

Masatoshi Hirabayashi

List of Publications by Year in descending order

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57
papers

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70
docs citations

70
times ranked

1606
citing authors

#	ARTICLE	IF	CITATIONS
1	Time-Optimal and Fuel-Optimal Trajectories for Asteroid Landing via Indirect Optimization. , 2022, , .		1
2	Active Main-belt Asteroid (6478) Gault: Constraint on Its Cohesive Strength and the Fate of Ejected Particles in the Solar System. Planetary Science Journal, 2022, 3, 16.	3.6	2
3	Rock Abundance on the Lunar Mare on Surfaces of Different Age: Implications for Regolith Evolution and Thickness. Geophysical Research Letters, 2022, 49, .	4.0	5
4	Three-axial shape distributions of pebbles, cobbles and boulders smaller than a few meters on asteroid Ryugu. Icarus, 2022, 381, 115007.	2.5	1
5	Extended mission of Hayabusa2. , 2022, , 557-571.		1
6	A Numerical Approach Using a Finite Element Model to Constrain the Possible Interior Layout of (16) Psyche. Planetary Science Journal, 2022, 3, 122.	3.6	1
7	Double Asteroid Redirection Test (DART): Structural and Dynamic Interactions between Asteroidal Elements of Binary Asteroid (65803) Didymos. Planetary Science Journal, 2022, 3, 140.	3.6	12
8	Bombardment history of the Moon constrained by crustal porosity. Nature Geoscience, 2022, 15, 531-535.	12.9	7
9	Predictions for the Dynamical States of the Didymos System before and after the Planned DART Impact. Planetary Science Journal, 2022, 3, 157.	3.6	23
10	NASA's Double Asteroid Redirection Test (DART): Mutual Orbital Period Change Due to Reshaping in the Near-Earth Binary Asteroid System (65803) Didymos. Planetary Science Journal, 2022, 3, 148.	3.6	15
11	Reconstructing the formation history of top-shaped asteroids from the surface boulder distribution. Nature Astronomy, 2021, 5, 134-138.	10.1	27
12	The surface sensitivity of rubble-pile asteroids during a distant planetary encounter: Influence of asteroid shape elongation. Icarus, 2021, 358, 114205.	2.5	6
13	Geologic History and Crater Morphology of Asteroid (162173) Ryugu. Journal of Geophysical Research E: Planets, 2021, 126, e2020JE006572.	3.6	10
14	Hayabusa2 extended mission: New voyage to rendezvous with a small asteroid rotating with a short period. Advances in Space Research, 2021, 68, 1533-1555.	2.6	20
15	The Double Asteroid Redirection Test (DART): Planetary Defense Investigations and Requirements. Planetary Science Journal, 2021, 2, 173.	3.6	110
16	Finite element modeling to characterize the stress evolution in asteroid (99942) Apophis during the 2029 Earth encounter. Icarus, 2021, 365, 114493.	2.5	11
17	The excited spin state of Dimorphos resulting from the DART impact. Icarus, 2021, 370, 114624.	2.5	33
18	YORP Effect on Asteroid 162173 Ryugu: Implications for the Dynamical History. Journal of Geophysical Research E: Planets, 2021, 126, e2021JE006863.	3.6	4

#	ARTICLE	IF	CITATIONS
19	Spin-driven evolution of asteroids' top-shapes at fast and slow spins seen from (101955) Benu and (162173) Ryugu. <i>Icarus</i> , 2020, 352, 113946.	2.5	28
20	Mercury Dust Monitor (MDM) Onboard the Mio Orbiter of the BepiColombo Mission. <i>Space Science Reviews</i> , 2020, 216, 1.	8.1	15
21	Sample collection from asteroid (162173) Ryugu by Hayabusa2: Implications for surface evolution. <i>Science</i> , 2020, 368, 654-659.	12.6	158
22	A benchmarking and sensitivity study of the full two-body gravitational dynamics of the DART mission target, binary asteroid 65803 Didymos. <i>Icarus</i> , 2020, 349, 113849.	2.5	24
23	Collisional formation of top-shaped asteroids and implications for the origins of Ryugu and Benu. <i>Nature Communications</i> , 2020, 11, 2655.	12.8	87
24	Spacecraft trajectory tracking and parameter estimation around a splitting contact binary asteroid. <i>Acta Astronautica</i> , 2020, 171, 280-289.	3.2	3
25	The Mysterious Location of Maryland on 2014 MU69 and the Reconfiguration of Its Bilobate Shape. <i>Astrophysical Journal Letters</i> , 2020, 891, L12.	8.3	8
26	Mass-shedding Activities of Asteroid (3200) Phaethon Enhanced by Its Rotation. <i>Astrophysical Journal Letters</i> , 2020, 892, L22.	8.3	17
27	Impact Gardening as a Constraint on the Age, Source, and Evolution of Ice on Mercury and the Moon. <i>Journal of Geophysical Research E: Planets</i> , 2020, 125, e2019JE006172.	3.6	43
28	Rotationally induced failure of irregularly shaped asteroids. <i>Icarus</i> , 2019, 317, 354-364.	2.5	35
29	Boulder size and shape distributions on asteroid Ryugu. <i>Icarus</i> , 2019, 331, 179-191.	2.5	107
30	The dynamic geophysical environment of (101955) Benu based on OSIRIS-REx measurements. <i>Nature Astronomy</i> , 2019, 3, 352-361.	10.1	132
31	Hayabusa2 arrives at the carbonaceous asteroid 162173 Ryugu—A spinning top-shaped rubble pile. <i>Science</i> , 2019, 364, 268-272.	12.6	410
32	The geomorphology, color, and thermal properties of Ryugu: Implications for parent-body processes. <i>Science</i> , 2019, 364, 252.	12.6	313
33	The equilibrium size-frequency distribution of small craters reveals the effects of distal ejecta on lunar landscape morphology. <i>Icarus</i> , 2019, 326, 63-87.	2.5	49
34	The Western Bulge of 162173 Ryugu Formed as a Result of a Rotationally Driven Deformation Process. <i>Astrophysical Journal Letters</i> , 2019, 874, L10.	8.3	30
35	Resurfacing asteroids from thermally induced surface degradation. <i>Icarus</i> , 2019, 322, 1-12.	2.5	17
36	The expansion of debris flow shed from the primary of 65803 Didymos. <i>Monthly Notices of the Royal Astronomical Society</i> , 2019, 484, 1057-1071.	4.4	5

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37	Assessing possible mutual orbit period change by shape deformation of Didymos after a kinetic impact in the NASA-led Double Asteroid Redirection Test. <i>Advances in Space Research</i> , 2019, 63, 2515-2534.	2.6	21
38	The Role of Breccia Lenses in Regolith Generation From the Formation of Small, Simple Craters: Application to the Apollo 15 Landing Site. <i>Journal of Geophysical Research E: Planets</i> , 2018, 123, 527-543.	3.6	21
39	Resurfacing asteroids from YORP spin-up and failure. <i>Icarus</i> , 2018, 304, 162-171.	2.5	22
40	The Dynamical Complexity of Surface Mass Shedding from a Top-shaped Asteroid Near the Critical Spin Limit. <i>Astronomical Journal</i> , 2018, 156, 59.	4.7	29
41	No Change in the Recent Lunar Impact Flux Required Based on Modeling of Impact Glass Spherule Age Distributions. <i>Geophysical Research Letters</i> , 2018, 45, 6805-6813.	4.0	16
42	An analytical model of crater count equilibrium. <i>Icarus</i> , 2017, 289, 134-143.	2.5	26
43	Heterogeneous impact transport on the Moon. <i>Journal of Geophysical Research E: Planets</i> , 2017, 122, 1158-1180.	3.6	41
44	Looking into the evolution of granular asteroids in the Solar System. <i>EPJ Web of Conferences</i> , 2017, 140, 14004.	0.3	3
45	Constraints on the perturbed mutual motion in Didymos due to impact-induced deformation of its primary after the DART impact. <i>Monthly Notices of the Royal Astronomical Society</i> , 2017, 472, 1641-1648.	4.4	16
46	Evidence for rapid topographic evolution and crater degradation on Mercury from simple crater morphometry. <i>Geophysical Research Letters</i> , 2017, 44, 5326-5335.	4.0	28
47	Comet C/2011 J2 (LINEAR) nucleus splitting: Dynamical and structural analysis. <i>Planetary and Space Science</i> , 2016, 126, 8-23.	1.7	3
48	The geophysical environment of Bennu. <i>Icarus</i> , 2016, 276, 116-140.	2.5	92
49	Fission and reconfiguration of bilobate comets as revealed by 67P/Churyumov-Gerasimenko. <i>Nature</i> , 2016, 534, 352-355.	27.8	68
50	Failure mode diagram of rubble pile asteroids: Application to (25143) asteroid Itokawa. <i>Proceedings of the International Astronomical Union</i> , 2015, 10, 122-127.	0.0	1
51	INTERNAL STRUCTURE OF ASTEROIDS HAVING SURFACE SHEDDING DUE TO ROTATIONAL INSTABILITY. <i>Astrophysical Journal</i> , 2015, 808, 63.	4.5	71
52	Failure modes and conditions of a cohesive, spherical body due to YORP spin-up. <i>Monthly Notices of the Royal Astronomical Society</i> , 2015, 454, 2249-2257.	4.4	45
53	STRESS AND FAILURE ANALYSIS OF RAPIDLY ROTATING ASTEROID (29075) 1950 DA. <i>Astrophysical Journal Letters</i> , 2015, 798, L8.	8.3	55
54	CONSTRAINTS ON THE PHYSICAL PROPERTIES OF MAIN BELT COMET P/2013 R3 FROM ITS BREAKUP EVENT. <i>Astrophysical Journal Letters</i> , 2014, 789, L12.	8.3	64

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55	ANALYSIS OF ASTEROID (216) KLEOPATRA USING DYNAMICAL AND STRUCTURAL CONSTRAINTS. Astrophysical Journal, 2014, 780, 160.	4.5	35
56	Structural failure of two-density-layer cohesionless biaxial ellipsoids. Icarus, 2014, 236, 178-180.	2.5	14
57	Recursive computation of mutual potential between two polyhedra. Celestial Mechanics and Dynamical Astronomy, 2013, 117, 245-262.	1.4	20