

1) Research subject title and an abstract (<1000 words)

Title: Multi-wavelength studies of X-ray transients

This joint Chile-China postdoc program is aimed at multi-wavelength studies of black hole and neutron star X-ray transients in our Galaxy. The outbursts of X-ray novae and dwarf novae (many of these reside in the Galactic Bulge), are usually discovered by X-ray all-sky monitoring observations from space or dedicated wide field-of-view optical monitoring programs on the ground. The postdoc candidate(s) will have the chance to work closely with both Chile and Chinese PIs on observations and data analysis, to investigate the physics of accretion and jet in these transients through X-ray observations from space (e.g., Swift, XMM-Newton, and the to-be-launched Chinese X-ray mission HXMT) and optical and radio observations from ground (e.g., various optical or radio telescopes in Chile and China). Special efforts will be on using ground telescopes in Chile and China and space X-ray observatories for target-of-opportunity and follow-up observations of X-ray transients. Candidates with both theory and observation background are encouraged to apply.

2) Project proposer, his/her collaborator and host institutions in Chile and/or China

Chile: Dr. Penelope Longa, Universidad de Antofagasta

China: Dr. Wenfei Yu, Shanghai Astronomical Observatory

- 3) A brief Scientific Justification, Chile-China connection, and any other relevant information

Both teams work on X-ray binaries in the past and have achieved experience in leading groups in Europe. The expertise of both teams are complementary. The Chilean team is very experienced in optical observations of CVs and XRBs, while the Chinese team has strong experience in space X-ray observations or ground radio observations. Both teams consider the joint Chile and China program a chance to enhance further collaborations. They have already started to consider optical monitoring program of X-ray binaries with telescopes in Chile.

- 4) Implementation details including expected project duration (two years or three years)

The postdoc candidate(s) will primarily work in Chile CASSACA. The candidate(s) is expected to collaborate with both PIs and their teams in Chile and China, and visit both teams for substantial period of time. The program is intend for two years and can be extended for an additional year.

- 5) CV(s) of the project's leader(s) and list of their publications relevant to the proposal

Chinese PI: Dr. Wenfei Yu

Dr. Wenfei Yu obtained his Ph.D from the Institute of High Energy Physics (IHEP) of the Chinese Academy of Sciences (CAS) in 1998 after an academic visit of the CGRO/BATSE team in NASA/MSFC and study in the High Energy Astrophysics Group in IHEP (the instrument team of HXMT – the Chinese X-ray satellite to be launched in early 2017). He won the National Excellent Ph.D Thesis Award in 2000. He then left for University of Amsterdam to work on X-ray observations of X-ray binaries and later worked in the University of Illinois at Urbana-Champaign on relativistic astrophysics. In late 2006, he came back to CAS as a titled professor and started his observational high energy astrophysics group in Shanghai Astronomical Observatory. His group has been very active in the studies of X-ray binaries and X-ray transients, making use of monitoring observations such as RXTE/ASM, Swift/BAT and MAXI, as well as target-of-opportunity observations with Swift, XMM-NEWTON, RXTE, and ground telescopes such as JVLA and VLBA and optical telescopes in China. He is also involved in the science working groups of several future missions, such as LOFT, eXTP and SKA.

Chilean PI: Dr. Penelope Longa

Dr. Penelope Longa obtained her PhD from the University of Warwick, where she collaborated with the optical characterization of X-ray binaries. She has experience observing in most of the Chilean optical ground base telescopes, including the VLT. She is one of the scientists in charge of the scientific program of the Universidad de Antofagasta optical observatory, Ckoirama

(<http://www.astro.uantof.cl/investigacion/observatorios/observatorio-ckoirama/>), which will be an important tool for the follow up of bright transients.