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WHAT IS EARTH'S TECHNOSIGNATURE?

Abstract

The moonbounce project aims to answer the questions: what is our technosignature and how is it changing? a Humans have been unintentionally transmitting technosignatures in the form of radio waves since the 1940's. Communication technology has changed rapidly since its humble beginnings, varying in the number of transmitters and power used to transmit. For example, digital TV has largely replaced analog TV in the 1990's and the power needed to transmit digital signals is significantly less than its predecessor. Even though some transmissions may have a reduction in power other transmissions, such as planetary radar and ballistic missile detectors, are some of the most powerful transmitters on our planet. Are we becoming radio quiet as a species, or are we increasing our radio detectability?

The moonbounce project uses our moon to help answer these questions, as the moon is a natural reflector of radio light and we can intercept "bounced" terrestrial leakage. Following on previous observations by Sullivan and Knowles (1985) and McKinley *et al.* (2013), our team has observed the moon a total of 40 hours in two Ultra High frequency (UHF) bands centered at 342MHz and 800MHz with the Green Bank Telescope in West Virginia. This presentation will discuss our current findings and how they differ from previous moonbounce observations.

[1] Sullivan, W. and Knowles, S., *Lunar Reflections of Terrestrial Radio Leakage.* The Search for Extraterrestrial Life: Recent Developments. 1985.

[2] McKinley, B., *et al. Low-Frequency Observations of the Moon with the Murchison Widefield Array.* The Astronomical Journal, 145:23 (9pp), 2013.