

Errata And Addenda For Fly by Night Physics

"Of making books there is no end, and much study is a weariness of the flesh." -- Ecclesiastes 12:12

Errors, typographical and otherwise, in Fly by Night Physics are listed here.

Alina Gutierrez has kindly set up a link https://docs.google.com/forms/d/10f1IQNorxV53vaJ_Nmnqkj1WtcOB2PzKxL7VhlXWteY/ on which you could directly enter errata.

Readers who find errors are urged to bring them to my attention by email (zee@kitp.ucsb.edu) using for subject "fly by night physics errata" so that your email does not get treated as spam by the filter on my mailer. I would appreciate it if you would write them in exactly the same format as used here, including the (Thanks to ABC). Notation: Line -n means line n from the bottom of the page. It would be easiest for me if errata are sent to me as plain text in a email rather than in some other format.

Please check to see if the errata you found are not already listed here.

I have many other commitments, and so I may not get to your erratum for quite some time if sent by email. If you feel that the erratum you sent in is particularly serious, please email me again and say so. Thanks.

My intention is to produce a functional errata page that would help the reader understand the material, rather than a nice looking errata page that is perfectly formatted and ordered, free from repetitions, etc. On the other hand, if you find a significant error on this errata page, of course I would appreciate your letting me know. Please be warned that I have not checked every single erratum entry here.

One thing that is useful for me to know is how complete the index is. If there are items in the index that you feel should be there but are not, please let me know. Most people do not know that the index is not prepared by the author but by a professional index compiler who often knows almost nothing about the subject of the book.

I would also like to take this opportunity to thank all of you who sent in errata, particularly those who also posted a favorable "Customer Review" on Amazon.com. Appreciative words from readers make the enormous effort that went into writing a book like this worthwhile.

last updated 5/25/2022

p12: Eq. (1) should have a negative sign. (Thanks to Mark Weitzman)

p63: line 3 (sunny blue sky section) in equation for B: $k^2 p/cr \rightarrow k^2 p/r$. (Thanks to Mark Weitzman)

p69: line 5 $S \sim e^2 a^2/c^4 R^2 \rightarrow S \sim e^2 a^2/c^3 R^2$. (Thanks to Mark Weitzman)

p73: line -3 $P \sim e^2/m^2 c^3 E^2 \rightarrow P \sim e^4 m^2 c^3 E^2$. (Thanks to Mark Weitzman)

p111: Eq. (4) $r = \sim 2me \rightarrow r = \sim 2me^2$. (Thanks to Mark Weitzman)

p120: last line: whatnot \rightarrow what not. (Thanks to Mark Weitzman)

p125: Footnote 19: $\epsilon = \pi^2 T^4/45(nc)^3 \rightarrow \epsilon = \pi^2 T^4/15(nc)^3$. (Thanks to Mark Weitzman)

p167: line 5 $P = -dE/dV \mid S = 3 E/2 V = NT/V \rightarrow P = -dE/dV \mid S = 2 E/3 V = NT/V$. (Thanks to Mark Weitzman)

p176: line 10 $[n] = E/T \rightarrow [h] = M^{1/2} L E^{1/2}$. (Thanks to Mark Weitzman)

p184: last line Pace \rightarrow Peace. (Thanks to Mark Weitzman) (AZ: I actually wrote pace, the scholarly form of peace. Both are OK.)

p188: line -2 $p^2 F/2m - e\phi(r) = h^2 n^5/3/2m - e\phi(r) \rightarrow p^2 F/2m - e\phi(r) = h^2 n^2/3/2m - e\phi(r)$. (Thanks to Mark Weitzman)

p194: Eq. (9) RHS: $\int_0^\infty dx x^2 1/e^x - 1 \rightarrow \int_0^\infty dx x^2 1/e^{x^2} - 1$. (Thanks to Mark Weitzman)

p194: line 7 $\sim x^2/x = x \rightarrow \sim x^2/x^2 = 1$. (Thanks to Mark Weitzman).

p229: line 7 in Chandrasekhar section: $\epsilon(p) = \sqrt{(pc)^2 + (mc)^2} \rightarrow \epsilon(p) = \sqrt{(pc)^2 + (mc)^2}^2$. (Thanks to Mark Weitzman)

p307: line 8 ... Newtonian point moving ... \rightarrow ... Newtonian point particle moving ...
(Thanks to Mark Weitzman)

p310: Diagrams (c), (d) I think the electron and positron lines should be distinguished. I recommend the usual reversal of the arrow on the positron lines.
(Thanks to Mark Weitzman)

p310: Caption on diagram line 5 the electron. \rightarrow the electron, and the positron (arrow reversed). (Thanks to Mark Weitzman)

p315: Footnote 5 add or saddle. (Thanks to Mark Weitzman)

p345: Footnote 16, I am confused, perhaps clarify. You state terms odd in q vanish, but then you make a special remark about $1/q$ drops out, and ignore the following even term in q , to state that the leading term which is odd ($q-3$), gives the m^2 contribution. Seems like you are missing a power of q somewhere. (Thanks to Mark Weitzman)

p369: Eq. (5) missing a minus sign on RHS. (Thanks to Mark Weitzman)

p376: line 7 on RHS of equation no prime on x : $-4\pi\rho(\sim x \rightarrow |) \rightarrow -4\pi\rho(\sim x \rightarrow)$. (Thanks to Mark Weitzman)

p378: Eq. (11) on RHS $\delta(3)(x \rightarrow |) \rightarrow -4\pi\delta(3)(x \rightarrow)$. (Thanks to Mark Weitzman)

p378: Eq. (12) on RHS $\delta(3)(x \rightarrow |) \rightarrow -4\pi\delta(3)(x \rightarrow)$. (Thanks to Mark Weitzman)

p399: lines 7,8 Latex needs to be fixed: $\int \infty r_0 \rightarrow \int \infty r_0$. (Thanks to Mark Weitzman)

p56: (1), equations (5) and (6) are interchanged.

p61: line -2, chapter II.1

p68: In the spirit of fly by night physics, we deduce in (8) that E is proportional to a . To show that \vec{E} does not depend on the component of \vec{a} along the line of sight, we have to either appeal to the pictorial argument on p72 or do a detailed fly by day calculation. Note that there is a hidden velocity dependence inside the delta function in both (6) and (7) due to the retardation condition, and consequently φ also contributes to \vec{E} . (AZ)

p176: paragraph 2. It is true that there are only three equations for four unknowns, but the equations are homogenous, and so we could consider β as given. Then we have three equations for the three unknowns α , γ , and δ , which we can determine in terms of β . Then we find the dimensionless combination $(\hbar n / (m T)^{3/2}) \beta$ and we reach exactly the same conclusion as in (1). (AZ)

p184: middle of page, after $=1/$, a parenthesis is missing.