Supplement of

Evolution of the dynamics, area, and ice production of the Amundsen Sea Polynya, Antarctica, 2016–2021

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**Supplementary Figures**

![Graph](image)

**Fig. S1.** Daily active polynya area for select dates in 2020 as measured manually from Sentinel-1 SAR imagery (blue diamonds) and from SIC data (orange squares) on the same dates.
Fig. S2. The red boundary shows the region used to calculate daily wind speed at the ASP as shown in Figs.8; S3; S5. The whole ASP study area is shown by the green boundary. The background image is the same true-color MODIS image from 12 December 2020 shown in Fig 1b.
**Fig. S3.** Daily increases in active polynya area plotted against wind direction for all winter (April-October) instances, 2017-2020. The color indicates the density of the distribution of points as measured using a kernel-density estimate using Gaussian kernels.
**Fig. S4.** Daily winter (April-October) ice production for each winter 2017-2020, and the daily mean for the whole period, as measured using heat-flux modelling of ERA-5 data and AMSR-2 SIC data.

**Fig. S5.** Total daily SIC from 1 November 2016 to 31 March 2021 for the broader region defined by the red box in Fig. 1a.
Fig. S6. Daily wind speed and polynya area during the winters (April-October) of (a) 2017, (b) 2018, (c) 2019 and (d) 2020