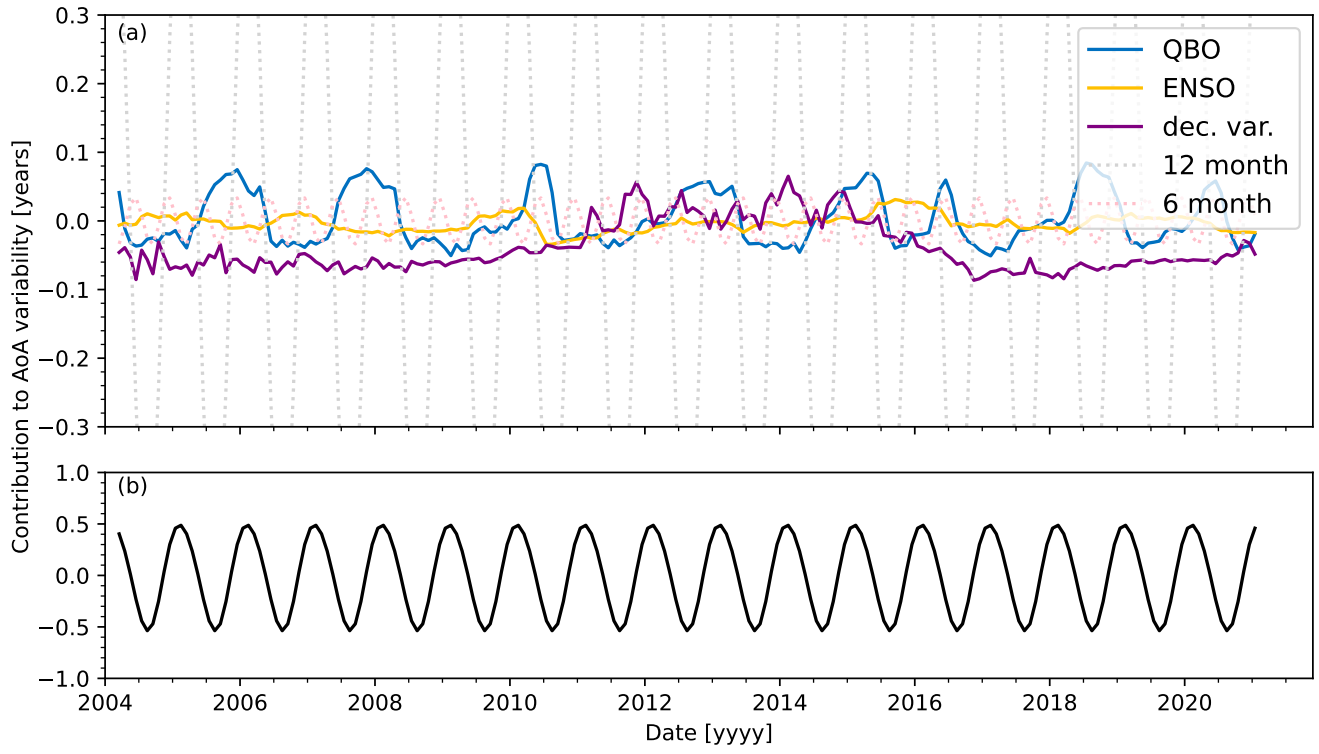
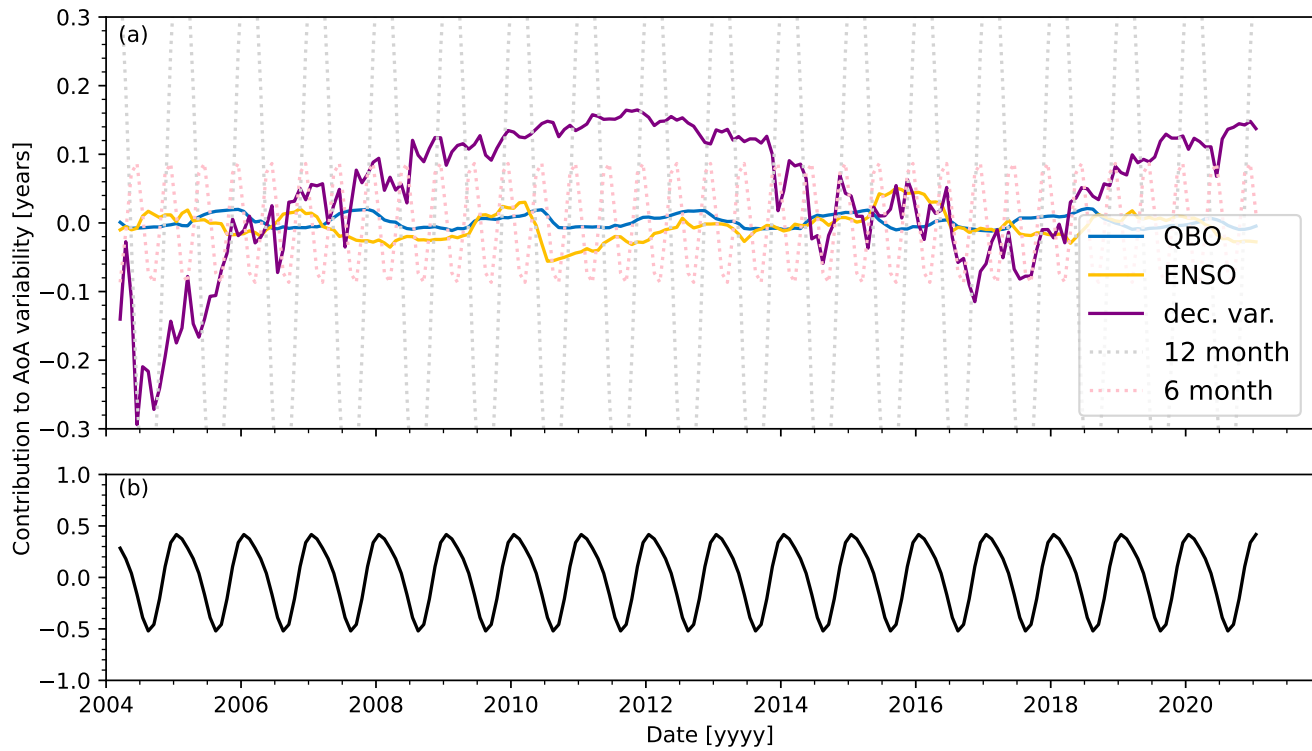


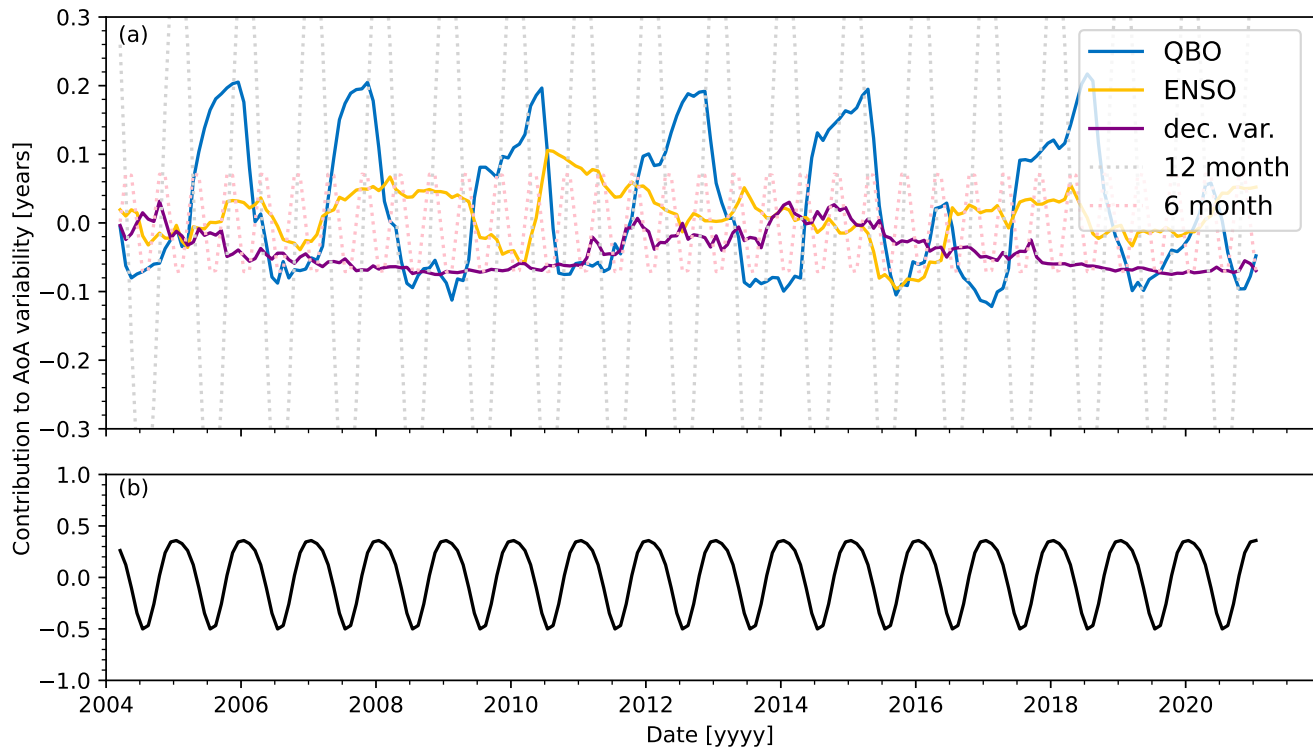
**Figure S1.** (a) The contribution (in years) of each type of interannual variability to the fitted age of air for 40-50°N, 14-17 km. (b) The total contribution of the 12- and 6-month seasonal cycles



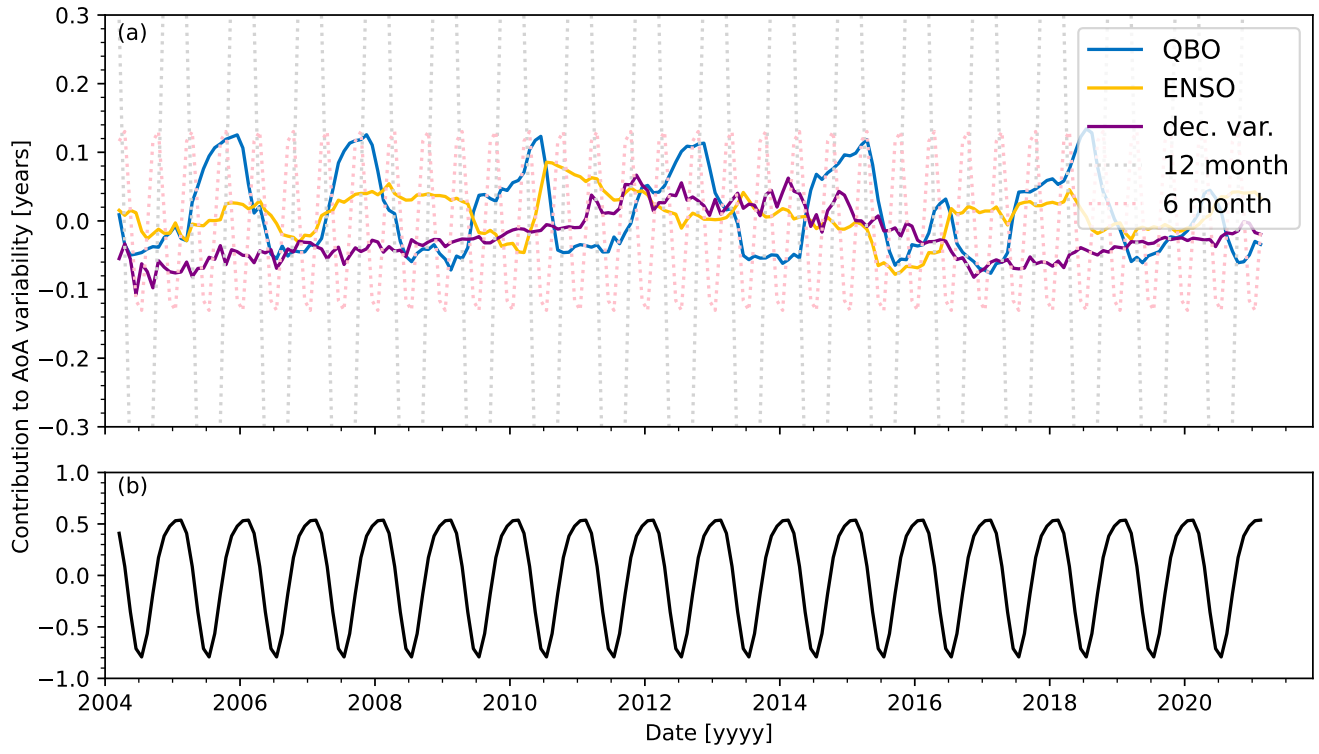
**Figure S2.** Same as Fig. S1 but for 40-50°N, 17-20 km.



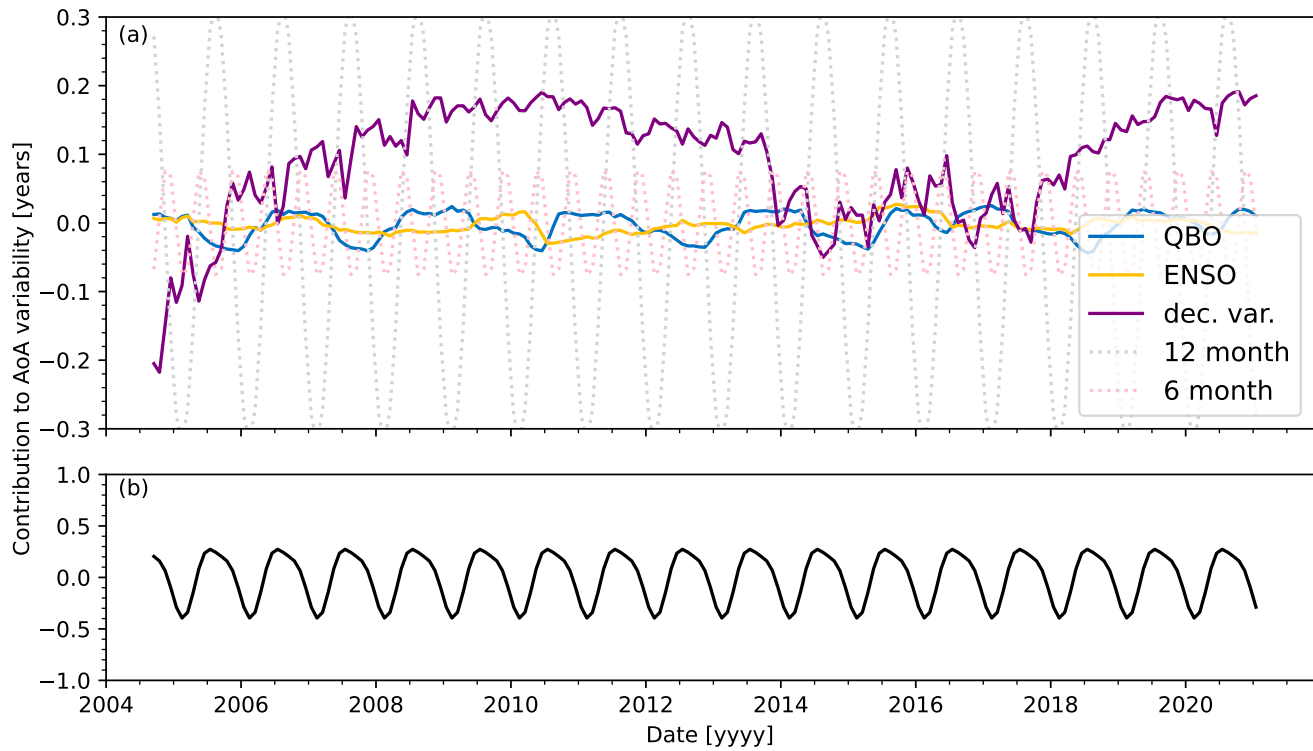
**Figure S3.** Same as Fig. S1 but for 50-60°N, 14-17 km.



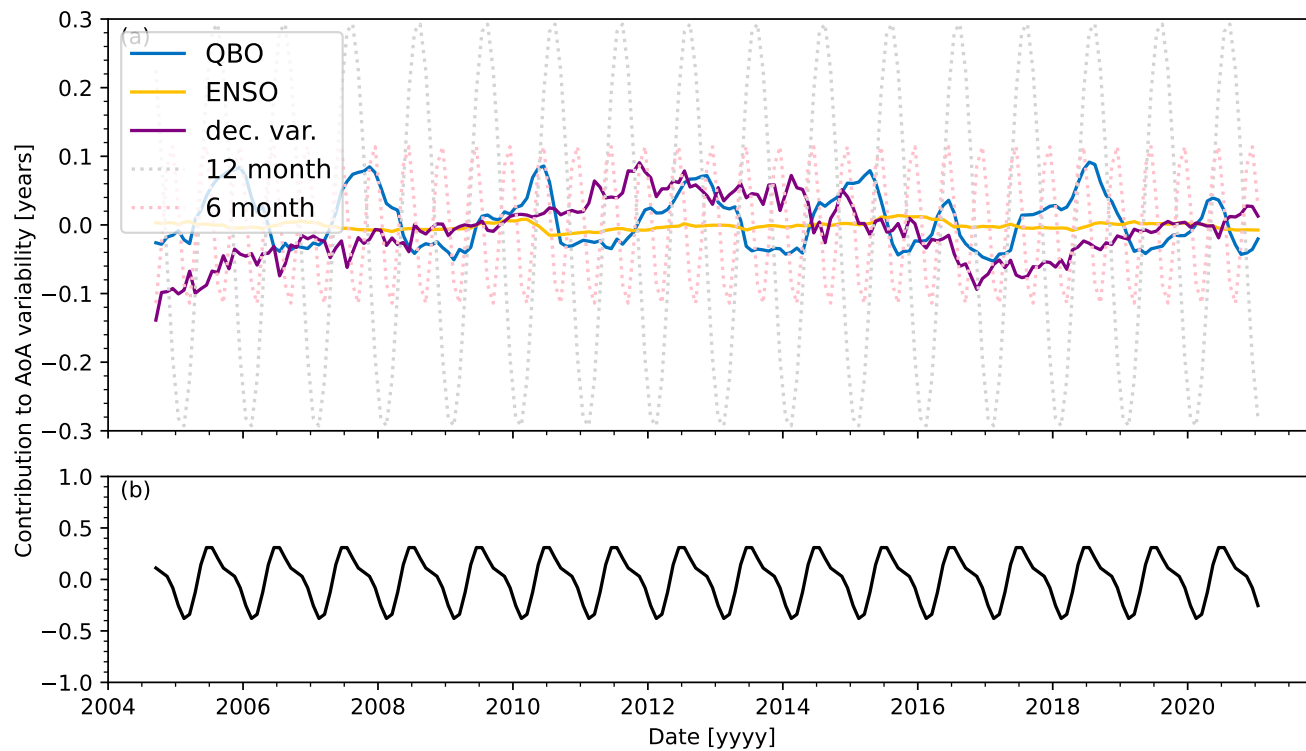
**Figure S4.** Same as Fig. S1 but for 50-60°N, 17-20 km.



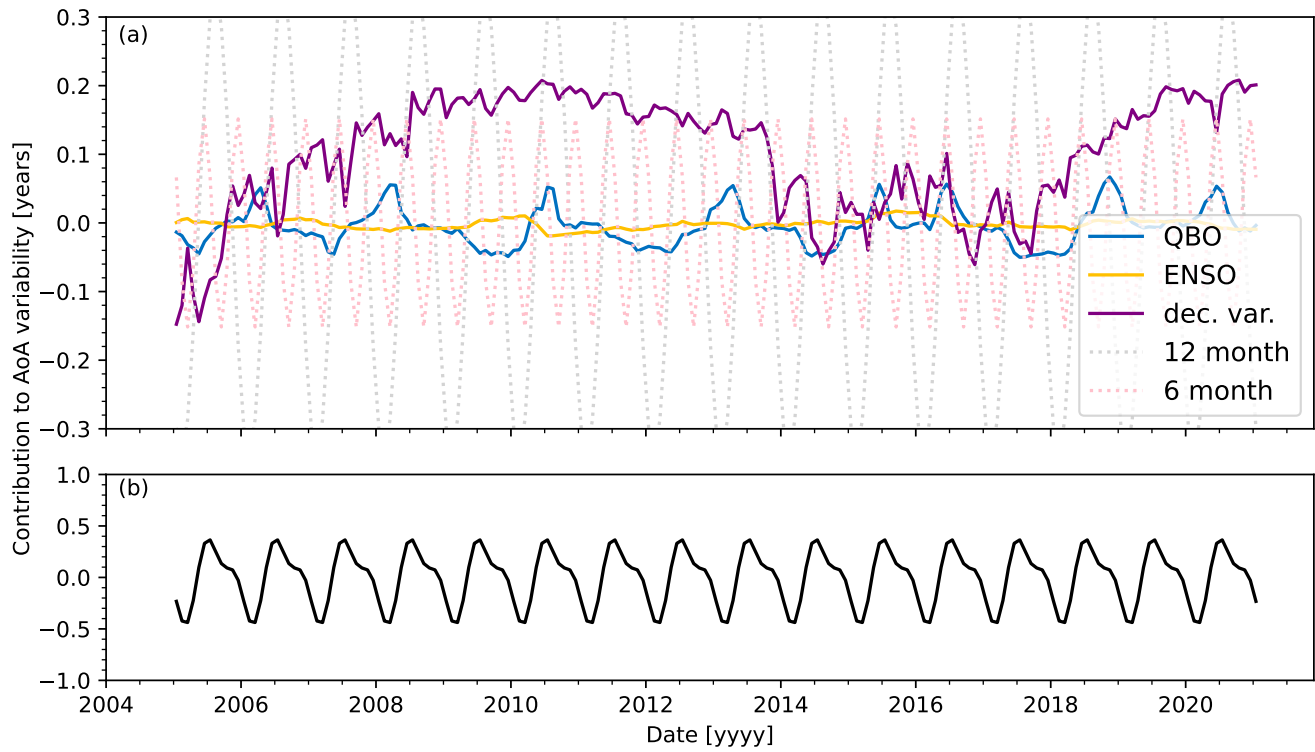
**Figure S5.** Same as Fig. S1 but for 60-70°N, 17-20 km.



**Figure S6.** Same as Fig. S6 but for 40-50°S, 14-17 km.

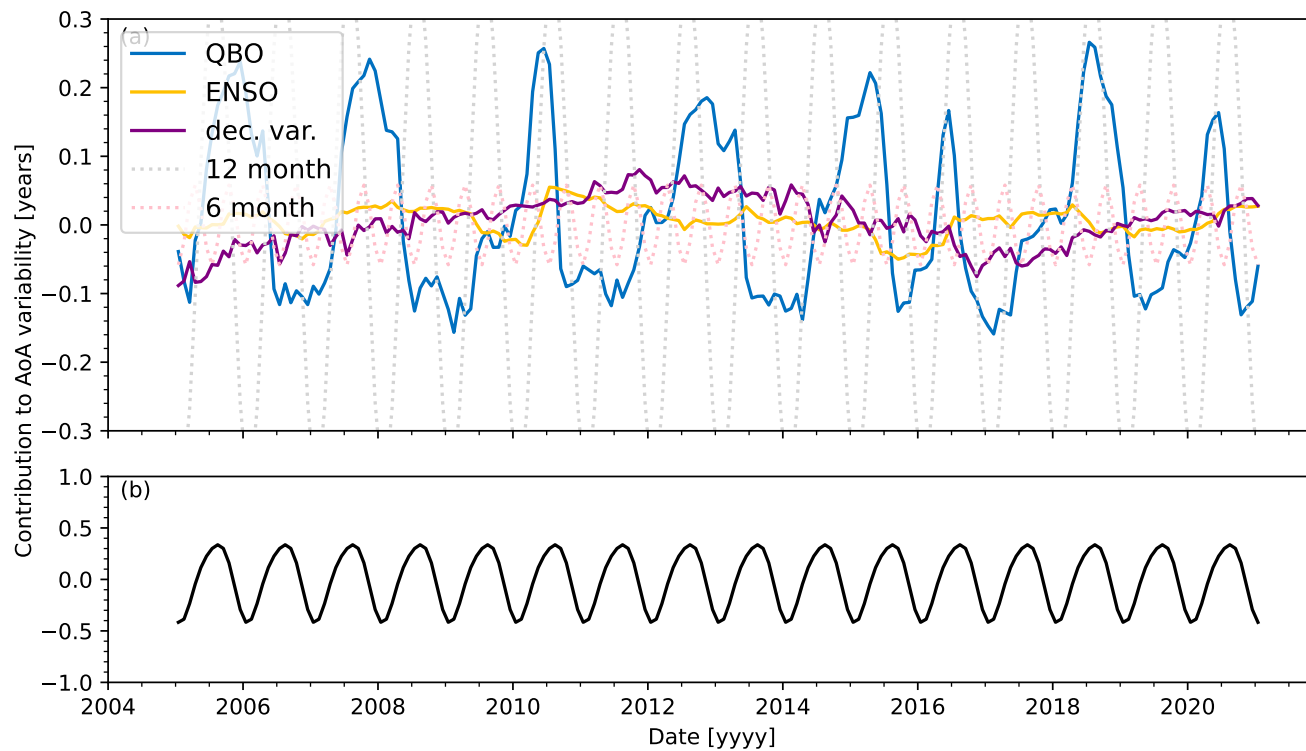


**Figure S7.** Same as Fig. S6 but for 40-50°S, 17-20 km.

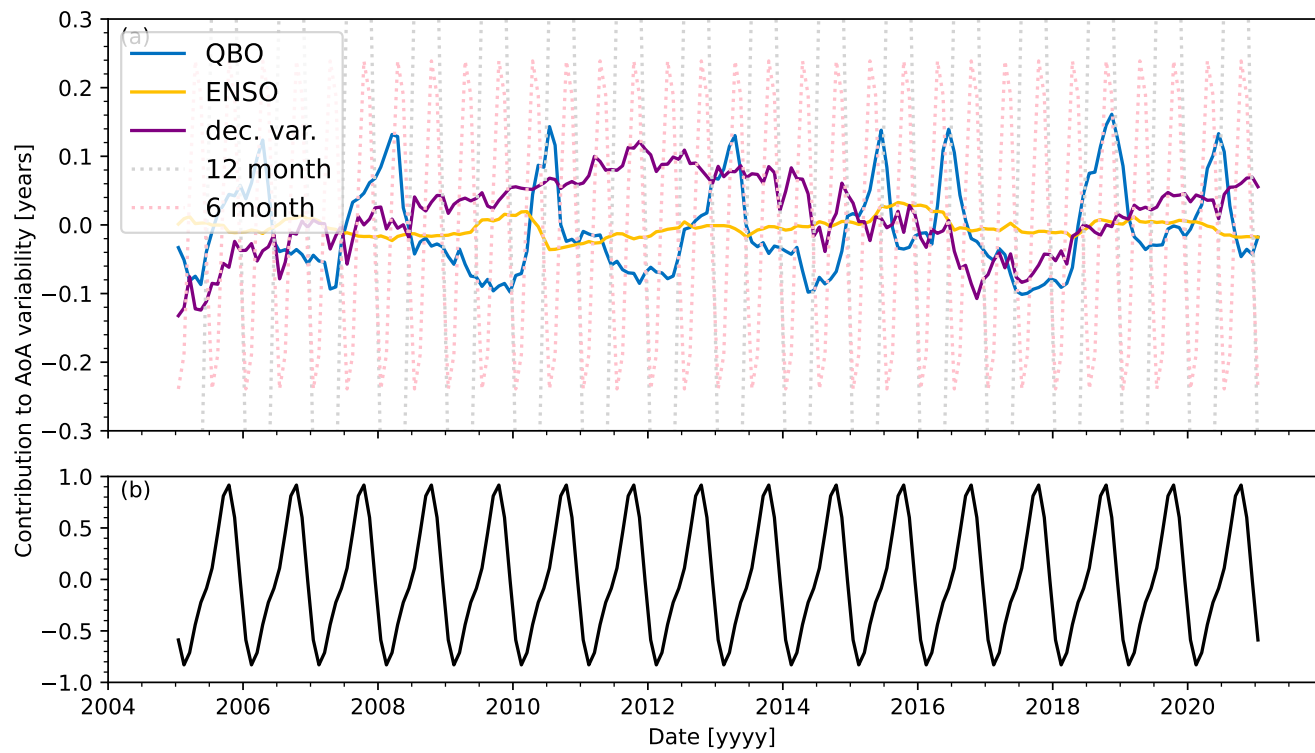


**Figure S8.** Same as Fig. S6 but for 50-60°S, 14-17 km.

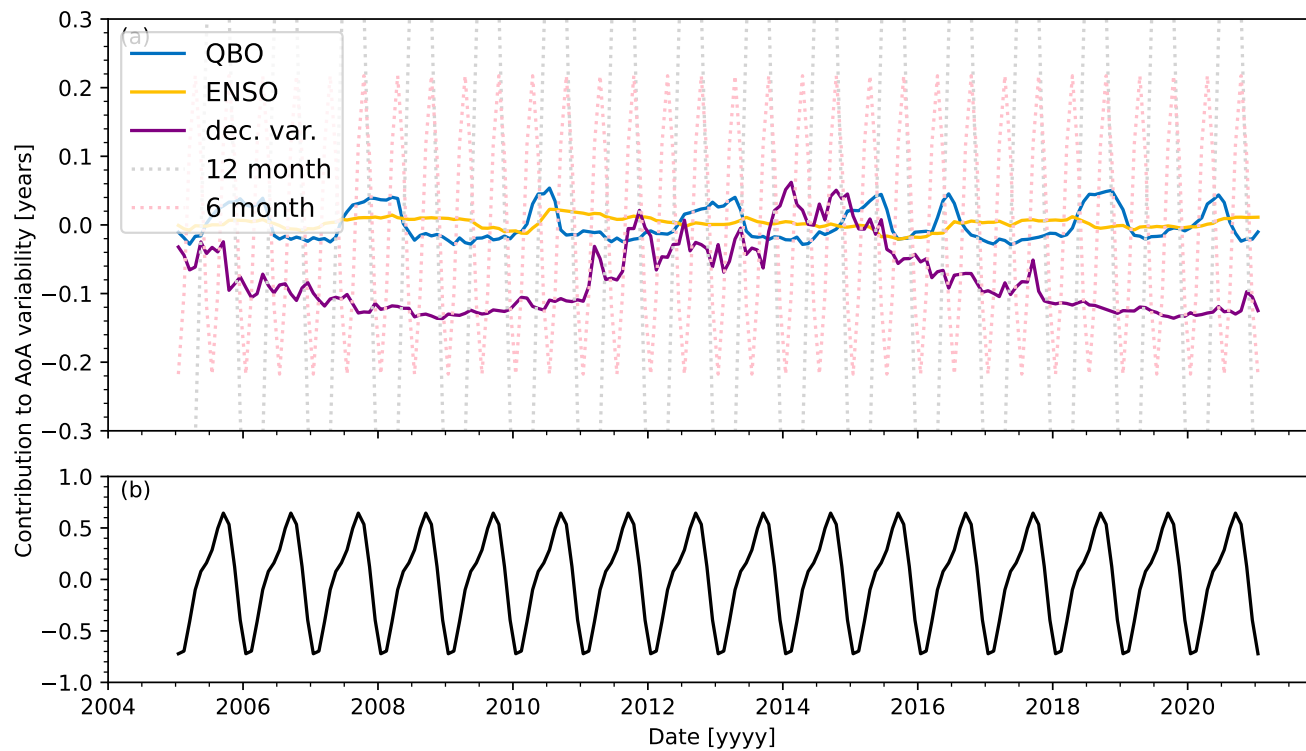




**Figure S9.** Same as Fig. S6 but for 50-60°S, 17-20 km.



**Figure S10.** Same as Fig. S6 but for 60-70°S, 14-17 km.



**Figure S11.** Same as Fig. S6 but for 60-70°S, 17-20 km.