

Splinter Session Review: Atmospheric Characterization

Speakers: Nicolas Godoy, Luke Parker, Jules Scigliuto,
Rocio Kiman, Matthieu Ravet, Evert Nasedkin, Gabriel
Marleau, Casper Farret Jentink, Alice Radcliff, Allan Dennis

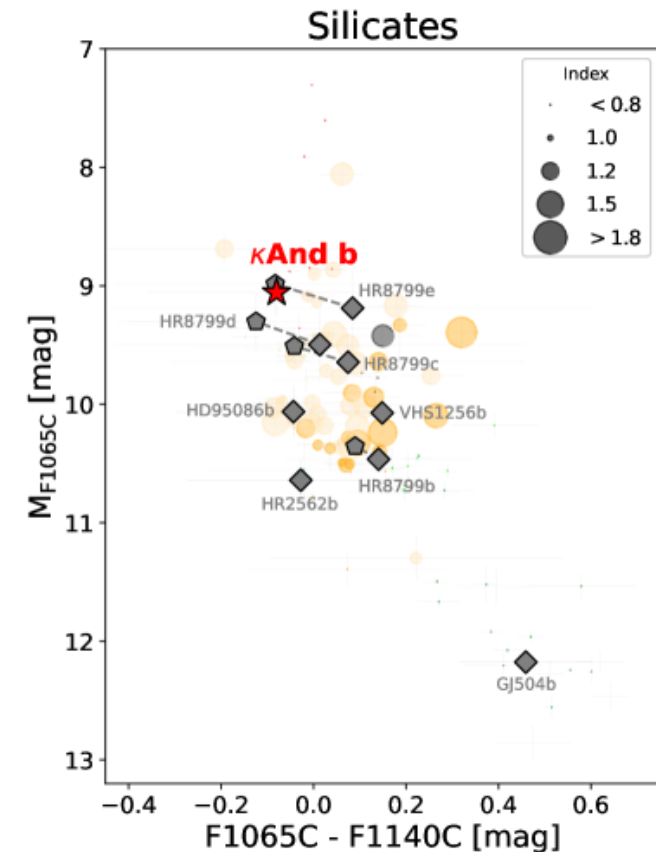
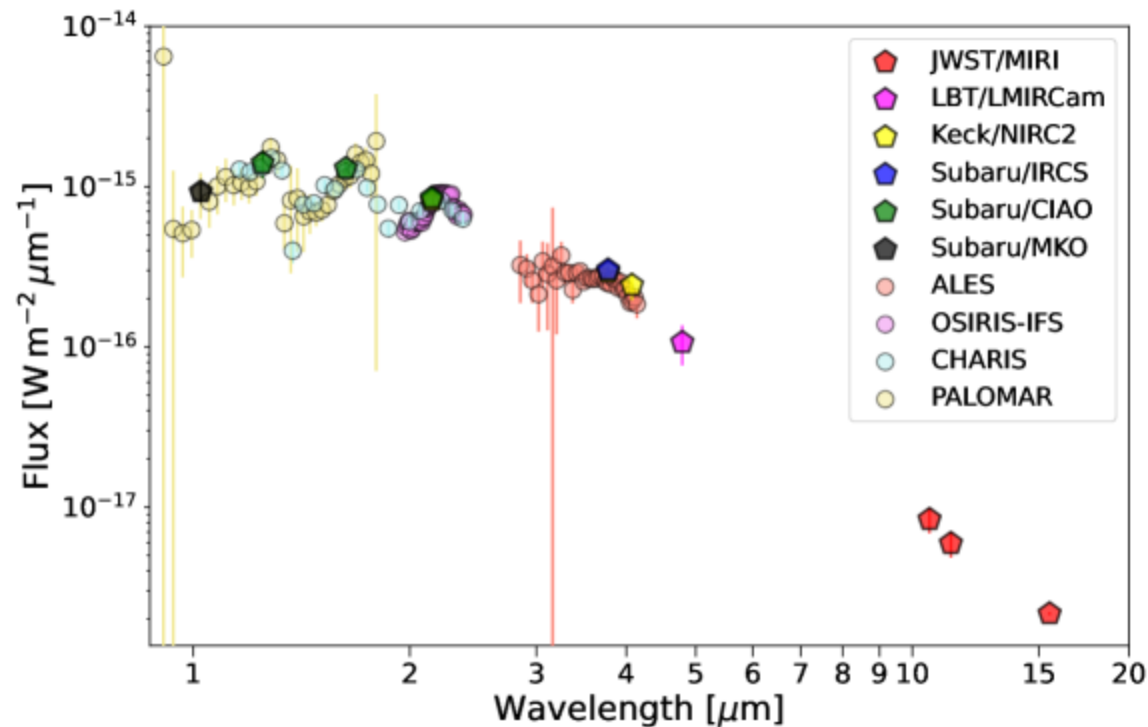
Editorialized by Jason Wang with assistance by Jayne Birkby
(session chair)

- Towards longer wavelengths
- Towards higher spectral resolutions
- The incredible high SNR spectra from JWST (planet-analogues)
- Modeling stepping up to the challenge
- Dedicated instruments on small telescopes

Towards Longer Wavelengths

N. Godoy Barraza

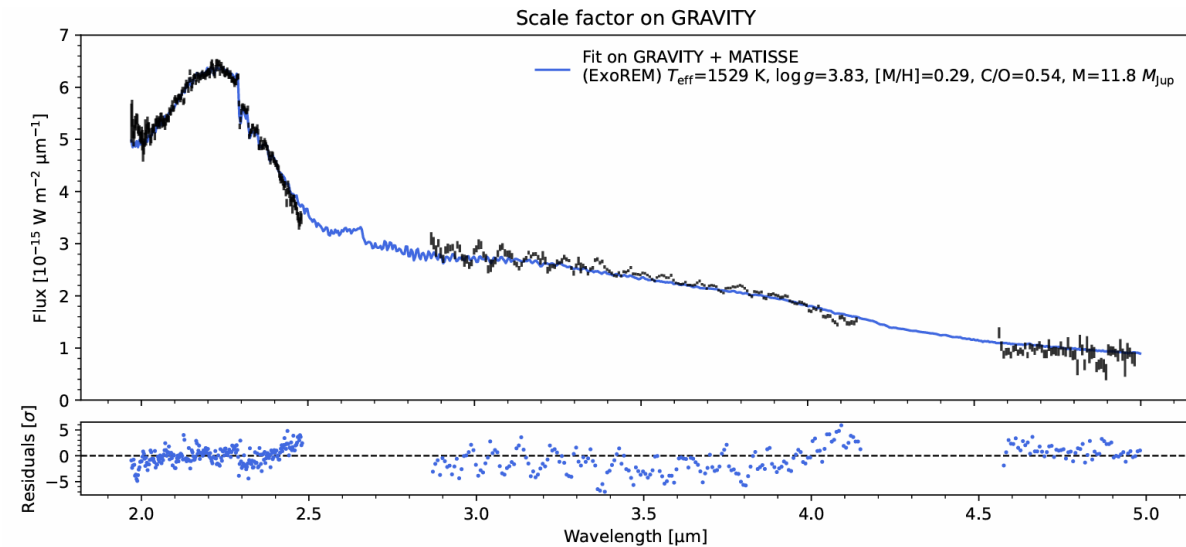
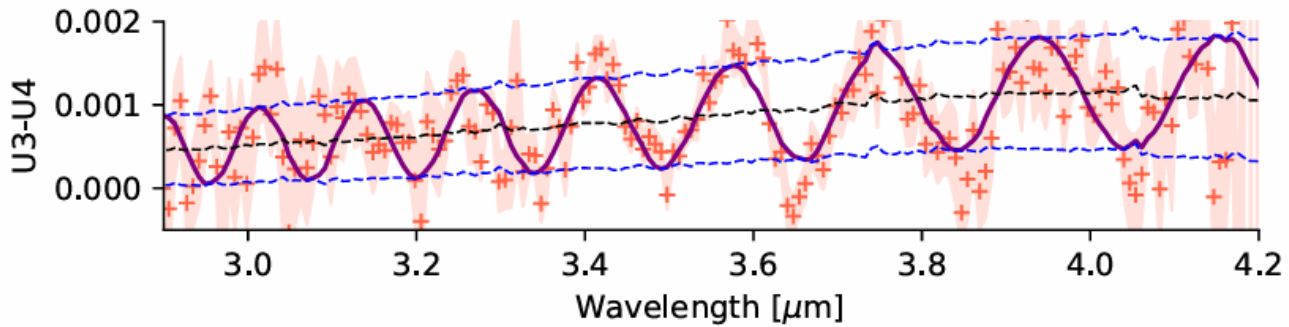
A JWST/MIRI view of kappa Andromedae b: Refining its mass, age, and physical parameters



Towards Longer Wavelengths

J. Scigliuto

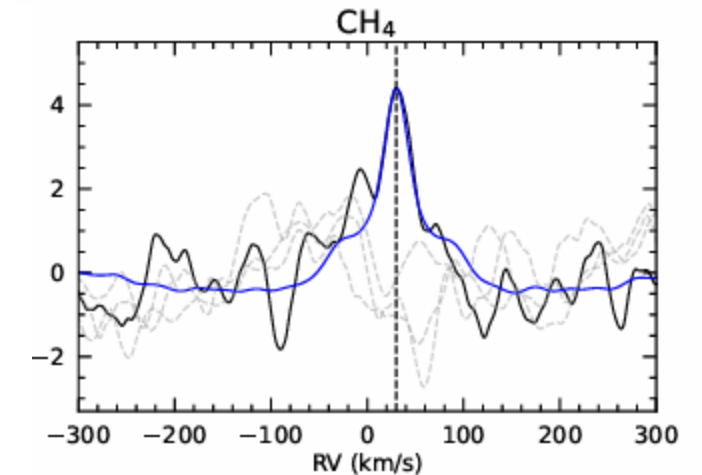
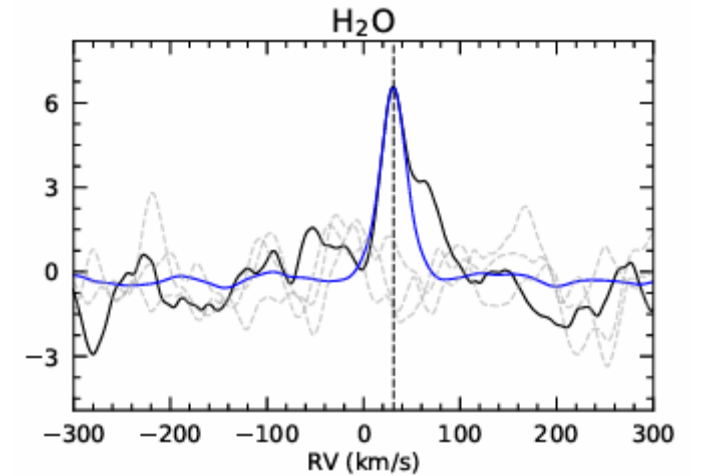
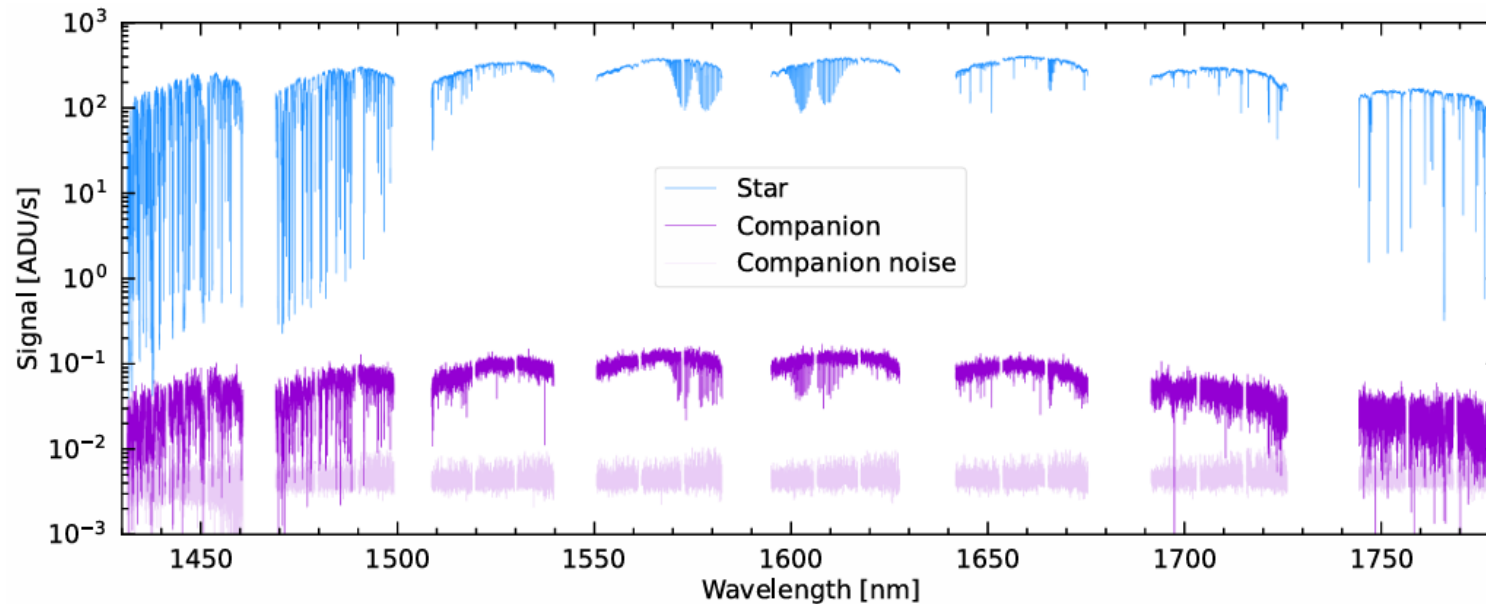
Exploring worlds with VLT/MATISSE



Towards Higher Resolutions

A. Denis

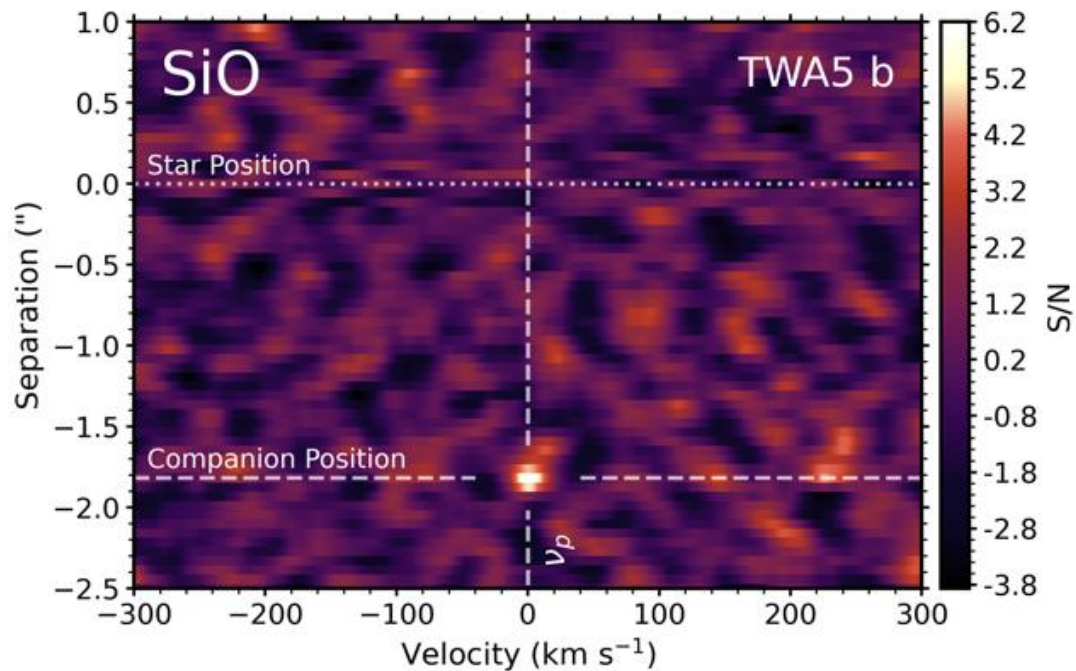
Pushing the limits of direct imaging with HiRISE : Characterization of 2 super Jovian exoplanets at low angular separation



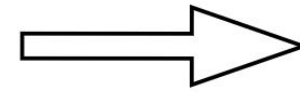
Towards Higher Resolutions (and longer wavelengths)

L. Parker

Tracing the formation history of long-period companions with novel silicate abundance ratios in the M-band



CRIRES+



METIS

~8x S/N

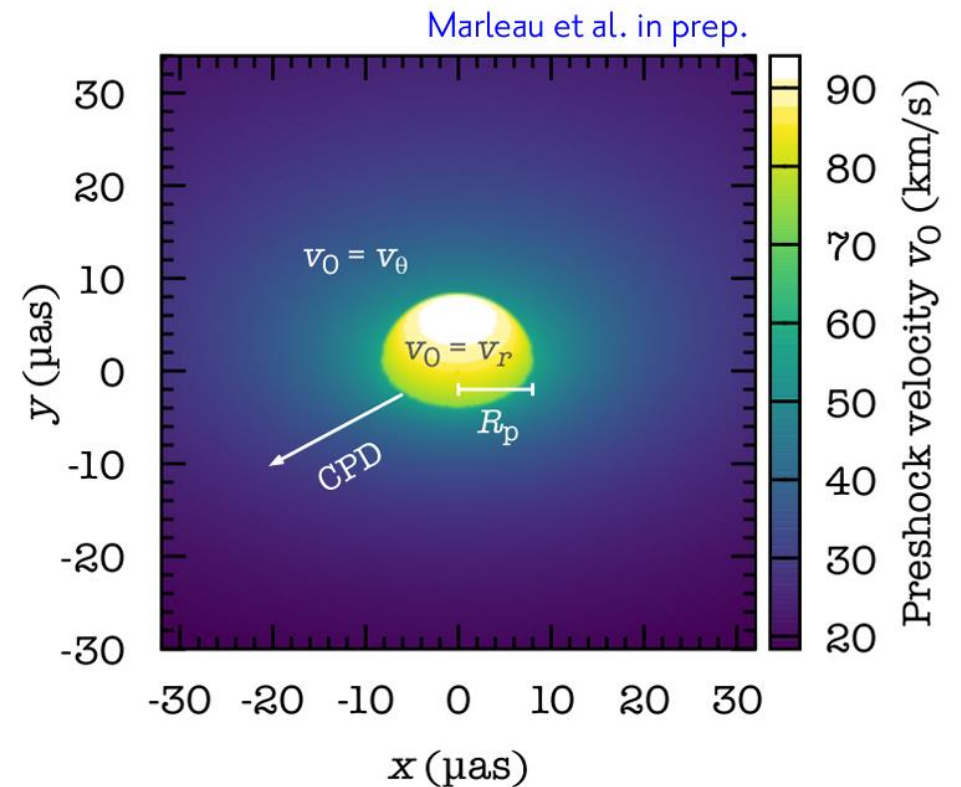
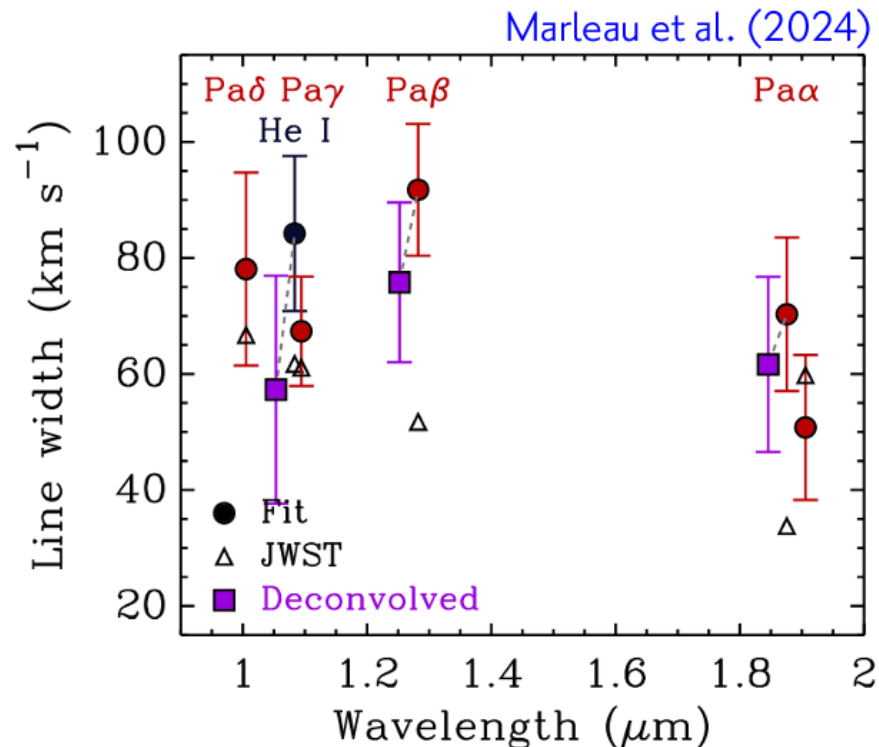
< 2% exposure time

~2 mins of METIS/ELT time to achieve these CRIRES+ results

Redefining “high SNR” with JWST (on the most favorable planetary-mass objects)

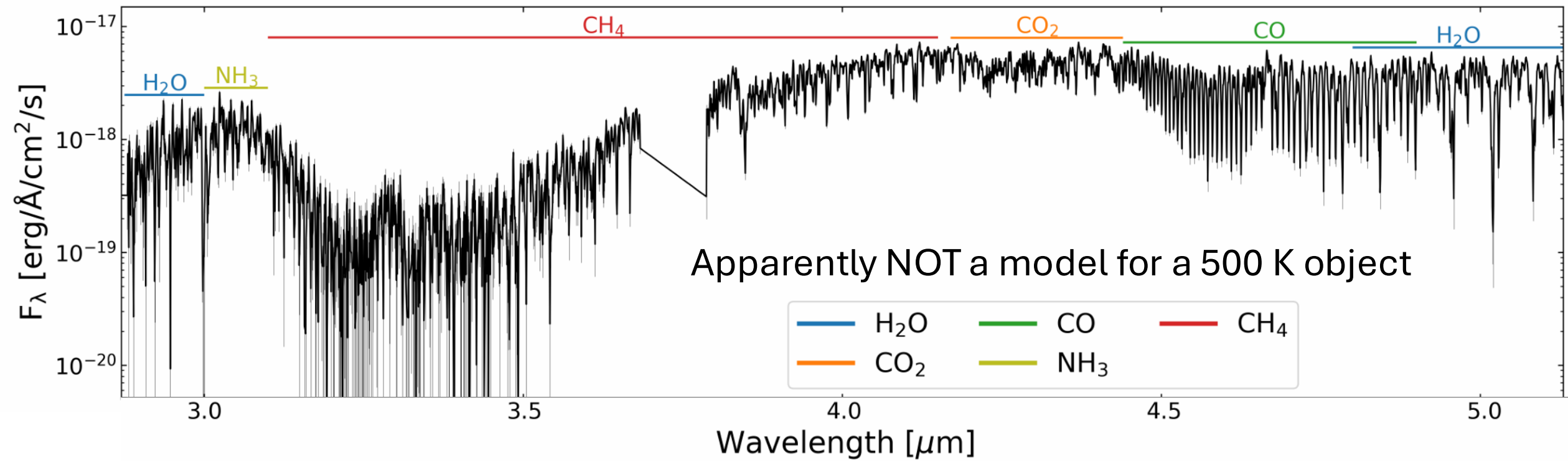
G. Marleau

Medium- and high-resolution hydrogen-line spectroscopy of planetary accretion tracers: data and models for and with JWST and ELT



Redefining “high SNR” with JWST (on the most favorable planetary-mass objects)

R. Kiman	The Diversity of Cold Worlds: Age and Characterization of the Coconuts-2 T9 Brown Dwarf
M. Ravet	Panchromatic view of the Frigid Jovian Exoplanet COCONUTS-2 b

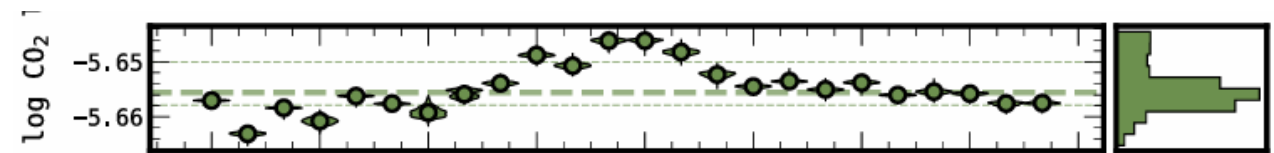
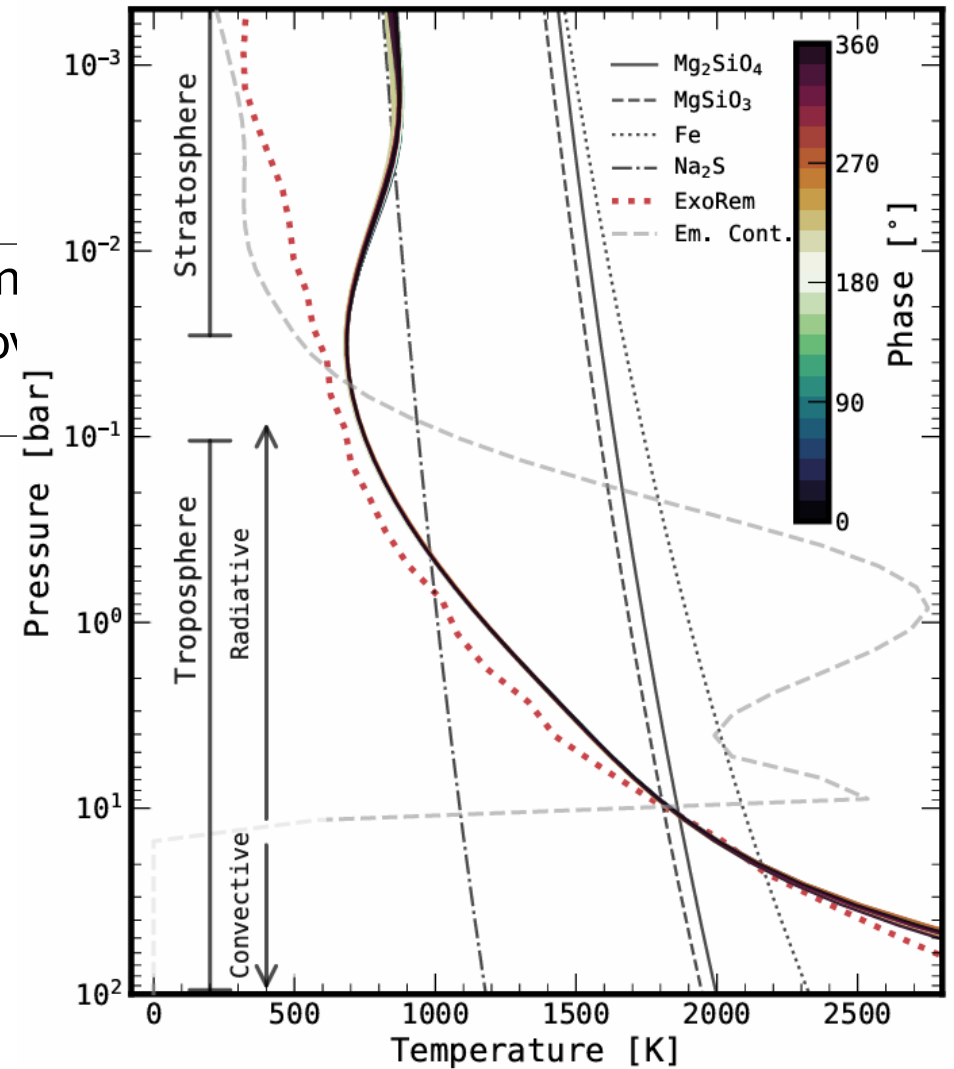
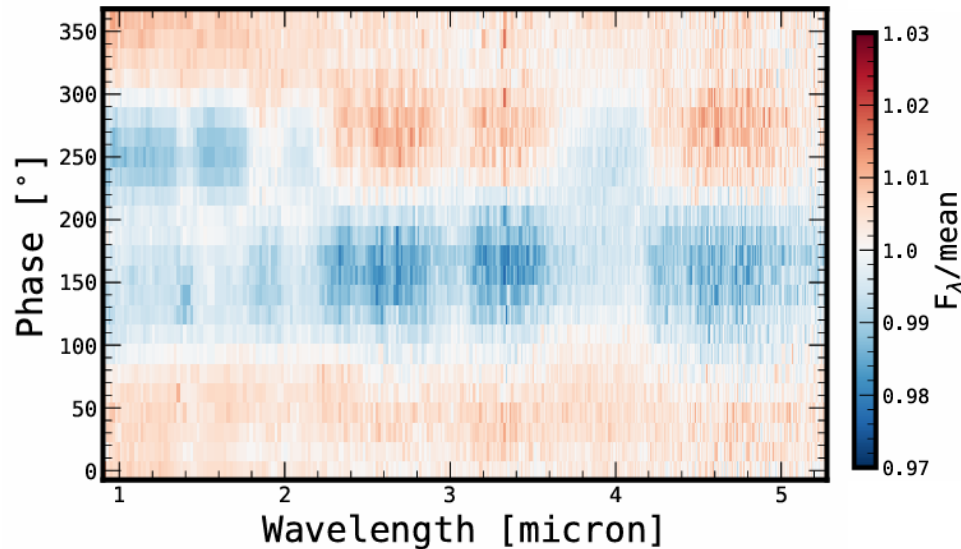


Modeling Stepping Up

E. Nasedkin

The JWST Weather Report from heating and constant cloud cover atmospheric retrievals.

1% changes in flux over a rotation period

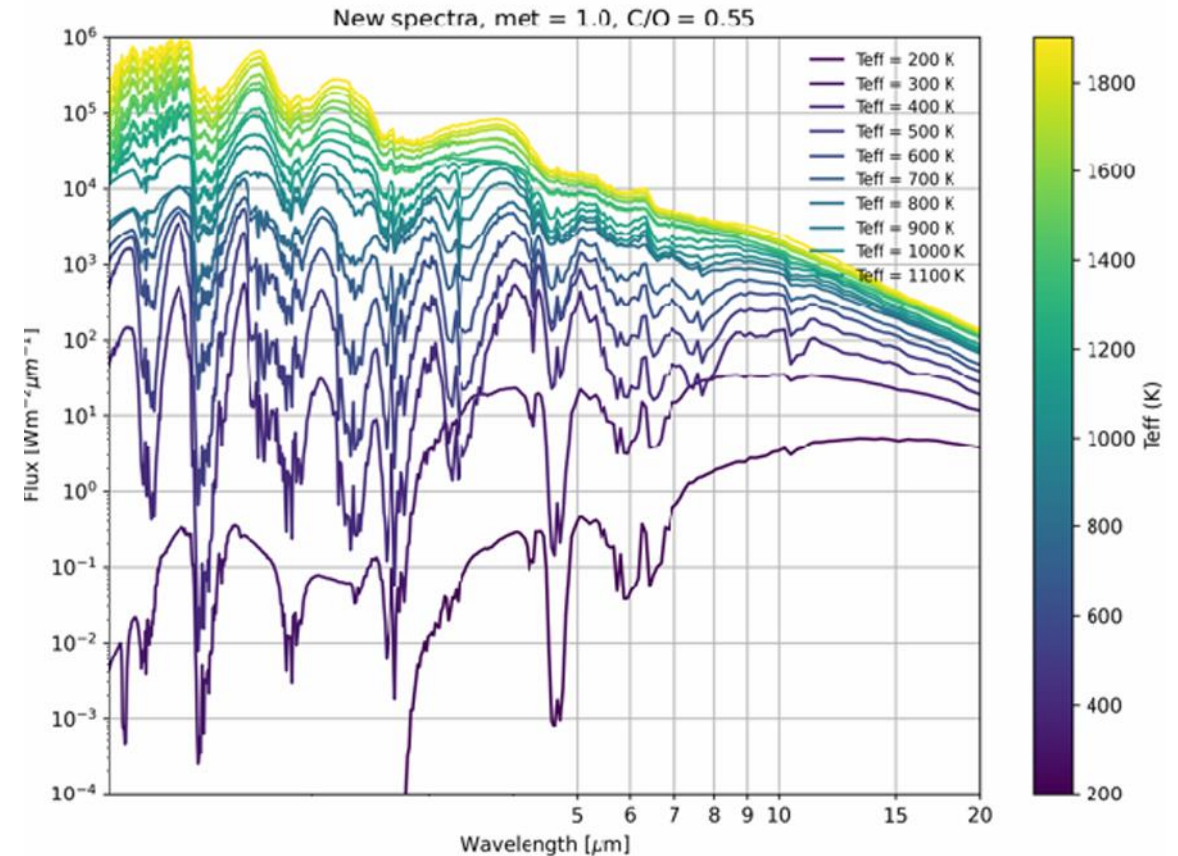
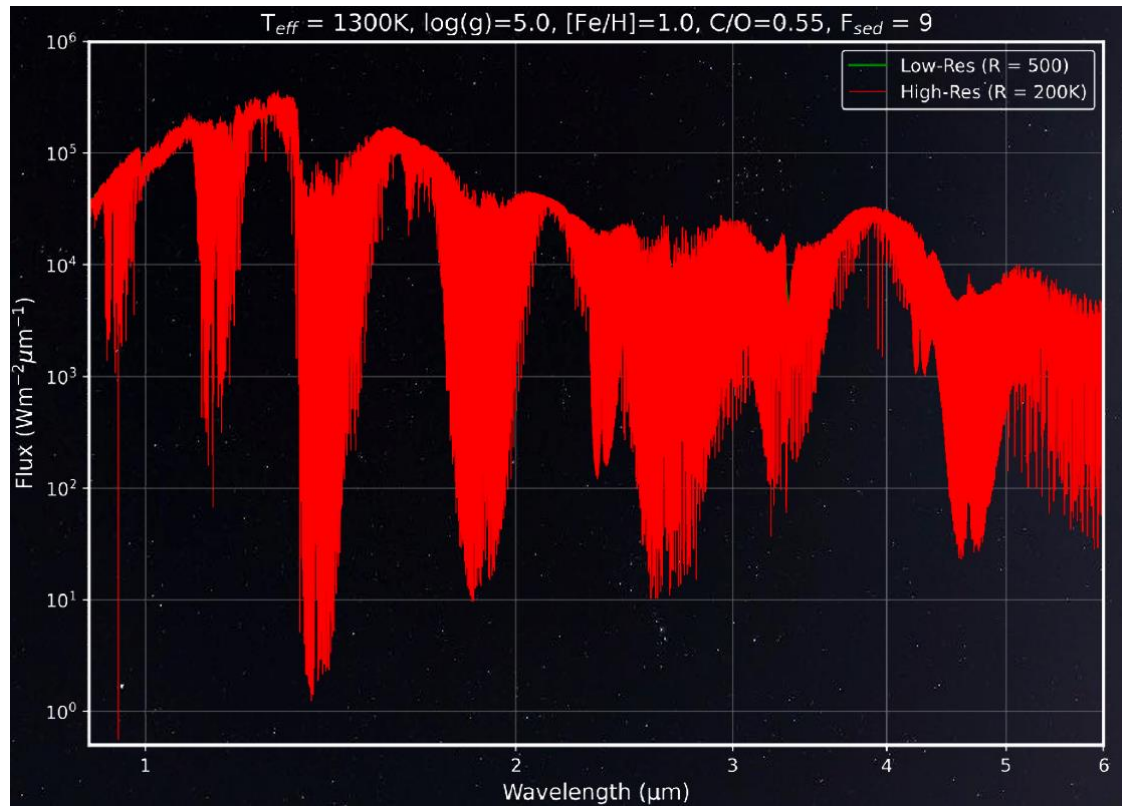


Modeling Stepping Up

A. Radcliffe

A High- Spectral Resolution atmosphere Model

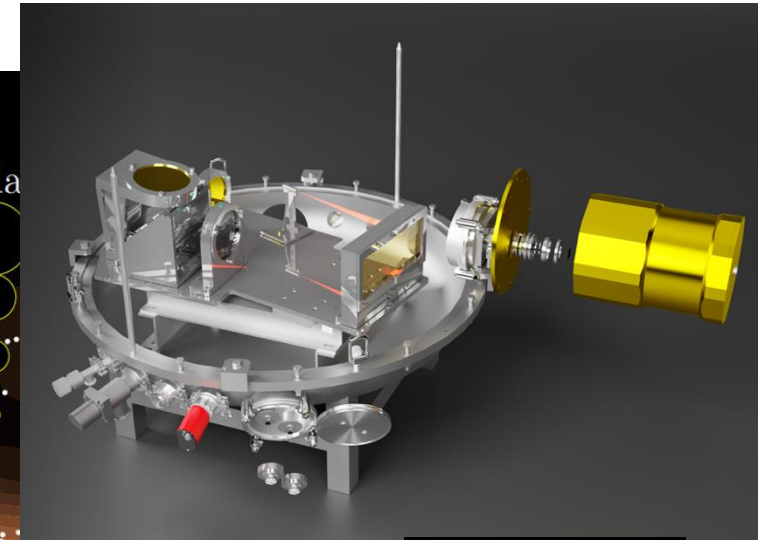
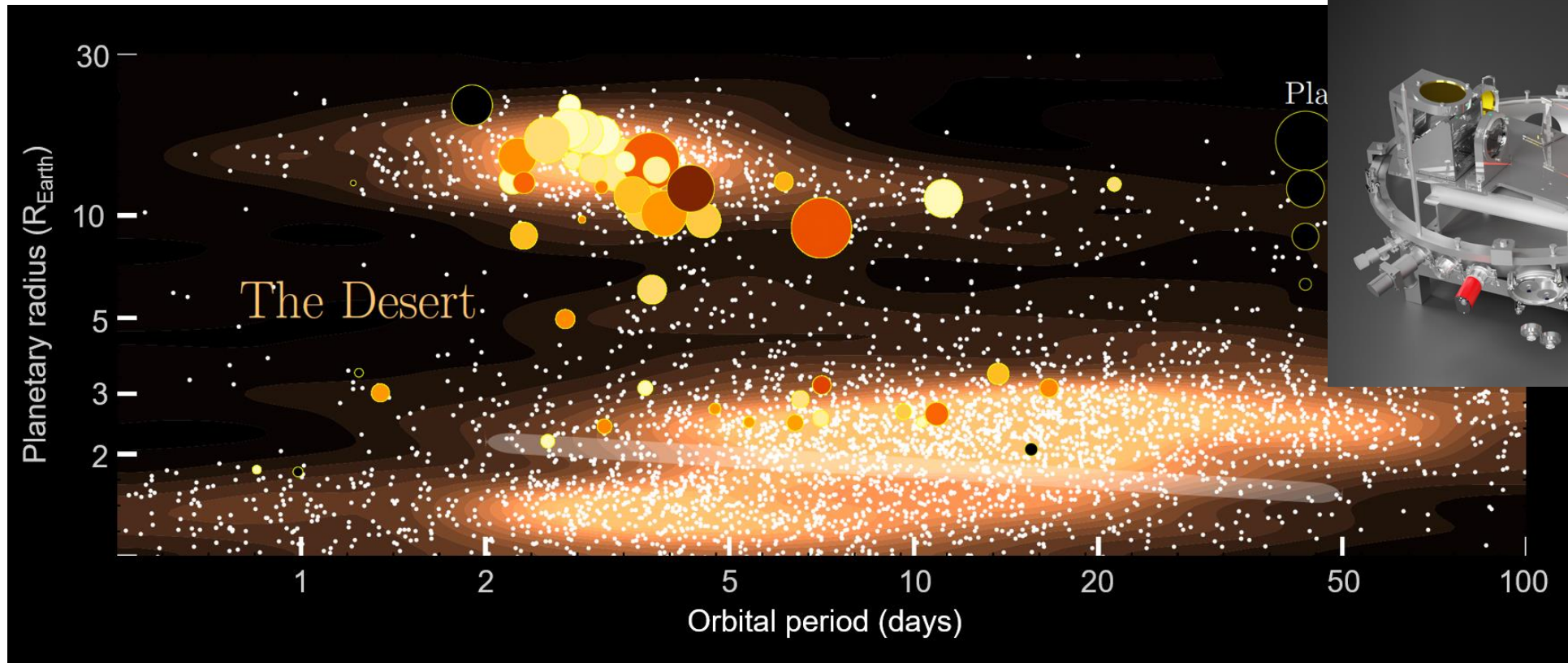
Exo-REM grid models at $R \sim 200k$ and with cloud parameters



Dedicated instruments on small telescopes

C. Farret Jentink

NIGHT: Unveiling Atmospheric Evolution Across Planetary Systems
Through Dedicated Helium Transit Observations



Editorial Thoughts

- We're really expanding our data (diversity, quality, quantity)
- We're putting out precise atmospheric measurements
- Future instruments of big/small telescopes coming
- How do we actually use this information to learn about planet formation?
- How do build confidence in our modeling and their inferred values?