

Proposal Title

PI: Firstname Lastname (Affiliation)

Abstract

Provide a concise summary of the proposed Key Program, including its primary scientific objectives, observing strategy, and expected scientific and legacy value.

The subsection headings in this template provide the suggested structure for the proposal. Proposers are strongly encouraged to follow this structure where appropriate so that the scientific case and program plan can be evaluated consistently and efficiently.

I. Science Justification

(up to 6 pages)

1. Scientific Background and Motivation

Describe the scientific background and motivation for the proposed Key Program, including pertinent references and previous work. Clearly identify the fundamental astrophysical problem to be addressed and explain why it is important.

2. Scientific Questions and Objectives

State the specific scientific questions to be addressed and the objectives of the proposed program. Explain what will be learned from the proposed observations and how the program will advance the field.

3. Relevance to the XRISM Science Objectives and Legacy Value

Describe the relevance of the proposed program to one or more of the XRISM Science Objectives. Proposals addressing compelling scientific directions beyond the listed Science Objectives should explain why the program is particularly suitable for a Key Program.

Describe the expected long-term legacy value of the observations, including their potential to provide benchmark datasets or other lasting scientific value to the broader astronomical community. Explain how the program exploits the unique capabilities of *XRISM*.

4. Expected Scientific Outcomes

Describe the principal scientific outcomes expected from the program and how they will address the scientific questions and objectives stated above.

5. Observing Strategy

Describe and justify the overall observing strategy, including the requested observing time, target selection, pointing strategy, cadence, and any scheduling constraints relevant to the scientific objectives.

For multi-year programs, describe the distribution of observations over the requested years. For adaptive programs, clearly describe the decision criteria and how targets, pointing positions, or observing strategies may be modified in response to results obtained in earlier observations. For Target-of-Opportunity proposals, clearly define the triggering criteria and the planned observing strategy following a trigger.

6. Data Analysis and Publication Plan

Describe the planned data analysis and publication strategy. Explain how the proposed analysis will achieve the scientific objectives of the program and how the team will ensure timely scientific

return and effective delivery of the program's scientific legacy. Take into account that all Key Program data will be made publicly available immediately after standard pipeline processing.

II. Detailed Feasibility Assessment

(no page limit)

Provide a detailed quantitative assessment demonstrating that the proposed observations can achieve the stated scientific objectives. As appropriate, include expected source properties and count rates, simulations, signal-to-noise estimates, background estimates, instrumental and calibration limitations, systematic uncertainties, and other information needed to establish feasibility.

Justify the requested exposure time for each target or class of targets and demonstrate that the proposed measurements will provide the required statistical and systematic precision. If specific scheduling or operational constraints are required, demonstrate their necessity and feasibility.

For Target-of-Opportunity proposals, assess the feasibility of the triggering criteria and observing strategy, including the expected event rate or trigger probability where applicable.

III. Team Structure, Expertise, and Available Resources

(no page limit)

1. Team Structure and Roles

Describe the structure of the proposing team and the roles and responsibilities of key team members. Explain how the team will organize and coordinate the scientific analysis and publication activities required to carry out the program.

2. Expertise and Available Resources

Describe the expertise, experience, personnel, software, computational resources, and other capabilities available to the team that are relevant to the successful completion of the proposed program. Where applicable, describe PI-led coordinated observations with other observatories, including anticipated observing windows if known.

3. Previous Use of XRISM Data

Briefly describe the team's experience in analyzing *XRISM* data relevant to the proposed program, including progress and scientific results from previous *XRISM* observations where applicable. If relevant, provide proposal or observation identifiers and the associated PI and program title.

4. Most Relevant Publications

List the publications by members of the proposing team that are most relevant to the subject of this proposal, particularly publications demonstrating expertise directly relevant to the proposed *XRISM* observations, data analysis, or scientific objectives.

IV. References

(no page limit)

Provide the references.

Although no individual page limits are imposed on the sections II, III, and IV, the complete proposal, including the Science Justification, must not exceed 20 pages in total.