



Dropping aircraft-deployable GPS stations on Scar Inlet and Pine Island Glacier.

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There remains areas of scientific interest that heavy crevassing makes difficult or impossible to reach by ground via overland treks or an aircraft landing. We have developed an alternative strategy for instrumenting these regions: a sensor probe that can be dropped from an aircraft, partially bury itself in the snow whilst keeping its antennas protruding high above the surface to ensure a long operating life. Our probe has a 2.5m, 10kg missile-shaped design and can be deployed through a standard sonar-buoy launch tube. In order to achieve a consistent impact depth in different snow densities the case is fitted with fold-out fins one metre from the nose cone. This ensures a large step-change in impact surface area when the device is embedded to the correct depth. A small disk-gap-band parachute improves the angle of impact while damping any probe oscillations. We are now able to achieve near-vertical impact angles and a consistent snow penetration depth of one metre. The sensor is cheap to make (approximately £000) and has a minimal environmental impact. This year we have used a large network of these sensors to instrument previously inaccessible parts of Scar Inlet and Pine Island Glacier.