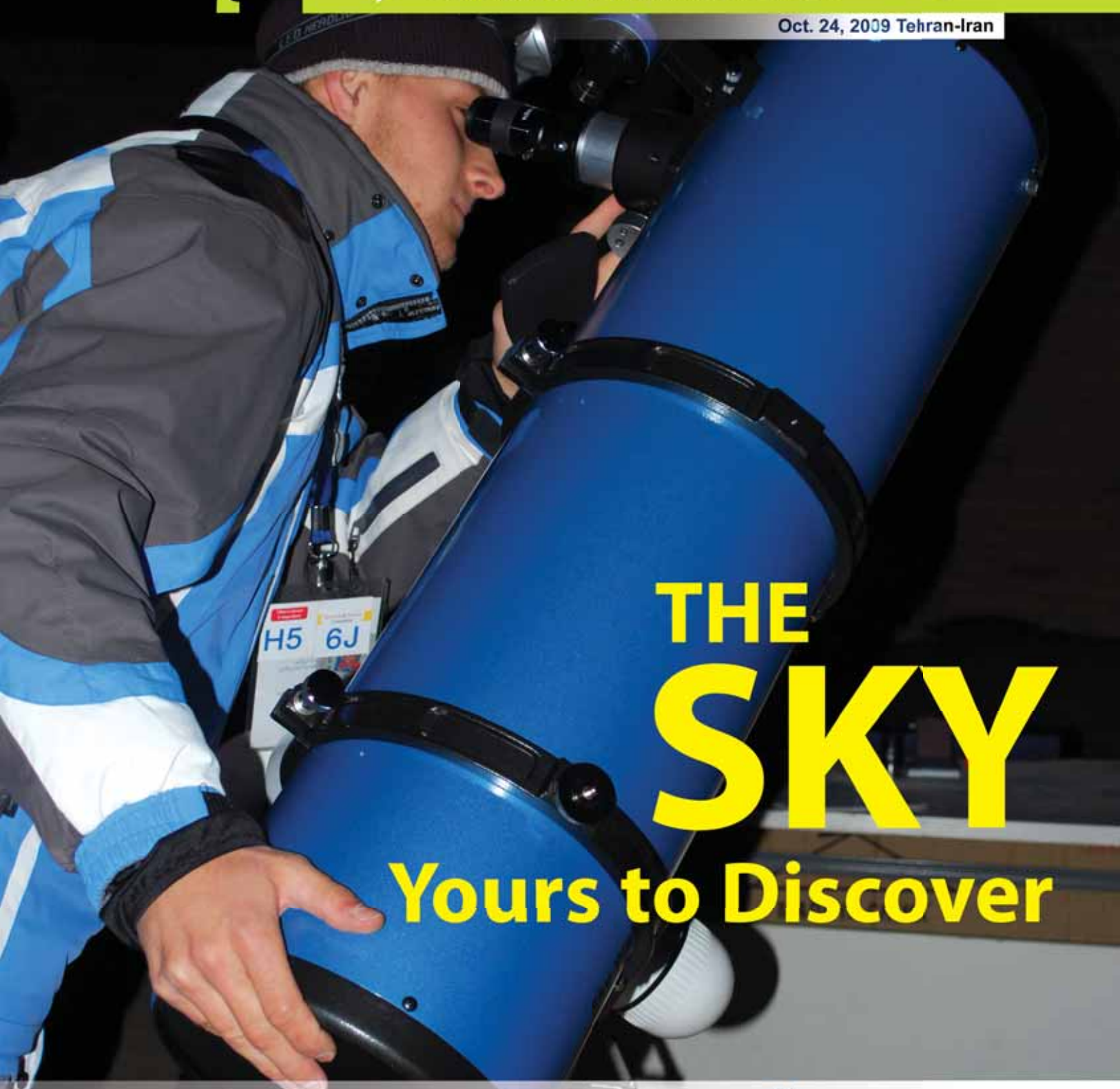
Official Newsletter

7

Astrolabe

3rd International Olympiad on Astronomy and Astrophysics

Oct. 24, 2009 Tehran-Iran



THE SKY

Yours to Discover

TODAY'S PROGRAM

STUDENTS

Visit to Milad Tower

Team Competitions

Tehran's Municipality's Dinner at Hotel Shian

TEAM LEADERS

Moderation

Tehran's Municipality's Dinner at Hotel Shian

3rd IOAA International Olympiad on Astronomy and Astrophysics

Tehran, Iran, Oct. 17-26, 2009

THE UNIVERSE YOURS TO DISCOVER ASTRONOMY 2009

►► *Starry Night of Cyrus*

While another night covers the Persian lands in its peaceful darkness, the Milky Way and the majestic planet Jupiter shine above the tomb of Cyrus in Pasargadae; a 2500-year old World Heritage Site in southern Iran. Bright star Antares or Alpha Scorpius sets in the southwest. This super red giant star dwarfs our sun in diameter and it would envelop all the inner planets if it were in the center of the solar system. To its left (east) where the Milky Way is at its brightest and widest (the central galactic bulge) stars of constellation Sagittarius are visible. The dazzling Jupiter is photographed at its brightest near the opposition with our planet, while it was in the constellation Capricornus. As noted by the photographer "I took the image during the third Sufi Observing Competition, an annual event to bring the best night sky observers from around the country (and in future, from around the world) to a challenging competition to observe a selected list of deep sky objects, including several objects which were mentioned for the first time in history by the famed Persian astronomer Al-Sufi (or Sufi), about a thousand years ago."
Pasargadae was the first capital of the Achaemenid Empire, the capital of Cyrus the Great (559-530 BCE) and also his last resting place. At the height of its power, the Achaemenid Empire spanned three continents, as far west as Libya, nearly all Middle East, up to Central Asia. This has been the largest ancient empire on the planet. Cyrus left an everlasting legacy on leadership as he respected the customs and religions of the lands he conquered. He attributed his success to "Diversity in counsel, unity in command."

Photo by Babak A. Tafreshi - www.twanight.org/tafreshi

Interview with Boonruksa Soonthornthum

Boonruksa Soonthornthum, the president of the International Olympiad on Astronomy and Astrophysics, and also, the director of the National Astronomical Research Institute of Thailand, has talked with Astrolabe on the occasion of the 3rd IOAA.

How well do you think this year's IOAA has proceeded so far?
So far the organization of IOAA has been good. I think the organizers, specially the local organizing committee, have done a lot of hard work and put a lot of effort in organizing this event. I feel both the academic activities, and all the other activities concerning with team leaders and the students, are going on very well, and I am very pleased to see the success of this IOAA

The first Olympiad was held in your country Thailand, do you find anything different between these two Olympiads?
The first IOAA was organized in 2007 to commemorate the King's birthday, and also the King's sister's birthday. Twenty countries participated in that Olympiad. We organized many activities; it was a successful Olympiad and it was the founding Olympiad. Actually in 2006, Iran, Thailand, China, Poland, and Indonesia explored together the possibility of organizing IOAA. We wrote the statutes and the syllabus, so these 5 countries constitute the founding members of IOAA. For the 3rd IOAA, I think Iran had the advantage of the experience gained from previous IOAAs. Therefore IOAA is getting better and better; the next Olympiad will be in China and I hope it will be even better.

I think our idea for the astronomy Olympiad was a good idea. We try to create a friendly atmosphere for the students, and you know, it is not just these 10 days; in the future we will see its impact on astronomy education in Thailand as well as in Iran and all participating countries.

Any ideas on who will win this Olympiad?
It is hard to predict. We should wait until Monday. But what is more important than the prizes is that the students learn how to find knowledge. It is important to teach the students how to think analytically and how to use their imagination. The experience the students gain in IOAA is more important.

Was there anything in IOAA that surprised you?
Actually I like this country but it is not my first trip to Iran. About 5 years ago I came to Iran to give a lecture for the students. The trip was organized by the Ministry of Education, and what impressed me was the enthusiasm of the students for information, and what I liked best was the way they asked their questions… because to learn a subject, you have to know how to ask your questions; I tried to answer all of their questions. And I like the atmosphere in Iran, the way of living… you know, the sound of sermon when I pass a mosque as I walk the streets…

Is there anything that you would like to say to the readers of the newsletter?
I wish everybody success, I wish that IOAA can be continued sustainably and keep contributing to friendship between all countries.

Marking the Exam Papers and Moderation

About 60 individuals are involved in marking the Theory Exam and Data Analysis papers. They had all assembled in Tehran's Teachers Club on Monday, October 19th. Their task consists of marking the Theory Exam papers until Wednesday, October 21st, and marking the Data Analysis papers on Thursday and Friday, 22-23 October. To mark the theory papers, the markers were divided into 17 separate groups. The same number of groups will be involved in marking the Data Analysis papers.
Some of the contestants had solved the problems using several methods, and some despite writing a lot on their papers did not receive very good marks. The marking of the papers has to be finished by Friday, since the marks should be entered by then into the special software created for this purpose, to be compared with the marks given to the students by their team leaders who have marked the exact same papers. If the marks given by the markers are lower than that given by the leaders, the markers will be asked to be present at the

Moderation session on Saturday, October 24th, to discuss the disputed marks with the team leaders. The importance of the Moderation session is in that even an increase by a few tenths of a point in a student's marks, can change the type of medal the student is receiving from silver to gold; this is so because there are no distinct boundaries for the medals and anybody getting a mark higher than 90 percent of the average of the best 3 scores, will get a gold medal.

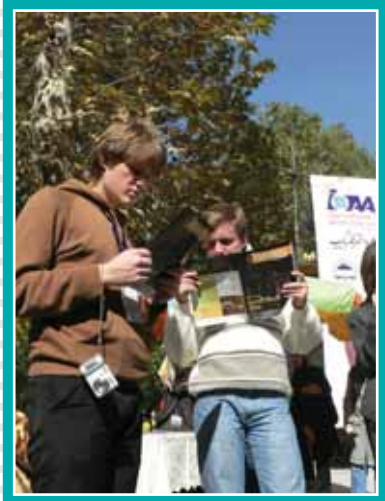







Photos: Ehsan Mehrjoo

Photometer Workshop




The Fans of Astrolabe Newsletter

1961 CE

The Soviet Union puts a man, Yuri Gagarin, into Earth's orbit. He became the first man to travel into space.

1963 CE

Valentina Tereshkova flies into the space with the Vostok 6 spacecraft, she is the first woman in space.

1967 CE

The first pulsar is discovered

Astrolab Workshop





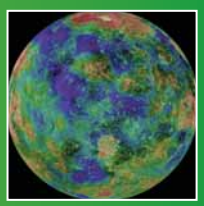



1969 CE

Neil Armstrong and Buzz Aldrin land on the moon in the Apollo 11 space mission.

1970 CE

The first spacecraft lands on Venus.



1990 CE

Hubble space telescope is put into orbit.

Van Gogh and Astronomy

Vincent Van Gogh, the great Dutch painter, created more than 2000 paintings in his lifetime. The artists consider all of these as important, but a few are also of interest to the astronomers… those in which Van Gogh has painted the night sky. One of his most famous paintings, Starry Night, has been analyzed by Charles Whitney and Albert Bohm. Another one of his paintings which involves the night sky, is The Road with Cypress and Star. The painting depicts the sky at sunset in which two astronomical objects, a bright star-like object, and the new Moon's crescent, lie close to each other. As an astronomer, aren't you curious to know what the star-like object was in actuality?

Based on Van Gogh's letters, art historians believe Van Gogh painted this painting at the end of his one-year stay at Saint-Rémy, France, therefore, Van Gogh must have created this painting a little before 16 May, 1890, when he left Saint-Rémy. One can thus ask: When was the last new moon, before Van Gogh left Saint-Rémy? On which day was the waxing crescent visible in the sky? What bright star or planet was at the time visible near the Moon's crescent? With the help of a simple computer program one finds out that the New Moon was on 19 April, 1890. Calculations show that the first visible crescent occurred on April 20th, at 7 PM local time. At that time no bright star could be seen near the moon, but checking the position of the planets shows that Venus with a magnitude of -3.9 was at an angular distance of 4 degrees from the moon. Interestingly, Mercury, with a magnitude of -1.2 (almost as bright as Sirius) was only 3 degrees away from Venus. Thus on the 20th of April, 1890, a little after sunset, three bright objects could be seen in the sky near each other: Moon, Venus, and Mercury. Since the apparent motion of the Moon is rather fast (13 degrees per day), these three objects could have been close to each other only on the 20th.

There is, however, a difference between the real arrangement of the objects in the sky on that night and what is depicted in the painting. In the painting the three objects form

a curve which is congruent with the actual angular distances, but is the mirror image of the actual arrangement. The planets would appear to the right of the moon in the sky, but in the painting they appear to the left. Why? One can guess that Van Gogh did this having in mind the composition of the painting... after all, he was an artist not an astronomer.

Interview with Chatief Kunjaya, Secretary of the 3rd IOAA

Are you happy with the way IOAA has preceded so far?
It has proceeded very well, and the exams were also well-organized.

Do you find anything different between this IOAA and the one held in Indonesia?
Concerning general items like the organizing of the exams, there is not much difference. There are some differences between the supplementary activities planned for IOAA.

Can you predict who will be the winner of this year's Olympiad?
One cannot predict, but based on the prior record of the teams and my own experience, the teams from India, China, and Iran should do well.

During your visit to Iran, were there any surprises?
Well, I was under the impression that I have to wear black in Iran, so I bought black shirts and black suits but when I came here, I saw people wearing many different colors!

Q

1- Which instruments do you use for observing the sky?
2- What are your favorite astronomical objects to observe?
3- What would you like to tell everyone in 3rd IOAA?
4- Was there anything that surprised you when you came to Tehran?

Yoon Soo Park, Republic of Korea

1- Binoculars and my 70mm-diameter telescope
2- The double cluster Perseus, and the Orion nebula
3- Let's be friends and enjoy this competition
4- Iranians are very kind, and, IOAA programs, gifts, and food are excellent

Cho Ho-Jin, Republic of Korea

1-130 mm reflector
2- M45 (Pleiades cluster)
3- Pleased to meet you!
4- The similarities between Tehran and my hometown

Kruk Sándor (Alex), Romania

1- Skywatcher 10" Telescope, Schmidt Cassegrain 1200mm/135mm dobsonian
2- Comets
3- Nice to meet you all and I hope we will keep in touch.
4- People are very warm and friendly.

Shyaminda Basnayake & Yasith Mathangasinghe, Sri Lanka

1- Telescopes, spectrometers
2- Messier objects
3- Whether a winner or not, just get together and make friends as much as you can!
4- Friendliness and hospitality of Iranians

Photo of the Day

Sheltered by the Trees

The rotation of the Earth caused startrails around the North Celestial Pole, in this long exposure image from Gochang, Korea. The big trees protect a historic shrine above a hill.

Kwon O Chul

TWAN

IYA 2009 Projects in 209 Words

Dark skies awareness

The ongoing loss of a dark night sky for much of the world's population is a serious and growing issue that not only impacts astronomical research, but also human health, ecology, safety, economics and energy conservation. According to the United Nations, around 3.3 billion people live in cities. With the growth of large cities, the number of people living in cities could climb to 5 billion by 2030. As cities grow, so does their impact on the global environment.

For this Cornerstone project the IAU and UNESCO collaborate with the US National Optical Astronomy Observatory, representatives of the International Dark-Sky Association, the Starlight Initiative and other national and international partners in dark-sky and environmental education on several related themes. The focus is on three main citizen-scientist programs that measure local levels of light pollution. These programs take the form of "star counts", providing people with a fun and direct way of acquiring heightened awareness of light pollution through firsthand observations of the night sky. The three programs cover the entire IYA2009, namely "GLOBE at Night", "the Great World Wide Star Count", and "How Many Stars", During IYA2009, GLOBE at Night set a new record, with 80% more observations of the world's dark skies than the program's previous best.

http://www.darkskiesawareness.org/

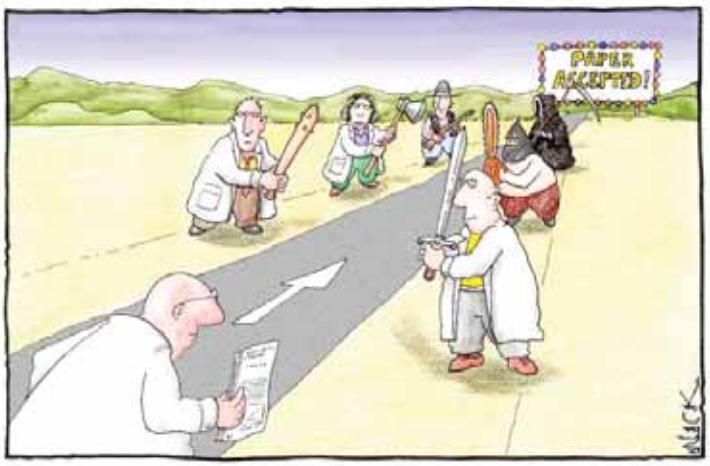
Weather Forecast for Tehran

TODAY

Partly Cloudy
High: **21** °C
Low: **12** °C

TOMORROW

Partly Cloudy
High: **21** °C
Low: **12** °C



Most scientists regarded the new streamlined peer-review process as 'quite an improvement.'

Astrolabe

Managing Editor: Shahab Saghri
Coordinator: Zahra Rahimdel
Editorial Board:
Nader Heydari, Fatemeh Azimloo, M.J. Torabi, B.A. Tafreshi
Art Director: Hassan Azimloo
Supervisor: Mansour Vesali
Produced by: *Nojum* Magazine *(www.nojum.ir)*
Published by: Zarvan Co.

The 3rd IOAA is organized by Young Scholars Club (www.IOAA2009.ir)

Islamic Republic of Iran Ministry of Education

Cover Photo by: Ehsan Mehrjoo