

ABSTRACT

We describe a simple and inexpensive method which corrects the astigmatism of a Czerny-Turner spectrometer. Initial characterization of the astigmatism for a particular Czerny-Turner spectrometer was performed and the design of the corrective optic is described. The optic is a thin piece of glass, which is used as a one-dimensional waveguide between the light source and the spectrometer such that the sagittal and tangential focal planes are brought to the same position. This method is demonstrated to work well between 360 and 900 nm for an $f/4.7$ spectrometer. With appropriate materials, corrections for longer and shorter wavelengths should also be possible. When using an inexpensive glass plate, light intensity lost with this method is approximately 12%. Improved surface finish should reduce this loss.

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