

Nikku Madhusudhan

List of Publications by Year in descending order

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112
papers

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citations

26630

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112
all docs

112
docs citations

112
times ranked

3539
citing authors

#	ARTICLE	IF	CITATIONS
1	HyDRo: atmospheric retrieval of rocky exoplanets in thermal emission. Monthly Notices of the Royal Astronomical Society, 2022, 511, 2565-2584.	4.4	7
2	Constraints on TESS albedos for five hot Jupiters. Monthly Notices of the Royal Astronomical Society, 2022, 513, 3444-3457.	4.4	3
3	Characterizing atmospheres of cloudy temperate mini-neptunes with JWST. Monthly Notices of the Royal Astronomical Society, 2022, 514, 2073-2091.	4.4	7
4	A survey of sodium absorption in 10 giant exoplanets with high-resolution transmission spectroscopy. Monthly Notices of the Royal Astronomical Society, 2022, 514, 5192-5213.	4.4	7
5	On Atmospheric Retrievals of Exoplanets with Inhomogeneous Terminators. Astrophysical Journal, 2022, 933, 79.	4.5	20
6	Assessing telluric correction methods for Na detections with high-resolution exoplanet transmission spectroscopy. Monthly Notices of the Royal Astronomical Society, 2021, 502, 4392-4404.	4.4	12
7	Aurora: A Generalized Retrieval Framework for Exoplanetary Transmission Spectra. Astrophysical Journal, 2021, 913, 114.	4.5	25
8	How deep is the ocean? Exploring the phase structure of water-rich sub-Neptunes. Monthly Notices of the Royal Astronomical Society, 2021, 505, 3414-3432.	4.4	20
9	Sulfur chemistry in the atmospheres of warm and hot Jupiters. Monthly Notices of the Royal Astronomical Society, 2021, 506, 3186-3204.	4.4	24
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	Habitability and Biosignatures of Hycean Worlds. Astrophysical Journal, 2021, 918, 1.	4.5	46
13	JexoSim 2.0: end-to-end JWST simulator for exoplanet spectroscopy implementation and case studies. Monthly Notices of the Royal Astronomical Society, 2021, 508, 433-452.	4.4	3
14	The Hubble PanCET Program: A Metal-rich Atmosphere for the Inflated Hot Jupiter HAT-P-41b. Astronomical Journal, 2021, 161, 51.	4.7	16
15	JexoSim: a time-domain simulator of exoplanet transit spectroscopy with JWST. Monthly Notices of the Royal Astronomical Society, 2020, 491, 378-397.	4.4	14
16	Neutral Cr and V in the Atmosphere of Ultra-hot Jupiter WASP-121 b. Astrophysical Journal Letters, 2020, 897, L5.	8.3	44
17	Assessing spectra and thermal inversions due to TiO in hot Jupiter atmospheres. Monthly Notices of the Royal Astronomical Society, 2020, 496, 3870-3886.	4.4	22
18	Assessment of supervised machine learning for atmospheric retrieval of exoplanets. Monthly Notices of the Royal Astronomical Society, 2020, 496, 269-281.	4.4	21

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19	Considerations for atmospheric retrieval of high-precision brown dwarf spectra. <i>Monthly Notices of the Royal Astronomical Society</i> , 2020, 497, 5136-5154.	4.4	16
20	Ground-based transmission spectroscopy with FORS2: A featureless optical transmission spectrum and detection of H ₂ O for the ultra-hot Jupiter WASP-103b. <i>Monthly Notices of the Royal Astronomical Society</i> , 2020, 497, 5155-5170.	4.4	20
21	H- and Dissociation in Ultra-hot Jupiters: A Retrieval Case Study of WASP-18b. <i>Astronomical Journal</i> , 2020, 159, 232.	4.7	23
22	Molecular cross-sections for high-resolution spectroscopy of super-Earths, warm Neptunes, and hot Jupiters. <i>Monthly Notices of the Royal Astronomical Society</i> , 2020, 495, 224-237.	4.4	42
23	Detection of neutral atomic species in the ultra-hot Jupiter WASP-121b. <i>Monthly Notices of the Royal Astronomical Society</i> , 2020, 494, 363-377.	4.4	62
24	The Interior and Atmosphere of the Habitable-zone Exoplanet K2-18b. <i>Astrophysical Journal Letters</i> , 2020, 891, L7.	8.3	60
25	Statistical Characterization of Hot Jupiter Atmospheres Using Spitzer's Secondary Eclipses. <i>Astronomical Journal</i> , 2020, 159, 137.	4.7	72
26	A Featureless Infrared Transmission Spectrum for the Super-puff Planet Kepler-79d. <i>Astronomical Journal</i> , 2020, 160, 201.	4.7	24
27	An Unusual Transmission Spectrum for the Sub-Saturn KELT-11b Suggestive of a Subsolar Water Abundance. <i>Astronomical Journal</i> , 2020, 160, 280.	4.7	21
28	On the Temperature Profiles and Emission Spectra of Mini-Neptune Atmospheres. <i>Astrophysical Journal</i> , 2020, 904, 154.	4.5	27
29	On Degeneracies in Retrievals of Exoplanetary Transmission Spectra. <i>Astronomical Journal</i> , 2019, 157, 206.	4.7	62
30	HyDRA-H: Simultaneous Hybrid Retrieval of Exoplanetary Emission Spectra. <i>Astronomical Journal</i> , 2019, 158, 228.	4.7	35
31	Exoplanetary Atmospheres: Key Insights, Challenges, and Prospects. <i>Annual Review of Astronomy and Astrophysics</i> , 2019, 57, 617-663.	24.3	207
32	A chemical kinetics code for modelling exoplanetary atmospheres. <i>Monthly Notices of the Royal Astronomical Society</i> , 2019, 487, 2242-2261.	4.4	27
33	New avenues for thermal inversions in atmospheres of hot Jupiters. <i>Monthly Notices of the Royal Astronomical Society</i> , 2019, 485, 5817-5830.	4.4	54
34	The metal-rich atmosphere of the exo-Neptune HAT-P-26b. <i>Monthly Notices of the Royal Astronomical Society</i> , 2019, 486, 1292-1315.	4.4	34
35	Mass-Metallicity Trends in Transiting Exoplanets from Atmospheric Abundances of H ₂ , O, Na, and K. <i>Astrophysical Journal Letters</i> , 2019, 887, L20.	8.3	125
36	H ₂ O abundances and cloud properties in ten hot giant exoplanets. <i>Monthly Notices of the Royal Astronomical Society</i> , 2019, 482, 1485-1498.	4.4	141

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37	On the robustness of analysis techniques for molecular detections using high-resolution exoplanet spectroscopy. Monthly Notices of the Royal Astronomical Society, 2019, 482, 4422-4436.	4.4	57
38	Retrieval of exoplanet emission spectra with HyDRA. Monthly Notices of the Royal Astronomical Society, 2018, 474, 271-288.	4.4	71
39	Atmospheric Retrieval of Exoplanets. , 2018, , 2153-2182.		29
40	The Origin and Evolution of Saturn, with Exoplanet Perspective. , 2018, , 5-43.		23
41	The Transiting Exoplanet Community Early Release Science Program for <i>JWST</i>. Publications of the Astronomical Society of the Pacific, 2018, 130, 114402.	3.1	100
42	Polluted white dwarfs: constraints on the origin and geology of exoplanetary material. Monthly Notices of the Royal Astronomical Society, 2018, 479, 3814-3841.	4.4	76
43	Community Targets of JWST's Early Release Science Program: Evaluation of WASP-63b. Astronomical Journal, 2018, 156, 103.	4.7	25
44	Evidence for Multiple Molecular Species in the Hot Jupiter HD 209458b. Astrophysical Journal Letters, 2018, 863, L11.	8.3	60
45	Atmospheric Retrieval of Exoplanets. , 2018, , 1-30.		3
46	Retrieval of planetary and stellar properties in transmission spectroscopy with Aura. Monthly Notices of the Royal Astronomical Society, 2018, 480, 5314-5331.	4.4	80
47	C/O AND O/H RATIOS SUGGEST SOME HOT JUPITERS ORIGINATE BEYOND THE SNOW LINE. Astronomical Journal, 2017, 153, 83.	4.7	70
48	Detection of the Atmosphere of the 1.6 \hat{A} Exoplanet GJ 1132 b. Astronomical Journal, 2017, 153, 191.	4.7	65
49	Evidence for Atmospheric Cold-trap Processes in the Noninverted Emission Spectrum of Kepler-13Ab Using HST/WFC3. Astronomical Journal, 2017, 154, 158.	4.7	71
50	Statistical Analysis of Hubble/WFC3 Transit Spectroscopy of Extrasolar Planets. Astrophysical Journal Letters, 2017, 847, L22.	8.3	88
51	Detection of titanium oxide in the atmosphere of a hot Jupiter. Nature, 2017, 549, 238-241.	27.8	129
52	Evidence for a Dayside Thermal Inversion and High Metallicity for the Hot Jupiter WASP-18b. Astrophysical Journal Letters, 2017, 850, L32.	8.3	104
53	Signatures of Nitrogen Chemistry in Hot Jupiter Atmospheres. Astrophysical Journal Letters, 2017, 850, L15.	8.3	64
54	Secondary Eclipses of HAT-P-13b. Astrophysical Journal, 2017, 836, 143.	4.5	36

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55	Chemical enrichment of giant planets and discs due to pebble drift. <i>Monthly Notices of the Royal Astronomical Society</i> , 2017, 469, 3994-4011.	4.4	148
56	Atmospheric signatures of giant exoplanet formation by pebble accretion. <i>Monthly Notices of the Royal Astronomical Society</i> , 2017, 469, 4102-4115.	4.4	134
57	The Broadband and Spectrally Resolved H-band Eclipse of KELT-1b and the Role of Surface Gravity in Stratospheric Inversions in Hot Jupiters. <i>Astronomical Journal</i> , 2017, 154, 242.	4.7	49
58	On signatures of clouds in exoplanetary transit spectra. <i>Monthly Notices of the Royal Astronomical Society</i> , 2017, 471, 4355-4373.	4.4	56
59	HD 209458b in new light: evidence of nitrogen chemistry, patchy clouds and sub-solar water. <i>Monthly Notices of the Royal Astronomical Society</i> , 2017, 469, 1979-1996.	4.4	186
60	genesis: new self-consistent models of exoplanetary spectra. <i>Monthly Notices of the Royal Astronomical Society</i> , 2017, 472, 2334-2355.	4.4	106
61	NO THERMAL INVERSION AND A SOLAR WATER ABUNDANCE FOR THE HOT JUPITER HD 209458B FROM HST/WFC3 SPECTROSCOPY. <i>Astronomical Journal</i> , 2016, 152, 203.	4.7	144
62	A map of the large day–night temperature gradient of a super-Earth exoplanet. <i>Nature</i> , 2016, 532, 207-209.	27.8	225
63	Exoplanetary Atmospheres—Chemistry, Formation Conditions, and Habitability. <i>Space Science Reviews</i> , 2016, 205, 285-348.	8.1	172
64	Efficiency of planetesimal ablation in giant planetary envelopes. <i>Monthly Notices of the Royal Astronomical Society</i> , 2016, 463, 4516-4532.	4.4	45
65	Transiting Exoplanet Studies and Community Targets for <i>JWST</i> 's Early Release Science Program. <i>Publications of the Astronomical Society of the Pacific</i> , 2016, 128, 094401.	3.1	98
66	In hot water: effects of temperature-dependent interiors on the radii of water-rich super-Earths. <i>Monthly Notices of the Royal Astronomical Society</i> , 2016, 458, 1330-1344.	4.4	49
67	Effect of pressure broadening on molecular absorption cross sections in exoplanetary atmospheres. <i>Monthly Notices of the Royal Astronomical Society</i> , 2016, 458, 1427-1449.	4.4	44
68	Variability in the super-Earth 55 Cnc. <i>Monthly Notices of the Royal Astronomical Society</i> , 2016, 455, 2018-2027.	4.4	126
69	DIRECT IMAGING AND SPECTROSCOPY OF A YOUNG EXTRASOLAR KUIPER BELT IN THE NEAREST OB ASSOCIATION. <i>Astrophysical Journal Letters</i> , 2015, 807, L7.	8.3	47
70	A DETECTION OF WATER IN THE TRANSMISSION SPECTRUM OF THE HOT JUPITER WASP-12b AND IMPLICATIONS FOR ITS ATMOSPHERIC COMPOSITION. <i>Astrophysical Journal</i> , 2015, 814, 66.	4.5	212
71	Optimal measures for characterizing water-rich super-Earths. <i>International Journal of Astrobiology</i> , 2015, 14, 177-189.	1.6	38
72	SPECTROSCOPIC EVIDENCE FOR A TEMPERATURE INVERSION IN THE DAYSIDE ATMOSPHERE OF HOT JUPITER WASP-33b. <i>Astrophysical Journal</i> , 2015, 806, 146.	4.5	177

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73	TRANSMISSION SPECTROSCOPY OF THE HOT JUPITER WASP-12b FROM 0.7 TO 5 μ m. <i>Astronomical Journal</i> , 2014, 147, 161.	4.7	154
74	TOWARD CHEMICAL CONSTRAINTS ON HOT JUPITER MIGRATION. <i>Astrophysical Journal Letters</i> , 2014, 794, L12.	8.3	209
75	THE EMERGENT 1.1-1.7 μ m SPECTRUM OF THE EXOPLANET COROT-2B AS MEASURED USING THE HUBBLE SPACE TELESCOPE. <i>Astrophysical Journal</i> , 2014, 783, 113.	4.5	77
76	A SPITZER FIVE-BAND ANALYSIS OF THE JUPITER-SIZED PLANET TrES-1. <i>Astrophysical Journal</i> , 2014, 797, 42.	4.5	42
77	SPITZER OBSERVATIONS OF THE THERMAL EMISSION FROM WASP-43b. <i>Astrophysical Journal</i> , 2014, 781, 116.	4.5	91
78	ATMOSPHERIC CHARACTERIZATION OF FIVE HOT JUPITERS WITH THE WIDE FIELD CAMERA 3 ON THE HUBBLE SPACE TELESCOPE. <i>Astrophysical Journal</i> , 2014, 785, 148.	4.5	68
79	WATER VAPOR IN THE SPECTRUM OF THE EXTRASOLAR PLANET HD 189733b. II. THE ECLIPSE. <i>Astrophysical Journal</i> , 2014, 795, 166.	4.5	80
80	DEEP THERMAL INFRARED IMAGING OF HR 8799 bcde: NEW ATMOSPHERIC CONSTRAINTS AND LIMITS ON A FIFTH PLANET. <i>Astrophysical Journal</i> , 2014, 795, 133.	4.5	80
81	DECIPHERING THE ATMOSPHERIC COMPOSITION OF WASP-12b: A COMPREHENSIVE ANALYSIS OF ITS DAYSIDE EMISSION. <i>Astrophysical Journal</i> , 2014, 791, 36.	4.5	128
82	Thermal structure of an exoplanet atmosphere from phase-resolved emission spectroscopy. <i>Science</i> , 2014, 346, 838-841.	12.6	266
83	H ₂ O ABUNDANCES IN THE ATMOSPHERES OF THREE HOT JUPITERS. <i>Astrophysical Journal Letters</i> , 2014, 791, L9.	8.3	134
84	A PRECISE WATER ABUNDANCE MEASUREMENT FOR THE HOT JUPITER WASP-43b. <i>Astrophysical Journal Letters</i> , 2014, 793, L27.	8.3	297
85	Water vapour absorption in the clear atmosphere of a Neptune-sized exoplanet. <i>Nature</i> , 2014, 513, 526-529.	27.8	238
86	CHEMISTRY IN AN EVOLVING PROTOPLANETARY DISK: EFFECTS ON TERRESTRIAL PLANET COMPOSITION. <i>Astrophysical Journal</i> , 2014, 787, 81.	4.5	90
87	INFRARED TRANSMISSION SPECTROSCOPY OF THE EXOPLANETS HD 209458b AND XO-1b USING THE WIDE FIELD CAMERA-3 ON THE HUBBLE SPACE TELESCOPE. <i>Astrophysical Journal</i> , 2013, 774, 95.	4.5	409
88	ULTRACAM ϵ -band detection of the secondary eclipse of WASP-12b. <i>Monthly Notices of the Royal Astronomical Society</i> , 2013, 435, 2268-2273.	4.4	48
89	GROUND-BASED TRANSIT SPECTROSCOPY OF THE HOT-JUPITER WASP-19b IN THE NEAR-INFRARED. <i>Astrophysical Journal</i> , 2013, 771, 108.	4.5	80
90	A COMBINED VERY LARGE TELESCOPE AND GEMINI STUDY OF THE ATMOSPHERE OF THE DIRECTLY IMAGED PLANET, ρ PICTORIS b. <i>Astrophysical Journal</i> , 2013, 776, 15.	4.5	95

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91	EXOPLANET TRANSIT SPECTROSCOPY USING WFC3: WASP-12 b, WASP-17 b, AND WASP-19 b. <i>Astrophysical Journal</i> , 2013, 779, 128.	4.5	130
92	INFERENCE OF INHOMOGENEOUS CLOUDS IN AN EXOPLANET ATMOSPHERE. <i>Astrophysical Journal Letters</i> , 2013, 776, L25.	8.3	250
93	WASP-8b: CHARACTERIZATION OF A COOL AND ECCENTRIC EXOPLANET WITH <i>SPITZER</i> . <i>Astrophysical Journal</i> , 2013, 768, 42.	4.5	76
94	THERMAL EMISSION OF WASP-14b REVEALED WITH THREE <i>SPITZER</i> ECLIPSES. <i>Astrophysical Journal</i> , 2013, 779, 5.	4.5	61
95	NEBULAR WATER DEPLETION AS THE CAUSE OF JUPITER'S LOW OXYGEN ABUNDANCE. <i>Astrophysical Journal Letters</i> , 2012, 751, L7.	8.3	68
96	JUPITER WILL BECOME A HOT JUPITER: CONSEQUENCES OF POST-MAIN-SEQUENCE STELLAR EVOLUTION ON GAS GIANT PLANETS. <i>Astrophysical Journal</i> , 2012, 756, 132.	4.5	60
97	A POSSIBLE CARBON-RICH INTERIOR IN SUPER-EARTH 55 Cancri e. <i>Astrophysical Journal Letters</i> , 2012, 759, L40.	8.3	168
98	C/O RATIO AS A DIMENSION FOR CHARACTERIZING EXOPLANETARY ATMOSPHERES. <i>Astrophysical Journal</i> , 2012, 758, 36.	4.5	338
99	ANALYTIC MODELS FOR ALBEDOS, PHASE CURVES, AND POLARIZATION OF REFLECTED LIGHT FROM EXOPLANETS. <i>Astrophysical Journal</i> , 2012, 747, 25.	4.5	99
100	INFRARED ECLIPSES OF THE STRONGLY IRRADIATED PLANET WASP-33b, AND OSCILLATIONS OF ITS HOST STAR. <i>Astrophysical Journal</i> , 2012, 754, 106.	4.5	64
101	PLANETESIMAL COMPOSITIONS IN EXOPLANET SYSTEMS. <i>Astrophysical Journal</i> , 2012, 757, 192.	4.5	72
102	THE HIGH ALBEDO OF THE HOT JUPITER KEPLER-7 b. <i>Astrophysical Journal Letters</i> , 2011, 735, L12.	8.3	123
103	<i>SPITZER</i> SECONDARY ECLIPSES OF WASP-18b. <i>Astrophysical Journal</i> , 2011, 742, 35.	4.5	85
104	A COMBINED SUBARU/VLT/MMT 1-5 $\hat{1}$ / ₄ m STUDY OF PLANETS ORBITING HR 8799: IMPLICATIONS FOR ATMOSPHERIC PROPERTIES, MASSES, AND FORMATION. <i>Astrophysical Journal</i> , 2011, 729, 128.	4.5	233
105	CARBON-RICH GIANT PLANETS: ATMOSPHERIC CHEMISTRY, THERMAL INVERSIONS, SPECTRA, AND FORMATION CONDITIONS. <i>Astrophysical Journal</i> , 2011, 743, 191.	4.5	137
106	A 5 $\hat{1}$ / ₄ m IMAGE OF $\hat{1}$ / ₂ PICTORIS b AT A SUB-JUPITER PROJECTED SEPARATION: EVIDENCE FOR A MISALIGNMENT BETWEEN THE PLANET AND THE INNER, WARPED DISK. <i>Astrophysical Journal Letters</i> , 2011, 736, L33.	8.3	70
107	A <i>SPITZER</i> TRANSMISSION SPECTRUM FOR THE EXOPLANET GJ 436b, EVIDENCE FOR STELLAR VARIABILITY, AND CONSTRAINTS ON DAYSIDE FLUX VARIATIONS. <i>Astrophysical Journal</i> , 2011, 735, 27.	4.5	115
108	MODEL ATMOSPHERES FOR MASSIVE GAS GIANTS WITH THICK CLOUDS: APPLICATION TO THE HR 8799 PLANETS AND PREDICTIONS FOR FUTURE DETECTIONS. <i>Astrophysical Journal</i> , 2011, 737, 34.	4.5	163

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109	A high C/O ratio and weak thermal inversion in the atmosphere of exoplanet WASP-12b. <i>Nature</i> , 2011, 469, 64-67.	27.8	274
110	THE ATMOSPHERES OF THE HOT-JUPITERS KEPLER-5b AND KEPLER-6b OBSERVED DURING OCCULTATIONS WITH <i>WARM-SPITZER</i> AND <i>KEPLER</i> . <i>Astrophysical Journal, Supplement Series</i> , 2011, 197, 11.	7.7	61
111	Possible thermochemical disequilibrium in the atmosphere of the exoplanet GJ 436b. <i>Nature</i> , 2010, 464, 1161-1164.	27.8	242
112	STUDYING THE ATMOSPHERE OF THE EXOPLANET HAT-P-7b VIA SECONDARY ECLIPSE MEASUREMENTS WITH EPOXI, SPITZER, AND KEPLER. <i>Astrophysical Journal</i> , 2010, 710, 97-104.	4.5	103