

Spectroscopic confirmation with ANDES of transiting exomoons detected by PLATO



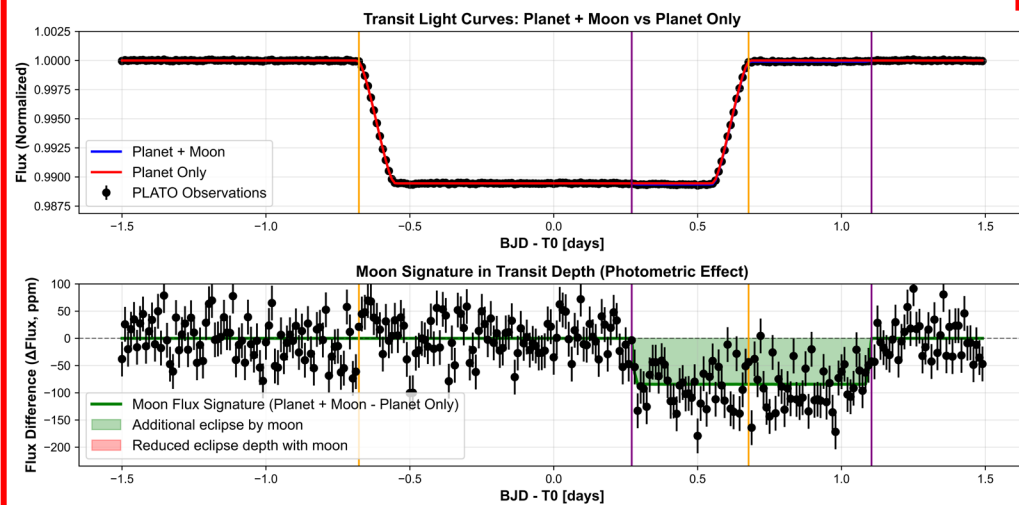
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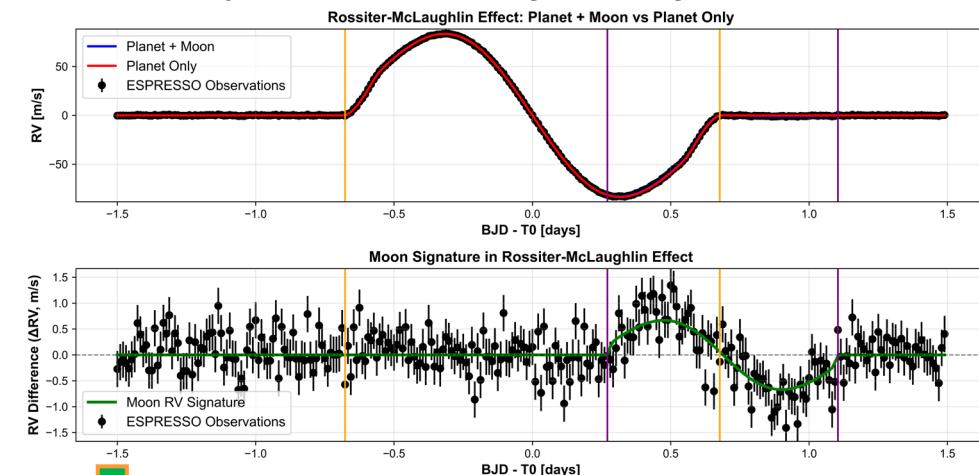
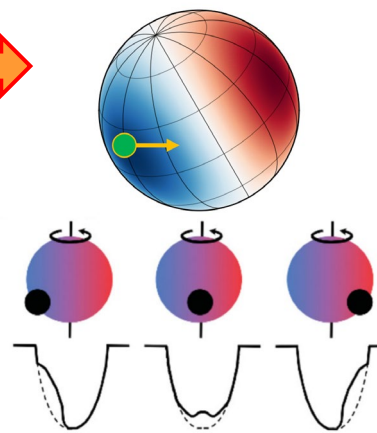
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With **PLATO**, the transit signal of an **exomoon** will be (relatively) **easy to identify**, but extremely **difficult to confirm**, due to the many false-positive scenarios. This is the reason why there are **no confirmed exomoons yet**



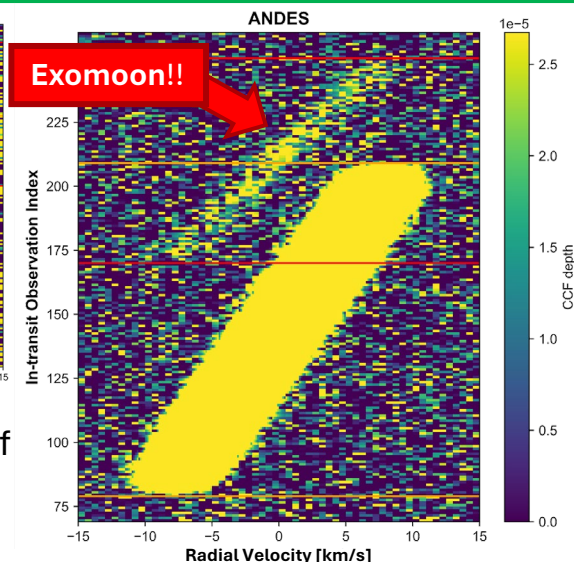
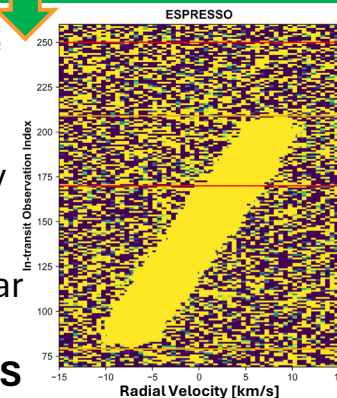
The **Rossiter-McLaughlin effect** can provide the **first independent confirmation** of the existence of an exomoon, but it is limited by the **radial velocity stability** of the instrument



In **RV space**, we are limited by the **photon noise**: **ANDES** can see signals invisible to **ESPRESSO**, regardless of the lower RV stability

The signal is also **achromatic**: color-dependent signals (e.g., stellar activity) can be ruled out with the broader wavelength range of **ANDES**

Now working on: Bayesian framework for the analysis of photometric & spectroscopic data, in preparation for **PLATO** and **ANDES** observations



Virginia Bettio

Hunting exomoons: detection and characterization via the Rossiter-McLaughlin effect and next-generation facilities

WORK IN PROGRESS

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