

## ERRORS IN GALACTIC ASTRONOMY (January 5, 2010)

We are very grateful to colleagues for reporting errors to us – we are especially indebted to Roland van der Marel and Bodil Helt for extensive corrigenda.

### I: ERRORS CORRECTED AT FIRST REPRINTING

- p.43 : eq. (2.17): numerator and denominator on the r.h.s. should be reversed.
- p.78, l.4 : \*to\* distinguish
- p.88, l.3 : pulsars \*pulse\*
- p.100, l.-5 (i.e., line 5 from the bottom):  $z \rightarrow$  metallicity  $Z$
- p.107, Table 3.10, heading: delete “giants: luminosity and colors”
- p.135, Fig. 3.17: labels don’t reflect that both axes are logarithmic
- p.158 & 159, l.-2: within \*of\* cluster galaxies
- p.166, l.14: luminosity function\*s\*
- p.175, l.7: period missing
- p.183, l.6: in  $I(\mathbf{R})$ , the R should be boldface, not underscored.
- p.199, l.19: .05  $\rightarrow$  .005
- p.200 & 201, l.-5: \*by\* examination
- p.200, Fig 4.38: interchange left and right panels
- p.216, l.5: 3893  $\rightarrow$  3898
- p.237, Fig. 4.63: in left pane all plot symbols should be same type
- p.240, 241, l.1: \*to of\*
- p.247 l.-5: the random the motions
- p.264, Fig. 5.1: position of RC added (all others lines from Table 5.1 are also indicated).
- p.273, Fig. 5.7: label along  $x$ -axis fails to indicate that the scale is logarithmic.
- p.280, l.-4: A \*stars\*
- p.292, l.-3: \*there\* is no
- p.345, l.1: for a for a
- p.401, l.13:  $\Delta R \rightarrow \Delta r$
- p.416, p.-17: the number of stars  $\rightarrow$  the number of globular clusters
- p.456, l.10: the width \*of\* the Ly ...
- p.466, eq (1) in box: the penultimate line should end  $L = 0 \not\rightarrow L = 0$
- p.475, Table 8.1, Notes: in the last line,  $10^6 \rightarrow 10^{-6}$
- p.486, l.-9: heat a photon  $\rightarrow$  heat a grain
- p.514, l.-5: dust in early-type galaxies dust
- p.517, Fig.8.43, caption, last line: falls  $\rightarrow$  rises
- p.529, l.-8: much this of tail
- p.538, Fig 9.3: there should be no emission at  $l > 90$  and  $v > 0$  or at  $l < -90$  and  $v < 0$
- p.573, l.-16: add “was sensitive” after COBE
- p.607, l.12: have allow\*ed\* us

p.608, l.14: the kinds \*of\* data  
p.608, l.17: to examine of the bulge  
p.609, l.2: delete “Galactic center: extinction to”  
p.622, l.-9: at its red end → at its blue end  
p.623, l.-12: Seventer → Sevenster  
p.644, l.4: expected \*to\* decrease  
p.663, l.-2: the amount \*of\*  
p.670, Fig.10.32: wrong figure shown  
p.678, l.3&4: delete this para  
p.711, l.-12: kurtotic → kurtosis  
p.719, Fig 11.13, Caption: CFHT resolution should be 0.5”.

## II: ERRORS in SECOND PRINTING

p.10, l-6 : Hoskins → Hoskin  
p.15, l+1 : late 1923 → late 1922  
p.18, l-5 : galactic bar → Galactic bar  
p.31, below eq (2.1): longitude of NCP is  $l_{CP} = 122.932$  not 123.932 as given  
p.48, below (2.28) replace 0.921 with 1.086  
p.61, l+18 : that the this galaxy → that this galaxy  
p.65, Eq (2.54): replace  $\theta_E$  by  $\theta_E^2$   
p.80 Eq (3.11): replace  $(v_{r1} + v_{r2})^2$  by  $(v_{r1} + v_{r2})^3$   
p.87, l-8 : periods of the of the best → periods of the best  
p.97 Table 3.6 at  $V - K = 0$  95000 should read 9500  
p.111, l+17 : the number  $dN/dm$  of → the number  $dN$  of  
p.115, l+13 : 0.15 → -0.35  
p.118 Eq (3-51): should read

$$\frac{\varpi}{\sigma_\varpi} = \frac{1}{2} \left( \frac{\varpi'}{\sigma_\varpi} + \sqrt{\frac{\varpi'^2}{\sigma_\varpi^2} + 4(5\beta - 4)} \right).$$

Table 3.15 should read

**Table 3.15** The Lutz-Kelker bias in parallax and absolute magnitude and its 90% confidence limits

$\varpi'/\sigma_\varpi$	40	20	15	10	8	5	3
$(\varpi - \varpi')\sigma_\varpi$	-0.019	-0.038	-0.050	-0.076	-0.095	-0.155	-0.275
$\varpi_L/\sigma_\varpi$	38.7	18.7	13.7	8.6	6.6	3.5	1.2
$\varpi_U/\sigma_\varpi$	41.3	21.2	16.2	11.2	9.2	6.1	4.0
$M - M'$	-0.001	-0.004	-0.007	-0.016	-0.026	-0.068	-0.209

p.147, note : the Shapley-Ames → the Revised Shapley-Ames  
p.164, Eq (4.4) and on line below: replace  $\Phi_0$  by  $\Phi^*$   
p.177, Eq (4.7):  $P(d)$  →  $P(\mathbf{d})$

p.177, Eq (4.8): Integrand missing factor

$$\frac{1}{\sigma^2} \exp\left(-\frac{R^2 + R'^2}{2\sigma^2}\right)$$

p.178, l+1 : length  $a$  their  $\rightarrow$  length  $a$  of their

p. 181 Table 4.5 last line: the term involving a square root is too big by a factor 2, so the formular should read

$$\frac{\pi}{4s} - \frac{1}{s^2 - 1} \left( \frac{1}{2} - \frac{(1 - s^2/2)c(s)}{|s^2 - 1|^{1/2}} \right)$$

p.185, last line: replace  $x - yR^{1/4}$  by  $x + yR^{1/4}$

p.237, l+4: add '+4' before 'being'

p.255, Eq in Problem 4.1 missing factor  $1/\pi\sigma^2$  before integral and limits of  $\theta'$  integral should be  $0, \pi$ .

p.256 In last line of Problem 4.5, replace  $I \sim R^{-(1+\alpha)}$ . by  $I \sim R^{-(\alpha-1)}$ .

p.277, l-5 'lower' to 'higher'

p.287, Last line of (5.16): replace by  $\mathcal{M}^{-1.83}$  for  $0.2 M_\odot < \mathcal{M} < 1 M_\odot$

p.297, Fig 5.15 : The  $\beta$ -decay arrows should point diagonally

p.308, l 15,16: change  $x$  to 0.2 and 0.51 to 0.52

p. 311 eq (5.48) change 0.6 to 6

p. 312 l 5: change 0.6 to 6

p. 316 eq (5.66):  $dM_{\text{GB}}$  to  $d \ln M_{\text{GB}}$

p. 322 l-2: (5.72) to (5.71)

p. 324 l 18: 'lower-frequency' to 'higher-frequency'

p. 325 Prob 5.8 SF rate  $\propto e^{-\alpha t}$  and (5.73) should read

$$\Phi_0(M) = \frac{e^{t\alpha}}{e^{T\alpha} - 1} \Phi(M) \quad \text{where } T = \min(t, \tau_{\text{MS}}).$$

p. 338 l-12 to end para: replace with "Since RR Lyrae period decreases monotonically with the star's metallicity, this gap also shows up as a minimum in the period distribution; clusters on the metal-rich side of the gap form a group whose RR Lyrae stars have short periods, while those on the metal-poor side of the gap contain only long-period RR Lyrae stars."

p 354 l 1: change "second" to "third"

p 371 l 12: change  $r$  to  $R$

p 371 l -4: change "spectra" to "measurements"

p 372 l -13: replace "an isotropic system" with "a system with an isotropic velocity distribution"

p. 537: caption Fig 9.2: change  $r$  to  $R$

pp. 538, 539 captions of Figs 9.3 & 9.4: change  $20^\circ$  to  $15^\circ$  and also in text

p. 436 Problem 8.3: add that beam covers  $6 \times 10^{-7}$  steradians.

pp 539,540: in many places change  $r$  to  $R$

p. 542 caption of Fig 9.7: reverse 'clockwise' & 'anticlockwise' in the last sentence.

p. 548 l 2 and caption Fig 9.12: change  $20^\circ$  to  $15^\circ$ ; also change (8.16) to (8.18)

p. 557 l19: add 'used' after 'been'

- p. 611 eq (10.3) second line: change  $\pi s_b$  to  $\pi q_b s_b$
- p. 612 eq (10.4) change first  $2z_0$  to  $4z_0$
- p. 627 l 9 and 11: change  $V_\odot$  to  $W_\odot$
- p. 631 l-2 of Box 10.2: change  $(q \sin \psi, \cos \psi)$  to  $(\cos \psi, q \sin \psi)$
- p. 639 eq (10.22): remove  $\frac{R_0}{R}$ ; in last line of eq (10.27) add  $(R - R_0)$  before  $\frac{d\Omega_z}{dR}$
- p. 640 eq (10.29): remove subscript  $z$  from  $\Omega$
- p. 642 l 10: §2.1.5 to §2.1.6
- p. 659 l -7: ‘density is  $K/D$ ’ to ‘density is  $K/(2D)$ ’; eq (10.53) add minus sign after second equality
- p. 668 eq (10.63) and in line above: add hats to  $\mathbf{x}^{(i)}$
- p. 669 eq (10.64): replace top of fraction by  $\sum_i (v_{\text{los}}^{(i)} + \mathbf{v}_\odot \cdot \hat{\mathbf{x}}^{(i)}) \mathbf{e}_\phi^{(i)} \cdot \hat{\mathbf{x}}^{(i)}$
- p. 673 l-17: change  $[\text{Fe}/\text{H}] \lesssim -0.8$  to  $[\text{Fe}/\text{H}] \gtrsim -0.8$
- p. 674 l 12: change  $\mu_0 d$  to  $\mu_0 s$
- p. 675 last line: change  $\frac{1}{3}u^3/\mu_0^3$  to  $\pi u^3/(16\mu_0^3)$  and change rhs of eq (10.68) to

$$\frac{\pi^2 n_0}{4\mu_0^3} u^3 f(u)$$

- p. 678 caption Fig 10.37: replace  $y_{\text{eff}} = 0.025$  by  $p/(1+c) = 0.025 Z_\odot$
- p.680, 3 lines above (10.73): after ‘by’ replace rest of paragraph with ‘equations (10.73) below with  $q = 0.6$ ,  $\beta = \gamma = 1.8$ , and  $r_t = 1.9$  kpc.’
- p. 681 l -4: change “0.2” to “2”
- p. 692 In denominator of second term on left of (10.79) replace  $R_0$  with  $R_0^2$ .
- p. 704, eq. (11.13) in denominator  $\sigma_k \rightarrow \sigma_k^2$
- p. 745, Arias : voordinate  $\rightarrow$  coordinate
- p. 758, Hoskins: Hoskins  $\rightarrow$  Hoskin