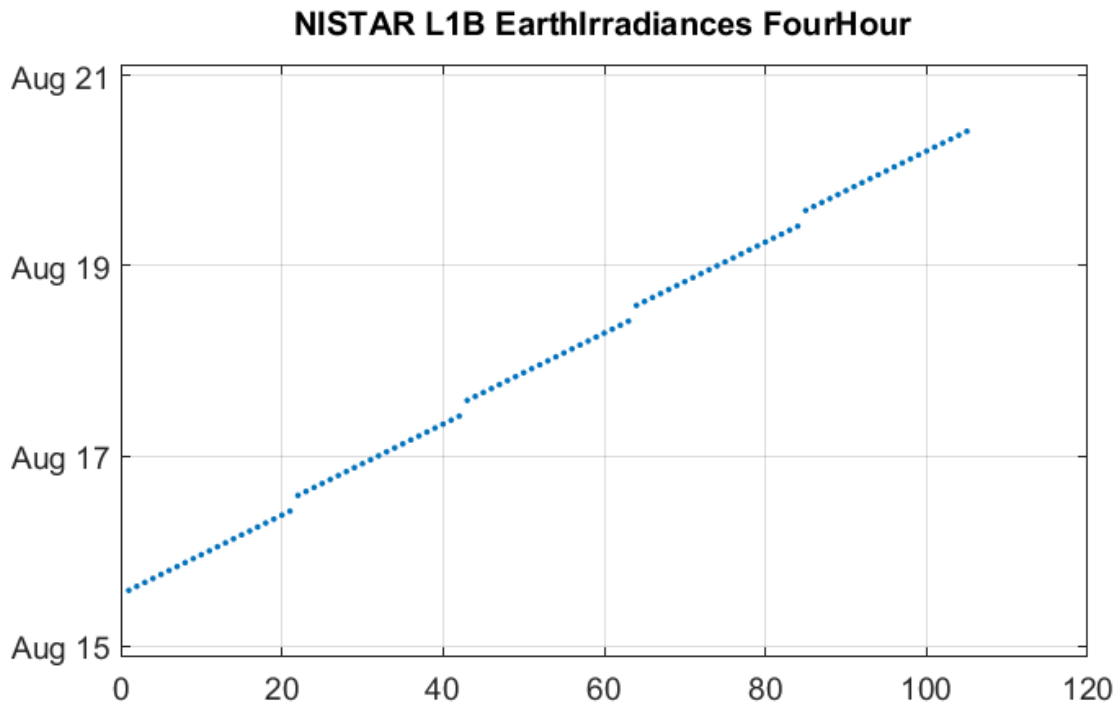


Notice for Users of NISTAR L1B Data Products

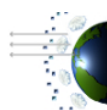
The DSCOVR Science Team has recently noticed an issue regarding the time stamps in particular datasets of the NISTAR L1B data products, where the DSCOVR Epoch time does not yield a smooth and continuous progression. To be specific, we have categorized this issue into two types, based on different behavior and datasets.

1. **Binned_Averages/EarthIrradiances_FourHour**
Binned_Averages/EarthIrradiances_FourHour_Decimated

The time stamps yield a jump in between two consecutive Julian Days, which means the data points are not averaged evenly in time.

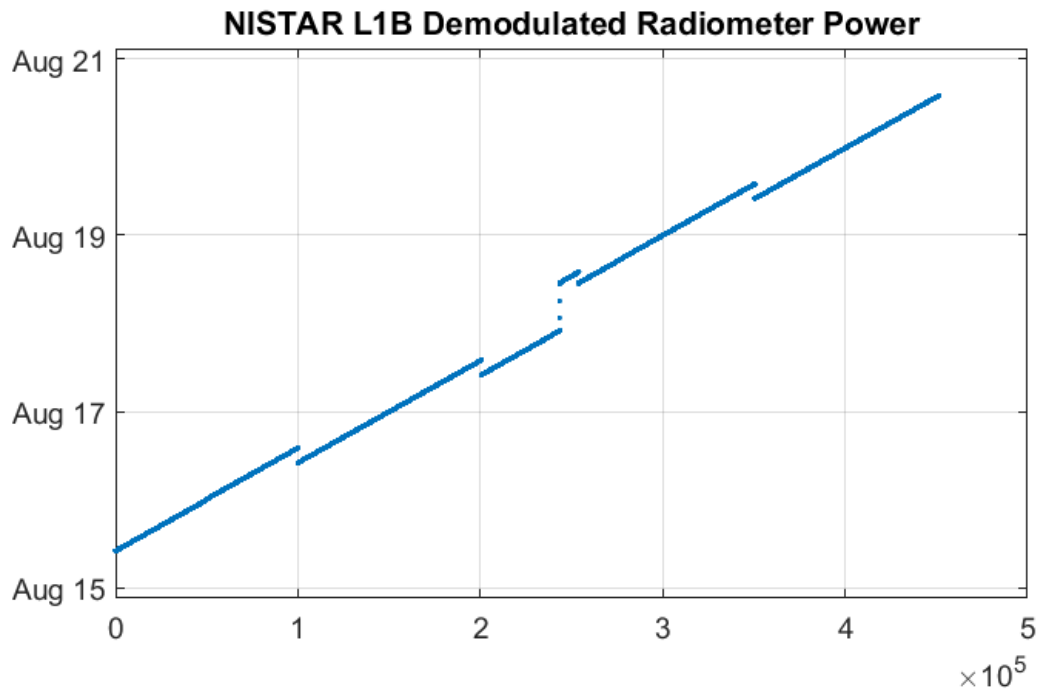


2. **Demodulated_Power/Demodulated_Radiometer_Power**
Demodulated_Power/Manual_Demodulated_Radiometer_Power
Demodulated_Power/Demodulated_Radiometer_Power_Decimated
Demodulated_Power/Manual_Demodulated_Radiometer_Power_Decimated
Earth_Irradiance/RC1_Earth_Signal_Irradiance
Earth_Irradiance/RC2_Earth_Signal_Irradiance
Earth_Irradiance/RC3_Earth_Signal_Irradiance
Earth_Irradiance/RC1_Earth_Signal_Irradiance_Decimated



Earth_Irradiance/RC2_Earth_Signal_Irradiance_Decimated
Earth_Irradiance/RC3_Earth_Signal_Irradiance_Decimated

The time stamps yield overlaps (“jump backwards”) in the above datasets. Technically this is caused by data redundancies, i.e., the current dataset always contains the last part of previous day’s data.

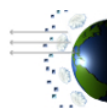


The precise cause of timing overlaps has been identified. The L1B processing reads the output of L1A processing and demodulates the irradiance data with the referencing square wave of shutter autocycles. However, the demodulation processing will zero out the first and the last 2 autocycle periods of data in the time series. To compensate this artificial effect, L1B processing reads the data of the current day, and additional 2 hours data from the days before and after at both ends. Therefore, each L1B output file includes demodulated irradiance data of 28 hours minus 2 shutter cycles at both ends.

To avoid this timing redundancy, DSCOVER Science Team may update the future L1B product versions to implement additional truncation process to trim the data. Currently, users should make sure to read the time stamps in the DSCOVERepochTime field, found within each NISTAR L1B HDF data group, and filter the duplicate data as necessary.

DSCOVER/NISTAR Science Team

October 27, 2017



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