2024 ENSCI User Panel Report

August 12 & 14, 2024 held on Zoom

Members of User Panel

- **Dr. Eric Murphy** (UVA, NRAO; chair)
- **Dr. Antara Basu-Zych** (UMBC & NASA/GSFC)
- **Prof. Caitlin M. Casey** (UT Austin; EC)
- **Prof. Yicheng Guo** (U. Missouri)
- **Dr. Katarina (Dida) Markovic** (JPL; EC)
- **Prof. Michael Rutkowski** (Minnesota State University)
- **Prof. Michael Troxel** (Duke)

Link to presentation material:

https://collaboration.ipac.caltech.edu/pages/viewpage.action?pageId=123804463

Executive Summary:

The Euclid NASA Science Center at IPAC (ENSCI) User Panel convened via Zoom on August 12 and 14, 2024. All seven committee members were in attendance, and the meeting was chaired by Eric Murphy. During the meeting, members of the ENSCI team provided the panel with 6 presentations covering status updates to both Euclid and ENSCI, responses to our 2023 panel report, IRSA and public data, Early Release observations, and an overview of the NASA teams. Doris Daou (NASA) also provided a presentation on the NASA perspective on Euclid Guest Investigator programs.

In the following report, we briefly comment on ENSCI's handling of recommendations from the 2023 report, as well as provide new feedback based on the updates that we were provided on the status of the Euclid Operations. We would like to thank all of the speakers for their clear presentations, and ensuring that there was sufficient time for both presentations and ample discussion between members of the ENSCI team and the Panel.

Finally, we would like to commend the entire ENSCI staff for all of the hard work that they have put into preparing the science center for the successful launch and operation of Euclid. The team continues to do a remarkable job and are well poised to help ensure that US-based investigators will be able to achieve great science with Euclid data.

Responses to 2023 Report:

Recommendation: Euclid email exploder for US scientists.

ENSCI response: ENSCI has established an opt-in email list for US scientists that was announced via IPAC and IRSA newsletters. The first newsletter was sent on August 8, 2024.

Panel response: The panel greatly appreciates ENSCI for introducing this email exploder. A number of panelists received information regarding the upcoming proposal call via this mechanism. We encourage ENSCI to continue to advertise this service and provide useful content to the US community on the status of the Euclid mission, especially including data releases.

Recommendation: Survey buildup information.

ENSCI response: ENSCI and IRSA plan to make available information about the footprint of each data release. Now that the overview of future plans are available in the Euclid Overview paper by the EC, ENSCI is negotiating with ESA about a visualization of the survey plan in advance of the releases.

Panel response: The panel thanks ENSCI for taking up this recommendation and pursuing to create a tool to visualize the Euclid survey footprint both before and after data releases. This will provide the community with useful planning information for their science programs. We encourage ENSCI to continue negotiations with ESA to finalize a visualization service of the survey plan for the community.

Recommendation: Collecting feedback from the US community at large.

ENSCI response: ENSCI agrees with this recommendation and plans to issue an online survey in advance of Q1.

Panel response: The panel is happy to see that ENSCI will be looking to gather additional feedback from the larger community and is looking forward to seeing the first survey issued. The panel will also be interested to see the results of the feedback survey, which ENSCI should consider making public.

Recommendation: Plan multiple methods for interacting with and downloading Euclid data.

ENSCI response: IRSA plans to provide multiple options for exploring, analyzing, and downloading Euclid data. Users will be able to download data via a web interface and command line APIs without the need for Python.

Panel response: The panel is happy to see that ENSCI/IRSA will be serving the data in a way that will allow users to analyze data directly on their machines without the need for special Python libraries. The panel also encourages ENSCI to work to see how to best interface with future science platforms (i.e., Fornax) as a longer-term goal.

Recommendation: Jupyter notebooks and establish best practices for computing.

ENSCI response: ENSCI will work on Euclid-specific notebooks and tutorials as necessary to help the community get the most science out of Euclid data.

Panel response: The panel is happy to see that ENSCI will be putting effort into creating starter Jupyter notebooks and tutorials to allow users to get a jumpstart on working with Euclid data for their science. We recommend that you continue to pursue this as we believe that this is an important bit of effort that will really help to keep barriers low for non-experts that want to take advantage of Euclid survey data.

Recommendation: Webinar for preparation (before Q1 release).

ENSCI response: This was a question from ENSCI to the User's Panel, for which we believe that a pre-introduction to ENSCI would be extremely valuable to allow the US community to prepare to use Euclid data for their science. ENSCI will plan to host some form of webinar/videos (as resources permit) to demonstrate IRSA services to access public data.

Panel response: The panel believes that such resources will be extremely valuable for the community to more quickly and effectively work with Euclid data for their science and recommend that ENSCI continue to put resources into this effort.

Recommendation: Tools and documentation.

ENSCI response: IRSA has a Youtube channel and will use this to include tutorials for Euclid interfaces. The need for a separate ENSCI channel will be assessed based on need. ENSCI has added a Technical FAQ to their webpage that will be updated based on helpdesk questions.

Panel response: The panel greatly appreciates all of the effort that ENSCI is putting into keeping the community informed about Euclid's progress and data availability. By providing tutorials via the IRSA Youtube channel, the panel expects that Euclid data will be easier to access and use and appreciates the efforts that ENSCI is making towards these goals. The addition of a Technical FAQ page that will continue to be maintained over the lifetime of the mission will be a useful resource to the community. We strongly encourage ENSCI to continue these efforts.

Recommendation: Data product access and functionality of online query pages.

ENSCI response: IRSA is developing the user interface for Euclid data access in collaboration with ENSCI. It is planned for the user interface to incorporate features available for other IRSA services and will make use of the same underlying visualization software (i.e., Firefly).

Panel response: The panel encourages ENSCI to continue to work with IRSA to ensure that Euclid-specific data access tools are included as part of the user interface. Building on the existing visualization tools, which are extremely impressive, should provide the US community with a highly intuitive means to access Euclid data.

New Panel Feedback:

Proposal Preparation:

The panel felt that the current proposal preparation for Euclid was somewhat intimidating. Many of the panel members only found out about the (mandatory) Notice of Intent due to the ENSCI newsletter, which only gave users a couple of weeks to act. Consequently, the process of announcing future calls should be better streamlined in partnership with NASA headquarters to help lower the barrier of entry for the next cycle.

Panel Recommendation:

To enable the general US community to easily participate in open calls, we recommend that ENSCI do their best to curate and make available public documentation and data coming from the EC (i.e., both coordinated and out of cycle papers). The panel felt that sufficient technical information is still largely missing from what is publicly available, making proposers feel less secure about their simulations and the viability of their projects. A list of specific items related to this point has been discussed with ENSCI (e.g., PSF, thermal backgrounds, etc.). The panel appreciates that there are currently non-trivial issues within the EC itself regarding availability of information, and simply urges ENSCI to be proactive in trying to make information available to the US user community as soon as it is made public by ESA. For instance, when the ROSES announcement is made for 2025, technical materials should be made easily findable on the ENSCI website (e.g., keeping updated materials organized on the ENSCI Proposal Support Page, including links to relevant technical details, which in future could possibly be linked to the ROSES call). This will ultimately help to actively level the playing field for EC and nonEC North American users.

Ice Build-Up on VIS Optics:

During the meeting the User's Panel was made aware of ice build up on the VIS optics, which affected the transmission efficiency of the telescope. Actions to remedy the situation (by heating up the system) appears to have fixed the issue. This problem seems to be currently well under control, and its occurrence was not totally unexpected.

Panel Recommendation:

We request that ENSCI please provide the panel with updates on any future issues regarding additional ice build up on the VIS optics, as well as any new information on potential long-term impacts of this process to the observatory performance and observing schedule. A brief discussion of this may make for a good future ENSCI newsletter topic.

ERO Data and Custom vs. Standard Pipeline:

During the meeting the panel was presented with the current status of the ERO data and were informed that all data has been reduced through a custom (non-standard) pipeline due to a meta data issue/incompatibility. It was also stated that this had to be done due to a time-dependence of the photometric calibration.

Panel Recommendation:

The panel found this to be a bit concerning since the custom pipeline is different than what would ultimately be used to serve the future data to the users. The panel would like to be updated on how the validation of the ERO data goes when it is run through the standard pipeline to ensure that there is consistency and proper validation of the final pipeline-reduced data. In addition, the panel would encourage that any public data released that uses customized data reduction routines include documentation and/or make the customized data analysis codes available, to ensure reproducibility, validation and consistency.