Gravitation and Spacetime, 3rd Edition by Hans C. Ohanian and Remo Ruffini
Published by Cambridge University Press, ISBN 978-1-107-01294-3

ERRATA

As of April 2015

p. 196, caption for Fig. 5.8: change "An oscillating quadrupole." to "A vibrating quadrupole."

p. 222, second line of last paragraph: change "1929" to "1926"

p. 229, at end of footnote 3, add the sentence: "For an incisive analysis of the conceptual difficulties that arise from attempts to couple torsion to the spin of quantum-mechanical particles, see Kleinert, 2008."

p. 273, Problem 6.28: the square root on the left side of the equation extends too far; it should stop short of the symbol *R* (so that, stated verbally, the equation become square root of –g multiplied by *R* without square root).

p. 274, after second line insert an extra item:
Kleinert, H. (2008). *Multivalued Fields in Condensed Matter, Electromagnetism, and Gravitation*. Singapore: World Scientific, Section 20.2.

p. 289, second line after Eq. (7.38): change "…speed" to "…speed of light"

p. 343, fourth line of second paragraph: change "(Kerr, 1963; …" to "(Kerr, 1963, 2009;… "

p. 354, third paragraph: merge this paragraph into the end of second paragraph (to save space), and at end of third paragraph add a sentence: "This mass can be increased (by dumping extra mass into the black hole, so $\delta M_{ir} \geq 0$), but it cannot be decreased by any process."

p. 354, first line of fourth paragraph (now third paragraph): change "These results follow directly from Hawking's theorem…" to "These results also follow from Hawking's area theorem…"

p. 354, third line of fourth paragraph (now third paragraph): change "1973;…" to "1971, 1973;…"

p. 355, first line: change "…The black-hole…" to "…By solving Eq. (8.54) for M, the black-hole…"

p. 380, at end of paragraph, add: " The evidence for a firm identification of Cygnus X-1 as a black hole was first presented by Ruffini in 1972 (see Leach and Ruffini, 1973; Ruffini, 2009)."

p. 387, before seventh line from bottom, insert extra item:

Gravitation and Spacetime, 3rd Edition by Hans C. Ohanian and Remo Ruffini
Published by Cambridge University Press, ISBN 978-1-107-01294-3

Hawking, S. W. (1971). *Phys. Rev. Lett*. **26**, 1344.

p. 388, after third line, insert extra item:
Kerr, R. P. (2009). Discovering the Kerr and Kerr-Schild metrics. *The Kerr Spacetime,* ed. D. L. Wiltshire et al. Cambridge: Cambridge University Press.

p. 388, after sixth line, insert extra item:
Leach, R. W., and Ruffini, R. (1973), *Astrophys. J.* **180**, L15.

p. 388, after line 26, insert extra item:
Ruffini, R. (2009). The ergosphere and dyadosphere of the Kerr black hole. *The Kerr Spacetime*, ed. D. L. Wiltshire et al. Cambridge: Cambridge University Press.

p. 406, last line: change “blackbody” to “background”

p. 441, Problem 9.30, second line: change “…expressed” to “…expressed as”

p. 442, Schmidt, M. (1972), last line: change “**1.**76” to “**176**”

p. 495, second line from bottom: change “2009” to “2010”

p. 496, Ohanian H. C. (2009), third line from bottom: change “(2009)” to “(2010)”

p. 506, first line: change “coordinates” to “coordinates, 79-80”

p. 514, second column: change item “Hawking’s theorem, 354-5” to “Hawking’s area theorem, 354-5”

p. 516, after sixth line, insert an extra item: “isotropic coordinates, 298”

Note: The following errata have not yet been corrected in the printed books.

p. 310, Eq. (7.133): change $\frac{dS^\mu}{d\tau} = -\Gamma^\mu{}_{\alpha\beta} S^\alpha \frac{dx^\alpha}{d\tau}\frac{dx^\beta}{d\tau}$ to $\frac{dS^\mu}{d\tau} = -\Gamma^\mu{}_{\alpha\beta} S^\alpha \frac{dx^\beta}{d\tau}$

p. 311, Eq. (7.136): change $\frac{dS^k}{d\tau} = -\Gamma^k{}_{\alpha\beta} S^\alpha \frac{dx^\alpha}{d\tau}\frac{dx^\beta}{d\tau}$ to $\frac{dS^k}{d\tau} = -\Gamma^k{}_{\alpha\beta} S^\alpha \frac{dx^\beta}{d\tau}$