

ArAS News

NEWSLETTER

ARMENIAN ASTRONOMICAL SOCIETY (A r A S)



No. 104 (April 30, 2017)

Editor: Sona FARMANYAN

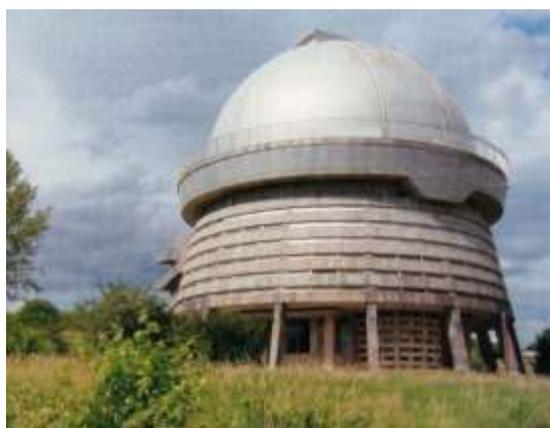
ArAS Newsletter online at: <http://www.aras.am/ArasNews/arasnews.html>

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BAO director elections

The National Academy of Sciences of the Republic of Armenia (NAS RA) had announced a call for BAO Director elections, as Haik Harutyunian's term was over (he was BAO Director since 2003). The procedure consists of several stages; at first nominations are being sent to NAS RA (BAO scientific staff, academicians and other organizations may nominate), then NAS RA registers all candidates (if eligible) and sends back to BAO for discussion and providing an opinion on each candidate. After this, NAS RA Division of Physics and Astrophysics organizes its meeting to discuss the nominated candidatures and submits the results to the Presidium of NAS RA, which finally elects the director.



BAO scientific staff didn't submit any nomination, though Areg Mickaelian was the only candidate. Then NAS RA Corresponding Member Elma Parsamian nominated Areg Mickaelian, who was at the end the only candidate and after discussions in BAO scientific staff and NAS RA Division of Physics and Astrophysics meetings was unanimously elected by the NAS RA Presidium. As a result, **Dr. Areg Mickaelian** is BAO Director since April 12, 2017.



Areg Mickaelian has graduated from the YSU Department of Physics in 1984. Since 1986, he works at BAO and has advanced from Assistant Astronomer to Junior Research Associate, Research Associate, Senior Research Associate and since 2007 Leading Research Associate. He defended his PhD thesis in 1994 on the *Search and Studies of the Blue Stellar Objects of the First Byurakan Survey*. In 1994-2001, he was also BAO Scientific Secretary. Since 2005, he leads a research group, and since 2015, he was also BAO Deputy Director on International Affairs. He has led the Digitized First Byurakan Survey (DFBS, 2002-2007), Armenian Virtual Observatory (ArVO, since 2005) and BAO Plate Archive (since 2015) projects. He initiated the Armenian Astronomical Society (ArAS) in 1999-2001 and became its first President (at present, Acting President and one of the 3 Co-Presidents). In 2015, due to Mickaelian's efforts, the IAU established in Armenia the South West Asian (SWA, at present South West and Central Asian, SWCA) Regional Office of Astronomy for Development (ROAD) and he became its first Director as well. Mickaelian's research interests include astronomical surveys, white dwarfs and cataclysmic variables, active galaxies, IR, X-ray and radio sources, and virtual observatories. He has revealed 1100 blue stellar objects (BSOs), the nature of 1600 IR sources and

2800 X-ray sources. Based on follow-up spectroscopic observations, he has discovered some 1000 new objects; white dwarfs, hot subdwarfs, cataclysmic variables, hot coronal K stars, QSOs, Seyfert galaxies, LINERs, starburst galaxies, and luminous IR galaxies. He has initiated and accomplished observing projects with BAO 2.6m and 1 m Schmidt, SAO 6m, Observatoire de Haute Provence (OHP) 1.9m and 1.5m, Palomar Observatory 5m, Spitzer and some other telescopes. Based on Spitzer Space Telescope observations, he has discovered 32 IR galaxies with extreme IR/opt flux ratio. He has discovered a rare type of X-ray cataclysmic binary. He has also revealed 6300 variable radio sources. Based on this research, Mickaelian has published 97 refereed papers, 95 papers in proceedings of meetings, 19 papers in books, 17 electronic catalogs, 11 booklets, many other articles. He also edited 11 books.

For 2-3 months periods, Mickaelian has worked as visiting astronomer or visiting professor in many observatories, astronomical institutes and universities, such as Cornell University (USA), OHP (France), Observatoire de Lyon (France), LATMOS (Paris, France), Hamburger Sternwarte (Germany), Leibniz-Institut für Astrophysik (Potsdam, Germany), Università di Roma “La Sapienza” (Italy), University of Federico II (Naples, Italy) and others. He has delivered invited seminars in the USA, UK, Germany, France, Italy, Belgium, China, India, and many other countries.

Mickaelian is a member of IAU and the Acting President of the IAU Armenian National Committee for Astronomy (NCA), EAS, Vice-Chair of EAAS, member of the Executive Council of IVOA, IPDA and SREAC, member of many other international organizations and societies, the Armenian representative in a number of international organizations and committees, member of the editorial boards of several journals. He has been awarded a number of prizes, many grants and other awards, as well as he has been included in all lists of top productive Armenian scientists by the RA State Committee of Science.

On April 18, Areg Mickaelian organized a meeting with BAO scientific staff members to present his **plans on the organization of science in BAO**. These first activities include creation of efficiently working departments, including those on some new subjects for BAO (Astrochemistry, Astrobiology, Exoplanets, etc.), improvement of seminars at BAO (including introduction of review, information and technical seminars), creation of a new Time Allocation Committee (TAC) for the 2.6m telescope (with a study of all previous observing programmes and their output), restoration of the publication of the Communications of BAO (founded by Viktor Ambartsumian in 1946), etc.

Other forthcoming plans include improvement of the efficiency of observations of BAO telescopes, practice of guest instruments from other world telescopes for mutual observing programmes, participation in large international projects, active usage of international databases for research work, invitation of famous foreign scientists for short visits and possible associate fellowship, more active participation of BAO scientists in international meetings, organizations and committees, development of new approach on the evaluation of the research efficiency of astronomers (science metrics), introduction and heavy usage of Astroinformatics at BAO for data reduction, computations, modelling, visualization, VOs, etc., additional focus on inter- and multi- disciplinary studies, development of applied projects, activation of Young Scientists’ Council, invitation of new young scientists and students, as well as qualified engineers to work at BAO, improvement of BAO webpage, and other affairs.

IAU Symposium #330: *Astrometry and Astrophysics in the Gaia sky*

<https://iaus330.sciencesconf.org/>

IAU Symposium #330 “Astrometry and Astrophysics in the Gaia sky” was organized on April 24-28, 2017 in Nice, France. The ESA Gaia mission is astrometrically, photometrically and spectroscopically surveying the full sky since July 2014 and the first Gaia Data Release (DR1) has been made publicly available on September 14, 2016. The main goal of this IAU symposium was to ensure the world-wide sharing of the Gaia mission results, foster international collaborations and discussions that would enhance the Gaia scientific return. This symposium marked the first step of the Gaia revolution in astrometry, our understanding of the Milky Way galaxy, stellar physics and the Solar System bodies. The astrometry and reference frames science were one of the conference highlights. Gaia DR1 includes the five-parameter astrometric solution – positions, parallaxes, and proper motions – for 2.5 million stars in common between the Tycho-2 Catalogue and Gaia (TGAS). They were at the heart of the interdisciplinary scientific discussions of the symposium.



The impact of Gaia on Milky Way research is truly astounding. Starting with DR1, thanks to the TGAS catalogue, Gaia triggers a strong qualitative and quantitative change in Galactic studies. This symposium was the occasion to present the first results about the time evolving chemo-dynamical picture of the Milky Way, as well as discussing its impact on theoretical models of Galaxy formation. In this context, the synergy between Gaia and other ground-based Galactic surveys had a clear visibility. Regarding stellar physics, Gaia data help constrain stellar structure and evolution models owing to the very precise distances and homogeneous parameters, including stars in rapid evolutionary phases and rare objects. Again, the 2.5 million stars included in the TGAS catalogue are the start of a new era. Moreover, variable star physics stands out in Gaia DR1 thanks to the photometric data of RR Lyrae and Cepheids in the ecliptic-pole fields. The ultra-precise astrometry is also the unbeatable driver for Gaia based Solar System science and exoplanets, promising a revolution. Just with the DR1, Gaia impacts planetology by the availability of stellar astrometry, permitting new astrometric reduction of old Solar System observations and improving the reliability of predictions of stellar occultations. Moreover, Gaia provides a unique determination of distances and proper motions for many planet-hosting stars, thus placing stronger constraints on formation and structural models of extrasolar planetary systems as well as the stellar hosts' environment. At last, thanks to the Gaia interdisciplinary character, this IAU symposium was a unique opportunity to discuss the Gaia-based results with all the relevant scientific communities.

The scientific program was organized in the following sessions:

- The Gaia Sky
- Astrometry and fundamental physics
- Solar System and exoplanets
- Stellar physics
- Galactic Archaeology
- DR2 and Conclusions

In total, 275 participants from 33 countries took part in the meeting, working on various subjects of Solar System studies, (mainly) Galactic and extragalactic research. 16 invited talks and 53 contributed ones were presented, as well as 121 posters. Many important talks were given, such as:

Timo Prusti: *The Gaia mission status*
 Anthony Brown: *The Gaia sky: version 1.0*
 Lennart Lindegren: *The Tycho Gaia Astrometric Solution (TGAS)*
 Rosemary Wyse: *Galactic surveys in the Gaia era*
 Norbert Zacharias: *Astrometric surveys in the Gaia era*
 Jean Souchay: *The LQAC-4, last update of the Large Quasar Astrometric Catalogue*
 Corinne Charbonnel: *Stellar evolution models in the Gaia sky*
 Pier-Emmanuel Tremblay: *White dwarfs in the Gaia era*
 Angela Bragaglia: *Stellar Clusters in the Gaia era*
 Martin Groenewegen: *Variable stars in the Gaia era*
 Carlos Allende Prieto: *Archeology of the Galactic disc and halo in the Gaia era*
 Christine Ducourant: *The known gravitational quasar lenses observed by Gaia in DRI*
 Jo Bovy: *Galactic dynamics with Gaia DRI*
 Bruno Sicardy: *Stellar astrometry and asteroids*
 Marc Pinsonneault: *Stellar ages in the Gaia sky*
 Pierre Kervella: *Optical interferometry & Gaia parallaxes: Cepheid distance scale*
 Jeff Andrews: *Wide Binaries in Gaia, Method and First Results*

From Armenia, **Areg Mickaelian** (Director of BAO) participated. He presented a poster "*Gaia based discoveries of new white dwarfs – evolutionary signatures of the Milky Way*". **Vardan Adibekyan** from Portugal also presented a poster on "*Trends with condensation temperature and terrestrial planet formation: The case of Zeta Reticuli and our Sun*". VA Prize Winner **Nuno Santos** (Portugal) gave an invited talk "*Characterization of exoplanet hosting stars*".



The Symposium was also a tribute to François Mignard, expert in astrometry and reference frames, and Chair of the Gaia Data Processing and Analysis Consortium since its formation and until the end of 2012.

H2020 Space Programme Committee Meeting

The 17th Programme Committee meeting of Horizon 2020 (H2020) Space was organized on April 26, 2017 in the European Commission, Brussels, Belgium. There were representatives from all EU and H2020 associated countries, as well as representatives of ESA, space Galileo and Copernicus projects. Armenia participated for the first time, as it was accepted to H2020 as an associated member in November 7, 2016. From Armenia, **Areg Mickaelian** (Director of BAO, NAS RA) and **Aram Saharian** (Head of the Scientific Policy Department at RA State Committee of Science) participated. The main topic of the meeting was the discussion and acceptance of H2020 Space Work Programme for 2018-2020. A few more similar meetings are planned for the forthcoming months for final decision.



Horizon 2020 (H2020) is a funding programme created by the European Union / European Commission to support and foster research in the European Research Area (ERA). It is the eighth of the Framework Programmes for Research and Technological Development funding research, technological development, and innovation with the focus on innovation, delivering economic growth faster and delivering solutions to end users that are often governmental agencies. The framework programme's objective is to complete the ERA by coordinating national research policies and pooling research funding in some areas to avoid duplication. Horizon 2020 itself is seen as a policy instrument to implement other high-level policy initiatives of the EU, such as Europe 2020 and Innovation Union. The programme runs from 2014–2020 and provides EUR 77 billion of funding, an increase of 23% on the previous phase.

Horizon 2020 provides grants to research and innovation projects through open and competitive calls for proposals. Legal entities from any country are eligible to submit project proposals to these calls. Participation from outside the EU is explicitly encouraged. Participants from EU member states and countries associated to H2020 are automatically funded. Associated countries have signed an association agreement for the purposes of this framework programme. To date, 16 countries are associated to Horizon 2020 (Albania, Armenia, Bosnia and Herzegovina, Faroe Islands, Georgia, Iceland, Israel, Macedonia (FYR), Moldova, Montenegro, Norway, Serbia, Switzerland, Tunisia, Turkey, and Ukraine). H2020 supports open access to research results, in order to create greater efficiency, improve transparency and accelerate innovation. Horizon 2020 is also implementing the European environmental research and innovation policy, which is aimed at defining and turning into reality a transformative agenda for greening the economy and the society as a whole so as to achieve a truly sustainable development.



H2020 programme consists of three main research areas that are called “pillars”. The first pillar, **“Excellent Science”**, focuses on basic science. It has a budget of EUR 24 billion. The European Research Council (ERC) delivers EUR 13 billion to researchers and teams of researchers based on scientific excellence of the applications. This pillar funds Future and Emerging Technologies (FET) and researcher mobility (Marie Skłodowska-Curie Action, MSCA) and large European research infrastructures. The second pillar is **“Industrial Leadership”**, with a budget of EUR 14 billion. It is managed by DG Enterprise and based on Europe 2020 and Innovation Union strategies. The pillar consists of six sub-programmes within “Leadership in Enabling and Industrial Technologies”: Information and communication technologies, Nanotechnologies, Advanced materials, Advanced manufacturing and processing, Biotechnology, Space. The third pillar funds potential solutions to social and economic problems, **“Societal challenges” (SC)**, in the following seven sub-programmes: Health; Food, water, forestry, bioeconomy; Energy; Transport; Climate action, environment, resource efficiency, and raw materials; European society; Security, as well as themes named as "Science with and for society" and "Spreading excellence and widening participation".

The structure follows the previous framework programme (FP7, 2007-13) to the level of the sub-programmes under the pillars. In the industrial pillar the goal is to find ways to modernize European industries that have suffered from a fragmented European market. In societal challenges the goal is implementation of solutions, less on technology development.

EU Space policy aims to tackle some of the most pressing challenges today, such as fighting climate change, helping to stimulate technological innovation, and providing socio-economic benefits to citizens. Space technology, data and services have become indispensable in the lives of Europeans. Satellites also provide immediate information when disasters, such as earthquakes, forest fires or floods strike, enabling better coordination between emergency and rescue teams. The EU has three flagship space programmes:

- **Copernicus** is a leading provider of Earth observation data. It helps save lives at sea, improves our response to natural disasters, and allows farmers to better manage their crops.
- **Galileo** is Europe's global satellite navigation system. It provides more accurate and reliable positioning and timing information for autonomous and connected cars, railways, aviation and other sectors.
- **EGNOS (the European Geostationary Navigation Overlay Service)** provides “safety of life” navigation services to aviation, maritime and land-based users over most of Europe.

ARMENIAN-GERMAN GRANT IN THE FIELD OF COMPUTER SCIENCE



Bundesministerium
für Bildung
und Forschung

The Republic of Armenia Ministry of Education and Science **State Committee of Science** (RA MES SCS) and the German Federal Ministry of Education and Research (**Bundesministerium für Bildung und Forschung**, BMBF) had announced a call for joint grants between Armenian and German research groups in the fields of biotechnology / life sciences; materials, optical technology, information and communication technologies; and research aimed at developing environmental technologies and sustainable. At the end, 10 grants were awarded to collaborative research groups, and among others, one was won from BAO in the field of ICT. The project subject is the *Building high-performance research environment through German and Armenian Astrophysical Virtual Observatories* and the Co-PIs are **Areg Mickaelian** (NAS RA V. Ambartsumian Byurakan Astrophysical Observatory (BAO), Armenia) and Joachim Wambsganss (Zentrums für Astronomie der Universität Heidelberg (Astronomischen Rechen-Instituts), Germany).



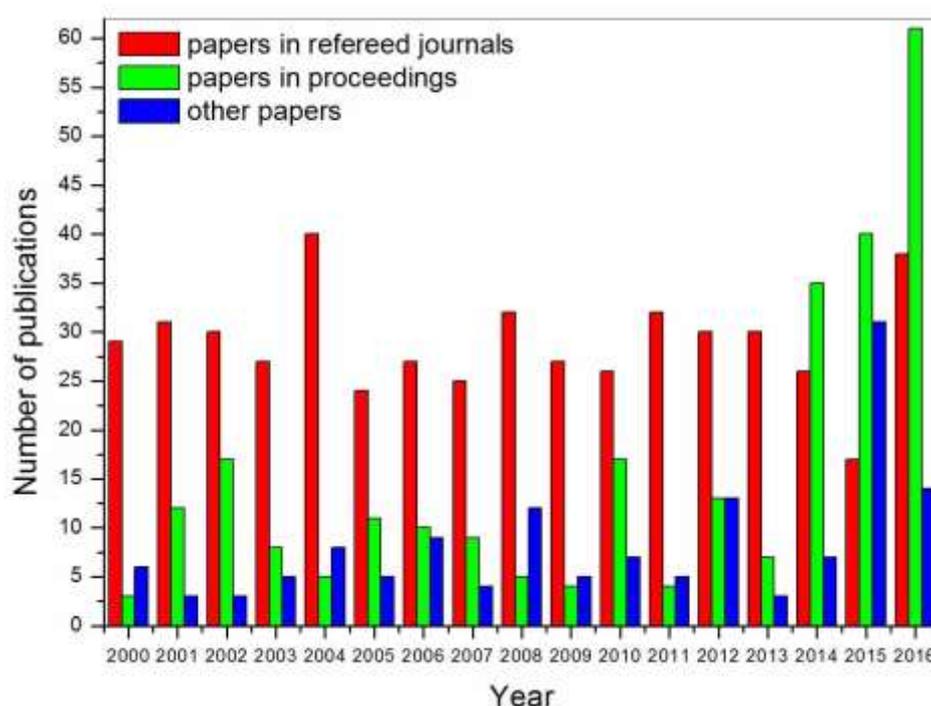
The project goals are to build a high-performance research environment through German and Armenian Astrophysical Virtual Observatories, GAVO and ArVO, by using their databases and software tools. Both are part of the International Virtual Observatory Alliance (IVOA) and contribute to the development of VOs. Several other VO projects, such as VO-France, UK Astrogrid, Italian VO and others are in tight collaboration and the project will contribute to multilateral cooperation. The Digitized First Byurakan Survey (DFBS) spectroscopic database will be made VO compliant thus providing some 20 million spectra (the largest amount in any existing database) to the astronomical community. The scientific and technical working goals targeted by the project are:

- establishing contacts between German and Armenian scientists,
- establishing contacts between astronomers and computer scientists,
- formation of a network of databases and tools,
- development of a structure of computational astrophysical laboratories and institutions based on the German experience.



PUBLICATIONS BY THE BYURAKAN OBSERVATORY ASTRONOMERS IN 2000-2016

During the last 17 years (2000-2016), 81 Byurakan astronomers have published **894 papers** (yearly 52.6 in average), including **493 papers** (yearly 29.0 in average) in **37 refereed journals** (including *ApJ*, *AJ*, *A&A*, *MNRAS*, *ApSS*, *Astronomische Nachrichten*, *Astrophysics*, etc.), **247 papers in proceedings of 75 meetings** (including 60 in IAU symposia and colloquia and a few others at IAU GA Joint Discussions and Special Sessions), **42 electronic catalogs**, **22 books**, 35 e-prints, 37 abstracts, 6 papers in books, and 12 other papers. The year 2004 was the most productive with 40 papers in refereed journals. However, by the total number of papers 2016 was the best: 113 publications, including 38 in refereed journals.



The figure shows the distribution of the number of publications by BAO authors during 2000-2016. Papers in refereed journals, proceedings of meetings, and others are given separately.

The publication lists are given according to the ADS database, however *Astrofizika* and *Astrophysics* (English translation of *Astrofizika*) have been merged, as well as Russian journals *Астрон. Ж.* / *Astron. Reports* and *Письма в Астрон. Ж.* / *Astron. Letters*. E-prints have been removed if later published in journals. Also, abstracts of papers presented in meetings have been removed if later published in proceedings. In addition, some publications absent in ADS have been added.

Follow the link and find the full list of publications, which has significantly improved and updated, where now search by authors, years, publication type, given journals, etc. is possible:

<http://www.aras.am/Publications/publications.html>

RELEASE OF ASTROPHYSICS VOL. 60, ISSUE 1

Supernova Remnants in the H α and H β Lines

E. O. Vasiliev, Yu. A. Shchekinov

Polarimetry of the Nova V339 Del

D. N. Shakhovskoy, K. A. Antonyuk, S. P. Belan

Photometric Studies of the Two Magnetic Cataclysmic Variables SDSS J215427+155713 and SDSS J032855+052254

Ju. V. Babina, E. P. Pavlenko, O. I. Antonyuk

Long-Term Spectral Variability of the Spotted Star in Com

O. V. Kozlova, I. Yu. Alekseev, A. V. Kozhevnikova

Comparative Analysis of Phenomenological Approximations for the Light Curves of Eclipsing Binary Stars with Additional Parameters

I. L. Andronov, M. G. Tkachenko, L. L. Chinarova Pages 57-69

Investigation of Faint Galactic Carbon Stars from the First Byurakan Spectral Sky Survey. III. Infrared Characteristics

K. S. Gigoyan, A. Sarkissian, C. Rossi, D. Russeil, G. Kostandyan...

Variation in the Flux Density of the Radio Source Cassiopeia-A During the Period 2007-2015

R. M. Martirosyan, A. G. Gulyan, G. A. Pirumyan, S. A. Sargsyan...

Magnetic Field of Sunspots During the Rising Phase of Activity Cycle 24

O. S. Gopasyuk

Effect of Viscosity on Shock Waves Observed After Two Different Coronal Mass Ejection Activities CME20/11/2003 and CME11/04/2010

H. Cavus, G. Zeybek

Contribution to the Total Recombination Rate from Three-Body Recombination into Highly Excited States Under the Conditions of Stellar Atmospheres and the Interstellar Medium

O. M. Belova, K. V. Bychkov

Determination of the Superflare Frequency Distribution Function of Solar-Type Stars

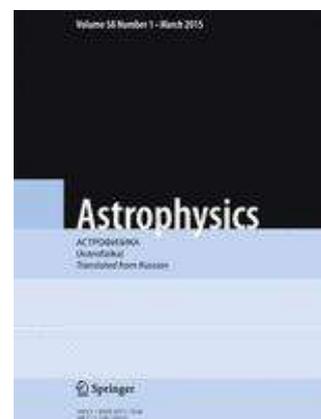
A. A. Akopian

Burgers Vortex in a Protoplanetary Disk

M. G. Abrahamyan

Accelerated Expansion of the Early and Late Universe in Terms of the Scalar-Tensor Theory of Gravitation. I

R. M. Avagyan, G. H. Harutyunyan, S. V. Sushkov



RELEASE OF NRAO NEWSLETTER



Upcoming Events

ALMA Cycle 5 Call for Proposals Submission Deadline
NRAO/LBO Community Day @ UNAM-Morelia
American Astronomical Society Meeting
2017 Astrobiology Graduate Conference
Women in Astronomy IV: The Many Faces of Women Astronomers
Developing the ngVLA Science Program Workshop
Measuring Star Formation in the Radio, Millimetre, and Submillimetre
Fred Lo Science Symposium
5th U.S. – China Workshop on Radio Astronomy Science & Technology
Futures III
ALMA Long Baseline Workshop
6th VLA Data Reduction Workshop

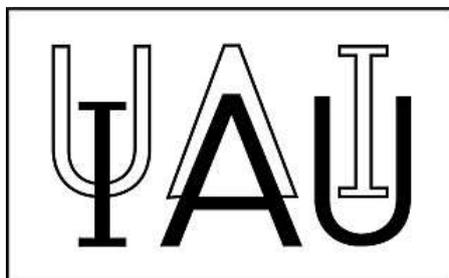
Recent Media Releases

ALMA Investigates 'DeeDee,' a Distant, Dim Member of Our Solar System
Image Release: ALMA Captures Explosive Star Birth
ALMA and the Event Horizon Telescope Tip Sheet
Milky Way-like Galaxies in Early Universe Embedded in 'Super Halos'

Career Opportunities

Director for the Central Development Laboratory
CASA Lead

RELEASE OF IAU ASTRONOMY OUTREACH NEWSLETTER 2017, April #1, #2



From the Editors

Columba-Hypatia: Astronomy for Peace

National Outreach Contacts (NOC) Corner: News from Portugal

Linking Astronomy and Data Science for Development

NASA Image and Video Library

Asteroid Day

Yuri's Night

Breakthrough: Portraits of Women in Science

Space 360

IAU Commission C1 Education and Development of the Astronomy Newsletter #85

Quality Lighting Teaching Kit program survey

National Outreach Contacts (NOC) Corner: News from Japan

Gaza Ambassadors of the Universe

Volunteer as a Total Solar Eclipse Subject Matter Expert

Zero Shadow Day (ZSD)

Global Hands-on Universe Call for Abstracts

Space App Challenge

Meetings & Global Events for 2017

Recently added

Important Dates

Upcoming

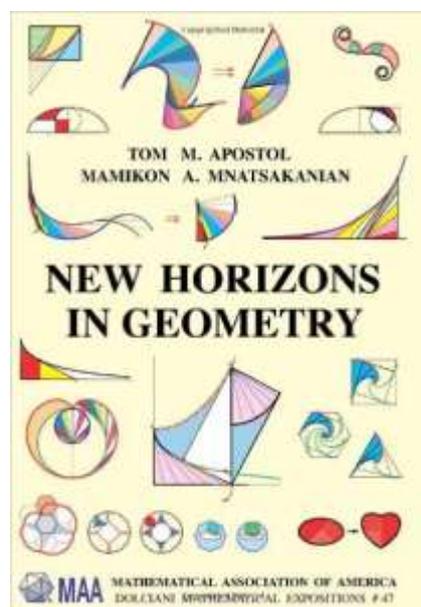
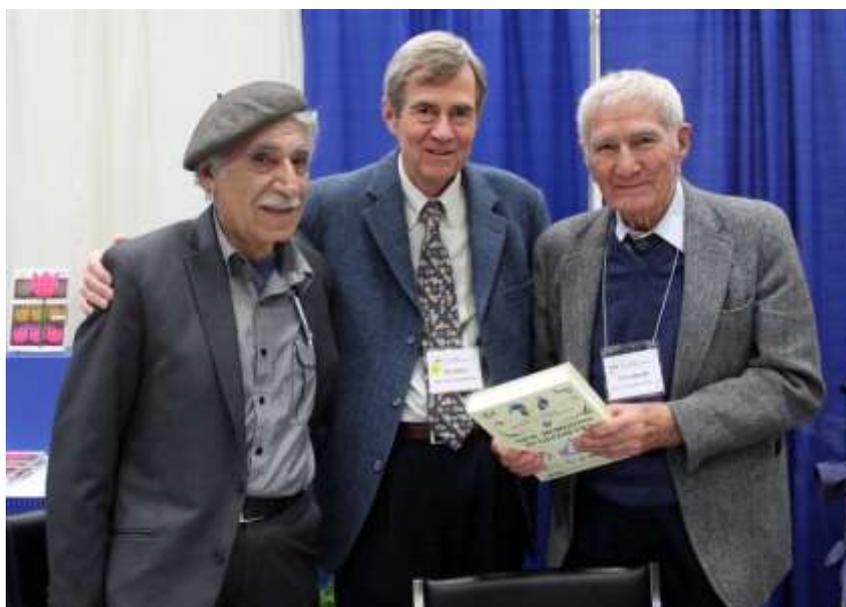
IAU Astronomy Outreach Newsletter in other languages

Contributions to IAU Outreach Newsletter





Mamikon MNATSAKANIAN – 75. Dr. Mamikon A. Mnatsakanian, an Armenian well-known astronomer, celebrated his 75th anniversary. Mamikon Mnatsakanian was born on April 17, 1942 in Yerevan, Armenia (former USSR). In 1965, he graduated from the Yerevan State University (YSU) and obtained M.Sc. degree. In 1969, he successfully defended his Ph.D. thesis in the field of “*Generalized General Theory of Relativity*” at YSU. In 1984, he was awarded a degree of Doctor of Science in Phys.-Math. Sciences in “Theoretical and Mathematical Physics and Astrophysics” (topic: “*New Apparatus in Radiation Transfer Theory*”) by USSR Supreme Ministry' Highest Accreditation Commission, Moscow. In 1985, he obtained a Diploma of Senior Scientific Researcher by the USSR Academy of Sciences. In 1965-1991, he worked as a Researcher (Junior, Senior, Principal, Leading, Laboratory Head) in Theoretical Astrophysics at the Byurakan Astrophysical Observatory (BAO). In 1972-1985, he was the Scientific Secretary of BAO, responsible for scientific projects, publications, conferences, external relationships of the Observatory. In 1975-1985, he was the Scientific Secretary of the Specialized Board awarding USSR Doctoral Degrees in Astrophysics (over 50 cases). In 1977-1991, he worked as an Associate Professor, Professor at Departments of Theoretical Physics, Astrophysics, and Mathematical Modelling at YSU. In 1988-1991, he worked as Director of the Centre for Mathematical Modelling of Physical Processes at the Armenian Academy of Sciences. He also was the Founder and the Head of the Department of Mathematical Modelling at YSU (Division of Physics).



Since 1991, Mamikon Mnatsakanian lives and works in the USA. In 1991-1992 he worked as a Mathematics Education Consultant, creating problems for CA Assessment Program at California State Department of Education, Sacramento. 1993-1996 he worked as a Researcher, co-author, creating problems and Investigations for High School Textbooks “CPM” (Eisenhower grant) at UC Davis, Davis, CA (Experimental teaching of own course “Visual Calculus” at UC Davis and Davis Senior High School). In 1996-1997 he was a Manipulative curriculum developer and experimental teacher of “Visual Calculus” for Elementary Schools, South Land Park Montessori School,

Sacramento, CA. Since January of 1997 still present he is a Project Associate, “Project Mathematics” at California Institute of Technology (Caltech) (Designing “Visual Calculus” and interactive educational animations). He was awarded USSR Academy of Sciences Distinction Medal for Excellence in Sciences and AAS Distinction Award for "Generalized Theory of Gravity" in 1985, AAS Distinction Award for "Radiation Transfer Theory" in 1986, Lester Ford triple Award (Mathematical Association of America) for three papers in the American Mathematical Monthly in 2005, California Department of Energy Grant for development of the Mamikon Spinner in 2005, Lester Ford triple Award (Mathematical Association of America) for a paper in the American Mathematical Monthly in 2008 and Pearson “International Conference in use of Technology in Collegiate Mathematics” Award for computer interactive mathematics educational games and activities in 2011. Mamikon Mnatsakanian has published more than a hundred refereed papers in USSR and in USA on *Generalized General Theory of Relativity with variable gravitational constant; Stellar Statistics and Dynamics of pulsars, flare stars, stellar associations and aggregates; New Methods and their Applications in Radiation Transfer Theory*; on Mathematics: *visual calculus, geometry, integral and integro-differential equations*; on Popular mathematics, “Kvant” magazine of the Soviet Academy of Sciences. He has published over 30 papers with Tom Apostol on new elementary solutions, with use of no formulas, equations or integration machinery, of advanced problems of calculus and their various generalizations. These works are included in “*New Horizons in Geometry*”, a 500-page book with 500 illustrations to be published by the Mathematical Association of America.

Greta OHANIAN-70

We congratulate ArAS member Ms. **Greta Ohanian's** 70th anniversary and wish her all the best. Greta was born in 1947, April 28. She has graduated from Yerevan State University in 1970 and at the same year she started working at the Byurakan Astrophysical Observatory as an assistant astronomer. In 1972, she became a junior research associate. Greta’s research interests include investigations of flare stars, clusters, etc. A number of flare stars were discovered thanks to Greta. Later on she was the chief of the Byurakan Astrophysical Observatory’s photographic plate library. Greta is a member of ArAS since 2001. She is also a member of Euro-Asian Astronomical Society (EAAS).

