Stéphane Le Mouélic

List of Publications by Year in descending order

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141 papers 9,788 citations

57 h-index 95 g-index

158 all docs

158 docs citations

158 times ranked

4928 citing authors

#	Article	IF	Citations
1	The SuperCam infrared spectrometer for the perseverance rover of the Mars2020 mission. Icarus, 2022, 373, 114773.	2.5	19
2	Science goals and new mission concepts for future exploration of Titan's atmosphere, geology and habitability: titan POlar scout/orbitEr and in situ lake lander and DrONe explorer (POSEIDON). Experimental Astronomy, 2022, 54, 911-973.	3.7	5
3	Bedrock Geochemistry and Alteration History of the Clayâ€Bearing Glen Torridon Region of Gale Crater, Mars. Journal of Geophysical Research E: Planets, 2022, 127, .	3.6	17
4	In situ recording of Mars soundscape. Nature, 2022, 605, 653-658.	27.8	30
5	Overview of the Morphology and Chemistry of Diagenetic Features in the Clayâ€Rich Glen Torridon Unit of Gale Crater, Mars. Journal of Geophysical Research E: Planets, 2022, 127, .	3.6	17
6	Titan Stratospheric Haze Bands Observed in Cassini VIMS as Tracers of Meridional Circulation. Planetary Science Journal, 2022, 3, 114.	3.6	3
7	From Lake to River: Documenting an Environmental Transition Across the Jura/Knockfarril Hill Members Boundary in the Glen Torridon Region of Gale Crater (Mars). Journal of Geophysical Research E: Planets, 2022, 127, .	3.6	19
8	Deposition and erosion of a Light-Toned Yardang-forming unit of Mt Sharp, Gale crater, Mars. Earth and Planetary Science Letters, 2021, 554, 116681.	4.4	13
9	The SuperCam Instrument Suite on the Mars 2020 Rover: Science Objectives and Mast-Unit Description. Space Science Reviews, 2021, 217, 1.	8.1	131
10	Alternating wet and dry depositional environments recorded in the stratigraphy of Mount Sharp at Gale crater, Mars. Geology, 2021, 49, 842-846.	4.4	33
11	Geomorphological map of the South Belet Region of Titan. Icarus, 2021, 366, 114516.	2.5	7
12	The SuperCam Instrument Suite on the NASA Mars 2020 Rover: Body Unit and Combined System Tests. Space Science Reviews, 2021, 217, 4.	8.1	160
13	Perseverance rover reveals an ancient delta-lake system and flood deposits at Jezero crater, Mars. Science, 2021, 374, 711-717.	12.6	86
14	Long-Distance 3D Reconstructions Using Photogrammetry with Curiosity's ChemCam Remote Micro-Imager in Gale Crater (Mars). Remote Sensing, 2021, 13, 4068.	4.0	5
15	3D digital outcrop model reconstruction of the Kimberley outcrop (Gale crater, Mars) and its integration into Virtual Reality for simulated geological analysis. Planetary and Space Science, 2020, 182, 104808.	1.7	27
16	Structural analysis of sulfate vein networks in Gale crater (Mars). Journal of Structural Geology, 2020, 137, 104083.	2.3	10
17	Investigating Lunar Boulders at the Apollo 17 Landing Site Using Photogrammetry and Virtual Reality. Remote Sensing, 2020, 12, 1900.	4.0	10
18	Photometrically-corrected global infrared mosaics of Enceladus: New implications for its spectral diversity and geological activity. Icarus, 2020, 349, 113848.	2.5	10

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19	Spatio-temporal Variation of Bright Ephemeral Features on Titan's North Pole. Planetary Science Journal, 2020, 1, 31.	3.6	7
20	Close-range remote sensing of Saturn's rings during Cassini's ring-grazing orbits and Grand Finale. Science, 2019, 364, .	12.6	17
21	The Cassini VIMS archive of Titan: From browse products to global infrared color maps. Icarus, 2019, 319, 121-132.	2.5	17
22	Observational Evidence for Summer Rainfall at Titan's North Pole. Geophysical Research Letters, 2019, 46, 1205-1212.	4.0	14
23	3-D digital outcrop model for analysis of brittle deformation and lithological mapping (Lorette cave,) Tj ETQq1 10).784314 r 2.3	ggŢ /Overlo
24	Geological Evolution of Titan's Equatorial Regions: Possible Nature and Origin of the Dune Material. Journal of Geophysical Research E: Planets, 2018, 123, 1089-1112.	3.6	28
25	The Spectral Nature of Titan's Major Geomorphological Units: Constraints on Surface Composition. Journal of Geophysical Research E: Planets, 2018, 123, 489-507.	3.6	33
26	Transparency of <mml:math altimg="si1.gif" overflow="scroll" xmlns:mml="http://www.w3.org/1998/Math/MathML"> <mml:mrow> <mml:mn> </mml:mn> <mml:mtext> î¼ </mml:mtext> </mml:mrow> </mml:math> window of Titan's atmosphere. Planetary and Space Science, 2018, 151, 109-124.	·m1.7	5
27	Observational evidence for active dust storms on Titan at equinox. Nature Geoscience, 2018, 11, 727-732.	12.9	18
28	Martian Eolian Dust Probed by ChemCam. Geophysical Research Letters, 2018, 45, 10,968.	4.0	40
29	Mapping polar atmospheric features on Titan with VIMS: From the dissipation of the northern cloud to the onset of a southern polar vortex. Icarus, 2018, 311, 371-383.	2.5	20
30	Titan's Meteorology Over the Cassini Mission: Evidence for Extensive Subsurface Methane Reservoirs. Geophysical Research Letters, 2018, 45, 5320-5328.	4.0	47
31	Martian aeolian activity at the Bagnold Dunes, Gale Crater: The view from the surface and orbit. Journal of Geophysical Research E: Planets, 2017, 122, 2077-2110.	3.6	77
32	Centimeter to decimeter hollow concretions and voids in Gale Crater sediments, Mars. Icarus, 2017, 289, 144-156.	2.5	12
33	ACETYLENE ON TITAN'S SURFACE. Astrophysical Journal, 2016, 828, 55.	4.5	36
34	Constraints on iron sulfate and iron oxide mineralogy from ChemCam visible/near-infrared reflectance spectroscopy of Mt. Sharp basal units, Gale Crater, Mars. American Mineralogist, 2016, 101, 1501-1514.	1.9	31
35	Oxidation of manganese in an ancient aquifer, Kimberley formation, Gale crater, Mars. Geophysical Research Letters, 2016, 43, 7398-7407.	4.0	110
36	Observation of > 5 wt % zinc at the Kimberley outcrop, Gale crater, Mars. Journal of Geophysical Research E: Planets, 2016, 121, 338-352.	3.6	32

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37	Composition of conglomerates analyzed by the Curiosity rover: Implications for Gale Crater crust and sediment sources. Journal of Geophysical Research E: Planets, 2016, 121, 353-387.	3.6	53
38	Magmatic complexity on early Mars as seen through a combination of orbital, in-situ and meteorite data. Lithos, 2016, 254-255, 36-52.	1.4	66
39	The potassic sedimentary rocks in Gale Crater, Mars, as seen by ChemCam on board <i>Curiosity</i> Journal of Geophysical Research E: Planets, 2016, 121, 784-804.	3.6	67
40	Titan's surface spectra at the Huygens landing site and Shangri-La. Icarus, 2016, 270, 291-306.	2.5	14
41	Near-infrared spectra of liquid/solid acetylene under Titan relevant conditions and implications for Cassini/VIMS detections. Icarus, 2016, 270, 429-434.	2.5	4
42	ChemCam activities and discoveries during the nominal mission of the Mars Science Laboratory in Gale crater, Mars. Journal of Analytical Atomic Spectrometry, 2016, 31, 863-889.	3.0	134
43	Temporal variations of Titan's surface with Cassini/VIMS. Icarus, 2016, 270, 85-99.	2.5	29
44	Spectral properties of Titan's impact craters imply chemical weathering of its surface. Geophysical Research Letters, 2015, 42, 3746-3754.	4.0	36
45	Chemical variations in Yellowknife Bay formation sedimentary rocks analyzed by ChemCam on board the Curiosity rover on Mars. Journal of Geophysical Research E: Planets, 2015, 120, 452-482.	3. 6	51
46	Dissolution on Titan and on Earth: Toward the age of Titan's karstic landscapes. Journal of Geophysical Research E: Planets, 2015, 120, 1044-1074.	3.6	63
47	Hydrogen detection with ChemCam at Gale crater. Icarus, 2015, 249, 43-61.	2.5	58
48	First detection of fluorine on Mars: Implications for Gale Crater's geochemistry. Geophysical Research Letters, 2015, 42, 1020-1028.	4.0	107
49	67P/Churyumov-Gerasimenko surface properties as derived from CIVA panoramic images. Science, 2015, 349, aab0671.	12.6	47
50	Possible temperate lakes on Titan. Icarus, 2015, 257, 313-323.	2.5	13
51	In situ evidence for continental crust on early Mars. Nature Geoscience, 2015, 8, 605-609.	12.9	233
52	Compositions of coarse and fine particles in martian soils at gale: A window into the production of soils. Icarus, 2015, 249, 22-42.	2.5	64
53	The ChemCam Remote Micro-Imager at Gale crater: Review of the first year of operations on Mars. Icarus, 2015, 249, 93-107.	2.5	95
54	ChemCam passive reflectance spectroscopy of surface materials at the Curiosity landing site, Mars. lcarus, 2015, 249, 74-92.	2.5	70

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55	ChemCam results from the Shaler outcrop in Gale crater, Mars. Icarus, 2015, 249, 2-21.	2.5	52
56	Surface albedo spectral properties of geologically interesting areas on Titan. Journal of Geophysical Research E: Planets, 2014, 119, 1729-1747.	3.6	30
57	High manganese concentrations in rocks at Gale crater, Mars. Geophysical Research Letters, 2014, 41, 5755-5763.	4.0	81
58	Global mapping and characterization of Titan's dune fields with Cassini: Correlation between RADAR and VIMS observations. Icarus, 2014, 230, 168-179.	2.5	68
59	A Habitable Fluvio-Lacustrine Environment at Yellowknife Bay, Gale Crater, Mars. Science, 2014, 343, 1242777.	12.6	687
60	Elemental Geochemistry of Sedimentary Rocks at Yellowknife Bay, Gale Crater, Mars. Science, 2014, 343, 1244734.	12.6	246
61	Sedimentation waves on the Martian North Polar Cap: Analogy with megadunes in Antarctica. Earth and Planetary Science Letters, 2014, 403, 56-66.	4.4	20
62	Calcium sulfate veins characterized by ChemCam/Curiosity at Gale crater, Mars. Journal of Geophysical Research E: Planets, 2014, 119, 1991-2016.	3.6	214
63	Cassini/VIMS observes rough surfaces on Titan's Punga Mare in specular reflection. Planetary Science, 2014, 3, 3.	1.5	31
64	Evidence of Titan's climate history from evaporite distribution. Icarus, 2014, 243, 191-207.	2.5	62
65	One million cubic kilometers of fossil ice in Valles Marineris: Relicts of a 3.5Gy old glacial landsystem along the Martian equator. Geomorphology, 2014, 204, 235-255.	2.6	82
66	Minerals detection for hyperspectral images using adapted linear unmixing: LinMin. Icarus, 2014, 237, 61-74.	2.5	21
67	Terrain physical properties derived from orbital data and the first 360 sols of Mars Science Laboratory Curiosity rover observations in Gale Crater. Journal of Geophysical Research E: Planets, 2014, 119, 1322-1344.	3.6	43
68	The rock abrasion record at Gale Crater: Mars Science Laboratory results from Bradbury Landing to Rocknest. Journal of Geophysical Research E: Planets, 2014, 119, 1374-1389.	3.6	46
69	Chemistry and texture of the rocks at Rocknest, Gale Crater: Evidence for sedimentary origin and diagenetic alteration. Journal of Geophysical Research E: Planets, 2014, 119, 2109-2131.	3.6	48
70	Igneous mineralogy at Bradbury Rise: The first ChemCam campaign at Gale crater. Journal of Geophysical Research E: Planets, 2014, 119, 30-46.	3.6	114
71	Precipitation-induced surface brightenings seen on Titan by Cassini VIMS and ISS. Planetary Science, 2013, 2, .	1.5	45
72	Titan's surface and atmosphere from Cassini/VIMS data with updated methane opacity. Icarus, 2013, 226, 470-486.	2.5	92

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73	X-ray Diffraction Results from Mars Science Laboratory: Mineralogy of Rocknest at Gale Crater. Science, 2013, 341, 1238932.	12.6	327
74	Curiosity at Gale Crater, Mars: Characterization and Analysis of the Rocknest Sand Shadow. Science, 2013, 341, 1239505.	12.6	280
75	Volatile, Isotope, and Organic Analysis of Martian Fines with the Mars Curiosity Rover. Science, 2013, 341, 1238937.	12.6	367
76	Martian Fluvial Conglomerates at Gale Crater. Science, 2013, 340, 1068-1072.	12.6	326
77	The Petrochemistry of Jake_M: A Martian Mugearite. Science, 2013, 341, 1239463.	12.6	134
78	A TRANSMISSION SPECTRUM OF TITAN'S NORTH POLAR ATMOSPHERE FROM A SPECULAR REFLECTION OF THE SUN. Astrophysical Journal, 2013, 777, 161.	4.5	23
79	Soil Diversity and Hydration as Observed by ChemCam at Gale Crater, Mars. Science, 2013, 341, 1238670.	12.6	215
80	CLOUD AND HAZE IN THE WINTER POLAR REGION OF TITAN OBSERVED WITH VISUAL AND INFRARED MAPPING SPECTROMETER ON BOARD <i>CASSINI/i>. Astrophysical Journal, 2012, 748, 4.</i>	4.5	9
81	Global mapping of Titan′s surface using an empirical processing method for the atmospheric and photometric correction of Cassini/VIMS images. Planetary and Space Science, 2012, 73, 178-190.	1.7	24
82	The ChemCam Instrument Suite on the Mars Science Laboratory (MSL) Rover: Science Objectives and Mast Unit Description. Space Science Reviews, 2012, 170, 95-166.	8.1	372
83	Wide distribution and glacial origin of polar gypsum on Mars. Earth and Planetary Science Letters, 2012, 317-318, 44-55.	4.4	76
84	Edge detection applied to Cassini images reveals no measurable displacement of Ontario Lacus' margin between 2005 and 2010. Journal of Geophysical Research, 2012, 117, .	3.3	18
85	Observations of Titan's Northern lakes at 5Î⅓m: Implications for the organic cycle and geology. Icarus, 2012, 221, 768-786.	2.5	72
86	Laboratory infrared reflection spectrum of carbon dioxide clathrate hydrates for astrophysical remote sensing applications. Icarus, 2012, 221, 900-910.	2.5	57
87	Most Mars minerals in a nutshell: Various alteration phases formed in a single environment in Noctis Labyrinthus. Journal of Geophysical Research, 2012, 117, .	3.3	74
88	Geomorphological significance of Ontario Lacus on Titan: Integrated interpretation of Cassini VIMS, ISS and RADAR data and comparison with the Etosha Pan (Namibia). Icarus, 2012, 218, 788-806.	2.5	55
89	Climate-driven deposition of water ice and the formation of mounds in craters in Mars' north polar region. Icarus, 2012, 220, 174-193.	2.5	41
90	Mapping Titan's surface features within the visible spectrum via Cassini VIMS. Planetary and Space Science, 2012, 60, 52-61.	1.7	25

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91	Dissipation of Titan's north polar cloud at northern spring equinox. Planetary and Space Science, 2012, 60, 86-92.	1.7	33
92	A newly discovered impact crater in Titan's Senkyo: Cassini VIMS observations and comparison with other impact features. Planetary and Space Science, 2012, 60, 18-25.	1.7	18
93	Temperature and grain size dependence of near-IR spectral signature of crystalline water ice: From lab experiments to Enceladus' south pole. Planetary and Space Science, 2012, 61, 124-134.	1.7	11
94	AVIATRâ€"Aerial Vehicle for In-situ and Airborne Titan Reconnaissance. Experimental Astronomy, 2012, 33, 55-127.	3.7	45
95	Titan's cloud seasonal activity from winter to spring with Cassini/VIMS. Icarus, 2011, 216, 89-110.	2.5	68
96	Organic sedimentary deposits in Titan's dry lakebeds: Probable evaporite. Icarus, 2011, 216, 136-140.	2.5	96
97	Stratigraphy, mineralogy, and origin of layered deposits inside Terby crater, Mars. Icarus, 2011, 211, 273-304.	2.5	131
98	Wave constraints for Titan's Jingpo Lacus and Kraken Mare from VIMS specular reflection lightcurves. Icarus, 2011, 211, 722-731.	2.5	38
99	Detection and mapping of hydrocarbon deposits on Titan. Journal of Geophysical Research, 2010, 115, .	3.3	147
100	Ismenius Cavus, Mars: A deep paleolake with phyllosilicate deposits. Planetary and Space Science, 2010, 58, 941-946.	1.7	44
101	A Late Amazonian alteration layer related to local volcanism on Mars. Icarus, 2010, 207, 265-276.	2.5	39
102	Geology of the Selk crater region on Titan from Cassini VIMS observations. Icarus, 2010, 208, 905-912.	2.5	44
103	Morphology, stratigraphy, and mineralogical composition of a layered formation covering the plateaus around Valles Marineris, Mars: Implications for its geological history. Icarus, 2010, 208, 684-703.	2.5	48
104	Titan haze distribution and optical properties retrieved from recent observations. Icarus, 2010, 208, 850-867.	2.5	85
105	Martian polar and circum-polar sulfate-bearing deposits: Sublimation tills derived from the North Polar Cap. Icarus, 2010, 209, 434-451.	2.5	68
106	CHARACTERIZATION OF CLOUDS IN TITAN'S TROPICAL ATMOSPHERE. Astrophysical Journal, 2009, 702, L105-L109.	4.5	35
107	Observation of a Large Landslide on La Reunion Island Using Differential Sar Interferometry (JERS and) Tj ETQq $1\ 1$	0.784314	f rgBT /Overle
108	Analysis of a cryolava flow-like feature on Titan. Planetary and Space Science, 2009, 57, 870-879.	1.7	31

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110	TandEM: Titan and Enceladus mission. Experimental Astronomy, 2009, 23, 893-946.	3.7	77
111	A review of Titan's atmospheric phenomena. Astronomy and Astrophysics Review, 2009, 17, 105-147.	25.5	15
112	Global circulation as the main source of cloud activity on Titan. Nature, 2009, 459, 678-682.	27.8	76
113	The Aristarchus Plateau on the Moon: Mineralogical and structural study from integrated Clementine UV–Vis–NIR spectral data. Icarus, 2009, 199, 9-24.	2.5	36
114	Shoreline features of Titan's Ontario Lacus from Cassini/VIMS observations. Icarus, 2009, 201, 217-225.	2.5	69
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118	Titan's surface: Search for spectral diversity and composition using the Cassini VIMS investigation. Icarus, 2008, 194, 212-242.	2.5	83
119	Spectroscopy, morphometry, and photoclinometry of Titan's dunefields from Cassini/VIMS. Icarus, 2008, 195, 400-414.	2.5	125
120	Fluvial erosion and post-erosional processes on Titan. Icarus, 2008, 197, 526-538.	2.5	88
121	Ferric oxides in East Candor Chasma, Valles Marineris (Mars) inferred from analysis of OMEGA/Mars Express data: Identification and geological interpretation. Journal of Geophysical Research, 2008, 113, .	3.3	40
122	Mapping and interpretation of Sinlap crater on Titan using Cassini VIMS and RADAR data. Journal of Geophysical Research, 2008, 113 , .	3.3	60
123	Mineralogical composition, structure, morphology, and geological history of Aram Chaos crater fill on Mars derived from OMEGA Mars Express data. Journal of Geophysical Research, 2008, 113, .	3.3	39
124	Monitoring post-mining subsidence in the Nord-Pas-de-Calais coal basin (France): comparison between interferometric SAR results and levelling. Geocarto International, 2008, 23, 287-295.	3.5	3
125	Coupled Ferric Oxides and Sulfates on the Martian Surface. Science, 2007, 317, 1206-1210.	12.6	161
126	Nearâ€infrared spectral mapping of Titan's mountains and channels. Journal of Geophysical Research, 2007, 112, .	3.3	82

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127	Global-scale surface spectral variations on Titan seen from Cassini/VIMS. Icarus, 2007, 186, 242-258.	2.5	110
128	Correlations between Cassini VIMS spectra and RADAR SAR images: Implications for Titan's surface composition and the character of the Huygens Probe Landing Site. Planetary and Space Science, 2007, 55, 2025-2036.	1.7	168
129	Cassini observations of flow-like features in western Tui Regio, Titan. Geophysical Research Letters, 2006, 33, .	4.0	66
130	Spectral characterization of weathering products of elemental iron in a Martian atmosphere: Implications for Mars hyperspectral studies. Planetary and Space Science, 2006, 54, 1034-1045.	1.7	8
131	Cassini/VIMS hyperspectral observations of the HUYGENS landing site on Titan. Planetary and Space Science, 2006, 54, 1510-1523.	1.7	79
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133	Monitoring of slow ground deformation by ERS radar interferometry on the Vauvert salt mine (France). Remote Sensing of Environment, 2003, 88, 468-478.	11.0	84
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136	A ground uplift in the city of Paris (France) detected by satellite radar interferometry. Geophysical Research Letters, 2002, 29, 34-1-34-4.	4.0	32
137	Calculating iron contents of lunar highland materials surrounding Tycho crater from integrated Clementine UV-visible and near-infrared data. Journal of Geophysical Research, 2002, 107, 4-1.	3.3	32
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139	Discrimination between maturity and composition of lunar soils from integrated Clementine UV-visible/near-infrared data: Application to the Aristarchus Plateau. Journal of Geophysical Research, 2000, 105, 9445-9455.	3.3	72
140	A new data reduction approach for the Clementine NIR data set: Application to Aristillus, Aristarchus and Kepler. Journal of Geophysical Research, 1999, 104, 3833-3843.	3.3	18
141	The distribution of olivine in the Crater Aristarchus inferred from Clementine NIR data. Geophysical Research Letters, 1999, 26, 1195-1198.	4.0	23