Supplementary material

Overview plots of the ArcticShark flights in March, June and August 2023
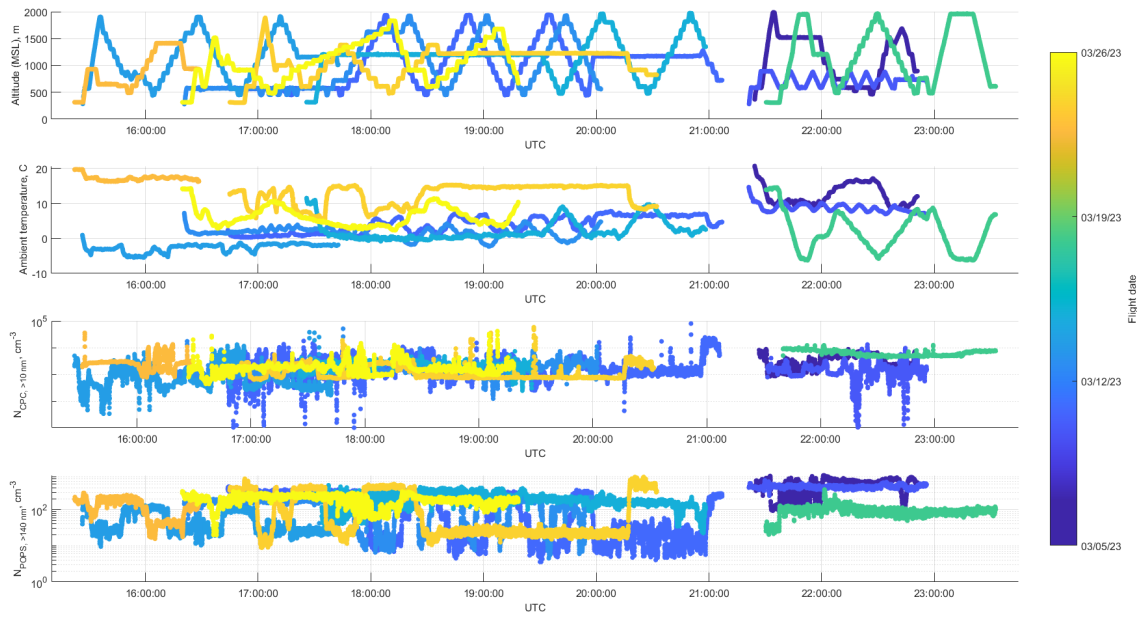
Figure S1. Time series representation of UAS altitude, ambient temperature, and aerosol number concentrations, colored by flight dates in March.
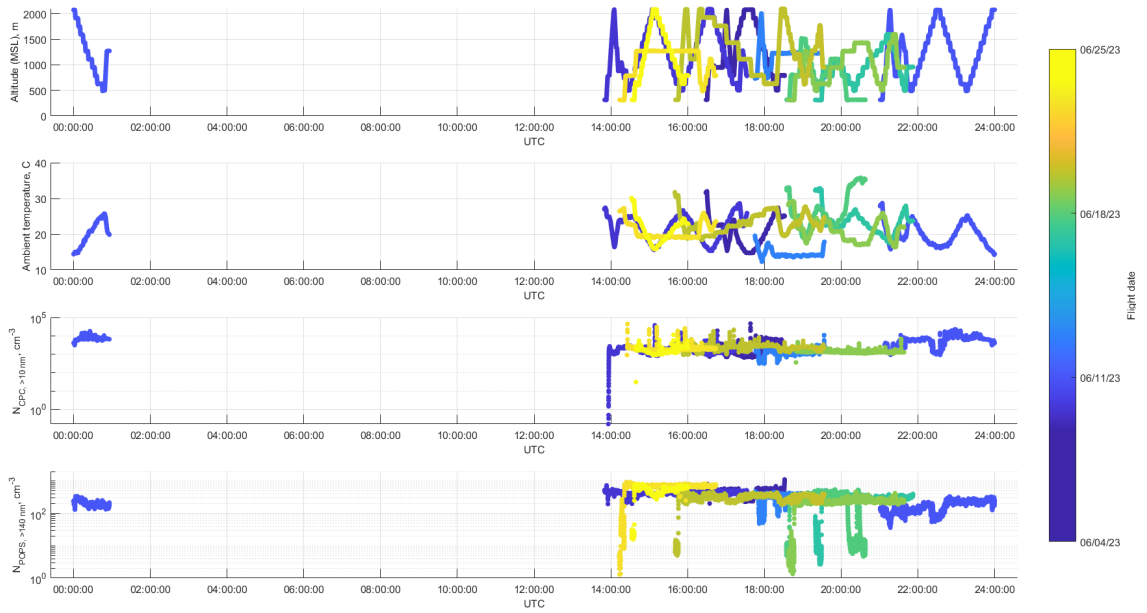
Figure S2. Time series representation of UAS altitude, ambient temperature, and aerosol number concentrations, colored by flight dates in June.
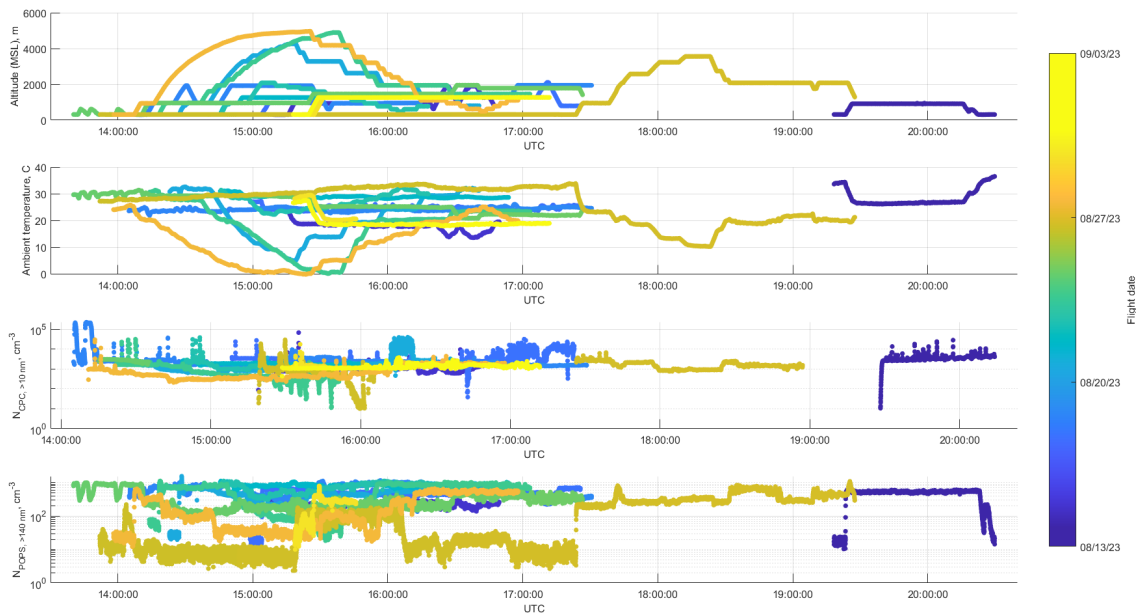
Figure S3. Time series representation of UAS altitude, ambient temperature, and aerosol number concentrations, colored by flight dates in August.
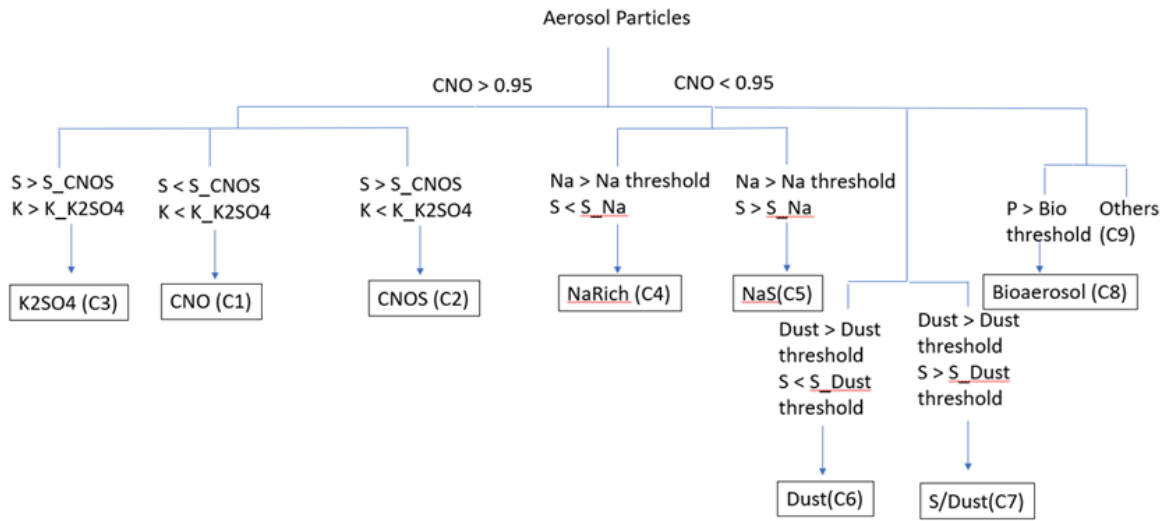
Figure S4. Particle classification scheme sorted based on the CCSEM/EDX results.
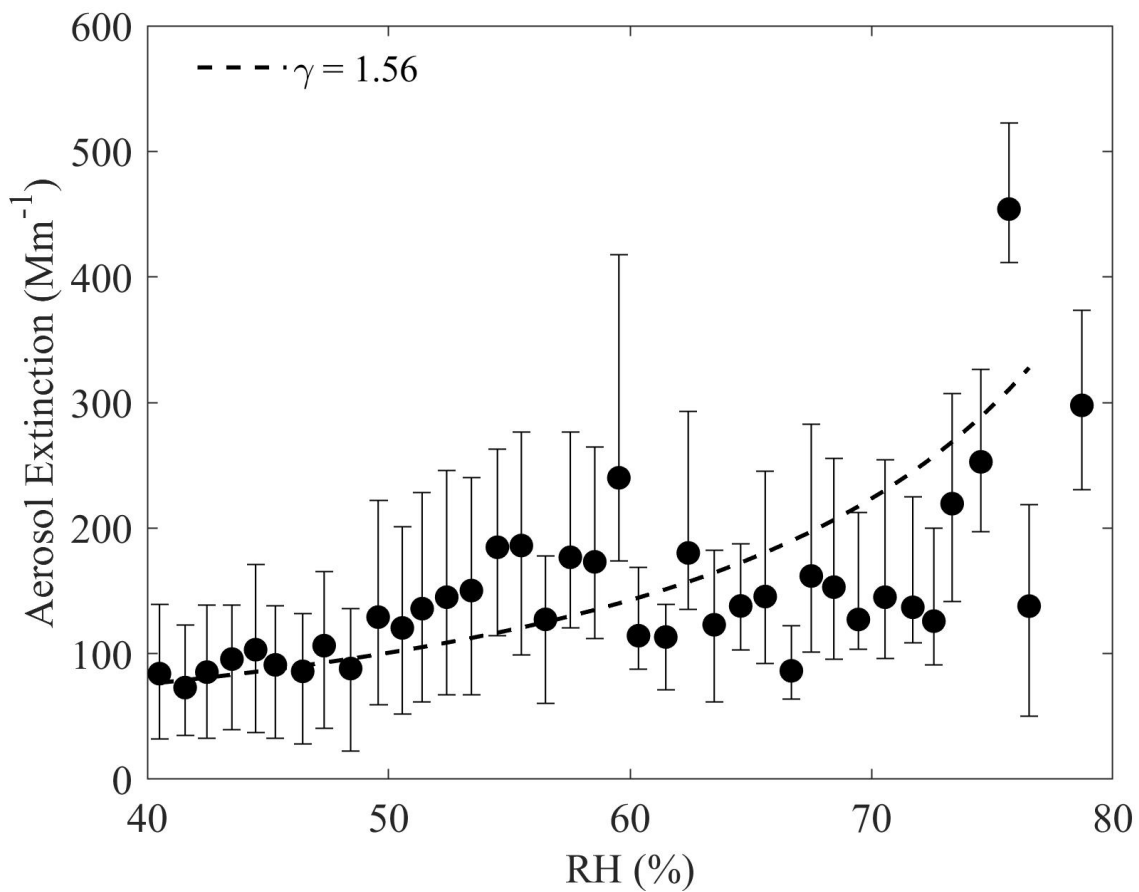
Figure S5. Humidogram of aerosol extinction at 355 nm based on the data between Aug 16 -26, 2023