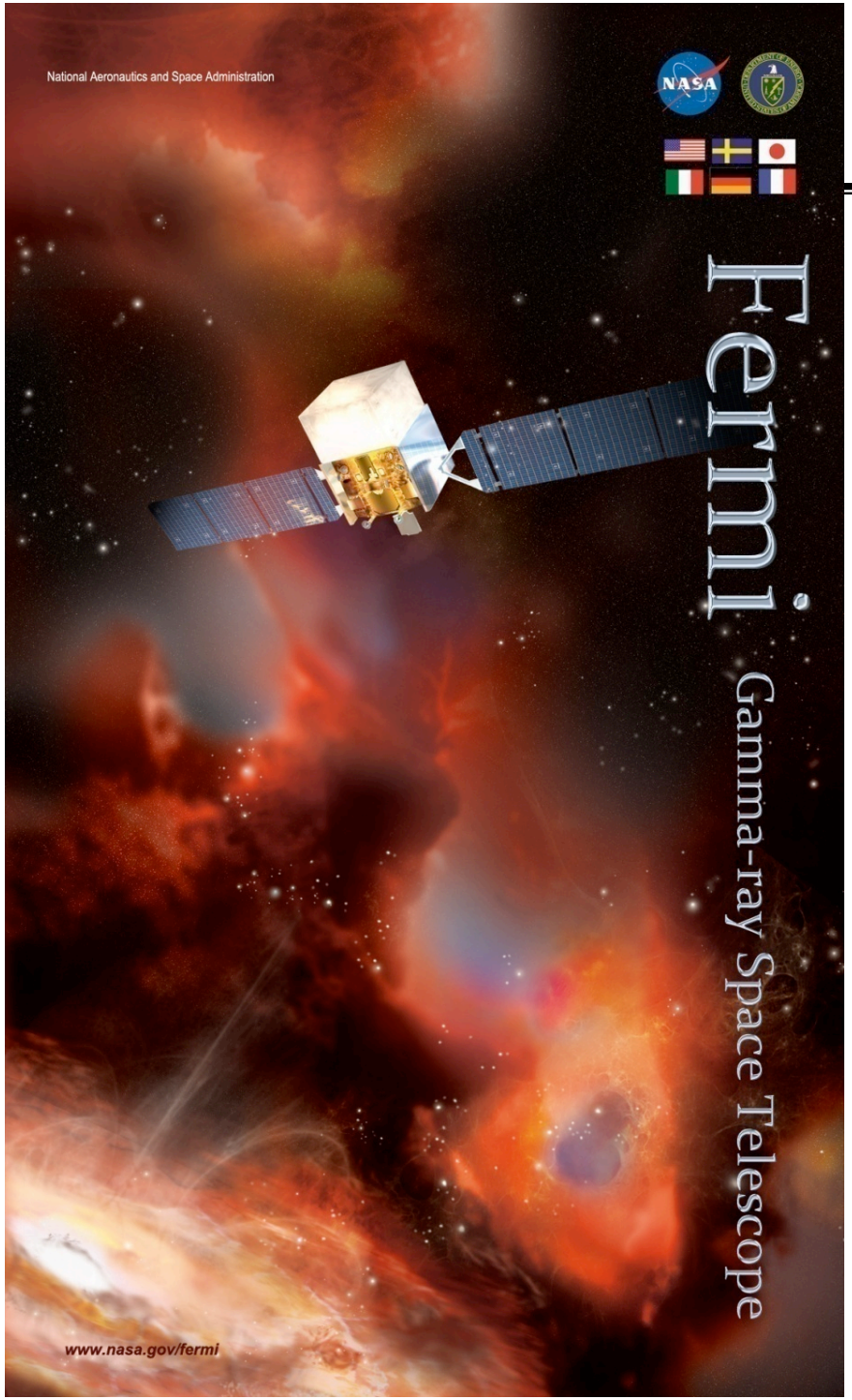


Fermi

Gamma-ray Space Telescope

Users Group Meeting
12 May 2010

Data Analysis Workshops/ Schools

Liz Hays

Data Analysis Workshops

- **Workshops in support of US GI program**
  - **2008: Goddard**
  - **Dec. 2009/Jan. 2010: Stanford, Fermi Lab, Boston, D.C. (AAS)**
- **Internationally hosted workshops**
  - **Monash University (Melbourne, Australia, Nov. 23-24, 2009)**
  - **11th COSPAR capacity building workshop (Bangalore, India, Feb. 8-19 2010)**
  - **40th Saas-Fee Course: Astrophysics at Very-High Energies (Les Diablerets, Switzerland, March 14 2010)**

Typical one-day workshop program

9:00 - 9:30	Registration, Setup
9:30 - 9:40	Overview, Workshop Objectives
9:40 - 10:00	Data Selection, Exploration
10:00 - 10:10	Data Selection Caveats
10:10 - 10:30	Hands on Session 1
10:30 - 10:50	Point Source Analysis
10:50 - 11:00	Using the Catalog for Analysis
11:00 - 12:00	Hands on Session 2
12:00 - 12:15	Q&A, Review
12:15 - 13:30	Lunch Break
13:30 - 13:45	Advanced Likelihood Topics
13:45 - 14:45	Hands on Session 3
14:45 - 15:00	Light Curve Analysis
15:00 - 15:45	Hands on Session 4
15:45 - 16:00	Summary, Feedback
16:00 - 16:30	GI Program and Q&A
16:30	Adjourn

Basic data interaction

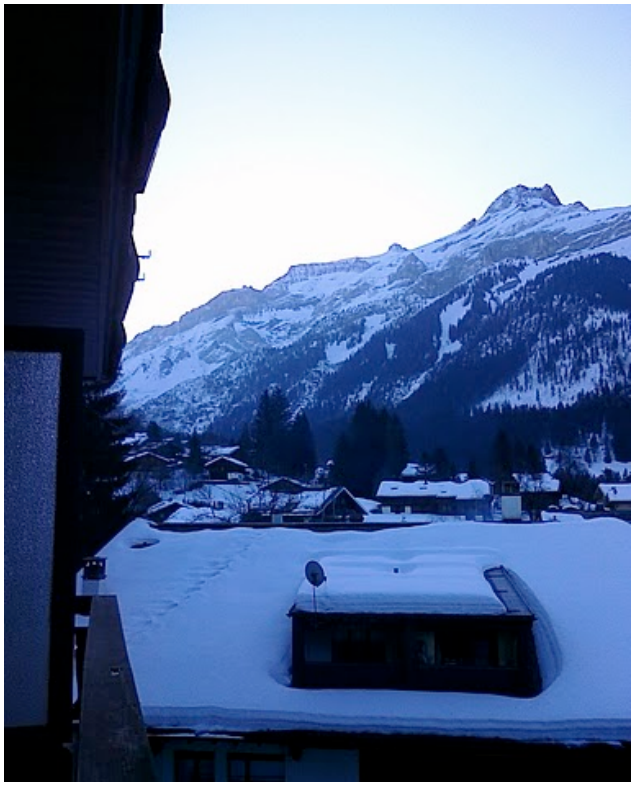
Standard point source analysis spectral parameter estimation

Special topic

Highly successful!
Well-organized, well-attended, positive feedback

Saas-Fee - Fermi analysis hands-on session

- Organized by FSSC
- Not very hands-on…
  - 1/2 day
  - ~60 students (grad to postdoc)
  - 3 instructors
- Good feedback
  - Too short!
  - First successful interaction with data for some
  - Great questions from advanced users
  - Clear interest and need for in-depth exploration of analysis topics



Bangalore Workshop

- 2 weeks
- 30 students (undergrad to postdoc)
- Project working groups
  - AGN (2), GRBs, pulsars, X-ray binaries
  - Reproduce results from Fermi publications

- Overview Slides:
  - Introduction to High Energy Astrophysics, Gamma-ray Astronomy Dave Thompson
  - Gamma-ray Astronomy Instrumentation Neil Gehrels
  - Fermi Overview Julie McEnery
  - Fermi Archive, Search and Data Download Robin Corbet
  - Basics of Analysis of High Energy Data, Use of Statistics, Photon Counting Mariano Mendez
  - Statistics Peter Willmore
  - X-ray Astronomy Missions Mariano Mendez
  - Indian Astronomical Facilities Biswajit Paul
- GBM Science & Analysis:
  - Overview of Science with GBM Valerie Connaughton
  - GBM GRB AnalysisValerie Connaughton
- LAT Science & Analysis:
  - LAT GRB Analysis I Valerie Connaughton
  - LAT GRB Analysis II Julie McEnery
  - Aperture Photometry Robin Corbet
  - Fermi Timing Analysis Demonstration Dave Thompson
  - Likelihood Analysis of LAT Data Benoit Lott
  - More on Likelihood analysis of LAT data Benoit Lott
- Gamma-Ray Science:
  - Radiative Processes, Pulsar, and SNRs Dipankar Bhattacharya
  - Pulsars (Gamma-ray Emission, Coordinated Observations) Dave Thompson
  - Magnetar High Energy Emission Wim Hermsen
  - Gamma-ray Emission of X-ray Binaries Robin Corbet
  - Physics of Blazars Benoit Lott
  - Gamma-ray Properties and Multi-wavelength Observations of Blazars Dave Thompson
  - Gamma-Ray Burst Physics and Swift Observations Neil Gehrels
  - Fermi Observations of Gamma-Ray Bursts Valerie Connaughton
  - Cosmic Rays Pijushpani Bhattacharjee
  - Diffuse Gamma-Ray Emission P. Sreekumar
  - Dark Matter Pijushpani Bhattacharjee

Early Planning for Fermi Analysis School

- **Longer format schools are ideal for Fermi analysis**
  - **Fully explore a variety of applications**
  - **Allow deeper understanding of data properties and techniques**
- **Preliminary planning begun for a Fermi school**
  - **2 week format covering both science and analysis topics related to Fermi LAT and GBM**
  - **Winter/Spring 2011**
  - **Exploring venues in the D.C. area**
  - **Details of organization and logistics in progress**

Workshop slides archived in FSSC library