Kevin J Walsh

List of Publications by Year
in descending order

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95 papers	7,303 citations	66343 42 h-index	58581 82 g-index
102 all docs	102 docs citations	102 times ranked	3580 citing authors

#	Article	IF	Citations
1	A low mass for Mars from Jupiterâ€™s early gas-driven migration. Nature, 2011, 475, 206-209.	27.8	992
2	OSIRIS-REx: Sample Return from Asteroid (101955) Bennu. Space Science Reviews, 2017, 212, 925-984.	8.1	426
3	Building Terrestrial Planets. Annual Review of Earth and Planetary Sciences, 2012, 40, 251-275.	11.0	392
4	The unexpected surface of asteroid (101955) Bennu. Nature, 2019, 568, 55-60.	27.8	364
5	Rotational breakup as the origin of small binary asteroids. Nature, 2008, 454, 188-191.	27.8	329
6	The Compositional Structure of the Asteroid Belt. , 2015, , .		249
7	Water delivery and giant impacts in the â€˜Grand Tackâ€™ scenario. Icarus, 2014, 239, 74-84.	2.5	209
8	Highly siderophile elements in Earthâ€™s mantle as a clock for the Moon-forming impact. Nature, 2014, 508, 84-87.	27.8	191
9	Properties of rubble-pile asteroid (101955) Bennu from OSIRIS-REx imaging and thermal analysis. Nature Astronomy, 2019, 3, 341-351.	10.1	188
10	Shape of (101955) Bennu indicative of a rubble pile with internal stiffness. Nature Geoscience, 2019, 12, 247-252.	12.9	179
11	The OSIRISâ€REx target asteroid (101955) Bennu: Constraints on its physical, geological, and dynamical nature from astronomical observations. Meteoritics and Planetary Science, 2015, 50, 834-849.	1.6	168
12	Craters, boulders and regolith of (101955) Bennu indicative of an old and dynamic surface. Nature Geoscience, 2019, 12, 242-246.	12.9	161
13	Growing the terrestrial planets from the gradual accumulation of submeter-sized objects. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 14180-14185.	7.1	142
14	The dynamic geophysical environment of (101955) Bennu based on OSIRIS-REx measurements. Nature Astronomy, 2019, 3, 352-361.	10.1	132
15	In search of the source of asteroid (101955) Bennu: Applications of the stochastic YORP model. Icarus, 2015, 247, 191-217.	2.5	125
16	Populating the asteroid belt from two parent source regions due to the migration of giant planetsâ€”â€œThe Grand Tackâ€• Meteoritics and Planetary Science, 2012, 47, 1941-1947.	1.6	118
17	Spin-up of rubble-pile asteroids: Disruption, satellite formation, and equilibrium shapes. Icarus, 2012, 220, 514-529.	2.5	114
18	Marsâ€™ growth stunted by an early giant planet instability. Icarus, 2018, 311, 340-356.	2.5	108

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19	Rubble Pile Asteroids. Annual Review of Astronomy and Astrophysics, 2018, 56, 593-624.	24.3	106
20	Introducing the Eulalia and new Polana asteroid families: Re-assessing primitive asteroid families in the inner Main Belt. Icarus, 2013, 225, 283-297.	2.5	105
21	Binary near-Earth asteroid formation: Rubble pile model of tidal disruptions. Icarus, 2006, 180, 201-216.	2.5	95
22	The geophysical environment of Bennu. Icarus, 2016, 276, 116-140.	2.5	92
23	Collisional formation of top-shaped asteroids and implications for the origins of Ryugu and Bennu. Nature Communications, 2020, 11, 2655.	12.8	87
24	Numerical simulations of asteroids modelled as gravitational aggregates with cohesion. Planetary and Space Science, 2009, 57, 183-192.	1.7	84
25	Variations in color and reflectance on the surface of asteroid (101955) Bennu. Science, 2020, 370, .	12.6	84
26	Asteroid (101955) Bennuâ€™s weak boulders and thermally anomalous equator. Science Advances, 2020, 6, .	10.3	83
27	The ESA Hera Mission: Detailed Characterization of the DART Impact Outcome and of the Binary Asteroid (65803) Didymos. Planetary Science Journal, 2022, 3, 160.	3.6	82
28	Identification of a primordial asteroid family constrains the original planetesimal population. Science, 2017, 357, 1026-1029.	12.6	81
29	BINARY MINOR PLANETS. Annual Review of Earth and Planetary Sciences, 2006, 34, 47-81.	11.0	79
30	The early instability scenario: Terrestrial planet formation during the giant planet instability, and the effect of collisional fragmentation. Icarus, 2019, 321, 778-790.	2.5	72
31	Constraining the primordial orbits of the terrestrial planets. Monthly Notices of the Royal Astronomical Society, 2013, 433, 3417-3427.	4.4	71
32	TERRESTRIAL PLANET FORMATION FROM AN ANNULUS. Astronomical Journal, 2016, 152, 68.	4.7	63
33	Bennuâ€™s near-Earth lifetime of 1.75 million years inferred from craters on its boulders. Nature, 2020, 587, 205-209.	27.8	62
34	In situ evidence of thermally induced rock breakdown widespread on Bennuâ€™s surface. Nature Communications, 2020, 11, 2913.	12.8	62
35	Global Patterns of Recent Mass Movement on Asteroid (101955) Bennu. Journal of Geophysical Research E: Planets, 2020, 125, e2020JE006475.	3.6	60
36	The effect of an early planetesimal-driven migration of the giant planets on terrestrial planet formation. Astronomy and Astrophysics, 2011, 526, A126.	5.1	58

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37	Hemispherical differences in the shape and topography of asteroid (101955) Bennu. Science Advances, 2020, 6, .	10.3	57
38	Exogenic basalt on asteroid (101955) Bennu. Nature Astronomy, 2021, 5, 31-38.	10.1	57
39	Heterogeneous mass distribution of the rubble-pile asteroid (101955) Bennu. Science Advances, 2020, 6, .	10.3	50
40	Fine-regolith production on asteroids controlled by rock porosity. Nature, 2021, 598, 49-52.	27.8	45
41	Planetesimals to terrestrial planets: Collisional evolution amidst a dissipating gas disk. Icarus, 2019, 329, 88-100.	2.5	44
42	Is the Grand Tack model compatible with the orbital distribution of main belt asteroids?. Icarus, 2016, 272, 114-124.	2.5	43
43	A steady-state model of NEA binaries formed by tidal disruption of gravitational aggregates. Icarus, 2008, 193, 553-566.	2.5	42
44	FORMATION AND EVOLUTION OF PLUTOâ€™S SMALL SATELLITES. Astronomical Journal, 2015, 150, 11.	4.7	40
45	Thermal Fatigue as a Driving Mechanism for Activity on Asteroid Bennu. Journal of Geophysical Research E: Planets, 2020, 125, e2019JE006325.	3.6	40
46	Asteroid Ryugu before the Hayabusa2 encounter. Progress in Earth and Planetary Science, 2018, 5, .	3.0	39
47	Spacecraft sample collection and subsurface excavation of asteroid (101955) Bennu. Science, 2022, 377, 285-291.	12.6	39
48	Timing of the formation and migration of giant planets as constrained by CB chondrites. Science Advances, 2016, 2, e1601658.	10.3	38
49	Interpreting the Cratering Histories of Bennu, Ryugu, and Other Spacecraft-explored Asteroids. Astronomical Journal, 2020, 160, 14.	4.7	34
50	Visible spectroscopy of the Polanaâ€“Eulalia family complex: Spectral homogeneity. Icarus, 2016, 266, 57-75.	2.5	33
51	Particle Size-Frequency Distributions of the OSIRIS-REx Candidate Sample Sites on Asteroid (101955) Bennu. Remote Sensing, 2021, 13, 1315.	4.0	33
52	Yarkovsky V-shape identification of asteroid families. Icarus, 2017, 282, 290-312.	2.5	32
53	Near-zero cohesion and loose packing of Bennuâ€™s near subsurface revealed by spacecraft contact. Science Advances, 2022, 8, .	10.3	31
54	The cool surfaces of binary near-Earth asteroids. Icarus, 2011, 212, 138-148.	2.5	30

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55	Meteoroid Impacts as a Source of Bennu's Particle Ejection Events. Journal of Geophysical Research E: Planets, 2020, 125, e2019JE006282.	3.6	30
56	Spin-driven evolution of asteroids' top-shapes at fast and slow spins seen from (101955) Bennu and (162173) Ryugu. Icarus, 2020, 352, 113946.	2.5	28
57	Overcoming the Challenges Associated with Imageâ€Based Mapping of Small Bodies in Preparation for the OSIRISâ€REx Mission to (101955) Bennu. Earth and Space Science, 2018, 5, 929-949.	2.6	26
58	Portrait of the Polanaâ€“Eulalia family complex: Surface homogeneity revealed from near-infrared spectroscopy. Icarus, 2016, 274, 231-248.	2.5	24
59	The Dynamical Evolution of the Asteroid Belt. , 2015, , .		23
60	Directed energy missions for planetary defense. Advances in Space Research, 2016, 58, 1093-1116.	2.6	21
61	Energy Dissipation in Large Collisionsâ€”No Change in Planet Formation Outcomes. Astrophysical Journal, 2019, 876, 103.	4.5	21
62	Modified granular impact force laws for the OSIRIS-REx touchdown on the surface of asteroid (101955) Bennu. Monthly Notices of the Royal Astronomical Society, 2021, 507, 5087-5105.	4.4	21
63	The Morphometry of Impact Craters on Bennu. Geophysical Research Letters, 2020, 47, e2020GL089672.	4.0	20
64	Crater population on asteroid (101955) Bennu indicates impact armouring and a young surface. Nature Geoscience, 2022, 15, 440-446.	12.9	20
65	Low surface strength of the asteroid Bennu inferred from impact ejecta deposit. Nature Geoscience, 2022, 15, 447-452.	12.9	19
66	Stability analysis of the martian obliquity during the Noachian era. Icarus, 2011, 213, 423-427.	2.5	17
67	PHYSICAL CHARACTERIZATION AND ORIGIN OF BINARY NEAR-EARTH ASTEROID (175706) 1996 FG3. Astrophysical Journal, 2012, 748, 104.	4.5	15
68	Potential Themis-family Asteroid Contribution to the Jupiter-family Comet Population. Astronomical Journal, 2020, 159, 179.	4.7	15
69	Rotational states and shapes of Ryugu and Bennu: Implications for interior structure and strength. Planetary and Space Science, 2021, 204, 105268.	1.7	15
70	Internal rubble properties of asteroid (101955) Bennu. Icarus, 2021, 370, 114665.	2.5	15
71	The Role of Hydrated Minerals and Space Weathering Products in the Bluing of Carbonaceous Asteroids. Planetary Science Journal, 2021, 2, 68.	3.6	14
72	The Formation of Terraces on Asteroid (101955) Bennu. Journal of Geophysical Research E: Planets, 2022, 127, .	3.6	14

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73	Global geologic map of asteroid (101955) Bennu indicates heterogeneous resurfacing in the past 500,000Âyears. Icarus, 2022, 381, 114992.	2.5	13
74	Initial velocity V-shapes of young asteroid families. Monthly Notices of the Royal Astronomical Society, 2018, 473, 3949-3968.	4.4	12
75	Geophysical evidence that Saturnâ€™s Moon Phoebe originated from a C-type asteroid reservoir. Monthly Notices of the Royal Astronomical Society, 2019, 486, 538-543.	4.4	12
76	Assessing the Sampleability of Bennuâ€™s Surface for the OSIRIS-REx Asteroid Sample Return Mission. Space Science Reviews, 2022, 218, 20.	8.1	12
77	Chromium Isotopic Evidence for Mixing of NC and CC Reservoirs in Polymict Ureilites: Implications for Dynamical Models of the Early Solar System. Planetary Science Journal, 2021, 2, 13.	3.6	11
78	Alignment of fractures on Bennuâ€™s boulders indicative of rapid asteroid surface evolution. Nature Geoscience, 2022, 15, 453-457.	12.9	11
79	DE-STARLITE - A Directed Energy Planetary Defense Mission. , 2014, , .		10
80	Size-dependent modification of asteroid family Yarkovsky V-shapes. Astronomy and Astrophysics, 2018, 611, A82.	5.1	10
81	Geologic Context of the OSIRIS-REx Sample Site from High-resolution Topography and Imaging. Planetary Science Journal, 2022, 3, 75.	3.6	10
82	Towards understanding the dynamical evolution of asteroid 25143 Itokawa: constraints from sample analysis. Earth, Planets and Space, 2015, 67, .	2.5	8
83	The Formation of Bilobate Comet Shapes through Sublimative Torques. Planetary Science Journal, 2021, 2, 14.	3.6	8
84	Barrel Instability in Binary Asteroids. Planetary Science Journal, 2021, 2, 231.	3.6	8
85	Efficiency characterization of the V-shape asteroid family detection method. Icarus, 2021, 357, 114218.	2.5	7
86	Volatile-rich Asteroids in the Inner Solar System. Planetary Science Journal, 2020, 1, 82.	3.6	7
87	Effects of asteroid rotation on directed energy deflection. Proceedings of SPIE, 2014, , .	0.8	6
88	Orbital Simulations for Directed Energy Deflection of Near-Earth Asteroids. Procedia Engineering, 2015, 103, 671-678.	1.2	6
89	Using a geometrical algorithm to provide N-body initial conditions for the gravitational phase of asteroid family formation. Monthly Notices of the Royal Astronomical Society, 2019, 485, 697-707.	4.4	6
90	Preservation of polar ice on near-Earth asteroids originating in the outer main belt: A model study with dynamical trajectories. Icarus, 2020, 348, 113865.	2.5	5

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91	Charon: A Brief History of Tides. Journal of Geophysical Research E: Planets, 2020, 125, e2020JE006449.	3.6	4
92	Collisional Evolution of Meter- to Kilometer-sized Planetesimals in Mean Motion Resonances: Implications for Inward Planet Shepherding. Astrophysical Journal, 2020, 890, 170.	4.5	4
93	The morphometry of small impact craters on Bennu: Relationships to geologic units, boulders, and impact armoring. Icarus, 2022, 384, 115058.	2.5	3
94	Forming terrestrial planets and delivering water. Proceedings of the International Astronomical Union, 2015, 11, 427-430.	0.0	1
95	Shaping of the Inner Solar System by the Gas-Driven Migration of Jupiter. Proceedings of the International Astronomical Union, 2012, 8, 204-211.	0.0	0