RDAC Report from JAXA

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Introduction: JAXA SST Missions Status

- Aqua/AMSR-E
  - Operation completed on Dec. 4, 2015. (slow rotation (2rpm) mode since Dec. 4, 2012)
  - 2rpm L1 products from Dec. 2012 to Dec. 2015 are available via the GCCOM-W1 Research Product web site (http://suzaku.eorc.jaxa.jp/GCOM_W/research/terms.html).
- GCOM-W
  - No major problem in satellite and instruments. Will achieve designed mission life of 5 years in May 2017.
  - All standard products are updated to Ver.2 in Mar. 2015.
  - Research products, 10-GHz SST and All-weather sea surface wind speed, have released to public in Mar. 2015 and Oct. 2015, respectively.
- GPM Core Observatory (NASA-JAXA)
  - No major problem in satellite and instruments. Will achieve designed mission life of 3 years and 2 months in Apr. 2017.
  - The product version V04 has been released to public in Mar. 2016, including L1 updates of DPR & GMI.
- GCOM-C
  - Preparation for the launch that is scheduled in Japanese Fiscal Year 2016.

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JAXA GHRSST Datasets

- JAXA GHRSST server (http://suzaku.eorc.jaxa.jp/GHRSST/) distributes following L2P/L3C products in GDS 2.0.
  - *Aqua/AMSR-E (2002.07 – 2011.10)*
  - *TRMM/VIRS (1997.12 – 2015.04)*
  - Windsat/Colioris (2009.04 – present): realtime
  - GCOM-W/AMSR2 (6-GHz) (2012.07 – present): realtime/delay
  - GPM-Core/GMI (10-GHz) (2014.03 – present): realtime/delay
  - **Himawari-8/AHI (2015.07 – present)**: realtime/(delay)
- Reprocessing activities
  - GMI SST was updated in Mar. 2016 in corresponding to L1 updates V04.
  - Windsat SST will be updated in June 2016.
- Planned products in future
  - AMSR2 10-GHz (in 2016)
  - MODIS, VIIRS (in 2016?)
  - GCOM-C/SGLI (in 2017)

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Main Activities since GHRSST-XV (1/3)

- Marine Environment Monitoring research team has been "officially" organized.
  - Covers all research activities related to marine environment
  - GHRSSST activities including Hiawari-8 Ocean are also covered.
- AMSR-E algorithm updates
  - **Preparing AMSR-E products consistent with AMSR2**, which are processed with the latest AMSR2 L2 algorithms and output in AMSR2 formats. Planning to apply the latest AMSR2 algorithm, which will be released in late 2016.
- AMSR2 algorithm updates
  - Reprocessing of L2 Ver.2.1 for the past period was completed. Available at: https://gcom-w1.jaxa.jp
  - **L1 minor version-up** (correction of bug in RFI flag) is scheduled in summer 2016 with reprocess. No TB changes.
    - Possible cause of non-linearity in L1 is under investigation. Hoping to be included in future (2017 or later) release.
  - **Next L2 version-up** is planning in late 2016, except Total Precipitable Water and Cloud Liquid Water products.
  - Validation of **all-weather sea surface wind speed** (research product) has been done with GPS dropsonde, and products has been released in Oct. 2015. Available at: http://suzaku.eorc.jaxa.jp/GCOM_W/research/terms.html

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Major Activities since GHRSST-XIV (2/3)

- TRMM algorithm updates
  - **TRMM V8** products (applying GPM algorithms to TRMM) is scheduled by 2018.
- GPM algorithm updates
  - **GPM V04** (DPR, GMI, & combined products) has been released during Mar.-Apr. 2016. Global rainfall map products (JAXA's GSMaP and NASA's IMERG) V04 will be released in autumn 2016.
    JAXA: http://www.gportal.jaxa.jp and also available from NASA.
  - **GMI SST in GDS2.0** also has been updated in Mar. 2016 in corresponding to GMI L1 V04 updates.
- Himawari-8 activities
  - Under the agreements between JAXA and JMA, **JAXA Himawari Monitor** (http://www.eorc.jaxa.jp/ptree) has been opened to public since Aug. 2015 to distribute JMA-provided L1 and JAXA-produced L2 products.
  - **Himawari-8 SST V1.2** will be released in June or July 2016.
  - **Side meeting on next generation geostationary satellites**, focused on Himawari-8, will be held from 18:00 this evening at this room.

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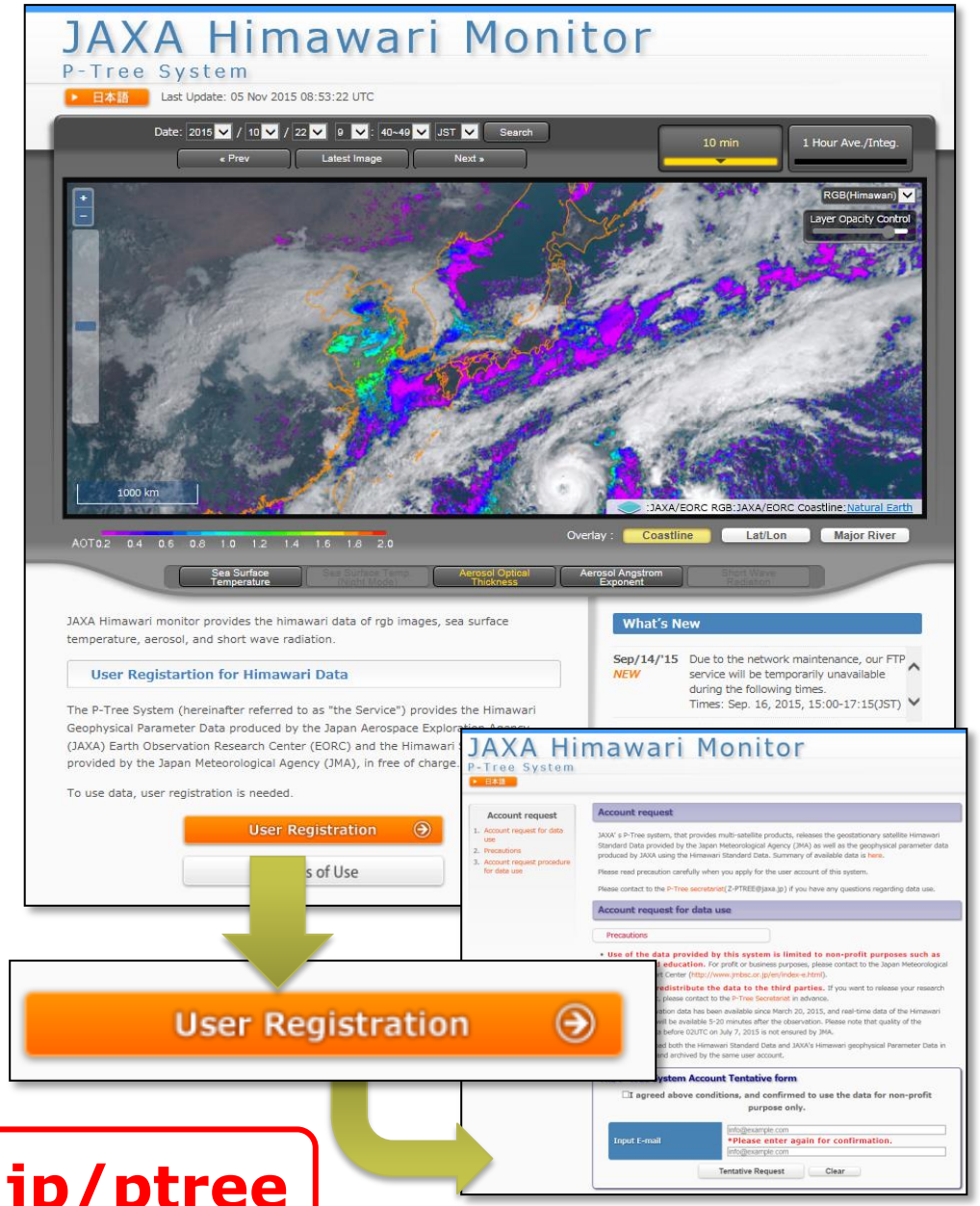
JAXA Himawari Monitor

- To seek synergies between Himawari-8 and JAXA's Earth Observation Missions by applying same algorithm to produce consistent dataset
- Available since 31 August 2015 (320 users as of 2 June 2016)
- Browse images of Himawari-8 RGB and geophysical parameters on the Webpage
- Disseminates Himawari Standard data and JAXA produced geophysical data via FTP
- Data can be downloaded with simple user registration



http://www.eorc.jaxa.jp/ptree

JAXA Himawari Products

Level	Product name		Grid size	Format
L1	Reflectance (6 bands) Brightness temperature (10 bands)		500m/1km/ 2km	HSD *NetCDF4**
L2	Atmosphere	Aerosol properties	5km	NetCDF
		*Cloud properties**	*TBD*	
	Ocean	Sea surface temperature	2km	
		Ocean color (Chlorophyll-a)	5km(full-disk) 1km (Japan)	
	Land	*Vegetation index**	*TBD*	
		*Snow cover**		
		*Wild fire**		
	Flux	Photosynthetically active radiation (PAR) & Shortwave radiation (SWR)	5km(full-disk) 1km (Japan)	

- Products with "*" are under investigation and not released yet.
- L2 Algorithms are based on those developed for GCOM-C/SGLI. References are available at the web site. (**http://www.eorc.jaxa.jp/ptree/**)

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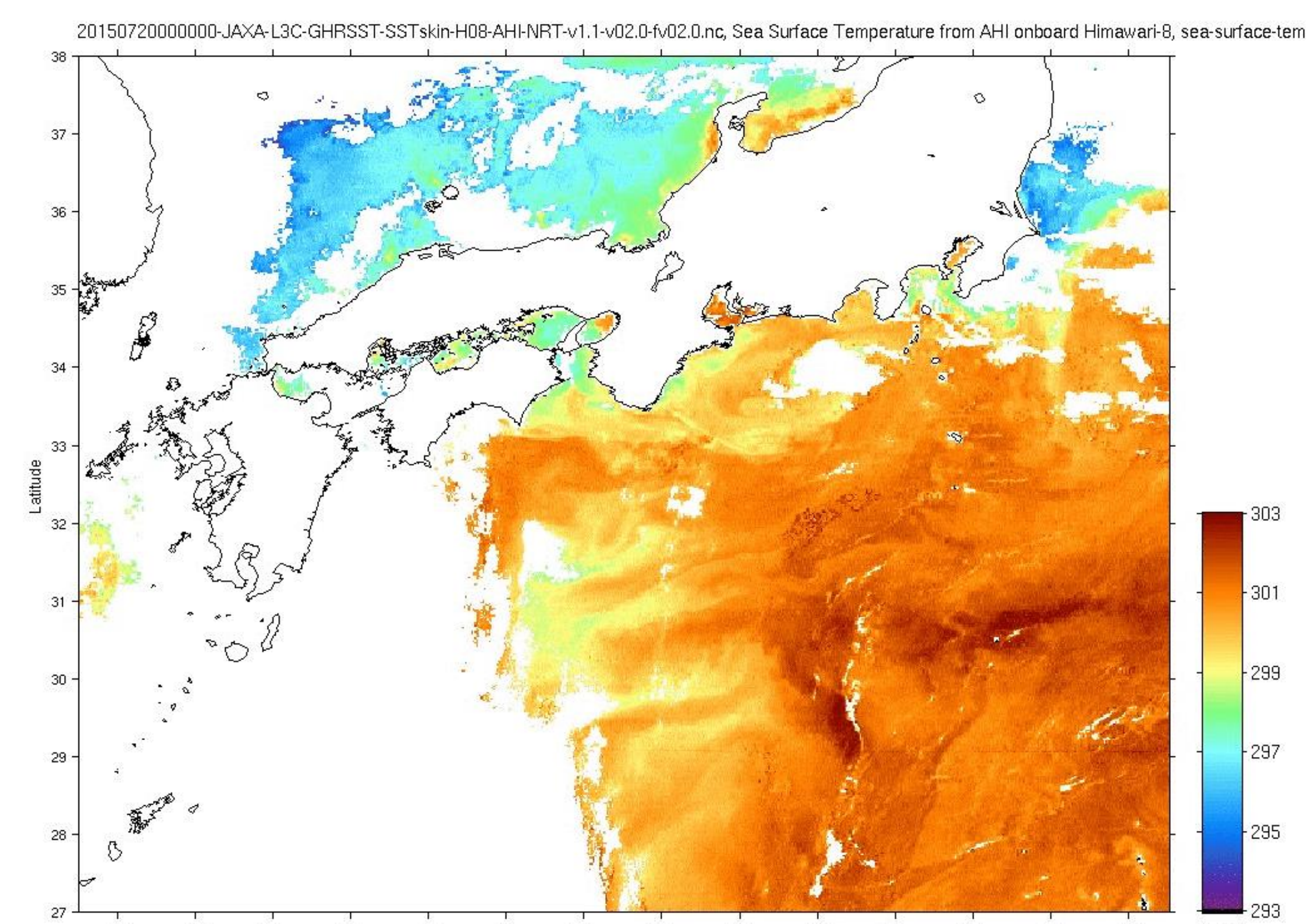
20150720000000-JAXA-L3C-GHRSST-SSTskin-H08-AHI-NRT-v1.1-v02.0-fv02.0.nc, Sea Surface Temperature from AHI onboard Himawari-8, sea-surface-tem
Latitude
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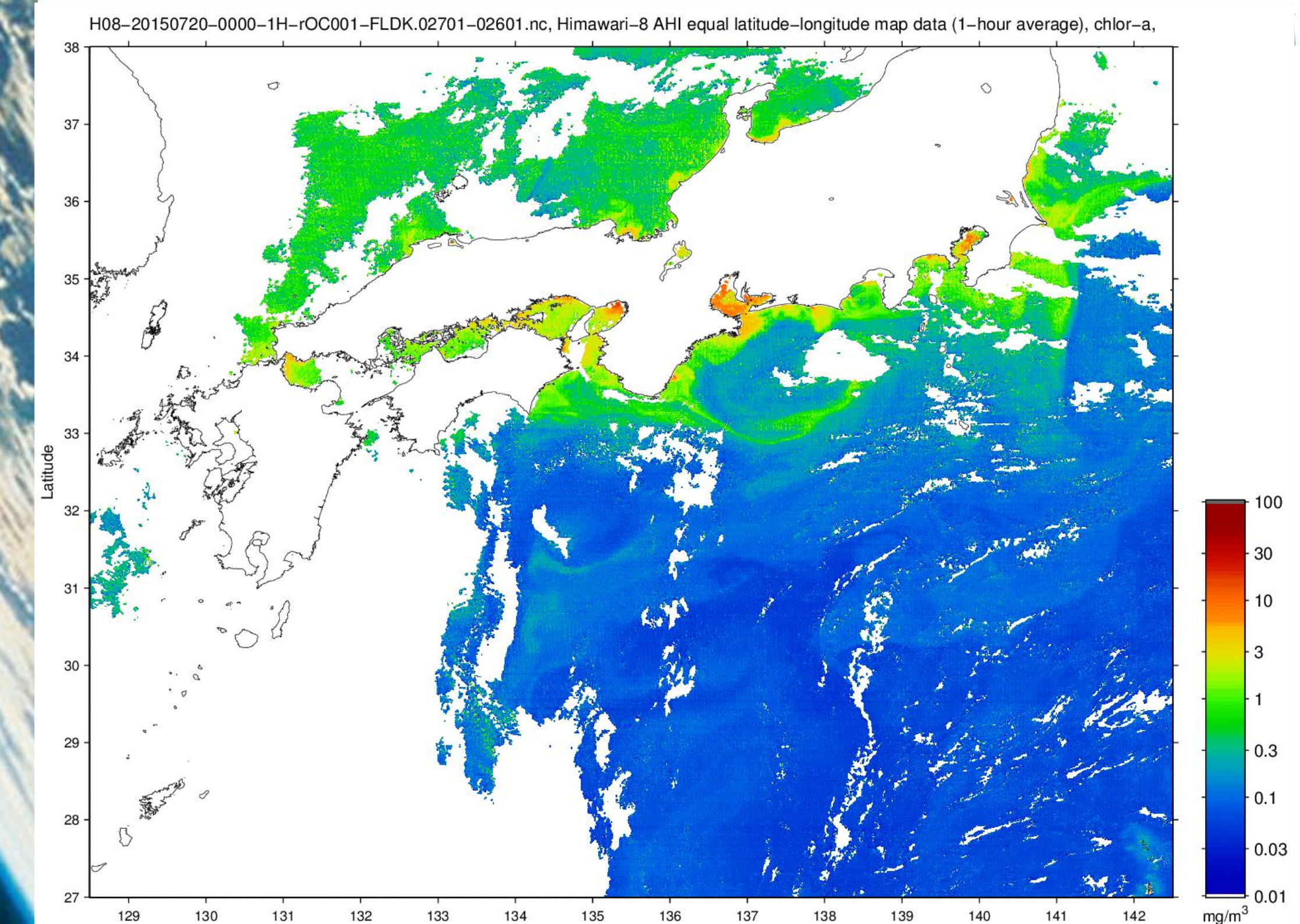
H08-20150720-0000-1H-rOC001-FLDK.02701-02601.nc, Himawari-8 AHI equal latitude-longitude map data (1-hour average), chlor-a,
Latitude
38
37
36
35
34
33
32
31
30
29
28
27
129
130
131
132
133
134
135
136
137
138
139
140
141
142
100
30
10
3
1
0.3
0.1
0.03
0.01
mg/m3

Major Activities since GHRSST-XIV (3/3)

- GCOM-C/SGLI preparation
  - Preparation for the launch as scheduled
  - SST algorithm developed for SGLI is applied to Himawari-8/AHI, and will be applied to Aqua/Terra MODIS to produce consistent dataset.
  - SGLI SST in GDS 2.0 will be available at JAXA GHRSST server.
- AMSR2 follow-on mission
  - Still in planning phase.
  - A sentence was newly added to the Japanese Basic Plan on Space Policy revised edition (Dec. 2015) – "Accelerate a study on how future GCOM-W mission should be, including follow-on mission, from JFY2016."
  - Followings are current plan for follow-on mission
    - Keeping 7-89 GHz channels those are required by many users.
    - Investigating addition of high-frequency channels (160/190GHz) those have sensitivity to solid precipitation and water vapor information.
    - Investigating down-sizing of HW components to make space for additional channels.
    - Investigating effective plans including multiple missions and international joint mission.

Data availability

- Registration (automatic):
  - for LEO products: http://suzaku.eorc.jaxa.jp/GHRSST/
  - for Himawari-8: http://www.eorc.jaxa.jp/ptree
- Data access: ftp (with UID and password)
- Data latency:
  - for LEO
    - NRT mode: 1-6 hours after observation
    - Delayed mode: 1-2 days after observation
  - for Himawari-8
    - NRT mode: 20-30 minutes after observation
    - Delayed mode: 1 day after observation (will be started soon)
- Format: GDS 2.0
- Systems
  - No restriction to ingest JAXA products to GDAC except Himawari-8 (JMA's policy "non-profit only")

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Issues to be discussed at G-XVII

- How to ingest new GHRSST dataset into GDAC?
  - Ingest of JAXA products to GDAC is action continued since the G-XVI.
- GSICS (Global Space-based Inter-Calibration System) under WMO & CGMS asked collaboration with GHRSST for evaluation of Himawari-8 & future GEO SST inter-calibrations.
  - Will be introduced in side meeting