

# ewald zietsman

software developer

## contact

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## languages

english  
afrikaans

## personal info

age: 32  
nationality: South African  
ID: 8202085009086

## experience

- 2011 – **Siyavula Education** Cape Town  
**Technical Coordinator / Software Developer**
- 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:
    - Maintenance of *Transifex* 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:
    - OERPub Editor: <http://oerpub.github.io/Aloha-Editor>
    - AnnotatorJS: <http://annotatorjs.org>
- 2008 **University of Cape Town** School of Geomatics  
**Lecturer**
- 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** Department of Astronomy  
**Course Tutor**  
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](http://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), Microsoft Windows.

**Applications:** Git, Pyramid, Plone, Django, scipy, matplotlib, pyfits, numpy, vpython, cython, swig, f2py, pygame, parallepython, Subversion, Mercurial, IRAF,  $\LaTeX$ .

**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*

#### **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*

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

M. D. Reed, D. Kilkenney, 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  
*VizieR Online Data Catalog 742 (Oct. 2012) p. 10181. 2012*

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

M. D. Reed, D. Kilkenney, 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*

#### **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*

#### **SDSS J0349-0059 is a GW Virginis star**

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

### 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*

### 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*

## 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.