

The restless nature of AGN: 10 years later



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Still alive and kicking: a significant outburst in changing-look AGN Mrk 1018

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Mrk 1018 is an extremely unique changing-look AGN, which has already changed type twice. Almost a decade ago, it returned from a Seyfert type 1 to its original classification of a Seyfert type 1.9. We have been monitoring Mrk 1018 in the u'-band with STELLA since this last major transition. In 2020, our long-term optical monitoring program detected the most significant outburst over the last few years. With a flux increase of a factor ~ 13 , this outburst alone would have flagged Mrk 1018 as a changing-look AGN in photometric searches. The outburst is asymmetric in the u'-band with a rise of ~ 100 days and a decline of ~ 200 days. It was confirmed by the ATLAS forced photometry server. Using both STELLA and ATLAS, we compared the outburst as seen in three optical wavebands. We also followed up with an extensive multi-wavelength dataset in X-ray, UV, optical and infrared to compare the AGN components before and after outburst. Optical spectra were taken approximately one year before and after the outburst and showed no change. X-ray and UV observations were taken 6 - 7 months before and after. The primary X-ray flux returned to the state before the outburst but the 6.4 keV iron line increased in strength and UV emission was also increased. The IR light curve responded to the optical outburst extremely quickly. The optical light decay is best described by a linear decline, indicating that the increase was not caused by a tidal disruption event of a star. I will summarise a recently submitted paper on this outburst in 2020, including speculation as to why Mrk 1018 changes its energy output repeatedly and in such a drastic manner.

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