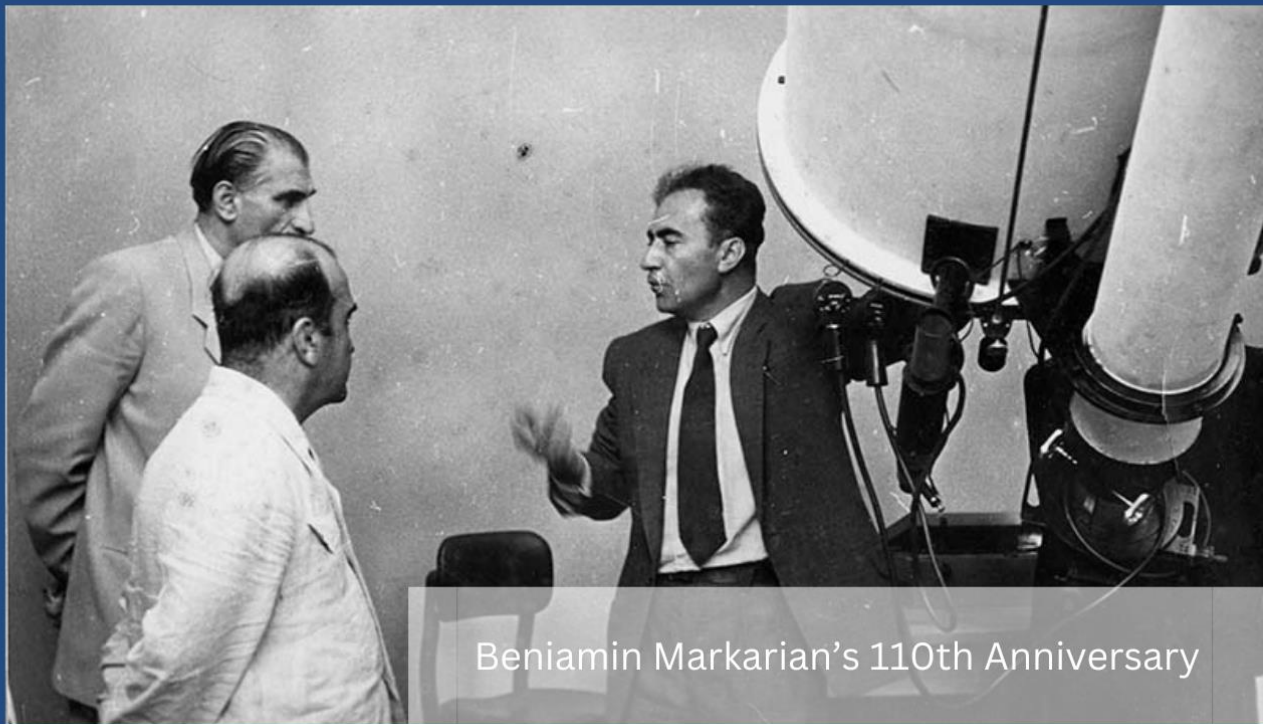




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Beniamin Markarian's 110th Anniversary

EDITOR: MELINE ASRYAN

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LOCAL NEWS

Memorandum of Understanding Between the Byurakan Astrophysical Observatory and the University of Sharjah (UAE)

On November 13-16, the 14th pan Arab congress of the Arab Union for Astronomy and Space Sciences (AUASS) was held in the city of Sharjah, United Arab Emirates (UAE). The Director of the Byurakan Astrophysical Observatory name, Areg Mickaelian took part in the congress as a keynote speaker.

During the same visit, a memorandum of cooperation was signed with the BAO and University of Sharjah. From the University of Sharjah signed the memorandum by Prof. Hamid Al-Naimiy, Chairman of the University Council.

Deputy Ruler of the Emirate of Sharjah, His Highness Sheikh Sultan bin Ahmed Al Qasimi was also present at the ceremony. The contract was signed for a period of 5 years. According to the agreement, it is planned to implement a number of exchange programs between employees and students, to carry out joint scientific research activities, as well as to organize joint conferences and seminars.



The Byurakan Astrophysical Observatory at “PanArmenian Conference – 2023”



Elena Nikoghosyan

On November 17-22, “PanArmenian Scientific Conference - 2023” was held at Yerevan State University with the support of the RA Higher Education and Science Committee.

Among the speakers were scientists from the Byurakan Astrophysical Observatory (BAO): leading researcher Elena Nikoghosyan, “Star Formation Domains: Formation and Evolution” (Advanced Research Support Program, 21AG-1C044), BAO Director Areg

Mikcaelian, “Revealing early stages of galaxy evolution through multi-wavelength study of active galaxies” (Advanced Research Support Program), 21AG-1C053), Valery Hambaryan, researcher at the University of Jena, Germany, “Searching and identifying high-velocity stars through dynamical emission from multiple stars and supernova explosions” (Remote Laboratories Foundation Program, 22RL-039).

The purpose of the conference was to promote the development of various fields of science, as well as to provide an opportunity for specialists to get acquainted with the scientific projects of related fields.



Valery Hambaryan

Anniversary Seminar Commemorating Benjamin Markarian's 110th Anniversary

In a tribute to the 110th anniversary of the famous astronomer Benjamin Markarian, the Byurakan Astrophysical Observatory (BAO) hosted a special seminar.

Areg Mickaelian, the Director of BAO, presented an insightful overview of Markarian's pivotal research areas and highlighted his most significant scientific achievements. Following this, senior researchers at BAO, Sussanna Hakobyan and Kamo Gigoyan, shared their perspectives on Markarian's impactful contributions and recounted their memories about the revered astronomer.



Areg Mickaelian, Susanna Hakobyan and Kamo Gigoyan, 2023, BAO.

Benjamin Markarian, born on November 29, 1913, in the village of Shulaver (now Shahumyan) in the Marneuli region of the Georgian SSR, stands as a towering figure in observational astronomy. Few astronomers rival Markarian's influence, placing him second only to the esteemed Viktor Ambartsumian in the realm of Armenian astronomy. Markarian's Survey and the Markarian galaxies are familiar to astronomers worldwide. To this day, astronomers globally are engaged in studying these galaxies.

It is worth noting that in 2011, Markarian survey (the First Byurakan Survey, FBS) was registered in the UNESCO “Memory of the World” documentary heritage list. It is one of the 12 UNESCO items in Armenia and one of the rare scientific heritage items of UNESCO in the whole world.

You can find out more about B. Markarian's legacy on page 8.

Invited Seminar at the Byurakan Astrophysical Observatory

On November 23, the Byurakan Astrophysical Observatory held yet another scientific seminar.

This time the speaker was Lenser Aghalovyan, Academician-Secretary of the Department of Mathematical and Technical Sciences of the National Academy of Sciences of the Republic of Armenia. L. Aghalovyan's talk was devoted to "Generalized Newtonian theory of universal gravitation and classification of black holes".

L. Aghalovyan presented the results of their work, wherein they generalized Newton's theory of universal gravitation, studied a new type of central interaction, the potential field of which is many times stronger than the Newton one. In addition, conditions were derived when the trajectory of the body is a conic section.

L. Aghalovyan also mentioned that they had established a connection with the event horizon, black holes and had developed a way of classifying black holes.



Lenser Aghalovyan

Scientific Journalism Award 2023

Being the initiator of scientific journalism in Armenia, the Byurakan Astrophysical Observatory (BAO) is organizing the annual Scientific (Astronomical) Journalism Competition. It aims to promote the development of scientific journalism in Armenia and encourage journalists of the field.

This year, the BAO is introducing one category: “The most active journalist of the year”. The winner will not only receive a certificate but also be awarded a prize of 75,000 AMD for their contribution. Additionally, the winner will have an opportunity to enjoy a tour around the Observatory, including the visits to Victor Ambartsumian house-museum and the renowned 2,6m telescope.



ANNIVERSARIES

Robert Epremyan's 85th Anniversary



Robert Epremyan

Dr. Robert Epremyan was born on January 11, 1938 in Khatunarkh village of Echmiadzin region, Armenia (1938-2013). In 1962, he graduated from the Yerevan State University (YSU). From 1963-2007 he worked at the Byurakan Astrophysical Observatory (BAO). In 1982, he defended his PhD thesis under the supervision of Prof G.A. Gurzadyan.

R. Epremyan's research interests include stars, stellar associations, interstellar medium and nebulae, particularly studies in UV. He published more than 60 papers.

Benjamin Markarian's 110th Anniversary



Figure 1 Benjamin Markarian

Very few astronomers with their contribution in the observational astronomy can be compared to Benjamin Markarian. After the distinguished scientist Viktor Ambartsumian he is very likely the greatest person of Armenian astronomy. His survey and Markarian galaxies are known to every astronomer and not only. Many astronomers and world observatories continue to work on investigations of Markarian galaxies.

Benjamin Y. Markarian was born on November 29, 1913, in Shulaver (at present Shahumyan) of the district of Marnuli of the Soviet Republic of Georgia. In 1933, he entered and in 1938 with a diploma of excellence, graduated from the faculty of physics-mathematics of Yerevan State University.

From 1938 to 1941 he worked as a senior lecturer of higher mathematics at Yerevan Pedagogical Institute. In 1939, B. Markarian entered the post-graduate fellowship of the Armenian branch of the USSR Academy of Sciences in the sphere of astrophysics and went to Leningrad University. However, his studies were interrupted by World War II and in 1941 after returning to Armenia he was called up to the Army. After the Army he was a senior researcher at the Yerevan Astronomical Observatory (1942-1946). In May 1944, under the supervision of the academician V. Ambartsumian, Markarian successfully defended his candidate thesis on a subject "The fluctuations observed in the visible distribution of stars and the cosmic absorption". Since 1946 (since the day of foundation), he was a senior researcher at the Byurakan Astrophysical Observatory, in fact being one of its founders. Markarian actively participated in the selection of the site for the new observatory, which required serious work for further effective observations. Markarian personally mounted and put almost all telescopes of the BAO into operation (except the last telescope of 2.6 m), thus laying the foundation for the development of observational astronomy in Armenia.

From 1953 to 1956, Markarian worked as a deputy director on science of the BAO. He was appointed as the Head of the Department of Investigation of Stars from 1957 to 1962, then the head of Department of Galaxies from 1962 to 1985. In 1943-1956, he also worked as a lecturer of astronomy at Yerevan State University. He was elected as a corresponding member of the Academy of Sciences of the Armenian SSR (1965), as a full member of the Academy of Sciences of the Armenian SSR (1971).

Markarian was awarded a title of Honored Scientist of the Armenian SSR (1961). He was elected as a member of Astronomical Council of the USSR Academy of Sciences (1964), a member of the International Astronomical Union (IAU, 1955), he was elected as a Vice-President of the IAU Commission on Galaxies (1973-1976) and its President (1976-1979).

B. Markarian's scientific works pertain to the physics of stars, stellar clusters and galaxies. He took part in the development the theory of fluctuations observed in the distribution of stars, taking into consideration the interstellar absorption.

Based on observational data, he confirmed that the stellar associations expand. Markarian worked out a new classification of stellar clusters and in 1952 he compiled and published "An atlas of different types of stellar clusters". In 1963, he revealed 73 galaxies with an unusual color for their spectral class. He worked out a special method (for selecting galaxies with ultra-violet excess) on the basis of which 1965-1980 a spectral sky survey was carried out in the BAO. He has revealed 1500 objects of special class which are called by his name (Markarian galaxies or galaxies with ultra-violet excess). Since 1968 with the help of large telescopes of the USSR and the USA, spectral observations of these galaxies were carried out and a great number of active galaxies were discovered among them essentially changing our understanding concerning the population of the Universe and the activity of galaxies. Later from 1974 to 1991 again on Markarian's initiative the Second Byurakan Survey was conducted in which a great number of quasars and other active galactic nuclei were revealed. The catalog of Markarian galaxies was published after his death by his colleagues in the USA in 1986 and in the USSR in 1989.

B. Markarian has published more than 100 scientific papers. He is a USSR State Prize winner (1950). He was awarded the orders "Sign of Honor" (1955) and "Peoples' Friendship" (1983), as well as a number of medals and diplomas of the Presidiums of the Academies of Sciences of the USSR and the Armenian SSR and of the Supreme Council of the Armenian SSR.

Benjamin Markarian passed away on September 29, 1985 in Yerevan. In spite of his poor health, he actively worked doing the main job of his scientific life; the Byurakan Surveys till the end of his life.

OTHER NEWS

A New Look Inside the Moon

New research based on the old data has helped uncover the structure of the Moon's core. The findings reveal what the early solar system was like.

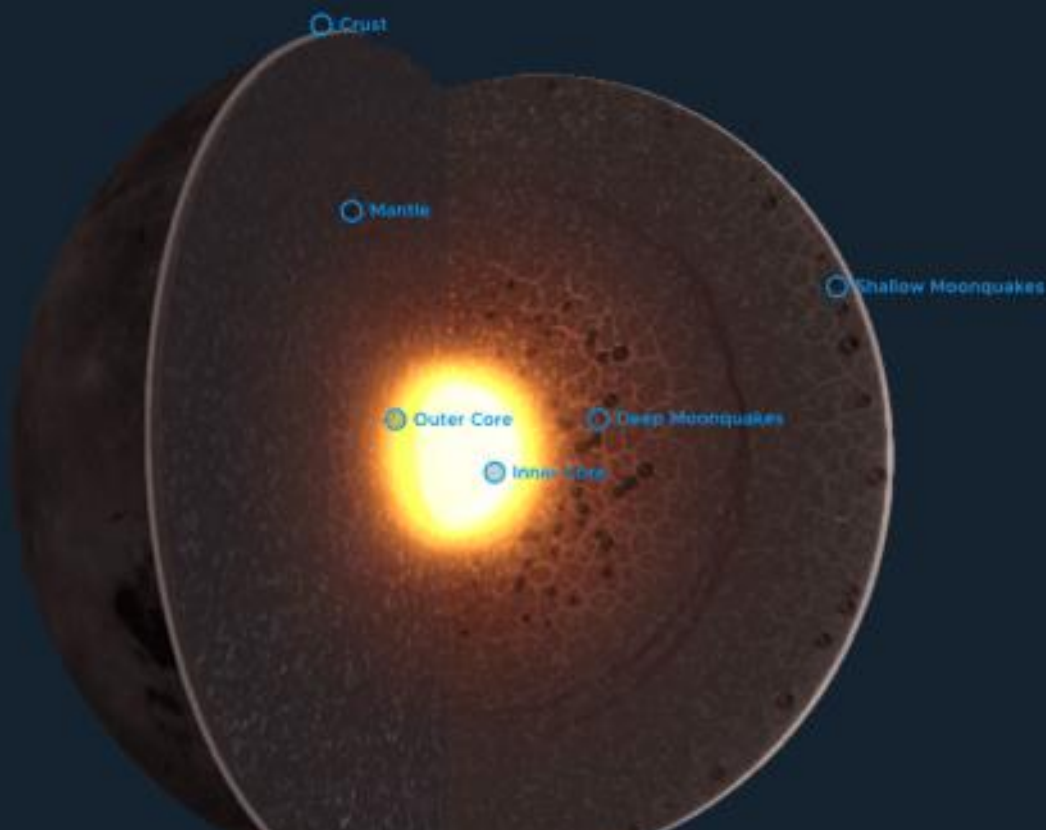
The diagram shows the Moon's internal structure, including the inner and outer core, as well as possible locations of seismic activity.

Between 1969 and 1972, astronauts from five Apollo missions deployed seismometers on the lunar surface. In 2011, a team of NASA scientists, led by Renee Weber, utilized the seismic data obtained to gain insights into the Moon's interior. Their findings suggested the presence of a solid inner core and a liquid outer core, along with a partially molten layer encircling the lunar core. The data also implied a partly molten layer surrounding the lunar core.

That snapshot of the Moon's interior was somewhat blurry, thanks to seismic waves scattering through the lunar regolith, and the absence of instruments on the Moon's far side.

Now a team of French astronomers has provided a definitive picture. Their results align with the NASA researchers' predictions – but also include some surprises.

Read more [here](#).



Credit: NASA

ArAS News is the electronic newsletter of the Armenian Astronomical Society. It was distributed to all ArAS members from the beginning of 2002, 4 times a year, typically at the end of each trimester. In 2009-2014, 8 issues annually and since 2015, 12 issues annually have been released.

ArASNews publishes information materials on ArAS, Byurakan Astrophysical Observatory and the Armenian astronomy in general, reports on ArAS Annual Meetings and participation of the Armenian astronomers in important international meetings, articles on occasion of anniversaries of famous Armenian astronomers and ArAS members, acceptance of new ArAS members, achievements of the Armenian astronomers, astronomical education in Armenia, Armenian archaeoastronomy, as well as science articles (reviews) on important studies.

So, if you want to share your studies with the scientific community, send us your articles to melin.asryan@gmail.com. They will be reviewed for the publication in ArAS Newsletters next issues.

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