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**Before the**
**FEDERAL COMMUNICATIONS COMMISSION**
**Washington, D.C. 20554**

In the Matter of

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| 2000 Biennial Regulatory Review-- Streamlining and Other Revisions of Part 25 of the Commission's Rules Governing the Licensing of, and Spectrum Usage by, Satellite Network Earth Stations and Space Stations | ) ) ) ) ) | IB Docket No. 00-248 |

To: The Commission

## REPLY COMMENTS OF THE NATIONAL RADIO ASTRONOMY OBSERVATORY

The National Radio Astronomy Observatory, Green Bank, West Virginia (NRAO), by its attorneys, hereby submits its Reply Comments in the above-captioned proceeding.

1. The NRAO was established in 1957 to provide sophisticated telescopes and related facilities to radio astronomers affiliated with universities, other observatories, government laboratories and private industry who might otherwise not have these resources available to them. Under the terms of a cooperative agreement with the National Science Foundation, the NRAO facilities are operated by a nonprofit corporation, Associated Universities, Inc., which was founded by nine universities: Columbia, Cornell, Harvard, Johns Hopkins, Massachusetts Institute of Technology, Pennsylvania, Princeton, Rochester and Yale. The NRAO currently operates its radio astronomy observatories from facilities in Green Bank, West Virginia, and Socorro, New Mexico.

2. The telescope systems are operated at Green Bank, include the new Green Bank Telescope (GBT), funded by a $75 million Congressional appropriation in 1989. The NRAO facilities are located within the National Radio Quiet Zone (NRQZ), a 13,000 square mile, rectangular area in Virginia, West Virginia and western Maryland created by the FCC "in order to provide maximum practicable protection from interference to radio astronomy measurements." *Report and Order in Docket No. 11745*, 17 R.R. 1738, 1740 (1958).

3. Section 25.203(f) of the Commission's rules provides that "any applicant for a station authorization... [with exceptions not applicable here] seeking a station license for

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a new station, a construction permit to construct a new station or to modify an existing station license in a manner which would change either the frequency, power, antenna height or directivity, or location of such a station" within the NRQZ must notify the NRAO which is permitted to object to the application if it has the potential to cause harmful interference to NRAO operations.

4. The NRAO has become aware of the potential for interference which, because of the streamlining of processing of license applications for the operation of satellite facilities, may not be identified in advance of the institution of satellite service to individual customers of the system licensee. As an example, the NRAO was contacted by an education facility located within the NRQZ which is considering becoming a subscriber to the Starband service which is a two-way satellite link enabling customers in isolated, remote regions such as within the NRQZ, to obtain high-speed internet connections not available by other means. In this instance, the hub of the satellite system is located outside of the boundaries of the NRQZ and may be part of a multiple hub system with hubs located at great distances from the Quiet Zone. With this streamlining of satellite applications, the application processing scheme which existed when Section 25.203(f) was first instituted is circumvented and the protection against interference to radio astronomy activities which the Commission originally envisioned can no longer be assured.

5. In light of the Commission's proposal in paragraph 58 of the *Notice of Proposed Rulemaking* in this proceeding to expand the licensing provisions to include multiple hub stations within a single VSAT network license, the NRAO requests that the Commission institute procedures which are designed to identify potential interference from hubs with service areas which overlap the boundaries of the NRQZ. For example, this may require revisions to software employed by the Commission to identify these potential interference sources by expanding the field of the search to include the NRQZ plus a perimeter around the NRQZ sufficient in size and area. Such an expanded search might enable the FCC to identify applicants which may provide service within the NRQZ and which could cause objectionable interference to NRAO. In those instances where the licensee serves a customer who is later identified as being the source of actual harmful interference, the Commission should be prepared to cooperate with the NRAO to institute such steps as will ensure that actual interference is terminated as rapidly as possible. At the very least, applicants must be reminded that the purpose of Section 25.203(f) is to protect NRAO and that every effort must be made before and after licensing to expeditiously eliminate interference to radio astronomy activities in Green Bank.

6. In addition, it may also be appropriate to revise §25.203(f) to apply to satellite systems which are geographically licensed with a main station located outside the Quiet Zone which are otherwise permitted to add additional hubs or other subscriber points of communication inside the Quiet Zone without the necessity of filing a further application. §25.203(f) might be amended to read as follows (with the additional language underscored):

> Notification to the National Radio Astronomy Observatory: In order to minimize possible harmful interference at the National Radio Astronomy Observatory site located at Green Bank, Pocahontas County, W.Va., and at the Naval Radio Research Observatory at Sugar Grove, Pendleton County, WV, any applicant for a station authorization other than mobile, temporary base, temporary fixed, Personal Radio, Civil Air Patrol, or amateur seeking a station license for a new station, a construction permit to construct a new station or to modify an existing station license in a manner which would change either the frequency, power, antenna height or directivity, or location of such a station within the area bounded by 39° 15' N on the north, 78° 30' W on the east, 37° 30' N on the south and 80° 30' W on the west shall, at the time of filing such application with the Commission, simultaneously notify the Director, National Radio Astronomy Observatory, P.O. Box No. 2, Green Bank, W.Va. 24944, in writing, of the technical particulars of the proposed station. Such notification shall include the geographical coordinates of the antenna, antenna height, antenna directivity if any, proposed frequency, type of emission, and power. In addition, the applicant shall indicate in his application to the Commission the date notification was made to the Observatory. After receipt of such applications, the Commission will allow a period of 20 days for comments or objections in response to the notifications indicated. If an objection to the proposed operation is received during the 20-day period from the National Radio Astronomy Observatory for itself or on behalf of the Naval Radio Research Observatory, the Commission will consider all aspects of the problem and take whatever action is deemed appropriate. <u>Licensees or permittees of systems serving geographic areas which are authorized to add transmission facilities without further application to, or approval by, the Commission, and which additional transmission facilities are located within the coordinates specified above, shall, prior to allowing such additional transmission facilities to operate, notify the National Radio Astronomy Observatory (NRAO) and coordinate the construction and operation to minimize possible harmful interference to the NRAO. A certificate of coordination signed by an authorized representative of the NRAO shall be retained by the licensee or permittee and made available to the Commission upon request. Comments or objections by the NRAO in response to such coordination, or non-coordination if appropriate, will be considered by the Commission in the same manner as comments or objections to applications as stated above.</u>

For the foregoing reasons, the NRAO respectfully requests that the concerns of the NRAO expressed in these comments be alleviated by appropriate Commission actions in the context of this Biennial Regulatory Review in order to ensure the continuing viability of the protections afforded radio astronomy operations within the National Radio Quiet Zone.

Respectfully submitted,

NATIONAL RADIO
ASTRONOMY OBSERVATORY

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