

Policies for Swift Scientific Operation During Year 1
04-June-2004 N. Gehrels

- 1) Swift is a GRB mission. The top scientific priority for the mission is observations of GRBs and their afterglows.
- 2) For the first months of the mission, all GRBs imaged by BAT will be pointed to by the spacecraft as an AT if allowed by observing constraints. All GRBs will be given equal merit values so that the FOM will not prevent a slew to a new GRB due to a previous higher-priority burst. This policy will be reviewed by the EC with advise from the GRB advisory board (see #8 below) before the end of the Verification Phase and again at launch plus 6 months.
- 3) The default duration for an AT will be 20,000 seconds of good observing time.
- 4) With the exception of rare TOOs (see #7 below), all PPTs will be GRB afterglows. If there are no recent GRBs available at a given time and given orbital phase, then observations will be scheduled of older GRBs.
- 5) For PPTs, recent GRBs will generally take priority over older GRBs. Older, more interesting GRBs can be moved up in priority by approval of the MOC Director in consultation with the relevant BAs. The PI will have ultimate authority if questions arise.
- 6) GRBs discovered with other observatories or from the analysis of BAT data on the ground can be followed-up by the Swift XRT and UVOT instruments as a PPT or by using the TDRSS uplink of a GRB TOO to the onboard FOM. This will be done at the approval of the PI. It will not occur until the end of the Verification Phase unless an exceptional GRB is detected. The decision will be based on the relative scientific importance of the GRB TOO compared to the planned schedule.
- 7) During the first year there will be a high threshold for non-GRB TOOs. A TOO will be implemented only for the most interesting and unique transients. This will be done by approval of the PI in consultation with the EC. The mechanism for a TOO request is for the interested Swift or outside scientist to fill out the web TOO form. It is expected that no more than 6 TOOs will be implemented in year 1.
- 8) A GRB advisory board will be established to give advice on GRB policy issues. The board will have approximately 5 members chosen from the Swift science team.
- 9) These policies for scientific operation during year 1 will be reviewed at launch plus 6 months.

Acronyms

AT - Automated Target (target that is slewed to autonomously)
EC - Executive Committee
FOM - Figure Of Merit software running on the BAT processor
PI - Principal Investigator or his designated representative
PPT - Pre-Planned Target (target scheduled by the MOC)
TOO - Target Of Opportunity

Nominal Swift Turn-on Schedule

- Spacecraft activation and slew tests L to L+14
- Instrument power-up L to L+6 (BAT completed on L+24)
- Open XRT outer door L+18
- Open XRT FPCA door L+22
- Open UVOT door L+23
- BAT/FoM Cyg X-1 forced slews L+20
- PPT enabled L+24
- Initial BAT GRB positions L+~30
- Autonomous slews to BAT positions L+~40
- End of activation phase L+45
- End of verification phase L+135