

Name _____

Interpreting Weather Satellite Images

Go to the following web page <https://www.star.nesdis.noaa.gov/GOES/> and select the region your teacher indicates.

The images you see were created from data collected by the GOES-16 satellite. The satellite transmitted this data to Earth through radio waves received by an antenna. Then a computer analyzed the data and turned it into a picture. As you can see, many images are sent from the satellite, but due to time constraints, you are just going to analyze a few.

I. GeoColor

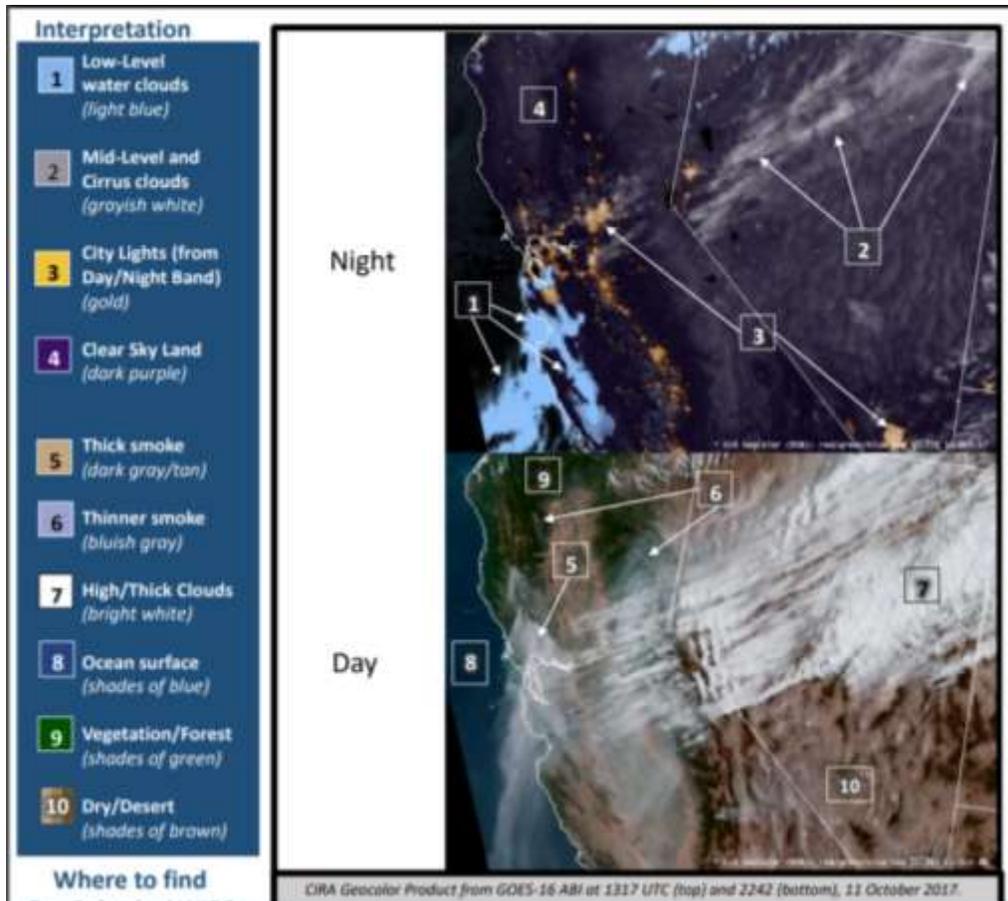
Under the GeoColor picture, click on the Animation Loop. This image provides the closest to true-color images that the GOES – 16 can create. Thus, when meteorologists inspect these images, it is like they are looking down on Earth from above. During the day, these images allow unusual air masses (such as smoke or dust) to be identified. At night these images allow meteorologists to differentiate between low-hanging clouds, which contain moisture, and clouds which are higher in the atmosphere and hold ice (Bikos, D., Miller, S., & Lindsey, D., 2017).

Decrease the image size until you can observe the whole thing on your screen. Then, watch the movement of the clouds through several cycles of the image.

- a. Describe the movement of the clouds and/or dust. Which direction are these things traveling? Are all objects moving in the same direction?

Key to the GeoColor Image. Use the following key to identify the weather features of your map.





(Bikos, D., Miller, S., & Lindsey, D., 2017)

Pause the animation and take a screenshot of the image. Paste it below, and label the parts of the picture using the image above.

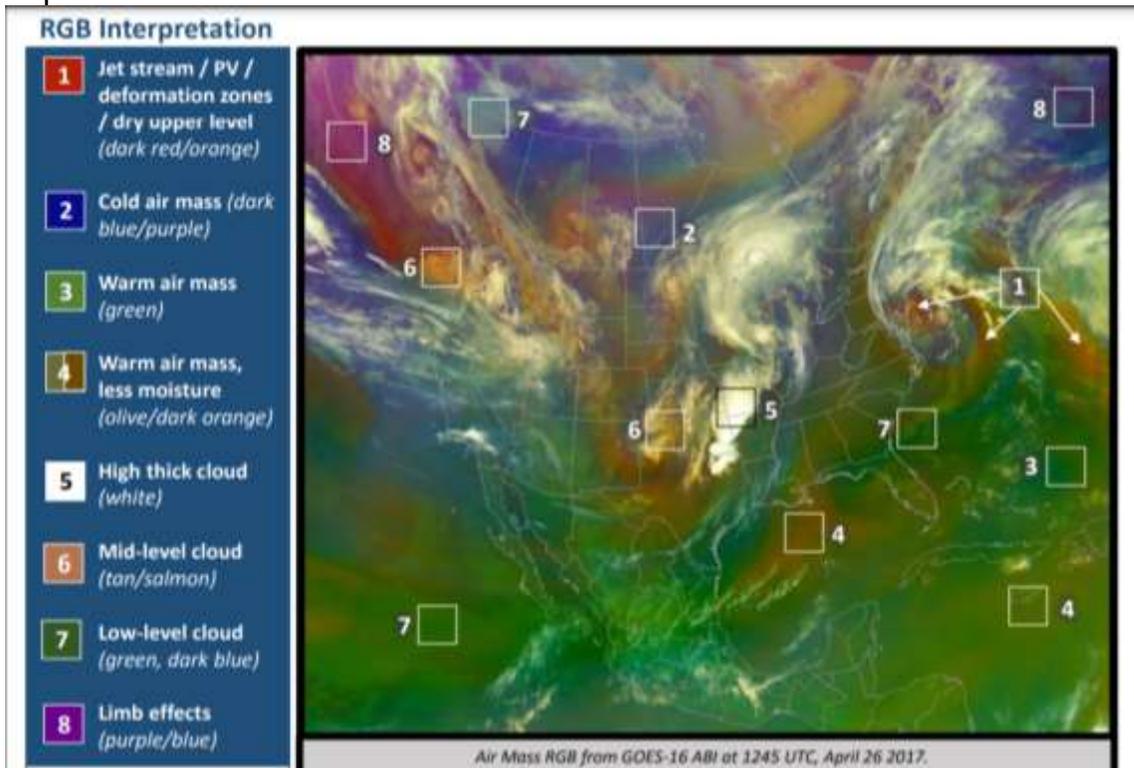
- b. What stood out to you from this image? Why?
- c. Why is this image important to weather forecasters?
- d. How would not having this image impact people's safety?

2. AirMass RGB

Under the AirMass RGB picture, click on the Animation Loop. This image helps interested individuals differentiate between air masses of different temperatures and moisture levels. This information can determine if cyclogenesis is occurring in the atmosphere. This is when the air circulation in an area follows a circular pattern. This type of circulation can be harmless or lead to dangerous storms such as tornados and hurricanes (Berndt, E., 2017). Decrease the image size until you can observe the whole thing on your screen. Then, watch the movement of the clouds through several cycles of the image.

- a. Describe the movement of the clouds. Which direction are they going? Are all the clouds moving in the same direction?

Key to the Air Mass RGB Image. Use the following key to identify the weather features of your map.



(Berndt, E., 2017)

Pause the animation and take a screenshot of the image. Paste it below, and label the parts of the picture using the image above.

- b. What stood out to you from this image? Why?
- c. In what ways is this image similar to the first image? How is it different?
- d. Why is this image important to weather forecasters?
- e. How would not having this image impact people's safety?

3. Dust RGB

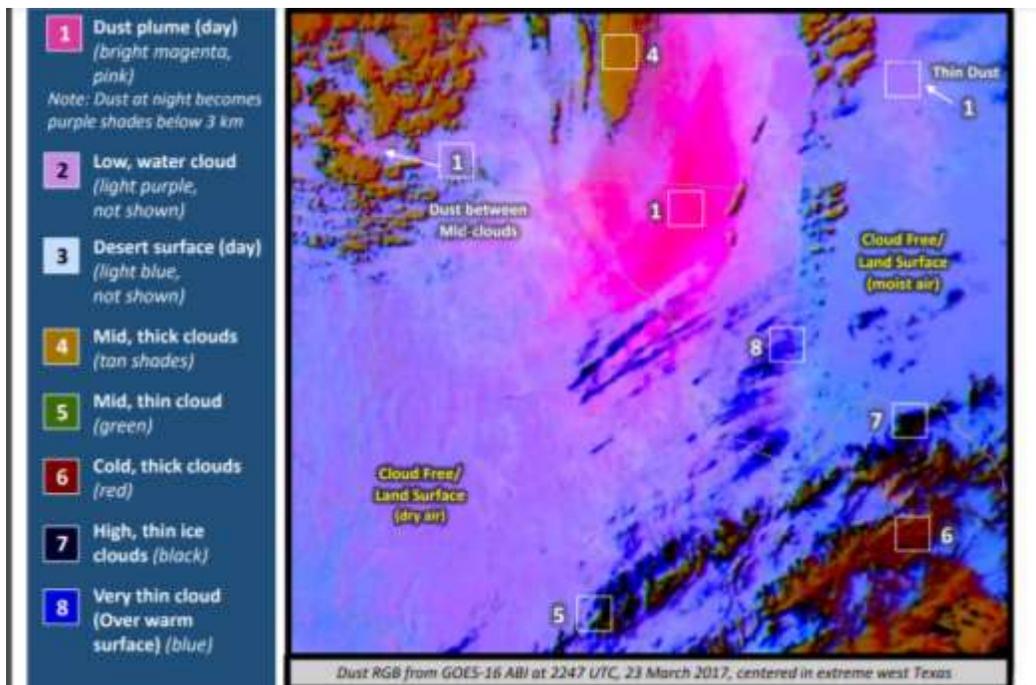
Under the Dust RGB picture, click on the Animation Loop. In this image, users can distinguish between clouds and dust. In addition, you can determine the temperature and thickness of clouds and the moisture content of air masses (Fuell, K., 2017)

Decrease the image size until you can observe the whole thing on your screen. Then, watch the movement of the clouds through several cycles of the picture.

- a. Describe the movement of the clouds. Which direction are they going? Are all the clouds moving in the same direction?

Key to the Dust RGB Image. Use the following key to identify the weather features of your map.





(Fuell, K., 2017)

Pause the animation and take a screenshot of the image. Paste it below, and label the parts of the picture using the image above.

- b. What stood out to you from this image? Why?
- c. In what ways was this image similar to the first image? How was it different?
- d. In what ways was this image similar to the second image? How was it different?
- e. Were there any dust plumes visible on the map? What types of habitats do you think would be prone to creating dust plumes?
- f. Why is this image important to weather forecasters?

- g. How would not having this image impact people's safety?

Sources

Berndt, E. (2017). *Air Mass RGB Quick Guide*. GOES Image Viewer.

https://www.star.nesdis.noaa.gov/GOES/documents/QuickGuide_GOESR_AirMassRGB_final.pdf

Bikos, D., Miller, S., & Lindsey, D. (2017). *GeoColor Product Quick Guide*. GOES Image Viewer.

https://www.star.nesdis.noaa.gov/GOES/documents/QuickGuide_CIRA_Geocolor_20171019.pdf

Fuell, K. (2017). *Dust RGB Quick Guide*. GOES Image Viewer.

https://www.star.nesdis.noaa.gov/GOES/documents/QuickGuide_Dust_RGB.pdf

