Science Tools Workshop, VRVS, December 2001

Draft schedule, 6 Nov 2001

Day	'Morning' topics		'Afternoon' topics
1	• Overview & introductions • Science (tools) requirements • Processing flow • Science Support Center	Dubois/Digel Digel? Williams Band/Norris	• Algorithms (*possibly multi-afternoon*)
2	• Review EGRET analysis system • LAT Science Tools development	Nolan Digel	• Interstellar emission model
3	• Data formats: FITS, Root, XDF? • Databases	? Nolan, Schalk?, SSC	
4	• Instrument Response Functions • Software development infrastructure • PDR readiness: Science tools • Wrap-up	Madejski? Dubois Digel? Dubois	

If enough interest warrants, additional topics can be added as parallel meetings for the afternoon sessions. Potential additional topics include the user environment for the analysis system and the contents and use of the non-event data packets at Level 0.

Details: Morning sessions

Day 1   *Overview & introductions*
          Goals for week: define scope of Science Tools and development effort,
              plus discussions of important early considerations
          Introductions – by person or institution

          Science (tools) requirements
          Not 'SRD', which is really a misnamed instrument performance spec.
          Analysis needs guide software development – some details
          Analysis modules
          Observation simulation
          Interstellar emission model

          Processing flow
          Macro: S/C-GN-MOC-IOC (DPF)-SSC
          Level 0-Level 0.5-Level 1-Level 2 – what are they?

          Science Support Center
          Who, what, and when
          Staffing, funding

HEASARC

Day 2   *EGRET analysis system*
        Compare and contrast
        Source detection
        Spectral analysis

        LAT Science Tools development
        Current plan – under development
        Organization by subject
        Who does what? w/ SSC – 'core' tools?
        Schedule – external and internal milestones
        Level 0 Ambassador

Day 3   *Data formats*
        FITS, Root, XDF (FITSML)?
        What, where, and why?

        Databases
        Requirements - performance, mirror-ability, etc.
        Possible implementations – Event, exposure, source catalog,…
        Event summary v. Photon summary databases

Day 4   *Instrument response functions*
        What are they used for and how do we find them?
        With what detail do they need to be specified?
        CALDB

        Science Tools development infrastructure
        Inherit from Sim/Recon
        Gaudi
        Display?
        Coding, documentation rules
        Testing

        PDR Readiness
        Science tools in PDR report
        Processing flow in PDR report
        FTEs in PDR report?

        Wrap-up
        What progress did we make?

Details: Afternoon sessions

Day 1   *Algorithms*

For any analysis topic, as interests dictate, e.g.:
Source detection (aka likelihood analysis) - Unbinned vs. binned, wavelet
Need 'standalone' spectroscopy?
GRB trigger
Methods for extended sources: user-defined models, nonparametric

analysis

Day 2   *Interstellar emission model*
Update of working group, status
Working group session

   Day 3

Bonus   *Level 0 data requirements*
Beyond the event packets
What kinds of packets are there?
What requirements do the Science Tools impose?
How will the information be used?

User environment options
 Command line, graphical (Web?), plotting, image display