



John Andrew
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B.Sc.

astrophysicist / programmer



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ABOUT ME

I love knowledge, in any shape, way and form.

I started learning programming languages and making stuff at age 12. I read the Feynmann Lectures at age 14. I read "Grey's Anatomy" and Christan Barnard's "The Body Machine" at age 15. I studied physics with interest in quantum mechanics and astrophysics. Now pursuing my Ph.D. in Astrophysics.

LANGUAGES

- Greek (Mother Tongue)
- English (Proficient – C2)
- German (Advanced – C1)
- French (Intermediate – B1)
- Italian (Elementary – A2)

EDUCATION

Ph.D. / Astronomy & Astrophysics

University of Crete

2017-2021(expected)

Interests: Astronomical Instrumentation (Hardware and Software), Observational Astrophysics (Imaging, Spectra and Polarimetry in Optical Wavelengths), Data Analysis, Astrophysics of Supernova Remnants, Astrophysics of Pulsars.

B.Sc. / Physics

University of Crete

2013-2017

Diploma grade: "Very Good" 8.11/10.00, second of my year, 244 ECTS.

Sample subjects: Calculus, Differential Equations, Linear Algebra, E&M, Quantum Mechanics, Classical Mechanics, Astrophysics, Programming (C++ / Fortran77), Statistical Mechanics, Experimental Physics.

Diploma Thesis: "Spectral line study of the physical parameters of Supernova Remnants in our Galaxy"

EXPERIENCE

Ph.D. Research Fellow

Foundation of Research and Technology Hellas, Institute of Astrophysics and University of Crete, Department of Physics / Greece / 2017-(now)

Full optical and software design, as well as leadership to the team responsible for the mechanical and electronic design of the WALOPNorth (Wide Area Linear Optical Polarimeter - North) Instrument. Modelling of the instrument performance in Python. Development of the observation simulator and strategy software of said instrument. Research in the emission properties of pulsars, in the optical regime, through large catalog manipulation and observations. Observations and research in discovery, cataloging and nature of polarimetrically standard stars. Research in the physical parameters of Supernova Remnants. Supervisor: professors Konstantinos Tassis and Andreas Zezas, University of Crete and professor A. N. Ramaprakash, IUCAA, India.

Visiting Professor – Temp. Guest (hons.)

Cummins College of Engineering for Women, Pune/ India / 2017-2018

Guest Introductory Astrophysics Course. Spring Semester.

Senior Undergraduate Research & Internship

University of Crete, Department of Physics/ Greece / 2016-2017

Acquisition of images and spectra of Galactic supernova remnants with the 1.3m telescope of Skinakas Observatory in optical wavelengths (more than 100 hours of observations). Analysis of the images and spectra resulting in maps of the velocity of the shock wave in each SNR. Development a Python suite for the reduction and analysis of future data. Supervisor: professor Andreas Zezas, University of Crete.

Undergraduate Research Fellowship

Foundation of Research and Technology, Institute of Electronic Structure and Lasers / Greece / 2014-2014

Acquisition and analysis of data from laser interactions with various (coated and uncoated) molecular iodine cells, in order to test the current models of photo-dissociation and come up with proper coating for creating high steady-state iodine column densities. Supervisor: professor Peter Theodore Rakitzis, University of Crete.

SELECT PUBLICATIONS

1. *J. A. Kyriotakis et al.*
New optical counterparts of pulsars and white dwarf pulsar companions. (in prep.)
2. *J. A. Kyriotakis et al.*
Narrowband study of the physical parameters of the G65.8-0.5 and G67.8+0.5 Supernova Remnants. (in prep.)
3. *G. E. Katsoprinakis, G. Chatzidrosos, J. A. Kyriotakis, E. Stratakis, P. T. Rakitzis. 2016, Sci. Rep. 6, 33261*
High steady-state column density of $I(^2P_{3/2})$ atoms from I_2 photodissociation at 532nm: Towards parity non-conservation measurements.

DISTINCTIONS

- *European Union Science Olympiad 2012*: This competition tests participants in experimental Physics, Chemistry and Biology. 1st place on the regional phase. 5th place at the national phase.
- *National Mathematical Competition 2012*: Passed the first 2 stages of the competition (3 total stages), chose not to compete further to focus on my qualification for the EUSO competition of the same year.
- *National Biology Competition 2012*: Passed the first stage of the competition (3 stages total), chose not to compete further to focus on my qualification for the EUSO competition of the same year.
- *Mensa Greece*: Member since 2011. I.Q. 145, as per the FRT-Form A test.
- *National Mathematical Competition 2011*: Passed the first 2 stages of the competition (3 total stages).

SKILLS

- Programming (Python, TensorFlow, C, C++, C#, LabView, Mathematica, x86 Assembly, 6502 Assembly, Ruby, Fortran77, Pascal, DOS, PowerShell, BASH, Docker, Arduino, HTML, PHP, Processing, IDL)
- Astronomical Software (IRAF/Pyraf, Maxim DL)
- Production Software (Zemax OpticStudio & ZPL, Autodesk Inventor, Autodesk Eagle)

REFERENCES

- Associate Prof. Andreas Zezas, University of Crete. Supervisor of my undergraduate diploma thesis and research. Co-supervisor of my Ph.D. Attended his courses: Observational Astrophysics, Astrophysics II, Subjects of Modern Physics.
- Associate Prof. Konstantinos Tassis, University of Crete. Main supervisor of my Ph.D. Attended his courses: Classical Mechanics I.
- Prof. Peter Theodore Rakitzis, University of Crete. Supervisor of my first research project. Attended his courses: Quantum Mechanics I, Quantum Mechanics II.