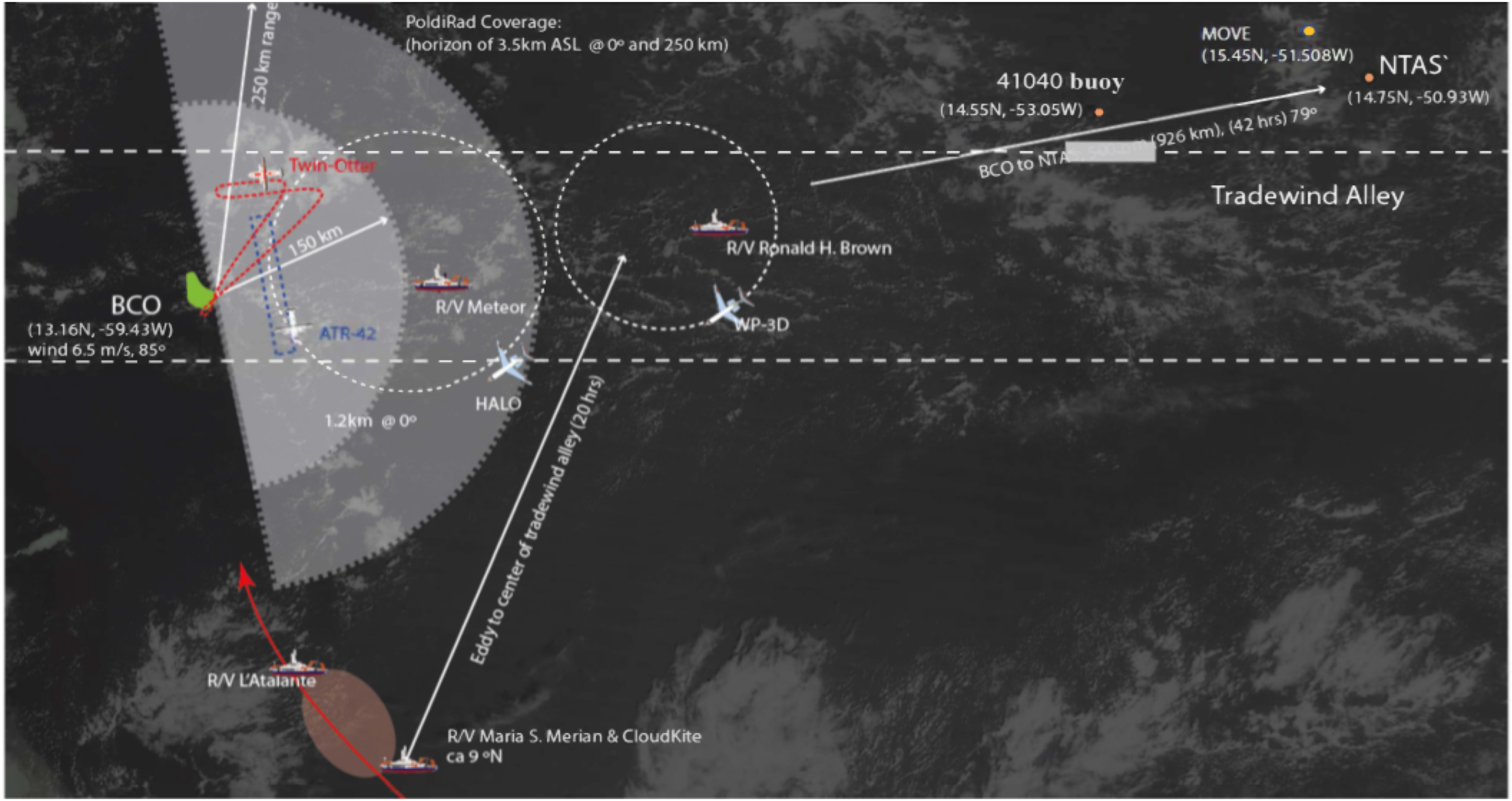

PoldiRad Coverage:
(horizon of 3.5km ASL @ 0° and 250 km)
250 km range
MOVE
(15.45N, -51.508W)
NTAS`
(14.75N, -50.93W)
41040 buoy
(14.55N, -53.05W)
BCO to NTA (926 km), (42 hrs) 79°
Tradewind Alley
Twin-Otter
150 km
R/V Ronald H. Brown
R/V Meteor
BCO
(13.16N, -59.43W)
wind 6.5 m/s, 85°
ATR-42
WP-3D
HALO
1.2km @ 0°
Eddy to center of tradewind alley (20 hrs)
R/V L'Atalante
R/V Maria S. Merian & CloudKite
ca 9 °N

NOAA P-3

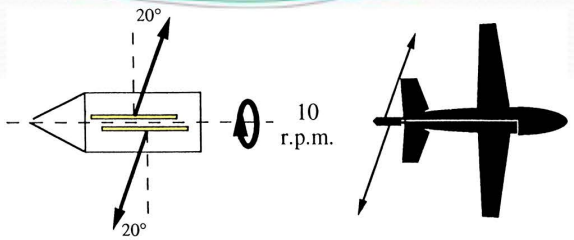

Norman, OK
David.P.Jorgensen@noaa.gov
TA Radar (Doppler)
LF Radar
Other Instrumentation:
• GPS Navigation
• Dropsondes
• Temp, dewpoint, winds
• Satellite data link

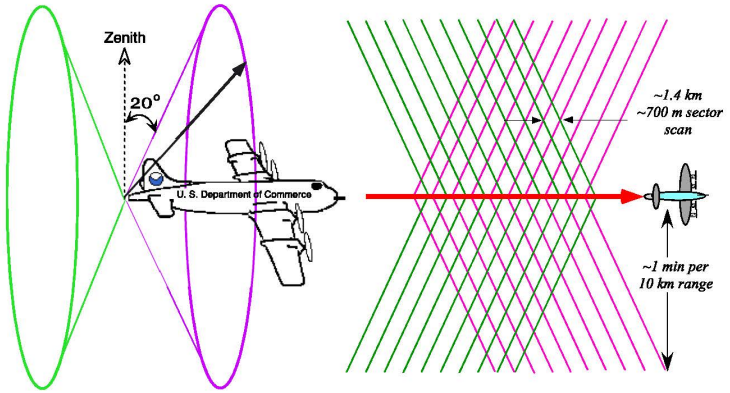
P3 Observing Systems

Table 4.3.1 Summary of NOAA P-3 observing systems for ATOMIC.		
Flight level data	Atmospheric/navigational	Ta, RH, U, Press, motion
Dropsonde	Vaisala RD-41s	Profiles Ta, RH, U, Pressure
AXBT	Ch 12, 14, 16	Profiles ocean temperature (0-800 m)
Tail Doppler Radar	X band Doppler	Volume scans dBZ and velocity
SFMR	5-7 Ghz microwave radiometer	U10 and rainrate
Cloud microphysics	DMT probles	Cloud/precip size spectra
IR radiometer	Heimann KT-15	SST
PSD Cloud radar	W band Doppler	Profiles cloud, precip, vertical motion plus MSS
PSD WSRA	Ku band	2-D wave spectra, MSS, rainrate
OSU Isotopes	Air samples	Water vapor, Oxygen

NOAA P-3 Airborne Doppler Radar

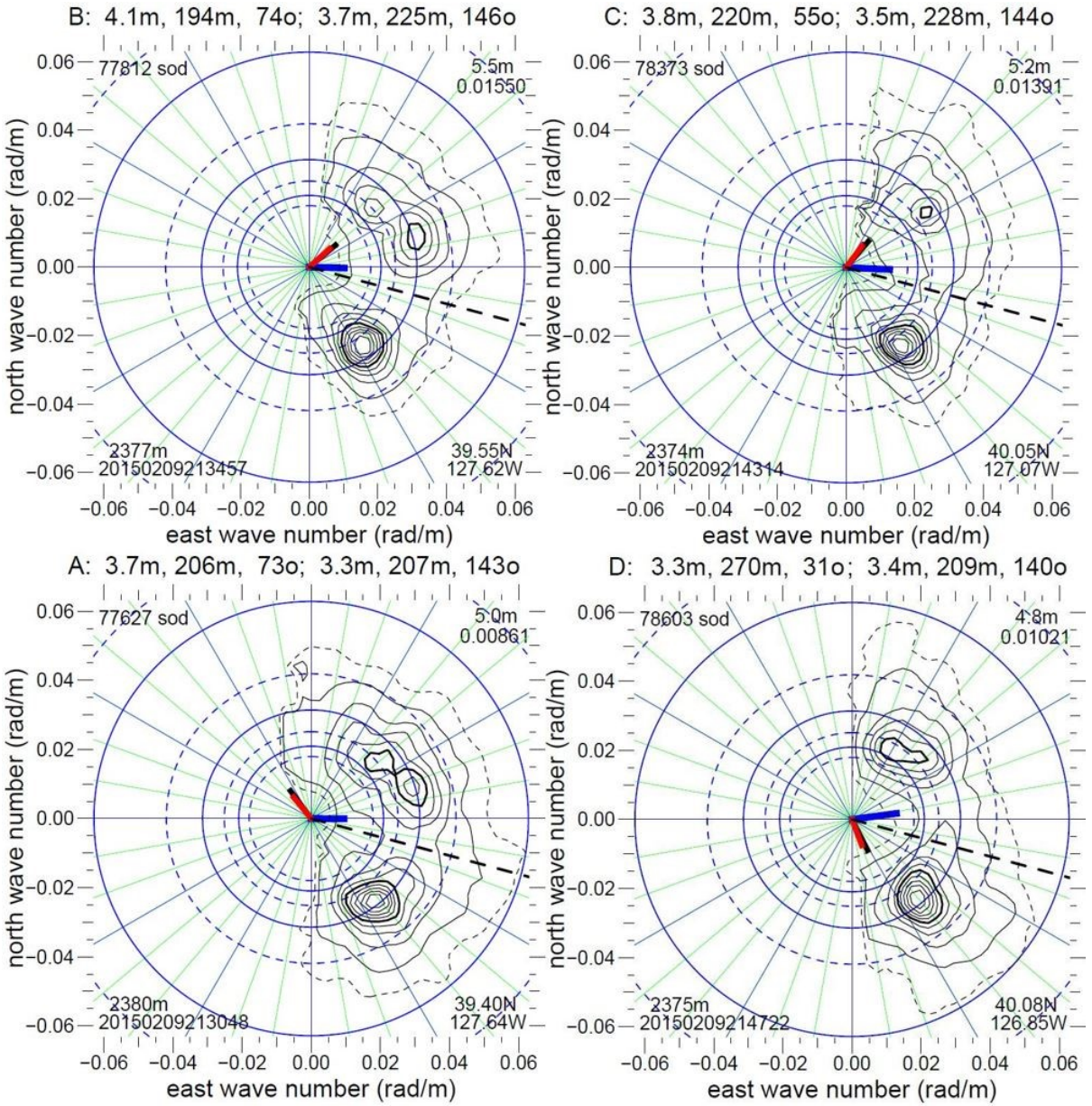
wavelength	3.12 cm (X-band)
PRF	3200/2400 s^{-1}
R_{max}	38 km
V_{max}	±51 m s^{-1}
H beam width	1.35°
V beam width	1.90°



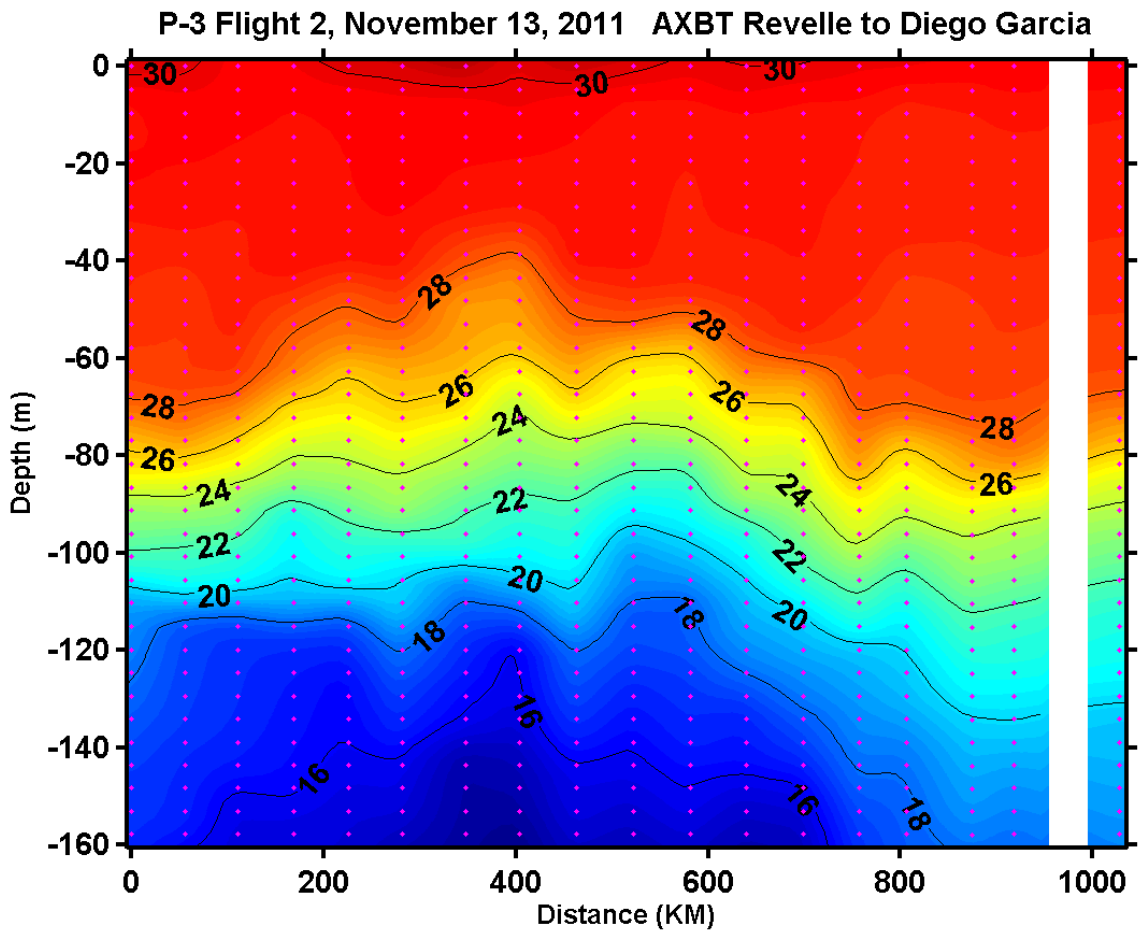


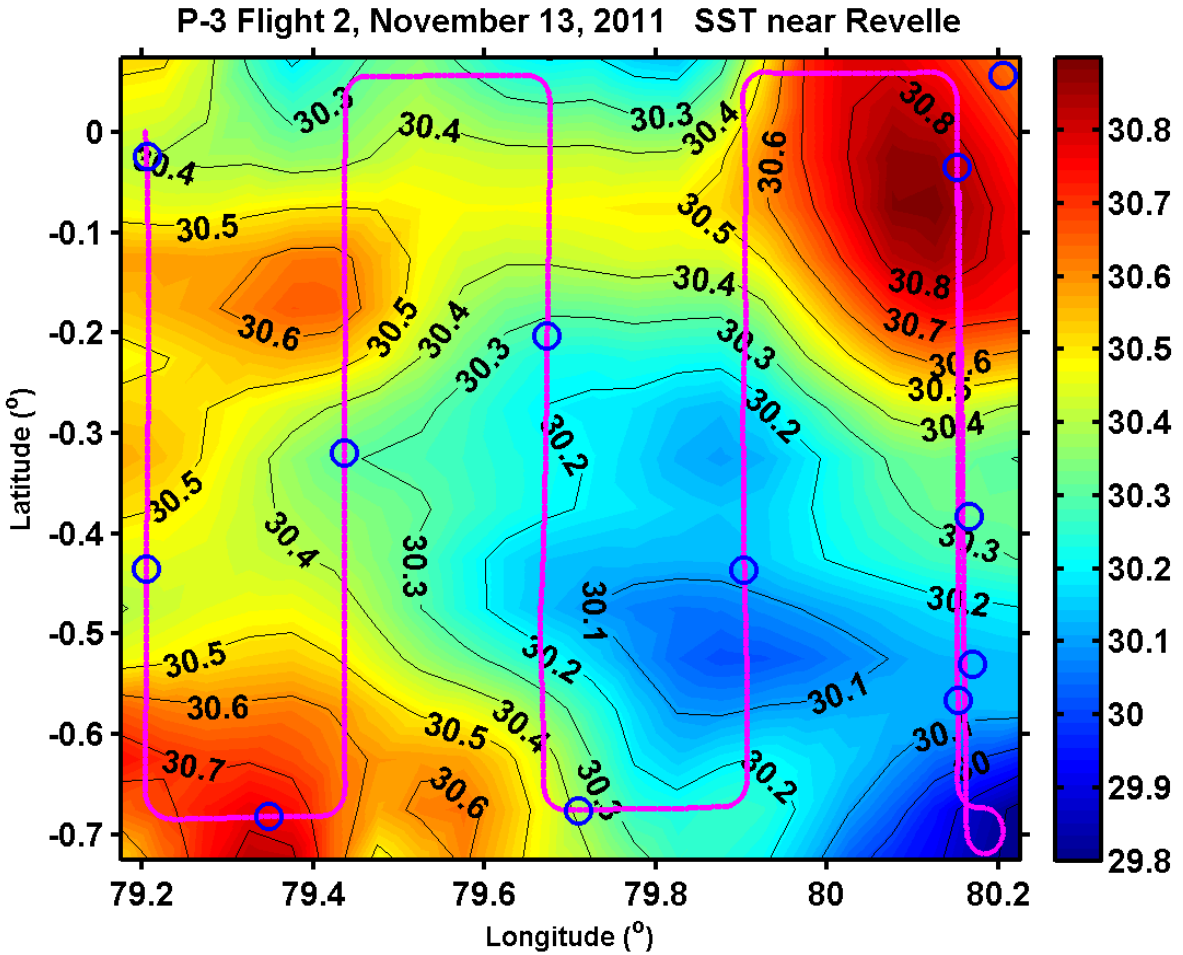
Jorgensen, D. P., T. Matejka, and J. D. DuGranrut, 1996: Multi-beam techniques for deriving wind fields from airborne Doppler radars. *J. Meteor. and Atmos. Physics*, **59**, 83-104

2-D Ocean wavenumber Spectra
U10 15 m/s Alt=3.5 km

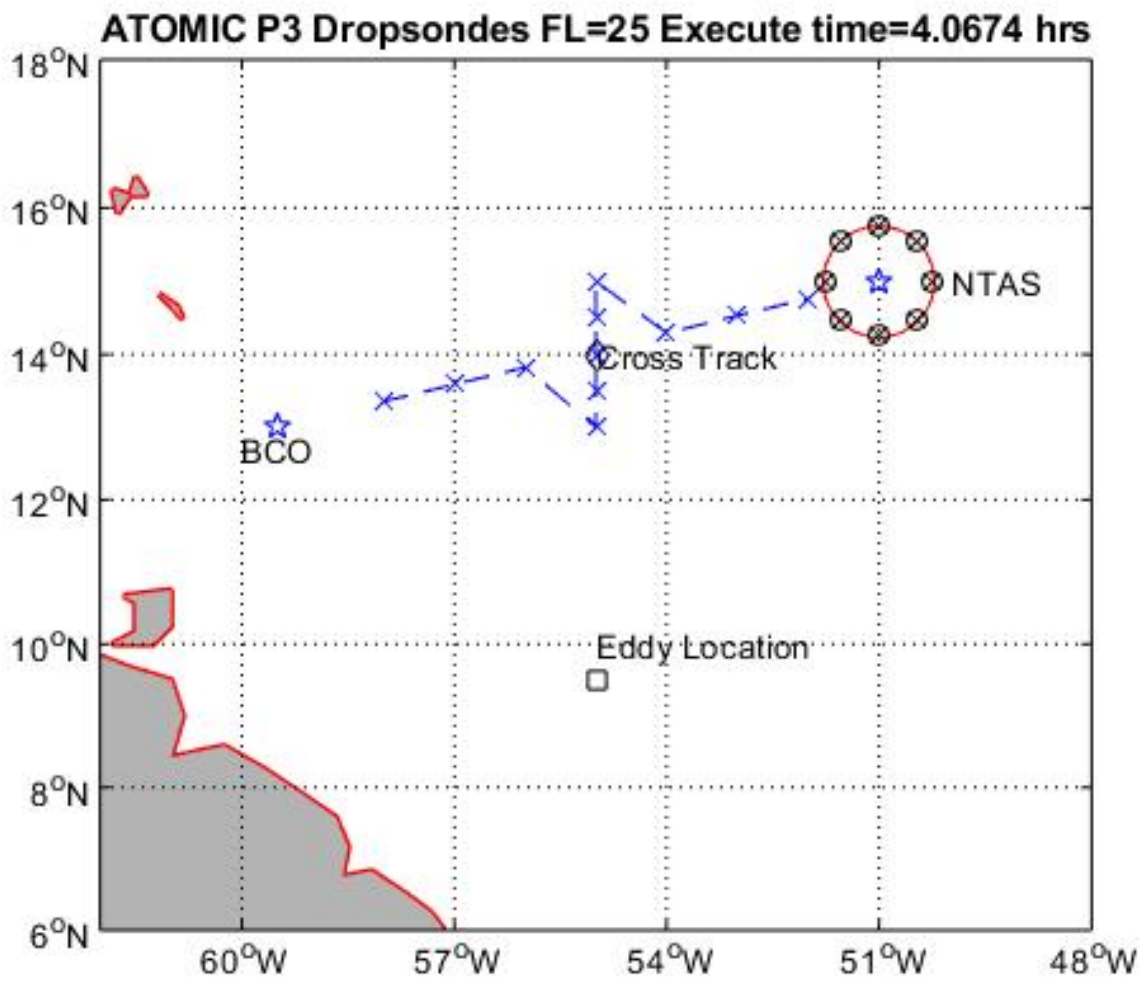


AXBT


P-3 Flight 2, November 13, 2011 AXBT Revelle to Diego Garcia
Depth (m)
Distance (KM)
0
-20
-40
-60
-80
-100
-120
-140
-160
0
200
400
600
800
1000


P-3 Flight 2, November 13, 2011 SST near Revelle
Latitude (°)
Longitude (°)
0
-0.1
-0.2
-0.3
-0.4
-0.5
-0.6
-0.7
79.2
79.4
79.6
79.8
80
80.2
30.8
30.7
30.6
30.5
30.4
30.3
30.2
30.1
30
29.9
29.8

Sample P-3 Flight Modules



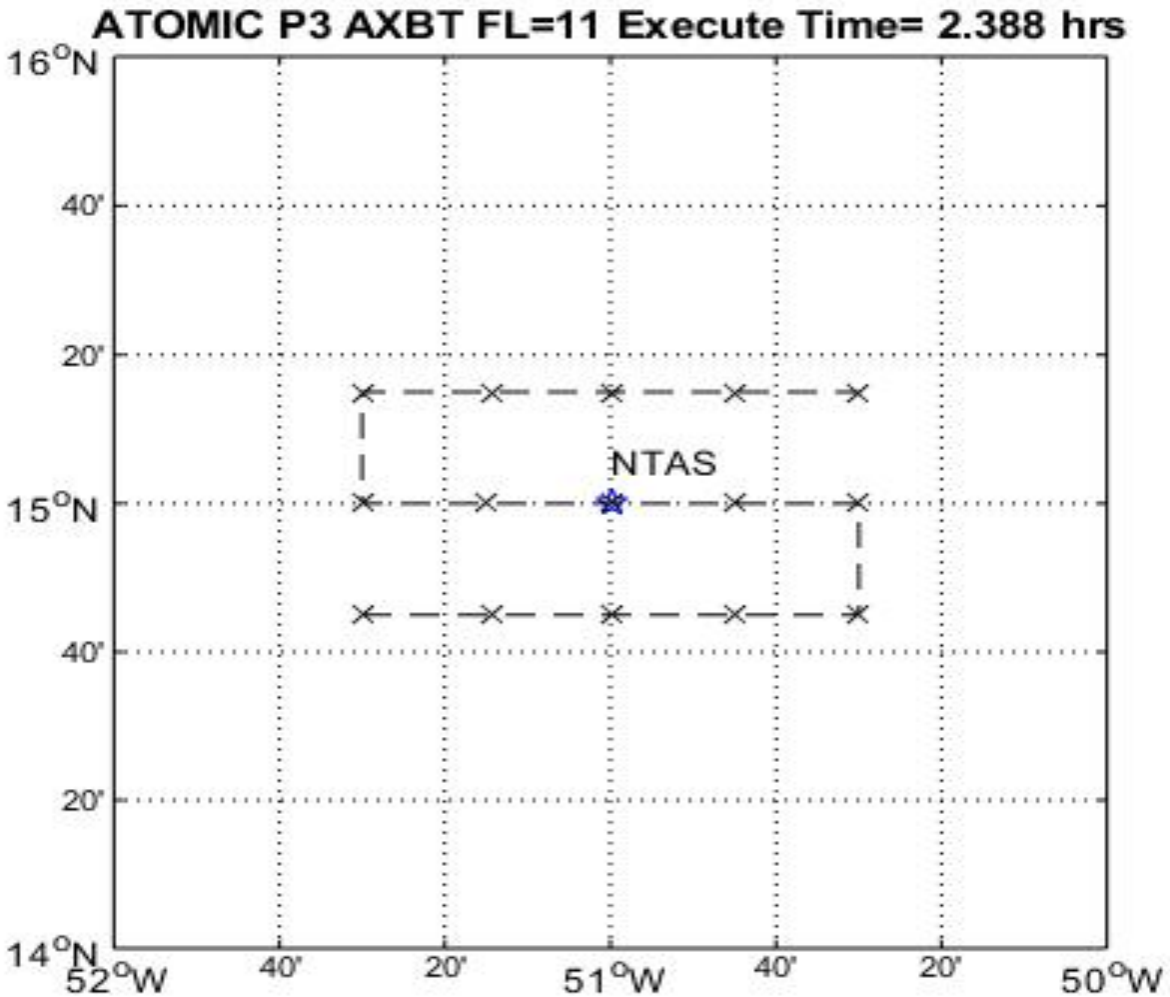


Table 4.3.3. Sample flight modules for P-3				
Long transect	Sonde, Wband, TDR	5-7 km	11 sonde	2.2 hr 1-way
1.5 deg circle	Sonde, Wband, TDR	5-7 km	16 sonde	2.4 hr 2 circles
0.5X1 deg lawn mower	AXBT, Cloud micro, Wband, WSRA, SFMR, TDR, FL	1 km	15 AXBT	2.1 hr
Stepped profile	Cloud micro, FL, Wband, TDR, SFMR, WSRA	0.5 – 3 km	NA	1.5 hr
Direct transit NTAS - BCO	Wband, TDR, FL, WSRA, SFMR	3 km	NA	2.1 hr

P3 Flight Schedule

#	Month	Day	Day of Week	TO Local	Hours	#sondes	#AXBT	Target	Center Lat	Center Lon	Transect	Circle	AXBT	Cloud Profiling	Transect return
1	jan	17	Fr	?	9	30	25	RHB	14.6	-53	7 km	4 km	3 km	multi	4 km
2		20	Mo	8	9	30	25	RHB	14.6	-53	7 km	7 km	3 km	multi	4km
3		23	Th	8	8	0	10	HALO Cirlcle/RHB	13.2	-57.5	4 km	4 km	3 km	multi	4km
4		24	Fr	8	9	30	25	RHB	14.6	-53	7 km	7 km	3 km	multi	4km
5		28	Tu	20	8	40	0	HALO Circle	13.2	-57.5	7 km	7 km 4 circles		multi	4 km
6		30	Th	20	8	40	0	HALO Circle	13.2	-57.5	7 km	7 km 4 circles		multi	4 km
7	feb	1	Sa	20	8	40	0	HALO Circle	13.2	-57.5	7 km	7 km 4 circles		multi	4 km
8		5	We	8	9	30	25	RHB	13.9	-55	7 km	7 km	3 km	multi	4km
9		7	Fr	8	9	30	25	RHB	13.9	-55	7 km	7 km	3 km	multi	4km
10		10	Mo	8	9	30	25	RHB	13.9	-55	7 km	7 km	3 km	multi	4km
11		12	We	8	9	30	25	RHB	13.9	-55	7 km	7 km	3 km	multi	4km
					95	330	185								