

FTS-2 L1 product sensitivity variation

Target products: All L1 FTS-2 products
Target period: Entire orbital period

Based on the instrument function calibration for one continuous orbit obtained in Oct. 2021, it was confirmed that the ILS *1 intensity temporary decreased over Antarctica during night period. The location where this anomaly occur overlaps with the location where the SCAL is performed. The intensity decrease is smaller in Band 2 than in Band 1, suggesting a wavelength-dependence. The sensitivity change is affected on during SCAL period, but less affected on during Earth observation period.

- Root cause estimation of ILS intensity decrease

It is assumed that this anomaly is related to the direct exposure of the scanner box (SSA *2) to sunlight only during the SCAL *3 period. Therefore, this anomaly does not occur except during SCAL period and immediately after SCAL period.

- Effects on Earth Observations

SWIR: There is a small impact during the dayside observation period, so the effect is negligibly small on SWIR radiance.
TIR: The effect has a strong wavelength dependence in shorter wavelengths, so it is assumed that the effect is negligibly small on TIR radiance.
->No version-up is required for this anomaly.

*1 ILS: Instrument Laser Shape *2 SSA: Scene Selection Assembly *3 SCAL: Solar CALibration

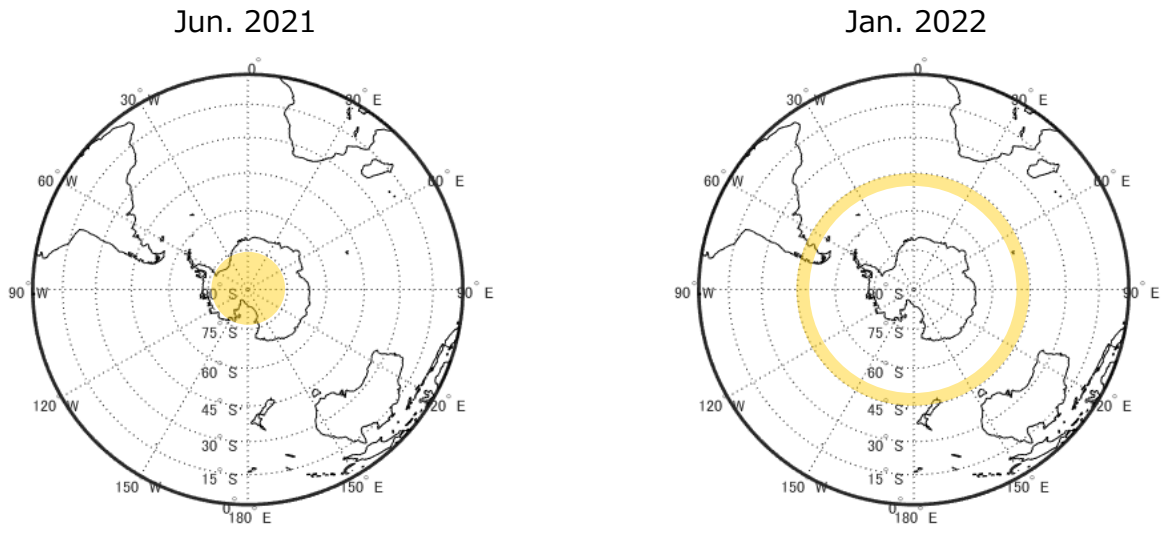


fig. SCAL operation area.
(Yellow area shows solar η angle of 14°~19° with seasonal changes.)