The Origin of the Christian Era: Fact or Fiction

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Dedicated to my mother...

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PREFACE

Chronology is the undeniable underpinning in the chronicling of history, and it is axiomatic that an unshakeable, unquestionable baseline is the absolute bedrock of chronology. Establishing the true baseline is the principal prerequisite in the reconstruction of chronological history and the lack of one may lay us open to error. To illustrate, historians with absolute belief that the epoch of the Christian era (1 CE) is the firm baseline of world chronology have failed miserably in establishing the exact dates of the first dynasty of Babylon and the fall of Babylon. This is apparent from the fact that the reign of Hammurabi has been dated in five different chronologies: 1933-1890 BCE, 1848-1806 BCE, 1792-1750 BCE, 1728-1686 BCE or 1696-1654 BCE and similarly, the fall of Babylon has been variously dated as 1736 BCE, 1651 BCE, 1595 BCE, 1531 BCE or 1499 BCE.

This inconsistency in determining the exact chronology of the Hammurabi dynasty and other instances is a clear indicator that the epoch of the Christian era does not qualify to be the firm baseline of world chronology. The Venus Tablet of King Ammisaduqa found in Babylon offers independently verifiable astronomical evidence but unfortunately, world historians have markedly failed to fix the exact date of the Venus Tablet because of the blind assumption of 1 CE as the epoch of the birth of Jesus Christ without presenting any independently verifiable evidence.

Fixing the exact dates of ancient historical events with precision is indeed an arduous and herculean undertaking but my studies have now conclusively established the exact dates of the Venus Tablet based on archaeo-astronomical evidence. Thus, the reign of King Ammisaduqa can be exactly dated to 2473-2453 BCE, the reign of Hammurabi to 2619-2578 BCE and the fall of Babylon can also be fixed as 2418 BCE.

The archaeo-astronomical evidence of the Venus Tablet, which accurately and independently establishes the date of King Ammisaduqa, the fifth successor of Hammurabi, will qualify to be the true baseline of the chronology of ancient Western kingdoms. Accordingly, my book argues that there is a genuine need to reconstruct Western chronology up to Augustus without referring to the

epoch of the Christian era. In fact, eminent historians of the Western world have incorrectly assumed the fictitious epoch of the Christian era (1 CE) as the unquestionable baseline and reconciled the chronology of world history in antithesis to the traditional chronology of ancient civilisations, resulting in numerous irresolvable chronological quandaries.

In this book, I present a rational inquiry into the genuine chronology of the world and a verifiable analysis to resolve the chronological inconsistency of ~660 years which arose as an outcome of the unfounded assumption of the birth of Jesus Christ in 1 CE. Illustrating with documented evidence and verifiable facts, I have traced the complete chronology of Western kingdoms from ancient times to the fall of the Byzantine Roman Empire. If the date of the Venus Tablet as the baseline were to be unanimously accepted, all the chronic problems of the chronology of world history can be satisfactorily resolved. I hope the learned readers will critically examine the facts to evaluate my research in resolving the chronological mysteries and contribute further in establishing the authentic chronology of world history.

This book would not have been possible without the erudite inputs from numerous research papers, articles and books on this very significant subject. During the writing of this book, I have, quite often, borrowed and reproduced some of the relevant content from these sources. I acknowledge my deep indebtedness to the scholarly authors of these articles and books.

I express my profound gratitude to respected K.N. Govindacharya ji for his inspirational guidance. My sincere thanks to Dr G. Satheesh Reddy, Secretary, Department of Defence R&D and Chairman, DRDO for being a constant source of great motivation. My special thanks to Sh. Raj Vedam, Sh. Ravindranath Kaul, Sh. Sudhir Nathan, Sh. Vutukur Srinivas Rao, Sh. Sandeep Sarkar and Ms. Dipti Mohil Chawla for their valuable suggestions and sustained encouragement. I also thank Sh. Sanjay Sharma, Sh. Shamit Khemka and Sh. Paritosh Agrawal for extending all support in design of cover page and publication of this book. I thank my friend Sh. Braj Kishore Gupta for his efforts in editing the manuscript. I also thank Sh. Vinod Yadav for his creative contribution in the type-setting, design and printing of this book. Finally, I thank my wife Sandhya for her support, encouragement and patience during the time of writing of this book.

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Vedveer Arya

1

The Introduction

The historical traditions of western ancient kingdoms like Greece, Persia, Egypt, Assyria and Sumeria have arguably evolved over a long period from origins of great antiquity. The Epic of Gilgamesh, the Homer's Illiad and Odyssey and the traditional historical records like the Zoroastrian Shahnamah, the genealogical lists of ancient Egyptian royal dynasties, the kings list of Sumeria and the Hebrew Bible of Jews undoubtedly provide a tantalizing glimpse of western historical traditions. Truly speaking, Homer was the first historian of the west, who narrated the historical events in verse, though eminent historians have had a biased view about his epics. Isaac Newton studied the Greek historical sources for the chronology and expressed his doubt that; "The Greek Antiquities are full of poetical fictions, because the Greeks wrote nothing in prose, before the conquest of Asia by Cyrus the Persian. Then Pherecydes Scyrius and Cadmus Milesius introduced the writing in Prose."[1] Apparently, Isaac Newton ridiculously argued that the Greek history written in poetry is fiction and the Greek history written in prose is trustworthy. In fact, the discovery of the archaeological site of Troy not only debunks the scepticism of Doubting Thomases (eminent historians) but also clearly establishes the historicity of the legends about the ancient city of Troy.

Herodotus, Thucydides, Xenophon and Ctesias were the earliest Greek historians after Homer. Though Herodotus mainly presented the historical account of the Greco-Persian wars but he also narrated the ancient traditions, politics and cultural conflicts in Greece, Persia and Egypt etc., in his book "*The Histories*". Thucydides criticized Herodotus for inserting some fables into his historical narrative and insisted on his writing only the factual narrative. Traditionally, ancient historians of the

world inserted fables to make the historical narrative more interesting to the common people. Herodotus also followed the same tradition but this does not mean that Herodotus had concocted the historical narratives. Egyptians, Persians, Babylonians, Assyrians and Jews also had the tradition of recording their own chronological history. Starting from the time of Alexander, many historians like Ptolemy I, Berossus, Manetho, Polybius, Diodorus, Pliny, Strabo, Plutarch, Arrian, Tacitus and Eucebius etc. had contributed a lot towards preserving the chronological history of ancient western kingdoms. Berossus wrote on the chronological history of Babylon, whereas Manetho presented the chronological history of Egypt.

Evidently, all ancient western kingdoms had a tradition of multigenerational recordkeeping of the chronological history. Seemingly, ancient Greeks referred to the epoch of Atlantis's submersion for the chronological records. Since the fall of Troy city was also an epochal historical event, the Greeks used that epoch also for recording the chronology. Thereafter, the epoch of Olympiad and the era of Alexandria came into popular use. Ancient Egyptians referred to the date of King Menes of the first dynasty as an epoch for recording the chronology. Later, they started using a calendar of Sothic cycle (1461 years) for recording the dates. The Sumerians traditionally preserved their chronological list of kings. Later, the epoch of Nabonassarian era had been popularly used in Babylon. The Jews used the epoch of Exodus, the first and second temple periods for recording their chronology. The Roman traditions referred to the epoch of the founding of Rome city, the Augustan era, the Diocletian era and the era of the Martyrs. Numerous ancient western historians had followed above mentioned epochs and presented the chronological history. None of these historians ever questioned or disputed the authenticity of the traditional chronology based on the well-established epochs of eras. Greece, Egypt, Babylon and Persia were following the traditional chronology till the 18th century.

Traditionally, the Christians followed the Easter computus. The Irish Christians prepared their Easter computus in the cycle of 84 (14) years in the astronomical epoch of 1 BCE which became an epoch for recording the history of Anglo-Saxons. Gradually, the Christians of England mistakenly

started believing that the incarnation of Jesus Christ took place in 1 BCE-1 CE. Though the epoch of the Christian era (1 CE) came into regular use since the 9th and 10th centuries, the popular era of the Martyrs was still in vogue till the 15th century CE. The last reference of the era of the Martyrs is dated in the year 1132 (1415 CE). Thus, the epoch of the Christian era (1 CE) has replaced the era of the Martyrs in the 16th century CE. This is how an astronomical epoch of 1 CE had been transformed into a historical epoch.

There was no academic dispute about the traditional chronological history of western ancient kingdoms till the 16th century. When the Christian era had replaced the era of Martyrs in the 16th century, the historians of the 16th and 17th centuries were faced with the inconsistencies in the chronology for the first time. Thus, the modern research on the chronological history of the Western civilisations has commenced in the 17th century. James Ussher (1581-1656 CE), the Archbishop of Ireland, has proposed the Biblical chronology starting from the date of creation in 4004 BCE. He assumed the birth of Jesus in the year of death of the King Herod in 4 BCE and speculated based on the Biblical references that the date of creation to have been at midday on 23rd Oct 4004 BCE. He calculated the date of Alexander in 323 BCE and the date of Julius Caesar in 44 BCE. John Lightfoot also presented the same chronology in 1642 CE.

In fact, Jesuit scholars had an obsession to present the timeline of human history based on the biblical book of Genesis. Many scholars like Venerable Bede, Joseph Scaliger and Johannes Kepler proposed the date of creation around 3952 BCE, 3949 BCE and 3992 BCE respectively. Issac Newton was the first who extensively worked on reconciliation of the chronologies of ancient western kingdoms and wrote a book titled "**The Chronology of Ancient Kingdoms Amended – A Short Chronicle from the First Memory of Things in Europe to the Conquest of Persia by Alexander the Great**" which was published by John Conduitt in 1728 CE. Evidently, Issac Newton was under the hypnotic influence of the Ussher-Lightfoot chronology but he revised the date of creation from 4004 BCE to 4000 BCE and the date of Jesus Christ from 4 BCE to

1 CE. He drastically revised the traditional timelines of various ancient civilisations. He contracted the Greek chronology by five hundred years and the Egyptian chronology by thousand years because he found that the traditional chronology of Greece and Egypt is not consistent with reference to the Christian chronology i.e. Ussher-Lightfoot chronology. Though Issac Newton promoted the rational and radical approach in resolving the chronological complexities in history but unfortunately, he failed to apply the same approach in critical examination of the Ussher-Lightfoot chronology because he was born and brought up with the blind faith in the fictitious epoch of 1 CE.

The publication of Newton's book on the chronology of ancient kingdoms in 1728 CE had unleashed a storm of controversy. Gradually, the chronological controversies have been forced to surrender to the domination of the Christian chronology presented by Newton and his ilk. The chronological history of Persia, Egypt, Babylonia, Greece, Israel, Syria and Rome is closely interlinked with the chronology of the Achaemenid Empire of Persia. Therefore, the historians unanimously agreed upon the timeline of the Achaemenid Empire to be the sheet anchor of the chronological history. Since there are some chronological errors or inconsistencies in the traditional account given in the Jewish sources and the Christian sources, the historians have accepted the chronology of the Achaemenid Empire given by Ptolemy as secular and authentic. According to Ptolemy, Cyrus, the founder of the Achaemenid Empire, ascended the throne in the year 210 of the Nabonassarian era. Though historians have established the Ptolemaic chronology as secular but they fixed the epoch of the Nabonassarian era in 747 BCE based on the non-secular epoch of the Christian era (1 CE). Thus, the so-called secular chronology of the world is basically a communal chronology that supports and promotes the fictitious epoch of 1 CE.

It's an irony that despite the fact that all western historians and their followers worked for 300 years for establishing a rational chronology of the world history but they failed to get rid of the hypnotic influence of the Christian chronology. This is the reason why numerous chronological inconsistencies still persist in the world history. There is a genuine need to

dehypnotize the world historians from the Christian chronology so that we can truly establish a rational chronology of the world history.

I have established in the forthcoming chapters that the epoch of the Christian era (1 CE) is simply fictitious as it being an astronomical epoch and not historical. Therefore, it cannot deserve to be the sheet anchor for arriving at the chronological history of the world. Interestingly, Newton and later western historians had reconstructed the chronology of the world based on the fictitious epoch of the Christian era and declared their methodology as rational and secular but none of these historians had ever produced an iota of evidence to establish the historicity of the epoch of the Christian era. Though they were very rational while critically examining the evidence for arriving at the chronology but they were extremely childish in their approach while examining the historicity of the Christian era. They fixed the dates of Alexander, Julius Caesar and Augustus based on the fictitious epoch of the Christian era and ridiculously assumed the historical date of Jesus Christ in 1 CE. It is totally irrational to establish the epochs of various ancient eras of the world based on a sheet anchor which cannot be independently established. Only independently verifiable historical epochs can qualify to be the sheet anchors of chronology. Moreover, most of the epochs of ancient western eras like the Nabonassarian era, the Olympiad era, the era of the founding of Rome city, the era of Alexandria and the Augustan era etc. came into popular use before the birth of Jesus Christ.

As we critically examine the chronology of Babylon, Egypt, Assyria, Greece, Persia, Rome and China in the forthcoming chapters, it becomes evident that the entire chronology of world history has been brought forward by ~660 years. The European historians of the 17th and 18th centuries faithfully assumed the historicity of the fictitious epoch of 1 CE and distorted the chronology of entire world. I have conclusively established that the epoch of 1 BCE-1 CE is just a fictitious astronomical epoch of the Irish cycle of 84 (14) years and the epoch of the 12th cycle of 532 years as propounded by Annianus of Alexandria. The Christians of England mistakenly started believing from the 8th century CE that Jesus Christ incarnated in 1BCE-1 CE due to the confusion between the epoch of *Anno Incarnatione Domini,* i.e., Irish computus of Easter

Sunday computus (1 BCE) and the epoch of *Anno Incarnatione* (660 BCE). Seemingly, there was a controversy about the exact epoch of *Anno Incarnatione* in the 9th and 10th centuries CE because Abul Fazal says that "*the commencement of their year (the epoch of the Christian era), some take to be the entry of the sun in Capricorn; others, from the 8th degree of the same*".[2] Though, there is a controversy about the historicity of Jesus Christ, it is nothing but an ideological propaganda by atheists. In reality, Jesus Christ was undoubtedly a historical person. He was born on 10th Jan 660 BCE and probably crucified on 1st Apr 629 BCE.

I have comprehensively studied the entire epigraphic evidence archaeo-astronomically and refixed the various epochs of ancient Indian eras in my book titled "*The Chronology of India: From Mahabharata to Medieval Era*". I have conclusively established that the chronology of India, Nepal, Sri Lanka, Burma, Cambodia and Java has been brought forward by 661 years because the historians mistakenly considered the epoch of the Saka era (583 BCE) and the Sakanta era (78 CE) as identical and fixed the epoch of the Saka era in 78 CE. Moreover, ancient Jain historians (2nd century CE onwards) mistakenly identified King Chandragupta of Ujjain, the disciple of Bhadrabahu I with the Maurya King Chandragupta which led to a chronological illusion that Buddha and Mahavira were the contemporaries. This mistaken contemporaneity of Buddha and Mahavira led to additional chronological error of 660 years. Thus, the date of Buddha's nirvana has been brought forward from 1864 BCE to 544 BCE by reducing 1320 years and modern historians have further reduced the chronology of 61 years by fixing the date of Buddha's nirvana in 483 BCE. Evidently, the chronology of India, Sri Lanka and Burma has suffered the loss of the chronology of 1381 years.

Seemingly, the epoch of *Anno Mundi* in the later Jewish tradition had been brought forward by ~165 years. This is the reason why Jewish chronology is still struggling with the missing ~165 years. Similarly, historians wrongly concluded that the Sothic cycle of Egypt commenced in 2781 BCE considering the heliacal rising of Sirius. I have established that the Sothic cycle commenced in 3605 BCE and the mid-night rising of Sirius on 2nd Nov 3605 BCE was the epoch. Thus, historians brought forward the chronology of ancient Egypt by 824 years.

It is evident that the date of Jesus' birth has been brought forward from 660 BCE to 1 BCE-1CE which led to the missing 660 years in the chronology of world history. Jewish and Egyptian chronologies suffered additional missing ~165 years before the epoch of Nabonassarian era. The Roman Chronology has also been brought forward by 660 years but historians mistakenly considered the epochs of the Diocletian era and the era of Martyrs as identical which reduced the gap of missing years by 361 years. Thus, the Roman chronology has only the missing years of ~300 years after 284 CE. This is the reason why Heribert Illig proposed the "Phantom time hypothesis" in 1991. Dr. Hans-Ulrich Niemitz has rightly observed that "*Between Antiquity (1 AD) and the Renaissance (1500 AD) historians count approximately 300 years too many in their chronology. The Roman emperor Augustus really lived 1700 years ago, instead of the conventionally assumed 2000 years.*"[3] Therefore, Illig has concluded that a phantom period of approximately 300 years has been inserted between 600 CE and 900 CE. One of the best examples is the Chapel of Aachen (800 CE), which seems to come approximately 300 years too early. Many evidences indicate that the Chapel of Aachen is a building of the 11th century CE. Illig has also pointed out many inconsistencies in the Roman chronology.

In fact, Heribert Illig is right. I have established that the epoch of the Diocletian era commenced in 77 BCE as recorded in *Ain-i-Akbari* by Abul Fazl.[4] Since the epoch of the Augustan era has been brought forward by 660 years from 685 BCE to 25 BCE, the epoch of the Diocletian era outght to be fixed 660 years later around 584 CE but historians have wrongly fixed the epoch of the Diocletian era in 284 CE 300 years earlier. Evidently, this error in the epoch of the Diocletian era led to the phantom time hypothesis of 300 years. Actually, there was a gap of 361 years between the epoch of the Diocletian era and the era of Martyrs. If we fix the epoch of the Diocletian era in 584 CE then the epoch of Martyrs' era will be in 945 CE which would be too late in the chronology. Therefore, modern historians have concocted that the epoch of the Diocletian era and the era of Martyrs are identical without any evidence. There are numerous Paparus records of Egypt which refer to the different years in the epochs of the Diocletian era and the Martyr's era.[5] Evidently, the Diocletian era and

the Martyr's era are not identical. If we correct these errors in the Roman chronology, we can successfully reconcile the inconsistencies pointed out by the phantom time hypothesis. It is extremely important to note in the Roman chronology that there is a gap of 361 years between the epoch of the Diocletian era and the epoch of the era of Martyrs. The Diocletian era commenced in 77 BCE whereas the Martyrs' era commenced in 284 CE.

Modern research on the chronological history of the Western civilisations began in the 17th century. James Ussher, the Archbishop of Ireland, has proposed the chronology starting from the date of creation in 4004 BCE. Issac Newton wrote "The Chronology of Ancient Kingdoms" in 1728 CE under the hypnotic influence of the Ussher chronology.

I have logically established in this book that the epoch of the Christian era (1 CE) is a fictitious epoch. I have critically and independently examined the entire evidence and established the true epochs of various ancient eras of the world without referring to the epoch of the Christian era. Thereafter, I have arrived the date of Jesus Christ based on the epochs of other eras because I have not found any evidence which can independently be verified to establish the date of Jesus. In this process, I have discovered that there is an error of ~660 years in the chronological history of the world and an error of ~825 years in the Egyptian chronology. Therefore, the epoch of the Christian era (1 CE) does not deserve to be sheet anchor of world chronology.

I have rationally attempted to explore the true chronology of the world and tried to resolve the chronological inconsistency of ~660 years. I have explained with the help of facts that the complete chronology of the western kingdoms from ancient times to the fall of Byzantine Roman Empire. If we correct these chronological errors as discussed, all chronic problems of the chronology of the world history can be satisfactorily resolved. I hope the learned readers will critically examine the facts to evaluate my research in resolving the chronological mysteries and contribute further in establishing the authentic chronology of the world history.

In fact, the eminent historians of the western world have mistakenly assumed a fictitious epoch of the Christian era (1 CE) as the sheet anchor

and reconciled the chronology of entire world history in contrast to the traditional chronology of ancient civilisations. Needless to say, it resulted in numerous irresolvable chronological problems. I would challenge the world historians to arrive the chronology from Hammurabi to Augustus without blindly presuming the date of Jesus' birth in 1 CE. The archaeoastronomical evidence of Venus Tablet can independently and accurately establish the date of King Ammisaduqa, the fifth successor of Hammurabi which would qualify to be the true sheet anchor of the chronology of ancient western kingdoms.

2

Why the Epoch of Anno Domini is not Historical

According to modern historians, Dionysius Exiguus was the founder of the epoch of 1 CE. He prepared a table of the future dates of Easter (from 532 to 626 CE) in 525 CE which became an epoch of the Anno Domini or the Christian era in the middle of the 8th century. He was a Scythian by birth but lived in Rome. Undoubtedly, he was well-educated in mathematical astronomy in comparison with his contemporary Roman scholars. He prepared the Easter table starting from the year 532, i.e., Anno Diocletiani 248 but did not claim it to date any historical event. But how he arrived at the 532nd year is still not known to historians.

In reality, Dionysius followed the epoch of the Diocletian era that commenced in 77 BCE and not in 284 CE. He calculated the dates of Easter for 95 years from 171 CE to 266 CE. We will discuss the Easter table of Dionysius in detail in Chapter 11. Annianus of Alexandria indicated that the 11th Paschal cycle of 532 years had been completed in the 77th year of the Diocletian era and the 12th Paschal had commenced in 1 BCE. Victorius of Aquitaine was the first who produced an Easter cycle of 532 years from 629 BCE to 97 BCE.

The historians of the 17th and 18th centuries mistakenly assumed the epoch of the Diocletian era and the epoch of the Martyrs era to be identical and fixed the epoch of the Diocletian era in 284 CE. Thus, they fixed the 77th year of the Diocletian era in 360 CE and assumed the 1st year of the 12th Paschal cycle in 360 CE. Moreover, the traditional Callippic cycles also cannot be explained in the epoch of 284 CE. In reality, the Diocletian era and the era of the Martyrs are not identical. The epoch of the Diocletian

era commenced in 77 BCE considering the commencement of the 12th Paschal cycle in 1 BCE as indicated by Annianus of Alexandria and the era of the Martyrs commenced in 284 CE. Let us understand the origin of the Paschal cycles before exploring the external evidence for the epoch of the Diocletian era and how it differs from the epoch of the Martyrs era. We also need to critically examine the ancient traditions of the Christians to find out the year after creation and the year of the incarnation of Jesus Christ.

The Epoch of the Anno Mundi (Year After Creation)

The Byzantine calendar followed a date of creation as 5509 years before the incarnation of Jesus. This date was calculated based on the earliest Greek translation of Old Testament called as Septuagint text or New Testament. The earliest Christian sources determined the year after creation was about 5530 years before the birth of Jesus. But the Hebrew calendar and ancient Jewish traditions inform us that the date of Adam & Eve was 3448 years before the era of Alexandria as also confirmed by Abu Rayhan. Annianus of Alexandria states that eleven cycles of 532 years (Paschal cycle) completed starting from the year after creation to the 77th year of the Diocletian era. Panodorus of Alexandria, an Egyptian Byzantine reckoned 5904 years from Adam to the epoch of the Antiochian era. Annianus of Alexandria criticized the world history written by Panodorus and accused him for relying too much on secular sources rather than biblical sources. It is evident that there was a divergence of opinion about the year after creation but we cannot accurately arrive at it without fixing the epochs of the Diocletian era, the Antiochian era and the epoch of the incarnation of Jesus Christ.

The Epoch of the Diocletian Era

The epoch of the Diocletian era commenced from the beginning of the reign of the Roman Emperor Diocletian. Modern historians have fixed the epoch on 29th Aug 284 CE considering the identical epoch of the Martyrs era. Let us explore the evidence in the non-Christian sources for the epoch of the Diocletian era. Abul Fazal, the author of *Ain-i-Akbari*, mentions that the Diocletian era commenced 1010 years before the solar

Hijrah year 1002 and the 40th year of Ilahi era.[1] Eminent historians have rejected it as erroneous because this reference of Abul Fazal leads to a date around 585 CE. In fact, these historians have fixed the epoch of Hijrah era around July 622 CE based on the fictitious epoch of 1 CE. Since we are critically examining the historicity of the epoch of Anno Domini, it is extremely important that every epoch of the world which is based on the epoch of 1 CE needs to be verified again. Abul Fazal unambiguously indicates the commencement of the epoch of the Diocletian era 1010 years before in the 1002nd elapsed year of the Hijrah era. There are ninety eight astronomically verifiable dates recorded in "*Akbarnama*" of Abul Fazal which can produce the absolute evidence to establish the epoch of the Hijrah era. Let us attempt to establish the epoch of the Hijrah era independently based on the astronomical verification of the dates mentioned in Akbarnama.

The Astronomically Verifiable Dates Mentioned in Akbarnama

It is well known that Mughal king Akbar introduced a new era named as "Ilahi era" or "Divine era". The study of *Akbarnama* and *Ain-i-Akbari* of Abul Fazal ibn Mubarak clearly indicates that Akbar used a lunar calendar of the Hijrah era and also a solar calendar for calculation of the date of Navroz (the date of New Year coinciding Sun's entrance into Aries). He also used both solar calendar based on the Canon of Mirza Ulugh Beg and Halali lunar calendar for recording the dates of important events during the reign of Akbar. Abul Fazal also refers to the solar calendar of the Yazdajirdi era and the solar calendar of the Rumi era. Historians wrongly believed that Akbar used the Islamic lunar calendar (new moon to new moon) and calculated the dates accordingly. In fact, the Halāli lunar calendar followed by Akbar was based on the scheme of *Purnimanta* (full moon to full moon) whereas the Islamic lunar calendar is always based on the scheme of *Amanta* (new moon to new moon).

According to Abul Fazal, Akbar was born on 5th Rajab 949, Sunday and ascended the throne 25 days before the starting of the Divine era on 27th /28th Rabi al-Sani 963, i.e., 3/2 Rabi al-Sani 963 of Hijrah, 477 of the Jalali era in the month of Isfandarmaz, 925 of the Yazdajirdi era in the month of Tir and 1867 of the Rumi era in the month of Shabat.[2] Akbar

also introduced a cycle of 12 years from the epoch of the Ilahi era. The Persian names of Solar months as referred to in *Akbarnama*:

Solar Months in Jalali Calendar	**Rumi Era [Syro-Macedonian]**
1. Farwardin (Mesha)	1. Kanoun al Sani (January)
2. Ardibihisht (Vrishabha)	2. Shabat (February)
3. Khurdad (Mithuna)	3. Mart (March)
4. Tir (Karkata)	4. Nisan (April)
5. Amardad (Simha)	5. Mayis (May)
6. Shahriyur (Kanya)	6. Haziran (June)
7. Mihr (Tula)	7. Temmuz (July)
8. Aban (Vrishchika)	8. Augustos (August)
9. Azar (Dhanu)	9. Ayloul (September)
10. Dai (Makara)	10. Tishreen al Awwal (October)
11. Bahman (Kumbha)	11. Tishreen al Sani (November)
12. Isfandarmaz (Mina)	12. Kanoun al Awwal (December)

Lunar months in the Halali Calendar

1. Muharram	7. Rajab
2. Safar	8. Shaban
3. Rabi-al-Awwal	9. Ramzan
4. Rabi-al-Sani or Rabi-al-Akhiri	10. Shawwal
5. Jumada-al-Awwal	11. Zil-qada
6. Jumada-al-Akhiri	12. Zil-hajjah

In the Jalali Solar Calendar, a month has 29 to 32 days. Every day has a particular name as given below:

1. Ormuz	17. Sarosh
2. Bahman	18. Rashn
3. Ardibihisht	19. Farwardin
4. Shahriyur	20. Bahram
5. Isfandarmaz	21. Ram
6. Khurdad	22. Bad

7. Murdad	23. Dai-ba-din
8. Daibazar (Dai-ba-Azar)	24. Din
9. Azar	25. Arad
10. Aban	26. Ashtad
11. Rash	27. Asman
12. Mah	28. Zamiyad
13. Tir	29. Marisfand
14. Kosh	30. Aniran
15. Khur (Dai-ba-mihr)	31. Ruz
16. Mihrgan (Mihr)	32. Shab

The Halali lunar calendar used by Akbar and Abul Fazal had 12 months without any intercalary months. Every month used to commence on Full moon day and it consisted of 29 or 30 days. Since Abul Fazal records the details of many dates in both solar and lunar calendars, these dates can be astronomically established. Modern historians have miserably failed to explain these dates during the lifetime of Akbar (1542-1605 CE) which clearly indicates that the date of Akbar as fixed by the modern historians is factually incorrect.

Since there is an error of ~660 years in Indian chronology due to mixing up of two different epochs of Saka era (583 BCE) and Sakanta era (78 CE),[3] I have deducted ~660 years from the period 1542-1605 CE and reconstructed the Persian calendar from 880 CE to 950 CE based on the verifiable dates mentioned by Abul Fazal. Pl refer to Chapter 2 of my book "*The Chronology of India: From Mahabharata to Medieval Era*" for further details on the chronological error of ~660 years. If we reconstruct the solar calendar and lunar calendar based on the internal evidence of *Akbarnama*, it clearly indicates the epoch of the solar calendar in 69-68 BCE (as indicated in *Ain-i-Akbari*) and the epoch of Halali lunar calendar in 39 BCE. It is also evident that Akbar used a Purnimanta lunar calendar. Thus, Akbar was born on the 5th Rajab of solar Hijrah year 949, i.e., 26th/27th Oct 880 CE. He ascended the throne 25 days before the starting of the Divine era on 27th Rabi al-Sani of solar year 963 (22nd Mar 894 CE). Thus, Akbar ascended the throne on 25th Feb 894 CE. Though he

introduced the Ilahi era in 992 (923 CE) but the epoch of the Ilahi era or Divine era commenced from 22nd Mar 894 CE. Since Akbar reigned for 50 years, Abul Fazal gives the dates of Navroz for 50 years in solar and lunar calendars. Let us astronomically verify the dates of Navroz recorded in *Akbarnama*.

The Dates of Navroz Recorded by Abul Fazal in Akbarnama:

	Year Name	**Persian Solar Hijrah Era (69 BCE)**	**Ilahi Era (894 CE)**	**In CE**	**The date of Sun's entry into Aries (based on Surya Siddhanta)**	**The date in Indian Calendar**	**The date in CE**	**Around 1542-1605 CE (irregular dates)**
First Cycle of 12 Years								
1.	Farwardin Ilahi	963	1	894-895	28 Rabi-al-Sani 963, Wednesday. [1 (Purnima) + 15 (tithis of Phalguna Krishna) + 12 (12 tithis of Chaitra Sukla) = 28][4]	Chaitra Sukla 12	22 Mar 894 CE	10 Mar 1556 CE but Sun entered Aries on 27 Mar 1556 CE.
2.	Ardibihisht Ilahi	964	2	895-896	9 Jamada-al-Awwal (as given in Abqat Akbari), in the night known as Thursday, after 10 hrs and 40 min.[5]	Chaitra Krishna 8	22 Mar 895 CE	10 Mar 1557 CE but Sun entered Aries on 27 Mar 1557 CE.

3.	Khu-rdad Ilahi	965	3	896-897	20 Jamada al-Awwal 965, Friday, 4 hrs, 28 min.[6]	Chaitra S 4	22 Mar 896 CE	11 Mar 1558 CE but Sun entered Aries on 28 Mar 1558 CE.
4.	Tir Ilahi	966	4	897-898	2 Jumada al-Akhiri 966, Sunday.[7]	Chaitra K 1	23 Mar 897 CE	12 Mar 1559 CE but Sun entered Aries on 28 Mar 1559 CE.
5.	Am-ardad Ilahi	967	5	898-899	13 Juma-da-al-Akhiri 967, in the night known as Monday, after 4 hrs and 9 min.[8]	Chaitra K 12	23 Mar 898 CE	11 Mar 1560 CE but Sun entered Aries on 27 Mar 1560 CE.
6.	Shahri-yur Ilahi	968	6	899-900	24 Jama-da-al-Akhiri 968, after 9 hrs and 59 min of the night of Wednesday.[9]	Chaitra S 8	23 Mar 899 CE	11 Mar 1561 CE but Sun entered Aries on 28 Mar 1561 CE.
7.	Mihr Ilahi	969	7	900-901	5 Rajab 969, after the elapse of 3 hrs and 49 min of Wednesday.[10]	Chaitra K 4	23 Mar 900 CE	11 Mar 1562 CE but Sun entered Aries on 28 Mar 1562 CE.

8.	Aban Ilahi	970	8	901-902	15 Rajab 970, after 9 hrs and 38 min of Thursday.[11]	Chaitra K 14	22 Mar 901 CE	10 Mar 1563 CE but Sun entered Aries on 28 Mar 1563 CE.
9.	Azar Ilahi	971	9	902-903	27 Rajab 971, after the lapse of 3 hrs and 27 min of the night of Saturday.[12]	Chaitra S 11	22 Mar 902 CE	11 Mar 1564 CE but Sun entered Aries on 28 Mar 1564 CE.
10.	Dai Ilahi	972	10	903-904	8 Shaban 972, after 9 hrs and 21 min had passed of the night of Sunday.[13]	Chaitra K 7	23 Mar 903 CE	11 Mar 1565 CE but Sun entered Aries on 28 Mar 1565 CE.
11.	Bahman Ilahi	973	11	904-905	18 Shaban 973, after 3 hrs and 15 min of Monday.[14]	Chaitra S 2	22 Mar 904 CE	10 Mar 1566 CE but Sun entered Aries on 28 Mar 1566 CE.
12.	Isfandaramaz Ilahi	974	12	905-906	29 Shaban 974, after 8 hrs and 15 min of Tuesday.[15]	Chaitra S 14	22 Mar 905 CE	11 Mar 1567 CE but Sun entered Aries on 28 Mar 1567 CE.

Second Cycle of 12 Years

13.	Farwardin Ilahi	975	13	906-907	11 Ramzan 975, after the passing of 3 hrs and 9 min of the night of Thursday.[16]	Chaitra K 10	22 Mar 906 CE	10 Mar 1568 CE but Sun entered Aries on 27 Mar 1568 CE.
14.	Ardibihisht Ilahi	976	14	907-908	22 Ramzan 976, after 7 hrs and 9 min of the night of Friday.[17]	Chaitra S 6	23 Mar 907 CE	10 Mar 1569 CE but Sun entered Aries on 28th Mar 1569 CE.
15.	Khurdad Ilahi	977	15	908-909	3 Shawwal 977, after the passing of 2 hrs and 23 min of Saturday.[18]	Chaitra K 2	22 Mar 908 CE	10 Mar 1570 CE but Sun entered Aries on 28 Mar 1570 CE.
16.	Tir Ilahi	978	16	909-910	14 Shawwal 978, after 8 hrs and 12 min had elapsed of Sunday.[19]	Chaitra K 13	22 Mar 909 CE	11 Mar 1571 CE but Sun entered Aries on 28 Mar 1571 CE.
17.	Amardad Ilahi	979	17	910-911	25 Shawwal 979, after the passing of 2 hrs and 3 min from the night of Saturday.[20]	Chaitra S 9	22 Mar 910 CE	10 Mar 1572 CE but Sun entered Aries on 27th Mar 1572 CE.

18.	Shahriyur Ilahi	980	18	911-912	6 Zil-qada 980, after the lapse of 8 min and 7 sec of the night of Wednesday.[21]	Chaitra K 5	22 Mar 911 CE	10 Mar 1573 CE but Sun entered Aries on 28 Mar 1573 CE.
19.	Mihr Ilahi	981	19	912-913	17 Zil-qada 981, after the passing of 1 hr and 41 min of Thursday.[22]	Chaitra S 1	22 Mar 912 CE	11 Mar 1574 CE but Sun entered Aries on 28 Mar 1574 CE.
20.	Aban Ilahi	982	20	913-914	27 Zil-qada 982, after the passing of 7hrs and 35 min on Friday.[23]	Chaitra S 12	22 Mar 913 CE	10 Mar 1575 CE but Sun entered Aries on 28 Mar 1575 CE.
21.	Azar Ilahi	983	21	914-915	9 Zil-hajja 983, on the night of Sunday after passing of 1 hr and 19 min.[24]	Chaitra K 8	22 Mar 914 CE	10 Mar 1576 CE but Sun entered Aries on 28 Mar 1575 CE.
22.	Dai Ilahi	984	22	915-916	20 Zil-hajja 984, on the night of Monday after 7 hrs and 12 min.[25]	Chaitra S 4	22 Mar 915 CE	10 Mar 1577 CE but Sun entered Aries on 28 Mar 1577 CE.

23.	Bahman Ilahi	985	23	916-917	2 Muharram 985, on Tuesday, after the passing of 53 min.[26]	Chaitra K 1	22 Mar 916 CE	10 Mar 1578 CE but Sun entered Aries on 28 Mar 1578 CE.
24.	Isfandaramaz Ilahi	986	24	917-918	12 Muharram 986, on Wednesday, after the passing of 6 hrs and 47 min.[27]	Chaitra K 11	22 Mar 917 CE	10 Mar 1579 CE but Sun entered Aries on 28 Mar 1579 CE.
Third Cycle of 12 Years								
25.	Farwardin Ilahi	987	25	918-919	24 Muharram 987, on the night of Friday, after 37 min had passed.[28]	Chaitra S 8	22 Mar 918 CE	10 Mar 1580 CE but Sun entered Aries on 28 Mar 1580 CE.
26.	Ardibihisht Ilahi	988	26	919-920	5 Safar 988, on the night of Thursday, after the passing of 6 hrs and 22 min.[29]	Chaitra K 4	23 Mar 919 CE	10 Mar 1581 CE but Sun entered Aries on 28 Mar 1581 CE.
27.	Khurdad Ilahi	989	27	920-921	15 Safar 989, on Sunday, after the passing of 14 min and 37 sec.[30]	Chaitra K 14	22 Mar 920 CE	10 Mar 1582 CE but Sun entered Aries on 28 Mar 1582 CE.

28.	Tir Ilahi	990	28	921-922	26 Safar 990, Monday.[31]	Chaitra S 11	22 Mar 921 CE	10 Mar 1583 CE but Sun entered Aries on 28 Mar 1583 CE.
29.	Amardad Ilahi	991	29	922-923	8 Rabi-al-Awwal 991, four minutes of the night of Wednesday.[32]	Chaitra K 7	22 Mar 922 CE	10 Mar 1584 CE but Sun entered Aries on 28 Mar 1584 CE.
30.	Shahriyur Ilahi	992	30	923-924	19 Rabi-al-Awwal 992, after the lapse of 6 hrs and 57 min on the night of Thursday.[33]	Chaitra S 3	23 Mar 923 CE	10 Mar 1585 CE but Sun entered Aries on 28 Mar 1585 CE.
31.	Mihr Ilahi	993	31	924-925	29 Rabi-al-Awwal 993, on the eve of Friday, after the passing of 11 hrs and 37 min.[34]	Chaitra S 14	22 Mar 924 CE	10 Mar 1586 CE but Sun entered Aries on 28 Mar 1586 CE.
32.	Aban Ilahi	994	32	925-926	11 Rabi-al-Akhiri 994, on Saturday, after the passing of 5 hrs and 27 min.[35]	Chaitra K 10	22 Mar 925 CE	10 Mar 1587 CE but Sun entered Aries on 28 Mar 1587 CE.

33.	Azar Ilahi	995	33	926-927	22 Rabi-al-Akhiri 995, on Sunday, after the passing of 10 hrs and 48 min.[36]	Chaitra S 6	22 Mar 926 CE	10 Mar 1588 CE but Sun entered Aries on 28 Mar 1588 CE.
34.	Dai Ilahi	996	34	927-928	4 Jamada-al-Awwal 996, on the eve of Tuesday, after 4 hrs and 36 min.[37]	Chaitra K 2	23 Mar 927 CE	10 Mar 1589 CE but Sun entered Aries on 28 Mar 1589 CE.
35.	Bahman Ilahi	997	35	928-929	14 Jamada-al-Awwal 997, on the night of Wednesday, after 10 hrs and 57 min.[38]	Chaitra K 13	22 Mar 928 CE	10 Mar 1590 CE but Sun entered Aries on 28 Mar 1590 CE.
36.	Isfandaramaz Ilahi	998	36	929-930	24 Jamada-al-Awwal 998, on Thursday, after the lapse of 4 hrs and 16 min.[39]	Chaitra S 9	22 Mar 929 CE	10 Mar 1591 CE but Sun entered Aries on 28 Mar 1591 CE.
Fourth Cycle of 12 Years								
37.	Farwardin Ilahi	999	37	930-931	5 Jamada-al-Akhiri 999, on Friday, after the passing of 10 hrs and 5 min.[40]	Chaitra K 5	22 Mar 930 CE	10 Mar 1592 CE but Sun entered Aries on 28 Mar 1592 CE.

38.	Ardibi-hisht Ilahi	1000	38	931-932	17 Jamada-al Akhiri 1000, on the eve of Sunday, after 3 hrs and 55 min.[41]	Chaitra S 1	23 Mar 931 CE	10 Mar 1593 CE but Sun entered Aries on 28 Mar 1593 CE.
39.	Khu-rdad Ilahi	1001	39	932-933	28 Jama-da-al-Akhiri 1001, on the eve of Mon-day, after the passing of 9 hrs, 44 min and 22 sec.[42]	Chaitra S 12	22 Mar 932 CE	10 Mar 1594 CE but Sun entered Aries on 28 Mar 1594 CE.
40.	Tir Ilahi	1002	40	933-934	9 Rajab 1002, on Tuesday, after 3 hrs and 33 min.[43]	Chaitra K 9	22 Mar 933 CE	10 Mar 1595 CE but Sun entered Aries on 28 Mar 1595 CE.
41.	Am-ardad Ilahi	1003	41	934-935	20 Rajab 1003, on Wednesday, after 9 hrs and 22 min.[44]	Chaitra S 4	22 Mar 934 CE	10 Mar 1596 CE but Sun entered Aries on 28 Mar 1596 CE.
42.	Shahri-yur Ilahi	1004	42	935-936	2 Shaban 1004, on the eve of Friday, after the passing of 3 hrs and 12 min.[45]	Chaitra K 1	23 Mar 935 CE	10 Mar 1597 CE but Sun entered Aries on 28 Mar 1597 CE.

43.	Mihr Ilahi	1005	43	936-937	13 Shaban 1005, on the night of Saturday, after 9 hrs, 1 min and 37 sec.[46]	Chaitra K 12	23 Mar 936 CE	10 Mar 1598 CE but Sun entered Aries on 28 Mar 1598 CE.
44.	Aban Ilahi	1006	44	937-938	23 Shaban 1006, on Sunday, after the passing of 3 hrs and 13 min.[47]	Chaitra S 8	22 Mar 937 CE	10 Mar 1599 CE but Sun entered Aries on 28 Mar 1599 CE.
45.	Azar Ilahi	1007	45	938-939	4 Ramzan 1007, on the night of Monday, after 8 hrs and 40 min.[48]	Chaitra K 4	22 Mar 938 CE	10 Mar 1600 CE but Sun entered Aries on 28 Mar 1600 CE.
46.	Dai Ilahi	1008	46	939-940	15 Ramzan, 1008, on the night of Saturday.[49]	Chaitra K 15	22 Mar 939 CE	10 Mar 1601 CE but Sun entered Aries on 28 Mar 1601 CE.
47.	Bahman Ilahi	1009	47	940-941	26 Ramzan, 1009, on the night of Thursday, after 8 hrs and 42 min.[50]	Chaitra S 11	22 Mar 940 CE	10 Mar 1602 CE but Sun entered Aries on 28 Mar 1602 CE.

48.	Isfandaramaz Ilahi	1010	48	941-942	8 Shawwal 1010, on Friday, after the passing of 2 hrs and 40 min.[51]	Chaitra K 7	22 Mar 941 CE	10 Mar 1603 CE but Sun entered Aries on 28 Mar 1603 CE.
Fifth Cycle of 12 years								
49.	Farwardin Ilahi	1011	49	942-943	18 Shawwal 1011, on Monday, after the passing of 8 hrs and 20 min.[52]	Chaitra S 3	22 Mar 942 CE	10 Mar 1604 CE but Sun entered Aries on 28 Mar 1604 CE.
50.	Ardibihisht Ilahi	1012	50	943-944	28 Shawwal 1012, on the night of Saturday, after the passing of 4 hrs and 40 min.[53]	Chaitra S 13	22 Mar 943 CE	10 Mar 1605 CE but Sun entered Aries on 28 Mar 1605 CE.

The Other Verifiable Dates (in Solar and Lunar Calendars) in Akbarnama:

	Dates in Solar calendar (69 BCE) and Lunar Halali calendar	**Dates in the Solar calendar (69 BCE) (Regular)**	**Dates in the epoch of 622 CE (Irregular)**
1. to 3.	1. 24 Mihr (Tula) and 1 Zil-hajja 963 (894 CE) [Hemu arrived near Delhi]. 2. 25 Mihir and 2 Zil-hajja 963. 3. 31 Mihir and 8 Zil-hajja 963.[54]	1. 18 Oct 894 CE (Karttika S 15 & Tula 24). 2. 19 Oct 894 CE (Karttika K 1 & Tula 25). 3. 24 Oct 894 CE (Karttika K 7 & Tula 31).	1. 5 Oct 1556 CE (Karttika S 2 & Tula 6). 2. 6 Oct 1556 CE (Karttika S 3 & Tula 7). 3. 20 Oct 1556 CE (Karttika K 12).

4. to 6.	1. 23 Aban (Vrishchika) and 2 Muharram 963. 2. 27 (23?) Azar (Dhanu), and 4 Safar 963. 3. 6 Dai (Makara) and 14 Safar 963.[55]	1. 17 Nov 894 CE (Margasirsa K 1 & Vrishchika 23). 2. 19 Dec 894 CE (Pausha K 3 & Dhanu 27). 3. 28 Dec 894 CE (Pausha K 13 & Makara 6).	1. 17 Nov 1555 CE (Margasirsa S 3 & Vrishchika 18). 2. 18 Dec 1555 CE (Pausha S 5 & Dhanu 20). 3. 28 Dec 1555 CE (Pausha K 1 & Dhanu 30).
7. to 9.	1. 11 Amardad (Simha) and 27 Ramzan 964. 2. 16 Amardad and 2 Shawwal 964. 3. 25 Amardad and 11 Shawwal 964.[56]	1. 5 Aug 895 CE (Sravana S 11 & Simha 11). 2. 10 Aug 895 CE (Sravana K 1 & Simha 16). 3. 19 Aug 895 CE (Sravana K 10 & Simha 25).	1. 24 Jul 1557 CE (Ashadha K 14 & Karkata 25). 2. 28 July 1557 CE (Sravana S 3 & Karkata 29). 3. 6 Aug 1557 CE (Sravana S 12 & Simha 7).
10. to 12.	1. 5 Ardibihisht (Vrishabha) and 25 Jamada-al-Akhiri 965. 2. 26 Mihr (Tula) and 26 Zil-hajja 965. 3. 17 Aban (Vrishchika) and 17 Muharrum 965.[57]	1. 26 Apr 896 CE (Vaishakha S 10 & Vrishabha 5). 2. 20 Oct 896 CE (Karttika S 10 & Tula 26). 3. 9 Nov 896 CE (Margasirsa S 1 & Vrishchika 17).	1. 14 Apr 1558 CE (Chaitra K 11 & Mesha 18). 2. 9 Oct 1558 CE (Ashvina K 13 & Tula 9). 3. 9 Nov 1557 CE (Karttika K 3 & Vrishchika 11).
13. to 14.	1. 5 Farwardin (Mesha) and 15 Ramzan 975. 2. 5 Ardibihisht (Vrishabha) 15 Shawwal 975.[58]	1. 26 Mar 906 CE (Chaitra K 14 & Mesha 5) 2. 26 Apr 906 CE (Vaishakha K 15 & Vrishabha 5)	1. 14 Mar 1568 CE (Chaitra K 1 & Mina 18) 2. 13 Apr 1568 CE (Vaishakha K 2 & Mesha 18)

15. to 16.	1. 12th Farwardin (Mesha) and 3 Shawwal 976. 2. 31st Ardibihisht (Vrishabha) and 24 Zil-qada 976.[59]	1. 3 Apr 907 CE (Chaitra K 2 & Mesha 12/13). 2. 23 May 907 CE (Jyeshtha S 8 & Vrishabha 31/32).	1. 21 Mar 1569 CE (Chaitra S 4 & Mina 25). 2. 11 May 1569 CE (Vaishakha K 11 & Vrishabha 14).
17.	22 Ardibihisht and 26 Zil-qada 977.[60]	13 May 908 CE (Jyeshtha S 10 & Vrishabha 22).	2 May 1570 CE (Vaishakha K 13 & Vrishabha 5).
18. to 21.	1. 6 Ardibihisht (Vrishabha) and 20 Zil-qada 978. 2. 6 Khirdad (Mithuna) and 22 Zil-hajja 978 3. 12 Tīr (Karkata) and 1 Safar 978. 4. The end of Khirdad (Mithuna) and 1 Muharram 979.[61]	1. 27 Apr 909 CE (Adhika Jyeshtha S 5 & Vrishabha 6). 2. 28 May 909 CE (Jyeshtha S 6 & Mithuna 6). 3. 6 July 909 CE (Ashadha S 15 & Karkata 12/13) 4. 25 Jun 910 CE (Ashadha S 15 & Karkata 1).	1. 15 Apr 1571 CE (Chaitra K 6 & Mesha 19). 2. 17 May 1571 CE (Vaishakha K 8 & Vrishabha 20). 3. 5 Jul 1570 CE (Sravana S 2 & Karkata 6). 4. 26 May 1571 CE (Jyeshtha S 2 & Vrishabha 29).
22.	27 Azar (Dhanu) and 2 Shaban 979.[62]	20 Dec 910 CE (Pausha K 2 & Dhanu 27).	20 Dec 1571 CE (Pausha S 4 & Dhanus 21).
23.	12 Dai (Makara) and 18 Shaban 979.[63]	4 Jan 911 CE (Magha S 1 & Makara 12/13).	5 Jan 1572 CE (Pausha K 5 & Makara 8).
24. to 25.	1. 20 Dai (Makara) and 25 Shaban 979. 2. 3 Bahman (Kumbha) and 7 Ramzan 979.[64]	1. 11 Jan 911 CE (Magha S 8 & Makara 20). 2. 23 Jan 911 CE (Magha K 6 & Kumbha 3).	1. 12 Aug 1572 CE (Bhadrapada S 4 & Simha 13). 3. 23 Jan 1572 CE (Magha S 9 & Makara 26).
26. to 27.	1. 18 Isfandarmaz (Mina) and 23 Shawwal 979. 2. 29 Isfandarmaz and 3 Zil-qada 979.[65]	1. 10 Mar 911 CE (Chaitra S 7 & Mina 18/19). 2. 20 Mar 911 CE (Chaitra K 3 & Mina 29).	1. 9 Mar 1572 CE (Phalguna K 10 & Mina 13). 2. 18 Mar 1572 CE (Chaitra S 5).

28.	24 Farwardin (Mesha) and 29 Zil-qada 980.[66]	14 Apr 911 CE (Vaishakha S 13 & Mesha 24).	2 Apr 1573 CE (Chaitra K 15 & Mesha 6).
29. to 30.	1. 3 Ardibihisht (Vrishabha) and 10 Zil-hajja 980. 2. 17 Dai (Makara) and 3 Ramzan 980.[67]	1. 25 Mar 911 CE (Vaishakha K 9 & Vrishabha 3/4). 2. 9 Jan 912 CE (Magha K 3 & Makara 17/18).	1. 13 Apr 1573 CE (Vaishakha S 12 & Mesha 17). 2. 7 Jan 1573 CE (Magha S 4 & Makara 11).
31.	23 Khirdad (Mithuna) and 2 Safar 980.[68]	15 June 911 CE (Ashadha K 1 & Mithuna 23).	14 June 1572 CE (Ashadha S 4 & Mithuna 17).
32.	10 Shahriyur (Kanya) and 24 Rabi-al-akhiri 980.[69]	5 Sep 911 CE (Adhika Ashvina S 9 & Kanya 10).	3 Sep 1572 CE (Bhadrapada K 11 & Kanya 4).
33.	20 Shahriyur (Kanya) and 5 Jamada-al-Awwal 980.[70]	15 Sep 911 (Adhika Ashvina K 4 & Kanya 20).	13 Sep 1572 CE (Ashvina S 6 & Kanya 14).
34.	31 Shahriyur (Kanya) and 16 Jamada-al-Awwal 980.[71]	25 Sep 911 (Adhika Ashvina K 15 & Kanya 31).	24 Sep 1572 CE (Ashvina K 3 & Kanya 25).
35.	22 Mihr (Tula) and 8 Jamada-al-Akhiri 980.[72]	17 Oct 911 (Ashvina K 7 & Tula 22).	16 Oct 1572 CE (Karttika S 10 & Tula 17).
36.	6 Azar (Dhanu) and 22 Rajab 980 [Sultan Salim was sent to school on this date].[73]	30 Nov 911 CE (Margasirsa 7 & Dhanu 6).	28 Nov 1572 CE (Margasirsa K 8 & Vrishchika 30).
37.	The beginning of Isfandarmaz (Mina) and 16 Shawwal 980.[74]	20 Feb 912 CE (Phalguna K 15 & Mina 1).	19 Feb 1573 CE (Phalguna K 3 & Kumbha 24).
38.	7 Farwardin (Mesha) and 23 Zil-qada 981.[75]	28 Mar 912 CE (Chaitra S 7 & Mesha 7).	16 Mar 1574 CE (Phalguna K 8 & Mina 19).

39.	8 Tīr (Karkata) and 29 Safar 981.[76]	1 Jul 912 CE (Ashadha S 14 & Karkata 8).	30 Jun 1573 CE (Ashadha S 1 & Karkata 1).
40.	22 Amardad (Simha) and 15 Rabi-al-Akhiri 981.[77]	15 Aug 912 CE (Sravana K 15 & Simha 22).	14 Aug 1573 CE (Sravana K 1 & Simha 15).
41.	24 Isfandarmaz (Mina) and 20 Zil-qada 981.[78]	15 Mar 913 CE (Chaitra S 5 & Mina 24).	13 Mar 1574 CE (Phalguna K 6 & Mina 16).
42.	3 Ardibihisht (Vrishabha) and 1 Muharram 982.[79]	24 Apr 913 CE (Vaishakha K 1 & Vrishabha 3).	23 Apr 1574 CE (Vaishakha S 4 & Mesha 8).
43. to 44.	1. 10 Amardad (Simha) 25 Rabi-al-Akhiri 983. 2. 31 Tīr (Karkata) and 15 Rabi-al-Akhiri 983.[80]	1. 4 Aug 914 CE (Sravana S 11 & Simha 10). 2. 25 Jul 914 CE (Adhika Sravana K 15 & Karkata 31).	1. 3 Aug 1575 CE (Sravana K 12 & Simha 3). 2. 24 Jul 1575 CE (Sravana K 2 & Karkata 25).
45.	20 Farwardin (Mesha) and 10 Muharram 984.[81]	11 Apr 915 CE (Chaitra K 9 & Mesha 20).	9 Apr 1576 CE (Vaishakha S 11 & Mesha 13).
46.	20 Amardad (Simha) and 1 Rajab 988.[82]	14 Aug 919 CE (Bhadrapada S 15 & Simha 20).	12 Aug 1580 CE (Bhadrapada S 2 & Simha 13).
47.	26 Ardibihisht (Vrishabha) of the 34th year and 3 Rajab 997.[83]	13th May 928 CE (Vaishakha K 5 and Vrishabha 22).	18 May 1589 CE (Jyeshtha S 4/5 and Vrishabha 11).
48.	21 Mihr (Tula) and 10 Safar 1002.[84]	15 Oct 933 CE (Ashvina K 9 & Tula 21).	5 Nov 1593 CE (Karttika S 12 & Tula 26).

Interestingly, Abul Fazal mentions that he received the first order on 22nd Isfandarmaz, 33rd year of Divine era (927-928 CE) and the second order on 26th Ardibihisht, 34th year of Ilahi era or 3rd Rajab 997. In the Ain-i-Akbari, he says that he was seven years employed on the history. Thus, Ain-i-Akbari was completed in the 41st year of Ilahi era.

Evidently, the astronomical verification of ninety eight dates recorded in Akbarnama as detailed above clearly establishes that Abul Fazal did not refer to the epoch of Hijrah era in 622 CE. None of these 98 dates can be explained with reference to the epoch of 622 CE. He apparently used the solar calendar in the epoch of solar Hijrah (69 BCE) and Purnimanta lunar Halali calendar in the lunar Hijrah era (39 BCE). Thus, it proves that there is also an error of ~660 years in the chronology of Mughal kings.

The Date of Akbar's Birth and the Epochal Date of Ilahi Era

Abul Fazal provides the details of the date of Akbar's birth. According to him, "When the altitude of shira-i-shamiya was 88° and when 8hrs 20m had passed from the beginning of the night of 8th Aban 464, Jalali era, corresponding to 19th Isfandarmaz 911 of the old era, and to night of Sunday (shab-i-yak-shamba) 5th Rajab, lunar era, and to 6th Karttik 1599, Hindu era, and to 16th Tishreen-al-Awwal 1854, Greek era; 4 hrs 22 min of the said night were remaining."[85]

The verifiable details of the date of Akbar's birth given by Abul fazal can only be explained on 26th Oct 880 CE and not in 1542 CE as fixed by the historians. Akbar was born in the fort of Amarkot on 8th Aban 464, Jalali era. The Jalali era commenced in 417 CE and the 464th year is 880-881 CE. The Jalali era follows the tropical calendar. Aban was the eight month which means Sun was in Scorpio or Vrischika Rashi. The 8th Aban indicates the 225th day counting from the day of vernal equinox or the position of Sun in the 8th degree of Scorpio sign. Evidently, the 225th day was 26th/27th Oct 880 CE and Sun was also in the 8th degree of Scorpio but sun was in the 1st degree of Scorpio on 15th Oct 1542 CE which was also the 218th day from the day of vernal equinox. Moreover, Shira-i-shamiya (the star Sirius) was also located exactly at 88° on 26th Oct 880 CE but the same was at 97° on 15th Oct 1542 CE. The date of 5th Rajab 949 of Lunar Hijrah (39 BCE) also corresponds to 26th Oct 880 CE. Interestingly, Abul Fazal mentions that Akbar was born on the 6th Karttik of 1599 of Hindu era. Two epochs of the Vikrama era were in vogue in India. The Karttikadi Vikrama era commenced in 719 BCE whereas the Chaitradi Vikrama era commenced in 57 BCE.[86] Evidently, Abul refers to the epoch of the Karttikadi Vikrama era (719 BCE). The Purnimanta calendar was

popular in north India. Therefore, Akbar was born on Karttika Krishna Shashthi, i.e., 26th /27th Oct 880 CE. Abul Fazal also mentions the date as 16th Tishrinul Awwal, 1854 of Greek era or Rumi era, i.e., the era of Alexandria that commenced in 973-972 BCE. Tishrinul Awwal is the month of October in Julian calendar.

Abul Fazal also gives Akbar's birth date in the Zoroastrian calendar as 19th Isfandarmaz 911 of old era (the Yazdajird era commenced in 29 BCE). The 911th year of Yazdajird era is 880 CE. Zoroastrians followed a calendar of 365 days in a year and intercalated one month of 30 days at the end of a cycle of 120 years but the intercalation was not regularly practiced. According to "Jami zij" written by the Iranian astronomer Kushyar ibn Labban al-Jili, the calendar of Yazdajird era was reset in the 375th Solar Hijrah year (345 CE) when the Sun entered Aries on the first day of the month of Farwardin. Seemingly, Abul Fazal referred to the old epoch of 29 BCE but used the Yazdajird calendar of 345 CE, i.e., the Kadmi calendar. This may be the reason why Abul Fazal indicates that the date of 8th Aban (8th month) of Jalali calendar corresponds to the date of 19th Isfandarmaz (12th month) of Yazdajird calendar in 880 CE.

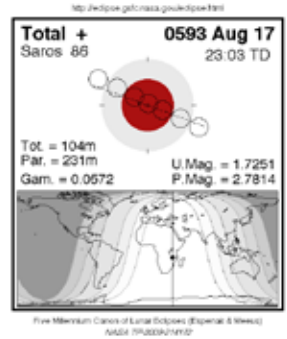
Abul Fazal informs us that Akbar ascended the throne on the second day of Rabi-al-Sani in the lunar Hijrah year 963 (25th Feb 894 CE), 10th Isfandarmaz of the Jalali year 477, 15th Tir of the Yazdajirdi year 925 and 14th Shabat of the Rumi year 1867. The tropical Jalali calendar indicates that the Sun was at 10° of Pisces (Mina Rashi) and the Sun was at 10° of Pisces on 24th/25th Feb 894 CE. The historians have wrongly fixed the date of Akbar's ascension on 14th Feb 1556 CE. The Sun was only at 4° of Pisces on 14th Feb 1556 CE.

Abul Fazal also discussed the four Horoscopes of Akbar's date of birth and one Horoscope of the date of his ascension. Let the experts in the Persian and western astrology examine the verifiable details of these Horoscopes.

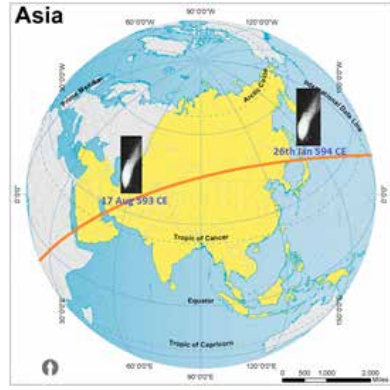
The References of Comets in Akbarnama

Interestingly, Abul Fazal mentions certain historical observations of comets. According to him, a hairy comet appeared in the Solar Hijrah year 662 (593 CE), when the sun was in the Sign Leo. On that night there was a

lunar eclipse to the extent of eleven digits 11/12.[87] It was extraordinary as large as a man's head, and smoke issued from the top of it. It passed to the countries of Tibet, Turkestan, China, Kashghar, Farghana, Transoxiana (Uzbekistan, Tajikistan, Kyrgyzstan and Kazakhstan) and Khurasan, and was visible for eighty-five days. Japanese medieval documents (Genpei Josuiki) record the observation of a comet in 593 CE. According to Abul Fazal, the comet appeared on 17th Aug 593 CE and was visible up to 10th Nov 593 CE. Sun was in the Sign Leo around 23 Jul – 22 Aug 593 CE) and a total lunar eclipse occurred on 17th Aug 593 CE.



The Japanese sources mention that the comet appeared around 10th Dec and was visible at least up to 26th January 594 CE. There is also a documentary evidence from Chinese and Korean sources that clearly indicate the apparition of the comet in late 593 and early 594 CE.



Interestingly, Abul Fazal mentions that for a long time people reckoned their years and months from the epoch of this comet. The Vilayati era of Bengal and Orissa is reckoned from Kanya-Sankranti. It seems that an epoch of 593 CE was in use in Bengal but needs further research. The Japanese had identified this comet as the appearance of Benzaiten, a Japanese Buddhist goddess (In fact, Benzaiten is the Japanese name of Indian goddess Saraswati). Japanese Buddhist monk Kokei also recorded that Benzaiten first appeared in early June of 552 CE before the dawn at Enoshima as observed by the villagers. The comet observed at Enoshima was Halley's Comet and it was visible at Enoshima in June 552 CE.

Abul Fazal further informs us that a tailed comet (2P/Encke?) appeared in the zenith of Asia Minor (Rum) in the year 807 (738 CE). A tailed comet (2P/Encke?) also appeared in the first degrees of the Sign of Libra near the Northern Crown in the year 837 (767-768 CE). It used to rise and set there. When some days had elapsed a singular movement of it took place. It became spear-bearing (*nezadar*) and went off to a distance from the Northern Crown (Corona Borealis constellation), and in eight months it disappeared. Abul Fazal records that when Akbar was in Punjab (Amber), a comet appeared on 29th Aban (Vrishchika) in the 22nd year of Ilahi era (915-916 CE), i.e., 22/23 Nov 915 CE but by God's grace, the malefic influences of comet passed away from Akbar's empire.

Historians calculated the year 662 in lunar calendar in the epoch of 622 CE and speculated that a comet appeared in France in July 1264

CE and remained visible to the end of Sep 1264 CE. They also calculated the 22nd year of Ilahi era (984) as 1577 CE and identified the comet that remained visible in Europe for 74 days from 13th Nov 1577 CE to 26 Jan 1578 CE. But Abul Fazal unambiguously used solar Hijrah calendar and not lunar Hijrah calendar. Therefore, the year 662 should be 1284 CE (622 + 662 = 1284) in the epoch of 622 CE. Similarly, the year 984 should be 1606 CE (622 + 984 = 1606) but Akbar had already died in 1605 CE.

Evidently, the 98 dates referred to in the solar Hijrah calendar and lunar calendar and some of the comet records mentioned in Akbarnama cannot be explained in the epoch of 622 CE. In fact, the historians have mistakenly fixed the epoch of Hijrah era in 622 CE based on the fictitious epoch of Anno Domini (1 CE). The historians dated the lifetime of Muhammad around 571-632 CE. In fact, Muhammad flourished around 100-34 BCE. We will discuss in detail about the epoch of the Hijrah era in Chapter 3. The astronomically verifiable dates recorded in Akbarnama conclusively indicate the epoch of lunar Hijrah in 39 BCE, the epoch of solar Hijrah in 69 BCE and the epoch of the Ilahi era in 894 CE.

Ain-i-Akbari: The Epochs of Ancient Eras

Interestingly, Abul Fazal discussed the following epochs of various ancient eras with reference to the 40th year of Ilahi era (933-934 CE) in his book "*Ain-i-Akbari*".[88]

1. **The epoch of the Astrological era:** According to Abul Fazal, all planets were in Aries in 183762 BCE. This epoch was used by Astrologists. The years are solar and total 184696 years have been elapsed on 22nd Mar 934 CE.
2. **The era of Adam:** According to Elkhani tables, Adam was born in 4420 BCE (5353-933 = 4420). There was a divergence of opinion in this regard. Some say that he was born in 5413 BCE (6346-933=5413) or 6005 BCE (6938-933 = 6005) or 5860 BCE (6793-933 = 5860).
3. **The Jewish era:** According to Abul Fazal, Jewish era started from the creation of Adam (Anno Mundi). Thus, the epoch must be 4420 BCE. In modern times, Jews start this epoch from 3761 BCE because it is traditionally believed that the epoch of Jewish era commenced 3448 year before the epoch of the Syro-Macedonian era. Historians

wrongly fixed the epoch of Syro-Macedonian era around 312-311 BCE considering it to be Seleucid era. In reality, the epoch of the Syro-Macedonian era commenced from 973-972 BCE as recorded by Abul Fazal.

4. **The era of Deluge:** Abu Mashar of Balkh used this epoch in his calculations of Solar years. Total 4696 years have been elapsed up to Mar 934 CE. Thus, the epoch of this era started in 3763 BCE.
5. **The era of Bukht Nassar (King Nabonassar of Babylon):** According to Abul Fazal, Ptolemy in his Almagest computed the planetary motions on this epoch. Total 2341 years have been elapsed up to Mar 934 CE. Thus, this era commenced in 1408 BCE.
6. **The era of Philipus:** Theon of Alexandria used it. The years and months were artificial but close to solar calendar. Ptolemy has recorded some of his observations regarding it, in the Almagest. Total 1917 years elapsed up to Mar 934 CE. Thus, this era commenced in 984 BCE. According to modern historians, Theon lived around 335-405 CE but he must be dated in the third century BCE.
7. **The era of Syro-Macedonian era:** Abul Fazal says; "The years and months were artificial but they reckon the year at 365 ¼ days exactly. This era dates from the death of Alexander the great but was not employed till 12 years after his death. Others assert that he established it in the 7th year of his reign when he set out from Macedonia, his kingdom, bent on foreign conquest. Muhiyuddin Mughrebi on the other hand, states that it began with the reign of Seleucus Nicator who founded Antioch. This era was in use both with the Jews and Syrians. They relate that when Alexander the son of Philip marched from Greece to the conquest of Persia, he passed through Jerusalem. Summoning the learned Jews of Syria he directed them to discontinue the Mosaical era and to employ his own. They thus answered him. "Our forefathers never observed any era above a thousand years and this year our Era will complete the thousand; from next year, therefore, thy command shall be obeyed." And they acted accordingly. And this took place in Alexander's 27th year of Reign. Some maintain that this Grecian era is of Hebrew origin. Kushyar in his Jami says that there is no difference between the Syro-

Macedonian and the Syrian era, except in the names of the months. The Syrian year begins on the 1st day of Tishreen-al-Awwal. This happened formerly when the sun was in the 4th degree of Libra, and now falls on the 11th. With the Syro-Macedonians, that date is the 1st of Kanun-i-Sani, when the sun is near the 20th degree of Capricorn. Battani mentions this era as beginning with Philip, father of Alexander Bicornutus, but that he called it after his son to exalt his fame; and he has based on it the calculation of the mean places of the planets in his Canon. Thus, there was divergence of opinion even during the time of Abul Fazal. Therefore, it is extremely difficult to conclude anything about the origin of the Syro-Macedonian era." Abul Fazal also mentions that 1905 years of this era had elapsed up to Mar 933 CE. Thus, the Syro-Macedonian era commenced in 973 BCE. Historians mistakenly concluded that this epoch of 323 BCE commenced from the death of Alexander.

8. **The Augustan era:** According to Abul Fazal, Augustus was the first of the Roman Emperors. In the calendar of this era, 11 months had 30 days and 12th month had 35 days (36 days in case of leap year). Total 1623 years elapsed in 933-934 CE. Thus, this era commenced in 690 BCE.
9. **The Christian era:** This begins with the birth of Jesus Christ. Abul Fazal says that the commencement of their year, some take to be the entry of the sun in Capricorn; others, from the 8th degree of the same. Evidently, Abul Fazal had no valid information of the epoch of the Christian era. However, he indicates the commencement of the epoch of the Christian era after the epoch of the Augustan era.
10. **The era of Antoninus of Rome:** This era begins with the accession of Antoninus. Ptolemy determined the position of the fixed stars in his Almagest on this era. Total 1457 years had elapsed up to Mar 934 CE. Thus, this era commenced in 524-523 BCE.
11. **The era of Diocletian:** This era begins with the accession of King Diocletian. Total 1010 years had elapsed up to Mar 934 CE. Thus, this era commenced in 77 BCE.
12. **The Solar Hijrah era:** According to Abul Fazal, 1002 years of Hijrah era had elapsed up to Mar 934 CE and this is based on the new Canon

introduced by Mirza Ulugh Beg (777 CE). Thus, the solar Hijrah era commenced in 69 BCE (14 Mar 69 BCE - 13 Mar 68 BCE).

13. **The era of Yazdajird:** According to Abul Fazal, Yazdajird was the son of Shahryar Aparwez b. Hurmuz b. Noshirwan. It began with the accession of Jamshid. After him every succeeding monarch renewed its designation by his own accession and Yazdajird also re-instituted it from his assumption of sovereignty. When the era was renewed under the name of Yazdajird, and his authority terminated in disaster, the continuity of intercalation was neglected. 963 years elapsed ever since. Thus, this era commenced in 30 BCE.
14. **The Jalali era or Maliki era:** Though the lunar Hijrah era was in use but the interruption of continuity in intercalation, the commencements of the years fell into confusion. At the instance of Sultan Jalaluddin Malik Shah Saljuki, Omar Khayyam and several other learned men instituted this era. The beginning of the year was determined from the sun's entry into Aries. The years and months were at first Natural, but now the month is the ordinary Artificial. Each month consists of 30 days and at the end of Isfandarmaz, they add 5 or 6 days. Total 516 years had elapsed up to Mar 934 CE. Thus, this era commenced in 417 CE.
15. **The Khani era:** This era was founded during the reign of Ghazan Khan. The years and months are natural and solar. Before its adoption, the state records bore date from the Hijrah era and the lunar year was current. By this means, the road was opened to grievous oppression, because 31 lunar years are equal to only 30 solar years and great loss occurred to the agriculturists, as the revenue was taken on the lunar years and the harvest depended on the solar. Abolishing this practice Ghazan Khan promoted the cause of justice by the introduction of this era. Total 293 years had elapsed up to mar 934 CE. Thus, this era commenced in 640 CE.
16. **The Ilahi era or Divine era:** According to Abul Fazal, Akbar had long desired to introduce a new computation of years and months throughout the fair regions of Hindustan in order that perplexity might give place to easiness. He was likewise averse to the era of the Hijrah (*Flight*) which was of ominous signification, but because of

the number of short-sighted, ignorant men who believe the currency of the era to be inseparable from religion, Akbar in his graciousness, dearly regarding the attachment of the hearts of his subjects did not carry out his design of suppressing it. Finally, Akbar decided to introduce an epoch from 22nd March 894 CE. At present, 933-934 CE is the 40th year of the divine era or Ilahi era. Interestingly, Abul Fazal mentions that Archimedes, Aristarchus and Hipparchus in Egypt, from whose time to the present, 1769 years have elapsed. Ptolemy in Alexandria who flourished some 1410 years ago; as the Caliph Mamun in Baghdad, 790 years past, and Sind bin Ali and Khalid bin Abdul Malik al Marwazi 764 years since at Damascus. Hakim and Ibn Aalam also laid the foundations of an observatory at Baghdad which remained unfinished, 712 years, and Battani at Racca 654 years previous to this time. Three hundred and sixty-two solar years have passed since Khwajah Nasir of Tus built another at Muragha near Tabriz and 156 is the age of that of Mirza Ulugh Beg in Samarkand. Thus, we can calculate the dates of these scholars as given below:

	In CE
Archimedes, Aristarchus and Hipparchus in Egypt (1769-933)	836 BCE
Ptolemy in Alexandria (1410-933)	477 BCE
Caliph Mamun in Baghdad (790-933)	143 CE
Sind bin Ali and Khalid bin Abdul Malik al Marwazi at Damascus (764-933)	169 CE
Hakim and Ibn Aalam also laid the foundations of an observatory at Baghdad which remained unfinished. (712-933)	221 CE
Al Battani at Racca (654-933)	279 CE
Khwajah Nasir of Tus built another at Muragha near Tabriz (362-933)	571 CE
Mirza Ulugh Beg in Samarkand (156-933)	777 CE

Abu Rayhan vs. Al Beruni

Abul Fazal lived around Solar Hijrah 958-1015 (889-946 CE). He wrote Akbarnama during the lifetime of Akbar and updated up to the Ilahi year

50. He also mentions that Akbar died on the eve of 4th Aban (Vrishchika 4) 1002, i.e., 29th Oct 943 CE. It is evident that Abul Fazal lived few more years after the death of Akbar. But historians believe that Abul Fazal was assassinated by Vir Singh Bundela in 1602 CE, three years before the death of Akbar. Apparently, historians mixed up the events of the later Mughal kings of the 16th & 17th centuries with that of the Mughal kings of the 9th and 10th centuries. Abul Fazal did not mention Al Beruni because he lived 100 years before him. Historians identified Abu Rayhan mentioned by Abul Fazal to be Al Beruni. Abu Rayhan and Al Beruni were two different personalities. Abu Rayhan lived in the 4th century whereas Al Beruni lived in the 11th century. Abu Rayhan authored a treatise "Al-athar Al-bakiya (Vestiges of the Past)" in Arabic which has been translated into English by Dr. C Edward Sachau under the title "The Chronology of Ancient Nations" in 1879.

Al-athar Al-bakiya of Abu Rayhan

Abu Rayhan clearly records that the majority of the country people still adhered to Ahur Mazda, and in most towns there have been Zoroastrian communities in his lifetime. It is evident from the work of Abu Rayhan that various sects of Persia, central Asia and Arab were co-existing. Dr. Sachau translated his work mistakenly considering him as Al Beruni. There is a need of re-translation of this work of Abu Rayhan with reference to the true chronology. Sachau says in his preface; "I have boldly attacked the sometimes rather enigmatic style of the author, and if I have missed the mark, if the bewildering variety and multiplicity of the subject-matter have prevented me reaching the very bottom of every question."

Abu Rayhan says that now the Arabs assumed the setting of the Sun as the beginning of the Day similar to Indian *ardharatrika* system.[89] He indicates that Arabs followed a lunar calendar that the beginnings of the months were fixed, not by calculation, but by the appearance of the new moons. But now, full moon, the appearance of which is, with them, the beginning of the month, becomes visible towards sunset. It is evident that the Persians also followed a Purnimanta lunar calendar.

Interestingly, Abu Rayhan says that he heard that Indians use the appearance of new-moon in their months that they intercalate one lunar

month in every 976 days. He states at the end that "I turn away from what I cannot know for certain". It is obvious that Abu Rayhan had neither the knowledge of Indian astronomy nor he ever visited India in his lifetime.

Abu Rayhan also discussed the epochs of various eras in the Chapter III of his book. Persians and Magians (Zoroastrians) think that the duration of world is 12000 years corresponding to the number of the signs of the zodiac and of the months. According to Abu Rayhan, Zoroastrians believe that 3000 years passed from the date of creation till the appearance of Zoroaster. From the appearance of Zoroaster to the beginning of the era of Alexandria (the Syro-Macedonian era) [973 BCE] they count 258 years which indicates that Zoroaster lived around 1231 BCE. Further, the Persians count the beginning of the reign of Yazdajird 942 years 257 days from the epoch of the era of Alexandria (973-972 BCE). Abul Fazal also gives the epoch of Yazdajird era around 29 BCE 942 years after 973-972 BCE. The duration of the rule of the Sasanian kings is computed nearly 415 years.

The Epoch of Anno Mundi and the Epoch of the Diocletian Era

As discussed at length above, Abul Fazal's *Akbarnama* undoubtedly indicates that the epoch of solar Hijrah era (based on the new Canon of Mirza Ulugh Beg) commenced in 69-68 BCE and the epoch of Ilahi era commenced in 894 CE. Accordingly, the 1002nd year of solar Hijrah and the 40th year of Ilahi was 933-934 CE. Abul Fazal mentions in his another book "*Ain-i-Akbari*" that the era of Diocletian of Rome begins with the accession of Diocletian, a Christian emperor and 1010 years have since elapsed in the 40th year of Ilahi, i.e., 933-934 CE. Thus, Abul Fazal states that the epoch of the Diocletian era commenced in 77 BCE but the historians have rejected it because they have mistakenly assumed the epochs of Diocletian era and the era of the Martyrs to be identical.

Colonel H. S. Jarrett comments in his translation of *Ain-i-Akbari*; "Abul Fazal evidently meant Constantine, but probably following the text of Albiruni,(Chronol) he copied the heading of the Era of Diocletian, without noticing in the body of passage, the change of name to Constantine, as the 1st Christian Emperor. The number 1010 is an error. Gladwin has 1410. If Abul Fazal counts from the era of Diocletian A.D.

284, the intermediate years would be about 1310; if from A.D. 324, the date of Constantine's sole mastership of the empire 1270, if from his proclamation as Emperor by the legious in 306, the number would be 1290. His father Constantine was proclaimed Caesar by Diocletian in A.D. 292." Evidently, the historians have simply blamed Abul fazal for the error but in reality, Abul Fazal was chronologically correct whereas the historians have committed the blunder in arriving at the epoch of the Diocletian era. We need to establish the epoch of Anno Mundi in the Christian tradition to rectify this chronological blunder.

While discussing the epoch of Adam or the creation (Anno Mundi), he says; "According to the Elkhani tables, 5353 solar years have elapsed to the present date. But some of those possessing a book of divine revelation make it 6346 solar years; others 6938 solar; other again, 6920 solar, but according to what has been reported from learned Christians, it is 6793." The Elkhani tables belonged to the Jewish tradition which indicate the commencement of the epoch of creation in 4421 BCE (5353-933). Seemingly, the learned Christians of the time of Abul Fazal followed the Paschal cycles who reported the epoch of creation to be in 5860-5859 BCE (6793-933). Interestingly, Abu Rayhan says that the Jews and the Christians differ widely on the epoch of the creation. The Jews believe that the time between Adam and Alexander is 3448 years (3448 + 973 = 4421) which leads to 4421 BCE. According to the Christians, the time is 5181 years (5181 + 973 = 6154), i.e. 6154 BCE.

It is very important to establish the epoch of the Paschal cycle followed by learned Christians because Annianus of Alexandria had fixed the beginning of the 12th Paschal cycle in the 77th year of Diocletian era. Before him, Panodorus of Alexandria had calculated the difference of 5904 years between the epoch of Anno Mundi and the epoch of Antiochian era. Thus, Panodorus indicates the commencement of Anno Mundi era in 6152 BCE and the commencement of the Antiochian era in 248 BCE. The Alexandrian cycles or the Alexandrian era also commenced from the epoch of Antiochian era. Evidently, Panodoraus calculated his cycle of 19-year from 248 BCE. Abu Rayhan indicates that the epoch of

Anno Mundi commenced in 6154 BCE, 5181 years before the epoch of Syro-Macedonian era (973 BCE). Panodorus was also the first Christian Alexandrian scholar who used the 19-year cycle for Easter calculations from the epoch of Antiochian era, i.e. 248 BCE. Seemingly, Panodorus sourced his chronological information from the works of Africanus, Eusebius and Dexippus.

Annianus of Alexandria rejected the epoch of Anno Mundi given by Panodorus. He was an Alexandrian astronomer. Therefore, he preferred to calculate an astronomical epoch of Anno Mundi. Interestingly, Annianus of Alexandria calculated eleven cycles of 532 years (a Paschal cycle consisting of 28 Metonic cycles of 19 years), i.e., 5852 elapsed years starting from the epoch of Anno Mundi to the 77th year of the Diocletian era. It may also be noted that a Paschal cycle of 532 years contains seven Callippic cycles of 76 years. Ptolemy used this cycle of Callippus (76 years) from the epoch of 988 BCE (the 418th year of the Nabonassar era). Annianus of Alexandria refers to the epoch of the Diocletian era in 77 BCE and calculates that total 5852 years had been elapsed in 1 BCE. Evidently, Annianus lived in the beginning of the 1st century CE. Though Annianus fixed the epoch of the 12th cycle of 532 years in 1 BCE but The Irish Christians also fixed the same epoch for their Easter computus.

The Irish scholars modified the 84 (12)-year cycle and introduced the 84 (14)-year cycle for Easter Sunday computus starting from 1 BCE-1 CE which became an epochal date for recording the history of Anglo-Saxon period. Thus, the Christians of Ireland and England were the real founders of the epoch of 1 BCE-1 CE and not Dionysius Exiguus. Considering the Theophillan epoch of 361 BCE, Dionysius Exiguus presented his Easter table in 171 CE based on the modified Alexandrian 95-year table evolved by Theophilus of Alexandria. Venerable Bede calculated Easter dates for 532 years (171-702 CE). Gradually, the epoch of the Irish computus of 1BCE-1 CE came to be known as the epoch of the Christian era after the 8th century. Evidently, the epoch of 1 BCE-1 CE is a fictitious astronomical epoch which was nothing but the 1st year of the 84 (14)-year cycle and the 1st year of the 12th Paschal cycle of 532 years.

Based on these historical facts, we can now confidently say that the following epochs of ancient eras used in the Christian tradition.

The Byzantine Christian Epoch of Anno Mundi (6154 or 6152 BCE) and the Ancient Anatolian Epoch (6169 BCE or 6168 BCE)

According to Panodorus of Alexandria, 5904 years have been elapsed before the epoch of Antiochian era, i.e. 248 BCE. Abu Rayhan records based that the epoch of Anno Mundi commenced 5180 years before the epoch of the Syro-Macedonian era, i.e. 973 BCE. The Greek Chronicle "*Chronicon Paschale*" indicates the difference of 5181 years between the epoch of Anno Mundi (6169 BCE) and the epoch of the Alexander's conquest of Persia (988 BCE). Thus, the Christian epoch of Anno Mundi commenced around 6154 BCE or 6152 BCE. Evidently, this Christian epoch of 6154 BCE was not traditional.

Seemingly, ancient Anatolians followed a traditional epoch of 6169 /6168 BCE. The Byzantine Empire also adopted the same epochal tradition but introduced the Byzantine Christian calendar. This calendar was based on Julian calendar but the year started on 1st September. The 7509th year began on the 1st September 2000 CE but it was actually the 8169th year if we add 660 years. This epoch was popular in Byzantine Empire till the 16th century. Gradually, the Orthodox Church had replaced it by the calendar of the Christian era (1 CE). A Greek Christian chronicle known as "*Chronicon Paschale*" follows the epoch of 6168 BCE and presents the chronological account from the ages from Adam the first man to the reign of King Heraclius (50-19 BCE).

The Epoch of the Era of Alexandria (972 BCE) or the Syro-Macedonian Era (973 BCE)

Abul Fazal records that the era of Alexandria commenced 1905 years before Hijrah 1002 and 40th year of Ilahi era (933-934 CE considering the solar Hijrah epoch of 69 BCE). Thus, the Syro-Macedonian era or the era of Alexandria commenced on 1st Jan 972 BCE. The years and months used in this era were artificial but they reckon the year at 365 ¼ days exactly. The New Year began on the 1st of Kanun-i-Sani (1st January), when the sun was near the 20th degree of Capricorn. Sun was exactly in the 20th degree of Capricorn (at Alexandria) on 1st Jan 972 BCE at 12:00 PM. Historians conveniently concocted that this epoch was introduced by Seleucus

Nicator in 312 BCE. They named this era as the Seleucid era but none of the ancient texts referred to this era as "Seleucid era". Moreover, Sun was in the 11th degree of Capricorn (at Alexandria) on 27th Dece 12 BCE (deducting 6 extra days in the Julian calendar). Evidently, the position of Sun in Capricorn 20 degrees on 1st January can only be explained in 972 BCE.

The Epoch of Syro-Macedonian era is identical to the epoch of the era of Alexandria but the calendar commenced from the month of October in Julian calendar. Thus, the epoch of Syro Macedonian calendar commenced from October 973 BCE.

The Epoch of the First Paschal Cycle (5853 BCE), the Epoch of the 12th Paschal Cycle of 532 years (1 BCE) and the Epoch of the 13th Paschal Cycle (532 CE)

Annianus of Alexandria introduced this astronomical epoch and indicated that 5852 years (11 cycles of 532 years) have been elapsed by 1 BCE or the 77th year of Diocletian era. Thus, the 12th Paschal cycle commenced in 1 BCE and the 13th Paschal cycle commenced in 532 CE. The Epoch of the 1st Paschal cycle also came to be known as Anno Mundi in the Christian tradition.

The Epoch of Antiochian or Alexandrian Era (248 BCE)

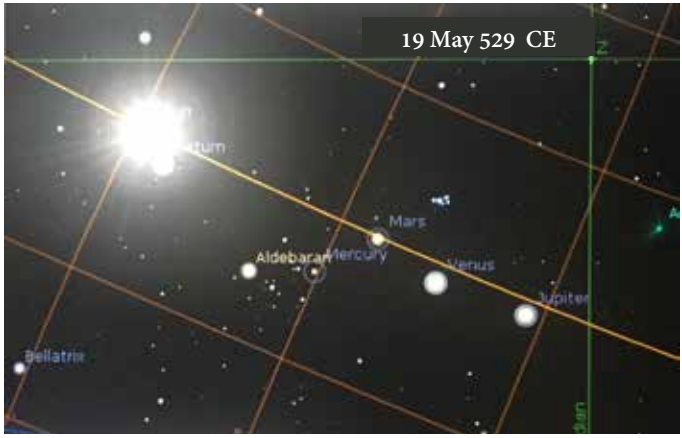
Antioch city of Syria was the center of early Christianity. Saint Peter was the founder of the ancient Patriarchate of Antioch. Flavian I succeeded Porphyrus of Antioch in 256 BCE. After the death of Flavian I, Alexander of Antioch became the Patriarch of Antioch in 248 BCE. Undoubtedly, Alexander of Antioch founded an epoch in 248 BCE which came to be known as the Antiochian era. The year 248 BCE was also the first year of 19-year cycle. This is the reason why the cycles of 19-year are called as Alexandrian cycles in the Christian tradition and the Antiochian era is also known as Alexandrian era. Seemingly, Panodorus flourished around 248-200 BCE and mentioned that the epoch of the Antiochian Era commenced when 5904 years had been elapsed from the epoch of Anno Mundi (6152 BCE).

The Epoch of Diocletian Era (77 BCE)

As already explained above, Annianus of Alexandria and Abul Fazal unambiguously inform us that the epoch of Diocletian era commenced in 77 BCE. After the death of Roman King Carus and his son Numerian, Diocletian was proclaimed as the emperor of Roman Empire in 77 BCE and he was coronated on 20 Nov 77 BCE. The year 77 BCE was also the first year of the Callippic cycle of 76 years. The first month of Egyptian calendar is Thoth (Margasirsa month in Indian calendar). The Thoth month commenced on 31st October at the end of the 2nd Sothic cycle in 685 BCE. Thereafter, Egyptians started following the similar intercalation scheme of Julian calendar. Thus, Thoth month certainly commenced in the beginning of November. This is the reason why Thoth or November is the first month of the Diocletian calendar. We will discuss the Sothic cycle in detail in Chapter 5.

The Epoch of the Era of Martyrs (284 CE)

Undoubtedly, the epoch of the era of Martyrs commenced in 284 CE because this epoch can be established independently and astronomically. Severus Sebokht (575-667 CE), a Syrian Bishop, records, "In the year 245 of the era of the Martyrs, on the 27th of Pachon (9th month in the later Egyptian calendar) according to the Alexandrians, at the 12th hour of the day the Seven Planets {Sun (29;28), Saturn (25;14), Jupiter (0;11,18) Mars (12;13) Venus (8;2), Mercury (16;46)} were in conjunction in the sign of Taurus. The date regularly corresponds to 19th May 529 CE.



Severus Sebokht lived around 575-667 CE and he referred to the era of Martyrs (284 CE) not the Christian era. Evidently, the epoch of 1 CE was not in vogue during the 7th century. It may be noted that the historians have mistakenly assumed that the epoch of the Diocletian era and the era of the Martyrs are identical and both commenced in 284 CE. In reality, the Diocletian era commenced in 77 BCE whereas the era of the Martyrs commenced in 284 CE. Moreover, Thoth, the first month of Diocletian calendar commenced in the beginning of November whereas Thoth, the first month of the Martyrs era calendar began on 29th Aug 284 CE. It is absolutely illogical to introduce two different calendars from the same epoch because it would have created an utter confusion in naming of the months.

In fact, Alexandrian and Antiochian Christians were using the Diocletian calendar that began from 1st November around 77 BCE - 284 CE whereas Anatolians were using the Byzantine calendar that began from 1st September. Seemingly, Eastern Orthodox Church of Byzantine Empire felt the need of one civil calendar and introduced the epoch of 284 CE and named it as the era of the Martyrs. The year 284 CE was also the first year of 19-year cycle. Thus, the calendar of the Martyrs era was introduced by the Church. It appears that the common people of Egypt might have preferred to use the Diocletian calendar because it followed their ancient Egyptian traditional calendar. Some historic documents refer to both the eras and record the different year in the Diocletian era and the different year in the Martyrs era which is the absolute evidence to prove that the epochs of these two eras are not identical.

The Diocletian Era (77 BCE) vs. the Era of the Martyrs (284 CE)

Roman Emperor Diocletian ascended the throne on 20 Nov 77 BCE, 584 years (583 years and ~10 months) after the birth of Jesus (660 BCE) and the epoch of Diocletian era commenced on 1st Nov 77 BCE whereas the epoch of the Martyrs era commenced on 29th Aug 284 CE 944 years (944 years and ~8 months) after the birth year of Jesus Christ (660 BCE). Thus, there was a difference of 361 years between the Diocletian era and the Martyrs era. Since the modern historians had misaligned the epoch of Jesus' Birth from 660 BCE to 1 CE, the epoch of the Diocletian era should have also

been misaligned from 77 BCE to 584 CE. But the historians mistakenly considered the Diocletian era and the Martyrs era to be identical and fixed both the epochs in 284 CE. Evidently, the gap between the epochs of Jesus' birth and the Diocletian era has been erroneously reduced by 300 years. This is the serious inconsistency in the Roman chronology.

Two German historians Heribert Illig and Hans-Ulrich Niemitz have correctly observed this chronological inconsistency of 300 years in the Roman chronology but they mistakenly claimed that some mysterious forces inserted 297 years into Julian calendar between 614 CE and 911 CE and Otto III might have modified the calendar in order to reign in the year 1000 CE.[90] This claim of the chronological inconsistency has been termed as "Phantom Time Hypothesis". Heribert Illig also believes that Charlemagne (742-814 CE) was a fictional character created by the Church. He also says that the Chapel of Aachen, supposedly built in 800 CE, had architecture similarities to chapels constructed over 200 years later. Illig and Niemitz argue that the Gregorian calendar was introduced to correct for 10 day discrepancy in 1582 CE. If the Julian calendar was introduced in 45 BCE, the calendar should have accrued a discrepancy of 13 days. But a 10-day discrepancy would have taken only 1257 years.

In fact, the theory of fraudulent insertion of 300 years in history is absolutely false because it was impossible for a Roman emperor or the Church to enforce the fictitious insertion of 300 years in various calendars of the world. In reality, this error of 300 years in Roman chronology is the result of considering the epoch of Diocletian era and the era of Martyrs as identical. We will discuss in detail this error of 300 years in the context of Roman chronology. In fact, Charlemagne lived around (82-154 CE).

The Epoch of Augustan Era (688 BCE)

Roman Emperor Augustus ascended the throne in 703 BCE. He subjugated Egypt in 688 BCE and killed Egyptian Queen Cleopatra VII. Thus, the year 688 BCE became an epoch in Rome and Alexandria.

The Epoch of the First Olympiad (1435-1434 BCE)

The epoch of the first Olympiad commenced in 1435 BCE. The reckoning of the year was from summer solstice to summer solstice. The annular

eclipse occurred on 13th Aug 1435 BCE became an epoch for prediction of solar eclipses in saros cycle. We will discuss it in detail in Chapter 9.

The Epoch of the Birth of Jesus Christ (10th Jan 660 BCE)

Panodorus (250-175 BCE) of Alexandria dated the birth of Jesus Christ in the year 5493 of Anno Mundi (6153 BCE), i.e. 661-660 BCE. Ancient historian Eusebius (397-321 BCE) states that Christ was born in 194.3 Olympiad, i.e. 661-660 BCE. Eusebius also mentions in "The History of the Church" (I.5): "It was the forty-second year of Augustus' reign, and the twenty-eighth after the subjugation of Egypt and the deaths of Antony and Cleopatra, the last of the Ptolemaic rulers of Egypt, when our Saviour and Lord, Jesus Christ, at the time of the first registration, while Cyrenius was governor of Syria... was born in Bethlehem in Judaea." Epiphanius says that Jesus Christ was born in the 42nd year of Augustus, when Augustus was consul for the 13th time with Silvanus, on the 8th day before the Ides of January, 13 days after the winter solstice, at dawn. Clement of Alexandria quotes that 'others' place the birth of Jesus in the 28th regnal year of Augustus. New Testament states that Jesus Christ incarnated in 312 years (660 BCE) after the epoch of the era of Alexandria (972 BCE). Luke (3.1 & 3.23) indicates that Jesus was about 30 when he was baptized and began to preach in the Year 15 of Tiberius. Tacitus mentions that Christus, the founder of Christians, was put to death by Pontius Pilate, procurator of Judea in the reign of Tiberius. According to Abu Rayhan, Jesus, the son of Marry was born in 304th year (668 BCE) after the epoch of the era of Alexandria (972 BCE) and died in 336th year (636 BCE).

Interestingly, the biblical legend of the Star of Bethlehem indicates the unusual astronomical event before the birth of Jesus. Mathew's account tells us that the astrologers arrive at the court of King Herod in Jerusalem and tell the king of a star which signifies the birth of the King of the Jews:

"Now after Jesus was born in Bethlehem of Judea in the days of Herod the king, behold, wise men from the East came to Jerusalem, saying, Where is He who has been born King of the Jews? For we have seen His star at its rising in the East and have come to worship Him. When Herod the king heard this, he was troubled, and all Jerusalem with him. And when he had

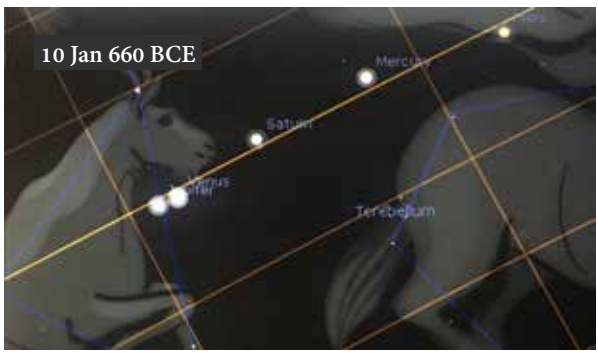
gathered all the chief priests and scribes of the people together, he inquired of them where the Christ was to be born."

King Herod asks astrologers; where the "king of the Jews" would be born? They answer Bethlehem, the birthplace of King David. Mathews says (2.7-11):

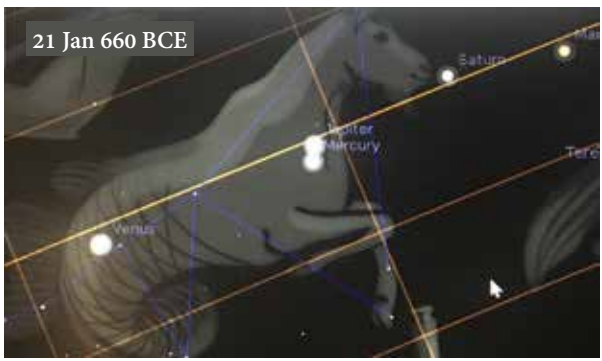
"Then Herod, when he had secretly called the wise men, determined from them what time the star appeared. And he sent them to Bethlehem and said, go and search carefully for the young Child, and when you have found Him, bring back word to me, that I may come and worship Him also. When they heard the king, they departed; and behold, the star which they had seen in the East went before them, till it came and stood over where the young Child was. When they saw the star, they rejoiced with exceedingly great joy. And when they had come into the house, they saw the young Child with Mary His mother, and fell down and worshiped Him. And when they had opened their treasures, they presented gifts to Him: gold, frankincense, and myrrh."

This astronomical observation indicates that the astrologers of Jerusalem saw the heliacal rising of a bright star. The same Star went before them and again it came and stood over in the east. Let us verify these astronomical observations on the birth date of Jesus Christ. Panodorus and Eusebius unambiguously mention that Jesus was born in 661-660 BCE. The year 661-660 BCE was the Year 42 of King Augustus and also the Year 28 of Augustus after the subjugation of Egypt. Epiphanius mentions that Jesus was born on the 8th day before the Ides of January, 13 days after the winter solstice, at dawn. Winter Solstice took place on 29th Dec 661 BCE. Therefore, 10 Jan 660 BCE was the 13th day after the winter solstice. In lunar calendar of Rome, 10 Jan 660 BCE was the 8th lunar day before the full moon (ides). Seemingly, the day of ides had been fixed as 13/14 Jan 660 BCE in the Julian calendar. This was the reason why the date of birth of Jesus had been shifted from 10 Jan to 6/7 Jan 660 BCE. Thus. Jesus Christ was in fact born on 10th Jan 660 BCE 13 days after the winter solstice. The simulations by means of Stellarium 0.18.2 with algorithm of Delta T (JPL Horizons) indicate that there was a perfect conjunction of Jupiter and Venus before the sunrise on 10th Jan 660 BCE. Interestingly, there

was also a perfect conjunction of Jupiter and Mercury before the sunrise on 20th /21st Jan 660 BCE. Undoubtedly, the astrologers of Jerusalem saw the conjunction of Jupiter and Venus as the brightest star on 10th Jan 660 BCE. Thereafter, they again saw the conjunction of Jupiter and mercury on 20th /21st Jan 660 BCE. Thus, we can conclusively fix the date of Jesus's birth on 10th Jan 660 BCE considering the star of Bethlehem (conjunction of Jupiter and Venus) as a strong astronomical evidence.



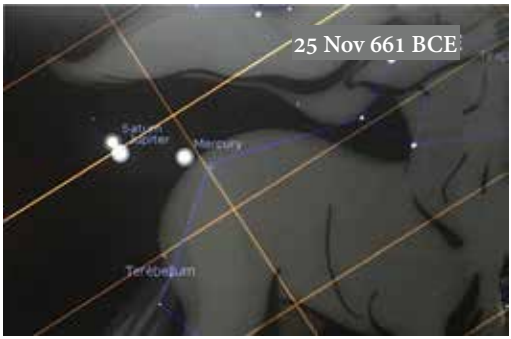
The conjunction of Jupiter and Venus



The conjunction of Jupiter and mercury

According to a Hebrew text of Rabbi Abravanel, "For Jewish astrologers, the Messiah would come from a conjunction of Saturn and Jupiter in the constellation of Pisces".[91] Kepler calculated that the same conjunction occurred three times in the same year of 6 BCE: 29 May, 3 October and 4 December. Interestingly, a conjunction of Saturn and

Jupiter occurred on 25 Nov 661 BCE in the constellation of Sagittarius before the birth of Jesus.



The conjunction of Saturn and Jupiter

Though Jesus was born on 10th Jan 660 BCE, the early Christians traditionally celebrated the birthday of Jesus on 6/7 January in the Julian calendar. The followers of Mithraism had celebrated the day of winter solstice as the festival of the birth of Mithra (Sun God) on 25th December. The Christians of Rome started celebrating the birthday of Jesus on 25 December instead of 6/7 January with an objective to corrupt the traditional Pagan festival. But the Eastern Church continued to celebrate Jesus' birthday on 6 January.

Abul Fazal also places the birth of Jesus after the epoch of Augustan era (688 BCE) but indicates a dispute about the date of birth of Jesus because some take it to be the entry of the sun in Capricorn; others, from the 8th degree of the same. Certainly, ancient Christian tradition followed the date from the 8th degree of Capricorn. Sun was at the 8th degree of Capricorn during the winter solstice around 660 BCE. Later Christian tradition mistakenly started believing the fictitious epoch of 1 CE as the date of Jesus' birth after the 8th century. This is the reason why some Christians of the time of Abul Fazal take it to be the entry of the sun in Capricorn. There is a difference of 9 or 8 degrees which clearly indicates the interval of ~648 years (considering 1 degree precession in every 72 years) between these two Christian traditions.

Interestingly, the two different genealogies of Jesus are found in Bible.[92] According to Matthew's gospel, Jesus was the prophesied Messianic

king of the Jews. His line traces through Joseph, the father of Jesus. Joseph was the husband of Mary. Now the question is; why do Mathew and Luke's genealogies contradict one another? Many speculative interpretations have been given till date to answer this question. Generally, it is stated that Luke starts with Mary and goes backwards to Adam whereas Mathew starts with Abraham and goes forward to Joseph. Mathew was addressing Jews. Therefore, he has given the legal lineage from Abraham through David. Luke was addressing the Christians not Jews. Therefore, he gives the biological lineage from Adam through David. Interestingly, Christians say that Luke said; "Jesus being supposedly the son of Joseph." This designation "supposedly" seems to signify the Marian genealogy since it seems to indicate that Jesus is not the biological son of Joseph.

In fact, there is no contradiction in the genealogy of Jesus. The only controversy is whether Joseph was the biological father of Jesus or not. Bible unambiguously indicates that Jesus was the biological son of Joseph. It appears that there was a controversy whether Joseph and Mary were legally husband and wife or not.

The Toledot Yeshu, an early Jewish text gives the biography of Jesus: "In the year 3671, Joseph Pandera lived at Bethlehem, in Judah during the reign of Hasmonean King Jannaeus and his Queen Helene. Near his house dwelt a widow and her lovely and chaste daughter named Miriam. Miriam was betrothed to Yohanan who belonged to the royal house of David. At the close of a certain Sabbath, Joseph Pandera, having gazed lustfully upon Miriam, knocked upon the door of her room and betrayed her by pretending that he was her betrothed husband, Yohanan. Even so, she was amazed at this improper conduct and submitted only against her will. Thereafter, when Yohanan came to her, Miriam expressed astonishment at behavior so foreign to his character. It was thus that they both came to know the crime of Joseph Pandera and the terrible mistake on the part of Miriam. Miriam gave birth to a son and named him Yehoshua after her brother. This name later deteriorated to Yeshu.

One day Yeshu walked in front of the Sages with his head uncovered, showing shameful disrespect. Moreover, the story tells that while the rabbis were discussing the Tractate Nezikin, he gave his own impudent interpretation of the law. This led to further inquiry as to the antecedents

of Yeshu, and it was discovered through Rabban Shimeon ben Shetah that he was the illegitimate son of Joseph Pandera. Miriam admitted it. After this became known, it was necessary for Yeshu to flee to Upper Galilee. He gathered about himself three hundred and ten young men of Israel and accused those who spoke ill of his birth of being people who desired greatness and power for themselves. Yeshu proclaimed, "I am the Messiah; and concerning me Isaiah prophesied and said, 'Behold, a virgin shall conceive, and bear a son, and shall call his name Immanuel." Thereupon, they worshipped him as the Messiah, Son of the Highest.

The Sages of Jerusalem bound Yeshu and led him before Queen Helene, with the accusation: "This man is a sorcerer and entices everyone." Yeshu replied, "The prophets long ago prophesied my coming: 'And there shall come forth a rod out of the stem of Jesse,' and I am he; but as for them, Scripture says 'Blessed is the man that walketh not in the counsel of the ungodly.'" Queen Helene asked the Sages: "What he says, is it in your Torah?" They replied: "It is in our Torah, but it is not applicable to him, for it is in Scripture: 'And that prophet which shall presume to speak a word in my name, which I have not commanded him to speak or that shall speak in the name of other gods, even that prophet shall die.' He has not fulfilled the signs and conditions of the Messiah." Yeshu spoke up: "Madam, I am the Messiah and I revive the dead." A dead body was brought in; he pronounced the letters of the Ineffable Name and the corpse came to life. The Queen was greatly moved and said: "This is a true sign." She reprimanded the Sages and sent them humiliated from her presence. Yeshu's dissident followers increased and there was controversy in Israel. Yeshu went to Upper Galilee.

The Sages came before the Queen, complaining that Yeshu practiced sorcery and was leading everyone astray. Therefore she sent Annanui and Ahaziah to fetch him. The found him in Upper Galilee, proclaiming himself the Son of God. When they tried to take him there was a struggle, but Yeshu said to the men of Upper Galilee: "Wage no battle." He would prove himself by the power which came to him from his Father in heaven. He spoke the Ineffable Name over the birds of clay and they flew into the air. He spoke the same letters over a millstone that had been placed upon the waters. He sat in it and it floated like a boat. When they saw this the

people marveled. At the behest of Yeshu, the emissaries departed and reported these wonders to the Queen. She trembled with astonishment. Then the Sages selected a man named Judah Iskarioto and brought him to the Sanctuary where he learned the letters of the Ineffable Name as Yeshu had done. When Yeshu was summoned before the queen, this time there were present also the Sages and Judah Iskarioto. Yeshu said: "It is spoken of me, 'I will ascend into heaven.'" He lifted his arms like the wings of an eagle and he flew between heaven and earth, to the amazement of everyone…Yeshu was seized. His head was covered with a garment and he was smitten with pomegranate staves; but he could do nothing, for he no longer had the ineffable name. Yeshu was taken prisoner to the synagogue of Tiberias, and they bound him to a pillar. To allay his thirst they gave him vinegar to drink. On his head they set a crown of thorns.

There was strife and wrangling between the elders and the unrestrained followers of Yeshu, as a result of which the followers escaped with Yeshu to the region of Antioch; there Yeshu remained until the eve of the Passover. Yeshu then resolved to go the Temple to acquire again the secret of the Name. That year the Passover came on a Sabbath day. On the eve of the Passover, Yeshu, accompanied by his disciples, came to Jerusalem riding upon an ass. Many bowed down before him. He entered the Temple with his three hundred and ten followers. One of them, Judah Iskarioto apprised the Sages that Yeshu was to be found in the Temple, that the disciples had taken a vow by the Ten Commandments not to reveal his identity but that he would point him out by bowing to him. So it was done and Yeshu was seized. Asked his name, he replied to the question by several times giving the names Mattai, Nakki, Buni, Netzer, each time with a verse quoted by him and a counter-verse by the Sages. Yeshu was put to death on the sixth hour on the eve of the Passover and of the Sabbath. When they tried to hang him on a tree it broke, for when he had possessed the power he had pronounced by the Ineffable Name that no tree should hold him. He had failed to pronounce the prohibition over the carob-stalk, for it was a plant more than a tree, and on it he was hanged until the hour for afternoon prayer, for it is written in Scripture, "His body shall not remain all night upon the tree." They buried him outside the city.

On the first day of the week his bold followers came to Queen Helene with the report that he who was slain was truly the Messiah and that he was not in his grave; he had ascended to heaven as he prophesied. Diligent search was made and he was not found in the grave where he had been buried. A gardener had taken him from the grave and had brought him into his garden and buried him in the sand over which the waters flowed into the garden. Queen Helene demanded, on threat of a severe penalty that the body of Yeshu be shown to her within a period of three days. There was a great distress. When the keeper of the garden saw Rabbi Tanhuma walking in the field and lamenting over the ultimatum of the Queen, the gardener related what he had done, in order that Yeshu's followers should not steal the body and then claim that he had ascended into heaven. The Sages removed the body, tied it to the tail of a horse and transported it to the Queen, with the words, "This is Yeshu who is said to have ascended to heaven." Realizing that Yeshu was a false prophet who enticed the people and led them astray, she mocked the followers but praised the Sages."

The Church declared the Toledot Yeshu as completely anti-Christian and banned it. Historians questioned the dating of Yeshu in the year 3671, i.e. 90 BCE. Undoubtedly, the Toledot Yeshu an ancient Jewish text. In the ancient Jewish tradition, it was believed that Messiah will be born 1335 years after the date of Exodus from Egypt and resettlement of Jews in Jerusalem. Jews referred to the Hebrew word of God in the 5th book of the Thora and expected the coming of the Messiah who was promised to them at the end of 1335 years. Abu Rayhan says that in consequence of which many of pseudo-prophets of their sects, as e.g. Al-rai, Abu-isa Al-isfahani, and others, claimed to be Messiahs. Evidently, Abu-Isa known as "Yeshu" lived during the reign of King Jannaeus whereas Jesus Christ lived during the reign of Augustus and Tiberius. Thus, Yeshu can be dated in the year 3671 of Jewish Anno Mundi (4421 BCE), i.e. 750 BCE. There is another version of the story that Jesus was born to a virgin in Palestine and his earthly father was a carpenter. Seemingly, Jewish sources mixed up the stories of Yeshu and Jesus. It appears that Yeshu, son of a carpenter was born in Palestine and lived around 750 BCE whereas Jesus was born to Mary and Joseph in Bethlehem and lived around 660-629 BCE. Yeshu

was hanged to death whereas Jesus was crucified on a cross under the directions of Pontius Pilate.

Crucifixion Darkness

There is also a speculation of darkness on the day Jesus was crucified. Africanus (Chronography 18:1) quotes Thallus and says; "On the whole world there pressed a most fearful darkness; and the rocks were rent by an earthquake, and many places in Judea and other districts were thrown down. This darkness Thallus, in the third book of his History, calls, as appears to me without reason, an eclipse of the sun." Christian apologist Tertullian did not consider it to be an eclipse. Most probably, an earthquake followed by a dust storm occurred in Judea on the day of Crucifixion. Moreover, Jesus was crucified at least a day before Passover (full moon). Therefore, the occurrence of a solar eclipse or a lunar eclipse was impossible.

The Problem with the Date of Easter

Africanus dated the resurrection of Jesus Christ in the 2nd year of the 202nd Olympiad, i.e. July 630 BCE - July 629 BCE. He also referred to the epoch of Anno Mundi in 6160 BCE. He put the crucifixion in AM 5531 whereas the resurrection in AM 5532. Evidently, Africanus followed the year from vernal equinox to vernal equinox and indicated that Jesus was crucified before the day of Passover in the Hebrew lunisolar calendar. According to the Apostle John, Jesus was crucified before the day of Passover. John indicated the date of Erev Pesach (a day before Passover). The Apostles Peter and Paul celebrated Easter on Sunday. Pesach is a spring festival on full moon in the Hebrew calendar which should fall after the vernal equinox. If the 12th full moon after the previous Pesach occurs before the vernal equinox, an intercalary lunar month (Adar Sheni) is inserted at the end of the previous year. Evidently, the Apostles John, Peter and Paul celebrated Easter on the third day, i.e. 14th Nisan, Sunday, i.e. the day of Passover.

Evidently, Jesus Christ was crucified in the year 629 BCE, the 2nd year of the 202nd Olympiad. He was crucified on 1st Apr 629 BCE, Friday before the Passover day which was the penultimate day of the year 5531 of Anno

Mundi. The day was also 14th Nisan or Erev Pesach (a day before Pesach or the first full moon after vernal equinox). The Apostles John, Peter and Paul celebrated Easter on 3rd Apr 629 BCE, Sunday. Thus, Jesus Christ started preaching in his 30th year, i.e., 631-630 BCE, i.e., the year 15 of Tiberius. The Popes of Smyrna and Antioch followed Nisan 14 as the date of Easter in lunisolar calendar of 19-year cycle and maintained a view that Passover must fall after the vernal equinox whereas the Popes of Rome had an alternative view that Easter (Sunday) must fall after the vernal equinox in solar calendar. Thus, there was a great disagreement about the date of Easter between the Popes of Rome and the Popes of Asia Minor. There is a serious problem of counting of weekdays in the reconstructed Julian calendar and the Gregorian calendar. In fact, 3rd Apr 629 BCE was Sunday and not Wednesday. We will discuss this weekday and Easter date problem in Chapter 11.

Anatolius of Laodicea (died in 377 BCE) was the first to use the 19-year cycle for Easter calculations. During the lifetime of Anatolius, the 19-year cycles were 476-457 BCE, 457-438 BCE, 438-419 BCE, 419-400 BCE and 400-381 BCE. Easter used to fall on 19th April in the first year and on 1st April in the 19th year. But the Romans did not follow the Easter table of Anatolius. The Easter date became very critical during the reign of Roman Emperor Theodosius I (267 BCE). He abolished all Pagan festivals and approved the Easter table for 95 years (from 266-172 BCE) devised by Pope Theophilus of Alexandria. At that time, Romans celebrated Easter on 27th March. Theophilus had a view that the Paschal full moon should be the first full moon after the equinox. Rome and Asia Minor both celebrated Easter on the same day on 27th March, Sunday in 265 BCE.

At the first Council of Nicaea in 335 BCE, it was agreed that all Christians must observe Easter on the first Sunday after the first full moon after the vernal equinox. The Council of Nicaea fixed the Easter date on 25th Mar 335 BCE, Sunday. Victorius of Aquitaine produced an Easter cycle in 203 BCE. Finally, the table of Victorius was replaced by the 95-year Easter-table of Dionysius Exiguus starting from 171 CE. Venerable Bede extended the same table from 171 CE to 702 CE.

Andreas prepared a 200-year Easter table that began with a Paschal full moon on 4th April in 5 BCE and ended with 25th Mar in 194 CE. When the list of Andreas ended, Aeas prepared an Easter table of 532 years beginning with the Paschal full moon of 25th Mar 194 CE. The Armenian scholar Anania of Shirak also generated his own Easter table of 532 years beginning with the Paschal full moon of 4th Apr 201 CE. The Easter table of Augustalis was based on the 84-year variant of the 19-year cycle giving the dates for 100 years.

The Fictitious Epoch of the Christian Era (1 CE)

As discussed, the epoch of 1 CE is a fictitious astronomical epoch of the Irish Computus of 84 (14) years and also the first year of the 12th cycle of 532 years from the epoch of Anno Mundi (5853 BCE) as calculated by Annianus of Alexandria. The epoch of 1 CE has nothing to do with the date of birth or incarnation of Jesus Christ. Unfortunately, later Christians mistakenly assumed the epoch of 1 CE as the date of incarnation of Christ starting from the 9th century onwards. Vatican records indicate that the epoch of 1 CE was referred to for the first time in 938, 964, 968, 996 and 1046 CE.

Though the Roman Church started officially referring to the epoch of 1 CE since the 10th century, but none of the historians ever referred to this epoch for arriving at the chronological history of western ancient kingdoms. Ussher was the first historian who mistakenly assumed this fictitious epoch of 1 CE as the sheet anchor for arriving the chronological history of the world. Lightfoot and Isaac Newton also promoted the epoch of 1 CE as a sheet anchor of chronology. Thereafter, all European historians have faithfully considered the fictitious epoch of 1 CE to be a sheet anchor of the chronology and misled the entire world. As discussed above, Jesus Christ was born in 10th Jan 660 BCE and not in 1 CE. The Christian historians mistakenly contracted the world chronology by ~660 years. Therefore, the epoch of 660 BCE must be the true epoch of the birth of Jesus Christ.

Since the Christian historians forced the world to abandon the traditional chronology and attempted to reconcile the world chronology

with reference to the fictitious epoch of 1 CE, all ancient nations of the world are still struggling with numerous unresolved chronological inconsistencies in their history. Let us critically examine the traditional chronology of Persian, Egyptian, Babylonian, Assyrian, Jewish, Greek, Roman and Chinese history with reference to the true epochs and sheet anchors without any prejudice to the epoch of 1 CE.

3

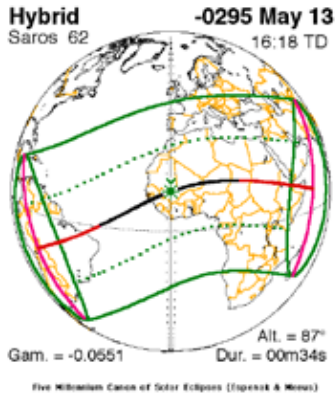
The Epoch of the Nabonassarian Era and the Chronology of Ancient Persia

It is well known that the chronological history of Persia, Egypt, Babylonia, Greece, Israel, Syria and Rome is closely interlinked with the chronology of the Achaemenid Empire of Persia. Therefore, the historians have agreed upon the timeline of the Achaemenid Empire given by Ptolemy to be the sheet anchor of the chronological history of all western ancient kingdoms. According to Ptolemy, Cyrus, the founder of the Achaemenid Empire, ascended the throne in the year 210 of the Nabonassarian era. Though the historians have rightly assumed the Ptolemaic chronology as authentic but they have fixed the epoch of the Nabonassarian era in 747 BCE based on the fictitious epoch of the Christian era (1 CE). Let us critically examine the evidence independently and arrive at the epoch of the Nabonassarian era without any prejudice to the epoch of 1 CE.

Interestingly, Theon of Alexandria records that he has observed a solar eclipse in Alexandria on the 24th of Thoth (the first month of Egyptian Calendar) in the year 1112 of the Nabonassarian era and on the 22nd of Payni (the 10th month of Egyptian Calendar) of old Alexandrian calendar. He also stated that the eclipse began at 2 5/6 (2:50 PM) equinoctial hours after midday and ended at 4 ½ (4:30 PM) equinoctial hours after midday.[1] Historians argued that the solar eclipse occurred on 16th Jun 364 CE regularly corresponds to the details recorded by Theon. But the date of 16th Jun 364 CE miserably fails to explain many facts which have been brushed aside by the historians. First of all, the solar eclipse on 16th Jun 364 CE started at 15:13 PM and ended by 4:57 PM at Alexandria, Egypt. Secondly,

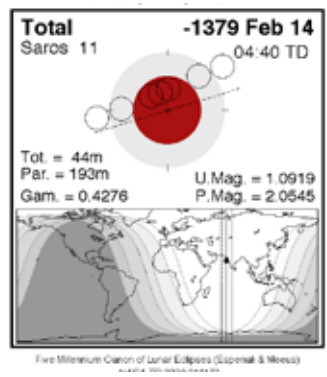
historians claim that the epoch of the Nabonassarian era commenced on 26th Feb 747 BCE. If so, it was the 1448273rd day of Julian calendar and 16th June 364 CE was the 1854176th day of Julian calendar. Thus, total 405902 days had got elapsed on 16th Jun 364 CE and the 405903rd day was the current. According to Theon, total 1111 years, 9 months and 21 days of the 10th month (Payni) elapsed on the day of the solar eclipse. Therefore, total 405806 days were elapsed [(1111 X 365 = 405515) + (9 X 30 = 270) + (21)] and the 405807th day was current. Apparently, there is a difference of 96 days between the date of solar eclipse and the epochal date of the Nabonassarian era given by historians. If the date of the solar eclipse (16th Jun 364 CE) is correct than the epochal date (26th Feb 747 BCE) is incorrect or vice versa.

Evidently, there is a glaring error in the epoch of the Nabonassarian era (26th Feb 747 BCE) as fixed by historians. Considering the error of ~660 years in the chronological history, I propose that the epoch of the Nabonassarian era commenced in 1406 BCE. The solar eclipse observed by Theon was occurred on 13th May 295 BCE /296 BCE. This eclipse began at 2.40 PM and ended by 4:54 PM at Alexandria. Considering 405806 days elapsed from the epoch of the Nabonassarian era, we can accurately fix the epochal date as 29th Apr 1406 BCE which is also the first day after new moon.



Ptolemy also cites an observation of Mars in the 13th year of the calendar of Dionysius, Aigon 25, at Dawn, i.e., in the 476th year of the

Nabonassarian era, 20/21 Athyr (3rd month) in the Egyptian calendar. This date was 21st Mar 931 BCE considering the epoch of the Nabonassarian era in 1406 BCE and Mars was visible at the Dawn. Historians calculated this date as 17/18 Jan 272 BCE but this date fails to explain the observation of Mars at Dawn. Ptolemy also mentions that a total lunar eclipse occurred in the 1st year of Mardokempados in the year 27 of the Nabonassarian era.[2] It began in Babylon one hour after the rise of the moon. It regularly corresponds to 13/14 February 1379 BCE and total lunar eclipse was visible from 19:03 hrs to 00:11 hrs.



Abul Fazal refers to the epochs of the Bukht Nassar (Nabonassar) era and the era of Alexandria (Iskander) in his work *Ain-i-Akbari*.[3] I have already explained the 98 verifiable dates recorded in "*Akbarnama*" of Abul Fazal which unambiguously establish the epoch of Solar Hijrah in 69 BCE and the epoch of Ilahi era in 894 CE. According to Abul Fazal, total 2341 years have been elapsed in the era of Bukht Nassar up to March 933 CE. Thus, Abul Fazal indicates the epoch of the Nabonassarian era commenced in 1408-1407 BCE.

In view of the above, we can accurately fix the epoch of the Nabonassarian era on 29th Apr 1406 BCE. It may be noted that ancient Egypt followed a calendar of 365 days in a year consisting of 12 months and each month had 30 days except the last which had 35 days. According to Ptolemy, Cyrus became the king of Persia in the year 210 of Nabonassarian era. The Chronology of Babylonian and Medo-Persian kings as given by Ptolemy:[4]

	Babylonian and Medo-Persian Kings	Regnal years	In Nabonassar era	In CE
1.	Nabonassaros	14	1-14	1406-1392 BCE
2.	Nadios	2	14-16	1392-1390 BCE
3.	Chinzer and Poros	5	16-21	1390-1385 BCE
4.	Iloulaios	5	21-26	1385-1380 BCE
5.	Mardokempados	12	27-39	1379-1368 BCE
6.	Arkeanos	6	39-45	1368-1362 BCE
7.	**Without kings**	**2**	45-47	1362-1360 BCE
8.	Bilibos	3	47-50	1360-1357 BCE
9.	Aparanadios	6	50-56	1357-1351 BCE
10.	Rhegebelos	1	56-57	1351-1350 BCE
11.	Mesesimordakos	4	57-61	1350-1346 BCE
12.	**Without kings**	**8**	61-69	1346-1338 BCE
13.	Asaradinos	13	69-82	1338-1325 BCE
14.	Saosdouchinos	20	82-102	1325-1305 BCE
15.	Kineladanos	22	102-124	1305-1283 BCE
16.	Nabopolassaros	21	124-145	1283-1262 BCE
17.	Nabokolassaros II	43	145-188	1262-1220 BCE
18.	Illoaroudamos	2	188-190	1220-1218 BCE
19.	Nerigasolassaros	4	190-194	1218-1214 BCE
20.	Nabonadios	17	194-210	1214-1197 BCE
Medo-Persian Kings				
21.	**Kyros (Cyrus)**	**9**	**210-219**	**1197-1188 BCE**
22.	Kambysos	8	219-227	1188-1180 BCE
23.	Dareios the First	36	227-263	1180-1144 BCE
24.	Xerxes	21	263-284	1144-1123 BCE
25.	Artaxerxes the First	41	284-325	1123-1082 BCE
26.	Dareios the Second	19	325-344	1082-1063 BCE
27.	Artaxerxes the Second	46	344-390	1063-1017 BCE
28.	Ochos	21	390-411	1017-996 BCE

29.	Arogos	2	411-413	996-994 BCE
30.	Dareios the Third	4	413-417	994-990 BCE
31.	**Alexandros I**	**8**	**417-425**	**990-982 BCE**

According to Ptolemy, the year 425 of the Nabonassarian era (1406 BCE) was the same as the 1st year of the era of Philippos, i.e., 982 BCE. Though there is a minor difference of 1 year in the epochs given by Ptolemy with reference to the epochs of the eras given by Abul Fazal, the epoch of the Nabonassarian era (1406 BCE) can be conclusively established based on independently verifiable details of a solar eclipse given by Theon of Alexandria. Therefore, the epoch of the Nabonassarian era must be the sheet anchor of the chronology of ancient Persia.

Firdausi's *Shahnama* is the earliest text which relates the chronological history of ancient Persia. According to *Shahnama*, the Pishdadian dynasty was the first dynasty that ruled over Persia. Keyumara or Gayomart was the first Persian king. Tabaqat-i-Nasiri tells us that Gayomart was the son of Adam in the Zoroastrian tradition whereas Shis was the son of Adam and Unnush also known as Gayomart was the son of Shis in the Islamic tradition. Adam had two more sons, Kabil and Nabati. Nabati and his descendants retired to the mountains of Jarmun. After 432 years, Nabati descendants came down from mountains and joined the descendants of Kabil. The sons of Nabati and Kabil began to act tyrannically when 1000 years passed after Adam. The descendants of Shis emerged as Gil-wanian or Bastanian dynasty and the first King Gil Shah made Bābil (Babylon) as his seat of Government 1024 years passed after Adam. When 1162 years has passed away, the countries of Arab, Ajam, Shām and Maghrab became settled. Tarikh-i-Guzida gives 2450 years for 11 kings of this dynasty. Tarikh-i-Guzida places Gil Shah around 4156 BCE. According to Avesta, Gayomart was the first king or human to worship Ahura Mazda but Zoroastrians follow the cycle of 12000 years. We will discuss the antiquity of ancient Persia in Chapter 13.

The Persian historical account given by Tabaqat-i-Nasiri is fragmentary but it contains certain important historical events which can be reconciled with the chronology of Judaism like the date of Abrahm

(Ibrahim) and Moses (Musa), etc. According to the Book of Exodus and Rabbinic Judaism, Moses led the exodus of the Jews out of Egypt. Evidently, the date of Exodus is closely linked with the date of Moses. The Jewish chronology tells us that Solomon built the first temple 480 years after Exodus. The Chaldean King Nabonassar II of Babylon destroyed the temple of Jerusalem 410 years after the date of the first temple. This destruction of temple occurred roughly 50 years before the reign of Medo-Persian King Cyrus (1197-1188 BCE).

Before the reign of King Cyrus, Zoroaster II revived the ancient Zoroastrianism which came to be known as Maghism. The later descendants of the ancient Kayanian dynasty were ruling in Persia during the time of Zoroaster II. Al Beruni states that "***In former times, Khurasan, Persia, Iraq, Mosul, the country up to the frontier of Syria, was Buddhistic, but then Zarathushtra (Zoroaster) went forth from Azarbaijan and preached Magism in Balkh..... In consequence, the Buddhists were banished from those countries, and had to emigrate to the countries east of Balkh."*** This statement of Al Beruni explicitly indicates that Buddha lived at least few hundred years before Zoroaster II.[5] I have conclusively established in my book titled "*The Chronology of India: From Mahabharata to Medieval era*" that Buddha attained nirvana in 1864 BCE.[6]

Persian historians indicate the date of Zoroaster II with reference to the epoch of the era of Alexandria. As already discussed, Abul Fazal says that the era of Alexandria commenced in 972 BCE and the Syro-Macedonian era commenced in 973 BCE. According to Abu Rayhan, from the appearance of Zoroaster II to the beginning of the era of Alexandria (972 BCE), Persians count 258 years which indicates that Zoroaster II lived around 1231-1230 BCE. However, if we compute the years from the creation of Gayomarth (the first man) till the era of Alexandria, the sum is 354 years. Thus, we can roughly fix the lifetime of Zoroaster II around 1326-1230 BCE. He lived for 77 years. Therefore, the date of Zoroaster must be either 1326-1249 BCE (1326 minus 77) or 1307-1230 BCE (1230 plus 77). Undoubtedly, there was another Zarathushtra or Zoroaster I who lived many thousands of years before the lifetime of Zoroaster II. We will discuss the date of Zoroaster I later.

Tarikh-i-Guzida mentions that the Kayanian dynasty reigned for 734 years but this period includes the reign of Achaemenid Empire. It appears that the author of Tarikh-i-Guzida considered the Achaemenid Kings as outsiders. Kai-Kubad was the founder of ancient Kayanian dynasty. Modern historians have failed to fix the chronology of the Kayanian kings and unreasonably declared them to be mythical. In reality, the Kayanian kings were indeed historical kings. Tabaqat-i-Nasiri gives the chronology of later Kayanian kings who reigned before the rise of Alexander.

	Later Kayanian Kings	**Duration of Reign**	**In CE**
1.	Bahman	22 y	1072-1050 BCE
2.	Humāe, the daughter of Bahman	30 y	1050-1020 BCE
3.	Darab-i-Akbar (He made captive the king of Rum.)	12 y	1020-1008 BCE
4.	Dara-i-Asghar	14 y	1008-994 BCE
5.	**Iskandar (Alexander)**	12 y	994-982 BCE

According to Ptolemy, Bukht-un-Nassar (Nabonassar II) reigned around 1262-1220 BCE and he destroyed the temple of Jerusalem around 1248 BCE. Solomon built the temple of Jerusalem 410 years before the destruction. Thus, Solomon built the temple around 1658 BCE. Tabaqat-i-Nasiri mentions that the Kayanian King Kai-Luhrasib appointed Bukht-un-Nassar (Nabonassar II) as commander-in-chief, who reigned around 1310-1270 BCE and his son Gushtasp reigned around 1270-1230 BCE. According to Persian historians, the Kayanian dynasty was ruling over Khurasan and Persia during the time of Zoroaster. Kayanian King Gushtasp was the contemporary of Zoroaster II (1307-1230 BCE). According to Zoroastrians, Gushtasp converted to Zoroastrianism in the 42nd year of Zoroaster around 1265 BCE.

According to Zoroastrian texts, the religion of Zoroastrianism was in purity till the completion of 300 years starting from the foundation by Zoroaster II. But Iskandar, the Ruman, invaded Iran who was dwelling in the Egypt. Tarikh-i-Guzida and Tabaqat-i-Nasiri mention that Iskandar was the descendant of Isfandiyar. Tarikh-i-Guzida says that Iskandar conquered

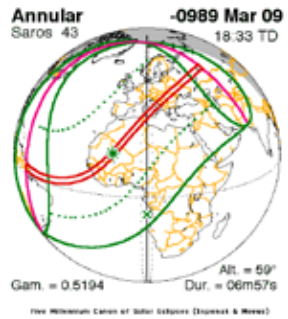
the whole world. His wazir was Aristotle. Interestingly, the author of Tarikh-i-Guzida accuses that Aristotle plagiarized Persian philosophy and then burnt the books and destroyed the sciences of Persians.

Tabaqat-i-Nasiri and Tarikh-i-Guzida mentions that Iskandar was the son of Darab, a descendant of Isfandiyar. Darab demands in marriage the daughter of Failakus, the king of Greeks but divorces her. She gave birth to Iskandar whom Failakus declares to be his own son. According to Tabaqat-i-Nasiri, Iskandar brought all Rum under his subjection. These Persian texts clearly mention that Iskandar reigned in Persia for 8 years or 12 years and died at Shahrazur in Iran but buried at Alexandria. Thus, the reign of Iskandar can be fixed around 990-982 BCE.

Battle of Arbela or Gaugemela

Alexander decisively subdued Darius III in the Battle of Arbela or Gaugemela in 989 BCE. A 15th century French manuscript of the *History of Alexander the Great* depicts that a solar eclipse occurred during the Battle of Gaugamela in 989 BCE when Alexander the Great's army met the Persian army of Darius III. Alexander is shown consulting his astrologers about the consequences of the eclipse.[7]

The historians have failed to explain the occurrence of solar eclipse and concocted that it was a lunar eclipse but the image unambiguously depicts a solar eclipse in the daytime. This solar eclipse occurred on 9th Mar 989 BCE.



The Epoch of the Era of Phillippos (981-980 BCE)

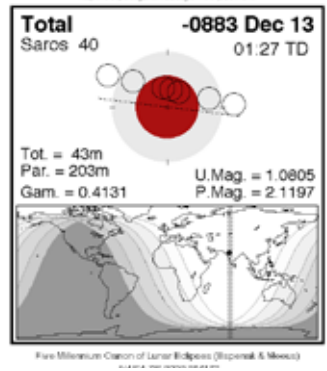
We have already discussed about the epoch of the era of Alexandria and Syro-Macedonian era in Chapter 2 which had commenced in 973-972 BCE. The historians have referred to it as the Seleucid era.

Ptolemy indicates that the epoch of the Phillippos era commenced in the 425th year of the Nabonassarian era (1406 BCE). Thus, the Phillippos era commenced from 981-980 BCE. Seemingly, the later Babylonians followed this epoch in their lunisolar calendar (from vernal equinox to vernal equinox). A later Babylonian astronomical text records an observation of total lunar eclipse in the year 97 of the Phillippos era, i.e., 883-882 BCE.

"Year 97, month IX, night of the 1 (13th?), lunar eclipse, on the east side when it began, in 21 degree of night all of it became covered; 16 degree of night of totality: when it began to clear, it cleared in 19 degree of night from east and north to west; 56 degree onset, totality; it began at one-half beru (i.e. 15 degree) after sunset…."

Since the sign for the day of the lunar month is damaged, seemingly, the day was the first if the lunar calendar was Purnimanta (from full moon) and it was the 13th or 14th day if the lunar calendar was Amanta

(from new moon). The 97th year of the Phillippos era was 883-882 BCE. A total lunar eclipse occurred on 13 Dec 883 BCE regularly corresponds to the verifiable details mentioned in the later Babylonian text.

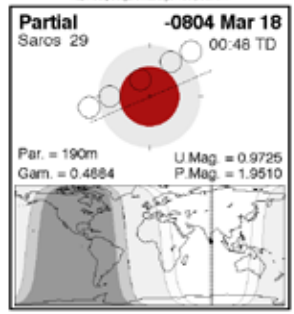


Two separate Babylonian texts refer to the lunar eclipse followed by a solar eclipse that occurred in the 175th year of the Phillippos era, i.e., 805-804 BCE.[8]

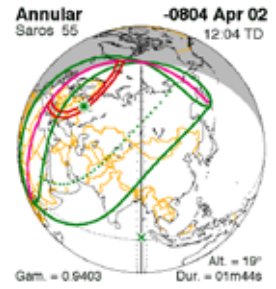
Text 1: "Year 175, Month XII_2, night of the 15th, moonrise to sunset 7° 40'; clouds, I did not watch. When corona culminated, lunar eclipse: when it began on the south and east side, in 18o of night it made 8 fingers. The day 29th, solar eclipse. When it began on the south west side, in 18 degree of day in the morning it became completely total (?). (It began) at 24 degree after sunrise."

Text 2: "Year 175, [King] Arsaces [month XII_2], day 29, at 24 degree after sunrise, solar eclipse. When it began on the south west side, Venus, Mercury and the Normal Stars were visible. Jupiter and Mars (Saturn?) which were in their period of invisibility were visible in its eclipse… 35 degree onset, maximal phase and clearing…"

The year 805-804 BCE was the 14th month in the 19-year cycle and it had an intercalary month of XIIth month. A lunar eclipse occurred on 18 Mar 804 BCE and an annular solar eclipse occurred on 2 Apr 804 BCE regularly correspond to the verifiable details recorded in the Babylonian texts. Venus and Mercury were visible before the sunrise on 2 Apr 804 BCE. The eclipse began on the south-west side. Jupiter and Saturn were visible during the eclipse.



Five Millennium Canon of Solar Eclipses (Espenak & Meenus)
NASA TP-2009-214172



Five Millennium Canon of Solar Eclipses (Espenak & Meenus)

Historians have identified the solar eclipse that occurred on 15 Apr 135 BCE considering the epoch of the Seleucid era in 312-311 BCE. But there was no intercalary month of 12th month in the year 136-135 BCE. Moreover, Venus and Mercury were not on the south west side.

Michael the Syrian, an Assyrian patriarch of the Syrian Orthodox Church refers to the total solar eclipse that he observed at Antioch: *"In this year 1487 (the era of Philippos), on New Sunday, the 11th of the month of Nisan, at daybreak, at the end of Office, that is, after the reading of the Gospel, the Sun was totally obscured; night fell and the stars appeared; the Moon itself was seen in the vicinity of the Sun. This was a sad and terrifying sight, which caused many people to lament with weeping; the sheep, oxen and horses crowded together in terror. The darkness lasted for two hours; afterwards the light returned. Fifteen days after, in this month of Nisan at the decline of Monday, at dusk, there was an eclipse of the Moon in the part of the sky where the eclipse of the Sun had taken place."*

The year 1487 of the era of Philippos was 506-507 BCE. Since full moon occurred before vernal equinox, there was an intercalary month of Nisan in 507 CE. Thus, the solar eclipse occurred on 29th Mar 507 CE on the last day of first Nisan month and the lunar eclipse also occurred in the month of second Nisan on 13th Apr 507 CE. Historians identified the solar eclipse of 10 Apr 1176 CE but the lunar eclipse of 26 Apr 1176 CE did not occur in the month of Nisan.

The Chronology of Persia after Alexander

Tarikh-i-Guzida tells us that Iskandar divided Persia before his death amongst 90 tribal kings. These tribal kings ruled over Persia for 318 years or 415 years until the foundation of Sasanian dynasty by Ardashir. Learning and Science flourished during this period and the book of Sindbad and other notable books were composed.

The Chronology of the Tribal Kings:

		Duration	In CE
First Branch			
1.	Abtahan-i-Rumi (He held Khurasan, Iraq and part of Fars and Kirman from Iskandar.)	4 y	982-978 BCE
Second Branch (Chronology needs to be corrected)			
1.	Ashk of Dara	15 y	
2.	Ashk II, the son of Ashk	20 y	
3.	Shapur, the son of Ashk II (He defeated Greeks and recovered the spoils taken from Persia by Iskandar.)	6 y	
4.	Bahram	11 y	
5.	Balash	16 y	978-700 BCE
6.	Hurmazd	16 y	
7.	Narsi	4 y	
8.	Firuz, the son of Balash	17 y	
9.	Khusraw	6 y	
10.	Balashan	22 y	
11.	Ardawan	13 y	
Third Branch: Ashghanians (178 years)			
1.	Ardawan	30 y	700-670 BCE
2.	Khusraw (Jesus Christ was born)	25 y	670-645 BCE
3.	Balash	27 y	645-618 BCE
4.	Gudarz	30 y	618-588 BCE

5.	Biri (Ways and Ramin governed Persia)	20 y	588-568 BCE
6.	Gudarz	5 y	568-563 BCE
7.	Narsi	10 y	563-553 BCE
8.	Narsi II (Romans attacked Persia but he drove them away.)	31 y	553-522 BCE

When these tribal kings were ruling over Iraq & southern Persia, Parthians, Indo-Parthians and Indo-Greeks were ruling over the regions closer to Caspian Sea, Turkmenistan and Afghanistan. According to Tarikh-i-Guzida and Abu Rayhan, the Sasanians ruled for 527 years. They started ruling 415 years after the epoch of the era of Alexandria (972 BCE). Thus, we can fix the reign of Sasanians around 557-30 BCE.

	Sasanian dynasty	**Duration**	**In CE**
1.	Ardashir Babakan	44 y	522-478 BCE
2.	Shapur	31 y	478-447 BCE
3.	Hurmazd	2 y	447-445 BCE
4.	Bahram	13 y 3 m	445-432 BCE
5.	Bahram II	8 y	432-424 BCE
6.	Bahram III	13 y 4 m	424-411 BCE
7.	Narsi	9 y	411-402 BCE
8.	Hurmazd	9 y	402-393 BCE
9.	Shapur II	72 y	393-321 BCE
10.	Ardashir	10 y	321-311 BCE
11.	Shapur III	5 y 4 m	311-306 BCE
12.	Bahram IV	13 y	306-293 BCE
13.	Yazdajird	1 y	293-292 BCE
14.	Yazdajird II	21 y 6 m	292-271 BCE
15.	Bahram Gur	53 y (63 y)	271-218 BCE
16.	Yazdajird	17 y	218-201 BCE
17.	Hurmazd	1 y	201-200 BCE
18.	Firoz	10 y	200-190 BCE
19.	Balash	5 y	190-185 BCE

20.	Qubad	45 y (64 y)	185-140 BCE
21.	Nusherwan	48 y	140-92 BCE
22.	Hurmazd	18 y (12 y)	92-74 BCE
23.	Khusru Parwez	38 y	74-36 BCE
24.	Shiruya	6 m	35-35 BCE
25.	Ardashir	1 y 6 m	35-34 BCE
26.	Turan Dukht	6 m	33-33 BCE
27.	Asarmi Dukht	4 m	33 BCE
28.	Farrukh Sad	1 m	33 BCE
29.	Yazdajird	4 y (10 y? 20 y?)	32-13 BCE

According to Tarikh-i-Guzida, the 9th Sasanian king Shapur was born 40 days after the death of his father Hurmazd. Since Arabs troubled him in his childhood, he invaded Arab and killed many of them. He got a nickname of Dhul-Aktaf (the Shoulder man). Once Shapur visits Emperor of Rum (King of Egypt), pretending to be his own ambassador but is recognised and taken prisoner. The Qayser (Emperor) of Rum devastates Persia. Shapur aided by a girl who falls in love with him escapes to Persia, takes the Qayser captive, and compels him to repair the ruin he caused in Persia by the Greek workmen.

The 15th Sasanian king Bahram Gur invaded India and married a daughter of an Indian king. Interestingly, Indian game "Chess" was introduced to Persia during the reign of the 21st Sasanian king Nusherwan. Nusherwan reigned for 48 years. Prophet Mohammad was born in the 40th regnal year of Nusherwan, i.e., 100-99 BCE. Tabaqat-i-Nasiri mentions that Khusru Parwez was the greatest king of Persia and ruled for 38 years. Mohammad began to propagate his religion in the 20th year of his reign, i.e., 54 BCE and Mohammad fled Mecca to Madina in the 30th year, i.e., 44-43 BCE. Mohammad died in 33 BCE during the reign of Turan Dukht, the daughter of the Sasanian king Khusru Parwez.

Mohammad started converting many people of Madina to Islam. The people of Mecca, instigated by Iblis, in the form of an old man of Najd, try to kill Mohammad but he fled to Madina in 44-43 BCE. According

to Tarikh-i-Guzida, Mohammad sent letters to the rulers of adjacent countries inviting them to embrace Islam. The King of Egypt answered politely and sent presents including a girl Mariya and a mule Duldul. The King of Syria did not answer at all. The King of Yaman declined to accept Islam. The Kings of Oman, Bahrin and Abyssinia accepted Islam. The Sasanian king Khusru Parwaz tore the letter in pieces. In Hijrah 10 (34 BCE), Abu Bakr was appointed as deputy of Mohammad due to his illness. Mohammad died in 34 BCE. Tarikh-i-Guzida considers the epoch of Hijrah in 34 BCE. The Chronology of the successors of Mohammad as given in Tarikh-i-Guzida:

	In Hijrah Era	**In CE**
Five orthodox Caliphs	From 11 AH to 41 AH (30 Lunar years)	35 BCE - 6 BCE
The remaining ten Imams (excluding Ali and al-Hasan)	From 49 AH to 264 AH (215 lunar years and 7 months)	4 CE - 219 CE
14 Umayyad Kings (not Caliphs)	From 41 AH to 132 AH (91 lunar years)	5 CE - 93 CE
37 Abbasid Caliphs	From 132 AH to 656 AH (523 lunar years, 2 months and 23 days)	93 CE - 602 CE

During the reign of Al Mansur the 2nd Caliph, many Indian astronomical texts were translated into Persian and Arabic. He established a house of wisdom in Baghdad. Al-Mamun, the 7th Caliph ordered to translate the texts of Greek and Syriac. He used to attend weekly conferences on literary and scientific matters. Al-Mutadid, the 16th Caliph restored the Persian Navroz festival from the Vernal Equinox to Mid-Summer. He died in 289 AH, i.e., 246 CE. During the reign of Al-Muqtadir, the 18th Caliph, Ismailis defeated Aghlabi princes in North-western Africa. Daylamis revolted in 315 AH. In 319 AH, Carmathians under Abu Said al-Jannabi again attacked Mecca and massacred the inhabitants, so that the well of Zamzam was filled with blood, and carried off the black stone. Carmathians restored the black stone at Mecca after 20 years in 339 AH

(294 CE) without any obvious reason. Mongol invasions began during the reign of An-Nasir, the 34th Caliph (575-622 AH). In 656 AH (602 CE), Hulagu Khan the Mongol takes Baghdad and kills Al-Mustasim, the 37th Caliph. In 40 days, Mongols killed 8 Lakh inhabitants of Baghdad.

The author of Tarikh-i-Guzida mentions that 13 Mongol Khan kings reigned in Persia for 131 years up to 730 AH (673 CE). Thus, Mongol Kings occupied Persia around 542-673 CE. Mongol Kings were still ruling over Persia in 673 CE when Tarikh-i-Guzida was written by Hamdullah Mustawfi-i-Qazwini.

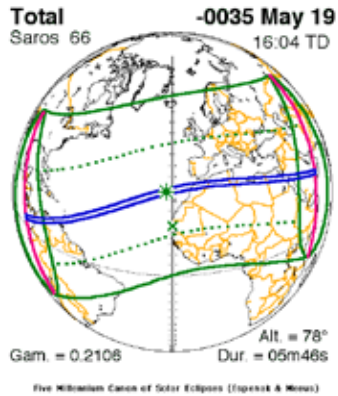
The Epoch of Anno Hegirae (the Hijrah Era)

According to Islamic historians, Prophet Mohammad was born in the 40th regnal year of the Sasanian King Nusherwan. Tabaqat-i-Nasiri mentions that Mohammad began to propagate his religion in the 20th regnal year of the Sasanian King Khusru Parwez, i.e., 54 BCE and Mohammad fled from Mecca to Madina in the 30th year, i.e., 44-43 BCE. Mohammad died in the 11th year of Hijrah era during the reign of Turan Dukht, the daughter of the Sasanian king Khusru Parwez. Mohammad and his close associate Abu Bakr had to migrate from Mecca to Madina due to persecution of his followers. Since the migration of Mohammad was a major turning point in the history of Islam, therefore, it became the epoch of the Islamic era known as the Hijrah era.

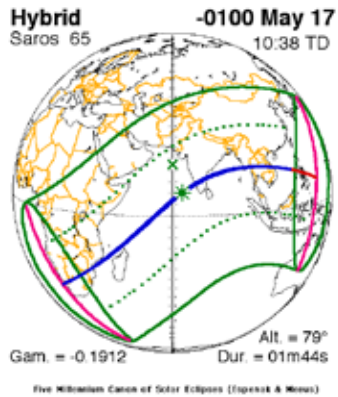
The Early Islamic Lunar Calendar

In pre-Islamic era, Babylonians, Jews and Arabs traditionally followed the Amanta (new moon to new moon) lunar calendar whereas the people of Northern Iran, Turkmenistan, Uzbekistan and Afghanistan followed the Purnimanta (full moon to full moon) lunar calendar. The early Islamic lunar calendar was the Amanta calendar without any intercalation. According to the Islamic historians, Ibrahim, son of Mohammad was born in the last month of 8 AH. Seemingly, the first year of the early Islamic lunar calendar commenced on 29 Apr 44 BCE. Thus, the lunar year 8 of Anno Hegirae was from 13th Feb 37 BCE to 2 Feb 36 BCE. Ibrahim might have born in January 36 BCE. He fell seriously ill sometime after the Battle

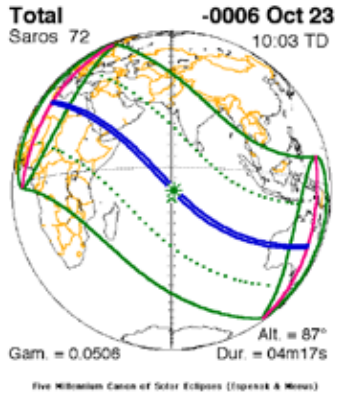
of Tabuk and died on 29 Rabi al Akhiri in 10 AH. The lunar year 10 of Anno Hegirae was from 22nd Jan 35 BCE to 11th Jan 34 BCE. Interestingly, it is recorded that there was a solar eclipse on the day Ibrahim died. The 29th day of the fourth lunar month, i.e., Rabi al Akhiri was 19 May 35 BCE and a solar eclipse occurred on that day.



According to Islamic history, Mohammad was born in the Year of Elephant (Kabah of Mecca was attacked by a large army which included elephants). The Koran mentions that a solar eclipse preceded the birth of Mohammad. Most probably, the Year of Elephant was 100-99 BCE and a solar eclipse occurred on 17th May 100 BCE. Mohammad died in the last month of 11 AH (11 Jan 34 BCE to 1 Jan 33 BCE), i.e., December 34 BCE.



Thus, we can fix the year of birth of Mohammad in 100-99 BCE. Imam Ali, the fourth Caliph (11-6 BCE) was born in 70-69 BCE 30 years after the year of elephant (100-99 BCE). He was assassinated on 21 Ramadan 39 AH (40 AH?), i.e., December 7 BCE when he was 63 years old. The Shias of Iraq proclaimed Ali's eldest son Hasan as their Caliph but Hasan wanted to avoid bloodshed. After Seven months, he signed a treaty with Muwaiah and surrendered his control over the Caliphate to him in Rabi al Akhiri, 40 AH, i.e., July 6 BCE. Most probably, Muwaiah stayed three months in Mecca. He decided to shift his capital from Mecca to Damascus, Syria but as his men were removing it, the sky darkened and stars were visible. Evidently, there was a total solar eclipse on 23rd October 6 BCE.



The Battle of Karbala took place in 61 AH (13 CE) and Imam Husain died in 10 Muharram 61 AH, i.e., 7 Aug 13 CE. The day of the death of Imam Husain also coincided with the day of Ashura. Zoroastrians celebrated the ancient Navroz, i.e., Jamshedi Navroz when Sun entered into Leo. Ashura was probably the 10th day of Jamshedi Navroz celebrations.

Thus, we can conclusively establish the timelines of Muhammad, Ibrahim, Imam Ali and the death of Imam Husain. Mohammad and his early successors had followed the amanta calendar that commenced on 29th April 44 BCE. Muharram was the first month of Islamic calendar and it was identical to Nisan, the first month of the Jewish lunisolar calendar. There was an intercalary month of Nisan in 44 BCE in the Jewish calendar.

Therefore, the month of Muharram of 1 AH commenced on 29 Apr 44 BCE. Al-Tabari mentions that there was a difference of 585 years between the ascension of Jesus and Hijrah. Jesus was crucified on 1 Apr 629 BCE, resurrected on 3 Apr 629 BCE (Easter Sunday) and ascended to heaven (40th day of Easter, i.e., Thursday) on 12 May 629 BCE. Mohammad fled from Mecca to Madina in 44 BCE exactly after 585 years.

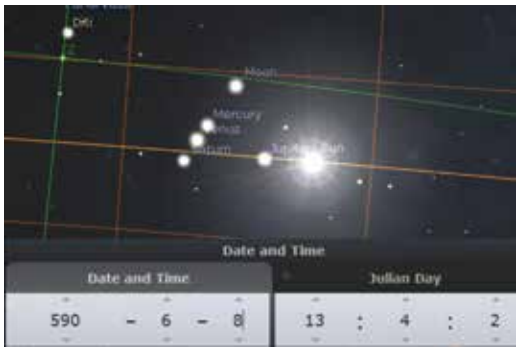
The Epoch of the Hijrah Era After the Battle of Karbala

Seemingly, the early tradition of Islamic calendar had been reformed under the influence of the converted Zoroastrian Muslims. Though the Persians accepted Islam but they continued to celebrate Navroz festival. The Muslims of Khurasan and Iraq had followed the solar calendar of Yazdajird era (32 BCE) and the Islamic lunar calendar of Hijrah era (42 BCE). A Mohammadan canon called Al-harkan indicates that the epoch of the Hijrah era commenced on 4 Aug 42 BCE.[9] During the reign of Al Mansur the 2nd Caliph of Abbasid dynasty, a house of wisdom was established in Baghdad which promoted the research on astronomy. The Zoroastrians used to celebrate traditional Jamshedi Navroz around July-August. The Yazdajird era had commenced from the day of Jamshedi Navroz in 32 BCE, i.e., 6 July 32 BCE, i.e., 1 Farvardin. The Zoroastrian Muslims of Fars celebrated Navroz on the vernal equinox. They followed another epoch of the Yazdajird era that commenced on 30 Mar 29 BCE, i.e., 1 Farvardin. With an objective to reconcile the calendars in the Yazdajird and Hijrah eras, the Muslims of Fars had reset the Islamic lunar calendar in 39 BCE considering 28 Oct 39 BCE as the first day of Muharram. In 29 BCE, 12th July 29 BCE was the first day of Muharram.

During the reign of the Ionian Greeks and the Parthians, Northern Iran, Turkmenistan, Uzbekistan and Bactria had followed the Purnimanta lunisolar calendar. The people of Northern Iran, Turkmenistan and Bactria used to celebrate Navroz on vernal equinox but followed the Purnimanta lunisolar calendar. The year of the lunisolar calendar was from vernal equinox to vernal equinox. Thus, the Purnimanta lunisolar calendar of the Yazdajird era had commenced on 30th Mar 29 BCE. After conversion to Islam, they had also reset the Islamic lunar calendar considering 30 Mar 29 BCE as the first day of Muharram. Tarikh-i-Guzida informs us that

Al-Mutadid, the 16th Caliph restored the Persian Navroz festival from the Vernal Equinox to Mid-Summer. Thus, two schools of Islamic calendars came into existence. The Persians followed the Amanta lunar calendar considering 12 July 29 BCE as the first day of Muharram whereas the Muslims of Sogdia, Turkmenistan, Uzbekistan and Bactria followed the Purnimanta lunar calendar considering 30 Mar 29 BCE as the first day of Muharram.

It appears that these two Islamic lunar calendars had referred to two different epochs of the Hijrah era. The Persian authors of Tarikh-i-Guzida and Tabaqat-i-Nasiri indicate that the epoch of the Hijrah era commenced in 34 BCE. Minhaj-i-Siraj, the author of Tabaqat-i-Nasiri mentions that Sultan Nasir-ud-Dunya ascended the throne in 644 AH. He says; "The Sultan-i-Muazzam, Nasir-ud-Dunya wa ud-Din, Mahmud Shah, under a happy conjunction of the Planets, with auspicious fortune, at a propitious time, and, with daily-increasing prosperity, ascended the throne of sovereignty within the Kasr-i-Sabz in the capital city of Dihli, on Sunday, the 23rd of the month of Muharram, in the year 644 Hijrah."[10] Evidently, Minhaj indicates the conjunction of Planets before the coronation of Sultan Nasir-ud-Dunya. This conjunction of Saturn, Jupiter, Mercury, Venus, Sun and Moon took place on 8th June 590 CE, the year 644 Hijrah commenced on 1 Muharram, i.e., 8 July 590 CE and Sultan Nasir-ud-Dunya ascended the throne on 30 July 590 CE, i.e., 23 Muharram 644 AH. Historians assumed the epoch of Hijrah era in 16 July 622 BCE. Thus, 23 Muharram 644 AH corresponds to 10 June 1246 CE but there was no conjunction of planets in the year 1246 CE.



Minhaj relates that "The capital city Dihli was reached on the 2nd of Muharram, 645 AH, and the Sultan remained at Dihli on account of the abundance of rain and severity of the rainy season."[11] The 2nd Muharram 645 AH corresponds to 29 June 591 CE. Apparently, the monsoon had arrived in Delhi in the last week of June 591 CE. If the epoch of Hijrah era was 622 CE, 2 Muharram 645 AH corresponds to 9th May 1247 CE. It was the summer season in Delhi in May 1247 CE.

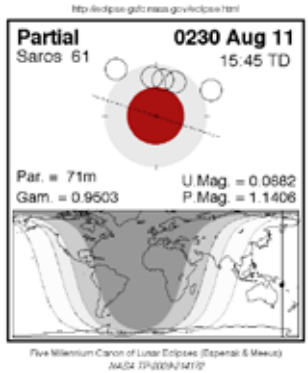
Minhaj indicates that the vernal equinox occurred on the 13th of the Safar in the Hijrah year 658. He says; "When the new year of 658 AH came in, the sun of sovereignty rose from the horizon of prosperity (vernal equinox), and the moon of dominion shone forth from the zodiac of happiness (Libra). On the 13th of the month of Safar, the Khan-i-Muazzam, Ulugh Khan-i-Azam marched towards Kohpayah of Dihli".[12] The Sun entered into Aries on 21/22 Mar 604 CE, i.e., 13 Safar 658 AH. If the epoch of Hijrah era was 622 CE, 13 Safar 658 AH corresponds to 29 Jan 1260 CE. It was impossible to establish the occurrence of vernal equinox in January 1260 CE. Evidently, the epoch of 622 CE miserably fails to explain the verifiable dates of Hijrah calendar given in Tabaqat-i-Nasiri.

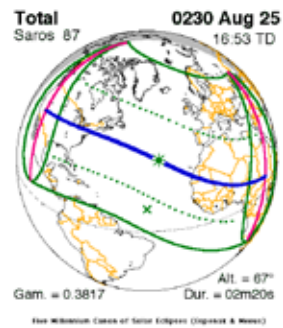
It is evident from the above that Tabaqat-i-Nasiri considers the commencement of the epoch of Hijrah era in 34 BCE. The Amanta Islamic lunar calendar of Persia and Arabia followed the epoch of 34 BCE (1 Muharram 34 BCE corresponds to 4 Sep 34 BCE) and for counting of lunar years and 1st Muharram of this calendar corresponds to 12 Jul 29 BCE in the 1st year of Yazdajird era. Abul Fazal, the author of Akbarnama clearly indicates the epoch of the Hijrah era (Purnimanta Calendar) in 39 BCE as already explained in the Chapter 2. Thus, the Purnimanta Islamic lunar calendar of Mughals followed the epoch of 39 BCE (1 Muharram 39 BCE corresponds to 16 Jul 39 BCE) for counting of lunar years and the 1st Muharram of this calendar corresponds to 30 Mar 29 BCE in the 1st year of Yazdajird era (29 BCE). The Navroz festival on vernal equinox day was the most sacred festival for the Mughals. Therefore, they followed the traditional solar calendar as well as the Purnimanta Islamic lunar calendar. This may be the reason why the author of Tabaqat-i-Nasiri refers to the Mughals as "Infidels".

Al Tabari and the Epoch of Hijrah Era

Al Tabari, a Persian historian wrote the history of Prophets and Kings in the third century CE. He referred to the occurrence of two eclipses (lunar and solar) in the month of Muharram in the lunar year 269. Al Tabari records; "In the month of Muharram this year, the Moon was eclipsed on the night of the 14th and the moon rose eclipsed (set eclipsed?). The Sun was eclipsed at the time of sunset on Friday, when two nights remained to the completion of Muharram, and set eclipsed. So in this month there were both lunar and solar eclipses." Ibn al Jawazi of Baghdad and Ibn al Athir of Mosul also referred to the same eclipses. These two lunar and solar eclipses might have been observed at Basra, Iraq. Certainly, these two eclipses occurred during the lifetime of Al Tabari.

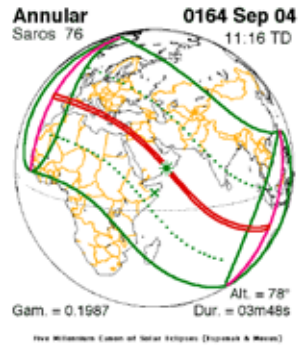
Most probably, Al Tabari counted the lunar years from the epoch of 29 BCE though he referred to Hijrah years prior to 29 BCE. As already explained, the Islamic lunar calendar had been reformed starting from the epoch of the Yazdajird era (12 July 29 BCE). The 269th lunar year commenced on 28 Jul 230 CE (1 Muharram) in the amanta Islamic lunar calendar. A lunar eclipse occurred on 11 Aug 230 CE and the Moon rose eclipsed. A solar eclipse occurred on 25 Aug 230 CE and the sun set eclipsed.





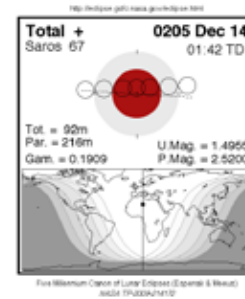
Al Tabari also mentioned to the occurrence of solar eclipse in the lunar year 203. He stated; "In this year (203rd Lunar year), there was an eclipse of the sun on Sunday, the 28th of Dhu al-Hijjah, to the extent that the sun's light faded away and over two-thirds of its orb disappeared. The

eclipse began when the sun was getting high and continued till it was nearly noon, then it cleared away." Al Tabari might have borrowed the details of this eclipse from the oral tradition. This solar eclipse occurred on 4 Sep 164 CE but the month was Muharram as per the lunar calendar followed by Al Tabari. The maximum eclipse was at ~11:00 to 11:30 hrs and the partial eclipse ended at ~12:30 to 13:00 hrs.

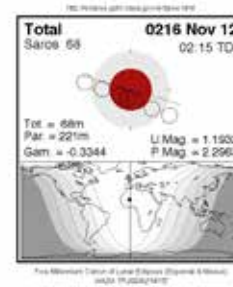


Al Tabari also mentioned the following four lunar eclipses:

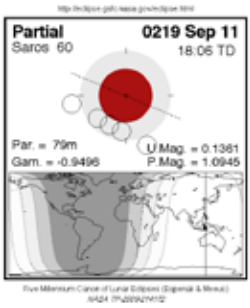
1 A great earthquake took place in the Yemen along with a lunar eclipse in the month of Shaban in the lunar year 242. This total lunar eclipse occurred 13 Dec 205 CE in the month of Shaban.



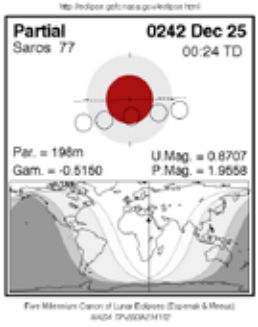
2 There was a total lunar eclipse on 14th of Dhu-al-Qada in the lunar year 253. A penumbral lunar eclipse occurred on 24 Nov 215 CE and a Total lunar eclipse occurred on 11/12 Nov 216 CE. Both eclipses took place in the month of Dhu al-Qada.



3 There was a lunar eclipse on Tuesday evening, on the 14th of Shawwal in the lunar year 257. This lunar eclipse occurred on 11 Sep 219 CE.



4 It was reported that a letter arrived from Dabil in the month of Dhu-al-Hijjah informing that the moon was eclipsed there on the 14th of Shawwal. Then it reappeared at the end of the night…. In the afternoon, there was an earthquake." This lunar eclipse was remembered as bad omen because the Armenian capital city of Dabil was destroyed in a strong earthquake. This lunar eclipse occurred on 25 Dec 242 CE and the eclipse ended at 5:02 AM. Thus, at the end of the night the moon had reappeared.

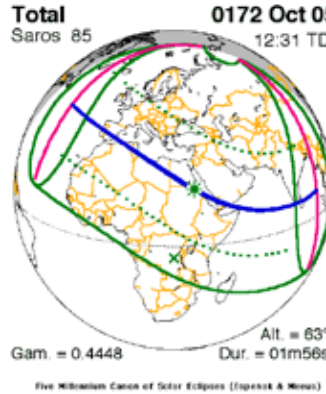


Early Records of Solar and Lunar Eclipses in Arabic Chronicles

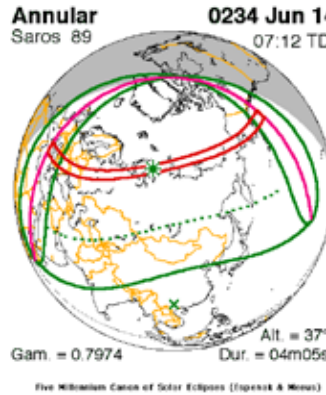
Said S. Said, FR Stephenson and Wafiq Rada published their research article titled "Record of Solar Eclipses in Arabic Chronicles" in 1989. FR Stephenson and Said S. Said also published an article titled "Record of Lunar Eclipses in Medieval Arabic Chronicles" in 1997.[13] Let us examine some of the solar eclipses discussed in these two articles to establish the epoch of the Hijrah era.

1. Ibn Idhari wrote a history of Morocco and al-Andalus (Spain). He records; "In this year (218th lunar year), there was the great solar eclipse in which the Sun was obscured and darkness appeared. That was before the Sun reached the meridian (midday) at the end

of Ramadan". Ibn Idhari clearly indicates that a total solar eclipse occurred before noon. This total solar eclipse occurred on 5 Oct 172 CE at the end of Ramadan month. Seemingly, Ibn Idhari followed the epoch of 39 BCE (16 July 39 BCE) and the amanta calendar.

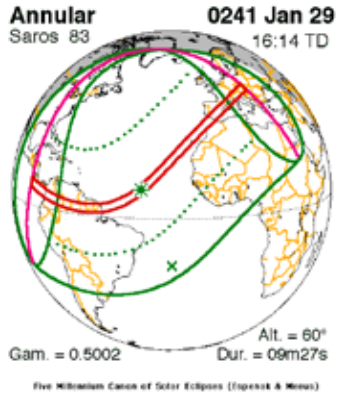


2. Ibn Hayyan records; "In this year (290?), the Sun was eclipsed in Cordoba and its vicinity on Wednesday, when one night remained to the completion of Dhu al Hijjah." This solar eclipse occurred on 14th Jun 234 CE.

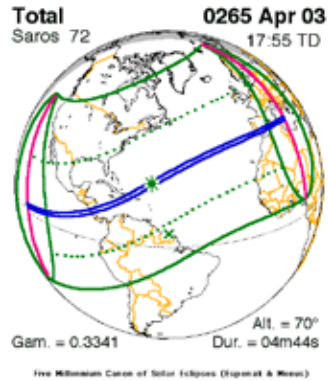


3. Ibn Hayyan records; "In this year (299?), the Sun was eclipsed and it disappeared totally on Wednesday when one night remained to the completion of Shawwal. The stars appeared and darkness covered the horizon. Thinking it was sunset, most of the people went for

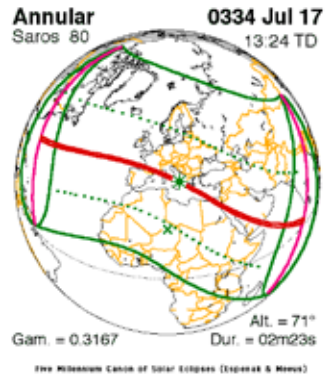
the Sunset (Maghrib) Prayer. Afterwards, the darkness cleared and the Sun reappeared for half an hour and then set." This solar eclipse occurred on 29 Jan 241 CE. The solar eclipse ended around 17:51 hrs and the Sun set around 18:30 hrs.



4. Ibn Hayyan quotes from the history of al-Andalus written by Al-Razi: "The Caliph al-Nasir (i.e. Abd al-Rahman al-Nasir) advanced (northwards from Cordoba) heading for his Jihad until he reached Toledo on Thursday, when seven nights remained to the completion of Ramadan. He stayed there for six days and left on Thursday, when two nights remained to the completion of Ramadan, for Welmish fortress and on Friday to Khalifa Castle. During the forenoon (Dhuhr) of that day, the Sun was eclipsed totally and its disc became dark except for a slight portion of it as seen by the eye." Ibn Hayyan also quotes from the works of al-Masudi; "In this year, the Caliph al-Nasir.… At the end of month Ramadan, the Sun was eclipsed on Friday in the late forenoon (great Dhuhr), when two nights remained to the completion of the month Ramadan." Seemingly, there is a mistake in English translation. "Dhuhr" has been deliberately distorted as "Duha" but Duha is not a compulsory prayer. Dhuhr is the prayer after midday. Thus, Ibn Hayyan clearly indicates that the solar eclipse took place late in the afternoon. This solar eclipsed occurred on 3 Apr 265 CE.

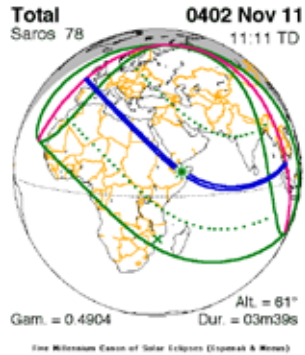


5. Al-Maqrizi who lived in Cairo states; "In this year (383?), the Sun was eclipsed totally at the end of Jumada al Ukhra. It was so dark that stars appeared and people could not see the palms of their hands. The eclipse cleared at the end of the day." This eclipse occurred in Cairo on 17 Jul 334 CE.

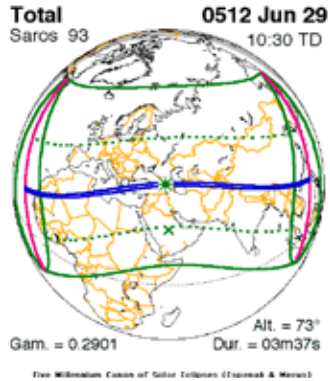


6. Interestingly, Ibn al-Jawazi (510-579 Hijrah) gives the graphic narrative of the total solar eclipse that occurred in Cairo during his lifetime. He wrote; "On Wednesday, when two nights remained to the completion of (the month of) Jumada al-Ula, two hours after daybreak, the Sun was eclipsed totally. There was darkness and the birds fell whilst flying. The astrologers claimed that one-sixth of the Sun should have remained [uneclipsed] but nothing of it did so. The

Sun reappeared after four hours and a fraction. The eclipse was not in the whole of the Sun in places other than Baghdad and its provinces." This solar eclipse occurred on 11 Nov 402 CE.



7. Ibn al-Athir also writes; "*In this year (571?), the Sun was eclipsed totally and the Earth was in darkness so that it was like a dark night and the stars appeared. That was the forenoon of Friday the 29th of Ramadan at Jazirat Ibn Umar [now Cizre, in Turkey], when I was young and in the company of my arithmetic teacher. When I saw it I was very much afraid; I held on to him and my heart was strengthened. My teacher was learned about the stars and told me:* now, you will see that all of this will go away, and it went quickly." Imad Al-Din al-Asfahani al-Katib also records in his chronicle that a total solar eclipse was witnessed by Salah al-Din and his army while crossing the Orontes River near Hamah. The total solar eclipse witnessed by Ibn al Athir amd Salah al-din took place on 29 Jun 512 CE.



Abu Rayhan and the Hijrah Calendar

Abu Rayhan tells us that Arabs learnt the intercalation system from Jews about 200 years before Hijrah. He says; "This went on till the time when the Prophet fled from Mecca to Madina, when the turn of intercalation, as we have mentioned, had come to Shaban. Now this month was called Muharram and Ramadan was called Safar. He also says that the people Thamud commenced their year with the month Daimur, i.e., Ramadan. Evidently, Abu Rayhan indicates that the early Islamic lunar calendar had undergone reforms roughly 100-150 years after the epoch of Hijrah. He also informs us that Caliph Almutawakkil planned to postpone Navroz till the 17th of Haziran but he was killed. The poet Albuhturi composed a Kasida in praise of Almutawakkil where he says: "The Day of Navroz has returned to that time, on which it was fixed by Ardashir". Later, Caliph Almutadid had reformed the calendar in in Muharram 243 AH. He added 60 days and put Navroz at the end of them which fell on a Wednesday, the 1st Khurdadh Mah of that year coinciding with the 11th of Haziran.

Al Beruni and the Hijrah Calendar

As already explained in the Chapter 2, Al Beruni and Abu Rayhan were not the same person. Abu Rayhan lived in the 4th century CE whereas Al Beruni flourished in the beginning of the 11th century CE. Abu Rayhan had no knowledge of Indian astronomy and he had just heard about the Indian method of intercalation whereas Al Beruni had extensively studied the Persian translations of Indian astronomical texts before his arrival in India. Abu Rayhan was certainly not a Khwarizmian whereas Al Beruni was born in Khwarizm. Abu Rayhan wrote in the Arabic language whereas Al Beruni wrote in the Persian language. Abu Rayhan praises his master Shams-ul-maali as "The commander, the prince, the glorious and victorious, the benefactor, Shams-ul-maali" whereas Al Beruni praises Prince Mahmud of Ghazna. The Kufic inscription on the tower of Qabus in Northern Iran refers to Prince Shams-ul-maali. During the lifetime of Abu Rayhan, the Buddhist monuments, the Viharas of their idols, their farkharas are still to be seen on the frontier countries of Khurasan and India but all traces of Buddhism in central Asia, Khurasan, Afghanistan and north western India seem to have disappeared during the lifetime of Al Beruni. Al Beruni knew scarcely anything at all about Buddhism.

Al Beruni refers to the year 400 of the reformed Yazdajird era, i.e., 1030 CE. Seemingly, the Yazdajird calendar had been finally reformed in 631 CE and a new reckoning of the Yazdajird era commenced from 631 CE. Thus, Al Beruni clearly mentions that the Hindu New-Year day or Chaitra Shukla Pratipada of the year 953 of the Saka era (78 CE) corresponds to 19th Ispandarmaz Mah of the year 399 of Yazdajird era Chaitra Pratipada of the Saka year 953 was 7 Mar 1030 CE which was 19th Ispandarmaz in the Yazdajirdi calendar and 1st day of the year 400, i.e., Navroz fell on 23rd Mar 1030. Considering the epoch of Islamic amanta lunar calendar from 12 Jul 29 BCE, 28th Safar of the lunar year 422 fell on 7 Mar 1030 CE. Evidently, Al Beruni had referred to the new reckoning of the Yazdajird era (21/22 March 631 CE), i.e., the epoch of the Fasli calendar. Accordingly, the counting of lunar years in the Islamic amanta lunar calendar had also been reset from 26 Jul 621 CE.

In view of the above, it is evident that the epoch of the Hijrah era and the counting of lunar years in the Islamic lunar calendar cannot be established in one particular epoch because it slightly differed from time to time and place to place. Seemingly, the earliest epoch of Hijrah era was 44 BCE. Thereafter, the epoch of 29 BCE became popular for counting of lunar years with reference to the solar calendar of the Yazdajird era. Later, 34 BCE became the epoch of Hijrah era in Persia and 39 BCE became the epoch of Hijrah in Sogdia. Probably, Andalus, Morocco and Cairo followed the epoch of 39 BCE.

Though the lunar Hijrah era was in use but the interruption of continuity in intercalation, the commencements of the years fell into a great confusion. At the instance of Sultan Jalaluddin Malik Shah Saljuki, Omar Khayyam and several other learned men reformed the solar and lunar calendars and founded an epoch in 417 CE which came to be known as Jalali or Maliki era. Thereafter, during the reign of Ghazan Khan, the pain of the agriculturists has been understood as the revenue was taken on the lunar years and the harvest depended on the solar. Abolishing this practice Ghazan Khan promoted the cause of justice by the introduction of the Khani era in 640 CE.

It appears that the Khwarizmi Islamic scholars reset the Yazdajird era in 631 CE and reformed the solar calendar considering the epoch of 631

CE and the lunar calendar considering the epoch of 621 CE. Seemingly, Al Beruni had referred to these epochs. The historians have assumed only one epoch of Hijrah era (16 Jul 622 CE) and miserably failed to explain numerous verifiable eclipses and astronomical observations.

Recently, a manuscript of Quran, which is held by University of Burmingham was radiocarbon dated to between 568 and 645 CE. According to Islamic tradition, the third Caliph Uthman (644-656 CE) compiled and canonized the earliest version of Quran. Evidently, the radiocarbon dating of the Burmingham Quran manuscript indicates the chronological error in dating of the lifetime of Muhammad.

A silver coin of Ali Raja found in Cannanore, Kerala records the Hijrah year 1631. If the epoch of Hijrah era had commenced in 622 CE, the year must be 2204 CE which would be impossible. Another coin found in India is dated in the Hijrah year 1314 and the regnal year 24 of Mughal King Shah Alam. The legends on observe are: Sikkazad bar haft Kishwar saya fazal e Ilah, hami din Muhammad Shah Alam Badshah, (Struck coin in seven climes the shadow of the divine favour; the defender of the faith, Emperor Muhammad Shah Alam) and the legends on reverse are: Manus maimanatsanahjulus 24, zarb Onrachha. The Hijrah year 1314 was 1896-1897 CE. It is impossible to establish the reign of Mughal king Shah Alam around 1872-1896 CE. Evidently, the epoch of the Hijrah era cannot be fixed in 622 CE.

A coin of Ali Raja dated 1631 AH

A coin of Shah Alam dated 1314 AH

The Epoch of the Yazdajird Era: Sasanian King Yazdajird III was the son of Shahryar Aparwez bin Hurmuz bin Noshirwan and reigned around 32-13 BCE. The earliest Yazdajird era began with the accession of ancient Zoroastrian king Jamshed in ancient times. After him every succeeding monarch renewed its designation by his own accession and

Yazdajird III had also re-instituted it from his ascension on 5/6 Jul 32 BCE, Sunday. Abul Fazal says that total 963 years have been elapsed in 933-934 CE. Thus, Abul Fazal clearly indicates that the Yazdajirdi calendar commenced from the vernal equinox that occurred on 30 Mar 29 BCE. Evidently, there were two calendars of the Yazdajird era. The Zoroastrian Yazdajirdi calendar of Khurasan and Iraq commenced from the date of the ascension of Sasanian King Yazdajird III, i.e., 5/6 Jul 32 BCE. These Zoroastrians of Iraq and Khurasan traditionally celebrated Jamshedi Navroz during the month of Jul-Aug when Sun entered into Leo. The Zoroastrian Yazdajirdi calendar of Fars and Sogdia commenced when sun entered into Aries. Seemingly, the Yazdajirdi calendar of Fars and Sogdia commenced on 30 Mar 29 BCE. Thus, there were two epochs of the Yazdajird calendar.

Ancient Persia followed a solar calendar of 365 days since ancient times. This calendar of 365 days followed an intercalation of one solar month after a cycle of 120 years. This is the reason why the epoch of this era had been reset many times. Seemingly, Zoroaster II might have reset the ancient Zoroastrian calendar in 1230 BCE. Thereafter, the calendar was probably reset in 1093 BCE during the reign of Achmaenid King Artaxerxes I. The Chaldean Zoroastrians followed a planetary cycle of 1440 years. This cycle might have commenced on 7th Apr 1093 BCE when the Sun and Saturn were in conjunction in Aries during the vernal equinox and the same conjunction took place on 26th Mar 349 CE. Though this astronomical conjunction cycle took 1443 years but the traditional calendar of 1440 years ended in 346 CE. This may be the reason why the tower of Qabus was built an ancient city of Northern Iran in the 375th year of Yazdajird era, i.e., 345 CE (in the epoch of 29 BCE). A Kufic inscription on the tower reads: "This tall palace for the prince Shams ul-Ma'ali, Amir Qabus ibn Wushmgir ordered to build during his life, in the year 397 the lunar Hijrah, and the year 375 the solar Hijrah".

Simon Cristoforetti writes: "The plan of the tower is derived from the combination of two simple geometrical shapes: the circle and the decagon. The regular decagon is a polygon having all sides of equal length and each

angle equal to 144°; therefore, the sum of ten angles is equal to 1440°. This is the utmost importance for our understanding of the tower structure, because it implies that the decagon revolution number is 4 (1440/360). It does not seem to far-fetched at all to say that the tower of Qabus bears a reference to the intercalary cycle of the Iranian calendar lasting 1440 years."

Evidently, the Zoroastrian calendar was reformed in 345 CE. According to "Jami zij" written by the Iranian astronomer Kushyar ibn Labban al-Jili, the calendar of Yazdajird era was intercalated in the 375th year when the Sun entered Aries on the 1st day of the month of Farwardin. Thus, the Yazdajird calendar was reset on 20/21 Mar 345 CE. This reformed calendar of 345 CE came to be known as the Kadmi calendar.

In the year 500 of Yazdajird era, i.e. 468 CE (in the epoch of 32 BCE), one month has been again intercalated in the Zoroastrian calendar. Abu Bakr Muhammad ibn Ahmad al-Thabi al-Kharaqi, a Persian astronomer mentions in his work "*Muntha al-idrak fi taqasim al-aflak*" in the section on Persian chronology:

"On the year 375 of the era of Yazdajird, when the Sun went to touch the spring equinox point at the first day of Farwardin-Mah we added the five days [of *andargah*] to the last days of Isfandarmudh-Mah [the 12th month]. The intercalation took place in the regions of Fars, while in the regions of 'Iraq and Khurasan [the five days] remained to the end of Aban-mah [the 8th month]… On Saturday, the 12th of the month of Rabi al-thani in the year [52]5, year 500 in the Yazdajird, in the month of Urdibihisht it was time to apply the *kabisa* again, and therefore we applied it by adding five days to the last days of the month of Farwardin; and therefore its days numbered thirty-five."

Evidently, Abu Bakr Muhammad clearly indicates the existence of two Zoroastrian calendars of the Yazdajird era. The intercalation in the calendar of Khurasan and Iraq took place at the end of the 8th month, i.e., Aban whereas the same in the calendar of Fars took place at the end of the 12th month, i.e., Isfandarmudh in 345 CE. He also mentions that another intercalation took place in 470 CE, i.e., the year 500 of the Yazdajird era.

Later, the Fasli calendar of the Yazdajird era was introduced on 22 Mar 631 CE following the Jalali calendar. Thus, the Yazdajird era had three calendars:

1. **The Shahanshashi Calendar (32 BCE or 29 BCE):** In ancient times, the Shahanshahi calendar year consisted of 12 months and each month had 30 days. During the reign of Achaemenid and Sasaninan kings, the calendar of 360 days has been changed to 365 days. An additional month of 30 days was intercalated once in a cycle of 120 years. This calendar had two epochs of the Yazdajira era. Khurasan and Iraq followed the epoch of 32 BCE and celebrated Navroz or New Year in July as Pateti (the day of introspection), i.e., the 1st day of Farvardin month. Fars and Sogdia followed the epoch of 29 BCE and celebrated Navroz on the vernal equinox.
2. **The Kadmi I & Kadmi II Calendar:** The Zoroastrians of Fars had intercalated an extra month to the Shahanshahi calendar around 345 CE and 470 CE. This calendar came to be known as the Kadimi calendar.
3. **The Fasli Calendar:** This calendar year also consisted of 12 months of 30 days each plus five Gatha days but also had a leap day called Avardad-sal-Gah in every four years. This calendar was introduced on 22 Mar 631 CE. Al Beruni had referred to the epoch of the Fasli calendar of the Yazdajird era.

The Epoch of the Sakanta Era of India (78 CE) was Preceded by the Epochs of Yazdajird Era and Hijrah Era

While discussing the Indian methods of Ahargana, Al Beruni says; "In a Muhammadan canon called the canon Al-harkan we find the same method of calculation, but applied to and starting from another era, the epoch of which must fall 40,081 (days) after that of the era of Yazdajird. According to this book, the beginning of the Indian falls on Sunday the 21st of Daimah of the year 110 of Yazdajird. The method may be tested in the following manners: Take 72 years, change them into months by multiplying them by 12, which gives the product 864. Add thereto the months which have elapsed between the 1st of Shaban of the year 197, and the 1st of the month in which you happen to be. Write down the sum

in two different places. Multiply the lower number by 7 and divide the product by 228. Add the quotient to the upper number and multiply the sum by 30. Add to the product the number of days which have elapsed of the month in which you are. Write down this number in two different places. Add 38 to the lower number and multiply the sum by 11. Divide the product by 703, and subtract the quotient from the upper number. The remainder in the upper place is the number of the civil days, and the remainder in the lower place is the number of the avamas. Add 1 to the number of days and divide the sum by 7. The remainder shows the day of the week on which the date in question falls."[14]

Dr. Edward C. Sachau could not understand the above method and commented that "The word "Al-harkan" seems to be an Arabic rendering of Ahargana. Al Beruni quotes from this book the computation of an era the epoch of which falls 40,081 days later than that of the Persian era….. If the epoch should fall 40081 days after that of the era Yazdajird, it would fall on the first Chaitra of the year 664 Sakakala; but this is not the case. The first of Shaban of the year 197 coincides with the beginning of Vaishakha 735. As there are 72 years to be subtracted, we should come to Vaishakha 663, and to begin with the beginning of a year, the epoch must be postponed to Chaitra 664. But this is of no importance, as we shall see that Al Beruni altogether misunderstood the method here given. These two dates do not agree to a day. The first Farwerdin-mah of Yazdajird coincides with 16th Jun 632; 40,081 days later was Monday, 12th Mar 742, whilst the 21st Daimah of the year 110 of Yazdajird corresponds to Sunday, 11th Mar 742. But as the date itself is erroneous, this is of no importance."

In fact, Dr. Sachau attempted to examine the method of Al-harkan in the erroneous epoch of the Yazdajird era (16 Jun 632 CE) and miserably failed to understand the importance of the epoch which falls 40,081 days later than that of the Yazdajird era. The Arabic canon called "Al-harkan" unambiguously informs us that there was a difference of 40,081 days between the epoch of the Yazdajird era and the epoch of the Indian era. The method of Ahargana applied by the author of Al-Harkan was borrowed from Varahamihira's Panchasiddhantika. Varahamihira explained this method with reference to the epoch of the year 427 of the Saka era (583

BCE). Indian astronomers had reset the epoch of the Saka era on 1st Apr 78 CE and called it "Sakanta" era.

Undoubtedly, the Muhammadan canon Al-harkan had referred to the epoch of the Sakanta era (1st Apr 78 CE) and calculated that the epoch of the Sakanta era falls 40,081 days after the epoch of the Yazdajird era. It is well known that the epoch of the Sakanta era commenced on Chaitra Shukla Pratipada, i.e., 1st Apr 78 CE, Sunday which was the 21st day of Daimah of the year 110 of Yazdajird era. It was Wednesday in the Julian calendar because there is an error in counting of weekdays. We will discuss about this error in the Chapter 13. The epoch of the Yazdajird era of Khurasan and Iraq commenced on 5/6 Jul 32 BCE, Sunday (from sunset to sunset) which was the 1st day of Farvardin month of the Shahanshahi calendar. This calendar consisted of 12 months and each month had 30 days. Five Gatha days were added at the end of the 8th month Aban. Thus, the 1st day of Farvardin month of the 110th Yazdajird year was 10 June 77 CE. Five days were added from 6 Feb to 10 Feb 78 CE and Daimah, i.e., the 10th month commenced on 11th Mar 78 CE. Thus, the epoch of the Sakanta era, i.e., 1 Apr 78 CE was the 21st day of Daimah in the Zoroastrian calendar and the 40,081 days have been elapsed on 31st Mar 78 CE starting from 6 Jul 32 BCE.

Apparently, the author of Al-harkan applied Varahamihira's method of Ahargana (counting of Days) in Islamic lunar calendar based on the epoch of the Sakanta era (78 CE). Considering the epoch of the Sakanta era (78 CE), Al-harkan fixed an epoch of the first Shaban of the year 197 in the Hijrah lunar calendar. Al Beruni says that the 25,958 days are counted from the epoch of falling 40,081 days after that of Yazdajird (i.e. 1 Apr 78 CE) to the first Shaban of the year 197. Starting from 1st Apr 78 CE, the 25958th day was 25 Apr 149 CE, i.e., the first Shaban of the year 197 and the first Muharram of the year 197 was 1 Oct 148 CE. Evidently, Al-harkan indicates that the epoch of the Hijrah era commenced on 4 Aug 42 BCE, i.e., 1 Muharram 1 AH and the epoch of the Yazdajird era commenced on 5/6 Jul 32 BCE, i.e., 1 Farvardin. Interestingly, Al-harkan unambiguously indicates that the epochs of the Yazdajird era and the Hijrah era had commenced before the epoch of the Sakanta era (78 CE).

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4

Ptolemy's Almagest: A Great Treatise or A Successful Fraud

Claudius Ptolemy was one of the great astronomers of Alexandria and the author of a comprehensive treatise of mathematical astronomy known as "Almagest". Modern historians have fixed the date of Ptolemy around 100-170 CE. Ptolemy has recorded many dated astronomical observations in his treatise "Almagest" such as observations of lunar eclipses, observations of occultation, and observations of equinoxes & solstices over the period of 900 years. But the results of astronomical studies of Almagest do not convincingly confirm the date of Ptolemy in the 2nd century CE. Therefore, many scholars questioned the reliability of Ptolemy's observations. Interestingly, Robert Russell Newton concludes in his book titled "*The Crime of Claudius Ptolemy*"; "**Ptolemy is not the greatest astronomer in antiquity, but he is something still more unusual: He is the most successful fraud in the history of science.**"[1]

Recently, John C Brandt, Peter Zimmer and Patrica B Jones have published an article titled "*Declinations in the Almagest: Accuracy, Epoch and Observers*" and opined that the declinations of Stars attributed to Ptolemy were likely two distinct groups – observations taken circa CE 57 and observations taken circa CE 128.[2] Evidently, the declinations of stars given in Almagest as observed by Ptolemy cannot be convincingly explained during the lifetime of Ptolemy.[3] Thus, there is a general agreement among the scholars that the astronomical observations of Ptolemy as recorded in Almagest are not reliable.

In fact, historians mistakenly fixed the date of Ptolemy in the 2nd century CE considering the fictitious epoch of Christian era (1 CE) and

analyzed the Ptolemaic observations in the wrong chronology. I have already explained and exposed this monumental mistake of historians in Chapter 2. Actually, Ptolemy lived around 560-477 BCE and not in the 2nd century CE. Therefore, we must study Almagest with reference to the true chronology. I have found that the observations of Ptolemy are very much reliable and Almagest is truly a great astronomical treatise. In reality, the fictitious epoch of the Christian era (1 CE) is the most successful fraud of the world which has misled entire world since 16th century CE to till date.

Let us analyze the Ptolemaic observations in the true chronology. I restrict my study to the dated observations recorded in Almagest.

The Observations of 21 Lunar Eclipses

Ptolemy has recorded 21 lunar eclipse observations starting 1379 BCE to 521 BCE. Evidently, he has quoted 17 eclipses as observed by early Greek astronomers. Only 4 eclipses have been personally observed by Ptolemy. I have referred to the website of NASA for the calculations of these historical lunar eclipses considering the secular accelerations of the Moon and Sun, which are related to long term changes in the Earth's rate of rotation.

Interestingly, Ptolemy gives the dates of lunar eclipses in various epochs. We have to understand the following epochs to find an absolute date of eclipses.

The Epoch of the Nabonassarian Era (1406 BCE) and the Epoch of Callippic Cycle (988 BCE)

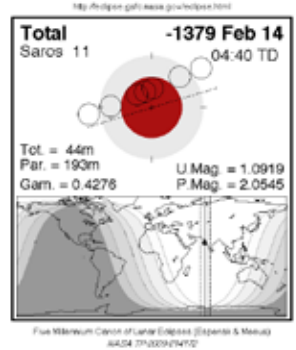
As discussed in detail in Chapter 3, the epoch of Nabonassarian era commenced on 29th Apr 1406 BCE. Callippus proposed a cycle of 76 years instead of the 19-year Metonic cycle. This cycle of 76 years commenced at summer solstice. Ptolemy indicates that the first Callippic cycle commenced in the year 418 of Nabonassar era, i.e., June 988 BCE. Thus, the first cycle was June 988 - June 912 BCE, the second cycle was June 912 - June 836 BCE and the third cycle was June 836 - June 760 BCE. Let us discuss the observations of lunar eclipses recorded in Ptolemy's Almagest.

Eclipse No. 1: (Observed at Babylon)

"The first is recorded as occurring in the first year of Mardokempad,

Thoth [month I] 29/30 in the Egyptian Calendar. The eclipse began, it [the report] says, well over an hour after moonrise and was total. Now, since the Sun was in Pisces (near the end of Pisces?), and [therefore] the night was about 12 equinoctial hours long, the beginning of the eclipse occurred, clearly 4 ½ equinoctial hours before midnight."[4]

Mardokempad was the 5th king of Babylon starting from King Nabonassar, the founder of the era of Nabonassar that commenced on 29th Apr 1406 BCE. Mardokempad began his reign in the 27th year of Nabonassar era, i.e., 1380-1379 BCE. The total lunar eclipse occurred on 13/14 February 1379 BCE was visible at Babylon from 20:03 hrs (UTC +3:00) to 00:11 hrs. This eclipse occurred well over an hour after moon rise and the Sun was in Pisces.



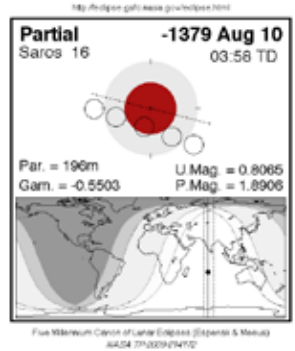
It appears that there are two distortions in the translation of Toomer. The month was 10th not 1st (Thoth). The Sun was in the beginning of Pisces and not at the end of Pisces. The Nabonassarian era commenced on 29th Apr 1406 BCE and it was the first day of the first month, i.e., Thoth and the Julian Day (JD) was 1207635. If we add 9490 (26 x 365) days to JD 1207635, it is clear that the first day of Thoth began on 22nd Apr 1380 BCE. Thus, 14th Feb 1379 BCE was the 28th/29th day of the 10th month (Payni) in Egyptian calendar.

Historians have established that this lunar eclipse occurred on 20th Mar 720 BCE. But this eclipse began at 18:40 hrs immediately after moonrise and not well over an hour after moonrise. Moreover, the Sun was in Aries not in Pisces. The name of the month needs to be verified from the original manuscript.

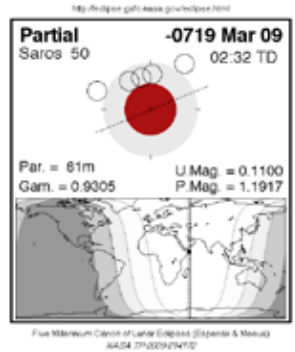
Eclipse No. 2: (Observed at Babylon)

"The second eclipse is recorded as occurring in the second year of Mardokempad, Thoth (?) 18/19 in the Egyptian calendar. The obscuration was 3 digits from the South exactly at midnight."[5]

The second year of King Mardokempad was 1379-1378 BCE. A lunar eclipse occurred on 9/10 Aug 1379 BCE and was visible at Babylon from 18:59 hrs to 00:52 hrs. The obscuration was 3 digits from the south at midnight. The first day of Thoth month was 22 Apr 1379 BCE and JD was 1217490. Thus, 9th Aug 1379 BCE was 19th/20th day of fourth month (Choiak) in the Egyptian calendar.



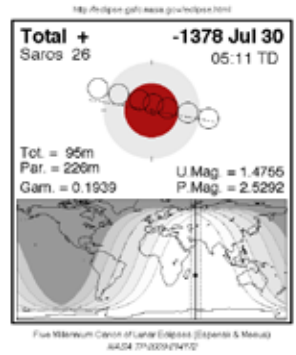
Historians have identified it with the eclipse occurred on 8th Mar 719 BCE from 21:18 hrs to 2:22 hrs. But the obscuration was from North and not from South.



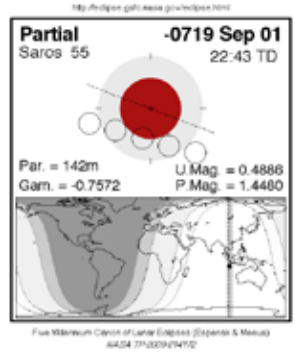
Eclipse No. 3: (Observed at Babylon)

"The third eclipse is recorded as occurring in the second year of Mardokempad, Phamenoth (?) 15/16 in the Egyptian calendar. The eclipse began after moonrise, and the obscuration was more than half from the North…… The beginning of the eclipse was about 5 equinoctial hours before midnight."[6]

The second year of King Mardokempad was 1379-1378 BCE. A total lunar eclipse occurred on 29/30 Jul 1378 BCE and was visible at Babylon from 20:08 hrs to 02:09 hrs. The obscuration was more than half from the North. It is evident that Mardokempad ascended the throne around 1st Aug 1380 BCE. Thus, the first regnal year was from Aug 1380 BCE to July 1379 BCE and the second regnal year was Aug 1379 BCE to July 1378 BCE. The first day of Thoth month was 22 Apr 1378 BCE and JD was 1217490. Thus, 29th Jul 1378 BCE was 8th/9th day of fourth month (Choiak) in the Egyptian calendar.



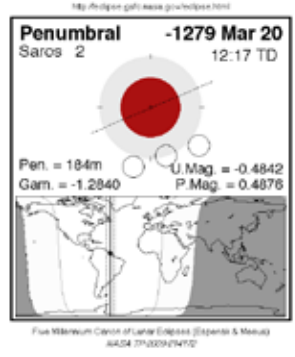
Historians have identified it with the eclipse occurred on 1st Sep 719 BCE from 18:50 hrs to 22:21 hrs. But, this eclipse began before moonrise not after moonrise. In fact, it was an eclipsed moonrise. And the obscuration was from South and not from North.



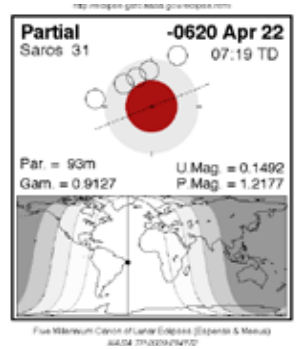
Eclipse No. 4: (Observed at Babylon)

"In the fifth year of Nabopolassar, which is the 127th year from Nabonassar, Athyr (?) 27/28 in the Egyptian calendar, at the end of the 11th hour in Babylon, the Moon began to be eclipsed; the maximum obscuration was ¼ of the diameter digits from the South. Now since the beginning of the eclipse occurred five seasonal hours after midnight….."[7]

The 127th year of Nabonassarian era was 1280-1279 BCE which was also the 5th regnal year of Nabopolassar. A lunar eclipse occurred on 20th Mar 1279 BCE regularly corresponds to the verifiable details given by Ptolemy. This eclipse was visible at Babylon from 5:15 hrs and moon set while eclipsed. Exactly, the eclipse began five hours after midnight and the maximum obscuration was ¼ of the diameter digits from the South. The month was Mesore, the 12th month of Egyptian calendar and the day of 27th/28th of the month.



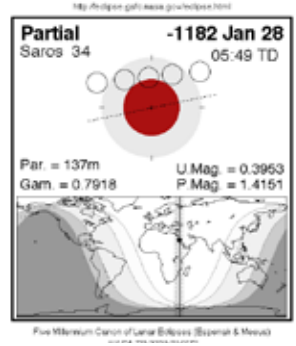
Historians have identified it with the eclipse occurred on 22nd Apr 620 BCE. This eclipse began from 2:31 hrs to 5:04 hrs. But, Ptolemy says that the eclipse began 5 hours after midnight. Moreover, the obscuration was from North and not from South.



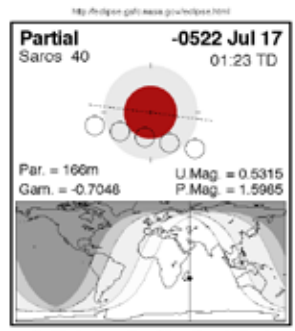
Eclipse No. 5: (Observed at Babylon)

" ……Again, in the seventh year of Kambyses, which is the 225th year from Nabonassar, Phamenoth (?) 17/18 in the Egyptian calendar, hour before midnight at Babylon, the Moon was eclipsed half its diameter from the North. Thus, the eclipse occurred about 1 5/6 hours before midnight at Alexandria."[8]

The 225th year of Nabonassarian era was 1182-1181 BCE which was also the 7th regnal year of Kambyses. A lunar eclipse occurred on 28th Jan 1182 BCE regularly corresponds to the verifiable details given by Ptolemy. This eclipse was visible at Babylon from 22:23 hrs to 3:19 hrs. The Moon was eclipsed half its diameter from the North. The month was Epiphi, the 11th month of Egyptian calendar and the day was 28th/29th of the month.



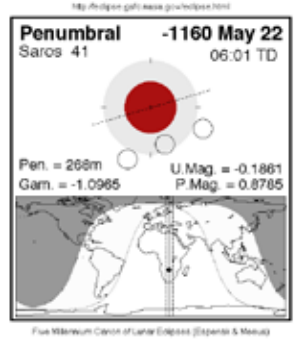
Historians have identified it with the eclipse occurred on 16th Jul 522 BCE. This eclipse was visible from 20:46 hrs to 2:19 hrs. But, Ptolemy says that the eclipse began hour before midnight. Moreover, the obscuration was from South and not from North.



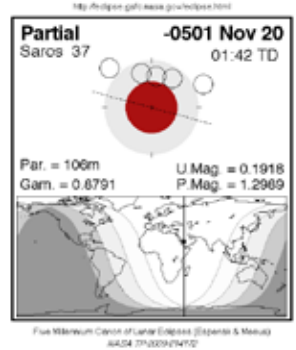
Eclipse No. 6: (Observed at Babylon)

" ..…The second which Hipparchus too used, occurred in the twentieth year of Darius who succeeded Kambyses, Epiphi (?) 28/29 in the Egyptian calendar, when 6 1/3 hours of the night passed; at this eclipse the Moon was obscured from the South ¼ of its diameter. The middle of the eclipse was 2/5 of an equinoctial hour before midnight in Babylon."[9]

The 20th regnal year of Kambyses was 1160 BCE. A lunar eclipse occurred on 21/22 May 1160 BCE regularly corresponds to the verifiable details given by Ptolemy. This eclipse was visible at Babylon from 22:56 hrs to 3:24 hrs. The Moon was obscured from the South ¼ of its diameter.



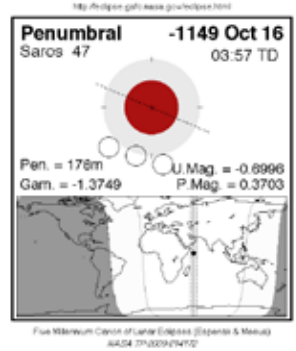
Historians have identified it with the eclipse occurred on 19th Nov 501 BCE. This eclipse was visible from 21:18 hrs to 2:34 hrs. The obscuration was from North and not from South.



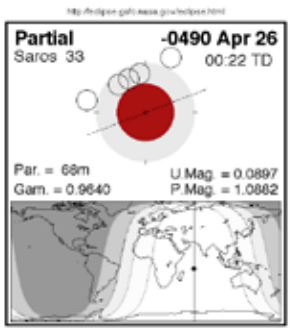
Eclipse No. 7: (Observed at Babylon)

"The first eclipse we used the one in Babylon in the thirty-first year of Darius I, Tybi (?) ¾ in the Egyptian Calendar, at the middle of the sixth hour. It is reported that at this eclipse, the Moon was obscured 2 digits from the South….. For the time of mid-eclipse was ½ hour before midnight at Babylon and 1 1/3 equinoctial hours before midnight at Alexandria."[10]

The 20th regnal year of Kambyses was 1149 BCE. A lunar eclipse occurred on 15th Oct 1149 BCE regularly corresponds to the verifiable details given by Ptolemy. This eclipse was visible at Babylon from 21:41 hrs to 00:38 hrs and the mid-eclipse was around 23:09 hrs. It was visible at Alexandria from 20:41 hrs to 23:38 hrs and the mid-eclipse was around 22:09 hrs. The Moon was obscured 2 digits from the South.



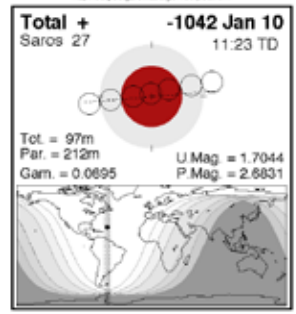
Historians have identified it with the eclipse occurred on 25th Apr 490 BCE. This eclipse was visible at Babylon from 20:25 hrs to 00:53 hrs and the mid-eclipse was around 22:39 hrs. The obscuration was from North and not from South.



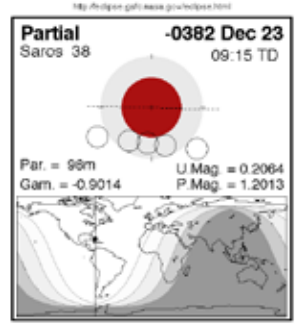
Eclipse No. 8: (Observed at Athens)

"He (Hipparchus) says that these three eclipses which he adduces are from the series brought over from Babylon, and were observed there; that the first occurred in the archonship of Phanostratos at Athens in the month of Poseidon, a small section of the moon's disk was eclipsed from the summer rising-point [i.e. the north-east] when half an hour of night was remaining. He adds that it was still eclipsed when it set. Now this moment is in the 365th (366th?) year from Nabonassar, in the Egyptian calendar, Thoth 26/27, 5 ½ seasonal hours after midnight."[11]

Athenians were using the Attic calendar during the time of Hipparchus. This Attic calendar used to begin the New Year from the summer solstice. The month of Poseidon was the 6th (December/January). In fact, the year was the 365th of Nabonassar era and the first day of Thoth was 29th Jan 1042 BCE. A total lunar eclipse occurred on 10th Jan 1042 BCE regularly corresponds to the verifiable details given by Hipparchus and Ptolemy. This eclipse was visible at Athens from 3:27 hrs to 7:55 hrs and the Moon was still eclipsed when it set. The Obscuration began from the north-east.



Historians have identified it with the eclipse occurred on 22nd Dec 382 BCE. But, the obscuration was from South and not from North-east.

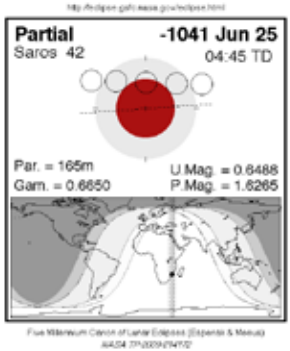


Eclipse No. 9: (Observed at Athens)

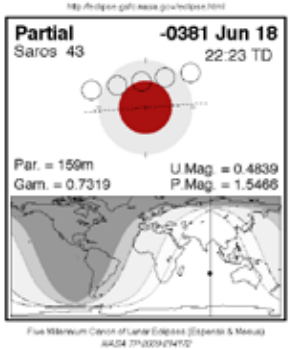
"He (Hipparchus) says that the next eclipse occurred in the archonship of Phanostratos at Athens in the month of Skirophorion, Phamenoth 24/25 in the Egyptian calendar, and that the Moon was eclipsed from the summer rising-point [i.e. the north-east] when the first hour of night was well advanced. This moment is in the 366th year from Nabonassar, about 5 ½ seasonal hours before midnight."[12]

Skirophorion was the 12th month of Attic calendar (June/July). The 366th year of Nabonassarian era was 1041 BCE. A partial lunar eclipse occurred on 24th/25th Jun 1041 BCE regularly corresponds to the verifiable

details given by Hipparchus and Ptolemy. This eclipse was visible at Athens from 21:01 hrs to 2:01 hrs. The Obscuration began from the north-east.



Historians have identified it with the eclipse occurred on 18th Jun 381 BCE.

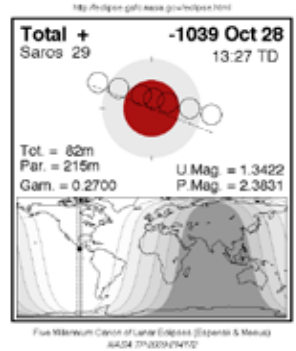


Eclipse No. 10: (Observed at Athens)

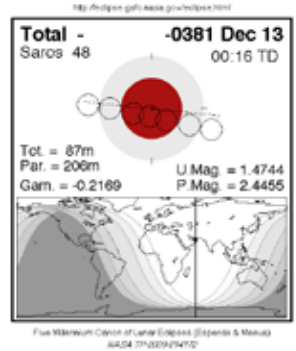
"He (Hipparchus) says that the third eclipse occurred in the archonship of Evandros at Athens in the month of Poseidon I, Thoth 16/17 in the Egyptian calendar, and that the Moon was totally eclipsed beginning from the summer rising-point [i.e. the north-east] after four hours of night had passed. This moment is in the 367th year from Nabonassar. Now when the Sun is about two thirds through Scorpio (Sagittarius?)."[13]

Poseidon I was the 6th month of Attic calendar (December) but it was an intercalary month (November). The 367th year of Nabonassarian

era was 1039 BCE. A total lunar eclipse occurred on 28th/29th Oct 1039 BCE regularly corresponds to the verifiable details given by Hipparchus and Ptolemy. This eclipse was visible at Athens from 5:22 hrs to 6:26 hrs. Evidently, "after four hours of night" means "after four hours of Mid-night".



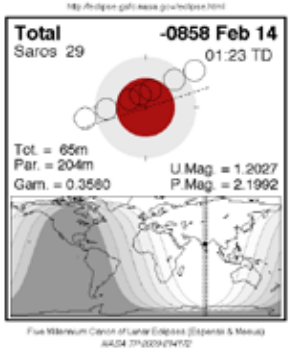
Historians have identified it with the eclipse occurred on 12/13 Dec 381 BCE but it was visible at Athens from 19:25 hrs to 00:42 hrs. Moreover, the obscuration did not occur from the northeast.



Eclipse No. 11: (Observed at Alexandria)

"And next we shall pass to the three later eclipses set out by him (Hipparchus), which he says were observed in Alexandria. He says the first of these occurred in the year 54 of the Second Callippic Period…… the moon began to be obscured half an hour before it rose, and its full light was restored in the middle of the third hour."[14]

The first Callippic cycle of 76 years began in 988-987 BCE and it followed Attic calendar (Summer solstice to Summer solstice). The Second Callippic cycle began in 912-911 BCE. Therefore, the year 54 of the second Callippic cycle was 858-857 BCE. A total lunar eclipse occurred on 14th Feb 858 BCE regularly corresponds to the verifiable details given by Hipparchus and Ptolemy. This eclipse was visible at Alexandria from 18:20 hrs to 23:46 hrs. Evidently, the moon began to be obscured half an hour before it rose, and its full light was restored in the middle of the third hour of night.



Historians have identified it with the eclipse occurred on 22 Sep 200 BCE but the eclipse began at Alexandria from 16:01 hrs to 21:38 hrs. Evidently, the obscuration began 2:50 hrs before the moon rise and not before half an hour.

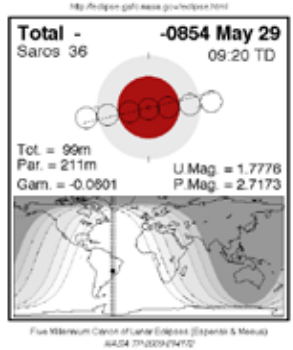
Eclipse No. 12 & 13: (Observed at Alexandria)

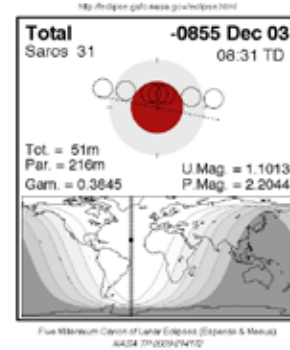
"The next eclipse occurred, he says, in the year 57 (55?) the same period…… it began when 5 1/3 hours of night had passed and the eclipse was total."

"And he says the third eclipse occurred in the year 57 (55?) of the Second Callippic Period…… it began when 6 2/3 hours of night had passed and the eclipse was total…."[15]

The year 57 of the second Callippic cycle was 855-854 BCE. The first total lunar eclipse took place on 3rd Dec 855 BCE and the second total lunar eclipse occurred on 29th May 854 BCE. These two total eclipses

regularly correspond to the verifiable details given by Hipparchus and Ptolemy. The first eclipse was visible at Alexandria from 1:09 hrs to 6:00 hrs and the second eclipse was visible from 2:23 hrs to 5:01 hrs. Evidently, the first total eclipse began when 5 1/3 hours of night had passed and the second total eclipse began when 6 2/3 hours of night had passed.



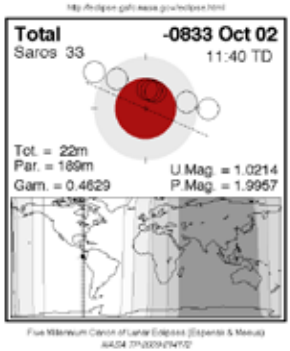


Historians have established that these eclipses occurred on 19th Mar 199 BCE and 11th Sep 199 BCE.

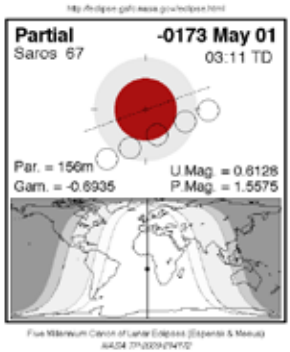
Eclipse No. 14: (Observed at Alexandria)

"In the year 7 of Philometor then, (i.e. the year 574 of Nabonassarian era)…..from the beginning of the eighth hour till the end of the tenth hour in Alexandria, there was an eclipse of the moon which reached a maximum obscuration of 7 digits from the north."[16]

The year 574 of Nabonassarian era and the 7th year of Philometor was 833-832 BCE. A lunar eclipse occurred on 2nd Oct 833 BCE regularly corresponds to the verifiable details given by Hipparchus and Ptolemy. This eclipse was visible at Alexandria from 4:53 hrs to 5:53 hrs. The eclipse began in the eighth hour and ended in the tenth hour. The maximum obscuration of 7 digits was from the North.



Historians have identified it with the eclipse occurred on 1st May 173 BCE. But the obscuration was from South-east and not from North.



Eclipse No. 15: (Observed at Alexandria)

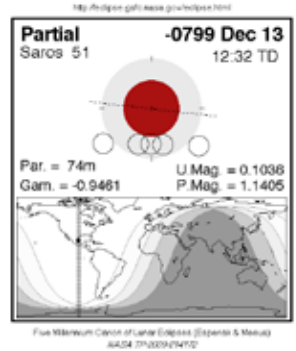
"For example, from the observation of the eclipse in the year 32 of the third Callippic Period…"[17]

The year 32 of the third Callippic cycle was 804-803 BCE. A lunar eclipse was visible at Alexandria on 11th Sep 804 BCE from 3:13 hrs to 6:09 hrs.

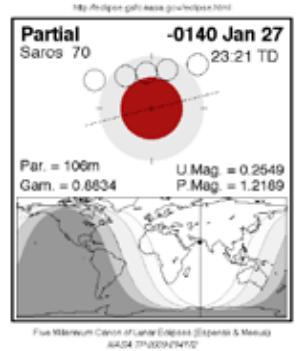
Eclipse No. 16: (Observed at Rhodes)

"Once again in the year 37 of the third Callippic Period (which is the year 607 of Nabonassar…), the moon began to be eclipsed at the beginning of the fifth hour after mid-night in Rhodes. The maximum obscuration was 3 digits from the south."[18]

The year 37 of the third Callippic cycle was 799-798 BCE. A lunar eclipse occurred on 13th Dec 799 BCE regularly corresponds to the verifiable details given by Ptolemy. The eclipse began in the fifth hour after mid-night in Rhodes. The maximum obscuration was 3 digits from the south.



Historians have identified it with the eclipse occurred on 27th Jan 140 BCE. But the obscuration was from North and not from South.

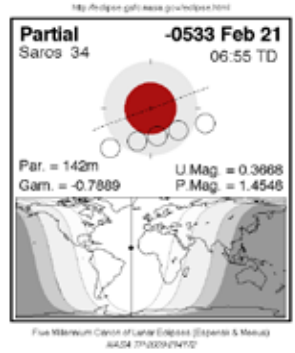


Eclipse No. 17: (Observed at Alexandria)
"From the eclipse in the year 43 of the same period…"[19]

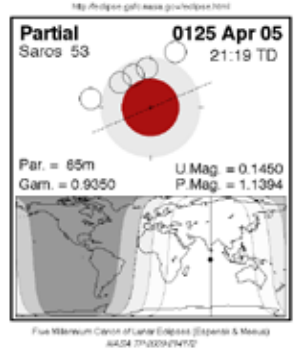
The year 43 of the third Callippic cycle was 793-792 BCE. A lunar eclipse was visible at Alexandria on 11th Aug 793 BCE from 3:26 hrs to 6:10 hrs.

Eclipse No. 18: (Observed at Alexandria)
"Second, we took that observed in Alexandria in the year 9 of Hadrian… 3 3/5 equinoctial hours after (before?) Midnight. The Moon was eclipsed likewise to the extent of 1/6 of its diameter from the southern side."[20]

The 9th regnal year of Roman Emperor Hadrian was 533-532 BCE. A lunar eclipse occurred on 21st Feb 533 BCE regularly corresponds to the verifiable details given by Ptolemy. This eclipse was visible at Alexandria from 1:19 hrs to 6:45 hrs. The maximum obscuration was 3 digits from the south.



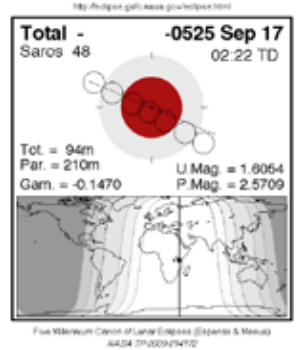
Historians have identified it with the eclipse occurred on 5th Apr 125 CE but the obscuration was from North and not from South.



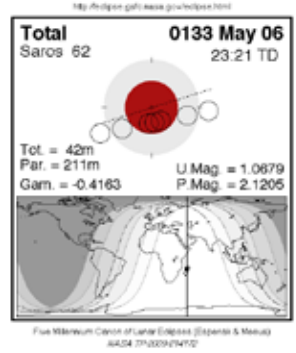
Eclipse No. 19: (Observed at Alexandria)
"Again of the three eclipses we have chosen from those most carefully observed by us in Alexandria in the year 17 of Hadrian. We computed

the exact time of mid-eclipse as ¾ of an hour before midnight and it was total."[21]

The 17th regnal year of Roman Emperor Hadrian was 525-524 BCE. A total lunar eclipse occurred on 16/17 Sep 525 BCE regularly corresponds to the verifiable details given by Ptolemy. This eclipse was visible at Alexandria from 20:51 hrs to 2:11 hrs. The time of mid-eclipse was 23:31 hrs.



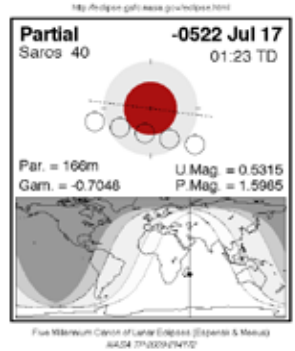
Historians have identified it with the eclipse occurred on 6th May 133 CE but the time of mideclipse was 22:47 hrs almost one hour and fourteen minutes before midnight.



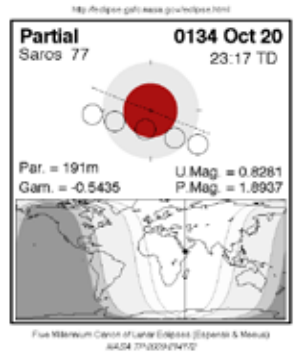
Eclipse No. 20: (Observed at Alexandria)

"The second occurred in the year 19 of Hadrian… We computed that mid-eclipse occurred 1 equinoctial hour before midnight. The moon was eclipsed 5/6 of its diameter from the South (North?)."[22]

The 19th regnal year of Roman Emperor Hadrian was 523-522 BCE. A lunar eclipse occurred on 16th /17th Jul 522 BCE regularly corresponds to the verifiable details given by Ptolemy. This eclipse was visible at Alexandria from 19:46 hrs to 1:19 hrs. The time of mid-eclipse was 22:32 hrs.



Historians have identified it with the eclipse occurred on 20th Oct 134 CE.

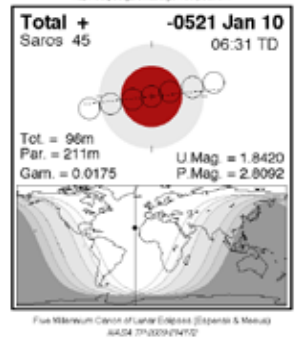


Eclipse No. 21: (Observed at Alexandria)

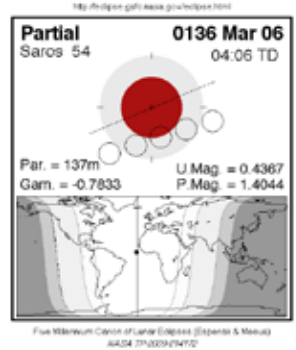
"The third of the eclipses occurred in the year 20 of Hadrian… We computed that mid-eclipse occurred 4 equinoctial hour after midnight. The moon was eclipsed half of its diameter from the North."[23]

The 20th regnal year of Roman Emperor Hadrian was 522-521 BCE. A lunar eclipse occurred on 10th Jan 521 BCE regularly corresponds to the

verifiable details given by Ptolemy. This eclipse was visible at Alexandria from 1:01 hrs to 6:20 hrs. The time of mid-eclipse was 3:41 hrs almost 4 hours after midnight.



Historians have identified it with the eclipse occurred on 5/6 Mar Oct 136 CE.



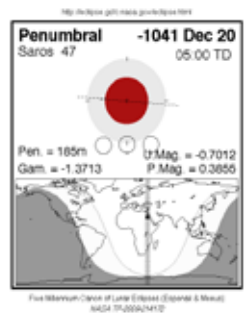
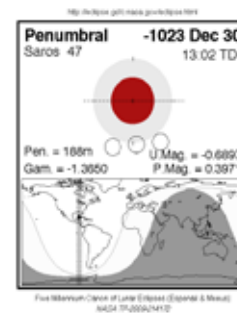
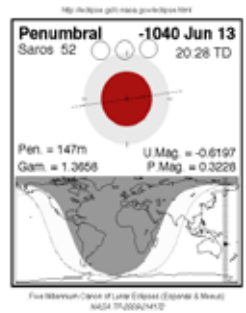
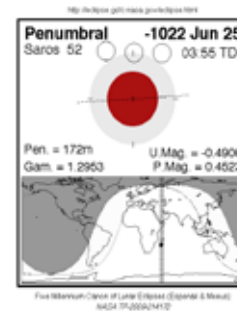
Robert Newton declared most of the ancient observations of lunar eclipses recorded by Ptolemy as forgeries because these observations cannot be satisfactorily explained in the 2nd century CE. As explained above, we can convincingly explain all lunar eclipse observations recorded in Almagest if we follow the true chronology.

In fact, Greek and Alexandrian astronomers learnt the methods of scientific observations of lunar eclipses and their prediction from the Chaldean (Babylonian) astronomers. The archaeological evidence conclusively proves that the Chaldean astronomers discovered the Saros

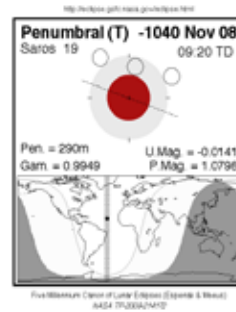
cycle of 223 synodic months after which the Moon is almost precisely back to the same position. Thus, Chaldeans predicted a future lunar eclipse based the observed lunar eclipse.

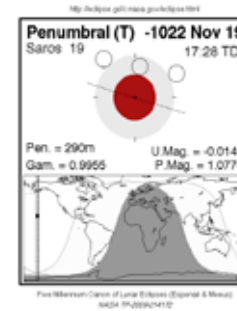
The cuneiform tablet BM 37088 + 37652 of Babylon

Interestingly, the cuneiform tablet BM 37088 + 37652 gives the list of six lunar eclipse observations in the left column and six predicted lunar eclipses in the right column.[24] Unfortunately, the tablet is badly damaged. I have identified these six lunar eclipses observed in Babylon during the reign of Artaxerxes II (1063-1017 BCE) as given below.

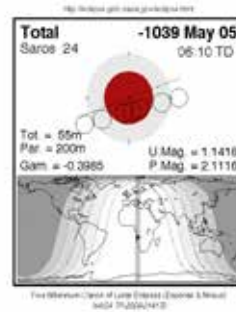
	Babylonian Date	Saros No.	Observed Lunar Eclipse	Predicted Lunar Eclipse
1.	Artaxerxes II, Year 40, Month X, Day 14	47		
2.	Artaxerxes II, Year 41, Month III, Day 14	52		

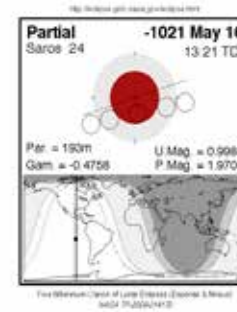
3. Artaxerxes II, Year 41, Month IX, Day 14 — 19



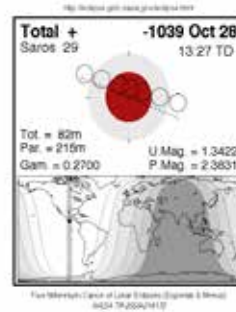


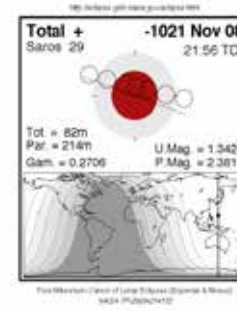
4. Artaxerxes II, Year 42, Month III, Day 14 — 24



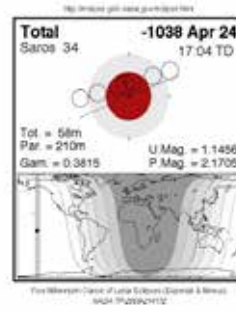


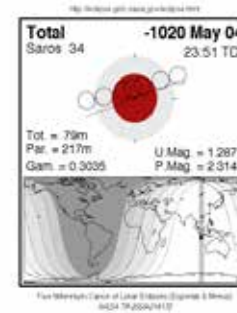
5. Artaxerxes II, Year 42, Month IX, Day 14 — 29





6. Artaxerxes II, Year 43, Month III, Day 13 — 34

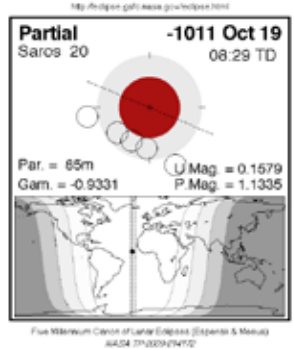




The Tablet BM 32238 of Babylon

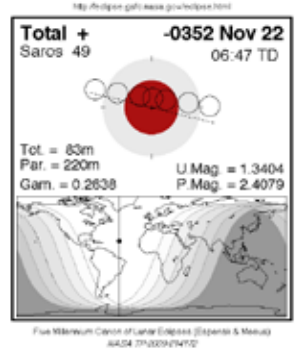
The cuneiform tablet BM 32238 records; "Month VIII, the 14th. When it began on the south and east side, in 23 degrees all was covered. 18 degrees maximal phase. After 16 degrees of midnight, one-fourth on the east side cleared; it set eclipsed. The eclipse was Red. 1 ½ cubits behind (above?) the Star Zeta Tauri it was eclipsed. During the eclipse Saturn stood there; the remainder of the planets did not stand there."[25]

These details perfectly correspond to the Partial-Penumbral eclipse occurred on 19th October 1011 BCE. This eclipse was visible from 2:15 hrs to 5:06 hrs and it set eclipsed because the eclipse ended only after 6:32 hrs. The eclipse was red because it was penumbral and it began from Southeast side.



The Moon was located above the Star Zeta Tauri when the eclipse began and only Saturn was visible in the sky. Undoubtedly, other planets either set by the time of eclipse or rose after the beginning of the eclipse.

Historians have identified it with the eclipse occurred on 22nd Nov 352 BCE but it was a total eclipse which began from east to north side. Thus, the eclipse cannot be red. The moon had already entered Gemini. Therefore, the position of Moon can never be 1 ½ cubits behind or above the star Zeta Tauri on 22nd Nov 352 BCE.



Thus, the Chaldean astronomers meticulously recorded the lunar eclipse observations since ancient times. Ptolemy has quoted some of these ancient observations in his treatise Almagest. If we correct the chronological error of 660 years, all astronomical observations recorded by Ptolemy can be satisfactorily explained.

Occultation (the covering of the stars) by Planets

Ptolemy records four observations of occultation by Planets. He refers to an epoch of the Chaldean era. Historians could not convincingly explain the epoch of Chaldean era till date.

The Epoch of Chaldean Era (1282 BCE)

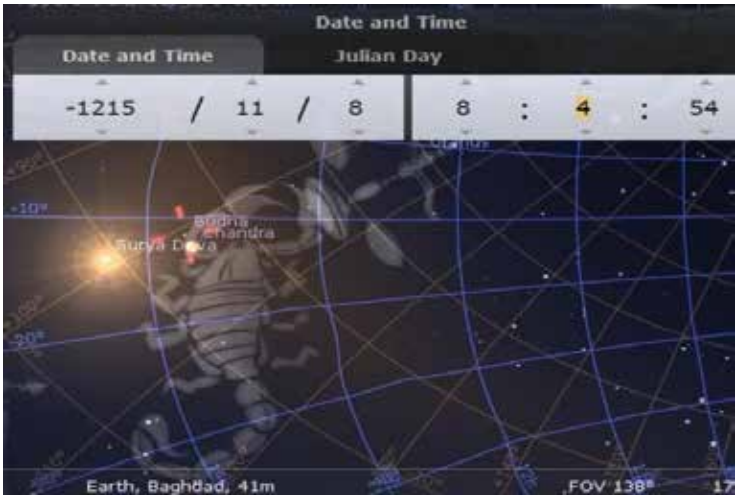
After the death of Assyrian King Ashurbanipal, the Chaldeans rebelled under the leadership of Nabopolassar and established their kingdom in Babylon around 1283 BCE. Evidently, Chaldean King Nabopolassar founded an epoch of Chaldean era in 1282 BCE. Ptolemy refers to three dates in this epoch of the Chaldean era.

The Year 67 of the Chaldean Era

Ptolemy says: "In the 67th year in the Chaldean calendar, Apellaios 5, at

dawn, Mercury was a half a cubit above the northern star in the forehead of Scorpius."[26]

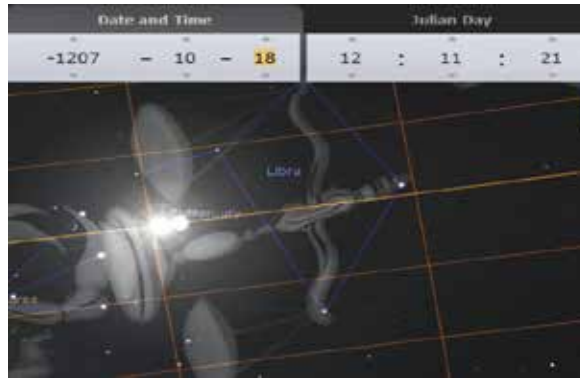
Considering the epoch of Chaldean era in 1282 BCE, the year 67 was 1215 BCE. Apellaios is the solar month of Sagittarius (Dhanus). The date regularly corresponds to 8/9 Nov 1215 BCE and the 5th day of solar month Sagittarius. Exactly, Mercury was a half a cubit above the northern star in the forehead of Scorpius. The position of Mercury relative to B Sco giving a maximum western elongation of 22° 30 at a longitude of 212° 20. Mercury was 212° 28 and B Sco was 198° 35 on 10th Nov 1215 BCE.



The Year 75 of the Chaldean Era

Ptolemy says: "In the 75th year in the Chaldean calendar, Dios 14, at dawn, Mercury was a half a cubit above the star on the southern scale of Libra."[27]

Considering the epoch of Chaldean era in 1282 BCE, the year 75 was 1207 BCE. Dios is the solar month of Scorpio (Vrischika). The date regularly corresponds to 18/19 Oct 1207 BCE and the 14th day of solar month Scorpio. Exactly, Mercury was a half a cubit above the southern scale of Libra**. The position of Mercury relative to Libra giving a maximum western elongation of 21° at a longitude of 194° 10.**



The Year 82 of the Chaldean Era

Ptolemy says: "In the 82nd year in the Chaldean calendar, Xandikos 5, in the evening, the planet Saturn was two digits below the star (γ Vir) on the southern shoulder of Virgo."[28]

Considering the epoch of Chaldean era in 1282 BCE, the year 87 was 1200 BCE. Xandikos is the solar month of Aries (Mesha). The date regularly corresponds to 7th Mar 1200 BCE and the 6th / 7th day of solar month Aries. Exactly, Saturn was two digits below the star γ Vir on the southern shoulder of Virgo.

Occultation of γ Virginis by Venus

Ptolemy says: "Of the old observations, we took one which Timocharis records thus: In the year 13 of (Philadelphus?) (In Egyptian calendar Messore 17-18?) and at the twelfth hour, Venus appeared to have exactly overtaken the star opposite of Vindermiatrix."[29]

This observation indicates that Venus covered the star γ Virginis at about midnight. Tagliaferro's translation tells us that this observation had been conducted in the year 406 of Nabonassar. I.N. Veselovskiy's translation tells us that the year of the observation was 476 after Nabonassar. Many ancient manuscripts of Almagest give the year 406 after Nabonassar. Thus, Timocharis observed this occultation of γ Virginis by Venus in the year 406 of Nabonassar, i.e., 1000-999 BCE. It may be noted that the epoch of Nabonassar era commenced on 29th Apr 1406 BCE. We have to verify the statement "In the year 13 of Philadelphus" from the original manuscript. Venus occulted γ Virginis at the 12th hour (midnight) on 28th Jul 999 BCE.

It appears that Hipparcus also observed the similar midnight occultation of Venus on 20th Jul 831 BCE.

Modern historians have fixed the date of Timocharis around 320-260 BCE and the date of Hipparchus around 190-120 BCE. They have also

established that Timocharis observed the occultation by Venus on 12th Oct 271 BCE or 272 BCE. But, this occultation did not occur at midnight. Evidently, the date of Timocharis and Hipparchus as fixed by historians is absolutely incorrect.

Occultation of β Sco by Mars

Ptolemy says: "We took one of the old observations to which it is quite clear that in the year 13 according to Dionysius, Aigon 25 (Capricorn) in the morning, Mars seemed to occult the Scorpion's northern forehead."[30] This observation indicates that Mars covered the star β Sco in the morning.

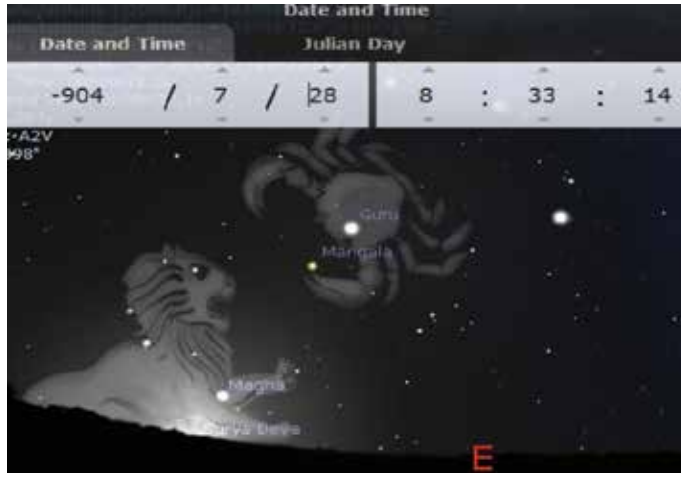
I have not found any convincing evidence to prove the epoch of Dionysius era but it appears that the epoch of Dionysius era began after the epoch of the death of Alexander (982 BCE). Most probably, the Dionysius era commenced from summer solstice of 942 BCE or 944 BCE. According to the translation of Tagliaferro, this occultation was observed in the 42nd year (930 BCE or 932 BCE) after the death of Alexander and the year 476 of Nabonassar era (930 BCE).

The 13th year of Dionysius era was 930-929 BCE or 932-931 BCE. In all probability, Aigon was the Indian lunar month of Pausa. Thus, Mars occulted the star β Sco (the Scorpion's northern forehead) in the morning on 16th Nov 930 BCE or 6th Dec 932 BCE.

Occultation of δ Cnc by Jupiter

Ptolemy says: "We again took one of the ancient observations very faithfully recorded, according to which it is quite clear that in the year 45? (40?) of Dionysius, Parthenon 10 (Virgo), Jupiter at Sunrise occulted the Southern Ass." This observation indicates that Jupiter covered the star δ Cnc at sunrise.[31]

According to the translations, this occultation was observed on the 83rd year (80th?) since the death of Alexander. Most probably, Jupiter occulted δ Cnc at sunrise on 27/28 Jul 904 BCE.



Evidently, Ptolemy's Almagest is undoubtedly a great treatise on mathematical astronomy. Unfortunately, historians mistakenly believed in the historicity of the fictitious epoch of the Christian era (1 CE). In reality, Ptolemy lived around 560-477 BCE not around 100-170 CE. Therefore, the astronomical observations recorded in Ptolemy's Almagest must be verified with reference to the true epochs of the Nabonassarian era (1406 BCE), the Chaldean era (1282 BCE) and the first Callippic cycle (988 BCE), etc.

5

The Chronology of Ancient Egypt

Archaeological evidence suggests that Egypt had a pre-dynastic history from 6000 BCE to 4000 BCE. Manetho was the first who wrote the chronological history of Egypt in his treatise named "*Aegyptiaca*". Another treatise "Book of Sothis" is also attributed to Manetho. According to Syncellus, Manetho links himself directly with King Ptolemy Philadelphus Augustus whereas Plutarch mentions that Manetho lived during the reign of Ptolemy I Soter. The Book of Sothis gives the pre-dynastic history of Egypt. It says that Six Gods reigned in Egypt for 11,985 years and Demigods Horos to Zeus reigned for 856 years. According to the other version, Gods, Demigods and Spirits reigned for 24,925 years.

The dynastic history of Egypt starts from the King Menes. It is extremely important to understand the ancient Egyptian calendar and the Sothic cycle to arrange the chronology of Egyptian dynasties. Egyptians followed a solar calendar of 12 months. 11 months had 30 days and 12th month had 35 days.

The Sothic Cycle of 1460 Years

A tablet related to the 3rd king Djer of 1st dynasty indicates that the Egyptians had established a link between the rising of Sirius or Sothis (the Dog Star constellation) and the beginning of the year. Ancient Egyptians followed the Sothic cycle of 1461 Egyptian years (365 days each) or 1460 Julian years. They also knew 309 lunations nearly equated 9125 days or 25 Egyptian years. In all probability, the Sothic cycle was also a luni-solar cycle.

Historians speculated that Egyptians might have referred to the heliacal rising of Sirius as the beginning of the year in a Sothic cycle but

they failed to explain the chronological Egyptian history with reference to the Sothic cycle. Eduard Meyer claimed in 1904 based on the ivory tablet of King Djer that the Egyptian calendar was created in 19th July 4241 BCE and the 1st Sothic cycle of 1460 years was completed on 19th July 2781 BCE considering the heliacal rising of Sirius. Historians rejected the claim of Meyer because it leads to the chronological complications. Finally, frustrated historians brushed aside the Sothic cycle and propounded that the King Djer flourished around 3000 BCE.

Let us try to reconstruct the Sothic cycle calendar of ancient Egypt based on the available facts. According to Theon of Alexandria, the Sothic cycle of 1460 years was concluded in the 5th year of the emperor Augustus. Abul Fazal mentions that total 1623 years have been elapsed in the Augustan era in 933 CE which clearly indicates that the Augustan era commenced around 690-688 BCE.

I have already explained that the epoch of the Nabonassarian era commenced on 29th Apr 1406 BCE based the verifiable details of the solar eclipse occurred on 13th May 295 BCE as recorded by Theon. Thus, we can conclude that the Egyptian new year began on 29th Apr in 1406 BCE (1207635th Julian day) and the Egyptian year ended on 31st Oct 685 BCE (1471165th Julian day). Total 722 Egyptian years elapsed between 1406 BCE and 685 BCE (1471165-1207635 = 263530 and 263530/365 = 722).

Interestingly, 31st Oct 685 BCE was the new moon day of Karttika month of Indian calendar which unambiguously indicates that ancient Egyptians followed a Sothic cycle of 1460 years reckoning from the first day of the new cycle on Margasirsa Sukla Pratipada, i.e., the first day of the bright half of Margasirsa month and ending the Sothic cycle of 1460 years on the new moon day of Karttika. It may be noted that Sirius is the brightest star of the Earth's night sky and visible with Mrigashira constellation (Orion).

We can now easily reconstruct the two Sothic cycles based on the important inputs given by Theon of Alexandria and the epoch of the Augustan era given by Abul Fazal as attempted below:

		In CE	Commenced on	Ended on
1.	**1st Sothic Cycle**	3605-2145 BCE	**2nd Nov 3605 BCE,** Julian day = 404637, First day of the bright half of Margasirsa month (Margasirsa Sukla Pratipada).	**1st Nov 2145 BCE,** Julian day = 937901, New moon day of Karttika month.
2.	**2nd Sothic Cycle**	2145-685 BCE	**2nd Nov 2145 BCE,** Julian day = 937902, First day of the bright half of Margasirsa month (Margasirsa Sukla Pratipada).	**31st Oct 685 BCE,** Julian day = 1471165, New moon day of Karttika month/1st Day of Margasirsa.

Evidently, the Sothic cycle of Ancient Egypt commenced with **the mid-night rising of Sirius** and it has nothing to do with the heliacal rising of Sirius. Though the Sothic cycle followed a solar calendar of 365 days but it also reconciles with the lunar calendar in a cycle of 1460 years. There are 1460 solar years (365.25 days), 1506 synodic lunar years (354.09 days) and 1519 sidereal lunar years (351.06 days) in a Sothic cycle. The first day of the bright half of Margasirsa month was the beginning of the Sothic cycle and the new moon day of Karttika month was the end of the Sothic cycle. Moreover, Egyptians divided the calendar into 3 seasons (Akhit, Pert and Shemu) of 4 months each. There is a difference of opinion about the meaning of Akhit ("Starting of floods" or "the end of floods"). Interestingly, Borkhardt mentions that the records of high Nile were placed on the Palermo stone inscription under the later portion of each year which clearly indicates that the last season was the high Nile and not the first season. Thus, Akhet season was from November to February, Pert season was from March to June and Shemu season was from July to October. Therefore, it can be concluded that the mid-night rising of Sirius was linked to the beginning of the Sothic cycle and not the heliacal rising of Sirius.

Thus, the ivory tablet of ancient Egypt clearly indicates that a Sothic cycle and Egyptian calendar of 365 days commenced on 2nd Nov 3605 BCE during the reign of King Djer of the first dynasty. Total 30 dynasties reigned over Egypt before the reign of Iskandar or Alexandros (990-982 BCE) during the period 3700 BCE to 990 BCE. Historians calculated the chronology of 30 dynasties starting from 3100 BCE considering the date of Alexandros around 332-324 BCE. Evidently, the chronology of ancient Egypt has also been brought forward by ~660 years.

There are many ancient Papyrus documents that record the date of the mid-night rising of Sirius or the date of the beginning of the Sothic cycle, i.e., 2nd November. Historians miserably failed to explain these dates in Egyptian calendar and therefore, speculated some mid-course changes in the Sothic calendar without giving any supporting evidence. Interestingly, Nigidus Figulus recorded that "each Egyptian King on his accession to the throne bound himself by oath before the priest of Isis in the temple of Ptah in Memphis not to intercalate either days or months, but to retain the year of 365 days as established in ancient times". Evidently, the Egyptian calendar remained the same for the period of two Sothic cycles (3605 BCE to 685 BCE) without any changes.

We can easily explain the observations of Sirius recorded in ancient Egyptian inscriptions and Papyrus documents with reference to the beginning of the Sothic cycle as explained above.

1. A Papyrus found at Ilahun tells us that the mid-night rising of Sirius took place in the 7th regnal year of unknown king of 12th dynasty (Senusert (Usertsen) III?), eight month, sixteenth day of the fourth winter month, i.e., Pharmuthi. It clearly indicates that the calendar of 365 days advanced by 226 days (30 x 7 = 210 + 16 = 226). Considering the one day difference in four Egyptian years, we can say that the date given in this Papyrus must be 904 years after 3605 BCE. The first Sothic cycle began on 2nd Nov 3605 and 404637th Julian day which was the first day of Thoth, the first Egyptian month. Considering 329960 (904 x 365) days elapsed in 904 years, the first day of Thoth began on 21st Mar 2701 BCE and it was exactly the 734597th Julian day (404637 + 329960). These Papyrus records that the mid-night rising of Sirius took place on 226th day which regularly corresponds

to 2nd Nov 2701 BCE and it was the 734823rd Julian day (734597 + 226).

2. In the Egyptian Western Desert at Gebel Tjauti, a graffito containing the date of an observation of the rising of Sirius was found. The inscription mentions that in the year 11 of some unknown king the rising of Sirius took place on the 20th day of the second month of season Shemou, i.e., Payni the 10th month which means the Egyptian calendar advanced by 290 days. It indicates that total 1160 Egyptian years elapsed after 3605 BCE. The 1160th year has been elapsed in 2445 BCE and the first day of Thoth began on 16th Jan 2445 BCE and it was the 828037th Julian day. Thus, the mid-night rising of Sirius took place on 290th day which regularly corresponds to 2nd Nov 2445 BCE and it was the 828327th Julian day (828037 + 290).
3. The Papyrus Ebers mentions that the mid-night rising of Sirius took place in the 9th regnal year of Ser-Kepher-ra, on the 9th day of the 11th month, i.e., Epiphi which means the Egyptian calendar moved backwards by 309 days. It indicates that total 1236 Egyptian years elapsed after 3605 BCE. The 1236th year has been elapsed in 2370 BCE and the first day of Thoth began on 28th Dec 2370 BCE and it was the 855777th Julian day. These Papyrus records that the mid-night rising of Sirius took place on 309th day which regularly corresponds to 2nd Nov 2369 BCE and it was the 856086th Julian day (855777 + 309).
4. During the reign of the Shepherd King Asseth, the mid-night rising of Sirius took place on the 15th day of the 11th month, i.e., Epiphi which means the Egyptian calendar moved backwards by 315 days. It indicates that total 1260 Egyptian years elapsed after 3605 BCE. The 1260th year has been elapsed in 2346 BCE and the first day of Thoth began on 22nd Dec 2346 BCE and it was the 864537th Julian day. Thus, the mid-night rising of Sirius took place on 315th day which regularly corresponds to 2nd Nov 2345 BCE and it was the 864852nd Julian day (864537 + 315).
5. An inscription of a Egyptian King (Thothmes III?) states that the mid-night rising of Sirius took place on the 28th day of the 11th month i.e. Epiphi which means the Egyptian calendar moved backwards by 328 days. It indicates that total 1312 Egyptian years elapsed after

3605 BCE. The 1312nd year elapsed in 2294 BCE and the first day of Thoth began on 9th Dec 2294 BCE and it was the 883517th Julian day. Thus, the mid-night rising of Sirius took place on the 328th day which regularly corresponds to 2nd Nov 2293 BCE and it was the 883845th Julian day (883517 + 328).

6. The notice of Meneptah II in his 2nd year states that the mid-night rising of Sirius took place on the 29th day of the 1st month, i.e., Thoth which means the Egyptian calendar moved backwards by 29 days. This clearly indicates that the first Sothic cycle has already been completed. I have explained above that the second Sothic cycle began on 2nd Nov 2145 BCE and it was the 937902nd Julian day. Therefore, total 116 years elapsed after 2145 BCE. The 116th year has been elapsed in 2029 BCE and the first day of Thoth began on 4th Oct 2029 BCE and it was the 980242nd Julian day (937902 + 42340). Thus, the mid-night rising of Sirius took place on 29th day which regularly corresponds to 2nd Nov 2029 BCE and it was the 980271st Julian day (980242 + 29).
7. The notice found in the tomb of King Ramesses states that the mid-night rising of Sirius took place on the 1st day of the 2nd month, i.e., Paophi which means the Egyptian calendar moved backwards by 31 days. Evidently, the notice of Ramesses VI was issued 8 years after the notice of Meneptah II which was issued on 2nd Nov 2029 BCE. Thus, this notice of Ramesses VI was issued on 2nd Nov 2021 BCE.
8. **The Era of Menophres:** Most probably, the epoch of this era was the beginning of the second Sothic cycle that commenced on 2nd Nov 2145 BCE. Amenophis II (2175-2145 BCE) or his son Orus was the reigning king when the 2nd Sothic cycle commenced in 2145 BCE. Theon informs us that 1605 years had elapsed since the era of Menophres until the end of the era of Augustus. Hardinus became the Roman Emperor in 540 BCE ending the Augustus dynasty. Thus, Theon calculated 1605 years from 2145 BCE to 540 BCE indicating the epoch of the era of Menophres was in 2145 BCE. Some historians speculated that this epoch commenced from the foundation of the city of Memphis but did not give any credible evidence. Egyptians traditionally believe that the King Menes founded the city of Memphis. Therefore, the epoch of

Menophres was the beginning of the second Sothic cycle and nothing to do with the foundation of the city of Memphis.

9. The famous Canopus decree of the Macedonian King of Upper and Lower Egypt, Ptolomaios (the son of Arsinoe) states that in the 9th regnal year of King Ptolomaios, the rising of Sothis or the New year day occurs on 1st day of the second month of the season Shemu, i.e., Payni the 10th month.

The Extract of Canopus Decree

"*In year IX, 7 the month Apellaios, the 17 Tybi according to the Egyptians under the King of Upper and Lower Egypt Ptolemaios, the Everliving, Beloved of Ptah, son of Ptolemaios and Arsinoe, the Brother-gods, when the Priest of King Alexander the justified, of the Brother-Gods and of the Benevolent Gods was Apollonides, the son of Moschion, and Menekrateia, the daughter of Philammon, was Basket-bearer before Queen Arsinoe, the Brother-loving. On this day followed the Decree.*

The Temple-wardens, the Prophets, the Hierodoules Priests, all who enter 3 in the sanctuary of the gods to clothe them, the Sacred Scribes, knowing things, the Divine Fathers, and the (other) Priests in their rank assembled from Upper and Lower Egypt on 5 of the month Dios, when was celebrated the birthday fete of His Majesty, and to the 25 day of that month, when His Majesty assumed the dignity from his father; they assembled in the temple of the Benevolent Gods, which is in Petkutha and declared. Since King Ptolemaios, the Everliving, the Beloved of Ptah, son of Ptolemaios and Arsinoe, the Sister-gods, and the Ruler Berenike his sister and wife, the Benevolent Gods, have made benefits many and great to the temples of Egypt for all time: since they have ordered very greatly to the gods: since they have taken perpetual care of the things of the glorious Apis, Mnevis, and all animals of the temple which are protected in Egypt, for whom they assigned great things supplying numerous things.……

In as much as was celebrated the festival of the Benevolent Gods in all temples in each month on the 5, 9, and 25th days in consequence of a decree established before, and similarly as is celebrated a panegyry of the Great Gods, and a general feast in Egypt is celebrated yearly in its

time so shall similarly be prepared a great festival in its time to King Ptolemaios the everliving, the beloved of Ptah, and to Queen Berenike, the Benevolent Gods, in the Upper and Lower country and throughout Egypt in its entire extent, on the day of the rising of the Divine Sothis, which is called the New Year in his name in the writings of the House of Life.

At present it occurs in this 9th year on 1st day of Payni, in which month is celebrated the festival of New Year, *of the goddess Bast and the great festival of the goddess Bast in this month, and also it is the time for the collection of all fruits and rise of the Nile. But as the case will occur, that the rise of Sothis advances to another day in every 4 years, the day of the celebration of this feast, shall not pass along but it shall be celebrated on first day of Payni and the feast shall be celebrated as in the ninth year. This festival is to be celebrated for 5 days: placing wreaths of flowers on their head, and placing things on the altar, and executing the sacrifices and all ceremonies ordered to be done.*

But that these feast days shall be celebrated in definite seasons for them to keep forever, and after the plan of the heaven established on this day and that the case shall not occur, that all the Egyptian festivals, now celebrated in winter, shall not be celebrated some time or other in summer, on account of the procession of the rising of the Divine Sothis by one day in the course of 4 years, and other festivals celebrated in the summer, in this country, shall not be celebrated in winter, as has occasionally occurred in past times, therefore it shall be, that the year of 360 days and the 5 days added to their end, so one day as feast of Benevolent Gods be from this day after every 4 years added to the 5 epagomenae before the new year, whereby all men shall learn, that what was a little defective in the order as regards the seasons and the year, as also the opinions which are contained in the rules of the learned on the heavenly orbits, are now corrected and improved by the Benevolent Gods……"[1]

Undoubtedly, the Egyptian King Ptolomaios mentioned in this Decree was Ptolemy II. Ptolomaios I reined in Egypt around 984-945 BCE and Ptolomaios II ascended the throne in 945 BCE. The author of "*Chronicon Paschale*" indicates that the 127.2 Olympiad

year (929-928 BCE) was the 16th regnal year of Ptolemy II. Thus, 936 BCE was the 9th regnal year of Ptolemy II. The rising of Sothis on the first day of the 11th month clearly indicates that the Egyptian calendar advanced by 301 days in the 2nd Sothic cycle. It also indicates that total 1204 (301 x 4) years elapsed after 2145 BCE. The 1204th year had been elapsed in 940 BCE and the first day of Thoth began on 5th Jan 940 BCE and it was the 1377727th Julian day. Thus, the mid-night rising of Sirius took place on the 1st day of the 10th month, i.e., Payni which regularly corresponds to 2nd Nov 941 BCE. Interestingly, this Canopus decree informs us that King Ptolomaios introduced intercalation of one day, i.e., an additional day to be added to the last 5 days of intercalary month "*Epagomenae*" at the end of the Egyptian year after every 4 years. The year 936 BCE was purposefully selected to introduce the intercalation of one day because 936 BCE was the 4th year of the cycle of 940-936 years.

10. Censorinus, a Roman grammarian, was the author of the treatise "*De Die Natali*". He dedicated his treatise to his patron Quintus Caerellius. Censorinus mentions the current year as the 986th year from the epoch of the Nabonassarian era (1406 BCE), the 562nd year from the epoch of the Philippos era (982 BCE), the 1014th (254 II) year from the epoch of the first Olympiad (1434 BCE) and the 265th year from the Augustan era (685 BCE). Evidently, Censorinus wrote his work in 420 BCE. Interestingly, Censornius says that the Egyptian new year, i.e., the first day of the first month Thoth fell on 7th day before the Calends of September but 100 years ago (520 BCE) when Emperor Antoninus Pius was consul for the second time, and Bruttius Praesens was the other consul, the same day fell on the 12th day before Calends of October. Theon of Alexandria mentions that the second Sothic cycle ended in 685 BCE and the Egyptian New Year was on 31st Oct 685 BCE, i.e., the 1st day of Thoth and the Julian day was 1471165. Considering 165 Egyptian years elapsed in 520 BCE, the first day of Thoth fell on 19th Sep 520 BCE which was the 12th day before Calends of October and the Julian day was 1531390 (1471165 + 60225). Similarly, considering 265 Egyptian years elapsed in 420 BCE, the first day of Thoth fell on 25th Aug 420 BCE which was the

7th day before Calends of September and the Julian day was 1567890 (1471165 + 96725). Thus, we can perfectly explain the verifiable details of the dates in Egyptian calendar given by Censornius and fix the date of Censornius accurately around 420 BCE. Historians have fixed the date of Censornius in 239 CE but miserably failed to explain the verifiable dates given by Censornius.

As explained the ten verifiable ancient observations of the rising of Sirius, it is evident that the Egyptian calendar of 365 days and the Sothic cycle calendar commenced on 2nd Nov 3605 BCE and continued to be in vogue till 685 BCE and beyond (till the time of Theon) without any changes. Francis A Cunningham attempted to fix the epoch of the Sothic cycle in 19th July 3004 BCE and speculated that the Egyptian calendar has been undergone certain changes in 1744 BCE and 1321 BCE but did not give any concrete evidence. The chronological error of ~660 years led the historians to speculate that the Egyptian New Year commenced on 19th July coinciding with the heliacal rising of Sirius but in reality, the Egyptian New Year commenced on 2nd November coinciding with the mid-night rising of Sirius.

The Chronology of the Thirty Royal Dynasties of Ancient Egypt

According to historians, thirty royal dynasties reigned over Ancient Egypt before Alexander. Manetho was the first who wrote the chronology of Egypt but unfortunately it is available only in fragments. Later, Africanus, Josephus, etc. also provided the chronology of Egypt. Before discussing the traditional chronology of Egypt based on the Sothic cycle calendar, let us understand how European historians have distorted the dynastic chronology of Egypt. The Chronology of Egypt as arrived by the historians:[2]

The Archaic Period (3063-2649 BCE)

The 1st Dynasty: 214 Years

1	Narmer	3063-2849 BCE
2	Hor-Aha	
3	Djer	
4	Djet	
5	Den	

6	Anedjib	3063-2849 BCE
7	Semerkhet	
8	Qa'a	

The 2nd Dynasty: 200 Years

1	Hotepsekhemwy	2849-2649 BCE
2	Raneb	
3	Nynetjer	
4	Sekhemib	
5	Sendji	
6	Nubnefer	
7	Neferkare	
8	Neferkasokar	
9	Khasekhemwy	

The Old Kingdom Period (2649-2150 BCE)

The 3rd Dynasty (2649–2575 BCE)

Zanakht	2649–2630 BCE
Djoser	2630–2611 BCE
Sekhemkhet	2611–2605 BCE
Khaba	2605–2599 BCE
Huni	2599–2575 BCE

The 4th Dynasty (2575–2465 BCE)

Snefru	2575–2551 BCE
Khufu	2551–2528 BCE
Djedefre	2528–2520 BCE
Khafre	2520–2494 BCE
Nebka II	2494–2490 BCE
Menkaure	2490–2472 BCE
Shepseskaf	2472–2467 BCE
Thamphthis	2467–2465 BCE

The 5th Dynasty (2465–2323 BCE)

Userkaf	2465–2458 BCE

Sahure	2458–2446 BCE
Neferirkare	2446–2438 BCE
Shepseskare	2438–2431 BCE
Neferefre	2431–2420 BCE
Niuserre	2420–2389 BCE
Menkauhor	2389–2381 BCE
Isesi	2381–2353 BCE
Unis	2353–2323 BCE

The 6th Dynasty (2323–2150 BCE)

Teti	2323–2291 BCE
Userkare	2291–2289 BCE
Pepi I	2289–2255 BCE
Merenre I	2255–2246 BCE
Pepi II	2246–2152 BCE
Merenre II	2152–2152 BCE
Netjerkare Siptah	2152–2150 BCE

The First Intermediate period (2150-2030 BCE)

The 8th, 9th & 10th Dynasties (2150–2030 BCE)

The 11th Dynasty (2124–2030 BCE)

Mentuhotep I	2124–2120 BCE
Intef I	2120–2108 BCE
Intef II	2108–2059 BCE
Intef III	2059–2051 BCE
Mentuhotep I	2051–2030 BCE

The Middle Kingdom Period (2030-1640 BCE)

The Second term of the 11th Dynasty (2030–1981 BCE)

Mentuhotep II	2030–2000 BCE
Mentuhotep III	2000–1988 BCE
Qakare Intef	1985 BCE
Sekhentibre	1985 BCE
Menekhkare	1985 BCE

Mentuhotep IV	1988–1981 BCE
The 12th Dynasty (1981–1802 BCE)	
Amenemhat I	1981–1952 BCE
Senwosret I	1961–1917 BCE
Amenemhat II	1919–1885 BCE
Senwosret II	1887–1878 BCE
Senwosret III	1878–1840 BCE
Amenemhat III	1859–1813 BCE
Amenemhat IV	1814–1805 BCE
The 13th Dynasty (1840-1640 BCE)	
The Second Intermediate Period (1640-1540 BCE)	
The 14th, 15th and 16th Dynasty (1640-1635 BCE)	
The 17th Dynasty (1635-1550 BCE)	
Tao I	1560 BCE
Tao II	1560 BCE
Kamose	1552–1550 BCE
The New Kingdom Period (1550–1070 BCE)	
The 18th Dynasty (1550–1295 BCE)	
Ahmose	1550–1525 BCE
Amenhotep I	1525–1504 BCE
Thutmose I	1504–1492 BCE
Thutmose II	1492–1479 BCE
Thutmose III	1479–1425 BCE
Hatshepsut (as regent)	1479–1473 BCE
Hatshepsut	1473-1458 BCE
Amenhotep II	1427–1400 BCE
Thutmose IV	1400–1390 BCE
Amenhotep III	1390–1352 BCE
Amenhotep IV	1353–1349 BCE
Akhenaten	1349–1336 BCE
Neferneferuaton	1338–1336 BCE

Smenkhkare	1336 BCE
Tutankhamun	1336–1327 BCE
Aya	1327–1323 BCE
Haremhab	1323–1295 BCE
The 19th Dynasty (1295–1186 BCE)	
Ramesses I	1295–1294 BCE
Seti I	1294–1279 BCE
Ramesses II	1279–1213 BCE
Merneptah	1213–1203 BCE
Amenmesse	1203–1200 BCE
Seti II	1200–1194 BCE
Siptah	1194–1188 BCE
Tawosret	1188–1186 BCE
The 20th Dynasty (1186–1070 BCE)	
Sethnakht	1186–1184 BCE
Ramesses III	1184–1153 BCE
Ramesses IV	1153–1147 BCE
Ramesses V	1147–1143 BCE
Ramesses VI	1143–1136 BCE
Ramesses VII	1136-1129 BCE
Ramesses VIII	1129-1126 BCE
Ramesses IX	1126-1108 BCE
Ramesses X	1108-1099 BCE
Ramesses XI	1099-1070 BCE
High Priests of Amun	1080-1070 BCE
High Priests of Herihor	1080–1074 BCE
High Priests of Paiankh	1074-1070 BCE

The Third Intermediate Period (1070-713 BCE)

The 21st Dynasty (1070-945 BCE)	
Smendes	1070–1044 BCE
High Priests of Painedjem I	1070-1032 BCE

High Priests of Masaharta	1054-1046 BCE
High Priests of Djedkhonsefankh	1046-1045 BCE
High Priests of Menkheperre	1045-992 BCE
Amenemnisu	1044–1040 BCE
Psusennes I	1040–992 BCE
Amenemope	993–984 BCE
HP Smendes	992-990 BCE
HP Painedjem II	990-969 BCE
Osochor	984–978 BCE
Siamun	978–959 BCE
HP Psusennes	969–959 BCE
Psusennes II	959–945 BCE
The 22nd Dynasty (Libyan) 945-712 BCE	
Sheshonk I	945–924 BCE
Osorkon I	924–889 BCE
Sheshonk II	890 BCE
Takelot I	889–874 BCE
Osorkon II	874–850 BCE
Harsiese	865 BCE
Takelot II	850–825 BCE
Sheshonk III	825–773 BCE
Pami	773–767 BCE
Sheshonk V	767–730 BCE
Osorkon IV	730–712 BCE
The 23rd Dynasty (818-713 BCE)	
Pedubaste I	818–793 BCE
Iuput I	800 BCE
Sheshonq IV	793–787 BCE
Osorkon III	787–759 BCE
Takelot III	764–757 BCE
Rudamun	757–754 BCE

Iuput II	754–712 BCE
Peftjaubast	740–725 BCE
Namlot	740 BCE
Thutemhat	720 BCE
The 24th Dynasty (724-712 BCE)	
Tefnakht	724–717 BCE
Bakenrenef	717–712 BCE
The Late period (712-332 BCE)	
The 25th Dynasty (712-664 BCE)	
Piye *(establishes Nubian Dynasty in Egypt)*	743–712 BCE
Shabaqo	712-698 BCE
Shebitqo	698–690 BCE
Taharqo *(loses control of Lower Egypt)*	690–664 BCE
Tanutamani *(loses control of Upper Egypt)*	664–653 BCE
The 26th Dynasty (Saite) 688-525 BCE	
Nikauba	688–672 BCE
Necho I	672–664 BCE
Psamtik I	664–610 BCE
Necho II	610–595 BCE
Psamtik II	595–589 BCE
Apries	589–570 BCE
Amasis	570–526 BCE
Psamtik III	526–525 BCE
The 27th Dynasty (Persian) 525-404 BCE	
Cambyses	525–522 BCE
Darius I	521–486 BCE
Xerxes I	486–466 BCE
Artaxerxes I	465–424 BCE
Darius II	424–404 BCE
The 28th Dynasty (522-399 BCE)	
Pedubaste III	522–520 BCE

Psamtik IV	470 BCE
Inaros	460 BCE
Amyrtaios I	460 BCE
Thannyros	445 BCE
Pausiris	445 BCE
Psamtik V	445 BCE
Psamtik VI	400 BCE
Amyrtaios II	404–399 BCE
The 29th Dynasty (399-380 BCE)	
Nepherites I	399–393 BCE
Psammuthis	393 BCE
Achoris	393–380 BCE
Nepherites II	380 BCE
The 30th Dynasty (380-343 BCE)	
Nectanebo I	380–362 BCE
Teos	365–360 BCE
Nectanebo II	360–343 BCE
The Reign of Persians (343-332 BCE)	
Khabebesh	343–332 BCE
Artaxerxes III Ochus	343–338 BCE
Arses	338–336 BCE
Darius III Codoman	335–332 BCE
Macedonian Period (332-304 BCE)	
Alexander the Great	332-323 BCE
Philip Arrhidaeus	323–316 BCE
Alexander IV	316–304 BCE
Ptolemaic Period (304-30 BCE)	

The chronology of ancient Egypt and the chronological order of 30 dynasties as reconstructed by the modern historians differ from the chronology given by the ancient historians and the chronological order of dynasties given in the inscriptions and Papyrus records. Apparently,

modern historians edited and distorted the chronology of Egypt considering the fictitious epoch of 1 CE as sheet anchor. Isaac Newton had contracted the chronology of Egypt by ~825 years to ~660 years.

The True Chronology of Ancient Egypt

Manetho, the ancient historian of Egypt who lived around 950-850 BCE and an Egyptian by birth, divided the history of Egypt into 30 dynasties from the first King Menes to Alexander the Great (990-982 BCE). However, there is no clear understanding of what a 'dynasty' meant in Manetho's account. Unfortunately, we do not have the complete version of Manetho's work but only some edited extracts in the writings of the Jewish historian, Josephus (6th century BCE), whose work was a basic traditional source for studying ancient Egypt. We also have the works of Christian historians, Africanus, Eusebius and Syncellus.

We also have the epigraphic sources like Palermo Stone inscription, a Papyrus record of the Turin Canon of Kings and the inscriptions on temple or tomb walls known as the Table of Abydos, the Table of Karnak & the Table of Saqqara. The Palermo Stone inscription is fragmentary and gives the list of first five dynasties starting from King Menes as given by Manetho. The Turin Canon (Papyraus record) has been damaged while transporting from Egypt to Italy and only available in fragments. The Abydos list gives the list of 76 Kings up to King Menpehitra and Menmaatra. The Karnak list gives the names of 61 kings. The Saqqara tablet gives the list of 58 Kings from bottom to top from User-maat-ra Setep-en-ra, Men-maat-ra and Men-pehty-ra to Merbapen.

In fact, Ancient Egyptians dated their inscriptions in regnal years and sometimes referred to the dates of the rising of Sirius. Since we do not have the chronological order of the reigns, we have to follow the traditional consecutive order of Kings and fix the chronology based on the dates of the Sothic cycle, historical references and scientific and archaeological evidence.

The Sheet Anchor Dates for the History of Egypt (5867 BCE onwards)

Archaeological evidence suggests that the Nile valley was inhabited by the farming communities around 7000-6000 BCE. The traditional dynastic

history of Egypt began around 5867 BCE. According to Jeans Francois Champollion, the traditional sources of Egypt indicate the date of the first king Menes around 5867 BCE. But Modern historians divided the dynastic period into two categories, Early-Dynastic (5000-3100 BCE) and Dynastic (from 3100 BCE onwards). Historians fixed the date of the King Djer based on the carbon dating of the ivory tablet and propounded that the reign of the first dynasty started around 3100 BCE but this approach conveniently ignores or accepts the ancient dates of the Sothic cycles. I have already established that the first Sothic cycle began on 2nd Nov 3605 BCE with the mid-night rising of Sirius and this cycle has nothing to do with the heliacal rising of Sirius.

Ancient Egyptians only recorded that Sirius is the opener of the Year. Moreover, the annual flooding of Nile River used to last for ~105 days and the flood water used to recede by the month of October. Sun used to be in Scorpio (Vrischika) sign during the October and entered Sagittarius sign (Dhanu) on 20th Oct to 27th Oct around 4500-3600 BCE. Therefore, Egyptians probably marked the Vrischika Rasi as the last month of the solar calendar and it also coincided with the end of annual flooding of Nile River. Ancient Egyptians might have followed a calendar of 360 days before the introduction of the Sothic cycle calendar of 365 days.

The ivory tablet clearly tells that the rising of Sirius occurred on the first day of the first month (Thoth) of the first season Akhet during the reign of King Djer. Therefore, the first Sothic cycle commenced on 2nd Nov 3605 BCE. Thus, we can accurately fix the date of King Djer around 3605 BCE. The ivory tablet has been radiocarbon dated around 3218-3035 BCE by the historians. Firstly, the domain logic of radiocarbon dating is apparently biased to the chronology based on the fictitious epoch of 1 CE. Secondly, the historians generally calibrate the radiocarbon data to match their chronological framework. Thus, I assume that there is an error of 300 to 660 years in the domain logic of radiocarbon dating and its calibration methods. Therefore, I have dated King Djer and King Scorpio based on the astronomical epoch of the Sothic cycle.

As I have already explained that the Sothic cycle commenced on 2nd Nov 3605 BCE and also calculated certain ancient dates recorded in

inscriptions and Papyrus, the following dates of the Sothic cycle must be considered as sheet anchors of Egyptian chronology.

		In CE
1.	An ivory tablet carbon dated around 3214-3034 BCE indicates that the mid-night rising of Sirius took place on the first day of the first month of Egyptian calendar during the reign of King Djer of the first dynasty.	2nd Nov 3605 BCE
2.	The Papyrus found at Illahun mentions that the mid-night rising of Sirius took place in the 7th regnal year of unknown king, eight month, sixteenth day of the fourth winter month, i.e., Pharmuthi.	2nd Nov 2701 BCE
3.	The Papyrus Ebers mentions that the mid-night rising of Sirius took place in the 9th regnal year of Ser-Kepher-ra?, on the 9th day of the 11th month, i.e., Epiphi.	2nd Nov 2370 BCE
4.	During the reign of the Shepherd King Asseth, the mid-night rising of Sirius took place on the 15th day of the 11th month, i.e., Epiphi.	2nd Nov 2346 BCE
5.	An inscription of Thothmes III states that the mid-night rising of Sirius took place on the 28th day of the 11th month, i.e., Epiphi.	2nd Nov 2294 BCE
6.	The era of Menephros commenced when the 2nd Sothic cycle commenced.	2nd Nov 2145 BCE
7.	The notice of Meneptah II? in his 2nd year states that the mid-night rising of Sirius took place on the 29th day of the 1st month, i.e., Thoth.	2nd Nov 2029 BCE
8.	The notice found in the tomb of King Ramesses states that the mid-night rising of Sirius took place on the 1st day of the 2nd month, i.e., Paophi.	2nd Nov 2021 BCE

9.	The rising of Sirius occurred in the second month of Akhet, the 13th day in the fourth year of the rule of Tutmosis.	2nd Nov 1973 BCE

The Chronology of Egypt as Given by Herodotus

Herodotus, a senior contemporary of Socrates (1110-1050 BCE), gives the chronology of Egypt. According to him, 330 Kings reigned in Egypt and the first King was Min or Menes. He records that Sesostris became the king of Egypt 900 years before him who conquered whole world. Pheros succeeded him and lived at the time of the Trojan War (1842 BCE). Rhampsinitus, Chepos, Chepharn and Mycerinus were the next kings of Egypt. They are credited with the building of the three Pyramids at Gizeh. Next king was Asychis who also built a Pyramid. Anysis became the next Ruler but he loses his kingdom to the Kushite king Sabacus. Anysis lived 700 years before Herodotus. Later, Sabacus returns the kingdom back to Anysis. Priest Sethos succeeded Anysis. During his reign, Assyrian king Sennacherib attacked Egypt. The chronology as given by Herodotus:

			In CE
1.	Sesostris	40 y	1950-1910 BCE
2.	Pheros or Proteus	10 y	1910-1900 BCE
3.	Rhampsinitus	20 y?	1900-1880 BCE
4.	Chepos	50 y	1880-1830 BCE
5.	Chepharn	56 y	1830-1780 BCE
6.	Mycerinus	6 y	1780-1774 BCE
7.	Asychis	10 y?	1774-1764 BCE
8.	Anysis	-	1764-1760 BCE
9.	Sabacus	-	1760-1710 BCE
10.	Sethos	-	1710-1700 BCE

After Sethos, Herodotus tells about the reign of 12 rulers (foreign rulers?) who divided the Egypt. Psammetichus again reunites the country. He was succeeded by his son Necho who conquered Gaza. His successors are Psammis and Aprices who successfully campaigned in Phoenicia.

The Chronological References from Literary Sources

1. Josephus identified the Exodus of Israelites with Manetho's account of the expulsion of the Hyksos kings (Shepherd kings) when some 480000 Hyksos left Egypt to Jerusalem. Traditionally, the 15th dynasty rulers of northern Egypt were called Hyksos. Hyksos means the rulers of foreign countries in Egyptian language. Josephus mistranslated Hyksos as Shepherd king. Manetho said that the Hyksos ruled for 511 years. The date of invasion of Egypt by Hyksos needs to be fixed.
2. Manetho mentions that Moses led the Exodus of Jews during the reign of Achencherses, the 9th king of the 18th dynasty.
3. Bible states that the Israelites were forced to build a store in the city of Ramses, a city founded by Ramesses. Thus, it is generally assumed by the historians that King Ramesses II caused the oppression of the Israelites in Egypt that resulted in Exodus of Jews from Egypt.
4. Undoubtedly, a King named Menophres was the ruling King when the 2nd Sothic cycle commenced in 2145 BCE. Some historians identified him to be Amenophis or Amenophthis, the 3rd King of 18th dynasty of Manetho.
5. Francois Champollion identified the biblical Shishank as Shoshenk I of the 22nd dynasty (Libyan) who despoiled the Temple of Yahweh in the 5th year of Solomon's son Rehoboam [1 Kings 14:25].
6. The city of Thebes was sacked by the Assyrian King, Ashurbanipal around 1324 BCE in retaliation for a revolt led by Egyptian King Taharka.

The Reconstructed True Chronology of Ancient Egypt

As discussed, the various facts above let us reconstruct the true chronology of ancient Egypt regarding the epoch of the first Sothic cycle (2nd Nov 3605 BCE).

The Archaic Period (5867-3650 BCE)

Herodotus says that more than 330 Pharaohs or Kings reigned in Egypt. The Turin Canon has 244 rows but we could get only 80 or 90 names of the Kings. Interestingly, the names of first four dynasties given in the lists

of Abydos & Saqqara and the lists of Palermo stone & Manetho do not match at all as shown below:

	Manetho & Palermo Stone	**Abydos & Saqqara**
The 1st Dynasty		
1	Menes	Meni
2	Athothis	Teti
3	Kenkenes	Iti
4	Wenefes/Ouenphes	Ita
5	Usaphaidos/Ousaphaidos	Septi
6	Miebis/Miebidos	Meribiapen
7	Semempses	Semsu
8	Bieneches	Qebeh
The 2nd Dynasty		
1	Boethos	Bedjau
2	Kaiechos	Kakau
3	Binothris	Banetjer
4	Thias	Wadjnas
5	Sethenes	Sendi
6	Chaires	Djadjay
7	Neferkheres	---
8	Sesochris	---
9	Kheneres or Cheneris	---
The 3rd Dynasty		
1	Necherophes	Nebka
2	Tosorthios	Djeser-za
3	Tyreis	Teti
4	Mesochris	Sedjes
5	Suphis	Neferkara
6	Toserfasis	---
7	Aches	---
8	Sephouris	---

9	Kerferes	---
The 4th Dynasty		
1	Soris	Sneferu
2	Suphis I	Khufu
3	Suphis II	Djedefre
4	Mencheres	Khafra
5	Ratoises	Menkaura
6	Bicheris	Shepseskaf
7	Mencheres	Shepseskaf
8	Sebercheres	Djedefptah/Thamphthis
9	Tamphtis	---

Evidently, Egyptians had the lists of many dynasties flourished before the beginning of the 1st Sothic cycle (3605-2145 BCE). Most probably, the names of the kings of four dynasties as given by Manetho and Palermo stone may belong to the period before 3605 BCE. Hecataeus of Abdera was probably a senior contemporary of Manetho (950-850 BCE). He stated that Egyptians had a dynastic history of 4700 years. He assigned 470 native kings, 4 Ethiopian Kings and 5 Queens to the interval from Menes to the Persian conquest in 1184 BCE. Manetho also mentions that Egypt had a dynastic history of 5471 years up to the date of Alexander the Great (982 BCE) which indicates the date of King Menes around 6453 BCE. Interestingly, Duncan Macnaughton followed Hecataeus & Manetho and presented the Egyptian chronology in 1932 starting from 5776 BCE.[3]

In all probability, King Menes was the earliest king of Egypt whereas King Narmer was the first king of the first dynasty of the first Sothic cycle. Thus, we can conclude that Menes and Atithos were the earliest kings of the Egypt in great antiquity (from 6453 BCE to 5700 BCE) whereas Meni (Mni), Teti and Iti were the kings of the dynasty who reigned around the beginning of the epoch of the first Sothic cycle. Archaeological evidence suggests that many kings like Scorpion I, Iry-Hor, Ka, Scorpion II, etc. reigned in Egypt before the time of King Djer.

It is difficult to say conclusively about the king, who has introduced the Egyptian calendar of the Sothic cycle on 2nd Nov 3605 BCE but undoubtedly, King Menes flourished much before 3605 BCE. Abydos kings list and Saqqara Kings list were engraved on the walls during the reign of Ramesses II. The treaty between Ramesses II and Hittite King Hattusilis was signed around 2400-2380 BCE and the date of this treaty must be considered as the sheet anchor of Egyptian chronology. This treaty was made in the 21st regnal year of King Ramesses II as recorded in a Tablet. We will discuss the date of this treaty in the context of the chronology of Hittite Kings. I have followed the chronicle of Eusebius to arrive the chronology of Egypt because he had the access to the original works of Manetho.

The Egyptian Chronology Given by Eusebius:

	No. of Kings	**No. of years**	**In CE**
First book of Manetho			
1st Dynasty (Thinis city)	8	252	~5867 BCE to ~3000 BCE
2nd Dynasty	9	297	
3rd Dynasty (Memphis city)	8	197	
4th Dynasty	17	448	
5th Dynasty (Elephantine)	31	NA (400?)	
6th Dynasty	NA (70?)	203	
7th Dynasty (Memphis)	5	75	
8th Dynasty	5	100	
9th Dynasty (Heraclepolis)	4	100	
10th Dynasty	19	185	
11th Dynasty (Diospolis)	16	43	
	192	2300 years	

Second book of Manetho			
12th Dynasty (Diospolis)	7	245	From ~3000 BCE to 2420 BCE
13th Dynasty	60	453	
14th Dynasty (Xois)	76	484	
15th Dynasty	17?	250	
16th Dynasty (Thebes)	5?	190	2420-2230 BCE
17th Dynasty (Shepherds or foreign kings who captured Memphis.)	4	103	24th century BCE
18th Dynasty (Diospolis)	14	292 (348?)	2320-2028 BCE
19th Dynasty	5	194	2028-1834 BCE
	92	2121 years	
Third book of Manetho			
20th Dynasty	12	172	1834-1662 BCE
21st Dynasty (Tanis)	7	130	1662-1532 BCE
22nd Dynasty (Bubastis)	3	49	1532-1483 BCE
23rd Dynasty (Tanis)	3	44	1483-1439 BCE
24th Dynasty (Sais)	1	44	1439-1395 BCE
25th Ethiopian Dynasty	3	3	1395-1351 BCE
26th Dynasty (Sais)	9	167	1351-1184 BCE
27th Persian Dynasty	8	120 y 4 m	1183-1063 BCE
28th Dynasty (Sais)	1	16 (6?)	1063-1047 BCE
29th Dynasty (Mendes)	4	21 y 4 m	1047-1026 BCE
30th Dynasty (Sebennytus)	3	20 y	1026-1006 BCE
31st Persian Dynasty	3	16	1006-990 BCE
Alexander the Great		8 y	990-982 BCE

According to Manetho, Moses led the Exodus of Jews (2138 BCE) during the reign of Achencherses, the 9th king of the 18th dynasty. He also says that the fall of troy (1842 BCE) occurred during the reign of Thuoris, the last king of the 19th dynasty. Manetho lived around 950-850 BCE. Therefore, we must consider the chronological account of Manetho as factual and accurate at least from the 18th dynasty to Alexander. The date of the treaty between Egyptian King Ramesses II and Hittite King Hattusilis also validates the chronology of the 16th dynasty. Thus, we can accurately arrive at the chronology of Egypt from the 16th dynasty onwards.

Interestingly, Eusebius quotes Manetho and gives the account of Hyksos (Shepherd kings?) invasion on Egypt in the 24th century BCE. He narrates; "During the reign of Tutimaeus, it happened, I know not why, that God was angry with us, and there came, unexpectedly, men of ignoble birth from the east, and they were bold enough to make an expedition into our country, and easily subdued it by force, because we did not even hazard a battle with them. So when they had overpowered our rulers, they afterwards burnt down our cities, and demolished the temples of the gods, and treated all the inhabitants in the most barbarous manner. Some of them they slew, and led their children and their wives into slavery. At length they made one of themselves king, whose name was Salitis; he also lived at Memphis, and he made both the upper and lower regions pay tribute, and left garrisons in places that were the most suitable for them. He chiefly aimed to secure the eastern parts, because he foresaw that the Assyrians, who were the most powerful people of that time, would want to seize his kingdom, and invade it. He found in the Sethroite nome, a city very suitable for this purpose, on the east side of the Bubastic channel of the river, which for theological reasons was called Avaris. He rebuilt it, and made it very strong by the walls he built around it, and put in a very large garrison of two hundred and forty thousand armed men, to guard it. Salitis came there in summer time, partly to gather his corn, and pay his soldiers their wages, and partly to exercise his armed men, and thereby to intimidate foreigners. After this man had reigned nineteen years, another, whose name was Bnon, reigned for forty-four years; after him reigned another, called Apachnas, thirty-six years and seven months; after him Apophis reigned sixty-one years, and then Jannas fifty years

and one month; after all these, Assis reigned for forty-nine years and two months. And these six were the first rulers among them, who were all along making war with the Egyptians, and wanted gradually to eradicate them. This whole nation was styled Hyksos, that is, 'shepherd-kings': for the first syllable *hyk*, according to the sacred dialect, denotes 'a king', and *sos* is 'a shepherd.'"

"These people, whom we have before named kings, and called shepherds also, and their descendants," as he says, "kept control of Egypt for five hundred and eleven years." After this, he says, "The kings of Thebais and the other parts of Egypt rebelled against the shepherds, and a terrible and long war was fought between them. A king, whose name was Misphragmuthosis, subdued the shepherds, and after driving them out of the other parts of Egypt, he shut them up in a place that contained ten thousand arourai; this place was named Avaris."

Manetho adds, "The shepherds built a large and strong wall round this entire place, in order to keep all their possessions and their prey within a place of strength, but Thummosis the son of Misphragmuthosis made an attempt to take them by force and by siege, surrounding them with an army of four hundred and eighty thousand men. But, despairing of taking the place by siege, he came to an agreement with them, that they should leave Egypt, and go, without suffering any harm, wherever they chose; and, after this agreement was made, they went away with all their families and possessions, not fewer in number than two hundred and forty thousand, and travelled out of Egypt, through the wilderness, towards Syria. But as they were in fear of the Assyrians, who were then the rulers of Asia, they built a city in that country which is now called Judaea; the city was large enough to contain this great number of men, and they called it Jerusalem."

He says: "When this people or shepherds left Egypt and went to Jerusalem, Tethmosis the king of Egypt, who drove them out, reigned for another twenty-five years and four months, and then he died; after him his son Chebron took the kingdom for thirteen years; after whom came Amenophis, for twenty years and seven months; then came his sister Amesses, for twenty-one years and nine months; then came her son

Mephres, for twelve years and nine months; after him was Mephramuthosis, for twenty-five years and ten months; after him was Thmosis, for nine years and eight months; after him came Amenophis, for thirty years and ten months; after him came Orus, for thirty-six years and five months; then came his daughter Acenchres, for twelve years and one month; then was her brother Rathotis, for nine years; then came his son Acencheres, for twelve years and five months; then came another Acencheres, for twelve years and three months; after him Armais, for four years and one month; after him was Ramesses, for one year and four months; after him came Armesses Miamun, for sixty-six years and two months; after him Amenophis, for nineteen years and six months; after him came Sethosis, also called Ramesses, who had an army of cavalry, and a strong navy. This king appointed his brother, Armais, to be his deputy over Egypt. He also gave him all the other authority of a king, except that he instructed him, that he should not wear the diadem, nor do any harm to the queen, the mother of his children, and that he should not meddle with the other concubines of the king. Then he made an expedition against Cyprus, and Phoenicia, and besides against the Assyrians and the Medes. He subdued them all, some by his arms, some without fighting, and some by the terror of his great army; and being puffed up by the great successes he had had, he went on still more boldly, and overthrew the cities and countries that lay in the east. But after some considerable time, Armais, who was left in Egypt, recklessly did all those very things, which his brother had forbidden him to do. He used violence against the queen, and continued to make use of the rest of the concubines, without sparing any of them. At the persuasion of his friends he put on the diadem, and set up in opposition to his brother. But then the chief of the priests in Egypt wrote letters to Sethosis, and informed him of all that had happened, and how his brother had set up in opposition to him. Sethosis therefore returned back to Pelusium immediately, and recovered his kingdom again."[4]

Manetho clearly tells us that some shepherds came to inhabit Northern Egypt in the 28th century BCE and four Hyksos kings ruled over some parts of Egypt for 103 years in the 24th century BCE. Biblical Joseph lived during the time of Hyksos kings whose bones have been taken to Jerusalem by Moses in 2138 BCE. Though Manetho lists these Hyksos

kings as the 17th dynasty but most probably, they were the parallel rulers along with the last kings of the 16th dynasty and the first king of the 18th dynasty.

Let us reconstruct the chronology of Egypt considering the kings list of Abydos up to the 15th dynasty and the kings list given by Manetho from the 16th dynasty onwards.

Abydos Kings List (1st dynasty to 15th dynasty)		**In CE**
1.	Meni or Mni	
2.	Teti	
3.	Iti	
4.	Ita	
5.	Septi	
6.	Meribiapen	
7.	Semsu	
8.	Qebeh	
9.	Bedjau	
10.	Kakau	
11.	Banetjer	
12.	Wadjnas	
13.	Sendi	
14.	Djadjay	
15.	Nebka	From Archaic period
16.	Djeser-za	to 2420 BCE
17.	Teti	
18.	Sedjes	
19.	Neferkara	
20.	Sneferu	
21.	Khufu	
22.	Djedefre	
23.	Khafra	
24.	Menkaura	
25.	Shepseskaf	
26.	Userkaf	
27.	Sahure	
28.	Kakai	
29.	Neferefre	

30. Nyuserre
31. Menkauhor
32. Djedkare
33. Unis
34. Teti
35. Userkare
36. Meryre
37. Merenre
38. Neferkare
39. Merenre Saemsaf
40. Netjerikare
41. Menkare
42. Neferkare
43. Neferkare Neby
44. Djedkare Shemai
45. Neferkare Khendu
46. Merenhor
47. Sneferka
48. Nikare
49. Neferkare Tereru
50. Neferkahor
51. Neferkare Pepiseneb
52. Sneferka Anu
53. Kaukara
54. Neferkaure
55. Neferkauhor
56. Neferirkare
57. Nebhepetre
58. Sankhkare
59. Sehetepibre
60. Kheperkare
61. Nubkaure
62. Khakheperre
63. Khakaure
64. Nimaatre
65. Maakherure
66. Nebpehtira
67. Djeserkara
68. Aakheperkara

From Archaic period to 2420 BCE

69.	Aakheperenra	From Archaic period to 2420 BCE
70.	Menkheperra	
71.	Aakheperura	
72.	Menkheperura	
73.	Nebmaatra	
74.	Djeserkheperura Setepenra	

The 16th Dynasty

75.	Menpehtira or Ramesses I	2420-2418 BCE
76.	Menmaatra or Seti I	2418-2405 BCE
77.	Amenophis or Ramesses II or User-maat-ra Setep-en-ra (as mentioned in Saqqara Tablet)	2405-2339 BCE
78.	Merneptah	2339-2329 BCE
79.	Amenmesse	2329-2326 BCE
80.	Seti II	2326-2320 BCE
81.	Siptah	2320-2314 BCE
82.	Tawosret	2314-2311 BCE

The 17th Dynasty (Hyksos Kings)

(They had established a city in the Sethroite nome.)

	Saites (19 y)	2564-2545 BCE
	Bnon (44 y)	2545-2501 BCE
	Apachnas (36 y 6 m)	2501-2465 BCE
	Apophis (61 y)	2465-2404 BCE
	Jannas (50 y 1 m)	2404-2354 BCE
	Assith (49 y 2 m)	2354-2305 BCE

The 18th Dynasty

83.	Thutmose I (25 y 4 m)	2305-2280 BCE
84.	Chebron (13 y)	2280-2267 BCE
85.	Amenophis I (20 y 7 m)	2267-2247 BCE
86.	Amasis (21 y 9 m) sister of sl no. 86	2246-2224 BCE
87.	Mephres (12 y 9 m)	2224-2211 BCE
88.	Mephramuthosis (25 y 10 m)	2211-2185 BCE
89.	Thutmosis (9 y 8 m)	2185-2175 BCE
90.	Amenophis II (30 y 10 m)	2175-2145 BCE

(Most probably, Amenophis was referred to as King Menophres by Theon of Alexandria. The second Sothic cycle began on 2nd Nov 2145 BCE at the end of the reign of Amenophis which was referred to as the era of Menophres.)

91.	Orus (36 y 5 m)	2144-2108 BCE

(The Exodus of Israelites might have taken place in 2138 BCE during the time of Orus.)

92.	Acenchres I (12 y 1 m), Daughter of Orus	2108-2096- BCE

(Manetho says that the Exodus of Israelites took place during the eign of Acenchers. Seemingly, Israelites left Egypt during the reign of Orus and settled in Jerusalem during the reign of Acenchres I.)

93.	Rathotis (9 y)	2096-2087 BCE
94.	Acencheres (12 y 5 m)	2087-2075 BCE
95.	Acencheres II (12 y 3 m)	2075-2063 BCE
96.	Armais (4 y 1 m)	2063-2059 BCE
97.	Ramesses (1 y 4 m)	2059-2058 BCE
98.	Armesses Miamun (66 y 2 m)	2058-1992 BCE
99.	Amenophis (19 y 6 m)	1992-1980 BCE

The 19th Dynasty

100.	Sethosis (55 y)	1980-1925 BCE
101.	Rhampses (58 y)	1925-1868 BCE
102.	Ammenemes (26 y)	1868-1842 BCE
103.	Thuoris (7 y)	1842-1835 BCE

(The city of Troy was captured in 1842 BCE during the reign of Thuoris.)

The 20th Dynasty

104.		
105.	12 kings of Diospolis reigned for 172 years.	
106.		
107.		1834-1662 BCE
108.		
109.		
110.		

111.		1834-1662 BCE
112.		
113.		
114.		
115.		
The 21st Dynasty		
116.	Smendis (26 y)	1662-1636 BCE
117.	Psusennes (41 y)	1636-1595 BCE
118.	Nephercheres (4 y)	1595-1591 BCE
119.	Amenophthis (9 y)	1591-1582 BCE
120.	Osochor (6 y)	1582-1576 BCE
121.	Psinaches (9 y)	1576-1567 BCE
122.	Psusennes (35 y)	1567-1532 BCE
The 22nd Dynasty		
123.	Sesonchosis (21 y)	1532-1511 BCE
124.	Osorthon (15 y)	1511-1496 BCE
125.	Tacelothis (13 y)	1496-1483 BCE
The 23rd Dynasty		
126.	Petubastis (25 y)	1483-1458 BCE
127.	Osorthon (9 y)	1458-1449 BCE
128.	Psammus (10 y)	1449-1439 BCE
The 24th Dynasty		
129.	Bocchoris (44 y)	1439-1395 BCE
The 25th Dynasty (Ethiopian Kings)		
130.	Sabacon (12 y)	1395-1383 BCE
131.	Sebichos (12 y)	1383-1371 BCE
132.	Taracus (20 y)	1371-1351 BCE
The 26th Dynasty		
133.	Ammeres the Ethiopian (12 y)	1351-1339 BCE
134.	Stephinathis (7 y)	1339-1332 BCE
135.	Nechepsos (6 y)	1332-1326 BCE
136.	Nechao (8 y)	1326-1318 BCE
137.	Psammetichus (44 y)	1318-1274 BCE
138.	Nechao II (6 y)	1274-1268 BCE
139.	Psammuthes (17 y)	1268-1251 BCE
140.	Vaphres (25 y)	1251-1226 BCE

141.	Amosis (42 y)	1226-1184 BCE
The 27th Dynasty (Persian)		
142.	Cambyses (3 Y)	1184-1180 BCE
143.	Magi (7 m)	1180 BCE
144.	Darius I (36 y)	1180-1144 BCE
145.	Xerxes I (21 y)	1144-1123 BCE
146.	Artaxerxes I (40 y)	1123-1084 BCE
147.	Xerxes II (2 m)	1083 BCE
148.	Sogadianus (7 m)	1083 BCE
149.	Darius II (19 y)	1082-1063 BCE
The 28th Dynasty		
150.	Amyrtaeus (14 y)	1063-1049 BCE
The 29th Dynasty		
151.	Nepherites I (6 y)	1049-1043 BCE
152.	Achoris (13 y)	1043-1030 BCE
153.	Psammuthis (1 y)	1030-1029 BCE
154.	Muthes (1 y)	1029-1028 BCE
155.	Nepherites II (4 y)	1028-1024 BCE
The 30th Dynasty		
156.	Nectanebo I (10 y)	1024-1014 BCE
157.	Teos (2 y)	1014-1012 BCE
158.	Nectanebo II (8 y)	1012-1004 BCE
Achaemenid Dynasty of Persia		
159.	Artaxerxes III Ochus (6 y)	1004-998 BCE
160.	Arses (4 y)	998-994 BCE
161.	Darius III (6 y)	994-990 BCE
Macedonian Kings		
162.	Alexander the Great (8 y)	990-982 BCE

If we follow the king list and their regnal periods starting from the 20th dynasty onwards as given by modern historians, the true chronology of Egypt would be as under:

The 20th Dynasty (1834-1728 BCE)	
The 21st Dynasty (1728-1603 BCE)	
Smendes	1728–1702 BCE
High Priests of Painedjem I	1728-1690 BCE
High Priests of Masaharta	1712-1704 BCE
High Priests of Djedkhonsefankh	1704-1703 BCE
High Priests of Menkheperre	1703-1650 BCE
Amenemnisu	1702–1698 BCE
Psusennes I	1698–1650 BCE
Amenemope	1651–1642 BCE
HP Smendes	1650-1648 BCE
HP Painedjem II	1648-1627 BCE
Osochor	1642–1636 BCE
Siamun	1636–1617 BCE
HP Psusennes	1627–1617 BCE
Psusennes II	1617–1603 BCE
The 22nd Dynasty (Libyan) 1603-1370 BCE	
Sheshonk I	1603–1582 BCE
Osorkon I	1582–1547 BCE
Sheshonk II	1548 BCE
Takelot I	1547–1532 BCE
Osorkon II	1532–1508 BCE
Harsiese	1523 BCE
Takelot II	1508–1483 BCE
Sheshonk III	1483–1431 BCE
Pami	1431–1425 BCE
Sheshonk V	1425–1388 BCE
Osorkon IV	1388–1370 BCE
The 23rd Dynasty (1476-1371 BCE)	
Pedubaste I	1476–1451 BCE
Iuput I	1458 BCE
Sheshonq IV	1451–1445 BCE

Osorkon III	1445–1417 BCE
Takelot III	1422–1415 BCE
Rudamun	1415–1412 BCE
Iuput II	1412–1370 BCE
Peftjaubast	1398–1383 BCE
Namlot	1398 BCE
Thutemhat	1378 BCE
The 24th Dynasty (1382-1370 BCE)	
Tefnakht	1382–1375 BCE
Bakenrenef	1375–1370 BCE
The Late period (1370-990 BCE)	
The 25th Dynasty (1370-1322 BCE)	
Piye *(establishes Nubian Dynasty in Egypt)*	1401–1370 BCE
Shabaqo	1370-1356 BCE
Shebitqo	1356–1348 BCE
Taharqo *(loses control of Lower Egypt)*	1348–1322 BCE
Tanutamani *(loses control of Upper Egypt)*	1322–1311 BCE
The 26th Dynasty (Saite) 1346-1183 BCE	
Nikauba	1346–1330 BCE
Necho I	1330–1322 BCE
Psamtik I	1322–1268 BCE
Necho II	1268–1253 BCE
Psamtik II	1253–1247 BCE
Apries	1247–1228 BCE
Amasis	1228–1184 BCE
Psamtik III	1184–1183 BCE
The 27th Dynasty (Persian) 1183-1062 BCE	
Cambyses	1183–1180 BCE
Darius I	1179–1144 BCE
Xerxes I	1144–1124 BCE
Artaxerxes I	1123–1082 BCE
Darius II	1082–1062 BCE

The 28th Dynasty (1180-1057 BCE)	
Pedubaste III	1180–1178 BCE
Psamtik IV	1128 BCE
Inaros	1118 BCE
Amyrtaios I	1118 BCE
Thannyros	1103 BCE
Pausiris	1103 BCE
Psamtik V	1103 BCE
Psamtik VI	1058 BCE
Amyrtaios II	1062–1057 BCE
The 29th Dynasty (1057-1038 BCE)	
Nepherites I	1057–1051 BCE
Psammuthis	1051 BCE
Achoris	1051–1038 BCE
Nepherites II	1038 BCE
The 30th Dynasty (1038-1001 BCE)	
Nectanebo I	1038–1020 BCE
Teos	1023–1018 BCE
Nectanebo II	1018–1001 BCE
The Reign of Persians (1001-990 BCE)	
Khabebesh	1001–990 BCE
Artaxerxes III Ochus	1001–996 BCE
Arses	996–994 BCE
Darius III Codoman	993–990 BCE
Macedonian Period (990-982 BCE)	
Alexander the Great	990-382 BCE

There is a need for further research to settle the chronological sequence of the Egyptian dynasties starting from the 16th dynasty onwards but the epoch of the Sothic cycle (3605 BCE) as explained above unambiguously establishes that there is an error of ~825 years in the early chronology of

ancient Egypt. Alexander died in 982-981 BCE and thereafter, Ptolemaei dynasty ruled over Egypt for 295 years.[5]

Ptolemaei Dynasty of Egypt

		Duration	In CE
1.	Philippus[Ptolemy writes: "the Philip who came after the Alexander who founded Alexandria".]	7 y	981-974 BCE
2.	Alexandros	12 y	974-962 BCE
3.	Ptolemaios, son of Lagos	20 y	962-942 BCE
4.	Philadelphos	38 y	942-904 BCE
5.	Euergetes	25 y	904-879 BCE
6.	Philopator	17 y	879-862 BCE
7.	Epiphanes	24 y	862-838 BCE
8.	Philometor	35 y	838-803 BCE
9.	Euergetes the Second	29 y	803-774 BCE
10.	Soter	36 y	774-738 BCE
11.	Dionysos Neos	29 y	738-709 BCE
12.	Cleopatra, the daughter of Dionysos	22 y	709-687 BCE

Roman Emperor Augustus killed Cleopatra. Thus, the rule of the Ptolemaei dynasty ended in 687 BCE. Augustus was called Sebastos in Greek sources. It may also be noted that the 2nd Sothic cycle ended in 685 BCE during the reign of Augustus as recorded by Theon.

The Carbon Dating of Pyramids by Historians and Their Fraud

The radiocarbon data of the Old Kingdom period (2680-2181 BCE?) also clearly indicates the chronological error of ~400 years. The first project of carbon dating undertaken in 1984 has found that the radiocarbon dates of the tombs of third dynasty to fifth dynasty averaged 375 years older than the dates given in modern textbooks. Unable to digest the scientific dates, historians ridiculously concocted that the pyramid builders consistently used centuries-old Egyptian wood as fuel in preparing mortar and fraudulently evolved a concept of "***Old wood problem***" to distort the scientific dates. Another project was undertaken in 1995 and found the dates 200 years younger than the dates fixed in 1984. Interestingly,

historians raised questions about the fluctuation of atmospheric C14 over a long period. Therefore, scientists have developed calibration techniques to conveniently adjust or lower the results of radiocarbon data. Thus, the 1995 project has reduced 200 years from the dates found in 1984 using calibration techniques and brought the carbon dates closer to the dates given in modern textbooks. Interestingly, the radiocarbon data of King Amenemhet I of the 12th dynasty indicates a date in the Old Kingdom period. The great historians of modern times have ridiculously explained the scientific date of King Amenemhet I that the King actually took bits and pieces of Old Kingdom tomb chapels and pyramid temples (including those of the Giza Pyramids) and dumped them into the core of his pyramid at Lisht. I have no decent word than "Fraud" to showcase these distortions of the radiocarbon data.

Recently, the radiocarbon data of one king has indicated a date around 1570 BCE. Historians simply assumed him to be King Ahmosis, the first king of the dynasty of Thuthmos III and Tutankhamen. The ivory tablets having the reference to King Djer and King Scorpio have been carbon dated in 2013 around 3214-3035 BCE. Possibly, the historians calibrated and reduced the date of radiocarbon data by 400 to 600 years. Moreover, the epoch of the Sothic cycle cannot be established around 3200-3100 BCE. As explained above, the epoch of the Sothic cycle undoubtedly commenced on 2nd Nov 3605 BCE. Therefore, King Djer lived around 3605 BCE and the ivory tablets were probably made in 3605 BCE. Historians mistakenly fixed the date of King Djer around 3100 BCE and the epoch of the era of Alexandria in 312 BCE. In reality, King Djer flourished around 3605 BCE and the epoch of the era of Alexandria commenced in 972 BCE. Evidently, there is a chronological error of ~825 years to ~660 years in the history of ancient Egypt because the historians mistakenly contracted the chronology of Egypt based on the fictitious epoch of the Christian era (1 CE).

The Hittite Kings

North-central Anatolia was called "the land of Hatti" in ancient times. The Hittites were the inhabitants of the land of Hatti and neighbours to the Assyrian Empire. They established their kingdom in Hatti or Hattusa in 3rd Millennium BCE. A tablet written in cuneiform script gives the details

of a treaty between the Hittite King Hattusilis and the Egyptian King Ramesses II (2405-2339 BCE). This tablet clearly records that Hattusilis was the son of Mursulis and the grandson of Suppililiumas whereas User-maat-Re (Ramesses II) was the son of Men-maat-Re and the grandson of Men-pehti-Re. The Hittite King Mursulis I invaded and sacked Babylon in 2420-2418 BCE. I have established this date of the fall of Babylon based on the Venus Tablet of King Ammisaduqa in Chapter 7. The chronology of Hittites as follows:

		In CE
1.	Labarna I	2500-2475 BCE
2.	Hattusulis I	2475-2450 BCE
3.	**Suppililiumas I (father of Mursulis I)**	**2450-2420 BCE**
4.	**Mursulis I**	**2420-2390 BCE**
5.	**Hattusulis II**	**2390-2360 BCE**
6.	Zidanta I	
7.	Ammuna	
8.	Huzziya I	
9.	Telipinus	
10.	Alluwamna	
11.	Hantili I	
12.	Tahurwali	
13.	Zidanta II	2360-2005 BCE
14.	Huzziya II	
15.	Muwatalli I	
16.	Tudhaliya I	
17.	Arnuwanda I	
18.	Hattusulis III	
19.	Tudhaliya II	
20.	Tudhaliya III	
21.	**Suppililiumas II**	**2005-1983 BCE**

22.	Arnuwanda II	1982-1800 BCE
23.	Mursulis II	
24.	Muwatalli II	
25.	Mursulis III	
26.	Hattusulis IV	
27.	Tudhaliya IV	
28.	Kurunta	
29.	Arnuwanda III	
30.	Suppililiumas III	

The Mitanni Kings

Mitanni Kingdom, the land of Hurri, was the eastern neighbour of the Hittite Empire. The famous treaty between the Mitanni King Artatama II and the Hittite King Suppililiumas II (2005-1983 BCE) must be the sheet anchor of the chronology of the Mitanni kings.

		In CE
1.	Kirta	2200-2000 BCE
2.	Shuttarna I	
3.	Parshatatar	
4.	Shaushtatar	
5.	Artatama I	
6.	Shuttarna II (Daughter marries Egyptian King Amenhotep III)	
7.	Artashumara	
8.	Tushratta (contemporary of Amenhotep III & Amenhotep IV)	
9.	**Artatama II**	**2000-1985 BCE**
10.	Shuttama III	1985-1900 BCE
11.	Shattiwaza	
12.	Shattuara I	
13.	Wasashatta	
14.	Shattuara II	

Interestingly, the treaty between the Hittites and the Mitannis invokes the Vedic deities Mitra, Varuna, Indra and Nasatya (Ashvins). The Kikkuli text of Horse training refers to the Sanskrit names of numerals.

The Armenian Kingdom

The Hayasa-Azzi Kings (2600-1950 BCE)
The Hittite kings and the Hayasa-Azzi kings were in conflict during the time of Tudhaliya kings. The cuneiform tablets of Bogazkoy gives the names of three successive Hayasa-Azzi Kings, namely Karanni, Mariya and Hakkani. King Hakkani was the contemporary of Hittite King Suppililiumas I (2450-2420 BCE) the father of Mursulis I. He married the sister of Suppililiumas I. The Hittite King Mursulis II (1983 BCE) marched to suppress the rebellion of Hayasa-Azzi King Anniya in his 7th regnal year. According to an ancient text, a solar eclipse occurred in the 7th regnal year of Hittite King Mursulis II.

The Kingdom of Armenia (Urartu) (1950-1250 BCE)
Assyrian sources tell us that King Shalmanessar I invaded and subdued the entire territory of Urartu or Armenia. It appears that Kings of Armenia reigned around 1950-1500 BCE as vassals of Assyrian Kings.

The Yervanduni or Eruandid or Orontid Dynasty (1230-588 BCE)
Orontes I was the founder of this dynasty but began his reign as a Satrap of Achaemenid Empire. The Kings of Orontid dynasty became independent only after the fall of Achaemenid kingdom. Later, they succumbed to Roman Empire.

6

The Jewish Chronology up to the Second Temple Period

According to the Hebrew Bible, the Jews originally belong to the "Land of Canaan" located in the region of southern Levant. They trace their ancestry from Abraham, the father of Isaac and the grandfather of Jacob. Jacob was also known as Israel. The Jewish or Rabbinic chronology starts from a fictitious epoch of creation. Modern historians have concocted a traditional date of creation in 3761 BCE. This epoch of 3761 BCE perfectly reconciles to the Jewish chronology with the so-called secular chronology but it creates a chronological discrepancy of 165 years in the traditional rabbinic chronology which is well known as the "Missing years" in the Hebrew calendar. Unable to resolve the problem of missing years, some historians distorted the dates by citing a hypothesis of 4000 years up to 164 BCE based on the Masoretic text.

The Mystery of the Missing 165 Years of Hebrew Calendar

In fact, historians have wrongly calculated the epoch of the Hebrew calendar in 3761 BCE. As I have already explained how the fictitious epoch of 1 CE led to a chronological error of ~660 years. The Chaldean or Neo-Babylonian King Nabonassar II destroyed the first temple of Solomon in 1248 BCE considering the epoch of the Nabonassar era (1406 BCE). The epoch of the Nabonassar era is linked with the Sothic cycle of Egypt. Historians wrongly assumed that the epoch of the first Sothic cycle commenced in 2780 BCE. I have already established in the Chapter 5 that the first Sothic cycle had commenced in 3605 BCE. Evidently, historians have brought forward the epoch of the Sothic cycle by 825 years. Consequently, the rabbinic chronology has also been brought

forward by 825 years. Historians have no other option to place the dates of the first dynasty of Egypt ~250 years before 2780 BCE so that they can reconcile the chronology of Egypt with the epoch of the era of Alexandria (972 BCE).

Though historians have reconciled the chronology of Egypt and the epoch of the era of Alexandria, the rabbinic chronology is left with the chronological error of 165 years. Moreover, the era of Alexandria (972 BCE) and the Alexandrian calendar were introduced in Israel during the Hellenistic Maccabean period. Consequently, two different dates of creation came into practice due to the introduction of the era of Alexandria and the Metonic cycle of 19 years. One Jewish tradition established considering the Anno Mundi epoch (the date of creation) 3448 years before the epoch of the era of Alexandria (972 BCE). Abu Rayhan (4th century) also recorded that the Jewish epoch of Anno Mundi commenced 3448 years before 972 BCE, i.e., 4420 BCE. But it appears that the ancient rabbinic chronology did follow an epoch of Anno Mundi that commenced in 4586 BCE but later rabbinic tradition updated the Torah calendar considering the epoch of Anno Mundi in 4420/4421 BCE. Abu Rayhan (4th century) also observed that Jews have two or three different traditional dates of creation. Though the epoch of the Torah calendar was reset in 4420/4421 BCE but the ancient epoch of the Anno Mundi era (4586 BCE) remained unedited in the rabbinic chronological history. This is the reason why Hebrew calendar is still struggling with the missing chronology of 165 years. If we consider the epoch of the rabbinic chronology in 4586 BCE, we can accurately explain the rabbinic chronology.

Modern historians have committed a chronological error of ~660 years, considering the fictitious epoch of 1 CE. Thus, the Jewish date of creation has been brought forward by 660 years and fixed the epoch in 3760/3761 BCE. In reality, the ancient Jewish epoch of Anno Mundi commenced in 4586 BCE, whereas a later Jewish epoch of Anno Mundi commenced in 4420/4421 BCE.

The Chronological History of Jews

The Hebrew Bible or Old Testament gives the chronological history of Jews but it has some inconsistencies and contradictions. We must find

a sheet anchor of Jewish chronology to reconcile to the biblical account of Jewish history. In my opinion, the Anno Mundi dates recorded in the ancient text "Seder Olam Rabbah" must be considered as the sheet anchor of Jewish chronology. Seder Olam Rabbah is the earliest rabbinic text that gives the dates of biblical historical events from the date of creation to the date of Alexander. Interestingly, Seder Olam Rabbah treats the year of creation as "Zero year" that commenced in 4586 BCE. The following dates given in Seder Olam Rabbah must be considered as sheet anchor of the Jewish chronology.

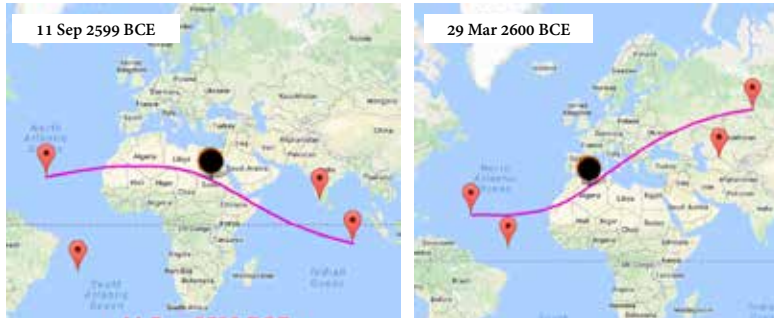
		The epoch of Anno Mundi (4586 BCE)	**In CE**
	The Date of Deluge or Great Floods	AM 1656	2930 BCE
1.	Abraham born 1948 years after the date of creation according to Hebrew Bible. Some scholars have calculated the birth of Abraham 529/530 years before the date of Exodus, i.e., 2138 BCE.	AM 1948	**2638 BCE** (2643 BCE?) (2668 BCE?)
2.	The date of Exodus of Israelites from Egypt	AM 2448	2138 BCE
3.	Solomon built the temple 480 years after the date of Exodus during his 4th regnal year.	AM 2928	1658 BCE
4.	Nabonassar II destroyed the temple built by Solomon 410 years after the year of construction	AM 3338	1248 BCE
5.	The second temple was rebuilt 70 years later.	AM 3408	1178 BCE
6.	The second temple was destroyed 490 years (70 + 420) after the reconstruction.	AM 3828	758 BCE

Let us discuss the Jewish chronology starting from the birth of Abraham because it is extremely difficult to reconstruct the chronology from the date of creation to Abraham due to non-availability of valid data. If we simply calculate the chronology from the date of creation (4586

BCE) as given in the Old Testament, Abraham was born in AM 1948, i.e., 2638 BCE. This date can also be validated considering 500 (430 + 70) years before the Exodus (2138 BCE). Moses said that the Exodus from Egypt by the Israelites commenced on the very day of the conclusion of a period of 430 years (Exodus 12:40, 41). Abraham gave the promise at age 70 (Genesis 12:1-4). Moses might have calculated 430 years from the call or promise of Abraham. Thus, Abraham was born in 2638 BCE five hundred years before the Exodus in 2138 BCE.

Eusebius clearly records that Abraham was born in 2643 BCE five hundred five years before the Exodus (2138 BCE). In the 75th year of Abraham, God appeared to him. Thus, there is a difference of 430 years between the 75th year of Abraham and the date of Exodus (2138 BCE). According to some scholars, the apostle Paul stated that the period of 430 years began at a time when God made a covenant with Abraham and this covenant was very important to Paul. The covenant took place when Abraham was at the age of 99. Thus, we must add 430 years to Abraham's year 99 and there is a total of 529 years from Abraham's birth to the Exodus. Abraham was told that his people would be afflicted for 400 years (Genesis 15:13) and Jacob entered Egypt when he was 130 years old (Genesis 46-47). If we interpret it that Jacob entered Egypt in the year 130 from the birth of his grandfather Abraham, it can be established that the Exodus took place 529/530 years after the birth of Abraham. Old Testament clearly tells us that the Israelites were in slavery for 400 years from the arrival of Jacob in Egypt to the Exodus. Thus, Abraham was born in 2668 BCE 529 (430 + 99) or 530 (400 + 130) years before the Exodus in 2138 BCE.

It appears that there was a divergence of opinion about the date of God's appearance to Abraham. We have three dates, the 70th year, the 75th year and the 99th year of Abraham. Since the ancient Jewish tradition gives the date as the 70th year, we can conclude that Abraham was born in 2638 BCE. There is a reference to a solar eclipse in Bible (the book of Genesis) which involves the journey of Abraham into Canaan. It says; "And when the Sun was going down…. Great darkness fell on him. Most probably, this solar eclipse occurred in afternoon either on 29th Mar 2600 BCE (Annular) or 11th Sep 2599 BCE (Total).



In view of the above, the date of Exodus in 2138 BCE must be considered as the sheet anchor of the Jewish chronology. Abu Rayhan (4th century) also mentions that the Exodus took place 1000 years before the epoch of the era of Alexandria (972 BCE). Abu Rayhan says that the date of creation commenced 3448 years before 972 BCE which clearly indicates that he followed a Jewish calendar that had the chronological error of 165 years (the missing years). If we add 165 years, the Exodus must have taken place 1165 years before 972 BCE, i.e., 2137 BCE. Since Abu Rayhan has roughly calculated 1000 years up to 972 BCE, we can say that Abu Rayhan also confirms the date of Exodus in 2138 BCE. Now, we can arrive at the Jewish chronology:

The Jewish Chronology	**In CE**
The Date of Creation	4586 BCE
The date of Biblical Deluge or Great Flood (AM 1656)	2930 BCE
Noah to Terah (11 generations)	3000-2638 BCE
The date of birth of Abraham (500 years before the year of Exodus, i.e., 2138 BCE).	2638 BCE
Jacob enters Egypt (100 years after the birth of Abraham).	2538 BCE
Israelites were in slavery for 400 years in Egypt. (The Hebrew Bible mentions that the Israelites were forced to build a store in the city of Ramses, a city founded by Ramesses. It is generally assumed that King Ramesses II caused the oppression of the Israelites in Egypt. Finally, Israelites migrated from Egypt. Moses led Israelites out of Egypt and across the Red Sea.)	2538 BCE to 2138 BCE

The Exodus from Egypt in Anno Mundi 2448.	2138 BCE
Moses was born 80 years before the Exodus.	2218 BCE
Israelites initially based on Mount Sinai where Moses received Ten Commandments. Moses also introduced Nisan as the first month of Hebrew calendar for festivities but the New Year used to begin in the month of Tishrei. Israelites entered the Holy Land (Jerusalem) 40 years after the Exodus.	2098 BCE
King David reigned for 40 years (2 Samuel 5:4).	1702-1662 BCE
King Solomon, the son of David begins his reign.	1662 BCE
Solomon builds the first temple in Jerusalem in his 4th regnal year and 480 years after the Exodus (2138 BCE).	1658 BCE
Solomon reigned for 40 years.	1662-1622 BCE
Rehoboam reigned for 17 years.	1622-1605 BCE
Abijah reigned for 3 years.	1605-1602 BCE
Asa reigned for 41 years.	1602-1561 BCE
Jehoshaphat reigned for 25 years.	1561-1536 BCE
Jehoram reigned for 8 years.	1536-1528 BCE
Ahaziah reigned for 1 year.	1528-1527 BCE
Athaliah reigned for 6 years.	1527-1521 BCE
Joash reigned for 40 years.	1521-1481 BCE
Amaziah reigned for 29 years.	1481-1452 BCE
Azariah reigned for 52 years.	1452-1400 BCE
Jotham (16 years)	1400-1384 BCE
Ahaz (16 years)	1384-1368 BCE
Hezekiah (29 years)	1368-1339 BCE
Manasseh (55 Years)	1339-1284 BCE
Amon (2 years)	1284-1282 BCE
Josiah (31 years)	1282-1251 BCE
Jehoahaz (3 months)	1251 BCE
Jehoakim (3 years)	1251-1248 BCE

Neo-Babylonian King Nabonassar II destroyed the first temple. Thus, the first temple existed for 410 years or 3338 years after the date of creation (4586 BCE).	1248 BCE
Jerusalem was under captivity for 70 years.	1248-1178 BCE
Cyrus decrees rebuilding the temple.	1197 BCE
The construction of the Second Temple was completed during the reign of Darius 70 years after destruction.	1178 BCE
Persian Kings (38 years) [Seder Olam Rabbah].	1178-1144 BCE
Greek (Macedonians) Kings (180 years) [Seder Olam Rabbah].	1144-964 BCE
Maccabees Kings (103 years) [Seder Olam Rabbah].	964-861 BCE
Herod Kings (103 years) [Seder Olam Rabbah].	861-758 BCE
The Second Temple was destroyed 420 years after its construction in 1178 BCE or 3828 years after the date of creation.	758 BCE? (593 BCE)

Daniel (1248-1196 BCE): The book of Daniel of Old Testament mentions that Daniel was the contemporary of King Jehoakim and King Nabonassar II. Daniel was in the court of Nabonassar II where he continued until the first year of King Cyrus. The book of Daniel was written during the time of Antiochus Epiphanes, the Ptolemaei King of Egypt (862-838 BCE).

The Chronology of Jews as Given in the Chronicon Paschale

The author of "*Chronicon Paschale*" gives the chronology of Jews kings and high priests. According to Toledot Yeshu, an early Jewish text, the Hasmonean King Alexander Jannaeus was the reigning king of Judea in the year 3671, i.e., 750 BCE. The chronology of Jews as given in the Chronicon Paschale:

		Duration	**In CE**
1.	Jesus, the son of Josedec jointly with Zorobabel	32 y	1178-1146 BCE
2.	Jacimus	30 y	1146-1116 BCE
3.	Eliasibus	40 y	1116-1076 BCE

4.	Jodae	36 y	1076-1040 BCE
5.	Jannaeus	32 y	1040-1008 BCE
6.	Jaddus (Alexander came to Jerusalem during his reign)	20 y	1008-988 BCE
7.	Onias	21 y	988-967 BCE
8.	Eleazar (In his time, the 70 wise men translate the Holy scriptures.)	15 y	967-952 BCE
9.	Onias	14 y	952-938 BCE
10.	Simon	2 y (32 y?)	938-936 BCE
11.	Manasses	26 y	936-921 BCE
12.	Simon	15 y (22 y?)	921-899 BCE
13.	Onias (In his time, Antiochus besieged the Jews and forced them to adopt Greek customs.)	29 y	899-870 BCE
14.	Jesus	16 y	870-854 BCE
15.	Onias also called Menelaus	7 y	854-847 BCE
16.	Judas Maccabaeus (He drove the infidels (Greeks) out of the country.)	33 y	847-814 BCE
17.	Jonathan	17 y	814-796 BCE
18.	Simon	18 y	796-778 BCE
19.	Jonathan the son of Simon, also called Hyrcanus	27 y	778-751 BCE
20.	Aristobulus	1 y	751-750 BCE
21.	Jannaeus Alexander	30 y	750-720 BCE

The Chronological Inconsistency of 165 Years in Seder Olam Rabbah

Seemingly, there is an error of 165 years in the Jewish chronology given in Seder Olam Rabbah. Toledot Yeshu, an early Jewish text mentions that the Hasmonean King Alexandar Jannaeus was the reigning king of Judea in the year 3671, i.e., 750 BCE. Moreover, it is factually incorrect that the Persian kings reigned over Judea for only 38 years after the construction

of the Second Temple. Evidently, the Persians kings had control over Judea till the invasion of Alexandar in 990 BCE. Thus, the Persian kings reigned over Judea for 188 years. The Jewish chronology after the construction of the Second Temple can be corrected as proposed below:

		In Anno Mundi (4586 BCE)	**In CE**
1.	The construction of the Second Temple	3408	1178 BCE
2.	The Persian Kings (188 years)	3408-3596	1178-990 BCE
3.	The Greek Kings (180 years)	3596-3776	990-810 BCE
4.	The Maccabees or Hasmonean Kings (113 years)	3776-3889	810-697 BCE
5.	The Herod Kings (103 years)	3889-3993	697-593 BCE
6.	The destruction of the Second Temple	3993	593 BCE

Thus, the Second Temple was destroyed 585 years after its construction in 1178 BCE or 3993 years after the date of creation. The Seder Olam Rabbah mistakenly calculated the gap of 420 years instead of 585 years. Now the question arises, how the Jewish scholars had committed the error of 165 years in their chronology. I would imagine that ancient Jews followed the old Hebrew calendar of 165-year cycle with an epoch of 4586 BCE. Moses reformed the Jewish lunisolar calendar after Exodus. Thus, Nisan became the first month of the Hebrew calendar. During the reign of Greek kings, the Torah calendar of 19-year cycle was introduced by replacing the old Torah calendar of 165-year cycle. In this process of calendrical reform, the Jewish scholars erroneously omitted one elapsed cycle of 165 years in calculation of the elapsed years after the date of the construction of the Second Temple. Seemingly, ancient Jews followed the 165-year cycle of ancient Greeks which is known as Yavana Siddhanta in Indian tradition. The treatise of Yavana Siddhanta is known as "*Yavana Jataka*" which was translated by Sphujidhvaja in Sanskrit.

Herod the Great (697-664 BCE) and His Successors

Herod, the Great reigned over Judea around 697-664 BCE. He rebuilt the Second Temple on a grand scale. Josephus mentions that Herod's death was preceded by lunar eclipse and followed by Passover. This lunar eclipse occurred on 29th Mar 664 BCE and followed by Passover. Herod Archalaeus succeeded his father Herod the great. Jesus Christ was born on 10th Jan 660 BCE during the reign of Herod Archalaeus.

The Contemporary Phoenician Kings

Phoenicians were the most ancient maritime traders and dominated the trade routes of Mediterranean Sea. They settled in Sidon, Tyre, Biblos and Baalbek cities of Lebanon. Hecatateus of Miletus mentions that Phoenicia was formerly called Khnan. Most probably, Canaan derived from Khnan. Herodotus states, "According to Persians best informed in history, the Phoenicians began the quarrel. These people, who had formerly dwelt on the shores of the Erythrean Sea, having migrated to Mediterranean and settled in the parts which they now inhabit, began at once, they say, to adventure on long voyages, freighting their vessels with the wares of Egypt and Assyria."

Most probably, Phoenicians migrated to Lebanon in ancient times. The city of Tyre was the capital of Phoenicia. According to Hellenic legends, Agenor was the earliest king who was the contemporary of Assyrian king Belus (2850 BCE). Some clay tablets written in Amarna letters (Akkadian Cuneiform) indicate that Aziru, a Phoenician king, was the contemporary of Hittite King Suppililumas I, (2450-2420 BCE), the father of Mursulis I and Egyptian King Ramesses I.

Ancient Phoenician Kings:

		In CE
1.	**Aziru**	2450-2400 BCE

2.	**Abi-Milku** (A contemporary of Egyptian kings of 18th dynasty.)	2150-2100 BCE

Phoenician Kings of Tyre

Hiram I was the contemporary of Jewish kings David (1702-1662 BCE) and Solomon (1662-1622 BCE). According to Jewish records of the building of Jerusalem temple, Hirom, the king of Tyre, was the friend of King Solomon. He presented Solomon one hundred and twenty talents of gold. He also cut down the most excellent timber out of the Libanus Mountain and sent it to him for adorning its roof.

		In CE
1.	Abibaal	1700-1670 BCE
2.	Hirom I	1670-1640 BCE
3.	Baal-Eser I	1640-1610 BCE
4.	Abdastartus	1610-1590 BCE
5.	Astartus	1590-1570 BCE
6.	Deleastartus	1570-1550 BCE
7.	Astarymus	1550-1540 BCE
8.	Phelles	1540-1530 BCE
9.	Ithobaal I (Father of Queen Jezebel)	1530-1510 BCE
10.	Baal-Eser II (a contemporary of Assyrian King Shalmaneser III (1517-1482 BCE)	1510-1480 BCE
11.	Mattan I	1480-1460 BCE
12.	Pygmalion	1460-1450 BCE

The Destruction of the Second Temple (593-590 BCE) and the Exile of Jewish People

Pontius Pilate became the procurator of Judea around 634 BCE and he crucified Jesus Christ on 27th Mar 629 BCE. Titus, son of Vespasian and the commander of Roman Army takes over Jerusalem and destroys the Second Temple around 593-590 BCE. He forcibly expelled the Jews from Judea. Josephus, an eyewitness of the destruction of the Second Temple and the exile of Jews writes;

"Now the number of those who were made captive during the period of war amounted to ninety-seven thousand; as was the number of those

that perished during the whole siege eleven hundred thousand, the greater part of whom were indeed of the same nation [with the citizens of Jerusalem], but not belonging to the city itself; for they had come from different countries to the feast of unleavened bread. But they were all of a sudden shut up by an army, which, at the very first, occasion so great a straightness among them, that there came a pestilential destruction upon them, and soon afterward such a famine, as destroyed them more suddenly.

Now as soon as the army had no more people to slay or to plunder, because there remained none to be the objects of their fury, (for they would not have spared any, had there remained any other work to be done,) Caesar gave orders that they should now demolish the entire city and temple, but should leave as many of the towers standing as were of the greatest eminency; that is, Phasaelus, and Hippicus, and Mariamne; and so much of the wall as enclosed the city on the west side. This wall was spared, in order to afford a camp for such as were to lie in garrison, as were the towers also spared, in order to demonstrate to posterity what kind of city it was, and how well fortified, which the Roman valor had subdued; but for all the rest of the wall, it was so thoroughly laid even with the ground by those that dug it up to the foundation, that there was left nothing to make those that came thither believe it had ever been inhabited. This was the end which Jerusalem came to by the madness of those that were for innovations; a city otherwise of great magnificence, and of mighty fame among all mankind."

Aristotle on the Origin of Jews

The Jewish scholar Flavius Josephus (37 – 100 CE) quotes from Clearchus's fragment in his *Contra Apionem* [Against Apion] in which Aristotle says: "Jews are derived from the Indian philosophers; they are named by the Indians Calami, and by the Syrians Judaei, and took their name from the country they inhabit, which is called Judea." (Book I: 22).

7

The Chronology of Babylon

The epoch of the Nabonassarian era (1406 BCE) and the dates of Achaemenid kings of Persia are the sheet anchors of the later chronology of Babylon. It is also pertinent to establish certain sheet anchors for arriving at the chronology of ancient Babylon. Fortunately, this ancient civilization has recorded sufficient astronomical data in their inscriptions which is instrumental in establishing the absolute dates of certain historical events.

The Venus Tablet of King Ammisaduqa

This famous clay tablet records the astronomical observations (the heliacal rising and setting) of Venus for a period of 21 years during the reign of King Ammisaduqa. Historians have proposed four different dates (1702 BCE, 1646 BCE, 1582 BCE and 1550 BCE) of King Ammisaduqa but miserably failed to explain the astronomical data recorded on this clay tablet.[1] Interestingly, Duncan Macnaughton has explained the dates of Venus Tablet in his book "*The scheme of Babylonian Chronology: From the flood to the fall of Nuneveh*" in 1930 and logically explained the dates of Venus tablet around 2260-2239 BCE but he ignored the reconciliation of the dates with Babylonian calendar. Since the historians were pursuing the chronology with prejudice to the fictitious epoch of 1 CE, they assumed that the date of Ammisaduqa cannot be beyond the period of 1600-1550 BCE. Therefore, the historians rejected the date arrived by Macnaughton considering it as a very early date. In fact, Duncan Macnaughton has propounded a hypothesis that certain year names of the Hammurabi period, which record the enthronement of Babylonian gods, fall on dates which are apparently related in some way to the synodic periods

of planets. He has speculated that the enthronement of the planetary gods was apparently being carried out when the heliacal rising of their respective planets took place during the month of Nisan.

Interestingly, Babylonians had the knowledge of the synodic period (584 days or ~20 months) of Venus. The synodic period is the time Venus takes to be seen again from the Earth in the same position with respect to the Sun. When Venus is between Earth and Sun (inferior conjunction) or on the far side of the sun (superior conjunction), it is invisible in the Sun's glare. Since its greatest elongation from the Sun is never more than 45°, Venus rises as a morning star for about 263 days, invisible when it is behind the sun, appears as the evening star for about 263 days and again invisible when it is in front the sun. Thus, Venus becomes invisible twice during each synodic period. The First and last visibilities repeat themselves after five synodic periods or 8 years. The duration of invisibility is determined by the common longitude of Venus and the sun at conjunction. At inferior conjunction, Venus remains invisible between about 1 day (L= 320^{O}) and about 19 days (L= 160^{O}), while at superior conjunction, Venus remains invisible between 55 days (L= 285^{O}) and 70 days (L= 55^{O}). A Tablet of Babylonian King Ammisaduqa records these observations of heliacal rising and setting of Venus for 21 years.

Firstly, we have to understand the basics of Babylonian lunisolar calendar that was in vogue during the time of King Ammisaduqa. This calendar was almost like the Indian calendar and the lunar months were based on the Amanta scheme (new moon to new moon) but the lunar months commenced from the 5^{th} day after new moon. I have successfully reconstructed the old Babylonian calendar (see **Appendix I**) based on the dates given in the Venus tablet. The names of 12 months of Babylonian calendar are as under:

1.	Nisanu (29 days)	7.	Tishritu (29 days)
2.	Ayar (30 days)	8.	Arahsamnu (30 days)
3.	Simanu (29 days)	9.	Kislimu (29 days)
4.	Dumzi (30 days)	10.	Tebetu (30 days)
5.	Abu (29 days)	11.	Shabatu (29 days)
6.	Ululu (30 days)	12.	Adar (30 days)

Though the months have fixed days but it appears that sometimes an additional day (Adhika tithi) was also added to one or two months having 29 days in a year whenever it was necessary.

It is also pertinent to find a closest date of King Ammisaduqa, who was the 4th successor of the famous King Hammurabi. Ancient Jewish tradition and Hebrew Biblical sources tell us that King Hammurabi was the contemporary of Abraham (2638 BCE). We have already discussed the date of Abraham in Chapter 6. Therefore, the date of King Ammisaduqa must be around 2500-2450 BCE who reigned for 21 years. We can now accurately fix the date of Ammisaduqa around 2473-2453 BCE based on the verifiable dates recorded in his tablet and the chronological synchronism of Hammurabi and Abraham. The verifiable dates of the Venus Tablet of King Ammisaduqa:

Regnal Year	**The Observations**[2]	**Dates calculated using Calsky Software (Babil, Iraq: Lat. 32.47 N & Long 44.55 E)**		**Dates calculated based on Reconstructed Babylonian calendar**	
1st	Inferior Venus sets on Shabatu 15 and after 3 days rises on Shabatu 18.	25 Jan 2473 BCE	29 Jan 2473 BCE	Shabatu 15, 25 Jan 2473 BCE	Shabatu 18, 28 Jan 2473 BCE
2nd	Superior Venus vanishes E on Arahsamnu 21 and after 1 month 25 days appears W on Tebetu 16.	12 Oct 2473 BCE	26 Dec 2473 BCE	Arahsamnu 12, 14 Oct 2473 BCE	Tebatu 16, 16 Dec 2473 BCE
3rd	Inferior Venus sets on Ululu 29 and after 16 days rises on Tishritu 15.	16 Aug 2472 BCE	5 Sep 2472 BCE	Ululu 29, 21 Aug 2472 BCE	Tishritu 15, 6 Sep 2472 BCE

4th	Superior Venus vanishes E on Dumuzi 3 and after 2 months 6 days appears W on Ululu 9.	25 Apr 2471 BCE	17 July 2471 BCE	Dumuzi 3, 17 May 2471 BCE	Ululu 9, 21 July 2471 BCE
5th	Inferior Venus sets on Nisan 29 and after 12 days rises on Ayar 11.	2 Apr 2470 BCE	11 Apr 2470 BCE	Nisan 29, 4 Apr 2470 BCE	Ayar 11, 15 Apr 2470 BCE
5th	Superior Venus vanishes E on Kislimu 27 and after 2 months 3 days appears W on Shabatu 30.	25 Dec 2470 BCE	28 Feb 2469 BCE	Kislimu 27, 24 Dec 2470 BCE	Shabatu 30, 25 Feb 2469 BCE
6th	Inferior Venus sets on Arahsamnu 28 and after 3 days rises on Kislimu 1.	2 Nov 2469 BCE	17 Nov 2469 BCE	Arahsamnu 28, 16 Nov 2469 BCE	Kislimu 1, 19 Nov 2469 BCE
7th	Superior Venus vanishes E on Abu 30 and after 2 months appears W on Tishritu 30.	27 July 2468 BCE	14 Oct 2468 BCE	Abu 30, 10 Aug 2468 BCE	Tishritu 30, 9 Oct 2468 BCE
8th	Inferior Venus sets on Dumuzi 9 and after 17 days rises on Dumuzi 26.	9 Jun 2467 BCE	26 Jun 2467 BCE	Dumuzi 9, 11 Jun 2467 BCE	Dumuzi 26, 29 Jun 2467 BCE
8th	Superior Venus vanishes E on Adar 27 and after 2 months 16 days appears W on Simanu 13 .	21 Feb 2466 BCE	6 May 2466 BCE	Adar 27, 19 Feb 2466 BCE	Simanu 13, 5 May 2466 BCE

9th	Inferior Venus sets on Adar 12 and after 2 days rises on Adar 14 .	22 Jan 2465 BCE	27 Jan 2465 BCE	Adar 12, 24 Jan 2465 BCE	Adar 14, 26 Jan 2465 BCE
10th	Superior Venus vanishes E on Arahsamnu 17 and after 1 month 25 days appears W on Tebetu 12.	10 Oct 2465 BCE	23 Dec 2465 BCE	Arahsamnu 17, 22 Oct 2465 BCE	Tebetu 12, 15 Dec 2465 BCE
11th	Inferior Venus sets on Ululu 25 and after 16 days rises on II Ululu 11 .	14 Aug 2464 BCE	3 Sep 2464 BCE	Ululu 25, 20 Aug 2464 BCE	II Ululu 11, 5 Sep 2464 BCE
12th	Superior Venus vanishes E on Ayar 29 and after 2 months 6 days appears W on Abu 5.	22 Apr 2463 BCE	14 July 2463 BCE	Ayar 29, 17 May 2463 BCE	Abu 5, 21 Jul 2463 BCE
13th	Inferior Venus sets on Nisan 25 and after 12 days rises on Ayar 7.	31 March 2462 BCE	9 Apr 2462 BCE	Nisan 25, 2 Apr 2462 BCE	Ayar 7, 13 Apr 2462 BCE
13th	Superior Venus vanishes E on Tebetu 23 and after 2 months 3 days appears W on Adar 26.	23 Dec 2462 BCE	26 Feb 2461 BCE	Tebetu 23, 21 Dec 2461 BCE	Adar 26, 21 Feb 2461 BCE
14th	Inferior Venus sets on Arahsamnu 24 and after 3 days rises on Arahsamnu 27.	30 Oct 2461 BCE	15 Nov 2461 BCE	Arahsamnu 24, 12 Nov 2461 BCE	Arahsamnu 27, 15 Nov 2461 BCE

15th	Superior Venus vanishes E on Abu 26 and after 2 months appears W on Tishritu 26.	24 July 2460 BCE	11 Oct 2460 BCE	Abu 26, 5 Aug 2460 BCE	Tishritu 26, 3 Oct 2460 BCE
16th	Inferior Venus sets on Dumuzi 5 and after 16 days rises on Dumuzi 21.	7 June 2459 BCE	24 June 2459 BCE	Dumuzi 5, 4 Jun 2459 BCE	Dumuzi 21, 20 June 2459 BCE
16th	Superior Venus vanishes E on Adar 24 and after 2 months 15 days appears W on Simanu 9.	19 Feb 2458 BCE	4 May 2458 BCE	Adar 24, 17 Feb 2458 BCE	Simanu 9, 1 May 2458 BCE
17th	Inferior Venus sets on Adar 8 and after 3 days rises on Adar 11	20 Jan 2457 BCE	25 Jan 2457 BCE	Adar 8, 20 Jan 2457 BCE	Adar 11, 23 Jan 2457 BCE
18th	Superior Venus vanishes E on Arahsamnu 13 and after 1 month 25 days appears W on Tebetu 8.	7 Oct 2457 BCE	21 Dec 2457 BCE	Arahsamnu 13, 18 Oct 2457 BCE	Tebetu 8, 11 Dec 2457 BCE
19th	Inferior Venus sets on II Ululu 20 (Ululu 20?) and after 17 days rises on Tishritu 8.	11 Aug 2456 BCE	31 Aug 2456 BCE	Ululu 20, 15 Aug 2456 BCE	Tishritu 8, 2 Sep 2456 BCE
20th	Superior Venus vanishes E on Simanu 25 and after 2 months 6 days appears W on Ululu 1.	20 Apr 2455 BCE	12 Jul 2455 BCE	Simanu 25, 13 May 2455 BCE	Ululu 1, 16 Jul 2455 BCE

21st	Inferior Venus sets on Nisan 22 and after 11 days rises on Ayar 3.	29 Mar 2454 BCE	6 Apr 2454 BCE	Nisan 22, 30 Mar 2454 BCE	Ayar 3, 9 Apr 2454 BCE
21st	Superior Venus vanishes E on Tebetu 19 and after 2 months 3 days appears W on Adar 22.	21 Dec 2454 BCE	24 Feb 2453 BCE	Tebetu 19, 17 Dec 2454 BCE	Adar 22, 17 Feb 2453 BCE

We can also validate the reconstructed old Babylonian calendar by calculating the synodic period (584 days) of Venus around 2473-2453 BCE.

The calculations based on the Reconstructed Old Babylonian Calendar:

Heliacal Rising (Inferior Conjunction)		**Days**	**Heliacal Rising (Superior Conjunction)**		**Days**
From	**To**		**From**	**To**	
28-Jan-2473 BCE	6-Sep-2472 BCE	587	16-Dec-2473 BCE	21-Jul-2471 BCE	583
6-Sep-2472 BCE	15-Apr-2470 BCE	586	21-Jul-2471 BCE	25-Feb-2469 BCE	584
15-Apr-2470 BCE	19-Nov-2469 BCE	583	25-Feb-2469 BCE	9-Oct-2468 BCE	592
19-Nov-2469 BCE	29-Jun-2467 BCE	588	9-Oct-2468 BCE	5-May-2466 BCE	573
29-Jun-2467 BCE	26-Jan-2465 BCE	576	5-May-2466 BCE	15-Dec-2465 BCE	589
26-Jan-2465 BCE	5-Sep-2464 BCE	588	15-Dec-2465 BCE	21-Jul-2463 BCE	584
5-Sep-2464 BCE	13-Apr-2462 BCE	585	21-Jul-2463 BCE	21-Feb-2461 BCE	580
13-Apr-2462 BCE	15-Nov-2461 BCE	581	21-Feb-2461 BCE	3-Oct-2460 BCE	590

15-Nov-2461 BCE	20-Jun-2459 BCE	583	3-Oct-2460 BCE	1-May-2458 BCE	575
20-Jun-2459 BCE	23-Jan-2457 BCE	582	1-May-2458 BCE	11-Dec-2457 BCE	589
23-Jan-2457 BCE	2-Sep-2456 BCE	588	11-Dec-2457 BCE	16-Jul-2455 BCE	583
2-Sep-2456 BCE	9-Apr-2454 BCE	584	16-Jul-2455 BCE	17-Feb-2453 BCE	581
		7011			**7003**
		584.25			**583.58**

The Calculations based on Calsky Software:[3]

Heliacal Rising (Inferior Conjunction)		**Days**	**Heliacal Rising (Superior Conjunction)**		**Days**
From	**To**		**From**	**To**	
29-Jan-2473 BCE	5-Sep-2472 BCE	585	26-Dec-2473 BCE	17-Jul-2471 BCE	569
5-Sep-2472 BCE	11-Apr-2470 BCE	583	17-Jul-2471 BCE	28-Feb-2469 BCE	591
11-Apr-2470 BCE	17-Nov-2469 BCE	585	28-Feb-2469 BCE	14-Oct-2468 BCE	594
17-Nov-2469 BCE	26-Jun-2467 BCE	587	14-Oct-2468 BCE	6-May-2466 BCE	569
26-Jun-2467 BCE	27-Jan-2465 BCE	580	6-May-2466 BCE	23-Dec-2465 BCE	596
27-Jan-2465 BCE	3-Sep-2464 BCE	585	23-Dec-2465 BCE	14-Jul-2463 BCE	569
3-Sep-2464 BCE	9-Apr-2462 BCE	583	14-Jul-2463 BCE	26-Feb-2461 BCE	592
9-Apr-2462 BCE	15-Nov-2461 BCE	585	26-Feb-2461 BCE	11-Oct-2460 BCE	593
15-Nov-2461 BCE	24-Jun-2459 BCE	587	11-Oct-2460 BCE	4-May-2458 BCE	570
24-Jun-2459 BCE	25-Jan-2457 BCE	580	4-May-2458 BCE	21-Dec-2457 BCE	596

25-Jan-2457 BCE	31-Aug-2456 BCE	584	21-Dec-2457 BCE	12-Jul-2455 BCE	569
31-Aug-2456 BCE	6-Apr-2454 BCE	583	12-Jul-2455 BCE	24-Feb-2453 BCE	592
		7007			**7000**
		583.91			**583.33**

It is of paramount significance to establish these dates of Venus Tablet for the chronology of ancient Babylon. This is because the calculated dates of Venus visibility of the 8-year period (2473-2466 BCE) as explained above would certainly fit the period of 54 or 64 years before/after with the same probability and accuracy. Therefore, I would claim that I have successfully deciphered the exact dates of Venus Tablet and the regnal years of King Ammisaduqa.

The Old Babylonian Calendar

The data available in the Venus tablet is not sufficient to infer the exact scheme of intercalation but it is evident that Babylonians used intercalary months to reconcile the first lunar month (Nisanu) with the first solar month (Aries). This tablet indicates that the 4th (Adar II), 5th (Ululu II), 9th (Adar II), 11th (Ululu II), 14th (Ululu II), 17th (Adar II) and 20th (Adar II) regnal years of King Ammisaduqa had intercalary months. They have also used the concept of extra day (Adhika tithi) because this tablet refers to 30th day of Abu, Tishritu and Sabatu months which generally have only 29 days. Though the Babylonian lunisolar calendar followed the Amanta scheme (from the new moon to new moon) but the months commenced from the 5th or 6th day of the bright fortnight. This is the reason why one tablet refers to a solar eclipse on 26th day of the month and another tablet refers to a lunar eclipse on the 10th day of the month. Interestingly, the 8th year was referred to as the year of Golden throne because Venus and Sun were both in conjunction in Cancer and the heliacal rising of Venus appears as Venus is sitting on the Golden throne. Thus, the dates recorded in Venus tablet unambiguously indicate that King Ammisaduqa reigned for 21 years from 2473 BCE to 2453 BCE. His successor King Samsuditana reigned for 31 years around 2452-2421 BCE. Hittite King Mursulis I destroyed the city of Babylon around 2421-2418 BCE.

Since the Venus tablet provides absolute dates for the reign of King Ammisaduqa, the regnal period of Ammisaduqa (2473-2453 BCE) must be considered as the sheet anchor of the Babylonian chronology. Unfortunately, historians have limited their research around the period of 1702-1499 BCE and utterly failed to explain the dates of the Venus tablet. Finally, Erica Reiner and David Pingree have concluded that it is impossible to extract reliable chronological information from the tablet and blamed the imaginary scribal errors that never existed.[4] In reality, historians are lost in the erroneous chronology that based the fictitious epoch of 1 CE. I have proved above that we can extract reliable chronological information from the Venus tablet if we are able to correct the chronological error of ~825 years (~660 years in the epoch of the Christian era and additional ~165 years in the Jewish chronology).

Let us discuss the archaeo-astronomical observations recorded in various other clay tablets.

The Total Lunar Eclipse of Mari

A tablet discovered the city of Mari tells about the occurrence of a total lunar eclipse in the 12th regnal year of King Hammurabi who reigned around 2620-2578 BCE. This total lunar eclipse occurred on 13th Mar 2608 BCE.

The Eclipses of Babylon
(From the reign of Samsuditana to the fall of Babylon)[5]

Eclipse No. 1

The translation of "*Solar Omens of Enuma Anu Enlil*" and the omen on Tablet 24 records, "If the Sun weeps because of the decision of the Annunaki, you observe the sky there is darkness, and Libra is surrounded by green halo on the 28th of Abu. The same solar eclipse also mentioned in another text as "If the sun weeps because of the decision of the Annunaki, you observe the sky there is darkness, Libra is surrounded by green halo…. A period of hostilities will come and one king will defeat another king." This text also indirectly predicts the conquest of Babylon by the Hittite King Mursulis I.

This solar eclipse occurred on 15th Sep 2423 BCE on the 28th of Abu month (Aug/Sep) when sun was in Libra. Thus, eclipse took place in the 29th regnal year of King Samsuditana.

Eclipse No 2

EAE Tablet 20 informs us that a pair of Solar and Lunar eclipses occurred in the month of Simanu (May/June) at the end of the reign of King Samsuditana. It says; "If an eclipse occurs on the 14th day of Simanu (May/June) and the god, in his eclipse, becomes dark on the side south above, and clears on the side east below; the north wind (blows, and) (the moon) begins the last watch, and he (the moon) is seen with the sun. His horns bend (toward) the sky. He (the moon) did not obscure his entire *Surinnu*, and disappeared. You observe on the 28th, and the eclipse is near; begins and becomes red; it will show you the eclipse. Observe his eclipse, the god who in his eclipse was visible and disappeared, and bear in mind the north wind. The prediction is given for Babylon: the destruction of Babylon is near."

Historians say that 1595 BCE is the traditional date for the destruction of Babylon by the Hittite King Mursulis I but they have identified the pair of eclipses that occurred on 31st Jan 1546 BCE and 15th Feb 1546 BCE. This identification of eclipses is fallacious because Simanu Month is May/June and not January/February. Moreover, these eclipses cannot be explained in the High chronology (1702-1681 BCE), nor in the Middle chronology (1646-1625 BCE), nor in the Low chronology (1582-1561 BCE) nor in the Ultralow chronology (1550-1529 BCE).

If we correct the chronological error of ~825 years, the traditional date of the fall of Babylon must be around 2419 or 2418 BCE. Historians have incorrectly calculated the traditional date as 1595 BCE/1594 BCE due to the chronological error of ~825 years. A total solar eclipse occurred on 23rd Jun 2418 BCE in the month of Simanu and fifteen days earlier, a penumbral lunar eclipse occurred on 9th Jun 2418 BCE. This rarest twin eclipse also validates the chronology of the first dynasty of Babylon and the fall of Babylon. Interestingly, another lunar eclipse also occurred 15 days before on 9th Jun 2418 BCE. Interestingly, another penumbral lunar eclipse also occurred 15 days later (9th Jun 2418 BCE).

More importantly, this twin eclipse coincided with the 8-year cycle of Venus. The year 2418-2417 BCE was the 56th year starting from the first year (2474-2473 BCE) of the Venus tablet. This rarest twin eclipse must be considered as the sheet anchor of Babylonian chronology. In all probability, Hittite King Mursulis I invaded and destroyed Babylon between 2421 BCE and 2418 BCE.

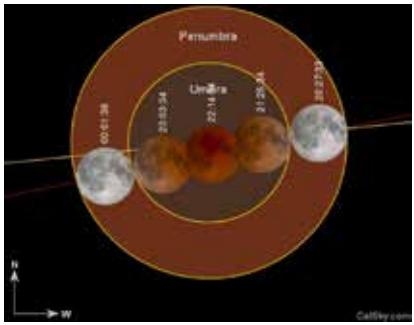
Eclipse No 3

Two tablets found at Tell Mohammad refer to the lunar eclipses occurred in the months of Nisanu (Feb/Mar) and Abu (Jul/Aug) during the year 38 after the resettlement of Babylon. Evidently, these two lunar eclipses must have been extraordinary. As established above, Hittite King Mursulis I destroyed Babylon around 2418 BCE and took the idol of Marduk, the patron deity of Babylon to Hani. Later, the idol of Marduk was brought back to Babylon and re-installed in the temple. Thus, Babylon was again resettled after 34 years and most probably, an epoch of resettlement of Babylon commenced in 2384 BCE. Two tablets of Tell Mohammad refer the year 38, i.e., 2346 BCE starting from the epoch of the resettlement of Babylon (2384 BCE) and record two extraordinary penumbral lunar eclipses occurred in the month of Nisanu on 25th Feb 2346 BCE and in the month of Abu on 23rd Jul 2346 BCE. Interestingly, the tablet records that the lunar eclipse of 23rd Jul occurred on the 10th day of Abu month. Evidently, the Babylonian months used to begin on the 5th day of the bright half of the lunar month.

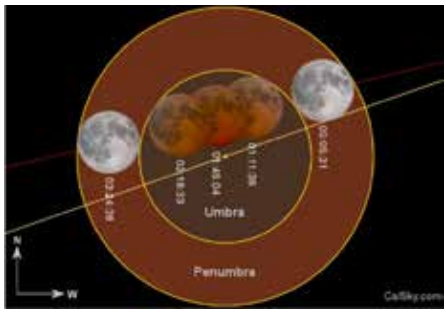
The Ur III Lunar Eclipses:[6]

EAE *(Enuma Anu Enlil)* Tablet 20 records that a lunar eclipse occurred in the 14th day of the month Simanu (May/June) beginning in the first watch of the night. This eclipse is associated with the death of an Ur III King (King Sulgi) and the succession of his son. The lunar eclipse began on the Upper East Side and cleared the moon on the lower west side.

The Kings of Ur III reigned before the foundation of the city of Babylon (2906 BCE). The penumbral lunar eclipse occurred on 18th May 2975 BCE regularly corresponds to the verifiable details recorded in the Tablet 20.



EAE Tablet 21 informs us that a lunar eclipse was observed on the 14th day of the month Adar (Jan/Feb) and it began on the south side of the moon. This eclipse is associated with King Ibbi-Sin's penultimate year and predicts the immediate fall of Ur. Interestingly, the direction of these two eclipses described in the Tablet 20 & 21 clearly indicates that there was an interval of 42 years between the events. The penumbral lunar eclipse occurred on 25th Jan 2932 BCE regularly corresponds to the verifiable details recorded in the Tablet 21 and it observed exactly 42 years after the eclipse of 18th May 2975 BCE.



These two lunar eclipses were extraordinary because they were the first of three eclipses (Lunar-Solar-Lunar) occurred within a month.

The lunar eclipse (18th May 2975 BCE) of EAE Tablet 20 was followed by a solar eclipse (1st Jun 2975 BCE) and a lunar eclipse (16 Jun 2975 BCE). The lunar eclipse (25th Jan 2932 BCE) of EAE Tablet 21 was also followed by a solar eclipse (9 Feb 2932 BCE) and a lunar eclipse (24 Feb 2932 BCE).

Interestingly, the Tablet 21 predicts the destruction of Ur. The reign of King Ibbi-Sin ended in 2931 BCE and seemingly, the floods had destroyed the kingdom of Ur in 2930 BCE.

The Chronology of the Third Dynasty of Ur (3056-2931 BCE)

We can accurately fix the chronology of the third dynasty of Ur based on the dates of two extraordinary Lunar eclipses referred to in EAE Tablet 20 (18th May 2975 BCE) & EAE Tablet 21 (25th Jan 2932 BCE).

		Duration	**In CE**
1.	Ur-Namma	32 y	3056-3023 BCE
2.	Shulgi	48 y	3023-2975 BCE
3.	Amar-Suena	9 y	2975-2966 BCE
4.	Shu-Suena	9 y	2965-2956 BCE
5.	Ibbi-Suena	24 y	2955-2931 BCE

The Dynasty of Isin (2931-2706 BCE)

		Regnal years	**In CE**
1.	Ishbi-Erra	33 y	2930-2897 BCE
2.	Shu-Illishu	20 y	2897-2877 BCE
3.	Iddin-Dagan	21 y	2877-2856 BCE
4.	Ishme-Dagan	20 y	2856-2836 BCE
5.	Lipit-Ishtar	11 y	2836-2825 BCE
6.	Ur-Ninurta	28 y	2825-2797 BCE
7.	Bur-Suen	21 y	2797-2776 BCE
8.	Lipit-Enlil	5 y	2776-2771 BCE
9.	Erra-Imitti	8 y	2771-2763 BCE
10.	Enlil-Bani	24 y	2763-2739 BCE
11.	Zambiya	3 y	2739-2736 BCE
12.	Iter-Pisha	4 y	2736-2732 BCE
13.	Ur-du-Kuga	4 y	2732-2728 BCE
14.	Suen-Magir	11 y	2728-2718 BCE
15.	Damiq-ilicu	23 y	2718-2695 BCE

The First Dynasty of New Babylon or Arabian? Dynasty (2720-2421 BCE)

		Regnal years	In CE
1.	Sumu-abum	13 y	2720-2707 BCE
2.	Sumu-la El	36 y	2707-2671 BCE
3.	Sabium	14 y	2671-2657 BCE
4.	Apil-sin	18 y	2657-2639 BCE
5.	Sin-Muballit	19 y	2639-2620 BCE
6.	**Hammurabi**	**42 y**	**2619-2578 BCE**
7.	Samsuiluna	38 y	2578-2540 BCE
8.	Abi-eshuh	28 y	2540-2512 BCE
9.	Ammi-ditana	38 y	2512-2474 BCE
10.	**Ammi-saduqa**	**21 y**	**2473-2453 BCE**
11.	Samsu-ditana	31 y	2452-2421 BCE

The famous king Hammurabi was the contemporary of Abraham, who was born in 2638 BCE. The astronomical data of Venus tablet accurately establishes the reign of Ammisaduqa around 2473-2421 BCE. Hittite King Mursulis I invaded and destroyed Babylon between 2421 BCE and 2418 BCE. The city of Babylon was again resettled in 2384 BCE.

The Kassite Dynasty (2418-1955 BCE)

The Kassite kings took over the control of Babylon after the Hittite sack of the city in 2418 BCE and reigned up to 1955 BCE.

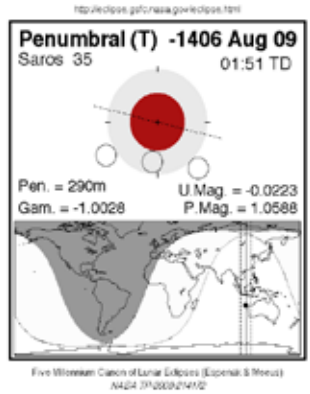
The Assyrian Kings of Babylon (1955-1429 BCE)

Berosus records that Assyrian Kings reigned over Babylon for 526 years. We will discuss the chronology of Assyrian Kings in the next Chapter. The Chaldean King Nabu-shuma-ishkun reigned around 1429-1406 BCE.

Nabonassar I and His Successors (1406-1283 BCE)

Nabonassar I took over Babylon from Chaldean King Nabu-shuma-ishkun and founded his era on 29th Apr 1406. He introduced Egyptian calendar in Babylon. There is a record of the Babylonian observation of a

lunar eclipse in the first year of Nabonassar. Ptolemy uses the beginning of Nabonassar's reign as the epoch for his calculations."



	Babylonian Kings	Regnal years	In CE
1.	Nabonassaros	14 y	1406-1392 BCE
2.	Nadios	2 y	1392-1390 BCE
3.	Chinzer and Poros	5 y	1390-1385 BCE
4.	Iloulaios	5 y	1385-1380 BCE
5.	Mardokempados	12 y	1379-1368 BCE
6.	Arkeanos	6 y	1368-1362 BCE
7.	**Without kings**	**2 y**	1362-1360 BCE
8.	Bilibos	3 y	1360-1357 BCE
9.	Aparanadios	6 y	1357-1351 BCE
10.	Rhegebelos	1 y	1351-1350 BCE
11.	Mesesimordakos	4 y	1350-1346 BCE
12.	**Without kings**	**8 y**	1346-1338 BCE
13.	Asaradinos	13 y	1338-1325 BCE
14.	Saosdouchinos	20 y	1325-1305 BCE
15.	Kineladanos	22 y	1305-1283 BCE

The Babylonian Kingdom became weak after 1362 BCE and seemingly, the Assyrian kings had indirect control over Babylon around 1362 BCE to 1283 BCE.

Chaldean or Neo-Babylonian Empire (1283-1197 BCE)
After the death of the Assyrian King Ashurbanipal, the Chaldeans rebelled against the leadership of Nabopolassar. He established the Chaldean Empire in 1283 BCE & founded an epoch of the Chaldean era in 1282 BCE.

	The Chaldean Kings	**Regnal Years**	**In CE**
1.	Nabopolassaros	21 y	1283-1262 BCE
2.	Nabokolassaros II	43 y	1262-1220 BCE
3.	Illoaroudamos	2 y	1220-1218 BCE
4.	Nerigasolassaros	4 y	1218-1214 BCE
5.	Nabonadios	17 y	1214-1197 BCE

Medo-Persian Empire (1197-990 BCE) and the reign of Alexander (990-982 BCE)

		Regnal Years	**In CE**
1.	Cyrus	9 y	1197-1188 BCE
2.	Kambysos	8 y	1188-1180 BCE
3.	Dareios the First	36 y	1180-1144 BCE
4.	Xerxes	21 y	1144-1123 BCE
5.	Artaxerxes the First	41 y	1123-1082 BCE
6.	Dareios the Second	19 y	1082-1063 BCE
7.	Artaxerxes the Second	46 y	1063-1017 BCE
8.	Ochos	21 y	1017-996 BCE
9.	Arogos	2 y	996-994 BCE
10.	Dareios the Third	4 y	994-990 BCE
11.	**Alexandros I**	**8 y**	**990-982 BCE**

8

The Chronology of Assyria

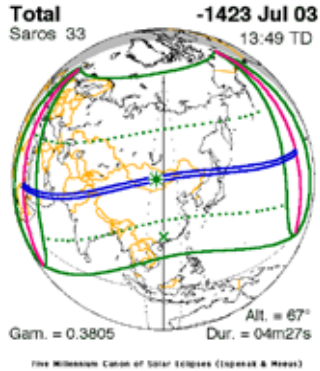
A tablet containing the Khorsabad Assyrian Kings list was found in excavations on the site of Dur-Sarru-Kin in 1932/33 and another tablet having the SDAS Assyrian kings list was also found in 1952. A few more fragmentary tablets also give the Assyrian kings list. Literary sources like the Chronicle of Eusebius and *Excerpta Latina Barbari* provide us valuable information about the chronology of Assyrian Kings. Before discussing the chronology of Assyrian Kings, let us establish the dates of archaeo-astronomical observations as recorded in some of the clay tablets found in the archaeological sites.

The Solar Eclipse at the City of Nineveh

An Assyrian tablet refers to the occurrence of a solar eclipse in the 8th year of King Assurdan III. It records;

"*Bur-Sagale of Guzana, A revolt in Assur took place in the month of Simanu and the Sun was eclipsed.*"[1]

The month Simanu generally occurs in May/June and in June/July in case of intercalation. Historians have claimed that this eclipse was occurred on 15th Jun 763 BCE which must be considered as the sheet anchor date of the Babylonian and Assyrian chronology. Considering the chronological error of ~660 years, this Assyrian tablet refers to the solar eclipse that occurred on 3rd Jul 1423 BCE. It may be noted that 1424-1423 BCE was the 19th year in Metonic cycle and there was an intercalation of the month Adar II. Thus, Simanu month was in June/July 1423 BCE.

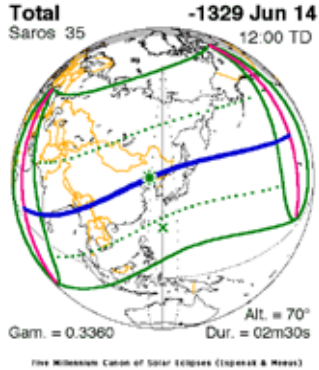


The Date of King Sennacherib

The Hebrew sources say that King Sennacherib was the contemporary of Jewish King Hezekiah (1368-1339 BCE) and the prophet Isaiah. According to the rabbinic literature, Isaiah was a descendant of the royal house of Judah and the brother of King Amaziah. Isaiah died in the 14th regnal year of King Hezekiah. King Sennacherib invaded Judah and defeated King Hezekiah. Thus, we can accurately fix the date of Sennacherib around 1365-1341 BCE.

The Solar Eclipse During the Reign of King Esar-haddon

An Assyrian tablet of the reign of Esar-haddon records, "Since my lord went to Egypt, an eclipse has taken place in the month of Tammuz". Esar-haddon was the successor Sennacherib and reigned around 1341-1329 BCE. A solar eclipse occurred in the month of Tammuz (June/July) on 14th Jun 1329 BCE. Undoubtedly, Esar-haddon went to Egypt in 1329 BCE in his last regnal year.



Historians have fixed the date of Esar-haddon around 681-679 BCE but failed to explain the solar eclipse in the month of Tammuj during his reign.

Chronological History of Assyria: From 3000 BCE to 1266 BCE

The Date of Assyrian King Belus: The Sheet Anchor of Assyrian Chronology

Excerpta Latina Barbari, a Latin translation of a Greek chronicle, mentions that the Great Assyrian King Belus flourished 1430 years before the epoch of the first Olympiad.[2] The epoch of the first Olympiad commenced in 1435 BCE. Considering the epoch of the first Olympiad in 1435 BCE, the Assyrian King Belus reigned around 2865 BCE.

The date of the Assyrian King Belus (2865 BCE) can also be validated from other sources. Diodorus says that Assyrian Empire commenced 1000 years or more before Trojan War (1842 BCE). We will discuss in detail the epoch of the first Olympiad and the date of the fall of Troy city in the context of the chronology of Greece. Eusebius gives the chronology of 36 Assyrian kings:

Assyrian Kings of Northern Syria and South-central Anatolia

		Duration	**In CE**
	Belus I and his descendants		2865-2742 BCE
	Belus II	55	2742- 2687 BCE
1.	Ninus (He was the first to rule over all the inhabitants of Asia except Indians. Abraham was born during his time.)	52	2687-2635 BCE
2.	Semiramis (wife of Ninus)	42	2635-2593 BCE
3.	Zames, also known as Ninyas	38	2593-2555 BCE
4.	Arius	30	2555-2525 BCE
5.	Aralius, also known as Amyrus	40	2525-2485 BCE
6.	Xerxes, also known as Balaeus	30	2485-2455- BCE
7.	Armamithres	38	2455-2417 BCE

8.	Belochus	35	2417-2382 BCE
9.	Balaeas	12	2382-2370 BCE
10.	Aladas	32	2370-2338 BCE
11.	Mamythus	30	2338-2308 BCE
12.	Machchalaeus	30	2308-2278 BCE
13.	Spherus	22	2278-2256 BCE
14.	Mamylus	30	2256-2226 BCE
15.	Sparethus	40	2226-2186 BCE
16.	Ascatades (Moses lived during his reign.)	40	2186-2146 BCE
17.	Amyntas	45	2146-2101 BCE
18.	Belochus (His daughter Tratres also known as Achurard ruled for 17 years. Dionysus and Perseus lived at the time.)	45	2101-2056 BCE
19.	Balatores	30	2056-2026 BCE
20.	Lamprides	32	2026-1994 BCE
21.	Sosmares	8	1994-1986 BCE
22.	Lampares	30	1986-1956 BCE
23.	Pannias (The expedition of Argonauts and Heracles happened during his reign.)	42	1956-1914 BCE
24.	Sosarmus	19	1914-1895 BCE
25.	Mithraeus	27	1895-1868 BCE
26.	Teutamus (Troy was captured in 1842 BCE during his reign.)	32	1868-1836 BCE
27.	Teutaeus	40	1836-1796 BCE
28.	Theneus	30	1796-1766 BCE
29.	Derusus	40	1766-1726 BCE
30.	Eupalmes (Jews King David lived during his reign and Solomon built the temple at Jerusalem.)	38	1726-1688 BCE
31.	Laosthenes	45	1688-1643 BCE

32.	Peritiades	30	1643-1613 BCE
33.	Ophrataeus	21	1613-1592 BCE
34.	Ophatanes	50 (25?)	1592-1542 BCE
35.	Acrazanes	42	1542-1500 BCE
36.	Sardanapallus (Thonnos Konkoleros)	25 (20?)	1500-1475 BCE

Arbaces, the general of Assyrian King Sardanapallus, killed him 40 years before the first Olympiad (1435 BCE) and founded the Median Empire. He appointed Belesius to be governor of Babylon.

The Medes Kings of Assyria

		Duration	**In CE**
1.	Arbaces	28	1475-1447 BCE
2.	Maudaces	20	1447-1427 BCE
3.	Sosarmus	30	1427-1397 BCE
4.	Artycas	30	1397-1367 BCE
5.	Deioces	54	1367-1313 BCE
6.	Phraortes	24	1313-1289 BCE
7.	Cyraxas	32	1289-1257 BCE
8.	Ashdahak [Astyages] (He was the maternal grandfather of King Cyrus.)	38	1257-1219 BCE

The Lydian Kings of Lydia (Western Turkey)

		Duration	**In CE**
1.	Ardys (son of Alyattes)	36	1390-1354 BCE
2.	Alyattes	14	1354-1340 BCE
3.	Meles	12	1340-1328 BCE
4.	Candaules	17	1328-1311 BCE
5.	Gyges (Alyattes)	35	1311-1276 BCE
6.	Ardys	5	1276-1271 BCE
7.	Odyartes	49	1271-1222 BCE
8.	Croesus	15	1222-1207 BCE

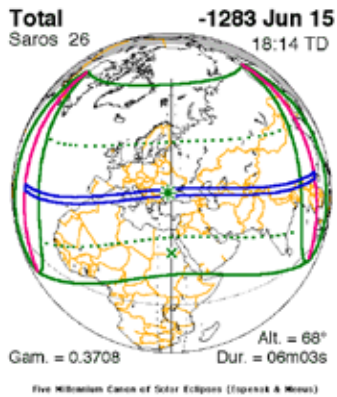
Cyrus deposed his maternal grandfather Ashdadhak and became the king of the Medes Empire in 1219 BCE in the 55th Olympiad year. He defeated the Lydian King Croesus. Thus, Cyrus took over the control of the Empire of the Assyria and Lydia.

The War Between Lydia and Medes

Herodotus mentions that there was a total solar eclipse during the battle between the Lydians and Medes. He says that this total solar eclipse had been predicted by Thales of Miletus:[3]

"After this, seeing that Alyattes would not give up the Scythians to Cyraxes at his demand, there was war between the Lydians and the Medes five years…. They were still warring with equal success, when it chanced, at an encounter which happened in the sixth year, that during the battle the day was turned to night. Thales of Miletus had foretold this loss of daylight to the Ionians, fixing it within the year in which the change did indeed happen. So when the Lydians and the Medes saw the day turned to night, they stopped fighting, and both were rather keen to make peace. Those who reconciled them were Syennesis the Sicilian and Labnetus the Babylonian….."

Undoubtedly, this total solar eclipse occurred on 15th June 1283 BCE.



Evidently, the Lydians and the Medes were at war for five years from 1288 BCE to 1283 BCE and the war ended on 16th June 1283 BCE when a total solar eclipse took place. Modern historians have mistakenly considered the statements of Herodotus and Pliny to be the same and

thought that the eclipse predicted by Thales must have occurred in the 4th year of 48th Olympiad. They have opined that the only plausible date of the eclipse of Thales is 28th May 585 BCE but the year 585 BCE is the 2nd year of 48th Olympiad if the epoch is 776 BCE. Evidently, the epoch of 776 BCE fails to explain the eclipse predicted by Thales. Moreover, the eclipses mentioned by Pliny and Herodotus were not the same. Pliny records to a partial solar eclipse that occurred in the 4th year of 48th Olympiad whereas Herodotus mentions a total solar eclipse that occurred during the sixth year (15th June 1283 BCE) of Lydia-Medes war during the time of Cyraxes (1288-1256 BCE).

The Assyrian Kings of Upper Mesopotamia

A cuneiform tablet found at the city of Mari on the central Euphrates establishes that King Hammurabi of Babylonia (2619-2578 BCE) and King Shamshi-Adad I of Mari were the contemporaries. An oath was sworn by the life of these two kings in the tenth year of Hammurabi, the finds at Mari "proved conclusively that Hammurabi came to the throne in Babylonia after the accession of Shamshi-Adad I in Assyria.

Apart from the above, the date of the solar eclipse during the 8th year of King Assurdan III (3rd July 1423 BCE) and the date of a solar eclipse during the reign of King Esar-haddon (14th June 1329 BCE) can be considered as the sheet anchors of the Assyrian chronology. Now, we can accurately establish the chronology as given below:

	The Old Assyrian Kings	**Duration**	**In CE**
1.	Erishum I		2900-2860 BCE
2.	Ikunum		2860-2820 BCE
3.	Sargon I		2820-2780 BCE
4.	Puzur Ashur II		2780-2740 BCE
5.	Naram-sin (Naram-Suen)		2740-2700 BCE
6.	Erishum II		2700-2651 BCE
7.	Shamsi-Adad I	33	2651-2618 BCE
8.	Ishme-Dagan I	40	2618-2578 BCE
9.	Mut-Ashkur		2578-2540 BCE
10.	Remu		2540-2500 BCE

11.	Asinum		2500-2476 BCE
	Seven Usurpers of Assyrian throne		
12.	Ashur-dugul (44th King in the list)	6	2476-2470 BCE
13.	Ashur-apla-idi		2470-2450 BCE
14.	Nasir-Sin		2450-2430 BCE
15.	Sin-namir		2430-2410 BCE
16.	Ipqi-Ishar		2410-2390 BCE
17.	Adad-salulu		2390-2367 BCE
18.	Adasi	19	2367-2348 BCE
	The Middle Assyrian Kings		
19.	Bel-Bani	10	2348-2338 BCE
20.	Libaya	17	2338-2321 BCE
21.	Sharma-Adad I	12	2321-2309 BCE
22.	Iptar-Sin	12	2309-2297 BCE
23.	Bazaya	28	2297-2269 BCE
24.	Lullaya	6	2269-2263 BCE
25.	Shu-Ninua	14	2263-2249 BCE
26.	Sharma-Adad II	3	2249-2246 BCE
27.	Erishum III	13	2246-2233 BCE
28.	Shamshi-Adad II	6	2233-2227 BCE
29.	Ishme-Dagan II	16	2227-2211 BCE
30.	Shamshi-Adad III	16	2211-2195 BCE
31.	Ashur-nirari I	26	2195-2169 BCE
32.	Puzur-Ashur III	24	2169-2145 BCE
33.	Enlil-nasir I	13	2145-2132 BCE
34.	Nur-ili	12	2132-2120 BCE
35.	Ashur-shaduni	1 m	2120-2119 BCE
36.	Ashur-rabi I		2119-2099 BCE
37.	Ashur-nadin-ahhe I		2099-2079 BCE
38.	Enlil-nasir II		2079-2074 BCE
39.	Ashur-Nirari II		2074-2067 BCE
40.	Ashur-bei-nisheshu		2067-2058 BCE

41.	Ashur-rim-nisheshu	2058-2049 BCE
42.	Ashur-nadin-ahhe II	2049-2040 BCE
43.	Eriba-Adad I	2039-2012 BCE
44.	Ashur-Uballit I	2012-1977 BCE
45.	Enlil-nirari	1977-1967 BCE
46.	Arik-den-ili	1967-1955 BCE
47.	Adad-nirari I	1955-1923 BCE
48.	Shalmaneser I	1923-1893 BCE
49.	Tukulti-Ninurta I	1893-1856 BCE
50.	Ashur-Nadin-apli	1856-1853 BCE
51.	Ashur-Narari III	1853-1847 BCE
52.	Enlil-Kudurri-usur	1847-1841 BCE
53.	Ninurta-apal-Ekur	1841-1838 BCE
54.	Ashur-Dan I	1838-1792 BCE
55.	Ninurta-tukulti-Ashur	1792 BCE
56.	Mutakkil-nusku	1792 BCE
57.	Ashur-Resh-ishi I	1792-1774 BCE
58.	Tiglath-Pileser I	1774-1735 BCE
59.	Asharid-apal-Ekur	1735-1733 BCE
60.	Ashur-bel-kala	1733-1715 BCE
61.	Eriba-Adad II	1715-1713 BCE
62.	Shamsi-Adad IV	1713-1709 BCE
63.	Ashur-nasir-pal I	1709-1690 BCE
64.	Shalmaneser II	1690-1678 BCE
65.	Ashur-Nirari IV	1678-1672 BCE
66.	Ashur-Rabi II	1672-1631 BCE
67.	Ashur-Resha-Ishi II	1631-1626 BCE
68.	Tiglath-Pileser III	1626-1594 BCE
69.	Ashur-Dan II	1594-1571 BCE
The Neo-Assyrian Kings		
70.	Adad-Nirari II	1570-1549 BCE
71.	Tukulti-Ninurta II	1549-1542 BCE

72.	Ashur-nasir-pal II	1542-1517 BCE
73.	Shalmaneser III	1517-1482 BCE
74.	Shamshi-Adad V	1482-1469 BCE
75.	Shammu-ramat (Regent)	1469-1466 BCE
76.	Adad-nirari III	1469-1441 BCE
77.	Shalmaneser IV	1441-1431 BCE
78.	Ashur-Dan III	1431-1413 BCE
79.	Ashur-nirari V	1413-1403 BCE
80.	Tiglath-Pileser III	1403-1387 BCE
81.	Shalmaneser V	1387-1382 BCE
The Sargonid Dynasty		
82.	Sargon II	1382-1365 BCE
83.	Sennacherib	1365-1341 BCE
84.	Esar-Haddon	1341-1329 BCE
85.	Ashurbanipal	1329-1291 BCE
86.	Ashur-etil-ilani	1291-1287 BCE
87.	Sin-shumu-lishir	1286 BCE
88.	Sin-shar-ishkun	1287-1272 BCE
89.	Ashur-Uballit II	1272-1266 BCE

The Fall of Nineveh

Nuneveh was the capital of the Assyrian kings of upper Mesopotamia. There was a 12-year war between the Babylonians and the Assyrians. Finally, the Babylonians defeated the Assyrians in the 10th year of Neo-Babylonian or Chaldean King Nabopolassar (1283-1262 BCE). Assyrian King Sin-shar-ishkun was killed in 1272 BCE and his brother Ashur-Uballit II was made king of Assyria. Ashur-Uballit II founded his capital at Harran but got killed in 1266 BCE. Thus, Assyrians lost their kingdom around 1266 BCE.

Assyria came under the control of Achaemenid empire around 1198-990 BCE. Thereafter, it became part of the Macedonian and the Seleucid empires.

9

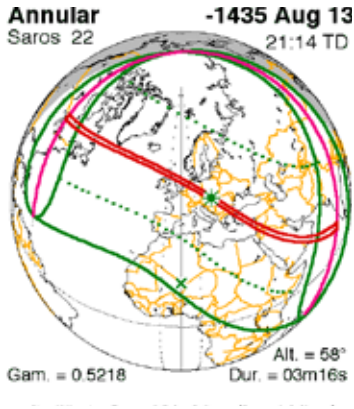
The Chronology of Ancient Greece

It is of paramount importance to fix the following epochs of ancient eras for arriving at the correct chronology of ancient Greece.

1. The epoch of the first Olympiad
2. The epoch of Rome's era
3. The epoch of the Fall of Troy

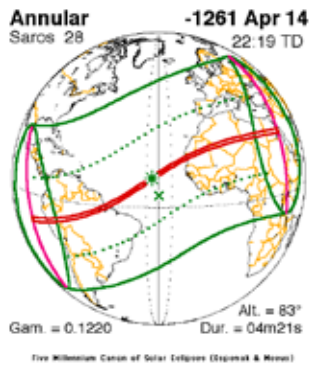
The Epoch of the Olympiad (1435 BCE)

It is well-known fact that the first Olympiad Games were held in ancient Greece. Interestingly, the first Olympic Games became an epochal milestone in the Greek history and the ancient Greek historians popularly used this epoch for recording the chronology of historical events. Ancient sources indicate that the date of first Olympiad had coincided with a total or annular solar eclipse. Greek astronomers used this solar eclipse as an epoch for predicting future eclipses occurring in Saros cycle (~18 years) and developed an analogue computing method. Seemingly, the Greek astronomers learnt the basics of Saros cycle from the Chaldean astronomers of Babylon and Egypt. The historians of modern era have fixed the epoch of the first Olympiad in 776 BCE or 775 BCE with a bias to the fictitious epoch of the Christian era (1 CE) but the epoch of 776 BCE miserably fails to establish a total or annular solar eclipse in 776 BCE or 775 BCE which indicates a serious error in the Greek chronology. I have already explained in Chapter 2 that there is an error of ~660 years in the chronology of world history. Therefore, we have to fix the epoch of the first Olympiad in 1435 BCE 660 years before 775 BCE. An annular solar eclipse took place extremely close to the city of Athens on 13th Aug 1435 BCE.

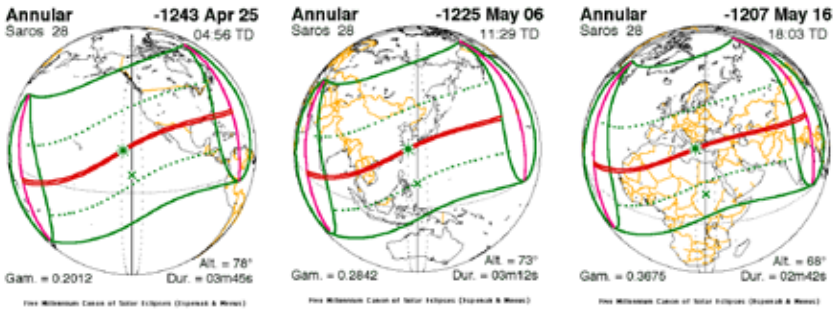


Thus, we can conclusively fix the epoch of the first Olympiad in the year 1435 BCE. The reckoning of the year of Olympiad calendar was from Summer solstice to Summer solstice. Therefore, the first Olympiad year was from July 1435 BCE to July 1434 BCE.

Interestingly, Pliny mentions in his work *"Naturalis Historia"* that Thales of Miletus has predicted the occurrence of solar eclipse in the 4th year of the 48th Olympiad.[1] The 48.4 Olympiad years was from July 1244 BCE to July 1243 BCE. Pliny referred to the 49.1 Olympiad years which indicates that he used a calendar from vernal equinox to vernal equinox. Thus, the 49.1 Olympiad years was from Apr 1243 BCE to Apr 1242 BCE. In all probability, Thales of Miletus observed a solar eclipse 18 years before 1243 BCE and predicted an eclipse in 1243 BCE in the 28th Saros series. It appears that Thales had witnessed the solar eclipse that occurred on 14th Apr 1261 BCE.

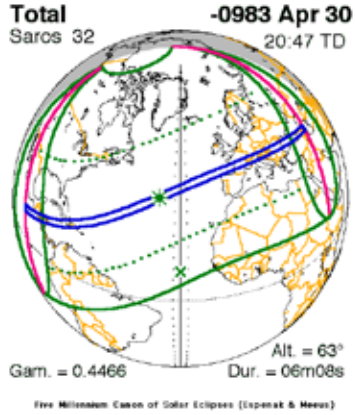


Seemingly, Thales of Miletus predicted the occurrence of solar eclipses on 25th Apr 1243 BCE, 6th May 1225 BCE and 16th May 1207 BCE in the 28th Saros series.



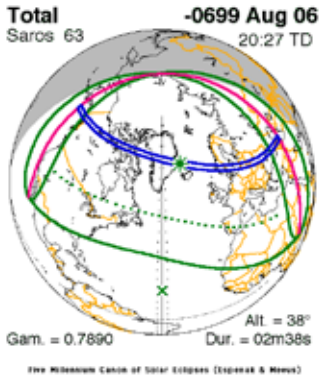
Herodotus informs us that the Lydians and the Medes agreed to the terms of friendship after more than five years of war when the day suddenly became night.[2] He also adds that Thales of Miletus had foretold the occurrence of this eclipse to the Ionians. Evidently, Thales of Miletus had predicted the annular solar eclipse of 1207 BCE in the 28th Saros cycle.

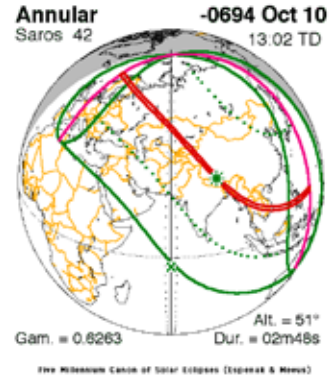
Diodorus mentioned that there was a solar eclipse in the 3rd year of 113th Olympiad (984-983 BCE). A total solar eclipse occurred on 30th Apr 983 BCE.



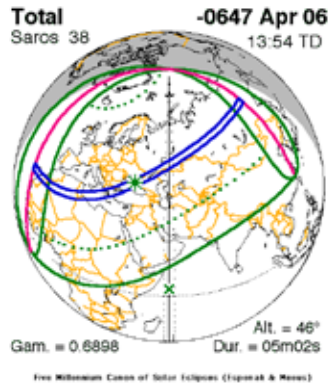
The author of "*Chronicon Paschale*" mentions that there was an eclipse of Sun in the 4th year of 184th Olympiad, i.e., 699-698 BCE.[3] He also refers to an eclipse of Sun in the 4th year of the 185th Olympiad, i.e.,

695-694 BCE. These two solar eclipses occurred on 6th Aug 699 BCE and 10th Oct 694 BCE.

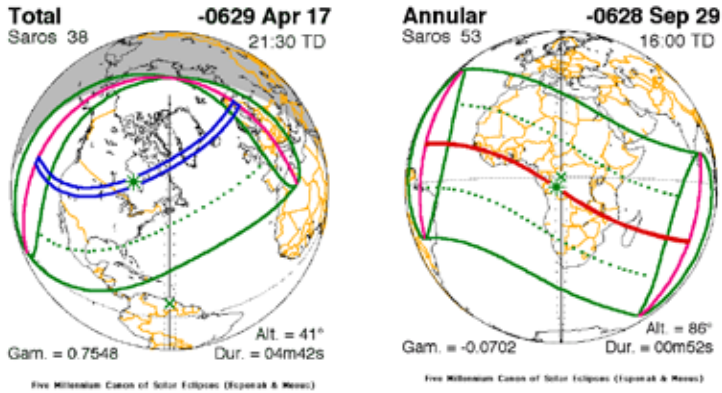




St. Jerome mentions that there was a solar eclipse in the 1st year of the 198th Olympiad and Augustus died in the same year. Total solar eclipse occurred on 6th Apr 647 BCE.



John Philoponus of Alexandria records the occurrence of a solar eclipse in the 2nd year of the 202nd Olympiad, i.e., 630-629 BCE. There is also a fragment of Phelgon referring to a solar eclipse in the 4th year of the 202nd Olympiad, i.e., 628-627 BCE. Eusebius also refers to a solar eclipse in the 4th year of the 202nd Olympiad. A total solar eclipse occurred on 17th Apr 629 BCE (the 2nd year of the 202nd Olympiad) and an annular solar eclipse occurred on 29th Sep 628 BCE (the 4th year of the 202nd Olympiad).



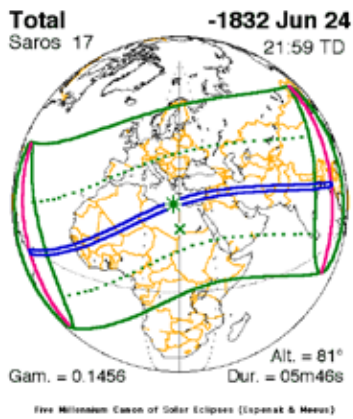
The historians fixed the epoch of the first Olympiad in 776 BCE/775 BCE but failed to explain none of the eclipses as discussed above. Though a partial solar eclipse occurred in Egypt on 4th May 775 BCE but it was not visible in Athens. Moreover, the historians have mistakenly mixed up the references of Pliny and Herodotus and identified the solar eclipse predicted by Thales that occurred on 28th May 584 BCE. In fact, Pliny referred to a solar eclipse predicted by Thales in the 49.1 or 48.4 Olympiad years, whereas Herodotus referred to a total or annular solar eclipse predicted by Thales during the war between the Medes and the Lydians. Cyrus became the king of Medes Empire in the 55th Olympiad. The war between the Medes and the Lydians began in the 7th regnal year of Cyrus and lasted for at least five years. Therefore, the solar eclipses mentioned by Pliny and Herodotus were not the same. In fact, Thales of Miletus might have predicted some solar eclipses in a Saros series. Seemingly, there was a difference of 36 years between the solar eclipse referred to by Pliny and the total or annular solar eclipse referred to by Herodotus. If Pliny had mentioned the solar eclipse of 584 BCE in the 57th Saros series, the solar eclipse in the same Saros series occurred in 548 BCE but the solar eclipse that occurred on 19th June 548 BCE was only partially (with magnitude of 0.127) visible in the area of the River Halys (Red River) where the battle was fought.

The astronomical evidence of various solar eclipses as discussed above conclusively establishes the epoch of the first Olympiad in the year 1435 BCE.

The Epoch of Rome's Era (1410 BCE) and the Epoch of the Fall of Troy (1842 BCE)

Romulus founded the city of Rome in the 6.4 Olympiad year and the 432nd year from the epoch of the fall of Troy. The 6.4 Olympiad year was from July 1411 to July 1410 BCE. Thus, the city of Rome was founded in 1410 BCE. Now, we can conclusively fix the epoch of the fall of Troy in 1842 BCE, 432 years before the foundation of Rome city and 407 years before the epoch of the first Olympiad (1435 BCE). Eratosthenes indicates the difference of 704 years between the fall of Troy (1842 BCE) and the expedition of Xerxes (1138 BCE).

Homer tells us that Odysseus, the hero of Trojan War returned to Penelope after ten years. Plutarch interpreted a passage in the 20th book of Homer's Odyssey to be a poetic description of a total solar eclipse at Odysseus' return. After ten years from the date of the Fall of Troy (1842 BCE), Odysseus returned to his capital Ithaca disguised in beggar's rags. It happens that, when Penelope's persistent suitors sat down at noon for a meal, they started laughing and saw their food spattered with blood. At this moment, the seer Theoclymenus foretells their death, ending with the sentence, *"The Sun has been obliterated from the sky, and an unlucky darkness invades the world."* This description suggests a total solar eclipse over Ithaca. This total solar eclipse occurred at noon on 24th Jun 1832 BCE, ten years after the date of the fall of Troy, i.e., 1842 BCE. Thus, we can conclusively establish the date of fall of Troy in 1842 BCE.



The historians have fixed the date of the fall of Troy around 1184 BCE but there was no total solar eclipse in 1174 BCE. Therefore, they have fixed the year of Odysseus' return in 1177 BCE and claimed that the total solar eclipse occurred on 16th Apr 1177 BCE. This is another example of the chronological discrepancy in the history of ancient Greece.

The Date of Homer and Hesiod (1700-1600 BCE)

Homer was the legendary author of "Iliad" and "Odyssey" and Hesiod was the author of "Theogony" and "Shield of Heracles" (the expedition of Heracles against Cycnus). Aristotle and Aristarchus indicated that Homer lived during the period of Ionian migration, 140 years after the fall of Troy (1842 BCE). Most probably, Homer and Hesiod were the contemporaries as mentioned by Herodotus. According to Tatian, Homer was also a contemporary of Archilochus (1730-1650 BCE). Thus, we can roughly fix the date of Homer and Hesiod around 1700-1600 BCE.

The Greek Olympiads From 1435 BCE

According to many Greek scholars, the games were held for the first time by Heracles, the son of Alcmene 419 years before the first Olympiad (1435 BCE). Evidently, Heracles founded the institution of games in 1854 BCE but the first Olympiad was held formally in 1435 BCE. Greeks used this sports event as an epoch for calendrical purpose. The reckoning of the year was from summer solstice to summer solstice. The annular eclipse occurred on 13th Aug 1435 BCE became an epoch for prediction of solar eclipses in the Saros cycle. The Olympiads used to be held in every 4th year starting from June 1435 BCE but stopped on the 293rd Olympiad (267 BCE) by Christian emperor Theodosius I.

Some historical events recorded in the Olympiad calendar:

		In CE
1.	Romulus, the founder of Rome city and Remes were born in the 2.2 year of Olympiad.	1430-1429 BCE (15 Aug 1429 BCE)
2.	Cyrus became the king of Medes Empire in 55th Olympiad.	1219-1218 BCE

3.	From the first Olympiad to the expedition of Xerxes 297 years.	1138 BCE
4.	Peloponnesian war began in the 87th Olympiad.	1091-1090 BCE
5.	Alexander captured Babylon and killed Darius in the 112th Olympiad.	991-990 BCE
6.	Alexander died during the 114th Olympiad.	983-982 BCE
7.	Parthians revolted against Macedonians. Their first king was Arsaces during the 133rd Olympiad.	907-906 BCE
8.	Augustus became the emperor of Roman in the 188th Olympiad.	687-686 BCE
9.	Tiberius became the emperor of Roman in the 198th Olympiad.	647-646 BCE
10	Jesus was crucified in the 2nd year of the 202nd Olympiad.	630-629 BCE
11.	Gauis became the emperor of Rome in the 204th Olympiad.	623 BCE
12	Claudius became the emperor of Rome in the 205th Olympiad.	619 BCE
13	Nero became the emperor of Rome in the 208th Olympiad.	607 BCE
14.	Vespasianus became the emperor of Rome in the 212nd Olympiad.	591 BCE
15.	Titus became the emperor of Rome in the 214th Olympiad.	583 BCE
16.	Domitianus became the emperor of Rome in the 215th Olympiad.	579 BCE
17.	Nerva, after him Trajanaus became the emperors of Rome in the 219th Olympiad.	563 BCE
18	Hadrianus became the emperor of Rome in the 224th Olympiad.	543 BCE
19.	Antonius Pius became the emperor of Rome in the 229th Olympiad.	523 BCE

20.	Marcus Antonius Pius and Lucius Verus became the emperors of Rome in the 235th Olympiad.	499 BCE
21.	Commodus became the emperor of Rome in the 239th Olympiad.	483 BCE
22.	Pertinax and then Severus became the emperors of Rome in the 243rd Olympiad.	467 BCE
23.	Antoninus called Caracalla became the emperor of Rome in the 247th Olympiad.	451 BCE
24.	The Christian Emperor Theodosius I ordered to discontinue the tradition of Olympic games on 293rd Olympiad.	267 BCE

The Dynastic History of Ancient Greece

The dynastic history of ancient Greece begins with the Kings of Sicyonians, Argives and Athenians.

The Kings of Sicyonians

Aegialeus, the first King of Sicyonians became king in the 15th year of Assyrian King Belus II (2742-2657 BCE) and his son Europs was the contemporary of Ninus (2657-2605 BCE). Telchin was the contemporary of Assyrian Queen Semiramis.

		Duration	**In CE**
1.	Aegialeus	52	2727-2675 BCE
2.	Europs	45	2675-2630 BCE
3.	Telchin	20	2630-2610 BCE
4.	Apis	25	2610-2585 BCE
5.	Thelxion	52	2585-2533 BCE
6.	Aegydrus	34	2533-2499 BCE
7.	Thurimachus	45	2499-2454 BCE
8.	Leucippus	53	2454-2401 BCE
9.	Messapus (During his reign, Egypt was ruled by Joseph as recorded by Hebrews.)	47	2401-2354 BCE

10.	Eratus	46	2354-2308 BCE
11.	Plemnaeus	48	2308-2260 BCE
12.	Orthopolis	63	2260-2197 BCE
13.	Marathonius	30	2197-2167 BCE
14.	Marathus	20	2167-2147 BCE
15.	Echyreus	55	2147-2092 BCE
16.	Corax	30	2092-2062 BCE
17.	Epopeus	35	2062-2027 BCE
18.	Laomedon	40	2027-1987 BCE
19.	Sicyon	45	1987-1942 BCE
20.	Polybus	40	1942-1902 BCE
21.	Inachus	40	1902-1862 BCE
22.	Phaestus	8	1862-1854 BCE
23.	Adrastus	4	1854-1850 BCE
24.	Polypheides (During his reign, Troy was captured in 1842 BCE.)	31	1850-1819 BCE
25.	Pelasgus	20	1819-1799 BCE
26.	Zeuxippus	31	1799-1768 BCE
		959 years	
27.	Priests of Carneius (Archelaus (1 y), Automedon (4 Y), Theoclytus (4 y), Euneus (6 y), Theonomus (9 y), Amphigyes (12 y) and Charidemus (1 y).	37	1768-1731 BCE.

The Kings of the Argives and the Epoch of the Era of Phoroneus (2412 BCE)

Inachus was the first King and the contemporary of Thurimachus, the 7th King of Sicyonians (2499-2454 BCE). Phoroneus ascended the throne in 2412 BCE and his date of ascension became the epoch of the era of Phoroneus. The ancient Greece tradition indicates that the epoch of the era of Phoroneus commenced 570 years before the epoch of the Trojan War (1842 BCE). Berosus, the earliest historian of Babylon, mentioned

that the astronomical observations commenced at Babylon 490 years before the Greek era of Phoroneus. Babylon city was resettled in 2906 BCE during the reign of King Ishbi-Erra of the Isin dynasty. Thus, Berosus indicated that the tradition of astronomical observations had been re-established in Babylon in 2902 BCE 490 years before the Greek era of Phoroneus (2412 BCE).

		Duration	**In CE**
1.	Inachus	50	2462-2412 BCE
2.	Phoroneus	60	2412-2352 BCE
3.	Apis	35	2352-2317 BCE
4.	Argus	70	2317-2247 BCE
5.	Criasus	54	2247-2193 BCE
6.	Phorbas	35	2193-2158 BCE
7.	Triopas (During his reign, Moses led Exodus of Israelites out of Egypt in 2138 BCE.)	46	2158-2112 BCE
8.	Crotopus	21	2112-2091 BCE
9.	Stheneleus	11	2091-2080 BCE
10.	Danaus (He drove out Stheneleus and ruled Argos.)	50	2080-2030 BCE
11.	Lynceus	41	2030-1989 BCE
12.	Abas	23	1989-1966 BCE
13.	Proetus	17	1966-1949 BCE
14.	Acrisius	31	1949-1918 BCE

After Acrisius, the kings of Argives started ruling from Mycenae.

1.	Eurystheus	45	1978-1933 BCE
2.	The sons Pelops (Atreus, Thyestes)	65	1933-1868 BCE
3.	Agamemnon	30	1868-1838 BCE
4.	Aegisthus	17	1838-1821 BCE
5.	Orestes, Tisamenus, Penthilus and Cometes	58	1821-1763 BCE

6.	The return of the Heracleidae and they conquered the Peloponnese kingdom.	60	1763-1703 BCE
7.	The Migration of Ionians		1703-1702 BCE
8.	The first Olympiad (267 years after the migration of Ionians.) Pelops was the first ruler of Peloponnese and he organized the first Olympic games.		1434 BCE

The Kings of the Athenians

Eusebius tells us that Ogygus was the first king of the Athenians. He lived during the time of Messapus (2401-2354 BCE), the 9th King of Sicyon and Belochus (2417-2382 BCE), the 8th King of the Assyrians. After Ogygus, floods caused major destruction in Athens or Attica. It remained without a King for 189 years. Cecrops became the King of Athens in 2215 BCE 780 years before the first Olympiad (1435 BCE). Thus, Ogygus died 969 years before the first Olympiad (1435 BCE).

		Duration	**In CE**
	Ogygus	30	2434-2404 BCE
	No King.	189	2404-2215 BCE
1.	Cecrops Diphyes [During his reign, Prometheus, Epimetheus and Atlas lived. He was a senior contemporary of Marathonius (2197-2167 BCE), the 13th Sicyonian King, Triopas (2158-2112 BCE), the 7th king of the Argives and Moses (2218-2118 BCE).]	50	2215-2165 BCE
2.	Cranaus	9	2170-2161 BCE
3.	Amphictyon	10	2161-2151 BCE
4.	Erichthonius	50	2151-2101 BCE
5.	Pandion	40	2101-2061 BCE

6.	Erechtheus	50	2061-2011 BCE
7.	Cecrops II	40	2011-1971 BCE
8.	Pandion II	25	1971-1946 BCE
9.	Aegeus	48	1946-1898 BCE
10.	Theseus	30	1898-1868 BCE
11.	Menestheus (Troy was captured in 1842 BCE during his reign. Seemingly, there is an error of three to four years in the chronology.)	23	1868-1845 BCE
12.	Demophon	33	1845-1812 BCE
13.	Oxyntes	12	1812-1801 BCE
14.	Apheidas	1	1801-1800 BCE
15.	Thymoetes	8	1800-1792 BCE
16.	Melanthus	37	1792-1755 BCE
17.	Codrus (During his reign, Ionians were driven out of Achaea and they took refuge in Athens.)	21	1755-1734 BCE
18.	Medon	20	1734-1714 BCE
19.	Acastus (The Ionians migrated and Solomon built the temple in 1658 BCE in his reign.)	36	1714-1678 BCE
20.	Archippus	19	1678-1659 BCE
21.	Thersippus	41	1659-1618 BCE
22.	Phorbas	30	1618-1588 BCE
23.	Mrgacles	30	1588-1558 BCE
24.	Diognetus	28	1558-1530 BCE
25.	Pherecles	36 (19?)	1530-1494 BCE
26.	Ariphron (Assyrian King Sardanapallus was killed in his reign.)	20	1494-1474 BCE
27.	Thespieus	10 (27?)	1474-1464 BCE

28.	Agamestor	17	1464-1447 BCE
29.	Aeschylus (The first Olympiad was held in his 12th regnal year.)	23	1447-1424 BCE
30.	Alcmaeon	2	1424-1422 BCE
		12?	1422-1410 BCE?

After Alcmaeon, the archons were appointed for ten years each.

		Duration	**In CE**
1.	Charops	10 y	1410-1400 BCE
2.	Aesimides	10	1400-1390 BCE
3.	Cleidicus	10	1390-1380 BCE
4.	Hippomenes	10	1380-1370 BCE
5.	Leocrates	10	1370-1360 BCE
6.	Apsander	10	1360-1350 BCE
7.	Eryxias	10	1350-1340 BCE

Thereafter, an archon was appointed for each year.

Now, we can accurately arrive at the chronology of Athenians from the era of Phoroneus to the first Olympiad as indicated by Eratosthenes. There was a difference of 570 years between the epoch of the Phoroneus era (2412 BCE) and the fall of Troy (1842 BCE) and a difference of 407 years between the epoch of fall of Troy (1842 BCE) and the epoch of the first Olympiad (1435 BCE). Apollodorus also says that there are 407 years' gap between the capture of Troy (1842 BCE) and the first Olympiad (1435 BCE). The Grecian chronology from 2412 BCE to 1435 BCE:

		In CE
1.	The epoch of the Phoroneus era (570 years before the fall of Troy).	2412 BCE
2.	Danaus was the twin brother of an Egyptian king [Probably, son of Egyptian King Orus (2144-2108 BCE) of the 18th dynasty]. He had migrated to Greece. He founded the Danaid dynasty in Argos 287 years after the epoch the Phoroneus era or 283 years before the fall of Troy.	2125 BCE

3.	Dionysius of Halicarnassus mentions that Deucalion was the son of Prometheus and Clymene, daughter of Oceanus. He drove away the "sixth generation" of Pelasgians from Thessaly. He was the father of Orestheus, king of Aetolia. Deucalion might have flourished 250 years before the fall of Troy.	2092 BCE
4.	Erechtheus II became the king of Athens 200 years before the fall of Troy.	2042 BCE
5.	Cadmus was a Phoenician prince and the son of King Agenor and queen Telephassa of Tyre city. He became the King of Thebes 130 years before the fall of Troy.	1972 BCE
6.	Pelops won the crown of Olympia in a Chariot race. He flourished 100 years before the fall of Troy.	1942 BCE
7.	Heracleas or Hercules was born.	1925 BCE
8.	First Theban war was fought 30 years before the fall of Troy.	1872 BCE
9.	Heracleas died 26 years before the fall of Troy.	1868 BCE
10.	Agamemnon became the King of Mycenae.	1858 BCE
11.	The second Theban was fought 16 years before the fall of Troy.	1858 BCE
12.	Trojan Expedition began.	1852 BCE
13.	The capture of Troy city.	1842 BCE
14.	Orestes became the king of Mycenae in the 8th year after the fall of Troy.	1834 BCE
15.	The Expedition and the return of Heracleidae into the Peloponnese (80 years after 1842 BCE).	1762 BCE
16.	Ionians migrated and settled in the cities of Ionia (140 years after 1842 BCE).	1702 BCE
17.	Cyme was founded 150 years after the fall of Troy.	1692 BCE
18.	Smyrna was founded 168 years after the fall of Troy.	1674 BCE
19.	Lycurgus of Sparta (159 years after 1702 BCE).	1543 BCE
20.	The first Olympiad (108 years after 1543 BCE).	1434 BCE

The Kings of Heracleidae (Corinthians and Spartans)

The Kings of Heracleidae were the descendants of Heracles (Hercules). These kings conquered the Peloponnesian kingdoms of Mycenae, Sparta and Argos. Aletes was the first king and reigned for 38 years. Aletes and his descendants ruled 447 years after the return of the Heracleidae. Most probably, Aletes reigned around 1762 BCE.

The Corinthians	**Duration**	**In CE**
Aletes	38	1762-1724 BCE
Ixion	38	1724-1686 BCE
Agelas	37	1686-1649 BCE
Prymnis	35	1649-1614 BCE
Bacchis (He was the most distinguished King.)	35	1614-1579 BCE
Agelas	30	1579-1549 BCE
Eudemus	25	1549-1524 BCE
Aristomedes	35	1524-1489 BCE
Agemon	16	1489-1473 BCE
Alexander	25	1473-1448 BCE
Teletes	12	1448-1436 BCE
Automenes	1	1436-1435 BCE

Thereafter, annual presidents reigned over Corinth up to 1315 BCE. Total 447 years reigned. The Tyrant King Cypsellus took over the kingdom.

The Spartans	**Duration**	**In CE**
Eurysthenes (He began his rule in the 80th year after the Trojan war.)	42	1762-1720 BCE
Agis	1 or 35	1720-1685 BCE
Echestratus	31	1685-1654 BCE
Labotas	37	1654-1617 BCE
Dorystus	29	1617-1588 BCE
Agesilaus	44	1588-1544 BCE
Archelaus	60	1544-1484 BCE
Teleclus	40	1484-1444 BCE

Alcamenes (In the 10th year of his reign, the first Olympiad took place.)	38	1444-1406 BCE
The 2nd Family of Spartans		
Procles	49	1685-1636 BCE
Prytanis	49	1636-1587 BCE
Eunomius	45	1587-1542 BCE
Chariclus	60	1542-1482 BCE
Nicander	38	1482-1444 BCE
Theopompus (In the 10th year of his reign, the first Olympiad took place.)	47	1444-1397 BCE

The Kings of Macedonia

After the death of King Sardanapallaus around 1475 BCE, Assyrian Empire collapsed. The Kings of Macedonia took the control over the Kingdom. Most of the ancient historians trace the ancestry of Macedonian Kings back to Heracles. Caranus was the first King of Macedonia after the death of Assyrian King Sardanapallaus. Total 23 kings reigned for 483 years up to Alexander.

		Duration	**In CE**
1.	Caranus	30	1475-1445 BCE
2.	Coenus	28	1445-1417 BCE
3.	Tyrimias	43	1417-1374 BCE
4.	Perdiccas	47	1374-1327 BCE
5.	Argaeus	38	1327-1289 BCE
6.	Philippus	33	1289-1256 BCE
7.	Aeropus	20	1256-1236 BCE
8.	Alcetas (He was the contemporary of Cyrus.)	18	1236-1218 BCE
9.	Amyntas	42	1218-1176 BCE
10.	Alexander	44	1176-1132 BCE
11.	Perdiccas	23	1132-1109 BCE

12.	Archelaus	24	1109-1085 BCE
13.	Orestes	3	1085-1082 BCE
14.	Archelaus	24	1082-1058 BCE
15.	Amyntas	4	1058-1054 BCE
16.	Pausanias	1	1054-1053 BCE
17.	Amyntas	6	1053-1047 BCE
18.	Argaeus	2	1047-1045 BCE
19.	Amyntas	18	1045-1027 BCE
20.	Alexander	1	1027-1026 BCE
21.	Ptolemy of Alorus	3	1026-1023 BCE
22.	Perdiccas	6	1023-1017 BCE
23.	Philippus	27	1017-990 BCE
24.	Alexander, the Great	12	994-982 BCE

Alexander, the Great (994-982 BCE)

According to Eusebius, Alexander ruled for 6 years before the conquest of Persian Empire. He killed Darius and ruled over Persia for 6 years. Thus, Alexander reigned for total 12 years. The Persian Empire was established in the 55th Olympiad (1214 BCE) and Alexander died in the first year of 114th Olympiad (983-982 BCE).

Alexander had two sons, Heracles the son of Barsine, the daughter of Pharnabazus, and Alexander IV was born about the time of his father's death. Alexander IV was the son of Roxane the daughter of Oxyartes the Bactrian. Cassander executed Olympias the mother of Alexander the Great and both the sons of Alexander. The entire family of Alexander was killed by Cassander.

The Kings of Macedonians after Alexander

		Duration	**In CE**
1.	Alexander IV	7 y	980-972 BCE
2.	Cassander	19 y	972-954 BCE
3.	The sons of Cassander	3 y 6 m	954-950 BCE
4.	Demetrius Poliorcetes	6	950-944 BCE

5.	Pyrrhus	7 m	944 BCE
6.	Lysimachus	5 y 5 m	944-939 BCE
7.	Ptolemy Ceraunus	1 y 5 m	938-937 BCE
8.	Meleager	2 m	937 BCE
9.	Antipater	45 d	937 BCE
10.	Sosthenes	2 y	937-935 BCE
11.	No King	2 y	935-933 BCE
12.	Antigonus Gonatas	34 y	933-899 BCE
13.	Demetrius	10 y	899-889 BCE
14.	Antigonus	12 Y	889-877 BCE
15.	Philippus	42 y	877-835 BCE
16.	Perseus	10 y 8 m	835-825 BCE
17.	Autonomy	19 y	825-806 BCE
18	Phillippus	1 y	806-805 BCE

After 805 BCE, the Macedonians became the feudatories of the Roman Empire.

The Macedonian Kings of Syria

		Duration	**In CE**
1.	Seleucus Nicanor	32	972-940 BCE
2.	Antiochus Soter	19	940-921 BCE
3.	Antochus Theos	15	921-906 BCE
4.	Seleucus Callinicus	21	906-885 BCE
5.	Seleucus Ceraunus	3	885-882 BCE
6.	Antiochus the Great	36	882-846 BCE
7.	Seleucus Philopator	12	846-834 BCE
8.	Antiochus Epiphanes	11	834-823 BCE
9.	Antiochus Eupator	1 y 6 m	823-822 BCE
10.	Demetrius Soter	12	822-810 BCE

11.	Alexander	15	810-795 BCE
12.	Demetrius	3	795-792 BCE
13.	Antiochus Sidetes	9	792-783 BCE
14.	Demetrius	4	783-779 BCE
15.	Antiochus Grypus	26	779-753 BCE
16.	Antiochus Cyzicenus	17	753-736 BCE
17.	Philippus	2	736-734 BCE

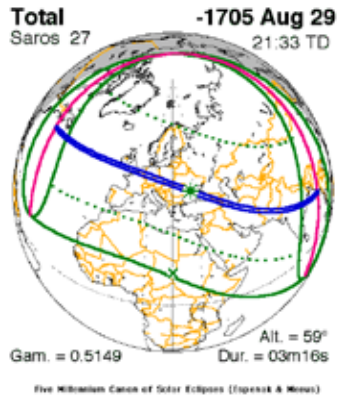
The Date of Archilochus (1730-1650 BCE)

Archilochus was one of the earliest Greek lyric poets. He wrote,

"Nothing there is beyond hope, nothing that can be sworn impossible, nothing wonderful, since Zeus father of the Olympians made night from midday, hiding the light of the shining sun and sore fear came upon men."

Archilochus unambiguously records his observation of a total solar eclipse occurred in his lifetime. The reference of "midday" clearly indicates that the maximum eclipse took place at noon time. Herodotus, Tatian, Proclus and Eusebius mention that Archilochus was the contemporary of Gyges, the King of Lydia and the founder of Mermnad dynasty. Seemingly, there were two Gyges. Gyges I was the contemporary of Archilochus who used a magical ring to usurp the throne and founded his Mermnad dynasty. Gyges II was the bodyguard of Heraclid king Candaules and assassinated him. Historians have mistakenly considered only one Gyges and fixed his date around 716-652 BCE whereas the date of Archilochus around 680-645 BCE so that they can explain the date of eclipse on 6th Apr 648 BCE.

Archilochus was a contemporary of Homer as mentioned by Tatian. Archilochus lived in Paros and Thasos islands of Greece. The solar eclipse recorded by Archilochus was undoubtedly total at Paros and Thasos islands. A total solar eclipse that occurred on 29th Aug 1705 BCE was visible at noon at Thasos and Paros islands. Therefore, we can roughly fix the date of Archilochus around 1730-1650 BCE.

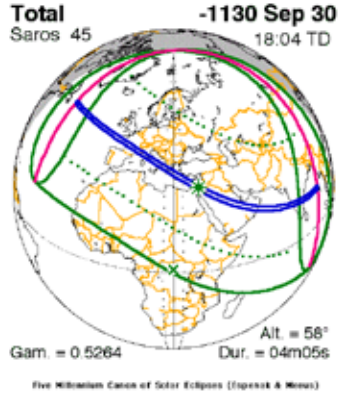


The Date of Thales of Miletus (1284-1206 BCE)

Thales had predicted the solar eclipses in the 28th Saros series from 1261 BCE to 1207 BCE as recorded by Herodotus and Pliny. He had observed the solar eclipse occurred on 14th Apr 1261 BCE and predicted the occurrence of solar eclipses on 25th Apr 1243 BCE, 6th May 1225 BCE and 16th May 1207 BCE in the 28th Saros series. Thus, we can fix the date of Thales around 1284-1206 BCE.

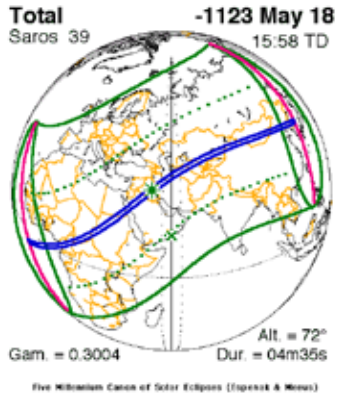
The Date of Pindar (1182-1103 BCE)

Pindar was a Greek lyric poet. He also referred to his observation of a total solar eclipse. He lived at Thebes city of Greece. A total solar eclipse occurred on 30th Sep 1130 BCE and was visible at Thebes.



The Date of Herodotus (1144-1085 BCE)

Herodotus also records that there was a total solar eclipse at the end of the reign of King Xerxes (1144-1123 BCE). He states, *"While he (Xerxes) was offering sacrifice to know if he should march out against the Persians, the sun was suddenly darkened in mid sky".*[4] *A total solar eclipse occurred on 18th May 1123 BCE and the eclipse was visible at Babylon from 9:58 hrs to 12:45 hrs.*

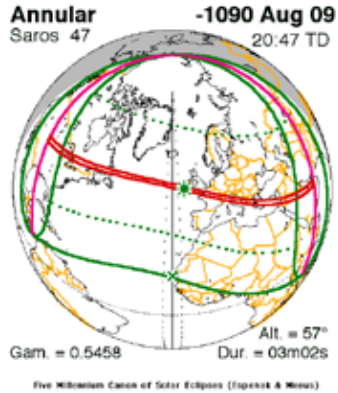


The Date of Xenophon (1090-1014 BCE)

Xenophon was a Greek philosopher and historian. He lived in Athens. According to him, the original inhabitants of Larissa were Medes and they abandoned Larissa during the war between the Medes and the Persians. An annular solar eclipse occurred on 16th May 1207 BCE.

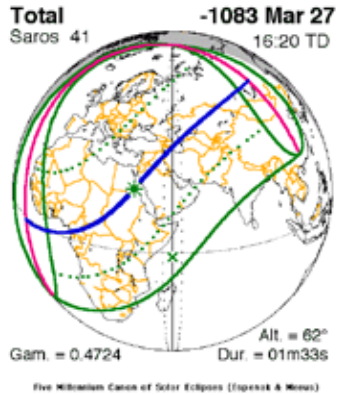
The Date of Thucydides (1120-1060 BCE)

Thucydides was a Greek historian and lived at Athens. He recorded, *"During the same summer at the beginning of a lunar month, the sun was eclipsed after midday; it assumed the shape of a crescent and became full again and during the eclipse some stars became visible."* The year of the eclipse is clearly defined by Thucydides and corresponds to 1090 BCE. Thucydides clearly indicates that the eclipse was annular and it occurred after midday in the summer season. An annular solar eclipse was visible in Athens on 9th Aug 1090 BCE from 15:05 hrs to 17:39 hrs. The summer season in Greece was from July to August.



Historians have erroneously fixed the date of Thucydides around 460-395 BCE and identified the partial solar eclipse occurred on 3rd Aug 430 BCE. Firstly, this eclipse began at 16:53 hrs and ended at 18:56 hrs. Therefore, this eclipse started in the evening and not after midday. Secondly, it was partial and the visibility of stars at the time of maximum eclipse was not possible.

The Solar Eclipse in the 8th year of Peloponnesian War (1091-1064 BCE)
This ancient Greek war was fought between Athenians and Peloponnesian league of Sparta. This war began in 1091 BCE. According to Thucydides, "*In first days of the next summer there was an eclipse of the sun at the time of new moon, and in the early part of the same month an earthquake.*"



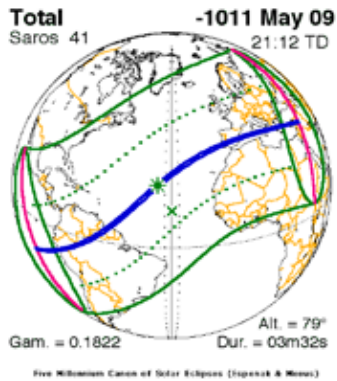
Thus, Thucydides clearly indicates that there was a solar eclipse in the 8th year of Peloponnesian war before the beginning of summer season, i.e., in the month of March. A total solar eclipse took place on 27th Mar 1083 BCE. It was only a large solar eclipse in Greece.

The Date of King Agathocles of Syracuse and Sicily (979-949 BCE)

Diodorus records a solar eclipse occurred during the reign of Greek tyrant king of Syracuse and Sicily. He describes, "*The next day there was such an eclipse of the Sun that the stars appeared everywhere in the Firmament, and the Day turned into Night.*" This eclipse was observed by the fleet of King Agathocles the day after it had set out on a voyage lasting six days and six nights, from Syracuse to Latomia on the African coast. The fleet observed it in the morning about 8:00 hrs to 9:00 hrs having been well with the line of maximum eclipse. Interestingly, Cleomedes refers to this eclipse and records that the Sun was entirely eclipsed in the Hellespont (an ancient name of Dardanelles, the narrow passage between the Aegean Sea and the Sea of Marmara) while one fifth of its diameter was still visible at Alexandria. The annular eclipse occurred on 23rd Jul 950 BCE regularly corresponds to the all verifiable details recorded.

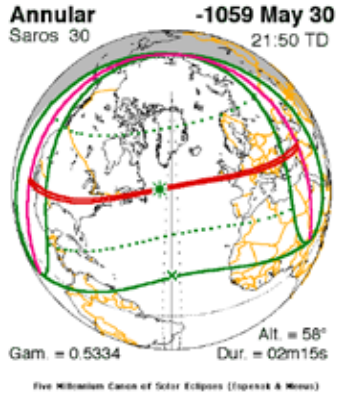
The Date of Pelopidas (1066-1010 BCE)

Pelopidas was a General in Greece and lived in Thebes. According to Plutarch's Life of Pelopidas, a total solar eclipse occurred before Pelopidas left Thebes on expedition against Alexander of Pherae. A total solar eclipse that occurred on 9th May 1011 BCE was visible at Thebes.



The Date of Ennius

Quintus Ennius, a poet and annalist, clearly informs us that a very nearly total or annular solar eclipse occurred before sunset on June 5 in the 350th year after the foundation of Rome. Cicero says that the same eclipse was also recorded in the Annales Maximi. Interestingly, Ennius scientifically described the nature of a solar eclipse and stated that the moon and night obscured the shining Sun. He unambiguously tells us that the maximum eclipse and the end of eclipse took place just before sunset. His statement "*Nonis Iunis soli luna obstitit et nox*" that well implies an eclipse at sunset. An annular eclipse occurred on 30th May 1059 BCE and it began at 15:46 hrs and ended 18:07 hrs. The eclipse was maximum at 17:01 hrs before sunset.



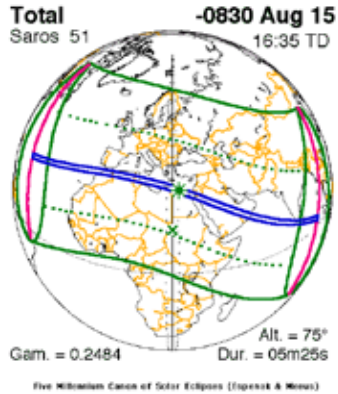
The Roman calendar was, in fact, over-intercalated in ancient times. It appears that the Roman calendar was over-intercalated by 6 days during the lifetime of Ennius. This is the reason why Ennius states that the eclipse took place on 5th June whereas it was occurred on 30th May. Evidently, Macrobius states that the Romans realized that their system is over-intercalated and modified it so that every third octaeteres inserted 66 days (3 intercalations of 22) instead of 90 (4 intercalations of alternating 22 and 23 bays).

The Date of Archimedes, Aristarchus and Hipparchus (900-820 BCE)

Abul Fazal mentions that Archimedes, Aristarchus and Hipparchus were in Alexandria, Egypt around 836 BCE (1769 years before 933 CE). In all probability, Archimedes and Aristarchus were the senior contemporaries of Hipparchus. Evidently, Hipparchus was in Alexandria in 836 BCE.

Hipparchus used parallax for the first time in Greek astronomy to determine the distance to the moon. He did this from the observations of a total solar eclipse. Hipparchus used the observational data from a total solar eclipse viewed from 2 or 3 different locations. Hellespont, Alexandria, Syene (Aswan) and Abu Simbel were the centers of astronomical observations. Hellespont and Abu Simbel are located ~1000 km (flying distance) away from Alexandria whereas Syene is located 5000 stadia or ~800 km (flying distance) away from Alexandria.

A total solar eclipse occurred on 15th Aug 830 BCE was the eclipse observed by Hipparchus at Alexandria.



Probably, Hipparchus got the observational data from Hellespont, Syene and Abu Simbel and found that the eclipse magnitude was 1.065 at Alexandria, 0.861 at Syene, 0.779 at Hellespont and 0.792 at Abu Simbel. He saw the entire Sun was blocked by the Moon at Alexandria whereas the observers at Syene saw only 4/5th of the Sun's disk was covered by the Moon. Based on these observations, Hipparchus approximately calculated that Moon was between 59 and 67 earth radii away.

The Dates of Greek Scholars

		Corrected Date	Erroneous Date
1.	**Pythagoras.** (He learnt various sciences and philosophy in Babylon and India.)	1230-1155 BCE	570-495 BCE
2.	**Hecatateus of Miletus**	1210-1136 BCE	550-476 BCE
3.	**Herodotus**	1144-1085 BCE	484-425 BCE
4.	**Socrates**	1130-1059 BCE	470-399 BCE
5.	**Plato**	1087-1007 BCE	427-347 BCE
6.	**Aristotle**	1044-980 BCE	384-322 BCE
7.	**Euclid**	1020-1040 BCE	360-280 BCE
8.	**Eratosthenes**	936-854 BCE	276-194 BCE

(Eratosthenes was the contemporary of Archimedes. He calculated the circumference of earth by measuring the Sun's angle of elevation at noon on the same day at Alexandria and Syene. He found that the distance of 5000 stadia between the two cities is 1/50th of the circle and concluded that the circumference of the earth is 5000 x 50 =2,50,000 stadia. The Olympic stade was equal to 176.4 meters, which would imply that the circumference is 44100 km. Aryabhata calculated 42882 km whereas the modern value is 40075 km.)

9.	**Apollonius of Perga**	922-850 BCE	262-190 BCE
10.	**Apollonius of Tyana**	650-570 BCE	30-100 BCE

(He was the contemporary of Gaudapadacharya, the Parama Guru of Adi Shankaracharya. He visited India when Indo-Parthian King Phraotes was ruling in Takshashila around 614 BCE.)

11.	The **unknown author** of "Periplus of the Erythrean Sea	635-585 BCE	25-75 CE
12.	**Claudius Ptolemy**, the author of "Almagest"	547-477 BCE	100-170 CE

(Abul Fazal mentions that Ptolemy flourished in Alexandria 1410 years before 933 CE.)

10

The Chronology of Roman Empire

Ancient Greece and Italy probably shared the classical antiquity. The people living in the region of Egypt, Libya and Algeria might have migrated to Italy during ancient times. The royal family of Troy city migrated to Italy after the fall of Troy in 1842 BCE. Romulus founded the city of Rome in 1410 BCE. Ancient Italy might have shared the Greco-Roman classical heritage before the foundation of the city of Rome.

The Date of the Foundation of Rome City (1410 CE)

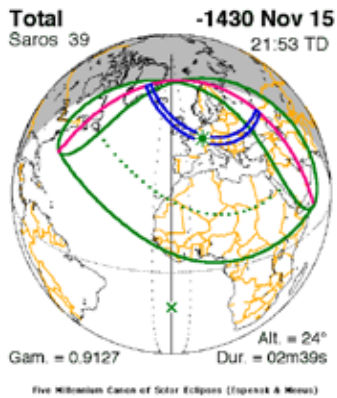
The city of Rome was founded by the legendary King Romulus. Plutarch tells us that Romulus was the descendant of the prince Aeneas, a fugitive from Troy city after the destruction by Greeks in 1842 BCE. Romulus founded the city of Rome in the 432nd year from the epoch of the fall of Troy. Probably, the prince of Troy and his descendants settled in Italy. Twin brothers Romulus and Remus were the sons of Rhea Silvia, the daughter of Numitor, the king of Alba Longa. Romulus wanted to build new city on Palatine Hill whereas Remus selected the Aventine Hill. This difference of opinion led to a serious conflict and consequently, Romulus killed his brother Remus and built the city named "Rome".

According to Plutarch, the city of Rome was founded on the 30th of the lunar month, at a conjunction of the sun and moon in which there was an eclipse. The same eclipse was seen by Antimachus, the epic poet of Teos in the year of Olympiad 6.4. Dionysius of Halicarnassus mentions the year as Olympiad 6.4 whereas Varro records the year as Olympiad 6.3. Probably, some scholars counted the years from 1434-1433 BCE as Olympiad 1.2 whereas others counted 1434-1433 BCE as Olympiad 1.1. This is the reason why Varro gives the year of Rome as Olympiad

6.3 and Dionysius indicates the same year as Olympiad 6.4. Thus, we can accurately fix the year of the foundation of Rome in 1410 BCE.

Plutarch also records that by tradition the city of Rome was founded on the festival of Parilia, i.e., 21st April. Interestingly, Plutarch relates that Varro asked Tarutius to determine the day and hour of Romulus birth astrologically. Plutarch gives the dates related to Romulus in the Egyptian calendar. Romulus was conceived on 23 Choiak of Olympiad 2.1 at the 3rd hour of the day during a total solar eclipse and born on 21 Thoth at sunrise. Plutarch records that the city of Rome was founded on 9 Pharmouthi in Olympiad 6.3 or 6.4 between the second and third hour after sunrise. Let us calculate the exact dates:

The Date of Romulus' Conception: It appears that there is an error in the date (23 Choiak) of Romulus' conception given by Tarutius and Plutarch but they record that a total solar eclipse occurred in Olympiad 2.1 (1430-1429 BCE). Evidently, ancient Roman tradition informs us that a total solar eclipse was observed very close to the date of Romulus conception. A total solar eclipse took place on 15th Nov 1430 BCE and the eclipse magnitude was 0.942 at Rome.

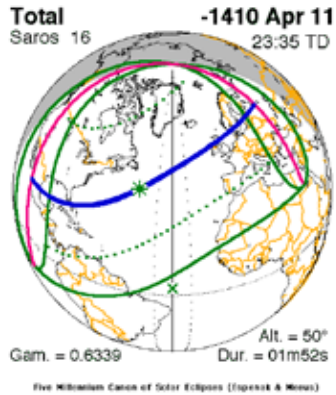


Considering the epoch of the 2nd Sothic cycle on 2nd Nov 2145 BCE, the date of 15th Nov 1430 was 16 Phamenoth (the 7th month) and not 23 Choiak (the 4th month).

The Date of Romulus' Birth: Romulus was born on the 273rd day from conception. Tarutius says that Romulus spent nine months less two

days in the womb of his mother. Thus, Romulus was born on 15th Aug 1429 BCE which was 12 Choiak in Egyptian calendar.

The Date of the Foundation of Rome City: Romulus founded the city on 21st April when he was 18 years old. Plutarch says that there was a solar eclipse on 21st April of Olympiad 6.3 or 6.4. A solar eclipse was observed on 11th Apr 1410 BCE.



Five Millennium Canon of Solar Eclipses (Espenak & Meeus)

Plutarch clearly mentions that the day was the 30th of the lunar month. Therefore, Romulus founded the Rome city on 11th Apr 1410 BCE. It is well known that ancient Roman calendar was struggling with over-intercalation. Therefore, 11th Apr 1410 BCE was calculated as 21st Apr in 1410 BCE.

The Date of death of Romulus: In his 37th regnal year, Romulus died. An eclipse of the sun was observed in this year. The 37th regnal year of Romulus was Apr 1374-1373 BCE. A total solar eclipse took place on 3rd May 1374 BCE and a large eclipse (Magnitude 0.517) was visible at Rome.

The date of the foundation of Rome city, i.e., 11th Apr 1410 BCE became the epoch of Rome's era which was known as AUC (Ab Urbe Condita, a Latin phrase meaning "From the founding of the city"). This epoch can also be reconciled from the epoch of Olympiad (1435 BCE) and the epoch of Trojan war (1842 BCE). The year 1410 BCE was Olympiad 6.4 and the 432nd year from the epoch of Trojan war (1842 BCE). Thus, the calendar of the Rome's era commenced on 21st April 1410 BCE (11th April 1410 BCE). Ennius refers to a solar eclipse occurred around in the

350th year of Rome's era. This solar eclipse was observed on 30th May 1059 BCE.

Censorinus, a Roman scholar, wrote his book in 421 BCE and recorded the year of his book in several different epochs as given below.[1]

	The Year of the Book of Censorinus	**In CE**
1.	Olympiad 254.2 or 1014 (1435 BCE)	Jul 421 BCE – Jul 420 BCE
2.	Rome's era or AUC 991 (1410 BCE)	21 Apr 421 BCE- 20 Apr 420 BCE
3.	Nabonassarian Era 986 (1406 BCE)	29 Apr 421 BCE – 28 Apr 420 BCE
4.	Philippus Era 562 (982 BCE)	Jul 421 BCE – Jul 420 BCE
5.	Pontifex Maximus epoch 283 (704 BCE)	1st Jan 421 BCE – 31st Dec 421 BCE
6.	Augustan Era (Alexandrian) 267 (687 BCE)	29 Aug 421 BCE – 28 Aug 420 BCE
7.	Augustan Era (Roman) 265 (685 BCE)	1st Jan 421 BCE – 31st Dec 421 BCE

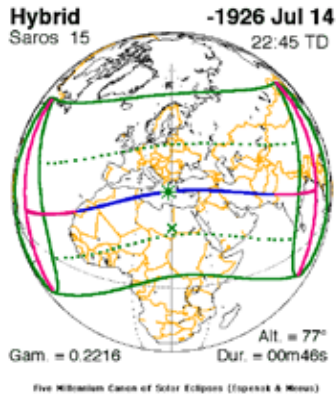
Evidently, Censorinus wrote his book between July and August 421 BCE. N. Salimann infers that the date of Censorinus' book is 21st Jul 421 BCE (terminus ante quem).

The Chronology of Romans

The people of Rome were called Romans from 1410 BCE onwards. Before 1410 BCE, they had been called as Latins. Dionysius of Halicarnassus wrote the history of Romans. He tells us that Arcadians of Greece under the leadership of Oenotrus, the son of Lycaon crossed the Ionian Gulf and settled in Italy. Oenotrus was the fifth from Aezelius and Phoroneus. As I have already explained that Phoroneus began his reign in 2412 BCE 570 years before the fall of Troy (1842 BCE). Thus, Oenotrus might have migrated to Italy around 2300 BCE. Seventeen generations of Oenotrus reigned in the region called Oenotria. They were called Italians from King Italus, who was the descendant of Oenotrus.

The Arcadian Kings (From 2325 BCE to 1842 BCE)
Oenotrus, Italus and their descendants (17 generations) reigned in Italy from 2300 BCE to 1842 BCE. These Arcadians brought the Greek alphabets to Italy.

The Heraclid Kings (From 1910 BCE to 1831 BCE)
According to Herodotus, Heracles lived 900 years before him. The legends say that Heracles was conceived during a solar eclipse in the morning. A solar eclipse was observed (Anatolia, Greece and Egypt) in the morning on 14th July 1926 BCE.



Most probably, Heracles was born in 1925 BCE. Heracles conquered the Peloponnesian kingdoms of Mycenae, Sparta and Argos. Saturnius, a Heraclid King arrived with a Greek fleet and settled in the region called Saturnia. His son Latinus reigned over the land of Aborigines. These Hercules or Heraclid kings introduced the Latin language in Italy. King Latinus died without a successor.

The Trojan Kings (1842-1410 BCE)
According to Homer's "Iliad", Paris the son of Troy's King Priam abducted Helen, a queen from Sparta. King Agamemnon of Argives, the husband of Helen besieged Troy for 10 years and eventually conquered it in 1842 BCE. Plutarch says that Aeneias, the son of Anchises was the fugitive prince of Troy but there is no mention of prince Aeneias in Iliad. Most probably, Aeneias was the descendant of Heraclid kings who supported Troy. When King Latinus died without any successor, Aeneias became the king of Italy.

		Duration	In CE
	The Fall of Troy		1842 BCE
1.	**Latinus**		**up to 1838 BCE**
2.	Aeneias	7 (4+3)	1838-1828 BCE
3.	Ascanius	38	1827-1789 BCE
4.	Silvius	29	1789-1760 BCE
5.	Aeneias Silvius	29	1760-1731 BCE
6.	Latinus Silvius	51	1731-1680 BCE
7.	Alba Silvius	39	1680-1641 BCE
8.	Eptius Silvius	26	1641-1615 BCE
9.	Capis Silvius	28	1615-1587 BCE
10.	Calpetus Silvius	13	1587-1574 BCE
11.	Tiberius Silvius	8	1574-1566 BCE
12.	Agrippa Silvius	35	1566-1531 BCE
13.	Arramulius Silvius	19	1531-1512 BCE
14.	Aventius	37	1512-1475 BCE
15.	Procas Silvius	23	1475-1452 BCE
16.	Amulius Silvius	42	1452-1410 BCE
		432 years	

The Kings of Roman Empire

Cephalon of Gergis, a very early historian, says that the city of Rome was founded in the second generation after the Trojan War and the founder was Rhomos, one of Aeneias' sons. Aeneias had four sons, Ascanius, Euryleon, Rhomulos and Rhomos. Demagoras, Agathymus and many others agree with Cephalon. Probably, Rhomulos, the son of Aeneias might have founded Rome around 1825 BCE but Romulus built the city on grand scale in 1410 BCE. Romulus began his reign in the 1st year of the 7th Olympiad, when Charops at Athens was in the first year of his ten year term as archon.

		Regnal years	In CE
1.	Romulus	36	1410-1374 BCE
2.	Numa Pompilius	41	1374-1333 BCE

3.	Tullus Hostilius	33	1333-1300 BCE
4.	Ancius Marcus	33	1300-1267 BCE
5.	Tarquinius	33 (37?)	1267-1234 BCE
6.	Servilius	44	1234-1190 BCE
7.	Tarquinius Superbus	24	1190-1166 BCE
		244 years	

The Roman Republic (1165-687 BCE)

King Tarquinius was a tyrant. After the death of Tarquinius, Romans no longer had kings. They appointed Consuls. Marcus Terentius Varro, a Roman historian, says that the Roman republic was established in AUC 245 (1165 BCE) and Brutus was the first consul of Rome. Dionysius says that after consuls, they appointed tribunes of plebs; then dictators, who were generals and then consuls again up to 687 BCE.

The Roman Consuls Before Augustus

The author of *"Chronicon Paschale"* presents the chronology of the early Roman Consuls[2] and relates the following equivalences between the Olympiad years and the regnal years of Egyptian kings:

	Roman Consuls	**Olympiad Year**	**Egyptian Kings**	**In CE**
1.	Camillus and Munius	Olympiad 111.1	Arsiochus, year 1	994-993 BCE
2.	Albinus II and Cossus	Olympiad 112.2	Dareius, year 2	989-988 BCE
3.	Longus and Ceratanus	Olympiad 114.2	Ptolemy I, year 4	981-980 BCE
4.	Muso II and Rullus II	Olympiad 117.4	Ptolemy I, year 18	967-966 BCE
5.	Claudius and Violens	Olympiad 121.1	Ptolemy I, year 31	954-953 BCE
6.	Maximus III and Muso	Olympiad 122.3	Ptolemy I, year 37	948-947 BCE
7.	Gallus and Pictor	Olympiad 127.2	Ptolemy II, year 16	929-928 BCE

8.	Claudius and Varus	Olympiad 135.2	Ptolemy III, year 10	897-896 BCE
9.	Albinus and Benas	Olympiad 150.4	Ptolemy VI, year 5	835-834 BCE
10.	Scipio and Lacaeus	Olympiad 158.4	Ptolemy VIII, year 2	803-802 BCE
11	Octavianus Augustus and Corvilius	Olympiad 185.4	Cleopatra, year 16	695-694 BCE

Augustus, the Founder of Roman Empire (687-646 BCE)

Gaius Octavius was assassinated in the year 701 BCE. He named Augustus as his adopted son in his will. Augustus, Mark Antony and Marcus Lepidus formed an alliance to defeat the killers of Octavius. But the ambitions of Mark Antony led to a war and Augustus defeated Mark Antony at the Battle of Actium around 690 BCE and Marcus Lepidus was driven into exile. Augustus killed Queen Cleopatra of Egypt in 687 BCE and founded a powerful Roman Empire. Thus, Augustus became Roman Emperor in 687 BCE. The year 687 BCE became an epoch in Alexandria and Rome. After 2 years, the 2nd Sothic cycle of 1460 years ended on 31st Oct 685 BCE. Augustus founded his era in 685 BCE and introduced the calendar with intercalation of one day in every four years. Censorinus has referred to the epochs of 687 BCE (Alexandrian) and 685 BCE (Roman). The epoch of 687 BCE or 685 BCE was popularly referred to as the Augustan Era.

The Kings of Roman Empire

		Duration	**In CE**
1.	Gaius Julius Caesar	4 y 6 m	707-703 BCE
2.	Augustus Octavius	56 y	703-687 BCE
	Augustus Octavius (188th Olympiad)		687-647 BCE
	[Jesus Christ was born on 10th Jan 660 BCE during the reign of Augustus.]		
3.	Tiberius (198th Olympiad)	23 y	647-624 BCE
	[Jesus Christ was crucified on 14 Nisan, i.e., 1st Apr 629 BCE, Friday during the reign of Tiberius and he resurrected on 3rd Apr 629 BCE on Sunday, Full moon day and the day of Passover.]		

4.	Gauis Caesar or Caligula (204th Olympiad)	623-619 BCE
5.	Claudius (205Th Olympiad)	619-607 BCE
6.	Nero (208th Olympiad)	607-593 BCE
7.	Galba	593-592 BCE
8.	Otho	592 BCE
9.	Vitellius	591 BCE
10.	Vespasianus (212th Olympiad)	591 BCE
11.	Titus (214th Olympiad)	583 BCE
12.	Domitianus (215th Olympiad)	577-562 BCE
13.	Nerva (219th Olympiad)	561 BCE
The Augustan era (685 BCE) ended in 540 BCE		
1.	Hadrianus (224th Olympiad)	543 BCE
2.	Antoninus Pius (229th Olympiad)	523 BCE
The Antonian era commenced in 520 BCE as indicated by Censorinus. According to Abul Fazal, the Antonian era commenced in 524-523 BCE.		
3.	Marcus Antonius Pius and Lucius Versus (235th Olympiad)	499 BCE
4.	Commodus (239th Olympiad)	483-470 BCE
5.	Vespasianus	470 BCE
6.	Pertinax Didius (243rd Olympiad)	467 BCE
7.	Severus	467 BCE
8.	Antonius Caracalla (247th Olympiad)	451 BCE
	……..	
	Theodosius I (293rd Olympiad)	267 BCE
	……	
	Diocletian	77 BCE

Censornius clearly tells us that Quintus Caerellius was the consul of Rome in 420 BCE because he dedicated his work to him on his birthday. Therefore, the chronological order of Roman emperors from Antonius Pius (523 BCE) to Diocletian (77 BCE) needs to be carefully reconstructed.

The Epochs of Antonian Era (520 BCE or 524 BCE), Diocletian Era (77 BCE) and the Era of Martyrs (284 CE)

Abul Fazal unambiguously records that the Antonian era commenced around 524-523 BCE whereas the Diocletian era commenced in 77 BCE. Severus Sebokht indicates that the era of Martyrs commenced in 284 CE. Modern historians have mistakenly assumed that the epochs of Diocletian era and the era of Martyrs are identical and both commenced in 284 CE. They have also brought forward the date of Antonius Pius and fixed around 138 CE. Evidently, the chronological error of ~660 years led to the fixation of the date of Antonius Pious in 138 CE. The epoch of Diocletian era (77 BCE) clearly indicates that there was a gap of ~447 years between Antonius Pius and Diocletian but historians reduced this gap of ~447 years to only ~147 years. There was also a gap of 361 years between the Diocletian era (77 BCE) and the era of Martyrs (284 BCE) but historians have considered them identical eras. Thus, historians have brought forward the Roman chronology by ~661 years (reduced 300 years between Antonius Pius and Diocletian & 361 years between Diocletian era and the era of Martyrs).

The Chronology of Roman Emperors (From Antonius Pius to Diocletian)

Interestingly, ancient Roman historians wrote biographies of Roman emperors from Julius Caesar to Diocletian. Suetonius wrote the history of 12 Roman emperors from Gaius Julius Caesar to Domitian. During the reigns of Diocletian and Constantine I (1st century BCE), six different Roman authors wrote a collection of biographies of Roman emperors from Hadrian to Numerian which is known as "Historia Augusta".[3] Modern historians have declared that Historia Augusta is a forgery, hence not reliable. Since historians cut short the gap between Antonius Pius and Diocletian by 300 years, they have miserably failed to understand the historical account given in Historia Augusta. In my opinion, Historia Augusta probably gives the authentic history of Rome from Hadrian to Numerian. It gives the biographies of 30 emperors from Hadrian to Carinus. I propose the following chronology of Roman Emperors:

		In CE
1.	Hadrian	543-528 BCE
2.	Aelius	528-524 BCE

3.	Antonius Pius		524-500 BCE
4.	Marcus Aurelius Antoninus		499 BCE
5.	Lucius Verus		485 BCE
6.	Avidus Cassius		484 BCE
7.	Commodus		483 BCE
8.	Pertinax		467 BCE
9.	Didius Julianus		467-451 BCE
10.	Septimus Severus		
11.	Pescennius Niger		
12.	Clodius Albinus		
13.	Caracalla		451-443 BCE
14.	Geta		
15.	Opellius Macrinus		443-376 BCE
16.	Diadumenianus		
17.	Elagabalus	436-432 BCE	
18.	Severus Alexandar (The son of Varius and the grandson of Varia)	432 BCE	
19.	The Two Maximini (Maximinus I and Maximinus II)		
20.	The three Gordians		376-295 BCE
21.	Maximus and Balbinus		
22.	The Two Valerians (Probably, Valentinian I and his son Valentinian II)		294-268 BCE
23.	The Two Gallieni (Probably, the Theodosian dynasty)		267-205 BCE
24.	The Thirty Pretenders		205-110 BCE
25.	The Deified Cladius		110-101 BCE
26.	The Deified Aurelian		101-96 BCE
27.	Tacitus (1 y)		96-95 BCE
28.	Probus (8 y)		95-87 BCE
29.	Firmus (2 y)		87-85 BCE

30.	Saturninus (2 y)	85-83 BCE
31.	Proculus (1 y)	83-82 BCE
32.	Bonosus (1 y)	82-81 BCE
33.	Carus (2 y)	81-79 BCE
34.	Carinus (1 y)	79-78 BCE
35.	Numerian (1 y)	78-77 BCE
36.	**Diocletian (28 y)**	77-49 BCE

Historia Augusta was published in three volumes in 1932 by Loeb Classical Library, England. I have simply followed the sequence of Roman emperors given in this print. We have to establish the chronological order as given in the original manuscripts. However, Historia Augusta clearly indicates that there was a considerable time gap between Antonius Pius and Diocletian. Historians have unreasonably reduced this gap from 447 years to 147 years.

St Jerome composed his *"Chronicon"* in 280 BCE in Constantinople and indicated that total 1155 years have been elapsed from the first Olympiad (1435 BCE) to the 14th regnal year of Valens. Thus, Valentinian I became the Emperor of Rome in 294 BCE and his 14th regnal year was 280 BCE. St Jerome had no knowledge of the reign of Emperor Diocletian and did not mention his name in his chronology. Therefore, Diocletian cannot be dated before the lifetime of St. Jerome (313-240 BCE). In fact, there was a difference of 361 years between the epoch of Diocletian era (77 BCE) and the epoch of the era of Martyrs (284 CE). Evidently, there is a serious chronological error in the dating of Diocletian. After the death of Diocletian, Byzantine Emperor Heraclius (50-19 BCE) adopted the Greek royal title of "Basileus" and might have controlled Western Roman Empire from Constantinople. The Byzantine Emperors after Heraclius also had a title of *Basileus kai autokrator Rhomaion* ("Emperor and Autocrat of the Romans"). The Greek Language became the language of state in place of Latin during the reign of Heraclius.

The Chronology of the Emperors of Constantinople

According to Greek sources, Byzas and Antes built the city of Byzantium in the 3rd year of 30th Olympiad, i.e., 1316 BCE (1435 BCE – 119 years).

Constantine the Great rebuilt the Greek city of Byzantium and renamed it as Constantinopolis 1080 years after the foundation of Rome (1410 BCE), i.e., 330 BCE and 981 years after the foundation of Byzantium city (1316 BCE), i.e., 335 BCE. Thus, the city of Constantinople was rebuilt around 335-330 BCE.

Constantine, the Great (354-323 BCE)

Constantine I succeeded his father around 354 BCE. It is generally assumed that he was also known as Constantius Chlorus. Constantine I organized the first Council of Nicea in November 336 BCE which was his 19th regnal year. The Council had set new moon day on 4th April 335 BCE and decided to celebrate Easter on the Sunday after Paschal full moon, i.e., 17th Apr 335 BCE.

The Byzantine Emperors:

		Duration	**In CE**
1.	Constantine the Great	31	354-323 BCE
2.	Constantius II	24	323-299 BCE
3.	Julian the Apostate	2	299-297 BCE
4.	Jovian	1	297-296 BCE
5.	Valentinian I	11	296-285 BCE
6.	Valens	14	296-282 BCE
7.	Gratian	1	282-281 BCE
8.	Theodosius I the Great	16	281-265 BCE
9.	Arcadius	13	265-252 BCE
10.	Theodosius II	42	252-210 BCE
11.	Marcian	7	210-203 BCE
12.	Leo I the Thracian	17	203-186 BCE
13.	Leo II	1	186 BCE
14.	Zeno	16	186-185 BCE & 184-169
15.	Basiliscus	1.5	185-186 BCE
16.	Anastasius I	27	169-142 BCE
17.	Justin I (Iustinus)	9	142-133 BCE

18.	Justinian I (Iustinianus)	38	133-95 BCE
19.	Justin II	13	95-82 BCE
20.	Tiberius II Constantine	4	82-78 BCE
21.	Maurice (Mauricius)	20	78-58 BCE
22.	Phocas	8	58-50 BCE
23.	Heraklios	31	50-19 BCE
24.	Constantine III & Heraklonas	1	19 BCE
25.	Constans II (Pogonatos)	27	19 BCE – 8 CE
26.	Constantine IV	17	8-25 CE
27.	Justinian II Rhinotmetos	16	25-35 CE & 45-51 CE
28.	Leontios	3	35-38 CE
29.	Tiberius III Apsimarus	7	38-45 CE
30.	Philippicos Bardanes	2	51-53 CE
31.	Anastasios II (Artemios)	2	53-55 CE
32.	Theodosios III	2	55-57 CE
33.	Leo III the Isaurian	24	57-81 CE
34.	Constantine V Kopronymos	34	81-115 CE
35.	Leo IV the Khazar	5	115-120 CE
36.	Constantine VI the Blind	17	120-137 CE
37.	Irene of Athens	5	137-142 CE
38.	Nikephoros I	9	142-151 CE
39.	Staurakios	1	151 CE
40.	Michael I Rangabes	2	151-153 CE
41.	Leo V the Armenian	7	153-160 CE
42.	Michael II the Stammerer	9	160-169 CE
43.	Theophilos	13	169-182 CE
44.	Theodora	13	182-195 CE
45.	Michael III the Drunkard	25	182-207 CE
46.	Basil I the Macedonian	19	207-226 CE
47.	Leo VI the Wise	26	226-252 CE
48.	Alexander	1	252-253 CE

49.	Constantine VII Porphyrogenetos	46	253-299 CE
50.	Romanos I Lekapenos	24	260-284 CE
51.	Romanos II Porphyrogenetos	4	299-303 CE
52.	Nikephoros II Phocas	6	303-309 CE
53.	John I Tzimiskes	7	309-316 CE
54.	Basil II Bulgaroktonos	49	316-365 CE
55.	Constantine VIII	3	365-368 CE
56.	Zoe	22	368-390 CE
57.	Romanos III Argyros	6	368-374 CE
58.	Michael IV the Paflagonian	7	374-381 CE
59.	Michael V the Caulker	1	381-382 CE
60.	Constantine IX Monomachos	13	382-395 CE
61.	Theodora	2	382 & 395-396 CE
62.	Michael VI Stratiotikos	1	396-397 CE
63.	Isaac I Komnenos	2	397-399 CE
64.	Constantine X Doukas	8	399-407 CE
65.	Romanos IV Diogenes	3	408-411 CE
66.	Michael VII Doukas	7	407-408 & 411-418 CE
67.	Nikephoros III Botaneiates	3	418-421 CE
68.	Alexios I Komnenos	37	421-458 CE
69.	John II Komnenos	25	458-483 CE
70.	Manuel I Komnenos	37	483-520 CE
71.	Alexios II Komnenos	3	520-523 CE
72.	Andronikos I Komnenos	2	523-525 CE
73.	Isaac II Angelos	10	525-535 & 543-544 CE
74.	Alexios III Angelos	8	535-543 CE
75.	Alexios IV Angelos	1	543-544 CE
76.	Alexios V Doukas Murtzuphlos	<1	544 CE

77.	Constantine Laskaris	1	544-545 CE
78.	Theodore I Laskaris	16	545-561 CE
79.	John III Doukas Vatatzes	33	561-594 CE
80.	Theodore II Doukas Laskaris	4	594-598 CE
81.	John IV Doukas Laskaris	3	598-601 CE
82.	Michael VIII Palaiologos	21	601-622 CE
83.	Andronikos II Palaiologos	46	622-668 CE
84.	Michael IX Palaiologos	25	635-660 CE
85.	Andronikos III Palaiologos	13	668-681 CE
86.	John V Palaiologos	50	681-731 CE
87.	John VI Kantakouzenos	7	687-694 CE
88.	Andronikos IV Palaiologos	3	716-719 CE
89.	John VII Palaiologos	3	730 & 739-742 CE
90.	Manuel II Palaiologos	34	731-765 CE
91.	John VIII Palaiologos	23	765-788 CE
92.	Constantine XI Palaiologos	4	789-793 CE

The Ottoman Turks conquered the city of Constantinople around 793 CE and reigned over Eastern Roman empire from 793 onwards. Seemingly, the chronology of the Ottoman Empire has been contracted by 660 years, considering the fictitious epoch of the Christian era (1 CE). There is a genuine need to research and rewrite the Turkish history from 793 onwards. Right now, I am not in a position to explain how the Ottoman chronology unfolds from 793 CE but I would like to draw the attention of historians to the following point:

- The title of "Basileus" was exclusively claimed by the Byzantine Roman Emperors. The Kings of various kingdoms under the Roman Empire had only the title of "Regis" or "Rex". Charlemagne (141-155 CE), the king of franks had claimed the imperial title which led to a diplomatic row between the Franks and the Byzantines. Finally, the Byzantine Emperor might have allowed Charlemagne to use the title of "Basileus of the Franks". Except Charlemagne, the Byzantines did never recognize any king as "Basileus". Since the Byzantine Roman

Empire ceased to exist after 793 CE, the later Bulgarian Christian kings had claimed themselves as "Basileus of the Bulgarians and the Romans". Stefan Dusan (1354 CE?), the king of Serbs had also claimed himself as "Basileus and autokrator of the Romans and the Serbs". Many Anglo-Saxon kings had also the title of "Basileus" from the 9th century onwards. It is absurd to imagine that the kings of the Anglo-Saxons, the Bulgarians and the Serbs etc., had the title of "Basileus" when the Byzantine Empire was dominating over these kingdoms. Seemingly, the Byzantine Empire ceased to exist at the end of the 8th century.

11

The Problem with Weekday and the Date of Easter

As expounded in the preceding chapters, the chronology of world history has been contracted by ~660 years due to the false sheet anchor of 1 CE. In fact, Jesus Christ was born on 10th Jan 660 BCE and crucified on Friday before the day of Passover full moon day, i.e., 1st Apr 629 BCE, Friday. Easter was celebrated on Nisan 14, Sunday which was the day of Passover. The Christian historians have fixed the date of crucifixion on 7th Apr 30 CE but failed to explain the verifiable details mentioned in the New Testament. It is also believed by the Christians that he was resurrected on the third day, i.e., the day of Passover, i.e. 3rd Apr 629 BCE, Sunday. But the day of 3rd Apr 629 BCE was Wednesday in the contemporary Julian calendar. There are also many historical references of dates which refer to Sunday but the day was Wednesday on those dates in the Julian calendar. For example, the Kurtakoti copper plate inscription found in India refers to the occurrence of total solar eclipse on 9th May 53 BCE, Sunday but the day was Wednesday in the Julian calendar.[1] Evidently, it appears that there is a serious flaw in the counting of weekdays in the contemporary Julian calendar. Before discussing this weekday problem, let us explore the chronological history and evolution of the Julian calendar.

The ancient Romans used a lunisolar calendar called Republican calendar in the epoch of Rome's era (1410 BCE). The Epoch of Rome's era is also known as AUC (Ab urbe condita or Anno Urbis Conditae in Latin which means "from the founding of the city"). In all probability, the Republican calendar could have evolved from the Macedonian lunisolar calendar. The Macedonian (Grecian) calendar followed the

scheme of intercalation in a cycle of 19 years. The Macedonians lunar month commenced from the full moon. The Kushana king Kanishka referred to the Macedonian lunar months in his inscriptions which clearly indicate that the Macedonians followed a Purnimanta lunar calendar. The Kushana inscriptions refer to the Macedonian months Daisos, Artemisios, Audunaios and Apellaios. It appears that Greece and Anatolia followed the Purnimanta calendar (full moon to full moon) whereas the Babylonians, Assyrians and Jews followed the Amanta calendar (new moon to new moon). Seemingly, the Republican calendar also followed the Purnimanta calendar. Africanus dated the crucifixion in AM 5531 whereas the resurrection in AM 5532 which also indicates that the first month of the calendar began on the full moon.

The Romans could not properly understand the scheme of intercalation in the lunisolar calendar. The Pontifices oversaw the Republican calendar and determined when intercalary months needed to be added. Therefore, the Republican calendar was more than 90 days behind the seasons during the time of Gaius Julis Caesar (707-703 BCE). At that time, Marcus Aemilius Lepidus was the Pontifex Maximus. In AUC 707 (704 BCE), Pontifex Maximus introduced the calendrical reforms starting from 1st Jan 704 BCE during the dictatorship of Gaius Julis Caesar. The so-called Julian calendar was introduced by Pontifex Maximus in 704 BCE. Thus, 1st Jan 704 BCE became an epoch and Censorinus mentions that the year 421 BCE was the 283rd year of the epoch of Pontifex Maximus.

In the second year of Julis Caesar's dictatorship, i.e., 706-705 BCE, the Republican calendar was running behind the seasons. Pontifex Maximus intercalated 67 days at the end of the year AUC 706. Since the Republican calendar followed the scheme of Purnimanta, the year AUC 706 ended on 24th Sep 705 BCE. Pontifex Maximus intercalated 67 days from 25th Sep 705 BCE to 30th Nov 705 BCE. Thus, the year 706 AUC ended on 30th Nov 705 BCE. Pontifex Maximus introduced the Julian calendar from 1st Dec 705 BCE to 31st Dec 704 BCE with an intercalary month of 31 days after February which was the year AUC 707.

The first year of early Julian calendar had 396 days because an additional month after February was intercalated but an ordinary year contained 365 days. Every fourth year was made a leap year starting from 700 BCE. Thus, the new Roman calendar, i.e., Julian or Pontifex Maximus calendar was pretty much back in sync with the seasons but this revolutionary reform in the calendar and replacing the lunar months with odd months having different lengths had created much confusion among the masses. The Romans sometimes mockingly called it as *annis confusionis*.

The First year of early Julian Calendar (AUC 707), i.e. 704 BCE

January	31	July	31
February	28	August	31
(Intercalary month)	31	September	30
March	31	October	31
April	30	November	30
May	31	December	31
June	30		

Seemingly, Pontifex Maximus deliberately selected the day of 1st Dec 705 BCE as the first day of the Julian calendar because it was Sunday. Thus, 1st Dec 705 BCE was actually 1st Jan 704 BCE in the early Julian calendar. The first day of the Julian calendar was indeed Sunday. This fact can be established by the earliest archaeological evidence of the use of weekday in the Julian calendar. A Pompeiian graffito refers to 6th Feb 601 BCE as Sunday in the early Julian calendar. This graffito presents numerous chronological problems in the contemporary Julian calendar. It reads:[2]

"Nerone Caesare Augusto
Cosso Lentulo Cossi fil. Cos.
VIII idus Febr(u)arius
Dies Solis, luna XIIIIX, nun (dinae) Cumis, V (idus Februarius) nun (dinae) Pompeis"

When Nero Caesar Augustus
And Cossus Lentulus son of Cossus
Eight days before the ides of February
Sunday, 16th day of the moon, the nundinae at Cumae, five days before the ides of February the nundinae at Pompeii.

Undoubtedly, the year indicated in the graffito was 601-600 BCE. Roman Emperor Nero (607-593 BCE) appointed Cossus Lentulus as Ordinarii in 601 BCE for only six months. The historians have calculated the date as 6th Feb 60 CE in the fictitious epoch of 1 CE and miserably failed to explain the weekday because 6th Feb 60 CE was Wednesday. Ides means one day before the middle of each month. It depends on the month's length. Thus, Ides fell on the 13th day of February whereas it fell on the 15th day of other months. The graffito clearly indicates the date as 6th February, i.e., eight days before 13th February. The 'nundinae' would suggest that the market-day in Cumae and Pompeii was on 9th February, i.e., five days before 13th February. It also indicates that 9th February was the 16th day of moon. Evidently, ancient Romans followed a lunar month of Mithraism that commenced from the full moon. Therefore, the first day after new moon was the 16th lunar day. The graffito indicates that the 9th February was the 16th lunar day. The date of graffito regularly corresponds to 6th Feb 601 BCE, Sunday. But it was Wednesday on 6th Feb 601 BCE and 6th Feb 60 CE in the Julian calendar.

The Wikipedia says; "The first identifiable date cited complete with day of the week is 6 Feb AD 60, identified as a Sunday (as *viii idus Februarius dies solis* "eighth day before the ides of February, day of the Sun") in a Pompeiian graffito. According to the (contemporary) Julian calendar, 6 February 60 was, however, a Wednesday. This is explained by the existence of two conventions of naming days of the weeks based on the planetary hours system: 6 February was a "Sunday" based on the sunset naming convention, and a "Wednesday" based on the sunrise naming convention."[3] The explanation presented by Wikipedia is totally absurd because there would have been maximum 12 hours difference between the two conventions. There is not an iota of evidence to establish that there were two different ancient conventions of weekdays having three-day difference.

The earliest Christian literary reference of weekday is found in *Martyrium Polycarpii*. According to this text, Polycarp, Bishop of Smyrna was martyred on the second day in the beginning of the month of Xandichus, the day before the seventh kalends of March, on a great Sabbath, at the eight hour. He was arrested by Herod, when Philip of Thralles was High Priest, and Statius Quadratus Proconsul, during the unending reign of our Lord Jesus Christ. Certainly, an eyewitness had recorded the account of the martyrdom of Polycarp. The author of *Martyrium Polycarpii* gives the following verifiable details of the date intended:

- The date was the second day in the beginning of the month of Xandichus in the Macedonian calendar. Xandichus was the Chaitra month in Indian calendar. Since Macedonians followed Purnimanta months, the date was the second day after full moon.
- The date was the day before the seventh kalends of March, i.e., 22 February.
- The day was Sabbath, i.e., Saturday. This Saturday was a great Sabbath which indicates a Jewish festival on the day.
- Bishop of Smyrna was burned to death during the consulship of Statius Quadratus.

Statius Quadratus became consul in 518 BCE. Aelius Aristides, a contemporary of Statius Quadratus clearly indicated the end of his consulship in 507 BCE. Eusebius also dates the martyrdom of Polycarp on Saturday, Xantichus 2. The date regularly corresponds to 22nd Feb 514 BCE. The day was Xantichus 2, i.e., the second day after full moon and Saturday. It was also a great Sabbath because it was 21st Sabbath on which Jews read a particular portion of Torah. Thus, Polycarp, Bishop of Smyrna was martyred on 22nd Feb 514 BCE. It was indeed Saturday in the early Julian calendar but Tuesday in the modern Julian calendar. The historians identified the date as 23rd Feb 155 CE, Saturday in the fictitious epoch of 1 CE but miserably fail to explain the verifiable details. The date 23 Feb 155 CE was the 5th day in the bright fortnight (20th day of Xantichus). Moreover, the date in Julian calendar was 22nd February and not 23 February.

The Easter canon inscribed on the base of the statute of Hippolytus was found in 1551 during the excavations in Rome. This canon records the dates of Easter for 16 years. The inscription on the Statute reads that "In the first year of the reign of the Emperor Alexander, the xiv of Easter fell on the Saturday of the idus of April when there was an embolismic month." Roman Emperor Severus Alexander reigned after Caracalla (451-443 BCE), Geta, Opellius Macrinus, Diadumenianus and Elagabalus. We can conclusively fix the first year of Emperor Alexander in 432 BCE based on the date of Easter recorded in the canon of Hippolytus.

Ides (Idus) is the 15th day of March, May, July and October whereas the same is the 13th day of other months. Hippolytus mentions that Easter was on the 13th day (ides) of April, Saturday and there was an embolismic month. Full moon occurred on 15th Mar 432 BCE before vernal equinox. Therefore, there was an intercalary (embolismic) month in the Jewish calendar. The date of Nisan 14 fell on the 13th April (Sunset to Sunset), Saturday but it was Tuesday in the contemporary Julian calendar.

Hippolytus mentions the dates of Easter in the 16-year cycle from 432 BCE to 417 BCE. He also gives the Easter dates in the previous cycle from 448 BCE to 433 BCE. Seemingly, he followed the 8-year cycle of the octaeteris calendar which was used for Olympic Games. Hippolytus gives the following dates of Easter for 16 years:

	Year	**SS = Leap year**	**EM = intercalary month in Metonic cycle (439-421 BCE)**	**Date**	**Weekday in the inscription**	**Weekday in Julian Calendar**
1.	432 BCE		EM of 8th year	13 April	Saturday	Tuesday
2.	431 BCE			3 April	Wednesday	Saturday
3.	430 BCE	SS		22 March	Sunday	Wednesday
4.	429 BCE		EM of 11th year	10 April	Saturday	Tuesday
5.	428 BCE			29 March	Wednesday	Saturday

6.	427 BCE			18 March	Sunday	Wednesday
7.	426 BCE	SS	EM of 14th year	6 April	Saturday	Tuesday
8.	425 BCE			26 March	Wednesday	Saturday
9.	424 BCE		EM of 16th year	13 April	Tuesday	Friday
10.	423 BCE			3 April	Saturday	Tuesday
11.	422 BCE	SS		23 March	Wednesday	Saturday
12.	421 BCE		EM of 19th year	11 April	Tuesday	Friday
13.	420 BCE			30 March	Saturday	Tuesday
14.	419 BCE			19 March	Wednesday	Saturday
15.	418 BCE	SS	EM of 3rd year	7 April	Tuesday	Friday
16.	417 BCE			27 March	Saturday	Tuesday

Seemingly, Romans celebrated a Pagan festival of Eostre only on Sunday which was not linked to Nisan 14. Therefore, Hippolytus gives the following dates of Pagan festival celebrated for 16 years in the past from 448 BCE to 433 BCE:

	Year	**SS = Leap year**	**EM = intercalary month in Metonic cycle (458-440 BCE)**	**Date**	**Weekday in the inscription**	**Weekday in Julian Calendar**
1.	448 BCE		EM of 11th year	21 April	Sunday	Wednesday
2.	447 BCE			6 April	Sunday	Wednesday
3.	446 BCE	SS		29 March	Sunday	Wednesday
4.	445 BCE		EM of 14th year	18 April	Sunday	Wednesday
5.	444 BCE			2 April	Sunday	Wednesday
6.	443 BCE			25 March	Sunday	Wednesday
7.	442 BCE	SS	EM of 17th year	14 April	Sunday	Wednesday
8.	441 BCE			30 March	Sunday	Wednesday
9.	440 BCE		EM of 19th year	18 April	Sunday	Wednesday

10.	439 BCE			10 April	Sunday	Wednesday
11.	438 BCE	SS		26 March	Sunday	Wednesday
12.	437 BCE		EM of 3rd year	15 April	Sunday	Wednesday
13.	436 BCE			6 April	Sunday	Wednesday
14.	435 BCE			22 March	Sunday	Wednesday
15.	434 BCE	SS	EM of 6th year	11 April	Sunday	Wednesday
16.	433 BCE			3 April	Sunday	Wednesday

Evidently, the Romans celebrated the Eostre Pagan festival on Sunday between the 5th day (Krishna panchami) and 12th Day (Krishna Dvadashi) of the dark fortnight of Chaitra or Vaishakha months of Indian calendar. Hippolytus was the first to introduce the dates of Christian Easter festival with reference to Nisan 14 in the Greek calendar of Metonic cycle. The historians have calculated the Easter dates of Hippolytus from 222 AD to 237 AD but the date of Easter in the last five years (233-237 AD) fell on Nisan 12. Moreover, the historians have failed to explain the intercalation scheme used by Hippolytus.

An unknown Roman computist had calculated the dates of Pagan festival "Eostre" for 112 years starting from 417 BCE to 305 BCE. Hippolytus computed the date of Christian Easter as 27 Mar 417 BCE, Saturday whereas the unknown Roman computist arrived the date of Pagan festival as 12 Apr 417 BCE, Sunday. In all probability, the Roman followers of Mithraism celebrated the Pagan festival "Eostre" on Sunday. The Mithraism followers were the first who had a tradition of calculating the periodical Eostre computus. The Christians had adopted the same Roman Pagan tradition but transformed it into the Christian Easter computus.

Anatolius of Laodicea (died in 377 BC) was the first to use the 19-year cycle for Easter calculations. He might have proposed Easter dates around 419-400 BCE & 400-381 BCE. Easter used to fall on 19th Apr in the first year and on 1st Apr in the 19th year. Anatolius would not have Easter before the entrance of Sun in Aries. Augustalis prepared an Easter table in the Paschal cycle of 84-years (3 x 28 years). He reckoned the epoch of Easter that occurred on 25th Mar 631 BCE. The 84-year cycles were 631-548 BCE, 547-464 BCE and 463-380 BCE.

The Council of Nicaea was held in November 336 BCE. The Council had set new moon day on 4th Apr 335 BCE and decided to celebrate Easter on the Sunday after Paschal full moon, i.e., 17th Apr 335 BCE. Venerable Bede writes;

"Now if someone, pursuing this question more seriously, were to say that the company of witnesses he had seen the new moon, in the same year in which the "Leap" is inserted, shine forth two days before the first, that is, on the 4th nones of April (2 April), and since in that same year of the aforementioned cycle the 14th Moon of Easter is marked down for the 15th kalends of May (17 April), and therefore the new Moon could not occur on the day before the nones of April (4 April), he would demand that we explain the cause of this. At this point, our insignificance, lest it be defeated by its weakness, will run for help to the Fathers', and indeed to God's authority. We are bolstered by the aid of the authority of the Fathers when we follow the decrees of the Council of Nicaea, which fixed the fourteenth Moons of Paschal feast with such firm stability that their 19-year cycle can never waver and never fail. There is no doubt on the part of any computist that within this cycle, the Paschal Moon of the year under discussion will be in its first day on the 2nd nones of April (4 April). And therefore it is not proper for any of the faithful to say that it is otherwise. What then? Is it credible that no one amongst the 318 bishops who attended the Council of Nicaea saw that new Moon which we saw on the 4th nones of April (2 April)?."[4]

Evidently, Bede informs us that Council of Nicaea fixed the New Moon on 4th April and Easter Sunday on 17th April. In fact, the Julian calendar had accumulated 3 extra days around 336-335 BCE when the Council of Nicaea took place. Therefore, the actual date of Easter Sunday was 20th Apr 335 BCE and the actual date of New moon was 7th April. The year 336 BCE was the 6th year in the Alexandrian cycle of 19 years and an intercalary month was inserted. Thus, Paschal full moon had occurred on 1st Apr 336 BCE. During the time of Venerable Bede, the Julian calendar had accumulated seven extra days. Therefore, some people had probably questioned the authenticity of the date of new Moon (4 April) fixed by the Council of Nicaea.

Though Rome and Alexandria celebrated the Easter Sunday on the same day, i.e., 17th Apr 335 BCE (20th April) in 273 BCE, Alexandrians celebrated Easter on 25th April, Romans celebrated on 18th April and the Churches of Gaul on 21st March. Therefore, the Easter date became very critical during the reign of Roman Emperor Theodosius I (267 BCE). He abolished all Pagan festivals and approved the Easter table devised by Pope Theophilus of Alexandria. At that time, Romans celebrated Easter on 27th March. Theophilus had a view that the Paschal full moon should be the first full moon after the equinox. Rome, Alexandria and Asia Minor celebrated Easter on the same day on 27th March, Sunday in 265 BCE. Theophillus was the first to use the epoch of 361 BCE for the cycle of 95 years. Cyrillus of Alexandria had prepared the table of Easter dates from 361 BCE to 170 CE, which was sent it to the Emperor Theodosius II (259-210 BCE). Theophillus and Cyrill followed the 95-year cycle that consisted of five cycles of 19 years.

In 216 BCE and 205 BCE, the date of Easter fell after 21 April which led to the review of Easter computus. To avoid such problems, Pope Leo's archdeacon Hillarius commissioned Victorius to investigate the reasons for discrepancies between Roman and Alexandrian systems. Victorius abandoned the 84-year cycle in favour of the 19-year cycle. He also followed Roman lunar limits of 16-22, rather than the Alexandrian limits 15-21. He made his Easter table in 203 BCE and dated years according to the reckoning the *annus Passionis* (629 BCE), assumed to coincide with *annus mundi* 5229, i.e., 629 BCE. Victorius followed the epoch of 5858 BCE as *annus mundi*. He borrowed it from the chronicle written by Prosper of Aquitaine (270-205 BCE). Victorius computed Easter dates for 532 years from 629 BCE to 97 BCE. One of the attractions of this table was its cyclical nature, which repeated exactly after 532 years. Victorius saw his 532-year cycle as 4 x 133 years because he might have discovered an interesting cycle of the occurrence of vernal equinox and paschal full moon in his cycle of 532 years. Vernal equinox occurred on 29th March and Paschal full moon occurred after 4 days on 2nd Apr 629 BCE. The same pattern repeated exactly after 133 years as shown below:

		Vernal Equinox	**Paschal Full Moon**
1.	629 BCE	28th March	2nd April
2.	496 BCE	27th March	1st April
3.	363 BCE	26th March	31st March
4.	230 BCE	25th March	30th March

Seemingly, the Roman Christians followed the Easter table of Victorius, whereas the Alexandrian Christians followed the Easter table of Cyrill starting from the 2nd century BCE onwards. In the process of investigating the exact dates of Easter, the Christians identified three epochs for the computation of Easter table. The followers of 84-year cycle identified the epoch of 25th Mar 631 BCE (full moon day). Victorius selected the historical year of the crucifixion of Jesus Christ, i.e., 629 BCE and it was also the first year in the Grecian Metonic cycle of 19 years. The Alexandrians preferred the epoch of 29th Mar 626 BCE because Paschal full moon occurred on 29th March exactly one day after the vernal equinox and it was also the first year of the Alexandrian Metonic cycle of 19 years.

Interestingly, the investigation for exact Easter dates also led to a debate on the epoch of Anno Mundi, i.e., the date of creation. Africanus mentioned that Jesus was crucified in AM 5531 and resurrected in AM 5532. He might have followed the epoch of 8-year or 84-year cycle, i.e., 25th Mar 631 BCE and fixed the epoch of Anno Mundi in 6159 BCE. Prosper and Victorius followed the Grecian or Macedonian cycle of 19 years and paschal cycle of 532 years and fixed the epoch of Anno Mundi in 5858 BCE. Panodorus might have followed the Anatolian (Turkish) epoch of the 12-year cycle (6154 BCE) and fixed the epoch of Anno Mundi in 6152 BCE. He stated that 5904 years elapsed in 248 BCE (the epoch of Antiochian era). Augustinus Hibernicus, the Irish author of "*De mirabilibus sacrae scripturae*" had followed Victorius and computed that the 11th cycle of 532 years elapsed in 7 BCE. He indicated that Manchianus, the Irish scholar died in AM 5852, i.e., 7 BCE. He called the first year of the 12th cycle of 532 years, i.e., 6 BCE as *Annus Praesens*. He wrote "*De mirabilibus sacrae scripturae*" in AM 5855, i.e., the third year of *Annus Praesens*, i.e., 4 BCE. Annianus of Alexandria followed the epoch of Alexandrian cycle of 19

years, i.e., 29th Mar 626 BCE and mentioned that the 11th cycle of 532 years elapsed in 2 BCE and the 12th cycle of 532 years commenced in 1 BCE, i.e., the 77th year of Diocletian era (77 BCE).

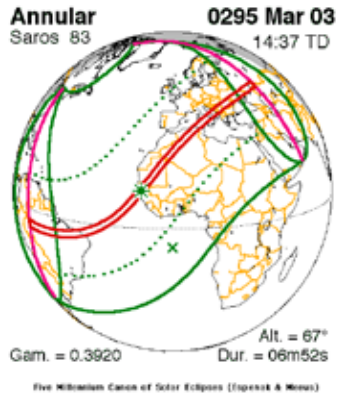
Undoubtedly, Annianus followed the tradition of 95-year cycle of Alexandria. Thepphilus and his nephew Cyrill of Alexandria had already propounded the importance of the 95-year cycle. The Roman Christians continued to follow the Easter table of Victorius in the 1st & 2nd centuries CE. During the time of Pope John I (163-166 CE), the Victorian table had been conclusively falsified. The Easter of 167 CE fell on 19th April but it was Nisan 12 (Sukla dvadasi) instead of Nisan 14 (Sukla chaturdasi). Therefore, the Roman Church enlisted Dionysius Exiguus to solve the perennial problems of the Easter computation. Finally, Dionysius understood that the Alexandrian cycle of 19 years is superior to the Macedonian cycle of 19 years. The last Alexandrian cycle of 19 years in the table of Cyrillus covered *Anni Diocletiani* 228-247, i.e., 152-170 CE. Dionysius Exiguus computed his famous Easter table of 19 years based on the 95-year cycle of Cyrillus starting from *Anni Diocletiani* 248, i.e., 171 CE. Dionysius referred to his first cycle as *Anno Domini Nostri Jesu Christi 532-550*. Evidently, Dionysius referred to the epoch of Cyrillus table, i.e., 361 BCE as Anno Domini not 1 CE. The Easter Sunday was on 11th April 361 BCE and the same repeated on 11th April 171 CE. This may be the reason why Dionysus used the epoch of 361 BCE to compute his Easter table.

Easter Table of Dionysius Exguus:

Diocle-tian year	Anno Domini (361 BCE)	In CE	Ferial numbers of March 24	Nisan 14	Easter Sunday	Nisan date of Easter Sunday
248	532	171 CE	4 (Wed)	5 April	11 April	Nisan 20
249	533	172 CE	5 (Thu)	25 March	27 March	Nisan 16
250	534	173 CE	6(Fri)	13 April	16 April	Nisan 17
251	535	174 CE	7(Sat)	2 April	8 April	Nisan 20
252	536	175 CE	2(Mon)	22 March	23 March	Nisan 15
253	537	176 CE	3 (Tue)	10 April	12 April	Nisan 16

254	538	177 CE	4 (Wed)	30 March	4 April	Nisan 19
255	539	178 CE	5(Thu)	18 April	24 April	Nisan 20
256	540	179 CE	7(Sat)	7 April	8 April	Nisan 15
257	541	180 CE	1(Sun)	27 March	31 March	Nisan 18
258	542	181 CE	2(Mon)	15 April	20 April	Nisan 19
259	543	182 CE	3(Tue)	4 April	5 April	Nisan 15
260	544	183 CE	5(Thu)	24 March	27 March	Nisan 17
261	545	184 CE	6(Fri)	12 April	16 April	Nisan 18
262	546	185 CE	7(Sat)	1 April	8 April	Nisan 21
263	547	186 CE	1(Sun)	21 March	24 March	Nisan 17
264	548	187 CE	3(Tue)	9 April	12 April	Nisan 17
265	549	188 CE	4(Wed)	29 March	4 April	Nisan 20
266	550	189 CE	5(Thu)	21 April	24 April	Nisan 21

Interestingly, Anno Domini years of Dionysius were also known as "Theophillan reckoning". According to Gerland, a solar eclipse occurred in the Theophillan year 656, i.e., 295 CE which was remembered as of computistical significance in connection with the paschal cycle. Two manuscripts give the "Gerlandian" or "Theophellan" date – 656 as the date of a solar eclipse. The Theophillan year 656 was 295 CE. An annular solar eclipse occurred on 3rd Mar 295 CE. Evidently, the epoch of Anno Domini was indeed identical to the epoch of Theophillan reckoning, i.e., 361 BCE and not 1 CE.



Though Dionysus Exguus had introduced his Easter table of 95 years in 171 CE but the Victorian table was continued to be popularly used till the end of the 3rd century. The solar eclipse in the Anno Domini or Theophillan year 656 (295 CE) had conclusively proved the error in the Easter computus of the 3rd century.

As explained above, Dionysius Exiggus followed the epoch of Theophillan reckoning, i.e., 361 BCE and named it as "Anno Domini". He prepared his famous Easter table of 95 years in the epoch of Anno Domini (361 BCE) from 171 CE to 265 CE. It is also evident from the letter written by Dionysius. The rare manuscripts of his letter to Petronius are headed "*Libellus de cyclo magno pasche DCCCII annorum*" but the historians have ridiculously distorted it and assumed it as a copyist's error for DXXXII *annorum*. Dionysius unambiguously dates his letter in the year 802 (DCCCII), i.e., 171 CE which is the 802nd year in the epoch of the Victorian paschal cycle (630-629 BCE), i.e., the year of the crucifixion of Jesus. Thus, the epoch of Victorian paschal cycle (630-629 BCE) and the epoch of Anno Domini (361 BCE) are not identical.

Abbot Felix Cyrillitani had extended the Dionysius's Easter table for the next cycle of 95 years from 266 CE to 361 CE. Thereafter, Venerable Bede extended the Dionysian table of Easter for the cycle of 532 years from Anno Domini year 532 to 1062, i.e., from 171 CE to 702 CE (see **Appendix II**) because the cycle of 532 years can be derived by multiplying the 19-year cycle with 28 and it makes the Easter Sunday dates repeat themselves in the Alexandrian cycle of 19 years. Later, the computus of Easter date based on the sequence of golden numbers in a 19-year cycle came into practice which was popular till the introduction of the Gregorian calendar in 1582 CE.

The Irish Computus and the Chronology

St. Palladius was the first bishop who preached in Ireland and Scotland in the second half the 3rd century BCE (~229-200 BCE). Though St. Jerome had translated Hebrew Bible into Latin known as "Vulgate" in the 3rd century BCE but the Christians traditionally followed Vetus Latina, the old Latin translation of Greek Old testament and New Testament passages. Seemingly, the early Irish Christians followed the 84 (12)-year

cycle of Easter reckoning that commenced in 631-630 BCE. The 84 (12)-year cycle was known as *Supputatio Romana* which followed a twelve-year *saltus*. They also followed the Victorian Easter table of the paschal cycle of 532 years (629-97 BCE). St. Augustine of Canterbury was the founder of the Catholic Church in England in 63 BCE.

Victorius presented his Easter computus starting from 629 BCE, the year of Jesus' crucifixion which he named as *annus Passionus*. Augustinus Hibernicus, the Irish author had followed Victorius and computed that the 11th cycle of 532 years elapsed in 7 BCE and the 12th cycle commenced in 6 BCE. Augustinus Hibernicus named the epoch of the 12th cycle, i.e., 6 BCE as "*Annus Praesens*". Thus, the early Christians fixed the epoch of Anno Mundi or the epoch of Adam in 5859-5858 BCE. Annianus of Alexandria followed the epoch of Alexandrian cycle of 19 years and revised the epoch of Anno Mundi from 5859 BCE to 5853 BCE and fixed the epoch of the 12th cycle of 532 years commenced in 1 BCE, i.e., the 77th year of the Diocletian era (77 BCE).

Seemingly, Irish Christians followed the epochs of Annus Incarnatione (660 BCE), the 84(12)-year cycle (631-630 BCE) and Annus Passionus (629 BCE). In all probability, Augustalis was the first who introduced the cycle of 84 years with a twelve year saltus in 444 BCE. He counted the consulship of Antonius and Albinus as the 186th year from the epoch of Passion, i.e., the 84 (12)-year cycle that commenced in 631 BCE and claimed that the lunar data repeated at that year. According to him, the first year of the 84 (12)-year cycle had commenced with 1 January on Friday, epact 20, i.e., 1 Jan 631 BCE. The Easter of the 186th year, i.e., 444 BCE fell on 26 March, Sunday, the 14th day of the moon respectively. Following the epoch of 631 BCE, the author of Zeitzer table states that he has composed five 84 (12)-year cycles beginning in the year of the Passion (631 BCE) and ending in the 420th year (211-210 BCE), in the year that will follow the consulship of Calepius and Arteburis.

In the second century BCE, the Victorian Easter table of 532 years (629-97 BCE) came in vogue. In the first century BCE, The second revolution of the Victorian Easter table that commenced in 97 BCE was in use in Ireland. Thus, the paschal cycle of 532 years became popular.

The Irish scholar Augustinus Hibernicus proposed the epoch of Annus Praesens (the 12th cycle of 532 years) in 6 BCE considering the epoch of Anno Mundi in 5859-5858 BCE. Seemingly, the Irish Christians fixed the epoch of the modified 84(14)-year cycle in 1 BCE which was also the epoch of the 12th cycle of 532 years proposed by Annianus of Alexandria. Interestingly, 1 BCE was also the first year of 84 (14)-year cycle as well as the Alexandrian cycle of 19 years. The Irish Christians had modified the 84 (12)-year cycle and introduced the 84 (14)-year cycle with a fourteen year saltus starting from 1 BCE. Thus, 1 BCE became an important epoch which came to be known as Anno Domini.

Daibhi O Croinin, an Irish historian discovered a dating clause in the Irish computistica (the Sirmond computus exemplar) which indicates that the exemplar was compiled in 658 CE in the southern part of Ireland. The famous clause reads;

"In truth, there are 631 from the Passion of the Lord until the Easter of Suibne mac Colmain, which has [just] transpired. Furthermore, there are 141 years from the above mentioned Pasch until the precise time when the world ends that is once 6000 years elapses."

Evidently, this clause refers to three important epochs. It indicates that the epoch of the Passion, i.e, the 84 (12)-year cycle commenced in 631 BCE and 631 years from the Passion had been elapsed up to 1 BCE. Interestingly, it refers to the epoch of the Easter of Suibne mac Colmain, i.e., 1 BCE. Suibne mac Colmain was the king of Uisnech, Ireland. Seemingly, the modified 84(14)-year cycle was introduced from the Easter of Suibne mac Colmain, i.e., 1 BCE. This clause also indicates that the year 6000 of Anno Mundi (5859-5858 BCE) was 141 CE, exactly 141 years after the Easter of Suibne mac Colmain, i.e., 1 BCE.

Evidently, the Easter table of 84(14)-year cycle became popular in Ireland starting from the 1st century CE but the Western Church (Romans) was using the second revolution of the Victorian Easter table. The Computus Cottonianus (Cotton MS Caligula A XV) records the date of its compilation. A dating clause on folio 107r reads:

"*In Christi nomine, Incipit cyclus per indictionem XImam? (XVmam?). Et anno quota fuerit luna Kalendis Ianuarii Prima, et dies dominicuc festi*

paschalis XVIII Kalendas Maii luna XV. Et quotus annus est ab incarnatione domini ihesu Christi DCCXLIII, et recapitulatio Victurino CLXXXIIII annus est, et primus annus Childerici regis Francorum cum consulibus suis Carlemanno et Pippino."

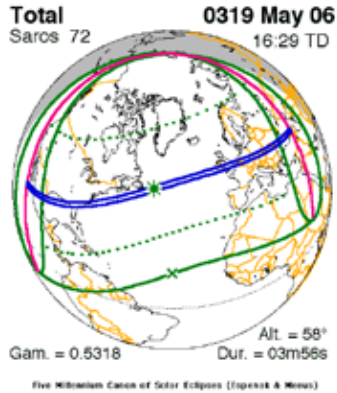
"In the name of Christ, the cycle begins, through the 11th indiction (15th indiction?). And which lunar age occurred on 1 January in this year the first Sunday. Paschal full moon was on 14 April, luna 15 and which year is this from the incarnation of our Lord Jesus Christ, the 748th (747th?) year, and in the Victorian recapitulation (i.e. the second revolution of the Victorian Easter table) it is the 184th year, and the first year of Childeric, the king of the Franks, with his consuls Carloman and Pippin."

The 184th year from the epoch of the second revolution of the Victorian Easter table was 86 CE which was also the 15th indiction (11th indiction?) year of 15-year cycle. Indiction was a Roman bureaucratic cycle of 15 years which was introduced during the reign of Constantine the Great for taxation purposes. The dating clause of Computus Cottonianus unambiguously indicates that the Romans followed the epoch of the incarnation (660 BCE). The 747th year (748th?) of incarnation was 86 CE. Seemingly, the Roman calendar (which had reformed during the Council of Nicaea (335 BCE) had accumulated three additional days in the beginning of the 1st century CE. Therefore, 4 Jan 86 CE was in fact 1 Jan 86 CE which was the day of New Moon and Sunday (Wednesday in the reconstructed Julian calendar). The Paschal full moon (luna 15) was on 14 April, i.e., 17th April.

There is another passage in the history of Franks: "From the beginning of the world to our Lord Jesus Christ is 5228 years and from the Lord's passion to the present year, which is the 177th in the cycle of Victorius, Sunday, 1 January, it is 735 years. Thus we lack 63 years to complete this millennium."[5] This passage refers to the epoch of Anno Mundi (5858 BCE), the birth year of Jesus Christ (660 BCE) and the year of Passion (629 BCE). It mentions that 1st January of the year 735 from the incarnation of Jesus (660 BCE) was Sunday. The 735th year was 75 CE. Considering the three additional days in the Roman calendar, 4 Jan 75 CE was 1 January and it was Sunday (Wednesday in

the reconstructed Julian calendar). It also refers to the 177th year of the second cycle of Victorius (97 BCE – 434 CE), i.e., 79 CE as the present year and indicates that the 6000th year of Anno Mundi will complete in 141-142 CE after 63 years.

Venerable Bede, a Roman monk refers to a solar eclipse that occurred on 3rd May (the fifth nones of May) at about the tenth hour (i.e. 3 pm to 4 pm). This total solar eclipse occurred exactly at the tenth hour on 6th May 319 CE.



Evidently, the Roman calendar had accumulated three days (if the weekday was from sunset to sunset) or four days (if the weekday was from sunrise to sunrise) starting from the year of Council of Nicaea (335 BCE) to the first year of the Dionysian Easter table, i.e., 171 CE. This was the reason why the Roman Church did not keep Easter Sunday at a proper time. In his *Historia Ecclesiastica*, Bede mentions that the Irish and Britons had differed regarding Easter: "they did not keep Easter Sunday at the proper time, but from the fourteenth to the twentieth moon; which computation is contained in a revolution of eighty-four years".

In fact, Irish scholars were the first, who had a comprehensive understanding of Easter reckoning in the 1st and 2nd centuries. They had introduced the Latercus, i.e., the 84(14)-year cycle starting from 1 BCE and fixed the lunar limits of Luna 14 to 20 for Easter Sunday. The difference between the Latercus and the Dionysius table:

		Latercus	**Dionysius Table**
1.	Lunar limits for Easter Sunday	14-20	15-21
2.	Earliest Easter Full Moon	25 March	20 March
3.	Julian Calendar limits for Easter Sunday	26 March-23 April	22 March-25 April
4.	Lunar Cycle	84 (14) years	19 years
5.	The Epoch	1 BCE	171 CE

The Munich computus manuscript contains an anonymous Irish Easter computus known as the Padua Latercus. This Padua Latercus gives the Easter dates in the 84(14)-year cycle from 335 CE to 419 CE. The Munich computus was written in the year 719 (i.e. 358 CE) in the epoch of Anno Domini (361 BCE). Columbanus who left Ireland in the year 590 (229 CE in the epoch of 361 BCE) wrote to Pope Gregory and complained of harassment of his monks over their dating of Easter by the Gaulish bishops. He explained that the scholars of Ireland had already rejected the *Victorian* reckoning as ludicrous, in comparison to the *Latercus* of the 84(14)-year cycle.

Evidently, the Irish Christian scholars had followed the *Latercus* of the 84(14)-year cycle starting from the epoch of 1 BCE whereas the Romans followed the Victorian table. The Romans understood the errors of the Victorian table and started following the Dionysian table that commenced in 171 CE. Bede informs us that twelve monasteries were founded on grants of land given by King Oswy (281-309 CE) of Northumbria to the Columbian Church in Deira and Bernicia in 655 (294 CE). Bede describes the role of King Oswy in the establishment of all these monasteries immediately before his account of the Synod of Whitby. Seemingly, Venerable Bede relates the Ecclesiastical history of England from the invasion of Julius Caesar to the time of King Edwin in the epoch of Anno Incarnatione (660 BCE). After the death of King Edwin, his next successors lost both the faith of their nation and the kingdom. The Christian king Oswald retrieved both. It appears that Bede referred to the epoch of Anno Domini of Dionysius (361 BCE) for the historical events starting from King Oswald.

There is a genuine need to critically review the oldest manuscripts of Bede's Ecclesiastical History with reference to the chronology suggested by me. It is certain that the 6000th year of Anno Mundi (5858 BCE) had already been elapsed before the lifetime of Venerable Bede. The Christians traditionally believed that the world would last for only 6000 years. Venerable Bede took the chronological data from St. Jerome's Latin translation of the Hebrew Old Testament (Known as Vulgate chronology) which is considerably shorter than the chronology of the Septuagint, the Greek translation of Old Testament that had been the traditional source for the Christian chroniclers. The 6000th year was 141 CE considering the epoch of Anno Mundi in 5859-5858 BCE. The 6000th year came and went but the world did not end. This is the reason why Venerable Bede followed the Vulgate Bible instead of Septuagint Bible. He revised the epoch of Anno Mundi from 5859 BCE to 4612 BCE based on the Vulgate chronology and refixed the epoch of *Anno Incarnatione* in the year 3952 (660 BCE) replacing the year 5199. According to historians, Bede died in 735 AD. If the epoch of *Anno Incarnatione* was 1 CE, then the year 6000 of Anno Mundi was 800-801 CE. It is totally absurd to think that Bede revised the epoch of Anno Mundi before the year 6000. In fact, Bede was born in the year 672 of Anno Domini of Dionysian reckoning (361 BCE), i.e., 311 CE and died in the year 735, i.e., 374 CE. It may also be noted that Bede did not mention about St. Pattrick because St. Pattrick lived in the 5th century.

According to Bede, King Oswy of Northumbria called the Synod of Whitby in the year 664, i.e., 303 CE. A controversy was already ongoing that arose about the due time of keeping of the date since 291 CE. The solar eclipse on 3rd Mar 295 CE had posed a challenge to review the computus of Easter. After discussions, King Oswy decided to follow the practice of Rome, i.e., celebrating Easter on Sunday and promulgated the Alexandrian cycle of 19 years and the Easter table of Dionysius. Though the Dionysian reckoning was introduced in England in the fourth century but the Ireland continued to use the epoch of 1 BCE-0 CE which gradually became popular as the epoch of Anno Domini in entire England from

the 6th century onwards because the epoch of 0 CE is also the 1st year of the Alexandrian cycle of 19 years. Unfortunately, the Christians of England and Ireland started mistakenly believing that the epochs of *Anno Incarnatione* (660 BCE) and *Anno Domini* (1 BCE – 0 CE) as identical during the 8th and 9th centuries. This is the reason why Abul Fazal says that some Christians consider the birth of Jesus Christ from the entry of the sun in Capricorn (660 BCE) whereas some Christians consider from the 8th degree of Capricorn (1 BCE-0 CE). Thus, the epoch of *Anno Incarnatione*, i.e., the birth year of Jesus Christ (660 BCE) had been erroneously brought forward by 660 years.

During the 3rd century, the Alexandrian Church reformed the calendar and introduced the Coptic calendar and the epoch of the Martyr's era in 284 CE. The first day of the Coptic calendar was 29 Aug 284 CE. Thereafter, the Julian calendar had also been reformed in the 4th century CE in line with the Coptic calendar. This is the reason why the Julian calendar had accumulated only ten extra days from 284 CE to 1582 CE. Finally, Pope Gregory XIII introduced the Gregorian calendar in 1582 CE. In all probability, the Coptic Calendar had been prepared considering the date of new Moon (4 April) as fixed by the Council of Nicaea. Though the Coptic calendar had deleted the additional days accumulated from 335 BCE to 284 CE but the early Julian calendar had already accumulated three extra days from 704 BCE to 335 BCE. In fact, 7 Apr 335 BCE was the new moon day and not 4 Apr 335 BCE. Moreover, 4 Apr 284 CE was the first day after new moon day. Thus, the Coptic calendar and the Julian calendar had an error of four additional days since 284 CE. Joseph Scaliger (1540-1609 CE) was not aware of this error when he had reconstructed the Julian calendar starting at noon on Monday, January 1 4713 BCE. In reality, January 1 4713 BCE was Friday not Monday because the Coptic and Julian calendars had four extra days which have not been accounted for while reconstructing the Julian calendar in 1582 CE. Therefore, there is a glaring error of four weekdays in the reconstructed Julian calendar and the Grogorian calendar. In fact, 1 Oct 1582 CE should be Friday not Monday.

As reformed in Oct 1582 CE

JULIAN 1582	October				Gregorian 1582	
Sun	Mon	Tues	Wed	Thurs	Fri	Sat
	1	2	3	4	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

To be corrected as

JULIAN 1582	October				Gregorian 1582	
Sun	Mon	Tues	Wed	Thurs	Fri	Sat
					1	2
3	4	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

Evidently, the references of weekdays in Pompeiian graffito, *Martyrium Polycarpii* and the Easter canon of Hippolytus clearly indicate that the weekdays in early Julian calendar do not match with those in the reconstructed Julian calendar. Let us understand the origin of the seven-day week to solve the problem of weekday error in the contemporary Julian calendar.

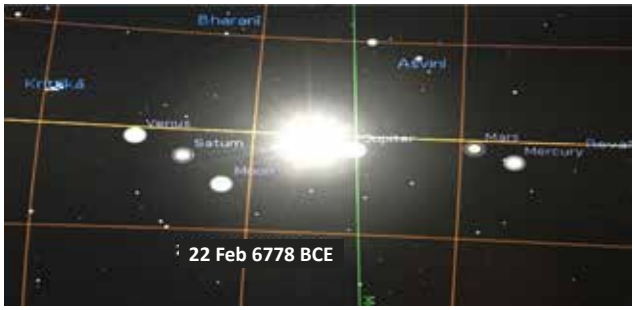
The Origin of Weekdays

Western scholars commonly believe that the ancient Babylonians or Chaldeans were the first to introduce the Sabbath (Saturday) as holiday and the Hebrew calendar of Jews adopted it from them. Initially, the Romans and Christians followed the Jewish seven-day week as regulated by the Hebrew calendar.

Olaf Perdersen, a scholar from University of Aarhus writes in his book titled "The Ecclesiastical Calendar and The Life of the Church"; "The Didache shows that already around 100 AD it is the frame of the Christian practice of fasting on the fourth and the sixth day – not on the second and third as the hypocrites do, which is a somewhat specious interpretation of Matt. 6, 16. One hundred years later the same custom is attested in Tertullian and Clement of Alexandria. This development was no doubt made easier by the fact that the seven day week was by now known all over the Empire as an astrological unit with each day "governed" by a particular planet and named after it. This practice was unacceptable to Christians who chose to denote the days of the week in the traditional Jewish manner by numbering them, the only exception being the Day of the Lord, or dies Dominica. The other days were called feria 2-6, using the Roman name for feast day of every day of the week. This system is known

as Tertullian, although Bede ascribes it to Pope Sylvester I. However, in civil life the planetary week occupied a strong position. A concordance between ferial numbers and the planetary names of the days is found in St. Augustine."

Seemingly, the Anatolians, Babylonians and Greeks traditionally viewed the week as an astrological unit with each day "governed" by a particular planet. Most probably, ancient Indians were the first who introduced the concept of the planetary week and the western civilisations learnt it from them. Mayasura, the author of Surya Siddhanta was the founder of the concept of the planetary week. He introduced his calendar from the epoch of 22 Feb 6778 BCE when all planets, Sun and Moon were in a conjunction in Aries. He also introduced the concept of 24 horas or hours and the seven day week. It is well known that the epoch of Surya Siddhanta, i.e., 22 Feb 6778 BCE was started on Sunday.



The Bhugoladhyaya (12th chapter) of Surya Siddhanta explains the concept of seven day week:

मन्दादधः क्रमेण स्युश्चतुर्था दिवसाधिपः।
वर्षाधिपतयस्तद्वत् तृतीयाः परिकीर्तिताः॥ Verse 78
ऊर्ध्वक्रमेण शशिनो मासानामधिपाः स्मृताः।
होरेशा सूर्यतनयादधोधः क्रमशस्तथा॥ verse 79

"Counting downward from Saturn, the fourth successively is regent of the day; and the third, in like manner, is declared to be the regent of the year. Reckoning upward from the moon are found, in succession, the regents of the months; the regents of the hora (hours), also, occur in downward order from Saturn."

Aryabhata also explained the same in his treatise "Aryabhatiyam" (सप्तैते होरेशाः शनैश्चराद्या यथाक्रमं शीघ्राः। शीघ्रक्रमाच्चतुर्था भवन्ति सूर्योदयाद् दिनपाः॥ [Kalakriyapada, Verse 16]). Surya Siddhanta considers one day or Ahoratra from sunrise (6 AM) to sunrise (6 AM). Thus, the Surya Siddhanta concept of weekdays can be further explained as shown below:

		Saturday				Sunday				Monday				Tuesday				Wednesday				Thursday				Friday			
Shani(Saturn)	29.46 years	**6**	13	20	3	10	17	24		7	14	21	4	11	18	1		8	15	22	5	12	19	2		9	16	23	
Guru(Jupiter)	11.86 years	7	14	21	4	11	18	1		8	15	22	5	12	19	2		9	16	23	**6**	13	20	3		10	17	24	
Mangal(Mars)	1.88 years	8	15	22	5	12	19	2		9	16	23	**6**	13	20	3		10	17	24		7	14	21	4	11	18	1	
Surya(Sun)	1 year	9	16	23	**6**	13	20	3		10	17	24		7	14	21	4	11	18	1		8	15	22	5	12	19	2	
Shukra(Venus)	225 days	10	17	24		7	14	21	4	11	18	1		8	15	22	5	12	19	2		9	16	23	**6**	13	20	3	
Budha(Mercury)	88 days	11	18	1		8	15	22	5	12	19	2		9	16	23	**6**	13	20	3		10	17	24		7	14	21	4
Soma(Moon)	27 days	12	19	2		9	16	23	**6**	13	20	3		10	17	24		7	14	21	4	11	18	1		8	15	22	5

It is evident that Surya Siddhanta founded the concept of seven day week starting from Sunday and entire world followed it. Therefore, we have to reconstruct the calendar starting from 22 Feb 6778 BCE, Sunday instead of January 1 4713 BCE. I propose that the epochal day of Surya Siddhanta (22 Feb 6778 BCE, -754556 Julian Day) must be considered as 0 SSD (Surya Siddhanta Day). Now, we can reconstruct the Surya Siddhanta calendar and verify the earliest references of weekdays. Aryabhata indicates that the epoch of fourth Yugapada (Kaliyuga) commenced on 5 Mar 3173 BCE, Guruvara (Thursday). The SSD Number is 1316740 and the Julian Day Number is 562184 on 5 Mar 3173 BCE which was Thursday. The epoch of Sakanta era (78 CE) commenced on 1 Apr 78 CE, Sunday. The SSD Number is 2504195 and the Julian Day Number is 1749638 on 1 Apr 78 CE.

Thus, ancient Indians were the first ones, who introduced the seven day week starting from 22 Feb 6778 BCE. The same tradition of seven day week had been adopted by the world. The true epoch of the tradition of weekdays clearly indicates that there is a need for another reform in the Gregorian calendar. Seemingly, we have no other option to cut short one week for only three days to correct the weekday error in the Gregorian calendar so that we can re-establish the true tradition of the weekdays of the world. This is absolutely necessary for calculation of historical weekdays and simulation of astronomical calculations. It would be logical to replace the concept of Julian day with the SSD (Surya Siddhanta Day) considering the epoch from 22 Feb 6778 BCE, Sunday.

12

The Chronology of Ancient China

The dynastic history of ancient China begins from the age of the legendary Yellow Emperor. The Chinese tradition informs us that China has a chronological history of more than 5000 years. Sima Tan and his son Sima Qian wrote a comprehensive history of ancient China for a period of 2500 years from Yellow Emperor to the reign of Emperor Wu of Han. This work is known as "Records of the Grand Historian".[1] Confucius, a famous Chinese philosopher, had compiled an ancient Chinese chronicle known as "Ch'in-ch'iu" chronicle or "Spring and Autumn Annals" which covers 241-year period of the Eastern Zhou dynasty. We also have "Bamboo Annals" which gives the chronological history from Yellow Emperor to King Xiang of Wei.

The Sheet Anchors of the Chinese Chronology

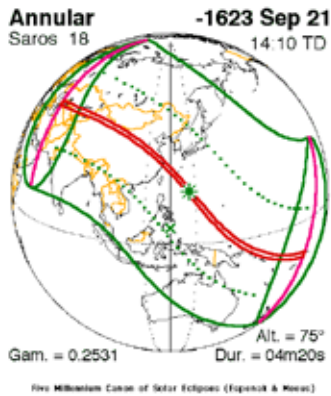
In ancient times, solar eclipses were regarded as divine signs to foretell the future of the King in China. Many Chinese astronomers were killed by the Chinese Emperors because they had failed to predict solar eclipses. There are numerous references of solar eclipses in ancient Chinese chronicles. "Bamboo Annals" and "Spring and Autumn Annals" record many astronomical references which can lead to an accurate chronology of Xia, Shang and Zhou dynasties. Therefore, the chronology of Xia, Shang and Zhou dynasties derived from the astro-historiographical content of ancient Chinese chronicles must be the sheet anchor of the ancient Chinese chronology.

Double-Dawn or Double Sunrise Eclipse

The Bamboo chronicle contains a record that "The first year of King Yi, the sky dawned twice at Zheng."[2] Undoubtedly, a total or annular solar

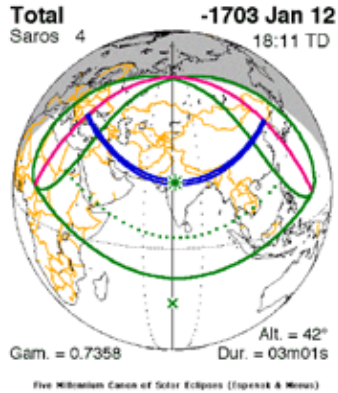
eclipse was observed in the first year of King Yi of Zhou dynasty. The statement of "dawned twice" clearly indicates that the eclipse took place after the sunrise and following the eclipse it brightened again like a second dawn. Historians searched for solar eclipses during the period 1000-840 BCE and finally identified the annular solar eclipse that occurred on 21st April 898 BCE. The period 1000-840 BCE was selected with a bias to the fictitious epoch of Christian era (1 CE). Thus, the chronology of ancient China has also been brought forward by ~660 years.

In fact, we must search for this double-dawn solar eclipse around the period 1650-1550 BCE. Zheng is the modern city of Xinxiang which is located on latitude 35° 18 North and longitude 113° 52 East. The Annular solar eclipse that occurred on 21st Sep 1623 BCE was observed around 8:00 AM to 10:00 AM and exactly crossed over the city of Xinxiang. Thus, 1623 BCE was the first regnal year of King Yi.



A Total Solar Eclipse in the 19th year of King Zhao

The Bamboo chronicle mentions; "In the 19th year of King Zhao, "Tian-da-yi" (The sky turned extraordinarily dark), pheasants and hares were shocked. King Zhao lost six armies at River Han.[3] This total solar eclipse took place during King Zhao's expedition to South Jingchu. The capital of King Zhao was Zongzhou (known as Xi'an) and Jingchu or Jiangling was an ancient state. Both cities are linked by the River Han. This total solar eclipse was observed on 12th Jan 1703 BCE.



The double dawn eclipse of 1623 BCE and the total solar eclipse of 1703 BCE must be considered as the sheet anchor for reconstructing the chronology of the early Zhou dynasty. Historians have established that the double dawn eclipse occurred on 21 Apr 898 BCE and the eclipse of the time of King Zhao took place on 31st May 975 BCE. The time of the eclipse of 898 BCE suggests that it could only be the eclipsed rise of Sun and may not have the phenomena of double dawn. The eclipse of 975 BCE was partial (magnitude 0.770) at the River of Han not total.

The Chronology of Early Zhou Dynasty (1792-1480 BCE)

		In CE
1.	King Wu (Fa)	1792-1775 BCE
2.	King Cheng (Song)	1775-1748 BCE
3.	King Kang (Zhao)	1748-1722 BCE
4.	King Zhao (Xia)	1722-1703 BCE
5.	King Mu (Man)	1703-1648 BCE
6.	King Gong (Yihu)	1648-1626 BCE
7.	King Yi (Jian)	1626-1602 BCE
8.	King Xiao (Pifang)	1602-1577 BCE
9.	King Yi II (Xie)	1577-1569 BCE
10.	King Li (Hu)	1569-1553 BCE
	Gonghe Regency	1553-1528 BCE

11.	King Xuan (Jing)	1529-1494 BCE
12.	King Yew (Gongsheng)	1494-1480 BCE

The Bamboo chronicle says; "In the 6th year of King Yew, in winter, 10th month, on a day Sin-Mao, a solar eclipse was observed. A lunar eclipse also occurred within 15 days before the solar eclipse." A solar eclipse was observed on 26th Dec 1488 BCE in the winter season and a total lunar eclipse was observed on 10th Dec 1488 BCE.

The Chronology of Later Zhou Dynasty (1480-968 BCE)

King Ping was the first king of Later Zhou dynasty. He ascended the throne in 1480 BCE and reigned for more than 51 years. According to ancient Annals, "In the year 51 of King Ping, in the spring, the second month, a solar eclipse was observed on a day of Yi-sse or Ki-sse (Chi-szu or 6th day)." This solar eclipse was observed on 31st Mar 1428 BCE in the beginning of the second month in spring season. It appears that King Ping reigned for 52 years

The Chronicle of Confucius and 37 Solar Eclipses

Interestingly, Confucius recorded 37 solar eclipses that observed in the state of Lu, a vassal of later Zhou dynasty. These solar eclipses were observed in a period of 241 years starting from the 3rd year of King Yin, the successor of King Ping to the 13th year of King Ai. Unfortunately, the original version of this chronicle is lost but it was copied during the reign of later Han dynasty. I do not know whether the available text is an exact copy of the original chronicle or some parts of the lost chronicle was reconstructed during the period of the later Han dynasty.

F. Richard Stephenson and Kevin KC Yau (University of Durham) have calculated the solar eclipses and published in an article titled "Astronomical records in the Ch'un-Ch'iu Chronicle" in 1992.[4] I have followed the data given in this article for calculating the solar eclipses. There are the two records of total solar eclipses out of 37 solar eclipses. Stephenson and Yau have also opined that the second eclipse of the list was also total but it is doubtful because the treatise of Han-shu records, "The eclipse threaded centrally through the sun; above and below it was

all yellow." Evidently, the second eclipse was not total. Therefore, I have considered only the 13th and the 24th eclipses as total. All 37 solar eclipses must be visible in the state of Lu. The period was roughly from 1420 BCE to 1182 BCE.

	Kings of Lu	**Regnal Years**	**Date of Solar Eclipse**	
1	Yin (1422-1412 BCE)	3	26 Oct 1420 BCE	
2	Huan (1411-1394 BCE)	3	13 Sep 1408 BCE	Annular eclipse
3	Huan	17	24 Jun 1395 BCE	
4	Chuang (1393-1362 BCE)	18	5 Jul 1377 BCE	
5	Chuang	25	5 Aug 1369 BCE	
6	Chuang	26?		
7	Chuang	30?		
8	Hsi (1359-1327 BCE)	5	3 May 1355 BCE	
9	Hsi	12	20 Dec 1349 BCE	
10	Hsi	15	7 Oct 1345 BCE	
11	Wen (1326-1309 BCE)	1	17 Oct 1327 BCE	
12	Wen	15	24 Jun 1311 BCE	
13	Hsuan (1308-1291 BCE)	8	5 Jun 1301 BCE	Total eclipse
14	Hsuan	10	17 Nov 1300 BCE	
15	Hsuan	17	24 Jun 1292 BCE	
16	Cheng	16	16 Jul 1275 BCE	
17	Cheng	17	30 Nov 1274 BCE	
18	Hsiang	14	22 Feb 1259 BCE	
19	Hsiang	15	27 July 1257 BCE	
20	Hsiang	20	16 May 1253 BCE	
21	Hsiang	21	04 May 1252 BCE	

22	Hsiang	21?	18 Sep 1251 BCE	
23	Hsiang	23?		
24	Hsiang	24	4 Mar 1249 BCE	Total eclipse
25	Hsiang	24?		
26	Hsiang	27	31 Dec 1247 BCE	
27	Chao	7	6 May 1235 BCE	
28	Chao	15	7 May 1226 BCE	
29	Chao	17	19 Oct 1224 BCE	
30	Chao	21	18 Aug 1221 BCE	
31	Chao	22?		
32	Chao	24	11 Dec 1218 BCE	
33	Chao	31	18 Jul 1210 BCE	
34	Ting	5	5 Mar 1203 BCE	
35	Ting	12	21 Oct 1198 BCE	
36	Ting	15	5 Apr 1195 BCE	
37	Ai	14	12 Jan 1182 BCE	

Unfortunately, ancient Chinese used the regnal years to record the occurrences of solar eclipses instead of an epoch of the era. Therefore, it is difficult to explain some of these eclipses in the chronology.

The Chronology of the Kings of Lu State (1422-1168 BCE)

The Lu state was a vassal state of the Zhou dynasty. Boqin, son of King Zhou was the founder of Lu state. The chronology of the kings of Lu state as indicated by Confucius:

	King	**Regnal years**	**In CE**
1.	Yin	11	1422-1412 BCE
2.	Huan	18	1411-1394 BCE
3.	Chuang	32	1393-1362 BCE
4.	Men	2	1361-1360 BCE
5.	Hsi	33	1359-1327 BCE
6.	Wen	18	1326-1309 BCE

7.	Hsuan	18	1308-1291 BCE
8.	Cheng	18	1290-1273 BCE
9.	Hsiang	31	1272-1242 BCE
10.	Chao	32	1241-1210 BCE
11.	Ting	15	1209-1195 BCE
12.	Ai	27	1194-1168 BCE

The Chronology of Later Zhou Dynasty (1480-968 BCE)

	Emperor	**In CE**
1.	Ping	1480-1428 BCE
2.	Huan	1428-1406 BCE
3.	Zhuang	1406-1391 BCE
4.	Xi	1391-1386 BCE
5.	Hui	1386-1361 BCE
6.	Xiang	1361-1328 BCE
7.	Qing	1328-1323 BCE
8.	Kuang	1323-1317 BCE
9.	Ding	1317-1296 BCE
10.	Jian	1296-1282 BCE
11.	Ling	1282-1255 BCE
12.	Jing	1255-1231 BCE
13.	Dao	1231-1230 BCE
14.	Jing	1230-1186 BCE
15.	Yuan	1186-1180 BCE
16.	Zhending	1180-1153 BCE
17.	Ai	1153-1152 BCE
18.	Si	1152-1151 BCE
19.	Kao	1151-1137 BCE
20.	Weilie	1137-1113 BCE
21.	An	1113-1087 BCE
22.	Lie	1087-1080 BCE

23.	Xian	1080-1032 BCE
24.	Shenjing	1032-1027 BCE
25.	Nan	1027-968 BCE

The Chronology of Qin Dynasty (968-866 BCE)

The Qin dynasty was the first imperial dynasty of China. The famous terracotta army sculptures were made during the reign of King Shi Huangdi (912-875 BCE) around 906-885 BCE.

		In CE
1.	Zhaoxiang	968-916 BCE
2.	Xiaowen	916-915 BCE
3.	Zhuangxiang	914-912 BCE
4.	Shi Huangdi	912-875 BCE
5.	Er Shi Huangdi	875-870 BCE
6.	Ying Ziying?	870-866 BCE

The Chronology of Early Han Dynasty (866-635 BCE)

Liu Bang was the founder of Han Dynasty around 866-862 BCE.

		In CE
1.	Liu Bang (Gaozu)	862-855 BCE
2.	Liu Ying (Huidi)	855-848 BCE
3.	Liu Gong (Shaodi Gong)	848-844 BCE
4.	Liu Hong (Shaodi Hong)	844-840 BCE
5.	Liu Heng (Wendi)	840-817 BCE
6.	Liu Qi (Jingdi)	817-801 BCE
7.	Liu Che (Wudi)	801-747 BCE
8.	Liu Fuling (Zhaodi)	747-734 BCE
9.	Liu He	734 BCE
10.	Liu Bingyi	734-709 BCE
11.	Lui Shi	709-693 BCE
12.	Liu Ao	693-667 BCE

13.	Liu Xin	667-660 BCE
14.	Liu Kan	660-654 BCE
15.	Liu Ying	654-651 BCE
16.	Wang-Mang of Xin dynasty	651-637 BCE
17.	Gengshi-di	637-635 BCE

The Chronology of Xia, Shang and Early Zhou Dynasties of Ancient China

We have discussed above the Chinese chronology from the early Zhou dynasty to the early Han dynasty (from 1792 BCE to 635 BCE). Ancient Chinese historian Liu Xin (710-637 BCE) has clearly stated that the early Zhou dynasty began their rule ~1100 years before his time. Historians calculated the date of 1122 BCE considering the fictitious epoch of the Christian era (1 CE). If we correct the chronological error of ~660 years, seemingly, the Zhou dynasty was founded around 1792 BCE.

Now we need to arrive at the chronology of ancient China before 1792 BCE. Ancient historian Liu Xin tells us that the Shang dynasty reigned for 644 years before the Zhou dynasty and the Xia dynasty reigned for 439 years before the Shang dynasty but the Bamboo Annals record that the Xia dynasty reined for 471 years. Thus, the Xia dynasty reigned around 2897-2426 BCE and the Shang dynasty reigned around 2426-1793 BCE. Sima Qian (810-747 BCE), a historian and the official of the Han dynasty, wrote the chronological history of ancient China starting from the legendary Yellow Emperor to the reign of King Wu (801-747 BCE) of the Han dynasty. Sima Qian wrote the history of 2500 years up to 754 BCE. Therefore, it can be concluded that the traditional dynastic history of ancient China begins from 3254 BCE.

The Sheet Anchors of the Chronology of Xia-Shang-Zhou Dynasties

Shangshu, one of the five classics of ancient Chinese literature, records that "On the first day of late autumn, the Chen was not harmonious in constellation of Fang, the blind beat drums, junior officers galloped, people ran around."[5] This incident occurred during the reign of King Zhong Kang of the Xia dynasty. The Bamboo chronicle also records this solar eclipse on the day of Gengwu, the 9th month in the 5th year of his

reign. This story is well known as the punishment of Yin. According to the story, Xi and He, the astronomers of Zhong Kang had neglected their duties and got drunk the whole time. When the solar eclipse occurred, Xi and He are sunk deep in a drunken state. The King put them to death because they failed to predict the solar eclipse.

Evidently, this solar eclipse was observed when moon was in the constellation of Fang (Uttara Ashadha Nakshatra in Indian astronomy) on the first day of late autumn, i.e., in the month of Oct-Nov (15th Oct – 15th Nov). The solar eclipse that occurred 9th Nov 2835 BCE perfectly corresponds to the required verifiable details. Since the eclipse took place in the 5th regnal year of King Zhong Kang, he might have ascended the throne in 2839 BCE.

Historians have fixed the period of the Xia dynasty around 2070-1600 BCE but failed to explain the occurrence of a solar eclipse in the 5th regnal year of King Zhong Kang. Some historians have identified it with the solar eclipse that occurred on 21st Oct 2136 BCE before the establishment of the reign of Xia dynasty but it is a blatant distortion of the traditional records.

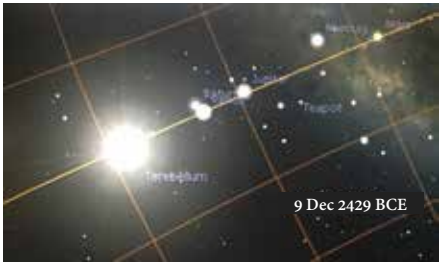
The Conjunction of Five Planets During the Reign of the First King of Xia Dynasty

Xiaojing Goumingjue, an ancient Chinese chronicle, records, "At the time of King Yu (the founder of Xia dynasty), the five planets were strung together like a necklace. They shone as brilliantly as chained jade disks."[6] This conjunction took place in between Aquarius and Capricornus on 27th

Dec 2867 BCE within an arc of 30 degrees. Saturn and Mercury were at the ecliptic longitude of 265° 28, Venus was at 252° 58, Mars was at 249° 04 and Jupiter was at 247° 05. Thus, this rare conjunction took place within the arc of 18 degrees. This conjunction might have appeared that the five planets were strung together like a necklace on 1st Jan 2866 BCE.

The conjunction of Five Planets during the reign of the last king of Xia dynasty

The Bamboo chronicle states, "In the 10th year of King Di Guy (the last King of Xia dynasty), the five planets were in conjunction but in disorder, stars fell down like rain." This conjunction occurred on 9th Dec 2429 BCE in Sagittarius. Saturn was at the ecliptic longitude of 229° 45, Venus was at 229° 01, Jupiter was at 224° 10, Mercury was at 214° 06 and Mars was at 207° 28. Thus, this conjunction took place within the arc of 22 degrees. This conjunction might have appeared that the five planets fell down like rain.



We can now easily arrive at the traditional chronology of the Xia dynasty based on the dates of these two conjunctions. Yu the Great launched an expedition against the king of Miao and subdued him. Thus, Yu the Great founded the Xia dynasty. Seventeen kings of the Xia dynasty reigned for 471 years. Bamboo Annals indicate that "From Yu to Jie there were seventeen reigns. Including when there was a king and when there was not, total time was 471 years".

The Xia Dynasty (2897-2429 BCE)

		Regnal years	In CE
1.	Yu the Great	45	2897-2853 BCE
(A conjunction of five planets on 27th Dec 2867 BCE.)			
2.	Qi	10	2853-2843 BCE
3.	Tai Kang	4	2843-2839 BCE
4.	Zhong Kang	13	2839-2826 BCE
(A solar eclipse on 9th Nov 2835 BCE in his 5th regnal year.)			
5.	Xiang	28	2826-2798 BCE
6.	Shao Kang	21	2798-2777 BCE
7.	Zhu	17	2777-2760 BCE
8.	Huai	44	2760-2716 BCE
9.	Mang	48	2716-2668 BCE
10.	Xie	16	2668-2652 BCE
11.	Bu Jiang	59	2652-2593 BCE
12.	Jiong	21	2593-2572 BCE
13.	Jin	21	2572-2551 BCE
14.	Kong Jia	31	2551-2520 BCE
15.	Gao	45	2520-2475 BCE
16.	Fa	55	2475-2420 BCE
17.	Di Gui or Jie	13	2419-2426 BCE
(A conjunction of five planets on 10th Dec 2429 BCE in the 10th year of King Di Gui or Lu Gui.)			

The Shang Dynasty (2426-1793 BCE)

Tang was the founder of the Shang dynasty and ruled in the Yellow river valley. This dynasty reigned for 644 years (634 years?) as recorded by ancient historian Liu Xin. King Dixin was the last ruler. The Bamboo chronicle records, "In the 32nd year of King Dixin, the five planets gathered in the constellation of Fang". The Constellation of Fang is Uttara Ashadha

Nakshatra in Indian astronomy. This conjunction occurred on 19th Dec 1812 BCE in Sagittarius. Jupiter was at the ecliptic longitude of 239° 30, Mercury was at 239° 08, Venus was at 238° 20, Mars was at 233° 09 and Saturn was at 222° 28. Thus, the conjunction took place within the arc of 17 degrees.

Thus, 1812 BCE was the 32nd regnal year of the King Dixin of the Shang dynasty. Total 30 kings of the Shang dynasty reigned for 634 years. Tang, the founder of the Shang dynasty defeated Jie in 2426 BCE and reigned for 29 years.

		Regnal years	**In CE**
1.	Tang the Perfect	29	2426-2397 BCE
2.	Wai Bing	3	2397-2394 BCE
3.	Zhong Ren	4	2394-2390 BCE
4.	Tai Jia	33	2390-2357 BCE
5.	Wo Ding	29	2357-2328 BCE
6.	Tai Geng	25	2328-2303 BCE
7.	Xiao Jia	36	2303-2267 BCE
8.	Yong Ji	12	2266-2254 BCE
9.	Tai Wu	75	2254-2179 BCE
10.	Zhong Ding	11	2179-2168 BCE
11.	Wai Ren	15	2168-2153 BCE
12.	He Dan Jia	9	2153-2144 BCE
13.	Zu Yi	19	2144-2125 BCE

14.	Zu Xin	16	2125-2109 BCE
15.	Wo Jia	20	2109-2089 BCE
16.	Zu Ding	32	2089-2057 BCE
17.	Nan Geng	29	2057-2028 BCE
18.	Yang Jia	7	2028-2021 BCE
19.	Pan Geng	28	2021-1993 BCE
20.	Xiao Xin	21	1993-1972 BCE
21.	Xiao Yi	21	1972-1951 BCE
22.	Wu Ding	30	1951-1921 BCE
23.	Zu Geng	7	1921-1914 BCE
24.	Zu Jia	33	1914-1881 BCE
25.	Lin Xin	6	1881-1875 BCE
26.	Geng Ding	6	1875-1869 BCE
27.	Wu Yi	4	1869-1865 BCE
28.	Tai Ding	3	1865-1862 BCE
29.	Di Yi	18	1862-1844 BCE
30.	Di Xin or Zhou (A conjunction of five planets occurred on 19th Dec 1812 BCE in his 32nd regnal year.)	52	1844-1793 BCE

The Date of King Wu's Conquest

King Wu conquered King Zhou of the Shang dynasty and founded the rule of the Zhou dynasty. The dating of this event was very important for the chronology of Xia, Shang and Zhou dynasties of ancient China. The Chinese tradition had recorded the astronomical observations related to the date of King Wu's conquest.[7] These astronomical records indicate:

"The first month, day Renchen [29], it was Pang Siba. The next day was Guisi [30]; King Wu departed from Zhou state to crusade against King Zhou of Shang dynasty. Counting from the day Ji Siba of the third month, the fifth day was Jiazi when King Zhou was killed. Counting from the day Jipang Shengba, the sixth day was Gengxu when King Wu prayed at the grand temple of Zhou state."

"When King Wu conquered Zhou, Jupiter was in the constellation Chunhuo; the Moon was in the constellation Tiansi; the Sun was in the constellation Ximu; Chen was in the constellation Doubing; the Star was in the constellation Tianyuan."

It is also recorded that Jupiter and a comet were in the east sky. An inscription on a bronze Ligui also indicates that Jupiter was in the constellation Chunhuo.

According to ancient Feng-Shui and Chinese astrology, the zodiacal signs are as under:

			Sun Sign
1.	Zouzi	Branch-Hai	Pisces
2.	Jianglou	Branch-Xu	Aries
3.	Daliang	Branch-You	Taurus
4.	Shichen	Branch-Shen	Gemini
5.	Chunshou	Branch-Wei	Cancer
6.	Chunhuo	Branch-Wu	Leo
7.	Chunwei	Branch-Si	Virgo
8.	Shouxing	Branch-Chen	Libra
9.	Dahuo	Branch-Mao	Scorpio
10.	Ximu	Branch-Yin	Sagittarius
11.	Xingji	Branch-Chou	Capricorn
12.	Xuanxiao	Branch-Zi	Aquarius

Most probably, King Wu conquered Zhou in Nov 1793 BCE. The Sun was in Sagittarius, Jupiter was in Leo and Moon was in Tian Zun (Gemini) on that day. Comet 2P/Encke was also visible at Dawn in the month of February, 1793 BCE. Therefore, we can conclusively fix the date of King Wu's conquest of Zhou in November 1793 BCE.

Total Lunar Eclipse During the 35th Regnal Year of King Wen of Zhou

King Wen of Zhou was the father of King Wu who founded the Zhou dynasty. King Wen was a vassal king of Di Xin, the last king of Shang dynasty. Bamboo Annals has a record of the total lunar eclipse that occurred in the 35th regnal year of King Wen of Zhou. Most probably, this total lunar eclipse

occurred on 16th Feb 1816 BCE because the conjunction of five planets took place on 19th Dec 1812 BCE in the 40th year of King Wen.

The Conjunction of Five Planets Marking the Founding of Xia, Shang and Zhou Dynasties

Ancient Chinese sources refer to three conjunctions of five planets marking the founding of the Xia, Shang and Zhou dynasties. King Yu founded the Xia dynasty around 2897-2853 BCE and the conjunction occurred on 27th Dec 2867 BCE. King Tang founded the Shang dynasty around 2426 BCE and the conjunction of five planets occurred on 9th Dec 2429 BCE. King Wu founded the Zhou dynasty and the conjunction of five planets occurred on 19th Dec 1812 in the constellation of Fang during the 32nd year of King Zhou of the Shang dynasty.

The historians arrived at the dates of these three conjunctions as 26th Feb 1952 BCE, 20th Dec 1575 BCE and 28th May 1058 BCE. The first conjunction of 1952 BCE does not match the actual observation because it is recorded that the five planets were strung together like a necklace. The second conjunction of 1575 BCE was the conjunction of only four planets. The third conjunction of 1059 did not occur in the constellation of Fang. Therefore, these dates of the conjunctions as identified by the historians miserably fail to explain the verifiable details. It is evident that the chronological framework followed by modern historians has an error of ~660 years.

The Epoch of Ancient Zhuanxu Calendar

Hong Fan Zhuan (8th century BCE) mentions that the "Ancient Zhuanxu calendar" began at dawn, in the beginning of the spring, when the sun, new moon, and five planets gathered in the constellation Yingshi (Pegasus). The Bamboo chronicle records that King Zhuanxu introduced the calendar in his 13th regnal year. King Zhuanxu was the grandson of the legendary Yellow Emperor who reigned before the reign of the Xia dynasty (2865-2426 BCE).

In all probability, Yellow Emperor reigned around 3200-3150 BCE and his grandson Zhuanxu started his reign around 3114 BCE. Interestingly, the Chinese astronomers might have introduced the new Chinese

calendar from the epoch of Kaliyuga, i.e., 17th / 18th Feb 3101 BCE when the sun, moon, and five planets all lined up in the constellation Yingshi (close to Revati Nakshatra) in the sky at dawn. Since King Zhuanxu was the reigning king in 3101 BCE, the ancient Chinese calendar came to be known as the Zhuanxu calendar.

The Outlines of the Chronology of Ancient China:

		Duration	**In CE**
	Five Emperors and their descendants	357 years	3254-2897 BCE
1.	The Xia Dynasty (Yu to Chieh 17 kings)	471 years	2897-2426 BCE
2.	The Shang Dynasty	633 years	2426-1793 BCE
3.	The Early Chou (Zhou) Dynasty	312 years	1792-1480 BCE
4.	The Chou (Zhou) Dynasty (Eastern)	512 years	1480-968 BCE
5.	The Ch'in (Qin) Dynasty	102 years	968-866 BCE
6.	The Early Han Dynasty	231 years	866-635 BCE
7.	The Later Han Dynasty	195 years	635-440 BCE
8.	The period of Six Dynasties	369 years	440-71 BCE
	Three Kingdoms		440-395 BCE
	Jin Dynasty		395-240 BCE
	Period of Northern and Southern Dynasties		274-71 BCE
9.	The Sui Dynasty		71-42 BCE
10.	The T'ang Dynasty		42 BCE - 247 CE

The Date of Confucius (1251-1179 BCE)

Confucius, the famous Chinese philosopher, was the author of the Ch'un-Ch'iu chronicle (Spring and Autumn Annals). He recorded the chronological history of the kings of Lu State from 1422 BCE to 1182 BCE. Confucius was born on the 20th day or 27th day after the solar eclipse which took place in the 10th month or in the 8th Moon of 1251 BCE. A solar eclipse was observed on 18th Sep 1251 BCE. Therefore, Confucius might have born on 8th Oct or 15th Oct 1251 BCE. Thus, we can conclusively fix the date of Confucius around 1251-1179 BCE.

The Date of Fa hien or Faxian (280-200 BCE)

Fa hien, a Chinese Buddhist monk visited many countries like India, Nepal and Sri Lanka around 250-230 BCE for collecting Buddhist texts during the reign of Gupta dynasty. Probably, he was the senior contemporary of the Song dynasty of the house of Liu (240-181 BCE) during the period of six dynasties.

Fa hien says that Buddha attained nirvana more than 300 years before the King Ping of Zhou dynasty (1480-1423 BCE). When the monks asked Fa hien if it could be known when the Law of Buddha first went to the east, he replied, 'When I asked the people of those countries about it, they all said that it had been handed down by their fathers from of old that, after the setting up of the image of Maitreya Bodhisattva, there were Sramanas of India who crossed this river, carrying with them sutras and Books of Discipline. Now the image was set up rather more than 300 years after the nirvana of Buddha, which may be referred to the reign of King Ping of the Chow (Zhou) dynasty. Evidently, Fa hien indicates that Buddha attained nirvana around 1765 BCE. I have already established that Buddha attained nirvana in 1864 BCE and the 2nd Buddhist council was held in 1765 BCE 100 years after Buddha nirvana during the reign of King Ashoka (Kalashoka). The epoch of 1765 BCE was known as the era of Jinachakka, i.e., the epoch of the Theravada Buddhism in Burma. Later, Buddhists mistakenly considered 1765 BCE as the year of Buddha nirvana.[8]

The Date of Sung Yun (2nd century BCE)

Chinese Buddhist monk Sung Yun visited Chitral, Swat Valley and Gandhar region around 142-138 BCE.

The Date of Hien Tsang or Xuanzang (58 BCE-4 CE)

Hien Tsang, a Buddhist monk of central China, sojourned in India around 30-15 BCE. He referred to a King Baladitya. Most probably, Baladitya was the king of Kashmir around 137-99 BCE.

The Date of Itsing or Yijing (25 BCE - 53 CE)

Itsing was born during the reign of Tang dynasty. He travelled to India and Srivijaya around 10-35 CE.

The Chronology of China After the Tang Dynasty

Tang dynasty reigned for the period 42 BCE-246 CE. Five dynasties (Later Liang, Later Tang, Later Jin, Later Han and Later Zhou) reigned from 247 CE to 300 CE. Emperor Tazu (Zhao Kuangyin) was the founder of the Song dynasty. This dynasty flourished during the period 300-619 CE.

The Mongol Invasion and the Chronology of Yuan Dynasty

I have already established in the Chapter 2 that the Islamic history has also been brought forward by ~660 years. Historians have mistakenly fixed the lifetime of Prophet Mohammad around 570-632 CE and the epoch of the Hijrah era in 622 CE. In reality, Mohammad lived around 101-39 BCE and the epoch of the lunar Hijrah era commenced around 44-34 BCE. But Persian astronomers followed the solar calendar and Arabs followed the lunar calendar which led to different epochs of Hijrah era. Abul Fazal, the author of Akbarnama refers to the epoch of Lunar Hijrah in 39 BCE and the author of Tarikh-i-Guzida refers to the epoch of lunar Hijrah in 34 BCE.

Changez Khan, the founder of the Mongol Empire, reigned around 534-555 CE. Kublai Khan, the grandson of Changez Khan, conquered the kingdom of the Song dynasty and founded the rule of the Yuan dynasty in China in 619 CE. The Yuan dynasty was the first foreign dynasty that reigned over China. This dynasty reigned for 749 years from 619 CE to 1368 CE. Since the chronological history of China has been brought forward by ~660 years, the historians have reduced the chronology of the Yuan dynasty for only 90 years.

"Yuvanshi", a Chinese history of the Yuan dynasty was written by the scholars of the Ming dynasty in the 14th century. This history of the Yuan dynasty was written in 210 chapters in 331 days. It contains 47 Imperial biographies starting from Changez Khan, 8 chronological tables and 97 biographies of important non-imperial people. Evidently, Yuvanshi gives the history of 47 Yuan rulers of China. Since it is impossible to adjust the reign of 47 Yuan rulers in the chronology of 90 years, modern historians have therefore blamed the authors of "Yuvanshi" for careless recording of the history of the Yuan dynasty and completely distorted it. In fact, Yuvanshi gives the history of 47 Yuan rulers who might have reigned

from 619 CE to 1369 CE. There is a genuine need for further research or comprehensive study of Yuvanshi. We would need to delve deeper into the works of Marco Polo and Rashid-eddin with reference the missing chronology of ~660 years.

Unfortunately, modern historians completely distorted the records of Yuvanshi with a bias to the fictitious epoch of 1 CE and reduced the chronology of Yuan dynasty from 749 years to 90 years. Ke Shaomin, a Chinese historian under the influence of western historians, has rewritten the history of Yuan in 1921 considering the chronology of only 90 years.

Liao Shi, Jin Shi, Song Shi and Yuan Shi

Toqto'a was an official historian of the Yuan dynasty. He compiled the history of the Liao, Jin and Song dynasties. Song Lian compiled the history of the Yuan dynasty (Yuan Shi) who lived during the time of the founder of the Ming dynasty. These four books were also part of the compilation of twenty four histories made during the 40th regnal year of Qianlong Emperor (1735-1796 CE). There is a serious need to study the original texts of Liao Shi, Jin Shi, Song Shi and Yuan Shi to arrive the chronology of China for the period 300-1368 CE.

The Chronology of China After 247 CE

In all probability, the Yuan dynasty reigned over China from 619 CE to 1368 CE. Thus, the chronology of China after 247 CE would be:

		In CE
1.	Five Dynasties Period	247-300 CE
2.	The Song Dynasty	300-619 CE
3.	The Yuan Dynasty	619-1368 CE
4.	The Ming Dynasty	1368-1644 CE
5.	The Qing Dynasty	1644-1912 CE

13

The Origin and Antiquity of Western Ancient Kingdoms

Archaeological evidence apparently indicates that the western ancient civilizations had their origin in the beginnings of the Holocene (12000 BCE). Human settlements have continuously been found at Tell es-Sultan, near Jericho, north of Dead Sea since 12500 BCE. The archaeological findings at Gobekle Tepe and Nevali Cori in South-eastern Turkey have been dated around 12000-8000 BCE. Dr. BG Siddhartha, the Director of the BM Birla Science Centre, Hyderabad has studied these archaeological sites of Turkey and pointed out that the early Vedic civilization was extended up to Anatolia. Among the many artefacts that were unearthed in Gobekle Tepe, there are, amazingly, the head of a Vedic priest, complete with the Shikha as well as several pillars and structures embellished with all the astronomical motifs clearly indicate the early settlement of the people who could have migrated from India during the Rigvedic period.[1]

Robert Bauval and Graham Hancock have dated the Great Sphinx of Giza, Egypt around 10500 BCE based on Orion correlation theory.[2] According to ancient Greece sources, Evenor was the original inhabitant of Atlantis, the island that was located about fifty stadia from sea in front of the Pillars of Hercules (close to the Strait of Gibraltar). Cleito

was the daughter of Evenor. She had a son named Atlas from the Greek god Poseidon. Atlas became the first king of Atlantis. Poseidon was the contemporary of Athena, the goddess of the city of Athens. Athena defeated Poseidon. The city of Atlantis was submerged by sea around ~10200 BCE as recorded by Plato which indicates that Evenor, Poseidon, Athena and Atlas etc. flourished many centuries before 10200 BCE. According to ancient Greek and Persian sources, Zoroaster I flourished around 7100 BCE and Zoroaster II lived around 1310-1230 BCE. Zoroastrian and Persian sources relate that Ahur Mazda's son Gayomart and his dynasty reigned for 3070 years and many kings reigned before the time of Zoroaster I (~7100 BCE). Thus, Zoroastrian sources also give the history beyond ~10200 BCE.

The historians generally speculate that the area of Mesopotamia was the cradle of human civilization but I have established in my book titled "*The Chronology of India: From Manu to Mahabharata*" that the Vedic civilization of India had its origin around 14500 BCE.[3] Modern scholars generally agree that every chronological study must rationally reconcile to the archaeological, epigraphic, archaeo-astronomical, astro-historiographical, archaeo-genetic, literary, linguistic & traditional evidences and factually establish the chronological continuity of the world history. Considering the chronological continuity based upon the findings of archaeological and archaeo-astronomical studies till date, the historic period of Indus-Sarasvati / Vedic civilization might have begun around 14500 BCE. Seemingly, the Sapta-Sindhu or Indus-Sarasvati region was the cradle of civilizations and the large-scale migrations from this region led to the evolution of various civilizations of Eurasia.

Ancient Indians living in Sapta Sindhu region gradually established an agrarian society during the early Vedic period. This agrarian revolution was impossible without learning the basic astronomy. Therefore, ancient Indians of the early Vedic period started the record-keeping of astro-observational data. The Rishis composed the hymns of Rigveda, Yajurveda and Samaveda during this period. Many early kingdoms established during the early Vedic period which led to the foundation of gradual urbanization.

The Ancient Greece

Devas and Asuras were the two major political rivals in India during the Rigvedic era. Though they were cousins, they were in a major conflict for many centuries during the early Vedic era or Deva Yuga, i.e., 14000-11300 BCE. The Asuras were also known as Danavas because they were the progeny of mother Danu. Vritrasura, son of Tvashta and Danu was the progenitor of Asuras or Danavas. Initially, the Asuras dominated over the Devas but the Devas led by Indra had comprehensively defeated the Asuras around 11300 BCE. The monsoons in north-west India might have also weakened after 11300 BCE. The Danavas, sons of Danu were the earliest to immigrate to Anatolia and Greece during the early Vedic era. Homer refers to these Danavas as Danaans (Danaoi), Achaeans or Argives. Dr. David Frawley also opined: "The term Danu or Danava appears to form the substratum of Indo-European identity at the base of the Hellenic, Illyro-Venetic, Italo-Celtic, Germanic and Balto-Slavic elements. The northern Greeks were also called Danuni. Therefore, the European Aryans could probably all be called Danavas."[4]

Gradually, many ancient Greek tribes came into existence. The Yavanas of North-western India also migrated to Anatolia and Greece and came to be known as Ionians. The legend of the city of Atlantis clearly indicates that the Greece civilization came into existence before 10200 BCE. The city of Atlantis was submerged by sea around 10200-9500 BCE in the beginning of Meltwater Pulse 1B. The ancient history of Greece from 10000 BCE to 3000 BCE needs to be reconstructed from the historico-mythological legends. I have already explained the chronological history of Greece from Aegialeus, the first King of Sicyonians who became king in the 15th year of Assyrian King Belus II (2742-2657 BCE).

Classical Greeks consider themselves divided into four groups, Aeolians, Achaeans, Dorians and Ionians. Greeks or Hellenes believe that their progenitor was Hellen. He had three sons, Aeolus, Xuthus and Dorus. Aeolus was the progenitor of Aeolians, Xuthus was the progenitor of Achaeans and Dorus was the progenitor of Dorians. Though Ionians have been categorized as the fourth group of classical Greece, they are not one of the earliest Greeks to appear in ancient records. The Ionians

only appear in the Mycenaean Greek records of Crete. Evidently, Ionians were the Yavanas of Gandhara and Bactria who had migrated to Anatolia and Greece. Greeks refer to Ionians as the masters of Philosophy, Art and Literature, etc.

The Origin of Ionians

The Yavanas of Gandhara and Bactria migrated to Anatolia and Greece probably around 6500-6000 BCE. These Yavanas known as Ionians established cultural links between Bactria and Greece. The so-called Heraclid kings of Macedonia were the descendants of Ionians. It appears that a branch of the Yavanas of Bactria was aware of their Indian origins. Therefore, they claimed themselves to be Vaishnavas and Parama-bhagavatas. They also considered Vasudeva (Sri Krishna) to be their ancestor. A coin of these Yavanas has images of Vasudeva (Sri Krishna), Conch and Sudarshana Chakra.

The famous Brahmi script pillar inscription informs us that Heliodorus, a resident of Takshashila and an ambassador of Yavana King Antialkidas (1400-1365 BCE) visited Vidisha and erected a Garuda Dhvaja in a Temple of Vasudeva. Heliodorus claims himself to be Bhagavata, i.e., a devotee of Vasudeva. Emperor Asoka's Brahmi inscriptions (1765-1737 BCE) mention the Yavana kings named Antikina, Alikasundara, Maga, Turamaya and Gongakena who were ruling in the region of Bactria, Gandhara and Khurasan. In all probability, the Heraclid kings of Greek were the descendants of Yavanas (Ionians) migrated to Greece in ancient times. Interestingly, Alexander claims himself to be the descendant of Heraclids because his mother was the daughter of Philippos, a king of Heraclids.

The Origin of the Scythians of Eurasian Steppe

The Sakas of Gandhara and Bactria had migrated to Eurasian Steppe in the post Vedic period (9000-7000 BCE) and came to be known as the Scythians. Sakas, Pahlavas, Kambojas and Yavanas were the warrior tribes of the later Vedic period. Valmiki Ramayana indicates that Rishi Vasishtha of the Rigvedic era trained them as warriors.

The Ancient Egypt

The traditional sources of Egypt indicate the date of the first king Menes around 5867 BCE as calculated by Jeans Francois Champollion. Prior to 5867 BCE, a different class of Demigods reined for 5813 years, Demigods from Horos to Zeus reigned for 5212 years (856 years?) and seven gods reigned for 13900 years (11985 years). If we ignore the over-estimation of the reign of gods and demigods, the chronology of Egypt might have commenced around 13000-11000 BCE. Robert Bauval has dated the Great Sphinx of Giza, Egypt around 10500 BCE based on Orion correlation theory. Graham Hancock further explains; "The Sphinx represents the disposition of the constellations of Orion and Leo as they looked at the moment of sunrise on the spring equinox during the astronomical "Age of Leo" (i.e. the epoch in which the Sun was "housed" by Leo on the spring equinox.) Like all precessional ages this was a 2,160-year period. It is generally calculated to have fallen between the Gregorian calendar dates of 10970 BCE and 8810 BCE.

Herodotus clearly indicates that the Greek and the Egyptian gods are the same. He shows numerous similarities of Greek and Egyptian mythology. He refers to many Egyptian gods comparing them to Olympian gods. It is now difficult to establish whether the Egyptian mythology derived from the Greek Mythology or vice versa but it would be logical to speculate that the Greeks and the Egyptians might have shared a common origin in the remote past. The history of ancient Egypt from ~11000 BCE to 5867 BCE needs to be reconstructed from the legends of Egyptian gods and demigods. It may be noted that ancient mythological legends do contain some valuable historical inputs.

The Ancient Phoenicia

Sanchuniathon of Berytus (Beirut) was the earliest historian of Phoenicia, who lived during the reign of Assyrian queen Semiramis (2635-2593 BCE). He wrote in the Phoenician language and dedicated his work to King Abibalus of Berytus. Philo of Byblos had translated the works of Sanchuniathon into Greek but only few fragments of this Greek translation are found quoted by Eusebius in his work titled *"Praeparatio Evengelica"*.

Herodotus clearly states, "According to Persians best informed in history, the Phoenicians began the quarrel. These people, who had formerly dwelt on the shores of the Erythrean Sea, having migrated to Mediterranean and settled in the parts which they now inhabit, began at once, they say, to adventure on long voyages, freighting their vessels with the wares of Egypt and Assyria." Undoubtedly, Phoenicians migrated from the modern Arabian Sea and they were the neighbours of Persians. The Chaldean Kings founded a city named "Eridu" in the region of Lower Mesopotamia. The city of Eridu became the major center of sea trade. Therefore, the entire Arabian Sea including Persian Gulf was referred to as "Erythrean Sea". Berosus, the ancient historian of Babylonia, unambiguously refers to Persian Gulf and Arabian Sea as "Erythrean Sea".[5]

It may be noted that "Panis" (पणिः) were the earliest business men of the early Vedic period. Many Sanskrit words like पण (coin), आपण (Shop), etc. are derived from the word "पणिः". The Panis were the ancient ship-builders, navigators and maritime traders. They might have traditionally dominated the trade in Mediterranean region and had sufficient knowledge of the geography. They might have made temporary settlements in Lebanon and Cyprus since ancient times.

The Persians became either the middlemen or competitors which led to a quarrel between the Persians and the Panis. Consequently, the Panis decided to immigrate to Mediterranean region around 4000-3500 BCE. Thus, they settled in Sidon, Tyre, Biblos and Baalbeck cities of Lebanon. The Greeks called Panis as the Phoenicians. Hecatateus of Miletus mentions that Phoenicia was formerly called Khnan. In fact, the Panis were also called "Kānana" because in ancient times, their ancestors used to live in forests collecting various commodities and products to sell in

the villages and cities. Mahabharata also mentions that the Kānana tribe supported Pandavas. The land of Lebanon and northern Israel came to be known as "Canaan" because the Kānanas, i.e., the Panis settled and reigned over this region. The Greeks called the land of Lebanon and northern Israel as Phoenicia.

The Ancient Persia

The migrated Asuras from India had settled in Persia and came to be known as Zoroastrians. Avesta is the oldest text of Zoroastrianism. It is well known that there are significant similarities in the words and grammar of Avestan and Vedic Sanskrit languages. Avesta mentions Mithra, Varuna, Indra, Yama etc. The Gathas of Avesta mention Rudra along with Angra Mainyu. Vedic and post Vedic sources indicate that the Asuras also performed Yajnas. Gopatha Brahmana refers to Asuraveda of Pratichyas (westerners) and Asita Dhānvan, an Asura Rishi. Asita is also mentioned in Avesta. Shānkhāyana Shrautasutra mentions about Asuravidyā. Evidently, the Asuras compiled their own Veda for performing rituals. The same Asuraveda came to be known as Avesta. Unfortunately, a major portion of Avesta text is now lost.

Many Vedic Rishis taught Vedic sciences to Asuras. Sukracharya, a famous Guru of Asuras was known as Kavi or Kava Us or Kaikaus in Zoroastrianism. Sukracharya was the son of Kavi. He was referred to as Ushanas Kāvya in Rigveda Anukramani. The Asuras evolved archaic Avestan Sanskrit (Vedic Sanskrit of Asuras) based on their own grammar from Proto Sanskrit language. Thus, Vedic Sanskrit and archaic Avestan Sanskrit have been artificially evolved by the learned people.

The common people of Asura community spoke Proto Iranian that was naturally evolved from Proto Sanskrit. It appears that the early Asuras had settled in Gandhara region on the banks of Helmand River. According to Vedic legends, Sarama Devashuni met Panis, a business clan of Asuras on the banks of Rasa River. Most probably, Rasa River was Helmand River of Afghanistan. King Bahlika (Kuru dynasty) and King Gandhara (Druhyu dynasty) conquered northern and southern Afghanistan respectively and established their kingdoms around 11100-11000 BCE. The Asuras had no other option to migrate further westwards. They settled in Iran, Iraq,

Syria and Southern Anatolia. The Pani Asuras (known as Phoenicians in the west) migrated up to Atlantic Ocean and a group of Panis might have founded the city of Atlantis which was submerged by sea around 10000 BCE. When the monsoons weakened after 11000 BCE, many groups of Danavas had also migrated up to Greece and the Druhyus had migrated to Sumeria and Syria. Thus, the speakers of Proto-Sanskrit and Proto-Iranian languages laid foundation for the evolution of all West Asian and European languages. Therefore, Proto-Sanskrit was indeed the mother of Proto Indo-Iranian and Proto Indo-European languages.

It appears that the early Zoroastrianism of Asuras was extended from Iran to Southern Anatolia and posed a challenge to the Danavas, the early settlers of Greece. Seemingly, there were at least two Zoroasters. The first Zarathustra also known as Asha Zarathustra or Zarathushtra Spitama was the author of Gathas and Yasna Haptanghaiti of Avesta. Ancient Greek sources also refer to two Zoroasters. Hermodorus (10th century BCE) believed that Zoroaster I lived 5000 years before the date of Trojan war (1842 BCE). Eudoxus also placed Zoroaster I 6000 years before the lifetime of Plato (11th century BCE). Evidently, Zarathushtra I flourished around ~7100-7000 BCE and authored Gathas and Yasna Haptanghaiti of Avesta and recompiled Avesta. Zarathushtra I was like a Veda Vyasa of Zoroastrianism. He transformed Zoroastrianism into Monotheism and founded the basic tenets of Zoroastrian philosophy. This is how an Asuraveda transformed into Avesta and Zoroastrianism around 7000 BCE. Interestingly, Zoroastrianism accepted the Indian concept of Mahayuga of 12000 years that evolved after the Ramayana era. Zoroastrianism followed equal length of four Yugas (3000 years of each Yuga) Instead of the differential duration (4:3:2:1) of four Yugas.

The Danavas of the post Vedic era were the worshippers of Vedic devatas like Mitra, Varuna, etc. These Vedic gods had been transformed into Greek gods. Twelve Olympian gods are like twelve Adityas of the Rigvedic era. The common people from Afghanistan to East Europe prominently worshipped God Mithra. Gradually, Mithra became synonymous to Surya (Sun). Zarathushtra I's monotheism also influenced the philosophy of the Mithra god worshippers of East Europe. Thus, The Mithraism was born in East Europe and became a popular religion before the birth of

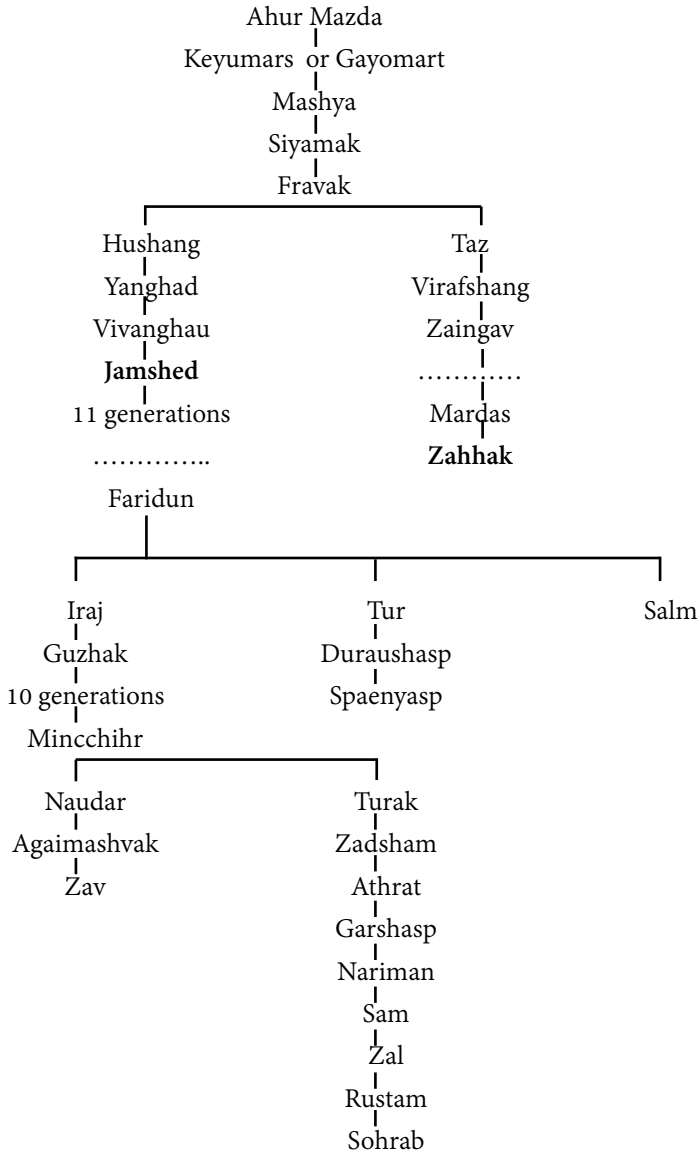
Christianity. The Mithraism had been meticulously destroyed and wiped out by the Christian faith patronized by the authoritarian kings.

Probably, many Indian families of Baluchistan and Gandhara had also migrated to Sumeria, Babylon, Egypt around 11000 BCE. Puranas indicates that the sons of Prachetas, a descendant of the Druhyu dynasty migrated to west and became the kings of Mlecchа countries. Sumerians and Egyptians started learning the basics of Indian astronomy and mathematics in the post-Ramayana era. This is the reason why Sumerians and Egyptians also believed that their gods and ancestors reigned for thousands of years. Sumerians and Egyptians also followed the Yuga of 432000 years. A group of Babylonians came under the influence of Zoroastrianism who evolved the philosophy of Judaism. The Yavanas and Bactrians of northern Afghanistan and Turkmenistan learnt the Surya Siddhanta of Mayasura (6778 BCE) and evolved the Yavana Siddhanta under the influence of Surya Siddhanta. Many families of Yavanas living in Bactria and Gandhara had migrated to Greece and western Anatolia around 6500-5000 BCE and came to be known "Ionians" and "Javans". Consequently, Hellenistic mythology and Hellenistic sciences had been evolved.

Seemingly, Zoroastrianism was declined around 3000-1300 BCE due to the political rise of Egypt, Sumeria-Babylonia and Assyria. Persia was under the rule of Sumerians and Babylonians around 3000-1700 BCE. The rising Buddhism also posed a great challenge to Zoroastrianism around 1800-1300 BCE. The later Kayanian dynasty was reigning over Persia around 1300 BCE. Zoroaster II was born in Magha country (North Bactria, North Turkmenistan and Uzbekistan) around 1307 BCE and revived Zoroastrianism. Since Magha was the birthplace of Zoroaster II, Zoroastrianism also came to be known as Maghism. Maghism or Later Zoroastrianism accepted the solar calendar and started celebrating Navroj. Kayanian king Gustaspa declared Zoroastrianism as the state religion. Acheamenids and Sasanians promoted Zoroastrianism. Unfortunately, the Zoroastrians of Iran and Turkmenistan had no other option to surrender to the barbaric Islamic invaders. The converted Maghist Muslims (Zoroastrian Muslims) came to be known as Mughals who invaded and established their kingdom in India in medieval period.

Thus, the glorious Zoroastrianism of Vedic era has been wiped out from Iran. Today, a micro minority community of Zoroastrians in India is struggling to preserve their glorious heritage.

The Genealogy of Pishdad Dynasty of Ancient Persia (Bundashin)



The Chronology of Ancient Persia (Shahnama)

		In CE
Ahur Mazda		14350 BCE
The Pishdadian Kings		
Keyumars I or Gayomart I	3030 years	14300 BCE
Keyumars II or Gayomart II		11300-11220 BCE
Hushang	40 years	11220-11180 BCE
Tahmuras	30 years	11180-11150 BCE
Jamshid Jam (and his descendants)	700 years	11150-11000 BCE to 10400 BCE
Zahhak or Azi Dahaka, a Serpent King or an evil foreign ruler (and his descendants)	1000 years	10400-9400 BCE
Faridun (First physician) and his descendants (The legends of Garshasp, Nariman, Sam, Zal, Rustam & Sohrab)	500 years (Tabakat-i-Nasiri indicates the duration of 1276 years between Faridun and Garshasp.)	9400-7900 BCE
The Kayanian Dynasty		
Kay Kubad and his son Kavi Kavata (the founders of Kayanian dynasty)		~8000 BCE?
Kavi Ushan or Kay Kāvus, a king of Ariana and the contemporary of Rustam and Sohrab. He had a flying chariot.		~7900 BCE?
Avesta (Zamyad Yasht 19.71, and Farvardin Yasht 13.132) mentions many Kayanian kings like Kavi Aipivohu, Kavi Usadha, Kavi Arshan, Kavi Pisina, Kavi Byarshan, and Kavi Syavarshan etc.		7900-7000 BCE?

Kavi Khusrow (Kay Husroy)		
Kavi Luhrasp, father of Vistaspa		~7050 BCE
Kavi Vistaspa (the patron of Zarathushtra I)	6000 years before Plato (11th century BCE) or 5000 years before Trojan war (1842 BCE)	~7000 BCE
Kavi Wahman		6950 BCE

Evidently, Zarathushtra I, a contemporary of Vistaspa recompiled Asuraveda (Avesta) around 7000 BCE. King Vistaspa struggled to maintain the sovereignty of Airan Kingdom but King Arjasp of Aratta Kingdom (Turkmenistan) posed a great challenge to him. Seemingly, the Kayanian kings lost their kingdom to the Aratta Kings around 6900 BCE. The Aratta kings reigned over Airan from 6900 BCE to 3000 BCE. According to Iranian legends, King In-Su-Kush-Siranna had celebrated Navroz 2000 years before the reign of King Cyrus (1198 BCE). It appears that the Assyrian and the Babylonian kings dominated over Airan around 3000-1300 BCE. Zoroaster II (1307-1230 BCE) was born in the Maga region and revived the Zoroastrianism. King Cyrus (1198-1188 BCE) of the Achaemenid dynasty had declared Zoroastrianism as the state religion. Most probably, the later descendants of Kayanian dynasty were ruling over Persia before the invasion of Alexander.

	Duration	**In CE**
Bahman	22 years	1064-1042 BCE
Humāe, the daughter of Bahman	30 years	1042-1012 BCE
Darab-i-Akbar or Darab Kiani	12 years	1012-1000 BCE
Dara-i-Asghar (During his reign, Alexander conquered Persia.)	12 years	1000-988 BCE

The Sheet Anchors of the Chronology of Western Ancient Kingdoms Before the Epoch of the Era of Adam

Seemingly, Ancient Greece had referred to the submergence of Atlantis city (~10200 BCE) and the time of Zarathustra I or Zoroaster I (~7100-

7000 BCE) as the epochal historical events for roughly counting the elapsed years in the chronological history. After the lifetime of Zoroaster I, the Aratta kings of Armenia and Tukmenistan dominated over Persia. During the period 6900-6500 BCE, many Asura families had migrated to Iraq, Syria and Anatolia from Persia.

The ancient western historians indicate that Dionysios or Father Bacchus lived 6451 years and three months before Alexander the Great (988-982 BCE), i.e., around ~7400 BCE.

Pliny says; "From the days of Father Bacchus to Alexander the Great their kings (Indian kings) are reckoned at 154 whose reigns over 6451 years and three months."[6] He also mentions; "Many writers include in India even the city of Nysa and Mount Merus, sacred to Father Bacchus, whence the origin of the fable that he sprang from the thigh of Jupiter."[7]

Gaius Julius Solinus tells us; "Father Bacchus was the first who invaded India and was the first of all who triumphed over the vanquished Indians. From him to Alexander the great 6451 years are reckoned with three months additional, the calculation being made by counting the kings who reigned in the intermediate period, to the number 153."[8] He also mentions; "The city Nysa is assigned to this region, as is also the mountain sacred to Jupiter, Meros by name, in a cave on which the ancient Indians affirm Father Bacchus was nourished; while the name has given rise to the well-known fantastic story that Bacchus was born from the thigh."[9]

Arrian also says; "From the time of Dionyson (or Bacchus) to Sandrakottos the Indians counted 153 kings and a period of 6042 years, but among these a republic was thrice established another to 300 years and another to 120 years. The Indians also tell us that Dionysios was earlier than Herakles by fifteen generations."[10]

Polyaenus gives the detailed account of the expedition of Dionysos. He states:

"Dionysos, in his expedition against the Indians, in order that the cities might receive him willingly, disguised the arms with which he had equipped his troops, and made them wear soft raiment and fawnskins. The spears were wrapped round with ivy, and the thyrsus had a sharp

point. He gave the signal for battle by cymbals and drums instead of the trumpet, and by regaling the enemy with wine diverted their thoughts from war to dancing. These and all other Bacchic orgies were employed in the system of warfare by which he subjugated the Indians and all the rest of Asia. Dionysus, in the course of his Indian campaign, seeing that his army could not endure the fiery heat of the air, took forcible possession of the three-peaked mountain of India. Of these peaks one is called Korasibie, another Kondaske, but the third he himself gave the name of Meros, in remembrance of his birth. Thereon were many fountains of water sweet to drink, game in great plenty, tree-fruits in unsparing profusion, and snows which gave new vigour to the frame. The troops quartered there made a sudden descent upon the barbarians of the plain, whom they easily routed, since they attacked them with missiles from a commanding position on the heights above.

Dionysos, after conquering the Indians, invaded Bactria, taking with him as auxiliaries the Indians and Amazons. That country has for its boundary the river Saranges. The Bactrians seized the mountains overhanging that river with a view to attack Dionysos, in crossing it from a post of advantage. He, however, having encamped along the river, ordered the Amazons and the Bakkhai to cross it, in order that the Bactrians, in their contempt for women, might be induced to come down from the heights. The women then assayed to cross the stream, and the enemy came downhill, and advancing to the river endeavoured to beat them back. The women then retreated, and the Bactrians pursued them as far as the bank; then Dionysos, coming to the rescue with his men, slew the Bactrians, who were impeded from fighting by the current, and he crossed the river in safety."[11]

Evidently, ancient western historians relate the historical legend of Dionysus' expedition against India. As a matter of fact, there were at least two individuals who had the name of Dionysus. It appears that Dionysus I was the most ancient god of Greeks. According to ancient Greek legends, Dionysus I came from the east who founded a city of Nysa in the Kunar valley close to Koh-i-Mor peak in Afghanistan. Alexander the great rebuilt this ancient city of Nysa in memory of Dionysus I. My hypothesis is that Danu's son Danava Vritrasura (13650 BCE) of the early Vedic era

was probably known as Dionysus I in ancient Greece. When Indra killed Dionysus I, the descendants of Danava had migrated to the west and settled in the Anatolia region and worshipped Danava or Dionysus I as their progenitor.

Seemingly, there was another Dionysus II who was the son of Zeus. Probably, Dionysus II was also known as Bacchus. According to Herodotus, "As it is, the Greek story has it that no sooner was Dionysus born than Zeus sewed him up in his thigh and carried him away to Nysa in Ethiopia beyond Egypt; and as for Pan, the Greeks do not know what became of him after his birth. It is therefore plain to me that the Greeks learned the names of these two gods later than the names of all the others, and trace the birth of both to the time when they gained the knowledge." Most probably, Herodotus relates the legend of Dionysus II. In all probability, it was Dionysus II (also known as Bacchus) who led the expedition against India around ~7400 BCE and subjugated the Indians of Gāndhara and Bactria regions. It appears that ancient western historians mistakenly identified the legend of Bacchus, son of Zeus with the legend of Kacha, son of Brihaspati (Jupiter) due to resemblance in the name. Kacha lived around ~11200 BCE whereas Bacchus flourished around ~7400 BCE. Thus, ancient Greek sources roughly refer to the epochs of the submergence of Atlantis city (~10200 BCE), Zoroaster I (~7000 BCE) and Dionysus II or Bacchus (~7400 BCE).

The Epoch of the Era of Adam (6168 BCE)

Adam or Adamu was the earliest leader of Asuras who founded the kingdom of Assyria. His son Yangi succeeded him. Adam had two wives, Eve and Jer. Seth was the son of Eve and Shahid was the son of Jer. The Yajidis consider themselves as the descendants of Shahid bin Jer. Most probably, the Jews are the descendants of Seth, son of Eve. King Adam and his son Yangi and their descendants might have dominated over Anatolia and Syria. Therefore, the epoch of Adam's era became very popular in Anatolia which came to be known as the date of creation later.

Abul Fazal clearly distinguishes between the Khatai Era (Era of Creation) and the Era of Adam. He says; "According to Elkhani tables, 5353 solar years have elapsed to the present date (934 CE). But some of

those possessing a book of divine revelation make it 6346 solar years; others 6938 solar: others again, 6920, solar, but according to what has been reported from learned Christians, it is 6793 years."

The Era of Adam was popularly used in Anatolia. The traditional evidence indicates that the epoch of Adam's era commenced in 6168 BCE. At the end of the "*Chronicon paschale*", Georgios says that the best of all and the most popular is the era which counts 6147 years till the 29th year of Heraclius (21 BCE). Jesus Christ was born in the year 5508 of the Era of Adam. The early Christians referred to this epoch as "Anno Mundi" or the era of creation. The Christians altered the epoch of this era from 6168 BCE to 5859-5858 BCE so that the cycles of 532 years can be explained. Annianus of Alexandria shifted the epoch of 5859-5858 BCE to 5853 BCE.

The early Christians believed that the world would cease to exist in the year 6000 but the world continued to exist in 141 CE when 6000 years had elapsed in the Era of Adam. Venerable Bede revised the epoch of the Era of Adam from 5858 BCE to 4612 BCE. Later, Ushar fixed the same in 4004 BCE. Thus, the Christians had unsuccessfully attempted to revise the epoch of Adam's era but the traditional epoch, i.e., 6168 BCE continued to be in use till the decline of the Byzantine Empire. Total 8187 years have been elapsed to the present year, i.e., 2019.

The Epoch of the Era of Deluge (3966 BCE – 3762 BCE)

In ancient times, Babylonian or Mesopotamian civilization flourished in the land between Tigris and Euphrates Rivers. Most probably, this civilization suffered a massive destruction in the great floods. It may be noted that the devastating flood mentioned in Bible was real and not mythical. Hippolytus of Rome (490-425 BCE) mentions that total 2242 years have been elapsed from Adam to the flood and 1141 years have been elapsed from the flood to Abraham. Doukas gives the following chronology from Adam to the flood:

Adam to Seth	230 years
Seth to Enos	205 years
Enos to Kainan	190 years
Kainan to Mahaleel	170 years

Mahaleel to Jared	165 years
Jared to Enoch	162 years
Enoch to Metusaleh	165 years
Metusaleh to Lamech	167 years
Lamech to Noah	188 years
Noah to Flood	600 years
	2242 years

Considering the epoch of the Adam's era in 6168 BCE, the Deluge might have taken place in 3926 BCE. The early Christian tradition indicates that total 2938 years elapsed up to the epoch of the era of Alexandria (972 BCE) which means the Deluge took place in 3910 BCE. Hebrew Bible (Old Testament) mentions that the great flood occurred in 2930 BCE 1656 years after the date of creation (4586 BCE). Seemingly, Hebrew Bible considered the date of Noah as the date of creation.

Abu Rayhan mentions that the Chaldean and Babylonian astronomers refer to a conjunction of Saturn and Jupiter 229 years and 108 days before Deluge. Interestingly, a perfect conjunction of Saturn and Jupiter took place in Sagittarius on 9th Dec 4196 BCE and also on 26th Sep 3997 BCE. Thus, the date of Biblical Deluge must be around 3966 BCE or 3768 BCE. Abu Rayhan states that Abu Ma'shar of Balkh used an epoch of Deluge in 3762 BCE and calculated 2790 years elapsed up to the epoch of the era of Alexandria (972 BCE). Abul Fazal also refers to the astronomical epoch of deluge (as calculated by Abu Ma'shar) in 3763-3762 BCE and says that total 4696 years have been elapsed up to 934 CE.

The ancient tradition dates the epoch of Deluge around 3926 BCE 2242 years after the epoch of the Era of Adam (6168 BCE) but the same tradition says that Abraham was born 1141 years after the Deluge. We have already discussed the date of Abraham (2638 BCE) who was the contemporary of Babylonian King Hammurabi. Considering the date of Abraham in 2638 BCE, the date of Deluge would be around 3779 BCE. **Therefore, we can conclude that the great deluge might have occurred around 3966 BCE – 3762 BCE.**

In all probability, Iraq and Syria were the most affected countries in the great flood whereas Jordan and Egypt were partially affected. Abul Fazal clearly says that Indians do not have the story of the great flood but modern historians have propounded that Indians do have the flood story of Manu. It may be noted that the flood story of Manu is an historical event of the great antiquity (~11200 BCE) because India was not affected by the floods of 3966-3762 BCE. Evidently, the story of Manu can never be equated with the story of Noah.

Interestingly, Al Beruni mentions that Aphrodisios, an Indian King ruled over Egypt about 900 years after the deluge (3966–3762 BCE), i.e., 3066–2862 BCE. He indicates that the Indian King was the first who introduced the chariots drawn by two horses.[12] Though Greeks claimed that Athenians were the first who rode on chariots of war but Al Beruni states that the Indian king of Egypt introduced Chariots in the west. Probably, Aphrodisios belonged to the Afridi tribe (a clan of Abhiras) of Kyber Pakhtunkhwa who flourished 100 or 300 years after the Mahabharata war (3162 BCE). Seemingly, ancient Indians of Gandhara and Bactria had migrated to Greece during the period 11000-10500 BCE. At that time, they might have carried some chariots to Athens. This may be the reason why the Greek mythology refers to the use of Chariots by Athenians. But there is no evidence of use of war chariots with spoked wheels in the west before 3066–2868 BCE.

The Epoch of the Foundation of the City of Assur (5410 BCE)

Ancient Assyrian kings founded the city of Assur or Ashur in 5410 BCE and they also built a temple of Assur. This became an epochal event in the history of Assyrians. The epoch of 5410 BCE is still used by the Yajidis who adopted it during the reign of Assyrians.

The Chronology of the Earliest Kings of Assyria

The chronological history of ancient Assyria starts from the foundation of the city of Assur. The ancient Assyrian calendar starts from the year 5410 BCE when the city of Assur or Ashur was founded by King Ushpia. Modern historians have calculated this date around 4750 BCE because of the chronological error of 660 years. Undoubtedly, the Assyrians

had originated from the Asuras migrated from India and settled in northern Mesopotamia and shared the common ancestry of Sumerians/ Babylonians. Therefore, the antiquity of the Assyrian civilization must be as old as the antiquity of the Persian and Sumerian civilization. The Khorsabad list and the SDAS list give the names of 17 earliest kings who dwelled in tents.

Khorsabad List	**SDAS List**	**The Earliest Assyrian Kings**	**In CE**
1	1	Tudiya	6200-6168 BCE
2	**1**	**Adamu**	**6168-6100 BCE**
3	2	Yangi	6100-6050 BCE
4	2	Suhlamu	6050-6000 BCE
5	3	Harharu	6000-5950 BCE
6	3	Mandaru	5950-5900 BCE
7	4	Imsu	5900-5850 BCE
8	4	Harsu	5850-5800 BCE
9	4	Didanu	5800-5750 BCE
10	5	Hana	5750-5700 BCE
11	5	Zuabu	5700-5650 BCE
12	6	Nuabu	5650-5600 BCE
13	6	Abazu	5600-5550 BCE
14	7	Belu	5550-5500 BCE
15	7	Azarah	5500-5450 BCE
16	**8**	**Ushpia**	**5450-5390 BCE**
17	8	Apiashal	5390-5350 BCE

King Ushpia founded the city of Assur in 5410 BCE. The city of Assur became the capital of early Assyrian kings. Apiashal succeeded his father Ushpia.

		In CE
1.	Apiashal	5390-4200 BCE
2.	Hale	
3.	Samani	

4.	Hayani	5390-4200 BCE
5.	Ilu-Mer	
6.	Yakmesi	
7.	Yakmeni	
8.	Yazkur-el	
9.	Ila-kabkabu	
10.	Aminu	

Six Kings whose Eponyms are not known

1.	Sulili	4200-3768 BCE
2.	Kikkiya	
3.	Akiya	
4.	Puzur-Ashur I	
5.	Shalim-ahum	
6.	Ilu-shuma	

The deluge is not mentioned in the Assyrian king lists but seemingly the early Assyrian kings from Tudina and Adamu to Ilu-shuma flourished before the great flood (3966–3762 BCE). Assyrian kingdom was devastated in the flood. Seemingly, the early Akkadian and the early Amorite kings might have dominated over the Assyrian kingdom from 3768 BCE to 3056 BCE. The third dynasty of Ur also dominated over Assyrians during 3056-2931 BCE. After the fall of the third dynasty of Ur, it appears that two Assyrian kingdoms came into existence. Belus founded the Assyrian kingdom in Northern Syria and South-central Anatolia around 2865 BCE whereas Erishum I founded the Assyrian kingdom in upper Mesopotamia around 2900 BCE. We have already discussed the chronology of Assyria after 2900 BCE in the Chapter 8.

The Chronology of the Early Kings of Sumeria, Uruk, Ur, Kish and Babylon

The archaeological sites like Tell Hassuna, Tell Halaf, Tell Ubaid and Samarra have been scientifically dated beyond 6000-5500 BCE. According to the traditional history, Eridu was the earliest city of Mesopotamia. It was a coastal city of Persian Gulf in ancient times. The first King of

Mesopotamia reigned from the city of Eridu as recorded in the Sumerian Kings list. The ancient cities of Uruk, Ur and Kish were built before the great flood (3768 BCE).

Berosus, a Chaldean priest and astronomer, wrote the history of Babylon (Babyloniaca) from ancient times to the beginning of the reign of Cyrus (1197 BCE). He was the contemporary of Alexander (990–982 BCE). Unfortunately, the original work of Berosus and its abridged version written by Greco-Roman scholar Polyhistor are now lost. Eusebius of Caesarea has quoted the Babylonian chronology as given by Polyhistor in his work "*Chronica*". Berosus unambiguously tells us that the Kings of Mesopotamia were the Chaldeans. Therefore, we can conclude that the history of Babylonia is in fact the history of Chaldeans up to 1200 BCE. Most probably, the Chaldeans belonged to the learned community of ancient Asuras who had migrated from India around 11000 BCE.

Berosus describes that there was a chaos before creation. This chaos was presided over by the female called "Tiamat" or "Tisallat" but she was destroyed by the Babylonian god Bel Mardhuk. The gods created the heavens and the earth. Ten Chaldean kings (Alorus, Alaparos, Amelon, Ammenon, Amegalaros, Daonos, Edpranchos, Amempsinos, Otiartes and Xisuthros) reigned for 432000 years from the creation to the flood. Thereafter, 86 kings (Illukassat, Mulagununna, Abilkisu, Izdubar, etc.) reigned for a period of 34080 or 33091 years.

According to Berosus, Medes tribe conquered Babylonia and eight kings reigned for a period of 234 or 224 or 190 years. 11 Kings reigned for unknown period. Thereafter, 49 Chaldean kings reigned for 458 years who belong to the famous line of sovereigns reigning at the cities of Eridu, Urukh, Ur, etc. The center of Babylonian power in their time lay in the south of the country, and many of the well-known temples and other buildings in this region were raised during their dominion. After 49 Chaldean kings, 9 kings of Arabian line reigned for 245 years. The famous king Hammurabi belongs to this Arabian dynasty. Kings of Assyria, conquered Babylon, and reigned for 526 years. Berosus's chronological account of Babylon as given above is available only in fragments and in

abridged versions. We have several cuneiform inscriptions which give the chronological list of Sumerian Kings.

The Antediluvian Kings of Sumeria

According to these inscriptions, King Alulim was the founder of Eridu city. The archaeological studies reveal that the Eridu city had settlements since 6000-5500 BCE. Seemingly, the antediluvian kings reigned over Sumeria around 6000-5500 BCE.

	Antediluvian Kings	**City**	**Regnal years**
1.	Alulim	Eridug (Eridu)	28,800
2.	Alalgar		36000
3.	Amme-sipa-anna	Bad-Tibira	21600
4.	Ammegalanna		18000
5.	Dumuzid		36000
6.	En-sipa-zianna	Larak	21600
7.	Ammendurana (Menduranki)	Sippar	18000
8.	Ubaratutu	Shurrupak	20400
9.	Ziusudra		36000
10.	Two Kings		56400
	Total years:		**236400**
	Version II: 8 Kings		**241200**
	Version III: 8 Kings		**222600**

King Ziusudra flourished before the great flood (3966–3762 BCE). According to the Sumerian Kings list, Ziusudra was the last king prior to the great flood and he was the hero in Sumerian flood legends like biblical hero Noah.

After the great flood, the cities of Uruk, Kish and Ur had emerged as the power centers of Sumeria. Though it has been assumed that all kings of Uruk, Kish and Ur are postdiluvian but seemingly, the first and second dynasties of Uruk, the first, second and third dynasties of Kish, the first dynasty of Lagash, the first and second dynasties of Ur reigned before the great flood.

The Early Kings of Uruk

Uruk city was founded by king Enmerkar. The legendary Sumerian text "Enmerkar and the Lord of Aratta" describes the wars between Sumerian king Enmerkar and the unnamed king of Arattas. The Aratta kings dominated over Persia and Armenia since 6900 BCE after the fall of the Kayanian dynasty. Gilgamesh, the legendary king of Sumeria built a wall around Uruk city. Seemingly, the kings from E-ana to Gilgamesh flourished before the flood.

Antediluvian Kings of Uruk		**Duration**	**In CE**
The first dynasty			
1.	Mesh-ki-ang-gasher of E-ana	324 years	
2.	**Enmerkar**	420 years	
3.	Lugalbanda	1200 years	
4.	Dumuzid	100 years	
5.	Gilgamesh (He was the contemporary of Kish king Aga.)	126 years	
6.	Ur-Nungal	30 years	5500-4300 BCE
7.	Udul-kalama	15 years	
8.	La-ba'shum	9 years	
9.	En-nun-tarah-ana	8 years	
10.	Mesh-he	36 years	
11.	Melem-ana	6 years	
12.	Lugal-kitun	36 years	
The Second Dynasty of Uruk			
1.	En-Sshag-kush-ana	60 years	
2.	Lugal-kinishe-dudu or Lugal-ure	120 years	4300-3800 BCE
3.	Argandea	7 years	

The Early Kings of Kish

Kish city was founded by King Jushur. Aga, the last king of the first dynasty was a contemporary of Dumuzid and Gilgamesh of Uruk.

Antediluvian Kings of Kish		Duration	In CE
The first dynasty			
1.	Jushur	1,200 years	
2.	Kullassina-bel	960 years	
3.	Nangishlishma	670 years	
4.	En-tarah-ana	420 years	
5.	Babum	300 years	
6.	Puannum	840 years	
7.	Kalibum	960 years	
8.	Kalumum	840 years	
9.	Zuqaqip	900 years	
10.	Atab (or A-ba)	600 years	
11.	Mashda	840 years	
12.	Arwium	720 years	5500-4300 BCE
13.	Etana	1,500 years	
14.	Balih	400 years	
15.	En-me-nuna	660 years	
16.	Melem-Kish	900 years	
17.	Barsal-nuna	1,200 years	
18.	Zamug	140 years	
19.	Tizqar	305 years	
20.	Ilku	900 years	
21.	Iltasadum	1,200 years	
22.	En-me-barage-si	900 years	
23.	Aga of Kish	625 years	
The Second Dynasty of Kish			
1.	Susuda	201 years	
2.	Dadasig	81 years	
3.	Mamagal	360 years	4300-4000 BCE
4.	Kalbum	195 years	
5.	Tuge	360 years	

6.	Men-nuna	180 years	4300-4000 BCE
7.	(Enbi-Ishtar)	290 years	
8.	Lugalngu	360 years	
The Third Dynasty of Kish			
1.	Kug-Bau	100 years	4000-3800 BCE

The Early Kings of Lagash

The first dynasty of Lagash city might have reigned before the flood. King En-anna-tum I was the contemporary of Kug-Bau of Kish.

	The First Dynasty of Lagash	**In CE**
1.	Enhengal	4300-3800 BCE
2.	Lugal-sha-engur (Lugal-Suggur)	
3.	Ur-virte (Ur-nina)	
4.	Akurgal	
5.	Eannatum	
6.	En-anna-tum I	
7.	Entemena	
8.	Enanatum II	
9.	Enentarzid	
10.	Lugalanda	
11.	Urukagina	

The First and Second Dynasties of Ur

The First Dynasty of Ur		**Duration**	**In CE**
1.	**Mesh-Ane-pada**	**80 years**	4400-4200 BCE
2.	Mesh-ki-ang-Nuna	36 years	
3.	Elulu	25 years	
4.	Balulu	36 years	

The Second Dynasty of Ur

1.	Nanni	120 years	4000-3800 BCE
2.	Mesh-ki-ang-Nanna II	48 years	
3.	Unknown King	2 years	

The Elamite Kings (4200-3800 BCE)

Archaeological evidence found in Elam and Khuzestan provinces of Persia and the Mesopotamian sources inform us that the Elamite civilization flourished in Persia around 4500 BCE to 2000 BCE. The city of Susa was the major center of this civilization. Unfortunately, we have only the fragmentary account of Elamites. The inscriptions of early Elamites could not be deciphered till date. One bilingual inscription written in Linear Elamite script and Old Akkadian roughly indicates that Linear Elamite script had the characteristics of a phonetic script. Later Elamites abandoned their script and adapted the cuneiform script of Mesopotamia. Interestingly, Elamite cuneiform script contained 145 signs whereas Mesopotamian cuneiform script had 700 signs. Evidently, Elamite cuneiform script was more advanced but the Mesopotamian cuneiform script became more popular under the royal patronage of Mesopotamian-Babylonian kings. The Awan dynasty of Elam might have reigned for 356 years before the great flood (3966–3762 BCE).

The Postdiluvian Kings of Sumeria (3724 BCE to 3056 BCE)

		Duration	In CE
1.	The Dynasty of Mari (6 Kings)	136 years	3724-3588 BCE
2.	The Fourth Dynasty of Kish (8 Kings)	112 years	3588-3476 BCE
3.	The Third Dynasty of Uruk (1 King)	25 years	3476-3451 BCE
4.	The Akkadian Empire (11 Kings)	181 years	3451-3270 BCE
5.	The Forth Dynasty of Uruk (5 Kings)	64 years	3270-3206 BCE
6.	The Dynasty of Gutium or The Guti Period (21 Kings)	124 years	3206-3082 BCE
7.	The Fifth Dynasty of Uruk (1 King)	26 years	3082-3056 BCE

The third dynasty of Ur reigned over the Sumerian kingdom starting from 3056 BCE. We have already discussed the Chronology of Sumeria from 3056 BCE to the time of Alexander (990-982 BCE) in the Chapter 7.

The Tower of Babel and the City of Babel

According to Sumerian legends and the Jewish Tanakh's first book, a united humanity of generations speaking a single language migrated to eastward after the Great Flood. They came to the land of Sumeru (Shinar in Hebrew) in Mesopotamian region and built a city and a tower (91 meters high?) "Tall enough to reach heaven". This tower came to be known as the tower of Babel dedicated to Sumerian god "Bel Marduk". Interestingly, it is believed that many languages born after the construction of this tower and the people could no longer understand each other's language.

Considering the date of the great flood around 3768 BCE, the city of Babel and the tower of Babel might have been built around 3750-3700 BCE. Seemingly, the city of Babel was destroyed in the flood which happened around 2930 BCE. The tower of Babel was not much affected by the floods. The city of Babel was rebuilt after 2930 BCE. Seemingly, the tower of Babel was almost a dilapidated structure in the 11th century BCE. Alexander ordered it demolished around 988-982 BCE but died before the preparation for the reconstruction of the tower.

According to modern historians, Ctesias claimed that Bābil or Babylon was rebuilt in 2286 BCE (as quoted by later classical authors). Considering the chronological error of ~660 years, the construction of the city of Babylon commenced around 2930-2900 BCE. Berosus, the earliest historian of Babylon, stated that astronomical observations commenced at Babylon 490 years before the Greek era of Phoroneus. Most probably, Berosus indicates a date of 2902 BCE when the third dynasty of Ur was reigning. It may be noted that the epoch of the era of Phoroneus commenced in 2412 BCE. EAE Tablet 20 refers to the dates of two extraordinary lunar eclipses those occurred on 18th May 2975 BCE and 25th Jan 2932 BCE. Evidently, the epigraphic evidence also validates the statement of Berosus that the astronomical observations had been commenced at Babylon in the 30th century BCE.

According to Tabkat-i-Nasiri, Shis was the son of Adam and Unnush was the son of Shis. Adam had two more sons, Kabil and Nabati. Nabati and his descendants retired to the mountains of Jarmun. After 432 years, Nabati descendants came down from mountains and joined the descendants of Kabil. The sons of Nabati and Kabil began to act tyrannically when 1000 years passed after Adam. The descendants of Shis emerged as Gil-wanian or Bastanian dynasty and the first King Gil Shah (Gilgamesh?) made Bābil (Babylon) as his seat of Government 1024 years passed after Adam (6168 BCE). When 1162 years has passed away, the countries of Arab, Ajam, Shām and Maghrab became settled.

How Ancient Indian Astronomy Influenced the Astronomy of the Western Civilizations

The Asuras of the Rigvedic era (~11500-10500 BCE) had compiled Asuraveda (Avesta) and followed a calendar that commenced from the vernal equinox (spring season). The calendar of the Devas had commenced from the autumnal equinox (autumn season). The Asuras had settled in the region of Persia, Mesopotamia and Syria. The Asura astronomers were the first who made the horoscope of the first Asura King Keyumar or Gayomart. The early astronomy of Asuras indicates that the calendar had commenced from Leo. Evidently, the spring or vernal equinox was in the beginning of Leo around 10900-10000 BCE. In all probability, the earliest version of Thema Mundi (the so-called mythical horoscope) was the horoscope of Gayomart. This may be the reason why Thema Mundi shows the position of Sun in Leo.

Though Asuras had migrated to the west but many Asuras continued to live in South India and Sri Lanka during the post-Vedic period. Maya, a great astronomer of the Asura tradition wrote Surya Siddhanta on 22nd Feb 6778 BCE when all planets, Sun and Moon were in a conjunction in Aries. He introduced many advanced astronomical concepts like Jovian cycle of 12 years and a cycle of 60 years, seven day week and epicycle theory, etc. Maya's Surya Siddhanta not only influenced the traditional Paitamaha Siddhanta in India but also became popular in the west. Following the concepts of Surya Siddhanta, the Yavanas of Gandhara and Bactria evolved their own Siddhanta which came to be known as "Yavana

Siddhanta". Though the Yavanas followed Surya Siddhanta in ancient times, they evolved a distinct siddhanta known as Yavana Siddhanta. The Yavanas also claimed the origin of their siddhanta from Maya's Surya Siddhanta. Yavana king Minaraja's *Vriddha Yavana Jatakam* mentions that the Yavana siddhanta evolved from Mayasura's Surya Siddhanta. The famous text *"Yavana Jatakam"* written by Sphujidhvaja clearly indicates its Indian origins. European historians have concocted that *Yavana Jatakam* is a Sanskrit translation of a lost Greek text.

The Yavanas and the Persian Zoroastrians used to follow the Thema Mundi for astrological calculations. Seemingly, Thema Mundi had undergone updation during the 7th millennium BCE under the influence of Surya Siddhanta. This is the reason why Thema Mundi has Cancer in the ascendant. The vernal equinox was at Cancer in the 7th millennium BCE.

Thema Mundi

It is evident that the ancient Yavana Siddhanta and Ionian astronomy (Hellenistic astronomy) was certainly influenced by Maya's Surya Siddhanta. Later, the Ionians learnt the 19-year lunisolar cycle from the Romaka Siddhanta of India. It appears that the Persian astronomers also started following the basics of Surya Siddhanta. They believe that the beginning of the year was fixed and that took place on the day of Hurmuz of Farwardin whilst the Sun stood in the point of the vernal equinox in the middle of Heaven. This occurred at the beginning of the 7th millennium BCE. The Persian astrologers also believe that Cancer is the horoscope of the world. Thus, the epoch of Maya's Surya Siddhanta (6778 BCE) became an astrological epoch of the creation of the world.

Before 7th millennium BCE, Anatolia and Greece followed the reckoning of years from the autumnal equinox whereas the Persian Zoroastrians followed the reckoning of years from the vernal equinox. Under the influence of Surya Siddhanta, a new calendar came into practice in the west that commenced from the winter solstice. Maya had introduced the Surya Siddhanta calendar from the epoch of 22nd Feb 6778 BCE, Sunday when Sun was at winter solstice and all planets were in conjunction in Aries. The followers of the winter solstice calendar started worshipping Sun (Mithra) as supreme god. Thus, the Mithraism gradually emerged as the popular religion in Anatolia and Eastern Europe and the first day of week, i.e., Sunday became the sacred day of worship. Later, the Christians inherited the traditions of Mithraism.

Seemingly, the ancient Turks of Turkmenistan and Uzbekistan had followed the Jovian cycle of 12 years under the influence of Maya's Surya Siddhanta (6778 BCE). Abul Fazal refers to the Turkish era also known as Uighuri era that commenced in the unknown past. The Turkish people started using the cycle of 12 years from the unknown epoch of the Turkish era. Ulugh Beg also referred to the same era but the epoch was not known to him. Evidently, the Turkish astronomers had forgotten the epoch of the Turkish era but continued to follow the cycle of 12 years. Seemingly, the Turks were the first who introduced the cycle of the twelve animals and the Chinese borrowed it from them. Though the epoch of the Turkish era is not known, Abu Rayhan says that the Turks add nine to the incomplete Syro-Macedonian years to their era and divide it by 12: and in whatever animal the remainder terminates, counting from the Sign of the Mouse, the year is named therefrom. Abul Fazal also says that if 7 years added to the imperfect years of the Maliki era, dividing by 12, whatever remains is the year of the animal reckoning from Mouse.

Colonel HS Jarrett who translated "*Ain-i-Akbari*" of Abul Fazal into English in 1891 mentions that according to the Jesuits, the cycle of 12 years began in February 2397 BCE. But Abul Fazal indicates that the epoch of the Turkish era might have commenced before the epoch of the Adam's era (6168 BCE). In all probability, the Turkish cycle of 12 years had commenced in 6777 BCE. If we add 9 years to the epoch of Syro-

Macedonian era (972 BCE), the first year of the 12-year cycle was 981 BCE. Similarly, if we add 7 years to the epoch of Maliki era (416 CE), the first year of the 12-year cycle was 423 CE. Thus, we can conclusively establish that the epoch of the Turkish cycle of twelve animals commenced in 6777 BCE and the ancient Turks borrowed the cycle of 12 years from Maya's Surya Siddhanta.

Interestingly, Abul Fazal refers to the epoch of an astrological era of Creation that reckoned when all planets were in Aries. Evidently, this astrological era was undoubtedly the epoch of Maya's Surya Siddhanta, i.e., 22nd Feb 6778 BCE. Abul Fazal also says that according to the calculation of astrologers, total 184696 years have been elapsed from that time to the present (933 BCE). It may be noted that Abul Fazal refers to the astronomical epoch of the Deluge (3763-3762 BCE) as calculated by Abu Ma'shar and says that total 4696 years have been elapsed from then.

Seemingly, the ancient Turkish astronomers might have counted roughly 3000 years from the epoch of the planetary conjunction in Aries to the epoch of Deluge. It appears that the ancient Turkish astronomers had multiplied 3000 years by 60 and assumed that 180000 astronomical years have been elapsed by the time of Deluge (~3778 BCE). Since there was a divergence of opinion about the traditional date of Deluge, Abu Ma'shar calculated his own date of Deluge based on the traditional astronomical inputs. If we add 3000 years (instead of 180000 astronomical years) to the epoch of the Deluge, the epoch of the planetary conjunction in Aries can be conclusively fixed around 6778 BCE. It is evident that the ancient Turkish astronomy was certainly influenced by Maya's Surya Siddhanta. According to Varahamihira's Panchasiddhantika, a Yuga of Maya's Surya Siddhanta consisted of 180000 years.

The Egyptian Astronomy

The astronomical dating of the Great Sphinx of Giza based on Orion correlation theory clearly indicates the period of 11000-10000 BCE. In all probability, Osiris and his wife Isis flourished during this period. The ancient Egyptian temples at Esne and Dendera have four sculptured Zodiacs. A Zodiac at Esne temple indicates Virgo as the first sign whereas a Zodiac at Dendera temple indicates Leo as the first sign. The temple at

Esne is dedicated to Khnum, the god of creation. The temple complex of Dendera has many shrines of Egyptian deities including the shrine of Isis. The Esne Zodiac indicates the occurrence of vernal equinox at Virgo around ~12000-11000 BCE. Seemingly, Khnum, the Egyptian god of creation lived during this period. The Dendera Zodiac indicates the occurrence of vernal equinox at Leo around ~11000-10000 BCE. It appears that Isis and her brother Osiris flourished during this period.

Ancient Egyptians followed a calendar of 360 days exactly identical to the early Vedic calendar and ancient Babylonian calendar. The Dendera Zodiac has 36 spirits or decans and each spirit represents 10 days. Thus, the Dendera Zodiac followed ancient Egyptian calendar of 360 days. Seemingly, the Temple complex of Dendera was modified during the lifetime of Cleopatra VI Tryphaena. Jean-Baptiste Biot concluded that the Dendera Zodiac referred to the year 716 BCE. It appears that though Egyptians used the calendar of Sothic cycle but followed their ancient calendar of 360 days for performing rituals in temples.

Egyptians evolved a solar calendar of 365 days and a Sothic cycle of 1461 years. The first Sothic cycle commenced on 2nd Oct 3605 BCE. This Egyptian Sothic cycle was equal to 1460 civil years. Though the Sothic cycle was a solar cycle but it perfectly reconciles the synodic and sidereal lunar months. The Sothic cycle begins from the new moon day of Margasirsa month to the new moon day of Margasirsa month. The New Year used to begin with the mid-night rising of Sirius. Sirius is the brightest star in the sky.

It appears that some of the Egyptian astronomers had the knowledge of the Indian cycle of 95 years. The cycle of 95 years was invented by ancient Indians since the time of Shatapatha Brahmana (~8800 BCE). Romaka Siddhanta of Dvapara Yuga (5577-3177 BCE) also propounded the cycle of 95 years and the cycle of 2850 years (95 x 30). Prior to 940 BCE, the traditional Egyptian astronomers opposed the intercalary scheme in the calendar. This was the reason why the Egyptian kings had to take an oath that they will never allow intercalary days or months in the calendar.

The Christian Alexandrian astronomers like Theophillus and Cyrill followed this cycle for the calculation of Easter dates. The Christian monk

Dionysus Exiguous used this cycle to calculate Easter dates in 171 CE. It appears that ancient Yavana astronomers of Bactria and Gandhara further divided the 95-year cycle into 5 smaller cycles of 19 years. Interestingly, Burmese Buddhists also used this 19-year cycle in the first millennium BCE. Evidently, the Yavanas of Bactria transmitted the knowledge of 19-year cycle to Greece. Thus, Meton of Athens used a calendar of 19-year cycle in 1092 BCE for the first time in Greece. Interestingly, Callippic cycle of 76 years contains four Metonic cycles whereas Paschal cycle of 532 years contains 28 Metonic cycles. Therefore, it can be concluded that the Vedic cycle of 95 years was the origin of all western cycles.

It may also be noted that ancient Indians divided the calendar into 3 seasons and each season had 4 months and 8 fortnights. Ancient Egyptians also divided the calendar into 3 seasons (Akhit, Pert, Shema) of 4 months each.

The Babylonian Astronomy

Babylonians and Assyrians had a similar lunisolar calendar and intercalary methods since ancient times. Interestingly, Assyrian calendar begins from the epoch of 5410 BCE when the city of Assur and the temple of Ashur was founded. The Yajidis of Iraq had adopted the same Assyrian epoch (5410 BCE) for their calendar.

The similarities between Indian astronomy and Babylonian astronomy are well known to the world. Western scholars have speculated about the Babylonian influence on Indian astronomy because they are ignorant of the true chronology of India and Babylonia. In exact terms, we must refer to Babylonian astronomy as the Chaldean Astronomy because the Chaldeans were the founders of Babylonian astronomy. Berosus (1000-925 BCE) clearly mentions that Chaldeans were the founders of Babylonian civilization.

Greek geographer Strabo of Amasia (742 BCE- 635 CE) calls Babylonian astronomers as Chaldeans. He says, "In Babylon, a settlement is set apart for local philosophers, the Chaldeans, as they are called, who are concerned mostly with astronomy; but some of these, who are not approved of by the others, profess to be writers of horoscopes. There is

also a tribe of the Chaldeans, and a territory inhabited by them, in the neighborhood of the Arabs and of Persian Gulf, as it is called. There are also several tribes of the Chaldeans astronomers. For example, some are called Orcheni (from Uruk), others Borsippeni (from Borsippa) and several others by different names, as though divided into different sects, who hold to various dogmas about the same subjects. And the mathematicians make mention of some of these men; as, for example, Cidenas (Kidinnu), Naburianus and Sudines."

Ancient Babylonian astronomy also used 30 divisions of the lunar month; the 360 divisions of the civil year; the 360 divisions of the circle; the length of the year and the solar zodiac like ancient Indian astronomy. Babylonian planetary tables also have close similarity with the Siddhantas of Indian astronomy. Dr. Kak has already logically established that the key ideas of Babylonian astronomy are already present in Vedic texts.

Let us focus on the inputs from archaeo-astronomy and astro-historiography of Babylonia. The earliest clay tablets of Babylonia having the verifiable dates are found in Ur. These tablets belong to the third dynasty of Ur (3056-2931 BCE). EAE Tablet no. 20 & 21 refer to two lunar eclipses occurred on the 14^{th} day of the month. One lunar eclipse occurred on 18^{th} May 2975 BCE and another lunar eclipse occurred on 25^{th} Jan 2932 BCE after 42 years. The reference of a lunar eclipse on the 14^{th} day unambiguously indicates that the Chaldeans of Ur followed the Amanta lunisolar calendar.

The dates given in the Venus Tablet of King Ammisaduqa indicate that the lunar calendar was changed by the first dynasty of Babylon. Berosus says that the Arabian dynasty has replaced the Chaldean Kings of Ur. The first dynasty of Babylon followed a lunar month that commenced on the 5^{th} day after new moon. One tablet refers to a lunar eclipse on the 10^{th} day and another tablet refers to a solar eclipse on the 26^{th} day. Evidently, it indicates that the Babylonian kings of Arabian lineage preferred to begin the lunar month when the crescent of moon is clearly visible. It appears that the Babylonian astronomers had modified and introduced a new lunisolar calendar that reckoned from Sukla Panchami or the 5^{th} day of the bright half of the month around 2600-2500 BCE under the influence

of the Arabian tradition. The Chaldean astronomers had again restored their ancient lunisolar calendar and reckoned the lunar month from New Moon during the reign of Kassite and Assyrian Kings of Babylon.

The Chaldeans of Babylonia also had advanced knowledge of planetary revolutions. They particularly studied the cycle of Venus and Mercury. Cidenas was the celebrated Chaldean mathematician and astronomer who lived around 1070-990 BCE. He mentions that Mercury also has similar orbit like Venus but it travels in a lower circle, with a revolution nine days quicker, shining sometimes before sunrise and sometimes after sunset. Pliny the Elder records that acoording to Cidenas (Kidinnu) and Sosigenes, Mercury never be more than 22 degrees away from the sun. Cidenas also discovered that 251 synodic months are identical to 269 anomalistic months.

Berosus, a Chaldean priest and astronomer, lived around 1000-925 BCE. He wrote the history of Babylonia. According to him, first ten Chaldean kings of Babylonia reigned for 432000 years before the great flood. Evidently, Chaldean astronomers of Babylonia learnt the concept of Yuga (432000 years) from Indian sources. Unfortunately, the original work of Berosus is not available. Armenian translations mention that Berosus covered total history of 2150000 years. Greek sources indicate only 150000 years. Pliny the Elder says that Berosus gave the history of 490000 years whereas Africanus indicates the figure of 480000 years.

Ancient Indians followed a Yuga of 5 years during the early Vedic period. Gradually, they evolved a Yuga of 1200 years. Ancient Indian astronomers regularly updated their siddhantas to achieve accurate astronomical calculations. During the period of Dvapara Yuga (5577-3176 BCE), ancient Indian astronomers had evolved a concept of a Yuga having the length of 432000 years. They multiplied the Yuga of 1200 years by 360. Thus, Indian astronomy started following a Yuga of 432000 years and a Kalpa of 4320000000 years. The traditional Kaliyuga began around 3176 BCE or 3173 BCE but later Indian astronomers fixed the epoch of Kaliyuga on 18th Feb 3102 BCE or 3101 BCE considering the conjunction of Sun, Moon and five planets in Revati Nakshatra.

Historians have mistakenly fixed the date of Aryabhata around 499 CE. In fact, Aryabhata was born in 3173 BCE 3600 years (60 x 60) after 6773 BCE and he wrote Aryabhatiyam in 3150 BCE. The distortion in dating of Aryabhata led to a wild speculation that Aryabhata might have borrowed planetary data from Babylonians. Dr. Abhyankar speculates that the concepts of Bhaganas used by Aryabhata were probably derived from the Babylonian planetary data. Abhyankar says that the Babylonians had 44528/3600 synodic lunar months in one year and Aryabhata calculated these synodic lunar months in terms of the *Mahayuga*, which comes to 53433600 synodic lunar months in a Mahayuga. The earliest Babylonian record of planetary data is the Venus Tablet of King Ammisaduqa. As I have already explained that this tablet gives the dates around 2473-2453 BCE. The Mahayuga concept had already been evolved before the Mahabharata war (3162 BCE). Therefore, Indian planetary data based on the concept of Mahayuga is undoubtedly older than Babylonian planetary data. Mayasura's Surya Siddhata (6778 BCE), Aryabhatiyam of Aryabhata (3150 BCE) and Latadeva's Surya Siddhata (3101 BCE) are much older than the Venus Tablet of King Ammisaduqa (2473–2453 BCE).

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Appendix I

Babylonian Calendar (2500-2400 BCE)

(Reconstructed based on the astronomical data taken from the Venus Tablet)

	Month	Days	From date	To date
2474-2473 BCE (1st Year)				
11	Sabatu	29	11 Jan	8 Feb
12	Adar	30	9 Feb	10 Mar
2473-2472 BCE (2nd Year)				
1	Nisanu	29	11 Mar	8 Apr
2	Ayar	30	9 Apr	8 May
3	Simanu	29	9 May	6 Jun
4	Dumuzi	30	7 Jun	6 Jul
5	Abu	29	7 Jul	4 Aug
6	Ululu	30	5 Aug	3 Sep
7	Tishritu	29	4 Sep	2 Oct
8	Arahsamnu	30	3 Oct	1 Nov
9	Kislimu	29	2 Nov	30 Nov
10	Tebetu	30	1 Dec	30 Dec
11	Shabatu	29	31 Dec	28 Jan
12	Adar	30	29 Jan	27 Feb
2472-2471 BCE (3rd Year)				
1	Nisanu	29	28 Feb	27 Mar
2	Ayar	30	28 Mar	26 Apr

3	Simanu	29	27 Apr	25 May
4	Dumuzi	30	26 May	24 Jun
5	Abu	29	25 Jun	23 Jul
6	Ululu	30	24 Jul	22 Aug
7	Tishritu	29	23 Aug	20 Sep
8	Arahsamnu	30	21 Sep	20 Oct
9	Kislimu	29	21 Oct	18 Nov
10	Tebetu	30	19 Nov	18 Dec
11	Shabatu	29	19 Dec	16 Jan
12	Adar	30	17 Jan	15 Feb
2471-2470 BCE (4th Year)				
1	Nisanu	29	16 Feb	16 Mar
2	Ayar	30	17 Mar	15 Apr
3	Simanu	29	16 Apr	14 May
4	Dumuzi	30	15 May	13 Jun
5	Abu	29	14 Jun	12 Jul
6	Ululu	30	13 Jul	11 Aug
7	Tishritu	29	12 Aug	9 Sep
8	Arahsamnu	30	10 Sep	9 Oct
9	Kislimu	29	10 Oct	7 Nov
10	Tebetu	30	8 Nov	7 Dec
11	Shabatu	29	8 Dec	5 Jan
12	Adar I	30	6 Jan	4 Feb
13	Adar II	30	5 Feb	6 Mar
2470-2469 BCE (5th year)				
1	Nisanu	29	7 Mar	4 Apr
2	Ayar	30	5 Apr	4 May
3	Simanu	29	5 May	2 Jun
4	Dumuzi	30	3 Jun	2 Jul
5	Abu	29	3 Jul	31 Jul
6	Ululu I	30	1 Aug	30 Aug

7	Ululu II	30	31 Aug	29 Sep
8	Tishritu	29	30 Sep	28 Oct
9	Arahsamnu I	30	29 Oct	27 Nov
10	Kislimu	29	28 Nov	27 Dec
11	Tebetu	30	28 Dec	26 Jan
12	Shabatu	30?	27 Jan	25 Feb
13	Adar	30	26 Feb	27 Mar
2469-2468 BCE (6th year)				
1	Nisanu	29	28 Mar	25 Apr
2	Ayar	30	26 Apr	25 May
3	Simanu	29	26 May	23 Jun
4	Dumuzi	30	24 Jun	23 Jul
5	Abu	29	24 Jul	21 Aug
6	Ululu	30	22 Aug	20 Sep
7	Tishritu	29	21 Sep	19 Oct
8	Arahsamnu	30	20 Oct	18 Nov
9	Kislimu	29	19 Nov	17 Dec
10	Tebetu	30	18 Dec	16 Jan
11	Shabatu	29	17 Jan	14 Feb
12	Adar	30	15 Feb	15 Mar
2468-2467 BCE (7th year)				
1	Nisanu	29	16 Mar	13 Apr
2	Ayar	30	14 Apr	13 May
3	Simanu	29	14 May	11 Jun
4	Dumuzi	30	12 Jun	11 Jul
5	Abu	30?	12 Jul	10 Aug
6	Ululu	30	11 Aug	9 Sep
7	Tishritu	30?	10 Sep	9 Oct
8	Arahsamnu	30	10 Oct	8 Nov
9	Kislimu	29	9 Nov	7 Dec
10	Tebetu	30	8 Dec	6 Jan

11	Shabatu	29	7 Jan	4 Feb
12	Adar	30	5 Feb	6 Mar
2467-2466 BCE (8th year)				
1	Nisanu	29	7 Mar	4 Apr
2	Ayar	30	5 Apr	4 May
3	Simanu	29	5 May	2 Jun
4	Dumuzi	30	3 Jun	2 Jul
5	Abu	29	3 Jul	31 Jul
6	Ululu	30	1 Aug	30 Aug
7	Tishritu	29	31 Aug	28 Sep
8	Arahsamnu	30	29 Sep	28 Oct
9	Kislimu	29	29 Oct	26 Nov
10	Tebetu	30	27 Nov	26 Dec
11	Shabatu	29	26 Dec	23 Jan
12	Adar	30	24 Jan	22 Feb
2466-2465 BCE (9th year)				
1	Nisanu	29	23 Feb	23 Mar
2	Ayar	30	24 Mar	22 Apr
3	Simanu	29	23 Apr	21 May
4	Dumuzi	30	22 May	20 Jun
5	Abu	29	21 Jun	19 Jul
6	Ululu	30	20 Jul	18 Aug
7	Tishritu	29	19 Aug	16 Sep
8	Arahsamnu	30	17 Sep	16 Oct
9	Kislimu	29	17 Oct	14 Nov
10	Tebetu	30	15 Nov	14 Dec
11	Shabatu	29	15 Dec	12 Jan
12	Adar	30	13 Jan	11 Feb
13	Adar II	30	12 Feb	13 Mar

2465-2464 BCE (10th year)				
1	Nisanu	29	14 Mar	11 Apr
2	Ayar	30	12 Apr	11 May
3	Simanu	29	12 May	9 Jun
4	Dumuzi	30	10 Jun	9 Jul
5	Abu	29	10 Jul	7 Aug
6	Ululu	30	8 Aug	6 Sep
7	Tishritu	29	7 Sep	5 Oct
8	Arahsamnu	30	6 Oct	4 Nov
9	Kislimu	29	5 Nov	3 Dec
10	Tebetu	30	4 Dec	2 Jan
11	Shabatu	29	3 Jan	31 Jan
12	Adar	30	1 Feb	1 Mar
2464-2463 BCE (11th year)				
1	Nisanu	29	2 Mar	30 Mar
2	Ayar	30	31 Mar	29 Apr
3	Simanu	29	30 Apr	28 May
4	Dumuzi	30	29 May	27 Jun
5	Abu	29	28 Jun	26 Jul
6	Ululu I	30	27 Jul	25 Aug
7	Ululu II	30	26 Aug	24 Sep
8	Tishritu	29	25 Sep	23 Oct
9	Arahsamnu	30	24 Oct	22 Nov
10	Kislimu	29	23 Nov	21 Dec
10	Tebetu	30	22 Dec	20 Jan
11	Shabatu	29	21 Jan	18 Feb
12	Adar	30	19 Feb	20 Mar
2463-2462 BCE (12th year)				
1	Nisanu	29	21 Mar	18 Apr
2	Ayar	30	19 Apr	18 May
3	Simanu	29	19 May	16 Jun

4	Dumuzi	30	17 Jun	16 Jul
5	Abu	29	17 Jul	14 Aug
6	Ululu	30	15 Aug	13 Sep
7	Tishritu	29	14 Sep	12 Oct
8	Arahsamnu	30	13 Oct	11 Nov
9	Kislimu	29	12 Nov	10 Dec
10	Tebetu	30	11 Dec	9 Jan
11	Shabatu	29	10 Jan	7 Feb
12	Adar	30	8 Feb	8 Mar
2462-2461 BCE (13th year)				
1	Nisanu	29	9 Mar	6 Apr
2	Ayar	30	7 Apr	6 May
3	Simanu	29	7 May	4 Jun
4	Dumuzi	30	5 Jun	4 Jul
5	Abu	29	5 Jul	2 Aug
6	Ululu	30	3 Aug	1 Sep
7	Tishritu	29	2 Sep	30 Sep
8	Arahsamnu	30	1 Oct	30 Oct
9	Kislimu	29	31 Oct	28 Nov
10	Tebetu	30	29 Nov	28 Dec
11	Shabatu	29	29 Dec	26 Jan
12	Adar	30	27 Jan	25 Feb
2461-2460 BCE (14th year)				
1	Nisanu	29	26 Feb	26 Mar
2	Ayar	30	27 Mar	25 Apr
3	Simanu	29	26 Apr	24 May
4	Dumuzi	30	25 May	23 Jun
5	Abu	29	24 Jun	21 Jul
6	Ululu I	30	22 Jul	20 Aug
7	Ululu II	30	21 Aug	19 Sep
8	Tishritu	29	20 Sep	18 Oct

9	Arahsamnu	30	19 Oct	17 Nov
10	Kislimu	29	18 Nov	16 Dec
11	Tebetu	30	17 Dec	15 Jan
12	Shabatu	29	16 Jan	13 Feb
13	Adar	30	14 Feb	14 Mar
2460-2459 BCE (15th year)				
1	Nisanu	29	15 Mar	12 Apr
2	Ayar	30	13 Apr	12 May
3	Simanu	29	13 May	10 Jun
4	Dumuzi	30	11 Jun	10 Jul
5	Abu	29	11 Jul	8 Aug
6	Ululu	30	9 Aug	7 Sep
7	Tishritu	29	8 Sep	6 Oct
8	Arahsamnu	30	7 Oct	5 Nov
9	Kislimu	29	6 Nov	4 Dec
10	Tebetu	30	5 Dec	3 Jan
11	Shabatu	29	4 Jan	1 Feb
12	Adar	30	2 Feb	3 Mar
2459-2458 BCE (16th year)				
1	Nisanu	29	4 Mar	1 Apr
2	Ayar	30	2 Apr	1 May
3	Simanu	29	2 May	30 May
4	Dumuzi	30	31 May	29 Jun
5	Abu	30?	30 Jun	29 Jul
6	Ululu	30	30 Jul	29 Aug
7	Tishritu	30?	29 Aug	27 Sep
8	Arahsamnu	30	28 Sep	27 Oct
9	Kislimu	29	28 Oct	25 Nov
10	Tebetu	30	26 Nov	25 Dec
11	Shabatu	29	26 Dec	23 Jan
12	Adar	30	24 Jan	22 Feb

2458-2457 BCE (17th year)

1	Nisanu	29	23 Feb	23 Mar
2	Ayar	30	24 Mar	22 Apr
3	Simanu	29	23 Apr	21 May
4	Dumuzi	30	22 May	20 Jun
5	Abu	29	21 Jun	19 Jul
6	Ululu	30	20 Jul	18 Aug
7	Tishritu	29	19 Aug	16 Sep
8	Arahsamnu	30	17 Sep	16 Oct
9	Kislimu	29	17 Oct	14 Nov
10	Tebetu	30	15 Nov	14 Dec
11	Shabatu	29	15 Dec	12 Jan
12	Adar I	30	13 Jan	11 Feb
13	Adar II	30	12 Feb	13 Mar

2457-2456 BCE (18th year)

1	Nisanu	29	14 Mar	11 Apr
2	Ayar	30	12 Apr	11 May
3	Simanu	29	12 May	9 Jun
4	Dumuzi	30	10 Jun	9 Jul
5	Abu	29	10 Jul	7 Aug
6	Ululu	30	8 Aug	6 Sep
7	Tishritu	29	7 Sep	5 Oct
8	Arahsamnu	30	6 Oct	4 Nov
9	Kislimu	29	5 Nov	3 Dec
10	Tebetu	30	4 Dec	2 Jan
11	Shabatu	29	3 Jan	31 Jan
12	Adar	30	1 Feb	1 Mar

2456-2455 BCE (19th year)

1	Nisanu	29	2 Mar	30 Mar
2	Ayar	30	31 Mar	29 Apr
3	Simanu	29	30 Apr	28 May

4	Dumuzi	30	29 May	27 Jun
5	Abu	29	28 Jun	26 Jul
6	Ululu	30	27 Jul	25 Aug
7	Tishritu	29	26 Aug	23 Sep
8	Arahsamnu	30	24 Sep	23 Oct
9	Kislimu	29	24 Oct	21 Nov
10	Tebetu	30	22 Nov	21 Dec
11	Shabatu	29	22 Dec	19 Jan
12	Adar	30	20 Jan	18 Feb
2455-2454 BCE (20th year)				
1	Nisanu	29	19 Feb	19 Mar
2	Ayar	30	20 Mar	18 Apr
3	Simanu	29	19 Apr	17 May
4	Dumuzi	30	18 May	16 Jun
5	Abu	29	17 Jun	15 Jul
6	Ululu	30	16 Jul	14 Aug
7	Tishritu	29	15 Aug	12 Sep
8	Arahsamnu	30	13 Sep	12 Oct
9	Kislimu	29	13 Oct	10 Nov
10	Tebetu	30	11 Nov	10 Dec
11	Shabatu	29	11 Dec	8 Jan
12	Adar I	30	9 Jan	7 Feb
13	Adar II	30	8 Feb	8 Mar
2454-2453 BCE (21st year)				
1	Nisanu	29	9 Mar	6 Apr
2	Ayar	30	7 Apr	6 May
3	Simanu	29	7 May	4 Jun
4	Dumuzi	30	5 Jun	4 Jul
5	Abu	29	5 Jul	2 Aug
6	Ululu	30	3 Aug	1 Sep
7	Tishritu	29	2 Sep	30 Sep

8	Arahsamnu	30	1 Oct	30 Oct
9	Kislimu	29	31 Oct	28 Nov
10	Tebetu	30	29 Nov	28 Dec
11	Shabatu	29	29 Dec	26 Jan
12	Adar	30	27 Jan	25 Feb

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Appendix II

Dionysian Table of Easter for the Cycle of 532 Years

(From Anno Domini 532 to 1062)

In CE	Anno Domini (361 BCE)	Ferial numbers of March 24	Nisan 14	Easter Sunday	Nisan date of Easter Sunday
171	532	4	5-Apr	11-Apr	20
172	533	5	25-Mar	27-Mar	16
173	534	6	13-Apr	16-Apr	17
174	535	7	2-Apr	8-Apr	20
175	536	2	22-Mar	23-Mar	15
176	537	3	10-Apr	12-Apr	16
177	538	4	30-Mar	4-Apr	19
178	539	5	18-Apr	24-Apr	20
179	540	7	7-Apr	8-Apr	15
180	541	1	27-Mar	31-Mar	18
181	542	2	15-Apr	20-Apr	19
182	543	3	4-Apr	5-Apr	15
183	544	5	24-Mar	27-Mar	17
184	545	6	12-Apr	16-Apr	18
185	546	7	1-Apr	8-Apr	21
186	547	1	21-Mar	24-Mar	17
187	548	3	9-Apr	12-Apr	17

188	549	4	29-Mar	4-Apr	20
189	550	5	17-Apr	24-Apr	21
190	551	6	5-Apr	9-Apr	18
191	552	1	25-Mar	31-Mar	20
192	553	2	13-Apr	20-Apr	21
193	554	3	2-Apr	5-Apr	17
194	555	4	22-Mar	28-Mar	20
195	556	6	10-Apr	16-Apr	20
196	557	7	30-Mar	1-Apr	16
197	558	1	18-Apr	21-Apr	17
198	559	2	7-Apr	13-Apr	20
199	560	4	27-Mar	28-Mar	15
200	561	5	15-Apr	17-Apr	16
201	562	6	4-Apr	9-Apr	19
202	563	7	24-Mar	25-Mar	15
203	564	2	12-Apr	13-Apr	15
204	565	3	1-Apr	5-Apr	18
205	566	4	21-Mar	28-Mar	21
206	567	5	9-Apr	10-Apr	15
207	568	7	29-Mar	1-Apr	17
208	569	1	17-Apr	21-Apr	18
209	570	2	5-Apr	6-Apr	15
210	571	3	25-Mar	29-Mar	18
211	572	5	13-Apr	17-Apr	18
212	573	6	2-Apr	9-Apr	21
213	574	7	22-Mar	25-Mar	17
214	575	1	10-Apr	14-Apr	18
215	576	3	30-Mar	5-Apr	20
216	577	4	18-Apr	25-Apr	21
217	578	5	7-Apr	10-Apr	17
218	579	6	27-Mar	2-Apr	20

219	580	1	15-Apr	21-Apr	20
220	581	2	4-Apr	6-Apr	16
221	582	3	24-Mar	29-Mar	19
222	583	4	12-Apr	18-Apr	20
223	584	6	1-Apr	2-Apr	15
224	585	7	21-Mar	25-Mar	18
225	586	1	9-Apr	14-Apr	19
226	587	2	29-Mar	30-Mar	15
227	588	4	17-Apr	18-Apr	15
228	589	5	5-Apr	10-Apr	19
229	590	6	25-Mar	26-Mar	15
230	591	7	13-Apr	15-Apr	16
231	592	2	2-Apr	6-Apr	18
232	593	3	22-Mar	29-Mar	21
233	594	4	10-Apr	11-Apr	15
234	595	5	30-Mar	3-Apr	18
235	596	7	18-Apr	22-Apr	18
236	597	1	7-Apr	14-Apr	21
237	598	2	27-Mar	30-Mar	17
238	599	3	15-Apr	19-Apr	18
239	600	5	4-Apr	10-Apr	20
240	601	6	24-Mar	26-Mar	16
241	602	7	12-Apr	15-Apr	17
242	603	1	1-Apr	7-Apr	20
243	604	3	21-Mar	22-Mar	15
244	605	4	9-Apr	11-Apr	16
245	606	5	29-Mar	3-Apr	19
246	607	6	17-Apr	23-Apr	20
247	608	1	5-Apr	7-Apr	16
248	609	2	25-Mar	30-Mar	19
249	610	3	13-Apr	19-Apr	20

250	611	4	2-Apr	4-Apr	16
251	612	6	22-Mar	26-Mar	18
252	613	7	10-Apr	15-Apr	19
253	614	1	30-Mar	31-Mar	15
254	615	2	18-Apr	20-Apr	16
255	616	4	7-Apr	11-Apr	18
256	617	5	27-Mar	3-Apr	21
257	618	6	15-Apr	16-Apr	15
258	619	7	4-Apr	8-Apr	18
259	620	2	24-Mar	30-Mar	20
260	621	3	12-Apr	19-Apr	21
261	622	4	1-Apr	4-Apr	17
262	623	5	21-Mar	27-Mar	20
263	624	7	9-Apr	15-Apr	20
264	625	1	29-Mar	31-Mar	16
265	626	2	17-Apr	20-Apr	17
266	627	3	5-Apr	12-Apr	21
267	628	5	25-Mar	27-Mar	16
268	629	6	13-Apr	16-Apr	17
269	630	7	2-Apr	8-Apr	20
270	631	1	22-Mar	24-Mar	16
271	632	3	10-Apr	12-Apr	16
272	633	4	30-Mar	4-Apr	19
273	634	5	18-Apr	24-Apr	20
274	635	6	7-Apr	9-Apr	16
275	636	1	27-Mar	31-Mar	18
276	637	2	15-Apr	20-Apr	19
277	638	3	4-Apr	5-Apr	15
278	639	4	24-Mar	28-Mar	18

279	640	6	12-Apr	16-Apr	18
280	641	7	1-Apr	8-Apr	21
281	642	1	21-Mar	24-Mar	17
282	643	2	9-Apr	13-Apr	18
283	644	4	29-Mar	4-Apr	20
284	645	5	17-Apr	24-Apr	21
285	646	6	5-Apr	9-Apr	18
286	647	7	25-Mar	1-Apr	21
287	648	2	13-Apr	20-Apr	21
288	649	3	2-Apr	5-Apr	17
289	650	4	22-Mar	28-Mar	20
290	651	5	10-Apr	17-Apr	21
291	652	7	30-Mar	1-Apr	16
292	653	1	18-Apr	21-Apr	17
293	654	2	7-Apr	13-Apr	20
294	655	3	27-Mar	29-Mar	16
295	656	5	15-Apr	17-Apr	16
296	657	6	4-Apr	9-Apr	19
297	658	7	24-Mar	25-Mar	15
298	659	1	12-Apr	14-Apr	16
299	660	3	1-Apr	5-Apr	18
300	661	4	21-Mar	28-Mar	21
301	662	5	9-Apr	10-Apr	15
302	663	6	29-Mar	2-Apr	18
303	664	1	17-Apr	21-Apr	18
304	665	2	5-Apr	6-Apr	15
305	666	3	25-Mar	29-Mar	18
306	667	4	13-Apr	18-Apr	19
307	668	6	2-Apr	9-Apr	21
308	669	7	22-Mar	25-Mar	17
309	670	1	10-Apr	14-Apr	18

310	671	2	30-Mar	6-Apr	21
311	672	4	18-Apr	25-Apr	21
312	673	5	7-Apr	10-Apr	17
313	674	6	27-Mar	2-Apr	20
314	675	7	15-Apr	22-Apr	21
315	676	2	4-Apr	6-Apr	16
316	677	3	24-Mar	29-Mar	19
317	678	4	12-Apr	18-Apr	20
318	679	5	1-Apr	3-Apr	16
319	680	7	21-Mar	25-Mar	18
320	681	1	9-Apr	14-Apr	19
321	682	2	29-Mar	30-Mar	15
322	683	3	17-Apr	19-Apr	16
323	684	5	5-Apr	10-Apr	19
324	685	6	25-Mar	26-Mar	15
325	686	7	13-Apr	15-Apr	16
326	687	1	2-Apr	7-Apr	19
327	688	3	22-Mar	29-Mar	21
328	689	4	10-Apr	11-Apr	15
329	690	5	30-Mar	3-Apr	18
330	691	6	18-Apr	23-Apr	19
331	692	1	7-Apr	14-Apr	21
332	693	2	27-Mar	30-Mar	17
333	694	3	15-Apr	19-Apr	18
334	695	4	4-Apr	11-Apr	21
335	696	6	24-Mar	26-Mar	16
336	697	7	12-Apr	15-Apr	17
337	698	1	1-Apr	7-Apr	20
338	699	2	21-Mar	23-Mar	16
339	700	4	9-Apr	11-Apr	16
340	701	5	29-Mar	3-Apr	19

341	702	6	17-Apr	23-Apr	20
342	703	7	5-Apr	8-Apr	17
343	704	2	25-Mar	30-Mar	19
344	705	3	13-Apr	19-Apr	20
345	706	4	2-Apr	4-Apr	16
346	707	5	22-Mar	27-Mar	19
347	708	7	10-Apr	15-Apr	19
348	709	1	30-Mar	31-Mar	15
349	710	2	18-Apr	20-Apr	16
350	711	3	7-Apr	12-Apr	19
351	712	5	27-Mar	3-Apr	21
352	713	6	15-Apr	16-Apr	15
353	714	7	4-Apr	8-Apr	18
354	715	1	24-Mar	31-Mar	21
355	716	3	12-Apr	19-Apr	21
356	717	4	1-Apr	4-Apr	17
357	718	5	21-Mar	27-Mar	20
358	719	6	9-Apr	16-Apr	21
359	720	1	29-Mar	31-Mar	16
360	721	2	17-Apr	20-Apr	17
361	722	3	5-Apr	12-Apr	21
362	723	4	25-Mar	28-Mar	17
363	724	6	13-Apr	16-Apr	17
364	725	7	2-Apr	8-Apr	20
365	726	1	22-Mar	24-Mar	16
366	727	2	10-Apr	13-Apr	17
367	728	4	30-Mar	4-Apr	19
368	729	5	18-Apr	24-Apr	20
369	730	6	7-Apr	9-Apr	16
370	731	7	27-Mar	1-Apr	19
371	732	2	15-Apr	20-Apr	19

372	733	3	4-Apr	5-Apr	15
373	734	4	24-Mar	28-Mar	18
374	735	5	12-Apr	17-Apr	19
375	736	7	1-Apr	8-Apr	21
376	737	1	21-Mar	24-Mar	17
377	738	2	9-Apr	13-Apr	18
378	739	3	29-Mar	5-Apr	21
379	740	5	17-Apr	24-Apr	21
380	741	6	5-Apr	9-Apr	18
381	742	7	25-Mar	1-Apr	21
382	743	1	13-Apr	14-Apr	15
383	744	3	2-Apr	5-Apr	17
384	745	4	22-Mar	28-Mar	20
385	746	5	10-Apr	17-Apr	21
386	747	6	30-Mar	2-Apr	17
387	748	1	18-Apr	21-Apr	17
388	749	2	7-Apr	13-Apr	20
389	750	3	27-Mar	29-Mar	16
390	751	4	15-Apr	18-Apr	17
391	752	6	4-Apr	9-Apr	19
392	753	7	24-Mar	25-Mar	15
393	754	1	12-Apr	14-Apr	16
394	755	2	1-Apr	6-Apr	19
395	756	4	21-Mar	28-Mar	21
396	757	5	9-Apr	10-Apr	15
397	758	6	29-Mar	2-Apr	18
398	759	7	17-Apr	22-Apr	19
399	760	2	5-Apr	6-Apr	15
400	761	3	25-Mar	29-Mar	18
401	762	4	13-Apr	18-Apr	19
402	763	5	2-Apr	3-Apr	15

403	764	7	22-Mar	25-Mar	17
404	765	1	10-Apr	14-Apr	18
405	766	2	30-Mar	6-Apr	21
406	767	3	18-Apr	19-Apr	15
407	768	5	7-Apr	10-Apr	17
408	769	6	27-Mar	2-Apr	20
409	770	7	15-Apr	22-Apr	21
410	771	1	4-Apr	7-Apr	17
411	772	3	24-Mar	29-Mar	19
412	773	4	12-Apr	18-Apr	20
413	774	5	1-Apr	3-Apr	16
414	775	6	21-Mar	26-Mar	19
415	776	1	9-Apr	14-Apr	19
416	777	2	29-Mar	30-Mar	15
417	778	3	17-Apr	19-Apr	16
418	779	4	5-Apr	11-Apr	20
419	780	6	25-Mar	26-Mar	15
420	781	7	13-Apr	15-Apr	16
421	782	1	2-Apr	7-Apr	19
422	783	2	22-Mar	23-Mar	15
423	784	4	10-Apr	11-Apr	15
424	785	5	30-Mar	3-Apr	18
425	786	6	18-Apr	23-Apr	19
426	787	7	7-Apr	8-Apr	15
427	788	2	27-Mar	30-Mar	17
428	789	3	15-Apr	19-Apr	18
429	790	4	4-Apr	11-Apr	21
430	791	5	24-Mar	27-Mar	17
431	792	7	12-Apr	15-Apr	17
432	793	1	1-Apr	7-Apr	20
433	794	2	21-Mar	23-Mar	16

434	795	3	9-Apr	12-Apr	17
435	796	5	29-Mar	3-Apr	19
436	797	6	17-Apr	23-Apr	20
437	798	7	5-Apr	8-Apr	17
438	799	1	25-Mar	31-Mar	20
439	800	3	13-Apr	19-Apr	20
440	801	4	2-Apr	4-Apr	16
441	802	5	22-Mar	27-Mar	19
442	803	6	10-Apr	16-Apr	20
443	804	1	30-Mar	31-Mar	15
444	805	2	18-Apr	20-Apr	16
445	806	3	7-Apr	12-Apr	19
446	807	4	27-Mar	28-Mar	15
447	808	6	15-Apr	16-Apr	15
448	809	7	4-Apr	8-Apr	18
449	810	1	24-Mar	31-Mar	21
450	811	2	12-Apr	13-Apr	15
451	812	4	1-Apr	4-Apr	17
452	813	5	21-Mar	27-Mar	20
453	814	6	9-Apr	16-Apr	21
454	815	7	29-Mar	1-Apr	17
455	816	2	17-Apr	20-Apr	17
456	817	3	5-Apr	12-Apr	21
457	818	4	25-Mar	28-Mar	17
458	819	5	13-Apr	17-Apr	18
459	820	7	2-Apr	8-Apr	20
460	821	1	22-Mar	24-Mar	16
461	822	2	10-Apr	13-Apr	17
462	823	3	30-Mar	5-Apr	20
463	824	5	18-Apr	24-Apr	20
464	825	6	7-Apr	9-Apr	16

465	826	7	27-Mar	1-Apr	19
466	827	1	15-Apr	21-Apr	20
467	828	3	4-Apr	5-Apr	15
468	829	4	24-Mar	28-Mar	18
469	830	5	12-Apr	17-Apr	19
470	831	6	1-Apr	2-Apr	15
471	832	1	21-Mar	24-Mar	17
472	833	2	9-Apr	13-Apr	18
473	834	3	29-Mar	5-Apr	21
474	835	4	17-Apr	18-Apr	15
475	836	6	5-Apr	9-Apr	18
476	837	7	25-Mar	1-Apr	21
477	838	1	13-Apr	14-Apr	15
478	839	2	2-Apr	6-Apr	18
479	840	4	22-Mar	28-Mar	20
480	841	5	10-Apr	17-Apr	21
481	842	6	30-Mar	2-Apr	17
482	843	7	18-Apr	22-Apr	18
483	844	2	7-Apr	13-Apr	20
484	845	3	27-Mar	29-Mar	16
485	846	4	15-Apr	18-Apr	17
486	847	5	4-Apr	10-Apr	20
487	848	7	24-Mar	25-Mar	15
488	849	1	12-Apr	14-Apr	16
489	850	2	1-Apr	6-Apr	19
490	851	3	21-Mar	22-Mar	15
491	852	5	9-Apr	10-Apr	15
492	853	6	29-Mar	2-Apr	18
493	854	7	17-Apr	22-Apr	19
494	855	1	5-Apr	7-Apr	16
495	856	3	25-Mar	29-Mar	18

496	857	4	13-Apr	18-Apr	19
497	858	5	2-Apr	3-Apr	15
498	859	6	22-Mar	26-Mar	18
499	860	1	10-Apr	14-Apr	18
500	861	2	30-Mar	6-Apr	21
501	862	3	18-Apr	19-Apr	15
502	863	4	7-Apr	11-Apr	18
503	864	6	27-Mar	2-Apr	20
504	865	7	15-Apr	22-Apr	21
505	866	1	4-Apr	7-Apr	17
506	867	2	24-Mar	30-Mar	20
507	868	4	12-Apr	18-Apr	20
508	869	5	1-Apr	3-Apr	16
509	870	6	21-Mar	26-Mar	19
510	871	7	9-Apr	15-Apr	20
511	872	2	29-Mar	30-Mar	15
512	873	3	17-Apr	19-Apr	16
513	874	4	5-Apr	11-Apr	20
514	875	5	25-Mar	27-Mar	16
515	876	7	13-Apr	15-Apr	16
516	877	1	2-Apr	7-Apr	19
517	878	2	22-Mar	23-Mar	15
518	879	3	10-Apr	12-Apr	16
519	880	5	30-Mar	3-Apr	18
520	881	6	18-Apr	23-Apr	19
521	882	7	7-Apr	8-Apr	15
522	883	1	27-Mar	31-Mar	18
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525	886	5	24-Mar	27-Mar	17
526	887	6	12-Apr	16-Apr	18

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529	890	3	9-Apr	12-Apr	17
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531	892	6	17-Apr	23-Apr	20
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533	894	1	25-Mar	31-Mar	20
534	895	2	13-Apr	20-Apr	21
535	896	4	2-Apr	4-Apr	16
536	897	5	22-Mar	27-Mar	19
537	898	6	10-Apr	16-Apr	20
538	899	7	30-Mar	1-Apr	16
539	900	2	18-Apr	20-Apr	16
540	901	3	7-Apr	12-Apr	19
541	902	4	27-Mar	28-Mar	15
542	903	5	15-Apr	17-Apr	16
543	904	7	4-Apr	8-Apr	18
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545	906	2	12-Apr	13-Apr	15
546	907	3	1-Apr	5-Apr	18
547	908	5	21-Mar	27-Mar	20
548	909	6	9-Apr	16-Apr	21
549	910	7	29-Mar	1-Apr	17
550	911	1	17-Apr	21-Apr	18
551	912	3	5-Apr	12-Apr	19
552	913	4	25-Mar	28-Mar	17
553	914	5	13-Apr	17-Apr	18
554	915	6	2-Apr	9-Apr	21
555	916	1	22-Mar	24-Mar	16
556	917	2	10-Apr	13-Apr	17
557	918	3	30-Mar	5-Apr	20

558	919	4	18-Apr	25-Apr	21
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560	921	7	27-Mar	1-Apr	19
561	922	1	15-Apr	21-Apr	20
562	923	2	4-Apr	6-Apr	16
563	924	4	24-Mar	28-Mar	18
564	925	5	12-Apr	17-Apr	19
565	926	6	1-Apr	2-Apr	15
566	927	7	21-Mar	25-Mar	18
567	928	2	9-Apr	13-Apr	18
568	929	3	29-Mar	5-Apr	21
569	930	4	17-Apr	18-Apr	15
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571	932	7	25-Mar	1-Apr	21
572	933	1	13-Apr	14-Apr	15
573	934	2	2-Apr	6-Apr	18
574	935	3	22-Mar	29-Mar	21
575	936	5	10-Apr	17-Apr	21
576	937	6	30-Mar	2-Apr	17
577	938	7	18-Apr	22-Apr	18
578	939	1	7-Apr	14-Apr	21
579	940	3	27-Mar	29-Mar	16
580	941	4	15-Apr	18-Apr	17
581	942	5	4-Apr	10-Apr	20
582	943	6	24-Mar	26-Mar	16
583	944	1	12-Apr	14-Apr	16
584	945	2	1-Apr	6-Apr	19
585	946	3	21-Mar	22-Mar	15
586	947	4	9-Apr	11-Apr	16
587	948	6	29-Mar	2-Apr	18
588	949	7	17-Apr	22-Apr	19

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592	953	5	2-Apr	3-Apr	15
593	954	6	22-Mar	26-Mar	18
594	955	7	10-Apr	15-Apr	19
595	956	2	30-Mar	6-Apr	21
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605	966	7	9-Apr	15-Apr	20
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607	968	3	17-Apr	19-Apr	16
608	969	4	5-Apr	11-Apr	20
609	970	5	25-Mar	27-Mar	16
610	971	6	13-Apr	16-Apr	17
611	972	1	2-Apr	7-Apr	19
612	973	2	22-Mar	23-Mar	15
613	974	3	10-Apr	12-Apr	16
614	975	4	30-Mar	4-Apr	19
615	976	6	18-Apr	23-Apr	19
616	977	7	7-Apr	8-Apr	15
617	978	1	27-Mar	31-Mar	18
618	979	2	15-Apr	20-Apr	19
619	980	4	4-Apr	11-Apr	21

620	981	5	24-Mar	27-Mar	17
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622	983	7	1-Apr	8-Apr	21
623	984	2	21-Mar	23-Mar	16
624	985	3	9-Apr	12-Apr	17
625	986	4	29-Mar	4-Apr	20
626	987	5	17-Apr	24-Apr	21
627	988	7	5-Apr	8-Apr	17
628	989	1	25-Mar	31-Mar	20
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631	992	5	22-Mar	27-Mar	19
632	993	6	10-Apr	16-Apr	20
633	994	7	30-Mar	1-Apr	16
634	995	1	18-Apr	21-Apr	17
635	996	3	7-Apr	12-Apr	19
636	997	4	27-Mar	28-Mar	15
637	998	5	15-Apr	17-Apr	16
638	999	6	4-Apr	9-Apr	19
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640	1001	2	12-Apr	13-Apr	15
641	1002	3	1-Apr	5-Apr	18
642	1003	4	21-Mar	28-Mar	21
643	1004	6	9-Apr	16-Apr	21
644	1005	7	29-Mar	1-Apr	17
645	1006	1	17-Apr	21-Apr	18
646	1007	2	5-Apr	6-Apr	15
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649	1010	6	2-Apr	9-Apr	21
650	1011	7	22-Mar	25-Mar	17

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678	1039	7	12-Apr	15-Apr	17
679	1040	2	1-Apr	6-Apr	19
680	1041	3	21-Mar	22-Mar	15
681	1042	4	9-Apr	11-Apr	16

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698	1059	4	1-Apr	4-Apr	17
699	1060	6	21-Mar	26-Mar	19
700	1061	7	9-Apr	15-Apr	20
701	1062	1	29-Mar	31-Mar	16
702	1063	2	17-Apr	20-Apr	17

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