

Antarctic Peninsula Automatic Weather Station Network 2018-19 Field Season Review

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1. Overview

The British Antarctic Survey (BAS) is responsible for a network of automatic weather stations (AWS) located on the Antarctic Peninsula and in the Halley region. BAS also service two further AWS on the Larsen C ice shelf in collaboration with the University of Utrecht.

All BAS AWS sites measure wind speed, wind direction, temperature, pressure and relative humidity. Data are logged to a Campbell CR1000 data logger and ten minute averaged data are saved to a data card. Ten minute averaged data are transmitted via SBD Iridium every three hours and relayed as SYNOPS on the GTS. Once a week the complete data set is sent via Iridium. The AWS are powered by two 100Ah 12V lead acid batteries, charged by solar panel. Assuming normal service, these stations need only be visited to raise the instruments, logger box and batteries above snow accumulation and to retrieve and replace data cards. Visits usually take place every one or two years depending on weather conditions and aircraft operational commitments.

2. 2018-19 season

This season all sites, except Dismal Island, Koni Steffen's AWS, Limbert AWS and Baldrick AWS were visited for data retrieval and instrument raising. Sky Blue required a second visit to resolve iridium communication problems.



Figure 1. A typical BAS AWS.

University of Utrecht

The two remaining Intelligent Weather Stations (iWS) located on the Larsen C ice shelf continue to work well after finishing their two-year trial running alongside their older AWS versions. These iWS were developed by the University of Utrecht. The iWS is a small unit (18x22x12cm) which comprises a power system (solar panels and lithium batteries), logger and all sensors, except a propane and radiation sensor which are plugged into the unit and are mounted on the same rig. Data are transmitted via ARGOS. The units, propane and radiation sensor are replaced annually, when operational commitments allow, with a normal service time of less than an hour.

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Figure 2. A University of Utrecht iWS on the Larsen C ice shelf.

3. Issues

Last season the logger box at Fossil Bluff was found with condensation in it. Desiccant bags were placed inside the logger box and this season there was no evidence of condensation so the bags will be changed annually.

4. Intentions for 2019-20 season

This coming field season, operations will be carried out from both Rothera and Halley as usual to enable the best possible chance to visit and service all of the AWS.