

Abstract Submitted
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Peculiar Velocities of Wide Angle Tailed Radio Galaxies in Galaxy Clusters¹ THOMAS STEINBERGER, JASON PINKNEY, Ohio Northern University — We analyze photometry and redshifts of clusters containing WAT (Wide Angle Tailed) radio galaxies with the goal of clarifying the connection between the WATs' bent tail morphology and the dynamical state of their host cluster. We have gathered data for 18 WAT clusters from a variety of sources. We've obtained B, V, and R CCD mosaics from the Kitt Peak 0.9-m telescope, and g and r CCD images from the Sloan Digital Sky Survey (SDSS). The redshifts come from the MX multifiber spectrograph, Gemini GMOS, and SDSS. The redshifts allow us to calculate the WAT peculiar velocities (i.e. radial velocity relative to the cluster) for all 18 clusters. Significant peculiar velocities were found for 39% of the clusters before correcting for substructure, and 35% after. Our deep imaging reveals that most WAT's are associated with first ranked galaxies with extended stellar envelopes that usually show distortions. Moreover, WAT's are usually found near peaks in the galaxy surface density. We conclude that most WAT's have small but non-zero speeds within their host subclusters. For some, the speeds may be high enough to bend the radio tails.

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