# Mark A Wieczorek

List of Publications by Year
in descending order



| 127 | 11,959 | 23567 58 | 27406 106 |
|---|---|---|---|
| papers | citations | h-index | g-index |

| 131 | 131 | 131 | 4374 |
|---|---|---|---|
| all docs | docs citations | times ranked | citing authors |

| # | Article | IF | Citations |
|---|---|---|---|
| 1 | The Crust of the Moon as Seen by GRAIL. Science, 2013, 339, 671-675. | 12.6 | 726 |
| 2 | Major lunar crustal terranes: Surface expressions and crust-mantle origins. Journal of Geophysical Research, 2000, 105, 4197-4216. | 3.3 | 719 |
| 3 | The Constitution and Structure of the Lunar Interior. Reviews in Mineralogy and Geochemistry, 2006, 60, 221-364. | 4.8 | 413 |
| 4 | Gravity Field of the Moon from the Gravity Recovery and Interior Laboratory (GRAIL) Mission. Science, 2013, 339, 668-671. | 12.6 | 389 |
| 5 | Thermal and Magmatic Evolution of the Moon. Reviews in Mineralogy and Geochemistry, 2006, 60, 365-518. | 4.8 | 372 |
| 6 | Crustal structure of Mars from gravity and topography. Journal of Geophysical Research, 2004, 109, . | 3.3 | 360 |
| 7 | The â€œProcellarum KREEP Terraneâ€• Implications for mare volcanism and lunar evolution. Journal of Geophysical Research, 2000, 105, 20417-20430. | 3.3 | 294 |
| 8 | Potential anomalies on a sphere: Applications to the thickness of the lunar crust. Journal of Geophysical Research, 1998, 103, 1715-1724. | 3.3 | 285 |
| 9 | Spatiospectral Concentration on a Sphere. SIAM Review, 2006, 48, 504-536. | 9.5 | 285 |
| 10 | Initial results from the InSight mission on Mars. Nature Geoscience, 2020, 13, 183-189. | 12.9 | 274 |
| 11 | Nonuniform cratering of the Moon and a revised crater chronology of the inner Solar System. Icarus, 2011, 214, 1-20. | 2.5 | 266 |
| 12 | Localized gravity/topography admittance and correlation spectra on Mars: Implications for regional and global evolution. Journal of Geophysical Research, 2002, 107, 19-1-19-25. | 3.3 | 243 |
| 13 | SEIS: Insightâ€™s Seismic Experiment for Internal Structure of Mars. Space Science Reviews, 2019, 215, 12. | 8.1 | 238 |
| 14 | Localized spectral analysis on the sphere. Geophysical Journal International, 2005, 162, 655-675. | 2.4 | 223 |
| 15 | Thickness of the Martian crust: Improved constraints from geoid-to-topography ratios. Journal of Geophysical Research, 2004, 109, . | 3.3 | 205 |
| 16 | Asymmetric thermal evolution of the Moon. Journal of Geophysical Research E: Planets, 2013, 118, 1435-1452. | 3.6 | 193 |
| 17 | Lunar Multiring Basins and the Cratering Process. Icarus, 1999, 139, 246-259. | 2.5 | 188 |
| 18 | The timeline of the lunar bombardment: Revisited. Icarus, 2018, 305, 262-276. | 2.5 | 186 |

| # | Article | IF | Citations |
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| 19 | Lunar interior properties from the GRAIL mission. Journal of Geophysical Research E: Planets, 2014, 119, 1546-1578. | 3.6 | 185 |
| 20 | Ancient Igneous Intrusions and Early Expansion of the Moon Revealed by GRAIL Gravity Gradiometry. Science, 2013, 339, 675-678. | 12.6 | 177 |
| 21 | The Origin of Lunar Mascon Basins. Science, 2013, 340, 1552-1555. | 12.6 | 174 |
| 22 | Lunar impact basins revealed by Gravity Recovery and Interior Laboratory measurements. Science Advances, 2015, 1, e1500852. | 10.3 | 173 |
| 23 | SHTools: Tools for Working with Spherical Harmonics. Geochemistry, Geophysics, Geosystems, 2018, 19, 2574-2592. | 2.5 | 155 |
| 24 | Correction to â€œLocalized gravity/topography admittance and correlation spectra on Mars: Implications for regional and global evolutionâ€• Journal of Geophysical Research, 2004, 109, . | 3.3 | 151 |
| 25 | An impact-driven dynamo for the early Moon. Nature, 2011, 479, 215-218. | 27.8 | 144 |
| 26 | Thickness and structure of the martian crust from InSight seismic data. Science, 2021, 373, 438-443. | 12.6 | 140 |
| 27 | Nonuniform cratering of the terrestrial planets. Icarus, 2008, 197, 291-306. | 2.5 | 135 |
| 28 | GRAIL gravity constraints on the vertical and lateral density structure of the lunar crust. Geophysical Research Letters, 2014, 41, 5771-5777. | 4.0 | 126 |
| 29 | Minimum-Variance Multitaper Spectral Estimation on the Sphere. Journal of Fourier Analysis and Applications, 2007, 13, 665-692. | 1.0 | 124 |
| 30 | Constraints on the Martian lithosphere from gravity and topography data. Journal of Geophysical Research, 2005, 110, . | 3.3 | 122 |
| 31 | Back to the Moon: The scientific rationale for resuming lunar surface exploration. Planetary and Space Science, 2012, 74, 3-14. | 1.7 | 119 |
| 32 | An Impactor Origin for Lunar Magnetic Anomalies. Science, 2012, 335, 1212-1215. | 12.6 | 112 |
| 33 | Regolith thickness over the lunar nearside: Results from Earth-based 70-cm Arecibo radar observations. Icarus, 2012, 218, 771-787. | 2.5 | 108 |
| 34 | A long-lived lunar dynamo powered by core crystallization. Earth and Planetary Science Letters, 2014, 401, 251-260. | 4.4 | 105 |
| 35 | Geology, geochemistry, and geophysics of the Moon: Status of current understanding. Planetary and Space Science, 2012, 74, 15-41. | 1.7 | 104 |
| 36 | Compositional variations of the lunar crust: Results from radiative transfer modeling of central peak spectra. Journal of Geophysical Research, 2009, 114, . | 3.3 | 103 |

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| 37 | Asymmetric Distribution of Lunar Impact Basins Caused by Variations in Target Properties. Science, 2013, 342, 724-726. | 12.6 | 103 |
| 38 | Gravity and Topography of the Terrestrial Planets. , 2015, , 153-193. | | 102 |
| 39 | Petrological constraints on the density of the Martian crust. Journal of Geophysical Research E: Planets, 2014, 119, 1707-1727. | 3.6 | 91 |
| 40 | Constraints on the composition of the martian south polar cap from gravity and topography. Icarus, 2008, 196, 506-517. | 2.5 | 89 |
| 41 | The role of magma buoyancy on the eruption of lunar basalts. Earth and Planetary Science Letters, 2001, 185, 71-83. | 4.4 | 85 |
| 42 | Pre-mission InSights on the Interior of Mars. Space Science Reviews, 2019, 215, 1. | 8.1 | 85 |
| 43 | Lateral variations of lunar crustal thickness from the Apollo seismic data set. Earth and Planetary Science Letters, 2006, 243, 1-14. | 4.4 | 83 |
| 44 | 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 |
| 45 | The BepiColombo Laser Altimeter (BELA): Concept and baseline design. Planetary and Space Science, 2007, 55, 1398-1413. | 1.7 | 80 |
| 46 | Planned Products of the Mars Structure Service for the InSight Mission to Mars. Space Science Reviews, 2017, 211, 611-650. | 8.1 | 80 |
| 47 | Formation of the Orientale lunar multiring basin. Science, 2016, 354, 441-444. | 12.6 | 78 |
| 48 | The composition and origin of the lunar crust: Constraints from central peaks and crustal thickness modeling. Geophysical Research Letters, 2001, 28, 4023-4026. | 4.0 | 75 |
| 49 | Density and porosity of the lunar crust from gravity and topography. Journal of Geophysical Research, 2012, 117, . | 3.3 | 73 |
| 50 | Crustal thickness of the Moon: New constraints from gravity inversions using polyhedral shape models. Icarus, 2007, 192, 150-166. | 2.5 | 71 |
| 51 | 4. Thermal and Magmatic Evolution of the Moon. , 2006, , 365-518. | | 70 |
| 52 | Lunar bulk chemical composition: a post-Gravity Recovery and Interior Laboratory reassessment. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2014, 372, 20130242. | 3.4 | 70 |
| 53 | The Thermal State and Interior Structure of Mars. Geophysical Research Letters, 2018, 45, 12,198. | 4.0 | 69 |
| 54 | The structure and compensation of the lunar highland crust. Journal of Geophysical Research, 1997, 102, 10933-10943. | 3.3 | 68 |

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| 55 | Crustal and time-varying magnetic fields at the InSight landing site on Mars. Nature Geoscience, 2020, 13, 199-204. | 12.9 | 68 |
| 56 | Modeling polarimetric radar scattering from the lunar surface: Study on the effect of physical properties of the regolith layer. Journal of Geophysical Research, 2011, 116, . | 3.3 | 67 |
| 57 | Thickness of the crust of Mercury from geoidâ€toâ€topography ratios. Geophysical Research Letters, 2015, 42, 1029-1038. | 4.0 | 67 |
| 58 | Excavation of the lunar mantle by basin-forming impact events on the Moon. Earth and Planetary Science Letters, 2015, 409, 243-251. | 4.4 | 64 |
| 59 | The fractured Moon: Production and saturation of porosity in the lunar highlands from impact cratering. Geophysical Research Letters, 2015, 42, 6939-6944. | 4.0 | 63 |
| 60 | Observations, Meteorites, and Models: A Preflight Assessment of the Composition and Formation of (16) Psyche. Journal of Geophysical Research E: Planets, 2020, 125, e2019JE006296. | 3.6 | 61 |
| 61 | Lunar Seismology: An Update on Interior Structure Models. Space Science Reviews, 2019, 215, 1. | 8.1 | 60 |
| 62 | Lunar Seismology: A Data and Instrumentation Review. Space Science Reviews, 2020, 216, 1. | 8.1 | 59 |
| 63 | The formation of lunar mascon basins from impact to contemporary form. Journal of Geophysical Research E: Planets, 2014, 119, 2378-2397. | 3.6 | 57 |
| 64 | GRAIL, LLR, and LOLA constraints on the interior structure of the Moon. Geophysical Research Letters, 2016, 43, 8365-8375. | 4.0 | 57 |
| 65 | Mercuryâ€™s spinâ€“orbit resonance explained byÂinitial retrograde and subsequent synchronousÂrotation. Nature Geoscience, 2012, 5, 18-21. | 12.9 | 56 |
| 66 | Distribution of Radioactive Heat Sources and Thermal History of the Moon. Journal of Geophysical Research E: Planets, 2018, 123, 3144-3166. | 3.6 | 55 |
| 67 | The C1XS X-ray Spectrometer on Chandrayaan-1. Planetary and Space Science, 2009, 57, 717-724. | 1.7 | 54 |
| 68 | Farside explorer: unique science from a mission to the farside of the moon. Experimental Astronomy, 2012, 33, 529-585. | 3.7 | 52 |
| 69 | A Serenitatis origin for the Imbrian grooves and South Pole-Aitken thorium anomaly. Journal of Geophysical Research, 2001, 106, 27853-27864. | 3.3 | 51 |
| 70 | 3. The Constitution and Structure of the Lunar Interior. , 2006, , 221-364. | | 51 |
| 71 | Thicknesses of mare basalts on the Moon from gravity and topography. Journal of Geophysical Research E: Planets, 2016, 121, 854-870. | 3.6 | 51 |
| 72 | Gravity and Topography of the Terrestrial Planets. , 2007, , 165-206. | | 48 |

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| 73 | X-ray fluorescence observations of the moon by SMART-1/D-CIXS and the first detection of Ti KÎ± from the lunar surface. Planetary and Space Science, 2009, 57, 744-750. | 1.7 | 46 |
| 74 | Lunar X-ray fluorescence observations by the Chandrayaan-1 X-ray Spectrometer (C1XS): Results from the nearside southern highlands. Icarus, 2011, 214, 53-66. | 2.5 | 46 |
| 75 | Structure and Formation of the Lunar Farside Highlands. Science, 2010, 330, 949-951. | 12.6 | 45 |
| 76 | InSight Constraints on the Global Character of the Martian Crust. Journal of Geophysical Research E: Planets, 2022, 127, . | 3.6 | 45 |
| 77 | The D-CIXS X-ray spectrometer on the SMART-1 mission to the Moonâ€”First results. Planetary and Space Science, 2007, 55, 494-502. | 1.7 | 41 |
| 78 | Strength, Depth, and Geometry of Magnetic Sources in the Crust of the Moon From Localized Power Spectrum Analysis. Journal of Geophysical Research E: Planets, 2018, 123, 291-316. | 3.6 | 39 |
| 79 | Gravity field of the Orientale basin from the Gravity Recovery and Interior Laboratory Mission. Science, 2016, 354, 438-441. | 12.6 | 38 |
| 80 | Highâ€Resolution Gravity Field Models from GRAIL Data and Implications for Models of the Density Structure of the Moon's Crust. Journal of Geophysical Research E: Planets, 2020, 125, e2019JE006086. | 3.6 | 38 |
| 81 | Subsurface morphology and scaling of lunar impact basins. Journal of Geophysical Research E: Planets, 2016, 121, 1695-1712. | 3.6 | 37 |
| 82 | Did a large impact reorient the Moon?. Icarus, 2009, 200, 358-366. | 2.5 | 36 |
| 83 | Density and lithospheric structure at Tyrrhena Patera, Mars, from gravity and topography data. Icarus, 2012, 221, 43-52. | 2.5 | 36 |
| 84 | Thickness of Lunar Mare Basalts: New Results Based on Modeling the Degradation of Partially Buried Craters. Journal of Geophysical Research E: Planets, 2019, 124, 2430-2459. | 3.6 | 36 |
| 85 | Improving Constraints on Planetary Interiors With PPs Receiver Functions. Journal of Geophysical Research E: Planets, 2021, 126, e2021JE006983. | 3.6 | 34 |
| 86 | Ring faults and ring dikes around the Orientale basin on the Moon. Icarus, 2018, 310, 1-20. | 2.5 | 31 |
| 87 | The scientific rationale for the C1XS X-ray spectrometer on India's Chandrayaan-1 mission to the moon. Planetary and Space Science, 2009, 57, 725-734. | 1.7 | 30 |
| 88 | The Gravitational Signature of Martian Volcanoes. Journal of Geophysical Research E: Planets, 2019, 124, 2054-2086. | 3.6 | 30 |
| 89 | The Chandrayaan-1 X-ray Spectrometer: First results. Planetary and Space Science, 2012, 60, 217-228. | 1.7 | 28 |
| 90 | Testing the axial dipole hypothesis for the Moon by modeling the direction of crustal magnetization. Journal of Geophysical Research E: Planets, 2017, 122, 383-399. | 3.6 | 27 |

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| 91 | Olivine-bearing lithologies on the Moon: Constraints on origins and transport mechanisms from M3 spectroscopy, radiative transfer modeling, and GRAIL crustal thickness. Icarus, 2018, 300, 287-304. | 2.5 | 27 |
| 92 | Gravitational signatures of lunar floor-fractured craters. Earth and Planetary Science Letters, 2015, 424, 269-279. | 4.4 | 26 |
| 93 | Iron Abundances in Lunar Impact Basin Melt Sheets From Orbital Magnetic Field Data. Journal of Geophysical Research E: Planets, 2017, 122, 2429-2444. | 3.6 | 26 |
| 94 | The Interior Structure of the Moon: What Does Geophysics Have to Say?. Elements, 2009, 5, 35-40. | 0.5 | 25 |
| 95 | Fundamental relations of mineral specific magnetic carriers for paleointensity determination. Physics of the Earth and Planetary Interiors, 2017, 272, 44-49. | 1.9 | 25 |
| 96 | Flexure of the Lithosphere Beneath the North Polar Cap of Mars: Implications for Ice Composition and Heat Flow. Geophysical Research Letters, 2020, 47, e2019GL086746. | 4.0 | 23 |
| 97 | Constraints on Thermal History of Mars From Depth of Pore Closure Below InSight. Geophysical Research Letters, 2020, 47, e2020GL088653. | 4.0 | 21 |
| 98 | Simulations of Seismic Wave Propagation on Mars. Space Science Reviews, 2017, 211, 571-594. | 8.1 | 19 |
| 99 | LunarEXâ€”a proposal to cosmic vision. Experimental Astronomy, 2009, 23, 711-740. | 3.7 | 18 |
| 100 | The forced precession of the Moon's inner core. Journal of Geophysical Research E: Planets, 2016, 121, 1264-1292. | 3.6 | 18 |
| 101 | Density distribution of asteroid 25143 Itokawa based on smooth terrain shape. Planetary and Space Science, 2019, 174, 32-42. | 1.7 | 18 |
| 102 | Hydrostatic Interfaces in Bodies With Nonhydrostatic Lithospheres. Journal of Geophysical Research E: Planets, 2019, 124, 1410-1432. | 3.6 | 17 |
| 103 | Mercury's lowâ€degree geoid and topography controlled by insolationâ€driven elastic deformation. Geophysical Research Letters, 2015, 42, 7327-7335. | 4.0 | 16 |
| 104 | Impact cratering rate consistency test from ages of layered ejecta on Mars. Planetary and Space Science, 2020, 180, 104755. | 1.7 | 16 |
| 105 | Large impact cratering during lunar magma ocean solidification. Nature Communications, 2021, 12, 5433. | 12.8 | 16 |
| 106 | Lunar Netâ€”a proposal in response to an ESA M3 call in 2010 for a medium sized mission. Experimental Astronomy, 2012, 33, 587-644. | 3.7 | 15 |
| 107 | The Composition of the South Polar Cap of Mars Derived From Orbital Data. Journal of Geophysical Research E: Planets, 2021, 126, e2020JE006730. | 3.6 | 15 |
| 108 | Lithospheric Structure of Venusian Crustal Plateaus. Journal of Geophysical Research E: Planets, 2022, 127, . | 3.6 | 15 |

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| 109 | Distinguishing the Origin of Asteroid (16) Psyche. Space Science Reviews, 2022, 218, 17. | 8.1 | 13 |
| 110 | A New Largeâ€Scale Map of the Lunar Crustal Magnetic Field and Its Interpretation. Journal of Geophysical Research E: Planets, 2021, 126, e2020JE006667. | 3.6 | 12 |
| 111 | Crustal Porosity of Lunar Impact Basins. Journal of Geophysical Research E: Planets, 2020, 125, e2019JE006335. | 3.6 | 11 |
| 112 | Isostatic Compensation of the Lunar Highlands. Journal of Geophysical Research E: Planets, 2018, 123, 646-665. | 3.6 | 10 |
| 113 | Impacts on the Moon: Analysis methods and size distribution of impactors. Planetary and Space Science, 2021, 200, 105201. | 1.7 | 10 |
| 114 | Seismic Velocity Variations in a 3D Martian Mantle: Implications for the InSight Measurements. Journal of Geophysical Research E: Planets, 2021, 126, e2020JE006755. | 3.6 | 10 |
| 115 | Is the Lunar Magnetic Field Correlated With Gravity or topography?. Journal of Geophysical Research E: Planets, 2020, 125, e2019JE006274. | 3.6 | 9 |
| 116 | Depth of Martian Magnetization From Localized Power Spectrum Analysis. Journal of Geophysical Research E: Planets, 2021, 126, e2020JE006690. | 3.6 | 8 |
| 117 | Numerical Simulations of the Apollo Sâ€IVB Artificial Impacts on the Moon. Earth and Space Science, 2021, 8, e2021EA001887. | 2.6 | 7 |
| 118 | Effect of ray and speed perturbations on ionospheric tomography by overâ€theâ€horizon radar: A new method. Journal of Geophysical Research: Space Physics, 2014, 119, 7841-7857. | 2.4 | 6 |
| 119 | Magnetic Anomalies in Five Lunar Impact Basins: Implications for Impactor Trajectories and Inverse Modeling. Journal of Geophysical Research E: Planets, 2021, 126, e2020JE006668. | 3.6 | 6 |
| 120 | Seismic Efficiency for Simple Crater Formation in the Martian Top Crust Analog. Journal of Geophysical Research E: Planets, 2021, 126, e2020JE006662. | 3.6 | 6 |
| 121 | Geodetic investigations of the mission concept MAGIC to reveal Callisto's internal structure. Acta Astronautica, 2022, 195, 68-76. | 3.2 | 5 |
| 122 | Thickness of Lava Flows Within the Northern Smooth Plains on Mercury as Estimated by Partially Buried Craters. Geophysical Research Letters, 2020, 47, e2020GL090578. | 4.0 | 4 |
| 123 | The Psyche Topography and Geomorphology Investigation. Space Science Reviews, 2022, 218, 1. | 8.1 | 4 |
| 124 | The science mission of SpaceILâ€™s Beresheet lander. Planetary and Space Science, 2020, 194, 105115. | 1.7 | 3 |
| 125 | Statistical analysis of fireballs: Seismic signature survey. Publications of the Astronomical Society of Australia, 2021, 38, . | 3.4 | 2 |
| 126 | An autonomous lunar geophysical experiment package (ALGEP) for future space missions. Experimental Astronomy, 2022, 54, 617-640. | 3.7 | 2 |

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| 127 | Appreciation of Peer Reviewers for 2014. Journal of Geophysical Research E: Planets, 2015, 120, 359-361. | 3.6 | 0 |