



National Aeronautics and Space Administration

# Earth Systems Science Pathfinder Program Office Executive Summary

Fall 2017



## Recent project and investigation news and highlights:

(Please click on hyperlinks for more information)

- The 2017 Atlantic hurricane season has been one of the most active seasons in the last decade, producing at least four major hurricanes. ESSP instruments have contributed important observations for use in improving the understanding of the development and structure of storms, and for improving predictions of storm intensity and track.  
**CYGNSS** (The Cyclone Global Navigation Satellite System), ESSP's first Earth Venture Mission, launched on December 15, 2016 and began regular production of science data products (ocean surface wind speed and roughness) on May 22. Since then, CYGNSS has contributed observations throughout the lifecycles of several major storms that have affected the US during the 2017 hurricane season (Harvey, Irma, Jose and Maria). Dr. Chris Ruf (CYGNSS principal investigator) describes these measurements in NASA's *Earth Observatory "Notes from the Field"*, and *relates his experience* flying into Harvey on NOAA's P-3 "hurricane hunter" aircraft.  
**CloudSAT**, an ESSP operating mission, is the first satellite to provide a global and seasonal survey of cloud profiles and physical properties. On August 26, CloudSAT obtained *imagery of Hurricane Harvey*, with the cloud profiling radar (CPR) instrument capturing information on cloud particles and structure across the extent of the storm.  
ESSP's most recent Hands-On Project Experience campaign, *Eastern Pacific Origins and Characteristics of Hurricanes (EPOCH)* made use of NASA's Global Hawk autonomous aircraft to study storms in the Northern Hemisphere for learning more about storm intensification. The campaign took place in August, with three tropical storms presenting the opportunity for study: TS Franklin and TS Harvey located in the Gulf of Mexico, and TS Lidia in the eastern Pacific. The timing of the eastern Pacific flights enabled sampling of the evolution of tropical disturbance 14-E into TS Lidia.
- Congratulations to Dr. Gary Lagerloef, PI for **Aquarius**, who was selected as recipient of the **Verner E. Suomi Award (AMS)**. This award is granted to individuals in recognition of highly significant technological achievement in the atmospheric or related oceanic and hydrologic sciences. Dr. Lagerloef will be honored in Austin, TX at the annual AMS meeting in January 2018.
- **ATom** (EVS-2) makes their third global transit this fall on NASA's DC8, coincident with the 30 year anniversary of NASA's first ever mission with the DC8. The DC8 is currently based at NASA's Armstrong Flight Research Center. Its first NASA mission was the **Airborne Antarctic Ozone Experiment (AAOE)**, based from Punta Arenas, Chile during August-September 1987. Punta Arenas is one of the sites for ATom's global transit, and the team plans a flight from that site to Antarctica and back to sample the atmosphere under current ozone depletion conditions.
- After more than 15 years of taking data, the **GRACE** (Gravity Recovery and Climate Experiment) missions operations team is making plans for an anticipated *final science data collection* in October/November. GRACE-2 is expected to run out of fuel after that period, and both satellites will be decommissioned.
- Catch up on the experiences of the scientists on board the RV Atlantis in the North Atlantic during the third **NAAMES** (EVS-2) expedition from this *Earth Observatory blog archive*.