

INTEGRAL in 2010 NASA Senior Review

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2010 SENIOR REVIEW FOR OPERATING MISSIONS

NASA will host the next Astrophysics Division Senior Review for its Operating Missions in March 2010. The purpose of this comparative review is to assist NASA in maximizing the scientific productivity from its Operating Missions. NASA will use the findings from the Senior Review to:

- Prioritize the operating missions and projects;
- Define an implementation approach to achieve astrophysics strategic objectives;
- Provide programmatic direction to the missions and projects concerned for 2011 and 2012; and
- Issue initial funding guidelines for 2013 and 2014 (to be revisited in the 2012 Senior Review).

Key Dates

Draft Call for Proposals issued: September 16, 2009

Call for Proposals to be issued: October 15, 2009

Proposals due: February 8, 2010

Senior Review Panel meets: March 29 - April 1, 2010

Missions (operating, beyond nominal)

- Chandra
- GALEX
- INTEGRAL
- Planck
- RXTE
- Spitzer
- Suzaku
- Swift
- WISE
- WMAP
- XMM-Newton

INTEGRAL in NASA Senior Review

- We will propose for funding for
 - Individual investigators (successful proposers)
 - GSFC support of INTEGRAL program
 - GI program
 - HEASARC INTEGRAL data archive
- Something less than \$1 M yr⁻¹

Proposal science

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|--|-----------------------------------|
| 2.2.1 Heavily Obscured HMXBs | John Tomsick |
| 2.2.2 Supergiant Fast X-Ray Transients | Katja Pottschmidt |
| 2.2.3 Black Hole Transients - State Transitions | John Tomsick |
| 2.2.4 Cyclotron Resonant Lines | Katja Pottschmidt/Rick Rothschild |
| 2.2.5 Magnetars - SGRs & AXPs | Kevin Hurley |
| 2.2.6 Polarization Studies - Crab Nebula & Pulsar | Mark McConnell |
| 2.2.7 CV's & Galactic Diffuse Emission | Chris Shrader |
| 2.2.8 Young SNRs - Continuum Sources | John Tomsick |
| | |
| 2.3.1 Galactic Annihilation Radiation | Gerry Skinner/Rick Rothschild |
| 2.3.2 Nucleosynthesis Lines - ^{26}Al , ^{60}Fe & ^{44}Ti | Mark Leising/Dieter Hartmann |
| 2.3.3 Gamma-Ray Lines from SNe and Novae | Mark Leising |
| | |
| 2.4.1 AGN - Seyferts & Blazars | Markus Boettcher |
| 2.4.2 GRBs | Kevin Hurley |
| Synergies with Fermi, Swift, Suzaku | Neil Gehrels/Chris Shrader |

2008 NASA Senior Review ranking

1. Swift
2. Chandra
3. GALEX
4. Suzaku
5. Warm Spitzer
6. WMAP
7. XMM-Newton
8. INTEGRAL
9. RXTE
10. Gravity Probe-B

2008 NASA Senior Review- INTEGRAL

Strengths

Unique capability for nuclear line region. Improving constraints on sources of ^{26}Al , ^{60}Fe . Asymmetric distribution of 511 keV from plane, might point to source of poorly understood emission.

IBIS has identified >400 hard X-ray sources, >100 new. Two new classes: obscured HMXB's and superfast X-ray transients. Is constraining AGN contribution to CXB.

Important synergy between INTEGRAL and soon-to-be launched GLAST, with INTEGRAL providing bridge to soft X-ray measurements.

2008 SR (cont.)

Weaknesses:

“With the exception of the prospect for nearby SN line observations, the proposal offered mainly incremental improvements on previous science. Some of the most interesting new science (e.g., lines from a nearby supernova) is not guaranteed. The size of the US community involved with INTEGRAL was judged to be small in comparison with other missions before the committee.”

Recommendation:

Unique capabilities, but incremental science. Support at reduced level (~\$1M/yr*) for two years, then end. US investigators can propose to ADP.

*actual funding ~\$760k and ~\$600k for fy 09, 10

So...

INTEGRAL will continue quite well without US
community, but...

This same battle will be fought again,
with the same questions and perceptions?