



Contribution ID: 18

Type: Oral presentation

Characterizing the atmosphere of two warm Neptune-like planets HD 106315 c and HD 3167 c with the HST/WFC3 Camera

Thursday, February 11, 2021 2:00 PM (15 minutes)

We present an atmospheric characterisation of two intermediate-sized planets: HD 106315 c ($R_p=4.98\pm 0.23 R_\oplus$) and HD 3167 c ($R_p=2.74\pm 0.11 R_\oplus$) whose results have been published in the ARES IV article, i.e. Guilluy et al 2020. We analysed spatially scanned spectroscopic observations obtained with the G141 grism (1.125 - 1.650 μm) of the Wide Field Camera 3 (WFC3) onboard the Hubble Space Telescope. We use the publicly available Iraclis pipeline and TauREx3 atmospheric retrieval code and we found a strong water spectroscopic signature in HD 106315 c transmission spectrum corresponding to an abundance of $\log(\text{H}_2\text{O})=2.1\pm 0.7$ (5.7σ). We also found evidences of water and carbon dioxide in HD 3167 c's atmosphere with $\log(\text{H}_2\text{O})=4.1\pm 0.9$ (3.2σ) and $\log(\text{CO}_2)=2.4\pm 0.7$ (3.3σ). Different scenarios including additional contribution of clouds, ammonia and carbon bearing species are discussed. HD 106315 c and HD 3167 c will be interesting targets for upcoming telescopes such as the James Webb Space Telescope (JWST) and the Atmospheric Remote-Sensing Infrared Exoplanet Large-Survey (ARIEL).

Field

Planetology (including small bodies and exoplanets)

Day constaints

I will not be available February 10th

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