Typographical Errors in Space Physics: An Introduction Updated 11/12/19

Chapter 2

- p. 33, RH column, 8 lines from bottom of page: change "temperature" to "pressure"
- p. 38, Col. 2, 3^{rd} line above 2.7.1. change "...T_n many" to "...T_n may"
- p. 50 Equation 2.89 Replace v_{in} with v_{en} .
- p. 50 Third line before Equation (2.91) change "z-direction" to "-z direction".
- p. 51 On Figure 2.23, add arrowhead on Z-axis pointing down and to left.



 $\begin{array}{c} p. \ 51-Figure \ 2.24-Add \ Z \ axis \ to \ Y-X \ axes. \\ {\sf Primary} \qquad \qquad {\sf Secondary} \end{array}$



Chapter 3

p. 68 – Eq. 3.76: Change
$$\frac{v^2}{2mKT}$$
 to $\frac{mv^2}{2KT}$,
- Eq. 3.77a: Change $\frac{v^2}{2mKT_i}$ to $\frac{mv^2}{2KT_i}$
- Eq. 3.77b: Change $\frac{v^2}{2mKT_e}$ to $\frac{mv^2}{2KT_e}$

Chapter 5

p. 160 – Table 5.1 – change "~4 x 10^4 K" to "~4 x 10^5 K" (For proton temperatures – fast solar wind)





Chapter 6

p. 202 – LH Column, lines 23-33

"Another constraint... is called a mixed mode normal." should be changed to:

"Since the shock does not change the velocity of the plasma parallel to the surface of the shock $\Delta Vx = 0$ (6.5)

 $\Delta Vy = 0 \qquad (6.6)$

where x and y are the components in the shock plane. Thus if three-dimensional solar wind measurements are available, the shock normal can be found from the difference of the vector velocities on either side of the shock." [Text continues "In fact, all..."]

p. 203 – RH, lines 4-5: "that the mass flux across the shock remains constant." [Delete "change in".]

p. 203 - RH col, line 7: $(\rho \mathbf{u}) \cdot \nabla \mathbf{u} = \nabla P + j \times B$. (Both first 'u' and the ' ∇ u' should be bold.)

p. 203 - LH col, 3rd to last line: $\nabla = (\rho u) = 0$ should be $\nabla \cdot (\rho u) = 0$. (Remove "=" after " ∇ ".)

- p. 203 RH Col. Equation 6.10 $\left[\rho u_n^2 + p + \frac{B_l^2}{2\mu_0}\right] = 0 \text{ is the correct form. (power of } u_n \text{ should be 2)}$
- p. 203 Equation below (6.11): Make first u bold, and replace \times with \cdot
- p. 203 Equation below (6.12): Change to: $j \cdot E = -\mu_0^{-1} (\nabla \times B) \cdot (u \times B)$ (Add negative sign before μ and subscript '0' to 'u'.)
- p. 206 first line of Eq. 6.24: Change $\theta_{B_{1n}}$ to $\theta_{B_{n1}}$
- p. 220 LH Paragraph 2, Line 10 change "pockets" to "packets"

Chapter 7

- p. 223 Figure 7.1 caption: Change 'R' to 'r'.
- p. 233 RH column, line 2: Change "Figure 6.8" to "Figure 7.10".
- p. 235: Equation 7.27 Add a closing bracket "]" to the end of the equation.
- p. 240 Problem 7.11
 Use the Magnetospheres option of the Space Physics Exercises* to study dipole magnetic fields. (Add 's' to 'Magnetosphere')

Chapter 8

- p. 252 RH column, second paragraph, 5th line Change "frozen field" to "frozen-in field"
- p. 253 RH column, 2nd line from bottom: Change first '**u**' to '∇' i.e. " $\partial B/\partial t = -\mathbf{u} \ge \mathbf{v} \ge -\nabla \ge \mathbf{v}$ "

p. 254 - Figure 8.6 (a) – $\rho u_2 + B_2/2\mu_0 \rightarrow \rho u^2 + B^2/2\mu_0$ (values should be squared and not subscripted 2).

Chapter 9

- p. 288: Switch 1 and 1' in the first sentence of the first paragraph.
- p. 313 Problem 9.10 Replace 'Tracing' with 'Motion' in first line.

Chapter 10

- p. 322 RH column, Eq. 10.5: Change " W_{\perp} " to " W_{\perp}/q "
- p. 322 RH column, second line after Eq. 10.5: Change "This parameter..." to "This parameter $q\tilde{\phi}$..."
- p. 327 LH column, last paragraph, 5th line from bottom: Change "regions" to "reasons".
- p. 336 RH column, under Eq. 10.31: Remove "(see Eq. (10.18))"
- p. 337, LH column, first line under equation 10.35 and first sentence after that: Change " $\mathbf{F} = q\delta E + v_p \ x \ \delta B$ " to " $\mathbf{F} = q(\delta E + v_p \ x \ \delta B)$ "

p. 340: LH column, ten lines down: Change "... at an angle to the magnetic,..." to "at an angle to the magnetic field,..."

Chapter 12

p. 388 - Figure 12.20 (right side) Number on horizontal axis under vertical line should be 10⁻¹.
i.e., the bottom number should be changed from 10⁻² to 10⁻¹.

Chapter 13

p. 397 - Section 13.2 title: Change "PERTUBATION" to "PERTURBATION"

<u>Glossary</u>

p. 465 – Substorm definition: Change "charge" to "change"