

Fire Behavior and Wind Flow Measurements



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Surface wind Anemometers



SoDAR



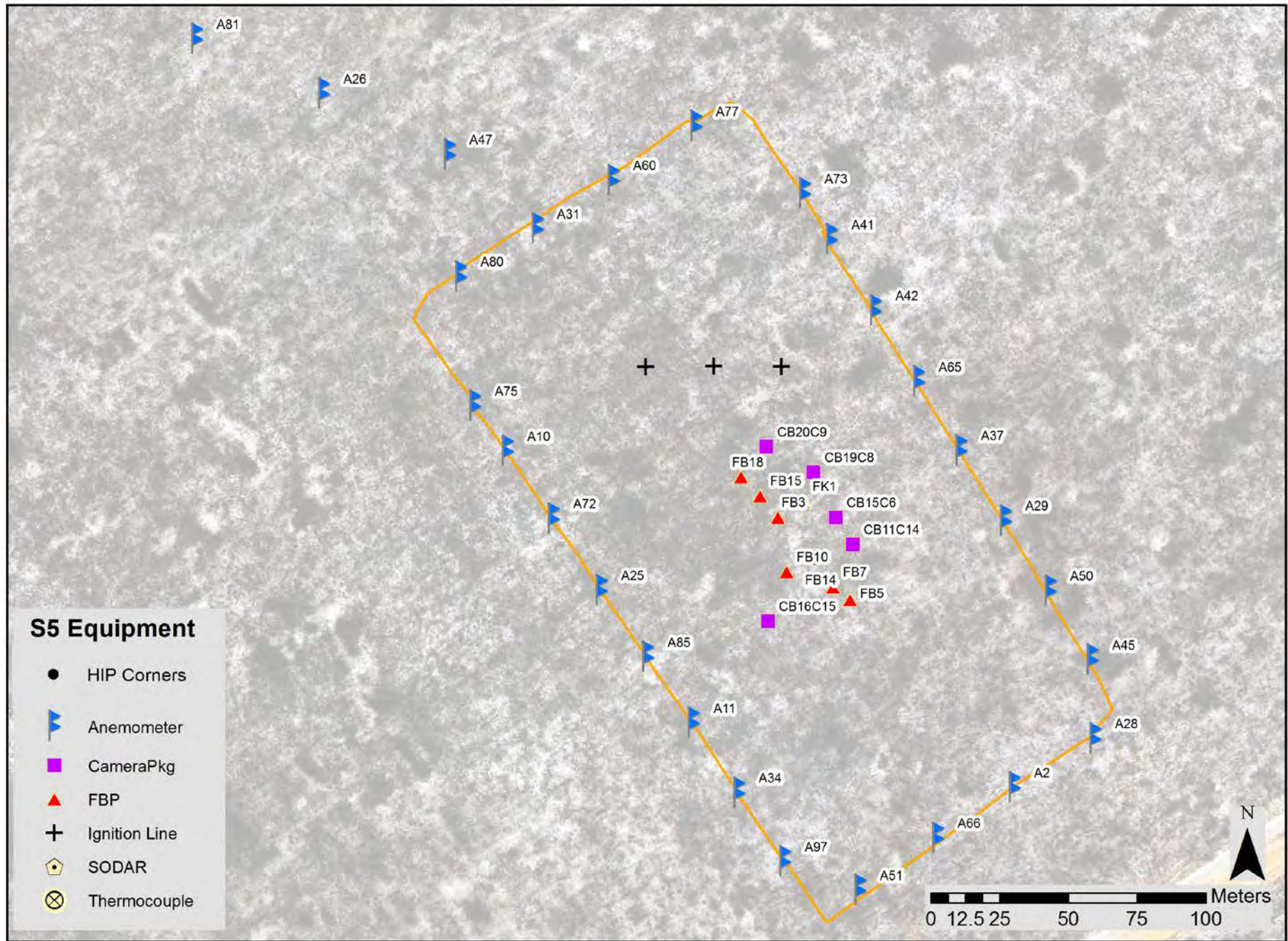
In-Fire Video Camera



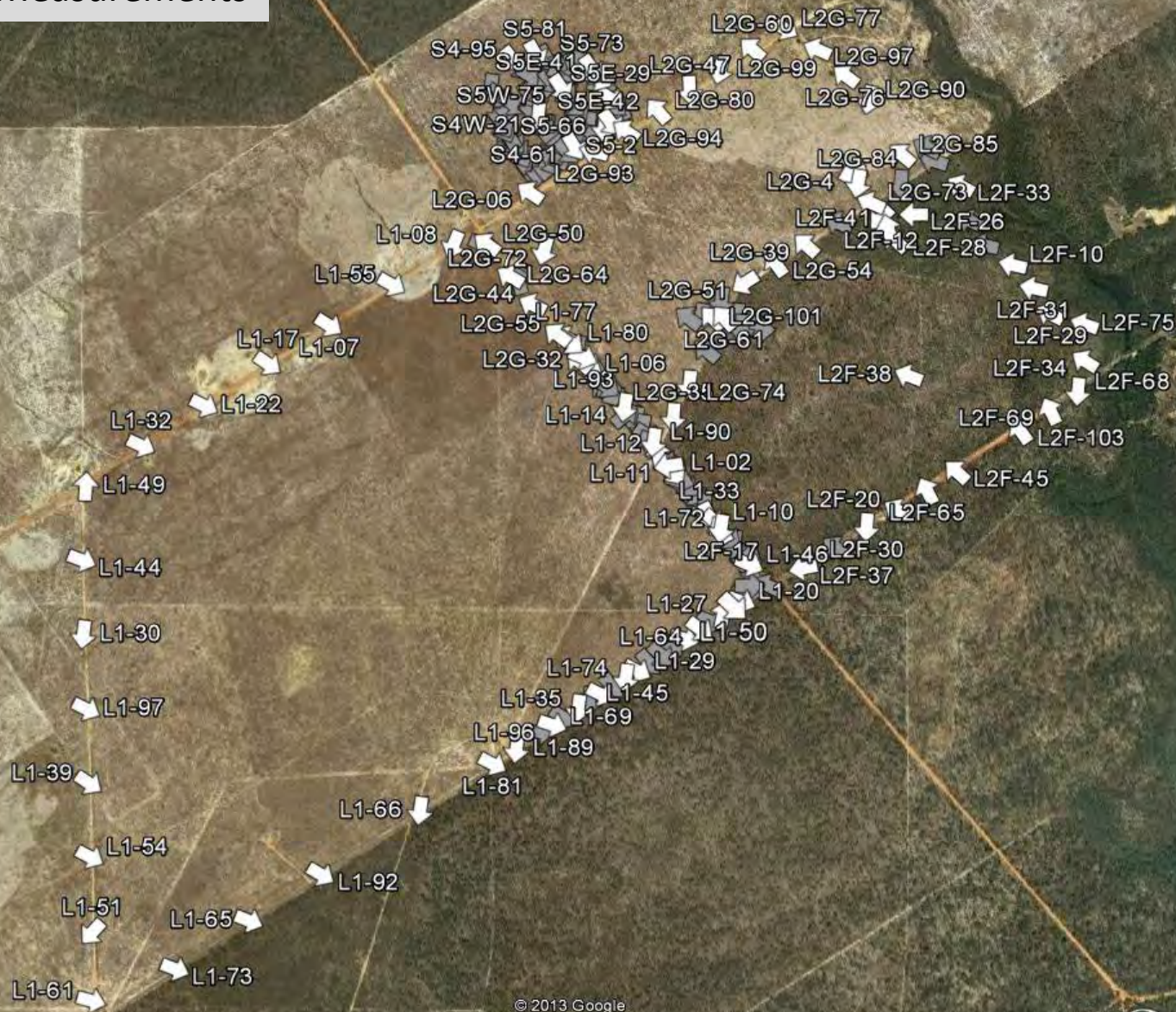
Fire Behavior Package



S5 Equipment and Ignition Line Locations



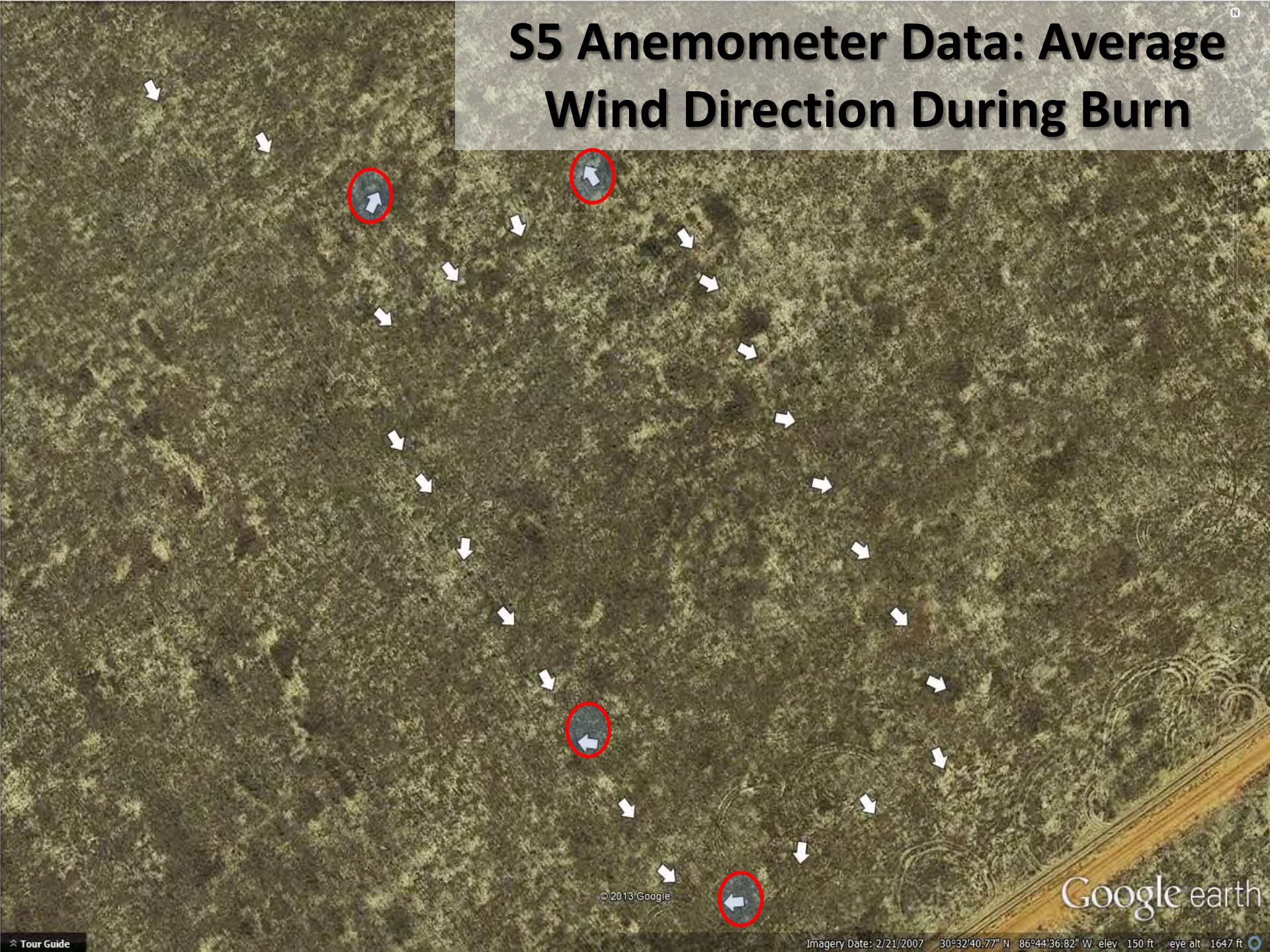
Wind Measurements



© 2013 Google

Google earth

S5 Anemometer Data: Average Wind Direction During Burn



© 2013 Google

Google earth

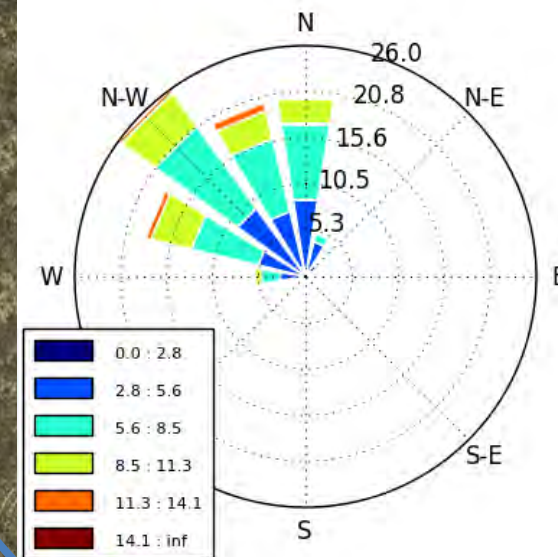
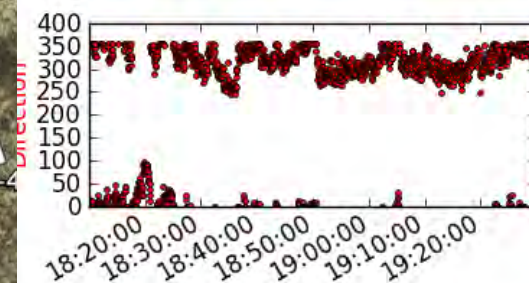
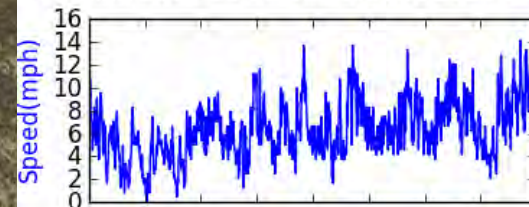
Imagery Date: 2/21/2007 30°32'40.77" N 86°44'36.82" W elev 150 ft eye alt 1647 ft

Tour Guide

S5 Wind

SODAR

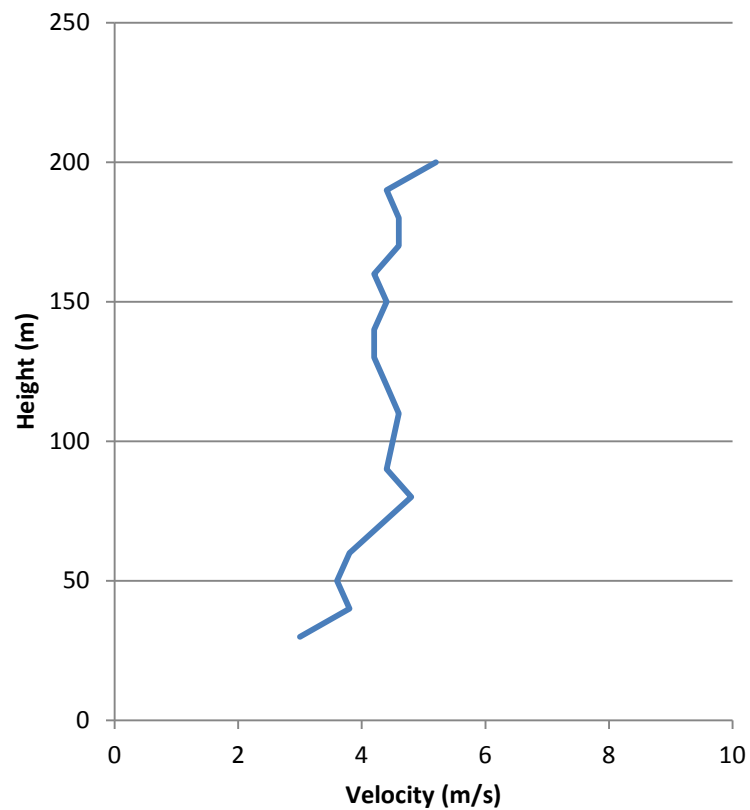
V-75 from 2012-11-01 18:10:00 to 2012-11-01 19:10:00



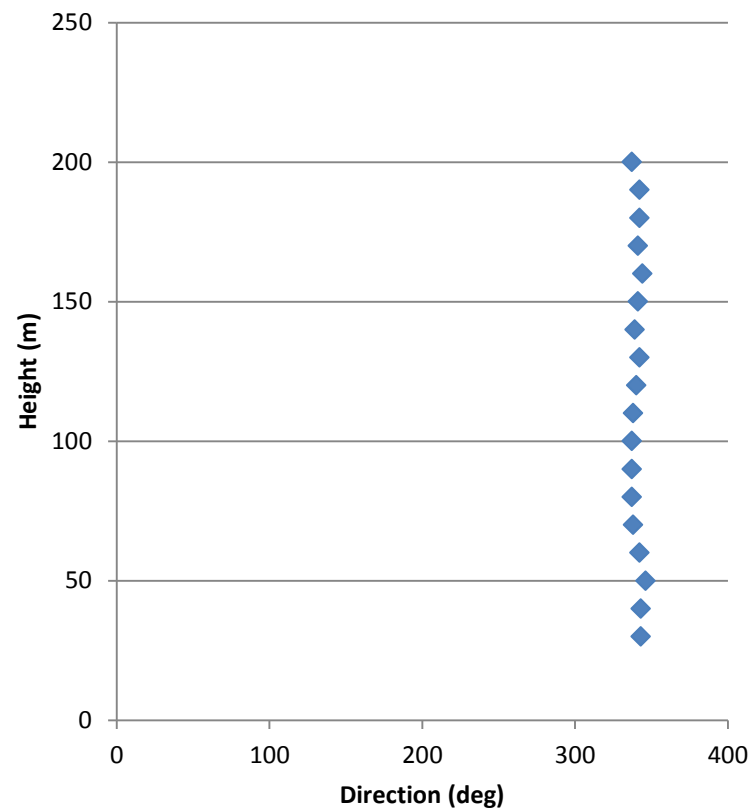
© 2013 Google

Google earth

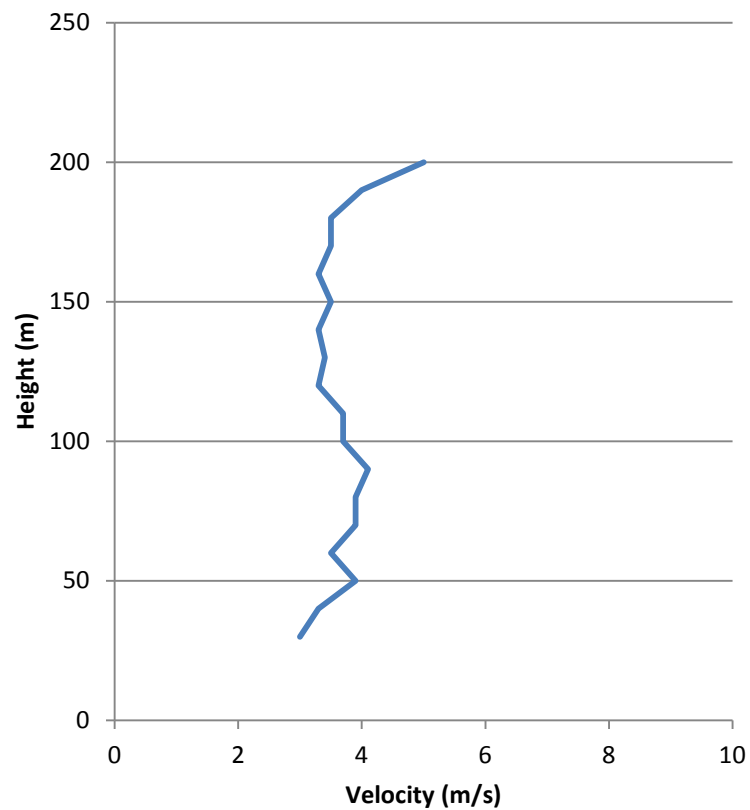
SODAR Wind Velocity 1615



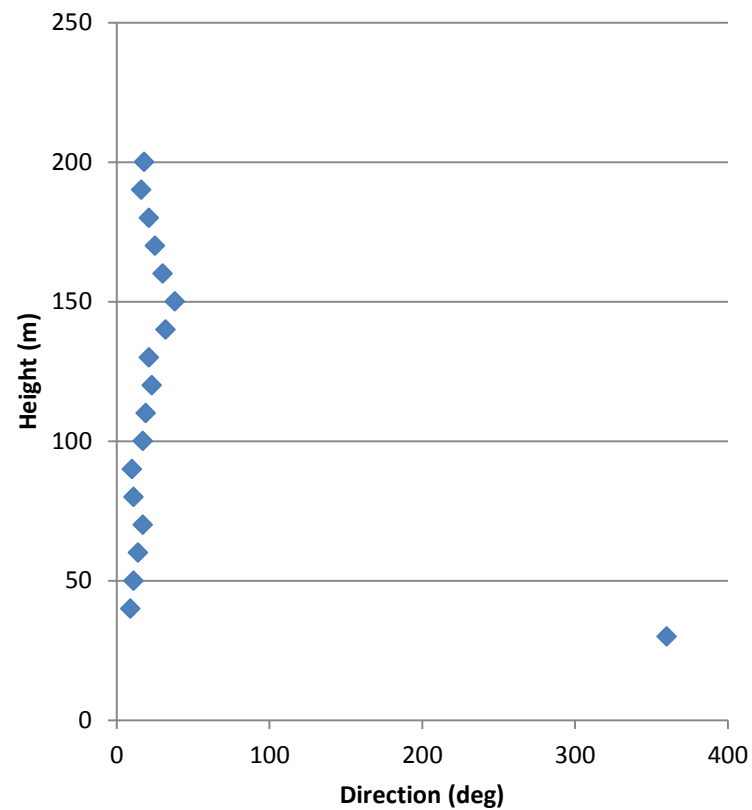
SODAR Wind Direction 1615



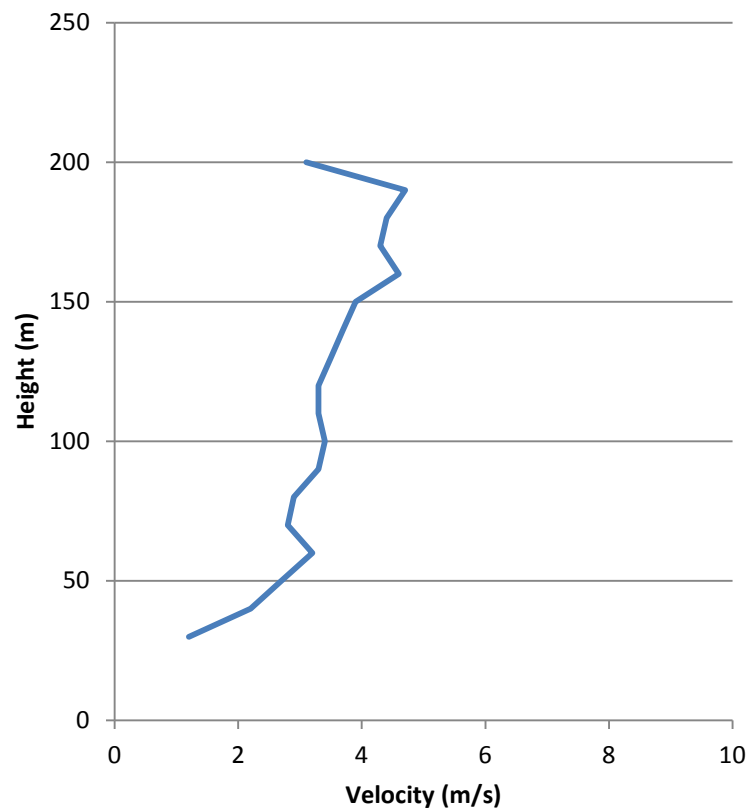
SODAR Wind Velocity 1645



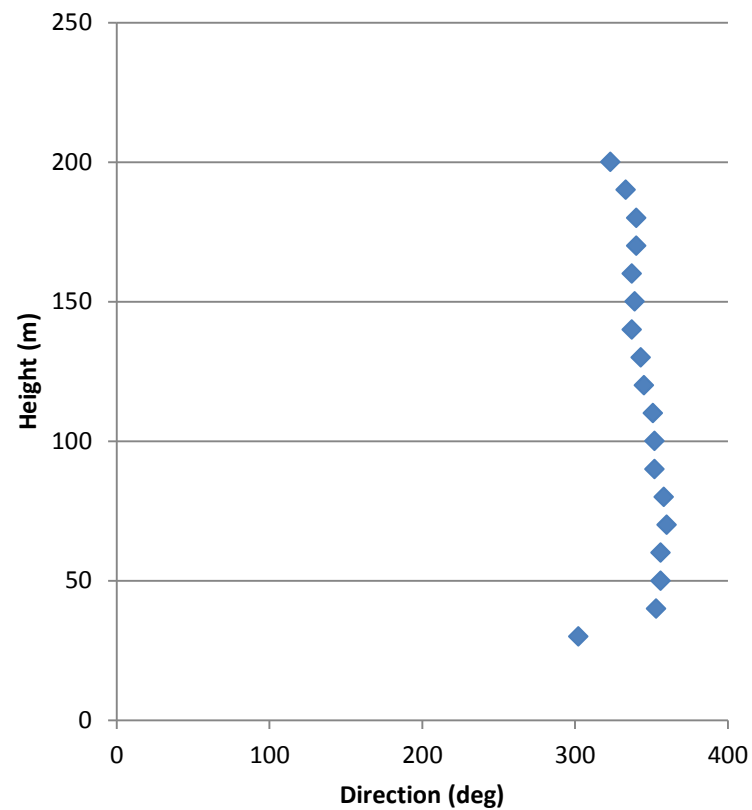
SODAR Wind Direction 1645



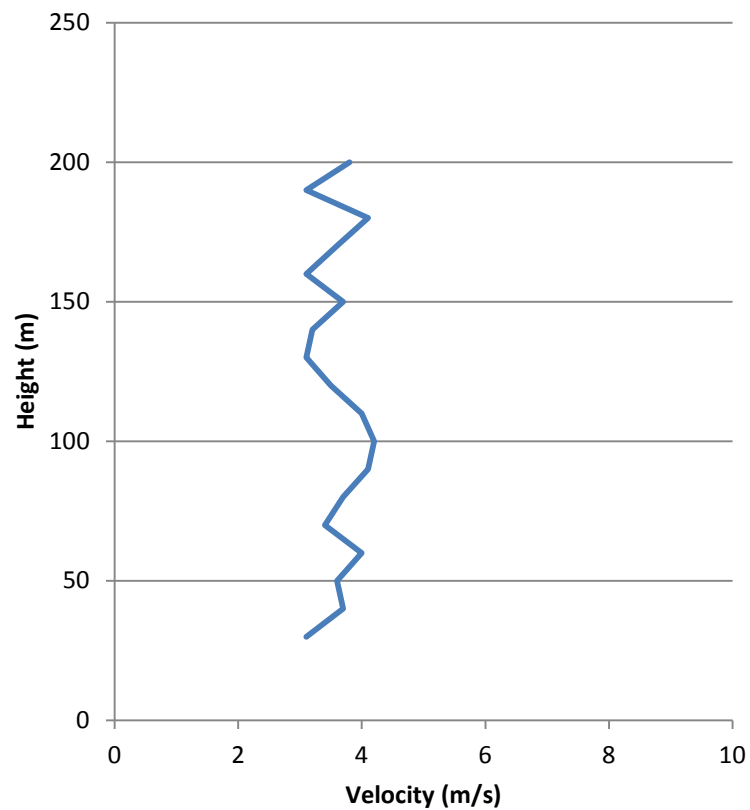
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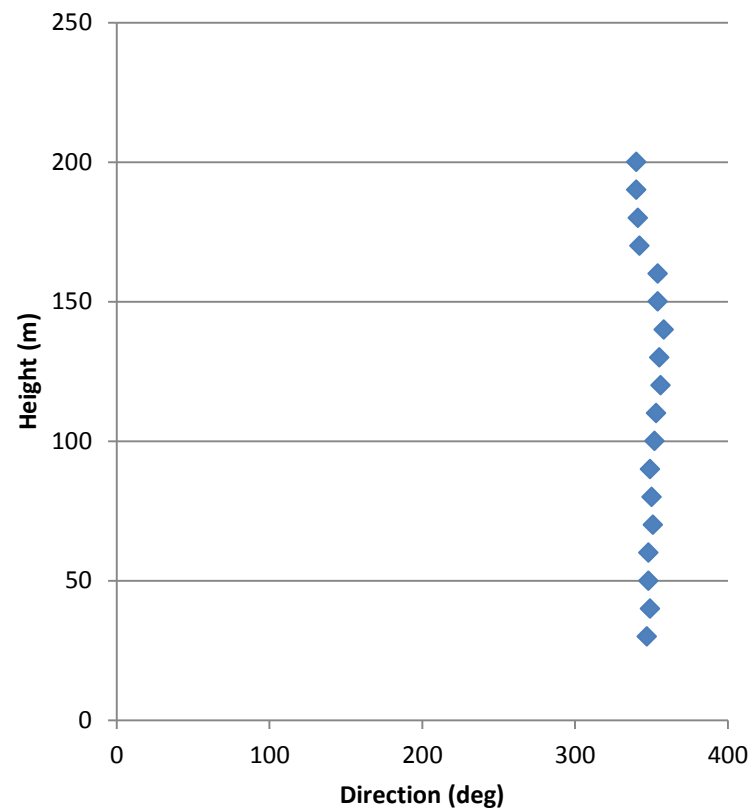
SODAR Wind Direction 1715



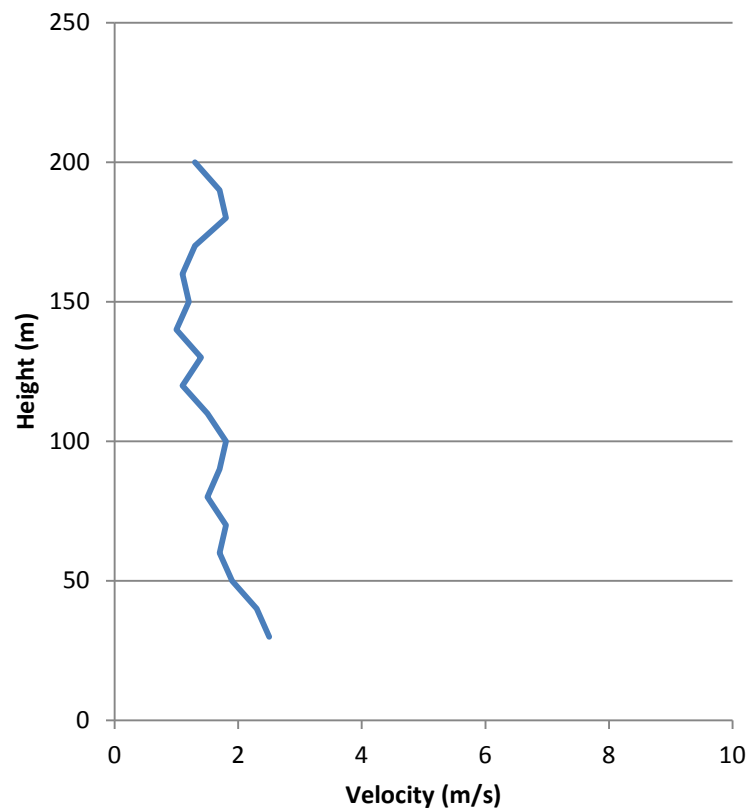
SODAR Wind Velocity 1745



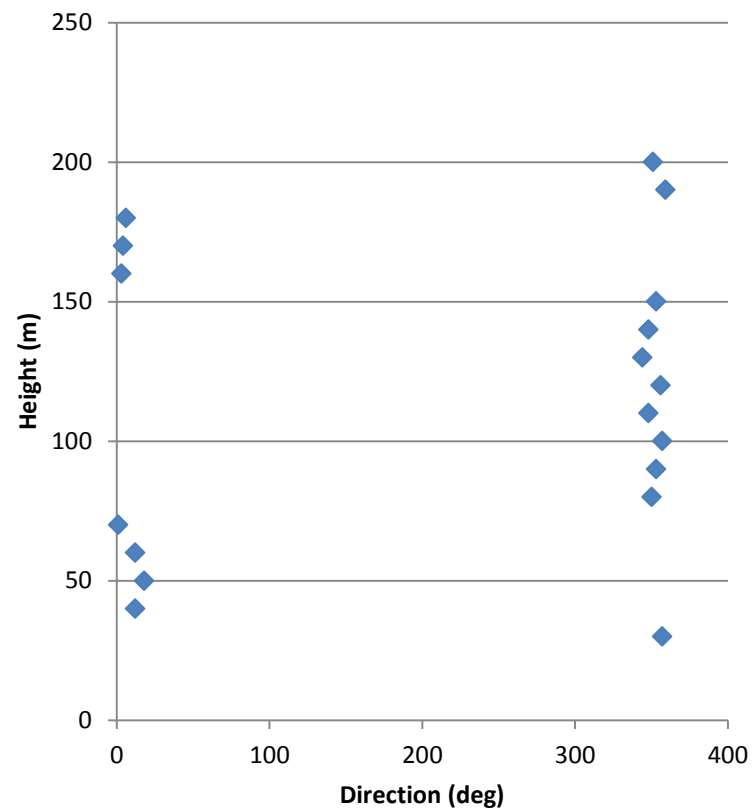
SODAR Wind Direction 1745



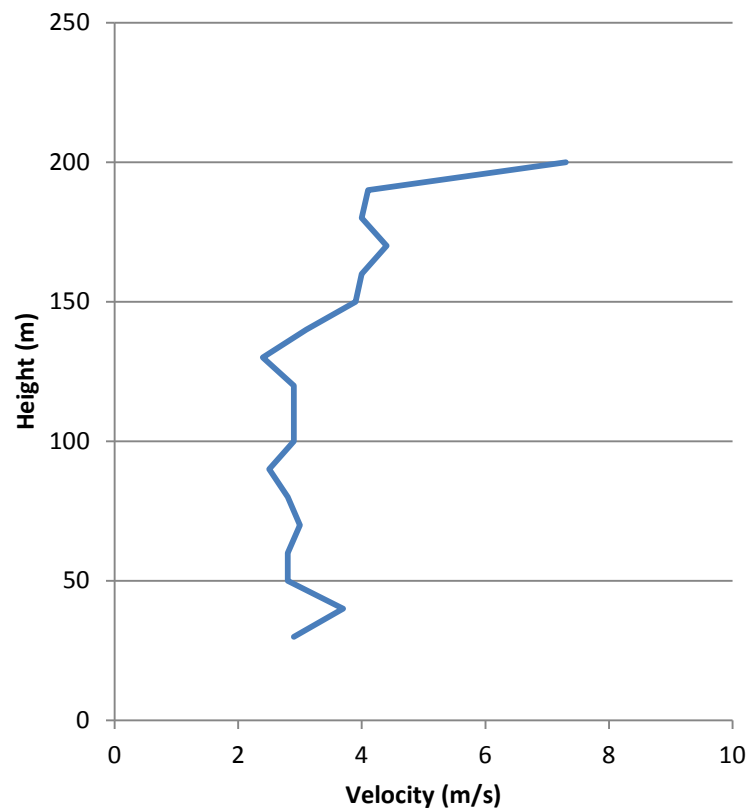
SODAR Wind Velocity 1815



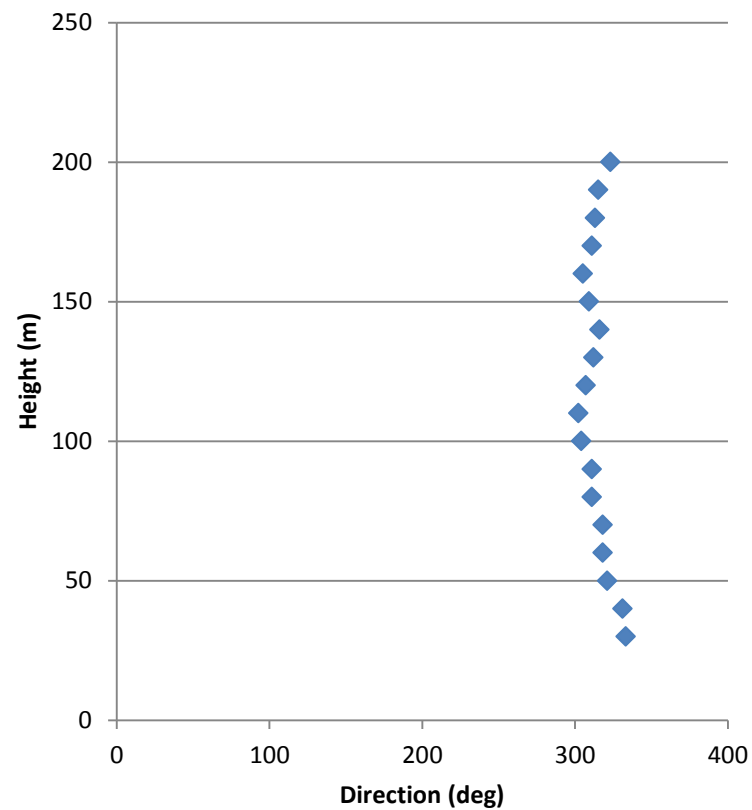
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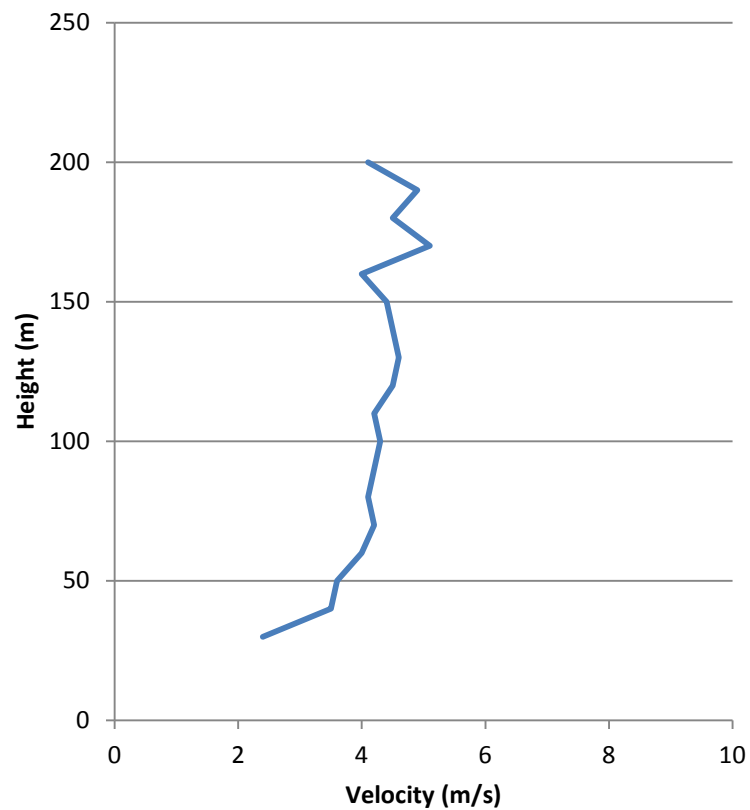
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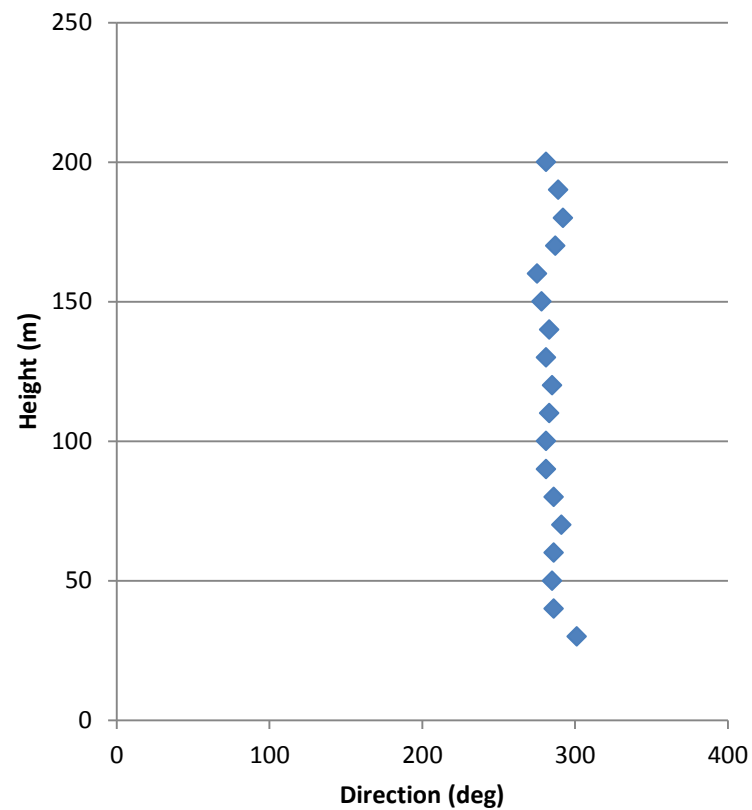
SODAR Wind Direction 1845



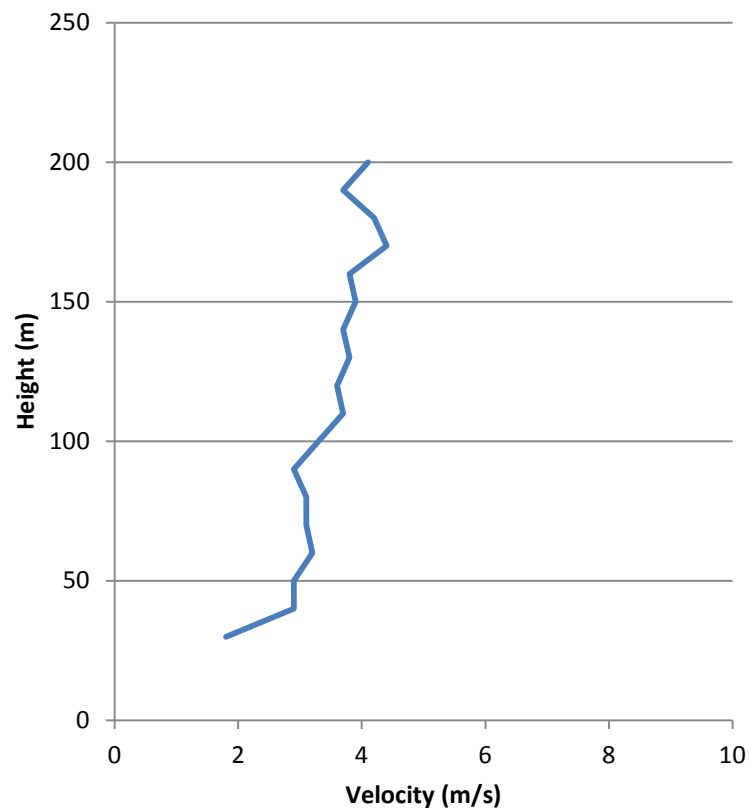
SODAR Wind Velocity 1915



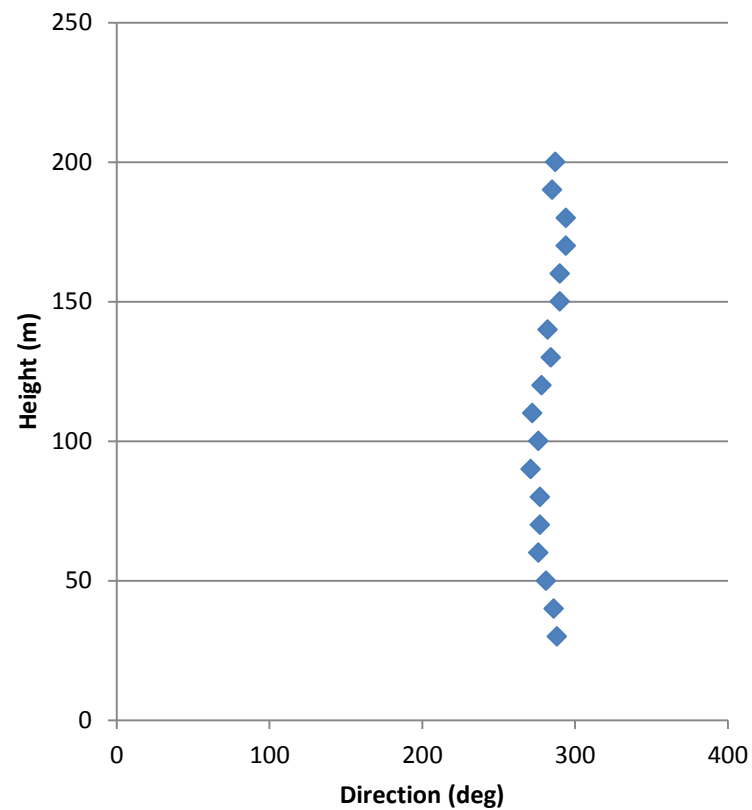
SODAR Wind Direction 1915



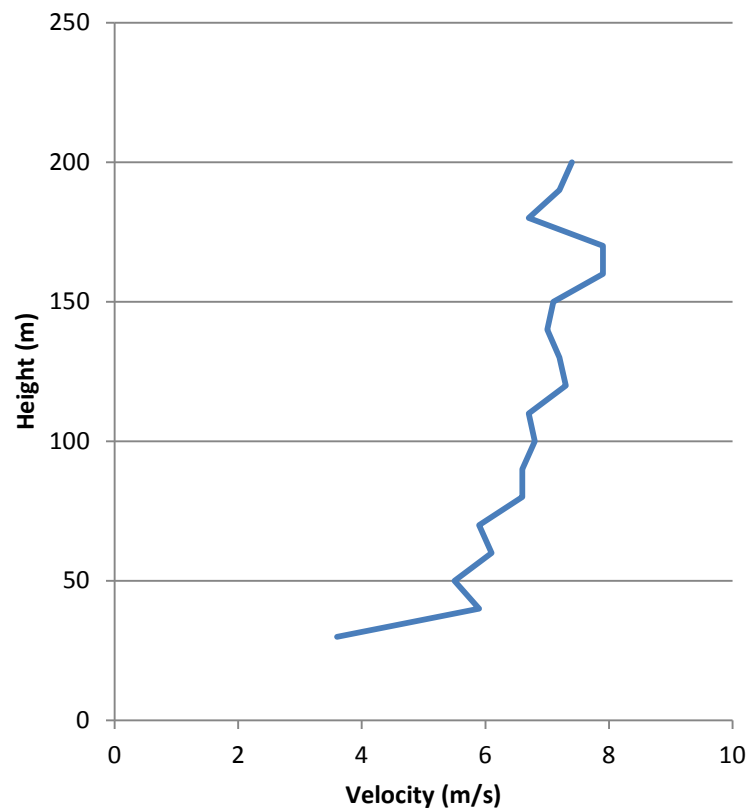
SODAR Wind Velocity 1945



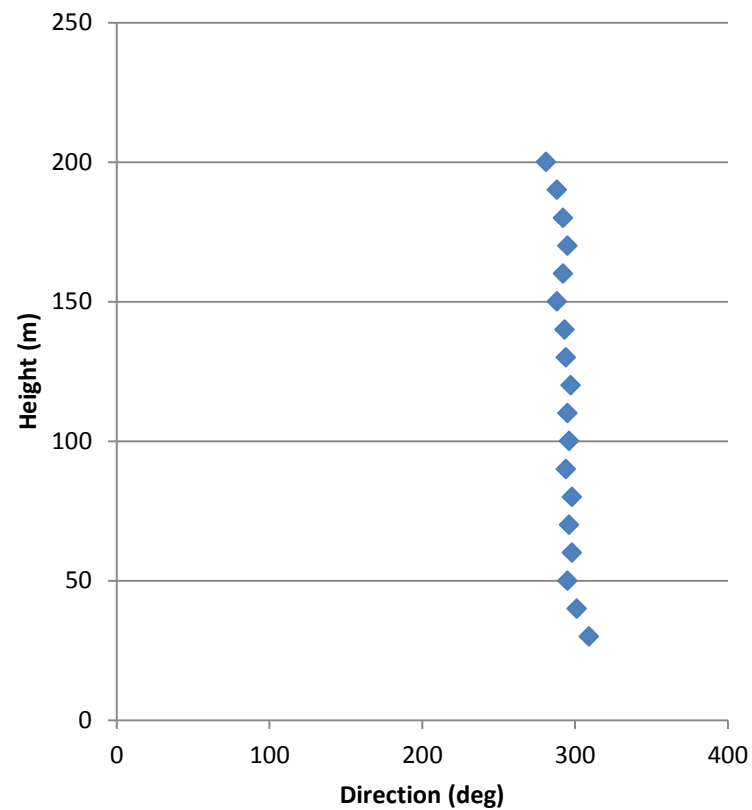
SODAR Wind Direction 1945



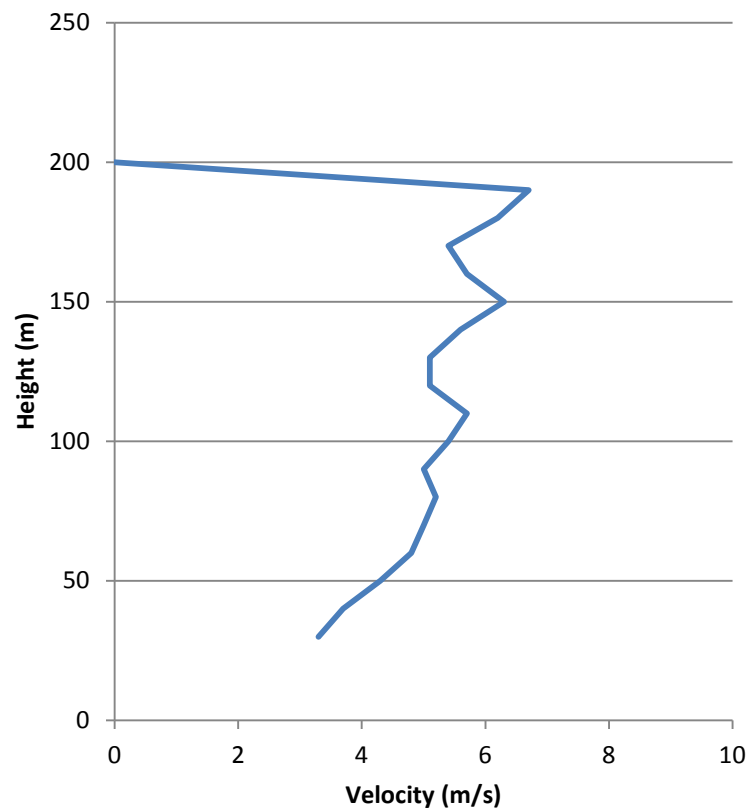
SODAR Wind Velocity 2015



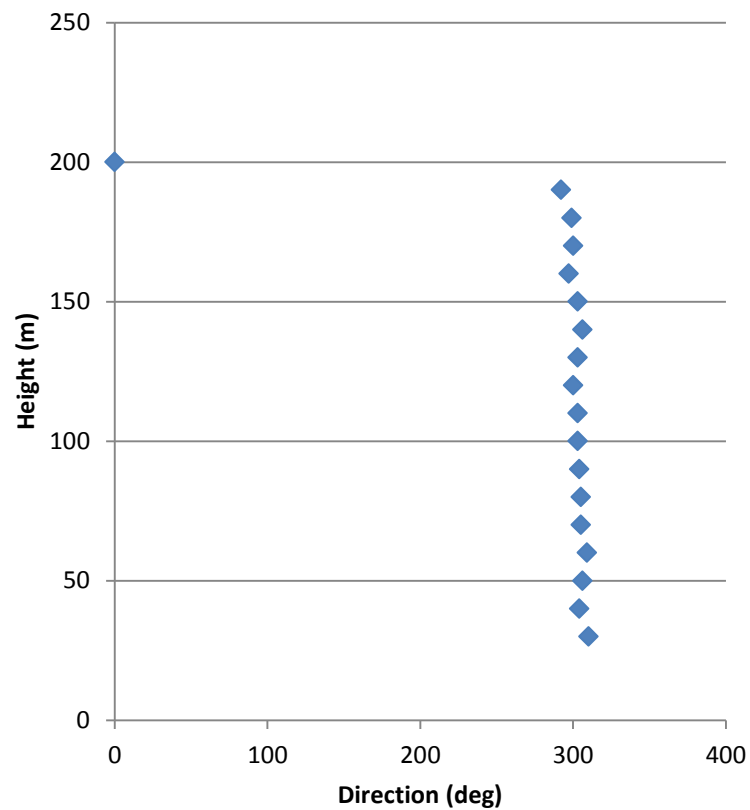
SODAR Wind Direction 2015



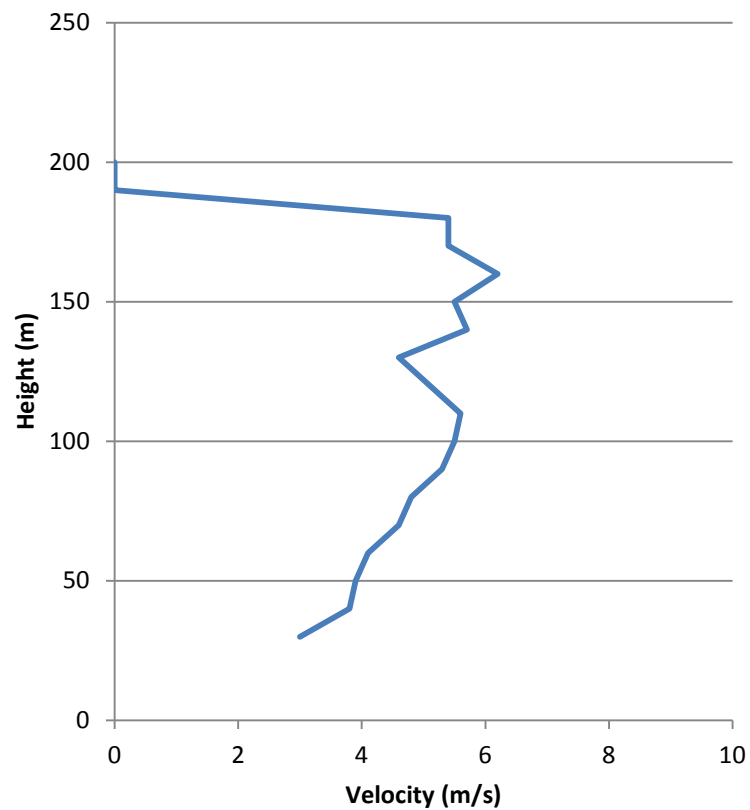
SODAR Wind Velocity 2045



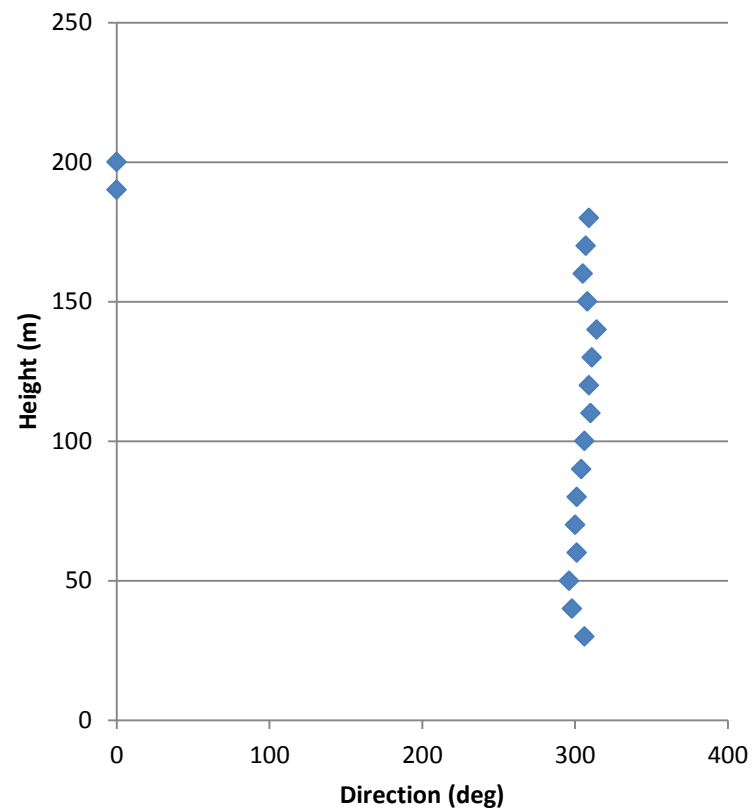
SODAR Wind Direction 2045



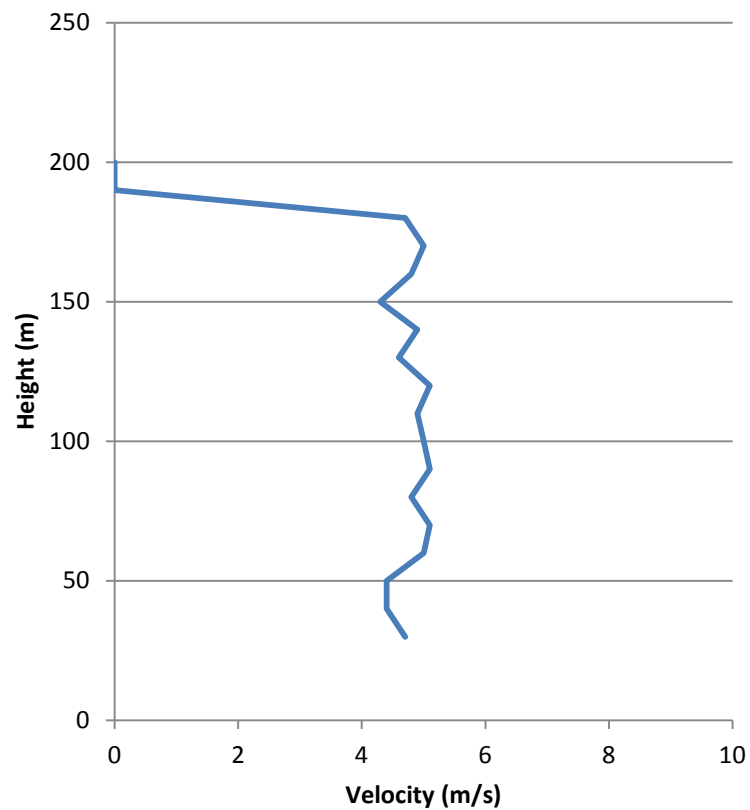
SODAR Wind Velocity 2115



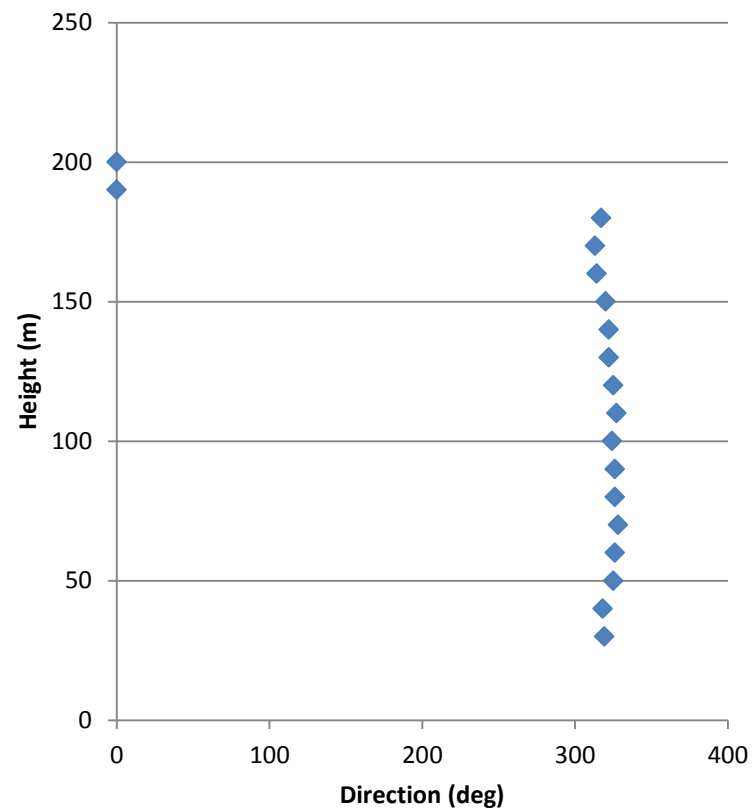
SODAR Wind Direction 2115



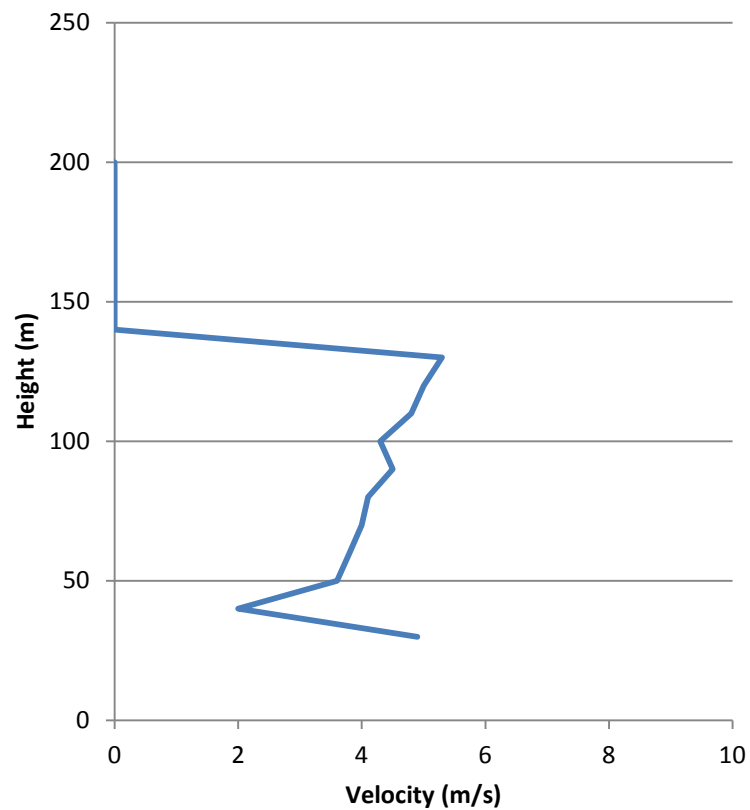
SODAR Wind Velocity 2145



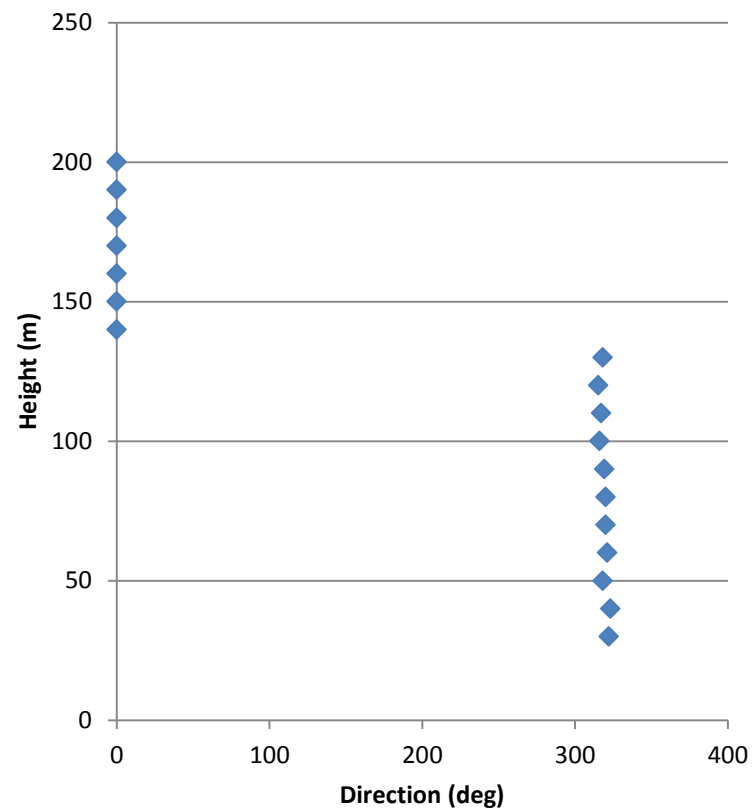
SODAR Wind Direction 2145



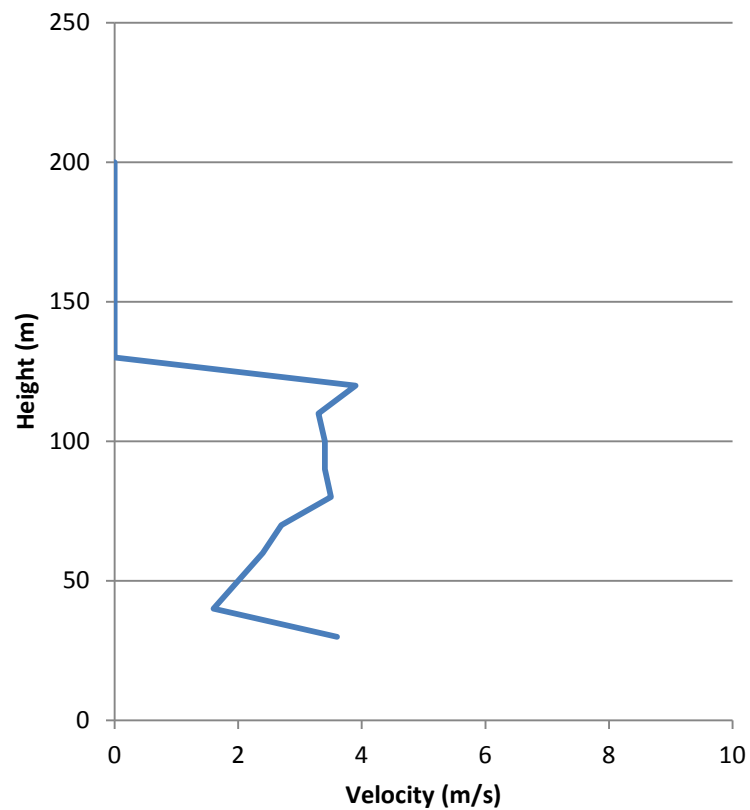
SODAR Wind Velocity 2215



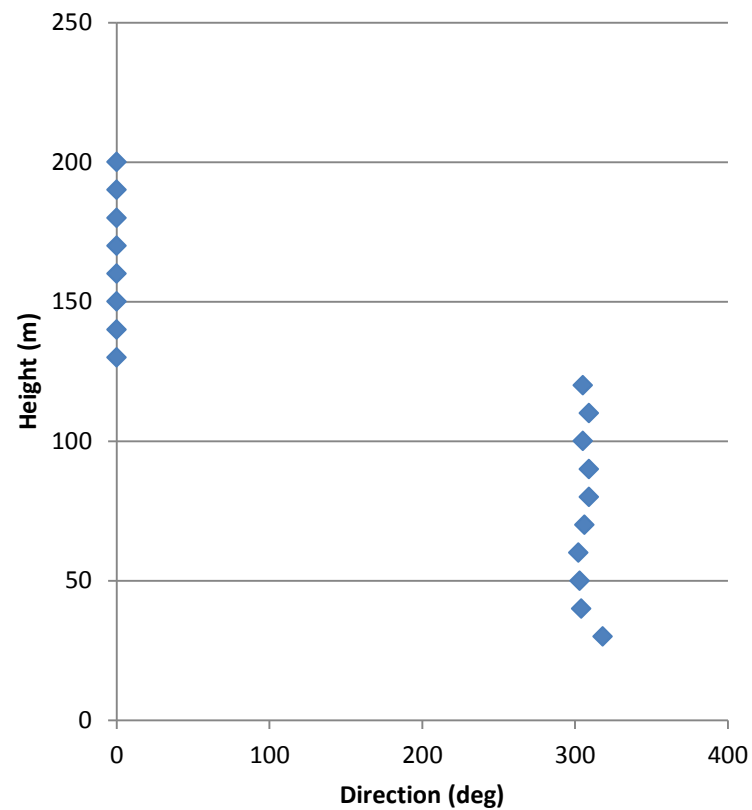
SODAR Wind Direction 2215



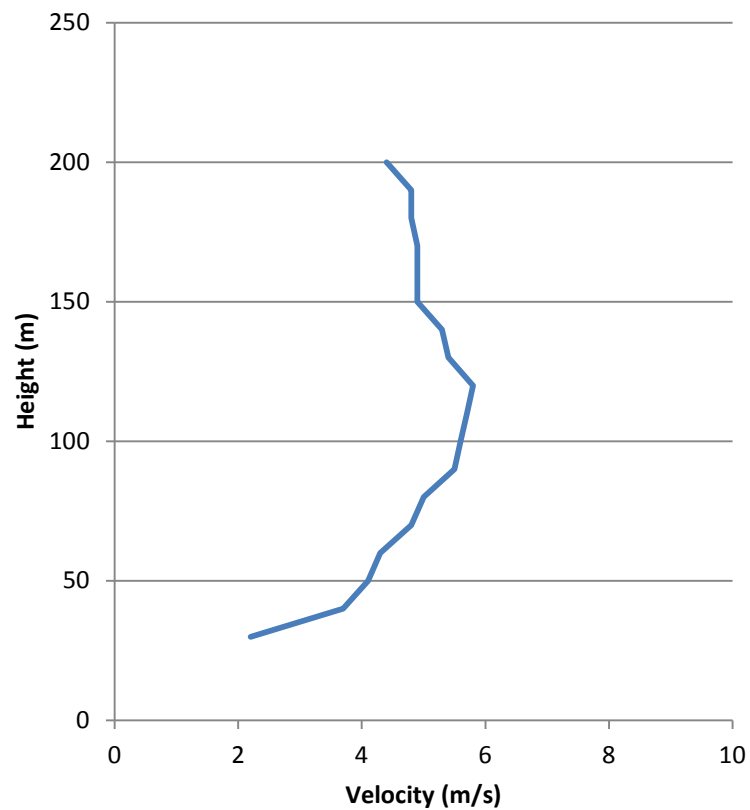
SODAR Wind Velocity 2245



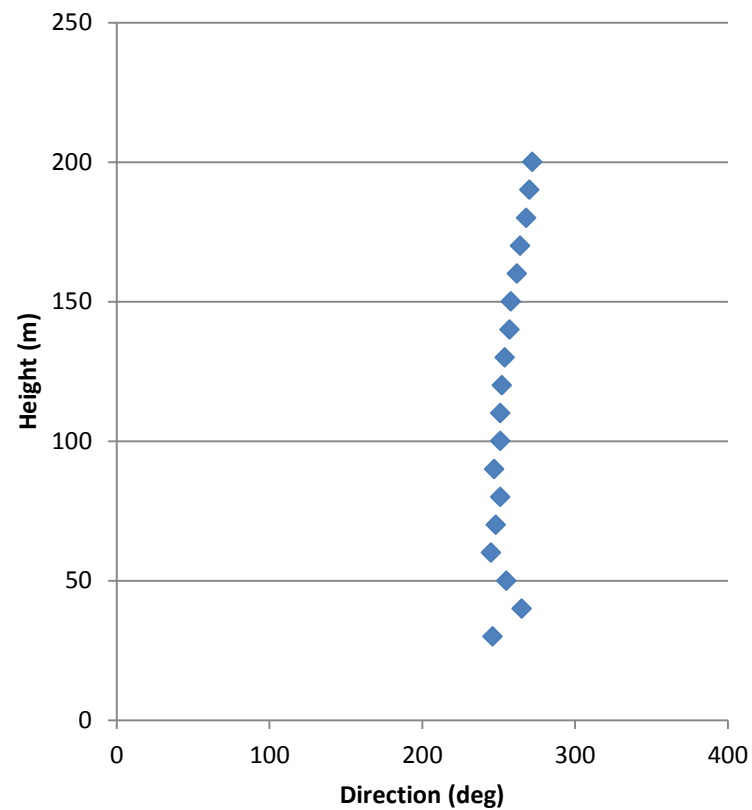
SODAR Wind Direction 2245



SODAR Wind Velocity 2315

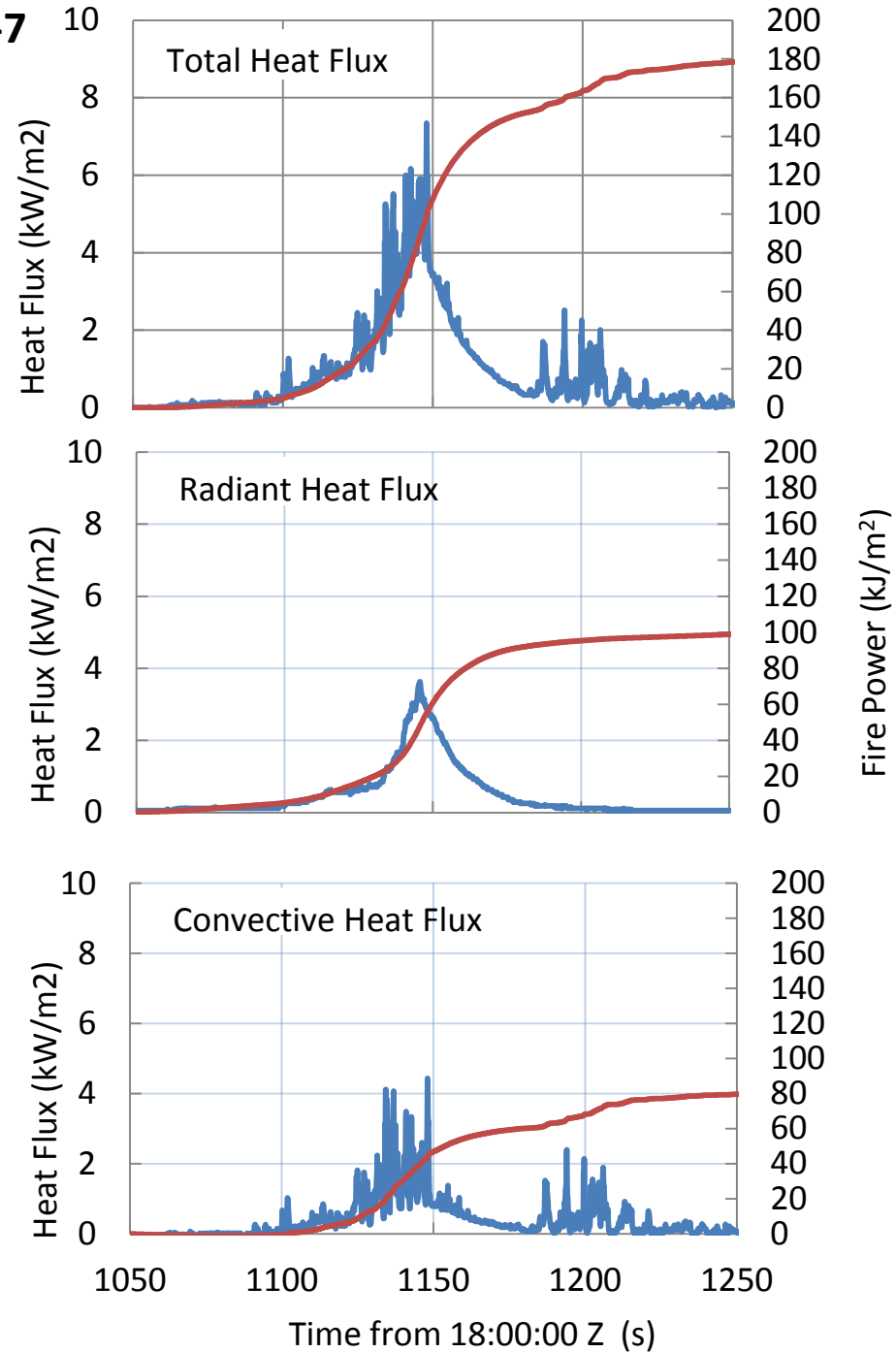
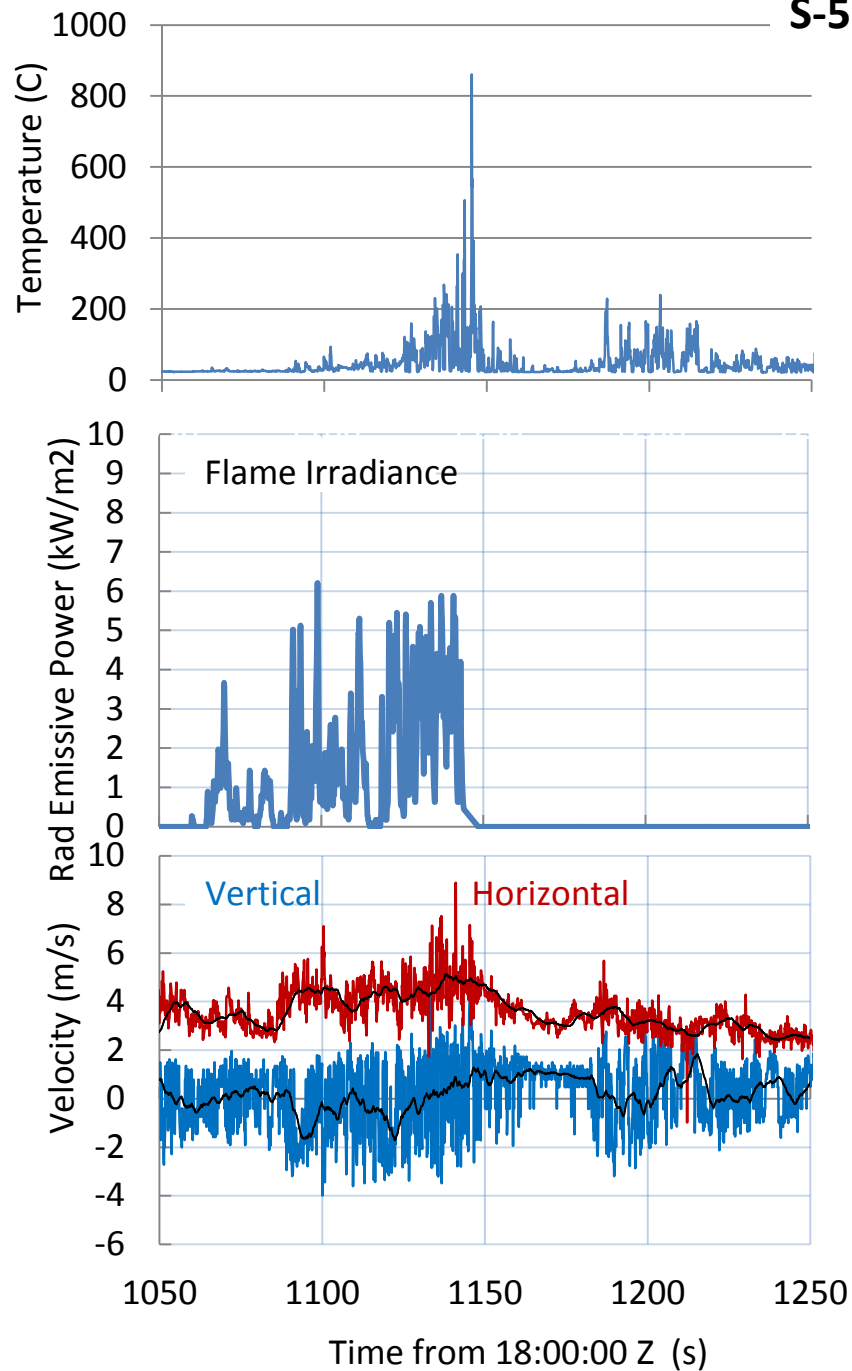


SODAR Wind Direction 2315





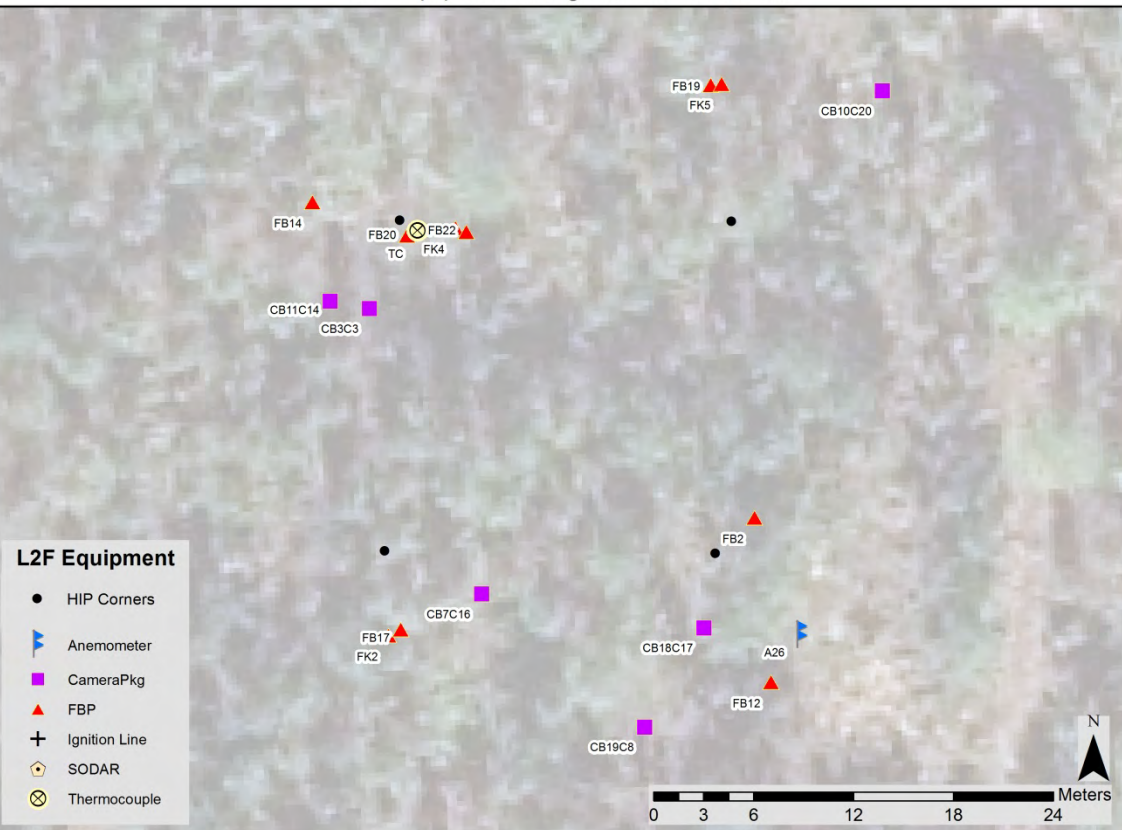
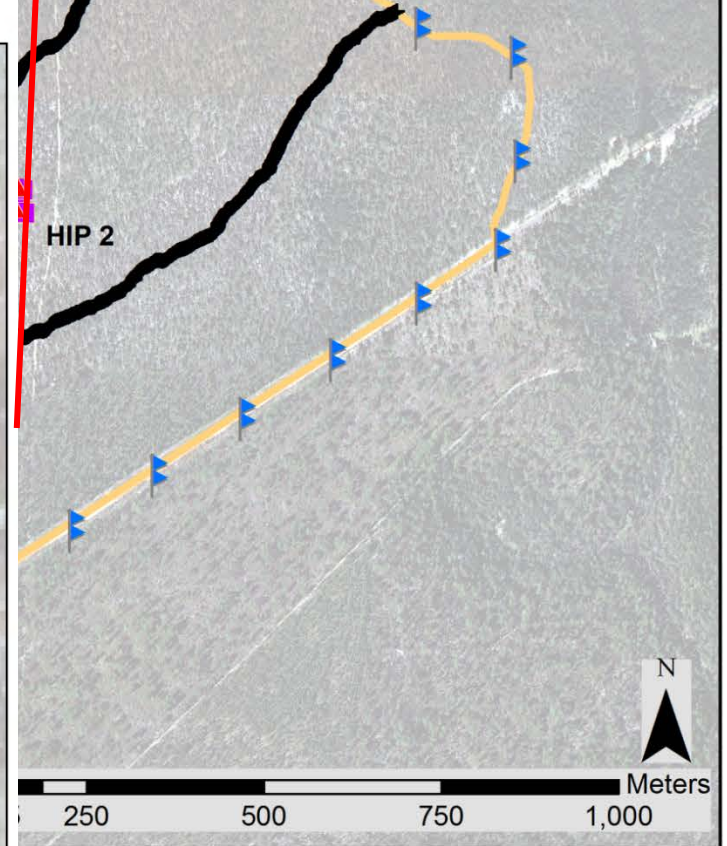
S-5 FBP-7



L2F Equipment and Ignition Line Locations



L2F Equipment and Ignition Line Locations



L2F Equipment

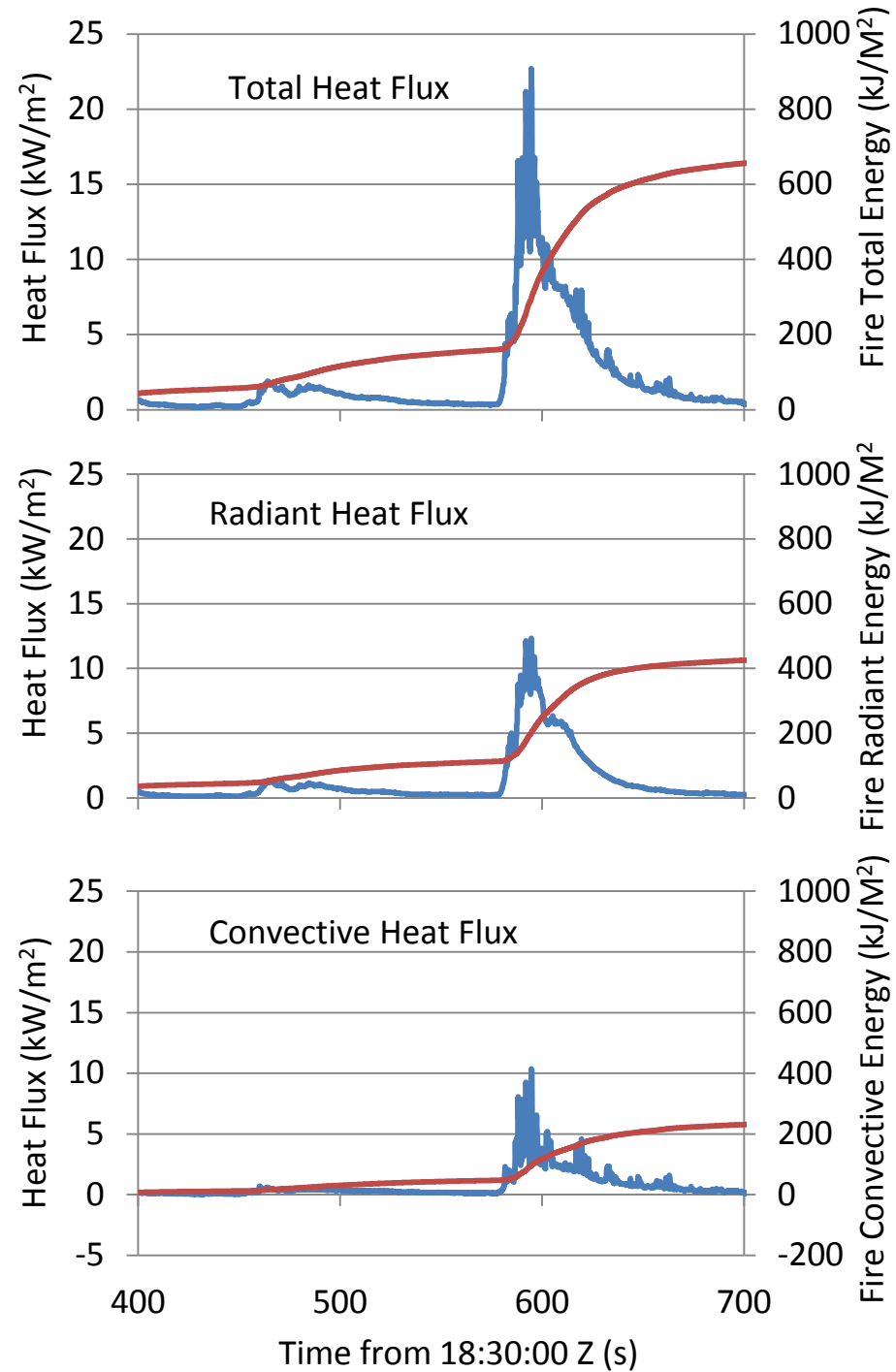
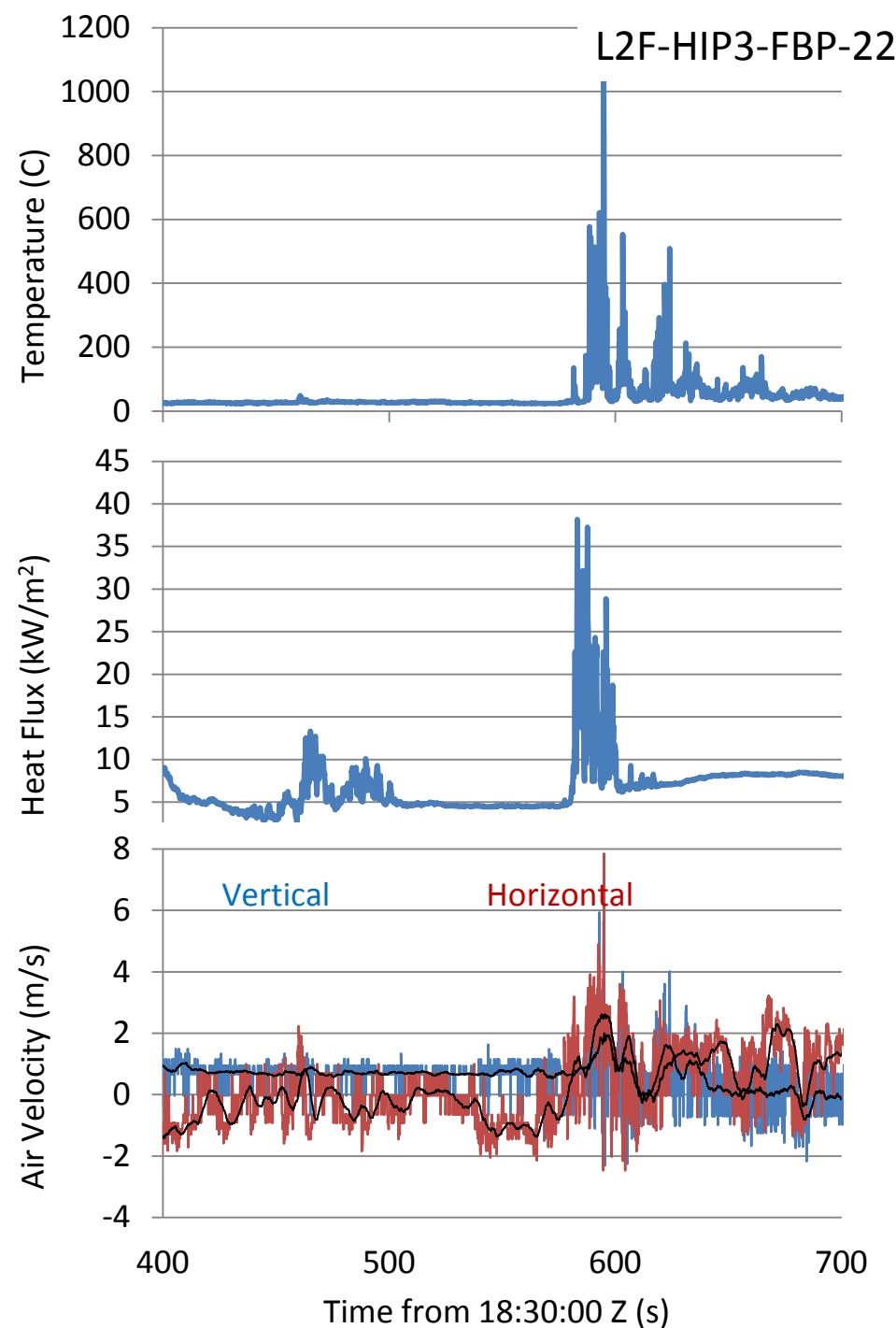
- HIP Corners
- ▲ Anemometer
- CameraPkg
- ▲ FBP
- ⊕ Ignition Line
- ⊗ SODAR
- ⊗ Thermocouple

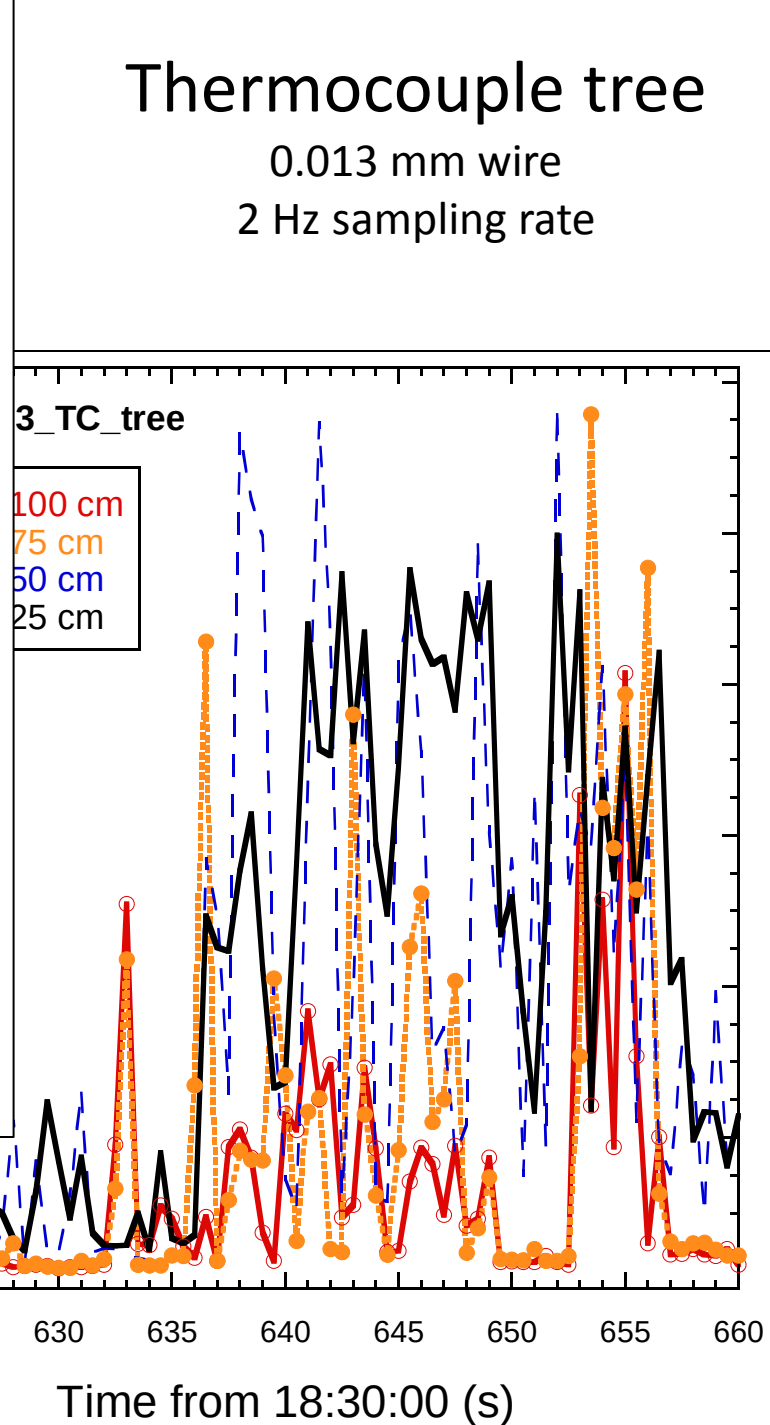
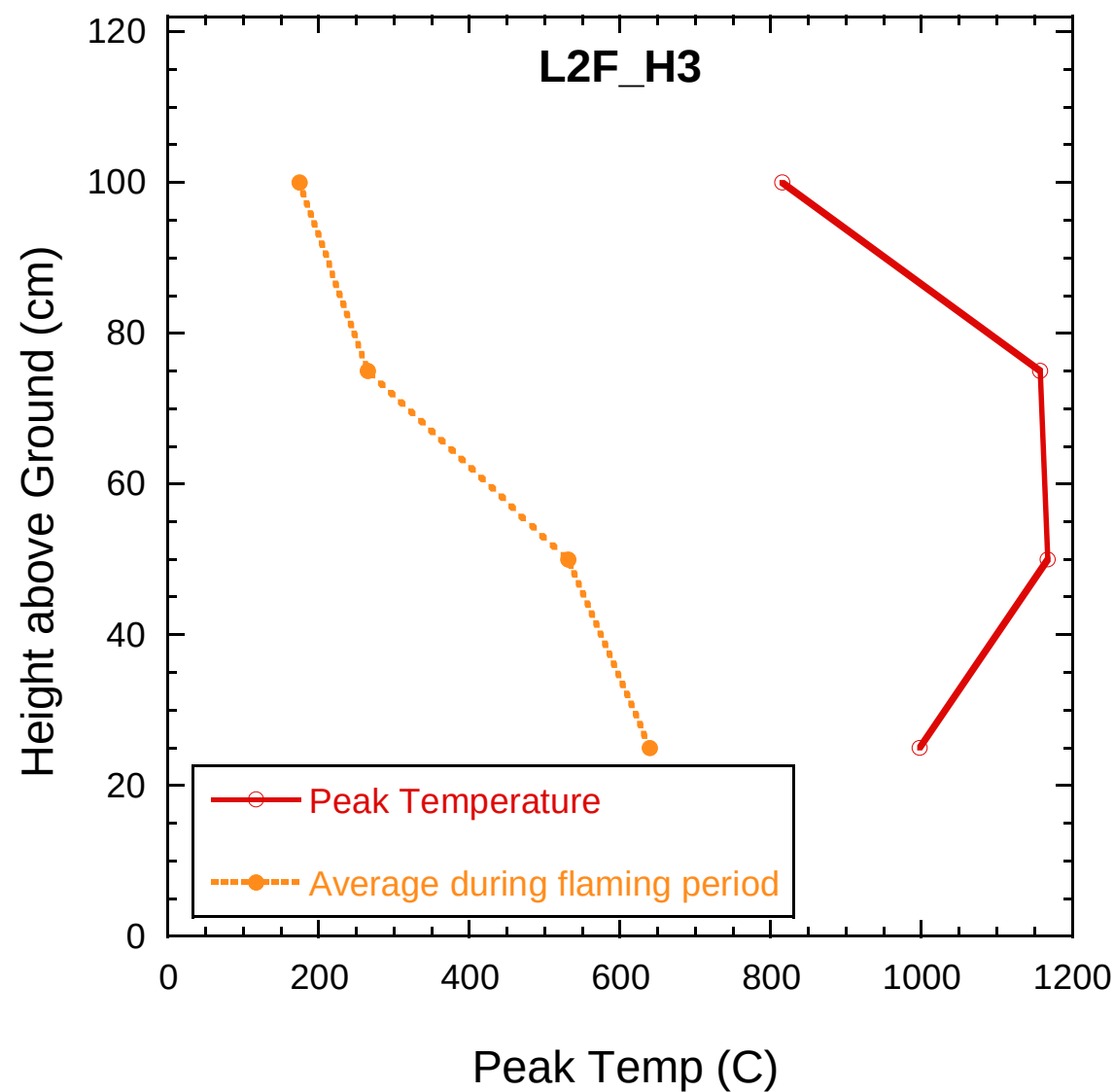
0 3 6 12 18 24 Meters



250 500 750 1,000 Meters







How do these fires compare to others?

Peak Radiative Heating

Crown fires 180-300 kW/m²

Brush Fires 100-130 kW/m²

Grass Fires 20-115 kW/m²

Unit S5 4-5 kW/m²

Unit L2F HIP3 5-12 kW/m²

Peak Convective Heating

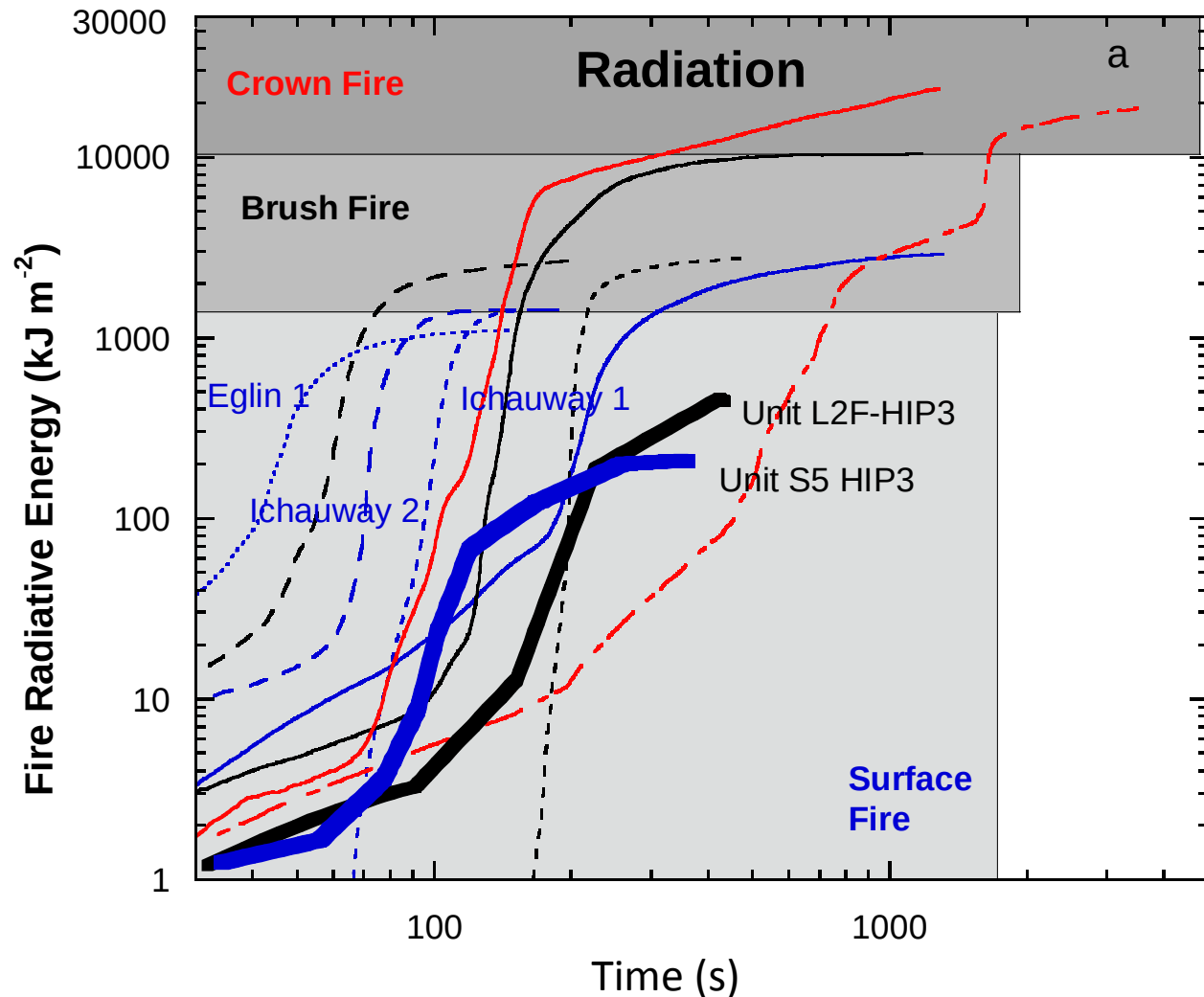
Crown fires 30-40 kW/m²

Brush Fires 20-100 kW/m²

Grass Fires 13-140 kW/m²

Unit S5 4-5 kW/m²

Unit L2F HIP3 5-12 kW/m²



Fire Behavior Data collected by Missoula Group

A photograph of a large fire burning in a field of dry brush and trees. The fire is intense, with bright orange and yellow flames rising from the ground. Thick white smoke is rising from the fire, partially obscuring the background. The sky is overcast and grey. The overall scene is one of a controlled burn or a wildfire in progress.

Surface Wind- More than 300 anemometer deployments

Air velocity and direction from 30 to 200+m on all fires

Fire Videos-More than 100 videos

Fire energy release, air flow, and temperature data sets—more than 110

Thanks to:

Joint Fire Science Program

Eglin Air Force Base

