

Located on the beautiful island of Sardinia (Italy) the [Physics Department of the University of Cagliari](#) has a 23-year experience in PhD research in experimental and theoretical physics. In particular, the Astronomy Group of the University of Cagliari has an international research experience in the field of High Energy Astrophysics (Prof. Luciano Burderi) and Radio Astronomy (Prof. Nichi D'Amico), and a well established collaboration with the [Astronomical Observatory of Cagliari](#) (directed by Prof. Nichi D'Amico).

In the field of Radio Astronomy, the main research is on radio pulsars and radio surveys, which recently led to the discovery of the relativistic double pulsar PSR J0737-3039A/B (the only known binary system containing two radio pulsars and the best testbed for general relativity and other theories of gravity to date). From an instrumental point of view Prof. Nichi D'Amico and the Astronomical Observatory of Cagliari are leading the construction of the Sardinia Radio Telescope (SRT), one of the biggest astronomical Italian projects at the moment, a 64-meters single dish parabola with adaptive optics which will be finished at the end of 2009 and will be part of the VLBI. The main research topics in the field of high energy astrophysics are the astrophysics of compact objects, and in particular Galactic compact objects in X-ray binaries. The study regards observations (mainly using space based instrumentation - such as *XMM-Newton*, *INTEGRAL*, *Chandra*, *Suzaku*, *RXTE*, *Swift* - and ground based instrumentation - such as ESO VLT and the Parkes radio telescope) and modeling of the time variability and spectral properties of the X-ray emission from accreting compact objects.

Successful applicants will be based at the Physics Department of the University of Cagliari (Cittadella Universitaria di Monserrato).

The permanent staff teaching at the Department of Physics consists of 51 lecturers (full and associate professors, and researchers), specializing in different topics of experimental and theoretical physics. The PhD school in Physical Sciences and Technologies counts at the moment 23 PhD students.

