

**Errata to *Optical Specification, Fabrication, and Testing*,
by Jim Schweigerling, First Printing**

page 64: Eq. (2.53), second equation should read:

$$\varepsilon_y(h; \rho_x, \rho_y) = -\frac{4RW_{040}}{n'_M r_{\max}} (\rho_x^2 \rho_y + \rho_y^3) \Rightarrow \varepsilon_y(h; \rho, \psi) = -\frac{4RW_{040}}{n'_M r_{\max}} \rho^3 \cos\psi.$$

page 66: Eq. (2.57), second equation should read:

$$\varepsilon_y(h; \rho_x, \rho_y) = -\frac{RW_{131}}{n'_M r_{\max}} h (\rho_x^2 + 3\rho_y^2) \Rightarrow \varepsilon_y(h; \rho, \psi) = -\frac{RW_{131}}{n'_M r_{\max}} h \rho^2 (2 + \cos 2\psi).$$

page 71: Line above Eq. (2.75) should read:

When $W_{020} = -W_{220}h^2$, based on Eq. (2.49), the axial shift of the image plane is

page 80:

Table 2.3 The Zernike polynomials through sixth order.

j	n	m	$Z_n^m(\rho, \theta)$	Name
0	0	0	1	Piston
1	1	-1	$2\rho\sin\theta$	Vertical tilt
2	1	1	$2\rho\cos\theta$	Horizontal tilt
3	2	-2	$\sqrt{6}\rho^2\sin 2\theta$	Oblique astigmatism
4	2	0	$\sqrt{3}(2\rho^2 - 1)$	Defocus
5	2	2	$\sqrt{6}\rho^2\cos 2\theta$	Horizontal astigmatism
6	3	-3	$\sqrt{8}\rho^3\sin 3\theta$	Oblique trefoil
7	3	-1	$\sqrt{8}(3\rho^3 - 2\rho)\sin\theta$	Oblique coma
8	3	1	$\sqrt{8}(3\rho^3 - 2\rho)\cos\theta$	Horizontal coma
9	3	3	$\sqrt{8}\rho^3\cos 3\theta$	Horizontal trefoil
10	4	-4	$\sqrt{10}\rho^4\sin 4\theta$	Oblique quatrefoil
11	4	-2	$\sqrt{10}(4\rho^4 - 3\rho^2)\sin 2\theta$	Oblique secondary astigmatism
12	4	0	$\sqrt{5}(6\rho^4 - 6\rho^2 + 1)$	Spherical aberration
13	4	2	$\sqrt{10}(4\rho^4 - 3\rho^2)\cos 2\theta$	Horizontal secondary astigmatism
14	4	4	$\sqrt{10}\rho^4\cos 4\theta$	Horizontal quatrefoil
15	5	-5	$\sqrt{12}\rho^5\sin 5\theta$	
16	5	-3	$\sqrt{12}(5\rho^5 - 4\rho^3)\sin 3\theta$	
17	5	-1	$\sqrt{12}(10\rho^5 - 12\rho^3 + 3\rho)\sin\theta$	Vertical secondary coma
18	5	1	$\sqrt{12}(10\rho^5 - 12\rho^3 + 3\rho)\cos\theta$	Horizontal secondary coma
19	5	3	$\sqrt{12}(5\rho^5 - 4\rho^3)\cos 3\theta$	
20	5	5	$\sqrt{12}\rho^5\cos 5\theta$	
21	6	-6	$\sqrt{14}\rho^6\sin 6\theta$	
22	6	-4	$\sqrt{14}(6\rho^6 - 5\rho^4)\sin 4\theta$	
23	6	-2	$\sqrt{14}(15\rho^6 - 20\rho^4 + 6\rho^2)\sin 2\theta$	
24	6	0	$\sqrt{7}(20\rho^6 - 30\rho^4 + 12\rho^2 - 1)$	
25	6	2	$\sqrt{14}(15\rho^6 - 20\rho^4 + 6\rho^2)\cos 2\theta$	
26	6	4	$\sqrt{14}(6\rho^6 - 5\rho^4)\cos 4\theta$	
27	6	6	$\sqrt{14}\rho^6\cos 6\theta$	

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page 155: Eq. (5.7) should read:

$$z_1 = \frac{d}{1 + m_1} \quad \text{and} \quad z'_1 = m_1 z_1$$

page 160: Eq. (5.16) should read:

$$\rho_y = - \frac{r_e}{\frac{R}{r_{\max}} \left[- \frac{\delta z}{4(f/\#)^2} + 2W_{22} \right]}$$