

Transients in Middle Earth



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Ramping Up the Search for Fast Transients with JWST

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Fast infrared transients have not been well explored; however, we now have chance to search this parameter space. With creative analysis techniques, we are using the James Webb Space Telescope (JWST) to search for transients with lifetimes from seconds to minutes. A single exposure from JWST is made up of integrations that are a combination of numerous non-destructive reads. This means that a single full-frame image can be split into a time-series of images with cadences ranging from about 3 seconds to 50 seconds depending on the specified readout pattern. In principle, JWST can then be turned into a fast transient infrared telescope just by looking at its diagnostic images. This method is applicable to all NIRCam and MIRI observations, however, detection capability increases with the length of integration time. I will present the JURASSIC (JWST Up the Ramp Analysis: Searching the Sky for Infrared Cosmic-cataclysms) pipeline and report our search's initial findings, including previously unidentified asteroids.

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