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ArAS Newsletter

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LOCAL NEWS

Byurakan Astrophysical Observatory's Astronomers' Paper on "Homogeneous Fine Classification of Markarian Galaxies Based on SDSS Medium-Resolution Spectroscopy" in Astronomy & Astrophysics

Markarian (Mrk) galaxies has been in Astronomers' attention for quite a while already. Different authors used various methods for its classification using low spectral resolution obtained from different telescopes.

In their recently published paper in Astronomy &Astrophysics, BAO researchers A. M. Mickaelian, H. V. Abrahamyan, G. A. Mikayelyan, and G. M. Paronyan obtained homogeneous classifications of Mrk galaxies by means of the SDSS spectra. Methods. Based on our work on the classification of newly revealed objects from various recent catalogs, we developed a fine clas- sification scheme for activity types based on the homogeneous database of the SDSS spectroscopy. This scheme was applied to Mrk galaxies having spectra in the SDSS (779 out of 1544, 50.45%). Results. As a result, 779 Mrk galaxies now have homogeneous optical spectral classification that can be used for further studies and statistics of their physical and spatial properties. We revealed 2 QSOs, 49 classical Seyferts (broad-line Seyferts 1, BLS1s), 17 narrow-line Seyferts 1 (NLS1s), 4 Sy2s, 12 LINERs, 11 active galactic nuclei (AGN) without a definite type, 31 Composite spectrum objects, and 533 HII/Starbursts. Due to low-quality spectra, some objects were left without definite activity types and were classified as emission or absorption galaxies.

Markarian galaxies revealed due to their ultraviolet excess are very famous; they play a significant role in many astro- physical problems and come in a variety of types: Seyferts (Sys), low-ionization narrow emission-line regions (LINERs), starbursts (SBs), blue compact dwarf galaxies (BCDGs), as well as some quasars (QSOs) and blazars. They also appear as sources of non-optical radiation, such as gamma-ray, X-ray, ultraviolet (UV), infrared (IR), and radio, including some extremely high-energy gamma-ray sources (Mrk 421, Mrk 501) and very high-luminosity IR galaxies (Mrk 231). Aims. The classifications of Mrk galaxies for activity types have been carried out based on old mostly poor-quality and inhomoge- neous spectra (relatively low-resolution photographic spectra and low S/N spectra). The Sloan Digital Sky Surveys (SDSS) provides ~90% of the existing medium-resolution spectra, and is a relevant homogeneous database for classification of galaxies.

100 Scientific Milestones:

Byurakan Astrophysical Observatory's Scientific Events

The Byurakan Astrophysical Observatory (BAO) is renowned for hosting a variety of scientific gatherings such as conferences, colloquia, workshops and summer schools for young scientists. The first scientific conference centered on "Stellar Associations and the Distribution of Hot Giants" took place in 1951 at BAO, even before the main building was fully constructed.

Today, the total number of scientific events has reached 100. This does not encompass the numerous educational and public events, which BAO holds 20-25 events annually.

Find the most important scientific events organized by BAO here.

More is yet to come!

"Communication with Extraterrestrial Intelligence" First International Symposium on the Problem of Extraterrestrial Civilizations.

1971. BAO.

Delegation From Byurakan Astrophysical Observatory Delegation Visits Aryabhatta Research Institute of Observational Sciences

On March 8-16, Areg Mickaelian, the director of the Byurakan Astrophysical Observatory, and Gayane Baleyan, the head of the BAO public relations department, went on a business trip to Nainital, India, and the Devastal observatory at the invitation of Banerjee Dipankar, the director of the Aryabhatta Research Institute of Observational Sciences (ARIES).

The purpose of the visit was to get acquainted with the scientific research and public activities of ARIES, and to establish scientific cooperation.

Left: Areg Mickaelian. Rught: Gayane Baleyan

Within the framework of the business trip, the BAO delegation had a discussion with the scientific staff of ARIES on the topics of research and possible cooperation. The members of the delegation visited the Nainital 1m Telescope, ARIES, Devasthal Observatory, which houses the 3.6m (DOT) and 1.3m telescopes, as well as the unique 4m liquid mercury telescope, and also got acquainted with the public activities of the institute.

The BAO delegates presented the scientific and public activities of the BAO. They also gave speeches: “Byurakan Astrophysical Observatory: current statuses and activities” by Areg Mickaelian and “A new classification of active galaxies based on their emission spectra” and "Public activity of the Byurakan Observatory and the MAU Southwest and Central Asia Regional Center" by Gayane Baleyan.

As a result of the mission, an agreement was reached to prepare and present possible scientific projects for further discussion and implementation, as well as for the implementation of joint observation programs with BA and ARIES telescopes.

ANNIVERSARIES

Abraham Mahtessian's 70th Anniversary

On March 13, Abraham Mahtessian, Senior research associate in the department of Active Galaxies, celebrated his 70th anniversary. A. Mahtessian was born on March 13, 1954 in Leninakan (Gyumri), Armenia. He graduated from the Yerevan State University (YSU), Department of Astrophysics in 1976 and has started working at BAO since 1976. He got his PhD degree in 1989 and was a deputy director of BAO in 1999-2003.

His scientific works pertain to groups and clusters of galaxies, Markarian galaxies.

A. Mahtessian is a member of the International Astronomical Union (IAU).

Abraham Mahtessian

We congratulate A. Mahtessian once more and wish him further fruitful research and new scientific achievements.

Ruben Andreasyan's 75th Anniversary

Ruben Andreasyan

Ruben Andreasyan, one of the active astronomers of the Byurakan Astrophysical Observatory, is 75.

R. Andreasyan was born on March 27, 1949 in Yerevan, Armenia. He is head of the department of Active Galaxies and a leading research associate.

R. Andreasyan graduated from the Yerevan State University (YSU), Department of Astrophysics (1972). Since 1974, Andreasyan has been working at the Byurakan Astrophysical Observatory (BAO), first as an assistant astronomer and junior research associate. In 1977-1980, Andreasyan took his post-graduate studies and in 1985 he successfully defended his Ph.D. thesis at BAO under the supervision of Prof M.A. Mnatsakanian. In 2001-2004, Andreasyan was the scientific secretary of BAO.

R. Andreasyan's scientific works pertain to the study of large-scale magnetic fields in our Galaxy and Metagalaxy, the distribution of interstellar matter in our Galaxy, the mechanisms of magnetic field formation in galaxies, and the role of large-scale magnetic fields in extragalactic radio sources

Andreasyan has published more than 65 papers in Astrophysics, Astrophys. Space Sci., Astron. Astrophys. Transactions, Communications of BAO, and other journals, as well as in proceedings of several international conferences. He has participated in a number of important international meetings, including the IAU XXIV General Assembly in Manchester (2000), a few other IAU meetings and JENAMs.

He was awarded ANSEF grants in 2004 for his studies of the radio luminosity of pulsars and the distribution of interstellar electron density and in 2005 for the study of the 3D structure of the magnetic field of our Galaxy. He was actively involved in the French-Armenian collaboration (PICS and Jumelage). He also was a lecturer at the YSU and was a supervisor of a number of MSc and PhD students.

R. Andreasyan is a member of the International Astronomical Union (IAU), European Astronomical Society (EAS), Armenian Astronomical Society (ArAS)

We congratulate Dr. Andreasyan once more and wish him further fruitful research and new scientific achievements.

INTERNATIONAL NEWS

European Astronomical Society 2024 Prizes Released

The European Astronomical Society announced the release of the prestigious awards for EAS 2024.

Tycho Brahe Medal

The 2024 Tycho Brahe Medal is awarded to Prof. Francesco Pepe (University of Geneva, Switzerland) for the development and exploitation of ultra-stable high-resolution spectrographs which revolutionised the detection and characterisation of small-mass exoplanets.

Lodewijk Woltjer Lecture

The 2024 Lodewijk Woltjer Lecture is awarded to Prof. Roland Bacon (CRAL/CNRS/ENS de Lyon/Claude Bernard Lyon 1 University, France) for the development of integral field spectroscopy as a core technique in observational astrophysics and its application to a wide range of problems, in particular galaxy evolution.

Fritz Zwicky Prize for Astrophysics & Cosmology

The 2024 Fritz Zwicky Prize for Astrophysics & Cosmology is awarded to Dr Catherine Cesarsky (CEA Saclay, France) for outstanding contributions to the understanding of the evolution of galaxies via space infrared observations and for her leadership in shaping the observational infrastructure of contemporary astronomy.

MERAC Prizes

The 2024 MERAC Prizes for the Best Doctoral Thesis are awarded in Theoretical Astrophysics to Dr Lorenzo Gavassino (Vanderbilt University, United States of America) for his thermodynamics-based formulation of relativistic viscous hydrodynamics for multimessenger and gravitational astronomy. Observational Astrophysics to Dr Julia V. Seidel (European Southern Observatory) for her work on climate and atmospheric circulation regimes of exoplanets from high-resolution spectroscopic observations. New Technologies (Computational) to Dr Johannes Heyl (University College London, United Kingdom) for his work on machine learning-based techniques to understand astrochemical processes in the interstellar medium.

All six awardees will give a plenary lecture at the European Astronomical Society Annual Meeting 2024 to be held in Padova, Italy, from 1 to 5 July 2024.

OTHER NEWS

The Brightest and Fastest-Growing Supermassive Black Hole

Astrophysicists have recently identified the most luminous and fast-growing black hole, according to Astronomy magazine. For decades, it remained unnoticed despite being in plain view. Dubbed J0529-4351, the quasar was so bright that it was first dismissed as a star. Described in a paper published in Nature Astronomy, the quasar has a mass of 17 billion Suns and it's still growing. The black hole is consuming the equivalent of one Sun per day, shining brighter than 500 trillion Suns and making it the brightest known object in the universe.

Quasars, recognized as the brightest entities in the universe, owe their brilliance to their insatiable hunger. Such objects can shine with greater luminosity than the entirety of the Milky Way Galaxy. As gas and dust are pulled into the supermassive black holes, it forms a swirling accretion disk that spews out electromagnetic radiation, glowing as the material undergoes friction and other forces on its way toward the center.

Initially observed in a sky survey back in 1980, J0529-4351 was only identified as a quasar last year. Automated analysis of data from ESA's Gaia satellite instead earmarked the quasar as a star because it seemed too bright to be anything else.

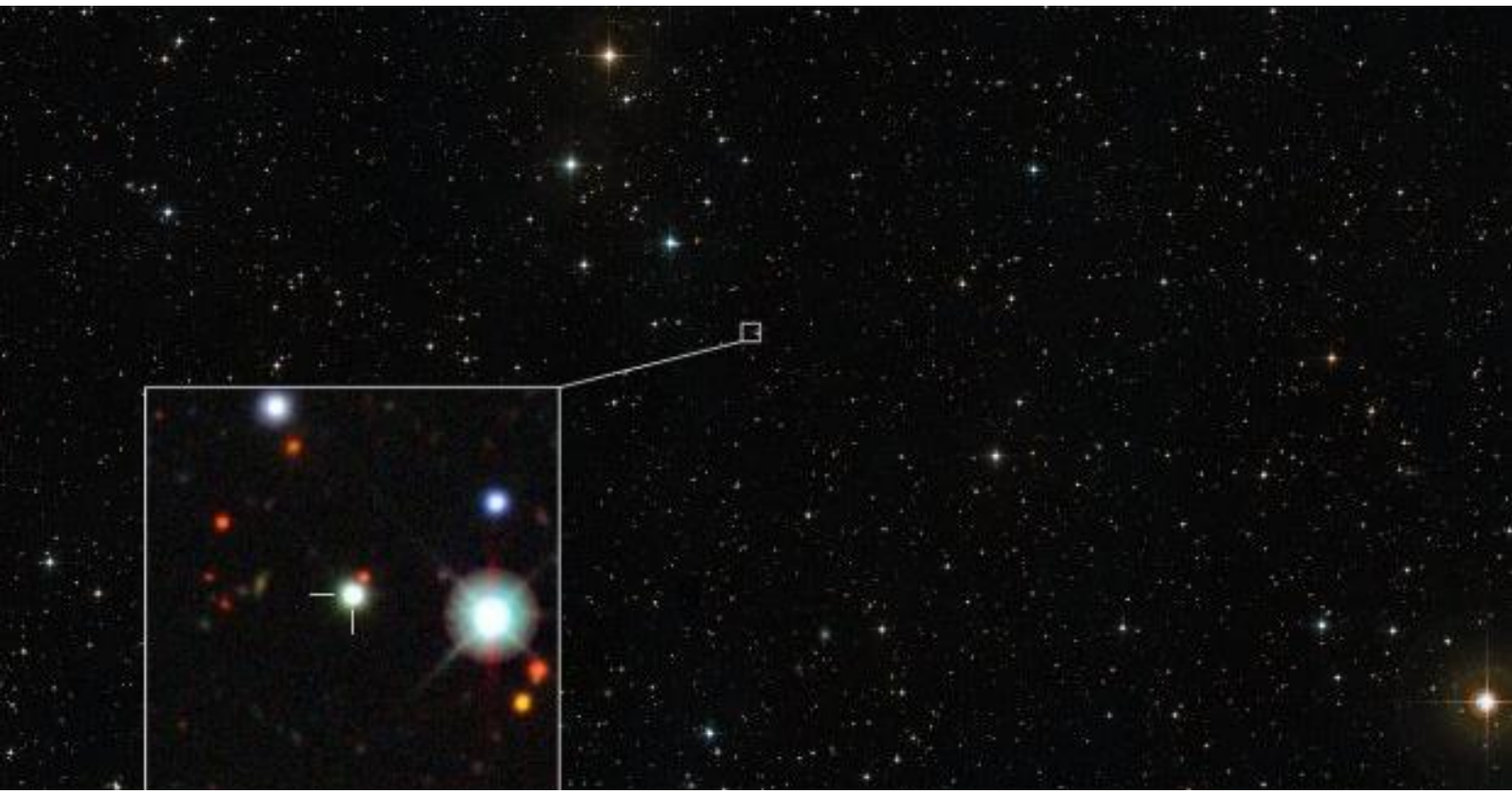

Image of quasar J0529-4351 as it appears in the sky. The photo uses images taken for the Digitized Sky Survey 2 and the Dark Energy Survey.
Credit: ESO/Digitized Sky Survey 2/Dark Energy Survey

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.