Errata in “Galaxy Formation and Evolution” (Mo, van den Bosch and White)

This list includes all errors found so far. The errors are divided into two categories, “Significant errors” (serious or misleading errors in equations and in the text), and “Innocuous errors”. Some of the errors may have already been corrected in the newer reprints of the book.

Significant errors

- P14, line 9 from bottom: $M_{\rm sat}/M_{\rm main} \to M_{\rm main}/M_{\rm sat}$ (Credit P. Hall)
- P82, Eq.(2.46): insert $\frac{1}{M}$ in front of the summation (Credit: G. Blanc)
- P104, line 14: $\mathrm{d}l^2 = \mathrm{d}w^2 - \mathrm{d}x^2 - \mathrm{d}y^2 - \mathrm{d}z^2 \to \mathrm{d}l^2 = \mathrm{d}x^2 + \mathrm{d}y^2 + \mathrm{d}z^2 - \mathrm{d}w^2$
- P104, line 15: $x^2 + y^2 + z^2 - w^2 = a^2(t) \to w^2 - x^2 - y^2 - z^2 = a^2(t)$
- P142, Eq.(3.210): $16.4\eta \to 16.4$
- P171, line 1 in §4.1.5: $\xi \to \xi^{-1}$ (Credit: L. Barnes)
- P205, Eq.(4.264): delete both of the factors “2” from the right hand side (Credit: R. Angulo)
- P205, Eq.(4.266): $\delta_{\rm G}^2 \to \delta_{\rm G}$ (Credit: H. Li)
- P207, Eq.(4.272): $\frac{3}{(kR)^2} \to \frac{3}{(kR)^3}$ (Credit: Z. Butcher)
- P243, Eq.(5.162), the third variable in the second B: $\chi \to 1 - \chi$ (Credit: A. Benitez Llambay)
- P244, Eq.(5.167): $\tilde{\Phi} \to \tilde{\Psi}$ (Credit: A. Benitez Llambay)
- P264, Eq. (6.14): add $-\langle\delta_1\rangle\langle\delta_2\rangle\langle\delta_3\delta_4\rangle$ (six terms) on the right hand side of the first line
- P266, Eq. (6.26): $\mathbf{x} + \mathbf{x}' \to \mathbf{x} - \mathbf{x}'$ (Credit: J. Lange)
- P269, Eq. (6.44): replace by

$$\kappa = \mu_4 - 3\kappa_2^2 - 4\kappa_1\kappa_3 - 6\kappa_1^2\kappa_2 - \kappa_1^4$$

- P270, Eq. (6.58): $\mathbf{x} + \mathbf{x}' \to \mathbf{x} - \mathbf{x}'$
- P290, Eq. (6.163): $\frac{\overline{n}^2}{\overline{\nu}^2} \to \frac{1}{\overline{\nu}^2}$ (Credit: J. Witstok)
- P291, Eq. (6.165): $\frac{1}{\overline{\nu}^2} \to \frac{\overline{n}^2}{\overline{\nu}^2}$ (Credit: J. Witstok)
- P294, Fig. 6.6: $D_{\rm L} \to d_{\rm L}$; $D_{\rm S} \to d_{\rm S}$; $D_{\rm LS} \to d_{\rm LS}$
- P294, caption of Fig. 6.6: $D_{\rm L} \to d_{\rm L}$; $D_{\rm S} \to d_{\rm S}$; $D_{\rm LS} \to d_{\rm LS}$; erase “*comoving*” in line 3; erase the whole last sentence
- P295: Replace Eq. (6.196) by

$$\Phi(\mathbf{r}_\perp, z) = -\frac{GM}{(r_\perp^2 + z^2)^{1/2}} \qquad (\mathbf{r} = a\mathbf{x}) \, ,$$

- P295: Replace Eq. (6.197) by

$$\nabla_{\mathbf{r}_\perp}\Phi(\mathbf{r}_\perp, z) = \frac{GM\mathbf{r}_\perp}{(r_\perp^2 + z^2)^{3/2}} \approx \frac{GM\mathbf{b}}{(b^2 + z^2)^{3/2}} \, .$$

- P295: Replace Eq. (6.200) by

$$\vec{\alpha} = \frac{D_{\rm LS}}{D_{\rm S}}\vec{\alpha}_{\rm d} = \frac{d_{\rm LS}}{d_{\rm S}}\vec{\alpha}_{\rm d} \, ,$$

- P295: Replace Eq. (6.201) by

$$\vec{\alpha}_{\rm d} \equiv \frac{2}{c^2}\int \boldsymbol{\nabla}_\perp\Phi \,\mathrm{d}\chi = \frac{2}{c^2}\int \boldsymbol{\nabla}_{\mathbf{r}_\perp}\Phi(b, z)\,\mathrm{d}z$$

- P296, line 1 below Eq.(6.202): angular-diameter distances $\to$ radial coordinates (angular-diameter distances in comoving units)
- P296, Eq. (6.203): $D \to d$

- P296, line 3 below Eq. (6.205): $D_{\rm LS} \to d_{\rm LS}$; $D_{\rm L} \to d_{\rm L}$
- P296, Eq. (6.206): $D \to d$
- P296, Eq. (6.209): $D \to d$
- P296, line 1 below Eq. (6.209): $D_{\rm L} \to d_{\rm L}$
- P297, Eq. (6.212): the five $\mathbf{x}$ should all be replaced by $\mathbf{r}$
- P298, Eq. (6.217): $D \to d$
- P298, Eq. (6.221): $D \to d$
- P299, Eq. (6.225): $D \to d$
- P299, line 1 below Eq. (6.225): $D_{\rm L} \to d_{\rm L}$
- P299, Eq. (6.226): $D \to d$
- P299, Eq. (6.227): $D \to d$
- P299, Eq. (6.228): $D_{\rm L} \to d_{\rm L}$; $D_{\rm S} \to d_{\rm LS}$; $D_{\rm LS} \to d_{\rm S}$
- P299, Eq. (6.229): $D \to d$
- P301, Eq.(6.234): insert $\frac{1}{c^2}$ after the minus $(-)$ sign in the first line; insert $\frac{1}{c^2}$ after the equal $(=)$ sign in the second line
- P301, Eq.(6.235): insert $\frac{1}{c^4}$ after the equal $(=)$ sign
- P321, Eq. (7.1): $\mathbf{x} + \mathbf{x}' \to \mathbf{x} - \mathbf{x}'$
- P327, Eq. (7.42): $\mathbf{x} + \mathbf{x}' \to \mathbf{x} - \mathbf{x}'$
- P352, Eq.(7.139): $\overline{\rho} \to \rho_{\rm crit}$
- P353, Eq.(7.141): $\frac{\Delta_{\rm h}}{3} \to \frac{\Delta_{\rm h}\Omega_{\rm m}}{3}$
- P386, Fig. 8.6: line 3 in caption: gas mass $\to$ total mass
- P475, lines 4 - 6 in §10.3.5: the evolution of a star $\cdots$: stars with higher metallicities evolve faster. $\to$ the position of a star $\cdots$: stars with higher metallicities are cooler and fainter. (Credit Y-T Lin)
- P490, below Eq.(10.133): In the special case where the star-formation rate is equal to the infall rate $[\Psi(t) = \mathcal{A}(t)]$ $\to$ In the special case where the infall rate is equal to the rate at which mass is locked up in stars $[\mathcal{A}(t) = \Psi(t) - \mathcal{E}(t)]$ (Credit P. Hall)
- P499, Eq.(11.30): get rid of the minus sign following the equal sign (Credit: A. Battisti)
- P580, line 1 above Eq (13.13):
  $v_{\rm los} = v_r \cos\alpha - v_\vartheta \sin\alpha \to v_{\rm los} = v_r \sin\alpha - v_\vartheta \cos\alpha$ (Credit: P. Hall)
- P659, Eq.(15.16): $\frac{{\rm d}^2 N}{{\rm d}md} \to \frac{{\rm d}^2 N}{{\rm d}m\,{\rm d}z}$
- P680, Eq.(15.80): $\tilde{u}(k|m) \to \tilde{u}(k|M)$
- P681, Eq.(15.85), first line: $\tilde{u}(k|m) \to \tilde{u}(k|M)$
- P755, line 1 below Eq.(B1.39): $\hbar_p^2/4\pi^2 m_{\rm e} q_{\rm e}^2 \to \hbar_{\rm P}^2/m_{\rm e} q_{\rm e}^2$
- P756, line 1 below Eq.(B1.47): $g_n/g_{n+1} \to g_n$
- P769, Eq.(C1.21): The power index $-1/2$ should be $1/2$ (Credit: M. Abadi)

Innocuous errors

- Title page: *Max Planch* $\to$ *Max Planck*
- P10, Fig. 1.2: Add an arrow from the box labeled "cold gas" to the line labeled "AGN accretion"
- P24, line 12 from bottom: a homogeneous $\to$ an inhomogeneous
- P46, lines 5 and 6 in **(c) Colors**: Ellipticals also display color gradient. In general, the outskirt has a bluer color than the central region. $\to$ Ellipticals also display color gradients. In general, the outskirts have bluer colors than the central regions.
- P47, line 2 in caption of Fig. 2.16: $\mathcal{M}_B \le 20.5 \to \mathcal{M}_B \le -20.5$ (Credit: W. Luo)
- P94, line 1 below Eq.(2.59): $K = H_0^2 a_0^2(\Omega_0 - 1) \to K = H_0^2 a_0^2(\Omega_0 - 1)/c^2$ (Credit: L. Graziani)
- P192, line 5 below Eq.(4.209): Eq.(4.205) $\to$ Eq.(4.206)

- P216, line 3 from bottom: $3M/4\pi\overline{\rho}(t) \to [3M/4\pi\overline{\rho}(t)]^{1/3}$
- P249, line 11: $(df/dt = 0) \to (df/dt = 0)$?
- P330, Eq.(7.57): $P(\Delta\delta_\mathrm{s}|\delta_\mathrm{s}) \to P(\Delta\delta_\mathrm{s}|\delta_\mathrm{s})\,\mathrm{d}(\Delta\delta_\mathrm{s})$
- P386, line 4 of the caption to Fig.8.6: $f_\mathrm{gas} = 0.15 \to f_\mathrm{gas} = 0.15,$
- P392, line 3 below Eq.(8.132): Eds → EdS
- P403, line 1 above Eq.(8.192): by M_sp and M_sp → by M_sp and v_sp
- P412, line 2 below Eq.(8.221): in detail is → in detail in
- P414, line 15 from bottom: In many some clusters → In many clusters
- P470, line 6 from bottom: $R_\mathrm{s} \to r_\mathrm{s}$
- P571, line 1: cannabalism → cannibalism
- P647, line 4 in §14.3.3: $10^{10}\mathrm{M}_{.} \to 10^{10}\,\mathrm{M}_\odot$
- P741, Eq. (A1.2) and the line above it: $\mathrm{d}s^2 \to \mathrm{d}l^2$
- P767, line 16 from bottom: **(c)** $\mathbf{P}^3\mathbf{M}$ → **(d)** $\mathbf{P}^3\mathbf{M}$
- P776, below the line "Planck constant" add a new item:
  Reduced Planck constant $\hbar_\mathrm{P} = h_\mathrm{P}/2\pi$
- P776, Electron charge: $e \to q_\mathrm{e}$
- P779, line 13 from bottom, reference "Blandford R.D., Payne D.G. 1982, MNRAS, 199, 883" listed twice