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MAGIC AND AGN

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MAGIC Cerenkov telescope has been operational since 2003. During this observing period it has been a very successful device. It observed and detected many galactic sources but also very many AGN. A summary of these AGN detections is given.

VHE gamma astronomy is a very rapidly growing part of the modern ground based astronomy. MAGIC (Major Atmospheric Gamma Imaging Cerenkov Telescope) is the largest single dish Imaging Cerenkov Telescope in the world with a 17 meter diameter dish. The telescope is located in La Palma Observatory, Canary Islands. The lowest trigger threshold is about 60 GeV.

Blazars are thought to be supermassive black holes in the centres of some elliptical galaxies. They produce somehow strongly collimated, ultra-relativistic jets aligned closely to the observers line of sight. Their SEDs are almost entirely dominated by the jet emission showing two distinct nonthermal components. The lower bump is commonly ascribed to synchrotron radiation but there is much less agreement about the origin of the very high energy component where also MAGIC is operating.

Before the operation of the new huge Cerenkov experiments, MAGIC and H.E.S.S. (Namibia) there were only about 5 blazars detected in these VHE energies. Now the number is already 19 and this number is growing all the time. The updated Sky Map of the Extragalactic VHE gamma-ray sources is shown in Figure 1 (Robert Wagner, MAGIC collaboration). MAGIC has detected 11 of these Extragalactic VHE

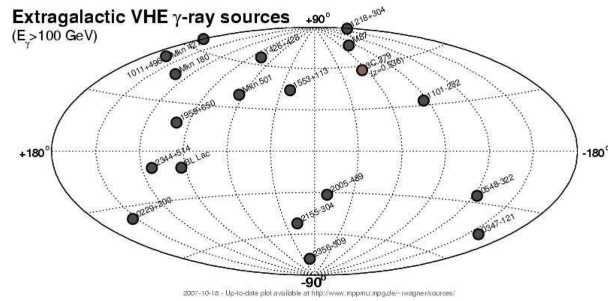

Fig. 1. Extragalactic VHE γ-ray sources for $E_\gamma > 100$ GeV. Up to date plot available at `http://www.mppmu.mpg.de/~rwagner/sources/`.

sources. At the same time when the number of the detected sources has been rapidly growing we have seen also more and more distant sources. Quite a long time the redshift record was below z = 0.2 but then MAGIC detected the source 1ES 1011+496 at z = 0.212 (Albert et al. 2007) and after this MAGIC detected also a famous blazar 3C 279 with a very distant redshift z=0.536 which is now the new record (Teshima et al. 2007). These new high redshift detections give an important clue to study about the intrinsic source cut-off and also to determine the Extragalactic Background Light (EBL).

REFERENCES

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