
Thomas Mikal-Evans

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PRIMARY RESEARCH ACTIVITIES

Observational characterisation of exoplanet atmospheres. Transmission and emission spectroscopy using both space-based and ground-based telescopes. Principal Investigator for 6 HST programs awarded 168 orbits and a JWST Cycle 1 program awarded 44.7 hours for exoplanet spectroscopy.

EMPLOYMENT

Research Group Leader, Oct 2021-present, Max Planck Inst. Astronomy, Germany

Postdoctoral Scholar, Aug 2018-Sep 2021, MIT, USA

Postdoctoral Scholar, Aug 2014-Jul 2018, University of Exeter, UK

EDUCATION

DPhil, Physics (Astrophysics), 2010-2014, University of Oxford, UK

MPhil (Science), Physics (Astrophysics), 2009-2010, University of Sydney, Australia

BPhil (Science) (Hons I), 2005-2008, Australian National University, Australia

SUMMARY OF PUBLICATIONS

13 published first-author papers with 923 citations combined (Source: Google Scholar)

91 published papers total including 5 in Nature, 1 in Science, 2 in Nature Astronomy

First-author papers in Nature and Nature Astronomy

NASA ADS: 4,372 citations combined, h-index of 36

Google Scholar: 5,519 citations combined, h-index of 37

MAJOR TELESCOPE PROGRAMS AS PRINCIPAL INVESTIGATOR

1. 2021, **James Webb Space Telescope** Cycle 1 General Observer program 1729, Title: *A NIRSpec Phase Curve for the Ultrahot Jupiter WASP-121b*, 44.7 hours
2. 2019, **Hubble Space Telescope** Cycle 27 General Observer program 15813, Title: *Seeing in 3D: unlocking the dynamical properties of a canonical exoplanet* 60 spacecraft orbits
3. 2019, **Hubble Space Telescope** Cycle 27 General Observer program 15814, Title: *Atmospheric characterization of two temperate mini-Neptunes formed in the same protoplanetary nebula*, 26 spacecraft orbits
4. 2017, **Spitzer Space Telescope** Director's Discretionary Time Program 13242

Title: *A global map of the atmospheric circulation and thermal structure for an ultrahot exoplanet*, 80 hours

5. 2017, **Hubble Space Telescope** Cycle 25 General Observer program 15134
Title: *A global map of thermal inversions for an ultra-hot planet*,
52 spacecraft orbits
6. 2017, **Hubble Space Telescope** Cycle 25 General Observer program 15135
Title: *An exoplanet with a stratosphere: seeking the unknown absorber*,
10 spacecraft orbits
7. 2016, **Hubble Space Telescope** Cycle 23 General Observer program 14468
Title: *Characterizing an extreme planet on the verge of tidal disruption*,
5 spacecraft orbits
8. 2015, **Hubble Space Telescope** Cycle 23 General Observer program 14099
Title: *Measuring the L-T transition for a warm Saturn exoplanet*,
15 spacecraft orbits
9. 2015, **ESO Very Large Telescope** Program 096.C-0950
Title: *Extending the WASP-43b emission spectrum to visible wavelengths*
7.5 hours
10. 2015, **ESO Very Large Telescope** Program 092.C-0812
Title: *Probing exoplanet atmospheres using KMOS differential transit spectroscopy*
9 hours

TEACHING

2022, Summer Term, Class Tutor, “Computational Physics”, Undergraduate level, Heidelberg University

2022, Spring Term, Lecturer, “Physics of exoplanet atmospheres”, Graduate level, Heidelberg University

2020, Fall Term, Guest lecturer, 12.425 “Extrasolar Planets” (Prof. Seager), Advanced undergraduate level, MIT

2012-2014, Astrophysics computer lab demonstrator, University of Oxford

2009-2010, Undergraduate course tutor, Core Physics, University of Sydney

PROFESSIONAL GROUPS AND SERVICE

Referee for academic journals:

- Science, Astronomical Journal, Astrophysical Journal, Monthly Notices of the Royal Astronomical Society, Astronomy & Astrophysics

Reviewer for proposals and grant applications:

- 2022-2025, Australian Time Allocation Committee (ATAC) **Committee Member**
- 2021, NASA Exoplanet Research Program (XRP) **Panel Chair**
- 2021, Hubble Space Telescope Cycle 29 **External Reviewer**
- 2020, Hubble Space Telescope Cycle 28 **External Reviewer**
- 2020, Canadian Time Allocation Committee (CanTAC) **External Reviewer**

- 2019, Hubble Space Telescope Cycle 27 **Review Panel Member**
- 2018, NASA Exoplanet Research Program (XRP) **External Reviewer**
- 2016, Isaac Newton Group of Telescopes **External Reviewer**

2021-present, Max Planck Inst. Astronomy **Königstuhl Colloquium Organising Committee**

2018-2020, MIT Exoplanet Journal Club **Organiser**

2021-present, LIFE Space Mission

- Exoplanet Science **Working Group Member**

2018-present, JWST Early Release Science (ERS) Transiting Exoplanet Program

- Transmission Spectroscopy and Phase Curve **Working Group Member**

2018-present, TESS Atmospheric Characterization Working Group (ACWG)

- **Target Selection Lead**

2019-2020, Origins Space Telescope, Science and Technology Definition Team

- Exoplanets **Working Group Member**

Conference **Local Organising Committees:**

- UK Exoplanet Meeting, 2016, Exeter, UK
- Exoplanets and Their Host Stars, STFC Workshop, 2012, Oxford, UK
- New Horizons in Time Domain Astronomy, IAU Symposium, 2011, Oxford, UK

SCIENTIFIC TALKS SINCE 2019

1. 2022, Seminar, NASA GSFC Exoplanet Group, online, USA
2. 2022, Talk, *Atmospheres: The Physics and Chemistry of Planetary Gaseous Environments* Conference, Chianti, Italy
3. 2022, Seminar, Königstuhl Colloquium, Max Planck Inst. for Astronomy, Heidelberg, Germany
4. 2021, Talk, TESS Science Conference 2 (Atmospheres session), online, USA
5. 2021, Seminar, Cavendish Astrophysics, University of Cambridge, online, UK
6. 2021, Seminar, Harvard-Smithsonian Center for Astrophysics, online, USA
7. 2020, Talk, *Exoplanets 3* Conference, online, Germany
8. 2020, Talk, Exocoffee Journal Club, Max Planck Inst. for Astronomy, online, Germany
9. 2020, Talk, 235th American Astronomical Society Meeting, Honolulu, USA
10. 2019, Talk, Astrophysics Journal Club, MIT, USA
11. 2019, Talk, *Exoclimates V* Conference, Oxford, UK
12. 2019, Seminar, Astrophysics group, University of New South Wales, Australia
13. 2019, Talk, 233rd American Astronomical Society Meeting, Seattle, USA