

# McLean ゼミ

6.9 exercise 6

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6. Spherical aberration is zero for a paraboloidal mirror, but sagittal coma is given by  $\beta = \theta / 16 (f / \#)^2$ , where  $\beta$  is the blur circle diameter in seconds of arc and  $\theta$  is the off-axis field angle in seconds of arc; the head-to-tail extent is  $3\beta$ . Determine the image blur due to coma 1' off axis for an  $f / 3$  mirror. How would this change if the primary was  $f / 1.5$ ?

- The image blur due to coma 1' off axis for an  $f / 3$  mirror is,

$$\beta = \frac{1'}{16 \times 3^2} = 0.0069' = 0.42''$$

- If the primary was  $f / 1.5$ , this value would change as follows.

$$\beta = \frac{1'}{16 \times 1.5^2} = 0.028' = 1.7''$$