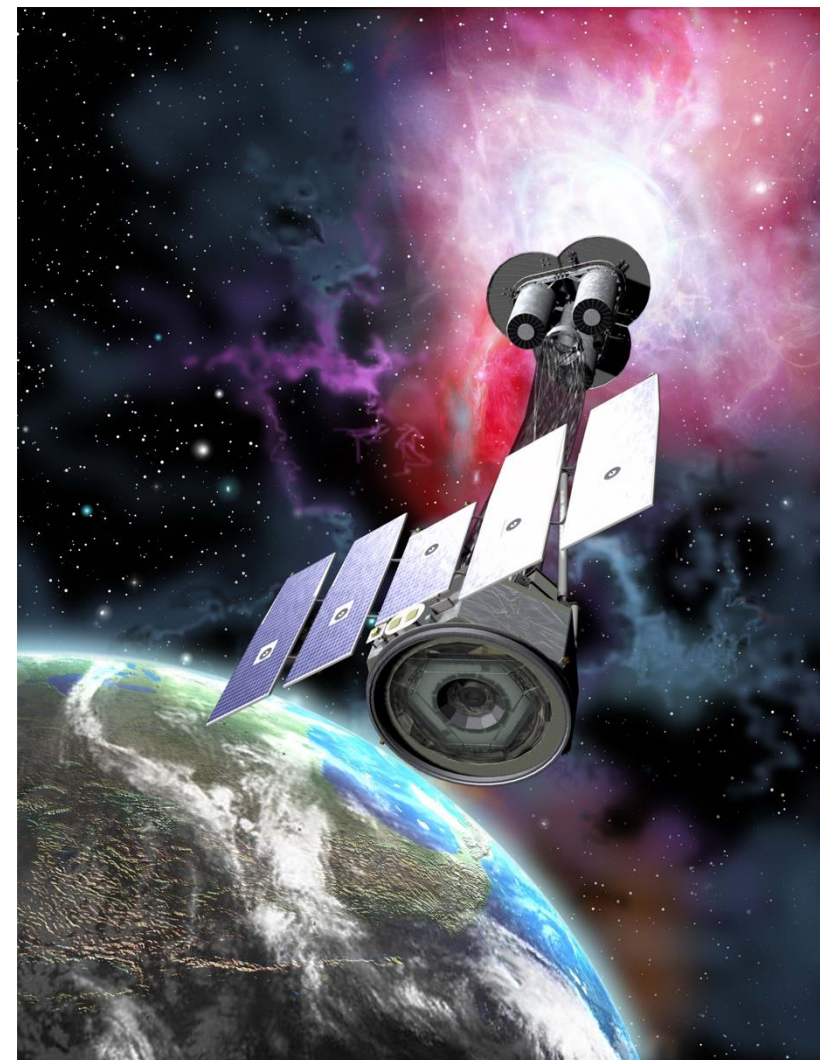


IXPE General Observer Program



Kavitha Arur
UMBC/NASA GSFC/CRESST II
IXPE GOF Lead

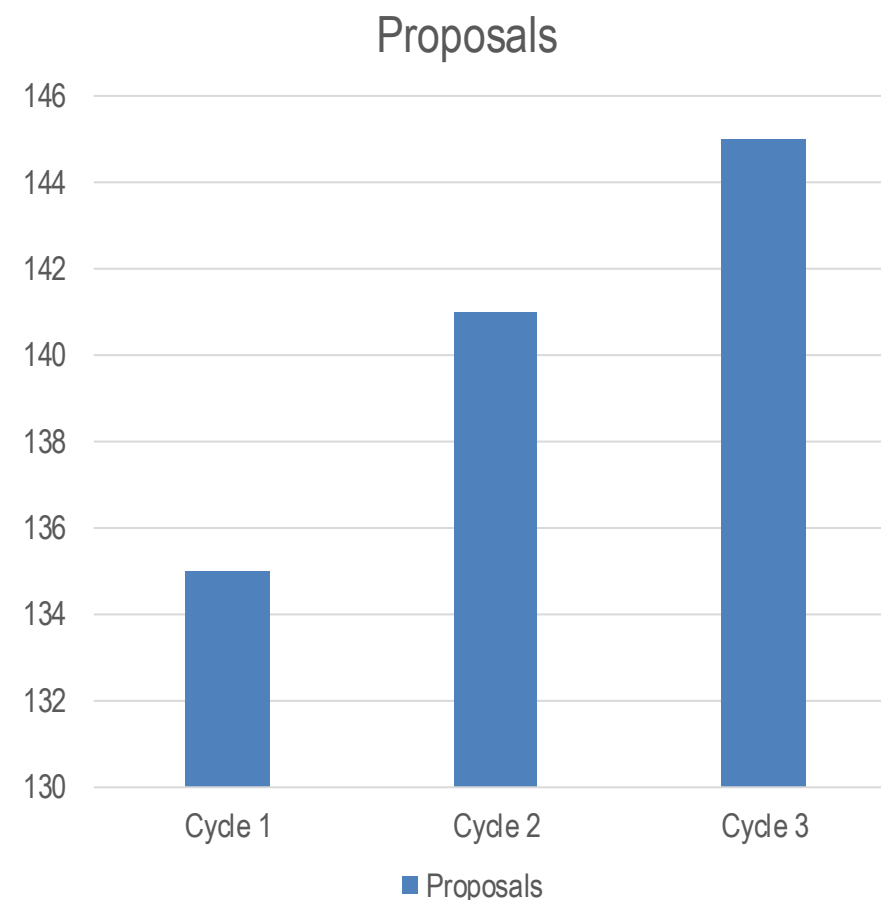
- IXPE extended past the 2 year prime mission, initiating the General Observer (GO) program in 2024.
- General Observer Facility website:
<https://heasarc.gsfc.nasa.gov/docs/ixpe/>
- The 4th GO Cycle will begin in February 2027
- The call for proposals was released as part of ROSES-25 (see Section 9)



Event	Date
Proposal submission opens	August 2026
Phase I submission deadline	September 17th, 2026
Proposal review	November 2026
Cycle 4 Targets announced	December 2026
Cycle 4 GO observations start	February 2027

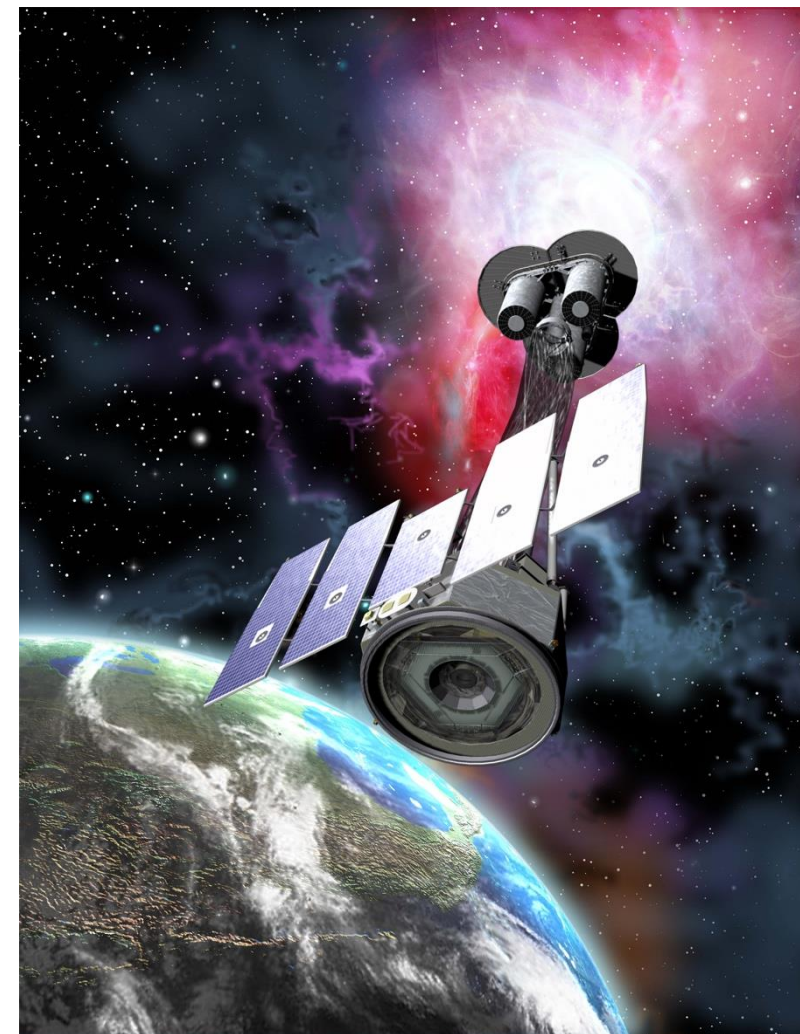
- Oversubscription rates
 - Overall IXPE time ~6
 - ToO triggers ~8
- In Cycle 3, 35 new* PIs, 30 proposals from student PIs

* Have not previously been PI of an IXPE proposal



- Approximately 11 Msec observing time for regular proposals
- Additional ~4 Msec for large proposals
- Joint programs with NuSTAR, Swift, XRISM, NRAO and XMM-Newton*
- Regular, Large and Multi-cycle proposals
- Legacy science program
- ToO proposals of known and unknown targets solicited
- Can request up to 6 months exclusive-use

* New this cycle



- ~4 Msec for large program (LP)
- All proposals requesting over 1.5 Msec considered large
- No exclusive use period for LP
- Proposers encouraged to submit large proposals covering legacy project topics.

- The 2025 NASA Senior Review of Operating Astrophysics Missions required addition of legacy projects to IXPE's mission goals.
- Proposals addressing legacy science are encouraged to be large programs, but not necessary.
- If your proposal addresses a scientific goal that is part of a legacy project, highlight it!

- Deep observation of a rapidly rotating stellar-mass black hole in the soft state to search for EVPA rotation versus energy as predicted in General Relativity
- Deep observation of the Crab pulsar to constrain the emission zone geometry thereby advancing our understanding of the pulse emission mechanism
- Observation of a high accretion rate AGN to determine the Comptonizing medium geometry
- Additional studies of stellar-mass BH and NS X-ray transients through all outburst phases to measure the evolution of the accretion geometry
- Observation of a bright outburst of an accreting millisecond X-ray pulsar suitable for constraining the magnetic field geometry and improving constraints on the NS EoS
- Observation of magnetars, in quiescence or outburst, to search for definitive signatures of vacuum birefringence
- Detection of neutron star free precession in additional accreting X-ray pulsars and extended campaigns to measure the coupling between the crust superfluid and the crust itself

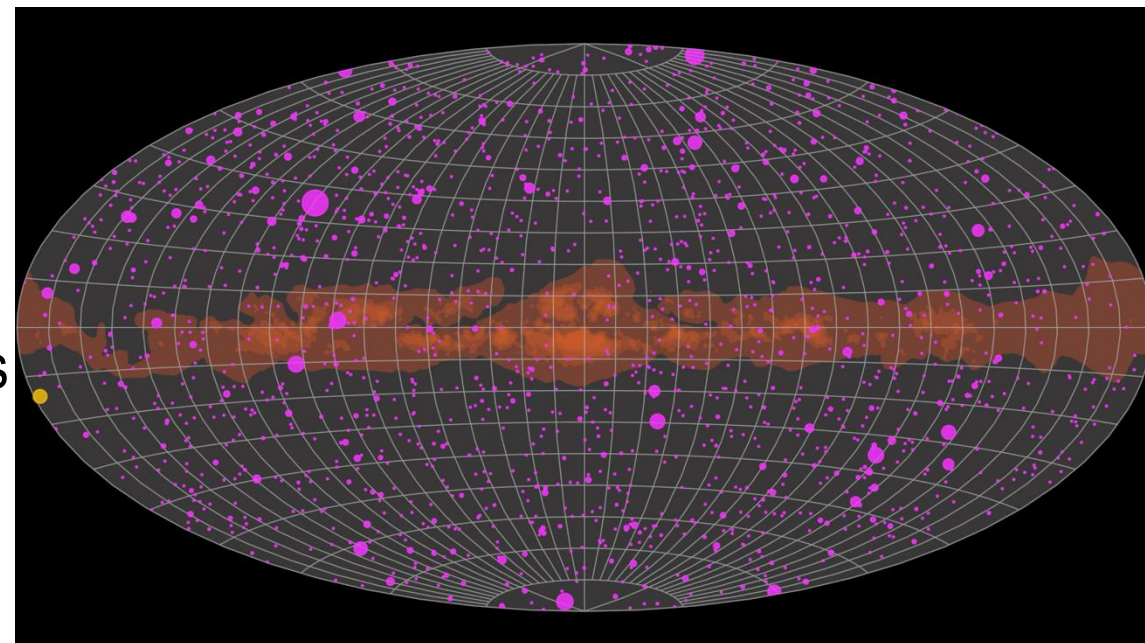
- Beginning in Cycle 3, proposals may request observations be scheduled over a 3 cycle period (i.e cycle 4, 5 and 6*)
- Up to 3Ms of GO time may be awarded to a multi-cycle proposal over the 3 year period.
- Proposals may NOT request more than 1Ms individually in cycles 5 and 6
- Multi-cycle proposals may NOT request ToO observations
- Multi-cycle proposals may NOT request joint observations
- If a multi-cycle program is not strongly justified in the proposal text, it might be evaluated as a Cycle 4-only proposal

*subject to mission extension after the senior review

Targets of Opportunity

- ToO proposals for **known and unknown targets** –
- Multiple triggers allowed per proposal (max 3)
- Max. exposure for individual ToO trigger – 1.5 Msec
- **High:** IXPE observations to begin within 9 days of trigger
- **Medium:** IXPE observations to begin between 9 days to 4 weeks from the trigger
- **Low:** IXPE observations to begin after 4 weeks from the trigger

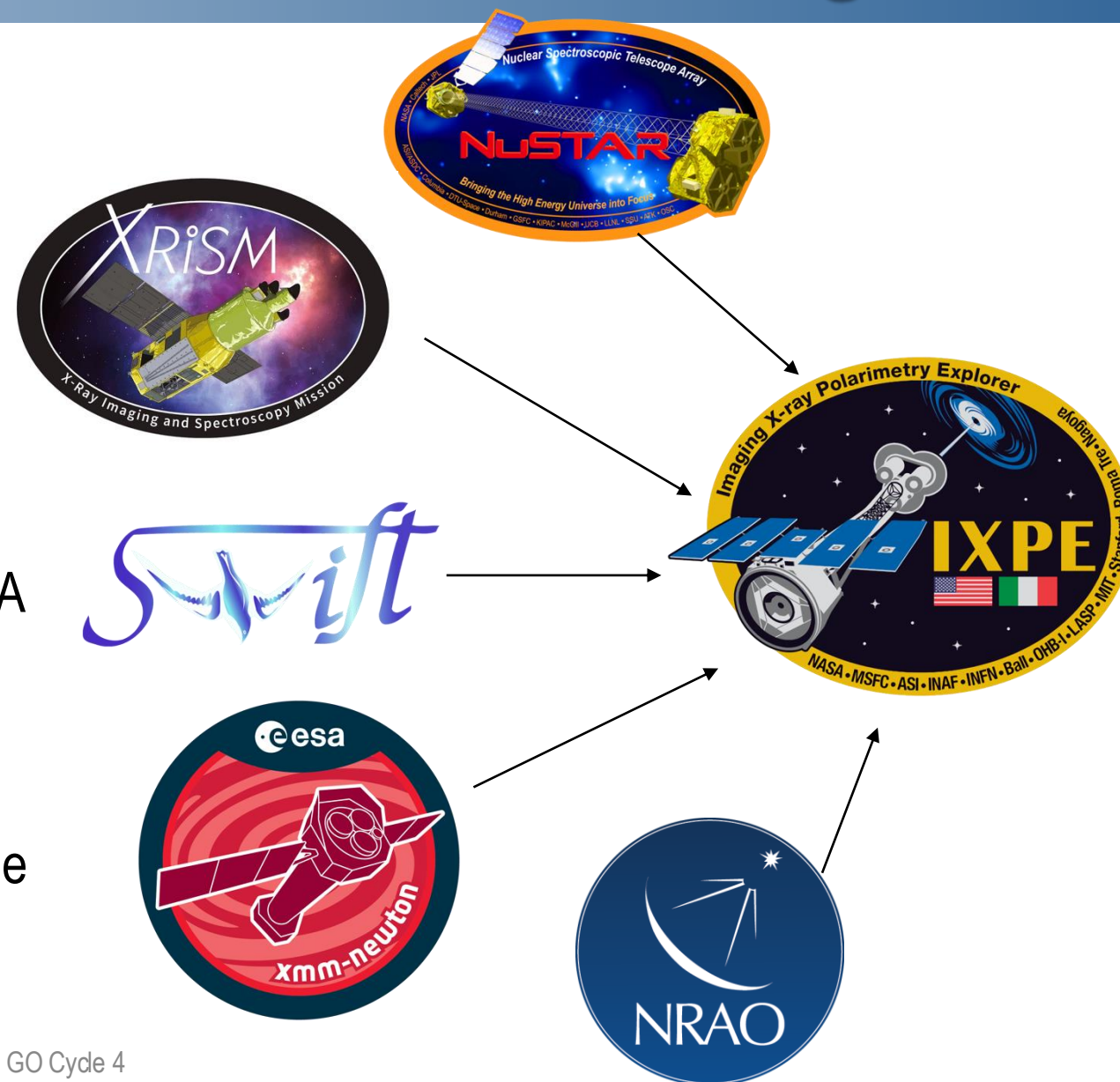
IXPE anticipates executing approximately **1 high and 7 medium triggers** in this GO cycle



Credit: NASA's Marshall Space Flight Center/Daniel Kocevski

Joint Programs

- NuSTAR
 - Up to 400ks of NuSTAR time available
- Swift
 - Up to 200ks of Swift time available
- XRISM
 - Up to 200ks of XRISM time available
- NRAO
 - Up to 5% of 'open skies' time on VLA VLBA and GBT facilities (or up to 200-300 hours per year on each telescope)
- XMM-Newton – *New this cycle!*
 - Up to 200ks of XMM-Newton time available



Constraints and Designations

- Accepted proposals are ranked Category A or C
- Time constrained and joint proposals need to be designated Category A
- Category A guaranteed
- Category C executed on best effort basis
 - Funding available if C targets observed
 - If observations of a Category C target is begun, at least 80% of the requested exposure will be completed, even if it needs to be carried over to the next cycle
 - Category C targets that are not observed during a cycle will be dropped, but may be re-proposed for observations in subsequent cycles.

- Two phase process
- Phase 1 – scientific justification
 - Dual anonymous
- Phase 2 – budget proposal*

*subject to availability of funding

**Writing a good
IXPE proposal**

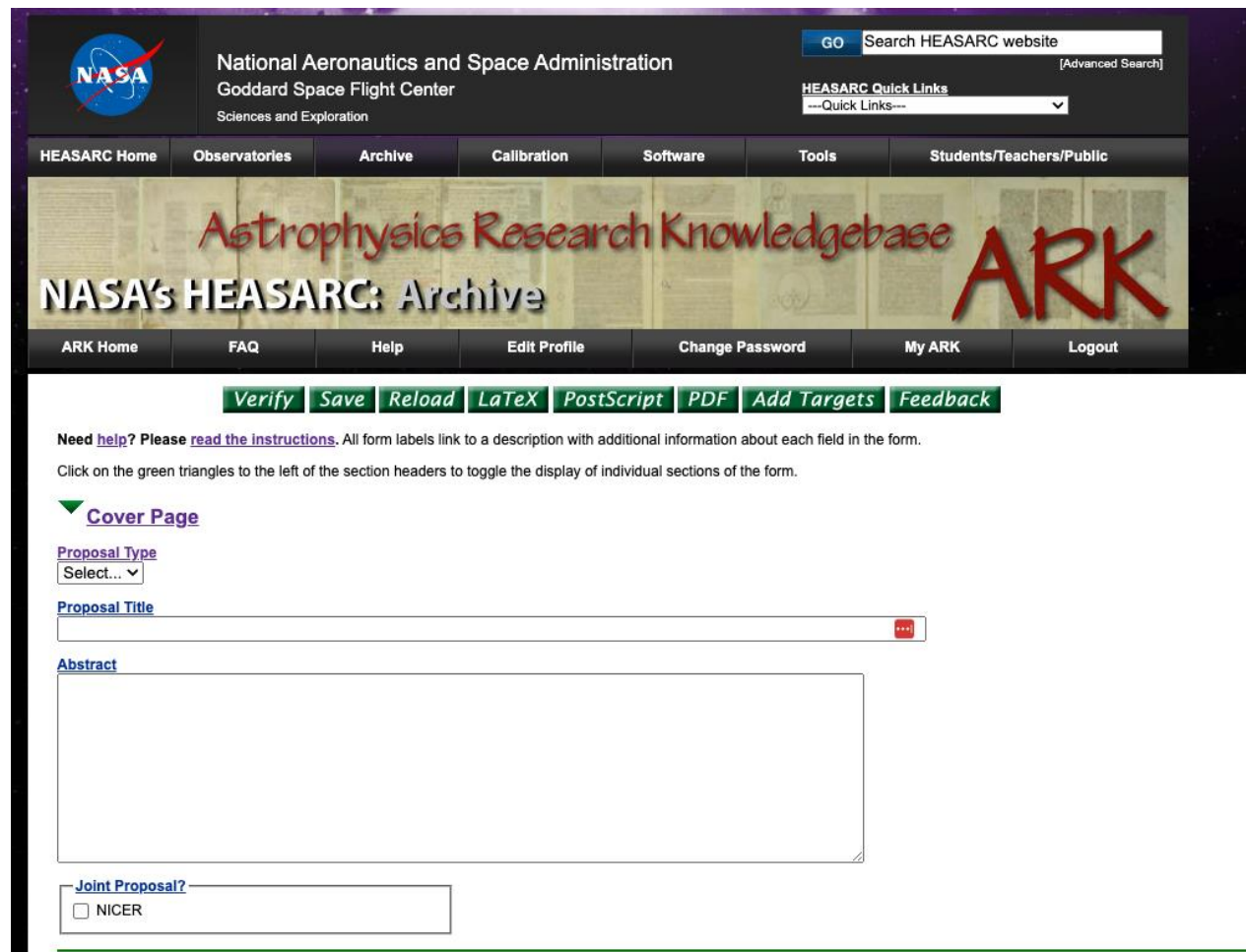


Phase 1 Proposal Submission

Submission through ARK/RPS

- ☐ RPS form
- ☐ Scientific/Technical Justification
- ☐ Expertise and resources document

Each component must be carefully considered!



The screenshot shows the NASA HEASARC Archive submission interface. At the top, there is a NASA logo and the text "National Aeronautics and Space Administration, Goddard Space Flight Center, Sciences and Exploration". A search bar is present with the text "GO Search HEASARC website" and a link to "[Advanced Search]". Below this is a "HEASARC Quick Links" dropdown menu. A navigation bar contains links: "HEASARC Home", "Observatories", "Archive", "Calibration", "Software", "Tools", and "Students/Teachers/Public". The main header area features the text "Astrophysics Research Knowledgebase" and "NASA's HEASARC: Archive" in a stylized font, with a large "ARK" logo. Below the header is another navigation bar with links: "ARK Home", "FAQ", "Help", "Edit Profile", "Change Password", "My ARK", and "Logout". A row of buttons includes "Verify", "Save", "Reload", "LaTeX", "PostScript", "PDF", "Add Targets", and "Feedback". A message states: "Need help? Please read the instructions. All form labels link to a description with additional information about each field in the form. Click on the green triangles to the left of the section headers to toggle the display of individual sections of the form." The "Cover Page" section is expanded, showing a "Proposal Type" dropdown menu (set to "Select..."), a "Proposal Title" text field, and an "Abstract" text area. At the bottom, there is a "Joint Proposal?" checkbox labeled "NICER".

- Cool science idea – Hurray!
- Start early!! Especially with joint deadlines
 - Familiarize yourself with the form and available tools
- Check if your target has been observed before
 - Repeat observations must be strongly justified
- Is it technically feasible
 - Use WebPIMMS to estimate count rate and MDP
 - Use measured polarization from similar sources from IXPE publications
 - Use a theory that predicts polarization
 - Simulations (e.g using user contributed software such as *ixpeobssim*)
- Any time constraints or visibility constraints?
 - Use the visibility tool to check
- IXPE specific considerations

- Title, abstract, PI and co-I information
 - Simple step but many errors!
 - E.g **Philip Kaaret**, Phillip Kaaret or Phil Kaaret?
 - Which institute is your co-I at? (Especially important for large organizations!) Have they moved recently?
 - Include everyone involved.
- Must estimate MDP!
- Justify any time constraints. Make sure time constraints do not conflict with visibility windows
- Target form for each different target/trigger
 - Observing plan, joint/coordinated observations, estimated count rate

The information in this form is used by the SOC to plan observations. Please fill in the information carefully and accurately!

Phase 1- Science/Technical Justification

- Please respect the page limits!
 - 4-page limit (incl. figures & tables)
 - 5 pages for large, multi-cycle and joint proposals
 - References do not count against page limit, can use one extra page
- Introduction
 - Brief overview of topic
 - Key science questions being answered
- Justification for observations:
 - Why are these observations needed? Why now?
 - **STRONG** justification for ToO trigger request, incl. trigger probability
 - Does it count as a legacy project? Say so!
- Technical feasibility
 - Estimation of count rates, exposure times, and MDP

Phase 1- Science/Technical Justification

Double check that the information in the text matches the information in the RPS form!

Phase 1- Science/Technical Justification

- One paragraph work plan
- Example: “Co-I #1 will extract the spectro-polarimetric data. The PI will mentor Co-I #2 in developing the model. It is anticipated that this step will take 4 months. Co-I #3 will lead the collection and analysis of ground-based observations.”
- MUST maintain anonymity! – Especially if previously approved ToO/cat C
 - Use neutral language (“this target was approved...”)
 - Do not identify yourself (“This proposal by our team was selected in Cycle 2”)
 - Stating your team has access to telescope/proprietary data is OK. Further details should go in E&R document.

- Get hands on experience reviewing proposals by volunteering to be in a panel!
 - Proposal reviewers (must have PhD at the time of review).
 - Executive secretaries (graduate students)

Email me to volunteer or to ask for more information!

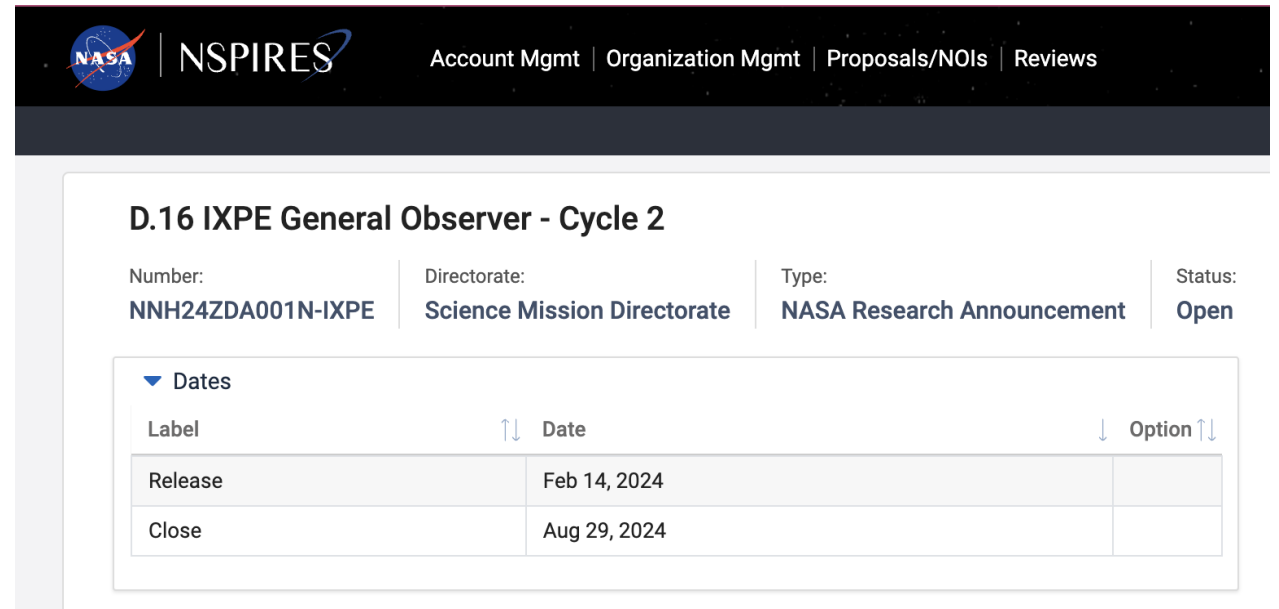
Phase 1 - Expertise and Resources

- 1 page PDF, not anonymized
- Only seen by panel **after** ranking is finalized for highly ranked/ tentatively selected proposals
- This document should include the following information:
 - Team members, including ranks, affiliations and research expertise
 - Access to pre-approved data, institution specific facilities, if relevant
 - Justification for exclusive use period (if requesting)

If you have any questions, or run into any issues, please see the RPS help page or contact the help desk as soon as possible!

Phase 2 Proposal Submission

- Submission through NSPIRES
- US Co-Is of proposals from non-US PIs may not submit a budget
- Fair share amount will be emailed to the budget/admin PI
- Includes:
 - ☐ NSPIRES form
 - ☐ 2 page budget narrative
 - ☐ Current and pending support for the PI
 - ☐ PI Bio sketch form



NSPIRES Account Mgmt | Organization Mgmt | Proposals/NOIs | Reviews

D.16 IXPE General Observer - Cycle 2

Number: NNH24ZDA001N-IXPE	Directorate: Science Mission Directorate	Type: NASA Research Announcement	Status: Open
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▼ Dates

Label	↑↓ Date	↓ Option ↑↓
Release	Feb 14, 2024	
Close	Aug 29, 2024	

- IXPE cycle 4 proposal deadline is coming up – **September 17th 2026, 4:30pm Eastern Time**
 - Coincides with other deadlines – prepare in advance!
- IXPE's unique polarization capabilities can help your science!
- We are looking for volunteers for the review panels!
 - Proposal reviewers (must have PhD at the time of review)
 - Executive secretaries (graduate students)
- Please contact the IXPE Help Desk if you have any questions!

[IXPE Help Desk](#)



- [IXPE Cycle 4 Call for proposals](#)
- [IXPE Cycle 4 Proposers Guide](#)
- [IXPE RPS – Proposal Submission site](#)
- [HEASARC Viewing Tool](#)
- [HEASARC WebPIMMS](#)

