

Sandor Jozsef Kruk

PERSONAL DATA

DPhil Astrophysics

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EDUCATION

PRESENT	DPhil in Astrophysics
SEP 2014	University of Oxford , Oxford, United Kingdom. Thesis: Secular evolution of galaxies in the Modern Era using the Galaxy Zoo project . Advisor: Prof Chris Lintott.
JUN 2014	MSci degree in Astrophysics.
SEP 2010	University College London (UCL) , London, United Kingdom. Grade: First Class Honours (Average Mark 92/100). Thesis: High-energy radiation and cosmic rays from bubbles in galaxies . (Mark 85/100). Advisor: Prof Kinwah Wu (MSSL, UCL).
SEP 2010	High School
SEP 2006	Vasile Lucaciu National College , Baia Mare, Romania. Graduated in top 1% of the class (secondary school GPA: 9.93/10). Romanian Baccalaureate Diploma (graduation exam: 9.70/10).

RESEARCH INTERESTS

Galaxies: evolution, morphology, classification, substructure (discs, bars, bulges, rings, spiral arms etc.), parametric fitting. Rare objects (galaxies with off-centre bars, off-centre nuclei, blue ellipticals, red spirals etc.). Survey and multiwavelength astronomy. Machine learning.

PUBLICATION RECORD

Refereed publications: **8**, of which **2** as first author. A full up-to-date list of publications can be found at: [ADS Sandor J. Kruk search](#).

ONGOING PROJECTS

- Studying the star formation histories of barred galaxies in the SDSS-IV MaNGA survey.
- Kinematics of galaxies with offset bars and discs in the SDSS-IV MaNGA survey.
- Offset discs and bars in the S⁴G survey.
- Boxy/Peanut bulges from $z \sim 0$ (SDSS) to $z \sim 1$ (HST) galaxies.

OTHER RESEARCH EXPERIENCE

SUMMER 2013	University of London Observatory , UCL, UK Developed tools to observe and characterize exoplanet transits using small telescopes. Developed tutorials and lecture materials for the Practical Astronomy labs.
SUMMER 2012	Mullard Space Science Laboratory , UCL, UK Modelled the dynamics of void galaxies to study the distribution of dark matter in clusters for future missions such as EUCLID.
SUMMER 2011	University of Heraklion , Crete, Greece Observed and studied X-ray binnaries.

TEACHING, SUPERVISION & MENTORING

PRESENT 2015	Tutor of 4 th Year MPhys Astrophysics Major, University of Oxford <ul style="list-style-type: none">◦ Tutor of the year-long astrophysics course at the University of Oxford Department of Physics, accounting for 1/3 of the 4th year's overall mark.◦ Taught final year students a range of topics in modern astrophysics (cosmology, galaxies, high energy astrophysics, stellar evolution, radiative processes).
PRESENT 2015	Demonstrator of 1 st Year Data Analysis Course <ul style="list-style-type: none">◦ Delivered tutorials and assisted students in first term <i>R</i> data analysis labs.
AUG 2017 JUN 2017	Summer student supervision , Jesse Murray-Dean, University of Kent <ul style="list-style-type: none">◦ Supervised summer student's project on classifying bar strength in Galaxy Zoo.

HONOURS, AWARDS, GRANTS

OCT 2014	Studentship for doctoral studies from the UK Science & Technology Facilities Council.
APR 2015	Clockmakers' Prize from the Clockmakers Livery Company, City of London, for the contribution made to the UCL Astronomy Department and to the University of London Observatory.
JUN 2014	Dean's List award for being in top 2% undergraduates of the Mathematical & Physical Sciences Faculty at UCL.
JUN 2014	Herschel prize for the best performance in 4 th year Astronomy at UCL.
OCT 2013	Best performance in 3rd year Astronomy at UCL.
OCT 2012	Huggins prize for the best performance in 2 nd year Astronomy at UCL.
JUN 2012	Summer research studentship from the Royal Astronomical Society.
OCT 2011	Halley prize for the best performance in 1 st year Astronomy at UCL.
AUG 2010	Gold Medal in the 4 th IOAA, Beijing, China.
NOV 2009	Silver Medal and Special Prize for the best result in the Observational Round in the XIV th International Astronomy Olympiad, Hangzhou, China.
OCT 2009	Honourable Mention in the 3 rd IOAA, Teheran, Iran.
AUG 2008	Bronze Medal in the 2 nd IOAA, Bandung, Indonesia.

OUTREACH

PRESENT 2015	Founder and Coordinator , British Astronomy and Astrophysics Olympiad <ul style="list-style-type: none">◦ Founder of the first Astronomy Olympiad in the United Kingdom and coordinator of the national Olympiad. Raised funds to run the competition.◦ Achieved wide national participation in the first two years of the competition, the papers being taken by >1000 students across the UK.◦ Organised training camps and trained the team to participate in the International Olympiad on Astronomy and Astrophysics (IOAA). Lead the UK team in the international competitions achieving excellent results: 1 Gold, 1 Silver, 1 Bronze Medal and 2 Honourable Mentions in the IOAA 2016 in Bhubaneswar, India and 2 Silver Medals in the IOAA2015 in Bandung, Indonesia.
PRESENT 2016	Co-founder , Oxford For Romania Summer School <ul style="list-style-type: none">◦ Co-founded and raised funds to bring >20 bright Romanian students from disadvantaged backgrounds to a multidisciplinary summer school at one of the world leading universities, for two consecutive years.◦ Planned the timetable, coordinated the logistics and organised workshops on novel discoveries in astronomy.◦ The project received two prizes: the UK Romanian Ambassador's Diploma for Romanian Community and the Generosity Trophy given by the Hategan Foundation.

SEMINARS, TALKS AND POSTERS

Conference contributions: 6 talks and 5 poster presentation.

Seminars and colloquia: 7 seminars.

Regularly gave outreach talks at public events in Oxford and in Romania.

Graduate outreach rep of the University of Oxford Astrophysics Department during 2015-2016.

LIST OF MOST RECENT SEMINARS AND TALKS

- OCT 2017 Gas in Galaxies Conference, Malta (talk).
- SEP 2017 ESO, Garching, Germany (lunch talk).
- SEP 2017 MPE, Garching, Germany (seminar).
- AUG 2017 Universitäts Sternwarte Munich, Germany (talk).
- IUL 2017 Galaxy Zoo 10 Meeting, Oxford, UK (talk).
- IUL 2017 National Astronomy Meeting (NAM), Hull, UK (talk & poster).
- IUN 2017 European Week of Astronomy and Space Science (EWASS), Prague, Czech Republic (poster).
- MAY 2017 University of Oxford, UK (seminar).
- IUL 2016 Discs in Galaxies Conference, ESO, Garching, Germany (poster).
- APR 2016 What Shapes Galaxies Conference, Baltimore, USA (poster).

SKILLS

Languages

- *Romanian*: mother tongue • *Hungarian*: mother tongue • *English*: fluent
- *French*: advanced knowledge • *Spanish*: basic knowledge

Observing

- *Radio*:: observed with the Caltech Submillimetre Observatory for 10 nights.
- *Optical*: observed with 2-m telescopes, with both imaging and spectroscopy: the Nordic Optical Telescope, and using the telescopes in Skinakas, Moletai and Observatoire de Haute Provence. Experienced in using and maintaining smaller telescopes.

Data analysis and techniques

- Experienced in planning, reducing and analysing optical, radio and spectroscopic data from various telescopes.
- Expert in galaxy fitting and decompositions of large samples using softwares such as GALFIT, GALFITM and GALAPAGOS.

Computer knowledge and programming

- Linux, Windows, MacOS, L^AT_EX, Topcat, IRAF, SExtractor, HyperZ, EAZY, CSS, MS Office.
- Python, R, IDL, SQL, HTML, Matlab, Bash, Tcsh.