Angelos Tsiaras - Curriculum Vitae

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Research interests

Observations of exoplanetary systems, data analysis, data simulations, photometry, spectroscopy, exoplanets characterisation, modelling of light-curves from exoplanetary systems, developing user-friendly scientific tools.

Education

- **PhD in Astronomy** September 2014 – September 2017
  Department of Physics and Astronomy, University College London, UK.
  Thesis title: *Towards a population of exoplanetary atmospheres.*
  Subjects: Transit spectroscopy of exoplanets with the HST/WFC3 camera, data analysis, calibration, spectra-photometry, transit modelling, atmoshperic retrievals, simulating observations.
  Supervisors: Prof. Giovanna Tinetti and Dr. Ingo P. Waldmann.
- **BSc in Physics (Ptychion)** 9.38/10.00 – First Class September 2009 – July 2014
  Department of Physics, Aristotle University of Thessaloniki, Greece.
  Thesis title: *Detection of an additional extra-solar planet and simulation of perturbations on transit light-curves*.
  Subjects: Transits of exoplanets from the ground, data analysis, photometry, modelling. Planet-planet transits in *Kepler* data, data de-trending and modelling.
  Supervisor: Prof. John H. Seiradakis

Work experience

- Post-Doctoral research assistant at University College London. November 2017 – today

Current projects

- Atmospheric characterisation of exoplanets with the Hubble Space Telescope.
- Co-leader of the data analysis group of ARIEL, the ESA M4 mission dedicated to investigate the atmospheres of several hundreds of exoplanets.
- Science manager of ExoWorlds Spies, a project that involves professional and amateur astronomers, with the aim of following-up transiting exoplanets with small telescopes.

Selected peer reviewed publications (ADS link - ORCID link)

- **Tsiaras, A.**, Waldmann, I. P., Zingales, T., et al. 2018. *A Population Study of Gaseous Exoplanets.* The Astronomical Journal, 155, 156.
- **Tsiaras, A.**, Waldmann, I. P., Rocchetto, M., et al. 2016. *A New Approach to Analyzing HST Spatial Scans: The Transmission Spectrum of HD 209458 b.* The Astrophysical Journal, 832, 202.
- **Tsiaras, A.**, Rocchetto, M., Waldmann, I. P., et al. 2016. *Detection of an Atmosphere Around the Super-Earth 55 Cancri e.* The Astrophysical Journal, 820, 99.
- Morello, G., **Tsiaras, A.**, Howarth, I. D., et al. 2017. *High-precision Stellar Limb-darkening in Exoplanetary Transits.* The Astronomical Journal, 154, 111.
- Varley, R., **Tsiaras, A.**, and Karpouzas, K. 2017. *Wayne – A Simulator for HST WFC3 IR Grism Spectroscopy.* The Astrophysical Journal Supplement Series, 231, 13.
- Beatty, T. G., Madhusudhan, N., **Tsiaras, A.**, et al. 2017. *Evidence for Atmospheric Cold-trap Processes in the Non-inverted Emission Spectrum of Kepler-13Ab Using HST/WFC3.* The Astronomical Journal, 154, 4.
- Damiano, M., Morello, G., **Tsiaras, A.**, et al. 2017. *Near-IR Transmission Spectrum of HAT-P-32b using HST/WFC3.* The Astronomical Journal, 154, 39.

Press releases

- First detection of a super-Earth atmosphere:
  Hubble Space Telescope, European Space Agency, Europlanet,
  BBC, Nature, Forbes, Washington Post, Time, Daily Mail, Wired, Astronomy Now.
- First large catalogue of exoplanetary atmospheres:
  Europlanet (Press Release, Press Conference).

Publicly available software developed (GitHub link)

- *Iraclis*: Analysis pipeline for HST spectroscopic observations of exoplanet transits and eclipses.
- *Wayne*: Simulation of WFC3 observations.
- PyLightcurve: A python package for modeling and analysing transit light-curves.
- HOPS: A software to analyse data from small ground-based telescopes.
- TransitSimulator: Graphic interface for transit visualisation.
- ADSiLib: ADS Library Organiser..

Selected presentations

- Invited seminar: University of California, Berkeley, US. October 2017.
- Oral presentation: 49$^{\text{th}}$ Meeting of the American Astronomical Society Division of Planetary Science, Provo, US. October 2017.
- Oral presentation: European Planetary Science Congress 2017, Riga, Latvia. September 2017.
- Oral presentation: "Science with the Hubble and James Webb Space Telescopes V" conference, Venice, Italy. March 2017.
- Oral presentation: 13$^{\text{th}}$ Hellenic Astronomical Conference, Herakleion, Greece. July 2017.
- Invited lecture: 35$^{\text{th}}$ Meeting of the Astronomical Society of India, Jaipur, India. March 2017.
- Oral presentation: 48$^{\text{th}}$ Meeting of the American Astronomical Society Division of Planetary Science, Pasadena, US. October 2016.
- Oral presentation: National Astronomy Meeting 2016, Nottingham, UK. June 2016.
- Invited seminar: Aristotle University of Thessaloniki, Greece. February 2016.
- Invited seminar: National Observatory of Athens, Greece. February 2016.
- Oral presentation: 12$^{\text{th}}$ Hellenic Astronomical Conference, Thessaloniki, Greece. July 2015.

Fellowships & Awards

- NASA Postdoctoral Fellowship. January 2018.
- Macedonian Prize, annual prize awarded to a greek citizen for achievements in science or art. Drama, Greece. October 2017.
- Honorable mention: 3$^{\text{rd}}$ International Olympiad on Astronomy and Astrophysics, Tehran, Iran. October 2009.
- 2$^{\text{nd}}$ prize: 14$^{\text{th}}$ Greek National Competition on Astronomy & Space, Volos, Greece. March 2009.
- 1$^{\text{st}}$ prize: Vasilis Xanthopoulos Mathematics-Physics Competition, Drama, Greece. March 2009.

Teaching & Toutoring

- Invited lecturer on data analysis of exoplanet transits: Aristotle University of Thessaloniki, Greece. 2016 – 2017.
- Masters thesis co-supervisor:
  - James Ozden, University College London, UK. 2017 – 2018.
  - Yip Kai, University College London, UK. 2016 – 2017.
  - Konstantinos Karpouzas, Aristotle University of Thessaloniki, Greece and University College London, UK. 2016 – 2017.
- Undergraduate tutor:
  - Holomon Astronomical Station, Aristotle University of Thessaloniki, Greece. 2011 – 2017.
  - University College London Observatory, University College London, UK. 2016 – 2017.
- International Olympiad on Astronomy and Astrophysics (IOAA):

  - Invited scientific assistant of the Greek delegation: 11$^{\text{th}}$ IOAA, Phuket, Thailand. November 2017.
  - Grader of the theoretical and data analysis tests: 7$^{\text{th}}$ IOAA, Volos, Greece. August 2013.
  - Trainer of the students selected to represent Greece, especially on the subjects of data analysis, practical astronomy, celestial sphere and theoretical mechanics: 4$^{\text{th}}$ (2010), 5$^{\text{th}}$ (2011), 6$^{\text{th}}$ (2012), 7$^{\text{th}}$ (2013), 9$^{\text{th}}$ (2015) and 10$^{\text{th}}$ (2016) IOAA.

Outreach

- Invited to the Hubble hangouts program, March 2016.
- Several public talks on exoplanets in Greece. 2009 – 2018 (e.g. Thessaloniki, February 2016).
- Collaborator in the education programme EduTwinkle, with the aim of engaging high-school students with data analysis of exoplanet transits (e.g. Twinkle in India).

Skills

- Languages
  - Greek (native)
  - English (proficient)
- Computing
  - Operating systems: Mac OS (excellent), Linux (excellent), Windows (excellent).
  - Programming: Python (excellent, including GUI programming), R (good), C (basic).
  - Other: LaTeX (excellent), M. Office (excellent), Mathematica (excellent), Django (basic).
- Observing
  - Telescope operator: 10″ – 11″ (excellent, +400 hours).
  - Related software: MaxIm DL (excellent).
  - Targets: transiting exoplanets, eclipsing binaries, variable stars.