

SPECTROSCOPIC DETECTION OF SUPERMASSIVE BINARY BLACK HOLE SYSTEMS IN AGN

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The variability of emission line shapes and fluxes in active galactic nuclei (AGNs) might be caused by supermassive binary black hole (SMBBH) systems in their cores. Using a method similar to those typically applied for spectroscopic binary stars it might be possible to obtain radial velocity curves of the supermassive binary system, from which could be calculated orbital elements and masses of components. Recent observational evidences of spectroscopically resolved supermassive sub-parsec orbits in the core of Seyfert galaxies opens many questions for understanding AGN and the mechanisms responsible for the production of such a large energies in cores. If black hole mass grows via major mergers, then we might expect to see the signature of a binary BH in some or many active galaxies. Here we present spectroscopic study of several SBBH candidates.

DIFFERENCES OF THE STELLAR POPULATION BETWEEN THE HII GALAXIES AND ACTIVE GALAXIES

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In this paper we studied differences of the stellar population between the HII galaxies and active galaxies. We used full spectrum fitting technique to analyse the composite stellar population spectrum made of a number of bursts. We looked for correlations between the fraction of the youngest population to the total flux and the total equivalent width, as well as to the fraction of the sum of the two youngest to the total flux and the total equivalent width. We found that the population of HII galaxies is younger than that of active ones.