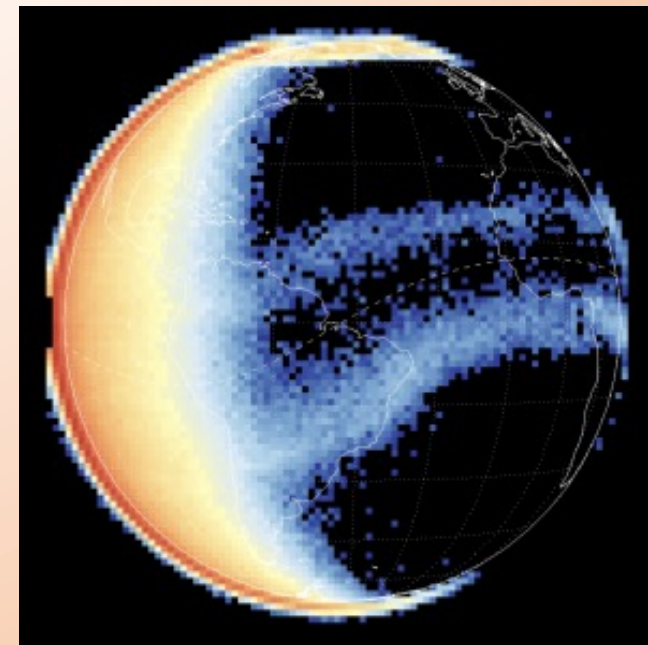


GOLD Data at SPDF



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GOLD Data Archive at SPDF

- ❖ Daily downloads of GOLD data from SDC to SPDF:
 - ❖ Level 0 data in the private area; up to now 2,064,769 files with a total volume of 5 TB.
Could include Level 1A data as well or instead of the Level 0 data. Awaiting decision by GOLD team and NASA HQ.
 - ❖ Level 1b, 1c, 1d and Level 2 data in the public archive (<https://spdf.gsfc.nasa.gov/pub/data/>); up to now 2,795,552 files with a total volume of 13 TB;
 - ❖ As of October 3, 2022:
 - Level 1b data up to October 3, 2022
 - Level 1c and 1d up to September 5, 2022
 - Level 2 (all) up to September 4, 2022
- ❖ Level 2 data are being added to CDAWeb:
 - ❖ <https://cdaweb.gsfc.nasa.gov/>: plot, browse, subset, or download data in CDF, netCDF or ASCII format
 - ❖ NMAX, ON2, TDISK and O2DEN data are available
 - ❖ TLIMB and QEUV are in preparation.

Data Downloads in 2022 up to now

<https://cdaweb.gsfc.nasa.gov/publiclogs>

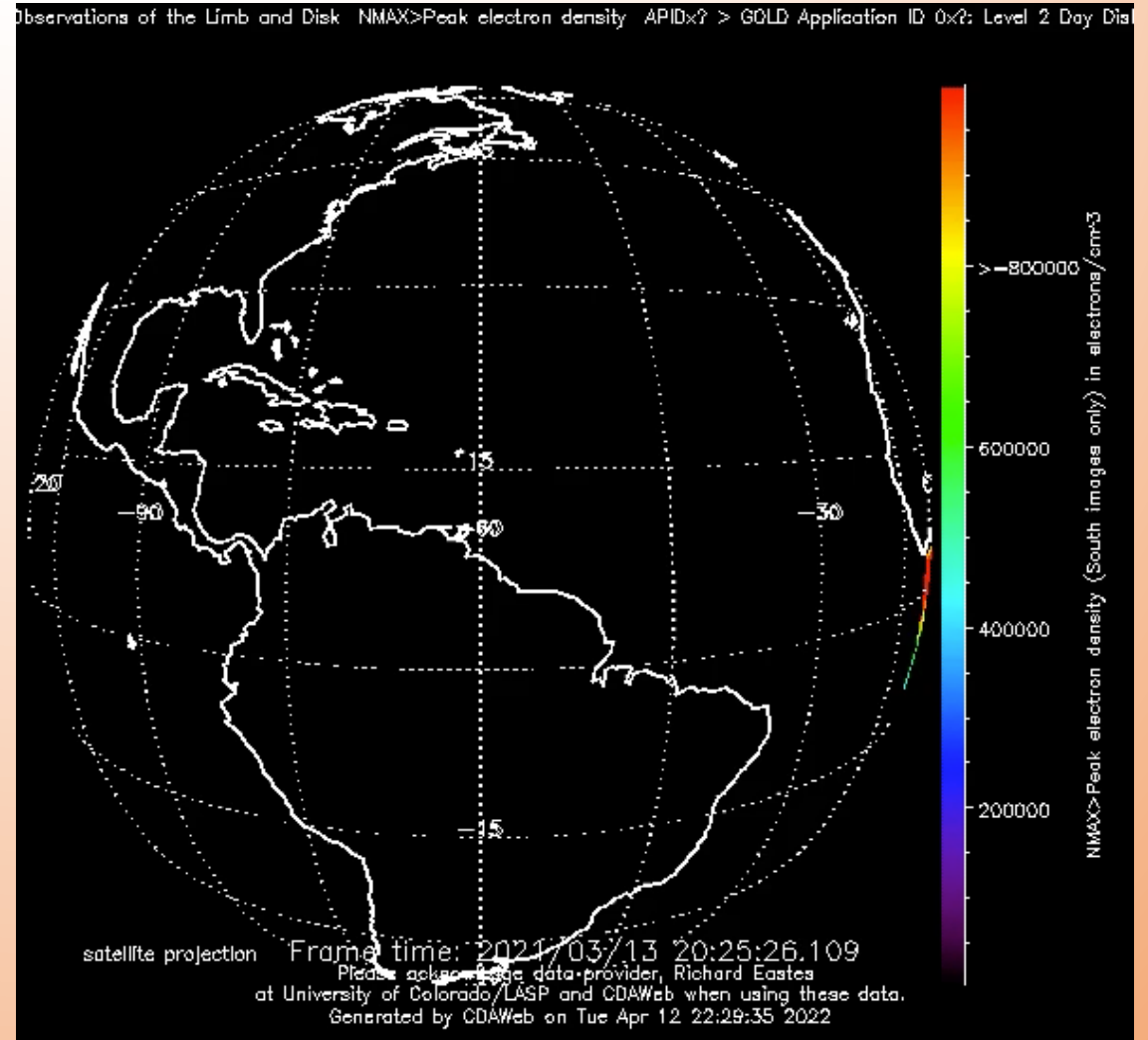
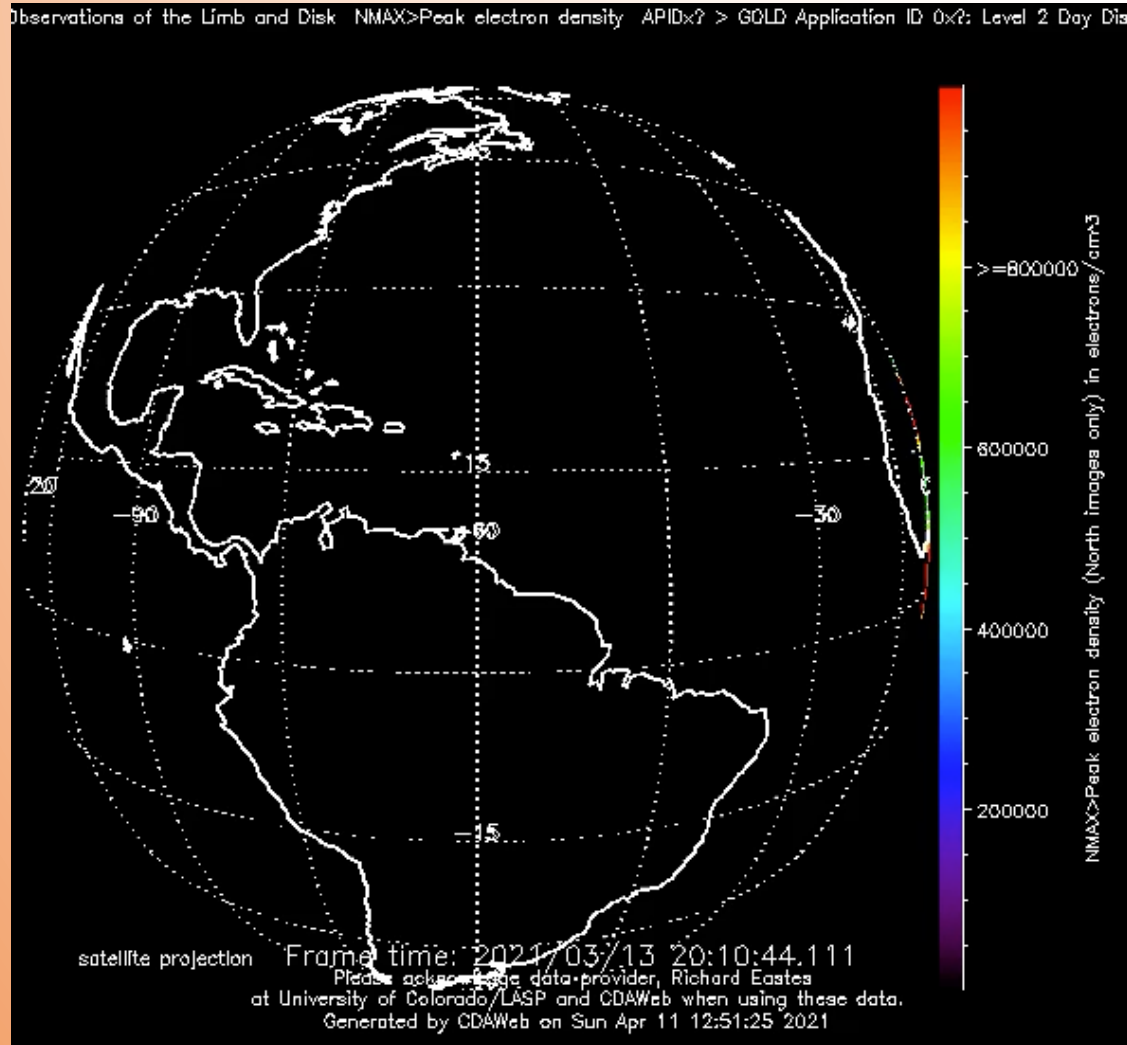
Numbers under the column
FTPS and HTTPS: file downloads'
are all original data files
(not those created by CDAWeb).
647 files created in CDAWeb.

GOLD:

year	downloads
2020	331,515 files
2021	378,140 files
2022	376,467 files

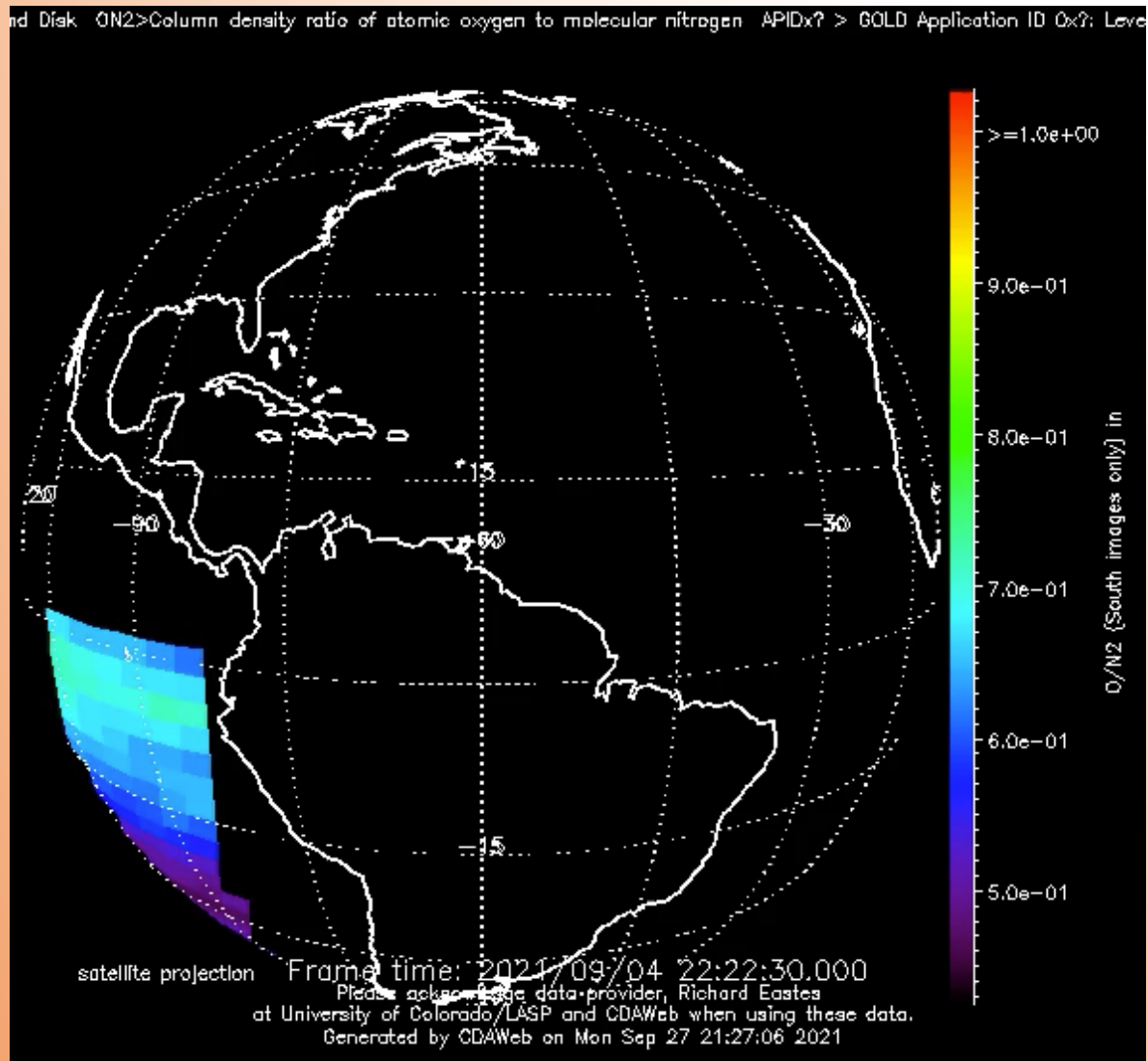
Mission	FTPS downloads	FTPS Volume	https:file downloads (CDAWeb)	https:file downloads (SPDF)
Ace	136186	70.114G	5340740	6682
Aerocube	0	0B	528	0
AIM	0	0B	3712	6093
Ampte	1	486B	4328	6003
Cluster	68889	55.2705G	3574126	5414
CNOFS	2539	84.0711G	31144	4774
CSSWE	0	0B	3873	4423
Darn	0	0B	185950	4507
DE	72026	59.8062G	45034	4555
DSCOV	1	136B	104974	4542
DMS	997939	3.79057T	2471492	4802
Equator-s	0	0B	11749	4486
Elfin	0	0B	11277	4453
ERG	107864	361.678G	1053966	4456
FAST	25872	85.9234G	237242	4485
Formosat	0	0B	343317	0
GENESIS	0	0B	2345	4519
Geotail	388	48.3877M	3384351	4566
GOES	6281	315.839G	101102	4719
GOLD	282832	1.53533T	87922	5066
GPS	34	37.5366M	534045	4591
Hawkeye	0	0B	28283	4515
Helios	0	0B	20403	4671
IBEX	0	0B	49288	4476
ICON	18792	362.196G	127837	5987
IMP	0	0B	99220	4528
ISEE	0	0B	47311	4469
ISIS	229704	174.677G	197816	4479
ISS	0	0B	883	0
LANL	0	0B	1202509	4469
MAVEN	8678	126.851G	104447	5354
MMS	3857867	67.7443T	2541050	5268
new-horizons	5	1.53717M	6202	4505
OMNI	23822	795.682G	649627	6689
Pioneer	4	17.6102M	15211	4504
PMC-Turbo	0	0B	141	0
Polar	11185	1.57015T	403680	4527
PSP	256399	5.04404T	216800	5743
RBSP	336023	5.55187T	1053621	13027
Solar-Orbiter	49170	2.4128T	247158	5063
SOHO	9478	1.2242G	121595	4531
STEREO	34660	60.8932G	171859	4523
THEMIS	185926	2.74191T	2692186	4596
TIMED	726144	3.28684T	295503	4509
TWINS	0	0B	24407	4423
Ulysses	27902	1.32419G	110225	4611
Voyager	79795	43.4607G	79302	15411
Wind	629943	634.758G	6364759	4854

CDAWeb display of NMAX

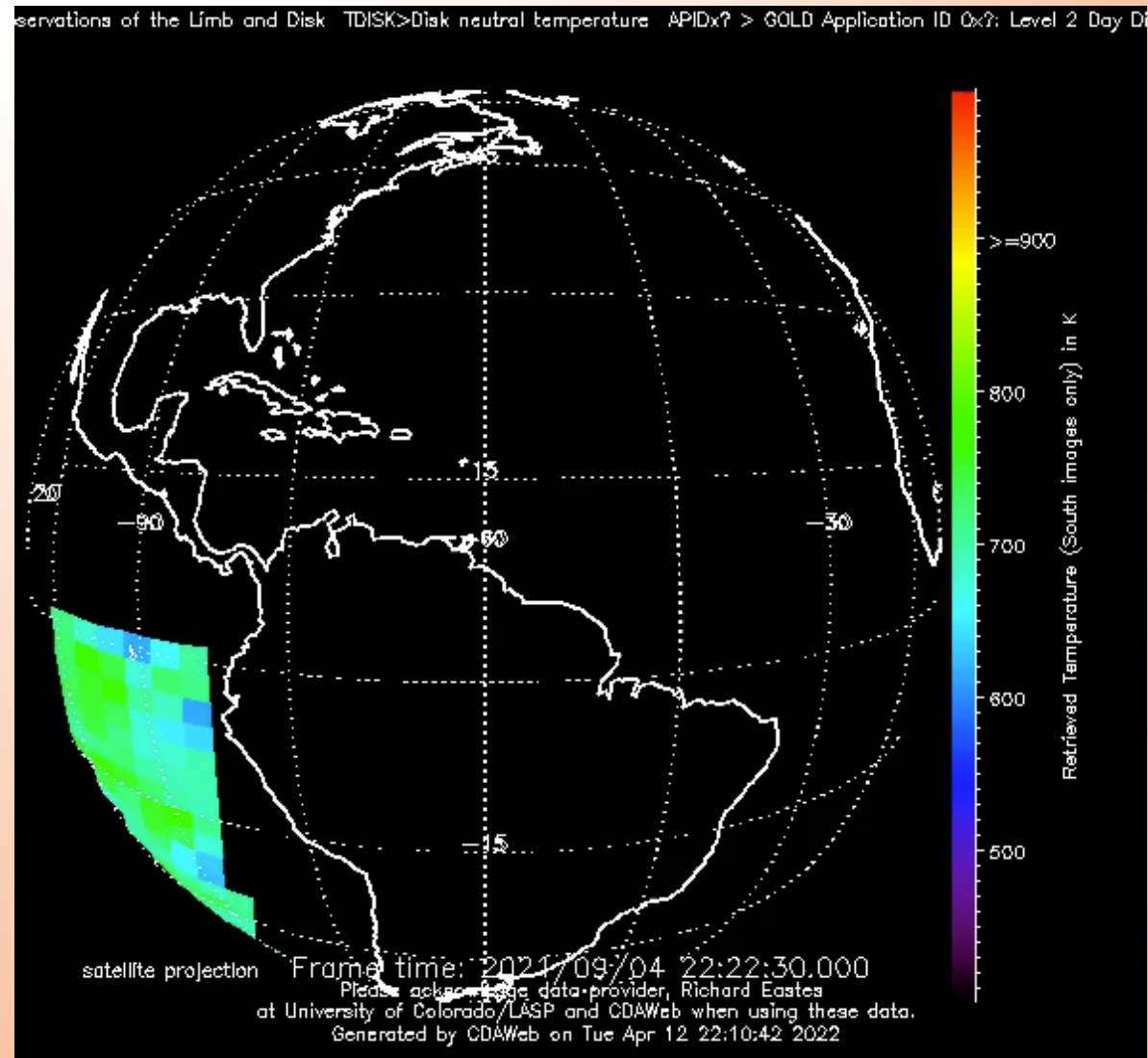


Using IDL Satellite Projection

CDAWeb display of ON2: O/N_2



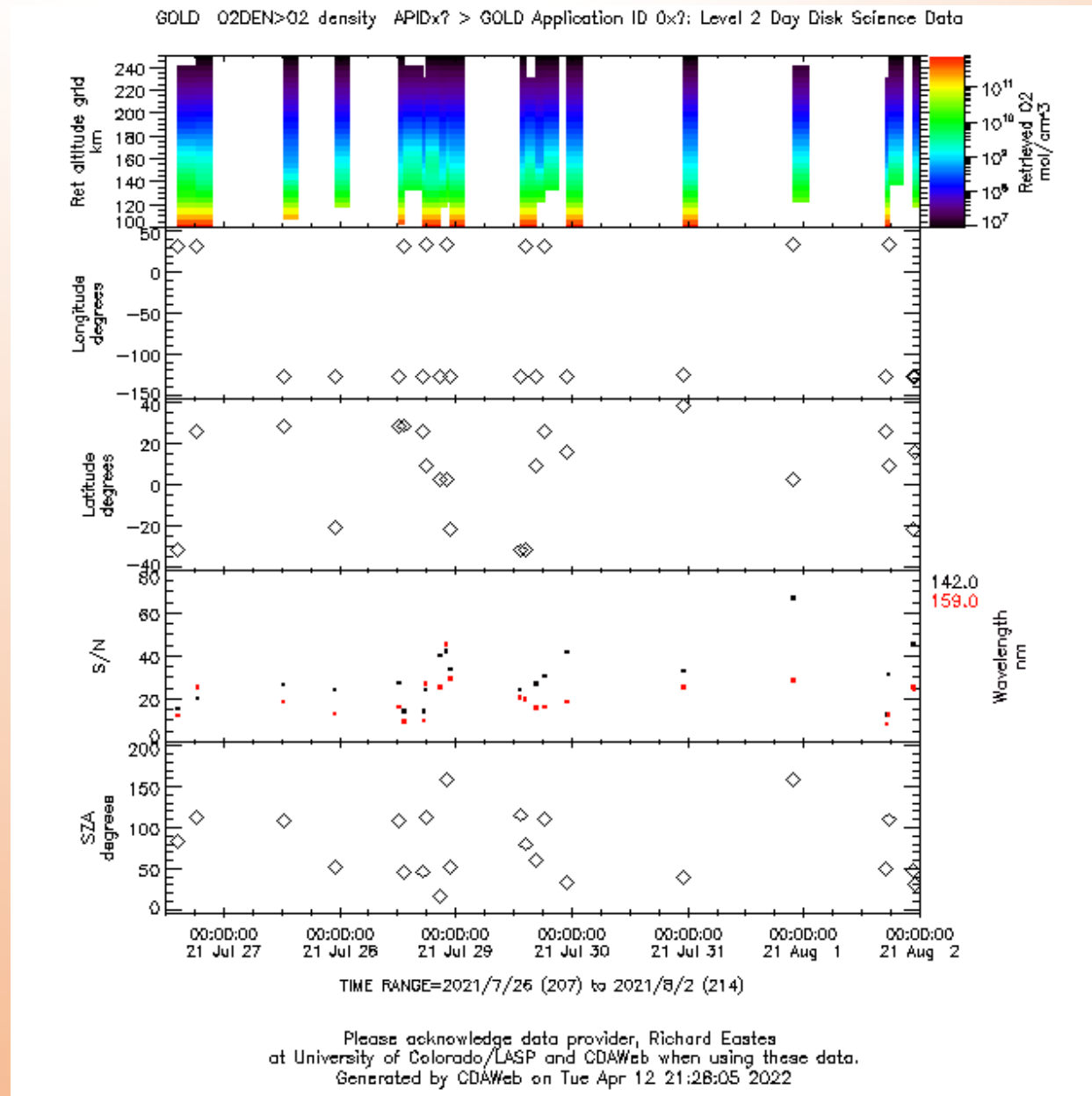
CDAWeb display of TDISK: T_n



CDAWeb plot of O2DEN

parameters:

- Retrieved O2
- Longitude
- Latitude
- S/N
- Solar zenith angle



SPDF provides multiple data and orbits access methods

Heliophysics Data (search) Portal
using the SPASE data model
(<http://www.spase-group.org/>)

CDAWeb: browse, plot, list, download
data, subset by time & selected variables
and how to access CDAWeb from IDL

Direct file downloads via FTPS and HTTPS

SSCWeb: orbit and ground track
displays/queries and animation through
the 4D Orbit Viewer

SPDF

Homepage

<https://spdf.gsfc.nasa.gov/>

GODDARD SPACE FLIGHT CENTER
Space Physics Data Facility

+ Goddard Home
+ NASA Home

Space Physics Data Facility

+ ABOUT + MISSION DATA + ModelWeb at CCMC + SCIENCE ENABLED + RESOURCES

NASA's Space Physics Data Facility (SPDF)

Space Physics Data Facility (SPDF) is the NASA active and permanent archive for non-solar heliophysics data (solar data at SDAC), per the NASA Heliophysics Science Data Management Policy. SPDF is a project of the Heliophysics Science Division (HSD) at NASA's Goddard Space Flight Center. SPDF also provides multi-project, cross-disciplinary access to data to enable correlative and collaborative research across discipline and mission boundaries with present and past missions. Many datasets from current missions are updated regularly (even daily), including reprocessing older time periods, and SPDF only preserves the latest version. SPDF maintains the SSCweb database of spacecraft orbits, the OMNIweb cross-normalized database, and the Common Data Format (CDF) self-describing science data format and associated software.

Data Access & Orbit Services

- + Heliophysics Data (search) Portal
- + Gateway to SPDF Services
- + CDAWeb (data browser)
- + CDAWeb Inside IDL
- + OMNIWeb Plus (now including COHWeb, 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
- + More information on Data Access for New Users

SPDF Web Service APIs

- + CDAWeb
- + SSCWeb
- + Heliophysics API (HAPI)

Software

- + CDF (Common Data Format)
- + Space Physics use of CDF
- + CDF/netCDF/FITS/HDF/XML/ASCII Format Translations
- + CDF SKTEditor
- + MetaCDF
- + CDAWlib /CDF-X (IDL)
- + VISBARD (visualization)

Submit New Data to the Archive

- + 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
- + Heliophysics URI Template Standard

News & Announcements

NOTICE: September 2022: GOES magnetometer (MAG) high-resolution data is now available in CDAWeb for GOES-08 to GOES-17, covering the period between 1995 and present. The GOES MAG subsystem consists of fluxgate magnetometer instruments monitoring three orthogonal components of the geomagnetic field at geosynchronous orbit (L = 6.6) with high-resolution sampling rate (G8-15: 2 Hz and G16-17: 10 Hz).

August 2022: The PSP data have been extended up to April 2022, covering the rest of Orbit 11 and part of the inbound leg of Orbit 12. Two new FIELDS datasets are added. They are Level 2 Antenna Electronics Board (AEB) data and Level 3 Simplified Quasi-Thermal Noise (SQTN) data using the Radio Frequency Spectrometer (RFS) spectra. Pitch angles are included in the ISOIS datasets whenever FIELDS data are available. EPI-Lo calibrations have been updated for apertures with thick entrance foils.

Access Models

- + Community Coordinated Modeling Ctr. (CCMC)
- + ModelWeb at CCMC

Heliophysics Virtual Observatories

Web service interfaces
(REST, SOAP, IDL, Matlab,
Java, Python) including the
new HAPI (Heliophysics API)

Autoplot access:
<http://autoplot.org/help#CDAWeb>

OMNIWeb: solar wind and
IMF parameters and solar
and magnetic indices.
Includes also COHWeb,
ATMOWeb, FTPBrowser,
HelioWeb and Corrected
GeoMagnetic (CGM)
coordinate computation

Over 200 Missions Supported by SPDF

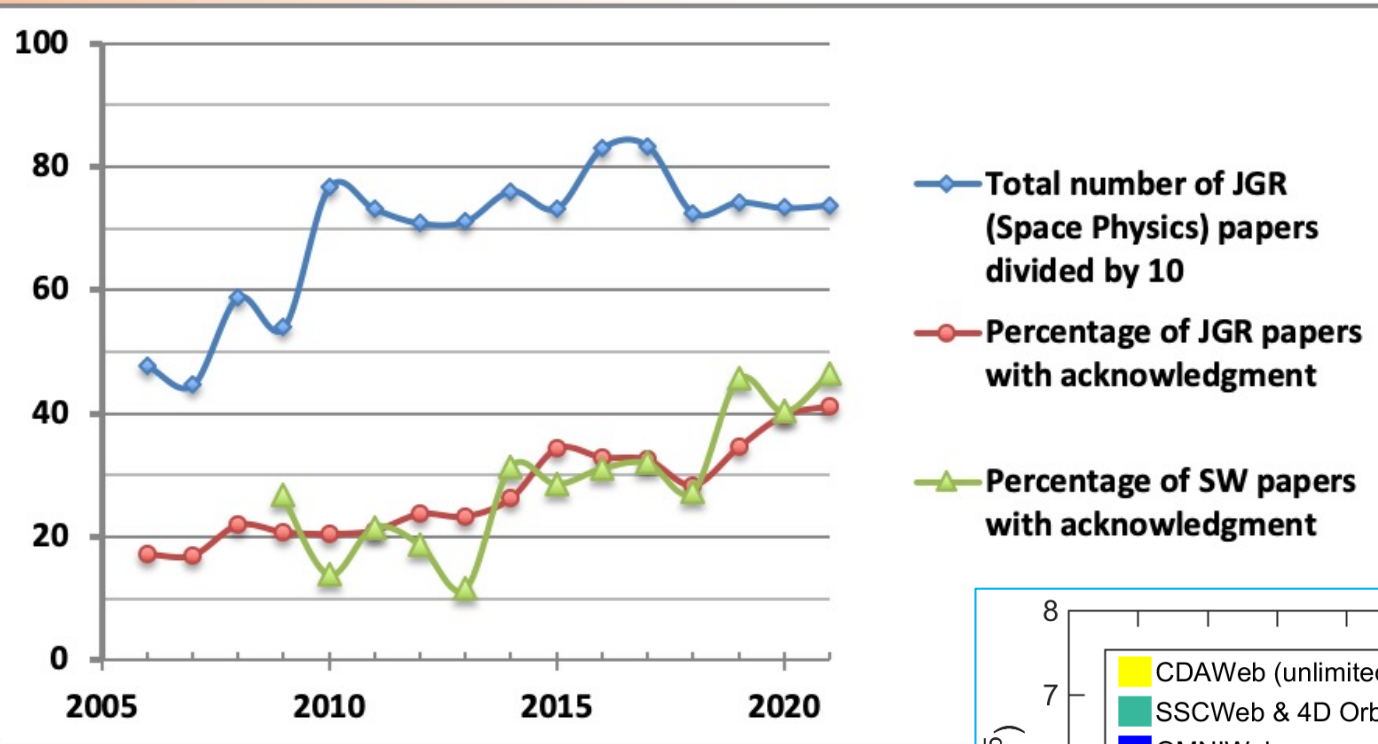
* Only orbit data available

ACE	
Active*	
Aeros	
AIM	
Akebono*	
Alouette1	
Alouette2	
AMPTE	
APEX-MAIN*	
Apollo	
Aqua	
Ariel-4	
Arase (ERG)	
ARCAD	
ARTEMIS	
ASTRID II*	
AE	
Aura	
Aureol2	
BARREL	
BepiColombo	
CALIPSO	
Cassini*	
Cassiope	
Cluster	
Cosmos 900	
C-NOFS	
CRRES	
CSSWE	
Dawn*	
DEMETER*	
DMSP	
Double Star*	
DSCOVR	
DE	
Equator-S	
Explorer	
FAST	
FIREBIRD*	
Formosat	
Freja*	
Galileo*	
GCOM W1	
Genesis	
Geotail	
Giotto*	
GOCE	
GOES	
GOLD	
GPS	
GMS 3	
GRACE*	
Granat	
Hawkeye	
Helios	
Hinode	
Hinotori	
IBEX	
ICON	
IMAGE	
IMP 7	
IMP 8	
IMP_early	
Interball	
ISEE	
ISEE 3-ICE	
ISIS	
ISS	
Jason 2	
Juno	
Kepler	
LANL	
LRO	
LUNA	
Magsat	
MAP	
Mariner 10	
Mars	
MAVEN	
MESSENGER	
Microlab 1	
Mir*	
MMS	
MRO	
MSL	
MSX*	
Munin	
New Horizons	
NOAA*	
Oersted	
OGO	
Ohzora	
PARA SOL	
Parker Solar Probe	
Phobos	
Pioneer	
Pioneer 10	
Pioneer 11	
Pioneer Venus	
Polar	
Prognoz	
Reimei	
Rosetta*	
RHESSI	
SAMPEX	
Sakigake*	
San Marco	
SCATHA*	
SDO	
SET-1/DSX	
SMILE	
SNOE	
SOHO	
Solar Orbiter	
SORCE	
Spartan-A	
Spitzer	
Sputnik 1	
STEREO	
Suisei	
Swarm	
Tatiana	
THEMIS	
TIMED	
TRACE	
TWINS	
UARS*	
Ulysses	
Van Allen Probes	
Vega	
Venera	
Viking	
Voyager	
Voyager 1	
Voyager 2	
Wind	
XMM-Newton	
Yohkoh*	
Zond	

Total: ~10,000 datasets, ~400 TB data

Recent average monthly data ingestion rate: ~0.7 million data files, ~147 TB data

Community use of SPDF services



The heliophysics research community makes heavy use of SPDF data and services, as evidenced both in our usage statistics (*plot on right*) and in acknowledgments of our services in published papers (*plot at top*).

