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Poster
The Mauna Loa Solar Observatory (MLSO) is an NSF observing facility operated by HAO since 1965 which has collected the longest record of coronal observations. There are two coronagraphs at MLSO which observe the low and middle corona: the COSMO K-Coronagraph (K-Cor) and the Updated Coronal Multi-Channel Polarimeter (UCoMP) which is the prototype for the proposed 1.5m COSMO large coronagraph.

K-Cor observes the corona from ~1.05 to 3 solar radii in polarized visible light. It was designed to study the formation and early acceleration of CMEs with a high temporal cadence of 15s. K-Cor data are calibrated and made publicly available in near-real time within 2-3m from acquisition. K-Cor can provide the first detection of an in-progress CME even before the CME enters the LASCO field of view.

UCoMP is an imaging spectropolarimeter that operates in the 530-10830nm range from ~1.03 to 2 solar radii. UCoMP level2 science products include intensity, line of sight velocity, line width, linear polarization, and radial azimuth. Coronal densities, plane of sky magnetic field, and coronal waves can be derived from level2 data. UCoMP provide unique information on the magnetic and plasma structure of the solar corona. While not specifically designed to study solar eruptions, UCoMP captured several CMEs, including halos and partial halos.

We illustrate the current capabilities for space weather research and forecasts of the existing MLSO instruments, show examples of observations taken at MLSO, including eruptive events, and present plans for future instruments and upgrades.

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