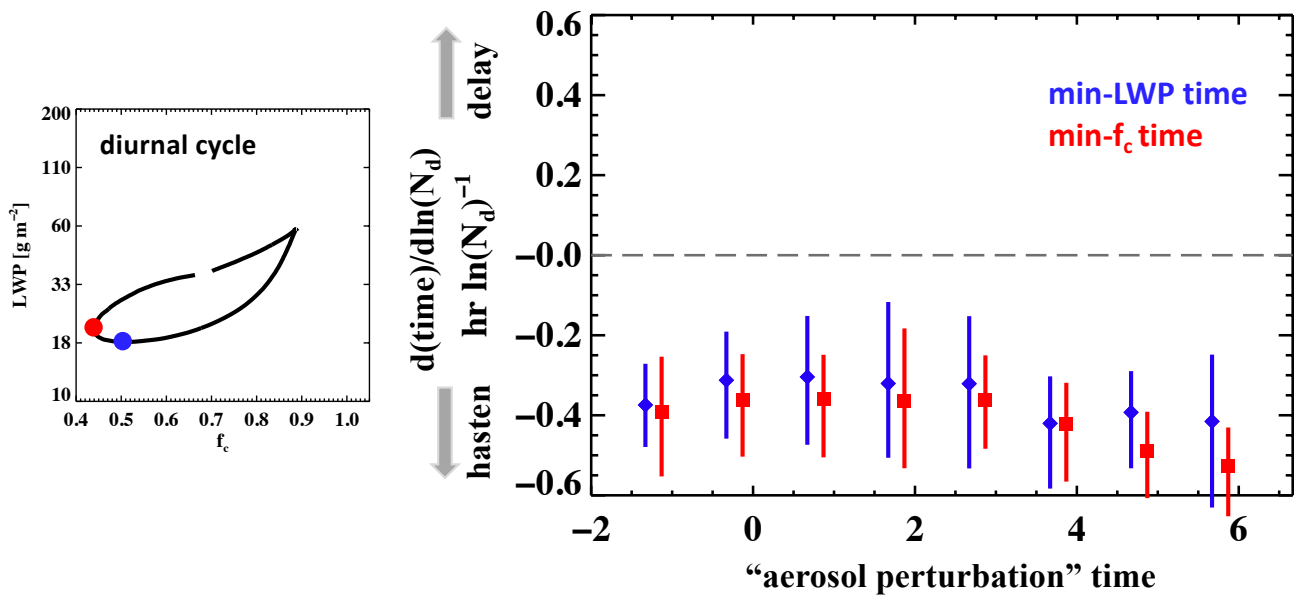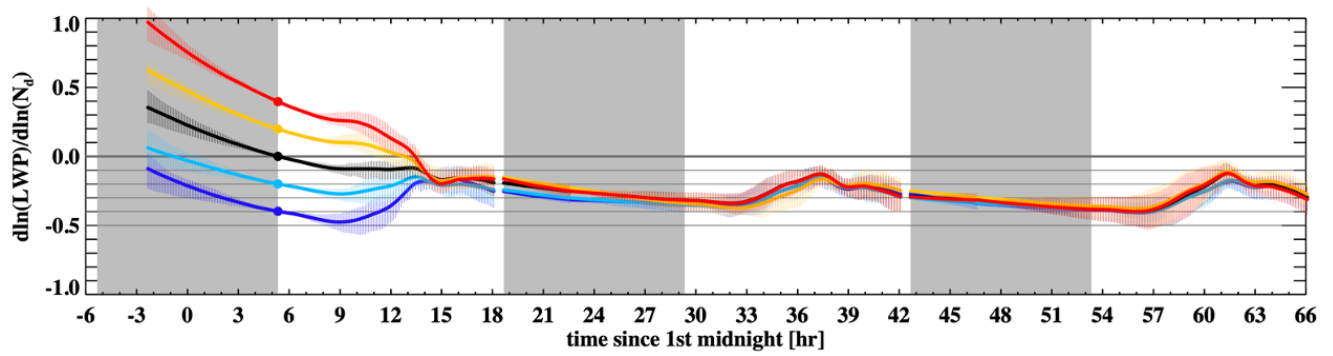**Figure S1.** As in Fig. 2, but for diurnal cycles of the slope between N_d total LWP (left) and cloud fraction (right) tendencies. Colors separates groups mimicking "aerosol perturbation" at different times. Gray shading indicates nighttime hours. Dashed magenta lines indicate the ensemble-mean total LWP and cloud fraction tendencies.

Figure S2. As in Fig. 6, but for the non-precipitating open-cell class.

Figure S3. As in Fig. 1, but for 3 diurnal cycles. The 204 non-precipitating Sc simulations are reused for cMC subsampling to get the additional 2 diurnal cycles based on the N_d–LWP relationship of each group at the end of each day.