Neil Cornish

List of Publications by Year
in descending order

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146 papers	9,745 citations	31976 53 h-index	39675 94 g-index
148 all docs	148 docs citations	148 times ranked	4207 citing authors

#	Article	IF	Citations
1	The NANOGrav 12.5Âyr Data Set: Search for an Isotropic Stochastic Gravitational-wave Background. Astrophysical Journal Letters, 2020, 905, L34.	8.3	528
2	The NANOGrav 11-year Data Set: High-precision Timing of 45 Millisecond Pulsars. Astrophysical Journal, Supplement Series, 2018, 235, 37.	7.7	448
3	The construction and use of LISA sensitivity curves. Classical and Quantum Gravity, 2019, 36, 105011.	4.0	412
4	Beyond LISA: Exploring future gravitational wave missions. Physical Review D, 2005, 72, .	4.7	393
5	The NANOGrav 11 Year Data Set: Pulsar-timing Constraints on the Stochastic Gravitational-wave Background. Astrophysical Journal, 2018, 859, 47.	4.5	331
6	Detection methods for stochastic gravitational-wave backgrounds: a unified treatment. Living Reviews in Relativity, 2017, 20, 2.	26.7	296
7	Bayeswave: Bayesian inference for gravitational wave bursts and instrument glitches. Classical and Quantum Gravity, 2015, 32, 135012.	4.0	295
8	Detecting the cosmic gravitational wave background with the Big Bang Observer. Classical and Quantum Gravity, 2006, 23, 2435-2446.	4.0	281
9	THE NANOGRAV NINE-YEAR DATA SET: LIMITS ON THE ISOTROPIC STOCHASTIC GRAVITATIONAL WAVE BACKGROUND. Astrophysical Journal, 2016, 821, 13.	4.5	227
10	Circles in the sky: finding topology with the microwave background radiation. Classical and Quantum Gravity, 1998, 15, 2657-2670.	4.0	192
11	THE NANOGRAV NINE-YEAR DATA SET: OBSERVATIONS, ARRIVAL TIME MEASUREMENTS, AND ANALYSIS OF 37 MILLISECOND PULSARS. Astrophysical Journal, 2015, 813, 65.	4.5	185
12	The International Pulsar Timing Array second data release: Search for an isotropic gravitational wave background. Monthly Notices of the Royal Astronomical Society, 2022, 510, 4873-4887.	4.4	174
13	Model-independent test of general relativity: An extended post-Einsteinian framework with complete polarization content. Physical Review D, 2012, 86, .	4.7	173
14	Bayesian inference for spectral estimation of gravitational wave detector noise. Physical Review D, 2015, 91, .	4.7	172
15	Constraining the Topology of the Universe. Physical Review Letters, 2004, 92, 201302.	7.8	164
16	Gravitational wave tests of general relativity with the parameterized post-Einsteinian framework. Physical Review D, 2011, 84, .	4.7	160
17	The Mixmaster Universe is Chaotic. Physical Review Letters, 1997, 78, 998-1001.	7.8	113
18	Mixmaster universe: A chaotic Farey tale. Physical Review D, 1997, 55, 7489-7510.	4.7	112

#	ARTICLE	IF	CITATIONS
19	Constructing gravitational waves from generic spin-precessing compact binary inspirals. Physical Review D, 2017, 95, .	4.7	111
20	Tests of Bayesian model selection techniques for gravitational wave astronomy. Physical Review D, 2007, 76, .	4.7	107
21	LISA response function. Physical Review D, 2003, 67, .	4.7	104
22	Forward modeling of space-borne gravitational wave detectors. Physical Review D, 2004, 69, .	4.7	104
23	The NANOGrav 11 yr Data Set: Limits on Gravitational Waves from Individual Supermassive Black Hole Binaries. Astrophysical Journal, 2019, 880, 116.	4.5	102
24	The NANOGrav 12.5 yr Data Set: Observations and Narrowband Timing of 47 Millisecond Pulsars. Astrophysical Journal, Supplement Series, 2021, 252, 4.	7.7	98
25	Characterizing the galactic gravitational wave background with LISA. Physical Review D, 2006, 73, .	4.7	95
26	LISA data analysis using Markov chain Monte Carlo methods. Physical Review D, 2005, 72, .	4.7	94
27	Detecting a stochastic gravitational wave background in the presence of a galactic foreground and instrument noise. Physical Review D, 2014, 89, .	4.7	87
28	Does Chaotic Mixing FacilitateÎ©<1Inflation?. Physical Review Letters, 1996, 77, 215-218.	7.8	84
29	Inferring the post-merger gravitational wave emission from binary neutron star coalescences. Physical Review D, 2017, 96, .	4.7	84
30	The Mock LISA Data Challenges: from challenge 3 to challenge 4. Classical and Quantum Gravity, 2010, 27, 084009.	4.0	83
31	Discriminating between a stochastic gravitational wave background and instrument noise. Physical Review D, 2010, 82, .	4.7	80
32	Fractal basins and chaotic trajectories in multi-black-hole spacetimes. Physical Review D, 1994, 50, R618-R621.	4.7	79
33	Galactic binary science with the new LISA design. Journal of Physics: Conference Series, 2017, 840, 012024.	0.4	78
34	Projected constraints on scalarization with gravitational waves from neutron star binaries. Physical Review D, 2014, 90, .	4.7	76
35	Mitigation of the instrumental noise transient in gravitational-wave data surrounding GW170817. Physical Review D, 2018, 98, .	4.7	75
36	Solution to the galactic foreground problem for LISA. Physical Review D, 2007, 75, .	4.7	71

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37	Mapping the gravitational-wave background. Classical and Quantum Gravity, 2001, 18, 4277-4291.	4.0	70
38	Detecting a stochastic gravitational wave background with the Laser Interferometer Space Antenna. Physical Review D, 2001, 65, .	4.7	70
39	Space missions to detect the cosmic gravitational-wave background. Classical and Quantum Gravity, 2001, 18, 3473-3495.	4.0	67
40	Global analysis of the gravitational wave signal from Galactic binaries. Physical Review D, 2020, 101, .	4.7	66
41	Astrophysics Milestones for Pulsar Timing Array Gravitational-wave Detection. Astrophysical Journal Letters, 2021, 911, L34.	8.3	66
42	BayesWave analysis pipeline in the era of gravitational wave observations. Physical Review D, 2021, 103, .	4.7	65
43	The Mock LISA Data Challenges: from Challenge 1B to Challenge 3. Classical and Quantum Gravity, 2008, 25, 184026.	4.0	64
44	The NANOGrav 12.5 yr Data Set: Wideband Timing of 47 Millisecond Pulsars. Astrophysical Journal, Supplement Series, 2021, 252, 5.	7.7	64
45	LISA data analysis: Source identification and subtraction. Physical Review D, 2003, 67, .	4.7	63
46	Searching for Gravitational Waves from Cosmological Phase Transitions with the NANOGrav 12.5-Year Dataset. Physical Review Letters, 2021, 127, 251302.	7.8	62
47	Lyapunov timescales and black hole binaries. Classical and Quantum Gravity, 2003, 20, 1649-1660.	4.0	61
48	Bayesian approach to the detection problem in gravitational wave astronomy. Physical Review D, 2009, 80, .	4.7	61
49	Chaos, fractals, and inflation. Physical Review D, 1996, 53, 3022-3032.	4.7	56
50	Gravitational wave tests of strong field general relativity with binary inspirals: Realistic injections and optimal model selection. Physical Review D, 2013, 87, .	4.7	54
51	NANOGrav CONSTRAINTS ON GRAVITATIONAL WAVE BURSTS WITH MEMORY. Astrophysical Journal, 2015, 810, 150.	4.5	54
52	Noise spectral estimation methods and their impact on gravitational wave measurement of compact binary mergers. Physical Review D, 2019, 100, .	4.7	54
53	Chaos in Quantum Cosmology. Physical Review Letters, 1998, 81, 3571-3574.	7.8	52
54	Effect of higher harmonic corrections on the detection of massive black hole binaries with LISA. Physical Review D, 2008, 78, .	4.7	52

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55	Can COBE see the shape of the universe?. Physical Review D, 1998, 57, 5982-5996.	4.7	51
56	Probing the internal composition of neutron stars with gravitational waves. Physical Review D, 2015, 92, .	4.7	51
57	Chaos and damping in the post-Newtonian description of spinning compact binaries. Physical Review D, 2003, 68, .	4.7	50
58	The search for massive black hole binaries with LISA. Classical and Quantum Gravity, 2007, 24, 5729-5755.	4.0	50
59	Bounding the Speed of Gravity with Gravitational Wave Observations. Physical Review Letters, 2017, 119, 161102.	7.8	50
60	Modeling the Uncertainties of Solar System Ephemerides for Robust Gravitational-wave Searches with Pulsar-timing Arrays. Astrophysical Journal, 2020, 893, 112.	4.5	49
61	An overview of the second round of the Mock LISA Data Challenges. Classical and Quantum Gravity, 2007, 24, S551-S564.	4.0	48
62	SPIN-PRECESSION: BREAKING THE BLACK HOLE-NEUTRON STAR DEGENERACY. Astrophysical Journal Letters, 2015, 798, L17.	8.3	48
63	Detecting hierarchical stellar systems with LISA. Physical Review D, 2018, 98, .	4.7	48
64	Comment on â€œRuling Out Chaos in Compact Binary Systemsâ€. Physical Review Letters, 2002, 89, 179001.	7.8	45
65	Characterization of the stochastic signal originating from compact binary populations as measured by LISA. Physical Review D, 2021, 104, .	4.7	45
66	Constraining the solution to the last parsec problem with pulsar timing. Physical Review D, 2015, 91, .	4.7	44
67	Measuring parameters of massive black hole binaries with partially aligned spins. Physical Review D, 2011, 84, .	4.7	43
68	Leveraging waveform complexity for confident detection of gravitational waves. Physical Review D, 2016, 93, .	4.7	42
69	MCMC exploration of supermassive black hole binary inspirals. Classical and Quantum Gravity, 2006, 23, S761-S767.	4.0	40
70	Chaos and gravitational waves. Physical Review D, 2001, 64, .	4.7	39
71	Parameter Estimation for Gravitational-wave Bursts with the BayesWave Pipeline. Astrophysical Journal, 2017, 839, 15.	4.5	38
72	Spectral separation of the stochastic gravitational-wave background for LISA: Observing both cosmological and astrophysical backgrounds. Physical Review D, 2021, 103, .	4.7	37

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73	Catching supermassive black hole binaries without a net. Physical Review D, 2007, 75, .	4.7	36
74	Pulsar timing array analysis for black hole backgrounds. Classical and Quantum Gravity, 2013, 30, 224005.	4.0	36
75	Detection and parameter estimation of gravitational waves from compact binary inspirals with analytical double-precessing templates. Physical Review D, 2014, 89, .	4.7	36
76	Enabling high confidence detections of gravitational-wave bursts. Physical Review D, 2016, 94, .	4.7	36
77	The NANOGrav 11 yr Data Set: Limits on Gravitational Wave Memory. Astrophysical Journal, 2020, 889, 38.	4.5	36
78	Modeling compact binary signals and instrumental glitches in gravitational wave data. Physical Review D, 2021, 103, .	4.7	36
79	Astrophysical model selection in gravitational wave astronomy. Physical Review D, 2012, 86, .	4.7	34
80	Towards robust gravitational wave detection with pulsar timing arrays. Physical Review D, 2016, 93, .	4.7	34
81	Analytic Gravitational Waveforms for Generic Precessing Binary Inspirals. Physical Review Letters, 2017, 118, 051101.	7.8	34
82	A tale of two centres. Classical and Quantum Gravity, 1997, 14, 1865-1881.	4.0	33
83	Report on the first round of the Mock LISA Data Challenges. Classical and Quantum Gravity, 2007, 24, S529-S539.	4.0	33
84	An Overview of the Mock LISA Data Challenges. AIP Conference Proceedings, 2006, , .	0.4	31
85	LISA data analysis using genetic algorithms. Physical Review D, 2006, 73, .	4.7	31
86	Constraints on the topology of the Universe: Extension to general geometries. Physical Review D, 2012, 86, .	4.7	31
87	Constraining Alternative Theories of Gravity Using Pulsar Timing Arrays. Physical Review Letters, 2018, 120, 181101.	7.8	30
88	Multimessenger Gravitational-wave Searches with Pulsar Timing Arrays: Application to 3C 66B Using the NANOGrav 11-year Data Set. Astrophysical Journal, 2020, 900, 102.	4.5	30
89	The NANOGrav 12.5-year Data Set: Search for Non-Einsteinian Polarization Modes in the Gravitational-wave Background. Astrophysical Journal Letters, 2021, 923, L22.	8.3	30
90	Separating gravitational wave signals from instrument artifacts. Physical Review D, 2010, 82, .	4.7	29

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91	Impact of galactic foreground characterization on a global analysis for the LISA gravitational wave observatory. Classical and Quantum Gravity, 2017, 34, 244002.	4.0	29
92	The NANOGrav 11 yr Data Set: Evolution of Gravitational-wave Background Statistics. Astrophysical Journal, 2020, 890, 108.	4.5	28
93	Spectral separation of the stochastic gravitational-wave background for <i>LISA</i> in the context of a modulated Galactic foreground. Monthly Notices of the Royal Astronomical Society, 2021, 508, 803-826.	4.4	28
94	Heterodyned likelihood for rapid gravitational wave parameter inference. Physical Review D, 2021, 104, .	4.7	27
95	GRAVITATIONAL WAVE ASTRONOMY. Annual Review of Nuclear and Particle Science, 2004, 54, 525-577.	10.2	26
96	Characterizing the gravitational wave signature from cosmic string cusps. Physical Review D, 2009, 79, .	4.7	26
97	Gravitational waveforms for precessing, quasicircular binaries via multiple scale analysis and uniform asymptotics: The near spin alignment case. Physical Review D, 2013, 88, .	4.7	26
98	Gravitational waveforms for precessing, quasicircular compact binaries with multiple scale analysis: Small spin expansion. Physical Review D, 2013, 88, .	4.7	25
99	Phase-coherent mapping of gravitational-wave backgrounds using ground-based laser interferometers. Physical Review D, 2015, 92, .	4.7	25
100	Extracting galactic binary signals from the first round of Mock LISA Data Challenges. Classical and Quantum Gravity, 2007, 24, S575-S585.	4.0	24
101	Detecting gravitational wave bursts with LISA in the presence of instrumental glitches. Physical Review D, 2019, 99, .	4.7	24
102	Characterizing spinning black hole binaries in eccentric orbits with LISA. Physical Review D, 2011, 83, .	4.7	23
103	Rosetta stone for parametrized tests of gravity. Physical Review D, 2013, 88, .	4.7	23
104	The black hole and the pea. Physical Review D, 1997, 56, 1903-1907.	4.7	22
105	LISA source confusion. Physical Review D, 2004, 70, .	4.7	22
106	Black hole hunting with LISA. Physical Review D, 2020, 101, .	4.7	22
107	Time-frequency analysis of gravitational wave data. Physical Review D, 2020, 102, .	4.7	22
108	A small universe after all?. Physical Review D, 2000, 62, .	4.7	21

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109	Detection strategies for extreme mass ratio inspirals. Classical and Quantum Gravity, 2011, 28, 094016.	4.0	21
110	Prospects for Gravitational Wave Measurement of ZTF J1539+5027. Astrophysical Journal Letters, 2019, 881, L43.	8.3	21
111	Rapid and robust parameter inference for binary mergers. Physical Review D, 2021, 103, .	4.7	21
112	The NANOGrav 11 yr Data Set: Limits on Supermassive Black Hole Binaries in Galaxies within 500 Mpc. Astrophysical Journal, 2021, 914, 121.	4.5	21
113	Probing neutron stars with the full premerger and postmerger gravitational wave signal from binary coalescences. Physical Review D, 2022, 105, .	4.7	21
114	Prospects for observing ultracompact binaries with space-based gravitational wave interferometers and optical telescopes. Monthly Notices of the Royal Astronomical Society, 2013, 429, 2361-2365.	4.4	20
115	Bayesian reconstruction of gravitational wave bursts using chirplets. Physical Review D, 2018, 97, .	4.7	20
116	First joint observation by the underground gravitational-wave detector KAGRA with GEO 600. Progress of Theoretical and Experimental Physics, 2022, 2022, .	6.6	20
117	Searching for massive black hole binaries in the first Mock LISA Data Challenge. Classical and Quantum Gravity, 2007, 24, S501-S511.	4.0	19
118	Reconstructing gravitational wave signals from binary black hole mergers with minimal assumptions. Physical Review D, 2020, 102, .	4.7	19
119	New binary pulsar constraints on Einstein-Ã¦ther theory after GW170817. Classical and Quantum Gravity, 2021, 38, 195003.	4.0	18
120	Chaos in special relativistic dynamics. Physical Review E, 1996, 53, 1351-1361.	2.1	17
121	Joint search for isolated sources and an unresolved confusion background in pulsar timing array data. Classical and Quantum Gravity, 2020, 37, 135011.	4.0	17
122	Making maps with LISA. Classical and Quantum Gravity, 2002, 19, 1279-1283.	4.0	16
123	When is a gravitational-wave signal stochastic?. Physical Review D, 2015, 92, .	4.7	16
124	Towards a unified treatment of gravitational-wave data analysis. Physical Review D, 2013, 87, .	4.7	15
125	Fisher versus Bayes: A comparison of parameter estimation techniques for massive black hole binaries to high redshifts with eLISA. Physical Review D, 2015, 91, .	4.7	15
126	A non-singular theory of gravity?. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 1994, 336, 337-342.	4.1	14

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127	Massive black hole binaries and where to find them with dual detector networks. Physical Review D, 2022, 105, .	4.7	14
128	Nonsingular gravity without black holes. Journal of Mathematical Physics, 1994, 35, 6628-6643.	1.1	12
129	Comment on â€œGravity Waves, Chaos, and Spinning Compact Binariesâ€• Physical Review Letters, 2000, 85, 3980-3980.	7.8	12
130	Publisherâ€™s Note: Rosetta stone for parametrized tests of gravity [Phys. Rev. D88, 064056 (2013)]. Physical Review D, 2013, 88, .	4.7	12
131	Ringing the eigenmodes from compact manifolds. Classical and Quantum Gravity, 1998, 15, 2699-2710.	4.0	11
132	Constraining alternative polarization states of gravitational waves from individual black hole binaries using pulsar timing arrays. Physical Review D, 2019, 99, .	4.7	11
133	Fast Bayesian analysis of individual binaries in pulsar timing array data. Physical Review D, 2022, 105, .	4.7	9
134	Using the acoustic peak to measure cosmological parameters. Physical Review D, 2000, 63, .	4.7	7
135	Semi-Classical Limit and Minimum Decoherence inÂtheÂConditional Probability Interpretation ofÂQuantum Mechanics. Foundations of Physics, 2009, 39, 474-485.	1.3	7
136	Comparison of maximum-likelihood mapping methods for gravitational-wave backgrounds. Physical Review D, 2022, 105, .	4.7	7
137	Alternative derivation of the response of interferometric gravitational wave detectors. Physical Review D, 2009, 80, .	4.7	6
138	Gravitational wave astronomy: needle in a haystack. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2013, 371, 20110540.	3.4	6
139	Bayesian search for gravitational wave bursts in pulsar timing array data. Classical and Quantum Gravity, 2021, 38, 095012.	4.0	6
140	Low latency detection of massive black hole binaries. Physical Review D, 2022, 105, .	4.7	6
141	Slice & Dice: Identifying and Removing Bright Galactic Binaries from LISA Data. AIP Conference Proceedings, 2006, , .	0.4	3
142	ANALYSIS OF THE NONSINGULAR WYMAN-SCHWARZSCHILD METRIC. Modern Physics Letters A, 1994, 09, 3629-3640.	1.2	2
143	Gravitational wave astronomy. , 2009, , 213-228.		1
144	Black Hole Merging and Gravitational Waves. Saas-Fee Advanced Course, 2019, , 1-92.	1.1	1

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145	Summary of session C1: pulsar timing arrays. General Relativity and Gravitation, 2014, 46, 1.	2.0	0
146	Listening for the Cosmic Hum of Black Holes. Physics Magazine, 2018, 11, .	0.1	0