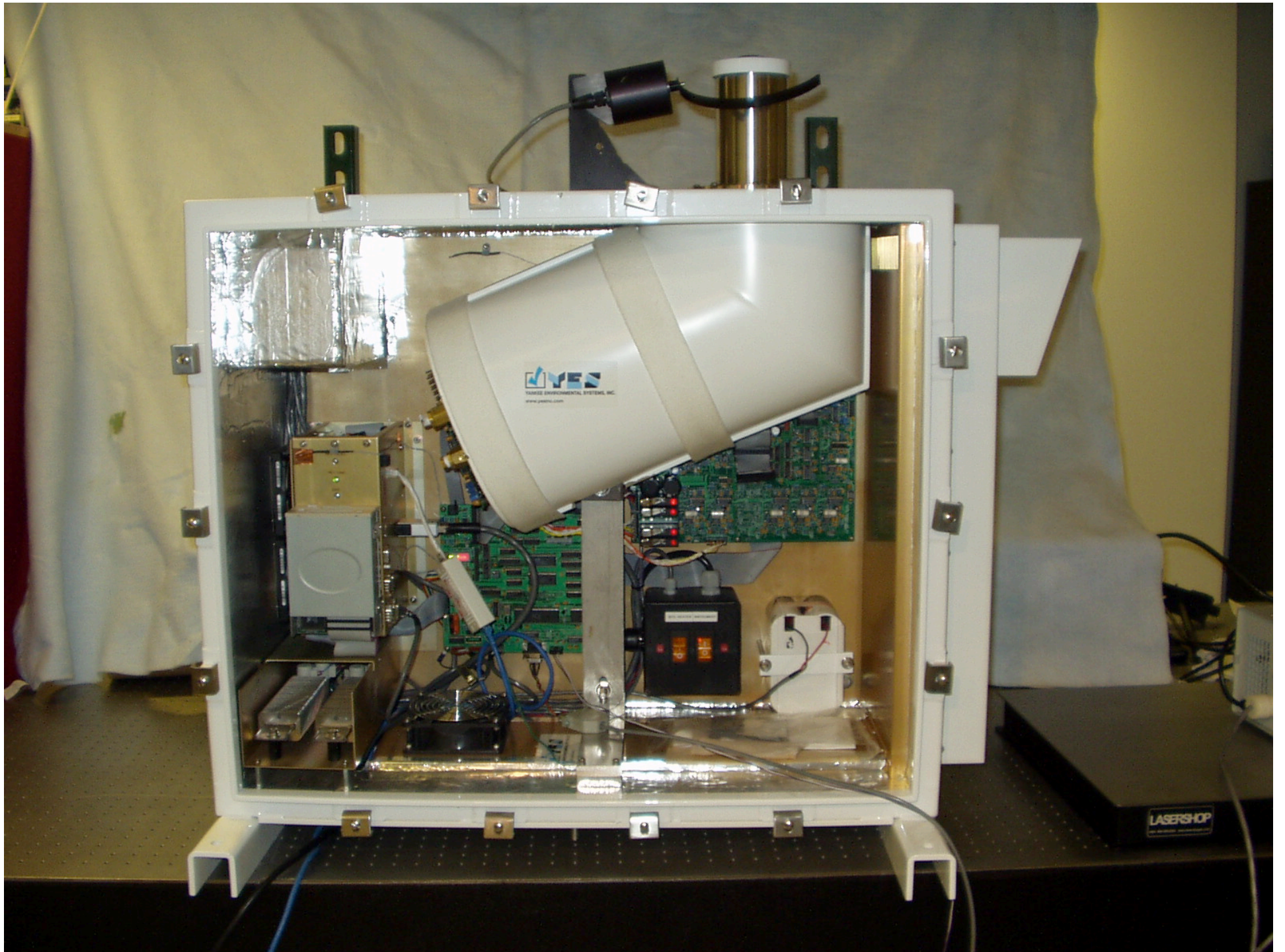


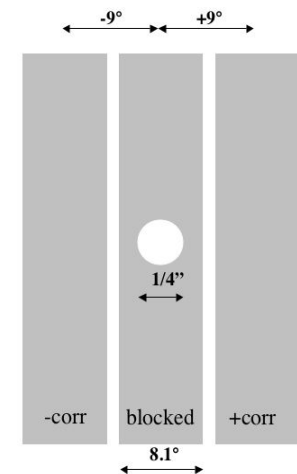
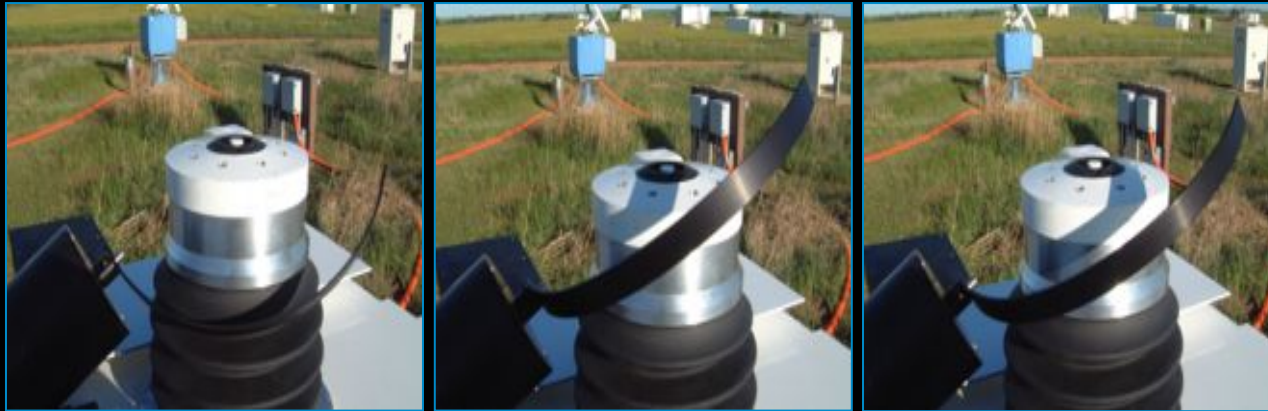
# Spectral Irradiance and Optical Depth Retrievals from the Rotating Shadowband Spectroradiometer (RSS)

Joseph Michalsky and Peter Kiedron\*  
University of Colorado (CIRES) and NOAA

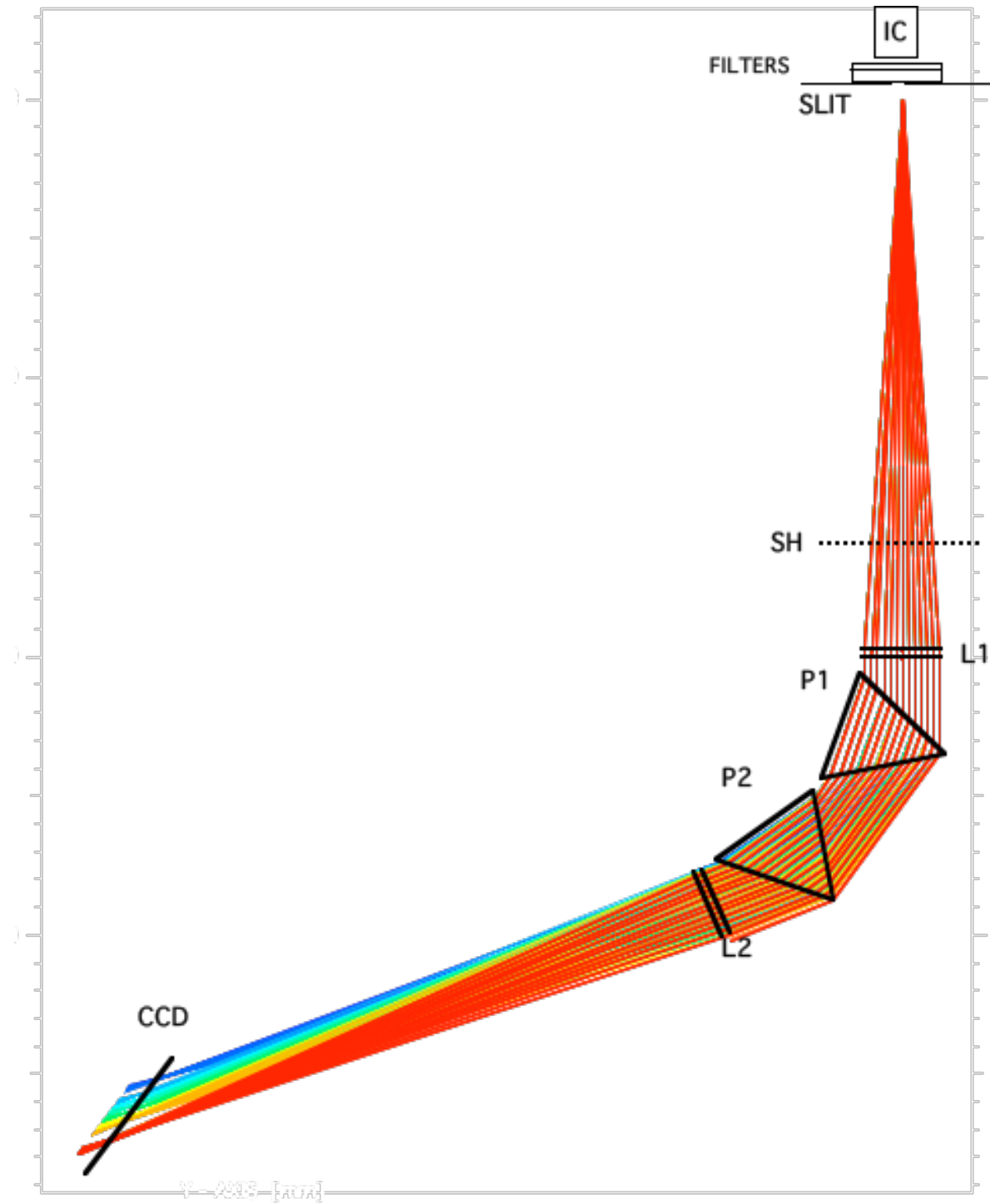
- Brief instrument description
- Wavelength registration
- Estimation of ET response across absorption bands
- Loss of sensitivity
- Calibration
- Examples of optical depth
- Examples of derived spectral irradiance
- An interesting retrieval using the data

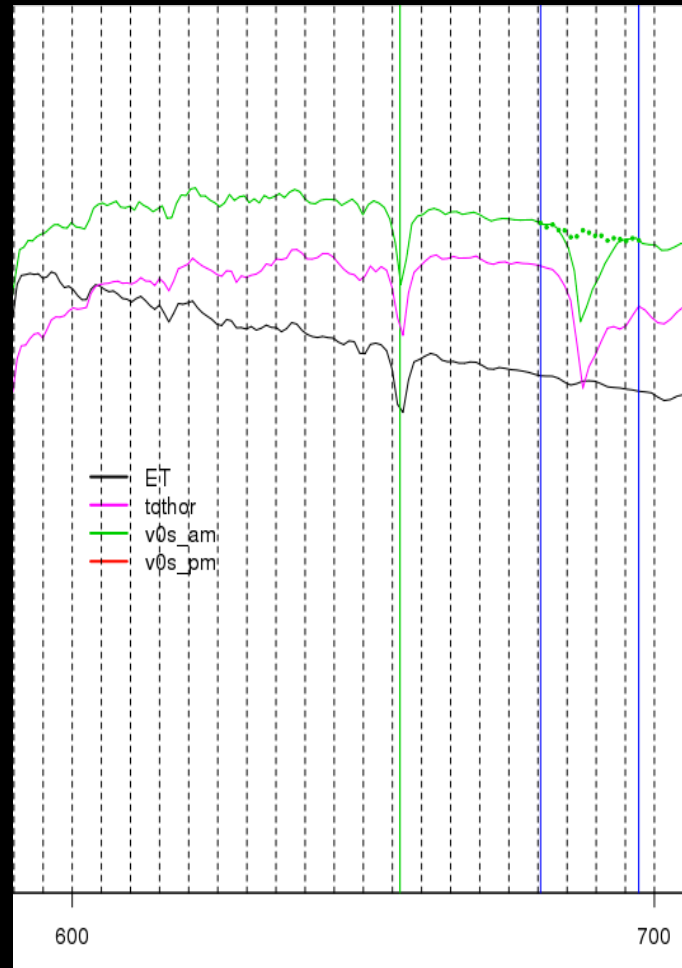
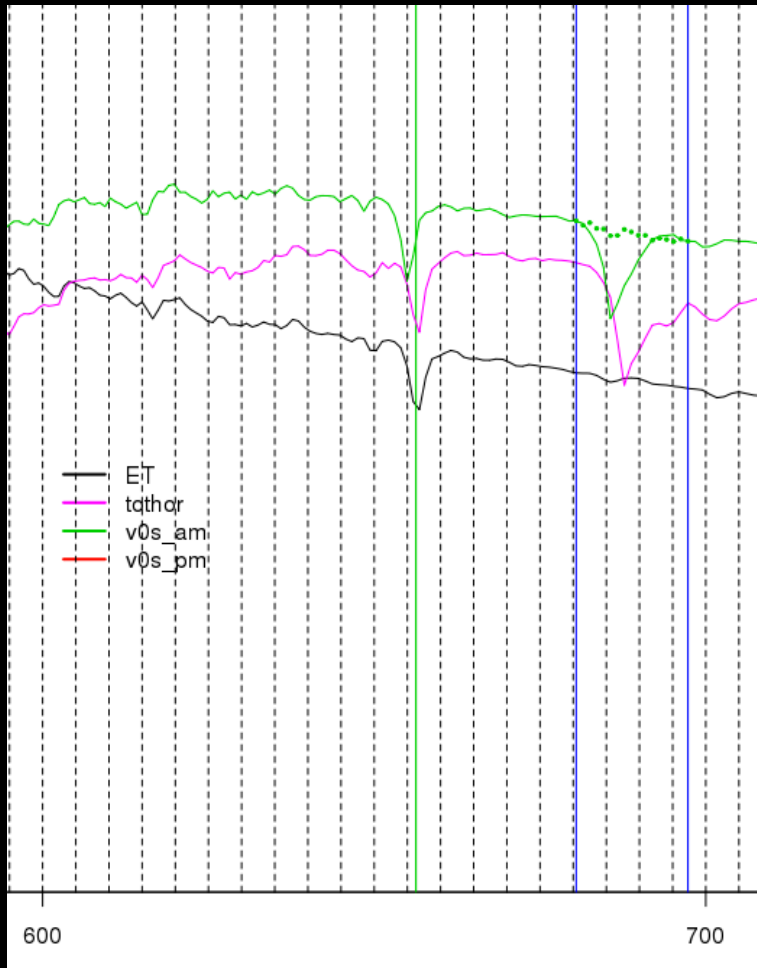
\*Formerly with CIRES and NOAA

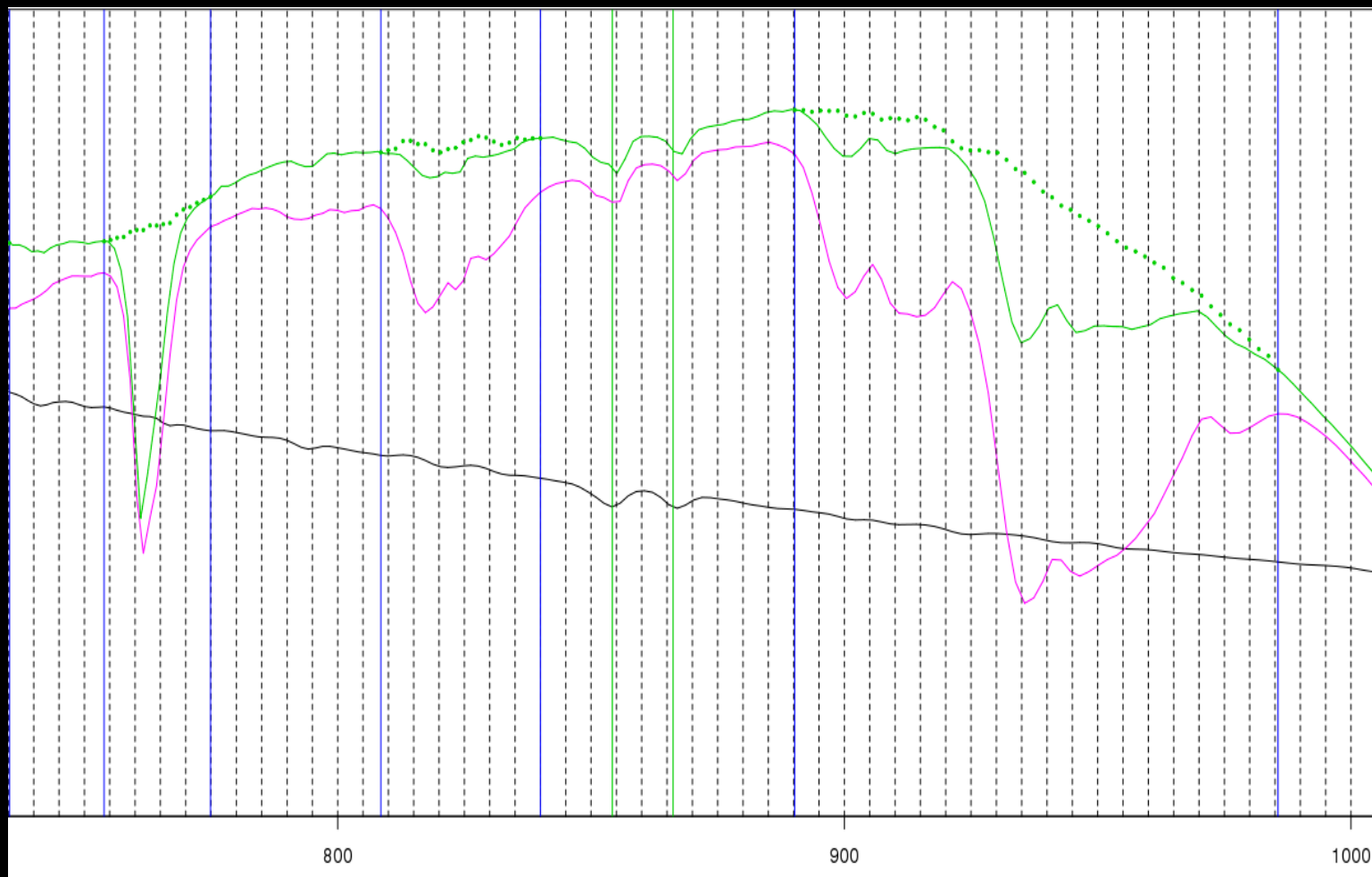




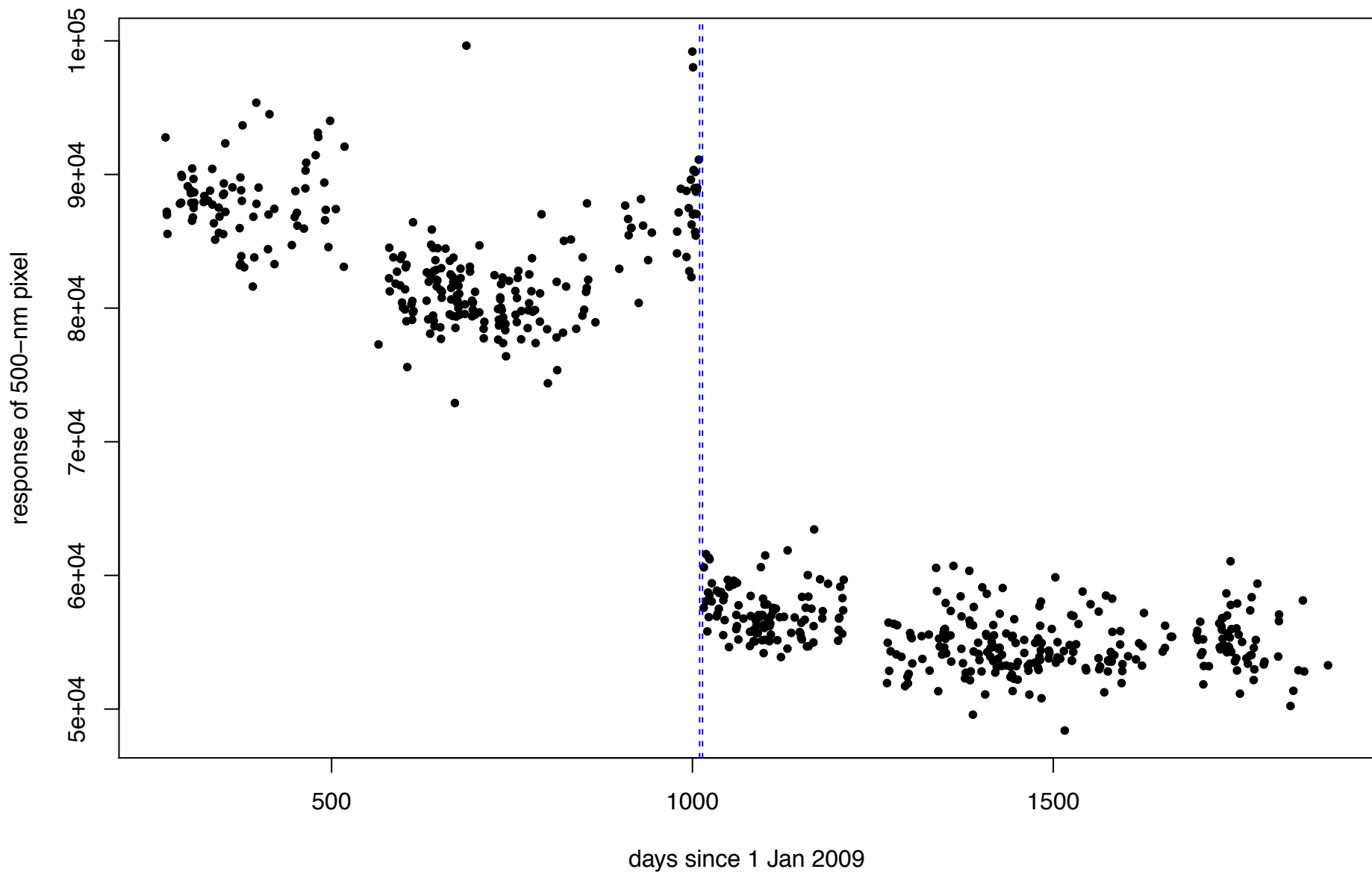
Shadowbanding



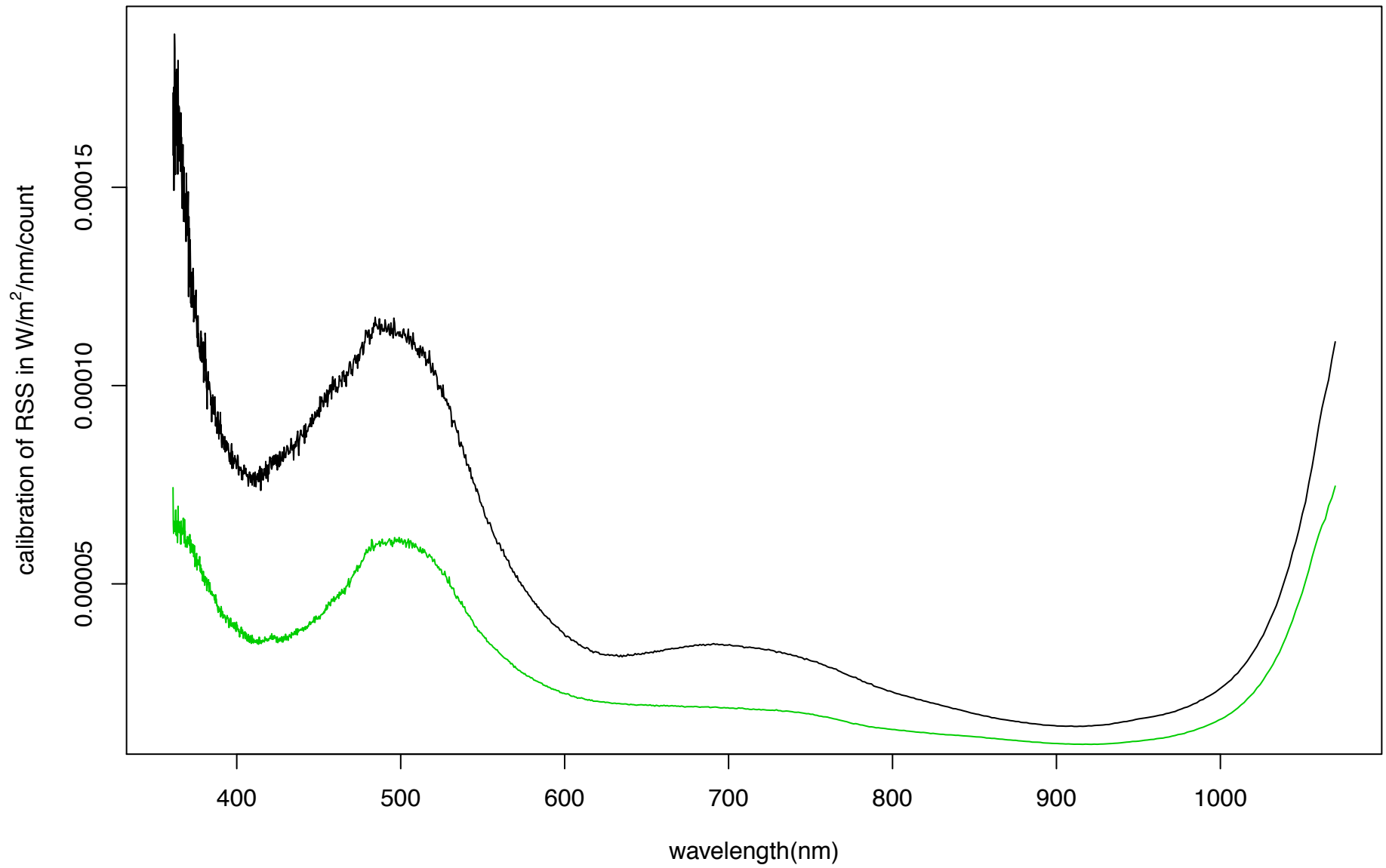




# $V_0$ Retrievals near 500 nm

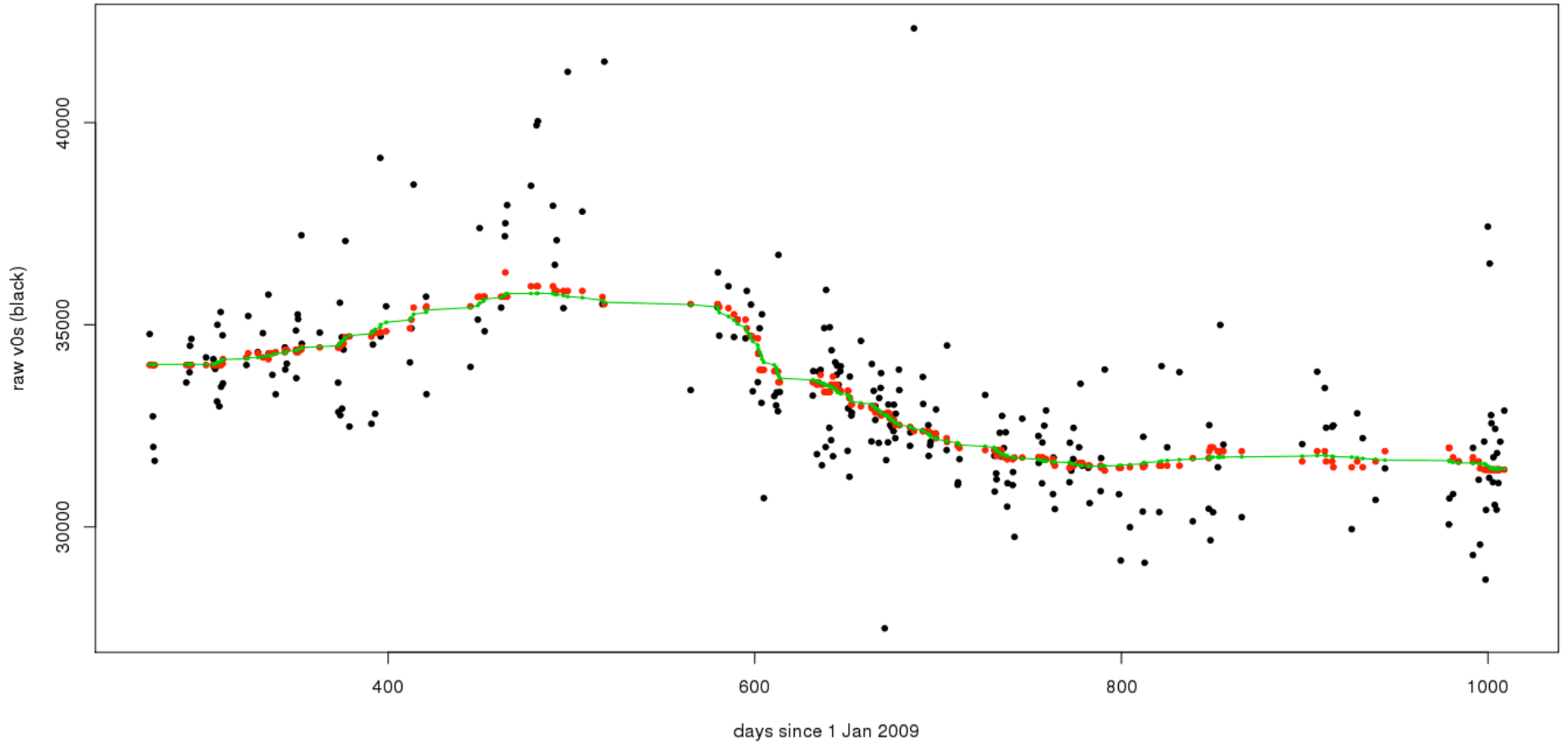


Calibration of RSS in 2009 (green) and in 2013 (black)

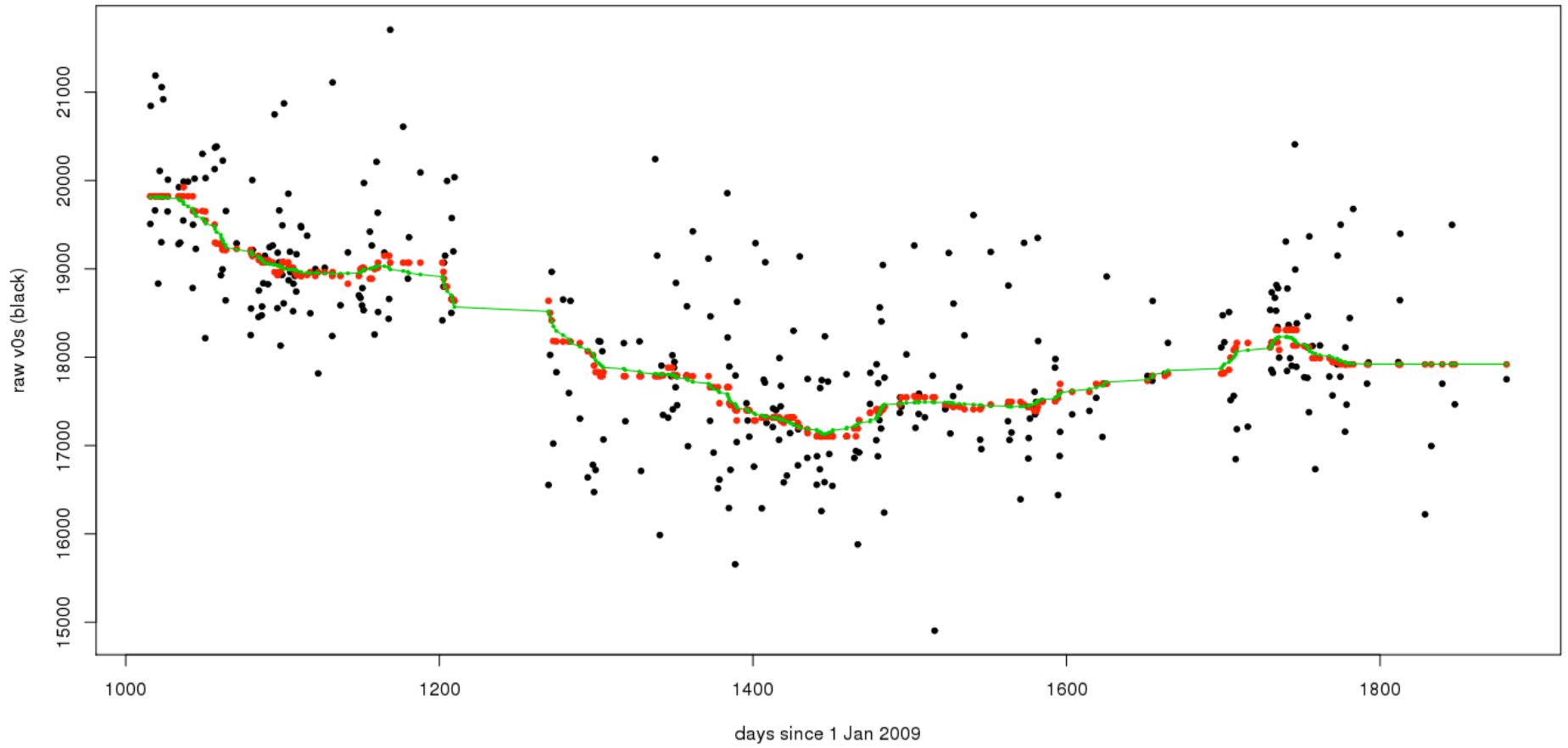




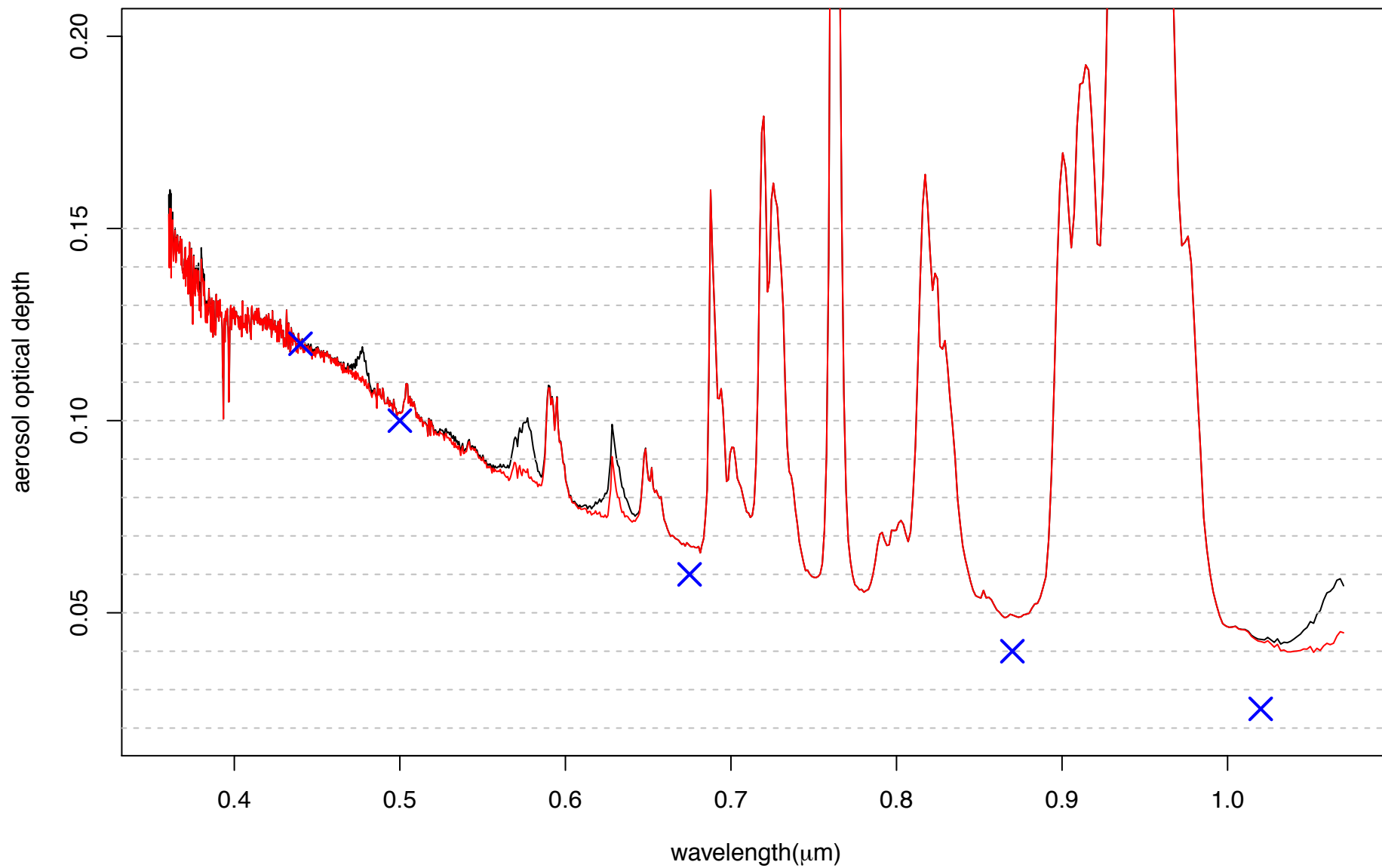
wavelength in nm = 499.96



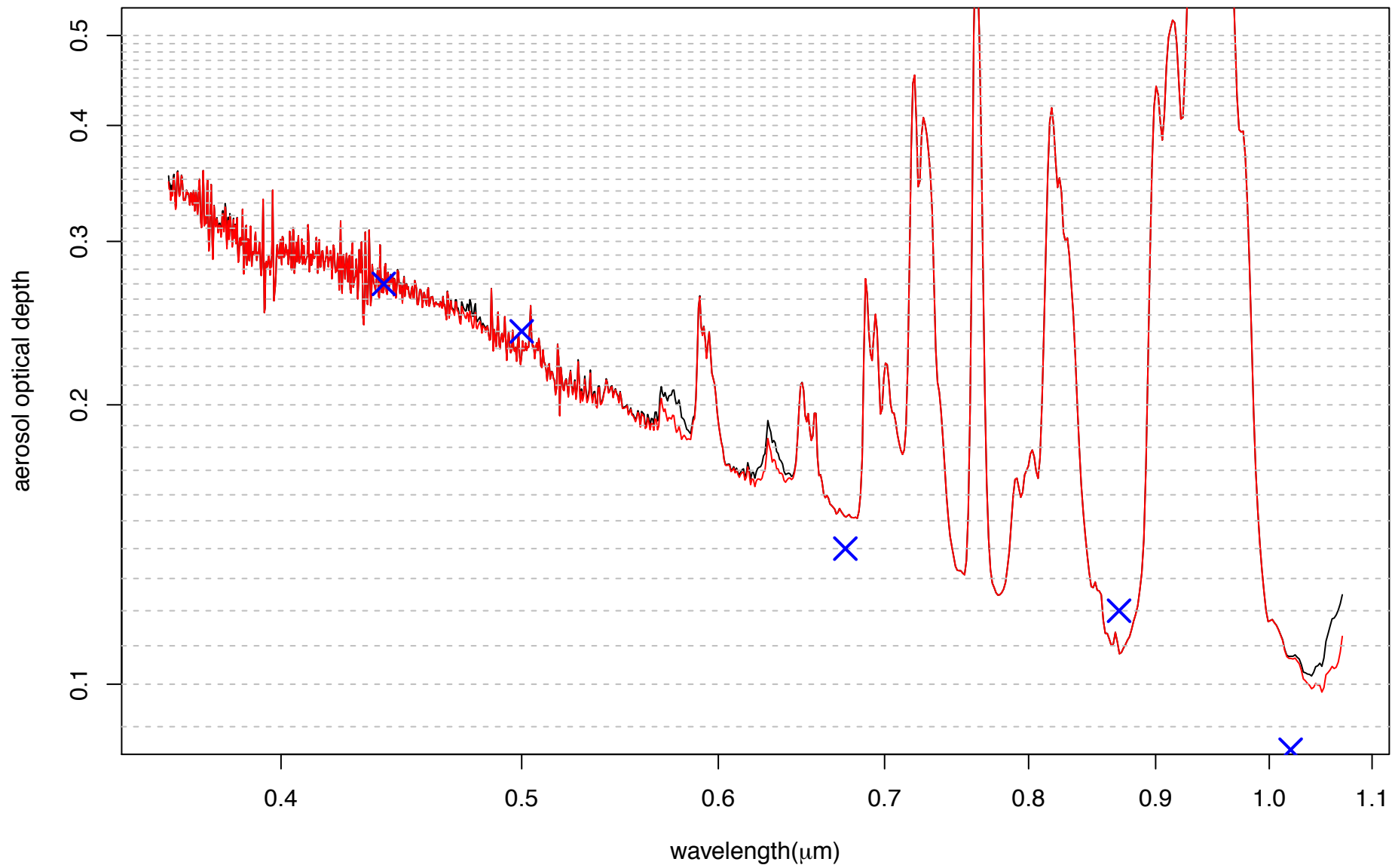
wavelength in nm = 499.96



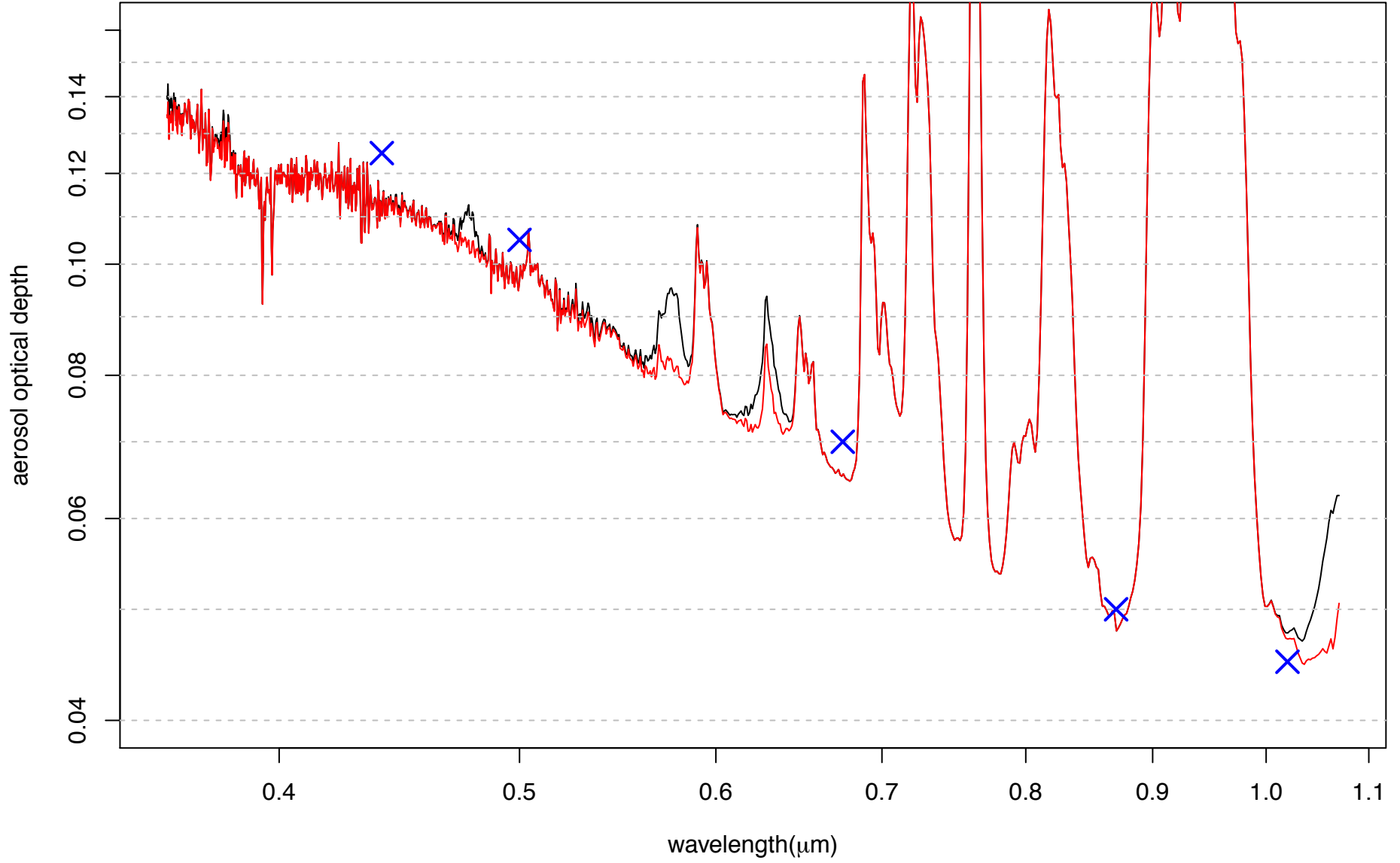
2009 Oct 18 – before sensitivity decrease



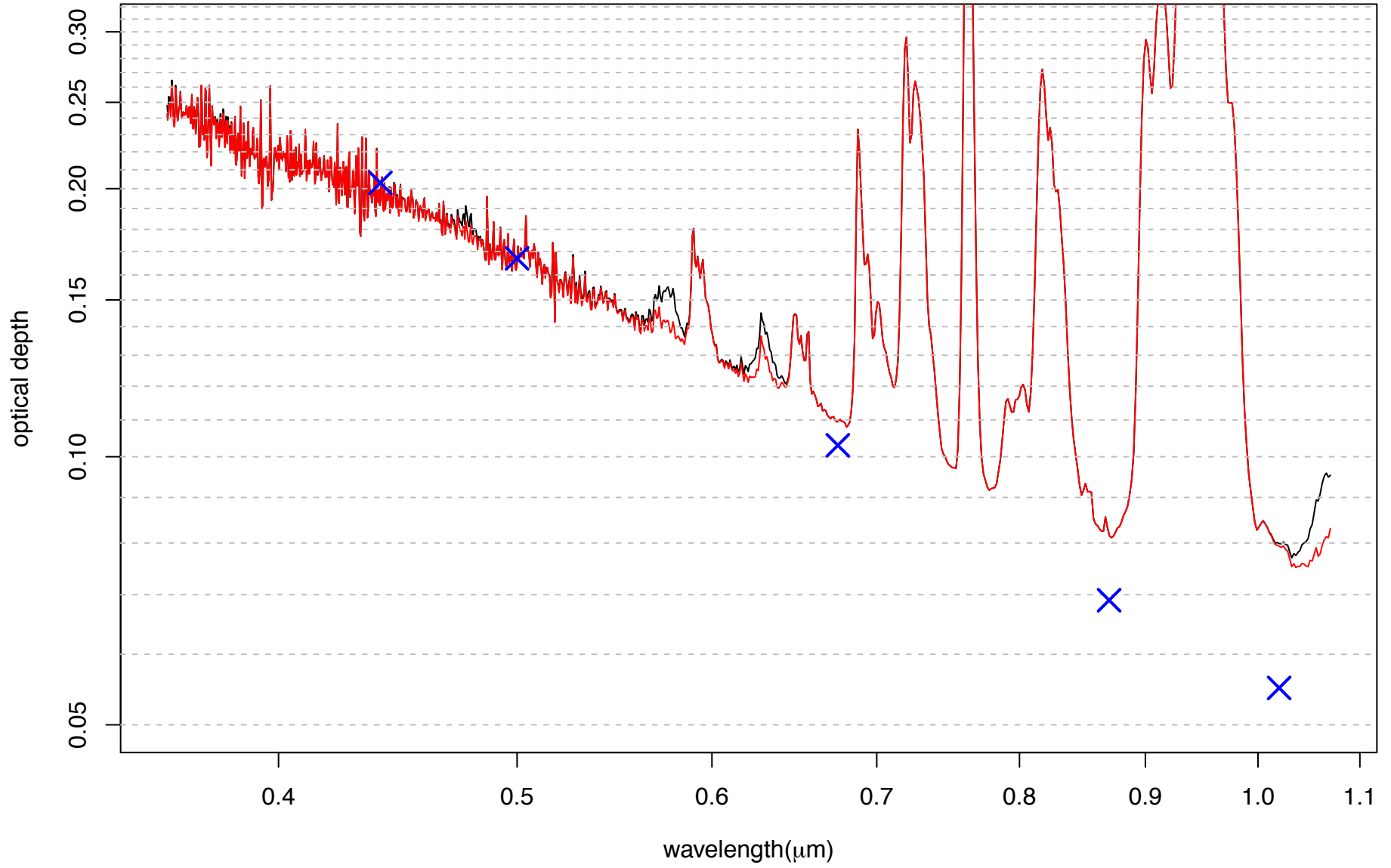
2010 Aug 20 – before sensitivity decrease



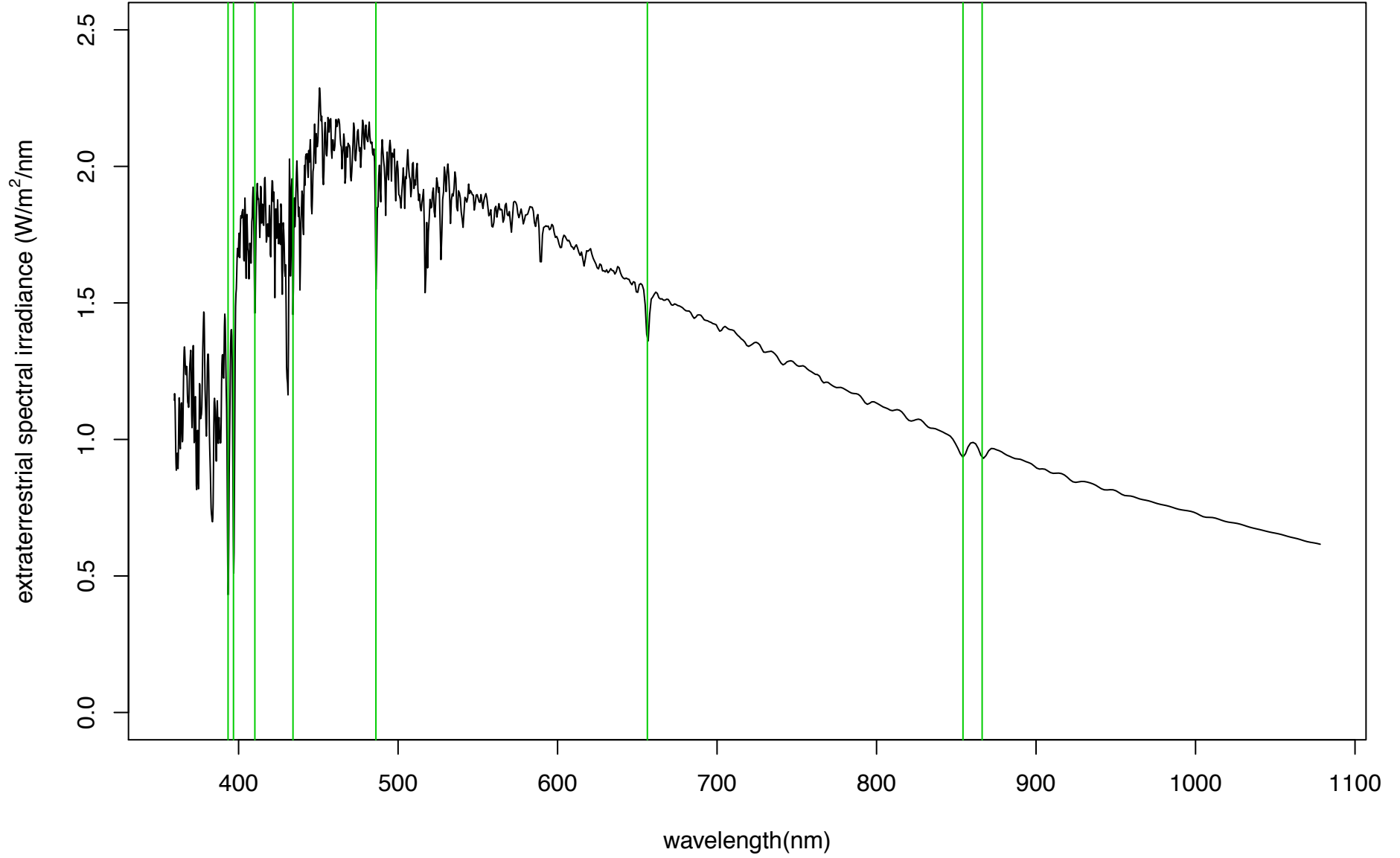
2012 Oct 09 – after sensitivity decrease

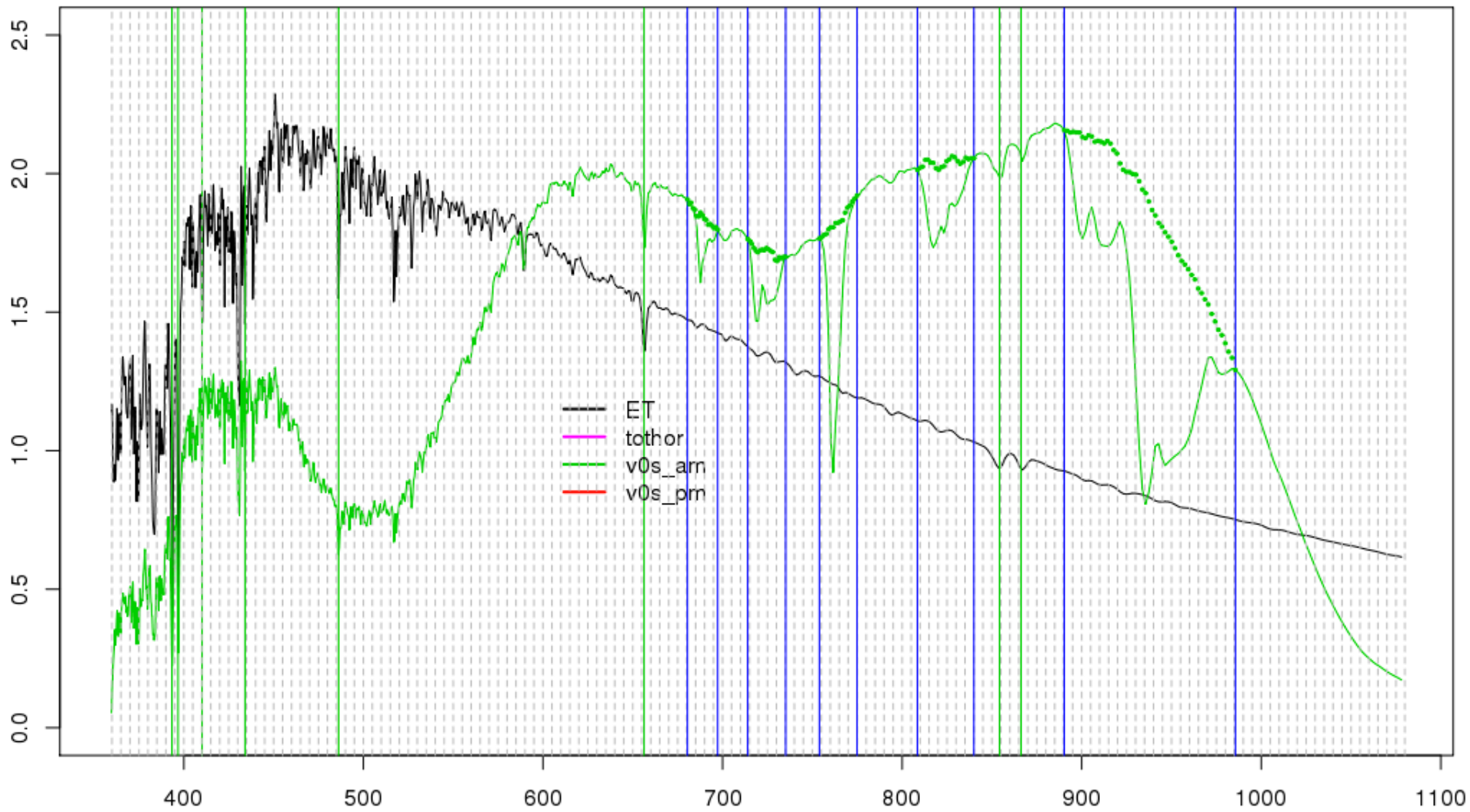


### AOD on 2010 October 19



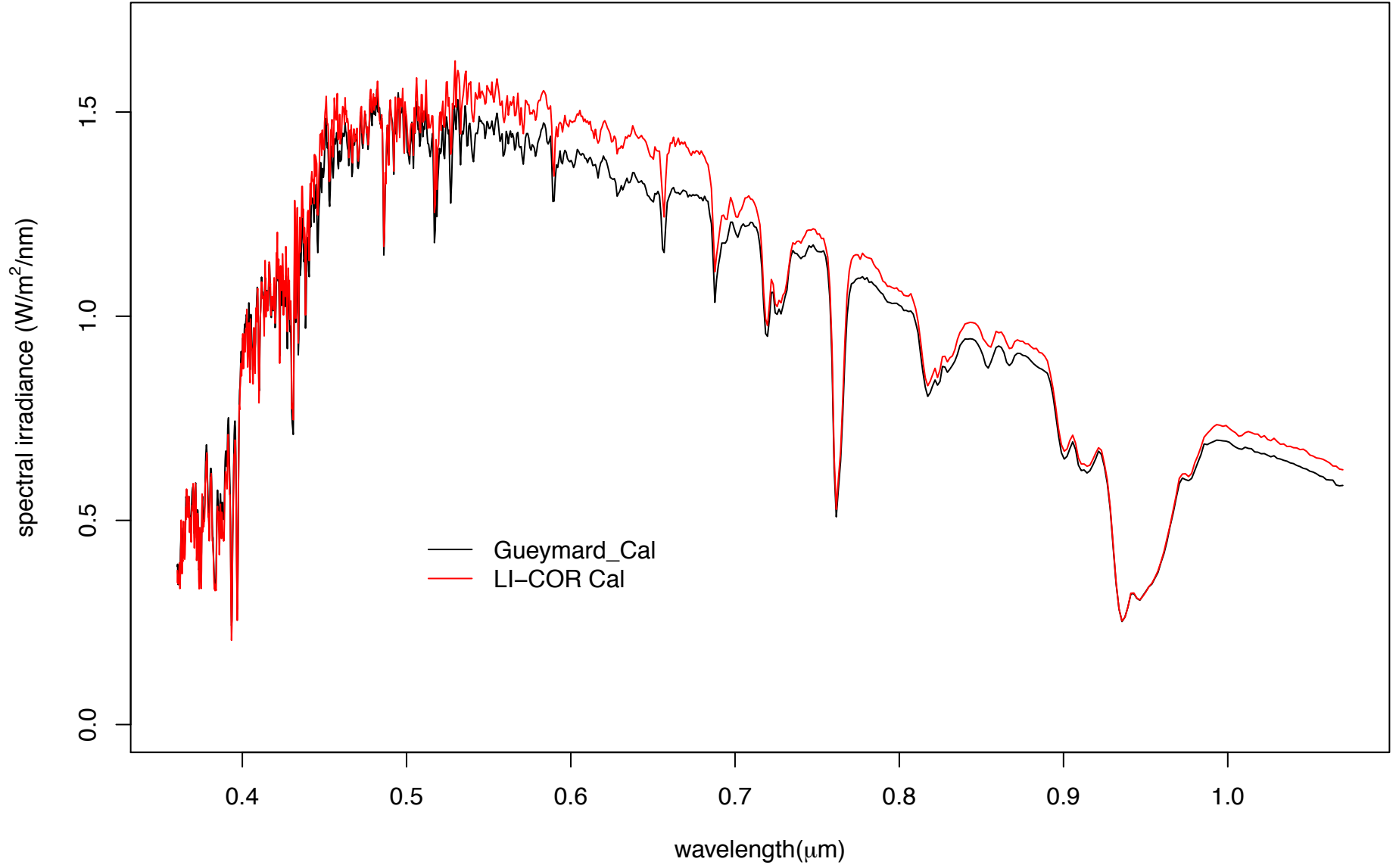
### ET at the Spectral Resolution of the RSS



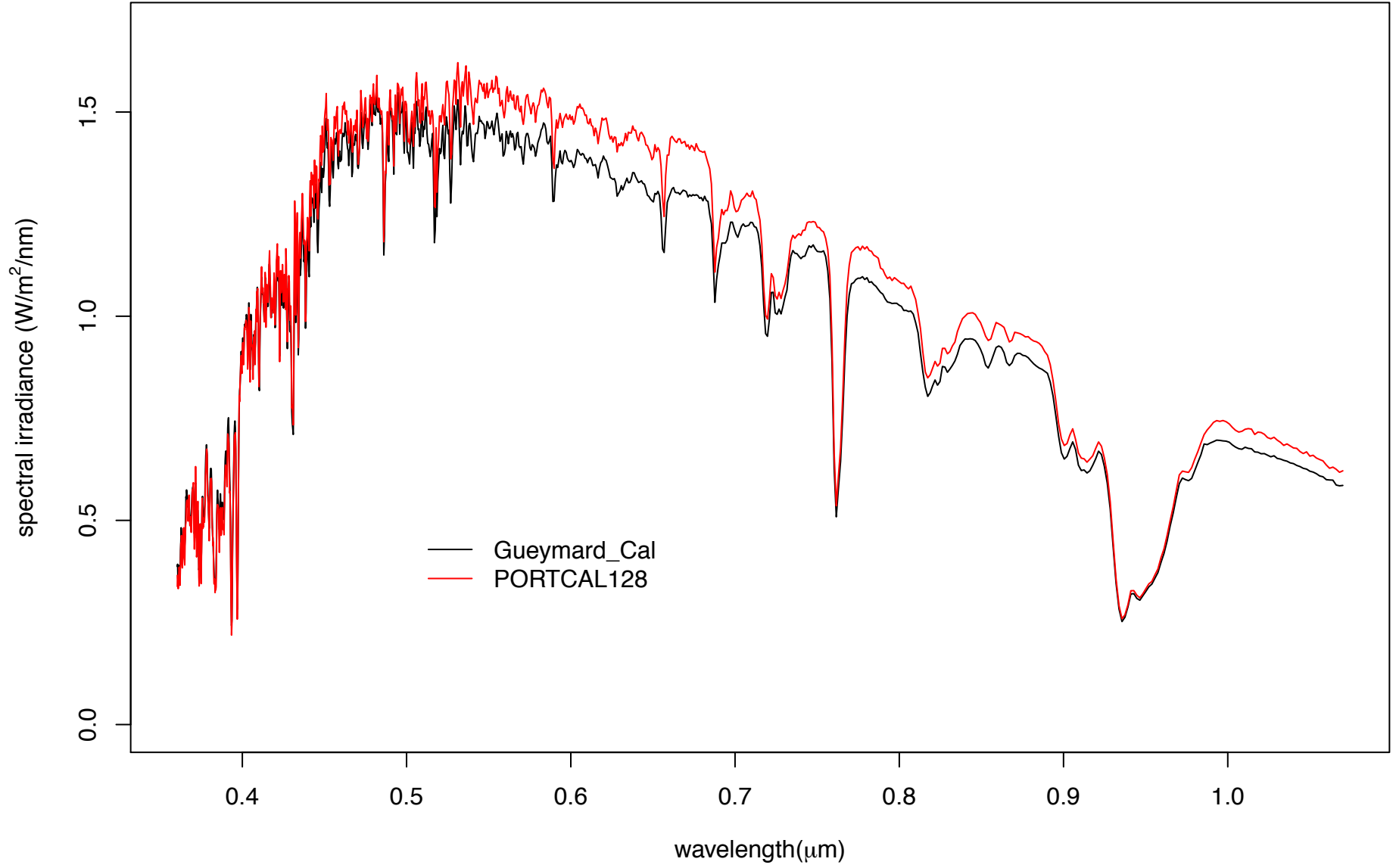




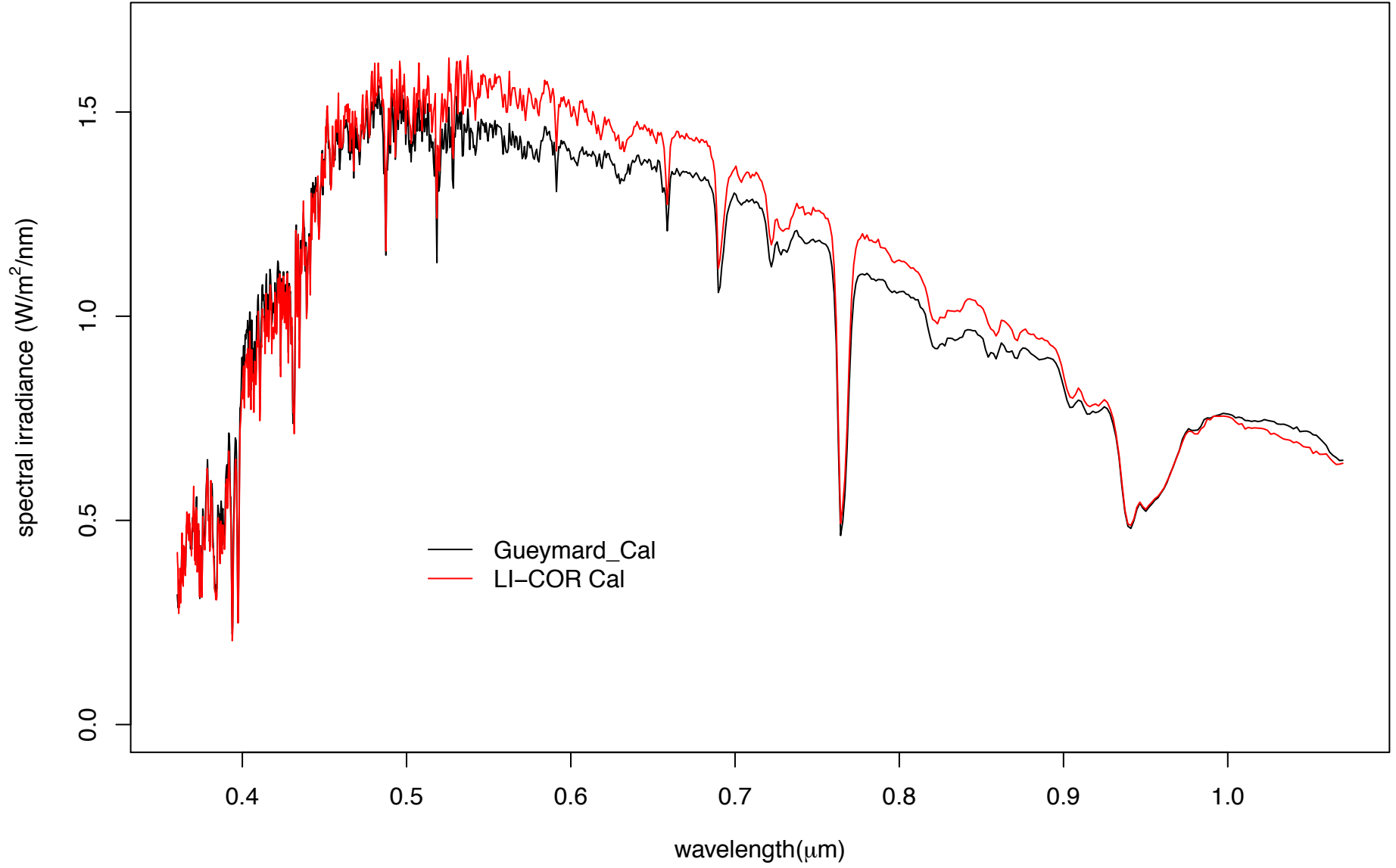
DNI @SGP 20091018.121400

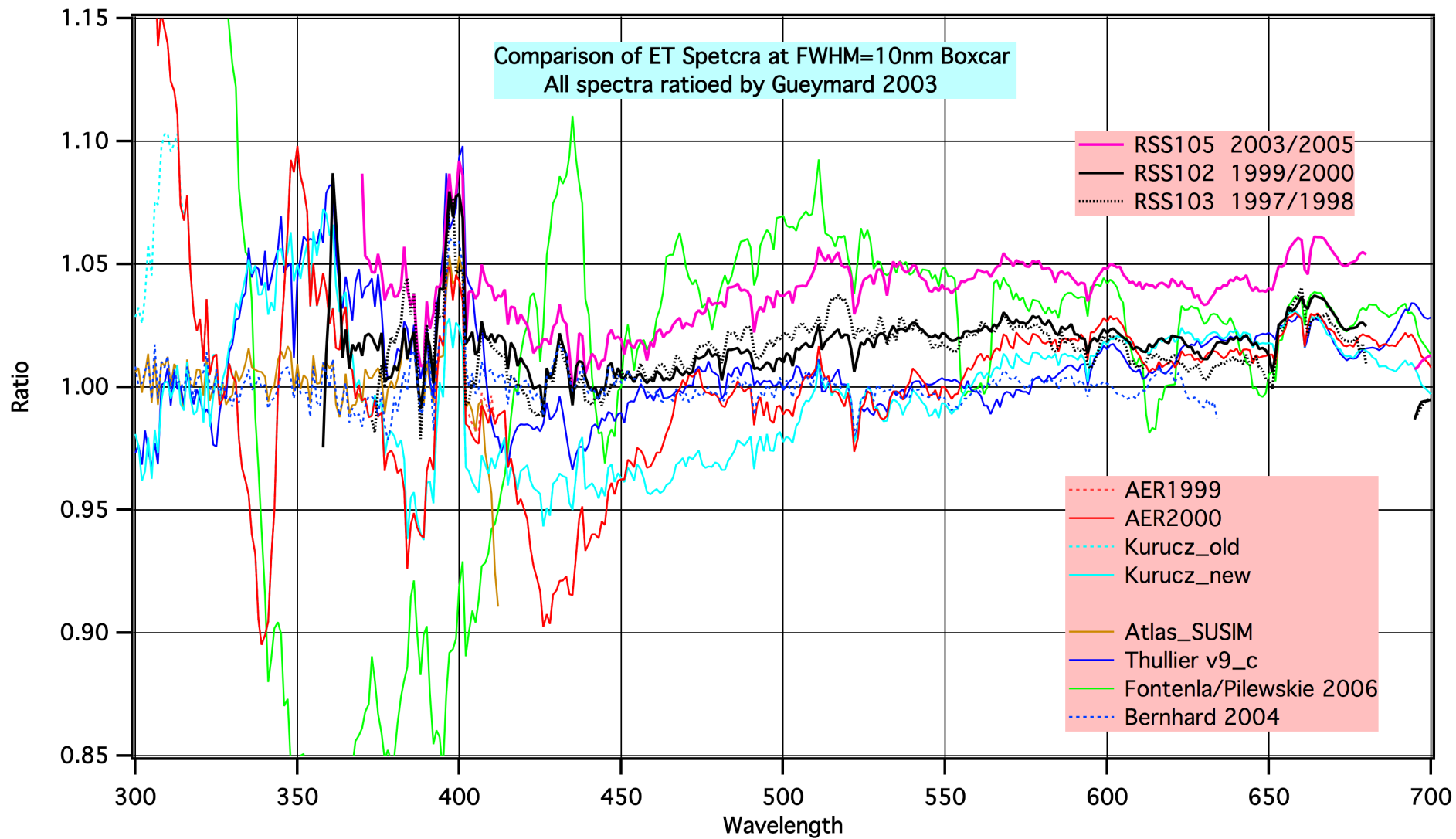


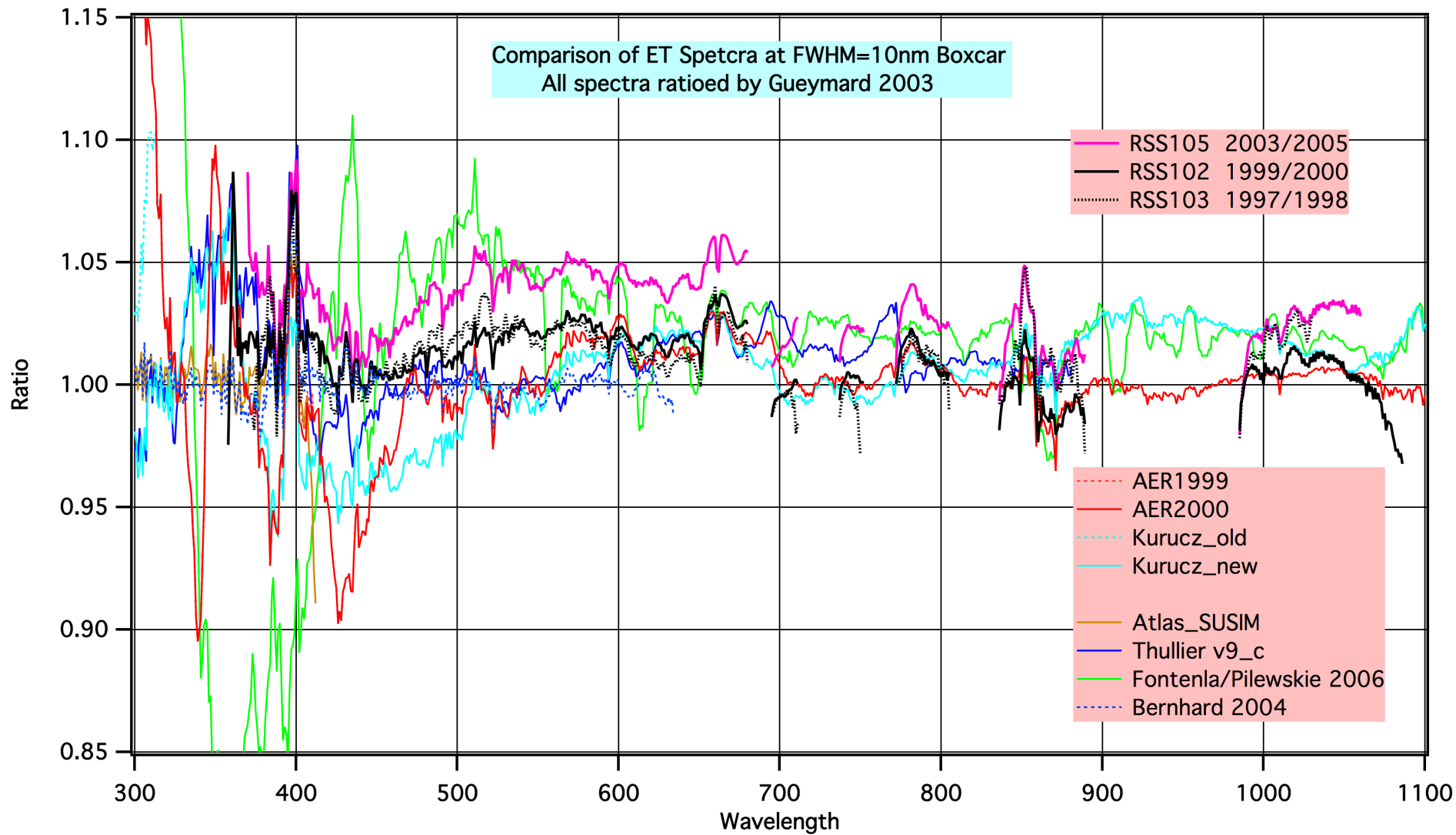
DNI @SGP 20091018.121400



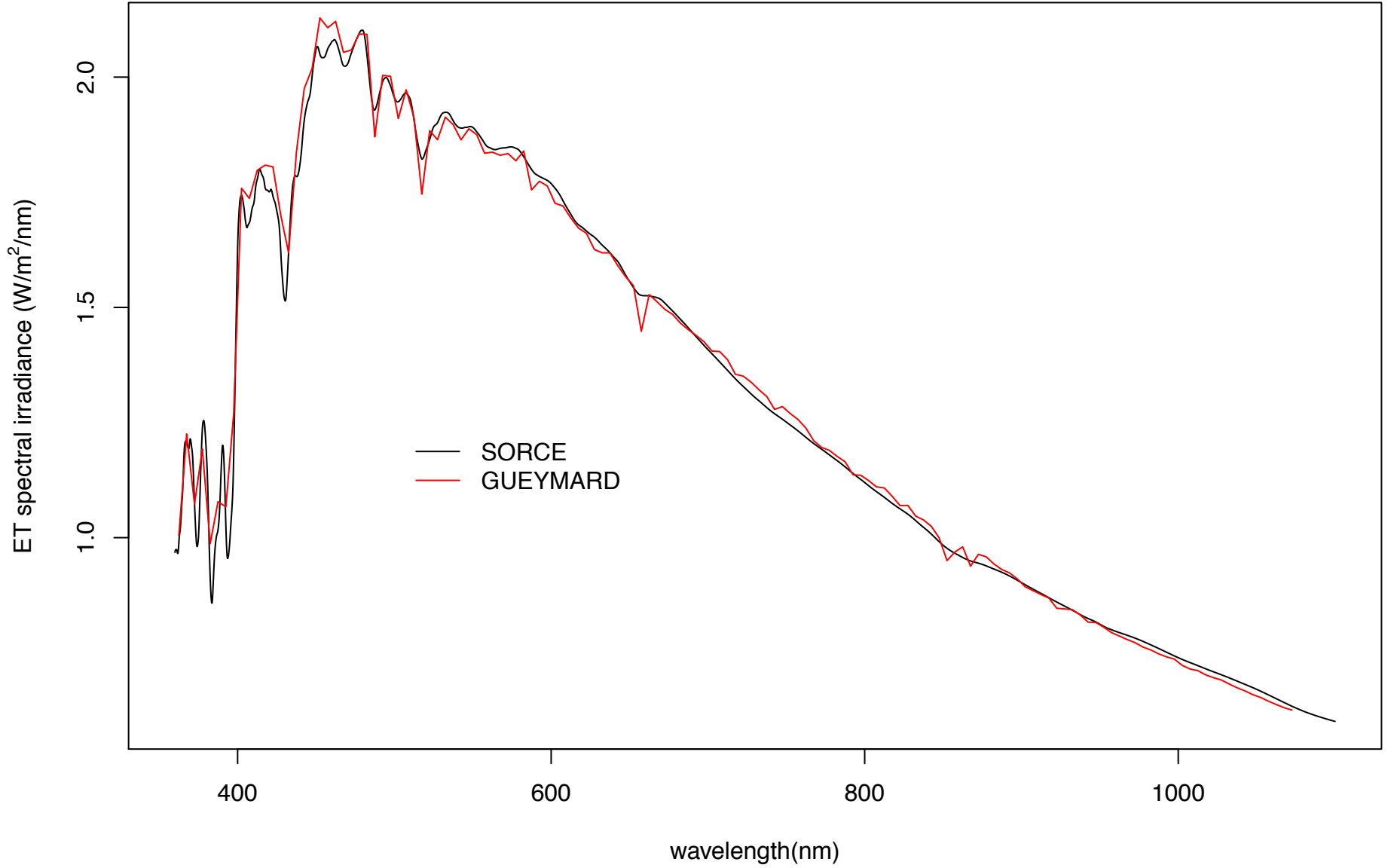
# DNI @SGP 20131127.120900



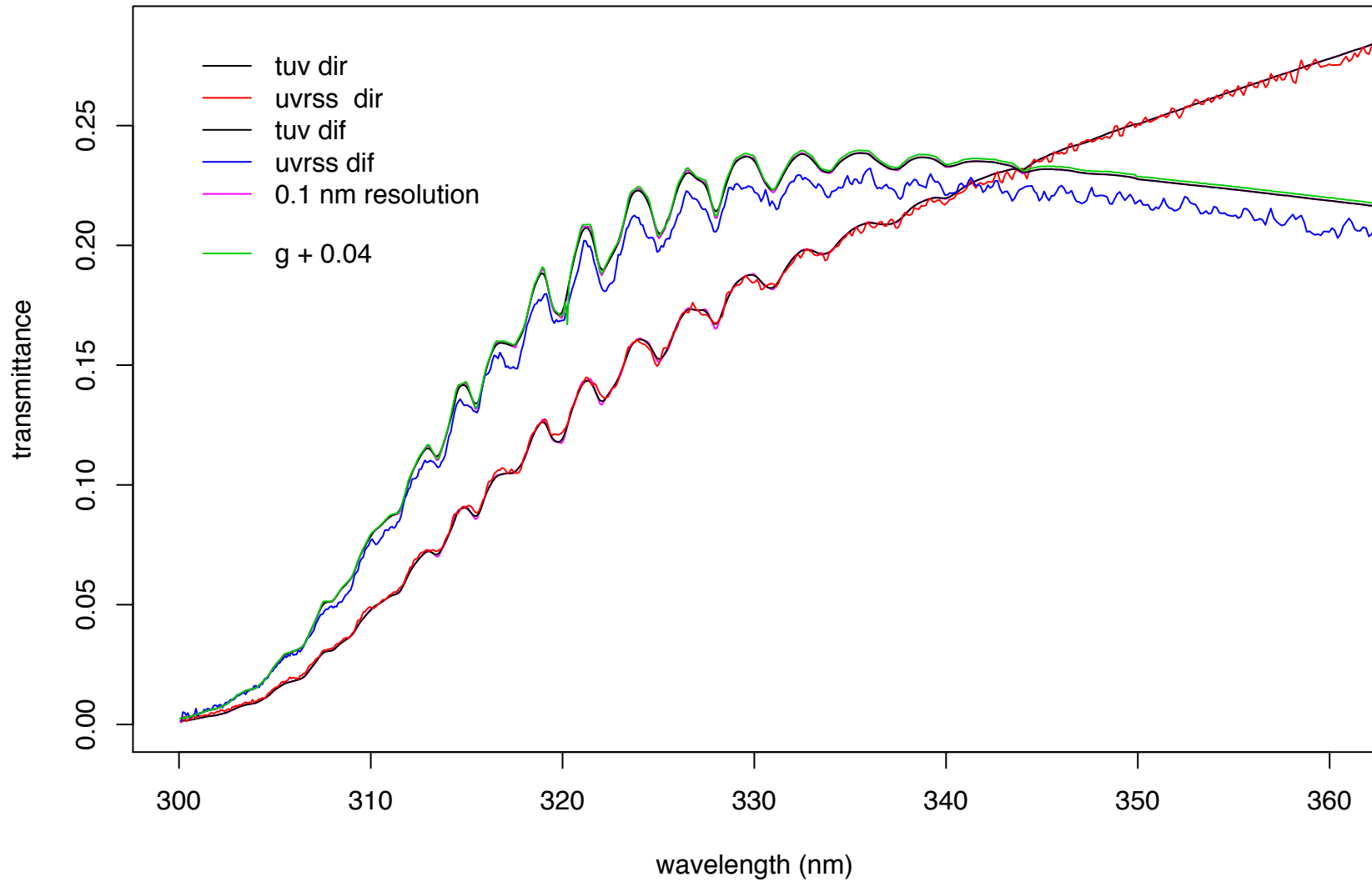




Two Reference ET Spectra @ Low Spectral Resolution



11 May 2003 @ 09:20; AOD(550 nm) = 0.078; SZA = 44.9 degs; SSA = 0.971



SSA = 0.841, 0.871, 0.901

