

Catching supermassive black holes with Rubin-LSST: Towards novel insights and discoveries into AGN science

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Searching for supermassive black hole binaries in the era of LSST

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Supermassive black hole binaries (SMBHB) form naturally in galaxy mergers. At sub-parsec separation, the most promising method to detect binaries is to find AGN with periodic variability and ~250 candidates have been identified in time-domain surveys over the last few years. However, confirming the nature of these candidates is very challenging due to the stochastic quasar variability. I will summarize the status of the searches and the opportunities for new detections with the Rubin Observatory. I will also describe potential synergies with gravitational wave detections from Pulsar Timing Arrays.

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