Kevin Hand

List of Publications by Year
in descending order

95 papers	3,324 citations	186265 28 h-index	155660 55 g-index
100 all docs	100 docs citations	100 times ranked	2800 citing authors

#	Article	IF	Citations
1	Mars 2020 Mission Overview. Space Science Reviews, 2020, 216, 1.	8.1	239
2	PROBING FOR EVIDENCE OF PLUMES ON EUROPA WITH HST/STIS. Astrophysical Journal, 2016, 829, 121.	4.5	194
3	Energy, Chemical Disequilibrium, and Geological Constraints on Europa. Astrobiology, 2007, 7, 1006-1022.	3.0	181
4	Geophysical controls of chemical disequilibria in Europa. Geophysical Research Letters, 2016, 43, 4871-4879.	4.0	153
5	SALTS AND RADIATION PRODUCTS ON THE SURFACE OF EUROPA. Astronomical Journal, 2013, 145, 110.	4.7	142
6	Empirical constraints on the salinity of the europan ocean and implications for a thin ice shell. Icarus, 2007, 189, 424-438.	2.5	134
7	Europa's surface color suggests an ocean rich with sodium chloride. Geophysical Research Letters, 2015, 42, 3174-3178.	4.0	129
8	Active Cryovolcanism on Europa?. Astrophysical Journal Letters, 2017, 839, L18.	8.3	125
9	Astrobiology: The Study of the Living Universe. Annual Review of Astronomy and Astrophysics, 2005, 43, 31-74.	24.3	121
10	Sodium chloride on the surface of Europa. Science Advances, 2019, 5, eaaw7123.	10.3	119
11	Science Potential from a Europa Lander. Astrobiology, 2013, 13, 740-773.	3.0	98
12	Perseveranceâ€™s Scanning Habitable Environments with Raman and Luminescence for Organics and Chemicals (SHERLOC) Investigation. Space Science Reviews, 2021, 217, 1.	8.1	94
13	PLANETARY SCIENCE: Enhanced: Life Without Photosynthesis. Science, 2001, 292, 2026-2027.	12.6	88
14	Clathrate Hydrates of Oxidants in the Ice Shell of Europa. Astrobiology, 2006, 6, 463-482.	3.0	86
15	Science Goals and Objectives for the Dragonfly Titan Rotorcraft Relocatable Lander. Planetary Science Journal, 2021, 2, 130.	3.6	80
16	Preservation of potential biosignatures in the shallow subsurface of Europa. Nature Astronomy, 2018, 2, 673-679.	10.1	76
17	Radiolysis and Photolysis of Icy Satellite Surfaces: Experiments and Theory. Space Science Reviews, 2010, 153, 299-315.	8.1	73
18	Clathrate formation and the fate of noble and biologically useful gases in Lake Vostok, Antarctica. Geophysical Research Letters, 2003, 30, .	4.0	63

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19	The Possible Emergence of Life and Differentiation of a Shallow Biosphere on Irradiated Icy Worlds: The Example of Europa. Astrobiology, 2017, 17, 1265-1273.	3.0	58
20	Tubular compression fossils from the Ediacaran Nama group, Namibia. Journal of Paleontology, 2009, 83, 110-122.	0.8	57
21	SPATIALLY RESOLVED SPECTROSCOPY OF EUROPA: THE DISTINCT SPECTRUM OF LARGE-SCALE CHAOS. Astronomical Journal, 2015, 150, 164.	4.7	55
22	H2O2 production by high-energy electrons on icy satellites as a function of surface temperature and electron flux. Icarus, 2011, 215, 226-233.	2.5	46
23	Science Goals and Mission Architecture of the Europa Lander Mission Concept. Planetary Science Journal, 2022, 3, 22.	3.6	42
24	Evidence for Ammonia-bearing Species on the Uranian Satellite Ariel Supports Recent Geologic Activity. Astrophysical Journal Letters, 2020, 898, L22.	8.3	38
25	On the Habitability and Future Exploration of Ocean Worlds. Space Science Reviews, 2020, 216, 1.	8.1	36
26	DEEP-WATER INCISED VALLEY DEPOSITS AT THE EDIACARAN-CAMBRIAN BOUNDARY IN SOUTHERN NAMIBIA CONTAIN ABUNDANT TREPTICHNUS PEDUM. Palaios, 2012, 27, 252-273.	1.3	33
27	KECK II OBSERVATIONS OF HEMISPHERICAL DIFFERENCES IN H ₂ O ₂ ON EUROPA. Astrophysical Journal Letters, 2013, 766, L21.	8.3	33
28	Fourier transform infrared spectroscopy for Mars science. Review of Scientific Instruments, 2005, 76, 034101.	1.3	29
29	Spectral Behavior of Irradiated Sodium Chloride Crystals Under Europaâ€Like Conditions. Journal of Geophysical Research E: Planets, 2017, 122, 2644-2654.	3.6	29
30	Methane sources in arctic thermokarst lake sediments on the <scp>N</scp>orth <scp>S</scp>lope of <scp>A</scp>laska. Geobiology, 2015, 13, 181-197.	2.4	28
31	Differential Incorporation of Bacteria, Organic Matter, and Inorganic Ions Into Lake Ice During Ice Formation. Journal of Geophysical Research G: Biogeosciences, 2019, 124, 585-600.	3.0	26
32	Distinct Microbial Assemblage Structure and Archaeal Diversity in Sediments of Arctic Thermokarst Lakes Differing in Methane Sources. Frontiers in Microbiology, 2018, 9, 1192.	3.5	25
33	The lens feature on the inner saturnian satellites. Icarus, 2014, 234, 155-161.	2.5	24
34	SPATIALLY RESOLVED SPECTROSCOPY OF EUROPAâ€™S LARGE-SCALE COMPOSITIONAL UNITS AT 3â€“4 Î¼m WITH KECK NIRSPEC. Astronomical Journal, 2017, 153, 13.	4.7	24
35	Adsorbed water and thin liquid films on Mars. International Journal of Astrobiology, 2012, 11, 169-175.	1.6	23
36	Exploring ocean worlds on Earth and beyond. Nature Geoscience, 2018, 11, 2-4.	12.9	23

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37	Return to Europa: Overview of the Jupiter Europa orbiter mission. Advances in Space Research, 2011, 48, 629-650.	2.6	22
38	Analog environments for a Europa lander mission. Advances in Space Research, 2011, 48, 689-696.	2.6	21
39	H₂O₂ within Chaos Terrain on Europaâ€™s Leading Hemisphere. Astronomical Journal, 2019, 158, 127.	4.7	20
40	Astrobiology and the Potential for Life on Europa. , 0, , 589-630.		18
41	Production of Sulfur Allotropes in Electron Irradiated Jupiter Trojans Ice Analogs. Astrophysical Journal, 2017, 846, 148.	4.5	17
42	Teleoperation and robotics under ice: Implications for planetary exploration. , 2018, , .		17
43	Follow the Oxygen: Comparative Histories of Planetary Oxygenation and Opportunities for Aerobic Life. Astrobiology, 2019, 19, 811-824.	3.0	17
44	The near-surface electron radiation environment of Saturn's moon Mimas. Icarus, 2017, 286, 56-68.	2.5	16
45	Galactic Cosmic-Ray Bombardment of Europaâ€™s Surface. Astrophysical Journal Letters, 2019, 881, L29.	8.3	16
46	Frontier or fiction. Nature, 2012, 488, 160-161.	27.8	15
47	Visible Near-infrared Spectral Evolution of Irradiated Mixed Ices and Application to Kuiper Belt Objects and Jupiter Trojans. Astrophysical Journal, 2018, 856, 124.	4.5	15
48	Exobiology and Planetary Protection of icy moons. Space Science Reviews, 2010, 153, 511-535.	8.1	13
49	Laboratory spectroscopic analyses of electron irradiated alkanes and alkenes in solar system ices. Journal of Geophysical Research, 2012, 117, .	3.3	13
50	ELECTRON IRRADIATION AND THERMAL PROCESSING OF MIXED-ICES OF POTENTIAL RELEVANCE TO JUPITER TROJAN ASTEROIDS. Astrophysical Journal, 2016, 820, 141.	4.5	13
51	An active nitrogen cycle on Mars sufficient to support a subsurface biosphere. International Journal of Astrobiology, 2012, 11, 109-115.	1.6	12
52	A Search for Water Vapor Plumes on Europa using SOFIA. Astrophysical Journal Letters, 2019, 871, L5.	8.3	12
53	Endogenic and Exogenic Contributions to Visible-wavelength Spectra of Europaâ€™s Trailing Hemisphere. Astronomical Journal, 2020, 160, 282.	4.7	12
54	A New Spectral Feature on the Trailing Hemisphere of Europa at 3.78 Î¼m. Astronomical Journal, 2017, 153, 250.	4.7	11

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55	Low Mass SN Ia and the Late Light Curve. , 1997, , 273-302.		11
56	Magnetospheric Ion Bombardment of Europaâ€™s Surface. Planetary Science Journal, 2022, 3, 5.	3.6	10
57	Microchip nonaqueous capillary electrophoresis of saturated fatty acids using a new fluorescent dye. Analytical Methods, 2014, 6, 9532-9535.	2.7	9
58	Towards a generic and adaptive System-on-Chip controller for space exploration instrumentation. , 2015, , .		9
59	Microbial Habitability of Icy Worlds. Microbe Magazine, 2012, 7, 167-172.	0.4	9
60	Evidence for Sulfur-bearing Species on Callistoâ€™s Leading Hemisphere: Sourced from Jupiterâ€™s Irregular Satellites or Io?. Astrophysical Journal Letters, 2020, 902, L38.	8.3	9
61	Joule heating of the south polar terrain on Enceladus. Journal of Geophysical Research, 2011, 116, .	3.3	8
62	On the Use of System-on-Chip Technology in Next-Generation Instruments Avionics for Space Exploration. IFIP Advances in Information and Communication Technology, 2016, , 1-22.	0.7	8
63	Methods and measurements to assess physical and geochemical conditions at the surface of Europa. Advances in Space Research, 2011, 48, 702-717.	2.6	7
64	Fourier transform spectrometer controller for partitioned architectures. , 2013, , .		7
65	Adaptive controller for a Fourier Transform Spectrometer with space applications. , 2015, , .		7
66	Penitente formation is unlikely on Europa. Nature Geoscience, 2020, 13, 17-19.	12.9	7
67	Discovery of novel structures at 10.7Âkm depth in the Mariana Trench may reveal chemolithoautotrophic microbial communities. Deep-Sea Research Part I: Oceanographic Research Papers, 2020, 160, 103238.	1.4	7
68	Thermal Testing of the Compositional InfraRed Imaging Spectrometer (CIRIS). , 2012, , .		6
69	An integrated SoC for science data processing in next-generation space flight instruments avionics. , 2015, , .		6
70	Energy conservation and Poynting's theorem in the homopolar generator. American Journal of Physics, 2015, 83, 72-75.	0.7	6
71	Erosion of Penitentes Under Experimental Conditions Relevant to Iceâ€Covered Airless Worlds. Journal of Geophysical Research E: Planets, 2021, 126, e2021JE006955.	3.6	6
72	Electric Power Generation from Earthâ€™s Rotation through its Own Magnetic Field. Physical Review Applied, 2016, 6, .	3.8	5

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73	A Comprehensive Revisit of Select Galileo/NIMS Observations of Europa. Planetary Science Journal, 2021, 2, 183.	3.6	5
74	Spectral Evidence for Irradiated Sodium Chloride on the Surface of 1 Ceres. Geophysical Research Letters, 2022, 49, .	4.0	5
75	Comets and Prebiotic Organic Molecules on Early Earth. , 2006, , 169-206.		4
76	Spectroscopic and spectrometric differentiation between abiotic and biogenic material on icy worlds. Proceedings of the International Astronomical Union, 2010, 6, 165-176.	0.0	4
77	Enceladus Vent Explorer Concept. , 2018, , 665-717.		4
78	Magnetic induction heating of planetary satellites: Analytical formulae and applications. Icarus, 2021, 360, 114360.	2.5	4
79	Hubble Space Telescope observations of Europa in and out of eclipse. International Journal of Astrobiology, 2010, 9, 265-271.	1.6	3
80	The mid-IR spectral effects of darkening agents and porosity on the silicate surface features of airless bodies. Icarus, 2019, 321, 71-81.	2.5	3
81	Effect of H₂S on the Near-infrared Spectrum of Irradiation Residue and Applications to the Kuiper Belt Object (486958) Arrokoth. Astrophysical Journal Letters, 2021, 914, L31.	8.3	3
82	Compositions of dissolved organic matter in the ice-covered waters above the Aurora hydrothermal vent system, Gakkel Ridge, Arctic Ocean. Biogeosciences, 2022, 19, 2101-2120.	3.3	3
83	Design and integration of an adaptive controller for a Fourier Transform Spectrometer. , 2014, , .		2
84	Designing a SoC to control the next-generation space exploration flight science instruments. , 2015, , .		2
85	Radiation Noise Effects at Jupiterâ€™s Moon Europa: In-Situ and Laboratory Measurements and Radiation Transport Calculations. IEEE Transactions on Nuclear Science, 2015, 62, 2273-2282.	2.0	2
86	Halogens on and Within the Ocean Worlds of the Outer Solar System. Springer Geochemistry, 2018, , 997-1016.	0.1	2
87	Demonstration of Autonomous Nested Search for Local Maxima Using an Unmanned Underwater Vehicle. , 2020, , .		2
88	Utilizing active mid-infrared microspectrometry for in situ analysis of cryptoendolithic microbial communities of Battleship Promontory, Dry Valleys, Antarctica. , 2005, , .		1
89	SILICATES ON IAPETUS FROM CASSINIâ€™S COMPOSITE INFRARED SPECTROMETER. Astrophysical Journal Letters, 2015, 811, L27.	8.3	1
90	A Highly-Efficient, Adaptive and Fault-Tolerant SoC Implementation of a Fourier Transform Spectrometer Data Processing. , 2015, , .		1

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91	Reply to â€œComment on â€˜Electric Power Generation from Earthâ€™s Rotation through its Own Magnetic Fieldâ€™â€‰â€•â€: Physical Review Applied, 2020, 13, .	3.8	1
92	Internal-current Lorentz-force Heating of Astrophysical Objects. Astrophysical Journal Letters, 2021, 922, L38.	8.3	1
93	Exploring the Ocean Worlds. , 2018, , .		0
94	Life beneath an icy moon. New Scientist, 2020, 246, 40-43.	0.0	0
95	Radiolysis and Photolysis of Icy Satellite Surfaces: Experiments and Theory. Space Sciences Series of ISSI, 2010, , 297-313.	0.0	0