

A CATALOGUE OF VERY FAINT CLUSTERS OF GALAXIES IN THE REGION OF THE SOUTH GALACTIC POLE

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In a search for very distant clusters of galaxies on a red-sensitive ( $6^\circ \times 6^\circ$ ) Schmidt plate taken at Siding Spring in the region of the south galactic pole, we found some 49 very faint and compact clusters. We tried to reduce the number of chance configurations, by limiting our survey to (a) very compact and isolated groups of galaxy-like images outside crowded regions; (b) some degree of concentration could be observed towards the brightest galaxy; (c) the size of the central object exceeded by several times the seeing disk diameter; (d) a minimum of 15 galaxies could be counted within a circle of  $\sim 30$  arcsec in diameter. The red magnitudes of the brightest galaxies in each clusters are estimated to be fainter than 19.0 magnitudes. From the Hubble diagram for red magnitudes we estimate the redshifts to be about  $z \gtrsim 0.5$ . The integrated red magnitude of the first ranked galaxies in the faintest clusters are about 21.5. Taking into account seeing effects, a more realistic formula for the surface brightness at the centers of galaxies (rather than the  $[1 + z]^{-4}$ ) is derived. It is shown that, assuming no evolution, the limit of our survey corresponding to the faintest clusters is about  $z \gtrsim 1.0$ . A list of clusters coordinates, magnitudes of the first ranked galaxies and finding charts can be obtained from the author.

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