

A deep spectroscopic study of the filamentary nebulosity in NGC4696, the brightest cluster galaxy in the Centaurus cluster

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We present results of deep integral field spectroscopy observations using high resolution optical (4150-7200 Å) VIMOS VLT spectra, of NGC 4696, the dominant galaxy in the Centaurus cluster (Abell 3526). After the Virgo cluster, this is the second nearest ($z=0.0104$) example of a cool core cluster. NGC 4696 is surrounded by a vast, luminous H alpha emission line nebula ($L = 2.2 \times 10^{40}$ ergs per second). We explore the origin and excitation of the emission-line filaments and find their origin consistent with being drawn out, under rising radio bubbles, into the intracluster medium as in other similar systems. Contrary to previous observations we do not observe evidence for shock excitation of the outer filaments. Our optical spectra are consistent with the recent particle heating excitation mechanism of Ferland et al.

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