

Peter J. Levens

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Education

University of Glasgow – Postgraduate

2013 - Present

- Ph.D. in Solar Astronomy funded by the Science and Technology Facilities Council (STFC)
- Began in October 2013, submitted thesis in September 2017
- Researched solar tornado-like prominences using spectroscopic techniques

Published papers

- “Comparing UV/EUV line parameters and magnetic field in a quiescent prominence with tornadoes” – [P. J. Levens](#), N. Labrosse, B. Schmieder, A. López Ariste, L. Fletcher, *Astronomy & Astrophysics*, 2017 (accepted).
- “Reconstruction of a helical prominence in 3D from IRIS spectra and images” – B. Schmieder, M. Zapiór, A. López Ariste, [P. J. Levens](#), N. Labrosse, R. Gravet, *Astronomy & Astrophysics*, 2017 (accepted).
- “Halpalpha Doppler shifts in a tornado in the solar corona” – B. Schmieder, P. Mein, N. Mein, [P. J. Levens](#), N. Labrosse, L. Ofman, *Astronomy & Astrophysics*, 2017, 597, A109.
- “Magnetic field in atypical prominence structures: Bubble, Tornado, and Eruption” – [P. J. Levens](#), B. Schmieder, A. López Ariste, N. Labrosse, K. Dalmasse, B. Gelly, *Astrophysical Journal*, 2016, 826, 164L.
- “Structure of prominence legs: Plasma and magnetic field” – [P. J. Levens](#), B. Schmieder, N. Labrosse, A. López Ariste, *Astrophysical Journal*, 2016, 818, 31L.
- “A solar tornado observed by EIS: Plasma diagnostics” – [P. J. Levens](#), N. Labrosse, L. Fletcher, B. Schmieder, *Astronomy & Astrophysics*, 2015, 582, A27.

Conference proceedings

- “Prominence plasma and magnetic field structure - A coordinated observation with IRIS, Hinode and THEMIS”, B. Schmieder, N. Labrosse, P. Levens, A. López-Ariste, *41st COSPAR Scientific Assembly*, 2016
- “Magnetic Field and Plasma Diagnostics from Coordinated Prominence Observations”, B. Schmieder, P. Levens, K. Dalmasse, N. Mein, P. Mein, A. López-Ariste, N. Labrosse, P. Heinzel, *Astronomical Society of the Pacific, ASP Conference Series, Vol. 504*, 2016, 119.
- “Polarimetric measurements in prominences and “tornadoes” observed by THEMIS”, B. Schmieder, A. López Ariste, P. Levens, N. Labrosse, K. Dalmasse, *IAU Symposium Proceedings No. 305*, 2015, 275–281.

Meetings attended, talks given and posters presented

- February 2017 – Talk at the International Space Science Institute in Bern, Switzerland
- June 2016 – Talk at the National Astronomy Meeting in Nottingham, UK
- June 2016 – Talk at the IRIS-6 meeting in Stockholm, Sweden
- November 2015 – Poster at the SUPA Cormack Astronomy Meeting in Edinburgh, UK
- September 2015 – Talk at the Hinode 9 meeting in Belfast, UK
- July 2015 – Poster at the National Astronomy Meeting in Llandudno, UK
- May 2015 – Talk at the IRIS-4 Workshop in Boulder, Colorado, USA
- January 2015 – Talk at the RAS IRIS Specialist Discussion Meeting in London, UK
- September 2014 – Talk at the European Solar Physics Meeting in Dublin, Ireland
- September 2014 – Attended the STFC Advanced Summer School in Dundee, UK
- June 2014 – Attended the National Astronomy Meeting in Portsmouth, UK
- February 2014 – Poster at Royal Astronomical Society solar prominence meeting in London, UK
- November 2013 – Attended the SUPA Cormack Astronomy Meeting in Edinburgh, UK

Funded international trips

- February 2017 – I was chosen to be part of an international ISSI team as a ‘young scientist’. There were two young scientists on the ISSI team of 14 members, which was dedicated to investigating and discussing tornado-like prominences. The meeting lasted one week and involved talks and a large amount of discussion from all members.
- December 2016 and April 2017 – I was selected to be a member of the IRIS Science Team as a science planner. I was one of three new science planners to be selected, and was required to spend two weeks at the LMSAL facility in Palo Alto, CA, in 2016 for training and planning duties. As a science planner for the IRIS satellite, I was responsible for coordinating satellite operations with observers to ensure correct target selection and that observations were performed as requested.
- November 2014 to February 2015 – I was awarded funding as part of SUPA’s Long Term Attachment scheme to spend four months in Paris at the Meudon Observatory. During this time I had access to knowledge and experience that was not available to me in the UK, beginning the analysis of data gathered during the May and July observing campaigns.
- May and July 2014 – I was part of observing team that was awarded funding by SOLARNET to use the THEMIS telescope in the Canary Islands. The proposal was to observe mainly solar prominences using the spectropolarimeter of THEMIS in order to build a picture of the magnetic field structures within. During this time we had observing support from both the Hinode and IRIS spacecrafts, so a great deal of organisation and planning was required in order to successfully complete these simultaneous observations. It was also a good introduction to the challenges faced when using ground-based solar telescopes.

Astronomy outreach

As a member of the Astronomy department at the University of Glasgow, I regularly had the opportunity to be involved in community outreach events. We provided observatory tours and talks, and the department has a mobile planetarium that is regularly taken to schools and science events, and planetarium shows are given to people of all ages. As well as being involved in these tours, talks and shows, I also helped at the Glasgow Science Centre in a ‘meet the expert’ stall as part of a science day for primary school children during the Glasgow Science Festival. I have also been heavily involved in University of Glasgow open days, where I have spoken to many prospective students about studying physics at the University of Glasgow.

University of Glasgow - Undergraduate

2009 - 2013

- BSc. Physics and Astronomy
- Degree classification: With Honours of the First Class

Honours courses and grades

- Galaxies – A3
- High Energy Astrophysics – A3
- Stellar Structure and Evolution – A5
- Thermal Physics – A1
- Quantum Mechanics – A3
- Mathematical Methods I – B1
- Waves and Diffraction – B1
- Exploring Planetary Systems – A5
- Instruments in Optical and Radio – A2
- Astronomical Data Analysis – B1
- Nuclear and Particle Physics – B1
- Electromagnetic Theory I – A3
- Atomic Systems – B2

Honours years project information:

- Final year honours project – Prominence Contribution to Solar Irradiance as observed by EVE - Working with data from the Solar Dynamics Observatory we looked into whether solar prominences contribute significantly to the total solar irradiance.
- Individual research project – The Moons and Rings of the Jovian Planets - comprising a 20 minute presentation on the topic to peers and members of staff, as well as a 15 page report.
- Final year lab project – Solar System Simulator - A solar system simulator was created using MATLAB.
- Junior honours lab project – Asteroid Light Curves - Using a free standing telescope, fitted with a motorised tracking mount, nights were spent observing asteroids in order to build up a light curve to measure their rotational velocity.

Kirkwall Grammar School

2003 - 2009

- Advanced Highers in Physics (A grade), Music (A grade) and Art (A grade).
- Highers taken in the above subjects as well as English (B grade) and Mathematics (A grade).

Work Experience

University of Glasgow summer placement

Summer 2012

- Six week placement with the University of Glasgow Astronomy department.
- Worked on teaching development of first and second year undergraduate curriculum, writing model answers for tutorial questions, writing questions corresponding to each lecture course, and developing and improving a first year laboratory experiment.

Waiter/Barista at CafeLolz@21

Summer 2011

- Working with other members of staff to provide the best service possible to the customer required good teamwork, especially in a busy café.
- As a more senior employee, the ability to delegate and knowledge of what needed to be done helped develop leadership skills.

Waiter/Barista at the Stadium Cafe Bar

Summer 2009/10

- Jobs included working with a coffee machine, waiting on tables, working with the public, money handling, and keeping a clean working environment.
- Café environment can be highly stressful, so keeping calm and level headed was an essential skill to master quickly.
- My time at the Stadium was a learning curve, as it was my first job of this kind. However, over my two summers in employment there I learnt a great deal and made some lasting bonds with colleagues.

Computer skills

Over the years I have gained a great deal of experience in computer programming, specifically in the languages IDL, Python, and MATLAB, as well as the typesetting language LaTeX. I am familiar with MacOS, Windows, and Ubuntu/Linux-type operating systems. Beyond the normal graphical user interface, I can also comfortably navigate Unix based OS command lines, specifically the MacOS and Ubuntu Terminal, and use bash, cshell and text editors such as Vim.

Interests and hobbies

Outside of physics and astronomy, I am a keen musician, playing a number of instruments. I have played in various bands over the years, playing gigs and practicing regularly with bandmates. Playing live has helped a great deal with self confidence, and playing in a band requires teamwork and determination.

I have a fond interest all-grain homebrewing. The process of making beer is fascinating to me, and the satisfaction of an enjoyable finished product is extremely rewarding, especially when I get to share the product with others. Learning about the process is what piqued my interest in brewing, and refining recipes, and finding new recipes is captivating.

I have an interest in art, finding drawing and sketching relaxing and very enjoyable. I am also an avid reader, enjoying books of many genres.