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The Hubble Tension: New Results from JWST

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I will describe new results from a major JWST program to improve measurements of the Hubble constant. The 10 times greater sensitivity and 4 times higher resolution of JWST in the near-infrared provide a powerful means of addressing challenges in previous measurements of the extragalactic distance scale. Distances to a sample of Type Ia supernova hosts have been measured using three independent astrophysical routes: 1) the Cepheid period-luminosity relation, 2) the Tip of the Red Giant Branch (TRGB) and 3) the luminosity function of JAGB/carbon stars. These three measurements provide a constraint on the systematic uncertainties in the distances that set the local calibration for the Hubble constant. As part of our analysis, our JWST photometry was blinded by adding random numbers to each of the photometric catalogs. The analysis was carried out in this blinded state until the relative distances were locked in, at which point the photometry was unblinded simultaneously for all three methods, and a value of H_0 for each of the methods was computed. The implications for the Hubble tension will be presented.

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