Abstract Submitted
for the MAS17 Meeting of
The American Physical Society

Imaging Spectroscopy of CME-Associated Solar Radio Bursts using OVRO-LWA SHERRY CHHABRA, DALE GARY, BIN CHEN, Center for Solar and Terrestrial Research, New Jersey Institute of Technology, GREGG HALLINAN, MARIN ANDERSON, California Institute of Technology — Energetic phenomenon on the Sun, such as solar flares and CMEs are a dynamic laboratory to study radio emission. We use Owens Valley Radio Observatory - Long Wavelength Array (OVRO-LWA) for the study. The new array with its 251 crossed broadband dipoles spread over a 200 m diameter core and 37 long baseline antennas extending to 1600 m baselines allows spatially resolving the Sun in the frequency range 24-82 MHz, with high spectral resolution. We examine coherent Type III and Type IV burst emission associated with a CME from 2015 Sep 20, as well as quiet Sun images before and after the bursts. Images of 9s cadence are used to study the event over a 100 minute period, out to a distance of about 2 solar radii, over the frequency range of 40-70 MHz available at that time. In order to understand better the behavior and structural evolution of the bursts, we image the event at hundreds of frequencies and use the source centroids to obtain the velocity of outward motion. A co-alignment with LASCO(C2) and SWAP data allows spatial and temporal comparison with observations of the CME in white light and EUV. We also place the bursts in context of AIA-EUV, Fermi hard X-ray and EOVSA Microwave emission associated with the event.

Sherry Chhabra
Center for Solar and Terrestrial Research, New Jersey Institute of Technology

Date submitted: 30 Sep 2017 Electronic form version 1.4