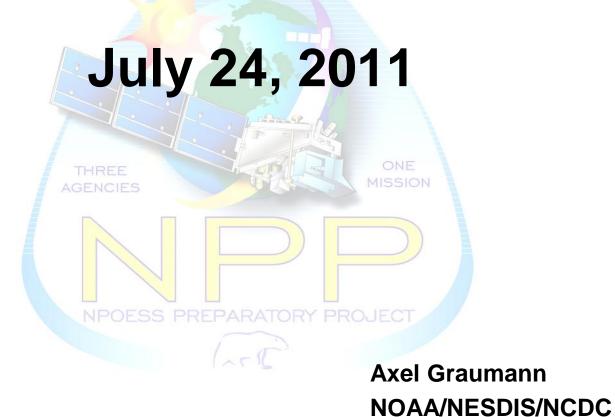


NPP Data Access





Agenda

- NOAA Archives
 - Science Data Stewardship
- Data for Archive
- CLASS Overview
 - Data Ingest
 - Data Access
 - Data Dissemination
- Data Access Example
- CLASS Future Enhancements



NOAA Archives

NESDIS Mission:

"NOAA's National Environmental Satellite, Data, and Information Service (NESDIS) is dedicated to providing timely access to global environmental data from satellites and other sources to promote, protect, and enhance the Nation's economy, security, environment, and quality of life.

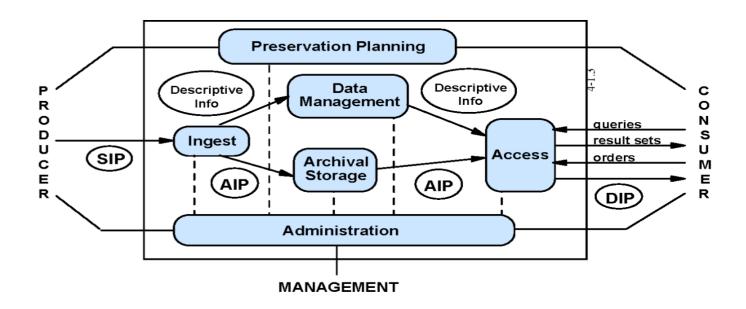
To fulfill its responsibilities, NESDIS acquires and manages the Nation's operational environmental satellites, provides data and information services, and conducts related research."

- NOAA National Data Centers
 - National Climatic Data Center (NCDC)
 - National Geophysical Data Center (NGDC)
 - National Oceanographic Data Center (NODC)
- NCDC is responsible for the long-term preservation of NPP data
 - Science data stewardship
 - Not just storing bits and bytes but preservation of the information
 - Technology migration
 - Enhance the information and provide easy access



NOAA Archives

- Functional capabilities required for an archive
 - From the Open Archival Information System (OAIS) Reference Model





NPP Data for Archive

- Operational
 - Visible/Infrared Imager Radiometer Suite
 - VIIRS: RDR, SDR, IP, EDR, ARP
 - Cross-track Infrared Sounder
 - CrIS: RDR, SDR
 - Advanced Technology Microwave Sounder
 - •ATMS: RDR, TDR
 - Cross-track Infrared and Microwave Sounder Suite
 - •CrIMSS: EDR
 - Ozone Mapping Profiler Suite
 - •OMPS: RDR, SDR, IP, EDR
 - Clouds and the Earth's Radiant Energy System
 - **•CERES: RDR**



NPP Data for Archive (2)

- Auxiliary Data:
 - Mission Schedules
 - Mission Notices
 - Revolution Number File
 - CERES Auxiliary Files (still being worked)
- Ancillary Data:
 - Two-line Elements (TLEs)
 - Official Static and Dynamic Ancillary Data
- Release Packages:
 - Software
 - Documentation
 - Supporting Data (Ancillary Data)
 - Test Data
- Calibration/Validation Data (still being worked)



CLASS Overview

- Comprehensive Large Array-data Stewardship System (CLASS)
 - Designated NOAA IT enterprise solution
 - Supports NOAA's data centers and science data stewardship missions
 - Provides interface for ingest and data access
 - Example of current data holdings (~35 data families):
 - Geostationary Operational Environmental Satellite (GOES)
 - Advanced Very High Resolution Radiometer (AVHRR)
 - Defense Meteorological Satellites Program (DMSP)
 - TIROS Operational Vertical Sounder (TOVS/ATOVS)
 - JASON-2 Satellite
 - Future data holdings:
 - National Polar-orbiting Operational Satellite System (NPP/NPOESS/JPSS)
 - Geostationary Operational Environmental Satellite (GOES-R)
 - Next-Generation Radar (NEXRAD)
 - National Centers for Environmental Prediction (NCEP) Climate Forecast System Reanalysis (CSFR)
 - URL: http://www.class.noaa.gov



CLASS - NPP

- New campaigns, like NPP, utilize existing CLASS capabilities
 - Familiar interface, search, order, and dissemination methods
- Anyone can search for data
 - Must be registered to order data
 - Can create and save user preferences and search criteria
- User help
 - Help desk
 - Help pages
 - Online demo
- Documentation
 - Mission and sensor specific
 - Links to external sources



CLASS – Data Ingest

- Ingest data from the NPP Ground Segment
 - Operational products sent to CLASS after 6 hour delay
 - > Guarantees complete/best products are delivered
 - Data available from CLASS within 24 hours of generation
 - CLASS validates files that are ingested
 - Aggregated products are ingested by CLASS
 - > Searches are based on the aggregated products but users can order deaggregated products

NPP Sensor	Granules Per Orbit	Granule Len (sec)	# Granules Agg	Storage Agg Len (sec)
CrIS	191	32	10	320
ATMS	191	32	10	320
VIIRS	71	85.7	4	342.8
OMPS	160	38	160	6080
CERES	10	660	1	660



CLASS – Data Access

- Search types (web interface)
 - Normal/Advanced Search
 - > Attributes to search operational data:
 - Satellite, sensor, product, temporal, geographical
 - > Attributes to search ancillary/auxiliary data:
 - Temporal
 - > Detailed Display provides granule/file level metadata
 - Simple Search
 - > Satellite, sensor, product, temporal, geographical
 - > Automatically copies data to shopping cart
 - Eliminates the browse capability
 - Higher limit on number of files you are allowed to order
 - Dataset Name
 - > Searches for a specific filename or filename pattern
 - Granule ID
 - > Provenance search based on granule ID
 - Returns products utilized to produce an SDR or EDR



CLASS – Data Access (2)

- Search types (web interface)
 - Beginning Orbit Number
 - > Returns all aggregations with the specified orbit number
 - Search Collection Metadata
 - > Allows users to search across data families and data types
 - Federal Geographic Data Committee (FGDC) compliant
 - Will be migrated to ISO19115-2
 - Records are housed in NOAA Metadata Manager Repository and published to NOAAServer
 - NOAAServer provides distributed access to NOAA environmental data and information



CLASS – Data Order

- Select items for order
 - Operational data
 - > Maximum number of files per order is configurable (by CLASS)
 - > Established to provide an expected level of service and efficiency
 - Associated ancillary and/or auxiliary information
 - Package geo-location products with the data products
- Subscription
 - Provides automatic distribution of specified products
 - Products can be 'pushed' or 'pulled'
 - Common CLASS interface used for handling subscriptions
 - > Request is for continued dissemination, not a one time order
 - Contact the CLASS Help desk to be registered for subscription access



CLASS – Data Dissemination

Delivery Options

- File Transfer Protocol (FTP)
 - > 'get' the ordered files from the CLASS holding zone
 - > Files remain in the holding zone for 48 hours
 - Longer times can be requested, if needed

Bulk Delivery

- > It is expected and encouraged to use bulk orders for large orders
- > It is understood the web interface will not service everyone's needs
- > Currently, bulk orders are serviced manually, working to automate
- > Distribution media
 - Magnetic tape
 - FTP



Data Access Example

- 1. CLASS Web Interface
- 2. Select Dataset for Search
- 3. Search for Data
- 4. Search Results List
- 5. Detailed Display
- 6. Granule Metadata Display
- 7. Select Products for Order
- 8. Create User Account
- 9. Set User Preferences
- 10. Submit Order
- 11. Order Confirmation
- 12. Order Status
- 13. Order Details
- 14. Email Notification



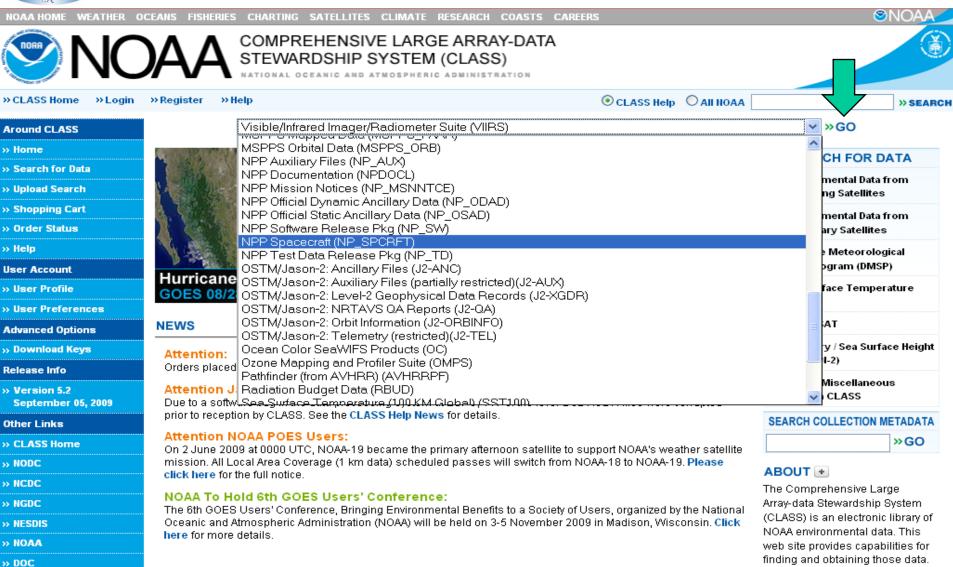
» DOC

Step 1: CLASS Web Interface



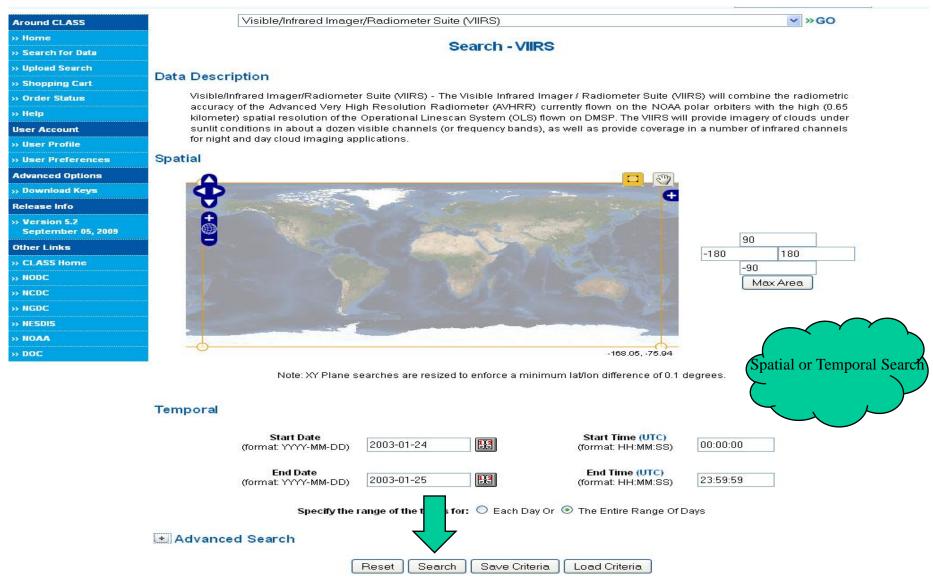


Step 2: Select Dataset for Search



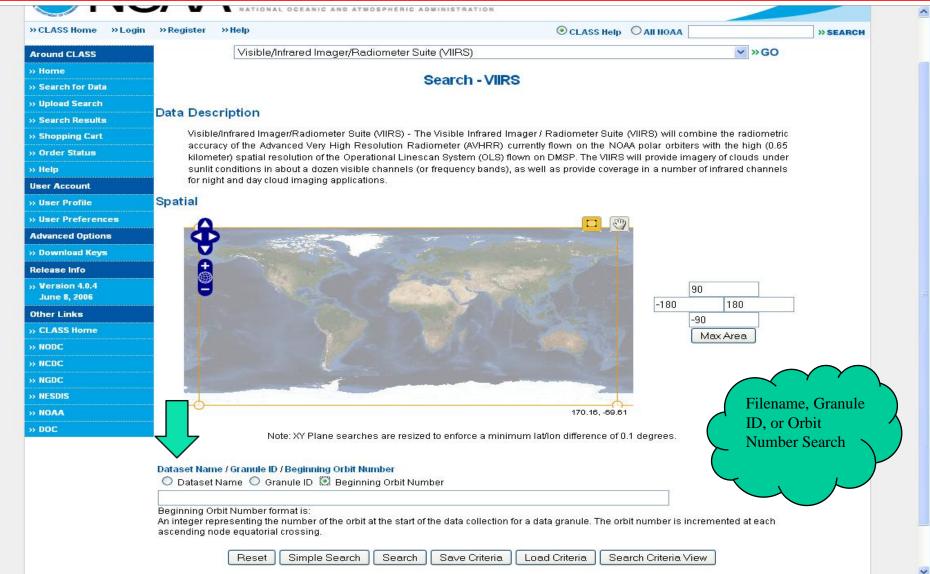


Step 3a: Search for Data - VIIRS



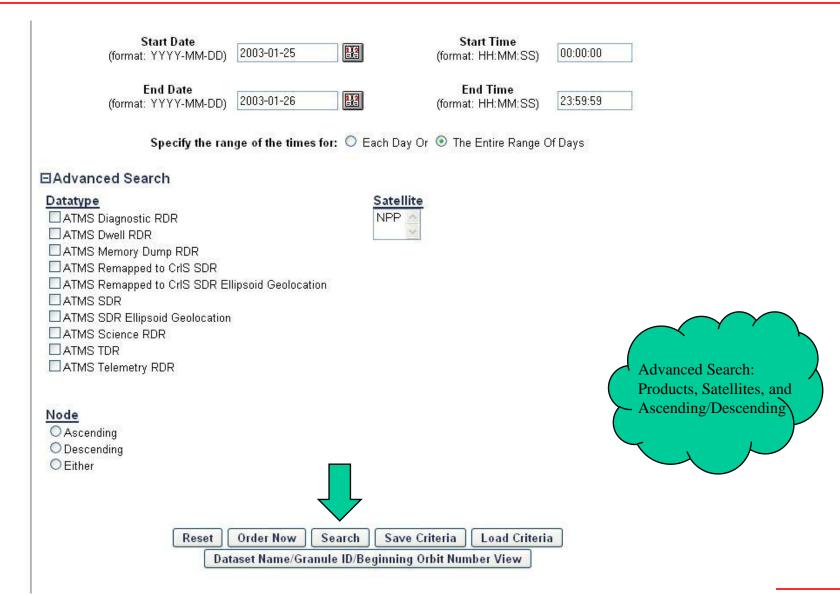


Step 3b: Search for Data - VIIRS



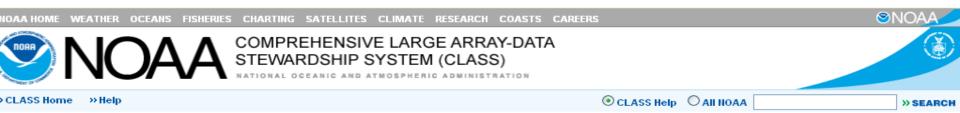


Step 3c: Search for Data - ATMS





Step 4: Search Results List



Data Sets...

VIIRS

Printable Listing

Search Results - VIIRS

Currently you have 263 hits out of 0 entries. There are 0 (VIIRS) items in your shopping cart. The shopping cart limit is 100.

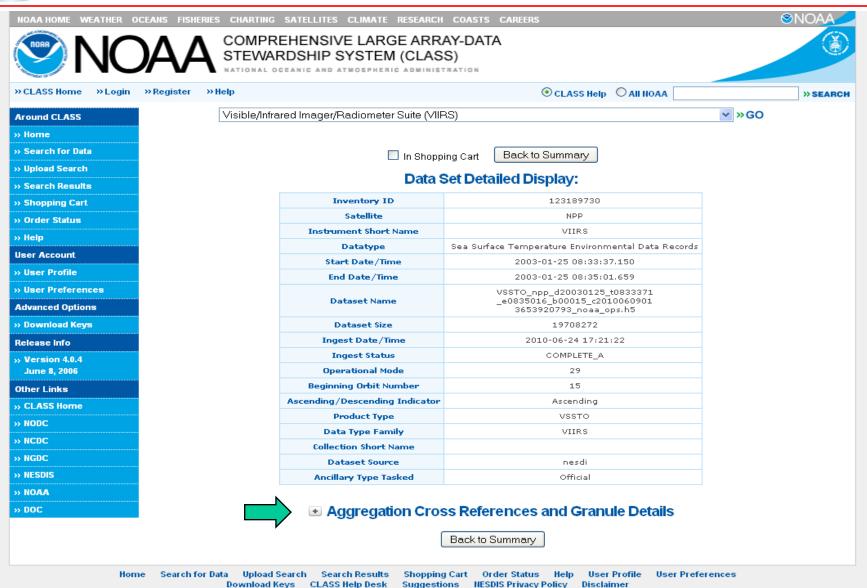
Shopping Cart: Goto Cart Update Select Group ✓ DeselectAll Page 1 Jump To Page ✓ Next



View Details	Shopping Cart	Inventory ID	Datatype	Start Date/Time	End Date/Time	Satellite	Dataset Name	Beginning Orbit Number
1		7076953	VIIRSSSEDR	2003-01-25 08:33:37.150	2003-01-25 08:35:01.659	NPP	VSSTO_npp_d20030125_t0833371 _e0835016_b00015_c2010060901 3653920793_noaa_ops.h5	
2		7077303	VIIRSSSEDR	2003-01-24 14:59:33.122	2003-01-24 15:05:13.082	NPP	V88TO_npp_d20030124_t1459331 _e1505130_b00000_c2010060814 _2641492673_noaa_ops.h5	
3		7077693	VIIRSSSEDR	2003-01-25 01:56:44.232	2003-01-25 01:58:08.741	NPP	V88TO_npp_d20030125_t0156442 _e0158087_b00011_c2010060818 5537367320_noaa_ops.h5	
4		7078153	VIIRSSSEDR	2003-01-25 02:05:16.920	2003-01-25 02:06:41.430	NPP	V88TO_npp_d20030125_t0205169 _e0206414_b00011_c2010060819 0041012776_noaa_ops.h5	
5		7078833	VIIRSSSEDR	2003-01-25 04:50:17.196	2003-01-25 04:55:57.156	NPP	VSSTO_npp_d20030125_t0450171 _e0455571_b00012_c2010060822 1541974384_noaa_ops.h5	
6		7079133	VIIRSSSEDR	2003-01-25 05:01:39.589	2003-01-25 05:07:19.549	NPP	VSSTO_npp_d20030125_t0501395 _e0507195_b00012_c2010060822 2141943438_noaa_ops.h5	
7		7079403	VIIRSSSEDR	2003-01-25 02:13:47.822	2003-01-25 02:15:12.332	NPP	V88TO_npp_d20030125_t0213478 _e0215123_b00011_c2010060819 0035614983_noaa_ops.h5	
8		7079563	VIIRSSSEDR	2003-01-25 02:13:47.822	2003-01-25 02:15:12.332	NPP	VSSTO_npp_d20030125_t0213478 _e0215123_b00011_c2010060819 0219659042_noaa_ops.h5	
9		7079683	VIIRSSSEDR	2003-01-25 02:13:47.822	2003-01-25 02:15:12.332	NPP	VSSTO_npp_d20030125_t0213478 _e0215123_b00011_c2010060819 0440739911_noaa_ops.h5	
10		7079713	VIIRSSSEDR	2003-01-25 02:15:13.568	2003-01-25 02:16:38.077	NPP	V88TO_npp_d20030125_t0215135 _e0216380_b00011_c2010060819 0235678610_noaa_ops.h5	



Step 5: Detailed Display





Step 6: Granule Metadata Display

■ Aggregation Cross References and Granule Details

Aggregation Cross Referencing						
Geolocati	ion	nggi egaut	There is no geolocation for this record.			
	ion .					
NPP001212068152	Granule Details: Granule ID NPP001212068152					
	Band ID		TIPP 001212000132			
	Creation Date/Time		2010-06-09 01;35:55.932			
	Processing Mode		2010-06-09 01:35:55.932			
			Managari 6			
	Spacecraft Maneuver		Normal Operation			
	LEOA Flag		Not LEOA State			
	Day Night Flag		Day			
	Cloud Cover					
	Granule Status		N/A			
	Percent Missing Data		0.0			
	Percent Erroneous Data		0.0			
	Percent Not-Applicable Data		74.5394			
	Graceful Degr	adation	Y			
	Quality Summary Names		Bulk Sea Surface Temperature EDR Summary Quality, Bulk Summary Range Check, Degradation Summary - Bulk S ea Surface Temperature, Degradation Summary - Skin S ea Surface Temperature, Exclusion Summary - Bulk Sea			
			ea Surrace Temperature, Exclusion Summary - Bulk Sea Surface Temperature, Exclusion Summary - Skin Sea Surface Temperature, Skin Sea Surface Temperature EDR Summary Quality, Skin Summary Range Check			
	Quality Summa	ry Values	1, 0, 13, 13, 11, 11, 1, 0			
	North Bounding	Coordinate	-27.2464 -36.9716			
	South Bounding	Coordinate				
	East Bounding Coordinate West Bounding Coordinate G-Ring Latitude		96.7933			
			63.5703			
			-27.2464, -29.7108, -32.0398, -35.5643, -36.9716, -34.5033, -31.910 -30.565			
	G-Ring Long	gitude	94.561, 95.6563, 96.7933, 80.885, 64.0167, 63.8058, 63.5703, 79.4466			
	Reference ID Granule Version Software Version		4c0eeffb-e3bb5-0a180212-5634 c682			
			A2			
			I1.5.02.00			
	Auxiliary Data		There is no auxiliary data for this granule.			
	Official Dynamic Ancillary Data Official Static Ancillary Data		There is no Official Dynamic Ancillary Data for this granule.			
			There is no Official Static Ancillary Data for this granule.			
	Softwar	re	There is no software for this granule.			
	Documentation		There is no documentation for this granule.			
			_			



Shopping Cart:

Step 7: Select Products for Order



Select Group

Update

Goto Cart

View Details	Shopping Cart	Inventory ID	Datatype	Start Date/Time	End Date/Time	Satellite	Dataset Name	Beginning Orbit Number
1	V	7076953	VIIRSSSEDR	2003-01-25 08:33:37.150	2003-01-25 08:35:01.659	NPP	VSSTO_npp_d20030125_t0833371 _e0835016_b00015_c2010060901 3653920793_noaa_ops.h5	
2	V	7077303	VIIRSSSEDR	2003-01-24 14:59:33.122	2003-01-24 15:05:13.082	NPP	VSSTO_npp_d20030124_t1459331 _e1505130_b00000_c2010060814 2641492673_noaa_ops.h5	
3	V	7077693	VIIRSSSEDR	2003-01-25 01:56:44.232	2003-01-25 01:58:08.741	NPP	V88TO_npp_d20030125_t0156442 _e0158087_b00011_c2010060818 5537367320_noaa_ops.h5	
4	V	7078153	VIIRSSSEDR	2003-01-25 02:05:16.920	2003-01-25 02:06:41.430	NPP	V88TO_npp_d20030125_t0205169 _e0206414_b00011_c2010060819 0041012776_noaa_ops.h5	
5	V	7078833	VIIRSSSEDR	2003-01-25 04:50:17.196	2003-01-25 04:55:57.156	NPP	VSSTO_npp_d20030125_t0450171 _e0455571_b00012_c2010060822 1541974384_noaa_ops.h5	
6	V	7079133	VIIRSSSEDR	2003-01-25 05:01:39.589	2003-01-25 05:07:19.549	NPP	VSSTO_npp_d20030125_t0501395 _e0507195_b00012_c2010060822 2141943438_noaa_ops.h5	
7	V	7079403	VIIRSSSEDR	2003-01-25 02:13:47.822	2003-01-25 02:15:12.332	NPP	V88TO_npp_d20030125_t0213478 _e0215123_b00011_c2010060819 0035614983_noaa_ops.h5	
8	V	7079563	VIIRSSSEDR	2003-01-25 02:13:47.822	2003-01-25 02:15:12.332	NPP	V88TO_npp_d20030125_t0213478 _e0215123_b00011_c2010060819 0219659042_noaa_ops.h5	
9		7079683	VIIRSSSEDR	2003-01-25 02:13:47.822	2003-01-25 02:15:12.332	NPP	VSSTO_npp_d20030125_t0213478 _e0215123_b00011_c2010060819 0440739911_noaa_ops.h5	
10		7079713	VIIRSSSEDR	2003-01-25 02:15:13.568	2003-01-25 02:16:38.077	NPP	V88TO_npp_d20030125_t0215135 _e0216380_b00011_c2010060819 0235678610_noaa_ops.h5	

DeselectAll

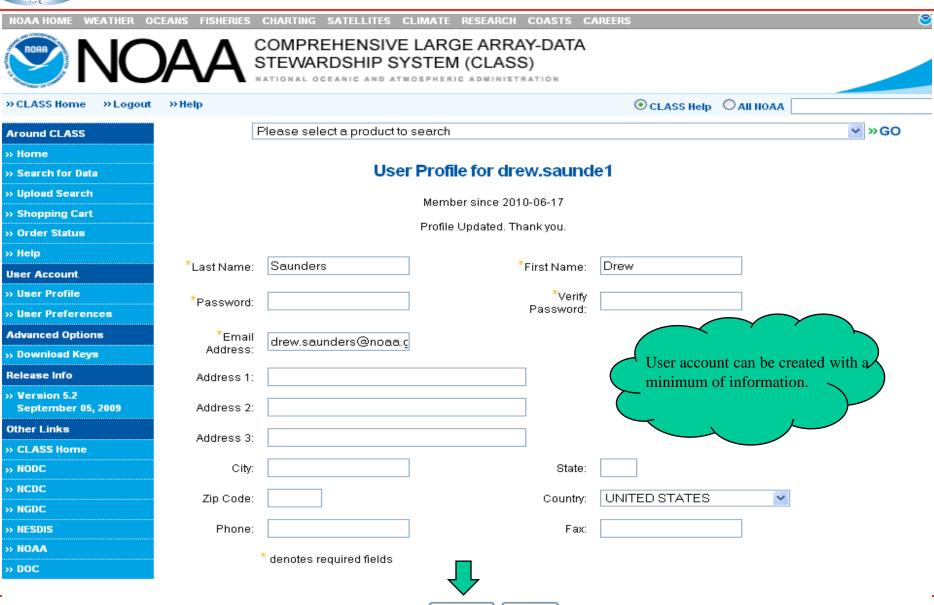
Jump To Page 🔽

Page 1

Next



Step 8: Create User Account

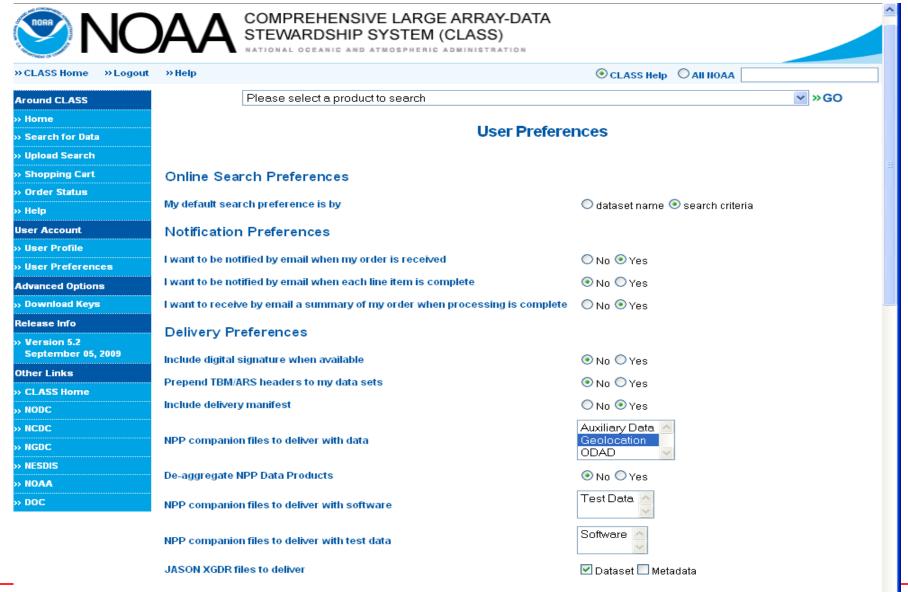


Update

Reset

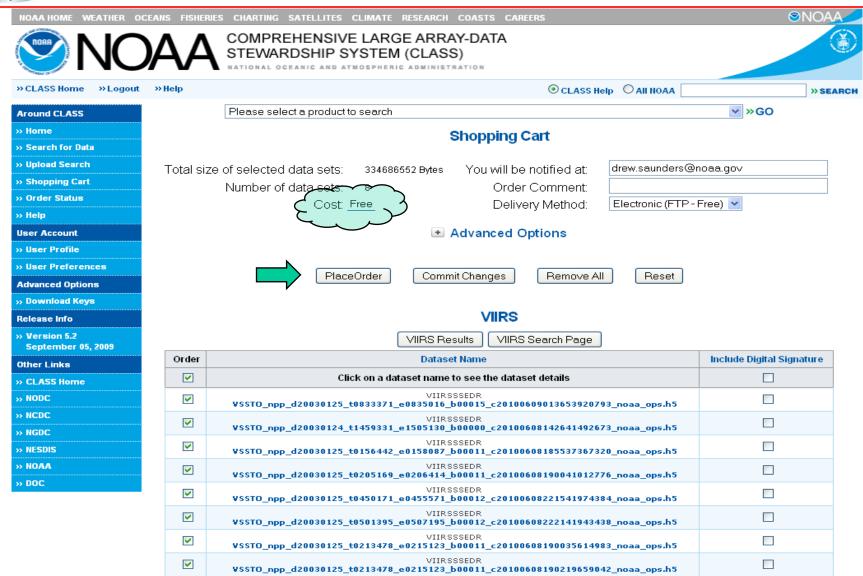


Step 9: Set User Preferences



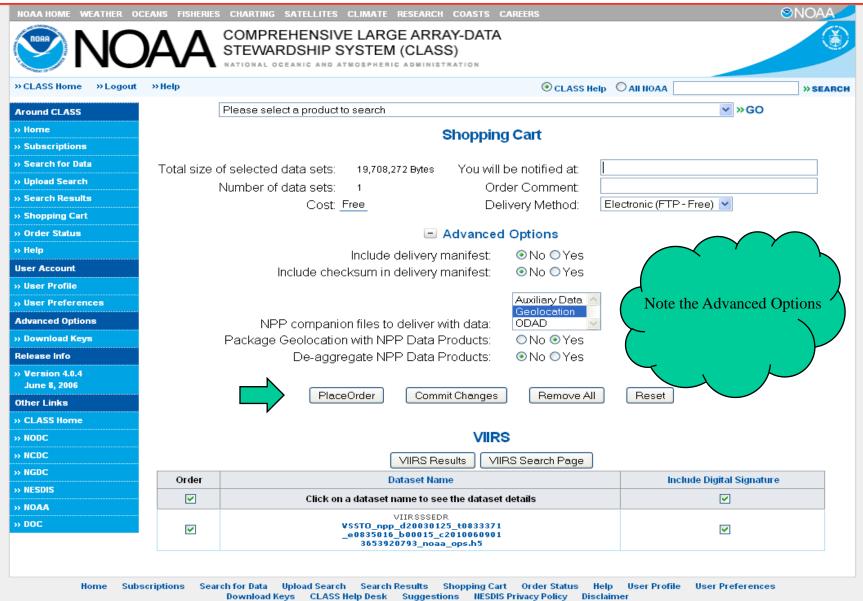


Step 10a: Submit Order



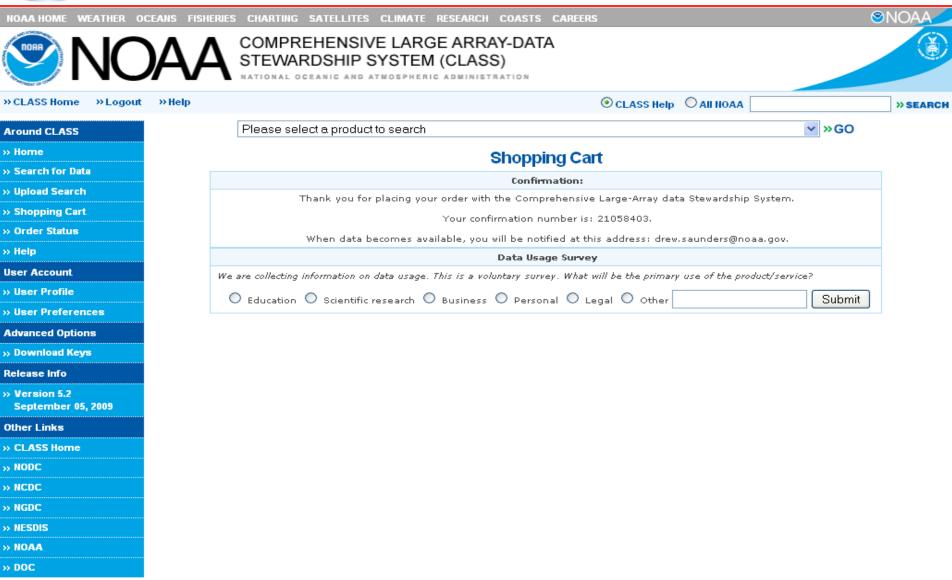


Step 10b: Submit Order (Advanced Options)



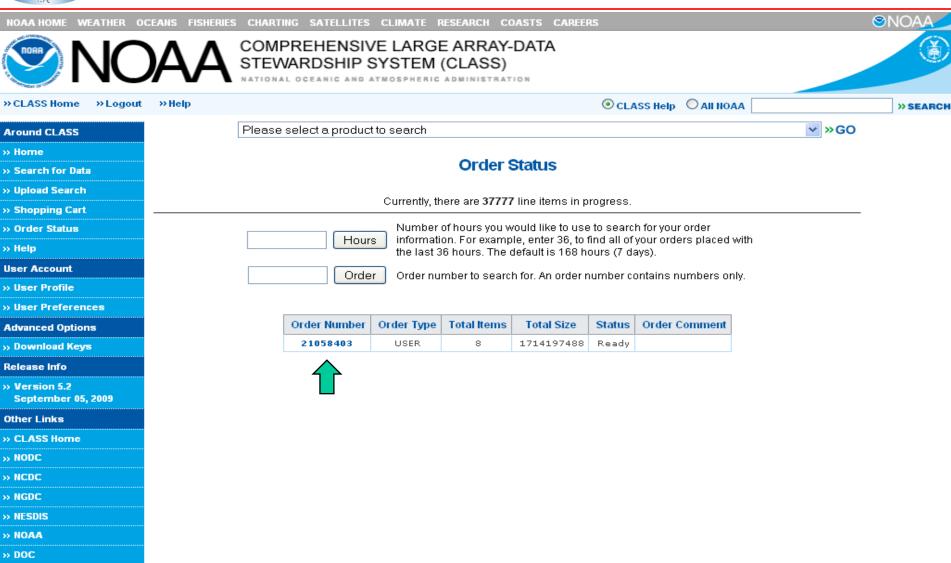


Step 11: Order Confirmation



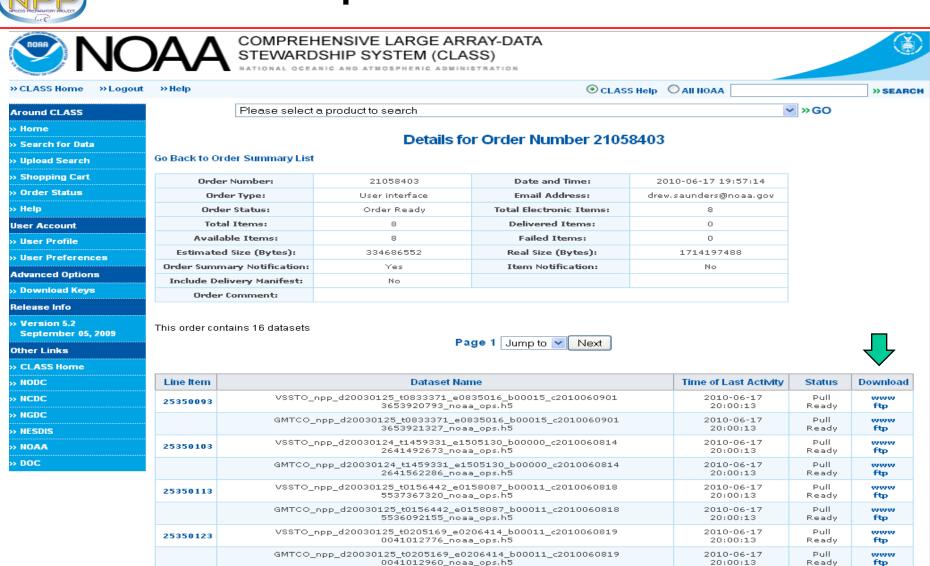


Step 12: Order Status





Step 13: Order Details



2010-06-17

20:00:13

2010-06-17

20:00:13

Pull

Ready

Pull

Ready

www

fф

www

ftp

VSSTO_npp_d20030125_t0450171_e0455571_b00012_c2010060822

1541974384_noaa_ops.h5

GMTCO npp d20030125 t0450171 e0455571 b00012 c2010060822

1241665113 noaa ops.h5

25350133

Home



Step 13: Email Notification

NOAA COMPREHENSIVE LARGE ARRAY-DATA STEWARDSHIP SYSTEM

A SERVICE OF:

NOAA NATIONAL DATA CENTERS

CLASS has processed your order number 21058403. The total size of this order is 1714197488 bytes.

Comments for this Order: The following item(s) are available for you to ftp copy. The procedure to copy is as follows:

ftp ftppopout.nsof.class.noaa.gov

- Logon to CLASS system

anonymous - FTP user id user@internet - FTP password

binary - Changes transfer mode to binary

cd 21058403 get VSSTO_npp_d20030125_t0833371_e0835016_b00015_c20100609013653920793_noaa_ops.h5 get

GMTCO_npp_d20030125_t0833371_e0835016_b00015_c20100609013653921327_noaa_ops.h5 get VSSTO_npp_d20030124_t1459331_e1505130_b00000_c20100608142641492673_noaa_ops.h5 get GMTCO_npp_d20030124_t1459331_e1505130_b00000_c20100608142641562286_noaa_ops.h5 get VSSTO_npp_d20030125_t0156442_e0158087_b00011_c20100608185537367320_noaa_ops.h5 get GMTCO_npp_d20030125_t0156442_e0158087_b00011_c20100608185536092155_noaa_ops.h5 get

VSSTO_npp_d20030125_t0205169_e0206414_b00011_c20100608190041012776_noaa_ops.h5 get

GMTCO_npp_d20030125_t0205169_e0206414_b00011_c20100608190041012960_noaa_ops.h5 get

 $VSSTO_npp_d20030125_t0450171_e0455571_b00012_c20100608221541974384_noaa_ops.h5\ get$

GMTCO_npp_d20030125_t0450171_e0455571_b00012_c20100608221241665113_noaa_ops.h5 get

 $VSSTO_npp_d20030125_t0501395_e0507195_b00012_c20100608222141943438_noaa_ops.h5\ get$

GMTCO_npp_d20030125_t0501395_e0507195_b00012_c20100608221620684553_noaa_ops.h5 get

VSSTO_npp_d20030125_t0213478_e0215123_b00011_c20100608190035614983_noaa_ops.h5 get

GMTCO npp d20030125_t0213478_e0215123_b00011_c20100608190035014983_n0aa_ops.h5 get

GM1CO_npp_d20030125_t0213478_e0213123_b00011_c2010000819003343407/_noaa_ops.n3 ge

 $VSSTO_npp_d20030125_t0213478_e0215123_b00011_c20100608190219659042_noaa_ops.h5\ get$

 $GMTCO_npp_d20030125_t0213478_e0215123_b00011_c20100608190219660135_noaa_ops.h5 - Copies \ data \ to \ your \ system \ by e \ (or \ quit) - Ends \ FTP \ session$

Alternatively, you can also pick up your data via http://www.pop.nsof.class.noaa.gov/download/21058403

NOTE: You must pick up your data within 48 hours of this notice.

Thank you.

<< DO NOT reply to this e-mail as it is automatically generated. >> << Please direct questions to the Help Desk: >>

NOAA/CLASS User Assistance National Climatic Data Center 151 Patton Avenue Asheville, NC 28801-5001 Internet: class.help@noaa.gov.



CLASS Future Enhancements

System Evolution

- Additional access to CLASS functionality
 - > New APIs, which are used by CLASS applications and the CLASS web interface, will be available to external clients.
 - > Working on additional interfaces to data in CLASS
 - CFSR data in CLASS accessible by NOMADS
- Capability to refine previous searches
 - > Allows you to narrow down result set
- Additional options for subscription orders
- Automation of bulk order processing



Questions/Suggestions

Axel.Graumann@noaa.gov

class.help@noaa.gov