International Civil Aviation Organization

FIFTH MEETING OF THE ASIA/PACIFIC METEOROLOGICAL HAZARDS TASK FORCE (MET/H TF/5)

Seoul, Republic of Korea, 18 – 20 March 2015

Agenda Item 7: Any other business

UP-TO-DATE INFORMATION ON HIMAWARI-8 AND ITS OPERATIONAL USE FOR MONITORING OF AVIATION METEOROLOGICAL HAZARDS

(Presented by Japan)

SUMMARY

This paper presents the up-to-date information on JMA's Himawari-8 next-generation geostationary meteorological satellite, which was successfully launched on 7 October 2014. Himawari-8 will be also helpful for monitoring of aviation meteorological hazards and subsequent issuance of more useful information on those.

1. INTRODUCTION

1.1 The next-generation geostationary meteorological satellite of the Japan Meteorological Agency (JMA), Himawari-8, was successfully launched using H-IIA Launch Vehicle No. 25 on 7 October 2014 from the Tanegashima Space Center in Kagoshima, Japan.

1.2 In the course of the in-orbit testing of Himawari-8, the first images from all 16 bands were captured by the satellite on 18 December 2014 (see Figure.1). JMA released each band image as well as a true-color composite image created from 3 visible bands corresponding to red, green and blue on the following website.

http://www.jma.go.jp/jma/jma-eng/satellite/news/himawari89/20141218_himawari8_first_images.html

1.3 JMA will continue with the commissioning of Himawari-8 and its related ground facilities toward the start of its operation in the middle of 2015 to replace the current MTSAT-2 satellite. Himawari-8, together with its backup and successor satellite Himawari-9, will observe the East Asia and Western Pacific regions for a period of 15 years.

1.4 JMA provides 2 types of method to distribute the multi-band, high-frequency and high-resolution data of Himawari-8. One is the HimawariCast service which disseminates a primary set of imagery for operational meteorological services via a communication satellite, and the other the HimawariCloud service which delivers a full set of imagery to the National Meteorological and Hydrological Services (NMHSs) via an Internet cloud service.

1.5 The HimawariCast service started disseminating the current MTSAT-2 imagery with 5 bands and 30/60-minute intervals on 29 January. After Himawari-8 becomes operational, Himawari-8 imagery will be disseminated via the service with 14 out of 16 bands and 10-minute intervals. The up-to-date information including the specification of receiving equipment can be seen on the following website.

http://www.data.jma.go.jp/mscweb/en/himawari89/himawari_cast/himawari_cast.html

1.6 JMA plans to start operation of the HimawariCloud service in March 2015 with distribution of Himawari-8 in-orbit-test imagery. JMA will give accounts for accessing the HimawariCloud service to the registered NMHSs in due course. The following website provides the information such as the registration form and how to download the data.

http://www.data.jma.go.jp/mscweb/en/himawari89/cloud_service/cloud_service.html

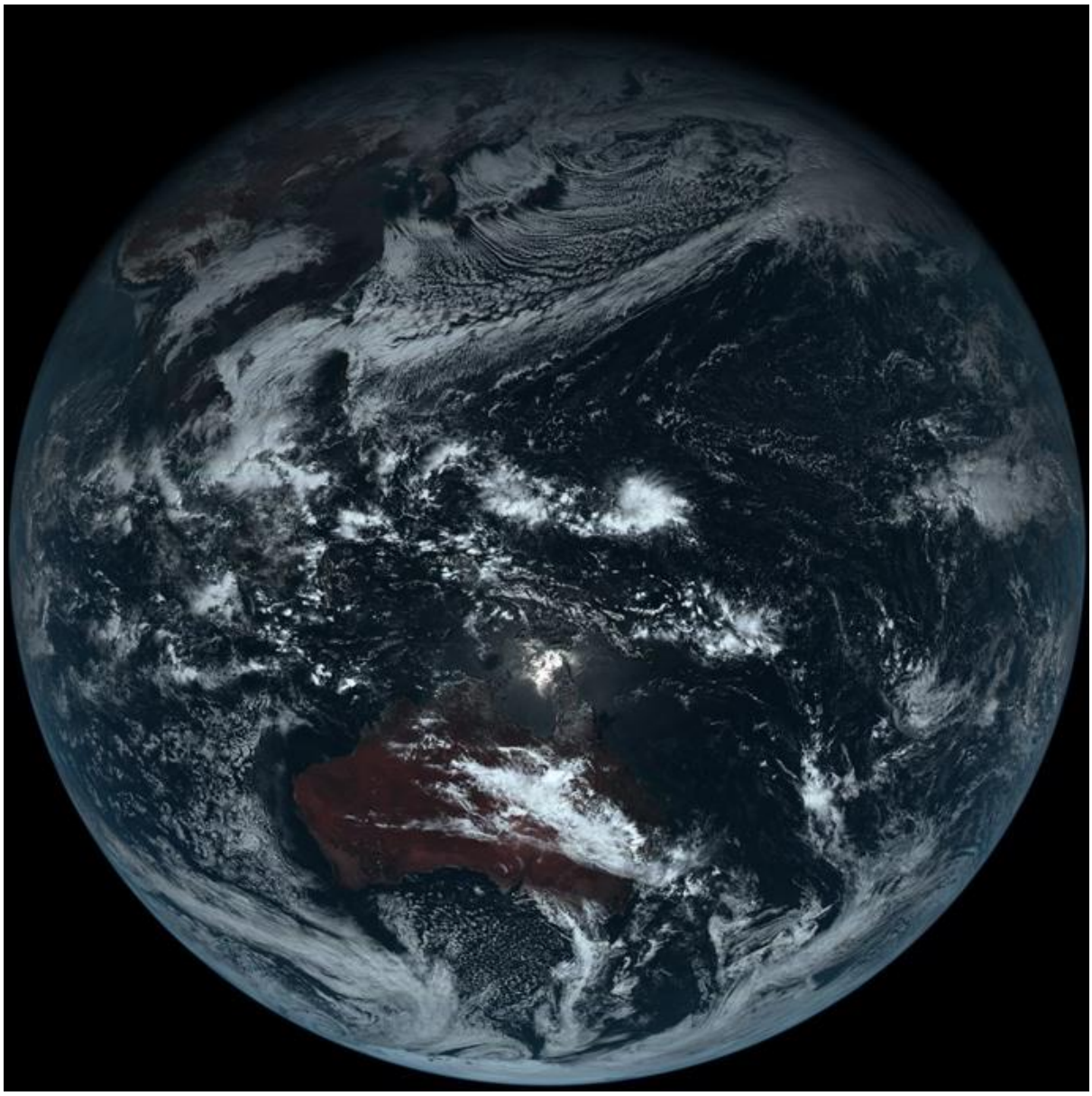

Figure.1 The first true-color composite image of Himawari-8 (02:40 UTC, 18 December 2014)

2. OPERATIONAL USE FOR MONITORING OF AVIATION METEOROLOGICAL HAZARDS

2.1 One of the operations conducted in JMA with satellite imagery is that of the Volcanic Ash Advisory Centre in Tokyo (VAAC Tokyo), which monitors volcanic eruptions and provides information on the locations and movement of volcanic ash clouds as well as an outlook for their area of responsibility. The higher spatial resolution of Himawari-8 will be beneficial for VAAC Tokyo to identify volcanic ash more easily and the rapid scanning will enable quicker detection of eruptions, which will lead more timely information issuance. In addition, SO_2 can be detected using split images between the new bands around 7 or 8 μm and 10 μm, that will be useful to grasp the current volcanic activities and make volcanic ash detection easier by combining the fact of SO_2 existence and so on.

2.2 JMA also provides regional advisory services as the Tropical Cyclone Advisory Center (TCAC) Tokyo. Higher resolution and more rapid scanning frequency of the Himarwari-8 will enable TCAC Tokyo to monitor tropical cyclones more precisely. It is expected that the TCAC Tokyo will be able to issue more accurate and appropriate information.

2.3 In JMA, Satellite imageries, such as VIS, IR, and WV, are operationally used in aeronautical meteorological services for monitoring weather conditions like CBs, Turbulence, and Jet streams precisely. Especially it will be able to monitor local growth and decay of CBs with obtaining higher resolution imagery with shorter frequency from the Himawari-8, which will help forecasters to issue more accurate aeronautical meteorological information like TS SIGMET in a timely manner. Furthermore, from the Asia/PAC regional perspective, for the States within the observation area, more precisely monitoring of the CBs will be very helpful to improve their skills in issuance of SIGMETs.

3. ACTION BY THE MEETING

3.1 The meeting is invited to note the information contained in this paper.

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