

**[7GC-14] Close Relationship in Color Between Host and Satellite Galaxies in WHL 085910.0+294957, a Galaxy Cluster at  $z = 0.30$**

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To test whether the close relationships between host and satellite galaxies in isolated groups are also found in the harsh environment of a galaxy cluster, we carry out a case study of WHL 085910.0+294957, a galaxy cluster at  $z=0.30$ , using deep images obtained with the 2.1-m Otto Struve telescope and CQUEAN CCD camera. When environmental parameters are controlled, the local weighted mean color of faint galaxies shows a measurable correlation with the color of their bright ( $M_i < -18$ ) neighbor. The most striking result is that the red ( $r - i > 0.2$ ) and bright galaxies within 200 kpc distance from the center of the cluster are correlated in color with very faint ( $M_i > -14$ ) galaxies around them by  $(r - i)_{\text{satellites}} = (7.276 \pm 1.402) \times (r - i)_{\text{host}} - 2.434$  (correlation coefficient = 0.665). We suggest three scenarios to interpret the results: vestiges of infallen groups, dwarf capturing, and tidal tearing of bright galaxies.

**[7GC-15] A Very Wide-Field Survey of Dwarf Galaxies in the M106 Group**

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We present a very wide-field survey of dwarf galaxies in the M106 Group using the Sloan Digital Sky Survey Data Release 8, covering an area of  $10^\circ \times 14^\circ$  around M106. We select 18 new members of the M106 group, 10 of which are new findings. Surface brightness profiles of most of these galaxies are fitted well by an exponential law. Twelve of these galaxies are early-types, and the rest are late-types. We produce a master catalog of the M106 Group galaxies by combining these new galaxies with 30 known galaxies. The faint-end of the luminosity function of these galaxies is fitted by a power law with an index  $\alpha = -1.22 \pm 0.02$ . This slope is much flatter than the value predicted by the  $\Lambda$ CDM models, but is similar to the values for other galaxy groups. The spatial distribution of the dwarf galaxies in the M106 group is quite different from that of the bright members of the group, requiring a further study.