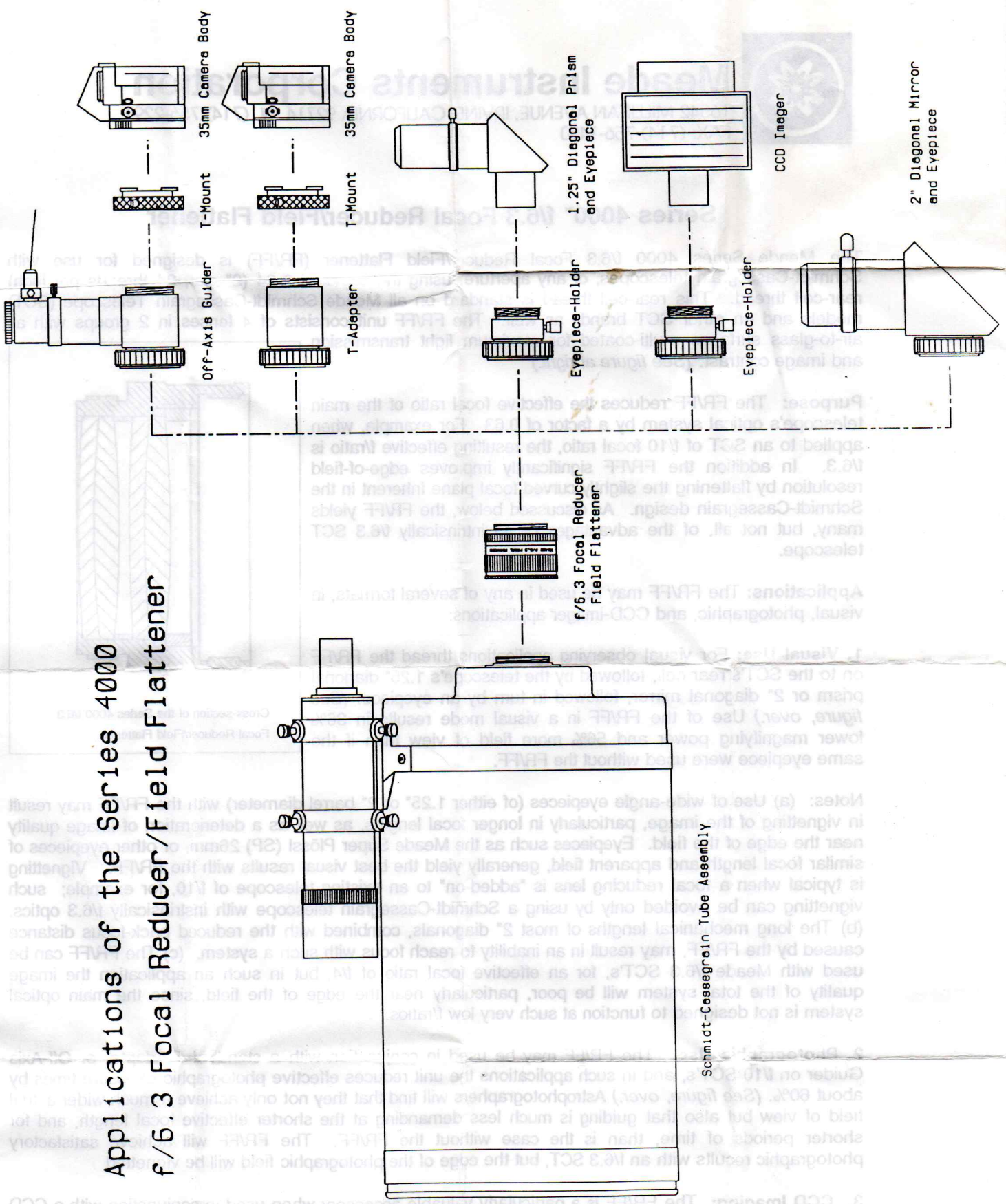


Applications of the Series 4000 f/6.3 Focal Reducer/Field Flatteners



Schmitt-Cassegrain Tube Assembly

Applications: The FRFF may be used in a variety of applications, including visual, photographic, and CCD imaging. The FRFF may be used in conjunction with a CCD imager. In this case the resultant reduced image size is beneficial to locating and centering the image on the relatively small CCD chip. In addition, use of the FRFF with an f/6.3 telescope (for an effective focal ratio of f/4) becomes entirely practical, since only on-axis or nearly-on-axis images are used.

Notes: (a) Use of wide-angle eyepieces (of either 1.25" or 2" diameter) with the FRFF may result in vignetting of the image, particularly in longer focal length eyepieces. Eyepieces such as the Meade Super Plossl (SP) 28mm, which have a relatively short focal length, generally yield the best results with the FRFF. (b) The long mechanical length of most 2" diagonals, combined with the reduced distance between the FRFF and the eyepiece, may result in an inability to reach focus with some systems. (c) The FRFF can be used with Meade SCTs for an effective focal ratio of f/4, but in such an application the image quality of the optical system will be poor, particularly near the edge of the field. The FRFF system is not designed to function at such very low focal ratios.

Purpose: The FRFF reduces the effective focal ratio of the main telescope's optical system by a factor of 0.63. For example, when applied to an SCT of f/10 focal ratio, the resulting effective focal ratio is f/6.3. In addition the FRFF slightly improves edge-of-field resolution by flattening the slightly curved focal plane inherent in the Schmidt-Cassegrain design. As a result, the FRFF yields many, but not all, of the advantages of a true f/6.3 SCT telescope.