

Using IDL with NPP VIIRS Data

HDF & HDF-EOS Workshop XV

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IDL

Agenda

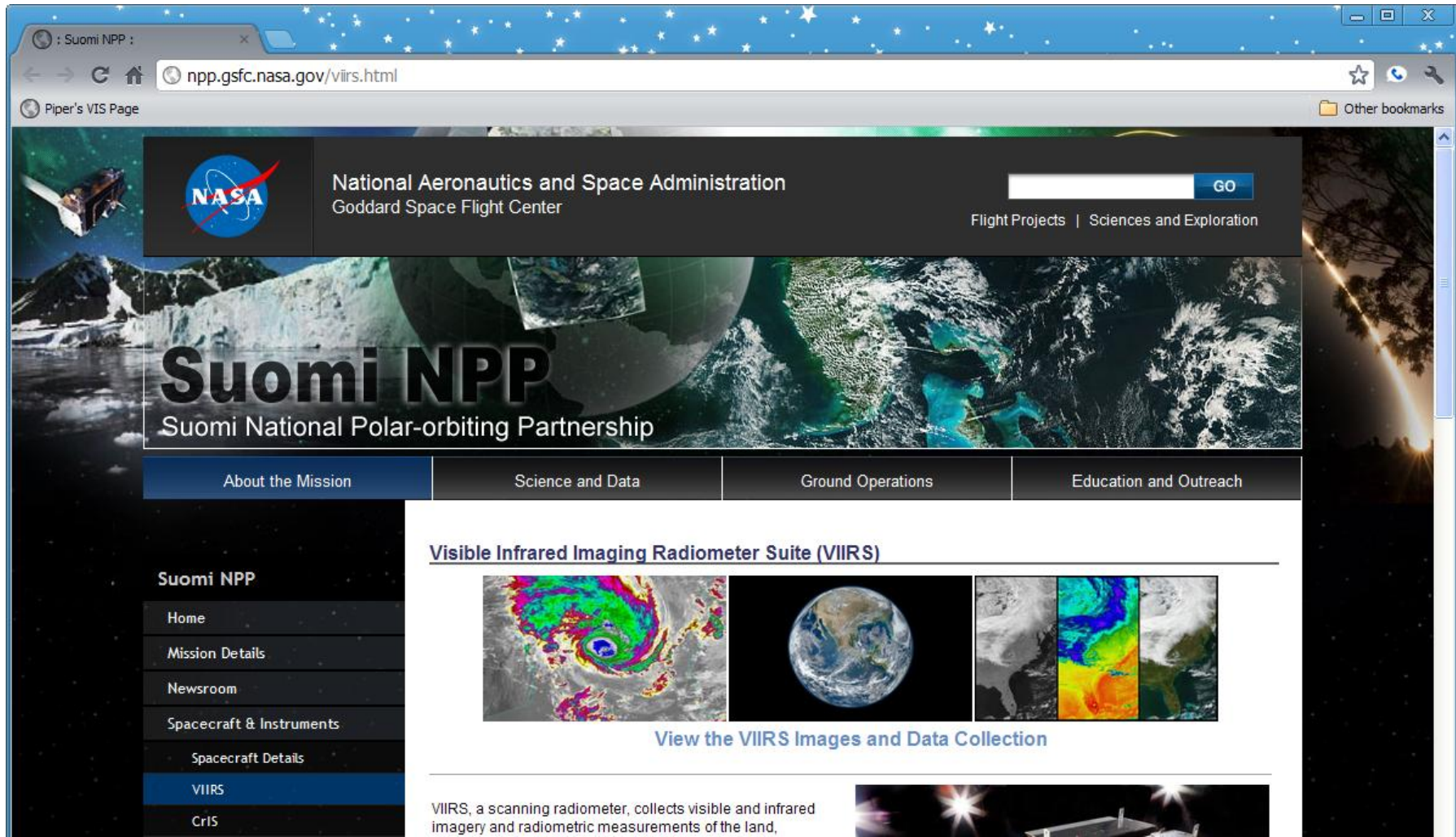
- > Overview of VIIRS data
- > Using IDL with VIIRS data (examples)
- > Summary / Q&A

Presentation files:

exelisvis.com/esg/Seminars.aspx

About Suomi NPP VIIRS

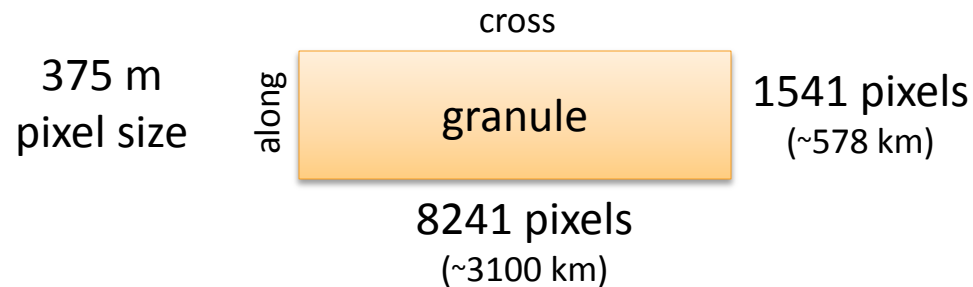
> Overview: <http://npp.gsfc.nasa.gov/viirs.html>



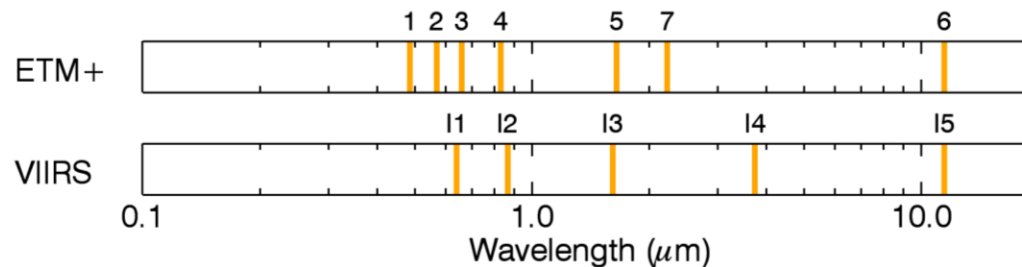
The screenshot shows a web browser window displaying the Suomi NPP VIIRS website. The browser's address bar shows the URL npp.gsfc.nasa.gov/viirs.html. The website header features the NASA logo, the text "National Aeronautics and Space Administration Goddard Space Flight Center", a search bar with a "GO" button, and navigation links for "Flight Projects" and "Sciences and Exploration". The main banner image shows a satellite orbiting Earth, with the text "Suomi NPP" and "Suomi National Polar-orbiting Partnership" overlaid. Below the banner is a navigation menu with four items: "About the Mission", "Science and Data", "Ground Operations", and "Education and Outreach". On the left side, there is a sidebar menu titled "Suomi NPP" with links for "Home", "Mission Details", "Newsroom", "Spacecraft & Instruments", "Spacecraft Details", "VIIRS", and "CrIS". The "VIIRS" link is highlighted. The main content area features a section titled "Visible Infrared Imaging Radiometer Suite (VIIRS)" with a row of four images: a colorful satellite image of a storm system, a view of Earth from space, and two panels of satellite imagery. Below these images is a link that says "View the VIIRS Images and Data Collection". At the bottom, there is a partial view of a section titled "VIIRS, a scanning radiometer, collects visible and infrared imagery and radiometric measurements of the land," with an image of the instrument's internal components.

VIIRS data overview

- > Data from NOAA CLASS site (<http://www.class.ngdc.noaa.gov>)
- > VIIRS I-Band (imaging channel) EDR (level 2); single HDF5 file
 - > I(1,2,3,4,5) and GEO info (Longitude, Latitude, Height, etc.)
 - > Four granules:



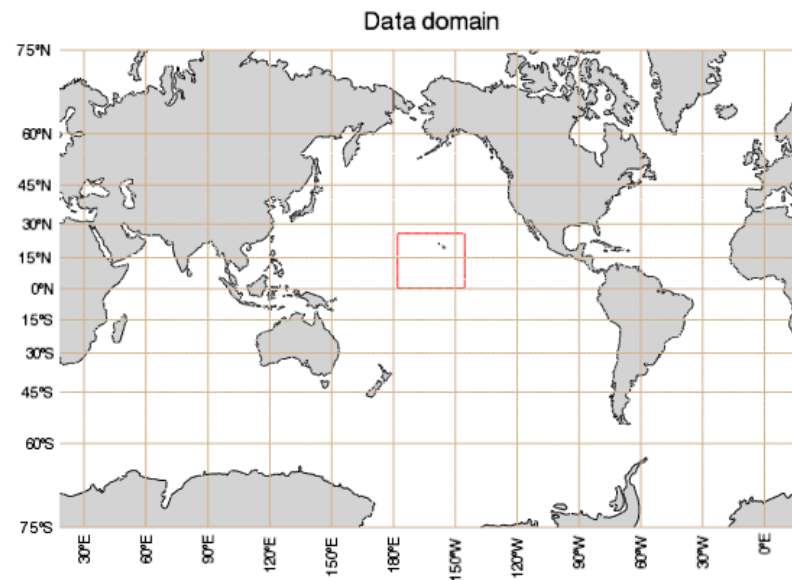
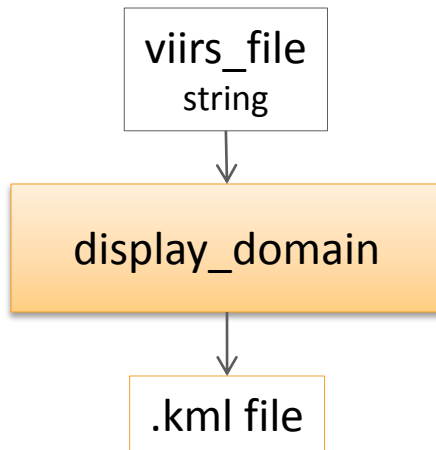
- > Band comparison:



Example #0

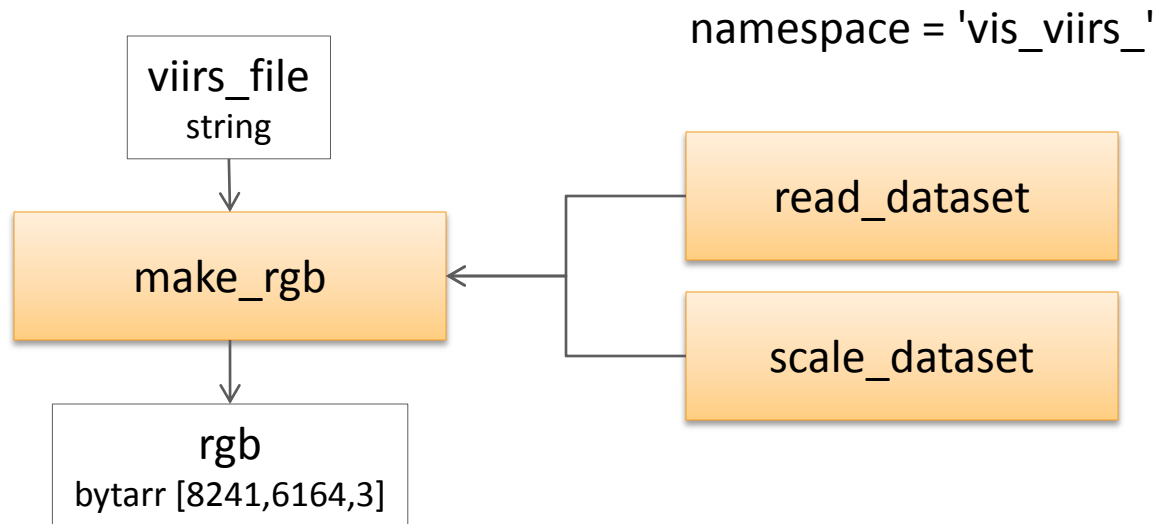
- > Browse a VIIRS I-Band file with TX_NPP_BROWSER.
- > View the domain of the data with IDL or Google Earth / NASA World Wind.

namespace = 'vis_viirs_'

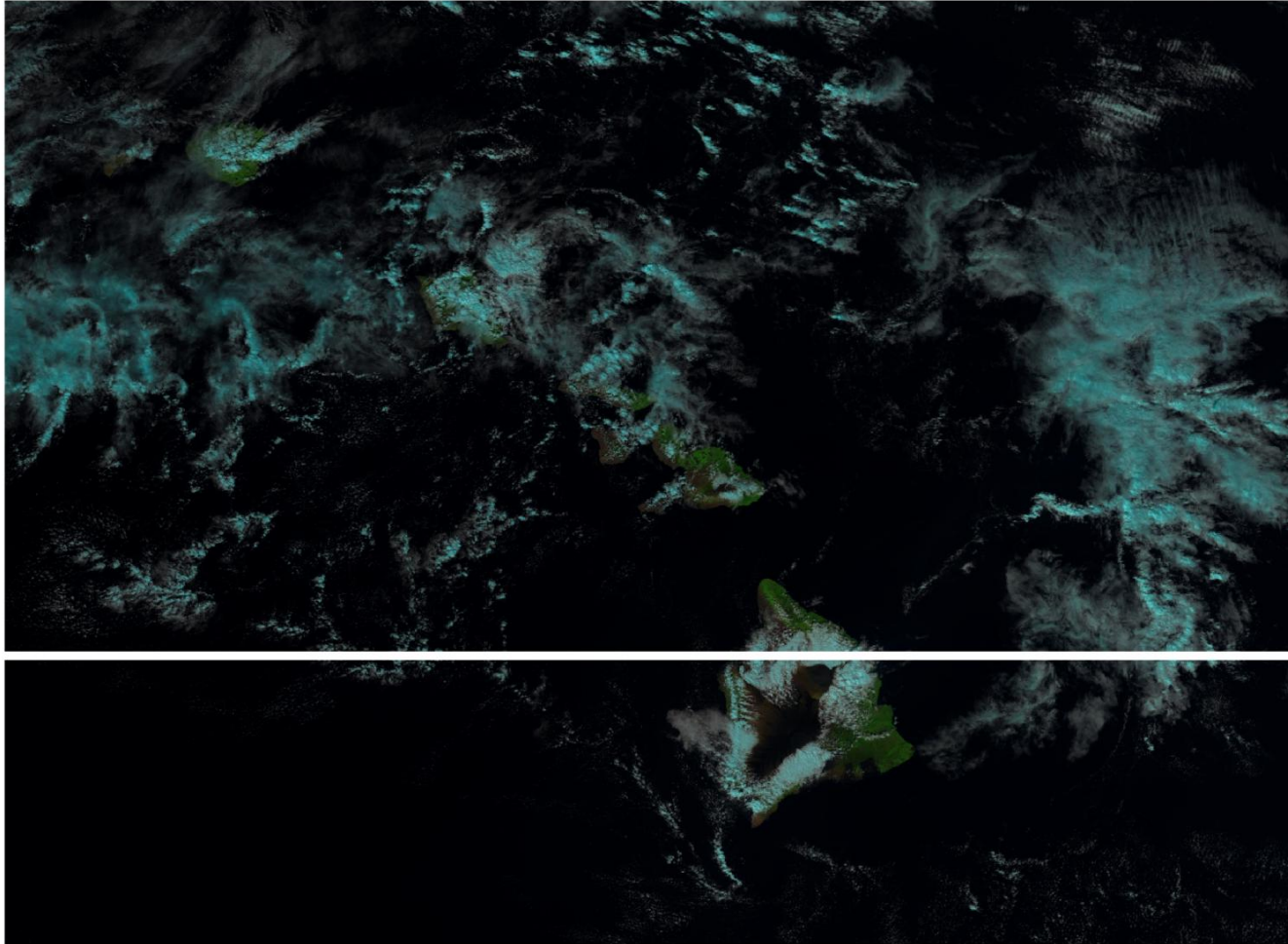


Example #1

- > Construct a VIIRS I-Band (3,2,1) false color composite image.

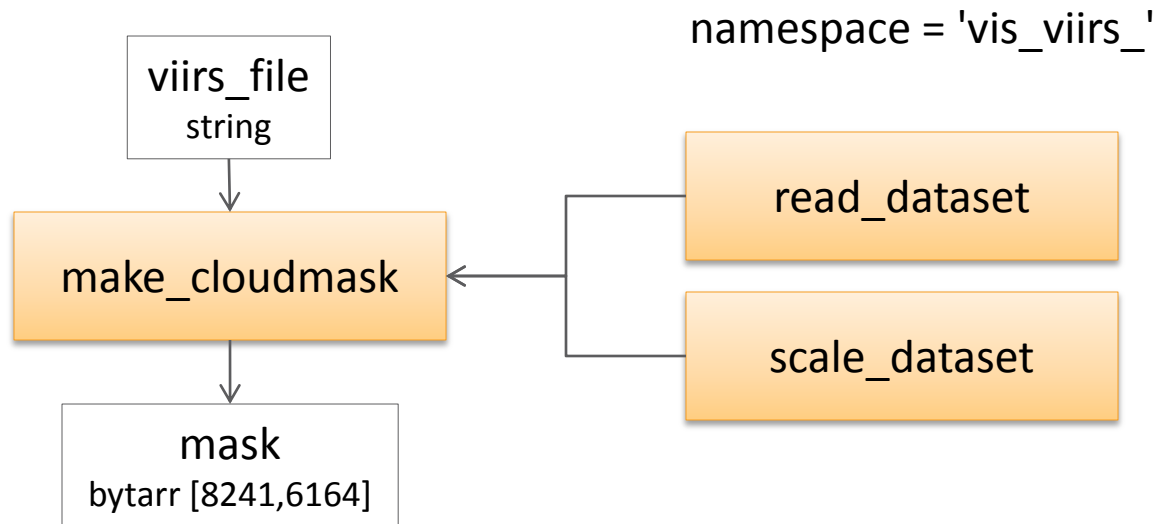


Example #1

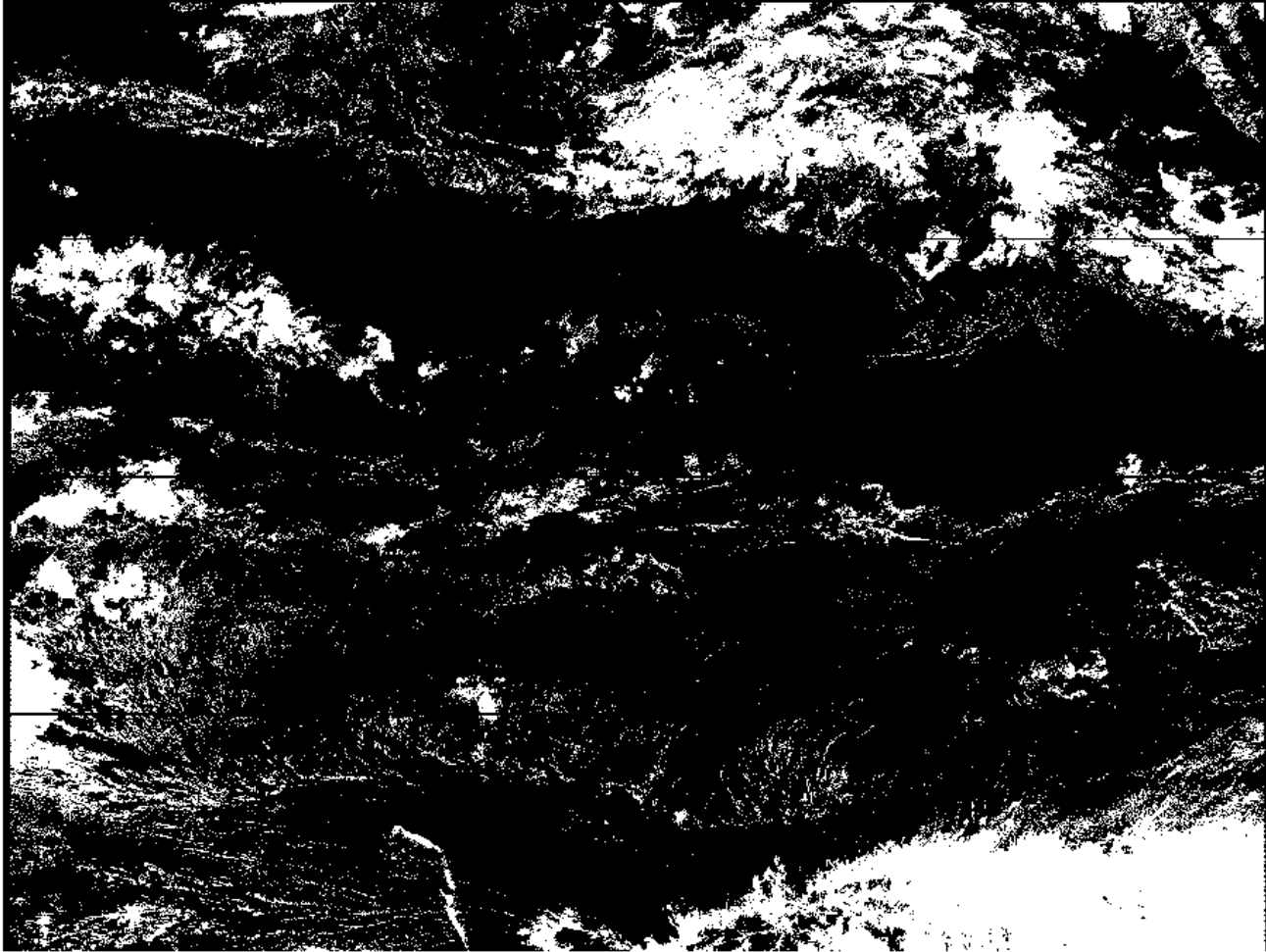


Example #2

- > Construct a cloud mask from VIIRS I-Band imagery.



Example #2



References

Here are a few references that I found helpful in making this presentation.

> Suomi NPP Science Documents:

<http://npp.gsfc.nasa.gov/science/documents.html>

> About VIIRS:

<http://npp.gsfc.nasa.gov/viirs.html>

<http://www.nesdis.noaa.gov/jpss/instruments.html>

> Landsat 7 Automatic Cloud Cover Assessment:

http://landsathandbook.gsfc.nasa.gov/pdfs/ACCA_SPIE_paper.pdf

Summary

HDF5 makes it easy to work with
Suomi NPP VIIRS data in IDL!

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