

# British Antarctic Survey

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## Automatic Weather Station Network 2016/17 Field Season Review

Rosey Grant, Steve Colwell, John Law, Mairi Simms



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# Summer Season 2016-17

## Rothera



Mairi Simms

Rosey Grant

John Law

## Halley



Carolyn Graves

Amy Valach

Thanks to everyone at both Halley and Rothera for their support.



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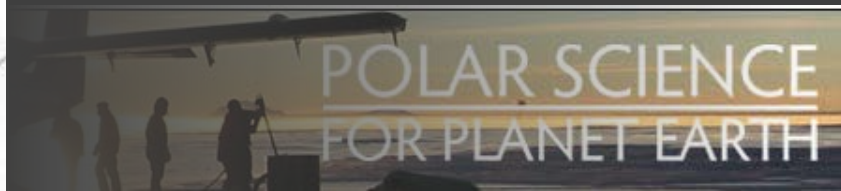


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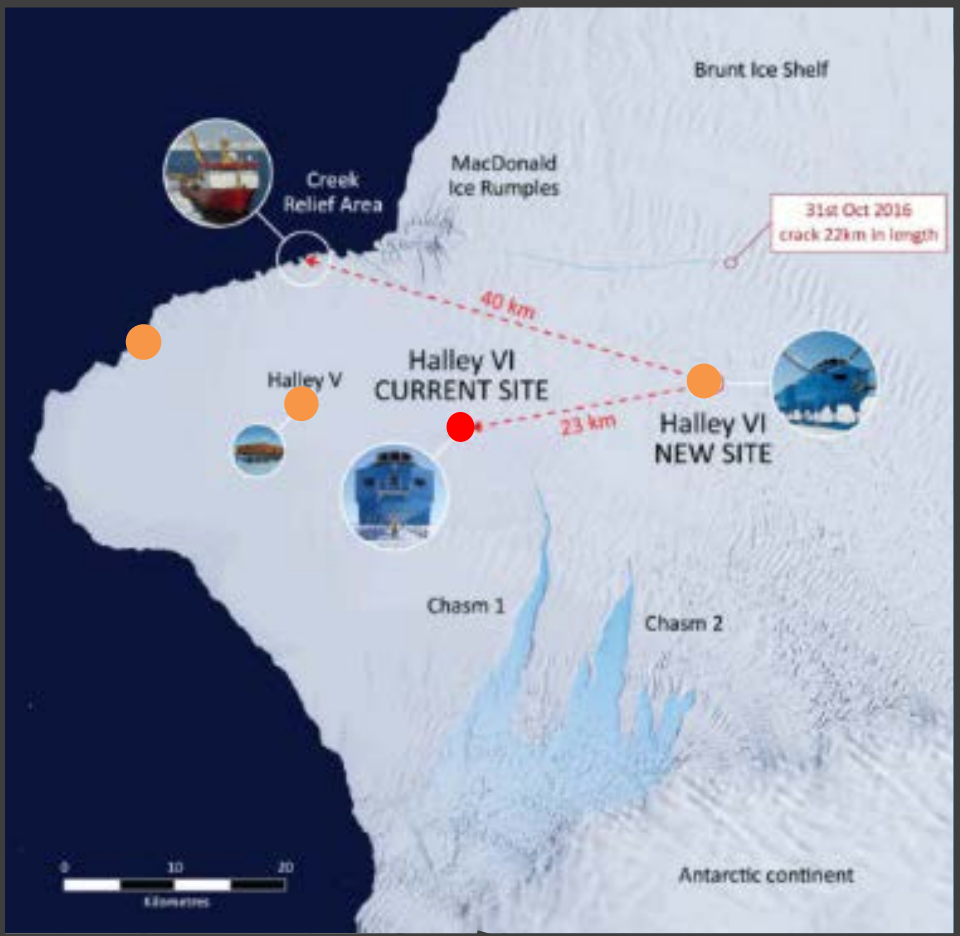
## BAS AWS network (start of 2016/17 season)

- 
- BAS manned weather station
  - BAS AWS



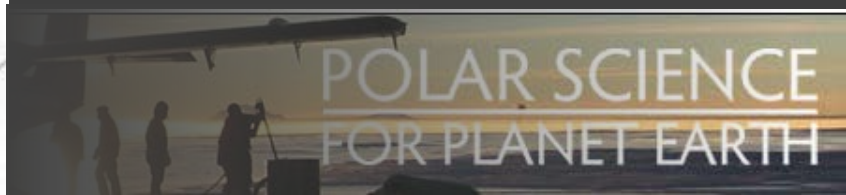
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## BAS AWS network (start of 2016/17 season)

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## BAS AWS

- Propvane, sonic ranging snow accumulation sensor, HMP temperature and humidity sensor, PRT air temperature sensor, pressure sensor .
- 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.
- Powered by 2 or 4 100Ah 12V batteries (buried), charged by solar panel.



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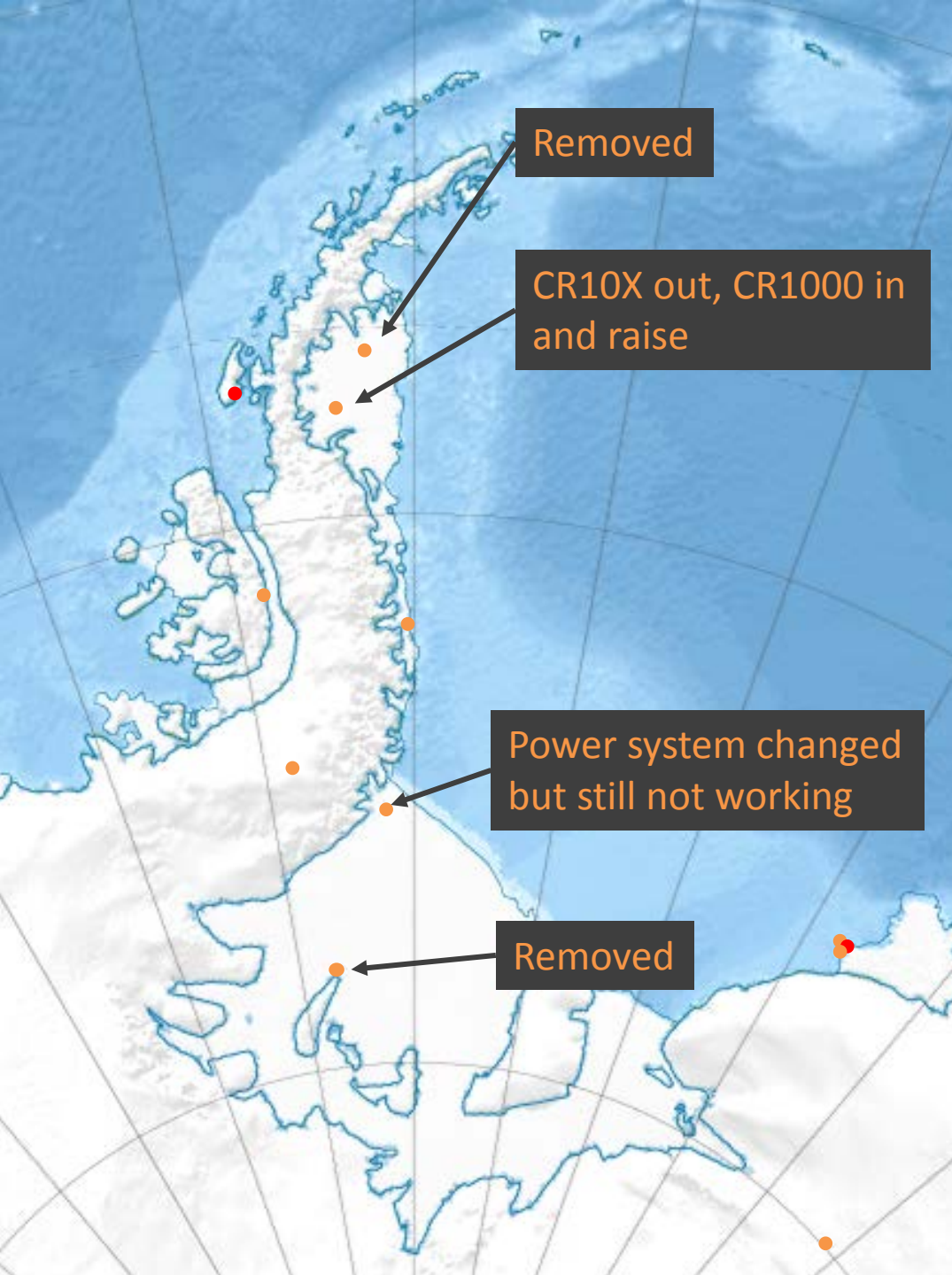
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## BAS AWS network (start of 2016/17 season)

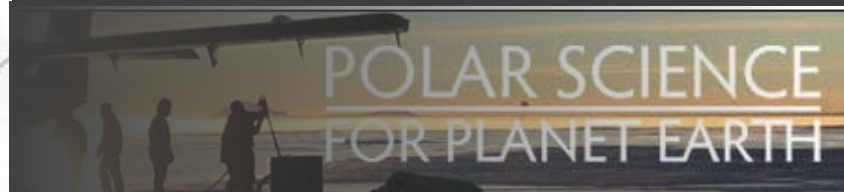
- 
- Capability of sending SYNOP to GTS
  - Not

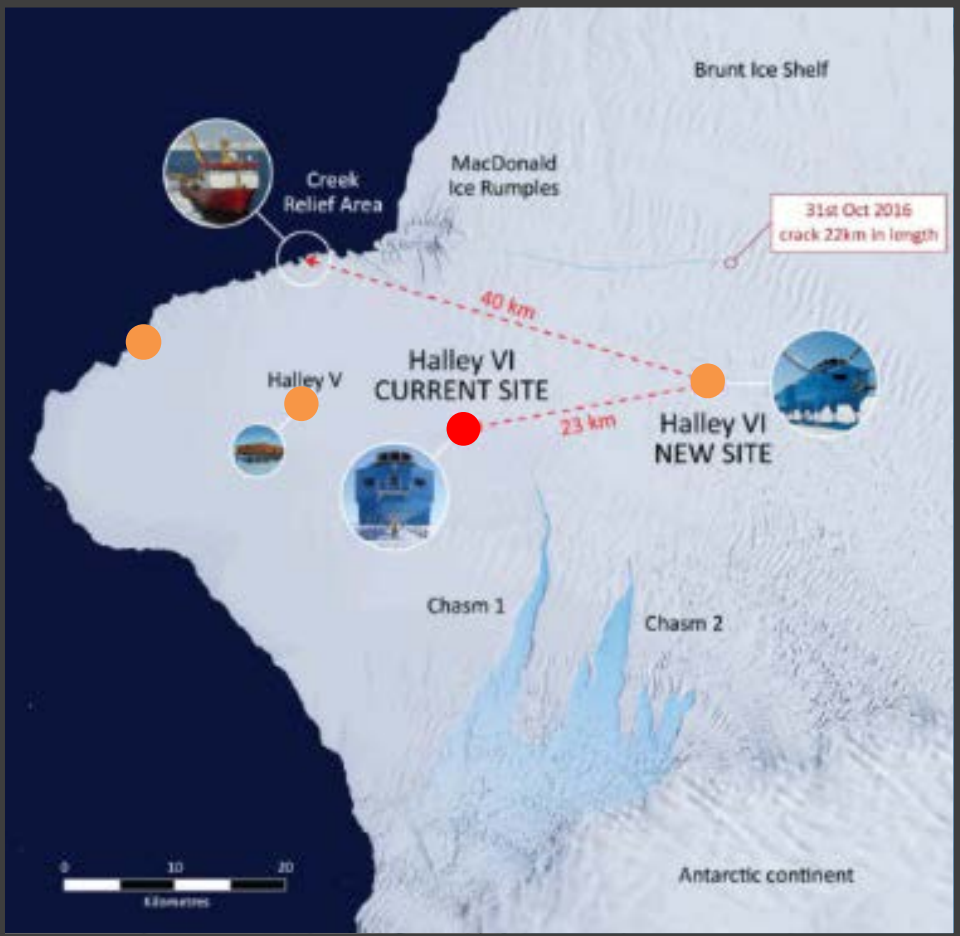




## BAS AWS network 2016/17 field season

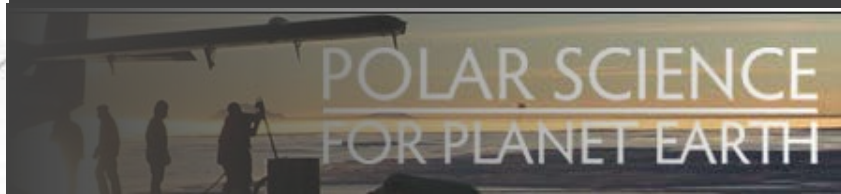
- Larsen north removed, 9 years (failed logger & co-located with iWS).
- Larsen south replaced CR10X with CR1000 and raised.
- Limbert power system replaced but still not working.
- Korff removed after three years (providing data for field campaign).



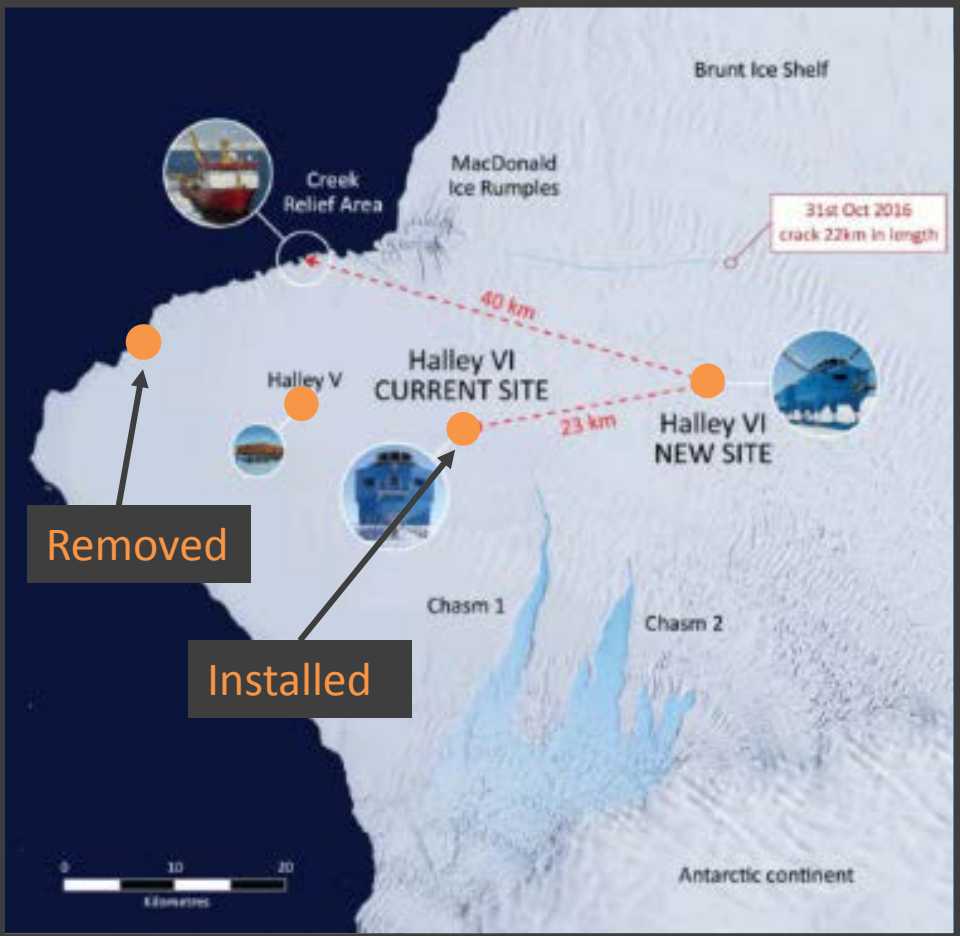


## BAS AWS network 2016/17 field season

- Halley station partially moved from 6 to 6A.
- Halley station closure.
- No mains power at either 6 or 6A over winter.
- Of AWS only Windy Creek sending SYNOPs.

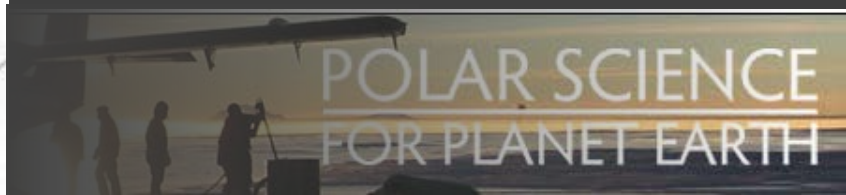


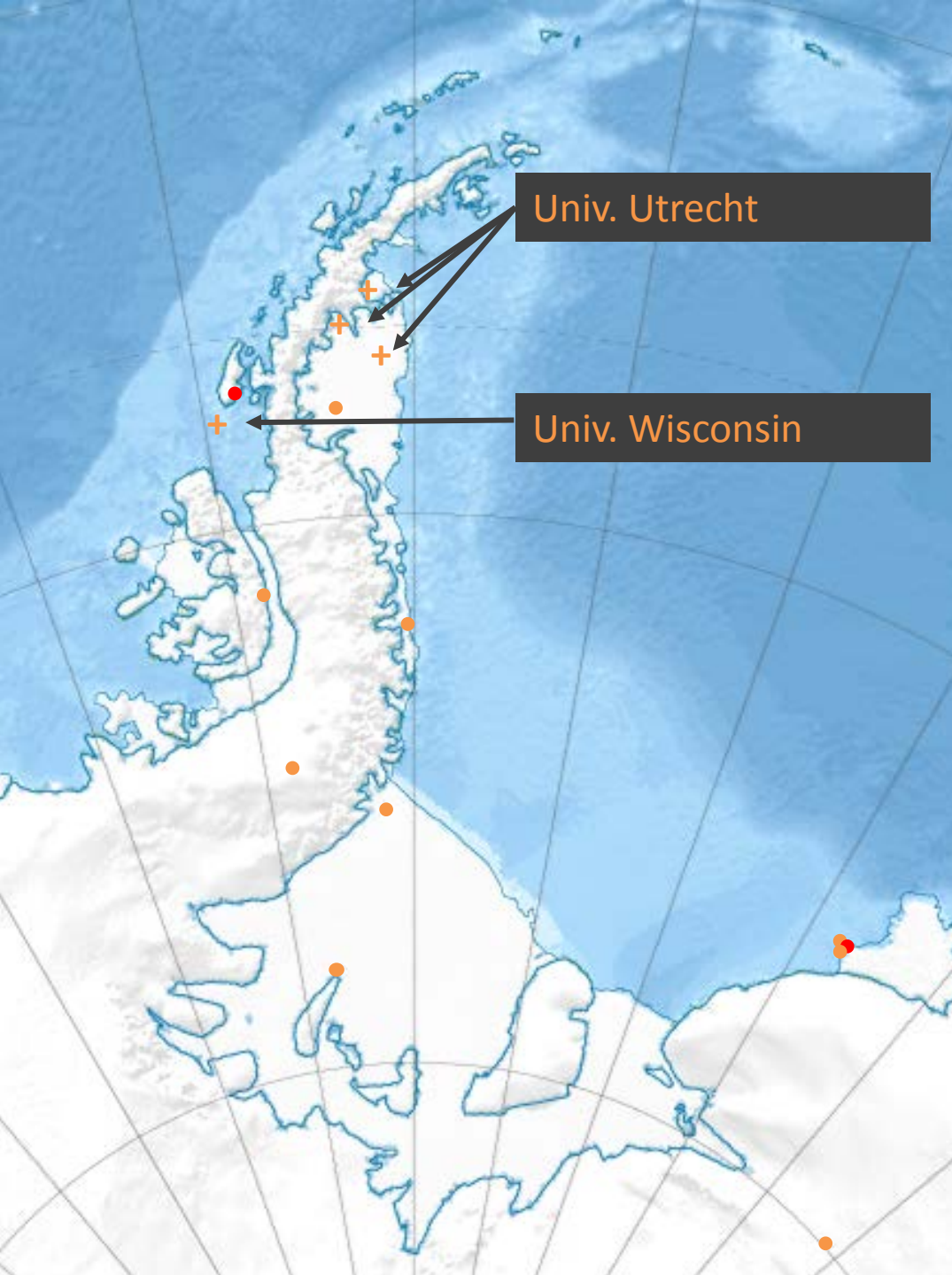




## BAS AWS network 2016/17 field season

- Removed Windy Creek (running for 10 years).
- Installed at Halley 6 to enable continuation of SYNOPs to GTS from Halley (6 months, sending SYNOPs).
- Halley 5 (7 years).
- Halley 6A (18 months).



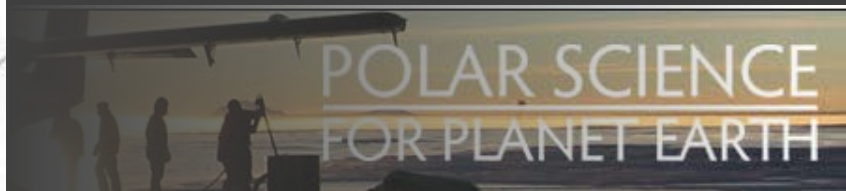


Univ. Utrecht

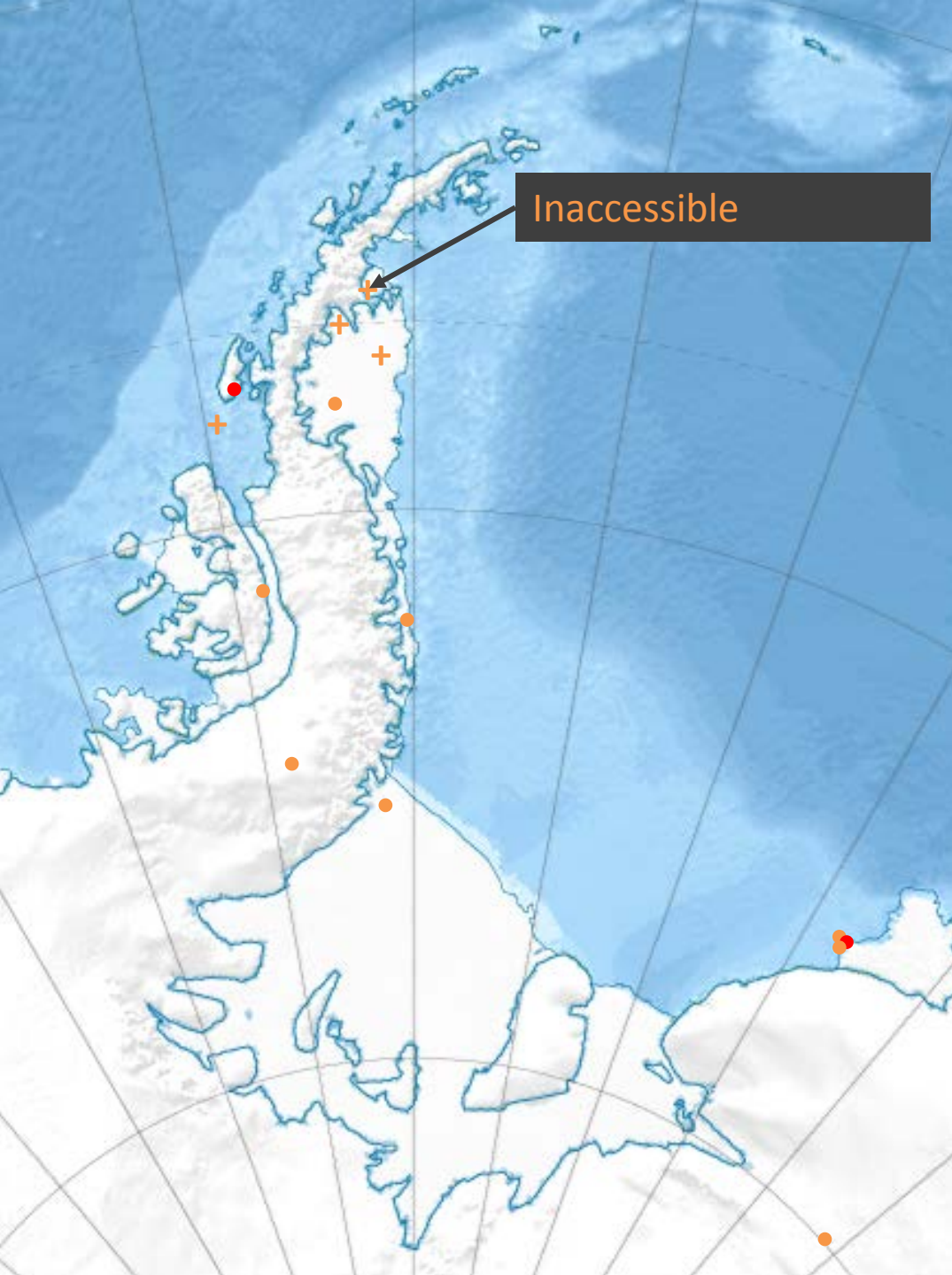
Univ. Wisconsin

## Non-BAS AWS network 2016/17 field season

- 
- BAS manned weather station
  - BAS AWS
  - + Non BAS AWS



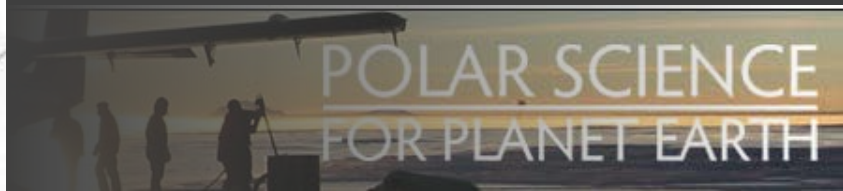
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Inaccessible

## Non-BAS AWS network 2016/17 field season

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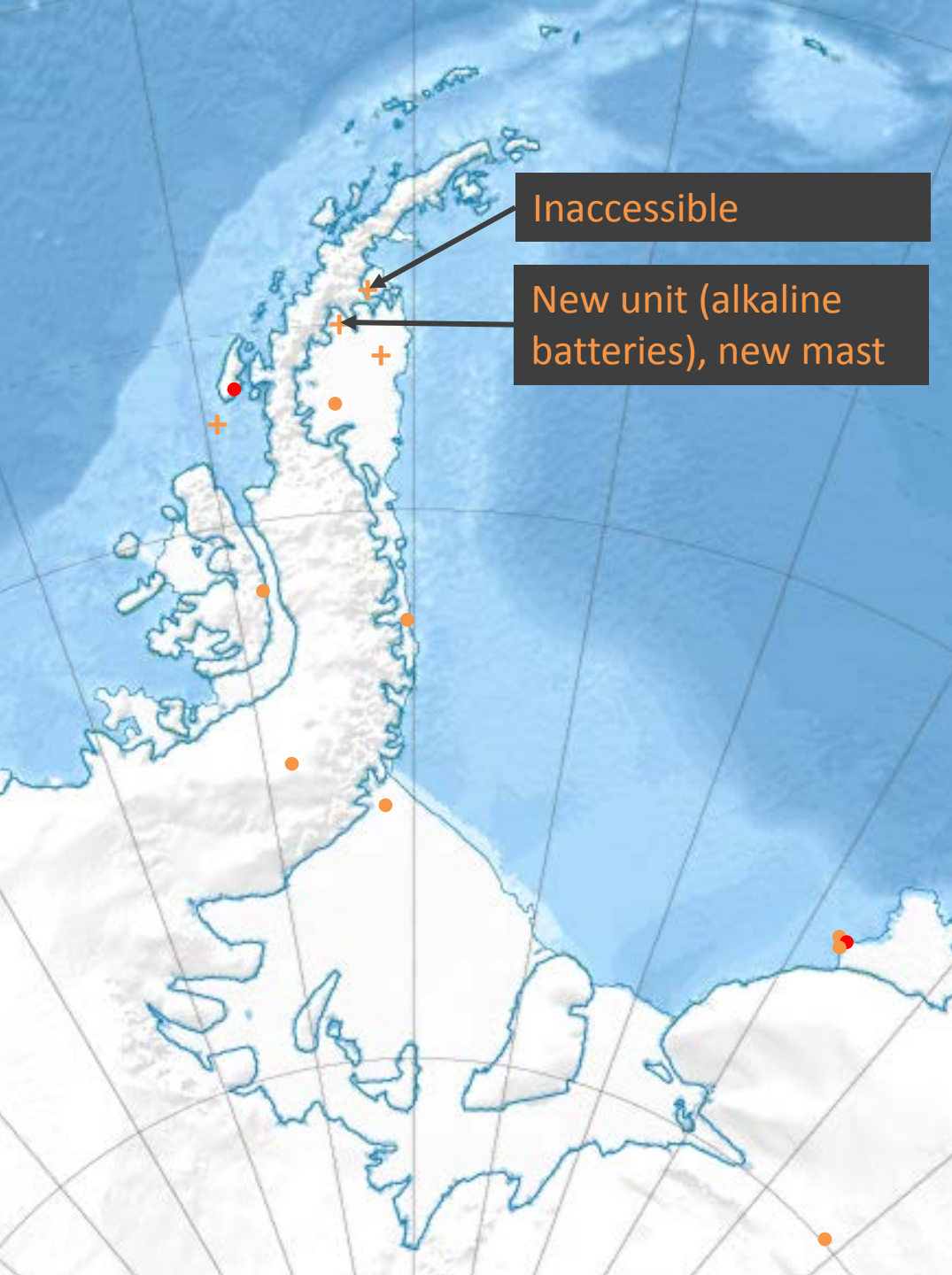




Inaccessible

Non-BAS AWS network  
2016/17 field season





Inaccessible

New unit (alkaline batteries), new mast

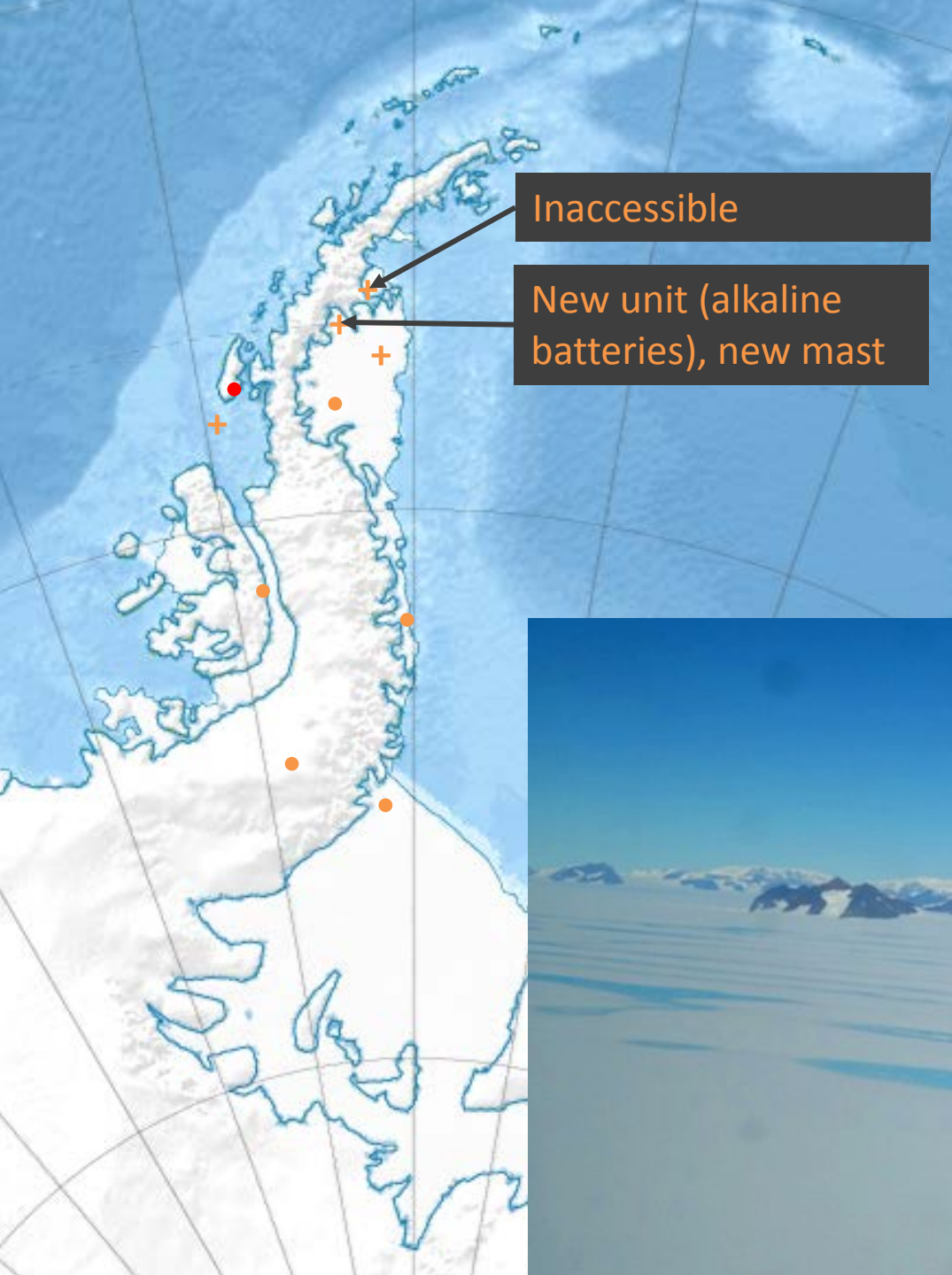
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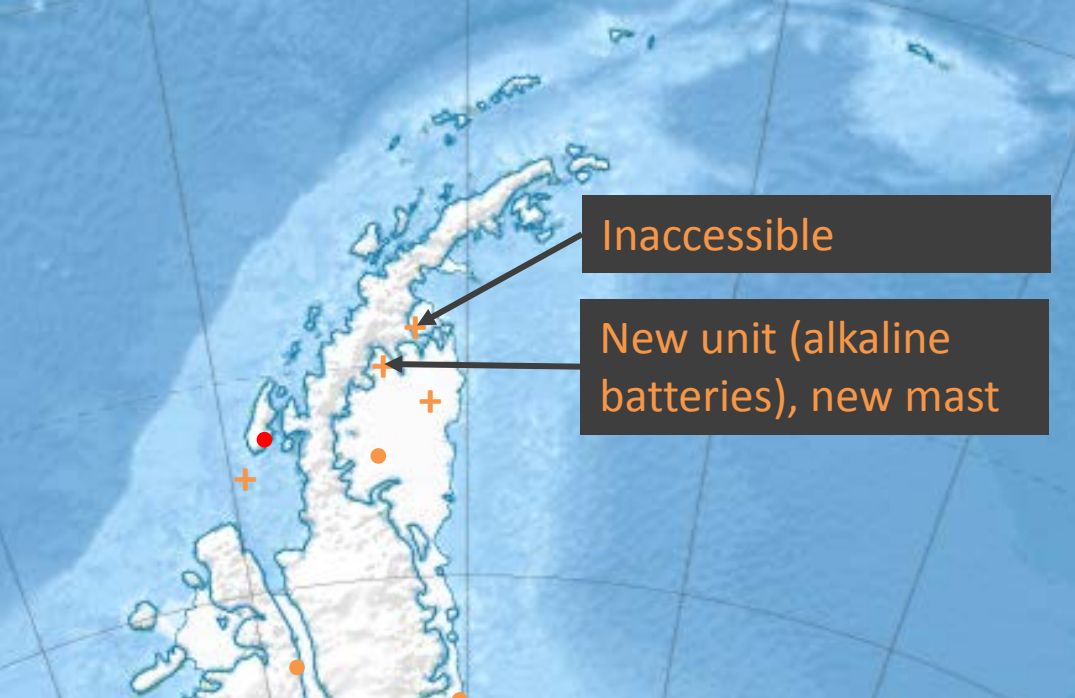


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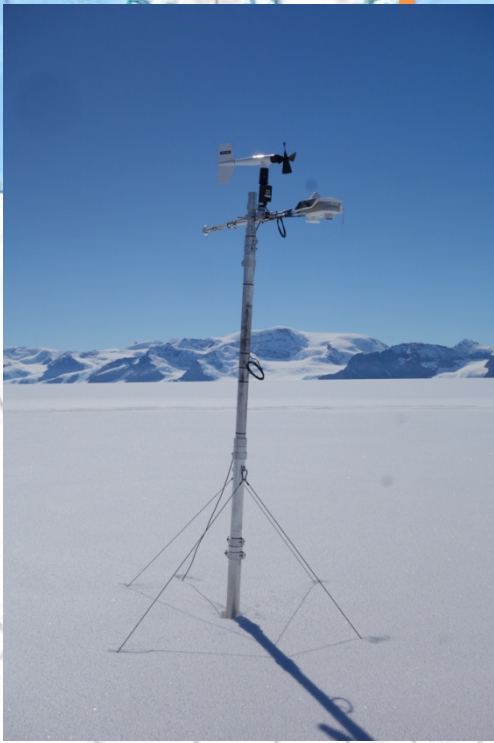


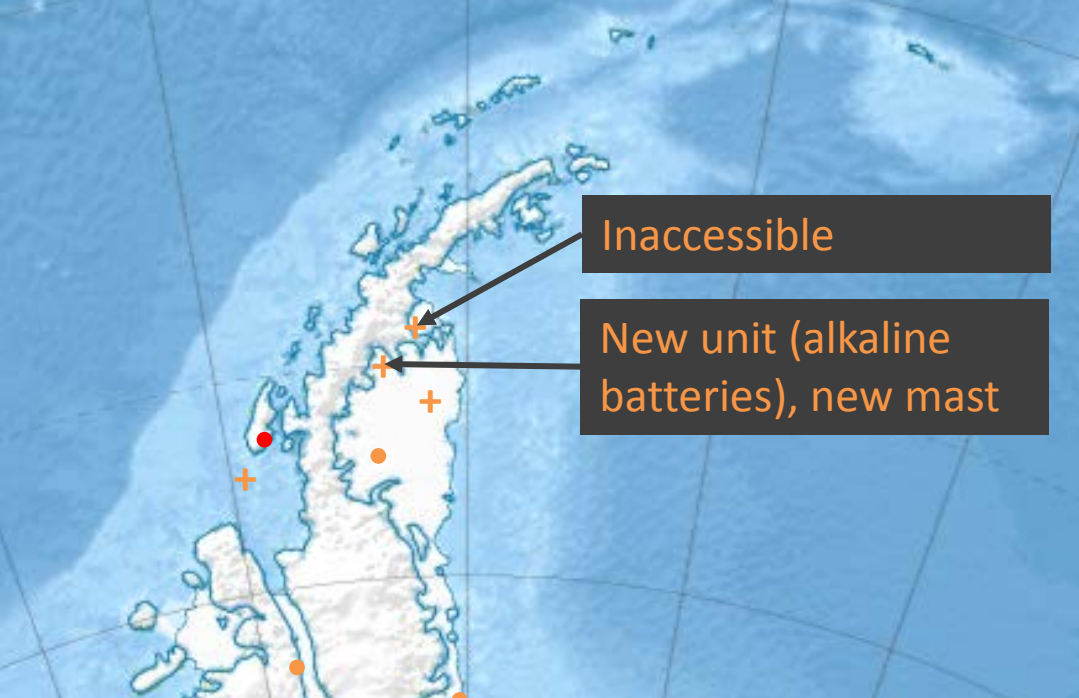




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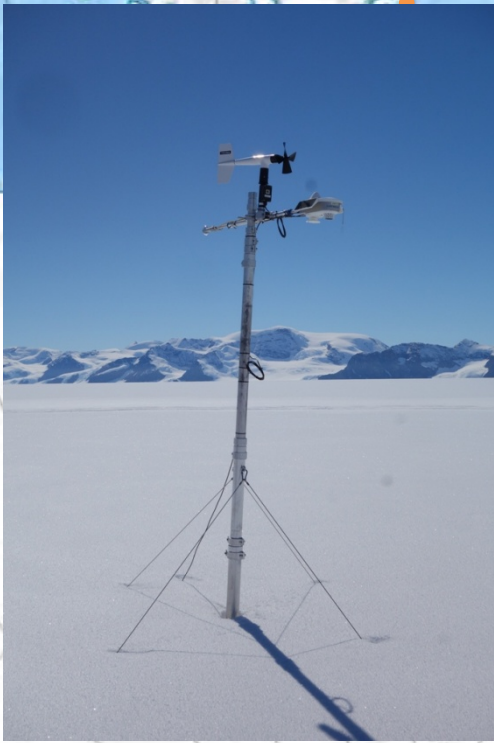
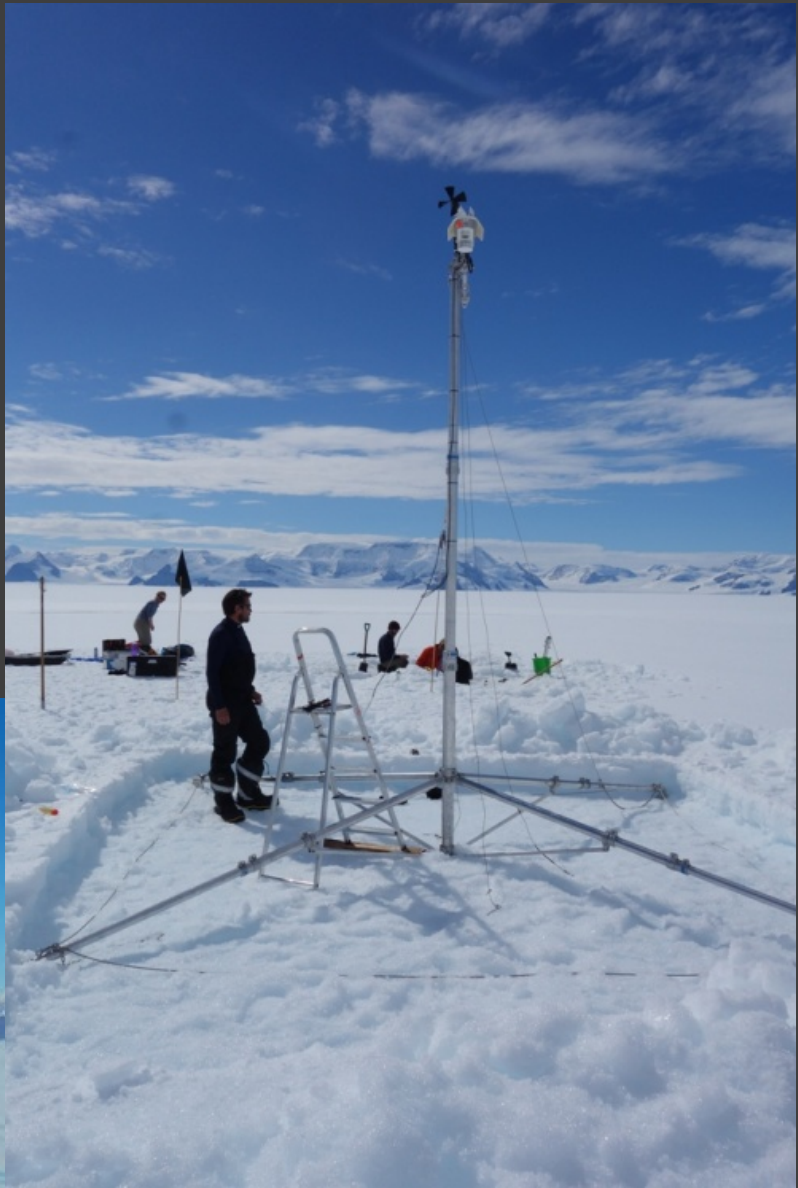
- 
- BAS manned weather station



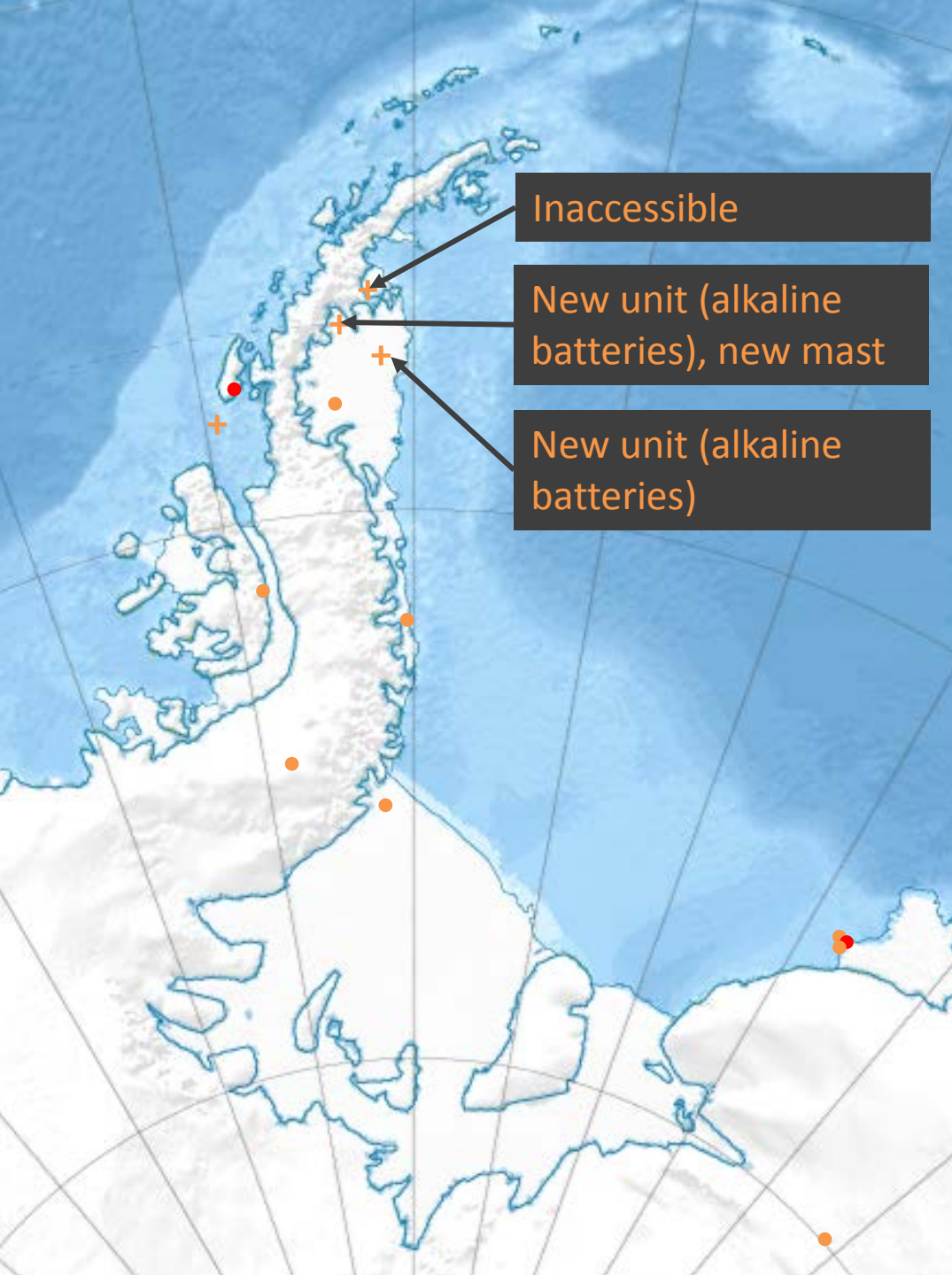


Inaccessible

New unit (alkaline batteries), new mast







## Non-BAS AWS network 2016/17 field season

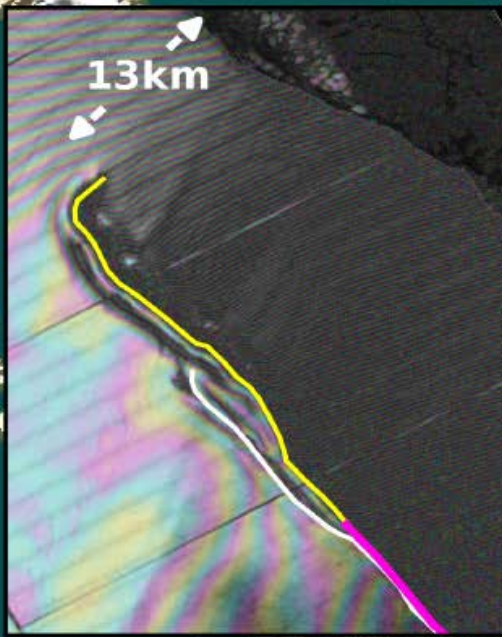
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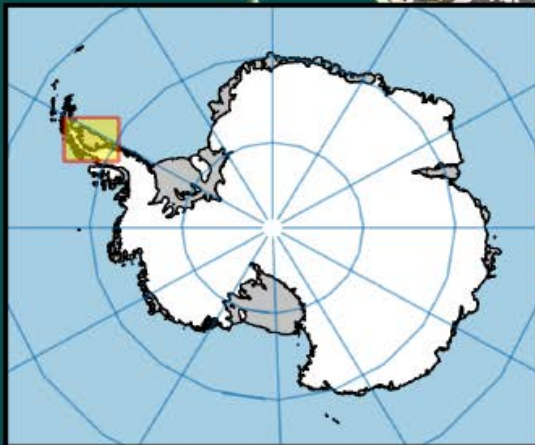
# Larsen C Ice Shelf

Rift development to May 31st 2017



## Larsen C digression

- Adrian Luckman (Swansea University) closely following progression of crack on east coast.
- Rapid growths in last nine months.
- 13km from calving.





# Larsen C Ice Shelf

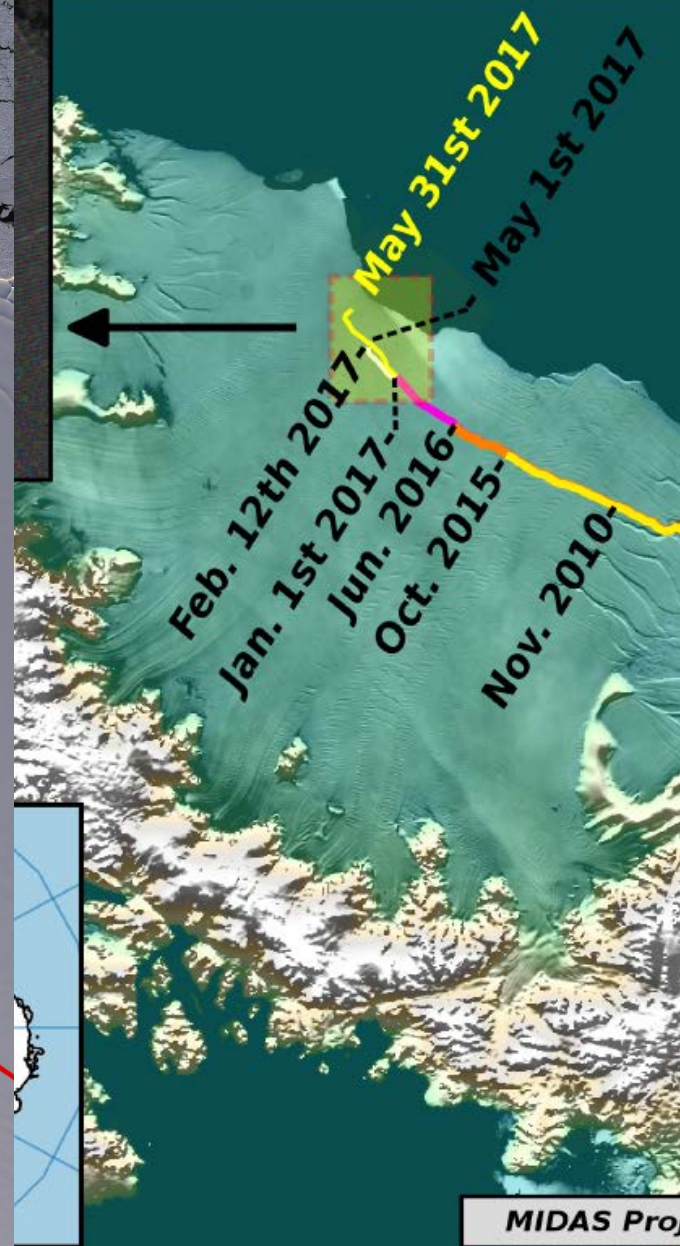
Rift development to May 31st 2017

LAAWS

24224 m

Rift location  
1st May 2017

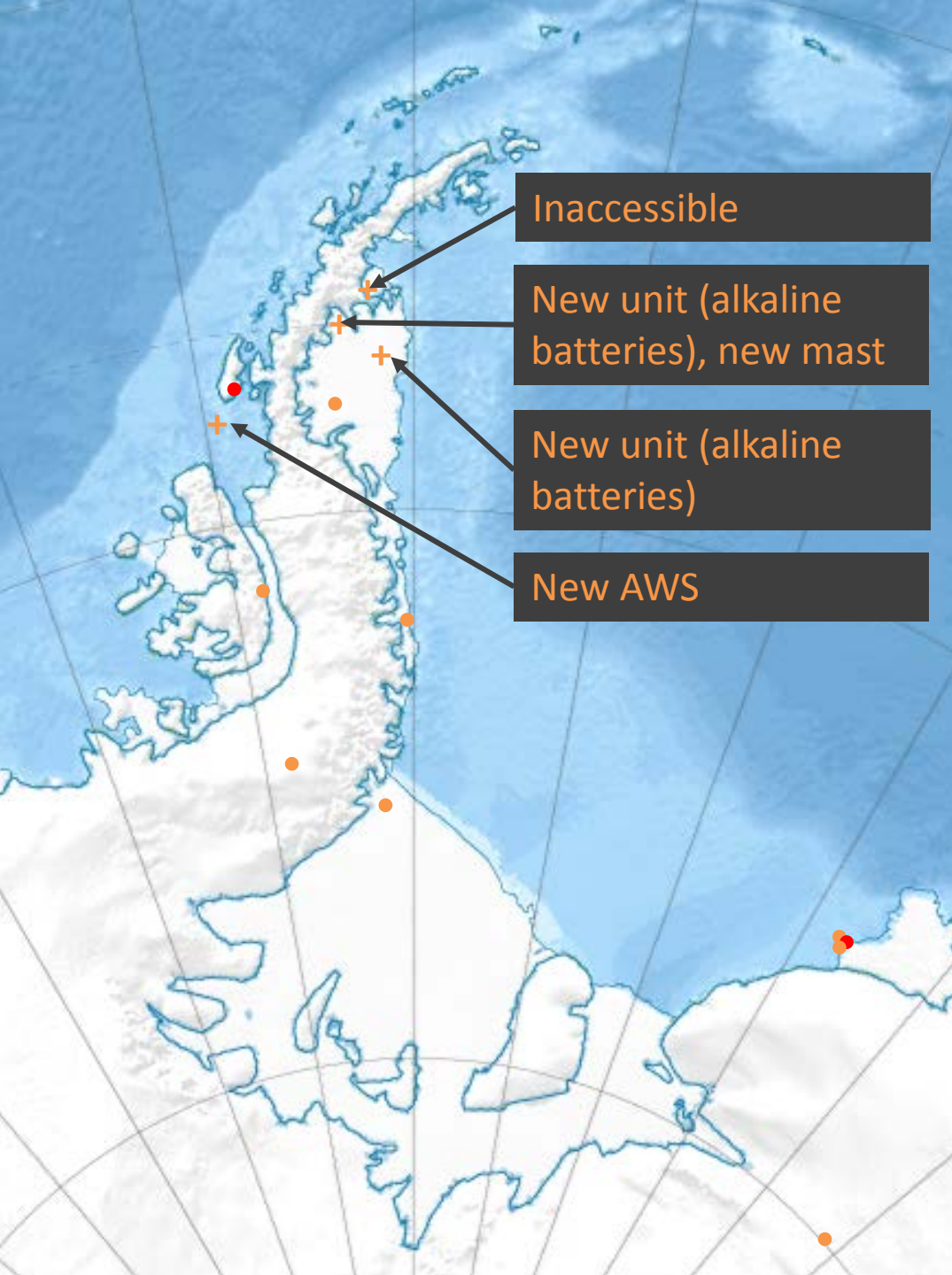
0 10 20  
km



MIDAS Proj







## Non-BAS AWS network 2016/17 field season

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## A day on Dismal Island

- 50km south of Rothera.
- 3hrs on British Royal Navy ship HMS Protector, then last 3km by zodiac.
- Last 300m by foot.







## A day on Dismal Island

- 50km south of Rothera.
- 3hrs on British Royal Navy ship HMS Protector, then last 3km by zodiac.
- Last 300m by foot.
- Luckily had the help of six Royal Marines!

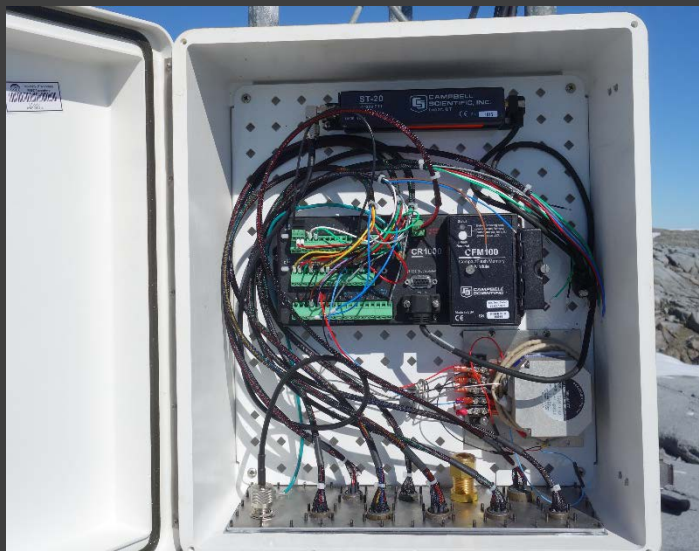




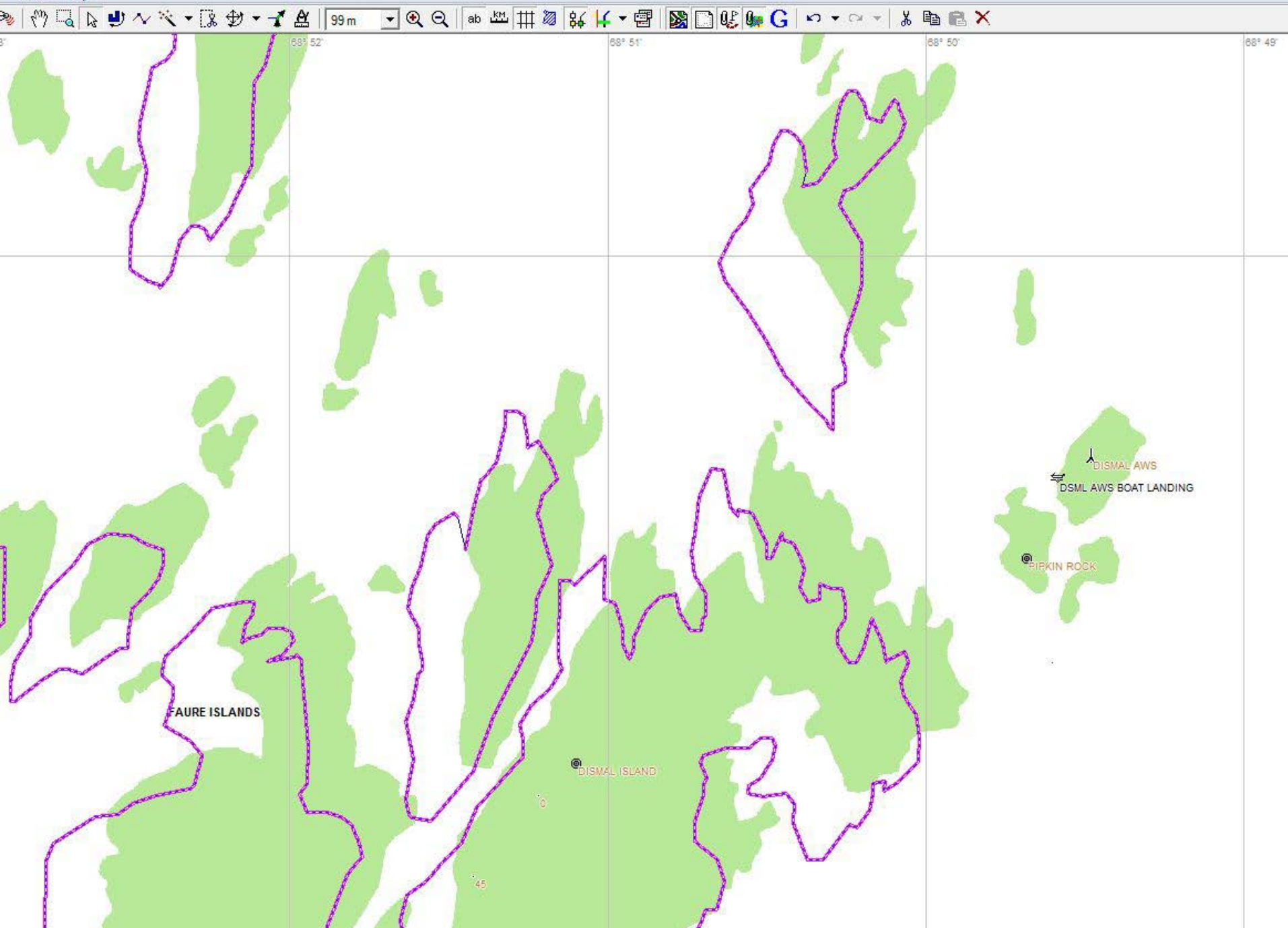
## Dismal Island AWS

- Installed in 2003/04 by UW.
- Serviced by BAS 2008/09.
- Continued transmitting data until 2014.
- Aerovane missing propeller.
- Nothing left of snow accumulation sensor except outer casing.
- Corrosion and salt deposit on logger box cable glands.
- Rusty instrument attachments and guys.





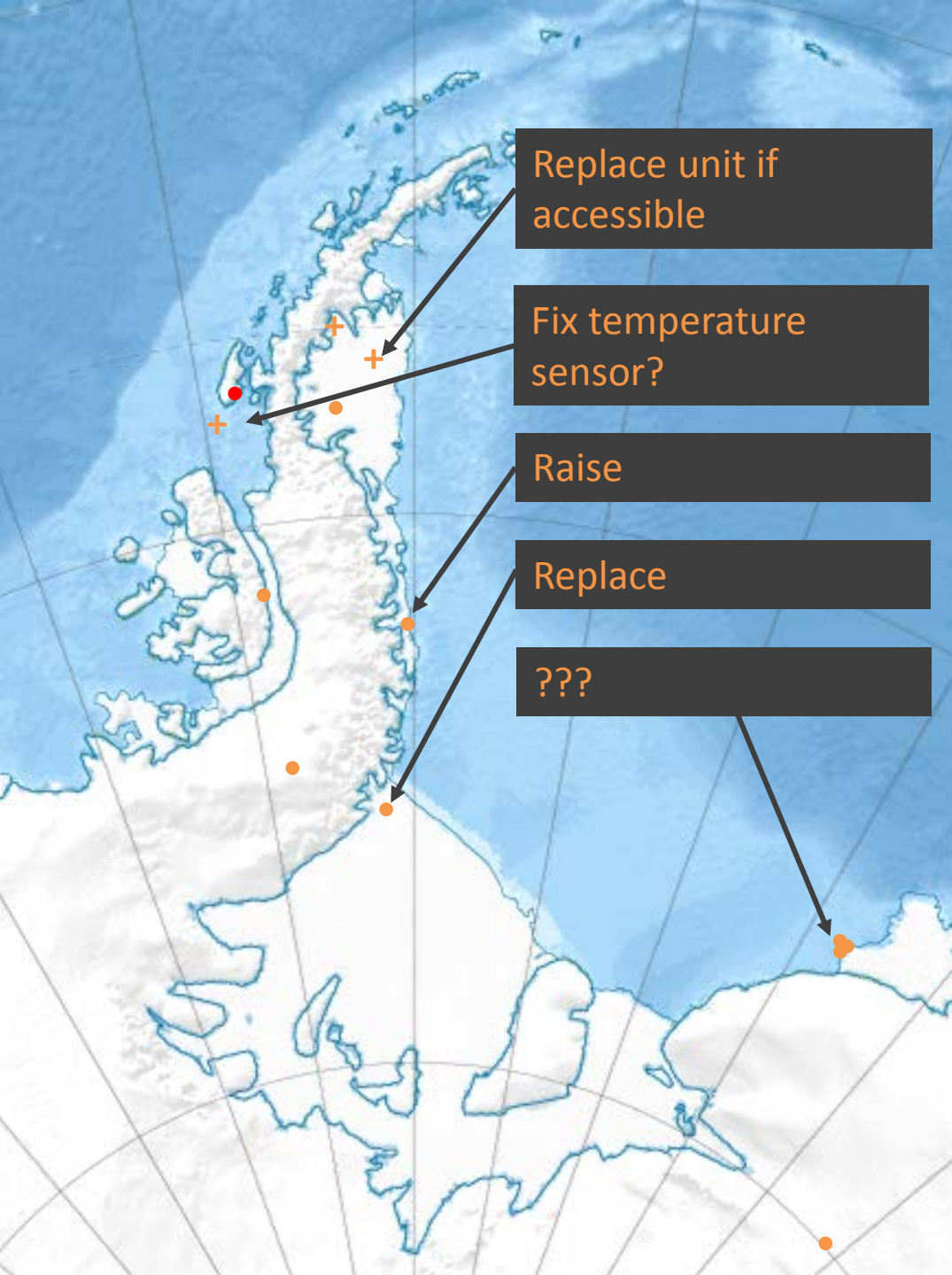






# Current AWS status

AWS	Sensors					Power	Iridium	SBD
	Winds	Humidity	Temperature	Pressure	Snow			
Fossil Bluff								
Butler Is.								
Sky Blu								
Limbert	Power down on 17.04.17							
Baldrick (M83)							ARGOS	
Halley 6a							ARGOS	
Larsen iWS	Power down on 10.04.17							
Cabinet iWS							ARGOS	
Dismal Is.			Intermittent		NA		ARGOS	



Replace unit if accessible

Fix temperature sensor?

Raise

Replace

???

## Intentions for 2017/18

- BAS manned weather station
- BAS AWS
- + Non BAS AWS



## Rothera Vaisala radiosonde trial

- Launching 5 balloons a week (RS92).
- Aiming for 1 of these to be a dual launch (one balloon, two sondes).
- Will run for a year (or until we have managed ~50 dual launches).



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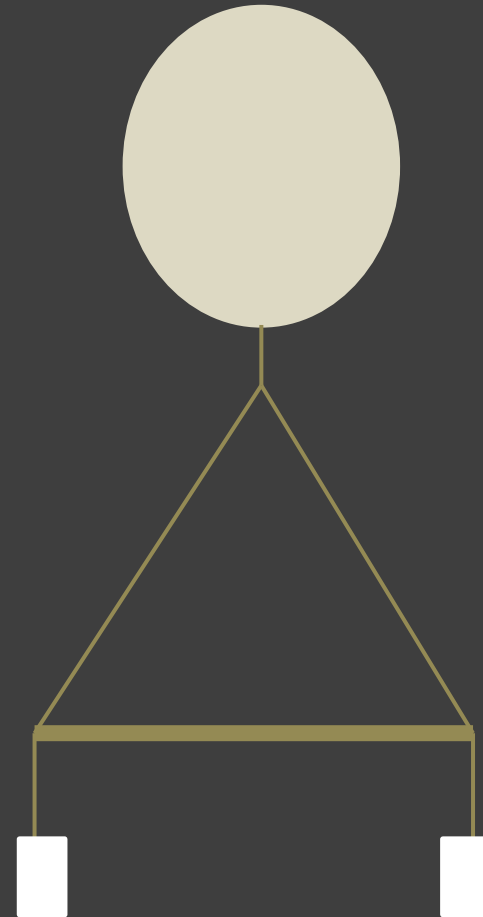


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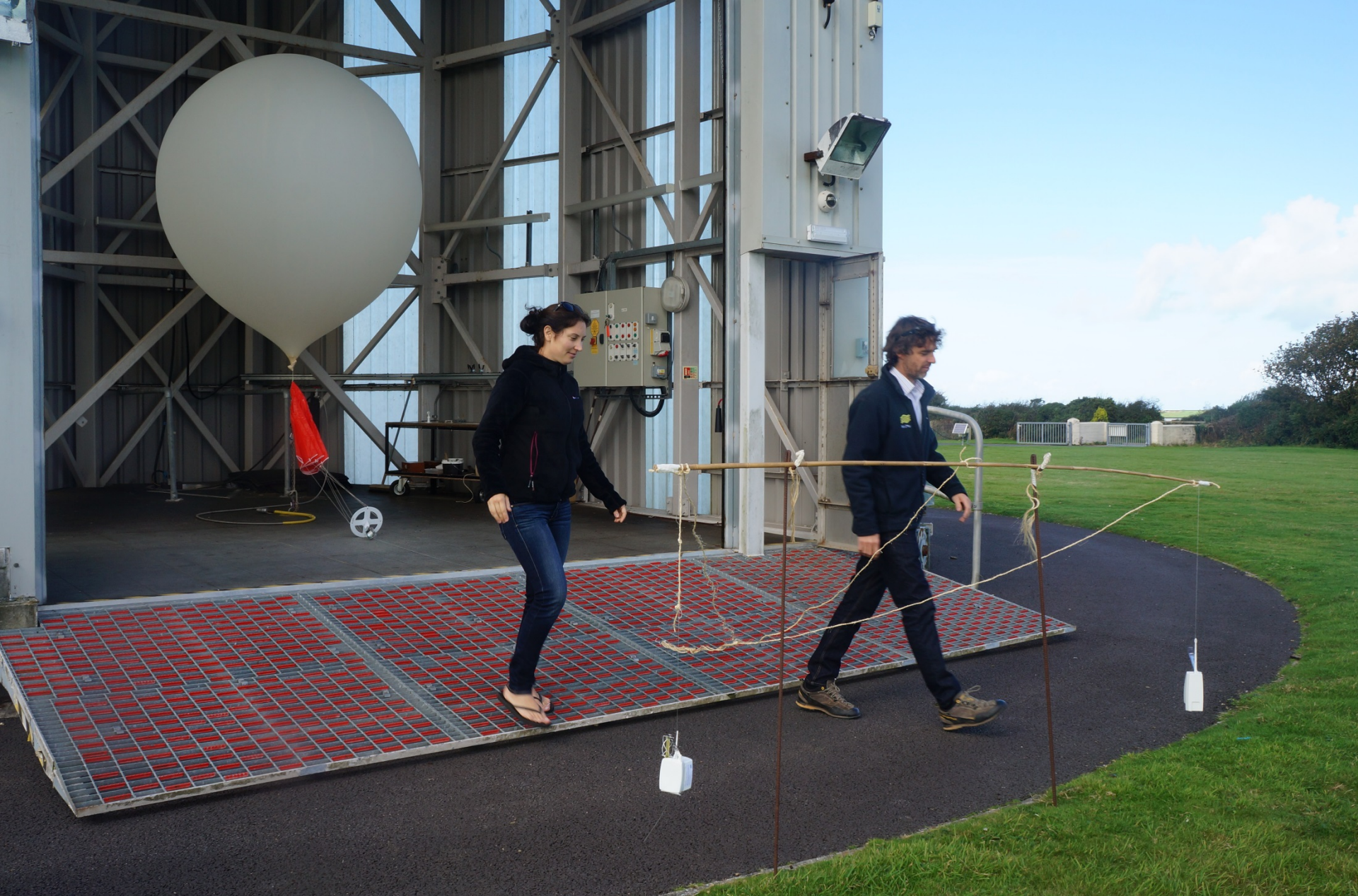


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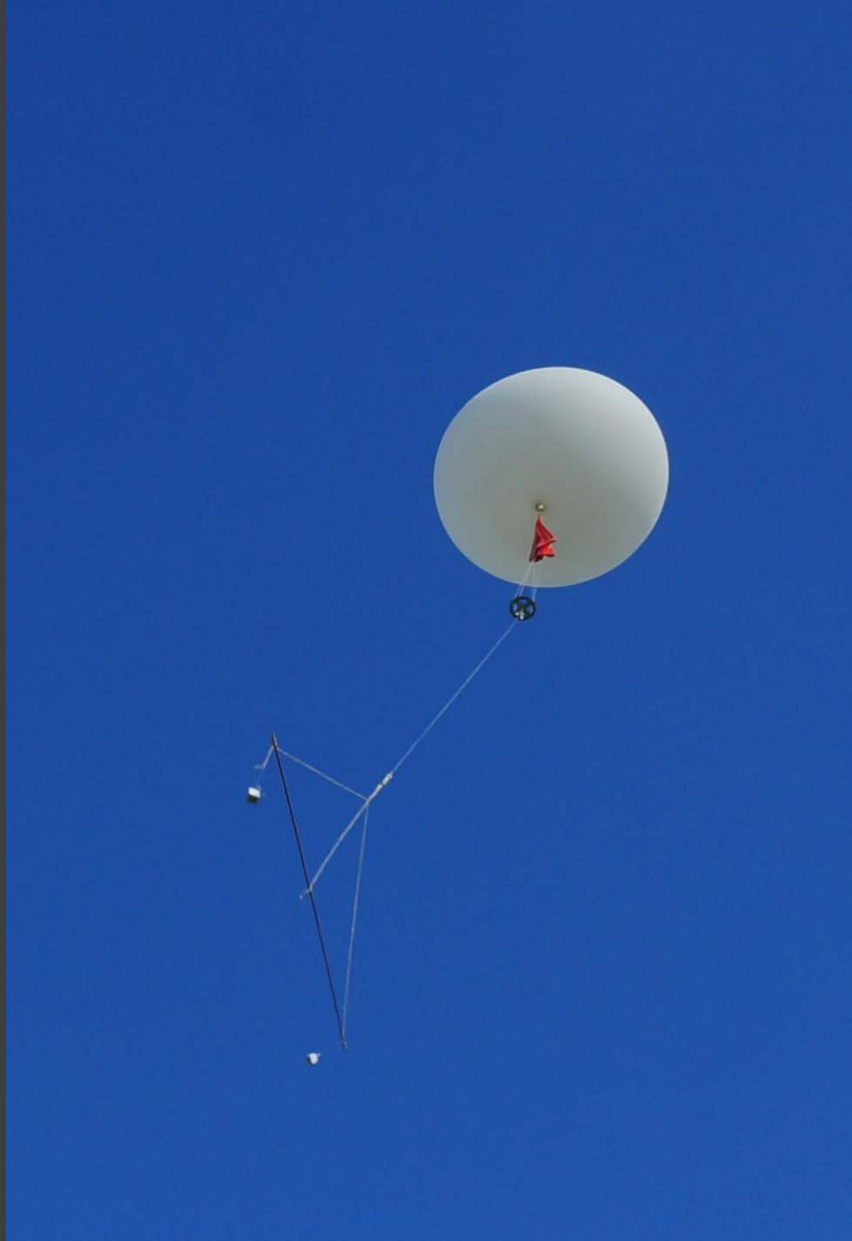
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Thank you

