

The restless nature of AGN: 10 years later



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Changing-look AGN in the BAT AGN Spectroscopic Survey

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Changing-look (CL) AGN are unique probes of accretion onto supermassive black holes (SMBHs), especially when simultaneous observations in complementary wavebands allow investigations into the properties of their accretion flows. I will present the results of a search for CL behaviour in 412 Swift-BAT detected AGN with multiple epochs of optical spectroscopy from the BAT AGN Spectroscopic Survey (BASS). 125 of these AGN also have 14-195 keV ultra-hard X-ray light curves from Swift-BAT which are contemporaneous with the epochs of optical spectroscopy. We have discovered eight new CL events, where the appearance or disappearance of broad Balmer line emission leads to a change in the observed Seyfert type classification. Combined with known events from the literature, 21 AGN from BASS are now known to display CL behaviour. Nine CL events have 14-195 keV light curve coverage, and five of these CL events can be associated with significant changes in their 14-195 keV flux from BAT. The ultra-hard X-ray flux is less affected by obscuration and so these changes in the 14-195 keV band suggest that the majority of our CL events are not due to changes in line-of-sight obscuration, and instead must be due to changes in the structure of the accretion disk and broad line region. We derive a CL rate of 0.7-6.2 per cent on 10-25 yr time-scales, and show that many transitions happen within at most a few years. Our results motivate further multiwavelength observations with higher cadence to better understand the variability physics of accretion onto SMBHs.

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