Contribution ID: **80** Type: **Talk**

Multiwavelength observations in 2019-2020 of a new very-high-energy gamma-ray emitter: the flat spectrum radio quasar QSO B1420+326

Tuesday, July 13, 2021 7:00 PM (12 minutes)

The flat-spectrum radio quasar QSO B1420+326 underwent an enhanced gamma-ray flux state seen by Fermi-LAT at the turn of 2019/2020. Compared to the low state both the position and luminosity of the two spectral energy distribution peaks changed by at least two orders of magnitude. The high state resulted in the discovery of the very-high-energy (>100 GeV) gamma-ray emission from the source by the MAGIC telescopes. The organized multiwavelength campaign allow us to trace the broadband emission of the source through different phases of the flaring activity. The source was observed by 20 instruments in radio, near-infrared, optical, ultra-violet, X-ray and gamma-ray bands.
We use dedicated optical spectroscopy results to estimate the accretion disk and the dust torus luminosity. The optical spectroscopy shows a prominent FeII bump with flux evolving together with the continuum emission and a MgII line with varying equivalent width. The gamma-ray flare was accompanied by a rotation of the optical polarization vector and emission of a new superluminal radio knot. We model spectral energy distributions in different flare phases in the framework of combined synchrotron-self-Compton and external Compton scenario in which the
shape of the electron energy distribution is determined from cooling processes.

Keywords

Gamma rays: galaxies; Galaxies: jets; Radiation mechanisms: non-thermal; quasars: individual: QSO B1420+326

Collaboration

Ferrmi-LAT

other Collaboration

MAGIC

Subcategory

Experimental Results

Primary author: D'AMMANDO, Filippo (INAF-IRA Bologna)

Co-authors: ANGIONI, Roberto; Dr ORIENTI, Monica (INAF-IRA Bologna); FOR THE FERMI-LAT COLLABORATION; SITAREK, Julian (Department of Astrophysics, University of Łódź, Łódź, Poland); NOZAKI, Seiya; LINDFORS, Elina; BONNOLI, Giacomo (Instituto de Astrofisica de Andalucia); FALLAH RAMAZANI, Vandad (not set); FOR THE MAGIC COLLABORATION; JORSTAD, Svetlana

Presenter: D'AMMANDO, Filippo (INAF-IRA Bologna)

Session Classification: Discussion

Track Classification: Scientific Field: GAI | Gamma Ray Indirect