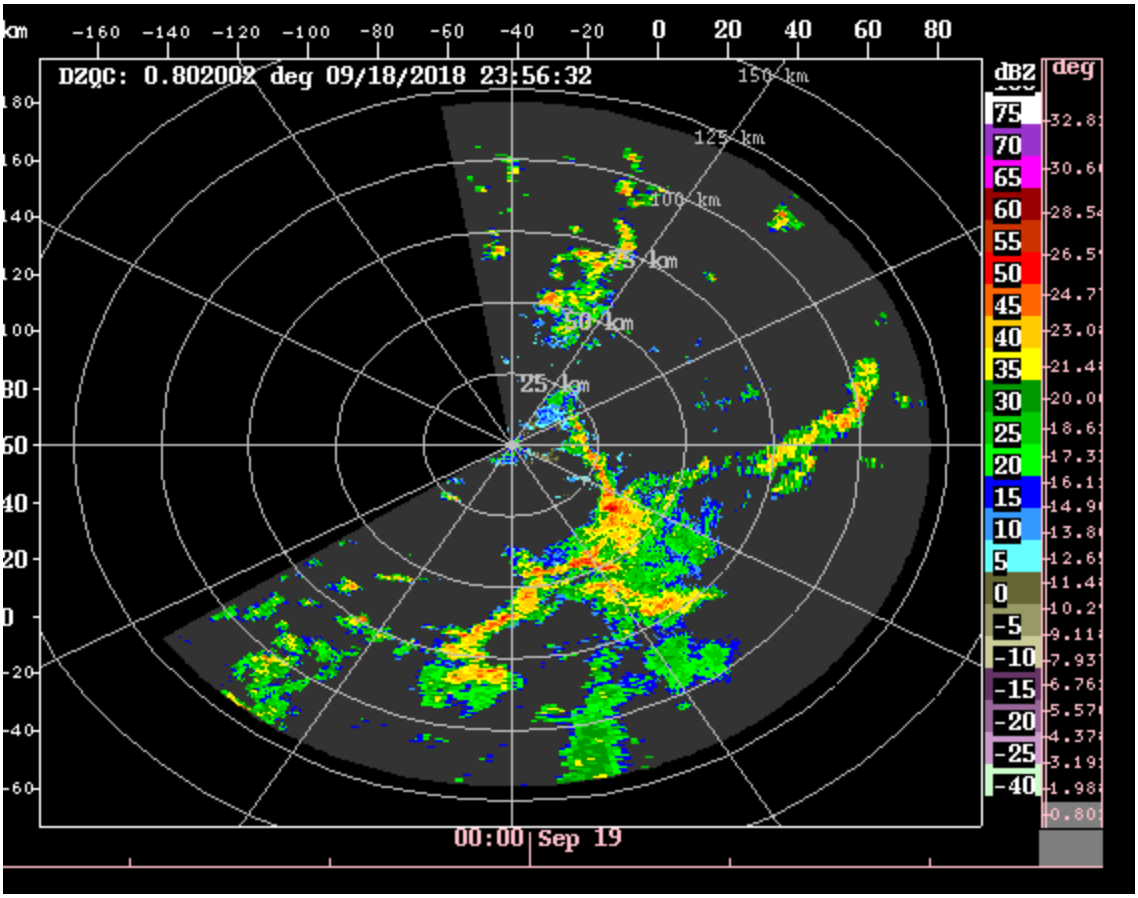
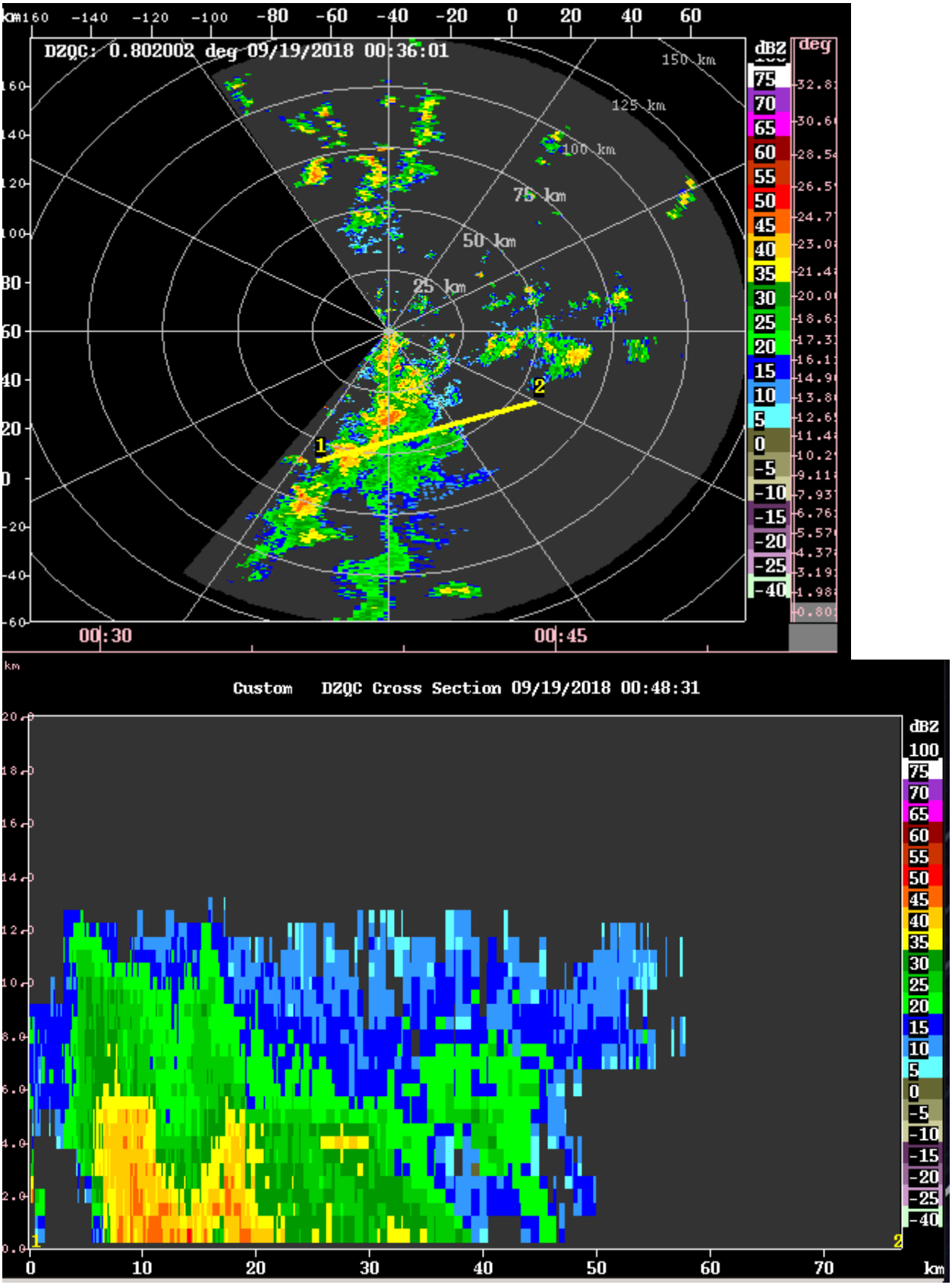
20180919
Morning Shift (9A-1P L)
Ben Trabing

0000 – Convection located just east of ship and a broader area of stratiform precipitation is located towards the southeast. Near scanning strategy set.



0040 – Band of stronger storms are traveling westward just south of the ship. Ship experiences some light precipitation. The MCS is shown below with a cross section.



0240 – Ship turned and the rest of the convection is obscured by the bridge. A few showers are located to the north but are not reaching above 6 km.

0400 – radar stopped for maintenance check.

Afternoon Shift (1P-9P L)
Weixin Xu

0415 – Resume radar operation. A surveillance scan is run to check out convection within 300 km. Seems convective activity calms down now.

0430 – Run in the FAR PPI mode. Some scattered convection is around 75-100 km to the N-NE of the ship.

1045 – Switch to SURVEILLANCE plus FAR_S mode, as not any convection is within the radar domain.

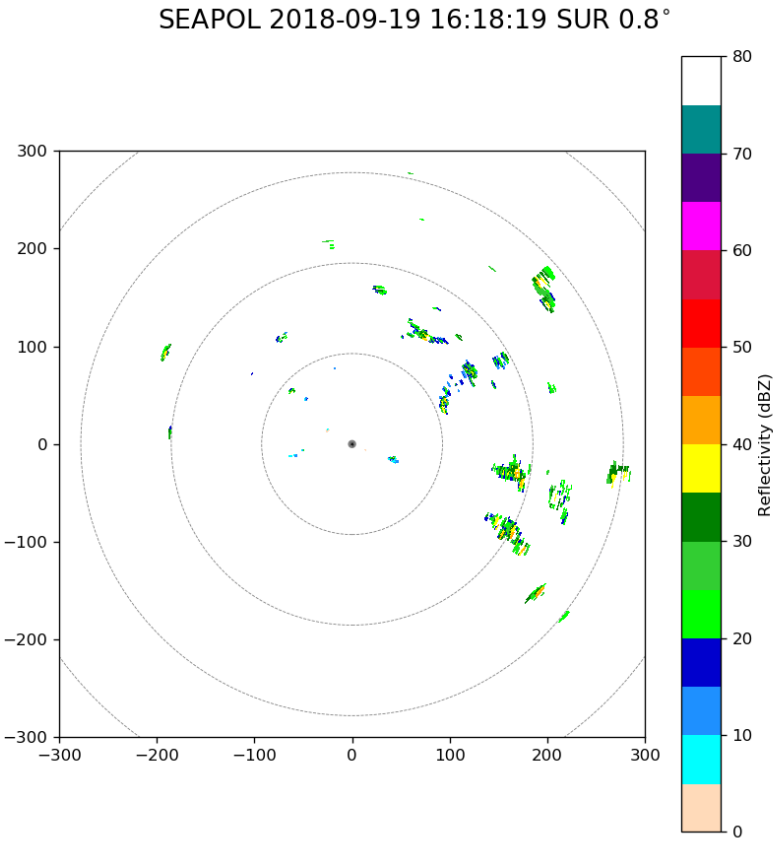
Night Shift (9P – 4A L)
Chelsea Nam

1200 – Keep the FAR_S mode for there are no convection in the domain.

1500 – Still suppressed so continue FAR_S mode.

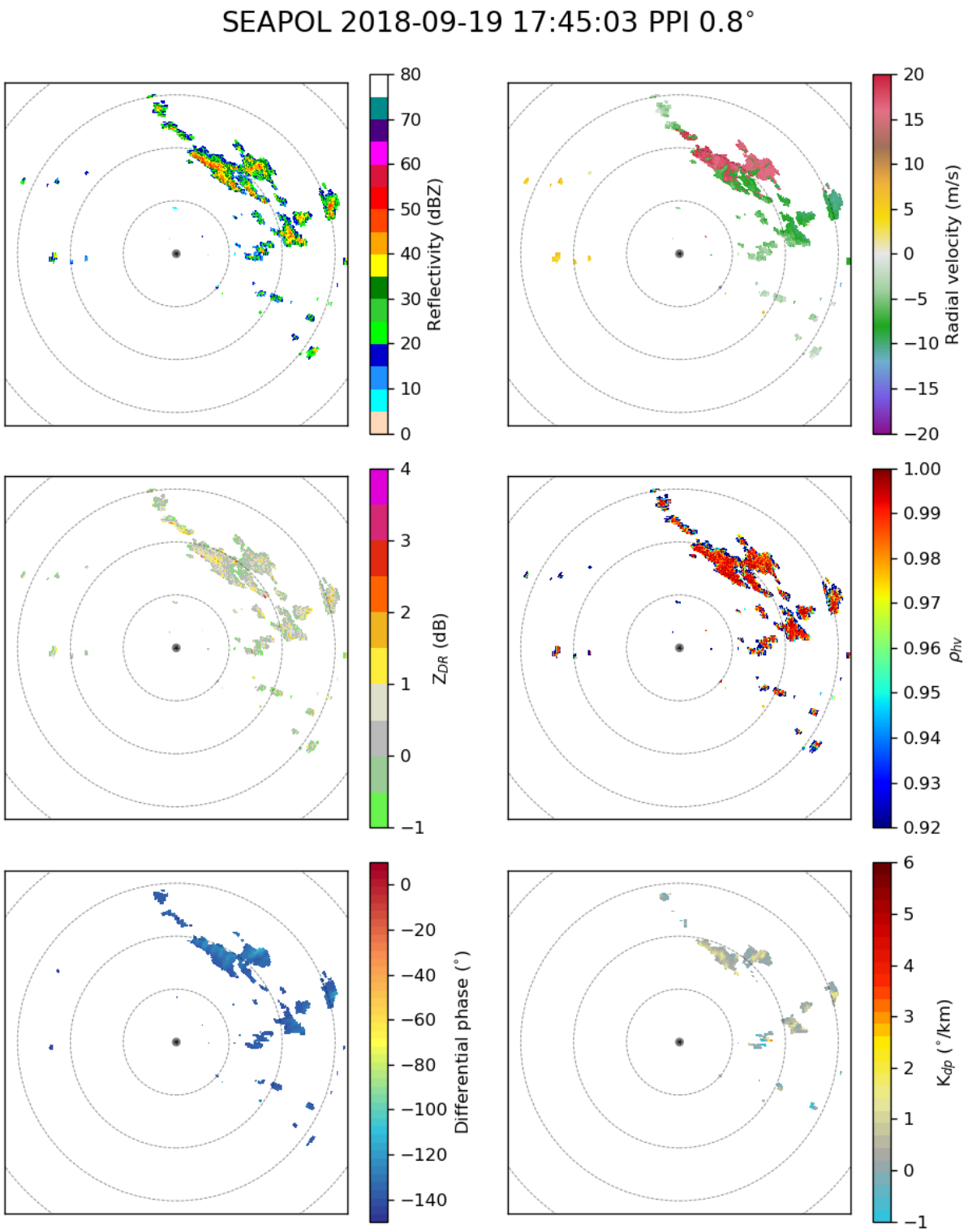
1505 – Surveillance mode shows there are some isolated convective cells far northeast beyond 150 km range. Will have FAR_S plus Surveillance mode scheduled from now on.

1615 – Some shallow convection in NE from Surveillance domain.

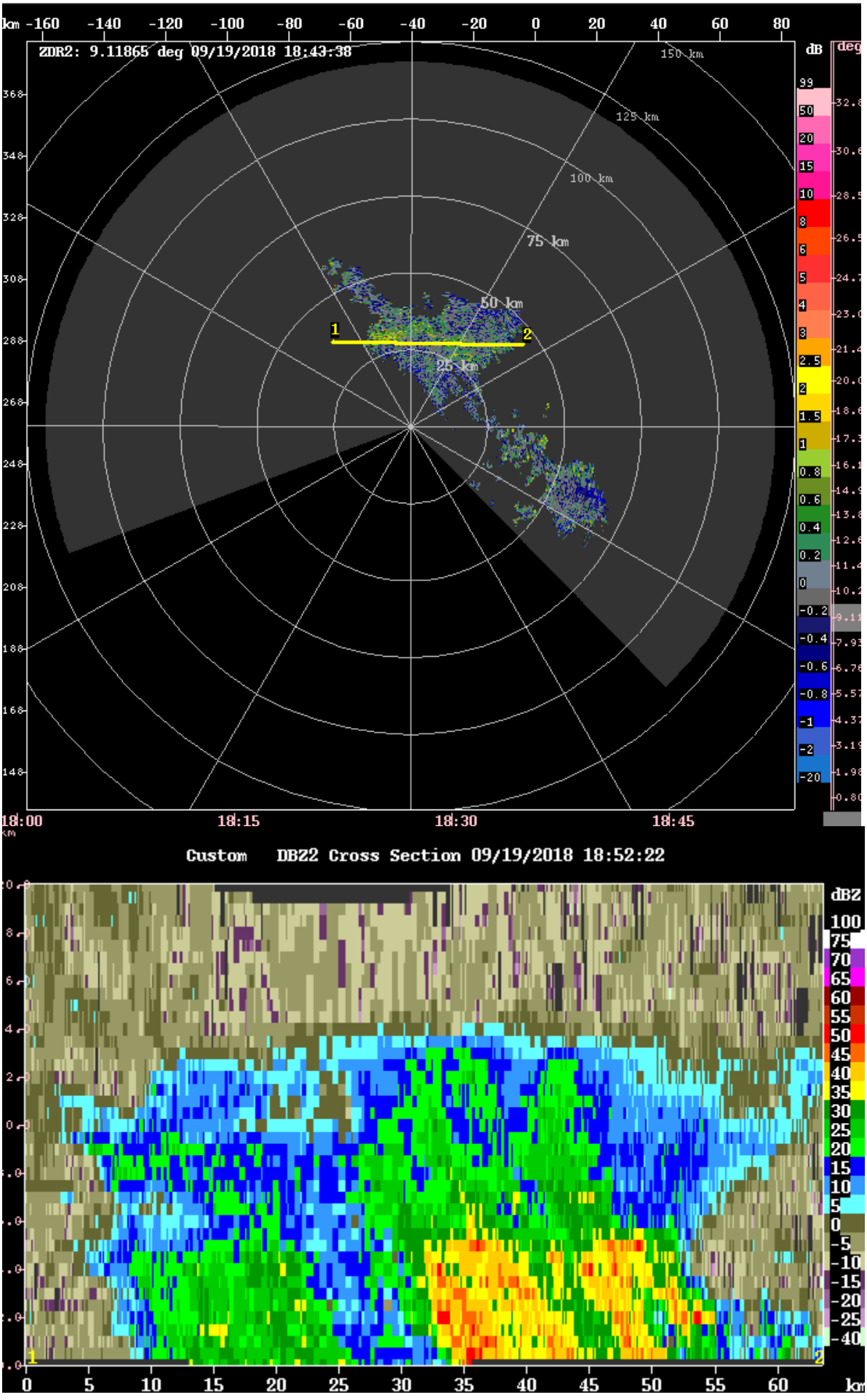


1640 – Run LOW volume scan. Convective cell in northeast (60 deg) shows somewhat high dBZ and Zdr. Will keep the LOW mode.

1745 – From 1715 to 1745 the convection northeast (30 deg) is getting closer to the radar. Will change into NEAR next round.



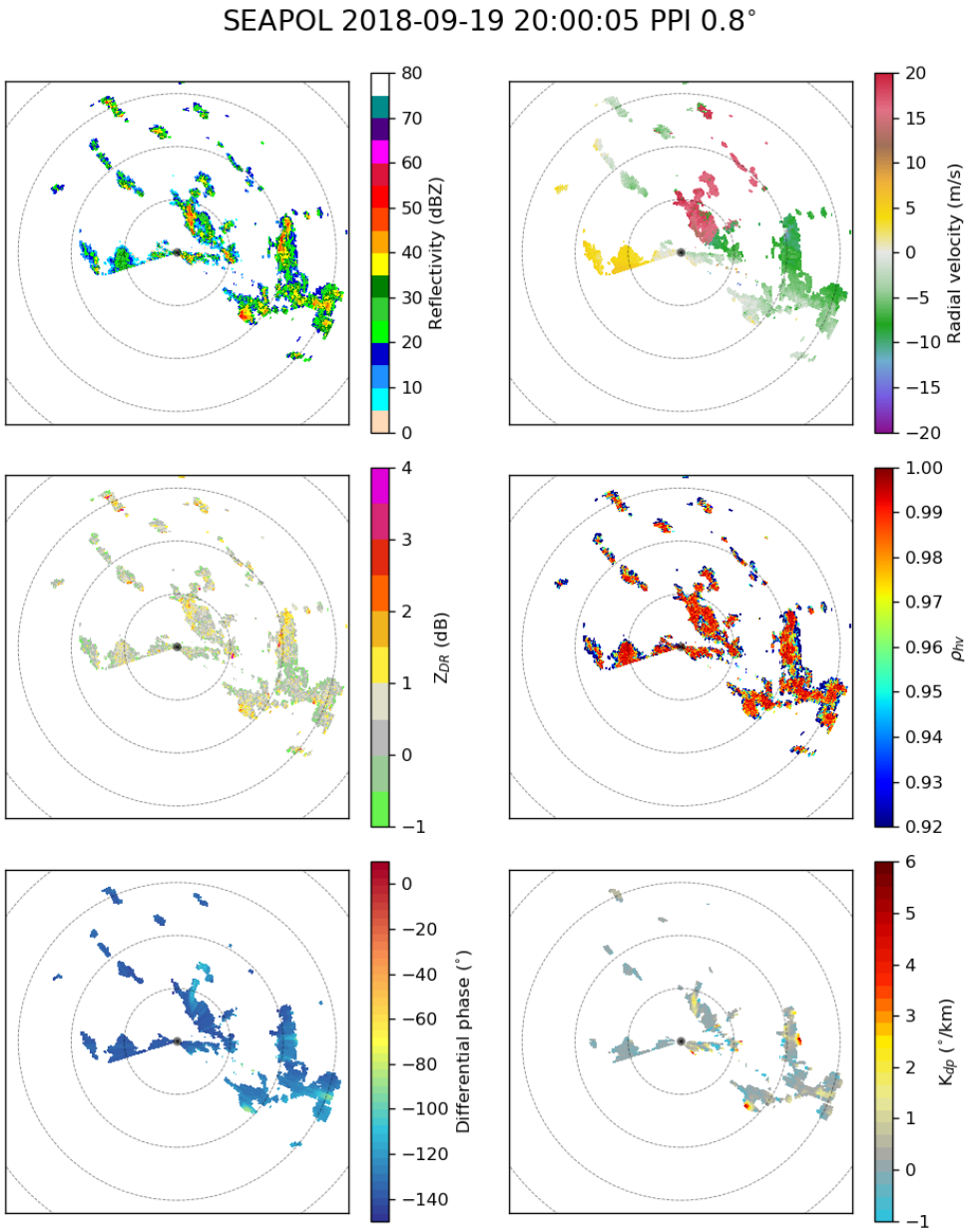
1845 – The system is right over the operation area. Keep NEAR mode (echo top ~14 km).


km -160 -140 -120 -100 -80 -60 -40 -20 0 20 40 60 80
ZDR2: 9.11865 deg 09/19/2018 18:43:38
150 km
125 km
100 km
75 km
50 km
25 km
1
2
dB
99
50
20
15
10
8
6
5
4
3
2.5
2
1.5
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-2
-20
deg
32.8
30.6
28.5
26.5
24.7
23.0
21.4
20.0
18.6
17.3
16.1
14.9
13.8
12.8
11.4
10.2
9.11
7.93
6.78
5.57
4.37
3.19
1.98
0.80
368
348
328
308
288
268
248
228
208
188
168
148
18:00
18:15
18:30
18:45
km
Custom DBZ2 Cross Section 09/19/2018 18:52:22
dBZ
100
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
-5
-10
-15
-20
-25
-40
8.0
6.0
4.0
2.0
0.0
1.0
1
2
0
5
10
15
20
25
30
35
40
45
50
55
60
km

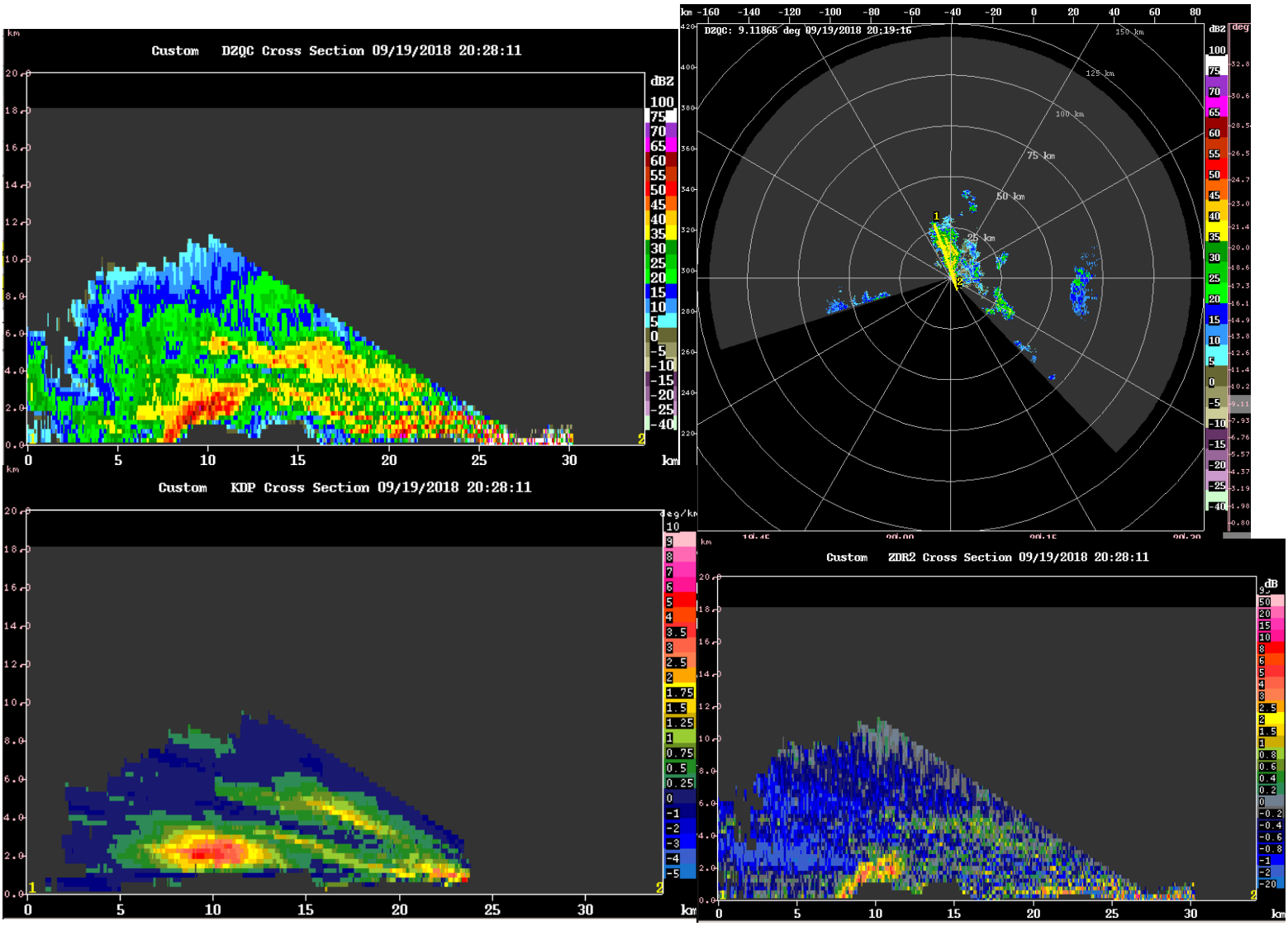
Morning Shift (4A-(A L)
Ben Trabing

1900 – We have some active shallow convection near the ship so near PPI scanning strategy continues.

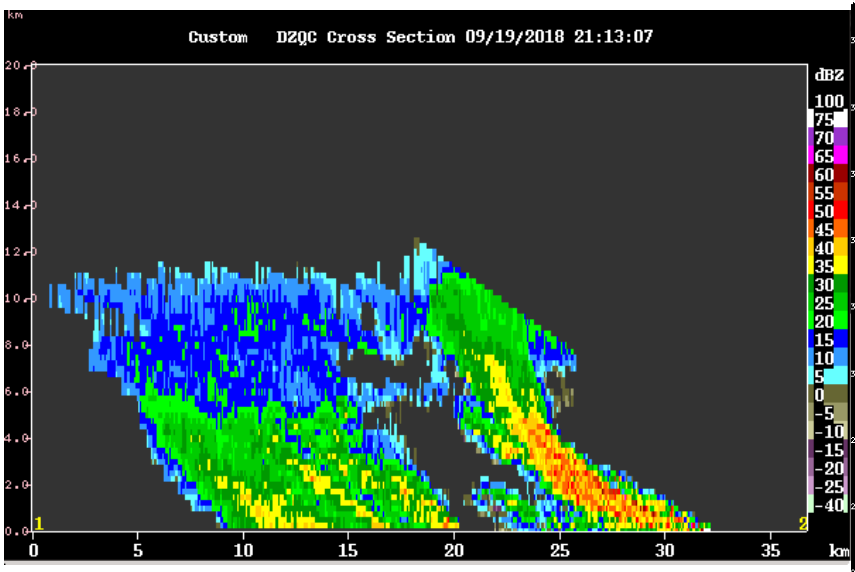
2015 – The ship is heading north but new scans reveal isolated shallow convection towards our north with what looks to be more of a convective and stratiform area to the southeast.

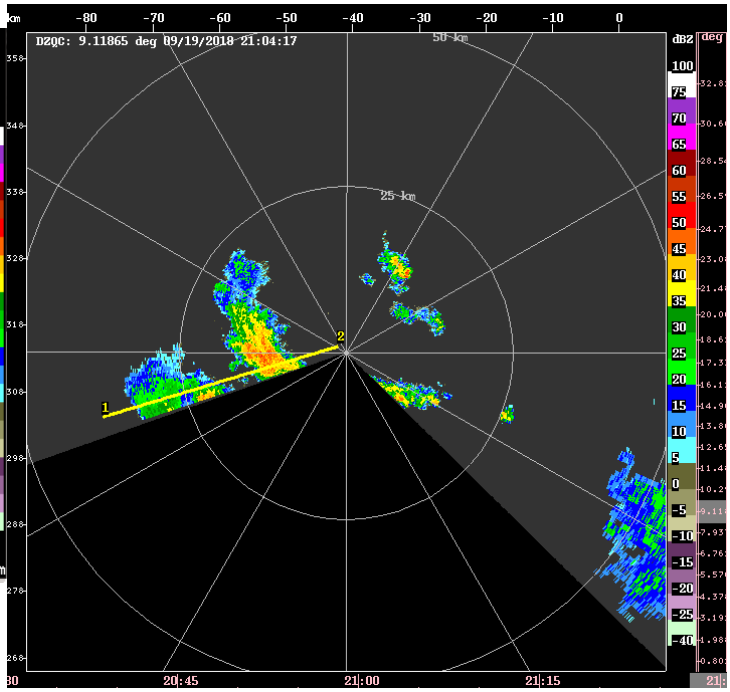


2030 – We had some solid rainrates at the ground and wind gusts associated with a north-south oriented >20 km band. Figures below show some areas of reflectivity > 55dBZ close to the surface. High ZDR and kdp indicates large droplets but smaller ZDR above would suggest the possibility of graupel/hail even though it is below the freezing level ~ 5km. Updraft appears fairly strong. Tilt may be over-exaggerated because of north heading on ship around 6 m/s.



2120 – Active convection area is mostly to the west southwest now due to the ship motion. Interesting that the convection is now tilted towards the west while the previous scans showed more of a southeast tilt. This could be due to ship motion but may also say something about the strength of the generating cell. This is shown below.





2250 – Switch to far scan PPI since most of the convection is shallow and we are moving away from any of the features seen earlier. Fewer angles are selected to relax some of the stress on the radar.

2345 – Some scattered areas of convection towards the east have moved into the radar domain <100 km so we switch to higher resolution far PPI scans.