AWM 4 and MKW 4 - two very different poor clusters observed with XMM

O'Sullivan, E. & Vrtilek, J. M. (SAO)

Introduction

AWM 4 and MKW 4 are relatively poor clusters, originally identified in the range of 0.1 - 0.3 Mpc, at XMM/EPIC observations. They are considered to be the smallest of the X-ray emitting cluster samples. AWM 4 is located at 0.45 Mpc from the Earth, while MKW 4 is found at 0.5 Mpc. Both clusters have a temperature of approximately 2 keV, and their X-ray emission is dominated by a single, soft X-ray component.

Temperature and Abundance profiles

The temperature and abundance profiles of the two clusters are quite different. AWM 4 has a peak temperature of around 2 keV, while MKW 4 shows a more gradual increase. The temperature profiles are consistent with the expected behavior for these clusters.

Elemental abundances

The elemental abundances of the two clusters are also different. AWM 4 has a higher abundance of heavy elements, while MKW 4 has a lower abundance.

Conclusions

AWM 4 and MKW 4 appear to be very different clusters with no significant differences in their X-ray and thermal properties. Their differences in abundance and temperature suggest that they may be in different phases of their evolution.