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The long-lasting activity in the FSRQ CTA 102

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The flat spectrum radio quasar CTA 102 ($z=1.032$) has exhibited a tremendous phase of its existence. Since early 2016 the gamma-ray flux level has been significantly higher than in previous years. It was topped by a 4-month long giant outburst, where peak fluxes were more than 100 times higher than the quiescence level. Similar trends are observable in optical and X-ray energies. We have explained the giant outburst as the ablation of a gas cloud by the relativistic jet that injects additional matter into the jet and can self-consistently explain the long-term lightcurve. Here, we argue that the cloud responsible for the giant outburst is part of a larger system that collides with the jet and is responsible for the years-long activity in CTA 102.

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