US INTEGRAL Status

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A Brief History

- Prior to launch, US scientists were involved in various aspects of the INTEGRAL mission:
  - SPI PSD hardware and software
  - SPI calibration and response matrix generation
  - SPI background modeling
  - Data analysis software production both in the US and at ISDC

- Post launch, US scientists remained involved with the SPI and IBIS instrument teams but with the addition of a formal Guest Observer Facility (GOF) at NASA/GSFC.

- The US INTEGRAL GOF operated within the HEASARC infrastructure but with separate personnel.

A Brief History (cont)

- The GOF:
  - Maintained within HEASARC, a US mirror to the INTEGRAL Public Data Archive residing at the ISDC
  - Administered a US GO program for US researchers with selected research programs including a theory/archival program during AO-3 and support for data rights proposals. Funding was ~ at the $40k/$10K level for PIs/Co-Is.
  - Maintained a US INTEGRAL User Committee
  - Maintained a US GOF website with a help desk

- 2010 NASA Senior Review -> US funding for INTEGRAL discontinued:
  - The dedicated US GO program was discontinued after AO-7
  - US observers in AO-8 could propose for support through NASA Astrophysics Data Analysis Program (ADAP). Subsequently only research involving public INTEGRAL data was supported within ADAP (as is the case for most missions).
  - Maintenance of the US mirror to the INTEGRAL Public Data Archive and the GOF webpage was transferred to HEASARC personnel

Current INTEGRAL Activities at the HEASARC

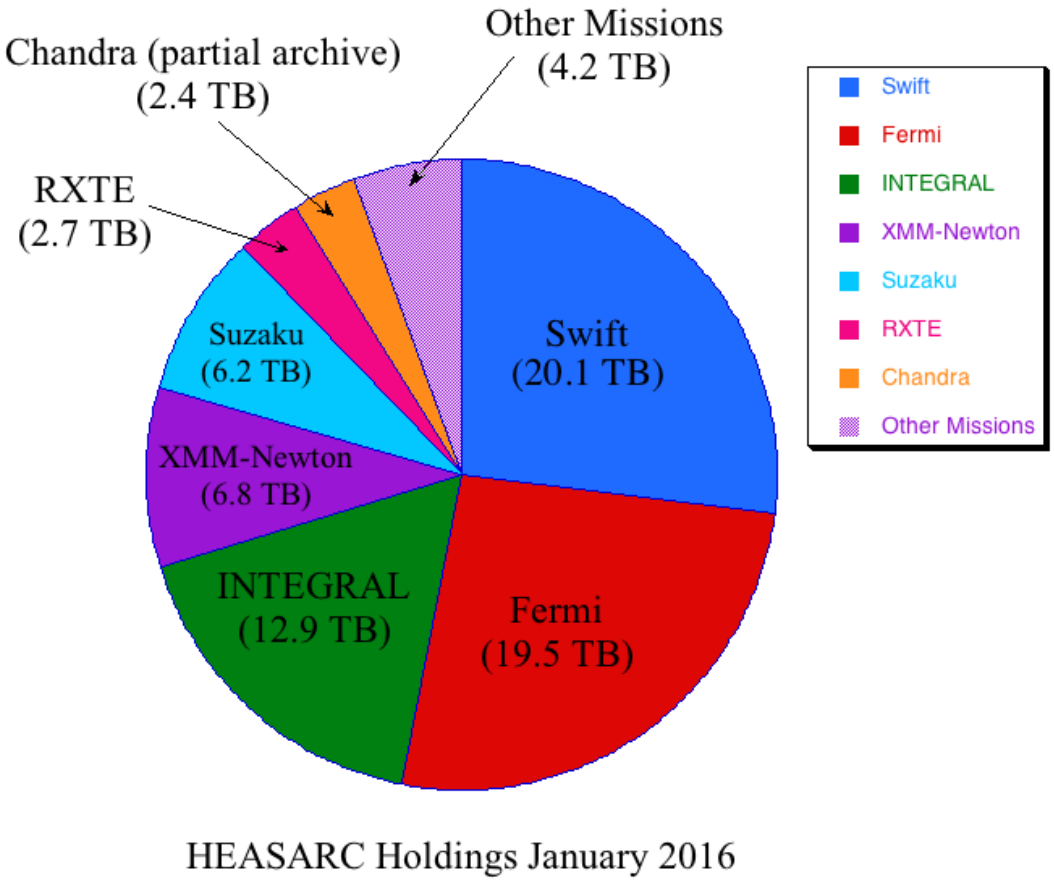
- The HEASARC maintains 17 searchable INTEGRAL catalogs including published catalogs.

- This includes an up-to-date mirror to the INTEGRAL data archive containing all public data.
  - The archive includes all publically released data including ToOs (e.g. V404 Cyg, SN 2014J) and Galactic monitoring programs as they become available as well as up-to-date housekeeping data.
  - The HEASARC does not support the download of proprietary data, GO data or data for analysis of other sources in the FOV, i.e. “data rights” data.

- The HEASARC maintains the INTEGRAL GOF webpage including links to INTEGRAL news (including RSS feeds) and an INTEGRAL help desk.

- HEASARC personnel remain a point of contact between ESA and NASA.

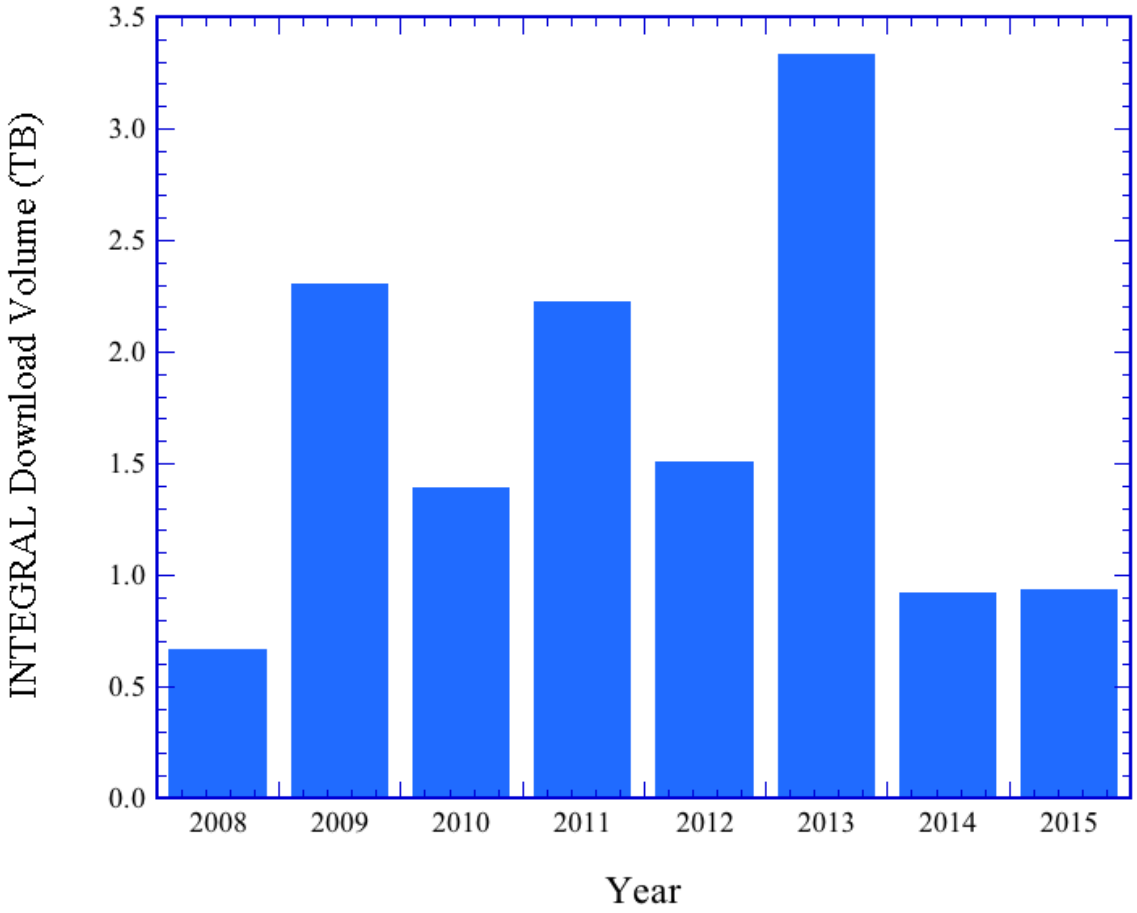
HEASARC Archive Holdings



HEASARC Holdings January 2016

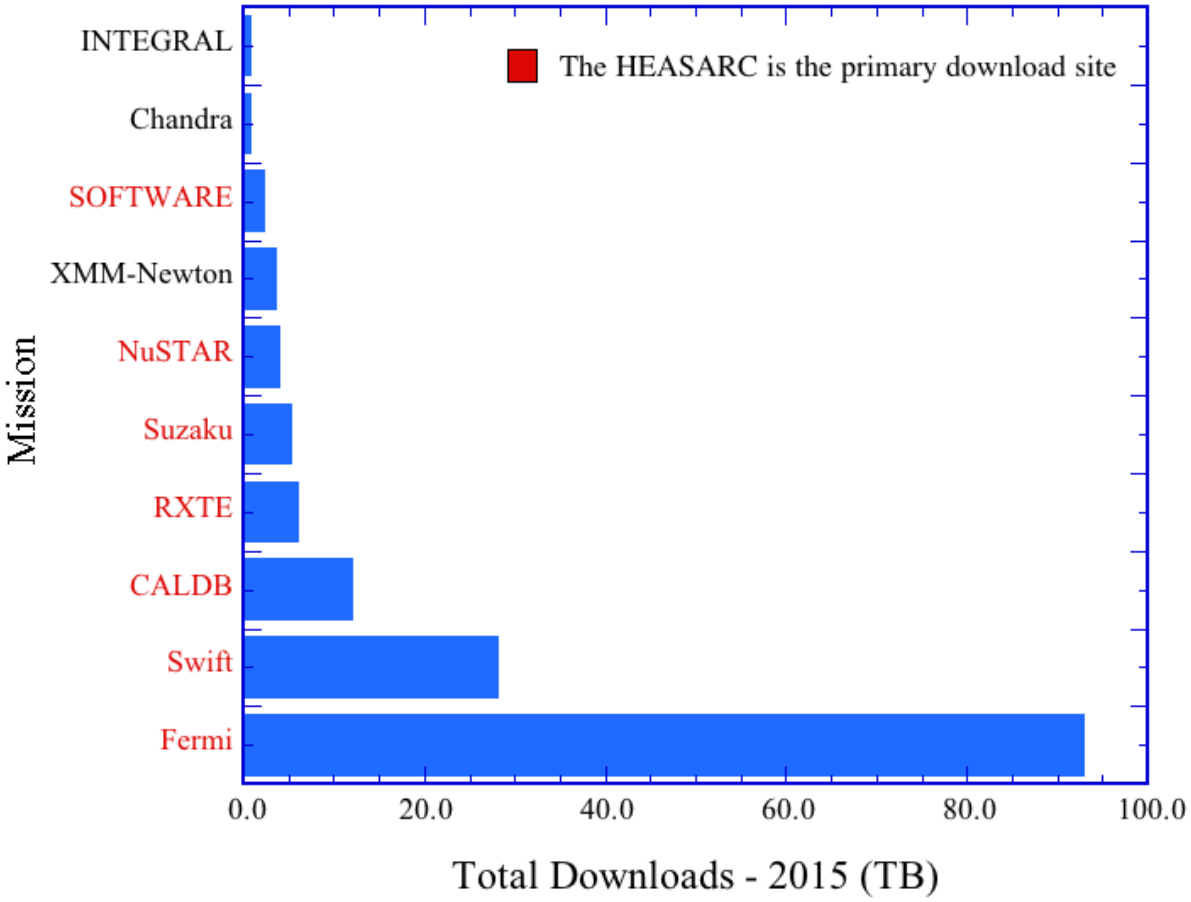
- The INTEGRAL archive at the HEASARC is the third largest mission archive behind Fermi and Swift.

HEASARC Data Download Volumes



- Downloads of INTEGRAL data from HEASARC averaged ~1.7 TB/year since 2008.
- Note: HEASARC does not support download of proprietary or “data rights” data

Comparison with Other Missions



- Many of the mission archives held by the HEASARC are the primary archives for those missions. Hence both Guest Observers and mirror archives download their data from the HEASARC.

INTEGRAL Research in the US

- The ESA-INTEGRAL webpage lists 67 INTEGRAL-related refereed publications in 2015-2016 (as of 17-Feb-2016)
- 31% of these papers had US authors representing 26 US institutions (8 with US first authors).
- Many of these papers represent collaborative science utilizing data from NASA-led missions such as Fermi, Swift, Chandra, and NuSTAR.
- In the current INTEGRAL observing cycle (AO-13), of the 45 selected proposals only 4 had US PIs. The number of US CoIs is not available.

Fermi-INTEGRAL Joint Program

- In Fermi Proposal Cycle 9 (deadline 22 Jan 2016), there was a Fermi-INTEGRAL joint program agreement
- Investigators at US institutions proposing to the Fermi program could request INTEGRAL observing time.
- 300 ksec of INTEGRAL observing time was made available
- ESA personnel will review requests to ensure the proposal is not in conflict with existing INTEGRAL observations
- One joint program proposal was received.