

# Curriculum Vitae

## Positions and Qualifications

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Family name, First name: Mayne, Nathan

Current Institute: University of Exeter, College of Engineering, Mathematics and Physical Sciences.

Date of Birth: 28/12/79

URL: <http://www.astro.ex.ac.uk/people/nathan/>

### Academic Positions & Experience:

Senior Lecturer	Univ. of Exeter	Apr. 2015–Present
( <i>proleptic</i> ) Lecturer	Univ. of Exeter	Jan. 2014–Apr. 2015
<i>Visiting Researcher (part-funded by hosts)</i>	Univ. of Arizona/UCLA	Nov. 2014–Dec. 2014
Research Fellow ( <i>Supvr</i> : Prof. I. Baraffe)	Univ. of Exeter	Jul. 2011–Jan. 2014
Associate Research Fellow ( <i>Supvr</i> : Prof. T. Harries)	Univ. of Exeter	Jul. 2008–Jul. 2011

## Education

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### Academic Qualifications:

<b>PhD</b>	Univ. of Exeter	Sep. 2004–Jun. 2008
<i>Thesis subject</i> : ages of young stars, <i>Supervisor</i> : Prof. T. Naylor		
<b>MPHYS (hons), 1<sup>st</sup> Class</b>	Univ. of Exeter	Sep. 1999–Jun. 2003
<i>Dissertation subject</i> : surface plasmon resonance, <i>Supervisor</i> : Prof. W. Barnes		
Two Dean's commendations & school prize for outstanding results		
<b>A–Levels</b>	Pool School & Community College	Sep. 1996–Jul. 1998
Mathematics <b>A</b> , Further Mathematics <b>A</b> , Physics <b>A</b> & Chemistry <b>C</b>		

**Overview:** I currently direct an inter-disciplinary research programme focussed on modeling planetary environments. I have fostered a strong interaction with the UK Met Office (MO), leading to a total of four staff being seconded to my work, and a (unique) “real-time” link between our research developments (including the award of MO computing resources). I have also fostered strong collaborations with colleagues from other disciplines, and institutes. My research programme is now recognised internationally, and I have been invited to give several talks at both individual departments/groups and international conferences including leading discussion panels across the fields of astrophysics and Earth-climate science. **I am a currently serving on the scientific organising committee of the UK Exoplanet Community meeting** and acted as a sole academic organiser of a  $\sim 30$  delegate workshop (which will now be a series, hosted next at the Univ. Oxford). I have also been invited to sit on high level telescope allocation committees (acting as co-chair, ESO OPC), as well as being requested to referee significant review papers in high-impact international journals and funding/computing resources proposals. **Finally, I have recently been invited to author a review on the numerical modeling of exoplanet atmospheres for the journal Living Reviews in Computational Astrophysics, and will be leading a “white paper” overviewing the current status of UK exoplanet modeling.**

**I am currently involved in both the Staff-Student Liaison Committee (SSLC) and Education Committee in Physics**, and have already become involved in reforming our teaching structure. I have worked with the employability services, and Physics lecturers to further embed employability activities within our course. Additionally, I am confident, based on individual (and unanimous) feedback, that my performance as a 3<sup>rd</sup> year tutor was exemplary. Additionally, I currently supervise four Physics Masters students and two students from the Univ. of Exeter Natural Sciences programme.

I have also contributed, significantly, to the wider college and University. For example, developing and delivering a College wide promotion workshop series, which has subsequently grown into a major part of the Early Career Researcher Network (ECRN) support programme. I have also been a member of the Juno and Athena Swan committees in Physics for several years, during which time we were **awarded Juno practitioner status and Athena Swan Bronze award** (for the latter I was part of the writing group). I now serve on both the inclusivity working and strategy (or writing) groups, as we develop an application for a departmental Athena Swan silver award and Juno champion status. I also undertake the critical roles of **Admissions Tutor, Stage One Coordinator and Assistant Director of Education**, and received the highest category of Bronze “Above & Beyond” award for work in the admissions role.

My efforts to communicate my research more widely have also led to several media interactions, including invitations to take part in a Stargazing Live! Programme, a BBC news event (each viewed by around 4 million people), to present at a TEDx event (viewed over 1 000 times in  $\sim 20$  days) and a New Scientist Live event. I was also invited to author an article on the website “The Conversation” (read over 4,000 times in  $\sim 10$  days), and been involved in more than  $\sim 13$  press releases or interviews.

Finally, I am currently leading an impact case titled “Exoplanet Explorer”. **This proposal was assessed by members of the University of Exeter IIB (Innovation, Impact and Business) impact team, and rated as potentially 3\*/4\*, and has been awarded £15 000 from the IIB fund (as well as  $\sim$ £6 000 contribution from the College of Engineering, Mathematics and Physical Sciences, CEMPS).** I am also a vital contributor to a further case, based on outreach, being developed within the astrophysics group featuring elements such as short concept videos<sup>1</sup>.

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<sup>1</sup><https://www.youtube.com/channel/UCX9eLLawNgedMYtYegsRqeQ>

## Funding & Facilities

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### PI Proposals:

2017	<i>Impact fund, IIB and CEMPS (Internal)</i> “Exoplanet Explorer” (visualisation with At-Bristol & Engine House)		~£21 000
2017	<i>Met Office Academic Partnership (MOAP)</i> , two staff one-day-per-week		~£20 000
2016	<i>QR Small equipment fund (Internal)</i> : Atmospheric Modelling Server		~£6 000
2016	<i>Leverhulme Research Project Grant</i> (I. Baraffe, J. Manners, D. Apai) “Examining cloud induced variability in Brown Dwarfs”		~£250 000
2016	<i>Met Office Academic Partnership (MOAP)</i> , two staff one-day-per-week		~£20 000
2016	<i>MOAP</i> , one staff two-days-per-week (6mths)		~£10 000
2015	<i>MOAP</i> , one staff one-day-per-week		~£10 000
2015	<i>Univ. Exeter PhD Studentship (Internal)</i>		~£80 000
2014	<i>MOAP</i> , two staff one-day-per-week		~£20 000
2013	<i>MOAP</i> , two staff one day per week		~£20 000
2011	<i>William Herschel Telescope (WHT)</i> , multi-fibre spectroscopy		~£51 000
Nominal PI Total			~£508 000

### Co-I Proposals:

2017	<i>International Excellence Scholarship (Internal)</i>	PI: M. Rice ( <b>Declined</b> )	~£131 000
2017	<i>DiRaC</i> , ~75 million CPU hours	PI: Prof. M. Bate	~£3 000 000
2016	<i>ESO SPHERE</i> , imaging 11 hrs	PI: E. Matthews	~£35 000
2016	<i>ESO FORS2</i> , Large prog., spectroscopy ~13 nght	PI: Dr. N. Nikolov	~£400 000
2016	<i>ESO SPHERE</i> , polarisation 1 night	PI: Dr. S. Hinkley	~£30 000
2016	<i>ESO SPHERE</i> , <i>NACO DDT</i> , imaging 8 hrs	PI: Dr. S. Hinkley	~£25 000
2015	<i>ESO SPHERE</i> , imaging 16 hrs	PI: Dr. S. Hinkley	~£50 000
2015	<i>ESO SPHERE</i> , imaging 16 hrs	PI: Dr. S. Hinkley	~£50 000
2015	<i>Terra Hunting Experiment</i> , <b>pending</b>	PI: Prof. D. Queloz	~£5,000,000
2015	<i>DiRaC</i> , ~75 million CPU hours	PI: Prof. M. Bate	~£3 000 000
2015	<i>MONSooN</i> , ~320 000 CPU hours/year (rolling)	PI: Prof. P. Palmer	~£14 000
2015	<i>MONSooN</i> , ~160 000 CPU hours/year (rolling)	PI: Dr. J. Manners	~£7 000
2014	<i>ESO SPHERE</i> , imaging 18 hrs	PI: Dr. S. Hinkley	~£55 000
2012	<i>DiRaC</i> , ~26 million CPU hours	PI: Prof. M. Bate	~£1 000 000
2012	<i>Isaac Newton Telescope (INT)</i> , photometry	PI: Prof. T. Naylor	~£25 000
2010	<i>Liverpool Telescope (LT)</i> , photometry	PI: Prof. T. Naylor	~£8 500
2009	<i>Gemini</i> , multi-object spectroscopy	PI: Prof. T. Naylor	~£51 000
2008	<i>WHT</i> , multi-fibre spectroscopy	PI: Prof. T. Harries	~£17 000
2008	<i>WHT</i> , multi-fibre spectroscopy	PI: Prof. T. Naylor	~£51 000
2008	<i>INT</i> , photometry	PI: Prof. T. Naylor	~£30 000
2008	<i>INT</i> , photometry	PI: Prof. T. Naylor	~£5 000
2007	<i>INT</i> , photometry	PI: Prof. T. Naylor	~£30 000
2007	<i>WHT</i> , multi-fibre spectroscopy	PI: Prof. T. Harries	~£17 000
2006	<i>WHT</i> , multi-fibre spectroscopy	PI: Prof. T. Naylor	~£102 000
2005	<i>WHT</i> , multi-fibre spectroscopy	PI: Prof. T. Naylor	~£51 000
2005	<i>Gemini</i> , multi-object spectroscopy	PI: Prof. R. D. Jeffries	~£51 000
Nominal Co-I Total			~£10 190 500

## Supervision (Graduate & Postdoctoral Level)

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### Primary Supervision:

Dr. Paul Cresswell	Systems scientist, Met Office Secondment Restructuring the idealised UM	2016–2017
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<u>Dr. Stefan Lines</u>	Postdoctoral: exoplanet modelling Clouds in Brown Dwarf, & gas giants	2016–present
<u>Dr. Ian Boutle</u>	Expert Scientist, Met Office Secondment Atmospheric modelling: clouds	2016–present
<u>Jayesh Goyal</u>	PhD: exoplanet modelling Hot Jupiter atmospheres: synthetic observations	2015–present
<u>Dr. James Manners</u>	Senior Research Scientist, Met Office Secondment Atmospheric modelling: radiative transfer	2013–present
Dr. Chris Smith	Senior Research Scientist, Met Office Secondment Atmospheric modelling: dynamics	2013–2015
Dr. Darryl Sergison	PhD ( <i>usual supervisor: Prof. T. Naylor</i> ) <sup>†</sup> Spectral indicators of stellar age	2013 (1 <sup>st</sup> yr)
<b>Co–Supervision:</b>		
<u>Florian Debras</u>	PhD: exoplanet modelling Hot Jupiter atmospheres: linear stability analysis	2016–present
<u>Mark Phillips</u>	<i>co-supervisor: Prof. I. Baraffe</i> PhD: chemistry in (exo)planet atmospheres	2016–present
<u>Jessica Spake</u>	<i>primary supervisor: Prof. D. Sing</i> PhD: hot Jupiter Atmospheres	2015–present
Dr. David S. Amundsen ( <i>Columbia Univ.</i> )	<i>primary supervisor: Prof. I. Baraffe</i> PhD: exoplanet modelling	2012–2015
Dr. Ben Drummond ( <i>Univ. Exeter</i> )	<i>co-supervisor: Prof. I. Baraffe</i> PhD: atmospheric chemistry	2013–2017
Dr. Cameron Bell ( <i>ETH, Zurich</i> )	PhD ( <i>usual supervisor: Prof. T. Naylor</i> ) <sup>†</sup> Ages of young clusters	2009–2012
†Tim Naylor was Head of School and I regularly performed primary supervisor role Current supervisions denoted by, e.g., <u>Jayesh Goyal</u> ( <i>Graduated PhD student’s current academic institute given</i> )		

## Teaching

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### Duties (nominated for teaching award, 2010):

PhD, literature review viva (& progress report): Freddy Worthingham	2017
MPhys, poster presentation, report and lab diary marking	2017
MPhys, project presentation, report and lab diary marking	2016
PhD, literature review viva (& progress report): Ed Hone	2016
Third year tutorials, 4 groups (1 hr/week each), 20 students (Bsc & Mphys)	2015–present
Lead teaching assistant: general problem class (lectures and tuition)	2011
Teaching assistant: astrophysics lab (2 <sup>nd</sup> year) (preparation, marking & delivery)	2008
Lead teaching assistant: C-programming lab (preparation, marking & delivery)	2008
Teaching assistant: astrophysics lab (1 <sup>st</sup> year), (marking, delivery)	2007
Lead teaching assistant: practical physics lab (preparation, marking & delivery)	2005–2011
Communication skills course (organisation and lectures)	2004–present
Pre-University physics course (organisation and/or lectures)	2004–present

### UG Primary Supervision:

<u>Scott Larcombe</u>	MPhys: Masters Project	2016–present
<u>Harry Mcrea</u>	(Exo)Planetclimatology	
<u>Duncan Lyster</u> & <u>Calum Smith</u>		
<u>Liam Crossling</u> & <u>Dan Barlow</u>	NatSci: Masters Project Climates of Earth-Like exoplanets	2016–present

Charlie Sweetland	MSc: Advanced Mathematics Climates of Earth-Like exoplanets	2015
Matthew Read & Lewis Ireland*	EPSRC summer students Brown Dwarfs; radiative transfer	2013 (8 weeks)

### UG Co-Supervision:

Neil Lewis	<i>co-supervisor: Dr Hugo Lambert</i> Summer Studentship: convection in exoplanets	2017
Neil Lewis**	<i>co-supervisor: Dr Hugo Lambert</i> Summer Studentship: convection schemes	2016
Tom Wilson & Sam Horaib	<i>primary supervisor: Prof. T. Naylor</i> MPHYS: ages of young stars	2011–2013

\* Article published in JUST (<http://emps.exeter.ac.uk/just/>)

\*\* Article published in JUST (<http://emps.exeter.ac.uk/just/>)

Current supervisions denoted by, e.g., Benjamin Drummond

## Institutional Responsibilities: Roles

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Admissions Tutor, Physics & Astronomy, Univ. of Exeter	Sep. 2016–Present
<b>Awarded: “Above &amp; Beyond” Bronze award (£500).</b>	
Stage One Coordinator, Physics & Astronomy, Univ. of Exeter	Sep. 2016–Present
Assistant Director of Education, Physics & Astronomy, Univ. of Exeter	Sep. 2016–Present
Athena Swan Strategy/Writing Group, Physics & Astronomy, Univ. of Exeter	Sep. 2013–Present
Juno & Athena Swan Working Groups, Physics & Astronomy, Univ. of Exeter	Sep. 2012–Present
<b>Awarded: Juno Practitioner Status &amp; Athena Swan Bronze</b>	
Postdoctoral Secondary Facilitator, CEMPS, Univ. of Exeter	Sep. 2010-Apr. 2014

## Institutional Responsibilities: Initiatives

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“Alumni Talent Network”, Univ. of Exeter	In development
UCAS Open Day Sample Lecture, Univ. of Exeter	Jun. 2016
Pre-University Physics Course Sample Lecture, Univ. of Exeter	Jul. 2015, Jul. 2016
Athena Swan: Engagement & Awareness day, Univ. of Exeter	Mar. 2015, 2016
Institute of Physics Unconscious Bias Workshop, Loughborough Univ.	2015
Promotion Workshops Series (organiser & presenter), Univ. of Exeter	2014–2017
UCAS Open Day, Physics & Astronomy, Univ. of Exeter	2014–present
<i>Interaction &amp; discussion sessions</i>	
UCAS Admissions, Physics & Astronomy, Univ. of Exeter	2014–present
<i>Interviews, presentations &amp; discussions sessions</i>	
Natural Sciences Offer-Holder visit day, Univ. of Exeter	2014
<i>Presentation and discussion sessions</i>	
Research Interactive (undergraduates), CEMPS, Univ. of Exeter	2013
Research Showcase (under- & post-graduates), CEMPS, Univ. of Exeter	2013, 2014, 2015
Research Speed-Updating (staff), Univ. of Exeter	2013
UCAS <i>general</i> , Physics & Astronomy, Univ. of Exeter	1997–present
<i>Tours, hosting and external visits</i>	

## Institutional Responsibilities: Panels & Reviewing

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Interview panel for PDRA positions, Physics & Astronomy, Univ. of Exeter 2017

Interviewer for group PhD positions, Physics & Astronomy, Univ. of Exeter 2016  
 Interview panel for PDRA positions, Physics & Astronomy, Univ. of Exeter 2016  
 Internal referee: CEMPS, Univ. of Exeter -  
*Leverhulme RPG, STFC Rutherford fellowship & Royal Society URF proposals*  
 XM<sup>2</sup> CDT 6 month project presentations chair, CEMPS, Univ. of Exeter 2014

## External Recognition: Presentations

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### Invited Talks: Conferences (*exoplanet atmospheres, unless stated*)

Jun. 2017 Planetary atmospheres: on Earth, in the solar system, and on exoplanets  
 Wenner-Gren Center, Stockholm  
 May 2017 Climate science, atmospheres and life: from the Earth and beyond  
 University of Cambridge  
 Apr. 2017 Atmospheres of Disks and Planets 2017: Chemistry, Dynamics and Observations  
 Ringberg (MPIA), Germany  
 Jul. 2016 **Plenary** “CliMathNet” International Conference, University of Exeter

### Invited Talks: Seminars (*exoplanet atmospheres, unless stated*)

Oct. 2016 Astrophysics Research Institute, Liverpool John Moores University  
 Jun. 2016 Department of Physics and Astronomy, University of Leicester  
 May. 2016 Centre for Atmospheric Science, University of Cambridge  
 Dec. 2015 UK Met Office, Exeter. *Delivered by PhD student Ben Drummond*  
 Oct. 2015 Institute for Astronomy, The University of Edinburgh, Royal Observatory  
 Feb. 2015 Atmospheric, Oceanic and Planetary Physics, Oxford University  
 Dec. 2014 Planetary Science, Department, Caltech  
 Dec. 2014 Institute for Planets and Exoplanets, UCLA  
 Dec. 2014 LCOGT, Santa Barbara  
 Dec. 2014 Department of Astronomy and Astrophysics, UC Santa Cruz  
 Dec. 2014 NASA Ames  
 Nov. 2014 Lunar and Planetary Lab, University of Arizona  
 May. 2014 School of Physics and Astronomy, University of St. Andrews  
 May. 2014 Geophysical and Astrophysical Fluids Department, University of Exeter  
 Jun. 2012 Applied Mathematics Department, University of Exeter  
 Jul. 2012 UK Met Office  
 Aug. 2009 (*star formation*) Astrophysics Group, University of Keele

### Posters (conferences and workshops)

Jan. 2012 “Exoclines II”, Aspen Center for Physics  
 Oct. 2010 “Constellation Meeting” (*star formation*), Tenerife  
 Jul. 2006 “Planet-Disc Connection” (*star formation*), Cambridge University

### Contributed Talks (*exoplanet atmospheres, unless stated*)

Apr. 2016 “Exoplanet UK community meeting”, Univ. of Exeter  
 Mar. 2015 “Met Office/Univ. of Exeter Space Weather day”, Univ. of Exeter  
 Apr. 2014 “Exoplanet UK community meeting”, Cambridge Univ.  
 Feb. 2014 “Exoclines, international conference”, Davos Congress Centre  
 Sep. 2013 “European Planetary Science Congress”, international conference, Univ. College London  
 Sep. 2013 “Mind the gap”, international conference (*invited by organiser*), Hertfordshire Univ.  
 May. 2013 “Rotational fluid dynamics: planetary & stellar applications”, workshop, Univ. of Exeter  
 Dec. 2011 “GCM & Exoplanets”, workshop, University of Exeter  
 Oct. 2010 “Constellation Meeting”, international conference (*star formation*), Tenerife  
 Apr. 2008 “National Astronomical Meeting” (*star formation*), Belfast

### Selective Meeting Attendance

Mar. 2012 Royal Society Discussion Meeting, London:  
 “Characterising exoplanets: detection, formation, interiors, atmospheres and habitability”

Feb. 2012 Royal Society Discussion Meeting, London:  
“Dust, Haze and Clouds in Exoplanet Atmospheres”

## External Recognition: Duties

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- Scientific Organising Committee, UK Exoplanet Community Meeting, *Oxford, 2018*
- **Invited to write review article for “Living Reviews in Computational Astrophysics (LRCA)”**
- Discussion session leader & organiser: “Exoplanet Modelling” session, UKEXOM 2017
- Session chair: Session II session, UKEXOM 2017
- Panel member for discussion session: “Learning from Exoplanets” at CliMathNet, Jul. 2016
- Organised University of Exeter/Met Office Idealised Planetary Modelling workshop Feb 2016, ~30 delegates
- ESO OPC Panel Co-Chair (P97-C4, P98-C2) 2015/2016 (requested P99-declined)
- Scientific Organising Committee (& Session Chair) of UK Exoplanet Community Meeting, University of Exeter, April 2016, ~150 delegates
- Referee: MNRAS, PASA, Royal Society (URF), Swiss National Supercomputing Centre (CSCS), NASA (NSPIRES)
- Co-organiser GCM workshop, Exeter 2011.
- Organisational support Exoclines, Exeter 2009.

## External Recognition: Media

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- Presenting at New Scientist Live! Event, *Sep, 2017*<sup>23</sup>
- Interviews for WIRED, IFLScience, International Business Times, Financial Times, VICE, BBC World Service & BBC Radio Devon<sup>4</sup>
- Press release on research, University of Exeter May, 2017<sup>5</sup>
- Interview for “Research Fortnight”, Dec. 2016
- Article for “The Conversation”<sup>6</sup>, Oct 2016.
- RadioEXE interview on Searching for life on exoplanets, Oct. 2016
- TED<sup>x</sup> Truro, presentation Sep. 2016<sup>7</sup>
- Coordinated NASA/University of Exeter press release on Research publication, Sep. 2016<sup>8</sup>
- Interviews with Radio Devon & Western Morning News, Perseid Meteor Shower, Aug. 2016
- Radio Exe interview (Perseid Meteor Shower), Aug. 2015, Aug. 2016.
- BBC Breakfast News interview & special comments (partial eclipse), Mar. 2015
- Appearance on BBC Stargazing Live! Programme, filmed segment, Jan. 2014<sup>9</sup>.
- News article, Met Office research news, 2014<sup>10</sup>
- News article, University of Exeter research news, 2014<sup>11</sup>.
- News article, Express and Echo, 2014<sup>12</sup>.
- Interview for Devon Life magazine, 2014<sup>13</sup>.

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<sup>2</sup><https://live.newscientist.com/speakers?&page=3&searchgroup=00000001-speakers>

<sup>3</sup><https://live.newscientist.com/talks>

<sup>4</sup>[http://www.wired.co.uk/article/second-earth-proxima-b-habitable/](http://www.wired.co.uk/article/second-earth-proxima-b-habitable), <http://www.iflscience.com/space/proxima-b-the-closest-exoplanet-to-earth-could-be-habitable/>, <http://www.ibtimes.co.uk/proxima-b-our-closest-neighbouring-exoplanet-could-host-alien-life-climate-models-suggest-1621694>, <https://www.ft.com/content/a5dd1a20-3966-11e7-ac89-b01cc67cfeec> [https://motherboard.vice.com/en\\_us/article/simulations-predict-a-hemisphere-wide-thunderstorm-on-proxima-b](https://motherboard.vice.com/en_us/article/simulations-predict-a-hemisphere-wide-thunderstorm-on-proxima-b)

<sup>5</sup>[http://www.exeter.ac.uk/news/featurednews/title\\_583299\\_en.html](http://www.exeter.ac.uk/news/featurednews/title_583299_en.html)

<sup>6</sup><https://theconversation.com/how-looking-into-space-can-help-our-understanding-of-climate-change-on-earth-66313>

<sup>7</sup><http://tedxtruro.com/talks/talk/searching-for-life-distant-solar-systems-nathan-mayne-tedxtruro/>

<sup>8</sup>[http://www.exeter.ac.uk/news/featurednews/title\\_540306\\_en.html](http://www.exeter.ac.uk/news/featurednews/title_540306_en.html)

<sup>9</sup><http://www.imdb.com/name/nm6345311/>

<sup>10</sup><http://www.metoffice.gov.uk/research/news/forecasting-beyond-the-solar-system>

<sup>11</sup>[http://www.exeter.ac.uk/news/research/title\\_199564\\_en.html](http://www.exeter.ac.uk/news/research/title_199564_en.html)

<sup>12</sup><http://www.exeterexpressandecho.co.uk/Exeter-Uni-experts-lead-role-BBC-8217-s/story-20409396-detail/story.html>

<sup>13</sup>[http://www.devonlife.co.uk/education/academics\\_need\\_students\\_with\\_stars\\_in\\_their\\_eyes.1\\_3341840](http://www.devonlife.co.uk/education/academics_need_students_with_stars_in_their_eyes.1_3341840)

- Interview for BBC Radio Cornwall, 2014.
- Interview for BBC Radio Devon, 2014.
- Research image as front cover of *Astronomy & Astrophysics* Vol 561, Jan. 2014<sup>14</sup>.
- News article, Daily Mail, 2012<sup>15</sup>

## Major Contribution to the Region

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- Presentation at “Year 7 Space Day” (University of the Third Age)(Exeter College & Surrounding Schools), Exeter, *June, 2017*
- Presentation to U3A (University of the Third Age), Exeter, *July, 2017*
- Invited talk at National Student Space Conference, University of Exeter Mar. 2017<sup>16</sup>
- Evening Lecture, Thomas Hardy School Dorchester, Dec. 2016<sup>17</sup>
- Presentation at Kaleider collaborative studio<sup>18</sup> Nov. 2016
- Presentation at Communication Skills Course, Oct. 2016
- Evening Lecture, Camborne Science and International Academy, Sep. 2016<sup>19</sup>
- Mock Interviews for A-Level Students Sep. 2016
- Short Concept Videos for Astrophysics outreach<sup>20</sup>, Aug. 2016
- Part of team which set up, and contributes to “Physics at Exeter” youtube channel, Aug. 2016<sup>21</sup>
- Presentation and workshop for schools and public, Penryn Campus, Univ. of Exeter, Jul. 2016
- Plymouth Astronomical Society, Feb. 2016.
- Public Presentation for Stargazing Live! event, Univ. of Exeter, Jan. 2016
- Public Christmas Lecture, Devonport High School for boys (attendance from several school throughout Plymouth), Dec. 2015.
- Stoke Hill Junior School, Nov. 2015.
- Torbay Astronomical Society, Oct. 2015.
- Britain Needs Scientists, Plenary Presentation Jul. 2015, Jul. 2016
- School Physicist of the Year, Presentation Jul. 2015, *Jun. 2017*
- Pint of Science talk, Exeter May. 2015
- Presentation at Norman Lockyer Observatory, Sidmouth Apr. 2015
- Disney Futures Workshop, Feb. 2015
- Stoke Hill Junior School, Feb. 2015
- Cornwall Amateur Astronomy Society, Mabe, Jan. 2015
- Christmas Lecture, University of Exeter, Dec. 2014
- Presentation to Senior Physics Society, Charterhouse School, Nov. 2014
- Britain Needs Scientists, presentation to A–Level students on research, 2013, 2014.
- TED-style talk for St Luke’s Science week, 2014
- Hosted Tavistock school visit, 2013, 2014.
- Talk to home educated, and behavioural problem group, Redruth, 2014.
- Careers in physics at Truro College, 2014, 2015, 2016.
- 3–minute wonder competition at Festival of Science. *invited heat finals:declined.*, 2013
- Presentation to A–Level students on research, 2013
- Presentation to Exwick heights school reach group, 2013
- Presentation at national dark skies reserve, 2013.
- Badminton School, seminar, 2012.
- Cafe Scientifique, Sidmouth, 2012.
- Cornwall Astronomy Society, seminar, Penryn, 2011.
- Astronomy Society, seminar, Callington, 2011.

<sup>14</sup>[http://www.aanda.org/articles/aa/abs/2014/01/contents/big\\_photocouv561.1.jpg](http://www.aanda.org/articles/aa/abs/2014/01/contents/big_photocouv561.1.jpg)

<sup>15</sup><http://www.dailymail.co.uk/sciencetech/article-2121756/And-VERY-long-range-forecast-Britains-Met-Office-use-climate-model-forecast-solar-storms-predict-weather-worlds.html>

<sup>16</sup><http://ukseds.org/nssc2017/programme.php>

<sup>17</sup>[http://www.thomas-hardye.dorset.sch.uk/documents/CLectureNathan\\_Mayne.pdf](http://www.thomas-hardye.dorset.sch.uk/documents/CLectureNathan_Mayne.pdf)

<sup>18</sup><http://kaleider.com/>

<sup>19</sup><http://www.nexuscsia.co.uk/dr-nathan-mayne-aliens-and-the-weather>

<sup>20</sup><https://www.youtube.com/channel/UCX9eLLawNgedMYtYegsRqeQ>

<sup>21</sup><https://www.youtube.com/channel/UCX9eLLawNgedMYtYegsRqeQ>

- Astronomy Society, seminar, Tiverton, 2011.
- Brannell Astronomy Society, seminar, Callington, 2010.
- Open evening, international year of astronomy, organisation & overview presentation, University of Exeter, 2010.
- School visit, seminar & workshop, Uffculme, 2010.
- Open evening, international year of astronomy, organisation & support, Univ. of Exeter, 2009.
- International School, seminar, Dubai, 2009.
- Yeovil College, 'Meet the Scientist', poster & workshop, 2008.

## Publications: Metrics

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Statistics ( <i>NASA ADS: 30/05/2017</i> )		
All refereed journal articles	26	with 649 citations
Primary/Lead author articles	12	with 234 citations
<i>Conference proceedings</i>	7	with 12 citations
<b>h factor:</b>	<b>13</b>	
<hr/>		
Refereed journal articles published/yr		Notes/Milestones
2007	2	
2008	1	( <i>PhD completed</i> )
2009	1	
2010	3	
2011	2	
2012	3	
2013	3	
2014	4	
2015	0	( <i>Appointed Senior lecturer</i> )
2016	3	( <i>Admissions tutor, stage 1 coord. &amp; Ass. Dir Ed.</i> )
2017	4	(+4 in preparation)

## Publications: Articles

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### Refereed Publications in Major Journals (reverse date ordered)

- 26 2017arXiv170405440T: **0 citations**  
P. Tremblin.; G. Chabrier.; **N. J. Mayne.**; Amundsen, D. S.; I. Baraffe.; F. Debras.; et al..  
(*abridged*) *Advection of potential temperature in the atmosphere of irradiated exoplanets.*
- 25 2017arXiv170400539M: **0 citations**  
**N. J. Mayne**; F. Debras; I. Baraffe; John Thuburn; David S. Amundsen; David M. Acreman; et al..  
*Results from a set of three-dimensional numerical experiments of a hot Jupiter atmosphere.*
- 24 2017arXiv170208463B: **0 citations [ROM: 3H]**  
I. A. Boutle.; **Nathan J. Mayne**; Benjamin Drummond; James Manners; Jayesh Goyal; et al..  
*Exploring the climate of Proxima Centauri B with the Met Office Unified Model.*
- 23 2017A&A...598A..97A: **5 citations**  
Amundsen, D. S.; Pascal Tremblin.; James Manners.; Isabelle Baraffe.; & **N. J. Mayne.**  
(*abridged*) *Treatment of overlapping gaseous absorption with the correlated-k method.*
- 22 2016A&A...595A..36A: **6 citations [ROM: 3H]**  
Amundsen, D. S.; **N. J. Mayne.**; Isabelle Baraffe.; James Manners.; Pascal Tremblin.; et al..  
(*Abridged*) *UK Met Office GCM with a sophisticated radiation scheme applied to HD 209458b*
- 21 2016A&A...594A..69D: **4 citations**  
B. Drummond.; P. Tremblin.; I. Baraffe.; D. S. Amundsen.; **N. J. Mayne.**; O. Venot.; J. Goyal..  
(*Abridged*) *Effects of Consistent Chemical Kinetics on PT profiles & Emission of Hot Jupiters*
- 20 2016MNRAS.460..855H: **8 citations**  
Helling, CH.; Lee, G.; Dobbs-Dixon, I.; **Mayne N.**; Amundsen, D. S.; Khaimova, J.; et al..  
*The mineral clouds on HD 209458b and HD 189733b.*
- 19 2014MNRAS.445.3496B: **19 citations**  
Bell, Cameron P. M.; Rees, Jon M.; *Naylor, Tim*; **Mayne, N. J.**; et al..  
*Pre-main-sequence isochrones – III. The Cluster Collaboration isochrone server.*
- 18 2014GMD.....7.3059M: **7 citations [ROM: 3M]**  
**Mayne, N. J.**; Baraffe, I.; Acreman, D. M.; Smith, C.; Wood, N.; Skålid Amundsen; et al.

*Using the UM dynamical cores to reproduce idealised 3-D flows.*

- 17 2014A&A...564A..59A: **25 citations**  
Amundsen, David S.; Baraffe, I; Tremblin, P; Manners, J; Hayek, W; **Mayne, N. J.**; et al.  
*Accuracy tests of radiation schemes used in hot Jupiter global circulation models.*
- 16 2014A&A...561A...1M: **31 citations** [ROM: 3M]  
**Mayne, Nathan J.**; Baraffe, Isabelle; Acreman, David M.; Smith, Chris; et al.  
*(abridged) The unified model, applied to hot Jupiters. ENDGame for a HD 209458b test case.*
- 15 2013MNRAS.434.2438J: **13 citations**  
Jeffries, R. D.; *Naylor, Tim*; **Mayne, N. J.**; Bell, Cameron P. M.; Littlefair, S. P.  
*A lithium depletion boundary age of 22 Myr for NGC 1960.*
- 14 2013MNRAS.434..966S: **12 citations**  
Sergison, Darryl J.; **Mayne, N. J.**; *Naylor, Tim*; Jeffries, R. D.; Bell, Cameron P. M.  
*No evidence for intense, cold accretion on to YSOs from measurements of Li in T-Tauri stars.*
- 13 2013MNRAS.434..806B: **104 citations** [ROM: 3M]  
Bell, Cameron P. M.; *Naylor, Tim*; **Mayne, N. J.**; Jeffries, R. D.; Littlefair, S. P.  
*Pre-main-sequence isochrones - II. Revising star and planet formation time-scales.*
- 12 2012MNRAS.424.3178B: **34 citations**  
Bell, Cameron P. M.; *Naylor, Tim*; **Mayne, N. J.**; Jeffries, R. D.; Littlefair, S. P.  
*Pre-main-sequence isochrones - I. The Pleiades benchmark.*
- 11 2012ApJ...755...97G: **72 citations**  
Gregory, S. G.; Donati, J.-F.; Morin, J.; Hussain, G. A. J.; **Mayne, N. J.**; et al.  
*(abridged) Can We Predict Global Magnetic Topology of PMS Star from HR Diagram?*
- 10 2012MNRAS.423.1775M: **4 citations**  
**Mayne, N. J.**; Harries, Tim J.; Rowe, John; Acreman, David M.  
*Bayesian fitting of Taurus brown dwarf spectral energy distributions.*
- 9 2011MNRAS.418.1948J: **56 citations** [ROM: 3H]  
Jeffries, R. D.; Littlefair, S. P.; *Naylor, Tim*; **Mayne, N. J.**  
*No wide spread of stellar ages in the Orion Nebula Cluster.*
- 8 2011MNRAS.413L..56L: **23 citations**  
Littlefair, S. P.; *Naylor, Tim*; **Mayne, N. J.**; Saunders, Eric; Jeffries, R. D.  
*Accretion-induced luminosity spreads in young clusters: evidence from stellar rotation.*
- 7 2010MNRAS.409.1307M: **9 citations**  
**Mayne, Nathan J.**; Harries, Tim J.  
*On the properties of discs around accreting brown dwarfs.*
- 6 2010MNRAS.408.1409M: **6 citations**  
**Mayne, N. J.**  
*Observational indicators of the transition from fully convective stars to stars with radiative cores.*
- 5 2010MNRAS.403..545L: **22 citations**  
Littlefair, S. P.; *Naylor, Tim*; **Mayne, N. J.**; Saunders, Eric S.; Jeffries, R. D.  
*Rotation of young stars in Cepheus OB3b.*
- 4 2009MNRAS.397..405S: **4 citations**  
Saunders, Eric S.; *Naylor, Tim*; **Mayne, Nathan**; Littlefair, S. P.  
*Pre-main-sequence variability across the radiative-convective gap.*
- 3 2008MNRAS.386..261M: **89 citations**  
**Mayne, N. J.**; *Naylor, Tim*.  
*Fitting the young main sequence; distances, ages and age spreads.*
- 2 2007MNRAS.376..580J: **30 citations**  
Jeffries, R. D.; Oliveira, J. M.; *Naylor, Tim*; **Mayne, N. J.**; Littlefair, S. P.  
*The Keele-Exeter young cluster survey - I. Low-mass pre-main-sequence stars in NGC 2169.*
- 1 2007MNRAS.375.1220M: **66 citations**  
**Mayne, N. J.**; *Naylor, Tim*; Littlefair, S. P.; Saunders, Eric S.; Jeffries, R. D.

**Conference Proceedings (reverse date ordered)**

- 7 2014spih.confE..37T: **0 citations**  
Tremblin, P.; Drummond, B.; Mourier, P.; Amundsen, D.; **Mayne, N.** et al.  
*Modeling UV photo-chemistry and clouds in the atmosphere of exoplanets*
- 6 2014IAUS..302...40G: **6 citations**  
Gregory, S. G.; Donati, J.-F.; Morin, J.; Hussain, G. A. J.; **Mayne, N. J.** et al.  
*Can we predict the magnetic properties of PMS stars from their H-R diagram location?*
- 5 2013EPSC....8...12M: **0 citations**  
**Mayne, N. J.**; Baraffe, I.; Acreman, D. M.; Smith, C.; Amundsen, D. S.  
*(Abridged) A critical analysis of standard approximations in modeling exoplanet atmospheres.*
- 4 2013prpl.conf1K018B: **0 citations**  
Bell, Cameron P. M.; *Naylor, Tim*; **Mayne, N. J.**; Jeffries, R. D.; Littlefair, S. P.  
*Revising Star and Planet Formation Timescales.*
- 3 2013prpl.conf1B076S: **0 citations**  
Sergison, Darryl J.; **Mayne, N. J.**; *Naylor, Tim*; Jeffries, R. D.; Bell, Cameron P. M.  
*No evidence for intense, cold accretion on to YSOs from measurements of Li in T-Tauri stars.*
- 2 2010HiA....15..763N: **3 citations**  
*Naylor, Tim*; **Mayne, N. J.**  
*Are pre-MS stars older than we thought?*
- 1 2009IAUS..258..103N: **3 citations**  
*Naylor, Tim*; **Mayne, N. J.**; Jeffries, R. D.; Littlefair, S. P.; Saunders, Eric S.  
*New methods for determining the ages of PMS stars.*

**Notes & Commentary:**

- Left column running total underlined for primary/lead author publications.
- PhD supervisor denoted in italics (*Tim Naylor*).
- 2014GMD.....7.3059M, publisher error: current citations incorrectly recorded.
- Sergison et al., 2013 Monthly Notices of the Royal Astronomical Society, Volume 434, Issue 2, pp. 966-977: author lists contains first author's official PhD supervisor but I performed lead supervisor role for this publication.
- Saunders et al., 2009 Monthly Notices of the Royal Astronomical Society, Volume 397, Issue 1, pp. 405-410: this work was left incomplete. I finished the analysis and wrote the manuscript for this publication.