Fermi

Gamma-ray Space Telescope

Users Group Meeting
12 May 2010

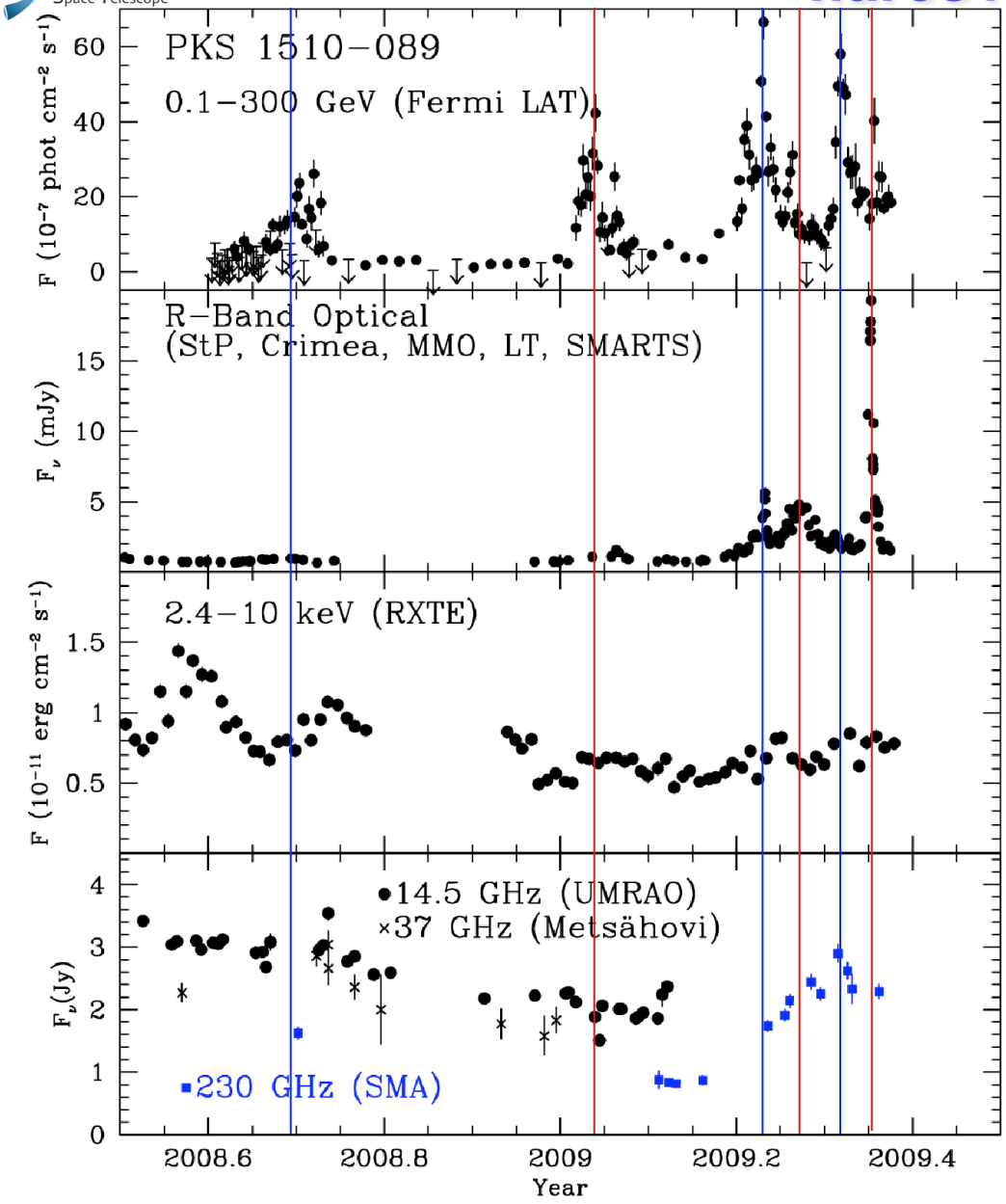
Multiwavelength Studies

Dave Thompson

Outline

1. Examples of MW work involving Fermi
2. Project efforts to promote MW work
3. Suzaku/Fermi discussions

Why not exact correspondence between γ-ray & lower-ν flares?



Optical/mm-wave: synchrotron

→ Depends on **B** & $\mathbf{N_0}$

γ-ray: inverse Compton

→ Depends on $\mathbf{N_0}$ & seed photon field

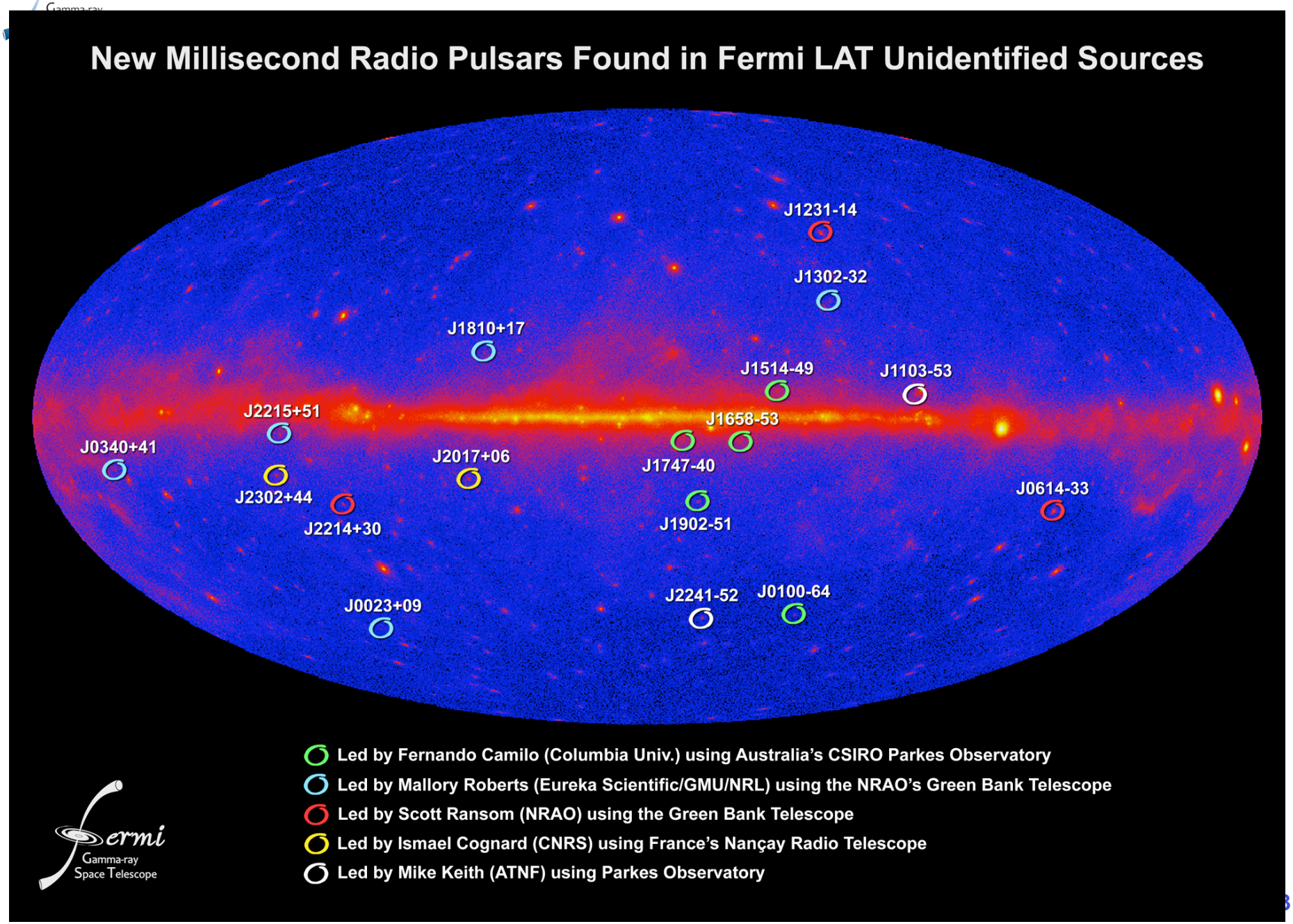
In 1 day, knot in 1510-089 moves by more than 1 pc!

→ Number of external seed photons must change dramatically to get γ-ray flare without synchrotron flare

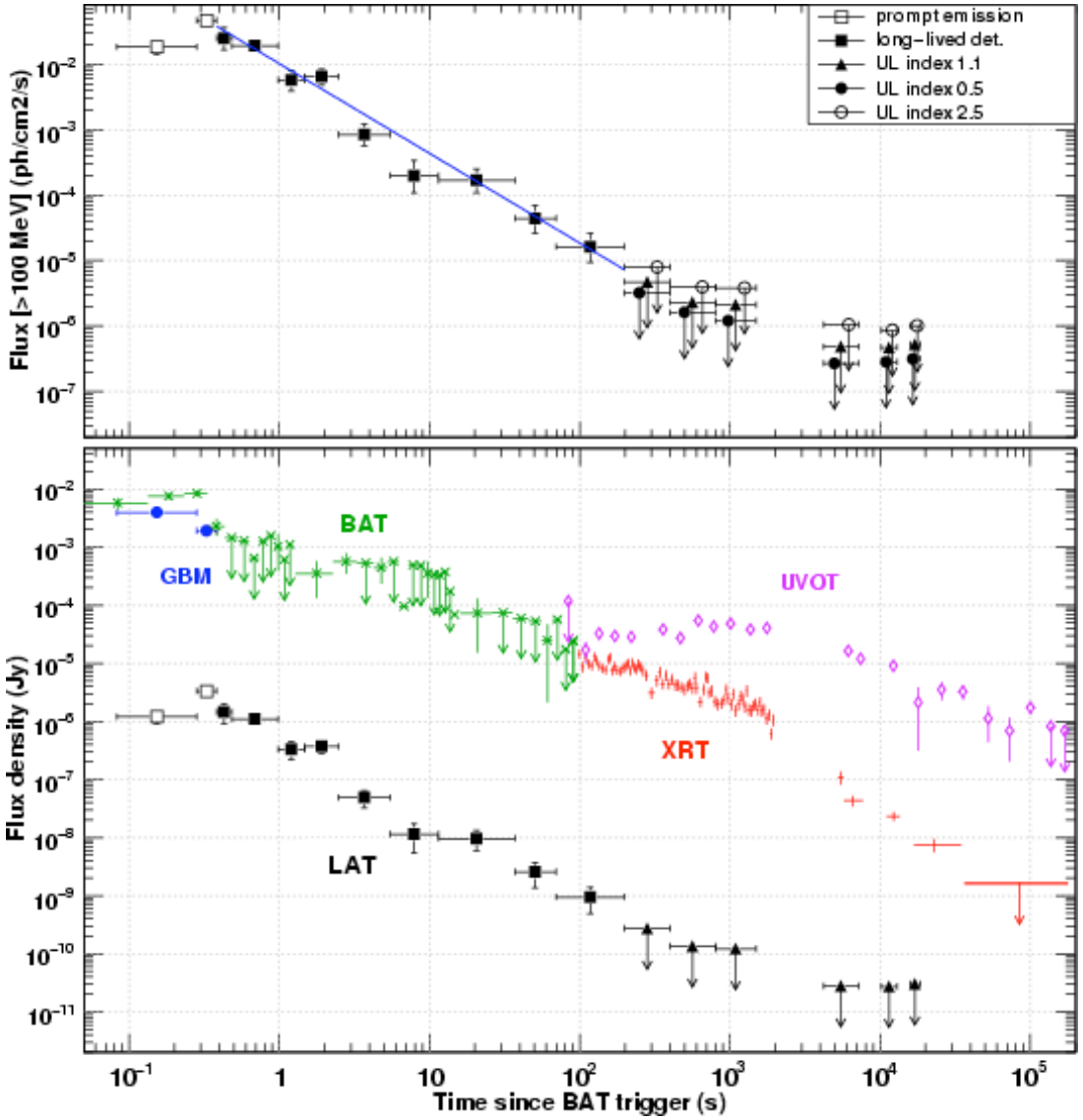
Still mysterious: why are X-rays relatively inactive in spring 2009 while all other wavebands are in outburst?

From Alan Marscher

Millisecond Pulsar Discoveries



GRB090510 : MW Afterglow



Significant emission (TS>25)
up to T0+200s

No evidence of a spectral evolution

LAT lightcurve
be
s
t fit by a power-law: a = -1.38 +/- 0.07

Black : LAT
White : LAT (prompt)
Blue : GBM (prompt)

Green : BAT (triggered on prompt)
Red : XRT (after T0+100s)
Violet : UVOT (after T0+100s)

De Pasquale et al. 2010

Promoting Multiwavelength Research

Bursts - GCN Notices, Circulars, and Reports

For other results - public data, catalogs, and other published Fermi results are sometimes all that is needed.

Science 2 April 2010:
Vol. 328. no. 5974, pp. 73 – 75
DOI: 10.1126/science.1184192

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REPORTS

Evidence for Strong Extragalactic Magnetic Fields from Fermi Observations of TeV Blazars

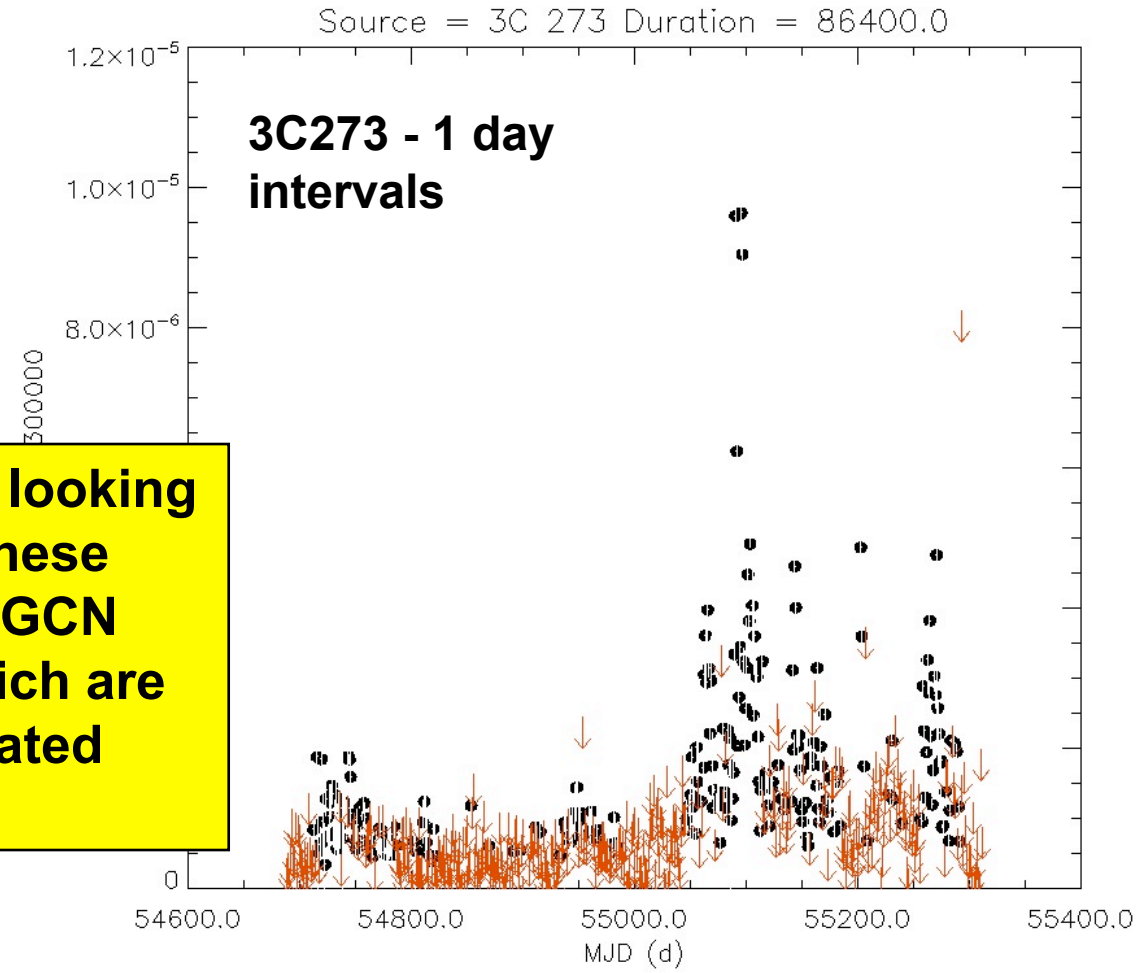
Andrii Neronov* and Ievgen Vovk

Promoting Multiwavelength Research

For many observers, the question is, "What is interesting in the gamma-ray sky right now?"

Several ap

Monitored values are



We are currently looking at a way to use these files to generate GCN flare notices, which are useful for automated telescopes.

The Astronomer's Telegram
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Present Time: 30 Apr 2010; 12:46 UT

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Fermi and Swift observation of a GeV/X-ray/UV flare from PKS 2233-148

ATel #2589; *K. V. Sokolovsky (MPIfR/ASC Lebedev), D. Donato (NASA/GSFC), F. K. Schinzel (MPIfR) on behalf of the Fermi Large Area Telescope Collaboration; and Y. Y. Kovalev (ASC Lebedev/MPIfR)*
*on **29 Apr 2010; 19:11 UT***
Distributed as an Instant Email Notice (Request for Observations)
Password Certification: Frank Schinzel (schinzel@mpifr-bonn.mpg.de)

Subjects: Radio, Ultra-Violet, X-ray, Gamma Ray, >GeV, Request for Observations, AGN

The Large Area Telescope (LAT), one of the two instruments on the Fermi Gamma-ray Space Telescope, has observed an increasing gamma-ray flux from a source positionally consistent with the BL Lac type object PKS 2233-148 (R.A.= 22:36:34.08716, Dec.= -14:33:22.1897, J2000; Petrov et al. 2008, AJ, 136, 580).

Flare Advocates - Follow-up Work

Othe

1. Th

Othe

2. Ju

blog

http://fermisky.blogspot.com/

FERMI GAMMA-RAY SKY

TUESDAY, APRIL 20, 2010

Fermi LAT weekly report N. 97

Covered period: 2010.Apr.12 2010.Apr.18

LAT Mission week: 97.57 - 98.57

- **3C 454.3** detected in high state again this week, although seems fading. At the beginning of the week, on April 13, it reached a daily maximum flux of (13.4 +/- 0.9) e-6 while it has been detected with a flux of (7.3 +/- 0.7)e-6 in the last day.

- **PKS 0537-441** active during the first days of the week (daily flux above 1e-6), then fading but maintaining a daily flux less above 0.6 e-6.

LAT DATA

LAT First Catalog

LAT Monitored Source List Light Curves

LAT Bright Source List

Browse interface to monitored source data

Contact Information by Individual Sources

BLOG ARCHIVE

▼ 2010 (22)

▼ April (3)

Fermi LAT weekly report N. 97

Fermi LAT weekly report N. 96

Extra note - Apr. 15, 2010

► March (8)

► February (5)

► January (6)

Daily R

Highlight

Extragal

• PKS 042

• PKS 053

• CGRaBS

The sourc

1.4+/-0.5

• CGRaBS

• 4C +21.3

• 3C 454.3

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LAT

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activity

sky

in sky

A Surprise - A Gamma-ray Nova?

- In early March, the LAT Flare Advocates found a new, flaring gamma-ray source in the Cygnus region.

- Electronic Telegram No. 2199

Central Bureau for Astronomical Telegrams
INTERNATIONAL ASTRONOMICAL UNION
CBAT Director: Daniel W. E. Green; Room 209; Dept. of Earth and Planetary Sciences; Harvard University; 20 Oxford St.; Cambridge, MA 02138; U.S.A.
e-mail: cbat@iau.org; cbatiau@eps.harvard.edu
URL http://www.cfa.harvard.edu/iau/cbat.html

V407 CYGNI
Hiroyuki Maehara, Kwasan Observatory
discovery by Koichi Nishiyama (Fukuoka, J
Japan) of an apparent unusually bright ou
star V407 Cyg on an unfiltered CCD image
3E camer
iltered
mag 6.8) and 10.814 (mag 6.9) using a 0.4

Also seen in X-rays and radio!

The amateur astronomers who discovered the optical flare.

Fermi - Suzaku Planning

Dear Dr. Thompson, Dr. McEnery,

We have discussed Fermi-Suzaku joint proposals among the Suzaku-observation steering committee members in Japan. They have no objection and support it.

Although, we have plenty of time to discuss, if we start from Suzaku Cycle-6 GO and Fermi Cycle-4 GI, here I would like to show some our idea as the starting point.

(0) Definition of the Fermi Suzaku joint program

Proposers of Fermi GI program can ask Suzaku observation time. The proposal will be reviewed by the Fermi review board. The Suzaku team will support the review process mainly in view of technical feasibility (and science, TBD). The Suzaku team may not accept some of the proposals in case of technical difficulty or schedule conflicts.

Fermi Gamma-ray Space Telescope

Summary

The Fermi Project and the instrument teams are enthusiastic supporters of multiwavelenth studies.

We are always looking for new ways to promote such research, and we welcome any suggestions from the Users Group.