

## Extreme AGN Variability in LSST and Follow-up Challenges

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Our understanding of AGN variability is continually increasing with data from ongoing surveys, but the Rubin Observatory will open a new discovery window in parameter space.

LSST will be able to identify extreme variability events in AGN, which could be driven by rapid changes in the SMBH accretion flow, changes in obscuration, jet activity, microlensing, or possibly even more exotic physics. This multiplicity of physical mechanisms means that changes in the LSST photometric time series will not always correlate with changes in the spectroscopic type classification. Timely spectroscopic and/or multiwavelength follow-up will be required to classify such phenomena, and subsequent monitoring will be crucially important to provide the observational foundation for physical interpretation. However, such objects will first need to be selected from the LSST data stream - all AGN are variable at some level and care will be needed to identify “extreme” variability events from the background defined by the rest of the AGN population.

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