

ewald zietsman

software developer

contact

Observatory
Cape Town
South Africa

email:
ewald.zietsman@gmail.com

website:
ezietsman.github.io

languages

english
afrikaans

personal info

age: 33
nationality: South African

experience

- | | | |
|-------------|--|-------------------------|
| 2014 – | Siyavula Education
Senior Software Developer | Cape Town |
| | <ul style="list-style-type: none">• Design, implementation and maintenance of a complex suite of web-based, machine-learning driven, educational software.
http://www.everythingmaths.co.za• Code review of other developers' code.• Maintenance of the codebase.• Mentoring of junior developers. | |
| 2011 – 2014 | Siyavula Education
Technical Coordinator / Software Developer | Cape Town |
| | <ul style="list-style-type: none">• Development and maintenance of Python software for XML document validation and conversion to publishing formats including HTML5, \LaTeX, EPub 3.0 and Mobile Web.• Implementation and maintenance of \LaTeX style sheets for print book PDF generation. See PDF downloads at:
http://www.thunderboltkids.co.za
http://www.curious.org.za
http://www.everythingscience.co.za
http://www.everythingmaths.co.za• Management of technical aspects of textbook translations including:<ul style="list-style-type: none">• Maintenance of <i>Transifex</i> server.• XML conversion to and from translation formats.• Developing proof of concept models and testing of new tools and technologies for possible inclusion in current processes.• Development of custom modules in the Plone CMS related to online hosting of textbooks.• Contributing to related open source software development projects including:<ul style="list-style-type: none">• OERPub Editor: http://oerpub.github.io/Aloha-Editor• AnnotatorJS: http://annotatorjs.org | |
| 2008 | University of Cape Town
Lecturer | School of Geomatics |
| | <ul style="list-style-type: none">• Lectured spherical trigonometry and map projections as part of Geographical Informations Systems I (2nd year course).• Lectured part of the Basic Surveying I course (2nd year course). | |
| 2006 – 2010 | University of Cape Town
Course Tutor | Department of Astronomy |
| | Astronomy I, Astronomy II, Spectroscopy NASSP Honours Course. | |

2001 – 2004 **James Mahon Landmeters** Pretoria
Student Land Surveyor
Assisted with various types of survey projects including precise engineering surveys, sectional title surveys, boundary disputes, setting out of townships and parcels, topographical surveys. Also assisted with other cadastral type work such as subdivisions of farms and parcels, servitude surveys and beacon relocation surveys.

education

2009 – 2011
(Incomplete) **D.Phil. in Astronomy** University of South Africa
Thesis: A Study of Selected Magnetic Cataclysmic Variables
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 (www.rockclusters.org) 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.

2006 – 2008 **M.Sc. in Astrophysics and Space Science** University of Cape Town
Coursework: Plasma Physics, Magnetohydrodynamics, Extragalactic Astronomy, Observational Cosmology and Cataclysmic Variables.
Dissertation: High-speed Photometry and Spectroscopy of the Cataclysmic Variable EC2117-54: Exploring New Avenues With the Southern African Large Telescope.

2005 **B.Sc.(Hons) in Astrophysics and Space Science** University of Cape Town
Coursework: Electrodynamics, Quantum Mechanics, Stellar Atmospheres, Stellar Structure and Evolution, Computational Physics, General Relativity, Galaxies, Observational Techniques and Radio Astronomy.

2001 – 2004 **B.Sc. in Geomatics** University of Cape Town
Coursework: Surveying, Geographic Information Systems, Computer Science, Remote Sensing, Mathematics, Physics, Astronomy, Numerical Methods, Land Law, Engineering Surveying and Photogrammetry.

skills

Programming languages: Python, Javascript, Fortran, C/C++, \LaTeX .

Operating systems: Linux (Ubuntu, Fedora Core, Mandriva), OSX.

Applications: Git, Github, Pyramid, Plone, Django, scipy, matplotlib, pyfits, numpy, vpython, cython,

swig, f2py, pygame, parallepython, Subversion, Mercurial, IRAF, \LaTeX , Trello, Code Climate.

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.

publications

articles

Faint cataclysmic variables from SDSS (Woudt+, 2012)

P. A. Woudt, B. Warner, D. de Bude, S. Macfarlane, M. P. E. Schurch, E. Zietsman
VizieR Online Data Catalog 742 (Jan. 2013) p. 12414. 2013

SDSS J0349-0059 is a GW Virginis star

P. A. Woudt, B. Warner, E. Zietsman
MNRAS 426 (Nov. 2012) pp. 2137–2141. 2012

EC 01541-1409 pulsations frequencies (Reed+, 2012)

M. D. Reed, D. Kilkeny, S. O'Toole, R. H. Ostensen, C. Honer, J. T. Gilker, A. C. Quint, A. M. Doennig, L. H. Hicks, M. A. Thompson, P. A. McCart, E. Zietsman, W.-P. Chen, C.-W. Chen, C.-C. Lin, P. Beck, P. Degroote, B. N. Barlow, D. E. Reichart, M. C. Nysewander, A. P. Lacluyze, K. M. Ivarsen, J. B. Haislip, A. Baran, M. Winiarski, M. Drozd
VizieR Online Data Catalog 742 (Oct. 2012) p. 10181. 2012

High-speed photometry of faint cataclysmic variables - VII. Targets selected from the Sloan Digital Sky Survey and the Catalina Real-time Transient Survey

P. A. Woudt, B. Warner, D. de Budé, S. Macfarlane, M. P. E. Schurch, E. Zietsman
MNRAS 421 (Apr. 2012) pp. 2414–2429. 2012

Multiyear and multisite photometric campaigns on the bright high-amplitude pulsating subdwarf B star EC 01541-1409

M. D. Reed, D. Kilkeny, S. O'Toole, R. H. Østensen, C. Honer, J. T. Gilker, A. C. Quint, A. M. Doennig, L. H. Hicks, M. A. Thompson, P. A. McCart, E. Zietsman, W.-P. Chen, C.-W. Chen, C.-C. Lin, P. Beck, P. Degroote, B. N. Barlow, D. E. Reichart, M. C. Nysewander, A. P. Lacluyze, K. M. Ivarsen, J. B. Haislip, A. Baran, M. Winiarski, M. Drozd
MNRAS 421 (Mar. 2012) pp. 181–189. 2012

On the spin modulated circular polarization from the intermediate polars NY Lup and IGR J15094-6649

S. B. Potter, E. Romero-Colmenero, M. Kotze, E. Zietsman, O. W. Butters, N. Pekeur, D. A. H. Buckley
MNRAS 420 (Mar. 2012) pp. 2596–2602. 2012

Possible detection of two giant extrasolar planets orbiting the eclipsing polar UZ Fornacis

S. B. Potter, E. Romero-Colmenero, G. Ramsay, S. Crawford, A. Gulbis, S. Barway, E. Zietsman, M. Kotze, D. A. H. Buckley, D. O'Donoghue, O. H. W. Siegmund, J. McPhate, B. Y. Welsh, J. Vallergera
MNRAS 416 (Sept. 2011) pp. 2202–2211. 2011

The rapidly pulsating sdO star, SDSS J160043.6+074802.9

C. Rodríguez-López, A. E. Lynas-Gray, D. Kilkeny, J. MacDonald, A. Moya, C. Koen, P. A. Woudt, D. J. Wium, B. Oruru, E. Zietsman
MNRAS 401 (Jan. 2010) pp. 23–34. 2010

Suzaku Observations of the Dwarf Nova V893 Scorpii: The Discovery of a Partial X-ray Eclipse

K. Mukai, E. Zietsman, M. Still

Astrophysical Journal 707 (Dec. 2009) pp. 652–661. 2009

The slowly pulsating sdB star EC 21324-1346

D. Kilkenney, C. Copley, E. Zietsman, H. Woters

MNRAS 375 (Mar. 2007) pp. 1325–1328. 2007

The X-Ray Properties of the Dwarf Nova V893 Scorpii

K. Mukai, E. Zietsman, M. Still

Progress of Theoretical Physics Supplement 169 (2007) 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. Väisänen, M. Still, R. S. Stobie, E. B. Burgh, K. H. Nordsieck, J. W. Percival, D. O'Donoghue, D. A. H. Buckley

MNRAS 371 (Sept. 2006) pp. 1497–1502. 2006

conference proceedings

PySALT: the SALT science pipeline

S. M. Crawford, M. Still, P. Schellart, L. Balona, D. A. H. Buckley, G. Dugmore, A. A. S. Gulbis, A. Kniazev, M. Kotze, N. Loaring, K. H. Nordsieck, T. E. Pickering, S. Potter, E. Romero Colmenero, P. Vaisanen, T. Williams, E. Zietsman

Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 2010

Time resolved astronomy with the SALT

D. A. H. Buckley, S. Crawford, A. A. S. Gulbis, J. McPhate, K. H. Nordsieck, S. B. Potter, D. O'Donoghue, O. H. W. Siegmund, P. Schellart, M. Spark, B. Y. Welsh, E. Zietsman

Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 2010

interests

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

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

Personal: Guitars, DIY effects pedals and valve amplifiers, dragonboat racing, trail running, gaming.