NSF's National Optical-Infrared Astronomy Research Laboratory

Panel Instructions for Grading and Reviewing

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Panel Instructions for Grading and Reviewing

Introduction

The goal of the TAC panels is to identify the proposals with the best-justified science that can be achieved through the observations proposed. Each panel comprises a set of astronomers selected to have a range of expertise sufficient in aggregate to evaluate the proposals brought before them. The task of the panel members is to listen professionally and respectfully to the proposal discussion by fellow panel members, to be open to new information or expertise beyond what they may bring to the table, themselves, and finally to compose helpful remarks to the proposers. The task of the panel chair is to ensure that each proposal is fairly evaluated with its strengths and weaknesses identified, that the judgment arrived at reflects the overall consensus of the panel, and ensure that the remarks provided to the proposers are professional and constructive.

Of necessity, the evaluation of any proposal will be subjective, limited by the time available for discussion, the match of the expertise of the panel members to the proposers' subject, and so on. The panel members and chairs should recognize that perfect agreement and judgment on any proposal may not occur. The goal is not to be perfect, but faithful to a fair reading of the proposals within these limitations.

1   Dual Anonymous Review

The NOIRLab TAC policy includes a Dual Anonymous review of the proposals.Removing the names of the proposal team from the proposal is meant to allow reviewers to focus on the science, rather than the scientist. The NOIRLab Dual Anonymous review has been implemented as a two-stage process. Much of the process in stage one will remain the same as in semesters prior to 2022B. Panel members will discuss all anonymized proposals and have an opportunity to adjust their initial grades after the discussion during the first day of the TAC meeting.

In Stage one, the TAC panels rank proposals solely in order of scientific merit.

Please do not spend time attempting to identify the team or the principal investigator.

Note that the goal in anonymizing proposals is **not** to reduce content to the extent that useful information is eliminated. Proposers are encouraged to present relevant past observations and theoretical analyses, together with complementary observing programs. However the information should be presented in an anonymized fashion For example,

"Smith et al. obtained observations of NGC 950 in 2019B" or "observations of NGC 950 were obtained in semester 2019B by Smith et al (2020)" as opposed to "we obtained observations of NGC 950 in our 2019B proposal (PI Smith)." Any privileged information should be cited as having been obtained through private communication. **Panelists should contact NOIRLab TAC staff as soon as possible if they feel that a proposal is not compliant with the anonymizing guidelines** science/observing-noirlab/proposals/anonymization-instructions Egregious cases may be disqualified by NOIRLab TAC staff.

In Stage two of the review, information about the team is revealed. Based on this additional information the panel may adjust the rank of a proposal. Guidelines for this process are discussed in Section 3.

2   Review Criteria in Stage 1

During the first stage of the review process, information on investigators, institutions and team background information is not shared with the review panel. Please evaluate all proposals according to the following criteria:

- The merit of the proposed research, both within the area of specialization and in the broader context of current astronomical research;

- The quality of the description of the experimental design of observations and planned analysis for enabling completion of the proposed science;

Note that the merit of the research may be broader than the scientific question that will be addressed. Additional considerations for the value of a proposal could include making proprietary software or software products public that would enable general access to, and reuse of, the proposed data. Other proposals might have as their main focus the development of a new instrument, technology, or observing mode. In all cases, such proposals should still address what future scientific investigations/software might be enabled once the new instrument/software capability/data product/dataset has been developed/commissioned/ made available. The significance of the future science that would be enabled by the development of the new capability should be considered as part of the scientific potential of the proposal and be evaluated by the TAC panel. We will endeavor to provide technical reviews of any instrumentation-based or software-based proposal prior to the TAC panel.

- The broader impacts of the proposed research, for example, in education and public awareness of science or broadening inclusion in research, etc. See http://www.nsf.gov/pubs/gpg/broaderimpacts.pdf for details.

- Review the technical description of the proposed observations. Depending on the telescope requested, some proposals may have staff reviews of the technical description while others may not. Please review the technical description (and any staff reviews) and if you have questions or concerns about any aspect of the technical description, please ask TAC staff for additional information.

3   Guidelines for proposal non-compliance with anonymizing

As part of a review panel members' responsibilities, during the Stage 1 they **must, as soon as possible, flag proposals that they believe are not compliant with anonymizing guidelines**. Such proposals should be immediately brought to the attention of NOIRLab TAC staff. Please do not discuss this with other reviewers. While degrees of compliance will be acknowledged and considered, non-compliance with anonymization guidelines may affect the outcome of the proposal review processes and such proposals may be downgraded or disqualified altogether. Panel members are encouraged to ask TAC staff for guidance if they have questions. It is up to TAC staff to decide whether a proposal will be disqualified from consideration due to non-compliance. Panelists will be asked to provide written feedback in the comments to proposers for any insufficient anonymization.

During Stage 1 in-person panel discussions, Chairs (and Levelers) should be quick to refocus or terminate discussion when it moves to the PI or team.

4   Guidelines for Rank changes during Stage 2

While the main goal of the Stage 1 anonymized process is to keep discussion of proposals focused on the scientific merit of the proposal, Stage 2 provides an opportunity for proposals that are above or near the band that represents the estimated number of available nights and that fulfill NOIRLab mission objectives, to be considered for adjustment to their rank. Criteria (**not** in prioritized order) are:

    i)   Thesis proposals
    ii)   Student proposals that are not thesis proposals
    iii)   Proposals that support NOIRLab observing access goals; proposals that describe why time through this NOIRLab open public access is critical to the proposed science
    iv)   Proposals that include a broader impact (e.g. EPO, unique technique/method/software, new instrumentation)

v)   The importance of maintaining continuity of an ongoing program on the same science objective (e.g., case where partial data obtained in previous program due to weather loss) OR the same telescope/instrument (e.g., case were instrument will soon be retired);

vi)   Information about the past productivity of the PI/TEAM and the use of NOIRLab facilities

Chairs should ask for staff advice in cases where it is unclear whether a proposal meets these criteria. Proposal ranking changes will be recorded and reasons reviewed in aggregate. Proposals that are downgraded or upgraded significantly will be flagged for review by the TAC Director.

Facilities that are allocated through the NOIRLab TAC process are available to all members of the U.S. community. US PIs with preferred access to non-NOIRLab facilities are eligible to receive time allocated by the NOIRLab TAC.

NSF operates NOIRLab under an "open skies" policy. Applications from astronomers, students, or teams who work at non-U.S. institutions and have no U.S. co-Is on the proposal should indicate in the Team Information section why U.S. national facilities are requested.

5   Conflict of Interest

Our goal is to have an informed, unbiased discussion of each proposal free of conflicts of interest. When the TAC staff assign Lead Reviewers, every effort will be made to avoid obvious conflicts (a close collaborator, a relative or spouse, possible reviewer connection to the proposal), but prior knowledge is often incomplete. In an anonymized review, some soft conflicts like common institutional affiliation are no longer relevant in most cases, unless a reviewer has had direct knowledge of or about a proposal. Clearly, if you recognize that you have been involved, in any way, with a given proposal, you should not grade that proposal and you should excuse yourself during the discussion. You should also inform TAC staff and the Panel Chair of the conflict. If you are working on a project similar to the one being discussed, you may feel that you should not supply a grade, but this again may not mean you should remain silent during the discussion. In fact, your interest in this area implies an expertise that could be of value to discussions. However, if an impartial outsider would think it is not appropriate that you grade or discuss a given proposal, then you probably should not. Panelists are urged to disclose and discuss any potential conflicts of interest with TAC staff or the Panel Chair before deciding whether or not to recuse oneself from grading any

proposal.   Bear in mind that the committees are small, and your expertise may be needed. The omission of one grade from a total of a few can significantly alter the ranking result.

Thus, disclosure of any potential conflict should be made to NOIRLab staff or the Panel Chair. After disclosure and discussion, a decision about how to proceed regarding grading and discussing a proposal that might have a possible conflict of interest, can then be made.

6   Grading System (Standard and Survey Proposals)

The telescope allocation process is a subjective evaluation process and as such may be influenced by implicit bias. Good practices for mitigating implicit bias suggest that determining criteria in advance of evaluation and specifying evaluations of separate criteria are helpful tools to lessen biased evaluations.

Below we provide specific criteria for evaluating the major sections of NOIRLab proposals. Proposals should be given a grade from 5 to 10, with 10 being an outstanding proposal. The grade of "3" is reserved for proposals which have a serious technical or scientific flaw which render the observations impossible to complete. We recommend that you evaluate each section of the proposal separately. However, please record only a single final grade(of 5 to 10) based on your separate section evaluations. Note that if a proposal receives a "3"(lowest possible grade) for either the science justification, experimental or technical design section, it should be considered ultimately unfeasible and not schedulable.

The meanings of the numerical grades are described below. DO NOT use an extreme grade to flag a proposal for discussion, since all proposals will be discussed. The primary criteria for awarding a grade should be the overall scientific merit of the proposal.

Panelists should make use of the full scale. Using the full scale will make it easier to break ties during the panel discussion, to easily determine where natural break points exist, and to determine which proposals may require extra time for discussion. However, DO NOT attempt to force your grading to fit any particular distribution.

The following guidelines are suggested in order to help guide your grade assignments. The scientific merit of the proposal is represented by both the scientific justification and experimental design and technical design. The reviewer should give a SINGLE grade for the overall scientific merit of each proposal taking the 3 sections into account.
The grading guidelines should be used as a reference, and are meant to provide guidance on each section, however only a SINGLE grade for these three sections should be given.

6.1   Science Justification Grading Guidance

-10- Very compelling, very high priority observing program with extremely well-defined scientific goals that address an important and timely astrophysical problem.

-9- Compelling well-defined goals that address an important astrophysical problem.

-8- Has good science content and addresses a problem or object(s) of interest.

-7- This proposal has merit, but does not stand out from the group as being particularly strong or weak

-6- The science is of some value but the proposal is not compelling, or the proposal/science goals may be weak, poorly described or lower priority.

-5- The scientific goals are unclear. Even if the observations are made, it is not clear how or if the science will be advanced.

-3- This proposal is seriously flawed. Do not schedule: The science is wrong.

6.2   Experimental Design Grading Guidance

-10- Well-defined, clear and feasible methodology that will accomplish all the science goals proposed.

-9-   A well-defined, feasible approach and good methodology that will accomplish most of the proposed goals.

-8-   Approach has a good chance of accomplishing the proposed science goals.

-7-   This proposal does not stand out from the group as being particularly strong or weak at accomplishing the science goals proposed.

-6-   It is unclear that the methodology, as described, will accomplish the science goals proposed.

-5-   The methodology is not well thought out or is unlikely to accomplish the goals.

-3-   This proposal is seriously flawed. Do not schedule: The targets are not available, or the observations are technically impossible.

6.3   Technical Description Assessment

Reviewers are encouraged to ask staff for assistance if there are questions regarding the assessment of the technical feasibility of a proposal. Review of this section of the proposal is binary and either a proposal can be technically scheduled or it cannot. Please contact Mia Hartman for assistance.

-10- Technical Description is okay, has minor flaws or minor time adjustments can be accommodated as needed.

 -3-   There are major technical flaws in the design of this program and it should not be scheduled.

7   Special Instructions for Survey Proposals

Reviewers on Survey panels are asked to evaluate the survey proposals for "scientific impact", as well as, "survey management", and "data products". In this case, panelists submit a grade ranging from 3 to 10, with 10 being the best grade and 3 being the poorest, **for each category**. The final grade for each proposal will be a weighted average of the grades in each category, with 50% for **science**, 25% for **management**, and 25% for **data products**. You are encouraged to use the full grade range, but otherwise please do no force your grades to fit any particular distribution. We request that you turn in your grades in advance of the meeting, but you will have the opportunity to change your grades during the TAC meeting as each proposal is discussed. In addition to the guidance above for grading the scientific justification and experimental design and review of the technical assessment, additional guidance is given below for grading the plan for the management of the survey and the release of data products from the survey.

The panelists are asked to please regard their evaluation of the management and data products sections as independent of their evaluation of the scientific justification and experimental design. Proposals with compelling scientific goals, for example, may not generate useful data products for follow-on work, or may require careful management to succeed, beyond what is described in the proposal. Conversely, surveys that are less compelling in their primary scientific goals, still generate valuable data products, and so on.

7.1 Survey Management Grading Guidance

Successful execution of a survey is likely to require a team effort spanning multiple observing sessions to ensure proper observing protocols, data reduction, analysis, and timely delivery of usable data products. Evaluate the proposer's management plan, team commitment, resources and other support required to successfully complete the proposed research AND delivery of data products to NOIRLab or other public archives. The 10 to 3 grade scale can be scaled by the fiducial grades given below. Interpolate to integer grades between these fiducials as warranted.

-10- The survey has a high probability of completing its research goals and timely delivery of the data products, based on the proposed commitments of the survey team to the project, a structure that shows how the work is to be organized, and a demonstration that resources are available to support the work of the survey team.

-8- Successful completion of the research goals and data products is likely, but not guaranteed in terms of the resources required or the structure of the team.

-6- Successful completion of the research goals and data products is more likely than not, but the structure of the investigation is not defined well enough to demonstrate complete understanding of the tasks required for its execution.

-3- The management plan is severely incomplete or the proposed research and data products have little probability of being completed.

7.2 Data Products Grading Guidance

Evaluate scientific value and usability of the proposed data products. In this category, the grades have the meaning of:

-10- The data products will be highly valuable and useful to several follow-on programs. Scientific returns from the use of the products beyond the survey's proposed goals may well exceed the primary scientific impact of the survey.

-8- The data products are likely to be useful for follow-on programs that may approach the

scientific impact of the primary program.

-6- Usable data products that will be produced, but their impact for generating interesting follow-on work has not been demonstrated to be high.

-3- No data products are being produced, the products are not likely to be in a usable form, or they are not likely to support research beyond that already conducted by the survey team.

8   Instructions for Login and Entering Grades

The time allocation main page, at https://time-allocation.noirlab.edu/#/ offers three options (1) Create a proposal; (2) Go directly to your dashboard to administer already created proposals or (3) Access for TAC panel members. Here we provide instructions for TAC panel members.

A login is required to enter the system. Click panel members and you will be routed to the CSDC Single Sign On (SSO) page. If you have used the NOIRLab Astro Data Archive in the past or submitted a NOIRLab proposal in 2022A or later, you use the same credentials to access your TAC resources. If you do not have a login, you can request one by clicking in "Signup" at the top left. This will take you to the CSDC Single Sign On (SSO) signup page. Follow the instructions to sign up. Additional instructions for SSO can be found at https://sso.csdc.noirlab.edu/info/.

Once you sign in and navigate to the appropriate dashboard you will see all proposals assigned to your panel and those proposals that are assigned to you as lead reviewer. All of the supporting reports and documentation that were formerly found on the NOIRLab TAC Meeting Web pages can now be accessed from the left-hand column. These include the Proposal Grading instructions, orientation slides, lead reviewer assignments, discussion list, competition list, and estimated nights available.

When you are ready to begin your review, click the "details" link to view all of the proposal information and resources, the details view provides a button to view the full PDF (button text is Full PDF) or individual attachment files. When you are ready to add your grade, enter it in the box below Overall Grade and hit save. NOTE that for Surveys, there will be more than one grade field to fill in. If you are conflicted, hit the conflicted button and it will mark the proposal as such. Please note: the grade field must be empty in order to mark the proposal as a conflict. You can leave and come back at a later time to finish your reviews. Please make sure you review and grade all proposals assigned to your panel, not just the proposals you are assigned as lead reviewer. The initial discussion list report will be available

automatically once all grades are submitted, preferably by the grade deadline. Once the grade deadline has passed, you will no longer be able to change your grade although you will still be able to see it.

If a proposal has received a technical review, the review will appear on the proposal details page and in the proposal PDF rendering. Proposals with a technical review are indicated by a "Tech Review" message in the proposal list. Proposals with technical reviews can also be found by using the "With technical reviews Only?" search filter.

During stage 1 of the panel discussion, the TAC Assistant will make all grade changes in the system. The new grades and grade averages will be available immediately. This will be the final grade that the PI will receive for their proposal. During Stage 2, there will be an opportunity to break tie grades and make adjustments as indicated in section 3 above. Any adjustments in Stage 2 will change the relative rank of the proposal, but not the final grade.

After the proposal review has been completed, your TAC comments can be added in the TAC comments box below the grade. Enter your comment, mark ready for review, and save.

The Chair will review your comments and mark them as approved or rejected. If they are rejected, you will be able to go back in to make the required/requested changes. Once your comments are approved by the Chair and marked reviewed you will no longer be able to add or make changes.

Lead Reviewers

Each TAC member serves as a Lead Reviewer for a share of the proposals. Lead Reviewer assignments are available on your Time Allocation System (TAS) dashboard. Lead Reviewers should record preliminary comments for the proposals assigned to them.

COMMENTS PROCEDURES: PLEASE READ CAREFULLY.

Comments: Procedures

At the meeting, the Lead Reviewer will begin the discussion of the proposal by providing a brief summary evaluation, based on their preliminary comments.

After the discussion of proposals, Lead Reviewers should augment their preliminary comments with the comments captured during the discussion. Panel members will provide the Lead Reviewer with written text that captures their contribution to the discussion, if necessary.

Lead Reviewers are responsible for producing summary comments. It is critical that

the comments reflect the consensus of the panel, and not just the judgment of the lead reviewer. When the panel is unable to arrive at a strong consensus, the remarks should reflect the dispersion in judgements from the panel.

Chairs will make sure that there will be frequent breaks during the panel meeting to allow the time for editing the comments.Panel Chairs will perform a final check of the summary comments. The final check will be done when all panelists are still available in person, so they can confirm the details of the panel discussion as needed. **Panel Chairs are responsible for delivering the checked summary comments to TAC staff**. These comments will be forwarded to the PI so it is essential that they be as complete, accurate, and clear as possible using complete sentences. Comments should be fair, professional, constructive, and respectful and the panel members should cast themselves as the recipient when wording the comments.

Lead Reviewers and Chairs will write/edit comments in the NOIRLab TAS. If for some reason you are unable to enter your comments, please contact Mia Hartman (mia.hartman@noirlab.edu).

Comments: Content

Please evaluate the proposals for all telescopes and record your preliminary comments in whichever format you prefer. Lead Reviewers will build on their preliminary comments to produce the summary comments. Summary comments should consider all applicable criteria (listed at beginning of this document). If a technical review is a significant factor in whether a proposal receives time, please flag this fact prominently so that we can confirm the technical assessment. Any concerns or errors with proper anonymization of the proposal should be noted.

Summary comments should contain the TAC impressions of the proposal. If the panel concludes that a proposal should not be granted observing time under any circumstances, the summary comments should include detailed information as to why the panel reached their conclusion. Comment editing should be done with special care for the proposals that are ranked the lowest.

Additional guidelines for writing comments can be found on the panel dashboard under Panel Meeting Materials.

Technical Review

Technical review information will be made available to all TAC members via TAS.   We do not provide a technical review of every proposal, but we try to review those that have the greatest likelihood for technical problems. If you feel you need specific technical or other information to evaluate a proposal, you may consult whatever experts you wish, but you should attempt to retain an appropriate degree of confidentiality. If you have a question

about the feasibility of the observations proposed, please email that concern to Mia Hartman (mia.hartman@noirlab.edu).