




IOANNIS APERGIS

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EDUCATION

PhD student | University of Warwick

Oct 2022 – Oct 2026

- Industrial CASE PhD student at Astronomy and Astrophysics Group

Master of Physics honours | University of Kent

Sep 2018 – Jul 2022

- First Class Honours in Astronomy Space Science and Astrophysics

PROJECTS

Precise Photometry with the new generation sCMOS Camera | PhD

Ongoing

University of Warwick

(Expected by Oct '26)

- Understanding and characterise the new sCMOS camera. Developing and executing a control system code in python, record and analyse data. Observations of exoplanets using the NGTS telescopes at Paranal observatory using sCMOS and CCDs cameras.

Direct detection of Asteroidal YORP effect in 1950 DA | MPhys

Sep 2021 – July 2022

University of Kent

- Modelling small Solar system bodies and analyse their physical properties and state. Photometric analysis of the asteroid and data reduction from CCDs from large observational facilities.

TECHNICAL SKILLS

Programming Languages

Python, Matlab

Astronomy software

IRAF, AIP4WIN, Aladin sky Atlas, SAOImageDS9

Operating systems

MacOS, Linux, Windows

Tools and Environments

Git, GitHub, PyCharm, VSCode

WORKING ACTIVITIES

Studentship Physicist | Andor Technology, Belfast

May 2023 – August 2023

- Work with the R&D team to optimise and improve technical aspects of the camera. Also interact with Andor's Engineering and Quality Control Team to learn and execute methods in effort to the characterise the camera according to EMVA-1288 standards. The work continued online from Warwick. I intend to spent 9 months in total at Andor as part of the industrial CASE PhD.

Studentship Physicist | Andor Technology, Belfast

May 2023 – August 2023

- I have been actively involved in the development team currently working on building the frame rate calculator application tailored for Sona/Marana camera products.

Studentship Physicist | Andor Technology, Belfast

May 2023 – August 2023

- Member of the team that was Awarded Andor's Innovation Prize 2023 with work 'Anti-Glow correction on sCMOS sensors'.

Studentship Physicist | Andor Technology, Belfast

May 2024 – October 2024

- Worked in various projects most importantly, for the new enhanced Sona-6 sCMOS for astronomical applications and in ChoiceMOS platform characterising various sensor types.

Summer Student | University of Kent, Canterbury

June 2022 – August 2022

- This research is a continuation of the master's project. In this work, extra data of previous years of the asteroid 1950 DA was analysed. Also scanning for different pole solutions of the asteroid's shape.

PUBLICATIONS

Lead Author

- "High-Precision Photometry with the Marana sCMOS Camera: I Lab Testing". Work complete, draft paper in preparation.
- "High-Precision Photometry with the Marana sCMOS Camera: II on-Sky Testing". Work to be completed over the next 6 months.

Co-Author

- Henderson, B. et al. (2023), "TOI-2490b- The most eccentric brown dwarf transiting in the brown dwarf desert", (in prep).
- Hawthorn, F. et al. (2023), "TESS Duotransit Candidates from the Southern Ecliptic Hemisphere".
- Gill, S. et al. (2024), "TOI-2447b / NGTS-29b: a 69-day Saturn around a Solar analogue".
- Anderson D. R. et al. (2023), "NGTS-11 c: a Neptune-mass planet in a transiting 12.8-day orbit interior to NGTS-11 b" (submitted in A&A).
- O'Brien S. M. et al. (2024), "Planet Hunters NGTS: New Planet Candidates from a Citizen Science Search of the Next Generation Transit Survey Public Data".
- Battley M. P. et al. (2024), "NGTS-30 b/TOI-4862 b: An adolescent 98-day transiting warm Jupiter recovered from one and a half transits".
- Vines J. I. et al. (2024), " NGTS-31b and NGTS-32b: Two Inflated hot Jupiters Orbiting Subgiant Stars" (submitted in MNRAS).
- Leleu A. et al. (2024), " Photo-dynamical characterisation of the TOI-178 resonant chain. Exploring the robustness of TTV and RV mass characterisation", (submitted in A&A).
- Alves D. et al. (2024). " NGTS-33b: A Young Super-Jupiter Hosted by a Fast Rotating Massive Hot Star", (to be submitted in MNRAS)
- Rodel T. et al. (2024). " TIC 238060327, an eccentric, long-period, low-mass eclipsing binary from TESS and NGTS", (to be submitted in MNRAS)
- Essack T. et al. (2024). " Giant Outer Transiting Exoplanet Mass (GOT 'EM) Survey. VI: Confirmation of a Long-Period Giant Planet Discovered with a Single TESS Transit", (to be submitted in A&A)

PROPOSALS

Co-Investigator

- Anderson D. R. et al. (2023), 112.25TM: "Characterizing two multi-planet systems: TIC 193096383 and TIC 398986735".

CONFERENCES AND MEETINGS

NGTS Consortium Meeting | Queen's University Belfast April 2023

- Presented my work on the characterisation of the sCMOS camera

NGTS Consortium Meeting | University of Warwick (Online) Sep 2023

- Presented my work and involvement with Andor

NGTS Consortium Meeting | University of Warwick (Online) April 2024

- Presented my work and involvement with Andor

NGTS Consortium Meeting | University of Geneva Sep 2024

- Presented my work and involvement with Andor

GNOSIS Annual Conference | University of Warwick Nov 2022

- Space Sustainability for the Next Decade (and Beyond)

Epistemic Insight | Canterbury Christ Church University July 2023

- Astronomy with AI Summer school

Writing Better Research Papers and Proposals | Berlin (Online) Nov 2023

- Online Workshop on Writing better research papers and proposals

TESS Science Team Meeting | MIT (Online) Nov 2022

- TESS Science group meeting about the technical aspects and the next steps of the mission

SEMINARS

Centre of Astrophysics and Planetary Science (CAPS)

- Participating in wide range of seminars about astrophysics during my UG course.

Warwick Astronomy Seminars

- Astronomy seminars of specialists in the fields.

Warwick Physics Colloquial

- Participate in a variety of broad area of physics seminars from high profile. speakers.

Warwick Exoplanets Meeting group

- I gave a talk about the characterisation of sCMOS Marana camera and my work in Andor at Belfast.

ToF and FMCW LiDARs | London (Online)

Nov 2023



- A SPIE.ONLINE webinar about ToF and FMCW LiDARs: a closer look at the principles of operation and technical challenges

Observing NEAs using telescopes located in South Africa | South Africa (Online)

Nov 2023

- Andor webinar about the follow-up characterisation of near-Earth asteroids (NEAs) using telescopes located in Sutherland, South Africa

TEACHING AND DEMONSTRATING

-  **PX283 Laboratory Demonstrator:** Demonstrate and assess A1-Simulations of Planetary Systems lab for 2nd year Physics and Astrophysics students.
-  **PX451 Laboratory Demonstrator:** Demonstrate and assess the 3rd year Astrophysics laboratory using The Marsh Observatory for astronomical techniques and data analysis. This includes observational scheduling and monitoring.

EXTRACURRICULAR AND ENGAGEMENT

La Palma Observatory

Nov 2023

- I took part in a technical mission to the telescopes at La Palma observatory to gain valuable insights into technical aspects of telescope operations.

Paranal Observatory

Dec 2023

- I took part in a technical mission to the NGTS telescopes at Paranal observatory to mount the CMOS camera.

GNOSIS Annual Conference

Nov 2022

- I had the chance to interact with visiting schools to the university of Warwick and give astronomy talks to children as part of the Astronomy and Astrophysics group.

Coding With Sophie

Nov 2023

- Outreach participation about an astrophysicist designed program introducing coding to kids.

Warwick Astronomy Society

Nov 2023

- Gave a talk on Warwick's Astronomy Society about scientific cameras.

PLANCKS UK and IRELAND

Feb 2022

- Physics League Across Numerous Countries for Kick-Ass Students" is a theoretical physics competition for UG. The competition consists of a series of physics problems, covering topics in physics.

Epistemic Insight

Jul 2023

- Gave an interview about the Astronomy With AI Summer school.

First Aid at Work

Nov 2022 – 2025

- I have received a first aid certificate in First Aid at Work course under the Health Safety (First Aid) Regulations 1981 Including Defibrillator Training.

Royal Astronomical Society

Mar 2023

- I am a Fellow of the Royal Astronomical Society (FRAS).

LANGUAGES

- Greek (Native).
- English (IELTS).