

Summary: GSICS VIS/NIR meeting 10 February 2022

Fred Wu (NOAA) presented “Calibration and Validation of EWS-G”. The EWS-G geostationary satellite formally known as GOES-13 is now located over the Indian Ocean domain. The GOES-13 temporal trending was performed using ray-matching with MODIS based on histogram equalization. Spectral band adjustments based on radiative transfer and SCIAMACHY were compared. Some degradation occurred while GOES-13 was not operational before being moved to over the Indian Ocean. Dave Doelling mentioned that the Met-8 GERB sensor also experienced mirror degradation while in storage between the 0° and Indian ocean operations. Fred noted that spectral band adjustment factors reduced the uncertainty of the GOES-13 trending.

Hugh Kieffer presented “Status of the SLIMED (rhymes with trimmed) spectral irradiance model” He compared the MODIS, VIIRS, GEOs and other sensor lunar reflectances, which varied by $\pm 15\%$. He noted that this is not due to the onboard calibration systems but more than likely due to methodology of how the lunar reflectance was captured. He suggested looking at the moon with the same optics as the Earth view, which may take spacecraft maneuvers. It was suggested that the NOAA VIIRS group provide their lunar measurements with GSICS, so that they can be compared to NASA VIIRS lunar measurements.

Dave Doelling (NASA) presented “DCC stability analysis of CERES-SW broadband fluxes” He showed how the entire Earth can be used as a short-wave (SW) flux invariant target to compare sensor stability. This is accomplished by BRDFs and diurnal models. He noted that the monthly natural SW flux variability was very similar between Terra, Aqua and NPP CERES SW sensors. Also, DCC thresholds were applied to the CERES footprint fluxes and then the CERES DCC albedo was deseasonalized and the resulting trends were found to be $\sim 0.15\%$ /decade. The record mean DCC albedos were compared between CERES sensors and was found to be within 0.5%. It was noted that these were preliminary results and more studies using the CERES SW sensor are in the works.