# GALAXIES AND PHOTOMETRIC SIGNATURE OF STARBURST

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In a series of papers (see Rakos & Schombert 1995, ApJ 439, 47), we have carried out CCD photometry of galaxies in rich clusters at various redshifts. We use a modified Strömgren system, modified in the sense that the filter set is "redshifted" to the cluster of galaxies in consideration (i.e., $\lambda_{\rm obs} = \lambda(1+z)$, therefore no k-correction). We call it $uz$, $vz$, $bz$, $yz$ to distinguish it from the original zero redshift system.

Our observations confirm a strong, rest frame Butcher-Oemler effect where the fraction of blue galaxies increases from 20% at $z = 0.4$ to 80% at $z = 0.9$. We believe that the majority of blue galaxies in clusters are triggered by interactions partly with a population of low surface brightness galaxies which fade and are then destroyed by the cluster tidal field and partly by merging processes so that spirals have been converted to SO galaxies. This view is also supported by the local distribution of blue galaxies within a cluster. The maximum number of blue galaxies is placed in the distance between 0.5 and 1 Mpc from the center.

In the diagram $bz - yz$ vs. $mz$ the starburst galaxies are well seperated below $mz = -0.2$. We see that the $mz$ index delivers a very good signature for starburst galaxies. It is produced by the bimodal distribution of colors in a starburst galaxy and by intrinsic reddening combined with a starburst.

The observations in clusters with increasing redshift show, along with increasing numbers of blue galaxies, also the increasing number of galaxies with $mz < -0.2$. One of our clusters, CL 317+1521 at $z = 0.583$, has 60% blue galaxies and 42% have $mz < -0.2$, photometric signature for starbursts. The complete version of this poster-paper can be obtained from the authors. The financial support of the Austrian Fonds zur Förderung der wissenschaftlichen Forschung is acknowledged.