

July 23, 2018

The NuSTAR Users Committee (NUC) had a face-to-face meeting at Caltech on July 17, 2018. The following includes a list of attendees from the NUC, a list of ex-officio attendees or guests, a summary of the outcomes of the discussion, and the detailed minutes.

NUC attendees:

John Tomsick (chair)
Andreas Zezas
Raffaella Margutti
Fred Baganoff
Stephanie LaMassa
Enrico Bozzo
Jack Steiner
Anne Lohfink (by phone)
Slavko Bogdanov (by phone)

Ex-Officio attendees or guests:

Fiona Harrison (PI, Caltech)
Daniel Stern (Project Scientist, JPL)
Karl Forster (SOC manager, Caltech)
Kristin Madsen (Instrument/calibration lead, Caltech)
Brian Grefenstette (Instrument expert, Caltech)
Andy Ptak (GO program officer, NASA/GSFC)
Calla Cofield (JPL press officer)

Outcomes of discussion (summary/recommendation/action):

Topic#1 (handling data from DDT observations): The project made a change to respond to the NUC's recommendation, and it seems likely that it will address the issue. We consider this topic closed unless there are future issues with DDT data rights.

Topic#2 (senior review planning): Actions are: for the NUC members to indicate how they would like to be involved in the senior review proposal process; for Karl and Andy to compile data on whether there is pressure for large proposals; to have a follow-up telecon to discuss time allocation (Legacy, GO, DDT, GO Large) for AO-5 and for the senior review proposal; and for the NUC to read the relevant comments from the last senior review report (e-mailed to the NUC).

Topic#3 (outreach): Action is for the project to send an e-mail to PIs of GO proposals encouraging web or press releases and describing how the process works.

Topic#4 (minimum exposure time): This should be discussed further on the follow-up telecon.

Topic#5 (nuskybgd): Action is for Andy to talk to Alan Smale about how this software package can be made usable by a larger number of NuSTAR observers.

Telecon minutes:

Introductions and preliminary topics:

- As this was our first face-to-face NUC meeting, we began by everyone introducing themselves.
- We decided that we will pronounce the name of our group (NUC) as “nuke.”

Topic#1: Summary of the last meeting (mainly, handling data from DDT observations)

- John read through the topics discussed on the April 2018 telecon. The only topic that required follow-up was, “Why does there seem to be different access to data from DDT observations when the policy is that the data should be immediately public?”
- Fiona, Karl, and Brian reported that a new webpage has been setup at http://www.srl.caltech.edu/NuSTAR_Public/NuSTAROperationSite/Quicklook/Quicklook.php which is publicly accessible. This site is intended to be the only place where people should access data for the purposes of quickly reporting results (e.g., for the purposes of ATELS). People should still use the QA’ed data for other purposes (e.g., detailed analysis and publication).
- The NUC generally thinks that this is a good solution as long as this is well communicated to the community.
- We also discussed the case where two or more people ask for a DDT observation of the same target at close to the same time. In most such cases, we would encourage the project to send an e-mail to all requestors about observation scheduling and instructions for accessing the data.

Topic#2: Senior Review planning

- There were two main questions related to this topic: 1. How would NUC members like to be involved in preparing the Senior Review proposal (between now and early 2019)?; and 2. Should the NuSTAR project consider changing the observing time divisions between GO, Legacy, DDT, and perhaps a new large GO category? Although the first NuSTAR GO proposal cycle under the next 3-year Senior Review period is AO-6, we may also consider making a recommendation for AO-5.
- For question #1, the NUC members should consider how they would like to be involved (e.g., writing on a certain topic or reviewing the proposal) and let Fiona and Daniel know (probably within the next month or so).
- For question #2, there was significant discussion. One possibility that seemed to be getting some traction is to shift time from Legacy into Large GO programs and/or into more DDT time that would be specifically for more Targets of Opportunity.
- Considering the Large GO programs, it would be good to get some information about how much demand there is for that. The easiest thing would be to look at proposal statistics and trends from the GO cycles, and Karl and Andy will compile some data on that. More difficult would be putting out an Request for Information call asking for one-page white papers or requiring Notices of Intent for Large

programs in AO-5. The other action item related to Large GO programs is to re-read the recommendations for the last Senior Review. The document (e-mailed to the NUC) is available at <https://science.nasa.gov/astrophysics/2016-senior-review-operating-missions>

- Considering the DDTs, we are expecting that there will be more-and-more pressure for unanticipated TOOs with the number of gravitational wave and high-energy neutrino detections ramping up and also with projects like ZTF and eventually LSST becoming operational. There was discussion about the fact that if the number of DDTs significantly increases, then a transient advisory group may be necessary to review the DDT requests.
- While there was enthusiasm for Large GO programs and DDTs, it was also pointed out that some of the Legacy programs are highly productive and also useful in schedule planning (e.g., the Swift/BAT AGN program provides excellent filler targets that can be scheduled anytime and cover the whole sky). Possibly, some metrics or a more formal proposal process might be good for the Legacy programs.
- During the NUC meeting, we said that we should have the next telecon in a couple months for further discussion. However, if we want to make a change that would take effect for AO-5, we probably need to have the telecom sometime in August.
- Fred pointed out that the joint NuSTAR time in the Chandra review has been undersubscribed. It was suggested that the reason is the way the time is divided between the Chandra panels. The NUC would encourage the project to bring this to the Chandra project's attention (Andrea Prestwich or Belinda Wilkes).

Topic#3: Outreach

- The project and the NUC would like to actively encourage people with NuSTAR results to communicate the results to the JPL press office for possible web or press releases.
- Calla Cofield introduced herself as the new JPL press officer, and she will be helping with future NuSTAR releases. A compelling image or plot can make for a popular web release, and the graphics people at JPL can help.
- The project plans to send an e-mail to PIs of GO proposals to let them know the details of how to contact the project about a release. The best way to start the process will be defined there, and it will likely be an e-mail to Daniel and Fiona.
- Enrico mentioned that having a picture of the month is one way to make sure that there are not big gaps in releases.

Topic#4: Should the project consider reducing the minimum exposure time per observation below 20 ks?

- John introduced the topic by saying that there have been some recent examples, such as the bright black hole transient MAXI J1820+070, where useful spectra can be obtained with exposures shorter than 20 ks. It is possible that a scientific case could be made for more frequent monitoring with shorter exposure times.
- Karl presented slides to give some information about slew times, exposure time distributions, and observing sources in stray light.

- Kristin mentioned that it takes 2 NuSTAR orbits (about 6 ks) to obtain a stray light Crab spectrum.
- A main reason for the minimum exposure time is the relatively long slew times for NuSTAR. Andy mentioned the possibility of adding a slew tax during GO reviews.
- The project was not enthusiastic about supporting a stray light mode for guest observers.
- If the NUC would like to recommend a reduction, then further discussion is necessary.

Topic#5: nuskybgd

- John said that the nuskybgd software developed by Dan Wik is very useful and that there are a lot of cases where it is optimal for data analysis. However, the fact that the software is only in IDL stops some observers from using it.
- Andy, Fiona, and Brian said that this is a well-known issue and that there have been discussions about making an FTOOL or porting to another software language.
- Andy will talk to Alan Smale about the best way to do this. A Goddard programmer working with Dan Wik might be able to produce an FTOOL.

Topic#6: Science presentation

- Raf gave a presentation on a very interesting transient, AT2018Cow (see many ATELS). This may be an excellent candidate for an upcoming web release.