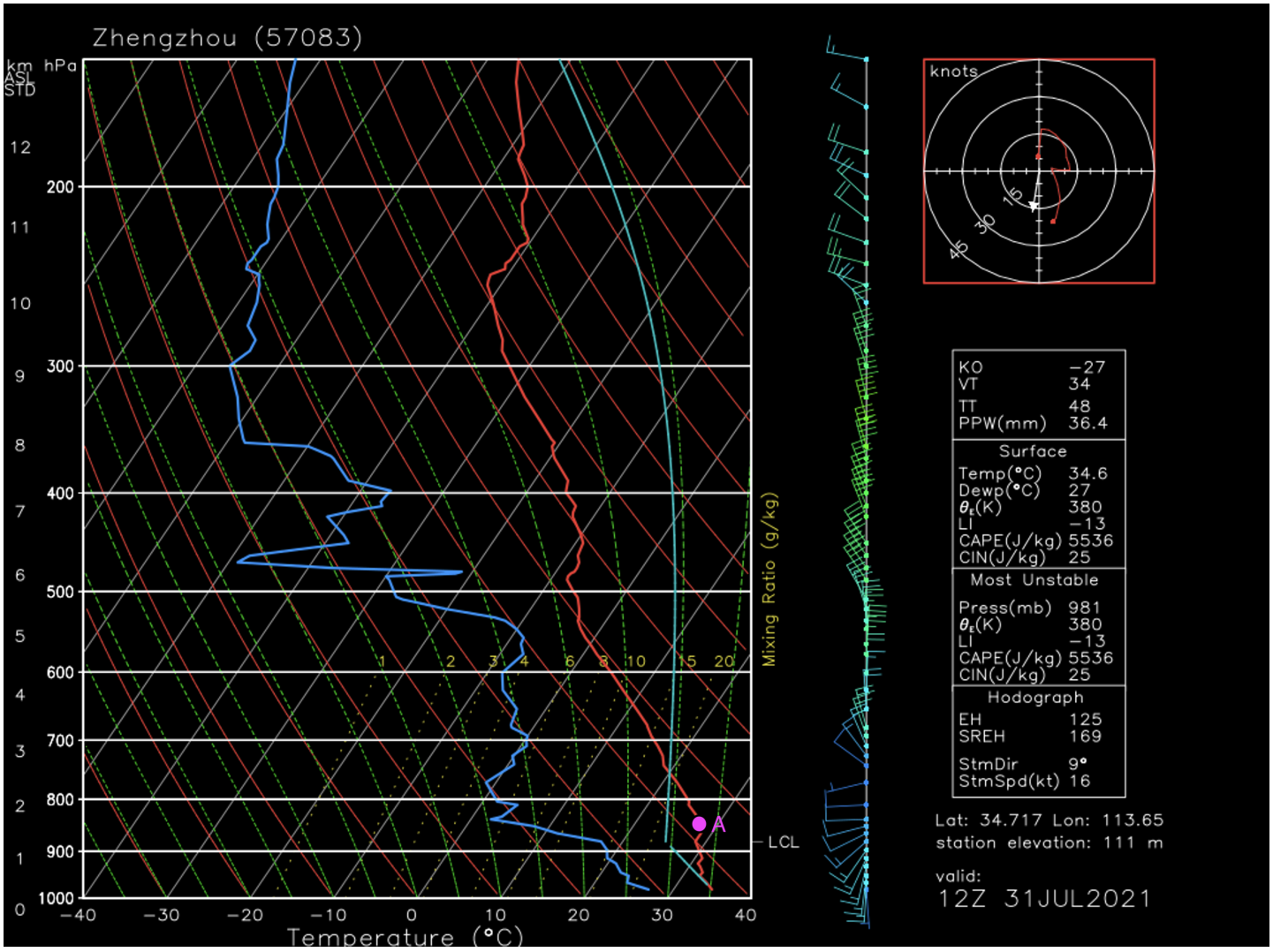
Homework 1 (deadline: Oct. 10)

1. Please write down the definition of the following parameters, and find their values for the dot A at the 850hPa level based on the Skew-T diagram (leave your drawing on the diagram).

(1) saturation mixing ratio, (2) mixing ratio, (3) relative humidity, (4) saturation vapor pressure, (5) vapor pressure, (6) virtual temperature, (7) potential temperature, (8) lifting condensation level, (9) equivalent temperature, (10) equivalent potential temperature, (11) convective condensation level, (12) convective temperature, (13) level of free convection, (14) equilibrium level, (15) wet-bulb temperature, (16) wet-bulb potential temperature, (17) freezing level, (18) CAPE, (19) CIN, (20) precipitable water (PPW).



2. Please draw the hodograph for the following case, write down the definition of (1) total shear magnitude, (2) mean wind shear vector, (3) storm motion, and (4) storm relative wind, and indicate them in the figure.