

ArAS News

NEWSLETTER OF THE
ARMENIAN ASTRONOMICAL SOCIETY (A r A S)

No. 66 (October 27, 2013)

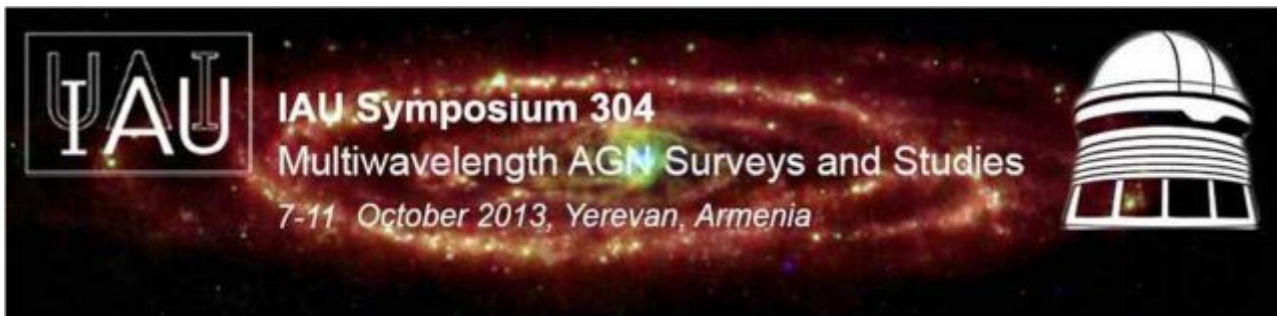


CONTENTS:

1. IAU Symposium #304 in Armenia	2
2. "The Modern Physics of Compact Stars and Relativistic Gravity"	4
3. "Quantum Aspects of Black Holes and its Recent Progress"	4
4. Armenian-Georgian astronomical colloquium	5
5. XVIII International Astronomical Olympiad in Lithuania	7
6. Viktor Ambartsumian International Prize 2014	8
7. ArAS Annual Prize for Young Astronomers (Yervant Terzian Prize) 2013	9
8. Establishment of the ICRANet office in Armenia	10
9. Publication of Beniamin Markarian booklet	10
10. Publication of astronomical calendars 2014	11
11. Anniversaries: Gurgen Sahakyan – 100	12
Vahe Paterosian – 75	13
Garik Israelian – 50	14

The ArAS Newsletter in the INTERNET: <http://www.aras.am/ArasNews/arasnews.html>

IAU SYMPOSIUM #304 in ARMENIA



The **IAU Symposium #304 “Multiwavelength AGN Surveys and Studies”** dedicated to Benjamin Markarian’s 100th anniversary took place in Yerevan, Armenia on 7-11 October 2013. It was the largest symposium ever held in Armenia both by the number of its participants and represented countries and its international significance. The International Astronomical Union (IAU), Armenian National Academy of Sciences (NAS RA), Byurakan Astrophysical Observatory (BAO) and the Armenian Astronomical Society (ArAS) were the organizers.

The **scientific topics** covered were:

- Historical surveys: spectral and colorimetric surveys for AGN, surveys for UV-excess galaxies
- AGN from IR/submm surveys: 2MASS, IRAS, ISO, AKARI, SCUBA, SST, WISE, Herschel
- AGN from radio/mm surveys: NVSS, FIRST, ALMA, Planck, and others
- AGN from X-ray/gamma-ray surveys: ROSAT, ASCA, BeppoSAX, Chandra, XMM, INTEGRAL, Fermi, HESS, MAGIC, VERITAS, NuSTAR
- Multiwavelength AGN surveys, AGN statistics and cross-correlation of multiwavelength surveys
- Unification and other models of AGN, accretion modes, understanding of the structure of nearby AGN from IFUs on VLT and other telescopes
- AGN feedback in galaxies and clusters, AGN host galaxies and the AGN environments
- Binary AGN and Merging Super-Massive Black Holes
- Study of unique AGN, AGN variability and the Phenomena of Activity
- Future large projects

There was a representative SOC of 18 members from 10 countries:

Felix Aharonian (DIAS, Dublin and MPK, Heidelberg, Ireland/Germany), Co-chair

Roger Blandford (Stanford University, USA)

George Djorgovski (California Institute of Technology (Caltech), Pasadena, USA)

Malcolm Longair (Cambridge University, UK)

Laura Maraschi (Osservatorio Astronomico di Brera, INAF, Milan, Italy)

Enrico Massaro (Sapienza Universita di Roma, Italy)

Areg Mickaelian (Byurakan Astrophysical Observatory (BAO), Armenia), Co-chair

Felix Mirabel (Centre d’Etudes Atomiques (CEA) de Saclay and CONICET, France/Argentina)

Ray Norris (CSIRO Astronomy and Space Science, Epping, Australia)

Paolo Padovani (European Southern Observatory (ESO), Garching, Germany)

Bradley Peterson (Ohio State University, USA)

Elaine Sadler (School of Physics, University of Sydney, Australia)
David Sanders (Institute for Astronomy (IfA), University of Hawaii, USA), Co-chair
Helene Sol (LUTH, Observatoire de Paris-Meudon (OBSPM), France)
Tadayuki Takahashi (Institute of Space and Astronautical Science (ISAS), JAXA, Japan)
Yervant Terzian (Cornell University, Ithaca, NY, USA)
Megan Urry (Yale University, USA)
Lutz Wisotzki (Leibniz-Institut-fur-Astrophysik (AIP), Potsdam, Germany)



Altogether, 128 astronomers from 26 countries attended the meeting, including Armenia, Australia, Canada, Chile, China, Colombia, Denmark, France, Germany, Greece, India, Iran, Israel, Italy, Japan, Mexico, Netherlands, Poland, Russia, South Africa, South Korea, Spain, Switzerland, UK, Ukraine, and USA (<http://iaus304.aras.am/participants.html>). In addition, together with the SOC members there were 141 official participants representing 28 countries, including also Argentina and Ireland.

The scientific program consisted of 28 invited and 52 contributed talks and 63 posters (<http://iaus304.aras.am/program.html>). A number of excellent review talks were given on various topics of AGN and many new excellent results were presented.

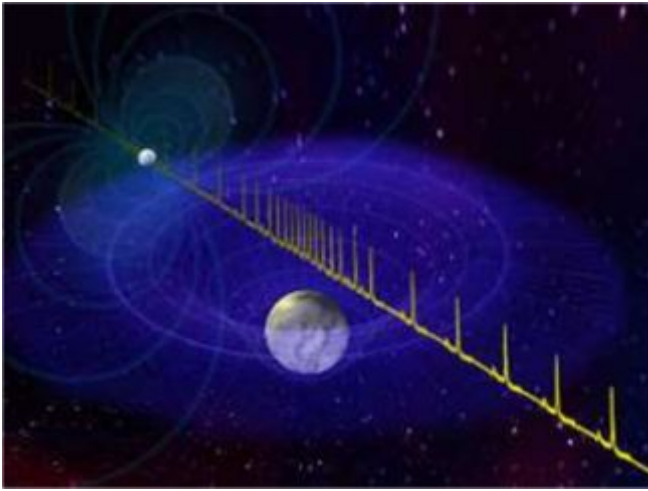
There was a rich social program: Welcome Reception, excursions (Yerevan City Tour; Garni and Geghard; Sevan and Noradus; Khor Virap, Noravank and Karahunge), visit to Matenadaran (museum of ancient manuscripts), to Ejmiatsin Cathedral and its Museum, Symphonic Concert at Yerevan Opera House, visit to BAO and social dinner, and Meeting Banquet.

The Symposium proceedings (<http://iaus304.aras.am/proceedings.html>) will be published by the IAU publisher, Cambridge University Press (CUP). The proceedings will be published both electronically and in print. The editors are Areg Mickaelian (Chief Editor), Felix Aharonian and David Sanders.

Meeting webpage: <http://iaus304.aras.am/>

Areg Mickaelian, Co-chair of SOC and Chair of LOC, IAU Symp. #304

The MODERN PHYSICS of COMPACT STARS and RELATIVISTIC GRAVITY



An international conference “The Modern Physics of Compact Stars and Relativistic Gravity” was held on 18-21 September 2013 in Yerevan, dedicated to the 100th anniversary of the outstanding physicist *Prof. Gurgen Sahakian*. This conference was the second in a series whose aim is to bring together people working in astrophysics of compact stars, physics of dense matter, gravitation and cosmology, observations of pulsars and binary neutron stars and related fields. As the first conference in 2008, it took place in Yerevan, Armenia. A dedicated talk was given about

G.S. Sahakian’s role and contribution in the world science.

The International advisory board consisted of M. Alford (St. Louis), E.R. Bezerra de Mello (Paraiba), G. S. Bisnovaty-Kogan (Moscow), F. Burgio (Catania), K. Kokkotas (Tübingen), D. Lai (Cornell), B. Link (Montana), J. Margueron (Orsay), C. Pethick (Copenhagen), M. Oertel (Meudon), L. Rezzolla (Potsdam), D. Rischke (Frankfurt Main), M. Sargsian (Miami), F. Weber (San Diego), D. N. Yakovlev (St. Petersburg). The Local Organizing committee consisted of R. Avagyan, E. Chubaryan, A. Saharian, A. Sedrakian, A. Yeranyan, N. Ayvazyan (secretary) and G. Colucci (web administrator). Sponsors of the meeting were Volkswagen Foundation, HIC for FAIR, and Ministry of Education and Science of Armenia.

There were about 60 participants at the conference from Heidelberg, Frankfurt, Groningen, New York, Tehran, Stockholm, Manchester, Miami, Joint Institute of Nuclear Research (Dubna), Phys-Tech Institute after Ioffe (St. Petersburg), etc. Armenia was represented by the YSU, YerPhI, and Institute of Applied Problem of Physics. There were many Armenian scientists from other countries.

Webpage of the meeting <http://indico.cern.ch/conferenceDisplay.py?confId=215145>

QUANTUM ASPECTS of BLACK HOLES and its RECENT PROGRESS



An International Workshop “Quantum Aspects of Black Holes and its Recent Progress” was held on September 24-26 in Yerevan, Armenia. One of the active research areas in theoretical high energy physics in understanding physics of black holes its thermodynamics, microstates comprising it and physical processes involving the hole. In this workshop the latest developments in the field were discussed. The workshop was organized within the ICTP UNESCO Network project "Novel approaches to mesoscopic phenomena" NET68 with partial support of Regional Training Network

in Theoretical Physics, sponsored by Volkswagen Stiftung. The meeting had regional format and 30 scientists from Armenia, Brazil, China, Georgia, India, Iran, Korea, Morocco, Russia, Thailand, Turkey, Ukraine, and USA participated. The head of the project is the Yerevan State University (YSU). Outstanding physicists-theorists Prof. Jan de Boer (Amsterdam Univ.), Finn Larsen (Michigan Univ., Penn.), Rouben Minasian (Saclay, France), excellent young researchers Monica Guica (Penn. Univ.), Chetan Krishnan (Bangalore, India) and others attended the meeting.

Following topics were covered: Firewall, Kerr/CFT and EVH/CFT, Fuzzball project, and Quantum Entropy Function. The Organizing Committee consisted of V. Balasubramanian, J. de Boer, A. Nersessian, M.M. Sheikh-Jabbari (Chairman), A. Saghatelian (Conference Secretary), and V. Yeghikyan.

Webpage of the workshop <http://theorphyslab.ysu.am/ICTP/Workshop/>

ARMENIAN-GEORGIAN ASTRONOMICAL COLLOQUIUM

A joint **Armenian-Georgian (Byurakan-Abastoumani) Astronomical Colloquium on “Instability and evolution of stars”** dedicated to Academician L.V. Mirzoyan’s 90th anniversary took place on August 26-28 in the Byurakan Astrophysical Observatory (BAO).

The tradition of such events was put by Viktor Ambarstumian in early 1970s to strengthen Armenian-Georgian friendship and collaboration in astronomy. During such colloquia, scientific sessions, discussions, as well as sports games and friendly meetings are being held. Typically, the Armenian-Georgian colloquia were held every year; once in BAO and once in Abastoumani Astronomical Observatory (AbAO, presently Georgian National Astronomical Observatory – GENAO) and some 15 talks on recent scientific results were presented from each part. However in 1980s, the colloquia were held non-regularly and as a result this year’s Colloquium is the 14th. Both Ambartsumian and Mirzoyan had a large contribution in development of the Georgian astronomy, particularly due to them a number of collaborative projects were established, Georgian astronomers had research stays in BAO, Ambartsumian and Mirzoyan have been scientific advisors of a number of them. Also during the recent years there was collaboration between BAO, the Armenian Institute of Informatics and Automation Problems and GENAO on the creation of the Georgian Virtual Observatory.

The Colloquium 2013 was rather successful both in sense of scientific talks and for renovation of the collaboration between the two observatoires. In addition, IAU Regional Office of Astronomy for Development (ROAD) was discussed between the Armenian (Areg Mickaelian) and Georgian (Maya Todua) parts.

Some 30 talks were given by BAO and GENAO representatives, as well as Valery Hambaryan, who was visiting BAO from the Jena University (Germany). The Georgian guests visited the Armenian sightseeings Khor Virap, Noravanq and Karahunge.



The previous Byurakan-Abastoumani colloquia:

Year	Place	Title and description of the colloquium
1974	BAO	I Joint Colloquium of BAO and AbAO
1976	AbAO	II Joint Colloquium of BAO and AbAO
1977	BAO	III Joint Colloquium of BAO and AbAO
1978	AbAO	IV Joint Colloquium of BAO and AbAO
1979	BAO	V Joint Colloquium of BAO and AbAO
1982	Tbilisi	VI Joint Colloquium of BAO and AbAO
1983	BAO	VII Joint Colloquium of BAO and AbAO
1984	AbAO	VIII Joint Colloquium of BAO and AbAO
1985	BAO	IX Joint Colloquium of BAO and AbAO
1988	BAO	Joint Colloquium of the Department of Astrophysics of the Leningrad State University, the Astronomical Council of the USSR Acad. Sci., BAO and AbAO
1997	AbAO	X Joint Colloquium of BAO and AbAO
1998	BAO	XI Joint Colloquium of BAO and AbAO, deidcated to L.V. Mirzoyan's 75 th anniversary
1999	AbAO	XII Joint Colloquium of BAO and AbAO
2003	BAO	XIII Joint Colloquium of BAO and AbAO, dedicated to L.V. Mirzoyan's 80 th anniversary
2013	BAO	XIV Joint Colloquium of BAO and GENAO, dedicated to L.V. Mirzoyan's 90 th anniversary

INTERNATIONAL ASTRONOMICAL OLYMPIAD in LITHUANIA



The 18th International Astronomy Olympiad (IAO XVIII) was held on 6-14 September 2013 in Lithuania, 50 km from Vilnius, in the Dubingay resort. The IAO provides the opportunity for the students between the ages of 14 and 18 to compete in knowledge and skills in Astronomy as well as to develop friendship with each other.

89 participants took part in the Olympiad from 20 teams representing 18 countries (Armenia, Bangladesh, Bulgaria, China, Crimea, Czech Republic, Estonia, India, Indonesia, Italy, Kazakhstan, Korea, Lithuania, Moscow province, Romania, Russia, Sri Lanka, Sweden, Thailand, and Ukraine).

This year 7 Armenian students took part in the IAO. Four of them became owners of Bronze medals. They are **Vardges Mambreyan** (Phys-Math School), **Arsen Vasilyan** (ASEU), **Hrant Topchyan** (Phys-Math School) and **Hayk Soghomonyan** (Phys-Math School). Gevorg Martirosyan (Gold medal in IAO-2012), Siranush Babakhanova (Bronze medal in IAO-2012) and Ara Mambreyan received diploma of participant. Most of the pupils are from the Physical and Mathematical specialized school after Artashes Shahinyan at YSU, and Arsen is a student from SEUA Base Gymnasium. The team leaders were **Marietta Gyulzadyan** (BAO researcher and Phys-Math School teacher) and **Emilia Karapetyan** (YSU lecturer).



From left to right: Ara Mambreyan (Phys-Math School), Hayk Soghomonyan (Phys-Math School, Bronze medal IAO-2013), Hrant Topchyan (Phys-Math School, Bronze medal IAO-2013), Gevorg Martirosyan (Phys-Math School, Gold medal IAO-2012), Marietta Gyulzadyan (Team Leader), Arsen Vasilyan (ASEU, Silver medal IAO-2012 and Bronze medal IAO-2013), Vardges Mambreyan (Phys-Math School, Bronze medals IAO-2011, IAO-2012 and IAO-2013), Emilya Karapetyan (Team Leader); in the front is Siranush Babakhanova (Bronze medal IAO-2012).

VIKTOR AMBARTSUMIAN INTERNATIONAL PRIZE 2014

Call for nominations



Viktor Ambartsumian Prize is one of the important awards in astronomy/astrophysics and related sciences. It is being awarded to outstanding scientists having significant contribution in physical-mathematical sciences from any country and nationality. The Prize totals USD 500,000 and is being awarded once every two years, starting with 2010.

To apply for the Prize, a work may be presented by an author or authors' group (not more than 3 persons). The cash award is being equally shared between the winners, and a diploma, a medal and a certificate are being awarded to each winner.

The right for the nomination of works is reserved to:

- Nobel Prize Winners
- Presidiums of national academies of sciences
- scientific councils of astronomical observatories
- councils of corresponding departments of universities

Nominations for Viktor Ambartsumian Prize are not allowed in case if the presented work has already won or at the same time has been presented for another international prize.

Necessary documents for nomination:

1. Official letter of nomination signed and sealed by the corresponding body,
2. Statement of scientific results or achievements, which are being nominated,
3. Curriculum Vitae of the nominee(s),
4. List of refereed publications of the nominee(s),
5. General annotations with reports of three referees,
6. Published papers, books, CD/DVDs, or other works that are being nominated,
7. Other documents that might be important for the decision.

The documents should be submitted to:

Viktor Ambartsumian Prize International Steering Committee, Presidium, National Academy of Sciences,

Marshal Baghramyan ave. 24, Yerevan 0019, Republic of Armenia. Phone: +374-10-525505.

Deadline for nominations: March 18, 2014. The decisions will be made before July 18, 2014 and Award of Viktor Ambartsumian Prize will take place on September 18, 2014.

Viktor Ambartsumian Prize International Steering Committee: *Prof. Radik M. MARTIROSYAN* (Armenia, Chair, *president@sci.am*), *Prof. Gennady S. BISNOVATYI-KOGAN* (Russia, *gkogan@mx.iki.rssi.ru*), *Prof. Catherine J. CESARSKY* (France, *catherine.cesarsky@cea.fr*), *Prof. Norio KAIFU* (Japan, *norio.kaifu@nao.ac.jp*), *Prof. Michel MAYOR* (Switzerland, *michel.mayor@unige.ch*), *Prof. Vahé PETROSIAN* (USA, *vahep@stanford.edu*), *Prof. Martin J. REES* (UK, *mjr@ast.cam.ac.uk*), *Prof. Yervant TERZIAN* (USA, *terzian@astro.cornell.edu*), *Prof. Robert E. WILLIAMS* (USA, *wms@stsci.edu*).

Contact: Dr. Areg M. MICKAELIAN (Scientific Secretary, International Steering Committee, phone: +374-91-195914, E-mail: aregmick@aras.am, aregmick@yahoo.com).

Sona V. FARMANYAN (Executive Secretary, International Steering Committee, phones: +374-10-525505, +374-55-911307, E-mail: sona.farmanyan@mail.ru, vaprize@sci.am).

Viktor Ambartsumian International Prize official webpage: <http://vaprize.sci.am>.

Previous winners of Viktor Ambartsumian International Prize were:

2010: Michel Mayor (Switzerland), **Garik Israelian** (Spain) and **Nuno Santos** (Portugal) – *for their important contribution in the study of relation between planetary systems and their host stars*

2012: Jaan Einasto (Estonia) – *for his fundamental contributions to the discovery of dark matter and the cosmic web* and **Igor Novikov** (Russia) – *for his pioneering formulation how to confirm observationally that our Universe started as a hot Universe, and for proposing the method for determination of quasar masses*

Areg Mickaelian, Scientific Secretary, VA Prize Steering Committee

ArAS PRIZE for YOUNG ASTRONOMERS (YERVANT TERZIAN PRIZE)



ArAS is pleased to announce the **ArAS Annual Prize for Young Astronomers (Yervant Terzian Prize) 2013**. The prize will be awarded to a young scientist under 35 working in astronomy or related field and showing significant results in research and/or other scientific activities connected anyhow with the Armenian astronomy. **Nominations** may be made by ArAS members or any

research organization from Armenia or elsewhere and should be sent to one of the ArAS Co-Presidents. They should include personal data for the nominee and a brief description of his/her achievements during the year, including important scientific results, all published papers, participation in meetings, given talks, etc., whatever is considered to be important. At least one refereed publication is required to qualify for the Prize.

The **deadline** for applications is **December 1**. The winner will be announced in the last issue of ArAS Newsletter (#68) at the end of the year. A **diploma** and sum of **\$500** will be awarded to the winner. 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.

Previous ArAS Annual Prize Winners

- 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)

ESTABLISHMENT of the ICRANet OFFICE in ARMENIA

Recently a formal contract was signed between the International Centre of Relativistic Astrophysics Network (ICRANet) and the Armenian authorities, the State Committee for Science (SCS) and the Armenian National Academy of Sciences (NAS RA). The collaboration in fact exists for a number of years and *Prof. Remo Ruffini*, the ICRANet Director has accepted Armenia as a full ICRANet member. The agreement envisages the establishment of an ICRANet Armenian office in Yerevan and a number of forms of future collaboration. Theoretical and observational research will be carried out in the fields of relativistic astrophysics and cosmology, as well as ICRANet will support the creation and development of modern scientific infrastructures.



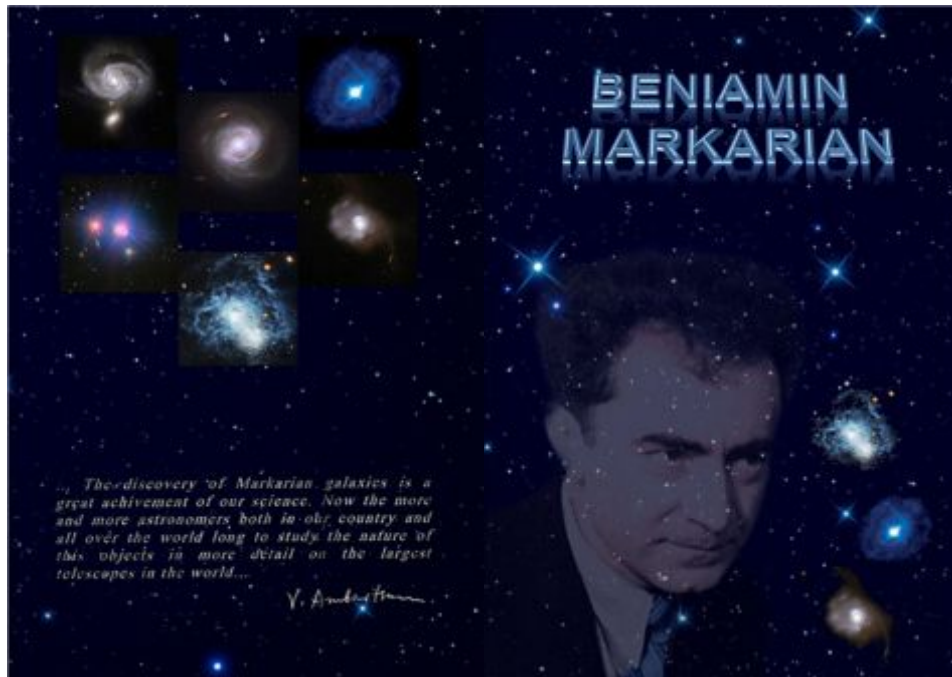
A special emphasis will be given to the collaboration with regional research centres. The Armenian office will be involved in the accomplishment of the ICRANet PhD and post-doctoral international programs, will organize international schools and meetings. The first international meeting and summer school is planned for 2014 June-July. The funding of the centre will start in 2014 as well.

PUBLICATION of BENIAMIN MARKARIAN BOOKLET

A 28-page booklet "***Beniamin Markarian***" was published recently by ArAS and "EditPrint" publishing company, dedicated to our outstanding astronomer B.E. Markarian's 100th anniversary.

The First Byurakan Survey (FBS) accomplished by Markarian and his colleagues is well known in the whole astronomical world. Due to this survey (later called Mararian survey), they discovered 1500 UV-excess galaxies, which at present are named after Markarian and are being studied by numerous astronomers and observatories.

B.E. Markarian's biography, his biographical chronological table, most important publications according to areas of research, information on the First and Second Byurakan surveys, description of the most famous Markarian galaxies, publications about Markarian survey and Markarian galaxies and many photos have entered the booklet. The author of the booklet is Areg Mickaelian.



PUBLICATION of ASTRONOMICAL CALENDARS 2014

Four kinds of astronomical calendars have been published recently by ArAS and “EditPrint” publishing company: “Byurakan Observatory”, “Viktor Ambartsumian (most important scientific results)”, “Armenian Astronomers” and “Lunar Phases”. In each page of the first three ones, under each month, definite information is given.

Calendar “**Byurakan Observatory**”. The brief history, research staff, most important scientific instruments (2.6, 1m and small telescopes), most important scientific results, famous Byurakan surveys, international collaboration, meetings and summer schools held, as well as BAO as one of the Armenian favourite sightseeing and frequently visited centres are given.

Calendar “**Viktor Ambartsumian (most important scientific results)**”. Short descriptions of 12 most important results by Viktor Ambartsumian are given: the proof of existence of neutrons in the atomic nuclei, studies on planetary nebulae, estimation of masses lost by Novae and Supernovae, derivation of stellar spatial velocities, estimation of the age of Our Galaxy, discovery of the clumpy structure of the absorbing matter of the Milky Way, the Principle of Invariance, the theory of brightness fluctuations of the Milky Way, the discovery of stellar associations, hypothesis of the activity of the galactic nuclei, hypothesis of superdense matter and statistical studies of flare stars.

Calendar “**Armenian Astronomers**”. Short biographies and scientific activities of 12 outstanding Armenian astronomers are given sorted by their birthdates, including *Marat Arakelian, Yervant Terzian, Paris Pismis, Anania Shirakatsi, Ludvik Mirzoyan, Tateos Agekian, Zadig Mouradian, Vahe Petrosian, Viktor Ambartsumian, Grigor Gurzadian, Agop Terzan, Benjamin Markarian*, as well as many other astronomers are listed who was born under each month, altogether 106 persons.



Finally, the calendar “Lunar Phases” gives lunar phases 2014 for each day. The first three calendars had been published for 2013 too, while “Lunar Phases” is being published for the first time.

ANNIVERSARIES



Gurgen SAHAKIAN – 100. *Prof.* Gurgen Sahakian, an outstanding Armenian theoretical physicist and astrophysicist, was one of the rare scientists who had a significant contribution in various fields of physics and astrophysics.

Gurgen Serob Sahakian was born on September 10, 1913 in Sogyutlu village (at present Sarnaghbyur village, in Shirak region of the Republic of Armenia). In 1939 he graduated from the Yerevan State University. He took part in the Great Patriotic War (1941-1945). Since 1939 he has worked at Yerevan State University, in 1951-1985 he was the Head of the Chair of Theoretical Physics of the same university, in 1967-1972 he was simultaneously the Dean of the Department of Physics. He also worked at the Yerevan Physics Institute (YerPhI) in 1959-1962, and in 1962-1970 at the Byurakan Astrophysical Observatory (BAO). In 1963 Gurgen Sahakian was honored with a doctorate of physical-mathematical sciences, In 1964 he was awarded a professorship, in 1970 he became an Honorary Figure of Science and Engineering of the Armenian SSR, and in 1982, an academician of the Academy of Sciences of the Republic of Armenia.

Sahakian’s works refer to the physics of elementary particles and cosmic rays, physics of degenerate superdense plasma and superdense stars, to the theory of gravity. He introduced the concept of formfactor of nucleons, investigated the distribution of charges in the nucleus, displayed that the elastic dispersion of electrons in large angles allows researching the inner structure of nucleons. At the beginning of 1960s due to Sahakian and Viktor Ambartsumian’s team works a new direction in astrophysics, the physics of superdense stars, was created. They have proved that in case of nuclear and larger densities the matter is a gas consisting of elementary particles where the baryons numerically predominate, and they have compiled models of superdense stellar forms of existence. They have also revealed a new phenomenon of general theory of relativity; the anomalous deficiency of mass. These results have a significant importance for the cosmogony of superdense celestial bodies. In his further works Sahakian displayed that dense plasma ring magnetosphere can be formed around rotating neutron stars, the outer edge of which can be a

resource of cosmic radiation of high energy. In the researches concerning the generalized theory of gravity he assumed that the constant of cosmic gravity is a slowly shifting magnitude, and investigated the cosmogonical effects connected with that shift. Sahakian foresaw the existence of p -mesons in the isobars of heavy nuclei of small serial number, worked out a consistent theory of degenerate plasma in case of nuclear and larger or smaller densities and deduced the equation of the state of degenerate stellar matter. Instead of the formerly assumed neutronization effect he confirmed the pionization effect, as well as the state from the electronuclear plasma to general nuclear matter (accompanied by a jump of about 500 times density), the existence of phase transition.

Sahakian has a great contribution in the development of theoretical physics and in the training of scientific personnel in the Republic of Armenia. He was awarded an Honorary Letter of the Presidium of the Armenian SSR Academy of Sciences (1976), orders of Red Star and People's Friendship. Sahakian's contribution is great in the training of Armenian physicists. Numerous highly talented physicists of Armenia were Sahakian's pupils. He is the author of a number of textbooks and monographs: *"Equilibrium configurations of degenerate gas masses"* (in Russian; Moscow 1972); *"Quantum Mechanics"* (in Russian; Yerevan 1982, co-author E.V. Chubarian); *"Space-time and gravity"* (in Russian; Yerevan 1985); *"Physics of Neutron Stars"* (in Russian; Yerevan 1998).

Gurgen Sahakian passed away on March 26, 2000 in Yerevan.



Vahe PETROSIAN – 75. *Prof.* Vahe Petrosian, one of the outstanding Armenian-American astronomers, Professor of Astrophysics and Applied Physics at Stanford University, celebrated his 75th anniversary.

Prof. Vahe Petrosian was born on September 3, 1938. He studied physics and astrophysics at the Cornell University in 1958-1962 (B.E.E.) and 1962-63 (M.S., thesis adviser *Prof.* Marshall Cohen). In 1963-67, he finished his Ph.D. studies under the supervision of *Prof.* Edwin Salpeter and defended his Ph.D. thesis. *Prof.* Petrosian's professional experience started in 1961: he was a

Teaching Assistant at Cornell University (1961), Research Assistant, CRSR, Cornell Univ. (1962-67), Research Assoc, CRSR, Cornell Univ. (1967), Research Fellow, Calif. Inst. Technology (1967-69), Visiting Scientist, IOTA Cambridge (1969), Assistant Professor, Stanford Univ. (1969-71), Consultant, Kitt Peak Natl Observatory (1971), Associate Professor, Stanford Univ. (1972-79), Professor, Stanford University (since 1980), worked at Arcetri, Florence; NOAO, Tucson, AZ; Nordita, Copenhagen; Cornell Univ. (1982-83), at Observatoire de Meudon, France (1989-90), at Space Telescope Science Institute (1996), at NOAO, Tucson, AZ (1998), and at Inst. Adv. Studies; Bochum Univ. (2000).

Prof. Petrosian's main fields of scientific interests are theoretical astrophysics with concentration on high energy astrophysical processes in solar and stellar flares, gamma-ray bursts, accretion disks of stellar and active galactic black holes and clusters of galaxies, and in cosmology; early phase of the universe, the evolution of galaxies and quasars, arcs in clusters of galaxies, and gravitational lensing. His research interests have been in two broad areas of high energy astrophysics and cosmology. The former area includes studies of acceleration, transport and radiation of non-thermal particles, developed primarily for application to solar flares. This work has also found application in variety of other astrophysical sources including accretion disks, Gamma-ray bursts and Clusters of Galaxies. The work in cosmology is focused on evolution of galaxies and quasars (and AGNs in general), and in luminous arcs in clusters of galaxies (of which he is a co-discoverer: R. Lynds & V. Petrosian, 1989, *"Luminous Arcs in Clusters of Galaxies"*, ApJ, 336) and gravitational lensing. Another interest has been in the area of statistical methods relevant to analysis of astronomical data. This work is carried out in collaboration with B. Efron of the Statistics Department at Stanford has been concentrated on development of new non-parametric methods for determination of distribution of astronomical sources from truncated data.

Prof. Petrosian has published more than 250 scientific papers on several subjects, including Gamma-Ray Burst (>40 publications), quasars and AGN (>20), Solar flares (>70), statistical methods (>15), and others (>100). He had more than 30 thesis undergraduate and graduate students and 7 postdoctoral associates since 1973.

Prof. Petrosian was awarded the Iranian National Fellowship (1958-62), the Industrial Fellowship, Cornell University (1963-64), and Alfred P. Sloan Foundation Fellowship (1972-74). He is a member of the Royal Astronomical Society (RAS), International Astronomical Union (IAU), American Astronomical Society (AAS), Eta Kappa Nu, and Tau Beta Pi. He joined the Armenian Astronomical Society in April 2007.



Garik ISRAELIAN – 50. *Dr. Garik L. Israelian*, a famous Armenian-Spanish astronomer working at the Institute of Astrophysics in Canary Islands (IAC), celebrated his 50th anniversary on October 3.

Dr. Garik Israelian, born in 1963, graduated with First Class Honours in 1987 (Yerevan State University, Armenia) and completed his PhD in Byurakan Observatory in 1992. Since then he worked as a researcher in the Universities of Utrecht (The Netherlands), Brussels (Belgium) and Sydney (Australia). Since 2000 he is a Principal Investigator of the project “*Stellar chemical abundances: clues on the formation of the Galaxy, black holes and planets*” at IAC. The IAC is one of the most important centers of astrophysics operating the largest telescope in the world: the 10.4m GTC. Israelian’s discoveries were covered by BBC, CNN, TVE etc. and reflected in special publications in dozens of national (Spanish) and international newspapers and magazines (New York Times, Der Spiegel, Science News, Scientific American etc.). *Dr. Israelian* has supervised five Doctoral dissertations, and lectured 32 hours post-graduate courses on Stellar Atmospheres and Radiation Transfer at the Universities of Geneva (Switzerland) and Tokyo (Japan). He is a trusted referee of the magazines Nature, Science, Astrophysical Journal etc.

One of the most important scientific contributions of *Dr. Israelian* is considered the article published in 1999 in Nature. 200 years after the original idea by John Michell regarding the existence of black holes in the Universe, *Dr. Israelian* led an international collaboration, which provided the first observational evidence that supernovae explosions may be responsible for the formation of black holes (John Cowan, Nature, 401, 124, 1999) This discovery was considered by Hans Bethe as “one of the most important discovery in black hole astrophysics”).

Dr. Israelian has served on numerous astronomy committees and panels. He has presented invited talks, reviews and contribution talks at more than 50 international conferences. Since 2000 he is collaborating with Michel Mayor’s team at Geneva University (Switzerland) and Nuno Santos with whom he has published more than 30 scientific articles. They have made several groundbreaking discoveries related to the properties of stars with extrasolar planetary systems. In 2010 they were awarded the first Viktor Ambartsumian International Prize.

On behalf of the Armenian Astronomical Society we wish him good health and success and new scientific achievements.