Imaging X-ray Polarimetry Explorer General Observer Program Cycle 3

Questions and Answers

Polarization values for previously unobserved sources

Q: Scientific justification for the proposal: On quoting expected polarization values for previously unobserved sources.

Some potential ways to motivate a target MDP:

- Theoretical models predicting polarization. Being able to distinguish between different models or different geometries based on an x-ray polarization measurement can be compelling.
- Polarization measurements at other wavebands, if the same emission mechanism applies. E.g., for sources that emit synchrotron radiation at both radio and X-rays, radio polarization measurements can be used to motivate the expected X-ray polarization.
- Drawing an analogy with other sources of the same class.

Exclusive use periods

Q: What are the expected data-release timelines for Cycle 3 GO observations, and will there be any proprietary-period extensions for large or time-critical programs?

Data are released as soon as they are fully processed, typically within two week.

Data from Large Programs and Director's Discretionary Time (DDT) observations have no exclusive use period.

By default, IXPE data from Standard Programs, including GO-approved Targets of Opportunity (ToO's) have no exclusive use period. However, GO proposers may request an exclusive use period of up to 6 months. Such requests are not considered in the proposal evaluation. Requests for an exclusive-use period MUST be noted on the proposal cover sheet and justified in the "Expertise and Resources Not Anonymized" document. Criteria for an exclusive-use period include, but are not limited to, the following:

- Data are needed for a soon to be completed graduate student thesis: request justification needs to include the names of the student and advisor, how close the student is to graduating, and the importance of the IXPE data to the thesis research.
- Personal reasons (e.g., parental leave, health-related, etc.).
- Particularly complex data reduction challenges including multiwavelength programs.

See Section 12 of the IXPE Cycle 3 Guide for Proposals for more details.

Time constrained IXPE observations

Q: Target of opportunity observations, multi-target proposals, multiwavelength campaigns (time constrained IXPE exposures)

- Time constrained observations must be ranked Category A.
- Proposals that request coordinated observations (via a joint program) can be approved at Category C, in which case the joint observations are not approved.
- Target of opportunity observations can be either for generic or specific targets. Trigger criteria must be clearly defined.
- For multiwavelength campaigns, it is best to describe any constraints in the proposal, e.g. avoid ±3 days around the full Moon. IXPE observations tend to be long, so usually other observatories follow the IXPE Long Term Plan (LTP). The LTP is usually published about 3 months out. Check the LTP for your target. The LTP is subject to change for ToO's and other events. We do try to keep times for Cat A targets fixed, particularly if the observations are coordinated or otherwise time critical.
- Any coordination for Cat C targets is done on a best effort basis.

Target of opportunity observations (ToO's)

Q: How are the trigger probabilities for IXPE GO evaluated?

- Trigger probabilities are a critical component of ToO proposals. If a review panel determines they are greatly miscalculated, they can become a major weakness in their evaluation.
- Review panels are allotted a set number of ToO triggers to award. In Cycle 1, each trigger counted as 1 regardless of probability. In Cycle 2, each trigger counted according to the probability in the proposal.
- Panels are allotted a set amount of observing time to award. The observing time for ToO's is weighted by the trigger probability.
- One often needs multiple observations of a source to catch different states. The review counts triggers, not observations. Multiple observations can be performed following a single trigger, but they must be fixed in time and clearly described in the proposal, i.e., we need to be able to schedule all of the observations when the trigger occurs.
- We are changing ToO definitions to match practice: high (1) = within 9 days of trigger, medium (7) between 9 days and 4 weeks, low (unlimited) > 4 weeks. Observations of sources in different states are scientifically important.
- We encourage low priority ToO's (> 4-week response) for slowly varying sources. These are included in standard planning, don't count against replans.

Time constrained IXPE observations

Q: Are there areas of the field the IXPE team would like to see more proposals for?

Q: What proposal topics does the IXPE team feel doesn't see enough proposals

- Proposals to address the legacy programs.
- Source classes from which X-ray polarization has not been measured and would be scientifically interesting.

Q: What kind of theoretical and/or numerical analysis with IXPE observations?

Unfortunately, we are unable to support theory proposals for Cycle 3.

Time constrained IXPE observations

Q: What information will be provided in the data? For instance, will there be a background spectra around sources?

IXPE data are X-ray event lists with supporting ancillary data. IXPE does imaging, so background spectra can usually be extracted from the same event list.

Q: Tools for simulating observations and other techniques to evaluate observational feasibility.

See the talks by Doug and Niccolò.

Note that proposals were accepted in Cycles 1 and 2 using only Webpimms for feasibility.

Proposals involving more complex cases (such as extended sources) may benefit from using ixpeobssim

Q: Should we expect to have 2 or 3 DUs when writing proposals.

Assume to have 3 DUs. We will adjust observing times if needed.