

# Joint Polar Satellite System (JPSS) Proving Ground and Risk Reduction Program

*Presentation for 3<sup>rd</sup> NOAA GPM Workshop  
2 April 2013*



**Ingrid Guch**

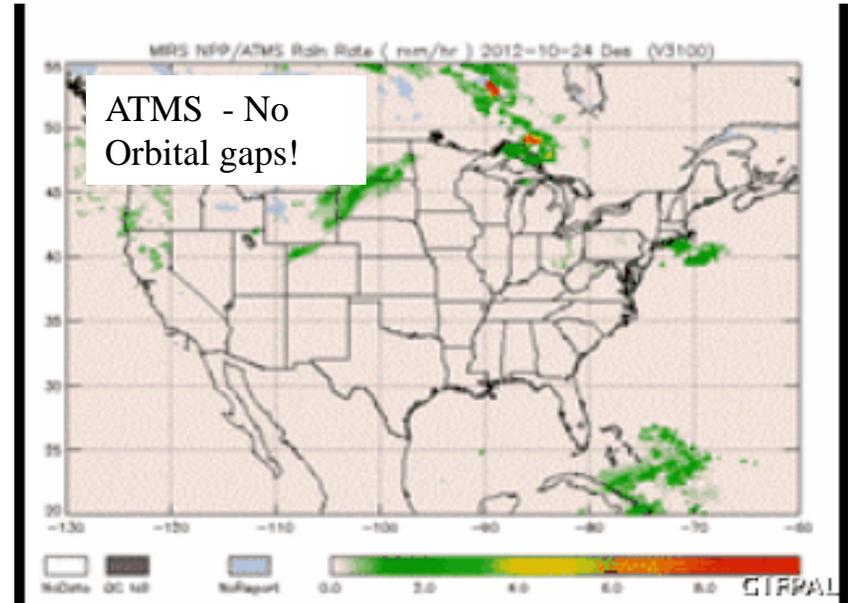
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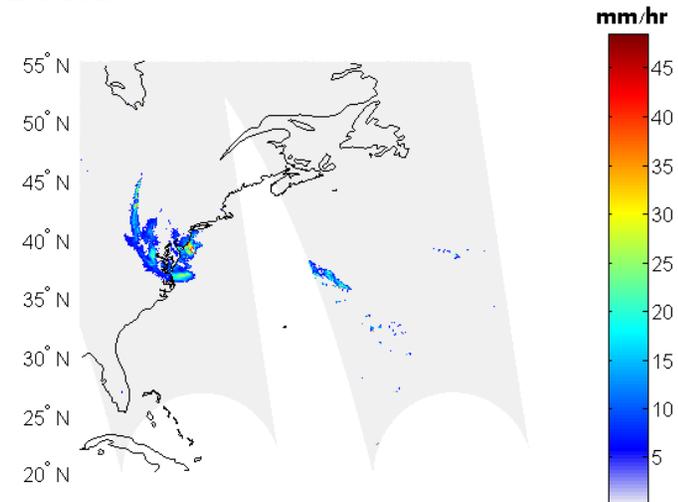
**Mitch Goldberg, Ralph Ferraro, and Bill Sjoberg**

# Suomi NPP and JPSS Hydrological EDRs

- **Precipitable water & cloud liquid water (ATMS, AMSR-2)**
- **Precipitation type and rate (ATMS, AMSR-2)**
- **Snow cover and sea ice characterization (ATMS, AMSR-2, VIIRS)**
- **Snow water equivalent (ATMS, AMSR-2)**
- **Soil Moisture (AMSR-2, ~ VIIRS drought estimates)**
- **Land surface temperature (VIIRS, ATMS)**
- **Land/Surface type (VIIRS, ATMS, AMSR-2)**
- **Vegetation Index, Fraction, and Health (VIIRS)**



AMSR-2





# Challenge

- **Move from Products to End User Applications**
- **Ensure users are ready for NPP/JPSS data and improve their key operational and research product and services**
  - ✓ Severe weather forecasts and warnings
  - ✓ Aviation weather forecasts and warnings
  - ✓ Improve fire and air quality forecasts and warnings
  - ✓ Improve warnings and prediction of poor water quality in coastal regions
  - ✓ **Improve drought, precipitation, snow and ice assessments and predictions**
- **Periodic feedback from key users on the impact of NPP/JPSS data and to identify improvements needed for products and applications**
- **To meet this challenge, the NOAA JPSS Office has established a JPSS Proving Ground and Risk Reduction Program**



# JPSS PGRR Hydrology Roster



Bob Yu	Monitoring Land Surface Vegetation Phenology from VIIRS
Donglian Sun	Application of NPP/JPSS Data for Improved Flood Mapping and Inundation Area Estimates
Jerry Zhan	Enhance Agricultural Drought Monitoring using NPP/JPSS Land EDRs for NIDIS
Huan Meng	ATMS Derived Snowfall Rates to Support Weather Forecasting
Pingping Xie	Infusing JPSS PMW Retrievals to CMORPH Precipitation Estimates for Improved Weather, Climate, and Water Applications
Naira Chaouch	River and Lake Ice mapping using NPP/JPSS VIIRS sensor To support NOAA NWS



# Suggestions for GPM Proving Ground



- **Need approval of planned NOAA GPM activities (IE using NASA PPS as a basis for NOAA PPS)**
  - Operational users need formal assurance that GPM in NOAA will be funded longterm to navigate firehose of ideas/applications that “could be helpful”
- **Need GPM Program Scientist or Proving Ground manager who has funds that can be used for a call for proposals and can interact with JPSS and GOES-R**
  - If NWS is primary customer consider formal integration with Science and Demonstration Executive Board (SDEB) and NWS Operational Advisory Team (NOAT)
    - JPSS is working on this, currently GOES-R centric
- **Official guidance at <http://www.testbeds.noaa.gov/>**
  - Currently GOES-R is official but not JPSS



# Summary



An understanding of how JPSS data used throughout NOAA is pivotal to evolving and maintaining a robust satellite mission that serves the needs of all Line Offices.

- Feedback from GPM Workshop attendees is important to prioritize how best to use JPSS data in combination with other data to improve critical product and services

*JPSS continues to engage the NOAA user community, ensuring that both the best product and new, enhanced products (via the Proving Ground) are made available in the most timely manner possible.*





# Backup



# Proving Ground and Risk Reduction Application Areas

- **Weather Forecasting (Improving Global, Regional forecasts)**
  - Tropical Cyclones
  - Severe Weather (Nowcasting)
- **Ocean/Coastal (Coral Bleaching, Harmful Algal Bloom alerts)**
- **Land (Droughts, Agriculture)**
- **Hazards (Smoke, Fire, Volcanic Ash, Air Quality)**
- **Hydrological (Precipitation, Floods, Soil Moisture, Snow/Ice, River Ice)**
- **Climate (integrated products, real-time anomaly products)**
- **Education and Training**
- **Infrastructure (Direct Readout and Software (CSPP), Airborne campaigns)**



## Definition from NOAA-wide Testbed and Proving Ground Coordinating Committee



Proving Grounds (PG) are a framework for NOAA/NWS to conduct testing of advanced operations, services and science and technology capabilities that address the needs of both internal and external users. Successful testing demonstrates readiness to implement into operations.