

When a Seyfert ...has a Crash on a model

Wednesday, 10 October 2018 12:00 (15 minutes)

Back in the late eighties - early nineties, Mkn 590 was ingesting mass at a rate that only NLSy1s do. Consequently, its permitted optical broad emission lines (BELs) were narrow (FWHM~2500 km/s) and its soft X-ray spectrum rather steep. Twenty five or so year later, the source had dramatically slowed down eating (factor of 100) and both its BELs and soft X-ray excess (SXE) had disappeared, which gained Mkn 590 the name of “changing-look AGN”. We used more recent UV and X-ray proprietary data, as well as additional historical optical data, to track back the changes of accretion rate and BELR FWHMs from 1990 to date.

Here I will show that these changes follow extremely closely the predictions from a zero-free-parameter model that I published in 2000 and that relates the AGN accretion rate to the widths of its BELs, and rule out at high statistical significance alternative models.

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Session Classification: Central engine and circum-nuclear regions