

MARRICK BRAAM (Version March 2024)

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EDUCATION

- 2020/09 – Now **Joint PhD in Atmospheric and Environmental Sciences**
Thesis: 'The atmospheric chemistry of rocky exoplanets in 3-D'
Supervisors: Prof P.I. Palmer & Prof. L. Decin
The University of Edinburgh, Edinburgh, UK
KU Leuven, Leuven, BE
- 2018/09 – 2020/07 **Master of Science in Astronomy**
Thesis: 'Chemical trends in hot Jupiter atmospheres'
University of Groningen, Groningen, NL
- 2014/09 – 2017/07 **Bachelor of Science in Astronomy**
Thesis: 'The Habitability of Exoplanets'
University of Groningen, Groningen, NL

WORK & TEACHING EXPERIENCE

- | | |
|-------------------|---|
| 2022/02 – Now | The University of Edinburgh
Tutor, Demonstrator, and Exam Moderator for:
<i>Earth's Atmospheric Composition (EASC10127)</i> |
| 2020/09 – Now | The University of Edinburgh & KU Leuven
PhD fellow in Marie Skłodowska-Curie Actions
ITN CHAMELEON |
| 2019/10 – 2020/07 | University of Groningen
Student assistant for <i>Astrobiology & Calculus</i> |
| 2016/01 – 2020/03 | Tutor at Studentsplus & Lyceo |

PUBLICATIONS

3. Braam M., Palmer P.I., Decin L., Cohen M., Mayne N.J., Stratospheric dayside-to-nightside circulation drives the 3-D ozone distribution on synchronously rotating rocky exoplanets, 2023, *Monthly Notices of the Royal Astronomical Society*, 526, 1
2. Braam M., Palmer P.I., Decin L., Ridgway R. J., Zamyatina M., Mayne N. J., Sergeev D. E., and Abraham N. L., 2022, Lightning-induced chemistry on tidally-locked Earth-like exoplanets, *Monthly Notices of the Royal Astronomical Society*, 517, 2
1. Braam M., van der Tak F.F.S., Chubb K.L., and Min M., 2021, Evidence for chromium hydride in the atmosphere of hot Jupiter WASP-31b, *Astronomy & Astrophysics*, 646: A17

CO-AUTHOR:

2. De Luca, P., Braam M., et al., The impact of Ozone on Earth-like exoplanet climate dynamics: the case of Proxima Centauri b, 2024, submitted to *Monthly Notices of the Royal Astronomical Society*
1. Ridgway, R.J., et al. (inc Braam, M.), 2023, 3D modelling of the impact of stellar activity on tidally locked terrestrial exoplanets: atmospheric composition and habitability, *Monthly Notices of the Royal Astronomical Society*, 518, 2

SEMINARS

3-D circulation and ozone on synchronous exoplanets NASA GISS Astrobiology talk, <i>NASA GISS, NY (virtual)</i>	2023/11
3-D atmospheric chemistry of Earth-like exoplanets in resonant orbits EAPS Planetary Lunch Seminar, <i>MIT, Cambridge, MA</i>	2023/10
The atmospheric chemistry of non-oxygenated terrestrial exoplanets LCLU Coffee Talk, <i>University of Cambridge, Cambridge</i>	2023/07
3-D coupled climate-chemistry simulations of terrestrial exoplanets Astrophysics Seminar, <i>University of Exeter, Exeter</i>	2022/11
Lightning-induced chemistry on tidally-locked Earth-like exoplanets Met Office Seminar, <i>UK Met Office, Exeter</i>	2022/06
Lightning-induced chemistry on tidally-locked Earth-like exoplanets Yuk Lunch Seminar, <i>California Institute of Technology, CA</i>	2022/05
Lightning-induced chemistry on tidally-locked Earth-like exoplanets Astrophysics Seminar, <i>University of California Irvine, CA</i>	2022/05
Chemical trends in hot Jupiter atmospheres Seminar Exoplanets Group, <i>SRON, Utrecht, NL</i>	2020/06

TALKS AND POSTERS

Observability of 3-D atmospheric dynamics and chemistry of rocky exoplanets in 1:1 and 3:2 spin-orbit resonances Contributed talk: Rocky Worlds III, Zürich, Switzerland	2024/01
3-D circulation and ozone on synchronous exoplanets Contributed talk: UKEXOM23, London, UK	2023/08
3-D circulation and ozone on synchronous exoplanets Poster: Sagan Workshop, Pasadena, USA	2023/07
3-D circulation and ozone on synchronous exoplanets Poster: Exoclimates VI, Exeter, UK	2023/06
Stratospheric dayside-to-nightside circulation and nightside ozone maxima on tidally-locked exoplanets Contributed talk: EGU23, Vienna, Austria	2023/04
Orbital effects on 3-D atmospheric chemistry of Earth-like exoplanets Contributed talk: UK Exoplanet Meeting, Edinburgh, UK	2022/09
Lightning chemistry on tidally-locked exoplanets Contributed talk: Rocky Worlds II, Oxford, UK	2022/07
Lightning chemistry on tidally-locked exoplanets Poster: Exoplanets IV, Las Vegas, Nevada	2022/05
Lightning chemistry on tidally-locked exoplanets Poster: AGU Fall Meeting 2021 (virtual)	2021/12
Chromium hydride on WASP-31b: using HST and JWST Poster: EAS Meeting 2021 (virtual)	2021/07
Lightning-induced chemistry on Habitable Zone Exoplanets Contributed talk: Scottish Exoplanet and Brown Dwarf Meeting 11 (virtual)	2021/04
Lightning-induced chemistry on Exoplanets Contributed talk: <i>Global Change Symposium, Edinburgh, UK (virtual)</i>	2020/12
The Habitability of Exoplanets Contributed talk: <i>PEPSci meeting, Groningen, NL</i>	2019/07

STUDENT SUPERVISION

Elias Esquenet & Milo Jacobs, KU Leuven, BSc Physics	
Lightning-induced chemistry on exoplanets with continents	2023/09 – 2023/12
Ellery Gopaoco, University of Cambridge, Summer project	
Prebiotic chemistry on M-dwarf exoplanets	2022/07 – 2022/09

EXTRACURRICULAR ACTIVITIES

Organiser Exoburgh group meetings	2022-NOW
Organising committee CHAMELEON ESR retreats	2022-NOW
Teacher training in Belgium on exoplanet clouds and lightning	2022-NOW
Student editor at NTvN (Dutch magazine of Physics)	2019-2020
Organising committee Astronomy on Tap Groningen	2019-2020
Volunteer at Blaauw Observatory Groningen	2019-2020
Observing run at Isaac Newton Telescope, La Palma	2019/05

ADDITIONAL SKILLS

	Native: Dutch & Frisian
LANGUAGE PROFICIENCY:	Fluent: English
	Basic: German & Spanish
PROGRAMMING SKILLS:	Python, Fortran, R