Tim Van Hoolst

List of Publications by Year
in descending order

117 papers	4,184 citations	109137 35 h-index	128067 60 g-index
126 all docs	126 docs citations	126 times ranked	3245 citing authors

#	Article	IF	Citations
1	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.	0.9	455
2	Strong tidal dissipation in Io and Jupiter from astrometric observations. Nature, 2009, 459, 957-959.	13.7	283
3	Geodesy constraints on the interior structure and composition of Mars. Icarus, 2011, 213, 451-472.	1.1	183
4	Enceladus's internal ocean and ice shell constrained from Cassini gravity, shape, and libration data. Geophysical Research Letters, 2016, 43, 5653-5660.	1.5	141
5	Long-Term Evolution of the Martian Crust-Mantle System. Space Science Reviews, 2013, 174, 49-111.	3.7	124
6	Water-rich planets: How habitable is a water layer deeper than on Earth?. Icarus, 2016, 277, 215-236.	1.1	98
7	Volcanism and outgassing of stagnant-lid planets: Implications for the habitable zone. Physics of the Earth and Planetary Interiors, 2017, 269, 40-57.	0.7	96
8	Pre-mission InSights on the Interior of Mars. Space Science Reviews, 2019, 215, 1.	3.7	85
9	The librations, shape, and icy shell of Europa. Icarus, 2008, 195, 386-399.	1.1	75
10	The interior structure of Mercury and its core sulfur content. Icarus, 2009, 201, 12-30.	1.1	75
11	Unstable non-radial modes in radial pulsators: theory and an example. Monthly Notices of the Royal Astronomical Society, 1998, 297, 536-544.	1.6	71
12	Titanâ€™s internal structure inferred from its gravity field, shape, and rotation state. Icarus, 2014, 237, 29-41.	1.1	69
13	Interior structure of terrestrial planets: Modeling Mars' mantle and its electromagnetic, geodetic, and seismic properties. Journal of Geophysical Research, 2005, 110, .	3.3	68
14	Martian gravity field model and its time variations from MGS and Odyssey data. Planetary and Space Science, 2009, 57, 350-363.	0.9	66
15	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.	1.8	66
16	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. Icarus, 2018, 313, 61-78.	1.1	66
17	The Rotation and Interior Structure Experiment on the InSight Mission to Mars. Space Science Reviews, 2018, 214, 1.	3.7	64
18	Large Ocean Worlds with High-Pressure Ices. Space Science Reviews, 2020, 216, 1.	3.7	62

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19	On the librations and tides of large icy satellites. Icarus, 2013, 226, 299-315.	1.1	54
20	Planetary Magnetic Dynamo Effect on Atmospheric Protection of Early Earth and Mars. Space Science Reviews, 2007, 129, 279-300.	3.7	53
21	Tidally induced surface displacements, external potential variations, and gravity variations on Mars. Icarus, 2003, 161, 281-296.	1.1	52
22	Implications of Rotation, Orbital States, Energy Sources, and Heat Transport for Internal Processes in Icy Satellites. Space Science Reviews, 2010, 153, 317-348.	3.7	52
23	The obliquity of Enceladus. Icarus, 2016, 268, 12-31.	1.1	52
24	Evolution of Icy Satellites. Space Science Reviews, 2010, 153, 447-484.	3.7	49
25	Mercury's tides and interior structure. Journal of Geophysical Research, 2003, 108, .	3.3	47
26	SIMBIO-SYS: Scientific Cameras and Spectrometer for the BepiColombo Mission. Space Science Reviews, 2020, 216, 1.	3.7	47
27	Titanâ€™s obliquity as evidence of a subsurface ocean?. Astronomy and Astrophysics, 2011, 530, A141.	2.1	46
28	Mars rotation variations induced by atmosphere and ice caps. Journal of Geophysical Research, 2000, 105, 24563-24570.	3.3	45
29	The effect of gravitational and pressure torques on Titan's length-of-day variations. Icarus, 2009, 200, 256-264.	1.1	44
30	Ice-Ocean Exchange Processes in the Jovian and Saturnian Satellites. Space Science Reviews, 2020, 216, 1.	3.7	43
31	The diurnal libration and interior structure of Enceladus. Icarus, 2016, 277, 311-318.	1.1	41
32	Librational response of Europa, Ganymede, and Callisto with an ocean for a non-Keplerian orbit. Astronomy and Astrophysics, 2011, 527, A118.	2.1	40
33	Accurate Mars Express orbits to improve the determination of the mass and ephemeris of the Martian moons. Planetary and Space Science, 2008, 56, 1043-1053.	0.9	39
34	Influence of the seasonal winds and the CO2mass exchange between atmosphere and polar caps on Mars' rotation. Journal of Geophysical Research, 2002, 107, 9-1.	3.3	38
35	LAPLACE: A mission to Europa and the Jupiter System for ESAâ€™s Cosmic Vision Programme. Experimental Astronomy, 2009, 23, 849-892.	1.6	38
36	Detection of the Chandler Wobble of Mars From Orbiting Spacecraft. Geophysical Research Letters, 2020, 47, e2020GL090568.	1.5	37

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37	Chandler wobble and Free Core Nutation for Mars. Planetary and Space Science, 2000, 48, 1145-1151.	0.9	36
38	Computation of Mars' transfer functions for nutations, tides and surface loading. Physics of the Earth and Planetary Interiors, 2000, 117, 385-395.	0.7	36
39	Sensitivity of the Free Core Nutation and the Chandler Wobble to changes in the interior structure of Mars. Physics of the Earth and Planetary Interiors, 2000, 117, 397-405.	0.7	36
40	A top-down origin for martian mantle plumes. Icarus, 2006, 185, 197-210.	1.1	35
41	Mercuryâ€™s Interior Structure, Rotation, and Tides. Space Science Reviews, 2007, 132, 203-227.	3.7	34
42	Influence of triaxiality and second-order terms in flattenings on the rotation of terrestrial planets. Physics of the Earth and Planetary Interiors, 2002, 134, 17-33.	0.7	33
43	Obliquity of the Galilean satellites: The influence of a global internal liquid layer. Icarus, 2012, 220, 435-448.	1.1	33
44	Lander radioscience for obtaining the rotation and orientation of Mars. Planetary and Space Science, 2009, 57, 1050-1067.	0.9	32
45	Crystal structure prediction for iron as inner core material in heavy terrestrial planets. Earth and Planetary Science Letters, 2011, 312, 237-242.	1.8	32
46	The netlander ionosphere and geodesy experiment. Advances in Space Research, 2001, 28, 1237-1249.	1.2	31
47	The effect of tides and an inner core on the forced longitudinal libration of Mercury. Earth and Planetary Science Letters, 2012, 333-334, 83-90.	1.8	31
48	Inertial core-mantle coupling and libration of Mercury. Astronomy and Astrophysics, 2007, 468, 711-719.	2.1	30
49	Constraints on thermal state and composition of the Earth's lower mantle from electromagnetic impedances and seismic data. Journal of Geophysical Research, 2009, 114, .	3.3	28
50	Librations of the Galilean satellites: The influence of global internal liquid layers. Icarus, 2010, 209, 651-664.	1.1	28
51	Gravity, Geodesy and Fundamental Physics with BepiColomboâ€™s MORE Investigation. Space Science Reviews, 2021, 217, 1.	3.7	28
52	Seismic modelling of theÎ²â€‰Cephei star HDâ€‰180642 (V1449â€‰Aquilae). Astronomy and Astrophysics, 2011, 534, A98.	2.1	26
53	Comparison Between the Nutations of the Planet Mars and the Nutations of the Earth. Surveys in Geophysics, 2000, 21, 89-110.	2.1	25
54	Nonadiabatic resonant dynamic tides and orbital evolution in close binaries. Astronomy and Astrophysics, 2003, 397, 973-985.	2.1	25

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55	Mars' time-variable gravity and its determination: Simulated geodesy experiments. Journal of Geophysical Research, 2005, 110, .	3.3	25
56	Geodesy, Geophysics and Fundamental Physics Investigations of the BepiColombo Mission. Space Science Reviews, 2021, 217, 1.	3.7	25
57	Numerical simulation of tides and oceanic angular momentum of Titanâ€™s hydrocarbon seas. Icarus, 2014, 242, 188-201.	1.1	24
58	Mercury's Crustal Thickness Correlates With Lateral Variations in Mantle Melt Production. Geophysical Research Letters, 2020, 47, e2020GL087261.	1.5	24
59	Updated Europa gravity field and interior structure from a reanalysis of Galileo tracking data. Icarus, 2021, 358, 114187.	1.1	24
60	Effect of internal gravitational coupling on Titan's nonâ€synchronous rotation. Geophysical Research Letters, 2008, 35, .	1.5	22
61	Martian global-scale CO2exchange from time-variable gravity measurements. Journal of Geophysical Research, 2006, 111, .	3.3	21
62	The role of Mercuryâ€™s core density structure on its longitudinal librations. Icarus, 2013, 225, 62-74.	1.1	21
63	Can a solid inner core of Mars be detected from observations of polar motion and nutation of Mars?. Journal of Geophysical Research, 2003, 108, .	3.3	20
64	Composition and formation of Mercury: Constraints from future electrical conductivity measurements. Planetary and Space Science, 2009, 57, 296-305.	0.9	18
65	Revealing Marsâ€™ deep interior: Future geodesy missions using radio links between landers, orbiters, and the Earth. Planetary and Space Science, 2011, 59, 1069-1081.	0.9	18
66	Influence of an inner core on the long-period forced librations of Mercury. Icarus, 2013, 226, 41-51.	1.1	18
67	Obliquity of Mercury: Influence of the precession of the pericenter and of tides. Icarus, 2017, 291, 136-159.	1.1	18
68	The radioscience LaRa instrument onboard ExoMars 2020 to investigate the rotation and interior of mars. Planetary and Space Science, 2020, 180, 104776.	0.9	18
69	Linear Isentropic Oscillations of Stars. Astrophysics and Space Science Library, 2010, , .	1.0	17
70	Understanding the effects of the core on the nutation of the Earth. Geodesy and Geodynamics, 2017, 8, 389-395.	1.0	17
71	Hydrostatic Interfaces in Bodies With Nonhydrostatic Lithospheres. Journal of Geophysical Research E: Planets, 2019, 124, 1410-1432.	1.5	17
72	Steady-state convection in Marsâ€™ mantle. Planetary and Space Science, 2001, 49, 501-509.	0.9	16

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73	Mars nutation resonance due to Free Inner Core Nutation. Journal of Geophysical Research, 2003, 108, .	3.3	16
74	Atmospheric angular momentum variations of Earth, Mars and Venus at seasonal time scales. Planetary and Space Science, 2011, 59, 923-933.	0.9	15
75	Librations and obliquity of Mercury from the BepiColombo radio-science and camera experiments. Planetary and Space Science, 2011, 59, 848-861.	0.9	15
76	Joint Europa Mission (JEM): a multi-scale study of Europa to characterize its habitability and search for extant life. Planetary and Space Science, 2020, 193, 104960.	0.9	15
77	Mars precession rate determined from radiometric tracking of the InSight Lander. Planetary and Space Science, 2021, 199, 105208.	0.9	15
78	The effects of seasonal mass redistribution and interior structure on Length-of-Day variations of Mars. Advances in Space Research, 2006, 38, 739-744.	1.2	14
79	Geoscience for Understanding Habitability in the Solar System and Beyond. Space Science Reviews, 2019, 215, 1.	3.7	14
80	Mercury's Interior Structure Constrained by Density and Pâ€Wave Velocity Measurements of Liquid Feâ€Siâ€C Alloys. Journal of Geophysical Research E: Planets, 2021, 126, e2020JE006651.	1.5	14
81	Excitation of Mars polar motion. Astronomy and Astrophysics, 2006, 446, 345-355.	2.1	12
82	Large eddy simulations of the Martian convective boundary layer: Towards developing a new planetary boundary layer scheme. Atmospheric Research, 2021, 250, 105381.	1.8	12
83	Regions of interest on Ganymede's and Callisto's surfaces as potential targets for ESA's JUICE mission. Planetary and Space Science, 2021, 208, 105324.	0.9	12
84	Assessment of the Martian gravity field at short wavelength with Mars Express. Geophysical Research Letters, 2006, 33, .	1.5	11
85	Polar motion of Titan forced by the atmosphere. Journal of Geophysical Research, 2011, 116, .	3.3	11
86	Rotation of the Terrestrial Planets. , 2015, , 121-151.		10
87	Exoplanet interiors and habitability. Advances in Physics: X, 2019, 4, 1630316.	1.5	9
88	The Librations, Tides, and Interior Structure of Io. Journal of Geophysical Research E: Planets, 2020, 125, e2020JE006473.	1.5	9
89	Numerical simulations of a Mars geodesy network experiment: Effect of orbiter angular momentum desaturation on Mars' rotation estimation. Planetary and Space Science, 2004, 52, 965-975.	0.9	8
90	On the coupling between magnetic field and nutation in a numerical integration approach. Journal of Geophysical Research, 2011, 116, .	3.3	8

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91	Modeling the polar motion of Titan. Icarus, 2016, 265, 1-28.	1.1	7
92	Survey of Capabilities and Applications of Accurate Clocks: Directions for Planetary Science. Space Science Reviews, 2017, 212, 1433-1451.	3.7	7
93	Interior Structure and Evolution of Mars. , 2014, , 379-396.		6
94	The precession and nutations of a rigid Mars. Celestial Mechanics and Dynamical Astronomy, 2020, 132, 1.	0.5	6
95	The Rotation of the Terrestrial Planets. , 2007, , 123-164.		5
96	LaRa after RISE: Expected improvement in the Mars rotation and interior models. Planetary and Space Science, 2020, 180, 104745.	0.9	5
97	Enceladus as a potential oasis for life: Science goals and investigations for future explorations. Experimental Astronomy, 2022, 54, 809-847.	1.6	5
98	Interiors of Earth-Like Planets and Satellites of the Solar System. Surveys in Geophysics, 0, , 1.	2.1	5
99	The libration and interior structure of large icy satellites and Mercury. Proceedings of the International Astronomical Union, 2014, 9, 1-8.	0.0	4
100	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. Physics of the Earth and Planetary Interiors, 2021, 321, 106804.	0.7	4
101	Mercuryâ€™s Interior Structure, Rotation, and Tides. Space Sciences Series of ISSI, 2008, , 21-45.	0.0	4
102	Degree-one displacements on Mars. Geophysical Research Letters, 2002, 29, 6-1.	1.5	3
103	Variations in rotation rate and polar motion of a non-hydrostatic Titan. Icarus, 2018, 307, 83-105.	1.1	3
104	Theory of Amplitude Modulation II. The Resonant Mode Interaction Model. International Astronomical Union Colloquium, 2000, 176, 307-312.	0.1	2
105	Period of the Slichter mode of Mercury and its possible observation. Astronomy and Astrophysics, 2012, 543, A40.	2.1	2
106	Slichter modes of large icy satellites. Icarus, 2014, 231, 287-299.	1.1	2
107	The long-period forced librations of Titan. Proceedings of the International Astronomical Union, 2014, 9, 25-28.	0.0	2
108	PLANET TOPERS: Planets, Tracing the Transfer, Origin, Preservation, and Evolution of their ReservoirS. Origins of Life and Evolution of Biospheres, 2016, 46, 369-384.	0.8	2

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109	Strong seasonal and regional variations in the evaporation rate of liquid water on Mars. Journal of Geophysical Research E: Planets, 2021, 126, e2021JE006867.	1.5	2
110	The effect of a dense atmosphere on the tidally induced potential of Titan. Icarus, 2006, 183, 230-232.	1.1	1
111	Coupling between the spin precession and polar motion of a synchronously rotating satellite: application to Titan. Celestial Mechanics and Dynamical Astronomy, 2019, 131, 1.	0.5	1
112	Does the magnetic field in the fluid core contribute a lot to Earth nutation?. Proceedings of the International Astronomical Union, 2006, 2, 483-483.	0.0	0
113	Normal modes and resonance in Ontario Lacus: a hydrocarbon lake of Titan. Ocean Dynamics, 2019, 69, 1121-1132.	0.9	0
114	Mercury libration determination and the link with the interior of the planet. , 2006, , .		0
115	Gravity, rotation, and interior of the terrestrial planets from planetary geodesy: example of Mars. International Association of Geodesy Symposia, 2007, , 887-894.	0.2	0
116	Implications of Rotation, Orbital States, Energy Sources, and Heat Transport for Internal Processes in Icy Satellites. Space Sciences Series of ISSI, 2010, , 315-346.	0.0	0
117	Survey of Capabilities and Applications of Accurate Clocks: Directions for Planetary Science. Space Sciences Series of ISSI, 2017, , 163-181.	0.0	0