Patrick N Peplowski

List of Publications by Year
in descending order

86	2,932	186265	175258
papers	citations	28 h-index	52 g-index

89	89	89	2078
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Radioactive Elements on Mercuryâ€™s Surface from MESSENGER: Implications for the Planetâ€™s Formation and Evolution. Science, 2011, 333, 1850-1852.	12.6	233
2	The distribution and origin of smooth plains on Mercury. Journal of Geophysical Research E: Planets, 2013, 118, 891-907.	3.6	193
3	Evidence for Water Ice Near Mercuryâ€™s North Pole from MESSENGER Neutron Spectrometer Measurements. Science, 2013, 339, 292-296.	12.6	173
4	Evidence for geochemical terranes on Mercury: Global mapping of major elements with MESSENGER's X-Ray Spectrometer. Earth and Planetary Science Letters, 2015, 416, 109-120.	4.4	167
5	Majorâ€element abundances on the surface of Mercury: Results from the MESSENGER Gammaâ€Ray Spectrometer. Journal of Geophysical Research, 2012, 117, .	3.3	146
6	Remote sensing evidence for an ancient carbon-bearing crust on Mercury. Nature Geoscience, 2016, 9, 273-276.	12.9	134
7	Mercuryâ€™s Weather-Beaten Surface: Understanding Mercury in the Context of Lunar and Asteroidal Space Weathering Studies. Space Science Reviews, 2014, 181, 121-214.	8.1	108
8	Variations in the abundances of potassium and thorium on the surface of Mercury: Results from the MESSENGER Gammaâ€Ray Spectrometer. Journal of Geophysical Research, 2012, 117, .	3.3	85
9	Enhanced sodium abundance in Mercuryâ€™s north polar region revealed by the MESSENGER Gamma-Ray Spectrometer. Icarus, 2014, 228, 86-95.	2.5	85
10	Science Goals and Objectives for the Dragonfly Titan Rotorcraft Relocatable Lander. Planetary Science Journal, 2021, 2, 130.	3.6	80
11	Geochemistry, mineralogy, and petrology of boninitic and komatiitic rocks on the mercurian surface: Insights into the mercurian mantle. Icarus, 2017, 285, 155-168.	2.5	79
12	Geochemical terranes of Mercuryâ€™s northern hemisphere as revealed by MESSENGER neutron measurements. Icarus, 2015, 253, 346-363.	2.5	74
13	Chlorine on the surface of Mercury: MESSENGER gamma-ray measurements and implications for the planetâ€™s formation and evolution. Icarus, 2015, 257, 417-427.	2.5	66
14	Observations, Meteorites, and Models: A Preflight Assessment of the Composition and Formation of (16) Psyche. Journal of Geophysical Research E: Planets, 2020, 125, e2019JE006296.	3.6	61
15	Constraints on the abundance of carbon in near-surface materials on Mercury: Results from the MESSENGER Gamma-Ray Spectrometer. Planetary and Space Science, 2015, 108, 98-107.	1.7	57
16	Evidence from MESSENGER for sulfurâ€•and carbonâ€driven explosive volcanism on Mercury. Geophysical Research Letters, 2016, 43, 3653-3661.	4.0	57
17	Compositional variability on the surface of 4 Vesta revealed through <scp>GR</scp>a<scp>ND</scp> measurements of highâ€energy gamma rays. Meteoritics and Planetary Science, 2013, 48, 2252-2270.	1.6	53
18	Olivine or impact melt: Nature of the â€œOrangeâ€•material on Vesta from Dawn. Icarus, 2013, 226, 1568-1594.	2.5	47

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19	Neutron absorption constraints on the composition of 4 Vesta. Meteoritics and Planetary Science, 2013, 48, 2211-2236.	1.6	47
20	The Chemical Composition of Mercury. , 2018, , 30-51.		43
21	Astrophysical Reaction Rate for the Neutron-Generator ReactionC13(Î±,n)O16in Asymptotic Giant Branch Stars. Physical Review Letters, 2006, 97, 192701.	7.8	41
22	Global Distribution and Spectral Properties of Lowâ€Reflectance Material on Mercury. Geophysical Research Letters, 2018, 45, 2945-2953.	4.0	41
23	Low<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mi>l</mml:mi><mml:mo>=</mml:mo><mml:mn>0</mml:mn></mml:mrow></mml:math>proton resonance in<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mmultiscripts><mml:mi mathvariant="normal">Si</mml:mi><mml:mprescripts /><mml:none /><mml:mrow><mml:mn>26</mml:mn></mml:mrow></mml:mmultiscripts></mml:math>and implications	2.9	37
24	Comprehensive survey of energetic electron events in Mercury's magnetosphere with data from the MESSENGER Gammaâ€Ray and Neutron Spectrometer. Journal of Geophysical Research: Space Physics, 2015, 120, 2851-2876.	2.4	36
25	A Low O/Si Ratio on the Surface of Mercury: Evidence for Silicon Smelting?. Journal of Geophysical Research E: Planets, 2017, 122, 2053-2076.	3.6	36
26	Distribution of iron on Vesta. Meteoritics and Planetary Science, 2013, 48, 2237-2251.	1.6	35
27	Intense energetic electron flux enhancements in Mercury's magnetosphere: An integrated view with highâ€resolution observations from MESSENGER. Journal of Geophysical Research: Space Physics, 2016, 121, 2171-2184.	2.4	31
28	Hydrogen and major element concentrations on 433 Eros: Evidence for an Lâ€or <scp>LL</scp>â€chondriteâ€like surface composition. Meteoritics and Planetary Science, 2015, 50, 353-367.	1.6	30
29	Compositional terranes on Mercury: Information from fast neutrons. Icarus, 2017, 281, 32-45.	2.5	30
30	Constraints on Vesta's elemental composition: Fast neutron measurements by Dawn's gamma ray and neutron detector. Meteoritics and Planetary Science, 2013, 48, 2271-2288.	1.6	28
31	Current nuclear data needs for applications. Physical Review Research, 2022, 4, .	3.6	28
32	Measuring the Elemental Composition of Phobos: The Marsâ€moon Exploration with GAmma rays and NEutrons (MEGANE) Investigation for the Martian Moons eXploration (MMX) Mission. Earth and Space Science, 2019, 6, 2605-2623.	2.6	26
33	Using <scp>HED</scp> meteorites to interpret neutron and gammaâ€ray data from asteroidÂ4 Vesta. Meteoritics and Planetary Science, 2015, 50, 1311-1337.	1.6	24
34	Aluminum abundance on the surface of Mercury: Application of a new backgroundâ€reduction technique for the analysis of gammaâ€ray spectroscopy data. Journal of Geophysical Research, 2012, 117, .	3.3	23
35	The Engineering Radiation Monitor for the Radiation Belt Storm Probes Mission. Space Science Reviews, 2013, 179, 485-502.	8.1	22
36	Science operation plan of Phobos and Deimos from the MMX spacecraft. Earth, Planets and Space, 2021, 73, .	2.5	22

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37	Mass-fragment isomers populated via<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mmultiscripts><mml:mi mathvariant="normal">Li</mml:mi><mml:mprescripts /><mml:none /><mml:mrow><mml:mn>6</mml:mn></mml:mrow></mml:mmultiscripts><mml:mo>+</mml:mo><mml:mmultiscripts><mml:mi mathvariant="normal">Th</mml:mi><mml:mprescripts /><mml:none /><mml:mrow><mml:mn>232</mml:mn></mml:mrow></mml:mmultiscripts></mml:mrow></mml:math>.	2.9	21
38	Bulk hydrogen abundances in the lunar highlands: Measurements from orbital neutron data. Icarus, 2015, 255, 127-134.	2.5	21
39	Galactic cosmic ray variations in the inner heliosphere from solar distances less than 0.5â€‰AU: Measurements from the MESSENGER Neutron Spectrometer. Journal of Geophysical Research: Space Physics, 2016, 121, 7398-7406.	2.4	21
40	The Geochemical and Mineralogical Diversity of Mercury. , 2018, , 176-190.		21
41	Analysis of MESSENGER Gamma-Ray Spectrometer data from the Mercury flybys. Planetary and Space Science, 2011, 59, 1829-1841.	1.7	18
42	Space-based measurement of the neutron lifetime using data from the neutron spectrometer on NASA's MESSENGER mission. Physical Review Research, 2020, 2, .	3.6	17
43	Low-lying states in<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mmultiscripts><mml:mi mathvariant="normal">B</mml:mi><mml:mprescripts /><mml:none /><mml:mrow><mml:mn>8</mml:mn></mml:mrow></mml:mmultiscripts></mml:math>. Physical Review C, 2010, 82, .	2.9	15
44	Geochemistry of the lunar highlands as revealed by measurements of thermal neutrons. Journal of Geophysical Research E: Planets, 2016, 121, 388-401.	3.6	15
45	The global elemental composition of 433 Eros: First results from the NEAR gamma-ray spectrometer orbital dataset. Planetary and Space Science, 2016, 134, 36-51.	1.7	15
46	Analytical Identification and Characterization of the Major Geochemical Terranes of Mercury's Northern Hemisphere. Journal of Geophysical Research E: Planets, 2019, 124, 2414-2429.	3.6	15
47	Structure of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msup><mml:mrow /><mml:mn>8</mml:mn></mml:msup></mml:math>B from elastic and inelastic<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msup><mml:mrow /><mml:mn>7</mml:mn></mml:msup></mml:math>Be+<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>p</mml:mi></mml:math>	2.9	14
48	Chemically distinct regions of Venusâ€™s atmosphere revealed by measured N2 concentrations. Nature Astronomy, 2020, 4, 947-950.	10.1	14
49	Distinguishing the Origin of Asteroid (16) Psyche. Space Science Reviews, 2022, 218, 17.	8.1	13
50	Early Results From the Engineering Radiation Monitor (ERM) and Solar Cell Monitor on the Van Allen Probes Mission. IEEE Transactions on Nuclear Science, 2013, 60, 4053-4058.	2.0	12
51	RadFET Dosimeters in the Belt: the Van Allen Probes on Day 365. IEEE Transactions on Nuclear Science, 2014, 61, 948-954.	2.0	12
52	Detection and characterization of 0.5â€“8â€‰MeV neutrons near Mercury: Evidence for a solar origin. Journal of Geophysical Research: Space Physics, 2014, 119, 5150-5171.	2.4	12
53	The MESSENGER Gamma-Ray Spectrometer: Calibration and operations. Icarus, 2017, 288, 186-200.	2.5	12
54	New insights into the global composition of the lunar surface from highâ€energy gamma rays measured by Lunar Prospector. Journal of Geophysical Research E: Planets, 2013, 118, 671-688.	3.6	11

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55	Igneous lithologies on asteroid (4) Vesta mapped using gamma-ray and neutron data. Icarus, 2017, 286, 35-45.	2.5	11
56	Mapping iron abundances on the surface of Mercury: Predicted spatial resolution of the MESSENGER Gamma-Ray Spectrometer. Planetary and Space Science, 2011, 59, 1654-1658.	1.7	10
57	Near-space operation of compact CsI, CLYC, and CeBr<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline" overflow="scroll" id="d1e513" altimg="si1.gif"><mml:msub><mml:mrow /><mml:mrow><mml:mn>3</mml:mn></mml:mrow></mml:msub></mml:math>sensors: Results from two high-altitude balloon flights. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2018, 905, 33-46.	1.6	10
58	High-resolution mapping of lunar polar hydrogen with a low-resource orbital mission. Acta Astronautica, 2015, 115, 452-462.	3.2	9
59	Compositional variability on the surface of 1 Ceres revealed through GRaND measurements of highâ€energy gamma rays. Meteoritics and Planetary Science, 2018, 53, 1805-1819.	1.6	9
60	Image Reconstruction Techniques in Neutron and Gamma Ray Spectroscopy: Improving Lunar Prospector Data. Journal of Geophysical Research E: Planets, 2018, 123, 1804-1822.	3.6	9
61	Cosmogenic radionuclide production modeling with Geant4: Experimental benchmarking and application to nuclear spectroscopy of asteroid (16) Psyche. Nuclear Instruments & Methods in Physics Research B, 2019, 446, 43-57.	1.4	9
62	Radiation damage and annealing of three coaxial n-type germanium detectors: Preparation for spaceflight missions to asteroid 16 Psyche and Marsâ€™ moon Phobos. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2019, 942, 162409.	1.6	8
63	Measurement of the free neutron lifetime using the neutron spectrometer on NASA's Lunar Prospector mission. Physical Review C, 2021, 104, .	2.9	8
64	The Engineering Radiation Monitor for the Radiation Belt Storm Probes Mission. , 2012, , 485-502.		7
65	Predictions of MESSENGER Neutron Spectrometer measurements for Mercury's north polar region. Planetary and Space Science, 2011, 59, 1665-1669.	1.7	6
66	Neutrons and energetic charged particles in the inner heliosphere: Measurements of the MESSENGER Neutron Spectrometer from 0.3 to 0.85â€‰AU. Journal of Geophysical Research: Space Physics, 2015, 120, 841-854.	2.4	6
67	GeMini: A High-Resolution, Low-Resource, Gamma-Ray Spectrometer for Planetary Science Applications. Space Science Reviews, 2020, 216, 1.	8.1	6
68	Position-dependent neutron detection efficiency loss in 3He gas proportional counters. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2020, 982, 164574.	1.6	6
69	Space-based measurements of neutron lifetime: Approaches to resolving the neutron lifetime anomaly. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2021, 988, 164919.	1.6	6
70	Potential Applications of Nuclear Resonance Fluorescence. , 2009, , .		5
71	Cross sections for the production of radionuclides via natCu(p,X) spallation reactions for proton energies from 250 MeV to 2 GeV. Nuclear Physics A, 2021, 1006, 122067.	1.5	5
72	Global Hydrogen Abundances on the Lunar Surface. Journal of Geophysical Research E: Planets, 2022, 127, .	3.6	5

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73	RADFET dosimeters in the belt: The Van Allen Probes on day 365. , 2013, , .		4
74	The 4 June 2011 neutron event at Mercury: A defense of the solar origin hypothesis. Journal of Geophysical Research: Space Physics, 2015, 120, 5284-5289.	2.4	4
75	Statistical Study of Mercury's Energetic Electron Events as Observed by the Gammaâ€Ray and Neutron Spectrometer Instrument Onboard MESSENGER. Journal of Geophysical Research: Space Physics, 2018, 123, 4961-4978.	2.4	4
76	MESSENGER Gamma Ray Spectrometer and Epithermal Neutron Hydrogen Data Reveal Compositional Differences Between Mercury's Hot and Cold Poles. Journal of Geophysical Research E: Planets, 2019, 124, 721-733.	3.6	4
77	Deciphering Redox State for a Metal-Rich World. Space Science Reviews, 2022, 218, 6.	8.1	4
78	MEGANE investigations of Phobos and the Small Body Mapping Tool. Earth, Planets and Space, 2021, 73, 217.	2.5	4
79	Characterizing near-surface elemental layering on Mars using gamma-ray spectroscopy: A proof-of-principle experiment. Nuclear Instruments & Methods in Physics Research B, 2018, 415, 89-99.	1.4	3
80	Applications of nuclear resonance fluorescence. , 2010, , .		2
81	Operation of a 3He proportional counter in the Ganymede radiation environment. Planetary and Space Science, 2012, 61, 46-52.	1.7	2
82	Longâ€duration neutron production by nonflaring transients in the solar corona. Journal of Geophysical Research: Space Physics, 2015, 120, 8247-8266.	2.4	2
83	Science Goals and Mission Concept for a Landed Investigation of Mercury. Planetary Science Journal, 2022, 3, 68.	3.6	2
84	Thermal neutron activation of a CeBr<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline" id="d1e719" altimg="si6.svg"><mml:msub><mml:mrow /><mml:mrow><mml:mn>3</mml:mn></mml:mrow></mml:msub></mml:math> gamma-ray sensor. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2022, 1029, 166396.	1.6	1
85	Pulsed neutron generator â€" gamma ray spectrometer measurements of venus elemental composition. , 2016, , .		0
86	Ex luna, scientia: lunar occultation as a paradigm for nuclear astrophysics. , 2016, , .		0