

ArAS News

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

No. 74 (October 15, 2014)



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

VIKTOR AMBARTSUMIAN INTERNATIONAL PRIZE 2014 AWARD CEREMONY



On September 17, Viktor Ambartsumian International Prize 2014 was awarded to **Felix AHARONIAN** (Ireland/Germany) and jointly to **Igor KARACHENTSEV** (Russia) and **Brent TULLY** (USA). Viktor Ambartsumian International Prize has been established by the President of Armenia in 2009 and at present is one of the important awards in astronomy/astrophysics and related sciences. It is being awarded to outstanding scientists from any country and nationality having significant contribution in science. The Prize totals USD 500,000 and since 2010 is being awarded once every two year. This time it was shared between the three winners.

Early in July, the International Steering Committee chaired by the President of the Armenian National Academy of Sciences *Prof. Radik Martirosyan* had decided to share the Prize between *Prof. Felix Aharonian* (Dublin Institute for Advanced Studies, Ireland and Max Planck Institute for Nuclear Physics, Heidelberg, Germany), nominated by Academia Nazionale Dei Lincei (Italy) for *“outstanding contributions to the field of high energy astrophysics and to the physics of cosmic accelerators, and leading role in the development of the stereoscopic system of Cherenkov telescopes”* and jointly *Prof. Igor Karachentsev* (Special Astrophysical Observatory, Russia) and *Prof. Brent Tully* (Institute of Astronomy, University of Hawaii, USA) nominated by the Special Astrophysical Observatory (Russia) for *“their fundamental contribution in the cosmology of the Local Universe”*.



The official award ceremony took place on September 17 in Yerevan, at the big hall of the Armenian National Academy of Sciences (NAS RA). Some 400 people were present, including the RA President Serzh Sargsyan, NAS RA President *Prof. Radik Martirosyan*, Ministers, Ambassadors, NAS RA members, other scientists, International Astronomical Olympiads participants, journalists and honorary guests. The Ceremony started with the Armenian national

anthem followed by the speech of *Prof. Radik Martirosyan* who presented the principles of the Viktor Ambartsumian International Prize and noted that all three laureates work at the forefront of modern astronomy and all three have authored numerous scientific inventions. Then followed President Serzh Sargsyan's welcome speech; he congratulated the winners and awarded the medals and certificates. The President hoped that after receiving the prizes they would put more efforts to continue their scientific activities aimed at improving the quality of life around the world. At the end, Prof. Felix Aharonian, Prof. Igor Karachentsev and Prof. Brent Tully presented short talks on their research and results that were nominated for the Prize.

There were several other events that accompanied the Award Ceremony such as the press-conference by the Prize Winners at NAS RA on Sep 17, the dinner given by the RA President for the Prize Winners, academicians, scientists and other invited guests on Sep 17 evening, the visit of Prize Winners to Byurakan Astrophysical Observatory on Sep 15, Scientific Talks at Yerevan State University on Sep 16, the dinner given by the NAS RA President for the Prize Winners on Sep 16 evening, and visits to Armenian sightseeing (Sevan, Dilijan, Haghartzin and Goshavank) on Sep 18.

CONFERENCE “RELATION of ASTRONOMY to OTHER SCIENCES, CULTURE and SOCIETY” and ArAS XIII ANNUAL MEETING

Conference “Relation of Astronomy to other Sciences, Culture and Society” 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 conference took place in Byurakan, Armenia on 7-10 October 2014. The conference was aimed at the development of problems of interdisciplinary sciences in Armenia and preparation of a basis for further possible collaborations by means of presentations of available modern knowledge in various areas by experts from different professions and by joint discussions.

Organizers

National Academy of Sciences RA (NAS RA)
NAS RA Byurakan Astrophysical Observatory (BAO)
Armenian Astronomical Society (ArAS)
RA Ministry of Education and Science
RA State Committee for Science (SCS)
RA Ministry of Culture
Yerevan State University (YSU)
“Matenadaran” Institute of ancient manuscripts after Mesrop Mashtots

Sponsors

National Academy of Sciences RA (NAS RA)
NAS RA Byurakan Astrophysical Observatory (BAO)
Armenian Astronomical Society (ArAS)
RA State Committee for Science (SCS)



Scientific Organizing Committee (SOC)

Radik Martirosyan (NAS RA) – Chair
 Armen Ashotyan (RA Ministry of Education and Science)
 Yuri Chilingaryan (NAS RA)
 Haik Harutyunian (BAO, ArAS)
 Samvel Harutyunyan (SCS)
 Areg Mickaelian (BAO, ArAS)
 Elena Nikoghosyan (BAO, ArAS)
 Elma Parsamian (BAO, ArAS)
 Hasmik Poghosyan (RA Ministry of Culture)
 Aram Simonyan (YSU)
 Yuri Suvaryan (NAS RA)
 Hrachya Tamrazyan (Matenadaran)

Following scientific topics were covered:

- Astronomical heritage of Armenia
- Ancient astronomy
- Astronomy in the Middle Ages
- Astronomy in ancient cultures
- Ethnoastronomy
- Astronomical bases of Philosophy
- Religion and Astronomy
- The problem of Extraterrestrial Intelligence
- Astronomy and Astrology
- Practical use of Astronomy
- Astroinformatics and Astrostatistics
- Astronomy and Space Flights
- Astronomy in Folklore and Poetry
- Astronomy in Arts
- Astrolinguistics
- Astroheraldry
- Scientific Tourism
- Scientific Journalism
- Amateur Astronomy
- Astronomical Education
- Popular Astronomy

The scientific program consisted of 45 talks. At the end of the meeting, in frame of ArAS XIII annual meeting, Areg Mickaelian presented the ArAS annual report for activities in 2013-2014. ArAS status, its membership, ArAS Newsletters, webpage, meetings and schools, ArAS annual prize for young astronomers (Yervant Terzian Prize), relations with other organizations, educational and other activities were presented.

Several other events accompanied the conference, such as visit to Zorats Karer, BAO 2.6m telescope, Viktor Ambartsumian home-museum, presentation of the Proceedings of the Conference *"Astronomical Heritage in the National Culture"* dedicated to Anania Shirakatsi's 1400th anniversary and Conference Banquet.

Proceedings of the Conference

The Proceedings of the conference will be published as an individual book by NAS RA publishing house. The deadline for submission of papers is November 30, 2014. **Haik Harutyunian** and **Areg Mickaelian** are the editors. Number of allocated pages:

Invited talks	8 pages
Contributed talks	5 pages

Conference webpage: <http://www.aras.am/Meetings/RASCS/index.html>

Areg Mickaelian, Sona Farmanyan

NEON OBSERVING SCHOOL and AWARENESS CONFERENCE



The Neon observing school and Awareness conference took place in Bulgaria from 16th September to 2nd October, 2014. The first week was in Rozhen Observatory. As usual, the school started with some lectures on fundamentals for observations. This one started with lectures on telescope optics and imaging, by Alexandro Pizzela. An introduction to spectroscopic techniques was given by Michel Dennefeld (Paris Observatory, France). In the afternoon students had practical exercises on data reduction. At the same time, the students were divided into five groups, under the leadership of their respective tutors, to prepare the scientific program for the observations, and make the necessary technical choices for the instrument set-up. The available telescope was 2m

RCC-telescope. And each group had opportunity to do spectroscopic observations.

The Awareness Conference took place next week in Sofia. These conferences, given by a small team of expert scientists and instrumentalists, present the "hot topics" in Astrophysics and the large facilities, on ground or in space, available (or planned), to help to solve the pending questions. They should encourage students to choose PhD subject in Astrophysics and help astronomers, especially from the new EU (or accessing) countries, to broaden their horizons and raise their interest in the Access program. It also included practical exercises, which gave opportunity to learn how to write proposal for observing time on European telescopes.



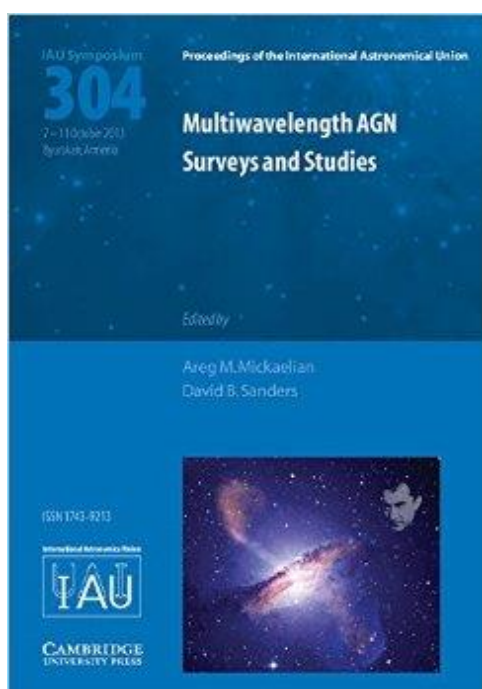
About 30 participants gathered at the Astronomical Observatory of Rozhen, who kindly hosted the meeting. Student participants came from Armenia, Greece, United Kingdom, Italy, France, Turkey, Hungary, Macedonia, Poland, Serbia and of course, the host country Bulgaria. Young astronomers **Knarik Khachatryan** and **Ani Vardanyan** were the Armenian representatives. The lecturers were from France, Italy and the United Kingdom. After hard and intensive work, the scientific results were presented on the last day of the school and each student had presentation about his/her project.

Knarik Khachatryan, Ani Vardanyan

PUBLICATION of PROCEEDINGS of IAU SYMPOSIUM #304 “MULTIWAVELENGTH AGN SURVEYS and STUDIES”

Proceedings of the IAU Symposium #304 “Multiwavelength AGN Surveys and Studies” have been published by Cambridge University Press (CUP). The editors are Areg Mickaelian (Armenia) and David Sanders (USA). The book has 439 pages and includes 28 invited and 51 contributed talks and 60 posters, as well as Preface giving general information on the meeting and its main events, lists of organizers and sponsors, the List of Participants, and an article dedicated to Benjamin Markarian. Armenian astronomers has published 27 papers in this book, including 21 papers by BAO staff members and 6 by representatives from YSU and other Armenian institutions, as well as by scientists from USA and Germany. The online version of the Proceedings is available at Cambridge University Press website at:

<http://journals.cambridge.org/action/displayIssue?iid=IAU&volumeId=9&seriesId=0&issueId=S304>



IAU S304 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), National Academy of Sciences of the Republic of Armenia (NAS RA), Byurakan Astrophysical Observatory (BAO) and the Armenian Astronomical Society (ArAS) were the organizers. The scientific sessions were held at the main Conference hall of NAS RA.

The Symposium was dedicated to B.E. Markarian's 100th anniversary. Benyamin Markarian (1913-1985, <http://markarian.aras.am/>) was the first to conduct and accomplish a large-area (17,000 sq. deg.) spectroscopic survey to search for active galaxies. Markarian survey is until now the largest objective-prism spectroscopic survey, it was the first systematic search for active galaxies using a new method of UV-excess, it resulted in the discovery of

1515 UVX galaxies (Markarian galaxies), including many AGN and Starbursts (SB), first classification of Seyferts into Sy1 and Sy2, and definition of Starburst galaxies.

The **scientific topics** of the symposium were presented by the following 10 sessions (each of is given in the Proceedings book as an individual section):

- 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

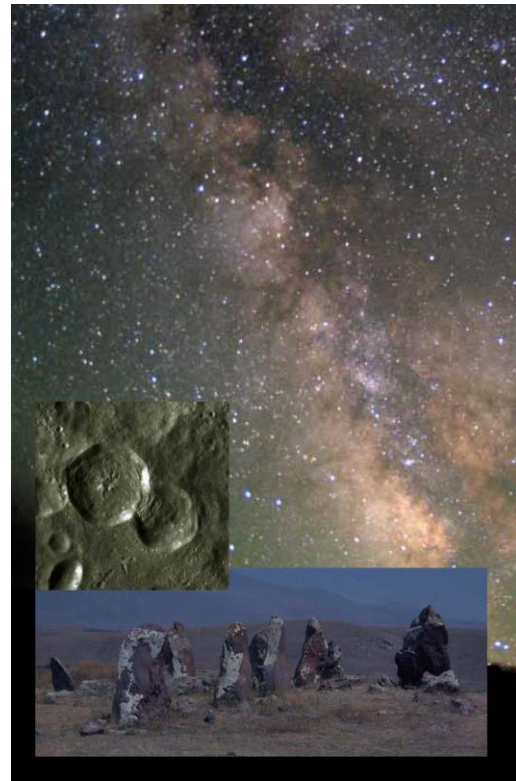
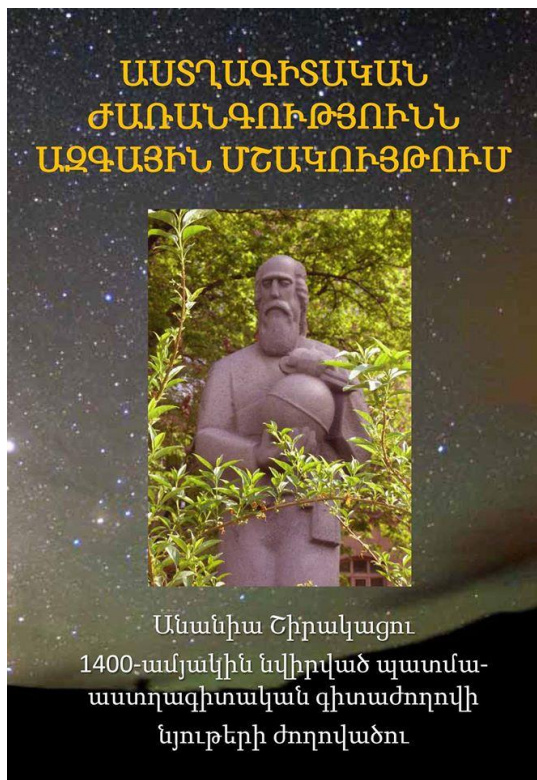
Altogether, **128 astronomers from 26 countries** attended the meeting (<http://iaus304.aras.am/participants.html>). In addition, together with the SOC members there were 141 official participants representing 28 countries, including also Argentina and Ireland. The list of all represented countries with the number of participants: Argentina (1), Armenia (18), Australia (4), Canada (2), Chile (1), China (3), Colombia (2), Denmark (1), France (4), Germany (20), Greece (2), India (3), Iran (1), Ireland (1), Israel (1), Italy (11), Japan (4), Mexico (3), Netherlands (1), Poland (1), Russia (4), South Africa (1), South Korea (1), Spain (7), Switzerland (1), UK (6), Ukraine (4), USA (33).

The IAU Symposium #304 was the 6th IAU meeting held in Armenia (<http://www.aras.am/Meetings/meetingsIAU.html>). The previous 5 meetings were: IAU S29 in 1966 (*“Non-Stable Phenomena in Galaxies”*), IAU S121 in 1986 (*“Observational Evidence of Activity in Galaxies”*), IAU S137 in 1989 (*“Flare Stars in Star Clusters, Associations and Solar Vicinity”*), IAU S194 in 1998 (*“Activity in Galaxies and Related Phenomena”*), and IAU Colloquium #184 in 2001 (*“AGN Surveys”*). Moreover, one of the regular Byurakan International Summer Schools (BISS) in 2010 was combined with the 32th IAU International School for Young Astronomers (ISYA).

PUBLICATION of PROCEEDINGS of CONFERENCE “ASTRONOMICAL HERITAGE in the NATIONAL CULTURE” DEDICATED to ANANIA SHIRAKATSI’S 1400TH ANNIVERSARY

Proceedings of Archaeoastronomical Meeting “Astronomical Heritage in the National Culture” dedicated to the 1400th anniversary of Anania Shirakatsi and XI Annual Meeting of Armenian Astronomical Society have been published by Armenian National Academy of Sciences “Gitutyun” Publishing House. The editors are Haik Harutyunian, Areg Mickaelian and Elma Parsamian. The book has 220 pages and includes 20 invited and contributed talks, as well as Preface giving general information on the meeting and its main events, lists of organizers and participants, and some more materials about Anania Shirakatsi. The book consists of 3 main sections: “Astronomical Heritage”, “Anania Shirakatsi” and “Modern Astronomy”, as well as Literature about Anania Shirakatsi is included. The book may be interesting for astronomers, historians, archaeologists, linguists, students and other readers.

The Meeting took place on 25-26 September 2012 in Byurakan Astrophysical Observatory (BAO), Armenia. It was organized jointly by BAO, ArAS, Institute of History, Institute of Archaeology and Ethnography, and Matenadaran. Talks on the Armenian rock art, ancient calendars, astronomical terminology, ancient observatories and astronomical instruments, records of astronomical events by ancient Armenians, Anania Shirakatsi’s heritage, etc. are presented by astronomers, historians and archaeologists.



Anania Shirakatsi (612-685) was the greatest Armenian scientist of the middle ages: philosopher, mathematician, astronomer, geographer, chronologist, the founder of the exact and natural sciences in Armenia. He in fact was the founder of the astronomy in Armenia. He supported the spherical hypothesis of the Earth, suggested a correct interpretation of the Milky Way, and explained the Solar and Lunar eclipses. Shirakatsi had a number of chronological works; chronological calculations, tables, he has written several books. Most of the Armenian names of the constellations and stars used nowadays also come from Shirakatsi.

UNESCO included Anania Shirakatsi's 1400th anniversary in its list of important dates of 2012, and in Armenia a governmental committee was created to organize the jubilee celebrations, which developed a list of jubilee events. Beside the Meeting, international summer school for young astronomers was held, books related to Anania Shirakatsi were published, 2012 3rd issue of NAS RA journal "In the World of Science" was entirely dedicated to Anania Shirakatsi, Anania Shirakatsi's digital database and webpage were created, meetings at schools and universities were held, TV and radio programs were broadcasted, printed and Internet mass media publications to present Shirakatsi's heritage to the society were released.

List of the papers:

Section 1. Astronomical Heritage

Elma Parsamian – *Archaeoastronomy in Armenia*

Haik Harutyunian – *Armenian Vahagn God as birth of four Cosmic elements*

Ani Ter-Gulanyan – *Ancient Astronomical Hieroglyphs of the Armenian Highland and their Echo in Architectural Structures*

Sona Farmanyan, Areg Mickaelian – *Sun and Sun Worship in Different Cultures*

Areg Mickaelian – *Armenian Astronomical Heritage*

Section 2. Anania Shirakatsi

Lilit Nazaryan – *Anania Shirakatsi's Life and Activities*

Sen Arevshatyan – *Anania Shirakatsi's Natural Philosophical Views*

Eduard Danielyan – *Anania Shirakatsi's Cosmographical and Natural Philosophical Views*

Haik Harutyunian, Areg Mickaelian – *Anania Shirakatsi's Cosmographical Works and the Methodology of his Natural Science*

Julieta Eynatyan – *Anania Shirakatsi's Overheads System*

Karen Tokhatyan – *Origins Rock Art and Calendar in Armenia and Anania Shirakatsi*

Gohar Vardumyan – *Anania Shirakatsi and "Pagan" Scientists*

Nora Yerznkyan – *Religious-Historical Sublayers in Anania Shirakatsi's Works*

Tatevik Shakhkulyan – *Anania Shirakatsi Musician*

Gohar Harutyunyan – *Shirakatsi Crater on the Moon*

Areg Mickaelian, Gor Mikayelyan – *Anania Shirakatsi's Webpage*

Section 3. Modern Astronomy

Areg Mickaelian – *Popular Astronomy in the World and in Armenia*

Marietta Gyulzadyan – *Armenian Pupils in the International Olympiads*

Avetik Grigoryan – *"From the Deep of Ages to the Universe" Popular Science Book*

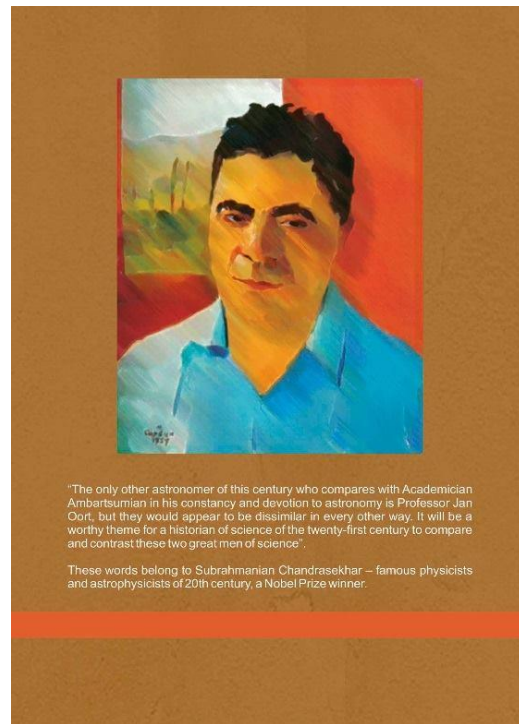
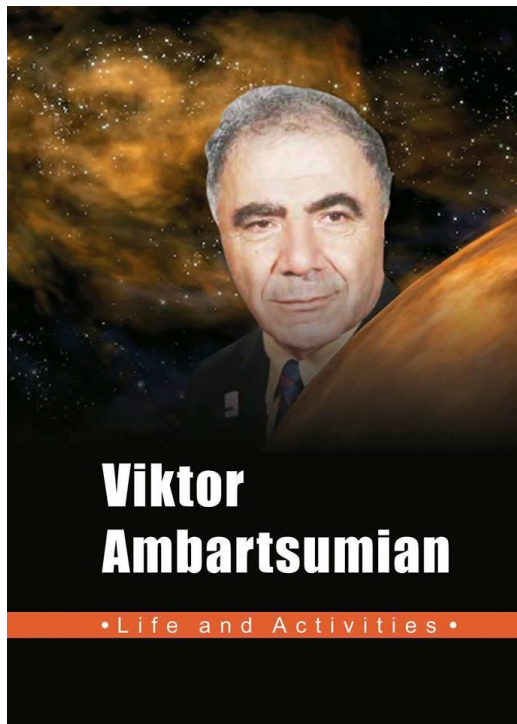
Areg Mickaelian – *Achievements of the Armenian Astronomy and the Present Activities of the Armenian Astronomical Society*

PUBLICATION of the BOOKLET

“VIKTOR AMBARTSUMIAN. LIFE AND ACTIVITIES”

Booklet “Viktor Ambartsumian: Life and Activities” has been published by “Antares” Publishing House (Yerevan-2014, 48 pages). Areg Mickaelian is the author. The booklet is dedicated to the outstanding Armenian astronomer and one of the great scientists of the XX century Viktor Ambartsumian.

Prof. Viktor Ambartsumian (1908-1996) is one of the greatest scientists of the XX century who has fundamentally contributed in various fields of astronomy and astrophysics, cosmogony, theoretical physics, mathematics, and philosophy. His revolutionary works on origin and evolution of stars and activity of galactic nuclei turned over the development of astrophysics and gave life to our before unchanged Universe. He is one of the founders of the theory of planetary nebulae, stellar dynamics, protostellar dense matter, as well as he has contributed in other important areas of the theoretical astrophysics. Ambartsumian was also a great organizer of science, important political and public figure. He is the founder of Astrophysics Departments at Leningrad (St. Petersburg) and Yerevan State Universities, Byurakan Astrophysical Observatory (BAO), journal *Astrofizika* (Astrophysics), one of the founders of the Armenian Academy of Sciences. Ambartsumian was the Director of BAO in 1946-1988, the President of the Armenian Academy of Sciences in 1947-1993, the President of the International Astronomical Union (IAU) in 1961-1964 and the President of the International Council of Scientific Unions (ICSU) in 1968-1972.



The booklet has a format of a visiting card and consists of the **following sections**:

Preface

Biography

Biographical chronology

Most important scientific results

Most important scientific papers

Books and booklets, editing of books

Achievements

Administrative and Honorary positions

Chairman or member of scientific councils and committees

Editor-in-Chief, Chairman or member of Editorial Boards and Councils

Membership of Academies

Membership of Societies and Organizations

Professor and Honorary Doctor (honoris causa) of universities

Titles, Honours and Awards

Public Activity

Books and other publications about Ambartsumian

Commemoration

ANNIVERSARIES



Roland Avagyan – 70. *Prof.* Roland Avagyan is one of the greatest Armenian physicists of the time. Roland Mamikon Avagyan was born on September 18, 1944, in Getashen. In 1968 he graduated from Yerevan State University (YSU). In 1973 he took his Ph.D. degree in Physics and Mathematics and in 1990 became Doctor of Science. In 1971-1974 he was the senior scientist at the Chair of Theoretical Physics, in 1974-1991 got the rank of Associated Professor and since 1991 until now is Associated Professor at the Chair of Theoretical Physics. In 2000-2006 he was the head of the chair of the Theoretical Physics, and he is the Dean of the Faculty of Physics at YSU (2006-present). The main fields of

Prof. Avagyan's research are general relativity, alternative theories of gravitation and its astrophysical applications (white dwarfs, neutron stars, pulsars, cosmology), and symmetries in quantum mechanics. As a result of his research, he has written numerous papers and 4 books. He has given lectures on classical mechanics, classical electrodynamics, quantum mechanics, gravitation theory, physics of neutron stars, plasma physics, weak interactions and theoretical nuclear physics. He has received Medal of the Ministry of Education of Nagorno Karabagh named after Atajan, YSU Gold Medal, as well as a number of scientific grants. He has supervised many famous physicists, who successfully work at YSU and elsewhere. In 2006 he was elected Corresponding Member of the National Academy of Sciences. *Prof.* Avagyan is a member of Theoretical Physics thesis defense board (1980-present), Scientific Council of YSU (2000-present), thesis defense board in the field of Astrophysics at Byurakan Astrophysical Observatory (2004-2006), as well as, President's Prize Committee Chair in the field of Physics (2005-present) and Chairman of the Board of YSU Physics faculty (2006-present).