NASA begins first Antarctic airborne campaign from McMurdo Station

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NASA's Operation IceBridge has begun its 2013 Antarctic field campaign with the arrival of the agency's aircraft and scientists at the National Science Foundation's McMurdo Station in Antarctica.

The IceBridge mission will conduct daily survey flights through Nov. 26 on a NASA P-3 research aircraft from a base of operations at McMurdo Station. The P-3 usually is based at the agency's Wallops Flight Facility in Virginia. As part of a multi-year project, researchers are collecting data on Antarctic land and sea ice. Previous IceBridge Antarctic missions was conducted out of Punta Arenas, Chile.

"Flying from Antarctica will allow us to survey areas that had been unreachable from Chile," said Michael Studinger, IceBridge project scientist at NASA's Goddard Space Flight Center in Greenbelt, Md. "There are many scientifically important areas we can now reach from McMurdo."

One such area is the Siple Coast on the edge of Antarctica's Ross Ice Shelf. The ice streams there are of particular interest. "We know from spaceborne ice surface velocity measurements that some of the Siple Coast ice streams are changing," said Studinger. "But since 2009, we have had no laser altimeter measurements of ice surface elevations in this area."

In 2009, NASA's ice-monitoring satellite, the Ice, Cloud and Land Elevation Satellite (ICESat) reached the end of its life and stopped

collecting data. IceBridge was started the same year and will keep an eye on changing polar ice until NASA launches the ICESat successor (ICESat-2) in three years.

IceBridge also plans to fly over areas of sea ice in and around the Ross Sea where there have been no airborne ice thickness measurements. The scientists also will survey beneath the Ross Ice Shelf using a gravimeter, an instrument that can detect minute changes in gravitational fields below the aircraft. These small changes help researchers determine the depth and shape of water cavities beneath floating ice.

The P-3 left Wallops Nov. 11 carrying a suite of instruments, including laser altimeters, radars, cameras and gravity and magnetic field sensors. The IceBridge team also has set up ground stations at McMurdo to collect global positioning system data.

Mission planners worked with the National Science Foundation and the U.S. Antarctic Program for more than a year laying the groundwork for this campaign. The IceBridge project science office is located at Goddard.

More information: For more information on Operation IceBridge, visit: www.nasa.gov/icebridge

Provided by NASA