

GCOM-C 科学ミッションの準備状況 Preparation status of GCOM-C science mission

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Global Change Observation Mission for Climate (GCOM-C) which carries Second-generation Global Imager (SGLI) is planned to be launched in Japanese Fiscal Year (JFY) 2016 (from April 2016 to March 2017). SGLI has middle spatial resolution (250 m to 1000 m), wide swath (1150 km to 1400 km), 19 bands from near-UV (380 nm) to thermal infrared (12 μm) wavelengths, and two-channel (red and near infrared) slant view polarization observations. It consists of two components, Visible and Near-infrared Radiometer (VNR) which scans 1150 km by push-broom telescopes, and Infrared Scanner (IRS) which scans 1400-km swath by rotating 45-degree mirror. The VNR consists of two sub-components, VNR-non polarized (11 bands) and VNR-polarized (2 bands) telescopes. The polarization telescopes can tilt along track directions from +45 to -45°. The 250-m resolution will provide enhanced observation capability over land and coastal areas influenced remarkably by the human activities. The polarization and multidirectional observations will enable us to retrieve aerosol information over land. After the design phase (until 2012), JAXA GCOM-C1 project is starting the satellite and sensor manufacturing, characterization, and development of the calibration and correction algorithms.

SGLI will provide many standard products, 9 land-area products, 8 atmosphere products, 7 ocean products, and 4 cryosphere products which aim to contribute to environment monitoring and climate researches. In addition to the standard products, research products, such as net primary production, land cover, radiation flux, red tide and so on, have been identified. All of the standard products will be open to public freely one-year after the launch by JAXA standard data portal, G-portal. There are special near-real time data flows from the Svalbard receiving station and direct downlink capability. Our science team is constructing and refining the validation plan (instruments, measurements, data analysis flow, group coordination and so on) until the launch to achieve accuracy targets which are requested by the GCOM user committee.

Data product development has been conducted by JAXA and GCOM-C Principal Investigators (PIs). The PI team has been organized in summer 2009 as the first research period (Sep. 2009 - Mar. 2013), and followed by the second research period (Apr. 2013 - Mar. 2016). In the current second research period, we are intensively conducting development of the standard algorithm (operational processing codes) and validation preparation for the first version of the standard products which will be evaluated and released until one year after the satellite launch. The next collaboration research (Apr. 2016 - Mar. 2019) will be announced in the autumn 2015, and we will concentrate our effort on the preparation of the launch version algorithms, post-launch calibration and validation, and application of the GCOM-C products.

キーワード: GCOM, GCOM-C, SGLI, リモートセンシング

Keywords: GCOM, GCOM-C, SGLI, remote sensing