Geronimo L Villanueva

List of Publications by Year
in descending order

100	4,365	87888	114465
papers	citations	38 h-index	63 g-index

101	101	101	3351
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Strong Release of Methane on Mars in Northern Summer 2003. Science, 2009, 323, 1041-1045.	12.6	516
2	Strong water isotopic anomalies in the martian atmosphere: Probing current and ancient reservoirs. Science, 2015, 348, 218-221.	12.6	245
3	Parent Volatiles in Comet 9P/Tempel 1: Before and After Impact. Science, 2005, 310, 270-274.	12.6	168
4	Planetary Spectrum Generator: An accurate online radiative transfer suite for atmospheres, comets, small bodies and exoplanets. Journal of Quantitative Spectroscopy and Radiative Transfer, 2018, 217, 86-104.	2.3	167
5	A sensitive search for organics (CH4, CH3OH, H2CO, C2H6, C2H2, C2H4), hydroperoxyl (HO2), nitrogen compounds (N2O, NH3, HCN) and chlorine species (HCl, CH3Cl) on Mars using ground-based high-resolution infrared spectroscopy. Icarus, 2013, 223, 11-27.	2.5	126
6	A SENSITIVE SEARCH FOR DEUTERATED WATER IN COMET 8P/TUTTLE. Astrophysical Journal, 2009, 690, L5-L9.	4.5	120
7	Martian dust storm impact on atmospheric H2O and D/H observed by ExoMars Trace Gas Orbiter. Nature, 2019, 568, 521-525.	27.8	107
8	EPOXI: COMET 103P/HARTLEY 2 OBSERVATIONS FROM A WORLDWIDE CAMPAIGN. Astrophysical Journal Letters, 2011, 734, L1.	8.3	96
9	Impact of Clouds and Hazes on the Simulated JWST Transmission Spectra of Habitable Zone Planets in the TRAPPIST-1 System. Astrophysical Journal, 2019, 887, 194.	4.5	92
10	Water Vapor Vertical Profiles on Mars in Dust Storms Observed by TGO/NOMAD. Journal of Geophysical Research E: Planets, 2019, 124, 3482-3497.	3.6	88
11	Detection of Formaldehyde Emission in Comet C/2002 T7 (LINEAR) at Infrared Wavelengths: Lineâ€byâ€Line Validation of Modeled Fluorescent Intensities. Astrophysical Journal, 2006, 650, 470-483.	4.5	82
12	The molecular composition of Comet C/2007 W1 (Boattini): Evidence of a peculiar outgassing and a rich chemistry. Icarus, 2011, 216, 227-240.	2.5	79
13	Water in planetary and cometary atmospheres: H2O/HDO transmittance and fluorescence models. Journal of Quantitative Spectroscopy and Radiative Transfer, 2012, 113, 202-220.	2.3	78
14	FIRST DETECTION OF NEAR-INFRARED LINE EMISSION FROM ORGANICS IN YOUNG CIRCUMSTELLAR DISKS. Astrophysical Journal, 2012, 747, 92.	4.5	72
15	A measurement of water vapour amid a largely quiescent environment on Europa. Nature Astronomy, 2020, 4, 266-272.	10.1	69
16	A Search for Variation in the H 2 O Ortho-Para Ratio and Rotational Temperature in the Inner Coma of Comet C/2004 Q2 (Machholz). Astrophysical Journal, 2007, 661, L97-L100.	4.5	67
17	TEMPORAL AND SPATIAL ASPECTS OF GAS RELEASE DURING THE 2010 APPARITION OF COMET 103P/HARTLEY 2. Astrophysical Journal Letters, 2011, 734, L7.	8.3	67
18	The First Habitable-zone Earth-sized Planet from TESS. I. Validation of the TOI-700 System. Astronomical Journal, 2020, 160, 116.	4.7	67

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19	Ethane in planetary and cometary atmospheres: Transmittance and fluorescence models of theÎ½₇band at 3.3Î¼m. Journal of Geophysical Research, 2011, 116, .	3.3	65
20	NON-DETECTION OFL-BAND LINE EMISSION FROM THE EXOPLANET HD189733b. Astrophysical Journal, 2011, 728, 18.	4.5	65
21	Description and climatology of a new general circulation model of the Martian atmosphere. Journal of Geophysical Research, 2005, 110, .	3.3	63
22	Identification of a new band system of isotopic CO2 near 3.3 Î¼m: Implications for remote sensing of biomarker gases on Mars. Icarus, 2008, 195, 34-44.	2.5	60
23	HIGHLY DEPLETED ETHANE AND MILDLY DEPLETED METHANOL IN COMET 21P/GIACOBINI-ZINNER: APPLICATION OF A NEW EMPIRICAL Î½₂-BAND MODEL FOR CH₃OH NEAR 50 K. Astrophysical Journal, 2013, 763, 1.	4.5	56
24	CHEMICAL COMPOSITION OF COMET C/2007 N3 (LULIN): ANOTHER â€˜â€˜ATYPICALâ€™â€™ COMET. Astrophysical Journal, 2012, 750, 102.	4.5	55
25	The Peculiar Volatile Composition of CO-dominated Comet C/2016 R2 (PanSTARRS). Astronomical Journal, 2019, 158, 128.	4.7	55
26	The Volatile Composition of the Split Ecliptic comet 73P/Schwassmann-Wachmann 3: A Comparison of Fragments C and B. Astrophysical Journal, 2006, 650, L87-L90.	4.5	54
27	A QUANTUM BAND MODEL OF THE Î½₃FUNDAMENTAL OF METHANOL (CH₃OH) AND ITS APPLICATION TO FLUORESCENCE SPECTRA OF COMETS. Astrophysical Journal, 2012, 747, 37.	4.5	51
28	THE CHEMICAL COMPOSITION OF CO-RICH COMET C/2009 P1 (GARRADD) ATR_h= 2.4 and 2.0 AU BEFORE PERIHELION. Astrophysical Journal Letters, 2012, 748, L13.	8.3	50
29	No evidence of phosphine in the atmosphere of Venus from independent analyses. Nature Astronomy, 2021, 5, 631-635.	10.1	50
30	The Peculiar Volatile Composition of Comet 8P/Tuttle: A Contact Binary of Chemically Distinct Cometesimals?. Astrophysical Journal, 2008, 680, L61-L64.	4.5	48
31	Evidence for two modes of water release in Comet 103P/Hartley 2: Distributions of column density, rotational temperature, and orthoâ€“para ratio. Icarus, 2013, 222, 740-751.	2.5	48
32	Discovery of OH in Circumstellar Disks around Young Intermediate-Mass Stars. Astrophysical Journal, 2008, 681, L25-L28.	4.5	42
33	EN ROUTE TO DESTRUCTION: THE EVOLUTION IN COMPOSITION OF ICES IN COMET D/2012 S1 (ISON) BETWEEN 1.2 AND 0.34 AU FROM THE SUN AS REVEALED AT INFRARED WAVELENGTHS*. Astrophysical Journal, 2016, 820, 34.	4.5	41
34	Depleted Carbon Monoxide in Fragment C of the Jupiter-Family Comet 73P/Schwassmann-Wachmann 3. Astrophysical Journal, 2007, 661, L101-L104.	4.5	40
35	GROUND-BASED INFRARED DETECTIONS OF CO IN THE CENTAUR-COMET 29P/SCHWASSMANN-WACHMANN 1 AT 6.26 AU FROM THE SUN. Astrophysical Journal, 2013, 766, 100.	4.5	40
36	Pre- and post-perihelion observations of C/2009 P1 (Garradd): Evidence for an oxygen-rich heritage?. Icarus, 2014, 228, 167-180.	2.5	39

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37	Strong Variability of Martian Water Ice Clouds During Dust Storms Revealed From ExoMars Trace Gas Orbiter/NOMAD. Journal of Geophysical Research E: Planets, 2020, 125, e2019JE006250.	3.6	39
38	Dim Prospects for Transmission Spectra of Ocean Earths around M Stars. Astrophysical Journal, 2020, 891, 58.	4.5	38
39	COMET C/2004 Q2 (MACHHOLZ): PARENT VOLATILES, A SEARCH FOR DEUTERATED METHANE, AND CONSTRAINT ON THE CH₄SPIN TEMPERATURE. Astrophysical Journal, 2009, 699, 1563-1572.	4.5	37
40	Evolution of H2O, CO, and CO2 production in Comet C/2009 P1 Garradd during the 2011â€“2012 apparition. Icarus, 2015, 250, 504-515.	2.5	37
41	The organic composition of Comet C/2000 WM1 (LINEAR) revealed through infrared spectroscopy. Icarus, 2010, 206, 764-777.	2.5	36
42	C/2013 R1 (LOVEJOY) AT IR WAVELENGTHS AND THE VARIABILITY OF CO ABUNDANCES AMONG OORT CLOUD COMETS. Astrophysical Journal, 2014, 791, 122.	4.5	36
43	Detectability of Molecular Signatures on TRAPPIST-1e through Transmission Spectroscopy Simulated for Future Space-based Observatories. Astrophysical Journal Letters, 2020, 898, L33.	8.3	35
44	The Unusual Volatile Composition of the Halley-Type Comet 8P/Tuttle: Addressing the Existence of an Inner Oort Cloud. Astrophysical Journal, 2008, 683, L71-L74.	4.5	34
45	Methane on Mars: New insights into the sensitivity of CH4 with the NOMAD/ExoMars spectrometer through its first in-flight calibration. Icarus, 2019, 321, 671-690.	2.5	32
46	Sensitive probing of exoplanetary oxygen via mid-infrared collisional absorption. Nature Astronomy, 2020, 4, 372-376.	10.1	32
47	Water heavily fractionated as it ascends on Mars as revealed by ExoMars/NOMAD. Science Advances, 2021, 7, .	10.3	31
48	A multi-instrument study of Comet C/2009 P1 (Garradd) at 2.1AU (pre-perihelion) from the Sun. Icarus, 2012, 220, 291-295.	2.5	30
49	Nitrogen Dioxide Pollution as a Signature of Extraterrestrial Technology. Astrophysical Journal, 2021, 908, 164.	4.5	30
50	IRCS/Subaru observations of water in the inner coma of Comet 73P-B/Schwassmannâ€“Wachmann 3: Spatially resolved rotational temperatures and orthoâ€“para ratios. Icarus, 2008, 196, 241-248.	2.5	29
51	THE UNEXPECTEDLY BRIGHT COMET C/2012 F6 (LEMMON) UNVEILED AT NEAR-INFRARED WAVELENGTHS. Astronomical Journal, 2014, 147, 15.	4.7	29
52	The 67P/Churyumovâ€“Gerasimenko observation campaign in support of the Rosetta mission. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2017, 375, 20160249.	3.4	29
53	Comprehensive investigation of Mars methane and organics with ExoMars/NOMAD. Icarus, 2021, 357, 114266.	2.5	27
54	High-resolution infrared spectroscopic measurements of Comet 2P/Encke: Unusual organic composition and low rotational temperatures. Icarus, 2013, 223, 298-307.	2.5	26

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55	Discovery of multiple bands of isotopic CO2 in the prime spectral regions used when searching for CH4 and HDO on Mars. Journal of Quantitative Spectroscopy and Radiative Transfer, 2008, 109, 883-894.	2.3	25
56	THE VOLATILE COMPOSITION OF COMET C/2003 K4 (LINEAR) AT NEAR-IR WAVELENGTHSâ€"COMPARISONS WITH RESULTS FROM THE NANÃ‡AY RADIO TELESCOPE AND FROM THEODIN,SPITZER, ANDSOHOSPACE OBSERVATORIES. Astrophysical Journal, 2015, 808, 1.	4.5	25
57	Modeling of nitrogen compounds in cometary atmospheres: Fluorescence models of ammonia (NH3), hydrogen cyanide (HCN), hydrogen isocyanide (HNC) and cyanoacetylene (HC3N). Journal of Quantitative Spectroscopy and Radiative Transfer, 2013, 129, 158-168.	2.3	24
58	The Volatile Composition of Comet C/2017 E4 (Lovejoy) before its Disruption, as Revealed by High-resolution Infrared Spectroscopy with iSHELL at the NASA/IRTF. Astronomical Journal, 2018, 156, 68.	4.7	24
59	First Comet Observations with NIRSPEC-2 at Keck: Outgassing Sources of Parent Volatiles and Abundances Based on Alternative Taxonomic Compositional Baselines in 46P/Wirtanen. Planetary Science Journal, 2021, 2, 45.	3.6	22
60	A new model for theÎ½₁vibrational band of HCN in cometary comae, with application to three comets. Astronomy and Astrophysics, 2013, 551, A51.	5.1	21
61	The First Habitable-zone Earth-sized Planet from TESS. III. Climate States and Characterization Prospects for TOI-700 d. Astronomical Journal, 2020, 160, 118.	4.7	20
62	HCN SPECTROSCOPY OF COMET 73P/SCHWASSMANN-WACHMANN 3. A STUDY OF GAS EVOLUTION AND ITS LINK TO CN. Astrophysical Journal, 2010, 715, 1258-1269.	4.5	19
63	The formation heritage of Jupiter Family Comet 10P/Tempel 2 as revealed by infrared spectroscopy. Icarus, 2012, 218, 644-653.	2.5	19
64	Ground-based Detection of Deuterated Water in Comet C/2014 Q2 (Lovejoy) at IR Wavelengths. Astrophysical Journal Letters, 2017, 836, L25.	8.3	18
65	Quantifying the Evolution of Molecular Production Rates of Comet 21P/Giacobiniâ€"Zinner with iSHELL/NASA-IRTF. Astronomical Journal, 2019, 158, 254.	4.7	18
66	A multi-wavelength study of parent volatile abundances in Comet C/2006 M4 (SWAN). Icarus, 2009, 203, 589-598.	2.5	17
67	A NEWLY DEVELOPED FLUORESCENCE MODEL FOR C₂H₆Î½₅AND APPLICATION TO COMETARY SPECTRA ACQUIRED WITH NIRSPEC AT KECK II. Astrophysical Journal, 2011, 729, 135.	4.5	17
68	THE INNER COMA OF COMET C/2012 S1 (ISON) AT 0.53 AU AND 0.35 AU FROM THE SUN. Astrophysical Journal Letters, 2014, 796, L6.	8.3	17
69	Line parameters for CO2- and self-broadening in the Î½3 band of HD16O. Journal of Quantitative Spectroscopy and Radiative Transfer, 2017, 203, 158-174.	2.3	17
70	Annual Appearance of Hydrogen Chloride on Mars and a Striking Similarity With the Water Vapor Vertical Distribution Observed by TGO/NOMAD. Geophysical Research Letters, 2021, 48, e2021GL092506.	4.0	15
71	The Deuterium Isotopic Ratio of Water Released From the Martian Caps as Measured With TGO/NOMAD. Geophysical Research Letters, 2022, 49, .	4.0	15
72	L 98-59: A Benchmark System of Small Planets for Future Atmospheric Characterization. Astronomical Journal, 2021, 162, 169.	4.7	14

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73	Line parameters for CO2 broadening in the Î½2 band of HD16O. Journal of Quantitative Spectroscopy and Radiative Transfer, 2017, 187, 472-488.	2.3	13
74	Beyond 3 au from the Sun: The Hypervolatiles CH₄, C₂H₆, and CO in the Distant Comet C/2006 W3 (Christensen)^{âˆ—}. Astronomical Journal, 2017, 153, 241.	4.7	13
75	First Detection and Thermal Characterization of Terminator CO₂Ice Clouds With ExoMars/NOMAD. Geophysical Research Letters, 2021, 48, .	4.0	12
76	Line parameters for CO2- and self-broadening in the Î½1 band of HD16O. Journal of Quantitative Spectroscopy and Radiative Transfer, 2017, 203, 133-157.	2.3	11
77	The Composition of Comet C/2012 K1 (PanSTARRS) and the Distribution of Primary Volatile Abundances Among Comets. Astronomical Journal, 2017, 153, 168.	4.7	11
78	The climatology of carbon monoxide on Mars as observed by NOMAD nadir-geometry observations. Icarus, 2021, 362, 114404.	2.5	11
79	Temporal evolution of parent volatiles and dust in Comet 9P/Tempel 1 resulting from the Deep Impact experiment. Icarus, 2007, 191, 481-493.	2.5	10
80	Potential improvements in global carbon flux estimates from a network of laser heterodyne radiometer measurements of column carbon dioxide. Atmospheric Measurement Techniques, 2019, 12, 2579-2594.	3.1	10
81	New Insights into the Chemical Composition of Five Oort Cloud Comets after Re-analysis of Their Infrared Spectra. Astronomical Journal, 2020, 159, 157.	4.7	10
82	Investigation of the Origins of Comets as Revealed through Infrared High-resolution Spectroscopy I. Molecular Abundances. Astronomical Journal, 2021, 162, 74.	4.7	10
83	IRTF/CSHELL mapping of atmospheric HDO, H2O and D/H on Mars during northern summer. Icarus, 2019, 330, 204-216.	2.5	8
84	A Global and Seasonal Perspective of Martian Water Vapor From ExoMars/NOMAD. Journal of Geophysical Research E: Planets, 2021, 126, .	3.6	8
85	Observations of Jupiter Family Comet 252P/LINEAR During a Close Approach to Earth Reveal Large Abundances of Methanol and Ethane. Astronomical Journal, 2019, 158, 98.	4.7	7
86	Probing the Atmospheric Cl Isotopic Ratio on Mars: Implications for Planetary Evolution and Atmospheric Chemistry. Geophysical Research Letters, 2021, 48, e2021GL092650.	4.0	7
87	Variations in Vertical CO/CO₂ Profiles in the Martian Mesosphere and Lower Thermosphere Measured by the ExoMars TGO/NOMAD: Implications of Variations in Eddy Diffusion Coefficient. Geophysical Research Letters, 2022, 49, .	4.0	7
88	Planetâ€Wide Ozone Destruction in the Middle Atmosphere on Mars During Global Dust Storm. Geophysical Research Letters, 2022, 49, .	4.0	7
89	THE EVOLUTION OF VOLATILE PRODUCTION IN COMET C/2009 P1 (GARRADD) DURING ITS 2011â€“2012 APPARITION. Astrophysical Journal, 2015, 807, 19.	4.5	6
90	Unique Spectroscopy and Imaging of Mars with the James Webb Space Telescope. Publications of the Astronomical Society of the Pacific, 2016, 128, 018004.	3.1	5

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91	DETAILED ANALYSIS OF NEAR-IR WATER (H₂O) EMISSION IN COMET C/2014 Q2 (LOVEJOY) WITH THE GIANO/TNG SPECTROGRAPH. Astrophysical Journal, 2016, 830, 157.	4.5	5
92	Solar polarimetry in the KÂI D₂ line : A novel possibility for a stratospheric balloon. Astronomy and Astrophysics, 2018, 610, A79.	5.1	5
93	Absorption in exoplanet atmospheres: Combining experimental and theoretical databases to facilitate calculations of the molecular opacities of water. Journal of Quantitative Spectroscopy and Radiative Transfer, 2021, 270, 107708.	2.3	5
94	The Extraordinary Passage of Comet C/2020 F3 NEOWISE: Evidence for Heterogeneous Chemical Inventory in Its Nucleus. Astronomical Journal, 2021, 162, 178.	4.7	5
95	Simulating Reflected Light Exoplanet Spectra of the Promising Direct Imaging Target, Ï… Andromedae d, with a New, Fast Sampling Method Using the Planetary Spectrum Generator. Astronomical Journal, 2021, 162, 30.	4.7	4
96	Utilizing a Database of Simulated Geometric Albedo Spectra for Photometric Characterization of Rocky Exoplanet Atmospheres. Astronomical Journal, 2020, 160, 204.	4.7	4
97	Solar fluorescence model of CH3D as applied to comet emission. Journal of Molecular Spectroscopy, 2013, 291, 118-124.	1.2	3
98	AN INFRARED SEARCH FOR HDO IN COMET D/2012 S1 (ISON) AND IMPLICATIONS FOR iSHELL. Astrophysical Journal, 2016, 816, 101.	4.5	3
99	A new model of monodeuterated ethane (C2H5D) spectrum: Enabling sensitive constraints on the D/H in ethane emission in comets. Journal of Quantitative Spectroscopy and Radiative Transfer, 2020, 255, 107225.	2.3	2
100	Overview of Primitive Object Volatile Explorer (PrOVE) CubeSat or Smallsat concept. , 2018, , .		0