

# Alan Heavens

## List of Publications by Year in descending order

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Version: 2024-02-01

161  
papers

12,676  
citations

29994

54  
h-index

25716

108  
g-index

162  
all docs

162  
docs citations

162  
times ranked

5257  
citing authors

#	ARTICLE	IF	CITATIONS
1	Matching Bayesian and frequentist coverage probabilities when using an approximate data covariance matrix. Monthly Notices of the Royal Astronomical Society, 2022, 510, 3207-3221.	1.6	27
2	Cosmology intertwined: A review of the particle physics, astrophysics, and cosmology associated with the cosmological tensions and anomalies. Journal of High Energy Astrophysics, 2022, 34, 49-211.	2.4	350
3	Bayesian forward modelling of cosmic shear data. Monthly Notices of the Royal Astronomical Society, 2021, 502, 3035-3044.	1.6	19
4	The integrated angular bispectrum of weak lensing. Journal of Cosmology and Astroparticle Physics, 2021, 2021, 055.	1.9	10
5	On the accuracy and precision of correlation functions and field-level inference in cosmology. Monthly Notices of the Royal Astronomical Society: Letters, 2021, 506, L85-L90.	1.2	11
6	Snowmass2021 - Letter of interest cosmology intertwined I: Perspectives for the next decade. Astroparticle Physics, 2021, 131, 102606.	1.9	37
7	Quantum coherence of photons to cosmological distances. Physical Review D, 2021, 104, .	1.6	6
8	Snowmass2021 - Letter of interest cosmology intertwined II: The hubble constant tension. Astroparticle Physics, 2021, 131, 102605.	1.9	228
9	Snowmass2021 - Letter of interest cosmology intertwined IV: The age of the universe and its curvature. Astroparticle Physics, 2021, 131, 102607.	1.9	39
10	Cosmology intertwined III: $\int_0^z \frac{dz'}{H(z')}$ and $S_8$ . Astroparticle Physics, 2021, 131, 102604.	1.9	182
11	Kernel-based emulator for the 3D matter power spectrum from CLASS. Astronomy and Computing, 2021, 38, 100508.	0.8	10
12	Lifting weak lensing degeneracies with a field-based likelihood. Monthly Notices of the Royal Astronomical Society, 2021, 509, 3194-3202.	1.6	18
13	The Kaiser-Rocket effect: three decades and counting. Journal of Cosmology and Astroparticle Physics, 2021, 2021, 027.	1.9	4
14	Parameter inference for weak lensing using Gaussian Processes and MOPED. Monthly Notices of the Royal Astronomical Society, 2020, 497, 2213-2226.	1.6	12
15	Extreme data compression while searching for new physics. Monthly Notices of the Royal Astronomical Society, 2020, 498, 3440-3451.	1.6	12
16	Perfectly parallel cosmological simulations using spatial comoving Lagrangian acceleration. Astronomy and Astrophysics, 2020, 639, A91.	2.1	7
17	Gaussian mixture models for blended photometric redshifts. Monthly Notices of the Royal Astronomical Society, 2019, 490, 3966-3986.	1.6	3
18	The gravitational and lensing-ISW bispectrum of 21 cm radiation. Monthly Notices of the Royal Astronomical Society, 2019, 483, 4259-4275.	1.6	5

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19	Bayesian photometric redshifts of blended sources. Monthly Notices of the Royal Astronomical Society, 2019, 483, 2487-2505.	1.6	15
20	Primordial power spectrum and cosmology from black-box galaxy surveys. Monthly Notices of the Royal Astronomical Society, 2019, 490, 4237-4253.	1.6	15
21	Cosmology and fundamental physics with the Euclid satellite. Living Reviews in Relativity, 2018, 21, 2.	8.2	602
22	Fast sampling from Wiener posteriors for image data with dataflow engines. Astronomy and Computing, 2018, 25, 230-237.	0.8	6
23	Bayesian evidence against the Harrison-Zelâ€™dovich spectrum in tensions with cosmological data sets. Physical Review D, 2018, 98, .	1.6	29
24	On the insufficiency of arbitrarily precise covariance matrices: non-Gaussian weak-lensing likelihoods. Monthly Notices of the Royal Astronomical Society, 2018, 473, 2355-2363.	1.6	39
25	The limits of cosmic shear. Monthly Notices of the Royal Astronomical Society, 2017, 469, 2737-2749.	1.6	64
26	No Evidence for Extensions to the Standard Cosmological Model. Physical Review Letters, 2017, 119, 101301.	2.9	104
27	Perturbation theory for BAO reconstructed fields: One-loop results in the real-space matter density field. Physical Review D, 2017, 96, .	1.6	14
28	Cosmological parameters, shear maps and power spectra from CFHTLenS using Bayesian hierarchical inference. Monthly Notices of the Royal Astronomical Society, 2017, 466, 3272-3292.	1.6	40
29	Mapping weak lensing distortions in the Kerr metric. Physical Review D, 2017, 95, .	1.6	5
30	Massive data compression for parameter-dependent covariance matrices. Monthly Notices of the Royal Astronomical Society, 2017, 472, 4244-4250.	1.6	45
31	Bayesian hierarchical modelling of weak lensing: The golden goal. , 2017, , .		0
32	Generalisations of Fisher Matrices. Entropy, 2016, 18, 236.	1.1	7
33	Beyond $\Lambda$ CDM: Problems, solutions, and the road ahead. Physics of the Dark Universe, 2016, 12, 56-99.	1.8	361
34	Discrepancies between CFHTLenS cosmic shear and Planck: new physics or systematic effects?. Monthly Notices of the Royal Astronomical Society, 2016, 459, 971-981.	1.6	34
35	Hierarchical cosmic shear power spectrum inference. Monthly Notices of the Royal Astronomical Society, 2016, 455, 4452-4466.	1.6	51
36	An accurate halo model for fitting non-linear cosmological power spectra and baryonic feedback models. Monthly Notices of the Royal Astronomical Society, 2015, 454, 1958-1975.	1.6	279

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37	Weak lensing with sizes, magnitudes and shapes. Monthly Notices of the Royal Astronomical Society, 2015, 452, 1202-1216.	1.6	29
38	3D weak gravitational lensing of the CMB and galaxies. Monthly Notices of the Royal Astronomical Society, 2015, 449, 2205-2214.	1.6	24
39	On the complementarity of galaxy clustering with cosmic shear and flux magnification. Monthly Notices of the Royal Astronomical Society, 2014, 437, 2471-2487.	1.6	53
40	Standard Rulers, Candles, and Clocks from the Low-Redshift Universe. Physical Review Letters, 2014, 113, 241302.	2.9	73
41	The bias of weighted dark matter haloes from peak theory. Monthly Notices of the Royal Astronomical Society, 2014, 443, 122-137.	1.6	11
42	Reionization and CMB non-Gaussianity. Monthly Notices of the Royal Astronomical Society, 2014, 442, 3427-3442.	1.6	3
43	Generalized Fisher matrices. Monthly Notices of the Royal Astronomical Society, 2014, 445, 1687-1693.	1.6	11
44	Probing modified gravity theories with ISW and CMB lensing. Monthly Notices of the Royal Astronomical Society, 2014, 442, 821-837.	1.6	22
45	3D cosmic shear: cosmology from CFHTLenS. Monthly Notices of the Royal Astronomical Society, 2014, 442, 1326-1349.	1.6	105
46	Size magnification as a complement to cosmic shear. Monthly Notices of the Royal Astronomical Society, 2013, 430, 2844-2853.	1.6	19
47	Combining size and shape in weak lensing. Monthly Notices of the Royal Astronomical Society: Letters, 2013, 433, L6-L10.	1.2	29
48	Cosmology and Fundamental Physics with the Euclid Satellite. Living Reviews in Relativity, 2013, 16, 6.	8.2	683
49	New approaches to probing Minkowski functionals. Monthly Notices of the Royal Astronomical Society, 2013, 434, 2830-2855.	1.6	16
50	CFHTLenS tomographic weak lensing cosmological parameter constraints: Mitigating the impact of intrinsic galaxy alignments. Monthly Notices of the Royal Astronomical Society, 2013, 432, 2433-2453.	1.6	506
51	Secondary anisotropies in CMB, skew-spectra and Minkowski Functionals. Monthly Notices of the Royal Astronomical Society, 2013, 428, 2628-2644.	1.6	7
52	TESTING HOMOGENEITY WITH GALAXY STAR FORMATION HISTORIES. Astrophysical Journal Letters, 2013, 762, L9.	3.0	15
53	Space-quality data from balloon-borne telescopes: The High Altitude Lensing Observatory (HALO). Astroparticle Physics, 2012, 38, 31-40.	1.9	13
54	CMB bispectrum, trispectrum, non-Gaussianity, and the Cramer-Rao bound. Physical Review D, 2011, 83, .	1.6	24

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55	Primordial non-Gaussianity from a joint analysis of the cosmic microwave background temperature and polarization. Monthly Notices of the Royal Astronomical Society, 2011, 410, 1295-1319.	1.6	11
56	Higher-order convergence statistics for three-dimensional weak gravitational lensing. Monthly Notices of the Royal Astronomical Society, 2011, 411, 2161-2185.	1.6	15
57	Higher order statistics of weak lensing shear and flexion. Monthly Notices of the Royal Astronomical Society, 2011, 411, 2241-2258.	1.6	14
58	New optimized estimators for the primordial trispectrum. Monthly Notices of the Royal Astronomical Society, 2011, 412, 1993-2016.	1.6	33
59	The stellar evolution of luminous red galaxies, and its dependence on colour, redshift, luminosity and modelling. Monthly Notices of the Royal Astronomical Society, 2011, 413, 434-460.	1.6	34
60	3D photometric cosmic shear. Monthly Notices of the Royal Astronomical Society, 2011, 413, 2923-2934.	1.6	48
61	Higher order statistics for three-dimensional shear and flexion. Monthly Notices of the Royal Astronomical Society, 2011, 416, 1629-1653.	1.6	21
62	sunglass: a new weak-lensing simulation pipeline. Monthly Notices of the Royal Astronomical Society, 2011, 414, 2235-2245.	1.6	35
63	Secondary non-Gaussianity and cross-correlation analysis. Monthly Notices of the Royal Astronomical Society, 2011, 414, 3173-3197.	1.6	22
64	Measuring unified dark matter with 3D cosmic shear. Monthly Notices of the Royal Astronomical Society, 2011, 415, 399-409.	1.6	22
65	Cosmic magnification: nulling intrinsic clustering. Monthly Notices of the Royal Astronomical Society, 2011, 415, 1681-1690.	1.6	17
66	Simulating the effect of non-linear mode coupling in cosmological parameter estimation. Monthly Notices of the Royal Astronomical Society, 2011, 416, 1045-1055.	1.6	14
67	Gravitational Lensing Accuracy Testing 2010 (GREAT10) Challenge Handbook. Annals of Applied Statistics, 2011, 5, .	0.5	36
68	Cosmology with Gravitational Lensing. Astrophysics and Space Science Library, 2011, , 177-216.	1.0	1
69	A new approach to probing primordial non-Gaussianity. Monthly Notices of the Royal Astronomical Society, 2010, 401, 2406-2418.	1.6	60
70	On lensing by a cosmological constant. Monthly Notices of the Royal Astronomical Society, 2010, 402, 2009-2016.	1.6	40
71	Adiabatic versus isocurvature non-Gaussianity. Monthly Notices of the Royal Astronomical Society, 2010, , .	1.6	5
72	Reducing sample variance: halo biasing, non-linearity and stochasticity. Monthly Notices of the Royal Astronomical Society, 2010, 407, 772-790.	1.6	30

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73	Geometry of the Universe. Nature, 2010, 468, 511-512.	13.7	0
74	THE AGES OF TYPE Ia SUPERNOVA PROGENITORS. Astronomical Journal, 2010, 140, 804-816.	1.9	71
75	Non-Gaussianity in WMAP data due to the correlation of CMB lensing potential with secondary anisotropies. Physical Review D, 2010, 81, 083511. CMB constraints on primordial non-Gaussianity from the bispectrum ( $\langle \delta\delta\delta \rangle$ )	1.6	18

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91	The star formation histories of galaxies in the Sloan Digital Sky Survey. Monthly Notices of the Royal Astronomical Society, 2007, 378, 1550-1564.	1.6	244
92	Bayesian Evidence for a cosmological constant using new high-redshift supernova data. Monthly Notices of the Royal Astronomical Society, 2007, 379, 169-175.	1.6	32
93	Bayesian galaxy shape measurement for weak lensing surveys - I. Methodology and a fast-fitting algorithm. Monthly Notices of the Royal Astronomical Society, 2007, 382, 315-324.	1.6	197
94	Environment and the Cosmic Evolution of Star Formation. Astrophysical Journal, 2006, 650, L25-L28.	1.6	30
95	Non-Gaussianity in the Wilkinson Microwave Anisotropy Probedata using the peak-peak correlation function. Monthly Notices of the Royal Astronomical Society, 2006, 365, 265-275.	1.6	30
96	Potential sources of contamination to weak lensing measurements: constraints from N-body simulations. Monthly Notices of the Royal Astronomical Society, 2006, 371, 750-760.	1.6	140
97	Measuring dark energy properties with 3D cosmic shear. Monthly Notices of the Royal Astronomical Society, 2006, 373, 105-120.	1.6	77
98	Baryonic conversion tree: the global assembly of stars and dark matter in galaxies from the Sloan Digital Sky Survey. Monthly Notices of the Royal Astronomical Society, 2005, 356, 495-501.	1.6	48
99	The Star-formation History of the Universe. American Scientist, 2005, 93, 36.	0.1	0
100	Weak lensing with COMBO-17: estimation and removal of intrinsic alignments. Monthly Notices of the Royal Astronomical Society, 2004, 347, 895-908.	1.6	119
101	The bispectrum of the Lyman $\tilde{\text{A}}$ forest at $z < 2.4$ from a large sample of LIVES QSO absorption spectra (LUQAS). Monthly Notices of the Royal Astronomical Society, 2004, 347, L26-L30.	1.6	32
102	The 2dF Galaxy Redshift Survey: spherical harmonics analysis of fluctuations in the final catalogue. Monthly Notices of the Royal Astronomical Society, 2004, 353, 1201-1218.	1.6	198
103	The mass function of the stellar component of galaxies in the Sloan Digital Sky Survey. Monthly Notices of the Royal Astronomical Society, 2004, 355, 764-768.	1.6	80
104	The star-formation history of the Universe from the stellar populations of nearby galaxies. Nature, 2004, 428, 625-627.	13.7	380
105	Redshift surveys. Astronomy and Geophysics, 2004, 45, 2.35-2.36.	0.1	0
106	The bispectrum of MAXIMA. New Astronomy Reviews, 2003, 47, 815-820.	5.2	3
107	Weak gravitational lensing: reducing the contamination by intrinsic alignments. Monthly Notices of the Royal Astronomical Society, 2003, 339, 711-720.	1.6	118
108	F stars, metallicity and the ages of red galaxies at $z > 1$ . Monthly Notices of the Royal Astronomical Society, 2003, 341, 464-476.	1.6	65

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109	Multiple methods for estimating the bispectrum of the cosmic microwave background with application to the MAXIMA data. Monthly Notices of the Royal Astronomical Society, 2003, 341, 623-643.	1.6	46
110	Star formation and metallicity history of the SDSS galaxy survey: unlocking the fossil record. Monthly Notices of the Royal Astronomical Society, 2003, 343, 1145-1154.	1.6	111
111	3D weak lensing. Monthly Notices of the Royal Astronomical Society, 2003, 343, 1327-1334.	1.6	141
112	Testing dark matter with high-redshift supernovae. Monthly Notices of the Royal Astronomical Society, 2002, 330, 378-382.	1.6	13
113	Observations of the Hubble Deep Field South with the Infrared Space Observatory- II. Associations and star formation rates. Monthly Notices of the Royal Astronomical Society, 2002, 332, 549-574.	1.6	38
114	Fast parameter estimation from the cosmic microwave background power spectrum. Monthly Notices of the Royal Astronomical Society, 2002, 334, 167-172.	1.6	15
115	The 2dF Galaxy Redshift Survey: the bias of galaxies and the density of the Universe. Monthly Notices of the Royal Astronomical Society, 2002, 335, 432-440.	1.6	504
116	Full-sky correlations of peaks in the microwave background. Monthly Notices of the Royal Astronomical Society, 2001, 324, 960-968.	1.6	23
117	Recovering physical parameters from galaxy spectra using MOPED. Monthly Notices of the Royal Astronomical Society, 2001, 327, 849-867.	1.6	63
118	Redshift-space distortions in the PSCz galaxy catalogue. Monthly Notices of the Royal Astronomical Society, 2001, 327, 689-696.	1.6	27
119	On the Trispectrum as a Gaussian Test for Cosmology. Astrophysical Journal, 2001, 553, 14-24.	1.6	41
120	Large-scale structure, the cosmic microwave background and primordial non-Gaussianity. Monthly Notices of the Royal Astronomical Society, 2000, 313, 141-147.	1.6	316
121	Massive lossless data compression and multiple parameter estimation from galaxy spectra. Monthly Notices of the Royal Astronomical Society, 2000, 317, 965-972.	1.6	193
122	Projected bispectrum in spherical harmonics and its application to angular galaxy catalogues. Monthly Notices of the Royal Astronomical Society, 2000, 318, 584-598.	1.6	28
123	Spherical harmonic analysis of the PSCz galaxy catalogue: redshift distortions and the real-space power spectrum. Monthly Notices of the Royal Astronomical Society, 1999, 305, 527-546.	1.6	78
124	The role of star formation in the Tullyâ€™Fisher law. Monthly Notices of the Royal Astronomical Society, 1999, 305, 770-774.	1.6	25
125	The correlation of peaks in the microwave background. Monthly Notices of the Royal Astronomical Society, 1999, 310, 1062-1070.	1.6	41
126	Eulerian bias and the galaxy density field. Monthly Notices of the Royal Astronomical Society, 1998, 293, 209-221.	1.6	84



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127	Galaxy formation and evolution: low-surface-brightness galaxies. Monthly Notices of the Royal Astronomical Society, 1998, 299, 123-138.	1.6	121
128	Estimating non-Gaussianity in the microwave background. Monthly Notices of the Royal Astronomical Society, 1998, 299, 805-808.	1.6	92
129	The double quasar Q2138 – 431: lensing by a dark galaxy?. Monthly Notices of the Royal Astronomical Society, 1997, 291, 811-818.	1.6	8
130	Large-scale bias in the Universe: bispectrum method. Monthly Notices of the Royal Astronomical Society, 1997, 290, 651-662.	1.6	148
131	Design and analysis of redshift surveys. Monthly Notices of the Royal Astronomical Society, 1997, 290, 456-464.	1.6	14
132	Karhunen-Loève Eigenvalue Problems in Cosmology: How Should We Tackle Large Data Sets?. Astrophysical Journal, 1997, 480, 22-35.	1.6	802
133	The correlation between bulk and shell velocities in cosmology. Monthly Notices of the Royal Astronomical Society, 1996, 279, 1303-1309.	1.6	0
134	Measuring the cosmological constant with redshift surveys. Monthly Notices of the Royal Astronomical Society, 1996, 282, 877-888.	1.6	291
135	A spherical harmonic analysis of redshift space. Monthly Notices of the Royal Astronomical Society, 1995, 275, 483-497.	1.6	142
136	The real-space power spectrum of IRAS galaxies on large scales and the redshift distortion. Monthly Notices of the Royal Astronomical Society, 1995, 276, L59-L63.	1.6	32
137	Galaxy redshifts: improved techniques. Monthly Notices of the Royal Astronomical Society, 1993, 263, 735-741.	1.6	15
138	The richness dependence of cluster correlations. Monthly Notices of the Royal Astronomical Society, 1993, 263, 798-816.	1.6	20
139	Shock acceleration and steep-spectrum synchrotron sources. Monthly Notices of the Royal Astronomical Society, 1992, 259, 89-94.	1.6	52
140	Analyzing the Cosmological Velocity Potential. Annals of the New York Academy of Sciences, 1991, 647, 701-706.	1.8	0
141	First-order Fermi acceleration at oblique relativistic magnetohydrodynamic shocks. Monthly Notices of the Royal Astronomical Society, 1991, 251, 438-448.	1.6	28
142	Exact hierarchical clustering in one dimension. Monthly Notices of the Royal Astronomical Society, 1991, 250, 458-476.	1.6	9
143	Great Attractors and the value of $\omega_m$ . Monthly Notices of the Royal Astronomical Society, 1991, 251, 267-280.	1.6	4
144	Large-scale periodicity: problems with cellular models. Monthly Notices of the Royal Astronomical Society, 1991, 252, 43P-46P.	1.6	3

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145	Alternatives to the Press&#224;Schechter cosmological mass function. Monthly Notices of the Royal Astronomical Society, 1990, 243, 133-143.	1.6	144
146	The clustering of peaks in a random Gaussian field. Monthly Notices of the Royal Astronomical Society, 1989, 238, 293-318.	1.6	32
147	Particle acceleration at oblique shock fronts. Monthly Notices of the Royal Astronomical Society, 1989, 239, 995-1011.	1.6	91
148	Relativistic shocks and particle acceleration. Monthly Notices of the Royal Astronomical Society, 1988, 235, 997-1009.	1.6	95
149	Tidal torques and local density maxima. Monthly Notices of the Royal Astronomical Society, 1988, 232, 339-360.	1.6	131
150	Cosmological Streaming Velocities & Large-Scale Density Maxima. Symposium - International Astronomical Union, 1988, 130, 551-551.	0.1	0
151	Explosions in pancake models of galaxy formation. Symposium - International Astronomical Union, 1988, 130, 583-583.	0.1	0
152	Cosmological streaming velocities and large-scale density maxima. Monthly Notices of the Royal Astronomical Society, 1987, 229, 469-483.	1.6	8
153	Particle acceleration in extragalactic sources: the role of synchrotron losses in determining the spectrum. Monthly Notices of the Royal Astronomical Society, 1987, 225, 335-353.	1.6	100
154	Particle acceleration in the hotspot of the jet of quasar 3C273. Nature, 1986, 323, 419-422.	13.7	42
155	The gravitational collapse of triaxial protoclusters. Monthly Notices of the Royal Astronomical Society, 1986, 220, 189-202.	1.6	9
156	The statistics of maxima in primordial density perturbations. Monthly Notices of the Royal Astronomical Society, 1985, 217, 805-820.	1.6	88
157	Large-scale structure in the Universe. Monthly Notices of the Royal Astronomical Society, 1985, 213, 143-155.	1.6	5
158	On model selection forecasting, dark energy and modified gravity. Monthly Notices of the Royal Astronomical Society, 0, 380, 1029-1035.	1.6	128
159	Recovering galaxy star formation and metallicity histories from spectra using VESPA. Monthly Notices of the Royal Astronomical Society, 0, 381, 1252-1266.	1.6	200
160	Results of the GREAT08 Challenge&#223;...: an image analysis competition for cosmological lensing. Monthly Notices of the Royal Astronomical Society, 0, , no-no.	1.6	47
161	Weak gravitational lensing, dark energy and modified gravity. , 0, , 279-318.		0