Science Tools Update, April 22, 2008

Science Tools Working Group

We'll skip having a meeting this week; the time slot will be used for a session on source identification convened by the Catalog group.

Since last Thursday, the current version of the Science Tools **v9r5p1**. Here are the differences from v9r5. The most important changes relate to IRFs; see below.

If you weren't one of the 46 people in the C&A meeting on Monday, you might want to check out Toby and Matthew's presentations yesterday on spectral analysis PointLike.

Data products: No news.

Databases and related utilities

No news

Likelihood analysis

Jim's implementation of calculation of TS for diffuse sources in **pyLikelihood**, mentioned last week, is in **v9r5p1**

GRB tools

No news

Pulsar tools

Masa and James expect to start coding this week to allow multiple binary timing models in the pulsar tools.

Observation simulation

No news

User interface and infrastructure (& utilities)

See Jim's note to irflist regarding the updates to IRF-related packages in **v9r5p1**. Riccardo's presentation in the C&A meeting yesterday provides a synopsis.

Here are the IRF sets that **gtirfs** reports are available in **v9r5p1**:

P5_v13_0_diff (= P5_v13_0_diff::FRONT + P5_v13_0_diff::BACK)
P5_v13_0_diff::BACK
P5_v13_0_diff::FRONT
P5_v13_0_source (= P5_v13_0_source::FRONT + P5_v13_0_source::BACK)
P5_v13_0_source::BACK
P5_v13_0_source::FRONT
P5_v13_0_trans (= P5_v13_0_trans::FRONT + P5_v13_0_trans::BACK)
P5_v13_0_trans::BACK
P5_v13_0_trans::FRONT
PASS4 (= PASS4::FRONT + PASS4::BACK)
PASS4::BACK
PASS4::FRONT
PASS4_v2 (= PASS4_v2::FRONT + PASS4_v2::BACK)
PASS4_v2::BACK
PASS4_v2::FRONT
PASS5_v0 (= PASS5_v0::FRONT + PASS5_v0::BACK)

PASS5_v0::BACK
PASS5_v0::FRONT
PASS5_v0_DIFFUSE (= PASS5_v0_DIFFUSE::FRONT + PASS5_v0_DIFFUSE::BACK)
PASS5_v0_DIFFUSE::BACK
PASS5_v0_DIFFUSE::FRONT
PASS5_v0_TRANSIENT (= PASS5_v0_TRANSIENT::FRONT + PASS5_v0_TRANSIENT::BACK)
PASS5_v0_TRANSIENT::BACK
PASS5_v0_TRANSIENT::FRONT

Older IRFs (DC2, DC1, et al.) are still available and can be viewed by doing

```
gtirfs chatter=3
```

From Eric W.: "The ScienceTools tarball distributed by the GSSC is in beta test now. We have also prepared a second tarball with the GSSC version of the **ModelEditor**. The latter has not been touched for many months, so I expect it will get some tweaking over the next few weeks. The GSSC-distributed tarball is now supported on 32- and 64-bit Linux, and OS X 10.4 on Intel- and PowerPC-based Macs."

Source Catalog

Met last week. The multi-band method that Jean and Ludovic have implemented for MRfilter have made it (currently) the best-performing source detection algorithm. The same approach will likely improve the performance of PGWave as well. UW pointfind (which inspired the mult-band approach) is not far behind and has a performance advantage in the vicinity of bright sources. Toby described the new command-line interface for pointfit. We also discussed the current state of using the Big Run backgrounds to make resampled (Pass 5) backgrounds for **gtobssim** simulations.