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October 5, 2015

VIA ECFS

Marlene H. Dortch, Secretary
Office of the Secretary
Federal Communications Commission
445 12th Street, N.W.
Washington, DC 20554

Re: Notice of Ex Parte Communication -- ET Docket No. 14-165
Amendment of Part 15 of the Commission's Rules for Unlicensed Operations in
the Television Bands, Repurposed 600 MHz Band, 600 MHz Guard Bands and
Duplex Gap, and Channel 37.

Dear Ms. Dortch:

On September 30, 2015, on behalf of users of the Radio Astronomy Service, Darrel Emerson (National Radio Astronomy Observatory, retired), Timothy Pearson (Research Professor in Radio Astronomy, California Institute of Technology) and I had a teleconference with the following members of the Commission's Office of Engineering and Technology: Ira Keltz, Hugh Van Tuyl, and Martin Doczkat.

The discussion in the teleconference focused on paragraph 228 of the Commission's Report and Order in ET Docket 14-165 (FCC 15-99, released August 11, 2015) ("R&O"), which states:

"We disagree with NRAO that we need to consider white space device signal aggregation when fashioning the separation distances. The VLBA is comprised of 25-meter dish antennas which have very high gain and very narrow beamwidth. In addition, these antennas generally are aimed skyward. However, in the instance that an antenna is pointed towards the horizon, its antenna beam is still so narrow that it is unlikely that it will see more than a single white space device.

Mr. Pearson and Mr. Emerson noted that this language in the R&O appears to reflect a misunderstanding regarding the manner through which radio telescopes typically receive radio frequency interference. For example, the primary international protection criteria used for radio astronomical measurements, ITU-R RA.769, considers only interference entering the isotropic

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side lobes of any antenna, and already accepts any interference that may occur when the radio telescope antenna might occasionally be pointing directly at the transmitter.¹ Accordingly, because radio telescopes are primarily impacted by interference in the far side-lobes, not the main beam, the fact that the main beam is narrow is not relevant in an analysis of potential interference to the telescope. The OET staff on the call acknowledged that this was a proper reading of ITU-R RA.769.

Should you have any questions with respect to this matter, please feel free to contact me at (703) 812-0400.

Sincerely,

Paul J. Feldman

Paul J. Feldman, Esq.

cc: Ira Keltz
Hugh Van Tuyl
Martin Doczkat

¹ See, e.g., Recommendation ITU-R RA.769-2 at Section 1.3 (“Interference to radio astronomy is almost always received through the antenna side lobes, so the main beam response to interference need not be considered.”)