



STScI | SPACE TELESCOPE
SCIENCE INSTITUTE

EXPANDING THE FRONTIERS OF SPACE ASTRONOMY

Lessons Learned: What Can Go Wrong (and some possible mitigation strategies)

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Anticipated issues

Astronomy is a small field



Keeping the science in the proposal without self-identifying

This is hard: as astronomers, we have all practiced and learned over years to write in first person and active voice! Unlearning this behavior is difficult. **There will be honest slip-ups.**

Not all first person language is self-identifying:

“We will reduce this data using the AwesomeWidget package...” is fine, while

“We will reduce this data using our AwesomeWidget package...” is both potentially self-identifying *and* potentially an honest mistake.

We **don’t want the science “punch” of the proposal to be less** because the proposers are bending over backwards to not identify themselves!

Oftentimes proposed observations build off of previous ones (expanding parameter space of a sample, or many long-duration time domain studies). How can a proposal still be written so that this broader context is leveraged, even if detailed knowledge of the existing parameter space or earlier observations is potentially identifying?



Keeping the science in the proposal without self-identifying

Astronomical observations do not stand in isolation: often bolstered by other data that may be proprietary or require proprietary access. Or will be interpreted using simulations that require proprietary access (especially tricky to navigate if for an Archival Theory proposal). Increases onus on the reviewers to believe the proposers (and on the proposers to not take advantage of this—but we are trained to back up our assertions with citations, so it can be difficult to not do...).

Example: Previously, “We will supplement these data with observations from AwesomeTelescope through Co-I Gonzalez’s institutional access...” Now, ““We will supplement these data with observations from AwesomeTelescope” *and the panel has to take the proposers at their word that they have access to AwesomeTelescope.* When proposals are anonymized, this aspect is both more difficult for the proposers *and* the reviewers.

A deep space photograph of a nebula, likely the Carina Nebula, showing intricate structures of gas and dust in shades of blue, purple, and brown. Numerous stars are visible throughout the field of view. The text "Unexpected pitfalls" is centered in white, with a thin orange horizontal line extending across the slide below it.

Unexpected pitfalls



Over-Litigating

While it was good that so many of the reviewers enthusiastically supported the dual anonymous system, this enthusiasm sometimes backfired / overshadowed the reviewing of the *science*.

Panelists spent a lot of time trying to decide if proposers are being “anonymous enough” instead of actually looking at the science. Many of the questions during the opening orientation session were about “what about cases where...”.

The Science Policies Group compiled a running spreadsheet of potential de-anonymization issues that panelists brought to our attention. Dozens of proposals were on the list, but (in our view) only a small handful were actually egregious enough to be disqualifying (most of which were otherwise not viable anyhow).

Counterpoint: we found several cases of URLs included in footnotes that *did* correspond to the group or PI, but that the panel did not comment on.



False Assumptions

Panelists sometimes assume they know who the team is,

...and may be doing this without realizing that is what they are doing.

Example: When referencing previous work or previous observations, proposals were unclear on if the previous work was done by them or other teams (see earlier issues regarding how to write a proposal that places the new observations in a broader context). Panelists may assume the previous work was done by the proposers and ding them for not showing results from it. In one case, the panel had full conversation about this, but the Leveler did not pick up on it as they were not a scientist or experienced serving on panels and did not follow that that was the conversation that was happening—the nuances in the conversation were subtle enough that an unexperienced observer could not realize that the panel was making assumptions about the team, and the panel itself did not realize they were making these assumptions.

A deep space photograph of a nebula, likely the Carina Nebula, showing intricate structures of gas and dust in shades of blue, purple, and brown. The background is filled with numerous stars of varying brightness. The text "Ideas on how to mitigate" is centered in white, with a thin orange horizontal line below it.

Ideas on how to mitigate



Some mitigation strategies

Give examples to proposers of how to word / phrase things anonymously. Examples can include suggestions to search for “we” and “our” in the text, as well as thinking carefully about any URLs included.

Let reviewers know of these pitfalls!

Be explicit about what we are looking for in “enforcement”: Does de-anonymization detract from ability to focus on science instead of proposers? Is there a reasonable doubt of who the proposers could be? **This is new for everyone.** When reviewers see case of de-anonymization, they should flag it for review by SPG but then try to not pay attention to it and continue to review it *based on the science* anyhow.

Levelers are more effective if they can follow the conversation, but it is difficult enough to get Levelers in the first place ...