

**LONG TERM MONITORING OF AGN SPECTRA AND DETECTION OF
SUPERMASSIVE BINARY BLACK HOLES**

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Active galactic nuclei (AGN) are the most luminous objects in the Universe. There are many scenarios that can explain how AGN are triggered. One of the most intriguing involves the existence of a supermassive binary black hole system in their cores. AGN monitoring spectra can reveal such systems by analysing their emission line shapes and continuum flux variation.

Using very long AGN monitoring data and a method typically used for spectroscopic binary stars, we reveal several candidates. We obtained radial velocity curves from which we calculated orbital elements and made estimates about black hole masses. Given the large observational effort needed to reveal this spectroscopically resolved binary orbital motion, we suggest that many such systems may exist in similar objects even if they are hard to find. Detecting more of them will provide us with insight into the supermassive black hole mass growth process.