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The JWST Transiting Exoplanet Community Early Release Science Program

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Abstract

With a 6.5-meter diameter primary mirror in space and a wavelength coverage from the visible to the mid-infrared, the *James Webb Space Telescope* (JWST) will soon open new windows to scrutinize transiting exoplanets' atmospheres. It will provide missing clues to understand hot Jupiter's atmospheres such as the relative abundances of molecular species and the thermal structure over a wide range of altitudes, and will probe the atmospheres of terrestrial exoplanets. The transiting exoplanet community is joining forces to define a coherent strategy to evaluate JWST's capabilities during the Early Release Science (ERS) program. The aim is to accelerate the acquisition and diffusion of technical expertise for transiting exoplanet observations with JWST, and to provide representative and compelling datasets that will enable immediate scientific breakthroughs. To this end, we proposed a set of well chosen observations that will be executed in the first months of JWST science operations and will be accompanied by data analysis toolkits and guides for best practices developed by our team. This proposal has been accepted and the data and tools will be publicly available. In this talk, I will review the observing modes that will be available for transiting exoplanet spectroscopy with JWST and I will present the Transiting Exoplanet Community ERS program.