

Download OMNI DATA

July 19, 2022

1. Go to the NASA SPDF website (<https://spdf.gsfc.nasa.gov>) --> Select OMNIWeb Plus on the left

The screenshot shows the NASA Space Physics Data Facility (SPDF) website. At the top, there's a header with the NASA logo, "GODDARD SPACE FLIGHT CENTER", and "Space Physics Data Facility". On the right of the header are links for "+ Goddard Home" and "+ NASA Home". Below the header is a banner with the text "Space Physics Data Facility" and a small image of a solar flare.

The main content area has a navigation bar with five tabs: "+ ABOUT", "+ MISSION DATA", "+ ModelWeb at CCMC", "+ SCIENCE ENABLED", and "+ RESOURCES".

On the left side, there's a sidebar with sections for "Data Access & Orbit Services", "Access Models", and "Heliophysics Virtual Observatories". Under "Data Access & Orbit Services", the "OMNIWeb Plus" link is highlighted with a red box.

The central content area contains several sections:

- Data Access & Orbit Services**: Includes links for Heliophysics Data (search) Portal, Gateway to SPDF Services, CDAWeb (data browser), CDAWeb Inside IDL, OMNIWeb Plus (now including COHOWeb, ATMOWeb, FTP Browser, HelioWeb and CGM), Direct HTTP(S) to Data, Direct FTP(S) to Data (FTPS required), SSCWeb (orbit search), 4D Orbit Viewer, GIFWalk data and orbit plots, Alternative Data Access Methods, SDAC VSO - Virtual Solar Observatory, SDAC - Solar Data Analysis Center, and More information on Data Access for New Users.
- SPDF Web Service APIs**: Includes links for CDAWeb, SSCWeb, and Heliophysics API (HAPI).
- Software**: Includes links for CDF (Common Data Format), Space Physics use of CDF, CDF/netCDF/FITS/HDF/XML/ASCII Format Translations, CDF SKTEditor, MakeCDF, CDAWlib /CDFX (IDL), and VISBARD (visualization).
- News & Announcements**: Includes news items for May 2022 (Parker Solar Probe PSP SWEAP and FIELDS data extended to December 2021), March 2022 (new CDF version 3.8.1 distribution available), and March 2022 (17 Level 2 Solar Wind Analyser (SWA) datasets added to CDAWeb). It also mentions MMS Level 2 data products available via SPDF.
- Submit New Data to the Archive**: Includes links for New mission data requirements, Overview of SPDF Data Submission Guidelines and Procedures, Registering Data Products with SPASE metadata descriptions, HPDE Data File Internal Metadata (previously ISTP) Guidelines, Recommended file and data collection naming practices, and Heliophysics URI Template Standard.

Figure 1: The NASA SPDF website.

2. There are two datasets with low and high resolutions, respectively. We select "high resolution OMNIWeb" in this exercise.


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+ HOME	+ Mission Data	+ ModelWeb at CCMC	+ SCIENCE ENABLED	+ AND MORE
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OMNIWeb Plus



Paths to Magnetic field, Plasma, Energetic particle data relevant to heliospheric studies and resident at Goddard's Space Physics Data Facility.

- OMNIWeb Plus, Home
- + ABOUT THE DATA
- + DOI citing OMNI data usage
- +ABOUT THE INTERFACE
- +Data from command line
- + SPDF/FTP
- DATA via FTPBrowser
- Energetic Particle fluxes
- ATMOWeb main page
- CGM transformation
- Magnetopause Crossings
- + CDAWeb (data browser)
- + SSCWeb (orbit search)

OMNI data (spacecraft-interspersed, near-Earth solar wind data)

- Low resolution OMNIWeb (1-hour, 1 and 27 days, yearly, 1963 - current)
- High resolution OMNIWeb (1-min, 5-min, 1981 - current)**

Spacecraft-specific data sets (near 1 AU, including near-Earth)

- + ACE
- + Geotail
- + IMP-8, IMP6&7
- + Wind
- + Explorer 33&35, Genesis, ISEE 3, Prognoz, SOHO, GOES
- + Moon Related Spacecraft
- + DSCOVR

Deep space data

- COHOWeb-formatted hourly solar wind field, plasma and proton fluxes
- + Pioneer
- + Ulysses
- + Voyager
- + Cassini, Helios, Mariner, STEREO

Interfaces for comparing multi-source data

- + Merged Magnetic field and Plasma 1-min
- + Magnetic field
- + Plasma
- + Energetic particle fluxes

- Multi-source spectra of energetic particle fluxes (MSSP)
- + IMP8/CPME, GOES and ACE/SIS proton fluxes,1-hour

[Heliocentric Trajectories for Selected Spacecraft, Planets, and Comets](#)

If you have any questions/comments about OMNIWeb Plus data and service, contact: Dr. Natalia Papitashvili, Space Physics Data Facility, Mail Code 672, NASA/Goddard Space Flight Center, Greenbelt, MD 20771

Figure 2: OMNIWeb Plus.

1 Request ASCII Files on the Interface

1. Request for parameters during a specific time can be submitted on the right (The format file is important!); all derived parameters for each year can be obtained from FTP site (long term investigation), as shown in Figure 3.
2. Select "create file" for creating an ascii data file; select data resolution, start and stop times, and parameters (SYM-H index), as show in Figure 4.
3. Data files (ascii data file and format description) are created, as shown in Figure 5.

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+ SSCWeb (orbit search)

OMNIWeb
SPDF•Goddard Space Flight Center

High resolution (1-min, 5-min) OMNI: Solar wind magnetic field and plasma data at Earth's Bow Shock Nose (BSN), also geomagnetic activity indices and 5-min energetic proton fluxes

Browse and Retrieve OMNI Data

- Plots, listings, output files
- Listings, plots, output files with filtering
- Scatter plots and linear regression fits
- Distribution functions, averages, std dev.

Browse and Retrieve New OMNI Data

- Plots, listings, output files
- Listings, plots, output files with filtering
- Scatter plots and linear regression fits
- Distribution functions, averages, std dev.
- New derived parameters

S/C Specific Data shifted to BSN

- Plots, listings, output files
- Scatter plots and linear regression fits
- Distribution functions, averages, std dev.
- Impact parameters:(Earth,Wind,ACE,IMP,Geotail)
- Cross-normalized plasma from different sources

About OMNI Data

- OMNI data availability
- OMNI Record Format
- S/C specific Record Format
- Data Preparation

If you have any questions/comments about OMNI/OMNIWEB data and service, contact: [Dr. Natalia Papitashvili](#), Mail Code 672, NASA/Goddard Space Flight Center, Greenbelt, MD 20771

+ Privacy Policy and Important Notices  Curator(s): Dr. Natalia Papitashvili
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Figure 3: OMNIWeb Plus for high resolution OMNIWeb.

2 Download ASCII Files Via FTP

The FTP site has data files including all the derived parameters for each year. We can download these files directly, as shown in Figure 2, 6, and 7. Also, remember to check the format file ("hroformat.txt") that is located under the same directory as those data files.

OMNIWeb

The Modified (Level-3) High Resolution OMNI (HRO) data (at 1-min and 5-min resolution) based on the definitive Wind plasma data. The main difference between the new data old data is the following: For creating this OMNI data set we used shifted Wind/SWE plasma definitive data rather than Wind/SWE shifted plasma KP-despike data. A user can get more accurate plasma parameters and "Alpha/Proton Density Ratio" parameter: (that parameter is not available in the SWE KP data). However, the time coverage in the new OMNI data was decreased by 2-10% (depending on the year) and latest date of these new data sets usually behind of the OMNI based on SWE_KP data.

[About using this interface.](#)
[About the data.](#)

Select activity
 Plot data List data Create file ([file?](#))

Select resolution
 1-min averaged 5-min averaged

Enter start and stop times: (use format YYYYMMDDHH or YYYYMMDD)
Start 20130316 Stop 20130318 Click [HERE](#) to get time spans for individual parameters.

Select variables

<input type="checkbox"/> IMF Spacecraft ID	<input type="checkbox"/> Percent interpolated
<input type="checkbox"/> Plasma Spacecraft ID	<input type="checkbox"/> Timeshift, sec.
<input type="checkbox"/> # Fine Scale Points in IMF Avgs	<input type="checkbox"/> Sigma Timeshift
<input type="checkbox"/> # Fine Scale Points in Plasma Avgs	<input type="checkbox"/> Sigma Min_var_vector
	<input type="checkbox"/> Time btwn observations.sec

Magnetic field

<input type="checkbox"/> IMF Magnitude Avg(Scalar), nT	<input type="checkbox"/> By, GSM, nT
<input type="checkbox"/> Bx, GSE/GSM, nT	<input type="checkbox"/> Bz, GSM, nT
<input type="checkbox"/> By, GSE, nT	<input type="checkbox"/> Sigma in IMF Magnitude Avg.

Spacecraft and Bow Shock Nose (BSN) Positions

<input type="checkbox"/> Spacecraft X, GSE, Re	<input type="checkbox"/> BSN location X, GSE, Re
<input type="checkbox"/> Spacecraft Y, GSE, Re	<input type="checkbox"/> BSN location Y, GSE, Re
<input type="checkbox"/> Spacecraft Z, GSE, Re	<input type="checkbox"/> BSN location Z, GSE, Re

Provisional activity Indexes

<input type="checkbox"/> AE Index, nT	<input type="checkbox"/> SYM/D, nT
<input type="checkbox"/> AL Index, nT	<input checked="" type="checkbox"/> SYM/H, nT
<input type="checkbox"/> AU Index, nT	<input type="checkbox"/> ASY/D, nT
	<input type="checkbox"/> ASY/H, nT

Fluxes from GOES (Available for 5min resolution only)

<input type="checkbox"/> Proton Flux >10 MeV, 1/(cm**2-sec-ster)
<input type="checkbox"/> Proton Flux >30 MeV, 1/(cm**2-sec-ster)
<input type="checkbox"/> Proton Flux >60 MeV, 1/(cm**2-sec-ster)

Advanced plot selections (optional)

Y-axis Scale: Linear Log

Character size(0.5-2.0): Symbol Size(0.1-4.0):

Figure 4: Selections for creating data files for SYM-H during March 16-17, 2013.

OMNIWeb Browser Results

REQUESTED DATA HAS BEEN CREATED

- ASCII data may be downloaded **now** by right clicking on the file hyperlinks below
- Or data may be downloaded via anonymous ftp to the following location

Location: <http://omniweb.gsfc.nasa.gov/staging/>

Filename	Description	Size (bytes)
omni_min_def_5rROITB6pD.lst	ASCII data file	90720
omni_min_def_5rROITB6pD.fmt	Format description	303

NOTE: These files will be removed from this site after **48 hours**.

If you have any questions about OMNIWeb Plus Interface, contact:
[Dr. Natalia Papitashvili](#), Code 672, Greenbelt, MD 20771.

2013 75 0 0 -7
2013 75 0 1 -7
2013 75 0 2 -7
2013 75 0 3 -8
2013 75 0 4 -8
2013 75 0 5 -7
2013 75 0 6 -7
2013 75 0 7 -7
2013 75 0 8 -8
2013 75 0 9 -8
2013 75 0 10 -7
2013 75 0 11 -7
2013 75 0 12 -7
2013 75 0 13 -7
2013 75 0 14 -7
2013 75 0 15 -7
2013 75 0 16 -7
2013 75 0 17 -7
2013 75 0 18 -7
2013 75 0 19 -8
2013 75 0 20 -7
2013 75 0 21 -8
2013 75 0 22 -8
2013 75 0 23 -8
2013 75 0 24 -8
2013 75 0 25 -8
2013 75 0 26 -9
2013 75 0 27 -9
2013 75 0 28 -8
2013 75 0 29 -9

FORMAT OF THE SUBSETTED FILE	
ITEMS	FORMAT
1 Year	I4
2 Day	I4
3 Hour	I3
4 Minute	I3
5 SYM/H, nT	I6

Figure 5: SYM-H index during March 16-17, 2013.

Index of /pub/data/omni

<u>Name</u>	<u>Last modified</u>	<u>Size</u>
Parent Directory		-
00readme.txt	2016-11-25 14:11	3.2K
high_res_omni/	2022-02-04 11:03	-
low_res_omni/	2022-01-11 14:02	-
omni_cdaweb/	2019-11-15 08:17	-

Figure 6: High resolution directory.

<u>omni_min1988.asc</u>	2019-07-22 14:05 151M
<u>omni_min1989.asc</u>	2019-07-22 14:05 150M
<u>omni_min1990.asc</u>	2019-07-22 14:05 150M
<u>omni_min1991.asc</u>	2019-07-22 14:05 150M
<u>omni_min1992.asc</u>	2019-07-22 14:05 151M
<u>omni_min1993.asc</u>	2019-07-22 14:05 150M
<u>omni_min1994.asc</u>	2019-07-22 14:05 150M
<u>omni_min1995.asc</u>	2019-07-22 14:05 150M
<u>omni_min1996.asc</u>	2019-07-22 14:05 151M
<u>omni_min1997.asc</u>	2019-07-22 14:05 150M
<u>omni_min1998.asc</u>	2019-07-22 14:05 150M
<u>omni_min1999.asc</u>	2019-07-22 14:05 150M
<u>omni_min2000.asc</u>	2019-07-22 14:05 151M
<u>omni_min2001.asc</u>	2019-07-22 14:05 150M
<u>omni_min2002.asc</u>	2019-07-22 14:05 150M
<u>omni_min2003.asc</u>	2019-07-22 14:05 150M
<u>omni_min2004.asc</u>	2019-07-22 14:05 151M
<u>omni_min2005.asc</u>	2019-07-22 14:05 150M
<u>omni_min2006.asc</u>	2019-07-22 14:05 150M
<u>omni_min2007.asc</u>	2019-07-22 14:05 150M
<u>omni_min2008.asc</u>	2019-07-22 14:06 151M
<u>omni_min2009.asc</u>	2019-07-22 14:06 150M
<u>omni_min2010.asc</u>	2019-07-22 14:06 150M
<u>omni_min2011.asc</u>	2019-07-22 14:06 150M
<u>omni_min2012.asc</u>	2019-07-22 14:06 151M
<u>omni_min2013.asc</u>	2022-02-04 11:02 150M
<u>omni_min2014.asc</u>	2022-02-04 11:02 150M
<u>omni_min2015.asc</u>	2022-02-04 11:02 150M
<u>omni_min2016.asc</u>	2022-02-04 11:02 151M
<u>omni_min2017.asc</u>	2022-02-04 11:02 150M
<u>omni_min2018.asc</u>	2022-04-05 07:32 150M
<u>omni_min2019.asc</u>	2022-02-04 11:02 150M
<u>omni_min2020.asc</u>	2022-02-04 11:02 151M
<u>omni_min2021.asc</u>	2022-05-13 07:56 150M
<u>omni_min2022.asc</u>	2022-06-29 11:46 150M

Figure 7: Data files list and the format file.