

National Aeronautics and Space Administration

Earth Systems Science Pathfinder Program Office Executive Summary

Summer 2018



Recent project and investigation news and highlights:

(Please click on [hyperlinks](#) for more information)

➤ 2018 Launches

- **ECOSTRESS** was successfully launched on June 29 this year on the 15th Space X commercial resupply services mission. The JPL instrument was installed on the JEM-EF module of the International Space Station on July 5, and first-light images were acquired on July 9.

After initial calibration and data validation, ECOSTRESS will begin its science mission.

- The NASA GSFC's **GEDI** instrument is *now planned to launch to the International Space Station* earlier than expected. Launch on Space X's 16th commercial resupply services mission is expected to occur in late 2018. GEDI will map the world's forests in high resolution and three dimensions to help scientists understand how much carbon is stored in the world's forests.

Watch the video: *May the Forest be with you !!*

➤ New flood detection capability by CYGNSS

- As the first year of **CYGNSS** data is being evaluated, a new and unexpected capability has emerged: the ability to see through clouds and rain to flooded landscapes. This ability, and the increase in temporal coverage due to the 8 satellite **CYGNSS** constellation, could introduce a new capability of rapid flood monitoring for government and disaster response agencies.

Read about this potential new area of scientific investigation here.

Extended application of ECOSTRESS data

While not its primary mission, **ECOSTRESS** is able to detect heat-related phenomenon on the Earth's surface such as volcanoes, fires, and heat waves. The instrument obtained *imagery on July 28 showing some of the fires in the western US with a ground resolution of 70 meters X 70 meters.*

Happy Birthday to the Orbiting Carbon Observatory-2!!! **OCO-2** was launched on July 2, 2014, and has been providing high-resolution global measurements of column CO₂ over the last four years.

➤ OMG, the water's warm! NASA study solves glacier puzzle

- The Tracy and Heilprin glaciers in northwest Greenland are melting at radically different rates: the Tracy Glacier is melting nearly four times faster than the Heilprin Glacier, located just next to it. Now, data from the EVS-2 investigation Oceans Melting Greenland (**OMG**) is being used to investigate why. Bathymetry data from ship "Neptune" along with temperature and salinity soundings around the glaciers confirm that the more rapidly melting Tracy Glacier has a deeper base calving front than the Heilprin Glacier, exposing Tracy to warmer subsurface waters. *The study was published in Oceanography on June 21.*