

# ERRATUM: “PULSED ALFVÉN WAVES IN THE SOLAR WIND” (2011, ApJ, 737, L35)

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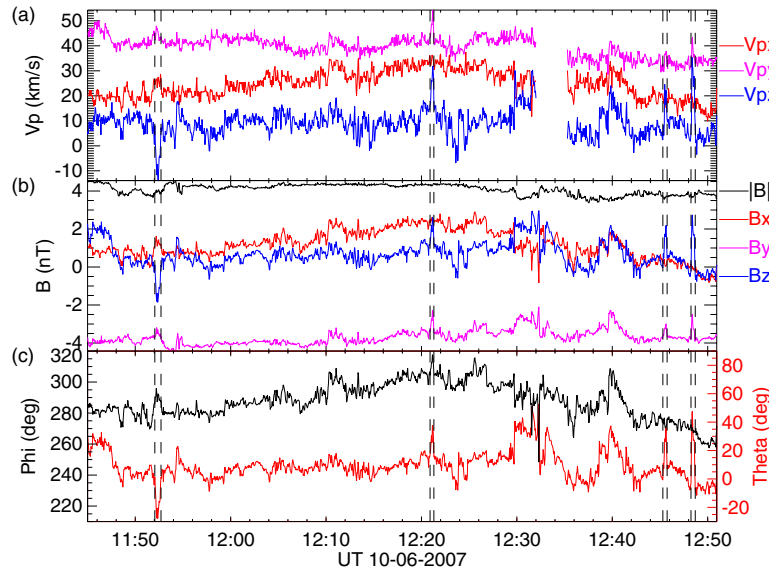
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*Online-only material:* machine-readable table

In the published version of this Letter, we inadvertently used magnetic field data obtained from NASA’s CDAWeb that were uncorrected for a  $\sim 1.5$  nT offset in the  $B_z$  (GSE) component; that offset affected both the field magnitude and, more importantly, the sense (positive or negative) and size of the change in field magnitude in many events. As a result of the offset, all quantities derived from the magnetic field data and included in Figures 1–3 and Table 1 in the published version of this Letter were incorrect. Corrected versions of Figures 1–3 and Table 1 are given below. Using the corrected data we find that only a few of the events studied were associated with changes in field magnitude  $>10\%$ , in contrast to what we originally reported. Except



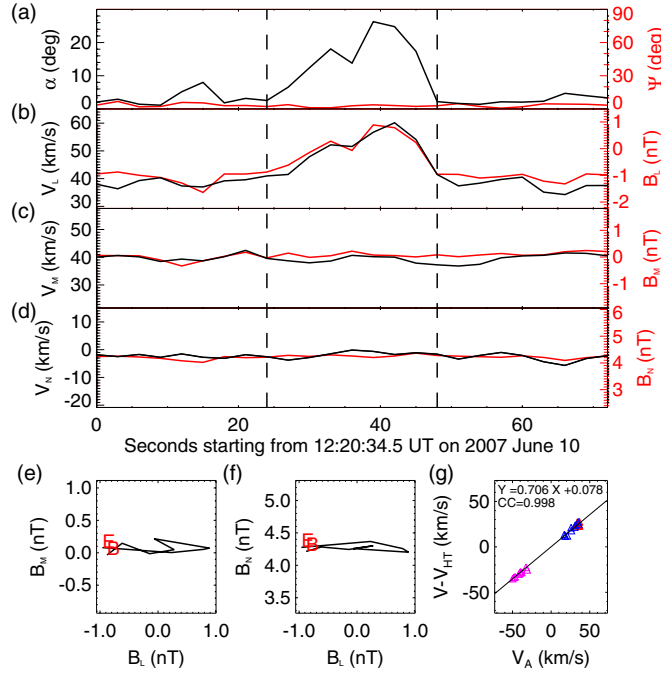
**Figure 1.** Examples of isolated pulsed Alfvénic fluctuations in the solar wind on 2007 June 10. (a) Solar wind velocity components (red, violet, and blue identifying, respectively, the Geocentric Solar Ecliptic, GSE,  $x$ ,  $y$ , and  $z$  components).  $V_x$  was shifted by  $+437$   $\text{km s}^{-1}$  and  $V_y$  was left uncorrected for aberration associated with Earth’s and *Wind*’s motion ( $\sim -29.8$   $\text{km s}^{-1}$ ) about the Sun. (b) Solar wind magnetic field GSE components similarly color-coded as well as the field magnitude (black). (c) Azimuthal (black) and polar (red) angles of the magnetic field vector. Dashed vertical lines bracket four isolated, pulsed Alfvénic events identified in this 65 minute interval when *Wind* was located  $(1.652, 0.292, 0.147) \times 10^6$  km in GSE coordinates upstream from Earth.

**Table 1**  
Pulsed Alfvén Wave Characteristics and Analysis Results

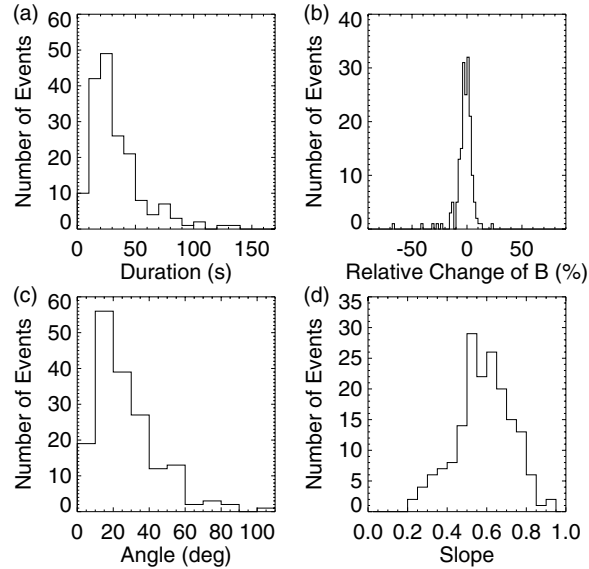
Day	Begin	$D$ (s)	$V$ ( $\text{km s}^{-1}$ )	$\Delta B/B_0$	Alpha (deg)	$\Delta N/N_0$	$\Delta T/T_0$	Slope	DWP
01	2:53:10.5	48	346	−0.016	28.8	−0.093	0.090	0.56	A
01	3:20:07.5	27	341	0.031	17.5	0.12	−0.064	0.62	A
01	3:29:07.5	51	333	−0.025	16.9	0.096	−0.099	0.56	A
01	3:57:31.5	21	332	−0.028	13.0	0.073	0.066	0.58	A
01	7:11:43.5	207	364	0.078	54.7	0.15	0.11	0.38	A
01	7:25:31.5	15	366	−0.033	10.2	−0.048	−0.035	0.69	A

**Notes.** Day: day of 2007 June; Begin: wave start time;  $D$ : duration of wave;  $V$ : solar wind speed at wave onset;  $\Delta B/B_0$ : maximum fractional change in field magnitude relative to average orientation prior to wave; Alpha: maximum field rotation angle away from the average initial field orientation;  $\Delta N/N_0$ : maximum fractional change in proton density relative to average proton density prior to wave;  $\Delta T/T_0$ : maximum fractional change in proton temperature relative to average proton temperature prior to wave; Slope: the degree of Alfvénicity of the wave; DWP: direction of wave propagation away from (A) or toward (T) the Sun in the solar wind rest frame.

(This table is available in its entirety in a machine-readable form in the online journal. A portion is shown here for guidance regarding its form and content.)



**Figure 2.** Analysis of the 12:20 UT pulsed Alfvénic event on 2007 June 10. (a)  $\Psi$ , the angle (red) between  $\mathbf{B}$  and  $\mathbf{V}$  in the calculated de Hoffman–Teller frame, and  $\alpha$ , the angle (black) between  $\mathbf{B}$  and the 21 s average value of  $\mathbf{B}$  immediately prior to the event, as functions of time. (b)–(d) The components of  $\mathbf{V}$  (black) and  $\mathbf{B}$  (red) as functions of time in  $LMN$  coordinates, where  $L, M, N$  are the directions of maximum, intermediate, and minimum variance, respectively. Dashed vertical lines in panels (a)–(d) bracket the pulsed Alfvénic event. (e)–(f) Magnetic hodograms of the event in  $LMN$  coordinates.  $B$  and  $E$  in these panels indicate respectively the beginning and end points of the event. (g) Correlation,  $CC$ , on a point-by-point basis between the components of  $\mathbf{V}$  in the de Hoffman–Teller frame and the components of the Alfvén velocity,  $\mathbf{V}_A$ . Red, violet, and blue points correspond to the GSE  $x, y$ , and  $z$  components, respectively.



**Figure 3.** Histograms illustrating some basic characteristics of 175 pulsed Alfvénic events identified in the interval 2007 June 1–10. (a) Event durations. (b) Maximum percentage changes in field magnitude from outside to inside the events. (c) Maximum field rotations away from the initial field direction. (d) Absolute values of the slopes (Alfvénicities) of the events.

for changes in field magnitude, the statistics of other quantities shown and/or discussed do not change significantly using the corrected data. Our interpretation of the events studied as pervasive, isolated, plane polarized, pulsed Alfvén waves remains as originally reported.