Errata for G. R. Fowles *Introduction to Modern Optics*
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This document was built based on the errata file found online from Mark Strovink, UC Berkeley. We do not assume that it is complete, and encourage you to report any error not already incorporated in this document to William Lewis, Sven Dönges, or Markus Raschke. The page numbers refer to the Dover edition, but with the eq. and fig. reference you should be able to identify the errors also in the original edition.

Chapter 1:
• No known errors.

Chapter 2:
• p.23 Eq. 2.16 should read:
$$H = \frac{nE}{Z_0}\frac{\mu_0}{\mu}.$$
• p.25 Eq. 2.23 should read:
$$I = \frac{1}{2}E_0 H_0 = \frac{n}{2Z_0}\left|E_0\right|^2\frac{\mu_0}{\mu}.$$
• p.35 Table 2.1 "Fast axis at $\pm45^o$" should read "Fast axis at $\mp45^o$".
• p.41 Eqs. 2.49, 2.50, and 2.51: these assume μ in both media is the same.
• p.43 Eqs. 2.54 and 2.55 omit the transmission coefficients:
$$t_s = \frac{2\cos\theta}{\cos\theta + n\cos\phi},$$
$$t_p = \frac{2\cos\theta}{n\cos\theta + \cos\phi}.$$
• p.45 The y-values of curves in Fig. 2.12 are accurate only to about a factor of 2.
• p.56 Problem 2.23 "Brewster window" should read "Brewster interface" as there is only one interface, that is, the interface between $n_1 = 1$ and $n_2 = n$.

Chapter 3:
• p.64 Ignore the last sentence, beginning "In this case the central fringe...", and continuing on p.65. The sentence is correct only if plate A were not silvered.
• p.75 For clarity in Fig. 3.13, the following should be indicated: s is the distance between S_a and S_b, ℓ is the distance between receivers P_1 and P_2, and r is the distance between the average of S_a and S_b and the average of P_1 and P_2.
• p.76 The sentence after Eq.3.39 should read "...small in comparison with τ_0."
• p.76 In the sentence before Eq. 3.40 r_{1b} should be changed to r_{2a}.
• p.76 Eq. 3.40 should read:
$$\tau_b - \tau_a \approx \frac{s\ell}{cr}.$$
• p.77 Eq. 3.41 should read:
$$\omega(\tau_b - \tau_a) \approx \frac{\omega s\ell_t}{cr}.$$
• p.77 Eq. 3.42 should read:
$$\ell_t = \frac{r\lambda}{2s}.$$
• p.77 Eq. 3.43 should read:
$$\ell_t = \frac{\lambda}{2\theta_s}.$$

Chapter 4:
• p.97 For consistency with Eqs. 4.23, 4.27, and 4.32, k_1 and k_1' in Fig. 4.7 should be changed to k and k' respectively.
• p.98 At the end of the last sentence add ", with $R + n_T T / n_0 = 1$."

Chapter 5:
• p.137 Fig. 5.28 should have the plots shifted down so that the minimum value is zero and left-right centered on the vertical axis.
• p.139 Fig. 5.29 should have the plots left-right centered on the vertical axis.
• p.143 Fig. 5.32 should have the plots shifted down so that the minimum value is zero and left-right centered on the vertical axis.
• p.150 The last sentence in Problem 5.16 should read "(Assume the trailing edge of the moon is effectively straight.)"

Chapter 6:
• No known errors.

Chapter 7:
• p.220 Note that the validity of the fourth sentence beginning "For right circularly polarized light,...." depends on the convention that we assume the photon couples to positive charge.

Chapter 8:
• No known errors.

Chapter 9:
• No known errors.

Chapter 10:
• p.297 Eq. 10.11 should read:
$$\frac{1}{f} = (n-1) \left[\frac{1}{r_1} - \frac{1}{r_2} + \frac{(n-1)t}{nr_1 r_2} \right].$$
• p.297 Eq. 10.12 should read:
$$d_2 = -ft \left(\frac{1-n}{r_1} \right).$$
with d_1 and d_2 positive as shown in Fig. 10.3.
• p.298 Fig. 10.3 should have the upper ray go into the lens parallel to the optic axis, and be bent only at the principal plane H', while the bottom ray should emerge parallel to the optic axis and be bent only at the principal plane H.
• p.307 It should be noted that in the first complete sentence shifting by one fringe means shifting from a bright fringe to a dark fringe.