

Mission Summary Report

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Mission Number: 3

Start of Mission(UTC): 29 October 2013 1514

End of Mission (UTC): 29 October 2013 2017

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Summary:

1. Scientific Background

Forecasting products showed a transition from southerly flow Monday into trade wind shower regime Tuesday. Remnant moisture from Sunday's storm provided for a forecast of moist trade showers, especially on the windward and Mauka side of Oahu. The best chance of precipitation was early in the morning as the diurnal radiation tends to favor convection at that time.

2. General Description of the Mission

The radar was deployed at the Kahalu'u Regional Park. GPS coordinates for the radar site is 21'27.5837N -157'50.3895W. The bearing of the truck was 340°. Beam blockage was evident left of the truck due to the high mountain ranges. Right of the truck was a view of the ocean and some blockage from the islands. Ground clutter near the radar was due to some trees and a small building housing picnic tables and kayaks. Directly behind the radar the land was a small hill which did produce some blockage as well. From the RHI scans it is evident the ground clutter tended to be below 16°.

Upon arrival at the site location there were a few tradewind cumulus clouds offshore and some clouds forming over the mountain ranges. Winds were very light, and the clouds over the area cleared out for a bit. A few sprinkles did occur around 8 am but other than that the tradewind showers that were expected were very light and showers were scarce.

3. Report on the Scanning Strategy

There were no problems with the truck GPS system the mission started according to plan. We started our first scan at 1530z starting at 0.5° elevation angle to 26.5° in steps of 2°. Our azimuth rate was 30° per second. A few clouds popped up on these but not much precipitation was seen. Each team

member had a turn with the scanning strategy and were able to change it accordingly.

4. Report on the Radiosonde System

The radiosonde was successfully launched at 16:45 Z. The launch ended around 18:40 Z and captured a dry and cool midlatitude region. There was a trade wind inversion around 850 mb. Although there was some low-level moisture, weak winds and the lack of moisture in the upper levels could have been why the tradewind showers did not develop along the Koolaus as anticipated.

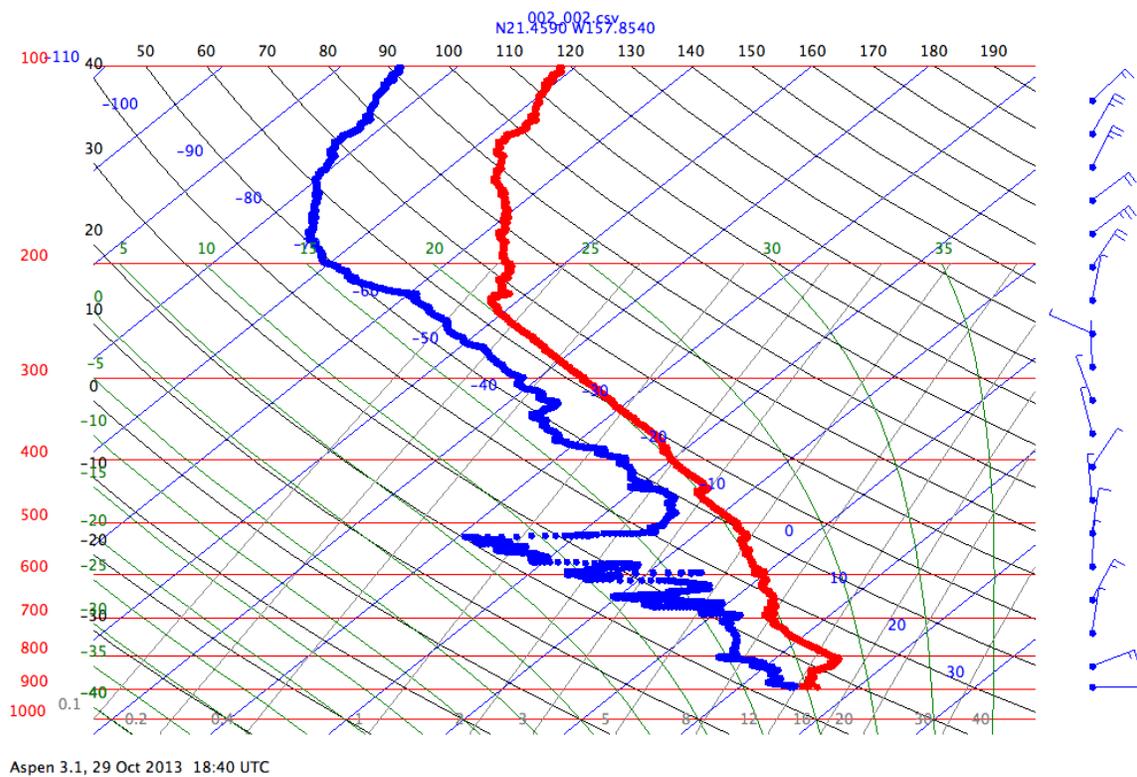


Figure 1. Skew-T image of the vertical profile of winds barbs (knots), temperature (red) and dewpoint temperature (blue) in degrees Celsius.