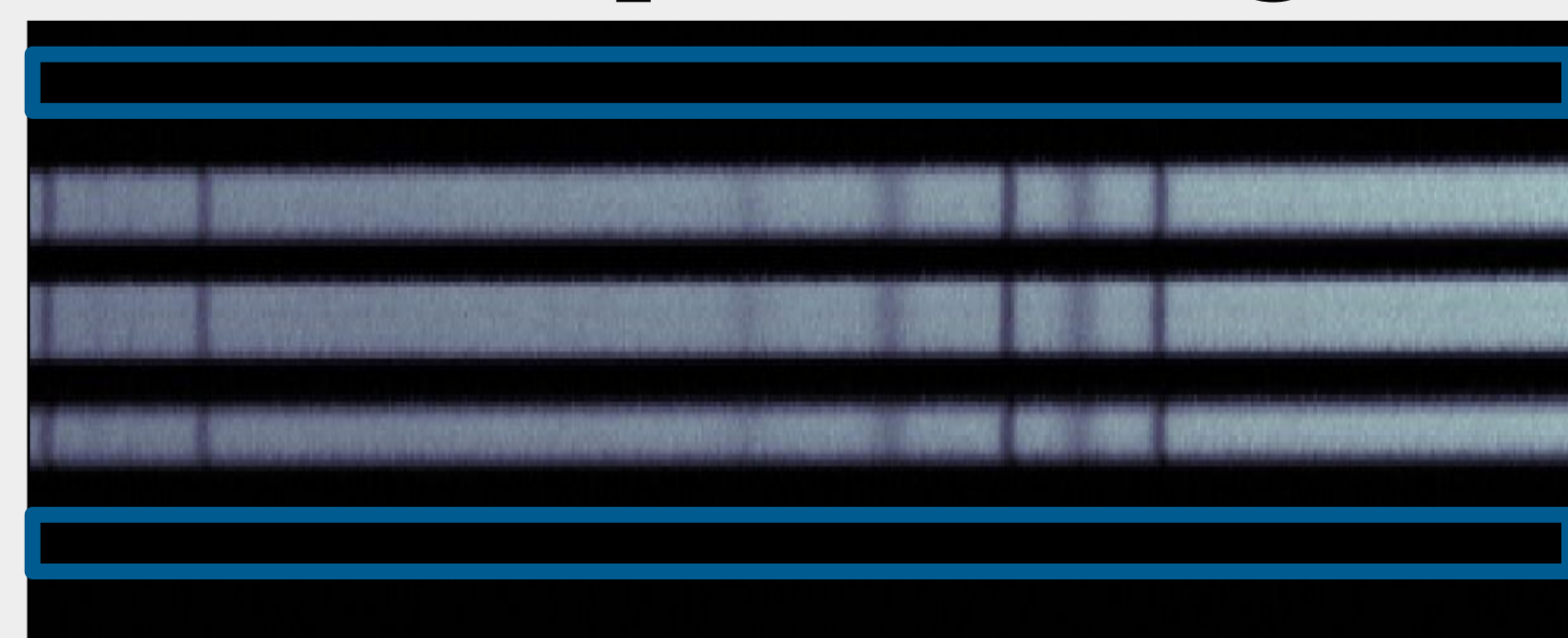


KPF spectrum of WASP-76 (top) showing data for the separate red and green cameras which collectively span a wavelength range of 445-870 nm. A model planet atmosphere for a WASP-76 b-like planet given below it, showing the absorption features from Fe I. Other atomic species accessible to KPF include, Mg, V, Cr, and Ti.

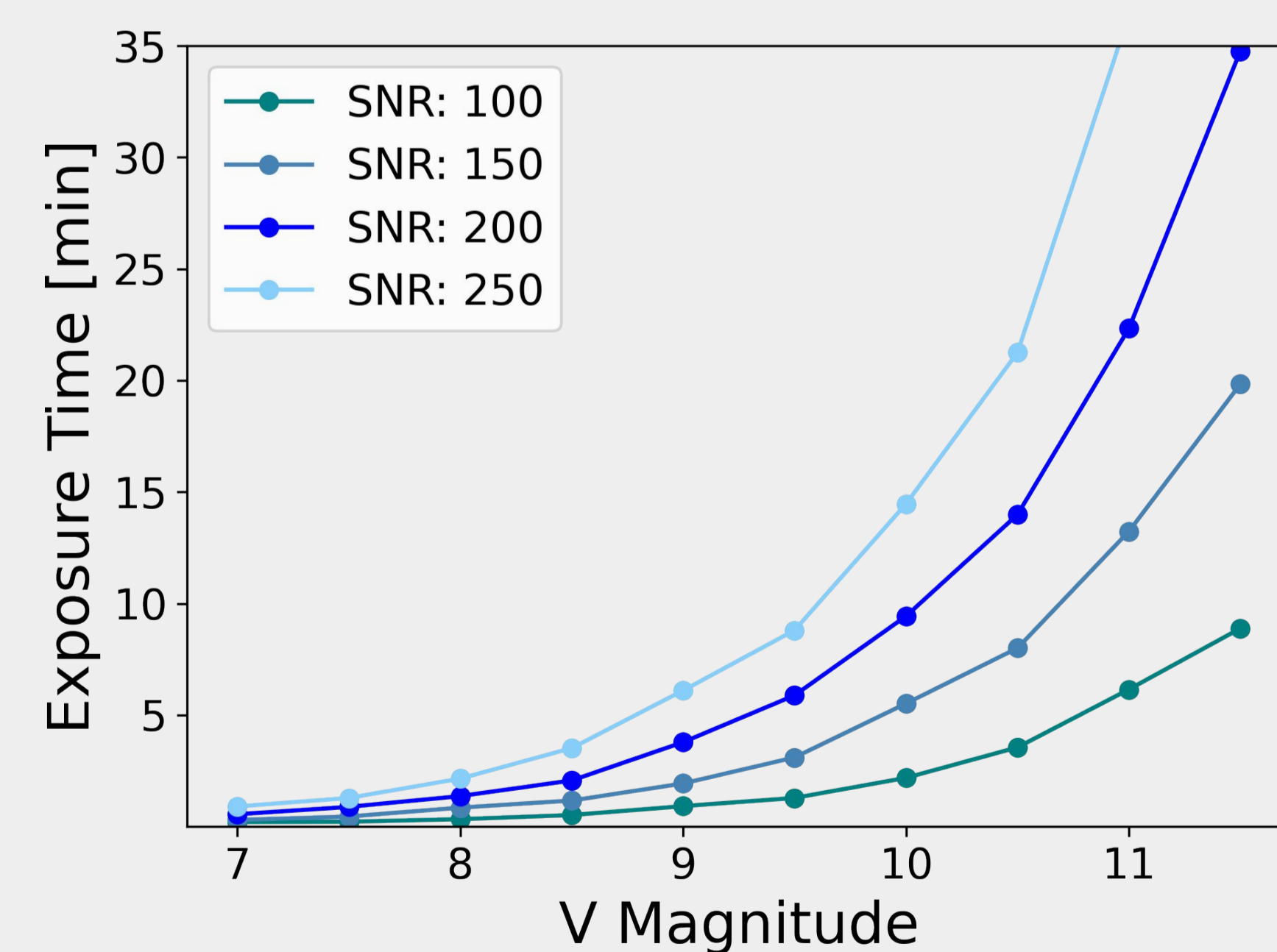
KPF Capabilities

The Keck Planet Finder (KPF, Gibson et al. 2016) is a newly-commissioned extreme precision radial velocity spectrograph. Fiber-fed from the 10 meter Keck I telescope, KPF will have nearly double the efficiency of its predecessor, HIRES. A radial velocity precision goal of 30 cm/s is enabled by:

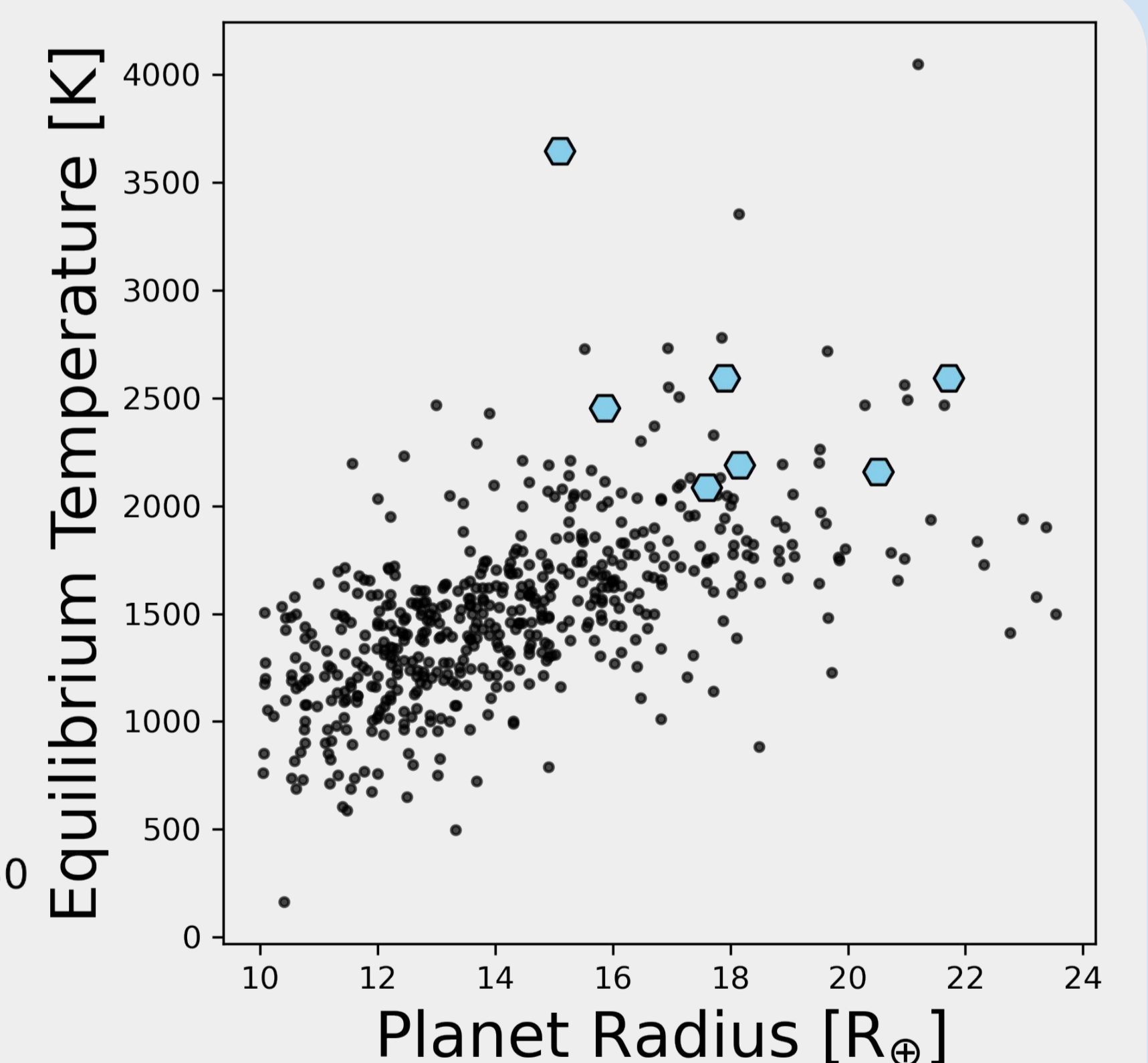
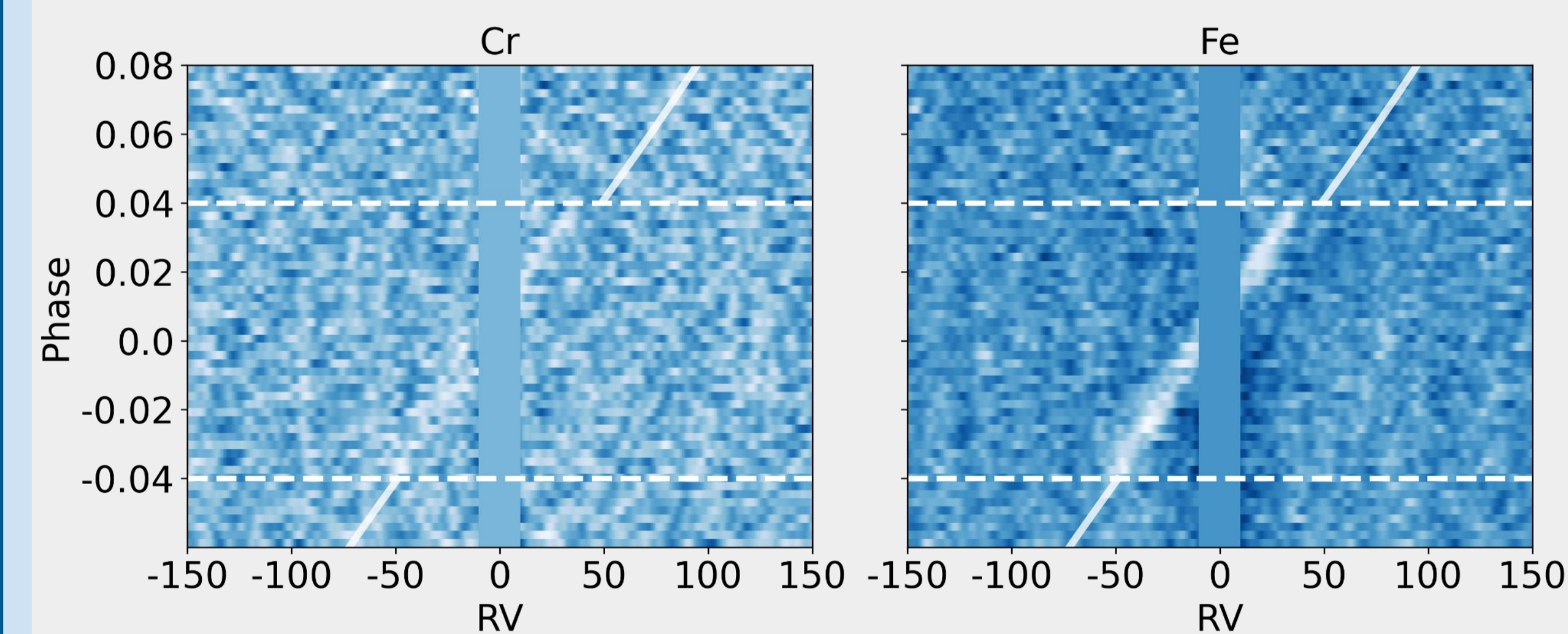
- **High Resolution: > 95,000.**
- **Ultra-stable optical bench enclosed in a vacuum chamber.**
- **Wide spectral range: 445 - 870 nm.**



Optional LFC
3 Science Fibers
Sky Fiber



Early Results



Cross-correlation maps for the KPF observation of WASP-76 b (left) showing a clear detection of Fe I and a detection of Cr I. On the right we show planets currently targeted by KPF (blue hexagons).

WASP-76 b was one of the first planets observed in-transit by KPF, and has had multiple atomic species detected in previous studies (e.g. Kesseli et al. 2022). Preliminary analysis of our observations confirm a strong Fe I detection (~13 sigma) in addition to Cr I and a tentative detection of V. These detections, along with other atomic species, will improve with the refinement of a full data reduction pipeline (Householder et al. *in-prep*).

Interested in using KPF for high resolution transmission spectroscopy? Come talk to us! KPF is available in public calls for proposals through NASA and NOIRLab.