

Contribution ID: 2309

Canadian Association of Physicists

Association canadienne des physiciens et physiciennes

Type: Poster (Non-Student) / Affiche (Non-étudiant(e))

POS-7 NuSTAR Search For Black Holes Within the Galactic Center

Tuesday 12 June 2018 18:00 (2 minutes)

This investigation reports on the 2016 Nuclear Spectroscopic Telescope Array (NuSTAR) observation of the Galactic Center (GC). Two new transients were identified within the Galactic Center, Swift J174540.7-290015 (Transient 15) and Swift J174540.2-290037 (Transient 37). Having observed the GC for 10 years and detected no prior outburst, it can be concluded that the time between outburst (recurrence time) is longer than 10 years. The recurrence time of a neutron star is less than 10 years, while that of a black hole is assumed to be approximately 100 years. Therefore, it can be concluded that these transients are very likely black hole binaries. Through both spectral fitting and timing analysis, Transients 15 and 37 were identified as black hole candidates. The observed number of transients were used to estimate the existence of 30 black hole binaries within the Galactic Center, 27 still unobserved, indicating the likelihood of a substantive population of black holes within the Galactic Center.

Authors: Mr LEE, Dong Hoon; Mr CHANG, Michael

Presenter: Mr LEE, Dong Hoon

Session Classification: DASP Poster Session & Finals: Poster Competition & Mingle Session with Industrial Partners (6) /Employers| Session d'affiches DPAE et finales: Concours d'affiches et rencontres avec partenaires industriels et employeurs (6)

Track Classification: Atmospheric and Space Physics / Physique atmosphérique et de l'espace (DASP-DPAE)