JPSS Proving Ground and Risk Reduction Update

September 8, 2014

Important Topics

- JPSS Program Status
- SNPP Initiatives of Interest
- JPSS Proving Ground/Risk Reduction project accomplishments
- Conferences and Meetings

JPSS Program Status

- **S-NPP is producing outstanding data -** Satellite healthy; data availability high (~99.99%)
- **JPSS-1 is executing as planned**
- **JPSS-2 planning and development is well underway**
- **On July 17, 2014, construction for the designated JPSS operations and office spaces at the Consolidated Back-up (CBU) in Fairmont, WV was substantially completed.**

JPSS Data Product Status

- The **Cloud Properties** Environmental Data Record (EDR) products approved for provisional maturity on August 13.
- The **Aerosol** EDR products (Aerosol Optical Thickness (AOT) and Aerosol Particle Size Parameter (APSP)) were approved for validated maturity on August 25.
- The **Microwave Blended Sea Surface Temperature** (SST) successfully completed its critical design review. The project will take the GCOM-W microwave SST data and incorporate it into the blended SST product. The microwave blended SST will reach operational status in the Dec 2014/Jan 2015 time frame.
- On August 20, the **Active Fires** product and VIIRS sensor data records were approved for transition to operational status on August 20. Both parameters are being used by the NESDIS/OSPO Satellite Analysis Branch (SAB) for hazard support and monitoring (e.g., fires, volcanic ash and tropical storms).
- Environmental Data Record (EDR) **Science Review** held on September 3-4. The specific products reviewed were the Active Fires, Cloud Properties, Ozone, Sea Ice Characterization (SIC), Sea Surface Temperature (SST), Snow Cover Fraction, Soundings, Surface Reflectance, and Vegetation Index EDRs.

JPSS PGRR Project Accomplishments

- **NOAA Unique CrIS/ATMS Processing System (NUCAPS) Initiative**:
  - In late July, kicked-off a new initiative (to be led by Chris Barnett) to improve the operational use of SNPP for those NWS offices with AWIPS II and assist those offices that will be getting AWIPS II with NUCAPS. The initiative will address :
    - NUCAPS algorithm work (STAR)
    - Operational application and validation of NUCAPS (Omaha/Boulder WFO)
    - NUCAPS training (NWS)
- The **JPSS Land Proving Ground Initiative** had its kick-off telecon on Mon 25 Aug
- The **2014 NOAA Ocean Satellite Data Course** was held at the University of Washington in Seattle Aug 26-28 with nearly 15 NOS and NMFS personnel is attendance. Training was focused n access and use of VIIRS data.
- The **OCONUS GOES-R - JPSS R2O Interchange Meeting** (29 Jul - 1 Aug).
  - Very successful 28 July side meeting with team maintaining the critical MOBY sensor. Dr. Goldberg provided a SNPP overview. The MOBY team briefed how they maintained the MOBY capability and showed us around their instrument and calibration areas
  - Met with the Hawaii Coast Watch (CW) people on 28 Sep to discuss VIIRS SST product and recent SST algorithm decisions. The Hawaii CW team has committed to reevaluate the VIIRS SST and provide some validation of this product in their mission area.
  - Attendees at the Interchange Meeting felt that the meeting content and the people participating made this meeting a huge success. The briefings are available on google drive.
  - The meeting participants have committed to holding the OCONUS 2015 meeting in Anchorage AK in late Apr-Early May 2015.
- The **SPoRT Science Advisory Committee** (SAC) met in Huntsville AL (26-28 Aug) to evaluate SPoRT work being done in support of JPSS and GOES-R. Bill Sjoberg facilitated the SAC collecting individual feedback and summarizing it for the outbriefing at the end of the meeting

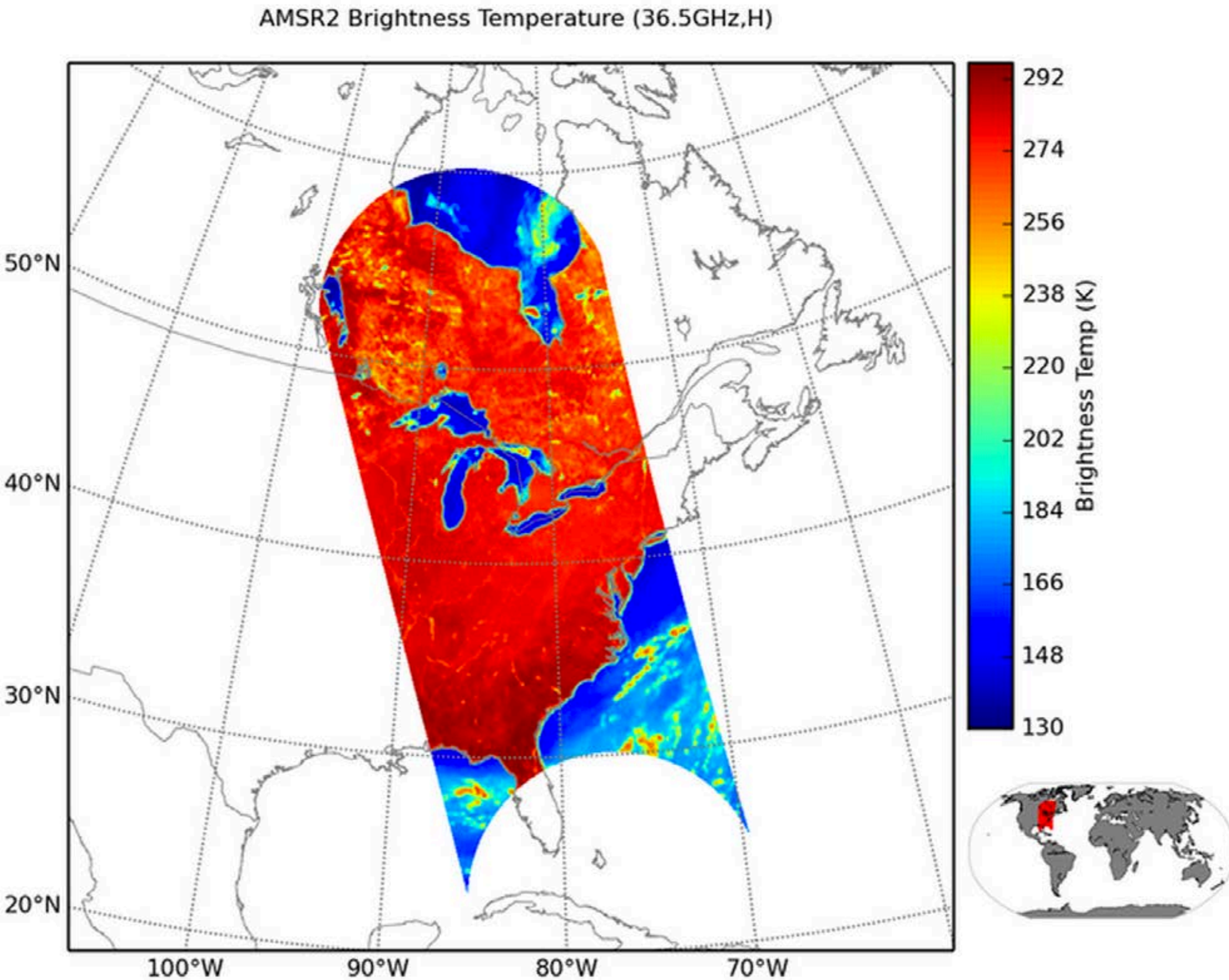
JPSS PGRR Project Accomplishments

- **JPSS Sounders for use in TC Track and Intensity Work**: Maximum Potential Intensity (MPI) estimates were calculated for a number of 2014 storms. Some of the Convective Available Potential Energy (CAPE) values, which is part of the MPI calculations, are lower than expected. As part of Cal/Val project, it was found that AMSU-MIRS retrievals have pronounced dry bias at the low levels and moist bias at the middle levels. If ATMS-MIRS retrievals have similar bias it will have the effect of lowering CAPE values. Validation of ATMS soundings against dropsondes data will be performed, and bias correction will be applied to ATMS soundings if needed. (DeMaria)
- **Global VIIRS Ocean Color Pre-Operational User Expansion:** Significant work was performed to address the VIIRS ocean color algorithm mitigation, including data conversion of six months of data globally for the potential replacement algorithm and quality analysis of this algorithm against alternatives and benchmark algorithms. (DiGiacomo)
- **Advanced Satellite Data Assimilation Techniques:** reviewing the assimilation techniques of both the microwave and infrared channels from all of the instruments currently used (MHS, ATMS, and AIRS). In a first look, the gross error check and the observation errors can be reduced on all of the current assimilated water vapor channels. (Jung)
- **Enhanced VIIRS Active Fire Data for Fire management and Fire Weather Applications:** The VIIRS AF website now has daily global detections available to users on a new map page. The archive is developed and a user-interface is being tested. Testing data ingest into VIIRS AF processing chain from NASA's Land PEATE to help reduce data interruptions while also providing other forms of data, mainly fire mask and fire radiative power (FRP) products. (Csiszar)
- **Enhance Agricultural Drought Monitoring Using NPP/JPSS Land EDRs for NIDIS**: Generated the root-zone Soil Moisture anomalies of simulations with and without assimilation of JPSS/GCOM-W land products for 2002 – 2012. This work will lead to the comparison of results with standard drought indices to evaluate the added/degraded value of the assimilation of JPSS/GCOM-W land EDRs into NLDAS/GLDAS (Zhan)
- **Hurricane Structure Monitoring:** Executed the sensitivity study of 2014 HWRF for Eastern Pacific hurricane forecasts. Assisted in the investigation of the ATMS striping mitigation using optimal striping filters. (Weng)

Upcoming Conferences/Workshops

- ***NOAA Workshop on Use of CrIS in Atmospheric Chemistry, 18-19 September, 2014, College Park, MD***
- ***NWA Annual Meeting, 18-23 Oct 2014, Salt Lake City, UT.*** Theme: *"Building a 21st Century Weather Enterprise: Facilitating Research to Operations – Optimizing Communication and Response.*
- ***NASA/NOAA S-NPP Applications Workshop in Huntsville, November 18-20, 2014***
- ***AGU Fall Meeting December 15-19***

First ever NOAA direct readout image of GCOM AMSR-2 from the UW CSPP Team captured by the UW Direct Readout - 7/29/14



Significance: AMSR2 data has already proven to be a vital data source for many applications, including assessing the strength of hurricanes and typhoons. With direct readout, this data will now be available in minutes instead of upwards of two hours, enabling the National Hurricane Center to have faster access to this critical data used in forecasting extreme weather events that can have catastrophic impacts on lives and property."

JPSS Science Seminars - Past

Date	Presenters	Topic
November 18, 2013	**Mark DeMaria**	**Joint JPSS-GOES-R Tropical Cyclone Satellite Data Assimilation Discussion**
December 16, 2013	**Arunas Kuciauskas and Jeff Hawkins**	**NexSat JPSS Demonstration Project** **NRL-MRY VIIRS Data and Cal-Val Work**
January 27, 2014	**Cara Wilson**	**Facilitating NOS/NMFS End-User Access to VIIRS data**
February 24, 2014	**Walter Wolf**	**Uniform Multi-Sensor Algorithms for Consistent Products**
March 21, 2014	**Alex Gilerson**	**Development of algorithms for retrieval of chlorophyll-a in the Chesapeake Bay and other coastal waters based on JPSS-VIIRS bands**
April 21, 2014	**Active Fire Team**	**JPSS and GOES-R Activities Supporting 2013 Fire Outbreaks**
May 19, 2014	**Amy Huff** **Shobha Kondragunta**	**VIIRS Aerosol Products for Air Quality Applications**
June 23, 2014	**Dan Pisut**	**Visualization of Suomi NPP Data**
July 21, 2014	**Daisuke Hotta** **Eugenia Kalnay**	**Application of EFSO to Proactive Quality Control, and Efficient Testing of Forecast Impact of New Instruments**
August 18, 2014	**Training Team**	**Joint JPSS/GOES-R Training**

JPSS Science Seminars - Future

Date	Presenters	Topic
September 29, 2014	Pingping Xie	Infusing JPSS PMW Retrievals to CMORPH Precipitation Estimates for Improved Weather, Climate, and Water Applications
October 20, 2014	Jerry Zhan	Enhance Agricultural Drought Monitoring Using NPP/JPSS Land EDRs For NIDIS
November 17, 2014	SPORT, Mike Pavolonis	Joint JPSS/GOES-R Low Cloud and Fog
December 15, 2014	Jeff Key	Development, Generation, and Demonstration of New JPSS Ice Products in Support of a National Ice Center JPSS Proving Ground and Risk Reduction Activity
January 26, 2015	Mark Eakin	Pushing the Limits: Increasing Resolution of Satellite-Derived Coral Bleaching Products using VIIRS and Geo-Polar Blended SSTs
February 23, 2015	Gary Jedlovec	SPoRT Product Assessments for JPSS
March 23, 2015	Huan Meng	ATMS-Derived Snowfall Rate Product and its Applications in Weather Forecasting and Hydrology
April 20, 2015	Danny Satterfield	Broadcast Meteorology use of Satellites
May 18, 2015		
June 22, 2015		
July 20, 2015		
August 17, 2015		
September 21, 2015		

For more information, please see: http://www.jpss.noaa.gov/science-seminars.html