

P305a **The JWST/NIRCam Coronagraphic Observations of the HD 163296 System**

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Directly imaging planets embedded in protoplanetary disks yields crucial insights into planet formation, evolution mechanisms, and planet-disk interactions. HD 163296, a young Herbig star, stands as an ideal testbed for exploring planet formation processes. High angular resolution observations from ALMA have unveiled numerous features suggestive of ongoing planet formation, including gaps in the dust continuum at 0.1, 0.5, 0.9, and 1.5 arcsec from the central star (the two outer gaps coincide with CO gas depletion), and velocity perturbations in the CO gas at 0.7 and 2.2 arcsec. Despite these indicators, however, previous ground-based high-contrast imaging efforts fell short in detecting companion candidates. To address this challenge, we undertook JWST/NIRCam deep coronagraphic observations in Cycle 1. In this presentation, we will show our post-processed results and engage in a comprehensive discussion to decipher their implications.