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Tidal orbital decay with PLATO

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The orbits of hot Jupiters are expected to decay through tidal interactions between the planet and host star, and this has been observationally confirmed for at least one system. Measuring this tidal orbital decay via transit timing variations allows us to determine the stellar tidal quality factor, Q. *This poorly-understood parameter governs the timescale of many tidal processes, such as the recircularisation and coplanarisation that occurs after dynamic migration. As such, improving our knowledge of Q* is vital in order to fully understand planet formation and migration, as well as in calculating the lifetimes of these extreme planetary systems. PLATO will observe with high precision a large number of transits for many targets, making a vital contribution in this area.

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