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EDUCATION

Ph.D., Planetary Sciences, minor in Astrophysics, California Institute of Technology, Pasadena, CA 2002
A.B., Astronomy & Astrophysics and Physics cum laude, Harvard University, Cambridge, MA 1995

PROFESSIONAL EXPERIENCE

Professor, Arizona State University 2024-present
Professor, U. California, Davis 2014-2024
Visiting Professor, Harvard University 2014-2016
Professor of Earth and Planetary Sciences, Harvard University 2012-2014
John L. Loeb Associate Professor of the Natural Sciences, Harvard University 2009-2012
Assistant Professor of Planetary Science, Harvard University 2003-2009
G. K. Gilbert Postdoctoral Fellow, Carnegie Institution of Washington, Washington, D.C. 2002-2003

RESEARCH INTERESTS AND HIGHLIGHTS

Planet formation and evolution with focus on collisional processes. Laboratory measurements of the equation of state and rheological properties of planetary materials using shock wave techniques. Computational and laboratory technique development for study of shock processes. Shock processes in heterogeneous materials. Experimental and computational studies of impact processes to interpret the formation, resurfacing history, physical properties, and internal structure of planets and small bodies.

Center for Matter under Extreme Conditions: 2018-2028; DOE-NNSA SSAA Center
Co-PI and Deputy Director (renewal) and lead for the High Energy Density (HED) Materials Theme. Center focused on advancing HED Physics and workforce training. cmec.ucsd.edu

Center for Matter at Atomic Pressures: 2020-2025; NSF Physics Frontiers Center
Co-PI; Center focused on discovery of new physics and chemistry at extreme compression with applications to planetary and exoplanetary interiors. cmap.rochester.edu

Impacts.wiki: 2022+, Planetary Impacts Community Wiki and Strategic Development Project
Founder of community development project to enable open science, DEI, education and research initiatives in high-pressure sciences and dynamic impact processes. impacts.wiki

ACADEMIC HONORS

Stephen E. Dwornik Planetary Geoscience Student Paper Award, Geological Society of America (2001)
Grove Karl Gilbert Postdoctoral Fellowship, Carnegie Institution of Washington (2002)
Presidential Early Career Award for Scientists and Engineers (2003)
Harold C. Urey Prize, Division for Planetary Sciences, American Astronomical Society (2009)
MacArthur Fellow (2018-2023)
Fellow, American Association for the Advancement of Science (2019)
Fellow, American Physical Society (2023): For the development and application of shock physics techniques to explain the origin and evolution of planetary systems.

Selected Media Recognition

Brilliant 10, Popular Science (2010)
Astronomy's Rising Stars, Astronomy Magazine (2013)
Top 100 Science Stories of 2015, Discover Magazine (2015)
Featured on TED.com, go.ted.com/sarahtstewart (2019)

Academic Service and Consulting

Selected Academic Service Appointments

- Associate Editor, J. Geophysical Research Planets, 2011-2014
- President-elect, Planetary Sciences Section of the American Geophysical Union, 2015
- American Physical Society Topical Group on Shock Compression of Condensed Matter, Fellows Committee, 2016-2019
- President, Planetary Sciences Section of the American Geophysical Union, 2016-2018, Past-President 2019-2020
- GSA Barringer Award Selection Committee, 2019-2022 (Chair 2022)

National Committees and Panels

- Controlling Material Response Panel, The Future of Compression Science, Los Alamos National Laboratory, 2009
  A Summary Report on the 21st Century Needs and Challenges of Compression Science Workshop, Los Alamos National Laboratory Technical Report LA-UR 09-07771, pp. 42, 2009
- Mitigation Panel, Committee to Review Near-Earth Object Surveys and Hazard Mitigation Strategies, National Research Council, 2009
  Defending Planet Earth: Near-Earth Object Surveys and Hazard Mitigation Strategies, National Academy of Sciences, pp. 149, 2010
- Materials in Extremes and Planetary Physics Panel, Basic Research Directions Workshop on User Science at the National Ignition Facility (NIF), Department of Energy, 2011
  Basic Research Directions for User Science at the National Ignition Facility, Eds. J. Sarrao, K. Budil, M. Wiescher, NNSA-DOE, pp. 141, 2011
- National Ignition Facility, Technical Review Committee, 2015-2022, Chair 2017-2022
- Standing Committee on Astrobiology and Planetary Science, National Academies of Sciences, Engineering and Medicine, 2016-2017
- National Academies of Sciences, Engineering and Medicine, Decadal Survey in Planetary Science and Astrobiology *2023-2032*, External Reviewer, 2022

Selected Education and Public Outreach

- *Essential Science for Teachers: Earth and Space* video series, Annenberg/CPB, Producer Shannon Densmore, Executive Producer Alex Griswold, Science Media Group, Center for Astrophysics: Science advisor and interviewee, 2003-2004
- Harvard Museum of Natural History: Science advisor for new meteorites exhibit; PI on E/PO video display, *Impact! The making of a meteorite,* 2005-2008
  Sacco, J. C., S. T. Stewart, A. Griswold, Z. M. Leinhardt, IMPACT! An Asteroid's Journey to Earth – Interactive Visualizations for Museums and Classrooms, *Lunar & Planetary Science Conference* 39, #2487, 2008.
- NOVA *Finding Life Beyond Earth*, interviewee, 2011
- Current Science magazine, careers profile, 2011
- Popular Science magazine, Labs that go Boom, 2012
- Astro Confidential, 2012
- Space's Deepest Secrets Episode *Dark Origins of the Moon*, interviewee, 2018
- Volcanoes 3D: The Fires of Creation, IMAX feature, consultant, 2018
- How the Universe Works, Season 8, interviewee, 2019
- Origin Story by S. J. Lock and S. T. Stewart, *Scientific American*, July 2019
- Synestias – An Interactive Primer, M.S. Thesis by G. O. Hollyday. Jupyter Book, S. T. Stewart (advisor, editor), https://synestia.info, 2020

Lecturer, HEDS Summer School, UC San Diego, 2019, 2021
Lecturer, CIDER 2022 Summer Program: Earth's evolution as an inhabited world, UC Berkeley, https://www.deep-earth.org/summer22, 2022

U. California Davis Committees
College of Letters & Science, Reorganization Committee, 2014-2015
College of Letters & Science, Visioning Committee, 2015-2016
Physics Department, Astrophysics Faculty Search, 2015-2016
Earth and Planetary Sciences, Earth and Planetary Materials Faculty Search, 2015-2016
MPS Division Machine Shops Committee, 2016-2017
College of Letters & Science Recruitment Advisory Committee for Associate Deans 2019
College of Letters & Science, Dean's Prize for Distinguished Contribution, 2019-2020
UC Davis Committee on Planning and Budget, 2019-2023
Earth and Planetary Sciences, Graduate Program Committee, 2021-present
Earth and Planetary Sciences, Events Committee, 2022-present

Harvard University Committees
Faculty of Arts and Sciences, Science Education Committee, 2006-2007
Earth and Planetary Sciences, Undergraduate Studies, 2003-2013, co-Director, 2010-2014
Earth and Planetary Sciences, Daly Postdoctoral Fellowship, 2003-2006
Earth and Planetary Sciences, Faculty Search Committees, 2004-2009
Earth and Planetary Sciences, Collections Committee, 2009-2010

Professional Memberships
American Geophysical Union
American Astronomical Society, Division for Planetary Sciences
American Physical Society, topical group on Shock Compression of Condensed Matter (fellow)
American Association for the Advancement of Science (fellow)
Meteoritical Society
International Astronomical Union

Past and Present Research Programs

Mapping water on Mars using fluidized crater morphologies: A new physical approach
P.I., NASA Mars Data Analysis Program, 2003-2006
Experimental Investigation of Martian Impact Processes
P.I., NASA Mars Fundamental Research Program, 2003-2006
Experimental Investigation of Porosity and Volatility in Impact Processes
P.I., NASA Planetary Geology and Geophysics Program, 2004-2006
Alteration of Composition and Structure in Cometesimals during Collisional Evolution
P.I., NASA Outer Planets Research Program, 2005-2007
Collaborative Study of Lonar Crater, India
P.I., NASA Mars Fundamental Research Program, 2005-2006
Experimental Investigation of Planetary Impact Processes: Porosity and Post-Shock Temperatures
P.I., NASA Planetary Geology and Geophysics Program, 2006-2011
Shock and magnetism: Experiments to bridge the nanoscale to the planetary scale
P.I., NASA Mars Fundamental Research Program, 2007-2009
Catastrophic Disruption of Small Bodies in the Outer Solar System
P.I., NASA Outer Planets Research Program, 2009-2012
Magnetism of extraterrestrial materials – an integrated study
Collaborator (P.I. J. Gattacceca, CEREGE), International Project for Scientific Cooperation, CNRS, 2010-2012
Shock Response of Dry and Water-Saturated Soils
P.I., Army Research Office, 2010-2013
Static and shock pressure treatment of synthetic Mars basalts: Implications for understanding the evolution of crustal magnetic anomalies

Co-I (P.I. S. Brachfeld, Montclair State), NASA Mars Fundamental Research Program, 2011-2014

Testing the Borealis Impact Hypothesis: An investigation of mantle and crustal signatures from a giant impact

P.I., NASA Mars Fundamental Research Program, 2011-2014

Giant impacts on terrestrial planets: A high-resolution 3D study of magma ocean formation and atmospheric blowoff

P.I., NASA Origins of Solar Systems Program, 2011-2014

Mobilization of water during planetary collisions: Shock thermodynamics experiments on icy mixtures and hydrated minerals

P.I., NASA Planetary Geology and Geophysics Program, 2011-2015

Investigating martian impact processes and crustal magnetic properties with multiple datasets

Co-I (P.I. R. Lillis, U.C. Berkeley), NASA Mars Data Analysis Program, 2011-2014

Dynamic High-Pressure Behavior of Hierarchical Heterogeneous Geological Materials

Co-I (P.I. N. Thadhani, GA Tech) Air Force Physics of Heterogeneous Materials, 2012-2015

Analytic models for outcomes of collisions between icy bodies

P.I., NASA Outer Planets Research Program, 2012-2015

From Z to Planets

Co-I (P.I. S. Jacobsen, Harvard), DOE/NNSA High Energy Density Laboratory Plasmas, 2012-2015

Shock-induced Melting and Vaporization Experiments on Planetary Materials

P.I., NASA Solar System Workings Program, 2015-2019

From Z to Planets: Phase II

Co-I (P.I. S. Jacobsen, Harvard), DOE/NNSA High Energy Density Laboratory Plasmas, 2015-2018

Multi-Programmatic Research with High Energy Density (HED) Science

P.I., Lawrence Livermore National Laboratory, 2016-2018

Center for Frontiers in High Energy Density Physics

Co-P.I. (P.I. F. Beg, UC San Diego), UC Office of the President, 2017-2020

Center for Matter under Extreme Conditions

Co-P.I. (P.I. F. Beg, UC San Diego), DOE Stewardship Science Academic Alliance, 2018-2023

Origin and Cycles of Life-Essential Ingredients in Young Rocky Planets

Co-I (P.I. R. Dasgupta, Rice University), NASA NExSS Team, 2018-2023

Impact-Driven Chemistry and its Role in the Surface Environment of the Early Earth

P.I., Simons Collaboration on the Origins of Life, 2018-2021

From Z to Planets: Phase III

Co-I (P.I. S. Jacobsen, Harvard), DOE/NNSA Stewardship Science Academic Alliances, 2019-2022

Center for Matter at Atomic Pressures

Co-P.I. (P.I. G. Collins, U. Rochester), NSF Physics Frontiers Center, 2020-2025

The Thermodynamics of Building Earth-like Planets

P.I., NASA Emerging Worlds, 2021-2023

From Z to Planets: Phase IV

Co-I (P.I. S. Jacobsen, Harvard), DOE/NNSA Stewardship Science Academic Alliances, 2022-2025

Center for Matter under Extreme Conditions

Deputy Director & Co-P.I. (P.I. F. Beg, UC San Diego),
DOE Stewardship Science Academic Alliance, 2023-2028

PAST AND PRESENT FACILITY TIME AND DEVELOPMENT PROGRAMS

40-mm Impact Research System for Harvard's Shock Compression Laboratory

P.I., NASA Planetary Major Equipment Program, 2003

Dynamic Compression Sector at the Advanced Photon Source

Team member (P.I. Y. Gupta, WSU), Facility Development Proposal, Argonne National Laboratory, 2009

Investigation of Phase Transitions on Release from Shock in H_2O and SiO_2

P.I., LLNL Jupiter Laser Facility, 2010

Large volume sample recovery at NIF: Concept Development

P.I., National Ignition Facility, Lawrence Livermore National Laboratory, 2011-2012

Formation and evolution of Earth and Earth-like planets: Fundamental planetary material property experiments on Z
Co-P.I. (Co-P.I. S. Jacobsen, Harvard), Sandia Z Accelerator Fundamental Science Experiments, 2012-2016

Instability Growth in Materials with Strength: Viscosity, growth rates, and shock recovery validation experiments
P.I., LLNL Jupiter Laser Facility, 2012

The Chemical Origins of the Earth and Moon: Investigating Shock-Induced Fe Redox States
P.I., LLNL Jupiter Laser Facility, 2014

Quantifying Vaporization and Melting during Planetary Formation
P.I., LLNL Jupiter Laser Facility, 2015

The Iron Melting Curve and the Magnetospheres of Habitable Super-Earths
Co-I. (P.I. R. Hemley, CIW), NIF Discovery Science Program, 2015 and 2016

A 2-stage Light Gas Gun for the Shock Compression Laboratory at UC Davis
P.I., NASA Planetary Major Equipment Program, 2015

Formation and evolution of Earth and Earth-like planets: Fundamental planetary material property experiments on Z – Phase II
Co-P.I. (Co-P.I. S. Jacobsen, Harvard), Sandia Z Accelerator Fundamental Science Experiments, 2016-2017

Formation and evolution of Earth and SuperEarth-like planets: Fundamental planetary material property experiments on Z – Phase III
Co-P.I. (Co-P.I. S. Jacobsen, Harvard), Sandia Z Accelerator Fundamental Science Experiments, 2018-2019

Investigating giant impacts between rocky planets with high-pressure melting and shock equation of state measurements on complex silicates
Co-I. (Co-P.I. D. Fratanduono, M. Millot, LLNL), U. Rochester Omega EP Experiments, 2019, 2020

Pyrolite Equation of State
P.I., CMAP Omega EP Experiments, 2021, 2022.

Formation and evolution of Earth-like and Water-World planets: Fundamental planetary material property experiments on Z
Co-P.I. (Co-P.I. S. Jacobsen, Harvard), Sandia Z Accelerator Fundamental Science Experiments, 2022-2024

Formation and evolution of Earth-like planets: Fundamental planetary material property experiments on Z
Co-P.I. (Co-P.I. S. Jacobsen, Harvard), Sandia Z Accelerator Fundamental Science Experiments, 2024-2026

The Shear Modulus of Solid Iron at Earth Inner-Core Conditions: A Transverse Velocity Interferometer for Janus
P.I., LLNL Jupiter Laser Facility, 2024-2025

ADVISING AND MENTORING

Graduate students

K. L. Louzada (2003-2009, PhD) – "The effects of impact cratering on planetary crustal magnetism"
L. E. Senft (2004-2009, PhD) – "The effect of target properties on impact cratering"
R. A. Marcus (2008-2011, PhD) – "The Role of Giant Impacts in Planet Formation and Internal Structure" (co-advised with L. Hernquist and D. Sasselov)
R. G. Kraus (2008-2013, PhD) – "On the Thermodynamics of Planetary Impact Events"
W. M. Steinhardt (2011-2013) – Shock physics and high-pressure experiments
S. J. Lock (2012-2018, PhD) – "The formation, structure and evolution of terrestrial planets"
E. Davies (2014-2020, PhD) – "Thermodynamics of Planet Forming Impacts"
G. Hollyday (2016-2020, MS) – Interactive learning about planet formation https://synestia.info
K. Amodeo (2017-2023) – "Shock Temperatures of Major Silicates"
M. Harwell (2020+) – Impact processes
A. Postema (2021+) – Impact processes
B. D'Addario (2022+) – Impact processes

Postdoctoral associates

Z. M. Leinhardt (2005-2007) – Collisional modification of small bodies

M. Ćuk (2008-2012, Daly-Clay Fellow) – Solar system dynamics; history of Earth-moon system

G. Sarid (2012-2014) – Collisional and thermal evolution of icy bodies

D. Spaulding (2012-2015, Origins Fellow) – Shock processes on volatile and organic materials

P. Carter (2017-2021) – Planet formation, collisional processes

B. Chidester (2018-2021) – Planetary material properties, planet formation

M. Duncan (2018-2019) – Planetary material properties, planet formation

R. Citron (2020-2022) – Planetary impact processes and planetary geophysics

E. Davies (2022-2023) – Shock physics experiments

Undergraduate theses

B. A. Black (2004-2005): Looking Beneath the Surface: Measurements of Impact Crater Geometries Provide Evidence for Ice-Rich Deposits at Low Latitudes on Mars (Hoopes Prize winner; published in *J. Geophysical Research – Planets*)

F. M. McEachern (2008-2009): Dynamical Evolution of the Hungaria Asteroids (Hoopes Prize winner; published in *Icarus*)

M. Newman (2012-2013): Heating System for Emissivity Measurements (B.S. in Engineering Sciences)

Harvard College Program for Research in Science and Engineering (PRISE)

2007: Andrea Peterson, Firth McEachern

2008: Sonya Mollinger, Peter Hedman

2010: Matthew Newman

Harvard Board of Freshman Advisors (2008-2011)

SELECTED INVITED PRESENTATIONS AND LECTURSHIPS

41st Division for Planetary Sciences Meeting, 2009, Urey Prize Plenary lecture: *Impacts onto icy bodies: A journey from the laboratory to the outer solar system*

11th Hypervelocity Impact Symposium, 2010, Plenary lecture: *The role of phase changes on the thermodynamics and mechanics of impact cratering in H_2O ice*

Research at High Pressure, Gordon Research Conference, 2010, Invited lecture: *Planetary impact dynamics: The importance of phase changes on decompression*

17th American Physical Society Topical Conference on Shock Compression of Condensed Matter, 2011, Plenary lecture: *New Frontiers at the Intersection of Shock Physics and Planetary Sciences*

Origin of the Moon Conference, The Royal Society of London, 2013, Invited presentation: *A sequence of giant impacts leading to the origin of the Earth and Moon*

Science Research Lecture (public lecture series), Harvard University, 2013, *The Violent Origin of the Earth and Moon*

Inaugural Thomas J. and Earleen Ahrens Lecture, California Institute of Technology, 2014, *The Origin of the Earth and Moon*

Physics of Exoplanets: From Earth-sized to Mini-Neptunes, Kavli Institute for Theoretical Physics Conference, 2015, Invited presentation: *Growing Planets by Giant Impacts: A Diversity of Outcomes*

5th International Conference on High Energy Density Physics, 2015, Invited presentation: *Transforming the Earth into a High Energy State: The Physics of Giant Impacts and Lunar Origin*

20th APS Topical Conference on Shock Compression of Condensed Matter, 2017, Invited presentation: *Shock-and-Release to the Liquid-Vapor Phase Boundary: Experiments and Applications to Planetary Science*

2018 Miller Institute Symposium, Invited presentation: *The Origin of the Earth and Moon*

2018 Kavli Institute for Theoretical Physics, Chalk Talk: *Earth's recovery from the Moon-forming giant impact*

2019 TED.com: *Where did the Moon come from? A new theory*

2019 Fall AGU Centennial Session Earth Interior: Accretion: *Expect more surprises during planet formation*

2020 Simons Foundation Lecture: *Traces of Catastrophe: how violent collisions shaped our habitable planet*

2022 Winston Ko Professor in Science Leadership Public Lecture, UC Davis: *A New Creation Story for the Earth and Moon*

2022 Plenary Lecture, 22nd American Physical Society Topical Conference on Shock Compression of Condensed Matter, 2022, *The Collisional Accretion of Earth: A Shock Physics Story*

2023 McDonnell Distinguished Lecturer, Washington University in St. Louis: *Can Collisions Create Earth's Isotopic Cousins?* and *Rewriting the Creation Story for the Earth and Moon*

2023 Los Alamos National Laboratory Director's Colloquium. *Rewriting the Creation Story for the Earth and Moon*

2023 Benjamin Meaker Distinguished Visiting Professorship, University of Bristol

PUBLICATIONS – CHRONOLOGICAL BY ACCEPTANCE DATE

Student and postdoctoral advisees underlined.

1. Orton, G., J. L. Ortiz, K. Baines, G. Bjoraker, U. Carsenty, F. Colas, A. Dayal, D. Deming, P. Drossart, E. Frappa, J. Friedson, J. Goguen, W. Golisch, D. Griep, C. Hernandez, W. Hoffmann, D. Jennings, C. Kaminski, J. Kuhn, P. Laques, S. Limaye, H. Lin, J. Lecacheux, T. Martin, G. McCabe, T. Momary, D. Parker, R. Puetter, M. Ressler, G. Reyes, P. Sada, J. Spencer, J. Spitale, **S. Stewart**, J. Varsik, J. Warell, W. Wild, P. Yanamandra-Fisher, G. Fazio, J. Hora, L. Deutsch. Earth-based observations of the Galileo probe entry site. *Science* **272**, 839-840, doi:10.1126/science.272.5263.839, 1996.
2. Orton, G. S., B. M. Fisher, K. H. Baines, **S. T. Stewart**, A. J. Friedson, J. L. Ortiz, M. Marinova, M. Ressler, A. Dayal, W. Hoffmann, J. Hora, S. Hinkley, V. Krishnan, M. Masanovic, J. Tesic, A. Tziolas, K. C. Parija. Characteristics of the Galileo probe entry site from Earth-based remote sensing observations. *J. Geophysical Research: Planets* **103**, 22791-22814, doi:10.1029/98JE02380, 1998.
3. Ortiz, J. L., G. S. Orton, A. J. Friedson, **S. T. Stewart**, B. M. Fisher, J. R. Spencer. Evolution and persistence of 5-μm hot spots at the Galileo probe entry latitude. *J. Geophysical Research: Planets* **103**, 23051-23069, doi:10.1029/98JE00696, 1998.
4. **Stewart, S. T.**, T. J. Ahrens. Shock Wave Propagation in Porous Ice. In *Shock Compression of Condensed Matter-1999*, AIP Conference Proceedings **505**, pp.1243-1246. Eds. M.D. Furnish, L.C. Chhabildas, R.S. Hixon. American Institute of Physics, doi:10.1063/1.1303686, 2000.
5. O'Keefe, J. D., **S. T. Stewart**, M. E. Lainhart, T. J. Ahrens. Damage and rock-volatile mixture effects on impact crater formation. *International Journal of Impact Engineering* **26**, 543-553, doi:10.1016/S0734-743X(01)00112-9, 2001.
6. Weiss, B. P., D. L. Shuster, **S. T. Stewart**. Temperatures on Mars: $^{40}Ar/^{39}Ar$ Thermochronology of ALH84001. *Earth and Planetary Science Letters* **201**, 465-472, doi:10.1016/S0012-821X(02)00729-X, 2002.
7. Weiss, B. P., H. Vali, F. J. Baudenbacher, J. L. Kirschvink, **S. T. Stewart**, D. L. Shuster. Records of an ancient Martian magnetic field in ALH84001. *Earth and Planetary Science Letters* **201**, 449-464, doi:10.1016/S0012-821X(02)00728-8, 2002.
8. **Stewart, S. T.**, F. Nimmo. Surface runoff features on Mars: Testing the carbon dioxide formation hypothesis. *J. Geophysical Research: Planets* **107**, 5069, doi:10.1029/2000JE001465, 2002.
9. **Stewart, S. T.**, T. J. Ahrens. Shock Hugoniot of H_2O ice. *Geophysical Research Letters* **30**, 1332, doi:10.1029/2002GL016789, 2003.
10. **Stewart, S. T.**, T. J. Ahrens, J. D. O'Keefe. Impact-Induced Melting of Near-Surface Water Ice on Mars. In *Shock Compression of Condensed Matter-2003*, AIP Conference Proceedings **706**, pp. 1484-1487, Eds. M.D. Furnish, Y. M. Gupta, and J. W. Forbes, American Institute of Physics, doi:10.1063/1.1780519, 2004.
11. **Stewart, S. T.**, T. J. Ahrens. A New H_2O Ice Hugoniot: Implications for Planetary Impact Events. In *Shock Compression of Condensed Matter-2003,* AIP Conference Proceedings **706**, pp. 1478-1483, Eds. M.D. Furnish, Y. M. Gupta, and J. W. Forbes, American Institute of Physics, doi:10.1063/1.1780518, 2004.
12. **Stewart, S. T.**, T. J. Ahrens. Shock Properties of H_2O ice. *J. Geophysical Research: Planets* **110**, E03005, doi:10.1029/2004JE002305, 2005.
13. Yoshimura, Y., **S. T. Stewart**, M. Somayazulu, H.-K. Mao, R. J. Hemley. High-pressure x-ray diffraction and Raman spectroscopy of ice VIII. *J. Chemical Physics* **124**, 024502, doi:10.1063/1.2140277, 2006.
14. **Stewart, S. T.**, G. B. Kennedy, L. E. Senft, M. R. Furlanetto, A. W. Obst, J. R. Payton, A. Seifter. Post-Shock Temperature and Free Surface Velocity Measurements of Basalt. In *Shock Compression of Condensed Matter-2005*, AIP Conference Proceedings **845**, pp. 1484-1487, Eds. M. D. Furnish, M. Elert, T. P. Russell, C. T. White, American Institute of Physics, doi:10.1063/1.2263605, 2006.
15. Seifter, A., **S. T. Stewart**, M. R. Furlanetto, G. B. Kennedy, J. R. Payton, A. W. Obst. Post-Shock Temperature Measurements of Aluminum. In *Shock Compression of Condensed Matter-2005*, AIP Conference Proceedings **845**, pp. 139-142, Eds. M. D. Furnish, M. Elert, T. P. Russell, C. T. White, American Institute of Physics, doi:10.1063/1.2263284, 2006.
16. Louzada, K. L., **S. T. Stewart**, B. P. Weiss. Shock Demagnetization of Pyrrhotite ($Fe_{1-x}S$,$x<0.13$) and Implications for the Martian Crust and Meteorites. In *Shock Compression of Condensed Matter-2005*,

AIP Conference Proceedings **845**, pp. 1476-1479, Eds. M. D. Furnish, M. Elert, T. P. Russell, C. T. White, American Institute of Physics, doi:10.1063/1.2263603, 2006.

17. **Stewart, S. T.**, G. J. Valiant. Martian subsurface properties and crater formation processes inferred from fresh impact crater geometries. *Meteoritics and Planetary Sciences* **41**, 1509-1537, doi:10.1111/j.1945-5100.2006.tb00433.x, 2006.
18. Louzada, K. L., **S. T. Stewart**, and B. P. Weiss. Effect of shock on the magnetic properties of pyrrhotite, the Martian crust, and meteorites. *Geophysical Research Letters* **34**, L05204, doi:10.1029/2006GL027685, 2007.
19. Yoshimura, Y., **S. T. Stewart**, H.-K. Mao, R. J. Hemley. *In situ* Raman spectroscopy of low-temperature/high-pressure transformations of H_2O. *J. Chemical Physics* **126**, 174505, doi:10.1063/1.2720830, 2007.
20. Senft, L. E., **S. T. Stewart**. Modeling Impact Cratering in Layered Surfaces. *J. Geophysical Research: Planets* **112**, E11002, doi:10.1029/2007JE002894, 2007.
21. Black, B. A., **S. T. Stewart**. Excess ejecta craters record episodic ice-rich layers at middle latitudes on Mars. *J. Geophysical Research: Planets* **113**, E02015, doi:10.1029/2007JE002888, 2008.
22. Halevy, I., **S. T. Stewart**. Is Enceladus' Plume Tidally Controlled? *Geophysical Research Letters* **35**, L12203, doi:10.1029/2008GL034349, 2008.
23. Louzada, K. L., B. P. Weiss, A. C. Maloof, **S. T. Stewart**, N. Swanson-Hysell, S. A. Soule. Paleomagnetism of Lonar Impact Crater, India. *Earth and Planetary Science Letters* **275**, 308-319, doi:10.1016/j.epsl.2008.08.025, 2008.
24. Senft, L. E., **S. T. Stewart**. Impact Crater Formation in Icy Layered Terrains on Mars. *Meteoritics and Planetary Science* **43**, 1993-2013, doi:10.1111/j.1945-5100.2008.tb00657.x, 2008.
25. Leinhardt, Z. M., **S. T. Stewart**. Full Numerical Simulations of Catastrophic Small Body Collisions. *Icarus* **199**, 542-559, doi:10.1016/j.icarus.2008.09.013, 2009.
26. **Stewart, S. T.**, A. Seifter, A. W. Obst. Shocked H_2O Ice: Thermal Emission Measurements and the Criteria for Phase Changes during Impact Events. *Geophysical Research Letters* **35**, L23203, doi:10.1029/2008GL035947, 2008.
27. Maloof, A. C., **S. T. Stewart**, B. P. Weiss, S. A. Soule, N. L. Swanson-Hysell, K. L. Louzada, I. Garrick-Bethell, P. M. Poussart. Geology of Lonar Crater, India. *Geological Society of America Bulletin* **122**, 109-126, doi:10.1130/B26474.1, 2010.
28. **Stewart, S. T.**, Z. M. Leinhardt. Velocity-dependent Catastrophic Disruption Criteria for Planetesimals. *Astrophysical Journal Letters* **691,** L133-L137, doi:10.1088/0004-637X/691/2/L133, 2009.
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