



Development, Production and Distribution of GOCI Data Products in Preparation for GEO-CAPE

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Acknowledgments

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GOALS

- Develop KIOST-NASA collaboration on geo ocean color missions including GOCI, GOCI-II and GEO-CAPE that would benefit both NASA and KIOST.
- Accelerate the development, production and distribution of validated GOCI data products to U.S. and non-U.S. scientific communities to prepare for GEO-CAPE.

Activities

- GOCI processing with standard NASA algorithms
- GOCI support in SeaDAS 7
- Integrating GOCI processing algorithms into SeaDAS
- GOCI distribution through Ocean Color Web
- Produce & validate NASA standard L2 & L3 products
- Vicarious cross-calibration with MODIS-Aqua
- Assist KOSC with L0 to L1B software development
- Non-standard GOCI algorithm development & validation

NASA OBPG Support for GOCI

Implement GOCI processing with standard NASA algorithms

- spectral response functions received, one month of GOCI L1B data received
- bandpass integrations completed
- aerosol and rayleigh tables generated (Ahmad et al. 2010)
- read routine for GOCI L1B data format implemented in l2gen
- testing underway on one month of GOCI data

Implement GOCI support in SeaDAS 7

- display capability functional, now being refined
- processing capability to be added soon
- next release of SeaDAS should fully support GOCI

Implement GOCI distribution through Ocean Color Web

- L1B and L2 browse file generation capability done
- browse, search and order system modifications underway
- ready to receive full GOCI archive and new data feed

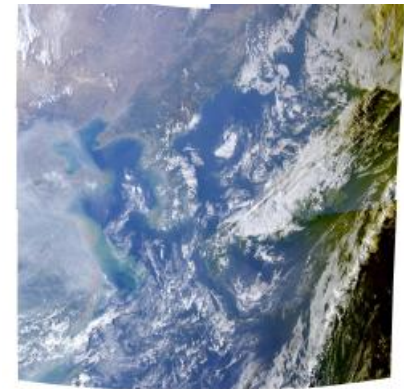
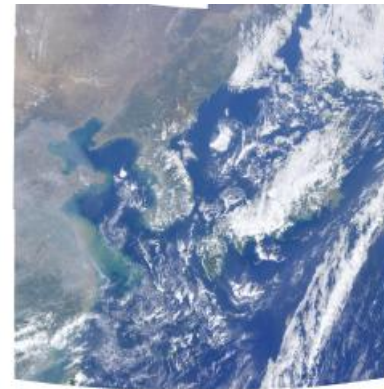
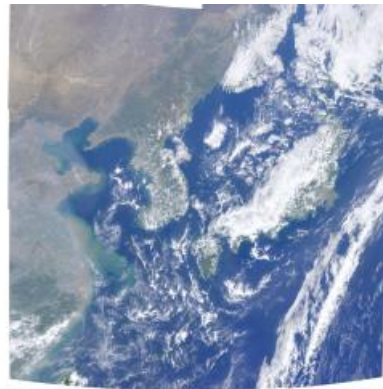
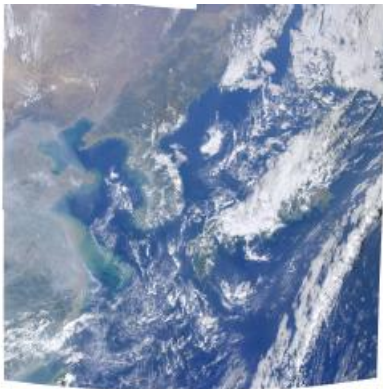
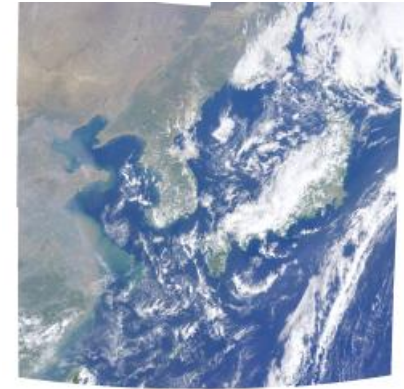
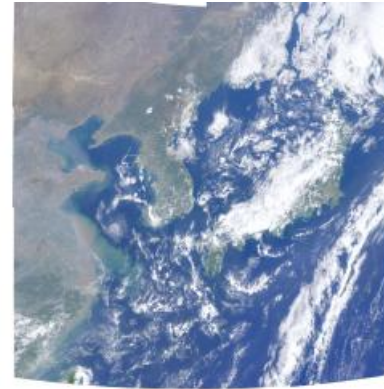
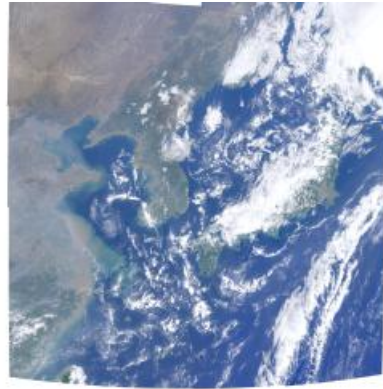
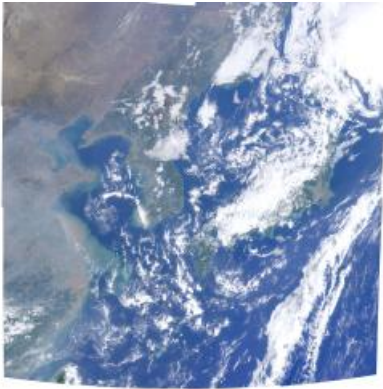
GOCI Band Averaged Parameters

Quantity	Band1	Band2	Band3	Band4	Band5	Band6	Band7	Band8
Wave Center (int)	412	443	490	555	660	680	745	865
Wave Center	411.980	443.004	490.012	554.997	660.012	680.021	744.996	864.999
Wave Width (fwhm)	18.896	17.160	18.711	18.004	17.693	9.031	18.305	38.102
F0 (Thuillier)	173.231	189.070	196.490	183.335	151.961	147.492	127.785	95.443
Taur (Rayleigh)	3.168E-01	2.347E-01	1.554E-01	9.362E-02	4.630E-02	4.098E-02	2.830E-02	1.558E-02
Dpol (Depolarization)	2.948E-02	2.909E-02	2.867E-02	2.828E-02	2.790E-02	2.785E-02	2.772E-02	2.755E-02
k_oz (Ozone)	4.729E-04	2.997E-03	2.204E-02	9.720E-02	5.521E-02	3.615E-02	1.066E-02	2.198E-03
k_no2 (NO2)	6.004E-19	5.042E-19	2.794E-19	8.963E-20	8.106E-21	7.329E-21	1.623E-21	1.011E-22
aw (water)	2.578E-02	5.168E-02	1.650E-02	5.954E-02	4.090E-01	4.780E-01	2.801E+00	4.672E+00
bbw (water)	3.311E-03	2.434E-03	1.581E-03	9.328E-04	4.456E-04	3.922E-04	2.661E-04	1.421E-04
Wave Peak	414.000	437.000	488.000	553.000	667.000	681.000	738.000	852.000
Wave Avg White	413.440	444.134	490.420	555.048	660.061	680.020	745.018	864.454
Wave Avg Solar	413.134	443.972	490.316	555.010	659.939	679.871	744.929	864.220
Wave Avg Rayleigh	412.082	443.118	489.859	554.382	659.114	679.449	744.509	862.579

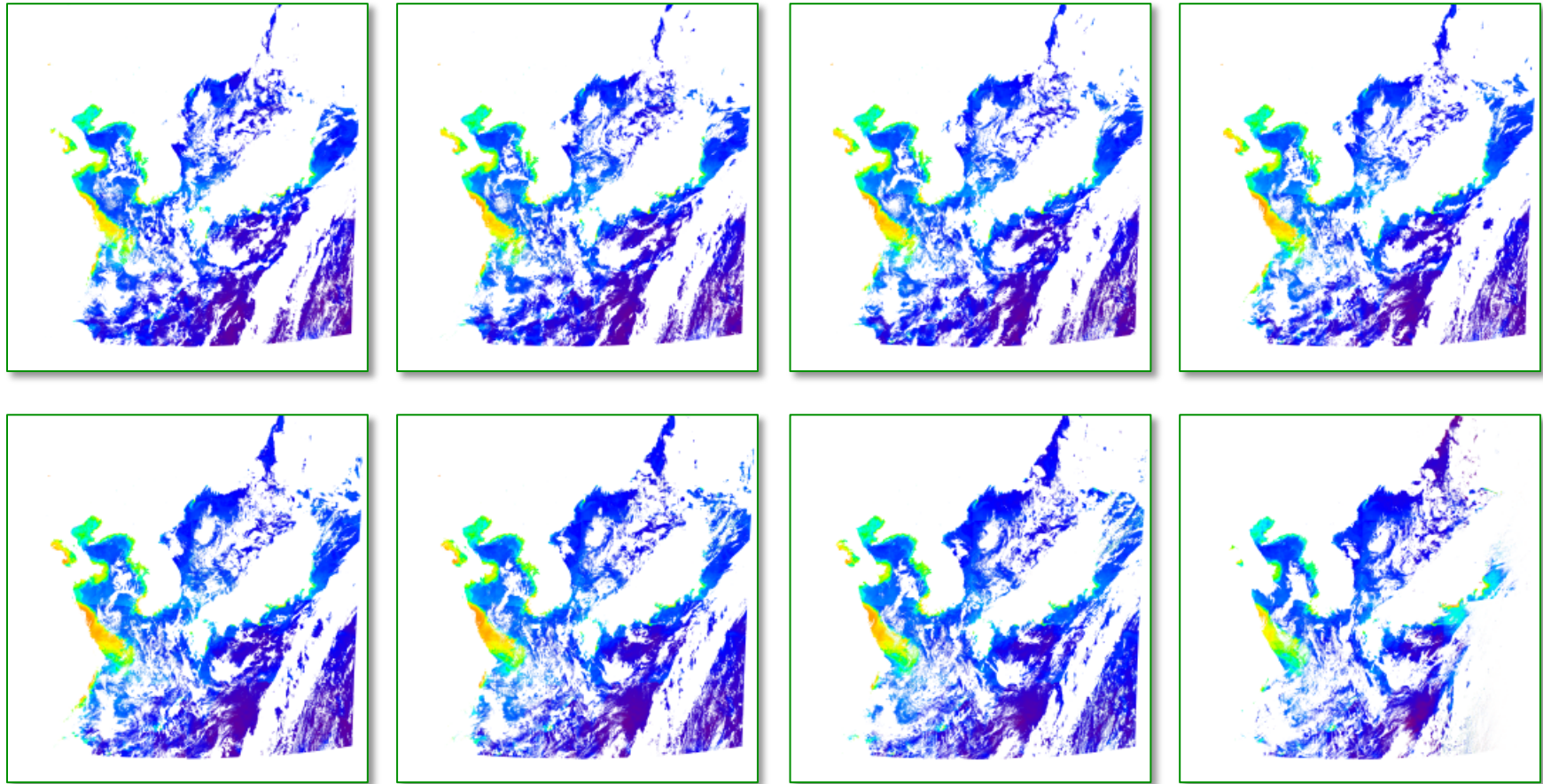
Derived from GOCI spectral response functions.

Used in the atmospheric correction (ozone, NO2) and radiative transfer simulations to derive Rayleigh and aerosol LUTs.

Sample GOCI RGB Browse Images



Sample GOCI Chlorophyll Images (OC3)



Chlorophyll a concentration (mg / m³)

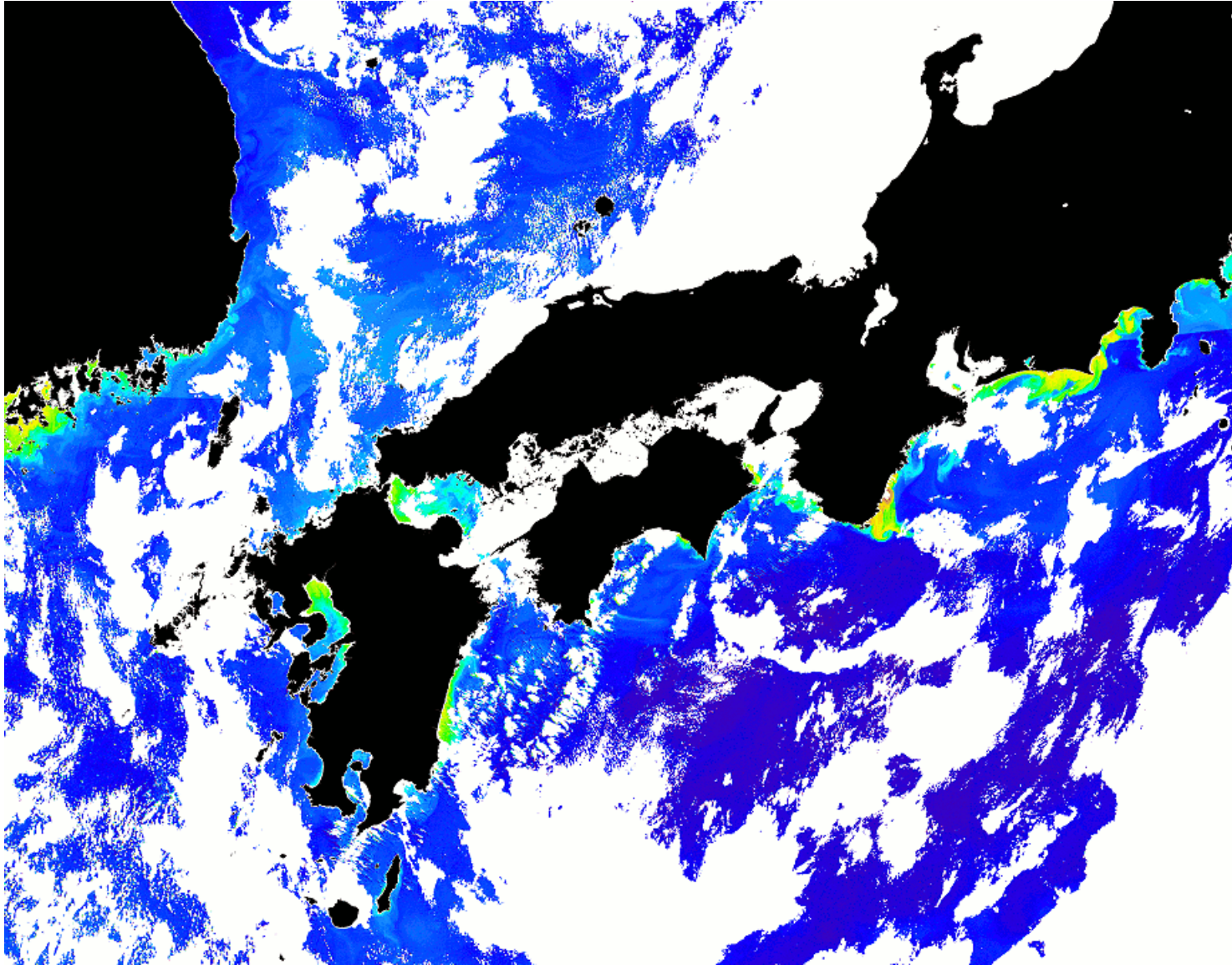


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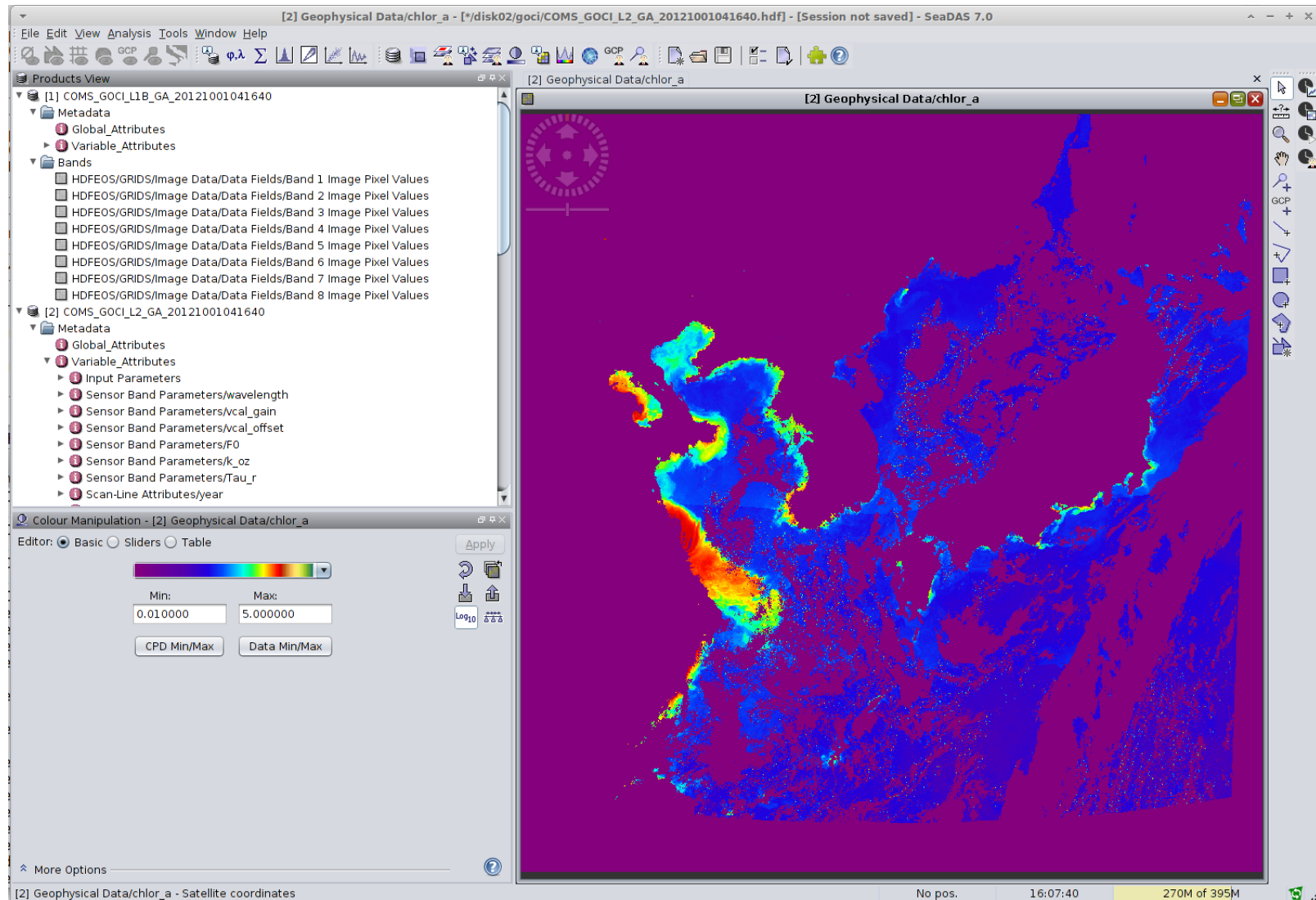
log

5

GOCI Chl Processed with NASA Algorithms (OC3)



GOCI Display Support in SeaDAS 7



Development of Non-standard Products

- Collaboration with KORDI to share data and analyze coastal samples from GOCI field-of-regard.
- Apply GOCI & our coastal carbon algorithms to examine diurnal and day-to-day variability of CDOM dissolved and particulate carbon.

Products

a_{CDOM}
DOC
POC

