

Ordering VIIRS data from NOAA's CLASS archive

IMPORTANT: In order to get data from **CLASS archive** you need to have a registered account. First navigate to **CLASS homepage**: <https://www.class.ngdc.noaa.gov>

- You should log in to your CLASS account. If you don't have an account on CLASS, you should first go to: https://www.class.ngdc.noaa.gov/saa/products/user_profile and then after you register, log in to CLASS.

NOAA HOME WEATHER OCEANS FISHERIES CHARTING SATELLITES CLIMATE RESEARCH COASTS CAREERS

NOAA COMPREHENSIVE LARGE ARRAY-DATA STEWARDSHIP SYSTEM (CLASS)
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

» CLASS Home » Login » Register » Help » About CLASS » **RSS** CLASS Help All NOAA » SE

» CLASS Home » Login » Register » Help » About CLASS » **RSS**

Please select a product to search

SEARCH FOR DATA

- Environmental Data from Polar-orbiting Satellites
- Environmental Data from Geostationary Satellites
- Defense Meteorological Satellite Program (DMSP)
- Suomi National Polar-orbiting Partnership (NPP)
- Sea Surface Temperature data (SST)
- RADARSAT
- Altimetry / Sea Surface Height Data (JASON)
- Global Navigation Satellite Systems (GNSS)
- Other - Miscellaneous products in CLASS

SEARCH COLLECTION METADATA

NEWS

Attention Satellite Users! (07/10/2017):
The GOES-R Peer Stakeholder - Product Validation Review for ABI L1b and CMI Provisional Maturity was held on June 1, 2017. As a result of this review, NOAA has confirmed that the ABI L1b and CMI data are at Provisional Validation Maturity as of June 1, 2017 (see [Readme](#) for details). This means that these products can be publicly accessed within the CLASS data family, GOES-R Series ABI Products (GRABIPRD).

While the GOES-16 ABI L1b and CMI data have reached provisional validation, please keep in mind that since GOES-16 satellite has not been declared operational, its data are still considered preliminary and undergoing testing.

Suomi NPP data access status (updated 01/11/17):
The majority of S-NPP products are available for ordering through CLASS website. These products are grouped under JPSS and S-NPP on the drop down product list. It is important to note the product/algorithm maturity levels from beginning dates to current dates by visiting the STAR JPSS Algorithm Maturity website at <https://www.star.nesdis.noaa.gov/jpss/AlgorithmMaturity.php>.

For further assistance please check out the [STAR Science Documents](#) website for JPSS Algorithm Theoretical Basis Documents (ATBD), Users Guides, Cal/Val plans, and much more. If you have any questions please email

- On this page you need to go to the drop down menu and scroll through it and find **VIIRS_SDR**, as in the image below.

Please select a product to search

- JPSS VIIRS Products (Non-Granule) (JPSS_NGRN)
- JPSS Visible Infrared Imaging Radiometer Suite Environmental Data Record (VIIRS_EDR)
- JPSS Visible Infrared Imaging Radiometer Suite Imagery Band Environmental Data Record (VIIRSI_EDR)
- JPSS Visible Infrared Imaging Radiometer Suite Intermediate Product (VIIRS_IPGD) Gridded
- JPSS Visible Infrared Imaging Radiometer Suite Intermediate Product (VIIRS_IPNG) Non-Gridded
- JPSS Visible Infrared Imaging Radiometer Suite Raw Data Record (VIIRS_RDR)
- JPSS Visible Infrared Imaging Radiometer Suite Sensor Data Record (VIIRS_SDR)**
- Jason: Ancillary Files (JASON-ANC)
- Jason: Auxiliary Files (partially restricted)(JASON-AUX)
- Jason: Level-2 Geophysical Data Records (partially restricted)(JASON-XGDR)
- Jason: NRTAVS QA Reports (JASON-QA)

After you choose this option, you will be forwarded to a page where various information about VIIRS can be found. Also, on this page you will set the desired spatial, temporal and spectral coverage of the data you want to order. This will be described in few steps.

1. Spatial coverage

You will find a map in which you should select the desired area from which **you** want the data.

Spatial



In this example, wide area around Italy is selected. On the right hand side you can see the coordinates of the area's corners.

2. Temporal coverage

Since this is a LEO satellite instrument, you will have just the images when satellite passes over the area. You should set **your** desired date and time. In our example it is 01st September 2017, (10:00:00 – 13:59:59 UTC), as it is shown in the image below.

Temporal

(maximum range is 366 days)

Start Date (format: YYYY-MM-DD)	<input type="text" value="2017-09-01"/>		Start Time (UTC) (format: HH:MM:SS)	<input type="text" value="10:00:00"/>
End Date (format: YYYY-MM-DD)	<input type="text" value="2017-09-01"/>		End Time (UTC) (format: HH:MM:SS)	<input type="text" value="13:59:59"/>

Specify the range of the times for: Each Day Or The Entire Range Of Days

3. Spectral coverage

Due to size of VIIRS data (very high spatial and spectral resolution, etc.) it would take very long time to download the whole spectrum of data which is offered for one scan. Luckily, we have the possibility to select individual channels we need without downloading the whole bunch (22 spectral channels). This is provided in the part “**Advanced Search**” which is situated below temporal part. In this example due to simplicity, we will ask for just one VIIRS channel I1 (0,6 microns, 375 m horizontal resolution – as in image below).

Advanced Search

Datatype
Sensor Data Record

- VIIRS Day Night Band SDR (SVDNB) (public 02/07/2012)
- VIIRS Imagery Band 01 SDR (SVI01) (public 02/07/2012)
- VIIRS Imagery Band 02 SDR (SVI02) (public 02/07/2012)
- VIIRS Imagery Band 03 SDR (SVI03) (public 02/07/2012)
- VIIRS Imagery Band 04 SDR (SVI04) (public 02/07/2012)
- VIIRS Imagery Band 05 SDR (SVI05) (public 02/07/2012)
- VIIRS Moderate Resolution Band 01 SDR (SVM01) (public 02/07/2012)
- VIIRS Moderate Resolution Band 02 SDR (SVM02) (public 02/07/2012)
- VIIRS Moderate Resolution Band 03 SDR (SVM03) (public 02/07/2012)
- VIIRS Moderate Resolution Band 04 SDR (SVM04) (public 02/07/2012)
- VIIRS Moderate Resolution Band 05 SDR (SVM05) (public 02/07/2012)

- After you are finished click on the button **Search** at the very bottom of this page (as in image below, marked red).

to place large order without reviewing inventory or granule (file) metadata.

to place small order after reviewing inventory and granule metadata, including browse images when available.

Now, we will get the table with results which meet all of our requirements (date, time, channels etc.).

Data Product Search Results - VIIRS_SDR

(click here for a printable listing)

Recently Searched Data Sets: VIIRS_SDR >>GO

Displaying page 1 of approximately 1 page(s).

There are an estimated 5 hit(s).

There are 0 (VIIRS_SDR) items in your shopping cart. The shopping cart limit is 100.

Generate Map

Shopping Cart

Goto Cart

Update

Select Page

Unselect All

Prev Page

Next Page

Select datasets...

Jump to...

View Details	Shopping Cart	Inventory ID	Satellite	Datatype	Start Date/Time	End Date/Time	Dataset Name	Beginning Orbit Number
1	<input type="checkbox"/>	1132770674	NPP	VIIRS Imagery Band 01 Sensor Data Records (VIIRSI1SDR)	2017-09-01 09:57:34.454	2017-09-01 10:03:14.845	SVI01_npp_d20170901_t0957344_e1003148_b3 0291_c20170901160315 281434_nobc_ops.h5	30291
2	<input type="checkbox"/>	1132782774	NPP	VIIRS Imagery Band 01 Sensor Data Records (VIIRSI1SDR)	2017-09-01 11:34:18.430	2017-09-01 11:39:58.820	SVI01_npp_d20170901_t1134184_e1139588_b3 0292_c20170901173959 415828_nobc_ops.h5	30292
3	<input type="checkbox"/>	1132783744	NPP	VIIRS Imagery Band 01 Sensor Data Records (VIIRSI1SDR)	2017-09-01 11:40:00.049	2017-09-01 11:45:40.440	SVI01_npp_d20170901_t1140000_e1145404_b3 0292_c20170901174540 395474_nobc_ops.h5	30292
4	<input type="checkbox"/>	1132800044	NPP	VIIRS Imagery Band 01 Sensor Data Records (VIIRSI1SDR)	2017-09-01 13:16:44.026	2017-09-01 13:22:22.637	SVI01_npp_d20170901_t1316440_e1322226_b3 0293_c20170901192224 454299_nobc_ops.h5	30293
5	<input type="checkbox"/>	1132800474	NPP	VIIRS Imagery Band 01 Sensor Data Records (VIIRSI1SDR)	2017-09-01 13:22:23.866	2017-09-01 13:28:04.256	SVI01_npp_d20170901_t1322238_e1328042_b3 0293_c20170901192805 572370_nobc_ops.h5	30293

In this example search tool got us five hits. Important thing to know is that on CLASS every channel of VIIRS is treated as a separate file. That further means, If we ask for only one channel (as in our example) we will get just one, but with separate start/end time which is due to multiple satellite overpasses (in above table there is a column Datatype where you see which channel is it, and to the right, two columns Start Date/Time and End Date/Time where we can distinguish between different satellite overpasses).

In our particular case we have got 5 overpasses (judging by different start and end times) included in result list and these five include, at least to some part, our desired area. Sometimes it can be most of the area, and sometimes it is just small band or corner of the image. That is why we need to check which one from all of them fits us best.

- We can do this by clicking each of the numbers in the column “View Details” (in the image below, in red rectangle).

Data Product Search Results - VIIRS_SDR

(click here for a printable listing)

Recently Searched Data Sets: >>GO

Displaying page 1 of approximately 1 page(s).
There are an estimated 5 hit(s).

There are 0 (VIIRS_SDR) items in your shopping cart. The shopping cart limit is 100.

[Generate Map](#)

Shopping Cart

[Goto Cart](#) [Update](#) [Select Page](#) [Unselect All](#)

[Prev Page](#) [Next Page](#)

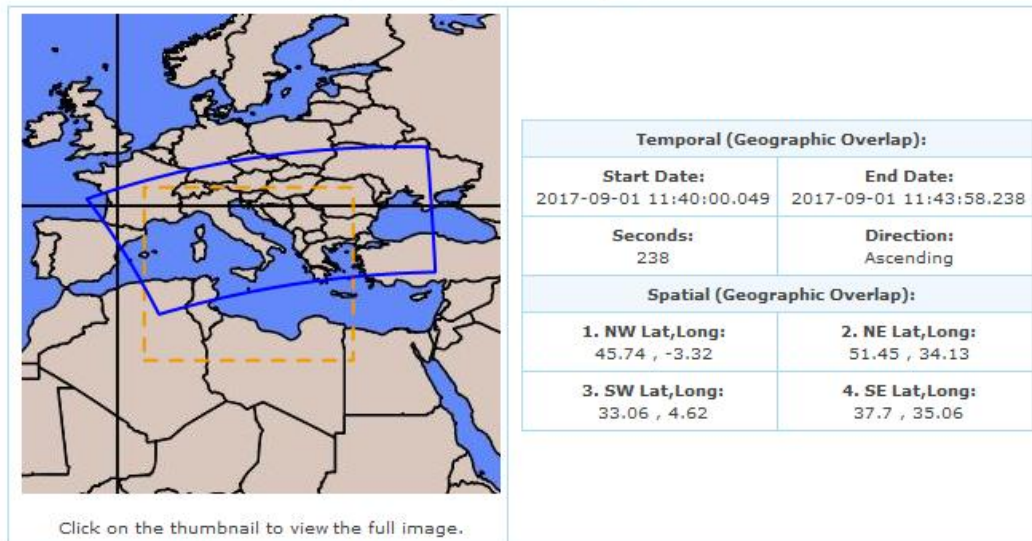
Select datasets... ▾

Jump to... ▾

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- After clicking any of the numbers, we will get the page with the details of the dataset. Important thing to watch for is **Overlapped Region of Geographic Search** (image below).

Overlapped Region of Geographic Search:



Overlap on the image above is from the third hit of the search and this dataset (blue line) fits the best our desired area (orange dashed line). **HINT:** You can come back to the original search list just by clicking on the **“BACK”** button in your browser.

- Once we are sure about which hit(s) meets our requirements the most, we should put them in our **Shopping Cart**. This is done by ticking the empty boxes (in our original search list) in that row (image below, marked red).

View Details	Shopping Cart	Inventory ID	Satellite	Datatype	Start Date/Time	End Date/Time	Dataset Name	Beginning Orbit Number
1	<input type="checkbox"/>	1132770674	NPP	VIIRS Imagery Band 01 Sensor Data Records (VIIRSI1SDR)	2017-09-01 09:57:34.454	2017-09-01 10:03:14.845	SVI01_npp_d20170901_t0957344_e1003148_b3 0291_c20170901160315 281434_nobc_ops.h5	30291
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- When selection is done, we should click on the button “Go to Cart” placed above the table with results (marked red in the image below). **HINT:** This button will not appear if you are not logged in to your CLASS account.

Data Product Search Results - VIIRS_SDR

(click here for a printable listing)

Recently Searched Data Sets: VIIRS_SDR

Displaying page 1 of approximately 1 page(s).

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Shopping Cart

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- This leads us to the **Shopping Cart**, where we once again see what our order includes. If we are fine with the order, we should click the button **“Place Order”**, the one marked red in the image below.

Shopping Cart

Total size of selected data sets: 101,790,778 Bytes You will be notified at: gendjole@gmail.com
 Number of data sets: 1 Order Comment:

* **Advanced Options**

VIIRS_SDR

Order	Dataset Name	Include Digital Signature
<input checked="" type="checkbox"/>	Click on a dataset name to see the dataset details	<input type="checkbox"/>
<input checked="" type="checkbox"/>	VIIRS1SDR SVI01_npp_d20170901_ t1140000_e1145404_b3 0292_c20170901174540 395474_nobc_ops.h5	<input type="checkbox"/>

This is the end of the ordering process.

Now, we watch on our email inbox, where we will get two emails. One will be about creation of the order, and the second one about completing the order. In the second email will be stated how to download the data in different ways (image below).

CLASS Order 2841472575 Processing Complete 🖨️ 📧

Примљена x

CLASS Notification <notification@cla: 14:19 (пре 3 минута) ☆ ↶ ↷

КОМЕ МЕНИ ▾

NOAA COMPREHENSIVE LARGE ARRAY-DATA STEWARDSHIP SYSTEM

A SERVICE OF:
NOAA NATIONAL DATA CENTERS

CLASS has processed your order number 2841472575. The total size of this order is 469994459 bytes.
 Comments for this Order: The following item(s) are available for you to ftp copy.
 The procedure to copy is as follows:

```

ftp ftp.class.ngdc.noaa.gov - Logon to CLASS system
anonymous - FTP user id
user@internet - FTP password
binary - Changes transfer mode to binary
cd 2841472575 get 001/GIMGO-SVI01_npp_d20170901_
t1140000_e1145404_b30292_c20170907121721357868_nobc_ops.h5
- Copies data to your system
bye (or quit) - Ends FTP session
  
```

Alternatively, you can also pick up your data via

<https://download.class.ngdc.noaa.gov/download/2841472575>

NOTE: You must pick up your data within 96 hours of this notice.

Use the option with the browser (marked with red on the image above). After clicking on it, you will get to the CLASS web pages where the data is stored, ready to be downloaded.

ADDENDUM

VIIRS bands and bandwidths

VIIRS Band	Central Wavelength (μm)	Bandwidth (μm)	Wavelength Range (μm)	Band Explanation	Spatial Resolution (m) @ nadir
M1	0.412	0.02	0.402 - 0.422	Visible	750 m @ nadir
M2	0.445	0.018	0.436 - 0.454		
M3 (blue)	0.488	0.02	0.478 - 0.488		
M4 (green)	0.555	0.02	0.545 - 0.565		
M5 (red)	0.672	0.02	0.662 - 0.682		
M6	0.746	0.015	0.739 - 0.754	Near IR	
M7	0.865	0.039	0.846 - 0.885		
M8	1.240	0.020	1.23 - 1.25	Shortwave IR	
M9	1.378	0.015	1.371 - 1.386		
M10	1.61	0.06	1.58 - 1.64		
M11	2.25	0.05	2.23 - 2.28	Medium-wave IR	
M12	3.7	0.18	3.61 - 3.79		
M13	4.05	0.155	3.97 - 4.13	Longwave IR	
M14	8.55	0.3	8.4 - 8.7		
M15	10.763	1.0	10.26 - 11.26		
M16	12.013	0.95	11.54 - 12.49		
DNB	0.7	0.4	0.5 - 0.9	Visible	750 m across full scan
I1	0.64	0.08	0.6 - 0.68	Visible	375 m @ nadir
I2	0.865	0.039	0.85 - 0.88	Near IR	
I3	1.61	0.06	1.58 - 1.64	Shortwave IR	
I4	3.74	0.38	3.55 - 3.93	Medium-wave IR	
I5	11.45	1.9	10.5 - 12.4	Longwave IR	

M = Moderate-resolution bands

I = Imagery-resolution bands

DNB = Day-Night Band (or Near Contrast Band)