

Curriculum Vitae: Matthew P.E. Schurch

PERSONAL INFORMATION Born 3rd April 1982 in Waverton, Cumbria, England

CONTACT DETAILS Astrophysics, Cosmology and Gravity Centre,
University of Cape Town,
Private Bag X3,
Rondebosch 7701, Republic of South Africa
telephone: +27 (0)21 650 3323
e-mail: matthew.schurch@gmail.com

PERSONAL STATEMENT My primary research interests are in the energetic interactions that take place in accreting X-ray binary star systems. In particular I have taken a multi-wavelength approach to studying the population of Be/X-ray binaries in the SMC/LMC and Galaxy. I have also taken a leading role within the ThunderKAT collaboration that will be analysing future MeerKAT data for radio transients. Currently this work is focused on observations of Cir X-1 at multiple wavelengths. I have utilised 6 facilities, SALT, IRSF, KAT-7, HartRAO, MAXI and Swift to perform this intensive monitoring campaign. I shall be coordinating and analysing the follow-up optical and X-ray observations of future transients detected by MeerKAT. I am involved with the planning of the MeerLICHT network of robotic 0.4m telescopes.

EMPLOYMENT AND EXPERIENCE Claude Leon Postdoctoral Research Fellow
University of Cape Town
Cape Town, Republic of South Africa
Supervisor: A/Prof. Patrick Woudt
January 2012 - December 2013

UCT/URC Postdoctoral Research Fellow
University of Cape Town
Cape Town, Republic of South Africa
Supervisor: Em. Prof. Brian Warner
September 2009 - December 2011

Research Assistant
Carnegie Mellon University
Pittsburgh, USA
August 2004 – November 2004
August 2003 – October 2003
Supervisor: Prof. Richard Griffiths

EDUCATION **University of Southampton**
Southampton, United Kingdom
PhD in Astronomy
October 2005 – July 2009
Thesis title: Observational studies of the growing population of High Mass X-ray Binaries in the Small Magellanic Cloud
Supervisor: Prof. Malcolm Coe

The HMXB population is being revealed through the use of high spatial resolution X-ray satellites such as *Chandra* and *XMM-Newton*, in addition to these observations we monitored the entire SMC weekly with three 10ks *RXTE* observations. My thesis presented an optical analysis of three new pulsars discovered during our *Chandra* Wing survey. From *RXTE* data a complete orbital solution was found from a fit to the variations in pulse period allowing its spectral properties at various phases to be evaluated. By comparing the long term X-ray and OGLE lightcurves I have examined the correlations between optical and X-ray outbursts for many systems, providing insight into the accretion processes and interactions taking place.

University of Bristol
Bristol, United Kingdom
MSci in Physics and Astronomy (First class Honours)
October 2000 – July 2004
Final Year Dissertation title: Radio Mapping of Serendipitous ChaMP Sources
Supervisor: Prof. Mark Birkinshaw

AWARDS	South African National Research Foundation Rating. 6 year duration.	Level Y2 January 2012 – December 2018 R40,000/annum.
	UCT Conference Travel Award	2012 (R17,840), 2011 (R12,000), 2010 (R8,000)
OBSERVING EXPERIENCE	SALT, SAAO, South Africa: Service observations. PI long slit spectroscopy programs.	2012-1-RSA_UKSC-003 (37845s), 2011-3-RSA_UKSC-004 (4500s), 2011-3-RSA_UKSC-001 (7470s), 2011-3-RSA_UKSC-002 (11900s)
	1.9-m and 1.0m Telescope, SAAO, South Africa: Long-slit spectroscopy and photometry.	August 2013, April 2012 and 2011, December 2010 and 2009, April 2006 and October 2005
	1.4-m IRSF, SAAO, South Africa: JHK _s imaging.	December 2009, December 2007 and October 2005
	3.6-m Telescope, ESO, Chile: Long-slit spectroscopy	September 2007
COMPUTER SKILLS	IDL, C++ programming Data reduction and processing of Southern African Large Telescope (SALT) and AAOmega data Reduction of photometric and spectroscopic data in IRAF Spectral and temporal analysis of <i>RXTE</i> and <i>Swift</i> data Proficient in <i>Chandra</i> and <i>XMM-Newton</i> data analysis using XSPEC Familiar with radio reduction techniques using AIPS and CASA Data analysis using PERIOD, DIPSO, TOPCAT, DS9 and ALADIN Web programming in HTML5.	
TEACHING AND ORGANISATIONAL ROLES	Co-supervision of Masters Student Willice Obonyo, UCT	2013-Present
	Supervision of Honours Student Patrick Affadi, UCT	2012
	Departmental Post-Doctoral Representative, UCT	2011 – Present
	Assistant Lecturer for Stellar Astrophysics (AST3002F), UCT	2011 and 2012
	ACGC Journal Club coordinator, UCT	2010 – 2012
	Teaching Assistant for 2nd year Life in the Cosmos (PHYS2010), Uni of Southampton	2007 – 2009
OUTREACH	Aimhigher Easter Summer School, Uni of Southampton	2006
	Aimhigher Summer/Easter Schools, Uni of Southampton	2008, 2007 and 2006
	Astronomy for Brownies, Uni of Southampton	2008
	Astronomy Summer School, Uni of Southampton	2007
REFEREES	A/Prof. Patrick Woudt University of Cape Town, Prof. Malcolm Coe University of Southampton, Ignacio Negueruela Universidad de Alicante,	pwoudt@ast.uct.ac.za +27 21 650 5830 M.J.Coe@soton.ac.uk +44 23 8059 2108 ignacio.negueruela@ua.es +34 965 903400-ext1152