
End-of-meeting report to the LSC from the Burst Group

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Outline

- Where we are
- Where we are going
- Lessons learned from E7
- What will be ready before S1?

Present status of Burst Group's E7 upper limit search

Pipeline is very close to complete.

Filters (DSOs)

Vetoos

Event analysis

Interpretation

Status of Burst filters

We have four DSOs.

1. Search triggered by Gamma Ray Bursts

software progressing rapidly

2. Time-frequency clusters

very mature, most of full pipeline exercised

3. Excess power statistic

long history, code needs informed tuning

4. Time-domain filter (slope and beyond)

newest, needs tuning

Status of Burst/Inspiral vetoes

Much exploratory work has been done.

At this meeting, joint Inspiral/Burst veto team was formed, has met twice since Wednesday.

We have a number of tools to find glitches.

Next task:

Welding tools into a strategy whose sensitivity and completeness are understood.

Status of Burst post-processing

We now have an Event Tool, the environment for doing the last steps of analysis.

It has most of its functionality.

Selecting, sorting, defining clusters, finding coincidences, drawing histograms.

It has users, who are talking to the developers.

Status of Interpretation

We will carry out three styles of interpretation.

1. Search triggered by Gamma Ray Bursts

Interpretation issues are well understood.

2. Instrumental interpretation

(description of strain vs. time-frequency character)

Straightforward in principle, still some open issues.

3. Astrophysically-motivated interpretation

(focus on bursts that look like something we expect)

Still some open issues.

Scientific Processing Exercise

All of this work will come together in a face-to-face Scientific Processing Exercise.

Scheduled for May 6-9 at MIT.

Agenda:

Run the complete burst pipeline through all of the playground data.

Do final tuning of DSOs, DMT monitors

Understand E7 sensitivity, false alarm rate.

Goal: By the end, be ready to carry out full E7 analysis.

Lessons learned from E7 exercise

- E7 data was full of glitches, which remain unexplained and unsolved.

We need help from instrumentalists.

- We were unprepared to fluently look for glitches in the data.

We need help from software people.

- Burst search methods need tuning, a time-consuming activity.

We need help in carrying out the search.

Will we be done with E7 search before S1?

Triggered search should be done.

Instrumental search:

Mechanics of search should be done.

Interpretation may need more Monte Carlo exercises.

Astrophysically motivated search:

Mechanics of search should be done.

Interpretation needs more work.

We will certainly be much more mature for S1
than we were for E7.
