Design and Mounting of Prisms and Small Mirrors in Optical Instruments
by Paul R. Yoder, Jr.

p. 128  Eqs. (7.2) through (7.4) should read:

$$\Delta = \frac{(K_s - K_a) P}{t'},$$

where

$$K_s = \frac{3\left(m^2 - 1\right)}{4\pi m^2 E_M a^2} \left[ a^4 - b^4 - 4a^2 b^2 \ln\left(a/b\right) \right],$$

and

$$K_a = \frac{3\left(m^2 - 1\right)(m + 1)}{4\pi E_M m^2} \left[ 2\ln\left(\frac{a}{b}\right) + \left(\frac{b^2}{a^2}\right) - 1 \right] \left[ b^4 - 2a^2 b^2 \ln\left(\frac{a}{b}\right) - a^4 b^2 \right].$$

pp 128–129 Numerical Example No. 28 should read:

Consider a 15.75-in. (400.05-mm) diameter mirror for a telescope that is to be held in place with a total preload $P$ of 380 lb (1690.3 N) distributed uniformly around the edge of the mirror by a 6061 aluminum flange with ID of 15.500 in. (393.7 mm) and OD of 15.750 in. (400.050 mm). The pertinent parameters are as follows:

- $a = (15.750/2) = 7.875$ in. (200.025 mm)
- $b = 15.50/2 = 7.750$ in. (196.850 mm)
- Assume: $t = 0.008$ in. (0.203 mm)
- $E_M = 9.9 \times 10^6$ lb/in.$^2$ (6.82 $\times$ 10$^{10}$ N/m$^2$)
- $m = 1/0.332 = 3.012$

From Eqs. (7.2), (7.3), and (7.1):

$$K_s = \frac{3\left(3.012^2 - 1\right)\left[ 7.875^2 - 7.75^2 - (4)(7.875^2)(7.75^2) \ln\left(\frac{7.875}{7.75}\right) \right]}{(4\pi)(9.9 \times 10^6)(3.012^2)\left[ (7.75^2)(4.102) + (7.875^2)(2.012) \right]} = 1.408 \times 10^{-11}$$

$$K_a = \frac{\left[ 3\left(3.012^2 - 1\right)\left(3.012 + 1\right)\right] \left[ 2\ln\left(\frac{7.875}{7.75}\right) + \left(\frac{7.875^2}{7.75^2}\right) - 1 \right]}{\left(4\pi\right)(9.9 \times 10^6)(3.012^2)\left[ (3.012 + 1)\left(7.875^2\right) - (3.012 - 1) \right]} = 2.250 \times 10^{-13}$$

$$\Delta = (1.408 \times 10^{-11} - 2.250 \times 10^{-13})(380/0.0083) = 0.0103$$ in. (0.262 mm)

This displacement is large enough to be measured with reasonable accuracy so the preload can be expected to be close to the desired value.