

Astrophysics Seminar

Monday, October 24, 2016



Probing Black Hole Variability on Days Century Timescales



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CfA

After a long recovery from a major flood on Jan. 18, on Aug. 4 our Digital Access to a Sky Century @ Harvard (DASCH) project had its 5th Data Release (DR5), making nearly full coverage of the Galactic latitude range $b = 15 - 90\text{deg}$ ($\sim 37\%$ of the sky) available for optical variability studies on days to century timescales. After a brief overview of DASCH and how it all works, I will describe one of the primary science goals for DASCH to measure historic outbursts of accreting black holes in low mass X-ray binaries (all are transient sources) to constrain their outburst recurrence

times and total numbers. Initial results suggest that the black hole LMXB population exceeds that for neutron star LMXBs, implying the BH-LMXBs can be more easily formed. I will outline a possible formation mechanism. Supermassive black holes in AGN, particularly Blazars, are another prime topic for DASCH. I will show results on several systems that reveal both apparent QPOs (in 3C273) and extreme flares in several well known Blazars. I will also show two possible DASCH detections of periodicities in AGN that have been recently reported from modern data.

3:30pm in CAS 502. Refreshments served at 3:15pm in CAS 500.

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Next Week

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