

S3-06

**Three-dimensional Propagation of the Global Extreme-ultraviolet Wave
Associated with a Solar Eruption on 2021 October 28**

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We present a case study for the global extreme ultraviolet (EUV) wave and its chromospheric counterpart 'Moreton-Ramsey wave' associated with the second X-class flare in Solar Cycle 25 and a halo coronal mass ejection (CME). The EUV wave was observed in the H α and EUV passbands with different characteristic temperatures. In the 171 Å and 193/195 Å images, the wave propagates circularly with an initial velocity of 600–720 km s⁻¹ and a deceleration of 110–320 m s⁻². The local coronal plasma is heated from log(T/K)≈5.9 to log(T/K)≈6.2 during the passage of the wavefront. The H α and 304 Å images also reveal signatures of wave propagation with a velocity of 310–540 km s⁻¹. With multi-wavelength and dual-perspective observations, we found that the wavefront likely propagates forwardly inclined to the solar surface with a tilt angle of ~53.2°. Our results suggest that this EUV wave is a fast-mode magnetohydrodynamic wave or shock driven by the expansion of the associated CME, whose wavefront is likely a dome-shaped structure that could impact the upper chromosphere, transition region and corona.