

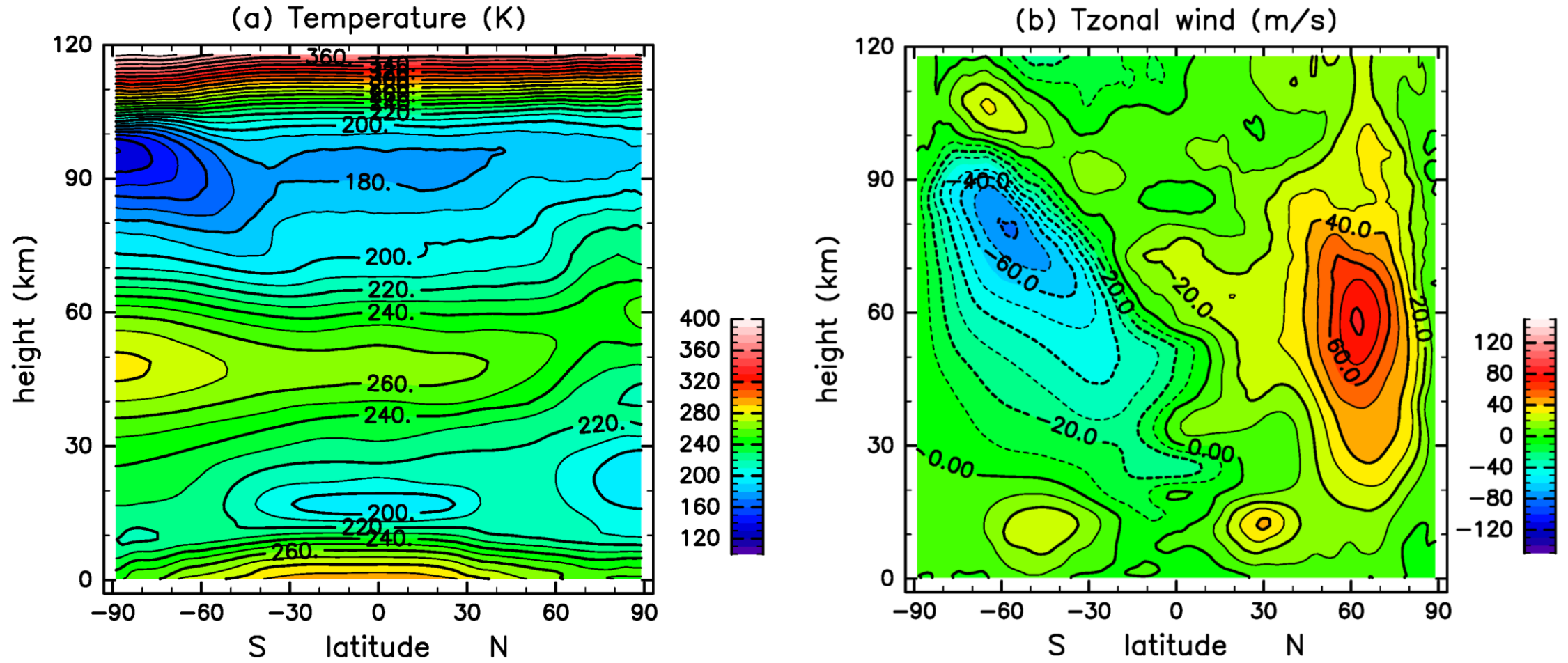


Figure S1: (a) Height-latitude distribution of the zonal mean temperature on 15 January 2022. Units are K. (b) As in Figure S1(a) but for the zonal wind. Units are m/s. Positive (negative) values indicate eastward (westward) wind.

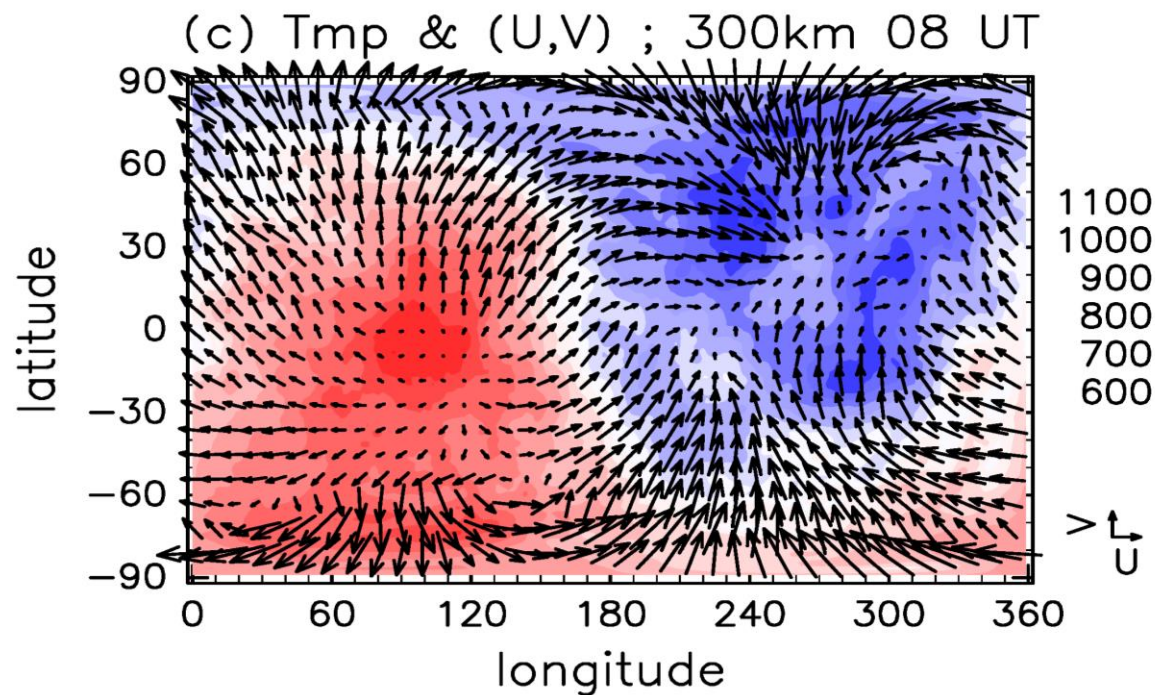
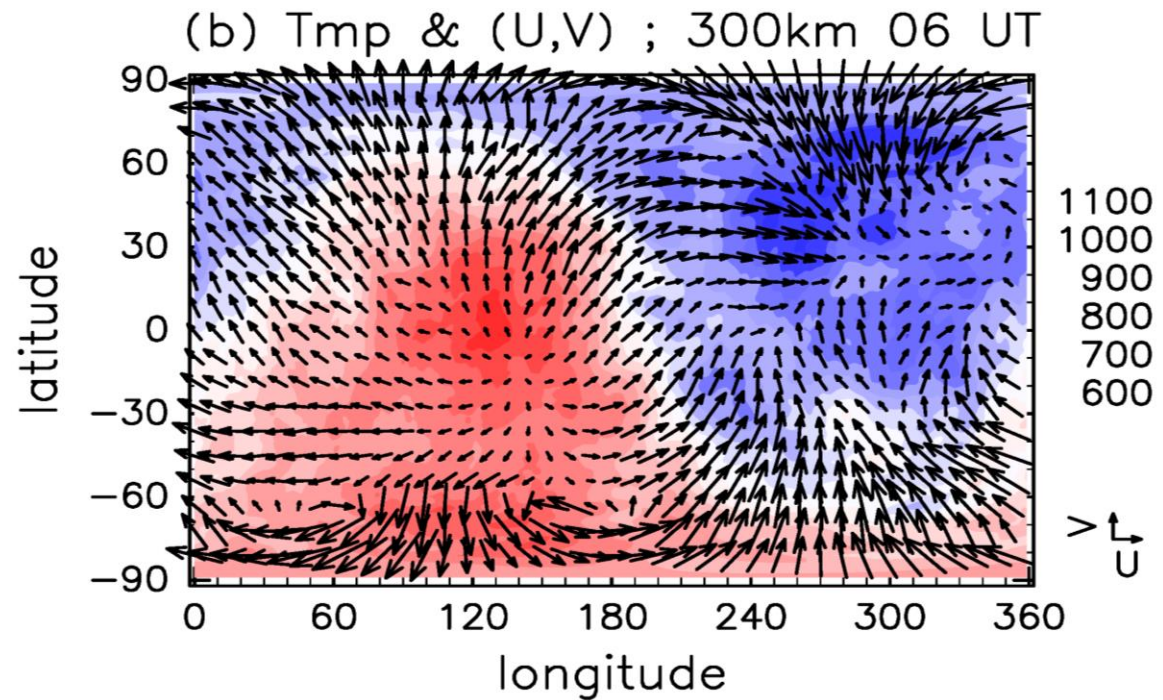
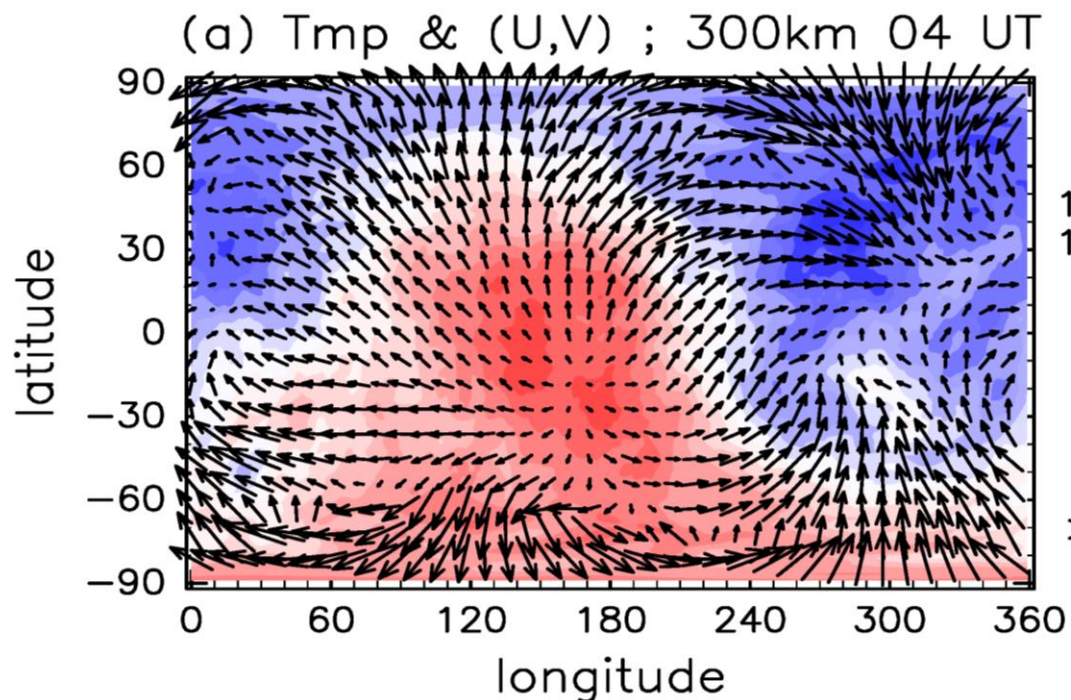


Figure S2: (a) Global distribution of the horizontal wind (vectors) and temperature at 300 km height at 04 UT on 15 January 2022. Units of temperature is K, and units of the wind is m/s. Vectors on the right-hand side indicate the magnitude of 200 m/s. (b) As in Figure S2(a) but for at 06 UT. (c) As in Figure S2(a) but for at 08 UT.

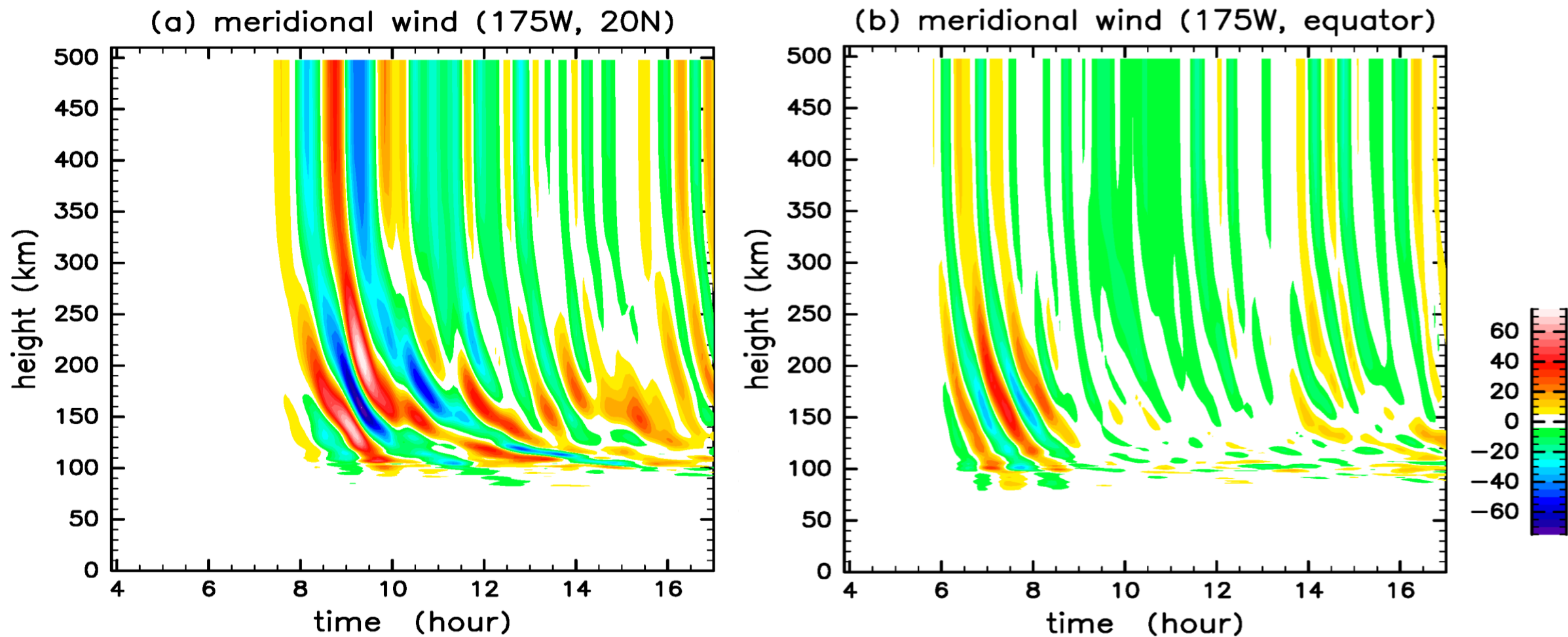


Figure S3: (a) Height-time distribution of the meridional wind perturbation at 175° W longitude and 20° N latitude on 15 January 2022. Units are m/s. (b) As in Figure S4(a) but for at the equator.

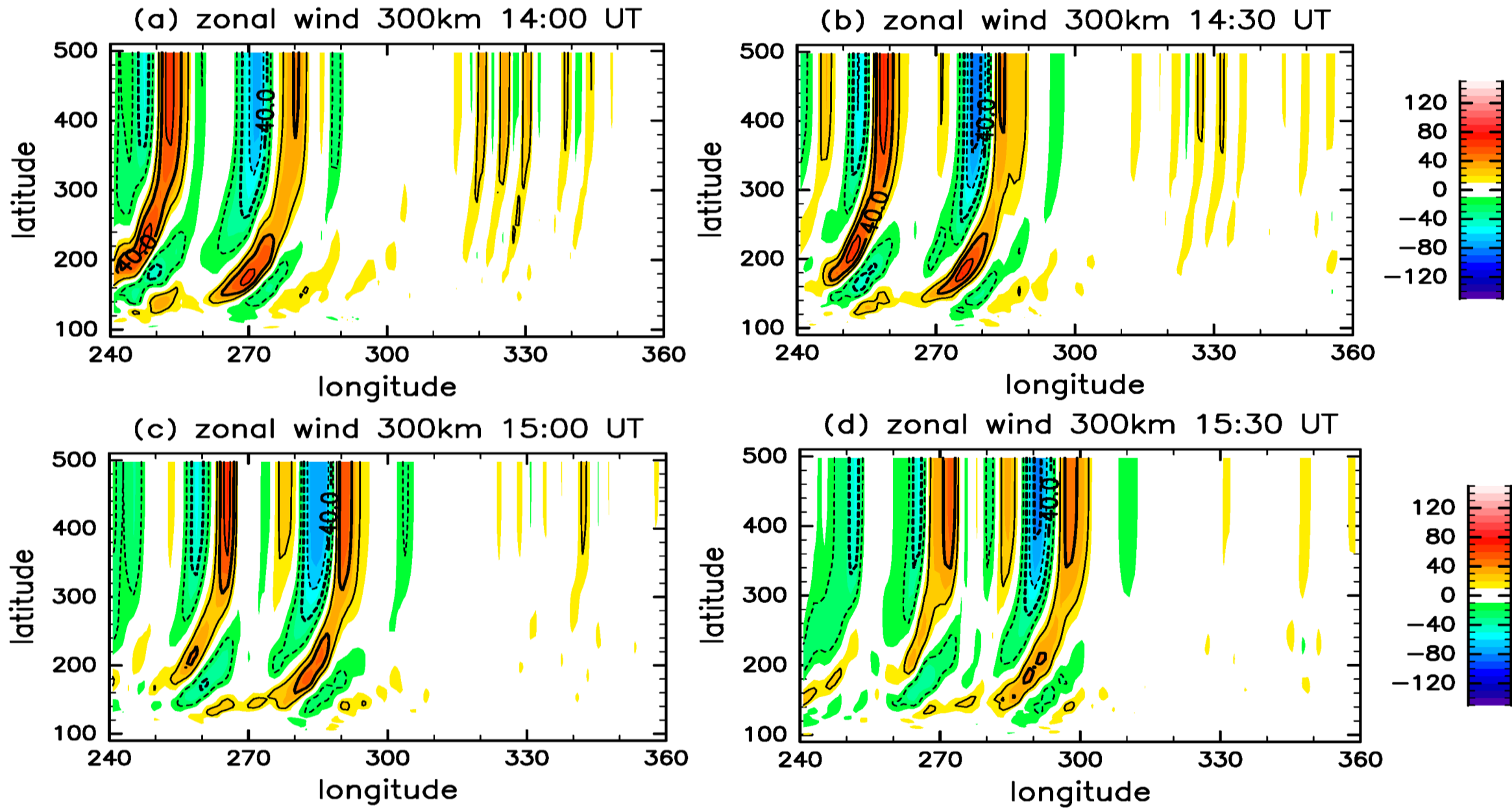


Figure S4: (a) Height-longitude distribution of the zonal wind perturbations at 35° N at 14:00 UT on 15 January 2022. (b) As in Figure S4(a) but for 14:30 UT. (c) As in Figure S4(a) but for 15:00 UT. (d) As in Figure S4(a) but for 15:30 UT.