Supplement of Atmos. Meas. Tech., 17, 3085–3101, 2024
https://doi.org/10.5194/amt-17-3085-2024-supplement

Atmospheric Measurement Techniques
Open Access
EGU

Supplement of

Multi-wavelength dataset of aerosol extinction profiles retrieved from GOMOS stellar occultation measurements

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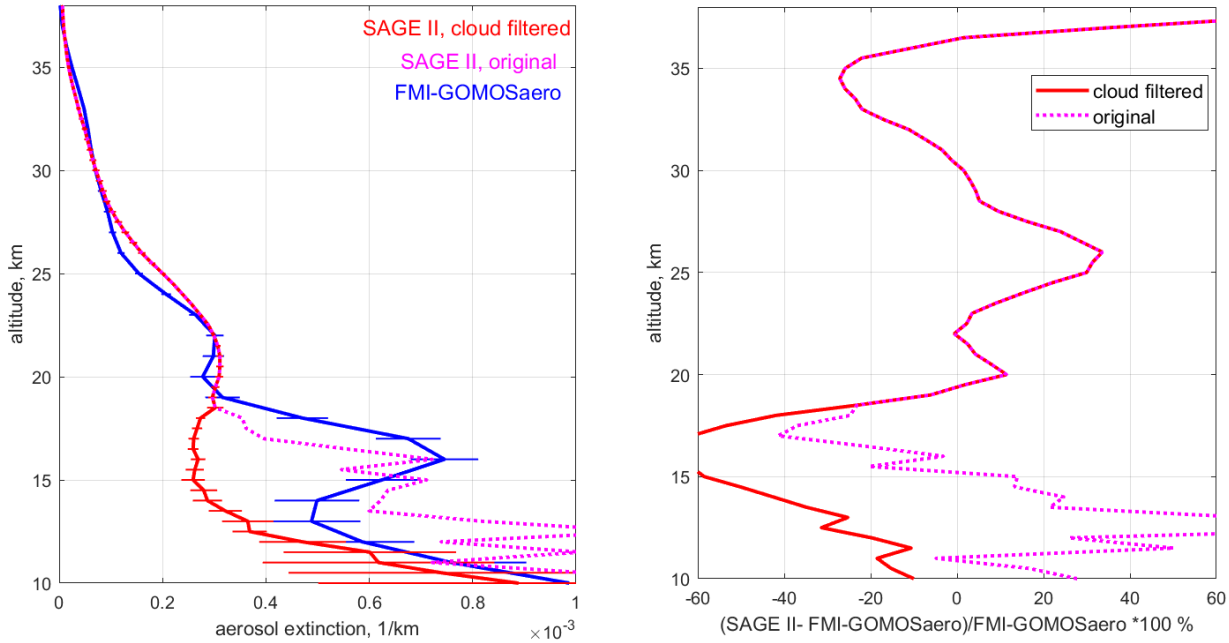

Figure S1.Comparison of GOMOS and SAGE II monthly mean aerosol extinction profiles at 525 nm, September 2002, 10°-20° S. Uncertainties of FMI-GOMOSaero are computed in the retrievals. Uncertainties of SAGE II data are estimated as a standard error of the mean. Left: monthly mean aerosol profile, right: relative difference in percent.

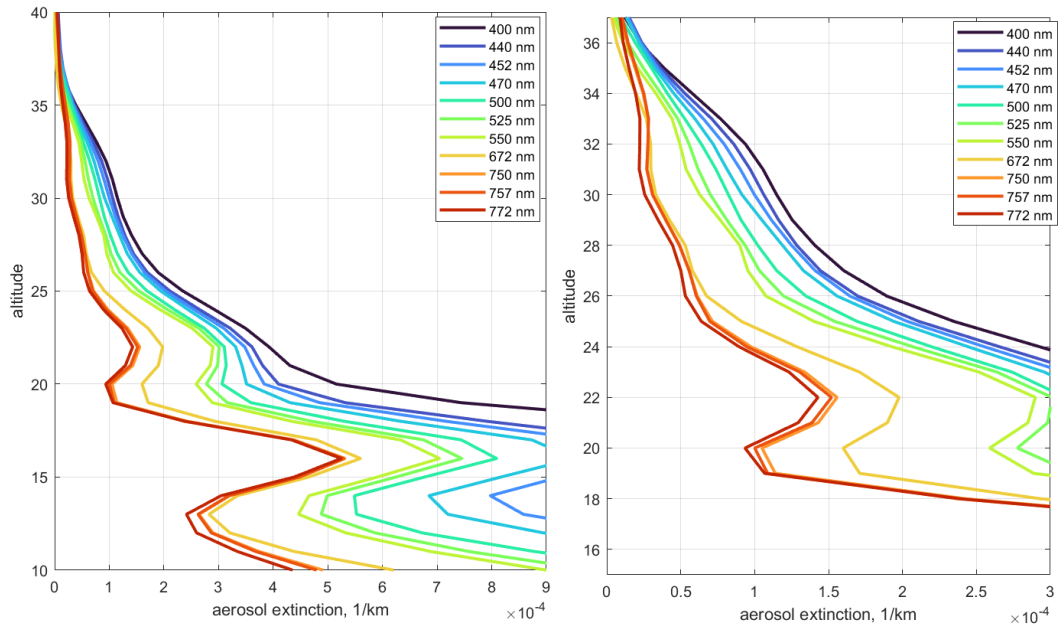

Figure S2. Left: The retrieved aerosol extinction for September 2002, 10°-20° S (wavelengths are indicated in the legend). Right: zoom at high altitudes

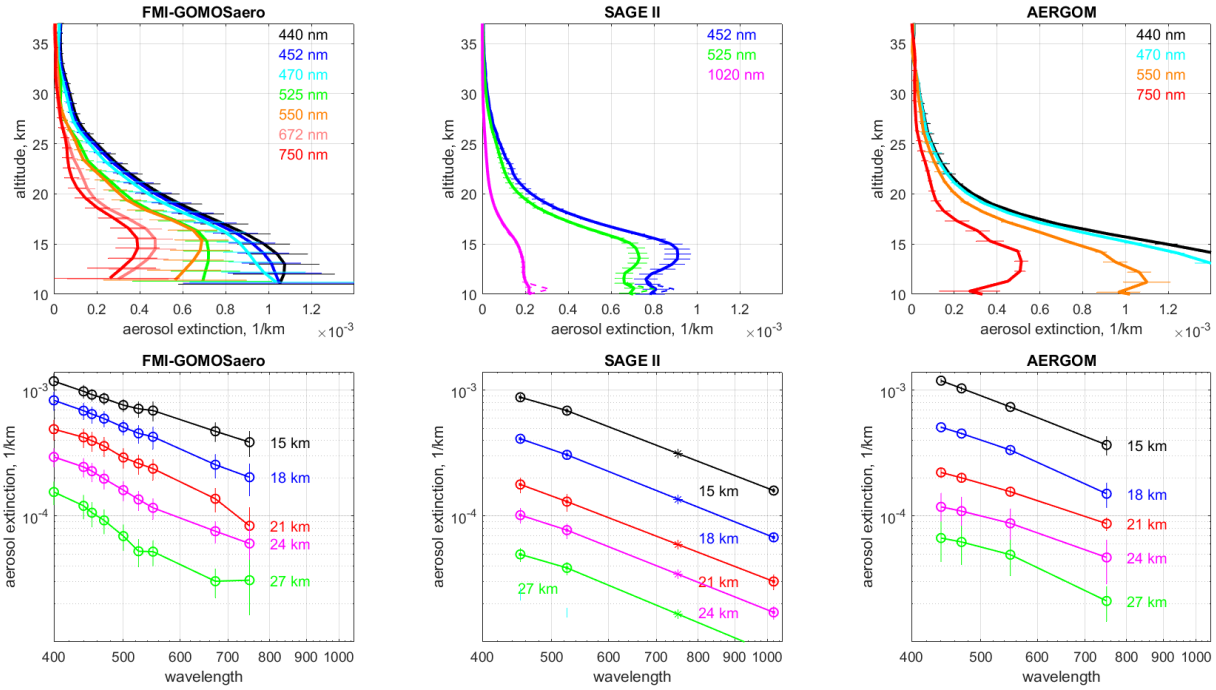

Figure S3. Top: monthly mean aerosol profiles at several wavelengths, September 2002, 60°-70° S for FMI-GOMOSaero (left), SAGE II (center) and AERGOM v4. The wavelengths are specified in the legend. For SAGE II, profiles with (solid lines) and without cloud filtering (dashed lines) are shown. Bottom: aerosol extinction spectra at selected altitudes specified on the panels. For visual aid, colored stars on bottom middle panel indicate 750 nm aerosol extinction computed using SAGE II extinctions at 525 and 1020 nm.

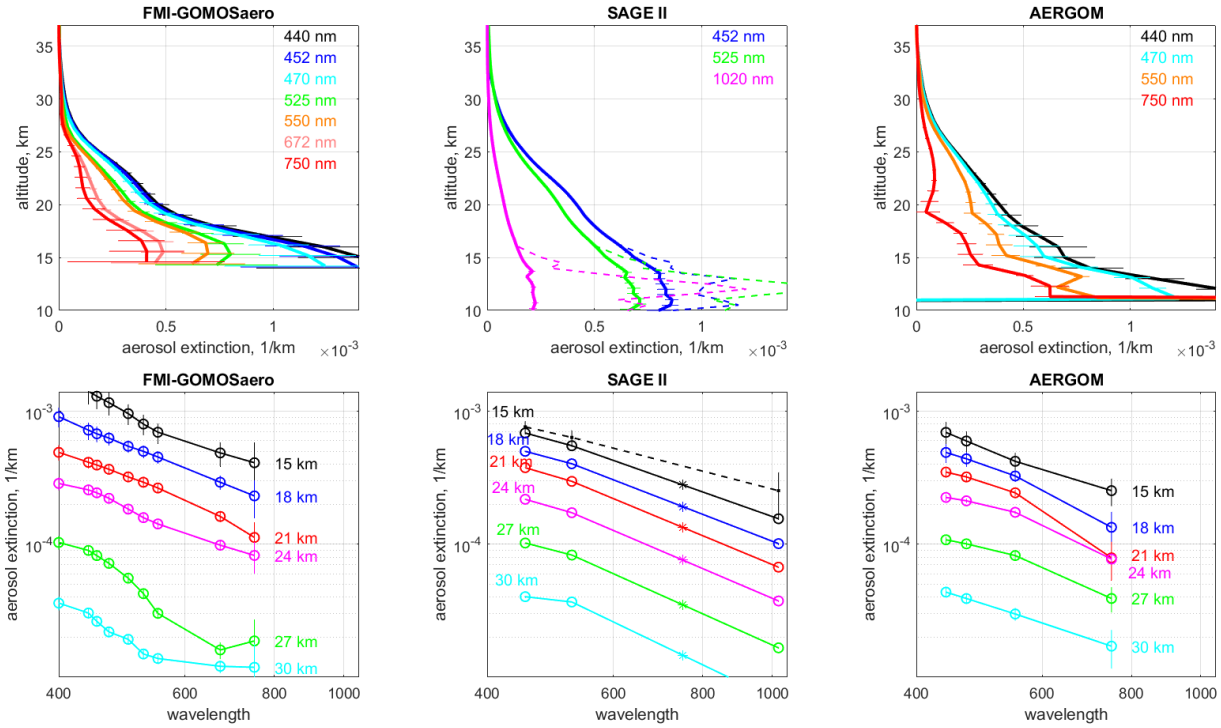

Figure S4. As Figure S3, but for January 2003 and latitudes 40°-50°S.

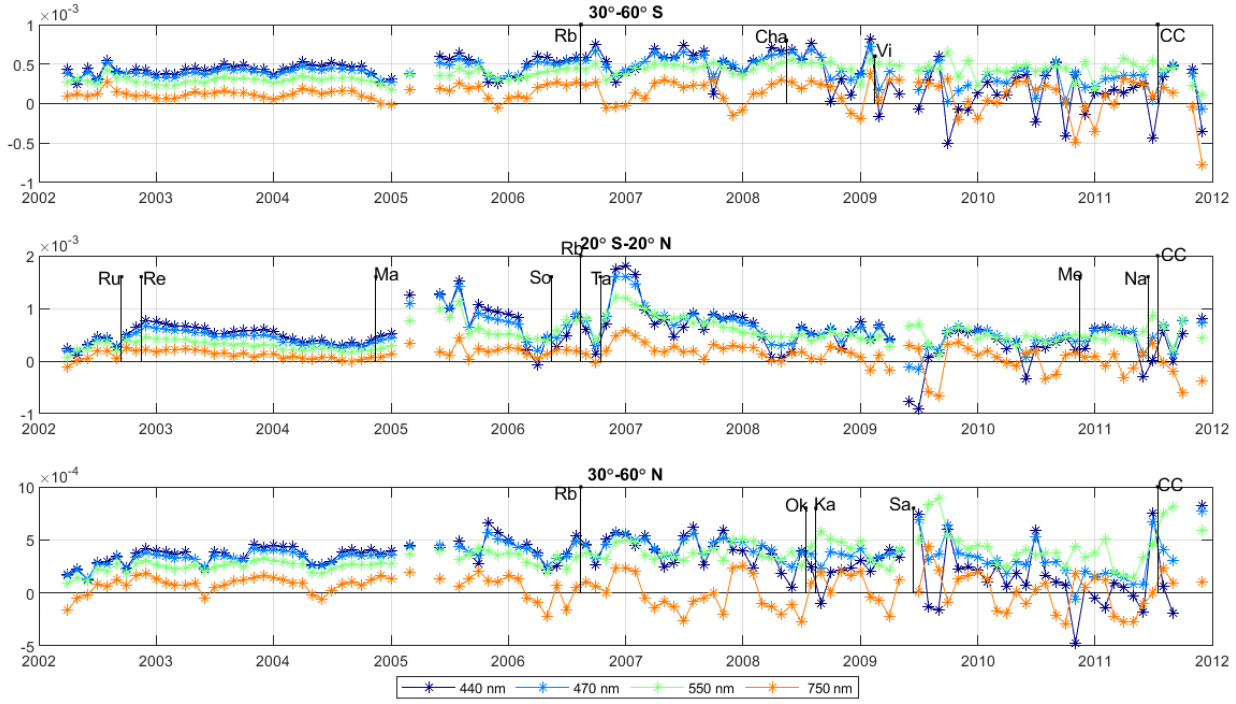

Figure S5. Time series of AERGOM v.4 aerosol extinction (1/km) at 20 km in the latitude zones 30°-60° S (top), 20°S-20°N (center) and 30°-60° N (bottom). The wavelengths are indicated in the figure legend. The volcanos are indicated by black bars with the length proportional to volcanic explosivity index (VEI). Volcanos with VEI>=5 are shown for all latitude zones, and with VEI>3 in the corresponding latitude zones. The valid data reported in the AERGOM files are included in the shown time series.

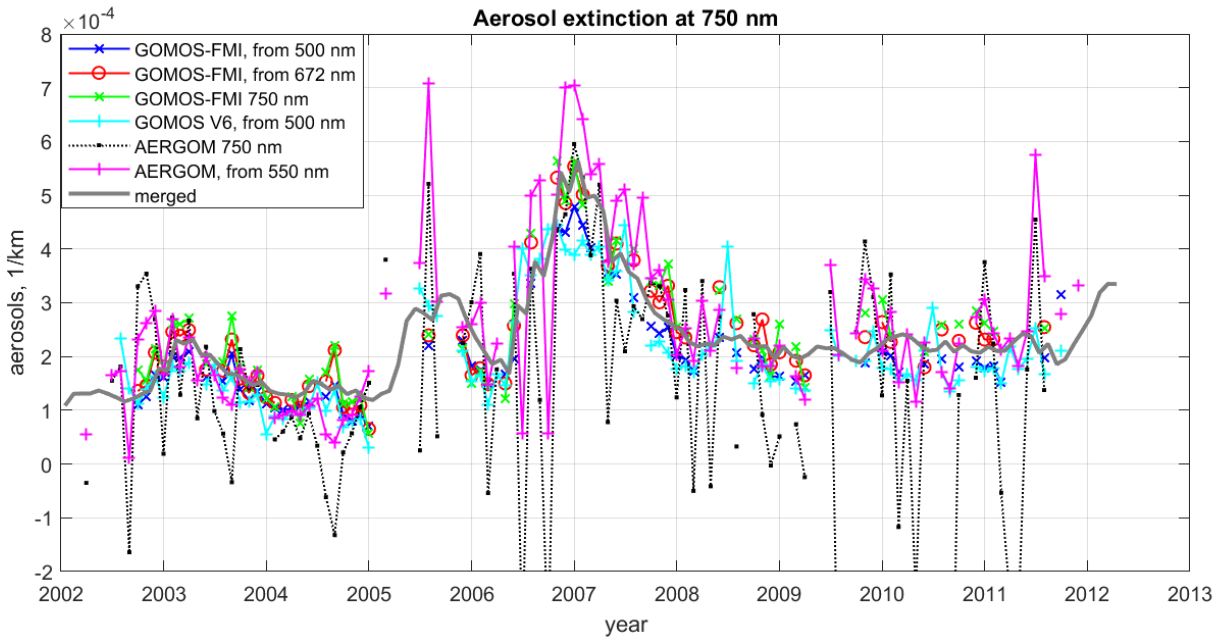

Figure S6. GOMOS aerosol extinction at 750 nm computed by different methods: GOMOS-FMI retrieved at 750 nm (green), GOMOS-FMI converted from 672 nm (red), GOMOS-FMI converted from 500 nm (blue), GOMOS IPF v6 converted from 500 nm (cyan) and AERGOM retrieved at 750 nm (black) and converted from 550 nm (magenta). Thick grey line indicates merged aerosol extinction. All time series are for the latitude bin 0-10°N and altitude 22 km. The valid data reported in the AERGOM files are included in the shown time series.