

Hot stars observed by XMM-Newton II. A survey of Oe and Be stars

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We perform a survey of Oe and Be stars in the X-ray range. To this aim, we cross-correlated XMM-Newton and Chandra catalogs of X-ray sources with a list of Be stars, finding 84 matches in total. Of these, 51 objects had enough counts for a spectral analysis. This paper provides the derived X-ray properties (X-ray luminosities, and whenever possible, hardness ratios, plasma temperatures, and variability assessment) of this largest ever sample of Oe and Be stars. The targets display a wide range in luminosity and hardness. In particular, the significant presence of very bright and hard sources is atypical for X-ray surveys of OB stars. Several types of sources are identified. A subset of stars display the typical characteristics of O-stars, magnetic OB stars, or pre-main-sequence (PMS) objects: their Be nature does not seem to play an important role. However, another subset comprises gamma Cas analogs, which are responsible for the luminous and hard detections. Our sample contains seven known gamma Cas analogs, but we also identify eight new gamma Cas analogs and one gamma Cas candidate. This nearly doubles the sample of such stars.

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