Mats Holmstrom

List of Publications by Year
in descending order

131 papers	5,449 citations	66234 42 h-index	95083 68 g-index
154 all docs	154 docs citations	154 times ranked	2533 citing authors

#	Article	IF	Citations
1	The Analyzer of Space Plasmas and Energetic Atoms (ASPERA-3) for the Mars Express Mission. Space Science Reviews, 2007, 126, 113-164.	3.7	241
2	The Analyser of Space Plasmas and Energetic Atoms (ASPERA-4) for the Venus Express mission. Planetary and Space Science, 2007, 55, 1772-1792.	0.9	214
3	Solar Wind-Induced Atmospheric Erosion at Mars: First Results from ASPERA-3 on Mars Express. Science, 2004, 305, 1933-1936.	6.0	204
4	The loss of ions from Venus through the plasma wake. Nature, 2007, 450, 650-653.	13.7	168
5	Energetic neutral atoms as the explanation for the high-velocity hydrogen around HD 209458b. Nature, 2008, 451, 970-972.	13.7	167
6	Extremely high reflection of solar wind protons as neutral hydrogen atoms from regolith in space. Planetary and Space Science, 2009, 57, 2132-2134.	0.9	130
7	Strong influence of lunar crustal fields on the solar wind flow. Geophysical Research Letters, 2011, 38, n/a-n/a.	1.5	125
8	Magnetic moment and plasma environment of HD 209458b as determined from LyÎ± observations. Science, 2014, 346, 981-984.	6.0	119
9	First observation of a miniâ€magnetosphere above a lunar magnetic anomaly using energetic neutral atoms. Geophysical Research Letters, 2010, 37, .	1.5	114
10	Heavy ion escape from Mars, influence from solar wind conditions and crustal magnetic fields. Icarus, 2011, 215, 475-484.	1.1	114
11	Plasma Acceleration Above Martian Magnetic Anomalies. Science, 2006, 311, 980-983.	6.0	111
12	A comparison of global models for the solar wind interaction with Mars. Icarus, 2010, 206, 139-151.	1.1	108
13	Carbon dioxide photoelectron energy peaks at Mars. Icarus, 2006, 182, 371-382.	1.1	105
14	Mass composition of the escaping plasma at Mars. Icarus, 2006, 182, 320-328.	1.1	103
15	Mars Express and Venus Express multi-point observations of geoeffective solar flare events in December 2006. Planetary and Space Science, 2008, 56, 873-880.	0.9	102
16	A cometâ€like escape of ionospheric plasma from Mars. Geophysical Research Letters, 2008, 35, .	1.5	94
17	Interplanetary coronal mass ejection observed at STEREOâ€A, Mars, comet 67P/Churyumovâ€Gerasimenko, Saturn, and New Horizons en route to Pluto: Comparison of its Forbush decreases at 1.4, 3.1, and 9.9ÂAU. Journal of Geophysical Research: Space Physics, 2017, 122, 7865-7890.	0.8	87
18	The Martian atmospheric ion escape rate dependence on solar wind and solar EUV conditions: 1. Seven years of Mars Express observations. Journal of Geophysical Research E: Planets, 2015, 120, 1298-1309.	1.5	84

#	Article	IF	Citations
19	Structure of the martian wake. Icarus, 2006, 182, 329-336.	1.1	81
20	Locations of Atmospheric Photoelectron Energy Peaks Within the Mars Environment. Space Science Reviews, 2007, 126, 389-402.	3.7	81
21	The interaction between the Moon and the solar wind. Earth, Planets and Space, 2012, 64, 237-245.	0.9	80
22	Solar forcing and planetary ion escape from Mars. Geophysical Research Letters, 2008, 35, .	1.5	77
23	Observations and Impacts of the 10 September 2017 Solar Events at Mars: An Overview and Synthesis of the Initial Results. Geophysical Research Letters, 2018, 45, 8871-8885.	1.5	77
24	Observations of aurorae by SPICAM ultraviolet spectrograph on board Mars Express: Simultaneous ASPERAâ€3 and MARSIS measurements. Journal of Geophysical Research, 2008, 113, .	3.3	70
25	Stellar wind interaction and pick-up ion escape of the Kepler-11 â€œsuper-Earthsâ€. Astronomy and Astrophysics, 2014, 562, A116.	2.1	63
26	Modeling the Evolution and Propagation of 10 September 2017 CMEs and SEPs Arriving at Mars Constrained by Remote Sensing and In Situ Measurement. Space Weather, 2018, 16, 1156-1169.	1.3	61
27	Solar cycle effects on the ion escape from Mars. Geophysical Research Letters, 2013, 40, 6028-6032.	1.5	58
28	Seasonal variation of Martian pick-up ions: Evidence of breathing exosphere. Planetary and Space Science, 2015, 119, 54-61.	0.9	56
29	Mars Express investigations of Phobos and Deimos. Planetary and Space Science, 2014, 102, 18-34.	0.9	54
30	Energetic neutral atoms at Mars 1. Imaging of solar wind protons. Journal of Geophysical Research, 2002, 107, SSH 4-1.	3.3	53
31	Empirical energy spectra of neutralized solar wind protons from the lunar regolith. Journal of Geophysical Research, 2012, 117, .	3.3	53
32	XUV-Exposed, Non-Hydrostatic Hydrogen-Rich Upper Atmospheres of Terrestrial Planets. Part II: Hydrogen Coronae and Ion Escape. Astrobiology, 2013, 13, 1030-1048.	1.5	53
33	Atmospheric origin of cold ion escape from Mars. Geophysical Research Letters, 2009, 36, .	1.5	49
34	Dynamics of solar wind protons reflected by the Moon. Journal of Geophysical Research, 2010, 115, .	3.3	48
35	Ion distributions in the vicinity of Mars: Signatures of heating and acceleration processes. Earth, Planets and Space, 2012, 64, 135-148.	0.9	47
36	Energetic neutral atom imaging of the lunar surface. Journal of Geophysical Research: Space Physics, 2013, 118, 3937-3945.	0.8	47

#	Article	IF	Citations
37	Imaging Plasma Density Structures in the Soft X-Rays Generated by Solar Wind Charge Exchange with Neutrals. Space Science Reviews, 2018, 214, 1.	3.7	47
38	Energetic neutral atoms at Mars 4. Imaging of planetary oxygen. Journal of Geophysical Research, 2002, 107, SSH 7-1.	3.3	46
39	The lunar wake current systems. Geophysical Research Letters, 2013, 40, 17-21.	1.5	46
40	Energetic neutral atom observations of magnetic anomalies on the lunar surface. Journal of Geophysical Research, 2012, 117, .	3.3	44
41	Annual variations in the Martian bow shock location as observed by the Mars Express mission. Journal of Geophysical Research: Space Physics, 2016, 121, 11,474.	0.8	44
42	X-ray imaging of the solar wind-Mars interaction. Geophysical Research Letters, 2001, 28, 1287-1290.	1.5	43
43	Global Marsâ€solar wind coupling and ion escape. Journal of Geophysical Research: Space Physics, 2017, 122, 8051-8062.	0.8	43
44	The Hydrogen Exospheric Density Profile Measured with ASPERA-3/NPD. Space Science Reviews, 2007, 126, 447-467.	3.7	42
45	Protons in the nearâ€lunar wake observed by the Subâ€keV Atom Reflection Analyzer on board Chandrayaanâ€1. Journal of Geophysical Research, 2010, 115, .	3.3	42
46	On the formation of Ganymede's surface brightness asymmetries: Kinetic simulations of Ganymede's magnetosphere. Geophysical Research Letters, 2016, 43, 4745-4754.	1.5	38
47	Mass-loading of the solar wind at 67P/Churyumov-Gerasimenko. Astronomy and Astrophysics, 2016, 596, A42.	2.1	38
48	A new view on the solar wind interaction with the Moon. Geoscience Letters, 2015, 2, .	1.3	37
49	Effects of protons reflected by lunar crustal magnetic fields on the global lunar plasma environment. Journal of Geophysical Research: Space Physics, 2014, 119, 6095-6105.	0.8	36
50	Low energy neutral atom imaging on the Moon with the SARA instrument aboard Chandrayaan-1 mission. Journal of Earth System Science, 2005, 114, 749-760.	0.6	35
51	Proton and hydrogen atom transport in the Martian upper atmosphere with an induced magnetic field. Journal of Geophysical Research, 2011, 116, n/a-n/a.	3.3	35
52	Mars' Ionopause: A Matter of Pressures. Journal of Geophysical Research: Space Physics, 2020, 125, e2020JA028145.	0.8	35
53	ARTEMIS observations of extreme diamagnetic fields in the lunar wake. Geophysical Research Letters, 2014, 41, 3766-3773.	1.5	34
54	Effects of the crustal magnetic fields on the Martian atmospheric ion escape rate. Geophysical Research Letters, 2016, 43, 10,574.	1.5	34

#	Article	IF	Citations
55	Low energy neutral atoms imaging of the Moon. Planetary and Space Science, 2006, 54, 132-143.	0.9	33
56	Solar windâ€•and EUVâ€dependent models for the shapes of the Martian plasma boundaries based on Mars Express measurements. Journal of Geophysical Research: Space Physics, 2017, 122, 7279-7290.	0.8	33
57	Solar wind interaction with the Reiner Gamma crustal magnetic anomaly: Connecting source magnetization to surface weathering. Icarus, 2016, 266, 261-266.	1.1	32
58	Pre-flight Calibration and Near-Earth Commissioning Results of the Mercury Plasma Particle Experiment (MPPE) Onboard MMO (Mio). Space Science Reviews, 2021, 217, 1.	3.7	32
59	Solar XUV and ENAâ€driven water loss from early Venus' steam atmosphere. Journal of Geophysical Research: Space Physics, 2016, 121, 4718-4732.	0.8	31
60	Tailward flow of energetic neutral atoms observed at Mars. Journal of Geophysical Research, 2008, 113, .	3.3	30
61	Scattering function for energetic neutral hydrogen atoms off the lunar surface. Geophysical Research Letters, 2011, 38, n/a-n/a.	1.5	30
62	First direct observation of sputtered lunar oxygen. Journal of Geophysical Research: Space Physics, 2014, 119, 709-722.	0.8	29
63	Solar wind plasma interaction with Gerasimovich lunar magnetic anomaly. Journal of Geophysical Research: Space Physics, 2015, 120, 4719-4735.	0.8	29
64	Ion Escape From Mars Through Time: An Extrapolation of Atmospheric Loss Based on 10 Years of Mars Express Measurements. Journal of Geophysical Research E: Planets, 2018, 123, 3051-3060.	1.5	29
65	Auroral Plasma Acceleration Above Martian Magnetic Anomalies. Space Science Reviews, 2007, 126, 333-354.	3.7	28
66	A case study of proton precipitation at Mars: Mars Express observations and hybrid simulations. Journal of Geophysical Research, 2012, 117, .	3.3	28
67	X rays from solar wind charge exchange at Mars: A comparison of simulations and observations. Geophysical Research Letters, 2004, 31, .	1.5	27
68	SERENA: Particle Instrument Suite for Determining the Sun-Mercury Interaction from BepiColombo. Space Science Reviews, 2021, 217, 11.	3.7	26
69	Energetic Hydrogen and Oxygen Atoms Observed on the Nightside of Mars. Space Science Reviews, 2007, 126, 267-297.	3.7	24
70	UV transit observations of EUV-heated expanded thermospheres of Earth-like exoplanets around M-stars: testing atmosphere evolution scenarios. Astrophysics and Space Science, 2011, 335, 39-50.	0.5	24
71	On lunar exospheric column densities and solar wind access beyond the terminator from ROSAT soft X-ray observations of solar wind charge exchange. Journal of Geophysical Research E: Planets, 2014, 119, 1459-1478.	1.5	24
72	A modelling approach to infer the solar wind dynamic pressure from magnetic field observations inside Mercuryâ€™s magnetosphere. Astronomy and Astrophysics, 2018, 614, A132.	2.1	24

#	Article	IF	Citations
73	The Martian Bow Shock Over Solar Cycle 23â€“24 as Observed by the Mars Express Mission. Journal of Geophysical Research: Space Physics, 2019, 124, 4761-4772.	0.8	24
74	Mars plasma system response to solar wind disturbances during solar minimum. Journal of Geophysical Research: Space Physics, 2017, 122, 6611-6634.	0.8	24
75	The effects of lunar surface plasma absorption and solar wind temperature anisotropies on the solar wind proton velocity space distributions in the lowâ€altitude lunar plasma wake. Journal of Geophysical Research, 2012, 117, .	3.3	23
76	Callisto plasma interactions: Hybrid modeling including induction by a subsurface ocean. Journal of Geophysical Research: Space Physics, 2015, 120, 4877-4889.	0.8	23
77	Solar wind dynamics around a comet. Astronomy and Astrophysics, 2018, 620, A35.	2.1	23
78	Comparison of accelerated ion populations observed upstream of the bow shocks at Venus and Mars. Annales Geophysicae, 2011, 29, 511-528.	0.6	22
79	Solar wind plasma protrusion into the martian magnetosphere: ASPERA-3 observations. Icarus, 2006, 182, 343-349.	1.1	21
80	IMF Direction Derived from Cycloid-Like Ion Distributions Observed by Mars Express. Space Science Reviews, 2007, 126, 239-266.	3.7	21
81	Mars Under Primordial Solar Wind Conditions: Mars Express Observations of the Strongest CME Detected at Mars Under Solar Cycle #24 and its Impact on Atmospheric Ion Escape. Geophysical Research Letters, 2017, 44, 10,805.	1.5	21
82	Oxygen Ion Energization at Mars: Comparison of MAVEN and Mars Express Observations to Global Hybrid Simulation. Journal of Geophysical Research: Space Physics, 2018, 123, 1678-1689.	0.8	21
83	Tailward flow of energetic neutral atoms observed at Venus. Journal of Geophysical Research, 2008, 113, .	3.3	20
84	Backscattered solar wind protons by Phobos. Journal of Geophysical Research, 2010, 115, .	3.3	19
85	Hydrogen ENA-cloud observation and modeling as a tool to study star-exoplanet interaction. Astrophysics and Space Science, 2011, 335, 9-23.	0.5	19
86	Responses of the Martian Magnetosphere to an Interplanetary Coronal Mass Ejection: MAVEN Observations and LatHyS Results. Geophysical Research Letters, 2018, 45, 7891-7900.	1.5	19
87	MAVEN Observations of Periodic Low-altitude Plasma Clouds at Mars. Astrophysical Journal Letters, 2021, 922, L33.	3.0	19
88	Proton entry into the nearâ€lunar plasma wake for magnetic field aligned flow. Geophysical Research Letters, 2013, 40, 2913-2917.	1.5	18
89	Transit Lyman-<i>Î±</i> signatures of terrestrial planets in the habitable zones of M dwarfs. Astronomy and Astrophysics, 2019, 623, A131.	2.1	18
90	CME Magnetic Structure and IMF Preconditioning Affecting SEP Transport. Space Weather, 2021, 19, e2020SW002654.	1.3	18

#	Article	IF	Citations
91	The extension of ionospheric holes into the tail of Venus. Journal of Geophysical Research: Space Physics, 2014, 119, 6940-6953.	0.8	17
92	AlfvÃ©n wings in the lunar wake: The role of pressure gradients. Journal of Geophysical Research: Space Physics, 2016, 121, 10,698.	0.8	17
93	Simulations of solar wind charge exchange X-ray emissions at Venus. Geophysical Research Letters, 2007, 34, .	1.5	16
94	A largeâ€scale flow vortex in the Venus plasma tail and its fluid dynamic interpretation. Geophysical Research Letters, 2013, 40, 1273-1278.	1.5	16
95	CMEs and SEPs During Novemberâ€"December 2020: A Challenge for Realâ€Time Space Weather Forecasting. Space Weather, 2022, 20, .	1.3	16
96	The September 2017 SEP Event in Context With the Current Solar Cycle: Mars Express ASPERAâ€3/IMA and MAVEN/SEP Observations. Geophysical Research Letters, 2018, 45, 7306-7311.	1.5	14
97	Asymmetries in Mars' Exosphere. Space Science Reviews, 2007, 126, 435-445.	3.7	13
98	Hybrid Modeling of Plasmas. , 2010, , 451-458.		13
99	Characteristics of proton velocity distribution functions in the near-lunar wake from Chandrayaan-1/SWIM observations. Icarus, 2016, 271, 120-130.	1.1	13
100	Solar cycle variation of ion escape from Mars. Icarus, 2023, 393, 114610.	1.1	13
101	Mars as a comet: Solar wind interaction on a large scale. Planetary and Space Science, 2015, 119, 43-47.	0.9	12
102	Threeâ€Dimensional Modeling of Callisto's Surface Sputtered Exosphere Environment. Journal of Geophysical Research: Space Physics, 2019, 124, 7157-7169.	0.8	12
103	Energisation of O+ and O+ 2 Ions at Mars: An Analysis of a 3-D Quasi-Neutral Hybrid Model Simulation. Space Science Reviews, 2007, 126, 39-62.	3.7	11
104	Lunar dayside current in the terrestrial lobe: ARTEMIS observations. Journal of Geophysical Research: Space Physics, 2014, 119, 3381-3391.	0.8	10
105	Plasma observations during the Mars atmospheric â€œplumeâ€• event of Marchâ€"April 2012. Journal of Geophysical Research: Space Physics, 2016, 121, 3139-3154.	0.8	10
106	Evolution of the Earth's Polar Outflow From Midâ€Archean to Present. Journal of Geophysical Research: Space Physics, 2020, 125, e2020JA027837.	0.8	10
107	Venusian bow shock as seen by the ASPERAâ€4 ion instrument on Venus Express. Journal of Geophysical Research, 2010, 115, .	3.3	9
108	On the confinement of lunar induced magnetic fields. Geophysical Research Letters, 2015, 42, 6931-6938.	1.5	9

#	Article	IF	Citations
109	Ceres interaction with the solar wind. Geophysical Research Letters, 2017, 44, 2070-2077.	1.5	9
110	Tritonâ€™s Variable Interaction With Neptuneâ€™s Magnetospheric Plasma. Journal of Geophysical Research: Space Physics, 2021, 126, e2021JA029740.	0.8	9
111	The role of plasma slowdown in the generation of Rhea's AlfvÃ©n wings. Journal of Geophysical Research: Space Physics, 2017, 122, 1778-1788.	0.8	8
112	An Eastward Current Encircling Mercury. Geophysical Research Letters, 2022, 49, .	1.5	8
113	STELLAR WIND INDUCED SOFT X-RAY EMISSION FROM CLOSE-IN EXOPLANETS. Astrophysical Journal Letters, 2015, 799, L15.	3.0	7
114	First Observation of Transport of Solar Wind Protons Scattered From Magnetic Anomalies Into the Near Lunar Wake: Observations by SARA/Chandrayaanâ€1. Geophysical Research Letters, 2018, 45, 8826-8833.	1.5	6
115	Variability of Precipitating Ion Fluxes During the September 2017 Event at Mars. Journal of Geophysical Research: Space Physics, 2019, 124, 420-432.	0.8	6
116	Ions Accelerated by Sounderâ€Plasma Interaction as Observed by Mars Express. Journal of Geophysical Research: Space Physics, 2018, 123, 9802-9814.	0.8	5
117	INTERACTION OF SOLAR WIND WITH MOON: AN OVERVIEW ON THE RESULTS FROM THE SARA EXPERIMENT ABOARD CHANDRAYAAN-1. , 2012, , 35-55.		4
118	Solar windâ€driven thermospheric winds over the Venus North Polar region. Geophysical Research Letters, 2014, 41, 4413-4419.	1.5	4
119	OBSERVATIONS IN THE SHADOW OF MARS BY THE NEUTRAL PARTICLE IMAGER. , 2006, , 119-134.		4
120	Does Phobos reflect solar wind protons? Mars Express special flyby operations with and without the presence of Phobos. Journal of Geophysical Research E: Planets, 2021, 126, e2021JE006969.	1.5	4
121	HolmstrÃ¶m et al. reply. Nature, 2008, 456, E1-E2.	13.7	3
122	Energetic neutral atom imaging of comets. Geophysical Research Letters, 2008, 35, .	1.5	3
123	Exoplanet Upper Atmosphere Environment Characterization. Proceedings of the International Astronomical Union, 2011, 7, 525-532.	0.0	3
124	New suprathermal proton population around the Moon: Observation by SARA on Chandrayaanâ€1. Geophysical Research Letters, 2017, 44, 4540-4548.	1.5	2
125	Active Experiments Beyond the Earth: Plasma Effects of Sounding Radar Operations in the Ionospheres of Venus, Mars, and the Jovian System. Frontiers in Astronomy and Space Sciences, 2019, 6, .	1.1	2
126	The Analyzer of Space Plasmas and Energetic Atoms (ASPERA-3) for the Mars Express Mission. , 2007, , 113-164.		2

#	Article	IF	Citations
127	Estimating ion escape from unmagnetized planets. Annales Geophysicae, 2022, 40, 83-89.	0.6	2
128	<i>Menura</i>: a code for simulating the interaction between a turbulent solar wind and solar system bodies. Annales Geophysicae, 2022, 40, 281-297.	0.6	2
129	Observations of Sounder Accelerated Electrons by Mars Express. Journal of Geophysical Research: Space Physics, 2020, 125, e2019JA027206.	0.8	1
130	The role of intrinsic magnetic fields in planetary evolution and habitability: the planetary protection aspect. Proceedings of the International Astronomical Union, 2008, 4, 283-294.	0.0	0
131	The Largest Electron Differential Energy Flux Observed at Mars by the Mars Express Spacecraft, 2004-2016. Journal of Geophysical Research: Space Physics, 2018, 123, 6576-6590.	0.8	0