

INTEGRAL Conference 2024:

- Opening
- Science Status
- Mission Status
- LOC announcements

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INTEGRAL: Technology + People

Spacecraft + Instruments with Instr. Teams + MOC

- **Science People:**
 - YOU the community
 - INTEGRAL Science Operations Centre (ISOC) ISDC
 - ISOC Coordinator + Archive Scientist
 - Mission Manager (MM) Project Scientist (PS)
 - ESA Divisions/Departments/Director of Science
 - Member States

Purpose of this Workshop: Celebrate *recent* scientific results – celebrate successes!

==> 2026 Legacy workshop

Thanks to:

- Scientific Organising Committee (SOC), esp. Carlo Ferrigno, Pietro Ubertini
- The INTEGRAL User Group (IUG): Helping a lot with INTEGRAL matters in general

Wonderful, Diverse Programme far beyond of what INTEGRAL was initially designed for:

Gamma-Ray Bursts

X-ray Binaries

Supernovae + SNR

Galactic Center

Black Holes

Surveys

Nucleosynthesis

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Gamma-Ray Bursts X-ray Binaries Magnetars
Multi-messenger Science Cyclotron lines Supernovae + SNR
Accretion Galactic Center Dark Matter, Antimatter Polarization
Neutrino Physics Neutron Stars, Pulsars Optical Photometry
Black Holes Surveys AGN Cosmic Rays
Isotopic ages Nucleosynthesis Positrons/Positronium
General Galactic and Intergalactic science Jets/Bursts

- Launch: 17 October 2002, planned for 4 years
- Many many extensions approved until end of 2024
- Last extension in 2023 granted **during the KAGRA, LIGO, and Virgo O4-campaign until end 2024**
- No further opportunity given to request extensions.
 - Unless O4 extended ==> consult SSAC
- Post-operations 01 Jan.2025 until end 2026, and spacecraft monitoring by the MOC until re-entry in the Earth atmosphere in February/March 2029.
 - **Latest update:**
- During the first 2 months of post-operations, INTEGRAL will maintain minimum operational capabilities to detect Gravitational Wave events. Science Data obtained in this period will go public immediately. Possibility for important ToOs.

General process of mission operations extensions (for all missions):

- Mission Extension Operations Review (MEOR)
prepared by ESA if requested by member states (via SPC = Science Programme Committee)
- Science Review
 - Astronomical Working Group = AWG: Evaluates Science Value
 - Space Science Advisory Committee = SSAC: Evaluates Science in context of programmatic constraints
- SPC approval

SPC: Highest authority, consists of delegates from member states
ESA is an actor having to fulfil SPC mandate:

This process is approved by the SPC

There needs to be a very strong justification to deviate from the approved process

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- Request from chairs of TAC and IUG: Extend slightly into 2025 in order to:
 - Complete AO21 programme (Carry Over)
 - Perform small number of highly ranked proposals that did not fit into the AO21 programme
- Although no process, ESA management accepted to listen => Memo written by PS and MM
- Then O4 extended until end of February 2025 ==> Process to consult SSAC as per SPC decision
- AWG, SSAC have *not* recommended the requested short extension but following O4 until end February at lowest-possible cost ==> SPC approved
- Further extension of O4 came too late, and ESA cannot accept to depend on others.

- **The Future**

- **We are losing the technologies and fresh data**
- **But: if we don't lose the Scientists, INTEGRAL will live !!!!**

- **=> 2024-2026 Community + ISOC + MM + PS**
- **2026- YOU the community**

Apart from ...

- non-performing thrusters (unused since Jul 2020) => no propellant consumption, regular attitude maneuvers (so-called Z-flips) to control spacecraft and reaction wheel momentum via solar radiation pressure
- use of redundant power supply converter (B) for Optical Monitoring Camera (OMC) (since critical s/c anomaly 22 Sep 2021)
- change of operations for on-board antenna swap (via transponder swap; radio switch unused since 12 Sep 2021)

... the status and performance of the platform and payload continuous nominally with all prime units still in use.

At Mission Operations Centre (MOC at ESOC):

- INTEGRAL Project Closure Plan
- INTEGRAL Post Science Mission Operations Concept: (non-science) Mission Planning at MOC; Spacecraft monitoring; Options for collision avoidance and disposal optimisation.

At Science Operations Centre (SOC at ESAC):

- INTEGRAL Post-Operations Plan: focus on Science Archive development and Legacy Products, collection of Community Products, Scientific s/w conservation, Legacy documentation, continued user support
- INTEGRAL Science Legacy Archive (ISLA) Definitions and Priorities; OSA in ESA DataLabs (*cf. dedicated talks by Guillaume Belanger*)

At INTEGRAL Science Data Centre (ISDC at Uni. Geneva):

- PRODEX Proposal for national funding & Extension of long-standing ESA Contract to cover 2025/2026; especially support for OSA, ISLA, Product generation

Payload PI teams:

- End-of-life Technology Tests (shortly after end of science observations, i.e., after Feb 2025; contents TBC)

Future Milestones:

- ISLA releases
- OSA in ESA DataLabs releases
- Legacy Conference (in 2026)
- Lessons Learned Exercise

And then?

INTEGRAL Legacy will continue via ISLA hosted at ESAC Science Data Centre (ESDC) & OSA preserved via ESA DataLabs.

All this enabling further publications (based on archival data) also by next generation of astronomers & for multi-wavelength studies.

**Everything
will be fine in
the end, and
if things
aren't fine, it's
not the end.**

ESA Mission-specific Newsletters will cease to exist & are replaced by:

The ESA Science Newsletter:

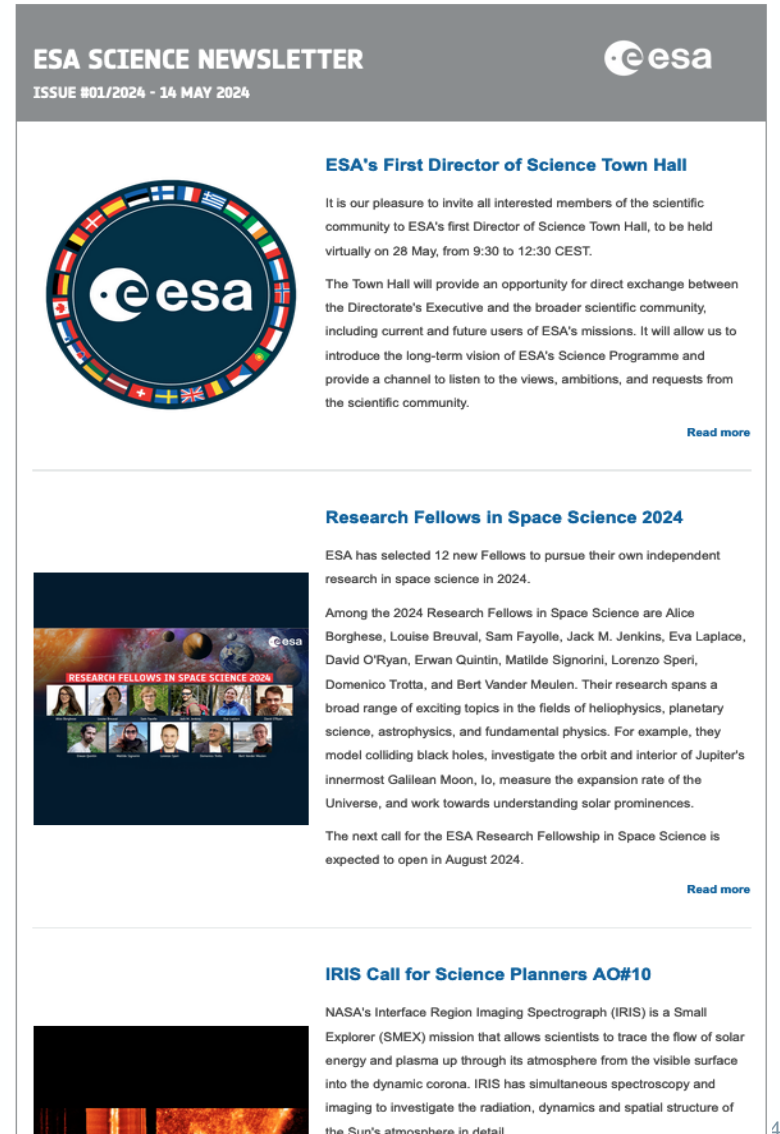
- AO announcements
- ESA science job vacancies
- Engagement with ESA Science, Outreach, etc.

1st issue published on 14 May 2024

Subscribe at <https://www.cosmos.esa.int/web/scinews>

Notes:

- **Specific info on INTEGRAL only via ISOC homepage**
- **Reach us via our HelpDesk (shared ISOC/ISDC)**



ESA SCIENCE NEWSLETTER
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ESA's First Director of Science Town Hall

It is our pleasure to invite all interested members of the scientific community to ESA's first Director of Science Town Hall, to be held virtually on 28 May, from 9:30 to 12:30 CEST.

The Town Hall will provide an opportunity for direct exchange between the Directorate's Executive and the broader scientific community, including current and future users of ESA's missions. It will allow us to introduce the long-term vision of ESA's Science Programme and provide a channel to listen to the views, ambitions, and requests from the scientific community.

[Read more](#)

Research Fellows in Space Science 2024

ESA has selected 12 new Fellows to pursue their own independent research in space science in 2024.

Among the 2024 Research Fellows in Space Science are Alice Borghese, Louise Breuval, Sam Fayolle, Jack M. Jenkins, Eva Laplace, David O'Ryan, Erwan Quintin, Matilde Signorini, Lorenzo Speri, Domenico Trotta, and Bert Vander Meulen. Their research spans a broad range of exciting topics in the fields of heliophysics, planetary science, astrophysics, and fundamental physics. For example, they model colliding black holes, investigate the orbit and interior of Jupiter's innermost Galilean Moon, Io, measure the expansion rate of the Universe, and work towards understanding solar prominences.

The next call for the ESA Research Fellowship in Space Science is expected to open in August 2024.

[Read more](#)

IRIS Call for Science Planners AO#10

NASA's Interface Region Imaging Spectrograph (IRIS) is a Small Explorer (SMEX) mission that allows scientists to trace the flow of solar energy and plasma up through its atmosphere from the visible surface into the dynamic corona. IRIS has simultaneous spectroscopy and imaging to investigate the radiation, dynamics and spatial structure of the Sun's atmosphere in detail.

- Webex link (same for all days) available for download and inclusion in calendar
- Canteen: limited time slots to avoid queues; Coffee breaks (not in programme!)
- Busses
- Conference Photo
- Social Event
- Code of Conduct
- Talks (not the Q&A) will be recorded and made public after the conference
- Designated LOC member to check online questions – don't forget about our online participants!
- Talks to be uploaded prior to sessions
- ...