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Discovery of a very high energy gamma-ray point like source in Monoceros

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Abstract content

The H.E.S.S. telescope has detected a new very high energy gamma-ray point-like source, HESS J0632+058. It is the first point-like source detected by H.E.S.S. without any obvious counterpart. The excess lies in a region where interaction between the Monoceros supernova remnant and the Rosette Nebula may occur. The energy spectrum of the observed gamma-rays is well described by a power law of index 2.5, and the gamma-ray flux above 400 GeV corresponds to 3.7% of that from the Crab Nebula. Different objects at other wavelengths may be associated with this source. HESS J0632+058 lies just within the 99% position confidence contour for an EGRET source, 3EG J0634+0521, and the EGRET spectrum is consistent with an extrapolation of the H.E.S.S. spectrum. A study of CO observations, in particular from NANTEN, was made to trace dense molecular clouds which may be coincident with the source position and may be an efficient target for cosmic rays accelerated by the Monoceros SNR. No coincident cloud was found. An X-ray source detected by ROSAT, 1RXS J063258.3+054857, is coincident with the gamma-ray source. Another possible association is a Be star, MWC 148.

If this papers is presented for a collaboration, please specify the collaboration

H.E.S.S. Collaboration

Summary

Reference

Proceedings of the 30th International Cosmic Ray Conference; Rogelio Caballero, Juan Carlos D'Olive, Gustavo Medina-Tanco, Lukas Nellen, Federico A. Sánchez, José F. Valdés-Galicia (eds.); Universidad Nacional Autónoma de México, Mexico City, Mexico, 2008; Vol. 2 (OG part 1), pages 719-722

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