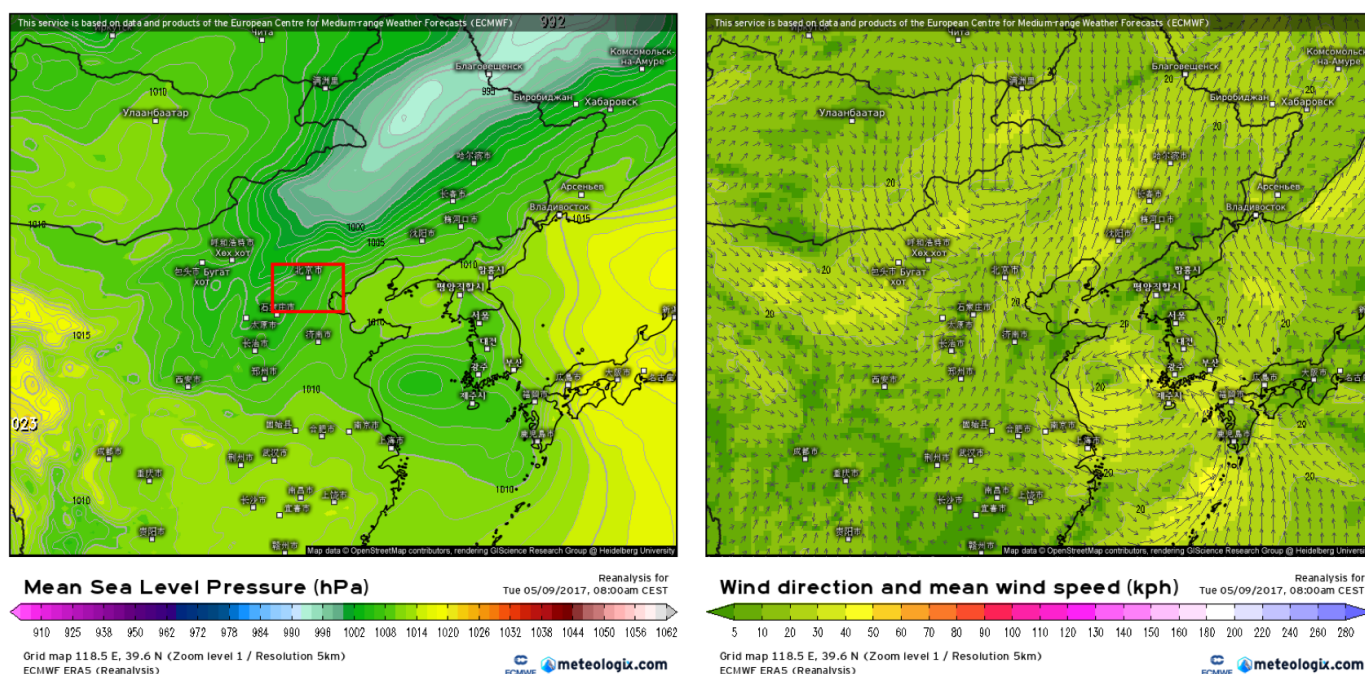
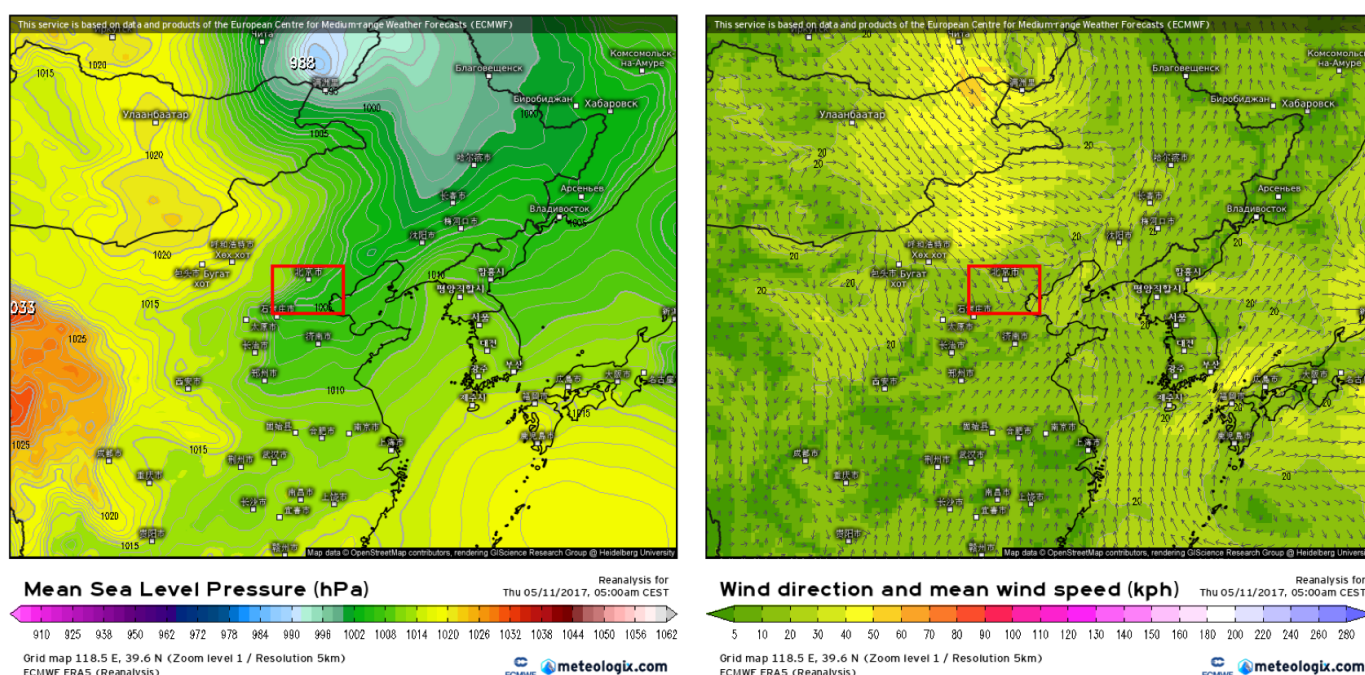


# Supplementary Materials:

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**Figure S1.** Mean sea level pressure (left) and wind direction and mean wind speed (right) charts for North China Plain (NCP) region for 9 May 2017, 06:00 UTC. The study area for the mobile measurements is marked by the red rectangle.



**Figure S2.** Mean sea level pressure (left) and wind direction and mean wind speed (right) charts for North China Plain (NCP) region for 11 May 2017, 03:00 UTC. The study area for the mobile measurements is marked by the red rectangle.

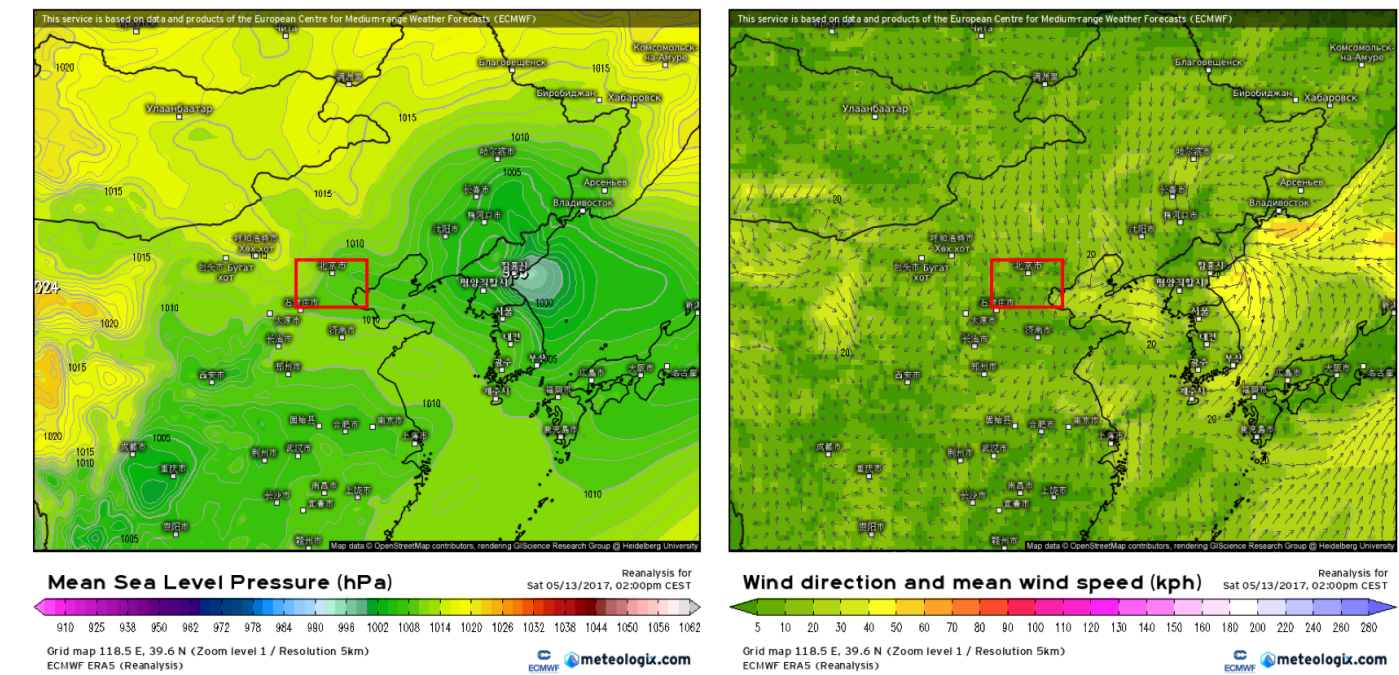


Figure S3. Mean sea level pressure (left) and wind direction and mean wind speed (right) charts for North China Plain (NCP) region for 13 May 2017, 12:00 UTC. The study area for the mobile measurements is marked by the red rectangle.

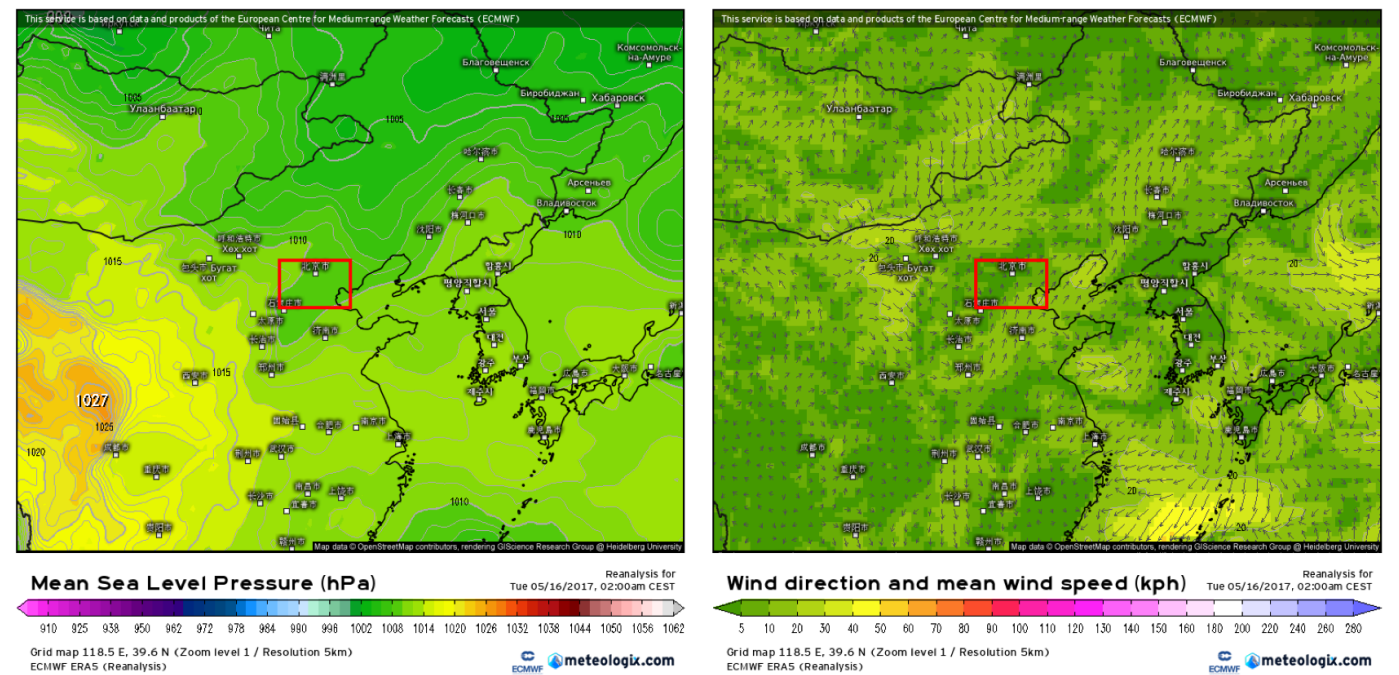
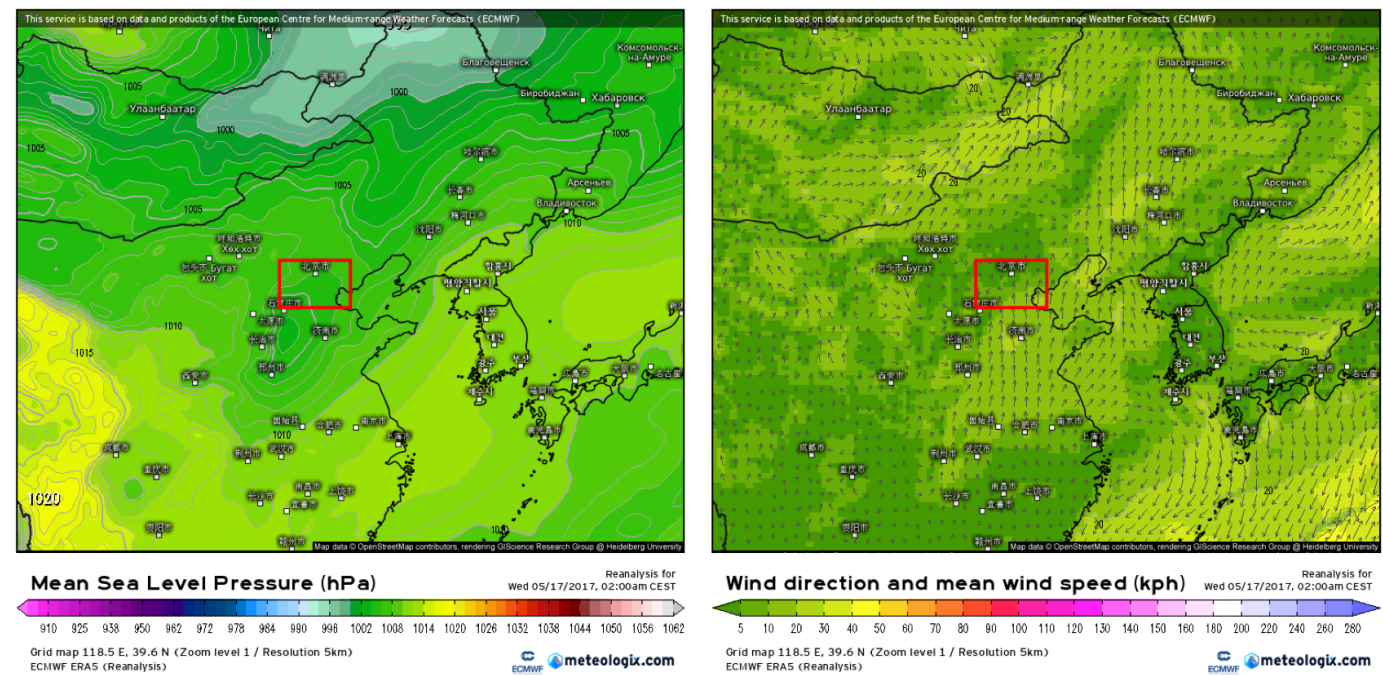
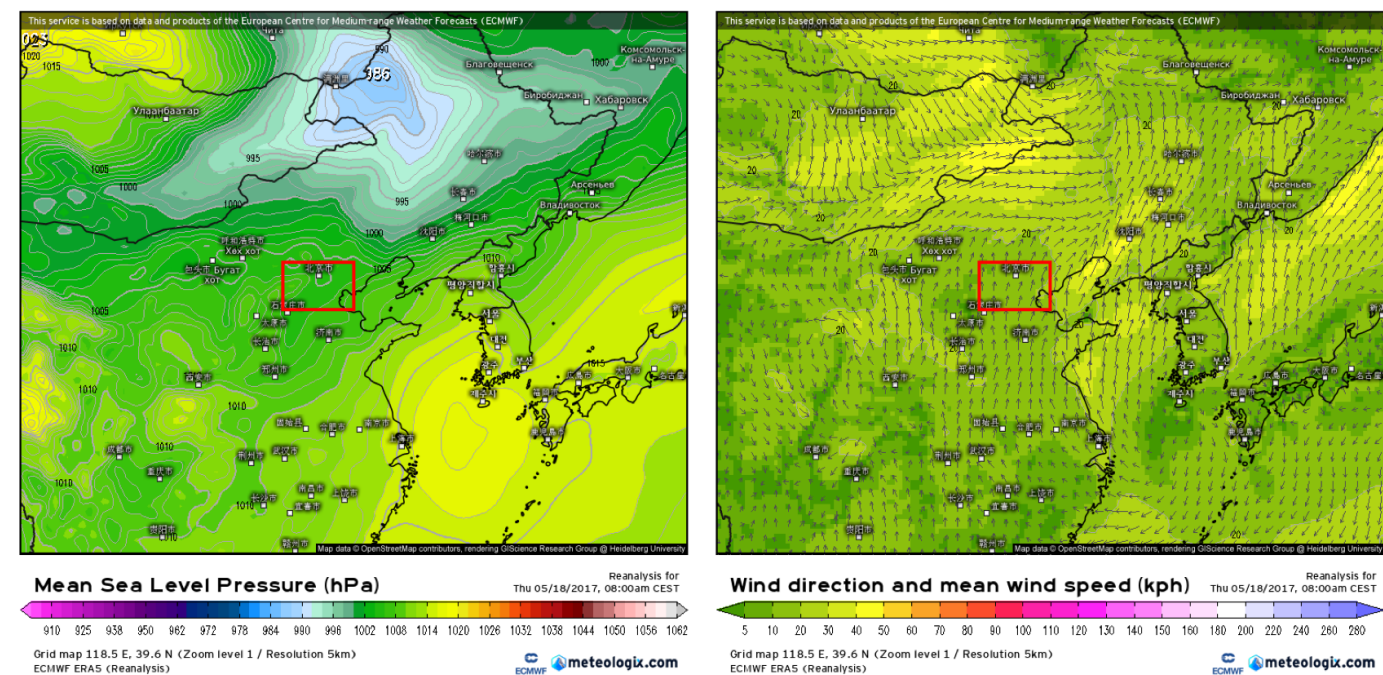


Figure S4. Mean sea level pressure (left) and wind direction and mean wind speed (right) charts for North China Plain (NCP) region for 16 May 2017, 00:00 UTC. The study area for the mobile measurements is marked by the red rectangle.

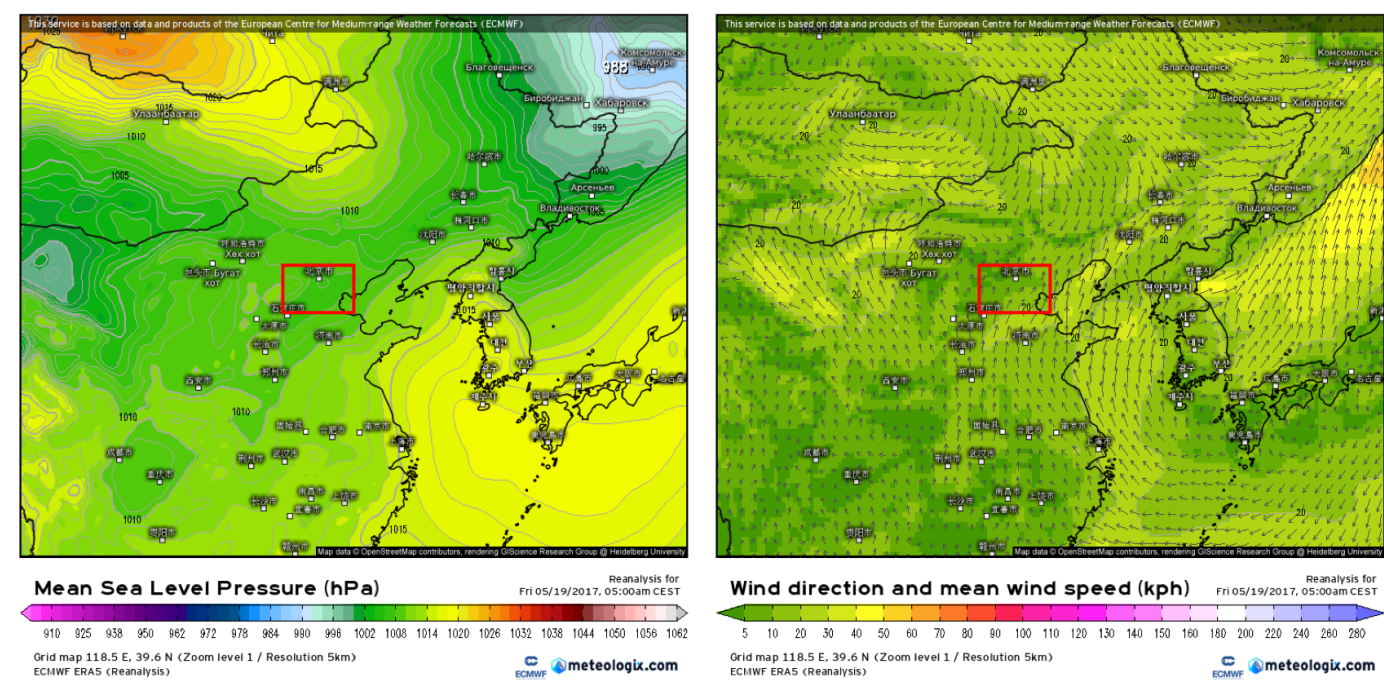




**Figure S5.** Mean sea level pressure (left) and wind direction and mean wind speed (right) charts for North China Plain (NCP) region for 17 May 2017, 00:00 UTC. The study area for the mobile measurements is marked by the red rectangle.

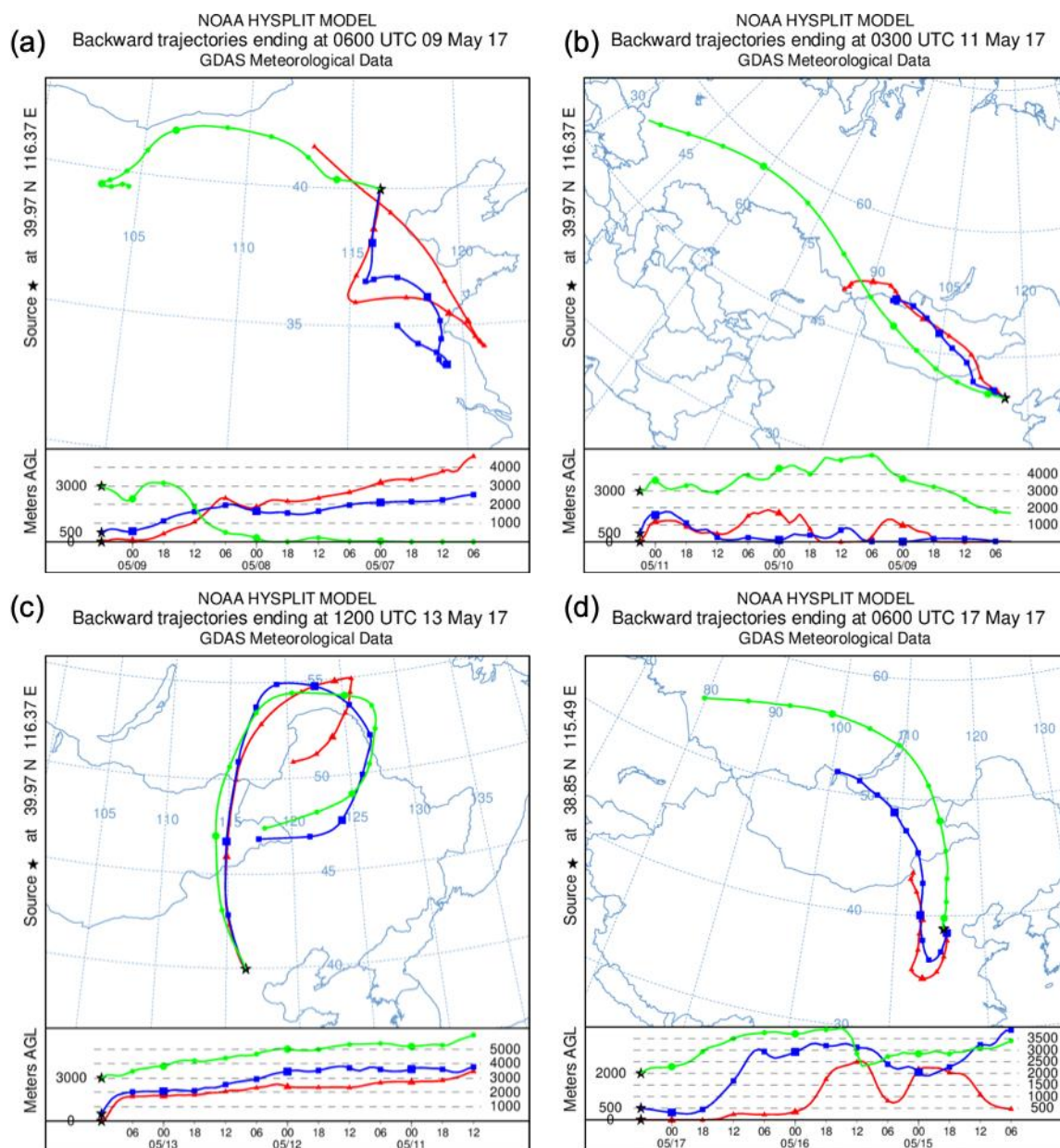


**Figure S6.** Mean sea level pressure (left) and wind direction and mean wind speed (right) charts for North China Plain (NCP) region for 18 May 2017, 06:00 UTC. The study area for the mobile measurements is marked by the red rectangle.

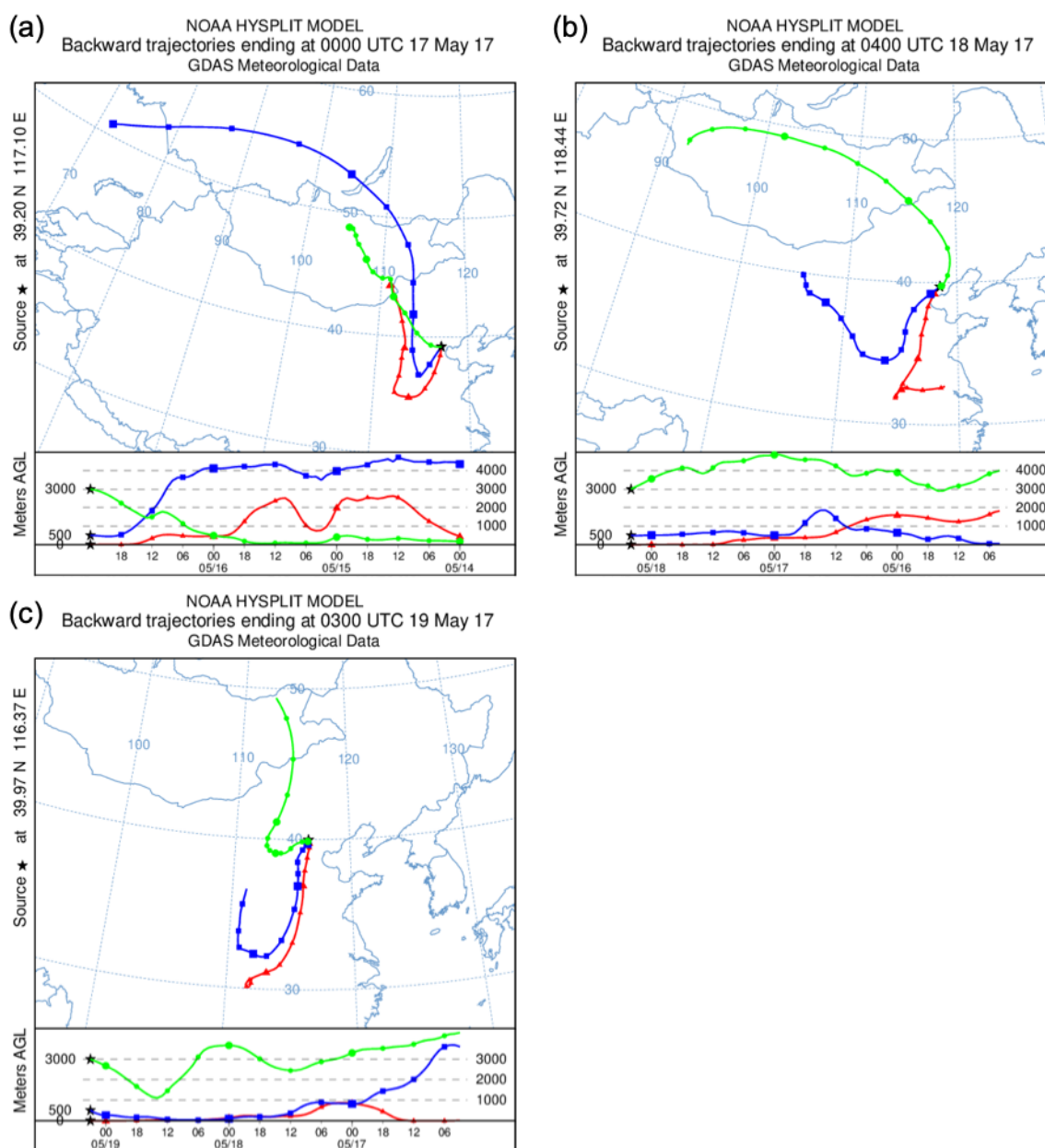


**Figure S7.** Mean sea level pressure (left) and wind direction and mean wind speed (right) charts for North China Plain (NCP) region for 19 May 2017, 03:00 UTC. The study area for the mobile measurements is marked by the red rectangle.





**Figure S8.** HYSPLIT backward trajectories for 72 h, at 0 m (red), 500 m (blue) and 3000 m (green) for: (a) Beijing, 9 May 2017, 06:00 UTC, (b) Beijing, 11 May 2017, 03:00 UTC, (c) Beijing, 13 May 2017, 12:00 UTC and (d) Baoding, 16 May 2017, 06:00 UTC.



**Figure S9.** HYSPLIT backward trajectories for 72 h, at 0 m (red), 500 m (blue) and 3000 m (green) for: (a) Tianjing, 17 May 2017, 00:00 UTC, (b) Tangshan, 18 May 2017, 04:00 UTC and (c) Beijing, 19 May 2017, 10:00 UTC.

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