

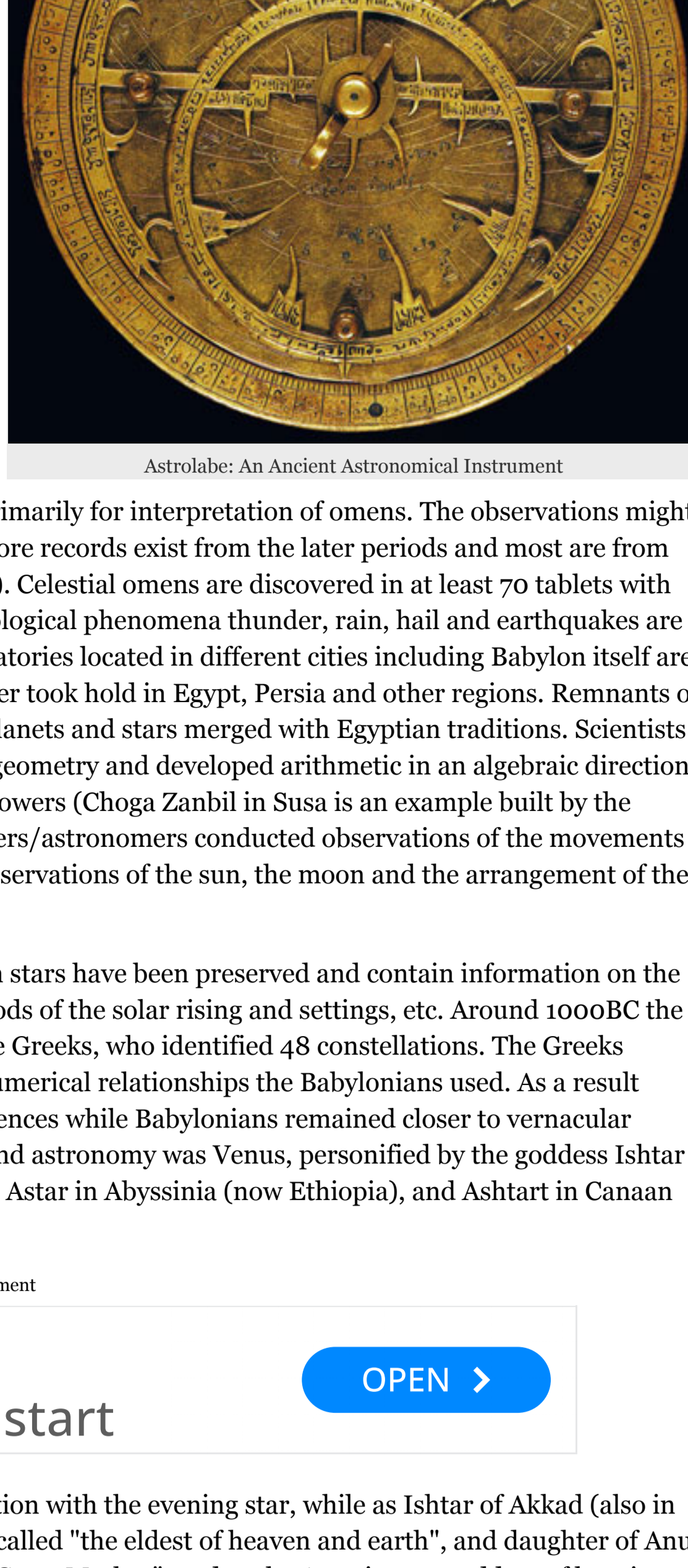


## *Iranian Calendar & Astrology*

### **Astrology & Astronomy in Iran and Ancient Mesopotamia**

By: Massoume Price, December 2001

Astrology is an occult practice that originated in ancient Mesopotamia, Egypt, India and China. The oldest records belong to the 2nd millennium BC, Old Babylonian period. However Sumerians a 1000 years earlier had some understanding of the subject. The astrologers observed the movements of the planets and assigned them godlike features and powers. Each planet represented a god or a goddess and ruled certain areas of life. The astrologers advised the rulers and interpreted the pattern of planetary movements as omens or signs for understanding the future. The practice is deeply rooted in the concept of Divination an important aspect of the Mesopotamian life. Divination was employed as a technique to communicate with gods, who according to the Mesopotamian religions thought, shaped the destinies of humans and controlled all events in the cosmos. Divination presupposes supernatural cause and effect in all perceived phenomena and assumes the cooperation of the gods in their willingness to reveal their future intentions. Observing the planets resulted in rudimentary scientific advances in astronomy and the practitioners of the prophetic aspects of astronomy became astrologers with great prestige and influence.



Astrolabe: An Ancient Astronomical Instrument

The oldest records are astrological omens preserved from the reign of king Ammi-saduqa (1683-47 BC). Appearance and disappearance of the planet Venus behind the sun is recorded primarily for interpretation of omens. The observations might have been important to the regulation of the calendar as well. More records exist from the later periods and most are from the library and archive of Assurbanipal at Nineveh (668-627 BC). Celestial omens are discovered in at least 70 tablets with observations relating to the moon occupying 23 tablets. Meteorological phenomena thunder, rain, hail and earthquakes are also observed and thought to have prophetic validity. Six observatories later located in different cities including Babylon itself are mentioned in the tablets. The Babylonian/Assyrian astrology later took hold in Egypt, Persia and other regions. Remnants of the Babylonian practice, such as the omens and settings of the planets and stars merged with Egyptian traditions. Scientists from both nations made accurate measurements of areas using geometry and developed arithmetic in an algebraic direction. Mathematical astronomy was used to build multistory ziggurat towers (Choga Zanbil in Susa is an example built by the Elamite). The towers were usually seven-floor high and astrologers/astrologers conducted observations of the movements of heavenly bodies from the rooftop. They recorded empirical observations of the sun, the moon and the arrangement of the planets and constellations.

Tables with astronomical computations of the distances between stars have been preserved and contain information on the basic fixed stars and constellations, their relative positions, periods of the solar rising and settings, etc. Around 1000BC the astronomical knowledge of the Babylonians was passed on to the Greeks, who identified 48 constellations. The Greeks employed geometrical explanations of motion rather than the numerical relationships the Babylonians used. As a result Greeks progressed in astronomy and moved slowly into pure sciences while Babylonians remained closer to vernacular astrology. One of the principal stars in Mesopotamian religion and astronomy was Venus, personified by the goddess Ishtar in Babylonia and Assyria, Astarte in Phoenicia, Athtar in Arabia, Astar in Abyssinia (now Ethiopia), and Ashtart in Canaan and Israel (Persian world Setareh comes from the same origin).

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As Ishtar of Erech (in Babylonia) she was worshipped in connection with the evening star, while as Ishtar of Akkad (also in Babylonia) she was identified with the morning star. Ishtar was called "the eldest of heaven and earth", and daughter of Anu, the god of heaven. She was the goddess of love and beauty, the "Great Mother", and to the Assyrians, a goddess of hunting and war. Greeks identified Ishtar with the goddess Venus. The earliest formal calendar in Mesopotamia was probably the Sumerian lunar calendar. The lunar calendar required intercalation (insertion of days or other portions of time in calendars) and was later improved by the Babylonia priests. They intercalated months according to an 8-year cycle when they would add 3 extra months. The calendar months started with the direct observation of a new crescent moon at dusk. Today Judaism and Islamic calendars still use the same principle that the new calendar day begins at sunset. The constellations of the Zodiac preserved at the British Museum from this period have several familiar representations. The Bull, the Tortoise, a female figure with wings, the Scorpion, the Archer and the Goat-fish are all prominent, such as stones, cylinder seals and gems. Calendars extensively utilized all such information and were both civil and religious institutions. Their origin was attributed to be the work of Gods and Goddesses.

The time of Persian dominion, particularly from the last quarter of the fifth century BC until the Greek conquest was the most creative period for Babylonian mathematical astronomy. Astronomical schools existed in Uruk, Sippar, Babylon and Borsippa. The Achaemenians maintained an atmosphere favorable to the development of science. Under Darius I and great Babylonian astronomer, Nabu-rimanni (Naburians), was instructed to carry out a study of lunar eclipses and arrived at calculations more accurate than those of Ptolemy and Copernicus. His works were translated and used for many centuries by all including Seleucid and Parthian rulers of Persia. His picture of Heavens was borrowed by the Greeks and eventually reached the famous Greek scientist Democritus. The terminology employed by Naburians includes spheres, orbits, ecliptic, inclination, celestial equator, poles, circular motion, revolutions, retrogression, moon's highest north and south latitudes. All were used extensively by Greek astronomers including the brilliant Eudoxus of Cnidus, precursor of Euclid. Another well known Babylonian astronomer under Persian rule, Kidinnu (Cidenas) of Sippar, distinguished the solar year from the lunar, discovered the precession of the equinoxes and arrived at an exact calculation of the length of the year, making an error of only 7 minutes, 41 seconds.

The advances enabled the astronomers to draw almanacs for the ensuing year. Almanacs in which eclipses of the sun and the moon, and times of the new and full moon were accurately noted. Also the positions of the planets throughout the year were determined using astrological charts. There are tablets that set forth observations of Jupiter from the 43rd year of the reign of Artaxerxes II to the thirteenth year of Alexander the Great. Some old Persian names in astronomy have barely survived. The names of the four "Royal Stars" which were standing guard at the equinoxes and solstices still resembles the modern ones. Aldebaran, Watcher of the East; Regulus, Watcher of the North; Antares, watcher of the West; Fomalhaut, Watcher of the South were used by the Persians. Today's equivalents would probably be Alcyone, Regulus, Albiroo and Bungula.

Despite all advances astronomy remained inseparably linked to astrology. Astronomical texts, in particular, contain allusions to the ties between the stars and various illnesses. By the end of the Achaemenid period in Babylonia and other territories under Persian rule science had declined and the potential for its development was stalled. Science was no opponent of religion in the ancient times. In fact it developed in the shadow of temples and was influenced by religion.

By this time the dominance of religious concepts hindered new methods and modes of thought for understanding nature. The Greeks introduced the next major change. They launched new ideas that revolutionized science in general including astronomy and astrology. Empiricism and experimentation were encouraged and metaphysical basis of natural phenomenon was rejected. They adopted Babylonian, Egyptian and Persian knowledge, mixed it with Greek thought, developed it and through the medium of Greek made them universal.

The Egyptian contribution to astronomy/astrology was immense. The latter Hellenistic (Greek) astrologers of Egypt attributed the root of their discipline to Nechepso and Petosiris, an Egyptian pharaoh and his high priest. By 1st century BC the entire apparatus of horoscopic astrology was in place and the language of Egyptian astrology had become Greek. The famed Greek astrologer, Valens traveled throughout Egypt and studied with at least a few living teachers of the old traditions and recorded his observations. Originally the astrology texts were written in Coptic, the last form of ancient Egyptian, but no clear reference to any has survived. The Hellenistic Egypt systematized the omen materials of the earlier Babylonian astrologers. Many astrological methods, such as the use of 12 houses, lots and aspects were developed at this time and spread throughout the area by the Greek writers. By the 2nd century BC the Greek scientist Hipparchus developed the mathematical astronomy that was given its final form by Ptolemy in the second century AD. Ptolemy's work in turn influenced all astrological/astronomical works till the advent of new sciences, including Islamic celestial concepts and astronomical studies of the Middle Ages.

After 126 BC, the Parthians, rose up against the Seleucids, the Greek successors to Alexander the Great, and re-conquered most of the Persian Empire. The Parthians were hostile to the Greeks (and later the Romans) and effectively cut off communication between the main body of Hellenistic peoples and Persians plus the Bactrian Greeks in Afghanistan and Pakistan. This created a new school of astronomy/astrology independent from the Greek and Egyptian traditions. There are no material left from this time but its impact on Indian and Hebrew astrology has left its mark. There are fragments in Hebrew astrology that are unlike the Hellenistic astrology that was emerging at the same time. The emphasis of Light and Dark recalls the Zoroastrian religion and the impact of Persian astrology. One can compare such literature to similar material at the end of the Indian astrological classic, Parashara's Hora Sastra. This omen-like material of reading bodily characteristics as personality or morality traits seems to have also been influenced by the Persian astrology. There are also similarities between Indian and Persian astrological history/narrative. This is the account of dynastic history in terms of cyclical periods of varying lengths of time governed by the stars and planets. Many stories from Sassanian period (Karnameh Ardeshir Papakan) and Shahnameh contain such dynastic history and more were produced after the Arab conquest (Abu Sahl's Kitab an-Nahmutan). However despite hostility by the Parthians, Greek sciences, arts and philosophy remained and with the coming of Sassanian rulers they reached a new peak and advances were made in the field.

The Sassanian Empire of Persia (226-642), with its state religion of Zoroastrianism, saw itself as heir to the legendary Achaemenid dynasty and their civilization, and developed an ideology and culture to reflect and promote this image. An imposing succession of Sassanian emperors actively engaged in collecting, recording and editing the historical and religious record of their civilization and the neighboring countries. According to Dinkard, the Zoroastrian canon in Pahlavi, Book IV, "all knowledge and sciences was received by Zoroaster from Ahura Mazda and transmitted through Avesta. Destruction of Persia by Alexander dispersed the texts throughout the world. The Greeks, the Egyptians derived all their knowledge and science from these dispersed texts. Subsequently Sassanian emperors took it upon themselves to collect all these texts from all over". The sources name, Byzantium, India and China as the main centers where book collecting was taking place.

Such activities reached their peak at the time of Khosro I (Anoshirvan, (531-578). Greek Philosophers, Syriac speaking Christians and Nestorians fleeing persecution by the Byzantines (Orthodox Christians of Constantinople) were received by Anoshirvan and were commissioned to translate Greek and Syriac texts into Pahlavi. Paul the Persian dedicated Works of logic to the king. The Greek philosopher Priscianus Lydus wrote a book in response to the king's questions on a number of subjects in Aristotelian physics, theory of the soul, meteorology and biology. Dinkard itself shows familiarity with all these topics, especially Aristotelian physics. Books in medicine, Ptolemy's Almagest (A collection of mathematical anthology) and other works in astronomy, Aristotle's Organon and a number of texts in crafts and skills were translated from Greek sources. Indian scientific material in astronomy, astrology, mathematics and medicine were also translated into Pahlavi. The Book of Nativities (Kitab al-Mawalid) was a five part astronomical work that was translated from Pahlavi into Arabic in 750. It was ascribed to Zoroaster and according to the Iranian historian Sa'idi ibn-Khurasan-Khurreh, "it was translated by Mahankard, an Iranian scholar from among the books of Zoroaster".

Astrological history was important to Sassanian Imperial ideology. The stars decreed the fate of the mortals and the kings expected to receive special protection. Shahnameh is full of stories where the fate of the heroes is sealed in the astronomical charts read at the time of their birth. Ptolemy and Greek astronomy was very well known in Iran. To what extent astronomy was separated from astrology is not clear and very likely astrology would have dominated the field. The Muslim Arabs destroyed almost all of the literature of the Zoroastrian Sassanian including their astrological works. However there are some clues as to what their astrology might have been. Most of the greatest astrologers in the Islamic era were Persians! The astrology Iranians taught is quite different from both the Hindu and the Greek traditions. It had orbs of aspect, the Great Cycles of Jupiter and Saturn, all of the elaborate systems of planetary interactions such as Frustration, Abscession of Light, Transposition of Light and so forth. While Muslim era astrology owes a large debt to Hellenistic astrology, it is also clear that in the two or three centuries between the last known Hellenistic astrologers and the first known Muslim ones, something new had come into the field. This was very likely the Persian stream of astrology.

The famous university and the hospital at Jundishapur built earlier reached its peak at Anoshirvan's time. In Jundishapur Greek (Egyptian & Byzantine), Indian and Persian scientific traditions were assimilated. Indian scientific material in astronomy, astrology, mathematics and medicine were translated into Pahlavi along with Chinese Herbal medicine and religion.

The books were kept at the university and the royal libraries and Greek sciences flourished. The Arab conquest in 7th century introduced many changes. The destruction of major cities, libraries, and eventual closure of universities in Alexandria, Antioch and Persia in the long run stalled development of science and technology except for the first 300 years.

The destruction of such major centers of learning with the compulsory use of Arabic made it clear to the scholars and intellectuals that all pre-Islamic knowledge and national identities were in danger of total obliteration and they had to be preserved. Massive and heroic efforts were made to save the ancient knowledge. The result was the formation of a dynamic and significant translation movement for almost two hundred years till 10th century. The movement started in Damascus in Umayyad times and flourished in Abbasid Baghdad (754 AD). This is the period that is known as the Golden Age of Islam. All major Greek Syriac Persian and some Indian texts were translated into Arabic and Neo-Persian. Pre-Abbasid translations from Pahlavi included major religious, literary and historical texts. Greek and Indian texts translated into Pahlavi were re-translated into Arabic and Neo Persian.

With the Abbasid translation of scientific texts was added. Nawbakht the court astrologer and his son Abu Sahl and other colleagues Fazari and Umar Tabari and many others sponsored by the Barmakid family (the chief ministers to the early Abbasids who were murdered later) translated and promoted Pahlavi texts into Arabic and Neo-Persian. They were all Iranians and aimed to include Sassanian culture into Abbasid ideology and guarantee the continuity of the Iranian heritage. Christian and Jewish learned families of Sassanian Persia such as Bukhtishu and Hunyan families were also great translators of Syriac Greek Pahlavi and other texts into Arabic. Both families had served at Jundishapur University for generations and were instrumental in founding the Adudi Hospital and Medical School in Baghdad. Baghdad a suburb of Ctesiphon was chosen as the site of the New Abbasid capital (Baghdad is Persian and means God given, it was founded in 762 by Mansur). The Royal library was based on the Sassanian model and was called the same name (house of knowledge, Bayt al-Hikmat). Even at Caliph Mamun's time when the persecution of Iranian elements had started, the director of the library was the great Persian nationalist and Pahlavi expert, Musa Sahl ibn-Harun (9th century). The famed Iranian mathematician and astronomer Musa Khawrazmi was employed full time by the library at this time. Ibn-an-Nadim, the author of Al-fihrist (the index), one of the most famous associates of the library listed all the books and their origins in his famous index. A great part of the index has survived and is a valuable source of information.

Before Islam, Hellenistic Greek knowledge was preserved in Alexandria, home of Ptolemy (85 to 165 AD), his great Book "Mathematike Syntaxis" was translated into Arabic and was titled the "Greatest," Greek "Megiste," which became "al-majesti," (Almagest in Latin). Ptolemy's knowledge was kept alive by Hypatia (355? - 415AD), the first great woman of science. She was a well-known professor of philosophy, mathematics and astronomy at Alexandria. With her father Theon, she edited and wrote commentaries on Ptolemy's work. Some sources mention that Caliph Mamun acquired Almagest (813-833) in a peace treaty with the Byzantine emperor. Once translated into Arabic it influenced Islamic and Western cosmology, astronomy and astrology for centuries to come.

Muslims had great interest in astronomy in order to find the direction to Mecca for praying. While latitude (north-south location) is easy to find, longitude (east-west location) requires accurate time. Without accurate portable clocks, longitude can only be found by sighting a star in two different places at the same time. A lunar eclipse gives astronomers in two places a natural way of adjusting their clocks to the same time. The great Iranian scientist and mathematician Khawrazmi was the first to publish astronomical tables to address the quest.

In fact most of the major scientists of the era were non-Arabs and mostly Iranians and though they traveled extensively in the Muslim world many carried out their research in Iranian territories. Khawrazmi's tables were used to find days of new moon, rising and setting times of the sun, moon, and planets, and to predict eclipses. Because they made these calculations easier, the tables served the same function today's computers. He also adapted Ptolemy's Geographike Hyphegesis and composed the first independent textbook for algebra; as a result his name survives in the term algorithm (Al Khawrazmi) for the formulation of a calculating method. His book of tables introduced the Indian system of decimal numbers to the west. The tables were labor-saving devices for astronomical calculations. He also improved astrolabe (Ostorlab), Ptolemy had used the device for observing and computing but its use was limited before it was improved. Trigonometry was improved since it was essential to the computation of planetary orbits as well as to terrestrial mapping, and consequently medieval 'qibla' tables attained great accuracy.

Major observatories were built in Persian territories such as Maragheh and Samarkand over the centuries. At these observatories, astronomers gathered to refine Ptolemy's coordinates for the stars and, eventually, to revise Ptolemy's catalog of stars. His catalogue gave the positions of 1,022 stars by magnitude, or brightness. The 10th-century astronomer Al Sufi (Azophii) heavily revised the book. Azophii's Book of the fixed Stars is the earliest illustrated astronomical manuscript known; the earliest copy, the work of the author's son, is dated 1009 and the author expressly states that he traced the drawings from a celestial globe. The Persian astrologer Abu Ma'shar Balkhi (787-886 AD) was one of the most influential figures in the field. His works were translated into Latin in the 12th century and exerted a powerful influence on the development of Western Astrology. A student of al-Kindi (Latin Alkindi) his works represent a fusion of Sabinian, Hermeticism, Persian chronology and the Islamic religious doctrine plus Greek science and Mesopotamian astrology. He was an extremely successful practitioner of the Art of astrology and traveled throughout the area in service to numerous Indian, Persian, Arab, and Egyptian heads of states. With his Iranian student Abu Sa'di Schadsan, who recorded his teachers answers and astrological heads they were very popular in Medieval European scholarly circles.

Biruni was another brilliant Iranian scientist who has made great contributions to sciences in general and mathematics and astronomy in particular. Born in Khawrazm (ruled by Iranian Samanids) by 990 AD, at age 17 he computed the latitude of his city Kath by observing the maximum altitude of the sun and shortly afterwards produced his Cartography, a work on map projections. He corrected Khujandi's astronomical calculations at the observatory in Ray near Tehran. In Gilan near Caspian area he observed a major eclipse in 997 and by comparing his results with another astronomer in Baghdad was able to calculate the difference in longitude between the cities.

By 1000 AD he was observing more eclipses at Gurgan and dedicated his work Chronology to Qabus, the Ziyarid ruler of the area. The Chronology refers to seven earlier works which he had written: one on the decimal system, one on the astrolabe, one on astronomical observations, three on astrology, and two on history. He also produced major astronomical works for the Ghaznavid ruler, Sultan Mahmood. Biruni's contribution to science, astronomy and social studies are enormous. His massive work India covers many aspects of life in this country while travelling with Mahmood's army. He describes his writing, religion and philosophy of India, its caste system and marriage customs. He then studies the Indian systems of literature and numbers before going on to examine the geography of the country. He studied Indian literature in the original, translating several Sanskrit texts into Arabic. He also wrote several treatises devoted to Indian astronomy, mathematics, geography and Gnamkrit. He produced around 146 works in his lifetime (around 13000 pages) covering all the sciences of his time and made corrections to Ptolemy's calculations. He shows no prejudice against different religions or sects and very strongly criticized the Arab conquerors for destroying the ancient books and texts at the libraries in the cities. 'Shadows' is one of his most important texts written around 1021. The contents of the book include the Arabic nomenclature of shade and shadows, applications of the shadow functions to the astrolabe and to other instruments, shadow observations for the solution of various astronomical problems, and the shadow-determined times of Muslim prayers. The book is an extremely important source for the history of mathematics, astronomy, and physics.

He made valuable contributions to theoretical and practical arithmetic, summation of series, combinatorial analysis, the rule of three, trigonometry, ratio theory, algebraic definitions, method of solving algebraic equations, geometry, Archimedes' theorems, irrational numbers, the sine theorem in the plane, and solving spherical triangles. He corresponded with other brilliant Iranian scientists Avicenna (Ibn Sina) and Sijzi about various scientific topics such as heat and light. One fifth of his works have survived. His most important astrological textbook, 'Elements of the Art of Astrology' was published in Ghaznah in 1029. It included detailed rules for the interpretation of nativity and horoscope charts for the time of birth.

Avicenna himself was an accomplished mathematician with a number of works in astronomy. He lived during the Samanid, Buyid and Ghaznavid rulers of Iran and worked as physician at a number of courts. His famous book 'The Book of Healing' is a scientific encyclopedia covering logic, natural sciences, psychology, geometry, astronomy, arithmetic and music. One quarter of the work is devoted to mathematics with astronomy and music included as branches of mathematics. He divided astronomy into astronomical and geographical tables, and the calendar. Ibn Sina made astronomical observations at Isfahan and Hamden. He observed Venus as a spot against the surface of the Sun and correctly deduced that Venus must be closer to the Earth than the Sun. He invented an instrument for observing the coordinates of a star. Another of Avicenna's contributions to astronomy was his attempt to calculate the difference in longitude between Baghdad and Gurgan by observing the moon at the later location.

Omar Khayyam (1044-1123ad) is another celebrated Iranian mathematician, philosopher, astronomer and poet who made great contributions to both science and literature. He was born at Nishapur, the provincial capital of Khurasan. He also visited Samarqand and other centers of learning such as Bukhara, Balkh and Isfahan. He was an expert in Algebra and made an attempt to classify most algebraic equations.

He has been considered to be the first to find the binomial theorem and determine binomial coefficients. In geometry, he studied generalities of Euclid and contributed to the theory of parallel lines. He was invited to Ray by the Saljuq Sultan, Malikshah to work at the new observatory around 1074 and started the task of producing a new and more accurate solar calendar. His calendar is still in use today and it called Jalali calendar. It had an error of one day in 3770 years and was thus superior to the Georgian calendar (error of 1 day in 3330 years). His contributions to other fields of science include a study of generalities of Euclid, development of methods for the accurate determination of specific gravity. He became very popular in the Western world, when Edward Fitzgerald in 1839 published an English translation of his (1259s) Ruba'iyat.

The Western Iranian mathematician, Nasir Din Tusi, founded the observatory at Maragha in 1259, one-year after the fall of Baghdad to the Mongols. He was born in Tus, Khurasan in 1201 and studied all subjects popular at the time. In 1262, he improved the observatory by building a twelve-foot wall quadrant made from copper. He used many instruments including astrolabes, representations of constellation, epicycles and shapes of spheres for various calculations.

The main theoretical work done at the observatory involved simplifying the Ptolemy's model and bringing it into line with the Aristotelian model, which postulated uniform circular orbits for the planets. Although they were often misguided, they made very important contributions; Ibn Shatir [early 14th century] used the information and came up with models for the movement of the Moon and of Mercury that are strikingly similar to those of Copernicus. Tusi invented new instruments for observing the stars accurately. He also invented an ingenious mechanical device (torquetum) for computing star positions and discovered how a special pair of circles (called a Tusi couple) can draw a straight line. Tusi was one of the greatest scientists, mathematicians, astronomers, philosophers, theologians and physicians of his time. He was a prolific writer. He wrote many treatises on such varied subjects as Algebra, Arithmetic, Trigonometry, Geometry, Logic, Metaphysics, Medicine, Ethics, and theology. Ilkhanid ruler Hulaku Khan appointed him as one of his ministers. Tusi produced a very accurate table of planetary movements and a star catalogue, and he published it under the title "Zij-Ilkhan" which was dedicated to the Khan and was in use till 15th century. The tables were developed from observations over a twelve-year period and were primarily based on original observations.

Tusi also pointed out several serious shortcomings in Ptolemy's models. His critique of Ptolemy's theories convinced future astronomers of the need to develop an alternative model ending in Copernicus discoveries. Tusi pioneered spherical trigonometry and one of his most important mathematical contributions was the treatment of trigonometry as a new mathematical discipline and revived the philosophy of Avicenna. He wrote his works in Arabic and Persian, sixty-four treatises have survived. These were translated into Latin and other European languages in the Middle Ages. Among Tusi's well-known Iranian students are Nizam Araj, who wrote a commentary on the Almagest, and Qutb ad-Din Shirazi who gave the first satisfactory mathematical explanation of the rainbow.

Despite great emphasis on astronomy, astrology also had a strong presence. Some scholars denied any scientific base for it. Biruni himself despite numerous works on the subject did not believe in it. Other writers ridiculed fortunetellers and magicians during this period and superstition and blind fate are criticized, the likes of Biruni, Ibn Sina and Ibn Khaldun (1406 AD). The latter makes a clear distinction between prophecy, a divine act bestowed upon chosen saints and prophets as compared to fortune telling a fake and deceitful act. The astrologer from the time of Mansur when Baghdad was first built used it extensively. In fact the site and the time was chosen by advice from Iranian court astronomer Nawbakht with help from Fazari and Tabari. These astrologers recommended 30th of July 762 as a blessed time to lay the foundation for Baghdad. Mansur accepted the verdict and it was Nawbakht who also consulted the heavens and advised him of the future revolt by Ibrahim ibn-Abdullah (762-663 AD). "Astrology made its gradual appearance in the public life of Arab rulers as a result of the infiltration of Sassanian cultural patterns" and all the subsequent rulers in the area used it in both its scientific and popular forms.

The Islamic principle of pre-destiny boasted the practice. Muslims believed that only their lives and actions were written down from the beginning of creation in the sacred tablet called 'Lohw e Mahfur.' All Allah knew every one's destiny but the astrologers could gain some insight by learning the subject. Star charts became very popular and people consulted the charts for everything from choosing the appropriate time (Saad) for a wedding to bad omen times called Nahs and fortune telling. Such practices were very common in Iran till the beginning of 20th century. Legend has it that the great astronomer Tusi consulted the stars and advised the ruler, Ruku Din Khurshah, that in order to save the Ismailis, he should surrender his castles in Rudbar, Alamut and other areas to the invading Mongols. If true, the stars saved him for a little while around 1257, but shortly after, the ruler and the rest of the Ismaili community and their castles and provinces were virtually reduced to ashes by Hulaku the Mongol ruler. Had they stayed in their castles they might not have vanished with such ease!

By the end of the 11th century AD, the Golden Age of Islam was over for many reasons including political/economic stagnation and foreign attacks. The great families who supported the translation movement and promoted advancement of science and philosophy in Persia, Byzantine and other territories were eradicated. The Muslim schools were fully established and were dominated by the fundamentalists where political ideology emphasized fate over reason. The Hellenistic cultures of Egypt, Syria and the Holy Land with its' Greek and Syriac elements and the Byzantine (Turkey) did not survive. They lost their language and their culture of scientific tradition and enquiry.

Persian culture partially survived but empirical knowledge and scientific traditions were lost. Astronomy like other branches of empirical science was virtually vanquished and like medicine was only revived in 20th century Iran. Astrologers on the other hand dominated every aspect of life including love and sexuality. With the coming of monotheistic religions i.e. Judo-Christianity and Islam the ancient goddesses of love, sexuality and fertility were totally eliminated. Their temples were closed down and communal acts and festivities to ease tension were banned. People particularly young women turned to fortunetellers and soothsayers for comfort. Christianity had banned such practices but Islamic ideas of pre-destiny encouraged it.

Astrologers by consulting charts and stars prescribed remedies, charms, and talismans to be made haphazard recommendations. Most were not educated as the ancient or classical astrologers used and to be incorporated everything including magic and were basically charlatans. Exclusion of women from public life during the Islamic period, polygamy and women's inferior legal status created unemployment, psychological disorders (for both males and females), insecurity and as a result there was great demand for astrologers and fortunetellers by women. In fact one of the few employment opportunities left to women at this time was fortune telling. However such women were rarely literate and could not use star charts like their trained male counterparts. As a result they had lower status and were paid less. By 19th century very few astrologers were properly trained with no observatories. The very few that existed remained at the service of the courts. There are many documents and star charts from 18th and 19th century Iran. They belong to the old aristocratic families of the time.

The practice of writing a chart for the male newborns of the grand families was common till the end of the 19th century. Astronomy was revived in the 20th century and had become an important scientific discipline. However the lack of research facilities and progressive institutions has hindered its growth. The country has no international standing other than many brilliant Iranian individuals working in first class facilities in Europe and North America.

It is interesting to note that since the Islamic revolution fortune telling and astrology that was ridiculed in the earlier part of the 20th century has made a comeback in Iran. Along with mystical cults, believing in supernatural and seeking help from divinity has become popular particularly amongst women including educated ones. Insecure, emotionally drained, legally, socially and economically inferior once again women are seeking comfort with fortunetellers and astrologers. Western astrology is also incorporated and horoscopes, taro cards, Chinese and Indian astrology and their practitioners are read widely and their principles are followed. Internationally such trends are enjoying a comeback as well but their popularity in Iran no doubt to a large extent is a result of closer contacts with other nations.

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