

# Atmospheric composition and dynamics of the ultra-hot Jupiter WASP-178 b



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## Background:

WASP-178 b is a **bloated ultra-hot Jupiter (UHJ)** orbiting a scorching A0 type star with an orbital period of 3.3 days. It is thought to have strong day-to-night winds and high energy recirculation.

**What can we find in its atmosphere?**

## Methods:

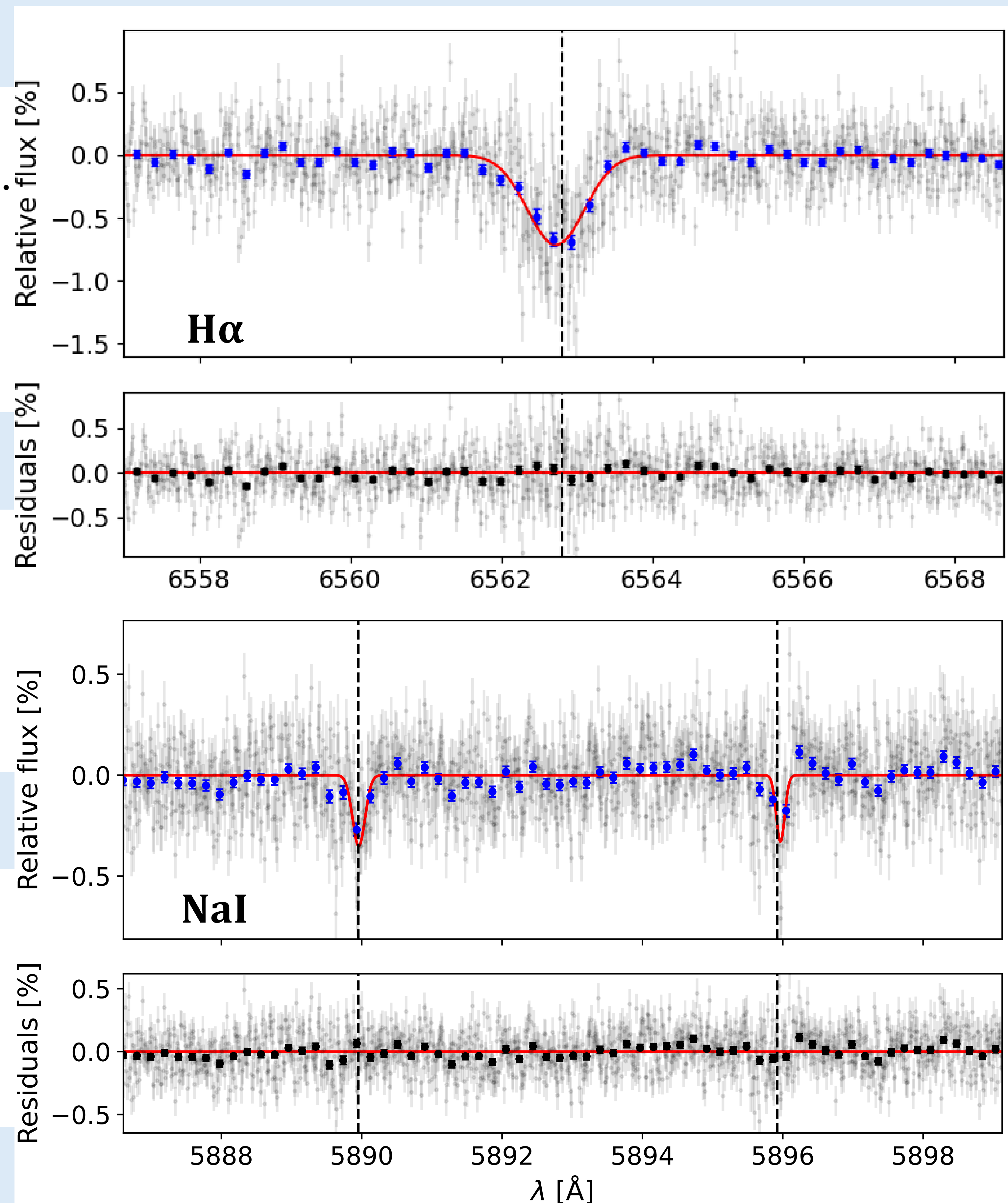
- We built the **transmission spectrum** of WASP-178 b with **two ESPRESSO transits**.
- We used narrow-band and cross-correlation techniques to search for absorption lines.

## Results:

- Detection of NaI, H $\alpha$ , H $\beta$ , FeI and FeII, with tentative MgI.
- All lines are broadened, yet only MgI, FeI and FeII appear blueshifted.

## Conclusions:

- Possibility of hydrogen escaping high up due to its high velocity dispersion.
- The blueshifts for Fe and Mg indicate the existence of day-to-night winds, mainly in the lower regions where these reside.
- Further observations on WASP-178b can help unravel the mysteries of UHJ atmospheres.



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