Ch. 2: Atomic Structure

Pg.27, Section 2.8 Hund's Rules, Para 2, line 2 should read: ".....They may NOT apply to excited.....". The word 'not' is missing.

Pg. 37, Section 2.13 Relativistic fine structure, Eq. (2.135), in the denominator change: '1' $\rightarrow'$ ℓ'.

Pg. 40, end of Section 2.13.2 Dirac equation, last equation for H^{so}_{nl}, delete one of the factors Z^4.

Pg. 41, Col. 2, after (2.179): Delete comma from "On the other hand..."

Ch.3: Atomic Processes

Pg.59, left column, §3.5 R-mateix method, the phrase in the middle of the paragraph should read ".....(particularly exchange)..." , (not 'exchanges'). The electron-ion exchange interaction is sufficiently weak in the outer region to be neglected.

Ch. 5: Electron-ion collisions

Pg.105, Footnote 4, line 2: Eq. 2.113 should read Eq. 2.115.

Ch. 6: Photoionization

Pg. 122, insert following paragraph at the end of §6.2 Photoionization cross section.

"In Eq. (6.11) for transition matrix elements T_{ij} we retain the designation of initial and final states as i and j to be consistent with Chapter 4 on raditive transitions where they are both bound states. However, for photoionization the eigenket $|j>$ is an oscillating wave with energy ϵ, such as those for a Coulomb potential Eqs. 3.35-3.37. The corresponding radial function is designated as $R_{\epsilon\ell_j}(r)$, valid for a central potential discussed later in §6.4."

Pgs. 122-124, Replace subscript n_j with ϵ in the equations in §6.3, 6.4, i.e. $R_{n_j,\ell_j}(r) \rightarrow R_{\epsilon,\ell_j}(r)$.

Ch. 9: Absorption lines and radiative transfer

Pg.198 - Section 9.2.2 *Doppler Broadening*, Eq. (9.32): change $v \rightarrow v_0$, i.e.

$$\Delta\nu_D \equiv \left(\frac{v_0}{c}\right)\,\nu_o, \qquad (9.32) \tag{1}$$

where v_0 is defined in (9.29) as the averaged kinetic velocity of particles wtih mass M at temperature T.

Pg. 216, left column, §9.5.1, paragraph 1, line 7 should have "...exp(-ϵ/kT)...".

Ch. 12: Gaseous Nebulae and H II Regions

Pg. 265 - §12.4.3 *Collisional excitation and photoionization rates*, paragraph following Eq. (12.24), line 4 should read

".....excitation rate (cm^{-3} s^{-1}) = q(cm^3 s^{-1}) $\times$ n_e (cm^{-3}) $\times$ n_{ion} (cm^{-3})."....."

Note that the rate is defined in units of per unit volume per second (cm^{-3} s^{-1}).

Ch. 13: Active Galactic Nuclei and Qusars

Pg. 289, Fig. 13.5 caption, line 2: "galactice" $\rightarrow$ "galactic"

Pg. 188, Eq. (8.40), denominator inside the integral: $j\nu \rightarrow h\nu$

Ch. 14: Cosmology

Pg. 305, Col. 2, line 6 from bottom: ”Compton” → ”inverse Compton”

Pg. 315, Footnote 7, line 4: should read ”....or smilarly 3p → 3s doublets,...”

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Pg. 363: ”Sunayer-Zeldovich” → ”Sunyaev-Zeldovich” and Pg. 105→ 305.