Splinter Session of the "Blazar and Other AGN" Science Group

Agenda

8:45 Organization of the Group: Who plans to be involved in what? (All)
9:00 Multiwavelength needs (All, G. Tosti)
9:20 Defining the “gold-plated” sources (All, G. Madejski)
9:35 Simulations (P. Giommi)
9:45 DC2- ST checkout 3
9:55 EBL: L. Reyes (10’)
P. Giommi(10’)
R. Romani (10’)
Discussion

Next meeting: variability studies (what, who, how?)
Action items, Face-to-face meetings, Confluence page

Blazar studies with the LAT

Post-launch activities, 1 year and beyond

1. Blazar catalog, sample definition (blazar identification prescription)
   Association with known sources, identification via cross-correlation with radio, X-ray... catalogs,
   Statistical studies on the remaining subset

2. Gamma-ray statistical properties of the samples
   LogN-LogS, redshift distributions, luminosity function, cosmological evolution, population studies
   In addition to BL Lacs and FSRQs, Bright radio-galaxies and Radio-quiet AGNs
   Contribution of non-resolved blazars to the Extraglactic Diffuse Background

3. General properties of GLAST-detected blazars
   General properties, spectral parameters:
   spectral index, spectral cutoffs, luminosity and spectral variability, duty cycle…
   Connection between γ-ray activity and jet structure (VLBA)

4. Specific Properties of Individual Source (Multiwavelength campaigns)
   Study as a function of time: Epeak vs Flux, Epeak vs Index, Index vs Flux, spectral curvature,
   time lags…

5. Extragalactic Background Light

It is anticipated that each topic will be the subject of (at least) one pre-launch paper.

Multi Wavelength Observations

Assignment – each science group should provide Peter and the MW Coordination Group (Dave Thompson as representative) with a prioritized list of science topics needing MW support, including justification and specific examples. Needed soon (by end of September?).

Also needed – spreadsheet of all MW resources, linked to the science topics, with contact information. See example spreadsheet. Propose to post this to the MW Confluence page to be available to the LAT Collaboration as a resource. Send information to Dave Thompson.

Pre-launch effort

Recommendation: Complete a southern hemisphere catalog of flat-spectrum radio sources out to 8.4 Ghz or higher frequencies, at least down to 100 mJy, and preferably to 30 mJy.

Recommendation: Complete a program of optical identifications and redshift measurements for all known flat-spectrum radio sources brighter than 100 mJy at 8 GHz.

Monitoring

Recommendation: Plan coordinated proposals with optical and radio observatories for follow-on observations of LAT sources.

Recommendation: The LAT blazar program should collaborate with existing blazar study groups wherever possible, for both Target of Opportunity campaigns and preplanned MW campaigns.

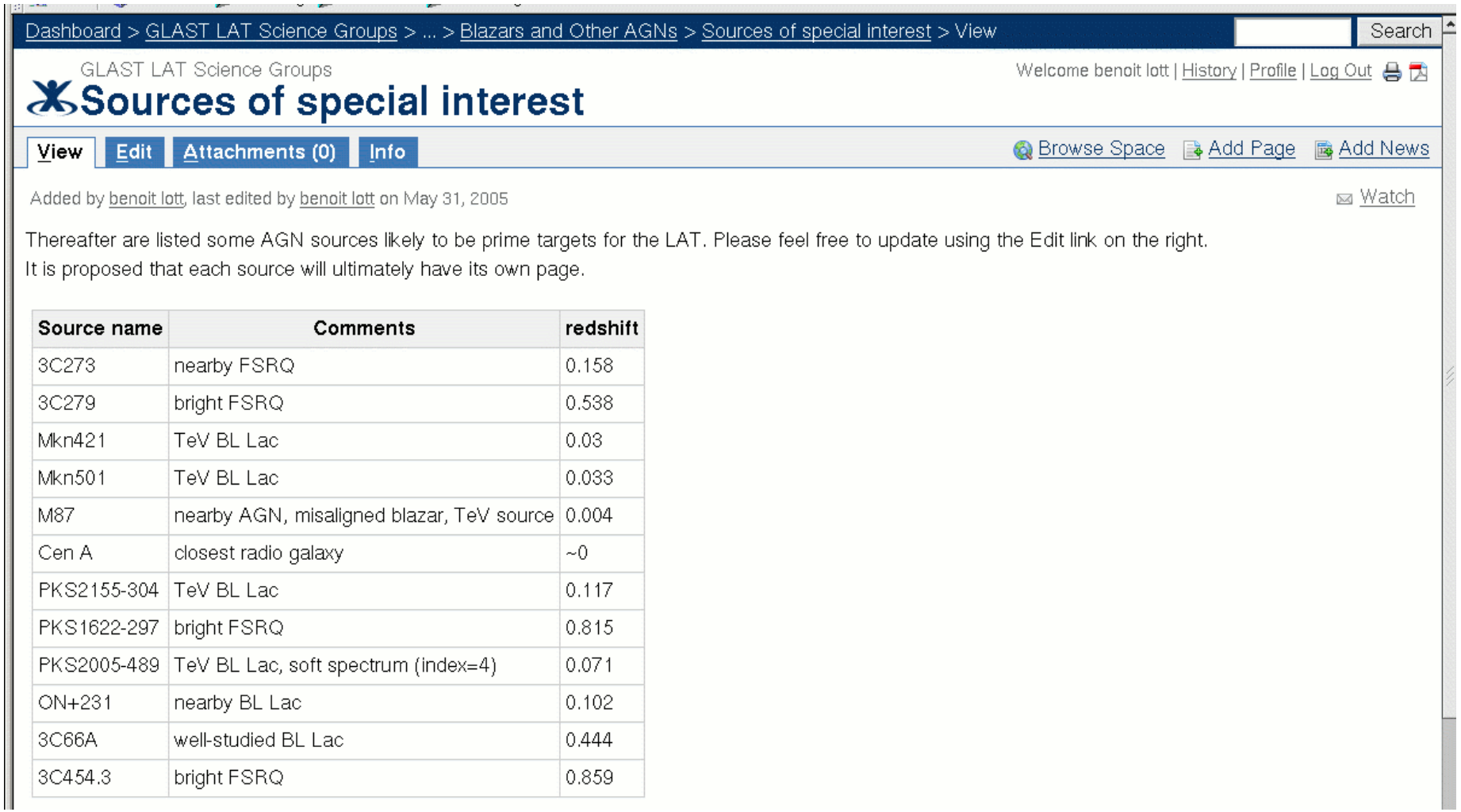
Multi Wavelength Observations

MW Campaigns: establish whole contemporaneous SEDs for 20 (?) bright sources during the first year

- radio: Owens Valley
- Far IR: Spitzer?
- IR-optical: WEBT
- X-ray: Swift XRT, Suzaku, Nustar, XMM
- g-ray: GLAST
- TeV g-ray: Veritas, HESS, MAGIC

Northern & Southern hemispheres

Sources of special interest



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GLAST LAT Science Groups

Sources of special interest

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Added by benoit lott, last edited by benoit lott on May 31, 2005

Watch

Thereafter are listed some AGN sources likely to be prime targets for the LAT. Please feel free to update using the Edit link on the right.
It is proposed that each source will ultimately have its own page.

Source name	Comments	redshift
3C273	nearby FSRQ	0.158
3C279	bright FSRQ	0.538
Mkn421	TeV BL Lac	0.03
Mkn501	TeV BL Lac	0.033
M87	nearby AGN, misaligned blazar, TeV source	0.004
Cen A	closest radio galaxy	~0
PKS2155-304	TeV BL Lac	0.117
PKS1622-297	bright FSRQ	0.815
PKS2005-489	TeV BL Lac, soft spectrum (index=4)	0.071
ON+231	nearby BL Lac	0.102
3C66A	well-studied BL Lac	0.444
3C454.3	bright FSRQ	0.859

Goals for DC2

1. Blazar catalog, sample definition
   Source Identification in collaboration with the Catalog Group

2. Gamma-ray statistical properties of the samples
   - LogN-LogS, redshift distributions, luminosity function
   - population studies: BL Lacs and FSRQs
     bright radio galaxies
     radio_quiet galaxies

3. General properties of GLAST-detected blazars
   - spectral index
   - spectral cutoffs
   - luminosity and spectral variability
   - duty cycle…

4. Specific Properties of Individual Source
   For the brightest sources: spectral evolution with time, flux
   non-simultaneous SEDs

5. Extragalactic Background Light
   Rough estimate of EBL density (if enough bright, high-redshift, high-energy sources…)

DC2 participants from the Blazar perspective

- SLAC: E. do Couto da Silva, G. Madejski, R. Cameron, B. Lott

- Perugia: G. Tosti , P. Lubrano, S. Ciprini, A. Cucchiara, L. Furhmann

- ASI: P. Giommi + 2 people

- GSFC: L. Reyes

- CENBG: Th. Reposeur

R. Cameron 2,5
J. Chiang 2,4
C. Dermer 2,3,4,5
B. Giebels 4
P. Giommi 1,2,3,
S. Larsson 3,4
B. Lott 2,3,4
G. Madejski 3,4
J. McEnery 2,3
P. Michelson 1,2,3,4,5
A. Reimer 2,3,5
Th. Reposeur 2,3
L. Reyes 5,3
S. Ritz 5
R. Romani
E. do Couto e Silva 3,4
T. Takahashi 4
G. Taylor 3,1
G. Tosti 3,4