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Photometry of blazars using the Las Cumbres Observatory robotic telescope network

Contributed Talk //

Active Galactic Nuclei (AGNs)

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We present an analysis of the photometry of nine of the brightest blazars using the 0.4m robotic telescopes of the Las Cumbres Observatory global network. Observations were carried out in four filters (B, V and Sloan g and r) with a typical cadence of 1 month over periods spanning 1-2 years. Almost all of the targets showed substantial variations over the period of investigation, in some cases by over a magnitude. In particular, The prototype BL Lac went through its most luminous recorded phase to date in late 2022, an event that was also monitored in high energy wave bands by other researchers. We determined the colour of the variable component using the flux variation gradient method, and hence establish the flux distribution of the variable source by isolating this component from the host galaxy background. We confirm that blazars occupy a characteristic zone in specific flux vs. flux diagrams. Finally, we examine optical spectra of some of our targets, some of which we obtained at SAAO. We explore the relationship between the optical spectral characteristics and the photometric behaviour.

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