Brown-0115 (15 Jan 2020)

Trish Quinn (Chief Scientist)

1. Objective

Sat by old NTAS buoy and conducted CTD casts for ship-buoy comparison. Triangulated the anchor as it had moved during a storm last year. Kept the bow into the wind throughout for successful atmospheric measurements. Radiosonde launches every 4 hours.

2. Synoptic Situation

Winds have decreased to a steady 20 kts. Fewer white caps today. Sea state of 6 to 8.

Field	Quantity	Notes
RH	(75.7,3.8)	18 m asl
Tair	(25.4,0.43)	18 m asl
Wind	(10.2, 1.9 m/s)	18 m asl
SST	(26.4,0.18)	5 m bsl
Salinity	(35.5,0.21)	5 m bsl
Precipitable water		
CN	(195,10)	18 m asl
CCN	(100,40@0.3%)	18 m asl
Dust	No indication	
Trade Inversion		
Cloud Obs (low/mid/high)	08:00 Local	Cu,St/As/Ci
Coverage (low/mid/high)	2/8,1/8,1/8	
Cloud Obs (low/mid/high)	12:00 Local	Sc/Ac/Ci
Coverage (low/mid/high)	2/8,2/8,1/8	
Cloud Obs (low/mid/high)	16:00 Local	Cu,St/Ac/na
Coverage (low/mid/high)	4/8,2/8,0/8	

3. Cruise-day Elements

Element	Position [°N, °W]	Time [UTC]	Notes
CTD cast 1	14.821N, 51.054W	12:00	250 m
CTD cast 2	14.824N, 51.053W	16:00	250 m
CTD cast 3	14.809N,50.958W	20:00	5000 m

4. Instrument Status

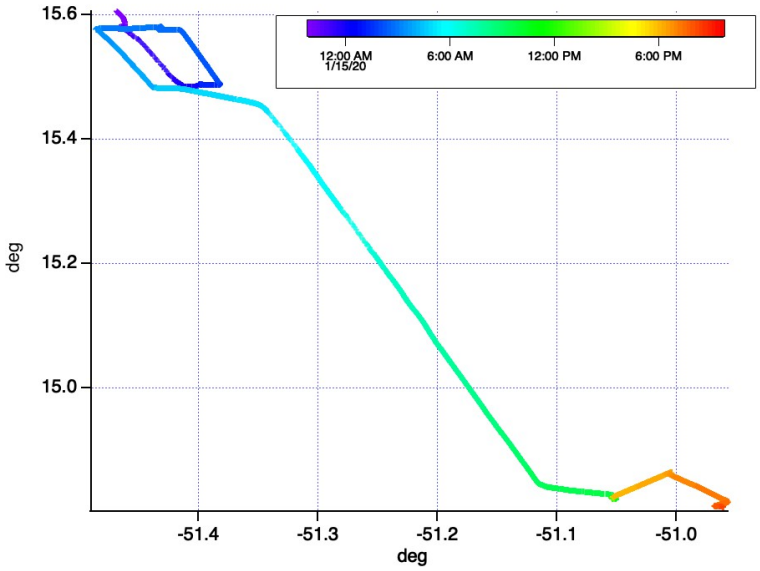
Cloud radar, microwave radiometer, and Picarro isotope instrument are not operational and haven't been since the beginning of the cruise. Microwave radiometer will remain broken throughout ATOMIC. Cloud radar will be worked on during the Bridgetown inport.

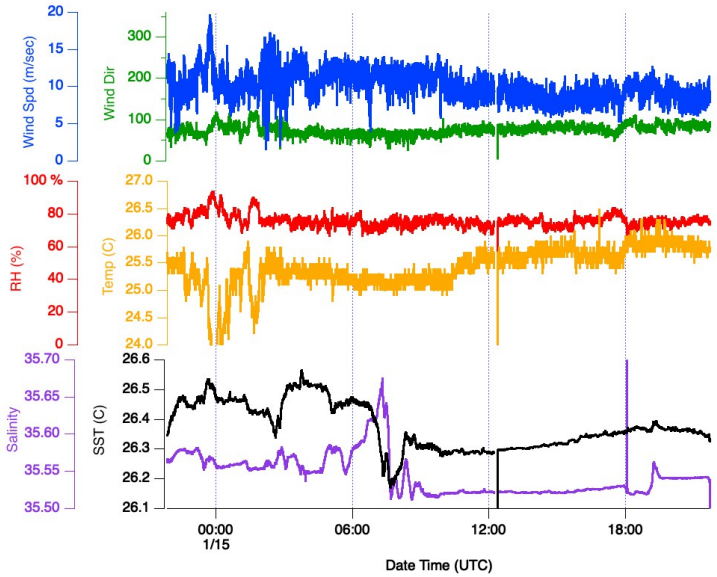
5. Outlook

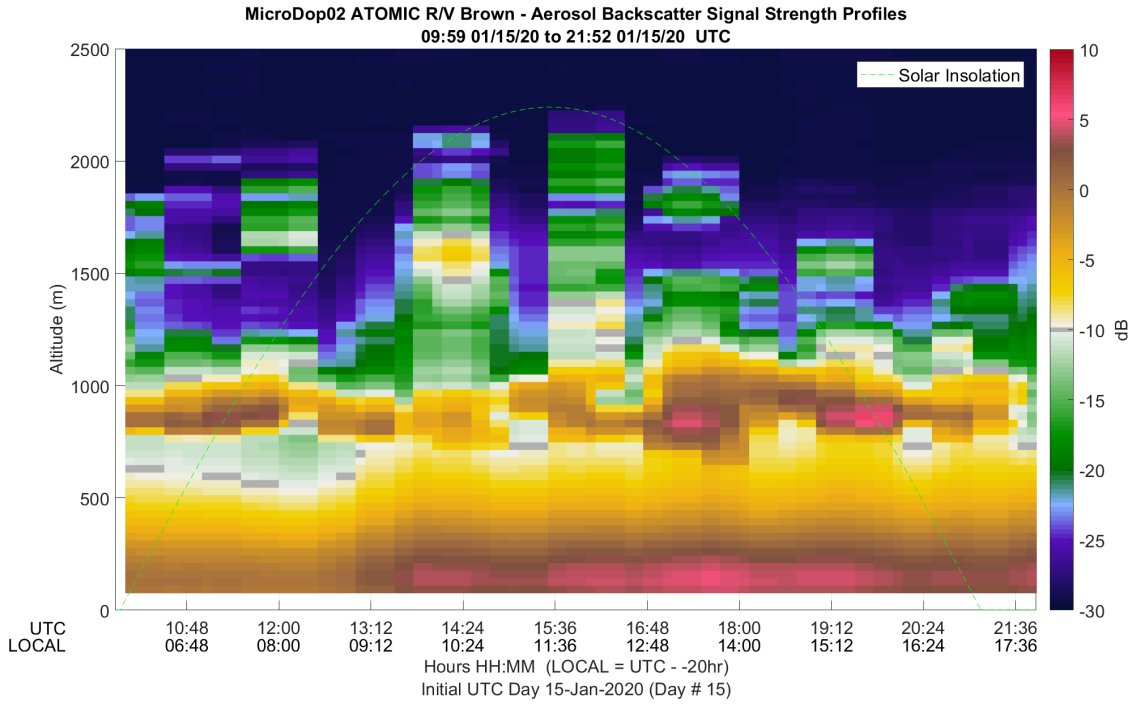
Tomorrow we will recover the old NTAS buoy. We currently are planning on staying in the NTAS region at least through the first P3 flight on Friday (Jan 17).

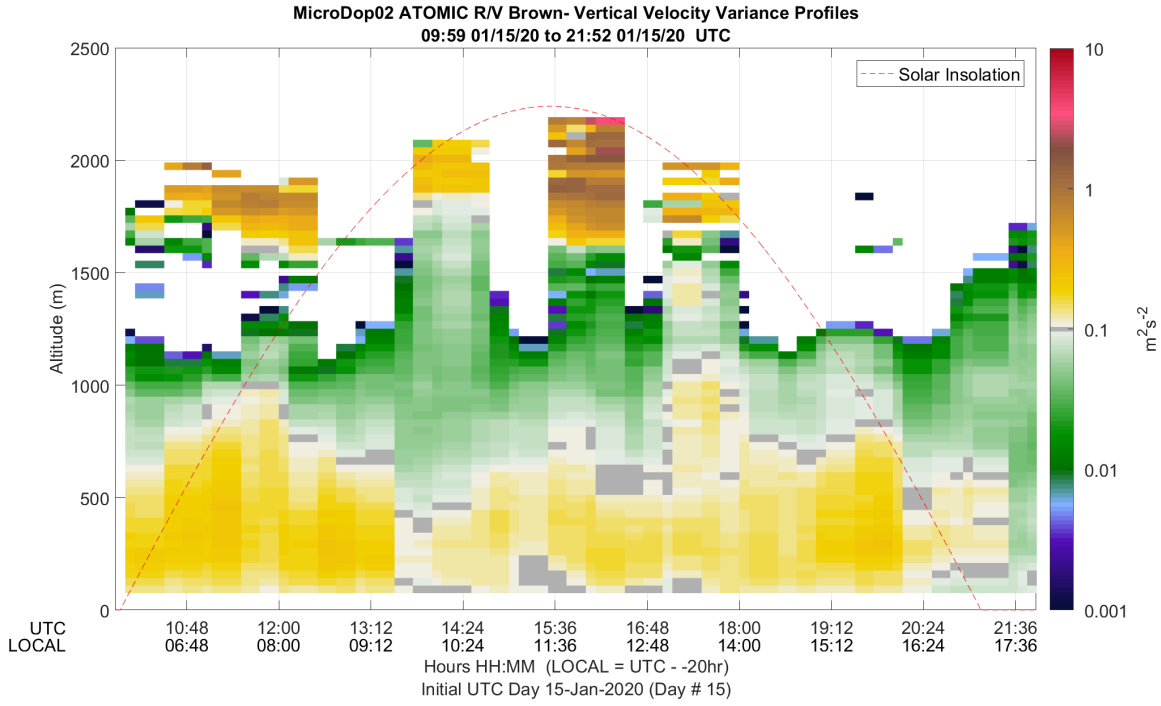
6. Figures

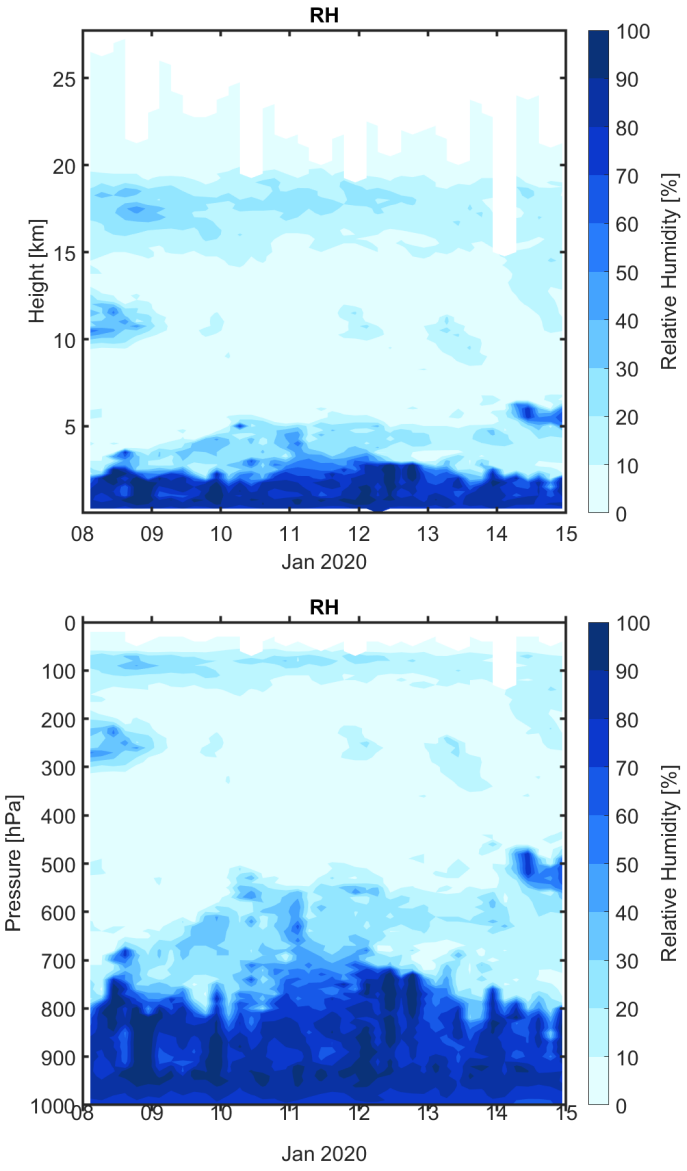
Today's track:




Wind Spd (m/sec)
20
15
10
5
0
Wind Dir
300
200
100
0
RH (%)
100 %
80
60
40
20
0
Temp (C)
27.0
26.5
26.0
25.5
25.0
24.5
24.0
Salinity
35.70
35.65
35.60
35.55
35.50
SST (C)
26.6
26.5
26.4
26.3
26.2
26.1
00:00
1/15
06:00
12:00
18:00
Date Time (UTC)


MicroDop02 ATOMIC R/V Brown - Aerosol Backscatter Signal Strength Profiles
09:59 01/15/20 to 21:52 01/15/20 UTC
Solar Insolation
Altitude (m)
2500
2000
1500
1000
500
0
10
5
0
-5
-10
-15
-20
-25
-30
dB
UTC
LOCAL
10:48
06:48
12:00
08:00
13:12
09:12
14:24
10:24
15:36
11:36
16:48
12:48
18:00
14:00
19:12
15:12
20:24
16:24
21:36
17:36
Hours HH:MM (LOCAL = UTC - -20hr)
Initial UTC Day 15-Jan-2020 (Day # 15)


MicroDop02 ATOMIC R/V Brown- Vertical Velocity Variance Profiles
09:59 01/15/20 to 21:52 01/15/20 UTC
Solar Insolation
Altitude (m)
2500
2000
1500
1000
500
0
10
1
0.1
0.01
0.001
m2s-2
UTC
LOCAL
10:48
06:48
12:00
08:00
13:12
09:12
14:24
10:24
15:36
11:36
16:48
12:48
18:00
14:00
19:12
15:12
20:24
16:24
21:36
17:36
Hours HH:MM (LOCAL = UTC - -20hr)
Initial UTC Day 15-Jan-2020 (Day # 15)


RH
Height [km]
25
20
15
10
5
08
09
10
11
12
13
14
15
Jan 2020
100
90
80
70
60
50
40
30
20
10
0
Relative Humidity [%]
RH
Pressure [hPa]
0
100
200
300
400
500
600
700
800
900
1000
08
09
10
11
12
13
14
15
Jan 2020
100
90
80
70
60
50
40
30
20
10
0
Relative Humidity [%]

Jan 15, 2020 10:45 UTC