

Discovery of the Radio Halo in The Abell 2256 Cluster of Galaxies*

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Abell 2256 is a Coma-like cluster of galaxies which exhibits strong emission at all wavelengths. Existence of a steep spectrum radio source in Abell 2256 was first noted by Constain et.al.(1972) who measured $\alpha = -1.9$ between 22.25 and 81.5 MHz. This diffuse radio emission was detected first time at a high frequency 1420 MHz above 3σ with DRAO observations. The estimated size of the halo is $\sim 13' \times 10' (\sim 1h_{70}^{-1} \text{ Mpc})$ in full extent and is elongated along a position angle of about 112° . The total flux density contained in the halo is $30 \pm 10 \text{ mJy}$ at 1420 MHz and its spectral index is -2.04 ± 0.04 showing no evidence for steepening up to 1420 MHz. Using the size estimate, yields a more reliable equipartition magnetic field strength which is $0.34(1+k)^{2/7} \mu\text{G}$. In addition, five new radio sources are identified.

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Nearly Simultaneous Observations of SiO and SiO Isotope Emission in the J=3-2 Rotational Transition

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Nearly simultaneous observations for ^{28}SiO J=3-2, $\nu=1,2$, ^{30}SiO J=3-2, $\nu=0$, and ^{30}SiO J=3-2, $\nu=0$ transitions in 37 evolved stars and 3 star formation regions have been carried out in February 1995 with the 14 m radio telescope of the KAO(Korea Astronomy Observatory).

Eight new detections in the ^{28}SiO J=3-2, $\nu=1$ transition, 2 new detections in the ^{28}SiO J=3-2, $\nu=2$ transition, 2 new detections in the ^{29}SiO J=3-2, $\nu=0$ transition from evolved stars, and new detections in the ^{29}SiO and ^{30}SiO J=3-2, $\nu=0$ transitions from Orion KL have been reported. Observations for ^{28}SiO J=2-1, $\nu=0,1,2$ and ^{29}SiO J=2-1, $\nu=0$ lines in the same objects have been also carried out in March 1995 with the 14m telescope. Based on these observations, the intensity ratios within the ladders and rotational states are investigated.