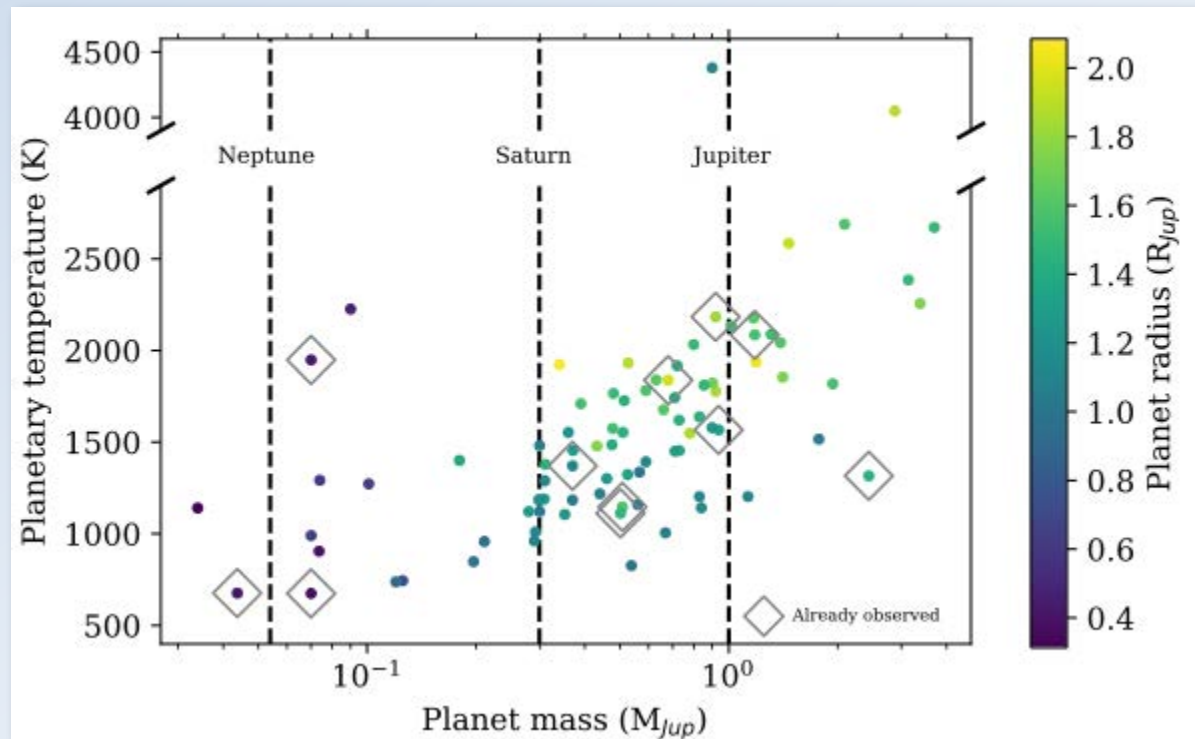


ExoGemS Survey (Exoplanets with Gemini Spectroscopy)

Exploring the diversity of exoplanet atmospheres at high-resolution from sub-Neptunes to ultra-hot Jupiters



ExoGemS Collaboration: **Jake Turner**, Andrew Ridden-Harper, Ray Jayawardhana, Emily Deibert, Ernst de Mooij, Ryan Macdonald, Jonathan Fortney, Callie Hood, David Sing, Drake Deming, David Lafreniere, Matteo Brogi, Romain Allart, & Laura Flagg

ExoGemS Survey

The Exotic Atmosphere of an Extreme World: **Detection of Ionized Calcium in WASP-76b**

The Astrophysical Journal Letters, 919, L15

- WASP-76b is an **ultra-hot Jupiter** with dayside temperatures up to **4,400 degrees F**
- Previous studies indicate that it may **rain iron** from its skies
- We detected **sodium** and **calcium** in its atmosphere



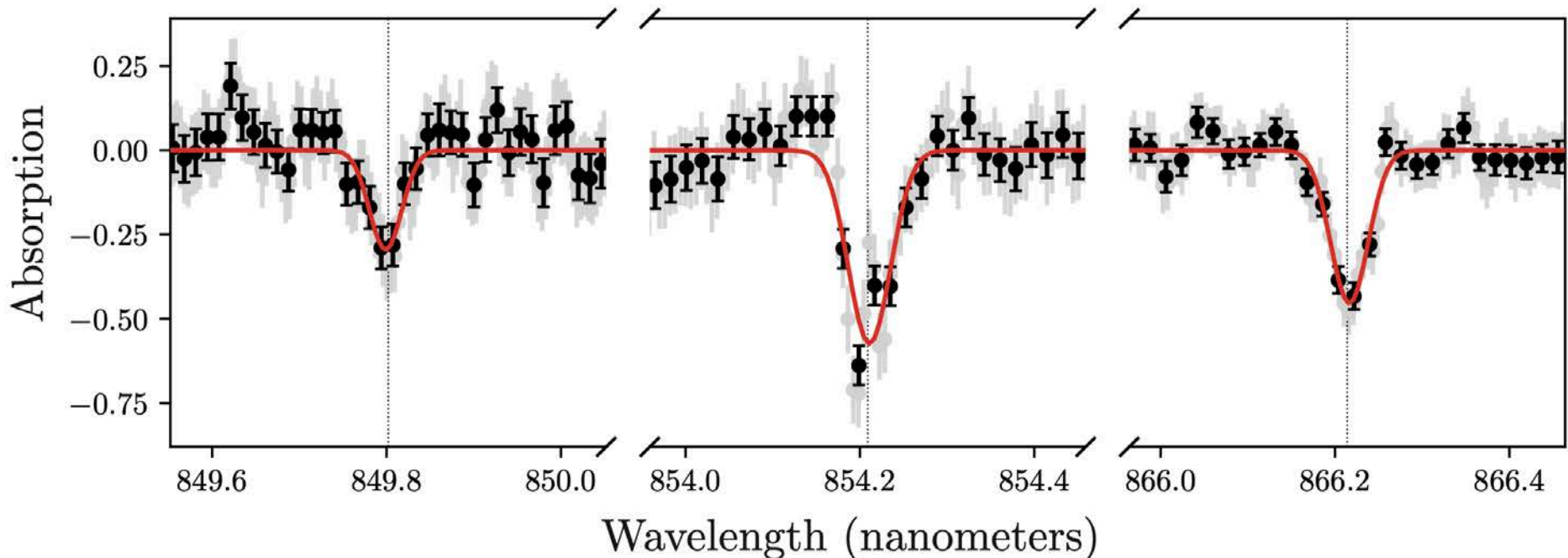
Credit: ESO/M. Kornmesser

Emily Deibert, Ernst de Mooij, Ray Jayawardhana, Jake Turner, Andrew Ridden-Harper, Luca Fossati, Callie Hood, Jonathan Fortney, Laura Flagg, Ryan MacDonald, Romain Allart, David Sing

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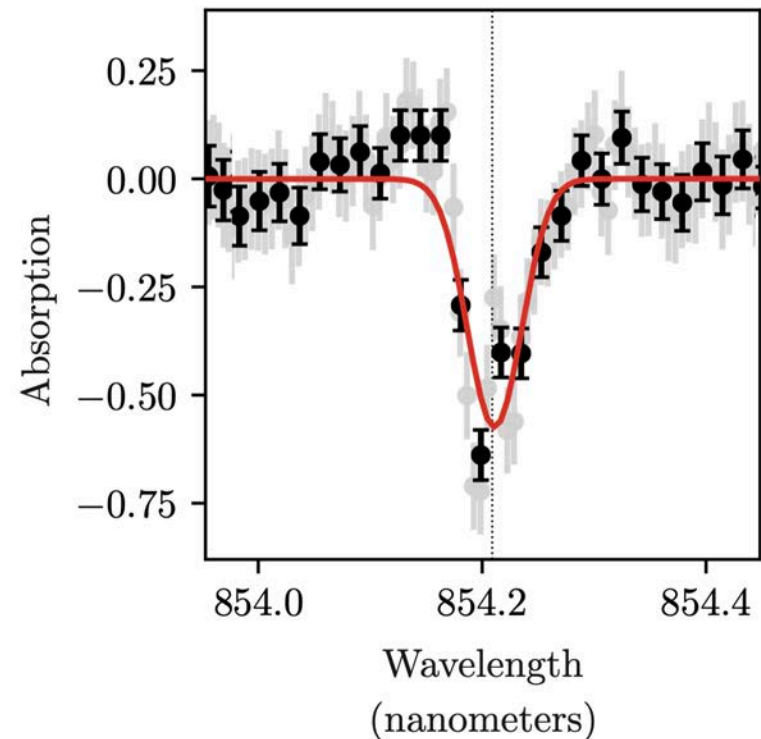
* result independently confirmed by Casasayas-Barris et al. 2021: arXiv:2109.00059

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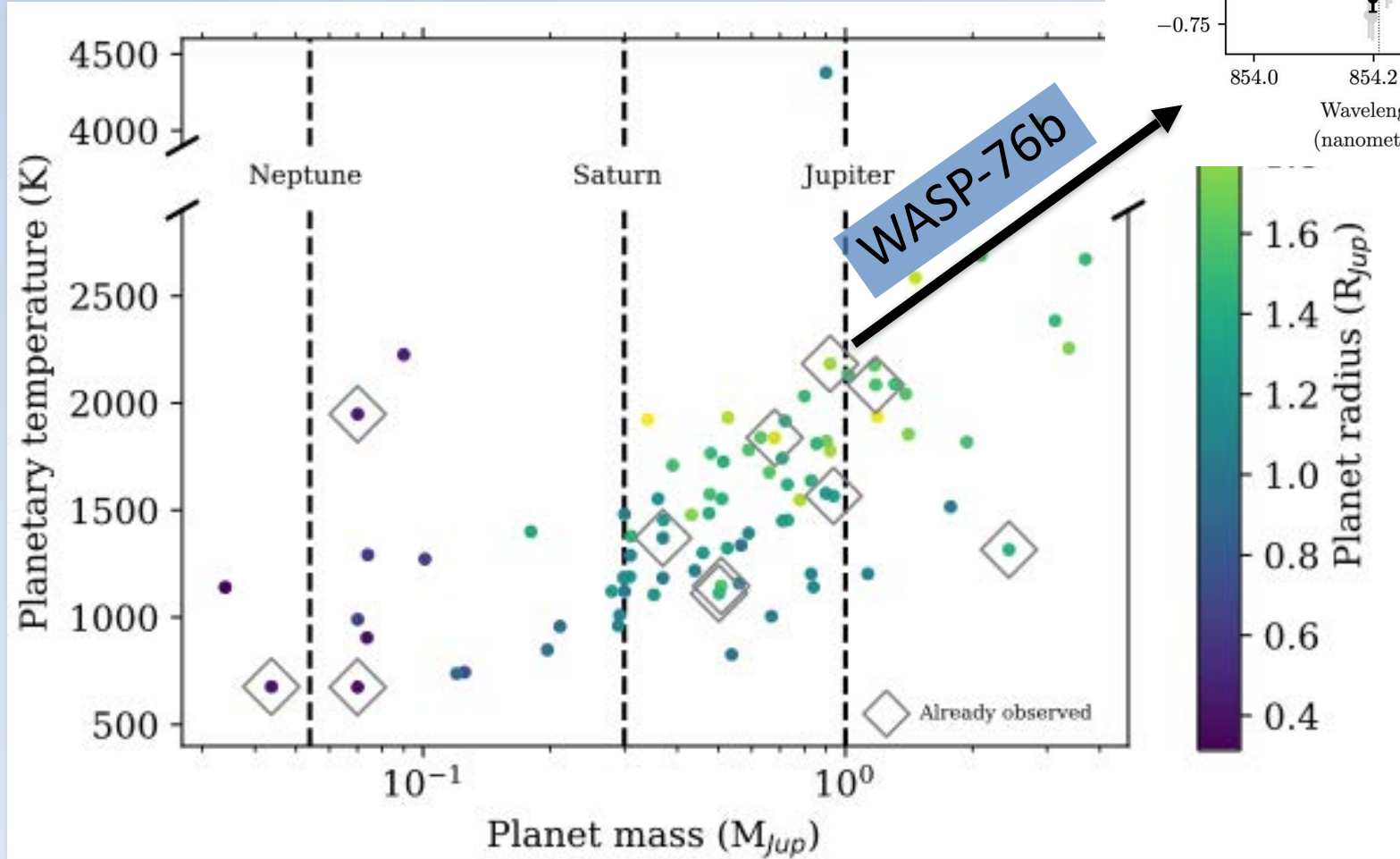
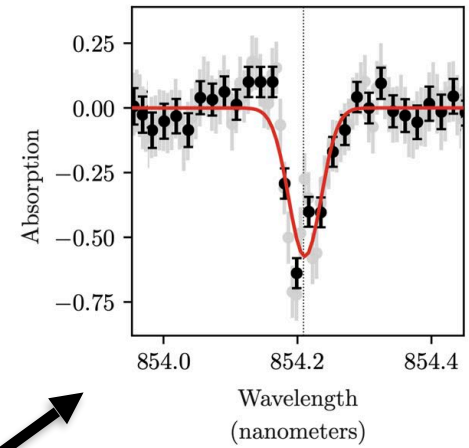
- Strong calcium signal indicates that the atmosphere is **even more extreme** than expected:
- The exoplanet is **hotter than expected**, and/or has **strong atmospheric winds**



Emily Deibert, Ernst de Mooij, Ray Jayawardhana, Jake Turner, Andrew Ridden-Harper, Luca Fossati, Callie Hood, Jonathan Fortney, Laura Flagg, Ryan MacDonald, Romain Allart, David Sing

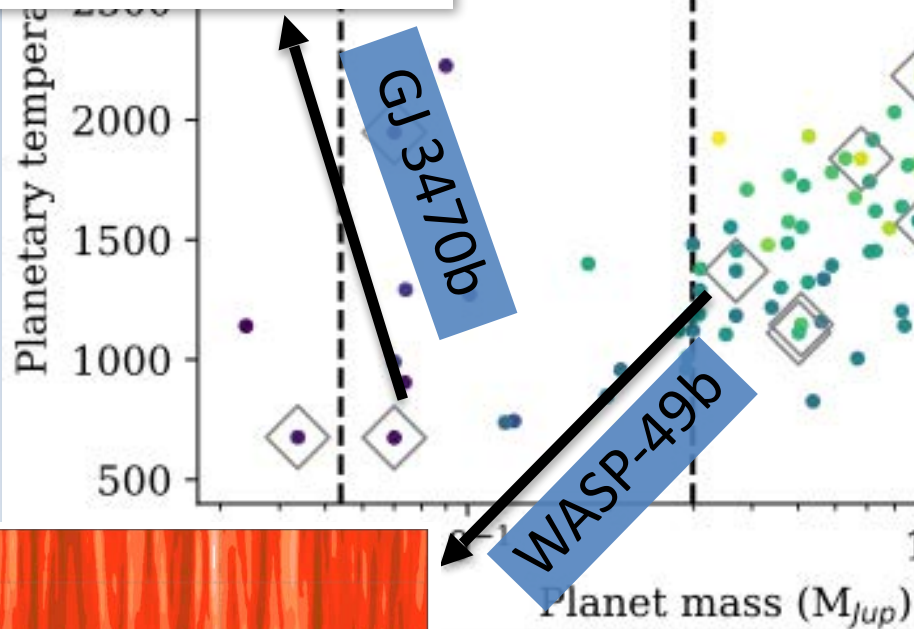
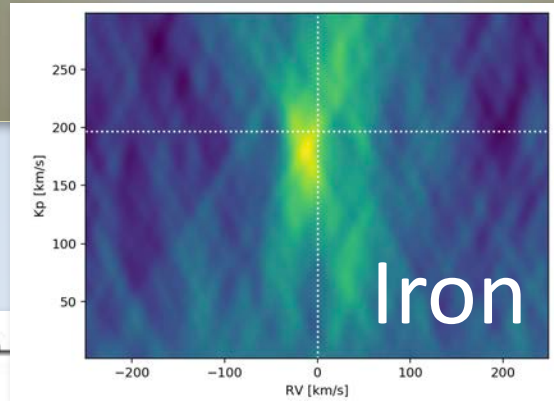
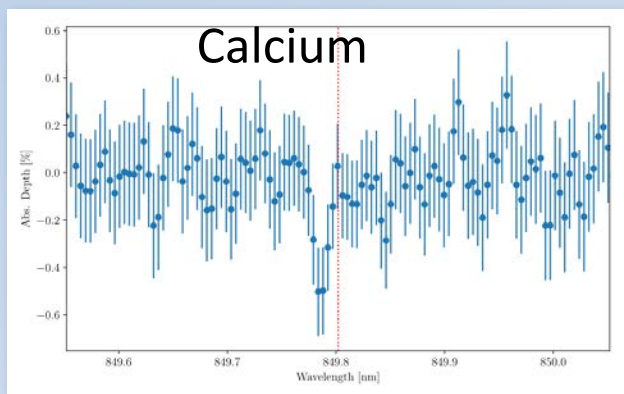
ExoGemS Survey

More results coming soon!



ExoGemS Survey

Preliminary Results



FeH

