

**GLAST Large Area Telescope:
Collaboration Meeting
August 26, 2005**

**Pulsar, Supernova Remnant, Plerion Group
(PSR/SNR/PWN)**

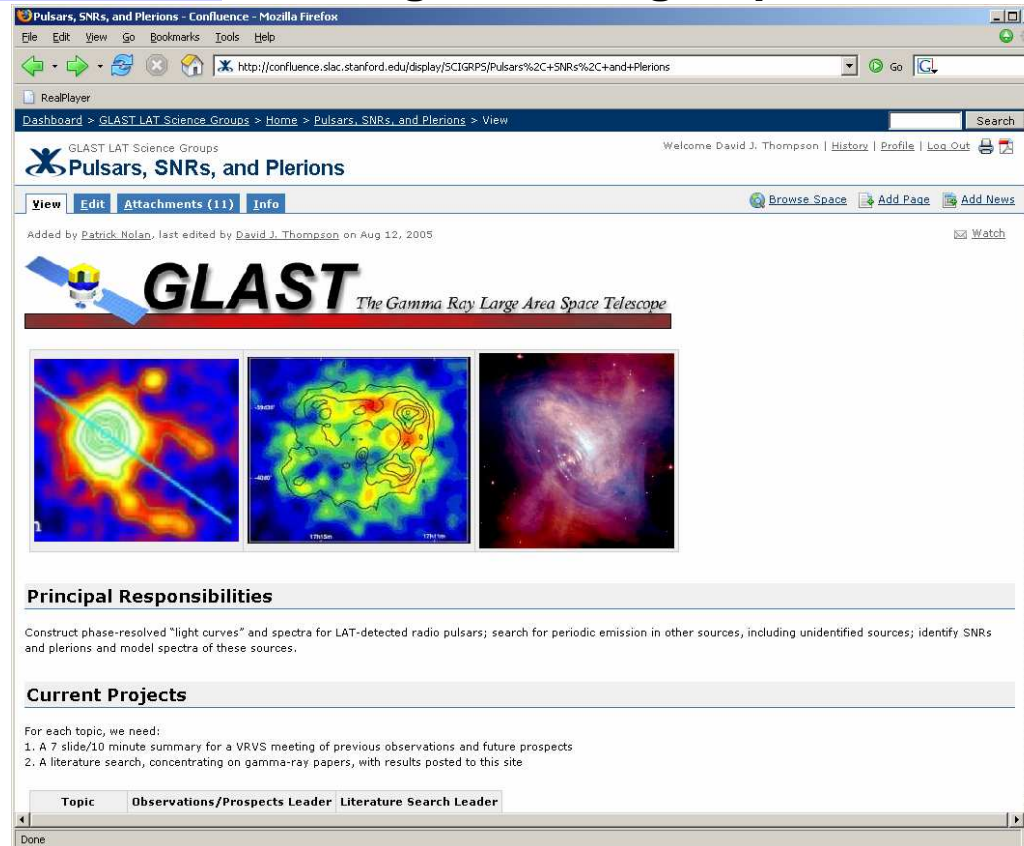
**Roger W. Romani, Stanford University
David J. Thompson, NASA Goddard Space Flight Center**

Group Activity to date

- **Group has ~35 members (with a dynamic membership!)**
 - ~10-15 have been active in meetings
- **VRVS meetings, Confluence WWW page**
 - Still defining Issues, starting to work up reviews
- **Work to date:**
 - Reviewed Pulsar Tools & sample simulations for DC2 (Razzano – summaries yesterday afternoon and today)
 - Discussion of SNR and extended source detection – reference to AGILE studies (Longo, Chen)
 - Started on review of key sources and model constraints (Vela – Romani)
- **Work Planned....**

Status of Web Site

<http://confluence.slac.stanford.edu/display/SCIGRPS/Pulsars%2C+SNRs%2C+and+Plerions> is being used for group activities.



The screenshot shows a Mozilla Firefox browser window displaying a Confluence page titled "Pulsars, SNRs, and Plerions". The page header includes the GLAST LAT Science Groups logo and navigation links. The main content area features a GLAST logo with the tagline "The Gamma Ray Large Area Space Telescope" and three images: a pulsar light curve, a pulsar map, and a plerion nebula. Below the images are sections for "Principal Responsibilities" and "Current Projects".

Principal Responsibilities

Construct phase-resolved "light curves" and spectra for LAT-detected radio pulsars; search for periodic emission in other sources, including unidentified sources; identify SNRs and plerions and model spectra of these sources.

Current Projects

For each topic, we need:

1. A 7 slide/10 minute summary for a VRVS meeting of previous observations and future prospects
2. A literature search, concentrating on gamma-ray papers, with results posted to this site

Topic	Observations/Prospects Leader	Literature Search Leader
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We do not have a public Web site yet. Maybe when we have something other than planning activities.

Group Activity to date

- **Work Planned**
 - **Some input for DC2 models**
 - Different Galactic pulsar populations? (Razzano, Harding,...)
 - **Review of new searches –**
 - AO multi-beam, Parkes Galactic center, Methanol multi-beam
 - **Review of ephemeris needs**
 - `Triage' of Radio, X-ray timing effort
 - **Review of Each Major Source (Crab, Geminga,...)**
 - **Review of `New' Source prospects (MSP, CTA-1, ...)**
 - **Review of Blind Search techniques**
 - New schemes vs. Standard tools
 - **Multi- wavelength issues**
 - Spatial, spectral de-convolution of SNR
 - TeV targets, X-ray maps...
 - Identification of PWNe (radio, X-ray maps, comparison with TeV)
 - X-ray survey, follow-up opportunities
 - Suzaku (Kawai), XMM (Ballet, Caraveo?)
 - **Papers...**

Papers

- Papers
 - Pre-launch papers
 - Rev of GLAST potential for model constraints
 - Studies of blind search algorithms – use DC2 exercises as examples
 - 6 month papers : For several of the category I papers, we can write 50% now!
- Trying to get non-experts to do associated lit review...
 - Calibration papers
 - Timing checkout ~week of Crab, Vela, B1706-44
 - Crab PSR/PWN cross spectral calibration w/ TeV spectra
- Good discussion (today!) of `paper-mill' procedures for Group review

Science Group Reports

Anticipated Papers

Category I Papers	Category II Papers	Data Collection
Crab Pulsar and Nebula 1		Year 1
Vela Observations 1		Year 1
1st New Pulsar Detected by LAT		Year 1
Geminga Observations 1		Year 1
1st New Geminga-type Pulsar		Year 1
Summary of Pulsar Observations		Year 1-2
1st Detection of Millisecond Pulsar		Year 1-2
1st Year Observations of SNR		Year 1
	PSR B1259-63	After Periastron
	PSR B1951+32	Year 1
	PSR J1617-5055	Year 1
	PSR B1853+01/SNR W44	Year 1
	PSR B1706-44	Year 1
	PSR B1055-58	Year 1
	PSR J0218+4232	Year 1
	SNR RX J1713.7-3946	Year 1

Issues

1. Need to increase the level of participation in the group

Some DC2 exercises may help

Likely need for more focused PSR modeling efforts.

-- Phase-resolved spectral models for Crab, Vela, Geminga

2. How to involve critical non-LAT scientists, such as radio astronomers?

Simon Johnston ATNF a member, recruit others?

3. How to coordinate overlapping analysis tools with other groups?