Wave Properties at the Diamagnetic Cavity Boundary of Comet 67P/C-G

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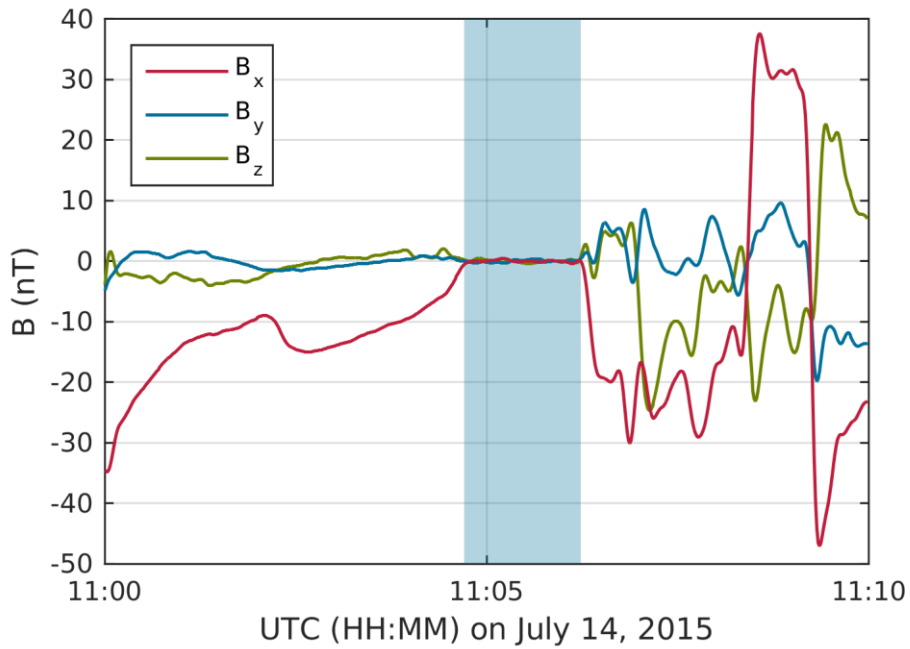
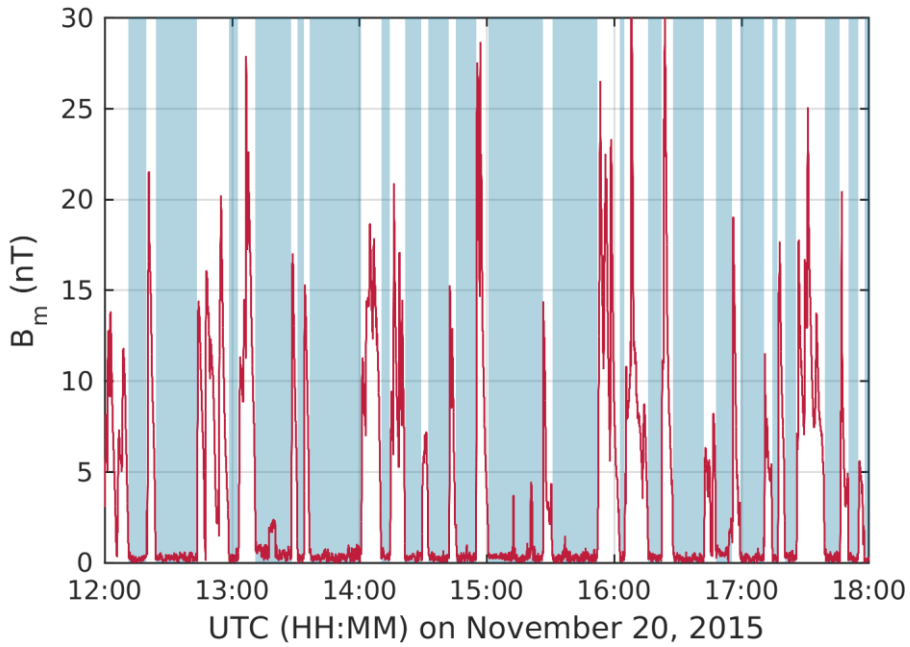
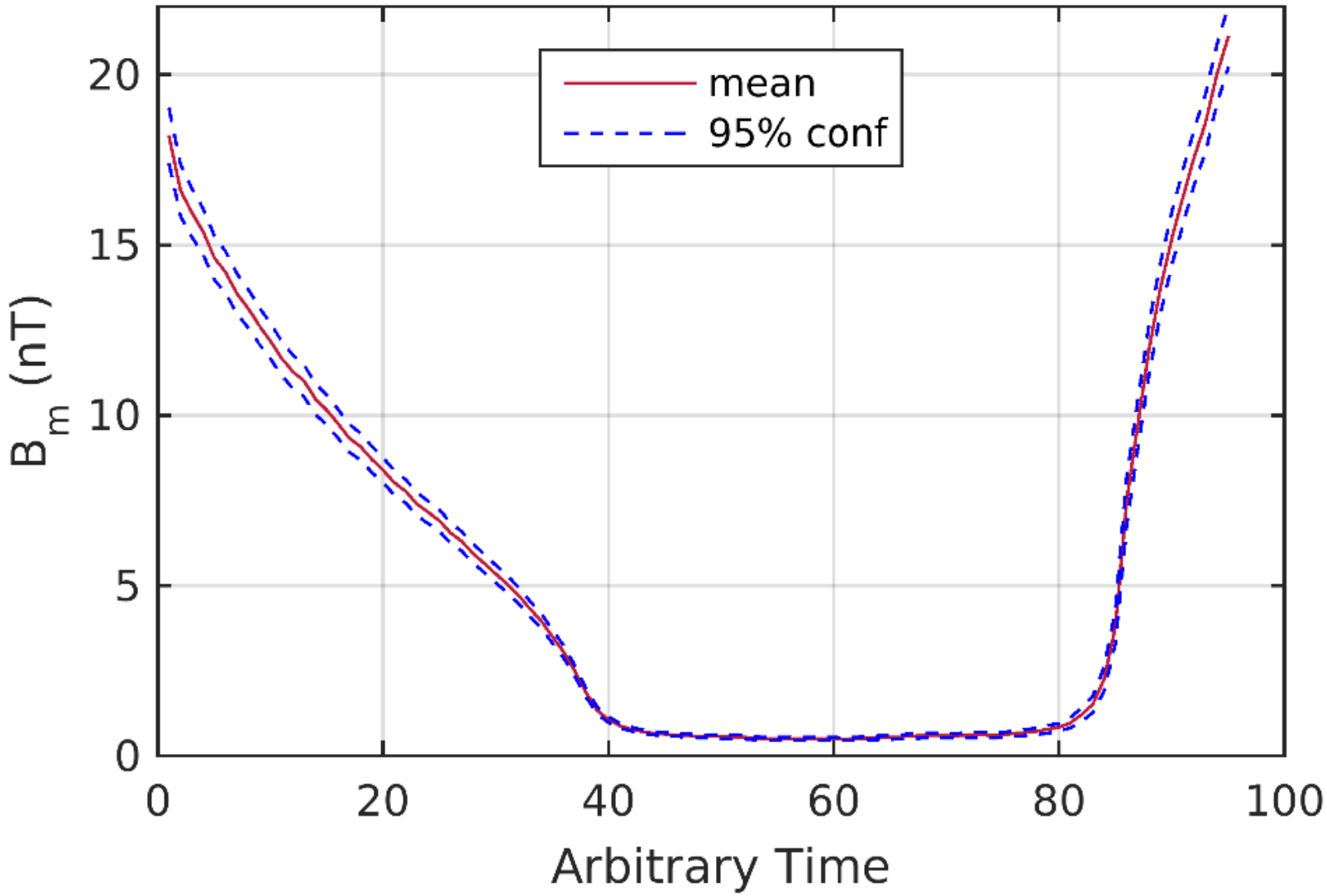
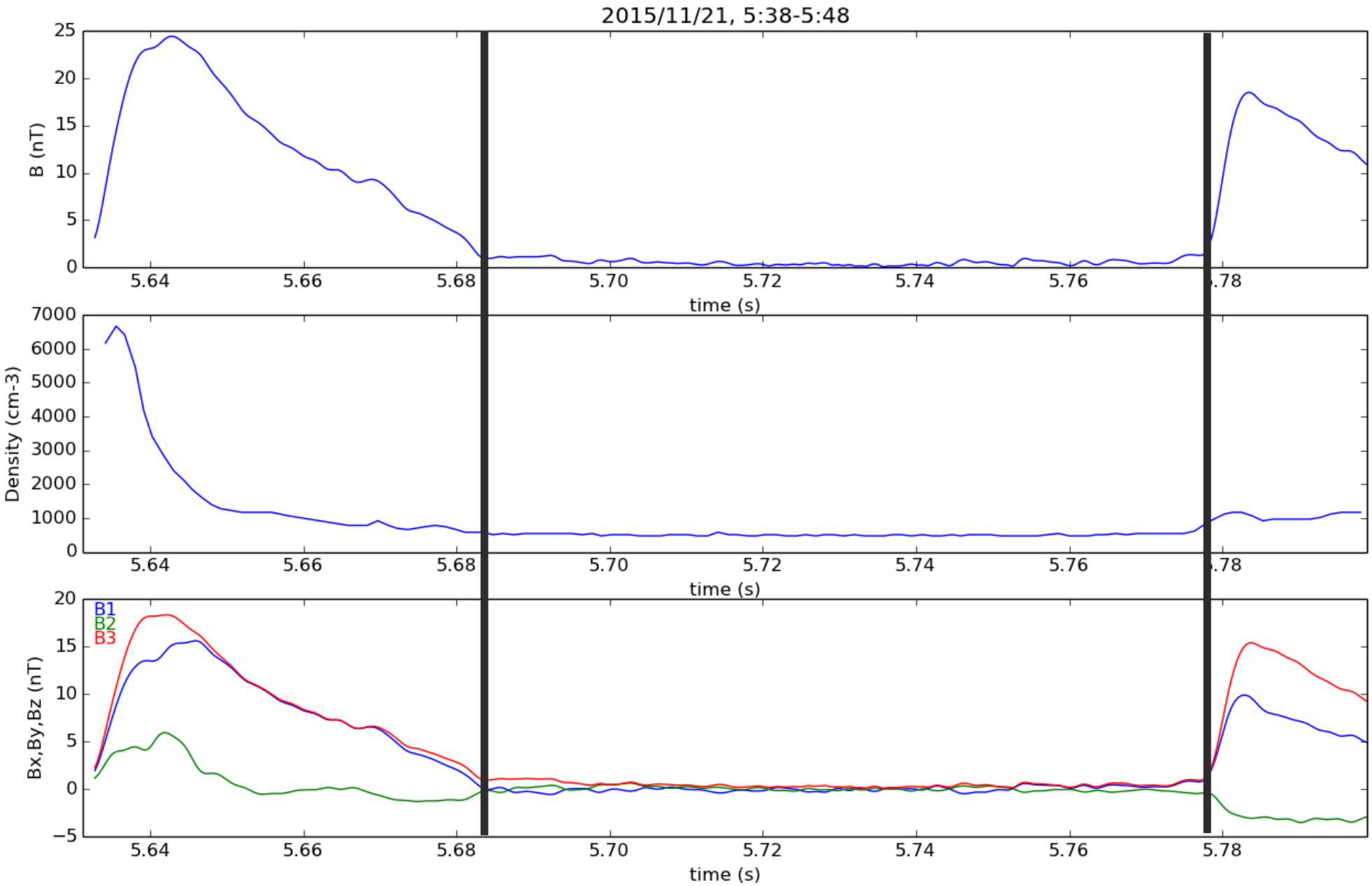
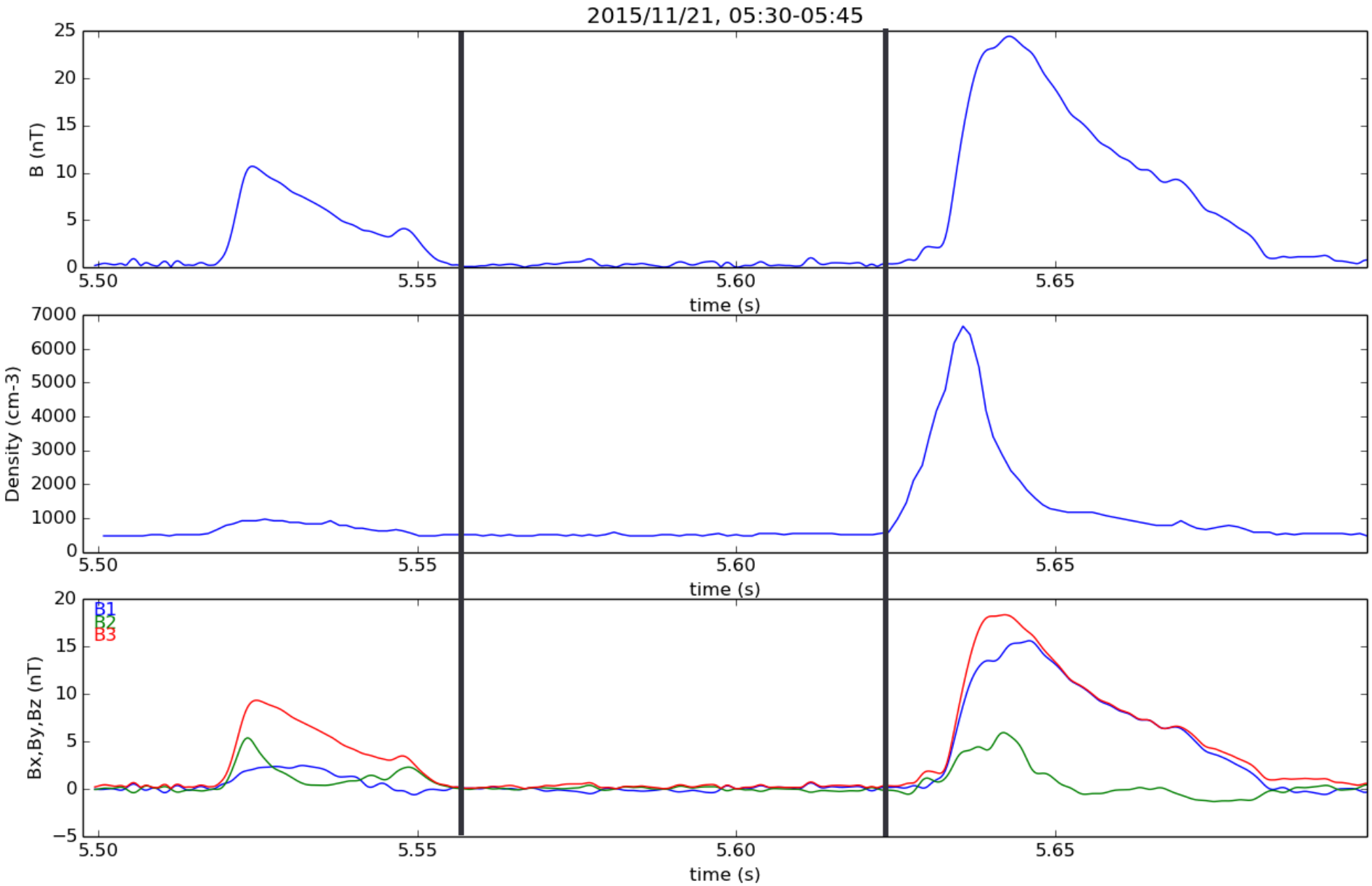
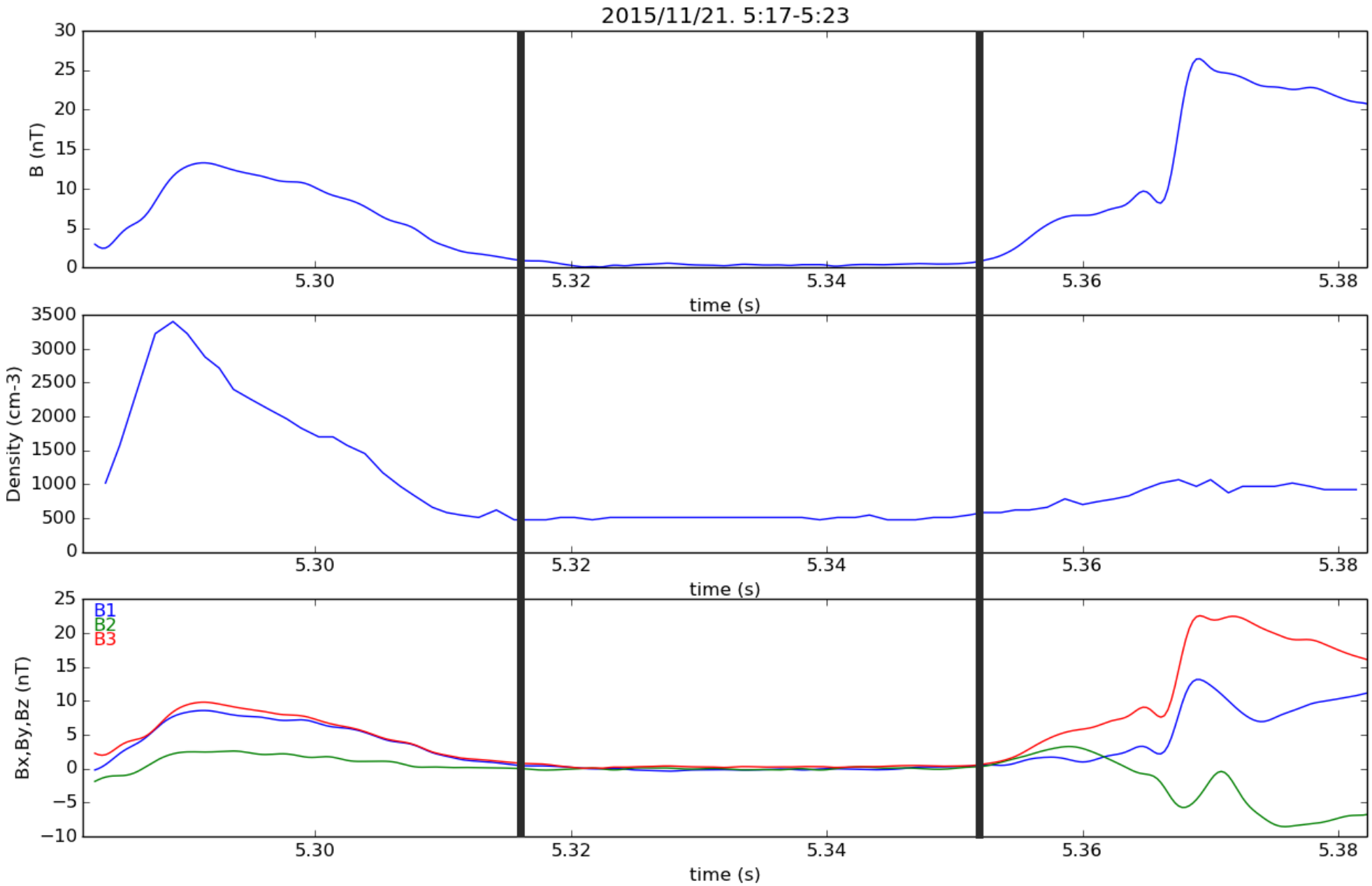

40
30
20
10
0
-10
-20
-30
-40
-50
B (nT)
B x
B y
B z
11:00
11:05
11:10
UTC (HH:MM) on July 14, 2015

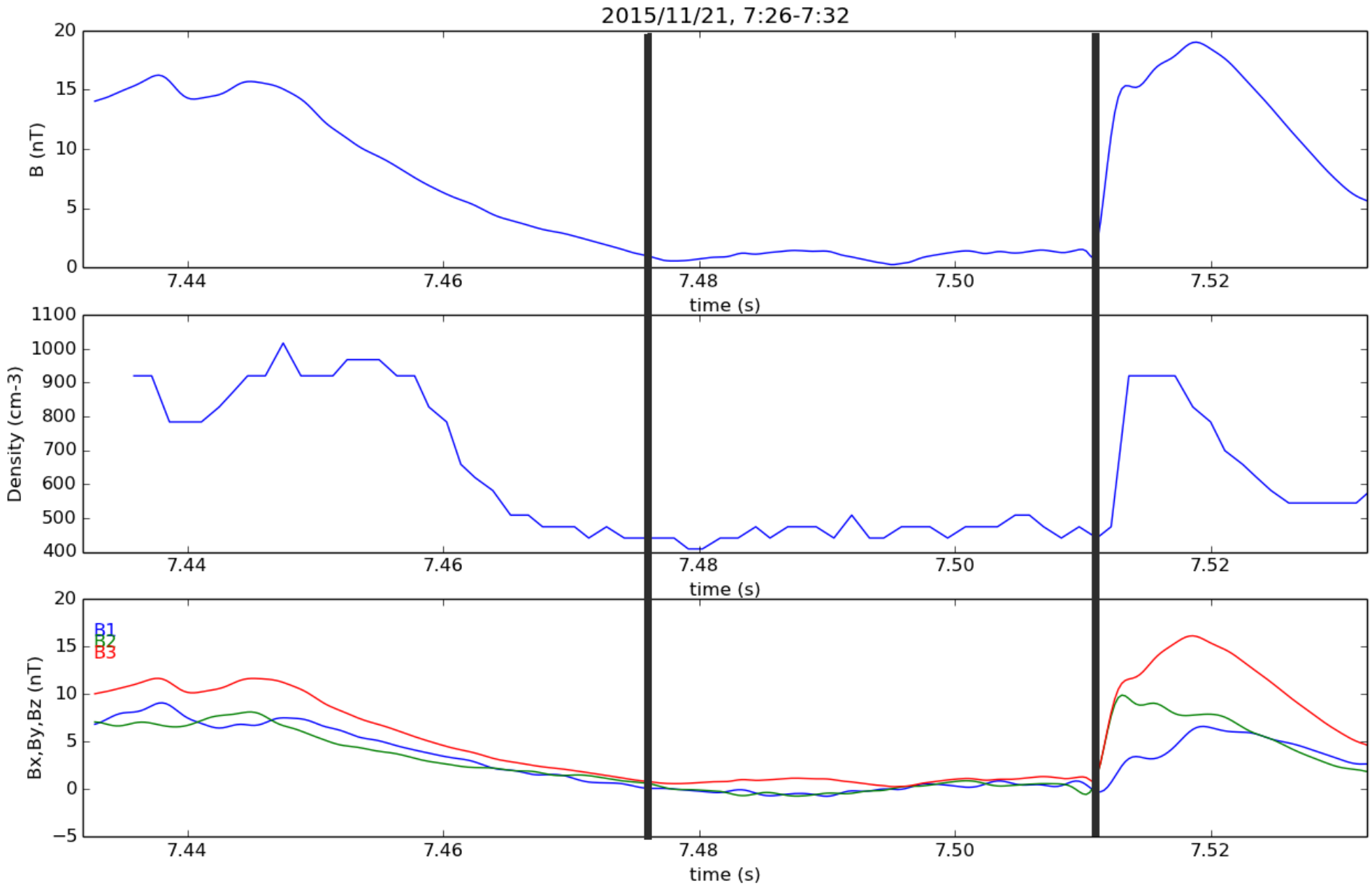

30
25
20
15
10
5
0
B m (nT)
12:00
13:00
14:00
15:00
16:00
17:00
18:00
UTC (HH:MM) on November 20, 2015


mean
95% conf
20
15
10
5
0
B_m (nT)
0
20
40
60
80
100
Arbitrary Time

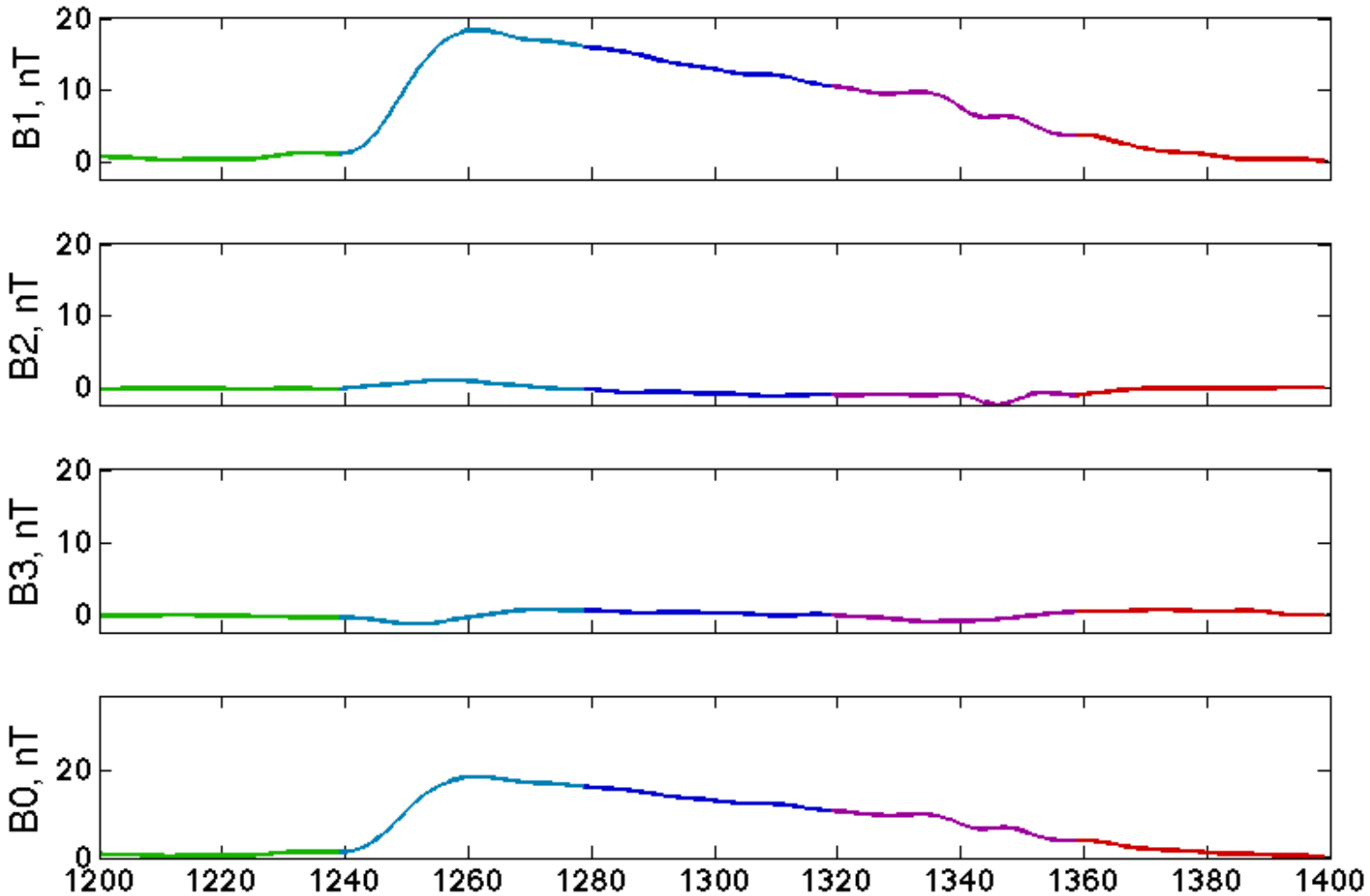

2015/11/21, 5:38-5:48
B (nT)
time (s)
Density (cm-3)
time (s)
B1
B2
B3
Bx,By,Bz (nT)
time (s)

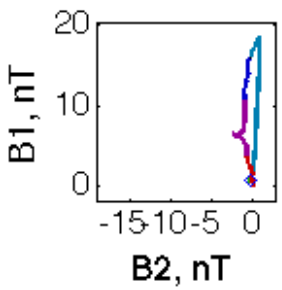

2015/11/21, 05:30-05:45
B (nT)
time (s)
Density (cm-3)
time (s)
B1
B2
B3
Bx,By,Bz (nT)
time (s)

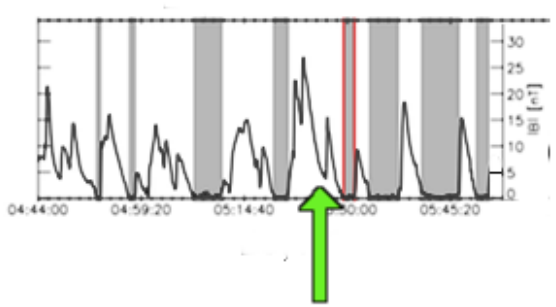

2015/11/21. 5:17-5:23
B (nT)
Density (cm-3)
Bx,By,Bz (nT)
B1
B2
B3
time (s)
5.30
5.32
5.34
5.36
5.38


2015/11/21, 7:26-7:32
B (nT)
time (s)
Density (cm-3)
time (s)
Bx,By,Bz (nT)
B1
B2
B3
time (s)

21/11/2015, 5:26 UT







Discussion

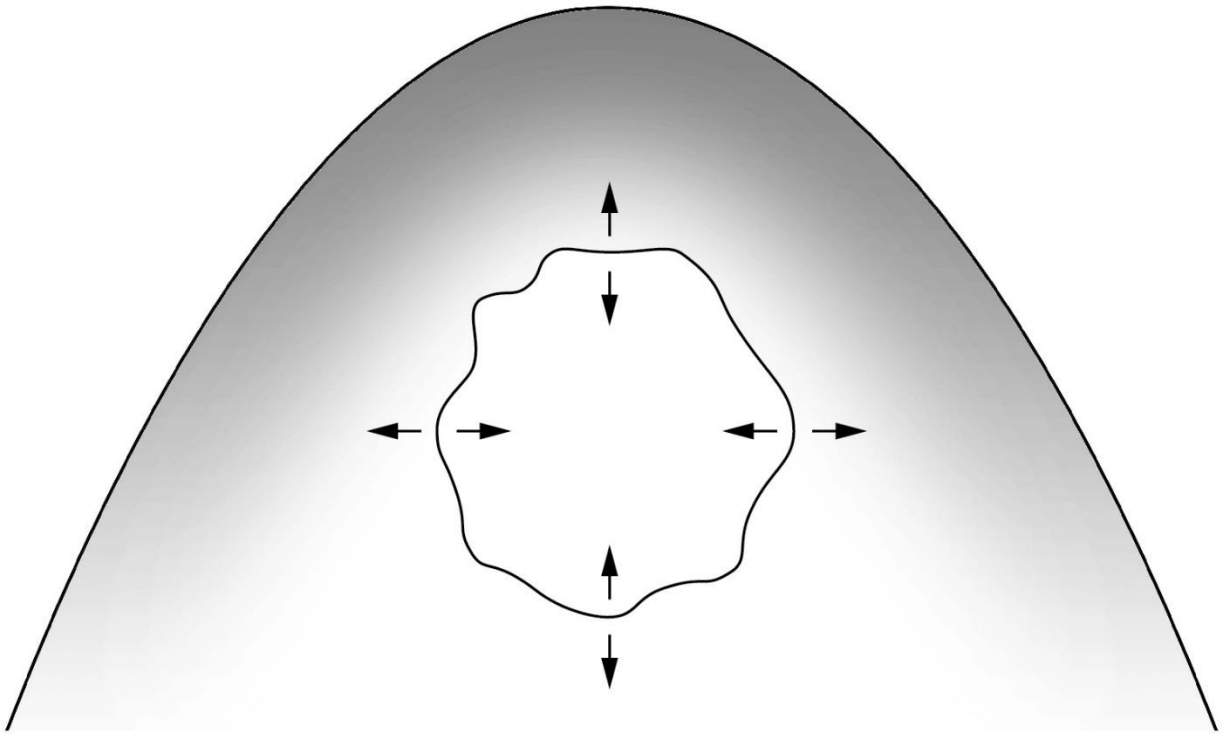
The waves at the boundaries of the diamagnetic cavities are steepened compressive waves.

The waves are always present at the boundaries.

Almost all of the waves have steepened into shocks.

The wave/shock magnetic signatures are different on the inbound leg and on the outbound leg, just as Goetz et al. (2015, 2016) have indicated in their publications.

In November 2015, the boundary shocks are quite strong, $\Delta N/N \sim 5\text{-}10$ and $\Delta B/B \sim 5$.



Thank You for Your Attention