

Thomas H Prettyman

List of Publications by Year in descending order

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125
papers

8,925
citations

53794

45
h-index

40979

93
g-index

131
all docs

131
docs citations

131
times ranked

3896
citing authors

#	ARTICLE	IF	CITATIONS
1	Ceres, a wet planet: The view after Dawn. <i>Chemie Der Erde</i> , 2022, 82, 125745.	2.0	1
2	Concepts for the Future Exploration of Dwarf Planet Ceresâ€™ Habitability. <i>Planetary Science Journal</i> , 2022, 3, 41.	3.6	9
3	Carbon and Organic Matter on Ceres. , 2022, , 121-133.		0
4	Deciphering Redox State for a Metal-Rich World. <i>Space Science Reviews</i> , 2022, 218, 6.	8.1	4
5	Distinguishing the Origin of Asteroid (16) Psyche. <i>Space Science Reviews</i> , 2022, 218, 17.	8.1	13
6	Fundamental Science and Engineering Questions in Planetary Cave Exploration. <i>Journal of Geophysical Research E: Planets</i> , 2022, 127, .	3.6	8
7	Determining the Relative Cratering Ages of Regions of Psycheâ€™s Surface. <i>Space Science Reviews</i> , 2022, 218, 1.	8.1	4
8	A roadmap for planetary caves science and exploration. <i>Nature Astronomy</i> , 2021, 5, 524-525.	10.1	19
9	Replenishment of Nearâ€™Surface Water Ice by Impacts Into Ceres' Volatileâ€™Rich Crust: Observations by Dawn's Gamma Ray and Neutron Detector. <i>Geophysical Research Letters</i> , 2021, 48, e2021GL094223.	4.0	2
10	Ceres: Astrobiological Target and Possible Ocean World. <i>Astrobiology</i> , 2020, 20, 269-291.	3.0	43
11	Evidence of non-uniform crust of Ceres from Dawnâ€™s high-resolution gravity data. <i>Nature Astronomy</i> , 2020, 4, 748-755.	10.1	30
12	Impact-driven mobilization of deep crustal brines on dwarf planet Ceres. <i>Nature Astronomy</i> , 2020, 4, 741-747.	10.1	50
13	A Probabilistic Approach to Determination of Ceres' Average Surface Composition From Dawn Visibleâ€™Infrared Mapping Spectrometer and Gamma Ray and Neutron Detector Data. <i>Journal of Geophysical Research E: Planets</i> , 2020, 125, e2020JE006606.	3.6	11
14	Observations, Meteorites, and Models: A Preflight Assessment of the Composition and Formation of (16) Psyche. <i>Journal of Geophysical Research E: Planets</i> , 2020, 125, e2019JE006296.	3.6	61
15	Neutron, Gamma-Ray, and X-Ray Spectroscopy. , 2019, , 191-238.		1
16	A Global Inventory of Iceâ€™Related Morphological Features on Dwarf Planet Ceres: Implications for the Evolution and Current State of the Cryosphere. <i>Journal of Geophysical Research E: Planets</i> , 2019, 124, 1650-1689.	3.6	33
17	Search for water outgassing of (1) Ceres near perihelion. <i>Astronomy and Astrophysics</i> , 2019, 628, A22.	5.1	9
18	Neutron, Gamma-Ray, and X-Ray Spectroscopy of Planetary Bodies. , 2019, , 588-603.		2

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19	Water Vapor Contribution to Ceres' Exosphere From Observed Surface Ice and Postulated Ice-Exposing Impacts. <i>Journal of Geophysical Research E: Planets</i> , 2019, 124, 61-75.	3.6	20
20	An aqueously altered carbon-rich Ceres. <i>Nature Astronomy</i> , 2019, 3, 140-145.	10.1	62
21	Driven by excess? Climatic implications of new global mapping of near-surface water-equivalent hydrogen on Mars. <i>Icarus</i> , 2018, 301, 97-116.	2.5	27
22	Carbonaceous chondrites as analogs for the composition and alteration of Ceres. <i>Meteoritics and Planetary Science</i> , 2018, 53, 1793-1804.	1.6	65
23	Compositional variability on the surface of 1 Ceres revealed through GRaND measurements of high-energy gamma rays. <i>Meteoritics and Planetary Science</i> , 2018, 53, 1805-1819.	1.6	9
24	Insights into Ceres's evolution from surface composition. <i>Meteoritics and Planetary Science</i> , 2018, 53, 1820-1843.	1.6	73
25	Igneous lithologies on asteroid (4) Vesta mapped using gamma-ray and neutron data. <i>Icarus</i> , 2017, 286, 35-45.	2.5	11
26	The Dependence of the Cerean Exosphere on Solar Energetic Particle Events. <i>Astrophysical Journal Letters</i> , 2017, 838, L8.	8.3	41
27	Extensive water ice within Ceres' aqueously altered regolith: Evidence from nuclear spectroscopy. <i>Science</i> , 2017, 355, 55-59.	12.6	169
28	Conditions for Sublimating Water Ice to Supply Ceres' Exosphere. <i>Journal of Geophysical Research E: Planets</i> , 2017, 122, 1984-1995.	3.6	40
29	Pitted terrains on (1) Ceres and implications for shallow subsurface volatile distribution. <i>Geophysical Research Letters</i> , 2017, 44, 6570-6578.	4.0	48
30	The CO ₂ Cycle. , 2017, , 374-404.		5
31	The Putative Cerean Exosphere. <i>Astrophysical Journal</i> , 2017, 850, 85.	4.5	19
32	SURFACE ALBEDO AND SPECTRAL VARIABILITY OF CERES. <i>Astrophysical Journal Letters</i> , 2016, 817, L22.	8.3	42
33	Dawn arrives at Ceres: Exploration of a small, volatile-rich world. <i>Science</i> , 2016, 353, 1008-1010.	12.6	178
34	Integration of a 6LiInSe ₂ thermal neutron detector into a CubeSat instrument. <i>Journal of Astronomical Telescopes, Instruments, and Systems</i> , 2016, 2, 046001.	1.8	2
35	Using <sc>HED</sc> meteorites to interpret neutron and gamma-ray data from asteroid 4 Vesta. <i>Meteoritics and Planetary Science</i> , 2015, 50, 1311-1337.	1.6	24
36	Ammoniated phyllosilicates with a likely outer Solar System origin on (1) Ceres. <i>Nature</i> , 2015, 528, 241-244.	27.8	276

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37	Bulk hydrogen abundances in the lunar highlands: Measurements from orbital neutron data. <i>Icarus</i> , 2015, 255, 127-134.	2.5	21
38	Concentrations of potassium and thorium within Vesta's regolith. <i>Icarus</i> , 2015, 259, 39-52.	2.5	33
39	Asteroid (4) Vesta II: Exploring a geologically and geochemically complex world with the Dawn Mission. <i>Chemie Der Erde</i> , 2015, 75, 273-285.	2.0	18
40	Remote Sensing of Chemical Elements Using Nuclear Spectroscopy. , 2014, , 1161-1183.		10
41	Unique, Antique Vesta. <i>Elements</i> , 2014, 10, 39-44.	0.5	8
42	Detection of serpentine in exogenic carbonaceous chondrite material on Vesta from Dawn FC data. <i>Icarus</i> , 2014, 239, 222-237.	2.5	34
43	The geology of the Marcia quadrangle of asteroid Vesta: Assessing the effects of large, young craters. <i>Icarus</i> , 2014, 244, 74-88.	2.5	36
44	The contamination of the surface of Vesta by impacts and the delivery of the dark material. <i>Icarus</i> , 2014, 240, 86-102.	2.5	28
45	DPA-Based Fast Neutron Dosimeter for the Space Environment. <i>IEEE Transactions on Nuclear Science</i> , 2013, 60, 830-836.	2.0	6
46	Evidence for Water Ice Near Mercury's North Pole from MESSENGER Neutron Spectrometer Measurements. <i>Science</i> , 2013, 339, 292-296.	12.6	173
47	Olivine or impact melt: Nature of the "Orange" material on Vesta from Dawn. <i>Icarus</i> , 2013, 226, 1568-1594.	2.5	47
48	Dawn completes its mission at 4 Vesta. <i>Meteoritics and Planetary Science</i> , 2013, 48, 2076-2089.	1.6	54
49	Distribution of iron on Vesta. <i>Meteoritics and Planetary Science</i> , 2013, 48, 2237-2251.	1.6	35
50	Constraints on Vesta's elemental composition: Fast neutron measurements by Dawn's gamma ray and neutron detector. <i>Meteoritics and Planetary Science</i> , 2013, 48, 2271-2288.	1.6	28
51	Compositional variability on the surface of 4 Vesta revealed through GR/ND measurements of high-energy gamma rays. <i>Meteoritics and Planetary Science</i> , 2013, 48, 2252-2270.	1.6	53
52	Dawn; the Vesta-HED connection; and the geologic context for eucrites, diogenites, and howardites. <i>Meteoritics and Planetary Science</i> , 2013, 48, 2090-2104.	1.6	185
53	Chondritic models of 4 Vesta: Implications for geochemical and geophysical properties. <i>Meteoritics and Planetary Science</i> , 2013, 48, 2300-2315.	1.6	66
54	Neutron absorption constraints on the composition of 4 Vesta. <i>Meteoritics and Planetary Science</i> , 2013, 48, 2211-2236.	1.6	47

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55	Vesta, vestoids, and the HED meteorites: Interconnections and differences based on <i>Dawn</i> Framing Camera observations. <i>Journal of Geophysical Research E: Planets</i> , 2013, 118, 1991-2003.	3.6	11
56	Composition of the Rheasilvia basin, a window into Vesta's interior. <i>Journal of Geophysical Research E: Planets</i> , 2013, 118, 335-346.	3.6	84
57	Elemental Mapping by Dawn Reveals Exogenic H in Vesta's Regolith. <i>Science</i> , 2012, 338, 242-246.	12.6	201
58	Dawn at Vesta: Testing the Protoplanetary Paradigm. <i>Science</i> , 2012, 336, 684-686.	12.6	422
59	Vesta's Shape and Morphology. <i>Science</i> , 2012, 336, 687-690.	12.6	222
60	Sensitivity of orbital neutron measurements to the thickness and abundance of surficial lunar water. <i>Journal of Geophysical Research</i> , 2011, 116, .	3.3	24
61	Mars Odyssey neutron data: 2. Search for buried excess water ice deposits at nonpolar latitudes on Mars. <i>Journal of Geophysical Research</i> , 2011, 116, .	3.3	51
62	Dawn's Gamma Ray and Neutron Detector. , 2011, , 371-459.		8
63	Space neutron spectrometer design with SSPM-based instrumentation. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 2011, 652, 342-346.	1.6	3
64	Surface Composition of Vesta: Issues and Integrated Approach. <i>Space Science Reviews</i> , 2011, 163, 117-139.	8.1	25
65	Dawn's Gamma Ray and Neutron Detector. <i>Space Science Reviews</i> , 2011, 163, 371-459.	8.1	160
66	Spacecraft instrument technology and cosmochemistry. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2011, 108, 19177-19182.	7.1	8
67	Technical Comment on "Hydrogen Mapping of the Lunar South Pole Using the LRO Neutron Detector Experiment LEND" <i>Science</i> , 2011, 334, 1058-1058.	12.6	25
68	Surface Composition of Vesta: Issues and Integrated Approach. , 2011, , 117-139.		0
69	Performance of Orbital Neutron Instruments for Spatially Resolved Hydrogen Measurements of Airless Planetary Bodies. <i>Astrobiology</i> , 2010, 10, 183-200.	3.0	23
70	K&T&Ti systematics and new three-component mixing model of HED meteorites: Prospective study for interpretation of gamma-ray and neutron spectra for the Dawn mission. <i>Meteoritics and Planetary Science</i> , 2010, 45, 1170-1190.	1.6	14
71	Characterization of Mars' seasonal caps using neutron spectroscopy. <i>Journal of Geophysical Research</i> , 2009, 114, .	3.3	37
72	Comparison of neutron sensitive scintillators for use with a solid-state optical detector. , 2009, , .		2

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73	Hydrogen content of sand dunes within Olympia Undae. <i>Icarus</i> , 2008, 196, 422-432.	2.5	49
74	H layering in the top meter of Mars. <i>Icarus</i> , 2008, 196, 409-421.	2.5	32
75	Surface and Downhole Prospecting Tools for Planetary Exploration: Tests of Neutron and Gamma Ray Probes. <i>Astrobiology</i> , 2008, 8, 639-652.	3.0	14
76	Neutron detectors based on CMOS solid state photomultipliers. <i>Proceedings of SPIE</i> , 2008, , .	0.8	0
77	Volatiles on Mars: scientific results from the Mars Odyssey Neutron Spectrometer. , 2008, , 125-148.		20
78	Martian polar processes. , 2008, , 578-598.		17
79	Remote Chemical Sensing Using Nuclear Spectroscopy. , 2007, , 765-786.		9
80	Global spatial deconvolution of Lunar Prospector Th abundances. <i>Geophysical Research Letters</i> , 2007, 34, .	4.0	64
81	Vertical distribution of hydrogen at high northern latitudes on Mars: The Mars Odyssey Neutron Spectrometer. <i>Geophysical Research Letters</i> , 2007, 34, .	4.0	35
82	Dawn Mission to Vesta and Ceres. <i>Earth, Moon and Planets</i> , 2007, 101, 65-91.	0.6	125
83	Exploring the asteroid belt with ion propulsion: Dawn mission history, status and plans. <i>Advances in Space Research</i> , 2007, 40, 193-201.	2.6	32
84	Understanding the Lunar Surface and Space-Moon Interactions. <i>Reviews in Mineralogy and Geochemistry</i> , 2006, 60, 83-219.	4.8	274
85	MCNPX benchmark for cosmic ray interactions with the Moon. <i>Journal of Geophysical Research</i> , 2006, 111, .	3.3	92
86	Improved modeling of Lunar Prospector neutron spectrometer data: Implications for hydrogen deposits at the lunar poles. <i>Journal of Geophysical Research</i> , 2006, 111, .	3.3	136
87	Elemental composition of the lunar surface: Analysis of gamma ray spectroscopy data from Lunar Prospector. <i>Journal of Geophysical Research</i> , 2006, 111, n/a-n/a.	3.3	342
88	Dawn Discovery mission to Vesta and Ceres: Present status. <i>Advances in Space Research</i> , 2006, 38, 2043-2048.	2.6	26
89	Evidence for a high-Th, evolved lithology on the Moon at Hansteen Alpha. <i>Geophysical Research Letters</i> , 2005, 32, n/a-n/a.	4.0	30
90	Topographic control of hydrogen deposits at low latitudes to midlatitudes of Mars. <i>Journal of Geophysical Research</i> , 2005, 110, .	3.3	34

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91	The presence and stability of ground ice in the southern hemisphere of Mars. <i>Icarus</i> , 2004, 169, 324-340.	2.5	299
92	Dawn: A journey in space and time. <i>Planetary and Space Science</i> , 2004, 52, 465-489.	1.7	100
93	Composition and structure of the Martian surface at high southern latitudes from neutron spectroscopy. <i>Journal of Geophysical Research</i> , 2004, 109, .	3.3	101
94	Global distribution of near-surface hydrogen on Mars. <i>Journal of Geophysical Research</i> , 2004, 109, .	3.3	423
95	Gamma-Ray, Neutron, and Alpha-Particle Spectrometers for the Lunar Prospector mission. <i>Journal of Geophysical Research</i> , 2004, 109, .	3.3	109
96	Depth, distribution, and density of CO ₂ deposition on Mars. <i>Journal of Geophysical Research</i> , 2004, 109, .	3.3	72
97	Hydrated states of MgSO ₄ at equatorial latitudes on Mars. <i>Geophysical Research Letters</i> , 2004, 31, .	4.0	65
98	Recharge mechanism of near-equatorial hydrogen on Mars: Atmospheric redistribution or sub-surface aquifer. <i>Geophysical Research Letters</i> , 2004, 31, .	4.0	16
99	Mapping the elemental composition of Ceres and Vesta: Dawn"s gamma ray and neutron detector. , 2004, , .		7
100	Latitude variation of the subsurface lunar temperature: Lunar Prospector thermal neutrons. <i>Journal of Geophysical Research</i> , 2003, 108, .	3.3	19
101	Mars odyssey neutron sensing of the south residual polar cap. <i>Geophysical Research Letters</i> , 2003, 30, .	4.0	18
102	Small-area thorium features on the lunar surface. <i>Journal of Geophysical Research</i> , 2003, 108, .	3.3	171
103	CO ₂ frost cap thickness on Mars during northern winter and spring. <i>Journal of Geophysical Research</i> , 2003, 108, .	3.3	45
104	Gamma-ray and neutron spectrometer for the Dawn mission to 1 Ceres and 4 Vesta. <i>IEEE Transactions on Nuclear Science</i> , 2003, 50, 1190-1197.	2.0	36
105	CdZnTe gamma-ray spectrometer for orbital planetary missions. <i>IEEE Transactions on Nuclear Science</i> , 2002, 49, 1881-1886.	2.0	22
106	Iron abundances on the lunar surface as measured by the Lunar Prospector gamma-ray and neutron spectrometers. <i>Journal of Geophysical Research</i> , 2002, 107, 13-1-13-26.	3.3	220
107	Ice concentration and distribution near the south pole of Mars: Synthesis of odyssey and global surveyor analyses. <i>Geophysical Research Letters</i> , 2002, 29, 10-1-10-4.	4.0	38
108	Distribution of Hydrogen in the Near Surface of Mars: Evidence for Subsurface Ice Deposits. <i>Science</i> , 2002, 297, 81-85.	12.6	884

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109	Global Distribution of Neutrons from Mars: Results from Mars Odyssey. <i>Science</i> , 2002, 297, 75-78.	12.6	468
110	Fast neutron flux spectrum aboard Mars Odyssey during cruise. <i>Journal of Geophysical Research</i> , 2002, 107, SSH 2-1.	3.3	27
111	<title>Effect of surfaces on the performance of CdZnTe detectors</title>. , 2001, , .		17
112	Evidence for water ice near the lunar poles. <i>Journal of Geophysical Research</i> , 2001, 106, 23231-23251.	3.3	296
113	Composition from fast neutrons: Application to the Moon. <i>Geophysical Research Letters</i> , 2001, 28, 3797-3800.	4.0	64
114	<title>High-energy characterization of two large-volume multielement CdZnTe detectors</title>. , 2001, , .		0
115	<title>Combined gamma-ray and neutron detector for measuring the chemical composition of airless planetary bodies</title>. , 2001, , .		0
116	Title is missing!. <i>Journal of Radioanalytical and Nuclear Chemistry</i> , 2001, 248, 295-300.	1.5	15
117	<title>Characterization of a large-volume multi-element CdZnTe detector</title>. , 2000, 4141, 1.		6
118	Simulation of Compton camera imaging with a specific purpose Monte Carlo code. <i>Applied Radiation and Isotopes</i> , 2000, 53, 673-680.	1.5	4
119	Thorium abundances on the lunar surface. <i>Journal of Geophysical Research</i> , 2000, 105, 20307-20331.	3.3	190
120	High resolution measurements of absolute thorium abundances on the lunar surface. <i>Geophysical Research Letters</i> , 1999, 26, 2681-2684.	4.0	83
121	<title>Evaluation of the Compton camera method for spectroscopic imaging with ambient-temperature detector technology</title>. , 1999, , .		2
122	Physics-based generation of gamma-ray response functions for CdZnTe detectors. <i>Journal of Radioanalytical and Nuclear Chemistry</i> , 1998, 233, 257-264.	1.5	13
123	Electrode design for coplanar-grid detectors. <i>IEEE Transactions on Nuclear Science</i> , 1997, 44, 713-720.	2.0	30
124	Tomographic Gamma Scanning to Assay Heterogeneous Radioactive Waste. <i>Nuclear Science and Engineering</i> , 1994, 118, 145-152.	1.1	91
125	A combined transmission and scattering tomographic approach to composition and density imaging. <i>Applied Radiation and Isotopes</i> , 1993, 44, 1327-1341.	1.5	25