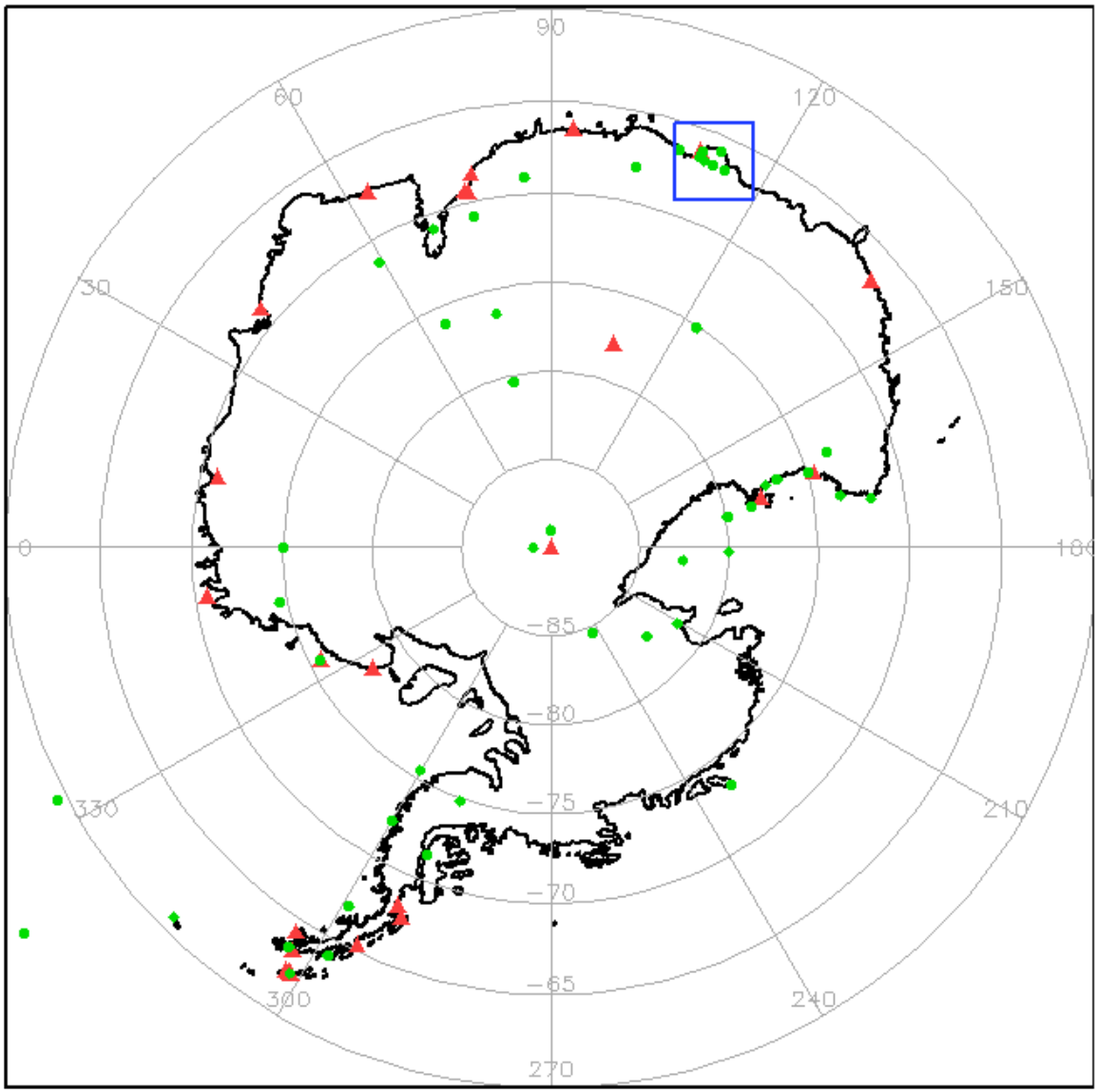
The Casey Automatic Weather Station (AWS) Network.



Dr. Neil Adams Australian Bureau of Meteorology.

Boulder June 2006

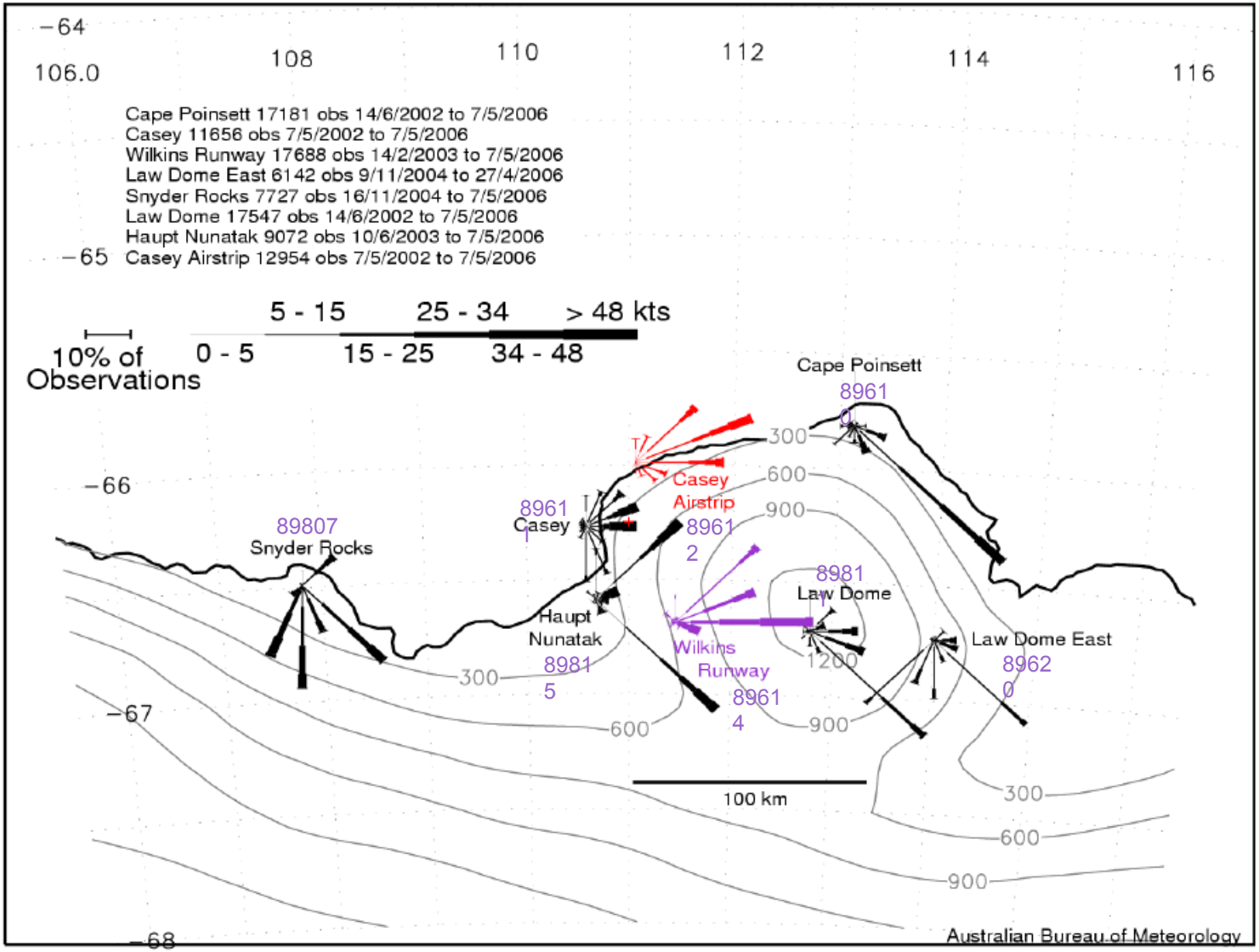
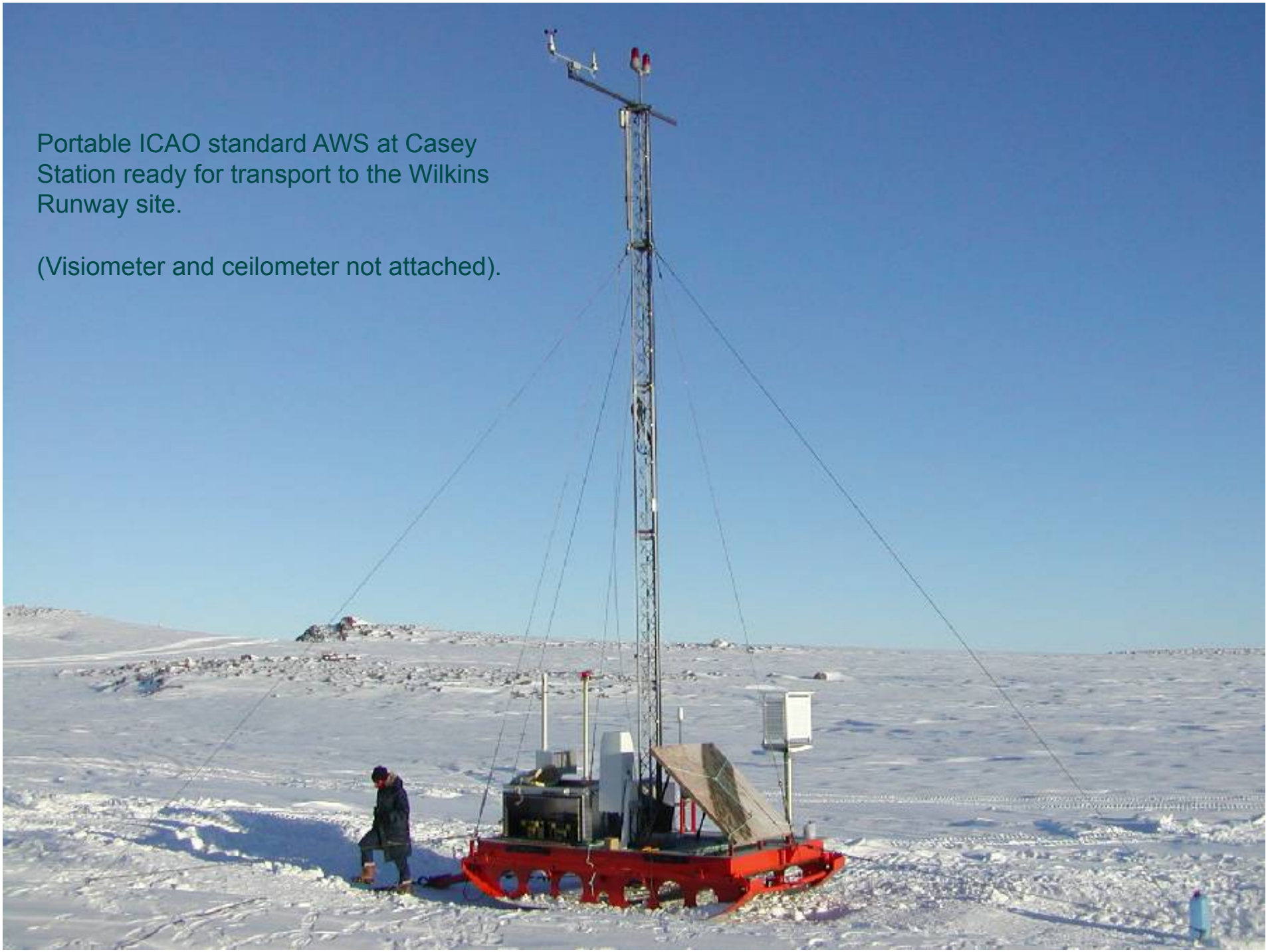

−64
106.0
108
110
112
114
116
Cape Poinsett 17181 obs 14/6/2002 to 7/5/2006
Casey 11656 obs 7/5/2002 to 7/5/2006
Wilkins Runway 17688 obs 14/2/2003 to 7/5/2006
Law Dome East 6142 obs 9/11/2004 to 27/4/2006
Snyder Rocks 7727 obs 16/11/2004 to 7/5/2006
Law Dome 17547 obs 14/6/2002 to 7/5/2006
Haupt Nunatak 9072 obs 10/6/2003 to 7/5/2006
−65 Casey Airstrip 12954 obs 7/5/2002 to 7/5/2006
5 - 15
25 - 34
> 48 kts
10% of Observations
0 - 5
15 - 25
34 - 48
Cape Poinsett
89610
300
600
900
−66
Casey Airstrip
89612
8961
Casey
89807
Snyder Rocks
Haupt Nunatak
89815
8981
Law Dome
89810
Wilkins Runway
89614
8961
1200
Law Dome East
89620
300
600
900
−67
100 km
300
600
900
−68
Australian Bureau of Meteorology


Photo: Jeremy Smith

Dismantling the Cape Poinsett AWS
for relocation on snow surface after 22 months of accumulated snow.



Portable ICAO standard AWS at Casey Station ready for transport to the Wilkins Runway site.

(Visiometer and ceilometer not attached).

Summary Points.

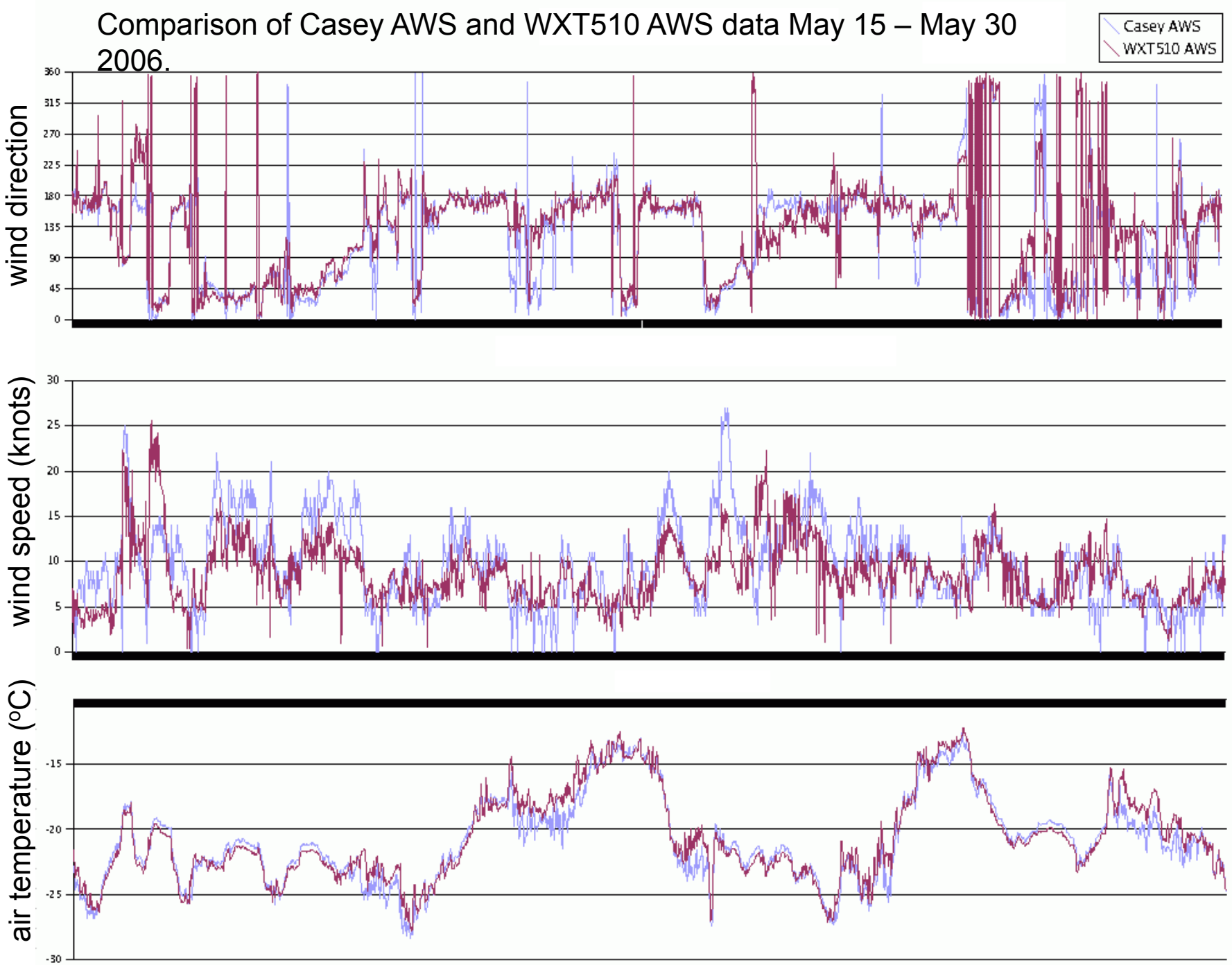
1. The AWS network is very expensive, in both the cost of each unit and
in the logistical cost of site visits and maintenance.

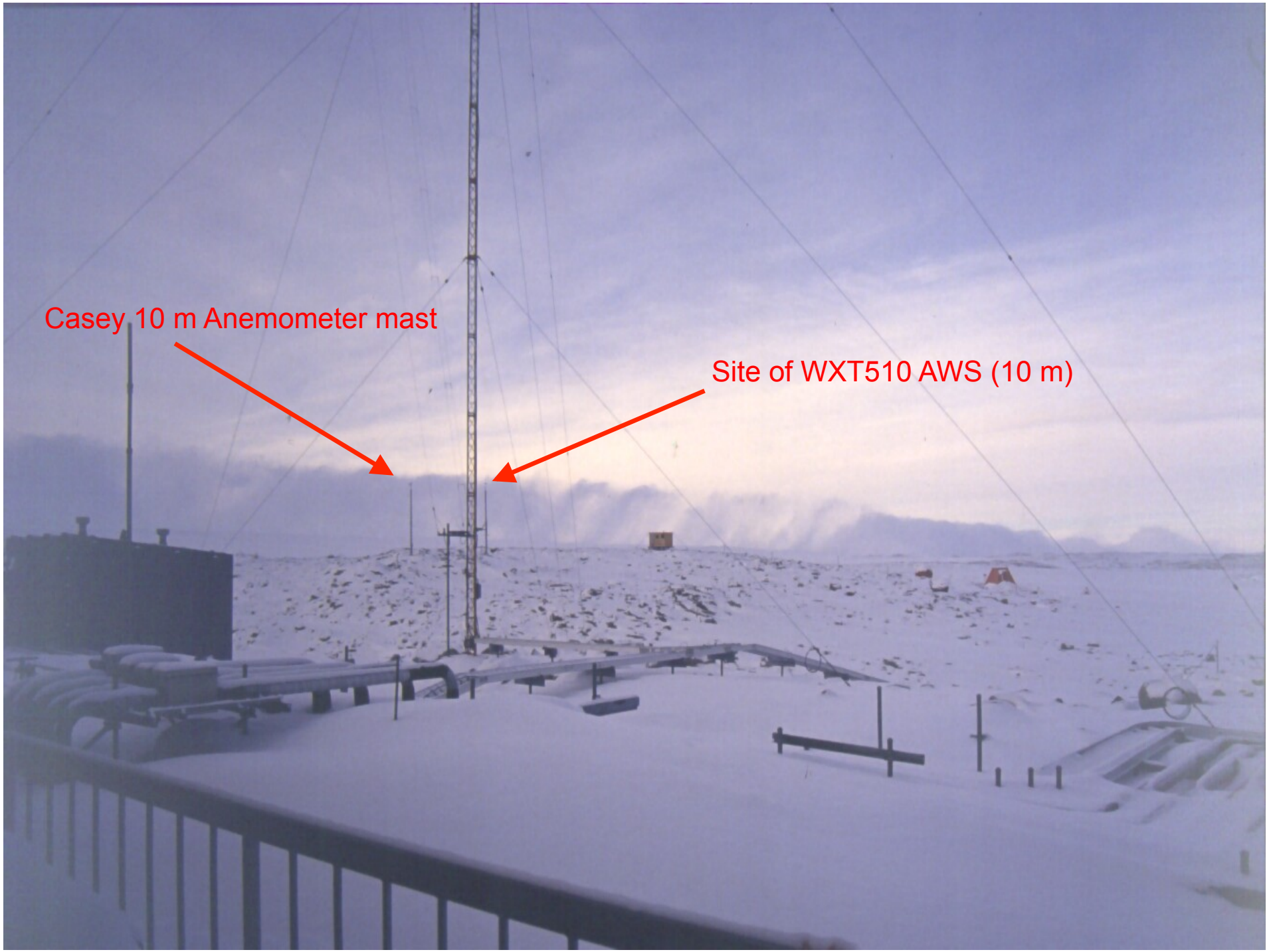
2. The excessive snow accumulation around Law Dome exacerbates the problem. Placing sled based AWS's at all sites is not practical, nor effective in areas of excessive accumulation.

3. The Bureau and the AAD are currently trialling an inexpensive AWS sensor package that is cheap enough to replace rather than maintain.

Vaisala WXT510 employing the Vaisala WINDCAP Ultrasonic Wind Sensor,
along with RAINCAP, BAROCAP, THERMOCAP and HUMICAP Sensors.

Comparison of Casey AWS and WXT510 AWS data May 15 – May 30 2006.




Casey 10 m Anemometer mast
Site of WXT510 AWS (10 m)

Ongoing testing of the WXT510 unit at Casey, looking at:

1. Accuracy,
2. Frosting/icing issues.

Possible installation at remote AWS sites as older units fail or become buried.

Ongoing study of AWS data with the aim of better understanding
the Casey area climatology.

Comparison of AWS climatology with NWP climatology.

(If NWP systems capture the weather regimes in the area accurately then may well be able to reduce the network density without compromising the analysis and forecasting effort).