Cloud System Evolution in the Trades (CSET) Pre-Lab Activity

Visit <http://cseteducation.weebly.com>, and read through ALL information on the *Scientific Background* and *About CSET* pages (tabs at the top). This includes watching all videos and using the provided links to learn more about any concept that you feel uncertain about. Make sure you pay special attention to the *Observation Strategies* section, this will be important in planning your own flights during lab.

After you have finished going through all information on both pages, answer the following 15 questions individually and in your own words. Your answers are due before the lab period begins.

1. What is the average strength of the Pacific High? (hint: Figure 1)
2. How does a subsidence inversion form?
3. How does the Pacific High lead to upwelling along the California coast and trade winds that blow from California towards Hawaii?
4. What types of clouds are typically found offshore of California? What types are typically found closer to Hawaii? Why does each type form in its respective location?
5. Describe the effect(s) that aerosols can have on clouds.
6. Why is ENSO considered an atmospheric oscillation?
7. How does the CSET field campaign study clouds in an attempt to meet its scientific goals?
8. Why is a flight plan of points 17🡪10🡪15🡪7 (Figure 11) not ideal for meeting the goals of CSET?
9. *Why* would the aircraft want to fly at various levels to collect data (Fig. 12)?
10. During which date and times did RF07 take place (hint: check out the field catalog). What were the starting and ending locations of RF07?
11. In the video with Hans Mohrmann, describe the flight path he recommends for flying from California to Hawaii. What factors did he consider in making that flight plan?
12. Paquita Zuidema talks about how data comes into the operations center as the plane is flying. Explain two specific points she makes in her interview
13. Choose another interview with a member of the CSET team and summarize the main ideas of the video.
14. How far can the GV travel?
15. Which instrument(s) are able to be pointed upwards or downwards to best observe clouds?
16. When (and why) was the first dropwindsonde developed?