

# Science Tools Update, July 21, 2009

## Science Tools Working Group

The current release of the Science Tools is **v9r15p3**. Here are the [differences](#) from v9r15p2. It is not a major update, obviously, but looks like it has some useful improvements for likelihood analysis and for simulating sources with EBL attenuation.

The FSSC is wrapping up pre-release testing of the subset of v9r15p2 that will be publicly released next month. We may get some feedback on they have found.

**Data products:** Studies in C&A on Pass 7 are continuing.

### Databases and related utilities

**N.B.** The [bug](#) that Vlasios reported with the FT2 files retrieved by the new AstroServer turned out to be in the 30-s versions of the Pass 7 reprocessed versions (i.e., the files with the new FT2 columns). The Pass 6 FT2 files that the AstroServer retrieves are fine.

A total of a 3 intervals in the FT2 file for the 11-month catalog analysis have livetime fraction  $\leq 0$  but still contain events. For most applications, these problems out of >760k intervals are quite ignorable. For some, like an analysis that Jim made, these odd intervals are show-stoppers. He suggested that filtering (**gtmktime**) on  $LIVETIME/(STOP-START) > 0.65$  will remove these and a few other intervals with suspiciously low livetime fractions. The ISOC has the information about the bad intervals.

### Likelihood analysis

No direct news. The release notes indicate a bug-fix was applied to the UpperLimits class in pyLikelihood.

**STOP PRESS** (21 Jul 2009, 18:26 UTC): Unfortunately, there is **still** a bug in this class, a new one introduced when I tried to fix the previous one. I'll fix that tonight and will tag a new pyLikelihood and make a new ST release. -Jim

**gttsmap** now generates maps with  $CDELTA < 0$ , so they are oriented correctly on the sky (RA or longitude increasing to the left).

### GRB tools

No direct news. **rspgen** was updated to handle azimuthal dependence in the effective area tables

### Pulsar tools

No news

### Observation simulation

LR implemented some new EBL models, including Gilmore, Franceschini et al., and Razzaque et al.

### User interface and infrastructure (& utilities)

No news

## Source Catalog

The 11-month source list and potential improvements were topics last week along with the year-1 Catalog paper.