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Initial Results of HamSCI Ham Radio 21 August 2017 Eclipse Ionospheric Experiments N.A. FRISSELL, J.D. KATZ, J.S. VEGA, S.W. GUNNING, A.J. GERRARD, New Jersey Institute of Technology, J.D. HUBA, Naval Research Laboratory, M.L. MOSES, G.D. EARLE, Virginia Tech, H.W. SILVER, HamSCI/ARRL, AND THE HAM RADIO SCIENCE CITIZEN INVESTIGATION TEAM — On 21 August 2017, a total solar eclipse will cause the shadow of the moon to traverse the United States from Oregon to South Carolina in just over 90 minutes. The sudden absence of sunlight due to the eclipse, especially solar UV and x-rays, provides an impulse function to the upper atmosphere that modifies the neutral dynamics, plasma concentrations, and related properties. Despite more than 60 years of research, questions remain regarding eclipse-induced ionospheric impacts. Ham radio operators advanced technical skills and inherent interest in ionospheric science make the amateur radio community ideal for contributing to and participating in large-scale ionospheric sounding experiments. We present initial results from three amateur radio experiments designed to study the 2017 total solar eclipse: the Solar Eclipse QSO Party (SEQP), the HF Wideband Recording Experiment, and the Eclipse Frequency Measurement Test (FMT). These experiments are coordinated by HamSCI, the Ham Radio Science Citizen Investigation, a citizen science organization that connects the amateur radio community to the professional space science research community for mutual benefit.

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