NuSTAR CYCLE 6 – GUIDELINES FOR ANONYMOUS PROPOSALS

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The Astrophysics Division (APD) of NASA's Science Mission Directorate is strongly committed to ensuring that the review of proposals is performed in an equitable and fair manner that reduces the impacts of any unconscious biases. To this end, and motivated by a successful pilot program conducted for the Hubble Space Telescope, APD is directing that all Astrophysics General Observer/General Investigator proposals be evaluated using dual-anonymous peer review. Under this system, not only are proposers unaware of the identity of the members on the review panel, but the reviewers do not have explicit knowledge of the proposal teams. NuSTAR General Observer (GO) Cycle 6, solicited as part of ROSES-2019, will be the first such GO program to transition to dual-anonymous peer review. As stated in the NuSTAR GO Cycle 6 call for proposals, "Phase-1 Proposals may not include language that identifies the names of investigators or their institutions". This document provides details on how anonymize proposals.

1. Guidelines for Proposers

1.1 Submission of Proposals

As in previous cycles, Phase-1 proposals will continue to be submitted via the Astrophysics Research Knowledgebase (ARK)/Remote Proposal System (RPS) website at the following URL: https://heasarc.gsfc.nasa.gov/ark/rps/. Proposers must fill in all required information on the cover pages: any identifying information will be automatically redacted by NASA in the copy provided to reviewers.

1.2 Proposal Abstract

Proposers are required to write the proposal abstract in an anonymized format that does not explicitly identify the names of the team members or their institutions. Some specific points follow:

- Do not include author names or affiliations anywhere in the abstract section. This includes but is not limited to, page headers, footers, diagrams, figures, or watermarks. This does not include references to past work, which should be included whenever relevant (see below).
- Referencing is an essential part of demonstrating knowledge of the field and progress. When citing references within the proposal, use third person neutral wording. This especially applies to self-referencing. For example, replace phrases like "as we have shown in our previous work (Doe et al. 2010)" with "as Doe et al. (2010) showed..."
- Do not refer to previous investigations with this or other observatories in an identifying fashion. For instance, rather than write "we observed another cluster under program #XXXXX." Instead, write "program #XXXXX has observed this target in the past."
- We encourage references to published work, including work citable by a Digital Object Identifier (DOI). It may be occasionally important to cite exclusive access datasets or non-public software that may reveal (or strongly imply) the investigators on the proposal. We suggest proposers use language like "obtained in private communication" or "from private consultation" when referring to such potentially revealing work.
- Do not include acknowledgements, or the source of any grant funding.

1.3 Scientific/Technical/Management Section.

Proposers are required to write the Scientific/Technical/Management (i.e., science justification) section of the proposal in an anonymized format that does not explicitly identify the names of the team members or their institutions. Some specific points follow:

- Do not include author names or their organizational affiliations anywhere in the Scientific/Technical/Management section. This includes but is not limited to, page headers, footers, diagrams, figures, or watermarks. This does not include references to past work, which should be included whenever relevant (see below).
- Referencing is an essential part of demonstrating knowledge of the field and progress. When citing references within the proposal, use third person neutral wording. This especially applies to self-referencing. For example, replace phrases like "as we have shown in our previous work (Doe et al. 2010)" with "as Doe et al. (2010) showed..."
- Do not refer to previous investigations with this or other observatories in an identifying fashion. For instance, rather than write "we observed another cluster under program #XXXXX." Instead, write "program #XXXXX has observed this target in the past."
- We encourage references to published work, including work citable by a Digital Object Identifier (DOI). It may be occasionally important to cite exclusive access datasets or non-public software that may reveal (or strongly imply) the investigators on the proposal. We suggest proposers use language like "obtained in private communication" or "from private consultation" when referring to such potentially revealing work.
- Do not include acknowledgements, or the source of any grant funding.

As always, the reviewers expect proposers to make an effort to describe the past work in the field, and how the proposed work would improve, build-upon, complement, contradict or complete that past work. Many successful proposals discuss stated sample goals or statistical completeness, and how this proposed work will fit in. Similarly, proposals may also discuss the uniqueness of the sample, and goals in comparison to similar work.

1.4 Separate "Team Expertise and Background" Document

Proposers are also required to upload a separate "Team Expertise and Background" document, which is not anonymized. The document will contain an alphabetized list of all investigators without identifying their role (e.g., PI or Co-I(s)), along with descriptions of the scientific and technical expertise each investigator brings. The document will also describe any specific resources (e.g., access to a laboratory or observatory) that are required to perform the proposed investigation.

An example follows:

Alphabetized list of investigators:

Mrs. Sandra Cauffman
Dr. Nicky Fox
Dr. Lori Glaze
Dr. Paul Hertz

Team expertise:

Mrs. Sandra Cauffman has over 25 years of experience in the project management of space-based science missions. Dr. Nicky Fox is an expert in telematics and satellite communications, and previously served as the Project Scientist for NASA’s Parker Solar Probe. Dr. Lori Glaze brings expertise in the conceptualization and development of planetary instrumentation. Dr. Paul Hertz is an expert in X-ray emission from neutron stars, black holes, and globular clusters. Through his

institutional affiliation, Dr. Hertz has access to the synchrotron beamline necessary to complete the proposed work.

This document will be distributed to the review panel after all proposals have been reviewed and rated, only for programs which are in the selectable range. This is to allow the reviewers to assess the team capabilities required to execute a given proposed science investigation.

2. Example Text for Anonymized Proposals

Much of the following text has been reproduced, with permission, from the Hubble Space Telescope dual-anonymous peer review website.

Here is an example of text from a sample proposal:

> *Over the last five years, we have used infrared photometry from 2MASS to compile a census of nearby ultracool M and L dwarfs (Cruz et al, 2003; 2006). We have identified 87 L dwarfs in 80 systems with nominal distances less than 20 parsecs from the Sun. This is the first true L dwarf census – a large-scale, volume-limited sample. Most distances are based on spectroscopic parallaxes, accurate to 20%, which is adequate for present purposes. Fifty systems already have high-resolution imaging, including our Cycle 9 and 13 snapshot programs, #8581 and #10143; nine are in binary or multiple systems, including six new discoveries. We propose to target the remaining sources via the current proposal.*

Here is the same text, re-worked following the anonymizing guidelines:

> *Over the last five years, 2MASS infrared photometry has been used to compile a census of nearby ultracool M and L dwarfs (Cruz et al, 2003; 2006). 87 L dwarfs in 80 systems have been identified with nominal distances less than 20 parsecs from the Sun. This is the first true L dwarf census – a large-scale, volume-limited sample. Most distances are based on spectroscopic parallaxes, accurate to 20%, which is adequate for present purposes. Fifty systems already have high-resolution imaging, including the Cycle 9 and 13 snapshot programs, #8581 and #10143; nine are in binary or multiple systems, including six new discoveries. We propose to target the remaining sources via the current proposal.*

Here is another example of text from a sample proposal:

> *In Rogers et al. (2014), we concluded that the best explanation for the dynamics of the shockwave and the spectra from both the forward-shocked ISM and the reverse-shocked ejecta is that a Type Ia supernova exploded into a preexisting wind-blown cavity. This object is the only known example of such a phenomenon, and it thus provides a unique opportunity to illuminate the nature of Type Ia supernovae and the progenitors. If our model from Rogers et al. (2014) is correct, then the single-degenerate channel for SNe Ia production must exist. We propose here for a second epoch of observations which we will compare with our first epoch obtained in 2007 to measure the proper motion of the shock wave.*

Here is the same text, again re-worked following the anonymizing guidelines:

> *Rogers et al. (2014) concluded that the best explanation for the dynamics of the shockwave and the spectra from both the forward-shocked ISM and the reverse-shocked ejecta is that a Type Ia supernova exploded into a preexisting wind-blown cavity. This object is the only known example of such a phenomenon, and it thus provides a unique opportunity to illuminate the nature of Type Ia supernovae and*

the progenitors. If the model from Rogers et al. (2014) is correct, then the single-degenerate channel for SNe Ia production must exist. We propose here for a second epoch of observations which we will compare with a first epoch obtained in 2007 to measure the proper motion of the shock wave.

Another common situation that occurs in proposals is when a team member has institutional access to unique facilities (e.g., an observatory or laboratory) that are required to accomplish the proposed work. An anonymized proposal does not prohibit stating this fact in the Scientific/Technical/ Management section of the proposal; however, the proposal must be written in a way that does not identify the team member. Here is an example:

The team has access to telescope time on the W. M. Keck Observatory, which will enable spectroscopic follow-up of the galaxies in the sample.

Note: in this situation, NASA strongly recommends that the team provide detailed supporting information to validate the claim in the "Team Expertise and Background" document, which is not anonymized.

3. Return Without Review for Unanonymized Proposals

NASA understands that dual-anonymous peer review represents a major shift in the evaluation of General Observer / General Investigator proposals, and as such there may be occasional slips in writing anonymized proposals. However, NASA reserves the right to return without review proposals that are particularly egregious in terms of the identification of the proposing team.

NASA further acknowledges that some proposed work may be so specialized that, despite attempts to anonymize the proposal, the identities of the Principal Investigator and team members are readily discernable. As long as the guidelines are followed, NASA will not return these proposals without review.

4. Evaluation of Proposals in Dual-Anonymous Peer Review

The overarching objective of dual-anonymous peer review is to reduce unconscious bias in the evaluation of the merit of a proposal. In order to ensure this goal, the review panels will be instructed to evaluate proposals based on their scientific merit without taking into account the proposing team qualifications.

In addition, NASA will appoint a "Leveler" to be present in the panel room for all discussions. The Leveler is not a reviewer or a panelist, but is an individual trained to ensure that the panel deliberations focus on the strengths and weaknesses of the proposal and do not deviate into a discussion of the identity, qualifications and experience of the PI and team. NASA will provide full and comprehensive instructions to all reviewers, Panel Chairs, and Levelers ahead of the review.

As a final check, and only after the scientific evaluation is finalized for all proposals, the panel will be provided with the "Team Expertise and Background" documents. The panel will assess the qualifications of the team in order to allow the reviewers to assess the team capabilities required to execute a given proposed science investigation. If there are clear, compelling deficiencies in the expertise required to see through the goals of the proposal, the panel may decide to flag the submission accordingly, and provide a detailed justification in its comments to NASA. This review may not be used to flag "up" proposals for having strong team qualifications, nor may it be used to re-evaluate or upgrade proposals.