

BAO ANNUAL MEETING

The annual meeting of Byurakan Astrophysical Observatory (BAO) scientific staff was held on December 15. NAS RA President *Prof. Radik Martirosyan* and NAS RA Physics and Astrophysics Department Academician-Secretary *Prof. Yuri Chilingaryan* were also present. **BAO Director Dr. Haik Harutyunian** presented a summarizing report on the results of 2014.



Studies of stars, star-forming regions, Supernovae and active galaxies, solutions of cosmological and theoretical astrophysics problems and other results were named among the **most important scientific results** of the year. In 2014, BAO astronomers showed high productivity in scientific publications, though most of them appeared in **proceedings of meetings**. This was partially due to publication of Proceedings of IAU Symposium 304 held in 2013 in Armenia dedicated to Benjamin Markarian's 100th anniversary, Proceedings of the Armenian-Georgian Colloquium held in 2013 dedicated to Ludwik Mirozjan's 90th anniversary and Proceedings of Archaeoastronomical Meeting held in 2012 dedicated to Anania Shirakatsi's 1400th anniversary. In 2014, an English book “*Viktor Ambartsumian: Life and Activities*” was also published.

Among the **events held in BAO during 2014**, the meeting “*Relation of Astronomy to other sciences, culture and society*” and the first BAO Science Camp held in October were mentioned. BAO astronomers have participated in a number of **international meetings**, including the European Week of Astronomy and Space Science (EWASS) held in July in Geneva, Switzerland, and several young astronomers have participated in **international schools**, such as the European NEON, IAU International School for Young Astronomers (ISYA), etc. In addition, BAO scientists had a number of missions for research and collaboration. Many **BAO General Seminars** have been given, also including a number of foreign astronomers.

BAO development strategic programs and future prospects were also discussed at the meeting.

ARAS PRIZE for YOUNG ASTRONOMERS (YERVANT TERZIAN PRIZE) 2014



ArAS Annual Prize for Young Astronomers (Yervant Terzian Prize) 2014 was awarded at Byurakan Astrophysical Observatory (BAO) Annual Meeting held on December 15 in Byurakan. This time the Prize winner was **Gurgen Paronyan** (BAO, Armenia)

Gurgen M. Paronyan was born on 12.06.1985 in Yerevan. He graduated from Yerevan State University (YSU) in 2006 with B.Sc. and in 2008 with M.Sc. He joined Byurakan Astrophysical Observatory (BAO) in 2006 working with *Dr. R.R. Andreyan* and *Dr. M. A. Hovhannisyán*. He is a Junior Research Associate. Since 2010 Gurgen works in Armenian Virtual Observatory (ArVO) research group and his supervisor is *Dr. A. M. Mickaelian*. Since 2012 he also is the person in charge for BAO Plate Archive. His Ph.D. thesis subject was accepted at BAO Scientific Council in 2014 as “*Study of X-ray Properties of Active Galaxies*”. Since 2014 Gurgen also works on Space Debris project with “Roskosmos” (ISON), Russia. He is ArAS member since 2010. Gurgen’s research interests are AGN, radiogalaxies, QSOs, X-ray properties of active galaxies, multiwavelength studies of galaxies. In 2014 he showed rather high activity; 2 published refereed papers, 2 accepted ones, 8 papers in proceedings of meetings, including 6 posters presented at IAU Symposium #304, participation in an international conference in Pulkovo Observatory (Russia) and in international school for young astrophysics in Tajikistan (with talks given in each of them), 2 general seminars at BAO, participation in ANSEF grant PS-3605 on “*X-ray Properties of Active Galaxies*”, etc.



The Prize was established in 2004 and is being sponsored by one of ArAS Co-Presidents **Prof. Yervant Terzian** (Cornell University, USA). Since 2009 the Prize is named after Yervant Terzian. Altogether, 12 young astronomers have been winners (in some years the Prize was shared between two astronomers), including Lusine Sargsyan, Vardan Adibekyan and Parandzem Sinamyán; each of them twice has become winner.

ArAS Prize for Young Astronomers (Yervant Terzian Prize)

2014	Gurgen PARONYAN (BAO)
2013	Hayk ABRAHAMYAN (BAO) and Avet HARUTYUNYAN (IAC, Spain)
2012	Vardan ADIBEKYAN (CAUP, Portugal)
2011	Marine AVTANDILYAN (ASPU)
2010	Parandzem SINAMYAN (BAO)
2009	Lusine SARGSYAN (BAO)
2008	Vardan ADIBEKYAN (YSU) and Artur HAKOBYAN (BAO)
2007	Igor CHILINGARIAN (OBSPM, France)
2006	Lilit HOVHANNISYAN (BAO) and Parandzem SINAMYAN (BAO)
2005	Artak HARUTYUNYAN (BAO) and Elena HOVHANNESSIAN (BAO)
2004	Lusine SARGSYAN (BAO)

GTPP CERTIFICATE to ASHOT HAKOBYAN and SERGEY NERSISSIAN

Ashot Hakobyan and **Sergey Nersissian** were awarded **Galileo Teacher Training Program (GTTP)** certificates thus becoming **Galileo teachers of Armenia**. The award ceremony was held at the BAO general annual meeting on December 15. It is supposed that Galileo teachers use novel methods in astronomy education and train other teachers sharing their knowledge.



Dr. Ashot Hakobyan is a senior research associate at BAO and teaches at Yerevan State University (YSU) Department of Physics, Chair of General Physics and Astrophysics. He is the Scientific Secretary of BAO Specialized Council. His research interests are stellar associations, flare stars, and statistical methods in astrophysics. He has published more than 30 papers. Since 2001 he is the Chair of Jury of Armenian Republican Astronomical Olympiads. He has participated in International Astronomical Olympiads as Armenian team leader.

Dr. Sergey Nersisyan has worked at BAO and since 2002 he teaches Physics and Astrophysics at Armenian State Pedagogical University (ASPU). His research interests were studies of carbon stars and star clusters. Sergey is an ArAS member and a member of Jury of Armenian Republican Astronomical Olympiads. He has participated in International Astronomical Olympiads as Armenian team leader. He has published the popular book “*Starry Sky*” (2000) and the textbook “*Astronomy for Secondary Schools*” (2003).

Galileo Teachers in Armenia

2014	Sergey NERSISYAN (Armenian State Pedagogical University)
2014	Ashot HAKOBYAN (BAO)
2013	Robert SARGSYAN (Basic College of Armenian State Agrarian University)
2012	Avetik GRIGORYAN (Armenian Youth Aero-Space Club)
2011	Tigran NAZARYAN (BAO)
2011	Marietta GYULZADYAN (BAO, Physics-Mathematics School)

CREATION of “VIKTOR AMBARTSUMIAN’S DESCENDANTS” FOUNDATION



“Viktor A. Ambartsumian's Descendants” educational charitable foundation was founded in 2014 and is pursuing educational, charitable and other public objectives. The necessity of creation of the foundation is due to the great success of 35 Armenian pupils in the international Astronomical Olympiads in the last 15 years. The main objective of the foundation is to encourage pupils and among them develop interest in Astronomy, as well as to identify gifted pupils in National Astronomical Olympiads and to support their participation in International Astronomical Olympiads, later on to be informed about their further research activities. The other objective of the

foundation is to support Astronomy at all levels in Armenia and to preserve outstanding scientist Viktor Ambartsumian’s scientific heritage. The potential beneficiaries of the foundation are pupils, Astronomy Olympiads participants, young astronomers studying and studied abroad, those operating in the field of Astronomy and persons contributing to the development and propagation of Astronomy.

For supporting Astronomy at all levels in Armenia and to preserve outstanding scientist Viktor Ambartsumian’s scientific heritage, Viktor Ambartsumian International Prize Winners, Nobel Prize Winners and famous Armenian astronomers all over the world got together to put their efforts in the following areas:

- Support to Professional Astronomers
- Support to Astronomy Students
- Support to Astronomy Olympiads participants
- Support to Astronomy teachers
- Support to Amateur Astronomers
- Popularization of Astronomy

Projects for Funding

- ❖ Support to Scientific Projects by Professional Astronomers
- ❖ Support of Meetings for Young Astronomers
- ❖ Byurakan International Summer Schools (BISS)
- ❖ Byurakan Summer Schools (BSS) for YSU Students
- ❖ BAO Science Camps (BSC)
- ❖ Pupils Visits to BAO
- ❖ School Lectures by Professional Astronomers
- ❖ Junior Astronomer Club activities
- ❖ Public Lectures by Professional Astronomers
- ❖ Astronomical Public Events
- ❖ International Astronomical Olympiads Online Database
- ❖ Scholarship for Astronomy Olympiads Participants

- ❖ Scholarship for Pupils Interested in Astronomy
- ❖ Scholarship for YSU Astrophysics Students
- ❖ Support to Astronomy Teachers
- ❖ Astronomy Teachers Training, Support to GTTP
- ❖ Support to Amateur Astronomers
- ❖ Support to “Archaeoastronomy and Astronomy in Culture” Project
- ❖ “Astghaghtak” Online Journal
- ❖ Building of Planetaria in Armenia
- ❖ Purchase of Small Telescopes for Schools
- ❖ Publication and Production of Astronomical Books and other Promotional Materials
- ❖ Support to Astrojournalism

The student of Viktor Ambartsumian and the author of the book “Viktor A. Ambartsumian's Descendants” **Dr. Robert Sargsyan** and the leading scientist of Byurakan Astrophysical Observatory and Co-president of ArAS **Dr. Areg Mickaelian** are the founders of “Viktor A. Ambartsumian's Descendants” foundation. Robert Sargsyan is the Director of the foundation and Areg Mickaelian is the coordinator of the Board of Trustees.

The Foundation’s webpage is available in the following link: va-fund.aras.am

*Areg Mickaelian, Board of Trustees Coordinator,
Sona Farmanyanyan, Program Coordinator,
“Viktor A. Ambartsumian's Descendants” Foundation*

INTERNATIONAL SCHOOL for YOUNG ASTRONOMERS in THAILAND

ISYA 2014
36th International School for Young Astronomers
“Modern Astrophysics: Theory and Observation”
Chiang Mai, Thailand
24 November – 12 December 2014

The 2014 International School for Young Astronomers (ISYA2014) will be held in Chiang Mai, Thailand, under the joint organization of the National Astronomical Research Institute of Thailand (NARIT), Yunnan Observatories (YNO) of the Chinese Academy of Sciences and Chiang Mai University (CMU). The ISYA 2014 is sponsored by the International Astronomical Union (IAU), NARIT, YNO, CMU, the National Research Council of Thailand (NRCT), the Bureau of International Co-operation and the Key Laboratory for the Structure and Evolution of Celestial Objects of the Chinese Academy of Sciences, and the Norwegian Academy of Sciences and Letters.

The goal is to bring together young students of Astronomy, Astrophysics and related sciences, and provide them with a unique learning experience.

Applications are encouraged from students and young professionals within a broad range of education and experience, from senior undergraduates to postdoctoral level. Priority will be given to applicants from Asia, but other nationalities will also be considered.

Key Topics

- Sun and Solar System
- Galaxies and Cosmology
- Black Holes
- Exoplanets
- Variable and Binary Stars
- Stellar Clusters
- Stellar Pulsation and Asteroseismology
- Space Astronomy
- Radio Astronomy
- High Time Resolution
- Telescopes and Instrumentation

Format

The school will include a program of lectures from leading international scientists, as well as a wide range of opportunities for hands-on experience using modern facilities, including the new 2.6m Thai National Telescope and the PROMPT robotic telescope located in Chile. Several tutors will help the students with observations and data analysis.

For more information

Website: <http://www.iaunetindex.php/isy>
Email: isy2014@narit.or.th
Address: National Astronomical Research Institute of Thailand (Public Organization)
193 Science Building, Huayfong Road, Chiang Mai, Chiang Mai, Thailand 50200
Telephone: (+66) 53 225 548 Ext. 502 Fax: (+66) 53 225 524

NARIT IAU

The IAU 2014 International School for Young Astronomers (ISYA2014) took place in Chiang Mai, Thailand, from 24 November to 12 December. The school was held under the joint organization of the National Astronomical Research Institute of Thailand (NARIT), Yunnan Observatories (YNO) of the Chinese Academy of Sciences and Chiang Mai University (CMU).

ISYAs have the goal of bringing together young students of Astronomy, Astrophysics and related sciences, and providing them with a unique learning experience. Students attended lectures on a variety of topics, ranging from our solar system, to stars and extrasolar planets, to galaxies and the origin of the universe. A significant part of ISYA 2014 was devoted to practical observations and data analysis, under the guidance of experienced tutors. The participants had the opportunity to present their

findings at the end of the School. Last but not least, ISYA 2014 aimed at providing the opportunity for students to get to know each other, to learn about different fields of interest, and to sow the seeds for future collaborations.



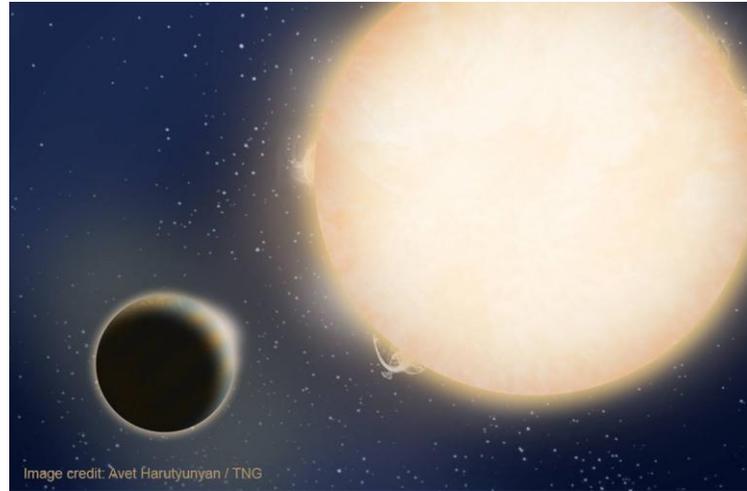
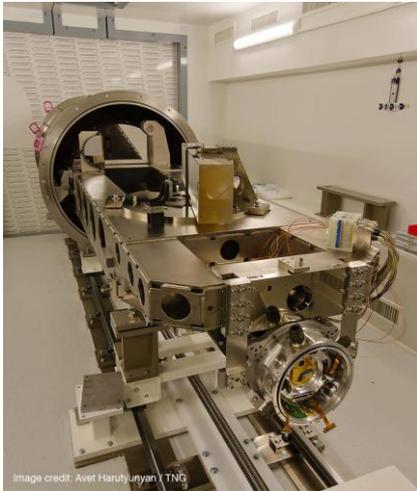
The School involved 41 young professionals and graduate students from 15 countries (Argentina, Armenia, Cambodia, China, Philippines, Hong Kong, India, Indonesia, Malaysia, Nepal, Pakistan, Taiwan, Sri Lanka, Thailand and Vietnam). Junior researcher of Byurakan Astrophysical Observatory (BAO) **Naira Azatyan** was the Armenian representative at the School. The lectures were given by a number of well-known scientists, such as Michel Dennefeld, Michele Gerbaldi, Ed Guinan, Kam Ching Leung, Andrea Richichi, David Mkrtichian and other astronomers.

KEPLER'S COMEBACK. HARPS-N CHARACTERIZES the FIRST K2 PLANET

For four years **Kepler space telescope** continuously observed a single patch on the sky looking for the tiny, periodic fluctuations in brightness of more than 150,000 stars, caused by planets transiting in front of them. Kepler's observations revolutionized the field of exoplanet research, allowing astronomers to discover almost 1000 confirmed planets to date, along with more than 3200 planet candidates.

In May 2013, while a good part of Kepler data was still to be analyzed, the second of four gyroscope-like reaction wheels on the spacecraft failed. The high accuracy brightness measurements that the space telescope provided required precise pointing, which was achieved by using at least three reaction wheels. So when the spacecraft's second wheel failed putting an end to the Kepler's primary mission, many thought that was the end for the spacecraft too.

Nothing further from the truth! The scientists and engineers did not want to give up on otherwise functional space telescope. An alternative mission was designed, where the spacecraft will observe several fields along the ecliptic, with the help of the pressure from sunlight to control the pointing together with the remaining control wheels. The new mission, dubbed **K2**, promised to continue Kepler's search for exoplanets, as well as enable observations of stellar clusters, active galaxies and supernovae.



Kepler has kept its promise! A confirmation comes from the discovery and characterization of the first planet from the K2, Kepler's "second life". An international team of astronomers from the US, Italy, Switzerland, UK, Canada and Portugal, led by Andrew Vanderburg of the Harvard-Smithsonian Center for Astrophysics (CfA) found a new super-Earth using the data collected during Kepler's 9-day test observations in February 2014.

Due to Kepler's reduced pointing capabilities, extracting useful data requires sophisticated computer analysis. The team has developed specialized software to correct for the spacecraft movements, achieving about half the photometric precision of the original Kepler mission. When the astronomers analyzed the data, they found that Kepler had detected a single planetary transit. Additional transits were weakly detected by the Microvariability and Oscillations of STars (MOST) satellite.

"We needed an authoritative confirmation of this result, like those HARPS-N gives", contentedly says **Avet Harutyunyan**, coauthor of the study. Harutyunyan is an astronomer at the **Italian Telescopio Nazionale Galileo1 (TNG)**, located in La Palma, Canary Islands, where the **High Accuracy Radial Velocity Planet Searcher – North2 (HARPS-N)** is mounted. "The very precise radial velocity measurements from HARPS-N would confirm there is actually the planet, as well as provide valuable information on its characteristics like mass and density", adds Harutyunyan. The team obtained the radial velocities of HIP 116454 planetary system from the HARPS-N observations that were carried out during the months of July to September 2014.

The newfound planet, HIP 116454b, has a diameter of 32200 km, two and a half times the size of Earth. HARPS-N showed that it weighs almost 12 times as much as Earth. This makes HIP 116454b a super-Earth, a class of planets that doesn't exist in our solar system. The average density suggests that this planet is either a water world (composed of about three-fourths water and one-fourth rock)

or a mini-Neptune with an extended, gaseous atmosphere. The astronomers predict its temperature to be around 400 degrees Celsius.

HIP 116454b has an orbital period of 9.1 days and therefore it orbits at a close distance of about 13.5 million km from its host star, 11 times closer than the Earth is to the Sun. The host star, HIP 116454, is an orange dwarf, slightly smaller and cooler than our sun, in the constellation of Pisces around 180 light-years away from us. “HARPS-N has already discovered and characterized several tens of extrasolar planets to date, a significant part of them coming from the original Kepler mission. But we are especially happy for HIP 116454b, as it is the first planet from the Kepler's new life,” says Avet Harutyunyan.

The research paper reporting this discovery has been accepted in *The Astrophysical Journal*.

1 – *The Italian 3.58m Telescopio Nazionale Galileo (TNG) is located at the Roque de los Muchachos Observatory, La Palma, Canary Islands. The TNG is operated by the Fundación Galileo Galilei – INAF (FGG-INAF). Web: www.tng.inaf.it*

2 – *HARPS-N is the most precise spectrograph measuring stellar velocities in the northern sky. HARPS-N is installed at the TNG and is led by an international Consortium of the Geneva University, TNG-INAF, Harvard-Smithsonian CfA, University of St. Andrews, University of Edinburgh and Queens University Belfast.*

Avet Harutyunyan, Telescopio Nazionale Galileo (TNG)

SCIENTIFIC TOURSIM MATTERS in ARMENIA

On December 17 at Armenian Institute of Tourism a meeting on **Scientific Tourism in Armenia and in the World** was held. The meeting was attended by RA Deputy Minister of Culture A. Samuelyan, Armenian Tourism Institute (ATI) Rector R. Minasyan, President of the Armenian branch of the International Council on Monuments and Sites (ICOMOS) and Director of Erebuni Museum G. Gyurjyan, Memorial Ensemble of Sardarapat Battle, National Museum of Armenian Ethnography and History of Liberal Struggle Director K. Aristakesyan, as well as representatives of Byurakan Astrophysical Observatory, A. Alikhanyan National Laboratory, Institute of Archaeology and Ethnography, Scientific Center of Zoology and Hydroecology, Institute of Botany, Matenadaran Ancient Manuscripts Institute after M. Mashtots, Shengavit Museum, “Metsamor” Historical-Archeological Museum-Reserve and Musaler Memorial and Museum. The meeting was also attended by representatives of Union of Incoming Tour Operators of Armenia, members of Armenian Guides Guild, directors and representatives of travel agencies and others.

The meeting was chaired by ATI Rector R. Minasyan and RA Deputy Minister of Culture A. Samuelyan delivered welcome address. The member of IAU working group on “Astronomy and World Heritage” (WGAWH) and Co-president of Armenian Astronomical Society A. Mickaelian gave a talk on **“Astronomical Observatories as Scientific Tourism Centers”**. Representatives of other scientific organizations briefly presented their possible tourism attractions and the representatives of travel agencies talked about the necessary conditions for effective management of tourism. They discussed new approaches of representing Armenia to the world. The meeting made a new bridge between travel agencies and research organizations.



Armenia being a small country by its territory, has always been visible to the world due to its science, and for continuing this tradition it was suggested to make “**Armenia as a Science Land**” tour package and to produce a film with the related content. At the meeting especially proposed to encourage **pupils’ regular visits to research centers**, directly involve the visitors in research activities, by this deepening the interest and knowledge to science.

The participants highlighted the importance of the meeting and offered to organize similar meetings on a regular basis. On the same day “**Scientific Tourism in Armenia**” Facebook group was created and the meeting participants joined it. **Initiative group** has been created (R. Minasyan and N. Nalbandyan from ATI, A. Mickaelian and S. Farmanyanyan from NAS RA), which will coordinate the cooperation of science and tourism, will accomplish the communication with the public and other official agencies and will make the **Project of Developing Scientific Tourism in Armenia**.

*Robert Minasyan, Rector, Armenian Tourism Institute (ATI),
Naira Nalbandyan, Lecturer, Armenian Tourism Institute (ATI)*

SWISS EMBASSY STAFF in BYURAKAN



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Embassy of Switzerland in Armenia

On 21 November 2014, Byurakan Astrophysical Observatory (BAO) hosted the staff of Swiss Embassy in Yerevan, including His Excellency Ambassador Extraordinary and Plenipotentiary Mr. Lukas Gasser. The guests visited BAO’s largest 2.6m telescope, Viktor Ambartsumian home-museum and Viktor Ambartsumian office. BAO Director Haik Harutyunian gave a talk about Viktor Ambartsumian, and ArAS Co-President Areg Mickaelian talked about Armenian-Swiss relations in astronomy. Acquaintance to BAO, strengthening Armenian-Swiss relations and scientific collaboration were the purposes of the meeting.

During the recent years, Armenian-Swiss relations in astronomy have been activated. In 2007, at the Joint European and National Astronomical Meeting (JENAM-2007) organized by ArAS Swiss astronomers **Prof. Michel Mayor** and **Prof. Thierry Courvoisier** participated. Michel Mayor is the

discoverer of the first extrasolar planet. Thierry Courvoisier is the Director of INTEGRAL Science Data Centre (ISDC) and at present he is the President of the European Astronomical Society (EAS) and Swiss Academy of Arts and Sciences. At JENAM-2007, Michel Mayor gave a plenary talk, and Thierry Courvoisier organized one of EAS Symposia, which was dedicated to High Energy Astrophysics. Michel Mayor is in close collaboration with *Dr. Garik Israelian*, and together with their Portuguese colleague *Dr. Nuno Santos*, they became the first winners of Viktor Ambartsumian International Prize (2010). At present Michel Mayor is a member of Viktor Ambartsumian International Prize Steering Committee. He delivered lectures at one of Byurakan International Summer Schools (BISS), and in 2014, he became a member of BAO International Science Advisory Committee, created by NAS RA.

FOUR YEARS of SCIENTIFIC JOURNALISM in ARMENIA



In December 2010 a group of the **Scientific Journalists of Armenia** was created to facilitate and promote scientific (mostly astronomical) publications in mass media. Some 80 members are involved in the mailing list of this group from various mass media: TV, radio, newspapers, Internet media, as well as some other scientists. In addition, a Facebook group has been created and **515 members** are active, including (mostly young) scientists and journalists. On December 13, 2010, the first ArAS press-release was distributed through mailing list and the Facebook group. Since then, **391 press-releases** have been distributed (in average, 8 ones monthly) resulting in **more than 2500 publications** in newspapers and Internet web-sites. Moreover, a number of interviews and press-conferences were taken additionally to present more detailed materials on various subjects. For the moment, the prevailing number of the publications is related to space subjects and contribution from other fields of science is desirable and welcome. Thus, a significant increase of scientific publications and of interest to astronomy/science has been recorded. We have also organized a number of **seminars on interesting subjects of astronomy and related fields**. In 2011 ArAS together with the Oxford Armenian scientific society (OxArm) established and awarded **prizes for the best scientific journalists** and in 2013 ArAS awarded certificates and astronomical souvenirs to mass media and journalists who actively write on science and especially astronomy.

To summarize the main activities of scientific journalism are:

- ArAS regular press-releases, in average 8 times in a month
- Interviews by astronomers on various subjects of astronomy and space science
- Popular articles, TV and radio programs on astronomical subjects
- E-Journal “Astghagitak”
- Press-conferences on important aspects and events
- Scientific journalism seminars on various topics of astronomy and other sciences
- Prizes and awards to scientific journalists and mass media

The Facebook group is active at <https://www.facebook.com/groups/144651068920380/>

FILM “AMBITION” about ROSETTA MISSION

The European Space Agency has become a film company. This is how the short science fiction film Ambition was announced at its premiere on Friday 24 October. Funded by ESA, it is collaboration between the space agency and digital film company Platige Image. Oscar-nominated director Tomek Bagiński’s seven-minute film explores the philosophy behind the Rosetta mission. It also includes some eye-popping special effects. These include a breath-taking scene in which Rosetta deploys the Philae lander, while the comet rotates to bring the jets into view. This is an inspiring and imaginative use of outreach funding.



If the film doesn’t quite work as a complete story because of its brevity, that’s OK says Mark McCaughrean, senior science adviser at ESA. “Think of it as a seven-minute trailer to a 20 year mission.” The Rosetta mission is turning science fiction into science fact by being the first spacecraft to orbit a comet. Ambition features two post-humans discussing the ‘ancient mission’ while conjuring visions using only their minds. Science is as much a cultural endeavour as film making.

“Ambition” stars are Aiden Gillen and Aisling Franciosi, it was shot on location in Iceland. The film’s subtitles are available in 15 languages, as well as **in Armenian** translated by Sona Farmanyan.

You can watch the film in the following link <https://www.youtube.com/watch?v=H08tGjXNH04>

For more information please visit the following link http://www.esa.int/.../Rosetta_the_ambition_to_turn_science_f...

ASTRONOMICAL CALENDAR OF EVENTS 2015 at ArAS WEBPAGE



“Calendar of Events 2015” is now available at ArAS website “Calendar of Events” menu. The Calendar includes all the most important astronomical events of 2015 known at the moment, including sky events and international and Armenian astronomy upcoming events. In the first group (Sky Events) Solar and Lunar Eclipses (altogether 4), all the main meteor showers (altogether 20, Lyrids in April, Eta Aquarids in May, Perseids in August, Orionids in October, Leonids in November and Geminids in December being the strongest ones), lunar phases, 20 conjunctions of the planets, oppositions of Jupiter, Saturn, Neptune and Uranus, occultations of planets by the Moon are presented. Among the events of the second group, most important affairs of BAO and ArAS, international and local symposia, conferences, summer schools and astronomical Olympiads, as well as anniversaries of Armenian astronomers are given. Particularly, this year IAU XXIX General Assembly will be organized in August in Hawaii, USA and European Week of Astronomy and Space Science (EWASS) will take place in July in Tenerife, Canary Islands, Spain.

ANNIVERSARIES

Elma PARSAMIAN – 85. One of our famous astronomers, **Prof. Elma Parsamian** celebrated her 85th anniversary. Since the early years of foundation of Byurakan Astrophysical Observatory (BAO), she has had a significant contribution in the development of the Armenian observational astrophysics, as well as in preparation of future astronomical generations.

Prof. Parsamian was born on 23 December 1929 in Yerevan. Finishing the secondary school with a gold medal, she studied in 1949-1954 at Yerevan State University (YSU) Department of Physics and Mathematics. After the graduation of YSU in 1954 she started working in Byurakan. She was a post-graduate in 1957-1960 and took her Ph.D. degree at the YSU in 1963 under the supervision of *Prof. G.A. Gurzadian* on “*Colorimetric and polarimetric investigation of some cometary nebulae*”. In 1967-1986, Parsamian was a Senior Researcher, in 1986-2000, a Leading Researcher, and since 2000 she is a Principal Researcher at BAO. In 1983, she defended her second thesis and became a Doctor of Sciences. Since 1989 she is Professor. In 1983-1987, Parsamian simultaneously worked at the Armenian Pedagogical Institute as the Chair of the Department of Astronomy and Theoretical Physics. In 1967-1971 and 1990-1991 she lectured at the YSU and has been a supervisor of a number of diploma and Ph.D. theses. In 1968-1969, 1976-1977 and 1991-1995, Parsamian worked at UNAM and Tonantzintla Observatory in Mexico as a researcher of the highest “C” degree. There she also lectured at the University in 1992. In 1965 and 1996, she was a visiting scientist in

Germany (Tautenburg Observatory and Max-Planck-Institute for Astronomy in Heidelberg). In 1982 she also worked in Italy (Asiago Observatory), as well as in some other institutions. In 2000, Parsamian was elected a Corresponding member of the Armenian National Academy of Sciences, and in the same year, a member of the Editorial Board of journal *"Astrofizika"* ("*Astrophysics*").



Parsamian's studies concern the physics of gaseous nebulae, investigation of variable stars in star clusters and associations, and archaeoastronomy. She has carried out colorimetric and polarimetric study of cometary nebulae (the subject of her Ph.D. thesis). In 1965, Parsamian published the first catalog of cometary nebulae. Since 1965, she was engaged in studies of variable (mainly flare) stars. In 1970-1981 she participated in the large program of search and investigation of flare stars in young stellar groups (Pleiades, Orion, Hyades, Praesepe, Cygnus, etc.) organized in BAO. Parsamian has discovered and observed numerous flare stars. In 1976, she has worked out a new method for determination of the age of flare stars and stellar associations and clusters containing flare stars. In 1979, together with V.M. Petrosian, Parsamian published her second catalog of cometary nebulae containing 106 such objects. She has studied the frequency distribution function of flare stars in the Orion association and estimated that there were 1.5 times more flare stars than in Pleiades. In 1982, together with the Mexican astronomer E. Chavira, she published a catalog of 534 stars in the Orion nebula region having H α emission (half of them discovered by herself) adding many new such stars to Haro's list. At present Parsamian is the PI of a research group in Byurakan and works on spectral study of fours and subfuors, spectrophotometry of planetary nebulae and problems of distribution of flare activity and frequency of flares of flare stars. Some cometary and planetary nebulae discovered by her have been **named after Parsamian**.

Parsamian has significant contribution in **archaeoastronomy**. She has justified the astronomical significance of buildings in Metsamor (1967), Zorats Karer Karahunge (1984). Particularly, she discovered proves about the existence of astronomical observing platforms in Metsamor. She showed that Sirius was observed in Metsamor in 2500-2600 B.C.

As a result, Parsamian has **published 136 scientific papers**, as well as a number of popular articles. She has participated in more than 50 international and all-Union symposia and conferences, including 4 IAU General Assemblies and several other IAU meetings. Parsamian is a member of

IAU (1976), EAS (1990), EAAS (1996), and ArAS (2001). She also is a member of BAO Specialized Council for Scientific Degrees (1980) and its Chair since 2007, Vice-President of the working group “*Flare Stars*” of the Commission on Stellar Physics of the academies of sciences of Socialist countries (1985-1988), member of the USSR Commission on Preparation of Astronomical Staff (1986-1991), member of Editorial Board of the journal “*Historical-Astronomical Investigations*”(1988-1992), member of astronomical scientific-methodological commission of the USSR universities and institutes (1990-1992). Parsamian has been awarded the medal “*For Labour Valour*” (1971), Letter of Commendation of the Armenian NAS (1981), and Anania Shirakatsi medal (2003). Her name was included in Armenian Concise Encyclopedia (Vol. 4, p.183, Yerevan, 2003) and “*Who is Who*” encyclopedia (Vol. 2, p.314, Yerevan, 2007).

Areg Mickaelian



Elena NIKOGHOSYAN – 50. *Dr. Elena Nikoghosyan* celebrated her 50th anniversary. Elena Hamlet Nikoghosyan was born on 16 December 1964 in Yerevan. In 1986 she graduated from Yerevan State University (YSU) Physics Department with a specialization of Astrophysics and in the same year joined Byurakan Astrophysical Observatory (BAO). In 2002 she defended her Ph.D. thesis on Physics and Mathematics on study of the substructure of clusters of galaxies (supervisor: Haik Harutyunian). Since 2004 she is the **Scientific Secretary of BAO**. She has worked several times as a visiting astronomer at Institut d’Astrophysique de Paris (IAP). She actively collaborates with

scientists from France, USA, Japan, Germany, Ireland and other countries. She has participated in a number of international meetings. During many years she has actively accomplished observations with BAO 2.6m telescope.

Her **main fields of investigations** are the problems connected with star forming processes, including outflow activity of pre-main sequence (PMS) stars, young stellar clusters, T Tauri stars, Fuors, etc. as well as clusters of galaxies and extrasolar planets. As a result Elena has **published more than 45 research papers**, including those in most important international astronomical journals (*European Astronomy & Astrophysics*, *American Astronomical Journal* and *Astrophysical Journal*, *UK Monthly Notices of the Royal Astronomical Society*, *German Astronomische Nachrichten*, *Japanese Publications of the Astronomical Society of Japan*, *Russian Astronomy Reports*, *NAS RA Astrophysics*), in Proceedings of international meetings and several electronic catalogues.

Elena teaches at Armenian-Russian (Slavonic) University. She is the supervisor of a number of B.Sc. and M.Sc. diploma theses. She has given lectures at Byurakan International Summer Schools (BISS) and in frame of ArAS school lectures program also at a number of Armenian high schools.

She was **awarded** American Astronomical Society (AAS), European INTAS, National Foundation of Science and Advanced Technologies (NFSAT), Armenian National Science and Educational Fund (ANSEF, 2006 and 2008) and RA State Committee of Science (SCS) grants. She is IAU (2012), EAS (2002) and ArAS (1999) **member**. She is ArAS founding member and since 2001, ArAS Scientific Secretary. In 2009 she was **awarded** NAS RA Letter of Commendation and ArAS/BAO Paris Pismis Award as the best female astronomer of the year in Armenia.