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The College of Graduate Studies and the College of Science Cordially Invite You to a

Master Thesis Defense

Entitled

RADIO OBSERVATIONS OF THE NEUTRON STAR BINARY CIRCINUS X-1: CLUES ON THE ONSET OF RADIO EMISSION AND JET FORMATION.

by

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Date & Venue

10:00 AM

Sunday, 14 June 2020

Link: https://eu.bbcollab.com/guest/f2ca9f5d10a8413eb4fa233584e9f83a

Abstract

Circinus X-1 is a Neutron-Star X-ray Binary System which features strong and variable radio emission. This emission is triggered as a result of the interaction between neutron star and its companion as they approach periastron. Radio observations of Circinus X-1 have not been carried out over the past 7 years. Here, we present the results of the radio observation and monitoring campaign on Circinus X-1 with the Australia Telescope Compact Array (ATCA) – Australia, at centimeter wavelengths (5.5 and 9 GHz). We monitored the radio behavior of Circinus X-1 over two of its orbits (16.6 days each) to probe its current radio brightness as a function of its orbit. We investigate whether there is any correlation between the observed radio emission and the estimated accretion rates, and what difference do the orbital phases make in terms of the system's observed behavior.

Keywords: Circinus X-1, radio observations, X-rays binaries, Neutron Star, Accretion, Accretion Discs.