Matthias Grott

List of Publications by Year
in descending order

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93 papers	4,357 citations	94433 37 h-index	110387 64 g-index
103 all docs	103 docs citations	103 times ranked	3176 citing authors

#	Article	IF	Citations
1	Initial results from the InSight mission on Mars. Nature Geoscience, 2020, 13, 183-189.	12.9	274
2	Constraints on the shallow elastic and anelastic structure of Mars from InSight seismic data. Nature Geoscience, 2020, 13, 213-220.	12.9	207
3	Outgassing History and Escape of the Martian Atmosphere and Water Inventory. Space Science Reviews, 2013, 174, 113-154.	8.1	159
4	Thermal and mechanical properties of the near-surface layers of comet 67P/Churyumov-Gerasimenko. Science, 2015, 349, aab0464.	12.6	158
5	A spherical harmonic model of the lithospheric magnetic field of Mars. Journal of Geophysical Research E: Planets, 2014, 119, 1162-1188.	3.6	157
6	Volcanic outgassing of CO2 and H2O on Mars. Earth and Planetary Science Letters, 2011, 308, 391-400.	4.4	139
7	Long-Term Evolution of the Martian Crust-Mantle System. Space Science Reviews, 2013, 174, 49-111.	8.1	124
8	Low thermal conductivity boulder with high porosity identified on C-type asteroid (162173) Ryugu. Nature Astronomy, 2019, 3, 971-976.	10.1	124
9	Crustal recycling, mantle dehydration, and the thermal evolution of Mars. Icarus, 2011, 212, 541-558.	2.5	113
10	Thermochemical evolution of Mercury's interior. Journal of Geophysical Research E: Planets, 2013, 118, 2474-2487.	3.6	113
11	Geology of the InSight landing site on Mars. Nature Communications, 2020, 11, 1014.	12.8	107
12	The Heat Flow and Physical Properties Package (HP3) for the InSight Mission. Space Science Reviews, 2018, 214, 1.	8.1	105
13	Geology, geochemistry, and geophysics of the Moon: Status of current understanding. Planetary and Space Science, 2012, 74, 15-41.	1.7	104
14	MASCOTâ€"The Mobile Asteroid Surface Scout Onboard the Hayabusa2 Mission. Space Science Reviews, 2017, 208, 339-374.	8.1	100
15	Highly porous nature of a primitive asteroid revealed by thermal imaging. Nature, 2020, 579, 518-522.	27.8	100
16	Images from the surface of asteroid Ryugu show rocks similar to carbonaceous chondrite meteorites. Science, 2019, 365, 817-820.	12.6	99
17	Martian rifts: Structural geology and geophysics. Earth and Planetary Science Letters, 2010, 294, 393-410.	4.4	86
18	Pre-mission InSights on the Interior of Mars. Space Science Reviews, 2019, 215, 1.	8.1	85

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19	How large are present-day heat flux variations across the surface of Mars?. Journal of Geophysical Research E: Planets, 2016, 121, 2386-2403.	3.6	81
20	The evolution of the martian elastic lithosphere and implications for crustal and mantle rheology. Icarus, 2008, 193, 503-515.	2.5	78
21	TandEM: Titan and Enceladus mission. Experimental Astronomy, 2009, 23, 893-946.	3.7	77
22	Geology and Physical Properties Investigations by the InSight Lander. Space Science Reviews, 2018, 214, 1.	8.1	77
23	Thermo-chemical evolution and global contraction of mercury. Earth and Planetary Science Letters, 2011, 307, 135-146.	4.4	71
24	Mechanical modeling of thrust faults in the Thaumasia region, Mars, and implications for the Noachian heat flux. Icarus, 2007, 186, 517-526.	2.5	69
25	The Thermal State and Interior Structure of Mars. Geophysical Research Letters, 2018, 45, 12,198.	4.0	69
26	On the spatial variability of the Martian elastic lithosphere thickness: Evidence for mantle plumes?. Journal of Geophysical Research, 2010, 115, .	3.3	65
27	The MASCOT Radiometer MARA for the Hayabusa 2 Mission. Space Science Reviews, 2017, 208, 413-431.	8.1	62
28	High heat flux on ancient Mars: Evidence from rift flank uplift at Coracis Fossae. Geophysical Research Letters, 2005, 32, .	4.0	59
29	A Pre-Landing Assessment of Regolith Properties at the InSight Landing Site. Space Science Reviews, 2018, 214, 1.	8.1	58
30	Farside explorer: unique science from a mission to the farside of the moon. Experimental Astronomy, 2012, 33, 529-585.	3.7	52
31	Thermal evolution and Urey ratio of Mars. Journal of Geophysical Research E: Planets, 2015, 120, 995-1010.	3.6	48
32	Apollo lunar heat flow experiment revisited: A critical reassessment of the in situ thermal conductivity determination. Journal of Geophysical Research, 2010, 115, .	3.3	46
33	The Camera of the MASCOT Asteroid Lander on Board Hayabusa 2. Space Science Reviews, 2017, 208, 375-400.	8.1	46
34	A review of volatiles in the Martian interior. Meteoritics and Planetary Science, 2016, 51, 1935-1958.	1.6	43
35	Acheron Fossae, Mars: Tectonic rifting, volcanism, and implications for lithospheric thickness. Journal of Geophysical Research, 2007, 112, .	3.3	39
36	Asteroid Ryugu before the Hayabusa2 encounter. Progress in Earth and Planetary Science, 2018, 5, .	3.0	39

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37	Thermal structure of Martian soil and the measurability of the planetary heat flow. Journal of Geophysical Research, 2007, 112, .	3.3	37
38	Density and lithospheric structure at Tyrrhena Patera, Mars, from gravity and topography data. Icarus, 2012, 221, 43-52.	2.5	36
39	Presentâ€Day Mars' Seismicity Predicted From 3â€D Thermal Evolution Models of Interior Dynamics. Geophysical Research Letters, 2018, 45, 2580-2589.	4.0	35
40	In situ methods for measuring thermal properties and heat flux on planetary bodies. Planetary and Space Science, 2011, 59, 639-660.	1.7	34
41	Future Mars geophysical observatories for understanding its internal structure, rotation, and evolution. Planetary and Space Science, 2012, 68, 123-145.	1.7	32
42	Analysis of Regolith Properties Using Seismic Signals Generated by InSightâ€™s HP3 Penetrator. Space Science Reviews, 2017, 211, 315-337.	8.1	31
43	Implications of large elastic thicknesses for the composition and current thermal state of Mars. Icarus, 2009, 201, 540-548.	2.5	30
44	Effects of a Large Dust Storm in the Nearâ€Surface Atmosphere as Measured by InSight in Elysium Planitia, Mars. Comparison With Contemporaneous Measurements by Mars Science Laboratory. Journal of Geophysical Research E: Planets, 2020, 125, e2020JE006493.	3.6	30
45	Anomalously porous boulders on (162173) Ryugu as primordial materials from its parent body. Nature Astronomy, 2021, 5, 766-774.	10.1	30
46	Degree-one convection and the origin of Enceladus' dichotomy. Icarus, 2007, 191, 203-210.	2.5	28
47	Constraining the Date of the Martian Dynamo Shutdown by Means of Crater Magnetization Signatures. Journal of Geophysical Research E: Planets, 2017, 122, 2294-2311.	3.6	28
48	Macroporosity and Grain Density of Rubble Pile Asteroid (162173) Ryugu. Journal of Geophysical Research E: Planets, 2020, 125, e2020JE006519.	3.6	27
49	The InSight-HP3 mole on Mars: Lessons learned from attempts to penetrate to depth in the Martian soil. Advances in Space Research, 2022, 69, 3140-3163.	2.6	24
50	Thermal Conductivity of the Martian Soil at the InSight Landing Site From HP³ Active Heating Experiments. Journal of Geophysical Research E: Planets, 2021, 126, e2021JE006861.	3.6	23
51	Soil Thermophysical Properties Near the InSight Lander Derived From 50 Sols of Radiometer Measurements. Journal of Geophysical Research E: Planets, 2021, 126, e2021JE006859.	3.6	22
52	On the accuracy of palaeopole estimations from magnetic field measurements. Geophysical Journal International, 2017, 211, 1669-1678.	2.4	21
53	Water in the Martian interiorâ€”The geodynamical perspective. Meteoritics and Planetary Science, 2016, 51, 1959-1992.	1.6	20
54	The MMX rover: performing in situ surface investigations on Phobos. Earth, Planets and Space, 2022, 74, .	2.5	20

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55	A method to derive surface thermophysical properties of asteroid (162173) Ryugu (1999JU3) from in-situ surface brightness temperature measurements. Planetary and Space Science, 2018, 159, 1-10.	1.7	19
56	Effects of dust layers on thermal emission from airless bodies. Progress in Earth and Planetary Science, 2019, 6, .	3.0	19
57	Calibration of the HP³ Radiometer on InSight. Earth and Space Science, 2020, 7, e2020EA001086.	2.6	19
58	Paleopole Reconstruction of Martian Magnetic Field Anomalies. Journal of Geophysical Research E: Planets, 2018, 123, 1140-1155.	3.6	18
59	The descent and bouncing path of the Hayabusa2 lander MASCOT at asteroid (162173) Ryugu. Astronomy and Astrophysics, 2019, 632, L3.	5.1	18
60	The MASCOT lander aboard Hayabusa2: The in-situ exploration of NEA (162173) Ryugu. Planetary and Space Science, 2021, 200, 105200.	1.7	18
61	In Situ and Orbital Stratigraphic Characterization of the InSight Landing Siteâ€”A Type Example of a Regolithâ€Covered Lava Plain on Mars. Journal of Geophysical Research E: Planets, 2022, 127, .	3.6	17
62	Mercury's lowâ€degree geoid and topography controlled by insolationâ€driven elastic deformation. Geophysical Research Letters, 2015, 42, 7327-7335.	4.0	16
63	The InSight Mars Lander and Its Effect on the Subsurface Thermal Environment. Space Science Reviews, 2017, 211, 259-275.	8.1	16
64	Thermophysical modelling and parameter estimation of small Solar system bodies via data assimilation. Monthly Notices of the Royal Astronomical Society, 2020, 496, 2776-2785.	4.4	16
65	Late crustal growth on Mars: Evidence from lithospheric extension. Geophysical Research Letters, 2005, 32, .	4.0	15
66	Interannual perturbations of the Martian surface heat flow by atmospheric dust opacity variations. Journal of Geophysical Research E: Planets, 2016, 121, 2166-2175.	3.6	14
67	The Hayabusa2 lander MASCOT on the surface of asteroid (162173) Ryugu â€“ Stereo-photogrammetric analysis of MASCam image data. Astronomy and Astrophysics, 2019, 632, L5.	5.1	14
68	Near Surface Properties of Martian Regolith Derived From InSight HP³â€RAD Temperature Observations During Phobos Transits. Geophysical Research Letters, 2021, 48, e2021GL093542.	4.0	13
69	Seasonal seismic activity on Mars. Earth and Planetary Science Letters, 2021, 576, 117171.	4.4	13
70	Latitudinal dependence of asteroid regolith formation by thermal fatigue. Icarus, 2019, 319, 308-311.	2.5	12
71	Penetration and performance testing of the HPÂ³ Mole for the InSight Mars mission. Planetary and Space Science, 2020, 181, 104780.	1.7	12
72	Formation of the double rift system in the Thaumasia Highlands, Mars. Journal of Geophysical Research, 2007, 112, .	3.3	11

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73	Thermal disturbances caused by lander shadowing and the measurability of the martian planetary heat flow. Planetary and Space Science, 2009, 57, 71-77.	1.7	11
74	Possibility of estimating particle size and porosity on Ryugu through MARA temperature measurements. Icarus, 2019, 333, 318-322.	2.5	10
75	Microporosity and parent body of the rubble-pile NEA (162173) Ryugu. Icarus, 2021, 358, 114166.	2.5	10
76	The first active seismic experiment on Mars to characterize the shallow subsurface structure at the InSight landing site. , 2019, , .		10
77	Mid-infrared emissivity of partially dehydrated asteroid (162173) Ryugu shows strong signs of aqueous alteration. Nature Communications, 2022, 13, 364.	12.8	10
78	Seasonal variations of subsurface seismic velocities monitored by the SEIS-InSight seismometer on Mars. Geophysical Journal International, 2022, 229, 776-799.	2.4	10
79	Potential Effects of Surface Temperature Variations and Disturbances and Thermal Convection on the Mars InSight HP3 Heat-Flow Determination. Space Science Reviews, 2017, 211, 277-313.	8.1	9
80	Constraints on the radiogenic heat production rate in the Martian interior from viscous relaxation of crustal thickness variations. Geophysical Research Letters, 2008, 35, .	4.0	8
81	Calibration of the Heat Flow and Physical Properties Package (HP) for the InSight Mars Mission. Earth and Space Science, 2019, 6, 2556-2574.	2.6	8
82	The process for the selection of MASCOT landing site on Ryugu: Design, execution and results. Planetary and Space Science, 2020, 194, 105086.	1.7	6
83	A Reconstruction Algorithm for Temporally Aliased Seismic Signals Recorded by the InSight Mars Lander. Earth and Space Science, 2021, 8, e2020EA001234.	2.6	6
84	Outgassing History and Escape of the Martian Atmosphere and Water Inventory. Space Sciences Series of ISSI, 2012, , 113-154.	0.0	6
85	Planetary polar explorer â€“ the case for a next-generation remote sensing mission to low Mars orbit. Experimental Astronomy, 2022, 54, 695-711.	3.7	6
86	Long-Term Evolution of the Martian Crust-Mantle System. Space Sciences Series of ISSI, 2012, , 49-111.	0.0	4
87	Changâ€™Eâ€4 Rover Spectra Revealing Microâ€scale Surface Thermophysical Properties of the Moon. Geophysical Research Letters, 2021, 48, e2020GL089226.	4.0	3
88	Thermal Properties of the Mojave Mars Regolith Simulant in Mars-Like Atmospheric Conditions. International Journal of Thermophysics, 2022, 43, 1.	2.1	3
89	An autonomous lunar geophysical experiment package (ALGEP) for future space missions. Experimental Astronomy, 2022, 54, 617-640.	3.7	2
90	Is Mars Geodynamically Dead?. Science, 2008, 320, 1171-1172.	12.6	1

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91	HP3â€“ Experiment on InSight Mission â€“ Operations on Mars. , 2018, , .		1
92	Potential effects of atmospheric collapse on Martian heat flow and application to the InSight measurements. Planetary and Space Science, 2020, 180, 104778.	1.7	0
93	A Concept for a Mars Boundary Layer Sounding Balloon: Science Case, Technical Concept and Deployment Risk Analysis. Aerospace, 2022, 9, 136.	2.2	0