

Trend Quality Ozone from the Version 2 Processing of OMPS Nadir Mapper and Nadir Profiler Data



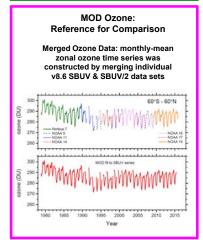
by
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OMPS
Ozone Mapper Profiler Suite
OMPS consists of 3 instruments:

1) NM – Nadir Mapper (similar to TOMS & OMI)

2) NP – Nadir Profiler (similar to SBUV)

3) LP – Limb Profiler measures ozone profile via light scattered from the Earth's limb



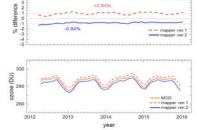
mapper and the nadir profiler, has produced accurate, high quality ozone consistent with data in our long term Merged Ozone Data (MOD) record. Instrument and calibration artifacts have been corrected in this processing and a calibration consistent with the SBUV v8.6 processing has been applied. Total column ozone from the OMPS nadir mapper is very consistent with ozone from the NOAA 19 SBUV/2 with a near zero offset. Total column ozone data from the OMPS nadir profiler now agree with data from the SBUV/2 instrument on NOAA 19 to better than 1%. The ozone profiles agree mostly to within 5% throughout the stratosphere.

Abstract. The version 2 reprocessing of data from the two OMPS nadir ozone instruments on Suomi NPP, the nadir

OMPS Total Column Ozone Comparisons

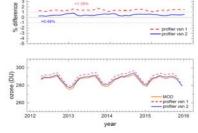
Version 1 versus Version 2

NPP OMPS nadir mapper



For 60°S - 60°N average ozone from the OMPS mapper the average bias was reduced to -0.84% bias in the version 2 processing. There is a very small time dependent change relative to the MOD long term data.

NPP OMPS nadir profiler



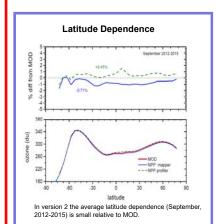
A similar plot for the OMPS nadir profiler shows the large bias in the released vsn 1 data is reduced to half a percent in the vsn 2 processing.

Conclusions

- Mapper and profiler total column ozone bias relative to MOD / NOAA 19 less than one percent
- No significant long term time dependent change for nadir mapper or profiler
- Ozone profiles mostly within ±5% of NOAA 19 profiles
- No significant latitude dependence (less than 1%)

The OMPS Version 2 Processing

- · refined "hard" calibration
 - found error in pre-launch calibration near 300 nm
- new soft calibration (use ice reflectivity to set long wavelength calibration)
- improved scattered light correction
- revised L1b product
- revised L2 product using v8.6 algorithm
 - uses Brion / Daumont / Malicet ozone cross sections



OMPS Ozone Profile Comparisons OMPS O OMPS O

