

LP_DAILY_AER - Data Release Notes

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12 March 2014

The OMPS Limb Profiler (LP) aerosol product available in these sample files was created by the combined ozone and aerosol retrieval algorithm described in *Rault and Loughman* [2013]. No retrieved ozone values are provided here. Aerosol extinction coefficient profiles are retrieved independently at five measurement wavelengths (nominally 514, 526, 674, 748, 892 nm), using the optimal estimation method [*Rodgers, 1976*]. Note that the actual wavelengths used for each retrieval are based on the information in the Level 1G (L1G) data set. In most cases, the same wavelengths are used for each event, but different values may be used in some situations to address saturated pixels or other issues encountered in the Level 1B (L1B) data.

The *a priori* data set for the aerosol retrieval is a set of monthly average and zonal average extinction coefficient profiles derived from SAGE II data, where data between May 1991 and August 1996 were excluded due to contamination from the Mt. Pinatubo eruption.

The background atmosphere temperature and pressure profiles used in the retrieval are created by interpolation from NASA Global Modeling and Assimilation Office (GMAO) Np gridded data, which are provided on 42 pressure levels up to 0.1 hPa at 0.3125° x 0.25° horizontal resolution and at 3 hours temporal interval. Bi-linear interpolation in geographic location and linear interpolation in time are used to generate profiles appropriate for the measurement time and tangent point location of each OMPS LP event.

The sample dates provided here represent dates where the orbits of the Suomi NPP satellite (containing the OMPS LP instrument) and the Aura satellite (containing the MLS instrument) are most closely aligned, based on inspection of orbit tracks. Table 1 lists these “golden days” and their corresponding NPP orbit numbers for the period April-December 2012.

References

Rault, D. F., and R. P. Loughman [2013], The OMPS Limb Profiler Environmental Data Record Algorithm Theoretical Basis Document and expected performance, *IEEE Trans. Geosci. Rem. Sens.*, **51**, 2505-2527.

Rodgers, C. D. [1976], Retrieval of atmospheric temperature and composition from remote measurements of thermal radiation, *Rev. Geophys.*, **14**, 609-624.

Table 1. OMPS LP Aerosol Sample File Dates for 2012

Date	Julian Day	Orbit Range
Apr 2	93	2222-2236
Apr 10	101	2336-2350
Apr 18	109	2449-2463
Apr 26	117	2563-2577
May 4	125	2676-2690
May 12	133	2790-2804
May 23	144	2946-2960
May 28	149	3017-3031
Jun 5	157	3130-3144
Jun 13	165	3244-3258
Jun 29	181	3471-3485
Jul 4	186	3542-3556
Jul 10	192	3627-3641
Jul 18	200	3740-3754
Jul 23	205	3811-3825
Jul 31	213	3925-3939
Aug 8	221	4038-4052
Aug 13	226	4109-4123
Aug 16	229	4152-4166
Aug 24	237	4265-4279
Sep 6	250	4450-4464
Sep 14	258	4563-4577
Sep 17	261	4606-4620
Sep 25	269	4719-4733
Oct 3	277	4833-4847
Oct 11	285	4946-4960
Oct 19	293	5060-5074
Oct 27	301	5173-5187
Oct 30	304	5216-5230
Nov 7	312	5329-5343
Nov 12	317	5400-5414
Nov 17	322	5471-5485
Nov 28	333	5627-5641
Dec 6	341	5741-5755
Dec 11	346	5812-5826
Dec 17	352	5897-5911
Dec 22	357	5968-5982
Dec 27	362	6039-6052