NASA's satellites to improve hurricane forecasting

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New York: NASA engineers have started working on the first of eight micro-satellites under the Cyclone Global Navigation Satellite System (CYGNSS) project.

The system, being built at the Southwest Research Institute in San Antonio, Texas, will improve hurricane forecasting by making measurements of ocean surface winds in and near the eye wall of tropical cyclones, typhoons and hurricanes throughout their life cycle.

Communication antennas, attitude control, GPS receiver, and other instrumentation will be installed on the satellite frame in the coming weeks.

"We are now in the last phase of the beginning of a new era in hurricane observations," said Chris Ruf, CYGNSS principal investigator at the University of Michigan, Ann Arbor.

CYGNSS mission - a constellation of eight micro-satellites - will allow scientists to probe the inner core of hurricanes from space frequently for the first time, using both direct and reflected signals from existing GPS satellites to obtain estimates of surface wind speeds over the ocean.

These measurements will advance forecasting methods by providing data that can lead to better predictions of hurricane tracks, intensities and storm surges.

The CYGNSS constellation will be deployed into low-Earth orbit with successive satellites passing over the same region approximately every 12 minutes.

As the CYGNSS and GPS satellites circle Earth, their interaction will provide a new image of wind speeds over the entire tropics every few hours, whereas a single satellite supplies a new image every few days.

The University of Michigan is directing the CYGNSS mission for NASA, including satellite design and production and science data processing.

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