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Measurement report: Summertime fluorescence characteristics of atmospheric water-soluble organic carbon in the marine boundary layer of the western Arctic Ocean

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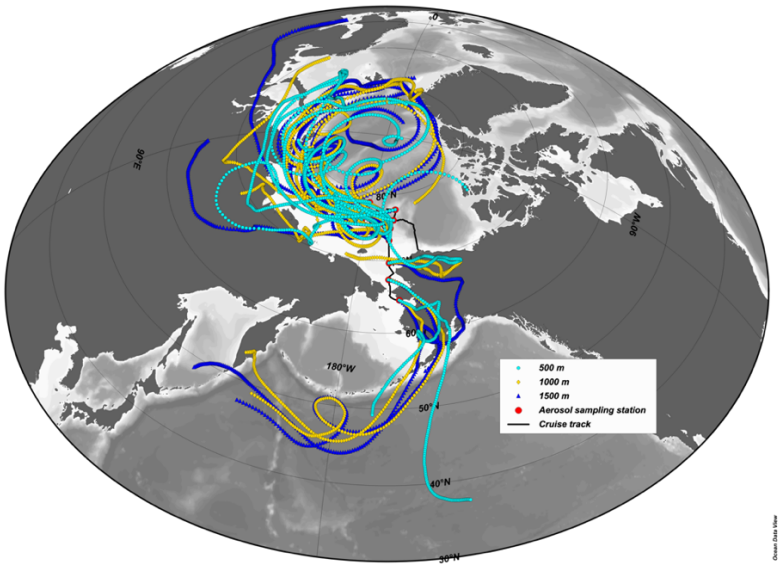

Figure S1. Seven-day backward air mass trajectories at 500 (cyan circles), 1000 (yellow diamonds), and 1500 m (blue triangles) above ground level for each aerosol sampling station during the cruise. The trajectories were calculated from the GDAS database of the NOAA and simulated using the HY-SPLIT model (http:// www.ready.noaa.gov/HYSPLIT_traj.php) (Stein et al., 2015).

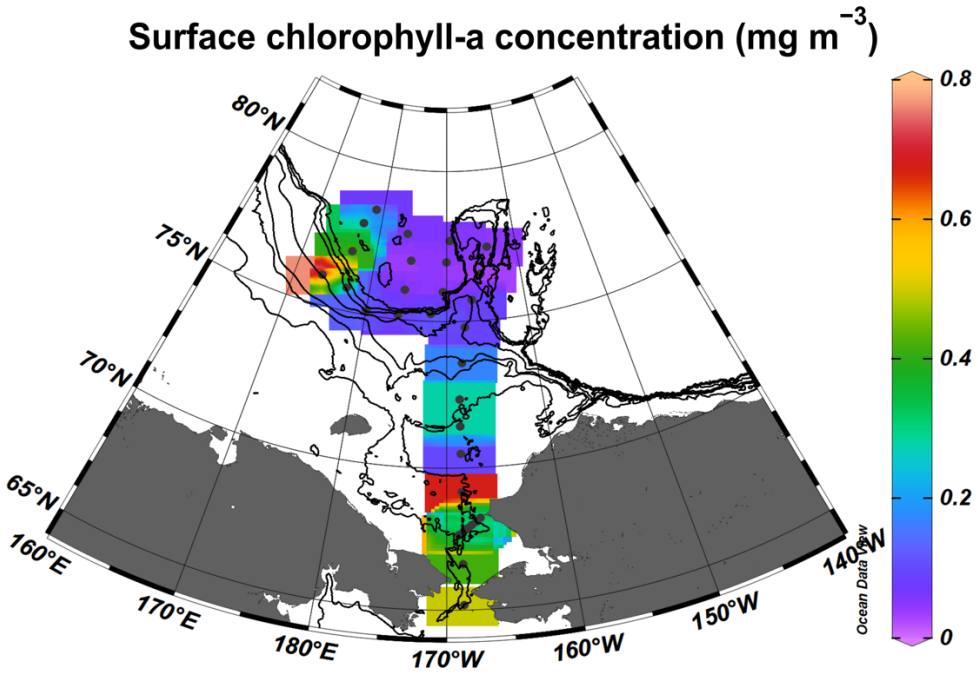

Figure S2. Spatial distribution of in situ surface chlorophyll-a (Chl-a) concentrations (mg m^{-3}) observed in the western Arctic Ocean during the summer (6−19 August) of 2016. The surface Chl-a concentration ranged from 0.031–0.77 mg m^{-3} during the cruise.

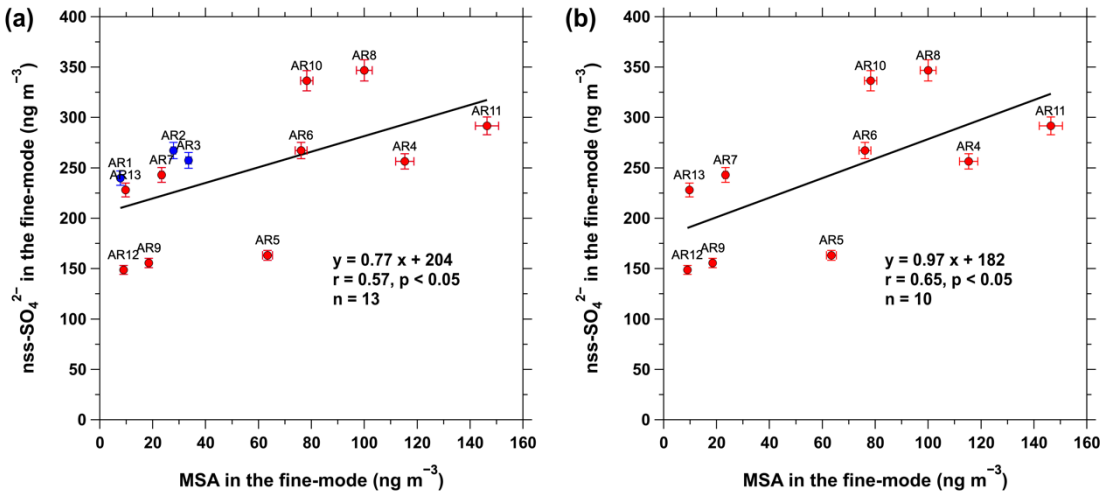

Figure S3. (**a**) Relationship between nss-SO_4^{2-} (ng m^{-3}) and MSA (ng m^{-3}) in the fine-mode aerosols (D < 2.5 μm) obtained during the cruise. (**b**) Same as (**a**), but for the aerosol samples collected in the sea ice-covered areas of the western Arctic Ocean. The blue and red solid circles indicate the samples collected in the coastal and sea ice-covered areas, respectively.

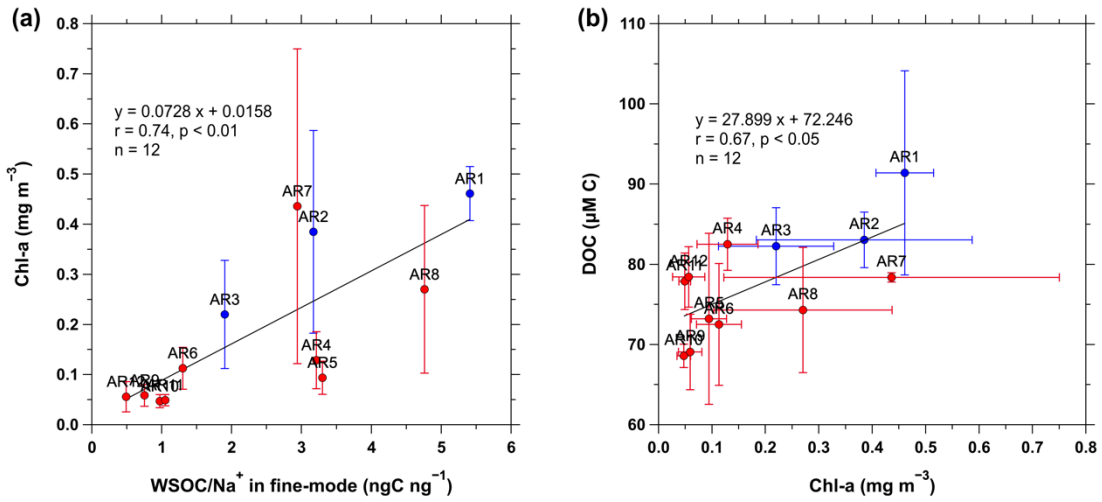

Figure S4. (**a**) Relationship between WSOC/Na^+ ratio (ngC ng^{-1}) in the fine-mode aerosols and in situ surface chlorophyll-a (Chl-a) concentration (mg m^{-3}). (**b**) Relationship between surface Chl-a concentration and surface dissolved organic carbon (DOC) concentration (uM C). Chl-a and DOC concentrations are presented in their mean values and standard deviations for each aerosol sampling time. The blue and red solid circles indicate the samples collected from the coastal and sea ice-covered areas, respectively. Chl-a and DOC concentrations were not measured during the collection of the AR13 aerosol sample.