



HimawariCast Newsletter

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Japan Meteorological Agency 

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Enhancing Cooperation in the Utilization of Meteorological Satellites between BoM and JMA

On 11 November 2024, Dr. Andrew Johnson (CEO and Director of Meteorology at the Australian Government's Bureau of Meteorology (BoM)) visited Mr. Mori Takashi (Director-General of the Japan Meteorological Agency (JMA)) toward the development of bilateral cooperation between the two organizations in the field of meteorological satellites and elsewhere. The visit produced a Memorandum of Cooperation (MoC), with a signing ceremony attended by Mr. Justin Hayhurst (Australian Ambassador to Japan), in advance of the introduction of JMA's next-generation geostationary meteorological satellite, Himawari-10, scheduled to enter operation in FY 2029. (Figure 1)

JMA has operated the Himawari series of geostationary meteorological satellite for around 50 years, distributing observation data to the international community and contributing to disaster risk reduction in the Asia-Oceania region. BoM has made use of these data since the Himawari series began. JMA has also operated a HimawariRequest service since 2018, allowing National Meteorological and Hydrological Services (NMHSs) to request Himawari-8/9 target area observation every 2.5 minutes as a way of supporting monitoring of typhoons, bushfires, volcanic ash and other phenomena. Using these data, BoM has coordinated the HimawariRequest in RA V since 2018 and makes a significant contribution to disaster risk reduction in the region.

The objectives of the MoC are to enhance close



Figure 1. MoC signing (left: Dr. Johnson, right: Mr. Mori)

cooperation in the utilization of geostationary meteorological satellites between both sides in order to further improve the quality and effectiveness of related services as follows:

- Both organizations will seek to strengthen cooperation in the use of Himawari data for optimal meteorological services in Australia and Japan, and for contribution to the protection of life and property in both countries and the Asia-Oceania region.
- Both organizations will collaborate on:
 - further use of Himawari observation data and functions;
 - enhancement of meteorological services involving the use of Himawari data, thereby contributing to disaster risk reduction and disaster response;
 - scientific and technological R&D and close communication; and
 - strengthening of the international community through multilateral cooperation in the Asia-Oceania region.
- Himawari-10 rapid-scan observation will be conducted for natural hazards, such as bushfires

and heavy rain in the Australia region, through the cooperation of both organizations.

Based on the MoC, BoM and JMA will further strengthen their cooperative relationship in the use of Himawari data and contribute to disaster risk reduction in Australia, Japan and the Asia-Oceania region.

(SUMIDA Yasuhiko)

The 14th Asia-Oceania Meteorological Satellite Users' Conference

The 14th Asia-Oceania Meteorological Satellite Users' Conference (AOMSUC-14), hosted by the India Meteorological Department (IMD), was held from 2 to 7 December 2024 in New Delhi, India. The event included a two-day training course, a three-day plenary/scientific session, and a one-day WMO regional II & V coordination meeting.

- 02-03 December 2024
Comprehensive Training event on Satellite Data and Product Utilization
- 04-06 December 2024
The AOMSUC-14 Plenary and Scientific Sessions
- 07 December 2024
Joint RA-II and RA-V coordination meeting (by invitation)

This event covered pertinent issues such as the utilization of satellite data in reception, processing, dissemination, product generation, weather analysis, nowcasting and forecasting, climate and environmental monitoring, numerical weather data assimilation, prediction, and disaster monitoring.

At the training event, JMA conducted both presentation-based and hands-on training. During the presentation session, case studies from the textbook



Figure 2. Photo session (courtesy of IMD)

Utilization of Meteorological Satellite Data in Cloud Analysis, which was published on the JMA website on March 2024, were featured (see the article on the next page). The interactive hands-on training featured selected functions and case studies with focus on the SATellite Animation and Interactive Diagnosis (SATAID) system toward immediate usefulness. These features were demonstrated as attendees operated SATAID themselves.

The plenary and scientific sessions covered the following:

1. The Space program and data access updates
2. Satellite Data in Support of Early Warning Systems
3. SmallSat/Cubesat for meteorology, climate, and environmental monitoring
4. Application for numerical weather prediction
5. Application for weather analysis and nowcasting
6. Application for land surface and sea surface derived from Satellite
7. Space Weather
8. Performance and calibration of satellite instruments
9. Use of AI/ML in weather forecasting
10. Geoinformatics



Figure 3. Training event



Figure 4. Plenary and scientific session

JMA gave three presentations on the Status of Himawari-8/9 and their Follow-on Satellite Himawari-10, Radiometric Performance of Himawari-8/-9 AHI VNIR Bands, and Evaluation of Straylight in the 3.9 μm band for Himawari-8/-9.

The joint RA-II and RA-V coordination meeting was very helpful in determining satellite data users' requirements and the related training needs of the members, and in providing guidance to satellite operators in their data provision plans.

Since 2010, AOMSUC has been a premier annual event for the meteorological and broad earth sciences community across Asia Oceania, where satellite operators, users, scientists and students from across the world come to share their findings and plans for the use of meteorological satellite data.

For details, see:

<https://nmisc.imd.gov.in/aomsuc/index.html>

(SHIMIZU Akihiro)

Publication of *Utilization of Meteorological Satellite Data in Cloud Analysis*

The Meteorological Satellite Center of the Japan Meteorological Agency (JMA/MSC) published *Utilization of Meteorological Satellite Data in Cloud Analysis* on its website (https://www.data.jma.go.jp/mseweb/en/product/library_book.html) in June 2024.

Since the start of Geostationary Meteorological Satellite (GMS) operation in 1978, JMA/MSC has developed cloud analysis techniques involving the use of satellite imagery to contribute to usage in weather forecasting. The related analysis technology began with cloud type identification using visible and infrared imagery, and has been constantly enhanced with the addition of multi-spectral bands such as water vapor and split-window bands. These analysis techniques have been summarized in publications and technical reports, including *Utilization of Meteorological Satellite Data in Cloud Analysis*

(First Edition in Japanese) published in 2000. However, these are exclusively in Japanese; this is the first time an English version has been published.

Himawari-8 became operational in July 2015, and its operational role was switched to Himawari-9 in December 2022. Both satellites are equipped with the Advanced Himawari Imager (AHI), a visible and infrared radiometer with significantly enhanced capabilities. The AHI is capable of multi-spectral band observation in the visible and infrared fields for a total of 16 observation bands. This revised edition of *Utilization of Meteorological Satellite Data in Cloud Analysis* outlines the characteristics of each observation band as necessary for AHI imagery utilization.

This publication uniquely covers the characteristics and use of the 16-band AHI imagery data. It also details the characteristics and use of different types of imagery and other matters. Special emphasis is placed on RGB imagery, which is promising for the efficient use of multi-band data. The content is intended to enhance awareness of RGB imagery (https://www.jma.go.jp/jma/jma-eng/satelite/VLab/RGB_QG.html) and the SATAID viewer (<https://www.wis-jma.go.jp/cms/sataid/>) provided by the Japan Meteorological Agency.

(SASAKI Masayuki)

Feedback

JMA welcomes feedback from users on HimawariCast data usage, and particularly invites articles to be posted in this newsletter. Such input will help other users consider new ideas for their services.

The Agency also invites questions on HimawariCast services. These may relate to the functions of the SATAID program, interpretation/analysis of multi-band imagery or other areas of interest. Feel free to send queries to be answered in the newsletter.

All articles and questions are welcomed. Your contributions are greatly appreciated.

Comments and Inquiries

Comments and inquiries on this newsletter and/or the HimawariCast Web Page are welcomed.

Back numbers of HimawariCast Newsletters:

https://www.data.jma.go.jp/mscweb/en/himawari89/himawari_cast/himawari_cast.php

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