

Ocean Optics 2024

Las Palmas, Canary Islands, Spain

Palacio de Congresos, Gran Canaria Room

SeaDAS Workshop (Focus on PACE Data)

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6 October, 2024

Ocean Biology Distributed Active Archive Center (OB.DAAC)

NASA - Goddard Space Flight Center

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

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



SeaDAS

Sea, Earth & Atmosphere Data Analysis System



SeaDAS



OCSSW

All slides are based on **SeaDAS version 9.1.0**

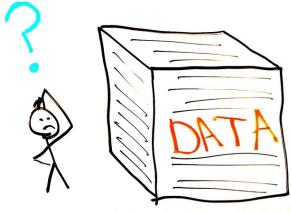
This workshop teaches participants how to use SeaDAS to visualize, analyze, and process satellite data, with specific focus on PACE data.

We will explore what tools SeaDAS has to offer:

- Show how to load PACE data and understand it.*
- Understand how to create true color imagery.*
- Show how to use tools, such as spectrum view, angular view, animation, and statistics to analyze hyperspectral data.*
- Understand the science processing levels and how to use SeaDAS to process files through different data levels.*
- Understand how to reproject and aggregate data from different scenes.*
- How to customize SeaDAS to improve performance for large files.*

- Introduction
 - Q & A Participant Goals
 - SeaDAS History
 - PACE Scenes - *that will be used*
- File Readers - *opening a file*
- PACE Data & Product Suites
- Visualization: Colors & Layers - *live demo*
- RGB Imagery
- Case Study: Spectral Analysis
 - Covers Pins, Spectrum View
- Optional: Case Study 2: Spectral Analysis with Statistics/Masking
 - Covers L2Merge, Band Math, Masking, Statistics
- Pixel Extraction
- Angular View Tool
- Image Animator
 - Covers Image Animator, Land Mask, Soft Button
- System Performance
- Science Processors (OCSSW)
 - Covers L2gen, L2bin, L3mapgen
 - Live Demo
- Wrapup Q & A

- 1987 “*System Concept for Wide Field-of-View Observation of Ocean Phenomena From Space*”
 - Specifications report outlines SeaWiFS as an improved oceancolor sensor
 - Nimbus-7 Coastal Zone Color Scanner (CZCS) had ceased operating (Oct 1978 – June 1986)



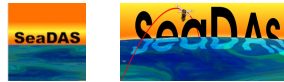
- Early 1990s SeaDAS Vision
 - Provide user community with tools to work with the satellite data
 - Visualization & Analysis of distributed NASA products: levels 1, 2 and 3
 - Processing: Identically reproduce all standard NASA products: levels 1, 2 and 3
 - Continually evolve to keep up with technology

- 1994 July: SeaDAS Beta release
 - SeaDAS (SeaWiFS Data Analysis System)



- 1997 Sep: SeaDAS release (version 3.0B3) : supports SeaWiFS operations

- 2012: SeaDAS integrates BEAM GUI interface software



- 2021: SeaDAS integrates SNAP GUI interface software



- 2024: Supports 24 missions (version 9.0.0): supports PACE
 - SeaDAS (Sea, earth and atmosphere Data Analysis System)



- Most of this will be a slide-based demo, which attempts to simulate a live demo or video tutorial.
- Single slides may be packed with sequential user events along with the results to those events.



- Denotes a user action (single-click, drag, selection or text-typed)



- Denotes a user action (right-click)



- Denotes something of interest or something which occurs as a result of the user's action

- May not occur simultaneously with user action
- May show a final result when a button such as “Okay” is clicked

SeaDAS Workshop

Scenes

SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

[5] PACE_OCI.20240831T133906.L2_OC_BGC.V2_0.NRT.nc - [/Users/dknowles/SeaDASTraining/OceanOptics2024/CanaryIslands/PACE_OCI.20240831T133906.L2_OC_BGC.V2_0.NRT.nc]

File Ma... x World Map World View x [5] chlor_a x [2] chlor_a x [1] chlor_a x [6] OCI TC 645 555 425 (1.0, 0.005) RGB x [8] OCI TC 645 555 4...

Navigation... Color M... x Layer Editor

Editor: Basic Sliders Tabl

Palette

Derived from universa...

Load exact values Reverse

Chlorophyll *a* Concentration (mg m⁻³)

0.01 0.03 0.1 0.3 1 3 10 20

Layer M... Mas... x Pixel Info

Name	Color
<input type="checkbox"/> NAVWARN	
<input checked="" type="checkbox"/> LAND	
<input type="checkbox"/> ABSAER	
<input type="checkbox"/> ATMFAIL	
<input type="checkbox"/> ATMWARN	
<input type="checkbox"/> BOWTIEDEL	
<input type="checkbox"/> CHLFAIL	
<input type="checkbox"/> CHLWARN	
<input type="checkbox"/> CLDICE	
<input type="checkbox"/> COASTZ	
<input type="checkbox"/> COCCOLITH	
<input type="checkbox"/> FILTER	
<input type="checkbox"/> HIGLINT	
<input type="checkbox"/> HILT	
<input type="checkbox"/> HIPOL	
<input type="checkbox"/> HISATZEN	
<input type="checkbox"/> HISOLZEN	
<input type="checkbox"/> LOWLW	
<input type="checkbox"/> MAXAERITER	
<input type="checkbox"/> MODGLINT	
<input type="checkbox"/> NAVFAIL	
<input type="checkbox"/> PRODFAIL	
<input type="checkbox"/> PRODFAIL	
<input type="checkbox"/> SEAWARN	
<input type="checkbox"/> SEAIICE	
<input type="checkbox"/> STRAYLIGHT	
<input type="checkbox"/> TURBIDW	
<input type="checkbox"/> Composite1	
<input type="checkbox"/> Water	

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

[5] PACE_OCI.20240831T133906.L2_OC_BGC.V2_0.NRT.nc - [Users/dknowles/SeaDASTraining/OceanOptics2024/CanaryIslands/PACE_OCI.20240831T133906.L2_OC_BGC.V2_0.NRT.nc]

File Ma... x World Map World View x [5] chlor_a x [2] chlor_a x [1] chlor_a x [6] OCI TC 645 555 425 (1.0, 0.005) RGB x [8] OCI TC 645 555 4... Layer M... Mas... x Pixel Info

[1] PACE_OCI.20240808T084808.L2.C
 [2] PACE_OCI.20240907T172452.L2.C
 [5] PACE_OCI.20240831T133906.L2.C
 [6] PACE_OCI.20240831T133906.L2.S
 [7] PACE_OCI.20240808T084808.L2.S
 [8] PACE_OCI.20240907T172452.L2.S

Navigation... Color M... x Layer Editor

Editor: Basic Sliders Tabl

Palette

Derived from universa... [v]

Chlorophyll *a* Concentration (mg m^{-3})

0.01 0.03 0.1 0.3 1 3 10 20

Color

- NAVWARN
- LAND
- ABSAER
- ATMFAIL
- ATMWARN
- BOWTIEDEL
- CHLFAIL
- CHLWARN
- CLDICE
- COASTZ
- COCCOLITH
- FILTER
- HIGLINT
- HILT
- HIPOL
- HISATZEN
- HISOLZEN
- LOWLW
- MAXAERITER
- MODGLINT
- NAVFAIL
- PRODFAIL
- PRODWARN
- SEAICE
- STRAYLIGHT
- TURBIDW
- Composite1
- Water

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

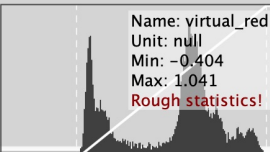
[2] PACE_OCI.20240907T172452.L2_OC_BGC.V2_0.NRT.nc - [/Users/dknowles/SeaDASTraining/OceanOptics2024/ArgentineSea/PACE_OCI.20240907T172452.L2_OC_BGC.V2_0.NRT.nc]

File Ma... x World Map World View [5] chlor_a x [2] chlor_a x [1] chlor_a x ...RGB [8] OCI TC 645 555 425 (1.0, 0.005) RGB x [7] OCI TC 64...

Navigation... Color M... x Layer Editor

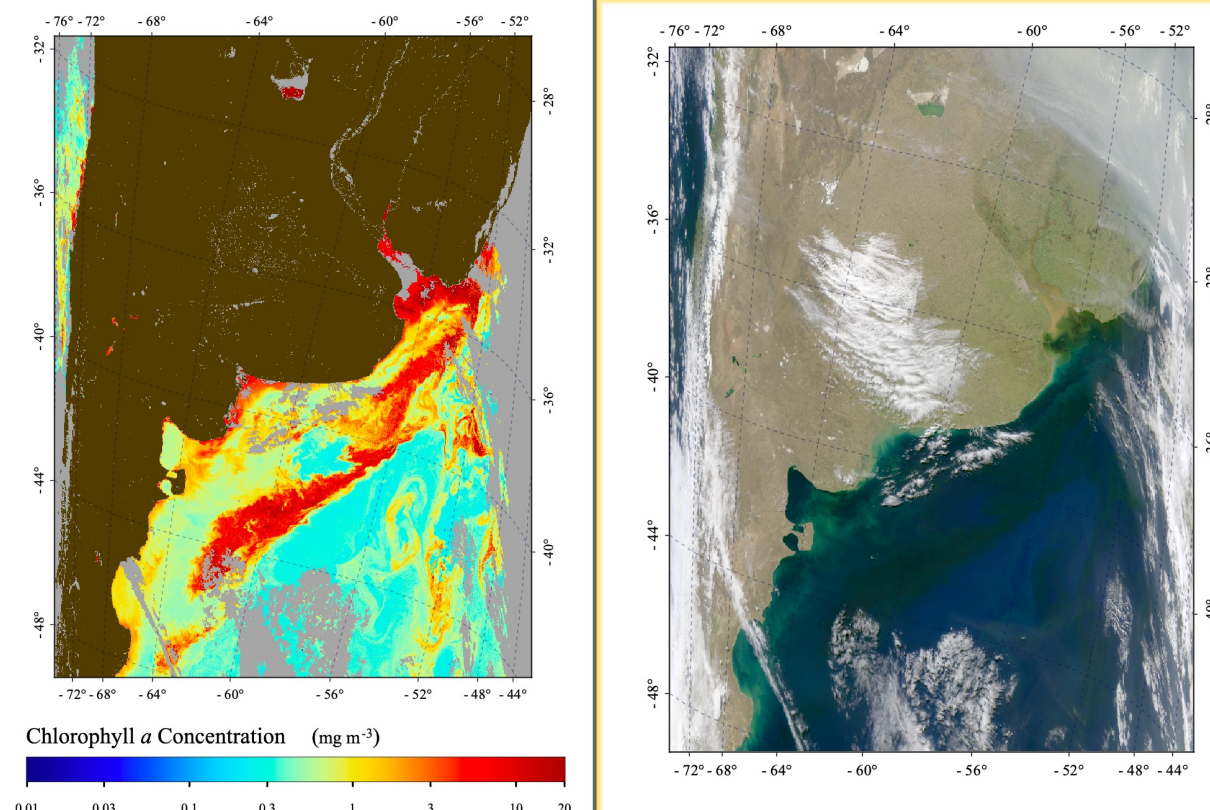
Red
 Green
 Blue

Name: virtual_red
 Unit: null
 Min: -0.404
 Max: 1,041
 Rough statistics!



Chlorophyll a Concentration (mg m⁻³)

0.01 0.03 0.1 0.3 1 3 10 20



NAVWARN
 LAND
 ABSAER
 ATMFAIL
 ATMWARN
 BOWTIEDEL
 CHLFAIL
 CHLWARN
 CLDICE
 COASTZ
 COCCOLITH
 FILTER
 HIGLINT
 HILT
 HIPOL
 HISATZEN
 HISOLZEN
 LOWLW
 MAXAERITER
 MODGLINT
 NAVFAIL
 PRODFAIL
 PRODWARN
 SEAICE
 STRAYLIGHT
 TURBIDW
 Composite1
 Water

X -- Y --
 Lat -- Lon --
 Zoom -- Level --
 Pixel Spacing: -- m -- m

SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

[1] PACE_OCI.20240808T084808.L2.OC_BGC.V2_0.NRT.nc - [Users/dknowles/SeaDASTraining/OceanOptics2024/BarentsSea/PACE_OCI.20240808T084808.L2.OC_BGC.V2_0.NRT.nc]

File Ma... x World Map World View [5] chlor_a x [2] chlor_a x [1] chlor_a x ...RGB [7] OCI TC 645 555 425 (1.0, 0.005) RGB (2) x Layer M... Mas... x Pixel Info

Editor: Basic Sliders Tabl

Palette

Derived from universa...

Load exact values Reverse

Chlorophyll *a* Concentration (mg m⁻³)

0.01 0.03 0.1 0.3 1 3 10 20

Chlorophyll *a* Concentration (mg m⁻³)

6° 9° 12° 15° 18° 21° 24° 27° 30° 33° 36° 39° 42° 45° 48° 51° 54° 57° 60° 63° 66° 69° 72° 75°

33° 36° 39° 42° 45° 48° 51° 54° 57° 60° 63° 66° 69° 72°

6° 9° 12° 15° 18° 21° 24° 27° 30° 33° 36° 39° 42° 45° 48° 51° 54° 57° 60° 63° 66° 69° 72° 75°

33° 36° 39° 42° 45° 48° 51° 54° 57° 60° 63° 66° 69° 72°

Name Color

- LAND
- ABSAER
- ATMFAIL
- ATMWARN
- BOWTIEDEL
- CHLFAIL
- CHLWARN
- CLDICE
- COASTZ
- COCCOLITH
- FILTER
- HIGLINT
- HILT
- HIPOL
- HISATZEN
- HISOLZEN
- LOWLW
- MAXAERITER
- MODGLINT
- NAVFAIL
- NAVWARN
- PRODFAIL
- PRODFARN
- SEAICE
- STRAYLIGHT
- TURBIDW
- Composite1
- Water

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

SeaDAS Workshop
File Readers (Opening a File)

The screenshot displays the SeaDAS 9.1.0 application window. The top menu bar includes File, Edit, View, SeaDAS-Toolbox, Analysis, Layer, Vector, Raster, Optical, Tools, Window, Earthdata-Cloud, and Help. The 'File' menu is open, showing options such as 'Open Product...', 'Reopen Product', 'Product Library', 'Close Product', 'Close All Products', 'Close Other Products', 'Save Product', 'Save Product As...', 'Session', 'Import', and 'Export'. A yellow lightning bolt icon points to the 'Open Product...' menu item.

The 'SeaDAS - Open Product' dialog box is open, showing a file browser for the 'CanaryIslands' directory. The file list includes:

- HARP
- PACE_OCI.20240831T133906.L1B.V2.nc
- PACE_OCI.20240831T133906.L1C.V2.5km.nc
- PACE_OCI.20240831T133906.L2.CLD.V2_0.NRT.nc
- PACE_OCI.20240831T133906.L2.LAND.V2_0.NRT.nc
- PACE_OCI.20240831T133906.L2.OC_AOP.V2_0.NRT....
- PACE_OCI.20240831T133906.L2.OC_BGC.V2_0.NRT....**
- PACE_OCI.20240831T133906.L2.OC_IOP.V2_0.NRT.nc
- PACE_OCI.20240831T133906.L2.PAR.V2_0.NRT.nc
- PACE_OCI.20240831T133906.L2.SFREFL.V2_0.NRT.nc
- SPEXONE

The selected file is 'PACE_OCI.20240831T133906.L2.OC_BGC.V2_0.NRT....'. A yellow lightning bolt icon points to this file. The 'File Format' dropdown is set to 'All Files'. The 'Open' button is highlighted with a yellow lightning bolt icon.

The background shows the SeaDAS interface with a 'File Manager' panel on the left and a 'Layer Manager' panel on the right. The status bar at the bottom displays coordinates (X, Y, Lat, Lon) and zoom/spacing information.

File Readers: (Alternative) Import with a Specific Reader (in this case it is the same as Auto-Detect) 13

The screenshot displays the SeaDAS 9.1.0 application window. The 'File' menu is open, showing options like 'Open Product...', 'Reopen Product', 'Product Library', 'Close Product', 'Close All Products', 'Close Other Products', 'Save Product', 'Save Product As...', 'Session', 'Import', and 'Export'. The 'Import' option is selected, leading to a submenu with 'DEM', 'Generic Formats', 'Optical Sensors', 'SAR Sensors', and 'Vector Data'. The 'Optical Sensors' submenu is further expanded, showing a list of sensors and products such as 'Alos AVNIR-2', 'Alos PRISM', 'Ikonos', 'Komsat', 'Landsat', 'Pleiades', 'RapidEye', 'Seadas', 'Sentinel-2', 'Sentinel-3', 'Spot', 'WorldView', 'ATSR Product', 'NOAA-AVHRR/3 L1B', 'ALOS/AVNIR-2 Product', 'ALOS/PRISM Product', 'Deimos', 'MERIS Binned Level-3', 'MODIS (MOD,MXD,MYD)', 'Muscate', 'PROBA-V L2A/L3', '(A)ATSR Level 1b (S3 Format)', 'MERIS Level 1 (S3 Format)', 'MERIS Level 2 (S3 Format)', 'SPOT VGT', 'Aquarius', 'HICO L1B', 'MODIS L1B', 'OCM2 L1B', 'VIIRS (SDR, EDR)', 'EnMAP data', 'Binned SeaDAS data', 'ERS1/2 ATSR (.E1, .E2)', 'ENVISAT MERIS,AATSR', and 'HICO (ENVI format)'. The 'SeaDAS Browse (L1, L2)' submenu is also visible, listing 'SeaDAS L1 (OCTS, CZCS, SeaWiFS)', 'SeaDAS L2 (CZCS, OCTS, SeaWiFS, MODIS, VIIRS, etc.)', and 'SeaDAS L3 (CZCS, OCTS, SeaWiFS, MODIS, VIIRS, etc.)'. The 'SeaDAS L2' option is highlighted with a yellow lightning bolt. In the foreground, the 'SeaDAS - Import Product' dialog box is open, showing a file list for the 'CanaryIslands' directory. The file list includes 'HARP', 'PACE_OCI.20240831T133906.L1B.V2.nc', 'PACE_OCI.20240831T133906.L1C.V2.5km.nc', 'PACE_OCI.20240831T133906.L2.CLD.V2_0.NRT.nc', 'PACE_OCI.20240831T133906.L2.LAND.V2_0.NRT.nc', 'PACE_OCI.20240831T133906.L2.OC.AOP.V2_0.NRT.nc', 'PACE_OCI.20240831T133906.L2.OC.BGC.V2_0.NRT.nc', 'PACE_OCI.20240831T133906.L2.OC.IOP.V2_0.NRT.nc', 'PACE_OCI.20240831T133906.L2.PAR.V2_0.NRT.nc', 'PACE_OCI.20240831T133906.L2.SFREFL.V2_0.NRT.nc', and 'SPEXONE'. The file 'PACE_OCI.20240831T133906.L2.OC.BGC.V2_0.NRT.nc' is selected and highlighted with a yellow lightning bolt. The 'File Format' dropdown is set to 'SeaDAS-Supported Level...'. The 'Import Product' button is highlighted with a yellow lightning bolt.

SeaDAS 9.1.0

File Manager

Navigation

Color Manager

Layer Editor

File

Open Product...

Reopen Product

Product Library

Close Product

Close All Products

Close Other Products

Save Product

Save Product As...

Session

Import

Export

DEM

Generic Formats

Optical Sensors

SAR Sensors

Vector Data

Alos AVNIR-2

Alos PRISM

Ikonos

Komsat

Landsat

Pleiades

RapidEye

Seadas

Sentinel-2

Sentinel-3

Spot

WorldView

ATSR Product

NOAA-AVHRR/3 L1B

ALOS/AVNIR-2 Product

ALOS/PRISM Product

Deimos

MERIS Binned Level-3

MODIS (MOD,MXD,MYD)

Muscate

PROBA-V L2A/L3

(A)ATSR Level 1b (S3 Format)

MERIS Level 1 (S3 Format)

MERIS Level 2 (S3 Format)

SPOT VGT

Aquarius

HICO L1B

MODIS L1B

OCM2 L1B

VIIRS (SDR, EDR)

EnMAP data

Binned SeaDAS data

ERS1/2 ATSR (.E1, .E2)

ENVISAT MERIS,AATSR

HICO (ENVI format)

SeaDAS Browse (L1, L2)

SeaDAS L1 (OCTS, CZCS, SeaWiFS)

SeaDAS L2 (CZCS, OCTS, SeaWiFS, MODIS, VIIRS, etc.)

SeaDAS L3 (CZCS, OCTS, SeaWiFS, MODIS, VIIRS, etc.)

SeaDAS - Import Product

CanaryIslands

Subset...

File size: 14 M

Name

HARP

PACE_OCI.20240831T133906.L1B.V2.nc

PACE_OCI.20240831T133906.L1C.V2.5km.nc

PACE_OCI.20240831T133906.L2.CLD.V2_0.NRT.nc

PACE_OCI.20240831T133906.L2.LAND.V2_0.NRT.nc

PACE_OCI.20240831T133906.L2.OC.AOP.V2_0.NRT.nc

PACE_OCI.20240831T133906.L2.OC.BGC.V2_0.NRT.nc

PACE_OCI.20240831T133906.L2.OC.IOP.V2_0.NRT.nc

PACE_OCI.20240831T133906.L2.PAR.V2_0.NRT.nc

PACE_OCI.20240831T133906.L2.SFREFL.V2_0.NRT.nc

SPEXONE

File Format: SeaDAS-Supported Level...

Cancel

Import Product

Layer M...

Mas...

Pixel Info

Name

Color

f(x) [x]

Zoom -- Level --

Pixel Spacing: -- m -- m

SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

[1] chlor_a - [PACE_OCI.20240831T133906.L2.OC_BGC.V2_0.NRT.nc] - [/Users/dknowles/Desktop/OceanOptics/Scenes/CanaryIslands/PACE_OCI.20240831T133906.L2.OC_BGC.V2_0.NRT.nc]

File Manager x World Map World View [1] chlor_a x Layer M... Mas... x Pixel Info

Navigation - [1] chlor_a

Color Manager - [1] chlor_a

Layer Editor - Color Bar Legend

File Manager x World Map World View [1] chlor_a x

- [1] PACE_OCI.20240831T133906.L2.OC_BGC.V2_0.NRT.nc
 - Metadata
 - Flag Codings
 - Vector Data
 - Bands
 - chlor_a
 - Add Elevation Band
 - Math Band...
 - Convert Band
 - Filter Band...
 - Linear to/from dB
 - Export Transect Pixels
 - Open Image Window
 - Add Land Cover Band
 - Cut %X
 - Copy %C
 - Paste %V
 - Delete
 - Properties

chlor_a - Properties

Product Node Properties

Name	chlor_a
Description	Chlorophyll Concentration, OCI Algorithm
Modified	<input checked="" type="checkbox"/>

Raster Band Properties

Unit	mg m ⁻³
Data Type	float32
Raster size	1272 x 1710
Valid-Pixel Expression	chlor_a >= 0.00100 && chlor_a <= 100.00000
No-Data Value Used	<input checked="" type="checkbox"/>
No-Data Value	-32767.0
Spectral Wavelength	0.0
Spectral Bandwidth	0.0
Ancillary Variables	
Ancillary Relations	

chlor_a
Chlorophyll Concentration, OCI Algorithm, 1272 x 1710 pixels, (mg m⁻³)

Help Close

Chlorophyll Concentration, OCI Algorithm
 August 31, 2024 13:39:06 - August 31, 2024 13:44:06
 File: PACE_OCI.20240831T133906.L2.OC_BGC.V2_0.NRT.nc

Chlorophyll α Concentration (mg m⁻³)

Layer M... Mas... x Pixel Info

Name	Color
<input checked="" type="checkbox"/> LAND	Dark Blue
<input type="checkbox"/> ABSAER	Yellow
<input type="checkbox"/> ATMFAIL	Red
<input type="checkbox"/> ATMWARN	Magenta
<input type="checkbox"/> BOWTIEDEL	Cyan
<input type="checkbox"/> CHLFAIL	Red
<input type="checkbox"/> CHLWARN	Grey
<input type="checkbox"/> CLDICE	White
<input type="checkbox"/> COASTZ	Dark Red
<input type="checkbox"/> COCCOLITH	Cyan
<input type="checkbox"/> FILTER	Grey
<input type="checkbox"/> HIGLINT	Magenta
<input type="checkbox"/> HILT	Grey
<input type="checkbox"/> HIPOL	Light Blue
<input type="checkbox"/> HISATZEN	Light Blue
<input type="checkbox"/> HISOLZEN	Purple
<input type="checkbox"/> LOWLW	Blue
<input type="checkbox"/> MAXAERITER	Grey
<input type="checkbox"/> MODGLINT	Purple
<input type="checkbox"/> NAVFAIL	Red
<input type="checkbox"/> NAVWARN	Magenta
<input type="checkbox"/> PRODFAIL	Red
<input type="checkbox"/> PRODWARN	Blue
<input type="checkbox"/> SEACE	Black
<input type="checkbox"/> STRAYLIGHT	Yellow
<input type="checkbox"/> TURBIDW	Brown
<input type="checkbox"/> Composite1	Grey
<input type="checkbox"/> Water	Dark Blue

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

The screenshot shows the SeaDAS 9.1.0 application window. The 'File' menu is open, showing the path: File > Import > NetCDF (Generic). The 'Import Product' dialog box is open, showing a file list for 'CanaryIslands' with a file size of 14 M. The file 'PACE_OCI.20240831T133906.L2.OC.BGC.V2_0.NRT.nc' is selected. The 'File Format' dropdown is set to 'Generic NetCDF Data Pro...'. The 'Import Product' button is highlighted.

File Menu Path:

- File
- Import
- NetCDF (Generic)

Import Product Dialog:

- Location: CanaryIslands
- File size: 14 M
- Selected file: PACE_OCI.20240831T133906.L2.OC.BGC.V2_0.NRT.nc
- File Format: Generic NetCDF Data Pro...
- Buttons: Cancel, Import Product

File List (CanaryIslands):

Name
Folder: HARP
PACE_OCI.20240831T133906.L1B.V2.nc
PACE_OCI.20240831T133906.L1C.V2.5km.nc
PACE_OCI.20240831T133906.L2.CLD.V2_0.NRT.nc
PACE_OCI.20240831T133906.L2.LAND.V2_0.NRT.nc
PACE_OCI.20240831T133906.L2.OC.AOP.V2_0.NRT.nc
PACE_OCI.20240831T133906.L2.OC.BGC.V2_0.NRT.nc
PACE_OCI.20240831T133906.L2.OC.IOP.V2_0.NRT.nc
PACE_OCI.20240831T133906.L2.PAR.V2_0.NRT.nc
PACE_OCI.20240831T133906.L2.SFREFL.V2_0.NRT.nc
Folder: SPEXONE

SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

[2] chlor_a - [PACE_OCI.20240831T133906.L2.OC_BGC.V2_0.NRT] - [/Users/dknowles/Desktop/OceanOptics/Scenes/CanaryIslands/PACE_OCI.20240831T133906.L2.OC_BGC.V2_0.NRT.nc]

Q Search (⌘+I)

File Manager x World Map World View [1] chlor_a x [2] chlor_a x Layer M... Mas... x Pixel Info

Navigation - [2] chlor_a

- [1] PACE_OCI.20240831T133906.L2.OC_BGC.V2_0.NRT.nc
 - Metadata
 - Flag Codings
 - Vector Data
 - Bands
 - chlor_a
 - carbon_phyto
 - poc
 - l2_flags
 - carbon_phyto_unc
 - chlor_a_unc
 - longitude
 - latitude
 - Masks
- [2] PACE_OCI.20240831T133906.L2.OC_BGC.V2_0.NRT.nc
 - Metadata
 - Flag Codings
 - Vector Data
 - Bands
 - chlor_a
 - Add Elevation Band
 - Math Band...
 - Convert Band
 - Filter Band...
 - Linear to/from dB
 - Export Transect Pixels
 - Open Image Window
 - Add Land Cover Band
 - Cut ⌘X
 - Copy ⌘C
 - Paste ⌘V
 - Delete ⌘
 - Properties

Layer Editor - Color Bar Legend

chlor_a - Properties

Product Node Properties

Name: chlor_a
 Description: Chlorophyll Concentration, OCI Algorithm
 Modified: ✓

Raster Band Properties

Unit: mg m⁻³
 Data Type: float32
 Raster size: 1272 x 1710
 Valid-Pixel Expression:
 No-Data Value Used:
 No-Data Value: -32767.0
 Spectral Wavelength: 0.0
 Spectral Bandwidth: 0.0
 Ancillary Variables:
 Ancillary Relations:

chlor_a
 Chlorophyll Concentration, OCI Algorithm, 1272 x 1710 pixels, (mg m⁻³)

Help Close

Chlorophyll Concentration, OCI Algorithm
August 31, 2024 13:39:06 - August 31, 2024 13:44:06
File: PACE_OCI.20240831T133906.L2.OC_BGC.V2_0.NRT

Chlorophyll a Concentration (mg m⁻³)

0.01 0.03 0.1 1 3 10 20

Name	Color	f(x) [x]

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

SeaDAS Workshop
PACE Data & Product Suites

SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

[1] PACE_OCI.20240831T133906.L1B.V2.nc - [/Users/dknowles/Desktop/OceanOptics/Scenes/CanaryIslands/PACE_OCI.20240831T133906.L1B.V2.nc]

File Manager World Map World View [1] rhot_SWIR_2260.0 x [1] rhot_blue_489.65063 x

- [1] PACE_OCI.20240831T133906.L1B.V2.nc
 - Metadata
 - Vector Data
 - Bands
 - rhot_blue
 - rhot_red
 - rhot_SWIR
 - qual_blue
 - qual_red
 - qual_SWIR
 - height
 - solar_zenith
 - quality_flag
 - solar_azimuth
 - sensor_zenith
 - sensor_azimuth
 - SWIR_scan_angles
 - CCD_scan_angles
 - latitude
 - longitude

Navigation - [1]... Color Manag... x Layer Editor - C...

Editor: Basic Sliders Table

Palette

Derived from gradient_red.cpd

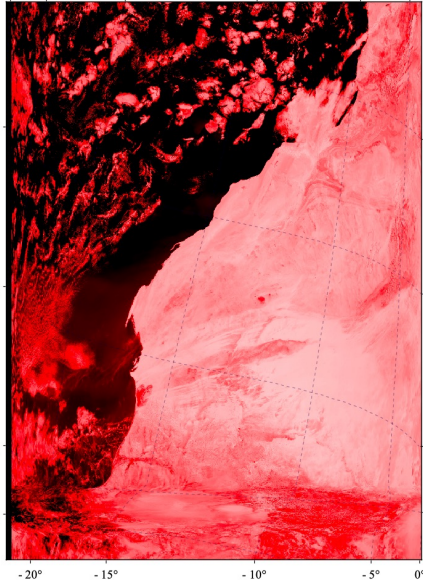
Load exact values

Range

Min: 0.01 Max: 1.0

rhot_SWIR

August 31, 2024 13:39:06 - August 31, 2024 13:44:05
File: PACE_OCI.20240831T133906.L1B.V2.nc

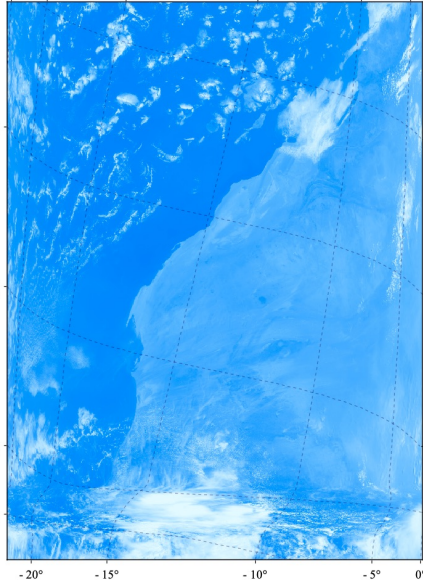


TOA (Top of Atmosphere) Reflectance at 2260 nm

0.01 0.03 0.1 0.3 1

rhot_blue

August 31, 2024 13:39:06 - August 31, 2024 13:44:05
File: PACE_OCI.20240831T133906.L1B.V2.nc



TOA (Top of Atmosphere) Reflectance at 490 nm

0.01 0.03 0.1 0.3 1

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

[1] sensor_zenith_angle_20 - PACE_OCI.20240831T133906.L1C.V2.5km.nc - /Users/dknowles/Desktop/OceanOptics/Scenes/CanaryIslands/PACE_OCI.20240831T133906.L1C.V2.5km.nc

File Manager World Map World View [1] i_20_489 x [1] sensor_zenith_angle_20 x

- Metadata
- Vector Data
- Bands
 - i_20
 - i_-20
 - view_time_offsets
 - sensor_azimuth
 - sensor_zenith
 - sensor_zenith_angle_-20
 - sensor_zenith_angle_20
 - solar_azimuth
 - solar_zenith
 - scattering_angle
 - qc_-20
 - qc_20
 - i_stdev_20
 - i_stdev_-20
 - height
 - height_stdev
 - number_of_observations_-20
 - number_of_observations_20
 - latitude
 - longitude

Navigation - [...] Color Mana... x Layer Editor

Editor: Basic Sliders Table

Palette: Derived from universal_b...
 Load exact values Reverse

i_20_489
 August 31, 2024 13:39:06 - August 31, 2024 13:44:06
 File: PACE_OCI.20240831T133906.L1C.V2.5km.nc

i_20_489 ($W m^{-2} sr^{-1} \mu m^{-1}$)

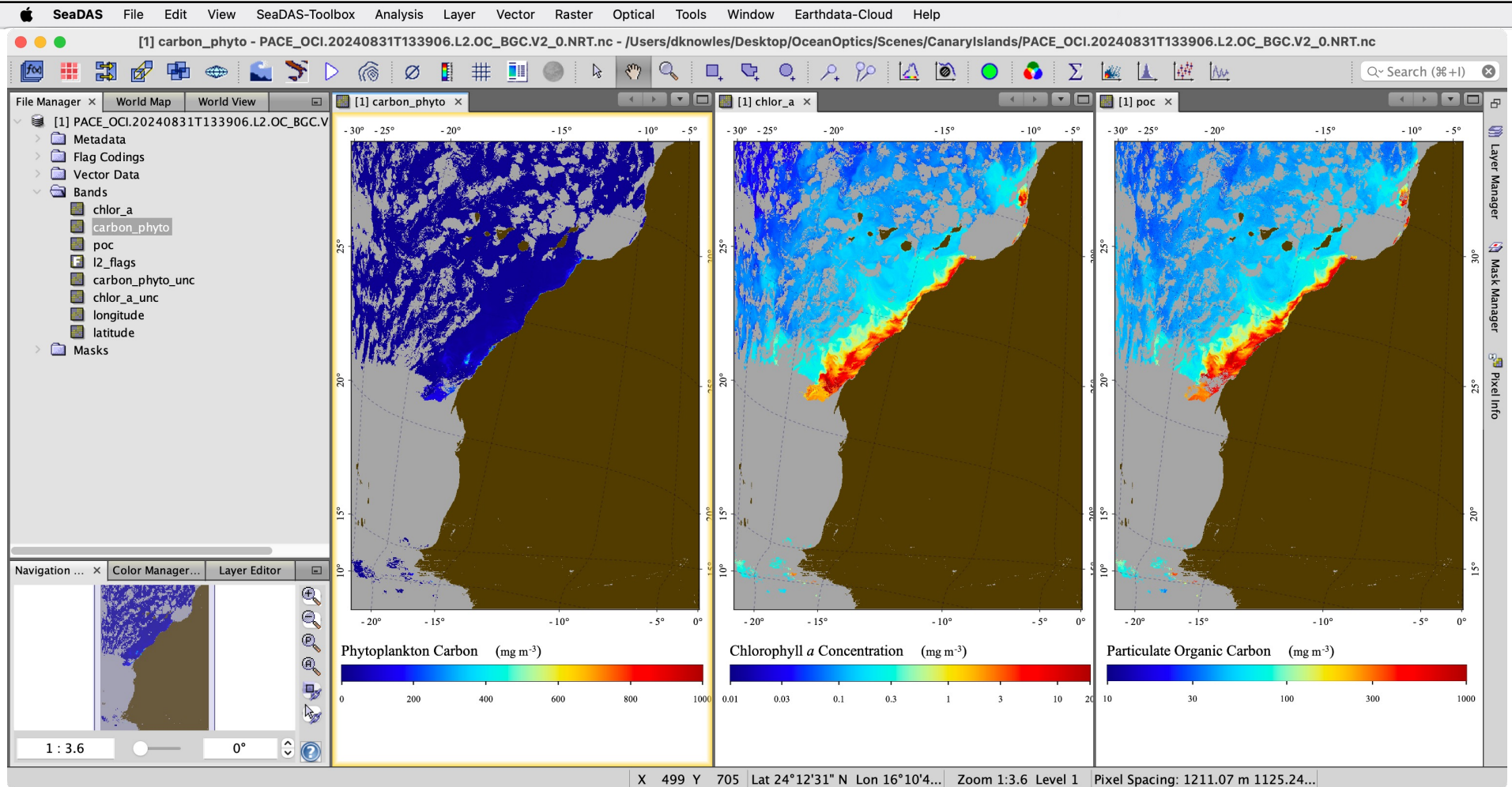
55.273 102.717 150.161 197.606 245.05

sensor_zenith_angle
 August 31, 2024 13:39:06 - August 31, 2024 13:44:06
 File: PACE_OCI.20240831T133906.L1C.V2.5km.nc

sensor_zenith_angle_20 (degrees)

22.588 34.295 46.001 57.708 69.414

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m



SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

[1] aot_865 - PACE_OCI.20240831T133906.L2_OC_AOP.V2_0.NRT.nc - /Users/dknowles/Desktop/OceanOptics/Scenes/CanaryIslands/PACE_OCI.20240831T133906.L2_OC_AOP.V2_0.NRT.nc

File Manager x World Map World View x [1] Rrs_490 x [1] aot_865 x

- File Manager
 - [1] PACE_OCI.20240831T133906.L2_OC_AOP.V2_0
 - Metadata
 - Flag Codings
 - Vector Data
 - Bands
 - Rrs_unc
 - Rrs
 - aot
 - aot_865 (864.61 nm)
 - l2_flags
 - aww
 - angstrom
 - longitude
 - latitude
 - Masks

Navigation - [1] ... Color Manag... x Layer Editor

Editor: Basic Sliders Table

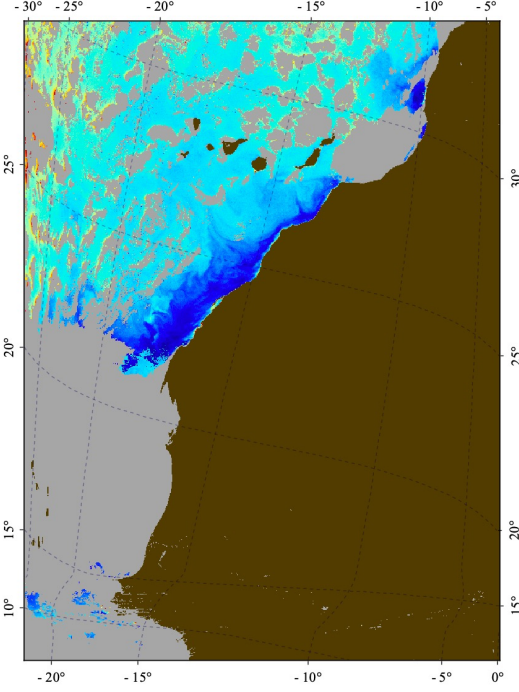
Palette

Derived from oceancolor_st...

Load exact values

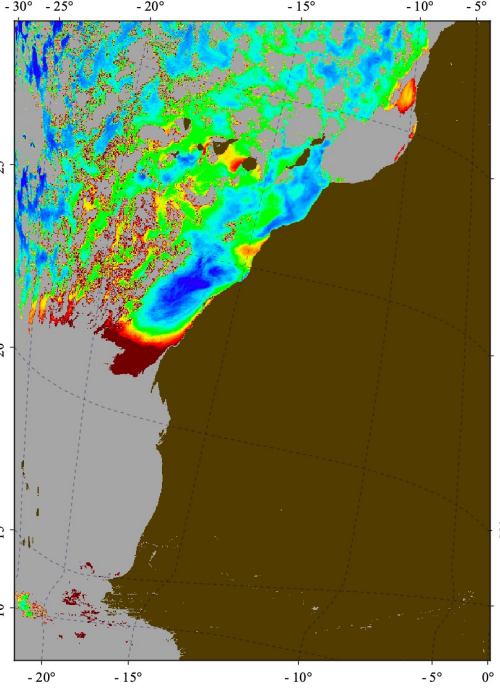
Range

Min: 0.0 Max: 0.25



Remote Sensing Reflectance at 490 nm (sr⁻¹)

0.0 0.003 0.006 0.009 0.012 0.015



Aerosol Optical Thickness at 865 nm (dimensionless)

0 0.05 0.1 0.15 0.2 0.25

X 427 Y 729 Lat 23°46'33" N Lon 16°58'2... Zoom 1:3.3 Level 1 Pixel Spacing: 1211.07 m 1125.24...

SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

[1] PACE_OCI.20240831T133906.L2_OC_IOP.V2_0.NRT.nc - [/Users/dknowles/Desktop/OceanOptics/Scenes/CanaryIslands/PACE_OCI.20240831T133906.L2_OC_IOP.V2_0.NRT.nc]

Q Search (⌘+I)

File Manager x World Map World View [1] Kd_490 x [1] a_442 x

- [-] PACE_OCI.20240831T133906.L2_OC_IOP.V2
 - [-] Metadata
 - [-] Flag Codings
 - [-] Vector Data
 - [-] Bands
 - [-] Kd
 - [-] adg
 - [-] aph
 - [-] bbp
 - [-] bb
 - [+] a_351 (350.912 nm)
 - [+] a_361 (360.695 nm)
 - [+] a_385 (385.359 nm)
 - [+] a_413 (412.557 nm)
 - [+] a_425 (424.94 nm)
 - [+] a_442 (442.327 nm)
 - [+] a_460 (459.757 nm)
 - [+] a_475 (474.7 nm)
 - [+] a_490 (489.674 nm)
 - [+] a_510 (509.72 nm)
 - [+] a_532 (532.314 nm)
 - [+] a_555 (555.044 nm)
 - [+] a_583 (582.996 nm)
 - [+] a_618 (617.605 nm)
 - [+] a_640 (639.791 nm)
 - [+] a_655 (654.622 nm)
 - [+] a_665 (664.564 nm)
 - [+] a_678 (678.208 nm)
 - [+] a_711 (710.581 nm)
 - rrsdiff
 - l2_flags
 - longitude
 - latitude

Diffuse attenuation coefficient at %d nm, Lee Algorithm
August 31, 2024 13:39:06 - August 31, 2024 13:44:06
File: PACE_OCI.20240831T133906.L2_OC_IOP.V2_0.NRT.nc

Diffuse Attenuation Coefficient at 490 nm (m⁻¹)

0.01 0.03 0.1 0.3 1 3 5

Total absorption at %d nm, GIOP model
August 31, 2024 13:39:06 - August 31, 2024 13:44:06
File: PACE_OCI.20240831T133906.L2_OC_IOP.V2_0.NRT.nc

Total Absorption at 442.327 nm (m⁻¹)

0.001 0.003 0.01 0.1 0.3 1

Navigation - [1] ... Color Manag... x Layer Editor
Editor: Basic Sliders Table

X -- Y -- Lat -- Lon --
Zoom -- Level -- Pixel Spacing: -- m -- m

SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

[1] PACE_OCI.20240831T133906.L2_OC_IOP.V2_0.NRT.nc - [/Users/dknowles/Desktop/OceanOptics/Scenes/CanaryIslands/PACE_OCI.20240831T133906.L2_OC_IOP.V2_0.NRT.nc]

[1] PACE_OCI.20240831T133906.L2_OC_IOP.V2_0.NRT.nc - Properties

Product Node Properties

Name	PACE_OCI.20240831T133906.L2_OC_IOP.V2_0.NRT.nc
Description	PACE_OCI.20240831T133906.L2_OC_IOP.V2_0.NRT.nc
Modified	✓

Product Properties

File	/Users/dknowles/Desktop/OceanOptics/Scenes/CanaryIslands/PACE_OCI.20240831T133906.L2_OC_IOP.V2_0.NRT.nc
Product Type	OCI Level-2
Sensing Start Time	31-AUG-2024 13:44:06.037000
Sensing Stop Time	31-AUG-2024 13:39:06.154000
Band Grouping	Rrs_unc:Rrs:nLw:Lt:La:Lr:Lw:Lq:L_u:Es:TLg:rhom:rhos:rhot:Taua:Kd:aot:adg:aph_:bbp:bb:vgain:BT:tg_sol:tg_sen

Diffuse Attenuation Coefficient at 490 nm (m⁻¹)

Band Grouping
The product's band grouping

Diffuse Attenuation Coefficient at 490 nm (m⁻¹)

Navigation - [1] ... Color Manag... x Layer Editor

Editor: Basic Sliders Table

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

File Manager x World Map World View [1] Kd_490 x

- [1] PACE_OCI.20240831T133906.L2_OC_IOP.V2
- Metadata
- Flag Codings
- Vector Data
- Bands
 - Kd
 - adg
 - aph_
 - bbp
 - bb
 - a_
 - a_351 (350.912 nm)
 - a_361 (360.695 nm)
 - a_385 (385.359 nm)
 - a_413 (412.557 nm)
 - a_425 (424.94 nm)
 - a_442 (442.327 nm)
 - a_460 (459.757 nm)
 - a_475 (474.7 nm)
 - a_490 (489.674 nm)
 - a_510 (509.72 nm)
 - a_532 (532.314 nm)
 - a_555 (555.044 nm)
 - a_583 (582.996 nm)
 - a_618 (617.605 nm)
 - a_640 (639.791 nm)
 - a_655 (654.622 nm)
 - a_665 (664.564 nm)
 - a_678 (678.208 nm)
 - a_711 (710.581 nm)
 - rrsdiff
 - l2_flags
 - longitude

GIOP model
31, 2024 13:44:06
OC_IOP.V2_0.NRT.nc

[1] PACE_OCI.20240831T133906.L2_OC_IOP.V2_0.NRT.nc - Ban...

Rrs_unc:Rrs:nLw:Lt:La:Lr:Lw:Lq:L_u:Es:TLg:rhom:rhos:rhot:Taua:Kd:aot:adg:aph_:bbp:bb:vgain:BT:tg_sol:tg_sen:a

Cancel OK

SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

[1] PACE_OCI.20240831T133906.L2.SFREFL.V2_0.NRT.nc - [/Users/dknowles/Desktop/OceanOptics/Scenes/CanaryIslands/PACE_OCI.20240831T133906.L2.SFREFL.V2_0.NRT.nc]

Q Search (⌘+I)

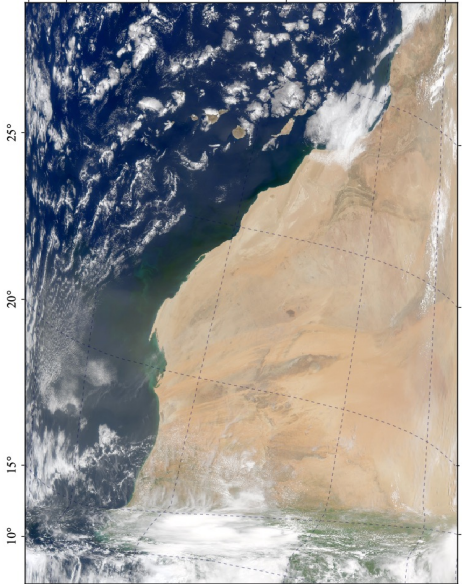
File Manager x World Map World View [1] OCI TC 645 555 465 1band RGB x [1] rhos_555 x

- ▼ PACE_OCI.20240831T133906.L2.SFREFL.V2_0.NRT.nc
 - ▼ Metadata
 - ▼ Flag Codings
 - ▼ Vector Data
 - ▼ Bands
 - ▼ rhos
 - rhos_339 (339.16 nm)
 - rhos_353 (353.344 nm)
 - rhos_368 (368.083 nm)
 - rhos_380 (380.419 nm)
 - rhos_388 (387.811 nm)
 - rhos_400 (400.178 nm)
 - rhos_415 (415.025 nm)
 - rhos_425 (424.94 nm)
 - rhos_440 (439.828 nm)
 - rhos_465 (464.737 nm)
 - rhos_470 (469.729 nm)
 - rhos_485 (484.689 nm)
 - rhos_495 (494.686 nm)
 - rhos_515 (514.729 nm)
 - rhos_530 (529.798 nm)
 - rhos_537 (537.346 nm)
 - rhos_550 (549.994 nm)
 - rhos_555 (555.044 nm)
 - rhos_563 (563.642 nm)

OCI TC 645 555 465 1band RGB

August 31, 2024 13:39:06 - August 31, 2024 13:44:06

File: PACE_OCI.20240831T133906.L2.SFREFL.V2_0.NRT.nc



-30° -25° -20° -15° -10° -5°

25° 30°

15° 20° 25°

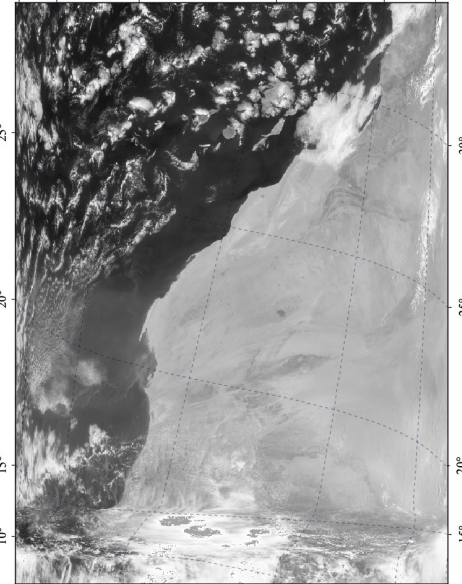
10° 15°

-20° -15° -10° -5° 0°

Surface reflectance

August 31, 2024 13:39:06 - August 31, 2024 13:44:06

File: PACE_OCI.20240831T133906.L2.SFREFL.V2_0.NRT.nc



-30° -25° -20° -15° -10° -5°

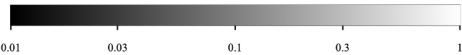
25° 30°

15° 20° 25°

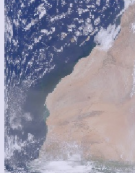
10° 15°

-20° -15° -10° -5° 0°

Surface Reflectance at 555.044 nm ()



Navigation x Color Manager Layer Editor



1 : 3.65 0°

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

Layer Manager Mask Manager Pixel Info

SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

[1] par_day_scalar_below - [PACE_OCI.20240831T133906.L2.PAR.V2_0.NRT.nc] - [Users/dknowles/Desktop/OceanOptics/Scenes/CanaryIslands/PACE_OCI.20240831T133906.L2.PAR.V2_0.NRT.nc]

File Manager x World Map World View [1] par_day_planar_below x [1] par_day_scalar_below x

- [1] PACE_OCI.20240831T133906.L2.PAR.V2_0.NRT.nc
 - Metadata
 - Flag Codings
 - Vector Data
 - Bands
 - l2_flags
 - ipar_planar_above
 - ipar_planar_below
 - ipar_scalar_below
 - par_day_scalar_below
 - par_day_planar_above
 - par_day_planar_below
 - longitude
 - latitude
 - Masks

Navigatio... x Color Manag... Layer Editor

Daily photosynthetically available planar irradiance just below the surface
 August 31, 2024 13:39:06 - August 31, 2024 13:44:06
 File: PACE_OCI.20240831T133906.L2.PAR.V2_0.NRT.nc

Photosynthetically Available Radiation (mol m⁻² day⁻¹)

0 20 40 60 76.2

Daily photosynthetically available scalar irradiance just below the surface
 August 31, 2024 13:39:06 - August 31, 2024 13:44:06
 File: PACE_OCI.20240831T133906.L2.PAR.V2_0.NRT.nc

Photosynthetically Available Radiation (mol m⁻² day⁻¹)

0 20 40 60 76.2

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

[1] ndvi - [PACE_OCI.20240831T133906.L2.LAND.V2_0.NRT.nc] - [/Users/dknowles/Desktop/OceanOptics/Scenes/CanaryIslands/PACE_OCI.20240831T133906.L2.LAND.V2_0.NRT.nc]

File Manager x World Map World View [1] ndvi x

Layer Manager Mask Manager x Pixel Info

Search (%+) x

File Manager x

- [1] PACE_OCI.20240831T133906.L2.LAND.V2_0.NRT.nc
 - Metadata
 - Flag Codings
 - Vector Data
 - Bands
 - ndvi
 - evi
 - ndwi
 - ndii
 - cci
 - ndsi
 - pri
 - cire
 - car
 - mari
 - l2_flags
 - longitude
 - latitude
 - Masks

Navigation - [1] n... Color Manager - [...] Layer Editor - [...]

Apply Scheme (File, Units (Band Lookup))

Title: <PROPERTY=band_description>

Units

Show Units

Units: <PROPERTY=units>

Convert Carets to Superscripts

Labels

Show Tick Labels

Apply Scheme Tickmark Values (Band Lookup)

Label Value Mode: Generated Values

Normalized Difference Vegetation Index
 August 31, 2024 13:39:06 - August 31, 2024 13:44:06
 File: PACE_OCI.20240831T133906.L2.LAND.V2_0.NRT.nc

Normalized Difference Vegetation Index

Legend:

Name	Color	Tran...	Type
<input type="checkbox"/> LAND	Dark Brown	0 Maths	L
<input type="checkbox"/> ABSAER	Yellow	0.5 Maths	A
<input type="checkbox"/> ATMFAIL	Red	0 Maths	A
<input type="checkbox"/> ATMWARN	Magenta	0.5 Maths	A
<input type="checkbox"/> BOWTIEDEL	Red	0.1 Maths	B
<input type="checkbox"/> CHLFAIL	Red	0 Maths	C
<input type="checkbox"/> CHLWARN	Grey	0.5 Maths	C
<input type="checkbox"/> CLDICE	White	0 Maths	C
<input type="checkbox"/> COASTZ	Dark Red	0.5 Maths	S
<input type="checkbox"/> COCCOLITH	Cyan	0.5 Maths	C
<input type="checkbox"/> FILTER	Grey	0.5 Maths	I
<input type="checkbox"/> HIGLINT	Magenta	0.2 Maths	H
<input type="checkbox"/> HILT	Grey	0.2 Maths	H
<input type="checkbox"/> HIPOL	Pink	0.5 Maths	H
<input type="checkbox"/> HISATZEN	Cyan	0.5 Maths	L
<input type="checkbox"/> HISOLZEN	Purple	0.5 Maths	H
<input type="checkbox"/> LOWLW	Blue	0.5 Maths	L
<input type="checkbox"/> MAXAERITER	Grey	0.5 Maths	M
<input type="checkbox"/> MODGLINT	Purple	0.5 Maths	M
<input type="checkbox"/> NAVFAIL	Red	0 Maths	N
<input type="checkbox"/> NAVWARN	Magenta	0.5 Maths	N
<input type="checkbox"/> PRODFAIL	Red	0.1 Maths	C
<input type="checkbox"/> PRODWARN	Blue	0.5 Maths	C
<input type="checkbox"/> SEACE	Dark Grey	0.5 Maths	S
<input type="checkbox"/> STRAYLIGHT	Yellow	0.2 Maths	S
<input type="checkbox"/> TURBIDW	Brown	0.5 Maths	T
<input type="checkbox"/> Composite 1	Grey	0 Maths	C
<input type="checkbox"/> Water	Blue	0 Maths	N

Normalized Difference Vegetation Index

Color Scale: 0.191, 0.433, 0.674, 0.915

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

[1] cot_22 - PACE_OCI.20240831T133906.L2.CLD.V2_0.NRT.nc - /Users/dkknowles/Desktop/OceanOptics/Scenes/CanaryIslands/PACE_OCI.20240831T133906.L2.CLD.V2_0.NRT.nc

Q Search (⌘+I)

File Manager x World Map World View [1] cer_22 x [1] cot_22 x [1] cwp_22 x

- [1] PACE_OCI.20240831T133906.L2.CLD.V2_0.NRT.nc
 - Metadata
 - Flag Codings
 - Vector Data
 - Bands
 - Lt
 - Lt_865 (864.61 nm)
 - cer_22
 - cot_22**
 - cwp_22
 - cer_21
 - cot_21
 - cwp_21
 - cer_16
 - cot_16
 - cwp_16
 - cer_16_21
 - cot_16_21
 - cwp_16_21
 - ctp
 - ctt
 - cth
 - cid_phase_21
 - cid_phase_22
 - cid_phase_16
 - cid_phase_16_21
 - cid_non_abs_band
 - l2_flags
 - longitude
 - latitude
 - Masks

Navigation - ... Color Man... x Layer Editor

Editor: Basic Sliders Table

cer_22 (micron)

7.208 14.743 22.278 29.813 37.348

cot_22 (none)

1.258 6.816 12.374 17.932 23.49

cwp_22 (g/m²)

10.645 63.899 117.154 170.409 223.663

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

Refined

PACE-OCI SIM Sample L3 Binned
 PACE-OCI SIM Processing Test L3 Binned
 PACE OCI L3B Dark Target
 PACE OCI L3B Dark Target Land
 PACE OCI L3B Dark Target Ocean
 PACE OCI L3B Deep Blue
 PACE OCI L3B Deep Blue Land
 PACE OCI L3B Deep Blue Ocean
 PACE OCI L3B CLD 16um Ice
 PACE OCI L3B CLD 16um Water
 PACE OCI L3B CLD 16um&21um ICE
 PACE OCI L3B CLD 16um&21um WATER
 PACE OCI L3B CLD 21um ICE
 PACE OCI L3B CLD 21um WATER
 PACE OCI L3B CLD 22um ICE
 PACE OCI L3B CLD 22um WATER
 PACE OCI L3B CLD TOP
 PACE OCI L3B AOT
 PACE OCI L3B FLH
 PACE OCI L3B RRS
 PACE OCI L3B CHL
 PACE OCI L3B CARBON
 PACE OCI L3B PIC
 PACE OCI L3B POC
 PACE OCI L3B IOP
 PACE OCI L3B PAR
 PACE OCI L3B AVW
 PACE OCI L3B LAND
 PACE-OCI Processing Test L3 Binned
 PACE OCI L3B KD
 PACE OCI L3B Surface Relectance (SFREFL)
 PACE OCI L3B CLDMASK
 PACE OCI L3B CLDMASK TEST
 PACE OCI L3B UAA

Refined

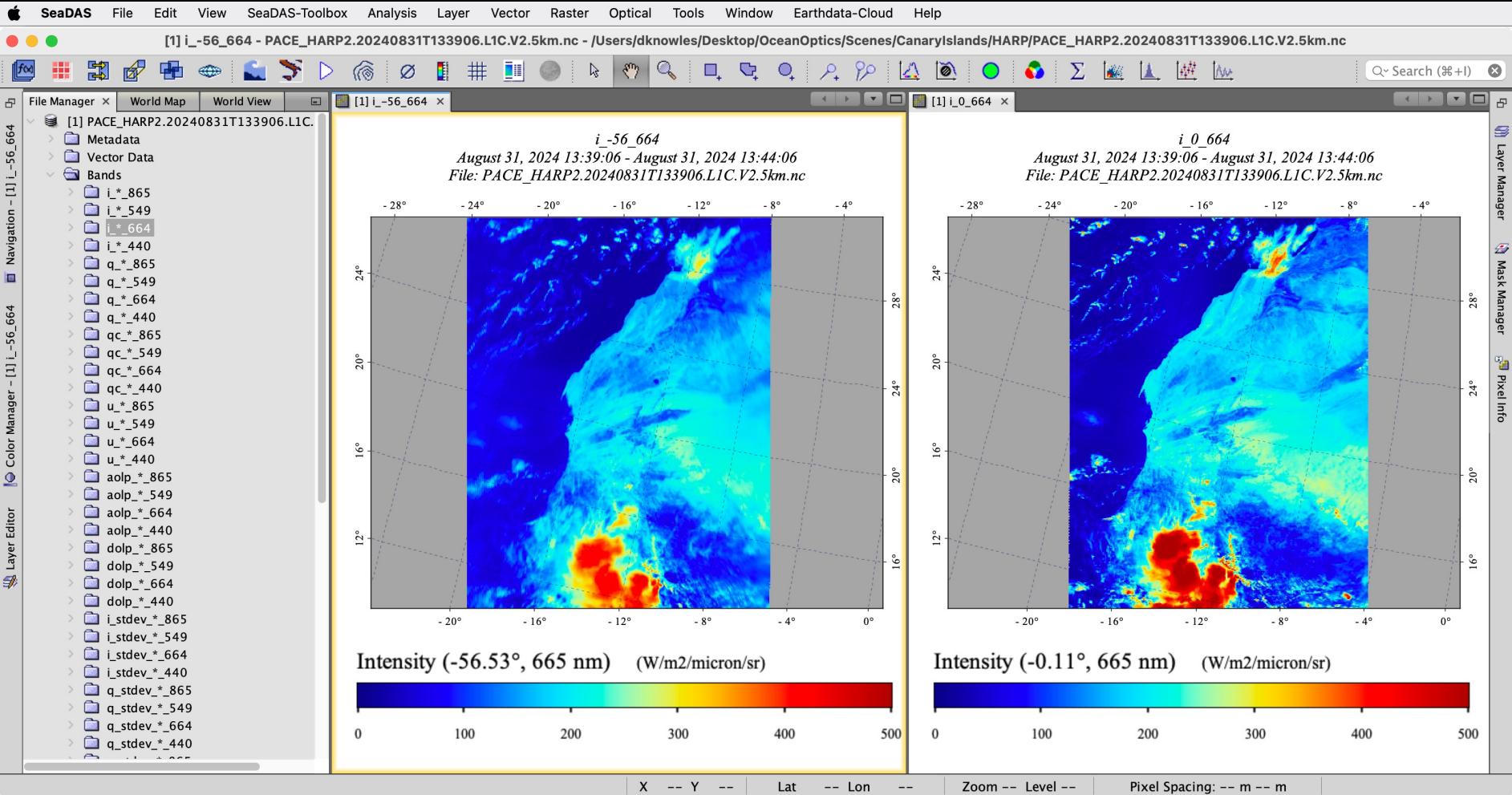
PACE-OCI SIM Sample L3 Mapped
 PACE-OCI SIM Processing Test L3 Mapped
 PACE OCI L3M Dark Target
 PACE OCI L3M Dark Target Land
 PACE OCI L3M Dark Target Ocean
 PACE OCI L3M Deep Blue
 PACE OCI L3M Deep Blue Land
 PACE OCI L3M Deep Blue Ocean
 PACE OCI L3M CLD 16um Ice
 PACE OCI L3M CLD 16um Water
 PACE OCI L3M CLD 16um&21um ICE
 PACE OCI L3M CLD 16um&21um WATER
 PACE OCI L3M CLD 21um ICE
 PACE OCI L3M CLD 21um WATER
 PACE OCI L3M CLD 22um ICE
 PACE OCI L3M CLD 22um WATER
 PACE OCI L3M CLD TOP
 PACE OCI L3M AOT
 PACE OCI L3M FLH
 PACE OCI L3M RRS
 PACE OCI L3M CHL
 PACE OCI L3M CARBON
 PACE OCI L3M PIC
 PACE OCI L3M POC
 PACE OCI L3M IOP
 PACE OCI L3M PAR
 PACE OCI L3M AVW
 PACE OCI L3M LAND
 PACE-OCI Processing Test L3 Mapped
 PACE OCI L3M KD
 PACE OCI L3M Surface Relectance (SFREFL)
 PACE OCI L3M CLDMASK
 PACE OCI L3M CLDMASK TEST
 PACE OCI L3M UAA

Refined

PACE-OCI L3 Spacebin
 PACE-OCI L3 Spacebin Temp

Refined

PACE-OCI SIM Processing Test L4 Binned
 PACE-OCI Processing Test L4 Binned
 PACE OCI L4B NPP from CAFE Model (CAFE)
 Near Real Time
 PACE OCI L4B NPP from CAFE Model (CAFE) NRT



SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

[1] i_0_746 - PACE_SPEXONE.20240831T133906.L1C.V2.5km.nc - /Users/dknowles/Desktop/OceanOptics/Scenes/CanaryIslands/SPEXONE/PACE_SPEXONE.20240831T133906.L1C.V2.5km.nc

Q Search (%+)

File Manager x World Map World View [1] i_0_380 x [1] i_0_447 x [1] i_0_547 x [1] i_0_645 x [1] i_0_746 x

- [1] PACE_SPEXONE.20240831T133906.L1C.V2.5km.nc
 - Metadata
 - Vector Data
 - Bands
 - qc_-50_*
 - qc_-20_*
 - qc_0_*
 - qc_20_*
 - qc_50_*
 - i_-50_*
 - i_-20_*
 - i_0_*
 - i_20_*
 - i_50_*
 - i_stdev_-50_*
 - i_stdev_-20_*
 - i_stdev_0_*
 - i_stdev_20_*
 - i_stdev_50_*
 - qc_polsample_-50_*
 - qc_polsample_-20_*
 - qc_polsample_0_*
 - qc_polsample_20_*
 - qc_polsample_50_*
 - i_polsample_-50_*
 - i_polsample_-20_*
 - i_polsample_0_*
 - i_polsample_20_*
 - i_polsample_50_*
 - i_polsample_stdev_-50_*
 - i_polsample_stdev_-20_*
 - i_polsample_stdev_0_*
 - i_polsample_stdev_20_*
 - i_polsample_stdev_50_*
 - q_-50_*
 - q_-20_*

Intensity (0.0°, 746 nm) (W m-2 sr-1 um-1)

Layer Manager Mask Manager Pixel Info

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

SeaDAS Workshop
Visualization: Colors & Layers

Live Demo for this part

SeaDAS Workshop
RGB Imagery

RGB Imagery: (SFREFL File) Example 1

SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

[1] virtual_red - [PACE_OCI.20240907T172452.L2.SFREFL.V2_0.NRT.nc] - [/Users/dknowles/SeaDASTraining/OceanOptics2024/ArgentineSea/PACE_OCI.20240907T172452.L2.SFREFL.V2_0.NRT.nc]

File Manager x World Map World View [1] OCI TC 645 555 425 (1.0, 0.01) RGB x [1] OCI TC 645 555 425 (0.7, 0.005) RGB x [1] OCI TC 645 555 425 (0.3, 0.005) RGB x

Metadata
Flag Codings
Vector Data
Bands
rhos
rhos_339 (339.16 nm)
rhos_353 (353.344 nm)
rhos_368 (368.083 nm)
rhos_380 (380.419 nm)
rhos_388 (387.811 nm)
rhos_400 (400.178 nm)
rhos_415 (415.025 nm)
rhos_425 (424.94 nm)
rhos_440 (439.828 nm)
rhos_465 (464.737 nm)
rhos_470 (469.729 nm)
rhos_485 (484.638 nm)

Navigation - [1]... Color Manag... x Layer Editor

Red Green Blue

Name: virtual_red
Unit: null
Min: -0.615
Max: 1.047
Rough statistics!

0.0 1.0

More Options

Select RGB-Image Channels

Profile:
OCI TC 645 555 425 (1.0, 0.01)

Red: $\log(\text{rhos}_{645}/0.01)/\log(1.0/0.01)$
 fixed range 0.0 min 1.0 max

Green: $\log(\text{rhos}_{555}/0.01)/\log(1.0/0.01)$
 fixed range 0.0 min 1.0 max

Blue: $\log(\text{rhos}_{465}/0.01)/\log(1.0/0.01)$
 fixed range 0.0 min 1.0 max

Valid Pixel Expression Inan(rhos_645) and Inan(rhos_555) and Inan(rhos_425)

Store RGB channels as virtual bands in current product

OK Cancel Help

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

RGB Imagery: (SFREFL File) Example 1

SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

[1] PACE_OCI.20240907T172452.L2.SFREFL.V2_0.NRT.nc - [/Users/dknowles/SeaDASTraining/OceanOptics2024/ArgentineSea/PACE_OCI_20240907T172452.L2.SFREFL.V2_0.NRT.nc]

File Manager x World Map World View [1] OCI TC 645 555 425 (1.0, 0.01) RGB x [1] OCI TC 645 555 425 (0.7, 0.005) RGB x [1] OCI TC 645 555 425 (0.3, 0.005) RGB x

Metadata
Flag Codings
Vector Data
Bands
rhos
rhos_339 (339.16 nm)
rhos_353 (353.344 nm)
rhos_368 (368.083 nm)
rhos_380 (380.419 nm)
rhos_388 (387.811 nm)
rhos_400 (400.178 nm)
rhos_415 (415.025 nm)
rhos_425 (424.94 nm)
rhos_440 (439.828 nm)
rhos_465 (464.737 nm)
rhos_470 (469.729 nm)
rhos_485 (484.638 nm)

Navigation - [1]... Color Manag... Layer Editor

Red Green Blue

Name: virtual_green
Unit: null
Min: -0.27
Max: 1.042
Rough statistics!

More Options

Select RGB-Image Channels

Profile: OCI TC 645 555 425 (1.0, 0.01)

Red: $\log(\text{rhos}_{645}/0.01)/\log(1.0/0.01)$
 fixed range 0.0 min 1.0 max

Green: $\log(\text{rhos}_{555}/0.01)/\log(1.0/0.01)$
 fixed range 0.0 min 1.0 max

Blue: $\log(\text{rhos}_{465}/0.01)/\log(1.0/0.01)$
 fixed range 0.0 min 1.0 max

Valid Pixel Expression $\text{Inan}(\text{rhos}_{645}) \text{ and } \text{Inan}(\text{rhos}_{555}) \text{ and } \text{Inan}(\text{rhos}_{425})$

Store RGB channels as virtual bands in current product

OK Cancel Help

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

RGB Imagery: Transform (RGB Profile) Example 1

SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

[1] PACE_OCI.20240907T172452.L2.SFREFL.V2_0.NRT.nc - [/Users/dknowles/SeaDASTraining/OceanOptics2024/ArgentineSea/PACE_OCI_20240907T172452.L2.SFREFL.V2_0.NRT.nc]

File Manager x World Map World View [1] OCI TC 645 555 425 (1.0, 0.01) RGB x [1] OCI TC 645 555 425 (0.7, 0.005) RGB x [1] OCI TC 645 555 425 (0.3, 0.005) RGB x

Q Search (%+)

Layer Manager Mask Manager Pixel Info

Select RGB-Image Channels

Profile: OCI TC 645 555 425 (1.0, 0.01)

Red: $\log(\text{rhos_645}/0.01)/\log(1.0/0.01)$

fixed range 0.0 min 1.0 max

Green: $\log(\text{rhos_555}/0.01)/\log(1.0/0.01)$

fixed range 0.0 min 1.0 max

Blue: $\log(\text{rhos_465}/0.01)/\log(1.0/0.01)$

fixed range 0.0 min 1.0 max

Valid Pixel Expression $\text{Inan}(\text{rhos_645}) \text{ and } \text{Inan}(\text{rhos_555}) \text{ and } \text{Inan}(\text{rhos_425})$

Store RGB channels as virtual bands in current product

OK Cancel Help

Navigation - [1]... Color Manag... Layer Editor

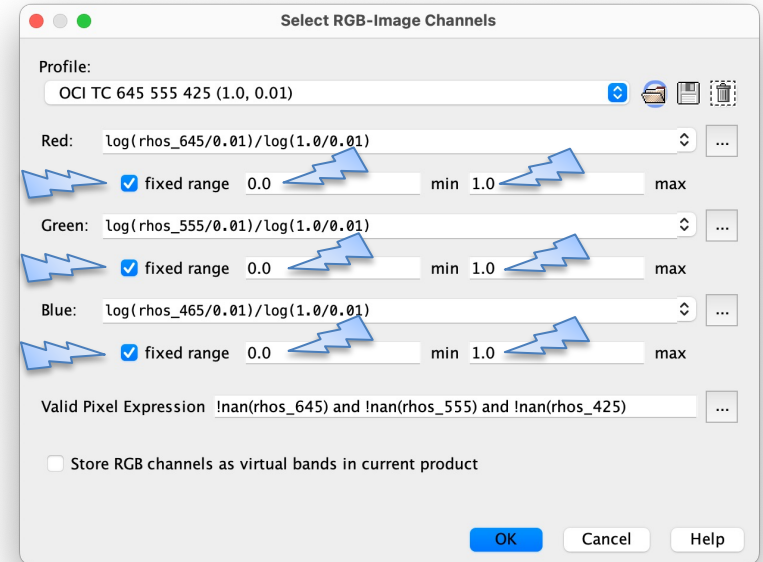
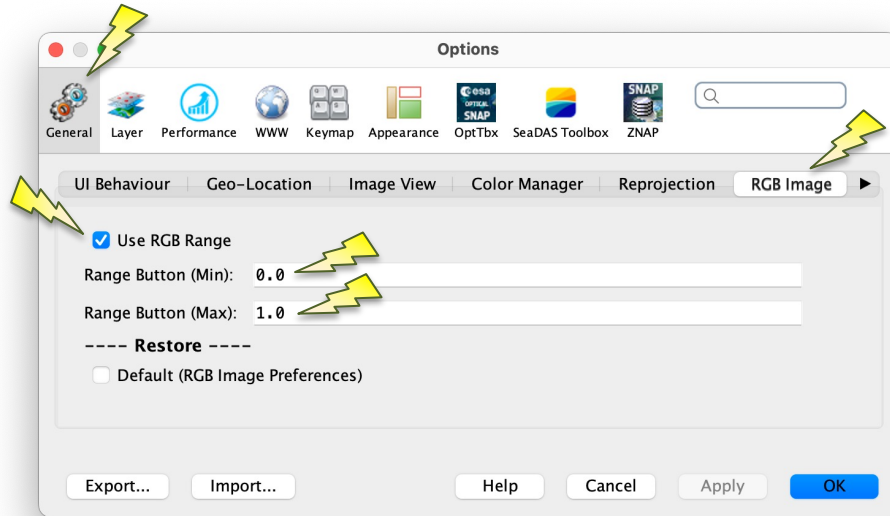
Red Green Blue

Name: virtual_blue
Unit: null
Min: -0.997
Max: 1.041
Rough statistics!

0.0 1.0

More Options

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m



RGB Imagery: Transform (RGB Profile) Example 2

SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

[1] PACE_OCI.20240907T172452.L2.SFREFL.V2_0.NRT.nc - [/Users/dknowles/SeaDASTraining/OceanOptics2024/ArgentineSea/PACE_OCI_20240907T172452.L2.SFREFL.V2_0.NRT.nc]

File Manager x World Map World View [1] OCI TC 645 555 425 (1.0, 0.01) RGB x [1] OCI TC 645 555 425 (0.7, 0.005) RGB x [1] OCI TC 645 555 425 (0.3, 0.005) RGB x

Q Search (%+)

Layer Manager Mask Manager Pixel Info

Select RGB-Image Channels

Profile:
OCI TC 645 555 425 (0.7, 0.005)

Red: $\log(\text{rhos}_{645}/0.005)/\log(0.7/0.005)$
 fixed range 0.0 min 1.0 max

Green: $\log(\text{rhos}_{555}/0.005)/\log(0.7/0.005)$
 fixed range 0.0 min 1.0 max

Blue: $\log(\text{rhos}_{425}/0.005)/\log(0.7/0.005)$
 fixed range 0.0 min 1.0 max

Valid Pixel Expression $\text{Inan}(\text{rhos}_{645}) \text{ and } \text{Inan}(\text{rhos}_{555}) \text{ and } \text{Inan}(\text{rhos}_{425})$

Store RGB channels as virtual bands in current product

OK Cancel Help

Navigation - [1]... Color Manag... x Layer Editor

Red Green Blue

Name: virtual_green
Unit: null
Min: -0.112
Max: 1.111
Rough statistics!

More Options

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

RGB Imagery: Transform (RGB Profile) Example 3

SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

[1] OCI TC 645 555 425 (0.3, 0.005) RGB - PACE_OCI.20240907T172452.L2.SFREFL.V2_0.NRT.nc - /Users/dkknowles/SeaDASTraining/OceanOptics2024/ArgentinaSea/PACE_OCI.20240907T172452.L2.SFREFL.V2_0.NRT.nc

File Manager x World Map World View [1] OCI TC 645 555 425 (1.0, 0.01) RGB x [1] OCI TC 645 555 425 (0.7, 0.005) RGB x [1] OCI TC 645 555 425 (0.3, 0.005) RGB x

Metadata
Flag Codings
Vector Data
Bands
rhos
rhos_339 (339.16 nm)
rhos_353 (353.344 nm)
rhos_368 (368.083 nm)
rhos_380 (380.419 nm)
rhos_388 (387.811 nm)
rhos_400 (400.178 nm)
rhos_415 (415.025 nm)
rhos_425 (424.94 nm)
rhos_440 (439.828 nm)
rhos_465 (464.737 nm)
rhos_470 (469.729 nm)
rhos_485 (484.638 nm)

Navigation - [1]... Color Manag... Layer Editor

Red Green Blue

Name: virtual_green
Unit: null
Min: -0.135
Max: 1.341
Rough statistics!

More Options

Select RGB-Image Channels

Profile: OCI TC 645 555 425 (0.3, 0.005)

Red: $\log(\text{rhos}_{645}/0.005)/\log(0.3/0.005)$
 fixed range 0.0 min 1.0 max

Green: $\log(\text{rhos}_{555}/0.005)/\log(0.3/0.005)$
 fixed range 0.0 min 1.0 max

Blue: $\log(\text{rhos}_{425}/0.005)/\log(0.3/0.005)$
 fixed range 0.0 min 1.0 max

Valid Pixel Expression $\text{Inan}(\text{rhos}_{645}) \text{ and } \text{Inan}(\text{rhos}_{555}) \text{ and } \text{Inan}(\text{rhos}_{425})$

Store RGB channels as virtual bands in current product

OK Cancel Help

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

RGB Imagery: Transform (RGB Profile) Example 4

The screenshot displays the SeaDAS software interface with a central window titled "Select RGB-Image Channels". The background shows a satellite-style ocean color map of the Mediterranean region.

SeaDAS Interface Elements:

- Menu bar: SeaDAS, File, Edit, View, SeaDAS-Toolbox, Analysis, Layer, Vector, Raster, Optical, Tools, Window, Earthdata-Cloud, Help.
- Toolbar: Standard GIS navigation and analysis tools.
- File Manager: Shows a project structure with folders for Metadata, Flag Codings, Vector Data, and Bands. The Bands folder contains a sub-folder "rhos" with various channels like rhos_339, rhos_353, etc.
- Navigation: Includes "Color Management" and "Layer Editor" tabs.
- Color Management: Shows a histogram for "virtual_green" with statistics: Name: virtual_green, Unit: null, Min: -0.184, Max: 1.833, and a note "Rough statistics!".

Select RGB-Image Channels Dialog:

- Profile: OCI TC 645 555 425 (0.1, 0.005)
- Red: $\log(\text{rhos}_{645}/0.005) / \log(0.1/0.005)$
 - fixed range 0.0 min 1.0 max
- Green: $\log(\text{rhos}_{555}/0.005) / \log(0.1/0.005)$
 - fixed range 0.0 min 1.0 max
- Blue: $\log(\text{rhos}_{425}/0.005) / \log(0.1/0.005)$
 - fixed range 0.0 min 1.0 max
- Valid Pixel Expression: $\text{!nan}(\text{rhos}_{645}) \text{ and } \text{!nan}(\text{rhos}_{555}) \text{ and } \text{!nan}(\text{rhos}_{425})$
- Store RGB channels as virtual bands in current product
- Buttons: OK, Cancel, Help

Yellow lightning bolt icon is present in the top right of the main window. A blue lightning bolt icon is present in the bottom right of the main window.

RGB Imagery: Transform (RGB Profile) Example 5

SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

[1] OCI TC 645 555 425 (0.05, 0.005) RGB - PACE_OCI.20240907T172452.L2.SFREFL.V2_0.NRT.nc - /Users/dknowles/SeaDASTraining/OceanOptics2024/ArgentineSea/PACE_OCI.20240907T172452.L2.SFREFL.V2_0.NRT.nc

File Manager x World Map World View ...RGB [1] OCI TC 645 555 425 (0.3, 0.005) RGB x [1] OCI TC 645 555 425 (0.1, 0.005) RGB x [1] OCI TC 645 555 425 (0.05, 0.005) RGB x

[1] PACE_OCI.20240907T172452.L2.SFREFL.V2_0.NRT.nc

- Metadata
- Flag Codings
- Vector Data
- Bands
 - rhos
 - rhos_339 (339.16 nm)
 - rhos_353 (353.344 nm)
 - rhos_368 (368.083 nm)
 - rhos_380 (380.419 nm)
 - rhos_388 (387.811 nm)
 - rhos_400 (400.178 nm)
 - rhos_415 (415.025 nm)
 - rhos_425 (424.94 nm)
 - rhos_440 (439.828 nm)
 - rhos_465 (464.737 nm)
 - rhos_470 (469.729 nm)
 - rhos_485 (484.690 nm)

Navigation - [1]... Color Manag... x Layer Editor

Red Green Blue

Name: virtual_green
Unit: null
Min: -0.24
Max: 2.385
Rough statistics!

More Options

Select RGB-Image Channels

Profile: OCI TC 645 555 425 (0.05, 0.005)

Red: $\log(\text{rhos}_{645}/0.005) / \log(0.05/0.005)$
 fixed range 0.0 min 1.0 max

Green: $\log(\text{rhos}_{555}/0.005) / \log(0.05/0.005)$
 fixed range 0.0 min 1.0 max

Blue: $\log(\text{rhos}_{425}/0.005) / \log(0.05/0.005)$
 fixed range 0.0 min 1.0 max

Valid Pixel Expression $\text{!nan}(\text{rhos}_{645}) \text{ and } \text{!nan}(\text{rhos}_{555}) \text{ and } \text{!nan}(\text{rhos}_{425})$

Store RGB channels as virtual bands in current product

OK Cancel Help

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

SeaDAS Workshop
Case Study: Spectral Analysis

SeaDAS Workshop
Case Study: Spectral Analysis
Pins

The screenshot displays the SeaDAS software interface. At the top, the menu bar includes File, Edit, View, SeaDAS-Toolbox, Analysis, Layer, Vector, Raster, Optical, Tools, Window, Earthdata, and Help. The title bar shows the current project: [3] virtual_red - [PACE_OCI.20240907T172452.L2.SFREFL.V2_0.NRT.nc] - [Users/dknowles/SeaDASTraining/OceanOptics2024/ArgentineSea/PACE_OCI.20240907T172452.L2.SFREFL.V2_0.NRT.nc].

The main workspace shows a satellite image of the ocean with three pins labeled Pin 1, Pin 2, and Pin 3. Pin 2 is located near the coast, Pin 1 is in the middle of the ocean, and Pin 3 is further out. Yellow lightning bolt icons are placed near each pin. The image is overlaid with a color scale from dark blue to light green.

The left sidebar contains a File Manager with the following structure:

- Metadata
- Flag Codings
- Vector Data
- Bands
 - rhos
 - rhos_339 (339.16 nm)
 - rhos_353 (353.344 nm)
 - rhos_368 (368.083 nm)
 - rhos_380 (380.419 nm)
 - rhos_388 (387.811 nm)
 - rhos_400 (400.178 nm)
 - rhos_415 (415.025 nm)
 - rhos_425 (424.94 nm)
 - rhos_440 (439.828 nm)
 - rhos_465 (464.737 nm)
 - rhos_470 (469.729 nm)
 - rhos_485 (484.689 nm)

The bottom left panel shows a histogram for the 'virtual_green' band. The histogram displays a distribution of pixel values with a peak around 1.0. The statistics shown are:

- Name: virtual_green
- Unit: null
- Min: -0.24
- Max: 2.385
- Rough statistics!

The bottom status bar displays the following information: X 151 Y 763 Lat 38°37'27" S Lon 68°55'42... Zoom 1:1.7 Level 0 Pixel Spacing: 1206.83 m 1143.01...

Pins: Modify Name and Color of Pins

The screenshot displays the SeaDAS software interface. The main window shows a map of the Argentine Sea with three pins placed on it. The pins are labeled: "Bright Green Bloom (Coastal)" (orange), "Dark Green Bloom" (green), and "BlueBloom" (blue). The Pin Manager window is open, showing a table of pin data. The table has columns for X, Y, Lon, Lat, Color, and Label. The data rows are:

X	Y	Lon	Lat	Color	Label
575.500	1267.5...	-59.926952	-42.675259	Green	Dark Green Bloom
382.041	1158.0...	-63.110519	-42.020847	Orange	Bright Green Bloom (Coastal)
855.500	1265.5...	-56.005978	-41.899178	Blue	BlueBloom

The interface also shows a File Manager on the left with a tree view of data files, a Color Manager at the bottom left with a histogram for "virtual_green", and a navigation bar at the bottom with coordinates: X 564 Y 1066 Lat 40°35' S Lon 60°43'55" W Zoom 1:1.7 Level 0 Pixel Spacing: 1206.83 m 1143.01...

Pins: View Pins on a "normal" True Color Image

SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

[3] OCI TC 645 555 425 (1.0, 0.01) RGB - PACE_OCI.20240907T172452.L2.SFREFL.V2_0.NRT.nc - /Users/dknowles/SeaDASTraining/OceanOptics2024/ArgentineSea/PACE_OCI.20240907T172452.L2.SFREFL.V2_0.NRT.nc

File Manager x World Map World View ...645 [3] OCI TC 645 555 425 (1.0,0.005) RGB x [3] OCI TC 645 555 425 (0.7, 0.005) RGB x [3] OCI TC 645 555 425 (0.3, 0.005) RGB x [3] OCI TC 645 555 42...

- Metadata
- Flag Codings
- Vector Data
- Bands
 - rhos
 - rhos_339 (339.16 nm)
 - rhos_353 (353.344 nm)
 - rhos_368 (368.083 nm)
 - rhos_380 (380.419 nm)
 - rhos_388 (387.811 nm)
 - rhos_400 (400.178 nm)
 - rhos_415 (415.025 nm)
 - rhos_425 (424.94 nm)
 - rhos_440 (439.828 nm)
 - rhos_465 (464.737 nm)
 - rhos_470 (469.729 nm)
 - rhos_485 (484.689 nm)

Navigation - [3] RGB Color Manager - [3] ... x Layer Editor

Red Green Blue

Name: virtual_green
Unit: null
Min: -0.27
Max: 1.042
Rough statistics!

Bright Green Bloom (Coastal)

Dark Green Bloom

BlueBloom

X 273 Y 1158 Lat 42°20'39" S Lon 65°06'23"... Zoom 1.1:1 Level 0 Pixel Spacing: 1206.83 m 1143.01...

Pins: Add another pin and modify its color and name

SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata Help

[3] virtual_red - [PACE_OCI.20240907T172452.L2.SFREFL.V2_0.NRT.nc] - [Users/dknowles/SeaDASTraining/OceanTools/2024/ArgentineSea/PACE_OCI.20240907T172452.L2.SFREFL.V2_0.NRT.nc]

File Manager x World Map World View ...645 [3] OCI TC 645 555 425 (1.0, 0.005) RGB x [3] OCI TC 645 555 425 (0.7, 0.005) RGB x [3] OCI TC 645 555 425 (0.3, 0.005) RGB x [3] OCI TC 645 555 42...

Flag Codings
Vector Data
Bands
Masks
[2] PACE_OCI.20240907T172452.L2.OC_BGC.V2_0.NRT.nc
[3] PACE_OCI.20240907T172452.L2.SFREFL.V2_0.NRT.nc
Metadata
Flag Codings
Vector Data
Bands
rhos
rhos_339 (339.16 nm)
rhos_353 (353.344 nm)
rhos_368 (368.083 nm)
rhos_380 (380.419 nm)
rhos_388 (387.811 nm)
rhos_400 (400.178 nm)

Navigation - [3] RGB Color Manager - Layer Editor - pins

Red Green Blue

Name: virtual_green
Unit: null
Min: -0.27
Max: 1.042
Rough statistics!

More Options

Pin Manager x

X	Y	Lon	Lat	Color	Label
575.500	1267.5...	-59.926952	-42.675259	Dark Green	Dark Green Bloom
382.041	1158.0...	-63.110519	-42.020847	Bright Green	Bright Green Bloom (Coastal)
855.500	1265.5...	-56.005978	-41.899178	Blue	BlueBloom
640.500	152.500	-62.496098	-30.734665	Dark Green	Mar Chiquita

X 327 Y 233 Lat 32°22'10" S Lon 66°19'59... Zoom 1:1.4 Level 0 Pixel Spacing: 1206.83 m 1143.01...

Pins: Export Pins

SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

[3] virtual_red - [PACE_OCI.20240907T172452.L2.SFREFL.V2_0.NRT.nc] - [Users/dknowles/SeaDASTraining/OceanOp/2024/ArgentineSea/PACE_OCI.20240907T172452.L2.SFREFL.V2_0.NRT.nc]

File Manager x World Map World View ...645 [3] OCI TC 645 555 425 (1.0, 0.005) RGB x [3] OCI TC 645 555 425 (0.7, 0.005) RGB x [3] OCI TC 645 555 425 (0.3, 0.005) RGB x [3] OCI TC 645 555 42...

Flag Codings
Vector Data
Bands
Masks
[2] PACE_OCI.20240907T172452.L2.OC_BGC.V2_0.NRT.nc
[3] PACE_OCI.20240907T172452.L2.SFREFL.V2_0.NRT.nc
Metadata
Flag Codings
Vector Data
Bands
rhos
rhos_339 (339.16 nm)
rhos_353 (353.344 nm)
rhos_368 (368.083 nm)
rhos_380 (380.419 nm)
rhos_388 (387.811 nm)
rhos_400 (400.178 nm)
rhos_415 (415.925 nm)

Navigation - [3] RGB Color Manager - x Layer Editor - pins

Red Green Blue

Name: virtual_green
Unit: null
Min: -0.27
Max: 1.042
Rough statistics!

More Options

Pin Manager x

X	Y	Lon	Lat	Color	Label
575.500	1267.5...	-59.926952	-42.675259	Dark Green Bloom	
382.041	1158.0...	-63.110519	-42.020847	Bright Green Bloom (Coastal)	
855.500	1265.5...	-56.005978	-41.899178	BlueBloom	
640.500	152.500	-62.496098	-30.734665		Mar Chiquita

X 327 Y 233 Lat 32°22'10" S Lon 66°19'59... Zoom 1:1.4 Level 0 Pixel Spacing: 1206.83 m 1143.01...

Pins: Import Pins into different file (BGC file with chlor_a)

The screenshot displays the SeaDAS software interface. The main window shows a map of the Argentine Sea with a color-coded Chlorophyll *a* concentration. A vertical color bar on the right indicates the concentration scale in mg m^{-3} , ranging from 0.01 (dark blue) to 20 (dark red). The interface includes a menu bar (File, Edit, View, SeaDAS-Toolbox, Analysis, Layer, Vector, Raster, Optical, Tools, Window, Earthdata-Cloud, Help), a toolbar with various icons, and a File Manager on the left. A Pin Manager window is open, showing a table with columns for X, Y, Lon, Lat, Color, and Label. The Color Manager is also visible, showing a palette derived from 'universal_blurred.cpd' and a range from 0.01 to 20.0. The status bar at the bottom displays coordinates (X, Y, Lat, Lon) and zoom/level information.

File Manager x World Map World View [2] chlor_a x [3] rhos_425 x [3] rhos_465 x [3] rhos_555 x [3] rhos_645 x [3] OCI TC 645 555 425 (1.0, 0.01) RGB x [3] OCI TC 645 555 4...

[1] PACE_OCI.20240907T172452.L2_OC_AOP.V2_0.NRT.nc
Metadata
Flag Codings
Vector Data
Bands
Masks

[2] PACE_OCI.20240907T172452.L2_OC_AOP.V2_0.NRT.nc
Metadata
Flag Codings
Vector Data
Bands
chlor_a
carbon_phyto
poc
l2_flags
carbon_phyto_unc
chlor_a_unc

Navigation - [2] chlor_a Color Manager - [2]... x Layer Editor

Editor: Basic Sliders Table

Palette
Derived from universal_blurred.cpd
Load exact values Reverse

Range
Min: 0.01 Max: 20.0
From Palette From Data

Scheme
More Options

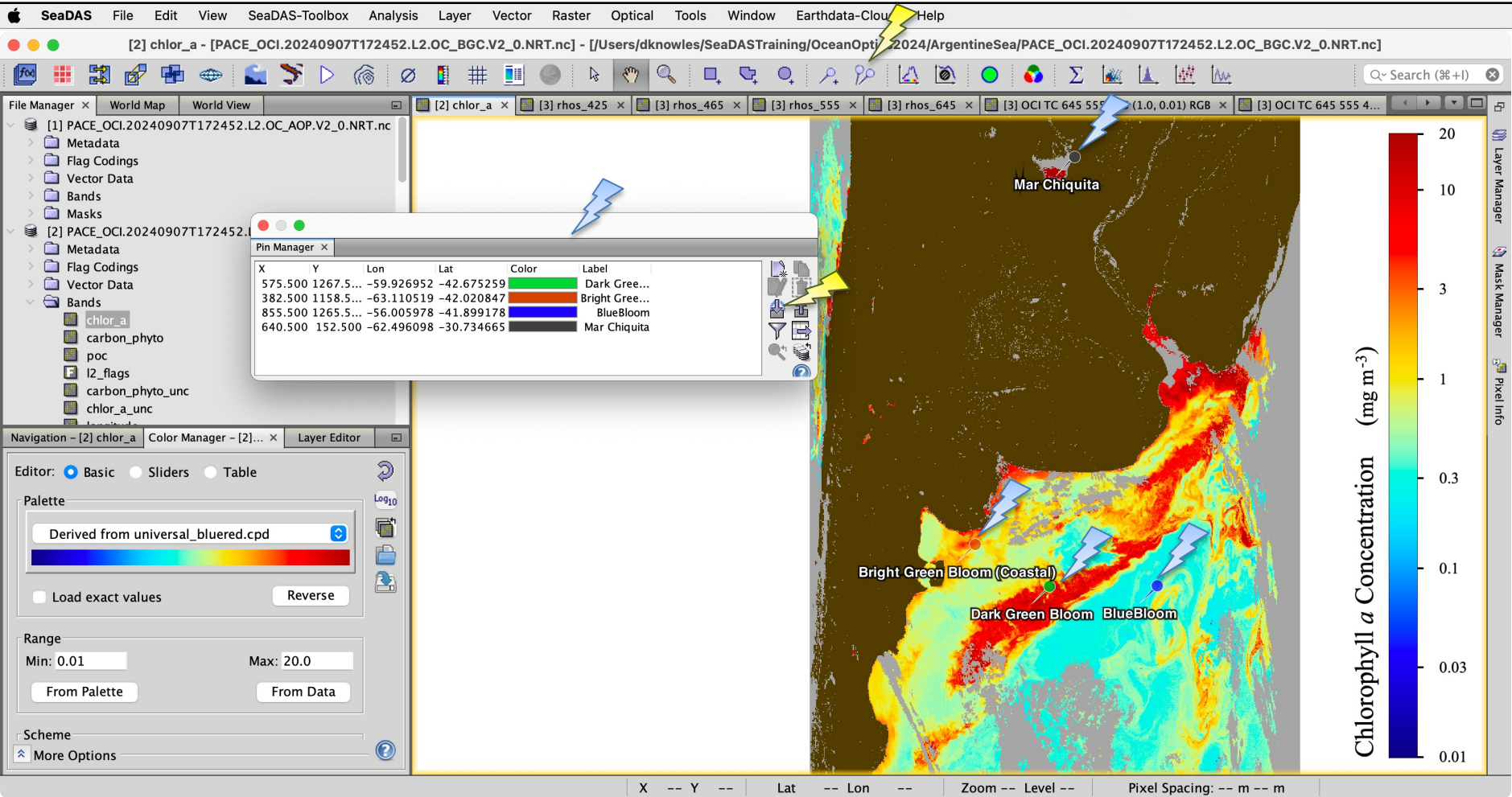
X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

Chlorophyll *a* Concentration (mg m^{-3})

Layer Manager Mask Manager Pixel Info

Pins: Import Pins into different file (BGC file with chlor_a)

50



SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

[2] chlor_a - [PACE_OCI.20240907T172452.L2_OC_BGC.V2_0.NRT.nc] - [/Users/dknowles/SeaDASTraining/OceanOptics2024/ArgentineSea/PACE_OCI.20240907T172452.L2_OC_BGC.V2_0.NRT.nc]

File Manager x World Map World View [2] chlor_a x [3] rhos_425 x [3] rhos_465 x [3] rhos_555 x [3] rhos_645 x [3] OCI TC 645 555 425 (1.0, 0.01) RGB x [3] OCI TC 645 555 4...

[1] PACE_OCI.20240907T172452.L2_OC_AOP.V2_0.NRT.nc
Metadata
Flag Codings
Vector Data
Bands
Masks

[2] PACE_OCI.20240907T172452.L2_OC_BGC.V2_0.NRT.nc
Metadata
Flag Codings
Vector Data
Bands
chlor_a
carbon_phyto
poc
l2_flags
carbon_phyto_unc
chlor_a_unc

Navigation - [2] chlor_a Color Manager - [2]... x Layer Editor

Editor: Basic Sliders Table

Palette
Derived from universal_blurred.cpd

Load exact values

Range
Min: 0.01 Max: 20.0

Scheme

Bright Green Bloom (Coastal)

Dark Green Bloom

BlueBloom

X 368 Y 1116 Lat 41°36'56" S Lon 63°27'31"... Zoom 1.8:1 Level 0 Pixel Spacing: 1206.83 m 1143.01...

Layer Manager Mask Manager Pixel Info

Pins: Zoom in to make sure a good pixel is pinned

52

The screenshot displays the SeaDAS software interface. At the top, the menu bar includes File, Edit, View, SeaDAS-Toolbox, Analysis, Layer, Vector, Raster, Optical, Tools, Window, Earthdata-Cloud, and Help. The title bar shows the current project: [2] chlor_a - [PACE_OCI.20240907T172452.L2.OC_BGC.V2_0.NRT.nc]. The main window is divided into several panels:

- File Manager:** Shows a hierarchical view of the project files, including folders for Metadata, Flag Codings, Vector Data, Bands, and Masks, and a list of data files like chlor_a, carbon_phyto, poc, l2_flags, carbon_phyto_unc, and chlor_a_unc.
- Navigation:** Includes a navigation pane for the current layer (chlor_a) and a Color Manager panel.
- Color Manager:** The 'Basic' editor is selected. The color palette is 'Derived from universal_bluered.cpd', showing a gradient from blue to red. The range is set from 0.01 to 20.0. The 'From Palette' button is active.
- Main Map:** Displays a satellite-style map of the Mar Chiquita region. A red lightning bolt icon is pinned to a specific location on the map, labeled 'Mar Chiquita'.
- Right Sidebar:** Contains vertical toolbars for Layer Manager, Mask Manager, and Pixel Info.

At the bottom of the interface, a status bar shows coordinates (X, Y, Lat, Lon), zoom and level settings, and pixel spacing information.

The screenshot displays the SeaDAS software interface. At the top, the menu bar includes File, Edit, View, SeaDAS-Toolbox, Analysis, Layer, Vector, Raster, **Pin**, Tools, Window, Earthdata-Cloud, and Help. The title bar shows the active layer: [2] chlor_a - [PACE_OCI.20240907T172452.L2.OC_BGC.V2_0.NRT.nc].

The main window is divided into several panels:

- File Manager:** Shows a hierarchical tree of data layers. The selected layer is [2] PACE_OCI.20240907T172452.L2.OC_BGC.V2_0.NRT.nc, with sub-items for Metadata, Flag Codings, Vector Data, Bands, and Masks. The 'Bands' folder is expanded, showing items like chlor_a, carbon_phyto, poc, l2_flags, carbon_phyto_unc, and chlor_a_unc.
- Navigation:** Includes a 'Color Manager' panel with 'Basic' selected, a color palette 'Derived from universal_bluered.cpd', and 'Range' settings (Min: 0.01, Max: 20.0).
- Main Map:** Displays a satellite image of the Mar Chiquita lagoon. A red lightning bolt icon is positioned over the lagoon, with a blue square outline indicating its movement path. The text 'Mar Chiquita' is overlaid on the map.
- Right Sidebar:** Contains 'Layer Manager', 'Mask Manager', and 'Pixel Info' panels.

At the bottom, the status bar shows coordinates: X 589 Y 126 Lat 30°34'35" S Lon 63°09'36" W, Zoom 5.7:1 Level 0, and Pixel Spacing: 1206.83 m 1143.01...

SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

[2] chlor_a - [PACE_OCI.20240907T172452.L2.OC_BGC.V2_0.NRT.nc] - [/Users/dknowles/SeaDASTraining/OceanOpti...2024/ArgentineSea/PACE_OCI.20240907T172452.L2.OC_BGC.V2_0.NRT.nc]

File Manager x World Map World View [2] chlor_a x [3] rhos_425 x [3] rhos_465 x [3] rhos_555 x [3] rhos_645 x [3] OCI TC 645 555 425 (1.0, 0.01) RGB x [3] OCI TC 645 555 4...

[1] PACE_OCI.20240907T172452.L2.OC_AOP.V2_0.NRT.nc
 Metadata
 Flag Codings
 Vector Data
 Bands
 Masks

[2] PACE_OCI.20240907T172452.L2.OC_BGC.V2_0.NRT.nc
 Metadata
 Flag Codings
 Vector Data
 Bands
 chlor_a
 carbon_phyto
 poc
 l2_flags
 carbon_phyto_unc
 chlor_a_unc

Navigation - [2] chl... Color Manager -... x Layer Editor - pins

Editor: Basic Sliders Table

Palette
 Derived from universal_bluered.cpd
 Load exact values

Range
 Min: 0.01 Max: 20.0

Scheme

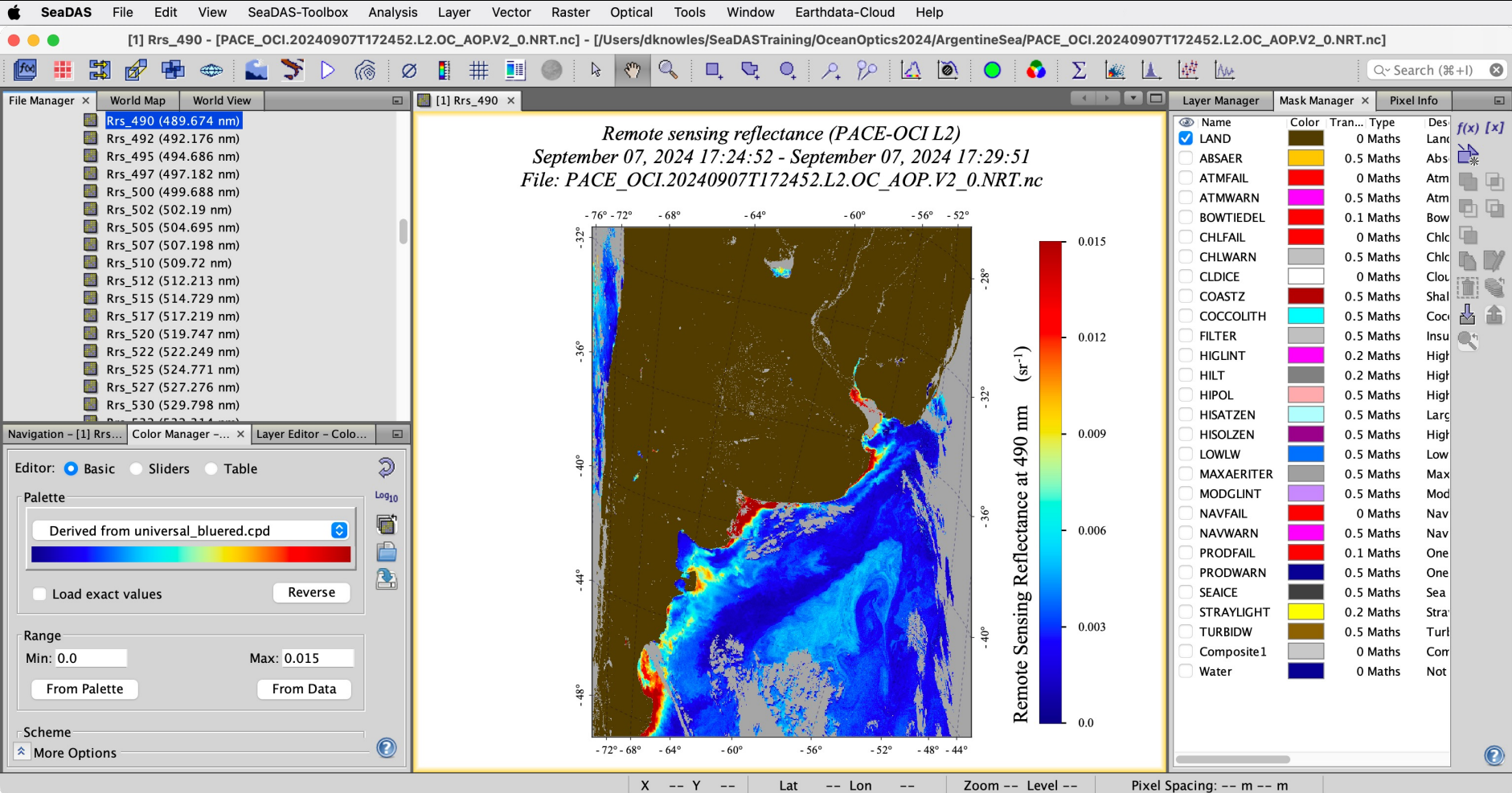
Pin Manager x

X	Y	Lon	Lat	Color	Label
575.500	1267.5...	-59.926952	-42.675259	Green	Dark Green Bloom
382.500	1158.5...	-63.110519	-42.020847	Red	Bright Green Bloom (Coastal)
855.500	1265.5...	-56.005978	-41.899178	Blue	BlueBloom
631.297	145.067	-62.620033	-30.681200	Black	Mar Chiquita

Layer Manager
 Mask Manager
 Pixel Info

X 589 Y 126 Lat 30°34'35" S Lon 63°09'36... Zoom 5.7:1 Level 0 Pixel Spacing: 1206.83 m 1143.01...

SeaDAS Workshop
Case Study: Spectral Analysis
Spectrum View



Spectrum View: Import Pins

SeaDAS 9.1.0

File Manager x World Map World View [1] Rrs_490 x

Navigation - [1] Rrs... Color Manager - x

Editor: Basic Sliders Table

Palette

Derived from universal_bluered.cpd

Load exact values Reverse

Range

Min: 0.0 Max: 0.015

From Palette From Data

Scheme

More Options

Pin Manager x

X	Y	Lon	Lat	Color	Label
575.500	1267.5...	-59.926952	-42.675259	Dark Gree...	Dark Green Bloom
382.500	1158.5...	-63.110519	-42.020847	Bright Gree...	Bright Green Bloom
855.500	1265.5...	-56.005978	-41.899178	BlueBloom	BlueBloom
640.500	152.500	-62.496098	-30.734665	Mar Chiquita	Mar Chiquita

Layer Manager Mask Manager x Pixel Info

Name	Color	Tran...	Type	Des
<input checked="" type="checkbox"/> LAND	Dark Brown	0 Maths	Land	Land
<input type="checkbox"/> ABSAER	Yellow	0.5 Maths	Abs	Abs
<input type="checkbox"/> ATMFAIL	Red	0 Maths	Atm	Atm
<input type="checkbox"/> ATMWARN	Magenta	0.5 Maths	Atm	Atm
<input type="checkbox"/> BOWTIEDEL	Cyan	0.1 Maths	Bow	Bow
<input type="checkbox"/> CHLFAIL	Red	0 Maths	Chlc	Chlc
<input type="checkbox"/> CHLWARN	Grey	0.5 Maths	Chlc	Chlc
<input type="checkbox"/> CLDICE	White	0 Maths	Clou	Clou
<input type="checkbox"/> COASTZ	Dark Red	0.5 Maths	Shal	Shal
<input type="checkbox"/> COCCOLITH	Cyan	0.5 Maths	Coc	Coc
<input type="checkbox"/> FILTER	Grey	0.5 Maths	Insu	Insu
<input type="checkbox"/> HIGLINT	Magenta	0.2 Maths	High	High
<input type="checkbox"/> HILT	Grey	0.2 Maths	High	High
<input type="checkbox"/> HIPOL	Pink	0.5 Maths	High	High
<input type="checkbox"/> HISATZEN	Cyan	0.5 Maths	Larg	Larg
<input type="checkbox"/> HISOLZEN	Purple	0.5 Maths	High	High
<input type="checkbox"/> LOWLW	Blue	0.5 Maths	Low	Low
<input type="checkbox"/> MAXAERITER	Grey	0.5 Maths	Max	Max
<input type="checkbox"/> MODGLINT	Purple	0.5 Maths	Mod	Mod
<input type="checkbox"/> NAVFAIL	Red	0 Maths	Nav	Nav
<input type="checkbox"/> NAVWARN	Magenta	0.5 Maths	Nav	Nav
<input type="checkbox"/> PRODFAIL	Red	0.1 Maths	One	One
<input type="checkbox"/> PRODWARN	Dark Blue	0.5 Maths	One	One
<input type="checkbox"/> SEAICE	Grey	0.5 Maths	Sea	Sea
<input type="checkbox"/> STRAYLIGHT	Yellow	0.2 Maths	Stra	Stra
<input type="checkbox"/> TURBIDW	Grey	0.5 Maths	Turb	Turb
<input type="checkbox"/> Composite1	Grey	0 Maths	Corr	Corr
<input type="checkbox"/> Water	Dark Blue	0 Maths	Not	Not
<input type="checkbox"/> pins	Red	0.5 Geometry Mas		

Remote Sensing Reflectance at 490 nm (sr⁻¹)

Bright Green Bloom (Coastal)

Dark Green Bloom

BlueBloom

Mar Chiquita

X 69 Y 571 Lat 37°02'34" S Lon 72°11'16... Zoom 1:2.3 Level 1 Pixel Spacing: 1206.83 m 1143.01...

SeaDAS 9.1.0

File Manager x World View x [1] Rrs_490 x

Spectrum View x

Spectrum Plot

No product selected

Wavelength (nm)

0.00 0.05 0.10 0.15 0.20 0.25 0.30 0.35 0.40 0.45 0.50 0.55 0.60 0.65 0.70 0.75 0.80 0.85 0.90 0.95 1.00 1.05

0.00 0.05 0.10 0.15 0.20 0.25 0.30 0.35 0.40 0.45 0.50 0.55 0.60 0.65 0.70 0.75 0.80 0.85 0.90 0.95 1.00 1.05

0.00 0.003 0.006 0.009 0.012 0.015

Layer Manager Mask Manager x Pixel Info

Name	Color	Tran...	Type	Des
<input checked="" type="checkbox"/> LAND		0 Maths	Land	
<input type="checkbox"/> ABSAER		0.5 Maths	Abs	
<input type="checkbox"/> ATMFAIL		0 Maths	Atm	
<input type="checkbox"/> ATMWARN		0.5 Maths	Atm	
<input type="checkbox"/> BOWTIEDEL		0.1 Maths	Bow	
<input type="checkbox"/> CHLFAIL		0 Maths	Chlc	
<input type="checkbox"/> CHLWARN		0.5 Maths	Chlc	
<input type="checkbox"/> CLDICE		0 Maths	Clo	
<input type="checkbox"/> COASTZ		0.5 Maths	Shal	
<input type="checkbox"/> COCCOLITH		0.5 Maths	Coc	
<input type="checkbox"/> FILTER		0.5 Maths	Insu	
<input type="checkbox"/> HIGLINT		0.2 Maths	Higl	
<input type="checkbox"/> HILT		0.2 Maths	Higl	
<input type="checkbox"/> HIPOL		0.5 Maths	Higl	
<input type="checkbox"/> HISATZEN		0.5 Maths	Larg	
<input type="checkbox"/> HISOLZEN		0.5 Maths	Higl	
<input type="checkbox"/> LOWLW		0.5 Maths	Low	
<input type="checkbox"/> MAXAERITER		0.5 Maths	Max	
<input type="checkbox"/> MODGLINT		0.5 Maths	Mod	
<input type="checkbox"/> NAVFAIL		0 Maths	Nav	
<input type="checkbox"/> NAVWARN		0.5 Maths	Nav	
<input type="checkbox"/> PRODFAIL		0.1 Maths	One	
<input type="checkbox"/> PRODWARN		0.5 Maths	One	
<input type="checkbox"/> SEAICE		0.5 Maths	Sea	
<input type="checkbox"/> STRAYLIGHT		0.2 Maths	Stra	
<input type="checkbox"/> TURBIDW		0.5 Maths	Turb	
<input type="checkbox"/> Composite1		0 Maths	Corr	
<input type="checkbox"/> Water		0 Maths	Not	
<input type="checkbox"/> pins		0.5 Geometry Mas		

Navigation - [1] Rrs_490

Editor: Basic

Palette

Derived f

Load exa

Range

Min: 0.0

From Pale

Scheme

More Options

X 69 Y 571 Lat 37°02'34" S Lon 72°11'16... Zoom 1:2.3 Level 1 Pixel Spacing: 1206.83 m 1143.01...

SeaDAS 9.1.0

File Manager x World Map World View x [1] Rrs_490 x Spectrum View x

Q Search (%+)

Spectrum Plot

Available Spectra

Spectrum Name	Unit	Line Style	Symbol	Symbol Size
<input type="checkbox"/> Rrs_unc	sr ⁻¹	————	◇	3
<input checked="" type="checkbox"/> Rrs	sr ⁻¹	- - - -	△	3
<input type="checkbox"/> aot		————	○	3

OK Cancel Help

Layer Manager Mask Manager x Pixel Info

Name	Color	Tran...	Type	Des
<input checked="" type="checkbox"/> LAND		0 Maths		Lan
<input type="checkbox"/> ABSAER		0.5 Maths		Abs
<input type="checkbox"/> ATMFAIL		0 Maths		Atm
<input type="checkbox"/> ATMWARN		0.5 Maths		Atm
<input type="checkbox"/> BOWTIEDEL		0.1 Maths		Bow
<input type="checkbox"/> CHLFAIL		0 Maths		Chlc
<input type="checkbox"/> CHLWARN		0.5 Maths		Chlc
<input type="checkbox"/> CLDICE		0 Maths		Clo
<input type="checkbox"/> COASTZ		0.5 Maths		Shal
<input type="checkbox"/> COCCOLITH		0.5 Maths		Coc
<input type="checkbox"/> FILTER		0.5 Maths		Insu
<input type="checkbox"/> HIGLINT		0.2 Maths		Higl
<input type="checkbox"/> HILT		0.2 Maths		Higl
<input type="checkbox"/> HIPOL		0.5 Maths		Higl
<input type="checkbox"/> HISATZEN		0.5 Maths		Larg
<input type="checkbox"/> HISOLZEN		0.5 Maths		Higl
<input type="checkbox"/> LOWLW		0.5 Maths		Low
<input type="checkbox"/> MAXAERITER		0.5 Maths		Max
<input type="checkbox"/> MODGLINT		0.5 Maths		Mod
<input type="checkbox"/> NAVFAIL		0 Maths		Nav
<input type="checkbox"/> NAVWARN		0.5 Maths		Nav
<input type="checkbox"/> PRODFAIL		0.1 Maths		One
<input type="checkbox"/> PRODWARN		0.5 Maths		One
<input type="checkbox"/> SEAICE		0.5 Maths		Sea
<input type="checkbox"/> STRAYLIGHT		0.2 Maths		Stra
<input type="checkbox"/> TURBIDW		0.5 Maths		Turb
<input type="checkbox"/> Composite1		0 Maths		Corr
<input type="checkbox"/> Water		0 Maths		Not
<input type="checkbox"/> pins		0.5 Geometry Mas		

Editor: Basic

Palette

Derived f

Load exa

Range

Min: 0.0

From Pale

Scheme

More Options

X 69 Y 571 Lat 37°02'34" S Lon 72°11'16... Zoom 1:2.3 Level 1 Pixel Spacing: 1206.83 m 1143.01...

SeaDAS 9.1.0

File Manager x World View x [1] Rrs_490 x Spectrum View x

Spectrum Plot

Collecting Spectral Data

Collecting spectral data: this can take several minutes on larger files

Cancel

Wavelength (nm)

0.00 0.05 0.10 0.15 0.20 0.25 0.30 0.35 0.40 0.45 0.50 0.55 0.60 0.65 0.70 0.75 0.80 0.85 0.90 0.95 1.00 1.05

0.00 0.005 0.010 0.015 0.020 0.025 0.030 0.035 0.040 0.045 0.050 0.055 0.060 0.065 0.070 0.075 0.080 0.085 0.090 0.095 1.00 1.015 1.030 1.045 1.050

Layer Manager Mask Manager x Pixel Info

Name	Color	Tran...	Type	Des
<input checked="" type="checkbox"/> LAND		0	Maths	Land
<input type="checkbox"/> ABSAER		0.5	Maths	Abs
<input type="checkbox"/> ATMFAIL		0	Maths	Atm
<input type="checkbox"/> ATMWARN		0.5	Maths	Atm
<input type="checkbox"/> BOWTIEDEL		0.1	Maths	Bow
<input type="checkbox"/> CHLFAIL		0	Maths	Chlc
<input type="checkbox"/> CHLWARN		0.5	Maths	Chlc
<input type="checkbox"/> CLDICE		0	Maths	Clou
<input type="checkbox"/> COASTZ		0.5	Maths	Shal
<input type="checkbox"/> COCCOLITH		0.5	Maths	Coc
<input type="checkbox"/> FILTER		0.5	Maths	Insu
<input type="checkbox"/> HIGLINT		0.2	Maths	Higl
<input type="checkbox"/> HILT		0.2	Maths	Higl
<input type="checkbox"/> HIPOL		0.5	Maths	Higl
<input type="checkbox"/> HISATZEN		0.5	Maths	Larg
<input type="checkbox"/> HISOLZEN		0.5	Maths	Higl
<input type="checkbox"/> LOWLW		0.5	Maths	Low
<input type="checkbox"/> MAXAERITER		0.5	Maths	Max
<input type="checkbox"/> MODGLINT		0.5	Maths	Mod
<input type="checkbox"/> NAVFAIL		0	Maths	Nav
<input type="checkbox"/> NAVWARN		0.5	Maths	Nav
<input type="checkbox"/> PRODFAIL		0.1	Maths	One
<input type="checkbox"/> PRODWARN		0.5	Maths	One
<input type="checkbox"/> SEAICE		0.5	Maths	Sea
<input type="checkbox"/> STRAYLIGHT		0.2	Maths	Stra
<input type="checkbox"/> TURBIDW		0.5	Maths	Turb
<input type="checkbox"/> Composite1		0	Maths	Corr
<input type="checkbox"/> Water		0	Maths	Not
<input type="checkbox"/> pins		0.5	Geometry Mas	

X 69 Y 571 Lat 37°02'34" S Lon 72°11'16... Zoom 1:2.3 Level 1 Pixel Spacing: 1206.83 m 1143.01...

Spectrum View: Plot is Displayed

61

SeaDAS 9.1.0

File Manager x World Map x World View x [1] Rrs_490 x Spectrum View x

Spectrum Plot

The plot displays the relationship between Wavelength (nm) on the x-axis (ranging from 340 to 720) and sr⁻¹ on the y-axis (ranging from -0.008 to 0.024). The data series include Dark Green Bloom_Rrs (green triangles), Bright Green Bloom (Coastal)_Rrs (orange triangles), BlueBloom_Rrs (blue triangles), and Mar Chiquita_Rrs (grey triangles). The Mar Chiquita_Rrs series shows a prominent peak at approximately 560 nm. A vertical color bar on the right indicates a scale from 0.0 to 0.015.

Legend:

- Dark Green Bloom_Rrs
- Bright Green Bloom (Coastal)_Rrs
- BlueBloom_Rrs
- Mar Chiquita_Rrs

Layer Manager:

Name	Color	Tran...	Type	Des
<input checked="" type="checkbox"/> LAND	Black	0 Maths	Land	Land
<input type="checkbox"/> ABSAER	Yellow	0.5 Maths	Abs	Abs
<input type="checkbox"/> ATMFAIL	Red	0 Maths	Atm	Atm
<input type="checkbox"/> ATMWARN	Magenta	0.5 Maths	Atm	Atm
<input type="checkbox"/> BOWTIEDEL	Red	0.1 Maths	Bow	Bow
<input type="checkbox"/> CHLFAIL	Red	0 Maths	Chlc	Chlc
<input type="checkbox"/> CHLWARN	Grey	0.5 Maths	Chlc	Chlc
<input type="checkbox"/> CLDICE	White	0 Maths	Clo	Clo
<input type="checkbox"/> COASTZ	Red	0.5 Maths	Shal	Shal
<input type="checkbox"/> COCCOLITH	Cyan	0.5 Maths	Coc	Coc
<input type="checkbox"/> FILTER	Grey	0.5 Maths	Insu	Insu
<input type="checkbox"/> HIGLINT	Magenta	0.2 Maths	Higl	Higl
<input type="checkbox"/> HILT	Grey	0.2 Maths	Higl	Higl
<input type="checkbox"/> HIPOL	Pink	0.5 Maths	Higl	Higl
<input type="checkbox"/> HISATZEN	Cyan	0.5 Maths	Larg	Larg
<input type="checkbox"/> HISOLZEN	Purple	0.5 Maths	Higl	Higl
<input type="checkbox"/> LOWLW	Blue	0.5 Maths	Low	Low
<input type="checkbox"/> MAXAERITER	Grey	0.5 Maths	Max	Max
<input type="checkbox"/> MODGLINT	Purple	0.5 Maths	Mod	Mod
<input type="checkbox"/> NAVFAIL	Red	0 Maths	Nav	Nav
<input type="checkbox"/> NAVWARN	Magenta	0.5 Maths	Nav	Nav
<input type="checkbox"/> PRODFAIL	Red	0.1 Maths	One	One
<input type="checkbox"/> PRODWARN	Blue	0.5 Maths	One	One
<input type="checkbox"/> SEAICE	Grey	0.5 Maths	Sea	Sea
<input type="checkbox"/> STRAYLIGHT	Yellow	0.2 Maths	Stra	Stra
<input type="checkbox"/> TURBIDW	Grey	0.5 Maths	Turb	Turb
<input type="checkbox"/> Composite1	Grey	0 Maths	Corr	Corr
<input type="checkbox"/> Water	Blue	0 Maths	Not	Not
<input type="checkbox"/> pins	Red	0.5 Geometry Mas		

Navigation - [1] Rrs

Editor: Bas

Palette

Derived f

Load exa

Range

Min: 0.0

From Pale

Scheme

More Options

X 69 Y 571 Lat 37°02'34" S Lon 72°11'16... Zoom 1:2.3 Level 1 Pixel Spacing: 1206.83 m 1143.01...

Spectrum View: Edit Plot Properties (Title)

SeaDAS 9.1.0

File Manager x World View x [f1] Rrs_490 x

Spectrum View x

PACE OCI Rrs (Argentine Sea)

Properties...

- Copy
- Save as ▶
- Print...
- Zoom In ▶
- Zoom Out ▶
- Auto Range ▶

Chart Properties

Title Plot Other

General:

Show Title:

Text: PACE OCI Rrs (Argentine Sea)

Font: Tahoma-Bold, 20 Select...

Color: Select...

Cancel OK

sr⁻¹

Wavelength (nm)

Legend:

- Dark Green Bloom_Rrs
- Bright Green Bloom (Coastal)_Rrs
- BlueBloom_Rrs
- Mar Chiquita_Rrs

Layer Manager Mask Manager x Pixel Info

Name	Color	Tran...	Type	Des
<input checked="" type="checkbox"/> LAND		0 Maths	Land	
<input type="checkbox"/> ABSAER		0.5 Maths	Abs	
<input type="checkbox"/> ATMFAIL		0 Maths	Atm	
<input type="checkbox"/> ATMWARN		0.5 Maths	Atm	
<input type="checkbox"/> BOWTIEDEL		0.1 Maths	Bow	
<input type="checkbox"/> CHLFAIL		0 Maths	Chlc	
<input type="checkbox"/> CHLWARN		0.5 Maths	Chlc	
<input type="checkbox"/> CLDICE		0 Maths	Clo	
<input type="checkbox"/> COASTZ		0.5 Maths	Shal	
<input type="checkbox"/> COCCOLITH		0.5 Maths	Coc	
<input type="checkbox"/> FILTER		0.5 Maths	Insu	
<input type="checkbox"/> HIGLINT		0.2 Maths	High	
<input type="checkbox"/> HILT		0.2 Maths	High	
<input type="checkbox"/> HIPOL		0.5 Maths	High	
<input type="checkbox"/> HISATZEN		0.5 Maths	Larg	
<input type="checkbox"/> HISOLZEN		0.5 Maths	High	
<input type="checkbox"/> LOWLW		0.5 Maths	Low	
<input type="checkbox"/> MAXAERITER		0.5 Maths	Max	
<input type="checkbox"/> MODGLINT		0.5 Maths	Mod	
<input type="checkbox"/> NAVFAIL		0 Maths	Nav	
<input type="checkbox"/> NAVWARN		0.5 Maths	Nav	
<input type="checkbox"/> PRODFAIL		0.1 Maths	One	
<input type="checkbox"/> PRODWARN		0.5 Maths	One	
<input type="checkbox"/> SEAICE		0.5 Maths	Sea	
<input type="checkbox"/> STRAYLIGHT		0.2 Maths	Stra	
<input type="checkbox"/> TURBIDW		0.5 Maths	Turb	
<input type="checkbox"/> Composite1		0 Maths	Corr	
<input type="checkbox"/> Water		0 Maths	Not	
<input type="checkbox"/> pins		0.5 Geometry Mas		

Navigation - [1] Rr

Editor: Bas

Palette

Derived f

Load exa

Range

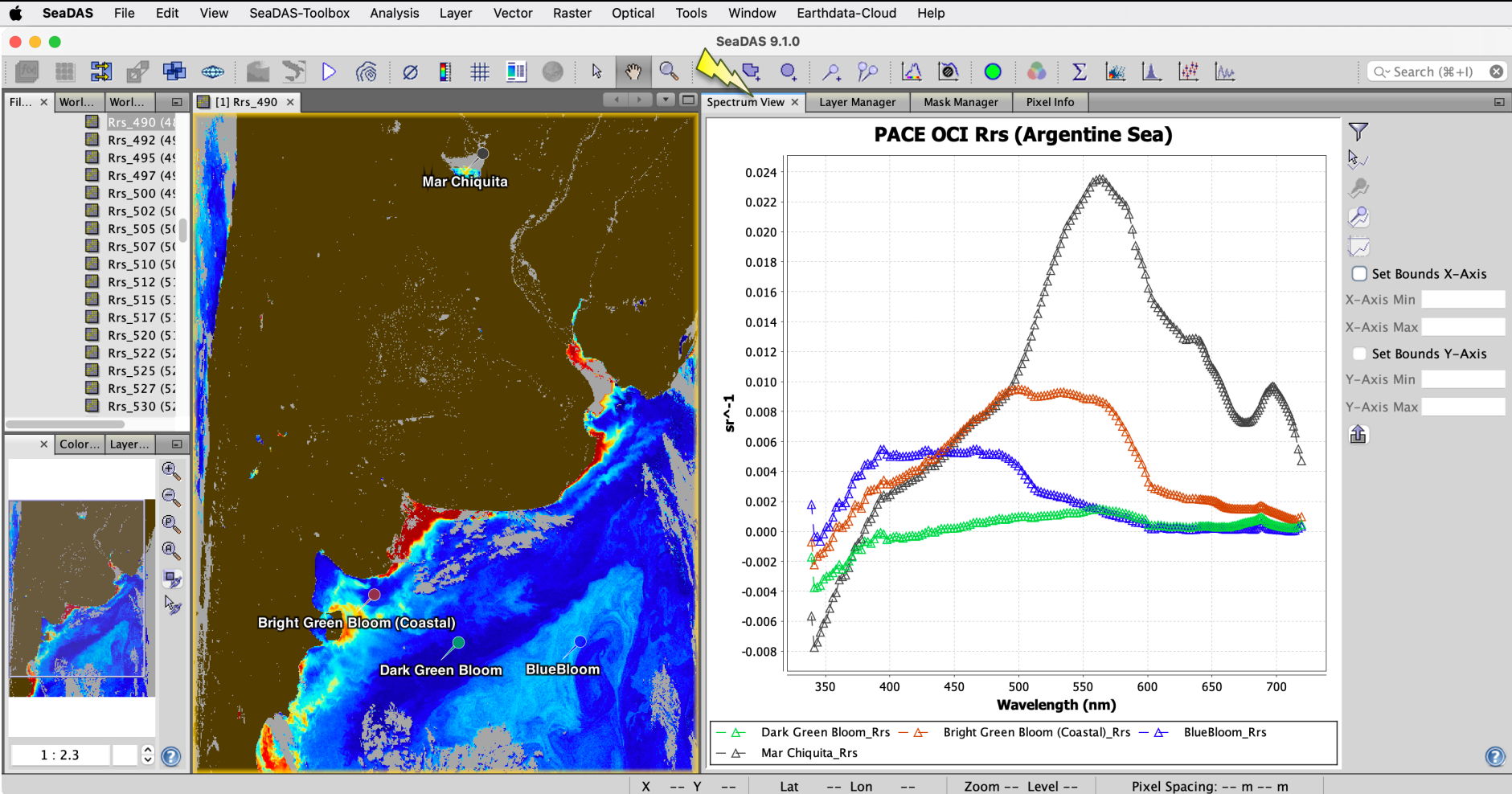
Min: 0.0

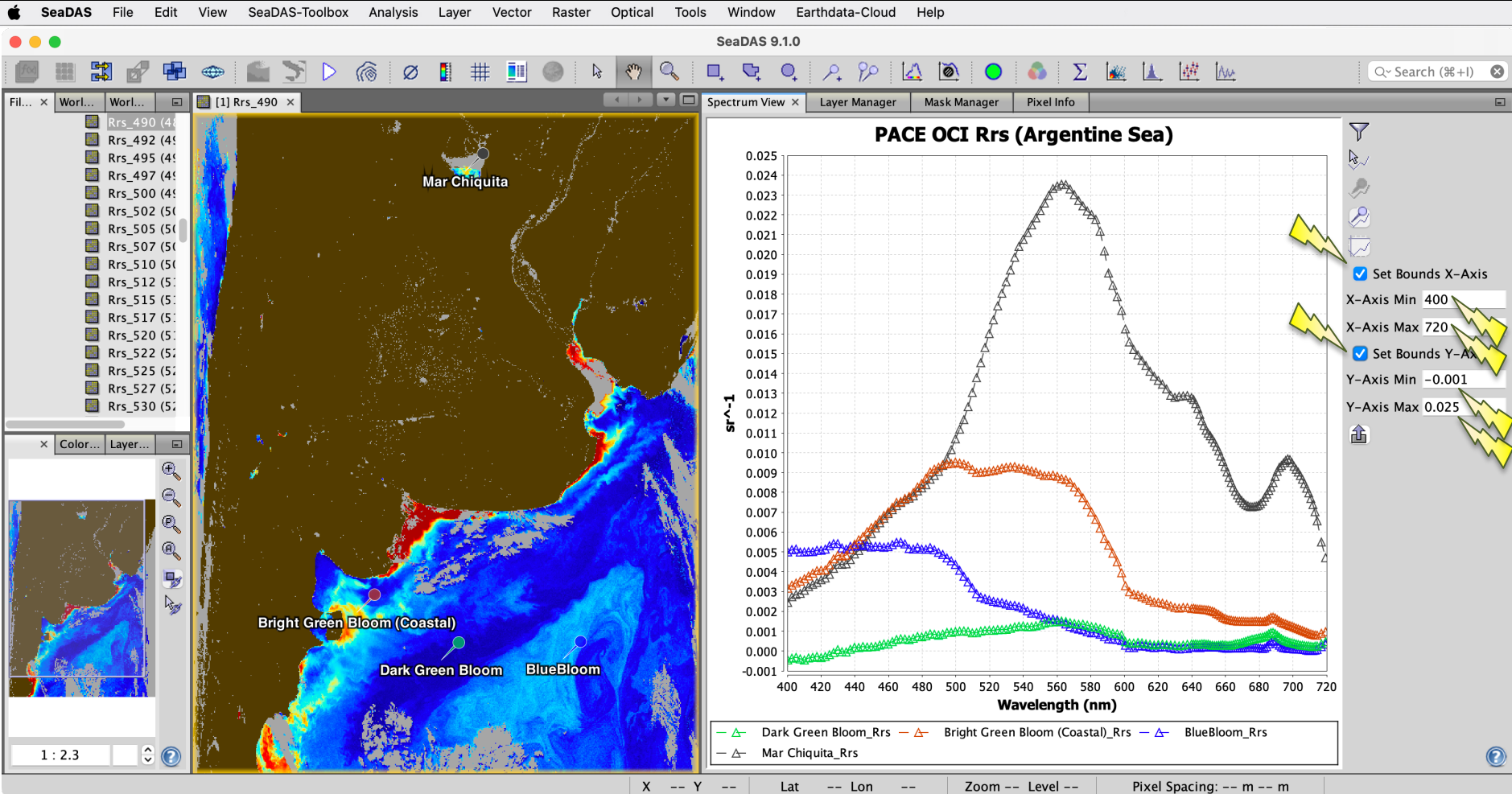
From Pale

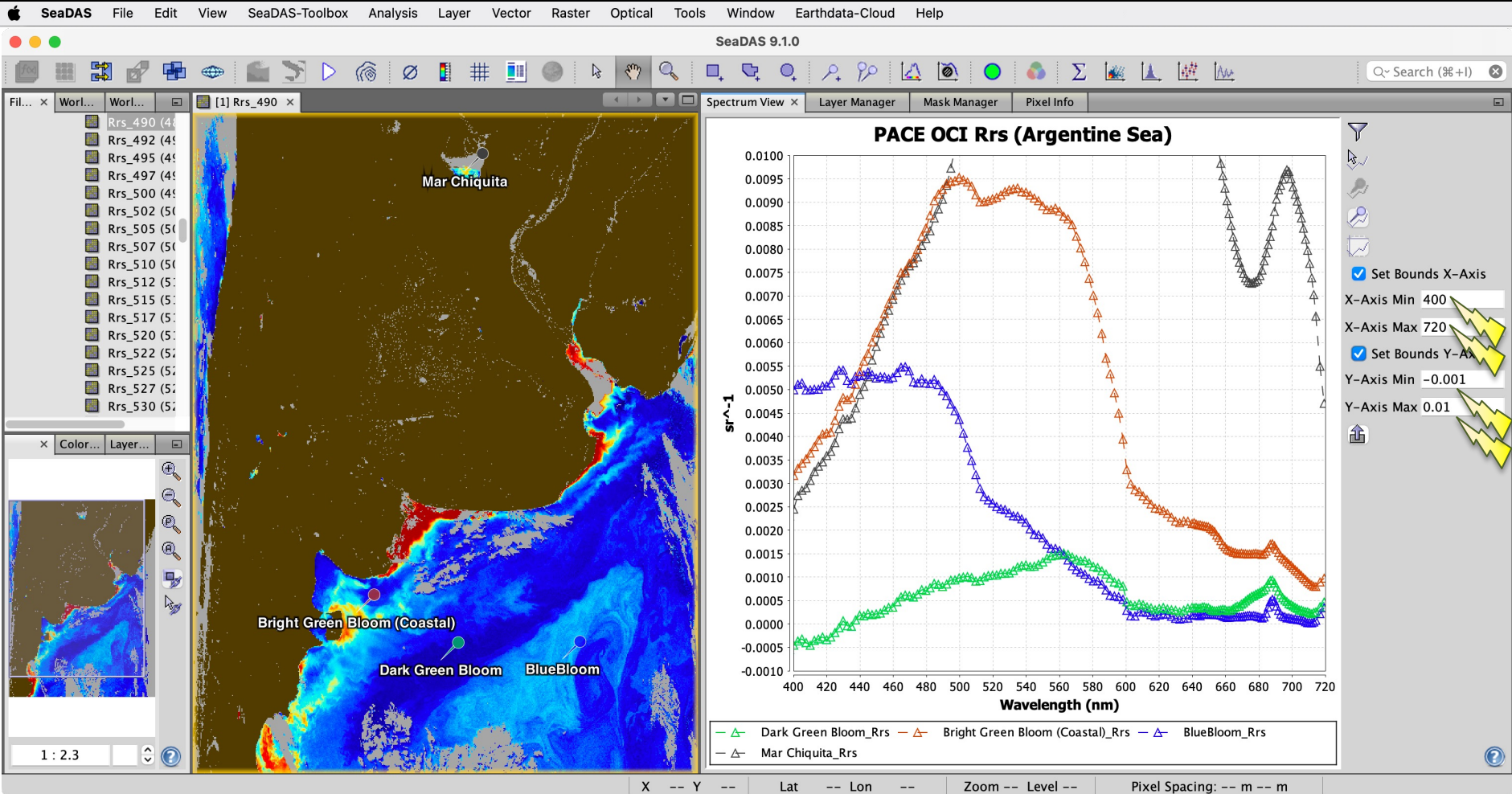
Scheme

More Options

X 69 Y 571 Lat 37°02'34" S Lon 72°11'16... Zoom 1:2.3 Level 1 Pixel Spacing: 1206.83 m 1143.01...







SeaDAS 9.1.0

File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

Q Search (#+)

File... x Worl... Worl... [1] Rrs_490 x Spectrum View x Layer Manager Mask Manager Pixel Info

Rrs_490 (4)

Rrs_492 (4)

Rrs_495 (4)

Rrs_497 (4)

Rrs_500 (4)

Rrs_502 (5)

Rrs_505 (5)

Rrs_507 (5)

Rrs_510 (5)

Rrs_512 (5)

Rrs_515 (5)

Rrs_517 (5)

Rrs_520 (5)

Rrs_522 (5)

Rrs_525 (5)

Rrs_527 (5)

Rrs_530 (5)

Mar Chiquita

Bright Green Bloom (Coastal)

Dark Green Bloom

BlueBloom

PACE OCI Rrs (Argentine Sea)

sr⁻¹

Wavelength (nm)

0.0100

0.0095

0.0090

0.0085

0.0005

0.0000

-0.0005

-0.0010

400 420 440 460 480 500 520 540 560 580 600 620 640 660 680 700 720

Dark Green Bloom_Rrs

Bright Green Bloom (Coastal)_Rrs

BlueBloom_Rrs

Mar Chiquita_Rrs

Export Pin Spectra

Save As: Rrs_Spectra

ArgentineSea

Name	Date Modified
DemoStuff	2024 Sep 28, Sat 10:24
l2merge_output.nc	2024 Sep 27, Fri 08:21
more	2024 Sep 26, Thu 10:33
OCSSW_LOG_l2extract.txt	2024 Sep 23, Mon 21:46
OCSSW_LOG_l2merge.txt	2024 Sep 27, Fri 08:24
PACE_OCI.20240907T172452.L2.m...	2024 Sep 27, Fri 08:53
PACE_OCI.20240907T172452.L2.m...	2024 Sep 27, Fri 08:19
PACE_OCI.20240907T172452.L2.O...	2024 Sep 23, Mon 16:46
PACE_OCI.20240907T172452.L2.O...	2024 Sep 23, Mon 16:33
PACE_OCI.20240907T172452.L2.SF...	2024 Sep 23, Mon 16:45

File Format: Spectra CSV (*.csv)

New Folder Cancel Save

Set Bounds X-Axis

X-Axis Min 400

X-Axis Max 720

Set Bounds Y-Axis

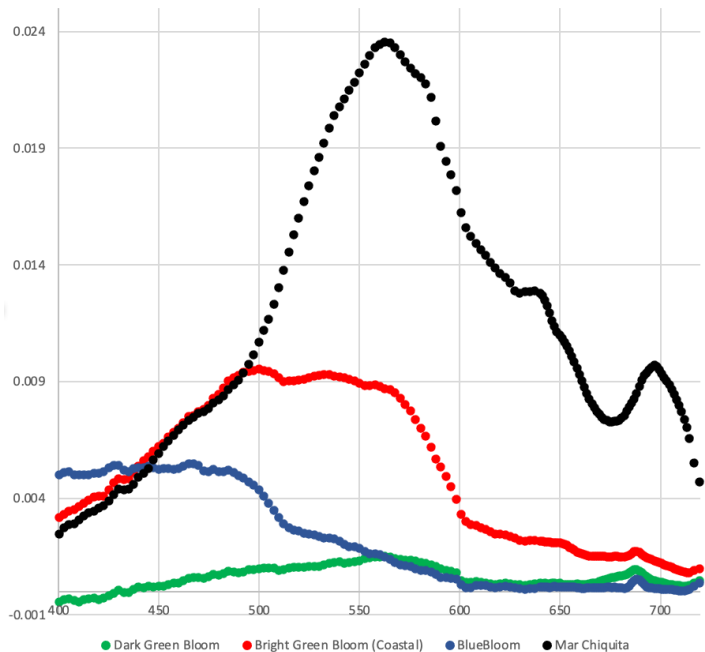
Y-Axis Min -0.001

Y-Axis Max 0.01

1 : 2.3

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

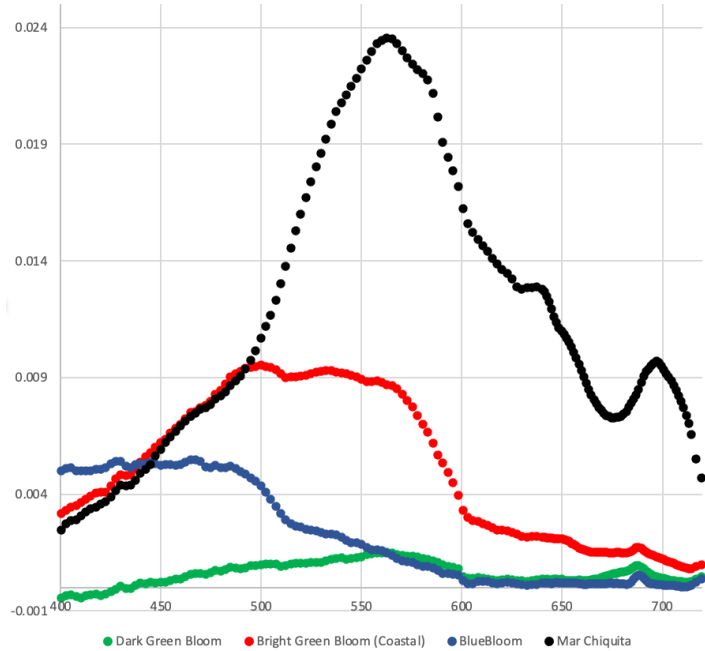
PACE OCI Rrs (Argentine Sea)



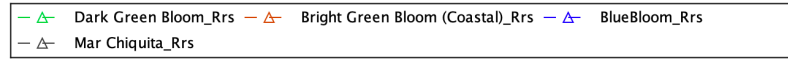
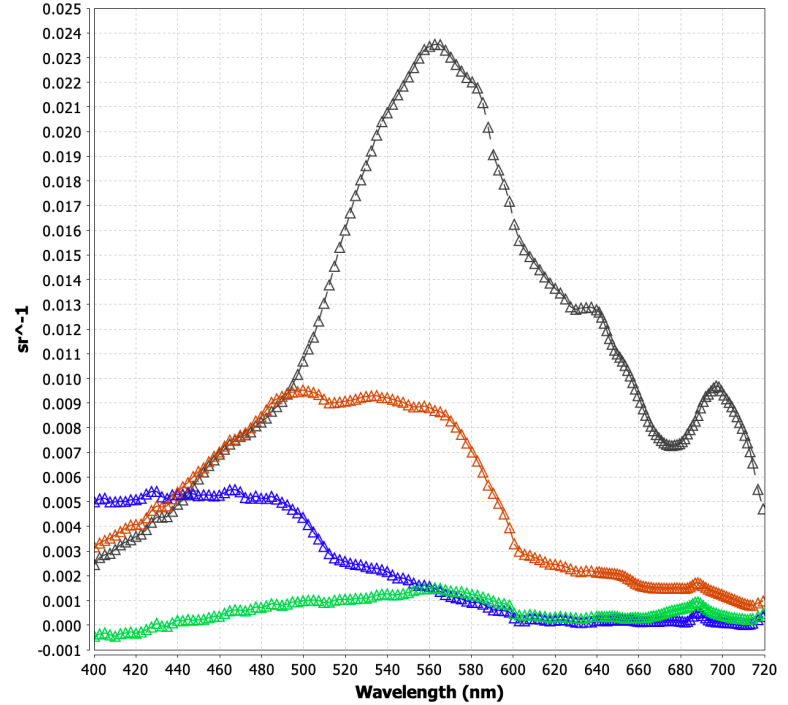
Wavelength	Dark Green Bloom	Bright Green Bloom (Coastal)	BlueBloom	Mar Chiquita
339.1600037	-0.001717999	-7.06E-04	0.001792001	-0.005653999
341.3210144	-0.003759999	-0.002235999	-3.66E-04	-0.007745999
343.6319885	-0.003709999	-0.001661999	-3.28E-04	-0.007387999
346.0169983	-0.003603999	-0.001473999	-6.56E-04	-0.006731999
348.4679871	-0.003175999	-0.001395999	-1.70E-04	-0.006129999
350.9119873	-0.002995999	-0.001025999	3.16E-04	-0.005837999
353.3439941	-0.002959999	-9.94E-04	2.88E-04	-0.005135999
355.7820129	-0.002753999	-4.02E-04	9.58E-04	-0.004419999
358.2349854	-0.002509999	2.88E-04	0.001622001	-0.004089999
360.6950073	-0.002219999	3.68E-04	0.001916001	-0.003237999
363.1369934	-0.002527999	2.50E-04	0.001708001	-0.003021999
365.6099854	-0.002311999	4.76E-04	0.001912001	-0.002911999
368.0830078	-0.001975999	6.78E-04	0.002502001	-0.002417999
370.5339966	-0.001697999	0.001244001	0.003170001	-0.001635999
372.9909973	-0.001175999	0.001790001	0.003684001	-0.001027999
375.4819946	-0.001201999	0.001696001	0.003744001	-7.42E-04
377.9259949	-0.001211999	0.001544001	0.003776001	-5.06E-04
380.4190063	-6.52E-04	0.002130001	0.004420001	1.50E-04
382.8760071	-6.88E-04	0.002694001	0.004528001	6.54E-04
385.3590088	-8.00E-04	0.002762001	0.004442001	8.56E-04
387.8110046	-4.94E-04	0.002824001	0.004624001	0.001288001
390.2969971	-1.76E-04	0.002832001	0.005042001	0.001814001
392.7640076	-8.00E-05	0.003164001	0.005458001	0.002214001
395.2380066	-1.88E-04	0.003418001	0.005474001	0.002416001
397.7059937	-5.48E-04	0.003166001	0.005154001	0.002306001
400.178009	-4.52E-04	0.003168001	0.004996001	0.002450001
402.6539917	-3.64E-04	0.003322001	0.005112001	0.002738001
405.1270142	-3.20E-04	0.003432001	0.005142001	0.002852001
407.605011	-3.96E-04	0.003524001	0.004990001	0.002906001
410.0740051	-4.56E-04	0.003646001	0.004996001	0.003062001
412.5570068	-3.50E-04	0.003784001	0.005010001	0.003252001
415.0249939	-3.20E-04	0.003924001	0.005008001	0.003366001

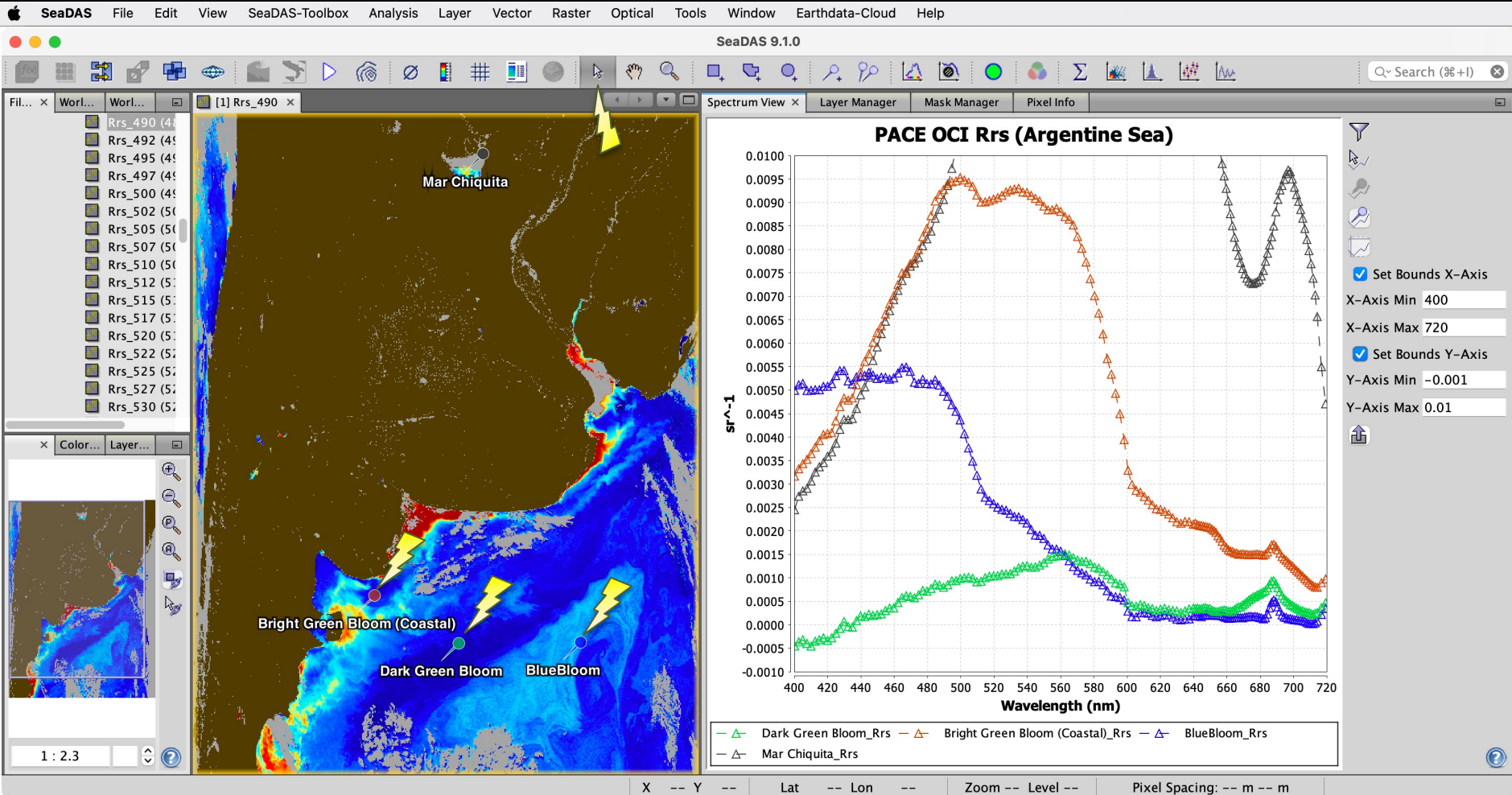
● Dark Green Bloom ● Bright Green Bloom (Coastal) ● BlueBloom ● Mar Chiquita

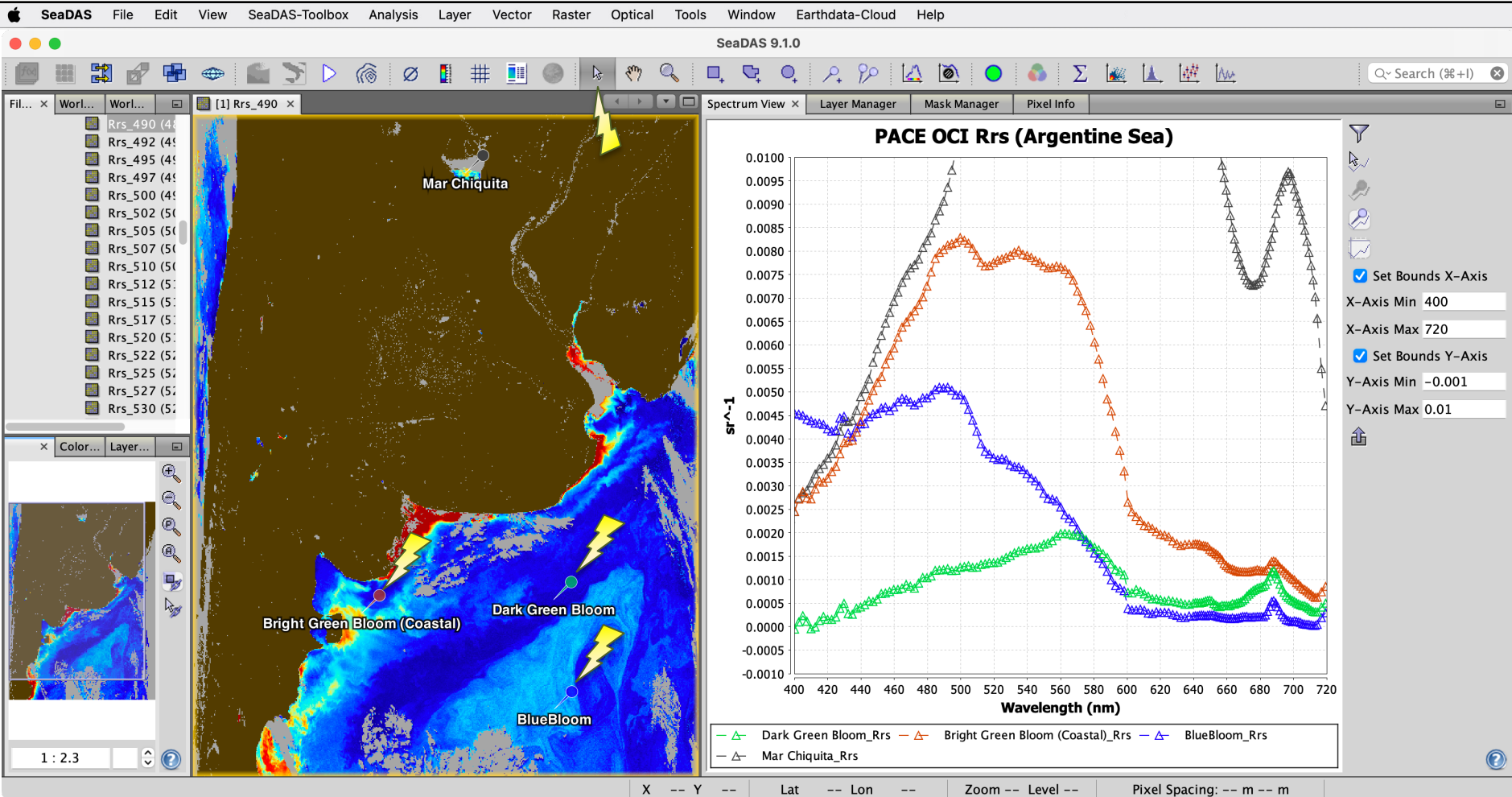
PACE OCI Rrs (Argentine Sea)



PACE OCI Rrs (Argentine Sea)







SeaDAS Workshop
Case Study

Spectral Analysis with Statistics/Masking

Notes

- Some Options:
 - L2gen
 - L2merge
 - BandMath (copy chlor_a from AOP file)
 - BandMath (chlor_a equation)

SeaDAS Workshop

Case Study

Spectral Analysis with Statistics/Masking

L2merge

(combining bands into a single level-2 file)

SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

[1] PACE_OCI.20240907T172452.L2_OC_BGC.V2_0.NRT.nc - [Users/dknowles/SeaDASTraining/OceanOptics2024/ArgentineSea/PACE_OCI.20240907T172452.L2_OC_BGC.V2_0.NRT.nc]

File Manager World Map World View [1] chlor_a [2] Rrs_490

Navigation Color Management Layer Editor

Chlorophyll Concentration, OCI Algorithm (PACE-OCI L2)
 September 07, 2024 17:24:52 - September 07, 2024 17:29:51
 File: PACE_OCI.20240907T172452.L2_OC_BGC.V2_0.NRT.nc

Chlorophyll *a* Concentration (mg m⁻³)

0.01 0.03 0.1 0.3 1 3 10 20

Remote sensing reflectance (PACE-OCI L2)
 September 07, 2024 17:24:52 - September 07, 2024 17:29:51
 File: PACE_OCI.20240907T172452.L2_OC_AOP.V2_0.NRT.nc

Remote Sensing Reflectance at 490 nm (sr⁻¹)

0.0 0.003 0.006 0.009 0.012 0.015

Name	Color	Trans...
<input checked="" type="checkbox"/> LAND	Black	0
<input type="checkbox"/> ABSAER	Yellow	0.5
<input type="checkbox"/> ATMFALL	Red	0
<input type="checkbox"/> ATMWARN	Magenta	0.5
<input type="checkbox"/> BOWTIEDEL	Red	0.1
<input type="checkbox"/> CHLFAIL	Red	0
<input type="checkbox"/> CHLWARN	Gray	0.5
<input type="checkbox"/> CLDICE	White	0
<input type="checkbox"/> COASTZ	Dark Red	0.5
<input type="checkbox"/> COCCOLITH	Cyan	0.5
<input type="checkbox"/> FILTER	Gray	0.5
<input type="checkbox"/> HIGLINT	Magenta	0.2
<input type="checkbox"/> HILT	Gray	0.2
<input type="checkbox"/> HIPOL	Pink	0.5
<input type="checkbox"/> HISATZEN	Cyan	0.5
<input type="checkbox"/> HISOLZEN	Purple	0.5
<input type="checkbox"/> LOWLW	Blue	0.5
<input type="checkbox"/> MAXAERITER	Gray	0.5
<input type="checkbox"/> MODGLINT	Purple	0.5
<input type="checkbox"/> NAVFAIL	Red	0
<input type="checkbox"/> NAVWARN	Magenta	0.5
<input type="checkbox"/> PRODFAIL	Red	0.1
<input type="checkbox"/> PRODWARN	Dark Blue	0.5
<input type="checkbox"/> SEACE	Dark Gray	0.5
<input type="checkbox"/> STRAYLIGHT	Yellow	0.2
<input type="checkbox"/> TURBIDW	Dark Yellow	0.5
<input type="checkbox"/> Composite1	Gray	0
<input type="checkbox"/> Water	Dark Blue	0

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

Install/Update SeaDAS Processors... .NRT.nc - [/Users/dknowles/SeaDASTraining/OceanOptics2024/ArgentineSea/PACE_OCI.20240907T172452.L2.OC_BGC.V2_0.NRT.nc]

SeaDAS Processors > Tools > georegion_gen... > l2merge...

File Manager x World Map World

[1] PACE_OCI.20240907T172452.L2.OC_BGC.V2_0.NRT.nc

[2] PACE_OCI.20240907T172452.L2.OC_AOP.V2_0.NRT.nc

SeaDAS Processor Location... Update LUTs... Software & System Info... General Tools

Tools > extractors... > HawkEye > MODIS > VIIRS > l1bgen_generic... > l2gen... > l2bin... > l3bin... > l3gen... > mapgen... > l3mapgen... > multilevel_processor...

Remote sensing reflectance (PACE-OCI L2)
September 07, 2024 17:24:52 - September 07, 2024 17:29:51
File: PACE_OCI.20240907T172452.L2.OC_AOP.V2_0.NRT.nc

Layer Man... Mask M... Pixel Info

Name	Color	Tran...
<input checked="" type="checkbox"/> LAND		0
<input type="checkbox"/> ABSAER		0.5
<input type="checkbox"/> ATMFAIL		0
<input type="checkbox"/> ATMWARN		0.5
<input type="checkbox"/> BOWTIEDEL		0.1
<input type="checkbox"/> CHLFAIL		0
<input type="checkbox"/> CHLWARN		0.5
<input type="checkbox"/> CLDICE		0
<input type="checkbox"/> COASTZ		0.5
<input type="checkbox"/> COCCOLITH		0.5
<input type="checkbox"/> FILTER		0.5
<input type="checkbox"/> HIGLINT		0.2
<input type="checkbox"/> HILT		0.2
<input type="checkbox"/> HIPOL		0.5
<input type="checkbox"/> HISATZEN		0.5

Navigation ... x Color Manage... Layer Editor

Chlorophyll a Concentration (µg/m³)

0.01 0.03 0.1 0.3 1 3 10 20

0.0 0.003 0.006 0.009 0.012 0.015

1 : 4 0°

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

l2merge

Primary I/O Files

ifile /Users/dknowles/SeaDASTraining/OceanOptics2024/ArgentineSea/PACE_OCI.20240907T172452.L2.merge.txt

ofile /Users/dknowles/SeaDASTraining/OceanOptics2024/ArgentineSea/PACE_OCI.20240907T172452.L2.merge.out.nc

product
chlor_a,Rrs

Load Parameters... Save Parameters...

Open in SeaDAS

Run Cancel Apply ?

SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

[3] Rrs_490 - PACE_OCI.20240907T172452.L2.merge.out.nc - /Users/dknowles/SeaDASTraining/OceanOptics2024/ArgentineSea/PACE_OCI.20240907T172452.L2.merge.out.nc

File Manager x World Map World View [3] chlor_a x [3] Rrs_490 x Layer Man... Mask M... Pixel Info

[1] PACE_OCI.20240907T172452.L2_OC_BGC.V
 [2] PACE_OCI.20240907T172452.L2_OC_AOP.V
 [3] PACE_OCI.20240907T172452.L2.merge.out.nc

Metadata
 Flag Codings
 Vector Data
 Bands
 Rrs
 l2_flags
 chlor_a
 latitude
 longitude
 Masks

Navigation ... Color Manage... Layer Editor

1: 3.9 0°

Chlorophyll Concentration, OCI Algorithm (PACE-OCI L2)
 September 07, 2024 17:24:52 - September 07, 2024 17:29:51
 File: PACE_OCI.20240907T172452.L2.merge.out.nc

Chlorophyll *a* Concentration (mg m⁻³)

0.01 0.03 0.1 0.3 1 3 10 20

Remote sensing reflectance (PACE-OCI L2)
 September 07, 2024 17:24:52 - September 07, 2024 17:29:51
 File: PACE_OCI.20240907T172452.L2.merge.out.nc

Remote Sensing Reflectance at 490 nm (sr⁻¹)

0.0 0.003 0.006 0.009 0.012 0.015

Name	Color	Trans...
<input checked="" type="checkbox"/> LAND	Black	0
<input type="checkbox"/> ABSAER	Yellow	0.5
<input type="checkbox"/> ATMFAIL	Red	0
<input type="checkbox"/> ATMWARN	Magenta	0.5
<input type="checkbox"/> BOWTIEDEL	Red	0.1
<input type="checkbox"/> CHLFAIL	Red	0
<input type="checkbox"/> CHLWARN	Grey	0.5
<input type="checkbox"/> CLDICE	White	0
<input type="checkbox"/> COASTZ	Red	0.5
<input type="checkbox"/> COCCOLITH	Cyan	0.5
<input type="checkbox"/> FILTER	Grey	0.5
<input type="checkbox"/> HIGLINT	Magenta	0.2
<input type="checkbox"/> HILT	Grey	0.2
<input type="checkbox"/> HIPOL	Pink	0.5
<input type="checkbox"/> HISATZEN	Cyan	0.5
<input type="checkbox"/> HISOLZEN	Purple	0.5
<input type="checkbox"/> LOWLW	Blue	0.5
<input type="checkbox"/> MAXAERITER	Grey	0.5
<input type="checkbox"/> MODGLINT	Purple	0.5
<input type="checkbox"/> NAVFAIL	Red	0
<input type="checkbox"/> NAVWARN	Magenta	0.5
<input type="checkbox"/> PRODFAIL	Red	0.1
<input type="checkbox"/> PRODWARN	Dark Blue	0.5
<input type="checkbox"/> SEACE	Dark Grey	0.5
<input type="checkbox"/> STRAYLIGHT	Yellow	0.2
<input type="checkbox"/> TURBIDW	Yellow	0.5
<input type="checkbox"/> Composite1	Grey	0
<input type="checkbox"/> Water	Dark Blue	0

SeaDAS Workshop

Case Study

Spectral Analysis with Statistics/Masking

Band Math

(combining bands into a single file)

SeaDAS 9.1.0

File Manager | World Map | World View | [1] Rrs_490 | [2] chlor_a

File Manager

- [1] PACE_OCI.20240907T172452.L2_OC_AOP.V2_0.NRT.nc
 - Metadata
 - Flag Codings
 - Vector Data
 - Bands
 - Rrs_unc
 - Rrs
 - aot
 - l2_flags
 - aww
 - angstrom
 - longitude
 - latitude
 - Masks
- [2] PACE_OCI.20240907T172452.L2_OC_BGC.V2_0.NRT.nc
 - Metadata
 - Flag Codings
 - Vector Data
 - Bands
 - chlor_a
 - carbon_phyto
 - poc
 - l2_flags
 - carbon_phyto_unc
 - chlor_a_unc
 - longitude
 - latitude
 - Masks

Navigation - [2] ch... | Color Manager ... | Layer Editor

Editor: Basic Sliders Table

Palette

Derived from universal_bluered.cpd

Remote sensing reflectance (PACE-OCI L2)
 September 07, 2024 17:24:52 - September 07, 2024 17:29:51
 File: PACE_OCI.20240907T172452.L2_OC_AOP.V2_0.NRT.nc

Remote Sensing Reflectance at 490 nm (sr⁻¹)

0.0 0.003 0.006 0.009 0.012 0.015

Chlorophyll Concentration, OCI Algorithm (PACE-OCI L2)
 September 07, 2024 17:24:52 - September 07, 2024 17:29:51
 File: PACE_OCI.20240907T172452.L2_OC_BGC.V2_0.NRT.nc

Chlorophyll a Concentration (mg m⁻³)

0.01 0.03 0.1 0.3 1 3 10 20

Color Bar | Annotat | Map Gri | Vector c | Masks | No-Dat | [2] chlor_a

Transparen... | Swipe: | ?

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

Band Math: Open band math and set target product (the AOP file)

SeaDAS 9.1.0

File Manager x World Map World View [1] Rrs_490 x [2] chlor_a x

File Manager x World Map World View

- [1] PACE_OCI.20240907T172452.L2_OC_AOP.V2_0.NRT.nc
 - Metadata
 - Flag Codings
 - Vector Data
 - Bands
 - Rrs_unc
 - Rrs
 - aot
 - l2_flags
 - aww
 - angstrom
 - longitude
 - latitude
 - Masks
- [2] PACE_OCI.20240907T172452.L2_OC_BGC.V2_0.NRT.nc
 - Metadata
 - Flag Codings
 - Vector Data
 - Bands
 - chlor_a
 - carbon_phyto
 - poc
 - l2_flags
 - carbon_phyto_unc
 - chlor_a_unc
 - longitude
 - latitude
 - Masks

Navigation - [2] ch... Color Manager ... x Layer Editor

Editor: Basic Sliders Table

Palette

Derived from universal_bluered.cpd

Band Maths

Target product:
[1] PACE_OCI.20240907T172452.L2_OC_AOP.V2_0.NRT.nc
[2] PACE_OCI.20240907T172452.L2_OC_BGC.V2_0.NRT.nc

Description:
Unit:
Spectral wavelength: 0.0

Virtual (save expression only, don't store data)
 Replace NaN and infinity results by NaN
 Generate associated uncertainty band

Band maths expression:

Load... Save... Edit Expression...

OK Cancel Help

Remote Sensing Reflectance at 490 nm (sr⁻¹)

Chlorophyll a Concentration (mg m⁻³)

Color Bar

- Color Bar
- Annotat
- Map Gri
- Vector c
- Masks
- No-Dat
- [2] chlo

Transparen...
Swipe:

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

Band Math: Set new band name and set math expression (source product BGC file)

SeaDAS 9.1.0

File Manager x World Map World View [1] Rrs_490 x [2] chlor_a x Pix...

Band Maths

Target product: [1] PACE_OCI.20240907T172452.L2_OC_AOP.V2_0.NRT.nc

Name: chlor_a

Description:

Unit:

Spectral wavelength: 0.0

Virtual (save expression only, don't store data)

Replace NaN and infinity results by NaN

Generate associated uncertainty band

Band maths expression: \$2.chlor_a

Load... Save... Edit Expression...

OK Cancel Help

Band Maths Expression Editor

Product: [2] PACE_OCI.20240907T172452.L2_OC_BGC.V2_0.NRT.nc

Data sources:

- \$2.chlor_a
- \$2.carbon_phyto
- \$2.poc
- \$2.l2_flags
- \$2.carbon_phyto_unc
- \$2.chlor_a_unc
- \$2.longitude
- \$2.latitude

Expression: \$2.chlor_a

Show bands

Show masks

Show tie-point grids

Show single flags

Constants... Operators... Functions...

OK Cancel Help

Navigation - [2] ch... Color Manager ... Layer Editor

Editor: Basic Sliders Table

Palette

Derived from universal_bluered.cpd

Remote Sensing Reflectance at 490 nm (sr^{-1})

Chlorophyll *a* Concentration (mg m^{-3})

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

Band Math: Make real band (but virtual could instead be useful)

SeaDAS 9.1.0

File Manager x World Map World View [1] Rrs_490 x [2] chlor_a x

[1] PACE_OCI.20240907T172452.L2_OC_AOP.V2_0.NRT.nc

- Metadata
- Flag Codings
- Vector Data
- Bands
 - Rrs_unc
 - Rrs
 - aot
 - l2_flags
 - awv
 - angstrom
 - longitude
 - latitude
- Masks

[2] PACE_OCI.20240907T172452.L2_OC_BGC.V2_0.NRT.nc

- Metadata
- Flag Codings
- Vector Data
- Bands
 - chlor_a
 - carbon_phyto
 - poc
 - l2_flags
 - carbon_phyto_unc
 - chlor_a_unc
 - longitude
 - latitude
- Masks

Navigation - [2] ch... Color Manager ... Layer Editor

Editor: Basic Sliders Table

Palette

Derived from universal_bluered.cpd

Band Maths

Target product:
[1] PACE_OCI.20240907T172452.L2_OC_AOP.V2_0.NRT.nc

Name: chlor_a

Description:

Unit:

Spectral wavelength: 0.0

Virtual (save expression only, don't store data)

Replace NaN and infinity results by NaN

Generate associated uncertainty band

Band maths expression:
\$2.chlor_a

Load... Save... Edit Expression...

OK Cancel Help

Remote sensing reflectance (PACE-OCI L2)
September 07, 2024 17:29:51
File: PACE_OCI.20240907T172452.L2_OC_AOP.V2_0.NRT.nc

Chlorophyll Concentration, OCI Algorithm (PACE-OCI L2)
September 07, 2024 17:24:52 - September 07, 2024 17:29:51
File: PACE_OCI.20240907T172452.L2_OC_BGC.V2_0.NRT.nc

Remote Sensing Reflectance at 490 nm (sr⁻¹)

Chlorophyll a Concentration (mg m⁻³)

Color Bar

- Color Bar
- Annotate
- Map Grid
- Vector Data
- Masks
- No-Data
- [2] chlor_a

Transparen...
Swipe:

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

SeaDAS 9.1.0

File Manager | World Map | World View | [1] Rrs_490 | [1] chlor_a

File Manager: [1] PACE_OCI.20240907T172452.L2.OC.AOP.V2_0.NRT.nc
 Metadata
 Flag Codings
 Vector Data
 Bands
 Rrs_unc
 Rrs
 aot
 l2_flags
 aww
 angstrom
 longitude
 latitude
 chlor_a
 Masks
 [2] PACE_OCI.20240907T172452.L2.OC.BGC.V2_0.NRT.nc
 Metadata
 Flag Codings
 Vector Data
 Bands
 chlor_a
 carbon_phyto
 poc
 l2_flags
 carbon_phyto_unc
 chlor_a_unc
 longitude
 latitude

Navigation - [1] ch... | Color Manager ... | Layer Editor

Editor: Basic | Sliders | Table
 Palette: Derived from universal_bluered.cpd

Remote sensing reflectance (PACE-OCI L2)
 September 07, 2024 17:24:52 - September 07, 2024 17:29:51
 File: PACE_OCI.20240907T172452.L2.OC.AOP.V2_0.NRT.nc

Remote Sensing Reflectance at 490 nm (sr⁻¹)

0.0 0.003 0.006 0.009 0.012 0.015

chlor_a (PACE-OCI L2)
 September 07, 2024 17:24:52 - September 07, 2024 17:29:51
 File: PACE_OCI.20240907T172452.L2.OC.AOP.V2_0.NRT.nc

Chlorophyll a Concentration

0.01 0.03 0.1 0.3 1 3 10 20

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

SeaDAS 9.1.0

File Manager x World Map World View [1] Rrs_490 x [1] chlora x

Remote sensing reflectance (PACE-OCI L2)
September 07, 2024 17:24:52 - September 07, 2024 17:29:51
File: PACE_OCI.20240907T172452.L2_OC_AOP.V2_0.NRT.nc

chlora (PACE-OCI L2)
September 07, 2024 17:24:52 - September 07, 2024 17:29:51
File: PACE_OCI.20240907T172452.L2_OC_AOP.V2_0.NRT.nc

chlora - Properties

Product Node Properties	
Name	chlora
Description	Chlorophyll Concentration, OCI Algorithm
Modified	<input checked="" type="checkbox"/>
Raster Band Properties	
Unit	mg m ⁻³
Data Type	float32
Raster size	1272 x 1710
Valid-Pixel Expression	chlora >= 0.00100 && chlora <= 100.00000
No-Data Value Used	<input checked="" type="checkbox"/>
No-Data Value	-32767.0
Spectral Wavelength	0.0
Spectral Bandwidth	0.0
Ancillary Variables	
Ancillary Relations	

chlora
Chlorophyll Concentration, OCI Algorithm, 1272 x 1710 pixels, (mg m⁻³)

Chlorophyll a Concentration (0)

0.03 0.1 0.3 1 3 10 20

Navigation - [1] ch... Layer Editor

Editor: Basic

Palette

Derived from universal_blurred.cpd

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

SeaDAS 9.1.0

File Manager | World Map | World View | [1] Rrs_490 | [1] chlor_a

File Manager

- [1] PACE_OCI.20240907T172452.L2_OC_AOP.V2_0.NRT.nc
 - Metadata
 - Flag Codings
 - Vector Data
 - Bands
 - Rrs_unc
 - Rrs
 - aot
 - I2_flags
 - aww
 - angstrom
 - longitude
 - latitude
 - chlor_a
 - Masks
 - Add Elevation Band
 - Math Band...
 - Convert Band
 - Filter Band...
 - Linear to/from dB
 - Export Transect Pixels
 - Open Image Window
 - Add Land Cover Band
 - [2] PACE_OCI.20240907T172951.L2_OC_AOP.V2_0.NRT.nc
 - Metadata
 - Flag Codings
 - Vector Data
 - Bands
 - chlor_a
 - carb
 - poc
 - I2_flags
 - carb
 - longitude
 - latitude

chlor_a - Properties

Product Node Properties	
Name	chlor_a
Description	
Modified	<input checked="" type="checkbox"/>
Raster Band Properties	
Unit	
Data Type	float32
Raster size	1272 x 1710
Valid-Pixel Expression	
No-Data Value Used	<input checked="" type="checkbox"/>
No-Data Value	NaN
Spectral Wavelength	0.0
Spectral Bandwidth	0.0
View Angle	0.0
Ancillary Variables	
Ancillary Relations	
Product Node Properties	

Buttons: Help, Close

Notes

- Valid-Pixel Expression was already applied when band was created.

September 07, 2024 17:24:52 - September 07, 2024 17:29:51
 PACE_OCI.20240907T172452.L2_OC_AOP.V2_0.NRT.nc

Map showing chlorophyll a concentration. The map covers a geographic area from approximately 72°W to 44°W and 28°N to 44°N. The color scale ranges from 0.01 (dark blue) to 20 (red).

Color Manager

- Color Bands
- Vector Data
- Masks
- No-Data
- [1] chlor_a

Transparency:

Swipe:

Navigation - [1] chlor_a

Editor: Basic Sliders Table

Palette

Derived from universal_blurred.cpd

Remote Sensing Reflectance at 490 nm (sr⁻¹)

0.0 0.003 0.006 0.009 0.012 0.015

Chlorophyll a Concentration ()

0.01 0.03 0.1 0.3 1 3 10 20

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

Band Math: Set "Description" and "Unit" (this could have been done during Band Math)

SeaDAS 9.1.0

File Manager x World Map World View [1] Rrs_490 x [1] chlor_a x

chlor_a - Properties

Product Node Properties

Name	chlor_a
Description	Chlorophyll Concentration, OCI Algorithm
Modified	<input checked="" type="checkbox"/>

Raster Band Properties

Unit	mg m ⁻³
Data Type	float32
Raster size	1272 x 1710
Valid-Pixel Expression	
No-Data Value Used	<input checked="" type="checkbox"/>
No-Data Value	NaN
Spectral Wavelength	0.0
Spectral Bandwidth	0.0
View Angle	0.0
Ancillary Variables	
Ancillary Relations	

Product Node Properties

Help Close

chlor_a (PACE-OCI L2)
September 07, 2024 17:24:52 - September 07, 2024 17:29:51
E_OCI.20240907T172452.L2_OC_AOP.V2_0.NRT.nc

Navigation - [1] ch... Color Manager ... Layer Editor

Editor: Basic Sliders Table

Palette

Derived from universal_blurred.cpd

Remote Sensing Reflectance at 490 nm (sr⁻¹)

Chlorophyll a Concentration ()

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

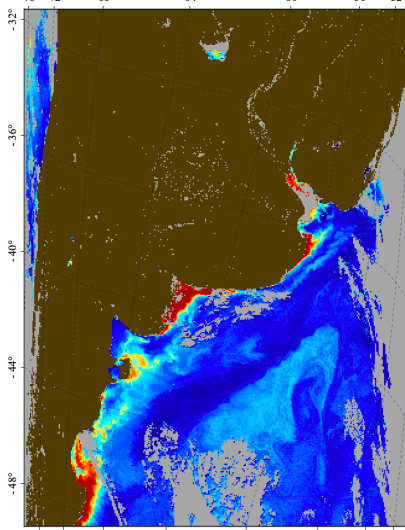
SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

[1] PACE_OCI.20240907T172452.L2.OC_AOP.V2_0.NRT.nc - [/Users/dknowles/SeaDASTraining/OceanOptics2024/ArgentineSea/PACE_OCI.20240907T172452.L2.OC_AOP.V2_0.NRT.nc]

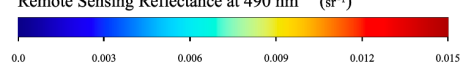
File Manager x World Map World View [1] Rrs_490 x [1] chlor_a x

- File Manager
 - [1] PACE_OCI.20240907T172452.L2.OC_AOP.V2_0.NRT.nc
 - Metadata
 - Flag Codings
 - Vector Data
 - Bands
 - Rrs_unc
 - Rrs
 - aot
 - l2_flags
 - aww
 - angstrom
 - longitude
 - latitude
 - chlor_a
 - Masks

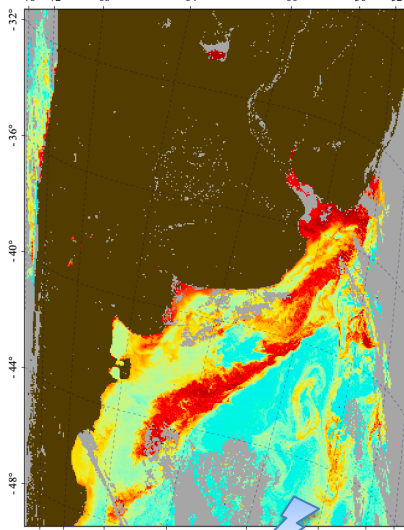
Remote sensing reflectance (PACE-OCI L2)
 September 07, 2024 17:24:52 - September 07, 2024 17:29:51
 File: PACE_OCI.20240907T172452.L2.OC_AOP.V2_0.NRT.nc



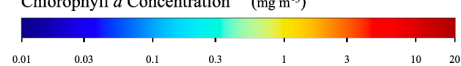
Remote Sensing Reflectance at 490 nm (sr⁻¹)



Chlorophyll Concentration, OCI Algorithm (PACE-OCI L2)
 September 07, 2024 17:24:52 - September 07, 2024 17:29:51
 File: PACE_OCI.20240907T172452.L2.OC_AOP.V2_0.NRT.nc



Chlorophyll *a* Concentration (mg m⁻³)



Navigation - [1] ch... Color Manager ... Layer Editor

Editor: Basic Sliders Table

Palette

Derived from universal_bluered.cpd

Transparency: Swipe:

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

SeaDAS Workshop

Case Study

Spectral Analysis with Statistics/Masking

Masking

Masking: File has both chlor_a and Rrs bands

SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

[3] Rrs_490 - PACE_OCI.20240907T172452.L2.merge.out.nc - /Users/dknowles/SeaDASTraining/OceanOptics2024/ArgentineSea/PACE_OCI.20240907T172452.L2.merge.out.nc

File Manager World Map World View [3] chlor_a [3] Rrs_490

[1] PACE_OCI.20240907T172452.L2_OC_BGC.V
[2] PACE_OCI.20240907T172452.L2_OC_AOP.V
[3] PACE_OCI.20240907T172452.L2.merge.out.nc

- Metadata
- Flag Codings
- Vector Data
- Bands
 - Rrs
 - I2_flags
 - chlor_a
 - latitude
 - longitude
- Masks

Navigation ... Color Manage... Layer Editor

1: 3.9 0°

Chlorophyll Concentration, OCI Algorithm (PACE-OCI L2)
September 07, 2024 17:24:52 - September 07, 2024 17:29:51
File: PACE_OCI.20240907T172452.L2.merge.out.nc

Chlorophyll *a* Concentration (mg m^{-3})

0.01 0.03 0.1 0.3 1 3 10 20

Remote sensing reflectance (PACE-OCI L2)
September 07, 2024 17:24:52 - September 07, 2024 17:29:51
File: PACE_OCI.20240907T172452.L2.merge.out.nc

Remote Sensing Reflectance at 490 nm (sr^{-1})

0.0 0.003 0.006 0.009 0.012 0.015

Layer Man... Mask M... Pixel Info

Name	Color	Tran...
<input checked="" type="checkbox"/> LAND	Black	0
<input type="checkbox"/> ABSAER	Yellow	0.5
<input type="checkbox"/> ATMFAIL	Red	0
<input type="checkbox"/> ATMWARN	Magenta	0.5
<input type="checkbox"/> BOWTIEDEL	Red	0.1
<input type="checkbox"/> CHLFAIL	Red	0
<input type="checkbox"/> CHLWARN	Grey	0.5
<input type="checkbox"/> CLDICE	White	0
<input type="checkbox"/> COASTZ	Dark Red	0.5
<input type="checkbox"/> COCCOLITH	Cyan	0.5
<input type="checkbox"/> FILTER	Grey	0.5
<input type="checkbox"/> HIGLINT	Magenta	0.2
<input type="checkbox"/> HILT	Grey	0.2
<input type="checkbox"/> HIPOL	Pink	0.5
<input type="checkbox"/> HISATZEN	Cyan	0.5
<input type="checkbox"/> HISOLZEN	Purple	0.5
<input type="checkbox"/> LOWLW	Blue	0.5
<input type="checkbox"/> MAXAERITER	Grey	0.5
<input type="checkbox"/> MODGLINT	Purple	0.5
<input type="checkbox"/> NAVFAIL	Red	0
<input type="checkbox"/> NAVWARN	Magenta	0.5
<input type="checkbox"/> PRODFAIL	Red	0.1
<input type="checkbox"/> PRODWARN	Dark Blue	0.5
<input type="checkbox"/> SEACE	Dark Grey	0.5
<input type="checkbox"/> STRAYLIGHT	Yellow	0.2
<input type="checkbox"/> TURBIDW	Black	0.5
<input type="checkbox"/> Composite1	Grey	0
<input type="checkbox"/> Water	Dark Blue	0

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

Masking: Draw "geometry" region (Corresponding Mask is also auto-generated)

SeaDAS 9.1.0

File Manager × World Map World View [3] chlor_a × [3] Rrs_490 ×

[1] PACE_OCI.20240907T172452.L2_OC_BGC.V
[2] PACE_OCI.20240907T172452.L2_OC_AOP.V
[3] PACE_OCI.20240907T172452.L2.merge.out

- Metadata
- Flag Codings
- Vector Data
- Bands
 - Rrs
 - l2_flags
 - chlor_a
 - latitude
 - longitude
 - Masks

Navigation ... × Color Manage... Layer Editor

Layer ... × Mask Man... Pixel Info

- Color Bar Legend
- Annotation Metadata
- Map Gridlines
- Vector data
 - pins
 - ground_control_pc
 - geometry
- Masks
 - LAND
 - ABSAER
 - ATMFAIL
 - ATMWARN
 - BOWTIEDEL
 - CHLFAIL
 - CHLWARN
 - CLDICE
 - COASTZ
 - COCCOLITH
 - FILTER
 - HIGLINT
 - HILT
 - HIPOL
 - HISATZEN
 - HISOLZEN
 - LOWLW
 - MAXAERITER
 - MODGLINT
 - NAVFAIL
 - NAVWARN

Transparency: 0% 50% 100%
Swipe: 0% 50% 100%

1 : 2 0°

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

Masking: Hide visibility of "geometry" vector

SeaDAS 9.1.0

File Manager × World Map World View [3] chlor_a × [3] Rrs_490 × Layer ... × Mask Man... Pixel Info

[1] PACE_OCI.20240907T172452.L2_OC_BGC.V...
[2] PACE_OCI.20240907T172452.L2_OC_AOP.V...
[3] PACE_OCI.20240907T172452.L2.merge.out

- Metadata
- Flag Codings
- Vector Data
- Bands
 - Rrs
 - l2_flags
 - chlor_a
 - latitude
 - longitude
 - Masks

Navigation ... × Color Manage... Layer Editor

1 : 2 0°

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

Layer ... × Mask Man... Pixel Info

- Color Bar Legend
- Annotation Metadata
- Map Gridlines
- Vector data
 - pins
 - ground_control_pc
 - geometry
- Masks
 - LAND
 - ABSAER
 - ATMFAIL
 - ATMWARN
 - BOWTIEDEL
 - CHLFAIL
 - CHLWARN
 - CLDICE
 - COASTZ
 - COCCOLITH
 - FILTER
 - HIGLINT
 - HILT
 - HIPOL
 - HISATZEN
 - HISOLZEN
 - LOWLW
 - MAXAERITER
 - MODGLINT
 - NAVFAIL
 - NAVWARN

Transparency: 0% 50% 100%

Swipe: 0% 50% 100%

Masking: Show and color the auto-generated "geometry" mask

SeaDAS 9.1.0

File Manager × World Map World View [3] chlor_a × [3] Rrs_490 ×

[1] PACE_OCI.20240907T172452.L2_OC_BGC.V
[2] PACE_OCI.20240907T172452.L2_OC_AOP.V
[3] PACE_OCI.20240907T172452.L2.merge.out

- Metadata
- Flag Codings
- Vector Data
- Bands
 - Rrs
 - l2_flags
 - chlor_a
 - latitude
 - longitude
 - Masks

Navigation ... × Color Manage... Layer Editor ...

1 : 2 0°

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

Layer Man... Mask M... × Pixel Info

Name	Color	Trans...	f(x) [x]
<input checked="" type="checkbox"/> LAND	Black	0	
<input type="checkbox"/> ABSAER	Yellow	0.5	
<input type="checkbox"/> ATMFAIL	Red	0	
<input type="checkbox"/> ATMWARN	Magenta	0.5	
<input type="checkbox"/> BOWTIEDEL	Red	0.1	
<input type="checkbox"/> CHLFAIL	Red	0	
<input type="checkbox"/> CHLWARN	Grey	0.5	
<input type="checkbox"/> CLDICE	White	0	
<input type="checkbox"/> COASTZ	Dark Red	0.5	
<input type="checkbox"/> COCCOLITH	Cyan	0.5	
<input type="checkbox"/> FILTER	Grey	0.5	
<input type="checkbox"/> HIGLINT	Magenta	0.2	
<input type="checkbox"/> HILT	Black	0.2	
<input type="checkbox"/> HIPOL	Pink	0.5	
<input type="checkbox"/> HISATZEN	Cyan	0.5	
<input type="checkbox"/> HISOLZEN	Purple	0.5	
<input type="checkbox"/> LOWLW	Blue	0.5	
<input type="checkbox"/> MAXAERITER	Grey	0.5	
<input type="checkbox"/> MODGLINT	Purple	0.5	
<input type="checkbox"/> NAVFAIL	Red	0	
<input type="checkbox"/> NAVWARN	Magenta	0.5	
<input type="checkbox"/> PRODFAIL	Red	0.1	
<input type="checkbox"/> PRODWARN	Dark Blue	0.5	
<input type="checkbox"/> SEACE	Grey	0.5	
<input type="checkbox"/> STRAYLIGHT	Yellow	0.2	
<input type="checkbox"/> TURBIDW	Brown	0.5	
<input type="checkbox"/> Composite1	Grey	0	
<input type="checkbox"/> Water	Dark Blue	0	
<input checked="" type="checkbox"/> geometry	Black	0.5	

Masking: Create "chlor_a_gt_2" mask

SeaDAS 9.1.0

File Manager × World Map World View [3] chlor_a × [3] Rrs_490 ×

[1] PACE_OCI.20240907T172452.L2_OC_BGC.V...
[2] PACE_OCI.20240907T172452.L2_OC_AOP.V...
[3] PACE_OCI.20240907T172452.L2.merge.out

Metadata
Flag Codings
Vector Data
Bands
Rrs
l2_flags
chlor_a
latitude
longitude
Masks

Navigation ... × Color Manage... Layer Editor - ...

1 : 2 0°

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

New Logical Band Maths Expression

Data sources:
Rrs_713
Rrs_714
Rrs_717
Rrs_719
l2_flags
chlor_a
latitude
longitude

Show bands
 Show masks
 Show tie-point grids
 Show single flags

Expression:
chlor_a > 2

Operators...
Functions...

Constants...
@ and @
@ or @
not @
(@)

OK Cancel Help

Ok, no errors.

Layer Manager

Name	Color	Trans...
<input checked="" type="checkbox"/> LAND	Black	0
<input type="checkbox"/> ABSAER	Yellow	0.5
<input type="checkbox"/> ATMFAIL	Red	0
<input type="checkbox"/> ATMWARN	Magenta	0.5
<input type="checkbox"/> BOWTIEDEL	Red	0.1
<input type="checkbox"/> CHLFAIL	Red	0
<input type="checkbox"/> CHLWARN	Gray	0.5
<input type="checkbox"/> CLDICE	White	0
<input type="checkbox"/> COASTZ	Red	0.5
<input type="checkbox"/> COCCOLITH	Cyan	0.5
<input type="checkbox"/> FILTER	Gray	0.5
<input type="checkbox"/> HIGLINT	Magenta	0.2
<input type="checkbox"/> HILT	Gray	0.2
<input type="checkbox"/> HIPOL	Pink	0.5
<input type="checkbox"/> HISATZEN	Cyan	0.5
<input type="checkbox"/> HISOLZEN	Purple	0.5
<input type="checkbox"/> LOWLW	Blue	0.5
<input type="checkbox"/> MAXAERITER	Gray	0.5
<input type="checkbox"/> MODGLINT	Purple	0.5
<input type="checkbox"/> NAVFAIL	Red	0
<input type="checkbox"/> NAVWARN	Magenta	0.5
<input type="checkbox"/> PRODFAIL	Red	0.1
<input type="checkbox"/> PRODWARN	Dark Blue	0.5
<input type="checkbox"/> SEACE	Gray	0.5
<input type="checkbox"/> STRAYLIGHT	Yellow	0.2
<input type="checkbox"/> TURBIDW	Black	0.5
<input type="checkbox"/> Composite1	Gray	0
<input type="checkbox"/> Water	Dark Blue	0
<input checked="" type="checkbox"/> geometry	Black	0.5

Masking: Show "chlor_a_gt_2" mask and set its name and color

SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

[3] chlor_a_gt_2 - [PACE_OCI.20240907T172452.L2.merge.out.nc] - [/Users/dknowles/SeaDASTraining/OceanOptics2024/ArgentineSea/PACE_OCI.20240907T172452.L2.merge.out.nc]

File Manager World Map World View [3] chlor_a [3] Rrs_490

[1] PACE_OCI.20240907T172452.L2_OC_BGC.V
[2] PACE_OCI.20240907T172452.L2_OC_AOP.V
[3] PACE_OCI.20240907T172452.L2.merge.out

Metadata
Flag Codings
Vector Data
Bands
Rrs
l2_flags
chlor_a
latitude
longitude
Masks

Navigation Color Management Layer Editor

1 : 2 0°

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

Layer Man... Mask M... Pixel Info

Name	Color	Trans...	f(x) [x]
<input checked="" type="checkbox"/> LAND	Black	0	
<input type="checkbox"/> ABSAER	Yellow	0.5	
<input type="checkbox"/> ATMFAIL	Red	0	
<input type="checkbox"/> ATMWARN	Magenta	0.5	
<input type="checkbox"/> BOWTIEDEL	Red	0.1	
<input type="checkbox"/> CHLFAIL	Red	0	
<input type="checkbox"/> CHLWARN	Grey	0.5	
<input type="checkbox"/> CLDICE	White	0	
<input type="checkbox"/> COASTZ	Red	0.5	
<input type="checkbox"/> COCCOLITH	Cyan	0.5	
<input type="checkbox"/> FILTER	Grey	0.5	
<input type="checkbox"/> HIGLINT	Magenta	0.2	
<input type="checkbox"/> HILT	Grey	0.2	
<input type="checkbox"/> HIPOL	Pink	0.5	
<input type="checkbox"/> HISATZEN	Cyan	0.5	
<input type="checkbox"/> HISOLZEN	Purple	0.5	
<input type="checkbox"/> LOWLW	Blue	0.5	
<input type="checkbox"/> MAXAERITER	Grey	0.5	
<input type="checkbox"/> MODGLINT	Purple	0.5	
<input type="checkbox"/> NAVFAIL	Red	0	
<input type="checkbox"/> NAVWARN	Magenta	0.5	
<input type="checkbox"/> PRODFAIL	Red	0.1	
<input type="checkbox"/> PRODWARN	Dark Blue	0.5	
<input type="checkbox"/> SEAICE	Grey	0.5	
<input type="checkbox"/> STRAYLIGHT	Yellow	0.2	
<input type="checkbox"/> TURBIDW	Brown	0.5	
<input type="checkbox"/> Composite1	Grey	0	
<input type="checkbox"/> Water	Dark Blue	0	
<input checked="" type="checkbox"/> geometry	Dark Grey	0.5	
<input checked="" type="checkbox"/> chlor_a_gt_2	Purple	0	

Masking: Create "bloom" mask

The screenshot displays the SeaDAS software interface. The main window shows a satellite image of the ocean with a color-coded mask overlaid. The mask is composed of several layers, including 'geometry' and 'chlor_a_gt_2'. A dialog box titled 'New Logical Band Maths Expression' is open, showing the expression 'geometry and chlor_a_gt_2'. The dialog box has a 'Data sources' list on the left, an 'Expression' text area, and buttons for 'OK', 'Cancel', and 'Help'. The 'Data sources' list includes 'PRODWARN', 'SEACE', 'STRAYLIGHT', 'TURBIDW', 'Composite1', 'Water', 'geometry', and 'chlor_a_gt_2'. The 'Expression' text area contains the text 'geometry and chlor_a_gt_2'. The 'OK' button is highlighted with a yellow lightning bolt icon. The 'Layer Manager' on the right side of the interface shows a list of layers with their respective colors and transparency values. The 'geometry' and 'chlor_a_gt_2' layers are checked. The 'File Manager' on the left side shows a tree view of the project files, including 'Metadata', 'Flag Codings', 'Vector Data', and 'Bands'. The 'Bands' folder contains 'Rrs', 'l2_flags', 'chlor_a', 'latitude', and 'longitude'. The 'Masks' folder is also visible. The 'Navigation' panel at the bottom left shows a zoomed-in view of the mask. The status bar at the bottom indicates the current zoom level (1:2) and the pixel spacing (0 m).

SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

[3] chlor_a_gt_2 - [PACE_OCI.20240907T172452.L2.merge.out.nc] - [/Users/dknowles/SeaDASTraining/OceanOptics2024/ArgentineSea/PACE_OCI.20240907T172452.L2.merge.out.nc]

File Manager World Map World View [3] chlor_a [3] Rrs_490

[1] PACE_OCI.20240907T172452.L2_OC_BGC.V...
[2] PACE_OCI.20240907T172452.L2_OC_AOP.V...
[3] PACE_OCI.20240907T172452.L2.merge.out...

Metadata
Flag Codings
Vector Data
Bands
Rrs
l2_flags
chlor_a
latitude
longitude
Masks

Navigation Color Management Layer Editor

1:2 0°

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

New Logical Band Maths Expression

Data sources:
PRODWARN
SEACE
STRAYLIGHT
TURBIDW
Composite1
Water
geometry
chlor_a_gt_2

Show bands
 Show masks
 Show tie-point grids
 Show single flags

Expression:
geometry and chlor_a_gt_2

Ok, no errors.

OK Cancel Help

Layer Manager Mask M... x Pixel Spacing

Name	Color	Trans...
<input checked="" type="checkbox"/> LAND	Black	0
<input type="checkbox"/> ABSAER	Yellow	0.5
<input type="checkbox"/> ATMFAIL	Red	0
<input type="checkbox"/> ATMWARN	Magenta	0.5
<input type="checkbox"/> BOWTIEDEL	Red	0.1
<input type="checkbox"/> CHLFAIL	Red	0
<input type="checkbox"/> CHLWARN	Grey	0.5
<input type="checkbox"/> CLDICE	White	0
<input type="checkbox"/> COASTZ	Red	0.5
<input type="checkbox"/> COCCOLITH	Cyan	0.5
<input type="checkbox"/> FILTER	Grey	0.5
<input type="checkbox"/> HIGLINT	Magenta	0.2
<input type="checkbox"/> HILT	Grey	0.2
<input type="checkbox"/> HIPOL	Pink	0.5
<input type="checkbox"/> HISATZEN	Cyan	0.5
<input type="checkbox"/> HISOLZEN	Purple	0.5
<input type="checkbox"/> LOWLW	Blue	0.5
<input type="checkbox"/> MAXAERITER	Grey	0.5
<input type="checkbox"/> MODGLINT	Purple	0.5
<input type="checkbox"/> NAVFAIL	Red	0
<input type="checkbox"/> NAVWARN	Magenta	0.5
<input type="checkbox"/> PRODFAIL	Red	0.1
<input type="checkbox"/> PRODWARN	Dark Blue	0.5
<input type="checkbox"/> SEACE	Grey	0.5
<input type="checkbox"/> STRAYLIGHT	Yellow	0.2
<input type="checkbox"/> TURBIDW	Brown	0.5
<input type="checkbox"/> Composite1	Grey	0
<input type="checkbox"/> Water	Dark Blue	0
<input checked="" type="checkbox"/> geometry	Grey	0.5
<input checked="" type="checkbox"/> chlor_a_gt_2	Purple	0

Masking: Show "bloom" mask and set its name and color

SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

[3] bloom - [PACE_OCI.20240907T172452.L2.merge.out.nc] - [Users/dknowles/SeaDASTraining/OceanOptics2024/ArgentineSea/PACE_OCI.20240907T172452.L2.merge.out.nc]

File Manager World Map World View [3] chlor_a [3] Rrs_490

[1] PACE_OCI.20240907T172452.L2_OC_BGC.V
[2] PACE_OCI.20240907T172452.L2_OC_AOP.V
[3] PACE_OCI.20240907T172452.L2.merge.out

- Metadata
- Flag Codings
- Vector Data
- Bands
 - Rrs
 - l2_flags
 - chlor_a
 - latitude
 - longitude
 - Masks

Navigation Color Management Layer Editor

Layer Manager Mask Manager Pixel Info

Name	Color	Trans...	f(x) [x]
<input checked="" type="checkbox"/> LAND	Black	0	
<input type="checkbox"/> ABSAER	Yellow	0.5	
<input type="checkbox"/> ATMFAIL	Red	0	
<input type="checkbox"/> ATMWARN	Magenta	0.5	
<input type="checkbox"/> BOWTIEDEL	Red	0.1	
<input type="checkbox"/> CHLFAIL	Red	0	
<input type="checkbox"/> CHLWARN	Grey	0.5	
<input type="checkbox"/> CLDICE	White	0	
<input type="checkbox"/> COASTZ	Red	0.5	
<input type="checkbox"/> COCCOLITH	Cyan	0.5	
<input type="checkbox"/> FILTER	Grey	0.5	
<input type="checkbox"/> HIGLINT	Magenta	0.2	
<input type="checkbox"/> HILT	Grey	0.2	
<input type="checkbox"/> HIPOL	Pink	0.5	
<input type="checkbox"/> HISATZEN	Cyan	0.5	
<input type="checkbox"/> HISOLZEN	Purple	0.5	
<input type="checkbox"/> LOWLW	Blue	0.5	
<input type="checkbox"/> MAXAERITER	Grey	0.5	
<input type="checkbox"/> MODGLINT	Purple	0.5	
<input type="checkbox"/> NAVFAIL	Red	0	
<input type="checkbox"/> NAVWARN	Magenta	0.5	
<input type="checkbox"/> PRODFAIL	Red	0.1	
<input type="checkbox"/> PRODWARN	Dark Blue	0.5	
<input type="checkbox"/> SEAICE	Grey	0.5	
<input type="checkbox"/> STRAYLIGHT	Yellow	0.2	
<input type="checkbox"/> TURBIDW	Brown	0.5	
<input type="checkbox"/> Composite1	Grey	0	
<input type="checkbox"/> Water geometry	Dark Blue	0	
<input type="checkbox"/> chlor_a_gt_2	Dark Purple	0	
<input checked="" type="checkbox"/> bloom	Black	0	

1 : 2 0°

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

Masking: Edit "bloom" mask to include masking on STRAYLIGHT flag

SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

[3] bloom - [PACE_OCI.20240907T172452.L2.merge.out.nc] - [Users/dknowles/SeaDASTraining/OceanOptics2024/ArgentineSea/PACE_OCI.20240907T172452.L2.merge.out.nc]

Q- Search (%+I)

File Manager x World Map World View [3] chlor_a x [3] Rrs_490 x

[1] PACE_OCI.20240907T172452.L2_OC_BGC.V
[2] PACE_OCI.20240907T172452.L2_OC_AOP.V
[3] PACE_OCI.20240907T172452.L2.merge.out

Metadata
Flag Codings
Vector Data
Bands
Rrs
l2_flags
chlor_a
latitude
longitude
Masks

Navigation ... x Color Manage... Layer Editor - ...

1 : 2 0°

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

Edit Band Maths Mask

Data sources:
l2_flags.HIGLINT
l2_flags.HILT
l2_flags.HISATZEN
l2_flags.COASTZ
l2_flags.SPARE8
l2_flags.STRAYLIGHT
l2_flags.CLDICE
l2_flags.COCCOLITH

Expression:
geometry and chlor_a_gt_2 and !l2_flags.STRAYLIGHT

Operators... Functions... Constants... Show bands Show masks Show tie-point grids Show single flags

Ok, no errors.

OK Cancel Help

Layer Man... Mask M... x Pix Info

Name	Color	Trans...
<input checked="" type="checkbox"/> LAND	Black	0
<input type="checkbox"/> ABSAER	Yellow	0.5
<input type="checkbox"/> ATMFAIL	Red	0
<input type="checkbox"/> ATMWARN	Magenta	0.5
<input type="checkbox"/> BOWTIEDEL	Red	0.1
<input type="checkbox"/> CHLFAIL	Red	0
<input type="checkbox"/> CHLWARN	Grey	0.5
<input type="checkbox"/> CLDICE	White	0
<input type="checkbox"/> COASTZ	Red	0.5
<input type="checkbox"/> COCCOLITH	Cyan	0.5
<input type="checkbox"/> FILTER	Grey	0.5
<input type="checkbox"/> HIGLINT	Magenta	0.2
<input type="checkbox"/> HILT	Grey	0.2
<input type="checkbox"/> HIPOL	Pink	0.5
<input type="checkbox"/> HISATZEN	Cyan	0.5
<input type="checkbox"/> HISOLZEN	Purple	0.5
<input type="checkbox"/> LOWLW	Blue	0.5
<input type="checkbox"/> MAXAERITER	Blue	0.5
<input type="checkbox"/> MODGLINT	Purple	0.5
<input type="checkbox"/> NAVFAIL	Red	0
<input type="checkbox"/> NAVWARN	Magenta	0.5
<input type="checkbox"/> PRODFAIL	Red	0.1
<input type="checkbox"/> PRODWARN	Dark Blue	0.5
<input type="checkbox"/> SEAICE	Grey	0.5
<input type="checkbox"/> STRAYLIGHT	Yellow	0.2
<input type="checkbox"/> TURBIDW	Brown	0.5
<input type="checkbox"/> Composite1	Grey	0
<input type="checkbox"/> Water	Dark Blue	0
<input type="checkbox"/> geometry	Grey	0.5
<input type="checkbox"/> chlor_a_gt_2	Dark Purple	0
<input checked="" type="checkbox"/> bloom	Black	0

Masking: Showing final "bloom" mask

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SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

[3] bloom - [PACE_OCI.20240907T172452.L2.merge.out.nc] - [Users/dknowles/SeaDASTraining/OceanOptics2024/ArgentineSea/PACE_OCI.20240907T172452.L2.merge.out.nc]

File Manager x World Map World View [3] chlor_a x [3] Rrs_490 x Layer Man... Mask M... x Pixel Info

[1] PACE_OCI.20240907T172452.L2_OC_BGC.V
[2] PACE_OCI.20240907T172452.L2_OC_AOP.V
[3] PACE_OCI.20240907T172452.L2.merge.out

- Metadata
- Flag Codings
- Vector Data
- Bands
 - Rrs
 - l2_flags
 - chlor_a
 - latitude
 - longitude
 - Masks

Navigation ... x Color Manage... Layer Editor - ...

1 : 2 0°

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

Name	Color	Tran...	f(x) [x]
<input checked="" type="checkbox"/> LAND	Black	0	
<input type="checkbox"/> ABSAER	Yellow	0.5	
<input type="checkbox"/> ATMFAIL	Red	0	
<input type="checkbox"/> ATMWARN	Magenta	0.5	
<input type="checkbox"/> BOWTIEDEL	Red	0.1	
<input type="checkbox"/> CHLFAIL	Red	0	
<input type="checkbox"/> CHLWARN	White	0.5	
<input type="checkbox"/> CLDICE	White	0	
<input type="checkbox"/> COASTZ	Red	0.5	
<input type="checkbox"/> COCCOLITH	Cyan	0.5	
<input type="checkbox"/> FILTER	White	0.5	
<input type="checkbox"/> HIGLINT	Magenta	0.2	
<input type="checkbox"/> HILT	Grey	0.2	
<input type="checkbox"/> HIPOL	Red	0.5	
<input type="checkbox"/> HISATZEN	Cyan	0.5	
<input type="checkbox"/> HISOLZEN	Purple	0.5	
<input type="checkbox"/> LOWLW	Blue	0.5	
<input type="checkbox"/> MAXAERITER	Grey	0.5	
<input type="checkbox"/> MODGLINT	Purple	0.5	
<input type="checkbox"/> NAVFAIL	Red	0	
<input type="checkbox"/> NAVWARN	Magenta	0.5	
<input type="checkbox"/> PRODFAIL	Red	0.1	
<input type="checkbox"/> PRODWARN	Dark Blue	0.5	
<input type="checkbox"/> SEAICE	Grey	0.5	
<input type="checkbox"/> STRAYLIGHT	Yellow	0.2	
<input type="checkbox"/> TURBIDW	Yellow	0.5	
<input type="checkbox"/> Composite1	White	0	
<input type="checkbox"/> Water	Dark Blue	0	
<input type="checkbox"/> geometry	White	0.5	
<input type="checkbox"/> chlor_a_gt_2	Dark Purple	0	
<input checked="" type="checkbox"/> bloom	Black	0	

SeaDAS Workshop

Case Study

Spectral Analysis with Statistics/Masking

Statistics

SeaDAS 9.1.0

File Manager x World Map World View [1] chlor_a x

File Manager x World Map World View [1] PACE_OCI.20240907T172452.L2.merge.out.nc

- Metadata
- Flag Codings
- Vector Data
- Bands
 - Rrs
 - l2_flags
 - chlor_a
 - latitude
 - longitude
- Masks

Navigation - [1] chl... x Color Manager - [1] chl... Layer Editor

Chlorophyll Concentration, OCI Algorithm (PACE-OCI L2)
 September 07, 2024 17:24:52 - September 07, 2024 17:29:51
 File: PACE_OCI.20240907T172452.L2.merge.out.nc

Chlorophyll *a* Concentration (mg m⁻³)

0.01 0.03 0.1 0.3 1 3 10 20

Layer Manager Mask Manager x Pixel Info

Name	Color	Tran... Type
<input checked="" type="checkbox"/> LAND	Black	0 Maths
<input type="checkbox"/> ABSAER	Yellow	0.5 Maths
<input type="checkbox"/> ATMFALL	Red	0 Maths
<input type="checkbox"/> ATMWARN	Magenta	0.5 Maths
<input type="checkbox"/> BOWTIEDEL	Red	0.1 Maths
<input type="checkbox"/> CHLFAIL	Red	0 Maths
<input type="checkbox"/> CHLWARN	Grey	0.5 Maths
<input type="checkbox"/> CLDICE	White	0 Maths
<input type="checkbox"/> COASTZ	Dark Red	0.5 Maths
<input type="checkbox"/> COCCOLITH	Cyan	0.5 Maths
<input type="checkbox"/> FILTER	Grey	0.5 Maths
<input type="checkbox"/> HIGLINT	Magenta	0.2 Maths
<input type="checkbox"/> HILT	Grey	0.2 Maths
<input type="checkbox"/> HIPOL	Pink	0.5 Maths
<input type="checkbox"/> HISATZEN	Cyan	0.5 Maths
<input type="checkbox"/> HISOLZEN	Purple	0.5 Maths
<input type="checkbox"/> LOWLW	Blue	0.5 Maths
<input type="checkbox"/> MAXAERITER	Grey	0.5 Maths
<input type="checkbox"/> MODGLINT	Purple	0.5 Maths
<input type="checkbox"/> NAVFAIL	Red	0 Maths
<input type="checkbox"/> NAVWARN	Magenta	0.5 Maths
<input type="checkbox"/> PRODFAIL	Red	0.1 Maths
<input type="checkbox"/> PRODWARN	Dark Blue	0.5 Maths
<input type="checkbox"/> SEAICE	Dark Grey	0.5 Maths
<input type="checkbox"/> STRAYLIGHT	Yellow	0.2 Maths
<input type="checkbox"/> TURBIDW	Yellow	0.5 Maths
<input type="checkbox"/> Composite1	Grey	0 Maths
<input type="checkbox"/> Water	Dark Blue	0 Maths
<input type="checkbox"/> geometry_Po...	Red	0.5 Geometry
<input type="checkbox"/> chlor_a_gt_2	Red	0.5 Maths
<input checked="" type="checkbox"/> bloom	Black	0 Maths
<input type="checkbox"/> Str_Regional	Red	0.5 Maths

X 258 Y 838 Lat 39°00'18" S Lon 66°10'22"... Zoom 1:4.0 Level 2 Pixel Spacing: 1206.83 m 1143.01...

SeaDAS 9.1.0

File Manager x World Map World View

[1] PACE_OCI.20240907T172452.L2

- Metadata
- Flag Codings
- Vector Data
- Bands
 - Rrs
 - I2_flags
 - chlor_a
 - latitude
 - longitude
 - Masks

Statistics x

Notes

- First select ALL bands
- Then deselect the bands not needed

Bands ROI-Mask Flag-Mask Criteria >>

Band Search Filter

- Rrs_703
- Rrs_704
- Rrs_706
- Rrs_707
- Rrs_708
- Rrs_709
- Rrs_711
- Rrs_712
- Rrs_713
- Rrs_714
- Rrs_717
- Rrs_719
- I2_flags
- chlor_a
- latitude
- longitude
- Select All/None

Run Reset ?

No statistics computed
Note: requires a view window to be selected

Mask Manager x Pixel Info

Color	Tran... Type
Black	0 Maths
Yellow	0.5 Maths
Red	0 Maths
Magenta	0.5 Maths
Red	0.1 Maths
Red	0 Maths
Gray	0.5 Maths
White	0 Maths
Dark Red	0.5 Maths
Cyan	0.5 Maths
Gray	0.5 Maths
Magenta	0.2 Maths
Gray	0.2 Maths
Pink	0.5 Maths
Cyan	0.5 Maths
Purple	0.5 Maths
Blue	0.5 Maths
Gray	0.5 Maths
Purple	0.5 Maths
Red	0 Maths
Magenta	0.5 Maths
Red	0.1 Maths
Blue	0.5 Maths
Black	0.5 Maths
Yellow	0.2 Maths
Gray	0.5 Maths
Black	0 Maths
Blue	0 Maths
Red	0.5 Geometry
Red	0.5 Maths
Black	0 Maths
Black	0.5 Maths

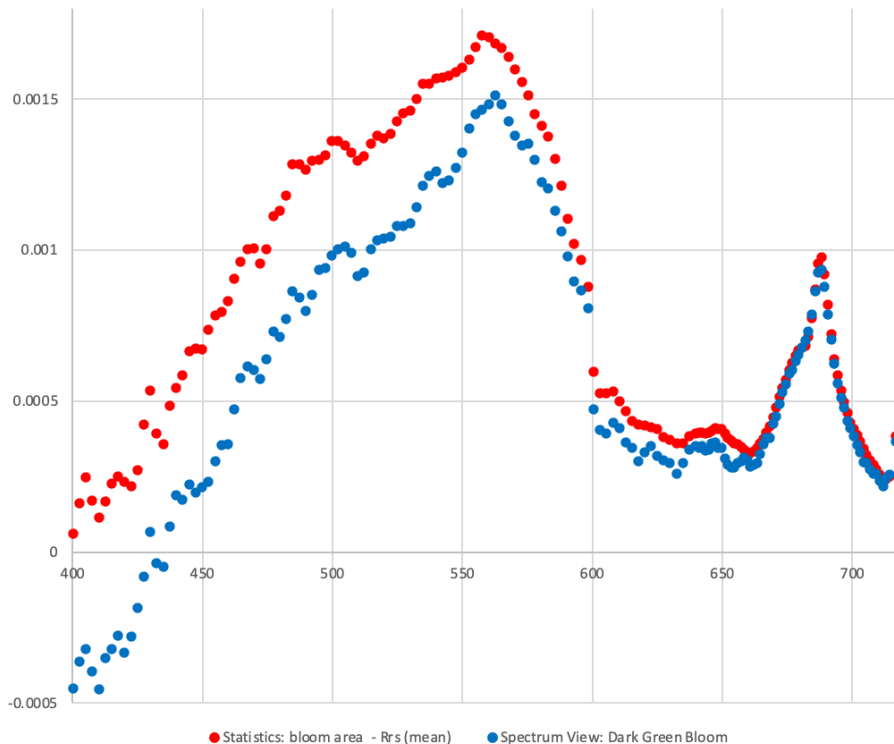
Navigation - [1] chl... x Color Manager - [1] c

1 : 4

X 258 Y 838 Lat 39°00'18" S Lon 66°10'22... Zoom 1:4.0 Level 2 Pixel Spacing: 1206.83 m 1143.01...

Wavelength	Statistics (bloom)	Dark Green Bloom
339.16	-0.001205334	-0.001717999
341.321	-0.003255171	-0.003759999
343.632	-0.003245064	-0.003709999
346.017	-0.003215646	-0.003603999
348.468	-0.002952097	-0.003175999
350.912	-0.002644738	-0.002995999
353.344	-0.002462789	-0.002959999
355.782	-0.002048901	-0.002753999
358.235	-0.001675854	-0.002509999
360.695	-0.001485147	-0.002219999
363.137	-0.001746393	-0.002527999
365.61	-0.001706649	-0.002311999
368.083	-0.001290721	-0.001975999
370.534	-8.60E-04	-0.001697999
372.991	-6.06E-04	-0.001175999
375.482	-6.36E-04	-0.001201999
377.926	-6.74E-04	-0.001211999
380.419	-1.56E-04	-6.52E-04
382.876	-4.25E-05	-6.88E-04
385.359	-1.59E-04	-8.00E-04
387.811	-5.93E-05	-4.94E-04
390.297	1.59E-04	-1.76E-04
392.764	3.76E-04	-8.00E-05
395.238	3.79E-04	-1.88E-04
397.706	1.03E-04	-5.48E-04
400.178	6.07E-05	-4.52E-04
402.654	1.62E-04	-3.64E-04
405.127	2.48E-04	-3.20E-04
407.605	1.70E-04	-3.96E-04

PACE OCI Rrs (Statistics: Area 45K pixels vs Spectrum View: one pixel)



Bands ROI-Mask Flag-Mask Criteria >>

Band Search Filter

- Rrs_703
- Rrs_704
- Rrs_706
- Rrs_707
- Rrs_708
- Rrs_709
- Rrs_711
- Rrs_712
- Rrs_713
- Rrs_714
- Rrs_717
- Rrs_719
- I2_flags
- chlor_a
- latitude
- longitude

Select All/None

Run Reset ?

Bands ROI-Mask Flag-Mask Criteria >>

Include results for ROI-Masking OFF

Mask Search Filter

- MAXAERITER
- MODGLINT
- NAVFAIL
- NAVWARN
- PRODFAIL
- PRODWARN
- SEACE
- STRAYLIGHT
- TURBIDW
- Composite1
- Water
- geometry_Polygon
- chlor_a_gt_2
- bloom
- Str_Regional_Mask

Select All/None

Mask Grouping INTERSECTION

Grouped Mask Str_Regional_Mask

Run Reset ?

Bands ROI-Mask Flag-Mask Criteria >>

Include results for Flag-Masking OFF

Mask Search Filter

- LOWLW
- MAXAERITER
- MODGLINT
- NAVFAIL
- NAVWARN
- PRODFAIL
- PRODWARN
- SEACE
- STRAYLIGHT
- TURBIDW
- Composite1
- Water
- geometry_Polygon
- chlor_a_gt_2

Select All/None

Mask Grouping COMPLEMENT

Grouped Mask Str_Regional_Mask

Run Reset ?

Bands ROI-Mask Flag-Mask Criteria >>

Bins Fields Format Plots View

Total Bins 1000

Set Total Bins from Bin Width

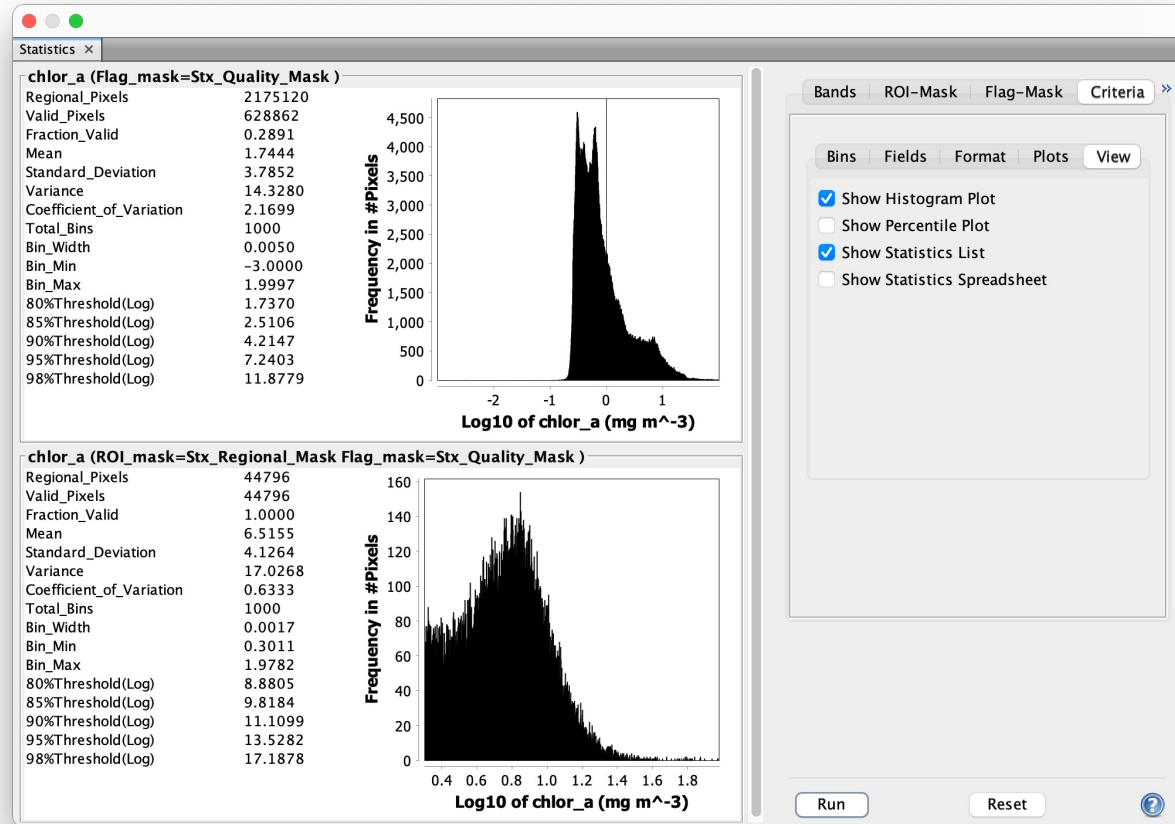
Bin Width NaN

Bin Span

Min NaN Max NaN

Log Scaled Bins

Run Reset ?



SeaDAS Workshop
Pixel Extraction Tool

Spectrum View: Import Pins

SeaDAS 9.1.0

File Manager x World Map World View [1] Rrs_490 x

Navigation - [1] Rrs... Color Manager - x

Editor: Basic Sliders Table

Palette

Derived from universal_blurred.cpd

Load exact values Reverse

Range

Min: 0.0 Max: 0.015

From Palette From Data

Scheme

More Options

Layer Manager Mask Manager x Pixel Info

Name Color Tran... Type Des

- LAND 0 Maths Land
- ABSAER 0.5 Maths Abs
- ATMFAIL 0 Maths Atm
- ATMWARN 0.5 Maths Atm
- BOWTIEDEL 0.1 Maths Bow
- CHLFAIL 0 Maths Chlc
- CHLWARN 0.5 Maths Chlc
- CLDICE 0 Maths Clou
- COASTZ 0.5 Maths Sha
- COCCOLITH 0.5 Maths Coc
- FILTER 0.5 Maths Insu
- HIGLINT 0.2 Maths High
- HILT 0.2 Maths High
- HIPOL 0.5 Maths High
- HISATZEN 0.5 Maths Larg
- HISOLZEN 0.5 Maths High
- LOWLW 0.5 Maths Low
- MAXAERITER 0.5 Maths Max
- MODGLINT 0.5 Maths Mod
- NAVFAIL 0 Maths Nav
- NAVWARN 0.5 Maths Nav
- PRODFAIL 0.1 Maths One
- PRODWARN 0.5 Maths One
- SEAICE 0.5 Maths Sea
- STRAYLIGHT 0.2 Maths Stra
- TURBIDW 0.5 Maths Turb
- Composite1 0 Maths Cor
- Water 0 Maths Not
- pins 0.5 Geometry Mas

Remote Sensing Reflectance at 490 nm (sr^{-1})

Mar Chiquita

Bright Green Bloom (Coastal)

Dark Green Bloom

BlueBloom

X 69 Y 571 Lat 37°02'34" S Lon 72°11'16... Zoom 1:2.3 Level 1 Pixel Spacing: 1206.83 m 1143.01...

SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

Time Series
 Math Band...
 Filter Band...
 Convert Band
 Propagate Uncertainty...
 Geo-Coding Displacement Bands...
 Subset...
 DEM Tools
 Geometric
 Masks
 Data Conversion
 Image Analysis
 Classification
 Segmentation
 Change Detection
 Export
 Bands extractor

Extract Pixel Values
 Mask Pixels
 Transect Pixels
 Pixel-Info to Clipboard

File Manager x World Map World View [1] Rrs_490 x

[1] PACE_OCI.20240907T172452.L2_OC_AOP.V2_0.NRT.nc
 Metadata
 Flag Codings
 Vector Data
 Bands
 Rrs_unc
 Rrs
 Rrs_339 (339.16 nm)
 Rrs_341 (341.321 nm)
 Rrs_344 (343.632 nm)
 Rrs_346 (346.017 nm)
 Rrs_348 (348.468 nm)
 Rrs_351 (350.912 nm)
 Rrs_353 (353.344 nm)
 Rrs_356 (355.782 nm)
 Rrs_358 (358.235 nm)
 Rrs_361 (360.695 nm)
 Rrs_363 (363.137 nm)
 Rrs_366 (365.61 nm)
 Rrs_368 (368.083 nm)
 Rrs_371 (370.534 nm)
 Rrs_373 (372.991 nm)
 Rrs_375 (375.482 nm)

Navigation - [1] Rrs... Color Manager - [1] Layer Editor - Color ...

Editor: Basic Sliders Table
 Palette
 Derived from universal_bluered.cpd
 Load exact values Reverse
 Range
 Min: 0.0 Max: 0.015

Bright Green Bloom (Coastal)
 Dark Green Bloom
 BlueBloom

Remote Sensing Reflectance at 490 nm (sr⁻¹)

Layer Manager Mask Manager x Pixel Info

Name	Color	Tran...	Type	Description
<input checked="" type="checkbox"/> LAND		0 Maths	Land	
<input type="checkbox"/> ABSAER		0.5 Maths	Absorbance	Absorbance
<input type="checkbox"/> ATMFAIL		0 Maths	Atmosphere	Atmosphere
<input type="checkbox"/> ATMWARN		0.5 Maths	Atmosphere	Atmosphere
<input type="checkbox"/> BOWTIEDEL		0.1 Maths	Bowtie	Bowtie
<input type="checkbox"/> CHLFAIL		0 Maths	Chlorophyll	Chlorophyll
<input type="checkbox"/> CHLWARN		0.5 Maths	Chlorophyll	Chlorophyll
<input type="checkbox"/> CLDICE		0 Maths	Cloud/Ice	Cloud/Ice
<input type="checkbox"/> COASTZ		0.5 Maths	Shallow water	Shallow water
<input type="checkbox"/> COCCOLITH		0.5 Maths	Coccolith	Coccolith
<input type="checkbox"/> FILTER		0.5 Maths	Insufficient	Insufficient
<input type="checkbox"/> HIGLINT		0.2 Maths	High glint	High glint
<input type="checkbox"/> HILT		0.2 Maths	High (or)	High (or)
<input type="checkbox"/> HIPOL		0.5 Maths	High deg	High deg
<input type="checkbox"/> HISATZEN		0.5 Maths	Large sa	Large sa
<input type="checkbox"/> HISOLZEN		0.5 Maths	High sol	High sol
<input type="checkbox"/> LOWLW		0.5 Maths	Low LW	Low LW
<input type="checkbox"/> MAXAERITER		0.5 Maths	Maximur	Maximur
<input type="checkbox"/> MODGLINT		0.5 Maths	Moderat	Moderat
<input type="checkbox"/> NAVFAIL		0 Maths	Navigatio	Navigatio
<input type="checkbox"/> NAVWARN		0.5 Maths	Navigatio	Navigatio
<input type="checkbox"/> PRODFAIL		0.1 Maths	One (or)	One (or)
<input type="checkbox"/> PRODWARN		0.5 Maths	One (or)	One (or)
<input type="checkbox"/> SEAICE		0.5 Maths	Sea ice c	Sea ice c
<input type="checkbox"/> STRAYLIGHT		0.2 Maths	Strayligh	Strayligh
<input type="checkbox"/> TURBIDW		0.5 Maths	Turbid w	Turbid w
<input type="checkbox"/> Composite1		0 Maths	Composi	Composi
<input type="checkbox"/> Water		0 Maths	Not land	Not land
<input type="checkbox"/> pins		0.5 Geometry	Mask de	Mask de

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

The screenshot shows the 'Pixel Extraction' dialog box in SeaDAS. The 'Input/Output' tab is active. The 'Source Paths' field is empty. A yellow lightning bolt icon points to the 'Input/Output' tab. A context menu is open over the 'Source Paths' field, listing options: 'Add product(s)...', 'Add product file(s)...', 'Add directory(s)...', and 'Add directory recursively...'. A yellow lightning bolt icon points to the 'Add product(s)...' option. The 'Add product' sub-dialog is open, showing a list of products. The first product is '[1] PACE_OCI.20240907T172452.L2.SFREFL.V2_0.NRT.nc' and the second is '[2] PACE_OCI.20240907T172452.L2.OC_AOP.V2_0.NRT.nc'. The second product is selected with a checked checkbox. A yellow lightning bolt icon points to the second product. The 'Add product' dialog has 'Select all' and 'Select none' options, and 'OK' and 'Cancel' buttons. A yellow lightning bolt icon points to the 'OK' button. The 'Pixel Extraction' dialog has 'Time extraction' options, 'Date/Time pattern' (yyyyMMdd), 'Time extraction pattern in filename' (*\${startDate}*\${endDate}*), 'Output directory' (/Users/dknowles), and 'File prefix' (pixEx). At the bottom of the 'Pixel Extraction' dialog are 'Extract', 'Close', and 'Help' buttons.

Pixel Extraction

File Help

Input/Output Parameters

Source Paths:

Time extraction: Extract time from product filename

Date/Time pattern:
yyyyMMdd

Time extraction pattern in filename:
\${startDate}\${endDate}*

Output directory: /Users/dknowles

File prefix: pixEx

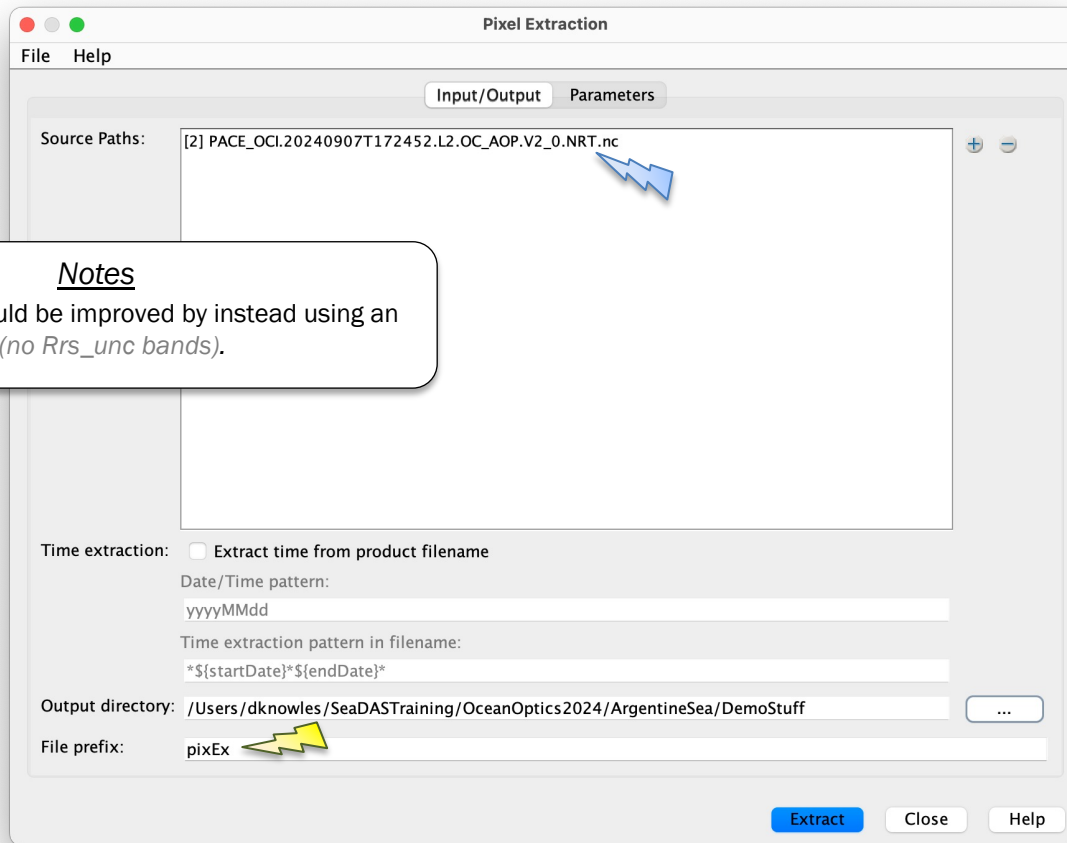
Add product

- [1] PACE_OCI.20240907T172452.L2.SFREFL.V2_0.NRT.nc
- [2] PACE_OCI.20240907T172452.L2.OC_AOP.V2_0.NRT.nc

Select all Select none

OK Cancel

Extract Close Help



Notes

- Performance would be improved by instead using an extracted L2 file (no *Rrs_unc* bands).

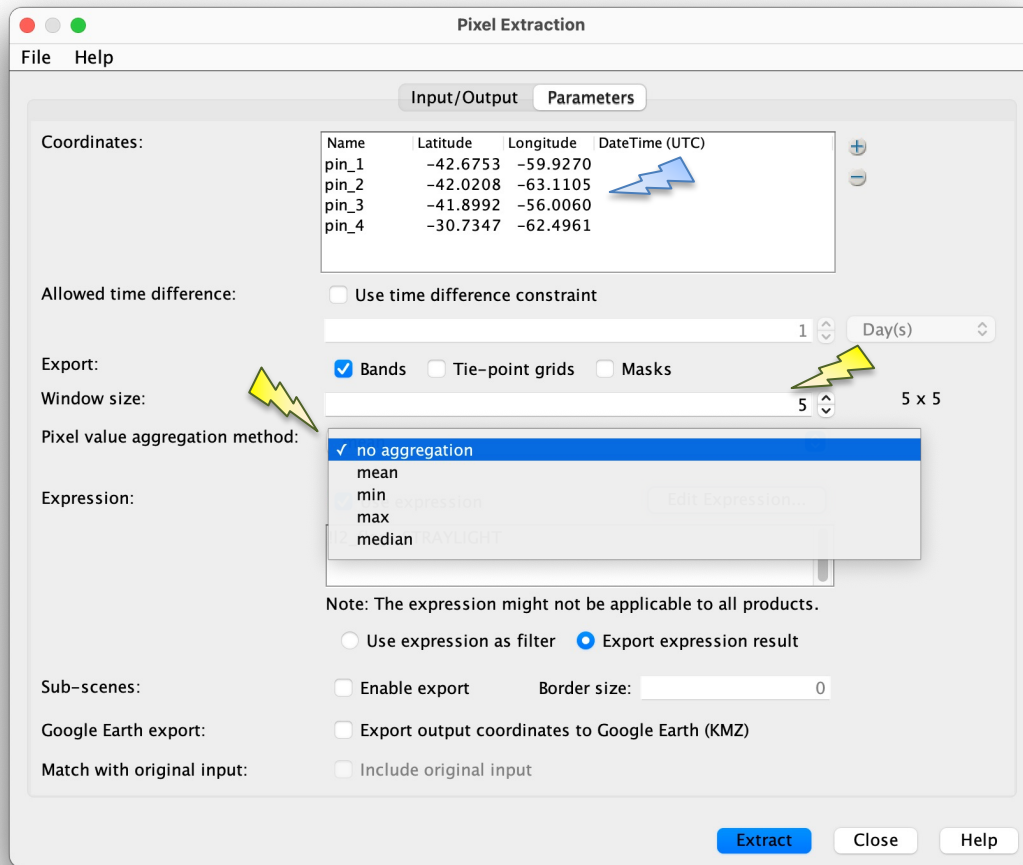
The screenshot shows the 'Pixel Extraction' application window with the 'Parameters' tab selected. The interface includes a menu bar (File, Help), a toolbar (Input/Output, Parameters), and several configuration sections: 'Coordinates' (a table with columns Name, Latitude, Longitude, DateTime (UTC)), 'Allowed time difference' (checkbox for 'Use time difference constraint'), 'Export' (checkboxes for 'Bands', 'Tie-point grids', 'Masks'), 'Window size', 'Pixel value aggregation method' (dropdown set to 'no aggregation'), 'Expression' (checkbox for 'Use expression', 'Edit Expression' button), 'Sub-scenes' (checkbox for 'Enable export', 'Border size' field), 'Google Earth export' (checkbox for 'Export output coordinates to Google Earth (KMZ)'), and 'Match with original input' (checkbox for 'Include original input'). A yellow lightning bolt icon points to the 'Parameters' tab.

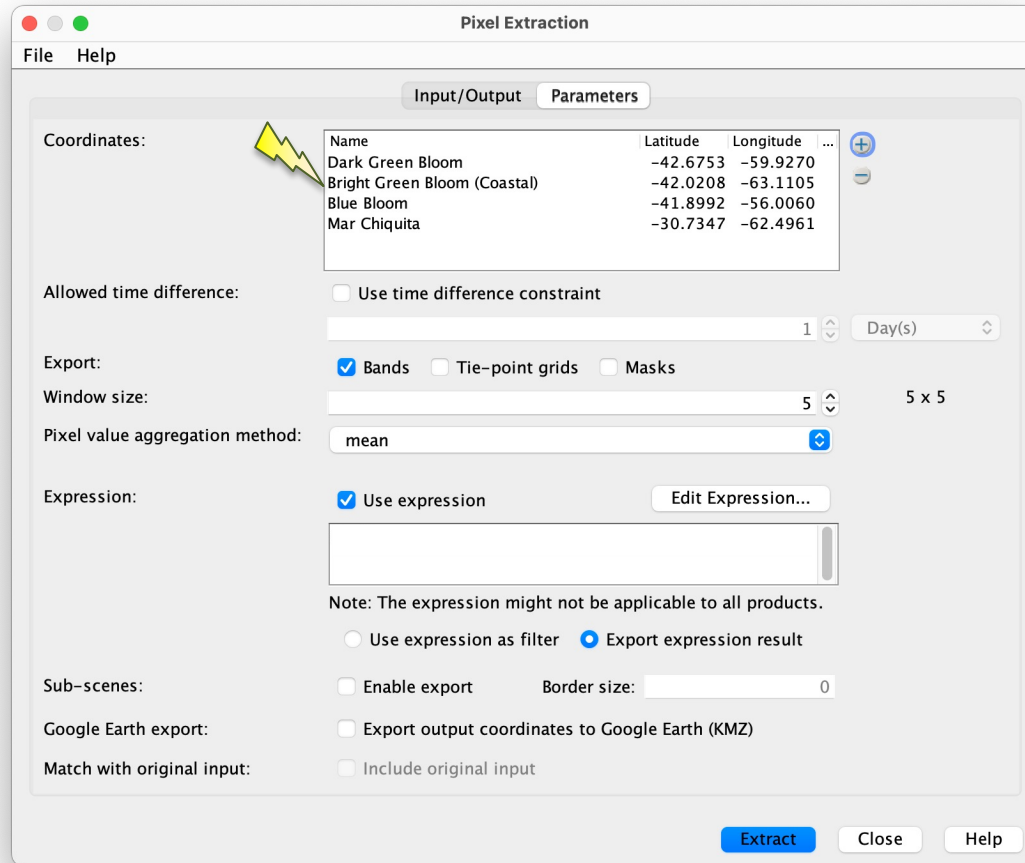
A file selection dialog is open in the foreground, titled 'File: Pins4Locations.placemark'. It shows a folder named 'DemoStuff' containing a list of files and folders. The file 'Pins4Locations.placemark' is selected. The 'File Format' is set to 'Placemark files - flat tex...'. A yellow lightning bolt icon points to the selected file. The dialog has buttons for 'New Folder', 'Cancel', and 'Select'.

At the bottom of the application window, there are buttons for 'Extract', 'Close', and 'Help'.

Name	Latitude	Longitude	DateTime (UTC)
------	----------	-----------	----------------

Name	Date Modified
geometry_Polygon.dbf	2024 Sep 27, Fri 10:26
geometry_Polygon.fix	2024 Sep 27, Fri 10:26
geometry_Polygon.prj	2024 Sep 27, Fri 10:26
geometry_Polygon.shp	2024 Sep 27, Fri 10:26
geometry_Polygon.shx	2024 Sep 27, Fri 10:26
pins.placemark	2024 Sep 27, Fri 08:36
Pins4Locations.placemark	2024 Sep 28, Sat 09:46
Pins4LocationsMoved.csv	2024 Sep 29, Sun 14:52
Pins4LocationsMoved.placemark	2024 Sep 28, Sat 10:24
~\$Book1(AutoRecovered).xlsx	2024 Sep 28, Sat 18:13





The screenshot shows the SeaDAS Pixel Extraction dialog box with the Expression Editor sub-dialog open. The main dialog has the following settings:

- Coordinates:** A list of names including Dark Green Bloom, Bright Green Bloom (Coastal), Blue Bloom, and Mar Chiquita.
- Allowed time difference:** Use time difference control.
- Export:** Bands, Tie-point control.
- Window size:** [Empty field]
- Pixel value aggregation method:** mean
- Expression:** Use expression. The expression field contains `!!2_flags.STRAYLIGHT`.
- Note:** The expression might not be applicable to all products. Use expression as filter, Export expression result.
- Sub-scenes:** Enable export, Border size: 0.
- Google Earth export:** Export output coordinates to Google Earth (KMZ).
- Match with original input:** Include original input.

The Expression Editor sub-dialog is open, showing:

- Data sources:** A list of data sources including `!2_flags.SPARE8`, `!2_flags.STRAYLIGHT`, `!2_flags.CLDICE`, `!2_flags.COCCOLITH`, `!2_flags.TURBIDW`, `!2_flags.HISOLZEN`, `!2_flags.SPARE14`, and `!2_flags.LOWLW`.
- Operators:** `@ and @`, `@ or @`, `not @`, `(@)`.
- Constants...** (dropdown)
- Operators...** (dropdown)
- Functions...** (dropdown)
- Expression:** `!!2_flags.STRAYLIGHT`
- Buttons:** OK, Cancel, Help.
- Status:** Ok, no errors.

Yellow lightning bolt icons highlight the `!2_flags.STRAYLIGHT` data source in the list, the `!!2_flags.STRAYLIGHT` expression in the main dialog, and the `!!2_flags.STRAYLIGHT` expression in the sub-dialog.

Notes

- Progress monitor does not move.
- This takes a long time to run (perhaps 5 minutes) on extracted file (longer on AOP file).

Pixel Extraction

Input/Output Parameters

	Latitude	Longitude	...
Green Bloom	-42.6753	-59.9270	
Bright Green Bloom (Coastal)	-42.0208	-63.1105	
Blue Bloom	-41.8992	-56.0060	
Mar Chiquita	-30.7347	-62.4961	

Allowed time difference: Use time difference constraint

Export: Bands Extracting pixels

Window size: Day(s) 5 x 5

Pixel value aggregation method:

Expression: Use expression

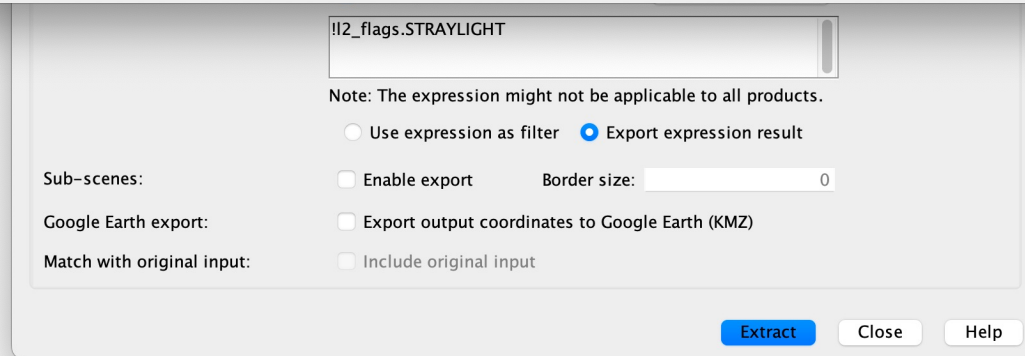
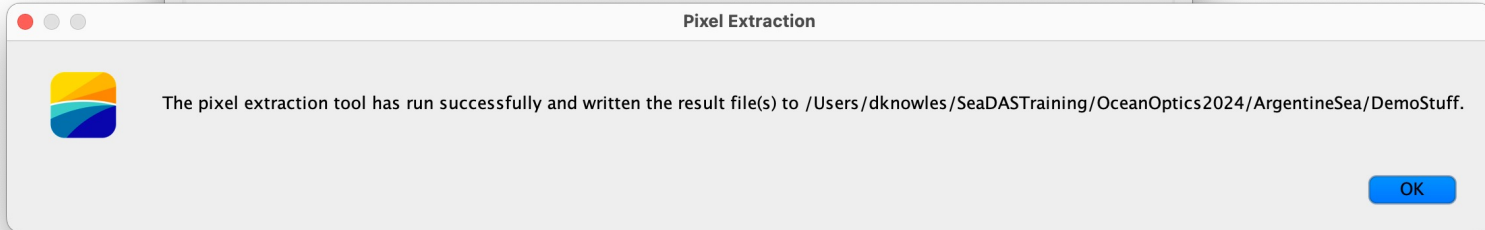
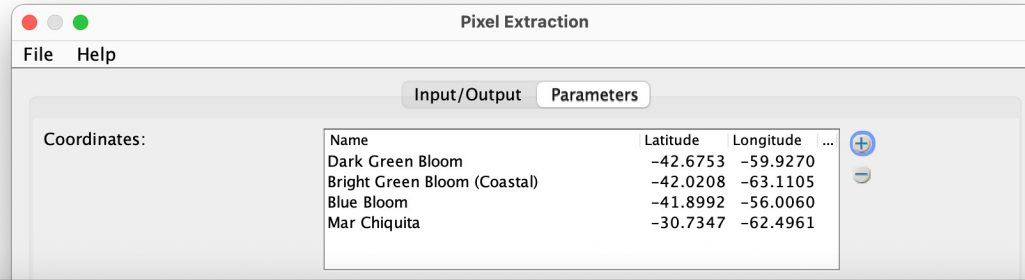
Note: The expression might not be applicable to all products.

Use expression as filter Export expression result

Sub-scenes: Enable export Border size:

Google Earth export: Export output coordinates to Google Earth (KMZ)

Match with original input: Include original input



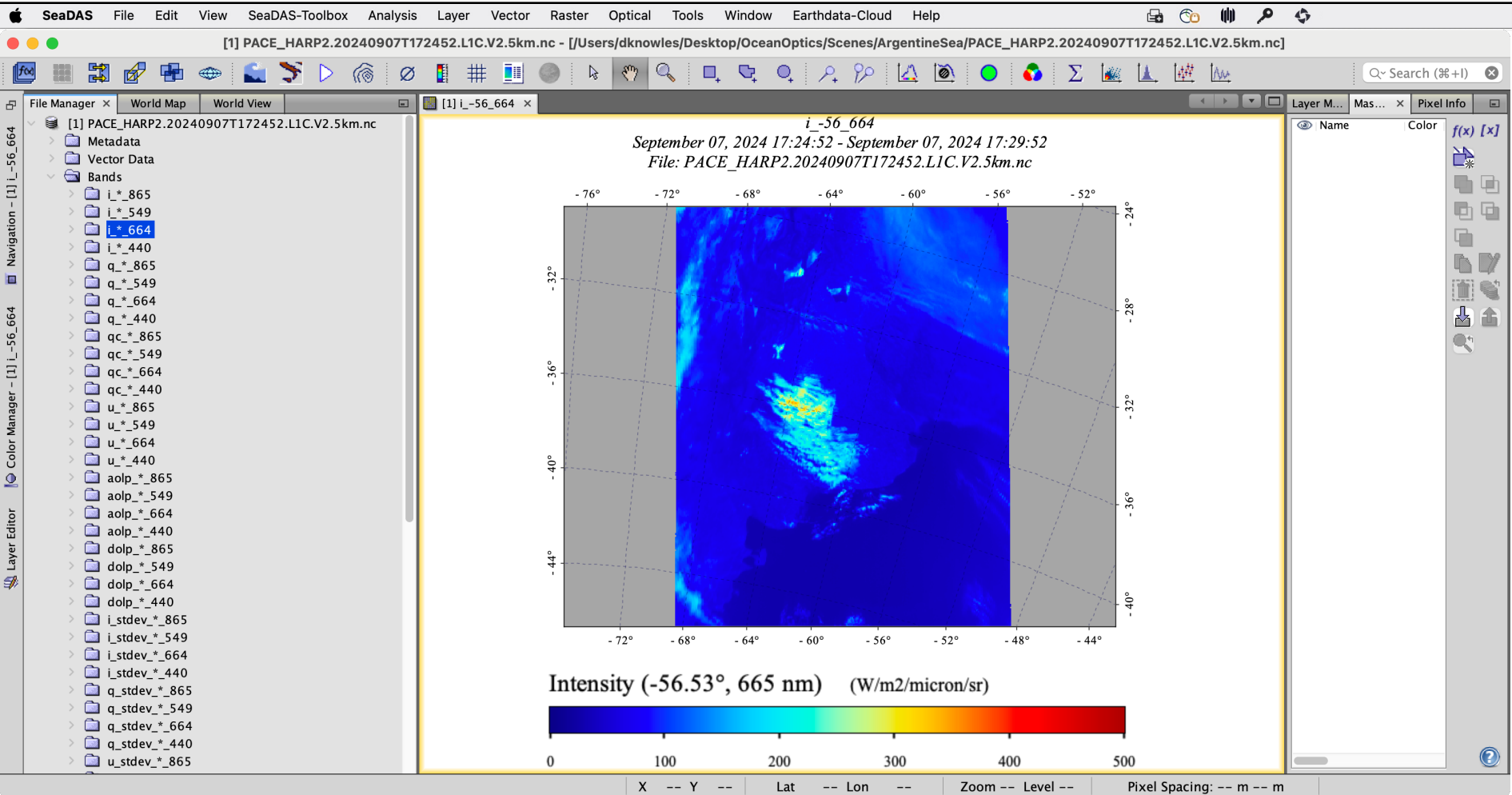
Notes

- Not conveniently plotable in 3rd party spreadsheets
 - 3 entries per band
 - Wavelength not included (must derive from band name)
 - Band data is in rows not columns

Name	Latitude	Longitude	PixelX	PixelY
Dark Green Bloom	-42.675259	-59.926952	575.5	1267.5
Bright Green Bloom (Coastal)	-42.020847	-63.110519	382.5	1158.5
Blue Bloom	-41.899178	-56.005978	855.5	1265.5
Mar Chiquita	-30.734665	-62.496098	640.5	152.5

Rrs_490_mean	Rrs_490_sigma	Rrs_490_num_pixels
0.001016081	1.96E-04	25
0.009318161	2.91E-04	25
0.004692321	2.74E-04	25
0.006600401	0.001373987	25

SeaDAS Workshop
Angular View Tool



Angular View: Import Pins

SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

[1] i_-56_664 - [PACE_HARP2.20240907T172452.L1C.V2.5km.nc] - [/Users/dknowles/Desktop/OceanOptics/Satellites/ArgentineSea/PACE_HARP2.20240907T172452.L1C.V2.5km.nc]

File Manager x World Map World View [1] i_-56_664 x

[1] PACE_HARP2.20240907T172452.L1C.V2.5km.nc

- Metadata
- Vector Data
- Bands
 - i_*_865
 - i_*_549
 - i_*_664
 - i_*_440
 - q_*_865
 - q_*_549
 - q_*_664
 - q_*_440
 - qc_*_865
 - qc_*_549
 - qc_*_664
 - qc_*_440
 - u_*_865
 - u_*_549
 - u_*_664
 - u_*_440
 - aolp_*_865
 - aolp_*_549
 - aolp_*_664
 - aolp_*_440
 - dolp_*_865
 - dolp_*_549
 - dolp_*_664
 - dolp_*_440
 - i_stdev_*_865
 - i_stdev_*_549
 - i_stdev_*_664
 - i_stdev_*_440
 - q_stdev_*_865
 - q_stdev_*_549
 - q_stdev_*_664
 - q_stdev_*_440
 - u_stdev_*_865

Color Manager [1] i_-56_664

- Navigation [1] i_-56_664
- Layer Editor

Layer Manager x Mas... x Pixel Info

Name	Color	f(x) [x]
pins	Red	

Pin Manager x

X	Y	Lon	Lat	Color	Label
246.500	340.500	-59.925903	-42.651237	Dark Green Bloom	Dark Green Bloom
200.500	316.500	-63.083530	-42.015587	Bright Green Bloom (Coastal)	Bright Green Bloom (Coastal)
310.500	340.500	-56.020088	-41.897133	BlueBloom	BlueBloom
260.500	82.500	-62.508984	-30.734886	Mar Chiquita	Mar Chiquita

X 88 Y 188 Lat 37°00'51" S Lon 71°01'25... Zoom 1.9:1 Level 0 Pixel Spacing: 5208.4 m 5186.52 m

Angular View: Open Angular View

123

The screenshot displays the SeaDAS software interface. At the top, the menu bar includes File, Edit, View, SeaDAS-Toolbox, Analysis, Layer, Vector, Raster, Optical, Tools, Window, Earthdata-Cloud, and Help. The main window title is "[1] i_-56_664 - [PACE_HARP2.20240907T172452.L1C.V2.5km.nc]". The interface is divided into several panels:

- File Manager:** Shows a tree view of the data file structure, including Metadata, Vector Data, and Bands.
- World Map:** Displays a satellite image of the ocean with a yellow lightning bolt icon pointing to a specific location.
- Angular View Window:** A central window titled "Angular View" with a grid. The x-axis is labeled "View Angle" and ranges from 0.00 to 1.05. The y-axis ranges from 0.00 to 1.05. The text "No product selected" is centered in the grid. To the right of the grid is a legend with four radio buttons: "View Angle" (selected), "Sensor Zenith", "Sensor Azimuth", and "Scattering Angle".
- Layer Manager:** Shows a list of layers with checkboxes and names like "pins".
- Pixel Info:** Shows a color swatch and a function $f(x)$.

At the bottom of the interface, the status bar displays: X 88 Y 188 Lat 37°00'51" S Lon 71°01'25... Zoom 1.9:1 Level 0 Pixel Spacing: 5208.4 m 5186.52 m

Angular View: Select Band Grouping(s)

The screenshot displays the SeaDAS software interface. The main window shows a satellite data map titled "[1] i_-56_664 - [PACE_HARP2.20240907T172452.L1C.V2.5km.nc]". A dialog box titled "Angular View" is open, showing a list of available spectra. The selected spectrum is "i*_664". The dialog also includes a "View Angle" plot and a "Color" panel on the right.

Angular View

Available Spectra

Spectrum Name	Unit	Line Style	Symbol	Symbol Size
<input type="checkbox"/> i*_865	W/m2/micron/sr	—————	◇	3
<input type="checkbox"/> i*_549	W/m2/micron/sr	- - - - -	△	3
<input checked="" type="checkbox"/> i*_664	W/m2/micron/sr	—————	▽	3
<input type="checkbox"/> i*_440	W/m2/micron/sr	—————	☆	3
<input type="checkbox"/> q*_865	W/m2/micron/sr	—————	×	3
<input type="checkbox"/> q*_549	W/m2/micron/sr	·····	+	3
<input type="checkbox"/> q*_664	W/m2/micron/sr	- - - - -	○	3
<input type="checkbox"/> q*_440	W/m2/micron/sr	—————	□	3

View Angle

View Angle
 Sensor Zenith
 Sensor Azimuth
 Scattering Angle

Color

f(x) [x]

OK Cancel Help

X 88 Y 188 Lat 37°00'51" S Lon 71°01'25... Zoom 1.9:1 Level 0 Pixel Spacing: 5208.4 m 5186.52 m

Angular View: Select Band Grouping(s) (Make sure children are selected)

SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

[1] i_-56_664 - [PACE_HARP2.20240907T172452.L1C.V2.5km.nc] - [/Users/dknowles/Desktop/OceanOptics/Scenes/ArgentineSea/PACE_HARP2.20240907T172452.L1C.V2.5km.nc]

File Manager x World Map World View [1] i_-56_664 x Layer M... Mas... x Pixel Info

[1] PACE_HARP2.20240907T172452.L1C.V2.5km.nc
Metadata
Vector Data
Bands

Angular View

Available Spectra

Spectrum Name	Unit	Line Style	Symbol	Symbol Size
<input type="checkbox"/> i_*.865	W/m2/micron/sr	—————	◇	3
<input type="checkbox"/> i_*.549	W/m2/micron/sr	- - - -	△	3
<input checked="" type="checkbox"/> i_*.664	W/m2/micron/sr	—————	▽	3

Band name	Band description	View Angle	View Angle	Unit
<input checked="" type="checkbox"/> i_55_664	i	55.66	0.0	W/m2/micron/sr
<input checked="" type="checkbox"/> i_54_664	i	54.41	0.0	W/m2/micron/sr
<input checked="" type="checkbox"/> i_53_664	i	53.1	0.0	W/m2/micron/sr
<input checked="" type="checkbox"/> i_51_664	i	51.68	0.0	W/m2/micron/sr
<input checked="" type="checkbox"/> i_50_664	i	50.27	0.0	W/m2/micron/sr
<input checked="" type="checkbox"/> i_48_664	i	48.72	0.0	W/m2/micron/sr
<input checked="" type="checkbox"/> i_47_664	i	47.19	0.0	W/m2/micron/sr
<input checked="" type="checkbox"/> i_45_664	i	45.66	0.0	W/m2/micron/sr

View Angle

- View Angle
- Sensor Zenith
- Sensor Azimuth
- Scattering Angle

Color

Name pins

OK Cancel Help

X 88 Y 188 Lat 37°00'51" S Lon 71°01'25... Zoom 1.9:1 Level 0 Pixel Spacing: 5208.4 m 5186.52 m

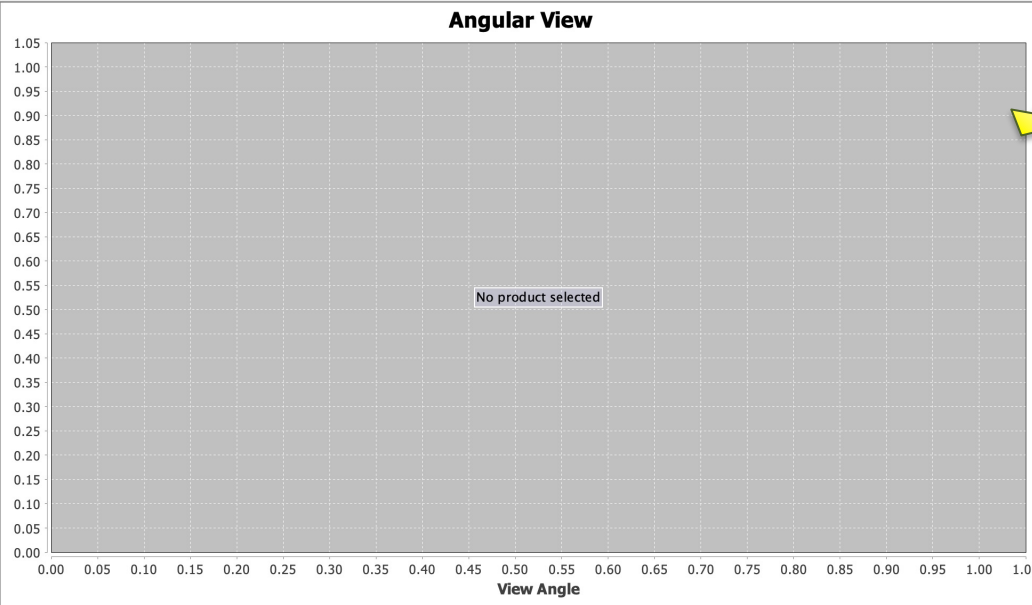
SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

[1] i_-56_664 - [PACE_HARP2.20240907T172452.L1C.V2.5km.nc] - [/Users/dknowles/Desktop/OceanOptics/Scenes/ArgentineSea/PACE_HARP2.20240907T172452.L1C.V2.5km.nc]

File Manager x World Map World View [1] i_-56_664 x

[1] PACE_HARP2.20240907T172452.L1C.V2.5km.nc
Metadata
Vector Data
Bands

Angular View x



Angular View

1.05
1.00
0.95
0.90
0.85
0.80
0.75
0.70
0.65
0.60
0.55
0.50
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00

0.00 0.05 0.10 0.15 0.20 0.25 0.30 0.35 0.40 0.45 0.50 0.55 0.60 0.65 0.70 0.75 0.80 0.85 0.90 0.95 1.00 1.05

View Angle

No product selected

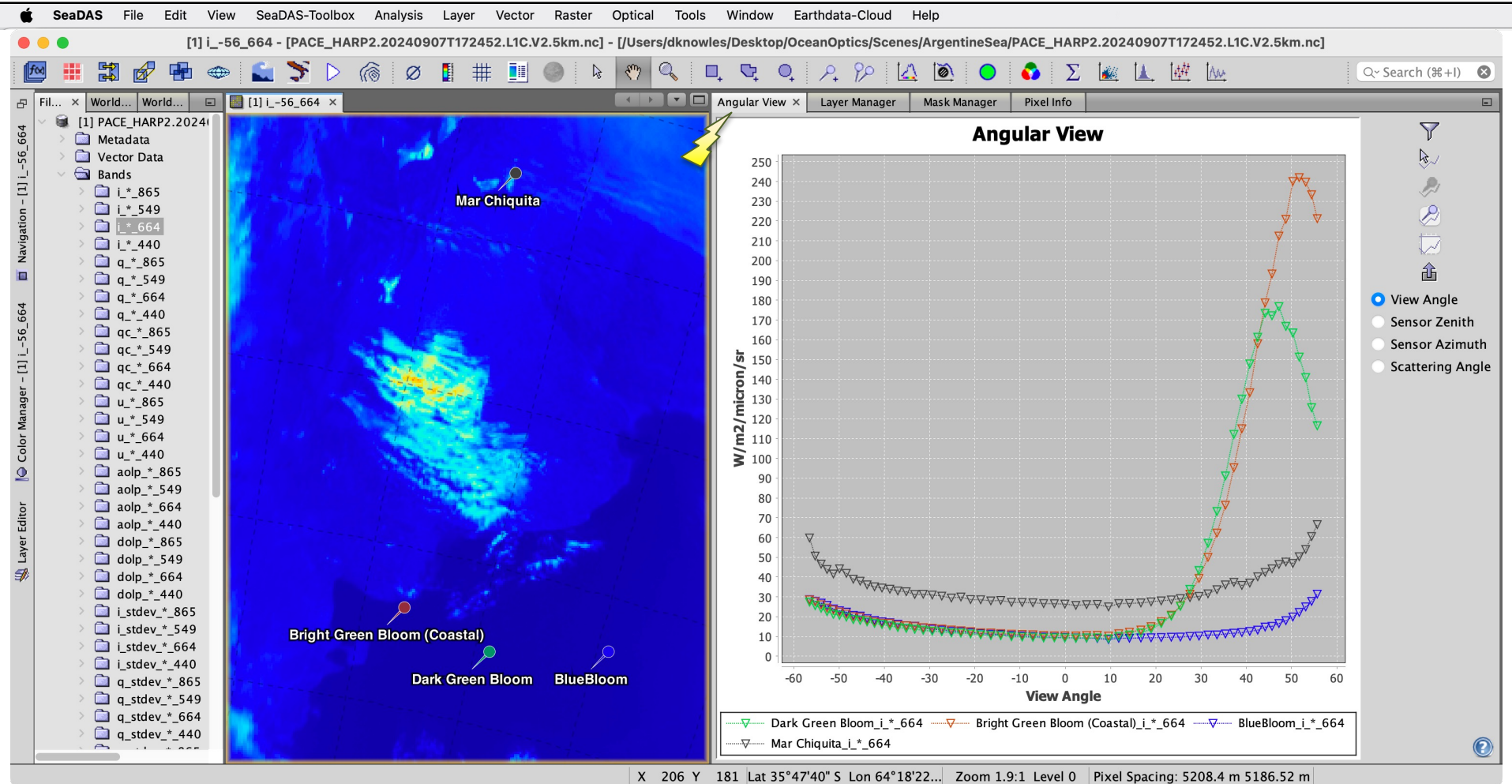
- View Angle
- Sensor Zenith
- Sensor Azimuth
- Scattering Angle

Layer Editor Color Manager - [1] i_-56_664 Navigation - [1] i_-56_664

Layer M... Mas... x Pixel Info

Name	Color	f(x) [x]
pins	Red	

X 88 Y 188 Lat 37°00'51" S Lon 71°01'25... Zoom 1.9:1 Level 0 Pixel Spacing: 5208.4 m 5186.52 m



SeaDAS 9.1.0

Q Search (⌘+I)

- World...
- World...
- [1] i_-56_664 x
- [1] PACE_HARP2.20241
 - Metadata
 - Vector Data
 - Bands
 - i_*_865
 - i_*_549
 - i_*_664
 - i_*_440
 - q_*_865
 - q_*_549
 - q_*_664
 - q_*_440
 - qc_*_865
 - qc_*_549
 - qc_*_664
 - qc_*_440
 - u_*_865
 - u_*_549
 - u_*_664
 - u_*_440
 - aolp_*_865
 - aolp_*_549
 - aolp_*_664
 - aolp_*_440
 - dolp_*_865
 - dolp_*_549
 - dolp_*_664
 - dolp_*_440
 - i_stdev_*_865
 - i_stdev_*_549
 - i_stdev_*_664
 - i_stdev_*_440
 - q_stdev_*_865
 - q_stdev_*_549
 - q_stdev_*_664
 - q_stdev_*_440

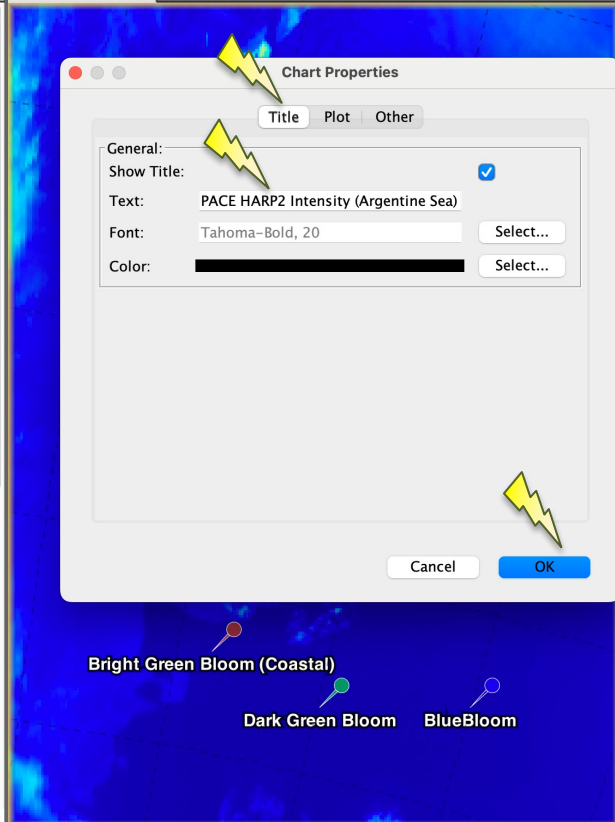


Chart Properties

Title Plot Other

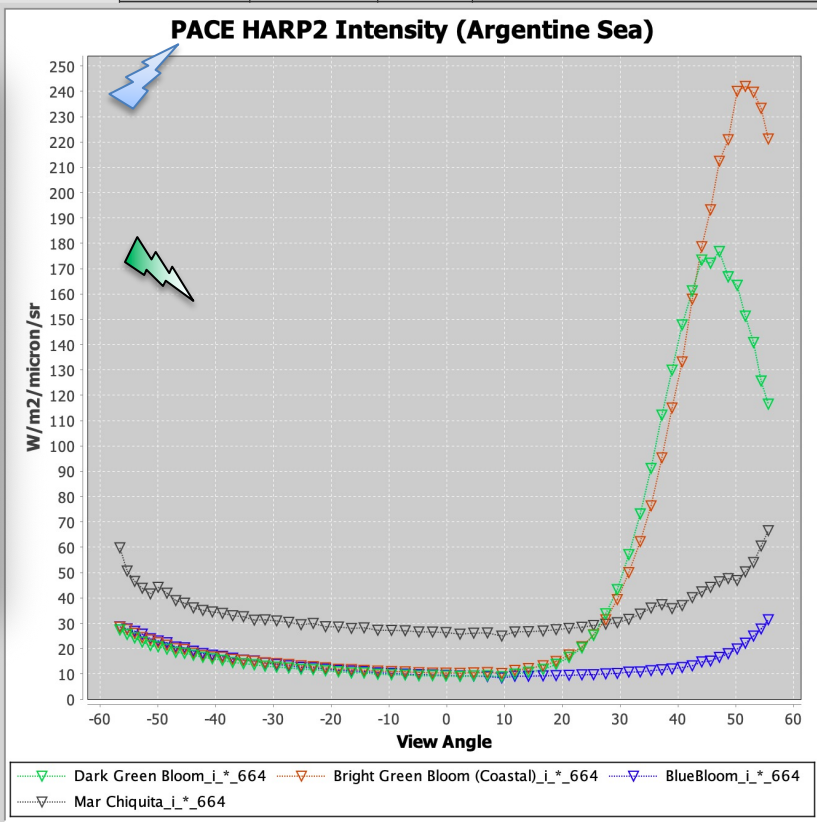
General:

Show Title:

Text: PACE HARP2 Intensity (Argentine Sea)

Font: Tahoma-Bold, 20

Color:



SeaDAS 9.1.0

File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

Angular View x Layer Manager Mask Manager Pixel Info

Q Search (⌘+I)

World... World... [1] i_-56_664 x

[1] PACE_HARP2.20241

- Metadata
- Vector Data
- Bands
 - i*_865
 - i*_549
 - i*_664
 - i*_440
 - q*_865
 - q*_549
 - q*_664
 - q*_440
 - qc*_865
 - qc*_549
 - qc*_664
 - qc*_440
 - u*_865
 - u*_549
 - u*_664
 - u*_440
 - aolp*_865
 - aolp*_549
 - aolp*_664
 - aolp*_440
 - dolp*_865
 - dolp*_549
 - dolp*_664
 - dolp*_440
 - i_stdev*_865
 - i_stdev*_549
 - i_stdev*_664
 - i_stdev*_440
 - q_stdev*_865
 - q_stdev*_549
 - q_stdev*_664
 - q_stdev*_440

Color Manager - [1] i_-56_664

Navigation - [1] i_-56_664

Layer Editor

Properties

Title Plot Other

XY Plot:

Domain Axis Range Axis Appearance

General:

Label: View Angle

Font: Tahoma-Bold, 14 Select...

Paint: Select...

Other

Ticks Range TickUnit

Auto-adjust range:

Minimum range value: 0.0

Maximum range value: 60.0

Cancel OK

Bright Green Bloom (Coastal)

Dark Green Bloom

BlueBloom

PACE HARP2 Intensity (Argentine Sea)

W/m²/micron/sr

View Angle

Dark Green Bloom_i*_664 Bright Green Bloom (Coastal)_i*_664 BlueBloom_i*_664 Mar Chiquita_i*_664

View Angle

- View Angle
- Sensor Zenith
- Sensor Azimuth
- Scattering Angle

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

SeaDAS 9.1.0

File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

Angular View x Layer Manager Mask Manager Pixel Info

Search (⌘+)

Navigation - [1] i_-56_664

Color Manager - [1] i_-56_664

Layer Editor

[1] PACE_HARP2.20241

- Metadata
- Vector Data
- Bands
 - i_*_865
 - i_*_549
 - i_*_664
 - i_*_440
 - q_*_865
 - q_*_549
 - q_*_664
 - q_*_440
 - qc_*_865
 - qc_*_549
 - qc_*_664
 - qc_*_440
 - u_*_865
 - u_*_549
 - u_*_664
 - u_*_440
 - aolp_*_865
 - aolp_*_549
 - aolp_*_664
 - aolp_*_440
 - dolp_*_865
 - dolp_*_549
 - dolp_*_664
 - dolp_*_440
 - i_stdev_*_865
 - i_stdev_*_549
 - i_stdev_*_664
 - i_stdev_*_440
 - q_stdev_*_865
 - q_stdev_*_549
 - q_stdev_*_664
 - q_stdev_*_440

Chart Properties

Title Plot Other

XY Plot:

Domain Axis Range Axis Appearance

General:

Outline stroke: Select...

Outline paint: Select...

Background paint: Select...

Orientation: Vertical

Cancel OK

PACE HARP2 Intensity (Argentine Sea)

W/m²/micron/sr

View Angle

View Angle (selected)
Sensor Zenith
Sensor Azimuth
Scattering Angle

Bright Green Bloom (Coastal)
Dark Green Bloom
BlueBloom

Dark Green Bloom_i_*_664
Bright Green Bloom (Coastal)_i_*_664
BlueBloom_i_*_664
Mar Chiquita_i_*_664

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

SeaDAS Workshop
Animate Image Tool

SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

[1] i_-56_664 - PACE_HARP2.20240907T172452.L1C.V2.5km.nc - /Users/dknowles/Desktop/OceanOptics/Scenes/ArgentineSea/PACE_HARP2.20240907T172452.L1C.V2.5km.nc

Q Search (#+)

File Manager x World Map World View [1] i_-56_664 x [1] i_21_664 x [1] i_47_664 x [1] i_11_664 x [1] i_-27_664 x [1] i_-46_664 x [1] ... Layer Mana... Mask Ma... Pixel Info

- i_-29_664 (664.57 nm)
- i_-31_664 (664.57 nm)
- i_-33_664 (664.57 nm)
- i_-35_664 (664.57 nm)
- i_-37_664 (664.57 nm)
- i_-38_664 (664.57 nm)
- i_-40_664 (664.57 nm)
- i_-42_664 (664.57 nm)
- i_-43_664 (664.57 nm)
- i_-45_664 (664.57 nm)
- i_-46_664 (664.57 nm)
- i_-48_664 (664.57 nm)
- i_-49_664 (664.57 nm)
- i_-51_664 (664.57 nm)
- i_-52_664 (664.57 nm)
- i_-53_664 (664.57 nm)
- i_-55_664 (664.57 nm)
- i_-56_664 (664.57 nm)**
- i_*_440
- q_*_865

Layer Editor - pins Color Manager - ... Navigation - [... x

1.7 : 1 0°

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

The screenshot shows the SeaDAS software interface. The main window displays a satellite image of the ocean. A dialog box titled "Animate Images" is open in the center. The dialog has a "Select Image Type:" section with three radio buttons: "Band Images" (selected), "Angular View", and "Spectrum View". Below this is a "Sort by Angle" dropdown menu. To the right of the dialog is a list of bands with checkboxes, including "view_time_offsets", "height", "height_stdev", "sensor_zenith_angle", "sensor_azimuth_angle", "solar_zenith_angle", "solar_azimuth_angle", "scattering_angle", "rotation_angle", "number_of_observations", "qc", "i", "q", "u", "dolp", "aolp", "i_stdev", "q_stdev", and "u_stdev". At the bottom of the dialog are three buttons: "Create Images", "Animate Images", and "Cancel". The background shows the SeaDAS interface with a file manager on the left, a toolbar at the top, and a layer editor at the bottom left. A yellow lightning bolt icon is overlaid on the "Band Images" radio button.

SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

[1] i_-56_664 - PACE_HARP2.20240907T172452.L1C.V2.5km.nc - /Users/dknowles/Desktop/OceanOptics/Scenes/ArgentineSea/PACE_HARP2.20240907T172452.L1C.V2.5km.nc

File Manager x World Map World View [1] i_-56_664 x [1] i_21_664 x [1] i_47_664 x [1] i_11_664 x [1] i_27_664 x [1] i_-46_664 x [1] ... Layer Mana... Mask Ma... Pixel Info

i_-29_664 (664.57 nm)
i_-31_664 (664.57 nm)
i_-33_664 (664.57 nm)
i_-35_664 (664.57 nm)
i_-37_664 (664.57 nm)
i_-38_664 (664.57 nm)
i_-40_664 (664.57 nm)
i_-42_664 (664.57 nm)
i_-43_664 (664.57 nm)
i_-45_664 (664.57 nm)
i_-46_664 (664.57 nm)
i_-48_664 (664.57 nm)
i_-49_664 (664.57 nm)
i_-51_664 (664.57 nm)
i_-52_664 (664.57 nm)
i_-53_664 (664.57 nm)
i_-55_664 (664.57 nm)
i_-56_664 (664.57 nm)

Layer Editor - pins Color Manager - ... Navigation - [... x

1.7 : 1 0°

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

Image Animator: Select all for "i" band group

SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

[1] i_-56_664 - PACE_HARP2.20240907T172452.L1C.V2.5km.nc - /Users/dknowles/Desktop/OceanOptics/Scenes/ArgentineSea/PACE_HARP2.20240907T172452.L1C.V2.5km.nc

File Manager x World Map World View [1] i_-56_664 x [1] i_21_664 x [1] i_47_664 x [1] i_11_664 x [1] i_-27_664 x [1] i_-46_664 x [1] ... Layer Mana... Mask Ma... Pixel Info

i_-29_664 (664.57 nm)
i_-31_664 (664.57 nm)
i_-33_664 (664.57 nm)
i_-35_664 (664.57 nm)
i_-37_664 (664.57 nm)
i_-38_664 (664.57 nm)
i_-40_664 (664.57 nm)
i_-42_664 (664.57 nm)
i_-43_664 (664.57 nm)
i_-45_664 (664.57 nm)
i_-46_664 (664.57 nm)
i_-48_664 (664.57 nm)
i_-49_664 (664.57 nm)
i_-51_664 (664.57 nm)
i_-52_664 (664.57 nm)
i_-53_664 (664.57 nm)
i_-55_664 (664.57 nm)
i_-56_664 (664.57 nm)

i_*_440
q_*_865

Layer Editor - pins Color Manager - ... Navigation - [... x

1.7 : 1 0°

Image Animator: Animate Images

Select Image Type:
 Band Images
 Angular View
 Spectrum View

Sort by Angle

- i
- i_56_549
- i_43_549
- i_32_549
- i_20_549
- i_5_549
- i_8_549
- i_-22_549
- i_-34_549
- i_-44_549
- i_-53_549
- i_55_664
- i_54_664
- i_53_664
- i_51_664
- i_50_664
- i_48_664
- i_47_664
- i_45_664
- i_44_664

Create Images Animate Images Cancel ?

Name Color Tran... Ty f(x) [x]

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

[1] i_-56_664 - PACE_HARP2.20240907T172452.L1C.V2.5km.nc - /Users/dknowles/Desktop/OceanOptics/Scenes/ArgentineSea/PACE_HARP2.20240907T172452.L1C.V2.5km.nc

File Manager x World Map World View [1] i_-56_664 x [1] i_21_664 x [1] i_47_664 x [1] i_11_664 x [1] i_-27_664 x [1] i_-46_664 x [1] ... Layer Mana... Mask Ma... Pixel Info

i_-29_664 (664.57 nm)
 i_-31_664 (664.57 nm)
 i_-33_664 (664.57 nm)
 i_-35_664 (664.57 nm)
 i_-37_664 (664.57 nm)
 i_-38_664 (664.57 nm)
 i_-40_664 (664.57 nm)
 i_-42_664 (664.57 nm)
 i_-43_664 (664.57 nm)
 i_-45_664 (664.57 nm)
 i_-46_664 (664.57 nm)
 i_-48_664 (664.57 nm)
 i_-49_664 (664.57 nm)
 i_-51_664 (664.57 nm)
 i_-52_664 (664.57 nm)
 i_-53_664 (664.57 nm)
 i_-55_664 (664.57 nm)
 i_-56_664 (664.57 nm)

i_*_440
 q_*_865

Layer Editor - pins Color Manager - ... Navigation - [... x

1.7 : 1 0°

Layer Name Color Tran... Ty f(x) [x]

Image Animator: click "Animate Images"

Select Image Type:
 Band Images
 Angular View
 Spectrum View

Sort by Angle

- i_-56_664
- i_56_549
- i_43_549
- i_32_549
- i_20_549
- i_5_549
- i_-8_549
- i_-22_549
- i_-34_549
- i_-44_549
- i_-53_549
- i_55_664
- i_54_664
- i_53_664
- i_51_664
- i_50_664
- i_48_664
- i_47_664
- i_45_664
- i_44_664

Create Images Animate Images Cancel ?

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

SeaDAS 9.1.0

Animation With Speed Control

Frames Per Second

0 10 20 30

File M... x World Map World Vi... [1] i_-56_664 x

Layer Manager - [1] i_-56_664

- i_-33_664 (664.57)
- i_-35_664 (664.57)
- i_-37_664 (664.57)
- i_-38_664 (664.57)
- i_-40_664 (664.57)
- i_-42_664 (664.57)
- i_-43_664 (664.57)
- i_-45_664 (664.57)
- i_-46_664 (664.57)
- i_-48_664 (664.57)
- i_-49_664 (664.57)
- i_-51_664 (664.57)
- i_-52_664 (664.57)
- i_-53_664 (664.57)
- i_-55_664 (664.57)
- i_-56_664 (664.57)
- i_*_440
- q_*_865
- q_*_549
- q_*_664
- q_*_440
- qc_*_865
- qc_*_549
- qc_*_664
- qc_*_440
- u_*_865
- u_*_549
- u_*_664
- u_*_440
- aolp_*_865
- aolp_*_549
- aolp_*_664
- aolp_*_440
- dolp_*_865
- dolp_*_549
- dolp_*_664

Layer Editor

Layer Manager - [1] i_-56_664

Color Manager - [1] i_-56_664

Navigation - [1] i_-56_664

File M... x World Map World Vi... [1] i_-56_664 x

Layer Manager - [1] i_-56_664

Mask Ma... x Pixel Info

Name Color Tran... Ty f(x) [x]

Pause Save Cancel

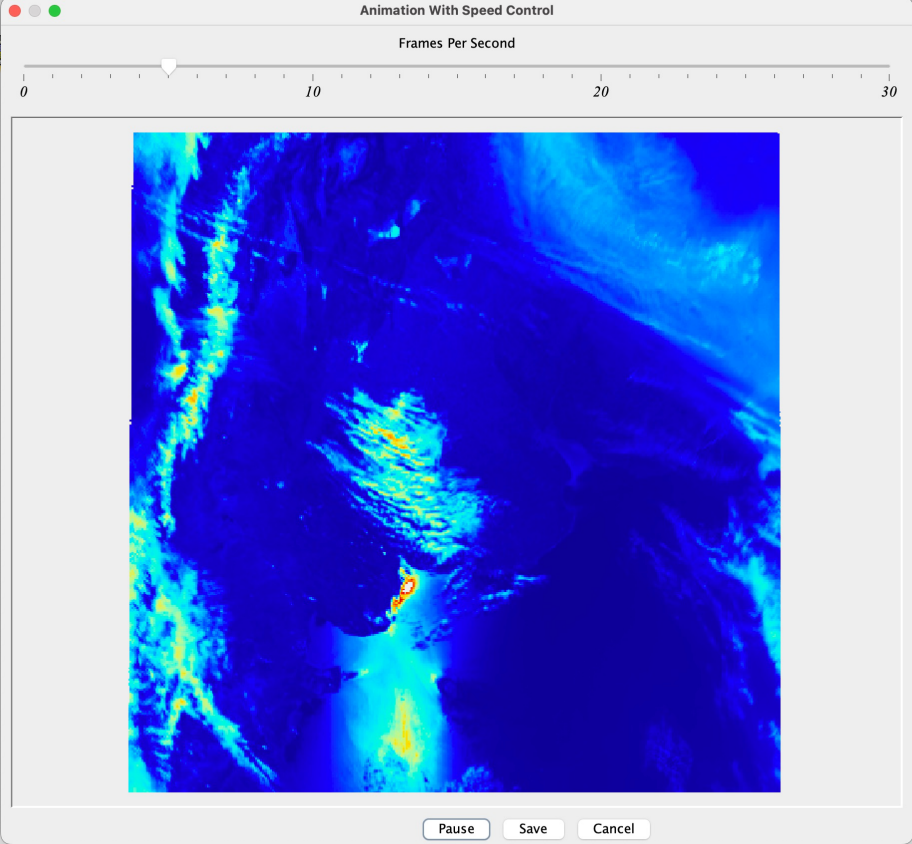
X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

SeaDAS 9.1.0

Animation With Speed Control

Frames Per Second

0 10 20 30



File M... x World Map World Vi... [1] i_-56_664 x

- i_-33_664 (664.57)
- i_-35_664 (664.57)
- i_-37_664 (664.57)
- i_-38_664 (664.57)
- i_-40_664 (664.57)
- i_-42_664 (664.57)
- i_-43_664 (664.57)
- i_-45_664 (664.57)
- i_-46_664 (664.57)
- i_-48_664 (664.57)
- i_-49_664 (664.57)
- i_-51_664 (664.57)
- i_-52_664 (664.57)
- i_-53_664 (664.57)
- i_-55_664 (664.57)
- i_-56_664 (664.57)
- i_*_440
- q*_865
- q*_549
- q*_664
- q*_440
- qc*_865
- qc*_549
- qc*_664
- qc*_440
- u*_865
- u*_549
- u*_664
- u*_440
- aolp*_865
- aolp*_549
- aolp*_664
- aolp*_440
- dolp*_865
- dolp*_549
- dolp*_664

Layer Editor

Layer Manager - [1] i_-56_664

Navigation - [1] i_-56_664

File M... x World Map World Vi... [1] i_-56_664 x

Layer Mana... Mask Ma... x Pixel Info

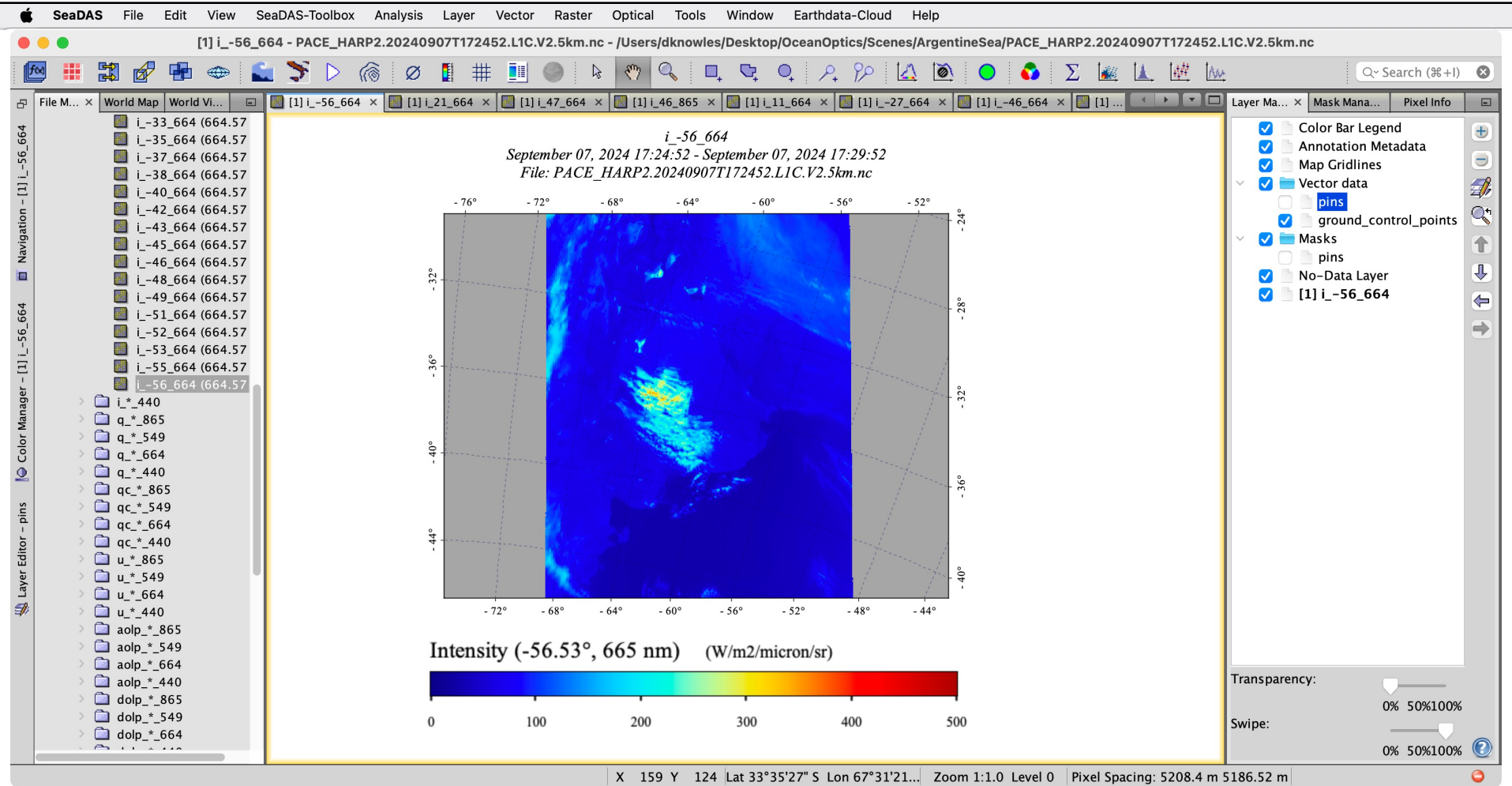
Name Color Tran... Ty f(x) [x]

Pause Save Cancel

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

SeaDAS Workshop
Land Mask

Land Mask Tool: Using HARP2 File (continued from Image Animation)



SeaDAS 9.1.0

File M... x World Map World Vi... x [1] i_-56_664 x [1] i_21_664 x [1] i_47_664 x [1] i_46_865 x [1] i_11_664 x [1] i_-27_664 x [1] i_-46_664 x [1] ...

Layer Editor Color Manager - [1] i_-56_664 Navigation - [1] i_-56_664

World Map World Vi... x [1] i_-56_664 x [1] i_21_664 x [1] i_47_664 x [1] i_46_865 x [1] i_11_664 x [1] i_-27_664 x [1] i_-46_664 x [1] ...

September 07, 2024 17:24:52
File: PACE_HARP2.202409

i_-56_664

-76° -72° -68° -64°

-32° -36° -40° -44°

-72° -68° -64° -60°

Intensity (-56.53°, 665 nm) (W/m2/micron/sr)

0 100 200 300 400 500

Create Coastline & Land Masks

World Source Data 1 km (GSHHS)

Super Sampling Factor 1

Create Coastline Mask/Bands

Mask Name CoastalMask

Coastal Grid Size 3

Coastal Size Tolerance 50

Color Black

Transparency 0

Enabled in All Bands

Mask Name LandMask

Color [70,70,0]

Transparency 0

Enabled in All Bands

Mask Name WaterMask

Color [0,125,255]

Transparency 0.5

Enabled in All Bands

Cancel Create Masks ?

Layer Mana... Mask Ma... x Pixel Info

Name	Color	Tran...	Ty
<input type="checkbox"/> LandMask		0 Ma	
<input type="checkbox"/> WaterMask		0.5 Ma	

f(x) [x]

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

Land Mask Tool: Show "LandMask" and change its color

SeaDAS 9.1.0

File M... x World Map World Vi... [1] i_-56_664 x [1] i_21_664 x [1] i_47_664 x [1] i_46_865 x [1] i_11_664 x [1] i_-27_664 x [1] i_-46_664 x [1] ...

Layer Editor Color Manager - [1] i_-56_664 Navigation - [1] i_-56_664

i_-56_664
September 07, 2024 17:24:52 - September 07, 2024 17:29:52
File: PACE_HARP2.20240907T172452.L1C.V2.5km.nc

Intensity (-56.53°, 665 nm) (W/m2/micron/sr)

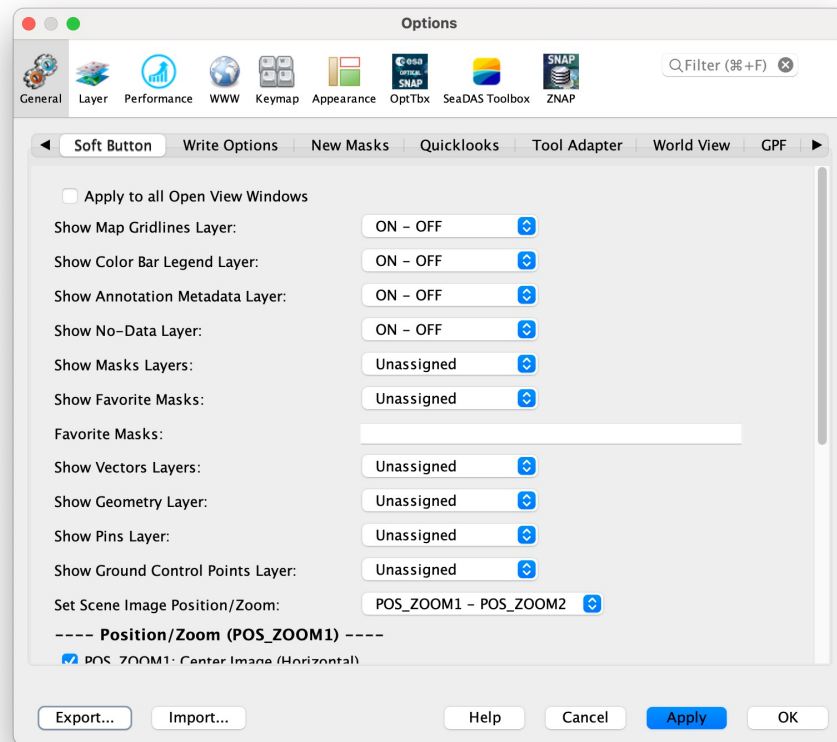
0 100 200 300 400 500

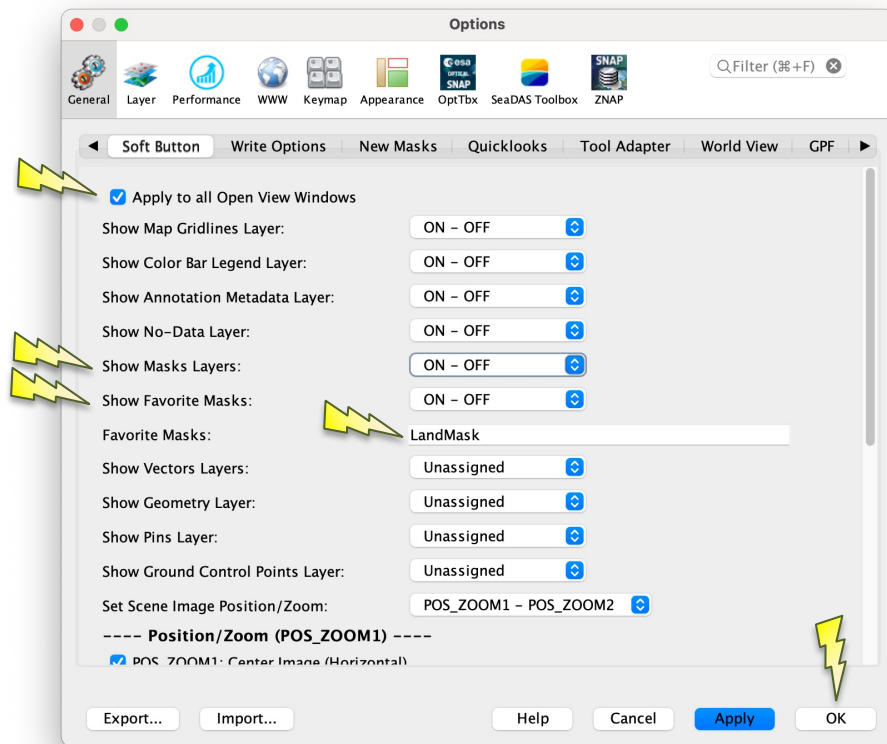
Name	Color	Tran...	Ty
<input checked="" type="checkbox"/> LandMask	Black	0 Ma	
<input type="checkbox"/> WaterMask	Blue	0.5 Ma	

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

SeaDAS Workshop

Soft Button





SeaDAS 9.1.0

File M... x World Map World Vi... [1] i_-56_664 x [1] i_21_664 x [1] i_47_664 x [1] i_46_865 x [1] i_11_664 x [1] i_27_664 x [1] i_-46_664 x [1] ...

Layer Editor Color Manager - [1] i_-56_664 Navigation - [1] i_-56_664

File Manager

- i_-33_664 (664.57)
- i_-35_664 (664.57)
- i_-37_664 (664.57)
- i_-38_664 (664.57)
- i_-40_664 (664.57)
- i_-42_664 (664.57)
- i_-43_664 (664.57)
- i_-45_664 (664.57)
- i_-46_664 (664.57)
- i_-48_664 (664.57)
- i_-49_664 (664.57)
- i_-51_664 (664.57)
- i_-52_664 (664.57)
- i_-53_664 (664.57)
- i_-55_664 (664.57)
- i_-56_664 (664.57)
- i_*_440
- q_*_865
- q_*_549
- q_*_664
- q_*_440
- qc_*_865
- qc_*_549
- qc_*_664
- qc_*_440
- u_*_865
- u_*_549
- u_*_664
- u_*_440
- aolp_*_865
- aolp_*_549
- aolp_*_664
- aolp_*_440
- dolp_*_865
- dolp_*_549
- dolp_*_664

Layer Manager

- LandMask
- WaterMask

Mask Manager

Name	Color	Trans...	Ty
LandMask	Black	0	Ma
WaterMask	Blue	0.5	Ma

Pixel Info

$f(x)$ [x]

i_{-56_664}
September 07, 2024 17:24:52 - September 07, 2024 17:29:52
File: PACE_HARP2.20240907T172452.L1C.V2.5km.nc

Intensity (-56.53°, 665 nm) (W/m2/micron/sr)

0 100 200 300 400 500

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

Image Animator: Click Soft Button a couple times, click other tabs to double-check

SeADAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

[1] i_-56_664 - PACE_HARP2.20240907T172452.L1C.V2.5km.nc - /Users/dknowles/Desktop/OceanOptics/Scenes/ArgentineSea/..._HARP2.20240907T172452.L1C.V2.5km.nc

Q Search (%+)

File M... x World Map World Vi... [1] i_-56_664 x [1] i_21_664 x [1] i_47_664 x [1] i_46_865 x [1] i_11_664 x [1] i_-27_664 x [1] i_-46_664 x [1] ... Layer Mana... Mask Ma... Pixel Info

Layer Editor Color Manager - [1] i_-56_664 Navigation - [1] i_-56_664

- i_-33_664 (664.57)
- i_-35_664 (664.57)
- i_-37_664 (664.57)
- i_-38_664 (664.57)
- i_-40_664 (664.57)
- i_-42_664 (664.57)
- i_-43_664 (664.57)
- i_-45_664 (664.57)
- i_-46_664 (664.57)
- i_-48_664 (664.57)
- i_-49_664 (664.57)
- i_-51_664 (664.57)
- i_-52_664 (664.57)
- i_-53_664 (664.57)
- i_-55_664 (664.57)
- i_-56_664 (664.57)
- i_*_440
- q_*_865
- q_*_549
- q_*_664
- q_*_440
- qc_*_865
- qc_*_549
- qc_*_664
- qc_*_440
- u_*_865
- u_*_549
- u_*_664
- u_*_440
- aolp_*_865
- aolp_*_549
- aolp_*_664
- aolp_*_440
- dolp_*_865
- dolp_*_549
- dolp_*_664

Layer Manager

Name	Color	Tran... Ty
<input checked="" type="checkbox"/> LandMask	Black	0 Ma
<input type="checkbox"/> WaterMask	Blue	0.5 Ma
<input type="checkbox"/> pins	Red	0.5 Ge

Pixel Info f(x) [x]

X 216 Y 142 Lat 33°55' S Lon 64°11'13" W Zoom 1.5:1 Level 0 Pixel Spacing: 5208.4 m 5186.52 m

Image Animator: Sync Navigation Tool and move image around to fire sync event

SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

[1] i_55_664 - [PACE_HARP2.20240907T172452.L1C.V2.5km.nc] - [Users/dknowles/Desktop/OceanOptics/Scenes/ArgentineSea/PACE_HARP2.20240907T172452.L1C.V2.5km.nc]

File Manager x World Map World View ...664 [1] i_51_664 x [1] i_-11_664 x [1] i_55_664 x [1] i_-42_664 x [1] i_39_664 x [1] i_48_664...

[1] PACE_HARP2.20240907T172452.L1C.V2.5km.nc

- Metadata
- Vector Data
- Bands
 - i*_865
 - i_55_865 (865.63 nm)
 - i_46_865 (865.63 nm)
 - i_30_865 (865.63 nm)
 - i_17_865 (865.63 nm)
 - i_3_865 (865.63 nm)
 - i_-10_865 (865.63 nm)
 - i_-17_865 (865.63 nm)
 - i_-30_865 (865.63 nm)
 - i_-46_865 (865.63 nm)
 - i_-54_865 (865.63 nm)
 - i*_549
 - i*_664
 - i_55_664 (664.57 nm)
 - i_54_664 (664.57 nm)
 - i_53_664 (664.57 nm)

Layer Editor Color Manager - [1... Navigation - [1]... x

September 07, 2024 17:24:52 - September 07, 2024 17:29:52
File: PACE_HARP2.20240907T172452.L1C.V2.5km.nc

Intensity (55.66°, 665 nm) (W/m2/micron/sr)

0 100 200 300 400 500

X 9 Y 363 Lat 45°15'18" S Lon 75°03'53... Zoom 1.0:1 Level 0 Pixel Spacing: 5208.4 m 5186.52 m

Layer Mana... Mask Ma... x Pixel Info

Name	Color	Tran...	Ty
<input checked="" type="checkbox"/> LandMask	Black	0	Ma
<input type="checkbox"/> WaterMask	Blue	0.5	Ma

f(x) [x]

SeaDAS Workshop
(return to) Animate Image Tool

SeaDAS 9.1.0

File Manager: World Map, World Vi..., [1] i_-56_664 x, [1] i_21_664 x, [1] i_47_664 x, [1] i_46_865 x, [1] i_11_664 x, [1] i_-27_664 x, [1] i_-46_664 x, [1] ...

Layer Manager: i_*_440, q*_865, q*_549, q*_664, q*_440, qc*_865, qc*_549, qc*_664, qc*_440, u*_865, u*_549, u*_664, u*_440, aolp*_865, aolp*_549, aolp*_664, aolp*_440, dolp*_865, dolp*_549, dolp*_664

Layer Manager Table:

Name	Color	Tran...	Ty
<input checked="" type="checkbox"/> LandMask	Black	0	Ma
<input type="checkbox"/> WaterMask	Blue	0.5	Ma

File List in Animate Images Dialog:

- i_56_664
- i_56_549
- i_43_549
- i_32_549
- i_20_549
- i_5_549
- i_-8_549
- i_-22_549
- i_-34_549
- i_-44_549
- i_-53_549
- i_55_664
- i_54_664
- i_53_664
- i_51_664
- i_50_664
- i_48_664
- i_47_664
- i_45_664
- i_44_664

Dialog Options:

- Select Image Type:
 - Band Images
 - Angular View
 - Spectrum View
- Sort by Angle: [Dropdown]

Buttons: Create Images, Animate Images, Cancel, ?

Bottom Status Bar: X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

Animation With Speed Control

Frames Per Second

0 10 20 30

i_-38_664

September 07, 2024 17:24:52 - September 07, 2024 17:29:52
File: PACE_HARP2.20240907T172452.L1C.V2.5km.nc

Intensity (-38.78°, 665 nm) (W/m²/micron/sr)

0 100 200 300 400 500

Pause Save Cancel

Layer Manager - [1] i_-56_664

- i_-33_664 (664.57)
- i_-35_664 (664.57)
- i_-37_664 (664.57)
- i_-38_664 (664.57)
- i_-40_664 (664.57)
- i_-42_664 (664.57)
- i_-43_664 (664.57)
- i_-45_664 (664.57)
- i_-46_664 (664.57)
- i_-48_664 (664.57)
- i_-49_664 (664.57)
- i_-51_664 (664.57)
- i_-52_664 (664.57)
- i_-53_664 (664.57)
- i_-55_664 (664.57)
- i_-56_664 (664.57)
- i_*_440
- q_*_865
- q_*_549
- q_*_664
- q_*_440
- qc_*_865
- qc_*_549
- qc_*_664
- qc_*_440
- u_*_865
- u_*_549
- u_*_664
- u_*_440
- aolp_*_865
- aolp_*_549
- aolp_*_664
- aolp_*_440
- dolp_*_865
- dolp_*_549
- dolp_*_664

Layer Editor

Layer Manager - [1] i_-56_664

Color Manager - [1] i_-56_664

Navigation - [1] i_-56_664

File Manager - x World Map World Vi...

Layer Manager... Mask Ma... Pixel Info

Name	Color	Trans...	Ty	f(x) [x]
<input checked="" type="checkbox"/> LandMask	Black	0	Ma	
<input type="checkbox"/> WaterMask	Blue	0.5	Ma	

Q Search (⌘+I)

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

SeaDAS Workshop
System Performance

Options

General Layer **Performance** WWW Keymap Appearance OptTbx SeaDAS Toolbox ZNAP

System

VM Parameters ...

Cache Path ...

Cache Size (MB)

Compute Reset

Processing

	SNAP Values	Benchmark test values
Tile size (px)	<input type="text" value="1024"/>	<input type="text" value="128;256;512;"/>
Number of Threads	<input type="text" value="12"/>	<input type="text" value="12;"/>

Benchmark operator ▾

Compute Reset

Export... Import... Help Cancel Apply **OK**

Options

General Layer **Performance** WWW Keymap Appearance OptTbx SeaDAS Toolbox

System

VM Parameters ...

Cache Path ...

Cache Size (MB)

Processing

	SNAP Values	Benchmark test values
Tile size (px)	<input type="text" value="1024"/>	<input type="text" value="128;256;512;"/>
Number of Threads	<input type="text" value="12"/>	<input type="text" value="12;"/>

Benchmark operator

Notes

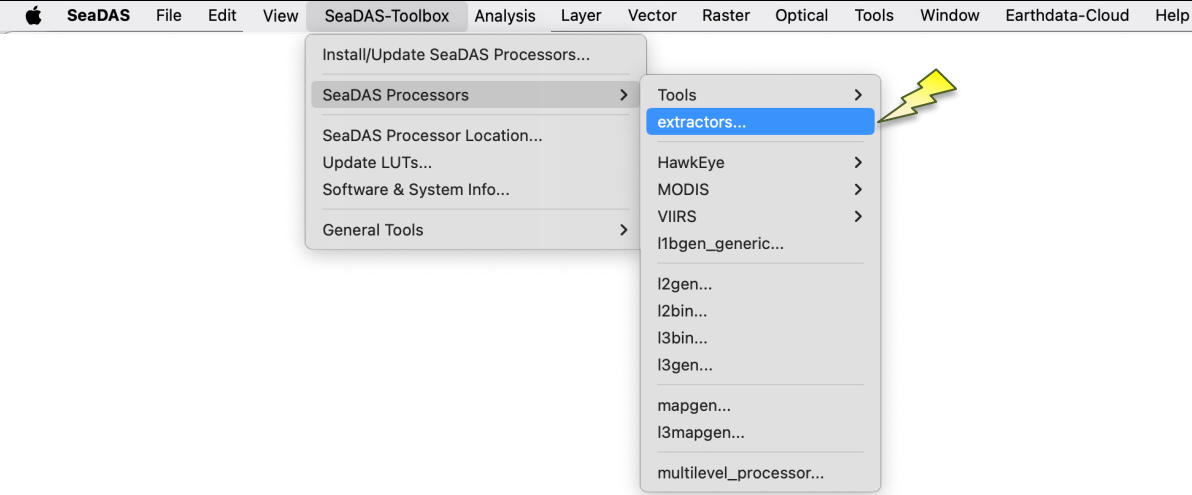
- “Compute” auto-setting helps determine upper limits of computer OS. But result could be too high for use, if anything else is running. So pick a reasonable value to use.

Notes

- PACE files can be quite large. Performance can be greatly improved by reducing file size.
 - Reduce number of bands
 - Reduce geographic/pixel boundaries

SeaDAS Workshop

Filesize (L2 Extract)



Notes

- Actual extractor is determined based on input file.

extractor

Primary I/O Files

ifile /Users/dknowles/SeaDASTraining/OceanOptics2024/ArgentineSea/PACE_OCI.20240907T172452.L2.OC_AOP.V2_0.NRT.nc ...

ofile /Users/dknowles/SeaDASTraining/OceanOptics2024/ArgentineSea/PACE_OCI.20240907T172452.L2.sub.nc ...











Parameters

Lon/Lat				
SWlon	SWlat	NElon	NElat	
-68	-48	-52	-34	

Pixels				
spix	epix	sline	eline	
132	1164	1	1355	
product	wavelist			
suite				

Load Parameters... Save Parameters... Open in SeaDAS

Run Cancel Apply ?



extractor

Primary I/O Files

ifile /Users/dknowles/SeaDASTraining/OceanOptics2024/ArgentineSea/PACE_OCI.20240907T172452.L2.OC_AOP.V2_0.NRT.nc

ofile /Users/dknowles/SeaDASTraining/OceanOptics2024/ArgentineSea/PACE_OCI.20240907T172452.L2.sub.nc

Parameters

Lon/Lat

SWlon	SWlat	NElon	NElat
-68	-48	-52	-34

Pixels

spix	epix	sline	eline
132	1164	1	1355
product	wavelist		
Rrs,angstrom	400:719		
suite			

Load Parameters... Save Parameters... Open in SeaDAS

Run Cancel Apply ?

extractor

Primary I/O Files

ifile /Users/dknowles/SeaDASTraining/OceanOptics2024/ArgentineSea/PACE_OCI.20240907T172452.L2.OC_AOP.V2_0.NRT.nc

ofile /Users/dknowles/SeaDASTraining/OceanOptics2024/ArgentineSea/PACE_OCI.20240907T172452.L2.sub.nc

Parameters

Lon/Lat
SWlon -68 NElat -34

Running I2extract ...

I2extract


Cancel

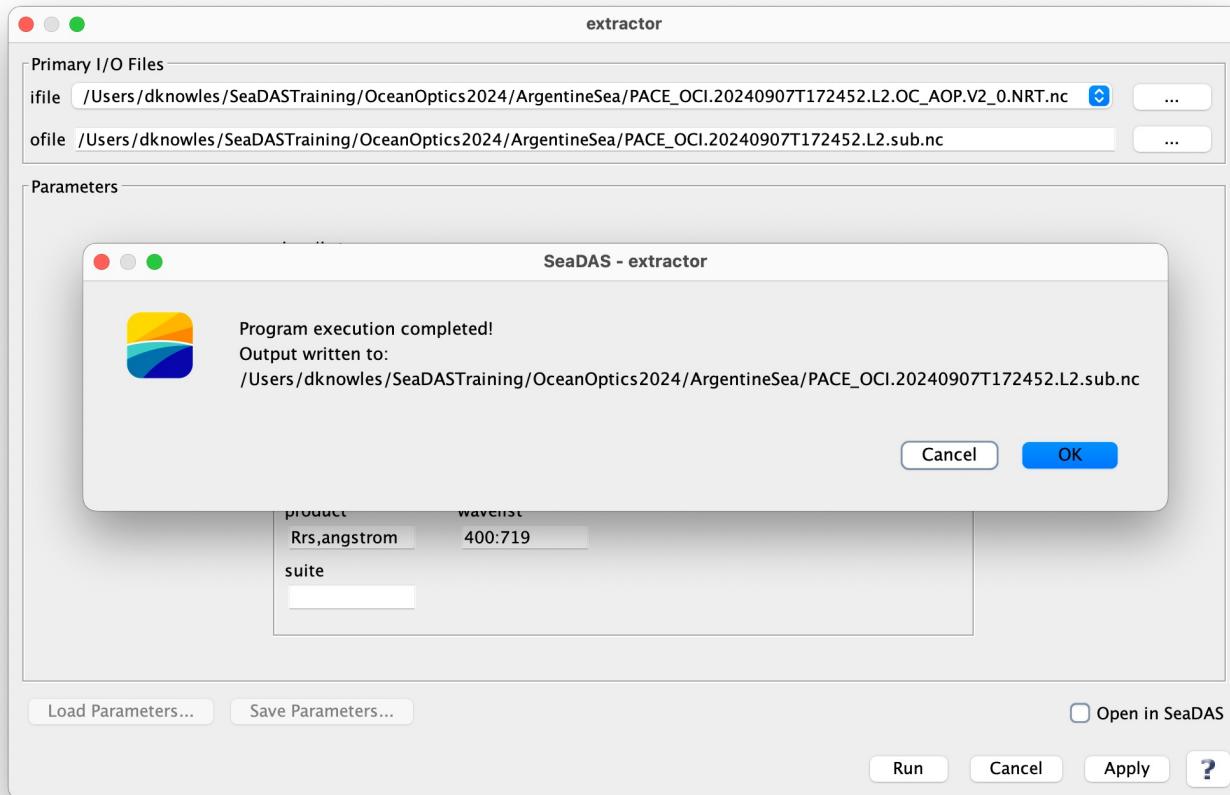
Pixels

spix	epix	sline	eline
132	1164	1	1355
product	wavelist		
Rrs,angstrom	400:719		
suite			

Load Parameters... Save Parameters... Open in SeaDAS

Run Cancel Apply ?





SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

[2] PACE_OCI.20240907T172452.L2_OC_AOP.V2_0.NRT.nc - [Users/dknowles/SeaDASTraining/OceanOptics2024/ArgentineSea/PACE_OCI.20240907T172452.L2.sub.nc]

File Manager x World Map World View [1] Rrs_490 x [2] Rrs_490 x

[1] PACE_OCI.20240907T172452.L2_OC_AOP.V2_0.NRT.nc

- Metadata
- Flag Codings
- Vector Data
- Bands
 - Rrs_unc
 - Rrs
 - aot
 - l2_flags
 - aww
 - angstrom
 - longitude
 - latitude
- Masks

[2] PACE_OCI.20240907T172452.L2_OC_AOP.V2_0.NRT.nc

- Metadata
- Flag Codings
- Vector Data
- Bands
 - Rrs
 - angstrom
 - l2_flags
 - longitude
 - latitude
- Masks

Navigation - [2] Rr... Color Manager ... Layer Editor - Ann...

Editor: Basic Sliders Table

Palette

Derived from universal_bluered.cpd

Load exact values

Log₁₀

Remote sensing reflectance (PACE-OCI L2)
 September 07, 2024 17:24:52 - September 07, 2024 17:29:51
 File: PACE_OCI.20240907T172452.L2_OC_AOP.V2_0.NRT.nc

Remote Sensing Reflectance at 490 nm (sr^{-1})

0.0 0.003 0.006 0.009 0.012 0.015

Remote sensing reflectance (PACE-OCI L2)
 September 07, 2024 17:24:52 - September 07, 2024 17:29:51
 File: PACE_OCI.20240907T172452.L2_OC_AOP.V2_0.NRT.nc

Remote Sensing Reflectance at 490 nm (sr^{-1})

0.0 0.003 0.006 0.009 0.012 0.015

File: /Users/dknowles/SeaDASTraining/OceanOptics2024/ArgentineSea/PACE_OCI.20240907T172452.L2.sub.nc

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

[2] PACE_OCI.20240907T172452.L2_OC_AOP... Sea/PACE_OCI.20240907T172452.L2.sub.nc]

File Manager x World Map World View [1] PACE_OCI.20240907T172452.L2_OC_AOP.V2_0.NRT.nc [2] PACE_OCI.20240907T172452.L2_OC_AOP.V2_0.NRT.nc

File Manager x World Map World View [1] PACE_OCI.20240907T172452.L2_OC_AOP.V2_0.NRT.nc [2] PACE_OCI.20240907T172452.L2_OC_AOP.V2_0.NRT.nc

Navigation - [2] Rr... Color Manager ... Layer Editor - Ann...

Editor: Basic Sliders Table

Palette

Derived from universal_blurred.cpd

Load exact values Reverse

Notes

- Original File:
 - 1272 x 1720 pixels (2,187,840 pixels)
 - 184 Rrs Bands
 - 184 Rrs_unc Bands
 - Total Bands: 374
 - Total Pixels: 818,252,160 pixels
- Extract File:
 - 1033 x 1355 pixels (1,399,715 pixels)
 - 159 Rrs Bands
 - Total Bands: 163
 - Total Pixels: 228,153,545 pixels
- Filename (listed in File Manager) derives from metadata and not actual filename. In this case the program l2extract does not change the file meta regarding title.
- Metadata field "file_location" does show actual filename

Remote Sensing Reflectance (PACE-OCI L2)
 ... 2024 17:24:52 - September 07, 2024 17:29:51
 ... CI.20240907T172452.L2_OC_AOP.V2_0.NRT.nc

Remote Sensing Reflectance at 490 nm (sr⁻¹)

Remote Sensing Reflectance at 490 nm (sr⁻¹)

File: /Users/dknowles/SeaDASTraining/OceanOptics2024/ArgentineSea/PACE_OCI.20240907T172452.L2.sub.nc

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

Notes

- PACE files can be quite large. Performance can be greatly improved by reducing file size.
 - Reduce number of bands
 - Reduce geographic/pixel boundaries

SeaDAS Workshop

Filesize (Band Deletion)

Band Deletion: Open AOP file and highlight all Rrs_unc bands

SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

[1] Rrs_unc_341 - [PACE_OCI.20240831T133906.L2_OC_AOP.V2_0.NRT.nc] - [Users/dknowles/Desktop/OceanOptics/Scenes/CanaryIslands/PACE_OCI.20240831T133906.L2_OC_AOP.V2_0.NRT.nc]

File Manager x World Map World View

[1] PACE_OCI.20240831T133906.L2_OC_AOP.V2_0.NRT.nc

- Metadata
- Flag Codings
- Vector Data
- Bands
 - Rrs_unc
 - Rrs_unc_339 (339.16 nm)
 - Rrs_unc_341 (341.321 nm)
 - Rrs_unc_344 (343.632 nm)
 - Rrs_unc_346 (346.017 nm)
 - Rrs_unc_348 (348.468 nm)
 - Rrs_unc_351 (350.912 nm)
 - Rrs_unc_353 (353.344 nm)
 - Rrs_unc_356 (355.782 nm)
 - Rrs_unc_358 (358.235 nm)
 - Rrs_unc_361 (360.695 nm)
 - Rrs_unc_363 (363.137 nm)
 - Rrs_unc_366 (365.61 nm)
 - Rrs_unc_368 (368.083 nm)
 - Rrs_unc_371 (370.534 nm)

Layer Editor Color Manager Navigation x

1.7 : 1 0°

Layer Mana... Mask Ma... x Pixel Info

Name	Color	Tran...	Ty	f(x) [x]
<input type="checkbox"/> LAND	0 Ma	0 Ma		
<input type="checkbox"/> ABSAER	0.5 Ma	0.5 Ma		
<input type="checkbox"/> ATMFAIL	0 Ma	0 Ma		
<input type="checkbox"/> ATMWARN	0.5 Ma	0.5 Ma		
<input type="checkbox"/> BOWTIEDEL	0.1 Ma	0.1 Ma		
<input type="checkbox"/> CHLFAIL	0 Ma	0 Ma		
<input type="checkbox"/> CHLWARN	0.5 Ma	0.5 Ma		
<input type="checkbox"/> CLDICE	0 Ma	0 Ma		
<input type="checkbox"/> COASTZ	0.5 Ma	0.5 Ma		
<input type="checkbox"/> COCCOLITH	0.5 Ma	0.5 Ma		
<input type="checkbox"/> FILTER	0.5 Ma	0.5 Ma		
<input type="checkbox"/> HIGLINT	0.2 Ma	0.2 Ma		
<input type="checkbox"/> HILT	0.2 Ma	0.2 Ma		
<input type="checkbox"/> HIPOL	0.5 Ma	0.5 Ma		
<input type="checkbox"/> HISATZEN	0.5 Ma	0.5 Ma		
<input type="checkbox"/> HISOLZEN	0.5 Ma	0.5 Ma		
<input type="checkbox"/> LOWLW	0.5 Ma	0.5 Ma		
<input type="checkbox"/> MAXAERITER	0.5 Ma	0.5 Ma		
<input type="checkbox"/> MODGLINT	0.5 Ma	0.5 Ma		
<input type="checkbox"/> NAVFAIL	0 Ma	0 Ma		
<input type="checkbox"/> NAVWARN	0.5 Ma	0.5 Ma		
<input type="checkbox"/> PRODFAIL	0.1 Ma	0.1 Ma		
<input type="checkbox"/> PRODFWARN	0.5 Ma	0.5 Ma		
<input type="checkbox"/> SEAICE	0.5 Ma	0.5 Ma		
<input type="checkbox"/> STRAYLIGHT	0.2 Ma	0.2 Ma		
<input type="checkbox"/> TURBIDW	0.5 Ma	0.5 Ma		
<input type="checkbox"/> Composite1	0 Ma	0 Ma		
<input type="checkbox"/> Water	0 Ma	0 Ma		

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

Band Deletion: Delete the Rrs_unc bands

The screenshot shows the SeaDAS software interface. The File Manager on the left displays a folder structure with 'Rrs_unc' selected. A context menu is open over the 'Rrs_unc' folder, with the 'Delete' option highlighted. A yellow lightning bolt icon points to the 'Delete' option. In the center, a dialog box titled 'Confirm Multiple Object Deletion' is displayed, asking 'Are you sure you want to delete these 184 items?' with 'No' and 'Yes' buttons. A yellow lightning bolt icon points to the 'Yes' button. The Layer Manager on the right lists various bands with their colors and transparency values.

Name	Color	Trans...	Ty
<input type="checkbox"/> LAND		0	Ma
<input type="checkbox"/> ABSAER		0.5	Ma
<input type="checkbox"/> ATMFAIL		0	Ma
<input type="checkbox"/> ATMWARN		0.5	Ma
<input type="checkbox"/> BOWTIEDEL		0.1	Ma
<input type="checkbox"/> CHLFAIL		0	Ma
<input type="checkbox"/> CHLWARN		0.5	Ma
<input type="checkbox"/> CLDICE		0	Ma
<input type="checkbox"/> COASTZ		0.5	Ma
<input type="checkbox"/> COCCOLITH		0.5	Ma
<input type="checkbox"/> FILTER		0.5	Ma
<input type="checkbox"/> HIGLINT		0.2	Ma
<input type="checkbox"/> HILT		0.2	Ma
<input type="checkbox"/> HIPOL		0.5	Ma
<input type="checkbox"/> HISATZEN		0.5	Ma
<input type="checkbox"/> HISOLZEN		0.5	Ma
<input type="checkbox"/> LOWLW		0.5	Ma
<input type="checkbox"/> MAXAERITER		0.5	Ma
<input type="checkbox"/> MODGLINT		0.5	Ma
<input type="checkbox"/> NAVFAIL		0	Ma
<input type="checkbox"/> NAVWARN		0.5	Ma
<input type="checkbox"/> PRODFAIL		0.1	Ma
<input type="checkbox"/> PRODFWARN		0.5	Ma
<input type="checkbox"/> SEACE		0.5	Ma
<input type="checkbox"/> STRAYLIGHT		0.2	Ma
<input type="checkbox"/> TURBIDW		0.5	Ma
<input type="checkbox"/> Composite1		0	Ma
<input type="checkbox"/> Water		0	Ma

SeaDAS 9.1.0

File Manager x World Map World View

[1] PACE_OCI.20240831T133906.L2_OC_AOP.V2_0.NRT.nc

- Metadata
- Flag Codings
- Vector Data
- Bands
 - Rrs_unc
 - Rrs
 - aot
 - l2_flags
 - aww
 - angstrom
 - longitude
 - latitude
- Masks

Layer Editor Color Manager Navigation x

1.7 : 1 0°

Layer Mana... Mask Ma... x Pixel Info

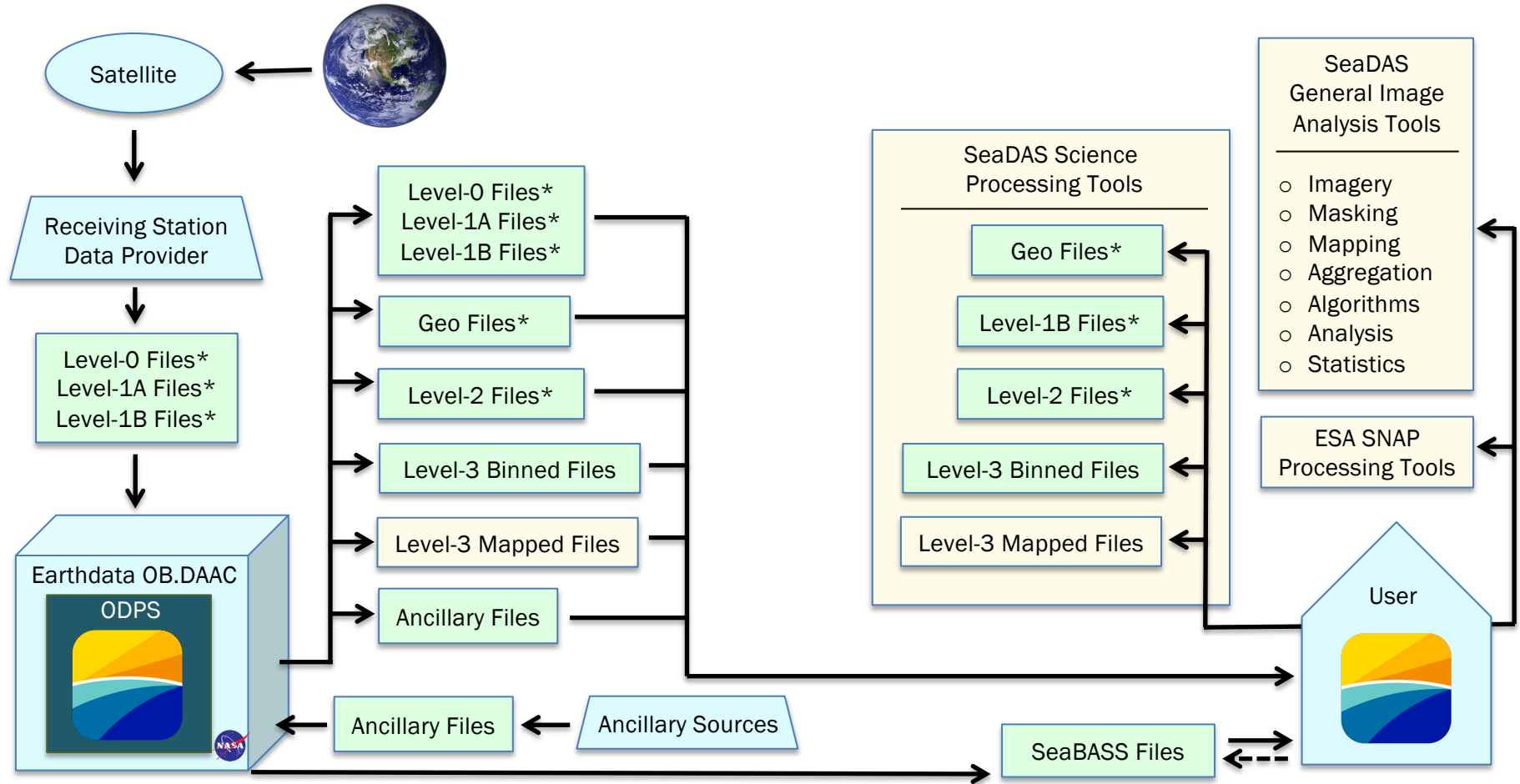
Notes

- Empty “Rrs_unc” folder left behind can be deleted if desired by right-clicking on file, selecting “Properties”, and then editing the band grouping and removing “Rrs_unc”.

Name	Color	Tran... Ty
<input type="checkbox"/> LAND		0 Ma
<input type="checkbox"/> ABSAER		0.5 Ma
<input type="checkbox"/> ATMFIL		0 Ma
<input type="checkbox"/> ATMWARN		0.5 Ma
<input type="checkbox"/> BOWTIEDEL		0.1 Ma
<input type="checkbox"/> CHLFAIL		0 Ma
<input type="checkbox"/> CHLWARN		0.5 Ma
<input type="checkbox"/> CLDICE		0 Ma
<input type="checkbox"/> COASTZ		0.5 Ma
<input type="checkbox"/> COCCOLITH		0.5 Ma
<input type="checkbox"/> FILTER		0.5 Ma
<input type="checkbox"/> HIGLINT		0.2 Ma
<input type="checkbox"/> HILT		0.2 Ma
<input type="checkbox"/> HIPOL		0.5 Ma
<input type="checkbox"/> HISATZEN		0.5 Ma
<input type="checkbox"/> HISOLZEN		0.5 Ma
<input type="checkbox"/> LOWLW		0.5 Ma
<input type="checkbox"/> MAXAERITER		0.5 Ma
<input type="checkbox"/> MODGLINT		0.5 Ma
<input type="checkbox"/> NAVFAIL		0 Ma
<input type="checkbox"/> NAVWARN		0.5 Ma
<input type="checkbox"/> PRODFAIL		0.1 Ma
<input type="checkbox"/> PRODWARN		0.5 Ma
<input type="checkbox"/> SEAICE		0.5 Ma
<input type="checkbox"/> STRAYLIGHT		0.2 Ma
<input type="checkbox"/> TURBIDW		0.5 Ma
<input type="checkbox"/> Composite1		0 Ma
<input type="checkbox"/> Water		0 Ma

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

SeaDAS Workshop
Science Processors (OCSSW)



SeaDAS Workshop
OCSSW L2bin

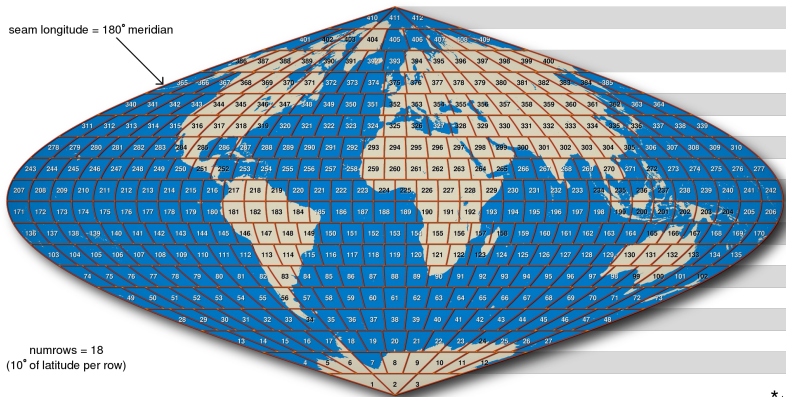
Level-3 Binned Data: Key Points

- Accumulated data from L2 products
- Equal surface area bins
 - Projection: Integerized Sinusoidal
- Applies level-2 flags (suite specific)
 - Each “valid” level-2 pixel goes in a single level-3 bin
- Bin Contents
 - Product Value (Mean)
 - Count
 - Standard Deviation, Sum, Sum Squared, Weight
- Bin Resolutions (OB.DAAC)
 - 4.64 km (Lat Span= $1/24^\circ$, Rows=4320)
- Time Resolutions (OB.DAAC)
 - Day, 8 Day, Month, Seasonal, Annual, Mission
- Global Files (OB.DAAC)
- Handles “Bow-Tie” Pixels

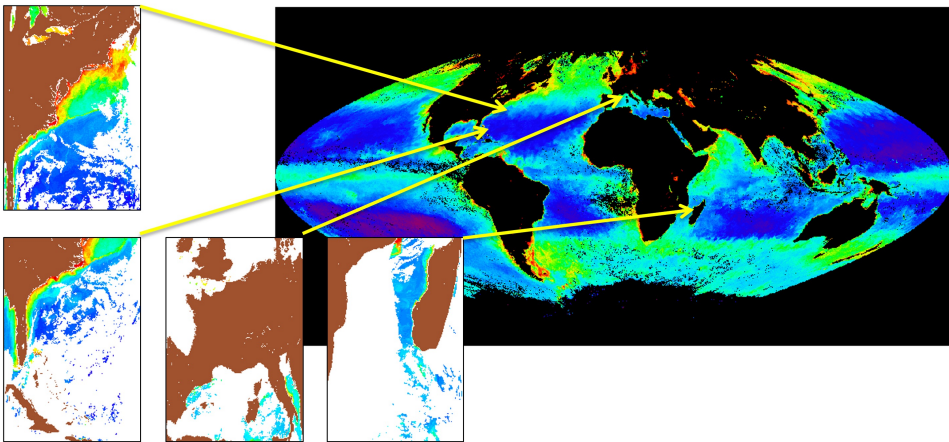
User Options

- Many Bin Resolutions
- Any Time Resolution

seam longitude = 180° meridian

numrows = 18
(10° of latitude per row)

row	central latitude	bins per row *
17	85	3
16	75	9
15	65	15
14	55	21
13	45	25
12	35	29
11	25	33
10	15	35
9	5	36
8	-5	36
7	-15	35
6	-25	33
5	-35	29
4	-45	25
3	-55	21
2	-65	15
1	-75	9
0	-85	3

* bins per row =
 $2 \times \text{numrows} \times \cos(\text{central latitude})$
rounded to the nearest integer

Level-3 Bin Spatial Resolutions

Angular Span (Latitude)	Rows	Bin Resolution	Short Name
1°	180	111.32 km	1D
1/2°	360	55.66 km	HD
1/3°	535	37.45 km	36
1/4°	720	27.83 km	QD
1/6°	1080	18.55 km	18
1/12°	2160	9.28 km	9
1/24°	4320	4.64 km	4
1/48°	8640	2.32 km	2
1/96°	17280	1.16 km	1
1/192°	34560	580 m	H
1/384°	69120	290 m	Q
1/1920°	345600	58 m	HH

* Bin height displayed is average and approximate based on a spherical Earth having a radius of 6378.145 kilometers

** Short name is subject to change in the future

The screenshot displays the SeaDAS 9.1.0 application window. The menu bar at the top includes 'SeaDAS', 'File', 'Edit', 'View', 'SeaDAS-Toolbox', 'Analysis', 'Layer', 'Vector', 'Raster', 'Optical', 'Tools', 'Window', 'Earthdata-Cloud', and 'Help'. The 'Tools' menu is open, showing a list of processing tools. The 'l2bin...' option is highlighted in blue, and a yellow lightning bolt icon points to it. Other visible options in the 'Tools' menu include 'extractors...', 'HawkEye', 'MODIS', 'VIIRS', 'l1bgen_generic...', 'l2gen...', 'l3bin...', 'l3gen...', 'mapgen...', 'l3mapgen...', and 'multilevel_processor...'. The 'SeaDAS Processors' menu is also open, showing options like 'Install/Update SeaDAS Processors...', 'SeaDAS Processor Location...', 'Update LUTs...', 'Software & System Info...', and 'General Tools...'. The interface includes a toolbar with various icons, a search bar, and a vertical sidebar on the right with 'Layer Manager', 'Mask Manager', and 'Pixel Info' buttons. The bottom of the window shows a 'Layer Editor' tab and a 'Navigation' panel.

SeaDAS 9.1.0

Tools

- extractors...
- HawkEye >
- MODIS >
- VIIRS >
- l1bgen_generic...
- l2gen...
- l2bin...**
- l3bin...
- l3gen...
- mapgen...
- l3mapgen...
- multilevel_processor...

SeaDAS Processors >

- Install/Update SeaDAS Processors...
- SeaDAS Processor Location...
- Update LUTs...
- Software & System Info...
- General Tools >

Layer Manager

Mask Manager

Pixel Info

Layer Editor x Color Manager Navigation

SeaDAS 9.1.0

File Manager x World Map World View

level2_files.txt

```
PACE_OCI.20240808T084808.L2.SFREFL.V2_0.NRT.nc
PACE_OCI.20240808T085308.L2.SFREFL.V2_0.NRT.nc
```

Notes

- If text file is being used for ifile and its level2 file entries do not contain full path, then the level2 files must be in the same directory as the text file.

I2bin

Primary I/O Files

ifile ...

ofile ...

l3bprod	prodtype	resolution	area_weighting
<input type="text"/>	regional	<input type="text"/>	0
flaguse	<input type="text"/>		
latnorth	latsouth	lonwest	loneast
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
sday	eday	pversion	rowgroup
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
qual_max	composite_scheme	composite_prod	oformat
2	<input type="text"/>	<input type="text"/>	netCDF4
	night	<input type="checkbox"/>	

Load Parameters... Save Parameters...

Run Cancel Apply ?

SeaDAS 9.1.0

File Manager x World Map World View

Layer Editor x Color Manager Navigation

Notes

- L3bprod=rhos_425,rhos_465,rhos_555,rhos_645
- prodtype=regional (no time binning)
- resolution=1 (is actually 1.16km; $1/96^\circ$ lat span)
- area_weighting=1 (interpolation)

l2bin

Primary I/O Files

ifile /Users/dknowles/Desktop/OceanOptics/Scenes/BarentsSea/level2_files.txt

ofile /Users/dknowles/Desktop/OceanOptics/Scenes/BarentsSea/PACE_OCI.2024080820240808.L3b.TC.1km.nc

l3bprod ios_425,rhos_465,rhos_555,rhos_645

prodtype regional

resolution 1

area_weighting 1

flaguse

latnorth latsouth lonwest loneast suite

sday eday pversion rowgroup qual_prod

qual_max composite_scheme composite_prod oformat

2 netCDF4

night

Load Parameters... Save Parameters...

Run Cancel Apply ?

SeaDAS 9.1.0

File Manager x World Map World View

Layer Editor x Color Manager Navigation

Primary I/O Files

infile /Users/dknowles/Desktop/OceanOptics/Scenes/Barent...
 ofile /Users/dknowles/Desktop/OceanOptics/Scenes/Barent... .1km.nc

l3bprod prodtype
 ios_425,rhos_465,rhos_555,rhos_645 regional

flaguse NAVFAIL

latnorth latsouth lonwest
 sday eday pversion
 qual_max composite_scheme composite

2

Load Parameters... Save Parameters...

ATMFAIL LAND PRODWARN
 HIGLINT HILT HISATZEN
 COASTZ STRAYLIGHT CLDICE
 COCCOLITH TURBIDW HISOLZEN
 LOWLW CHLFAIL NAVWARN
 ABSAER MAXAERITER MODGLINT
 CHLWARN ATMWARN SEACE
 NAVFAIL FILTER SSTWARN
 SSTFAIL HIPOL PRODFAIL
 NONE

OK

Layer Manager Mask Manager Pixel Info

Notes

- flaguse=[blank space] means use default flags and does not mean use no flags
- flaguse can be directly entered without using the popup checkbox form

Notes

- Leaving the geographic bounding fields blank will result in a bin file that fully encompasses the whole scene of files.

L2bin

Primary I/O Files

ifile /Users/dknowles/Desktop/OceanOptics/Scenes/BarentsSea/level2_files.txt

ofile /Users/dknowles/Desktop/OceanOptics/Scenes/BarentsSea/PACE_OCI.2024080820240808.L3b.TC.1km.nc

l3bprod	prodtype	resolution	area_weighting	
ios_425,rhos_465,rhos_555,rhos_645	regional	1	1	
flaguse	NAVFAIL			
latnorth	latsouth	lonwest	loneast	suite
sday	eday	pversion	rowgroup	qual_prod
qual_max	composite_scheme	composite_prod	offormat	
2			netCDF4	
		night		
		<input type="checkbox"/>		

Load Parameters... Save Parameters...

Run Cancel Apply ?

SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

SeaDAS 9.1.0

File Manager x World Map World View

Notes

- Output level3-bin file cannot be viewed in SeaDAS
- Auto-generate a par file in the ifile directory.

Layer Editor x Color Manager Navigation

Layer Manager Mask Manager Pixel Info

I2bin

Primary I/O Files

ifile /Users/dknowles/Desktop/OceanOptics/Scenes/BarentsSea/level2_files.txt ...

ofile /Users/dknowles/Desktop/OceanOptics/Scenes/BarentsSea/PACE_OCI.2024080820240808.L3b.TC.1km.nc ...

I3bprod	prodtype	resolution	area_weighting
regional	1	1	
lonwest	loneast	suite	
version	rowgroup	qual_prod	
qual_max	composite_scheme	composite_prod	offormat
2			netCDF4
	night		


Load Parameters... Save Parameters...

Run Cancel Apply ?

Running I2bin ...

ifile: 0 jsrow: 0 nsamp: 1272

Cancel



User Terminal

```
l2bin par=L2bin_TC_1km.par
```

L2bin_TC_1km.par

```
ifile=/Users/dknowles/Desktop/OceanOptics/Scenes/BarentsSea/level2_files.txt  
ofile=/Users/dknowles/Desktop/OceanOptics/Scenes/BarentsSea/PACE_OCI.2024080820240808.L3b.TC.1km.nc  
l3bprod=rhos_425,rhos_465,rhos_555,rhos_645  
prodtype=regional  
resolution=1  
area_weighting=1  
flaguse=NAVFAIL  
rowgroup=2000  
verbose=1
```

level2_files.txt

```
PACE_OCI.20240808T084808.L2.SFREFL.V2_0.NRT.nc  
PACE_OCI.20240808T085308.L2.SFREFL.V2_0.NRT.nc
```

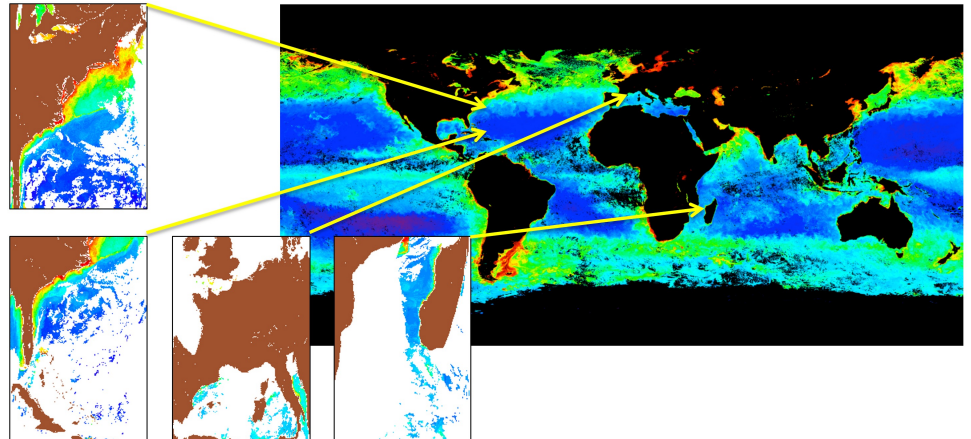
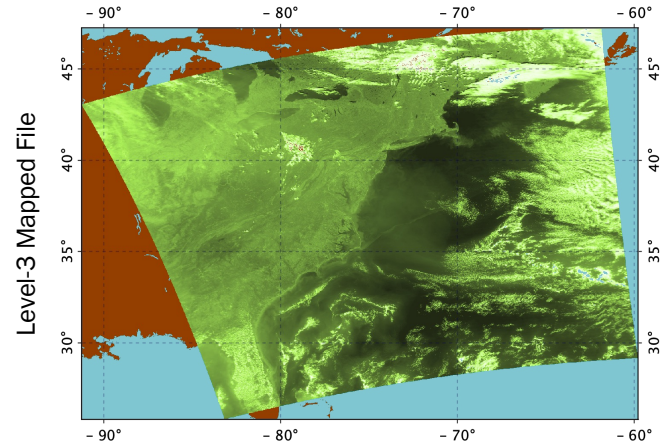

SeaDAS Workshop
OCSSW L3mapgen

Level-3 Mapped Data: Key Points

- Not equal surface area pixels (OB.DAAC)
 - Projection: SMI (Plate Carrée)
- Interpolation: Nearest Neighbor (OB.DAAC)
 - Each mapped pixel populated by up to one bin
 - A single bin can go into multiple mapped pixels
- Pixel Contents
 - Product Value
- Spatial Resolutions (OB.DAAC)
 - 4.64 km
 - 9.28 km
- Time Resolutions (OB.DAAC)
 - Day, 8 Day, Month, Seasonal, Annual, Mission
- Global Files (OB.DAAC)

User Options

- Any Spatial Resolution
- Many Mappings (including raw bin dump)



The screenshot displays the SeaDAS 9.1.0 application window. The menu bar at the top includes 'SeaDAS', 'File', 'Edit', 'View', 'SeaDAS-Toolbox', 'Analysis', 'Layer', 'Vector', 'Raster', 'Optical', 'Tools', 'Window', 'Earthdata-Cloud', and 'Help'. The 'Tools' menu is open, showing a list of options: 'extractors...', 'HawkEye', 'MODIS', 'VIIRS', 'l1bgen_generic...', 'l2gen...', 'l2bin...', 'l3bin...', 'l3gen...', 'mapgen...', 'L3mapgen...' (highlighted in blue), and 'multilevel_processor...'. A yellow lightning bolt icon is positioned to the left of the 'L3mapgen...' option. The main workspace is currently empty, with a search bar in the top right corner. On the right side, there are vertical panels for 'Layer Manager', 'Mask Manager', and 'Pixel Info'. At the bottom, there are tabs for 'Layer Editor', 'Color Manager', and 'Navigation'.

SeaDAS 9.1.0

File Manager x World Map World View

Layer Editor x Color Manager Navigation

Layer Manager Mask Manager Pixel Info

l3mapgen

Primary I/O Files

ifile /Users/dknowles/Desktop/OceanOptics/Scenes/BarentsSea/PACE_OCI.2024080820240808.L3b.TC.1km.nc

ofile /Users/dknowles/Desktop/OceanOptics/Scenes/BarentsSea/PACE_OCI.2024080820240808.L3m.9km.nc

product		projection			
		platecarree			
resolution	interp	north	south	west	east
9km	nearest				
central_meridian	fudge	datamin	datamax	scale_type	threshold
0	1.0				0
deflate	pversion	num_cache	product_rgb	palette_dir	
4	Unspecified			\$OCDATAROOT/common/palette	
palfile		ofomat			
		netCDF4			
		use_quality	use_rgb	apply_pal	
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Load Parameters... Save Parameters... Open in SeaDAS

Run Cancel Apply ?

Notes

- resolution=9km (actually 9.28km; 1/12° lat span)

SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

[1] virtual_red - [PACE_OCI.2024080820240808.L3m.9km.nc] - [/Users/dkknowles/Desktop/OceanOptics/Scenes/BarentsSea/PACE_OCI.2024080820240808.L3m.9km.nc]

File Manager x World Map World View [1] OCI TC 645 555 465 1band RGB x

- [1] PACE_OCI.2024080820240808.L3m.9km.nc
 - Metadata
 - Vector Data
 - Bands
 - rhos
 - rhos_425 (424.94 nm)
 - rhos_465 (464.737 nm)
 - rhos_555 (555.044 nm)
 - rhos_645 (644.716 nm)

Layer Editor ... x Color Manager ... Navigation - [1] ...

----- Footer Annotation -----

Show Footer Annotation

Footer Location: Bottom Left

Footer Gap: 7.0

Footer Text: proj4_string: <FILE_META=proj

Footer Text: resolution=<FILE_META=spatia

Footer Text: north=<FILE_META=geospatial_

Footer Text: west=<FILE_META=geospatial_

File: *PACE_OCI.2024080820240808.L3m.9km.nc*
 08 August, 2024 08:48:08 - 08 August, 2024 08:58:07

proj4_string: +proj=eqc +lat_ts=0 +lat_0=0 +x_0=0 +y_0=0 +ellps=WGS84 +datum=WGS84 +units=m +no_defs +lon_0=0.000000
 resolution=9.276624 km
 north=89.984375
 south=52.567707
 west=-179.93825
 east=179.93837

X 1737 Y 393 Lat 57°17'48" N Lon 35°11'11"... Zoom 2.7:1 Level 2 Pixel Spacing: 0.08 m 0.08 m

SeaDAS 9.1.0

File Manager x World Map World View

File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

Primary I/O Files

ifile /Users/dknowles/Desktop/OceanOptics/Scenes/BarentsSea/PACE_OCI.2024080820240808.L3b.TC.1km.nc

ofile /Users/dknowles/Desktop/OceanOptics/Scenes/BarentsSea/PACE_OCI.2024080820240808.L3m.platecarree.1km.nc

product

projection
platecarree

resolution 1km interp area north 80 south 66 west 10 east 50

central_meridian 0 fudge 1.0 datamin datamax scale_type threshold 0

deflate 4 pversion Unspecified num_cache 1000 product_rgb palette_dir SOCDATAROOT/common/palette

palfile oformat netCDF4

use_quality use_rgb apply_pal

Load Parameters... Save Parameters... Open in SeaDAS

Run Cancel Apply ?

Notes

- interp=area (area interpolation)
- resolution=1km (actually 1.16km; $1/96^\circ$ lat span)
- num_cache: number of rows to cache – adjusting this can aid in performance run duration.

User Terminal

```
l3mapgen  
par=L3mapgen_platecarre_1km.par
```

L3mapgen_platecarre_1km.par

```
ifile=/Users/dknowles/Desktop/OceanOptics/Scenes/BarentsSea/PACE_OCI.2024080820240808.L3b.TC.1km.nc  
ofile=/Users/dknowles/Desktop/OceanOptics/Scenes/BarentsSea/PACE_OCI.2024080820240808.L3m.platecarre.1km.nc  
resolution=1km  
num_cache=1000  
north=80.0  
south=66.0  
west=10.0  
east=50.0
```

SeaDAS 9.1.0

File Manager x World Map World View [1] OCI TC 645 555 465 1band RGB x

File: *PACE_OCI.2024080820240808.L3m.platecarree.1km.nc*
 08 August, 2024 08:48:08 - 08 August, 2024 08:58:07

12° 15° 18° 21° 24° 27° 30° 33° 36° 39° 42° 45° 48°

78° 75° 72° 69°

12° 15° 18° 21° 24° 27° 30° 33° 36° 39° 42° 45° 48°

proj4_string: +proj=eqc +lat_ts=0 +lat_0=0 +x_0=0 +y_0=0 +ellps=WGS84 +datum=WGS84 +units=m
 resolution=1.159578 km
 north=80.0
 south=66.0
 west=10.0
 east=50.0

Layer Editor - An... x Color Manager - [1] ... Navigation - [1] RGB

---- Footer Annotation ----
 Show Footer Annotation

Footer Location: Bottom Left

Footer Gap: 7.0

Footer Text: proj4_string: <FILE_META=proj4_string>

Footer Text: resolution=<FILE_META=spatialResolution>

Footer Text: north=<FILE_META=geospatial_lat_max>

Footer Text: west=<FILE_META=geospatial_lon_min>

X 877 Y 1175 Lat 67°45'38" N Lon 19°08'0... Zoom 24.5:1 Level 1 Pixel Spacing: 0.01 m 0.01 m

SeaDAS 9.1.0

File Manager x World Map World View [1] OCI TC 645 555 465 1band RGB x

File: PACE_OCI.2024080820240808.L3m.TC.800m.laea.30lon.70lat.nc
08 August, 2024 08:48:08 - 08 August, 2024 08:58:07

Layer Editor - An... x Color Manager - [1] ... Navigation - [1] RGB

---- Footer Annotation ----
 Show Footer Annotation
 Footer Location: Bottom Left
 Footer Gap: 7.0
 Footer Text: proj4_string: <FILE_META=proj4_string>
 Footer Text: resolution=<FILE_META=spatialResolution>
 Footer Text: north=<FILE_META=geospatial_lat_max>

 Footer Text: west=<FILE_META=geospatial_lon_min>

proj4_string: +proj=laea +lon_0=30.0 +lat_70=0.0
 resolution=800.000000 m
 north=80.0
 south=66.0
 west=10.0
 east=50.0

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

SeaDAS 9.1.0

File Manager | World Map | World View | [1] OCI TC 645 555 465 1band RGB x

[1] PACE_OCI.2024080820240808.L3m.TC.800m.tmerc.30lon.70lat.nc

- Metadata
- Vector Data
- Bands
 - rhos
 - rhos_425 (424.94 nm)
 - rhos_465 (464.737 nm)
 - rhos_555 (555.044 nm)
 - rhos_645 (644.716 nm)
 - lat
 - lon

File: PACE_OCI.2024080820240808.L3m.TC.800m.tmerc.30lon.70lat.nc
08 August, 2024 08:48:08 - 08 August, 2024 08:58:07

proj4_string: +proj=tmerc +lon_0=30.0 +lat_70=0.0
resolution=800.000000 m
north=80.0
south=66.0
west=10.0
east=50.0

Layer Editor - An... | Color Manager - [1] ... | Navigation - [1] RGB

---- Footer Annotation ----
 Show Footer Annotation
 Footer Location:
 Footer Gap:
 Footer Text:
 Footer Text:
 Footer Text:
 Footer Text:

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

SeaDAS 9.1.0

File Manager × World Map World View [1] OCI TC 645 555 465 1band RGB ×

[1] PACE_OCI.2024080820240808.L3m.TC.9km.ortho.bluemarble.30lon.70lat.nc

File: *PACE_OCI.2024080820240808.L3m.TC.9km.ortho.bluemarble.30lon.70lat.nc*
08 August, 2024 08:48:08 - 08 August, 2024 08:58:07

Layer Editor - An... × Color Manager - [1] ... Navigation - [1] RGB

----- Footer Annotation -----
 Show Footer Annotation
 Footer Location: Bottom Left
 Footer Gap: 7.0
 Footer Text: proj4_string: <FILE_META=proj4_string>
 Footer Text: resolution=<FILE_META=spatialResolution>
 Footer Text: north=<FILE_META=geospatial_lat_max>

 Footer Text: west=<FILE_META=geospatial_lon_min>

proj4_string: +proj=ortho +lon_0=30.0 +lat_0=70.0
 resolution=9.276624 km
 north=90.0
 south=-90.0
 west=-180.0
 east=180.0

X -- Y -- Lat -- Lon -- Zoom -- Level -- Pixel Spacing: -- m -- m

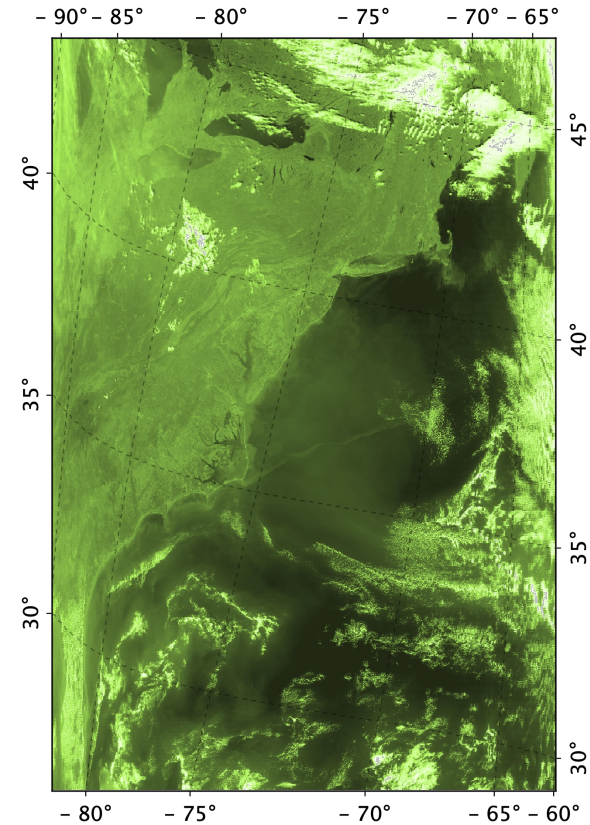
SeaDAS Workshop
OCSSW L2gen

Level-2 File: Key Points

- Native resolution
 - Each pixel gridded same as corresponding L1A and L1B files
 - Each pixel contains time and location
 - Adjacent pixels may or may not be geographically adjacent
 - MODIS has some 500m and 250m bands*
- Contains derived geophysical variables
 - OC, IOP, SST Suites
- Contains level-2 flags
- Instrument Calibration has been applied
- Atmospheric correction has been applied
- Vicarious Calibration has been applied
- Ancillary data has been applied
- File format is mission independent

User Options

- Many additional geophysical, ancillary and geometric products
- Atmospheric correction and processing options
- Users can set many of the flag thresholds
- MODIS has some 500m and 250m bands



Level-2 File

The screenshot displays the SeaDAS 9.1.0 application window. The menu bar at the top includes 'SeaDAS', 'File', 'Edit', 'View', 'SeaDAS-Toolbox', 'Analysis', 'Layer', 'Vector', 'Raster', 'Optical', 'Tools', 'Window', 'Earthdata-Cloud', and 'Help'. The 'Tools' menu is open, showing a list of processing tools. The 'l2gen...' option is highlighted in blue, and a yellow lightning bolt icon points to it. Other visible options in the 'Tools' menu include 'extractors...', 'HawkEye', 'MODIS', 'VIIRS', 'l1bgen_generic...', 'l2bin...', 'l3bin...', 'l3gen...', 'mapgen...', 'l3mapgen...', and 'multilevel_processor...'. The 'SeaDAS Processors' menu is also open, showing options like 'Install/Update SeaDAS Processors...', 'SeaDAS Processor Location...', 'Update LUTs...', 'Software & System Info...', and 'General Tools...'. The interface includes a 'File Manager' pane on the left with 'World Map' and 'World V' tabs, a 'Layer Editor' pane at the bottom with 'Color Manager' and 'Navigation' tabs, and a vertical toolbar on the right with 'Layer Manager', 'Mask Manager', and 'Pixel Info' buttons. The main workspace is currently empty.

Notes

- *ofile* automatically updated to contain selected suite
- Form is mostly blank because it only shows changes user has made that differs from the default of the suite.

L2gen

Main Products Processing Options Subsetting Options Thresholds Ancillary Inputs IOP Options

Primary I/O Files

ifile ...

ofile ...

Parfile

Exclude i/o Files Show Defaults Suite

PRIMARY INPUT OUTPUT FIELDS

ifile=/Users/dknowles/Desktop/OceanOptics/Scenes/CanaryIslands/PACE_OCI.20240831T133906.L1B.V2.nc

ofile=/Users/dknowles/Desktop/OceanOptics/Scenes/CanaryIslands/PACE_OCI.20240831T133906.L2.OC.nc

SUITE

suite=OC

ANCILLARY INPUTS Default = climatology (select 'Get Ancillary' to download ancillary files)

Keep params when new ifile is selected Open in SeaDAS

SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

File Manager x World Map World View

Layer Editor x Color Manager Navigation

i2gen

Main Products Processing Options Subsetting Options Thresholds Ancillary Inputs IOP Options

Primary I/O Files

ifile /Users/dknowles/Desktop/OceanOptics/Scenes/CanaryIslands/PACE_OCI.20240831T133906.L1B.V2.nc

ofile /Users/dknowles/Desktop/OceanOptics/Scenes/CanaryIslands/PACE_OCI.20240831T133906.L2.OC.nc

Parfile

Load Save Exclude i/o Files Show Defaults Suite Get Ancillary

PRIMARY INPUT OUTPUT FIELDS

ifile=/Users/dknowles/Desktop/OceanOptics/Scenes/CanaryIslands/PACE_OCI.20240831T133906.L1B.V2.nc

ofile=/Users/dknowles/Desktop/OceanOptics/Scenes/CanaryIslands/PACE_OCI.20240831T133906.L2.OC.nc

SUITE

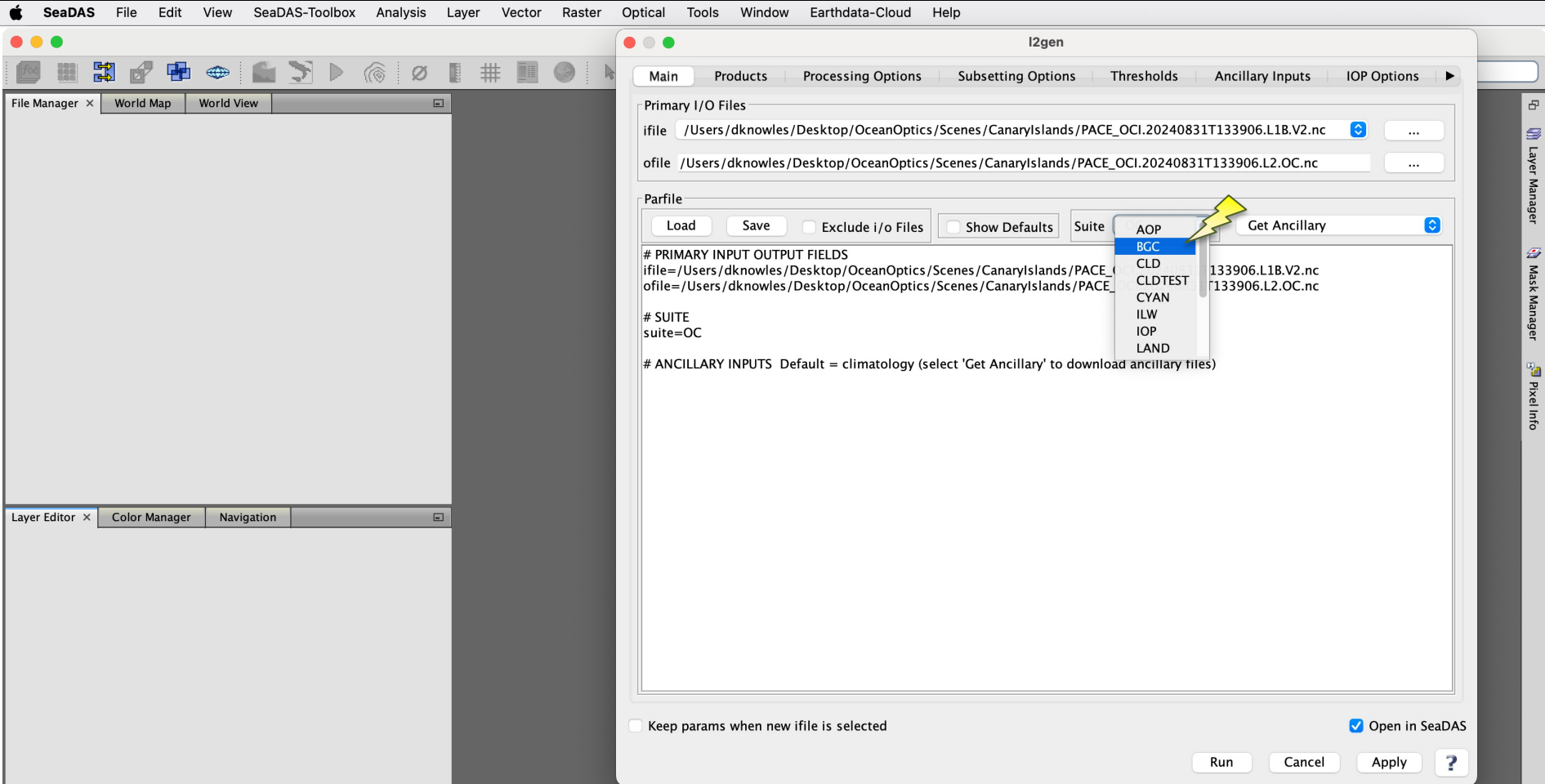
suite=OC

ANCILLARY INPUTS Default = climatology (select 'Get Ancillary' to download ancillary files)

Keep params when new ifile is selected Open in SeaDAS

Run Cancel Apply ?

Layer Manager Mask Manager Pixel Info



SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

File Manager x World Map World View

L2gen

Main Products Processing Options Subsetting Options Thresholds Ancillary Inputs IOP Options

Primary I/O Files

ifile /Users/dknowles/Desktop/OceanOptics/Scenes/CanaryIslands/PACE_OCI.20240831T133906.L1B.V2.nc ...

ofile /Users/dknowles/Desktop/OceanOptics/Scenes/CanaryIslands/PACE_OCI.20240831T133906.L2.BGC.nc ...

Parfile

Load Save Exclude i/o Files Show Defaults Suite BGC -- Get Ancillary Options --

```
# PRIMARY INPUT OUTPUT FIELDS
ifile=/Users/dknowles/Desktop/OceanOptics/Scenes/CanaryIslands/PACE_OCI.20240831T133906.L1B.V2.nc
ofile=/Users/dknowles/Desktop/OceanOptics/Scenes/CanaryIslands/PACE_OCI.20240831T133906.L2.BGC.nc

# SUITE
suite=BGC

# ANCILLARY INPUTS Default = climatology (select 'Get Ancillary' to download ancillary files)
```

Keep params when new ifile is selected Open in SeaDAS

Run Cancel Apply ?

Layer Manager Mask Manager Pixel Info

Notes

- *ofile* automatically updated to contain selected suite
- Form is mostly blank because it only shows changes user has made that differs from the default of the suite.

SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Windows Earthdata-Cloud Help

File Manager x World Map World View

Layer Editor x Color Manager Navigation

Notes

- *I2prod* is loaded with BGC suite defaults

I2gen

Main Products Processing Options Subsetting Options Thresholds Ancillary Inputs* IOP Options ▶

Product Selector

- > Radiances/Reflectances
- > Derived Geophysical Parameters
- > Inherent Optical Products
- > Ancillary/Meteorological/Geometric Parameters
- > Atmospheric Correction Intermediates
- > Uncertainties/Error Estimates
- > Miscellaneous

Wavelength 3-Way Toggle Selection

Deselect All UV

Deselect All Visible

Deselect All NIR

Deselect All SWIR

<input checked="" type="checkbox"/> 315	<input checked="" type="checkbox"/> 316
<input checked="" type="checkbox"/> 318	<input checked="" type="checkbox"/> 320
<input checked="" type="checkbox"/> 322	<input checked="" type="checkbox"/> 325
<input checked="" type="checkbox"/> 327	<input checked="" type="checkbox"/> 329
<input checked="" type="checkbox"/> 331	<input checked="" type="checkbox"/> 334
<input checked="" type="checkbox"/> 337	<input checked="" type="checkbox"/> 339
<input checked="" type="checkbox"/> 341	<input checked="" type="checkbox"/> 344
<input checked="" type="checkbox"/> 346	<input checked="" type="checkbox"/> 348
<input checked="" type="checkbox"/> 351	<input checked="" type="checkbox"/> 353
<input checked="" type="checkbox"/> 356	<input checked="" type="checkbox"/> 358
<input checked="" type="checkbox"/> 361	<input checked="" type="checkbox"/> 363
<input checked="" type="checkbox"/> 366	<input checked="" type="checkbox"/> 368
<input checked="" type="checkbox"/> 371	<input checked="" type="checkbox"/> 373
<input checked="" type="checkbox"/> 375	<input checked="" type="checkbox"/> 378
<input checked="" type="checkbox"/> 380	<input checked="" type="checkbox"/> 383
<input checked="" type="checkbox"/> 385	<input checked="" type="checkbox"/> 388

Selected Products

I2prod carbon_phyto carbon_phyto_unc chlor_a chlor_a_unc poc

Restore Defaults (Products only)

Keep params when new ifile is selected Open in SeaDAS

Run Cancel Apply ?

SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

File Manager x World Map World View

Layer Editor x Color Manager Navigation

Layer Manager Mask Manager Pixel Info

Notes

- ~/*.netrc* file must contain Earthdata login info

i2gen

Main Products Processing Options Subsetting Options Thresholds Ancillary Inputs IOP Options

Primary I/O Files

ifile /Users/dknowles/Desktop/OceanOptics/Scenes/CanaryIslands/PACE_OCI.20240831T133906.L1B.V2.nc ...

ofile /Users/dknowles/Desktop/OceanOptics/Scenes/CanaryIslands/PACE_OCI.20240831T133906.L2.BGC.nc ...

Parfile

Load Save Exclude i/o Files Show Defaults Suite BGC -- Get Ancillary Options --

PRIMARY INPUT OUTPUT FIELDS
 ifile=/Users/dknowles/Desktop/OceanOptics/Scenes/CanaryIslands/PACE_OCI.20240831T133906.L1B.V2.nc
 ofile=/Users/dknowles/Desktop/OceanOptics/Scenes/CanaryIslands/PACE_OCI.20240831T133906.L2.BGC.nc

SUITE
 suite=BGC

ANCILLARY INPUTS Default = climatology (select 'Get Ancillary' to download ancillary files)

-- Get Ancillary Options --

- Get Ancillary
- Refresh
- Near Real-Time NO2
- Force Download

Keep params when new ifile is selected Open in SeaDAS

Run Cancel Apply ?

SeaDAS File Edit View SeaDAS-Toolbox Analysis Layer Vector Raster Optical Tools Window Earthdata-Cloud Help

File Manager x World Map World View

Layer Editor x Color Manager Navigation

L2gen

Main Products Processing Options Subsetting Options Thresholds Ancillary Inputs* IOP Options ▶

Primary I/O Files

ifile /Users/dknowles/Desktop/OceanOptics/Scenes/CanaryIslands/PACE_OCI.20240831T133906.L1B.V2.nc ...

ofile /Users/dknowles/Desktop/OceanOptics/Scenes/CanaryIslands/PACE_OCI.20240831T133906.L2.BGC.nc ...

Parfile

Load Save Exclude i/o Files Show Defaults Suite BGC Get Ancillary

```
# PRIMARY INPUT OUTPUT FIELDS
ifile=/Users/dknowles/Desktop/OceanOptics/Scenes/CanaryIslands/PACE_OCI.20240831T133906.L1B.V2.nc
ofile=/Users/dknowles/Desktop/OceanOptics/Scenes/CanaryIslands/PACE_OCI.20240831T133906.L2.BGC.nc

# SUITE
suite=BGC

# ANCILLARY INPUTS Default = climatology (select 'Get Ancillary' to download ancillary files)
icefile=/Users/dknowles/Desktop/ocssw/var/anc/2024/244/20240831120000-CMC-L4_GHRSSST-SSTfnd-CMC0.1deg-GLOB-v02.
met1=/Users/dknowles/Desktop/ocssw/var/anc/2024/244/GMAO_MERRA2.20240831T130000.MET.nc
met2=/Users/dknowles/Desktop/ocssw/var/anc/2024/244/GMAO_MERRA2.20240831T140000.MET.nc
met3=/Users/dknowles/Desktop/ocssw/var/anc/2024/244/GMAO_MERRA2.20240831T140000.MET.nc
ozone1=/Users/dknowles/Desktop/ocssw/var/anc/2024/244/GMAO_MERRA2.20240831T130000.MET.nc
ozone2=/Users/dknowles/Desktop/ocssw/var/anc/2024/244/GMAO_MERRA2.20240831T140000.MET.nc
ozone3=/Users/dknowles/Desktop/ocssw/var/anc/2024/244/GMAO_MERRA2.20240831T140000.MET.nc
sstfile=/Users/dknowles/Desktop/ocssw/var/anc/2024/244/20240831120000-CMC-L4_GHRSSST-SSTfnd-CMC0.1deg-GLOB-v02
```

Keep params when new ifile is selected Open in SeaDAS

Run Cancel Apply ?

Notes

- `~/.netrc` file must contain Earthdata login info

File Manager x World Map World View

Layer Editor x Color Manager Navigation

L2gen

Main Products Processing Options Subsetting Options Thresholds Ancillary Inputs* IOP Options

Primary I/O Files

ifile /Users/dknowles/Desktop/OceanOptics/Scenes/CanaryIslands/PACE_OCI.20240831T133906.L1B.V2.nc ...

ofile /Users/dknowles/Desktop/OceanOptics/Scenes/CanaryIslands/PACE_OCI.20240831T133906.L2.BGC.nc ...

Parfile

Load Save Exclude i/o Files Show Defaults Suite BGC Get Ancillary

```
# PRIMARY INPUT OUTPUT FIELDS
ifile=/Users/dknowles/Desktop/OceanOptics/Scenes/CanaryIslands/PACE_OCI.20240831T133906.L1B.V2.nc
ofile=/Users/dknowles/Desktop/OceanOptics/Scenes/CanaryIslands/PACE_OCI.20240831T133906.L2.BGC.nc

# SUITE
suite=BGC

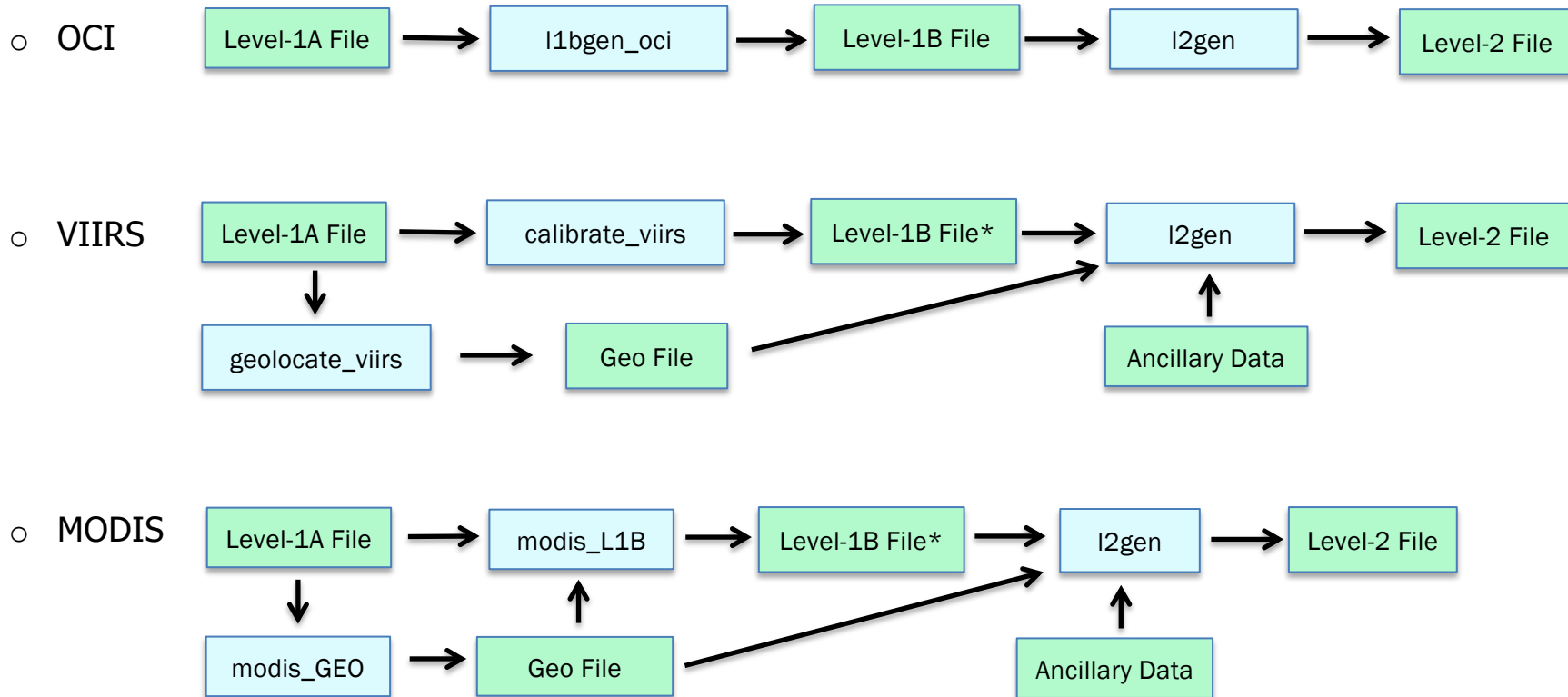
# ANCILLARY INPUTS Default = climatology (select 'Get Ancillary' to download ancillary files)
icefile=/Users/dknowles/Desktop/ocssw/var/anc/2024/244/20240831120000-CMC-L4_GHRSSST-SSTfnd-CMC0.1deg-GLOB-v02
met1=/Users/dknowles/Desktop/ocssw/var/anc/2024/244/GMAO_MERRA2.20240831T130000.MET.nc
met2=/Users/dknowles/Desktop/ocssw/var/anc/2024/244/GMAO_MERRA2.20240831T140000.MET.nc
met3=/Users/dknowles/Desktop/ocssw/var/anc/2024/244/GMAO_MERRA2.20240831T140000.MET.nc
ozone1=/Users/dknowles/Desktop/ocssw/var/anc/2024/244/GMAO_MERRA2.20240831T130000.MET.nc
ozone2=/Users/dknowles/Desktop/ocssw/var/anc/2024/244/GMAO_MERRA2.20240831T140000.MET.nc
ozone3=/Users/dknowles/Desktop/ocssw/var/anc/2024/244/GMAO_MERRA2.20240831T140000.MET.nc
sstfile=/Users/dknowles/Desktop/ocssw/var/anc/2024/244/20240831120000-CMC-L4_GHRSSST-SSTfnd-CMC0.1deg-GLOB-v02
```

Keep params when new ifile is selected Open in SeaDAS

Run Cancel Apply ?

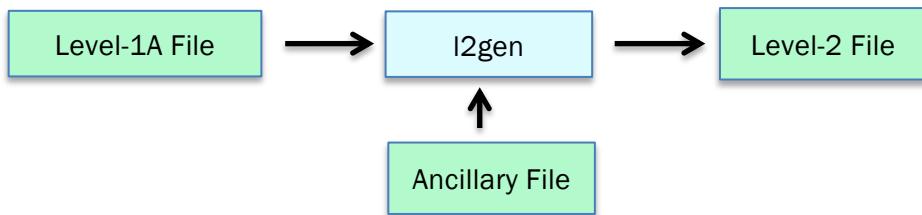
More in live demo

***SeaDAS Processing Workflow
Reference Slides***

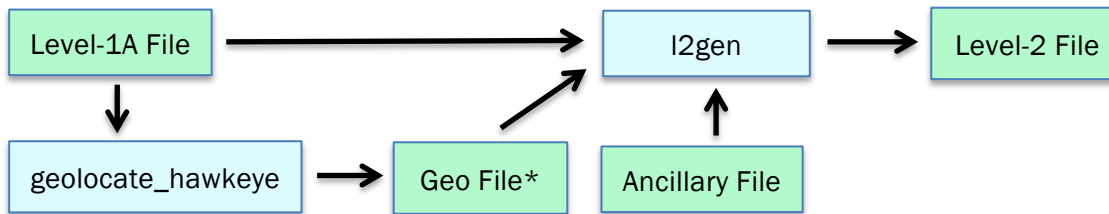


* Not distributed

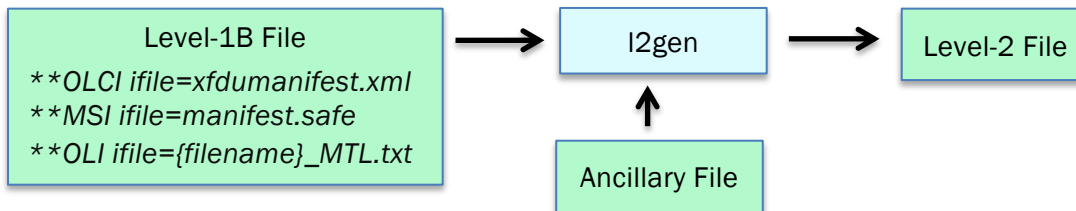
- SeaWiFS
- CZCS



- HawkEye

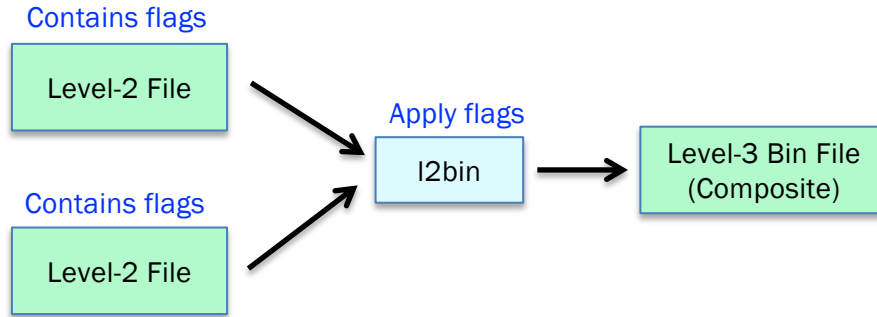


- OLCI
- MSI
- OLI
- GOCI
- HICO
- MERIS

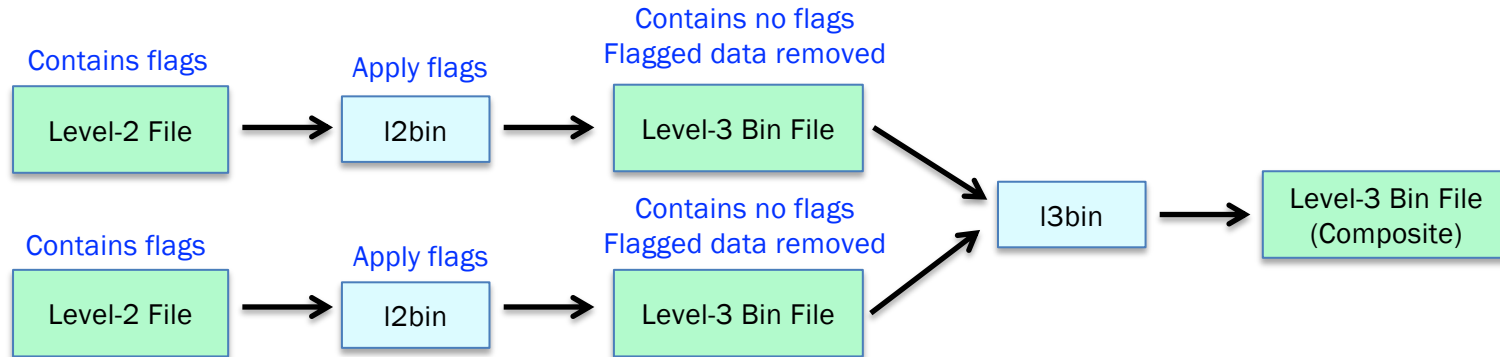


** Input files contained in directory with Level-1B file*

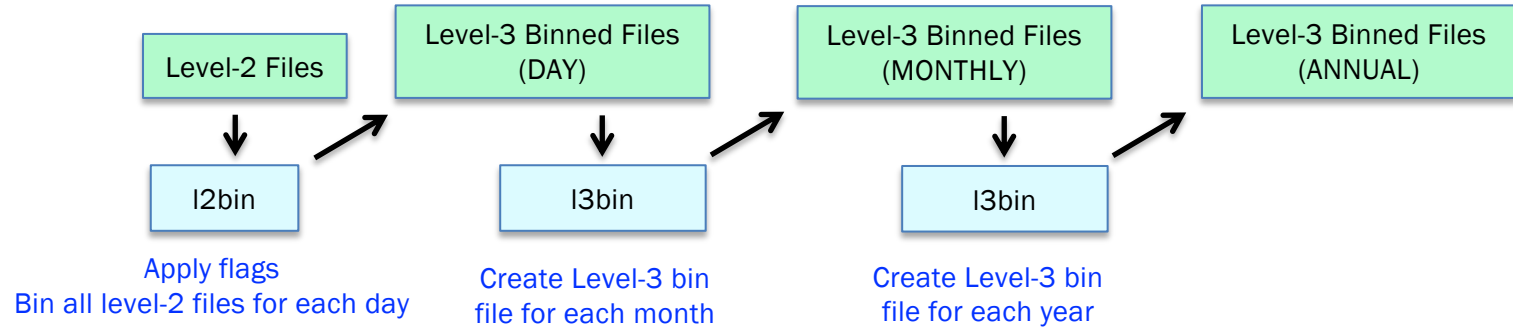
- Combining files with I2bin

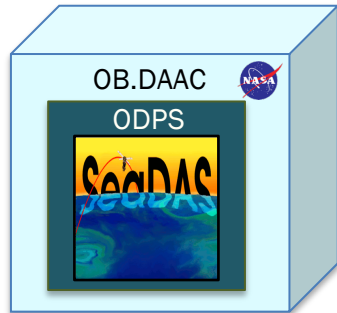


- Combining files later with I3bin



- Avoid impacts due to uneven temporal distribution of data





SeaDAS Support and Help

Earth Data Forum:

This is where you go to ask questions

<https://forum.earthdata.nasa.gov/app.php/tag/SeaDAS>

OB.DAAC Website:

This is where you get the Ocean Biology data and SeaDAS

<https://www.earthdata.nasa.gov/eosdis/daacs/obdaac>

Ocean Color Website:

A direct link to OBPG web site*

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

SeaDAS Website:

A direct link to the SeaDAS web site*

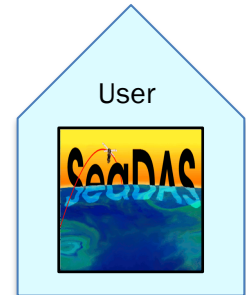
<https://seadas.gsfc.nasa.gov>

YouTube:

More SeaDAS tutorials planned

<https://www.youtube.com/@NASAOceanColor>

* Website url subject to change in future



Aynur Abdurazik – SeaDAS lead developer

Donald Shea - SeaDAS processors lead developer

Daniel Knowles – SeaDAS developer, SeaDAS instruction

Bing Yang – SeaDAS developer, SeaDAS processors developer

Sean Bailey - DAAC Manager

Alicia Scott - Deputy DAAC Manager

Guoqing Wang – DAAC Scientist

OBPG (NASA's Ocean Biology Processing Group) – many scientists and algorithm developers