

# Observing the Sun at Radio Wavelengths: Current Status and Future Prospects

<sup>1</sup>Tim Bastian, <sup>2</sup>Dale Gary ( <sup>1</sup>*National Radio Astronomy Observatory*, <sup>2</sup>*New Jersey Institute of Technology* )

tbastian@nrao.edu

Session: SpS6 Science with large solar telescopes

Type of presentation: Oral

Radio emission from the Sun offers the means of probing thermal and non-thermal processes in the chromosphere and corona using diagnostics that are largely complementary to those available at optical wavelengths. This talk briefly reviews radio diagnostics and observing techniques and several of the science objectives motivating new and planned instrumentation, including coronal magnetography, magnetic energy release and particle acceleration, drivers of space weather, and the quiet solar atmosphere. New instrumentation includes ALMA, opening a new spectral window at millimeter and submillimeter wavelengths; and the Jansky Very Large Array (JVLA), a powerful new instrument operating at centimeter and decimeter wavelengths. A solar-dedicated instrument under construction is the Expanded Owens Valley Solar Array (EOVSA); and a planned, new, solar-dedicated facility is the Frequency Agile Solar Radiotelescope (FASR). EOVSA will soon pioneer dynamic imaging spectroscopy techniques. FASR will fully exploit these techniques as a general purpose radioheliograph designed to perform ultra-wideband dynamic imaging spectroscopy.