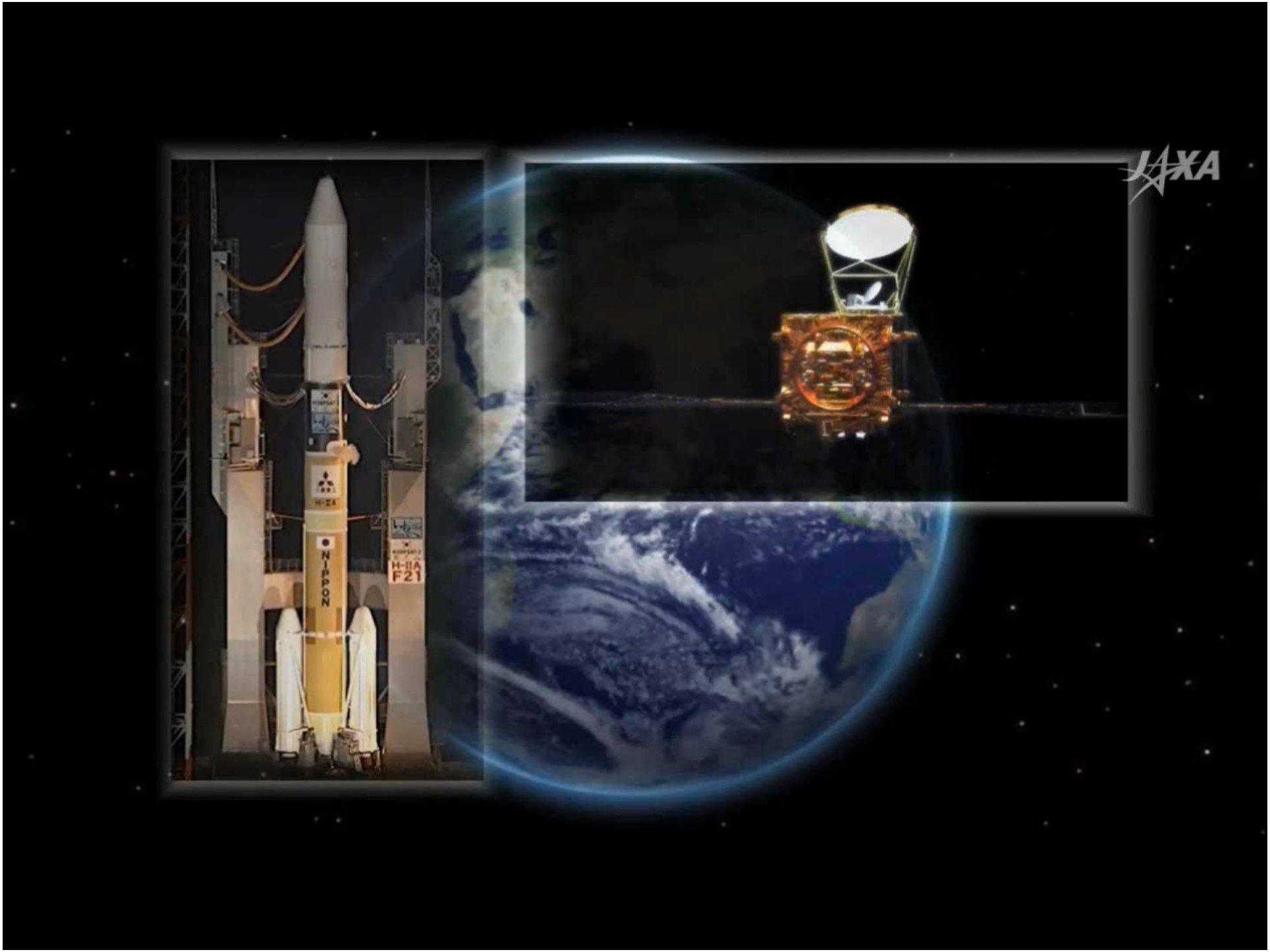
GCOM-W

Global Change Observation Mission W (Water)

June 8,2012

Toru Fukuda
Director
Earth Observation Research Center (EORC)
Japan Aerospace Exploration Agency(JAXA)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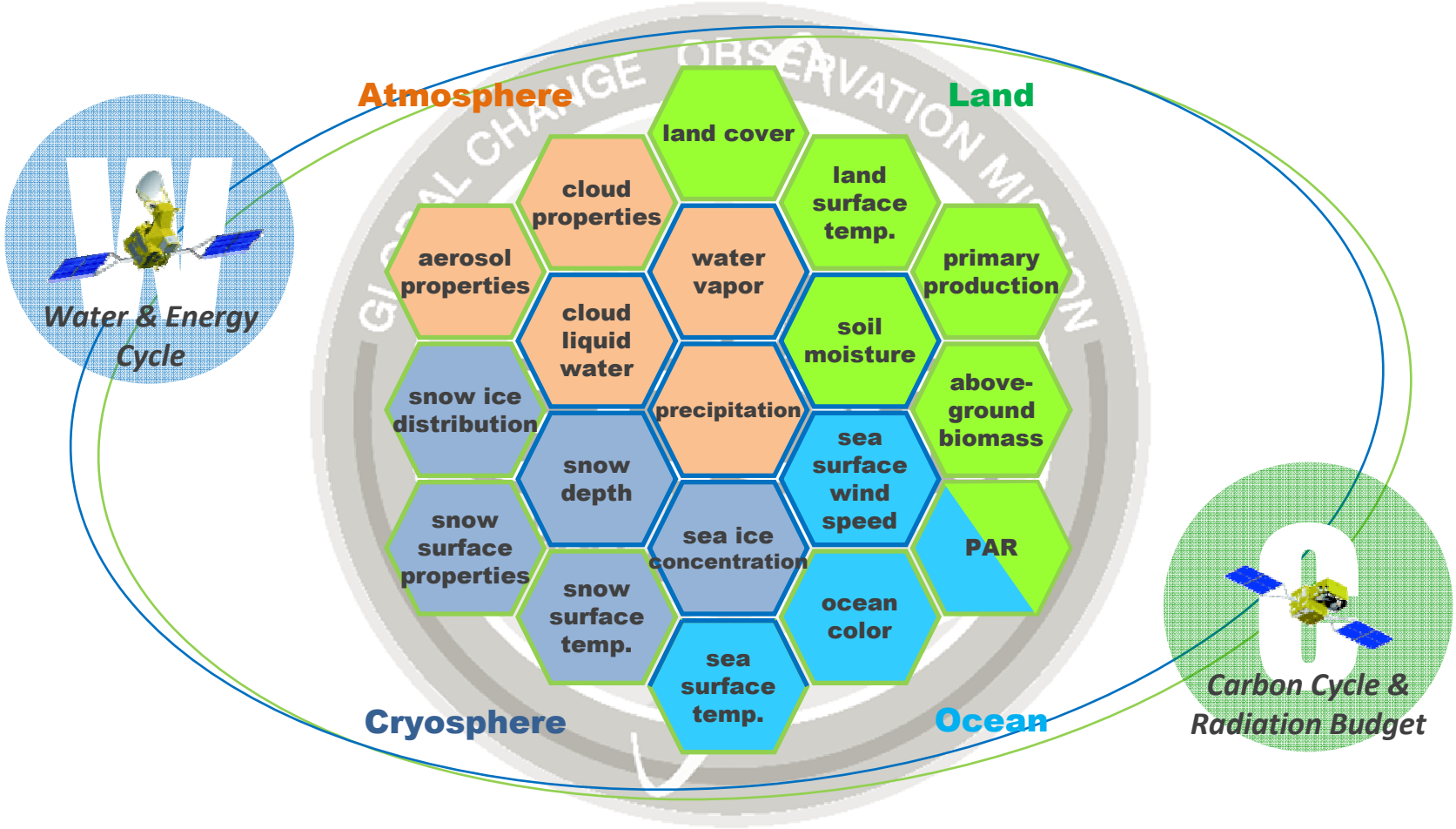
2 Global Change Observation Mission (GCOM)

GCOM (Global Change Observation Mission) :

- a project for the global and long-term observation of the Earth environment
- two types of observation satelllites: GCOM-W (Water) and GCOM-C (Climate)
- contribute to understanding of the mechanisms of water circulation and climate change

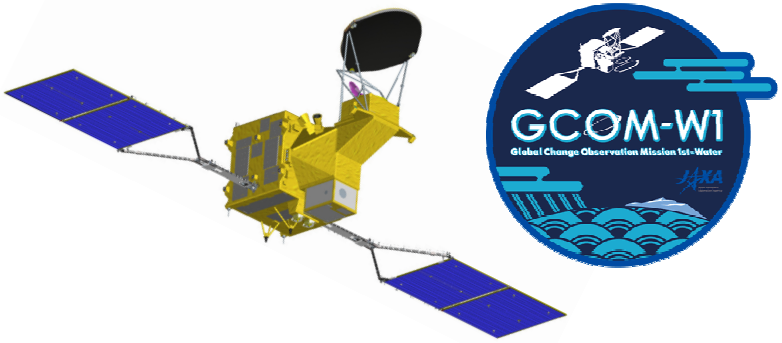


The Mission

3 GCOM-W1 “SHIZUKU”

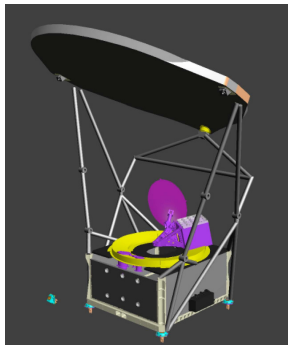
“SHIZUKU” is the first satellite of the GCOM-W series.

Health checkup of the Earth from space



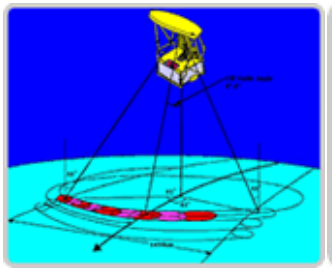
The Advanced Microwave Scanning Radiometer, AMSR2 is mounted on “SHIZUKU”.

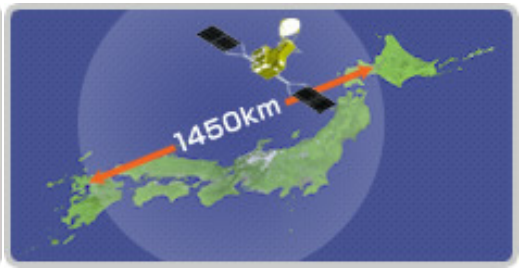
Acquisition of information about water through microwaves



AMSR2 observation concept

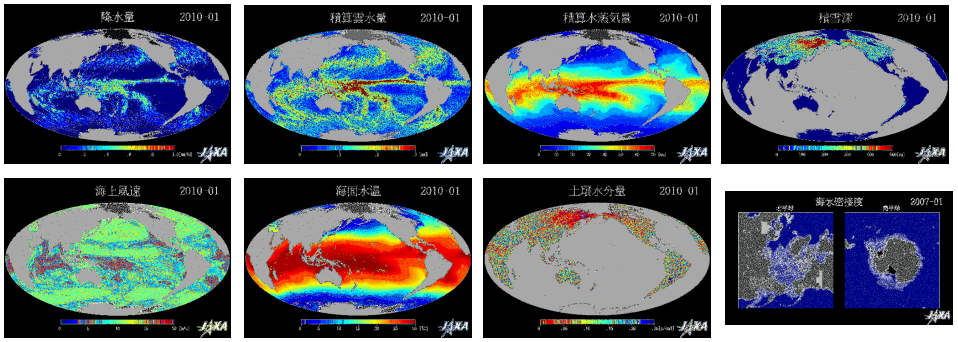
The antenna of AMSR2 scans conically once every 1.5 seconds, receiving microwaves emitted from the Earth’s surface and observing an area 1,450km wide in one scan.





Geophysical parameter of the Earth Observation by “SHIZUKU”

Frequent observation of water in various forms in the global water cycle



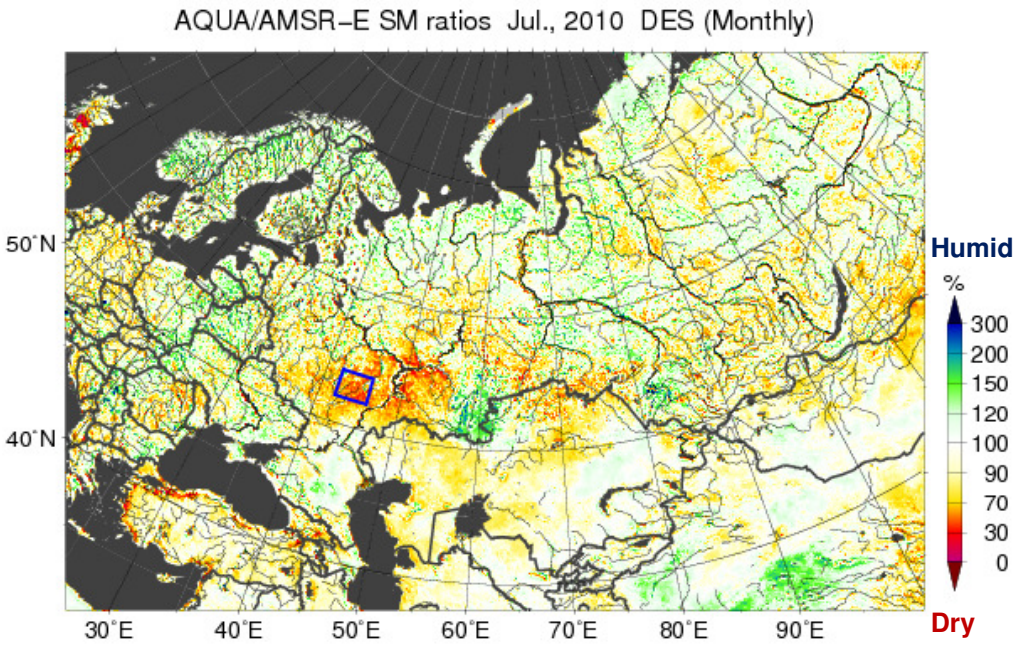
The Utilization

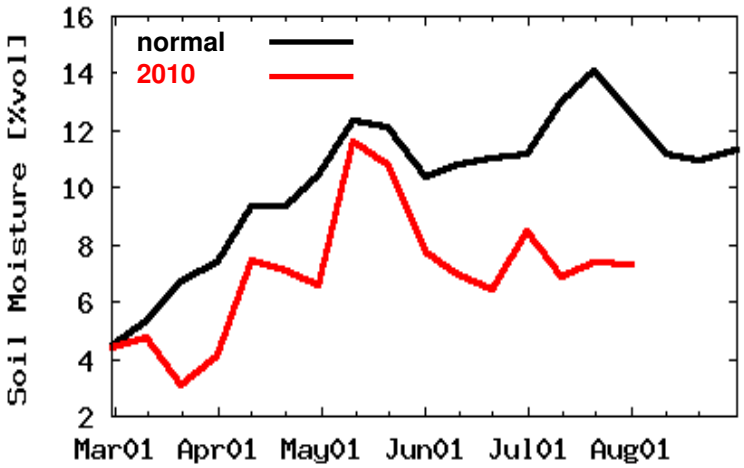
4 Observation of Soil Moisture

In Summer 2010, Russia suffered severe droughts, which seriously damaged crops. AMSR-E revealed decreased level of the soil moisture content in 2010.

The ratio of soil moisture content in July 2010 compared to the normal value in the Russia region

A profile of soil moisture content observed by AMSR-E from March to August 2010

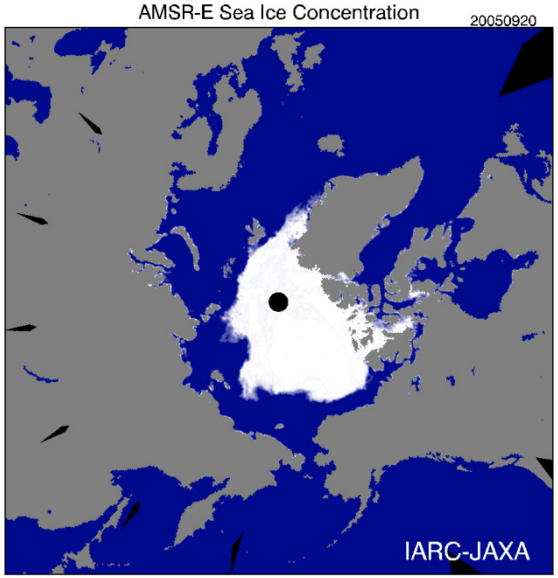


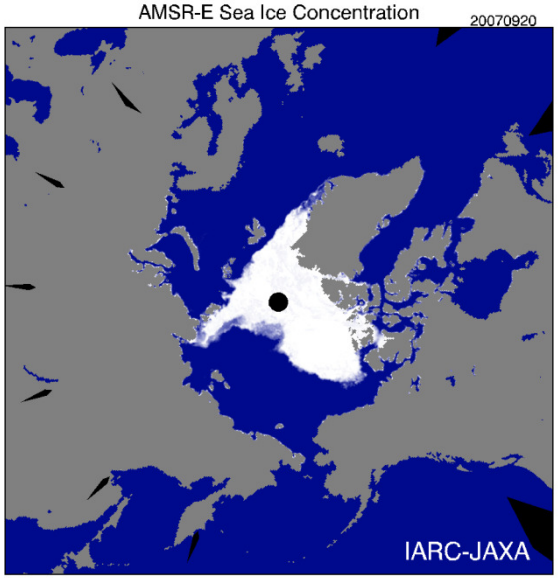


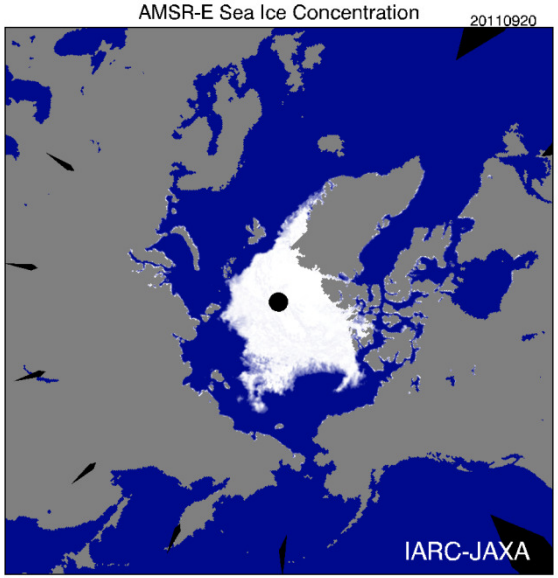
5 Sea Ice Distribution in the Arctic Ocean

These figures show sea ice distribution in the Arctic observed by AMSR-E.
The sea ice extension recorded in 2007 was the smallest in the history of observation.

The sea ice in September 2007 was smaller by about 2.8 times the area of Japan Islands than the previous smallest record in September 2005.
Even sea ice in the Northern Canadian archipelago, which normally remains frozen, has disappeared in 2007.







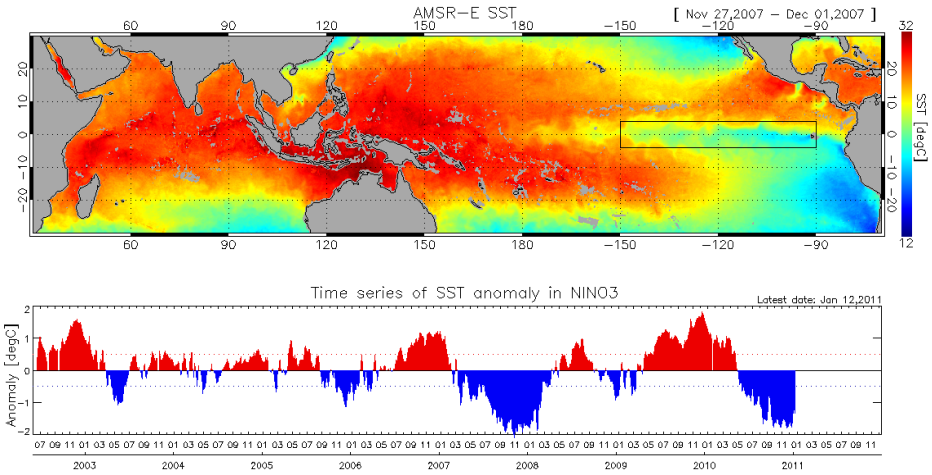
The Utilization

6 Observation of Sea Surface Temperature

These figures show sea surface temp. images during El Niño & La Niña.

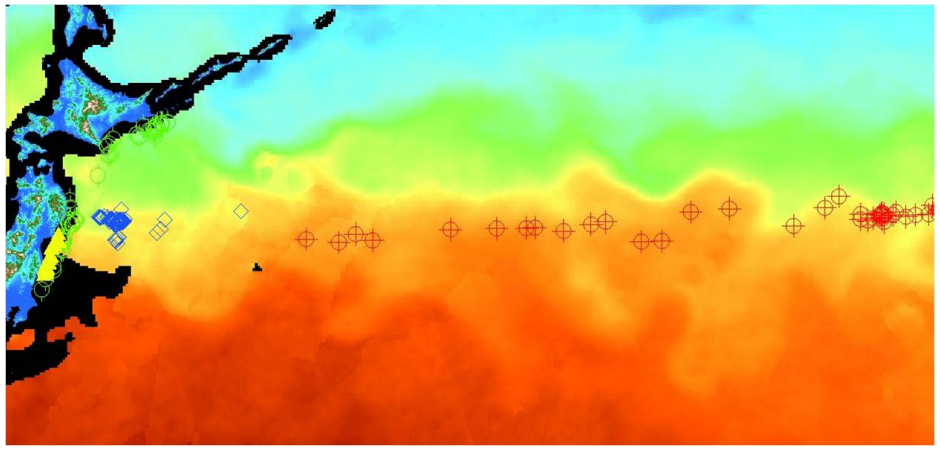
The upper shows the sea surface temperature distribution in winter 2007

The lower shows anomalies in sea surface temperatures from normal years



Accurate data on the ocean environment and fish distribution is vital for fishery.

Practical utilization of the observation data obtained by the satellite

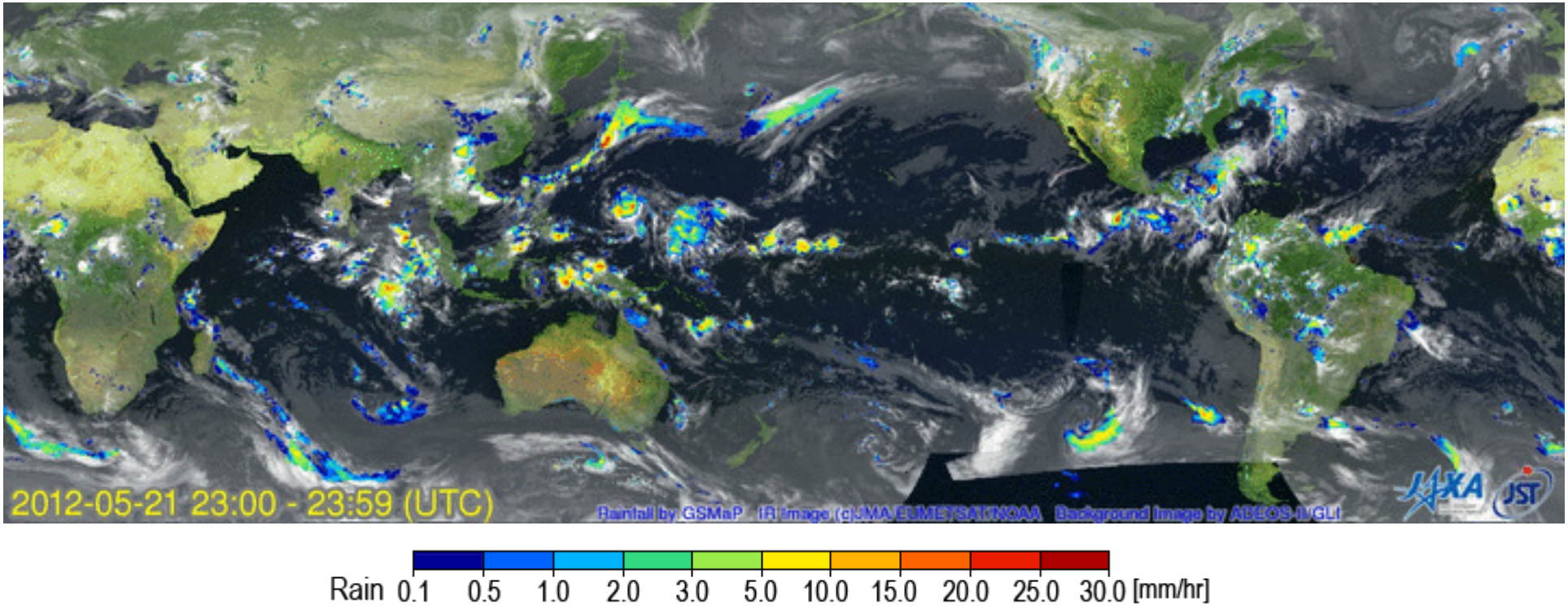


The Utilization

7 Global Rainfall Map in Near Real Time

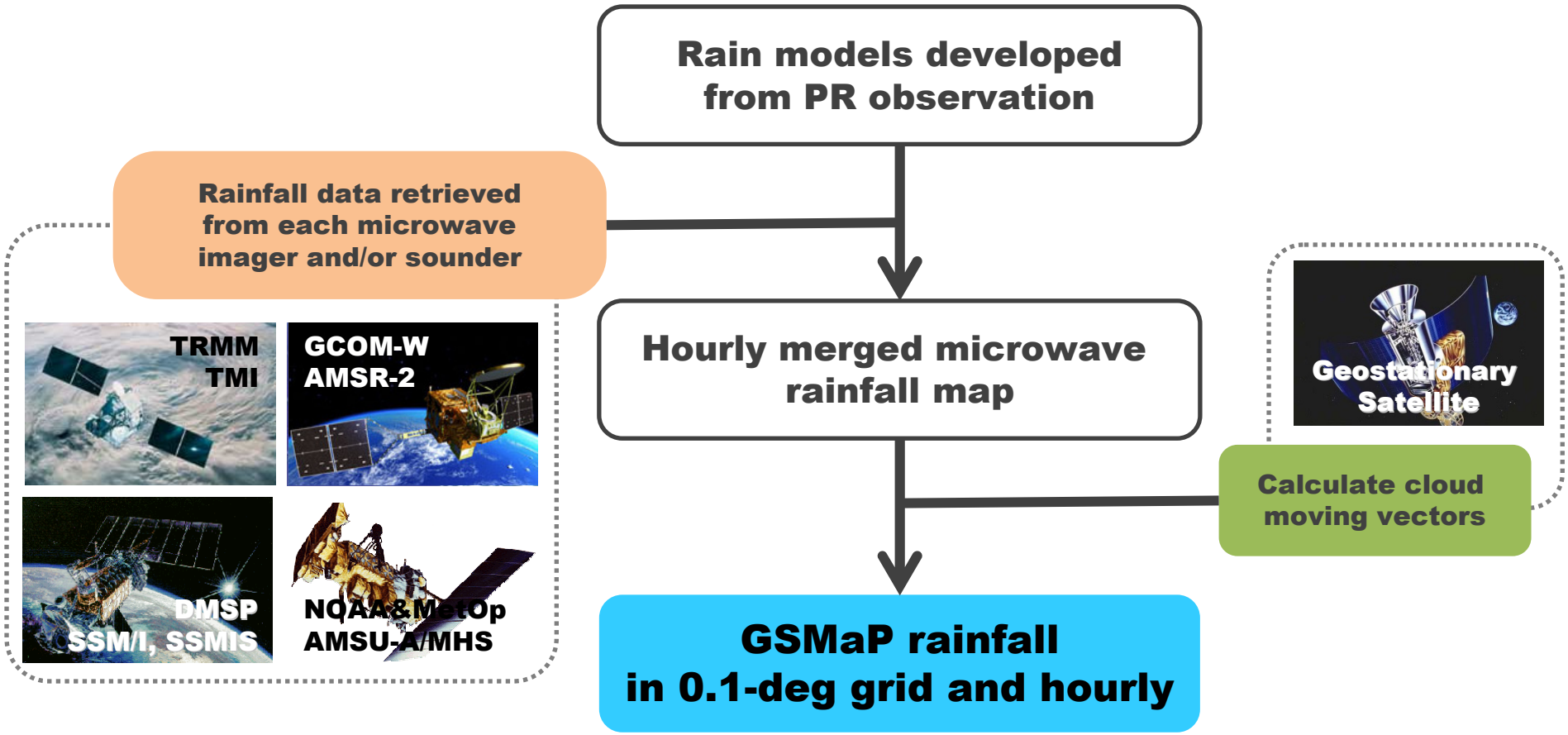
0.1-deg and hourly global rainfall product available 4-hour after observation via internet.

http://sharaku.eorc.jaxa.jp/GSMaP/



8 Production of "GSMaP" from Multi-satellite Data

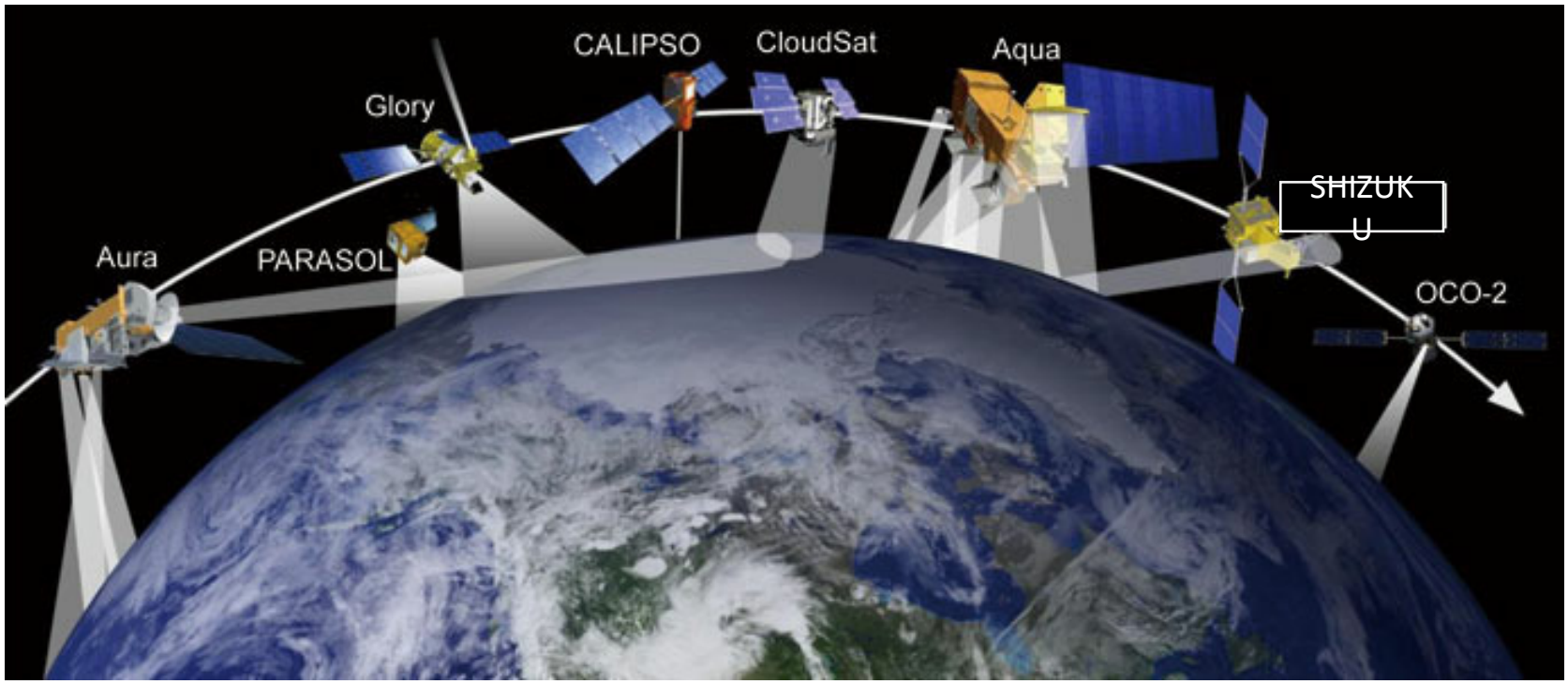
GSMaP: Global Satellite Mapping of Precipitation



9 International Cooperation

GCOM-W joins the A-Train,
with the goal of further expanding scientific research by using data from AMSR2.

A-Train is an Earth observation satellite constellation run by NASA, and allows near-simultaneous observations of a wide variety of parameters.

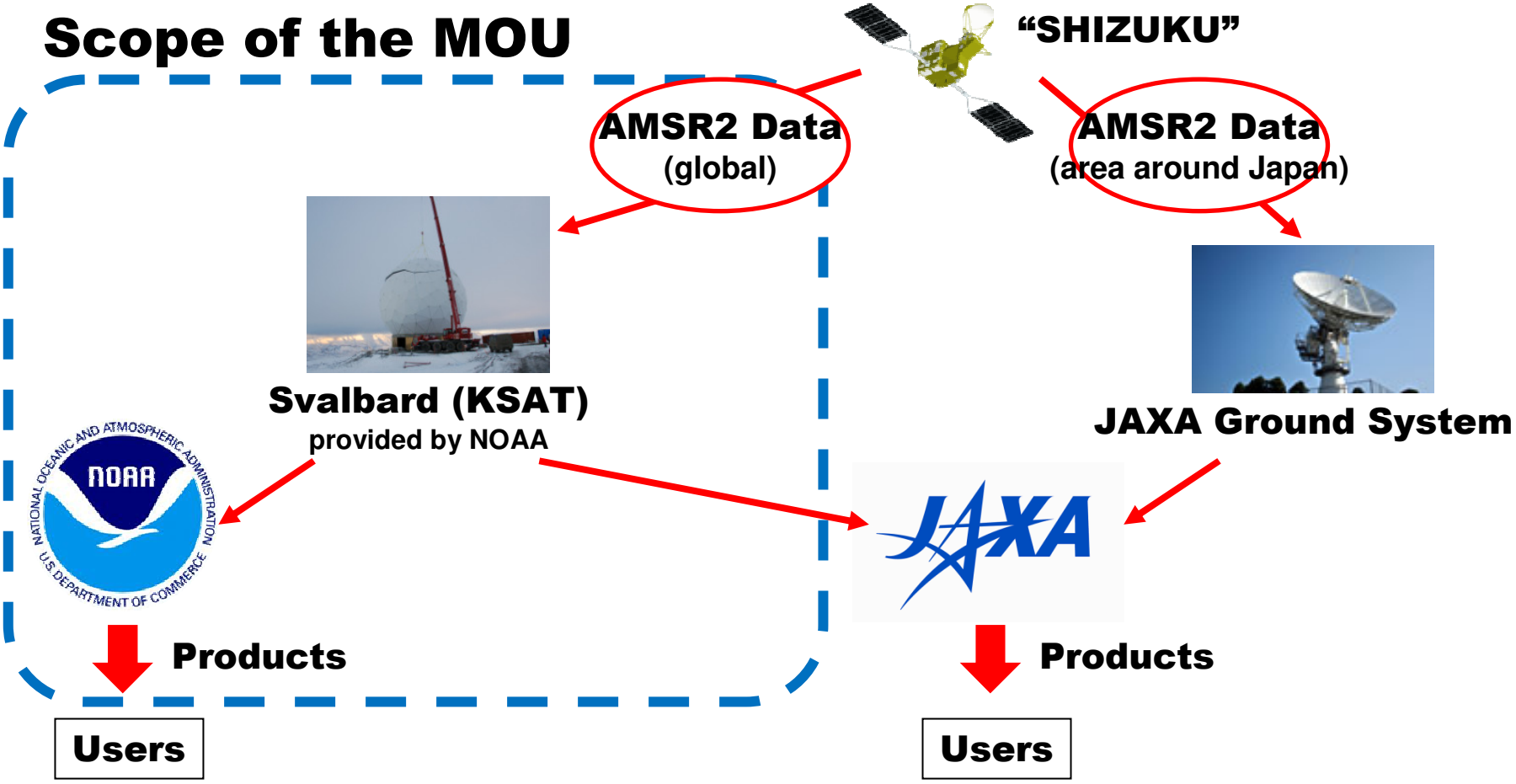


10 Cooperation between JAXA and NOAA

The MOU concerning SHIZUKU data was signed last year.

JAXA will downlink the SHIZUKU data to Svalbard for NOAA to transmit to NOAA and to JAXA.

NOAA will provide ground system to JAXA and transmit it from Norway's Svalbard Satellite Ground Station to JAXA and to NOAA, and use AMSR2 data.



Summary

”SHIZUKU” is expected to play an important role in monitoring global water circulation.
It is a kind of health checkup of the Earth from space.

International cooperation is an essential tool for observation of the Earth and its environment.
JAXA will contribute to participating in programs inside and outside the country.

Thank you for your kind attention.