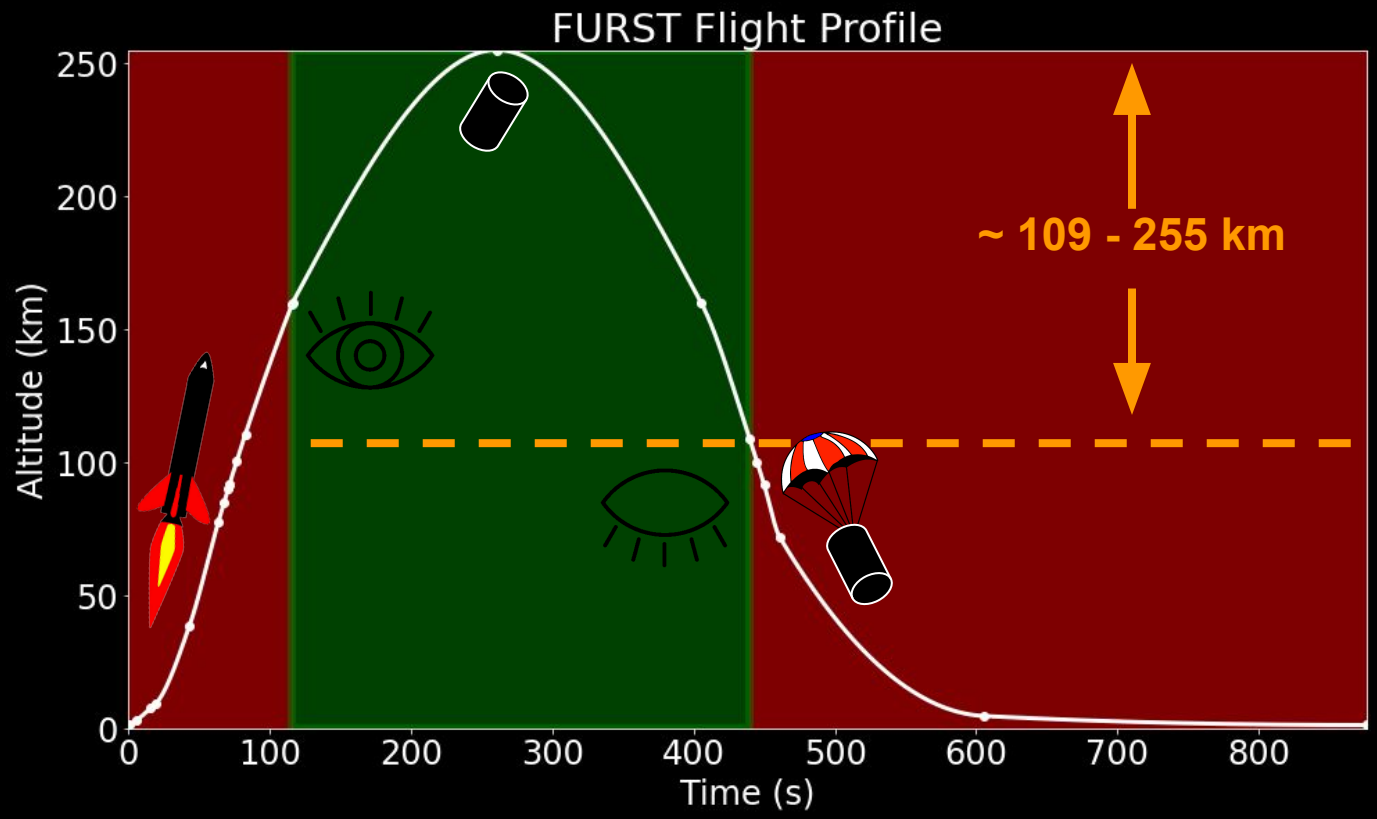
INVESTIGATING GEOCORONAL ABSORPTION FOR WAVELENGTH CALIBRATION OF SOUNDING ROCKETS

NICOLAS DONDERS,
AMY WINEBARGER,
CHARLES KANKELBORG,
GENEVIEVE VIGIL,
LARRY PAXTON,
& GARY ZANK

Sounding Rockets are spectroscopic and imaging instruments on-board sub-orbital flights

FURST will image the first **full-sun integrated high-resolution UV** spectra (1200-1810 Å)

- Current UV spectral measurement sources have a limited FOV (such as HRTS) or low resolution
- Will serve as a Hubble-analog



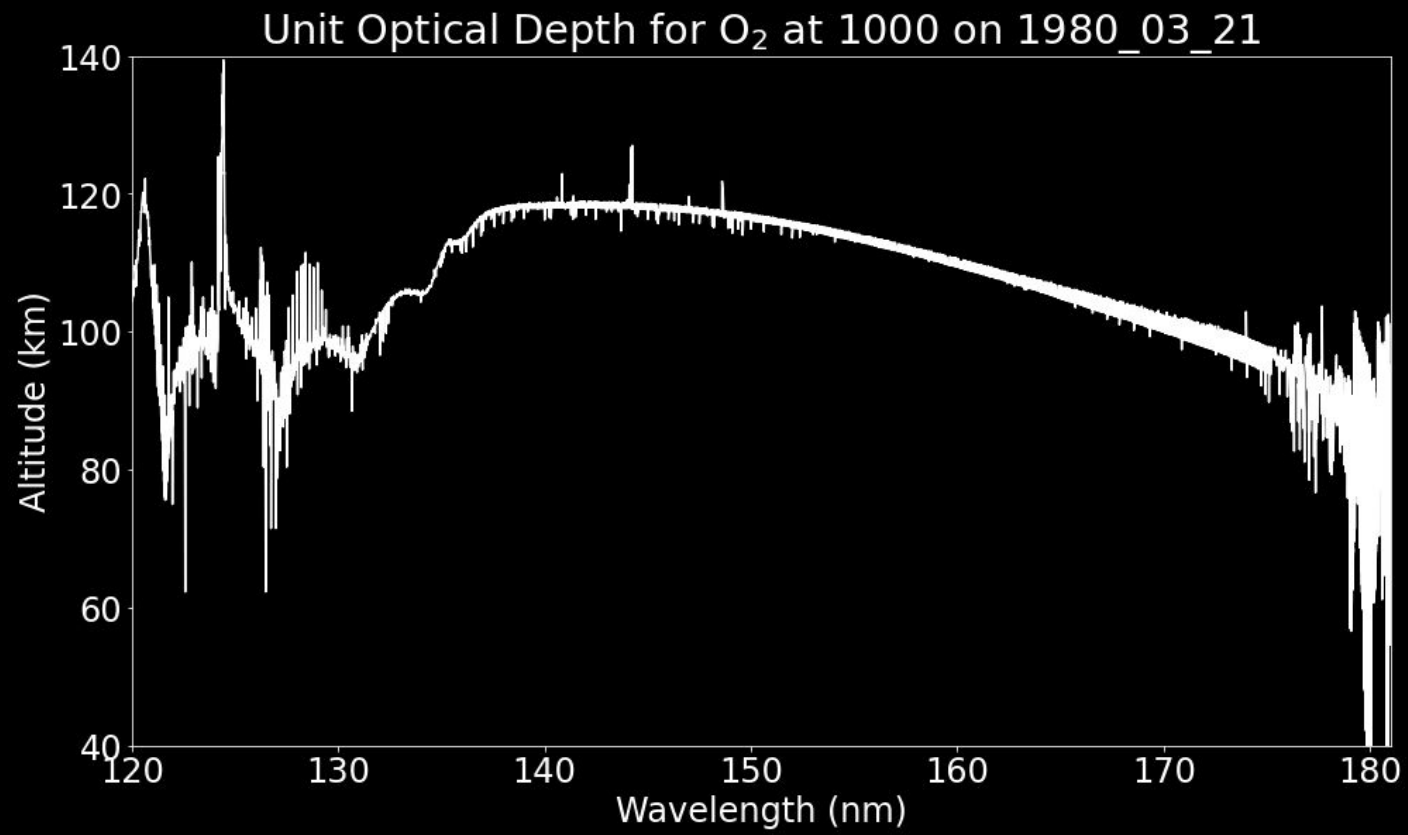
INVESTIGATING GEOCORONAL ABSORPTION FOR WAVELENGTH CALIBRATION OF SOUNDING ROCKETS

NICOLAS DONDERS,
AMY WINEBARGER,
CHARLES KANKELBORG,
GENEVIEVE VIGIL,
LARRY PAXTON,
& GARY ZANK

Geocoronal absorption is caused by molecules in the upper atmosphere

Optical depth is the product of the **absorption cross section and number density** integrated vertically with altitude

$$\tau(\lambda, z) = \sigma(\lambda) \int_{z'}^{\infty} \eta(z)\, dz' = 1$$



INVESTIGATING GEOCORONAL ABSORPTION FOR WAVELENGTH CALIBRATION OF SOUNDING ROCKETS

NICOLAS DONDERS,
AMY WINEBARGER,
CHARLES KANKELBORG,
GENEVIEVE VIGIL,
LARRY PAXTON,
& GARY ZANK

Absorption lowers the spectral signal at known locations

$$I = I_0 e^{-\tau / \cos\theta}$$

These patterns can be useful for **wavelength calibration!**

Additionally, we may also be able to **validate atomic and atmospheric properties**