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VLF monitoring of the ionospheric D-region during the August 2017 solar eclipse JONH CARLOS MOJICA DECENA, JAN SOJKA, DONALD RICE, Utah State Univ — The use of VLF signals to monitor the changes that occur in the ionosphere resulting from solar variability, has helped to understand how different ionospheric layers depend upon the Sun. These different ionospheric layers responses play a significant role in determine space weather impacts, and the total solar eclipse of August 21st, 2017 provided a unique opportunity to observe the D-region ionospheric impact on the low altitude waveguide. Our experiment involved monitoring VLF transmissions from the NML 25 KHz in La Moure, North Dakota with receivers located at both Utah State University, Logan, Utah as well as at Riverton, Utah. The path of the eclipse, especially that of totality, passes over the central section of the VLF waveguide of our experiment. We monitored several "undisturbed" days to obtain a calibration baseline for the VLF signal. We observed the total eclipse impact on the VLF strength relative to this baseline Our two receiver stations observed a well-defined signal reduction where maximum effect appeared at the time of totality. Also, a small X-ray flare during the eclipse was observed. We will present the detailed description of our experiment set up and the D-regions response to the solar eclipse as observed in the VLF signal strength.

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