

ISSUE

71

May 2025

EVN/JIVE Newsletter

Welcome to the May 2025 issue of the EVN/JIVE Newsletter.

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UPCOMING MEETINGS

I would like to welcome all EVN Newsletter readers as the new Chair of the EVN Consortium Board of Directors (CBD). I am delighted with this nomination and look forward to chairing the EVN CBD for the next two years.

This issue of the EVN newsletter showcases an impressive array of scientific achievements, highlighting the breadth and vitality of our community. Featured results include a VLBI search for extraterrestrial intelligence (Ren et al.), new findings from the SWEEPS project (Célestine et al.), imaging of a changing-look AGN (Meyer et al.), the discovery of a fast radio burst in a dwarf galaxy (Hewitt et al.), detailed observations of the recurrent nova RS Oph (Lico et al.), and simultaneous spacecraft observations contributing to VLBI science (using the University of Tasmania's radio telescope, Mas Said et al.). These highlights demonstrate the continuing strength of the EVN in delivering cutting-edge scientific discoveries.

On March 27th, 2025, ESO hosted a one-day RadioNet meeting, held both in person and online. The meeting brought together around 60 participants, most of them attending in person, including directors of major European and world-wide radio research infrastructures and projects.



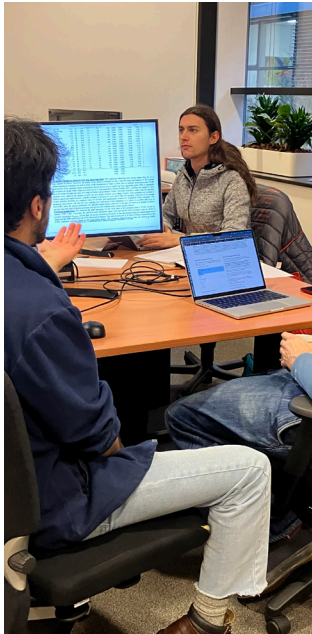
Among them were EVN/JIV-ERIC, LOFAR ERIC, ALMA, IRAM, e-MERLIN, ASTRON, SKAO, SRC, GMVA, EHT, and Leverage. (Here is the complete [list](#) of participants.) The aim of the meeting was to gain a comprehensive understanding of the future plans for European radio astronomy, define the evolving role of RadioNet, exchange ideas for collaboration, and discuss operational practicalities.

In this issue, we are also pleased to introduce two new sections: a short interview with one of the scientists featured in “Science Highlights”—this time with Danté Hewitt—and a report “From the Station”, with this issue highlighting recent updates from INAF.

In addition, we bring updates from recent activities, such as the EVN Online Training, the EVN seminar by Marica Branchesi, and EC projects ACME and Radioblocks. Looking ahead, several important meetings and events are on the horizon, including the SKA Science Meeting, the JIVE/ASTRON Summer School, the JIVE VLBI School 2025, and the SFXC VLBI Software Correlator Workshop. These events offer excellent opportunities for our community to come together and share expertise.

We hope you enjoy this issue and look forward to continuing our exciting journey together in the coming years.

Krzysztof Katarzyński
Nicolaus Copernicus University in Toruń, Poland
EVN CBD Chair



CALL FOR PROPOSALS

Observing proposals are invited for the European VLBI Network (EVN). Deadline: 1 June 2025, 16:00:00 UTC. The EVN facility is open to all astronomers, but currently restrictions apply to teams with PIs and/or co-Is with affiliation to institutes in Russia and Belarus. Astronomers with limited or no VLBI experience are particularly encouraged to apply for observing time. Student proposals are judged favourably. Support with proposal preparation, scheduling, correlation, data reduction and analysis can be requested from the Joint Institute for VLBI ERIC (JIVE). Check details of the call for proposals [here](#).



EUROPEAN VLBI NETWORK

CALL FOR PROPOSALS IS OPEN

**European VLBI Network
Call for Proposals
Deadline: 1 June 2025 16:00 UTC**

are invited for the European VLBI Network (EVN). The EVN currently restrictions apply to PIs and co-Is with affiliation to institutes in Russia and Belarus. Astronomers with limited or no VLBI experience are particularly encouraged to apply for observing time. Student proposals are judged favourably.

proposal preparation, scheduling, correlation, data reduction and analysis can be requested from the [Joint Institute for VLBI ERIC \(JIVE\)](#).

Synoptic Wide-field EVN-e-MERLIN Public Survey (SWEEPS)



Sensitivity VLBI offers a unique tool to identify and study active galactic nuclei and to propose commensal observing mode for the EVN and e-MERLIN, where single-targeted at the position of known radio sources within 12 arcmin of the pointing centre. For example, in the EVN-e-MERLIN project E81160. The green box shows the re-processed and SWEEPS J094909+403548, a 5.6 mly core-jet source at 1.7 GHz. Herba-George et al.

Apply until

 **June 1st, 2025**

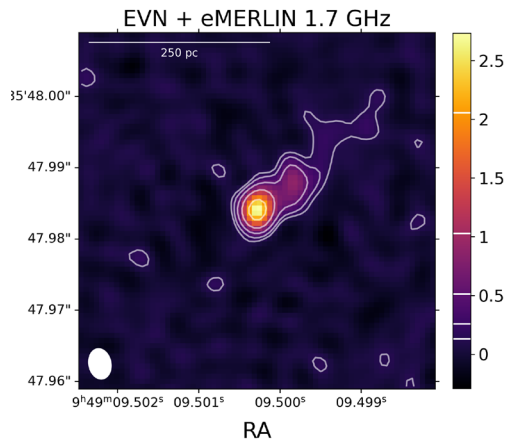
 **16.00 UTC**

FOR FULL INFO VISIT

www.evlbi.org

SCIENCE HIGHLIGHTS

1



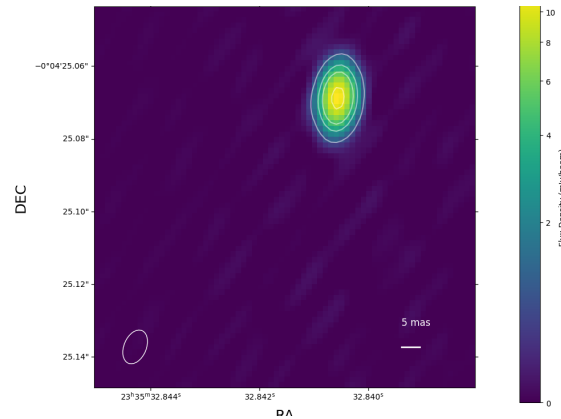
SWEEPS: the beginnings of commensal surveys with the eMERLIN-EVN

Célestin Herbé-George

SWEEPS (Synoptic Wide-field EVN-eMERLIN commensal Public Survey) is a proposed commensal survey mode for the EVN+e-MERLIN, where single-target pointed observations are re-correlated at the position of all known radio sources within 12 arcmin. Initially, the phase centres are selected using the LOFAR Two Metre Sky Survey (LoTSS; Shimwell et al. 2022), in the future however, additional phase centres will be provided by wide-field images using the short baselines of e-MERLIN. Using the integrated EVN+eMERLIN observations, these wide-field images can be generated on-the-fly during post processing.

[Read more.](#)

2



High-resolution EVN (e-VLBI) observations revealed the core of the AGN which contaminates a Dyson Sphere candidate star's mid-infrared emission.

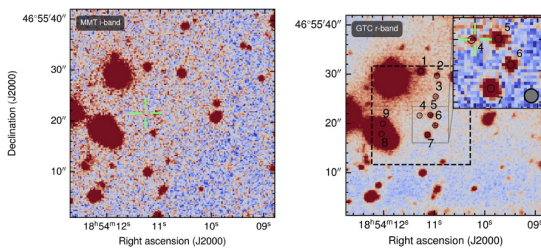
Tongtian Ren

The Dyson Sphere is an intriguing concept in the search for extraterrestrial intelligence (SETI). As proposed by Dyson (1960), advanced extraterrestrial civilisations may construct megastructures to capture starlight for energy. Then their waste heat would cause the host stars to exhibit unusual infrared excess. [Read more.](#)

3

A repeating FRB in a low-luminosity dwarf galaxy

Danté Hewitt



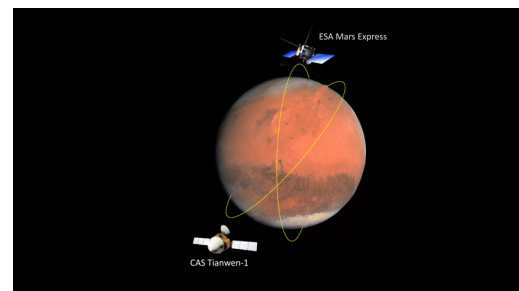
The host galaxies and local environments of astrophysical transients are often closely linked to the types of sources producing these transients. Using the EVN in EVN-Lite mode, the PRECISE (Pinpointing REpeating ChIME/FRB Sources with EVN dishes; PI: Franz Kirsten) team has localised another source of repeating fast radio bursts (FRBs), FRB 20190208A, to a very faint dwarf galaxy. This suggests a link between (some) FRBs and massive star progenitors; and hints that there might even be different types of FRBs that are found in different environments. [Read more.](#)

Solar activities can have an impact on the performance and reliability of space-borne and ground-based technological systems as well as risk human life and health. For space weather monitoring and forecasting, space missions were launched to study the energetic particles from the solar wind, the interplanetary medium, Coronal Mass Ejection (CME), etc. These energetic particles affect the space environment around Earth and throughout the solar system. The solar activity also affects the frequency, phase, and amplitude of a spacecraft's communications telemetry signal during its direct-to-Earth propagation path. Click [here](#) to continue reading the summary. Browse a [brief interview](#) with Said about this paper on JIVE's LinkedIn page.

4

Simultaneous multi-spacecraft observations with VLBI radio telescopes to study the interplanetary phase scintillation

N. M. M. Said

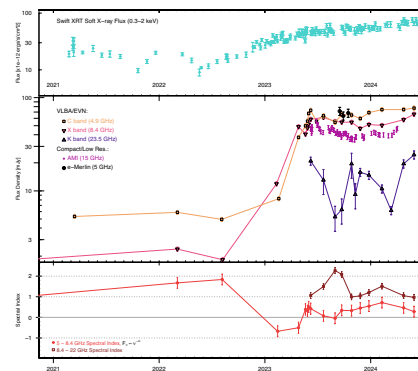


5

Watching an AGN launch a jet in real time in 1ES 1927+654

Eileen Meyer

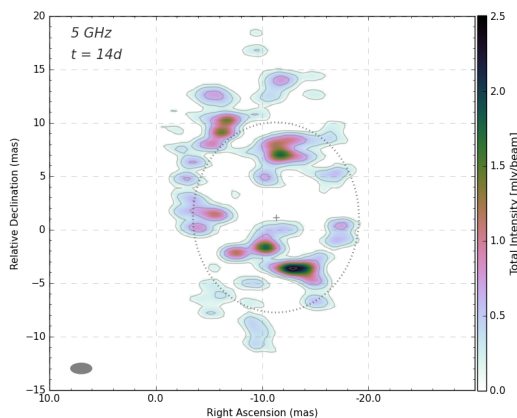
Active galaxies have long been divided into two families: those with powerful relativistic jets (radio-loud) and those without (radio-quiet). While we now know that this division is quite as absolute as we once thought, with the discovery of small-scale weak jets in some formally radio-quiet AGN and populations of “radio-intermediate” AGN, we still lack a clear understanding of why only some AGN form jets, and what determines their scale, lifetime, and total power. It has also been our implicit assumption that AGN do not change “type” or launch new jets on short timescales. Until recently, only a very few sources have ever been observed to change their radio-loudness (e.g., Nyland et al., 2024). [Read more.](#)



6

High-resolution imaging of the evolving bipolar outflows in symbiotic novae: The case of the RS Ophiuchi 2021 nova outburst

Rocco Lico



Novae are astrophysical transient phenomena occurring in binary star systems, where a white dwarf accretes matter from a companion star, typically a main sequence star. As the accreted hydrogen-rich gas accumulates on the white dwarf’s surface, pressure and temperature build up until a thermonuclear explosion occurs, ejecting material through the stellar wind of the companion star at speeds of several thousands of km/sec. The interaction between the expanding shell and the companion wind generates an astrophysical shock, resulting in particle acceleration. As these accelerated particles cool down through interactions with matter and magnetic fields, they emit photons across multiple wavebands. [Read more.](#)

OTHER NEWS

ACME project updates

ACME has launched its [website](#), which describes the project, the participating infrastructures, the Joint Centres of Expertise (JCEs), and other activities. The front page prominently features news about multimessenger science, results from ACME's partners, and upcoming schools and meetings. Among these is the JIVE VLBI School ([JVS 2025](#)), which will be held at JIVE and the University of Pretoria from 15 to 19 September 2025. This was the first training event selected through an open call, for which ACME provided financial support.

Recently, there was also an open call for TNA visits to centres of expertise that are part of this program. The call was a huge success—receiving 76 applications. The selection process was concluded by the end of April, and visits to the JCE nodes are expected to take place by fall this year. Further work is needed to organise the JCEs to offer access to expertise in various additional



ways. Not all domains are equally prepared for this; identifying the key issues and next steps was the main goal of a joint meeting between two major ACME work packages held in Paris at the end of January.

The first ACME science meeting on [The gravitational wave sky and complementary observation](#) was organised between 7-11 April 2025 in Toulouse, France. It will be followed by a one-day [citizen science training event](#) for amateur astronomers on 10 June 2025.

The next major meeting will be [The 16th Gaia Science Alerts and ACME Time-Domain Workshop](#), organised at Santa Cruz, Tenerife, from 29 September to 3 October 2025.



Team members from WPs 2 and 3 at the Paris meeting, January 2025.

Radioblocks Industry Advisory Board held its first meeting

On 5 February 2025, the Radioblocks executive team met with the Industry Advisory Board (IAB) to boost industry involvement in the project and ensure its long-term impact.

The IAB, made up of leading industry representatives, plays a key role in aligning Radioblocks' outcomes with the needs of the industry. The meeting served as an opportunity to share insights and suggest strategic directions to enhance the project's relevance to both the scientific and industrial sectors.

The discussion centered on further incorporating the project's work into industrial applications, developing a clear value proposition for industry partners, and improving dissemination efforts within the industry.

Learn more about the industry's role in Radioblocks on its [updated website](#). An official report on this meeting has been submitted to the European Union.

RADIO
BLOCKS

RB IAB 1ST
MEETING

On 5 February 2025



EVN Symposium in book form

“The proceedings of the 16th European VLBI Network Symposium, hosted last September by the Max-Planck-Institut für Radioastronomie in Bonn, are now available in book form. This publication captures the dynamic science being conducted within the EVN community.

A big thank you to the editorial team, Eduardo Ros et al., for creating such a special and valuable record of this meeting! The book is available for download from the [symposium's website](#).”





Photo: **Silvio Zangarini**

SFXC VLBI Workshop to be held at JIVE

Registration is now open for the two-day SFXC VLBI Workshop, which will take place at JIVE on September 22-23, 2025. The workshop will combine theoretical and hands-on sessions focused on the Super FX Correlator (SFXC). It is ideal for those interested in using SFXC for software correlation of data from their own VLBI instruments (or other long-baseline radio interferometers), as well as for scientists looking to take advantage of SFXC's advanced features for their own correlation. The registration deadline is May 25, 2025. For more information, visit the [workshop's Indico page](#).



Multi-messenger astronomy at the latest EVN seminar

On May 6th, Prof. Marica Branchesi from the Gran Sasso Science Institute (GSSI), INFN, INAF, and ASI delivered a compelling talk at the online EVN seminar. Her presentation traced the remarkable evolution of multi-messenger astronomy, highlighting its early groundbreaking detections and the transformative impact it has had across various domains of physics. [Read more](#) about this seminar and past EVN talks, and watch Prof. Branchesi's presentation [here](#).



JIVE hosted the 3rd EVN User Training

On April 29, 2025, JIVE successfully hosted its third online EVN User Training event, with around 50 participants from nearly 30 countries. The event provided valuable insights into EVN access, science highlights, and practical advice for proposal preparation. Feedback was very positive, and JIVE plans to continue offering these sessions annually. Read more about the event, its key takeaways, and future plans [here](#).

**Q
& A**

We spoke with Danté Hewitt, postdoctoral researcher at the University of Amsterdam, and asked him a few questions about the paper featured in this issue, as well as his experience as a researcher so far. This is what he said.

What are the core findings of your latest research?

In this paper, we pinpointed a repeating source of fast radio bursts (FRBs), FRB 20190208A, to an exceptionally faint dwarf galaxy—the lowest luminosity FRB host galaxy to date! This is quite surprising since the vast majority of identified FRB host galaxies are massive, star-forming galaxies. Perhaps the low-metallicity in dwarf galaxies (which enables the formation of truly massive stars that could collapse into magnetars) is driving the production of some FRB sources. What’s further puzzling is that unlike the other two repeating FRBs known to be in dwarf galaxies, FRB 20190208A has no associated compact persistent radio emission.

What role did the EVN have in your results?

This FRB was localised as part of our EVN-lite1 project, called PRECISE (PI: F. Kirsten). Each PRECISE localisation has helped us understand the FRB mystery better, but it can be challenging to detect bursts given the sporadic nature of repeating FRB sources. Thanks to PRECISE being an EVN-lite project, however, we can conduct weekly observations outside regular EVN sessions, increasing our chances of detecting bursts.

We also investigated how the localisation precision affects the host galaxy identification, and found that the high angular resolution of the EVN was essential for identifying the tiny host galaxy of FRB 20190208A. Typically a precision of about 1 arcsecond is sufficient to identify a

host galaxy, but in this case, the localisation precision had to be less than a few hundred milliarcseconds for a statistically robust host association.

Can you share a special moment of your research experience so far?

Initially, our optical observations of this FRB position showed no host galaxy. It was a lot of fun exploring and brainstorming possible explanations. Could it be a galaxy at very high redshift? Or maybe an orphan progenitor? A big plot twist came when we acquired an ultra-deep image with the 10.4-m GTC optical telescope and saw a faint smudge at the FRB position—definitely one of the most memorable moments of my PhD!



FROM THE STATION

KEY UPGRADES FOR INAF'S VLBI ANTENNAS

The three VLBI antennas in Italy are undergoing major upgrades which will boost their performances at the standard and current EVN frequencies and, at the same time, will considerably broaden the accessible frequency range, allowing for observations up to 116 GHz.

One of the most recent relevant investments made by INAF is the purchase of the K-Q-W triband receivers to be installed on Medicina, Noto and SRT. This has required the installation of the active surface in Medicina and the refurbishment of the active surface in Noto. Completion of the works in Medicina is expected in few weeks from now, with scientific commissioning of the triband receiver to be completed by the end of 2025. The timeline is slightly longer for Noto, with the refurbished active surface expected to be in place by the end of the year.

In 2026, broadband C/X receivers will also be installed in Medicina and Noto covering the 4.2-9.0 GHz frequency range.

By the end of the year, Noto will be a brand-new antenna, thanks to the ongoing important refurbishments on the azimuth rail, secondary mirror, and servo system. Finally, by January 2026 a new dual pol P-band receiver is expected to be mounted on the telescope, primarily dedicated to the search for FRBs and monitoring of space debris.

SRT is approaching the completion of the full receiving system, with a seamless frequency coverage from 300 MHz up to 116 GHz. The P- and L- receivers are expected to be in place by the end of 2025 and scientific commissioning of the K-Q-W receiver as well as a multi-beam cryogenic W-band and Q-band receiver are ongoing.

All this has been possible thanks to the Italian National Operative Programme for Research and Innovation (PON, 2014-2020), to INAF funding, and the funding made available by the European Community through the Recovery Plan.



UPCOMING MEETINGS

● ASTRON/JIVE

Summer Research Programme

At ASTRON, Dwingeloo, NL, for 10-12 weeks starting from the first week of June 2025. For more information, read [here](#).

● SKAO Science Meeting 2025, “A new era in Astrophysics: Preparing for early science with the SKAO”.

At Görlitz, Germany, from 16 to 20 June 2025. For information, read [here](#).

● JIVE VLBI School 2025

At JIVE, the NL, and the University of Pretoria, SA, from 15 to 19 September 2025. For more information, click [here](#).

● The Super FX Correlator (SFXC) VLBI Workshop

At JIVE, Dwingeloo, NL, from 21 to 23 September 2025. Registration deadline is May 25, 2025. For info and registration, click [here](#).

● The 16th Gaia Science Alerts and ACME Time-Domain Workshop

At Santa Cruz, Tenerife, from 29 September to 3 October 2025. Learn more about the [event](#) and its [deadlines](#).

Get in touch

EVN/JIVE newsletter editorial team

Agnieszka Slowikowska (JIVE Director)
Zsolt Paragi (JIVE Head of User Support)
Ioanna Kazakou (JIVE Communications Officer)

Our email

For any enquiries regarding
the newsletter, contact
communications@jive.eu.