



SCAR Sub-Group

SG

Person

Responsible:

EOAG

PS

A.E.Hogg

SCAR Delegates Report 2020

Earth Observation Action Group **(EOAG)**

2018-2020 Report

Summary

Report Author(s)

Anna E. Hogg (UK)

Summary of activities from 2018-20

There has been quite a bit of activity within the EOAG to report on over the past two-year period. This report contains a brief summary of work that's been done, challenges faced, and upcoming activities.

Major activities/achievements:

- Presented at the Polar Space Task Group (PSTG) meeting in Geneva.
- The SCAR EOAG was announced to the polar science community during an invited talk at the West Antarctic Ice Sheet (WAIS) meeting.
- The EOAG was represented in an ESA-NASA discussion meeting at the ESA Living Planet Symposium (LPS) about the possibility of synchronising the orbits of CryoSat-2 and ICESat-2, in order to better understand the difference between radar and laser altimetry.
- Named a new 'Earth observation Range' of glaciers in Antarctica.
- Convened a Remote sensing of the cryosphere session at the SCAR Hobart meeting.

Challenges Faced:

- The EOAG chair was awarded a large new NERC funded Earth observation Centre for Doctoral Training (CDT), which has a ~£7mill budget to fund and train 50 new PhD students to be the next generation of Earth observation leaders. (www.eo-cdt.org) Setting up this large new centre and recruiting the first intake of PhD students has been time consuming over the last 12 months. Dedicating my time to building an exciting new community of EO experts, who are being recruited using best EDI principles, and are supervised by gender diverse senior researchers, is in line with SCAR's commitment to support early career scientists education and training. Time commitments for maintaining this activity over the next two years will be much smaller than the effort required to set up a new centre.
- The first major opportunity to hold a SCAR wide EOAG meeting was at the Hobart meeting cancelled due to coronavirus. It was a real blow not to be able to have a full EOAG meeting during this event.

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Upcoming Activities:

- In discussions about forming a companion International Arctic Science Committee (IASC) Arctic Remote sensing Working Group.
- ESA EO for Polar Science Workshop, October 2020
- The EOAG desperately wants to hold a group wide Action Group meeting in order to review progress to date, define next steps for the next two years, and expand the AG membership to include new external members, and work more closely with existing SCAR groups.

Summary Budget 2019 to 2022

	2019	2020	2021	2022
	Spent	Allocated	Request	Request
(US\$)	\$0	\$0	\$1500	\$1500

Progress to date

Sub-group Outcomes Summary

The purpose of the Earth Observation Expert Group is to (i) be a permanent advocate for acquiring satellite data over the Antarctic and Southern Ocean region (up to 60° S); (ii) to make recommendations about the type and accuracy of satellite observations required; (iii) to identify a program of grand science challenges which can best be tackled with satellite data; and (iv) to advocate for long term continuity of satellite data records. To achieve these aims the EOAG has integrated itself into decision-making groups in space agencies across the world, and maintains close links with the scientific community that the SCAR Action Group represents. As the nature of these activities is both strategic and political, it has taken time for the EOAG to position itself to have a voice at the table. This relies heavily on the EOAG scientists' positions within the community, and a major asset of the team is the space agency advisory committees, satellite mission advisory groups and science teams that we represent, providing a unique voice for the community.

Major activities/achievements:

- The EOAG was invited to present at the Polar Space Task Group (PSTG) meeting in Geneva, setting out our observational priority areas, and making a formal link between the SCAR group and the space agencies at the meeting.
- The SCAR EOAG was announced to the polar science community during an invited talk at the West Antarctic Ice Sheet (WAIS) meeting, an important step to make the cryosphere community aware that this new group existed
- The EOAG was represented in an ESA-NASA discussion meeting at the ESA Living Planet Symposium (LPS) about the possibility of synchronising the orbits of CryoSat-2 and ICESat-2, in order to better understand the difference between radar and laser altimetry missions. The aim of this big move, which would use fuel on the CryoSat-2 satellite, is to help us understand the difference in penetration depth between the two frequencies, which we hope might significantly contribute towards our understanding of snow depth on sea ice. In the southern hemisphere, this is a large outstanding science question which has prevented us from observing sea ice thickness from space around Antarctica.
- In celebration of the role EO satellites have had in improving our understanding of the cryosphere, an 'Earth Observation Range' of glaciers were formally named in Western Palmer Land, on the Antarctic Peninsula. These new glacier names are now formally included in both the British and SCAR place names Gazettes online.
- EOAG committee members convened a popular Remote sensing of the cryosphere session at the SCAR Hobart meeting.

Upcoming Activities:

- We are in discussions about forming a companion International Arctic Science Committee (IASC) Arctic Remote sensing Working Group. The rationale is that the EO requirements for the Arctic and Antarctic are complimentary, therefore having community recommendations put forward via the SCAR EOAG and an IASC WG would represent a larger community and therefore result in more successful outcomes. A preliminary IASC EO WG group has formed, supported by the SCAR EOAG, and the IASC invited a working group proposal on this topic to be put forward for consideration this year. A job change by the person leading the proposal meant that it wasn't possible to submit the group this year, but it's a priority for next year to act on this opportunity.
- ESA EO for Polar Science Workshop, October 2020 – Forum for discussion between ESA and the European Commission (EC) about coordinating Polar projects and scientific groups internationally. ~200k EUR will be competitively

EOAG: 2018-2020 Report, cont.

tendered in 2020 to form a dedicated Polar science cluster. This will fund more coordinated activities across different existing EO Polar projects, support new collaborative work. Deliverables will include community white papers, thematic events, and growth of a network that in line with SCAR objectives fosters new initiatives and high-quality international research in the Antarctic region. The EOAG has already had in discussions with relevant partners about being formally represented in this cluster.

- The EOAG desperately wants to hold a group wide Action Group meeting in order to review progress to date, define next steps for the next two years, and expand the AG membership to include new external members, and work more closely with existing SCAR groups.

(Summarize the above and in each case provide your sub-group name in left hand column to assist Science Group COs in compiling their reports)

Sub-group	Activity/Outcome/Benefit/Achievement
EOAG	EOAG presented EO data acquisition requirements at the Polar Space Task Group (PTSG) meeting in Geneva. / ESA formally announced EOAG to other international space agencies. / maintained communication channels with national space agencies worldwide. / Only group present representing the scientific requirements of an international community.
EOAG	The SCAR EOAG was announced to the polar science community during an invited talk at the West Antarctic Ice Sheet (WAIS) meeting. / Made the non-EO cryosphere community aware that the EOAG group exists and can advocate for their needs. / Researchers without a route to request EO data products have a mechanism to do this now. / Collected EO data requests from the community.
EOAG	The EOAG was represented in an ESA-NASA discussion meeting at the ESA Living Planet Symposium (LPS) about the possibility of synchronising the orbits of CryoSat-2 and ICESat-2, in order to better understand the difference between radar and laser altimetry missions. / informed the discussions. / It currently looks like this manoeuvre will be performed. / Data collected will we hope answer a large outstanding science question about snow depth on sea ice, which has prevented observations of sea ice thickness from space being measured in the Antarctic.
EOAG	Named previously unnamed glaciers in Western Palmer Land on the Antarctic Peninsula after EO satellites, creating an 'Earth Observation Range'. / names added to SCAR place names Gazetteer. / Celebrated the role EO satellites have had in improving our understanding of the cryosphere, and international collaboration in Space. / widespread media coverage, raising public awareness of the role of EO satellites in Polar research.

EOAG: 2018-2020 Report, cont.

Sub-group Cash Flow

(From previous Delegates meeting to date)

Sub-group	Allocation	Amount spent		
		2018	2019	2020
EOAG	\$2500	\$0	\$0	\$0

Future plans

Planned activities in 2020 to 2022

Sub-group	Planned activity
EOAG	ESA EO for Polar Science Workshop, October 2020 – Write a scientific roadmap for major science challenges in the Polar regions that can be tackled using EO data. / Network and coordinate between primarily ESA and European Commission Polar projects, but also international EO networks focussed on the polar regions.
EOAG	Coordinate with an Arctic focussed team to propose a complimentary IASC EO Working Group.
EOAG	Hold an action group meeting at a SCAR meeting where the community are present, to review previous activities, widen participation and plan next objectives for the group.
EOAG	Continue representing the polar science community at strategic missions where EO data acquisitions are discussed, such as the Polar Space Task Group (PTSG), and future Polar EO mission planning meetings.

Planned use of funds for 2020 to 2022

Year (YYYY)	Purpose/Activity	Amount (in USD)	Contact Name	Contact Email
2021	EOAG working group meeting	\$1500	Anna Hogg	A.E.Hogg@leeds.ac.uk
2022	EOAG working group meeting	\$1500	Anna Hogg	A.E.Hogg@leeds.ac.uk
Total		\$3000		

Any additional detail on funds usage and desired results/outcomes

All EOAG meeting participation and activities have so far been funded by partners existing funding from alternative sources, some of which came through travel grants (e.g. WAIS meeting participation). Allocated money that would have been used to fund early career researcher participation in a 2020 EOAG working group meeting during the SCAR Hobart conference, hasn't been spent as planned due to global events.

Percentage of the budget to be used for support of early-career researchers

2020: 0 %
 2021: 66 %
 2022: 66 %

Percentage of the budget to be used for support of scientists from countries with developing Antarctic programmes

2020: 0%
 2021: 0%
 2022: 0%

Membership

Leadership

Role	First Name	Last Name	Affiliation	Country	Email	Date Started	Date Term is to End
Chair *	Anna	Hogg	Uni. Leeds	UK	A.E.Hogg@leeds.ac.uk	2018	
	Helen	Fricker	Scripps	USA	hafricker@gmail.com	2018	
	Ian	Joughin	Uni. Washington	USA	ian@apl.washington.edu	2018	
	Stefan	Hendricks	AWI	Germany	stefan.hendricks@awi.de	2018	
	Ted	Scambos	NSIDC	USA	teds@nsidc.org	2018	
	Matthew	England	Uni. New South Wales	Australia	m.england@unsw.edu.au	2018	
	Michael	Van Roozendael	Belgian Institute for Space Aeronomy	Belgium	michel.vanroozendael@aeronomie.be	2018	
	Tamsin	Edwards	Kings College London	UK	tamsin.edwards@kcl.ac.uk	2018	
	Chris	Banks	NOC	UK	chris.banks@noc.ac.uk	2018	

*Please identify early-career researchers with * in first column*

Other members

Role	First Name	Last Name	Affiliation	Country	Email	Date Started	Date Term is to End
SERCE	Rene	Forsberg	DTU	Denmark	rf@space.dtu.dk	2018	
OpMet	Matthew	Lazzara	Uni. Wisconsin	USA	mattl@ssec.wisc.edu	2018	

Notable Papers

N/A

Direct support from outside organisations received for your activities

N/A

Major collaborations your Science Group has with other SCAR groups and with organisations/groups beyond SCAR

(Numbered list of substantive collaborations)

Within SCAR

1. SERCE
2. OpMet
3. FRISP

Outside SCAR

1. NERC
2. UKSA
3. ESA
4. PSTG
5. WMO
6. EC

Outreach, communication and capacity-building activities

Brief highlights of any activities undertaken since the SCAR Delegates meeting in 2018.

The Antarctic glacier place names activity spawned a large number of news stories in international media outlets around the world. The SCAR website news story is linked here: <https://www.scar.org/research-features/antarctic-ice-streams-named-after-esa-satellites/>

SCAR fellowship reviewers

Please list one or more people (name and email address) from your group who would be willing to serve as reviewers for the next few years, along with 1-3 keywords on their principal expertise.

First Name	Last Name	Email	Principal Expertise
Anna	Hogg	A.e.Hogg@leeds.ac.uk	Remote sensing, ice sheets, ice speed, subglacial lakes