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Distribution of cross-tropopause convection within the Asian monsoon region from May through October 2017

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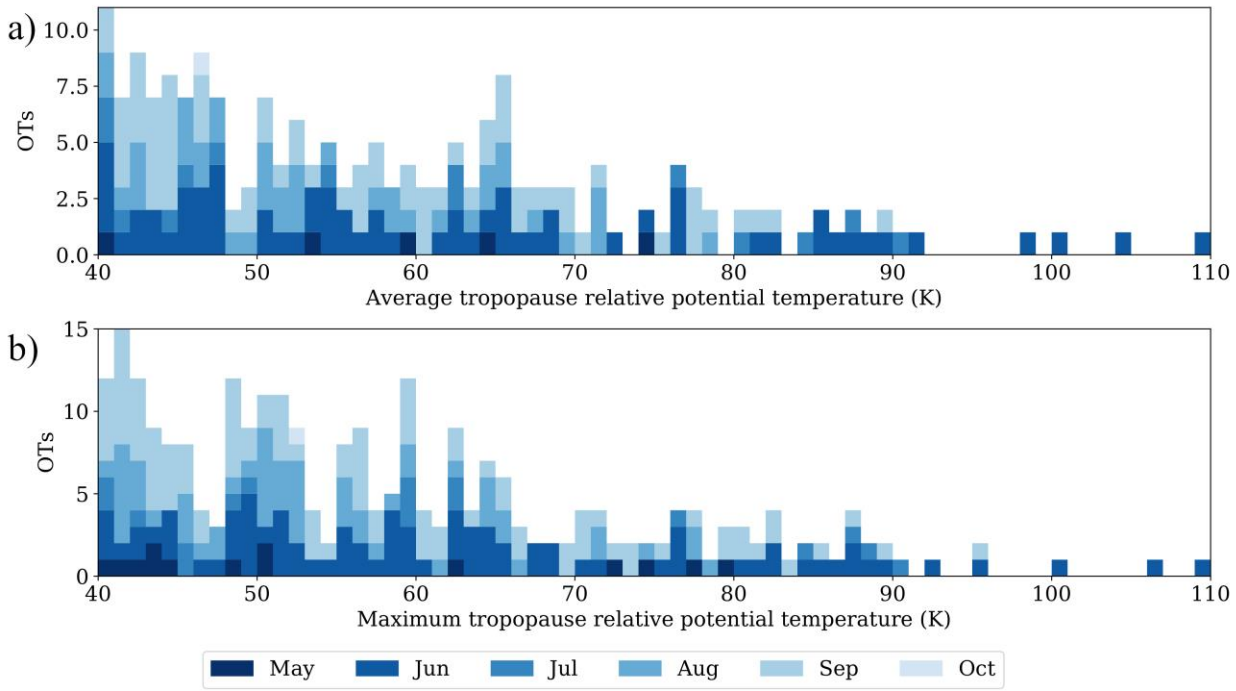

Figure S1 The distribution of the highest values of tropopause relative potential temperatures for all OTs within the study region not shown in Figure 4. Figure S1a shows the distribution of the average tropopause relative potential temperatures of each OT binned by 1 K. Figure S1b shows the maximum tropopause relative potential temperature distribution, also binned by 1 K. Within each bin, color indicates the fractional contribution of each month. The mean, standard deviation, and number of OTs for each distribution is indicated in the upper-right corner of each panel.

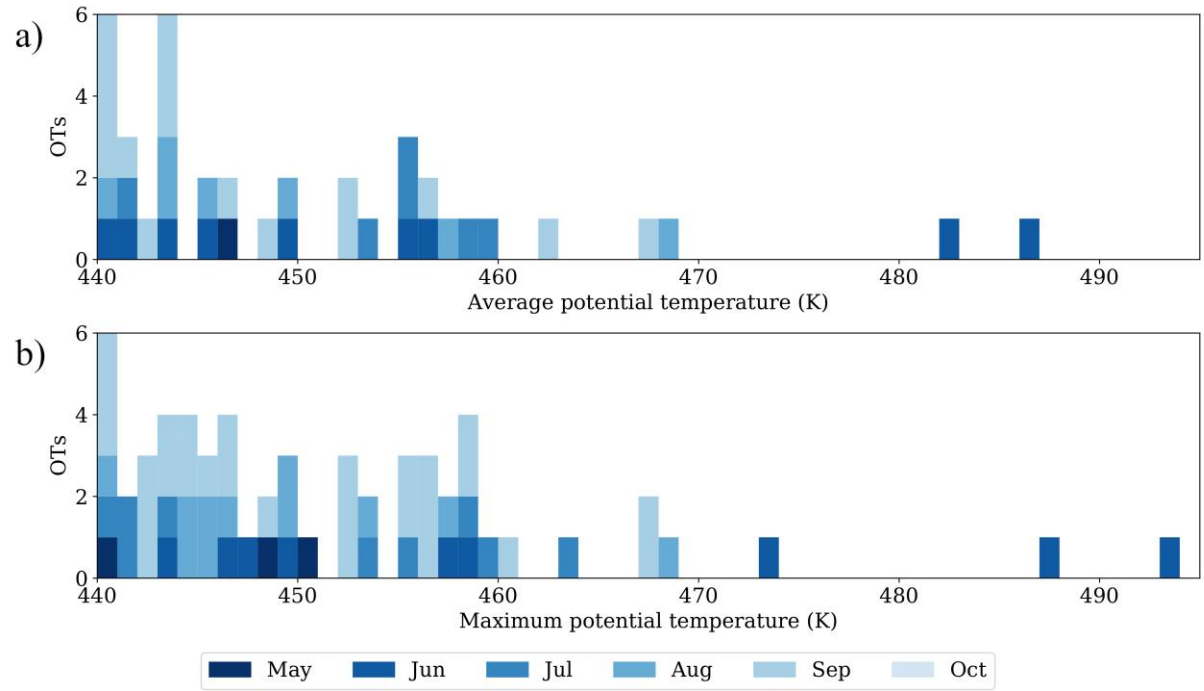

Figure S2 The distribution of the highest values of potential temperatures for all OTs within the study region not shown in Figure 4. Figure S2a shows the distribution of the average tropopause relative potential temperatures of each OT binned by 1 K. Figure S2b shows the maximum tropopause relative potential temperature distribution, also binned by 1 K. Within

each bin, color indicates the fractional contribution of each month. The mean, standard deviation, and number of OTs for each distribution is indicated in the upper-right corner of each panel.

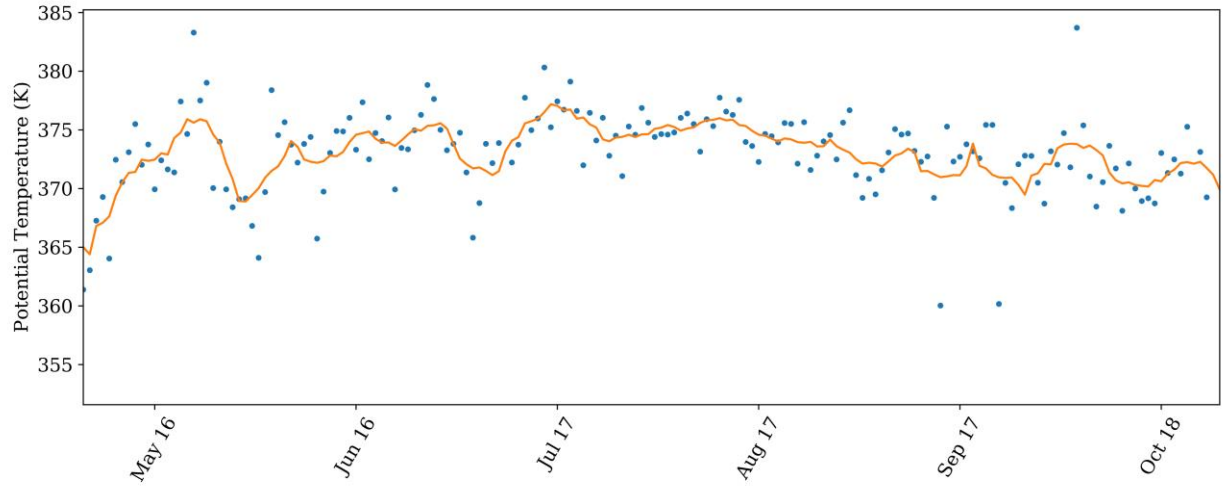

Figure S3 The time series of the daily average local tropopause potential temperature encountered by all OTs within the study region (dots), with the 8-day rolling average shown in orange.

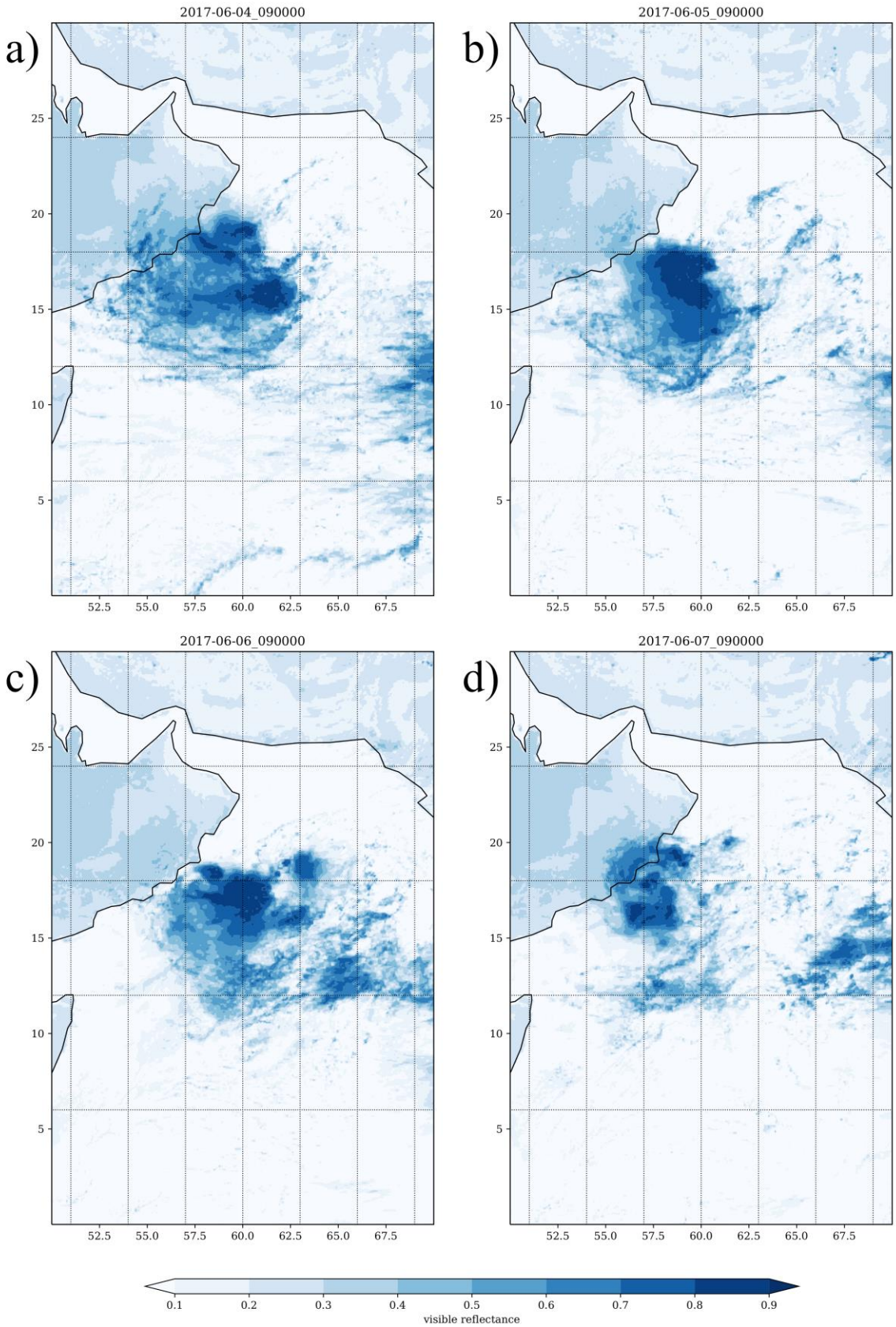
a)
2017-06-04_090000
b)
2017-06-05_090000
c)
2017-06-06_090000
d)
2017-06-07_090000
25
20
15
10
5
52.5
55.0
57.5
60.0
62.5
65.0
67.5
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
visible reflectance

Figure S4 The visible reflectance near 0.6 microns data from the gridded International Satellite Cloud Climatology Project B1 data of a large storm system passing through the Arabian Sea during June of 2017. Figures S4a, S4b, S4c, and S4d show the visible reflectance for 4 June, 5 June, 6 June, and 7 June at 09:00 UTC, respectively.