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ARMENIAN
ASTRONOMICAL SOCIETY

ArAS Newsletter

...Yet, the genuine perpetuation of the memory of our countless victims lies in the great revival of our people, in our ongoing construction efforts of today and tomorrow..

VIKTOR AMBARTSUMIAN, BAO FOUNDER

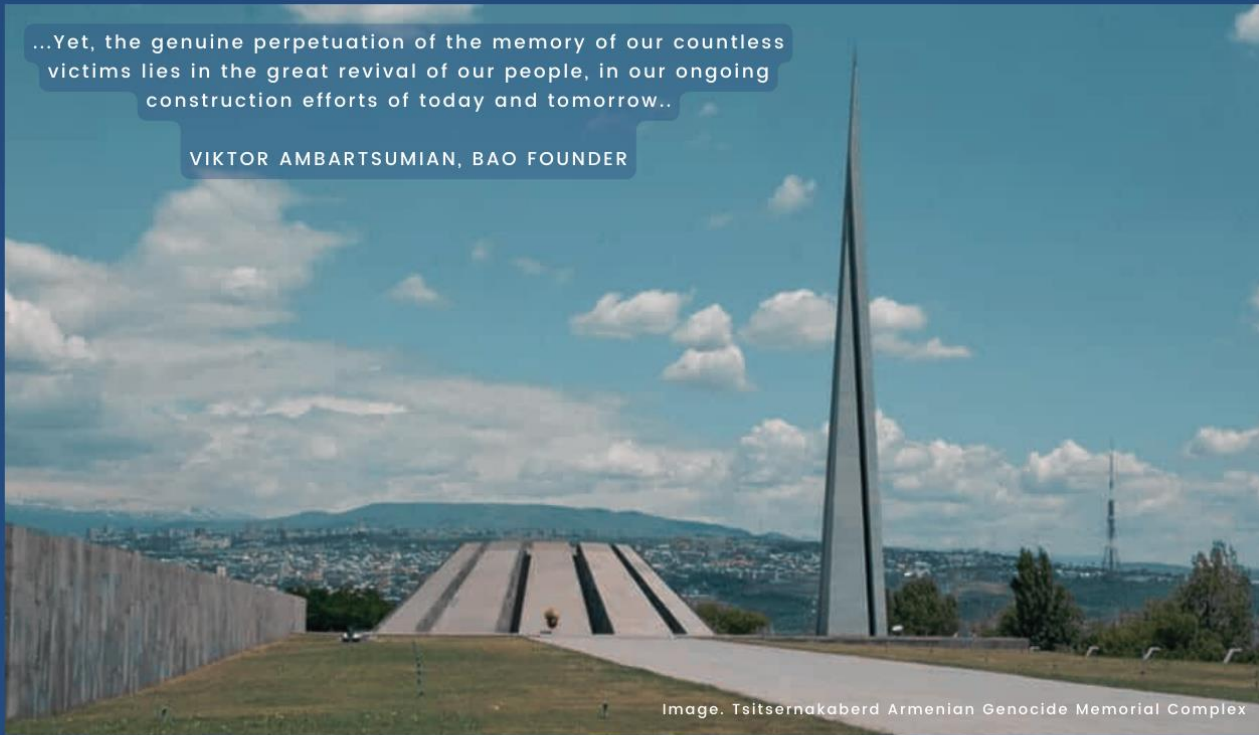


Image. Tsitsernakaberd Armenian Genocide Memorial Complex

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LOCAL NEWS

Celebrating 25 Years of Advancing Armenian Astronomy: ArAS Anniversary Conference

Գիտաժողով

«Աստղագիտության կապն այլ գիտությունների, մշակույթի և հասարակության հետ»

Նվիրված Հայկական աստղագիտական ընկերության 25-ամյակին

6-8 մայիս, 2024թ., Բյուրական



Symposium

“Relation of Astronomy to other Sciences, Culture and Society”

dedicated to Armenian Astronomical Society's 25th anniversary

6-8 May 2024, Byurakan

This year marks a significant milestone for the Armenian Astronomical Society (ArAS) as it celebrates its 25th anniversary. Since its inception in 1999 and official registration in 2001, ArAS has been at the forefront of fostering astronomical development in Armenia and beyond. As a Non-Governmental Organization (NGO), ArAS has been instrumental in promoting collaboration between Armenian and foreign astronomical institutions, nurturing ties among astronomers worldwide, and championing the cause of astronomical education and science popularization within Armenia.

With 104 members hailing from Armenia and 20 other countries, ArAS stands as a shining example of international cooperation in the field of astronomy. The ArAS Annual Prize for Young Astronomers serves as a testament to its commitment to nurturing the next generation of astronomical talent.

To commemorate its 25th anniversary, ArAS is organizing a special conference dedicated to reflecting on its journey, celebrating achievements, and charting the course for the future of astronomy in Armenia. This conference will be held on May 6-8, and serve as a platform for astronomers, educators, and enthusiasts to exchange ideas, foster collaborations, and inspire the next wave of astronomical advancements. The title of the Conference is “*Relation of Astronomy to other Sciences, Culture and Society*”, the second update of the subject since ArAS initiated a similar Conference 10 years ago in 2014.

The ArAS 25th Anniversary Conference promises to be a momentous occasion, marking not only a milestone in the society's history but also a beacon of hope for the limitless possibilities that lie ahead in the realm of astronomy.

“From School to Space”. School Lectures Program 2024

April was dedicated to the school lectures program entitled “*From School to Space*”. The program was jointly organized by the Byurakan Astrophysical Observatory (BAO) and the Armenian Astronomical Society (ArAS).

The interest towards the program is continuously growing. 132 schools applied to host it. Considering that fact, this year BAO researchers visited 30 schools in different provinces of Armenia, namely Aragatzotn, Syunik, Ararat, Armavir, Lori, Kotayq, Shirak, Tavush and Vayots Dzor.

Among the lecturers were the Director of BAO Areg Mickaelian, Senior Research Associate Hovhannes Pikichian, Leading Research Associate Ararat Yeghikyan, Research Associate Hayk Malkhasyan.



School Lecture Programme of 2024

During the visits our lecturers introduced different astronomical topics as well as distributed popular materials to the schools and schoolchildren. The schools received small telescopes as well.

ArAS School Lectures program was initiated by the ArAS Co-Presidents Areg Mickaelian and Prof. Yervant Terzian (Cornell University, N.Y., USA) to promote astronomy in the Armenian schools and facilitate interaction with professional astronomers.

Typically, once in a year starting from 2012, professional astronomers visit 30 schools and deliver lectures on hot topics of astronomy, achievements of the Armenian astronomy, activities of the Byurakan Astrophysical Observatory, etc. The program also aims at revealing talented children especially in remote regions to unlock their potential in science.

The lecture program was supported by the Fund for Armenian Relief (FAR). Beside the lecturers, one should mention the program coordinator Sona Farmanyanyan, organizers and assistants Gor Mikayelyan and Gayane Baleyan.

Celebrating the Legacy of Viktor Ambardzumian: The Statue Unveiling Ceremony in Vanadzor

On April 23, a momentous occasion unfolded in Vanadzor as the city commemorated the official unveiling of the statue honoring Viktor Ambartsumian, a revered national hero of Armenia and a distinguished astrophysicist.

Situated within the Bazum district of Vanadzor, the statue found its new home in the square dedicated to Viktor Ambartsumian, a fitting tribute to his enduring legacy and contributions to science.

The genesis of this project traces back to 2023 when a comprehensive renovation of the square bearing Ambartsumian's name, alongside the construction of an adjoining park, was initiated under a subsidy



V. Ambartsumian Statue in Vanadzor, Armenia

program. As part of the program commemorating the 115th anniversary of the esteemed scientist, the installation of the statue marked a pivotal moment in the city's cultural landscape. The artistic vision behind the statue was brought to life by the talented collaboration of Suren Abovyan, the chief architect of Vanadzor, and sculptor Gegham Begjanyan, whose craftsmanship captured the essence of Ambartsumian's legacy.

At the ceremony, Gayane Baleyan, Head of Public Relations at the Byurakan Astrophysical Observatory, delivered a poignant speech, reflecting on the profound impact of Ambartsumian's work and his enduring influence on Armenian science.

Following the unveiling ceremony, a symbolic act of environmental stewardship took place with the planting of a tree in the newly inaugurated park, symbolizing growth, vitality, and a commitment to preserving the natural environment for future generations.

In commemorating Viktor Ambartsumian through the installation of this statue, Vanadzor not only honors a national hero but also perpetuates a legacy of scientific excellence that continues to inspire and resonate with people worldwide.

4000 Papers of the Byurakan Astrophysical Observatory

The Byurakan Astrophysical Observatory (BAO) was founded in 1946 and from its inception, the Observatory has been a beacon of scholarly activity, with its researchers producing a wealth of scientific publications.

Coinciding with the establishment of the Observatory, the periodical “Communications of BAO” was inaugurated, serving as a vital platform for disseminating research findings. Since 2017, this publication has transitioned to an English-language format and is available online under the title “Communications of BAO – ComBAO.” Notably, between 1946 and 1964, the majority of BAO scientists' work found its outlet in this journal.

In 1965, the inception of the all-Union periodical “Astrophysics”, published in Armenia, marked a significant milestone in the dissemination of astronomical research. This journal, issued in Russian (Астрофизика) and translated into English as “Astrophysics – Ap”, became the primary venue for BAO authors to showcase their seminal contributions from 1965 up to now.

PUBLICATIONS BY BYURAKAN ASTRONOMERS IN 2024 (9)

[All - 9](#), [Refereed - 6](#), [Proceedings - 1](#), [Abstracts - 0](#), [El. Catalogs - 2](#), [Books - 0](#), [E-Prints - 0](#), [Papers in Books - 0](#), [Popular - 0](#), [Theses - 0](#), [Other - 0](#)

<input type="checkbox"/>	#	Authors	Title	Publication	Short	Vol	Issue	Pages	Month	Year
<input type="checkbox"/>	4055	Ter-Kazarian, G.	Deformed Lorentz Symmetry and Corresponding Geometry in Ultra-High Energy Astrophysics	Gravitation and Cosmology	GrCo	30	1	8-27	Apr	2024
<input type="checkbox"/>	4054	Azatyán, N. M.	Search and study of young infrared stellar clusters	Astrophysics & Space Science	ApSS	369	4	article id33	Apr	2024
<input type="checkbox"/>	4053	Abrahamyan, H. V.; Mickaelian, A. M.; Paronyan, G. M.; Mikayelyan, G. A.; Sukiasyan, A. G.	VizieR Online Data Catalog: Optical classification of BZG objects (Abrahamyan+, 2023)	VizieR On-line Data Catalog: J/other/Ap/66.11	VizieR				Mar	2024
<input type="checkbox"/>	4052	Hovhannisyán, M. A.; Mkhitarýan, S. A.; Mahtessian, L. A.; Vardanyán, J. G.; Markosyan, J. P.; Minasyán, A. M.; Mahtessian, A. P.	Studies of the NGC315 galaxy and the distribution of extragalactic objects around it	Nuclear Instruments and Methods in Physics Research A	NIMPRA	1060		id 169098	Mar	2024
<input type="checkbox"/>	4051	Mickaelian, A. M.; Abrahamyan, H. V.; Mikayelyan, G. A.; Paronyan, G. M.	Homogeneous fine classification of Markarian galaxies based on SDSS medium-resolution spectroscopy	Astronomy & Astrophysics	A&A	682		id A174	Feb	2024
<input type="checkbox"/>	4050	Mickaelian, A. M.; Abrahamyan, H. V.; Mikayelyan, G. A.; Paronyan, G. M.	VizieR Online Data Catalog: Classification of Markarian galaxies (Mickaelian+, 2024)	VizieR On-line Data Catalog	VizieR			J/A+A/682/A174	Jan	2024
<input type="checkbox"/>	4049	Mickaelian, A. M.; Abrahamyan, H. V.; Paronyan, G. M.; Mikayelyan, G. A.	Analysis of emission line spectra of active galaxies and fine classification for activity types	Proceedings of the International Astronomical Union	IAU GA	371		101-103		2024
<input type="checkbox"/>	4048	Astsatryan, H.; Babayan, S.; Mickaelian, A. M.; Mikayelyan, G. A.; Astsatryan, M.	Cloud-Based Machine Learning Service for Astronomical Sub-Object Classification: Case Study on the First Byurakan Survey Spectra	Data Science Journal	DSJ	23	6	1-14	Jan	2024
<input type="checkbox"/>	4047	Stoop, M.; Derkink, A.; Kaper, L.; de Koter, A.; Rogers, C.; Ramirez-Tannus, M. C.; Guo, D.; Azatyán, N. M.	The early evolution of young massive clusters. II. The kinematic history of NGC 6618/M 17	Astronomy & Astrophysics	A&A	681		idA21, 22 pp	Jan	2024

However, in recent years, BAO scientists have increasingly contributed to prestigious international and European journals, including but not limited to:

- Astronomy & Astrophysics (A&A)
- Monthly Notices of the Royal Astronomical Society (MNRAS)
- Astronomical Journal (AJ)
- Astrophysical Journal (ApJ)
- Astrophysics & Space Science (Ap&SS)
- Physical Reviews D (PhysRevD)
- Proceedings of the Astronomical Society of Australia (PASA)
- Astronomy & Computing (A&C)
- Gravitation and Cosmology (G&C)
- Revista Mexicana de Astronomía y Astrofísica (RevMexAAp)
- Астрономический журнал (АЖ, Astronomy Reports – AR)
- Письма в Астрономический журнал (ПАЖ, Astronomy Letters – AL)
- Astronomical and Astrophysical Transactions (A&ApTr)

Furthermore, since 2018, Armenia, represented by BAO, has proudly been a member of the esteemed European Astronomy & Astrophysics (A&A) journal.

As of today, the cumulative number of [scientific publications](#) stands at an impressive 4,000. This tally encompasses a diverse array of scholarly outputs, including peer-reviewed journal articles, conference proceedings, electronic catalogs, books, and book chapters, among others.

BAO's Participation to the Science Exhibition

On April 23, 2024, the National Academy of Science of the Republic of Armenia (NAS RA) witnessed a celebration of scientific discovery and innovation as it played host to a captivating science exhibition.

The event, held in front of the NAS RA Presidium building, brought together enthusiasts, educators, researchers, and students alike, fostering an environment of exploration and learning. The BAO was among the participants, presenting the latest achievements and ongoing projects of the Observatory.

One of the central aims of the exhibition was to inspire the next generation of scientists and innovators. Educational workshops and demonstrations captivated young minds, igniting their curiosity and passion for science.



"Science" Exhibition. 2024

By providing opportunities for hands-on learning and interaction with experts in the field, the exhibition empowered students to envision themselves as future leaders in science and technology.

Armenian-French Astronomical Cooperation Website

In celebration of two months of Francophonie in Armenia, the Byurakan Astrophysical Observatory (BAO) has launched a dedicated section on Armenian-French astronomical cooperation on its website (<https://www.bao.am/activities/collaborations/Pics/>). To ensure accessibility to a broader audience, the content primarily remains in English, with select sections available in French.



FRENCH-ARMENIAN COLLABORATION IN ASTRONOMY

The French-Armenian collaboration in astronomy dates back to 1960-1970-s (V. A. Ambartsumian, D. Chalange, J.-C. Pecker, G. Courtes, L. V. Mirzoyan, V. S. Okanian, et al.). Interestingly, several famous astronomers of Armenian origin worked in France: Ago Terzan, Zadig Mouradian, Ralph (Ara) Krikorian, Georges Alecian, et al, though some of them were born in other countries. In the database of Armenian astronomers there are 14 scientists living and working in France. A more intimate cooperation between French and Armenian astronomers was established in 1994 with the program **PICS**; renewed afterwards as the program **JUMELAGE**. Daniel Kunth and Artashes Petrosian were the coordinators of this collaboration. This successful cooperation was funded for 10 years (1994-2003). As a result, some 100 papers were published in various journals and Proceedings of international meetings. **French-Armenian colloquium was held in 1995** in Byurakan, Armenia, where 19 French astronomers participated. Many famous French scientists were involved in this collaboration, including Philippe Véron, Daniel Kunth, Georges Comte, Brigitte Rocca-Volmerange, et al. PICS and JUMELAGE significantly activated the science in Byurakan, which was in a very heavy situation after the disintegration of the Soviet Union. Particularly, the **2.6m telescope re-started operating** by the help of French astronomers from Marseille (J. Boulatais' team); pointing/guiding system was established, Fabry-Perot interferometer was installed and used for a few years, a focal reducer ByuFDSC and multi-pupil spectrograph VAGR were built. Chances for re-aluminization of the 2.6m mirror appeared.

Later on, in 2007, new **PICS** started for 3 more years. Georges Alecian and Arthur Nikoghossian were the coordinators of this new collaboration. The second **French-Armenian colloquium was held in 2009**, also in Byurakan, Armenia. In addition, several other visits of Armenian astronomers to France (INSU and ANR positions) and joint supervision of Ph.D. students were accomplished. French astronomers regularly participate in meetings held in Byurakan and by support of French scientists the Armenian students have participated in summer schools in Les Houches, Goutelas and elsewhere. In 2005, collaboration between the French and Armenian Virtual Observatories (VO) started which involves several institutions in France and is aimed at creation of VO access for the Digitized First Byurakan Survey (DFBS), as well as several science projects based on the DFBS have been started. Since 2010, CNRS-SCS (Armenian State Committee for Science) **Collaborative Project Grants** became available and Byurakan astronomers together with their French colleagues have won 5 such projects during 2010-2015. Later on, due to the collaboration with LATROS, UNSQ, **EU Europlanet and Erasmus+ projects** were awarded in the fields of VOs and Space Sciences and Technologies (coordinators: Alan Sarkisyan and Arap Mickaelian).

COLLABORATION FRANCO-ARMÉNIENNE EN ASTRONOMIE

The collaboration between the Byurakan Observatory and France stands as one of the most dynamic partnerships among all nations. Spanning across various periods, including 1994-1996, 1997-2003, and 2007-2009, the PICS Jumelage projects have been instrumental. These initiatives facilitated numerous exchanges, with Armenian astronomers conducting scientific work at French astronomical centers and vice versa.

Notably, significant enhancements were made, including the repair and reactivation of the BAO's 2.6m telescope and the installation of new observation instruments. Additionally, two joint Armenian-French colloquiums were convened in 1995 and 2009. Through the French Embassy's program in Armenia, three young Armenians successfully completed joint Armenian-French postgraduate studies. Moreover, the RA State Science Committee's programs saw the implementation of five scientific projects (2010-2011, 2012-2013, 2014-2015). The collaboration extended to broader European initiatives, such as Europlanet and Erasmus+, between 2019 and 2022. Furthermore, the Armenian and French virtual observatories have maintained active cooperation over the years.

Numerous scientific institutions, including observatories, astronomical institutes, and universities from both Armenia and France, have actively participated in this cooperation. Among them are BAO, Yerevan State University (YSU), the Institute of Astrophysics of Paris (IAP), the Paris Observatory (OBSPM), the Marseille Observatory (LAM), the Observatory of Haute Provence (OHP), the Lyon Observatory (CRAL), the Grenoble Observatory, the University of Montpellier, and the Astronomical Data Center of Strasbourg (CDS). Over a hundred scientists have contributed to these collaborative efforts. Notably, esteemed Armenian astronomers such as Hakob Terzan, Zatik Muradyan, Ara Krikorian, George Alesyan, Alen Sarkisyan, and others have made significant contributions while working in France.

INTERNATIONAL NEWS

Kavli Foundation Supports IAU General Assembly

The International Astronomical Union (IAU) has announced that The Kavli Foundation will be backing the distinguished awardees of the 2024 Kavli Prize in Astrophysics and the Young Astronomers Lunch at the XXXII IAU General Assembly 2024 (IAU GA 2024).

The generous support will be formally acknowledged during the event, where the esteemed Kavli Prize Laureates will lead a special session dedicated to The Kavli Prize on 12 August 2024. This session aims not only to recognize the laureates' groundbreaking accomplishments in astrophysics but also to emphasize the vital role of global collaboration and discourse in advancing the field.

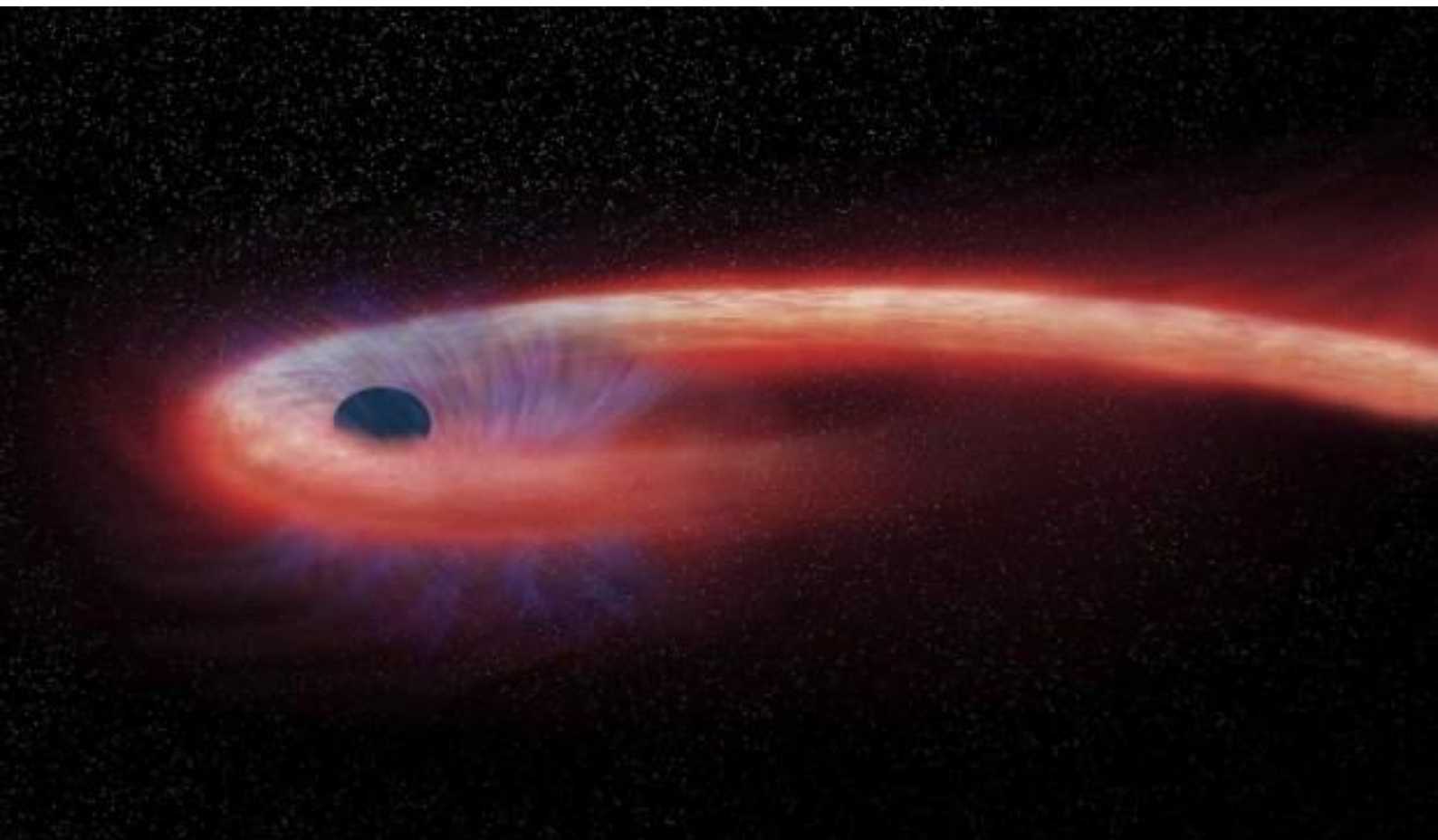
The Young Astronomers Lunch at the IAU General Assembly serves as a pivotal gathering to connect aspiring young astronomers with seasoned professionals. Anticipating an audience of 300 early-career researchers, the lunch provides a distinctive platform for mentorship, networking, and discussions on career trajectories and research opportunities within astronomy. Through this support, The Kavli Foundation remains committed to illuminating the path of scientific exploration and collaboration, striving to propel science for the betterment of humanity. This investment in both established and emerging scientists at the IAU General Assembly underscores a dedication to fostering a brighter future by championing and empowering astronomers at every stage of their careers.

OTHER NEWS

A Rare Type of Particle Sent from Powerful Astronomical Objects Detected

As we learn from Astronomy magazine, IceCube researchers have identified a scarce variety of particle emanating from potent celestial entities.

Described as the “800-pound gorilla” of detectors, IceCube, in a study released in April 2024, recorded an exceptionally rare form of astrophysical neutrino with notably high energy levels. These neutrinos, often originating from sources such as black holes, possess energies far surpassing the relic neutrinos dispersed throughout the universe since the Big Bang. While these energetic neutrinos are infrequent, they are more likely to interact with matter, allowing physicists to detect them. Despite their rarity, the researchers successfully pinpointed a few instances of these energetic neutrinos from nearly a decade's worth of data, marking the first detection of their kind. This discovery represents a significant advancement in the quest to comprehend the mechanisms behind the generation of highly energetic particles like astrophysical neutrinos.



Credit: NASA/Chandra X-ray Observatory.

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.

[ArAS Newsletter issues](#) are available online.