

NASA HQ Program Status

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NASA HQ, Washington, DC

Presentation to the Ocean Vector Winds Science Team Meeting

May 19, 2015

5/19/15

Summary

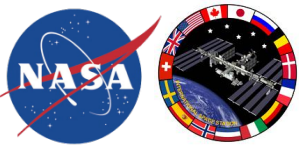
- **RapidSCAT** launched in September 2014. **What is the status of cross-calibration with QuikSCAT?** What are the early results across the OVW community?
- **Termination of QuikSCAT in CY2015.** What activities can be launched to honor the long data set from QuikSCAT?
- The **2nd NRC Earth Sciences Decadal Survey** is planned for reporting-out in 2017. What essential information would the OVW community provide to an NRC committee? What process shall we use to assemble the information?
- **NASA PO program is continuing research work on future missions** involving scatterometry, winds, surface currents, and mixed layer depth.
- NASA PO program is planning more interaction across our Measurement-based teams so we may expect more interaction between OVW community and SST and SSS teams. **Small workshop planned in March 2016.**



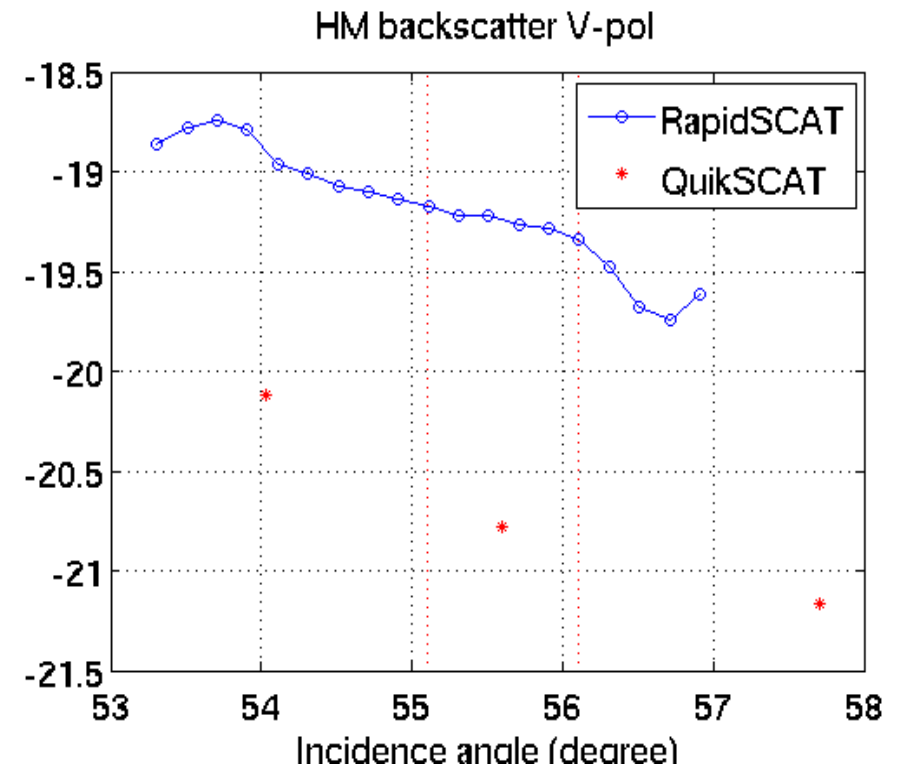
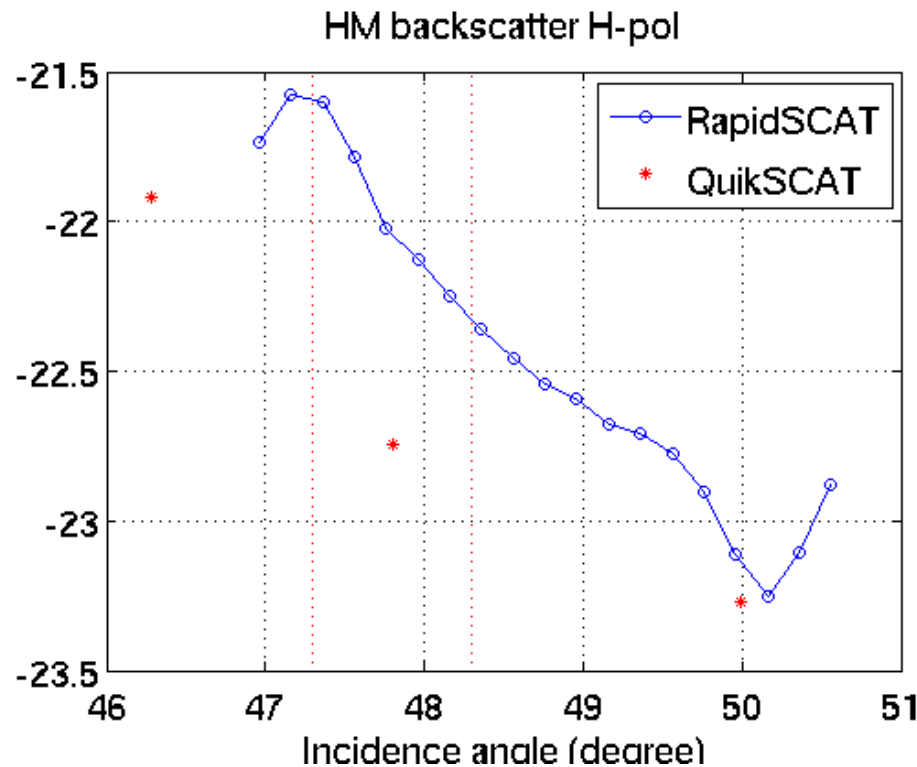
Cross-Calibrating QuikSCAT and RapidScat



- The QuikSCAT scatterometer has been extremely stable over its 15-year life and continues to provide consistent radar back scatter data.
- RapidScat launched in September 2014 and was calibrated against QuikSCAT before the first science data release.
- RapidScat and QuikSCAT are now in continuous cross-calibration mode to assess potential drifts in the RapidScat data.
- QuikSCAT will be decommissioned in the fall of 2015, after it has handed over to RapidScat the Ku-band cross-calibration standard.



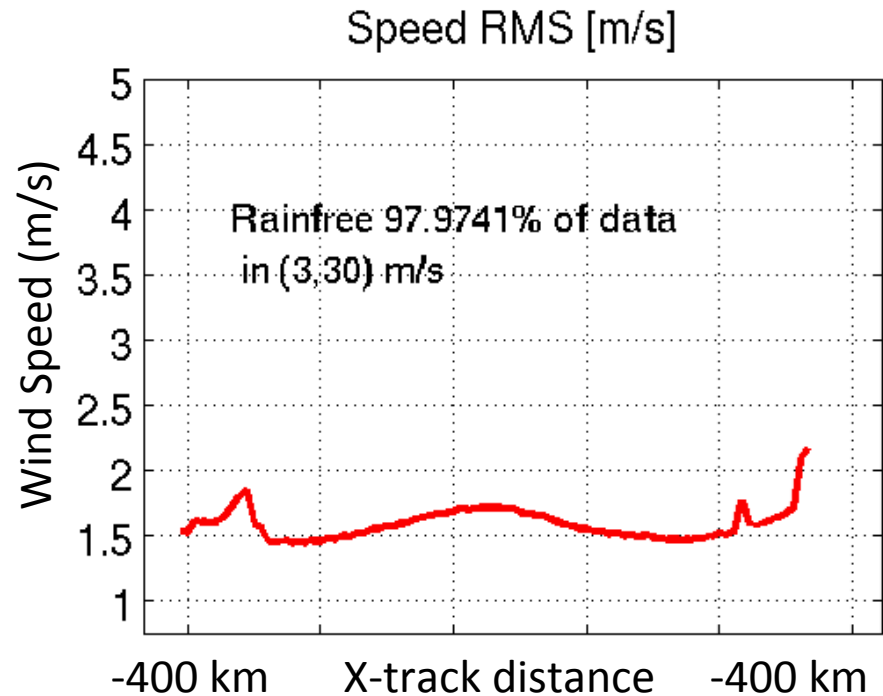
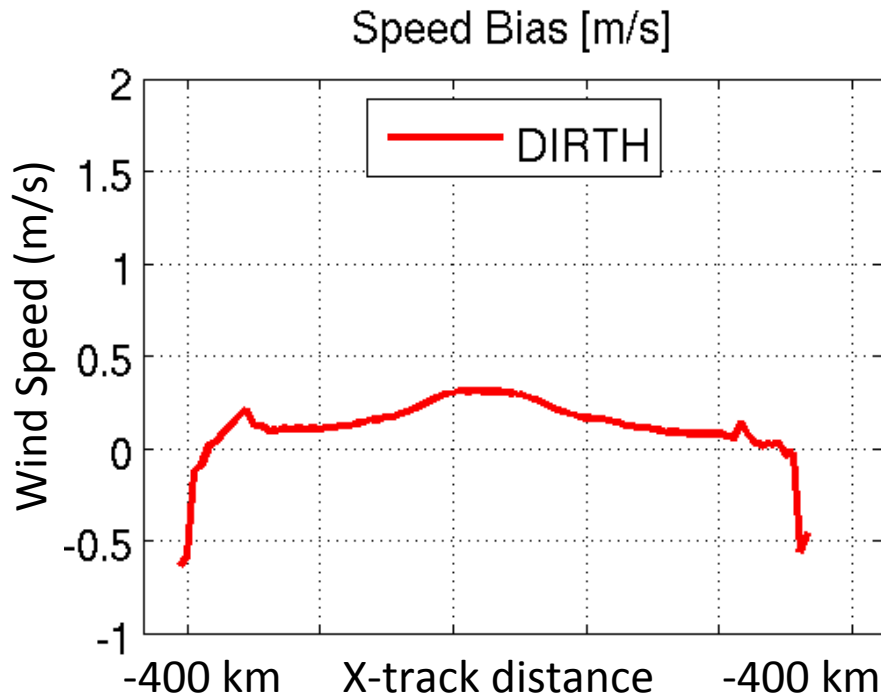
The Need for Measurement Continuity Cross-Calibrating with QuikSCAT



- Direct comparison of QuikSCAT and RapidScat radar cross sections after launch showed that RapidScat was biased high compared to QuikSCAT
- These biases resulted on wind speed biases of about 1 m/s when comparing against independent wind data
- This direct comparison was only possible with simultaneous data collection



Wind Speed Performance vs ECMWF after Bias Correction



- After correcting for the cross section bias relative to QuikSCAT, the RapidScat wind speed biases compared to ECMWF were similar to those observed with QuikSCAT
- The RMS difference between the two data sets showed that RapidScat had similar noise performance to QuikSCAT.

NRC Decadal Survey- ESAS 2017

- 2017 Decadal Survey of Earth Science and Applications from Space (ESAS)
- Covers period from 10/1/17-9/30/27
- Recommendations for NOAA, NASA, USGS
- Cost and technical analysis for major proof-of-concept NASA missions.
- Survey Steering Committee of 18-20 members and NRC-appointed ad hoc panels

QuikSCAT end-of-mission

- Planned for October 2015
- Can OVWST plan an activity to honor and highlight the long record of QuikSCAT and its accomplishments?
- Workshop? Special Publication?
- When is the right time? Venue?
- **PLEASE PROVIDE YOUR IDEAS.**

Physical Oceanography Program

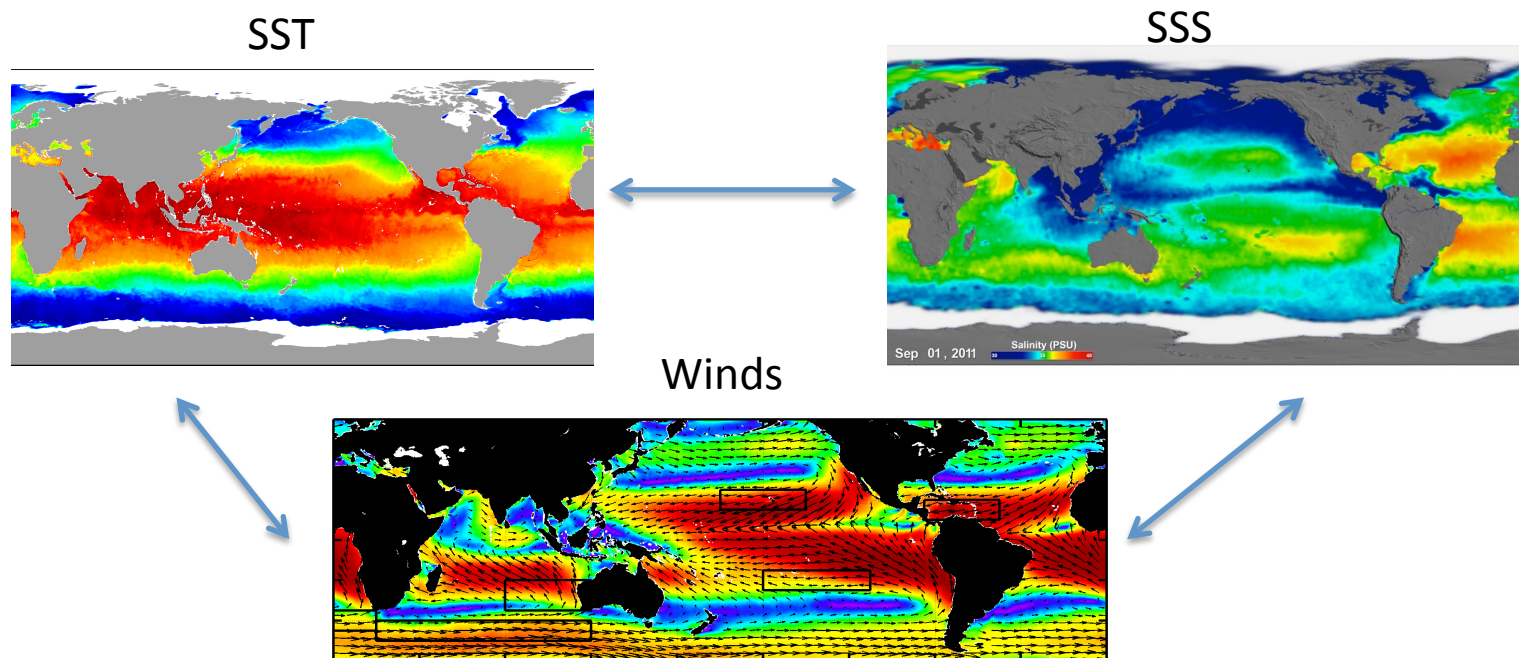
Supporting research on new mission concepts

- “Science motivations for remote sensing of ocean mixed-layer properties” (Halkidies and Menimenlis)
- “Effect of ocean waves on surface velocity retrievals using a Ka-band Doppler scatterometer” (Grodsky)

Workshops

- “From Space to the Deep Seafloor: Using "Green" Submarine Cable Systems in the Ocean Observing System” (Howe)
- “A Workshop on Mission Concepts for Marine Debris Sensing” (Maximenko)

NASA Coupled Ocean Surface Variables Workshop



Goals:

- Assist in the development of data products for surface water mass analysis (MLD, water mass formation)
- Describe key processes and phenomena related to SST/wind coupling
- Articulate research agenda for improved SSS retrieval from *Aquarius* via coupled surface variable studies (esp. SST, winds, roughness)

Proposed 3-day workshop at APL-UW (Seattle) March 15-17, 2016
Steering committee selection and program development ongoing