

Seminario

Miércoles 17 de Enero, 2018, 11 hrs (PST), Auditorio IA-Ensenada

A new asynchronous short period polar IGR J19552+0044 Gagik Tovmasian (IAE, UNAM)

Based on XMM–Newton X-ray observations IGR J19552+0044 appears to be either a pre-polar or an asynchronous polar. We conducted follow-up optical observations to identify the sources and periods of variability precisely and to classify this X-ray source correctly. Extensive multicolor photometric and medium- to high-resolution spectroscopy observations were performed and period search codes were applied to sort out the complex variability of the object. We found firm evidence of discarding spectroscopic (81.29 ± 0.01 m) and photometric (83.599 ± 0.002 m) periods that we ascribe to the white dwarf (WD) spin period and binary orbital period, respectively. This confirms that IGR J19552+0044 is an asynchronous polar. Wavelength dependent variability and its continuously changing shape point at a cyclotron emission from a magnetic WD with a relatively low magnetic field below 20 MG. The difference between the WD spin period and the binary orbital period proves that IGR J19552+0044 is a polar with the largest known degree of asynchronism (0.97 or 3%).

