WALTzER mission

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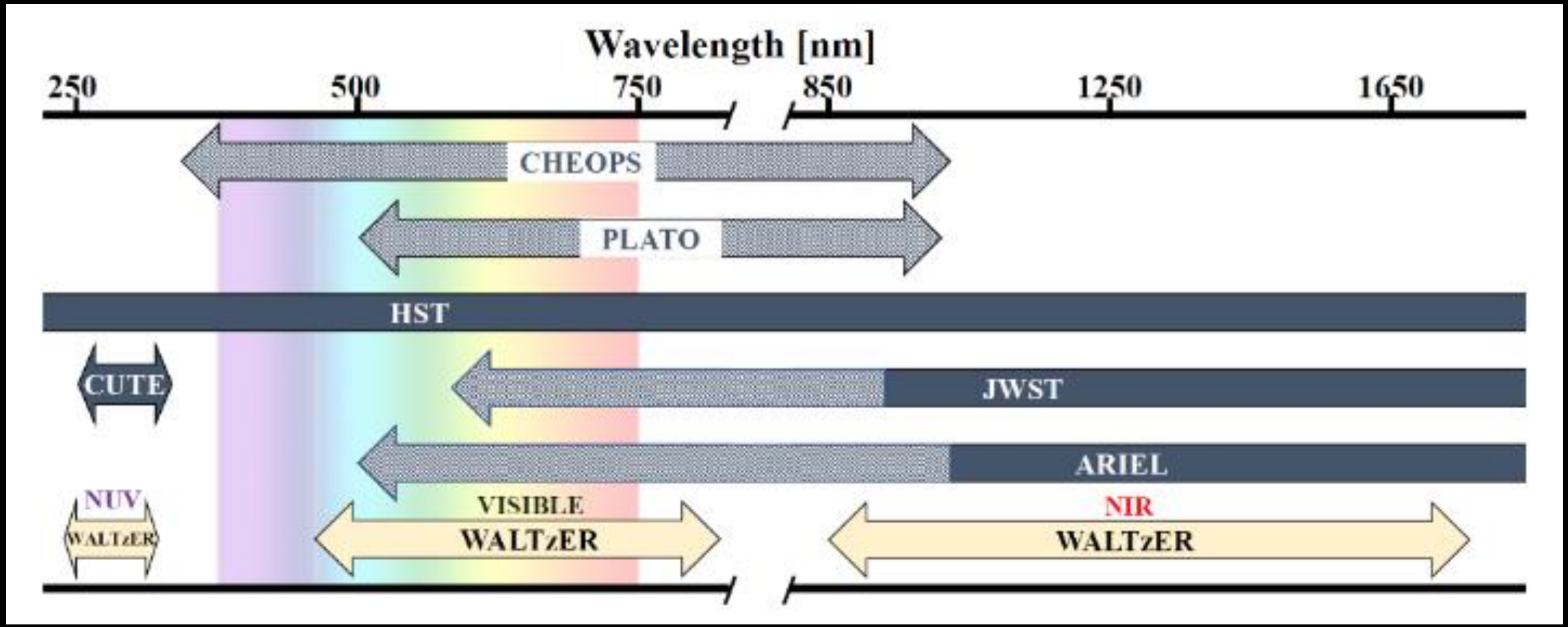
WALTzER

- Wide-band Atmospheric Laboratory for Transiting Exoplanet Research (WALTzER)
- Proposed ESA F-class mission in 2026
- 35cm mirror, NUV and VIS spectrographs, NIR photometer
- Launch in 2034 with 3 years nominal mission

Why additional mission?

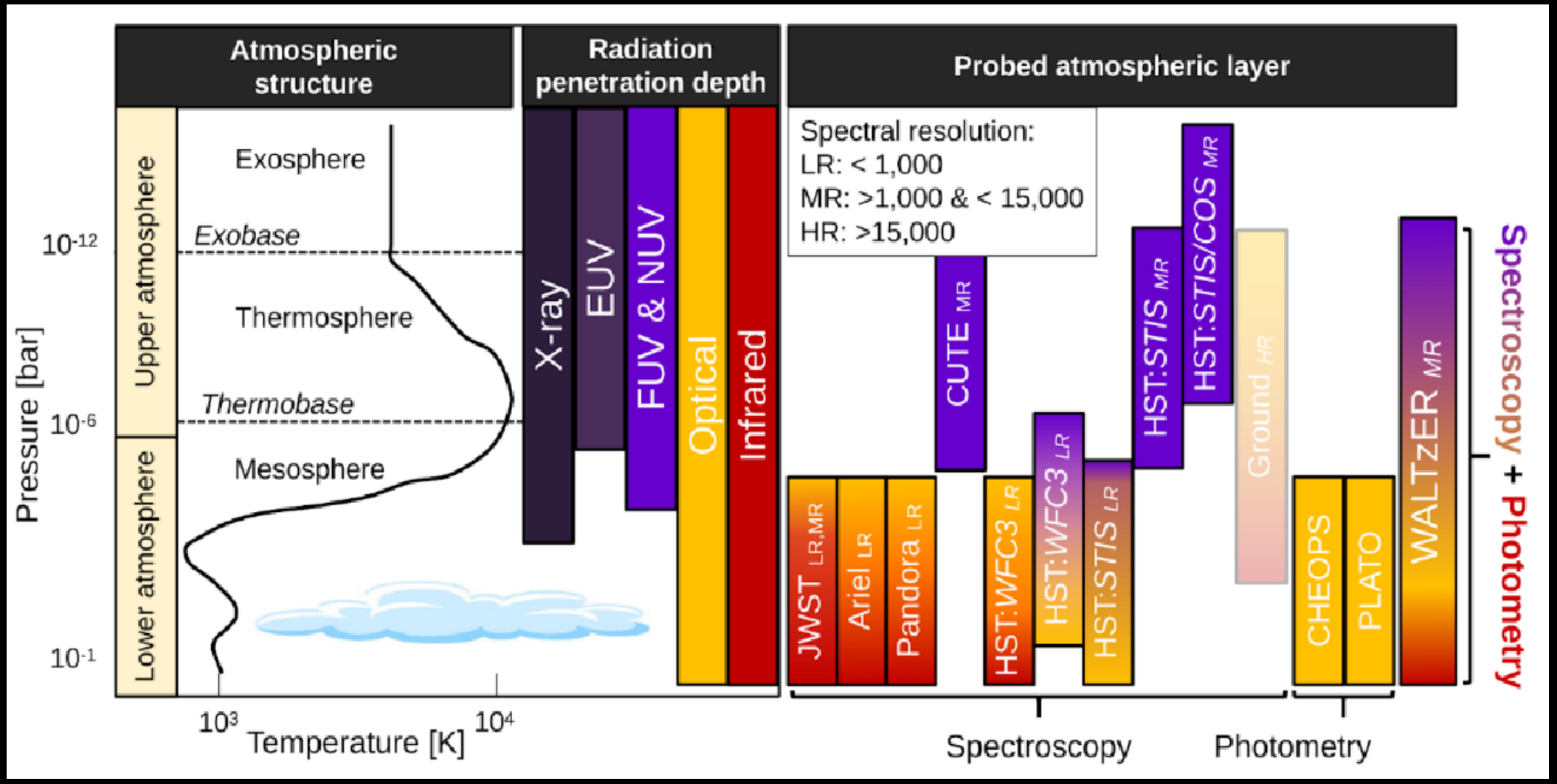
- Exoplanets are one of the most dynamical fields
- WALTzER complements missions currently operating and in preparation


Wavelength [nm]
250
500
750
850
1250
1650
CHEOPS
PLATO
HST
CUTE
JWST
ARIEL
NUV
WALTzER
VISIBLE
WALTzER
NIR
WALTzER

Why additional mission?

- Exoplanets are one of the most dynamical fields
- WALTzER complements missions currently operating and in preparation
- Key Science: Mass loss, gas and aerosol composition, vertical structure of exoplanetary atmospheres

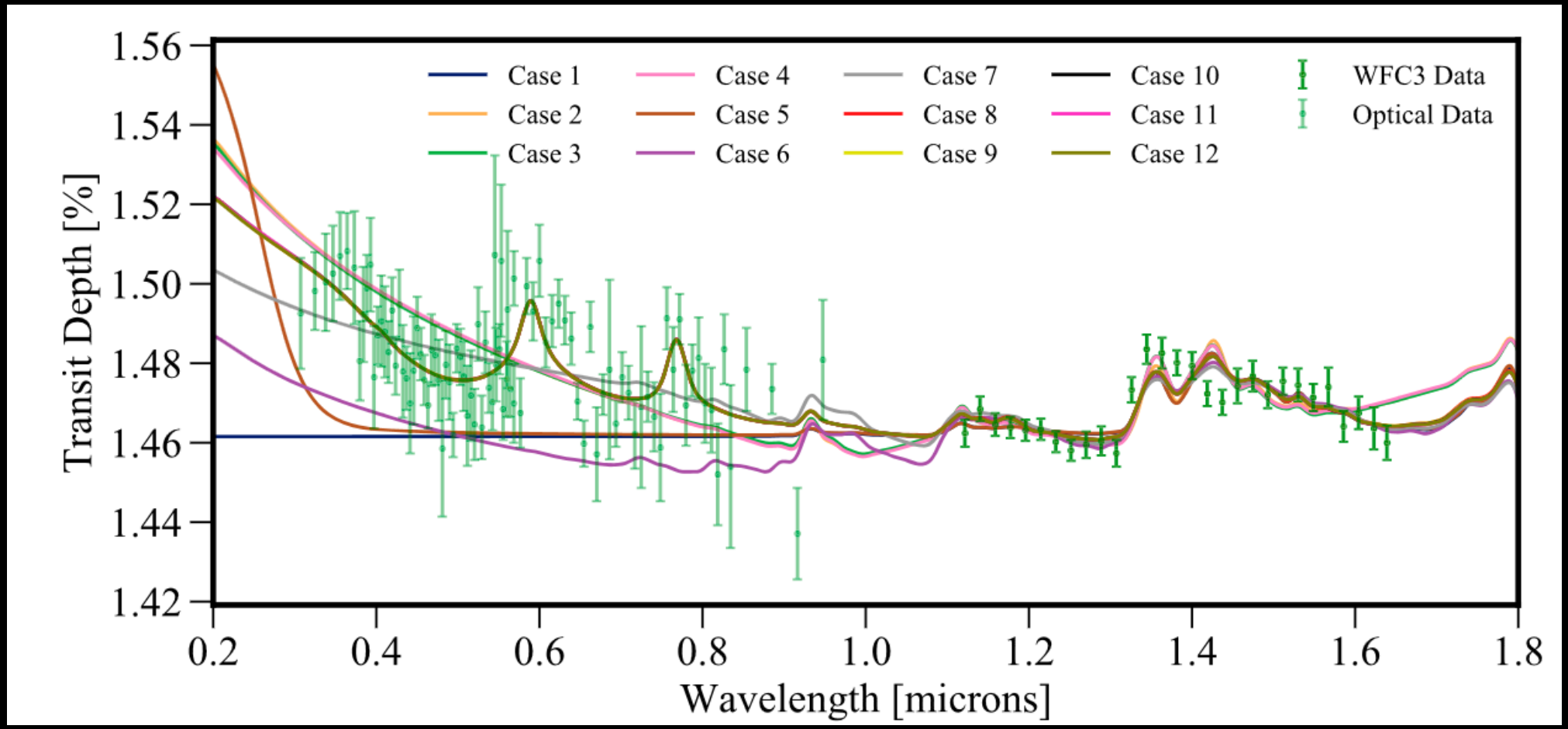
Different wavelengths probe different atmospheric layers



The missing UV/visible piece

- Exoplanets are one of the most dynamical fields
- WALTzER complements missions currently operating and in preparation
- Key Science: Mass loss, gas and aerosol composition, vertical structure
- UV and VIS region critical for breaking NIR degeneracies

Short wavelengths break retrieval degeneracies



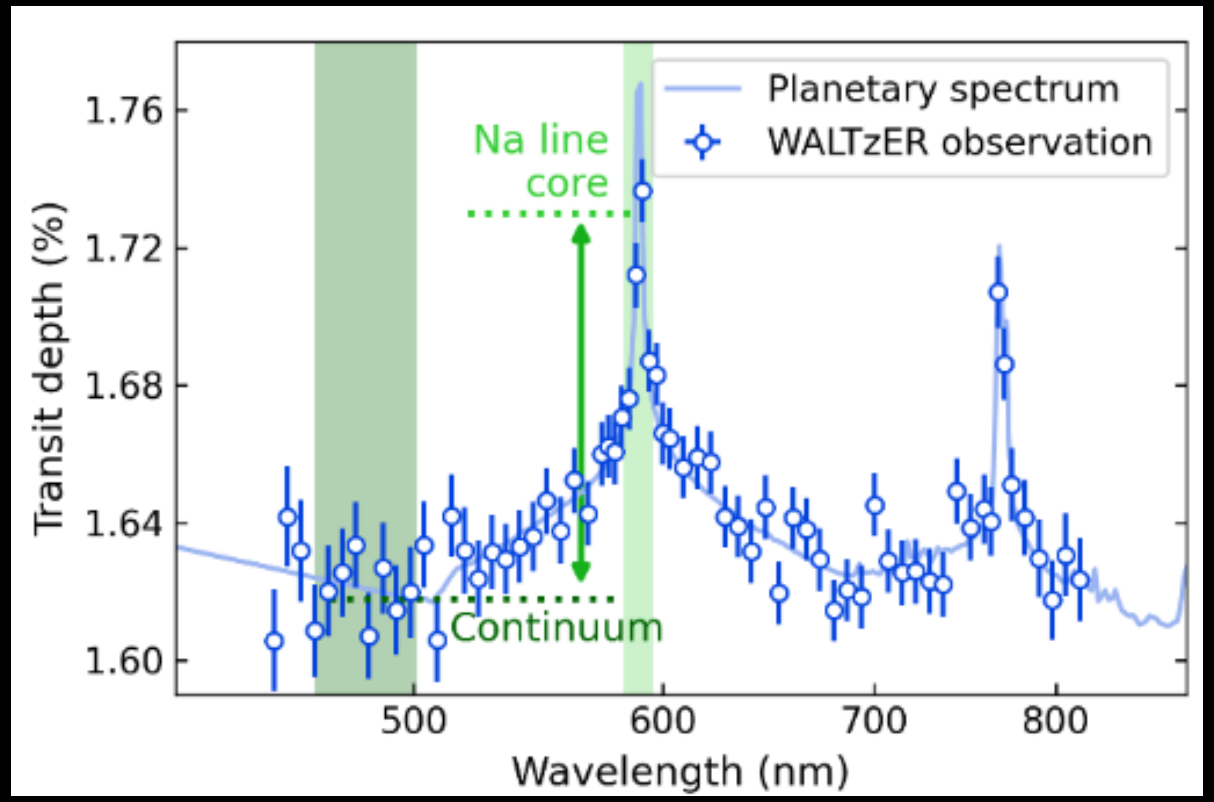
Welbanks 2019

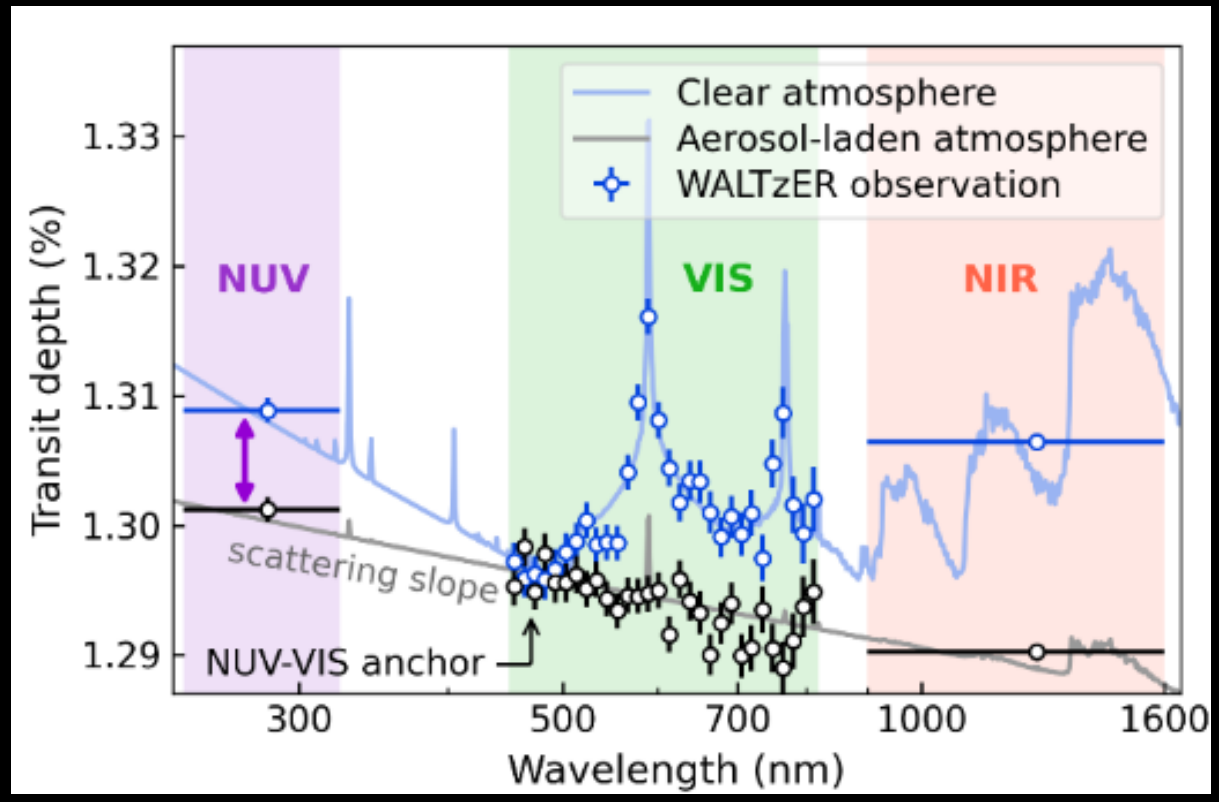
WALTzER exoplanet science objectives

- 30 gaseous exoplanets to simultaneously characterize the lower and upper atmosphere

- Key spectroscopic features in the **NUV** are Fe I & II and Mg I & II; in the **VIS** Na and K doublets. **NIR** band will cover water features and ensure consistency with Ariel and JWST.

Alkali metals and aerosols





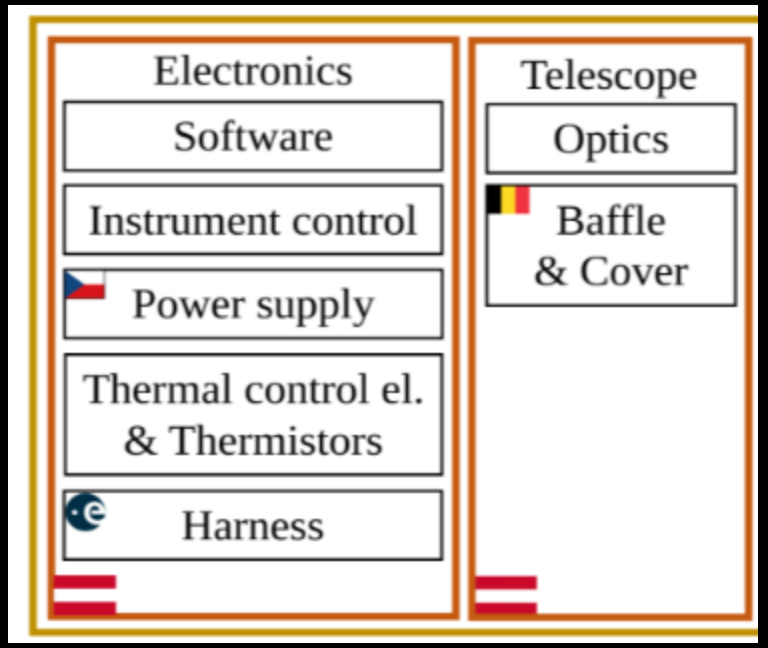
Additional science

- WALTzER, a versatile observatory
- HST will likely be decommissioned by 2030; possibly creating decade-long gap in UV spectroscopy.

- **Stellar radiation environments**: UV fluxes, flare rates, activity indicators
- **Solar System**: comets, interstellar objects, moons of giant planets
- **Community science**: about 25% open time

  Potential topics: interacting binaries, accretion, subdwarfs, stellar populations

Czech involvement



- Hardware: Power supply

- Strong exoplanet and stellar science groups (PLATO, Ariel)

- Science: Synergy with ground-based facilities
- PLATOSpec, OES+, ANDES

José Rodrigues

WALTzER