

RMIB First Results

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Overview

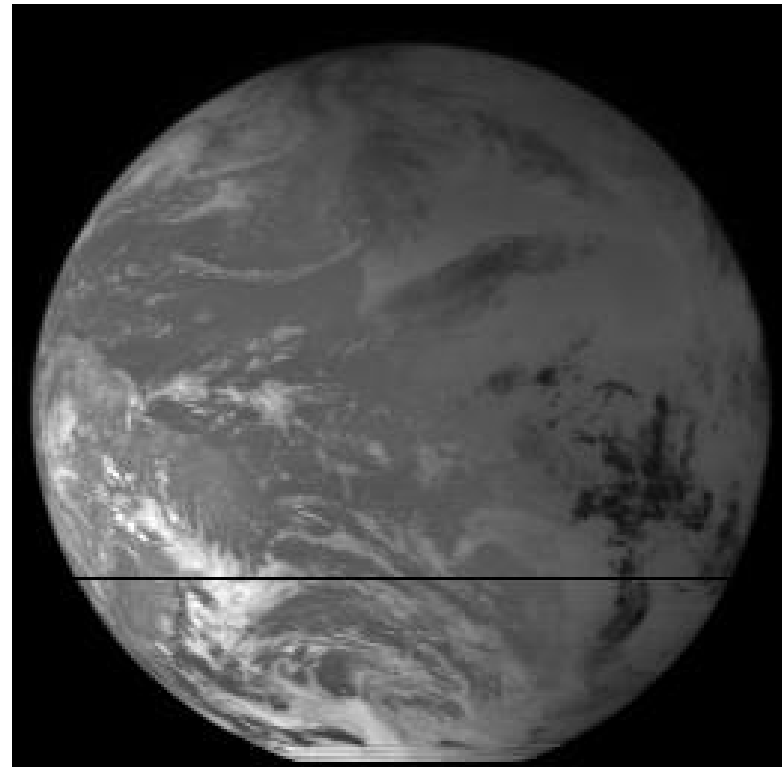
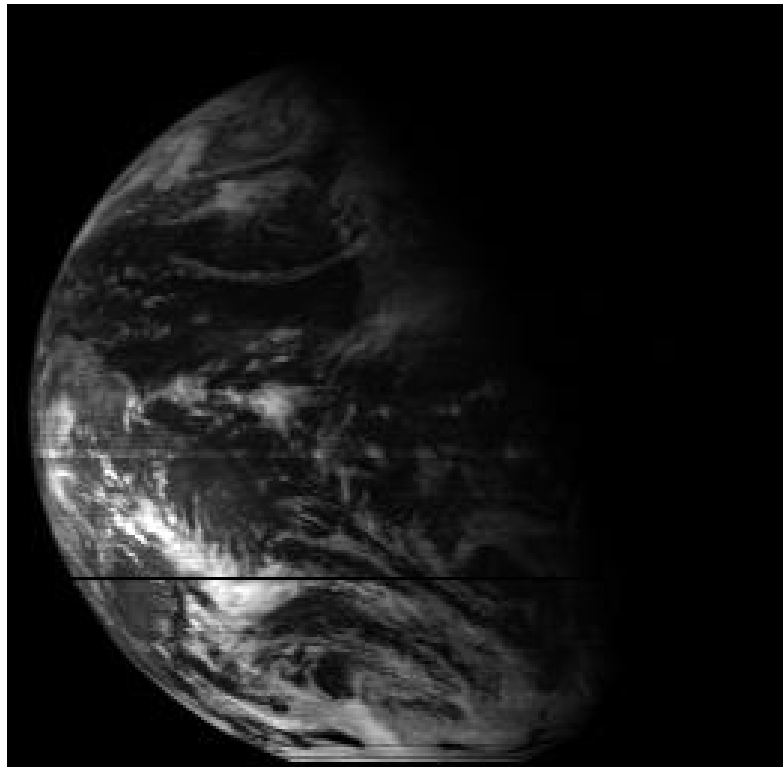
First images processed at RMIB

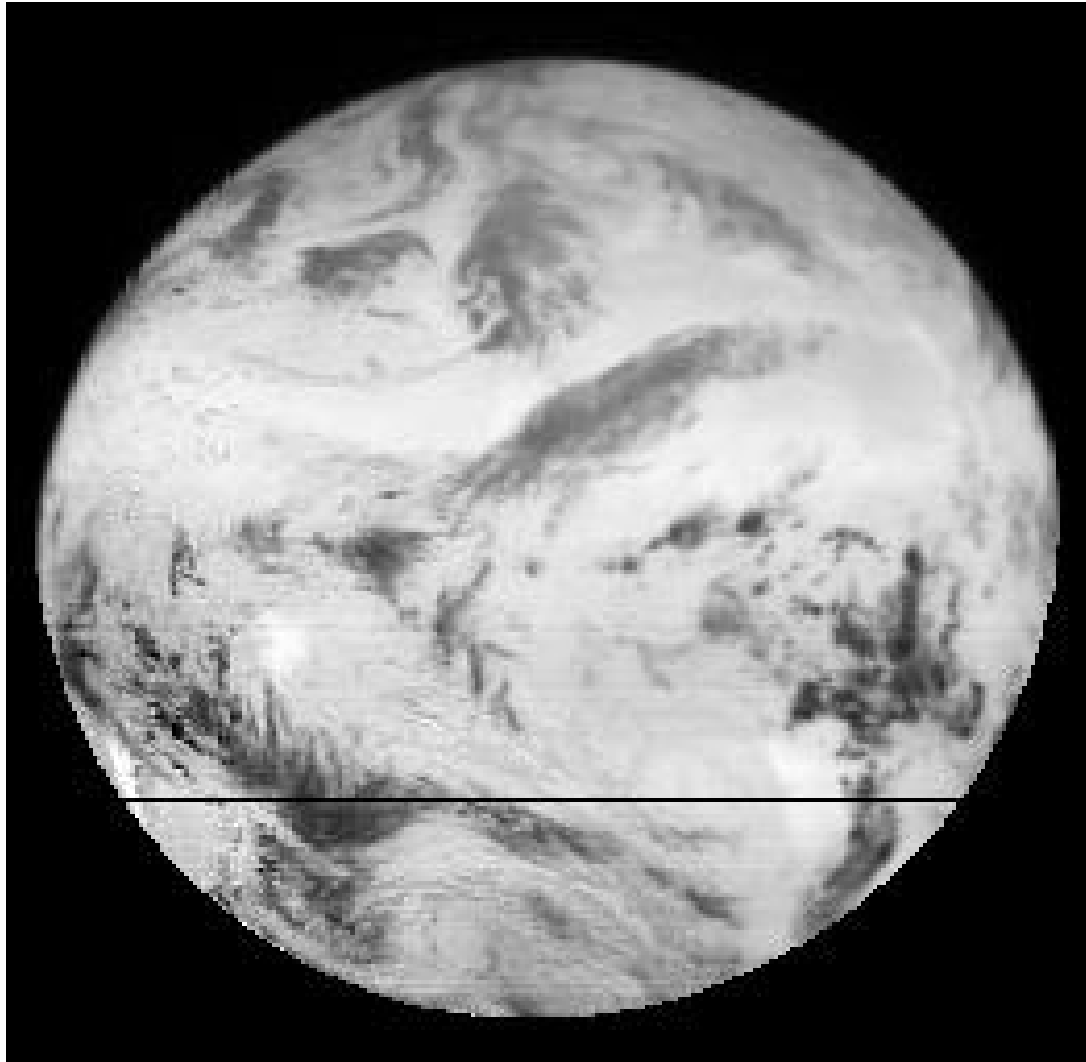
Contents of current ARG product

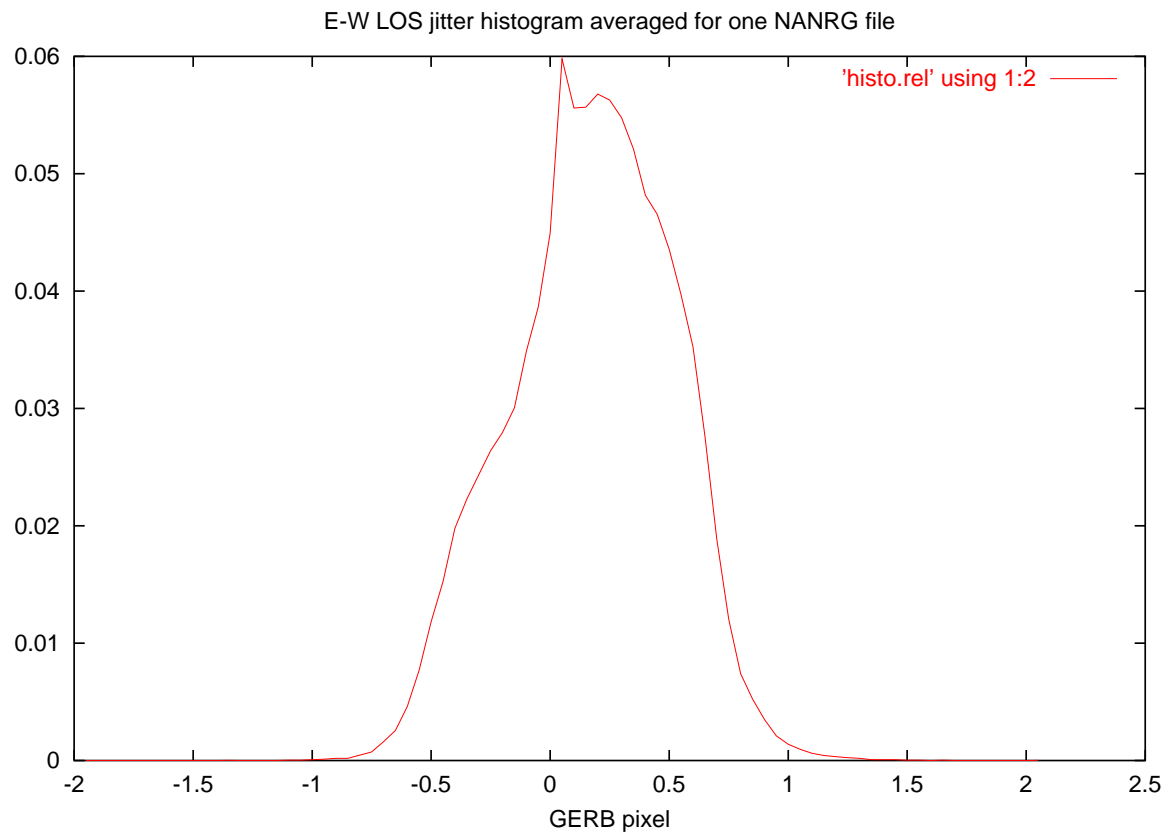
Comparison with METEOSAT

Conclusions

First Images Processing of first images at RMIB, input:







Example current ARG product

G2_MS7A_L20_TH_ARG_20030116_120000_V000.rof: image at noon

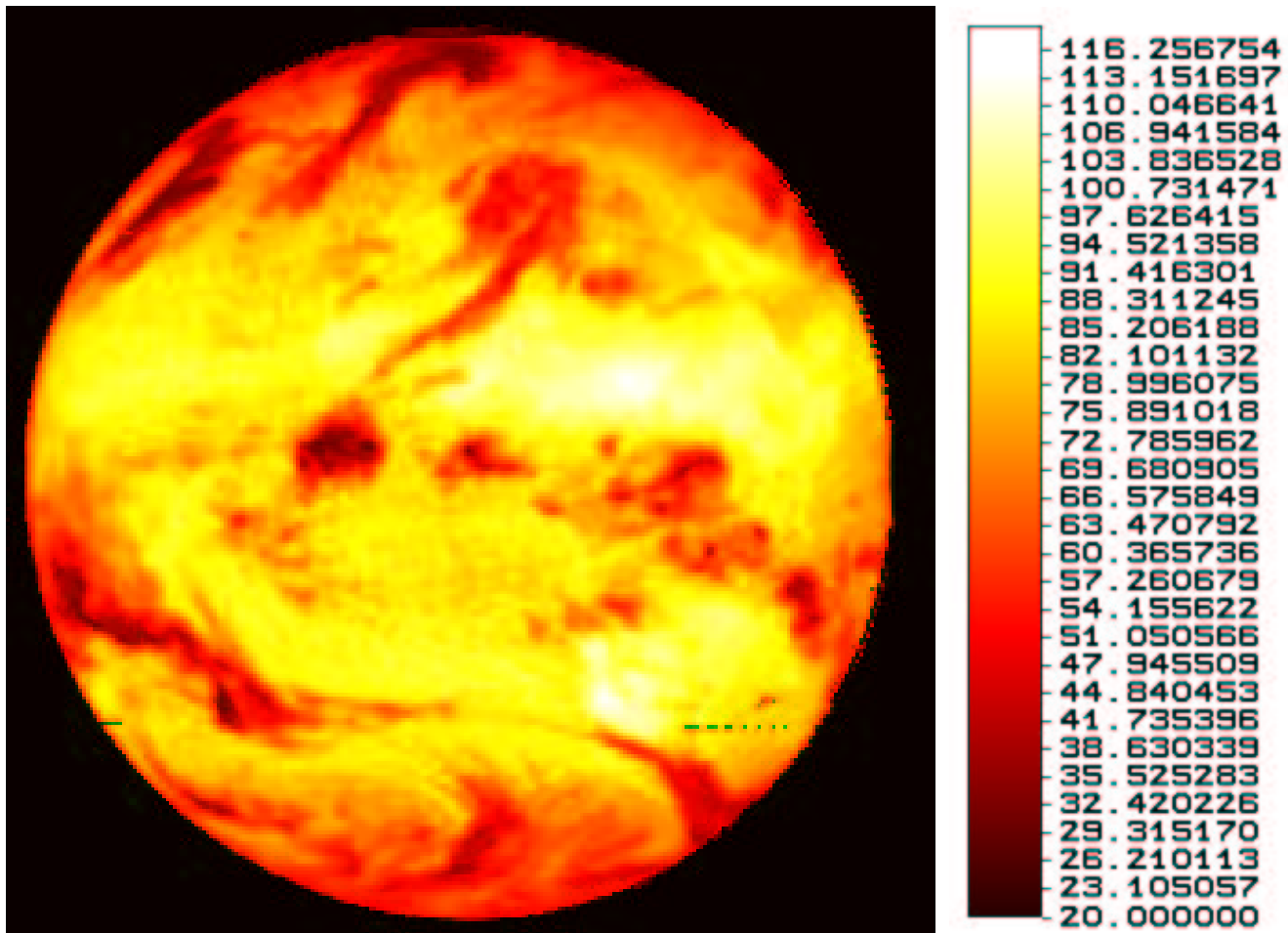
ARG: Averaged Rectified Geolocated: average 3 consecutive GERB scans, rectified to nominal (0 degree) GERB grid

geolocation: MSG satellite parameters are fitted to obtain best match GERB/METEOSAT 7, error < GERB pixel

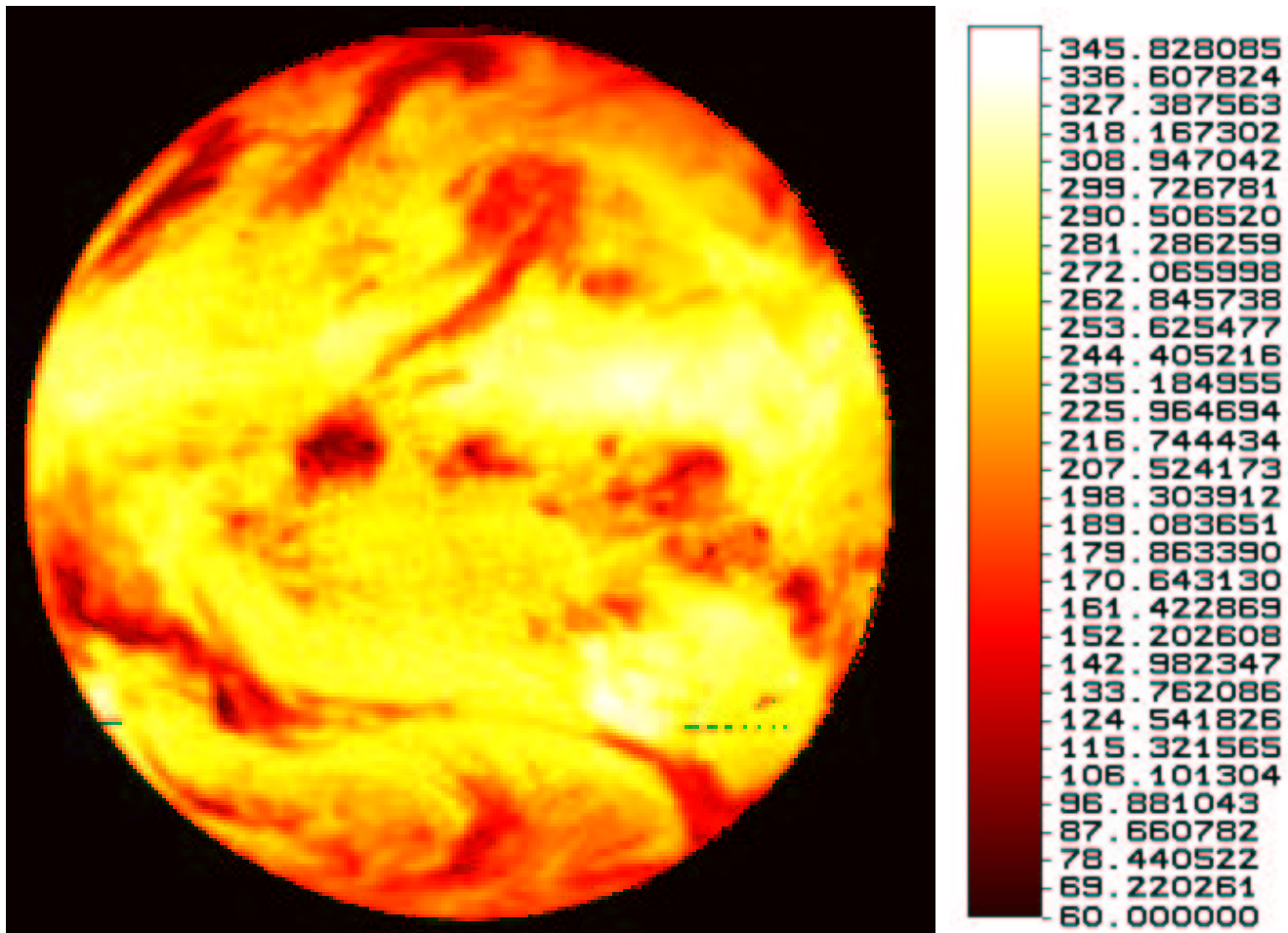
thermal radiance, thermal flux, solar radiance, solar flux: mainly GERB derived

cloud cover, cloud amount, cloud phase: METEOSAT derived, auxiliary products for solar ADM selection

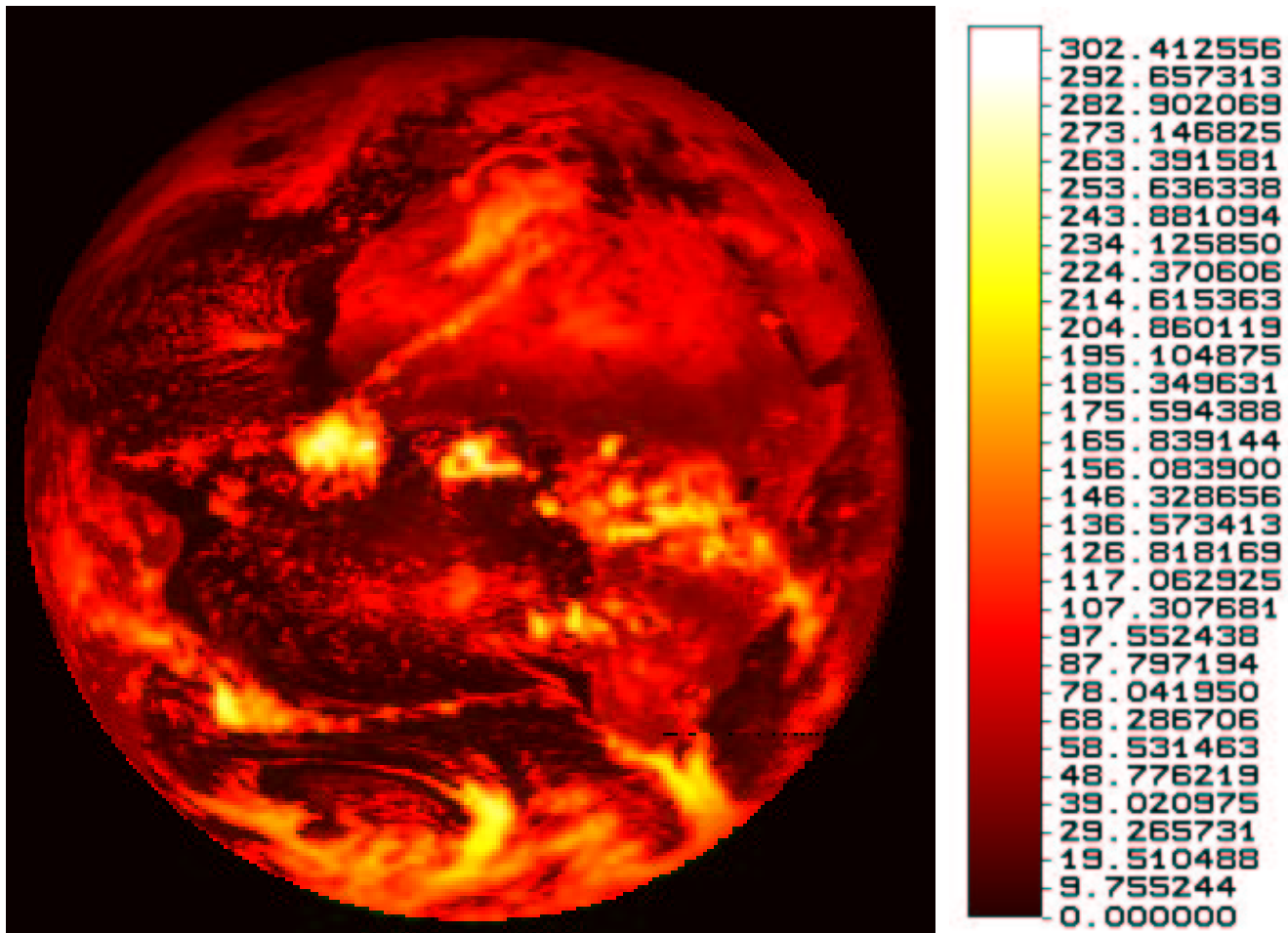
Thermal Radiance [$W m^{-2} sr^{-1}$]



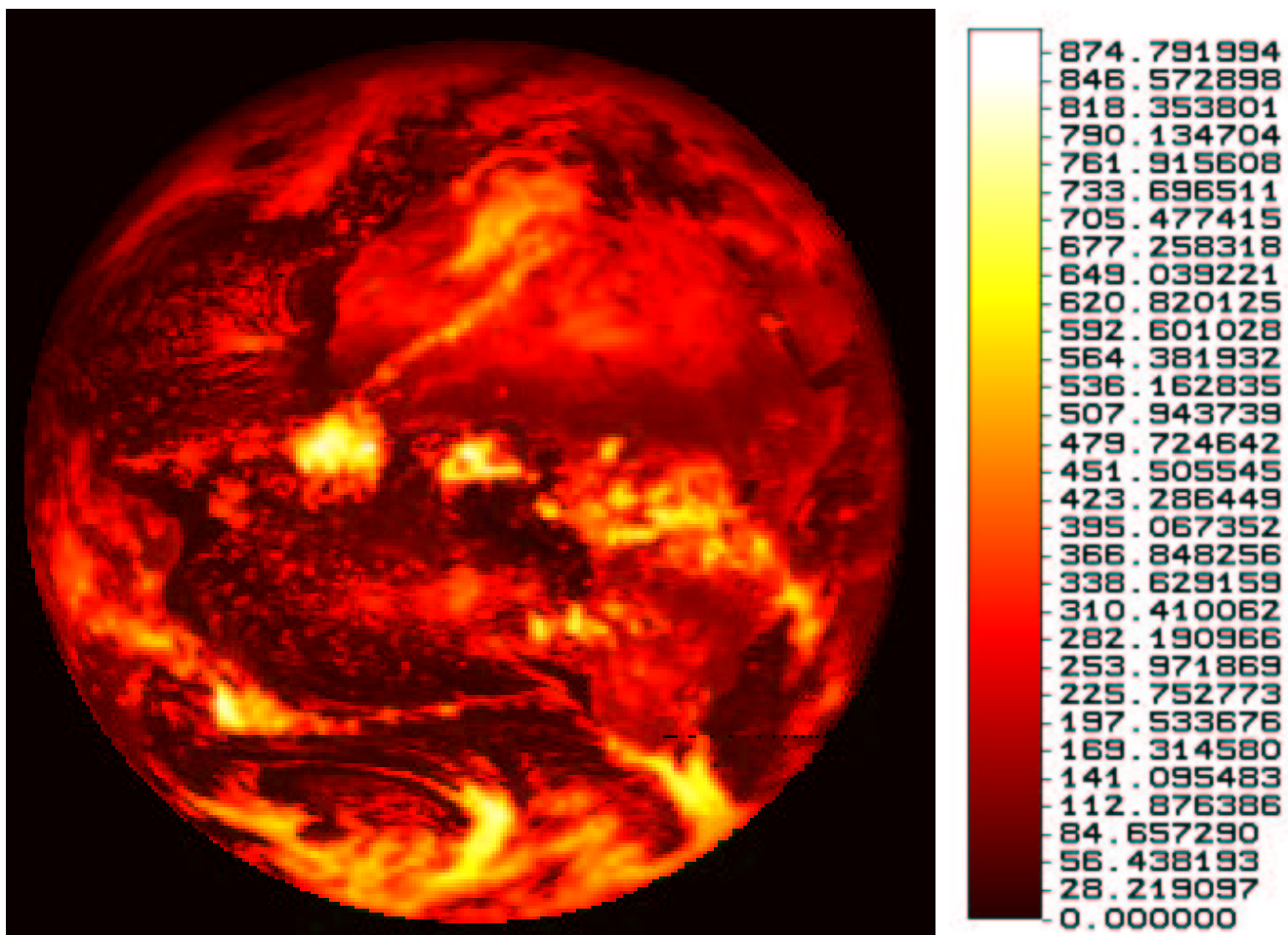
Thermal Flux [$W m^{-2}$]



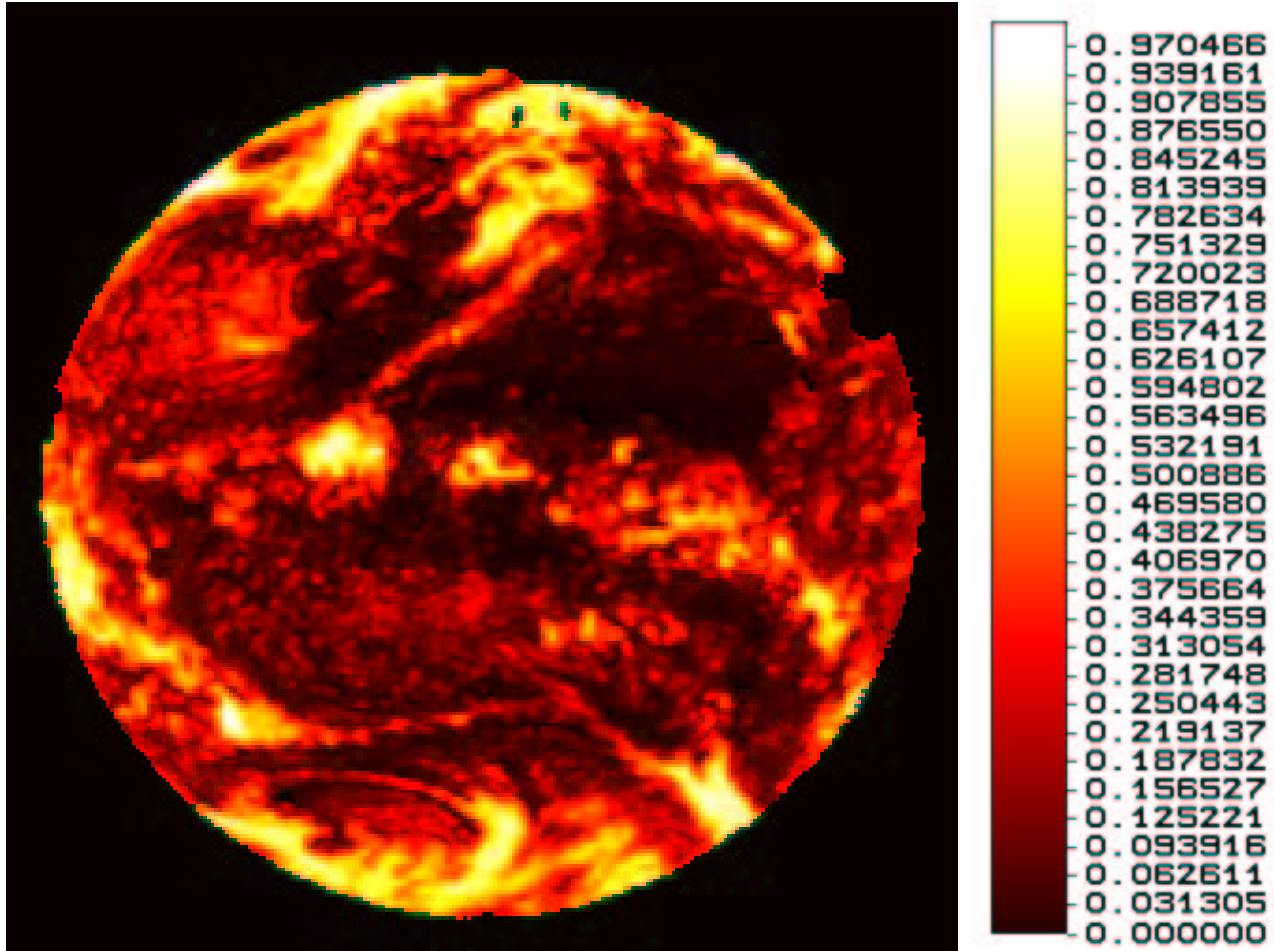
Solar Radiance [$W m^{-2} sr^{-1}$]



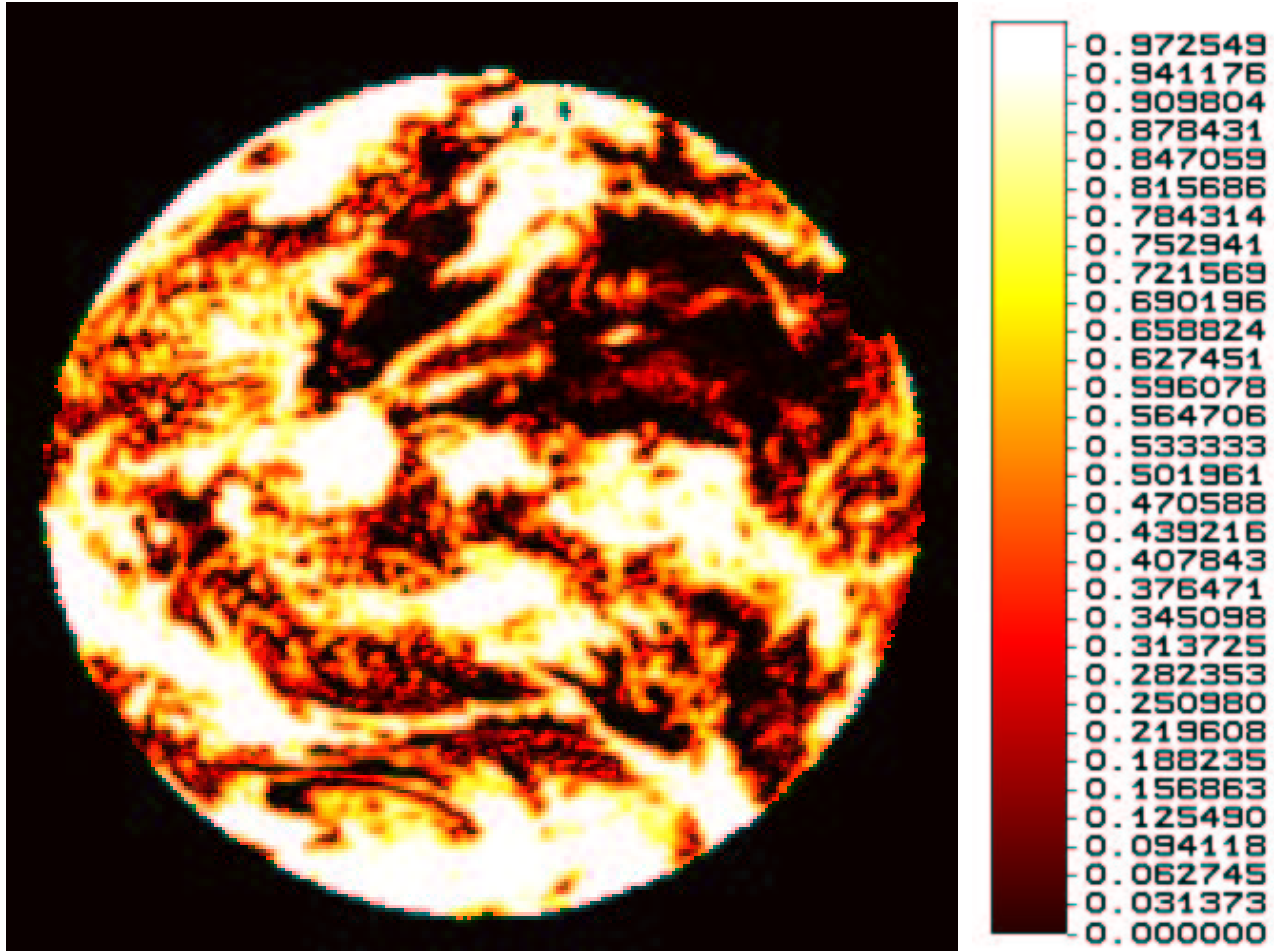
Solar Flux [$W m^{-2}$]



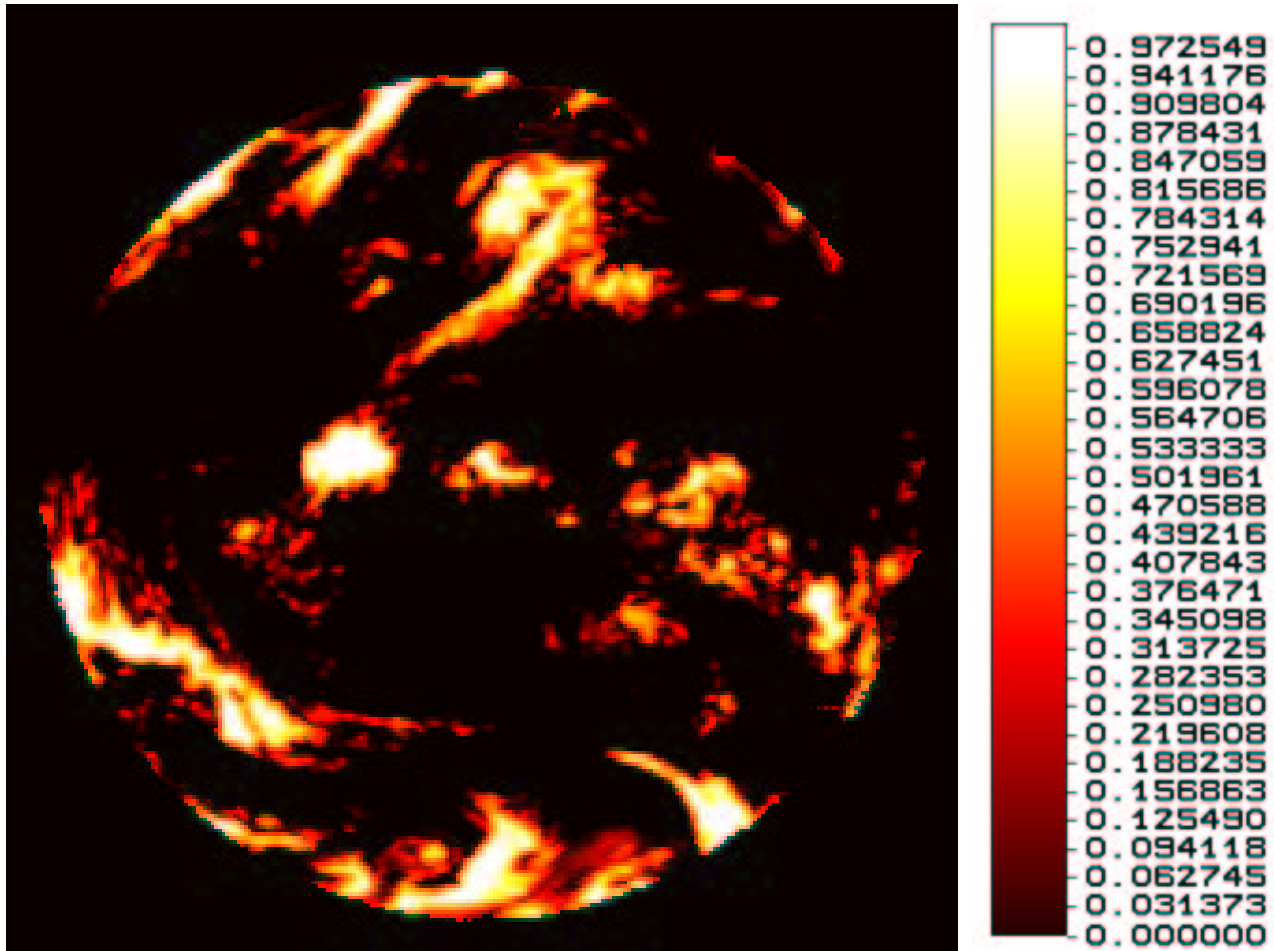
Cloud Amount [0-1]



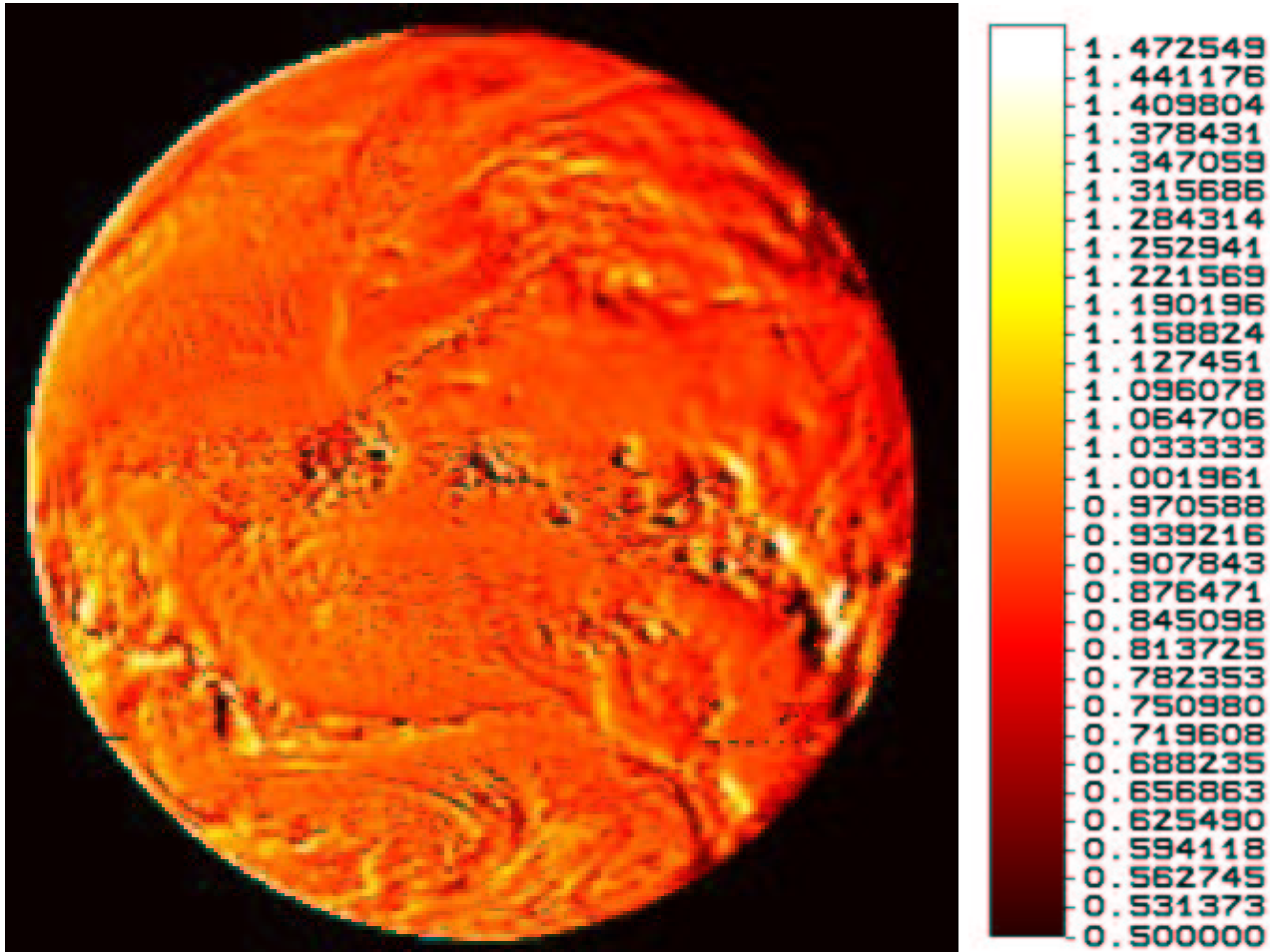
Cloud Cover [0-1]



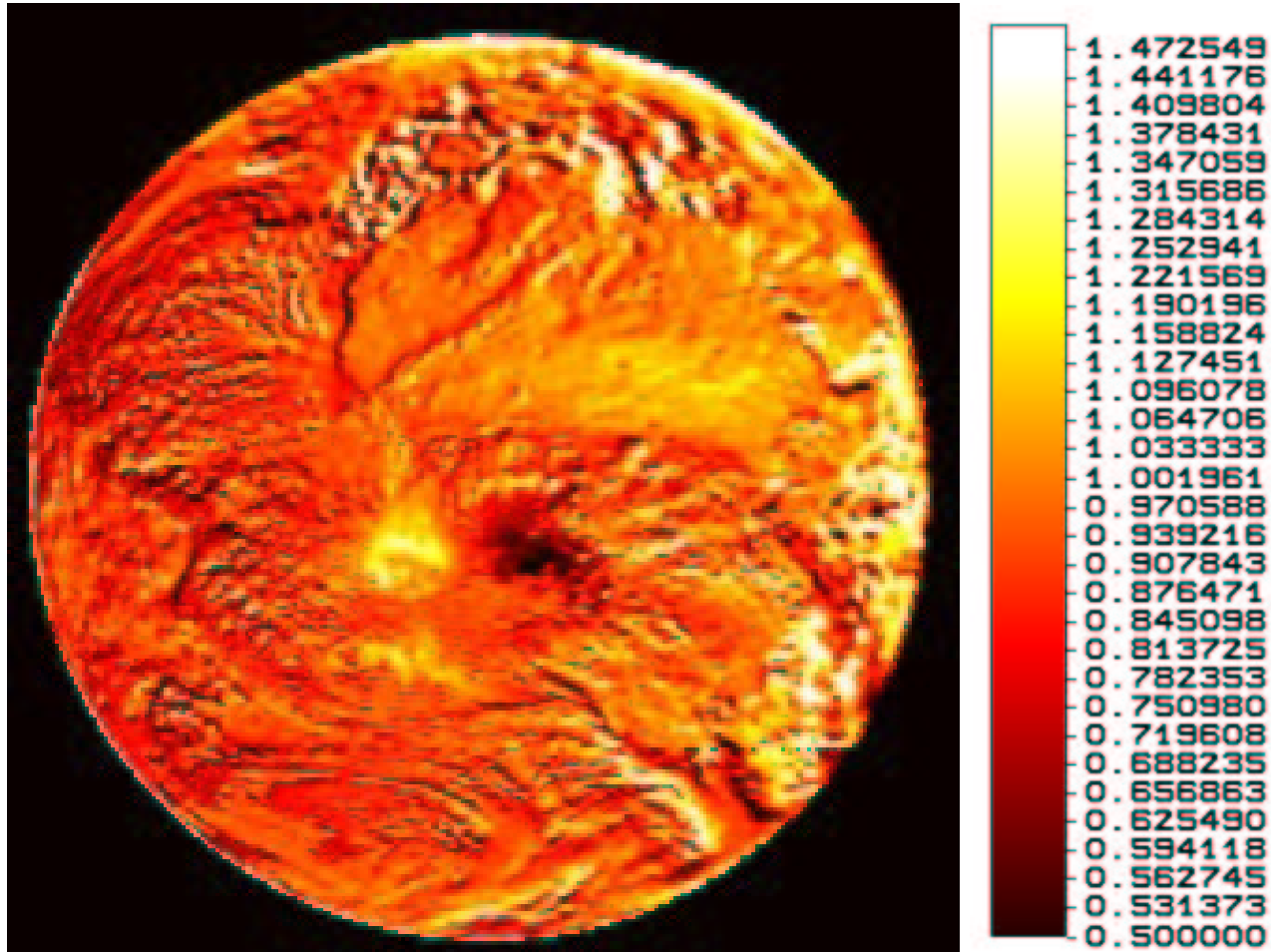
Cloud Phase [0-1]



Longwave ratio GERB/MS7



Shortwave ratio GERB/MS7



Ratio GERB/Meteosat-7: Discussion

- For LW: mean ratio of 0.974 (MS7 overestimates of 2.5% wrt GERB)
- For SW: mean ratio of 0.993 (MS7 overestimates of 0.7% wrt GERB)
- Important “instantaneous” error due to: geolocation, 10° difference in angle of view between the 2 instruments, spectral signature, ...
- The longwave limb-darkening, the shortwave limb-brightening and the sunglint are visible in the images of the ratio

Conclusions

The predicted non repeatability error exists really. METEOSAT estimates are used to remove it. By matching of GERB/METEOSAT 7, the geolocation can be derived/validated with error $<$ GERB pixel.

As far as can be judged from comparisons with METEOSAT 7, there are no gross GERB calibration errors.

The current 10 degree viewing angle difference between GERB and METEOSAT 7 causes measurable errors in the current processing.