Contribution ID: **133** Type: **not specified**

Unveiling transiting temperate giants in multi-planetary systems

Monday 7 July 2025 11:45 (15 minutes)

Most detected transiting planets have orbits of a few tens of days, exposing them to intense stellar irradiation and interactions that significantly alter their properties. In contrast, colder planets with longer orbital periods are less affected, offering crucial insights into their formation and migration histories. In this talk, I report the detection and characterization of two multi-planetary systems hosting a transiting temperate Jupiter with an orbital period larger than 100 days and an inner non-transiting planet, thanks to a four-year ground and space-based photometric and radial velocity survey. Combining precise masses, radii, and ages with a state-of-the-art planetary evolution model, I infer the metal enrichment of the newly discovered temperate giants and explore their influence on the mass-metallicity correlation of giant planets.

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Session Classification: RV-detected multiple systems