**OMPS NP and TC SDR Readme file**

OMPS SDR Release, Provisional Data Quality

Recommended Cautions for Data Users

The JPSS Algorithm Engineering Review Board has reviewed the OMPS Earth Viewing Sensor Data Record products and set the Data Quality attribute to Provisional, effective March 1, 2013.

CSN associated with provisional products are:

**OMPS-NP-SDR**  (SOMPS – OMPS Nadir Profiler Science SDR ) – Associated GEO file is **OMPS-NP-GEO** (OMPS NP ellipsoid, geolocation data)

**OMPS-TC-SDR**  (SOMTC – OMPS Total Column Science SDR) – Associated GEO file is **OMPS-TC- GEO** (OMPS TC ellipsoid geolocation data)

Provisional quality is defined as:

* Product quality may not be optimal
* Incremental product improvements are still occurring as calibration parameters are adjusted
* Version control is in effect
* General research community is encouraged to participate in the QA
* Users are urged to consult the SDR product status documents prior to use of the data in publications
* Ready for operational evaluation

The OMPS C/V team recommends that users be aware of certain specific data product characteristics. The product caveats for OMPS at this time are:

1. After the implementation of weekly update of dark current, it was found that the dark correction over SAA is occasionally in error. This is being investigated aggressively and should be corrected by the end of March 2013.
2. The CCD smear corrections have appeared to be in errors. Incorrect dark current correction was suspected as the root cause, which has been partially vindicated when most of the anomalous smear disappeared after weekly darks update was implemented. Recently we found that SAA\_DARKS are still in error, and that is being corrected. We believe the remaining smear error is also cause by the dark error that will be removed after SAA\_DARKS is corrected.
3. The spectral solar irradiances have been updated with on-orbit measurements for both NM and NP. Further analysis and update of Day One solar irradiance may be provided in the future. These preliminary and additional updates of Day One solar have been planned before launch as part of normal calibration update.
4. The wavelength scales for the OMPS NM and NP for both Earth and solar spectra have been updated with on-orbit measurements. The adjustments were somehow larger than expected from pre-launch thermal analysis. The wavelength scale will be monitored and re-evaluated periodically.
5. While the OMPS NP South Atlantic Anomaly (SAA) flag is working well in identifying regions with higher frequency of charged particles, the OMPS SDR performance over SAA is to be improved.
6. Out-of-band stray light was found for wavelength less than 310 nm for the OMPS NM. The impact can be significant, up to 5%, for wavelength less than 305 nm. While expected even before launch, this is not a major concern because these radiances are not used in total ozone retrievals. Stray light in this spectral region was characterized before launch and the EV SDR algorithm has an empty table that can be replaced with on-orbit determination of proper correction to mitigate the stray light effect. We are in the process of testing such a table before implementation in near future.
7. Out-of-band stray light has also been noted for NP. Its characterization and correction are the subject of future research.
8. OMPS NM SDR product dimensions allow for a future change in the horizontal resolution to much smaller FOVs. Currently only the first 35 cross-track by 5 along-track cells are used to store actual measurements. The OMPS NP SDR products allow for a future change in the horizontal resolution as well. Currently only the firs cross-track by first along-track cell contains and actual measurement. Thus, users should continue to find that, most of time, only a small portion (less than 5% in some case) of the data in the HDF files are valid (not zero or other fill values), as explained in Beta readme file [7].
9. In August 2012, the NM geo-location occasionally mismatched that of NP by 10-15 km in longitude when NM calculated ephemeris using the interpolated Two-Line-Element (TLE) and NP using the spacecraft diary. This mismatch affects the NM geo-location only, for part of Mx6.2 only (in operation between 8/10/12 and 10/15/12 when Mx6.3 entered in effect). This mismatch has been corrected since Mx6.3 was implemented, which no longer uses TLE for NM.