COMPTEL Observations of the Flaring Quasars PKS1622-297 and PKS0446+112

Zhang Shu, Li Tipei, Wu Mei (IHEP)

Two flaring quasars PKS1622-297 and PKS0446+112 observed by COMPTEL during VP 423.0 and VP 36.0+36.5 have been studied with a direct demodulation method. Images for both quasars are only obtained in the energy range 10-30 MeV and no convincing results can be derived at lower energies. With the obtained flaring fluxes, we find that the trends of flux evolution are different for the two flaring quasars at MeV energies. Our flux for the flaring quasar PKS1622-297 is about a factor of 1.5 higher than the earlier report given by Collmar et al. and, with our flux, the 10-30 MeV time variability of flux for PKS1622-297 follows well the trend as observed by EGRET at energies above 100 MeV, while such consistency with EGRET is hard to be seen for the flaring quasar PKS0446+112. The 10-30 MeV light curve of PKS1622-297 shows it behaves a significant MeV variability within one month: the flux increases first with a factor $\sim$ 2.5 and then the major flare ends with flux decrease of a factor $\sim$ 4 in one month. Such time variability of flux is also consistent well with that observed by EGRET at higher energies. For PKS0446+112, EGRET observed a factor $\sim$ 4 of flux decrease over one month from VP 36.0+36.5 to VP 39 and the 10-30 MeV light curve observed by COMPTEL, however, shows little evidence of such feature. Nevertheless, the detection and non-detections of PKS0446+112 in the energy range 10-30 MeV still follow the EGRET trend and the flux obtained by us indicates a MeV flare occurred also during VP 36.0+36.5. The common feature of hard spectrum for the two quasars may lead to their non-detections at lower COMPTEL energy range, while the different behaviors of flux variability at MeV energies suggest the two quasars may undergo different flaring mechanism.