

page 9....eq. (1.54)... change to: $P_n |a_m\rangle = \delta_{mn} |a_m\rangle$

page 66.... eq. (3.92).... change to: $i\hbar \frac{dP_\alpha}{dt} = i\hbar \left[\left(\frac{d|\alpha\rangle}{dt} \right) \langle \alpha| + |\alpha\rangle \left(\frac{d\langle \alpha|}{dt} \right) \right] = [H, P_\alpha]$

page 66...two lines below (3.95).....change to: "There is actually no contradiction because ρ is not an Heisenberg operator...."

page 67.... line below (3.97).... change to "Multiply (3.96) by ϕ^* on the left and (3.97) by ϕ on the right"

page 94....eq. (4.181)....change to $\mathbf{L}^2 = \sum_{jk} (r_j p_k r_j p_k - r_j p_k r_k p_j)$

page 109...eq. (5.57)...change to: $a \sin \alpha e^{i\beta} - b \cos \alpha = b$

page 110...line above (5.61)....change to "For example, if we take $\alpha = \pi/2$ and $\beta = -\pi/2$, we obtain $|y-\rangle$ "

page 115...line after eq. (5.102)...change to: "If the states $|\alpha\rangle$ and $|\beta\rangle$ are orthonormal and complete, then....."

Page 118...Prob 5 second line...change to: "in terms of the ensemble averages $\langle S_i \rangle_{av}$ where...."

page 121...eq. (6.9)....change to: $H = \frac{\mathbf{p}^2}{2m} \rightarrow H = \frac{(\mathbf{p} - \frac{e}{c} \mathbf{A})^2}{2m} - e\phi$

page 122...eq. (6.17)....change to: $\langle \alpha_G | \frac{e}{c} \mathbf{A}_G | \alpha_G \rangle \neq \langle \alpha | \frac{e}{c} \mathbf{A} | \alpha \rangle$

page 123...eq. (6.26)....change to: $i\hbar \frac{dx_i}{dt} = [x_i, H]$

page 127...line below (6.62)....change to: "Therefore, substituting $\mathbf{S} = (\hbar/2) \boldsymbol{\sigma}$, we find...."

page 127....eq. (6.63),,,change to: $H = \frac{\boldsymbol{\sigma} \cdot (\mathbf{p} - \frac{e}{c} \mathbf{A}) \boldsymbol{\sigma} \cdot (\mathbf{p} - \frac{e}{c} \mathbf{A})}{2m} = \frac{1}{2m} (\mathbf{p} - \frac{e}{c} \mathbf{A})^2 - \frac{e}{mc} \mathbf{S} \cdot \mathbf{B}$

page 127...eq. (6.64)....change to: $\boldsymbol{\mu}_e = \frac{e}{mc} \mathbf{S}$

page 127...eq. (6.65)....change to: $H = \frac{\mathbf{p}^2}{2m} - \frac{e}{2mc} \boldsymbol{\mu} \cdot \mathbf{B} + \frac{e^2}{2mc^2} \mathbf{A}^2$

page 129...eq. (6.73)....change to: $H' = -\frac{e}{mc} \mathbf{S} \cdot \left[\frac{\mathbf{p}}{mc} \times \left(\mathbf{r} \frac{dV_c}{dr} \right) \right]$

page 129...eq. (6.75)....change to: $H = \frac{\mathbf{p}^2}{2m} - \frac{e}{2mc} \boldsymbol{\mu} \cdot \mathbf{B} + \frac{e}{m^2 c^2} \frac{1}{r} \frac{dV_c}{dr} (\mathbf{L} \cdot \mathbf{S}) + \frac{e^2}{2mc^2} \mathbf{A}^2$

page 134....line below eq. (7.2)....change to "where $\mu_B = e/mc$"

page 148...eq. (8.96)....change to $\Delta = a - 2b$

page 165...eq. (8.235)....change to: $\frac{d^2 R_l}{d\rho^2} + \frac{2}{\rho} \frac{dR_l}{d\rho} + \left[\frac{\lambda}{\rho} - \frac{l(l+1)}{\rho^2} - \frac{1}{4} \right] R_l = 0$

page 166...eq. (8.249)....change to: $A_0 + A_1 \rho + \dots + A_\nu \rho^\nu + \dots = 0$

page 174...eq. (9.5) second relation....change to: $P = -i\sqrt{\frac{m\omega\hbar}{2}} (a - a^\dagger)$

page 175...line after eq. (9.7)....change to "where we have made use of relation (9.3)"

page 218...eq. (12.81)....change to (the change is in the first term):

$$-\frac{\hbar^2}{2m} \frac{\partial}{\partial x} \left[\psi^* \frac{\partial \psi}{\partial x} - \psi \frac{\partial \psi^*}{\partial x} \right] - \frac{\hbar^2}{2m} \frac{\partial}{\partial y} \left[\psi^* \frac{\partial \psi}{\partial y} - \psi \frac{\partial \psi^*}{\partial y} \right] + \frac{ie\hbar}{mc} B_0 x \left[\psi^* \frac{\partial \psi}{\partial y} + \psi \frac{\partial \psi^*}{\partial y} \right] = i\hbar \frac{\partial}{\partial t} (\psi^* \psi)$$

page 208...line after eq. (12.1)....change to "As we discussed in Chapter 6, to..."

page 229....line after eq. (13.51)....change to: "where we have written $\sqrt{D^2}$
 $= |D|$."

page 241....eq. (13.161)....change to: $i\ddot{c}_2 = \left(\frac{c_2\gamma e^{i\delta t}}{i}\right)\gamma e^{-i\delta t} + \left(\frac{i\dot{c}_2 e^{i\delta t}}{\gamma}\right)\gamma(-i\delta)e^{-i\delta t}$

page 242....eq. (13.165)....change to: $c_2(t) = Ae^{\frac{i[-\delta + \sqrt{\delta^2 + 4\gamma^2}]t}{2}} + Be^{\frac{i[-\delta - \sqrt{\delta^2 + 4\gamma^2}]t}{2}}$

page 242....eq. (13.166)....change to: $c_2(t) = Ae^{-\frac{i\delta t}{2}} \left[e^{\frac{i\sqrt{\delta^2 + 4\gamma^2}t}{2}} - e^{\frac{-i\sqrt{\delta^2 + 4\gamma^2}t}{2}} \right]$

page 247...Prob.(6) last line...change to: "If a state $|\psi(t)\rangle$ at $t = 0$ is in the
"spin down" state in the x -direction, $|\psi_{x-}(0)\rangle$, then determine the probability
that at times $t > 0$ it is in a state $\psi_{x+}(0)$ "

page 252....eq. (14.9)....change to: $\omega_0 = -\frac{eB_0}{mc}$

page 263....eq. (15.11)....change to (change is in the second term on the right):
 $|\nu_1(0)\rangle = \cos\theta|\nu_e(0)\rangle + \sin\theta|\nu_\mu(0)\rangle$

page 278....two lines above (16.13) ...change to: "Since $|\psi_s^{(0)}\rangle$ are assumed
to be....."

page 280...second line below eq. (16.28)....change to: "We notice that in the
second order term, $E_s^{(2)}$, if the levels E_n^0 and E_s^0 are...."

page 285....eq. (16.61)....change to: $Y_{lm} \rightarrow (-1)^m Y_{lm}$

Page 286... eq (16.73).....change to: $\langle 0|zF|0\rangle = -\frac{ma_0}{\hbar^2} \langle 0|(\frac{r}{2} + a_0)z^2|0\rangle$

page 290....eq. (16.99)....change to

$$\begin{bmatrix} & 2S & 2P(m=0) & 2P(m=1) & 2P(m=-1) \\ 2S & 0 & -3eE_0a_0 & 0 & 0 \\ 2P(m=0) & -3eE_0a_0 & 0 & 0 & 0 \\ 2P(m=1) & 0 & 0 & 0 & 0 \\ 2P(m=-1) & 0 & 0 & 0 & 0 \end{bmatrix}$$

page 294...line below (17.12)....change to: " where $\omega_{mn} = \frac{E_m^{(0)} - E_n^{(0)}}{\hbar}$, and....."

page 295..line below (17.15)....change to "Substituting the series (17.13) in
(17.12) and....."

page 295...line below (17.18)....change to: ".....for all values of t and (17.14)
tells us....."

page 300....eq. (17.57).....change to: $w_{fi} = \int \lambda_{fi} dN_f = \int \lambda_{fi} \rho(E_f) dE_f$

page 308...line above (17.117)....change to: "Since Γ_{fi} equals....."

page 309....eq. (17.118)....change to : $c_i(t) = \frac{-i}{2\pi} \int_{-\infty}^{\infty} d\omega \frac{e^{i\omega t}}{\omega + \frac{E_i'}{\hbar} - i\frac{\Gamma_i}{2}}$

page 321....eq. (18.24)....change to: $\sigma_{abs} = 4\pi^2 \hbar \omega_{ni} \alpha |\langle n|x|i\rangle|^2 \delta(E_n - E_i - \hbar\omega)$

page 321....eq. (18.25)....change to: $\sum_f \int \sigma_{abs} d\omega = \frac{4\pi^2 \alpha}{\hbar} \sum_f (E_f - E_i) |\langle f|x|i\rangle|^2$

page 322....eq. (18.27)....change to: $\sum_f \int \sigma_{abs} d\omega = \frac{2\pi^2 e^2}{mc}$

page 324....eq. (18.44)....change to (see the factor $\sqrt{\pi}$):... $\frac{i\hbar}{\sqrt{V}} \int d^3r \epsilon \cdot [\nabla(e^{-i\mathbf{q}\cdot\mathbf{r}})] \frac{1}{\sqrt{\pi}} \left(\frac{Z}{a_o}\right)^{\frac{3}{2}} e^{-\frac{Zr}{a_o}}$

page 331...line above (18.88)...change to: "From (18.86) we obtain"
page 344...line before eq. (19.19)...change to: " The relation (19.14)...."
page 346...eq. (19.40)...change to: $R = \frac{|Ae^{2i\delta}|^2}{|A|^2} = 1$
page 349...eq. (19.66)...change to: $A' = -\left(\sin(\alpha a) + i\frac{\alpha}{k}\cos(\alpha a)\right)\frac{F'}{2}$
page 349...eq. (19.67)...change to: $B' = -\left(\sin(\alpha a) - i\frac{\alpha}{k}\cos(\alpha a)\right)\frac{F'}{2}$
page 350...eq. (19.73)...change to: $\tan(\delta') = \frac{k}{\alpha}\tan(\alpha a)$
page 351...eq. (19.83)...change to: $\alpha \cot(\alpha a) = -k \tan(ka)$
page 360...line above (20.18)...change to: "If we express $|\phi\rangle$ as an expansion
given in (20.8) and insert it in (20.17) then...."

page 361...eq. (20.30) (see the last factor)..change to: $G_0^{(+)}(\mathbf{r}, \mathbf{r}') = \int d^3k' \int d^3k'' \langle \mathbf{r} | \phi_0(\mathbf{k}') \rangle \langle \phi_0(\mathbf{k}') | \frac{1}{\frac{\hbar^2 k^2}{2m} - H_0}$

page 364...eq. (20.52)...change to: $q^2 = |\mathbf{k}_f|^2 + |\mathbf{k}_i|^2 - 2|\mathbf{k}_f||\mathbf{k}_i|\cos\theta$

page 373....eq. (20.124)....change to: $\langle \phi^{(+)} | V G_0^\dagger V | \phi^{(+)} \rangle = \langle \phi^{(+)} | V \left(\frac{1}{E - H_0 - i\epsilon} \right) V | \phi^{(+)} \rangle$

page 373....eq. (20.125)...change to: $\frac{1}{E - H_0 - i\epsilon} = \left[P \left(\frac{1}{E - H_0} \right) + i\pi\delta(E - H_0) \right]$

page 379...eq. (20.176)....change to: $\int_{-\infty}^{\infty} dt' e^{i(E_f - E_i)t'/\hbar} = 2\pi\hbar\delta(E_f - E_i)$

page 450...eq. (24.2)....change to: $\frac{d^2u}{dx^2} + \frac{2m}{\hbar^2}(E - V(x))u = 0$

page 450...eq. (24.6)...change to: $\frac{d^2u}{dx^2} + k^2(x)u = 0$

page 455...eq. (24.40)...change to: $\int_{x_1}^{x_2} dx \left[\frac{2m}{\hbar^2}(E - V(x)) \right]^{\frac{1}{2}} = \left(n + \frac{1}{2}\right)\pi$

page 504...eq. (27.20)...change to: $\langle n; l, m | [L_z, H] | n; l, m' \rangle = (m - m') \langle n; l, m | n; l, m' \rangle E_n =$

0

page 518...eqs. (28.5) and (28.6)...change to :

$$\begin{aligned} \mathbf{J}^2 &= (\mathbf{J}_1 + \mathbf{J}_2)^2 = \mathbf{J}_1^2 + \mathbf{J}_2^2 + 2\mathbf{J}_1 \cdot \mathbf{J}_2 \\ &= \mathbf{J}_1^2 + \mathbf{J}_2^2 + J_{1+} J + J_{1-} J_{2+} + 2J_{1z}J_{2z} \end{aligned}$$