



JPSS STAR 2017 ACCOMPLISHMENTS AWARDS

Hu Yang (CIICS): for developing and improving ATMS calibration that leads to high quality SDR data for NWP applications.

Lisa M. McCormick (NASA): Lisa has played an essential role in communicating and coordinating the efforts of the ATMS team members at NASA, NOAA, and Lincoln Labs. Her tireless efforts have been critical at keeping things on track to keep us moving toward launch.

Robert Vincent Leslie (MIT): great support to the coordination in ATMS SDR team.

Chris Grassotti (AER): Sustained outreach to the MiRS user community and a seamless transition of MiRS ATMS operational processing.

Shuyan Liu (CIRA): Consistent commitment and quality work in to responding to MiRS users' needs at OSPO and within STAR.

Junye Chen (CICS): Great contribution to the performance improvement of the MiRS.

Wenhui Wang (IMSG), Guoqing (Gary) Lin (NASA), and Bin Zhang (ERT) for their significant contributions to improved VIIRS geolocation performance & monitoring, and VIIRS reprocessing with advanced algorithms and technologies.

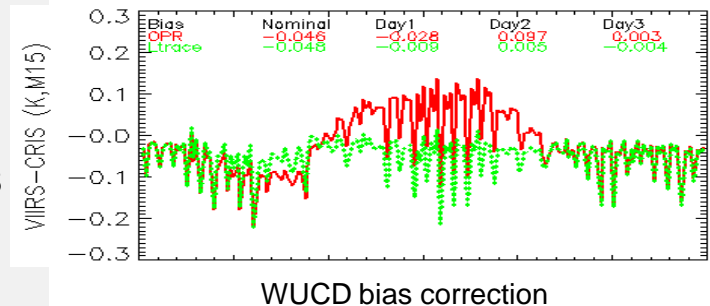
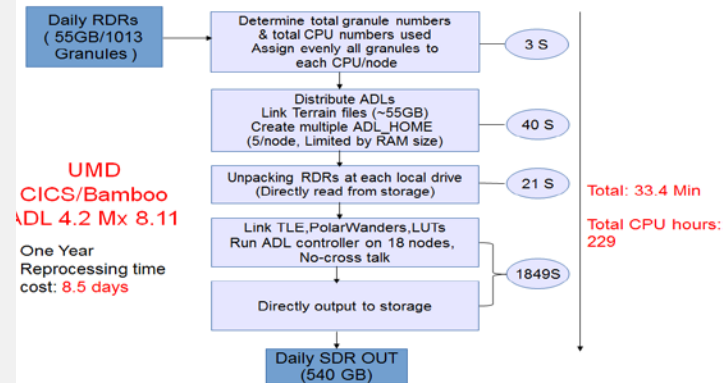
Improved VIIRS geolocation:

- Transition of the NASA CPM program to NOAA STAR and the development of NRT online I-bands geolocation error monitoring capability;
- Discovery of VIIRS scan-to-scan overlap/underlap;
- J1 VIIRS prelaunch geolocation LUTs preparation;
- S-NPP spacecraft attitude monitoring and improvement of attitude performance supporting mission operations.

S-NPP VIIRS SDR reprocessing:

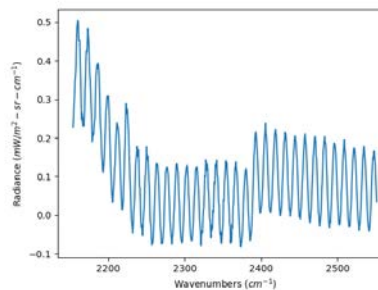
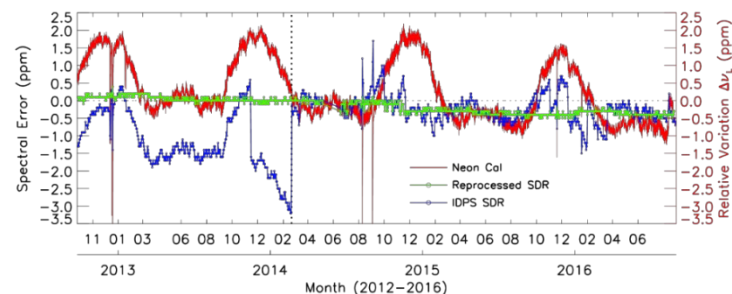
- VIIRS TEB WUCD bias correction implementation, testing and validation;
- Radiometric Bias Correction implementation in the reprocessed VIIRS RSB SDR;
- Optimized VIIRS reprocessing on super computers; Benchmarked VIIRS reprocessing based on extensive testing;
- Performed VIIRS reprocessing from launch to fall 2016 within 5 months, significantly ahead of schedule.

VIIRS Reprocessing Flow Chart

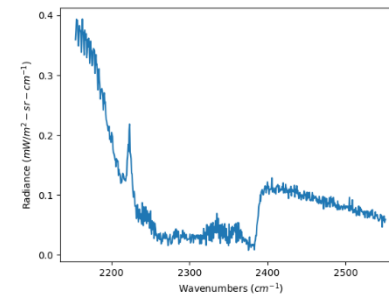


Yong Chen (CI-CS): for developing a state-of-the-art system for reprocessing, calibrating and validating CrIS life-mission data, and for significantly improving CrIS SDR data quality in operational system.

Mark Esplin (SDL): for developing an effective method to detect and correct interferogram spike and improving CrIS SDR data quality.



Original



Corrected

Chunhui Pan (CICS): for her outstanding work in implementing bi-weekly corrections to the OMPS-NP Wavelength and OMPS-NP Solar datasets now being used in IDPS operations. There are annual cyclical variations of the OMPS-NP instrument temperature which lead to small changes in the wavelength registration. Chunhui developed a method to correct these errors. This year she has a publication in the IEEE-Geoscience and Remote Sensing journal on recent algorithm improvements for the S-NPP OMPS SDR.

C. Pan, F. Weng, T. Beck, L. Flynn and S. Ding, Recent Improvements to Suomi NPP Ozone Mapper Profiler Suite Nadir Mapper Sensor Data Records, IEEE Transactions on Geoscience and Remote Sensing, Volume: PP, Issue: 99, Pp1-7. July 3, 2017, DOI: 10.1109/TGRS.2017.2714103

Ninghai Sun (ERT)

Taeyoung Choi (ERT)

Xin Jin (ERT)

For their leadership in developing a state-of-the art satellite instrument health monitoring system enabling corrective actions to extend instrument life.

Yuanzheng Yao (ERT)

For developing a highly efficient computational infrastructure that leads to a stable Soumi NPP SDR data record.

NPROVS

Bomin Sun (IMSG)

Michael Pettey (IMSG)

For developing and improving ATMS calibration that leads to high quality SDR data for NWP applications.

EDR/LTM

Tom Atkins (IMSG)

Lori Brown (IMSG)

For excellent coordination and development of EDR LTM page.

Steve Finley: (CIRA)

- Manages the ingest of VIIRS Imagery from GRAVITE and other sources (NDE, PDA, and direct broadcast) to serve the realtime data needed by numerous researchers at CIRA/RAMMB, for both for JPSS cal/val and PGRR work.
- Implemented CSPP to process downloaded RDRs into SDRs and EDRs on a global basis, whereas it would be impossible to download global SDRs and EDRs via the Internet, due to large data volumes.
- Understands the VIIRS data flow/path to maximize throughput and minimize data loss/gaps.
- Configured multiple computer systems and processors to access VIIRS Imagery in realtime and fill gaps/missing data as needed, to provide a rotating global archive.
- Presented CIRA's VIIRS processing system at a CSPP meeting at CIMSS/SSEC in July 2017.
- Steve Finley's JPSS IT work is the foundation for CIRA's successful work with VIIRS:
 - Numerous derived imagery products that are served online, as well as sent upon request to NWS users in Alaska and to StAR JPSS LTM website.
 - DNB imagery for monitoring nighttime lights (for examples: fires and smoke, volcanic hot spots and ash plumes)



Development of VIIRS L3U (Uncollated) SST Product

**Launch of SNPP
October 28, 2011**



Irina Gladkova (STAR CREST / GST)

Yanni Ding (STAR / CIRA)

Yury Kihai (STAR / GST)

- ✓ Developed L3U VIIRS SST Product
- ✓ The Product was requested by users in the NOAA West Coast Ocean Forecast System (WCOFS), Australian Bureau of Meteorology (BoM), UK Met Office, Japan Met Agency
- ✓ VIIRS L3U Product is organized into 10min granules, similarly to the L2P product
- ✓ The L3U maximally preserves spatial features & image quality present in the L2P product
- ✓ Daily data volume is ~0.7GB/day for L3U (vs. 27 GB/day for L2P)
- ✓ L3U product is used in Met Office & BoM and tested at WCOFS, JMA and Danish Met Institute. It received a very positive feedback from all users

Karlis Milkelsons

For his work on the OCView for bringing interactive satellite ocean color maps online.

Junqiang Sun

For his work on the VIIRS on-orbit calibration using the solar and lunar approaches, which significantly improved OC results.

Lide Jiang

Xiaoming Liu

SeungHyun Son

For their excellent work on routine VIIRS ocean color data processing, monitoring, and evaluation.

Hai Zhang (IMSG): For developing a new spectral surface reflectance dataset that led to the implementation of Aerosol Optical Thickness (AOT) retrievals over bright surface in the EPS algorithm and publishing the work in Journal of Geophysical Research – Atmosphere (2016)

Hongqing Liu (IMSG): For developing the EPS AOT algorithm with expanded measurement range and improved accuracy at high AOTs that became operational in July 2017

Pubu Ciren (IMSG): For developing the EPS aerosol detection algorithm that became operational in July 2017

YJ Noh

Curtis Seaman (CIRA)

For development of the NOAA Enterprise Cloud Base Algorithm and the publication of the methodology and its performance.

Peter Romanov (IMSG): Dr. Peter Romanov, CREST/CUNY, is being recognized for his extensive efforts in the development of VIIRS snow cover and snow fraction products. After spending years performing in-depth analyses of the VIIRS operational products, he then developed “Enterprise” snow algorithms based on his work with the GOES Imager. His robust validation work has demonstrated the high quality of the products.

Yinghui Liu (CIMSS): Dr. Yinghui Liu of the Cooperative Institute for Meteorological Satellite Studies (CIMSS) is recognized for his work in developing VIIRS products for sea and lake ice concentration, surface temperature, and motion. He originally developed the algorithms for GOES-R ABI, and later adapted them for use with VIIRS. Furthermore, the ice concentration and surface temperature algorithms are routinely used with MODIS and AVHRR data.

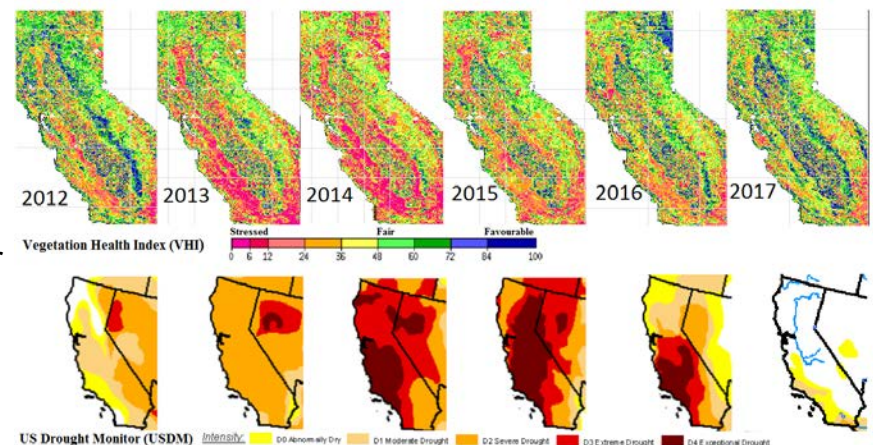
Marina Tsidulko (IMSG): Marina Tsidulko has made significant contributions to STAR JPSS land product development. As a key member of the STAR JPSS VIIRS active fire team, she worked with the science developers of the algorithm to create a processing code for the 750m product in the STAR and NOAA NDE environment. Recently she also implemented the STAR version of the 375m algorithm for testing and evaluation. She also supported JPSS Proving Ground efforts by providing tailored VIIRS fire products to key NOAA smoke and air quality monitoring and prediction systems. Marina also created a common and generic gridding and compositing system to facilitate the development of a consistent set of gridded land surface products.

Rui Zhang (CICS): Dr. Zhang has been the main workhorse for the global gridded annual surface type product. The algorithm development, classification metrics processing, training data selection, product generation and validation have been taking almost his every hours every day. Processing daily VIIRS surface reflectance data for the classification metrics and classification results post processing require extensive time, knowledge of global landscape details and research experiences of the classification algorithms. With the limited resources he has been delivering the annual surface type product on time every year. He has been also co-leading the recent efforts of testing surface type change indicator algorithm so that a daily surface type product could be developed for NOAA and other users in the near future.

Wei Guo (IMSG):

- Developed 1 km resolution SNPP/VIIRS-Vegetation health (VH) data used for drought monitoring
- Is working on 0.5 km resolution VH drought data for California
- Contributed to the paper ("2012-2016 strongest California drought from 500 m VIIRS vegetation health and potential for recovery from upcoming El Niño") published one month ago.

The image of California's 5-year VH showing improvement in drought monitoring compared to the drought products from USDM.



Changyi Tan (IMSG)

Nicholas Nalli (IMSG)

Flavio Iturbide-Sanchez (IMSG)

Successfully delivered the NUCAPS for CrIS full spectral resolution.

Zhihua Zhang: (IMSG) Implementation of Enterprise Ozone Algorithm for OMPS

While the implementation of the Version 8 Ozone Algorithms with OMPS measurements has been the result of excellent cooperation among NOAA personnel from several different teams, the success centers around the programming and analysis work of Dr. Zhihua Zhang of IMSG. He modified the codes, tested and validated them with full reprocessing of the OMPS records, and provided test cases and documentation to compose the deliveries for implementation at NDE. These deliveries included upgrades to process the NOAA-20 OMPS small FOV data. He computed and delivered new soft calibration adjustments needed by the codes and used them off-line at STAR to create climate-quality reprocessings of the EDRs from the reprocessed SDRs.

Letitia “Tish” Soulliard: (IMSG) We recognize Letitia for her work successfully transitioning the GAASP Day 2 algorithm package to NDE and for assisting NDE and OSPO with validation and emergency updates.

Jicheng Liu: (CIMSS) Dr. Jicheng Liu has been working on AMSR2 soil moisture data product with tremendous efforts on algorithm development and validation, computer code development, testing and delivery for the GAAPS Day 2 soil moisture EDR software and documentation.

Yong-Keun Lee: (CIMSS) Dr. Yong-Keun Lee of the Cooperative Institute for Meteorological Satellite Studies (CIMSS) is being recognized for his extensive efforts in implementing and improving AMSR2 snow algorithms, including snow cover, snow depth, and snow water equivalent.

Mike Wilson: (IMSG) We recognize Mike for his meticulous work supporting the transition of NUCAPS, Active Fire, Vegetation Indices, and Surface Reflectance to NDE and OSPO. Mike has recently stepped up and added the Active Fire and the Vegetation Indices to the algorithms that he supports. For these projects Mike has worked with both the STAR science teams and NDE to support operational code transition, configuration management, testing, diagnostics, troubleshooting, and validation.

Weizhong Chen: (IMSG) Dr Weizhong Chen has been instrumental for VIIRS SDR and VIIRS Imagery EDR integration and deliveries. He is always ready to cover another staff member of AIT and support.

Murty Divakarla (IMSG)

Xingpin Liu (IMSG)

For coordinate the J1 prelaunch testing activities.

Tess Valenzuela (IMSG)

For her dedicated supports for the JSTAR risk management and program reports.



Thank You!!