

Invited Lecture

**CHANGING LOOKS OF THE NUCLEUS OF SEYFERT GALAXY
NGC 1566 IN COMARISON WITH OTHER CL AGNs**

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We present results of the long-term multi-wavelength study of optical, UV and X-ray variability of the nearby changing-look (CL) Seyfert NGC 1566 observed with the *Swift* Observatory and the MASTER Global Robotic Network from 2007 to 2019. We started spectral observations with South African Astronomical Observatory 1.9-m telescope soon after the brightening was discovered in July 2018 and present here the data for the interval between Aug. 2018 to Sep. 2019. In the first publication (Oknyansky et al., 2019), we reported on the change in the spectral type of the object. Here we concentrates on the remarkable post-maximum behaviour after July 2018 when all bands decreased with some fluctuations (Oknyansky et al., 2020). We observed three significant re-brightenings in the post-maximum period during 17 Nov. 2018–10 Jan. 2019, 29 Apr.–19 Jun. 2019 and 27 Jul.–6 Aug. 2019. An X-ray flux minimum occurred in Mar. 2019. The UV minimum occurred about 3 months later. It was accompanied by a decrease of the $L_{\text{UV}}/L_{\text{X}}$ ratio. New post-maximum spectra covering (31 Nov. 2018 – 23 Sep. 2019) show dramatic changes compared to 2 Aug. 2018, with fading of the broad lines and [Fe X] $\lambda 6374$ until Mar. 2019. These lines became somewhat brighter in Aug.-Sep. 2019. Effectively, two CL states were observed for this object: changing to type 1.2 and then returning to the low state as a type 1.8 Sy. We suggest that the changes are due mostly to fluctuations in the energy generation. The estimated Eddington ratios are about 0.055% for minimum in 2014 and 2.8% for maximum in 2018.

Variability properties of NGC1566 are compared with our results for other CL AGNs: NGC4151, NGC2617, NGC3516, and Mrk6.