https://www.hermanus.astronomy@gmail.com

"The Southern Cross"

The Hermanus Astronomy Centre's Monthly Newsletter

June 2026

MONTHLY MEETINGS

At the May 19th Monthly meeting, our guest speaker **Prof Piet Meintjes** presented, *"A Southern Legacy Unfolds: Boyden Observatory and the Hunt for Cosmic Transients"*.

The Boyden Observatory traces its origins to the late 19th century, when it was first established by Harvard College Observatory in Arequipa. Relocated in the 1920s to Bloemfontein, Boyden became a cornerstone facility for charting the largely unexplored southern celestial sphere, contributing to early photographic surveys and long-term variability studies. In recent years, renewed efforts have focused on revitalizing Boyden's instrumentation to meet the demands of modern time-domain astrophysics. Prof Piet Meintjes highlighted Boyden's evolution from a pioneering survey observatory to a modern contributor alongside other facilities in South Africa, demonstrating how its historical legacy and geographic advantage continue to unlock the dynamic southern sky.

The presentation and discussion link: https://www.youtube.com/watch?v=JlvgNe7d1_M&pp=0gcJCQMLAYcqIYzv

Please note that our **June Monthly** meeting will be held on **WEDNESDAY 24TH JUNE**. At this meeting, our guest speaker **Prof Roger Deane** will present, ***"MeerKAT: A Giant African Eye and Ear on the Universe"***.

South Africa's MeerKAT radio telescope is a precursor to the billion-dollar-class SKA Observatory. The coherent confluence of a strategic vision, engineering excellence, and a pioneering human capacity development programme has delivered a state-of-the-art telescope and a diverse community of young African scientists to unlock its full potential. Prof Deane will provide an overview of some of the scientific highlights achieved thus far, from a transformed view of the centre of our own Milky Way to the detection of Einstein's gravitational waves, and look ahead towards the exciting discoveries that lie ahead, driven by telescopes on African soil.

This presentation will be given in person at the Onrus Manor and virtually via zoom. Invitations will be circulated shortly.

SPECIAL INTEREST GROUP ACTIVITIES

Cosmology

The **May 5th** meeting featured parts 4 and 5 of episode 38 of the Entire History of the Universe, *"What is Reality?"* - The concept of reality is probed by cutting matter into ever smaller pieces leading to radical possibilities with unexpected consequences.

The YouTube link: https://youtu.be/ji2KKU5NfoY?list=PLROBLlvnR7BEF9b1NOvRf_zhboibmywJb

The discussion link: https://www.youtube.com/watch?v=hMGsaMpYK-8

Our next meeting on **Jun 2nd** we will cover the final parts of Episode 38: *"What is Reality?"*.

For further information regarding the Cosmology Group, contact Derek Duckitt – derek.duckitt@gmail.com

Study Group

On **26th May** the Study Group watched a YouTube video of **Prof Yuval Noah Harari's** discussion of, *"Why advanced societies fall for mass delusion"*. Prof Harari, investigates why we can accumulate knowledge at an astonishing speed and yet remain vulnerable to deception and superstition: 'If humans are so smart, why are we on the verge of destruction?'

The YouTube link: https://youtu.be/I4l1fr-t3ZE

The discussion link: https://youtu.be/Br-IqmTPWo0

The topic for the study group scheduled for **30th June** will be, "Time lapse to the future of Earth." Sir David Attenborough asks; 'What if the end of Earth isn't in the distant future…but has already started?'

For further information regarding the Study Group, contact Peter Harvey petermh@hermanus.co.za

Observing.

Optimal dates for **June 2026**:

SUGGESTED EVENING OBSERVATION WINDOWS
(Lunar observations notwithstanding)

Date		*Moon*	*Dusk end*
Jun 5	*Rises*	**22h08 (78%)**	**19h09**
to **Jun 18**	*Sets*	**21h35 (13%)**	**19h10**

Moonwatch: A few days either side of **First Quarter** (21st Jun). The lunar 'X' and Lunar 'V' will not be visible this month.

Refer to Peter Harvey's excellent "Skynotes" for a summary of Astronomical Phenomenon forecast for June.

Outreach

Zimkhitha Buyile and learners from Lukhanyo Primary School continue to lead the way, through their commitment to science. Zimkhitha and members of her Science Club, visited the Cape Town Planetarium & Museum during May, and they have plans for a tour to the Wind Farm and Eskom Palmiet power station during the 3rd term.

The HAC were also delighted to learn that 2 of the 4 teams they entered for the NRF-SAASTA AstroQuiz® last month, advanced to the second round. The HAC congratulate them on their success and wish them well in their future studies.

Right: Zimkhitha and learners from Lukhanyo Primary School at the Cape Town Museum.

ASSA

From Tim Cooper

The link to the latest Comet, Asteroid and Meteor Section:

https://assa.saao.ac.za/wp-content/uploads/sites/23/2026/03/ASSA-CAMnotes-2026-Number-2.pdf

MNASSA

The Monthly Notes of the Astronomical Society of Southern Africa are available on:

http://www.mnassa.org.za/

ASSA Shallow Deep Sky Bulletin

The latest Shallow and Deep Sky Bulletin by the ASSA Director, Colin Steyn, is now available for download from https://assa.saao.ac.za/publications/deep-sky

Astronomy News May 2026 continued overleaf…

Compiled by Pieter Kotzé

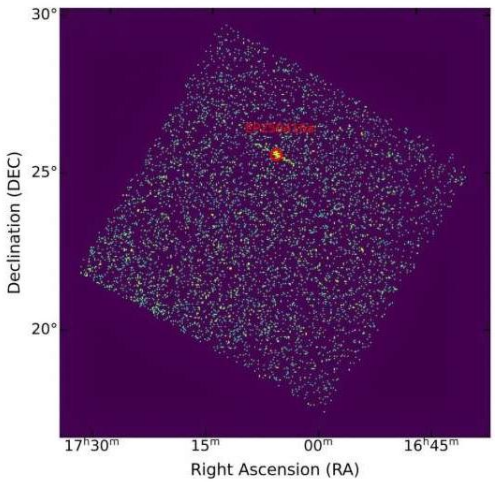
MAY ASTRONOMY PICTURE

Credit: ESA/Hubble & NASA, D. Thilker and the PHANGS-HST Team

In this new image by the NASA/ESA Hubble Space Telescope, a spiral galaxy glittering with star clusters is the center of attention. NGC 3137 is located 53 million light-years away in the constellation Antlia (The Air Pump). As a nearby spiral galaxy, this target offers astronomers an excellent opportunity to study the cycle of stellar birth and death, as well as giving researchers a glimpse of a galactic system similar to our own.

NGC 3137 is of particular interest to astronomers because it travels through space with a group of galaxies that is thought to be similar to the Local Group, the galaxy group that contains the Milky Way. Similar to the Local Group, the NGC 3175 group contains two large spiral galaxies: NGC 3137 and NGC 3175, which Hubble has also observed. In the Local Group, the largest members are the Milky Way and Andromeda, another spiral galaxy. In addition to two large spiral galaxies, both groups also contain a number of smaller dwarf galaxies, although it's not yet known how many of these tiny companions the NGC 3175 group has; researchers have found more than 500 dwarf galaxy candidates. By studying this nearby galaxy group, astronomers can learn about the dynamics of our own galactic home.

Optically dark gamma-ray burst reveals an unusually wide jet



EP250416a captured by the EP/WXT CMOS17 detector chip at 17:53:59 UTC on April 16, 2025. Credit: arXiv (2026). DOI: 10.48550/arxiv.2604.21624

Using various telescopes, an international team of astronomers has performed multi-wavelength observations of a recently identified gamma-ray burst source designated GRB 250416C. Results of the observational campaign, could help us better understand the nature of GRB 250416C and gamma-ray bursts in general. Gamma-ray bursts (GRBs) are the most powerful electromagnetic explosions in the universe, usually caused by the destruction of massive stars. In general, they are observed as bursts of highly energetic gamma rays lasting from less than a second to several minutes. GRB 250416C is a GRB source associated with a bright X-ray flare (designated EP250416a), which was identified with the Einstein Probe (EP) on April 16, 2025. In order to get more insights into the properties of the burst and its afterglow, a group of astronomers led by Guoying Zhao of the Sun Yat-Sen University in China conducted a comprehensive multi-wavelength study of GRB 250416C using various spacecraft and ground-based facilities, including the Neil Gehrels Swift satellite and Cerro Tololo Inter-American Observatory (CTIO). The observations found that GRB 250416C/EP250416a exhibits a burst duration of 30 seconds in X-ray and 17.7 seconds in gamma rays. It reaches peak energy of approximately 342 keV. https://phys.org/news/2026-05-optically-dark-gamma-ray-reveals.html

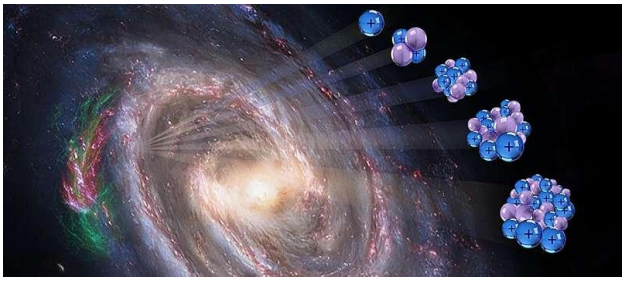
A tiny world beyond Neptune has an atmosphere that shouldn't exist

Artist's conception of this research showing an imagined time sequence as a star passes behind a TNO with an atmosphere. Credit: NAOJ

A team of professional and amateur Japanese astronomers have found evidence for a thin atmosphere around a small body in the outer solar system. The object is so small that it should not have a sustainable atmosphere, raising questions about when and how the atmosphere formed. Future observations to better characterize the atmosphere will help solve these mysteries. In the cold reaches of the outer solar system lie thousands of small objects known as trans-Neptunian objects (TNOs) because they lie outside the orbit of Neptune. A thin atmosphere has been observed around Pluto, the most famous TNO, but studies of other TNOs have yielded negative results. Most TNOs are so cold, and their surface gravity so weak, that they are not expected to retain atmospheres. But astronomers like to expect the unexpected, so they took advantage of a lucky "natural experiment" to look for an atmosphere around a TNO known as (612533) 2002 XV_{93}. This object, abbreviated as 2002 XV_{93}, has a diameter of approximately 500 km. For reference, Pluto's diameter is 2,377 km. The orbit of 2002 XV_{93} is such that, as seen from Japan, it passed directly in front of a star on January 10, 2024. As the star disappears behind 2002 XV_{93}, it might gradually fade, indicating that the light is being attenuated as it passes through a thin atmosphere; or it might suddenly wink out as it slips behind the solid surface of the TNO. https://phys.org/news/2026-05-tiny-world-neptune-atmosphere-shouldnt.html

DAMPE satellite reveals cosmic rays share spectral break near 15 teravolts

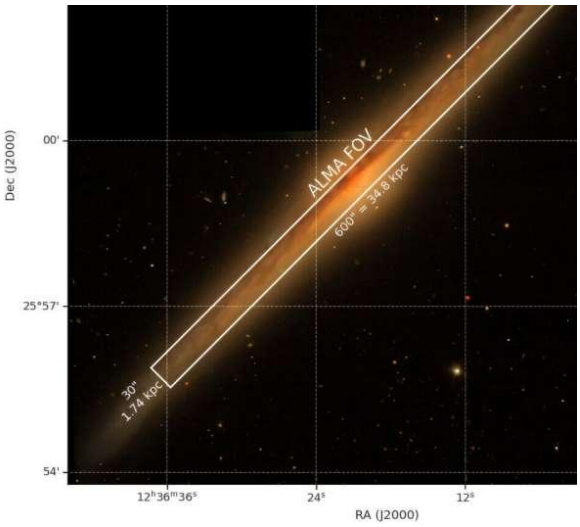
A century after their discovery, cosmic rays—particles of extreme energy originating from the far reaches of the universe—remain a mystery to scientists. The DAMPE (Dark Matter Particle Explorer) space telescope is tackling this phenomenon, particularly investigating the role that dark matter may play in their formation. This international mission, which includes the University of Geneva (UNIGE), has made a major breakthrough by highlighting a universal feature of these particles.



Cosmic rays are primarily composed of protons, but also of helium, carbon, oxygen, and iron nuclei. Credit: Chinese Academy of Science

Cosmic rays are the most energetic particles observed in the universe, far surpassing the energies of particles produced by man-made accelerators on Earth. Their exact origin is still under study, and it is believed that they originate from extreme astrophysical phenomena, such as supernovae, black hole jets, or pulsars. The DAMPE space telescope, launched in December 2015, aims to provide answers regarding the origin and nature of these cosmic rays. This space mission, with the astrophysics group from the Department of Nuclear and Particle Physics (DPNC) at the University of Geneva (UNIGE) being one of its main contributors, has made a crucial breakthrough. The results show that, for all the nuclei studied, the number of particles decreases more and more rapidly beyond a certain value. This phenomenon is called "spectral softening." Normally, the number of particles already decreases as energy increases, but here, this decrease becomes even more pronounced. This occurs around a rigidity of about 15 TV (teraelectron-volts). The rigidity of a particle measures the resistance of its trajectory to a magnetic field. The observation of a common structure at this rigidity strongly supports models that explain that the acceleration and transport of cosmic rays depend on the particles' rigidity. https://phys.org/news/2026-04-dampe-satellite-reveals-cosmic-rays.html

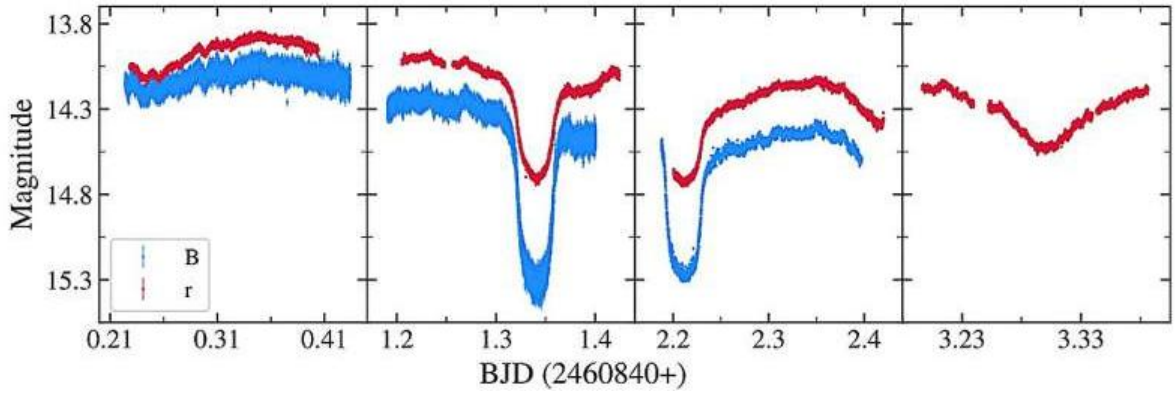
ALMA reveals giant molecular clouds across Needle galaxy's full disk



Sloan Digital Sky Survey DR14 three color image of the Needle Galaxy (g, r, and i bands) with field of view of new ALMA CO(2-1) survey shown as a white box. Credit: arXiv (2026). DOI: 10.48550/arxiv.2604.14136

An international team of astronomers has employed the Atacama Large Millimeter/submillimeter Array (ALMA) to perform high-resolution observations of the Needle galaxy. Results of the new observational campaign provide more insights into the properties of molecular gas in this galaxy. NGC 4565, known as the Needle galaxy due to its narrow profile, is a prominent example of an edge-on spiral galaxy. The galaxy has a diameter of about 176,000 light years and its mass is 80 billion solar masses. The distance to NGC 4565 is estimated to be some 39 million light years. The Needle galaxy is considered as a Milky Way analog and also shares many similarities to the Andromeda galaxy. That is why a group of astronomers led by Grace Krahm of the Ohio State University decided to take a closer look at this galaxy with ALMA, focusing on the molecular gas in its interstellar medium (ISM). Such a study could be essential for learning about the processes that govern star formation, galaxy evolution, and the cycling of gas between different phases of the ISM. In particular, the observations found that the Needle galaxy has very little molecular gas inside its ring. This is followed by a disk dominated by molecular hydrogen and a hydrogen-iodide outer disk. In terms of radial profiles, the findings point to some similarity to the Andromeda galaxy and to the spiral galaxy NGC 2775. https://phys.org/news/2026-04-alma-reveals-giant-molecular-clouds.html#goog_rewarded

J1152 is an unusual long-period dwarf nova with recurring eclipses, observations find

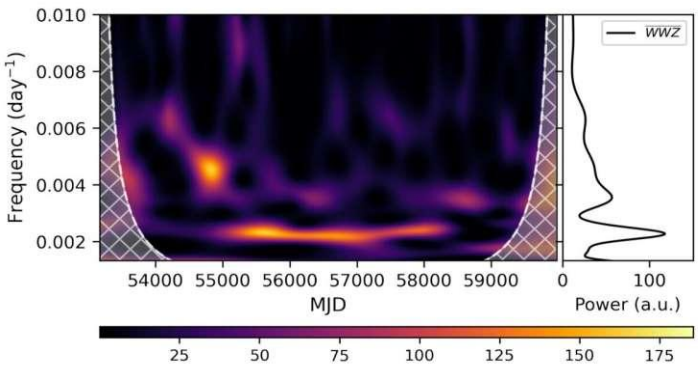


Simultaneous B- and r-band light curves of J1152 obtained from SAAO during the quiescent phase. Credit: Rawat et al., 2026.

Astronomers from the South African Astronomical Observatory (SAAO) and elsewhere have conducted photometric and spectroscopic observations of a cataclysmic variable system designated SRGA J115215.0−510656. Results of the new observations indicate that the investigated system is an unusual long-period dwarf nova. Cataclysmic variables (CVs) are binary star systems consisting of a white dwarf primary accreting matter from a normal star companion. They irregularly increase in brightness by a large factor, then drop back down to a quiescent state. These binaries have been found in many environments, such as the center of the Milky Way galaxy, the solar neighborhood, and within open and globular clusters. Given that in CVs, mass transfer from the companion star often occurs through an accretion disk around the white dwarf and, in some cases, thermal instability in the disk triggers an outburst known as a dwarf nova (DN). These novae are the type of CVs that undergo semi-periodic outbursts. Some DNe only experience regular 2–5 mag outbursts (U Gem type) while others display additional features. SRGA J115215.0−510656, or J1152 for short, was first identified in X-rays in 2021 and classified as a CV candidate. The system is located some 2,086 light years away and has an X-ray luminosity at a level of 100 nonillion erg/s. Recently, a team of astronomers led by SAAO's Nikita Rawat has utilized the South African Large Telescope (SALT) and the Sutherland Observatory to perform photometry and spectroscopy of J1152, hoping to shed more light on its nature. Their observations were complemented by data

from NASA's Transiting Exoplanet Survey Satellite (TESS). "In this paper, we present the first detailed investigation of the optical properties of J1152, making use of archival data from TESS, along with ground-based photometric and spectroscopic observations," the researchers write. https://phys.org/news/2026-05-j1152-unusual-period-dwarf-nova.html

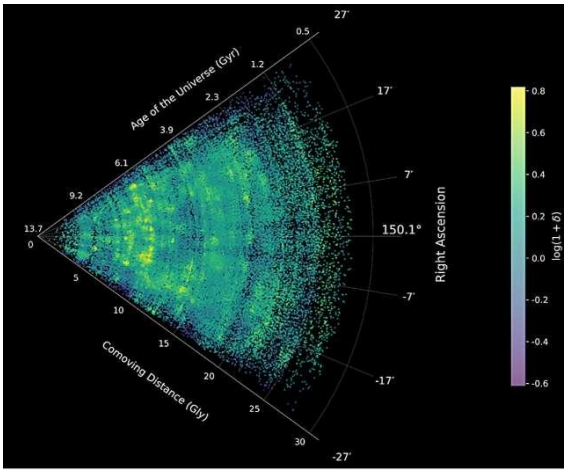
Bright blazar reveals 433-day optical quasi-periodic oscillation across nine years



On left: Result of the WWZ analysis with a dominant signal at 0.00231 day^{-1} from MJD 54980 to 58450. The white dashed line separates the region in the WWZ plot, where edge effects become dominant, with our QPO of ~433 days in the safe region. On right: Time-averaged WWZ plot. Credit: arXiv (2026). DOI: 10.48550/arxiv.2604.27503

By analyzing the data from the Whole Earth Blazar Telescope (WEBT), an international team of astronomers has discovered optical quasi-periodic oscillation (QPO) in a bright quasar known as 3C 454.3. It is so far one of the most persistent QPOs detected in the optical band. Blazars are very compact quasars associated with supermassive black holes (SMBHs) at the centers of active, giant elliptical galaxies. They belong to a larger group of active galaxies that host active galactic nuclei (AGN), and are the most numerous extragalactic gamma-ray sources. Their characteristic features are relativistic jets pointed almost exactly toward Earth. Based on their optical emission properties, blazars can be divided into two classes: flat-spectrum radio quasars (FSRQs) that feature prominent and broad optical emission lines, and BL Lacertae objects (BL Lacs), which do not. Observations show that some blazars may exhibit periodic-like fluctuations in the optical light curves known as optical QPOs. Given that QPOs were historically discovered and extensively studied in the X-ray band, it is believed that they occur when X-rays are emitted near the inner edge of an accretion disk in which gas swirls onto a compact object like a neutron star or a black hole. https://phys.org/news/2026-05-bright-blazar-reveals-day-optical.html

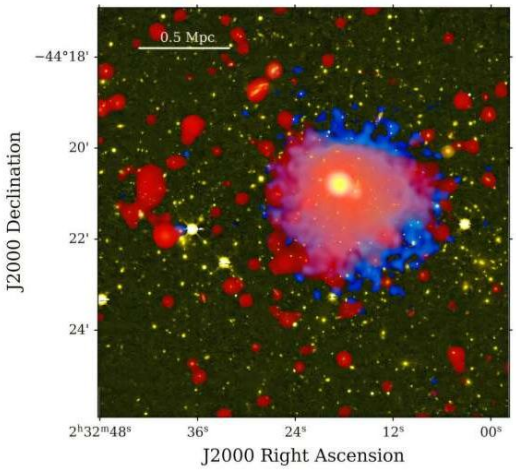
JWST maps cosmic web in record detail back to universe's first billion years



A slice through the COSMOS-Web cosmic-web map, showing galaxies across nearly 14 billion years of cosmic history. The vertex on the left marks the present day; moving outward, each galaxy is placed at its distance in cosmic time, reaching back to when the universe was less than a billion years old. Bright yellow regions show the dense clusters and filaments of the cosmic web, while dark regions mark the near-empty voids in between. Credit: Hossein Hatamnia, UC Riverside.

Using data from NASA's James Webb Space Telescope (JWST), astronomers led by researchers at the University of California, Riverside have produced the most detailed map of the cosmic web ever made, tracing the network of galaxies all the way back to when the universe was one billion years old. The cosmic web is the universe's vast, skeleton-like framework—a network of interwoven filaments and sheets of dark matter and gas that surround immense, nearly empty voids. It forms the underlying architecture of the cosmos, linking galaxies and clusters into a single, intricate, and far-reaching structure. The study, which appears in *The Astrophysical Journal*, used the largest JWST survey conducted so far—the COSMOS-Web—to trace how galaxies form a network across 13.7 billion years of cosmic history. The title of the paper is "Large-Scale Structure in COSMOS-Web: Tracing Galaxy Evolution in the Cosmic Web up to z ~ 7 with the Largest JWST Survey." https://phys.org/news/2026-05-jwst-cosmic-web-universe-billion.html

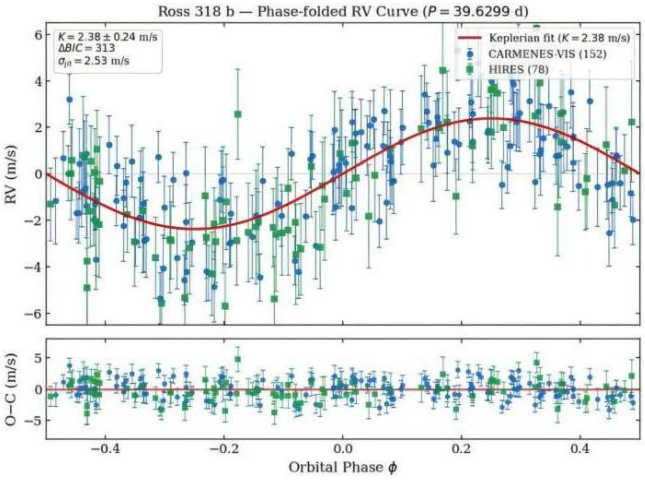
Radio telescopes confirm 3.3-million-light-year halo in unusually quiet galaxy cluster



Multiwavelength composite image of the cluster RXCJ0232–4420. Credit: arXiv (2026). DOI: 10.48550/arxiv.2604.27123

Astronomers have employed the upgraded Giant Metrewave Radio Telescope (uGMRT) and the MeerKAT radio telescope to observe a galaxy cluster known as RXCJ0232–4420. Results of the new observations, published April 29 on the *arXiv* pre-print server, deliver important insights into the nature of this cluster. Galaxy clusters contain up to thousands of galaxies bound together by gravity. They generally form as a result of mergers and grow by accreting sub-clusters. Therefore, they could serve as excellent laboratories for studying galaxy evolution and cosmology. RXCJ0232–4420 is a massive galaxy cluster at a redshift of approximately 0.066, discovered in 2002. It is a relaxed cool-core cluster hosting two brightest cluster galaxies (designated BCG-A and BCG-B), separated by about 330,000 light years. Previous observations of RXCJ0232–4420 revealed diffuse emission centered on BCG-A, resembling a typical radio mini-halo, while some other studies found cluster-scale diffuse emission extending up to about 3.6 million light years, which is consistent with the size of a giant radio halo. Moreover, two candidate relics located east and south of the diffuse emission have also been identified. https://phys.org/news/2026-05-radio-telescopes-million-year-halo.html

Astronomers discover a super-Earth orbiting a nearby red dwarf



Phase-folded radial velocity curve for Ross 318 b at P = 39.63 d. Blue circles represent CARMENES data; green circles represent HIRES data. The solid lines show the best-fit Keplerian model for each instrument. The bottom panel shows the residuals (O–C) after subtracting the model. Credit: arXiv (2026). DOI: 10.48550/arxiv.2605.11123

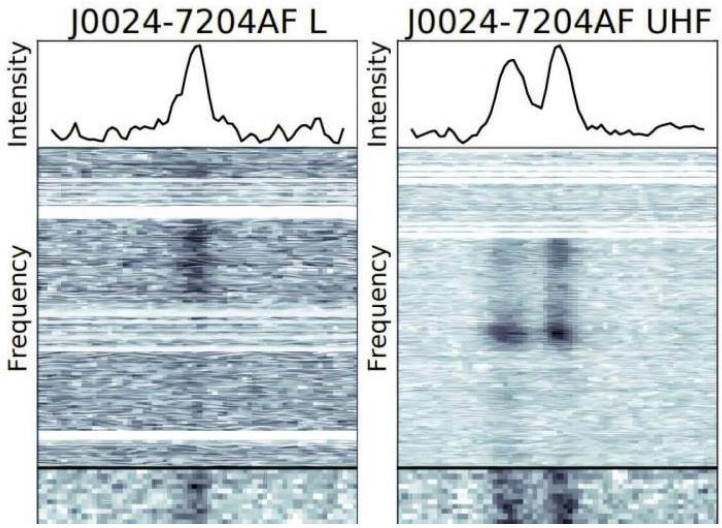
Astronomers from Italy and Brazil have investigated a nearby red dwarf star known as Ross 318 and have discovered an exoplanet orbiting this star, which is at least six times more massive than Earth. Located just 28 light years away from Earth, Ross 318 (also known as Gliese 48, or TIC 379084450) is a red dwarf star of spectral type M3.5V. The star has an orbital period of approximately 51.5 days and an effective temperature of 3,450 K, and showcases strong magnetic activity, which poses a major challenge for exoplanet searches. A team of astronomers led by Giuseppe Conzo from the amateur astronomy association Gruppo Astrofili Palidoro (GAP) decided to investigate Ross 318, hoping that amidst its magnetic activity, they could verify whether an alien world orbits this star. For this purpose, they conducted a systematic re-analysis of radial velocity (RV) data from the CARMENES spectrograph and decade-long High Resolution Echelle Spectrometer (HIRES) observations. Their study was complemented by data from the Transiting Exoplanet Survey Satellite (TESS). https://phys.org/news/2026-05-astronomers-super-earth-orbiting-nearby.html

Gaze into the Crystal Ball Nebula and see the light emitted by a dying star 1,500 years ago

The 8.1-meter Gemini North telescope, located on the summit of Maunakea in Hawai'i, has captured NGC 1514, nicknamed the Crystal Ball Nebula, in awe-inspiring detail. This nebula, with its mesmerizing glow of gas, harbors hints of a past stellar death, and its asymmetrical shell is now being shaped by the binary pair that lies at its center. Credit: International Gemini Observatory / NOIRLab / NSF / AURA; Image Processing: J. Miller & M. Rodriguez (International Gemini Observatory/NSF NOIRLab), T.A. Rector (University of Alaska Anchorage/NSF NOIRLab), D. de Martin & M. Zamani (NSF NOIRLab)

The 8.1-meter Gemini North telescope, located on the summit of Maunakea in Hawai'i, has captured NGC 1514, nicknamed the Crystal Ball Nebula, in awe-inspiring detail. This nebula, with its mesmerizing glow of gas, harbours hints of a past stellar death, and its asymmetrical shell is now being shaped by the pair of binary stars that lie at its center. NGC 1514, nicknamed the Crystal Ball Nebula, is showcased in this enchanting image captured by Gemini Multi-Object Spectrograph (GMOS) on the Gemini North telescope, located on Maunakea in Hawai'i. Gemini North is one half of the International Gemini Observatory. German–British astronomer William Herschel discovered the Crystal Ball Nebula in 1790. It is located in the constellation Taurus, near the border of Perseus. While, culturally, crystal balls are known for divining the future, the Crystal Ball Nebula provides us with a snapshot of the final stages of a star's life from long ago. It sits around 1,500 light-years from Earth. This means the light captured in this image left its source around 1,500 years ago, traveling across the universe before finally reaching Gemini North. https://phys.org/news/2026-05-crystal-ball-nebula-emitted-dying.html

MeerKAT discovers 15 new millisecond pulsars in a well known globular cluster



Pulse profiles of 47 Tuc af folded using an L-band observation in the left and an UHF-band observation in the right. The former lasted approximately four hours, and the latter lasted approximately one hour. Credit: Weiwei Chen et al

Using the MeerKAT radio telescope, an international team of astronomers has discovered 15 new millisecond pulsars in 47 Tucanae—one of the closest and best studied globular clusters. Pulsars are highly magnetized, rotating neutron stars emitting a beam of electromagnetic radiation and the most rapidly rotating ones (with rotation periods below 30 milliseconds) are known as millisecond pulsars (MSPs). It is assumed that MSPs are formed in binary systems when the initially more massive component turns into a neutron star that is then spun up due to accretion of matter from its companion. Now, a group of astronomers led by Weiwei Chen of the Max Planck Institute for Radio Astronomy (MPIfR) in Bonn, Germany, reports the discovery of another batch of MSPs. The pulsars were identified in 47 Tucanae (47 Tuc for short) as part of the TRAnsients and PUlsars with MeerKAT (TRAPUM) project. Positions of the pulsars overlaid on the positions of the MeerKAT beams from the observation on December 17, 2020 with the L-band receiver. The ellipses represent coherent synthesized beams with their edges indicating a 70% gain level. The gaps between beams were still covered, albeit with lower gain. The newfound pulsars have spin periods ranging from 1.88 to 13.03 milliseconds, and dispersion measures between 23.63 and 24.66 pc/cm^3. Twelve of them are binary pulsars, while the remaining three were classified as isolated pulsars. In general, the new binary pulsars with well-determined orbits have characteristics that are similar to those of the previously known pulsars in 47 Tucanae. Therefore, they have low mass companions and orbits with relatively small periods and eccentricities. https://phys.org/news/2026-05-meerkat-millisecond-pulsars-globular-cluster.html

Surrounded by stardust: Antarctic ice cores confirm Earth is accumulating iron-60 from local interstellar cloud

Path of the solar system through the Local Interstellar Cloud. The cloud's profile is preserved as an interstellar fingerprint in Antarctic ice. Credit: B. Schröder/HZDR/ NASA/Goddard/Adler/U.Chicago/Wesleyan

Our solar system is currently passing through the Local Interstellar Cloud, a region of highly diluted gas and dust between the stars. On its path, Earth continuously accumulates iron-60, a rare radioactive isotope of iron produced in stellar explosions. This has now been confirmed by an international research team led by the Helmholtz-Zentrum Dresden-Rossendorf (HZDR) through the analysis of Antarctic ice tens of thousands of years old. From the steady but time-varying influx, the researchers conclude that the radioactive isotope has been stored within the cloud since a long-past stellar explosion. Iron-60 is formed in the interiors of massive stars and is ejected into space when they explode. Geological archives show that our solar system was hit twice by iron-60 from supernovae millions of years ago. In more recent times, however, there have been no nearby stellar explosions—and thus no direct supply of iron-60. When scientists discovered iron-60 in Antarctic surface snow less than twenty years old a few years ago, the question of its origin arose. Our solar system entered the Local Interstellar Cloud several tens of thousands of years ago and will leave it again in a few thousand years. At present, we are located near its edge. https://phys.org/news/2026-05-stardust-antarctic-ice-cores-earth.html#goog_rewarded

'Calm' galaxy cluster hides a violent cosmic scene that took 4 billion years to settle

X-ray & optical image of Abell 2029. Credit: X-ray: NASA/CXC/CfA/C. Watson et al.; Optical: PanSTARRS; Image Processing: NASA/CXC/SAO/N. Wolk and P. Edmonds. The galaxy cluster Abell 2029 is sometimes described as "the most relaxed cluster in the universe." This moniker does not arise from some sort of mellow vibe, but rather because of how calm and undisturbed the superheated gas that pervades the cluster appears to be. New observations from NASA's Chandra X-ray Observatory clearly show that Abell 2029 had a much more colourful history than its current disposition suggests. The latest study finds that Abell 2029 is still settling down after a raucous collision with another smaller cluster about 4 billion years ago. Galaxy clusters are the largest structures in the universe held together by gravity. They are made up of hundreds or even thousands of galaxies, unseen dark matter, and a huge amount of gas that fills in the space between the galaxies. This gas is typically heated to millions of degrees, which makes it glow in X-ray light. The Chandra data reveal clear signs that this cluster did not have a mundane history. This new composite image shows evidence for the cluster's previous shenanigans in the nautilus-like shape in the Chandra data (blue). https://phys.org/news/2026-05-calm-galaxy-cluster-violent-cosmic.html

COMMITTEE MEMBERS

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