

ArAS News

NEWSLETTER

ARMENIAN ASTRONOMICAL SOCIETY (A r A S)

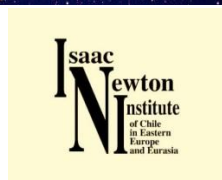


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Editor: Sona FARMANYAN

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

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ASTRONOMICAL SURVEYS AND BIG DATA



“*Astronomical Surveys and Big Data*” meeting dedicated to 50th anniversary of Markarian Survey and 10th anniversary of the Armenian Virtual Observatory (ArVO) will be held on Oct 5-9, 2015 in Byurakan, Armenia. We intend to combine astronomers and computer scientists with heavy involvement of astronomical surveys, catalogs, archives, databases and VOs. The Symposium is dedicated to Markarian Survey 50th anniversary. This survey led to the discovery of 1515 galaxies with UV excess – Markarian galaxies. BAO is famous for other surveys as well: Arakelian and Kazarian galaxies, Shahbazian compact groups, Parsamian cometary nebulae and other objects also are well known.

An update of **Invited Talks**, the **List of Participants** and update on the **Proceedings of the Meeting** are given.

INVITED TALKS

EXOPLANETS

Joachim Wambsganss (Germany) “*Discovering extrasolar planets with gravitational microlensing surveys*”

Garik Israelian (Spain) “” (TBC)

Alain Sarkissian (France) “*Data bases in planetary space research: the International Planetary Data Alliance, IPDA*”

STARS and NEBULAE

Dirk Froebrich (UK) “*Narrow Band Surveys of the Galactic Plane*”

Tigran Magakian (Armenia) “*Searches for Herbig-Haro objects: past years, current situation and perspectives*”

Oleg Malkov (Russia) “*The Binary star database BDB: current status and scientific tasks*”

Tigran Movsessian (Armenia) “” (TBC)

Norayr Melikian (Armenia) “*Search and Study of H α Objects in Dark Cloud Regions*”

Elena Nikoghosyan (Armenia) “*The search and study of PMS stars with H α emission*”

Kamo Gigoyan (Armenia) “*Cool Carbon Stars in the Halo*”

Armen Gyulbudaghian (Armenia) “*Two Types of Radial Systems of Dark Globules*”

GALAXIES and COSMOLOGY

Ajit Kembhavi (India) *“Astronomy with large galaxy databases”*

Johan Knapen (Spain) *“Galaxy Surveys in the next Decade”*

Areg Mickaelian (Armenia) *“Search and studies of active galaxies at BAO”*

Jesus Falcon-Barroso (Spain) *“Understanding the nearby Universe through the CALIFA survey”*

David Schade (Canada) *“” (TBC)*

Andrew Lawrence (UK) *“Clues to the structure of AGN through massive variability surveys”*

Serguei Dodonov (Russia) *“Medium Band Byurakan Survey: Scientific goals”*

DATABASES and VOs

Areg Mickaelian (Armenia) *“Astronomical Surveys, Catalogs, Databases and Archives”*

Hrachya Astsatryan (Armenia) *“” (TBC)*

Christophe Arviset (Spain) *“The Gaia Archive: VO in action in the big data era”*

Haik Harutyunian (Armenia) *“Brief Survey of Activity Phenomena in Cosmic Objects”*

Areg Mickaelian (Armenia) *“BAO plate archive digitization project and its scientific usage”*

LIST OF PARTICIPANTS

Surname	Name	Affiliation	Country
Abrahamyan	Hayk	Byurakan Astrophysical Observatory	Armenia
Arviset	Christophe	ESA-ESAC	Spain
Astsatryan	Hrachya	Institute for Informatics and Automation Problems	Armenia
Dodonov	Serguei	Special Astrophysical Observatory (SAO)	Russia
Erastova	Lidija	Byurakan Astrophysical Observatory	Armenia
Falcon-Barroso	Jesus	Instituto de Astrofisica de Canarias	Spain
Farmanyan	Sona	Byurakan Astrophysical Observatory	Armenia
Froebrich	Dirk	University of Kent	UK
Gebrehiwot	Yikdem	Entoto Observatory and Research center	Ethiopia
Gigoyan	Kamo	Byurakan Astrophysical Observatory	Armenia
Gyulbudaghian	Armen	Byurakan Astrophysical Observatory	Armenia
Gyulzadyan	Marietta	Byurakan Astrophysical Observatory	Armenia
Hakopian	Susanna	Byurakan Astrophysical Observatory	Armenia
Harutyunian	Haik	Byurakan Astrophysical Observatory	Armenia
Israelian	Garik	Instituto de Astrofisica de Canarias	Spain
Karapetian	Emilia	Yerevan State University	Armenia
Kazakov	Eugene		Russia
Kembhavi	Ajit	VO-India	India
Khachatryan	Knarik	Byurakan Astrophysical Observatory	Armenia
Knapen	Johan	Instituto de Astrofisica de Canarias	Spain
Knyazyan	Aram	Institute for Informatics and Automation Problems	Armenia
Kostandyan	Gayane	Byurakan Astrophysical Observatory	Armenia
Lawrence	Andy	Royal Observatory Edinburgh, AstroGrid	UK

Magakian	Tigran	Byurakan Astrophysical Observatory	Armenia
Malkov	Oleg	Institute of Astronomy	Russia
Melikian	Norayr	Byurakan Astrophysical Observatory	Armenia
Mickaelian	Areg	Byurakan Astrophysical Observatory	Armenia
Movsessian	Tigran	Byurakan Astrophysical Observatory	Armenia
Nightingale	James	Nottingham	UK
Nikoghosyan	Elena	Byurakan Astrophysical Observatory	Armenia
Paronyan	Gurgen	Byurakan Astrophysical Observatory	Armenia
Parsamian	Elma	Byurakan Astrophysical Observatory	Armenia
Samsonyan	Anahit	Byurakan Astrophysical Observatory	Armenia
Sangaralingam	Vinothini	University de Montreal	Canada
Sarkissian	Alain	LATMOS, Institute Pierre Simon Laplace, CNRS	France
Schade	David	Canadian Virtual Observatory (CVO)	Canada
Simonia	Irakli	Ilia State University	Georgia
Simonia	Tsitsino	Ilia State University	Georgia
Vardanyan	Ani	Byurakan Astrophysical Observatory	Armenia
Wambsganss	Joachim	Universitaet Heidelberg	Germany
Yeghiazaryan	Anahit	Byurakan Astrophysical Observatory	Armenia
Yeghikian	Ararat	Byurakan Astrophysical Observatory	Armenia

PROCEEDINGS

The Proceedings will be published by Astronomical Society of the Pacific (ASP) Conference Series. Areg Mickaelian, Andy Lawrence and Tigran Magakian are the editors. Deadline for submission of papers is 15 December 2015. Registration fee includes a copy of the Proceedings book.

Instructions for preparation of the papers will be given later.

<i>Page limits:</i>	Invited talks	8 pages
	Contributed talks	5 pages
	Posters	2 pages

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ARMENIAN-IRANIAN ASTRONOMICAL WORKSHOP



Armenian-Iranian Astronomical Workshop will be held on Oct 13-16, 2015 in Byurakan, Armenia. Armenia and Iran are among the most ancient countries in the world and have lived as neighbours through thousands years of history. Armenian and Iranian culture has many similarities and relations. During the recent years, tight relations are being established in more and more spheres, including politics, economy, tourism, sports, culture and indeed science. This Workshop is to strengthen our scientific relations and establish new collaboration. We plan to organize such workshops on annual basis, succeeding each other one in Armenia and one in Iran.

An update of **Invited Talks** and the **List of Participants** are given.

INVITED TALKS

- Ali Adjabshirizadeh (Iran) – *Heliophysics and Space Weather*
 Amin Farhang (Iran) – *EDIBLESS large survey: searching for DIB origin with VLT*
 Armen Gyulbudaghian (Armenia) – *Radial Systems of Dark Globules*
 Haik Harutyunian (Armenia) – *Byurakan Astrophysical Observatory and Viktor Ambartsumian*
 Habib Khosroshahi (Iran) – *Iranian National Observatory (INO) (TBC)*
 Habib Khosroshahi (Iran) – *Multi-wavelengths studies of fossil galaxy groups*
 Tigran Magakian (Armenia) – *(TBC)*
 Reza Mansouri (Iran) – *Scientific development in Iran and key science projects (TBC)*
 Norayr Melikian (Armenia) – *The Study of Flare Stars in Byurakan Observatory*
 Areg Mickaelian (Armenia) – *Armenian Astronomical Society (ArAS) activities*
 Areg Mickaelian (Armenia) – *BAO Plate Archive and Armenian Virtual Observatory (ArVO)*
 Tigran Movsessian (Armenia) – *Observational Possibilities in BAO*
 Sadollah Nasiri (Iran) – *Site selection for the Iranian National Observatory (TBC)*
 Arthur Nikoghossian (Armenia) – *Theoretical astrophysics in the Byurakan Observatory*
 Elma Parsamian (Armenia) – *Armenian archaeoastronomy (TBC)*
 Sohrab Rahvar (Iran) – *Extra-solar planet detection with gravitational Microlensing*
 Narek Sahakyan (Armenia) – *Exploring the Universe with gamma-rays and neutrinos*
 Aram Saharian (Armenia) – *Quantum Effects in Cosmology*
 Maya Todua (Georgia) – *Astronomy in Georgia – Present Status and Perspectives*

LIST OF PARTICIPANTS

Surname	Name	Affiliation	Country
Abbassi	Shahram	Ferdowsi University of Mashhad	Iran
Abrahamyan	Hayk	Byurakan Astrophysical Observatory	Armenia
Aghaee	Alireza	University of Sistan and Baluchestan	Iran
Ajabshirizadeh	Ali	The University of Tabriz & UPMC	Iran

Andresayan	Hasmik	Byurakan Astrophysical Observatory	Armenia
Asatrian	Norayr	Byurakan Astrophysical Observatory	Armenia
Azatyán	Naira	Byurakan Astrophysical Observatory	Armenia
Bagheri	Zahra	Research Inst. for Astron. and Astrophys. of Maragha	Iran
Baghram	Shant	Sharif University of Technology	Iran
Broutian	Grigor	Matenadaran	Armenia
Davoudifar	Pantea	Research Inst. for Astron. and Astrophys. of Maragha	Iran
Farhang	Amin	Institute for Research in Fundamental Science (IPM)	Iran
Farmanyán	Sona	Byurakan Astrophysical Observatory	Armenia
Gevorgyan	Mkrtich	Byurakan Astrophysical Observatory	Armenia
Gyulbudaghian	Armen	Byurakan Astrophysical Observatory	Armenia
Gyulzadyán	Marietta	Byurakan Astrophysical Observatory	Armenia
Harutyunian	Haik	Byurakan Astrophysical Observatory	Armenia
Karapetian	Emilia	Yerevan State University (YSU)	Armenia
Khachatryan	Knarik	Byurakan Astrophysical Observatory	Armenia
Khosroshahi	Habib	Institute for Research in Fundamental Science (IPM)	Iran
Kostandyán	Gayane	Byurakan Astrophysical Observatory	Armenia
Magakian	Tigran	Byurakan Astrophysical Observatory	Armenia
Melikian	Norayr	Byurakan Astrophysical Observatory	Armenia
Mickaelian	Areg	Byurakan Astrophysical Observatory	Armenia
Miraghaei Jafari	Halime	Institute for Research in Fundamental Science (IPM)	Iran
Mosleh	Moein	Institute for Research in Fundamental Science (IPM)	Iran
Movsessian	Tigran	Byurakan Astrophysical Observatory	Armenia
Nikoghossian	Arthur	Byurakan Astrophysical Observatory	Armenia
Nikoghosyan	Elena	Byurakan Astrophysical Observatory	Armenia
Ohanian	Gabriel	Byurakan Astrophysical Observatory	Armenia
Paronyán	Gurgen	Byurakan Astrophysical Observatory	Armenia
Parsamian	Elma	Byurakan Astrophysical Observatory	Armenia
Rahvar	Sohrab	Sharif University of Technology	Iran
Sabzali	Vajihe	Research Inst. for Astron. and Astrophys. of Maragha	Iran
Safari	Hossein	University of Zanjan	Iran
Sahakyan	Narek	ICRANet	Armenia
Saharian	Aram	Yerevan State University (YSU)	Armenia
Samsonyan	Anahit	Byurakan Astrophysical Observatory	Armenia
Tavasoli	Saeed	Institute for Research in Fundamental Science (IPM)	Iran
Todua	Maya	Abastumani Astrophys. Obs., Ilia State Univ.	Georgia
Vardanyán	Ani	Byurakan Astrophysical Observatory	Armenia
Yeghiazaryán	Anahit	Byurakan Astrophysical Observatory	Armenia
Yeghikian	Ararat	Byurakan Astrophysical Observatory	Armenia

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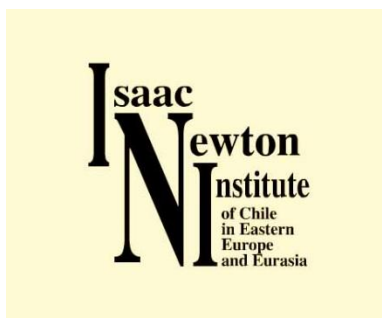
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Isaac Newton Institute (INI) Armenian Branch 15th Anniversary

Gonzalo ALCAINO, Areg MICKAELIAN



Isaac Newton Institute (INI, <http://www.ini.cl/>) is an international astronomical institute having its Headquarters based in Santiago, Chile. It was founded in 1978 by **Dr. Gonzalo Alcaino** as a private 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)***, founded in the USA in 1849 (its Impact Factor 2013 was $IF_{2013}=4.052$),
- ***The Astrophysical Journal (ApJ)***, founded in the USA in 1895 ($IF_{2013}=6.280$), as well as ***The Astrophysical Journal Supplement Series (ApJS)*** ($IF_{2013}=14.137!$) and ***The Astrophysical Journal Letters (ApJL)*** ($IF_{2013}=5.602$),
- ***Monthly Notices of the Royal Astronomical Society (MNRAS)***, founded in the UK in 1827 ($IF_{2013}=5.226$),
- ***Astronomy and Astrophysics (A&A)***, founded in 1969 and unified the majority of European journals into a single one ($IF_{2013}=4.479$).



In 1992, the Institute founded a branch in Moscow, Russia, and in 1997 in Crimea, Ukraine. Thereafter, agreements with 13 other scientific centres were established, from Eastern Europe to former Soviet Union nations in Eurasia. The grand total of staff members is 355 scientists throughout the 15 following branches:

INI Branch	Institution Hosting INI Branch	Staff	Resident Director
Armenia	Byurakan Astrophysical Observatory	19	Areg Mickaelian
Bulgaria	Inst. of Astronomy of Bulgarian Acad. of Sciences	28	Valeri Golev
Crimea	Crimean Astrophysical Observatory	35	Nelly Merkulova
Kazakhstan	Astrophysical Institute of Kazakhstan	18	Anatoliy Kurchakov
Kazan	Kazan State University	12	Valery Suleimanov
Kiev	Main Astronomical Observatory	11	Boris Zhilyaev
Moscow	Sternberg Astron. Institute of Moscow State Univ. and Institute of Astronomy of Russian Academy Sciences	23	Nikolai Samus
Odessa	Odessa Astronomical Observatory	35	Valery Kovtyukh
Poland	Kepler Astronomical Centre of Poland	13	Andrzej Maciejewski
Pushchino	Radio Astronomy Observatory in Russia	23	Igor Malov
SAO	Special Astrophysical Observatory in Russia	49	Zalikhha Shkhagosheva
St. Petersburg	Astronomical Institute of St. Petersburg University	33	Vladimir Reshetnikov
Tajikistan	Institute of Astrophysics of Tajikistan	9	Pulat Babadzhanov
Uzbekistan	Astron. Institute of Uzbek Academy of Sciences	24	Salakhutdin Nuritdinov
Yugoslavia	Belgrade Astronomical Institute	23	Milan Dmitrijevic

INI's basic endeavour is twofold: to channel the publication of the research from its staff members to the four major journals in astronomy, as well as to give a personal and professional motivation and compensation to these scientists who have lived and worked under quite difficult circumstances. Up to 2014, the Institute has published 820 papers. 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's Annual Reports are being published in the *Bulletin of the American Astronomical Society (BAAS)*.

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 (AJ, ApJ, A&A and MNRAS).

During these years, INI Armenian Branch staff members have been 27 astronomers: Hamlet Abrahamian, Levon Aramyan, Tigran Arshakian, Marine Avtandilyan, Smbat Balayan, Lidia Erastova, Kamo Gigoyan, Armen Gyulbudaghian, Artur Hakobyan, Susanna Hakopian, Haik Harutyunian, Lilit Hovhannisyan, Rafik Kandalyan, Artur Karapetian, Tigran Magakian, Norair Melikian, Areg Mickaelian, Gor Mikayelyan, Tigran Movsessian, Hripsime Navasardian, Tigran Nazaryan, Arthur Nikoghossian, Elena Nikoghossian, Artashes Petrosian, Lusine Sargsyan, Parandzem Sinamyman, and Armen Sinanian.



6 research groups have been created in frame of the Armenian Branch for more purposeful work. The subjects and Heads of the groups are:

- *Physics and Evolution of Stars* (T. Yu. Magakian),
- *Variable Stars* (N. D. Melikian),
- *Physics and Evolution of Galaxies* (A. R. Petrosian),
- *Surveys and Studies of New Objects* (A. M. Mickaelian),
- *Observational Cosmology* (H. A. Harutyunian),
- *Theoretical Astrophysics* (A. G. Nikoghossian).

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. We give in the table statistics of all INI Armenian Branch papers by authors (total numbers in the last row do not correspond to the sum of all authors' papers, as there is a number of papers with several co-authors).

Surname, Given Names	Papers in frame of INI 2000-2015				
	<i>AJ</i>	<i>ApJ</i>	<i>A&A</i>	<i>MNRAS</i>	Total
Abrahamian, Hamlet V.			1		1
Aramyan, Levon S.			1		1
Arshakian, Tigran G.		4	7	1	12
Avtandilyan, Marine G.			2		2
Balayan, Smbat K.			2		2
Erastova, Lidia K.	1		1		2
Gigoyan, Kamo S.			11	1	12

Gyulbudaghian, Armen L.					0
Hakobyan, Artur A.			5		5
Hakopian, Susanna A.			1		1
Harutyunian, Haik A.					0
Hovhannisyian, Lilit R.	1		1		2
Kandalyan, Rafik A.			2		2
Karapetian, Artur A.	2				2
Magakian, Tigran Yu.			6		6
Melikian, Norair D.	6		1		7
Mickaelian, Areg M.	2	1	7	3	13
Mikayelyan, Gor A.			1	1	2
Movsessian, Tigran H.			6		6
Navasardian, Hripsime Kh.	1				1
Nazaryan, Tigran A.					0
Nikoghossian, Arthur G.			3		3
Nikoghossian, Elena H.			1		1
Petrosian, Artashes R.	4	5	10		19
Sargsyan, Lusine A.		2	1		3
Sinamyian, Parandzem K.				2	2
Sinianian, Armen A.			1		1
Total	13	11	46	4	74



The Closest Rocky, Transiting Exoplanet Discovered Using HARPS-N and Spitzer

Avet HARUTYUNYAN

A small fraction of exoplanets have their orbits oriented in such a way that an observer from Earth can see them crossing in front of their stars. These are transiting exoplanets and astronomers are especially interested in these. As a transiting planet crosses in front of its star, the starlight dims, and the amount of this dimming reveals fundamental information: the size of the planet. Other valuable clues about the planet's atmosphere and surface can also be obtained. An international team of astronomers from Switzerland, Italy, USA and UK has just discovered the closest transiting exoplanet at just 21 light-years away!

The new planet, HD 219134b, was discovered around 5th-magnitude star named HD 219134 using HARPS-N spectrograph at the Italian Telescopio Nazionale Galileo in La Palma, Canary Islands. HARPS-N, the most precise spectrograph in the northern hemisphere, is designed to detect planets through radial velocity method. The HARPS-N data allowed astronomers to obtain the planet's orbital information and measure its mass: HD 219134b orbits its star in 3 days and weighs 4.5 Earth masses.

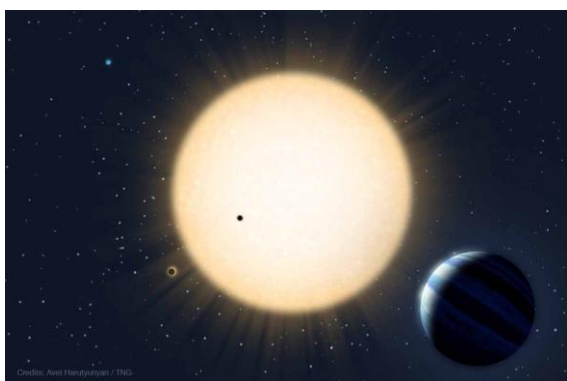
Such a short rotational period implies that the planet orbits very close to its star and this in turn means that there are good chances to see the planet transiting its star. With this in mind, the team used the NASA's Spitzer space telescope to observe the star looking for the possible transit. At the expected time the transit was detected!

Using the transit information the researchers measured the planet's size which is 1.6 times that of the Earth. The size and mass estimates imply a density of about 6g/cm^3 meaning that HD 219134b is a rocky planet.

This is not over, the team detected three more planets in the same system! Two of them with 2.7, 8.7 Earth masses are orbiting relatively close to the star every 6.8 and 46.8 days, respectively, and a third 62 Earth-mass giant planet at around 2 astronomical units and orbiting the star in more than 3 years. Also these additional planets may potentially be transiting, making the entire system an exciting target. In fact, the team is already busy organizing the future observations of the system.

HD 219134, which can be spotted in the constellation of Cassiopea by unaided eye from dark skies, is a K dwarf star slightly cooler and less massive than our Sun. This otherwise modest star from now on will be famous for hosting the closest transiting planet, and will be a favorite target of the astronomers using both ground and space based telescopes.

The research article with of this discovery was today accepted for publication in "Astronomy & Astrophysics" journal.

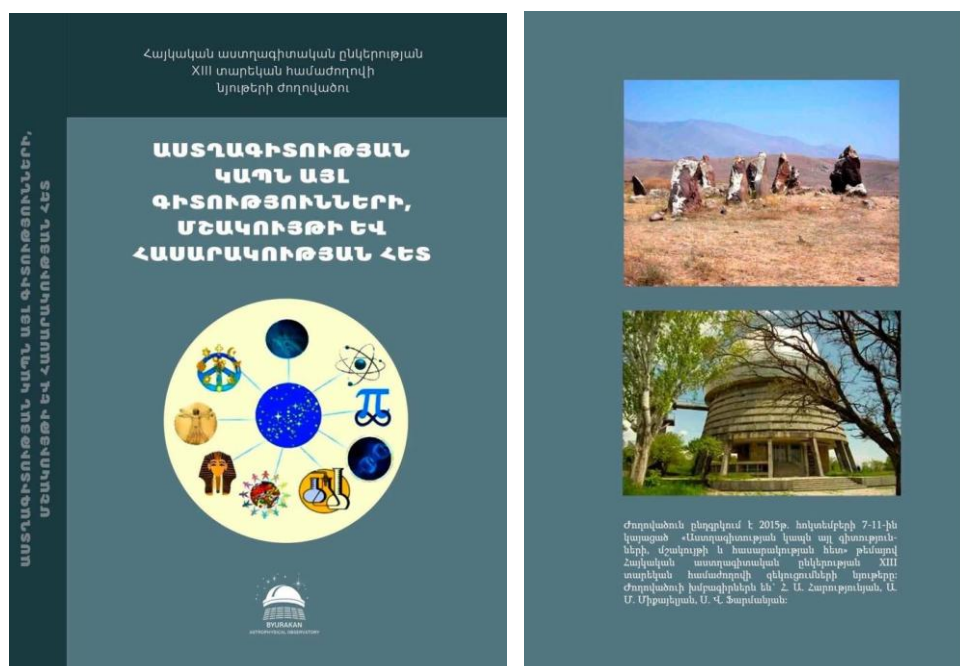


Artist's impression of HD 219134 system. Image credits: Avet Harutyunyan / TNG



The TNG at the Roque de los Muchachos Observatory. Image credits: Avet Harutyunyan / TNG

Publication of the Proceedings of Conference “Relation of Astronomy to Other Sciences, Culture and Society”



Proceedings of the meeting “*Relation of Astronomy to Other Sciences, Culture and Society*” have been published by Armenian National Academy of Sciences “Gitutyun” Publishing House. The editors are Haik Harutyunian, Areg Mickaelian and Sona Farmanyan. The book has 460 pages and includes invited and contributed talks, as well as Preface giving general information on the meeting and its main events, lists of organizers and participants. The book consists of 8 main sections: Astronomy and Philosophy, Astrobiology, Space-Earth Connections, Astrostatistics & Astroinformatics, Astronomy & Culture, Astrolinguistics, Archaeoastronomy, Scientific Tourism & Scientific Journalism and Armenian Astronomy.

Invited and contributed talks were presented; moreover, a review talk describing the current situation of each field was presented for all of special fields. The present Proceedings include all the talks. We hope that the Proceedings will be an interesting and valuable resource for many professionals and broad mass of readers.

The conference took place at NAS RA V. Ambartsumian Byurakan Astrophysical Observatory on 7-10 October, 2014. Among the participants there were astronomers, philosophers, biologists, mathematicians, historians, archeologists, specialists of literature, linguists, culturologists, experts in tourism and other fields, moreover, there were participants from the USA, France, Colombia, Russia, Georgia and from many organizations of Armenia. The meeting was devoted to the role of astronomy in science, culture and other fields of human activity and development of these fields due to the knowledge obtained from the Universe. The meeting was aimed at the development of problems of interdisciplinary sciences in Armenia and preparation of a basis for further possible collaborations by means of presentation of available modern knowledge in various areas by experts from different professions and by joint discussions.

Haik HARUTYUNIAN, Areg MICKAELIAN, Sona FARMANYAN
(Editors)

ARMENIAN COUNCIL OF ARCHAEOASTRONOMY AND ASTRONOMY IN CULTURE

On the 17th of July Byurakan Astrophysical Observatory hosted the representatives from the National Academy of Sciences of the Republic of Armenia (NAS RA), RA Ministry of Culture and Creative Unions. The guests visited 2.6m telescope, heard Dr. Areg Mickaelian's talk on "**Archaeoastronomy and Astronomy in Culture**", discussed and signed a cooperation agreement.



Dr. Mickaelian mentioned that the topics of Archaeoastronomy and Astronomy in Culture are on the focus of a number of international organizations. Academician **Elma Parsamian** added that in the developed countries this area is studied by astronomers, historians, archaeologists, ethnographers, literary critics, linguists, philosophers, theologians, art critics and other scientists. **Dr. Haik Harutyunian**, Director of Byurakan Astrophysical Observatory emphasized that this topic is in fact multidisciplinary and in some cases it is interdisciplinary science. **Yuri Suvaryan**, Academician-Secretary of the Division of Armenology and Social Sciences welcomed the initiative and made a series recommendations, including the study of the history of astronomy, astronomical terms and calendar. **Dr. Eduard Militonyan**, the Director of Writers Union of RA noticed that the sky is missing in Junior's literature and that is why children do not read anymore, they left the literature. **Ms. Arev Samuelyan**, Deputy Minister of Culture noticed that by developing "Archaeoastronomy and Astronomy in Culture" topic Byurakan Astrophysical Observatory may also become a touristic center.

The Council was established by the necessity of the development of this area in Armenia. It plans regular meetings and discussions, research and scientific publications, cooperation between NAS RA institutes, Yerevan State University faculties and Creative Unions, organizing interdisciplinary seminars, local and international conferences, as well as the publication of journals, books and other materials.

RELEASE OF CAP JUNE ISSUE



Editorial

(Georgia Bladon)

Explained in 60 Seconds: Windy with a chance of flares

(Nicky Jenner)

Communicating Astronomy with a Mass Audience — BBC's Stargazing Live goes Dutch

(Marieke Baan)

A Global Audience for New Race to the Moon: Outreach for the Google Lunar XPRIZE

(Anita Heward, Chanda Gonzales, Cynthia Ashley, Pearl Hwang, Steven Canvin)

Astrotour 2010: A retrospective

(David Ault)

The Aristarchus Campaigns: Collaboratively measuring the Solar System

(Jorge I. Zuluaga, Juan C. Figueroa)

Ten Challenges of Producing an Astronomical Gigapixel Image

(Mathias Jäger, Lars Lindberg Christensen)

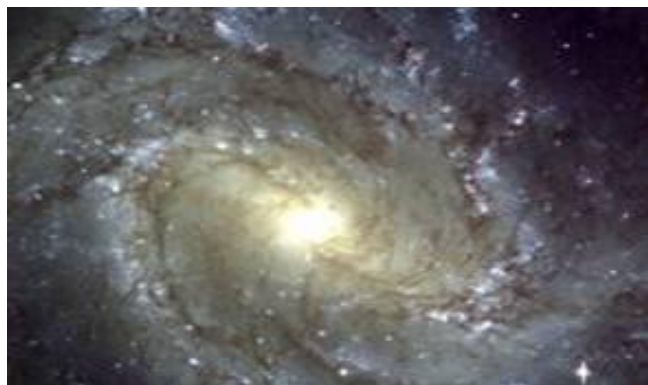
The Universe at the Fingertips of the Visually Impaired: Building a tactile planetarium

(Cláudio Luiz Carvalho, Hermes Adolfo de Aquino)

Astrocourier Newsletter is available in the following

link:<http://www.capjournal.org/issues/17/index.php>

RELEASE OF ASTROCOURIER JULY ISSUE



CONTENTS

Preface

Anniversary of A. M. Cherepashchuk

Chronicle of events:

European Week of Astronomy and Space Science 2015 in Tenerife, Canary Islands, Spain (EWASS, past JENAM)

30th Anniversary of the Observatory of the Canary Islands, and the official opening ceremony of the Canary telescope - robot "Master"(June 27, 2015)

Release of Armenian Astronomical Society's Newsletter (ArASNews #82)

06-08 July, 2015, Baku, Azerbaijan International Conference "Variability of the Sun and Sun-Like Stars: from Asteroseismology to Space Weather"

16-19 June 2015, Yaroslavl, 2nd International Festival of popular science programs "Reflection of the Universe"

11-24 June 2015, Pushchino Summer School for Young Astrophysicists

Memorial:

In Memory of Helen Evgenyavna Benevolensky and Valery Leushina

Astrocourier Newsletter is available in the following link:

<http://www.sai.msu.ru/EAAS/rus/astrocourier/070715.htm>

Anatol Cherepashchuk – 75

Prof. Anatol CHEREPASHCHUK, famous Russian astronomer, renowned specialist in the field of close binary stars, Director of Moscow State University Sternberg Astronomical Institute (SAI), Academician of Russian Academy of Sci. (RAS), ArAS member, celebrated his 75th anniversary.

Anatol Mikhailovich Cherepashchuk was born on July 7, 1940 in Syzran (Samara province, Russia). He graduated from the astronomical division of the Department of Physics of Moscow State University (MSU) in 1964. Ph.D. thesis in 1967 (“Study of the system V444 Cygni. Interpretation of eclipsing systems as inverse problem of photometry”), Doctoral thesis in 1976 (Method and result of narrow-band photometric studies of close binary systems with extended atmospheres and other non-stable objects). Since 1985 he is a Professor, since 1986 heads the Chair of Astrophysics and Stellar Astronomy, since 1986 also heads the astron. division of the Dept of Physics, as well as since 1986 is Director of SAI and Chair of division of Stellar Astrophysics, Corresponding Member of RAS (1997), Academician of RAS (2006). He is the Deputy Chair of the Astronomical Council (1993), Chair of the section “Stars and Planetary Systems” of the Scientific Council of RAS.

Cherepashchuk’s main research fields are astrophysics, stellar physics, and study of close binary stars at late evolutionary stages. He developed a new research field, physics of close binary systems at late evolutionary stages. Well-known are his works on Wolf-Rayet stars, neutron stars and candidates for black holes in binary systems. Observations led to new methods developed for the interpretation of observations of close binary stars in frame of non-traditional models. Masses, radii, temperatures, and evolutionary statuses of peculiar stars in binary systems were determined. He carried out a number of pioneering studies, including the creation of high efficiency theory, methodology, and equipment for study of close binary stellar systems, correct 16 definitions of radii and temperatures of Wolf-Rayet stars were given, it was shown that they are naked helium nuclei of massive stars at late evolutionary stage, optical evidences of X-ray binary systems were studied, mass estimations of black hole candidates were given. He developed and obtained observational confirmation for the concept of cloudy wind of Wolf-Rayet stars. He discovered optical eclipse in the unique object SS433 with collimated processing relativistic out flows and revealed the nature of this mysterious object. He suggested and justified by optical observations the presently accepted model of SS433 as a massive X-ray binary system at its late evolutionary stage with processing supercritical accretion disk around the relativistic object. These investigations are useful for the understanding of the nature of the galactic nuclei with similar relativistic collimated outflows of matter. At present the study of variability of spectral lines and search for delay effects grew to a new direction of investigations of structure of AGN. He has prepared 18 Ph.D. students and 3 Doctors of Science. He has published some 250 research papers.

Cherepashchuk is a member of IAU, EAS, Royal Astronomical Society (1999), ArAS (2009). He has been the EAS Vice-President (2000), Deputy Editor-in-Chief of Russian Astronomical Journal (“Astronomy Reports”) and of “Astrophysics and Space Science”, member of editorial boards of “Priroda” and “Zemlya i Vselennaya”. He is Laureate of Lenin Comsomol Prize (1974), MSU Lomonosov Prize of I degree for scientific research (1988), MSU Lomonosov Prize for teaching activities (2001), RAS A.A. Belopolski Prize (2002), Russian Federation State Prize in the field of science and technology (2008). He was awarded an Order of People’s Friendship (1999) and medal “To the 850th anniversary of Moscow” (1997).

Zadig Mouradian is 85 !

Five years ago I wrote: *“Is Zadig Mouradian really 80 years old?”*

Time passed and I wonder if this is still true. It is not so much because he looks so fit and his hair is still dark, as his unwavering passion for astronomy, in particular for the Sun. Besides, he is always thinking of the future that lies ahead. Perhaps this is why others get older, but not he.

The storms of the life have not spared him but he seems stronger than them. He has never forgotten where he left from and how he got where he is now. He had been noticed even during his university studies as a serious student who knows what he wants. Soon after obtaining his degree he found a good job in the Capital city, in an enterprise named after the god of fire - Vulcan. But the fire that has been lighting up all his life is the Sun. As soon he could, he resigned and took up a position as a researcher at the Astronomical Observatory.

But what happened in Romania in the 50s years pushed him towards to the West. In 1958 he settled in Paris, where he later obtained his PhD in Physical Sciences. He worked in Paris until his "retirement". We used special quotes because an administration can impose a law, can discourage people from working officially for money, but cannot stop passion.

It is no wonder therefore that today Zadig is still working without interruption, that he is so full of ideas and that he still does his best to unravel the mysteries of the Sun.

I shall mention only his most important accomplishments:

- First observation of solar magnetic field evolution of an active region before, during and after a solar flare.
- Discovery of material transport by specula from chromospheres toward corona, the main supply of solar wind.
- Measure of solar extreme limb darkening quoted in "Astrophysical Quantities", issues 1973 and 2000.
- "Mouradian's Effect" of optical thick spectral lines. The velocity field of the solar atmosphere produces Doppler shift which reduces the optical thickness in the line core.
- Discovery of thermal disappearance of solar prominences by heating.
- Design and building supervision of the 8 m Solar spectrograph set up at Pic du Midi Observatory (Pyrenean Mountains, France), still working.
- Conception and supervision of a computer program for digital recording, analyzing and drawing of "Synoptic Maps of Solar Activity" and their publication. The only existing computer controlled synoptic maps in the world.
- Finding of a new method for the measure of solar activity rotation rate, which reveals new parameters of solar activity.

But it is inevitable that an observer of the Sun must also experience numerous eclipses.

Perhaps the dearest to him was the total solar eclipse of 11th August 1999. This was particularly important for him as he could personally organize the related event in the country he had left decades ago.

It was also the opportunity to organize, for the first time in the world, in 1996, a scientific meeting before an eclipse. The results were then published in 1997 in "Theoretical and Observational Problems Related to Solar eclipses". Both of us were the organizers of the event and editors of the book.

After wars he has kept track of careers of the students that he supervised in Romania and in Paris during their PhDs. He has also kept an eye on the latest developments in Romanian astronomy, which has always been particularly important to him.

I'm sure that all the anniversaries that we will be celebrating from now on – hopefully lots - will never cease to surprise us. Surely the coming years will shine bright in his unquenchable passion for the Sun.

Many happy returns
Magda Stavinschi

ArAS New Members

We are happy to inform that ArAS has new members, including Viktor Ambartsumian International Prize winners and foreign members of the National Academy of Sciences of RA.



Prof. Brent TULLY is an astronomer at [the Institute for Astronomy at the University of Hawaii](#) since 1975. He was born in 1943 in Toronto, Canada and he received his B.Sc. from the [University of British Columbia](#) in 1964 and his Ph.D. from the [University of Maryland](#) in 1972. He was a postdoctoral researcher at the [Observatoire de Marseille](#) in 1972-1975. The main fields of Prof. Tully's research are extragalactic distance scale, galaxy motions, distribution of dark matter, large scale structure of the universe, luminosity function of galaxies, and dwarf galaxies. He was one of the pioneers of a branch of astronomy so-called Near Field Cosmology related to our understanding of the formation and evolution of galaxies and of the universe itself, with its weblike pattern of filaments of clusters and superclusters separated by vast voids of empty space. In 1977 Prof. Tully and his collaborator J. Richard Fisher discovered a relationship between the mass of galaxies and their luminosities that allow astronomers calculate distances to galaxies, thereby endowing maps of the universe with a third dimension, now well known as Tully-Fisher relation. In 1988, Prof. Tully published The Nearby Galaxies Catalog, along with the Nearby Galaxies Atlas, the first major attempt to illustrate the 3D distribution of galaxies. He has also published catalogs of directly measured distances, including distances for over 8,000 galaxies, which is the largest assembly of distance currently available (2013). He has published more than 350 scientific papers. He is an honorary member of the [Royal Astronomical Society of Canada](#). He has received a distinguished alumnus award from the [University of Maryland](#) and the [University of Hawaii Regents Medal](#) for Outstanding Research. He is the winner of Wempe Award from the [Leibniz Institute for Astrophysics](#) (Potsdam, Germany, 2014), awarded [Gruber Cosmology Prize](#) (2014, shared with Jaan Einasto, Kenneth Freeman, and Sidney van den Bergh) and [Viktor Ambartsumian International Prize](#) (2014) shared with Prof. Igor Karachentsev.



Prof. Igor KARACHENTSEV is a Principal Scientist at [Special Astrophysical Observatory \(SAO\)](#), Russia. He was born on Feb 17, 1940, in Kiev, Ukraine. In 1962 he graduated from Astronomy Department, Physical Faculty, [Kiev State University](#) and started his career at [Byurakan Astrophysical Observatory](#) (BAO, 1962-1967). He took his Ph.D. degree in 1967 at BAO on the "Dynamical state of systems of galaxies" (advisor V.A. Ambartsumian) and moved to [Kiev State University](#). Since 1971 Prof. Karachentsev works at SAO. In 1973-1975 he was the Vice Director of SAO and in 1975-2006, Head of the [Extragalactic Research Laboratory](#). In 1982 he defended his Doctor of Sciences thesis on the "Dynamics and structure of binary galaxies". Prof. Karachentsev has been member of Scientific Organizing Committee of 20 international meetings, member and secretary of the Time Allocation Committee of the 6m telescope (1977-1992) and is member of [International Astronomical Union](#) and Editorial Boards of "[Astrofizika](#)" and "[Astrophysical Bulletin](#)". The main fields of Prof. Karachentsev's research are Dwarf galaxies, Local Volume galaxies, Systems of galaxies, Dark Matter, Galaxy interactions, Galaxy redshifts, Large-scale structure and streamings, Observational Cosmology, and Dark Energy. He has published more than 500 scientific papers, as well as the monograph "Binary galaxies" (Moscow, 1987). He has supervised 14 Ph.D. theses. He has been awarded Senior Honored Scientist of the Russian Federation (2010), F. Bredikhin prize of the [Russian Academy of Sciences](#) (2004), H. Chretien grant of the [American Astronomical Society](#) (1999) and [Viktor Ambartsumian International Prize](#) (2014) shared with Prof. Brent Tully. In 1997-1999 he had a Fellowship in the program of the President of the Russian Federation for supporting of Russian scientists and in 1991-1996, a Fellowship of the Expert Council "Cosmology and Microphysics" of the [Russian Academy of Sciences](#).



Dr. Varoujan GORJIAN is PhD in Astronomy and Astrophysics and a researcher of [NASA's Jet Propulsion Laboratory](#) (JPL, USA). He graduated from the [California Institute of Technology](#) (Caltech) and [University of California](#), Los Angeles (UCLA). Since 2000 he is a Scientist of Spitzer Project Science Office. In 2002-2006 Gorjian was Herschel Project Science Office Scientist and in 1998-2000 he was Research Associate of [National Research Council Resident](#). He has been awarded NASA Group Achievement Award, WISE Education and Public Outreach Team (2013), NASA Group Achievement Award Visitor Center Redesign Team (2011), NASA Group Achievement Award Spitzer Public Affairs & Educational Outreach Team (2011), NASA Group Achievement Award SIM Science Office Team (2011), NASA Group Achievement Award NASA/IPAC Teacher Archive Research Project (2011), [Muhlmann Award](#) from the [Astronomical Society of the Pacific](#) to the Spitzer Space Telescope Team (2010) and National Research Council Postdoctoral Fellowship (1998 - 2000). In 2014 he was elected as a foreign member of the [National Academy of Sciences of the Republic of Armenia](#) (NAS RA). His research is focused on the study of Active Galactic Nuclei (AGN) with emphasis on determining their intrinsic luminosity and their fueling mechanism, infrared and Radio imaging of young star forming regions, which may be the sites of globular clusters in formation and determining the Cosmic Infrared Background (CIRB) in the near infrared to help constrain the cosmic star formation history.



Dr. Razmick MIRZOYAN was born on September 21, 1957 in Yerevan. He is a specialist of High Energy Astrophysics. He is the Head of MAGIC group at [Max-Planck-Institute for Physics](#) (MPIP) and [MAGIC Telescope Project](#) Manager, leading specialist and speaker of international Taiga cooperation, Professor of [Irkutsk State University](#) (ISU, Russia) and the head of the laboratory of ISU Multi-TeV Energy Gamma-Ray Astronomy. In the early 1990's, Mirzoyan took a leading role in the design, construction, and operation of the six imaging telescopes of the [HEGRA](#) collaboration on the Canary Islands. Upon conclusion of the [HEGRA](#) experiment, he led the creation of the [MAGIC Cherenkov radiation telescope](#) system, also on the Canary Islands. Now, Mirzoyan is actively participating in the design of the Cherenkov Telescope Array project, the leading astrophysical project in Europe, as the head of the TAIGA experiment near Lake Baikal in Russia. This experiment will search for ultra-high gamma ray sources in the universe and measure other aspects of cosmic radiation. In 2014 he was elected as a foreign member of the [National Academy of Sciences of the Republic of Armenia](#) (NAS RA). His achievements include silicon based light sensor of advanced topology and development of imaging air Cherenkov telescopes for sub-100 Electron volts gamma ray astronomy.



Prof. Armen SEDRAKIAN is a specialist of theoretical physics and astronomy. He is a researcher at the Institute for Theoretical Physics at the [University of Frankfurt-am-Main](#) and is Professor at [Yerevan State University](#) since 2011. In 1989 he got Diploma in Physics at Rostock University, in 1992 defended his PhD in Physics at [Yerevan State University \(YSU\)](#). In 2007 he became Doctor of Physical and Mathematical Sciences at [Yerevan State University](#). He has been visiting astronomer at many leading institutions including [Institut de Physique Nucleaire d'Orsay](#) (France, 2001), [INT](#), Seattle (USA, 1999-14), Junior Fellow at [ECT*](#) Trento (Italy, 2000) and [Albert-Einstein-Institute](#), Potsdam (Germany, 2013-14). Much of his research is focused on understanding the physics of superfluidity and superconductivity in neutron stars, nuclear matter, quark matter and ultra-cold atoms. In 2014 he was elected as a foreign member of the [National Academy of Sciences of the Republic of Armenia](#) (NAS RA).



Gayane KOSTANDYAN was born 1974 in Kapan, Armenia. She has graduated from [Yerevan State University \(YSU\)](#), Department of Astrophysics (1996). Gayane works at [Byurakan Astrophysical Observatory](#) (BAO) since 2003 and currently she is a junior research associate at BAO. In 1997-1998 she worked as a teacher of Physics and Astronomy at N63 Secondary School after Aghayan, and in 2009-2010 at Huysi Paros Secondary School. She has also participated in research grant: [ANSEF grant](#) "NAS Dust obscuration and velocity distribution in narrow line regions of AGN" in 2010. Since 2015 Gayane is also member of "[BAO Plate Archive](#)" project executing team. Her research fields include variable stars, carbon stars and cataclysmic variables. As a result she has some 10 papers in *Astrofizika*/Astrophysics and proceedings of international meetings. She has participated in several meetings and schools including the First and the Second Byurakan International Summer Schools (2006 and 2008).



Gor MIKAYELYAN was born in 1987 in Yerevan. He studied at [Yerevan State University \(YSU\)](#), Department of Physics and graduated from the Northern University, Department of Computer Systems and Informatics (2014). He participated in the project "[Digitized First Byurakan Survey \(DFBS\)](#)" (2005), he is a member of the team of [Armenian Virtual Observatory](#) (ArVO) (2005-presently) and a member of the project "[BAO Plate Archive](#)" (2015-presently). His work experience includes database management, web programming and design, internet security, application development and distribution. He has 13 scientific publications in 2005-2014, including in *A&A*, *MNRAS*, *Romanian Astronomical Journal*, *IAU Symposium #267* and electronic catalogs in *Vizier*. He participated in several meetings including VO meeting in 2005 (Sofia, Bulgaria), *IAU GA XXVII* in 2009 (Rio de Janeiro, Brazil), [Young Scientists Conference](#) 2011 (Yerevan, Armenia). He participated in the following grants: International Scientific--Technical Center (ISTC) projects A-1451 (2007-2009) and A-1606 (2008-2010), Web Group Manager – Service d'Aeronomie, Europlanet IDIS project, Paris, France (2008-2010). Gor is [ArAS](#) webmaster since 2009. He has created webpages of most of the meetings held in Byurakan and other websites.



Sona FARMANYAN was born in 1991 in Yerevan. She has graduated from [Yerevan State University \(YSU\)](#) and received her M.Sc. degree in 2014. In 2013 she was the leader of the LOC supporting team at [IAU Symposium #304](#). Since 2013, she works at NAS RA [Viktor Ambartsumian International Science Prize](#) office as Executive Secretary of the International Steering Committee and since 2014 she also is the program coordinator of "[Viktor Ambartsumian Descendants](#)" [Educational Charitable Foundation](#). Since 2015 she is a member of BAO Plate Archive Project team. She is the Editor of *ArASNews* since the first issue of 2015. Sona distributes [ArAS Press-releases](#) to Armenian mass-media and writes scientific-popular articles for *168Hours* newspaper. In addition, she is an expert in English and Cultural Studies and she is interested in **Astronomy in Culture**, which is subject for collaboration between several NAS RA institutes. In 2014 she was the coordinator and the co-editor of the Proceedings of the [Meeting "Relation of Astronomy to other Sciences, Culture and Society"](#). She has organized the first [Byurakan Science Camp \(BSC\)](#), coordinated *ArAS School Lectures* program and many events organized in Byurakan. Sona has published several papers related to Astronomy in Culture. She has been the language editor of several astronomical publications. Sona created a [Junior Astronomers Club \(JAC\)](#) to increase young people's interest to astronomy. She is a member of [IAU Working Group on Archaeoastronomy and Astronomy in Culture \(WGAAC\)](#).

AUGUST CALENDAR OF ASTRONOMICAL EVENTS

Monthly Calendar of Astronomical Events
AUGUST 2015

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
1 Junior Astronomers Club visit to Byurakan	2	3 IAU XXIX General Assembly (Hawaii, USA) IAU Symposium #315	4 IAU Symposium #317	5 IAU Symposium #318 Conjunction of Mercury vs. Venus (8°11' angle distance)	6 Lunar occultation of Uranus Triple Conjunction of Venus, Uranus and Mars (4.97 angle distance)	7 Lunar crescent (last quarter) Conjunction of Mercury vs. Jupiter (35' angle distance)
8	9	10 Cepheids-2 meteor shower; peak at 2015.08.20-21	11 IAU Symposium #316	12 IAU Symposium #319 Gabriel Ohanian's 60th anniversary	13 IAU Symposium #320	14 Full moon
15	16	17	18	19	20	21
22 Lunar crescent (first quarter)	23	24	25	26	27	28 Triple Conjunction of Mercury, Jupiter and Venus (7.85 angle distance)
29 New moon Super Moon Conjunction of Venus vs. Mars (9°25' angle distance)	30	31 Deadline for submission of ANSEF projects 2016				