

UPDATES TO THE CEOS/WMO DATABASE

This working paper provides an up-to-date-record of the US satellite missions, instruments and frequencies. The information presented in the document is accurate for the period ending September 9, 2003.

UPDATES TO THE CEOS/WMO DATABASE

1 INTRODUCTION

The US continues to provide updated information for the CEOS Database. The WMO requested revisions to the database manual tables, describing the geophysical parameters, in order to include them with the next version of the database in October 2003.

2. Update to the CEOS/WMO Database

Agency and Its Missions

GOES 10	Launch date: 4/25/1997	
GOES-11	Status: currently being flown	Launch date: 5/3/2000
GOES-M	Status: currently being flown (SXI)	Launch date: 7/23/2002
GOES-N	Launch date: July 2004	
GOES-O	Launch date: April 2007	
GOES-P	Launch date: October 2008	
GOES-R	Launch date: April 2012	

NOAA-L is now NOAA-16.	Status: currently being flown	Launch date: 9/21/2000
NOAA-M is now NOAA-17.	Status: currently being flown	Launch date: 6/24/2002
NOAA-N	Launch date: June 2004	
NOAA-N=	Launch date: March 2008	

DMSP S20 (will be F16 after launch) Launch date: [September 2003](#)

National Polar-orbiting Operational Environmental Satellite System (NPOESS)

NPP	Launch date: 10/2006	1030 Equatorial Crossing Time (Descending)
NPOESS-1	Launch date: 11/2009	0930 Equatorial Crossing Time (Descending)
NPOESS-2	Launch date: 06/2011	1330 Equatorial Crossing Time (Ascending)
NPOESS-3	Launch date: 06/2013	0530 Equatorial Crossing Time (Descending)
NPOESS-4	Launch date: 11/2015	0930 Equatorial Crossing Time (Descending)
NPOESS-5	Launch date: 01/2018	1330 Equatorial Crossing Time (Ascending)
NPOESS-6	Launch date: ~2019	0530 Equatorial Crossing Time (Descending)

Mission and Associated Instruments

Add NPOESS-5 and NPOESS-6, with launch dates and Equatorial Crossing Times as listed above.

Add NPP (NPOESS Preparatory Project) with launch date and Equatorial Crossing Time as listed above.

(NPOESS-1 through -4)

Delete the following instruments: AMSU-A, AVHRR/3, HIRS/3, MHS, SBUV/3, SEM

(POES)

Change ARGOS instrument to A-DCS

Add the following sets of instruments for the NPOESS spacecraft in the specific orbits:

NPP in the 1030 orbit: VIIRS, CrIS, ATMS, OMPS

NPOESS-1 and NPOESS-4 in the 0930 orbit: VIIRS, CMIS, APS, SARSAT

NPOESS-2 and NPOESS-5 in the 1330 orbit: VIIRS, CrIS, ATMS, CMIS, OMPS, GPSOS, SESS, ERBS, SARSAT, A-DCS

NPOESS-3 and NPOESS-6 in the 0530 orbit: VIIRS, CrIS, ATMS, CMIS, TSIS, ALT, SARSAT, A-DCS

NPOESS instrument payloads by orbit are listed in the following table:

EQUATORIAL ASCENDING NODAL CROSSING TIME

1330	1730	2130
VIIRS	VIIRS	VIIRS
CrIS	CrIS	
ATMS	ATMS	
CMIS	CMIS	CMIS
OMPS		
GPSOS		
SESS	TSIS	
ERBS	ALT	APS
SARSAT	SARSAT	SARSAT
A-DCS	A-DCS	

NPOESS Instrument acronym list:

VIIRS - Visible/Infrared Imager Radiometer Suite

CrIS – Cross-track Infrared Sounder

ATMS – Advanced Technology Microwave Sounder

CMIS – Conical-scanning Microwave Imager/Sounder

OMPS – Ozone Mapping and Profiler Suite

GPSOS - Global Positioning System Occultation Sensor

SESS - Space Environment Sensor Suite
APS – Aerosol Polarimetry Sensor
ERBS – Earth Radiation Budget Sensor
TSIS - Total Solar Irradiance Sensor
ALT – Radar Altimeter
SARSAT – Search and Rescue Satellite Aided Tracking
A-DCS – Data Collection System

NPOESS Instrument Data

VIIRS

Environmental parameters allocated to VIIRS:

Visible and infrared imagery
Sea surface temperature
Soil moisture
Aerosol optical thickness
Aerosol particle size
Albedo (surface)
Cloud base height
Cloud cover/layers
Cloud effective particle size
Cloud optical [thickness](#)
Cloud top height
Cloud top pressure
Cloud top temperature
Fresh water ice
Ice surface temperature
Land surface temperature
Net heat flux
Ocean color/chlorophyll
[Precipitable water](#)
[Sea ice characterization \(ice edge location/ice concentration\)](#)
Snow cover/depth
Surface type
[Active fires](#)
Suspended matter
Vegetation index

CrIS/ATMS

Environmental parameters allocated to CrIS/ATMS:

Atmospheric vertical temperature profile
Atmospheric vertical moisture profile
Atmospheric vertical pressure profile/surface

CMIS

Environmental parameters allocated to CMIS:

Atmospheric vertical temperature profile
Atmospheric vertical moisture profile
All weather (microwave) imagery
Sea surface temperature
Sea surface winds (speed and direction – horizontal)
Soil moisture
Cloud base height
Cloud liquid water
Cloud ice water path
Cloud imagery
Fresh water ice
Ice surface temperature
Land surface temperature
Precipitable water
Precipitation type/rate
Atmospheric vertical pressure profile
Sea ice characterization (ice edge location/ice concentration)
Snow cover/depth
Surface type
Sea surface wind stress
Total water content

OMPS

Environmental parameters allocated to OMPS:

Ozone profile	higher stratosphere and mesosphere
Ozone profile	lower stratosphere (LS)
Ozone profile	total column

GPSOS

Environmental parameters allocated to GPSOS:

Electron density profile
Ionospheric scintillation
Atmospheric temperature profile (secondary measurement)
Atmospheric moisture profile (secondary measurement)

SESS

In addition, the SESS instrument suite produces parameters that are not listed within the CEOS database. These are as follows:

Environmental parameters allocated to SESS:

Auroral boundary
Auroral energy deposition
Auroral imagery
Electric field
Electron density profile
Energetic ions
Geomagnetic field
In-situ plasma fluctuations
In-situ plasma temperature
Ionospheric scintillation
Medium energy charged particles
Neutral density profile
Supra-thermal-auroral particles

APS

Environmental parameters allocated to APS:

aerosol optical thickness
aerosol particle size
cloud particle size/distribution
aerosol refractive index
single scattering albedo and shape

ERBS

Environmental parameters allocated to ERBS:

Downward longwave radiation

Downward shortwave radiation

Net heat flux

Net solar radiation (TOA)

Outgoing longwave radiation (TOA)

TSIS

Environmental parameters allocated to TSIS:

Solar irradiance

ALT

Environmental parameters allocated to ALT:

Sea surface height/topography

Ocean wave characteristics (significant wave height)

Sea surface wind stress (magnitude)