

T02a Deep Optical Imaging of A Compact Group “Seyfert’s Sextet”

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Recently, the X-ray satellite ROSAT has been used to investigate the dark matter content in a large number of groups of galaxies because the hot gas probed in the soft X-ray is generally believed to be gravitationally bound to the groups. Although the majority of groups of galaxies detected by ROSAT show round-shaped morphologies in the soft X-ray, some groups such as Seyfert’s Sextet show irregular-shaped soft X-ray morphologies. In order to understand the origin of the irregular-shaped soft X-ray morphology of SS, we have obtained a deep *R*-band optical image of this group. Our image shows that a faint envelope down to a surface brightness $\mu_R \simeq 26 \text{ mag arcsec}^{-2}$ surrounds the member galaxies. Comparing this optical faint envelope with the soft X-ray image, we find that both the images are remarkably similar in morphology. Since the optical faint envelope should be attributed to stars liberated from the member galaxies through historical tidal interactions, this similarity provides direct morphological evidence that the dark matter was originally associated with the individual galaxies and are now spreading out around the group.