Errata

With thanks to Jeremy Scofield and Philip Wild:

p. 16, l. -8: "defintion" should be "definition".

p. 36, proof of Lemma 3.4: $\overline{D(z,\rho)}$ should be $\overline{D(0,\rho)}$, in 3 places ($\overline{D(z,\rho)}$ is correct in the *statement* of the lemma.)

p. 90, l. -5:

$$\{\frac{1}{2}+iy:|y|\leq 1\}$$

should be

$$\left\{\frac{1}{2}+iy:|y|\leq 1\right\}.$$

p. 94, l. 2: "such a sum" should be "such a product".

p. 97, center of page: $\phi(1)+\sum_{n=1}^{\infty}\phi(n)$ should be $\phi(1)+\sum_{n=2}^{\infty}\phi(n)$.

p 116, definition of g: $\prod_{k=1}^{n}(z-z_j)$ should be $\prod_{k=1}^{n}(z-z_k)$.

p. 155, l. 2: The $|f_\alpha(z_k)-f(z_k)|$ at the end of the line should be $|f_\alpha(z_k)-f_\alpha(z)|$.

p. 180, l. -2: "function" should be "functions".

p. 189, Exercise 10.14: "lowerst" should be "lowest".

p. 221, Theorem 10.7.5: $D \in \mathbb{C}$ should be $D \subset \mathbb{C}$.

p. 232, Exercise 12.2: "converge to uniformly" should be "converge uniformly".

p. 234, l. -3: $\mathcal{R}_\alpha$ should be $\mathcal{R}_{\{\alpha\}}$.

p. 239, l. -1: $(\mathbb{R}\mathrm{e}(z) <)0$ should be $(\mathbb{R}\mathrm{e}(z) < 0)$.

p. 249, Theorem 13.2:

$$\sum_{j=1}^{M} \left(\frac{r}{|z_j|}\right)^{n_j} < \infty$$

should be

$$\sum_{j=1}^{M} \left(\frac{r}{|z_j|}\right)^{n_j+1} < \infty.$$

p. 262, first paragraph in proof of Lemma 14.4: "Fix $r \in (R, 1)$" is not quite right; we need r sufficiently close to 1 that C_r intersects γ^*.

p. 273, display in center of page:

$$\sum_{n+-\infty}^{\infty}$$

should be

$$\sum_{n=-\infty}^{\infty}$$

.

p. 299, l. 2: Extra period after the \qed.

p. 302, l. -13: $\mathcal{O}_G$ should be $\mathcal{O}(G)$.

p. 304, definition of "one-dimensional complex manifold": We need to add "Hausdorff" to the definition.

p. 317, Exercise 17.1: The definition of $C[f](z)$ should mention f:

$$C[f](z) = \frac{1}{2\pi i} \int_{\partial\mathbb{D}} \frac{f(w)\,dw}{w - z}.$$

p. 321, proof of Lemma 18.0: $\chi(\sigma^n \phi_0) < \chi(\phi)$ should be $\chi(\sigma^n \phi_0) < \chi(\phi_0)$.

p. 323, Figure 18.3: The x-axis should not extend into the margin.

p. 343, Theorem 19.0.9: We should assume that Ω is simply connected.

p. 350, end of first paragraph of proof of Theorem 19.3.0: $g \circ g'(a) = a$ should be $g \circ g'(b) = b$.

p. 359, Theorem B: $f : \mathbb{D}' \to \mathbb{R}$ in the statement should be $u : \mathbb{D}' \to \mathbb{R}$.

p. 362, first 2 lines: We make comments about "f" without ever officially saying what f *is*: f is the function in $\mathbb{D}'$ "corresponding to" F. That is, $f : \mathbb{D}' \to \mathbb{C} \setminus \{0, 1\}$ satisfies $f(e^{2\pi i z}) = F(z)$.

p. 373, Exercise 21.8:

$$\sum_{j=0}^{n}$$

should be

$$\sum_{j=1}^{n}$$

.

p. 385, proof of Lemma 23.0.0: $\Omega \cup D(0, R)$ should be $\Omega \cap D(0, R)$ in two places.

p 390: "**Theorem 23.1.0.**" should be "**Theorem 23.1.0**".

p. 405, l. 18: "holomoprhic" should be "holomorphic".

p. 405, last display: $\log(1 - t/z)$ should be $\log(1 + t/z)$.

p. 410, l. 5: "canot" should be "cannot".

p. 412, proof of Theorem 24.14: $x(x-1)\ldots(x+n-1)f(x)$ should be $x(x+1)\ldots(x+n-1)f(x)$.

p. 422, end of the statement of Theorem 25.1: $r(p) = q$ should be $r(b) = c$.

p. 424, Lemma 25.4: Intended to assume that f is holomorphic.

p. 430, Lemma 25.4: This is the second Lemma 25.4.

p. 455, bottom: Should have less empty space above the three displayed formulas and more space between them.

p. 459, hint for Exercise A3.5: $\mathbb{R}\mathrm{e}\,(z) \neq 0$ should be $\mathbb{I}\mathrm{m}\,(z) \neq 0$.

p. 469, Exercise A4.26: Since Appendix 4 is supposed to be self-contained we need to insert a previous exercise to the effect that a function is continuous if and only if the inverse image of every open set is open; at present the suggested solution to Exercise A4.26 makes little sense to a beginner.

p. 477: No error, but a comment from Scofield that should be included:

"By the way, I wanted to convince myself that something like the example in Appendix 6 can happen with a *holomorphic* covering map. It turns out to be surprisingly easy. You take a generic cubic polynomial and arrange a figure-eight surrounding its branch points in the image. (This is the kind of thing that's probably dead obvious to someone who knows a little algebraic geometry.) I've plotted a graph of the cubic $p(z) = z^3 - z$, showing an appropriate figure-eight and its inverse image:

http://homepage.mac.com/jlscofield/cover.png

I color-coded the points and their inverse images, so it's easy to see that the large loops double-cover the circles, and the small loops single-cover. You could clearly fatten the figure-eight to an open set and keep the other desired properties."