Transmission Spectrum of L 98-59 b

(Bello-Arufe+2025)

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https://svs.gsfc.nasa.gov/13223

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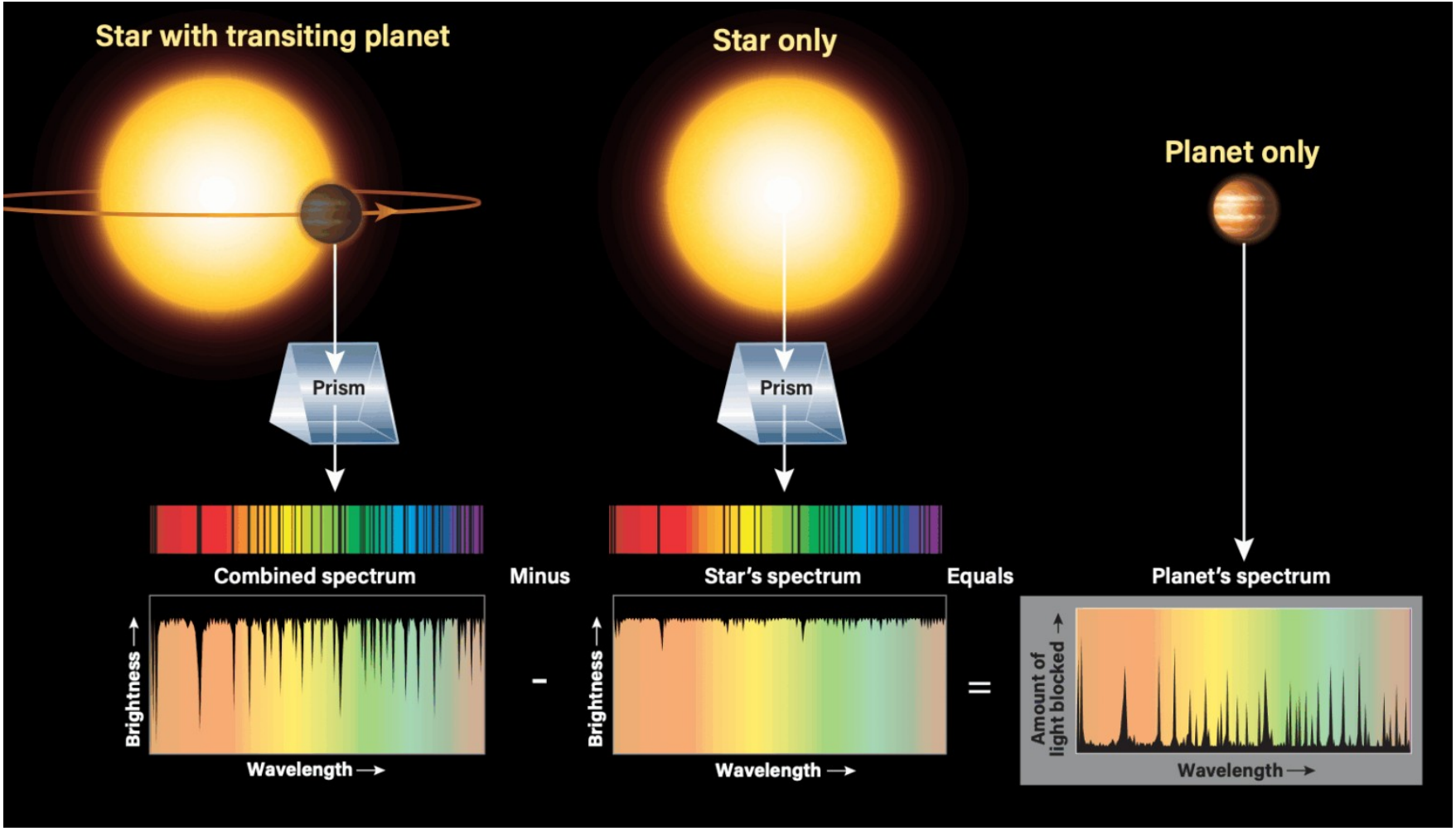
Ferdowsi University of Mashhad

Transmission Spectrum of L 98-59 b



Credit: Astronomy: Roen Kelly

Transmission Spectrum of L 98-59 b

Distance: 10.623 pc

Spectral type: M3V

Mass: 0.32 M_{Sun}

T_{eff}: 3415.0 K

Radius: 0.291 R_{sun}

 # planets: 4

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Distance: 10.623 pc

Spectral type: M3V

Mass: 0.32 M_{Sun}

T_{eff}: 3415.0 K

Radius: 0.291 R_{sun}

 # planets: 4

Mass: 0.41 M_E

Semi-Major Axis: 0.02191 AU

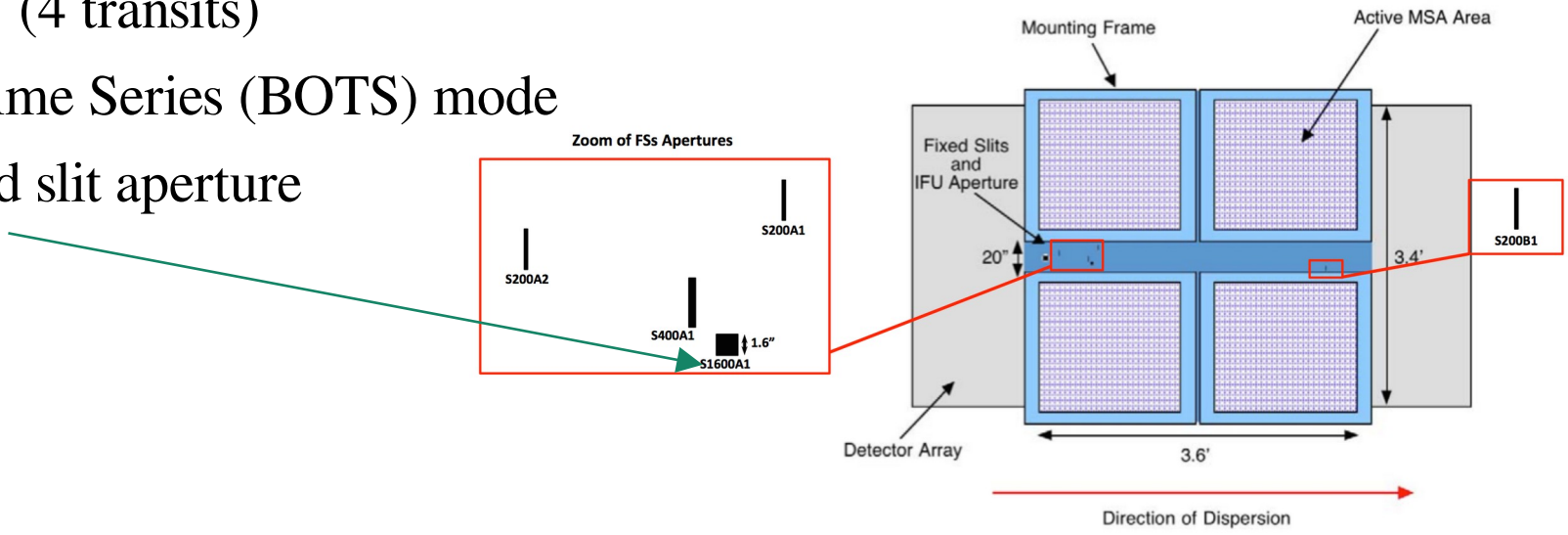
Orbital Period: 2.25311 day

Radius: 0.85 R_E

Transmission Spectrum of L 98-59 b

Observation:

- Cycle 2 GO program
- NIRSpec/G395H
- ~ 4 ×2.9 hours (4 transits)
- Bright Object Time Series (BOTS) mode
- 1.6″ × 1.6″ fixed slit aperture



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Pipelines:

I used **2 transits** and ran the pipeline for **each detector separately**.

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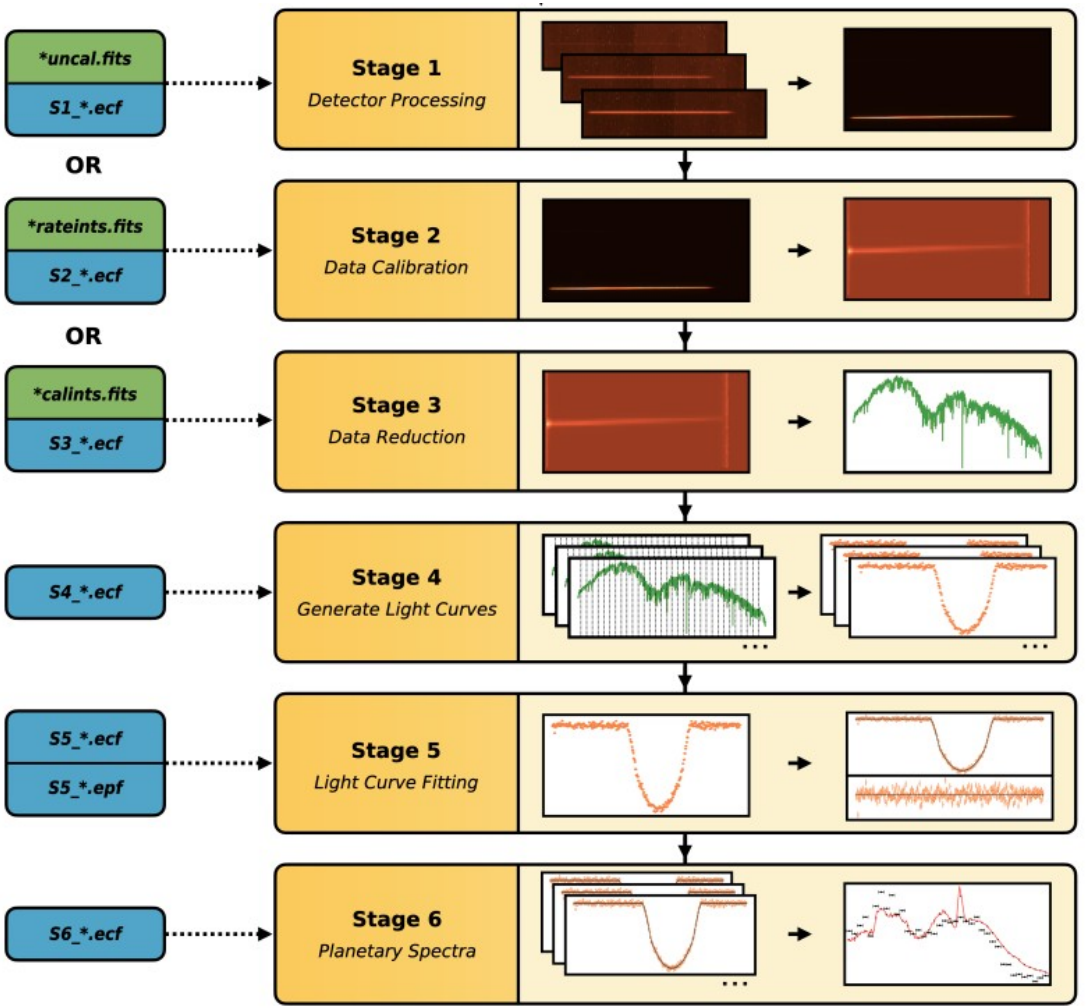

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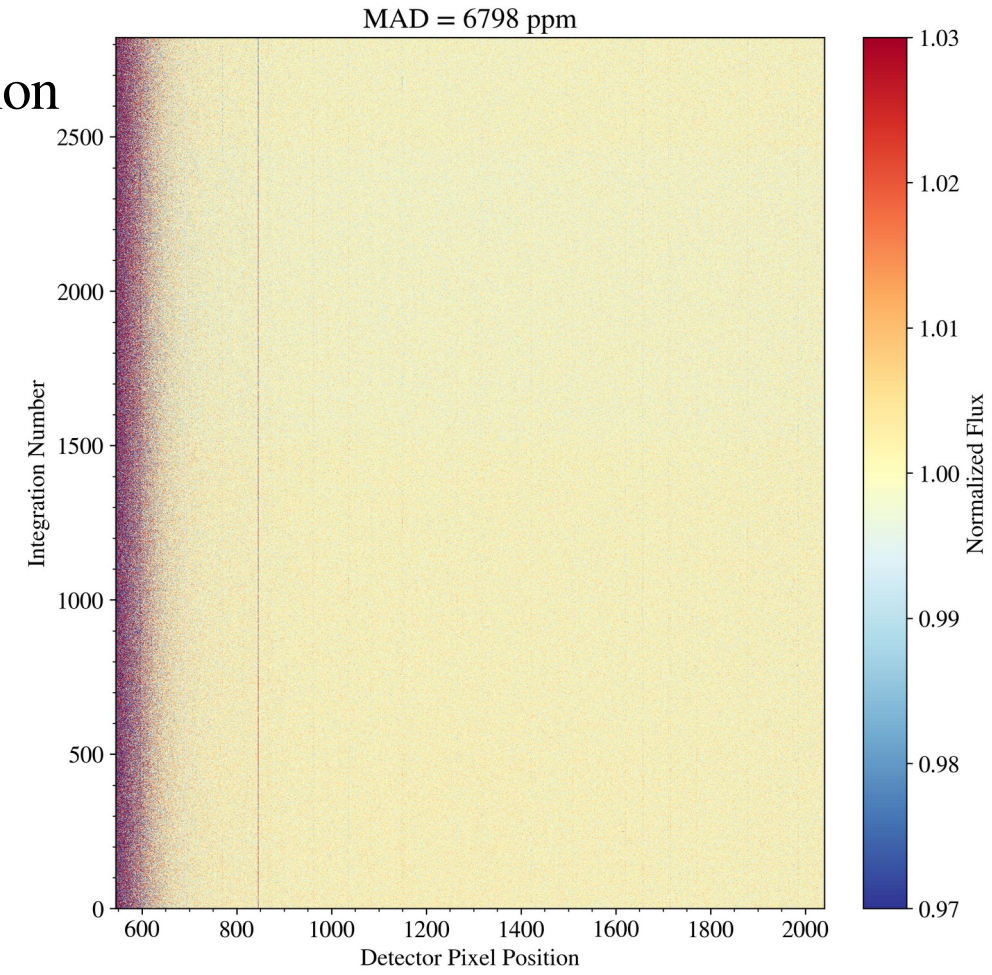
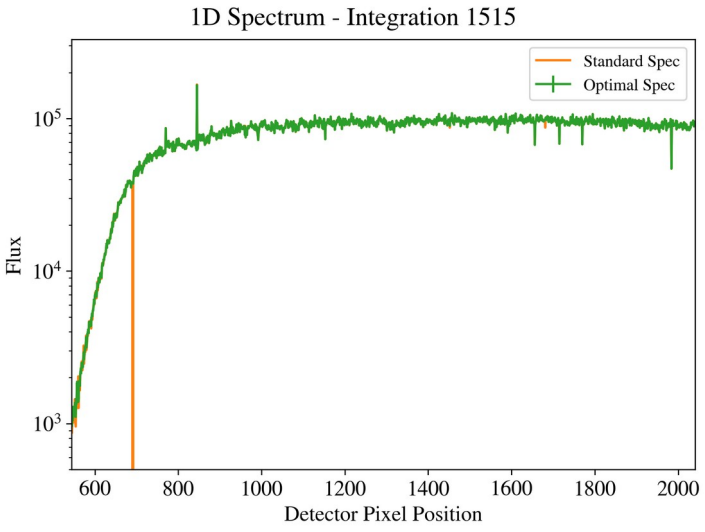
Stage 3:
Data reduction





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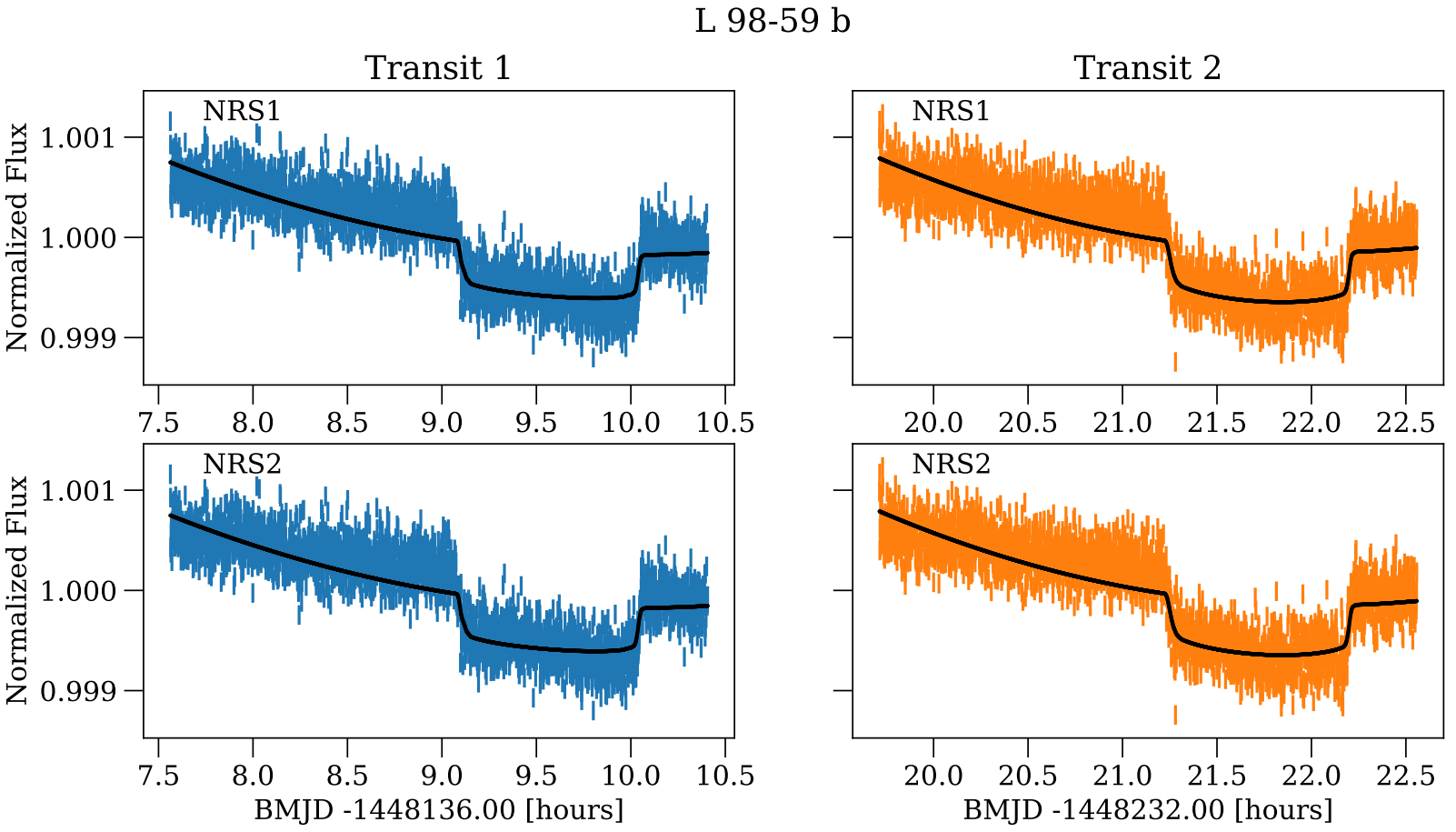
Stage 4:
Genetaring LC

Stage 5:
LC fitting



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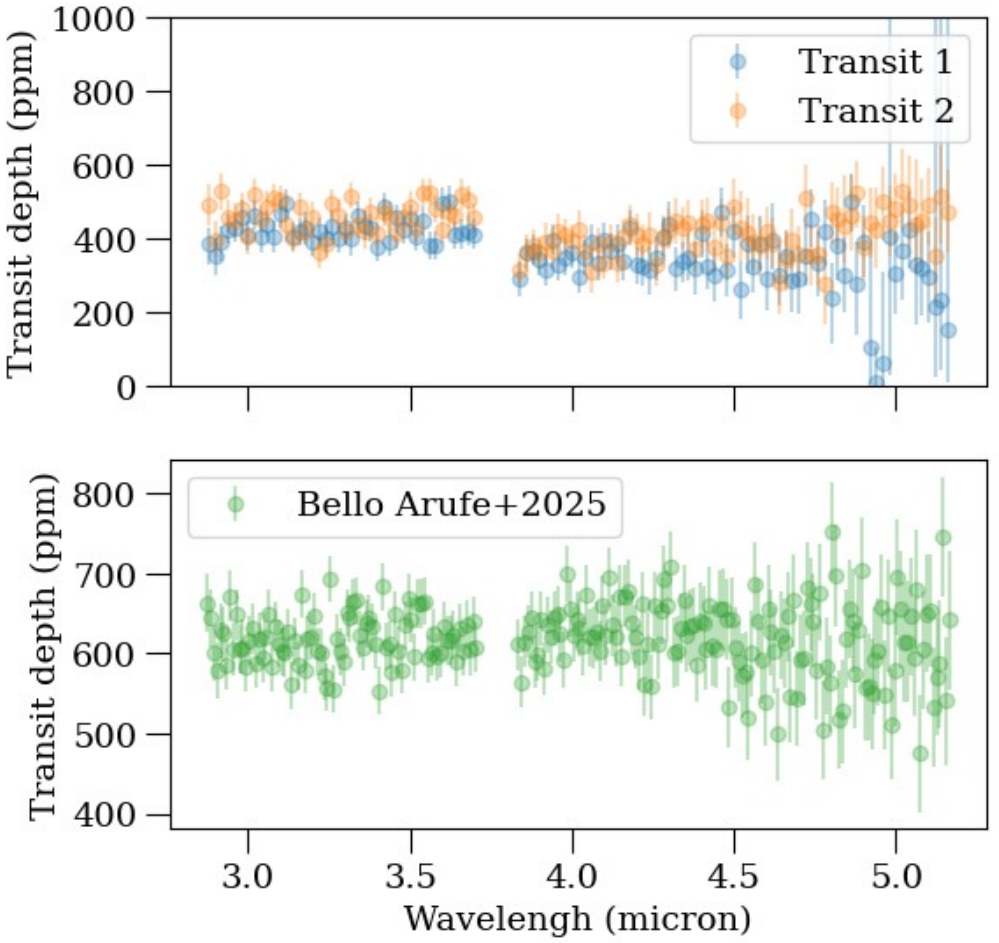
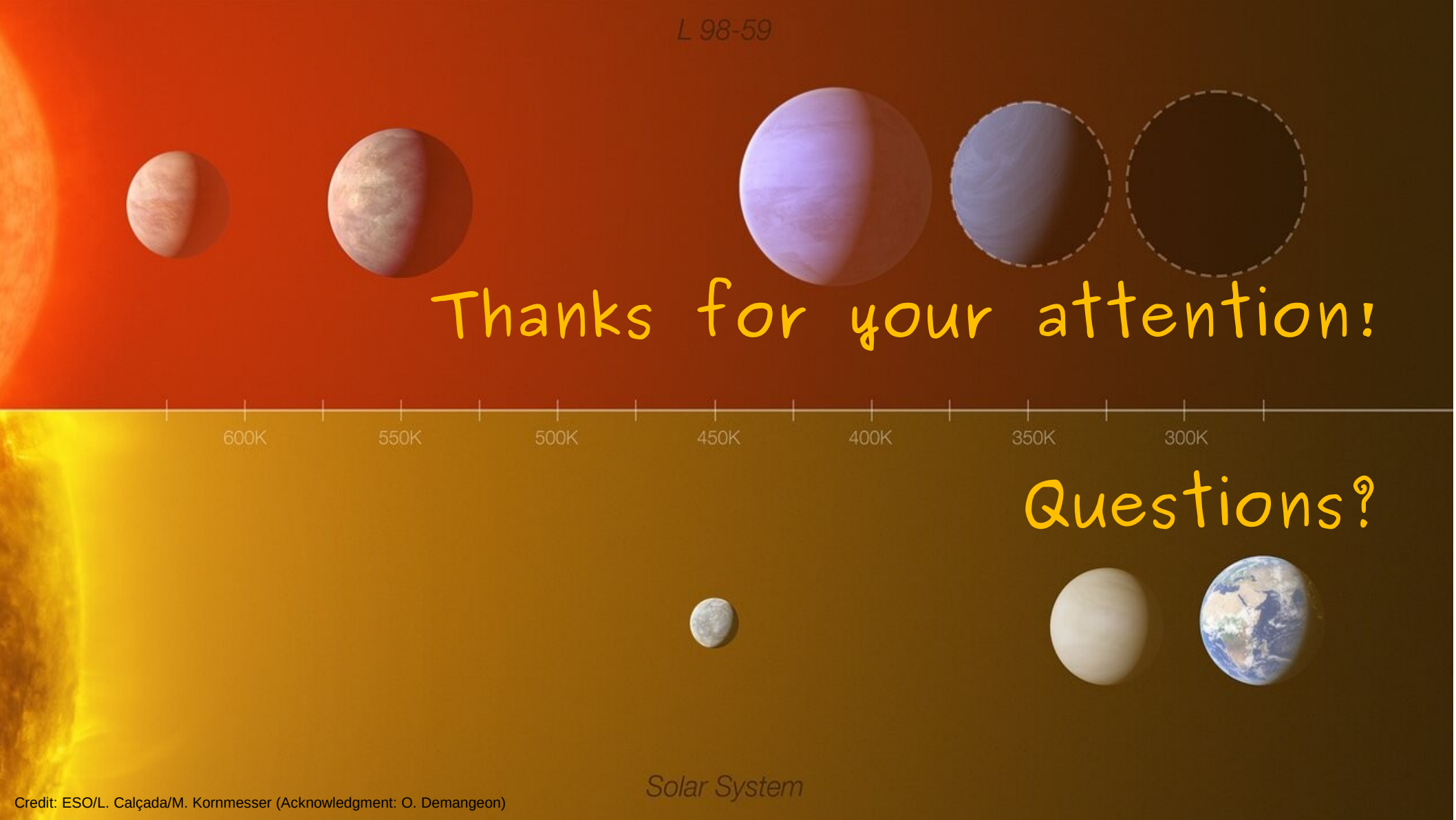
Stage 5:
Transmission Spectra





Credit: ESO/L. Calçada/M. Kornmesser (Acknowledgment: O. Demangeon)