

# Chester S Gardner

## List of Publications by Citations

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

74 papers	2,468 citations	30 h-index	46 g-index
78 ext. papers	2,662 ext. citations	5.3 avg, IF	4.92 L-index

#	Paper	IF	Citations
74	Experiments on laser guide stars at Mauna Kea Observatory for adaptive imaging in astronomy. <i>Nature</i> , <b>1987</b> , 328, 229-231	50.4	149
73	Seasonal variability of gravity wave activity and spectra in the mesopause region at Urbana. <i>Journal of Geophysical Research</i> , <b>1991</b> , 96, 17229		118
72	Diffusive filtering theory of gravity wave spectra in the atmosphere. <i>Journal of Geophysical Research</i> , <b>1994</b> , 99, 20601		112
71	Simultaneous radar and lidar observations of sporadic E and Na layers at Arecibo. <i>Geophysical Research Letters</i> , <b>1989</b> , 16, 1019-1022	4.9	70
70	Lidar observations of neutral Fe layers and fast gravity waves in the thermosphere (110–155 km) at McMurdo (77.8°S, 166.7°E), Antarctica. <i>Geophysical Research Letters</i> , <b>2011</b> , 38, n/a-n/a	4.9	69
69	Structure and seasonal variability of the nighttime mesospheric Fe layer at midlatitudes. <i>Journal of Geophysical Research</i> , <b>1993</b> , 98, 16875		66
68	Fe Boltzmann temperature lidar: design, error analysis, and initial results at the north and south poles. <i>Applied Optics</i> , <b>2002</b> , 41, 4400-10	1.7	63
67	Thermal Structure of the Mesopause Region (80–105 km) at 40°N Latitude. Part I: Seasonal Variations. <i>Journals of the Atmospheric Sciences</i> , <b>2000</b> , 57, 66-77	2.1	62
66	Thermal Structure of the Mesopause Region (80–105 km) at 40°N Latitude. Part II: Diurnal Variations. <i>Journals of the Atmospheric Sciences</i> , <b>2000</b> , 57, 78-92	2.1	62
65	Measurements of the dynamical cooling rate associated with the vertical transport of heat by dissipating gravity waves in the mesopause region at the Starfire Optical Range, New Mexico. <i>Journal of Geophysical Research</i> , <b>1998</b> , 103, 16909-16926		61
64	Removal of meteoric iron on polar mesospheric clouds. <i>Science</i> , <b>2004</b> , 304, 426-8	33.3	60
63	A model of meteoric iron in the upper atmosphere. <i>Journal of Geophysical Research</i> , <b>1998</b> , 103, 10913-10925		60
62	Seasonal variations of the Na and Fe layers at the South Pole and their implications for the chemistry and general circulation of the polar mesosphere. <i>Journal of Geophysical Research</i> , <b>2005</b> , 110,		58
61	Lidar studies of interannual, seasonal, and diurnal variations of polar mesospheric clouds at the South Pole. <i>Journal of Geophysical Research</i> , <b>2003</b> , 108,		58
60	Gravity wave characteristics in the lower atmosphere at south pole. <i>Journal of Geophysical Research</i> , <b>1999</b> , 104, 5963-5984		54
59	Horizontal and vertical structure of the major sporadic sodium layer events observed during ALOHA-90. <i>Geophysical Research Letters</i> , <b>1991</b> , 18, 1365-1368	4.9	53
58	Gravity waves in the upper mesosphere over Antarctica: Lidar observations at the South Pole and Syowa. <i>Journal of Geophysical Research</i> , <b>1994</b> , 99, 5475		49

57	Seasonal variations of the vertical fluxes of heat and horizontal momentum in the mesopause region at Starfire Optical Range, New Mexico. <i>Journal of Geophysical Research</i> , <b>2007</b> , 112,		48
56	Wave-induced transport of atmospheric constituents and its effect on the mesospheric Na layer. <i>Journal of Geophysical Research</i> , <b>2010</b> , 115,		47
55	Polar mesospheric clouds observed by an iron Boltzmann lidar at Rothera (67.5°S, 68.0°W), Antarctica from 2002 to 2005: Properties and implications. <i>Journal of Geophysical Research</i> , <b>2006</b> , 111,		44
54	Heat flux observations in the mesopause region above Haleakala. <i>Geophysical Research Letters</i> , <b>1995</b> , 22, 2829-2832	4.9	44
53	Lidar observations of mesospheric Fe and sporadic Fe layers at Urbana, Illinois. <i>Geophysical Research Letters</i> , <b>1990</b> , 17, 143-146	4.9	44
52	Measurements of atmospheric stability in the mesopause region at starfire optical range, NM. <i>Journal of Atmospheric and Solar-Terrestrial Physics</i> , <b>2003</b> , 65, 219-232	2	42
51	Influence of the diurnal tide and thermospheric heat sources on the formation of mesospheric temperature inversion layers. <i>Geophysical Research Letters</i> , <b>1998</b> , 25, 1483-1486	4.9	42
50	Testing theories of atmospheric gravity wave saturation and dissipation. <i>Journal of Atmospheric and Solar-Terrestrial Physics</i> , <b>1996</b> , 58, 1575-1589		42
49	Inferring the global cosmic dust influx to the Earth's atmosphere from lidar observations of the vertical flux of mesospheric Na. <i>Journal of Geophysical Research: Space Physics</i> , <b>2014</b> , 119, 7870-7879	2.6	39
48	Characteristics of quasi-monochromatic gravity waves observed with Na lidar in the mesopause region at Starfire Optical Range, NM. <i>Geophysical Research Letters</i> , <b>2002</b> , 29, 22-1-22-4	4.9	39
47	Atmospheric Refractivity Corrections in Satellite Laser Ranging. <i>IEEE Transactions on Geoscience and Remote Sensing</i> , <b>1985</b> , GE-23, 414-425	8.1	38
46	Unstable layers in the mesopause region observed with Na lidar during the Turbulent Oxygen Mixing Experiment (TOMEX) campaign. <i>Journal of Geophysical Research</i> , <b>2004</b> , 109,		35
45	Mid-latitude lidar observations of large sporadic sodium layers. <i>Geophysical Research Letters</i> , <b>1989</b> , 16, 715-718	4.9	35
44	Performance capabilities of middle-atmosphere temperature lidars: comparison of Na, Fe, K, Ca, Ca+, and Rayleigh systems. <i>Applied Optics</i> , <b>2004</b> , 43, 4941-56	1.7	30
43	Seasonal variations of the thermal structure of the mesopause region at Urbana, IL (40°N, 88°W) and Ft. Collins, CO (41°N, 105°W). <i>Geophysical Research Letters</i> , <b>1994</b> , 21, 821-824	4.9	30
42	Introduction to ALOHA-90: The airborne lidar and observations of the Hawaiian Airglow Campaign. <i>Geophysical Research Letters</i> , <b>1991</b> , 18, 1313-1316	4.9	30
41	Seasonal variations of the atmospheric temperature structure at South Pole. <i>Journal of Geophysical Research</i> , <b>2003</b> , 108,		29
40	Lidar observations of polar mesospheric clouds at South Pole: Diurnal variations. <i>Geophysical Research Letters</i> , <b>2001</b> , 28, 1937-1940	4.9	29

39	Nocturnal thermal structure of the mesosphere and lower thermosphere region at Maui, Hawaii (20.7°N), and Starfire Optical Range, New Mexico (35°N). <i>Journal of Geophysical Research</i> , <b>2005</b> , 110,		27
38	Observations of a 12 H wave in the mesopause region at the South Pole. <i>Geophysical Research Letters</i> , <b>1992</b> , 19, 57-60	4.9	27
37	Measurements of the vertical fluxes of atomic Fe and Na at the mesopause: Implications for the velocity of cosmic dust entering the atmosphere. <i>Geophysical Research Letters</i> , <b>2015</b> , 42, 169-175	4.9	25
36	Lidar observations of polar mesospheric clouds at Rothera, Antarctica (67.5°S, 68.0°W). <i>Geophysical Research Letters</i> , <b>2004</b> , 31,	4.9	25
35	Characteristics of Fe ablation trails observed during the 1998 Leonid Meteor Shower. <i>Geophysical Research Letters</i> , <b>2000</b> , 27, 1807-1810	4.9	25
34	Influence of the mean wind field on the separability of atmospheric perturbation spectra. <i>Journal of Geophysical Research</i> , <b>1993</b> , 98, 8859-8872		25
33	CEDAR lidar observations of sporadic Na layers at Urbana, Illinois. <i>Geophysical Research Letters</i> , <b>1988</b> , 15, 1137-1140	4.9	25
32	First lidar observations of polar mesospheric clouds and Fe temperatures at McMurdo (77.8°S, 166.7°E), Antarctica. <i>Geophysical Research Letters</i> , <b>2011</b> , 38, n/a-n/a	4.9	23
31	Spectra of gravity wave density and wind perturbations observed during ALOHA-90 on the 25 March flight between Maui and Christmas Island. <i>Geophysical Research Letters</i> , <b>1991</b> , 18, 1325-1328	4.9	23
30	Seasonal variations of the mesospheric Fe layer at Rothera, Antarctica (67.5°S, 68.0°W). <i>Journal of Geophysical Research</i> , <b>2011</b> , 116,		22
29	Simultaneous lidar observations of vertical wind, temperature, and density profiles in the upper mesosphere: Evidence for nonseparability of atmospheric perturbation spectra. <i>Geophysical Research Letters</i> , <b>1995</b> , 22, 2877-2880	4.9	22
28	Meteor trail advection observed during the 1998 Leonid Shower. <i>Geophysical Research Letters</i> , <b>2000</b> , 27, 1819-1822	4.9	21
27	Winter temperature tides from 30 to 110 km at McMurdo (77.8°S, 166.7°E), Antarctica: Lidar observations and comparisons with WAM. <i>Journal of Geophysical Research D: Atmospheres</i> , <b>2014</b> , 119, 2846-2863	4.4	19
26	Observations of tidal temperature and wind perturbations in the mesopause region above Urbana, IL (40°N, 88°W). <i>Geophysical Research Letters</i> , <b>1997</b> , 24, 1207-1210	4.9	19
25	First Na lidar measurements of turbulence heat flux, thermal diffusivity, and energy dissipation rate in the mesopause region. <i>Geophysical Research Letters</i> , <b>2017</b> , 44, 5782-5790	4.9	19
24	Observed temperature structure of the atmosphere above Syowa Station, Antarctica (69°S, 39°E). <i>Journal of Geophysical Research</i> , <b>2004</b> , 109,		18
23	Introduction to ALOHA/ANLC-93: The 1993 airborne lidar and observations of the Hawaiian Airglow/Airborne Noctilucent Cloud Campaigns. <i>Geophysical Research Letters</i> , <b>1995</b> , 22, 2789-2792	4.9	16
22	The temperature structure of the winter atmosphere at South Pole. <i>Geophysical Research Letters</i> , <b>2002</b> , 29, 49-1-49-4	4.9	15

21	Mesospheric Na Wind/Temperature Lidar.. <i>The Review of Laser Engineering</i> , <b>1995</b> , 23, 131-134	0	15
20	Measuring eddy heat, constituent, and momentum fluxes with high-resolution Na and Fe Doppler lidars. <i>Journal of Geophysical Research D: Atmospheres</i> , <b>2014</b> , 119, 10583-10603	4.4	14
19	Vertical dynamical transport of mesospheric constituents by dissipating gravity waves. <i>Journal of Atmospheric and Solar-Terrestrial Physics</i> , <b>2004</b> , 66, 267-275	2	14
18	Role of Wave-Induced Diffusion and Energy Flux in the Vertical Transport of Atmospheric Constituents in the Mesopause Region. <i>Journal of Geophysical Research D: Atmospheres</i> , <b>2018</b> , 123, 6581-6604	4.4	12
17	Simultaneous, common-volume lidar observations and theoretical studies of correlations among Fe/Na layers and temperatures in the mesosphere and lower thermosphere at Boulder Table Mountain (40°N, 105°W), Colorado. <i>Journal of Geophysical Research D: Atmospheres</i> , <b>2013</b> , 118, 8748-8759	4.4	12
16	Evidence for substantial seasonal variations in the structure of the mesospheric Fe layer. <i>Geophysical Research Letters</i> , <b>1992</b> , 19, 405-408	4.9	12
15	Chemical transport of neutral atmospheric constituents by waves and turbulence: Theory and observations. <i>Journal of Geophysical Research D: Atmospheres</i> , <b>2016</b> , 121, 494-520	4.4	12
14	From Antarctica Lidar Discoveries to Oasis Exploration. <i>EPJ Web of Conferences</i> , <b>2016</b> , 119, 12001	0.3	9
13	Vertical and horizontal transport of mesospheric Na: Implications for the mass influx of cosmic dust. <i>Journal of Atmospheric and Solar-Terrestrial Physics</i> , <b>2017</b> , 162, 192-202	2	9
12	Vertical heat and constituent transport in the mesopause region by dissipating gravity waves at Maui, Hawaii (20.7°N), and Starfire Optical Range, New Mexico (35°N). <i>Journal of Geophysical Research</i> , <b>2005</b> , 110,		8
11	High resolution horizontal wave number spectra of mesospheric wave perturbations observed during the 21 October triangular flight of ALOHA-93. <i>Geophysical Research Letters</i> , <b>1995</b> , 22, 2869-2872	4.9	8
10	Observations of persistent Leonid meteor trails 3. The "lowworm". <i>Journal of Geophysical Research</i> , <b>2002</b> , 107, SIA 5-1-SIA 5-10		7
9	Horizontal wave number spectra of density and temperature perturbations in the mesosphere measured during the 4 August flight of ANLC-93. <i>Geophysical Research Letters</i> , <b>1995</b> , 22, 2865-2868	4.9	7
8	Parameterizing Wave-Driven Vertical Constituent Transport in the Upper Atmosphere. <i>Earth and Space Science</i> , <b>2019</b> , 6, 904-913	3.1	5
7	First Simultaneous Lidar Observations of Thermosphere-Ionosphere Fe and Na (TIFe and TINa) Layers at McMurdo (77.84°S, 166.67°E), Antarctica With Concurrent Measurements of Aurora Activity, Enhanced Ionization Layers, and Converging Electric Field. <i>Geophysical Research Letters</i> , <b>2020</b> , 47, e2020GL090181	4.9	5
6	Seasonal and Nocturnal Variations of the Mesospheric Sodium Layer at Starfire Optical Range, New Mexico. <i>Chinese Journal of Geophysics</i> , <b>2003</b> , 46, 432-437		4
5	Impact of horizontal transport, temperature, and PMC uptake on mesospheric Fe at high latitudes. <i>Journal of Geophysical Research D: Atmospheres</i> , <b>2016</b> , 121, 6564-6580	4.4	3
4	OH* imager response to turbulence-induced temperature fluctuations. <i>Journal of Geophysical Research D: Atmospheres</i> , <b>2016</b> , 121, 13,919	4.4	2

- 3 Scale-Independent Diffusive Filtering Theory of Gravity Wave Spectra in the Atmosphere.  
*Geophysical Monograph Series*, **2013**, 153-175 1.1 2
- 2 Eliminating photon noise biases in the computation of second-order statistics of lidar temperature,  
wind, and species measurements. *Applied Optics*, **2020**, 59, 8259-8271 1.7 1
- 1 The Application of Terrestrial Aeronomy Groundbased Instruments to Planetary Studies.  
*Geophysical Monograph Series*, **2002**, 329-337 1.1