

IAF SPACE SYSTEMS SYMPOSIUM (D1)

Lessons Learned in Space Systems: Achievements, Challenges, Best Practices, Standards. (5)

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THE ACHIEVEMENTS THROUGH 1-YEAR GCOM-C OPERATION AFTER THE LAUNCH

Abstract

GCOM-C (Global Change Observation Mission -Climate) is the earth observation satellite led by JAXA (Japan Aerospace Exploration Agency). It was launched on December 23, 2017, successfully. This mission aims at improving in numerical climate models by conducting a long-term global observation in order to understand the radiation balance and carbon cycle. GCOM-C is called “SHIKISAI” which means colorful in Japanese. As this nickname indicates, GCOM-C observation is being carried out with the 19 bands optical imager called SGLI (Second-generation Global Imager). SGLI consists of two radiometer units VNR (Visible and Near Infrared Radiometer) and IRS (Infrared Scanning Radiometer). VNR is comprised of NP (Non Polarized light observation sensor : 380 - 868.5 nm, 11 channels) and PL (Polarized light observation sensor : 673.5 nm and 868.5 nm, 2 channels). IRS is comprised of SWI (Short Wavelength Infrared : 1.05 - 2.21 μm , 4 channels) and TIR (Thermal Infrared : 10.8 μm and 12 μm , 2 channels). These sensors perform the observation with wide swath (1150 - 1400 km) and relatively high spatial resolution (250 - 1000 m). It takes at most 3 days to complete the global observation. GCOM-C continues the observation from January 1, 2018. Observation data are received by ground stations at every 100 minutes on each pass. Downlinked 100-GByte data per day are send to Tsukuba Space Center of JAXA and processed. Approximately 1-TByte products of radiance and 28 geophysical parameters regarding 4 area of atmosphere, land, ocean, and cryosphere are created per day. All products have been released to the public since December 20, 2018. We are planning twice updates to improve our products accuracy during 5-years mission period. In this article, we will present GCOM-C status, our achievement, and best practices through GCOM-C operation after the launch. And we will also introduce GCOM-C/SGLI products.