Overview of the Proving Ground

The Ocean Prediction Center (OPC), the National Hurricane Center’s Tropical Analysis and Forecast Branch (TAFB), the Weather Prediction Center (WPC), and the Satellite Analysis Branch (SAB) of NESDIS make up the Satellite Proving Ground for Marine, Precipitation, and Satellite Analysis (MPS). These centers had early exposure to JPSS products using the S-NPP satellite that was launched in late 2011. Forecasters continue to evaluate new products in anticipation for the launch of JPSS-1 sometime in 2017.

New JPSS Products Introduced in 2016!
CIRA Layered Precipitable Water and NESDIS Snowfall Rate

![Figure 2](image)

![Figure 3](image)

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**JPSS Research Projects**

Extratropical Transition of Tropical Cyclones and Identifying the Precursors of Explosive Cyclogenesis which leads to Hurricane-Force wind events are two JPSS and GOES-R projects that are ongoing in the MPS Proving Ground. Both projects combine NUCAPS products, Ozone products, Multispectral imagery, and other ancillary data sets such as scatterometers to help build a better understanding on how integrating these products into a forecaster’s routine can better assist in analyzing and forecasting these extreme events.

**MPS Proving Ground JPSS Vision for 2017**

The 2017 demonstration/evaluation focus will continue to explore the use of the CIRA Layered Precipitable Water product in identifying and monitoring tropical waves in TAFB in assisting the forecasting for heavy rain events at WPC or front analysis at OPC. NUCAPS will continue to evaluate its utility in identifying the precursor to extratropical transition of tropical cyclones or the evolution of explosive cyclogenesis in the North Atlantic and North Pacific.

The NUCAPS laboratory product will be included in the Hydrometeorological Testbed’s 2017 Winter Weather Experiment and will also be evaluated at WPC. The NUCAPS product will be used to identify the soundings, useful products that have been in operations will remain until further notice, allowing for additional feedback and suggestions.

The CIRA-LPW 13-14 product will be evaluated on maritime convection, hurricane-force wind events (land and sea), tropical-to-extratropical transitions, and heavy rainfall.

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![Figure 4](image)

**Figure 4, 5, 6:** The NESDIS Snowfall Rate product was introduced unannounced during the 2015-2016 winter and made a debut as a verification tool in the 2016 Winter Weather Experiment. The Hydrometeorological Testbed staff and Satellite Liaison put together these comparisons to show the usefulness of the product compared to the probability forecasts for a given snowfall rate (0.5-2 inch) to occur during a 24-hour period.

- Training for the SFR Algorithm continues for WPC Operational Forecasters and Testbed Staff heading toward the 2016-2017 winter
- The SFR Algorithm will be utilized operationally on the forecast floor at WPC, SAB, and tentatively SPC
- The 2017 Winter Weather Experiment will utilize the SFR Algorithm to verify probabilistic snowfall rate forecasts when passes align with the forecast window

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![Figure 5](image)

**Figure 5:** The National Oceanic and Atmospheric Administration continues to develop and test new tools and techniques to help forecasters provide better service to the nation’s weather forecasters. The NUCAPS products, for example, have been used to identify the precursor to extratropical transition of tropical cyclones, and the evolution of explosive cyclogenesis in the North Atlantic and North Pacific. The CIRA-LPW 13-14 product will be evaluated on maritime convection, hurricane-force wind events (land and sea), tropical-to-extratropical transitions, and heavy rainfall.

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![Figure 6](image)

**Figure 6:** The National Oceanic and Atmospheric Administration continues to develop and test new tools and techniques to help forecasters provide better service to the nation’s weather forecasters. The NUCAPS products, for example, have been used to identify the precursor to extratropical transition of tropical cyclones, and the evolution of explosive cyclogenesis in the North Atlantic and North Pacific. The CIRA-LPW 13-14 product will be evaluated on maritime convection, hurricane-force wind events (land and sea), tropical-to-extratropical transitions, and heavy rainfall.