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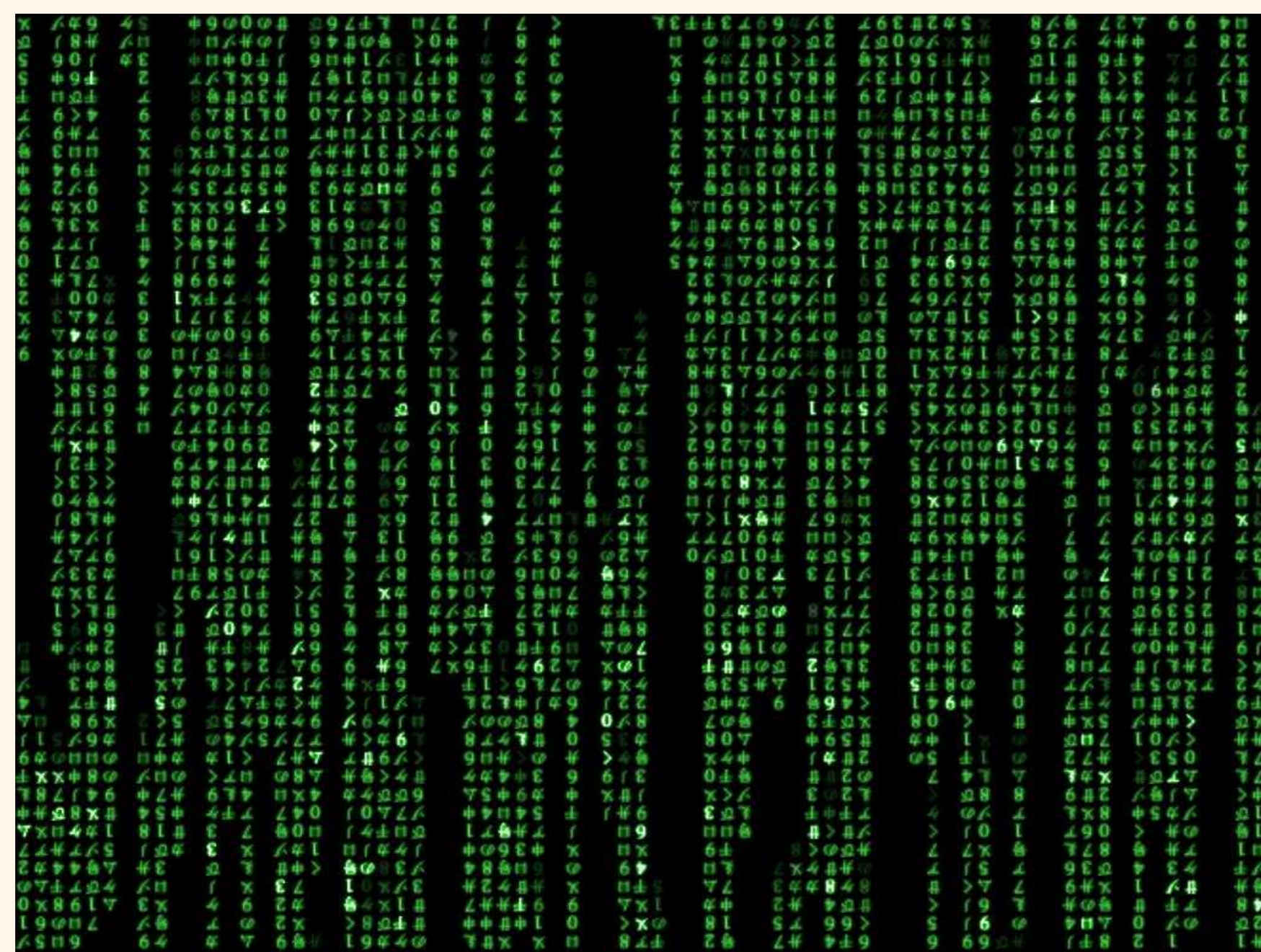
Abstract: The ISDC was originally founded as a ground segment and data center for ESA's *INTEGRAL* mission. By now it provides expertise in data handling, processing, and distribution as well as user support for several European space missions, such as *Planck*, *Gaia*, *POLAR*, and for the on-going *INTEGRAL* mission. It is foreseen that future activities will include for example *XEUS* and the *Cherenkov Telescope Array* (CTA). The development shows that the ISDC is the science data center for (mainly) high-energy astrophysics, and has worked successful in close collaboration with NASA's HEASARC. The ISDC can function as a contact point in the future, providing services for both, NASA led and ESA led missions.

The ISDC (Courvoisier et al. 2003, Beckmann 2002) was founded in 1995 to provide the ground segment for data processing, archiving, user support, and scientific expertise for the *INTEGRAL* mission. Since then, the institute has not only provided smooth services for *INTEGRAL*, but has also moved on to other missions, such as *Gaia* and *Planck*. In the near future, also the Gamma-Ray Burst polarisation study *POLAR* (Produit et al. 2005) will be hosted at the ISDC, and *XEUS* and the European *Cherenkov Telescope Array* are going to be major tasks for the next 10-15 years. The ISDC will be the European Data Centre for Astrophysics beyond 2020 - and therefore an excellent contact partner also for US led projects.

Services and Expertise

The ISDC provides a wide range of services to the scientific community for several space based experiments:

- Near-real time data analysis and automatic alerts to the astrophysical community
- Standard data analysis, scientific screening of incoming data
- Data archive and distribution
- user support in form of help-desk, documentation, workshops
- software development and implementation
- knowledge about the instruments and also scientific expertise



The ISDC deciphers incoming data and provides automatic data screening (within seconds), quick-look results (within a day), as well as data archival and distribution.

What can we do for you?

When thinking about future missions, the ISDC might provide useful tools and services:

- Data handling, archival, processing, and distribution
- Near real time analysis as well as scientific support
- Software development
- Ground Segment solutions

Missions included and in preparation

Active missions at the ISDC:

- *INTEGRAL* - ISDC is receiving all data from the spacecraft within seconds and is providing INTEGRAL data and the analysis software to the scientific community worldwide.
- *Planck* - developing the main software packages for the Level 1 data processing of the Planck Low-Frequency Instrument (LFI)
- *Gaia* - ISDC in charge of characterising the photometric and spectral variability
- *Polar* - ISDC is busy right now to measure with a prototype in the laboratory the key parameters. Proposition to fly it on the Chinese space station in the horizon of 2013.

Future missions where the ISDC is likely to be involved:

- *XEUS*
- *Cherenkov Telescope Array* (CTA)



Planck is one of the missions for which the ISDC is providing services - mainly in form of software for the *Planck* Low-Frequency Instrument. Graphic: ESA

For further questions contact us:

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References

- * Beckmann 2002, "The INTEGRAL Science Data Centre", proceedings of the XXII Moriond Astrophysics Meeting "The Gamma-Ray Universe", eds. A. Goldwurm, D. Neumann, and J. Tran Thanh Van, page 417
- * Courvoisier, Walter, Beckmann, et al., 2003, "The INTEGRAL Science Data Centre", A&A 411, L53
- * Produit et al. 2005, "POLAR, a compact detector for gamma-ray bursts photon polarization measurements", Nuclear Instruments and Methods in Physics Research Section A, Vol. 550, Issue 3, p. 616, astro-ph/0504605