Comments and Error List for

*The Observation and Analysis of Stellar Photospheres*, 3rd edition.

--- Please tell me at dfgray@uwo.ca about any errors you find ---

Last updated 26AP2016

p. 12, Eq. 1.11: The $dv$ at the end still has three components and might be written as $d^3v$. The same is true in Eq. 1.12.

pp. 12 & 13: One may wish to call $v_1$, $v_2$, and $v_3$ speeds instead of velocities.

p. 23, top line: replace the word probably with probable.

p. 28, Fig. 2.1: The star convolution sign between the top and middle panels should be a multiplications sign.

p. 40, Fig. 2.8: The star convolution sign between the Shaw function and $F(x)$ to the left should be a multiplication sign.

p. 75, third paragraph, first line: should read $\lambda/\Delta\lambda = 10^5$.

p. 120, following Eq. 6.4: The numerical value of sigma should be $5.67040 \times 10^{-5}$ or $10^{-8}$ to be consistent with the more correct value in Appendix A.

p. 131, Eq. 7.8: The integration variable at the end should be $t_\nu$ not $\tau_\nu$.

p. 142, four lines after Eq. 7.37: The density units should be $g/cm^3$.

p. 149, last text line before Eq. 8.1: (1.16) should be (1.17).

p. 150, third line of text: Delete the $F$ in $(hRc/F)$.

p. 150, Eq. 8.3: For the best accuracy with numerical computation, one would normally use the more complete value of $13.598$ eV instead of $3.60$ eV, as in Appendix D.

p. 151, 8 lines up from bottom: 3746 should read 3647.

p. 152, Fig. 8.2: the Balmer limit is at 3647, not 3746.

p. 156: Top line says units are in $10^{-18}$ cm$^2$/H$^+$ ion, so Equation 8.12 should include this factor, i.e., $\alpha_{bf}$ from the polynomial, which goes with Figure 8.3, should be multiplied by $10^{-18}$ before going into Equation 8.12.

p. 158, mid-page, the polynomial for $U_1$: place a minus sign in front of $U_1$ so it reads $-U_1 = 54.0532 ...$

p. 159, Eq. 8.16: The polynomials fit John’s (1994) values that are in units of $10^{-26}$ cm$^2$ per ion, so multiply $\alpha(\text{He}^\text{ii})$ by $10^{-26}$ before going into Equation 8.16.

p. 160, Fig. 8.5, panel (a) does not properly portray the H$^+$ bound-free component. The correct version is:
p. 172, second line up from bottom: Magnetic pressure is $B^2/(8\pi)$. The $B$ values in Table 9.1 should be increased by $2^{1/2}$.

p. 173. Eq. 9.2: The delete the exponent of $1/2$ on $t_0$ in the integrand. (A known error from the 2nd edition that did not get fixed.)

p. 188, line 6-7: The wavelengths are reversed, as is clear from Fig. 9.10.

p. 188, line 8: The sixth word is supposed to be depends.

p. 191, Fig. 9.13 caption: Insert: In these relatively cool models, the electron pressure rises rapidly in the deep layers, where the electron donors become more ionized.

p. 192, Fig. 9.14 caption: Replace with: Gas pressure and electron pressure are shown as a function of log $\tau_0$ for models having $S_0 = 2.0$. For these relatively hot models, the electron donors are highly ionized resulting in $P_e$ closely tracking $P_g$.

p. 194, Fig. 9.16: The heavy curve should be labeled 1, not 0.

p. 195, four equations starting with 9.24: replace the $c_0$ symbols with the word constant.

The point of these four equations is to specify the proportionality. The constant will be unique to each case.

p. 200, 2nd reference: should read Prieto not Preito.

p. 217, Fig. 10.10: $H_{19}$ should be $H_9$.

p. 218, top of page: Delete this six-line paragraph.
p. 224: The sign of the bolometric correction has not been consistently handled here. Keeping the negative convention shown in Fig. 10.16 and Eqs. 10.9 & 10.10 means that the sign of BC in Eqs. 10.7 & 10.8 should be reversed.

p. 246, last line of Fig 11.4 caption should read *comparison*.

p. 254, in the line of text above Eq. 11.42: insert the f for oscillator strength in the numerator of the fraction.

p. 255, Eq. 11.44: insert the convolution star between alpha(Stark) and alpha(v.d. Waals).

p. 258, Fig. 11.10: In the ordinate label, the a off to the left should be the second argument in $H(u,a)$.

p. 261, line after Eq. 11.54: the exponent on 10 is not $\chi_\lambda \theta$, but $\chi_{\lambda, \theta}$, i.e., the $\lambda$ is a subscript, as in Eq. 11.54.

p. 321, Fig. 13.8 caption: should read Fe II, not Fe I.

p. 326, 4th line down: Figure 13.8 should be Figure 13.7.

p. 330, last line on the page: Delete the z at the start of the line.

p. 345, caption on Fig. 14.2: revised parallax is currently 130.23 mas, resulting in a photometric radius of 2.76 R⊙.

p. 349, Fig. 14.5: The ordinate label should be R in solar units, i.e., R/Rsun.

p. 353, Eq. 14.17: The $\sim$ symbol near the end of the line should be $\sim$ instead.

p. 358, 4th line: Should read “... such pairs in the spectra...”

p. 383, last equation: The coefficient in front of $(\delta P/P)^2$ should be 4, not d.

p. 400, Eq. 16.7: the signs of the log kappa and the delta-theta-chi terms should be +.

p. 409, Fig. 16.13: the solar point (circled dot) is missing and should be at $\log A = -10.9$, $[\text{Fe/H}] = 0$.

p. 435, second integral near the top of the page: the subscript on both instances of $\zeta_{RT}$ should be T, not R.

p. 448, Fig. 17.15, label toward the right: The ε in front of Eri has been lost.

p. 464, Eq. 18.10: The first set of integration limits should be changed from $\pm R$ to $\pm v_L$.

p. 465, par. 1, line 1: Should read, “We can evaluate $G(\Delta\lambda)$...”

p. 486, Fig. 18.22: The 5/3 at the end of the equation is supposed to be an exponent on the mass, as in Eq. 18.23.

p. 507, Table B.2: The effective temperatures for these giants come from Eq. 14.17 and should read as follows.

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