X-ray emission from massive stars in Cyg OB2

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We report on the analysis of the Chandra-ACIS data of O, B and WR stars in the young association Cyg OB2. X-ray spectra of 49 O-stars, 54 B-stars and 3 WR-stars are analyzed and for the brighter sources, the epoch dependence of the X-ray fluxes is investigated. The O-stars in Cyg,OB2 follow a well-defined scaling relation between their X-ray and bolometric luminosities: log(Lx/Lbol) = -7.2 +/- 0.2. This relation is in excellent agreement with the one previously derived for the Carina OB1 association. Except for the brightest O-star binaries, there is no general X-ray overluminosity due to colliding winds in O-star binaries. Roughly half of the known B-stars in the surveyed field are detected, but they fail to display a clear relationship between Lx and Lbol. Out of the three WR stars in Cyg OB2, probably only WR144 is itself responsible for the observed level of X-ray emission, at a very low log(Lx/Lbol) = -8.8 +/- 0.2. The X-ray emission of the other two WR-stars (WR145 and 146) is most probably due to their O-type companion along with a moderate contribution from a wind-wind interaction zone.

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Comments:

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