

**VIIRS Surface Reflectance
IP Release, Provisional Data Quality
Effectivity: 18 March 2014
Read-me for Data Users**

The JPSS Algorithm Engineering Review Board (AERB) released the VIIRS Surface Reflectance (IP) to the public with a Provisional level maturity effective as of the date of implementation of the DRs 4488, 7141 and 7142 code changes included in IDPS build Mx8.3 which transitioned to operations on 18 March 2014.

The product short name is VIIRS-SR-IP.

Provisional quality is defined as:

- Product quality may not be optimal
 - Product accuracy is determined for a broader (but still limited) set of conditions
 - No requirement to demonstrate compliance with specifications
- Incremental product improvements still occurring
- General research community is encouraged to participate in the QA and validation of the product, but need to be aware that product validation and QA are ongoing
- Users are urged to consult the EDR product status document prior to use of the data in publications
- Ready for operational evaluation

The Board recommends that users be informed of the following product information and characteristics when evaluating the VIIRS Surface Reflectance Intermediate Product (IP).

QUALITY FLAGS: It is strongly recommended that the user check the following quality flags before using the product: aerosol quality and aerosol model. The aerosol quality should not be “high aerosol” and the aerosol model should not be “dust”.

1. The VIIRS SR IP is generated at the pixel level for retrievals that use VIIRS AOT-IP as input. The VIIRS Surface Reflectance (SR) IP is based on the heritage MODIS Collection 5 product (Vermote et al. 2002). However tuning to the aerosol algorithm and quality flag will be necessary before the products can reach a stage 1 validation quality for use in operational applications. Although tools for the performance evaluation are in place and have been run, no compliance with specifications has been demonstrated, so extreme caution is advised when using the product. Use of the product in research publication is in general not encouraged.
2. There are several known issues with the AOT-IP products that slightly affect the SR product:
 - a. The high aerosol flag needs to be set at a more conservative threshold as done for heritage MODIS product;
 - b. SR retrieved using the “Dust” aerosol model are not reliable and users are advised not to use them;
 - c. For very high aerosol conditions (AOT>2) the AOT retrieved might be low leading to an artifact in the SR product.
3. The next steps in the VIIRS SR –IP validation process, to move the product to Stage 1 validation maturity, include the following:

- a. Issues with the AOT IP algorithm needs to be fully addressed;
- b. Set the high aerosol flag as it is done in MODIS;
- c. Eliminate or substantially improve the dust aerosol model;
- d. Eliminate the artifact in the AOT retrieval at very high aerosol level.

More information about VIIRS and VIIRS SR products can be found at the following website, including the Algorithm Theoretical Basis Document (ATBD), Operational Algorithm Description (OAD) document, Common Data Format Control Book (CDFCB): <http://www.star.nesdis.noaa.gov/jps/ATBD.php>.

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