IXPE Users' Committee Report
4th Committee Meeting, Date: Feb. 2, 2026

Participants:

IXPE Users Committee Members:
Michael Nowak (Chair; Washington University in St. Louis),
Tiziana Di Salvo (Università degli Studi di Palermo),
Unatti Kashyap (Texas Tech University),
Herman Marshall (Massachusetts Institute of Technology),
Fabio Muleri (Istituto di Astrofisica e Planetologia Spaziali - Istituto Nazionale di Astrofisica),
George Younes (NASA Goddard Space Flight Center, University of Maryland, Baltimore County)

Ex-officio Members:
Phil Kaaret (IXPE Principal Investigator, NASA MSFC),
Hashima Hasan (IXPE Program Scientist, NASA HQ),
Paolo Soffitta (IXPE PI for Agenzia Spaziale Italiana, IAPS-INAF),
Doug Swartz (IXPE Deputy PI, NASA MSFC),
Steven Ehlert (IXPE Project Scientist, NASA MSFC),
Chien-Ting Chen (IXPE Science Operations Center Lead, NASA MSFC),
Kavita Arur (IXPE General Observer Facility Lead, NASA GSFC)

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2021 December, IXPE Launch
2022 January, Start of 2-year Prime Mission
2024 February, Start of GO Cycle 1
2024 May, 1st IUC Meeting
2024 September, 2nd IUC Meeting
2025 February Start of GO Cycle 2
2025 March 15, Report of NASA 2025 Senior Review of Operating Missions
2025 June, 3rd IUC Meeting
2026 February, 4th IUC Meeting

II. IXPE Overview

A joint collaboration between NASA and the Italian Space Agency, the Imaging X-ray Polarimetry Explorer (IXPE) is an explorer-class mission (Prime Mission cost of < $200M) currently operating in a low-Earth orbit. It uses a three-telescope design with gas pixel detectors to measure linear polarization of incoming X-rays over the energy range of 2-8 keV, reaching a sensitivity 2 orders of magnitude deeper than predecessor OSO-8, which was operational in the 1970s. IXPE was launched in December 2021 and began its 2-year prime mission phase the following January. Starting in February 2024 the mission entered an extended mission phase as a 100% General Observer (GO) facility. It is currently in its third Cycle as a GO facility. IXPE participated in the 2025 NASA Senior Review of Operating missions, and is approved to continue in an extended mission phase. It is expected that the mission will undergo senior review again in 2028.

III. Mission Status Update

Phil Kaaret presented an update on the IXPE mission, highlighting recent scientific achievements and operational status. The mission continues to be extremely scientifically productive. He noted the recent awarding of the Rossi Prize to Henric Krawczynski, which in part was for his work with IXPE observations of stellar mass black hole candidates. The IXPE publication record continues to be impressive, and the variety of observed sources has grown with time. For example, Phil Kaaret highlighted recent results on accreting white dwarfs. The IUC strongly endorses efforts to further expand the user community, and note the evidence for this expansion in the response to recent GO proposal rounds. (See the statistics highlighted below.)

Phil Kaaret also reviewed the senior review results, noting that IXPE passed and received an in-guide budget recommendation, although he also noted that they have been working to secure some fraction of the overguide request. The IUC supports these efforts as a means of continuing to expand the user community.

The spacecraft is in good health, with the battery expected to last through FY30. There is an ongoing issue with Detector Unit 2, however, which has been in an anomalous but stable and functional state since April 2025. As this state is functionally stable, mitigation efforts have focused on recalibration. The team is working on creating a new spurious polarization map and updating background filtering algorithms to address the detector anomaly. Specifically, Phil Kaaret discussed the reprocessing of DU2 data, and explained the need to start from the beginning to create a charge history for the gas electron multiplier. He outlined plans to automatically notify observing proposal PIs when new data and calibrations are available. Phil Kaaret addressed concerns about systematic issues in polarization estimates, and noted that many observations show good agreement between DU1, DU2, and DU3 after pixel equalization. However, he also noted that work on the new spurious polarization maps must be completed before drawing final conclusions.

The IUC sees these efforts to address these issues as being of the highest immediate priority, and is encouraged by the progress that the IXPE team has been making in this regard.

IV. User Support and Software

Doug Swartz presented updates on user tutorials and a new user pipeline that will help users reprocess earlier mission data. He further discussed the need to update the Software User Guide. The team also briefly discussed various analysis methods for electron tracks, including neural network approaches. The team raised concerns with the neural network approach for energy measurement and track absorption point/angles (e.g., unphysical distributions and modulation curves), as detailed in Di Marco et al. 2022 (AJ, 163, p. 170). Funding constraints were noted as a challenge for further development of these methods.

The IUC agrees that given sufficient funding and manpower, further development of such tools would be desirable, but they are of lower priority than addressing current calibration needs (i.e., updating the software and CALDB files to address the DU2 anomaly), and providing reprocessing support and updating the Software User Guide.

There was a discussion of the ixpeobssim software package (Baldini et al. 2022, SoftwareX, 19, 101194). It was noted that although this has proven to be a very useful and popular community tool, it is not officially supported by NASA. NASA requirements emphasize the need for testing, validation, and documentation of methods before official adoption. The IUC recognizes that there can be some tension between supporting community developed tools and NASA requirements, and appreciates the collaborative spirit between the IXPE team and its user community. The IUC suggests that the IXPE team continues to be mindful of "official" and "community" developed tracks remaining somewhat parallel, with the latter perhaps being a testbed for the former, and that these two tracks not diverge into separate competing systems.

V. User Training Activities

The group discussed inviting the user community to semi-regular online science meetings, as a means of familiarizing the community with both IXPE science opportunities and best practices and techniques for analyzing IXPE observations. The latter would feature mission updates, analysis techniques, and tutorial sessions. The IUC concurred that this was a good idea, and the IXPE team has begun to implement such plans. It was further discussed that the IXPE team would implement a web form system for managing participant sign-ups and create a code of conduct for these semi-regular science meetings.

VI. GO Program and Proposal Cycle 3 Overview

Kavitha Arur provided an overview of IXPE General Observer Cycle 3, highlighting a total of 11 Msec observing time with 4 Msec for a large proposal call. Cycle 3 saw the continuation of Target of Opportunity (ToO) proposals (albeit at a lower rate than in Cycle 1, now that the IXPE

team has gained more experience in scheduling ToOs). Furthermore, Cycle 3 saw the introduction of multi-cycle proposals. The timeline for the proposal call was explained, which included some delays as well as overlapping deadlines with other missions.

The IUC greatly appreciates how the GOF has met the challenges they have faced over the past year. The IUC is somewhat concerned whether having multiple proposal deadlines fall on the same date is helpful or overly burdensome for general observers of these missions, given the strong overlap among their proposer communities. This is an issue for which the various instrument GOFs should remain mindful, and NASA should consider whether there are more benefits or drawbacks to this policy.

It was noted that 145 proposals were received, with the majority being "regular" proposals. The PIs were primarily from the US and Italy, and the proposals were approximately being evenly distributed between galactic and extragalactic categories. After the IUC meeting, Kavitha Arur provided the more detailed statistics for the requested observing time:

Category	Total Exp (s)	Number of proposals
ACCRETING STELLAR MASS BH	20055	36
ACCRETING WD AND NS	24695	48
BLAZARS AND RADIO GALAXIES	16340	19
MAGNETARS	2801	3
OTHER	4475	4
PWN AND RADIO PULSARS	6398	6
RADIO-QUIET AGN AND SGR A	23356	21
SUPERNOVA REMNANTS	11100	8

The proposals represented 112 unique PIs, with at least 34 who had registered for the pre-proposal workshop, and 35 of whom had not submitted an IXPE proposal in either Cycle 1 or Cycle 2. The 37 selected proposals were from 33 unique PIs, 16 of whom registered for the pre-proposal workshop.

This large fraction of new PIs, the large number of unique PIs at both the submission and acceptance stages, and the high success rate of those who registered for the pre-proposal workshop, are all extremely encouraging. The IUC strongly endorses continuing the pre-proposal workshops as a means of maintaining and growing the IXPE user community. The IUC has agreed to help the IXPE team to review new workshop/tutorial requests that might fill in gaps in current online resources.

In terms of maintaining and growing the community that uses GO X-ray polarization studies as a vital part of their science programs, the IUC is concerned that IXPE GO funding support was somewhat reduced from the Cycle 1 levels. It was noted that the 2025 Senior Review prioritized restoring staffing and revitalizing the funding of the IXPE GO program. Again, the recent Cycle 3 statistics highlighting the unique PIs, the large fraction of PIs who participated in the

pre-proposal workshops, demonstrate that this community is still in the process of developing and would benefit from continued NASA funding support.

The IUC continues to remain concerned about recent NASA policies that encourage data to become immediately public. The IUC is especially concerned that this can be problematic for students working on thesis projects, who are just learning how to analyze and use IXPE data. Although it was noted that "exclusive time proposals" can be granted to anyone with a strong justification, the IUC is concerned whether proposals where data are primarily intended for student use are fully taking advantage of these opportunities.

The IUC was asked to comment on the adoption of "dual anonymous peer review" for most NASA panel reviews, such as the IXPE GO reviews. The IUC believes that the community has adapted well to this proposal/review format, and that the process has improved the focus on the science discussed in the proposals.

VII. Director's Discretionary Time

The meeting discussed the process of reviewing DDT (Director Discretionary Target) requests. Phil Kaaret explained that while DDT reviews are currently handled by a small team, he is considering a model with fewer but more responsive reviewers. The group also touched upon the balance between expertise and conflicts of interest in reviewing proposals, and discussed potential challenges in achieving this balance. The IUC recommends that the IXPE team continues the dialog on this process, and that it is revisited at the next IUC meeting.

VIII. IXPE Legacy Science and Project Balance

The group reviewed legacy science projects, with Phil Kaaret proposing minor edits to the existing web page notes on Legacy science projects. The IXPE team suggested that they would create a public database of observations related to legacy science topics, including dates and proposal numbers, to be advertised on the IXPE website and at proposal workshops. The IUC concurred that this would be very beneficial to the user community.

The committee discussed the balance of adding new topics to IXPE's legacy projects while maintaining progress on legacy projects. The IUC recommends that the IXPE team take a measured pace in adding topics. The IXPE team concurred that the community needs to carefully consider the feasibility of some proposed topics, that although scientifically very interesting, may be prohibitively expensive in terms of observing time. The group noted that there already is an over-subscription of large programs compared to regular programs, which may only be exacerbated by adding more legacy topics.

Following the meeting, the IXPE team presented to the IUC updated descriptions of current IXPE Legacy Projects, to be posted to the IXPE web pages. The IUC concurs with these revisions to the Legacy Project descriptions.