Don
Hassler
SwRI
Poster
The Compact Doppler Magnetograph (CDM) is a space-qualified, miniaturized Doppler magnetograph, designed to provide photospheric line-of-sight magnetic field and Doppler velocity measurements of the solar surface. CDM is derived from the proven GONG (Global Oscillations Network Group) instrument design (Harvey et al., 1988, 1996), with a space qualified prototype tailored to the requirements of deep space and space weather missions (Hassler et al., 2020). CDM has roughly 1/3 the mass of current state-of-the-art Doppler magnetographs (e.g., SOHO/MDI, SDO/HMI, SolO/PHI), with greatly increased sensitivity to the magnetic field (B) and Doppler velocity (v). Future solar polar missions and the next generation of space weather observing systems will require taking new observations from vantage points far outside of both the ecliptic plane and the Sun-Earth line. Observing platforms from these vantage points will have significant Size, Weight and Power (SWaP) limitations, requiring miniaturized instruments tailored for their mission. Ideally, a common set of instruments could be deployed on modest sized spacecraft to remote destinations in the solar system (e.g., Solar Polar orbit, Sun-Earth L4/L5) to improve upon and ultimately provide reliable and continuous coverage over the entire solar sphere. In this regard, CDM is unique since it is the only instrument at TRL 6 that has the combination of low SWaP (Size, Weight & Power) requirements, and ability to meet the measurement requirements of a wide range of future/anticipated, resource constrained, deep space and space weather missions.
Poster session day
Wednesday, April 29, 2026
Poster location
46
Meeting homepage
2026 Space Weather Workshop
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