Atmospheric Sciences 301 HW#2

Due Monday October 24, 2016

#1. For the two surface station models shown below, fill in the table with the appropriate information.
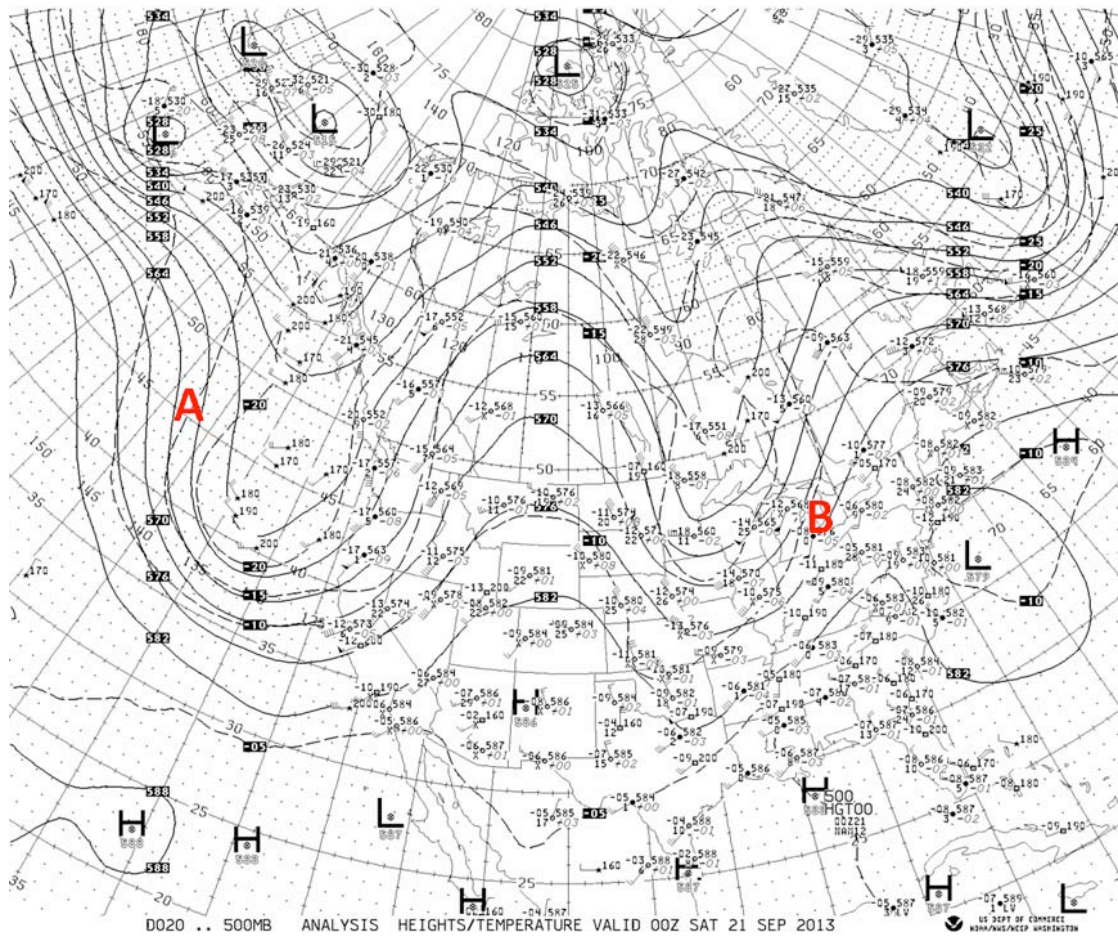
(a)   (b)

|	Temperature	Dew Point Temperature	Wind Speed	Wind Direction
(a)				
(b)				

	Pressure	Sky Cover	Weather Conditions
(a)			
(b)			

#2. The 500 hPa chart from 00Z, September 21, 2013 is shown below

D020 .. 500MB   ANALYSIS HEIGHTS/TEMPERATURE VALID 00Z SAT 21 SEP 2013

(a) Indicate at least one trough axis over North America using a dashed line.

(b) Indicate at least one ridge axis over North America using a solid line.

(c) Indicate the wind directions at the points labeled A and B with an arrow.

(d) Indicate an area of strong winds based on the height lines (draw a circle there).

#3. The GOES-WEST visible satellite image from 2200 UTC, October 2, 2013 is shown below.
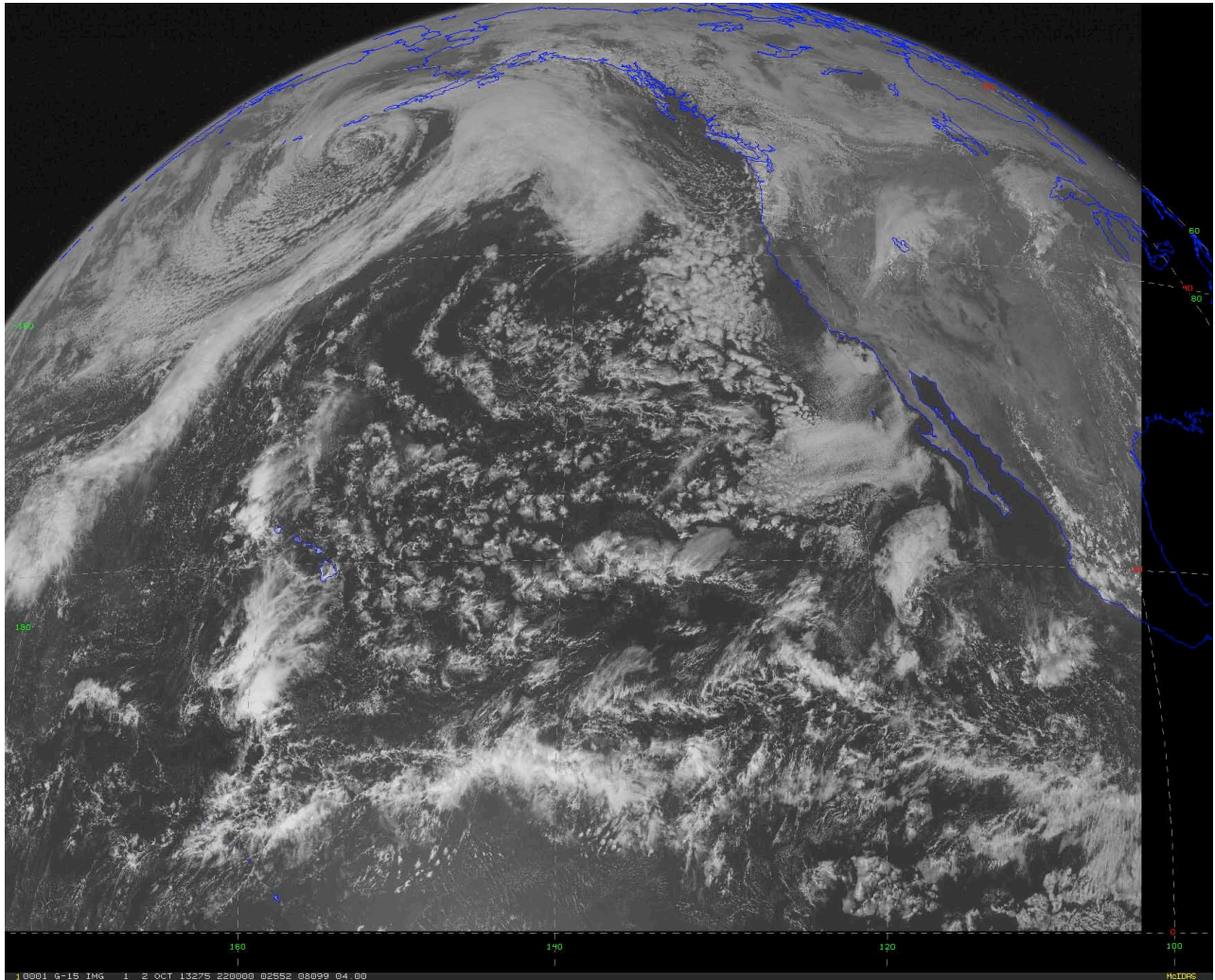
(a) Circle the location of a front over the Pacific Ocean.

(b) Mark the location of a low center over the Pacific Ocean with an 'L'.

(c) Indicate an area of unstable air with convection.

#4. A radar image from Springfield, Missouri is shown below. Three points are each marked with a bold
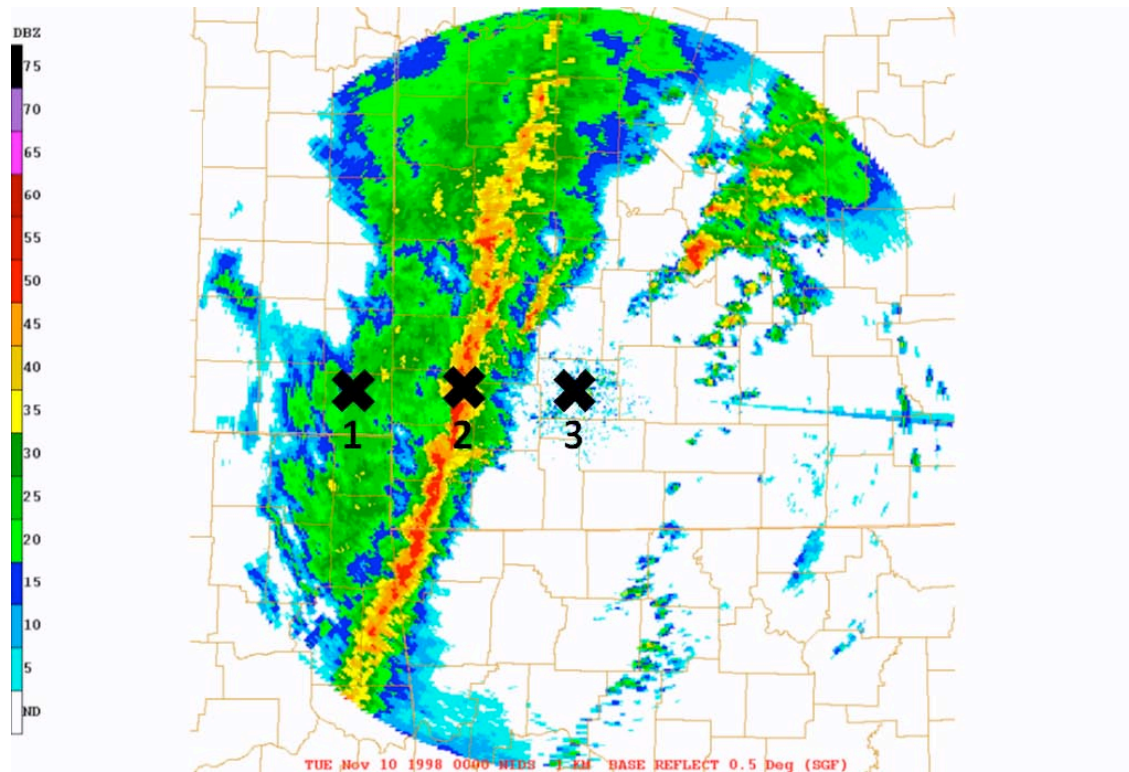
X. Point 3 is the location of the radar. Points 1 and 2 are 120 and 60 miles west of the radar location, respectively.

(a) At which point is the precipitation the heaviest?

(b) The elevation angle of this radar scan is 0.5 . At which point is the return coming from the highest in the atmosphere?

(c) If the same amount of water mass is spread over many small droplets or fewer big droplets, which do you think would have the highest reflectivity in radar imagery?

#5. Using the cloud classification system discussed in class, fill in the table below. For each cloud, determine its type (cumulus, stratus, or cirrostratus), its height (low, middle, high, or large vertical extent), and its composition (liquid water or ice crystals).

(a)

(b)

(c)

	Type	Height	Composition
(a)			
(b)			
(c)			