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LETTERS

Federal Funding Obligations in Astronomy

As a former Division Director of Astronomy at the National Science Foundation (NSF) (1977–1981), I wrestled with trying to provide a good balance of support to the nation's optical astronomers between the "haves" and the "have-nots" that John Travis points out in his article "Astronomy's optical illusion" (News, 21 Oct., p. 356). We built "funding firewalls" between the grants and national centers and between the various centers, providing a policy framework that worked because it encouraged scientists in these areas to do their own prioritizing within a relatively fixed percentage of the NSF astronomy budget (which would change only infrequently, as the needs of all of astronomy evolved). Current absence—or weakness—of such a framework is causing problems.

If we go back to "first principles," the issues become clearer. First, if major federal funding is expended on either a major telescope or its instrumentation, time on that instrument ought to be available in large measure to the best proposals based on the merit of the proposal as determined by peer review. That is what the national observatories were set up to do. If state or private observatories want federal support, they should be willing to make telescope time available competitively to outside observers in exchange for that support. If institutions use local, private, or state money to fund a telescope or its equipment, then they should have the right to limit time on the instrument to their own astronomers. Second, federal funds should support only state-of-the-art telescopes and instrumentation. If a telescope is not at the forefront of research, it should be transferred out of the federally funded arena. The government should not be asked to support a plethora of small telescopes. Other institutions should do that. Third, "funding firewalls" should be reinstituted so that the subdisciplines of astronomy can determine their own priorities. NSF, aided by the best astronomers in those subdisciplines, should determine the relative percentages of funding for each subdiscipline.

In the late 1950s, when the national observatories were built, they afforded access to instrumentation for anyone with a good observing proposal, and those proposals often came from institutions that did not have telescopes at home. One consequence of this was that everyone could be a "have," and we began to hire good astronomers at small, "have-not" institutions—a good thing, but then the number of astronomers began to grow at a rate that we have found hard to sustain with federal funds—a bad thing. The demand is now exceeding the supply. Back to "first principles!"

In times of funding hardship, we should avoid proliferation of management responsibility for large federally funded instruments. The plight of our national high energy physics centers should have taught us that new federal projects like the Gemini 8-meter telescopes should be a national observatory responsibility. The optical community of astronomers ought to be asked to wrestle with priority tradeoffs, rather than to have NSF share this responsibility with an organization that is only partly under the National Optical Astronomy Observatories (NOAO). Centralization should occur under an existing organization like NOAO; if it does not perform, the management should be changed.

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Travis gives an interesting description of some of the strategic problems facing astronomy that stimulated the formation of the National Academy of Sciences–National Research Council panel on ground-based optical and infrared astronomy.

While it is premature of us to comment on the substance of the News article before the panel's report is completed, we wish to give our view of the role of Sandra Faber. Faber has done a great service to optical and infrared astronomy by stating clearly some of the long standing issues that urgently need to be addressed. Her memo of 1993 has brought these issues to the fore and has stimulated a healthy debate. Moreover, Faber has been consistently supportive of excellence at the NOAO so that all astronomers might have the opportunity to make scientific contributions as distinguished as hers.

We hope that the panel's report will help NSF and NOAO meet this challenge.

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