

Minutes of the Blazar Science Group meeting, July 9 2005

Attendees: R.Cameron, A. Chen, J. Chiang, C. Dermer, P. Giommi, B. Lott, R. Romani, G. Tosti

The presentation slides are posted at:

http://www.cenbg.in2p3.fr/ftp/astropart/glast/agn_group/meeting_page.htm

Face-to-face meeting: Since a full session of the collaboration meeting will be devoted to Science Groups, there is seemingly no need to meet on the previous Sunday, as envisaged at the last VRVS meeting.

The list of papers to be published after the first year has been rapidly discussed. Concerning specific sources, the current list of preselected sources includes 3C279, 3C273, Mkn421. It is proposed to add at least one high- z ($z>3$) source to this list and other outstanding sources like Mkn501. Highly flaring sources that will trigger Targets of Opportunity MW observations will lead to (Category II) papers.

Paolo Giommi and Benoit Lott had a meeting with Dave Thompson on June 23, concerning the articulation between the Blazar Science Group and the MW Coordination Group. Dave expressed the opinion that the MW group will not do much of the actual work on MW studies, since the Science Groups have the expertise. The MW group will act as a supporting unit, providing a database of information about available MW facilities. The issue of the LAT data right policy should be discussed within the collaboration.

The Software DC2 meeting held at Goddard has briefly been summarized by B. Lott with slides by J. McEnery. All elements are essentially now in place to generate the background (hadronic) and gamma-ray data sets. Background-rejection “cuts” will be optimized using these data sets, and the Instrument Response Functions (effective area, psf, energy resolution...) needed for DC2 will be derived.

Jim has reviewed the present standing regarding simulation software for Blazars studies and the related analysis tools. The obssim package allows the user to select different source spectra, like a power law with/without a break. The EBL attenuation can be taken into account. Jim is willing to incorporate other distributions on request, like the logarithmic parabola. A specific light curve with an associated spectral index variation can be also input, in ascii or fits format. These tools are all already available for download on Glast’s CVS server (see intructions at <http://glast-ground.slac.stanford.edu/workbook/>) and feedback from the Science Group Members is highly welcome.

Roger Romani and Paolo Giommi have both presented their current activities concerning the identification of Blazar candidates for Glast. With a one-year sensitivity of $3 \cdot 10^{-9}$ ph cm $^{-2}$ s $^{-1}$, Glast will detect 4000-6000 blazars, half of them being suitable for spectral and variability analyses. This by far exceeds the number of known blazars.

R. Romani et al. have revisited the Blazar identification of the 3EG sources, using a Figure of Merit based on the radio flux at 8 GHz, the radio spectral index and the X-ray flux. The extrapolation of populations of FSRQs and BLLacs to be seen by GLAST shows that the former will still dominate the bright source population. Roger has also presented the results of the 3EG Blazar Survey performed with the Hobby Eberly Telescope, searching Blazar counterparts to unidentified EGRET sources. Finally, based on a parent EGRET-like radio population, they have been establishing a sample of about 1500-2000 blazar candidates (Candidate Gamma-Ray Blazars, "CGRaBs"), a large fraction being already optically classified, with 94% z measurement. About 60 sources have $z > 2.5$.

In his presentation, P. Giommi has mentioned the different blazar catalogs he and his collaborators have been developing at ASDC based on cross correlations between radio and X-ray catalogs (links are available on the group confluence page). The α_{ox} vs α_{ro} diagram is used to define different regions corresponding to LBL, HBL and radio galaxies respectively. Paolo has pointed out that ideally, the definition should be based on physical (as opposed to observational) properties. In a contribution to the discussion on an operational definition of blazars, Paolo proposes to define blazars as AGN with $[\alpha_{ox}, \alpha_{ro}]$ in the blazar region with flat radio spectrum at GHz or higher frequencies, the distinction between FSRQs and BLLacs coming from the presence or absence of broad lines. In their current work aiming at finding Blazar candidates, the result of a cross-correlation between NVSS-RASS surveys has produced a sample of 7400 sources. A further correlation with the SLOAN survey has yielded a list of 348 blazars.

The tentative list of catalogs put together by the catalog group for source identification can be found at:
http://glast/gsfsc.nasa.gov/ssc/dev/catalog_tools/catalogues_potential_list.html
(thanks to Rob Cameron!).

Next meeting: Tuesday, July 19 at 9:30 PDT, 12:30 EDT, 18:30 CEDT.