Valery I Shematovich

List of Publications by Year
in descending order

140 papers	3,771 citations	101543 36 h-index	161849 54 g-index
142 all docs	142 docs citations	142 times ranked	2282 citing authors

#	Article	IF	Citations
1	Numerical Model to Study Proton Polar Aurorae on Mars. Astronomy Reports, 2022, 66, 245-254.	0.9	1
2	Nonthermal Atmospheric Loss of the Sub-Neptune Ï€ Men c Due to Exothermic Photochemistry. Solar System Research, 2022, 56, 67-75.	0.7	2
3	Nonthermal Atmospheric Loss of the Exoplanet GJ 436b due to H2 Dissociation Processes. Solar System Research, 2021, 55, 150-158.	0.7	5
4	Effect of Variations in the Extended Hydrogen Corona of Mars on the Efficiency of Charge Exchange with Solar Wind Protons. Astronomy Reports, 2021, 65, 203-208.	0.9	7
5	Life as the Only Reason for the Existence of N2â€"O2-Dominated Atmospheres. Astronomy Reports, 2021, 65, 275-296.	0.9	12
6	Comparative Analysis of the Model for Exoplanet Atmosphere Outflow. Astronomy Reports, 2021, 65, 445-454.	0.9	0
7	Objectives of the Millimetron Space Observatory science program and technical capabilities of its realization. Physics-Uspekhi, 2021, 64, 386-419.	2.2	24
8	Atmospheric Loss of Atomic Oxygen during Proton Aurorae on Mars. Solar System Research, 2021, 55, 324-334.	0.7	7
9	A Kinetic Model for Precipitation of Solar-Wind Protons into the Martian Atmosphere. Astronomy Reports, 2021, 65, 869-875.	0.9	2
10	The Activity of Stars with Planetary Systems and Its Impact on the Loss of Atmosphere by Hot Exoplanets. Astrophysical Bulletin, 2021, 76, 450-471.	1.3	5
11	Oxygen Atom Escape from the Martian Atmosphere during Proton Auroral Events. Astronomy Reports, 2020, 64, 628-635.	0.9	8
12	About the Atmospheric Loss of Hot Neptune GJ436b. , 2020, , .		0
13	Atmospheric Loss for Hot Exoplanets. , 2020, , .		0
14	Kinetic Calculations of the Charge Exchange Efficiency for Solar Wind Protons in the Extended Martian Hydrogen Corona. Astronomy Reports, 2020, 64, 863-869.	0.9	2
15	Exoplanet Habitability: Potential O2/O3 Biosignatures in the Ultraviolet. Solar System Research, 2019, 53, 322-331.	0.7	1
16	Kinetic Monte Carlo Model for the Precipitation of High-Energy Protons and Hydrogen Atoms into the Atmosphere of Mars with Taking into Account the Measured Magnetic Field. Astronomy Reports, 2019, 63, 835-845.	0.9	12
17	Energy Spectral Properties of Hydrogen Energetic Neutral Atoms Emitted From the Dayside Atmosphere of Mars. Journal of Geophysical Research: Space Physics, 2019, 124, 4104-4113.	2.4	7
18	The Influence of Superflares of Host Stars on the Dynamics of the Envelopes of Hot Jupiters. Astronomy Reports, 2019, 63, 94-106.	0.9	9

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19	No detection of methane on Mars from early ExoMars Trace Gas Orbiter observations. Nature, 2019, 568, 517-520.	27.8	111
20	Martian dust storm impact on atmospheric H2O and D/H observed by ExoMars Trace Gas Orbiter. Nature, 2019, 568, 521-525.	27.8	107
21	Suprathermal particles in astrochemistry. Russian Chemical Reviews, 2019, 88, 1013-1045.	6.5	10
22	Lyman-Î± emission in the Martian proton aurora: Line profile and role of horizontal induced magnetic field. Icarus, 2019, 321, 266-271.	2.5	17
23	Towards a Global Unified Model of Europaâ€™s Tenuous Atmosphere. Space Science Reviews, 2018, 214, 1.	8.1	36
24	The Atmospheric Chemistry Suite (ACS) of Three Spectrometers for the ExoMars 2016 Trace Gas Orbiter. Space Science Reviews, 2018, 214, 1.	8.1	119
25	Survival of a planet in short-period Neptunian desert under effect of photoevaporation. Monthly Notices of the Royal Astronomical Society, 2018, 476, 5639-5644.	4.4	36
26	Atmospheric Mass Loss from Hot Jupiters Irradiated by Stellar Superflares. Astrophysical Journal, 2018, 869, 108.	4.5	22
27	Ocean Worlds in the Outer Regions of the Solar System (Review). Solar System Research, 2018, 52, 371-381.	0.7	10
28	The Influence of a Stellar Flare on the Dynamical State of the Atmosphere of the Exoplanet HD 209458b. Astronomy Reports, 2018, 62, 648-653.	0.9	15
29	Neutral atmospheric escape in the Solar and extrasolar planetary systems. Proceedings of the International Astronomical Union, 2018, 14, 168-171.	0.0	0
30	Monte Carlo Simulations of the Interaction of Fast Proton and Hydrogen Atoms With the Martian Atmosphere and Comparison With In Situ Measurements. Journal of Geophysical Research: Space Physics, 2018, 123, 5850-5861.	2.4	15
31	Escape of planetary atmospheres: physical processes and numerical models. Physics-Uspekhi, 2018, 61, 217-246.	2.2	18
32	The Mars diffuse aurora: A model of ultraviolet and visible emissions. Icarus, 2017, 288, 284-294.	2.5	20
33	Influence of photoelectrons on the structure and dynamics of the upper atmosphere of a hot Jupiter. Astronomy Reports, 2017, 61, 387-392.	0.9	25
34	Changes in the Martian atmosphere induced by auroral electron precipitation. Solar System Research, 2017, 51, 362-372.	0.7	2
35	Suprathermal oxygen atoms in the Martian upper atmosphere: Contribution of the proton and hydrogen atom precipitation. Solar System Research, 2017, 51, 249-257.	0.7	5
36	The tails of the satellite auroral footprints at Jupiter. Journal of Geophysical Research: Space Physics, 2017, 122, 7985-7996.	2.4	57

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37	Influence of the crustal magnetic field on the Mars aurora electron flux and UV brightness. Icarus, 2017, 282, 127-135.	2.5	17
38	Gasâ€“Dynamical Features of the Envelopes of Contact Binary Stars. Astronomy Reports, 2017, 61, 1038-1043.	0.9	1
39	Formation and Evolution of Protoatmospheres. Space Science Reviews, 2016, 205, 153-211.	8.1	68
40	Neutral atmosphere near the icy surface of Jupiterâ€™s moon Ganymede. Solar System Research, 2016, 50, 262-280.	0.7	16
41	Analytical estimate for lowâ€altitude ENA emissivity. Journal of Geophysical Research: Space Physics, 2016, 121, 1167-1191.	2.4	9
42	SPICAM observations and modeling of Mars aurorae. Icarus, 2016, 264, 398-406.	2.5	52
43	An inversion method for cometary atmospheres. Icarus, 2016, 277, 237-256.	2.5	8
44	Loss rates of Europa×³s tenuous atmosphere. Planetary and Space Science, 2016, 130, 14-23.	1.7	14
45	Kinetic Monte Carlo models for the study of chemical reactions in the Earthâ€™s upper atmosphere. Computational Mathematics and Mathematical Physics, 2016, 56, 1142-1150.	0.8	0
46	Scientific problems addressed by the Spektr-UV space project (world space Observatoryâ€"Ultraviolet). Astronomy Reports, 2016, 60, 1-42.	0.9	63
47	Formation and Evolution of Protoatmospheres. Space Sciences Series of ISSI, 2016, , 193-251.	0.0	0
48	Hydrogen-dominated upper atmosphere of an exoplanet: Heating by stellar radiation from soft X-rays to extreme ultraviolet. Solar System Research, 2015, 49, 339-345.	0.7	36
49	Nonthermal radiative transfer of oxygen 98.9â€‰nm ultraviolet emission: Solving an old mystery. Journal of Geophysical Research: Space Physics, 2015, 120, 10,772.	2.4	3
50	Modeling of sputtering of the ice surfaces under impact of H+ ions: Redistribution of the h and o isotopes applied to the satellites of Jupiter. Solar System Research, 2015, 49, 237-246.	0.7	1
51	Precipitation of electrons into the upper atmosphere of a hot-jupiter exoplanet. Astronomy Reports, 2015, 59, 836-842.	0.9	30
52	Nonthermal dissipation of the Martian neutral upper atmosphere. Doklady Physics, 2015, 60, 188-191.	0.7	3
53	MONTE CARLO SIMULATION OF METASTABLE OXYGEN PHOTOCHEMISTRY IN COMETARY ATMOSPHERES. Astrophysical Journal, 2015, 798, 21.	4.5	5
54	Types of Hot Jupiter Atmospheres. Astrophysics and Space Science Library, 2015, , 81-104.	2.7	6

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55	Suprathermal Particles in XUV-Heated and Extended Exoplanetary Upper Atmospheres. Astrophysics and Space Science Library, 2015, , 105-136.	2.7	12
56	Heating efficiency in hydrogen-dominated upper atmospheres. Astronomy and Astrophysics, 2014, 571, A94.	5.1	91
57	Monte Carlo study of interaction between solar wind plasma and Venusian upper atmosphere. Solar System Research, 2014, 48, 317-323.	0.7	9
58	Hot oxygen and carbon escape from the martian atmosphere. Planetary and Space Science, 2014, 98, 93-105.	1.7	60
59	Ionization fraction in the thermosphere of the exoplanet HD 209458b. Solar System Research, 2014, 48, 105-112.	0.7	32
60	Mapping the electron energy in Jupiter's aurora: Hubble spectral observations. Journal of Geophysical Research: Space Physics, 2014, 119, 9072-9088.	2.4	47
61	Suprathermal oxygen and hydrogen atoms in the upper Martian atmosphere. Solar System Research, 2013, 47, 437-445.	0.7	16
62	Types of gaseous envelopes of â€œhot Jupiterâ€•exoplanets. Astronomy Reports, 2013, 57, 715-725.	0.9	48
63	He²⁺ transport in the Martian upper atmosphere with an induced magnetic field. Journal of Geophysical Research: Space Physics, 2013, 118, 1231-1242.	2.4	8
64	THREE-DIMENSIONAL GAS DYNAMIC SIMULATION OF THE INTERACTION BETWEEN THE EXOPLANET WASP-12b AND ITS HOST STAR. Astrophysical Journal, 2013, 764, 19.	4.5	132
65	Solar flares as proxy for the young Sun: satellite observed thermosphere response to an X17.2 flare of Earth's upper atmosphere. Annales Geophysicae, 2012, 30, 1129-1141.	1.6	17
66	Variability of solar/stellar activity and magnetic field and its influence on planetary atmosphere evolution. Earth, Planets and Space, 2012, 64, 179-199.	2.5	57
67	Formation of complex chemical species in astrochemistry (a review). Solar System Research, 2012, 46, 391-407.	0.7	14
68	Cassini-UVIS observation of dayglow FUV emissions of carbon in the thermosphere of Venus. Icarus, 2012, 220, 635-646.	2.5	29
69	Hot oxygen atoms in the Venus nightside exosphere. Geophysical Research Letters, 2012, 39, .	4.0	12
70	Studies of the planetary atmospheres in Russia (2007â€“2010). Izvestiya - Atmospheric and Oceanic Physics, 2012, 48, 309-331.	0.9	3
71	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
72	Gas Dynamic Simulation of the Star-Planet Interaction using a Binary Star Model. Proceedings of the International Astronomical Union, 2011, 7, 545-546.	0.0	2

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73	Influence of the hot oxygen corona on the satellite drag in the Earthâ€™s upper atmosphere. Solar System Research, 2011, 45, 231-239.	0.7	7
74	Ultraviolet emissions in the planetary atmospheres. Astrophysics and Space Science, 2011, 335, 3-8.	1.4	2
75	EUV spectroscopy of the Venus dayglow with UVIS on Cassini. Icarus, 2011, 211, 70-80.	2.5	47
76	Suprathermal hydrogen produced by the dissociation of molecular hydrogen in the extended atmosphere of exoplanet HD 209458b. Solar System Research, 2010, 44, 96-103.	0.7	62
77	Kinetic Monte Carlo method for simulating astrochemical kinetics: Hydrogen chemistry in diffuse clouds. Solar System Research, 2010, 44, 177-188.	0.7	6
78	Exoplanet status report: Observation, characterization and evolution of exoplanets and their host stars. Solar System Research, 2010, 44, 290-310.	0.7	7
79	Symposium on the observations, parameters, and evolution of inhabited exoplanets and their parent stars, Austria, Graz-Koldorf, November 29â€"December 1, 2009. Solar System Research, 2010, 44, 354-357.	0.7	0
80	UVIS observations of the FUV OI and CO 4P Venus dayglow during the Cassini flyby. Icarus, 2010, 207, 549-557.	2.5	47
81	Venus' atomic hot oxygen environment. Journal of Geophysical Research, 2010, 115, .	3.3	51
82	Kinetic Monte Carlo method for simulating astrochemical kinetics: Test calculations of molecular hydrogen formation on interstellar dust particles. Solar System Research, 2009, 43, 301-312.	0.7	9
83	On the elusive hot oxygen corona of Venus. Geophysical Research Letters, 2009, 36, .	4.0	30
84	Altitude of Saturn's aurora and its implications for the characteristic energy of precipitated electrons. Geophysical Research Letters, 2009, 36, .	4.0	81
85	Exospheres and Atmospheric Escape. Space Science Reviews, 2008, 139, 355-397.	8.1	103
86	The Venus ultraviolet oxygen dayglow and aurora: Model comparison with observations. Planetary and Space Science, 2008, 56, 542-552.	1.7	26
87	Ionization chemistry in H2O-dominated atmospheres of icy moons. Solar System Research, 2008, 42, 473-487.	0.7	12
88	Monte Carlo model of electron transport for the calculation of Mars dayglow emissions. Journal of Geophysical Research, 2008, 113, .	3.3	68
89	Kinetics of Suprathermal Atoms and Molecules in the Rarefied Planetary Atmospheres. , 2008, , .		10
90	Exospheres and Atmospheric Escape. Space Sciences Series of ISSI, 2008, , 355-397.	0.0	7

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91	Understanding the escape of water from Enceladus. Journal of Geophysical Research, 2007, 112, n/a-n/a.	3.3	77
92	Self-consistent treatment of dynamics and chemistry in the winds from carbon-rich AGB stars. Astronomy and Astrophysics, 2007, 469, 553-560.	5.1	0
93	Stochastic models of hot planetary and satellite coronas: Total water loss in the Martian atmosphere. Solar System Research, 2007, 41, 103-108.	0.7	10
94	Energetic oxygen atoms in the polar geocorona. Journal of Geophysical Research, 2006, 111, .	3.3	9
95	Stochastic models of hot planetary and satellite coronas: Atomic oxygen in Europaâ€™s corona. Solar System Research, 2006, 40, 175-190.	0.7	11
96	Stochastic models of hot planetary and satellite coronas: A hot oxygen corona of Mars. Solar System Research, 2006, 40, 384-392.	0.7	37
97	Self-Consistent Theoretical Models of Collapsing Pre-Stellar Cores. Proceedings of the International Astronomical Union, 2005, 1, 37.	0.0	0
98	Surface-bounded atmosphere of Europa. Icarus, 2005, 173, 480-498.	2.5	107
99	Ejection of nitrogen from Titan's atmosphere by magnetospheric ions and pick-up ions. Icarus, 2005, 175, 263-267.	2.5	63
100	Stochastic models of hot planetary and satellite coronas: a photochemical source of hot Oxygen in the upper atmosphere of Mars. Solar System Research, 2005, 39, 22-32.	0.7	21
101	Stochastic models of hot planetary and satellite coronas: A photochemical source of hot oxygen in the upper atmosphere of Mars. Solar System Research, 2005, 39, 22-32.	0.7	32
102	A Monte Carlo model of auroral hydrogen emission line profiles. Annales Geophysicae, 2005, 23, 1473-1480.	1.6	5
103	An auroral source of hot oxygen in the geocorona. Geophysical Research Letters, 2005, 32, .	4.0	12
104	Stochastic Models of Hot Planetary and Satellite Coronas. Solar System Research, 2004, 38, 28-38.	0.7	22
105	Stochastic Models of Hot Planetary and Satellite Coronas: Suprathermal Nitrogen in Titan's Upper Atmosphere. Solar System Research, 2004, 38, 178-188.	0.7	4
106	Titan's atomic and molecular nitrogen tori. Geophysical Research Letters, 2004, 31, .	4.0	40
107	New approaches to the modelling of surface chemistry on interstellar grains. Astrophysics and Space Science, 2003, 285, 725-735.	1.4	17
108	Summary of quantitative interpretation of IMAGE far ultraviolet auroral data. Space Science Reviews, 2003, 109, 255-283.	8.1	60

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109	A coupled, dynamical and chemical model for the prestellar core L1544: Comparison of modeled and observed C18O, HCO+, and CS emission spectra. Astronomy Reports, 2003, 47, 176-185.	0.9	3
110	Characterization and dynamics of the auroral electron precipitation during substorms deduced from IMAGE-FUV. Journal of Geophysical Research, 2003, 108, .	3.3	13
111	High resolution FUV observations of proton aurora. Geophysical Research Letters, 2003, 30, .	4.0	2
112	Nitrogen loss from Titan. Journal of Geophysical Research, 2003, 108, .	3.3	67
113	Remote sensing of the proton aurora characteristics from IMAGE-FUV. Annales Geophysicae, 2003, 21, 2165-2173.	1.6	8
114	Summary of Quantitative Interpretation of IMAGE Far Ultraviolet Auroral Data. , 2003, , 255-283.		1
115	A Coupled Dynamical and Chemical Model of Starless Cores of Magnetized Molecular Clouds. II. Chemical Differentiation. Astrophysical Journal, 2003, 588, 894-909.	4.5	27
116	On the master equation approach to diffusive grain-surface chemistry: The H, O, CO system. Astronomy and Astrophysics, 2002, 391, 1069-1080.	5.1	77
117	Deuterium fractionation on interstellar grains studied with modified rate equations and a Monte Carlo approach. Planetary and Space Science, 2002, 50, 1257-1266.	1.7	78
118	A Coupled Dynamical and Chemical Model of Starless Cores of Magnetized Molecular Clouds. I. Formulation and Initial Results. Astrophysical Journal, 2002, 569, 792-802.	4.5	41
119	Observation of the proton aurora with IMAGE FUV imager and simultaneous ion flux in situ measurements. Journal of Geophysical Research, 2001, 106, 28939-28948.	3.3	58
120	The role of proton precipitation in the excitation of auroral FUV emissions. Journal of Geophysical Research, 2001, 106, 21475-21494.	3.3	35
121	Observation of anomalous temperatures in the daytime O(1D) 6300 Ã… thermospheric emission: A possible signature of nonthermal atoms. Journal of Geophysical Research, 2001, 106, 12753-12764.	3.3	15
122	Suprathermal nitrogen atoms and molecules in Titan's corona. Advances in Space Research, 2001, 27, 1875-1880.	2.6	25
123	Near-surface oxygen atmosphere at Europa. Advances in Space Research, 2001, 27, 1881-1888.	2.6	39
124	A model of the Lyman-Î± line profile in the proton aurora. Journal of Geophysical Research, 2000, 105, 15795-15805.	3.3	65
125	Thermalization of O(1D) atoms in the thermosphere. Journal of Geophysical Research, 1999, 104, 4287-4295.	3.3	45
126	Effect of hot oxygen on thermospheric O I UV airglow. Journal of Geophysical Research, 1999, 104, 17139-17143.	3.3	10

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127	Self-consistent model of chemical and dynamical evolution of protostellar clouds. Monthly Notices of the Royal Astronomical Society, 1997, 292, 601-610.	4.4	17
128	An updated model of the hot nitrogen atom kinetics and thermospheric nitric oxide. Journal of Geophysical Research, 1997, 102, 285-294.	3.3	36
129	Nonequilibrium Processes in the Planetary and Cometary Atmospheres: Theory and Applications. Astrophysics and Space Science Library, 1997, , .	2.7	29
130	High rotational excitation of NO infrared thermospheric airglow: A signature of superthermal nitrogen atoms?. Geophysical Research Letters, 1996, 23, 2215-2218.	4.0	11
131	The distribution of hot hydrogen atoms produced by electron and proton precipitation in the Jovian aurora. Journal of Geophysical Research, 1996, 101, 21157-21168.	3.3	17
132	Nonequilibrium aeronomic processes. Space Science Reviews, 1996, 76, 1.	8.1	36
133	The importance of new chemical sources for the hot oxygen geocorona. Geophysical Research Letters, 1995, 22, 279-282.	4.0	22
134	A kinetic model of the formation of the hot oxygen geocorona: 2. Influence of O+ion precipitation. Journal of Geophysical Research, 1995, 100, 3715-3720.	3.3	40
135	A kinetic model of the formation of the hot oxygen geocorona: 1. Quiet geomagnetic conditions. Journal of Geophysical Research, 1994, 99, 23217.	3.3	88
136	Effect of hot N(⁴S) atoms on the NO solar cycle variation in the lower thermosphere. Journal of Geophysical Research, 1993, 98, 11581-11586.	3.3	9
137	Non thermal nitrogen atoms in the Earth's thermosphere 1. Kinetics of hot N(⁴S). Geophysical Research Letters, 1991, 18, 1691-1694.	4.0	31
138	Non thermal nitrogen atoms in the Earth's thermosphere 2. A source of nitric oxide. Geophysical Research Letters, 1991, 18, 1695-1698.	4.0	33
139	Statistical modeling of the states of a gas mixture with allowance for energy exchange between translational and internal degrees of freedom. Journal of Applied Mechanics and Technical Physics, 1980, 21, 15-24.	0.5	0
140	The Role of Fast N(⁴S) Atoms and Energetic Photoelectrons on the Distribution of NO in the Thermosphere. Geophysical Monograph Series, 0, , 235-241.	0.1	6