

TRACING SUPER MASSIVE BLACK HOLE CANDIDATES VIA THE MAIN SEQUENCE OF QUASARS

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Reverberation mapping (RM) is a powerful technique used to probe the geometry and kinematics of the broad-line region (BLR) in active galactic nuclei (AGN). By measuring the time delay (lag) between fluctuations in the continuum emission and the response in emission lines, we can estimate the size of the BLR and infer black hole masses. While $H\beta$ RM is well established, Fe II RM is more challenging due to the complexity of the Fe II emission blends. NGC 5548 is one of the most extensively studied AGNs and serves as a benchmark for RM studies. Using a decade-long Fe II and continuum lightcurves from archival spectroscopic monitoring we find that the Fe II lags range from 43 to 58 days, consistently longer than the $H\beta$ lags (which range from about 5 to 26.5 days). The Fe II reverberation mapping in NGC 5548 confirms the existence of a delayed Fe II response, which implies that the Fe II emitting region lies at the outskirts of the BLR.