



POLAR SCIENCE
FOR PLANET EARTH

British Antarctic Survey

Automatic Weather Station Network 2017/18 Season Review

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Antarctic Survey**
NATURAL ENVIRONMENT RESEARCH COUNCIL



The Summer 2017/18 Team

Rothera



Dan Rylett



Mairi Simms

Halley



Tom "Barney"
Barningham



Jon Shanklin

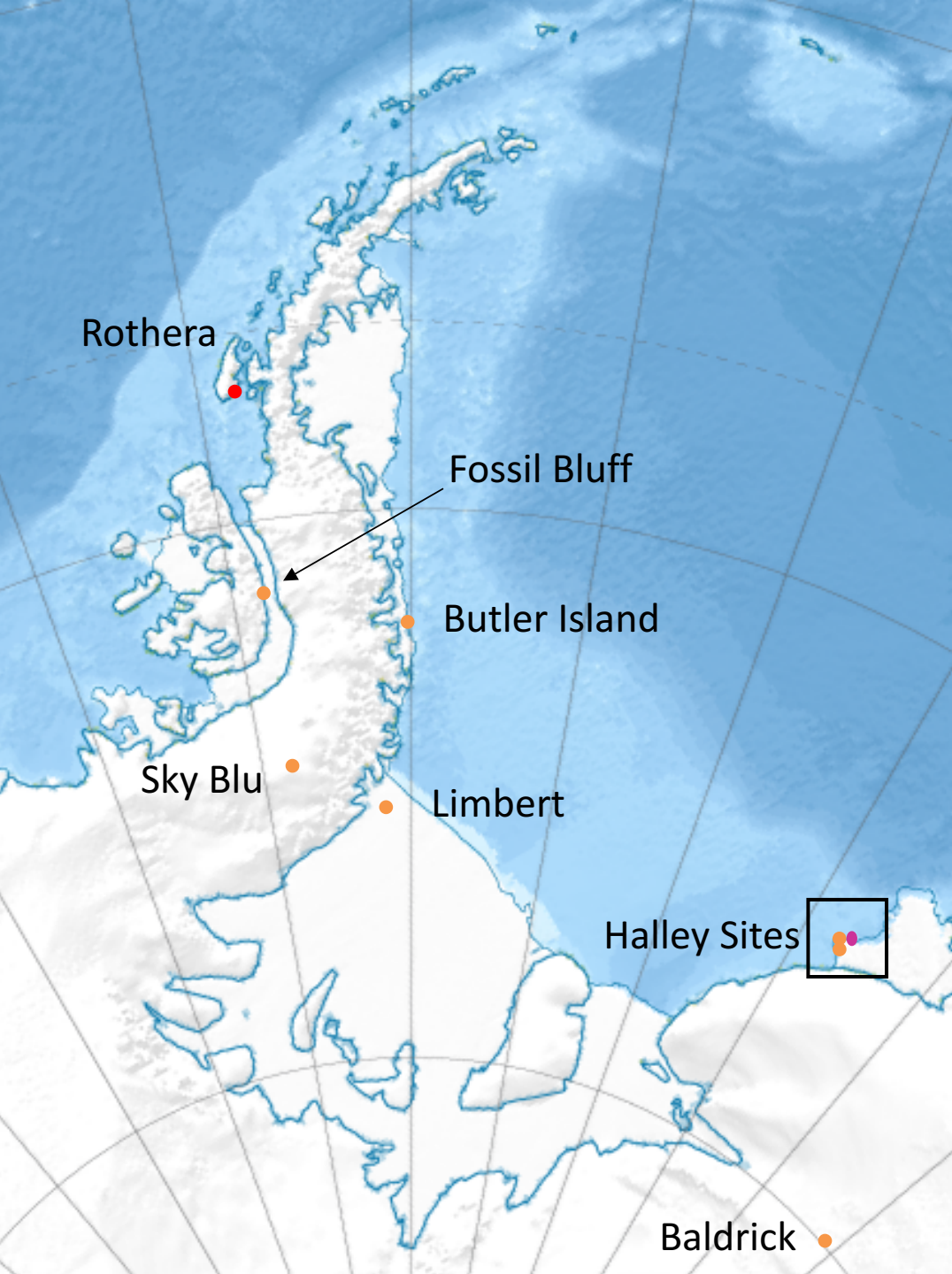
Thanks to the whole team for their efforts this past season!



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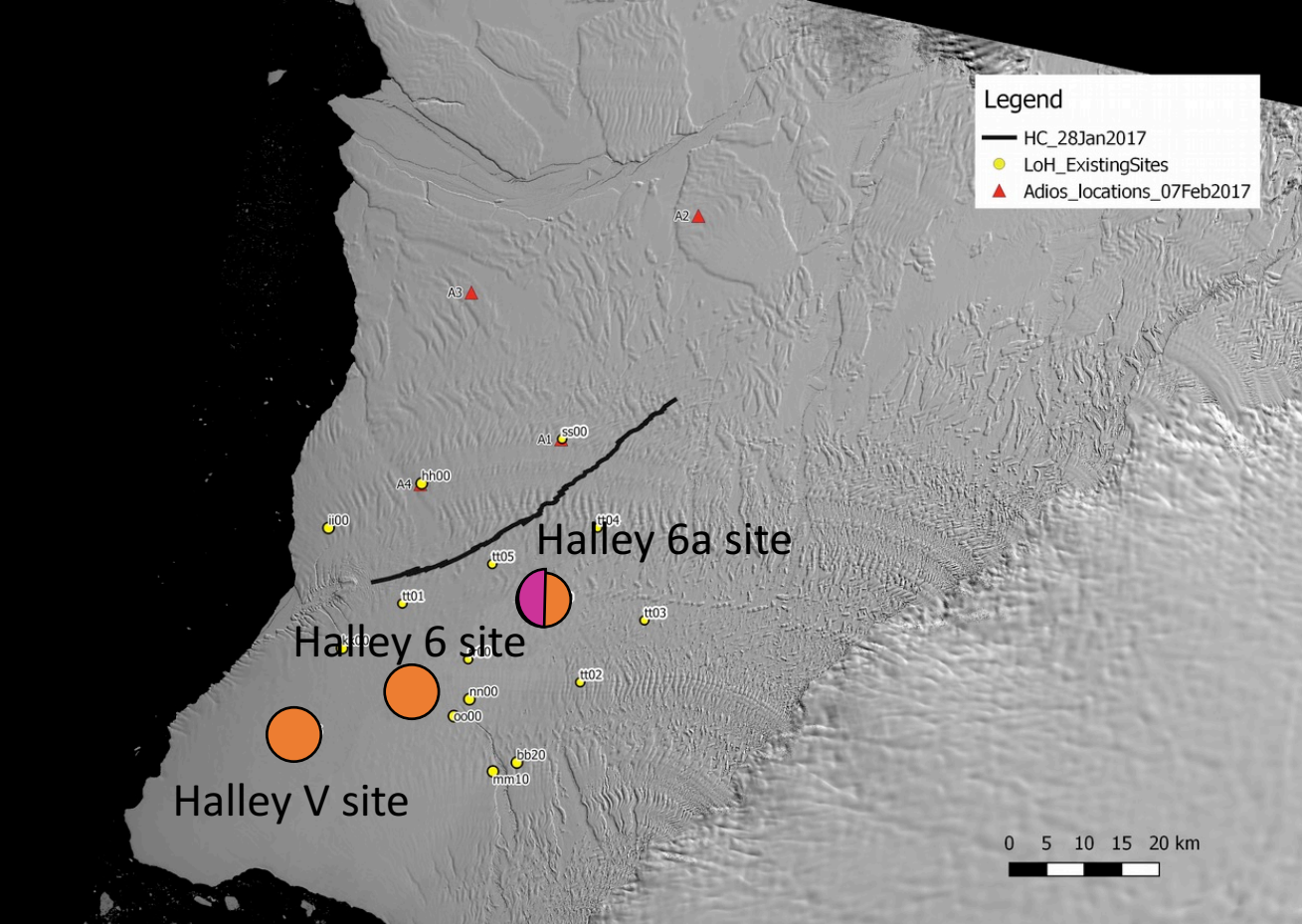
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BAS AWS Network



- BAS manned station
- BAS manned station (summer only)
- BAS AWS





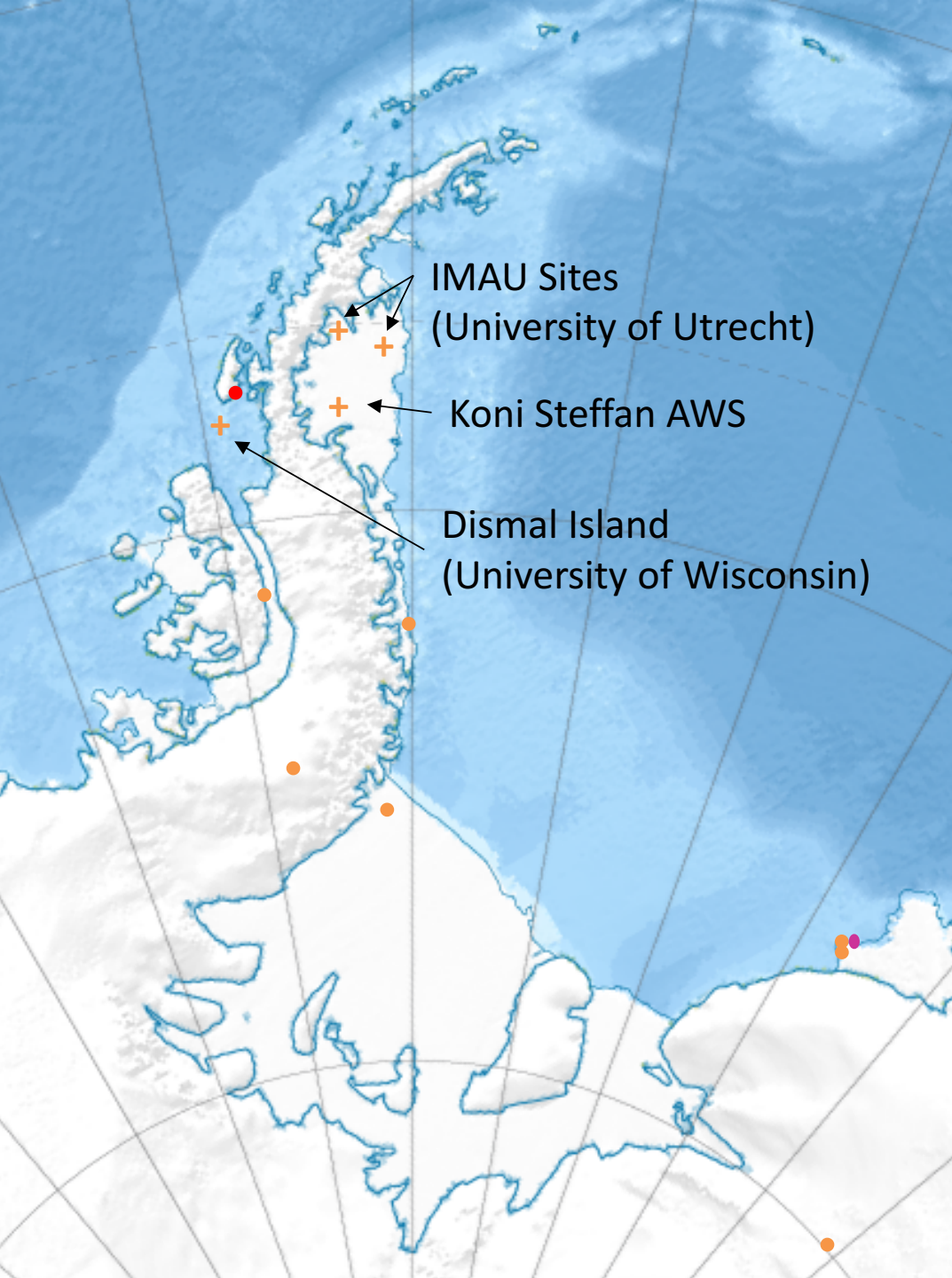
BAS AWS Network

Start of the 2017/18 season

- AWS at Halley V
- AWS at Halley 6 sending SYNOPS to GTS
- AWS at Halley Site 6a



AWS Network



+ Non-BAS AWS

● BAS manned station

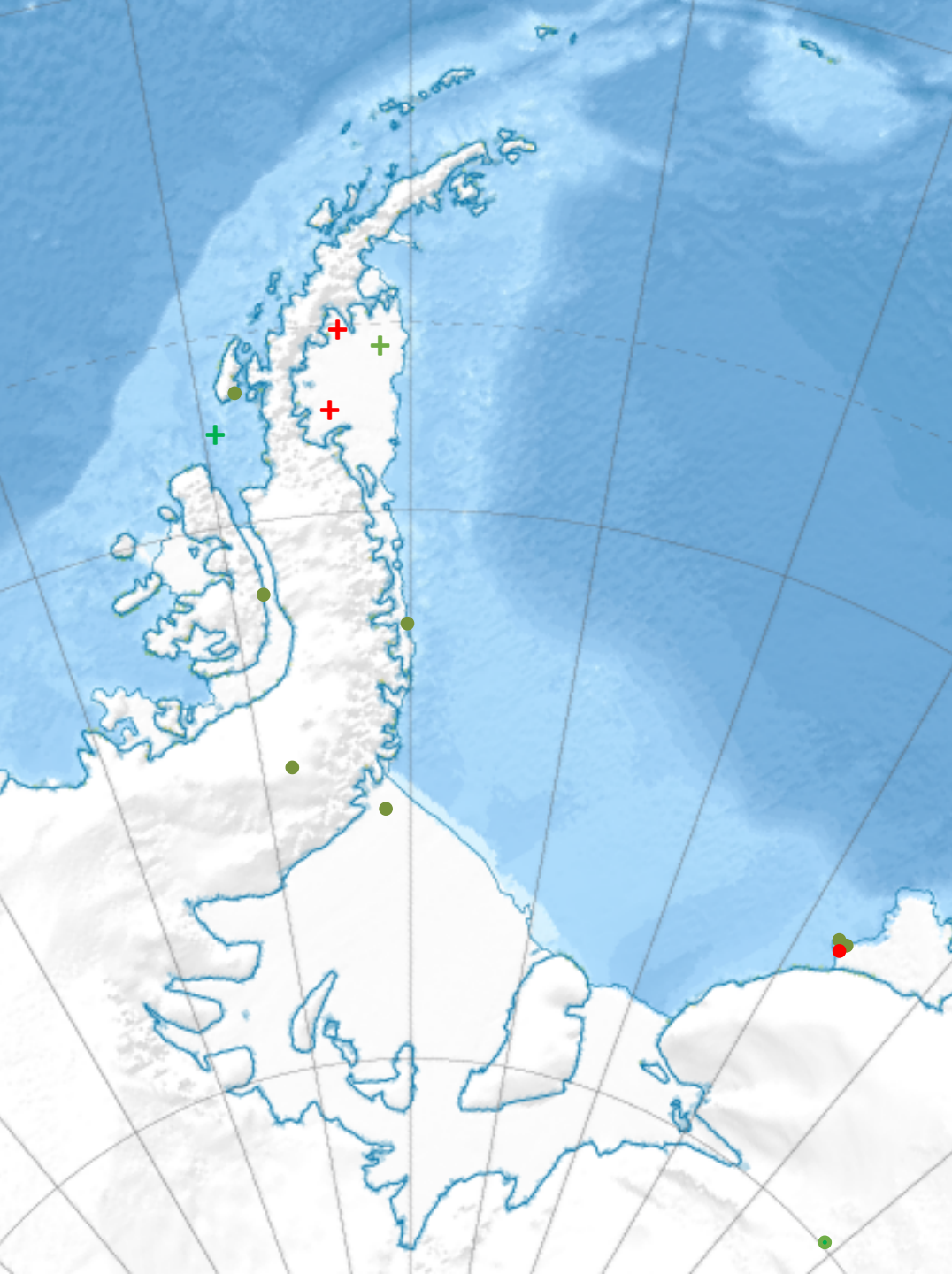
● BAS manned station
(summer only)

● BAS AWS



AWS Network

- Capability of sending SYNOPS to GTS
- No capability at this time



BAS AWS Network

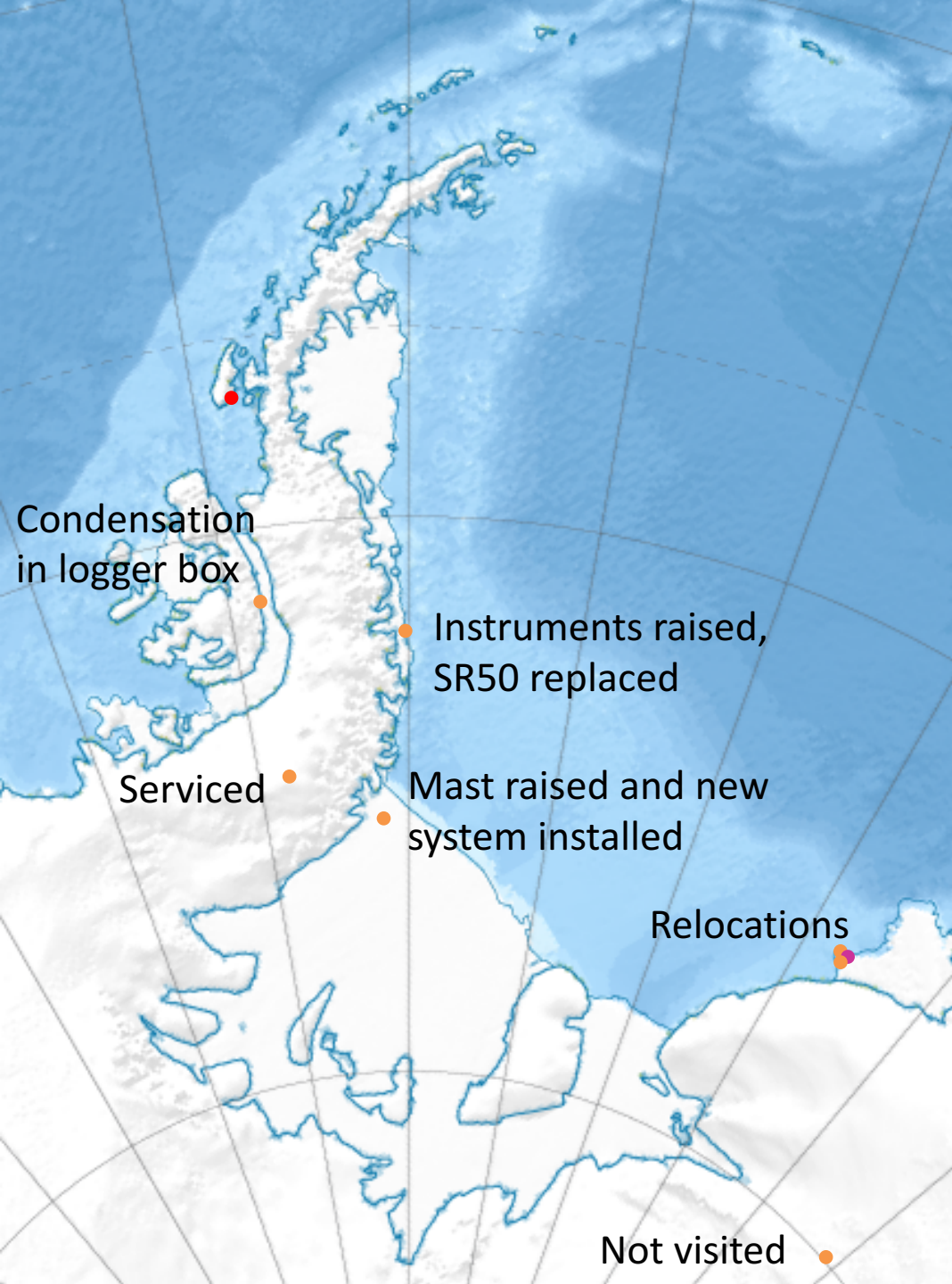
- Propvane, sonic ranging snow accumulation sensor, HMP temperature and humidity sensor, PRT air temperature sensor, pressure sensor
- Powered by two or four x 100Ah 12V batteries (buried), charged by solar panel.
- Campbell Scientific CR1000 data loggers.
- 10 minute averaged data saved to card.
- 10 minute averaged data are transmitted via SBD Iridium every three hours.
- Complete data set is sent via Iridium once a week.



BAS AWS Network

Work Carried out 2017/18

- Fossil Bluff – Condensation in logger box
- Limbert – Whole system (including batteries) replaced.
- Peninsula stations– Updated logger to the latest OS and rewired so that the modem isn't connected to the RS232 port.
- Raised any cables stored below loggerbox





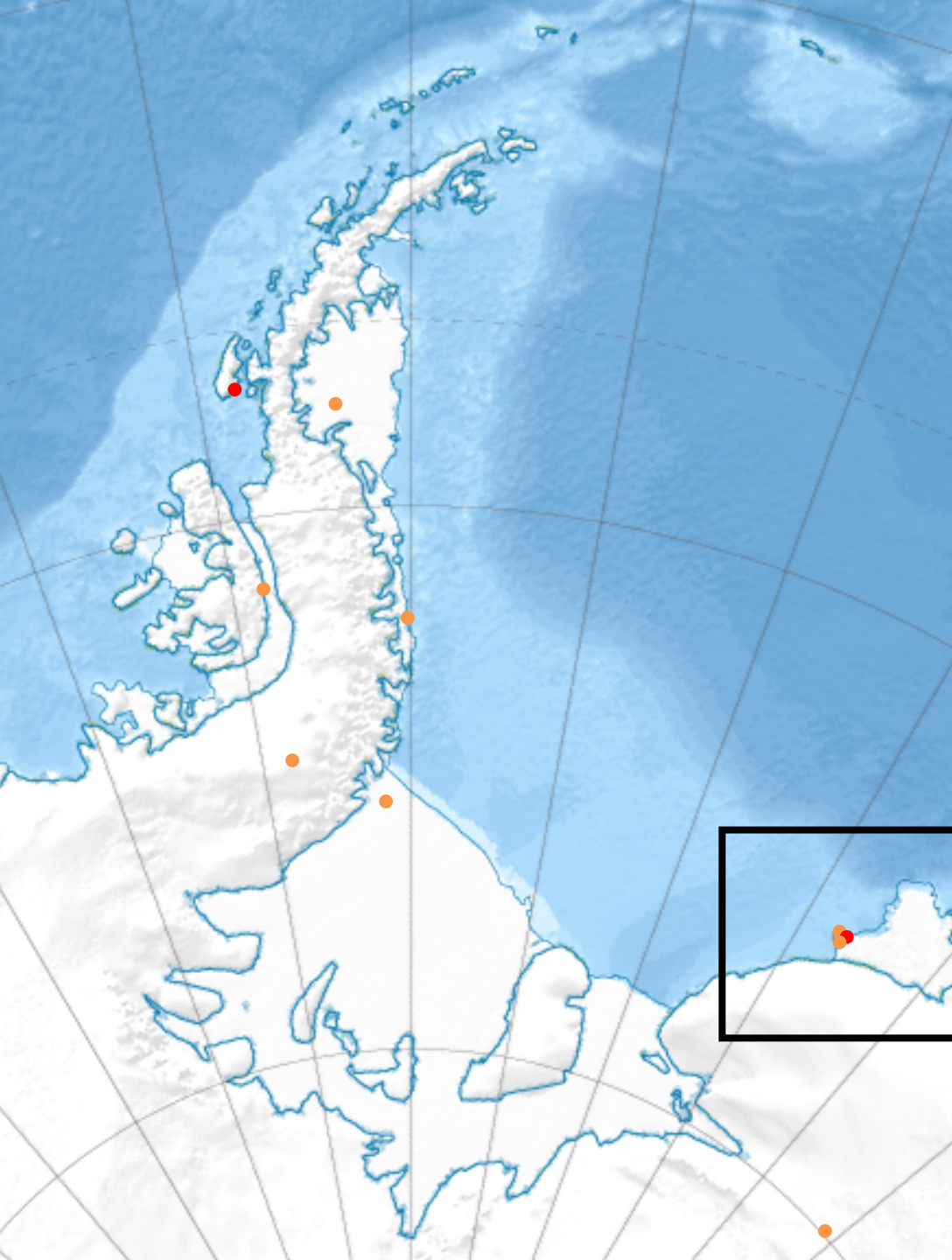
Limbert AWS

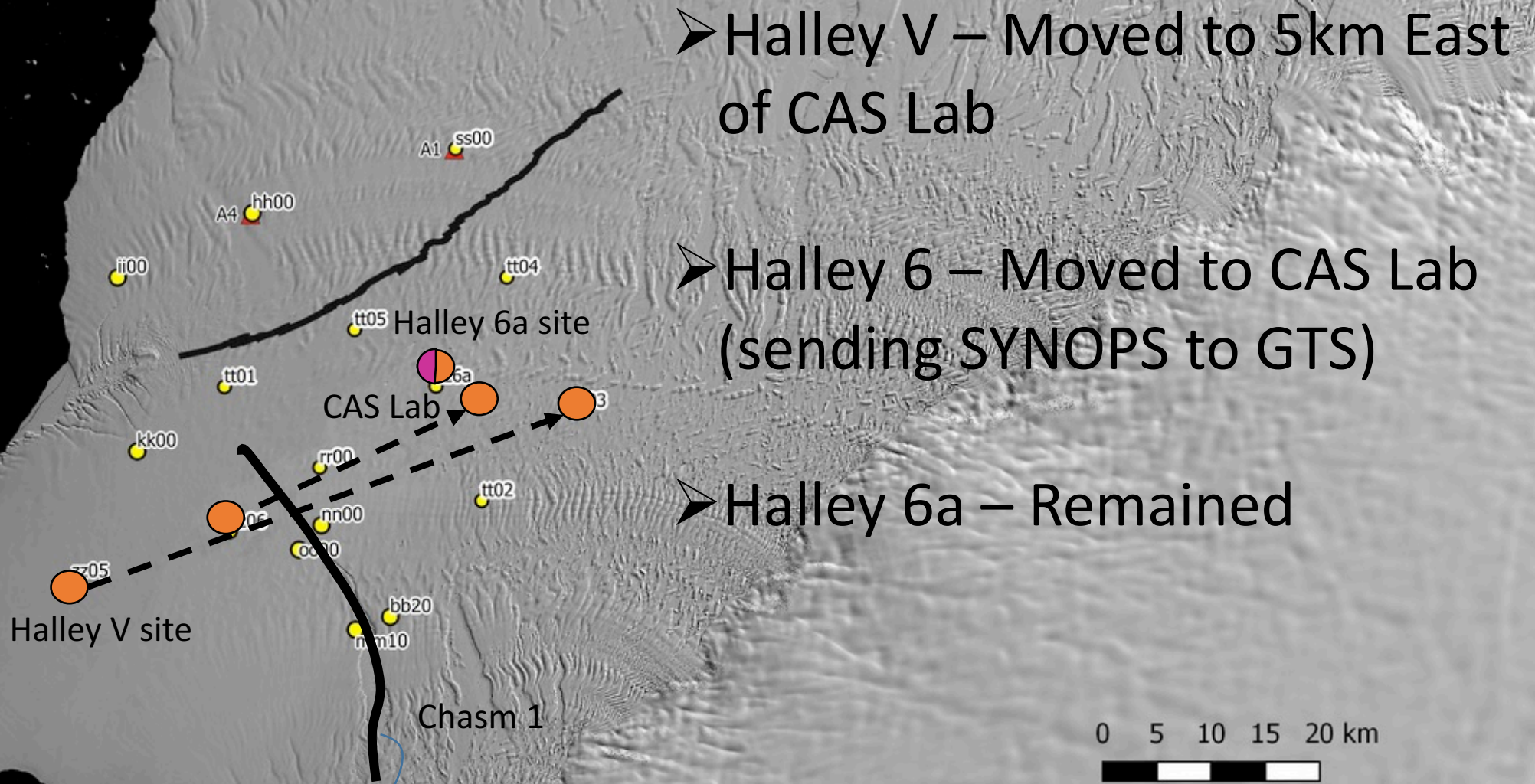
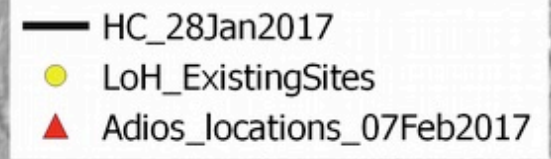
- Tried to raise previous season but wind proved too much.
- Was in need of a raise!
- Service over two days



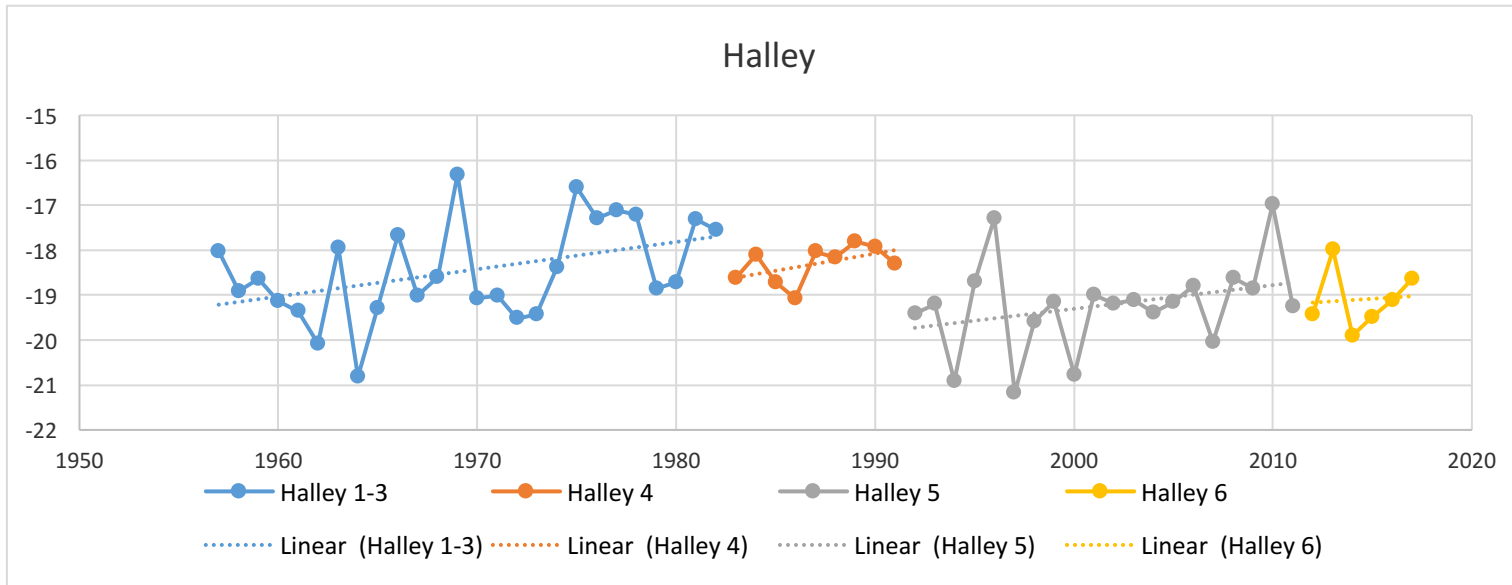
BAS AWS Network Work Carried out 2017/18

Over at Halley....

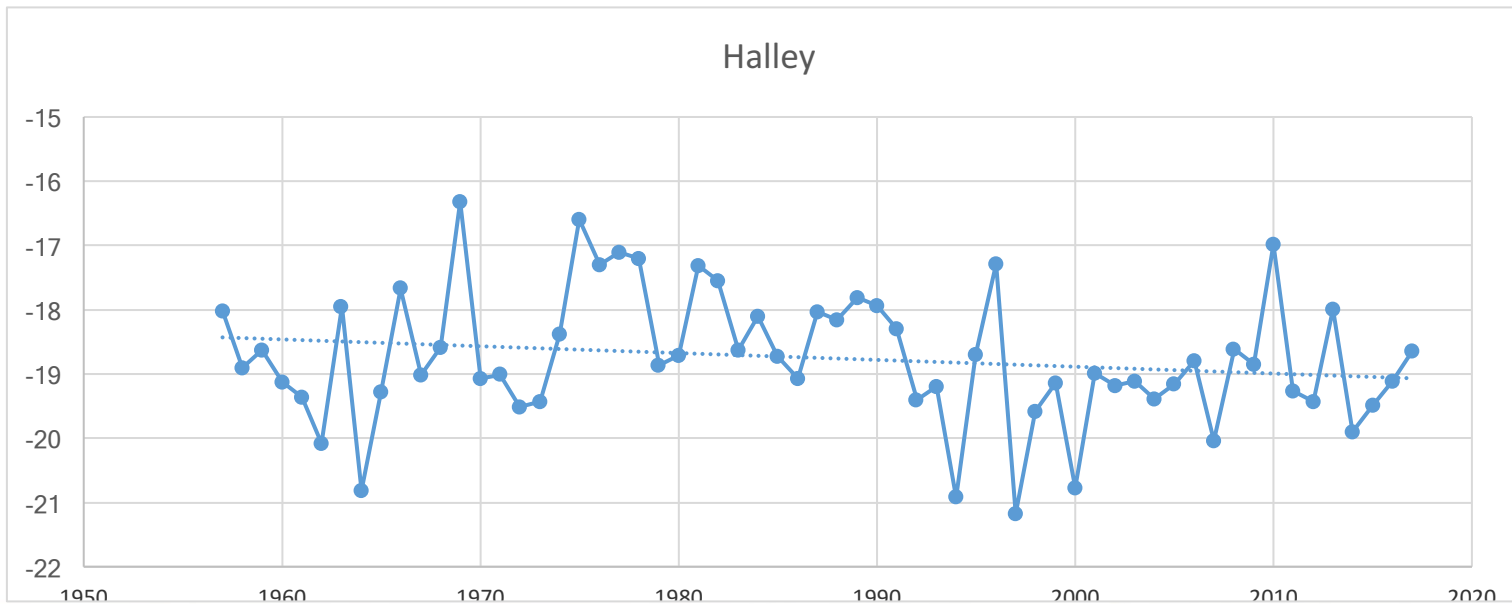




Halley Temperature Record



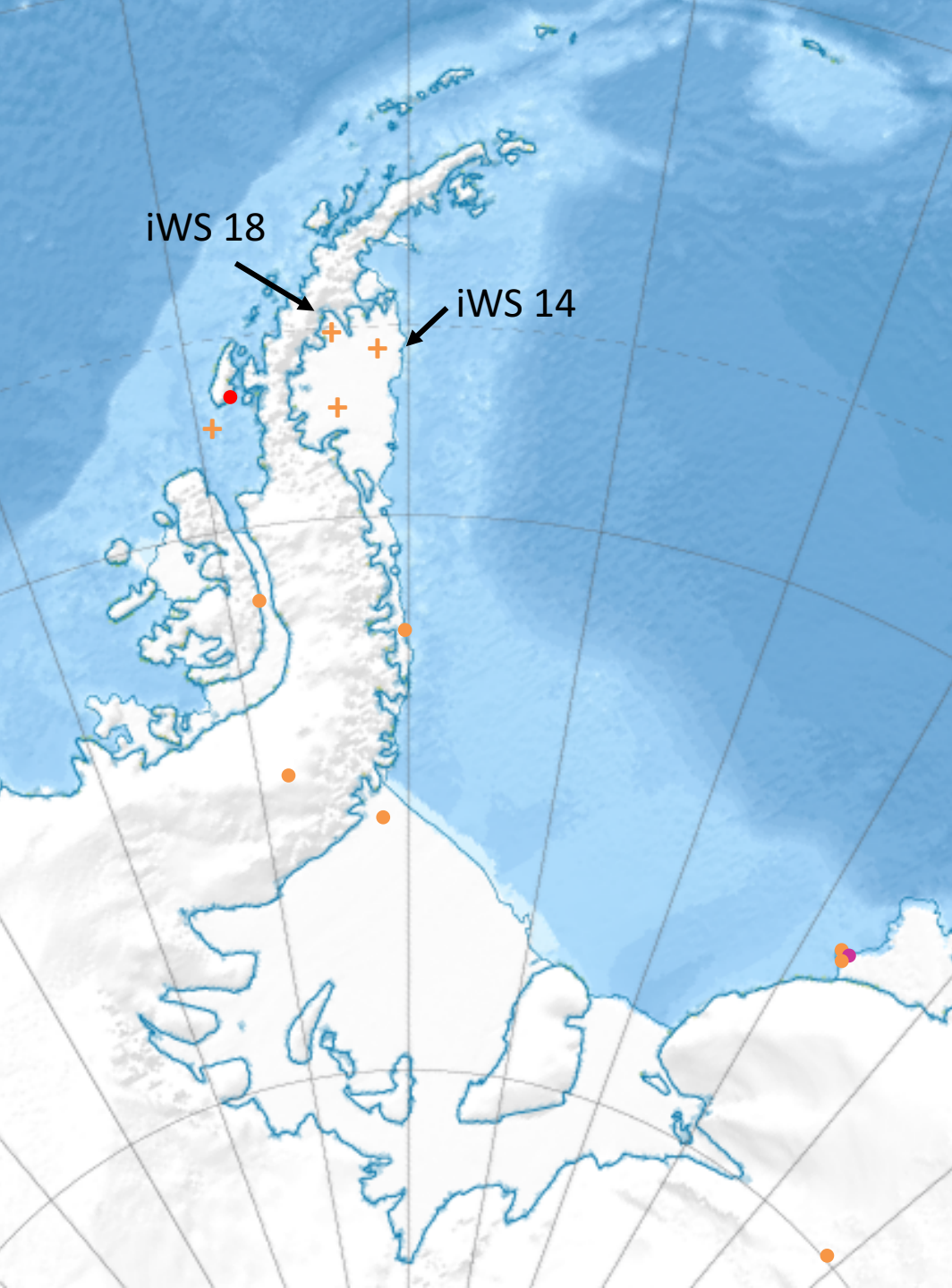
- Taking different sites separately – see an individual warming trend
- Stepped cooling because stations are moved further inland
- When all data is added together from all sites - gradual cooling trend
- So adding the data together from various sites may give false cooling....



Non-BAS AWS Network Work Carried out 2017/18

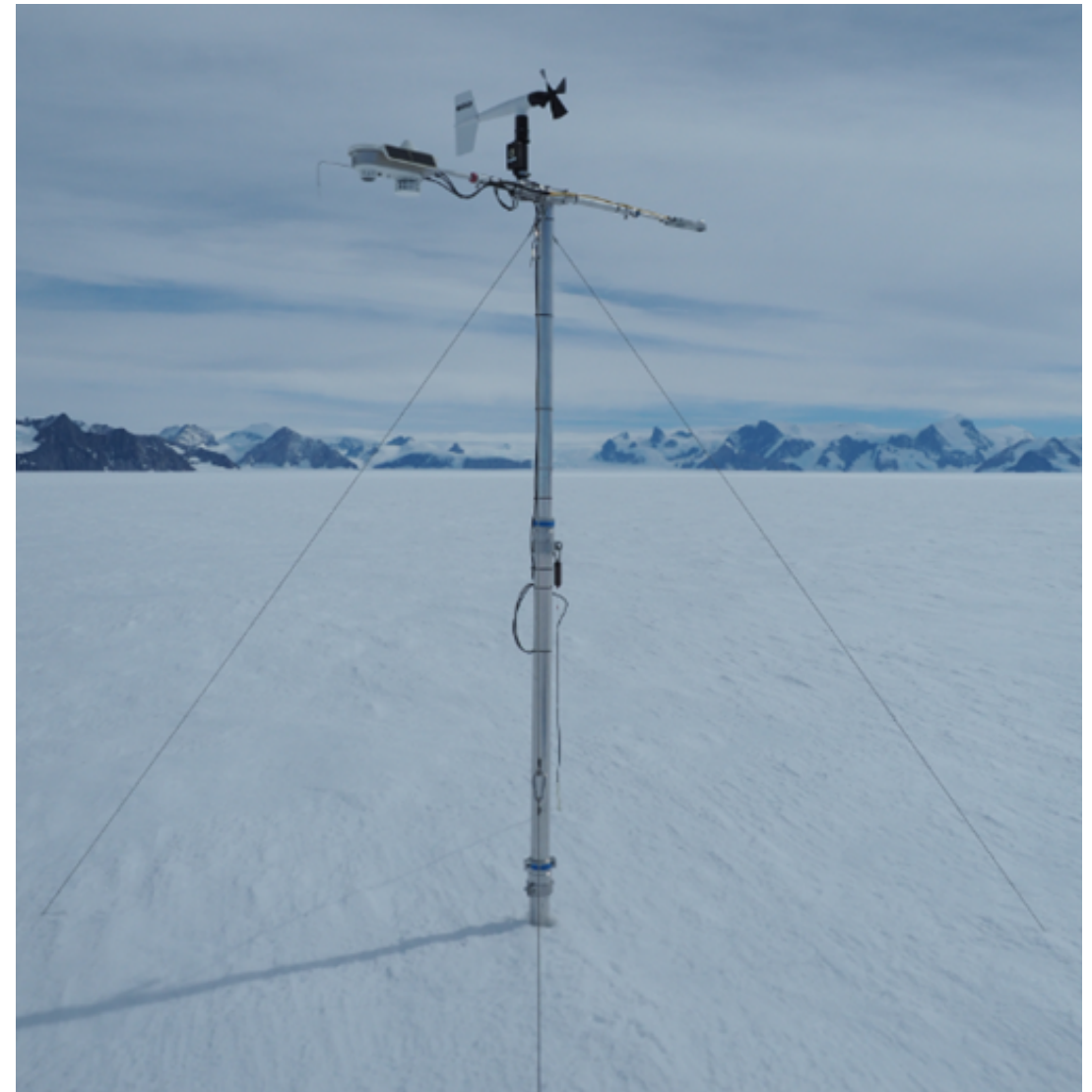
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- iWS 14 (Larsen) – swapped iWS unit
- iWS 18 (Cabinet Inlet) – swapped iWS unit



University of Utrecht - IMAU

- iWS 14 (Larsen) – swapped iWS unit
- iWS 18 (Cabinet Inlet) – swapped iWS unit
- Thermocouple broken – very fragile – trialling if different orientation works (up instead of down)



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Current AWS Status

AWS	Sensors					Power	Iridium	SBD
	Wind	Temperature	Pressure	Humidity	Snow Depth			
Fossil Bluff								
Butler Island							Not Working	
Sky Blu							Not Working	
Limbert					Intermittent			
Halley Sites						6a		
Baldrick								
Koni Steffan AWS					Not Working			
iWS14								
iWS18								



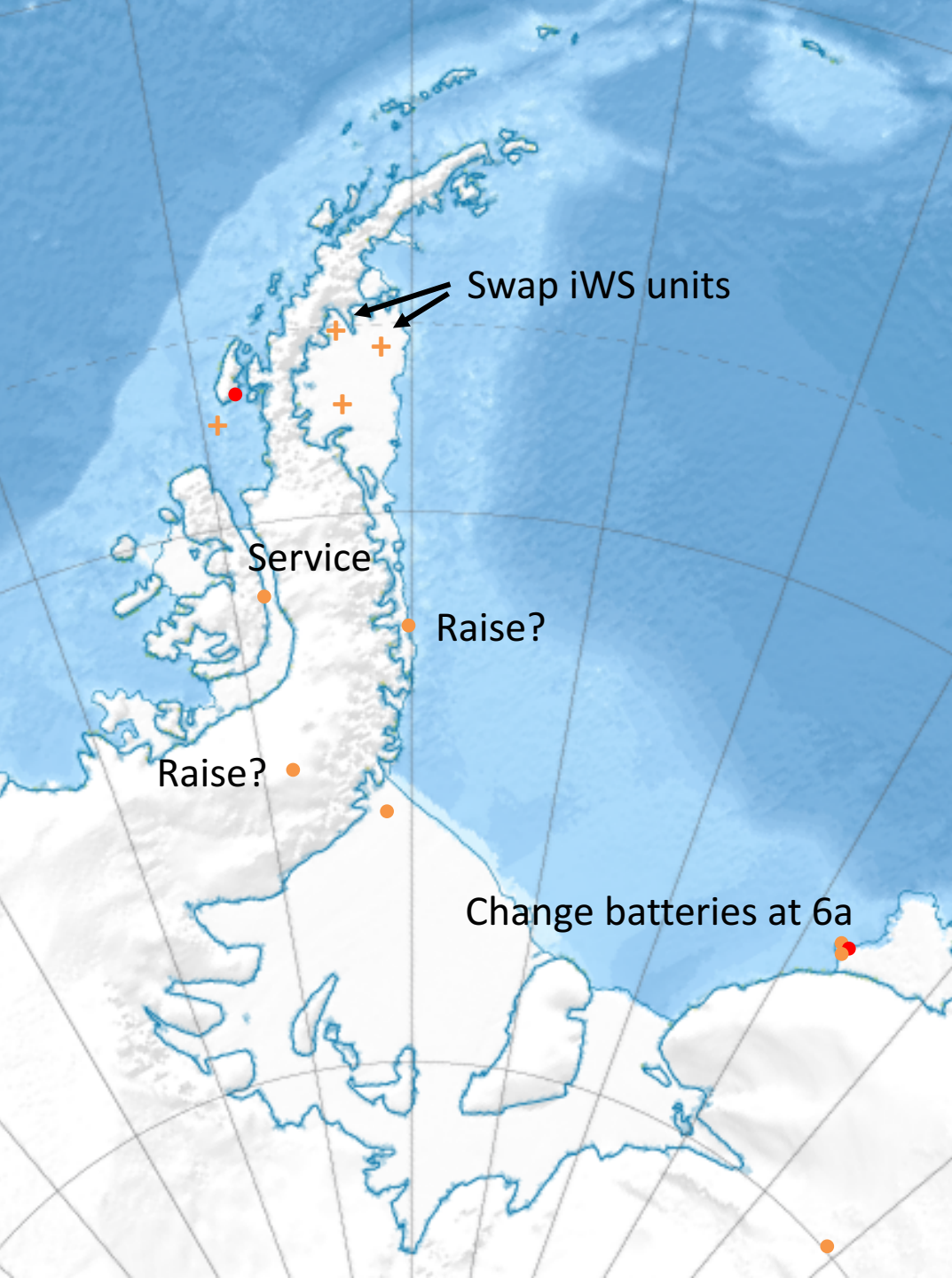
Intentions for 2018/19 season

BAS AWS

- Fossil Bluff – Investigate loggerbox moisture
- Sky Blu – Investigate Iridium problems, raise?
- Butler Island – Investigate Iridium problems, raise?
- Halley Sites – Change batteries at 6a?

University of Utrecht - IMAU

- iWS14 – Swap iWS unit
- iWS18 – Swap iWS unit



RS92



RS41



Rothera Vaisala Radiosonde Trial

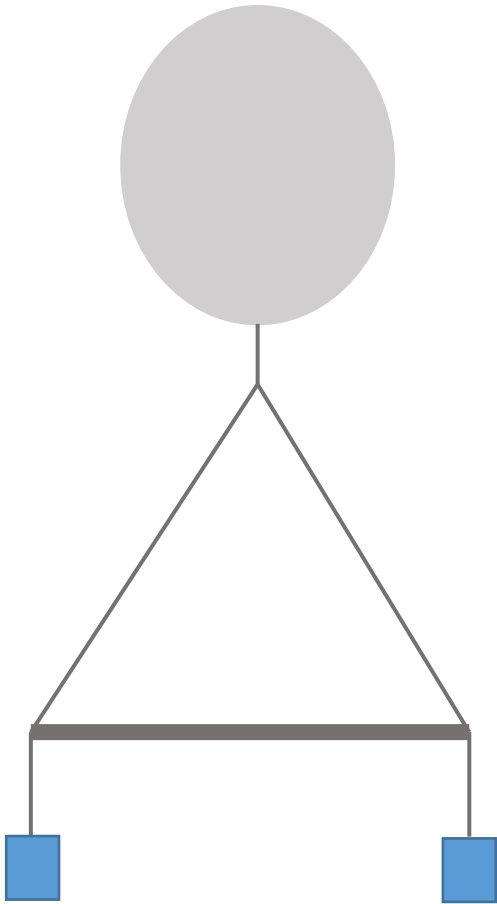
- Launching 5 balloon launches a week
- Aim for one to be a dual launch (two radiosondes, one big balloon)
- Running for approximately a year or when stocks run out
- Change to new system and new RS41 sondes at the end of the trial



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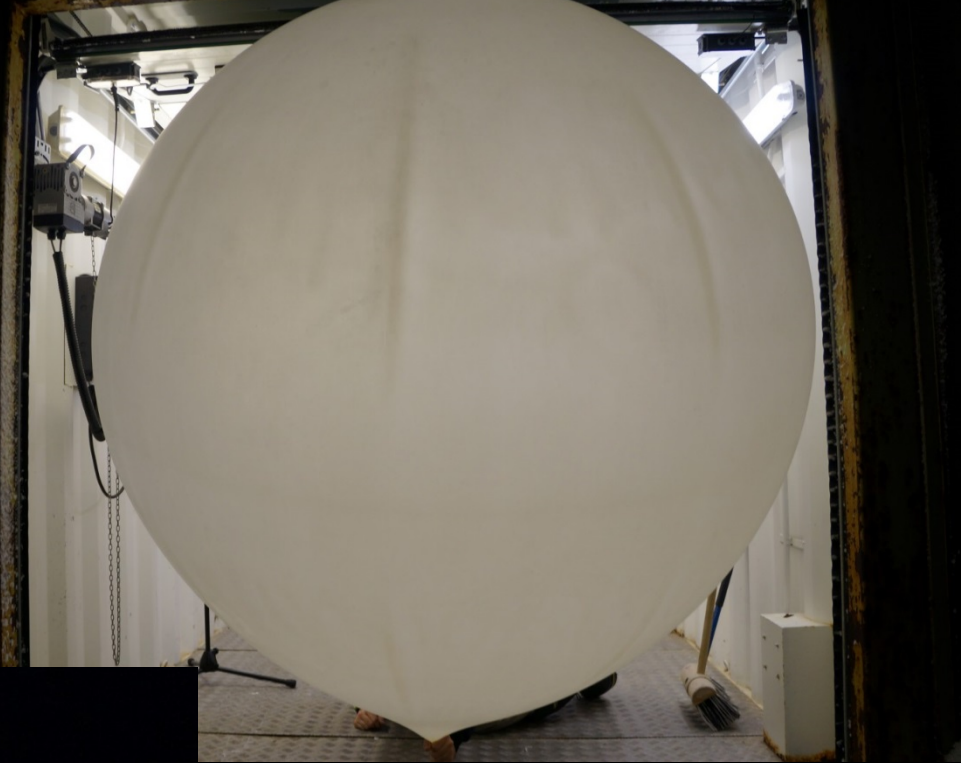
Rothera Vaisala Radiosonde Trial



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Rothera Dual Balloon Launch Trials



Thank you



Photo Credit: Scott Webster