

Tim Van Hoolst

List of Publications by Year in descending order

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117
papers

4,184
citations

109321

35
h-index

128289

60
g-index

126
all docs

126
docs citations

126
times ranked

3245
citing authors

#	ARTICLE	IF	CITATIONS
1	Enceladus as a potential oasis for life: Science goals and investigations for future explorations. <i>Experimental Astronomy</i> , 2022, 54, 809-847.	3.7	5
2	Large eddy simulations of the Martian convective boundary layer: Towards developing a new planetary boundary layer scheme. <i>Atmospheric Research</i> , 2021, 250, 105381.	4.1	12
3	Mercury's Interior Structure Constrained by Density and P-wave Velocity Measurements of Liquid Fe-Si Alloys. <i>Journal of Geophysical Research E: Planets</i> , 2021, 126, e2020JE006651.	3.6	14
4	Updated Europa gravity field and interior structure from a reanalysis of Galileo tracking data. <i>Icarus</i> , 2021, 358, 114187.	2.5	24
5	Geodesy, Geophysics and Fundamental Physics Investigations of the BepiColombo Mission. <i>Space Science Reviews</i> , 2021, 217, 1.	8.1	25
6	Gravity, Geodesy and Fundamental Physics with BepiColombo's MORE Investigation. <i>Space Science Reviews</i> , 2021, 217, 1.	8.1	28
7	Mars precession rate determined from radiometric tracking of the InSight Lander. <i>Planetary and Space Science</i> , 2021, 199, 105208.	1.7	15
8	Strong seasonal and regional variations in the evaporation rate of liquid water on Mars. <i>Journal of Geophysical Research E: Planets</i> , 2021, 126, e2021JE006867.	3.6	2
9	Regions of interest on Ganymede's and Callisto's surfaces as potential targets for ESA's JUICE mission. <i>Planetary and Space Science</i> , 2021, 208, 105324.	1.7	12
10	Modelling of thermal stratification at the top of a planetary core: Application to the cores of Earth and Mercury and the thermal coupling with their mantles. <i>Physics of the Earth and Planetary Interiors</i> , 2021, 321, 106804.	1.9	4
11	LaRa after RISE: Expected improvement in the Mars rotation and interior models. <i>Planetary and Space Science</i> , 2020, 180, 104745.	1.7	5
12	The radio science LaRa instrument onboard ExoMars 2020 to investigate the rotation and interior of Mars. <i>Planetary and Space Science</i> , 2020, 180, 104776.	1.7	18
13	Detection of the Chandler Wobble of Mars From Orbiting Spacecraft. <i>Geophysical Research Letters</i> , 2020, 47, e2020GL090568.	4.0	37
14	The precession and nutations of a rigid Mars. <i>Celestial Mechanics and Dynamical Astronomy</i> , 2020, 132, 1.	1.4	6
15	The Librations, Tides, and Interior Structure of Io. <i>Journal of Geophysical Research E: Planets</i> , 2020, 125, e2020JE006473.	3.6	9
16	Joint Europa Mission (JEM): a multi-scale study of Europa to characterize its habitability and search for extant life. <i>Planetary and Space Science</i> , 2020, 193, 104960.	1.7	15
17	SIMBIO-SYS: Scientific Cameras and Spectrometer for the BepiColombo Mission. <i>Space Science Reviews</i> , 2020, 216, 1.	8.1	47
18	Ice-Ocean Exchange Processes in the Jovian and Saturnian Satellites. <i>Space Science Reviews</i> , 2020, 216, 1.	8.1	43

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19	Large Ocean Worlds with High-Pressure Ices. <i>Space Science Reviews</i> , 2020, 216, 1.	8.1	62
20	Mercury's Crustal Thickness Correlates With Lateral Variations in Mantle Melt Production. <i>Geophysical Research Letters</i> , 2020, 47, e2020GL087261.	4.0	24
21	Geoscience for Understanding Habitability in the Solar System and Beyond. <i>Space Science Reviews</i> , 2019, 215, 1.	8.1	14
22	Exoplanet interiors and habitability. <i>Advances in Physics: X</i> , 2019, 4, 1630316.	4.1	9
23	Normal modes and resonance in Ontario Lacus: a hydrocarbon lake of Titan. <i>Ocean Dynamics</i> , 2019, 69, 1121-1132.	2.2	0
24	Hydrostatic Interfaces in Bodies With Nonhydrostatic Lithospheres. <i>Journal of Geophysical Research E: Planets</i> , 2019, 124, 1410-1432.	3.6	17
25	Coupling between the spin precession and polar motion of a synchronously rotating satellite: application to Titan. <i>Celestial Mechanics and Dynamical Astronomy</i> , 2019, 131, 1.	1.4	1
26	Pre-mission InSights on the Interior of Mars. <i>Space Science Reviews</i> , 2019, 215, 1.	8.1	85
27	Variations in rotation rate and polar motion of a non-hydrostatic Titan. <i>Icarus</i> , 2018, 307, 83-105.	2.5	3
28	A new ab initio equation of state of hcp-Fe and its implication on the interior structure and mass-radius relations of rocky super-Earths. <i>Icarus</i> , 2018, 313, 61-78.	2.5	66
29	The Rotation and Interior Structure Experiment on the InSight Mission to Mars. <i>Space Science Reviews</i> , 2018, 214, 1.	8.1	64
30	Volcanism and outgassing of stagnant-lid planets: Implications for the habitable zone. <i>Physics of the Earth and Planetary Interiors</i> , 2017, 269, 40-57.	1.9	96
31	Understanding the effects of the core on the nutation of the Earth. <i>Geodesy and Geodynamics</i> , 2017, 8, 389-395.	2.2	17
32	Obliquity of Mercury: Influence of the precession of the pericenter and of tides. <i>Icarus</i> , 2017, 291, 136-159.	2.5	18
33	Survey of Capabilities and Applications of Accurate Clocks: Directions for Planetary Science. <i>Space Science Reviews</i> , 2017, 212, 1433-1451.	8.1	7
34	Survey of Capabilities and Applications of Accurate Clocks: Directions for Planetary Science. <i>Space Sciences Series of ISSI</i> , 2017, , 163-181.	0.0	0
35	Enceladus's internal ocean and ice shell constrained from Cassini gravity, shape, and libration data. <i>Geophysical Research Letters</i> , 2016, 43, 5653-5660.	4.0	141
36	Water-rich planets: How habitable is a water layer deeper than on Earth?. <i>Icarus</i> , 2016, 277, 215-236.	2.5	98

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37	PLANET TOPERS: Planets, Tracing the Transfer, Origin, Preservation, and Evolution of their ReservoirS. Origins of Life and Evolution of Biospheres, 2016, 46, 369-384.	1.9	2
38	The diurnal libration and interior structure of Enceladus. Icarus, 2016, 277, 311-318.	2.5	41
39	The obliquity of Enceladus. Icarus, 2016, 268, 12-31.	2.5	52
40	Modeling the polar motion of Titan. Icarus, 2016, 265, 1-28.	2.5	7
41	Rotation of the Terrestrial Planets. , 2015, , 121-151.		10
42	Interior Structure and Evolution of Mars. , 2014, , 379-396.		6
43	Slichter modes of large icy satellites. Icarus, 2014, 231, 287-299.	2.5	2
44	Numerical simulation of tides and oceanic angular momentum of Titan's hydrocarbon seas. Icarus, 2014, 242, 188-201.	2.5	24
45	Titan's internal structure inferred from its gravity field, shape, and rotation state. Icarus, 2014, 237, 29-41.	2.5	69
46	The libration and interior structure of large icy satellites and Mercury. Proceedings of the International Astronomical Union, 2014, 9, 1-8.	0.0	4
47	The long-period forced librations of Titan. Proceedings of the International Astronomical Union, 2014, 9, 25-28.	0.0	2
48	Influence of an inner core on the long-period forced librations of Mercury. Icarus, 2013, 226, 41-51.	2.5	18
49	The role of Mercury's core density structure on its longitudinal librations. Icarus, 2013, 225, 62-74.	2.5	21
50	Jupiter ICy moons Explorer (JUICE): An ESA mission to orbit Ganymede and to characterise the Jupiter system. Planetary and Space Science, 2013, 78, 1-21.	1.7	455
51	Long-Term Evolution of the Martian Crust-Mantle System. Space Science Reviews, 2013, 174, 49-111.	8.1	124
52	The interior structure of Mercury constrained by the low-degree gravity field and the rotation of Mercury. Earth and Planetary Science Letters, 2013, 377-378, 62-72.	4.4	66
53	On the librations and tides of large icy satellites. Icarus, 2013, 226, 299-315.	2.5	54
54	Period of the Slichter mode of Mercury and its possible observation. Astronomy and Astrophysics, 2012, 543, A40.	5.1	2

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55	Obliquity of the Galilean satellites: The influence of a global internal liquid layer. <i>Icarus</i> , 2012, 220, 435-448.	2.5	33
56	The effect of tides and an inner core on the forced longitudinal libration of Mercury. <i>Earth and Planetary Science Letters</i> , 2012, 333-334, 83-90.	4.4	31
57	Polar motion of Titan forced by the atmosphere. <i>Journal of Geophysical Research</i> , 2011, 116, .	3.3	11
58	Crystal structure prediction for iron as inner core material in heavy terrestrial planets. <i>Earth and Planetary Science Letters</i> , 2011, 312, 237-242.	4.4	32
59	On the coupling between magnetic field and nutation in a numerical integration approach. <i>Journal of Geophysical Research</i> , 2011, 116, .	3.3	8
60	Librational response of Europa, Ganymede, and Callisto with an ocean for a non-Keplerian orbit. <i>Astronomy and Astrophysics</i> , 2011, 527, A118.	5.1	40
61	Seismic modelling of the α Cephei star HD 180642 (V1449 Aquilae). <i>Astronomy and Astrophysics</i> , 2011, 534, A98.	5.1	26
62	Titan's obliquity as evidence of a subsurface ocean?. <i>Astronomy and Astrophysics</i> , 2011, 530, A141.	5.1	46
63	Revealing Mars' deep interior: Future geodesy missions using radio links between landers, orbiters, and the Earth. <i>Planetary and Space Science</i> , 2011, 59, 1069-1081.	1.7	18
64	Atmospheric angular momentum variations of Earth, Mars and Venus at seasonal time scales. <i>Planetary and Space Science</i> , 2011, 59, 923-933.	1.7	15
65	Geodesy constraints on the interior structure and composition of Mars. <i>Icarus</i> , 2011, 213, 451-472.	2.5	183
66	Librations and obliquity of Mercury from the BepiColombo radio-science and camera experiments. <i>Planetary and Space Science</i> , 2011, 59, 848-861.	1.7	15
67	Evolution of Icy Satellites. <i>Space Science Reviews</i> , 2010, 153, 447-484.	8.1	49
68	Implications of Rotation, Orbital States, Energy Sources, and Heat Transport for Internal Processes in Icy Satellites. <i>Space Science Reviews</i> , 2010, 153, 317-348.	8.1	52
69	Librations of the Galilean satellites: The influence of global internal liquid layers. <i>Icarus</i> , 2010, 209, 651-664.	2.5	28
70	Linear Isentropic Oscillations of Stars. <i>Astrophysics and Space Science Library</i> , 2010, , .	2.7	17
71	Implications of Rotation, Orbital States, Energy Sources, and Heat Transport for Internal Processes in Icy Satellites. <i>Space Sciences Series of ISSI</i> , 2010, , 315-346.	0.0	0
72	Composition and formation of Mercury: Constraints from future electrical conductivity measurements. <i>Planetary and Space Science</i> , 2009, 57, 296-305.	1.7	18

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73	Martian gravity field model and its time variations from MGS and Odyssey data. <i>Planetary and Space Science</i> , 2009, 57, 350-363.	1.7	66
74	The effect of gravitational and pressure torques on Titan's length-of-day variations. <i>Icarus</i> , 2009, 200, 256-264.	2.5	44
75	LAPLACE: A mission to Europa and the Jupiter System for ESA's Cosmic Vision Programme. <i>Experimental Astronomy</i> , 2009, 23, 849-892.	3.7	38
76	Strong tidal dissipation in Io and Jupiter from astrometric observations. <i>Nature</i> , 2009, 459, 957-959.	27.8	283
77	The interior structure of Mercury and its core sulfur content. <i>Icarus</i> , 2009, 201, 12-30.	2.5	75
78	Lander radioscience for obtaining the rotation and orientation of Mars. <i>Planetary and Space Science</i> , 2009, 57, 1050-1067.	1.7	32
79	Constraints on thermal state and composition of the Earth's lower mantle from electromagnetic impedances and seismic data. <i>Journal of Geophysical Research</i> , 2009, 114, .	3.3	28
80	Accurate Mars Express orbits to improve the determination of the mass and ephemeris of the Martian moons. <i>Planetary and Space Science</i> , 2008, 56, 1043-1053.	1.7	39
81	The librations, shape, and icy shell of Europa. <i>Icarus</i> , 2008, 195, 386-399.	2.5	75
82	Effect of internal gravitational coupling on Titan's non-synchronous rotation. <i>Geophysical Research Letters</i> , 2008, 35, .	4.0	22
83	Mercury's Interior Structure, Rotation, and Tides. <i>Space Sciences Series of ISSI</i> , 2008, , 21-45.	0.0	4
84	The Rotation of the Terrestrial Planets. , 2007, , 123-164.		5
85	Inertial core-mantle coupling and libration of Mercury. <i>Astronomy and Astrophysics</i> , 2007, 468, 711-719.	5.1	30
86	Planetary Magnetic Dynamo Effect on Atmospheric Protection of Early Earth and Mars. <i>Space Science Reviews</i> , 2007, 129, 279-300.	8.1	53
87	Mercury's Interior Structure, Rotation, and Tides. <i>Space Science Reviews</i> , 2007, 132, 203-227.	8.1	34
88	Gravity, rotation, and interior of the terrestrial planets from planetary geodesy: example of Mars. <i>International Association of Geodesy Symposia</i> , 2007, , 887-894.	0.4	0
89	Assessment of the Martian gravity field at short wavelength with Mars Express. <i>Geophysical Research Letters</i> , 2006, 33, .	4.0	11
90	Martian global-scale CO ₂ exchange from time-variable gravity measurements. <i>Journal of Geophysical Research</i> , 2006, 111, .	3.3	21

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91	Excitation of Mars polar motion. <i>Astronomy and Astrophysics</i> , 2006, 446, 345-355.	5.1	12
92	Does the magnetic field in the fluid core contribute a lot to Earth nutation?. <i>Proceedings of the International Astronomical Union</i> , 2006, 2, 483-483.	0.0	0
93	A top-down origin for martian mantle plumes. <i>Icarus</i> , 2006, 185, 197-210.	2.5	35
94	The effects of seasonal mass redistribution and interior structure on Length-of-Day variations of Mars. <i>Advances in Space Research</i> , 2006, 38, 739-744.	2.6	14
95	The effect of a dense atmosphere on the tidally induced potential of Titan. <i>Icarus</i> , 2006, 183, 230-232.	2.5	1
96	Mercury libration determination and the link with the interior of the planet. , 2006, , .		0
97	Interior structure of terrestrial planets: Modeling Mars' mantle and its electromagnetic, geodetic, and seismic properties. <i>Journal of Geophysical Research</i> , 2005, 110, .	3.3	68
98	Mars' time-variable gravity and its determination: Simulated geodesy experiments. <i>Journal of Geophysical Research</i> , 2005, 110, .	3.3	25
99	Numerical simulations of a Mars geodesy network experiment: Effect of orbiter angular momentum desaturation on Mars' rotation estimation. <i>Planetary and Space Science</i> , 2004, 52, 965-975.	1.7	8
100	Tidally induced surface displacements, external potential variations, and gravity variations on Mars. <i>Icarus</i> , 2003, 161, 281-296.	2.5	52
101	Mercury's tides and interior structure. <i>Journal of Geophysical Research</i> , 2003, 108, .	3.3	47
102	Can a solid inner core of Mars be detected from observations of polar motion and nutation of Mars?. <i>Journal of Geophysical Research</i> , 2003, 108, .	3.3	20
103	Mars nutation resonance due to Free Inner Core Nutation. <i>Journal of Geophysical Research</i> , 2003, 108, .	3.3	16
104	Nonadiabatic resonant dynamic tides and orbital evolution in close binaries. <i>Astronomy and Astrophysics</i> , 2003, 397, 973-985.	5.1	25
105	Degree-one displacements on Mars. <i>Geophysical Research Letters</i> , 2002, 29, 6-1.	4.0	3
106	Influence of triaxiality and second-order terms in flattenings on the rotation of terrestrial planets. <i>Physics of the Earth and Planetary Interiors</i> , 2002, 134, 17-33.	1.9	33
107	Influence of the seasonal winds and the CO ₂ mass exchange between atmosphere and polar caps on Mars' rotation. <i>Journal of Geophysical Research</i> , 2002, 107, 9-1.	3.3	38
108	The netlander ionosphere and geodesy experiment. <i>Advances in Space Research</i> , 2001, 28, 1237-1249.	2.6	31

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109	Steady-state convection in Mars's mantle. <i>Planetary and Space Science</i> , 2001, 49, 501-509.	1.7	16
110	Chandler wobble and Free Core Nutation for Mars. <i>Planetary and Space Science</i> , 2000, 48, 1145-1151.	1.7	36
111	Comparison Between the Nutations of the Planet Mars and the Nutations of the Earth. <i>Surveys in Geophysics</i> , 2000, 21, 89-110.	4.6	25
112	Theory of Amplitude Modulation II. The Resonant Mode Interaction Model. <i>International Astronomical Union Colloquium</i> , 2000, 176, 307-312.	0.1	2
113	Computation of Mars' transfer functions for nutations, tides and surface loading. <i>Physics of the Earth and Planetary Interiors</i> , 2000, 117, 385-395.	1.9	36
114	Sensitivity of the Free Core Nutation and the Chandler Wobble to changes in the interior structure of Mars. <i>Physics of the Earth and Planetary Interiors</i> , 2000, 117, 397-405.	1.9	36
115	Mars rotation variations induced by atmosphere and ice caps. <i>Journal of Geophysical Research</i> , 2000, 105, 24563-24570.	3.3	45
116	Unstable non-radial modes in radial pulsators: theory and an example. <i>Monthly Notices of the Royal Astronomical Society</i> , 1998, 297, 536-544.	4.4	71
117	Interiors of Earth-Like Planets and Satellites of the Solar System. <i>Surveys in Geophysics</i> , 0, , 1.	4.6	5