

TEMPORAL AND SPECTRAL GAMMA-RAY PROPERTIES ABOVE 250 GEV OF MKN 421 FROM CAT OBSERVATIONS (1998-2001)

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The gamma-ray emission above 250 GeV from the BL Lac object Markarian 421 has been observed by the CAT Cherenkov imaging telescope during the last three years. In 1998, the source produced a series of small flares, making it the second extragalactic source detected by CAT; the time-averaged differential spectrum has been measured from 0.3 to 5 TeV; it is well fitted by a power law with spectral index $-2.88 \pm 0.12(\text{stat}) \pm 0.06(\text{syst})$. In 2000, the source showed an unprecedented activity, with variability time scales sometimes as short as one hour. The 2000 time-averaged spectrum measured is compatible with that of 1998, but some indication of a spectral curvature is found between 0.3 and 5 TeV. The latest CAT observations of the high-activity state of Mkn 421 in 2001 will also be reported.