

CLOUDS AND SOLAR RADIATION

STUDENT QUESTIONS SHEET

You should have a visible satellite image and a map of Oklahoma. The Oklahoma map will contain solar radiation measurement.

*** Remember - solar radiation is an indication of the amount of the solar energy that reaches the ground ***

1. Obtain a printed satellite image and Mesonet solar radiation map (SRAD) *or* view the images on a computer using WxImage or other image display software.
2. Examine the satellite image and the Mesonet solar radiation map. Look for similarities and differences.
3. Answer questions below.

Analysis: Using the maps you prepared, answer the following questions.

1. Describe the pattern of clouds in the satellite image. (In what part(s) of the state are there clouds?)
2. Where are the highest solar radiation values? Where are the lowest values?
3. Can you find any relationship between cloud cover on the satellite image and Mesonet solar radiation? If so, describe how they are related.

4. Can you determine which clouds are “thicker” (i.e., extend deeper vertically) by using the satellite image? If so, how?

5. Can you determine which clouds are thicker by using the solar radiation map? If so, how?

6. Can you determine the cloud type from the satellite image or the Mesonet solar radiation map? If so, how?

7. Are Mesonet solar radiation measurements helpful in determining the location, extent, thickness, or type of clouds? Explain your answer.

8. What other information would be useful for better determining the cloud cover across the state? Why?