M M Hedman

List of Publications by Year
in descending order

135 papers	4,078 citations	109137 35 h-index	168136 53 g-index
138 all docs	138 docs citations	138 times ranked	2425 citing authors

#	Article	IF	Citations
1	Benchmark parameters for CMB polarization experiments. Physical Review D, 2003, 67, .	1.6	142
2	An observed correlation between plume activity and tidal stresses on Enceladus. Nature, 2013, 500, 182-184.	13.7	136
3	An Evolving View of Saturnâ€™s Dynamic Rings. Science, 2010, 327, 1470-1475.	6.0	127
4	A close look at Saturn's rings with Cassini VIMS. Icarus, 2008, 193, 182-212.	1.1	113
5	100-metre-diameter moonlets in Saturn's A ring from observations of 'propeller' structures. Nature, 2006, 440, 648-650.	13.7	112
6	Cassini imaging of Saturn's rings. Icarus, 2007, 189, 14-34.	1.1	107
7	KRONOSEISMOLOGY: USING DENSITY WAVES IN SATURN'S C RING TO PROBE THE PLANET'S INTERIOR. Astronomical Journal, 2013, 146, 12.	1.9	99
8	Self-Gravity Wake Structures in Saturn's A Ring Revealed byCassiniVIMS. Astronomical Journal, 2007, 133, 2624-2629.	1.9	92
9	Saturnâ€™s icy satellites and rings investigated by Cassiniâ€“VIMS: III â€“ Radial compositional variability. Icarus, 2012, 220, 1064-1096.	1.1	86
10	THE POPULATION OF PROPELLERS IN SATURN'S A RING. Astronomical Journal, 2008, 135, 1083-1091.	1.9	85
11	First Measurements of the Polarization of the Cosmic Microwave Background Radiation at Small Angular Scales from CAPMAP. Astrophysical Journal, 2005, 619, L127-L130.	1.6	84
12	Titan solar occultation observed by Cassini/VIMS: Gas absorption and constraints on aerosol composition. Icarus, 2009, 201, 198-216.	1.1	75
13	Chemical interactions between Saturnâ€™s atmosphere and its rings. Science, 2018, 362, .	6.0	73
14	SPECTRAL OBSERVATIONS OF THE ENCELADUS PLUME WITH CASSINI-VIMS. Astrophysical Journal, 2009, 693, 1749-1762.	1.6	72
15	The temperature and width of an active fissure on Enceladus measured with Cassini VIMS during the 14 April 2012 South Pole flyover. Icarus, 2013, 226, 1128-1137.	1.1	69
16	New Measurements of Fineâ€Scale CMB Polarization Power Spectra from CAPMAP at Both 40 and 90 GHz. Astrophysical Journal, 2008, 684, 771-789.	1.6	66
17	Titanâ€™s atmosphere as observed by Cassini/VIMS solar occultations: CH4, CO and evidence for C2H6 absorption. Icarus, 2015, 248, 1-24.	1.1	64
18	PHYSICAL CHARACTERISTICS AND NON-KEPLERIAN ORBITAL MOTION OF â€œPROPELLERâ€• MOONS EMBEDDED IN SATURNâ€™S RINGS. Astrophysical Journal Letters, 2010, 718, L92-L96.	3.0	63

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19	In-flight calibration of the Cassini imaging science sub-system cameras. Planetary and Space Science, 2010, 58, 1475-1488.	0.9	60
20	The Source of Saturn's G Ring. Science, 2007, 317, 653-656.	6.0	59
21	The science case for an orbital mission to Uranus: Exploring the origins and evolution of ice giant planets. Planetary and Space Science, 2014, 104, 122-140.	0.9	56
22	Observations of Ejecta Clouds Produced by Impacts onto Saturnâ€™s Rings. Science, 2013, 340, 460-464.	6.0	55
23	THE TRANSIT TRANSMISSION SPECTRUM OF A COLD GAS GIANT PLANET. Astrophysical Journal, 2015, 814, 154.	1.6	55
24	Moonlets and clumps in Saturn's F ring. Icarus, 2008, 194, 278-289.	1.1	54
25	Constraints on clade ages from fossil outgroups. Paleobiology, 2010, 36, 16-31.	1.3	53
26	THE ARCHITECTURE OF THE CASSINI DIVISION. Astronomical Journal, 2010, 139, 228-251.	1.9	52
27	Three tenuous rings/arcs for three tiny moons. Icarus, 2009, 199, 378-386.	1.1	51
28	The B-ringâ€™s surface mass density from hidden density waves: Less than meets the eye?. Icarus, 2016, 279, 109-124.	1.1	51
29	Saturn's dynamic D ring. Icarus, 2007, 188, 89-107.	1.1	50
30	Uranus and Neptune missions: A study in advance of the next Planetary Science Decadal Survey. Planetary and Space Science, 2019, 177, 104680.	0.9	50
31	Scientific rationale for Saturn×³s in situ exploration. Planetary and Space Science, 2014, 104, 29-47.	0.9	49
32	More Kronoseismology with Saturn's rings. Monthly Notices of the Royal Astronomical Society, 2014, 444, 1369-1388.	1.6	49
33	Uranus Pathfinder: exploring the origins and evolution of Ice Giant planets. Experimental Astronomy, 2012, 33, 753-791.	1.6	44
34	Finding the trigger to Iapetusâ€™ odd global albedo pattern: Dynamics of dust from Saturnâ€™s irregular satellites. Icarus, 2011, 215, 260-278.	1.1	43
35	The inner small satellites of Saturn: A variety of worlds. Icarus, 2013, 226, 999-1019.	1.1	43
36	True polar wander of Enceladus from topographic data. Icarus, 2017, 295, 46-60.	1.1	43

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37	A Limit on the Polarized Anisotropy of the Cosmic Microwave Background at Subdegree Angular Scales. Astrophysical Journal, 2001, 548, L111-L114.	1.6	42
38	SATURNâ€™S G AND D RINGS PROVIDE NEARLY COMPLETE MEASURED SCATTERING PHASE FUNCTIONS OF NEARBY DEBRIS DISKS. Astrophysical Journal, 2015, 811, 67.	1.6	41
39	Connections between spectra and structure in Saturnâ€™s main rings based on Cassini VIMS data. Icarus, 2013, 223, 105-130.	1.1	40
40	Aegaeon (Saturn LIII), a G-ring object. Icarus, 2010, 207, 433-447.	1.1	38
41	Cassini imaging search rules out rings around Rhea. Geophysical Research Letters, 2010, 37, .	1.5	38
42	WHY ARE DENSE PLANETARY RINGS ONLY FOUND BETWEEN 8 AND 20 AU?. Astrophysical Journal Letters, 2015, 801, L33.	3.0	34
43	Origin and Evolution of Saturn's Ring System. , 2009, , 537-575.		34
44	Unravelling Temporal Variability in Saturn's Spiral Density Waves: Results and Predictions. Astrophysical Journal, 2006, 651, L65-L68.	1.6	33
45	COMPOSITIONS AND ORIGINS OF OUTER PLANET SYSTEMS: INSIGHTS FROM THE ROCHE CRITICAL DENSITY. Astrophysical Journal Letters, 2013, 765, L28.	3.0	33
46	Identification of spectral units on Phoebe. Icarus, 2008, 193, 233-251.	1.1	32
47	Self-gravity wake parameters in Saturnâ€™s A and B rings. Icarus, 2010, 206, 410-423.	1.1	32
48	Saturnâ€™s Curiously Corrugated C Ring. Science, 2011, 332, 708-711.	6.0	32
49	Cassini microwave observations provide clues to the origin of Saturn's C ring. Icarus, 2017, 281, 297-321.	1.1	31
50	Noncircular features in Saturnâ€™s rings II: The C ring. Icarus, 2014, 241, 373-396.	1.1	29
51	ARE THERE MOONLETS NEAR THE URANIAN Î± AND Î² RINGS?. Astronomical Journal, 2016, 152, 211.	1.9	29
52	Noncircular features in Saturnâ€™s rings I: The edge of the B ring. Icarus, 2014, 227, 152-175.	1.1	28
53	Radial profiles of the Phoebe ring: A vast debris disk around Saturn. Icarus, 2016, 275, 117-131.	1.1	28
54	THE RADIAL DISTRIBUTION OF WATER ICE AND CHROMOPHORES ACROSS SATURN'S SYSTEM. Astrophysical Journal, 2013, 766, 76.	1.6	26

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55	A pilot investigation to constrain the presence of ring systems around transiting exoplanets. New Astronomy, 2018, 60, 88-94.	0.8	26
56	The shape and dynamics of a heliotropic dusty ringlet in the Cassini Division. Icarus, 2010, 210, 284-297.	1.1	25
57	The Christiansen Effect in Saturnâ€™s narrow dusty rings and the spectral identification of clumps in the F ring. Icarus, 2011, 215, 695-711.	1.1	25
58	The Impact of Comet Shoemaker-Levy 9 Sends Ripples Through the Rings of Jupiter. Science, 2011, 332, 711-713.	6.0	25
59	Material Flux From the Rings of Saturn Into Its Atmosphere. Geophysical Research Letters, 2018, 45, 10,093.	1.5	25
60	Cassiniâ€“VIMS observations of Saturnâ€™s main rings: I. Spectral properties and temperature radial profiles variability with phase angle and elevation. Icarus, 2014, 241, 45-65.	1.1	24
61	Observing Planetary Rings and Small Satellites with the <i>James Webb Space Telescope</i>: Science Justification and Observation Requirements. Publications of the Astronomical Society of the Pacific, 2016, 128, 018008.	1.0	24
62	The three-dimensional structure of Saturnâ€™s E ring. Icarus, 2012, 217, 322-338.	1.1	23
63	The brightening of Saturnâ€™s F ring. Icarus, 2012, 219, 181-193.	1.1	23
64	Of horseshoes and heliotropes: Dynamics of dust in the Encke Gap. Icarus, 2013, 223, 252-276.	1.1	22
65	Diffuse Rings. , 2009, , 511-536.		22
66	Cosmic Microwave Background Polarimetry Using Correlation Receivers with the PIQUE and CAPMAP Experiments. Astrophysical Journal, Supplement Series, 2005, 159, 1-26.	3.0	21
67	Characterizing deposits emplaced by cryovolcanic plumes on Europa. Icarus, 2020, 343, 113667.	1.1	20
68	The smallest particles in Saturnâ€™s A and C Rings. Icarus, 2013, 226, 1225-1240.	1.1	19
69	Non-circular features in Saturnâ€™s D ring: D68. Icarus, 2014, 233, 147-162.	1.1	19
70	The weather report from IRC+10216: evolving irregular clouds envelop carbon star. Monthly Notices of the Royal Astronomical Society, 2016, 455, 3102-3109.	1.6	19
71	The case for seasonal surface changes at Titanâ€™s lake district. Nature Astronomy, 2019, 3, 506-510.	4.2	19
72	Forecasting Rates of Volcanic Activity on Terrestrial Exoplanets and Implications for Cryovolcanic Activity on Extrasolar Ocean Worlds. Publications of the Astronomical Society of the Pacific, 2020, 132, 084402.	1.0	19

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73	New Limits on the Polarized Anisotropy of the Cosmic Microwave Background at Subdegree Angular Scales. Astrophysical Journal, 2002, 573, L73-L76.	1.6	19
74	Organizing some very tenuous things: Resonant structures in Saturn's faint rings. Icarus, 2009, 202, 260-279.	1.1	17
75	Small particles and self-gravity wakes in Saturn's rings from UVIS and VIMS stellar occultations. Icarus, 2016, 279, 36-50.	1.1	17
76	Ring Shadowing Effects on Saturn's Ionosphere: Implications for Ring Opacity and Plasma Transport. Geophysical Research Letters, 2018, 45, 10,084.	1.5	17
77	Cassini-VIMS observations of Saturnâ€™s main rings: II. A spectrophotometric study by means of Monte Carlo ray-tracing and Hapkeâ€™s theory. Icarus, 2019, 317, 242-265.	1.1	17
78	Close-range remote sensing of Saturnâ€™s rings during Cassiniâ€™s ring-grazing orbits and Grand Finale. Science, 2019, 364, .	6.0	17
79	AN ANALYTIC PARAMETERIZATION OF SELF-GRAVITY WAKES IN SATURN'S RINGS, WITH APPLICATION TO OCCULTATIONS AND PROPELLERS. Astronomical Journal, 2010, 139, 492-503.	1.9	16
80	Probing the inner boundaries of Saturnâ€™s A ring with the Iapetus â^’1:0 nodal bending wave. Icarus, 2013, 224, 201-208.	1.1	16
81	EXPLORING OVERSTABILITIES IN SATURN'S A RING USING TWO STELLAR OCCULTATIONS. Astronomical Journal, 2014, 148, 15.	1.9	16
82	How Janusâ€™ orbital swap affects the edge of Saturnâ€™s A ring?. Icarus, 2016, 279, 125-140.	1.1	16
83	Kronoseismology. IV. Six Previously Unidentified Waves in Saturnâ€™s Middle C Ring. Astronomical Journal, 2019, 157, 18.	1.9	16
84	Obliquity Variability of a Potentially Habitable Early Venus. Astrobiology, 2016, 16, 487-499.	1.5	15
85	Spatial variations in the dust-to-gas ratio of Enceladusâ€™ plume. Icarus, 2018, 305, 123-138.	1.1	15
86	Cassini INMS constraints on the composition and latitudinal fractionation of Saturn ring rain material. Icarus, 2020, 339, 113595.	1.1	15
87	Dust in the arcs of Methone and Anthe. Icarus, 2017, 284, 206-215.	1.1	14
88	A new pattern in Saturnâ€™s D ring created in late 2011. Icarus, 2016, 279, 155-165.	1.1	13
89	Dynamical phenomena at the inner edge of the Keeler gap. Icarus, 2017, 289, 80-93.	1.1	12
90	Weighing Uranusâ€™ Moon Cressida with the Î· Ring. Astronomical Journal, 2017, 154, 153.	1.9	12

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91	The Case for a New Frontiersâ€"Class Uranus Orbiter: System Science at an Underexplored and Unique World with a Mid-scale Mission. Planetary Science Journal, 2022, 3, 58.	1.5	12
92	Neptune Odyssey: A Flagship Concept for the Exploration of the Neptuneâ€"Triton System. Planetary Science Journal, 2021, 2, 184.	1.5	11
93	First observations of the Phoebe ring in optical light. Icarus, 2014, 233, 1-8.	1.1	10
94	Corrugations and eccentric spirals in Saturnâ€™s D ring: New insights into what happened at Saturn in 1983. Icarus, 2015, 248, 137-161.	1.1	10
95	Spatially resolved near infrared observations of Enceladusâ€™ tiger stripe eruptions from Cassini VIMS. Icarus, 2017, 292, 1-12.	1.1	10
96	High-angular-resolution stellar imaging with occultations from the Cassini spacecraft â€" I. Observational technique. Monthly Notices of the Royal Astronomical Society, 2013, 433, 2286-2293.	1.6	9
97	AN ATLAS OF BRIGHT STAR SPECTRA IN THE NEAR-INFRARED FROM CASSINI-VIMS. Astrophysical Journal, Supplement Series, 2015, 221, 30.	3.0	8
98	High-angular-resolution stellar imaging with occultations from the<i>Cassini</i>spacecraft â€" III. Mira. Monthly Notices of the Royal Astronomical Society, 2016, 457, 1410-1418.	1.6	8
99	Energetic Neutral and Charged Particle Measurements in the Inner Saturnian Magnetosphere During the Grand Finale Orbits of Cassini 2016/2017. Geophysical Research Letters, 2018, 45, 10,847.	1.5	8
100	Seasonal structures in Saturn's dusty Roche Division correspond to periodicities of the planet's magnetosphere. Icarus, 2019, 330, 230-255.	1.1	8
101	Photometric Analyses of Saturnâ€™s Small Moons: Aegaeon, Methone, and Pallene Are Dark; Helene and Calypso Are Bright. Astronomical Journal, 2020, 159, 129.	1.9	8
102	First High Solar Phase Angle Observations of Rhea Using<i>Cassini</i>VIMS: Upper Limits on Water Vapor and Geologic Activity. Astrophysical Journal, 2008, 680, L65-L68.	1.6	7
103	Axisymmetric density waves in Saturnâ€™s rings. Monthly Notices of the Royal Astronomical Society, 2019, 485, 13-29.	1.6	7
104	The spectrum of a Saturn ring spoke from Cassini/VIMS. Geophysical Research Letters, 2010, 37, .	1.5	6
105	High angular resolution stellar imaging with occultations from the Cassini spacecraft â€" II. Kronocyclic tomography. Monthly Notices of the Royal Astronomical Society, 2015, 449, 1760-1766.	1.6	6
106	Dusty Rings. , 0, , 308-337.		6
107	A review of Morlet wavelet analysis of radial profiles of Saturn's rings. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2018, 376, 20180046.	1.6	6
108	Occultation observations of Saturn's rings with Cassini VIMS. Icarus, 2020, 344, 113356.	1.1	6

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109	Calibrating CMB polarization telescopes. AIP Conference Proceedings, 2002, , .	0.3	5
110	Efficiently extracting energy from cosmological neutrinos. Journal of Cosmology and Astroparticle Physics, 2013, 2013, 029-029.	1.9	5
111	Using Elliptical Fourier Descriptor Analysis (EFDA) to Quantify Titan Lake Morphology. Astronomical Journal, 2019, 158, 230.	1.9	5
112	A vertical rift in Saturnâ€™s inner C ring. Icarus, 2016, 279, 78-99.	1.1	4
113	An Introduction to Planetary Ring Dynamics. , 0, , 30-48.		4
114	The opposition effect in Saturnâ€™s main rings as seen by Cassini ISS: 4. Correlations of the surge morphology with surface albedos and VIMS spectral properties. Icarus, 2018, 305, 324-349.	1.1	4
115	Dynamics of Multiple Bodies in a Corotation Resonance: Conserved Quantities and Relevance to Ring Arcs. Astrophysical Journal, 2019, 882, 66.	1.6	4
116	Bright clumps in the D68 ringlet near the end of the Cassini Mission. Icarus, 2019, 323, 62-75.	1.1	4
117	Using cosmogenic Lithium, Beryllium and Boron to determine the surface ages of icy objects in the outer solar system. Icarus, 2019, 330, 1-4.	1.1	4
118	Uranusâ€™s Hidden Narrow Rings. Planetary Science Journal, 2021, 2, 107.	1.5	4
119	Kronoseismology V: A panoply of waves in Saturnâ€™s C ring driven by high-order internal planetary oscillations. Icarus, 2021, 370, 114660.	1.1	4
120	Retrograde-rotating Exoplanets Experience Obliquity Excitations in an Eccentricity-enabled Resonance. Planetary Science Journal, 2020, 1, 8.	1.5	4
121	Kronoseismology. VI. Reading the Recent History of Saturnâ€™s Gravity Field in Its Rings. Planetary Science Journal, 2022, 3, 61.	1.5	4
122	The Mysterious Periodicities of Saturn. , 2018, , 97-125.		3
123	Saturn's C ring and Cassini division: Particle sizes from Cassini UVIS, VIMS, and RSS occultations. Icarus, 2020, 344, 113565.	1.1	3
124	A curious ringlet that shares Prometheusâ€™ orbit but precesses like the F ring. Icarus, 2017, 281, 322-333.	1.1	2
125	Modeling Saturnâ€™s D68 Clumps as a Co-orbital Satellite System. Planetary Science Journal, 2021, 2, 74.	1.5	2
126	Advances in stellar imaging with occultations from the CASSINI spacecraft. , 2014, , .		1

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127	Polarization of the Cosmic Microwave Background. American Scientist, 2005, 93, 236.	0.1	1
128	Changes in a Dusty Ringlet in the Cassini Division after 2010. Planetary Science Journal, 2020, 1, 43.	1.5	1
129	Constraining lowâ€altitude lunar dust using the LADEEâ€UVS data. Journal of Geophysical Research E: Planets, 2021, 126, e2021JE006935.	1.5	1
130	Gravity Investigation of Saturnâ€™s Inner System with the Innovative Skimmer Concept. Planetary Science Journal, 2022, 3, 19.	1.5	1
131	Saturn's colossal ring. Nature, 2009, 461, 1064-1065.	13.7	0
132	Planetary Rings. , 2014, , 883-905.		0
133	Ring ripples. Nature Astronomy, 2017, 1, 580-580.	4.2	0
134	Unusual one-armed density waves in the Cassini Division of Saturn's rings. Icarus, 2020, 339, 113600.	1.1	0
135	Evidence that a Novel Type of Satellite Wake Might Exist in Saturnâ€™s E Ring. Planetary Science Journal, 2021, 2, 127.	1.5	0