

The objects in observations of Perseus Cluster region

The results of 20-year observations of the Perseus cluster centering on the NGC 1275 including IC 310 radio galaxy and extragalactic supernova SN 2006gy at energies 800 GeV - 45 TeV by the SHALON telescope are presented. Also, the emission from the galactic source of nonthermal radio and X-ray emission GK Per (Nova 1901) of classical nova type was found as it accompanied to the observations. The spectral energy distributions, light curve and images of NGC 1275 at energies > 800 GeV were determined. It was found, that the TeV gamma-ray emission has an extended structure with a distinct core centered at the source's position and well correlates with the photon emission regions viewed in X-rays by Chandra and anti-correlates with radio-structures. The emission component corresponding to the core of NGC 1275 and its spectral energy distribution was additionally identified. Also, the variations of TeV gamma-ray flux both at year- and day- scales were found. The obtained data indicate that the TeV gamma-ray emission is generated by a number of processes: a part of this emission is generated by relativistic jets in the nucleus of NGC 1275. Whereas, the presence of an extended structure around NGC 1275 and the slow rise of the gamma-ray flux is the evidence of the interaction of cosmic rays and magnetic fields generated in the jets at the galactic center with the gas of the Perseus cluster

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