

Interactive comment on “Multipoint Observations of Compressional Pc5 Pulsations in the Dayside Magnetosphere and Corresponding Particle Signatures” by Galina Korotova et al.

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We included three new figures from the paper and some description of figure 4.

Figure 4a shows G-13 and -15 observations of the total magnetic field strength from 18:00 UT to 24:00 UT. The spacecraft observed long-duration Pc5 pulsations over a wide longitudinal region in the pre- and post-noon magnetosphere from 10:00 to 15:20 MLT (Figure 2). G-15 observed weak, less than ~ 5 nT amplitude, Pc5 waves from 18:28 UT to 19:04 UT prior to the main event. During the main event from 19:04 to 23:00 UT, the magnetosphere was compressed (Figure 3), magnetic field strengths increased and the amplitude of these waves increased to values ranging from 10 to 16

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nT with peak amplitudes prior to local noon. G-13 observed weak Pc5 pulsations with amplitudes of 2-4 nT throughout most of the time interval from 16:40 UT (not shown) to 21:00 UT. During the interval from 19:34 UT (\sim 14:45 MLT) to 20:10 UT (\sim 15:20 MLT), the pulsations reached slightly stronger amplitudes of 5-8 nT. At 23:02 UT all Pc5 wave activity at both GOES stopped. Figure 4b shows the RBSP-A and -B total magnetic field strength from 18:40 UT to 21:10 UT and from 20:40 UT to 23:10 UT, respectively, on January 1, 2016. Taken together, RBSP-A and -B observed Pc5 pulsations that occupied the inner dayside magnetosphere from 5.26 to 5.75 RE and from 09:56 to 12:44 MLT (Figure 2). Prior to the arrival of the strong solar wind dynamic pressure variations from 18:15 to 18:55 UT RBSP-A observed very weak pulsations with Pc5 periods and amplitudes of 1-3 nT (not visible at this scale). After the compression of the magnetosphere just after 19:00 UT, the pulsation amplitude at RBSP-A increased to values ranging from 10 to 15 nT with the peak amplitude occurring prior to local noon (Figure 4b). RBSP-B observed similar compressional Pc5 pulsations from 20:46 UT that ceased simultaneously with the end of the magnetospheric compression at about 23:02 UT.

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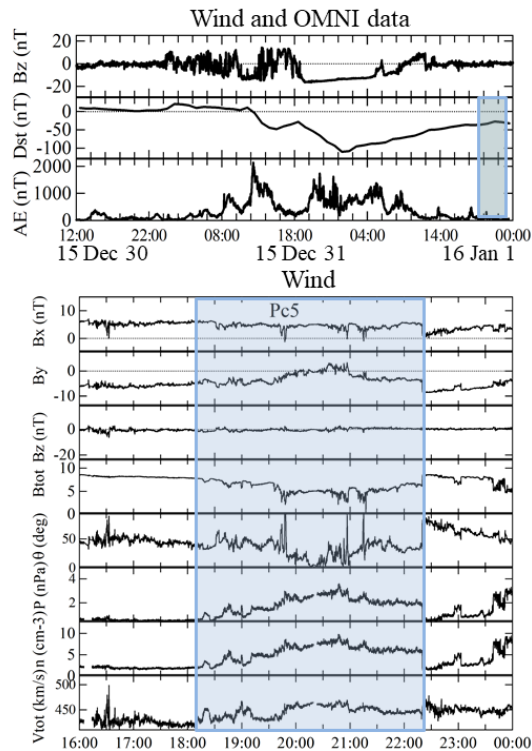
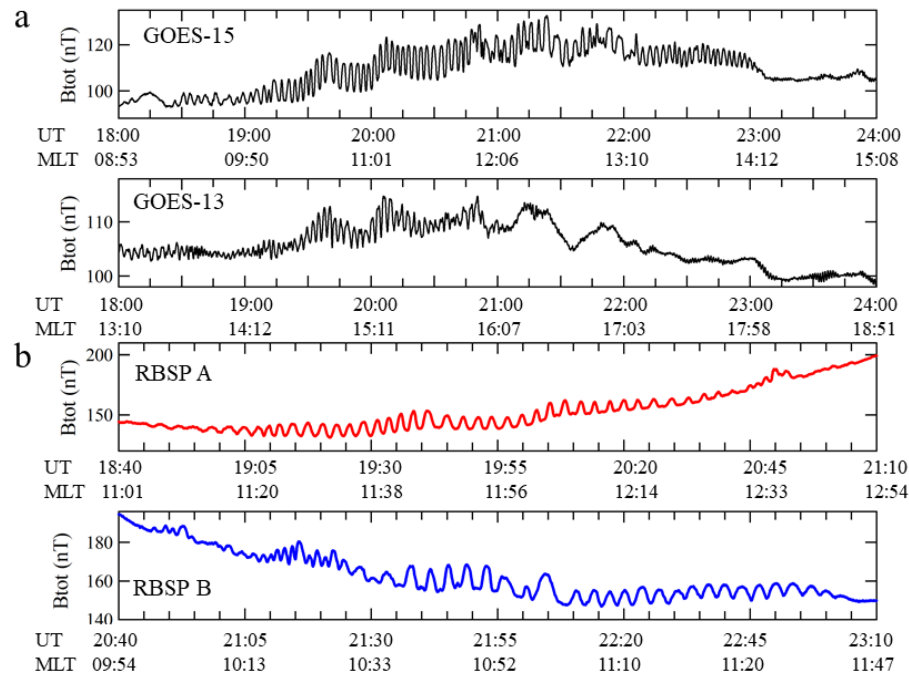
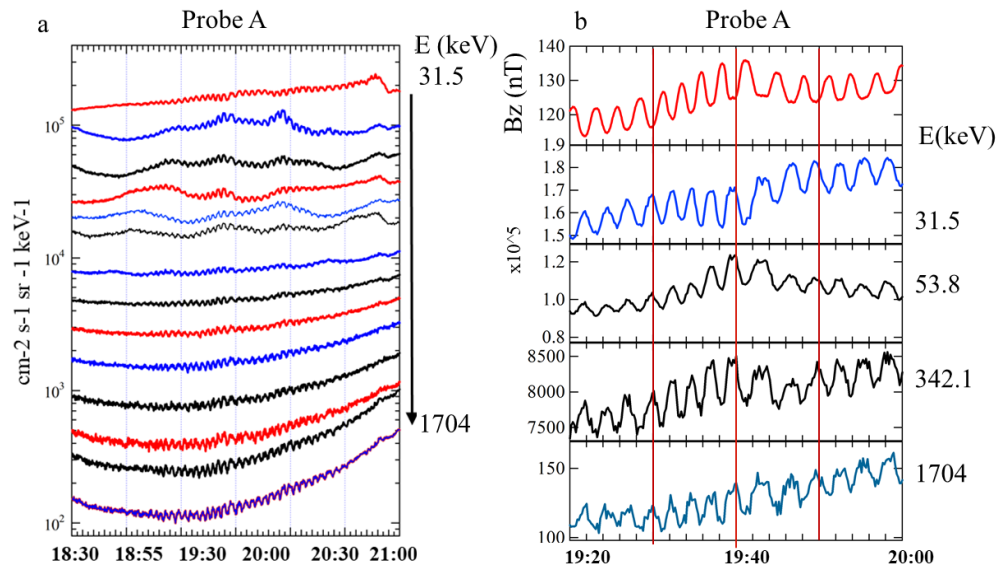


Figure 1. Bz component of the magnetic field observed at Wind, and geomagnetic activity Dst and AE indices obtained from the OMNI database (upper panels) from 12:00 UT on December 30 to 00:00 UT January 1, 2016. The bottom panels show Wind observations of the magnetic field components, total magnetic field strength, cone angle, pressure, plasma density, and velocity from 16:00 UT on January 1, 2016 to 00:00 UT on January 2, 2016.



Figures 4 (a, b). G-15 and G-13 (a) total magnetic field strength from 18:00 UT to 24:00 UT on January 1, 2016. RBSP-A and -B (b) total magnetic field strength from 18:40 UT to 21:10 UT and from 20:40 UT to 23:10 UT on January 1, 2016, respectively. Beneath the panels are listed the universal time (UT) and magnetic local time (MLT).



Figures 10 (a, b). RBSP-A observations of electron fluxes (a) in the energy range from 31.5 keV to 1704 keV from 18:30 UT to 21:00 UT and (b) their expanded view for selected energies from 19:20 UT to 20:00 UT.

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