Rod A Heelis

List of Publications by Citations

240 papers	8,696 citations	49 h-index	81 g-index
245 ext. papers	9,378 ext. citations	3.9 avg, IF	5.71 L-index

#	Paper	IF	Citations
240	A model of the high-latitude ionospheric convection pattern. *Journal of Geophysical Research*, **1982**, 87, 6339		462
239	The effects of interplanetary magnetic field orientation on dayside high-latitude ionospheric convection. *Journal of Geophysical Research*, **1984**, 89, 2873		249
238	The theta aurora. *Journal of Geophysical Research*, **1986**, 91, 3177		238
237	Rapid subauroral ion drifts observed by Atmosphere Explorer C. *Geophysical Research Letters*, **1979**, 6, 657-660	4.9	213
236	IMF By -dependent plasma flow and Birkeland currents in the dayside magnetosphere: 1. Dynamics Explorer observations. *Journal of Geophysical Research*, **1985**, 90, 1577		189
235	Ion convection velocity reversals in the dayside cleft. *Journal of Geophysical Research*, **1976**, 81, 3803-3809		182
234	A proposed production model of rapid subauroral ion drifts and their relationship to substorm evolution. *Journal of Geophysical Research*, **1993**, 98, 6069-6078		176
233	The ionospheric signatures of rapid subauroral ion drifts. *Journal of Geophysical Research*, **1991**, 96, 5785		173
232	Ion convection and the formation of the mid-latitude F region ionization trough. *Journal of Geophysical Research*, **1978**, 83, 4255		161
231	Global equatorial ionospheric vertical plasma drifts measured by the AE-E satellite. *Journal of Geophysical Research*, **1995**, 100, 5769		153
230	Theoretical study of the low- and midlatitude ionospheric electron density enhancement during the October 2003 superstorm: Relative importance of the neutral wind and the electric field. *Journal of Geophysical Research*, **2005**, 110,		151
229	Coupling of microprocesses and macroprocesses due to velocity shear: An application to the low-altitude ionosphere. *Journal of Geophysical Research*, **1994**, 99, 8873		147
228	Global distribution of density irregularities in the equatorial ionosphere. *Journal of Geophysical Research*, **1998**, 103, 407-417		138
227	Ion-neutral coupling in the high-latitude F region: Evaluation of ion heating terms from Dynamics Explorer 2. *Journal of Geophysical Research*, **1984**, 89, 7495-7508		136
226	Plasma injection and transport in the mid-altitude polar cusp. *Geophysical Research Letters*, **1982**, 9, 921-924	4.9	127
225	Behavior of the O+/H+ transition height during the extreme solar minimum of 2008. *Geophysical Research Letters*, **2009**, 36,	4.9	105
224	Modeling polar cap F-region patches using time varying convection. *Geophysical Research Letters*, **1993**, 20, 1783-1786	4.9	104

223	Origin of density enhancements in the winter polar cap ionosphere. *Radio Science*, **1988**, 23, 513-519	1.4	100
222	Longitudinal variations in the equatorial vertical drift in the topside ionosphere. *Journal of Geophysical Research*, **2007**, 112, n/a-n/a		96
221	A morphological study of vertical ionospheric flows in the high-latitude F region. *Journal of Geophysical Research*, **1991**, 96, 3627		92
220	Observational evidence for a boundary layer source of dayside region 1 field-aligned currents. *Journal of Geophysical Research*, **1981**, 86, 5577		91
219	Storm time density enhancements in the middle-latitude dayside ionosphere. *Journal of Geophysical Research*, **2009**, 114, n/a-n/a		88
218	Ionospheric convection signatures observed by De 2 during northward interplanetary magnetic field. *Journal of Geophysical Research*, **1986**, 91, 5817		88
217	Observations of quiet time vertical ion drift in the equatorial ionosphere during the solar minimum period of 2009. *Journal of Geophysical Research*, **2011**, 116, n/a-n/a		84
216	Low-latitude zonal and vertical ion drifts seen by DE 2. *Journal of Geophysical Research*, **1989**, 94, 6751-6761		82
215	Dayside auroral arcs and convection. *Geophysical Research Letters*, **1978**, 5, 391-394	4.9	82
214	Particle acceleration parallel and perpendicular to the magnetic field observed by DE-2. *Journal of Geophysical Research*, **1984**, 89, 3893		80
213	Model of the high-latitude ionospheric convection pattern during southward interplanetary magnetic field using DE 2 data. *Journal of Geophysical Research*, **1990**, 95, 2333		76
212	Characteristics of auroral electron acceleration regions observed by Atmosphere Explorer C. *Journal of Geophysical Research*, **1976**, 81, 2223-2230		76
211	Interpretation and modeling of the high-latitude electromagnetic energy flux. *Journal of Geophysical Research*, **1995**, 100, 19715		75
210	Duskside enhancement of equatorial zonal electric field response to convection electric fields during the St. Patrick's Day storm on 17 March 2015. *Journal of Geophysical Research: Space Physics*, **2016**, 121, 538-548	2.6	74
209	Observed saturation of the ionospheric polar cap potential during the 31 March 2001 storm. *Geophysical Research Letters*, **2003**, 30,	4.9	72
208	The Ionospheric Connection Explorer Mission: Mission Goals and Design. *Space Science Reviews*, **2018**, 214, 1	7.5	68
207	Neutral motions in the polar thermosphere for northward interplanetary magnetic field. *Geophysical Research Letters*, **1985**, 12, 159-162	4.9	65
206	Auroral arc electrodynamic parameters measured by AE-C and the Chatanika Radar. *Journal of Geophysical Research*, **1981**, 86, 4671-4685		65

205	Response time of the polar ionospheric convection pattern to changes in the north-south direction of the IMF. *Geophysical Research Letters*, **1995**, 22, 631-634	4.9	63
204	Seasonal and longitudinal variation of large-scale topside equatorial plasma depletions. *Journal of Geophysical Research*, **2005**, 110,		60
203	Formation of a plasma depletion shell in the equatorial ionosphere. *Journal of Geophysical Research* , **2009**, 114, n/a-n/a		59
202	Longitudinal variations of electron temperature and total ion density in the sunset equatorial topside ionosphere. *Geophysical Research Letters*, **2008**, 35,	4.9	59
201	Plasma density enhancements associated with equatorial spread F: ROCSAT-1 and DMSP observations. *Journal of Geophysical Research*, **2003**, 108,		59
200	Transformation of high-latitude ionospheric F region patches into blobs during the March 21, 1990, storm. *Journal of Geophysical Research*, **2000**, 105, 5215-5230		58
199	Effects of electrical coupling on equatorial ionospheric plasma motions: When is the F region a dominant driver in the low-latitude dynamo?. *Journal of Geophysical Research*, **1993**, 98, 6033-6037		58
198	East-west ion drifts at mid-latitudes observed by Dynamics Explorer 2. *Journal of Geophysical Research*, **1992**, 97, 19461		58
197	Cusp region particle precipitation and ion convection for northward interplanetary magnetic field. *Geophysical Research Letters*, **1980**, 7, 393-396	4.9	57
196	Properties of spikelike shear flow reversals observed in the auroral plasma by Atmosphere Explorer C. *Journal of Geophysical Research*, **1976**, 81, 3886-3896		54
195	Measurements of Thermal Ion Drift Velocity and Temperature Using Planar Sensors. *Geophysical Monograph Series*, **2013**, 61-71	1.1	53
194	Dayside observations of thermal-ion upwellings at 800-km Altitude: An ionospheric signature of the cleft ion fountain. *Journal of Geophysical Research*, **1989**, 94, 15277		53
193	Adaptive identification and characterization of polar ionization patches. *Journal of Geophysical Research*, **1995**, 100, 23819		52
192	Evolution of the global aurora during positive IMF Bz and varying IMF By conditions. *Journal of Geophysical Research*, **1997**, 102, 17489-17497		50
191	Distributions of He+ at middle and equatorial latitudes during solar maximum. *Journal of Geophysical Research*, **1990**, 95, 10313		48
190	On the relationship between dynamics of the polar thermosphere and morphology of the aurora: Global-scale observations from Dynamics Explorers 1 and 2. *Journal of Geophysical Research*, **1988**, 93, 2675		47
189	Comparison of low-latitude ion and neutral zonal drifts using DE 2 data. *Journal of Geophysical Research*, **1994**, 99, 341		46
188	Modeling daytime F layer patches over Sondrestrom. *Radio Science*, **1994**, 29, 249-268	1.4	46

187	Longitude variations in ion composition in the morning and evening topside equatorial ionosphere near solar minimum. *Journal of Geophysical Research*, **1996**, 101, 7951-7960		45
186	Multistation measurements of high-latitude ionospheric convection. *Journal of Geophysical Research*, **1983**, 88, 10111		45
185	E and F region study of the evening sector auroral oval: A Chatanika/Dynamics Explorer 2/NOAA 6 comparison. *Journal of Geophysical Research*, **1987**, 92, 2477		44
184	Structures in ionospheric number density and velocity associated with polar cap ionization patches. *Journal of Geophysical Research*, **1997**, 102, 307-318		43
183	A modeling study of the longitudinal dependence of storm time midlatitude dayside total electron content enhancements. *Journal of Geophysical Research*, **2012**, 117, n/a-n/a		42
182	A Sun-aligned arc observed by DMSP and AE-C. *Journal of Geophysical Research*, **1985**, 90, 9697		42
181	On the current-voltage relationship of the magnetospheric generator at intermediate spatial scales. *Geophysical Research Letters*, **1986**, 13, 495-498	4.9	42
180	Ground and Space-Based Measurement of Rocket Engine Burns in the Ionosphere. *IEEE Transactions on Plasma Science*, **2012**, 40, 1267-1286	1.3	40
179	The role of zonal winds in the production of a pre-reversal enhancement in the vertical ion drift in the low latitude ionosphere. *Journal of Geophysical Research*, **2012**, 117, n/a-n/a		39
178	ROCSAT 1 ionospheric plasma and electrodynamics instrument observations of equatorial spread F: An early transitional scale result. *Journal of Geophysical Research*, **2001**, 106, 29153-29159		39
177	Summary of field-aligned Poynting flux observations from DE 2. *Geophysical Research Letters*, **1995**, 22, 1861-1864	4.9	39
176	Field-aligned drifts in subauroral ion drift events. *Journal of Geophysical Research*, **1993**, 98, 21493-21499		39
175	Distribution of convection potential around the polar cap boundary as a function of the interplanetary magnetic field. *Journal of Geophysical Research*, **1989**, 94, 13447		39
174	Universal time dependence of nighttime F region densities at high latitudes. *Journal of Geophysical Research*, **1985**, 90, 4319		39
173	DMSP F8 observations of the mid-latitude and low-latitude topside ionosphere near solar minimum. *Journal of Geophysical Research*, **1994**, 99, 3817		38
172	Field-aligned Poynting Flux observations in the high-latitude ionosphere. *Journal of Geophysical Research*, **1994**, 99, 11417		38
171	Spatial distribution of ionospheric plasma and field structures in the high-latitude F region. *Journal of Geophysical Research*, **1998**, 103, 6955-6968		37
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167	Storming the Bastille: the effect of electric fields on the ionospheric F-layer. *Annales Geophysicae*, **2010**, 28, 977-981	2	34
166	Observation of a large density dropout across the magnetic field at 600 km altitude during the 6 April 2000 magnetic storm. *Journal of Geophysical Research*, **2002**, 107, SIA 18-1		34
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163	Ground-based studies of ionospheric convection associated with substorm expansion. *Journal of Geophysical Research*, **1994**, 99, 19451		34
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159	Solar activity variations in the composition of the low-latitude topside ionosphere. *Journal of Geophysical Research*, **1997**, 102, 295-305		33
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157	Variations in the low- and middle-latitude topside ion concentration observed by DMSP during superstorm events. *Journal of Geophysical Research*, **2007**, 112, n/a-n/a		32
156	Equatorial density irregularity structures at intermediate scales and their temporal evolution. *Journal of Geophysical Research*, **1998**, 103, 3969-3981		32
155	Medium-scale equatorial plasma irregularities observed by Coupled Ion-Neutral Dynamics Investigation sensors aboard the Communication Navigation Outage Forecast System in a prolonged solar minimum. *Journal of Geophysical Research*, **2010**, 115, n/a-n/a		30
154	Global and local Joule heating effects seen by DE 2. *Journal of Geophysical Research*, **1988**, 93, 7551		30
153	On TIE-GCM simulation of the evening equatorial plasma vortex. *Journal of Geophysical Research*, **2012**, 117, n/a-n/a		29
152	C/NOFS observations of the equatorial ionospheric electric field response to the 2009 major sudden stratospheric warming event. *Journal of Geophysical Research*, **2011**, 116, n/a-n/a		29

151	Upflowing ionospheric ions in the auroral region. *Journal of Geophysical Research*, **1992**, 97, 16855		29
150	Earth□ ion upflow associated with polar cap patches: Global and in situ observations. *Geophysical Research Letters*, **2016**, 43, 1845-1853	4.9	28
149	Ion temperature and density relationships measured by CINDI from the C/NOFS spacecraft during solar minimum. *Journal of Geophysical Research*, **2010**, 115, n/a-n/a		28
148	Fast equatorial bubbles. *Journal of Geophysical Research*, **1997**, 102, 2039-2045		28
147	Seasonal and universal time distribution of patches in the northern and southern polar caps. *Journal of Geophysical Research*, **1998**, 103, 29229-29237		28
146	High-latitude ionospheric convection pattern during steady northward interplanetary magnetic field. *Journal of Geophysical Research*, **1995**, 100, 14537		28
145	Polar cap deflation during magnetospheric substorms. *Journal of Geophysical Research*, **1989**, 94, 3785		28
144	Thermospheric dynamics during November 21□2, 1981: Dynamics Explorer measurements and thermospheric general circulation model predictions. *Journal of Geophysical Research*, **1988**, 93, 209		28
143	Thermospheric and ionospheric structure of the southern hemisphere polar cap on October 21, 1981, as determined from Dynamics Explorer 2 satellite data. *Journal of Geophysical Research*, **1985**, 90, 6553		28
142	Longitudinal and seasonal variations of the equatorial ionospheric ion density and eastward drift velocity in the dusk sector. *Journal of Geophysical Research*, **2010**, 115, n/a-n/a		27
141	Multiple auroral arcs and Birkeland currents: Evidence for plasma sheet boundary waves. *Geophysical Research Letters*, **1986**, 13, 805-808	4.9	27
140	Equatorial plasma bubbles: Variations of occurrence and spatial scale in local time, longitude, season, and solar activity. *Journal of Geophysical Research: Space Physics*, **2017**, 122, 5743-5755	2.6	26
139	Characteristics of ion velocity structure at high latitudes during steady southward interplanetary magnetic field conditions. *Journal of Geophysical Research*, **2005**, 110,		26
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137	Studies of ionospheric plasma and electrodynamics and their application to ionosphere-magnetosphere coupling. *Reviews of Geophysics*, **1988**, 26, 317	23.1	26
136	Ion temperature troughs and interhemispheric transport observed in the equatorial ionosphere. *Journal of Geophysical Research*, **1978**, 83, 3683		26
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132	High-latitude plasma outflow as measured by the DMSP spacecraft. *Journal of Geophysical Research* , **2003**, 108,		25
131	Magnetic field-aligned coupling effects on ionospheric plasma structure. *Journal of Geophysical Research*, **1990**, 95, 7995		24
130	Ionospheric flows associated with a transpolar arc. *Journal of Geophysical Research*, **1990**, 95, 21169		24
129	Electrical coupling effects on the temporal evolution of F layer plasma structure. *Journal of Geophysical Research*, **1985**, 90, 437-445		24
128	Characteristics of low-latitude ionospheric depletions and enhancements during solar minimum. *Journal of Geophysical Research*, **2012**, 117, n/a-n/a		23
127	Ion Velocity Measurements for the Ionospheric Connections Explorer. *Space Science Reviews*, **2017**, 212, 615-629	7.5	22
126	Onset conditions of bubbles and blobs: A case study on 2 March 2009. *Geophysical Research Letters*, **2011**, 38, n/a-n/a	4.9	22
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124	Effects of electric field methods on modeling the midlatitude ionospheric electrodynamics and inner magnetosphere dynamics. *Journal of Geophysical Research: Space Physics*, **2017**, 122, 5321-5338	2.6	21
123	Topside signature of medium-scale traveling ionospheric disturbances. *Annales Geophysicae*, **2014**, 32, 959-965	2	21
122	Observations of low-latitude plasma density enhancements and their associated plasma drifts. *Journal of Geophysical Research*, **2011**, 116, n/a-n/a		21
121	WN4 effect on longitudinal distribution of different ion species in the topside ionosphere at low latitudes by means of DEMETER, DMSP-F13 and DMSP-F15 data. *Annales Geophysicae*, **2009**, 27, 2893-2902	2	21
120	Electron temperatures during rapid subauroral ion drift events. *Annales Geophysicae*, **1998**, 16, 450-459	2	21
119	Ionospheric storm time dynamics as seen by GPS tomography and in situ spacecraft observations. *Journal of Geophysical Research*, **2008**, 113, n/a-n/a		21
118	Four cells or two? Are four convection cells really necessary?. *Journal of Geophysical Research*, **1994**, 99, 3955		21
117	A Comparison of in situ measurements of and from Dynamics Explorer 2. *Journal of Geophysical Research*, **1993**, 98, 21501-21516		20
116	Three-dimensional numerical simulations of equatorial spread F: Results and observations in the Pacific sector. *Journal of Geophysical Research*, **2012**, 117, n/a-n/a		19

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114	Solar filament impact on 21 January 2005: Geospace consequences. *Journal of Geophysical Research: Space Physics*, **2014**, 119, 5401-5448	2.6	18
113	The Mid-Latitude Trough Revisited. *Geophysical Monograph Series*, **2008**, 25-33	1.1	18
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111	Observations of ionospheric magnetospheric coupling: DE and Chatanika coincidences. *Journal of Geophysical Research*, **1986**, 91, 5803		18
110	Ionospheric convection signatures and magnetic field topology. *Journal of Geophysical Research*, **1987**, 92, 12352		18
109	Velocity spike at the poleward edge of the auroral zone. *Journal of Geophysical Research*, **1984**, 89, 1627		18
108	The polar ionosphere. *Reviews of Geophysics*, **1982**, 20, 567	23.1	18
107	Measurement of magnetic field aligned potential differences using high resolution conjugate photoelectron energy spectra. *Geophysical Research Letters*, **1977**, 4, 373-376	4.9	18
106	Global Modeling of Storm-Time Thermospheric Dynamics and Electrodynamics. *Geophysical Monograph Series*, **2013**, 187-200	1.1	17
105	Response of the topside ionosphere to recurrent geomagnetic activity. *Journal of Geophysical Research*, **2010**, 115, n/a-n/a		17
104	Ion drift meter calibration and photoemission correction for the C/NOFS satellite. *Journal of Geophysical Research*, **2012**, 117, n/a-n/a		17
103	Response of the ionospheric convection pattern to a rotation of the interplanetary magnetic field on January 14, 1988. *Journal of Geophysical Research*, **1992**, 97, 19449		17
102	Combining electric field and aurora observations from DE 1 and 2 with ground magnetometer records to estimate ionospheric electromagnetic quantities. *Journal of Geophysical Research*, **1989**, 94, 6723-6738		17
101	A feature of the behavior of He+ in the nightside high-latitude ionosphere during equinox. *Journal of Geophysical Research*, **1981**, 86, 59		17
100	Topside equatorial zonal ion velocities measured by C/NOFS during rising solar activity. *Annales Geophysicae*, **2014**, 32, 69-75	2	16
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98	Dynamics Explorer observations of equatorial spread F: Evidence for drift waves. *Geophysical Research Letters*, **1982**, 9, 993-996	4.9	16

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96	Low latitude thermospheric responses to magnetic storms. *Journal of Geophysical Research: Space Physics*, **2013**, 118, 3866-3876	2.6	15
95	Exploring the role of ionospheric drivers during the extreme solar minimum of 2008. *Annales Geophysicae*, **2013**, 31, 2147-2156	2	15
94	Quiet time meridional (vertical) ion drifts at low and middle latitudes observed by ROCSAT-1. *Journal of Geophysical Research*, **2010**, 115, n/a-n/a		15
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91	The HILAT program. *Eos*, **1983**, 64, 163	1.5	15
90	Observed Propagation Route of VLF Transmitter Signals in the Magnetosphere. *Journal of Geophysical Research: Space Physics*, **2018**, 123, 5528-5537	2.6	15
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85	Seasonal and latitudinal distributions of the dominant light ions at 600 km topside ionosphere from 1999 to 2002. *Journal of Geophysical Research*, **2005**, 110,		14
84	Ion and neutral motions observed in the winter polar upper atmosphere. *Journal of Geophysical Research*, **2002**, 107, SIA 17-1-SIA 17-7		14
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82	Electrostatic potential drop across the ionospheric signature of the low-latitude boundary layer. *Journal of Geophysical Research*, **2009**, 114, n/a-n/a		13
81	Coordinated radar and optical measurements of stable auroral arcs at the polar cap boundary. *Journal of Geophysical Research*, **1991**, 96, 17847		13
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75	The Ion/Electron Temperature Characteristics of Polar Cap Classical and Hot Patches and Their Influence on Ion Upflow. *Geophysical Research Letters*, **2018**, 45, 8072-8080	4.9	11
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70	Low- and Middle-Latitude Ionospheric Dynamics Associated with Magnetic Storms. *Geophysical Monograph Series*, **2013**, 51-61	1.1	10
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68	Superrotation of the ionosphere and quiet time zonal ion drifts at low and middle latitudes observed by Republic of China Satellite-1 (ROCSAT-1). *Journal of Geophysical Research*, **2011**, 116, n/a-n/a		9
67	Response of the topside ionosphere to high-speed solar wind streams. *Journal of Geophysical Research*, **2011**, 116, n/a-n/a		9
66	A statistical analysis of systematic errors in temperature and ram velocity estimates from satellite-borne retarding potential analyzers. *Physics of Plasmas*, **2009**, 16, 052901	2.1	9
65	Supercooled ion temperatures observed in the topside ionosphere at dawn meridian during storm periods. *Journal of Geophysical Research*, **2004**, 109,		9
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57	Effects of Alignment Between Particle Precipitation and Ion Convection Patterns on Joule Heating. *Journal of Geophysical Research: Space Physics*, **2019**, 124, 4905-4915	2.6	7
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54	A comparison of ionospheric O+/light-ion transition height derived from ion-composition measurements and the topside ion density profiles over equatorial latitudes. *Geophysical Research Letters*, **2010**, 37, n/a-n/a	4.9	7
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