

The Honorable Ted Cruz
Chairman
Committee on Commerce, Science, and Transportation
U.S. Senate
Washington, DC 20510

Dear Chairman Cruz,

We are writing regarding the recently approved House Energy and Commerce Committee budget reconciliation proposal to identify 600 MHz of radio spectrum between 1.3 and 10 GHz for repurposing and auction. The Senate Committee on Commerce, Science, and Transportation, in overseeing the Nation's telecommunications framework, has long promoted technological innovation and served the public interest. Both active and passive use of the radio spectrum are essential to maintaining U.S. commercial and scientific leadership, which requires that we protect frequency bands allocated to scientific investigation of Earth and the cosmos, which are also used to enable critical systems for our national security, like GPS.

On behalf of the United States astronomical community, we respectfully request (as your Committee considers the House budget reconciliation proposal) that frequency bands allocated to the Radio Astronomy Service both domestically and internationally be protected in accordance with applicable regulations and international treaties and therefore excluded from consideration for repurposing and auction. We provide as an annex to this letter a list of the relevant frequency bands between 1.3 and 10 GHz that are allocated to the Radio Astronomy Service on a primary or secondary basis, as well as those for which all practicable steps to protect the Radio Astronomy Service are required in accordance with the footnotes to the United States Table of Frequency Allocations (47 CFR § 2.105). These bands are protected globally in recognition of their value for understanding the universe around us. Beyond the bands protected for scientific discovery, a number of bands (centered at 2.2, 3.3, 5.5, 6.6, 8.6, and 10.5 GHz) are critical for observations that enable the Nation's positioning, navigation, and timing (PNT) capabilities. Very Long Baseline Interferometry (VLBI) and VLBI Global Observing System (VGOS) observations of extremely distant cosmic radio sources are used to measure the daily changes to the rotation rate and orientation of the Earth, which are, in turn, used to correct GPS satellite orbits to maintain GPS positional accuracy. **We risk deterioration of GPS capabilities** without the prevention of interference in these bands, which will in turn impact our national security and other critical systems in numerous ways.

The bands allocated to radio astronomy are often shared by different types of scientific investigations on Earth and in space. As a result, these bands are some of the most efficiently utilized in the entire radio spectrum. Furthermore, these bands are allocated based on the frequencies at which we can observe specific physical phenomena in the universe. The universe reveals its mysteries, naturally, in these frequencies. Therefore, we cannot carry out the same critical observations in reallocated bands.

As scientists, we appreciate that the Administration has continued technical studies of frequency bands identified for potential repurposing under the 2023 National Spectrum Strategy, and we hope that the findings of these studies will help identify the ideal bands for auction. We are confident that, in exercising a data-driven approach to this challenge, the Committee will optimize spectrum use and enable new wireless innovation, such as dynamic spectrum sharing, while ensuring continued U.S.

leadership in the exploration of our planet and the cosmos. We respectfully request that the Committee protect the frequency bands allocated to radio astronomy service in both domestic and international regulations. We would welcome the opportunity to brief your staff on these important considerations.

Sincerely,

A handwritten signature in black ink that reads "Dara Norman". The signature is fluid and cursive, with a long horizontal stroke at the end.

Dr. Dara Norman
President, American Astronomical Society

[This letter was sent to all members of the Committee on Commerce, Science, and Transportation.]



ANNEX

1.3–10 GHz RADIO ASTRONOMY SERVICE ALLOCATIONS AND FOOTNOTES TO THE U.S. TABLE OF FREQUENCY ALLOCATIONS (47 CFR § 2.105)

RADIO ASTRONOMY PRIMARY ALLOCATIONS

- 1400–1427 MHz [US 246: “No station shall be authorized to transmit...”]
[ITU-R RR 5.340: “All emissions are prohibited...”]
- 1610.6–1613.8 MHz [US 342: “... all practicable steps shall be taken to protect the radio astronomy service from harmful interference.”]
[ITU-R RR 5.149: “Administrations are urged to take all practicable steps to protect the radio astronomy service from harmful interference.”]
- 1660–1660.5 MHz [US 342, ITU-R RR 5.149]
- 1660.5–1668.4 MHz [US 246, ITU-R RR 5.149]
- 1668.4–1670 MHz [US 342, ITU-R RR 5.149]
- 2690–2700 MHz [US 246, ITU-R RR 5.340]
- 4990–5000 MHz [US 246, ITU-R RR 5.149]

RADIO ASTRONOMY SECONDARY ALLOCATIONS

- 2655–2690 MHz [US 385: “Licensees are urged to coordinate their systems through the National Science Foundation...”]
[ITU-R RR 5.149]

OTHER RADIO ASTRONOMY FOOTNOTES

- 1330–1400 MHz [US 342, ITU-R RR 5.149]
- 1670–1690 MHz [US 211: “Applicants for airborne or space station assignments are urged to take all practicable steps to protect radio astronomy observations in the adjacent bands from harmful interference.”]
- 3260–3267 MHz [US 342, ITU-R RR 5.149]
- 3332–3339 MHz [US 342, ITU-R RR 5.149]
- 3345.8–3352.5 MHz [US 342, ITU-R RR 5.149]
- 4825–4835 MHz [US 113: “Every practicable effort will be made to avoid the assignment of frequencies to stations in the fixed or mobile services...”]
[US 342, ITU-R RR 5.149]
- 4950–4990 MHz [US 342, ITU-R RR 5.149]
- 5000–5250 MHz [US 211]
- 6650–6675.2 MHz [US 342, ITU-R RR 5.149]