

Official Newsletter

2

# Astrolabe

3rd International Olympiad of Astronomy and Astrophysics

Oct. 19, 2009 Tehran-Iran

# Tehran Lights Up for 3rd IOAA

## STUDENTS

**TODAY'S  
PROGRAM**

Visit to Sa'dabad Palace,  
Visit to Daarabad Wildlife Museum  
Visit to Fanaamooz Park  
Explanation of the Theory Exam

## TEAM LEADERS

Discussion of the Theory Exam,  
Translation of the Theory Exam



سین پیاده‌گان آسمان و اخترفرمای



**►► Caveman View**

The night sky has amazed human beings throughout the history. Even our early ancestors, the prehistoric cavemen, had been touched by the stars and some of the oldest myths and legends might have been created on the basis of the unreachable starry sky. There are signs that the constellation Ursa Major (the Big Bear), notable in this view with its seven bright stars, was among the first star figures imagined by the mankind. The outlines of the imaginary figures of Ursa Major and Ursa Minor, the two celestial bears, are displayed in these images. This photograph was made on a moonlit night from inside the Roodafshan cave on the slopes of the Alborz Mountains in Iran. With a magnificent 168 m-long, 94-m wide, 40 m-high entrance hall, it is the biggest known cave chamber in Iran.

Photo by Babak A. Tafreshi  
[www.twanight.org/tafreshi](http://www.twanight.org/tafreshi)





## ►► *The International Board Meeting*

On Sunday morning, the International Board Meeting was held in the Evin Hotel of Tehran, where the Leaders and the invited guests of Olympiad have been provided with accommodations. The participants in the meeting included the Leaders of the teams that have participated in this year's Olympiad, as well as the President, Chairman, and the Secretary of IOAA. The participants discussed the program for this year's IOAA and arranged and the coordination of all the activities.

## ►► *Message from the Head of the Organizing Committee of IOAA*

The International Olympiad on Astronomy and Astrophysics (IOAA) is a worldwide competition organized to promote astronomy and astrophysics among the young students of various countries, and to identify bright talents among them. This scientific event provides an opportunity for all lovers of science to get acquainted with the abilities and talents of their peers in other countries. It also provides an opportunity for us, as the host country, to introduce the young representatives of other countries to our capabilities and our historical role in the development of astronomy as well as our old culture.

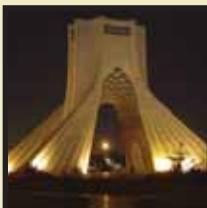
The successful hosting of the International Olympiad of Physics in 2007, did a lot to establish a positive outlook in the world towards our country. The acceptance of Iran as the host of the IOAA, and the letter of gratitude from the International Olympiads Committee for the successful organization of the 38th International Olympiad of Physics, as well as the



proposal for Iran to host this Olympiad again in 2023, all are indications of this positive outlook with respect to our cultural capabilities. Our top ranking in the 2007 international competition in Ukraine, as well as our high rankings in the competitions of Thailand and Indonesia, are also indications of the exquisite talents of our youth in this scientific endeavor. Considering these talented students and the historical contributions of Iranian and Muslim astronomers to this field, instills great hope for the progress of astronomy and astrophysics in Iran. This Olympiad has also provided the authorities of our countries with an opportunity to provide a glimpse of the progress and the achievements of our country. May God help them to use this opportunity wisely and effectively.

Mohsen Djamaali  
The Head of the Organizing Committee of IOAA 2009

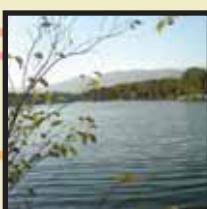
# SITES TO SEE IN TEHRAN



**The Azadi Tower** is the symbol of Tehran, and marks the entrance to the city. Built in 1971 It is 50 metres (148 ft) tall and completely clad in cut marble.



**The Grand Bazaar** is the world's largest bazaar located in southern Tehran. A bazaar is a type of marketplace, but fulfills many additional functions other than mere trade.



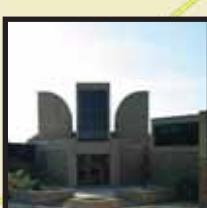
Eram's sport and recreational complex, contains an amusement park, a zoo, a lake,... and offers a site for international circus companies to hold their shows



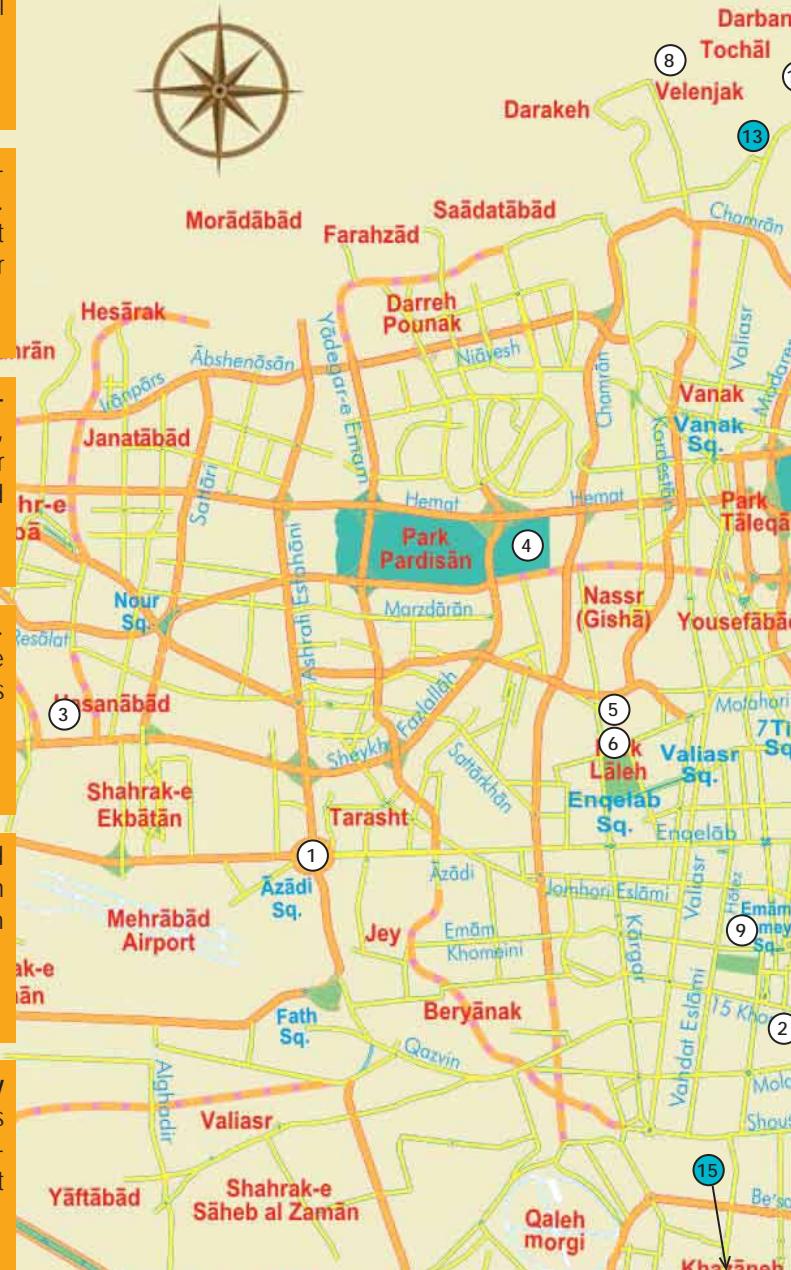
**Milad Tower** is the tallest tower in Iran. it stands 435 m (1,427 ft) tall from base to tip of the antenna. Milad Tower is the fifth tallest tower in the world.



**The Carpet Museum of Iran**, founded in 1976, exhibits a variety of Persian carpets from all over Iran, dating from 18th century to present.



**Tehran's Museum of Contemporary Art** is one of Iran's finest museums. It is considered to have the largest collection of precious Western modern art outside Europe and U.S.A.

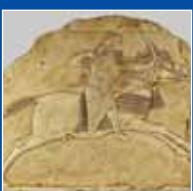


650 BCE

A star catalogue recovered from the library of Ashurbanipal is drawn up.

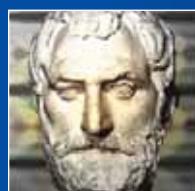
600 BCE

The birth of Greek Science: For the first time, Thales puts forward the hypothesis that simple laws can be used to understand the universe. He hypothesized that the Earth is floating on an immense ocean.



580 BCE

Greece: Anaximander hypothesized that Earth is an isolated cylinder existing within the space. He also believed that the planets and the stars reside on a crystal sphere.





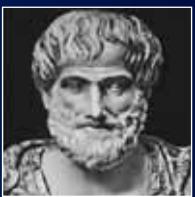
### 523 BCE

Babylon: Inscriptions have been found from this time which document the knowledge of Zodiac and its division into 12 signs.



### 340 BCE

Greece: Aristotle puts forward the principle of circular motion for astronomical objects.

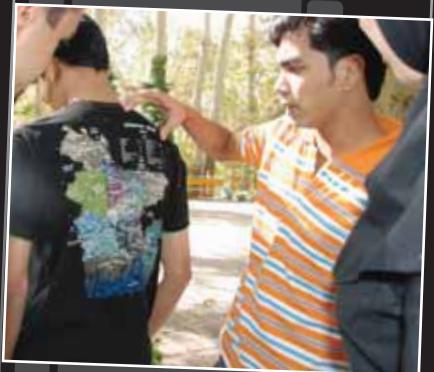
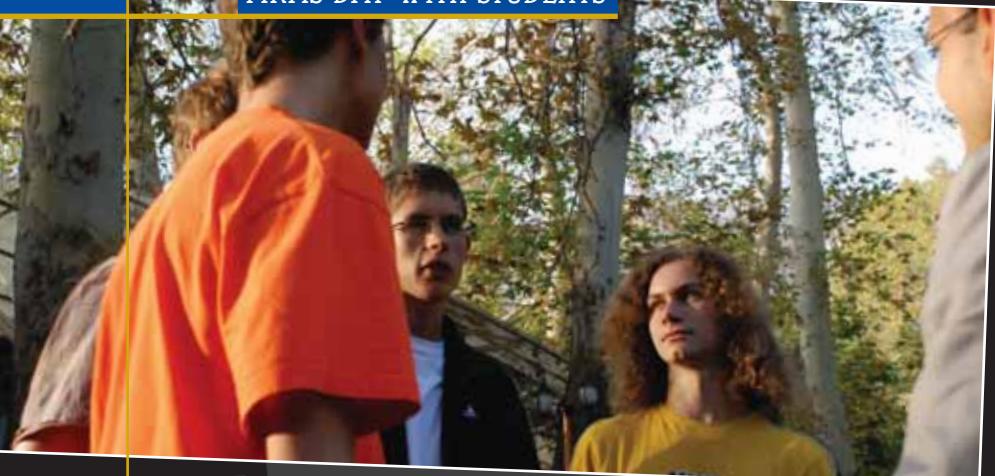


### 150 BCE

Ptolemy develops his computational system for calculating the position of celestial objects. He catalogued more than a thousand stars.



## FIRAS DAY WITH STUDENTS



3rd  
IOAA



3rd  
IOAA



## ►► *Astronomy in Tehran*



Za'feranieh Observatory



Shahr-e-Ray Observatory



Tehran Planetarium



Science and Astronomy Center(14)

[The numbers in parenthesis have been marked on the Tehran map (pages 4-5)]

Tehran, Iran's capital and most populous city, has witnessed a phenomenal growth of activities related to astronomy in the past several decades. There are several educational observatories and planetariums active in Tehran, a magazine called Nojum (astronomy) is published monthly, many books dealing with astronomy have been printed, and a TV program called The Night Sky is broadcast every night. In addition, several companies offer tours for the purpose of carrying out astronomical observations. There are several shops dedicated to the sale of astronomical equipment including telescopes, binoculars, and more specialized items. Many primary and secondary schools have included astronomy among their extra-curricular activities, while many educational institutes offer astronomy classes. At present, a world-class planetarium(16) is being constructed in Tehran. Each month, Tehran's Astronomy Club, holds a meeting in which amateur astronomers gather and exchange ideas and information. Holding nightly observation sessions on the streets of Tehran has become a routine event, and every now and then, amateur astronomers offer opportunities to the public to make astronomical observations in one of the Tehran parks, free of charge and with prior notice.

Another observatory, Za'faraaniyeh observatory(13), has been active in northern Tehran for the past twenty years. It is the first institute which proceeded to train children and teen-agers between 7 and 18 years of age in astronomy. It has served as a model for the present education centers and many of those initiated in Za'faraaniyeh, have become expert amateur astronomers who now teach at the same institute.

Southeast of Tehran, the Ray Observatory(15) is located in the courtyard of the Abdul-Azim Shrine. The shrine is more than 1000 years old, and is the resting place of the grandson of the Shiites second Imam. About a thousand years ago, Abu-Muhammad Hamed ibn-

Khezr Khujandi, constructed a tool called Seds-e Fakhri and installed it on Mount Tabarruk in Ray. This tool had the shape of a 60-degree arc from a circle and was used to measure the inclination of the ecliptic. It could measure the angular distance between the Sun and the Zenith with a precision of an arc second. Using this instrument, Abu-Muhammad determined the time of the summer and winter solstices of the year 994 BCE with great precision. The new observatory has been built to commemorate Ray's ancient observatory. It has been around for ten years now, and is one of the best-equipped educational observatories in the whole country. The Astronomy Center at the Abdul-Azim Shrine has both a modern observatory and another observatory built in the old style, a specialized library, a lab for developing astronomy photographs, a calendar exhibition, and a radio solar observatory. The calendar exhibition offers a unique opportunity to the public to get acquainted with the history of calendar over the past several thousand years, and the computations associated with the solar Hejri calendar – Iran's official calendar which is the world's most accurate.





## ►► Photo of the Day

### Apollo Sunset

Only a few days from Sun's aphelion, this photograph is made from the Greek island of Naxos to catch the setting (aphelion) sun against the Portara, the primary remnant of the Temple of Apollo.

(Anthony Ayiomamitis)



## ►► IYA2009 Projects in 209 Words

### ► She is an Astronomer

Promoting gender equality and empowering women is one of the United Nations Millennium Development Goals. The IYA2009 Cornerstone project, She is an Astronomer, provides information for female astronomers (both professional and amateur), students, and those interested in gender equality in science. Approximately, one quarter of all professional astronomers are women. In some countries there are no female astronomers, whilst in others more than half the professional astronomers are female. The drop in numbers towards more senior levels suggests that scientific careers are heavily affected by social and cultural factors, and are not determined solely by ability.

She is an Astronomer has its own dedicated website, where people can pick up information about the subject, ask questions and find answers. The main areas are: profiles of living and historical female astronomers (a largely invisible part of the astronomy community), resources available to female astronomers, events taking place during the year, an area for ambassadors of She is an Astronomer, and a forum where issues, lessons learned, and challenges can be discussed. As the International Year of Astronomy 2009 progresses, the website will grow with profiles of current and historical women astronomers added. At the end of IYA2009 the information gathered will be retained and maintained as a legacy from IYA2009.

([www.sheisanastronomer.org](http://www.sheisanastronomer.org))



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Ministry of Education – Islamic Republic of Iran

## ►► Weather Forecast for Tehran

### ► TODAY

Clear to partly cloudy

High: 20 °C

Low: 12 °C

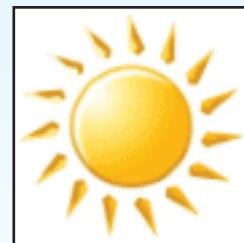


### ► TOMORROW

Clear

High: 19 °C

Low: 12 °C



(Forecast by AccuWeather)

## Front Page:

The lights of metropolitan Tehran as seen from above the Milad Communication tower. Notable in this multi-exposure digital star trail image is the trail of the setting Moon.

Photo: Amin Jamshidi