Christophe Sotin

List of Publications by Year
in descending order

124 papers	7,005 citations	47006 47 h-index	62596 80 g-index
131 all docs	131 docs citations	131 times ranked	2642 citing authors

#	Article	IF	Citations
1	The Cassini Visual And Infrared Mapping Spectrometer (Vims) Investigation. Space Science Reviews, 2004, 115, 111-168.	8.1	369
2	Episodic outgassing as the origin of atmospheric methane on Titan. Nature, 2006, 440, 61-64.	27.8	356
3	The identification of liquid ethane in Titanâ€™s Ontario Lacus. Nature, 2008, 454, 607-610.	27.8	254
4	Titan's internal structure inferred from a coupled thermal-orbital model. Icarus, 2005, 175, 496-502.	2.5	214
5	Release of volatiles from a possible cryovolcano from near-infrared imaging of Titan. Nature, 2005, 435, 786-789.	27.8	208
6	Tidal dissipation within large icy satellites: Applications to Europa and Titan. Icarus, 2005, 177, 534-549.	2.5	190
7	Tidally heated convection: Constraints on Europa's ice shell thickness. Journal of Geophysical Research, 2003, 108, .	3.3	177
8	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
9	Powering prolonged hydrothermal activity inside Enceladus. Nature Astronomy, 2017, 1, 841-847.	10.1	158
10	Europa: Tidal heating of upwelling thermal plumes and the origin of lenticulae and chaos melting. Geophysical Research Letters, 2002, 29, 74-1-74-4.	4.0	156
11	Three-dimensional thermal convection in an iso-viscous, infinite Prandtl number fluid heated from within and from below: applications to the transfer of heat through planetary mantles. Physics of the Earth and Planetary Interiors, 1999, 112, 171-190.	1.9	148
12	Detection and mapping of hydrocarbon deposits on Titan. Journal of Geophysical Research, 2010, 115, .	3.3	147
13	The Evolution of Titan's Mid-Latitude Clouds. Science, 2005, 310, 474-477.	12.6	139
14	An observed correlation between plume activity and tidal stresses on Enceladus. Nature, 2013, 500, 182-184.	27.8	136
15	Geophysical Investigations of Habitability in Iceâ€Covered Ocean Worlds. Journal of Geophysical Research E: Planets, 2018, 123, 180-205.	3.6	133
16	Spectroscopy, morphometry, and photoclinometry of Titan's dunefields from Cassini/VIMS. Icarus, 2008, 195, 400-414.	2.5	125
17	Ganymedeˣ³s internal structure including thermodynamics of magnesium sulfate oceans in contact with ice. Planetary and Space Science, 2014, 96, 62-70.	1.7	121
18	Global-scale surface spectral variations on Titan seen from Cassini/VIMS. Icarus, 2007, 186, 242-258.	2.5	110

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19	The Cooling Rate of a Liquid Shell in Titan's Interior. Icarus, 1996, 123, 101-112.	2.5	108
20	Stability of methane clathrate hydrates under pressure: Influence on outgassing processes of methane on Titan. Icarus, 2010, 205, 581-593.	2.5	107
21	Organic sedimentary deposits in Titanâ€™s dry lakebeds: Probable evaporite. Icarus, 2011, 216, 136-140.	2.5	96
22	Fluvial erosion and post-erosional processes on Titan. Icarus, 2008, 197, 526-538.	2.5	88
23	Is Titan's shape caused by its meteorology and carbon cycle?. Geophysical Research Letters, 2012, 39, .	4.0	84
24	Titan's surface: Search for spectral diversity and composition using the Cassini VIMS investigation. Icarus, 2008, 194, 212-242.	2.5	83
25	Nearâ€infrared spectral mapping of Titan's mountains and channels. Journal of Geophysical Research, 2007, 112, .	3.3	82
26	Thermal convection in the outer shell of large icy satellites. Journal of Geophysical Research, 2001, 106, 5107-5121.	3.3	81
27	Cassini/VIMS hyperspectral observations of the HUYGENS landing site on Titan. Planetary and Space Science, 2006, 54, 1510-1523.	1.7	79
28	A 5-Micron-Bright Spot on Titan: Evidence for Surface Diversity. Science, 2005, 310, 92-95.	12.6	78
29	TandEM: Titan and Enceladus mission. Experimental Astronomy, 2009, 23, 893-946.	3.7	77
30	Analytic theory of Titanâ€™s Schumann resonance: Constraints on ionospheric conductivity and buried water ocean. Icarus, 2012, 218, 1028-1042.	2.5	77
31	Global circulation as the main source of cloud activity on Titan. Nature, 2009, 459, 678-682.	27.8	76
32	Observations of Titanâ€™s Northern lakes at 5Î¼m: Implications for the organic cycle and geology. Icarus, 2012, 221, 768-786.	2.5	72
33	Saturn's Titan: Surface change, ammonia, and implications for atmospheric and tectonic activity. Icarus, 2009, 199, 429-441.	2.5	69
34	Shoreline features of Titan's Ontario Lacus from Cassini/VIMS observations. Icarus, 2009, 201, 217-225.	2.5	69
35	Titanâ€™s cloud seasonal activity from winter to spring with Cassini/VIMS. Icarus, 2011, 216, 89-110.	2.5	68
36	Global mapping and characterization of Titanâ€™s dune fields with Cassini: Correlation between RADAR and VIMS observations. Icarus, 2014, 230, 168-179.	2.5	68

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37	Cassini observations of flow-like features in western Tui Regio, Titan. Geophysical Research Letters, 2006, 33, .	4.0	66
38	The geology of Hotei Regio, Titan: Correlation of Cassini VIMS and RADAR. Icarus, 2009, 204, 610-618.	2.5	62
39	Evidence of Titanâ€™s climate history from evaporite distribution. Icarus, 2014, 243, 191-207.	2.5	62
40	Large Ocean Worlds with High-Pressure Ices. Space Science Reviews, 2020, 216, 1.	8.1	62
41	Mapping and interpretation of Sinlap crater on Titan using Cassini VIMS and RADAR data. Journal of Geophysical Research, 2008, 113, .	3.3	60
42	Observations in the Saturn system during approach and orbital insertion, with Cassini's visual and infrared mapping spectrometer (VIMS). Astronomy and Astrophysics, 2006, 446, 707-716.	5.1	57
43	THE ATMOSPHERES OF SATURN AND TITAN IN THE NEAR-INFRARED: FIRST RESULTS OF CASSINI/VIMS. Earth, Moon and Planets, 2006, 96, 119-147.	0.6	57
44	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
45	Detection of an Atmosphere on a Rocky Exoplanet. Astronomical Journal, 2021, 161, 213.	4.7	50
46	Two-phase convection in Ganymedeâ€™s high-pressure ice layer â€”ÂImplications for its geological evolution. Icarus, 2018, 299, 133-147.	2.5	49
47	Observations with the Visual and Infrared Mapping Spectrometer (VIMS) during Cassini's flyby of Jupiter. Icarus, 2003, 164, 461-470.	2.5	48
48	Heat transport in the high-pressure ice mantle of large icy moons. Icarus, 2017, 285, 252-262.	2.5	47
49	Titan's Meteorology Over the Cassini Mission: Evidence for Extensive Subsurface Methane Reservoirs. Geophysical Research Letters, 2018, 45, 5320-5328.	4.0	47
50	Precipitation-induced surface brightenings seen on Titan by Cassini VIMS and ISS. Planetary Science, 2013, 2, .	1.5	45
51	Geology of the Selk crater region on Titan from Cassini VIMS observations. Icarus, 2010, 208, 905-912.	2.5	44
52	Transient features in a Titan sea. Nature Geoscience, 2014, 7, 493-496.	12.9	43
53	Ice-Ocean Exchange Processes in the Jovian and Saturnian Satellites. Space Science Reviews, 2020, 216, 1.	8.1	43
54	Photometric changes on Saturn's Titan: Evidence for active cryovolcanism. Geophysical Research Letters, 2009, 36, .	4.0	38

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55	Titan's cold case files - Outstanding questions after Cassini-Huygens. Planetary and Space Science, 2018, 155, 50-72.	1.7	37
56	Spectral properties of Titan's impact craters imply chemical weathering of its surface. Geophysical Research Letters, 2015, 42, 3746-3754.	4.0	36
57	On the Habitability and Future Exploration of Ocean Worlds. Space Science Reviews, 2020, 216, 1.	8.1	36
58	Dissipation of Titan's north polar cloud at northern spring equinox. Planetary and Space Science, 2012, 60, 86-92.	1.7	33
59	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
60	Analysis of a cryolava flow-like feature on Titan. Planetary and Space Science, 2009, 57, 870-879.	1.7	31
61	Modeling specular reflections from hydrocarbon lakes on Titan. Icarus, 2012, 220, 744-751.	2.5	31
62	Cassini/VIMS observes rough surfaces on Titanâ€™s Punga Mare in specular reflection. Planetary Science, 2014, 3, 3.	1.5	31
63	Surface albedo spectral properties of geologically interesting areas on Titan. Journal of Geophysical Research E: Planets, 2014, 119, 1729-1747.	3.6	30
64	Temporal variations of Titanâ€™s surface with Cassini/VIMS. Icarus, 2016, 270, 85-99.	2.5	29
65	VIMS spectral mapping observations of Titan during the Cassini prime mission. Planetary and Space Science, 2009, 57, 1950-1962.	1.7	28
66	Latitudinal variations in Titanâ€™s methane and haze from Cassini VIMS observations. Icarus, 2010, 206, 352-365.	2.5	28
67	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
68	On the discovery of CO nighttime emissions on Titan by Cassini/VIMS: Derived stratospheric abundances and geological implications. Planetary and Space Science, 2006, 54, 1552-1562.	1.7	27
69	The Insulating Effect of Methane Clathrate Crust on Titan's Thermal Evolution. Geophysical Research Letters, 2020, 47, e2020GL087481.	4.0	27
70	Geology and Surface Processes on Titan. , 2009, , 75-140.		27
71	The solubility of ⁴⁰Ar and ⁸⁴Kr in liquid hydrocarbons: Implications for Titan's geological evolution. Geophysical Research Letters, 2013, 40, 2935-2940.	4.0	26
72	The exploration of Titan with an orbiter and a lake probe. Planetary and Space Science, 2014, 104, 78-92.	1.7	26

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73	Explorer of Enceladus and Titan (E2T): Investigating ocean worlds' evolution and habitability in the solar system. Planetary and Space Science, 2018, 155, 73-90.	1.7	26
74	Evolution of Titan and implications for its hydrocarbon cycle. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2009, 367, 617-631.	3.4	25
75	Mapping Titan's surface features within the visible spectrum via Cassini VIMS. Planetary and Space Science, 2012, 60, 52-61.	1.7	25
76	A carbonaceous chondrite and cometary origin for icy moons of Jupiter and Saturn. Earth and Planetary Science Letters, 2020, 530, 115920.	4.4	25
77	High-resolution CASSINI-VIMS mosaics of Titan and the icy Saturnian satellites. Planetary and Space Science, 2006, 54, 1146-1155.	1.7	24
78	Global mapping of Titanâ€²s 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
79	Interiors and Evolution of Icy Satellites. , 2015, , 605-635.		24
80	Meridional variation in tropospheric methane on Titan observed with AO spectroscopy at Keck and VLT. Icarus, 2016, 270, 376-388.	2.5	24
81	Melting in Highâ€Pressure Ice Layers of Large Ocean Worldsâ€”Implications for Volatiles Transport. Geophysical Research Letters, 2018, 45, 8096-8103.	4.0	24
82	A TRANSMISSION SPECTRUM OF TITAN'S NORTH POLAR ATMOSPHERE FROM A SPECULAR REFLECTION OF THE SUN. Astrophysical Journal, 2013, 777, 161.	4.5	23
83	Titanâ€™s surface composition and atmospheric transmission with solar occultation measurements by Cassini VIMS. Icarus, 2014, 243, 158-172.	2.5	23
84	Equilibrium composition between liquid and clathrate reservoirs on Titan. Icarus, 2014, 239, 39-45.	2.5	22
85	Titan: Earth-like on the Outside, Ocean World on the Inside. Planetary Science Journal, 2021, 2, 112.	3.6	21
86	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
87	Titan: Preliminary results on surface properties and photometry from VIMS observations of the early flybys. Planetary and Space Science, 2006, 54, 1498-1509.	1.7	19
88	Titan Science with the James Webb Space Telescope. Publications of the Astronomical Society of the Pacific, 2016, 128, 018007.	3.1	19
89	The case for seasonal surface changes at Titanâ€™s lake district. Nature Astronomy, 2019, 3, 506-510.	10.1	19
90	Rapid Formation of Clathrate Hydrate From Liquid Ethane and Water Ice on Titan. Geophysical Research Letters, 2020, 47, e2019GL086265.	4.0	19

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91	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
92	Observational evidence for active dust storms on Titan at equinox. Nature Geoscience, 2018, 11, 727-732.	12.9	18
93	Creep of High-Pressure Ice VI. , 1985, , 109-118.		18
94	Close-range remote sensing of Saturnâ€™s rings during Cassiniâ€™s ring-grazing orbits and Grand Finale. Science, 2019, 364, .	12.6	17
95	The Cassini VIMS archive of Titan: From browse products to global infrared color maps. Icarus, 2019, 319, 121-132.	2.5	17
96	Titan's Interior Structure and Dynamics After the Cassini-Huygens Mission. Annual Review of Earth and Planetary Sciences, 2021, 49, 579-607.	11.0	17
97	A review of Titanâ€™s atmospheric phenomena. Astronomy and Astrophysics Review, 2009, 17, 105-147.	25.5	15
98	Atmospheric control of the cooling rate of impact melts and cryolavas on Titanâ€™s surface. Icarus, 2010, 208, 887-895.	2.5	14
99	Titanâ€™s surface spectra at the Huygens landing site and Shangri-La. Icarus, 2016, 270, 291-306.	2.5	14
100	Two Terrestrial Planet Families with Different Origins. Astrophysical Journal, 2019, 881, 117.	4.5	14
101	Observational Evidence for Summer Rainfall at Titan's North Pole. Geophysical Research Letters, 2019, 46, 1205-1212.	4.0	14
102	A Recipe for the Geophysical Exploration of Enceladus. Planetary Science Journal, 2021, 2, 157.	3.6	14
103	The density structure of Titanâ€™s outer ice shell. Icarus, 2021, 364, 114466.	2.5	13
104	Titan's lost seas found. Nature, 2007, 445, 29-30.	27.8	12
105	The Moon That Would Be a Planet. Scientific American, 2010, 302, 36-43.	1.0	12
106	Phase Diagram of the Ternary Waterâ€“Tetrahydrofuranâ€“Ammonia System at Low Temperatures. Implications for Clathrate Hydrates and Outgassing on Titan. ACS Earth and Space Chemistry, 2018, 2, 135-146.	2.7	12
107	Dynamics of Titan's high-pressure ice layer. Earth and Planetary Science Letters, 2020, 545, 116416.	4.4	12
108	Modeling the formation of Menrva impact crater on Titan: Implications for habitability. Icarus, 2021, 370, 114679.	2.5	10

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109	Photometrically-corrected global infrared mosaics of Enceladus: New implications for its spectral diversity and geological activity. Icarus, 2020, 349, 113848.	2.5	10
110	Theoretical Considerations on the Characteristic Timescales of Hydrogen Generation by Serpentinization Reactions on Enceladus. Journal of Geophysical Research E: Planets, 2022, 127, .	3.6	10
111	Cryolava flow destabilization of crustal methane clathrate hydrate on Titan. Icarus, 2016, 274, 23-32.	2.5	9
112	Interiors and Evolution of Icy Satellites. , 2007, , 509-539.		8
113	Dynamics of Mixed Clathrateâ€Ice Shells on Ocean Worlds. Geophysical Research Letters, 2022, 49, .	4.0	8
114	The Evolutionary Track of H/He Envelopes of the Observed Population of Sub-Neptunes and Super-Earths. Astrophysical Journal, 2020, 898, 104.	4.5	7
115	Spatio-temporal Variation of Bright Ephemeral Features on Titanâ€™s North Pole. Planetary Science Journal, 2020, 1, 31.	3.6	7
116	Phase Behavior of Clathrate Hydrates in the Ternary H₂Oâ€“NH₃â€“Cyclopentane System. ACS Earth and Space Chemistry, 2020, 4, 526-534.	2.7	6
117	Enceladus as a potential oasis for life: Science goals and investigations for future explorations. Experimental Astronomy, 2022, 54, 809-847.	3.7	5
118	Science goals and new mission concepts for future exploration of Titanâ€™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
119	Cage occupancy of methane clathrate hydrates in the ternary H2Oâ€“NH3â€“CH4 system. Chemical Communications, 2020, 56, 12391-12394.	4.1	4
120	Titan Stratospheric Haze Bands Observed in Cassini VIMS as Tracers of Meridional Circulation. Planetary Science Journal, 2022, 3, 114.	3.6	3
121	Global mapping of Titan in the infrared using a heuristic approach to reduce the atmospheric scattering component. , 2010, , .		2
122	Diffraction-limited Titan Surface Imaging from Orbit Using Near-infrared Atmospheric Windows. Planetary Science Journal, 2020, 1, 24.	3.6	2
123	Tidal Currents Detected in Kraken Mare Straits from Cassini VIMS Sun Glitter Observations. Planetary Science Journal, 2020, 1, 35.	3.6	1
124	Reply to the â€˜Comment on Cage occupancy of methane clathrate hydrates in the ternary H₂Oâ€“NH₃â€“CH₄ systemâ€™ by S. Alavi and J. Ripmeester, Chem. Commun., 2022, 58, DOI: 10.1039/D1CC06526B. Chemical Communications, 2022, 58, 4099-4102.	4.1	1