

Errata

Please report any further errata, comments or suggestions for improvement to: eclipse@williams.edu and alex@astro.berkeley.edu. Thank you for your support.

Significant errors and omissions

p. xix: The launch of JWST is now during 2021, as we say elsewhere.

p. 6: Figure 1–5 shows Supernova 1987A, not the Bubble Nebula described in the caption, which is now the Ch 15 Opener. The correct caption is:

Figure 1–5 The expanding dust cloud of Supernova 1987A is located in the center of the image amidst a backdrop of stars. The bright ring around the central region of the exploded star is composed of material ejected by the star about 20,000 years before the actual explosion took place. The supernova remnant is surrounded by gaseous clouds, whose red color represents the glow of hydrogen gas.

p 7: The Reference to Fig 1–3 should be to Fig. 11–35; also change wording from past tense to “that will appear....”

p. 50: Caption to Fig. 3–16 should be “Gerhard Hüdepohl/European Southern Observatory”

p. 89: in the inset formula, the superscripts B and A should be subscripts

p. 118: the reference to Fig. 5–17 should be to Fig. 5–16b, so also change the ref to Fig. 5–16 to Fig. 5–16a.

p. 121: End of FIO 5.1, the reference to Fig. 5–17 should be to “Figs. 5–16a,b”

p. 171: Caption to Figure 6–48 should read: “A 360° panorama from Spirit, acquired on its 410th to 413th sols (martian days), February 27 to March 2, 2005. The summit near the center is known as Husband Hill, and is about 200 meters away and 45 meters high. We look past an outcrop known as the Cumberland Ridge, with the Tennessee Valley to the left. Some of Spirit’s tracks show at right.”

The printed caption refers to the image from the Phoenix Lander, available here:

<http://photojournal.jpl.nasa.gov/catalog/PIA13804>

p. 197: Caption to Fig. 7–11a, “left limb” should be “lower limb”

p. 253: Fig. 8–36a is the wrong image. (It duplicates Fig. 8–35.) The correct image is:

https://www.nasa.gov/mission_pages/dawn/multimedia/pia15678.html

p. 277: In caption of Fig 9–16b “(Pisces A)” should be “(alpha Piscis Austrini)” [preferably use a Greek alpha]

p. 341: The first light curve in Fig. 11–27b is “CY Aquarii” as it says in the caption (not delta Scuti, as labeled; the label needs correcting).

p. 343: In 2nd paragraph of 11.8a, reference to Fig. 11–32 should be omitted since it shows a globular, not an open, cluster.

p. 383: Column 2, paragraph 2, line 2, Ring Nebula is Fig. 13–1b. (Not Fig. 13–1a)

p.390: Credit for Figure 13–13b should be: "Gethyn Timothy (Nightsen Inc., and U. Massachusetts and Dartmouth) and Elliott Horch (Southern Connecticut State University)"

p. 408: In the final sentence, Fig. 12–20 should be "12–22"

p. 427: The following two figure references need to be changed:

In 1st complete paragraph, 1st column, Fig. 14–17 should be "14–19"

In line 4, 2nd column, Figs. 14–18, 14–19 should be "14–17, 14–18"

p. 435: Missing credit for Fig. 14–29e: "Jay M. Pasachoff"

p. 456: Last line in column 1, Fig. 3–32a shows Herschel, not Spitzer. Change the reference to "p. 61".

p. 462: Credit line for Fig. 15–18C: "NASA's Swift Mission, courtesy of Lynn Cominsky, Sonoma State U."

p. 472: Credit line for 15–36b: "ALMA (ESO/NAOJ/NRAO)"

p. 485: Column 1, line 1, since Fig. 16–10 should be 16–11, and in the 2nd column, line 3, Fig. 16–11 should be 16–10, swap the figures on **p. 487**

p. 506: , FIO 16.3, line –7, Figure 16–45 should be "Figure 16–47"

p. 514: Caption to Fig. 16–44, Figure 16–42 should be "Figure 16–43"

p. 515: Caption to Fig. 16–47, 16–45 should be "16–46"

p. 517: Concept Review, end of 1st paragraph, the galaxy diameter is "100,000 light-years" not 10,000 light-years

p. 559: Column 1, line 11 (line 3 of 3rd paragraph), Figure 18–9 should be "18–4"

The following two corrections are courtesy of Marco G. Giammarchi, Istituto Nazionale di Fisica Nucleare, Milano (Italy)

p. 601, there is the claim that in a particle accelerator one reproduces the same energy and density as in the very early (10^{-12} s) Universe. This is true for the energy, but not for the density. The density produced in the Large Hadron Collider is much smaller than it was in the early Universe.

p. 603, caption of fig. 19-18: The discovery of the Higgs particle (more generally: Brout-Englert-Higgs) was made by the two detectors that were specifically equipped to do that job: ATLAS and CMS, not by ALICE, which was designed to study Heavy Ion Physics and search for things such as the Quark-Gluon plasma. See <https://home.cern/science/experiments/atlas> for more on ATLAS.

p. 609: FIO 19.1, paragraph 3, the reference to Figure 19–24 should be to "19–26"

Minor errors and typos

p. 5: In the caption to Fig. 1–4, the European Southern Observatory's Extremely Large Telescope is now (since 2017) referred to as ELT (not E-ELT).

p. 51: In the caption to Fig. 3–18c, the European Southern Observatory's Extremely Large Telescope is now (since 2017) referred to as ELT (not E-ELT).

p. 67: the close quote mark should be after "KAT" instead of after "...dry karoo region."

p. 120: there is no callout for Fig 5–17. To Lives in Science 5.3, at the end of the first paragraph, add: "In 1627, he published tables calculated using his laws of orbits (Fig. 5–17).

p. 158: In the second complete paragraph, line -5, "For atoms heavier that..." should be "For atoms heavier than..."

p. 191: that photo is for Hubble, not Cassini, so move the callout to line 6 in that column, after "present."

p. 197: the letter "c" in Fig. 7–11b and c" is not the correct color

p. 235: 2nd column, first complete paragraph, "We saw" should be "We see"

p. 255: "The final two photographs" should be "The final photograph"

p. 275: The reference to Fig. 9–16b should be to Figs. 9–16b,c,d

p. 276: to the TESS paragraph, column 2, add callout "Fig. 9–16e"

p. 276: column 2, "is to monitor" should be "is monitoring (Fig.9–16e)

p. 280: The reference to Fig. 9–16b should be to Figs. 9–16b,c,d

p. 323: Column 1, line 4, reference to Fig. 11–8c is misplaced. It should be at the end of the paragraph since it is of the 2018 release. The image in FIO 11-1 is of the 2016 release. And where it now says Fig. 11–8c, substitute "above"

p. 334: Caption to Fig. 11–18, omit the word "dashed" in the final sentence since the line is solid.

pp. 339–40: Change reference to Fig. 11–27 at bottom of column 1 (p. 339) to 11–27a and then add "(See Fig. 11–27b)" to end of p. 340 paragraph, column 2 ". . . which applies only to Cepheids."

p. 343: Column 1, add "(see Fig. 11–27b)" to end of paragraph immediately before section 11.8.

p. 343: In Fig. 11–30c caption, the sentence beginning "Using a light curve . . ." is not correct grammar. Suggest: "The Hubble Space Telescope's images of the VAR! Star were taken at the times shown with large cartoon stars superimposed on a light curve measured by members of the AAVSO (red dots)."

p. 344: Line 10, add a callout: "Figs. 11–32 and 11–33"

p. 344: To the reference to Fig. 11–33, add "11–32"

p. 344: Add the fact that Fig. 11–31 is M93 in that image's caption: "An open cluster of stars, M93, in the . . ."

p. 405: Fig. 13–

30b appears to be missing. Omit the "a" and the whole "(b) The central region"

p. 426: Column 2, line 5, omit "deduced" in 1st paragraph of 14.8: "supermassive black deduced holes."

p. 431: Column 2, paragraph 2, ACL 13.1 is called "Searching for Supernovae" not "Search . . ."

p. 432: End of column 1, 1st paragraph, add "(See Fig. 14–23b)"

p. 454: The images used for Fig. 15–9b and c are identical. Omit part "c" image and caption.

p. 456: Figures 15–11 is missing the labels: letters a through m.

p. 470: Fig. 15–32 caption, add: "See also the Chapter 11 opener, p. 316."

p. 473: In the final two sentences before Concept Review, the two Figure references need to be in color with callout boxes.

p. 493: Column 1, lines 9 & 10, capitalize "this" and decapitalize "The"

p. 499: For part d, "(d)" needs to be boldface, and then capitalize "Gravitational"

p. 503: Caption for Fig. 16–33, make title of FIO 16.2 agree with p. 505 title: "Redshifts and the Hubble–Lemaître Law"

p. 504: Column 1, line 15, this same issue is present in the 3rd paragraph.

p. 534: 3rd line, Mauna Kea should be "Maunakea"

p. 576: Caption for Fig. 18–27, line 6, "(c and d)" should be bold. In line 8 "(c)" and "(d)" should not be bold.

p. 609: FIO 19.1, paragraph 1, the equations are colored. In every other FIO section, they are black.