

# Science Tools Update, March 2, 2010

[Updated March 5 with Pulsar Tools news]

## Science Tools Working Group

As of Feb. 26, the current release of the Science Tools is **v9r16p0**. Here is the Release Manager summary of the [package differences](#) from v9r15p6. The new release incorporates updates that have been described in previous Science Tools Updates. Here are some highlights:

- Jim's fix for the [problems with convolutions in binned likelihood analysis](#);
- The P6\_V8 IRFs that Toby has implemented with the in-flight PSF that he measured; P6\_V8 also incorporates the corrected fits and representation of the PSF that has been in the works for a while, dating to Matthew Kerr's study in the fall. The P6\_V8 IRFs are now more conveniently available for further evaluation in analyses;
- **gtselect** now allows INDEF as a response to (some) prompts, indicating that the tool should read the parameters from the DS keywords already in the header. For example, if you have retrieved an FT1 file that already has a region-of-the-sky selection but want to make some subselection with gtselect (say on time range) you do not need to enter the center and radius again;
- If you use the Release Manager builds, note that it is no longer building rh9\_gcc32 versions, just rhel4\_gcc34, rhel4\_gcc34opt, VC8, and VC8debug versions;
- Pulsar tools have some useful updates; see below.

**Data products:** No news

## Likelihood analysis

No news. Johann has volunteered to write up the issues regarding the convolutions in binned likelihood analyses. Jim's fixes definitely correct the problem, but users should be aware of how the convolutions are done. Considerations include the geometries of the counts and diffuse model maps, and even whether they have odd or even numbers of pixels along each axis.

## GRB tools

No news

## Pulsar tools

Summary of updates in **v9r16p0** from Masa:

- 1) Introduce tolerance of 1 millisecond at boundaries of FT2 time coverage.
- 2) Introduce psrdbfile=NONE, with which no pulsar database file needs to be given to the pulsar tool.
- 3) Improve text outputs of gtephem for clarity, especially when no ephemeris is found for a given condition.
- 4) Improve errors and warnings in ephemeris sub-selection.
- 5) Fixed a bug in time computations on 64-bit machines.

## Observation simulation

No news

## User interface and infrastructure (& utilities)

No news