

Geronimo L Villanueva

List of Publications by Year in descending order

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100
papers

4,365
citations

87888

38
h-index

114465

63
g-index

101
all docs

101
docs citations

101
times ranked

3351
citing authors

#	ARTICLE	IF	CITATIONS
1	Variations in Vertical CO/CO ₂ Profiles in the Martian Mesosphere and Lower Thermosphere Measured by the ExoMars TGO/NOMAD: Implications of Variations in Eddy Diffusion Coefficient. <i>Geophysical Research Letters</i> , 2022, 49, .	4.0	7
2	Planetâ€Wide Ozone Destruction in the Middle Atmosphere on Mars During Global Dust Storm. <i>Geophysical Research Letters</i> , 2022, 49, .	4.0	7
3	The Deuterium Isotopic Ratio of Water Released From the Martian Caps as Measured With TGO/NOMAD. <i>Geophysical Research Letters</i> , 2022, 49, .	4.0	15
4	Comprehensive investigation of Mars methane and organics with ExoMars/NOMAD. <i>Icarus</i> , 2021, 357, 114266.	2.5	27
5	Water heavily fractionated as it ascends on Mars as revealed by ExoMars/NOMAD. <i>Science Advances</i> , 2021, 7, .	10.3	31
6	Nitrogen Dioxide Pollution as a Signature of Extraterrestrial Technology. <i>Astrophysical Journal</i> , 2021, 908, 164.	4.5	30
7	First Comet Observations with NIRSPEC-2 at Keck: Outgassing Sources of Parent Volatiles and Abundances Based on Alternative Taxonomic Compositional Baselines in 46P/Wirtanen. <i>Planetary Science Journal</i> , 2021, 2, 45.	3.6	22
8	Probing the Atmospheric Cl Isotopic Ratio on Mars: Implications for Planetary Evolution and Atmospheric Chemistry. <i>Geophysical Research Letters</i> , 2021, 48, e2021GL092650.	4.0	7
9	Annual Appearance of Hydrogen Chloride on Mars and a Striking Similarity With the Water Vapor Vertical Distribution Observed by TGO/NOMAD. <i>Geophysical Research Letters</i> , 2021, 48, e2021GL092506.	4.0	15
10	Simulating Reflected Light Exoplanet Spectra of the Promising Direct Imaging Target, Ĩ... Andromedae d, with a New, Fast Sampling Method Using the Planetary Spectrum Generator. <i>Astronomical Journal</i> , 2021, 162, 30.	4.7	4
11	The climatology of carbon monoxide on Mars as observed by NOMAD nadir-geometry observations. <i>Icarus</i> , 2021, 362, 114404.	2.5	11
12	Investigation of the Origins of Comets as Revealed through Infrared High-resolution Spectroscopy I. Molecular Abundances. <i>Astronomical Journal</i> , 2021, 162, 74.	4.7	10
13	No evidence of phosphine in the atmosphere of Venus from independent analyses. <i>Nature Astronomy</i> , 2021, 5, 631-635.	10.1	50
14	Absorption in exoplanet atmospheres: Combining experimental and theoretical databases to facilitate calculations of the molecular opacities of water. <i>Journal of Quantitative Spectroscopy and Radiative Transfer</i> , 2021, 270, 107708.	2.3	5
15	L 98-59: A Benchmark System of Small Planets for Future Atmospheric Characterization. <i>Astronomical Journal</i> , 2021, 162, 169.	4.7	14
16	The Extraordinary Passage of Comet C/2020 F3 NEOWISE: Evidence for Heterogeneous Chemical Inventory in Its Nucleus. <i>Astronomical Journal</i> , 2021, 162, 178.	4.7	5
17	A Global and Seasonal Perspective of Martian Water Vapor From ExoMars/NOMAD. <i>Journal of Geophysical Research E: Planets</i> , 2021, 126, .	3.6	8
18	First Detection and Thermal Characterization of Terminator CO ₂ Ice Clouds With ExoMars/NOMAD. <i>Geophysical Research Letters</i> , 2021, 48, .	4.0	12

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19	Sensitive probing of exoplanetary oxygen via mid-infrared collisional absorption. <i>Nature Astronomy</i> , 2020, 4, 372-376.	10.1	32
20	A measurement of water vapour amid a largely quiescent environment on Europa. <i>Nature Astronomy</i> , 2020, 4, 266-272.	10.1	69
21	A new model of monodeuterated ethane (C ₂ H ₅ D) spectrum: Enabling sensitive constraints on the D/H in ethane emission in comets. <i>Journal of Quantitative Spectroscopy and Radiative Transfer</i> , 2020, 255, 107225.	2.3	2
22	Strong Variability of Martian Water Ice Clouds During Dust Storms Revealed From ExoMars Trace Gas Orbiter/NOMAD. <i>Journal of Geophysical Research E: Planets</i> , 2020, 125, e2019JE006250.	3.6	39
23	New Insights into the Chemical Composition of Five Oort Cloud Comets after Re-analysis of Their Infrared Spectra. <i>Astronomical Journal</i> , 2020, 159, 157.	4.7	10
24	Dim Prospects for Transmission Spectra of Ocean Earths around M Stars. <i>Astrophysical Journal</i> , 2020, 891, 58.	4.5	38
25	The First Habitable-zone Earth-sized Planet from TESS. I. Validation of the TOI-700 System. <i>Astronomical Journal</i> , 2020, 160, 116.	4.7	67
26	The First Habitable-zone Earth-sized Planet from TESS. III. Climate States and Characterization Prospects for TOI-700 d. <i>Astronomical Journal</i> , 2020, 160, 118.	4.7	20
27	Utilizing a Database of Simulated Geometric Albedo Spectra for Photometric Characterization of Rocky Exoplanet Atmospheres. <i>Astronomical Journal</i> , 2020, 160, 204.	4.7	4
28	Detectability of Molecular Signatures on TRAPPIST-1e through Transmission Spectroscopy Simulated for Future Space-based Observatories. <i>Astrophysical Journal Letters</i> , 2020, 898, L33.	8.3	35
29	Observations of Jupiter Family Comet 252P/LINEAR During a Close Approach to Earth Reveal Large Abundances of Methanol and Ethane. <i>Astronomical Journal</i> , 2019, 158, 98.	4.7	7
30	The Peculiar Volatile Composition of CO-dominated Comet C/2016 R2 (PanSTARRS). <i>Astronomical Journal</i> , 2019, 158, 128.	4.7	55
31	IRTF/CSHELL mapping of atmospheric HDO, H ₂ O and D/H on Mars during northern summer. <i>Icarus</i> , 2019, 330, 204-216.	2.5	8
32	Potential improvements in global carbon flux estimates from a network of laser heterodyne radiometer measurements of column carbon dioxide. <i>Atmospheric Measurement Techniques</i> , 2019, 12, 2579-2594.	3.1	10
33	Martian dust storm impact on atmospheric H ₂ O and D/H observed by ExoMars Trace Gas Orbiter. <i>Nature</i> , 2019, 568, 521-525.	27.8	107
34	Impact of Clouds and Hazes on the Simulated JWST Transmission Spectra of Habitable Zone Planets in the TRAPPIST-1 System. <i>Astrophysical Journal</i> , 2019, 887, 194.	4.5	92
35	Water Vapor Vertical Profiles on Mars in Dust Storms Observed by TGO/NOMAD. <i>Journal of Geophysical Research E: Planets</i> , 2019, 124, 3482-3497.	3.6	88
36	Quantifying the Evolution of Molecular Production Rates of Comet 21P/Giacobini-Zinner with iSHELL/NASA-IRTF. <i>Astronomical Journal</i> , 2019, 158, 254.	4.7	18

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37	Methane on Mars: New insights into the sensitivity of CH ₄ with the NOMAD/ExoMars spectrometer through its first in-flight calibration. <i>Icarus</i> , 2019, 321, 671-690.	2.5	32
38	Planetary Spectrum Generator: An accurate online radiative transfer suite for atmospheres, comets, small bodies and exoplanets. <i>Journal of Quantitative Spectroscopy and Radiative Transfer</i> , 2018, 217, 86-104.	2.3	167
39	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. <i>Astronomical Journal</i> , 2018, 156, 68.	4.7	24
40	Solar polarimetry in the K \hat{A} I $\langle i \rangle$ D ₂ line : A novel possibility for a stratospheric balloon. <i>Astronomy and Astrophysics</i> , 2018, 610, A79.	5.1	5
41	Overview of Primitive Object Volatile Explorer (ProVE) CubeSat or Smallsat concept. , 2018, , .		0
42	Line parameters for CO ₂ broadening in the $\hat{1}/22$ band of HD16O. <i>Journal of Quantitative Spectroscopy and Radiative Transfer</i> , 2017, 187, 472-488.	2.3	13
43	Ground-based Detection of Deuterated Water in Comet C/2014 Q2 (Lovejoy) at IR Wavelengths. <i>Astrophysical Journal Letters</i> , 2017, 836, L25.	8.3	18
44	Line parameters for CO ₂ - and self-broadening in the $\hat{1}/21$ band of HD16O. <i>Journal of Quantitative Spectroscopy and Radiative Transfer</i> , 2017, 203, 133-157.	2.3	11
45	Beyond 3 au from the Sun: The Hypervolatiles CH ₄ , C ₂ H ₆ , and CO in the Distant Comet C/2006 W3 (Christensen) \hat{a}^- . <i>Astronomical Journal</i> , 2017, 153, 241.	4.7	13
46	The 67P/Churyumovâ€™Gerasimenko observation campaign in support of the Rosetta mission. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2017, 375, 20160249.	3.4	29
47	Line parameters for CO ₂ - and self-broadening in the $\hat{1}/23$ band of HD16O. <i>Journal of Quantitative Spectroscopy and Radiative Transfer</i> , 2017, 203, 158-174.	2.3	17
48	The Composition of Comet C/2012 K1 (PanSTARRS) and the Distribution of Primary Volatile Abundances Among Comets. <i>Astronomical Journal</i> , 2017, 153, 168.	4.7	11
49	Unique Spectroscopy and Imaging of Mars with the $\langle i \rangle$ James Webb Space Telescope $\langle i \rangle$. <i>Publications of the Astronomical Society of the Pacific</i> , 2016, 128, 018004.	3.1	5
50	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*. <i>Astrophysical Journal</i> , 2016, 820, 34.	4.5	41
51	DETAILED ANALYSIS OF NEAR-IR WATER (H ₂ O) EMISSION IN COMET C/2014 Q2 (LOVEJOY) WITH THE GIANO/TNG SPECTROGRAPH. <i>Astrophysical Journal</i> , 2016, 830, 157.	4.5	5
52	AN INFRARED SEARCH FOR HDO IN COMET D/2012 S1 (ISON) AND IMPLICATIONS FOR iSHELL. <i>Astrophysical Journal</i> , 2016, 816, 101.	4.5	3
53	Evolution of H ₂ O, CO, and CO ₂ production in Comet C/2009 P1 Garradd during the 2011â€™2012 apparition. <i>Icarus</i> , 2015, 250, 504-515.	2.5	37
54	Strong water isotopic anomalies in the martian atmosphere: Probing current and ancient reservoirs. <i>Science</i> , 2015, 348, 218-221.	12.6	245

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55	THE EVOLUTION OF VOLATILE PRODUCTION IN COMET C/2009 P1 (GARRADD) DURING ITS 2011-2012 APPARITION. <i>Astrophysical Journal</i> , 2015, 807, 19.	4.5	6
56	THE VOLATILE COMPOSITION OF COMET C/2003 K4 (LINEAR) AT NEAR-IR WAVELENGTHS—COMPARISONS WITH RESULTS FROM THE NAJAY RADIO TELESCOPE AND FROM THE ODIN, SPITZER, AND SOHO SPACE OBSERVATORIES. <i>Astrophysical Journal</i> , 2015, 808, 1.	4.5	25
57	THE INNER COMA OF COMET C/2012 S1 (ISON) AT 0.53 AU AND 0.35 AU FROM THE SUN. <i>Astrophysical Journal Letters</i> , 2014, 796, L6.	8.3	17
58	THE UNEXPECTEDLY BRIGHT COMET C/2012 F6 (LEMMON) UNVEILED AT NEAR-INFRARED WAVELENGTHS. <i>Astronomical Journal</i> , 2014, 147, 15.	4.7	29
59	C/2013 R1 (LOVEJOY) AT IR WAVELENGTHS AND THE VARIABILITY OF CO ABUNDANCES AMONG OORT CLOUD COMETS. <i>Astrophysical Journal</i> , 2014, 791, 122.	4.5	36
60	Pre- and post-perihelion observations of C/2009 P1 (Garradd): Evidence for an oxygen-rich heritage?. <i>Icarus</i> , 2014, 228, 167-180.	2.5	39
61	Solar fluorescence model of CH ₃ D as applied to comet emission. <i>Journal of Molecular Spectroscopy</i> , 2013, 291, 118-124.	1.2	3
62	A sensitive search for organics (CH ₄ , CH ₃ OH, H ₂ CO, C ₂ H ₆ , C ₂ H ₂ , C ₂ H ₄), hydroperoxyl (HO ₂), nitrogen compounds (N ₂ O, NH ₃ , HCN) and chlorine species (HCl, CH ₃ Cl) on Mars using ground-based high-resolution infrared spectroscopy. <i>Icarus</i> , 2013, 223, 11-27.	2.5	126
63	Evidence for two modes of water release in Comet 103P/Hartley 2: Distributions of column density, rotational temperature, and ortho-para ratio. <i>Icarus</i> , 2013, 222, 740-751.	2.5	48
64	Modeling of nitrogen compounds in cometary atmospheres: Fluorescence models of ammonia (NH ₃), hydrogen cyanide (HCN), hydrogen isocyanide (HNC) and cyanoacetylene (HC ₃ N). <i>Journal of Quantitative Spectroscopy and Radiative Transfer</i> , 2013, 129, 158-168.	2.3	24
65	GROUND-BASED INFRARED DETECTIONS OF CO IN THE CENTAUR-COMET 29P/SCHWASSMANN-WACHMANN 1 AT 6.26 AU FROM THE SUN. <i>Astrophysical Journal</i> , 2013, 766, 100.	4.5	40
66	High-resolution infrared spectroscopic measurements of Comet 2P/Encke: Unusual organic composition and low rotational temperatures. <i>Icarus</i> , 2013, 223, 298-307.	2.5	26
67	HIGHLY DEPLETED ETHANE AND MILDLY DEPLETED METHANOL IN COMET 21P/GIACOBINI-ZINNER: APPLICATION OF A NEW EMPIRICAL $\hat{\nu}_{1/2}^{3-}$ -BAND MODEL FOR CH ₃ OH NEAR 50 K. <i>Astrophysical Journal</i> , 2013, 763, 1.	4.5	56
68	A new model for the $\hat{\nu}_{1/2}^{1-}$ vibrational band of HCN in cometary comae, with application to three comets. <i>Astronomy and Astrophysics</i> , 2013, 551, A51.	5.1	21
69	A QUANTUM BAND MODEL OF THE $\hat{\nu}_{1/2}^{3-}$ FUNDAMENTAL OF METHANOL (CH ₃ OH) AND ITS APPLICATION TO FLUORESCENCE SPECTRA OF COMETS. <i>Astrophysical Journal</i> , 2012, 747, 37.	4.5	51
70	FIRST DETECTION OF NEAR-INFRARED LINE EMISSION FROM ORGANICS IN YOUNG CIRCUMSTELLAR DISKS. <i>Astrophysical Journal</i> , 2012, 747, 92.	4.5	72
71	A multi-instrument study of Comet C/2009 P1 (Garradd) at 2.1AU (pre-perihelion) from the Sun. <i>Icarus</i> , 2012, 220, 291-295.	2.5	30
72	THE CHEMICAL COMPOSITION OF CO-RICH COMET C/2009 P1 (GARRADD) AT $R_{h} = 2.4$ and 2.0 AU BEFORE PERIHELION. <i>Astrophysical Journal Letters</i> , 2012, 748, L13.	8.3	50

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73	CHEMICAL COMPOSITION OF COMET C/2007 N3 (LULIN): ANOTHER "ATYPICAL" COMET. <i>Astrophysical Journal</i> , 2012, 750, 102.	4.5	55
74	The formation heritage of Jupiter Family Comet 10P/Tempel 2 as revealed by infrared spectroscopy. <i>Icarus</i> , 2012, 218, 644-653.	2.5	19
75	Water in planetary and cometary atmospheres: H ₂ O/HDO transmittance and fluorescence models. <i>Journal of Quantitative Spectroscopy and Radiative Transfer</i> , 2012, 113, 202-220.	2.3	78
76	Ethane in planetary and cometary atmospheres: Transmittance and fluorescence models of the ν_7 band at 3.3 μ m. <i>Journal of Geophysical Research</i> , 2011, 116, .	3.3	65
77	NON-DETECTION OF L-BAND LINE EMISSION FROM THE EXOPLANET HD189733b. <i>Astrophysical Journal</i> , 2011, 728, 18.	4.5	65
78	TEMPORAL AND SPATIAL ASPECTS OF GAS RELEASE DURING THE 2010 APPARITION OF COMET 103P/HARTLEY 2. <i>Astrophysical Journal Letters</i> , 2011, 734, L7.	8.3	67
79	A NEWLY DEVELOPED FLUORESCENCE MODEL FOR C ₂ H ₆ ^{1/2} AND APPLICATION TO COMETARY SPECTRA ACQUIRED WITH NIRSPEC AT KECK II. <i>Astrophysical Journal</i> , 2011, 729, 135.	4.5	17
80	The molecular composition of Comet C/2007 W1 (Boattini): Evidence of a peculiar outgassing and a rich chemistry. <i>Icarus</i> , 2011, 216, 227-240.	2.5	79
81	EPOXI: COMET 103P/HARTLEY 2 OBSERVATIONS FROM A WORLDWIDE CAMPAIGN. <i>Astrophysical Journal Letters</i> , 2011, 734, L1.	8.3	96
82	The organic composition of Comet C/2000 WM1 (LINEAR) revealed through infrared spectroscopy. <i>Icarus</i> , 2010, 206, 764-777.	2.5	36
83	HCN SPECTROSCOPY OF COMET 73P/SCHWASSMANN-WACHMANN 3. A STUDY OF GAS EVOLUTION AND ITS LINK TO CN. <i>Astrophysical Journal</i> , 2010, 715, 1258-1269.	4.5	19
84	COMET C/2004 Q2 (MACHHOLZ): PARENT VOLATILES, A SEARCH FOR DEUTERATED METHANE, AND CONSTRAINT ON THE CH ₄ SPIN TEMPERATURE. <i>Astrophysical Journal</i> , 2009, 699, 1563-1572.	4.5	37
85	A multi-wavelength study of parent volatile abundances in Comet C/2006 M4 (SWAN). <i>Icarus</i> , 2009, 203, 589-598.	2.5	17
86	Strong Release of Methane on Mars in Northern Summer 2003. <i>Science</i> , 2009, 323, 1041-1045.	12.6	516
87	A SENSITIVE SEARCH FOR DEUTERATED WATER IN COMET 8P/TUTTLE. <i>Astrophysical Journal</i> , 2009, 690, L5-L9.	4.5	120
88	Identification of a new band system of isotopic CO ₂ near 3.3 μ m: Implications for remote sensing of biomarker gases on Mars. <i>Icarus</i> , 2008, 195, 34-44.	2.5	60
89	IRCS/Subaru observations of water in the inner coma of Comet 73P-B/Schwassmann-Wachmann 3: Spatially resolved rotational temperatures and ortho/para ratios. <i>Icarus</i> , 2008, 196, 241-248.	2.5	29
90	Discovery of multiple bands of isotopic CO ₂ in the prime spectral regions used when searching for CH ₄ and HDO on Mars. <i>Journal of Quantitative Spectroscopy and Radiative Transfer</i> , 2008, 109, 883-894.	2.3	25

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91	The Peculiar Volatile Composition of Comet 8P/Tuttle: A Contact Binary of Chemically Distinct Cometesimals?. <i>Astrophysical Journal</i> , 2008, 680, L61-L64.	4.5	48
92	Discovery of OH in Circumstellar Disks around Young Intermediate-Mass Stars. <i>Astrophysical Journal</i> , 2008, 681, L25-L28.	4.5	42
93	The Unusual Volatile Composition of the Halley-Type Comet 8P/Tuttle: Addressing the Existence of an Inner Oort Cloud. <i>Astrophysical Journal</i> , 2008, 683, L71-L74.	4.5	34
94	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). <i>Astrophysical Journal</i> , 2007, 661, L97-L100.	4.5	67
95	Depleted Carbon Monoxide in Fragment C of the Jupiter-Family Comet 73P/Schwassmann-Wachmann 3. <i>Astrophysical Journal</i> , 2007, 661, L101-L104.	4.5	40
96	Temporal evolution of parent volatiles and dust in Comet 9P/Tempel 1 resulting from the Deep Impact experiment. <i>Icarus</i> , 2007, 191, 481-493.	2.5	10
97	Detection of Formaldehyde Emission in Comet C/2002 T7 (LINEAR) at Infrared Wavelengths: Line Validation of Modeled Fluorescent Intensities. <i>Astrophysical Journal</i> , 2006, 650, 470-483.	4.5	82
98	The Volatile Composition of the Split Ecliptic comet 73P/Schwassmann-Wachmann 3: A Comparison of Fragments C and B. <i>Astrophysical Journal</i> , 2006, 650, L87-L90.	4.5	54
99	Parent Volatiles in Comet 9P/Tempel 1: Before and After Impact. <i>Science</i> , 2005, 310, 270-274.	12.6	168
100	Description and climatology of a new general circulation model of the Martian atmosphere. <i>Journal of Geophysical Research</i> , 2005, 110, .	3.3	63