

Optical imaging of the gravitational lens system B1422+231

M. Remy¹, J. Surdej², A. Smette and J.-F. Claeskens

Institut d'Astrophysique, Avenue de Cointe 5, B-4000 Liège, Belgium

¹Also Aspirant (FNRS, Belgium)

²Also Maître de Recherche (FNRS, Belgium)

Abstract : Direct optical images (Bessel V, R and Gunn i; average FWHM of 0.88") of B1422+231, obtained in March 1993 at ESO (La Silla) have been decomposed by fitting multiple Point Spread Functions. We detect the optical counterparts of the four known radio point like components. No additional optical image is found but due to the compactness of the configuration our detection limit for additional point sources is rather low (19.3 in R). The deduced positions (see Fig.) and photometry of the four optical components agree pretty well with the radio and IR observations and this study provides further evidences supporting the gravitational lens origin of B1422+231.

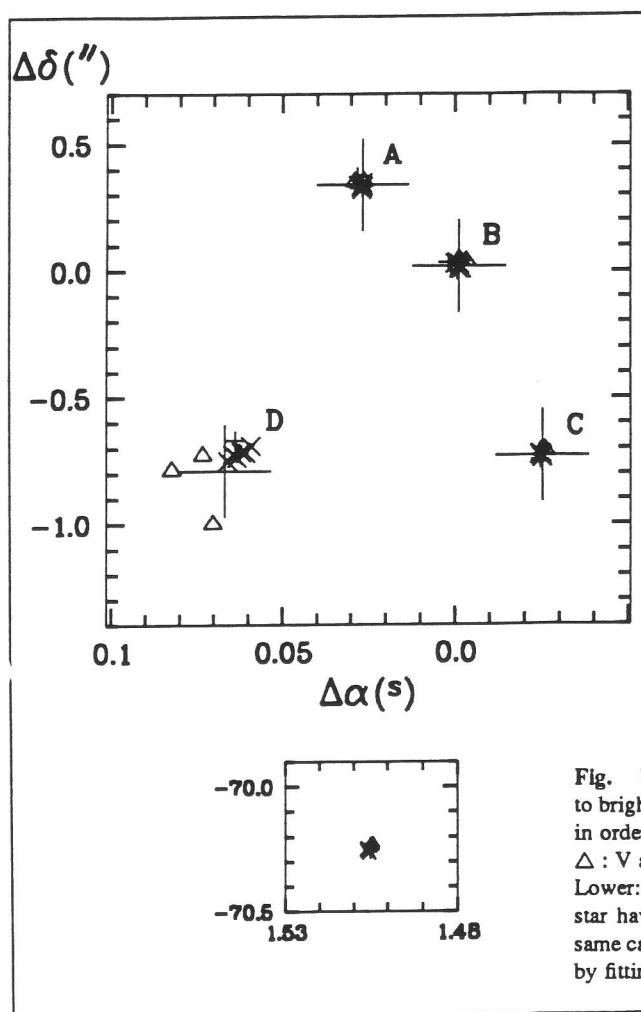


Fig. Upper: relative positions of the four components with respect to bright point sources in the field (a constant offset has been applied in order to get the B component around the origin) (symbols + : R, Δ : V and \times : i frames). Large crosses represent the radio positions. Lower: we have represented the relative positions of a nearby field star having a brightness similar to that of component B, using the same calibration and scale in (α, δ) . The calibration has been obtained by fitting the PSF to individual stars.