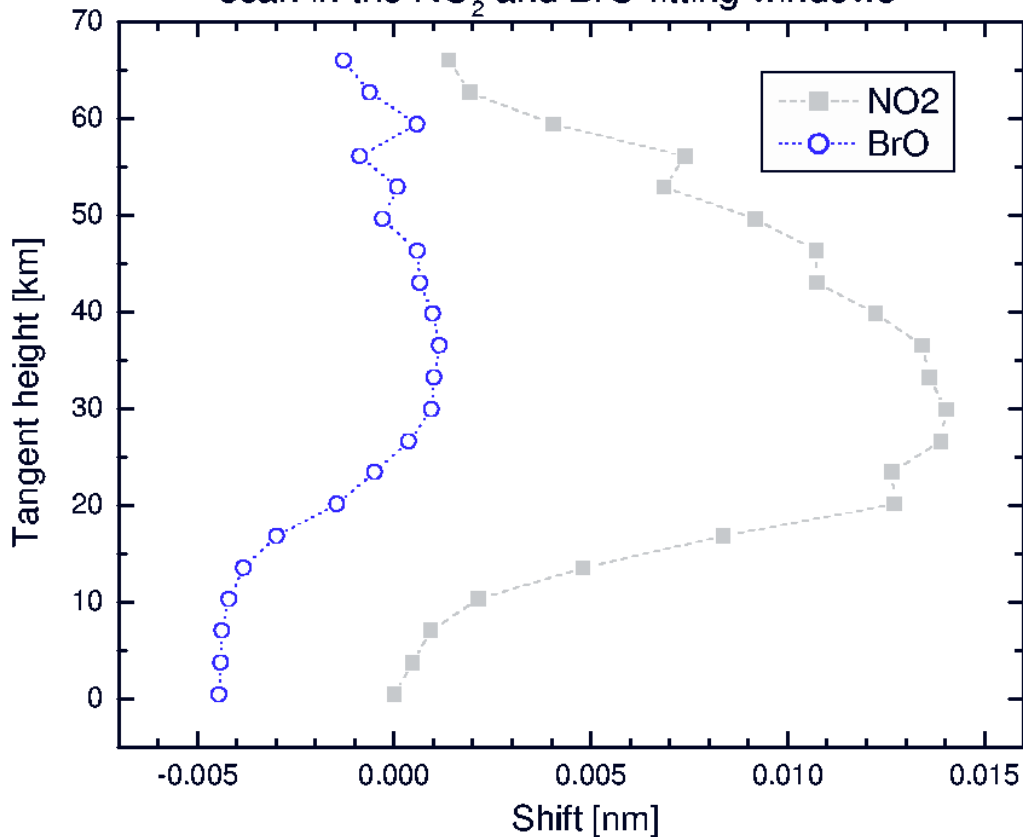


SCIAMACHY Spectral Shift in Limb Spectra

Tangent height dependent spectral shift (1)

Observed wavelength shifts during a limb scan in the NO₂ and BrO fitting windows

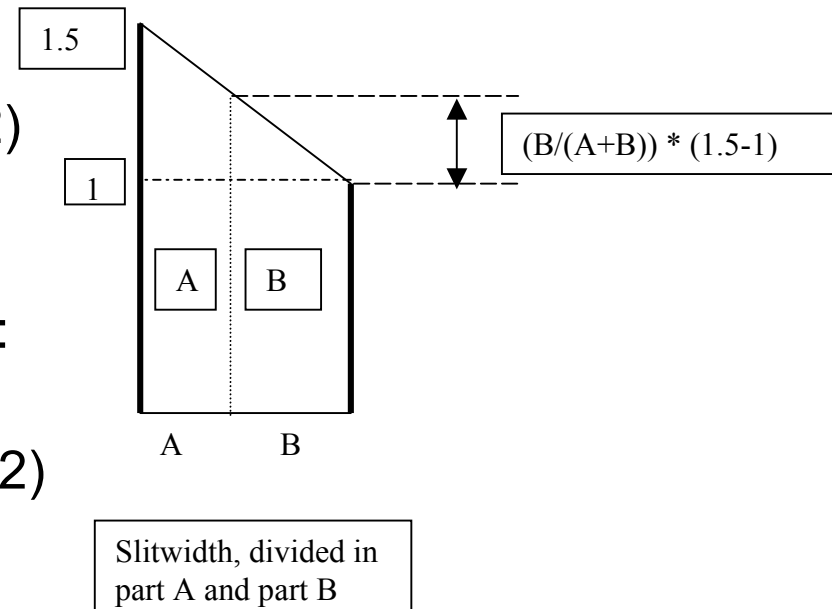


Limb radiance spectra measured with SCIAMACHY experience a wavelength shift that is a function of tangent height

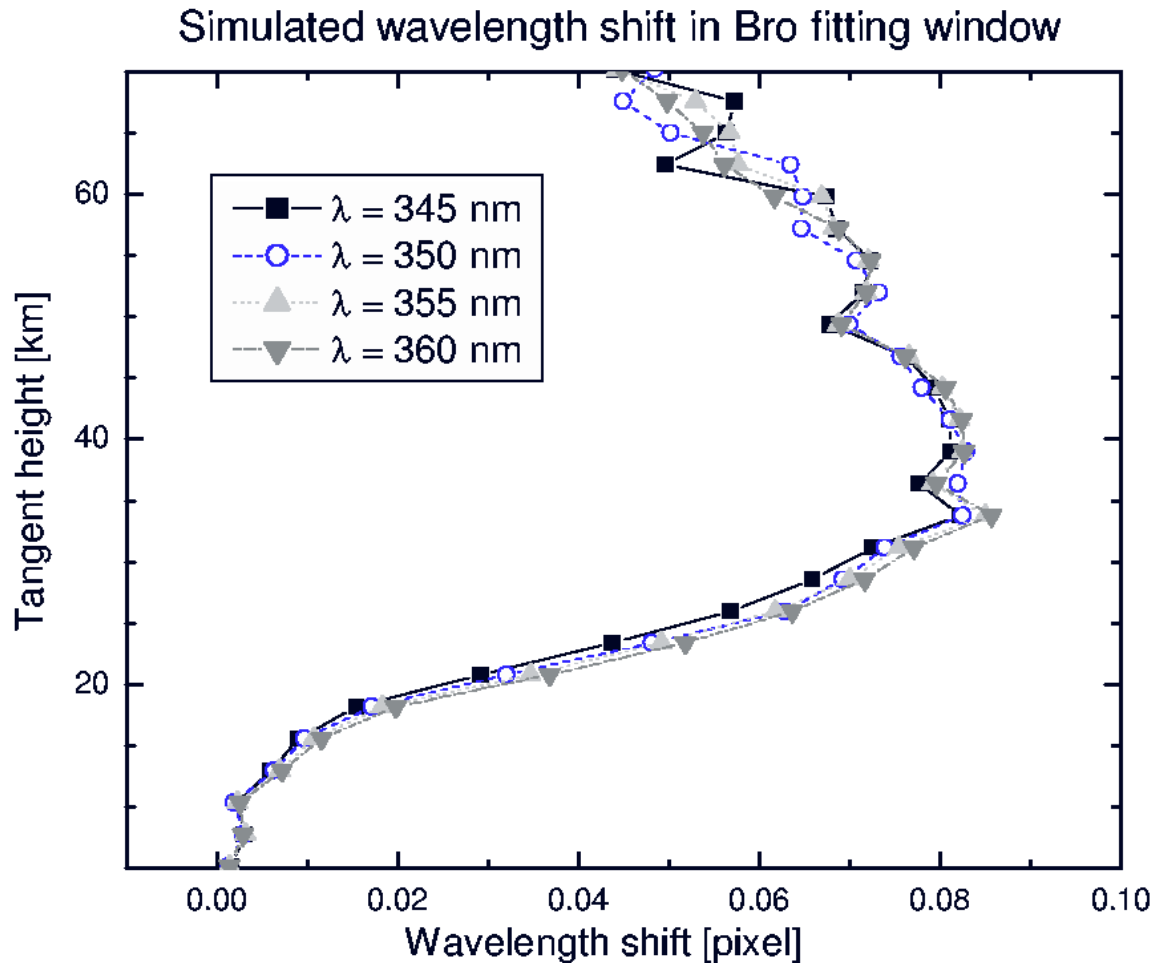
(Orbit 797, limb state 7,
date: 04/25/2002,
geog. lat.: 56-59N, geog. long.: 238-
253, 18:30 UTC, by Chr. v. Savigny)

Tangent height dependent spectral shift (2)

- Excluded explanations
(effects about an order too small):
 - Doppler shift
 - Slope of spectra (Sioris et.al., 2002)
- Actual explanation
(effect in the order of 0.01nm ~ 0.1pix):
 - inhomogeneous illumination of the slit (Visser & v. Savigny, 2002)

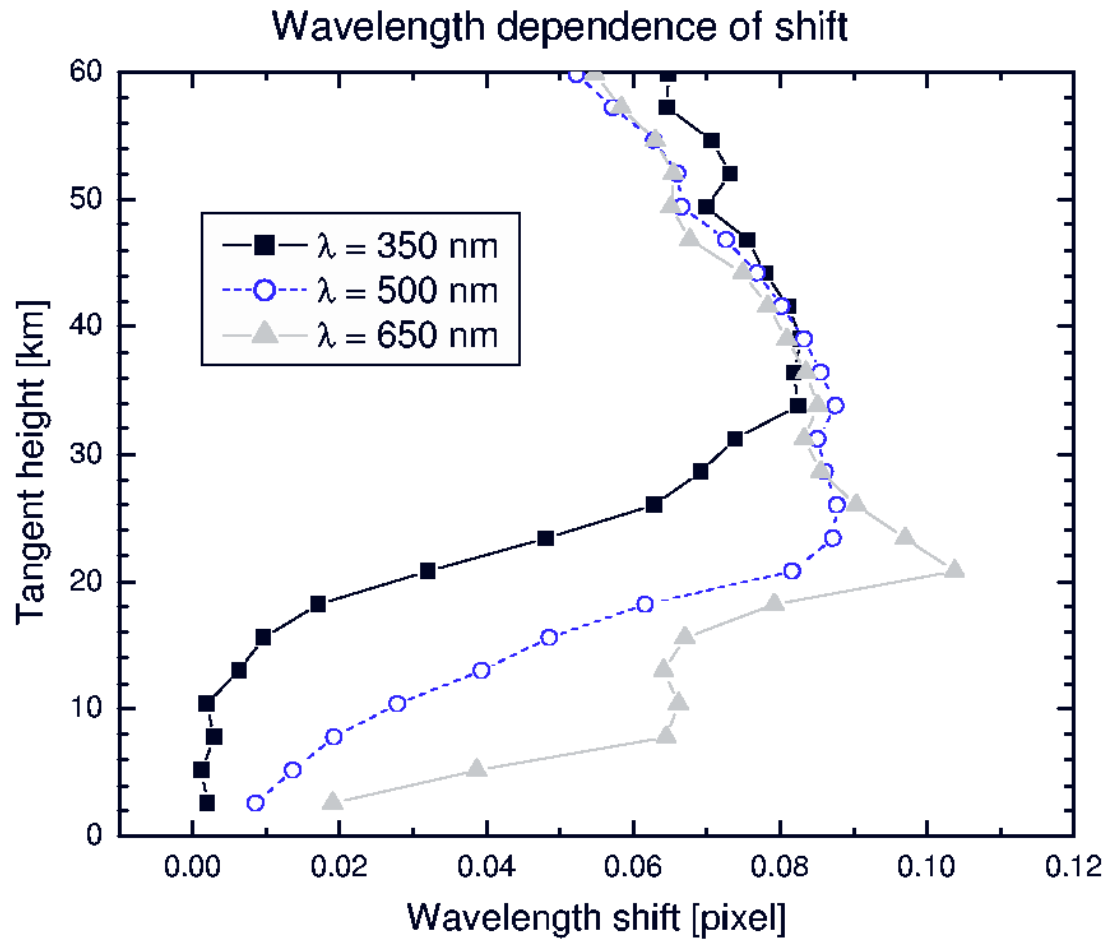


Tangent height dependent spectral shift (3)



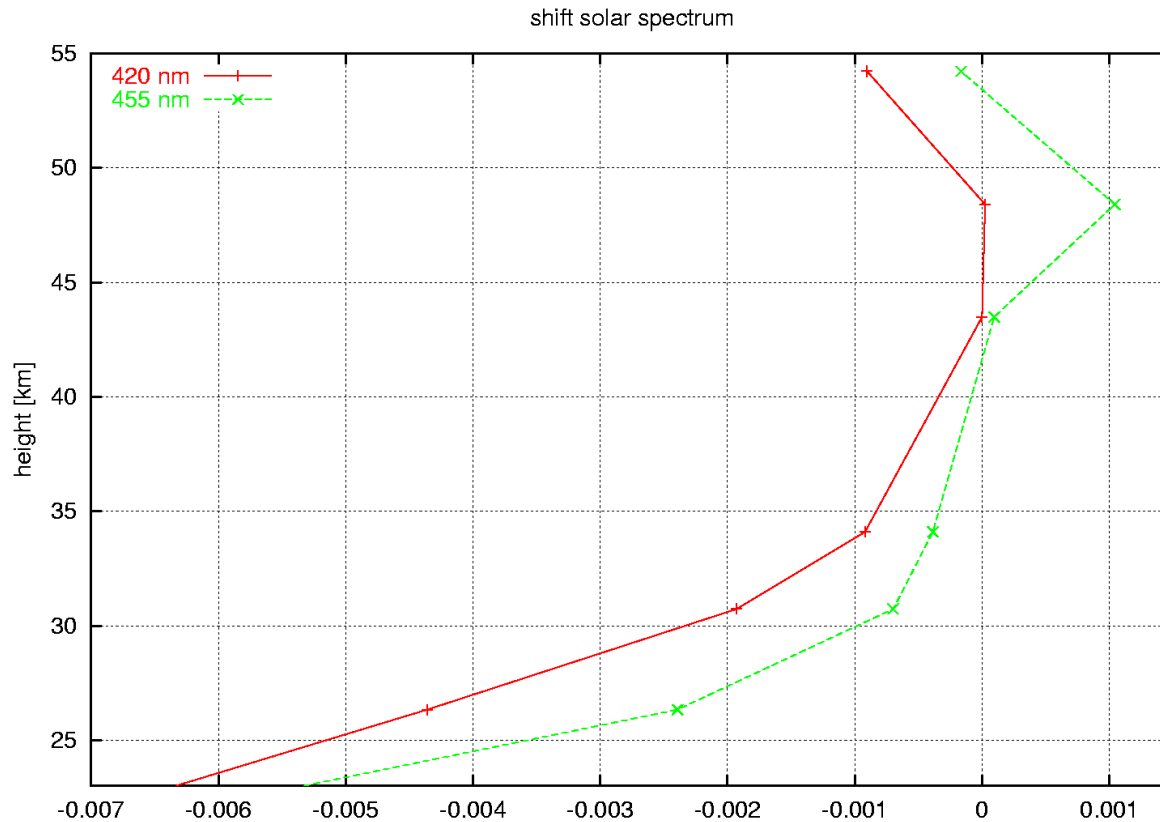
(by Chr. v. Savigny)

Tangent height dependent spectral shift (3)



(by Chr. v. Savigny)

Tangent height dependent spectral shift (4)



A similar effect
as in limb can
be found in
occultation
geometry

(by A. Schlesier)