

INTEGRAL-ISGRI observations of the CygOB2 region: searching for hard X-ray point sources in a region containing several non-thermal emitting massive stars

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Aims: We analyze INTEGRAL-ISGRI data in order to probe the hard X-ray emission (above 20 keV) from point sources in the Cyg OB2 region and to investigate the putative non-thermal high-energy emission from early-type stars (Wolf-Rayet and O-type stars). Among the targets located in the field of view, we focus on the still unidentified EGRET source 3EG 2033+4118 that may be related to massive stars known to produce non-thermal emission in the radio domain, and on the wide colliding-wind binary WR 140.

Methods: Using a large set of data obtained with the IBIS-ISGRI imager onboard INTEGRAL, we run the OSA software package in order to find point sources in the fully coded field of view of the instrument.

Results: Our data do not allow the detection of a lower-energy counterpart of 3EG J2033+4118 nor of any other new point sources in the field of view, and we derive upper limits on the high-energy flux for a few targets: 3EG J2033+4118, TeV J2032+4130, WR140, WR146 and WR147. The results are discussed in the context of the multiwavelength investigation of these objects.

Conclusions: The upper limits derived are valuable constraints for models aimed at understanding the acceleration of particles in non-thermal emitting massive stars, and of the still unidentified very-high gamma-ray source TeV J2032+4130.

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Comments:

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