

2018-2019 observations by Global Change Observation Mission- Climate (GCOM-C)

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Abstract: About 1.5 years observations of Global Change Observation Mission-Climate (GCOM-C) called “SHIKISAI” are introduced. JAXA polar-orbit satellite, GCOM-C, which carries Second-generation Global Imager (SGLI), has been launched on 23 Dec. 2017, and is being operated in orbit in 2018-2019. The key characteristics of the SGLI are (1) 250-m spatial resolution with 1150 km or 1400 km swath, and (2) nineteen bands in 0.38-12 μm including two polarimetry bands (observing the Stokes vectors [I, Q, U] at 672 nm and 866 nm) with +/- 45 degree along-track tilt angles. The SGLI 250-m bands have captured seasonal and the two-year changes of the vegetation, ocean colour, solar irradiance, snow cover, land-surface temperature and coastal sea-surface temperature with the 250-m resolution. Especially, unique functions of SGLI, the polarimetry revealed the fine-mode aerosol distribution around wild fires (e.g., California in 2018, Alaska in 2019, and Siberia and Africa in the both years) and Asian city areas (e.g., North India, Southeast Asia, and East China). Difference of the 250-m land-surface temperature between the day-time and night-time may give us information about the heat budget in the various land covers including extreme day-night difference in city and crop areas. The GCOM-C standard products have been evaluated and open to public freely through JAXA data portal “G-portal” since Dec. 2018. The current first version (Ver. 1) re-processing will be completed in the summer 2019, and the next version-up (Ver. 2) is planned in the middle of 2020. The accumulating GCOM-C data products are expected to be used in the wide areas of the earth environment monitoring and researches.

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