Fermi Proposer Workshop

Workshop Agenda

1:00-2:30 PM (EST), Fri, Jan 28, 2022

Welcome, Session Overview, and Goals  Chris Shrader
Mission Overview and News  Liz Hays (~10 min)
Overview of FSSC Online Services  Don Horner (~10 min)
The Fermi Light Curve Repository  Janeth Valverde (~15 min)
GI Program Description, Opportunities, General Discussion  Chris Shrader (~20 min)
GI Science Nuggets  1-VG Attendee Contributions (~5-min)
Fermi Guest Investigator Opportunities

Chris Shrader, 
Fermi Science support Center, 
NASA/GSFC
Fermi GI Program Overview

• Broad community participation greatly enhances the scientific productivity of the Fermi mission
  – This is facilitated through a rigorous Guest Investigator (GI) program

• Primarily proposals for grant support
  – All science data products and basic analysis tools are publicly available through the FSSC as are proposal preparation and submission details
Program Overview (con.)

- **Participants can propose:**
  - Analysis of all public data products
    - Includes development and dissemination of methodologies, e.g., algorithms, SW tools
  - Correlated observations relevant to Fermi
    - Includes opportunities for joint observation programs w/partner observatories; NRAO, NOAO, VERITAS, TESS and INTEGRAL
    - Proposers with separate access to other observatories can propose correlative programs
  - Theoretical investigations relevant to Fermi
Program Overview (con.)

• 2-stage review process
  – The first stage is the *science review*
    • Dual-anonymous peer-evaluation process
  – Budget proposals are solicited from successful first stage proposers
    • Internal review by NASA

• Support for ~35 research programs
  – Our goal is for ~$75k average grants, although
  – Also 1+/-1 new Large Projects @ ~$125k per year
Recent History: Cycle 13-14 Summary

• ~100 proposals received, ~35 selected
• ~35% approval rate represents an improvement \( \text{wrt} \) past cycles
  ➢ Cycles 5-10 average was 22%
• Recent Fermi selection rate is \( \sim \)consistent with the average for NASA GO programs
Joint Observation Programs

• The Fermi project has organized partnerships with several other observatories to establish joint program opportunities
• Participants include NRAO, NOAO, INTEGRAL, VERITAS, and TESS.
• It is STRONGLY recommended that prospective proposers carefully review the appropriate MOU(s) on our website.

Allotted Joint-Program Quotas

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<tr>
<td>NRAO:</td>
<td>450–600 hrs on GBT, VLA &amp; VLBA</td>
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<tr>
<td>NOAO:</td>
<td>3–5% for various telescopes</td>
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<tr>
<td>VERITAS:</td>
<td>120 hrs</td>
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<tr>
<td>INTEGRAL:</td>
<td>250 ksec</td>
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<tr>
<td>TESS:</td>
<td>1,000 2-minute cadence and 50 20-second cadence target slots</td>
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## Joint Program Statistics

**Cycle-14 Requested** (proposals/obs time) / (time available)

<table>
<thead>
<tr>
<th>Organization</th>
<th>Proposals</th>
<th>Observation Time</th>
<th>Available Time</th>
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<tbody>
<tr>
<td>NRAO</td>
<td>7/310</td>
<td>450-600 hrs</td>
<td>GBT, VLA &amp; VLBA</td>
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<tr>
<td>NOAO</td>
<td>8/380</td>
<td>3-5%</td>
<td>various telescopes</td>
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<tr>
<td>VERITAS</td>
<td>1/536</td>
<td>120 hrs</td>
<td></td>
</tr>
<tr>
<td>INTEGRAL</td>
<td>1/</td>
<td>250 ksec</td>
<td></td>
</tr>
<tr>
<td>TESS</td>
<td>1/38</td>
<td>33 hrs</td>
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**Awarded** (proposals/obs time)

<table>
<thead>
<tr>
<th>Organization</th>
<th>Proposals</th>
<th>Observation Time</th>
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<tbody>
<tr>
<td>NOAO</td>
<td>2/</td>
<td>250 hrs</td>
</tr>
<tr>
<td>NRAO</td>
<td>4/160</td>
<td>3 VLA/VLBA, 1 GBT</td>
</tr>
<tr>
<td>INTEGRAL</td>
<td>1/250ksec</td>
<td>250ksec</td>
</tr>
<tr>
<td>VERITAS</td>
<td>0/0</td>
<td></td>
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<tr>
<td>TESS</td>
<td>0/0</td>
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Topical, Proposal Type Distribution

- Active Galactic Nuclei: 17%
- Gamma-Ray Bursts: 12%
- Fermi Bubbles, CRs: 3%
- MAGNETARS: 5%
- Stellar, Sne: 3%
- Multi-Messenger: 7%
- Cosmology: 7%
- Binaries: 5%
- Novae: 5%
- Survey: 5%
- TGFs: 2%
- Solar Flares: 2%
- CRs/ISM: 5%
- Anal Methods/SW: 7%
- PULSARS: 15%
- Correlated: 37%
- LAT Data Analysis: 25%
- GBM Data Analysis: 11%
- Theory: 26%

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Proposal Evaluation Process

• Following the model of all NASA GI/GO programs each proposal is evaluated by NASA-convened, anonymous peer panel

• Begun in Cycle 14 and continuing henceforth Fermi will employ a dual-anonymous peer review process

• This is now the case for all NASA GO/GI programs as well as ADAP, ATP and some externally managed ones, e.g., Chandra, HST, JWST
What is Dual-Anonymous Peer Review?

• In dual-anonymous peer review, the reviewers do not have explicit knowledge of the identities of the proposing team during the scientific evaluation of the proposal.

• The primary intent of dual-anonymous peer review is to eliminate “the team” as a topic during the scientific evaluation of a proposal.

• This creates a shift in the review-panel discussions, away from the individuals, and towards a discussion of the scientific merit of a proposal.

• The goal is to eliminate or at least minimize Conscious and Subconscious Bias in the selection process.
Dual Anonymous Proposal Preparation

- Stage-I proposal submission done as before via ARK/RPS
  - Include PI/co-I info but names are hidden from reviewers
  - Numerical references, no “first person” attributions
  - Panelists may not speculate PI, co-I identities
  - Include “team identity and expertise” page
  - Cite access to specific facilities as private communications or arrangements
- Relaxes certain types of panelist conflicts of interest
- **After** deliberation and grading names will be revealed
  - A proposal can then be disqualified, but not re-scored
In Rogers et al. (2014), we concluded that the best explanation for the dynamics of the shockwave and the spectra from both the forward-shocked ISM and the reverse-shocked ejecta is that a Type Ia supernova exploded into a preexisting wind-blown cavity. This object is the only known example of such a phenomenon, and it thus provides a unique opportunity to illuminate the nature of Type Ia supernovae and the progenitors. If our model from Rogers et al. (2014) is correct, then the single-degenerate channel for SNe Ia production must exist. We propose here for a second epoch of observations which we will compare with our first epoch obtained in 2007 to measure the proper motion of the shock wave.

Here is the same text, again re-worked following the anonymizing guidelines:

Prior work [12] concluded that the best explanation for the dynamics of the shockwave and the spectra from both the forward-shocked ISM and the reverse-shocked ejecta is that a Type Ia supernova exploded into a preexisting wind-blown cavity. This object is the only known example of such a phenomenon, and it thus provides a unique opportunity to illuminate the nature of Type Ia supernovae and the progenitors. If the model from [12] is correct, then the single-degenerate channel for SNe Ia production must exist. We propose here for a second epoch of observations which we will compare with a first epoch obtained in 2007 to measure the proper motion of the shock wave.
Cycle 15 Timeline

• **Schedule:** Feb. 17, 2022, proposal due date
  - ~late April 2022: virtual review
  - ~late May/early June 2022: Stage-I selections
  - July/August stage-II awards

• **Hope to again select 30-40 programs**

• **No significant policy changes** *wrt* Cycle 14
Additional Information

• Again, for all proposal preparation details please visit the FSSC Web site, in particular the “Proposals” page:
  ➢ https://fermi.gsfc.nasa.gov/ssc/

• Also, feel free to make use of our helpdesk with any Fermi-related questions

• Good luck with your Fermi proposals!