

# ArAS News

NEWSLETTER

ARMENIAN ASTRONOMICAL SOCIETY (A r A S)



No. 93 (May 31, 2016)

---

Editor: Sona FARMANYAN

ArAS Newsletter online at: <http://www.aras.am/ArasNews/arasnews.html>

---

**CONTENTS**

	1	<b>IAU Symposia 2017</b>	3-4
 <p>ՄՇԱԿՈՒԹԱՅԻՆ ԱՍՏՂԱԳԻՏՈՒԹՅՈՒՆԸ ՀԱՅԿԱԿԱՆ ԼԵՈՆԱՇԽԱՐՀՈՒՄ 3-րդ գիտաժողով 20-23 հունիսի 2016թ., Երևան, Հայաստան</p>	2	<b>“Cultural Astronomy in Armenian Highland” Conference for Young Researchers</b>	5-6
	3	<b>Central Asia missions</b>	7-10
	4	<b>NASA-Solar Storms May Have Been Key to Life on Earth: Vladimir Airapetian</b>	11-12
	5	<b>Radik Martirosian’s 80<sup>th</sup> Anniversary</b>	13-15
	6	<b>Gonzalo Alcaino’s 80th Anniversary</b>	16-18
	7	<b>Release of IAU Astronomy Outreach Newsletter 2016 #9 May #1</b>	19
	8	<b>Lunar Phases of June</b>	20
	9	<b>June Calendar of Astronomical Events</b>	21

# IAU Symposia 2017



IAU Executive Committee has approved 9 IAU Symposia to be held in 2017. In addition, IAU S330 was postponed from 2016 and will also be held in 2017. The list is as follows:

**IAU S330: *Astrometry and Astrophysics in the Gaia sky***

24-28 April 2017, Nice, France

**Topics**

- The Gaia mission: presentation of the status and performances after the first 2.5 years of scientific observations
- The first Gaia Data Release and the Hundred Thousand Proper Motions catalogue
- First scientific results of the Gaia mission expected on:
  - (i) Astrometry and Reference frames
  - (ii) Solar system objects & Gaia alerts
  - (iii) Galactic and stellar physics & the Hundred-Thousand-Proper-Motion project for the Hipparcos stars

**IAU S331: *SN1987A, 30 years later***

20-27 February 2017, Saint-Gilles-les-Bains, La Réunion Island, France

**IAU S332: *Astrochemistry VII — Through the Cosmos from Galaxies to Planets***

20-24 March 2017, Puerto Varas, Chile

**IAU S333: *Peering towards Cosmic Dawn***

15-19 May 2017, Dubrovnik, Croatia

**IAU S334: *Rediscovering our Galaxy***

10-14 July 2017, Potsdam, Germany

**IAU S335: *Space Weather of the Heliosphere: Processes and Forecasts***

17-21 July 2017, University of Exeter, UK

**IAU S336: *Astrophysical Masers: Unlocking the Mysteries of the Universe***

4-8 September 2017, Cagliari, Sardinia, Italy

**IAU S337: Pulsar Astrophysics: The next 50 years**

4-8 September 2017, Jodrell Bank Observatory, UK

**IAU S338: Gravitational Wave Astrophysics: Early Results from GW Searches and Electromagnetic Counterparts**

9-14 October 2017, Baton Rouge, LA, USA

**IAU S339: Southern Horizons in Time-Domain Astronomy**

13-17 November 2017, Cape Town, South Africa

The topics of most of the meetings are not yet available. To remind, 7 IAU Symposia are being organized in 2016.

Armenian astronomers are among the most active ones, who organize IAU Symposia (and before, also Colloquia). Here we give the list of IAU meetings held in Armenia:

**IAU Symposium #29: Non-Stable Phenomena in Galaxies**

1966 May 4-12, BAO

67 participants from 12 countries; 54 talks

**IAU Symposium #121: Observational Evidence of Activity in Galaxies**

1986 Jun 3-7, BAO

113 participants from 17 countries; 34 talks and 40 posters

**IAU Symposium #137: Flare Stars in Star Clusters, Associations and Solar Vicinity**

1989 Oct 23-27, BAO

93 participants from 17 countries; 50 talks and 20 posters

**IAU Symposium #194: Activity in Galaxies and Related Phenomena, dedicated to V.A. Ambartsumian's 90<sup>th</sup> anniversary**

1998 Aug 17-21, BAO

100 participants from 22 countries; 52 talks and 84 posters

**IAU Colloquium #184: AGN Surveys, dedicated to B.E. Markarian's memory**

2001 Jun 18-22, BAO

92 participants from 16 countries; 42 talks and 45 posters

**IAU Symposium #304: Multiwavelength AGN Surveys and Studies, dedicated to B.E. Markarian's 100<sup>th</sup> anniversary**

2013 Oct 7-11, NAS RA, Yerevan

141 participants from 28 countries; 80 talks and 63 posters

# “Cultural Astronomy in Armenian Highland” Conference for Young Researchers



ԱՄԿՈՒԹԱՅԻՆ ԱՍՏՂԱԳԻՏՈՒԹՅՈՒՆԸ  
ՀԱՅԿԱԿԱՆ ԼԵՌՆԱՇԽԱՐՀՈՒՄ

3-րդ գիտաժողով

20-23 հունիսի 2016թ., Երևան, Հայաստան

## First Announcement

“Cultural Astronomy in Armenian Highland” Conference for Young Researchers is devoted to the role of astronomy in culture and other fields of human activity and development of these fields due to the knowledge obtained from the Universe. In modern era, astronomy is probably the field of science, which plays a leading role in the formation and development of interdisciplinary sciences. For a long time the astrophysics has reached high level of development, recently new science disciplines have been created, such as astrochemistry, astrobiology, astroinformatics, astrolinguistics, archaeoastronomy plays important role in culture and in the heritage of nations, chronologies and calendars created on the basis of astronomical knowledge, etc. Cultural Astronomy also plays an important role in the development of scientific tourism and scientific journalism. The meeting is aimed at the development of problems of interdisciplinary sciences in Armenia and preparation of a basis for further possible collaborations by means of presentations of available modern knowledge in various areas of culture by experts from different professions and by joint discussions.

### Topics

- Astronomical heritage of Armenian
- Ancient astronomy
- Astronomy in the Middle Ages
- Astronomy in ancient cultures
- Ethnoastronomy
- Astronomical bases of Philosophy
- Religion and Astronomy
- The problem of Extraterrestrial Intelligence
- Astronomy and Astrology
- Astronomy in Folklore and Poetry
- Astronomy in Arts
- Astronomy in Fashion
- Astrolinguistics
- Astroheraldry
- Scientific Tourism
- Scientific Journalism
- Amateur Astronomy
- Astronomical Education
- Popular Astronomy

**Organizers**

Armenian Astronomical Society (ArAS)  
 Byurakan Astrophysical Observatory (BAO)  
 National Academy of Sciences of RA (NAS RA)  
 Support Program for Young Scientists  
 Swiss Cooperation South Caucasus

**Scientific Organizing Committee (SOC)**

Areg Mickaelian (BAO, ArAS) *Chair*  
 Juan Antonio Belmonte Aviles  
 Piero Benvenuti  
 Vardan Devrikyan  
 Sona Farmanyan  
 Mary Kirakosyan  
 Lilit Mkrтчhyan  
 Efthymios Nicolaidis  
 Magda Stavinski  
 Yuri Suvaryan (NAS RA)

**Registration**

To register please follow the link: <http://www.aras.am/Meetings/AAC/registration.php>

**Proceedings of meeting**

The Proceedings of the meeting will be published as an individual book by NAS RA Publishing House. The deadline for submission of papers is August 15, 2016.

Number of allocated pages:

Invited talks	10 pages
Contributed talks	6 pages
Posters	2 pages

Details will be given during the meeting.

**Dates and deadlines**

10.06.2016	Deadline for registration and submission of contributions
15.06.2016	Meeting program available
20-23.06.2016	“ <i>Cultural Astronomy in Armenian Highland</i> ” Conference
15.08.2016	Deadline for submission of papers for the Proceedings

**Contacts**

**Official webpage:** <http://www.aras.am/Meetings/AAC/>  
 Sona Farmanyan  
 Phone: 055-911307, 010-525505  
 E-mail: [sona.farmanyan@mail.ru](mailto:sona.farmanyan@mail.ru)

## Central Asian Mission

*Visit of Areg Mickaelian and Elena Nikoghosyan  
to Uzbekistan, Kazakhstan and Tajikistan  
12-23.05.2016*

On 12-23 May 2016, BAO Deputy Director on International Affairs Areg Mickaelian and BAO Scientific Secretary Elena Nikoghosyan visited three Central Asian countries with developed astronomy/astrophysics, Uzbekistan, Kazakhstan and Tajikistan to renovate former contacts and collaboration and establish new possible collaborations and projects. The mission was scheduled as follows: 12-17 May – Uzbekistan, 17-20 May – Kazakhstan, and 20-23 May – Tajikistan. Together with visits to astronomical/astrophysical institutes in Tashkent, Almaty and Dushanbe, visits to high-altitude observatories and stations, as well as seminars, discussions and informal meetings were planned.

Here we give brief information on the state of astronomy in Uzbekistan, Kazakhstan and Tajikistan.

### Uzbekistan



[Ulugh Beg Astronomical Institute \(UBAI\)](#) of the Uzbek Academy of Sciences, Tashkent (founded in 1873).

**Director:** *Prof. Shuhrat Ehgamberdiev*; **other related people:** Alisher Hojaev (Uzbek astronomer, who worked in Byurakan in 1980s and received his PhD in Astrophysics from BAO under the supervision of *Prof. Ludwik Mirzoyan*).

**Observatories:** Kitab station, Maidanak Astronomical Observatory (MAO, altitude 2700m, AZT-22 1.5m telescope, Zeiss-1000 1m telescope, Zeiss-600 Northern, Southern and Eastern 0.6m telescopes, Taiwan Automated Telescope (TAT), Differential Image Motion Monitor (DIMM), AMT-1 0.5m telescope).

**Research subjects:** *Solar-terrestrial physics; stellar astrophysics; extra-terrestrial astronomy; galactic astronomy and cosmology; theoretical astrophysics.*

**Samarkand State University** with teaching astronomy.



*Left: Areg Mickaelian, Elena Nikoghosyan and Alisher Hojaev in Samarkand, Uzbekistan;  
Right: the quadrant of Ulugh Beg historical observatory in Samarkand.*

Discussions were held with *Prof. Ehgamberdiev* and *Dr. Hojaev* on the recovery of previous contacts and collaboration, joining IAU SWA ROAD, joint observations, digitization and creation of VOs, ISTC projects, Archaeoastronomy matters.

## Kazakhstan



[Fesenkov Astrophysical Institute \(APhI\)](#), Almaty  
(founded in 1941).

**Acting Director:** Rashit Valiullin; **other related people:** Academic Secretary Gauhar Aimanova, *Prof. Eduard Denissyuk*, *Prof. Ludmila Kondratyeva*, *Prof. Victor*

*Tejfel*, *Prof. Chingis Omarov*, Anatoly Kusakin, Alexander Serebryanskiy, Gennadiy Minasyants, Tamara Minasyants, engineers Maksim Krugov and Inna Reva.

**Observatories:** Kamenskoe Plateau Observatory (altitude 1450m, AZT-8 70cm, Zeiss-600 60cm, Hertz telescope-reflector 50cm, Wide aperture Maksutov meniscus telescope 50cm), Tian-Shan Observatory (TShAO, altitude 2735m, two 1m telescopes) and Assy-Turgen Observatory (altitude 2750m, 1m telescope).

**Research subjects:** *physics of stars and nebulae; physics of the Moon and planets; cosmology, stellar dynamics & computational astrophysics; nuclear astrophysics; artificial Earth satellites; advanced astrophysical research.*

Areg Mickaelian and Elena Nikoghosyan also had a visit to **Kazakh National University (KazNU)**, where they met *Prof. Kenes Kuratov*, Gulmira Yar-Muhamedova and Aygul Beisebaeva and discussed possible collaboration for teaching students.

Seminars were given at Fesenkov Astrophysical Institute (18.05.2016):

- Elena Nikoghosyan: *Recent studies on young stars and star-formation regions*
- Areg Mickaelian: *Active galaxies among X-ray, IR and radio sources*
- Areg Mickaelian: *Opportunities for joint projects and collaboration between Armenia and Kazakhstan*



*Left: Elena Nikoghosyan delivering a seminar at Fesenkov Astrophysical Institute (APhI), Almaty, Kazakhstan; Right: 1m telescope of Tian Shan Observatory of APhI*



*Tian Shan Observatory of APhI with its two 1m telescopes*

Discussions were held with *Dr. Valiullin, Dr. Aimanova* and Maksim Krugov on the recovery of previous contacts and collaboration, joining IAU SWA ROAD, joint observations, digitization and creation of VOs, ISTC projects.

### **Tajikistan**

[Institute of Astrophysics](#) of Academy of Science of the Republic of Tajikistan, Dushanbe (founded in 1932).

**Director:** Gulchehra Kokhirova; **other related people:** Scientific Secretary Firuza Rahmat, *Profs.* Pulat Babadjanov and Khursand Ibadinov, other astronomers; Academy of Science Vice-President *Prof.* Saudmuhamad Odinaev and Academy of Science Principal Scientific Secretary.

**Observatories:** Hissar Observatory (HisAO, altitude 730m, AZT-8, 40cm astrograph), the observatory “Sanglokh” (altitude 2300m) in Dangara area (1m telescope, 60cm Carl Zeiss) and its branch, the observatory “Pamir” (altitude 4350m) in Murghab district of Badakhshan (70cm telescope).

**Research subjects:** *comets and asteroids, experimental astrophysics, meteor astronomy, ionospheric, astrometry, variable stars, structure and dynamics of stellar systems.*

Seminars were given at the Tajik Academy of Sciences (20.05.2016):

- Elena Nikoghosyan: *Recent studies on young stars and star-formation regions*
- Areg Mickaelian: *Active galaxies among X-ray, IR and radio sources*
- Areg Mickaelian: *Modern state of astronomy in Armenia*

Discussions were held with *Profs.* Kohirova, Babadjanov and Ibadinov, and Firuza Rahmat on the recovery of previous contacts and collaboration, joining IAU SWA ROAD, joint observations, digitization and creation of VOs, ISTC projects.



*Most prominent Tajik astronomers Profs. Pulat Babadjanov and Khursand Ibadinov (both former Directors of Tajik Institute of Astrophysics, IoAp) at the Tajik Academy of Science hall before the seminar by Areg Mickaelian and Elena Nikoghosyan*



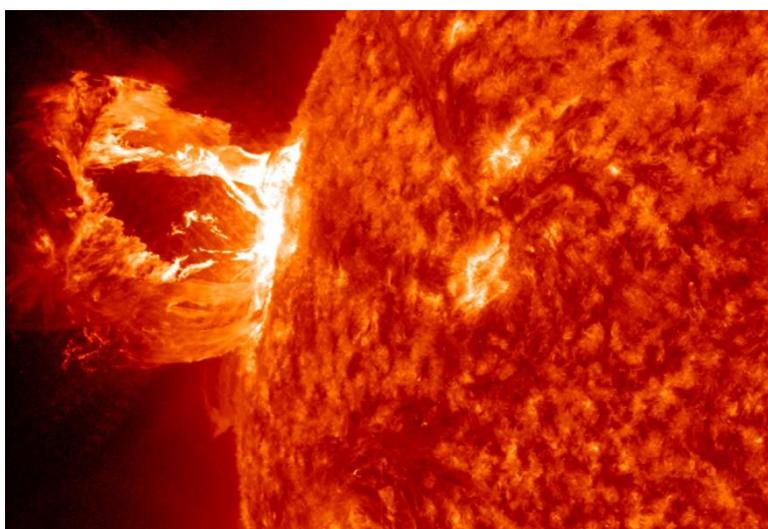
*Left: Scientific Secretary of IoAp Firuza Rahmat, Areg Mickaelian, Elena Nikoghosyan and Director of IoAp Gulchehra Kohirova near Sanglokh Observatory;  
Right: The dome of the 1m telescope of Sanglokh Observatory*

The Central Asian mission was rather useful and efficient from the point of view of future possible contacts and collaborations. At present entering of Uzbekistan, Kazakhstan and Tajikistan to IAU South West Asian ROAD is being actively discussed and a big project on digitization of plate archives in all these countries and creation of national virtual observatories is in preparation. We will also work on joint observing proposals and mutual visits of senior and young scientists for collaboration, scientific meetings and schools.

*Areg Mickaelian, Elena Nikoghosyan*

## NASA-Solar Storms May Have Been Key to Life on Earth

Our sun's adolescence was stormy and new evidence shows that these tempests may have been just the key to seeding life as we know it. Some 4 billion years ago, the sun shone with only about three-quarters the brightness we see today, but its surface roiled with giant eruptions spewing enormous amounts of solar material and radiation out into space. These powerful solar explosions may have provided the crucial energy needed to warm Earth, despite the sun's faintness. The eruptions also may have furnished the energy needed to turn simple molecules into the complex molecules such as RNA and DNA that were necessary for life. The research was published in *Nature Geoscience* on May 23, 2016, by a team of scientists from NASA.



Understanding what conditions were necessary for life on our planet helps us both trace the origins of life on Earth and guide the search for life on other planets. Until now, however, fully mapping Earth's evolution has been hindered by the simple fact that the young sun wasn't luminous enough to warm Earth. "Back then, Earth received only about 70 percent of the energy from the sun than it does today," said Vladimir Airapetian, lead author of the paper and a solar scientist at NASA's Goddard Space Flight Center in Greenbelt, Maryland. "That means Earth should have been an icy ball. Instead, geological evidence says it was a warm globe with liquid water. We call this the Faint Young Sun Paradox. Our new research shows that solar storms could have been central to warming Earth."

Scientists are able to piece together the history of the sun by searching for similar stars in our galaxy. By placing these sun-like stars in order according to their age, the stars appear as a functional timeline of how our own sun evolved. It is from this kind of data that scientists know the sun was fainter 4 billion years ago. Such studies also show that young stars frequently produce powerful flares – giant bursts of light and radiation -- similar to the flares we see on our own sun today. Such flares are often accompanied by huge clouds of solar material, called coronal mass ejections, or CMEs, which erupt out into space. NASA's Kepler mission found stars that resemble our sun about a few million years after its birth. The Kepler data showed many examples of what are called "superflares" – enormous explosions so rare today that we only experience them once

every 100 years or so. Yet the Kepler data also show these youngsters producing as many as ten superflares a day.

While our sun still produces flares and CMEs, they are not so frequent or intense. What's more, Earth today has a strong magnetic field that helps keep the bulk of the energy from such space weather from reaching Earth. Space weather can, however, significantly disturb a magnetic bubble around our planet, the magnetosphere, a phenomenon referred to as geomagnetic storms that can affect radio communications and our satellites in space. It also creates auroras – most often in a narrow region near the poles where Earth's magnetic fields bow down to touch the planet.

Our young Earth, however, had a weaker magnetic field, with a much wider footprint near the poles. "Our calculations show that you would have regularly seen auroras all the way down in South Carolina," says Airapetian. "And as the particles from the space weather traveled down the magnetic field lines, they would have slammed into abundant nitrogen molecules in the atmosphere. Changing the atmosphere's chemistry turns out to have made all the difference for life on Earth."

The atmosphere of early Earth was also different than it is now: Molecular nitrogen – that is, two nitrogen atoms bound together into a molecule – made up 90 percent of the atmosphere, compared to only 78 percent today. As energetic particles slammed into these nitrogen molecules, the impact broke them up into individual nitrogen atoms. They, in turn, collided with carbon dioxide, separating those molecules into carbon monoxide and oxygen.

The free-floating nitrogen and oxygen combined into nitrous oxide, which is a powerful greenhouse gas. When it comes to warming the atmosphere, nitrous oxide is some 300 times more powerful than carbon dioxide. The teams' calculations show that if the early atmosphere housed less than one percent as much nitrous oxide as it did carbon dioxide, it would warm the planet enough for liquid water to exist.

This newly discovered constant influx of solar particles to early Earth may have done more than just warm the atmosphere, it may also have provided the energy needed to make complex chemicals. In a planet scattered evenly with simple molecules, it takes a huge amount of incoming energy to create the complex molecules such as RNA and DNA that eventually seeded life.

While enough energy appears to be hugely important for a growing planet, too much would also be an issue -- a constant chain of solar eruptions producing showers of particle radiation can be quite detrimental. Such an onslaught of magnetic clouds can rip off a planet's atmosphere if the magnetosphere is too weak. Understanding these kinds of balances help scientists determine what kinds of stars and what kinds of planets could be hospitable for life.

"We want to gather all this information together, how close a planet is to the star, how energetic the star is, how strong the planet's magnetosphere is in order to help search for habitable planets around stars near our own and throughout the galaxy," said William Danchi, principal investigator of the project at Goddard and a co-author on the paper. "This work includes scientists from many fields -- those who study the sun, the stars, the planets, chemistry and biology. Working together we can create a robust description of what the early days of our home planet looked like – and where life might exist elsewhere.

*Vladimir Airapetian*

## Radik Martirosyan's 80<sup>th</sup> Anniversary



*Prof.* Radik Martirosyan, an Armenian well-known radiophysicist, celebrated his 80th anniversary on May 1. Radik Martirosyan was born on 01.05.1936 in v. Mataghis, Martakert province, Artsakh. He has graduated from the YSU Radiophysics Department in 1958.

His first interest in science was astrophysics, particularly radioastronomy. However, he took post-graduate fellowship at the USSR Academy of Sciences P.N. Lebedev Institute of Physics under the supervision of the Nobel Prize Winner acad. A.S. Prokhorov and in 1964 defending his thesis was awarded Ph.D. degree in Phys.-Math. sciences. Since 1964 he continued his research activities at the newly created NAS RA Institute of Radiophysics and Electronics (IRPhE), and since 1965, he simultaneously taught at the YSU; as an Associate Professor since 1966, and as a Professor since 1982. He was Head of Laboratory (1970-1980), Deputy Director (1971-1981) and Director (1980-2006) of IRPhE, Head of Chair of Ultrahigh Frequencies of YSU Radiophysics Department (1983-1993) and YSU Rector (1993-2006). During his rectorship, new departments and new specialties were created at the YSU and the number of students was twice increased. In 1980, he was awarded Doctoral degree in Phys.-Math. sciences. Martirosyan was elected NAS RA Corresponding member (1986) and Full member (1990) in Radiophysics and Electronics, NAS RA Presidium member (since 1993) and President of NAS RA (since 2006). He is the Chair of the International Steering Committee of Viktor Ambartsumian Prize since 2009. During the last 5 years, Martirosyan's role was significant for the accomplishment of NAS RA legislative program, rejuvenation of institutes' directors, elections of new Academy members, improvement of publishing and library, international collaboration and other scientific-organizational matters.



*Left: Radik Martirosyan with RA President Serzh Sargyan, right: Radik Martirosyan with Prof. Gury Marchuk (President of the USSR Academy of Sciences 1986-1991), Fadey Sargsyan, Davit Sedrakian and Viktor Ambartsumian*

Martirosyan's research relates to quantum and ultrahigh frequencies radiophysics, application problems of superconductivity, space research, radioastronomy, studies of Earth's natural resources by radiophysical methods. He has obtained important results in the field of investigation and creation of new, high efficiency quantum amplifiers working in cm and mm radiowavelength ranges. He has discovered and studied new materials serving as active medium quantum amplifiers. Based on these works, quantum devices of new type have been created that later have been applied in radioastronomical research.



*Radik Martirosyan at the Award Ceremony of the first Viktor Ambartsumian International Science Prize in 2010, awarded to Michel Mayor, Garik Israelian and Nuno Santos.*



*Left: Radik Martirosyan awarding Viktor Ambartsumian International Science Prize 2012 to Jaan Einasto, right: Radik Martirosyan with Viktor Ambartsumian International Science Prize 2014 winners, Brent Tully, Felix Aharonian and Igor Karachentsev*

Martirosyan has participated in the space program “Intercosmos”, particularly in accomplishment of “Vega” project. He is the author of more than 200 scientific papers, two books published in Sweden and the USA. He is a laureate of Ukrainian and ArmSSR (1988) state prizes. He was awarded the Armenian Order of St. Mesrop Mashtots (1999), “Sign of Honour” and Peoples’ Friendship orders, French National Order of the Legion of Honour and Italian order “*For Services in the fields of Science and Culture*”, Gagarin gold medal and other medals.

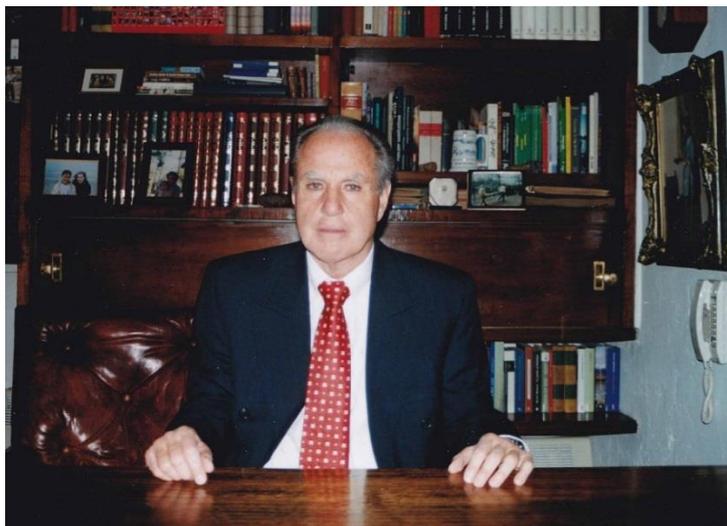


*Radik Martirosyan receiving at NAS RA the winners of the International Astronomical Olympiad 2014*

For his significant contribution in the development of astrophysics and his great support to BAO and ArAS, as well as on the occasion of his 80<sup>th</sup> anniversary ArAS awarded Prof. Radik Martirosyan a certificate of ArAS Honorary Member.

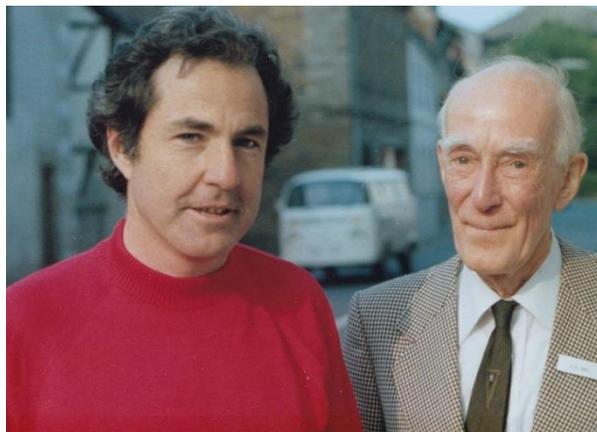
*Areg Mickaelian*

## Gonzalo Alcaino's 80<sup>th</sup> Anniversary



Gonzalo Alcaino Barros was born in Santiago, Chile on 28 May 1936. By his education, he is an architect and an astronomer and has worked in both areas, but mostly in astronomy, in which he has published 192 papers in AJ, ApJ, and A&A. His work has been basically in the field of globular clusters following around 400 nights of observations with the largest telescopes installed in Chile at Cerro Tololo, the Carnegie institution and ESO La Silla and Paranal.

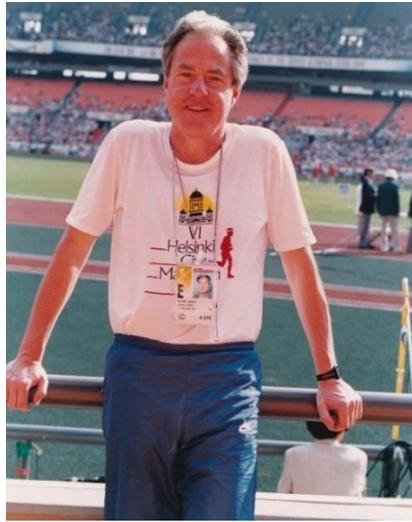
*Dr. Alcaino is a member of International Astronomical Union (IAU) and American Astronomical Society (AAS).*



*Gonzalo Alcaino with Prof. Jan Oort (The Netherlands) (left) and Alan Sandage (USA) (right).*

His main passion has been the sport of athletics and the study of human nature. As a sport journalist he has covered nine Olympic Games since Rome 1960 and nine World Championships since Rome 1987 and around forty international meetings in Europe. He was the first Chilean to participate in eight major world marathons, namely Boston 1962, 1980, New York 1984, Rotterdam 1986, 1987, 1989, Helsinki 1986 and London 1989.

In the area of human behavior he has published three books: *On time and Happiness*, *The Silence at the Eye of the Storm*, and *How to Manage your Own Life*. The last two books have been translated into Russian and are found in Amazon.



*Gonzalo Alcaino in Seoul during the Olympics 1988*

In 1978 he founded in Santiago the **Isaac Newton Institute (INI)**, (<http://www.ini.cl/>), an international astronomical institute having its Headquarters based in Santiago, Chile. It is a non-profit organization, which brought on the task to produce the highest level of scientific research in astronomy. Between 1978 and 1992, Chilean scientists worked in the Institute, using the international telescopes of Cerro Tololo, Las Campanas and La Silla, leading to the publication of over 100 papers. From the beginning, the Institute's policy has been to publish exclusively in the 4 journals of highest prestige in this discipline; two American and two European ones: *The Astronomical Journal (AJ)*, *The Astrophysical Journal (ApJ)*, *Monthly Notices of the Royal Astronomical Society (MNRAS)*, and *Astronomy and Astrophysics (A&A)*.



*Map of INI 15 branches in 9 countries*

In 1992 *Dr. Alcaino* opened the first institute Branch in Moscow. Thereafter in the year 2000 he established Branches in 14 other Observatories and Universities in Eastern Europe and Eurasia including Armenia. INI unites 355 scientists. This unique endeavor in the international world of science has been so successful that up to May 2016 has published 863 papers in the four most prestigious journals in astronomy (AJ, ApJ, A&A and MNRAS). This places INI as one of the most productive centres in the world of science, while it also assists more than three hundred astronomers from 9 countries, providing for a strong humanitarian perspective. INI's ongoing mission is to increase the rate of scientific output as well as the number of branches and staff members.

INI Armenian Branch was founded 15 years ago, in June 2000 wishing to contribute to further development of scientific research in observational and theoretical astrophysics in Armenia. The results of the research conducted by the scientists of INI Armenian Branch are being submitted for publication to the 4 abovementioned most prestigious journals in astronomy/astrophysics. During these years, INI Armenian Branch staff members have been 27 astronomers. 6 research groups have been created in frame of the Armenian Branch for more purposeful work. *Physics and Evolution of Stars, Variable Stars, Physics and Evolution of Galaxies, Surveys and Studies of New Objects, Observational Cosmology and Theoretical Astrophysics*. So far, during 15 years, INI Armenian Branch staff members have published 74 papers, including 46 in A&A, 13 in AJ, 11 ApJ (and ApJL / ApJS) and 4 in MNRAS.

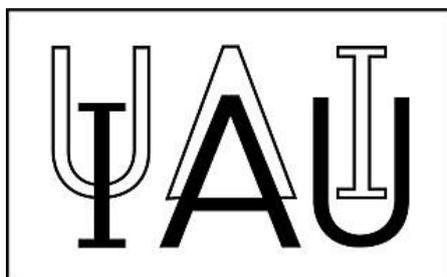


*INI Armenian Branch staff members*

On behalf of the Armenian Astronomical Society and INI Armenian Branch we congratulate *Dr. Alcaino* for this anniversary and wish great health and many new endeavours and achievements.

*Dr. Areg Mickaelian*  
Resident Director, INI Armenian Branch

# RELEASE OF IAU ASTRONOMY OUTREACH NEWSLETTER 2016 #9 May #1



In this newsletter:

From the Editors

Medellin ready to host Communicating Astronomy with the Public 2016 from 16 - 20 May 2016

Portuguese Language Office of Astronomy for Development (PLOAD)

IAU's Network for Astronomy School Education (NASE)

National Outreach Contact Corner: News from Portugal

Transit of Mercury - share your activities

AASWOMEN Newsletter

NASA Intern and Fellow Opportunities for International Students

The Story of Space 2017 - An invitation to partners and collaborators

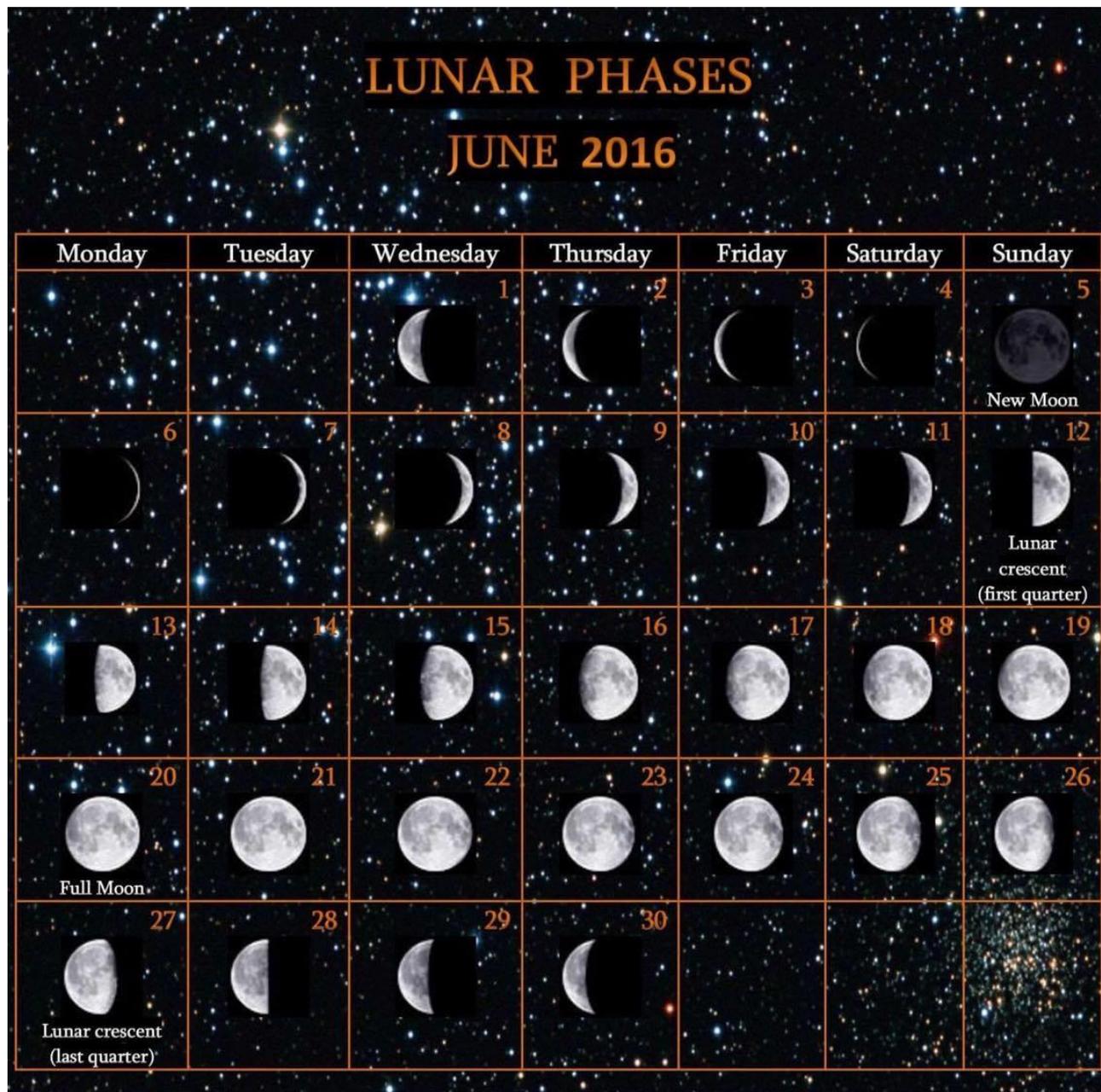
Meetings & global events for 2016

- a. Recently added
- b. Important deadlines
- c. Upcoming

Contributions to IAU Outreach Newsletter for 2016



# LUNAR PHASES OF JUNE



# JUNE CALENDAR OF ASTRONOMICAL EVENTS

