



**National Radio Astronomy Observatory**

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**Gender-Related Systematics in the NRAO Proposal  
Review Processes**

Peer review of proposals for telescope time is a bedrock principle to which the NRAO adheres, believing that it leads to the best and most-timely science program on its world-leading telescopes. Proposals to the NRAO for the scientific use of its telescopes are evaluated on the basis of scientific merit in accordance with NRAO's policy of non-discrimination and inclusion. NRAO uses a panel-based proposal review system to ensure that scientifically knowledgeable peers representing the broad diversity of the community at large provide expert proposal evaluations. We believe that inclusiveness and broad representation of our users produces the most compelling scientific program.

To meet this ideal requires awareness and vigilance. Recognizing that a number of biases may be inherent to any peer review process, steps must be taken to identify and correct them. Recently, Reid (2014; <http://arxiv.org/pdf/1409.3528.pdf>) conducted a study on gender-related systematics in HST proposal selection for cycles 11 through 21. He found a small effect that persisted across many cycles, showing that male PIs had a greater success rate than female PIs. NRAO has conducted a similar study of gender-related systematics in its own proposal review processes for both its North American instruments and ALMA. Weak evidence of systemic gender-related trends can be seen in five years of proposal data for each of the VLA, GBT, and VLBA, however the combined data for all three NRAO telescopes during this period indicates systematically lower rankings for proposals from women. A preliminary analysis of the North American results from ALMA Cycles 2 and 3 has found a significant trend in the rankings, favoring men relative to women (this result will be further examined using Cycle 4 results in the near future). Both the HST and NRAO studies show that gender-related systematics are pervasive, independent of the gender distribution on review panels, and observable across the distribution of geographical origins of the proposals. These results will be published on astro-ph (or elsewhere) in the near future.

**NRAO Policy**

The NRAO is deeply committed to principles of equity and inclusion in all aspects of its operation as an observatory and as a community. The Observatory considers bias in any element of its operations to be unacceptable. This commitment to fairness extends to our interactions with the broader community, and includes the peer review process.

We are working to eliminate gender bias in our proposal review processes. To that end, we strongly urge reviewers to make every effort to consider proposals equitably, keeping in mind the demonstrated tendencies toward gender-related systematics in the review process. Panel chairs should be particularly mindful of this issue as they guide the final

stages of the various reviews. NRAO will continue to monitor gender-related and other trends in proposal success rates to ensure that the prime criterion for time allocation remains scientific merit.

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