



OCO-2 Radiance Trends

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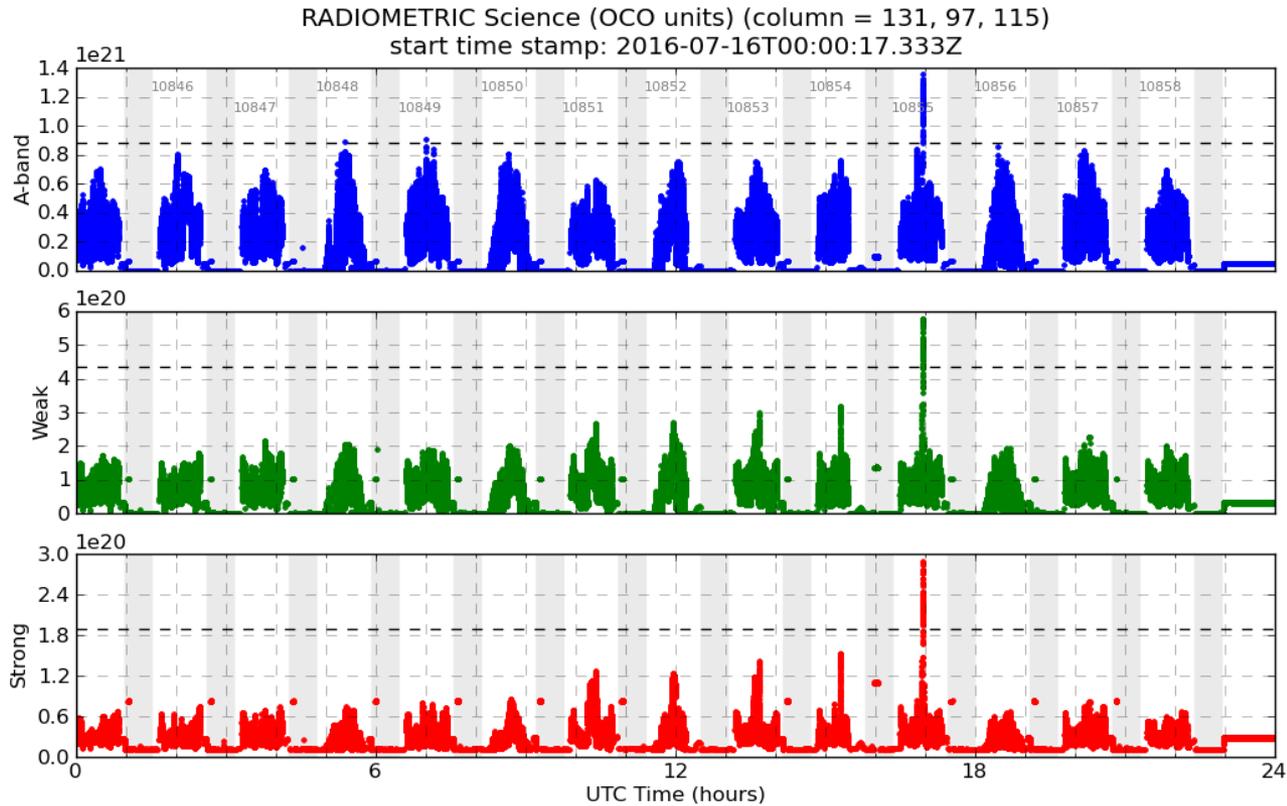


Radiance Trending

- The OCO-2 calibration team routinely trends the radiance levels observed in continuum regions of each of the 3 spectral channels
 - Reported in standard L1B units (photons/s/m²/sr/μm) as well as DN
 - Daily, monthly, and full-mission (“forever plots”) are generated
- These results provide a record of saturation events as well as the time dependence of the radiometric performance.
 - Saturation events are usually associated with anomalously-bright ocean (or lake) glint observations at low latitudes
 - These events typically occur more often during the northern hemisphere summer (June – August) associated details of the OCO-2 orbit and glint viewing geometry
- Examples of daily, monthly and full-mission records are shown on the following slides



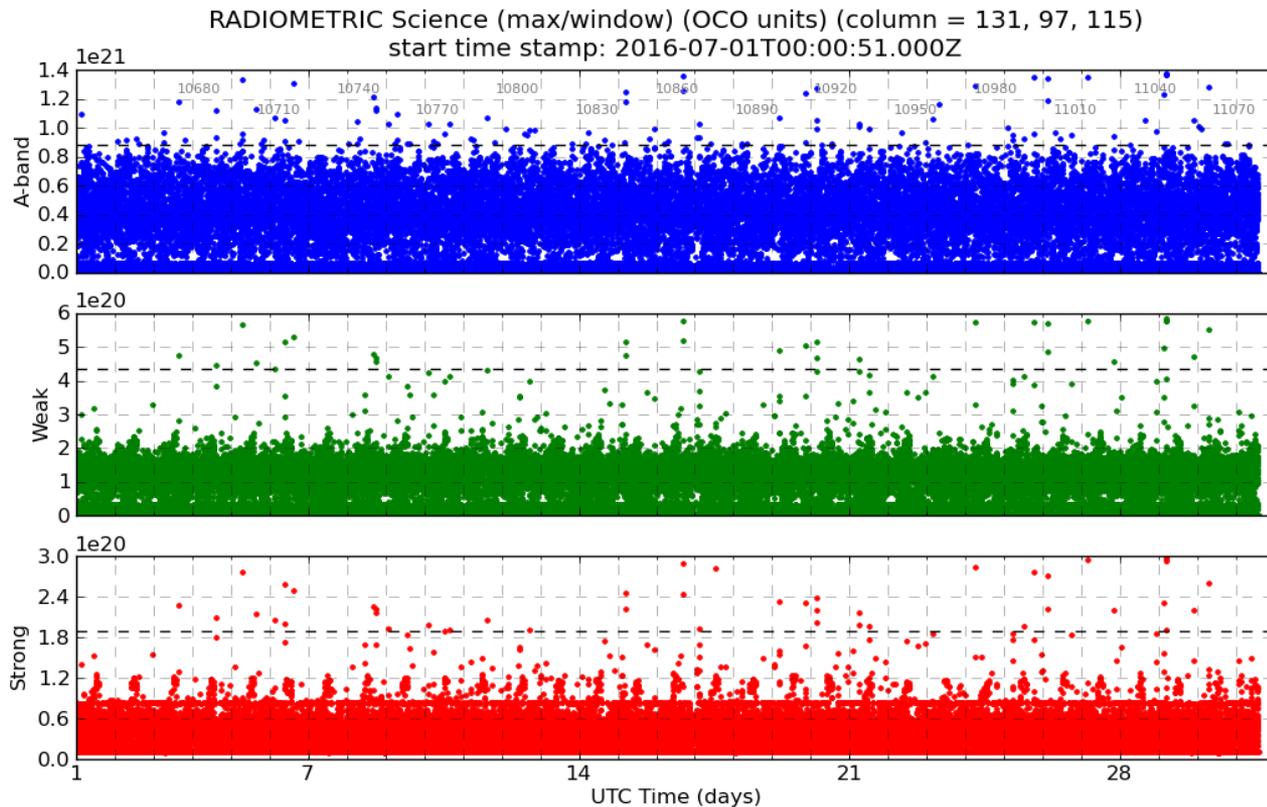
Daily Radiance Records



Daily radiance records are shown for the O₂ A-Band (top), 1.61-μm Weak CO₂ band (middle), and 2.06-μm CO₂ band (bottom) for 7 July 2016. Orbit numbers are shown in light grey (glint-odd, nadir-even) and grey bars indicate eclipse times. Maximum measurable signals levels for each band are indicated by a horizontal dash line. An anomalously bright glint observation was recorded at 1700 UTC.



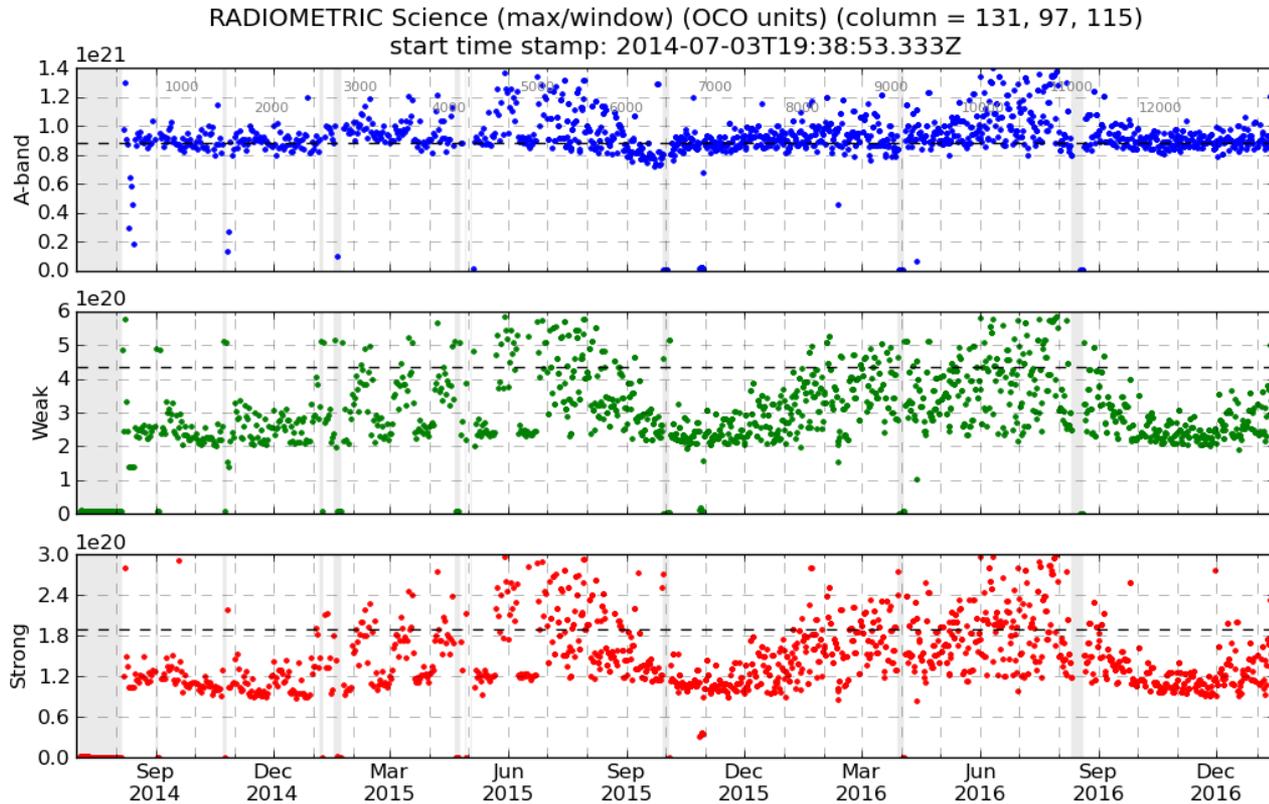
Monthly Radiance Records



Radiance levels for the O₂ A-Band (top), 1.61- μ m Weak CO₂ band (middle), and 2.06- μ m CO₂ band (bottom) are shown for July 2016. Maximum measurable signals levels for each band are indicated by a horizontal dash line. Observations exceeding this level are typically associated with anomalously bright glint observations at low latitudes.



Radiance Levels over 30 Months



Radiance levels for the O₂ A-Band (top), 1.61- μm Weak CO₂ band (middle), and 2.06- μm CO₂ band (bottom) are shown for the first ~30 months of the OCO-2 mission. Maximum measurable signals levels for each band are indicated by a horizontal dash line. Observations exceeding this level are typically associated with anomalously bright glint observations at low latitudes.