

**FOAC Meeting Notes**  
FUSE Observer's Advisory Committee  
Minutes for Meeting No. 15  
November 3, 2006  
Johns Hopkins University

**Attendance:**

Ed Fitzpatrick, Michael Crenshaw, Cynthia Froning, Jay Holberg, Anthony Moffat, Andrea Dupree, William Keel, Alain Lecavelier des Estangs, Ken Sembach, Carol Grady, Evan Skillman participated by phone.

William Blair, Mary Beth Kaiser, B-G Anderson, Warren Moos, Jeffrey Kruk, Thomas Ake

George Sonneborn, Jeffery Hayes

The committee welcomed new member Bill Keel to the FOAC

**Status of the New FUSE Observatory – Blair (JHU)**

One Wheel Mode: FUSE has been back in operation for one full year.

There were no changes in gyro status, FES-B continues to operate well and the UPRM ground station performance has been nominal.

**Pointing and Slews:**

Predictions of the momentum state continued to improve. This has led to fewer involuntary safe modes and LVLH events.

New ACS and IDS software have smoothed out operations.

A revised Torque Distribution Algorithm has led to much improved operations and to better momentum management. This has led to fewer momentum interventions, trips into Attitude-holds and safe modes – all resulting in improved schedule flexibility and performance.

**Long Range Planning:**

Mission planning tools have been improved, which has led to the implementation of more GI science.

For hemisphere crossing slews, a quick look tool has been developed to identify promising slew opportunities.

A better spacecraft simulator is now in use.

**Short Term Scheduling:**

This process continues to be labor intensive and a new planning tool 'SOVA' is being developed and tested.

In summary, many of the above mentioned improvements have resulted in increases FUSE science observing time. For the period May through September, science observations (including GI, S and U observations) exceeded 700 ks per month.

#### Long Observations:

Many observations in excess of 50 ks have been obtained in 2006. It appears that longer observations can be conducted, subject to considerations of target availability and prioritization.

#### Sky Coverage:

Potential new areas of sky coverage at lower declination are possible. However, it remains to be demonstrated that slews to and from these areas can be conducted. Case studies to test these slew capabilities are in progress.

Detectors: Current spikes called 'crackles' can lead to detector shut down. For this reason it is no longer possible to continue raising the HV in detector 2. Steps to mitigate this problem include lengthening the coded persistence time and automating HV shutdown recovery.

Work is ongoing to understand and predict mirror motions.

#### **CalFUSE 3.2 Status**

CalFUSE 3.2 final release has been delayed to allow for several improvements. These include: (1) new grating motion files, (2) a new pipeline module to correct for time-dependent changes in detector X and Y scales. (3) new algorithms for construction and interpreting the jitter files that can improve spectral resolution. January 2007 is the planned public release date for CalFUSE v3.2.

Complete reprocessing of data under CalFUSE 3.2 is planned for end of 2007

The CalFUSE paper was submitted to PASP.

#### MAST Status:

As of October 30, 4574 FUSE observations archived at MAST, with more than half processed with CalFUSE v3.0.

#### **GI Program Status: Sonneborn**

Outcome of the Senior Review was discussed.

No FUSE funding recommended for FY9 & FY10.

There are sufficient funds available in FY09 for close out operations.

#### Long Observations (Mary-Beth Kaiser handout)

Three long observations  $75 < \text{exposure time} < 148$  ks have been conducted.

All pending long observations are scheduled.

#### **Warren Moos:**

Warren reviewed ideas concerning the future of FUSE after the outcome of the 2006 Senior Review. He pointed out that although FUSE remains in good shape, it was clear that FUSE would find it difficult to continue to operate the current Guest Observer mode after Cycle 8. He discussed a number of interesting ideas and suggested some possible new approaches for continued operation of FUSE in a scientifically useful mode.

A number of ideas were presented for possible of focused science programs characterized by a limited number of targets requiring long exposure times. Other suggestions included a modified PI mode and/or an identified Observer Team to conduct science observations that would have no proprietary data restrictions. Suggested scientific programs included deep explorations of selected extragalactic sightline and support of COS and possibly STIS.

Discussions followed these suggestions.

**FOAC Discussions:**

It was announced that Guillaume Hébrard will replace Alain Lecavelier as the French FOAC representative. Also announced were plans to announce the FUSE session at the Seattle AAS meeting.

**FOAC Commendations:**

The FOAC wishes to formally commend the FUSE team for the outstanding effort that has resulted in successfully returning FUSE to a full year of scientifically productive observations. The reports presented at this meeting make clear how much has been achieved and document the hard work and dedicated effort that went into achieving this success. The last year has fully justified the confidence that NASA and the FUSE user community have had in FUSE and the FUSE team during the past two years. The FOAC therefore formally congratulates the FUSE team and project members at Johns Hopkins and elsewhere who were instrumental in bringing about this success.

**Action Items:**

- Set the time frame for the next FOAC meeting.
- Write a commendation to the FUSE Team.
- Provide guidance on Type A time

