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Official Newsletter

Astrolabe

3rd International Olympiad of Astronomy and Astrophysics

Oct. 18, 2009 Tehran-Iran

Welcome to Iran

STUDENTS

TODAY

Opening Ceremony,
International Board Meeting

TEAM LEADERS

Opening Ceremony,
International Board Meeting

TOMORROW

Checking Equipments for
Observational Exam

Discussion on Theoretical Exam,
Translation of Theoretical Exam



►► *Mount Damavand*

Strong moonlight has illuminated snow-covered landscape of northern Iran in this winter night picture taken from the slopes of Mount Damavand, the highest volcano in Asia, rising to an altitude of 5610 meters. Located in the Alborz mountain range of Iran, not far from the capital Tehran, Mt. Damavand has been a legendary mountain in Persian culture. The volcano has been dormant for many thousands of years. However it is a live volcano and is listed among the seven most

magnificent live volcanoes on the planet. As noted by the photographer "it was 4 am in the morning. Along with two other landscape astrophotographers I trekked a road covered by 1-2 meters deep snow to find this overlooking location. The temperature was well below -20° C with freezing wind. Clouds were moving fast against the volcano and the northern stars in the constellation Ursa Minor were visible just above the peak."

Babak Amin Tafreshi (www.twanight.org / tafreshi)





►► Welcome to Iran

Message by Acting Minister of Education

Distinguished scholars, professors, organizers, honorable participants, dear guests to the 3rd International Olympiad of Astronomy and Astrophysics.

It is indeed my great pleasure to witness a lively and dynamic presence of lovers of astronomy in a warm atmosphere of friendship, brotherhood and affection, in which one can feel the scent of venture for knowledge and understanding.

We are privileged to be your host in a great land with an ancient historical and scientific background in terms of astronomy. This country is proud to be the cradle of prominent scientists namely Khajeh Nasir al-Din Tousi, Abdolrahman Soufi-Razi, Qiaseddin Jamshid-Kashani and tens of other renowned figures, each of whom is truly the origin of significant developments and breakthroughs in the whole world. We are honored to have such national scientific assets as well as a tireless young generation who has guaranteed our scientific developments.

I hope this year competition will create a suitable ground for growth of merits and talents, enhancement of astronomy and international congruity.

To conclude, I would like to express my sincere thanks to all founders and organizers of this scientific forum and such a valuable competition and wish you prosperity and success.

*Seyed Ramezan Mohsenpour
Acting Minister of Education*



অভিনন্দন

Добро пожаловать

bienvenido

Bem-vindo

ឥឡូវស្វាគមន៍

欢迎

καλώς όρισες

स्वागत

selamat datang

خوش آمدید

Добро пожаловать

환영

sutikti

Witamy

bun venit

добро дошли

vitajte

සැරදි ආයුෂ්චරිත

ຍິນດີຕ້ອນรับ

Ласкаво просимо



3RD IOAA COUNTRIES (LEADERS & STUDENTS)



Brazil

Thais Mothe Diniz
Bruno L'Astorina

Otávio Menezes
Daniel Soare
Leonardo Stedile
Thiago Hallak
Hugo Araujo

Bolivia

YRDY GABRIEL EDGAR BUSTOS
ESPINOZA
MARKO ANDRADE UZBEDA

ALVARO RUBEN HURTADO
MALDONADO
HUGO ROBERTO OLIVERREZ
ANITA GARCIA FIGUEROA
HESSER RUSSELL TARGAADA MICHEL
DUSTRAVO TOBALIN GARDENAS

Poland

Grzegorz Stachowski
Jacek Szczepanik

Piotr Godlewski
Patrik Pjanka
Grzegorz Gajda
Przemysław Mróz
Rafał Sikora

Slovakia

Ladislav Hric
Maria Bartolomejova

Miroslav Jageľka
Fridrich Valach
Peter Kosec
Eugen Hruška

Lithuania

Jokubas Sudzius
Audrius Bridzius

Ilona Kovieraitė
Dainius Kilda
Motiejus Valunas
Povilas Kanapickas

Serbia

Slobodan Ninkovic
Ivan Milić

Aleksandar Vasiljkovic
Nataša Dragovic
Milena Milosevic
Filip Zivanovic

Greece

Loukas Zachilas
John Seiradakis
Maria Kontaxi

Georgios Valogiannis
Angelos Tsiaras
Orfels Voutyras
Athanasios Mitrakis
Georgios Lioutas

Romania

Trocaru Sorin
Petru Craciun

Constantin Marius
Zelko Ioana Alexandru
Kruk Șandor Josef
Oprescu Miruna Anto
Mărgărint Vlad Dumitru

14500 BCE

France: Some believe Lascaux cave paintings depict celestial constellations



3000 BCE

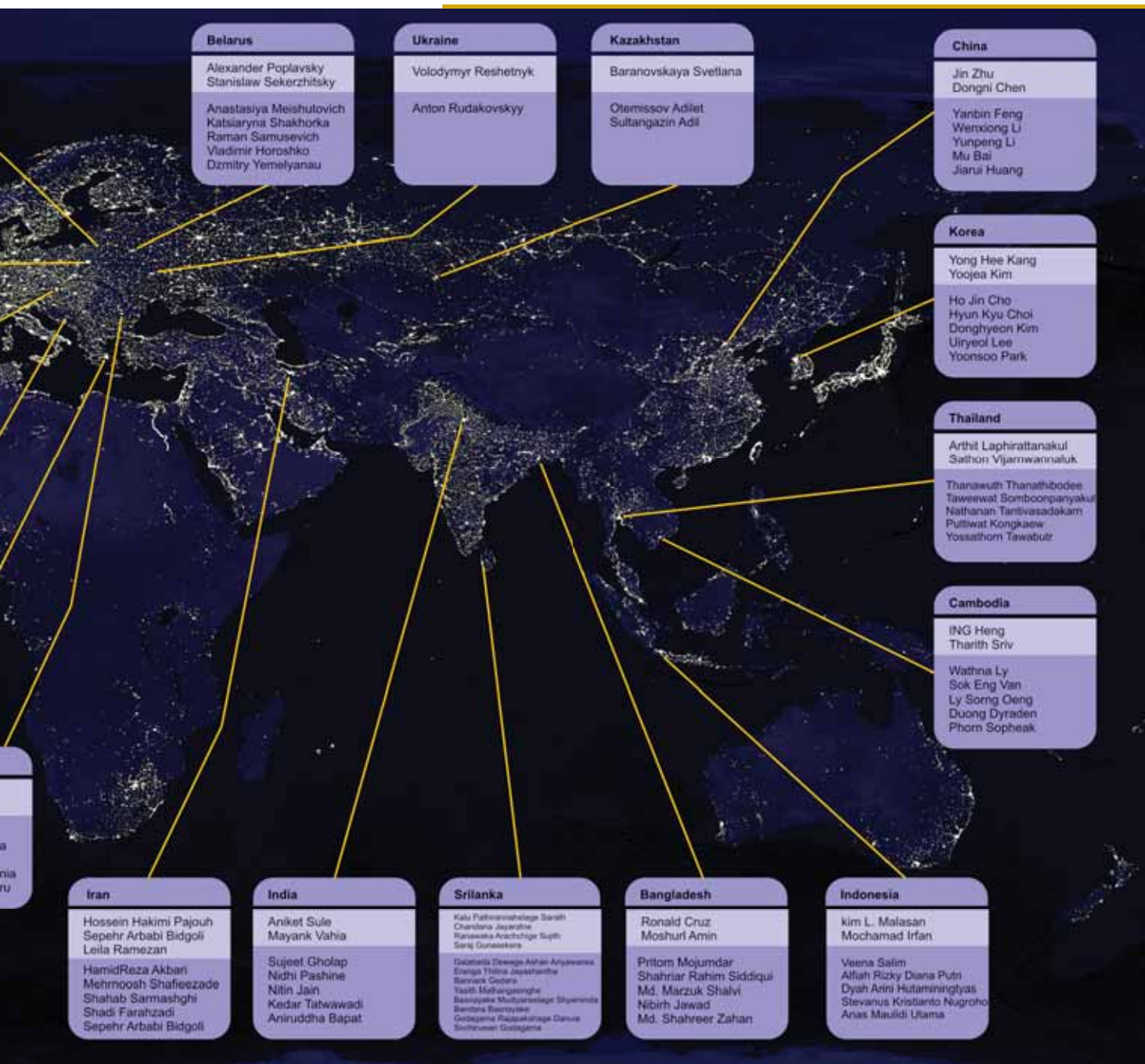
The Sumerians draw up the first star catalogue, and coin the term zodiac for the twelve constellations on the ecliptic.



2485 BC

The Great Pyramids were built in Egypt; these pyramids were aligned along the four principal directions of North, South, West, and East, and were most probably used for astronomical observations.





2354 BCE

The first known female astronomer lived and worked in Babylon.



2000 BCE

The oldest extant document from Babylon refers to a lunar eclipse.

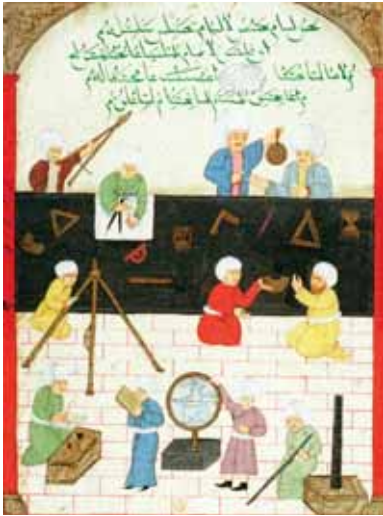


1900 BCE

England: The building of Stonehenge lasted from 3000 BCE to 1500 BCE. This monument is one of the largest and oldest structures the use of which for astronomy and chronometry has been established with great certainty.



►► A Short History of Persian Astronomy



An image of an Islamic observatory, showing an astrolabe in use. From the Whipple Collection

While Persia's written record spans millennia, clues regarding astronomical observations come to us from the even more distant past. Pottery dating back more than 5,000 years is adorned with painted figures suggestive of constellations. The ziggurat of Chogha Zanbil, built more than 3,200 years ago by the Elamites near their capital of Susa in southwestern Iran, is suspected of having an astronomical purpose, perhaps as an ancient observatory. Many constellation symbols and other celestial shapes made their first appearances in neighboring Babylon. Dating to the dynasty of the Kassites, who migrated from the Zagros Mountains of western Iran over three millennia ago, up to 40 cosmic figures

have been found engraved on individual land boundary markers known as kuduru stones.

Iran underwent profound changes with the birth of Persia's religion, Zoroastrianism, in the 7th century BC. Founded by Zoroaster (often known as Zarathustra in the West), the ancient faith is the basis for many of modern Iran's most cherished traditions. Astronomy at the time was the dominion of Zoroastrian priests known as magi (the origin of the term magician) and the holy book of the Zoroastrian faith, the Avesta, has many references to astronomical observations. Zoroaster himself is said to have been an astronomer who established an observatory that produced a *zīj*, a set of astronomical tables.

The founder of the Persian Empire, Cyrus the Great, captured Babylon in 539 BC. The magi who migrated there transformed Babylonian astronomy. For example, they were the first to record planetary motion through constellations. The magi learned from the Babylonian astronomers as well and translated Babylonian books into the early Persian language.

During the 5th century BC, the zodiac as we know it first appeared when Babylonian priests and Persian magi divided the ecliptic plane into 12 equalized zones represented by

constellations. With refinements in eclipse predictions and the development of astrology, citizens' daily lives were linked to sky events. A few centuries later, three Persian magi are said to have followed a bright star to Bethlehem in the West with gifts for the newborn Jesus.

Progress in the Persian Empire came to a halt following the devastation wrought by the invasion of Alexander the Great in 330 BC. According to some accounts, Alexander sent the enormous library at the royal capital of Persepolis back to Greece for translation before his troops destroyed the books and set fire to the palaces and temples.

In AD 624, Byzantine soldiers conquered the city of Shiz in northwestern Iran. They reported a remarkable structure called



Orion rising over the 3200-year old Ziggurat of Choqha Zanbil



Takht-e Taqdis — The Throne of the Dome — that speaks volumes to the Persian interest in astronomy. They found representations of the Sun, Moon, stars, and planets moving across the ceiling of a domed throne room. This may have been the world's first planetarium. The soldiers also reported rain falling from holes in the simulated sky to the accompaniment of thunder. Because the Byzantines viewed Persians and their Zoroastrian religion as pagans, the throne room suffered the same ignominious fate as other glories of Persia's past — destruction at the hands of invaders.



Full moon night at Persepolis

A few decades later, invading Arab armies destroyed much of the historical record after conquering most of the region. What little that has survived reveals a continuing keen interest in astronomy with similarities to the older science of Mesopota-

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Some of al-Tusi's ideas are found in the work of Copernicus 200 years later, although it's not known if Copernicus read al-Tusi's works

mia, along with the influence of Greek translations of works that found their way back to Persia.

Astronomy flourished under the Islamic caliphs, while science languished in Europe during the Dark Ages. Astronomy was particularly important to Muslims, who were obliged to predict when the New Moon might first be visible, thus marking the start of each month in the Islamic lunar calendar. While Baghdad was the center of the Islamic Empire,

astronomers from throughout the region made contributions. Persian astronomer al-Sufi worked in Baghdad and Iran during the 10th century, refining part of the star catalog in Ptolemy's *Almagest*, one of the seminal works of Greek astronomy. The Mongols swept through Persia during the 13th century.

The great Persian astronomer Nasir Al-Din Tusi, known as al-Tusi in the West, joined with the Mongols. They built al-Tusi a great observatory at Maragha, near the original Throne of the Dome. The observatory featured a 3.5-meter wall quadrant and many other instruments, some of al-Tusi's own design, which were capable of precise star position measurements. Al-Tusi precisely measured the precession of the equinoxes,

one of many contradictions to the accepted Ptolemaic system of planetary motion that he elucidated. Some of al-Tusi's ideas are found in the work of Copernicus 200 years later, although it's not known if Copernicus read al-Tusi's works. We still don't know why the flower of Islamic science faded while Europe experienced its Renaissance. Perhaps the new interest in astronomy among Iran's burgeoning youth will engender a renaissance of astronomy in Iran. — Mike Simmons

(Mercury, Jan-Feb 2003)



the tomb of Cyrus the Great in Pasargadae





►► *Photo of the Day*

Northern stars, including those of Ursa Major and Minor, over the west end of Great Wall of China; the gate of Ja Yu which once was the eastern edge of the ancient Silk Road. The Great wall of China was built and rebuilt from 5th century BC to the 16th century, to protect the northern borders of the Chinese Empire. The Wall, a World Heritage Site, is the world's longest human-made structure, stretching over approximately 6,400 km from Shanhaiguan in the east to Lop Nur in the west. (P.K. Chen.)



►► *IYA2009 Projects in 209 Words* ►► *Portal to the Universe*

Keeping up-to-date with cutting-edge astronomy and space science breakthroughs has just become that much easier, thanks to the Portal To The Universe, the latest Cornerstone project of the International Year of Astronomy 2009 (IYA2009). As a high-tech website embracing Web 2.0 technologies, the Portal To The Universe aims to become a one-stop-shop for astronomy news.

The Portal To The Universe provides a global portal for online astronomy content, serving as an index and aggregator. The site itself features news, blogs, video podcasts, audio podcasts, images, videos and more. Web 2.0 collaborative tools, such as the ranking of different services according to popularity, help the user to sift constructively through the wealth of information available and will promote interactions within the astronomy multimedia community. A range of "widgets" (small applications) have also been developed to tap into all sorts of existing "live data", such as near-live pictures of the Sun, live positions of spacecraft or live observations from telescopes.

The vision for the Portal is to enable real-time access to content by aggregating (pulling) from providers of dynamic content like blogs, images, news, etc. and distributing (pushing) to users, as well as indexing and archiving, collecting and maintaining a central repository of useful information.

Check this out now on: www.portaltotheuniverse.org



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Ministry of Education – Islamic Republic of Iran

►► *Weather Forecast for Tehran*

► *TODAY*

Clear to partly cloudy
High: 23 °C
Low: 14 °C



► *TOMORROW*

Clear
High: 22 °C
Low: 13 °C



(Forecast by AccuWeather)

Front Page:

The Gate of all Nations, consisted of a grand hall that was a square of approximately 25 meters (82 feet) in length, with four columns and its entrance on the Western Wall. There were two more doors, one to the south which opened to the Apadana yard and the other opened onto a long road to the east. Pivoting devices found on the inner corners of all the doors indicate that they were two-leafed doors, probably made of wood and covered with sheets of ornate metal. (photo: Oshin Zakarian)

