

# ICESHEET

The British Antarctic Survey Internal Newsletter



Jul-Aug 19  
#103

## Antarctica – Safe, Special, Secluded, Sensitive

Director's Office

This summer was busy with meetings of the Antarctic Treaty (ATCM) and Committee for Environmental Protection (CEP) in Prague (see page 6) and COMNAP operators meeting in Plovdiv, Bulgaria. These important meetings ensure that

Antarctica remains a continent for peace and science and is a

safe place for the 53 nations that work there, despite its remoteness and harsh climate.

This year air safety was a major topic, with high-level policy discussions at ATCM and operational aspects at COMNAP. There is a lot of new technology for aircraft to ensure accurate positioning but it needs all nations to work together to ensure that the system works safely across the continent.

The growth of tourism in Antarctica is also concerning. More than 30 new polar cruise ships are being built this year, bringing more people to the continent than the 45,000 visiting now.

The International Association of Antarctic Tour Operators (IAATO) does a great job of promoting safe and environmentally responsible travel to Antarctica but the increase in tourist numbers

and diversification of activities (e.g. heli-skiing) will certainly present a challenge. CEP and SCAR scientists – please help in understanding the impact and with the protection of popular sites.

Antarctica is already responding to climate change but now we see increasing human interaction with the Antarctic environment – is this a good or bad thing?

Professor Dame Jane Francis



## New Erebus Workboat Completes Maiden Voyage

BAS fleet

At 05:00 on Thursday 8th August, the new *Erebus* workboat 'set sail' on her maiden voyage from Pembroke Dock to the Cammell Laird Shipyard in Birkenhead. The journey started with a calm dawn cruise down Milford Haven before being met by the swell of the Irish Sea. After a short bumpy passage around Skokholm and Skomer Island, we headed across St Bridges Bay and inside Ramsey Island where calmer seas were welcomed.

Four-and-a-half hours into the trip, *Erebus* was happily

padding along at 20+ knots, and approaching the way point at Bardsey Island we enjoyed pleasant scenery and plenty of bird life.

Shortly before midday *Erebus* headed cautiously up the entrance into the Menai Straights, navigating sand bars and staying well clear of the odd wreck. Ninety minutes later and after a test of the boat's two 315hp engines, we were flying along at 30 knots out of the Menai Strait and up Colwyn Bay towards Puffin Island.

Once around Puffin Island we headed east for Liverpool Bay. At 15:00 hours we made our final approach through the confused waters of Rock Channel, where the River Mersey meets the Irish Sea. At 16:00 hours, and ahead



▲ Being lifted into the wet basin at Cammell Laird shipyard

of schedule, *Erebus* was finally being lifted out of the Mersey and into the wet basin at Cammell Laird. We had completed a successful maiden voyage and proved that we

now have a very capable vessel to support RRS *Sir David Attenborough*. A great effort from the *Erebus* crew and all involved!

– Chad Edgson



▲ Approaching Britannia Bridge



British  
Antarctic Survey

NATURAL ENVIRONMENT RESEARCH COUNCIL

## Orkney Trip Fuels New Ideas



▲ Under-sea power generation

At the beginning of August a team from BAS, BAM and Ramboll travelled to the Orkney Islands in search of energy generation technologies that could be applicable to the Antarctic environment of the BAS research stations.

Orkney is a remarkable place of numerous technological advancements in wind, tidal, wave, hydrogen energy systems and energy storage. It is the perfect testbed for new technologies due to the major wind, wave and tidal resources – Orkney's gusty winds can exceed the Antarctic ones at Rothera. It is also very sensitive in terms of wildlife and protected areas, as are our BAS stations.

Throughout the years, Orkney organisations have received substantial funding for research and development of such technologies and have attracted young talents that now live and work in the islands and drive the technology revolution.

The team returned to Cambridge full of ideas, useful information and a network

## BAS energy

of experts that could be of important assistance in the near future as we plan the decarbonisation of our stations in Antarctica.

How about a sub-sea power generation turbine to convert the energy within ocean currents and tides to electrical energy for Bird Island?

Or what about hydrogen generation from sea water to be used for the boats at KEP or to power Bird Island?

– *Nopi Exizidou*



▲ Hydrogen storage technology

## Fuchs Medal Nominations

The Fuchs Medal recognises outstanding devotion to BAS's interests, beyond the call of normal duty, by men or women who are or were members of the Survey, or closely connected with its work. Recipients are normally chosen from those who have given sterling service over a long period of time, and/or those who have made an exceptional contribution in a particular season or seasons.

Nominations may be made by any member of BAS staff (past and present), or anyone closely connected with its work, with personal knowledge of a candidate's contribution. Please address any queries in confidence to Paul Coslett ([phcoslett@yahoo.co.uk](mailto:phcoslett@yahoo.co.uk)). Closing date is 28th Feb 2020.  
– *Julie Leland*

## New Director For BGS

Karen Hanghøj will take up the role of Director of the British Geological Survey (BGS) from October 2019. Karen's experience in science and innovation, including commercialisation makes her very well-placed to take on the role of the BGS Director. Under Karen's leadership, BGS will continue in its role as a world-leading survey and will ensure new, innovative services and research continue to develop from its experience. Dr Tracy Shimmield, BGS Lyell Centre Director, will act as interim BGS Director until Dr Hanghøj takes up her post.  
– *Duncan Wingham (NERC)*



▲ Dr Karen Hanghøj

## The Old Meets The New



▲ Steve (left) and Don Parnell

Whilst visiting his sister in Yorkshire, BAS Radio Officer Steve Stiglic-Buxton was sitting in a café sporting a *Shackleton*-branded polo shirt. When a friendly dog appeared, soft-hearted Steve gave it a loving welcome and the owner apologised for his intrusion. No apology necessary, but before the words were spoken, the lady owner spotted the

BAS logo and became quite excited. She insisted both Steve and his sister Lynne should 'please' drop by her home around the corner, just for a minute to give her husband a massive surprise!?

In short we agreed, and upon arriving around the corner in Holmfirth, I was pleased to be introduced to Mr Don Parnell, ex-Falkland Island Dependent. Don served with FIDs from 1964 to 1968 at Bird Island, Stonnington Island and finally Adelaide Island (Rothera). Steve, ex-Radio Officer of the RRS *John Biscoe* (1985-87), RRS *Ernest Shackleton* (1999-2019), and currently RRS *James Clark Ross*, was so surprised to find Don was actually the Radio Operator and latterly the Base Commander for the Adelaide Island base. What a small world.

Having agreed to 'pop in for a five-minute chat', an

## BAS history

hour later sister Lynne had to intercede and pull the two boys away from a very engrossing conversation. One hour was just time enough to cover all of the interesting facts of the service past and present. Promising to keep in contact with Don, who is still very much in Antarctica in his heart, a quick photograph was taken of the 'sparky of old' and 'sparky currently'.

One topic that dominated the conversation was that Don worked with the dogs when they were still very valued members of the Antarctic teams. Lucky man.

Many thanks to Don for his excellent hospitality and to Mrs Parnell for accosting a strange man sporting Antarctic motifs in a café in Yorkshire! Without her help, such an enjoyable meeting would have never taken place.

– *Steve Stiglic-Buxton*

# The Joy Of Winter Chats



▲ Winter hikes are ideal for random debates and discussions

Anyone who has spent any duration working in isolation with a small group of the same people will understand the concept of ridiculous winter conversations. It is a part of winter station life that comes to be accepted as the norm, often until a new influx of people arrive and you realise just how special your tiny population bubble has become. I am referring to the bizarre quirkiness of subjects that are

debated, often at great length and with full commitment, after you have all but exhausted the standard 'getting to know you' topics.

Some people are more readily instigators of winter conversations, however most people will enthusiastically debate the minutiae of whatever conundrum is handed to them. Memorable gems over this winter include

## BAS stations

everything from; ranking order of who would survive in a zombie apocalypse, if your personality was best represented by a food what would you be, what colour Tuesday is and if you had to spend 12 hours of your day for the rest of your life as a fly which would you choose. Hikes and dinner conversations now frequently involve in-depth discussions on what poppadum condiment your personality is or if you could only eat one chocolate bar for the rest of your life, what would you have.

Winter conversations are brilliant. They keep everyone cheerfully chatting away regardless of how much time they have spent together. Embracing silliness is key to keeping the southern winter fresh.

– Allie Clement

# CIPR Award Nomination

The BAS Communications Team has been shortlisted for a 2019 Chartered Institute of Public Relations (CIPR) PRide Award. The awards are the leading regional PR awards which recognise outstanding work delivered across the UK.

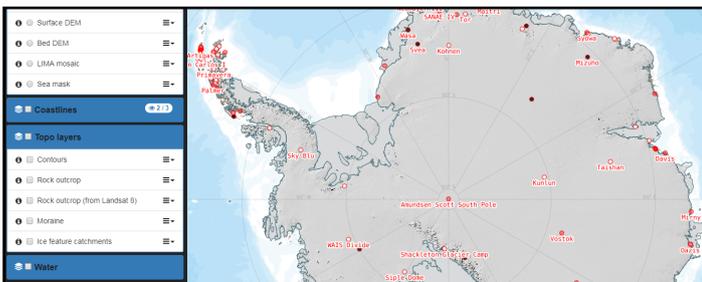
The team has been nominated for the best 'Public Sector Campaign' for the ceremonial launching of the hull of RRS *Sir David Attenborough* last July. Winners are announced on 19th September!

– Linda Capper



▲ The big splash!

# Antarctic Digital Database



▲ The Antarctic Digital Database has just had an update

The Antarctic Digital Database (ADD) has been running for more than 25 years now and is a place for scientists, tourists and those with a general interest in Antarctic affairs to view, query and download topographic data. The data is updated approximately every six months and has just had an update, with the ice-shelf fronts around the Brunt/ Dronning Maud Land and Thwaites/PIG redigitised from the latest imagery.

years and Laura Gerrish, Louise Ireland and Felix Fennel have just taken over responsibility. We are planning to reinvigorate and update the content and its usability over the next few months and we need your help. If you ever notice any errors or omissions of data, or if you think any aspect of it could be done differently to make it more useful, then please let us know via the 'user feedback' button on the web map (<https://add.data.bas.ac.uk>). We want to ensure that we deliver the best service possible!

– Laura Gerrish

The system has been run on behalf of SCAR by various MAGIC members over the

# Professor Elizabeth Harper

Congratulations to Professor Elizabeth Harper on the award of an honorary Chair in Evolutionary Malacology by the University of Cambridge (Department of Earth Sciences) in recognition of her significant contributions to the field. Excellent news and richly deserved! Liz is one of our highly-valued BAS Fellows.

Liz mainly collaborates with Lloyd Peck, Alistair Crame, Melody Clark and Vicky Peck on studies involving bivalve molluscs and brachiopods. Joint Harper-BAS projects range from studying predation pressure in molluscs (present day and across the K-Pg boundary on Seymour Island), shell microstructure in space and time in commercial shellfish (CACHE EU project), through to experimental manipulation of temperature and pH in brachiopods, specifically the effects on repair rates associated with

shell damage. Liz's most recent co-authored paper with BAS has just been published in the journal *Global Change Biology* – Telesca et al. (2019), Biomineralization plasticity and environmental heterogeneity predict geographical resilience patterns of foundation species to future change. See: <https://onlinelibrary.wiley.com/doi/pdf/10.1111/gcb.14758>

We look forward to many more successful projects with Professor Liz!

– Melody Clark



▲ Liz Harper is a BAS Fellow

## Environmental Protection



▲ Delegates braved the heat for a photo at the meeting in Prague

Amid the soaring summer temperatures across much of Europe, Rachel Clarke and Kevin Hughes attended the Committee for Environmental Protection (CEP) meeting in Prague as part of the UK delegation.

The Committee provides advice to the Antarctic Treaty Parties on environmental issues, with applied research

essential for evidence-based decision making. BAS science drove several international policy issues including an Antarctic Treaty Resolution promoting the elimination of macro- and micro-plastic pollution and a non-native species emergency response plan which was endorsed by the Committee for use across Antarctica.

– Kevin Hughes

## Heatwave Helps Solar Car Park

The sweltering temperatures in July made working at BAS Cambridge pretty challenging, with 37°C recorded inside the Aquarium hut on Thursday 25th. However, the blazing sunshine helped the new solar car park produce a serious amount of electricity.

During the sunniest days, the solar PV array in the south car park generated 140kW of stable power – enough to satisfy the electrical load of SB2 and the new Aquarium facility with room to spare.

– Tom Boagey



▲ Car park at BAS Cambridge

## Loving the Lepidoptera!

The BioDiversity@BAS team held our annual butterfly survey across the BAS Cambridge site on 30th July. This is part of an annual national initiative by Butterfly Conservation to record butterfly abundance and population trends across the UK. Despite a rather ominous weather forecast of torrential rain and high winds, we had a great turn-out of enthusiastic staff volunteers who remained undeterred and were rewarded with dry and sunny conditions.

Over the 15-minute duration of the lunchtime count, an impressive total of eight species and 32 individual butterflies were recorded. These data have not only contributed to the wider national survey, but served as a reminder that the BAS Cambridge grounds are an important habitat to a range of local wildlife.

## Spotlight On Science: May 2019

### The influence of substorms on extreme rates of change of the surface horizontal magnetic field in the United Kingdom

Electricity supply networks, such as the UK's National Grid, can be interrupted and damaged by geomagnetically induced currents (GIC). These currents are caused by rapid fluctuations in the Earth's magnetic field caused by space weather. The larger the magnetic fluctuation, the larger the GIC and risk to the Grid.

A recent socio-economic analysis, led by Oxford University, found that a one-in-100-year extreme GIC could lead to a loss in the UK gross domestic product of £16 billion, but that this could reduce to only £0.9 billion if there was a good forecasting capability.

However, in order to forecast GICs we need to understand what physical process causes them. By statistically analysing geomagnetic data measured every minute over 19 years at three British Geological Survey observatories in the UK, it was found that just over half of the extreme measured fluctuations occurred during unpredictable events known as substorms.

However, it could also be inferred that even more extreme and damaging fluctuations beyond the measured range were attributable to periods of relatively-predictable enhanced space weather convection outside of substorms. This offers the prospect of being able to forecast and mitigate the impact of geomagnetic fluctuations on the National Grid and the UK economy.

– Mervyn Freeman

### BAS biodiversity

The Biodiversity@BAS team have also started running a moth trap during the late summer nights as part of our effort to collate a comprehensive list of the plant and animal species that share our workplace environment.

The moth trap, which is basically a large lamp fitted over a box with a funnel lid, is a tried and tested design for capturing night-flying insects. Each morning following

the trap deployment, staff volunteers have carefully collected, identified and then released any moths found.

We've had a steady stream of species so far, including the unusually named *Setaceous Hebrew Character*. You can find more about our work at <https://nercacuk.sharepoint.com/sites/BASDigitalw/people-teams/social-life-hub/Pages/conservation-group.aspx>

– Mike Dunn



▲ The impressively-camouflaged Flounce Rustic moth



▲ The event was a big success

In July, we hosted an event to help link BAS Early Career Researchers (ECRs) with BAS staff that are engaged in policy. The aim was to give ECRs a chance to learn more about what it is like to work with policy-makers: the challenges, and the different ways BAS feeds into and shapes policy.

It was an excellent session, kicked off by seven BAS speakers giving a short introduction to how they work with policy and sharing their experiences of this – thanks to Susie Grant, Kevin

Hughes, Richard Phillips, Henry Burgess, Rachel Cavanagh, Simeon Hill and Norman Ratcliffe. There's a huge diversity of policy experience in the building, with different people engaging at different levels, which was great to hear about. We followed this by informal round-the-table discussions in small groups where attendees could chat and ask questions to our policy experts.

It was a great way to have frank discussions about what happens at the science-policy interface, the positives and negatives of engaging with policy, as well as tips and tricks to getting your science into policy. ECRs were able to ask questions related to their specific interests and areas of research, and get to know who to contact in the future for more advice.

Based on the success of this first event and the ever-evolving landscape of policy engagement and turnover of students and ECRs, we plan to host more to really link ECRs into the world of policy at an early stage. Although targeted to address the ECR-policy gap, these events are open to all interested persons to come and find out about the policy work emanating from BAS, so please do come along!

If you would like a platform to share your experiences in policy please email Anna or Martina to get involved with the next event. We're planning our next one for around October/November with BAS experts engaging with the IPCC, CCAMLR and many other bodies. Keep your eyes peeled for information about the next event!  
– Martina Bristow/Anna Belcher

## Lloyd Peck At Book Festival

Prof Lloyd Peck been asked to give a science talk on Antarctic biology at a book festival in London on 19th September. The week-long *Archway with Words* festival is in its seventh year and comprises 25 events. The line-up brings comedy, fiction, technology, biology, philosophy, poetry, cinema, memoir, science and history to north London.

Previous speakers include Will Self, Ben Okri, Dame Joan Bakewell, Charlie Higson, Viv Albertine, Michele Hanson, Simon Singh, Phill Jupitus, Tracy Chevalier, Linton Kwesi-Johnson, Esther Freud, John Hegley, Stella Duffy, John Healy, Rastamouse, Professor Steve Jones, Tina Seskis, Neil McKenna, Sathnam Sanghera... More at: [archwaywithwords.com](http://archwaywithwords.com)  
– Jamie Oliver

## Race Antarctica 2019 Results

After eight weeks, this year's Race Antarctica came to an end at the beginning of August. Congratulations to team *Racy-Mc-Race-face* who crossed the finish line back on 13th July! Hot on their heels were *Student Tea(m)* followed by *Running Late* in third place. An honourable mention goes to *Run, pizza, ice cream, REPEAT!* who came in fourth.

*Racy-Mc-Race-face* also covered the most distance with an impressive 10,638 (race) km – that would get them from Rothera to the South Pole, keep going to say hello to the Russian station Mirny, then head back to Rothera again. There were some impressive individual performances; Louise Ireland cycled 2,300km and Alex Tate ran over 1,141km! For full 'obsessive stats', visit: <https://race.web.bas.ac.uk/stats>  
– Mari Whitelaw

## What A Load Of Rubbish!



▲ Waste being loaded onto lorry for onward transport

As part of our obligations under the Environmental Protocol (1991) and Antarctic Act (1994), waste produced at BAS stations (other than sewage, grey water or food waste) must be removed from Antarctica. At BAS stations waste is segregated, processed and packaged ready to be shipped out of Antarctica onboard BAS ships to either the Falkland Islands or the UK.

Waste returned to the UK is offloaded and its collection and disposal is coordinated by

the BAS Environment Office in collaboration with our waste contractor, the ship's crew, BAS Supply Chain Logistics team and the port stevedores. Offloaded waste includes hazardous waste (e.g. oil filters, waste chemicals, batteries etc.) and recyclables (e.g. paper and card in FIBCs and glass in drums). This year, the waste even included mattresses! Recently Anna Malaos and Kate Morley from the Environment Office coordinated waste offload from both BAS ships at

## BAS environment

Harwich. This included labelling up hazardous waste for transport by road, checking the waste against the ship manifest, completing the relevant paperwork and loading our waste contractors' lorries for onward transport and disposal/treatment of the waste. On average, 90% of Antarctic waste returned to the UK is recycled!

A big thank you to all those on station who effectively segregate waste to ensure high recycling rates and to those who package and consign waste appropriately to ensure safe and compliant transportation.  
– Kate Morley



▲ Checking the manifest

## Rothera Modernisation Update



▲ The project team receiving the Elephant Seal of Excellence award

Rothera Modernisation Phase I has entered the technical design and procurement work stage following successful completion of the 65% detailed design and target-cost submission. A huge effort by the project team was focussed on completion and review of the design and cost evaluation that led to a successful approval for a construction contract being

awarded on 19th August. The hard work was recognised by the award of the Elephant Seal of Excellence for completion of the design within the timeframe of the project.

The design of the new Scientific and Operations Building is taking shape with development of the external walls, flooring and structural components. The layout of the

## BAS stations

central store has changed to provide greater fire resilience and more flexible access.

Good progress has been made on the design of the building and site-wide services including the ventilation and drainage systems. Plans for supporting tasks next season is well underway including deconstruction of the Miracle Span and moving into a new interim waste-management facility, diversion of some site-wide services, and work on a replacement Bentham (IT) container.

Groundworks, including excavations and laying of foundations, commence this austral summer season 2019/20, with the main construction of the new building and site-wide services starting in the 2020/21 season. – David Brand

## Cambridge Drawing Soc.

BAS Emeritus Fellow Paul Rodhouse will be exhibiting some of his recent Antarctic paintings at the Cambridge Drawing Society's autumn exhibition at the Leys School, Cambridge.

The exhibition runs from Sunday 20th to Friday 25th October. For more information about the Cambridge Drawing Society visit: <http://cambridgedrawingsociety.org> – Jamie Oliver



▲ The Shackleton at Halley

## A +1.5°C Climate Change Future

After I presented at the PA Women's Network Launch on the challenge of climate change, and an invitation to become part of the solution, technologists at PA Consulting Group have instigated an internship project to apply their FutureWorlds business scenario-planning technique to explore potential futures in a +1.5°C world. This is usually employed to guide strategic decision-making and direction with global corporations, government bodies, not-for-profits and start-ups.

Over 10 weeks this summer, Biologist Lauren Kavanagh and Design Engineer Daniel Cohen have articulated four scenarios, each imagining a

+1.5°C outcome, in order to drive open-minded thinking and strong conversations, using the FutureWorlds technique. The project was initiated and led by Lyn Scott at PA and has received input from myself and Anna Jones from BAS. On 4th September we ran an event at AURORA where delegates from BAS, PA and the wider AURORA community could learn about this approach, have an opportunity to explore these FutureWorlds, and bring their unique experience and insight to a lively discussion about how we can imagine and shape our future.

This publicly-available PA project is an excellent example of how sharing our insights into the challenges of climate change can inspire others to use their influence to make a difference. How will you use your power to inspire, to address the 1.5°C challenge? – Bea Schlarb-Ridley



▲ AURORA hosted the event

## New BAS Science Funding

BAS has been successful in the past few months, securing over £900k via grants from diverse opportunities that help to fund our science. Congratulations to the successful applicants.

### Royal Society

- T. Bauska – BAS led (University Research Fellowship). Ultra-high-resolution ice-core records of atmospheric CO<sub>2</sub>. Also, (Enhancement Award 2018) Augmenting ice-core records with continuous histories of CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O

### US Air Force

- R. Horne – BAS led (US Air Force Research). Simulating the entire outer radiation belt during space weather events (SORBS)

### NSF-NERC Lead Agency

- P. Convey – Kentucky Uni. and Birmingham Uni. led (NSF/ GEO-NERC). Mechanisms of adaptation to terrestrial Antarctica through comparative physiology and genomics of Antarctic and sub-Antarctic insects

### Other

- S. Grant – BAS led (GSGSSI – Small Grant). Further development of the SGSSI MPA Data Portal to support implementation of an MPA Research and Monitoring Plan
- A. Orr – Birmingham Uni. led (Newton Fund – WCSSP). IND5: Research on statistical post processing techniques for heavy rainfall forecasts in India
- H. Pritchard – BAS led. (National Geographic Society – Directed). SNOWFALL Himalayas
- J. Jackson – BAS led (South Georgia Heritage Trust – Small Grant). Estimating whale abundance in South Georgia waters

Tip of the month: Always read the reviewers criteria – they use it to 'score' your proposal.

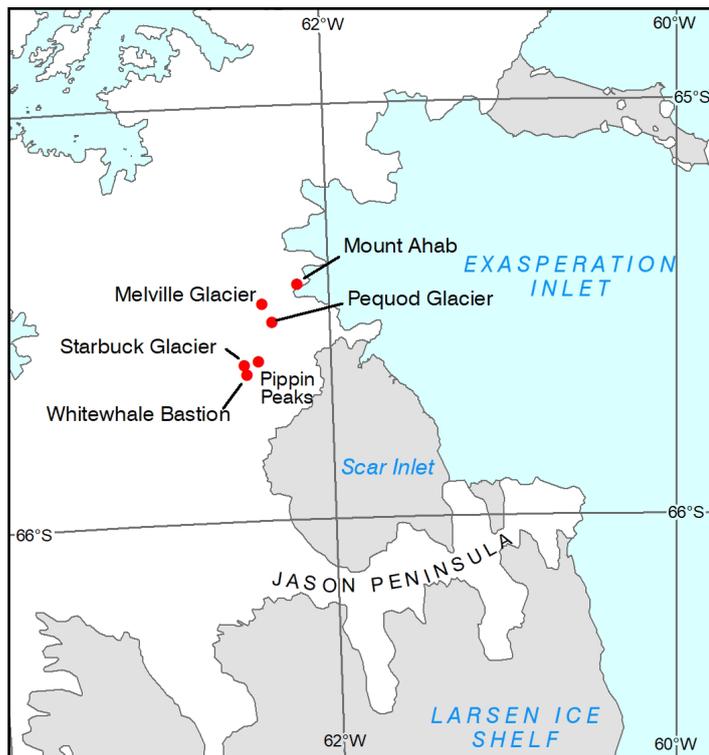
Workshops: we successfully ran the third Grant Writing Skills workshop in August. Would you like to attend the next one in spring 2020? Email [anaper@bas.ac.uk](mailto:anaper@bas.ac.uk). – Katie Gosling

## Place-Name Of The Month – #50

Antarctica

August 1st was the 200th anniversary of Herman Melville's birth. Testament to

the variety of themes present in the APC gazetteer, there is a Moby Dick place-name



▲ Moby Dick-themed place-names in the Antarctic Peninsula

theme in Graham Land, in the northern Antarctic Peninsula. Melville Glacier (62°22'58"W, 65°28'41"S), is named after the famous author. It was first surveyed by FIDS in 1947. Nearby, the Pequod Glacier (62°19'42"W, 65°31'20"S) is named after the whaling ship in the novel, with Mount Ahab (62°10'40"W, 65°26'02"S) named after its vengeful captain. Whitewhale Bastion (62°29'50"W, 65°37'25"S) rises between Starbuck Glacier and Pippin Peaks, named for the Pequod's first mate and shipkeeper respectively.

There are several other place-names in the area associated with Herman Melville's famous novel – if you are interested in learning more, please go to the Antarctic Place-names Committee website here: [apc.antarctica.ac.uk](http://apc.antarctica.ac.uk).

– Elena Field

## Bluedot Sounds Of Space

Nigel Meredith and local artist-engineer Diana Scarborough gave a talk on the 'sounds of space' at the Bluedot Festival in July. Nigel introduced the audience to an amazing variety of natural radio 'sounds' from Earth and beyond, including those from BAS's VLF receiver at Halley.

Nigel also described how the sounds have been used in music and space simulation game *Elite Dangerous*. Diana then explained how she uses them to create soundscapes, animations and performances that fuse art and science.

Bluedot is the UK's premier science and music festival, held annually at Jodrell Bank Observatory, Cheshire (see page 8).

– Nigel Meredith

## Shaping The Future Of APAs

Large parts of Antarctica have no Antarctic Specially Protected Areas. In June, the Antarctic Treaty System's Committee for Environmental Protection and the Scientific Committee on Antarctic Research (SCAR) held a workshop in Prague on the future of the Antarctic Protected Areas system.

BAS's Kevin Hughes, Susie Grant and Pete Convey have considerable practical management and research expertise relevant to area protection and attended the meeting on behalf of the UK and SCAR. The recommendations from the workshop were endorsed by the Antarctic Treaty Parties, paving the way for a major overhaul of the system to make it more representative and systematic.

– Kevin Hughes

## Picavet Kite Rig Testing



▲ The rig's aerial camera was tested near BAS Cambridge

Every year BAS has local school students to complete work experience. During one such visit, the design, construction and test of a picavet rig-kite platform was completed. The hope is that a kite can be used (where appropriate) to capture aerial images and potentially, if the situation allows, act as a backup for when technology fails on quadcopters.

We carried out a number of tests to measure the effectiveness of our rig-kite platform which uses pulleys to self-level.

We started by making tow knots in the kite line (177cm apart), near the top of the line close to the kite. We then attached the two clips holding the pulley strings which held the platform onto these points.

BAS engineering

Unfortunately, there was not much wind so the test was brief, but it was clear that the platform itself was reasonably stable, however it did sway.

For our second test, we moved the points where the pulleys were attached to the kite line closer together (102cm), so that the pulley strings had more leeway to balance out. Because of this extra string, the platform now rocked side to side more dramatically than previously, so the platform did not stay level for the entire flight.

In the third test, we tied the knot further away (231cm), far enough so the pulley strings would be tenser than the kite line itself, in a way that the pulley strings would become the new kite line. This resulted in a more stable platform that swung less and stayed more level than before.

– Carl Robinson

## BAS At 2019 Bluedot Festival

On the 50th anniversary weekend of the Apollo 11 lunar landing (19th-21st July), BAS showcased its science at Bluedot Festival under the famous Jodrell Bank telescope. With its mission to inspire and celebrate science, our team of 14 volunteers were in prime position at the Mission Control tent to showcase a range of BAS science including the Slocum Glider, Bedmap2 model and marine specimens.

It was an extremely busy and successful event engaging with a diverse audience of ~1000 people per day. Thanks to all!  
– Sorrel Kinton



## 2019 Rothera Point Aerial Survey



▲ The new high-resolution image mosaic of Rothera Point

During February 2019 MAGIC conducted a 5cm-resolution aerial-photography survey of Rothera Point in support of the ongoing modernisation of the station. Existing high-resolution coverage of Rothera

Point was from November 2015 and did not capture recent changes at Rothera along with having substantial snow cover, obscuring surface detail. As such, MAGIC was tasked with producing an

MAGIC

internally consistent, high-resolution 3D dataset of the entire Point during a period of minimum-snow cover.

The survey was carried out using a Phase One medium format aerial camera mounted in the camera bay of a Twin Otter and the resulting image mosaic (as seen here), along with the 3D model, have proved to be an invaluable resource not only for the modernisation project, but also for other tasks, including remotely planning the relocation of antennas.

This dataset is now available as an orthorectified mosaic (a geometrically corrected image from which true distances can be measured), 3D point cloud and digital elevation model. Please contact MAGIC for more information.

– Nathan Fenney

## Pictures From The BAS Archives

Inuit researchers and Parks Canada recently released stunning footage of the interior of the wreck of HMS *Terror*, filmed beneath the chilly Arctic waters off the coast of Nunavut. Five years prior to Sir John Franklin's ill-fated expedition to seek the Northwest Passage, the converted warships HMS *Erebus* and *Terror* were charting the waters at the opposite

end of the Earth; exploring Antarctica under the command of Sir James Clark Ross.

Ross named the volcanoes his party discovered at 77°S Mount *Erebus* and Mount *Terror* for his trusty ships, and the names have evoked the spirit of polar endeavour ever since. The ships RRS *John Biscoe* and RRS *Bransfield*, purpose-built in 1956 and

1970 respectively for FIDS/BAS operations, were both supported by workboats named *Erebus* and *Terror*.

Continuing the tradition into the 21st Century, RRS *Sir David Attenborough*, about to be officially named itself, will also carry onboard two smaller named vessels; the workboat *Erebus* and the cargo tender *Terror*. Fitted out with a crane, *Terror* will be used to transfer supplies ashore in areas inaccessible to the SDA. *Erebus* too will be able to transport cargo and personnel, but equipped with echosounders and a winch for overside sampling she will also be capable of undertaking scientific work.

These two little boats with two big names carry the great tradition of British polar seafaring and discovery into the future.

– Alysa Hulbert



▲ Motor launch *Erebus* tied up alongside RRS *Bransfield*

Archive Image #77

## And Finally...



▲ I recognise that place...

A US car insurance advert from YouTube appears to be set in a research station in Antarctica that looks very similar to Halley, clearly taking inspiration from the Hugh-Broughton-designed BAS station. Check it out here: <https://m.youtube.com/watch?v=nHj93iOTF84&list=PL139A69A037F3A12D&index=12&t=0s>

Halley will also feature in the closing credits of the film 'Where'd you go Bernadette?' featuring Cate Blanchett, which comes out later this year!

– Athena Dinar

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