



National Aeronautics and
Space Administration
Goddard Space Flight Center

Limb Gridded Radiance README

OMPS-LP_SDR_EV_GRID-0.1

Under NASA Contract #NNG12HP08C

Work Activity: Task 60

Original: 2 Nov 2012

Revised: November 12, 2012

Version: 0.1

OMPS-LP_SDR_EV_GRID-0.1	
Title:	Limb Gridded Radiance README
Type:	
Source/Format:	L ^A T _E X
Author(s):	Daniel Kahn
Status:	
Distribution:	
Abstract:	
See Also:	

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1 The LP Anc EV GRID Product

The LP Anc EV GRID Product contains important data from sources other than the OMPS instrument itself which have been interpolated to the spatial positions of the OMPS Limb Gridded Product. The HDFView TreeView picture of the Gridded data is Figure 1. These data are gridded derived from the National Centers for Environmental Prediction (NCEP) Reanalysis Product.

1.1 Getting Data

The data corresponding to this document can be found here <http://www.doi.org/10.5067/sofmi-npp/omps-limb/anc-grid/data11>.

1.2 File Format

The data are provided in the HDF5 file format. The HDF5 library is required to read the files. This library is available from the www.hdfgroup.org. In addition to interfaces in C and Fortran, which The HDF Group develops and distributes, there is a high quality interface for Python called H5py distributed independently. These are all open source. In addition to the library The HDF Group also distributes a number of tools for exploring and manipulating HDF5 files. The graphical tool HDFView is highly recommended, especially for those just starting with HDF5 or the OMPS data.

In addition the HDF5 library is incorporated into many common commercial data analysis tools: Matlab, IDL, TecPlot, Mathematica, etc.

The HDF5 file consists of named Groups (which behave analogously to folders or directories in your computer's file system) and named datasets. Because the objects are named they can be accessed by name rather than by file offset.

1.3 Product Filenames

The product file names follow this pattern:

The diagram shows the filename `OMPS-NPP-LP Anc EV GRID-v1.0-2012m0422t025230-o02508-2012m0928t175156.h5` with brackets and labels below it. The labels are: Platform (under OMPS-NPP), Product Name (under LP Anc EV GRID), Product Version (under -v1.0), Data Date (under 2012m0422t025230), Orbit Number (under -o02508), and Processing Timestamp (under 2012m0928t175156). The .h5 extension is not bracketed.

1.4 Contents of the Product

1.4.1 Dimensions

The data are stored as HDF5 datasets, i.e. arrays. The arrays semantics of the dimensions is shared between arrays. The dimensions are defined in Table 1 and they are used to describe the datasets in other tables. They values of the dimensions are not present in the data files themselves.

Dataset Name	Description	Dimensions	Units	Abbrv
AirDensity		nTimes x nSlit x nTH	per cubic centimeter	cm ⁻³
DateTimeUTC	Date string in Universal Coordinated Time. Format example is 2012-02-10T05:49:32.954987Z	nTimes x nSlit	Mixed Radix String	
O3Density		nTimes x nSlit x nTH	per cubic centimeter	cm ⁻³
Pressure		nTimes x nSlit x nTH	hecta Pascal	hPa
SurfacePressure		nTimes x nSlit	hecta Pascal	hPa
TangentHeight		nTimes x nSlit x nTH	kilometers	km
Temperature		nTimes x nSlit x nTH	Kelvin	K
SecondsOfDay	Number of seconds of day.	nTimes x nSlit	Seconds	s
TropopauseAltitude		nTimes x nSlit	kilometers	km
TropopauseTemperature		nTimes x nSlit	Kelvin	K
Vorticity		nTimes x nSlit x nTH	per second	s ⁻¹

Table 2: Field names, description, dimensions, and associated units for GRIDDED_DATA group.