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Beaufort Gyre Exploration Project: Dispatch 19: Examining sea ice

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Examining sea ice is an important component of the JOIS 2012 cruise and the 'ice team' has grown significantly this year with the addition of two scientists from the University of Manitoba. The University's Centre of Earth Observation Science sent Research Associate Klaus Hochheim and Heather Stark to study the sea ice pack using a variety of multispectral instruments. These instruments are to understand and help explain the ever-changing sea ice in the Arctic.

There are two portions to their scientific program: ship based and on ice. The ship-based program consists of a pyranometer, pyrgeometer, and a UV sensor mounted towards the stern of the ship above the helicopter hanger. These sensors collect continuous data about short- and long-wave radiation. To complement this, an instrument mounted on the bow, called the HyperSAS, collects downwelling and upwelling radiation when in sea ice to examine the relationship between solar radiation and sea ice. Another portion of the electromagnetic spectrum investigated is the thermal/infrared portion ñ a FLIR thermal camera mounted above a reflective dome captures images of the sky every minute. These images, when paired with images from the all sky camera, a digital camera with a fisheye lens, and hourly observations of cloud type, general atmospheric conditions are continuously documented.

So far the team has had little chance to examine sea ice, but hopefully in the next few weeks the concentration of sea ice will be higher and healthier to enable on-ice surveys.

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