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Searching for Fast Transients with the TESSSELLATE Sky Survey

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The Transiting Exoplanet Survey Satellite (TESS) has been operating for nearly eight years, repeatedly surveying the entire sky with cadences no slower than 30 minutes. This has produced an enormous, largely unexplored time-domain data set. Using the TESSELLATE pipeline, we can blindly extract transient events on timescales from 200 seconds to four weeks, opening a new window on rapidly evolving astrophysical phenomena. In this talk, I will present our first systematic searches for the fastest transients in TESS data, combining tailored filtering techniques, machine learning classification, and citizen science to identify and characterise hundreds of thousands of candidate events.

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