

## YOPP-SH teleconference 1 April 2020

### Present:

Eric Bazile, David Bromwich, Steve Colwell, Christophe Genthon, Irina Gorodetskaya, Robert Grumbine, Naohiku Hirasawa, Jun Inoue, Sato Kazutoshi, Matthew Lazzara, Anastasiia Maksimova, Francois Massonnet, Sang-Jong Park, Jordan Powers, Marie-Laure Roussel, Kirstin Werner, Jeff Wilson.

David opened the meeting at 1PM (1300) UTC. Everyone introduces themselves.

### Introduction

David recalls the history of the Antarctic YOPP Special Observing Period (SOP) during summer 2018/2019 and the background to the delay of a year for the winter SOP originally planned for 2021, now shifted to austral winter 2022 to be able to plan things in detail, especially to involve the oceanographic community. Unfortunately, the SCAR Conference was recently cancelled so we have cancelled the 5<sup>th</sup> YOPP-SH meeting in Hobart as well. We will aim for monthly teleconferences and allocate both morning and afternoon times in the US to better accommodate participants from around the world.

The US field program for 2020/2021 is under review and there are likely to be significant disruptions to the upcoming field season.

### Winter SOP

David asks if there will be any problems for anyone with the SOP being delayed until mid-April to mid-July 2022.

Sang-Jong Park: No problem for Korea. For the Korean Jang Bogo Station, contributions for the winter season 2021 weren't that clear but could even be better for 2022. From his own experience of launching radiosondes at King Sejong Station, Sang-Jong Park can tell that in winter, launches are difficult due to windy, very cold conditions. The approach to target particular short periods for enhanced observations make thus sense to him.

Matthew Lazzara: AWS project funded but research component during the Antarctic winter deleted. Soundings from WAIS Divide for the 2019-2020 austral summer available.

Irina Gorodetskaya: Chilean Escudero station had been planning additional radiosondes for 2021 winter and also doing some in early summer. Irina not sure if this will be the same for 2022 for Escudero or any other station.

David – most of Antarctic stations do not have many staff in the winter so we were thinking of following the Targeted Observing Periods (TOPs) along the same lines as the Northern Hemisphere.

Kirstin Werner – explains that in the Arctic they are targeting warm/most air intrusions and cold air outbreaks and radiosonde flights are only done upon request. There is a small group watching the forecasts and sending out notices at five days, 1 day and 12 hours ahead.

Irina – good, we worked this way during the summer SOP.

Kirstin – Irina, would you be one member of the small group for the SH?

Irina -yes

Matthew – In West Antarctica, we tried to do more launches from WAIS Divide site. The data did not get out on the GTS and is about a month long. It is on the SSEC ftp site in raw MOBILE format that needs decoding <ftp://amrc.ssec.wisc.edu/pub/WAIS/radiosondes/2020/> David suggested we also see whether Steve Colwell could host these data on his BAS website <ftp://ftp.bas.ac.uk/src/YOPP-SH/radiosondes/> for summer SOP radiosonde ascents.

Francois – there is a delay in the SIPN-South report for the 2019-2020 austral summer but hopefully it will be released in the next few weeks. There should be no problem in having additional forecasts from operational centers for the Winter SOP in 2022.

Robert Grumbine – NCEP may be able to contribute to the Winter SOP in 2022 but no promises. Nothing in the short term from their new computer system but hoping for the longer term.

Eric Bazile – Still running the observation denial experiments for Antarctica. Will run it also in high resolution for the Winter SOP. It may not be possible to generally have additional radiosondes for the Winter SOP, will find out if we can do limited extra observations along the TOP method.

David – we have a robust demonstration that the additional observations can make a big impact on forecasts for certain major events from the Summer SOP. On average there is not much impact but in particular circumstances.

Eric Bazile – the Météo France Arpege NWP system reveals some impacts from the additional sondes during the summer SOP, particularly with the diurnal cycles, but only 1 month examined so far. This may not be so evident in the winter when the diurnal cycle is not so marked. Radiosonde ascents for specific events in winter SOP during 2022 are feasible.

David – the winter SOP will not only be targeted at specific events but also for specific areas: the greater Ross Sea region, the Antarctic Peninsula and possibly Dome C.

Jordan Powers – The AMPS model work is trying out different data assimilation approaches to examine the forecast impact of the additional radiosondes launched during the summer SOP. The forecasts significantly improve for some major events. Work with primary data assimilation configuration will be commencing soon. The research will not continue to winter SOP in 2022 but we will try to obtain additional funding to include any winter SOP data in a future study.

Jun Inoue – Syowa already doing 2 launches/day in 2020. Will need to work with JMA to see if it is possible to increase the launches for limited periods in 2022. Winter data assimilation may be very interesting based upon the results ECMWF found for the Arctic that the conventional observations assume greater importance for the forecast as microwave soundings are limited in winter. We do not know if the same thing would appear in the Antarctic.

Jun asked about the status of the winter SOP during 2022 when the Polar Prediction Project is scheduled to end that year.

Kirstin Werner – The YOPP Final Summit conference in 2–5 May 2022 in Montreal; we hope that many/most of you will be able to attend. The ICO will finish in December 2022. No more help from Kirstin for YOPP-SH after that date.

David Bromwich – The PPP-SG#11 agreed to continue YOPP-SH to December 2024. The ten-year PPP is supposed to end in December 2022 but this was in normal times for WMO; given the current circumstances, David is keen to see if PPP in general can be extended.

Kirstin – the PPP Trust Funds may still be available past the end of 2022 but no news on this at this stage.

David – It may be possible to hold the funds from the 2020 WAMC over for post 2022 work.

Sang-Jong Park – Korea should be able to support the winter SOP in 2022, we are a bit short of sondes for a 2021 campaign but this gives us an extra year to get sondes there.

David – It seems that taking a TOP approach will suit Korea (Antarctic Peninsula (King Sejong) and Terra Nova Bay (Jang Bogo) stations).

Sang-Jong – general sonde releases in winter are difficult so the TOP approach is preferable.

Christophe Genthon – planning to continue the precipitation studies at Dumont D’Urville. The costs are quite small but we cannot guarantee it. Not sure about Concordia. Also, monitoring clouds at the same time as the precipitation. This should continue at Dumont. This will make Dumont, the Italian and the Belgian stations as key precipitation measurement sites. Hoping for a Chilean station from the Peninsula for precipitation as well. The radar obs do not see the surface precipitation but only one km upwards. We are hoping to get more satellite observations, Cloudsat only works during sunlight, Earthcare satellite (similar to Cloudsat) is late to launch, we are working with ESA on coordination for calibration-validation.

Irina – We are trying to make a formal precipitation network. There is a new MRR (Microwave Rain Radar, vertical pointing microwave radar) at Dumont D’Urville, Escudero, Princess Elizabeth and Mario Zucchelli stations. MRR radar also going into the Vernadsky (Ukrainian) station on the Antarctic Peninsula.

Christophe – we need to reprocess the radar data to detect snow properly. It can be run remotely without people provided there is power.

Christophe – Any plan to postpone the Hobart SCAR meeting to 2021?

David – SCAR not planning to postpone the Hobart meeting.

Matthew – We are assuming the WAMC will be postponed a year. Nothing set for 2021 so we can see what can be arranged for 2021 and schedule a YOPP-SH meeting at the same time.

Steve Colwell – We will be able to continue the archive site and do extra sondes at Rothera for limited periods for the winter SOP in 2022. We can add the extra radiosondes from Matthew from the last season to the summer SOP radiosonde archive.

Matthew – We are expecting the Antarctic Meteorological Research Center to become a formal data centre, we have the funding approval but the paperwork has not flowed through yet.

David – Do we need to send out a formal survey to see what participation in the winter SOP might be?

Kirstin – We have a spreadsheet from some time ago that can be updated. Then we need to prepare a letter from David and Thomas to the institutions, stakeholders etc. who could contribute to the winter SOP. A formal WMO letter to the Permanent Representatives would then follow.

Jeff – Also we need to have a one page document describing the Winter SOP.

Meeting concluded at 1410 UTC.

**Action Items:**

1. Update the spreadsheet summarizing the planned contributions to the winter SOP in 2022.
2. Prepare a short science plan for the winter SOP.
3. Plan out how the Targeted Observing Periods might work.
4. Draft a letter to the Permanent Representatives to WMO requesting contributions to the winter SOP.