

Beaufort Gyre Exploration Project: Dispatch 18: Sunrise/Sunset ITPs

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Besides the subsurface moorings, the BGOS portion of the JOIS program includes deployments of Ice-Tethered Profilers (ITPs; [learn more](#)), which are drifting buoys with profilers (like the MMP) that acquire and transmit to our laboratory in Woods Hole in near-real time CTD data between 7 and 760 m several times per day. In the 6 years before this cruise, 37 ITPs were deployed in the Arctic, one in Antarctica, and one in Crater Lake, Oregon. Eighteen of these were deployed from the Louis on previous BGOS/JOIS cruises, and 4 are to be deployed this cruise. In addition, we also hoped to recover two ITP systems that we believe have data in the subsurface profiler that was unable to be transmitted. One of these stopped transmitting a few weeks before we could reach it, but the other system (with a prototype current sensor) that was deployed from the Louis last year was successfully recovered this morning. This same day, later in the evening, one of the new ITPs was deployed not far away.

The ITP that was recovered (number 35) was found on a helicopter reconnaissance yesterday evening, so we were able to arrive at the site early this morning. As the ice surrounding the system precluded an on-ice recovery, shortly before sunrise the mooring team landed on the floe and attached a bridle and flag to the buoy to facilitate recovery by from the ship. Afterwards, skillful ship maneuvering freed the buoy from the refrozen lead that it was locked in, and the system was hoisted aboard. This was a major accomplishment since 1357 profiles were recovered from the prototype profiler that we wouldn't have recovered otherwise.

Soon thereafter, the mooring team prepared for deploying ITP number 41 not far away. A 2.5 m thick icefloe was found adequate for the deployment, and the personnel and equipment were all transported to the ice by helicopter, and the system successfully installed just before sunset while the air temperature plummeted to -20 C. It was long but productive day for our team, punctuated also by a sighting of two polar bears from the ship between operations.

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