

The blazar TXS 0506+056 as possible neutrino counterpart

On September 22, 2017, the IceCube Neutrino Observatory observed for the first time ever an extremely high-energy neutrino IceCube-170922A in spatial and temporal coincidence with a gamma-ray flaring blazar, TXS 0506+056. Following the original IceCube alert, the source has been observed by several telescopes in a broad wavelength band. Most notably the Fermi Large Area Telescope has reported an increase of the source's gamma-ray flux by a factor of ~6 compared to its average state. This triggered deep observations by MAGIC leading to the first detection of the source in very high-energy gamma-rays.

These detections motivated an archival search that identified additional IceCube events and multi-messenger data have been analyzed to better understand the physics and time-evolution of the object.

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