Figure S1: AERONET comparison of AAE and SAE (440-675 nm) with the Ascension island site (a) and without (b). The grid box classifications are described in Cappa et al., 2016.
Figure S2: Same comparison as Fig S2 but comparing the BRC model run AAE and SAE (400-700 nm).
Figure S3: The effect of BrC addition with a bleaching parameterization on (a) atmospheric absorption (W m\(^{-2}\)), (b) surface solar flux (W m\(^{-2}\)), (c) low-level cloud fraction, (d) mid-level cloud fraction, (e) large-scale precipitation, (f) convective precipitation, (g) liquid water path, and (h) surface air temperature.
fraction (%; clouds below 700 mb), (d) Mid-level cloud fraction (%; clouds between 700 and 400 mb), (e) large-scale precipitation (mm day⁻¹), (f) convective precipitation (mm day⁻¹), (g) liquid water path (g m⁻²), (h) surface air temperature (°K). Hatching indicates significance in ensemble year change to the 0.1 level.

**Figure S4:** 500 mb omega in Pa s⁻¹: (a) the default annual average and (b) the difference with the incorporation of BrC and BrC bleaching. Hatching indicates significance in the ensemble year change to the 0.1 level.