Dr Angelos Tsiaras

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Work Experience

- Research & Development consultant, Spaceflux Ltd, London. July 2023 – Now
- Honorary Senior Research Fellow at University College London. February 2022 – Now
- Arcetri Fellow at INAF-Osservatorio Astrofisico di Arcetri. November 2021 – June 2023
- Senior Research Fellow at University College London. February 2020 – October 2021
- Research Fellow at University College London. November 2017 – January 2020
- Part time Research Astronomer at Royal Observatory Greenwich. October 2019 – June 2021

Education

- **PhD in Astronomy** – VIVA passed with no corrections September 2014 – September 2017
  Department of Physics and Astronomy, University College London (UCL), UK.
  Thesis: *Towards a population of exoplanetary atmospheres* (external link).
- **BSc in Physics (Ptychion)** 9.38/10.00 – First Class September 2009 – July 2014
  Department of Physics, Aristotle University of Thessaloniki (AUTh), Greece. Thesis: *Detection of additional exoplanets and simulation of perturbations on transit light-curves*.

Fellowships & Awards

- Arcetri Fellowship, Florence, Italy. June 2021
- NASA Postdoctoral Fellowship (offer rejected), NASA Ames, USA. January 2018
- Royal Astronomical Society grant, London, UK. March 2017
- Royal Astronomical Society grant, London, UK. October 2016
- Honorable mention: October 2009
  3rd International Olympiad on Astronomy and Astrophysics, Tehran, Iran.
- 2nd prize: 14th Greek National Competition on Astronomy & Space, Volos, Greece. March 2009
- 1st prize: Vasilis Xanthopoulos Mathematics-Physics Competition, Drama, Greece. March 2009

Press releases

- First detection of water in the atmosphere of a habitable-zone planet (press release):
  – Top article for the physical sciences in the Altmetric 2019 Top 100 (and No 33 overall, UCL)
  – Interviews for top media worldwide (e.g. BBC, Sky, The Guardian), +4000 articles produced
  – In the top 5% of all articles ever tracked by Altmetric.
- First detection of a super-Earth atmosphere (press release)
  – World-wide coverage, translated to more than 10 different languages.
  – Articles: Hubble Space Telescope, European Space Agency, Europlanet, BBC, Nature, Forbes, Daily Mail, Washington Post, Time, Wired.
- First large catalogue of exoplanetary atmospheres (press release)
  – Articles: Europlanet, EPSC.

Teaching Experience

- PhD student co-supervised:
  - Arianna Saba, UCL. 2020 – today
  - Mario Morvan, UCL. 2018 – today
- MSc students supervised:
  - Luis Thomas, UCL. 2020 – 2021
  - Andrew Jolly, UCL (then PhD at University of New South Wales, Australia). 2019 – 2020
- MSc students co-supervised:
  - James Ozden, UCL (then PhD at University of New South Wales, Australia). 2017 – 2018
  - Yip Kai, UCL (then PhD at University College London, UK). 2016 – 2017
  - Konstantinos Karpouzas, AUTh/UCL 2016 – 2017
    (then PhD at University of Groningen, Netherlands).
- Visiting lecturer:
  - Course: Observational Astronomy, 2018/19 – today (Term 2)
    4^{th} year undergraduate course, Aristotele University of Thessaloniki
- Invited lecturer:
  - UKRI STFC Introductory Course in Astronomy. August 2019
  - ARES Summer school on HST data analysis, Biarritz, France. October 2019
- International Olympiad on Astronomy and Astrophysics (IOAA):
  - Trainer of the students selected to represent Greece at the IOAA 2010 – 2020
    on data analysis, observational astronomy, and theoretical astrophysics.
  - Invited scientific assistant for Greece: 11^{th} IOAA, Phuket, Thailand. November 2017
  - Grader of the theoretical and data analysis tests: 7^{th} IOAA, Volos, Greece. August 2013
- Course demonstrator:
  - 3rd Yr Group Project, UCLO - UCL. 2020/21 (Term 2)
  - 3rd Yr Group Project, UCLO - UCL. 2019/20 (Term 2)
  - Physics of the Exoplanets, UCL. 2017/18 (Term 2)
  - Physics of the Exoplanets, UCL. 2016/17 (Term 2)
  - Practical Astrophysics 2A, UCLO - UCL. 2015/16 (Term 2)
  - Observational Astronomy, AUTh. 2013/14 (Term 2)
  - Observational Astronomy, AUTh. 2012/13 (Term 2)
  - Observational Astronomy, AUTh. 2010/11 (Term 2)
- Course marker:
  - Mathematical Methods II, UCL. 2018/19 (Term 2)
  - Mathematical Methods II, UCL. 2017/18 (Term 2)
  - Waves, Optics and Acoustics, UCL. 2016/17 (Term 2)
  - Thermal Physics, UCL. 2015/16 (Term 2)
  - Physics of the Earth, UCL. 2014/15 (Term 1)
  - Introduction to Astronomy, AUTh. 2012/13 (Term 2)
  - Calculus II, AUTh. 2010/11 (Term 2)

Community Service

- Panel member for the JWST Cycle 2 Time Allocation Committee. April 2023
- Panel member for the JWST Cycle 1 Time Allocation Committee. February 2021
- Reviewer for Science, Nature Astronomy, AJ, and A&A, MNRAS, PASP. since 2016
- Co-Chair of the Open Science session in EPSC 2021. September 2021
- Chair of the Pro-Am collaborations session in NAM 2021. July 2021
- Co-Chair of the Open Science session in EPSC 2020. September 2020
- EPEC Officer of the Europlanet Society Ireland and UK hub. 2019-2021
- Co-chair of the EPEC Early Career Support Working Group. 2018-2020

Open-source algorithms and community platforms developed

- Iraclis (developer): Analysis pipeline for HST spectroscopic observations of transiting exoplanets.
- Wayne (developer): Simulation of WFC3 observations.
- PyLightcurve (developer): A python package for modeling and analysing transit light-curves.
- HOPS (developer): A software to analyse data from small ground-based telescopes.
- ExoTETHyS (contributor): An open-source package for modeling exoplanetary transits, eclipsing binaries and related phenomena.
- ExoClock Platform (developer): A citizen science platform that involves professional and amateur astronomers, with the aim of following-up transiting exoplanets with small telescope (+15000 visits per month).
- ExoWolrds Platform Spies (developer): An educational project aiming to bring schools, amateur astronomers and the general public exoplanet closer to exoplanet research (+20000 visits per month).

Citizen Science & Outreach

- Coordinator of the ExoClock project, a citizen science project that involves professional and amateur astronomers, aiming to following-up transiting exoplanets with small telescopes.
- Science manager of the ExoWorlds Spies project, an educational project aiming to bring schools, amateur astronomers and the general public exoplanet closer to exoplanet research.
- Co-coordinator of the ***Synergies with amateur astronomers*** working group of ARIEL consortium, ESA's M4 mission.
- Delivering astronomy lectures to high schools students at the Royal Observatory Greenwich.
- Developer of user friendly software, made for amateur astronomers and the general public.
- Several invitations for live discussions/interviews
  e.g. Hubble hangouts, BBC Sky at Night, Event horizon
- 15+ talks and workshops for the general public in Greece and the UK since 2009.

Languages

- Greek (native), English (proficient)

Observations

- Observation planning – ground (Holomon Astronomical Station (Greece), UCLO (UK), SUBARU, VLT) and space telescopes (Hubble, Spitzer).
- Telescope operator: $10''$ – $11''$ (+400 hours, targets: transiting exoplanets, eclipsing binaries, variable stars).

Computing

- Programming:
  - Python (excellent)
  - GUI development with Python/TkInter (excellent)
  - website development with Python/Django (excellent)
  - HTML (good)
  - R (good)
  - C (basic)
- Operating systems: Mac OS (excellent), Linux (excellent), Windows (excellent).
- Astronomical Software: MaxIm DL (excellent), The Sky X (good)
- Other: LaTeX (excellent), M. Office (excellent), Mathematica (excellent)

Selected publications

Published peer reviewed articles

- **Tsiaras**, Waldmann, Tinetti et al. 2019. *Water vapour in the atmosphere of the habitable-zone eight-Earth-mass planet K2-18 b.* Nature Astronomy 3, 1086–1091.
- **Tsiaras**, Waldmann, Zingales et al. 2018. *A Population Study of Gaseous Exoplanets.* The Astronomical Journal 155(4), 156.
- **Tsiaras**, Rocchetto, Waldmann et al. 2016. *Detection of an Atmosphere Around the Super-Earth 55 Cancri e.* The Astrophysical Journal 820(2), 99.
- **Tsiaras**, Waldmann, Rocchetto et al. 2016. *A New Approach to Analyzing HST Spatial Scans: The Transmission Spectrum of HD 209458 b.* The Astrophysical Journal 832(2) 202.
- Kokori, **Tsiaras**, Edwards et al. 2021. *The ExoClock Project: An open platform for monitoring the ephemerides of ARIEL targets with contributions from the public.* Experimental Astronomy.
- Morvan, **Tsiaras** Nikolaou et al. 2021. *PyLightcurve-torch: a transit modeling package for deep learning applications in PyTorch.* Publications of the Astronomical Society of the Pacific 133(1021), 6.
- Yip, **Tsiaras**, Waldmann et al. 2020. *Integrating light-curve and atmospheric modelling of transiting exoplanets.* The Astronomical Journal 160(4), 171.
- Morvan, Nikolaou, **Tsiaras** et al. 2020. *Detrending Exoplanetary Transit Light Curves with Long Short-term Memory Networks.* The Astronomical Journal 159(3), 109.
- Morello, **Tsiaras**, Howarth et al. 2017. *High-precision Stellar Limb-darkening in Exoplanetary Transits.* The Astronomical Journal 154(3), 111.
- Varley, **Tsiaras**, & Karpouzas 2017. *Wayne – A Simulator for HST WFC3 IR Grism Spectroscopy.* The Astrophysical Journal Supplement Series, 231(1), 13.
- Changeat, Edwards, Al-Refaie et al. 2021. *Disentangling atmospheric compositions of K2-18 b with next generation facilities.* Experimental Astronomy.
- Edwards, Changeat, Yip et al. 2021. *Original Research By Young Twinkle Students (ORBYTS): Ephemeris Refinement of Transiting Exoplanets.* Monthly Notices of the Royal Astronomical Society 504(4), 5671-5684.
- Edwards, Changeat, Mayuko et al. 2021. *Hubble WFC3 Spectroscopy of the Habitable-zone Super-Earth LHS 1140 b.* The Astronomical Journal 161(1), 44.
- Guilluy, Gressier, Wright et al. 2021. *ARES IV: Probing the Atmospheres of the Two Warm Small Planets HD 106315c and HD 3167c with the HST/WFC3 Camera.* The Astronomical Journal 161(1), 19.
- Yip, Changeat, Edwards et al. 2021. *On The Compatibility of Ground-based and Space-based Data: WASP-96 b, An Example.* The Astronomical Journal 161(1), 4.
- Yip, Nikolaou, Coronica et al. 2020. *Pushing the Limits of Exoplanet Discovery via Direct Imaging with Deep Learning.* IN Machine Learning and Knowledge Discovery in Databases p.322-338.
- Changeat, Edwards, Al-Refaie et al. 2020. *KELT-11 b: Abundances of water and carbon-bearing molecules from the Hubble transmission spectrum.* The Astronomical Journal 160(6), 260.
- Anisman, Edwards, Changeat et al. 2020. *WASP-117 b: An Eccentric hot-Saturn as a Future Complex Chemistry Laboratory.* The Astronomical Journal 160(5), 233.
- Pluriel, Whiteford, Edwards et al. 2020. *ARES III: Unveiling the two faces of KELT-7 b with HST/WFC3.* The Astronomical Journal 160(3), 112.
- Skaf, Bieger, Edwards et al. 2020. *ARES II: Characterising Hot Jupiters WASP-127 b, WASP-79 b and WASP-62 b with Hubble WFC3 transmission spectra.* The Astronomical Journal 160(3), 109.
- Edwards, Changeat, Baeyens et al. 2020. *ARES I: WASP-76 b, A Tale of Two Spectra.* The Astronomical Journal 160(1), 8.
- Morello, Claret, Martin-Lagarde et al. 2020. *The ExoTETHyS package: Tools for Exoplanetary Transits around Host Stars.* The Astronomical Journal 159(2), 75.
- Tinetti, Drossart, Eccleston et al. 2018. *A chemical survey of exoplanets with ARIEL.* Experimental Astronomy, 46(1), 135.

- Bean, Stevenson, Batalha et al. 2018. *The Transiting Exoplanet Community Early Release Science Program for JWST*. Publications of the Astronomical Society of the Pacific, 130(993), 114.
- Beatty, Madhusudhan, **Tsiaras** 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), 158.
- Damiano, Morello, **Tsiaras** et al. 2017. *Near-IR Transmission Spectrum of HAT-P-32b using HST/WFC3*. The Astronomical Journal 154(1), 39.

Selected presentations

Invited talks

- "Science with the Hubble and JWST VI" conference, Stockholm, Sweden. TBD
- 15th Hellenic Astronomical Conference, -, online. July 2021
- Meeting of the Europlanet Society Ireland and UK Hub, -, online. June 2021
- "Exoplanet atmospheres: from HST & Spitzer to JWST" conference, -, online. Mach 2021
- 52nd Conference on Variable Stars, -, online. November 2020
- Meeting of the Europlanet Society Ireland and UK Hub, London, UK. March 2020
- Pro-Am exoplanet observations workshop, Helsinki, Finland. April 2019
- "Digital Exoplanets" meeting, Prague, Czech Republic. January 2019
- International Symposium on Extra-Solar Planets, Bangalore, India. January 2019
- PLATO 2.0 Citizen Planetentest, Kea, Greece. October 2018
- 35th Meeting of the Astronomical Society of India, Jaipur, India. March 2017

Invited seminars

- INAF Osservatorio Astrofisico di Arcetri, Florence, Italy. February 2022
- Institute of Astrophysics - FORTH, Heraklion, Greece. March 2021
- Aristotle University of Thessaloniki, Thessaloniki, Greece. January 2021
- Queen Mary University, London, UK. December 2020
- Astrobiology and Planetary Exploration Meeting, UCL/Birkbeck, London, UK. October 2019
- Rutherford Appleton Laboratory, Harwell, UK. October 2019
- Astrobiology and Planetary Exploration Meeting, UCL/Birkbeck, London, UK. January 2019
- Astrobiology and Planetary Exploration Meeting, UCL/Birkbeck, London, UK. November 2017
- University of California, Berkeley, USA. October 2017
- Astrobiology and Planetary Exploration Meeting, UCL/Birkbeck, London, UK. November 2016
- Aristotle University of Thessaloniki, Thessaloniki, Greece. February 2016
- National Observatory of Athens, Athens, Greece. February 2016

Oral presentations

- European Planetary Science Congress 2021, -, online. September 2021
- European Planetary Science Congress 2020, -, online. September 2020
- ARIEL Open Conference, ESA/ESTEC, Netherlands. January 2020
- European Planetary Science Congress 2019, Geneva, Switzerland. September 2019
- 14th Hellenic Astronomical Conference, Volos, Greece. July 2019
- European Planetary Science Congress 2018, Berlin, Germany. September 2018
- "Spectroscopy of Exoplanets" Meeting, London, UK. July 2018
- UK Exoplanet Community Meeting, Oxford, UK. March 2018
- 49th Meeting of the AAS Division of Planetary Science, Provo, USA. October 2017
- European Planetary Science Congress 2017, Riga, Latvia. September 2017
- "Science with the Hubble and JWST V" conference, Venice, Italy. March 2017
- 13th Hellenic Astronomical Conference, Herakleion, Greece. July 2017
- 48th Meeting of the AAS Division of Planetary Science, Pasadena, USA. October 2016
- National Astronomy Meeting 2016, Nottingham, UK. June 2016
- 12th Hellenic Astronomical Conference, Thessaloniki, Greece. July 2015