Nathan J Mayne

List of Publications by Year
in descending order

48 papers	2,272 citations	172457 29 h-index	214800 47 g-index
52 all docs	52 docs citations	52 times ranked	1165 citing authors

#	Article	IF	Citations
1	Diurnal variations in the stratosphere of the ultrahot giant exoplanet WASP-121b. Nature Astronomy, 2022, 6, 471-479.	10.1	26
2	3D Radiative Transfer for Exoplanet Atmospheres. gCMCRT: A GPU-accelerated MCRT Code. Astrophysical Journal, 2022, 929, 180.	4.5	20
3	Longitudinally Asymmetric Stratospheric Oscillation on a Tidally Locked Exoplanet. Astrophysical Journal, 2022, 930, 152.	4.5	9
4	Solar-to-supersolar sodium and oxygen absolute abundances for a â€˜hot Saturnâ€™ orbiting a metal-rich star. Monthly Notices of the Royal Astronomical Society, 2022, 515, 3037-3058.	4.4	15
5	MOVES â€“ IV. Modelling the influence of stellar XUV-flux, cosmic rays, and stellar energetic particles on the atmospheric composition of the hot Jupiter HDÂ189733b. Monthly Notices of the Royal Astronomical Society, 2021, 502, 6201-6215.	4.4	23
6	Cloud property trends in hot and ultra-hot giant gas planets (WASP-43b, WASP-103b, WASP-121b,) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 5	5.1	32
7	Pseudo-2D modelling of heat redistribution through H2 thermal dissociation/recombination: consequences for ultra-hot Jupiters. Monthly Notices of the Royal Astronomical Society, 2021, 505, 4515-4530.	4.4	14
8	TRAPPIST Habitable Atmosphere Intercomparison (THAI) Workshop Report. Planetary Science Journal, 2021, 2, 106.	3.6	29
9	The impact of mixing treatments on cloud modelling in 3D simulations of hot Jupiters. Monthly Notices of the Royal Astronomical Society, 2021, 506, 4500-4515.	4.4	19
10	Transmission spectroscopy with VLT FORS2: a featureless spectrum for the low-density transiting exoplanet WASP-88b. Monthly Notices of the Royal Astronomical Society, 2021, 506, 2853-2870.	4.4	9
11	Ground-based Transmission Spectroscopy with VLT FORS2: Evidence for Faculae and Clouds in the Optical Spectrum of the Warm Saturn WASP-110b. Astronomical Journal, 2021, 162, 88.	4.7	6
12	Why is it So Hot in Here? Exploring Population Trends in Spitzer Thermal Emission Observations of Hot Jupiters Using Planet-specific, Self-consistent Atmospheric Models. Astrophysical Journal, 2021, 923, 242.	4.5	3
13	Acceleration of superrotation in simulated hot Jupiter atmospheres. Astronomy and Astrophysics, 2020, 633, A2.	5.1	17
14	Continuous Structural Parameterization: A Proposed Method for Representing Different Model Parameterizations Within One Structure Demonstrated for Atmospheric Convection. Journal of Advances in Modeling Earth Systems, 2020, 12, e2020MS002085.	3.8	3
15	A library of self-consistent simulated exoplanet atmospheres. Monthly Notices of the Royal Astronomical Society, 2020, 498, 4680-4704.	4.4	36
16	Ground-based transmission spectroscopy with FORS2: A featureless optical transmission spectrum and detection of H2O for the ultra-hot Jupiter WASP-103b. Monthly Notices of the Royal Astronomical Society, 2020, 497, 5155-5170.	4.4	20
17	Atmospheric Convection Plays a Key Role in the Climate of Tidally Locked Terrestrial Exoplanets: Insights from High-resolution Simulations. Astrophysical Journal, 2020, 894, 84.	4.5	45
18	Mineral dust increases the habitability of terrestrial planets but confounds biomarker detection. Nature Communications, 2020, 11, 2731.	12.8	20

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19	TRAPPIST-1 Habitable Atmosphere Intercomparison (THAI): motivations and protocol version 1.0. Geoscientific Model Development, 2020, 13, 707-716.	3.6	52
20	Ozone chemistry on tidally locked M dwarf planets. Monthly Notices of the Royal Astronomical Society, 2020, 492, 1691-1705.	4.4	20
21	Confirmation of water emission in the dayside spectrum of the ultrahot Jupiter WASP-121b. Monthly Notices of the Royal Astronomical Society, 2020, 496, 1638-1644.	4.4	46
22	Implications of three-dimensional chemical transport in hot Jupiter atmospheres: Results from a consistently coupled chemistry-radiation-hydrodynamics model. Astronomy and Astrophysics, 2020, 636, A68.	5.1	60
23	Implications of different stellar spectra for the climate of tidally locked Earth-like exoplanets. Astronomy and Astrophysics, 2020, 639, A99.	5.1	16
24	Overcast on Osiris: 3D radiative-hydrodynamical simulations of a cloudy hot Jupiter using the parametrized, phase-equilibrium cloud formation code EddySed. Monthly Notices of the Royal Astronomical Society, 2019, 488, 1332-1355.	4.4	39
25	The Limits of the Primitive Equations of Dynamics for Warm, Slowly Rotating Small Neptunes and Super Earths. Astrophysical Journal, 2019, 871, 56.	4.5	35
26	The carbon-to-oxygen ratio: implications for the spectra of hydrogen-dominated exoplanet atmospheres. Monthly Notices of the Royal Astronomical Society, 2019, 486, 1123-1137.	4.4	26
27	Eigenvectors, Circulation, and Linear Instabilities for Planetary Science in 3 Dimensions (ECLIPS3D). Astronomy and Astrophysics, 2019, 631, A36.	5.1	5
28	Idealised simulations of the deep atmosphere of hot Jupiters. Astronomy and Astrophysics, 2019, 632, A114.	5.1	38
29	Fully scalable forward model grid of exoplanet transmission spectra. Monthly Notices of the Royal Astronomical Society, 2019, 482, 4503-4513.	4.4	33
30	A library of ATMO forward model transmission spectra for hot Jupiter exoplanets. Monthly Notices of the Royal Astronomical Society, 2018, 474, 5158-5185.	4.4	86
31	The Influence of a Substellar Continent on the Climate of a Tidally Locked Exoplanet. Astrophysical Journal, 2018, 854, 171.	4.5	42
32	Observable Signatures of Wind-driven Chemistry with a Fully Consistent Three-dimensional Radiative Hydrodynamics Model of HD 209458b. Astrophysical Journal Letters, 2018, 855, L31.	8.3	56
33	The effect of metallicity on the atmospheres of exoplanets with fully coupled 3D hydrodynamics, equilibrium chemistry, and radiative transfer. Astronomy and Astrophysics, 2018, 612, A105.	5.1	49
34	The 3D Thermal, Dynamical, and Chemical Structure of the Atmosphere of HD 189733b: Implications of Wind-driven Chemistry for the Emission Phase Curve. Astrophysical Journal, 2018, 869, 28.	4.5	47
35	The Transiting Exoplanet Community Early Release Science Program for JWST. Publications of the Astronomical Society of the Pacific, 2018, 130, 114402.	3.1	100
36	Simulating the cloudy atmospheres of HD 209458 b and HD 189733 b with the 3D Met Office Unified Model. Astronomy and Astrophysics, 2018, 615, A97.	5.1	84

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37	Exonephology: transmission spectra from a 3D simulated cloudy atmosphere of HD 209458b. Monthly Notices of the Royal Astronomical Society, 2018, 481, 194-205.	4.4	45
38	An absolute sodium abundance for a cloud-free â€˜hot Saturnâ€™ exoplanet. Nature, 2018, 557, 526-529.	27.8	114
39	Exploring the climate of Proxima B with the Met Office Unified Model. Astronomy and Astrophysics, 2017, 601, A120.	5.1	92
40	Advection of Potential Temperature in the Atmosphere of Irradiated Exoplanets: A Robust Mechanism to Explain Radius Inflation. Astrophysical Journal, 2017, 841, 30.	4.5	109
41	Results from a set of three-dimensional numerical experiments of a hot Jupiter atmosphere. Astronomy and Astrophysics, 2017, 604, A79.	5.1	53
42	Treatment of overlapping gaseous absorption with the correlated-kmethod in hot Jupiter and brown dwarf atmosphere models. Astronomy and Astrophysics, 2017, 598, A97.	5.1	80
43	The UK Met Office global circulation model with a sophisticated radiation scheme applied to the hot Jupiter HD 209458b. Astronomy and Astrophysics, 2016, 595, A36.	5.1	88
44	The mineral clouds on HDÂ209458b and HDÂ189733b. Monthly Notices of the Royal Astronomical Society, 2016, 460, 855-883.	4.4	92
45	The effects of consistent chemical kinetics calculations on the pressure-temperature profiles and emission spectra of hot Jupiters. Astronomy and Astrophysics, 2016, 594, A69.	5.1	113
46	Using the UM dynamical cores to reproduce idealised 3-D flows. Geoscientific Model Development, 2014, 7, 3059-3087.	3.6	47
47	The unified model, a fully-compressible, non-hydrostatic, deep atmosphere global circulation model, applied to hot Jupiters. Astronomy and Astrophysics, 2014, 561, A1.	5.1	124
48	Accuracy tests of radiation schemes used in hot Jupiter global circulation models. Astronomy and Astrophysics, 2014, 564, A59.	5.1	126