



IAU Catalyst | January 2023

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1 Executive Committee

1.1 How do IAU Scientific Symposia Come About?

Diana Worrall
*IAU Assistant General
Secretary*

As Assistant General Secretary (AGS), one of my tasks is to oversee the selection of IAU Symposia. The process begins with annual emails to the IAU membership with a reminder of the deadlines: September 15th for Letters of Intent (Lols) and December 1st for proposals. Whether you are new to the IAU, or an old hand, those emails may benefit from extra explanation. Please read on.

Symposia are proposed by a group of individuals for a scientific topic that is of international interest to one or more of the scientific divisions of the IAU. To be sure of novelty, proposers must check what meetings have been held recently in closely related scientific areas (and where).

The IAU emphasises the importance of diversity, including geographic location and gender. This is important in constructing the team that will run the meeting and while drafting the scientific programme. The IAU currently provides extra funding for symposia held in a country that has yet to host one¹. The IAU also encourages organisers to facilitate educational activities within the local community in conjunction with their meeting, and such location-dependent planned activities should be described.

The proposal will need to list the members of the Scientific Organising Committee (SOC), normally IAU members. The lead proposer (SOC chair or co-chair) *must* be an IAU member as Lol and proposal submission are made using IAU credentials. Details must also be provided of the proceedings editors and local organising committee, typically overlapping the SOC.

Every proposal must nominate one of the IAU's nine scientific divisions as its Coordinating Division. Early communication with the Division President (DP) can provide invaluable advice on quality and diversity. The submission of an Lol, while not required, is strongly encouraged, both to allow more time for suggestions to strengthen a proposal and for those with similar ideas to consider possible collaboration.

The Proposal review is carried out by the DPs and Vice Presidents. Reviewers are looking for a high international scientific standard: outlining the proposed sessions in sufficient detail and providing examples of potential invited speakers can give substance to such claims. Reviewers will be looking to identify that diversity has been taken into account. The organisers should also think about the experience they may wish to consider offering someone participating remotely.

After the review, final approval is given by the Executive Committee at its meeting in the spring for symposia to be held in the following calendar year. Results are released via an Announcement².

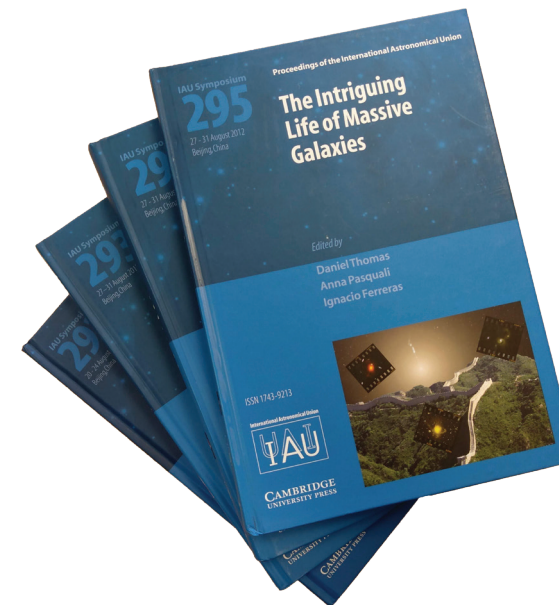


Figure 1: Copies of the proceedings for each Symposium are archived in the IAU headquarters in Paris. Shown are samples. Credit: IAU

1 Executive Committee

The IAU expects proposers to establish a local website for their meeting within a few weeks of learning about its selection. The content can be expanded over time, with the proposal as a reasonable basis for the initial content. The IAU Code of Conduct³ should appear prominently, and responsibilities related to it should be understood by organisers.

Then is the time to establish deadlines. The organisers will solicit and evaluate applications for IAU travel grants, reviewing them in conjunction with the applicant's contribution to the meeting. A compiled request to the IAU must then arrive on the desk of the AGS at least three months before the conference so that letters can be sent to successful applicants, who then re-confirm their participation and make final travel plans. This suggests a single deadline for abstracts and grant applications no less than four months before the meeting. Registration deadlines can be set accordingly. A good plan will maximise the number of people able to travel and participate.

The IAU records outcomes of its symposia, firstly via a short report form completed by organisers within a month of the end of the meeting, with highlights posted to the IAU website⁴, and secondly via proceedings published by Cambridge University Press (CUP) within six months of the symposium.

The editors must allocate pages to presenters, and it's a good idea to have established a level of pre-commitment with speakers. While there are no precise rules on structure or the number of separate articles, the intent is to produce proceedings that summarise the state of the field and are at a level helpful to someone newly entering it. Articles are uploaded by authors to the ScholarOne website to which CUP will have given permission to the editors to accept the submission as is or request revisions from the author. Editors should expect their work to be complete within three months of the end of the symposium.

The IAU places great importance on its scientific meetings as one of the key means of promoting astronomy

through international collaboration, and symposia are the most significant component of these meetings. Most IAU members will have participated in them, and for many it will have provided an introduction to the IAU. We are now mid-cycle, so there is ample time to discuss potential plans with colleagues and be ready for September. If you've not yet thought of proposing and planning a symposium, I encourage you to do so.

Notes

1 Previous meetings are listed at

<https://www.iau.org/science/meetings/past/symposia/>

2 e.g., <https://www.iau.org/news/announcements/detail/ann22023/>

3 <https://www.iau.org/static/archives/announcements/pdf/ann16007a.pdf>

4 <https://www.iau.org/science/meetings/past/meeting-report/>

2

IAU Divisions, Commissions & Working Groups

2.1

Division J Galaxies and Cosmology Highlights

Cristina Carmen Popescu,
Division J Vice-President

Kim-Vy Tran,
Division J President

Division J, *Galaxies and Cosmology*¹, has 3891 active members (of which 343 are junior members). With the support of its membership, Division J continues to promote research, education and outreach on topics related to the physics of the Universe and of galaxies beyond the Milky Way.

The main themes of the Division are physics and content of the Universe, evolution of structures, formation and evolution of galaxies, spatially resolved galaxies, science and data analysis methods for extra-galactic and cosmological surveys.

The scientific goals of the Division continue to be pursued by its Commissions: Inter-Division D-G-H-J Commission J1 *Galaxy Spectral Energy Distributions*² and Inter-Division B-H-J Commission D-J *Supermassive Black Holes, Feedback and Galaxy Evolution*⁴ and the affiliated Inter-Division G-H-J Commission H4 *Stellar Clusters throughout Cosmic Space and Time*⁵. In 2021 a new Commission was founded: the Commission J3, *Galaxies at the Epoch of Reionisation*⁶.

Division J organised its Division Day meeting at the IAU XXXI General Assembly on *Multi-phase Gas/Medium over Cosmic Time*. The main goal of this meeting was to provide an overview of our current understanding of the multi-phase medium and questions to address in the next 3-5 years. The main topics addressed were:

- Interpreting multi-wavelength ISM/Gas diagnostics across redshift;
- Discoveries with JWST, HST, eROSITA, ALMA, ASKAP/MeerKAT;
- Circum-galactic medium gas flow probes;
- The ISM/CGM interface.

During the General Assembly, the Division J 2021 PhD Prize was awarded to Zhijie Qu (United States). Martyna Chruslinska (Germany) was awarded an Honorable Mention.

Division J coordinated and supported three IAU symposia that took place in 2021-2022:

- IAU Symposium 361 on *Massive Stars Near & Far*, 8-13 May 2022, Ireland;
- IAU Symposium 369 on *The Dawn of Cosmology & Multi-messenger Studies with Fast Radio Bursts*, 2-4 August 2022, Busan, Rep. of Korea;
- IAU Symposium 373 on *Resolving the Rise and Fall of Star Formation in Galaxies*, 9-11 August 2022, Busan, Rep. of Korea.

Notes

1 https://www.iau.org/science/scientific_bodies/divisions/J/info/

2 https://www.iau.org/science/scientific_bodies/commissions/J1/

3 https://www.iau.org/science/scientific_bodies/commissions/J2/

4 https://www.iau.org/science/scientific_bodies/commissions/X1/

5 https://www.iau.org/science/scientific_bodies/commissions/H4/

6 https://www.iau.org/science/scientific_bodies/commissions/J3/

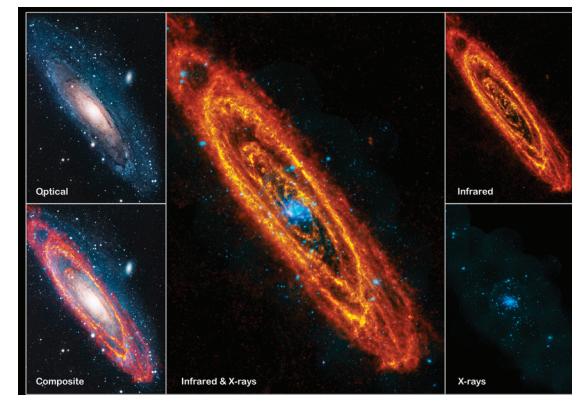


Figure 1: Multiwavelength images of the Andromeda Galaxy (M31) Credit: Infrared: ESA/Herschel/PACS/SPIRE/J. Fritz, U. Gent; X-ray: ESA/XMM-Newton/EPIC/W. Pietsch, MPE; Optical: R. Gendler.

3.1 The International School of Young Astronomers: 2023-2024 Program and a Sample of Alumni Paths

Itziar Aretxaga,
INAOE, Mexico,
ISYA Director

David Mota,
University of Oslo, Norway,
ISYA Deputy Director

Nigar Abbasova
University of Oslo, Norway,
OYA Intern

The International School for Young Astronomers (ISYA) has organised 42 schools in 27 countries since 1967. The ISYAs are a face-to-face activity where graduate students and lecturers interact for three weeks of intense work. Due to the pandemic, three ISYAs programmed for 2020-2021 were postponed or cancelled, and none could be organised in 2022 due to severe restrictions for international travel.

The ISYAs will resume activities in 2023 with two schools: Tonantzintla¹, Mexico, from 17 July to 4 August, geared towards the exploitation of large databases for Latin American and Caribbean graduate students, and Cape Town², South Africa, from 19 November to 9 December, geared towards observational astronomy for African graduate students. Another school has been approved to take place in Algeria in 2024.

In 2020-2022 the IAU Office for Young Astronomers (OYA) encouraged recent alumni to complete their training and pursue a career in astronomy. OYA launched a survey in 2021 to understand the career paths of alumni from generations 1967-2014. The survey received 97 replies: 90% of these alumni work in astronomy, 50% are IAU members and 10% work in other STEM fields. The alumni have undertaken great mobility in their career paths (see figure): 57% of alumni did their MSc, PhD, postdocs or work in other countries, and 70% are currently working in their countries of origin. The figure shows there are new countries, where astronomy was not very developed, that are becoming active astronomical poles in their region.

Notes

1 <https://www.inaoep.mx/~isya2023/>

2 <https://isya2023.saao.ac.za/>

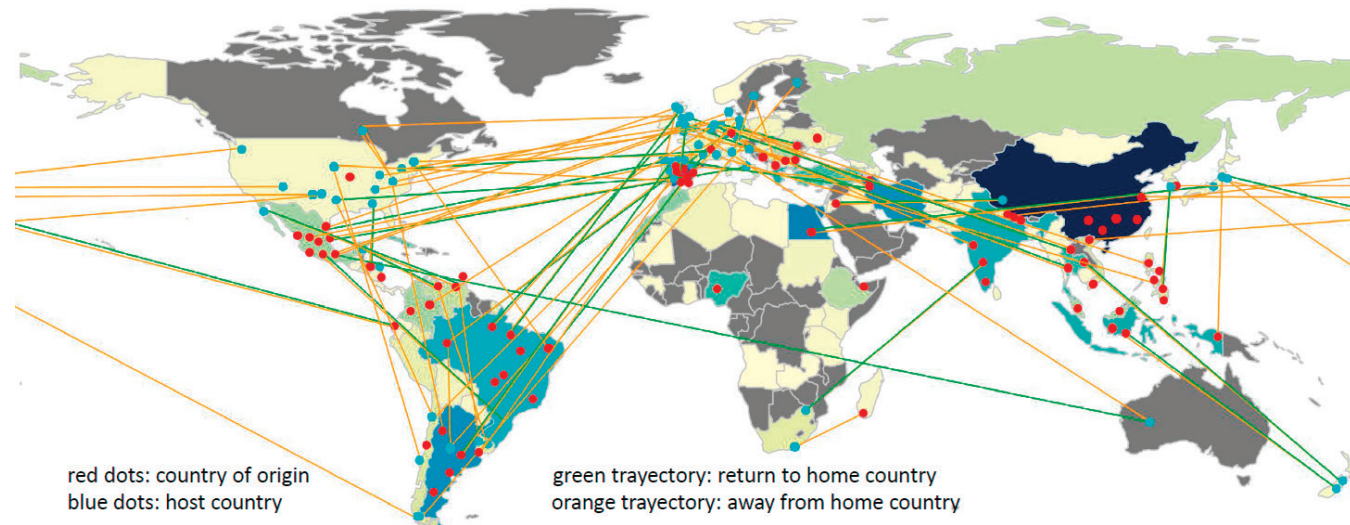


Figure 1: Mobility map for ISYA alumni 1967-2014 that replied to the OYA survey. The colours in the map represent the number of schools organised in the 27 ISYA host countries, from yellow (1) to deep blue (5). Red dots represent the home country of the alumni; blue dots the host country; orange lines are out of the home country trajectories; and green lines are back to home country trajectories. Credit: IAU/OYA

4 Scientific Meetings

4.1 Communicating Astronomy with the Public Conference Conference (CAP) 2022 Highlights

Ramasamy Venugopal,
IAU Office of Astronomy
for Development, CAP
Conference Working
Group Chair

Samir Dhurde
IUCAA, India,
CAP Conference
Working Group Chair

Kelly Blumenthal
IAU Office for Astronomy
Outreach Deputy Director

The Communicating Astronomy with the Public (CAP) Conference is the world's largest conference in astronomy communication, organised by IAU Commission C2 through its CAP Conference Working Group and the IAU Office for Astronomy Outreach.

Originally planned for September 2020, the conference had to be postponed due to the Covid-19 pandemic. The hybrid CAP Conference (CAP 2022) was instead held from 12-16 September 2022, hosted by Macquarie University in Sydney, under the theme *Communicating Astronomy for a Better World*.

Professional and amateur astronomers, media experts, science communication researchers and practitioners, educators, students, and journalists joined CAP 2022. There were 111 participants in-person in Sydney and a further 133 online, in total representing 44 countries.

The conference had five Keynote Talks, 122 Talks, 13 Workshops, two Panel Discussions, and 48 Posters. The keynote speakers addressed a variety of topics, including *Strategies for Effective Communication* and *Aboriginal Astronomy and Indigenous Science in Contemporary Science Communication*. Other talks focused on current challenges, new media and technologies, the role of astronomy in bridging cultures, inclusion, diversity and empathy, and more. Additionally, two special sessions were organised: one on planetariums and another discussing indigenous astronomy and cultural relations with the sky.¹

Networking is notoriously a challenge in hybrid conferences. To alleviate this, the organisers arranged various social events for in-person and online participants. Those in Sydney could join a welcome reception, conference dinner, and excursions to local facilities of astronomical interest. Virtual participants engaged with each other on *Kumospace*, which emulated the physical experience and atmosphere of being in a room with other conference attendees. Virtual participants also had the opportunity to participate in a number of events, including those that enabled virtual and in-person participants to interact directly.

The organisers provided eight travel and support grants and a record number of 44 registration fee waivers (both in-person and online). Dedicated funding from the IAU Office for Astronomy Outreach and the IAU allowed for a total of 23,000 Euros to support participants from disadvantaged contexts.

CAP Conferences are hosted every two years and the next CAP conference is expected to be held in 2024. The organisers are currently evaluating the for which hosting bids.

The organisers would like to extend sincere thanks to the CAP Conference Scientific Organising Committee and Working Group, the Local Organising Committee led by Richard de Grijs, the Virtual Organising Committee, the IAU Secretariat, and to all the CAP 2022 participants for their contributions.

Notes

¹ For a full programme, conference details, and more, please visit the CAP Conference 2022 website: <https://capconferences.org/2022/>

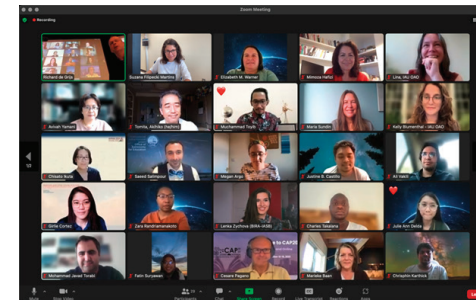


Figure 1: Some of the 240 participants of the 2022 CAP Conference. Credits: (top) IAU/CAP WG, OAO; (bottom) Ángel López-Sánchez (AAO-MQ).

5 IAU Offices

5.2 Teacher Training Program (TTP) 2022

Tshiamiso Makwela
IAU Office of Astronomy
for Education

Anna Sippel
IAU Office of Astronomy
for Education

An important part of the IAU's Office of Astronomy for Education (OAE) mission is to support regional and local teacher training workshops that leverage astronomy for formal education. In 2022, the OAE piloted what is anticipated to become a key tool for the IAU in supporting such local and regional events: the Teacher Training Program (TTP).

The TTP provides financial support for astronomy teacher training and professional development workshops adapted to the local needs, culture, and geography. For its first edition, TTP supported workshops organised by teams each involving at least one local teacher, an astronomer, and one of the country's National Astronomy Education Coordinators (NAECs) – the volunteers acting as liaisons between the OAE and their country's educational communities.

With central funding from the IAU and additional funds from the OAE Center Italy, the OAE was able to award up to 2000 Euros each to a total of twenty-one TTP projects, targeting both primary and secondary education. The topics of the workshops were developed by the organisers, with close support from the OAE.

Most of the TTP workshops have already been carried out successfully as of the time of this writing, with the rest to take place in the first quarter of 2023. Feedback has been universally positive: teachers and organisers have expressed satisfaction with the workshop outcome, and the teachers are excited to bring newly-acquired knowledge, tools and inspiration into their classrooms. We hope that a number of the newly-developed workshop concepts will continue with the help of local funding.

The TTP will continue in 2023, and prospective applicants are encouraged to check out <https://astro4edu.org/TTP/> for information about the next round.



Figure 1: TTP workshop in Romania: Rocket building. Credit: Elisabeta Ana Naghi



Figure 2: TTP workshop in Pakistan: Observations of the Sun. Credit: Hira Fatima



Figure 3: From TTP workshop in Ethiopia: Modeling the motion of the Sun and Earth-Moon system. Credit: Nebiyu Suleyman

5 IAU Offices

5.3

Astronomy to Promote Global Sustainable Development: OAD Projects in 2023

Ramasamy Venugopal

IAU Office of Astronomy for Development

The Office of Astronomy for Development recently completed its 11th annual call for proposals. The call is aimed at individuals or groups – astronomers and others – with creative ideas to use astronomy to help tackle societal issues. The office received 90 applications at Stage 1 that requested 1.1 million Euros in total. Of these, 41 applications were selected for the second and final stage. Proposals were evaluated by an independent review panel and approved by the OAD Steering Committee. Seventeen projects have been selected for funding in 2023 for a total of 113,011 Euros. In addition, two multi-year projects, funded for 3 years from 2021-2023, were recommended 11,000 Euros for their second year of funding.

The new projects will cover Africa, Europe, Asia, North America, and South America and undertake various activities to promote sustainable development in their communities. From training young women teachers to promote science education in rural Botswana; to astro-tourism initiatives in Malaysia, Tanzania, and India; an after-school astronomy program for families in Northern Ireland; inclusive astronomy projects targeting persons with disabilities in rural Guatemala, and blind and low-vision persons in Canada, Mexico, United States; an inspirational astronomy-based program for soon-to-be-released prison inmates in Nigeria; physics and astronomy training for young women in conflict-affected parts of Pakistan; mentorship programs for school girls in rural Kenya and underserved students from Central America and the Caribbean.

These and other projects will be carried out over the next 1-3 years by multidisciplinary teams across the world. For a full list of projects funded so far, please visit our website: <https://www.astro4dev.org/projects-search/>.

The OAD welcomes IAU members and others interested in contributing to its mission. If you have an idea for a project, want to collaborate, apply for a (remote) fellowship, or simply want to know more, write to us at info@astro4dev.org.



Figure 1: Astronomy training for preschool teachers, Malaysia: Participants at a workshop to train preschool teachers on fundamental astronomy and hands-on activities to promote high quality, inclusive, equitable education. The project aims to add astronomy in the early childhood curriculum to increase involvement and interest in learning without causing children anxiety. Credits: Astropest project/IAU OAD



Figure 2: Astro-tourism with nomadic herders, Mongolia: Nomadic herder families were trained on basic astronomy to develop Astro-tourism in Khuvsgul province, Mongolia. credits: ANHFAM project/ IAU OAD

6.1

IAU Symposium
373 on *Resolving the
Rise and Fall of Star
Formation in Galaxies*

Tony Wong

University of Illinois, USA

Eva Schinnerer

Max Planck Institute for
Astronomy, Germany

Star formation is relevant to nearly every area in astrophysics, from planetary science to galaxy evolution. Yet, the physical processes that determine the rate of star formation and its spatial and temporal distribution are still poorly understood. IAU Symposium 373, held from 9-11 August 2022 at the XXXI General Assembly meeting in Busan, Republic of Korea, focused on the impact that resolved studies of galaxies, both observational and theoretical, are having on our understanding of star formation on all scales. The goal of the meeting was to highlight the latest advances in understanding star formation in its galactic context (via resolved studies) and how it drives galaxy evolution.

Until fairly recently, the communities that studied star formation in galaxies were divided into those who studied small-scale processes at high resolution in very nearby galaxies (including our own) and those who treated star formation as a galaxy-scale process, studied out to high redshifts. In the last decade, the study of star formation has been undergoing a revolution that has connected these communities – thanks to a combination of new interferometric facilities in the radio and sub-mm (e.g., ALMA, NOEMA, SMA) and integral field units (IFUs) in the optical (VLT MUSE and surveys such as CALIFA, MaNGA, and SAMI), as well as advances in computational models that are starting to connect sub-galactic and cosmological domains. A key advance has been the ability to spatially resolve the sub-kiloparsec scales on which star formation relations are established, bridging the gap between resolved studies in the local neighbourhood and large-scale galaxy surveys. Helping to interpret these new data are a new generation of simulations and new techniques for confronting them with observations.

The oral sessions over three days surveyed a broad range of results, with ALMA observations playing a prominent role. Much of the discussion centred on three classic diagrams. First, *the rise and fall of cosmic star formation with time*, which is now well-established, albeit with considerable uncertainty at the highest redshifts, because the fraction of optically

obscured star formation is still poorly constrained and may be higher than previously thought. The decline of star formation in recent epochs is often attributed to AGN feedback, though clear evidence of feedback removing the gas reservoir remains scant. Second, *the star formation rate - stellar mass diagram*, on which the “star-forming main sequence” is located. The properties of main sequence galaxies are now well characterised and well reproduced in simulations, but what causes galaxies to leave the main sequence remains an important unsolved problem, and simulations still have difficulty reproducing the quiescent galaxy population. Finally, *the star formation rate-gas mass diagram*, commonly referred to as the Kennicutt-Schmidt relation. While this relation is remarkably invariant with cosmic time, variations among galaxies and across redshift do seem to occur, although possibly arising from differences in the type of gas being probed (dense vs diffuse) and the systematics involved in accurately measuring both quantities.

With JWST now delivering data, we look forward to many more exciting results in this rapidly developing field and to the next opportunity to gather again and discuss them.



Figure 1: Two complementary views of the nearby barred spiral galaxy NGC 3627: an ALMA CO(2-1) image (top), tracing the cold molecular gas that leads to star formation, and an optical image from VLT MUSE (bottom), showing the corresponding dust lanes in extinction as well as newly formed massive clusters. Credit: NASA/HST, ESO/VLT, ALMA, PHANGS team & J. Neidel/MPIA

6.2 The Gaia Mission

Lennart Lindegren

Launched in late 2013, the Gaia mission¹ has now completed almost 8.5 years of scientific operations. The Early third Data Release (Gaia EDR3)², published in December 2020, provided positions, parallaxes, proper motions, and broad-band photometry for about 1.5 billion objects. In June 2022, the full Gaia DR3³ was released with a staggering amount of new data, including radial velocities for 33 million objects, 220 million low-resolution prism spectra, astrophysical parameters for 470 million and variability analysis for 10 million objects. Among the data products are the results for 150,000 solar-system objects and more than 800,000 non-single stars. Gaia EDR3 and DR3 are based on the first 34 months of observations, that constitute only around one third of the data collected already.

The precise astrometric, photometric, and spectroscopic data for many millions of stars in the Gaia Archive⁴ are used in over a hundred publications each month. The nine performance verification papers⁵ that accompany the release give a foretaste of the exciting new science enabled by Gaia DR3.

One of the many data products that appear for the first time in DR3 is the catalogue of the two-body orbital solutions for some 169,000 objects, based purely on the astrometric measurements or a combination of astrometric and spectroscopic (SB1) data. Most of these objects are unresolved binary stars, but a substantial number are expected to have substellar mass companions (brown dwarfs and planets), and some may contain stellar-mass black holes.

Although based on only a third of the observations gathered to date, Gaia DR3 is already transforming the field of observational astrophysics. The non-single stars may be the data product that will benefit most strongly from the much extended span of observations in future releases. The inclusion of these data for the first time in DR3 is a reminder of the well-known but often neglected fact that most stars reside in double or multiple systems.

Notes

- 1 Gaia Collaboration, Prusti, et al. A&A 595, A1 (2016)
- 2 Gaia Collaboration, Brown, et al. A&A 649, A1 (2021)
- 3 Gaia Collaboration, Vallenari, et al. (2022, forthcoming)
- 4 <https://gea.esac.esa.int/archive/>
- 5 <https://www.cosmos.esa.int/web/gaia/dr3-papers>

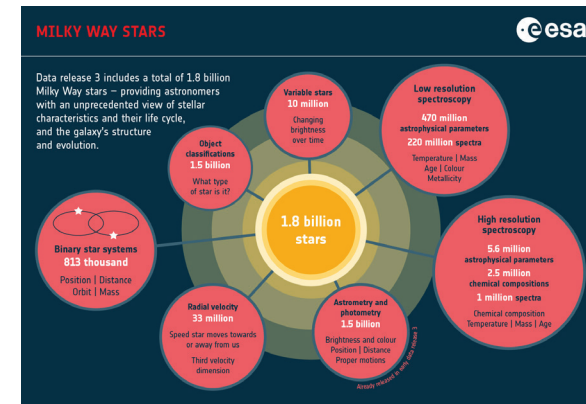


Figure 1: Schematic representation of the major data products included in Gaia Data Release 3. Credit: ESA

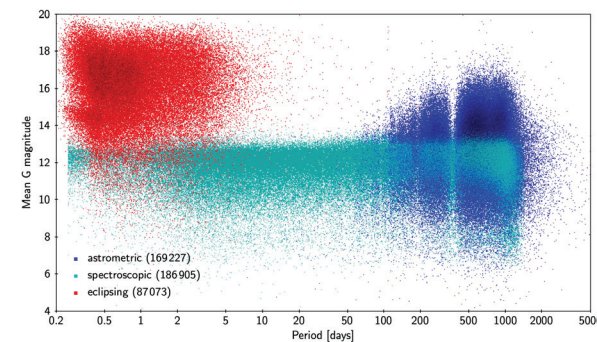


Figure 2: Joint distribution of periods and magnitudes for astrometric, spectroscopic, and eclipsing binaries in Gaia Data Release 3. A number of the binaries have joint solutions in different combinations. Credit: Gaia Collaboration & F. Arenou

6.3

Seeing through the fog – JWST reveals the nature of deeply embedded galaxy cores

Torsten Böker

The merging of two gas-rich galaxies is a spectacular event because it often triggers intense star formation accompanied by copious amounts of warm dust, resulting in extremely high infrared luminosities. Mergers are also an important mechanism for funnelling significant amounts of gas into the galaxy centres, which is likely to accelerate the growth of their supermassive black holes (SMBHs), as evidenced by the tell-tale signs of active galactic nuclei (AGN): large amounts of hot dust, relativistic jets, and the presence of broad and highly ionised emission lines that require energies above those produced by star formation.

Because of their extreme column densities of dust and gas and the resulting high extinction at optical wavelengths, studies of galaxy mergers often require infrared observations. The successful launch of the JWST has now enabled deep infrared observations at spatial resolutions comparable to that of the HST, which has ground-breaking implications for investigations of heavily obscured AGN.

The extraordinary power of JWST for such studies has been demonstrated by Early Release Science observations of a small number of Luminous Infrared Galaxies (PID 1328, PIs L. Armus and A. Evans). In addition to eye-catching wide-field images produced by JWST's near- and mid-infrared cameras, NIRCam and MIRI, the programme also obtained detailed spectroscopic studies of the merger nuclei.

Figure 1 shows the example of VV 114 (a.k.a. IC 1623 or Arp 236), a mid-stage merger at a distance of about 80 Mpc. The MIRI imaging observations described in Evans et al. (2022)¹ reveal many IR-bright sources in the overlap region of the merger, which are young massive star clusters still obscured by dust, and hence invisible at optical wavelengths. In addition, the deeply embedded Eastern nucleus VV 114E was resolved for the first time into two dominant IR sources, or cores. Follow-up observations with JWST's integral-field spectrographs MIRI and NIRSpect presented in Rich et al. (2023)² have enabled the first detailed study of the two

cores of VV 114E, revealing clear evidence for an AGN in its southwestern core (Figure 2).

Notes & References:

- 1 Evans, A.S., Frayer, D.T., Charmadaris, V. et al., 2022, ApJL, 940:L8
- 2 Rich, J. Aalto, S., Evans, A.S., et al. 2023, ApJL, in press

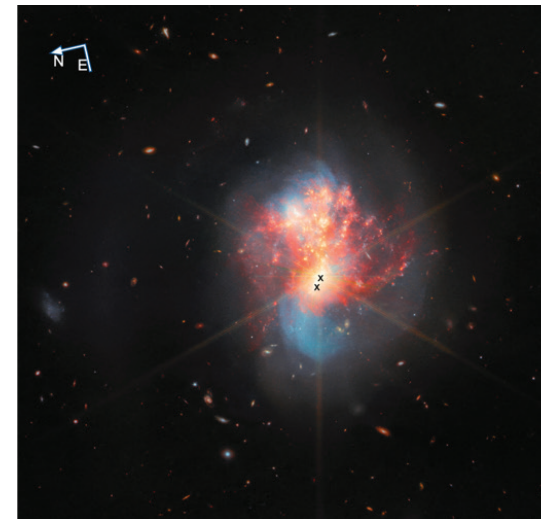


Figure 1: NIRCam/MIRI composite image of VV 114. The location of the two brightest IR sources in the Eastern nucleus of VV 114 are marked by crosses. Image credit: ESA/ Webb, NASA & CSA, L. Armus & A. Evans

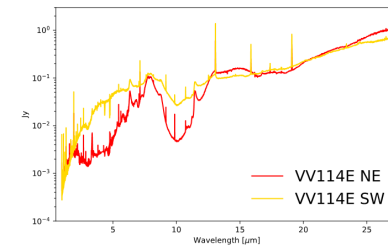


Figure 2: Combined NIRSpect and MIRI spectra of the two cores in VV 114E. The evidence for an AGN in the SW core comes from the combination of strong continuum emission in the 3-5 μ m region combined with weak 3.3 μ m and 6.2 μ m PAH emission, which is consistent with the heating and processing of dust by an AGN. Image: Rich et al. (submitted)

7 IAU Timeline: Dates and Deadlines

7.1 IAU Dates and Deadlines from February 2023 – August 2023

FEBRUARY 15th

DEADLINE for the Review of Membership Applications by the Respective NCA, Adhering Organization or Division Presidents

MARCH 15th

DEADLINE: Annual Reports due for Divisions, Commissions and Working Groups

MARCH 31st

DEADLINE for Applications for the Gruber Foundation Fellowship

DEADLINE for for the Review of Individual & Junior Member Applications by the Membership Committee

APRIL 1st

Opening of the Call for The Gruber Foundation Fellowship Applicants to Submit their Applications for Next Year

APRIL 24th - 28th

Executive Committee Meeting 109 Washington D.C. United States

MAY 1st

Call for Letters of Intent (LOI) for Symposia 2025

MAY 15th

Announcement of Recipients of the Gruber Foundation Cosmology Prize

MAY 31st

Applicants will be Notified by the IAU General Secretary of the Outcome of the Selection for the Gruber Fellowship and Announcement is Posted

Communication to the SOC of the Final Selection of Symposia

Communication to the SOC on the Final Selection of Focus Meetings

JUNE 7th

Accepted Individual and Junior Members Announced

JUNE 15th

PhD Prize Winners Announced

First Announcement of Symposia and Focus Meetings (GA Website and IAU Website)

Upcoming IAU Meetings are listed online at:
<https://www.iau.org/science/meetings/future/>

8 IAU Publications

8.1

IAU Publications September 2022 – January 2023

The IAU publishes scientific results and information in all areas of astronomy. IAU Publications comprise primarily the Information Bulletin and the Proceedings of the IAU General Assemblies and other scientific meetings sponsored by the IAU.

Here we present Catalyst readers with a summary of the recent publications and updates.

For further information regarding the full documents please go to the IAU official website IAU.org [here](#).

GENERAL ASSEMBLIES NEWSPAPERS

The IAU published 8 issues of the General Assembly Newspaper.
Find them online [here](#).

WORKING GROUP REPORTS

The IAU published 1 new Working Group Report.
Find it online [here](#).

COMMISSION REPORTS

The IAU published 8 new Commission Reports.
Find them online [here](#).

DIVISION REPORTS

During the period of September 2022 to January 2023 the IAU published 3 new IAU Division Reports.
Find them online [here](#).

SMALL BODIES NOMENCLATURE BULLETINS

The IAU published 4 new IAU Working Group Small Bodies Nomenclature Bulletins.
Find them online [here](#).



Editor(s) in Chief: José Miguel Espinosa, Debra Elmegreen

Managing Editor: Lina Canas

Editor(s): Kelly Blumenthal, Lina Canas

Layout: IAU Office for Astronomy Outreach

Production: National Astronomical Observatory of Japan

*Cover: Milky Way Arch over Amboseli National Park, one of the winners of the IAU Office for Astronomy Education's 2022 Astrophotography Contest
Credit: Amirreza Kamkar/IAU OAE*

