

Science Tools Update, July 27, 2006

Science Tools Working Group

Have not met for 2 weeks; most likely we will not meet again until August 9. Science tools development news from the GSSC is scant this week. The network security problems were disruptive, and currently the GSSC cannot write to the CVS repository at SLAC, at least not without workarounds.

The current version of the Science Tools is **v7r4**, incremented last week at the end of build cycle 19. [Here](#) is what the release manager reports as the changes in release notes since the previous version, and the [ScienceTools release.notes](#) summarize the changes. Jim reports that a further update to v7r4p1 is likely within the week to take into account further updates to the definition of FT1 - see below.

Data products: Last week, I was hasty in predicting that cleaning up the format of FT1 (LS-002) was complete. Several other tweaks and one fairly major change have been pointed out as missing from FT1. These are now being tracked in JIRA. The most important change has to do with adjusting **MJDREF** very slightly to account for its formally being in TT but the origin of MET (January 1, 2001, midnight) being in UTC. The shift is so small that **MJDREF** has to be broken into 2 keywords, **MJDREFI** and **MJDREFF** for the 'integer' and 'floating point' portions. Having **makeFT1** do this is straightforward, but it will break **gtpsearch** until it knows to look for the 2-part **MJDREF**.

Databases and related utilities

No news regarding the GSSC server.

I had one exchange with Jean-Paul regarding the missing START-STOP pair in the Astro Server GTIs. I think that the missing interval (for the case where the time of the first event is after the start of the first data file - which is what we'll always have) will come back. No news to report regarding command-line interface(s) for the Astro Data Server.

Likelihood analysis

Jim reports no development news. He forwarded a bug report from Jean Ballet for **gtsrcmaps**; tip misidentifies an image extension as not being one.

From James: "James and Analia completed a likelihood bad-fit warning. The approach suggested by Dave Thompson, in which the Poisson probability for observing N photons given that M were actually present, turned out not to be feasible for computational reasons. The formula includes raising N to the Mth power, which for even moderate sizes of M and N quickly exceeds the range of a double precision value. Instead they implemented a modified version of the scheme, in which the fractional deviation is computed and ranges are reported in which the deviation exceeds some threshold. This is clearly a work in progress because the threshold computation does not involve the predicted error, and in any case the value for the threshold needs to be tuned to real-life data. This code so far was not delivered due to the lack of repository access."

GRB tools

No news, and I'm afraid no update on the IRF normalization/**gtrspgen** issue reported by James last week.

Pulsar tools

From Masa: "Nothing special in the pulsar tools area; we've been developing an improved infrastructure of the time-handling classes."

Observation simulation

No news

User interface and infrastructure

From Jim: "I have started using Navid's pattern in STpolicy v1r2 for creating a central pfiles directory for all of the gt tools. This is in ST HEAD and will be a part of ST **v7r4p1**." This is the functionality that users of the DC2 distributions enjoyed. It also prevents needing enormously (or impossibly) long PFILES environment variables.

Source Catalog

The catalog group did not meet this week.