

WEAK GALAXY-GALAXY LENSING IN HST DATA

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Description

We expand on the work of Brainerd, Blandford & Smail (1996) (BBS), using a larger archival WFPC-2 dataset including many galaxy redshifts. It is clear from our data that the ellipticity distribution of images changes substantially with observed magnitude (figure 1, *left*) which is shown by simulations to be mainly the result of detection effects. We have detected a lensing signal, using a similar selection method to BBS and are also implementing a maximum likelihood method to constrain halo parameters. Using simulations, we show in figure 1 (*right*) that the signal is consistent with typical halo velocity dispersions of $\sigma^* \sim 70 - 100 \text{ km s}^{-1}$. However, the radial extent of the halos is less well constrained.

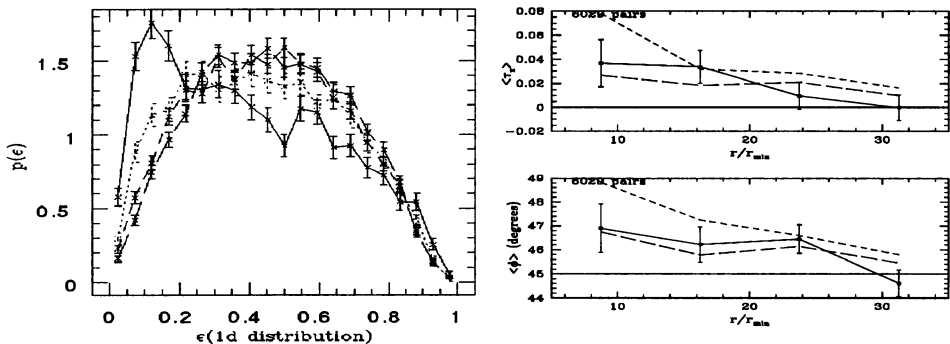


Figure 1. *left*: Change in the ellipticity distribution with magnitude (solid, dotted, dashed & long dashed lines: $I = 19 - 23$, $23 - 24$, $24 - 25$, $25 - 26$). *right*: Lensing signal from data (solid line) and simulations using $\sigma^* = 100$ & 70 km s^{-1} (short & long dashes)

References

Brainerd, T.G., Blandford, R.D. & Smail, I., 1996, *ApJ*, 466, 623.