

# Errata

p. 9: Third paragraph. “The right-hand side of the this equation” should read “The right-hand side of this equation”.

p. 70: Exercise 4.7 should read:

“A particle moves under the influence of a central force per unit mass of the form

$$f(r) = -\frac{k}{r^2} + \frac{c}{r^3},$$

where  $k$  and  $c$  are positive constants. Show that the associated orbit can be written

$$r = \frac{a(1 - e^2)}{1 + e \cos(\alpha\theta)},$$

which is a closed ellipse for  $e < 1$  and  $\alpha = 1$ . Discuss the character of the orbit for  $\alpha \neq 1$  and  $e < 1$ . Demonstrate that

$$\alpha = \left(1 - \frac{\gamma}{1 - e^2}\right)^{-1/2},$$

where  $\gamma = c/(ka)$ .”

p. 74: Equation (5.10), and following line. “24<sup>h</sup> 56<sup>m</sup> 04<sup>s</sup>” should read “23<sup>h</sup> 56<sup>m</sup> 04<sup>s</sup>”. This error occurs twice.

p. 91: Equation (5.94). “4 × 10<sup>9</sup>.” should read “4 × 10<sup>9</sup> years.”

p. 96: Exercise 5.13. Final equation. Delete equation number “(5.111)”.

p. 122: Second paragraph. “given previously, we can write the potential energy” should read “given previously, the potential energy”.

p. 142: Between Equations (7.207) and (7.208). “unit vector parallel to  $\mu A$ ” should read “unit vector parallel to  $MA$ ”.

p. 144: Between Equations (7.233) and (7.234). “and  $g = 4.0185 \times 10^{-3}$ ” should read “and  $g/n = 4.0185 \times 10^{-3}$ ”.

p. 156: Second paragraph. “(See Figure 8.5.)” should read “(See Figure 8.6.)”

p. 158: Between Equations (8.61) and (8.62). “excluded, grow in area as  $C$ ” should read “excluded grow in area as  $C$ ”.

p. 174: Fourth line. Replace  $\lambda^{(1)}(t)$  by  $\bar{\lambda}^{(1)}(t)$ .

p. 232: First paragraph. “(Gradshteyn and Ryzhik 1980e)” should read “(Gradshteyn and Ryzhik 1980c)”.

p. 197: First paragraph. Replace “Claudius Ptolemy (90 BCE–168 CE)” by “Claudius Ptolemy (90 CE–168 CE)”.

p. 205: At the end of the second paragraph. Add “We have also assumed that  $x_1 = -e$ ,  $y_1 = 2e$ ,  $z_1 = I$ , in accordance with Equations (10.42)–(10.44).”

- p. 215: Exercise 10.7. "Equation (10.109)" should read "Equation (10.110)".
- p. 229: First paragraph. "(Gradshteyn and Ryzhik 1980b)" should read "(Gradshteyn and Ryzhik 1980a)".
- p. 229: First paragraph. "(Gradshteyn and Ryzhik 1980c)" should read "(Gradshteyn and Ryzhik 1980b)".
- p. 232: Second paragraph. "(Gradshteyn and Ryzhik 1980e)" should read "(Gradshteyn and Ryzhik 1980c)".
- p. 235: Section B.2, first paragraph. "Equation (B.12) and (B.13)" should read "Equations (B.12) and (B.13)".
- p. 259: The eight entry should read:  
Brouwer, D., and van Woerkom, A.J.J. 1950. *The Secular Variations of the Orbital Elements of the Principal Planets*. *Astronomical Papers of the American Ephemeris* **13**, 81.
- p. 260: The second to sixth entries should be replaced by:  
Gradshteyn, I.S., and Ryzhik, I.M. 1980a. *Tables of Integrals, Series, and Products*, Corrected and Enlarged Edition, tr. A. Jeffrey. Academic Press. Section 8.411.  
Gradshteyn, I.S., and Ryzhik, I.M. 1980b. *ibid.* Section 8.440.  
Gradshteyn, I.S., and Ryzhik, I.M. 1980c. *ibid.* Chapters 13–15.