Mervyn Freeman

List of Publications by Year
in descending order

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143 papers	5,042 citations	109311 35 h-index	106340 65 g-index
155 all docs	155 docs citations	155 times ranked	3347 citing authors

#	Article	IF	Citations
1	Revisiting LÃ©vy flight search patterns of wandering albatrosses, bumblebees and deer. Nature, 2007, 449, 1044-1048.	27.8	736
2	A decade of the Super Dual Auroral Radar Network (SuperDARN): scientific achievements, new techniques and future directions. Surveys in Geophysics, 2007, 28, 33-109.	4.6	554
3	A study of an expanding interplanetary magnetic cloud and its interaction with the Earth's magnetosphere: The interplanetary aspect. Journal of Geophysical Research, 1993, 98, 7621-7632.	3.3	189
4	The excitation of plasma convection in the highâ€latitude ionosphere. Journal of Geophysical Research, 1990, 95, 7961-7972.	3.3	176
5	Pressure-driven magnetopause motions and attendant response on the ground. Planetary and Space Science, 1989, 37, 589-607.	1.7	127
6	The Earth's magnetosphere under continued forcing: Substorm activity during the passage of an interplanetary magnetic cloud. Journal of Geophysical Research, 1993, 98, 7657-7671.	3.3	108
7	Evidence for a solar wind origin of the power law burst lifetime distribution of theAEindices. Geophysical Research Letters, 2000, 27, 1087-1090.	4.0	83
8	The interaction of a magnetic cloud with the Earth: Ionospheric convection in the northern and southern hemispheres for a wide range of quasiâ€steady interplanetary magnetic field conditions. Journal of Geophysical Research, 1993, 98, 7633-7655.	3.3	82
9	A new technique for determining Substorm Onsets and Phases from Indices of the Electrojet (SOPHIE). Journal of Geophysical Research: Space Physics, 2015, 120, 10,592.	2.4	78
10	Saturn's dynamic magnetotail: A comprehensive magnetic field and plasma survey of plasmoids and traveling compression regions and their role in global magnetospheric dynamics. Journal of Geophysical Research: Space Physics, 2014, 119, 5465-5494.	2.4	69
11	Dayside ionospheric convection changes in response to longâ€period interplanetary Magnetic field oscillations: Determination of the ionospheric phase velocity. Journal of Geophysical Research, 1992, 97, 19373-19380.	3.3	64
12	A minimal substorm model that explains the observed statistical distribution of times between substorms. Geophysical Research Letters, 2004, 31, n/a-n/a.	4.0	64
13	On the association between northward turnings of the interplanetary magnetic field and substorm onsets. Geophysical Research Letters, 2007, 34, .	4.0	63
14	On the character and distribution of lowerâ€frequency radio emissions at Saturn and their relationship to substormâ€like events. Journal of Geophysical Research, 2009, 114, .	3.3	57
15	The effect of magnetospheric erosion on mid- and high-latitude ionospheric flows. Planetary and Space Science, 1988, 36, 509-522.	1.7	53
16	Power law distributions of burst duration and interburst interval in the solar wind: Turbulence or dissipative self-organized criticality?. Physical Review E, 2000, 62, 8794-8797.	2.1	51
17	A comparison of midlatitude Pi 2 pulsations and geostationary orbit particle injections as substorm indicators. Journal of Geophysical Research, 1994, 99, 4085.	3.3	49
18	Measuring the dayside reconnection rate during an interval of due northward interplanetary magnetic field. Annales Geophysicae, 2004, 22, 4243-4258.	1.6	49

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19	On the use of IMAGE FUV for estimating the latitude of the open/closed magnetic field line boundary in the ionosphere. Annales Geophysicae, 2008, 26, 2759-2769.	1.6	48
20	Ion-acoustic resistivity in plasmas with similar ion and electron temperatures. Geophysical Research Letters, 2002, 29, 4-1.	4.0	46
21	Incorrect Likelihood Methods Were Used to Infer Scaling Laws of Marine Predator Search Behaviour. PLoS ONE, 2012, 7, e45174.	2.5	44
22	Characteristics of mediumâ€scale traveling ionospheric disturbances observed near the Antarctic Peninsula by HF radar. Journal of Geophysical Research: Space Physics, 2013, 118, 5830-5841.	2.4	44
23	Towards Synthesis of Solar Wind and Geomagnetic Scaling Exponents: A Fractional LÃ©vy Motion Model. Space Science Reviews, 2005, 121, 271-284.	8.1	43
24	The determination of timeâ€stationary twoâ€dimensional convection patterns with singleâ€station radars. Journal of Geophysical Research, 1991, 96, 15735-15749.	3.3	42
25	A technique for accurately determining the cusp-region polar cap boundary using SuperDARN HF radar measurements. Annales Geophysicae, 2003, 21, 983-996.	1.6	42
26	No evidence for externally triggered substorms based on superposed epoch analysis of IMF B_z. Geophysical Research Letters, 2009, 36, .	4.0	42
27	Post midnight VLF chorus events, a substorm signature observed at the ground nearL= 4. Journal of Geophysical Research, 1996, 101, 24641-24653.	3.3	41
28	Large-Scale Structure and Dynamics of the Magnetotails of Mercury, Earth, Jupiter and Saturn. Space Science Reviews, 2014, 182, 85-154.	8.1	41
29	A statistical comparison of SuperDARN spectral width boundaries and DMSP particle precipitation boundaries in the morning sector ionosphere. Annales Geophysicae, 2005, 23, 733-743.	1.6	40
30	What effect do substorms have on the content of the radiation belts?. Journal of Geophysical Research: Space Physics, 2016, 121, 6292-6306.	2.4	40
31	A New Code for Electrostatic Simulation by Numerical Integration of the Vlasov and AmpÃ¨re Equations Using MacCormack's Method. Journal of Computational Physics, 2001, 171, 182-200.	3.8	39
32	Geoeffectiveness of three Wind magnetic clouds: A comparative study. Journal of Geophysical Research, 1998, 103, 17261-17278.	3.3	38
33	Anomalous resistivity in non-Maxwellian plasmas. Journal of Geophysical Research, 2003, 108, .	3.3	37
34	A statistical study of the open magnetic flux content of the magnetosphere at the time of substorm onset. Geophysical Research Letters, 2009, 36, .	4.0	37
35	The interplanetary magnetic field influences mid-latitude surface atmospheric pressure. Environmental Research Letters, 2013, 8, 045001.	5.2	37
36	A spatiotemporal analysis of U.S. station temperature trends over the last century. Journal of Geophysical Research D: Atmospheres, 2013, 118, 7427-7434.	3.3	37

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37	The location and rate of dayside reconnection during an interval of southward interplanetary magnetic field. Annales Geophysicae, 2003, 21, 1467-1482.	1.6	37
38	Radar observations of auroral zone flows during a multiple-onset substorm. Annales Geophysicae, 1995, 13, 1144-1163.	1.6	36
39	Nonlinear Dependence of Anomalous Ionâ€Acoustic Resistivity on Electron Drift Velocity. Astrophysical Journal, 2008, 686, 686-693.	4.5	35
40	The Influence of Substorms on Extreme Rates of Change of the Surface Horizontal Magnetic Field in the United Kingdom. Space Weather, 2019, 17, 827-844.	3.7	35
41	Remote sensing of the spatial and temporal structure of magnetopause and magnetotail reconnection from the ionosphere. Reviews of Geophysics, 2008, 46, .	23.0	34
42	Estimating the location of the open-closed magnetic field line boundary from auroral images. Annales Geophysicae, 2010, 28, 1659-1678.	1.6	34
43	Anomalous resistivity and the nonlinear evolution of the ion-acoustic instability. Journal of Geophysical Research, 2006, 111, .	3.3	33
44	A reassessment of SuperDARN meteor echoes from the upper mesosphere and lower thermosphere. Journal of Atmospheric and Solar-Terrestrial Physics, 2013, 102, 207-221.	1.6	33
45	The electric field response to the growth phase and expansion phase onset of a small isolated substorm. Annales Geophysicae, 1997, 15, 289-299.	1.6	31
46	Solar wind-driven geopotential height anomalies originate in the Antarctic lower troposphere. Geophysical Research Letters, 2014, 41, 6509-6514.	4.0	31
47	An ionospheric convection signature of antiparallel reconnection. Journal of Geophysical Research, 2001, 106, 28995-29007.	3.3	30
48	Scaling in long term data sets of geomagnetic indices and solar wind Ïµ as seen by WIND spacecraft. Geophysical Research Letters, 2003, 30, .	4.0	30
49	Application of computational mechanics to the analysis of natural data: An example in geomagnetism. Physical Review E, 2003, 67, 016203.	2.1	30
50	Substormâ€associated radar auroral surges. Journal of Geophysical Research, 1992, 97, 12173-12185.	3.3	29
51	Scaling of solar wind Ïµ and the AU, AL and AE indices as seen by WIND. Geophysical Research Letters, 2002, 29, 35-1-35-4.	4.0	29
52	An examination of interâ€hemispheric conjugacy in a subauroral polarization stream. Journal of Geophysical Research, 2012, 117, .	3.3	29
53	The nightside ionospheric response to IMF by changes. Geophysical Research Letters, 1998, 25, 2601-2604.	4.0	28
54	The response of dayside ionospheric convection to the Y-component of the magnetosheath magnetic field: A case study. Planetary and Space Science, 1990, 38, 13-41.	1.7	27

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55	Testing the SOC hypothesis for the magnetosphere. Journal of Atmospheric and Solar-Terrestrial Physics, 2001, 63, 1435-1445.	1.6	27
56	Spatial structure of ionospheric convection velocities in regions of open and closed magnetic field topology. Geophysical Research Letters, 2006, 33, .	4.0	25
57	A linear perturbation analysis of magnetopause motion in the Newton-Busemann limit. Annales Geophysicae, 1995, 13, 907-918.	1.6	24
58	A statistical comparison of SuperDARN spectral width boundaries and DMSP particle precipitation boundaries in the nightside ionosphere. Geophysical Research Letters, 2004, 31, .	4.0	24
59	Spatial distribution of average vorticity in the highâ€latitude ionosphere and its variation with interplanetary magnetic field direction and season. Journal of Geophysical Research, 2009, 114, .	3.3	24
60	The relationship of HF radar backscatter to the accumulation of open magnetic flux prior to substorm onset. Journal of Geophysical Research, 1998, 103, 26613-26619.	3.3	23
61	Cluster observations of broadband electromagnetic waves in and around a reconnection region in the Earth's magnetotail current sheet. Geophysical Research Letters, 2006, 33, .	4.0	23
62	Probing the high latitude ionosphere from ground-based observations: The state of current knowledge and capabilities during IPY (2007â€“2009). Journal of Atmospheric and Solar-Terrestrial Physics, 2008, 70, 2293-2308.	1.6	23
63	Recent ionospheric observations relating to solar-wind-magnetosphere coupling. Philosophical Transactions of the Royal Society A, 1989, 328, 93-105.	1.1	22
64	A unified model of the response of ionospheric convection to changes in the interplanetary magnetic field. Journal of Geophysical Research, 2003, 108, SMP 14-1.	3.3	22
65	Increases in plasma sheet temperature with solar wind driving during substorm growth phases. Geophysical Research Letters, 2014, 41, 8713-8721.	4.0	22
66	Energization of the Ring Current by Substorms. Journal of Geophysical Research: Space Physics, 2018, 123, 8131-8148.	2.4	22
67	An investigation of latitudinal transitions in the SuperDARN Doppler spectral width parameter at different magnetic local times. Annales Geophysicae, 2004, 22, 1187-1202.	1.6	21
68	Investigating turbulent structure of ionospheric plasma velocity using the Halley SuperDARN radar. Nonlinear Processes in Geophysics, 2007, 14, 799-809.	1.3	21
69	Solar wind input between substorm onsets during and after the October 18-20, 1995, magnetic cloud. Journal of Geophysical Research, 1999, 104, 22729-22744.	3.3	20
70	Recurrent substorm activity during the passage of a corotating interaction region. Journal of Atmospheric and Solar-Terrestrial Physics, 2009, 71, 1073-1081.	1.6	19
71	Seasonal and Temporal Variations of Fieldâ€Aligned Currents and Ground Magnetic Deflections During Substorms. Journal of Geophysical Research: Space Physics, 2018, 123, 2696-2713.	2.4	19
72	The Influence of Sudden Commencements on the Rate of Change of the Surface Horizontal Magnetic Field in the United Kingdom. Space Weather, 2019, 17, 1605-1617.	3.7	19

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73	On the relationship between the magnetic and VLF signatures of the substorm expansion phase. Journal of Geophysical Research, 1999, 104, 12351-12360.	3.3	18
74	The Heavens in a Pile of Sand. Science, 2002, 298, 979-980.	12.6	18
75	IMF clock angle control of multifractality in ionospheric velocity fluctuations. Geophysical Research Letters, 2009, 36, .	4.0	18
76	Winds and tides in the mid-latitude Southern Hemisphere upper mesosphere recorded with the Falkland Islands SuperDARN radar. Annales Geophysicae, 2011, 29, 1985-1996.	1.6	18
77	Probabilistic Forecasts of Storm Sudden Commencements From Interplanetary Shocks Using Machine Learning. Space Weather, 2020, 18, e2020SW002603.	3.7	18
78	A statistical comparison of SuperDARN spectral width boundaries and DMSP particle precipitation boundaries in the afternoon sector ionosphere. Annales Geophysicae, 2005, 23, 3645-3654.	1.6	17
79	Rhythm and Randomness in Human Contact. , 2010, , .		17
80	Timescales of Birkeland Currents Driven by the IMF. Geophysical Research Letters, 2019, 46, 7893-7901.	4.0	17
81	The Development of a Space Climatology: 3. Models of the Evolution of Distributions of Space Weather Variables With Timescale. Space Weather, 2019, 17, 180-209.	3.7	17
82	Evidence for a solar wind origin of the power law burst lifetime distribution of the AE indices. Geophysical Research Letters, 2000, 27, 1087-1090.	4.0	17
83	A study of the relationship between interplanetary parameters and large displacements of the nightside polar cap boundary. Journal of Geophysical Research, 1990, 95, 21133-21145.	3.3	16
84	Ionospheric signatures of split reconnection X-lines during conditions of IMFBz< 0 and |By| â^¼ |Bz|: Evidence for the antiparallel merging hypothesis. Journal of Geophysical Research, 2002, 107, SMP 23-1.	3.3	16
85	A superposed epoch investigation of the relation between magnetospheric solar wind driving and substorm dynamics with geosynchronous particle injection signatures. Journal of Geophysical Research, 2011, 116, n/a-n/a.	3.3	16
86	IMF-driven change to the Antarctic tropospheric temperature due to the global atmospheric electric circuit. Journal of Atmospheric and Solar-Terrestrial Physics, 2018, 180, 148-152.	1.6	15
87	Interhemispheric Comparisons of Large Nighttime Magnetic Perturbation Events Relevant to GICs. Journal of Geophysical Research: Space Physics, 2020, 125, e2020JA028128.	2.4	15
88	A very large scale flow burst observed by the SuperDARN radars. Journal of Geophysical Research, 1999, 104, 22469-22486.	3.3	14
89	Evidence for an extended reconnection line at the dayside magnetopause. Earth, Planets and Space, 2001, 53, 619-625.	2.5	14
90	A statistical analysis of ionospheric velocity and magnetic field power spectra at the time of pulsed ionospheric flows. Journal of Geophysical Research, 2002, 107, SMP 29-1-SMP 29-12.	3.3	14

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91	Dynamic subauroral ionospheric electric fields observed by the Falkland Islands radar during the course of a geomagnetic storm. Journal of Geophysical Research, 2011, 116, n/a-n/a.	3.3	14
92	An Empirical Orthogonal Function Reanalysis of the Northern Polar External and Induced Magnetic Field During Solar Cycle 23. Journal of Geophysical Research: Space Physics, 2018, 123, 781-795.	2.4	14
93	Association of substorm chorus events with drift echoes. Journal of Geophysical Research, 2006, 111, .	3.3	13
94	Natural Complexity. Science, 2008, 320, 323-324.	12.6	13
95	Modeling the Geomagnetic Response to the September 2017 Space Weather Event Over Fennoscandia Using the Space Weather Modeling Framework: Studying the Impacts of Spatial Resolution. Space Weather, 2021, 19, e2020SW002683.	3.7	13
96	On the probability distributions of SuperDARN Doppler spectral width measurements inside and outside the cusp. Geophysical Research Letters, 2004, 31, .	4.0	12
97	Spatial Variation in the Responses of the Surface External and Induced Magnetic Field to the Solar Wind. Journal of Geophysical Research: Space Physics, 2019, 124, 6195-6211.	2.4	12
98	The Development of a Space Climatology: 2. The Distribution of Power Input Into the Magnetosphere on a 3â€Hourly Timescale. Space Weather, 2019, 17, 157-179.	3.7	12
99	On the winding of auroral spirals: Interhemispheric observations and Hallinan's theory revisited. Journal of Geophysical Research, 2001, 106, 28913-28924.	3.3	11
100	The accuracy of using the spectral width boundary measured in off-meridional SuperDARN HF radar beams as a proxy for the open-closed field line boundary. Annales Geophysicae, 2005, 23, 2599-2604.	1.6	11
101	A highâ€resolution model of the external and induced magnetic field at the Earth's surface in the Northern Hemisphere. Journal of Geophysical Research: Space Physics, 2017, 122, 2440-2454.	2.4	11
102	Tailward Propagation of Magnetic Energy Density Variations With Respect to Substorm Onset Times. Journal of Geophysical Research: Space Physics, 2018, 123, 4741-4754.	2.4	11
103	How Well Can We Estimate Pedersen Conductance From the THEMIS Whiteâ€Light Allâ€Sky Cameras?. Journal of Geophysical Research: Space Physics, 2019, 124, 2920-2934.	2.4	11
104	Geomagnetically induced currents during the 07â€“08 September 2017 disturbed period: a global perspective. Journal of Space Weather and Space Climate, 2021, 11, 33.	3.3	11
105	The Impact of Sudden Commencements on Ground Magnetic Field Variability: Immediate and Delayed Consequences. Space Weather, 2021, 19, e2021SW002764.	3.7	11
106	EISCAT observations of unusual flows in the morning sector associated with weak substorm activity. Annales Geophysicae, 1994, 12, 541-553.	1.6	10
107	A comparison of the probability distribution of observed substorm magnitude with that predicted by a minimal substorm model. Annales Geophysicae, 2007, 25, 2427-2437.	1.6	10
108	Interplanetary Shockâ€Induced Magnetopause Motion: Comparison Between Theory and Global Magnetohydrodynamic Simulations. Geophysical Research Letters, 2021, 48, e2021GL092554.	4.0	10

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109	Measurement of field-aligned currents by the SABRE coherent scatter radar. Geophysical Monograph Series, 1990, , 575-580.	0.1	9
110	A statistical study of the possible effects of solar wind variability on the recurrence rate of substorms. Journal of Geophysical Research, 1995, 100, 23607.	3.3	9
111	VLF, magnetic bay, and Pi2 substorm signatures at auroral and midlatitude ground stations. Journal of Geophysical Research, 2002, 107, SMP 14-1-SMP 14-14.	3.3	9
112	On the nonâ€Gaussian nature of ionospheric vorticity. Geophysical Research Letters, 2010, 37, .	4.0	9
113	Multipoint observations of planar interplanetary magnetic field structures. Journal of Atmospheric and Solar-Terrestrial Physics, 1991, 53, 1039-1047.	0.9	8
114	What can we infer about the underlying physics from burst distributions observed in an RMHD simulation?. Planetary and Space Science, 2001, 49, 1233-1237.	1.7	8
115	AMBIGUITIES IN DETERMINATION OF SELF-AFFINITY IN THE AE-INDEX TIME SERIES. Fractals, 2001, 09, 471-479.	3.7	8
116	Large-scale geomagnetic effects of May 4, 1998. Advances in Space Research, 2003, 31, 1111-1116.	2.6	8
117	Substormâ€Ring Current Coupling: A Comparison of Isolated and Compound Substorms. Journal of Geophysical Research: Space Physics, 2019, 124, 6776-6791.	2.4	8
118	Pulsations observed during highâ€speed flow in the ionosphere. Journal of Geophysical Research, 1988, 93, 12883-12891.	3.3	7
119	Reply [to â€œComment on â€˜The Earth's magnetosphere under continued forcing: Substorm activity during the passage of an interplanetary cloudâ€™ by C. J. Farrugia, M. P. Freeman, L. F. Burlaga, R. P. Lepping, and K. Takahashiâ€]. Journal of Geophysical Research, 1994, 99, 14941.	3.3	7
120	Identifying the magnetotail lobes with Cluster magnetometer data. Journal of Geophysical Research: Space Physics, 2016, 121, 1436-1446.	2.4	6
121	Regional, seasonal, and inter-annual variations of Antarctic and sub-Antarctic temperature anomalies related to the Mansurov effect. Environmental Research Communications, 2019, 1, 111007.	2.3	6
122	Interplanetary Magnetic Field Control of Polar Ionospheric Equivalent Current System Modes. Space Weather, 2019, 17, 976.	3.7	6
123	Comment [on â€œSolar wind control of the magnetopause shape, location, and motionâ€•by D. G. Sibeck, R. E. Lopez, and E. C. Roelof]. Journal of Geophysical Research, 1992, 97, 10875-10877.	3.3	5
124	The role of upstream ULF waves in the generation of quasi-periodic ELF-VLF emissions. Annales Geophysicae, 1995, 13, 1127-1133.	1.6	5
125	Effect of magnetopause leakage on the lifetime of magnetospheric cavity modes. Journal of Geophysical Research, 2000, 105, 5463-5470.	3.3	5
126	Fractal reconnection structures on the magnetopause. Geophysical Research Letters, 2005, 32, .	4.0	5

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127	Traveling ionospheric disturbances in the Weddell Sea Anomaly associated with geomagnetic activity. Journal of Geophysical Research: Space Physics, 2013, 118, 6608-6617.	2.4	5
128	Magnetopause Motions in a Newton-Busemann Approach. , 1998, , 15-26.		5
129	The behavior of the electric field within the substorm current wedge. Journal of Geophysical Research, 1998, 103, 179-190.	3.3	4
130	Correction to â€œScaling of solar wind Ïµ and the AU, AL and AE indices as seen by WINDâ€•by B. Hnat, S. C. Chapman, G. Rowlands, N. W. Watkins, and M. P. Freeman. Geophysical Research Letters, 2003, 30, .	4.0	4
131	A Statistical Model of Vorticity in the Polar Ionosphere and Implications for Extreme Values. Journal of Geophysical Research: Space Physics, 2021, 126, e2021JA029307.	2.4	4
132	Distributions of Birkeland Current Density Observed by AMPERE are Heavyâ€Tailed or Longâ€Tailed. Journal of Geophysical Research: Space Physics, 2022, 127, .	2.4	4
133	Power to the magnetosphere: May 4, 1998. Advances in Space Research, 2003, 31, 1117-1122.	2.6	3
134	Anti-parallel reconnection at the dayside magnetopause: Ionospheric signatures and implications for the low latitude boundary layer. Geophysical Monograph Series, 2003, , 311-318.	0.1	3
135	Magnetic local time variation and scaling of poleward auroral boundary dynamics. Journal of Geophysical Research: Space Physics, 2014, 119, 10,006.	2.4	3
136	The Correspondence Between Sudden Commencements and Geomagnetically Induced Currents: Insights From New Zealand. Space Weather, 2022, 20, .	3.7	3
137	Comment on â€œLocation of the reconnection line for northward interplanetary magnetic fieldâ€•by K. J. Trattner, S. A. Fuselier, and S. M. Petrinec. Journal of Geophysical Research, 2005, 110, .	3.3	2
138	Reply to comment by S. M. Petrinec and S. A. Fuselier on â€œAn ionospheric convection signature of antiparallel reconnectionâ€• Journal of Geophysical Research, 2003, 108, .	3.3	1
139	Dataâ€Driven Basis Functions for SuperDARN Ionospheric Plasma Flow Characterization and Prediction. Journal of Geophysical Research: Space Physics, 2021, 126, e2021JA029272.	2.4	1
140	Complexity in astroplasmas. Astronomy and Geophysics, 2001, 42, 2.22-2.22.	0.2	0
141	RAS helps to reconnect scientists. Astronomy and Geophysics, 2003, 44, 3.33-3.34.	0.2	0
142	Investigating the turbulent structure of ionospheric plasma velocities on open and closed magnetic field lines. AIP Conference Proceedings, 2007, , .	0.4	0
143	The Substorm Chorus Event: An ELF/VLF Wave Signature of Substorm Expansion Phase Onset. Astrophysics and Space Science Library, 1998, , 589-591.	2.7	0