

# Masatoshi Hirabayashi

## List of Publications by Year in descending order

Source: <https://exaly.com/author-pdf/3267693/publications.pdf>

Version: 2024-02-01

57  
papers

2,463  
citations

236925

25  
h-index

197818

49  
g-index

70  
all docs

70  
docs citations

70  
times ranked

1606  
citing authors

#	ARTICLE	IF	CITATIONS
1	Hayabusa2 arrives at the carbonaceous asteroid 162173 Ryugu—A spinning top-shaped rubble pile. <i>Science</i> , 2019, 364, 268-272.	12.6	410
2	The geomorphology, color, and thermal properties of Ryugu: Implications for parent-body processes. <i>Science</i> , 2019, 364, 252.	12.6	313
3	Sample collection from asteroid (162173) Ryugu by Hayabusa2: Implications for surface evolution. <i>Science</i> , 2020, 368, 654-659.	12.6	158
4	The dynamic geophysical environment of (101955) Bennu based on OSIRIS-REx measurements. <i>Nature Astronomy</i> , 2019, 3, 352-361.	10.1	132
5	The Double Asteroid Redirection Test (DART): Planetary Defense Investigations and Requirements. <i>Planetary Science Journal</i> , 2021, 2, 173.	3.6	110
6	Boulder size and shape distributions on asteroid Ryugu. <i>Icarus</i> , 2019, 331, 179-191.	2.5	107
7	The geophysical environment of Bennu. <i>Icarus</i> , 2016, 276, 116-140.	2.5	92
8	Collisional formation of top-shaped asteroids and implications for the origins of Ryugu and Bennu. <i>Nature Communications</i> , 2020, 11, 2655.	12.8	87
9	INTERNAL STRUCTURE OF ASTEROIDS HAVING SURFACE SHEDDING DUE TO ROTATIONAL INSTABILITY. <i>Astrophysical Journal</i> , 2015, 808, 63.	4.5	71
10	Fission and reconfiguration of bilobate comets as revealed by 67P/Churyumov—Gerasimenko. <i>Nature</i> , 2016, 534, 352-355.	27.8	68
11	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
12	STRESS AND FAILURE ANALYSIS OF RAPIDLY ROTATING ASTEROID (29075) 1950 DA. <i>Astrophysical Journal Letters</i> , 2015, 798, L8.	8.3	55
13	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
14	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
15	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
16	Heterogeneous impact transport on the Moon. <i>Journal of Geophysical Research E: Planets</i> , 2017, 122, 1158-1180.	3.6	41
17	ANALYSIS OF ASTEROID (216) KLEOPATRA USING DYNAMICAL AND STRUCTURAL CONSTRAINTS. <i>Astrophysical Journal</i> , 2014, 780, 160.	4.5	35
18	Rotationally induced failure of irregularly shaped asteroids. <i>Icarus</i> , 2019, 317, 354-364.	2.5	35

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19	The excited spin state of Dimorphos resulting from the DART impact. <i>Icarus</i> , 2021, 370, 114624.	2.5	33
20	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
21	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
22	Spin-driven evolution of asteroids' top-shapes at fast and slow spins seen from (101955) Bennu and (162173) Ryugu. <i>Icarus</i> , 2020, 352, 113946.	2.5	28
23	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
24	Reconstructing the formation history of top-shaped asteroids from the surface boulder distribution. <i>Nature Astronomy</i> , 2021, 5, 134-138.	10.1	27
25	An analytical model of crater count equilibrium. <i>Icarus</i> , 2017, 289, 134-143.	2.5	26
26	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
27	Predictions for the Dynamical States of the Didymos System before and after the Planned DART Impact. <i>Planetary Science Journal</i> , 2022, 3, 157.	3.6	23
28	Resurfacing asteroids from YORP spin-up and failure. <i>Icarus</i> , 2018, 304, 162-171.	2.5	22
29	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
30	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
31	Recursive computation of mutual potential between two polyhedra. <i>Celestial Mechanics and Dynamical Astronomy</i> , 2013, 117, 245-262.	1.4	20
32	Hayabusa2 extended mission: New voyage to rendezvous with a small asteroid rotating with a short period. <i>Advances in Space Research</i> , 2021, 68, 1533-1555.	2.6	20
33	Resurfacing asteroids from thermally induced surface degradation. <i>Icarus</i> , 2019, 322, 1-12.	2.5	17
34	Mass-shedding Activities of Asteroid (3200) Phaethon Enhanced by Its Rotation. <i>Astrophysical Journal Letters</i> , 2020, 892, L22.	8.3	17
35	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
36	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

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37	Mercury Dust Monitor (MDM) Onboard the Mio Orbiter of the BepiColombo Mission. <i>Space Science Reviews</i> , 2020, 216, 1.	8.1	15
38	NASA's Double Asteroid Redirection Test (DART): Mutual Orbital Period Change Due to Reshaping in the Near-Earth Binary Asteroid System (65803) Didymos. <i>Planetary Science Journal</i> , 2022, 3, 148.	3.6	15
39	Structural failure of two-density-layer cohesionless biaxial ellipsoids. <i>Icarus</i> , 2014, 236, 178-180.	2.5	14
40	Double Asteroid Redirection Test (DART): Structural and Dynamic Interactions between Asteroidal Elements of Binary Asteroid (65803) Didymos. <i>Planetary Science Journal</i> , 2022, 3, 140.	3.6	12
41	Finite element modeling to characterize the stress evolution in asteroid (99942) Apophis during the 2029 Earth encounter. <i>Icarus</i> , 2021, 365, 114493.	2.5	11
42	Geologic History and Crater Morphology of Asteroid (162173) Ryugu. <i>Journal of Geophysical Research E: Planets</i> , 2021, 126, e2020JE006572.	3.6	10
43	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
44	Bombardment history of the Moon constrained by crustal porosity. <i>Nature Geoscience</i> , 2022, 15, 531-535.	12.9	7
45	The surface sensitivity of rubble-pile asteroids during a distant planetary encounter: Influence of asteroid shape elongation. <i>Icarus</i> , 2021, 358, 114205.	2.5	6
46	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
47	Rock Abundance on the Lunar Mare on Surfaces of Different Age: Implications for Regolith Evolution and Thickness. <i>Geophysical Research Letters</i> , 2022, 49, .	4.0	5
48	YORP Effect on Asteroid 162173 Ryugu: Implications for the Dynamical History. <i>Journal of Geophysical Research E: Planets</i> , 2021, 126, e2021JE006863.	3.6	4
49	Comet C/2011 J2 (LINEAR) nucleus splitting: Dynamical and structural analysis. <i>Planetary and Space Science</i> , 2016, 126, 8-23.	1.7	3
50	Looking into the evolution of granular asteroids in the Solar System. <i>EPJ Web of Conferences</i> , 2017, 140, 14004.	0.3	3
51	Spacecraft trajectory tracking and parameter estimation around a splitting contact binary asteroid. <i>Acta Astronautica</i> , 2020, 171, 280-289.	3.2	3
52	Active Main-belt Asteroid (6478) Gault: Constraint on Its Cohesive Strength and the Fate of Ejected Particles in the Solar System. <i>Planetary Science Journal</i> , 2022, 3, 16.	3.6	2
53	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
54	Time-Optimal and Fuel-Optimal Trajectories for Asteroid Landing via Indirect Optimization. , 2022, , .		1

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55	Three-axial shape distributions of pebbles, cobbles and boulders smaller than a few meters on asteroid Ryugu. <i>Icarus</i> , 2022, 381, 115007.	2.5	1
56	Extended mission of Hayabusa2. , 2022, , 557-571.		1
57	A Numerical Approach Using a Finite Element Model to Constrain the Possible Interior Layout of (16) Psyche. <i>Planetary Science Journal</i> , 2022, 3, 122.	3.6	1