Doppler & Polarimetric Observations of Jupiter with PMODE

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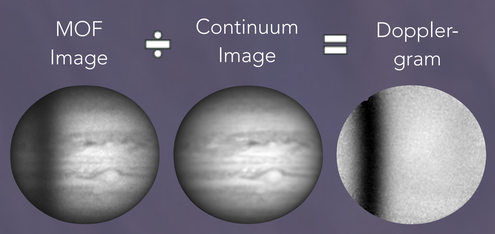
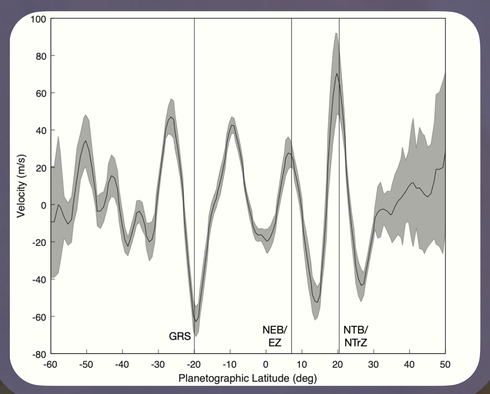
Doppler Imager

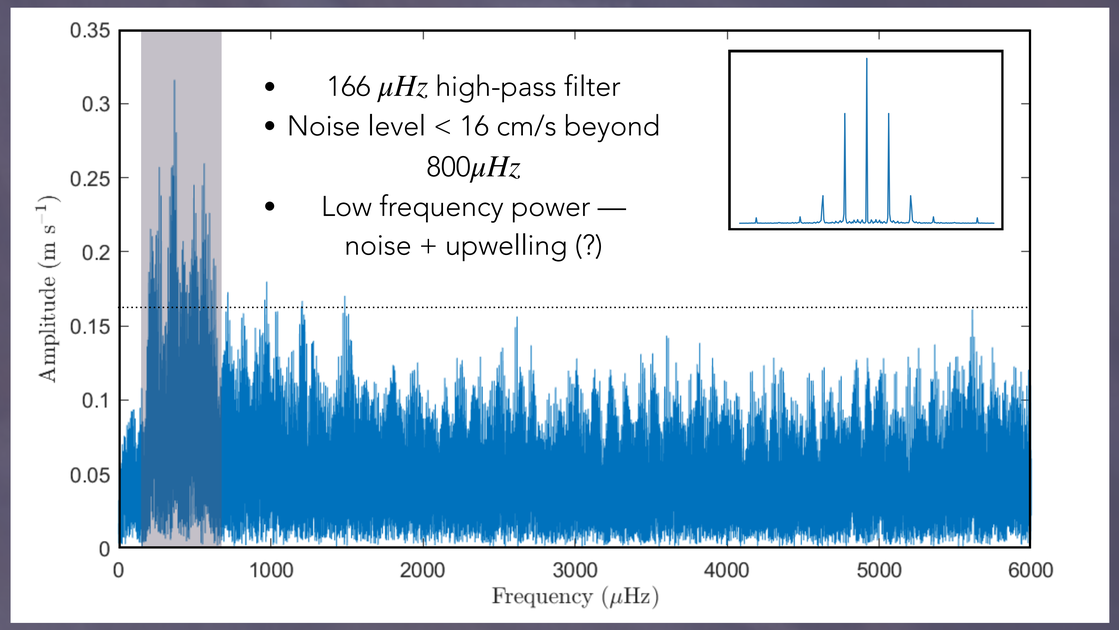


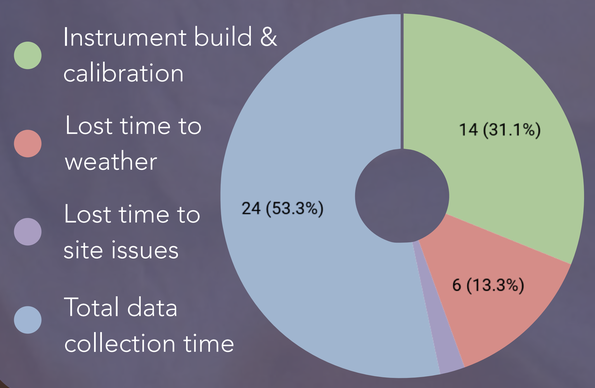
- 2 channels = 2 atmospheric heights:
  - 770 nm Potassium (~0.7 bar)
  - 589 nm Sodium* (~3 bar)
    *plagued by artefacts
- Sensitivity only in dark absorption line on left-hand side of disk
- 200 pixels across Jovian disk
- ~12.7 m/s sensitivity per image,
- ~10 cm/s sensitivity for entire run
- Doppler measurement of Jupiter's zonal wind profile



Preliminary Results

ANALYSIS DOES NOT REVEAL SIGNIFICANT, ORGANIZED POWER ABOVE 800 μHz IN THE $Y_m^\ell = (1,0)$ SPECTRUM

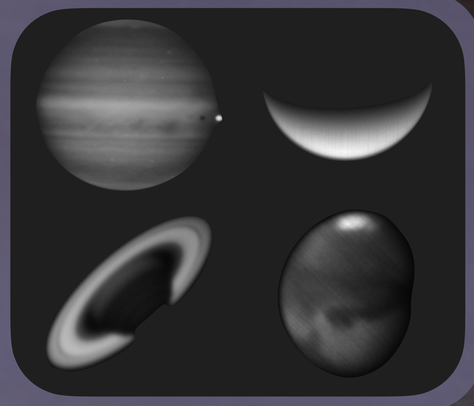




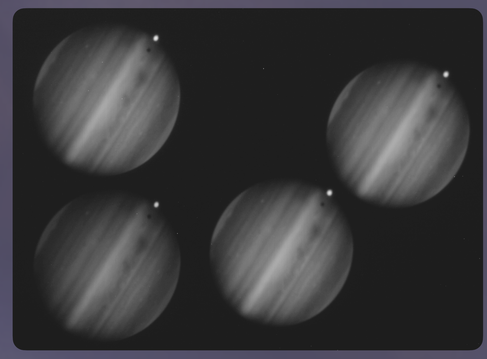
Observing Campaign:

08.06.20
—
08.31.20

24 nights
30s cadence



Polarimeter



- 1 channel = 1 atmospheric height:
  - 889 nm Methane (~0.2 bar)
- Snapshot collection of Stokes parameters Q & U
- 300 pixels across Jovian disk
- Collect complimentary information on atmospheric particle composition & size
- Possibly useful as a secondary validation for oscillation detection?

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