

Curriculum Vitae of Ewald Zietsman

18 Gordon Road, Observatory
Cape Town, South Africa

+27 072 735 4048
ewald.zietsman@gmail.com

Personal details

Date of birth : 8 February 1982
Gender : Male
Citizenship : South African
I.D. : 8202085009086
Marital Status : Unmarried
Languages : Afrikaans, English

Education

• University of South Africa

PhD Astrophysics

Jan. 2009 - Current

– Relevant Skills:

- * Reduction and analysis of high time-resolution observations obtained using the Southern African Large Telescope (SALT)
- * Computationally intensive calculations (genetic algorithms, utilising neural networks) performed using ROCKS cluster computing environment.
- * Scientific observations using the High-speed polarimeter (HIPPO) on the SAAO 1.9m telescope in Sutherland
- * Development of custom analysis and visualisation software using Python and related tools.

– Thesis : A Study of Selected Magnetic Cataclysmic Variables

• University of Cape Town

M.Sc. Astrophysics and Space Science

Jan. 2006 - Aug. 2008

- Relevant courses: Plasma Physics, Magnetohydrodynamics, Extragalactic Astronomy, Observational Cosmology, Cataclysmic Variables
- Thesis : High-speed Photometry and Spectroscopy of the Cataclysmic Variable EC2117-54 : Exploring New Avenues With the Southern African Large Telescope

• University of Cape Town

B.Sc.(Hons) Astrophysics and Space Science

2005

- Graduated with First Class Honours
- Relevant courses: Electrodynamics, Quantum Mechanics, Stellar Atmospheres, Stellar Structure and Evolution, Computational Physics, General Relativity, Galaxies, Observational Techniques, Radio Astronomy
- Honours Project : Observation and Analysis of the first observed pulsating sdO star.

• University of Cape Town

B.Sc. Geomatics

2001 - 2004

- Graduated with Honours.
- Included in Dean's Merit List each year.
- Relevant courses: Surveying, Geographic Information Systems, Computer Science, Remote Sensing, Mathematics, Physics, Astronomy, Numerical Methods, Land Law, Engineering Surveying, Photogrammetry

Work Experience

- **University of Cape Town** School of Geomatics
Lecturer 2008
 - Lectured spherical trigonometry as part of Geographical Informations Systems I (2nd year course)
 - Lectured parts of the Basic Surveying I course (2nd year course)
- **University of Cape Town** Department of Astronomy
Course Tutor 2006 - 2010
 - Astronomy I, Astronomy II, Spectroscopy NASSP Honours Course
- **James Mahon Landmeters** Pretoria
Student Land Surveyor 2001 - 2004
 - Assisted in various types of survey projects. These included precise engineering surveys, sectional title surveys, boundary disputes, setting out of townships and parcels, topographical surveys. Also assisted in other cadastral type work such as subdivisions of farms and parcels, servitude surveys and beacon relocation surveys. The work included calculation of fieldwork and the checking of diagrams for accuracy.

Publications

- Time resolved astronomy with the SALT
Buckley, D. A. H., Crawford, S., Gulbis, A. A. S., McPhate, J., Nordsieck, K. H., Potter, S. B., O'Donoghue, D., Siegmund, O. H. W., Schellart, P., Spark, M., Welsh, B. Y., Zietsman, E.
Proceedings of the SPIE, Volume 7735, pp. 773559-773559-14, 2010
- The rapidly pulsating sdO star, SDSS J160043.6+074802.9
Rodríguez-López, C., Lynas-Gray, A. E., Kilkenney, D., MacDonald, J., Moya, A., Koen, C., Woudt, P. A., Wium, D. J., Oruru, B., Zietsman, E.
Monthly Notices of the Royal Astronomical Society, Volume 401, Issue 1, pp. 23-34, 2010
- Suzaku Observations of the Dwarf Nova V893 Scorpii: The Discovery of a Partial X-ray Eclipse
Mukai, K., Zietsman, E., Still, M.
The Astrophysical Journal, Volume 707, Issue 1, pp. 652-661, 2009
- The slowly pulsating sdB star EC 21324-1346.
Kilkenney, D., Copley, C., Zietsman, E., Worters, H.
Monthly Notices of the Royal Astronomical Society, Volume 375, Issue 4, pp. 1325-1328, 2007
- The X-Ray Properties of the Dwarf Nova V893 Scorpii.
Mukai, K., Zietsman, E., Still, M.
Progress of Theoretical Physics Supplement No. 169, pp. 182-186, 2007
- SDSS J160043.6+074802.9: a very rapid sdO pulsator.
P.A. Woudt, D. Kilkenney, E. Zietsman, B. Warner, N.S. Loaring, C. Copley, A. Kniazev, P. Vaisanen, M. Still, R.S. Stobie, E.B. Burgh, K.H. Nordsieck, J.W. Percival, D. O'Donoghue & D.A.H. Buckley
Monthly Notices of the Royal Astronomical Society, Volume 371, Issue 3, pp. 1497-1502., 2006

Skills

Languages: Python, Fortran, C/C++, \LaTeX , Visual Basic, Java, Pascal

Operating Systems: Linux (Ubuntu, Fedora Core, Mandriva), Windows 95/98/NT/2000/XP

Applications: scipy, matplotlib, pyfits, numpy, vpython, cython, swig, f2py, pygame, parallepython, subversion, mercurial, Mayavi, IRAF, Gnuplot, \LaTeX , OpenOffice, Scribus, GIMP

Surveying Instruments: Digital and Opto-mechanical Theodolites, Static and Real Time Kinematic GPS systems, Precise Levels, Dumpy Levels.

Astronomical Observing: 110 nights observing experience on SAAO 1.9m and SAAO 1.0m Telescopes using the SAAO High-speed Polarimeter, UCT CCD Photometer, SAAO CCD Photometer

Miscellaneous: Exceptional analytical and problem solving skills, technical software programming and design capabilities, Object oriented programming, strong verbal and written communication skills.

Interests

Computing: Data analysis and visualisation, parallel and distributed computing, game design and programming, high-performance GPU computing, artificial intelligence, optimisation, genetic algorithms, Monte-Carlo simulations, 3D graphics and animation, real-time electric guitar amplifier synthesis, robotics.

Academic: Astrophysics of variable stars, astronomical observing and data reduction and analysis techniques, open-source educational software, programming literacy.

Musical: Playing guitar, building effects pedals and valve amplifiers

References

- **Name:** Hamish Whittal
Affiliation: South African Astronomical Observatory
Position: IT Manager
Email: hamish@sao.ac.za
Phone: +27 21 460 9343
- **Name:** Dr Steven Crawford
Affiliation: South African Astronomical Observatory
Position: SALT Data Manager
Email: crawford@sao.ac.za
Phone: +27 21 460 9359