

David A. Brain

(As of May 2021)

Associate Professor
 Laboratory for Atmospheric and Space Physics
 & Department of Astrophysical and Planetary Sciences
 University of Colorado Boulder
<http://lasp.colorado.edu/mop/people/brain/>

3665 Discovery Drive
 Boulder, Colorado 80303
 (303) 735-5606
david.brain@colorado.edu

Education

- Ph.D. **University of Colorado at Boulder** (2002)
 Astrophysical, Planetary, and Atmospheric Sciences
 M.S. **University of Colorado at Boulder** (1997)
 Astrophysical, Planetary, and Atmospheric Sciences
 B.A. **Rice University** (1995)
 Physics and Mathematics

Research Interests

- Influence of planetary scale magnetic fields on climate
- Planetary atmospheric source/loss processes and climate evolution
- Plasma environments and upper atmospheres of unmagnetized planets
- Interpretation of spacecraft measurements of magnetic fields and charged particles
- Plasma processes in small scale (non-global) magnetic fields

Professional Experience

- 2017 – Present Associate Professor – CU Boulder LASP & APS
 2011 – 2017 Assistant Professor – CU Boulder LASP & APS
 2005 – 2011 Assistant Research Physicist – UC Berkeley Space Sciences Laboratory
 2003 – 2005 Postdoc – UC Berkeley Space Sciences Laboratory
 2003 – 2005 Independent Consultant – Addison Wesley
 2002 – 2003 Postdoc – CU Boulder LASP
 Fall, 2002 Instructor – CU Boulder APS Department
 1995 – 2002 Graduate Research Assistant – CU Boulder LASP

Awards and Honors

- 2020 Boulder Faculty Assembly Award for Excellence in Teaching and Pedagogy
 2016 Provost's Faculty Achievement Award for significant publication or creative contribution to an academic field (CU)
 2015 Marinus Smith Award for positive impact on undergraduates (CU)
 2014 NASA Robert H. Goddard Exceptional Achievement for Engineering Team – MAVEN Team
 2013 CU ASSETT Award of Excellence as an Outstanding Teacher for Technology in Teaching
 2011 NASA Group Achievement Award – MAVEN Phase B Team
 2010 Editor's Citation for Excellence in Refereeing for GRL
 2006 Carl Sagan Early Career Fellowship in Planetary Sciences (NASA)
 2002 Residence Life Academic Teaching Award (CU)
 2001 Outstanding Student Presentation (Spring AGU Meeting)

Professional Organizations

- American Geophysical Union
 Division for Planetary Sciences of the American Astronomical Society

PI Grants

2020 – 2022	Heliophysics DRIVE Team Science (NASA) <i>Do Habitable Worlds Require Magnetic Fields?</i>
2019 – 2022	Mars Data Analysis (NASA) <i>Temporal Evolution of Plasma Near Mars: A Multi-Point Approach</i>
2019 – 2022	Habitable Worlds (NASA) <i>Scaling Laws for Ion Escape from Planets</i>
2017 – 2019	Solar system Workings (NASA) <i>Charged Particle Transport in Martian Magnetic Cusps</i>
2015 – 2017	Mars Data Analysis (NASA) <i>Ion Escape Rates from the Martian Atmosphere</i>
2014 – 2017	Earth and Space Science Fellowship Program (NASA Fellowship) <i>Influence of Asteroid and Comet Impacts on Atmospheric Abundances at Venus, Earth, and Mars</i>
2013 – 2015	Early Career Fellowship in Planetary Science (formerly Sagan Fellowship) <i>The Plasma Environments of Unmagnetized Planets</i>
2010 – 2014	Planetary Atmospheres (NASA) <i>Modeling Atmospheric Erosion by Impacts at Mars, Earth, and Venus</i>
2008 – 2010	ISSI International Team (International Space Science Institute, Switzerland) <i>Intercomparison of Global Models and Measurements of the Martian Plasma Environment</i>
2008 - 2013	Mars Data Analysis (NASA) <i>Magnetic Reconnection and Shear in the Martian Plasma Environment</i>
2006 - 2015	Venus Express Supporting Investigator (NASA/ESA) <i>The First Suprathermal Electron Measurements at Venus: Implications for Planetary Evolution</i>
2006 - 2010	Mars Data Analysis (NASA) <i>Martian Aurorae from Acceleration to Emission</i>
2006 - 2010	Planetary Atmospheres (NASA) <i>Atmospheric Energy Deposition at Mars, Venus and Extrasolar Planets from Solar Energetic Particle events</i>
1998 - 2001	Graduate Student Research Program (NASA) <i>The Martian Surface Magnetic Field</i>

Funded Co-I on ~15 NASA grants from the Interdisciplinary Consortium for Astrobiology Research, Mars Data Analysis, Geospace Science, Planetary Atmospheres, Mars Fundamental Research, Discovery Data Analysis, Hubble Space Telescope, Solar System Exploration Research Virtual Institute, and Mars Scout programs.

Co-I on two ISSI International Teams.

Service to the Research Community

2020	Panelist for NASA Planetary Mission Senior Review
2020	Review panelist for the NASA Solar System Workings Program
2019 – 2020	Astrophysics 2020 Decadal Survey Sub-panel member on Exoplanets, Astrobiology, and the Solar System
2019	Scientific Organizing Committee for 9th International Mars Conference
2017 –	Member of Mars Exploration Program Analysis Group (MEPAG) Goals Committee
2016 –	Nexus for Exoplanet System Science (NASA) Steering Committee
2016 – 2017	Scientific Organizing Committee for 2017 Mars Aeronomy Conference
2016 – 2017	Scientific Organizing Committee for 2017 Nexus for Exoplanet System Science (NExSS) Conference on “Habitable Worlds”

- 2016 Delegation member for NASA-ISRO (Indian Space Agency) Mars collaborations – traveled to Bangalore, India in February, 2016
- 2015 – 2018 Scientific Organizing Committee for 2018 Comparative Climatology of Terrestrial Planets Conference
- 2015 Convener of Fall AGU session on “Planetary Atmospheres”
- 2014 – 2015 Scientific Organizing Committee for 2015 Comparative Climatology of Terrestrial Planets Conference
- 2014 Panelist for NASA Planetary Mission Senior Review
- 2013 Convener of Fall AGU session on “Atmospheric Escape, Upper Atmospheres, Ionospheres, and Plasma Interactions at Mars and Venus”
- 2012 Review panelist for the NASA Planetary Atmospheres Program
- 2012 Review panelist for the NASA Planetary Mission Data Analysis Program
- 2011 Convener of Fall AGU session on “Extreme Space Weather”
- 2011 Convener of EPSC-DPS session on “Plasma Processes at Venus and Mars: Observations and Modeling”
- 2010 Convener of Fall AGU session on “Momentum and Energy Transfer and Atmospheric Escape in Weakly Magnetized Objects”
- 2010-2013 Associate Editor of *Journal of Geophysical Research - Space Physics*
- 2009-2011 Member of the NASA’s Planetary Atmospheres and Astronomy Management Operations Working Group (MOWG)
- 2009-2010 Program Committee (Planetary Sciences Section) for 2010 Western Pacific Geophysics Meeting
- 2009-2010 Program Committee Member for 2010 Alfvén Conference on Plasma Interaction with Unmagnetized Bodies in the Solar System
- 2009 Convener of Fall AGU session on “Planetary Plasma Interactions and Atmospheric Escape”
- 2008-2009 Guest editor for *Icarus* special issue on “The Solar Wind Interaction with Mars” (appearing December 2009)
- 2006-2008 Convener of 2008 AGU Chapman Conference “The Solar Wind Interaction with Mars”
- 2008 Review panelist for the NASA Planetary Atmospheres Program
- 2007 Convener of Spring AGU session on “Magnetospheres of the Inner Planets”
- 2004-present External Reviewer for data sets on the Planetary Data System: *Lunar Prospector Magnetometer and Electron Reflectometer; Cassini Plasma Spectrometer*
- 2003-present External Reviewer for NASA Mars Data Analysis, NASA Mars Fundamental Research, NASA Jupiter Data Analysis, NASA Lunar Advanced Science and Exploration Research, NASA Postdoc Program, Puerto Rico Advanced Research Grant Program, and NSF proposals
- 2001-present Reviewer for ~80+ manuscripts submitted to 15 journals: *Science, Nature, Nature Astronomy, Nature Communications, Geophysical Research Letters, Journal of Geophysical Research - Space Physics, Journal of Geophysical Research - Planets, Icarus, Planetary and Space Science, Space Science Reviews, Monthly Notices of the Royal Astronomical Society, Astrophysical Journal, Annales Geophysicae, Advances in Space Research, Astrobiology*

Public Lectures

- Feb. 2021 *Do Habitable Worlds Require Magnetic Fields?*
University of Colorado/LASP
- Dec. 2019 *Earth is Just Right*
Denver Astronomical Society Holiday Banquet (Keynote speaker)

Dec. 2018	<i>MAVEN and the Missing Martian Atmosphere</i> Boulder County Day School
Nov. 2018	<i>The Science of Science Fiction</i> Dubai Future Academy, Dubai, UAE
Nov. 2018	<i>Mars and the Emirates Mars Mission</i> JESS School Dubai, UAE
Nov. 2018	<i>Mars and the UAE's Emirates Mars Mission</i> Al Reyada School Abu Dhabi, UAE
Oct. 2018	<i>Mars and Life and the Universe</i> CU Family Weekend, Boulder, Colorado
Oct. 2018	<i>Do Habitable Worlds Require Magnetic Fields?</i> Northern Colorado Astronomical Society, Ft. Collins, Colorado
Oct. 2018	<i>Mars and Life and the Universe</i> Boulder County Philharmonic presentation at Fiske Planetarium, Boulder, Colorado
July 2018	<i>Earth is Just Right</i> Inner Circle of Advocates 2018 Meeting, Chicago, Illinois
Apr. 2018	<i>Do Habitable Worlds Require Magnetic Fields?</i> MAVEN Outreach Webinar
Apr. 2018	<i>The MAVEN Project</i> FIDAE Airshow, Santiago, Chile
Aug. 2017	<i>Venus is too Hot, Mars is too Cold, Earth is Just Right</i> Stars Above Aspen, Colorado
Apr. 2017	<i>Venus is too Hot, Mars is too Cold, Earth is Just Right</i> The Academy (retirement community), Boulder, Colorado
Mar. 2018	Boulder County Philharmonic performance of space-themed music (Science Speaker Between Pieces), Boulder, Colorado
June 2017	<i>Earth is Just Right</i> CU Director's Club, Boulder, Colorado
Oct. 2016	<i>The World of Science Fiction</i> United Arab Emirates Mars Science Workshop, Dubai, UAE
Apr. 2016	<i>CU: A Leader in Space and Teaching</i> CU Admitted Students Day, Boulder, Colorado
Mar, 2016	<i>Update on CU's MAVEN Mission</i> CU Scoop, Boulder, Colorado
Jan. 2016	<i>CUs MAVEN Mission to Mars: Update on MAVEN</i> CU Advocacy Day at Colorado State Capitol, Denver, Colorado
Sept.2015	<i>Do Habitable Worlds Require Magnetic Fields?</i> TEDx Boulder, Colorado
Aug. 2016	<i>Do Habitable Worlds Require Magnetic Fields?</i> Promoted to "TED talk" at the TED.com website, ~1 million views.
May 2015	<i>CU's MAVEN Mission</i> Boulder Alumni Chapter: Fiske Planetarium, Boulder, Colorado
Mar. 2015	<i>Update on CU's MAVEN Mission</i> CU Scoop, Boulder, Colorado
Nov. 2014	<i>An Insider's Look: CU Boulder and the Red Planet</i> eTown Hall, Boulder, Colorado
Aug. 2014	<i>Total Recall and Terraforming Mars</i> Science on Screen at Boulder Dairy Center for the Arts, Boulder, Colorado
June 2014	<i>MAVEN: CU's Mission to Mars</i> Denver – (CU Chancellor's Tour of Colorado)
June 2014	<i>MAVEN: CU's Mission to Mars</i>

June 2014	Colorado Springs – (CU Chancellor’s Tour of Colorado) <i>MAVEN: CU’s Mission to Mars</i>
June 2014	Pueblo – (CU Chancellor’s Tour of Colorado) <i>MAVEN: CU’s Mission to Mars</i>
June 2014	Durango – (CU Chancellor’s Tour of Colorado) <i>MAVEN: CU’s Mission to Mars</i>
June 2014	Grand Junction – (CU Chancellor’s Tour of Colorado) <i>MAVEN: CU’s Mission to Mars</i>
June 2014	Carbondale – (CU Chancellor’s Tour of Colorado) <i>MAVEN: CU’s Mission to Mars</i>
June 2014	Vail – (CU Chancellor’s Tour of Colorado) <i>MAVEN: CU’s Mission to Mars</i>
Aug. 2014	CU Lunch and Learn for Denver Metro Alumni Chapter <i>MAVEN: CU’s Mission to Mars</i>
Mar. 2014	<i>Was Ancient Mars Earth-like?</i> Fiske Planetarium, CU Boulder, Colorado
Apr. 2014	<i>Was Ancient Mars Earth-like?</i> CU Seminar, Boulder, Colorado
Nov. 2013	<i>Post-Launch MAVEN Briefing</i> (Panelist) Hosted by the Denver Museum of Nature and Science, Cape Canaveral, Florida
Oct. 2013	<i>Ancient Mars and the MAVEN Mission?</i> Chautauqua Space Series, Boulder, Colorado
Oct. 2013	<i>The 2013 MAVEN Mission to Mars</i> University of Colorado College of Arts and Sciences Leadership Society, Boulder, Colorado
Oct. 2013	<i>The 2013 MAVEN Mission to Mars</i> University of Colorado 50 th Reunion and Golden Anniversary Club Dinner, Boulder, Colorado
Sept. 2013	<i>The 2013 MAVEN Mission to Mars</i> Holly Creek Retirement Community, Centennial, Colorado
June 2013	<i>The 2013 MAVEN Mission to Mars</i> CU Director’s Club, Vail, Colorado
Aug. 2013	<i>Mars Exploration: The Next Steps</i> (Panelist) 16 th Mars Society Convention, Boulder, Colorado
Feb. 2013	<i>Was Ancient Mars Earth-like?</i> CU in the Community, Trinidad State Junior College, Trinidad, Colorado
Dec. 2012	<i>The 2013 MAVEN Mission to Mars</i> Denver Space Society, Colorado
Aug. 2012	<i>The Mars Science Laboratory</i> MSL Public Event at LASP, Boulder, Colorado
Aug. 2012	<i>The Mars Science Laboratory</i> CU Fiske Planetarium, Boulder, Colorado
Feb. 2012	<i>The Disappearing Martian Atmosphere</i> CU SEDS, Boulder, Colorado
Nov. 2012	<i>Mars’s Lumpy Bumpy Neato Magneto (Sphero)</i> Nerd Nite San Francisco, California
Oct. 2006	<i>Life in the Solar System</i> Berkeley City Commons Club, California
Aug. 2003	<i>Invisible Mars: More than a Big Red Rock</i> Mars Night at Fiske Planetarium, CU Boulder, Boulder, Colorado

Invited Presentations, Colloquia, and Seminars

- May 2021 *Atmospheric Response of Unmagnetized Planets to Stellar EUV*
Stars and Planets in the UV (workshop hosted at Arizona State)
- Mar. 2021 *Do Habitable Worlds Require Magnetic Fields?*
Arizona State University
- Mar. 2021 *Interaction of the Sun and Solar Wind with Venus*
Venus Subpanel of the Planetary Decadal Survey
- Nov. 2020 *Do Habitable Worlds Require Magnetic Fields?*
Queen Mary University London
- Nov. 2020 *Upper Atmosphere, Ionosphere, Magnetosphere*
Mars Subpanel of the Planetary Decadal Survey
- Oct. 2020 *Do Habitable Worlds Require Magnetic Fields?*
UMass Lowell Physics Colloquium, Lowell, Massachusetts
- Mar. 2020 *Do Habitable Worlds Require Magnetic Fields?*
Goddard Space Flight Center Science Colloquium, Greenbelt, Maryland
- Feb. 2020 *Atmospheric Escape from Mars: Lessons for Studies of Exoplanets*
Exoplanets in our Backyard, Houston, Texas
- Jan. 2020 *The Emirates Mars Mission*
Mars Architecture Strategy Working Group
- Mar. 2019 *Retaining a Habitable Atmosphere: Lessons from Mars* (Invited)
Aquaplanetology I - Earth Life Sciences Institute, Tokyo
- Oct. 2019 *Atmospheric Loss from Mars* (Invited)
Exoplanet Transit Spectroscopy e-Workshop, CU Boulder / NSO,
Boulder, Colorado
- Dec. 2019 *Observations of Space Weather at Mars* (Invited: **Brain, D.** and 10 co-authors)
2019 Fall AGU Meeting, San Francisco, California
- Mar. 2019 *Atmospheric Escape Processes from Mars* (Invited)
ISEE Workshop on Ancient Mars, University of Nagoya, Japan
- Feb. 2019 *Do Habitable Worlds Require Magnetic Fields?* (Invited: **Brain, D.A.** and 8 co-authors)
21st Symposium on Planetary Sciences, Sendai, Japan
- June 2019 *Do Habitable Worlds Require Magnetic Fields?* (Invited)
Tokyo Area Planetary Science Meeting, University of Tokyo
- Feb. 2019 *Do Habitable Worlds Require Magnetic Fields?* (Invited)
Earth and Planetary Science Seminar – University of Tokyo
- May 2019 *Overview of the Emirates Mars Mission* (Invited)
JPGU Planetary Sciences Section reception
- Nov. 2018 *Exploring the Habitability of Mars: The UAE Emirates Mars Mission in Context*
UAE University, Al Ain, UAE
- Nov. 2018 *Exploring the Habitability of Mars: Emirates Mars Mission in Context*
Higher College of Technology Dubai Men's College, Dubai, UAE
- Nov. 2018 *Do Habitable Worlds Require Magnetic Fields?*
University of British Columbia EOAColloquium, Vancouver
- May 2018 *Atmospheric Escape from Mars*
52nd ESLAB Symposium, Noordwijk, Netherlands
- Apr. 2018 *Exploring the Habitability of Ancient Mars using Robotic Spacecraft*
Aeronautical Polytechnic Academy, Santiago, Chile
- Jan. 2018 *Acceleration and Escape of Ions from the Martian Atmosphere*
Fundamental Processes in Solar Terrestrial Research, Kona, Hawaii

- Oct. 2017 *Gone With the (Solar) Wind: Escape to Space of the Ancient Martian Atmosphere*
American Physical Society 4 Corners Meeting, Fort Collins, Colorado
- Oct. 2017 *Gone With the Wind: One Mars Year of Atmospheric Loss*
Division for Planetary Sciences Meeting, Provo, Utah
- Oct. 2017 *Gone With the (Solar) Wind: The Escaping Martian Atmosphere*
University of Kansas Physics and Astronomy Colloquium, Lawrence, Kansas
- July 2017 *The Response of the Martian Atmosphere to the Solar Wind*
IAU 335:Space Weather of the Heliosphere: Processes and Forecasts, University of Exeter, United Kingdom
- May 2017 *Evolution of the Mars Atmosphere*
Mars Aeronomy Conference, Boulder, Colorado
- Dec. 2016 *MAVEN Measurements of Ion Escape Rates from Mars*
American Geophysical Union Fall Meeting, San Francisco, California
- May 2016 *Plasma Environments of Unmagnetized Planets*
Nexus for Exoplanetary System Science Annual Workshop, Wash. D.C.
- Apr. 2016 *Variability in the Loss of Ions from the Martian Atmosphere*
European Geophysical Union General Assembly, Vienna, Austria
- Mar. 2016 *Martian Atmospheric Ion Loss Rates*
Geospace Environment Modeling System for Integrated Studies (GEMSIS) Workshop, University of Nagoya, Nagoya, Japan
- Aug. 2016 *Has the Martian Atmosphere Disappeared over Time?*
University of Colorado APS Department Colloquium, Boulder, Colorado
- Mar. 2016 *Has the Martian Atmosphere Disappeared over Time?*
University of Minnesota Physics and Astronomy Colloquium, Minneapolis, Minnesota
- Jan. 2016 *Has the Martian Atmosphere Disappeared over Time?*
University of Arizona Lunar and Planetary Laboratory Colloquium, Tucson, Arizona
- Feb. 2016 *MAVEN Results*
Indian Space Research Organization, Bangalore, India
- Dec. 2015 *Science and Science Traceability*
LASP PI Training Series, Boulder, Colorado
- Oct. 2015 *Evolution of the Martian Atmosphere*
American University of Sharjah, United Arab Emirates
- Oct. 2015 *The Emirates Mars Mission*
LASP Seminar, Boulder, Colorado
- May 2015 *The Martian Atmosphere*
Global Space and Satellite Forum, Abu Dhabi, UAE
- May 2015 *Bubbles in Space*
Boulder Bubble Day, Boulder, Colorado
- Feb. 2015 *MAVEN Mission Update and Early Science*
Mars Exploration Program Analysis Group, Pasadena, California
- Feb. 2015 *Fun Physics at Martian Crustal Fields*
LASP - Friends of the Magnetosphere Seminar, Boulder, Colorado
- Feb. 2015 *What Happened to the Martian Atmosphere?*
Goddard Space Flight Center, Greenbelt, Maryland
- Jan. 2015 *What Happened to the Ancient Martian Atmosphere?*
University of Toronto Physics Colloquium, Toronto
- Dec. 2014 *Suprathermal Electrons in the Plasma Environments of Mars and Venus*
American Geophysical Union Fall Meeting, San Francisco, California

- July 2014 *Climates of Terrestrial Planets*
Heliophysics Summer School, Boulder, Colorado
- July 2014 *Ion Escape from Mars: Expectations for MAVEN*
6th Alfven Conference, London
- Apr. 2014 *What Happened to the Ancient Martian Atmosphere?*
Colorado School of Mines Department of Physics, Golden, Colorado
- Aug. 2014 *What Happened to the Ancient Martian Atmosphere?*
Southwest Research Institute, Boulder, Colorado
- Mar. 2013 *Do Magnetospheres Matter?*
Georgia Tech Planetary Seminar, Atlanta, Georgia
- Mar. 2013 *Mars Atmospheric Escape and Climate Evolution*
Nagoya University Global COE Program, Gifu, Japan
- Nov. 2012 *Do Magnetospheres Matter?*
Astrobiology Colloquium, University of Washington, Seattle, Washington
- Oct. 2012 *Lunar Crustal Magnetic Fields in the Solar Wind (Brain, D. A., et al)*
Cluster/THEMIS Joint Workshop, LASP, Boulder, Colorado
- July 2012 *The 2013 MAVEN Mission to Mars*
Workshop on Planetary Atmospheres, Ahmedabad, India
- July 2012 *The Dynamic Martian Plasma Environment*
Workshop on Planetary Atmospheres, Ahmedabad, India
- June 2012 *Planetary Magnetic Fields and Climate*
Comparative Climatology of Terrestrial Planets, Boulder, Colorado
- Feb. 2011 *Aurora in Martian Mini-Magnetospheres*
American Geophysical Union Chapman Conference on Relationship
between Auroral Phenomenology and Magnetospheric Processes,
Fairbanks, Alaska
- Dec. 2010 *The Induced Magnetotails of Mars and Venus: A Tale of Two Tails (Brain,
D.A., J.S. Halekas, and J.P. Eastwood)*
American Geophysical Union Fall Meeting, San Francisco, California
- Oct. 2010 *The Physics of Mini-Magnetospheres at Mars*
5th Alfven Conference, Sapporo, Japan
- June 2010 *Models for the Venus Upper Atmosphere and Plasma Environment*
International Venus Conference, Aussois, France
- Mar. 2010 *Space Weather Influences on the Atmospheres of Unmagnetized Planets*
University of Colorado Physics Seminar
- Feb. 2010 *Space Weather Influences on the Atmospheres of Unmagnetized Planets*
University of Arizona LPL Seminar
- Feb. 2010 *Space Weather Influences on the Atmospheres of Unmagnetized Planets*
UC Berkeley Space Physics Seminar
- June 2010 *The Ins and Outs of Martian Mini-Magnetospheres*
University of Colorado APS Colloquium
- Apr. 2010 *The Ins and Outs of Martian Mini-Magnetospheres*
Goddard Space Flight Center Heliophysics Seminar
- Apr. 2010 *The Ins and Outs of Martian Mini-Magnetospheres*
Boston University Center for Space Physics Seminar
- Mar. 2010 *The Ins and Outs of Martian Mini-Magnetospheres*
University of Colorado Physics Colloquium
- Feb. 2010 *The Ins and Outs of Martian Mini-Magnetospheres*
University of New Hampshire Physics Colloquium
- Feb. 2010 *The Ins and Outs of Martian Mini-Magnetospheres*
University of Arizona Planetary Science Colloquium
- Aug. 2009 *Atmospheric Escape and Aurora on Mars*
SETI Colloquium, SETI Institute, Palo Alto, California

- Oct. 2008 *Plasma Transport in the Lumpy Martian Magnetosphere*
Huntsville Workshop on The Physical Processes for Energy and Plasma Transport Across Magnetic Boundaries, Huntsville, Alabama
- July 2008 *The Solar Wind Interaction with Mars (SWIM) Model Challenge*
COSPAR, Montreal (**Brain, D.A.**, S. Barabash, A. Boeswetter, S. Bougher, S. Brecht, G. Chanteur, D. Crider, E. Dubinin, X. Fang, M. Fraenz, J. Halekas, E. Harnett, M. Holmstrom, E. Kallio, H. Lammer, S. Ledvina, M. Liemohn, K. Liu, J. Luhmann, Y. Ma, R. Modolo, U. Motschmann, A. Nagy, H. Nilsson, J. Schoendorf, H. Shinagawa, N. Terada)
- Sept.2008 *Aurora in the lumpy magnetic fields of Mars*
Southwest Research Institute, Boulder
- May 2008 *Aurora in the lumpy magnetic fields of Mars*
University of California Berkeley CIPS
- Apr. 2008 *Aurora in the lumpy magnetic fields of Mars*
University of California Berkeley Space Physics Seminar
- Mar. 2008 *Aurora in the lumpy magnetic fields of Mars*
University of Iowa Space Physics Seminar
- Feb. 2008 *Aurora in the lumpy magnetic fields of Mars*
University of Minnesota Astronomy Colloquium
- Feb. 2008 *Aurora in the lumpy magnetic fields of Mars*
University of Alaska Fairbanks Geophysical Institute
- Feb. 2008 *Aurora in the lumpy magnetic fields of Mars*
George Mason University Department of Physics and Astronomy
- Jan. 2008 *The SWIM Model Challenge*
American Geophysical Union Chapman Conference on the Solar Wind Interaction with Mars (SWIM), San Diego, California
(**Brain, D.A.**, S. Barabash, A. Boeswetter, S. Bougher, S. Brecht, G. Chanteur, D. Crider, E. Dubinin, X. Fang, M. Fraenz, J. Halekas, E. Harnett, M. Holmstrom, E. Kallio, H. Lammer, S. Ledvina, M. Liemohn, K. Liu, J. Luhmann, Y. Ma, R. Modolo, U. Motschmann, A. Nagy, H. Nilsson, J. Schoendorf, H. Shinagawa, N. Terada)
- Dec. 2006 *Origin, Variability, and Consequences of the Martian Aurora*
American Geophysical Union Fall Meeting, San Francisco, California
(**Brain, D.A.**, J.S. Halekas, L.M. Peticolas, M.O. Fillingim, R.P. Lin, J.G. Luhmann, D.L. Mitchell, S.W. Bougher, D. Lummerzheim)
- Sept.2006 *Aurora at Planets Lacking Global Magnetic Fields*
European Planetary Science Congress, Berlin, Germany
- Apr .2006 *Crustal fields in the solar wind: The lumpy bumpy magnetosphere of Mars*
Boston University Center for Space Physics Seminar
- Feb. 2006 *MGS Measurements of the Martian Solar Wind Interaction*
Kiruna Mars Workshop, Kiruna, Sweden
- Dec. 2005 *The interaction of the solar wind with Mars*
American Geophysical Union Fall Meeting, San Francisco, California
- Nov. 2005 *Auroral Electrons in Mars's Neato Magneto(sphere)*
Rice University Space Physics Seminar, Houston, Texas
- Oct. 2002 *The bow shock and upstream waves at Venus and Mars*
Committee for Space Research Meeting at the World Space Congress, Houston, Texas
- Oct. 2001 *Observation of low frequency waves upstream from the Martian bow shock*
Workshop at the International Space Science Institute on Mars magnetism and its interaction with the solar wind, Bern, Switzerland

- June 2000 *Comparative magnetospheres in the solar system*
CEDAR 2000 Student Workshop, Boulder, Colorado
- Mar. 1999 *Implications of Mars Global Surveyor MAG/ER data for atmospheric water loss at Mars*
30th Annual Lunar and Planetary Science Conference, Houston, Texas,
(**Brain, D.A.**, F. Bagenal, M.H. Acuña, J.E.P. Connerney, P.A. Cloutier, D.H. Crider, C.C. Law, P.W. Walker, Y. Chen, R.P. Lin, D. Mitchell, H. Reme, C. Mazelle, D. Vignes, and N.F. Ness)

Publications (as of January, 2021; h-index=49)

(* First author graduate students, † First author post doc, § First author visiting student or post doc)

196. Poppe, A. R., **D. A. Brain**, Y. Dong, S. Xu, R. Jarvinen (2021) *Particle-In-Cell Modeling of Martian Magnetic Cusps and Their Role in Enhancing Nightside Ionospheric Ion Escape*, Geophysical Research Letters, doi.org/10.1029/2020GL090763.
195. **Brain, D. A.**; T. Weber, S. Xu, D. L. Mitchell, R. J. Lillis, J. S. Halekas, J. Espley, B. M. Jakosky (2020) *Variations in Nightside Magnetic Field Topology at Mars*, Geophysical Research Letters, 47 (19), doi.org/10.1029/2020GL08892.
194. * Weber, T., **D. Brain**, S. Xu, D. Mitchell, J. Espley, J. Halekas, C. Mazelle, R. Lillis, G. DiBraccio, B. Jakosky (2020) *The Influence of Interplanetary Magnetic Field Direction on Martian Crustal Magnetic Field Topology*, Geophysical Research Letters, 47 (19), doi.org/10.1029/2020GL087757,
193. Halekas, J. S., S. Ruhunusiri, O. L. Vaisberg, Y. Harada, J. R. Espley, D. L. Mitchell, C. Mazelle, N. Romanelli, G. A. DiBraccio, **D. A. Brain** (2020) *Properties of Plasma Waves Observed Upstream From Mars*, Journal of Geophysical Research: Space Physics, 125 (9), doi.org/10.1029/2020JA028221.
192. Cravens, T. E., C. M. Fowler, **D. Brain**, A. Rahmati, S. Xu, S. A. Ledvina, L. Andersson, A. R. Renzaglia (2020) *Magnetic Reconnection in the Ionosphere of Mars: The Role of Collisions*, Journal of Geophysical Research: Space Physics, 124 (9), doi.org/10.1029/2020JA028036.
191. Kollmann, P., I. Cohen, R. C. Allen, G. Clark, E. Roussos, S. Vines, W. Dietrich, J. Wicht, I. de Pater, K. D. Runyon, R. Cartwright, A. Masters, **D. Brain**, K. Hibbits, B. Mauk, M. Gkioulidou, A. Rymer, R. McNutt, V. Hue, S. Stanley, P. Brandt (2020) *Magnetospheric Studies: A Requirement for Addressing Interdisciplinary Mysteries in the Ice Giant Systems*, Space Science Reviews ,216 (5), doi.org/10.1007/s11214-020-00696-5.
190. † Ramstad, R., **D. A. Brain**, Y. Dong, J. Espley, J. Halekas, B. Jakosky (2020) *The global current systems of the Martian induced magnetosphere*, Nature Astronomy ,4, 979-985, doi.org/10.1038/s41550-020-1099-y.

189. Xu, S., D. L. Mitchell, J. P. McFadden, M. O. Fillingim, L. Andersson, **D. A. Brain**, T. Weber, N. M. Schneider, S. Jain, C. M. Fowler, R. Lillis, C. Mazelle, J. Espley (2020) *Inverted-V Electron Acceleration Events Concurring With Localized Auroral Observations at Mars by MAVEN*, Geophysical Research Letters, 47 (9), doi.org/10.1029/2020GL087414.
188. Xu, S. D. L. Mitchell, T. Weber, **D. A. Brain**, J. G. Luhmann, C. Dong, S. M. Curry, Y. Ma, G. A. DiBraccio, J. Halekas, Y. Dong, C. Mazelle (2020) *Characterizing Mars's Magnetotail Topology With Respect to the Upstream Interplanetary Magnetic Fields*, Journal of Geophysical Research: Space Physics, 125 (3), doi.org/10.1029/2019JA027755.
187. Harada, Y. S. Ruhunusiri, J. S. Halekas, J. Espley, G. A. DiBraccio, J. P. McFadden, D. L. Mitchell, C. Mazelle, G. Collinson, **D. A. Brain**, T. Hara, M. Nosé, S. Oimatsu, K. Yamamoto, B. M. Jakosky (2019) *Locally Generated ULF Waves in the Martian Magnetosphere: MAVEN Observations*, Journal of Geophysical Research: Space Physics, 124 (11), 8707-8726, doi.org/10.1029/2019JA027312.
186. * Egan, H., R. Jarvinen, Y. Ma, **D. Brain** (2019) *Planetary magnetic field control of ion escape from weakly magnetized planets*, Monthly Notices of the Royal Astronomical Society, 488 (2), 2108-2120, doi.org/10.1093/mnras/stz1819.
185. Sakai, S., T. E. Cravens, L. Andersson, C. M. Fowler, D. L. Mitchell, C. Mazelle, E. M. B. Thiemann, F. G. Eparvier, **D. A. Brain**, K. Seki (2019) *Low Electron Temperatures Observed at Mars by MAVEN on Dayside Crustal Magnetic Field Lines*, Journal of Geophysical Research: Space Physics, 124 (9), 7629-7637, doi.org/10.1029/2019JA026961.
184. Inui, S., K. Seki, S. Sakai, **D. A. Brain**, T. Hara, J. P. McFadden, J. S. Halekas, D. L. Mitchell, G. A. DiBraccio, B. M. Jakosky (2019) *Statistical Study of Heavy Ion Outflows From Mars Observed in the Martian-Induced Magnetotail by MAVEN*, Journal of Geophysical Research: Space Physics, 124 (7), 5482-5497, doi.org/10.1029/2018JA026452.
183. * Egan, H., R. Jarvinen, **D. Brain** (2019) *Stellar influence on heavy ion escape from unmagnetized exoplanets*, Monthly Notices of the Royal Astronomical Society, 486 (1), 1283-1291, doi.org/10.1093/mnras/stz788.
182. Dong, Y., X. Fang, **D. A. Brain**, D. M. Hurley, J. S. Halekas, J. R. Espley, R. Ramstad, S. Ruhunusiri, B. M. Jakosky (2019), *Magnetic Field in the Martian Magnetosheath and the Application as an IMF Clock Angle Proxy*, Journal of Geophysical Research: Space Physics, 124 (6), 4295-4313, doi.org/10.1029/2019JA026522.
181. Xu, S., T. Weber, D. L. Mitchell, **D. A. Brain**, C. Mazelle, G. A. DiBraccio, J. Espley (2019) *A Technique to Infer Magnetic Topology at Mars and Its Application to the Terminator Region*, Journal of Geophysical Research: Space Physics, 124 (3), 1823-1842, doi.org/10.1029/2018JA026366.
180. * Weber, T. D. **Brain**, D. Mitchell, S. Xu, J. Espley, J. Halekas, R. Lillis, B. Jakosky (2018) *The Influence of Solar Wind Pressure on Martian Crustal Magnetic Field Topology*, Geophysical Research Letters, 46 (5), 2347-2354, doi.org/10.1029/2019GL081913.

179. Soobiah, Y. I. J., J. R. Espley, J. E. P. Connerney, J. R. Gruesbeck, G. A. DiBraccio, J. Halekas, L. Andersson, C. M. Fowler, R. J. Lillis, D. L. Mitchell, C. Mazelle, Y. Harada, T. Hara, G. Collinson, **D. Brain**, S. Xu, S. M. Curry, J. P. McFadden, M. Benna, B. M. Jakosky (2018) *MAVEN Case Studies of Plasma Dynamics in Low-Altitude Crustal Magnetic Field at Mars 1: Dayside Ion Spikes Associated With Radial Crustal Magnetic Fields*, *Journal of Geophysical Research: Space Physics*, 124 (2), doi.org/10.1029/2018JA025569.
178. Hurley, D. M., Y. Dong, X. Fang, **D. A. Brain** (2018) *A Proxy for the Upstream IMF Clock Angle Using MAVEN Magnetic Field Data*, *Journal of Geophysical Research: Space Physics*, 123 (11), 9612-9618, doi.org/10.1029/2018JA025578.
177. Jakosky, B. M., **D. Brain**, M. Chaffin, S. Curry, J. Deighan, J. Grebowsky, J. Halekas, F. Leblanc, R. Lillis, J. G. Luhmann, L. Andersson, N. Andre, D. Andrews, D. Baird, D. Baker, J. Bell, M. Benna, D. Bhattacharyya, S. Bougher, C. Bowers, C., et.al. (2018) *Loss of the Martian atmosphere to space: Present-day loss rates determined from MAVEN observations and integrated loss through time*, *Icarus*, 315, 146-157, https://doi.org/10.1016/j.icarus.2018.05.030.
176. Hara, T., J. G. Luhmann, F. Leblanc, S. M. Curry, J. S. Halekas, K. Seki, **D. A. Brain**, Y. Harada, J. P. Mcfadden, G. A. DiBraccio, Y. I. J. Soobiah, D. L. Mitchell, S. Xu, C. Mazelle, B. M. Jakosky (2018) *Evidence for Crustal Magnetic Field Control of Ions Precipitating Into the Upper Atmosphere of Mars*, *Journal of Geophysical Research: Space Physics*, 123 (10), 8572-8586, doi.org/10.1029/2017JA024798.
175. Halekas, J. S., J. P. McFadden, **D. A. Brain**, J. G. Luhmann, G. A. DiBraccio, J. E. P. Connerney, D. L. Mitchell, B. M. Jakosky (2018) *Structure and Variability of the Martian Ion Composition Boundary Layer*, *Journal of Geophysical Research: Space Physics*, 123 (10), 8439-8458, doi.org/10.1029/2018JA025866.
174. Ruhunusiri, S., J. S. Halekas, J. R. Espley, F. Eparvier, **D. Brain**, C. Mazelle, Y. Harada, G. A. DiBraccio, Y. Dong, Y. Ma, E. M. B. Thiemann, D. L. Mitchell, B. M. Jakosky (2018) *An Artificial Neural Network for Inferring Solar Wind Proxies at Mars*, *Geophysical Research Letters*, 45 (20), 10,855-10,865, doi.org/10.1029/2018GL079282.
173. Lee, C. O., B. M. Jakosky, J. G. Luhmann, **D. A. Brain**, M. L. Mays, D. M. Hassler, M. Holmström, D. E. Larson, D. L. Mitchell, C. Mazelle, J. S. Halekas (2018) *Observations and Impacts of the 10 September 2017 Solar Events at Mars: An Overview and Synthesis of the Initial Results*, *Geophysical Research Letters*, 45 (17), 8871-8885, 10.1029/2018GL079162.
172. Harada, Y., D. A., Gurnett, A. J. Kopf, J. S. Halekas, S. Ruhunusiri, G. A. DiBraccio, J. Espley, **D. A. Brain** (2018) *MARSIS Observations of the Martian Nightside Ionosphere During the September 2017 Solar Event*, *Geophysical Research Letters*, 45 (16), 7960-7967, doi.org/10.1002/2018GL077622.
171. Romanelli, N., R. Modolo, F. Leblanc, J.-Y. Chaufray, A. Martinez, Y. Ma, C. O. Lee, J. G. Luhmann, J. Halekas, **D. Brain**, G. DiBraccio, J. Espley, J. Mcfadden, B. Jakosky, M. Holmström (2018), *Responses of the Martian Magnetosphere to an Interplanetary Coronal Mass Ejection: MAVEN Observations and LatHyS Results*, *Geophysical Research Letters*, 45 (16), 7891-7900, doi.org/10.1029/2018GL077714.

170. Schneider, N. M., S. K. Jain, J. Deighan, C. R. Nasr, **D. A. Brain**, D. Larson, R. Lillis, A. Rahmati, J. S. Halekas, C. O. Lee, M. S. Chaffin, A. Stiepen, M. Crismani, J. S. Evans, M. H. Stevens, D. Y. Lo, W. E. McClintock, A. I. F. Stewart, R. V. Yelle, J. T. Clarke, G. M. Holsclaw, F. Lefevre, F. Montmessin, B. M. Jakosky (2018) *Global Aurora on Mars During the September 2017 Space Weather Event*, Geophysical Research Letters, 45 (15), 7391-7398, doi.org/10.1029/2018GL077772.
169. Romanelli, N., R. Modolo, F. Leblanc, J.-Y. Chaufray, S. Hess, **D. Brain**, J. Connerney, J. Halekas, J. McFadden, B. Jakosky (2018) *Effects of the Crustal magnetic Fields and Changes in the IMF Orientation on the Magnetosphere of Mars: MAVEN Observations and LatHyS Results*, Journal of Geophysical Research-Space Physics, 123 (7), 5315-5333, doi.org/10.1029/2017JA025155.
168. Xu, S. X. Fang, D. L. Mitchell, Y. Ma, J. G. Luhmann, G. A. DiBraccio, T. Weber, **D. Brain**, C. Mazelle, S. M. Curry, C. O. Lee, (2018) *Investigation of Martian Magnetic Topology Response to 2017 September ICME*, Geophysical Research Letters, 45 (15), 7337-7346, doi.org/10.1029/2018GL077708.
167. Inui, S., K. Seki, T. Namekawa, S. Sakai, **D. A. Brain**, T. Hara, J. P. McFadden, J. S. Halekas, D. L. Mitchell, C. Mazelle, et. al. (2018) *Cold Dense Ion Outflow Observed in the Martian-Induced Magnetotail by MAVEN*, Geophysical Research Letters, 45 (11), 5283-5289, doi.org/10.1029/2018GL077584.
166. Gruesbeck, J. R., J. R. Espley, J. E. P. Connerney, G. A. DiBraccio, Y. I. Soobiah, **D. A. Brain**, C. Mazelle, J. Dann, J. Halekas, D. L. Mitchell (2018) *The Three-Dimensional Bow Shock of Mars as Observed by MAVEN*, Journal of Geophysical Research-Space Physics, 123 (6), 4542-4555, doi.org/10.1029/2018JA025366.
165. DiBraccio, G. A., J. G. Luhmann, S. M. Curry, J. R. Espley, S. Xu, D. L. Mitchell, Y. Ma, C. Dong, J. R. Gruesbeck, J.E. P. Connerney, Y. Harada, S. Ruhunusiri, J. S. Halekas, Y. Soobiah, T. Hara, **D. A. Brain**, B. M. Jakosky (2018) *The Twisted Configuration of the Martian Magnetotail: MAVEN Observations*, Geophysical Research Letters, 45 (10), 4559-4568, doi.org/10.1029/2018GL077251.
164. Harada, Y, J. S. Halekas, G.A. DiBraccio, S. Xu, J. Espley, J. P. McFadden, D. L. Mitchell, C. Mazelle, **D. A. Brain**, T. Hara T, et. al. (2018) *Magnetic Reconnection on Dayside Crustal Magnetic Fields at Mars: MAVEN Observations*, Geophysical Research Letters, 45 (10), 4550-4558, doi.org/10.1002/2018GL077281.
163. Lillis, R. J, D. L. Mitchell, M. Steckiewicz, **D. Brain**, S. Xu, T. Weber, J. Halekas, J. Connerney, J. Espley, M. Benna, et. al. (2018) *Ionizing Electrons on the Martian Nightside: Structure and Variability*, Journal of Geophysical Research-Space Physics, 123 (5) 4349-4363, doi.org/10.1029/2017JA025151.
162. * Egan, H., Y. Ma, C. Dong, R. Modolo, R. Jarvinen, S. Bougher, J. Halekas, **D. Brain**, J. McFadden, J. Connerney, et. al. (2018) *Comparison of Global Martian Plasma Models in the Context of MAVEN Observations*, Journal of Geophysical Research-Space Physics, 123 (5), 3714-3726, doi.org/10.1029/2018GL077584.

161. Ruhunusiri, S., J. S. Halekas, J. R. Espley, F. Eparvier, **D. Brain**, C. Mazelle, Y. Harada, G. A. DiBraccio, E. M. B. Thiemann, D. E. Larson, et. al., (2018) *One-Hertz Waves at Mars: MAVEN Observations*, Journal of Geophysical Research-Space Physics, 123 (5), 3460-3476, doi.org/10.1029/2017JA024618.
160. Dong, C., Y. Lee, Y. Ma, M. Lingam, S. Bougher, J. Luhmann, S. Curry, G. Toth, A. Nagy, V. Tenishev, X. Fang, D. Mitchell, **D. Brain**, B. Jakosky, (2018) *Modeling Martian Atmospheric Losses over Time: Implications for Exoplanetary Climate Evolution and Habitability*, Astrophysical Journal Letters, 859 (1), doi.org/10.3847/2041-8213/aac489.
159. Fang, X., Y. Ma, J. Luhmann, Y. Dong, **D. Brain**, D. Hurley, C. Dong, C. O. Lee, B. Jakosky (2018) *The Morphology of the Solar Wind Magnetic Field Draping on the Dayside of Mars and Its Variability*, Geophysical Research Letters, 45 (8), 3356-3365, doi.org/10.1002/2018GL077230.
158. Jarvinen, R., **D. A. Brain**, R. Modolo, A. Fedoro, M. Holmstrom (2018) *Oxygen Ion Energization at Mars: Comparison of MAVEN and Mars Express Observations to Global Hybrid Simulation*, Journal of Geophysical Research-Space Physics, 123 (2), 1678-1689, doi.org/10.1002/2017JA024884.
157. Lentz, C. L., D. N. Baker, A. N. Jaynes, R. M. Dewey, C. O. Lee, J. S. Halekas, **D. A. Brain** (2018) *Statistical Similarities Between WSA-ENLIL plus Cone Model and MAVEN in Situ Observations From November 2014 to March 2016*, Space Weather-The International Journal of Research and Applications, 16 (2), 157-171, doi.org/10.1002/2017SW001671.
156. Lillis, R. J., J. S. Halekas, M. O. Fillingim, A. R. Poppe, G. Collinson, **D. A. Brain**, D. L. Mitchell (2018) *Field-Aligned Electrostatic Potentials Above the Martian Exobase From MGS Electron Reflectometry: Structure and Variability*, Journal of Geophysical Research-Planets, 123 (1), 67-92, doi.org/10.1002/2017JE005395.
155. Modolo, R., S. Hess, V. Génot, L. Leclercq, F. Leblanc, J.-Y. Chaufray, P. Weill, M. Gangloff, A. Fedorov, E. Budnik, M. Bouchemit, M. Steckiewicz, N. André, L. Beigbeder, D. Popescu, J.-P. Toniutti, T. Al-Ubaidi, M. Khodachenko, **D. Brain**, S. Curry, B. Jakosky, M. Holmström (2018) *The LatHyS database for planetary plasma environment investigations: Overview and a case study of data/model comparisons*, Planetary and Space, (150), 13-21, doi.org/10.1016/j.pss.2017.02.015.
154. Xu, S., D. Mitchell, J. Luhmann, Y. Ma, X. Fang, Y. Harada, T. Hara, **D. Brain**, T. Weber, C. Mazelle, et. al. (2017) *High-Altitude Closed Magnetic Loops at Mars Observed by MAVEN*, Geophysical Research Letters, 44 (22), 11229-11238, doi.org/10.1002/2017GL075831.
153. Halekas, J. S., **D. A. Brain**, J. G. Luhmann, G. A. DiBraccio, S. Ruhunusiri, Y. Harada, C. M. Fowler, D. L. Mitchell, J. E. P. Connerney, J. R. Espley, C. Mazelle, B. M. Jakosky (2017) *Flows, fields, and forces in the Mars-solar wind interaction*. Journal of Geophysical Research: Space Physics, 122, 11,320–11,341. doi.org/10.1002/2017JA024772.

152. Dubinin, E., M. Fraenz, M. Paetzold, J. McFadden, J. S. Halekas, G. A. DiBraccio, J. E. P. Connerney, F. Eparvier, **D. Brain**, B. M. Jakosky, et. al. (2017) *The Effect of Solar Wind Variations on the Escape of Oxygen Ions From Mars Through Different Channels: MAVEN Observations*, Journal of Geophysical Research-Space Physics, 122 (11), 11285-11301, doi.org/10.1002/2017JA024741.
151. * Weber, T., **D. Brain**, D. Mitchell, S. Xu, J. Connerney, J. Halekas (2017) *Characterization of Low-Altitude Nightside Martian Magnetic Topology Using Electron Pitch Angle Distributions*, Journal of Geophysical Research-Space Physics, 122 (10) 9777-9789, doi.org/10.1002/2017JA024491.
150. Garnier, P., M. Steckiewicz, C. Mazelle, S. Xu, D. Mitchell, M. K. G. Holmberg, J. S. Halekas, L. Andersson, **D. A. Brain**, J. E. P. Connerney, et. al. (2017) *The Martian Photoelectron Boundary as Seen by MAVEN*, Journal of Geophysical Research-Space Physics, 122 (10), 10472-10485, doi.org/10.1002/2017JA024497.
149. Cravens, T. E., O. Hamil, S. Houston, S. Bougher, Y. Ma, **D. Brain**, S. Ledvina *Estimates of Ionospheric Transport and Ion Loss at Mars* (2017) Journal of Geophysical Research-Space Physics, 122 (10), 10626-10637, doi.org/10.1002/2017JA024582.
148. § Matsunaga, K., K. Seki, **D. A. Brain**, T. Hara, K. Masunaga, J. P. McFadden, J. S. Halekas, D. L. Mitchell, C. Mazelle, J. R. Espley, et. al. (2017) *Statistical Study of Relations Between the Induced Magnetosphere, Ion Composition, and Pressure Balance Boundaries Around Mars Based On MAVEN Observations*, Journal of Geophysical Research-Space Physics, 122 (9), 9723-9737, doi.org/10.1002/2017JA024217.
147. Hara, T., Y. Harada, D. L. Mitchell, G. A. DiBraccio, J. R. Espley, **D. A. Brain**, J. S. Halekas, K. Seki, J. G. Luhmann, J. P. McFadden JP, et. al. (2017) *On the origins of magnetic flux ropes in near-Mars magnetotail current sheets*, Geophysical Research Letters, 44 (15), 7653-7662, doi.org/10.1002/2017GL073754.
146. Ledvina, S. A., S. H. Brecht, **D. A. Brain**, B. M. Jakosky (2017) *Ion escape rates from Mars: Results from hybrid simulations compared to MAVEN observations*, Journal of Geophysical Research-Space Physics, 122 (8), 8391-8408, doi.org/10.1002/2016JA023521.
145. Dubinin, E., M. Fraenz, M. Paetzold, J. McFadden, P. R. Mahaffy, F. Eparvier, J. S. Halekas, J. E. P. Connerney, **D. Brain**, B. M. Jakosky, et. al. (2017), *Effects of solar irradiance on the upper ionosphere and oxygen ion escape at Mars: MAVEN observations*, Journal of Geophysical Research-Space Physics, 122 (7), 7142-7152, doi.org/10.1002/2017JA024126.
144. Luhmann, J. G., C. F. Dong, Y. J. Ma, S. M. Curry, S. Xu, C. O. Lee, T. Hara, J. Halekas, Y. Li, J. R. Gruesbeck, **D. A. Brain**, C. T. Russell, B. M. Jakosky (2017) *Martian magnetic storms*, Journal of Geophysical Research-Space Physics, 122 (6), 6185-6209, doi.org/10.1002/2016JA023513.

143. * Jolitz, R. D., C. F. Dong, C. O. Lee, R. J. Lillis, **D. A. Brain**, S. M. Curry, S. Bougher, C. D. Parkinson, B. M. Jakosky (2017) *A Monte Carlo model of crustal field influences on solar energetic particle precipitation into the Martian atmosphere*, Journal of Geophysical Research-Space Physics, 122 (5), 5653-5669, doi.org/10.1002/2016JA023781.
142. Harada, Y., J. S. Halekas, J. P. McFadden, J. Espley, G. A. DiBraccio, D. L. Mitchell, C. Mazelle, **D. A. Brain**, L. Andersson, Y. J. Ma, et. al. (2017) *Survey of magnetic reconnection signatures in the Martian magnetotail with MAVEN*, Journal of Geophysical Research-Space Physics, 122 (5) 5114-5131, doi.org/10.1002/2017JA023952.
141. § Masunaga, K., K. Seki, **D. A. Brain**, X. Fang, Y. Dong, B. M. Jakosky, J. P. McFadden, J. P. Halekas, J. E. P. Connerney, D. L. Mitchell, et. al. (2017) *Statistical analysis of the reflection of incident O+ pickup ions at Mars: MAVEN observations*, Journal of Geophysical Research-Space Physics, 122 (4), 4089-4101, doi.org/10.1002/2016JA023516.
140. † Dong, Y., X. Fang, **D. A. Brain**, J. P. McFadden, J. S. Halekas, J. E. P. Connerney, F. Eparvier, L. Andersson, D. Mitchell, B. M. Jakosky (2017) *Seasonal variability of Martian ion escape through the plume and tail from MAVEN observations*, Journal of Geophysical Research-Space Physics, 122 (4) (April 01, 2017): 4009-4022, doi.org/10.1002/2016JA023517.
139. Fang, X., Y. Ma, K. Masunaga, Y. Dong, **D. Brain**, J. Halekas, R. Lillis, B. Jakosky, J. Connerney, J. Grebowsky, et. al. (2017) *The Mars crustal magnetic field control of plasma boundary locations and atmospheric loss: MHD prediction and comparison with MAVEN*, Journal of Geophysical Research-Space Physics, 122 (4), 4117-4137, doi.org/10.1002/2016JA0235009.
138. DiBraccio, G. A., J. Dann, J. R. Espley, J. R. Gruesbeck, Y. Soobiah, J. E. P. Connerney, J. S. Halekas, Y. Harada, C. F. Bowers, **D. A. Brain**, et. al. (2017) *MAVEN observations of tail current sheet flapping at Mars*, Journal of Geophysical Research-Space Physics, 122 (4), 4308-4324, doi.org/10.1002/2016JA023488.
137. Xu, S., D. Mitchell, M. Liemohn, X. Fang, Y. Ma, J. Luhmann, **D. Brain**, M. Steckiewicz, C. Mazelle, J. Connerney, et. al., (2017) *Martian low-altitude magnetic topology deduced from MAVEN/SWEA observations*, Journal of Geophysical Research-Space Physics, 22 (2), 1831-1852, doi.org/10.1002/2016JA023467.
136. Larsson, R., M. Milz, P. Eriksson, J. Mendrok, Y. Kasai, S. A. Buehler, C. Diéval, **D. Brain**, P. Hartogh (2017) *Martian magnetism with orbiting sub-millimeter sensor: simulated retrieval system*, Geoscientific Instrumentation, Methods and Data Systems, 6, 27-37, doi.org/10.5194/gi-6-27-2017.
135. **Brain, D.A.** (2017), *The Response of the Martian Atmosphere to Space Weather*, Space Weather of the Heliosphere: Processes and Forecasts edited by C. Foullon and O. Malandraki, doi:10.1017/S1743921317010924.

134. Hara T, J. G. Luhmann, F. Leblanc, S. M. Curry, K. Seki, **D. A. Brain**, J. S. Halekas, Y. Harada, J. P. McFadden, R. Livi R, et. al. (2017) *MAVEN observations on a hemispheric asymmetry of precipitating ions toward the Martian upper atmosphere according to the upstream solar wind electric field*, Journal of Geophysical Research-Space Physics, 122 (1), 1083-1101, doi.org/10.1002/2016JA023348.
133. Hara, T., **D. A. Brain**, D. L. Mitchell, J. G. Luhmann, K. Seki, H. Hasegawa, J. P. McFadden, J. S. Halekas, J. R. Espley, Y. Harada Y, et. al. (2017) *MAVEN observations of a giant ionospheric flux rope near Mars resulting from interaction between the crustal and interplanetary draped magnetic fields*, Journal of Geophysical Research-Space Physics, 122 (1), 828-842, doi.org/10.1002/2016JA023347.
132. Ruhunusiri, S., J. S. Halekas, J. R. Espley, C. Mazelle, **D. Brain**, Y. Harada, G. A. DiBraccio, R. Livi, D. E. Larson, D. L. Mitchell, et. al. (2017) *Characterization of turbulence in the Mars plasma environment with MAVEN observations*, Journal of Geophysical Research-Space Physics, 122 (1), 656-674, doi.org/10.1002/2016JA023456.
131. Steckiewicz, M., P. Garnier, N. Andre, D. L. Mitchell, L. Andersson, E. Penou, A. Beth, A. Fedorov, J.-A. Sauvaud, C. Mazelle, **D. A. Brain**, et. al. (2017) *Comparative study of the Martian suprathermal electron depletions based on Mars Global Surveyor, Mars Express, and Mars Atmosphere and Volatile EvolutioN mission observations*, Journal of Geophysical Research-Space Physics, 122 (1), 857-873, doi.org/10.1002/2016JA023205.
130. **Brain, D. A.**, F. Bagenal, Y.-J. Ma, H. Nilsson, G. Stenberg Wieser (2016) *Atmospheric escape from unmagnetized bodies*, Journal of Geophysical Research: Planets, 121 (12), 2364-2385, doi.org/10.1002/2016JE005162.
129. Romanelli, N., C. Mazelle, J. Y. Chaufray, K. Meziane, L. Shan, S. Ruhunusiri, J. E. P. Connerney, J. R. Espley, F. Eparvier, E. Thiemann, J. S. Halekas, D. L. Mitchell, J. P. McFadden, **D. Brain**, B. M. Jakosky (2016) *Proton cyclotron waves occurrence rate upstream from Mars observed by MAVEN: Associated variability of the Martian upper atmosphere*, Journal of Geophysical Research-Space Physics, 121 (11), 11113-11128, doi.org/10.1002/2016JA023270.
128. Harada, Y., L. Andersson, C. M. Fowler, D. L. Mitchell, J. S. Halekas, C. Mazelle, J. Espley, G. A. DiBraccio, J. P. McFadden, **D. A. Brain** (2016) *MAVEN observations of electron-induced whistler mode waves in the Martian magnetosphere*, Journal of Geophysical Research-Space Physics, 121 (10), 9717-9731, doi.org/10.1002/2016JA023194.
127. Masunaga, K., K. Seki, **D. A. Brain**, X. Fang, Y. Dong, B. M. Jakosky, J. P. McFadden, J. S. Halekas, J. E. P. Connerney (2016) *O⁺ ion beams reflected below the Martian bow shock: MAVEN observations*, Journal of Geophysical Research-Space Physics, 121 (4), 3093-3107, doi.org/10.1002/2016JA022465.
126. Ruhunusiri, S., J. S. Halekas, J. E. P. Connerney, J. R. Espley, J. P. McFadden, C. Mazelle, **D. Brain**, C. Collinson, Y. Harada, D. E. Larson, (2016) *MAVEN observation of an obliquely propagating low-frequency wave upstream of Mars*, Journal of Geophysical Research-Space Physics, 121 (3), 2374-2389, doi.org/10.1002/2015JA022306.

125. § Masunaga, K., K. Seki, **D. Brain**, X. Fang, Y. Dong, B. Jakosky, J. P. McFadden, J. Halekas, J. Connerney (2016) *O⁺ ion beams reflected below the Martian bow shock: MAVEN observations*, Journal of Geophysical Research., 121, 3093-3107, 10.1002/2016JA022465.
124. Ruhunusiri, S., J. Halekas, J. Connerney, J. Espley, J. P. McFadden, C. Mazelle, **D. Brain**, G. Collinson, Y. Harada, D. Larson, D. Mitchell, R. Livi, Bruce Jakosky (2016) *MAVEN observation of an obliquely propagating low-frequency wave upstream of Mars*, Journal of Geophysical. Research, 121, 2374-2389, 10.1002/2015JA022306.
123. Halekas, J., **D. Brain**, S. Ruhunusiri, J. P. McFadden, D. Mitchell, C. Mazelle, J. Connerney, Y. Harada, T. Hara, J. Espley, G. DiBraccio, Bruce Jakosky (2016), *Plasma clouds and snowplows: Bulk plasma escape from Mars observed by MAVEN*, Geophysical Research Letters, 43, 1426-1434, 10.1002/2016GL067752.
122. Harada, Y., D. Mitchell, J. Halekas, J. P. McFadden, C. Mazelle, Jack Connerney, J. Espley, **D. Brain**, D. Larson, R. Lillis, T. Hara, R. Livi, G. DiBraccio, S. Ruhunusiri, B. Jakosky (2016) *MAVEN observations of energy-time dispersed electron signatures in Martian crustal magnetic fields*, Geophysical Reserach Letters, 43(3), 939-944, 10.1002/2015GL067040.
121. Modolo, R., S. Hess, M. Mancini, F. Leblanc, J.-Y. Chaufray, **D. Brain**, L. Leclercq, R. Esteban-Hernandez, G. M. Chanteur, P. Weill, F. Gonzalez Galindo, F. Forget, M. Yagi, C. Mazelle (2016) *Mars-solar wind interaction: LathYS, an improved parallel 3D multi-species hybrid model*, Journal of Geophysical. Research, 121, 10.1002/2015JA0022324.
120. Dewey, R., D. Baker, M. L. Mays, **D. Brain**, B. Jakosky, J. Halekas, J. Connerney, D. Odstrcil, J. Luhmann, C. Lee (2016) *Continuous solar wind forcing knowledge: Providing continuous conditions at Mars with the WSA-ENLIL+Cone model*, Journal of Geophysical Research, 121, 10.1002/2015JA021941.
119. † Ulusen, D., J.G. Luhmann, Y. Ma, **D. A. Brain** (2016) *Solar control of the Martian magnetic topology: Implications from model-data comparisons* (2016) Planetary and Space Science, 128, 1-13, 10.106/j.pss.2016.01.007.
118. § Jarvinen, R., **D. A. Brain**, J. G. Luhmann, *Dynamics of planetary ions in the induced magnetospheres of Venus and Mars* (2016) Planetary and Space Science, 127, 1-14, 10.106/j.pss.2015.08.012.
117. Hara, T., J. G. Luhmann, J. S. Halekas, J. R. Espley, K. Seki, **D. A. Brain**, H. Hasegawa, J. P. McFadden, D. L. Mitchell, C. Mazelle, Y. Harada, R. Livi, G. A. DiBraccio, J. E. P. Connerney, L. Andersson, B. M. Jakosky (2016) *MAVEN observations of magnetic flux ropes with a strong field amplitude in the Martian magnetosheath during the ICME passage on 8 March 2015*, Geophysical Research Letters, 43(10), 4816-4824, 10.1002/2016GL068960.
116. Ruhunusiri, S., J. S. Halekas, J. P. McFadden, J. E. P. Connerney, J. R. Espley, Y. Harada, R. Livi, K. Seki, C. Mazelle, **D. Brain**, T. Hara, G. A. DiBraccio, D. E. Larson, D. L. Mitchell, B. M. Jakosky, H. Hasegawa (2016) *MAVEN observations of partially developed Kelvin-Helmholtz vortices at Mars*, Geophysical Research Letters, 43(10), 4763-4773, 10.1002/2016GL068926.

115. **Brain, D. A.** (2016) *Climates of Terrestrial Planets* in “Heliophysics: Active stars, their astrospheres, and impacts on planetary environments” edited by C. Shrijver, F. Bagenal, and J. Sojka, Cambridge University Press.
114. Fang, X., Y. Ma, **D. Brain**, Y. Dong, R. Lillis (2015) *Control of Mars global atmospheric loss by the continuous rotation of the crustal magnetic field: A time-dependent MHD study*, Journal of Geophysical Research., 120(12), 10926-10944, 10.1002/2015JA021605.
113. Luhmann, J. G., Y.-J. Ma, **D. A. Brain**, D. Ulusen, R. J. Lillis, J. S. Halekas, J. R. Espley (2015) *Solar wind interaction effects on the magnetic fields around Mars: Consequences for interplanetary and crustal field measurements*, Planetary and Space Science, 117, 15-23, 10.1016/j.pss.2015.05.004.
112. **Brain, D.A.**, J.P. McFadden, J.S. Halekas, J. E. P. Connerney, S.W. Bougher, S. Curry, C. F. Dong, Y. Dong, F. Eparvier, X. Fang, K. Fortier, T. Hara, Y. Harada, B. M. Jakosky, R. J. Lillis, R. Livi, J. G. Luhmann, Y. Ma, R. Modolo, K. Seki (2015) *The spatial distribution of planetary ion fluxes near Mars observed by MAVEN*, Geophysical Research Letters, 42, 10.1002/2015GL065293.
111. Luhmann, J. G., C. Dong, Y. Ma, S. M. Curry, D. Mitchell, J. Espley, J. Connerney, J. Halekas, **D. A. Brain**, B. M. Jakosky, C. Mazelle (2015) *Implications of MAVEN Mars Near-Wake Measurements and Models*, Geophysical Research Letters, 42, 10.1002/2015GL066122.
110. Curry, S. M., J. G. Luhmann, Y. J. Ma, C. F. Dong, **D. Brain**, F. Leblanc, R. Modolo, Y. Dong, J. McFadden, J. Halekas, J. Connerney, J. Espley, T. Hara, Y. Harada, C. Lee, X. Fang, B. M. Jakosky, *Response of Mars O⁺ pickup ions to the 8 March 2015 ICME: Inferences from MAVEN data-based models*, Geophysical Research Letters., 42, 10.1002/2015GL065304.
109. Dong, C., Y. Ma, S.W. Bougher, G. Toth, A. F. Nagy, J.S. Halekas, Y. Dong, S. M. Curry, J. G. Luhmann, **D. Brain**, J.E.P. Connerney, J. Espley, P. Mahaffy, M. Benna, J. P. McFadden, D. L. Mitchell, G.A. DiBraccio, R. J. Lillis, B. M. Jakosky, J. M. Grebowsky, *Multifluid MHD study of the solar wind interaction with Mars' upper atmosphere during the 2015 March 8th ICME event*, Geophysical Research Letters., 42, 10.1002/2015GL065944.
108. Harada, Y., J. S. Halekas, J. P. McFadden, D. L. Mitchell, C. Mazelle, J. E. P. Connerney, J. Espley, D. E. Larson, **D. A. Brain**, G. A. DiBraccio, S. M. Curry, T. Hara, R. Livi, S. Ruhunusiri, and B. M. Jakosky (2015) *Marsward and tailward ions in the near-Mars magnetotail: MAVEN observations*, Geophysical Research Letters, 42, 10.1002/2015GL065005.
107. Hara, T., D. L. Mitchell, J. P. McFadden, K. Seki, **D.A. Brain**, J. S. Halekas, Y. Harada, J. R. Espley, G. A. DiBraccio, J. E. P. Connerney, L. Andersson, C. Mazelle, B. M. Jakosky (2015), *Estimation of the spatial structure of a detached magnetic flux rope at Mars based on simultaneous MAVEN plasma and magnetic field observations*, Geophysical Research Letters., 42, 10.1002/2015GL065720.

106. † Dong, Y., X. Fang, **D. A. Brain**, J. P. McFadden, J. S. Halekas, J. E. Connerney, S. M. Curry, Y. Harada, J. G. Luhmann, and B. M. Jakosky (2015) *Strong plume fluxes at Mars observed by MAVEN: An important planetary ion escape channel*, Geophysical Research Letters., 42, 10.1002/2015GL065346.
105. Halekas, J. S., J. P. McFadden, J. E. P. Connerney, J. R. Espley, **D. A. Brain**, D. L. Mitchell, D. E. Larson, Y. Harada, T. Hara, S. Ruhunusiri, B. M. Jakosky (2015) *Time-dispersed ion signatures observed in the Martian magnetosphere by MAVEN*, Geophysical Research Letters., 42, 10.1002/2015GL064781.
104. Espley, J. R., G. A. DiBraccio, J. E. P. Connerney, **D. Brain**, J. Gruesbeck, Y. Soobiah, J. S. Halekas, M. Combi, J. Luhmann, Y. Ma, Y. Jia and B. M. Jakosky (2015) *A comet engulfs Mars: MAVEN observations of comet Siding Spring's influence on the Martian magnetosphere*, Geophysical Research Letters, 42, 10.1002/2015GL066300.
103. Connerney, J. E. P., J. R. Espley, G. A. DiBraccio, J. R. Gruesbeck, R. J. Oliverson, D. L. Mitchell, J. Halekas, C. Mazelle, **D. Brain**, B. M. Jakosky (2015), *First results of the MAVEN magnetic field investigation*, Geophysical Research Letters, 42, 10.1002/2015GL065366.
102. DiBraccio, G. A., J. R. Espley, J. R. Gruesbeck, J. E. P. Connerney, **D. A. Brain**, J. S. Halekas, D. L. Mitchell, J. P. McFadden, Y. Harada, R. Livi, G. Collinson, T. Hara, C. Mazelle, B. M. Jakosky (2015) *Magnetotail dynamics at Mars: Initial MAVEN observations*, Geophysical Research Letters, 42, 10.1002/2015GL065248.
101. Harada, Y., J. S. Halekas, J. P. McFadden, D. L. Mitchell, C. Mazelle, J. E. P. Connerney, J. Espley, D. E. Larson, **D. A. Brain**, L. Andersson, G. A. DiBraccio, G. A. Collinson, R. Livi, T. Hara, S. Ruhunusiri, B. M. Jakosky (2015) *Magnetic reconnection in the near-Mars magnetotail: MAVEN observations*, Geophysical Research Letters, 42, 10.1002/2015GL065004.
100. Jakosky, B. M., J. M. Grebowsky, J. G. Luhmann, **D. A. Brain**, *Initial results from the MAVEN mission to Mars* (2015) Geophysical Research Letters, 42, DOI: 10.1002/2015GL065271.
99. Bougher, S., B. M. Jakosky, J. Halekas, J. Grebowsky, J. Luhmann, P. Mahaffy, J. Connerney, F. Eparvier, R. Ergun, D. Larson, J. McFadden, D. Mitchell, N. Schneider, R. Zurek, C. Mazelle, L. Andersson, D. Andrews, D. Baird, D. Baker, J. M. Bell, M. Benna, **D. Brain**, M. Chaffin, P. Chamberlin, J.-Y. Chaufray, J. Clarke, G. Collinson, M. Combi, F. Crary, T. Cravens, M. Crismani, S. Curry, D. Curtis, J. Deighan, G. Delory, R. Dewey, G. DiBraccio, C. Dong, Y. Dong, P. Dunn, M. Elrod, S. England, A. Eriksson, J. Espley, S. Evans, X. Fang, M. Fillingim, K. Fortier, C. M. Fowler, J. Fox, H. Gröller, S. Guzewich, T. Hara, Y. Harada, G. Holsclaw, S. K. Jain, R. Jolitz, F. Leblanc, C. O. Lee, Y. Lee, F. Lefevre, R. Lillis, R. Livi, D. Lo, Y. Ma, M. Mayyasi, W. McClintock, T. McEnulty, R. Modolo, F. Montmessin, M. Morooka, A. Nagy, K. Olsen, W. Peterson, A. Rahmati, S. Ruhunusiri, C. T. Russell, S. Sakai, J.-A. Sauvaud, K. Seki, M. Steckiewicz, M. Stevens, A. I. F. Stewart, A. Stiepen, S. Stone, V. Tenishev, E. Thiemann, R. Tolson, D. Toublanc, M. Vogt, T. Weber, P. Withers, T. Woods, R. Yelle (2015) *Early MAVEN Deep Dip campaign reveals thermosphere and ionosphere variability*, Science, 350(6261), 10.1126/science.aad0459.

98. Jakosky, B. M., J. M. Grebowsky, J. G. Luhmann, J. Connerney, F. Eparvier, R. Ergun, J. Halekas, D. Larson, P. Mahaffy, J. McFadden, D. L. Mitchell, N. Schneider, R. Zurek, S. Bougher, **D. Brain**, Y. J. Ma, C. Mazelle, L. Andersson, D. Andrews, D. Baird, D. Baker, J. M. Bell, M. Benna, M. Chaffin, P. Chamberlin, J.-Y. Chaufray, J. Clarke, G. Collinson, M. Combi, F. Crary, T. Cravens, M. Crismani, S. Curry, D. Curtis, J. Deighan, G. Delory, R. Dewey, G. DiBraccio, C. Dong, Y. Dong, P. Dunn, M. Elrod, S. England, A. Eriksson, J. Espley, S. Evans, X. Fang, M. Fillingim, K. Fortier, C. M. Fowler, J. Fox, H. Gröller, S. Guzewich, T. Hara, Y. Harada, G. Holsclaw, S. K. Jain, R. Jolitz, F. Leblanc, C. O. Lee, Y. Lee, F. Lefevre, R. Lillis, R. Livi, D. Lo, M. Mayyasi, W. McClintock, T. McEnulty, R. Modolo, F. Montmessin, M. Morooka, A. Nagy, K. Olsen, W. Peterson, A. Rahmati, S. Ruhunusiri, C. T. Russell, S. Sakai, J.-A. Sauvaud, K. Seki, M. Steckiewicz, M. Stevens, A. I. F. Stewart, A. Stiepen, S. Stone, V. Tennishev, E. Thiemann, R. Tolson, D. Toublanc, M. Vogt, T. Weber, P. Withers, T. Woods, R. Yelle (2015) *MAVEN observations of the response of Mars to an interplanetary coronal mass ejection*, *Science*, 350(6261), 10.1126/science.aad0210.
97. Schneider, N. M. S., J. I. Deighan, S. K. Jain, A. Stiepen, A. I. F. Stewart, D. Larson, D. L. Mitchell, C. Mazelle, C. O. Lee, R. J. Lillis, J. S. Evans, D. **Brain**, M. H. Stevens, W. E. McClintock, M. S. Chaffin, M. Crismani, G. M. Holsclaw, F. Lefevre, D.Y. Lo, J. T. Clarke, F. Montmessin, B. M. Jakosky (2015) *Discovery of diffuse aurora on Mars*, *Science*, 350(6261), 10.1126/science.aad0313.
96. Lillis, R. J., **D.A. Brain**, S.W. Bougher, F. Leblanc, J. G. Luhmann, B. M. Jakosky, R. Modolo, J. Fox, J. Deighan, X. Fang, Y. C. Wang, Y. Lee, C. Dong, Y. Ma, T. Cravens, L. Andersson, S. M. Curry, N. Schneider, M. Combi, I. Stewart, J. Clarke, J. Grebowsky, D. L. Mitchell, R. Yelle, A. F. Nagy, D. Baker, R.P. Lin (2015) *Characterizing atmospheric escape from Mars today and through time, with MAVEN*, *Space Science Reviews*, 195(1), 357-422, 10.1007/s11214-015-0165-8.
95. Jakosky, B. M., R. P. Lin, J. M. Grebowsky, J. G. Luhmann, D. F. Mitchell, G. Beutelschies, T. Priser, M. Acuña, L. Andersson, D. Baird, D. Baker, R. Bartlett, M. Benna, S. Bougher, **D. Brain**, D. Carson, S. Cauffman, P. Chamberlin, J. Y. Chaufray, O. Cheatom, J. Clarke, J. Connerney, T. Cravens, D. Curtis, G. Delory, S. Demcak, A. DeWolfe, F. Eparvier, R. Ergun, A. Eriksson, J. Espley, X. Fang, D. Folta, J. Fox, C. Gomez-Rosa, S. Habenicht, J. Halekas, G. Holsclaw, M. Houghton, R. Howard, M. Jarosz, N. Jedrich, M. Johnson, W. Kasprzak, M. Kelley, T. King, M. Lankton, D. Larson, F. Leblanc, F. Lefevre, R. Lillis, P. Mahaffy, C. Mazelle, W. McClintock, J. McFadden, D. L. Mitchell, F. Montmessin, J. Morrissey, W. Peterson, W. Possel, J.-A. Sauvaud, N. Schneider, W. Sidney, S. Sparacino, A. I. F. Stewart, R. Tolson, D. Toublanc, C. Waters, T. Woods, R. Yelle, R. Zurek (2015) *The Mars Atmosphere and Volatile Evolution (MAVEN) Mission*, *Space Science Reviews*, 195(1), 3-48, 10.1007/s11214-015-0139-x.
94. Diéval, C., D. J. Andrews, D. D. Morgan, **D. A. Brain**, D. A. Gurnett (2015) *MARSIS remote sounding of localized density structures in the dayside Martian ionosphere: A study of controlling parameters*, *Journal of Geophysical Research*, 120(9), 8125-8145, doi:10.1002/2015JA021486.
93. § Matsunaga, K., K. Seki, T. Hara, **D. A. Brain** (2015) *Asymmetric penetration of shocked solar wind down to 400 km altitudes at Mars*, *Journal of Geophysical Research*, 120(8), 6874-6883, doi:10.1002/2014JA020757.

92. Peterson, W. K., **D. A. Brain**, A. W. Yau, P. G. Richards (2015) *Electron conic distributions produced by solar ionizing radiation in planetary atmospheres*, *Advances in Space Research*, 55(11), 2566-2572, doi:10.1016/j.asr.2015.02.023.
91. Halekas, J. S., **D. A. Brain**, M. Holmstrom, *The Moon's plasma wake*, in *Magnetotails in the Solar System*, Eds. A. Keiling, American Geophysical Union, Washington, D.C., 2015.
90. Halekas, J., A. Poppe, J. McFadden, V. Angelopoulos, K.-H. Glassmeier, **D. Brain**, (2014) *Evidence for small-scale collisionless shocks at the Moon from ARTEMIS*, *Geophysical Research Letters*, 41(21), 7436-7443, doi:10.1002/2014GL061973.
89. § Hara, T., K. Seki, H. Hasegawa, **D. Brain**, K. Matsunaga, M. Saito, D. Shiota, (2014) *Formation processes of flux ropes downstream from Martian crustal magnetic fields inferred from Grad-Shafranov reconstruction*, *Journal of Geophysical Research*, 119(9), 7947-7962, doi:10.1002/2014JA019943.
88. Ma, Y., X. Fang, C. Russell, A. Nagy, G. Toth, J. Luhmann, **D. Brain**, C. Dong, (2014) *Effects of crustal field rotation on the solar wind plasma interaction with Mars*, *Geophysical Research Letters*, 41(19), 6563-6569, doi:10.1002/2014GL060785.
87. § Hara, T., K. Seki, H. Hasegawa, **D. A. Brain**, K. Matsunaga, and M. H. Saito (2014) *The spatial structure of Martian magnetic flux ropes recovered by the Grad-Shafranov reconstruction technique*, *Journal of Geophysical Research*, 119(2), 1262-1271, doi:10.1002/2013JA019414.
86. **Brain D. A.**, F. Leblanc, J. G. Luhmann, T. E. Moore, F. Tian (2013) *Planetary magnetic fields and climate evolution*. In "Comparative Climatology of Terrestrial Planets" (S. J. Mackwell et al., eds.), pp. 487–501. Univ. of Arizona, Tucson, DOI: 10.2458/azu_uapress_9780816530595-ch20.
85. Tian, F., E. Chassefiere, F. Leblanc, **D. Brain** (2013) *Atmospheric Escape and Climate Evolution of Terrestrial Planets*, in "Comparative Climatology of Terrestrial Planets" (S. J. Mackwell et al., eds.), Univ. of Arizona, Tucson.
84. Peterson, W., **D. A. Brain**, D. L. Mitchell, S. A. Bailey, P. C. Chamberlin (2013) *Correlations between variations in solar EUV and soft X-ray irradiance and photoelectron energy spectra observed on Mars and Earth*, *Journal of Geophysical Research*, 118(11), 7338-7347, doi:10.1002/2013JA019251.
83. Bertucci, C., N. Romanelli, J. Y. Chaufray, D. Gomez, C. Mazelle, M. Delva, R. Modolo, F. González-Galindo, **D. A. Brain** (2013) *Temporal Variability of Waves at the Proton Cyclotron Frequency Upstream from Mars: Implications for Mars Distant Hydrogen Exosphere*, *Geophysical Research Letters*, 40(15), doi:10.1002/grl.50709.
82. Curry, S., M. Liemohn, X. Fang, **D. Brain**, Y. Ma (2013) *Simulated kinetic effects of the corona and solar cycle on high altitude ion transport at Mars*, *Journal of Geophysical Research*, 118, doi:10.1002/jgra.50358.
81. Lillis, R., **D. Brain** (2013) *Nightside electron precipitation at Mars: geographical variability and dependence on solar wind conditions*, *Journal of Geophysical Research*, 118, doi:10.1002/jgra.50171.

80. **Brain, D. A.**, J. S. Halekas (2012) *Aurora in Martian Mini-Magnetospheres*, in *Auroral Phenomenology and Magnetospheric Processes: Earth and other Planets*, AGU Monograph.
79. † Ulusen, D., **D. A. Brain**, J. G. Luhmann, D. L. Mitchell (2012) *Investigation of Mars' ionospheric response to solar energetic particle events*, *Journal of Geophysical Research*, 117, A12306, doi:10.1029/2012JA017671.
78. Delory, G. T., J. G. Luhmann, **D. Brain**, R. J. Lillis, D. L. Mitchell, R. A. Mewaldt, T. V. Falkenberg (2012) Energetic particles detected by the Electron Reflectometer instrument on the Mars Global Surveyor, 1999–2006, *Space Weather*, 10, S06003, doi:10.1029/2012SW000781.
77. Dieval, C., E. Kallio, S. Barabash, G. Stenborg, H. Nilsson, Y. Futaana, M. Holmstrom, A. Fedorov, R. A. Frahm, R. Jarvinen, **D.A. Brain** (2012) *A case study of proton precipitation at Mars: Mars Express observations and hybrid simulation*, *Journal of Geophysical Research*, 117, A06222, doi:10.1029/2012JA017537.
76. Lillis, R. J., **D. A. Brain**, G. T. Delory, J. G. Luhmann, R. P. Lin (2012) *Evidence for superthermal secondary electrons produced by SEP ionization in the Martian atmosphere*, *Journal of Geophysical Research*, 117, E03004, doi:10.1029/2011JE003932.
75. Fillingim, M. O., R. J. Lillis, S. L. England, L. M. Peticolas, **D. A. Brain**, J. S. Halekas, C. Paty, D. Lummerzheim, S.W. Bougher (2012) *On wind-driven electrojets at magnetic cusps in the nightside ionosphere of Mars*, *Earth, Planets, and Space*, 64(2), p. 93-103, doi:10.5047/eps.2011.04.010.
74. Eastwood, J. P., J. J. H. Videira, **D. A. Brain**, and J. S. Halekas (2012) *A chain of magnetic flux ropes in the magnetotail of Mars*, *Geophysical Research Letters*, 39, L03104, doi:10.1029/2011GL050444.
73. Lillis, R. J., M. O. Fillingim, **D. A. Brain** (2011) *Three-dimensional Structure of the Martian Nightside Ionosphere: Predicted Rates of Impact Ionization from Mars Global Surveyor MAG/ER measurements of precipitating electrons*, *Journal of Geophysical Research*, 116, A12317, doi:10.1029/2011JA016982.
72. * Briggs, J. A., **D. A. Brain**, M. L. Cartwright, J. P. Eastwood, J. S. Halekas (2011) *A statistical study of magnetic flux ropes in the Martian magnetosphere*, *Planetary and Space Science*, 59(13), doi:10.1016/j.pss.2011.06.010.
71. § Falkenberg, T.V., A. Taktakishvili, A. Pulkkinen, S. Vennerstrom, D. Odstrcil, **D. Brain**, G. Delory, D. Mitchell (2011) *Evaluating predictions of ICME arrival at Earth and Mars*, *Space Weather*, 9(9), S00E12, 10.1029/2011SW000682.
70. Halekas, J. S., **D. A. Brain**, J. P. Eastwood (2011) *Large amplitude compressive "sawtooth" magnetic field oscillations in the Martian magnetosphere*, *Journal of Geophysical Research*, 116, A07222, doi:10.1029/2011JA016590.
69. † Ulusen, D., **D. A. Brain**, D. L. Mitchell (2011), *Observation of conical electron distributions of Martian crustal magnetic fields*, *Journal of Geophysical Research*, 116, A07214, doi:10.1029/2010JA016217.

66. Nemec, F., D. D. Morgan, D. A. Gurnett, **D.A. Brain** (2011) *Areas of enhanced ionization in the deep nightside of Mars*, Journal of Geophys. Research., 116(E6), E06006, doi:10.1029/2011JE003804.
67. § Falkenberg, T.V., S. Vennerstrom, **D. A. Brain**, G. Delory, A. Taktakishvili (2011) *Multipoint observations of coronal mass ejection and solar energetic particle events on Mars and Earth during November 2001*, Journal of Geophysical Research, 116(A6), A06104, doi:10.1029/2010JA016279.
66. Sibeck, D. G., V. Angelopoulos, **D. A. Brain**, G. T. Delory, J. P. Eastwood, W. M. Farrell, R. E. Grimm, J. S. Halekas, H. Hasegawa, P. Hellinger, K. K. Khurana, R. J. Lillis, M. Øieroset, T.-D. Phan, J. Raeder, C. T. Russell, D. Schriver, J. A. Slavin, P. M. Travnicek, and J. M. Weygand (2011) *ARTEMIS Science Objectives*, Space Science Reviews, doi:10.1007/s11214-011-9777-9.
65. Stenberg, G., H. Nilsson, Y. Futaana, S. Barabash, A. Feorov, **D. Brain** (2011) *Observational evidence of alpha-particle capture at Mars*, Geophys. Res. Lett., 38(9), L09101, doi:10.1029/2011GL047155.
64. † Manning, C. V., Y. Ma, **D. A. Brain**, C. P. McKay, and K. J. Zahnle (2011) *Parametric analysis of modeled ion escape from Mars*, Icarus, 212(1), p.131-7, doi:10.1016/j.icarus.2010.11.028.
63. Morgan, D .D., D. A. Gurnett, F. Akalin, **D. A. Brain**, J. S. Leisner, F. Duru, R. A. Frahm, and J .D. Winningham (2011) *Dual-spacecraft observation of large-scale magnetic flux ropes in the Martian ionosphere*, J. Geophys. Res., 116(A2), A02319, doi:10.1029/2010JA016134.
62. Lundin, R., S. Barabash, M. Yamauchi, H. Nilsson, **D. Brain** (2011) *On the relation between plasma escape and the Martian crustal magnetic field*, Geophysical Research Letters, 38(2), L02102, doi:10.1029/2010GL046019.
61. McNulty, T., J. G. Luhmann, I. de Pater, **D. A. Brain**, A. Fedorov, T .L. Zhang, E. Dubinin (2010) *Interplanetary coronal mass ejection influence on high energy pick-up ions at Venus*, Planetary and Space Science, 58(14-15), p.1784-91, doi:10.1016/j.pss.2010.07.019.
60. Lillis, R. J., **D. A. Brain**, S. L. England, P. Withers, M. O. Fillingim, A. Safaeinili (2010) *Total electron content in the Mars ionosphere: Temporal studies and dependence on solar EUV flux*, Journal of Geophysical Research, 115(A11), A11314, doi:10.1029/2010JA015698.
59. Opgenoorth, H. J., R. S. Dhillon, L. Rosenqvist, M. Lester, N .J.T. Edberg, S. E. Milan, P. Withers, **D. Brain** (2010) *Day-side ionospheric conductivities at Mars*, Planetary and Space Science, 58(10), p.1139-51, doi:10.1016/j.pss.2010.04.004.
58. Haider, S. A., S. P. Seth, **D. A. Brain**, D. L. Mitchell, T. A. Majeed, and S.W. Bougher (2010) *Modeling Photoelectron transport in the Martian ionosphere at Olympus Mons and Syrtis Major: MGS observations*, Journal of Geophysical Research, 115(A8), A08310, doi:10.1029/2009JA014968.

57. Edberg, N. J. T., M. Lester, S. W. H. Cowley, **D. A. Brain**, M. Fränz, and S. Barabash (2010) *Magnetosonic Mach Number Effect on the Position of the Bow Shock at Mars in Comparison to Venus*, *Journal of Geophysical Research*, 115(A7), A07203, doi:10.1029/2009JA014998.
56. **Brain, D. A.**, A. H. Baker, J. Briggs, J. P. Eastwood, J. S. Halekas, T.-D. Phan (2010) *Episodic detachment of Martian crustal magnetic fields leading to bulk atmospheric plasma escape*, *Geophysical Research Letters*, 37(14), L14108, doi:10.1029/2010GL043916.
55. Øieroset, M., **D. A. Brain**, E. Simpson, D. L. Mitchell, T. D. Phan, J. S. Halekas, R. P. Lin, and M. H. Acuña (2010) *Search for Phobos and Deimos gas/dust tori using in situ observations from Mars Global Surveyor MAG/ER*, *Icarus*, 206, doi:10.1016/j.icarus.2009.07.017.
54. Brain, D., S. Barabash, A. Boesswetter, S. Bougher, S. Brecht, G. Chanteur, D. Hurley, E. Dubinin, X. Fang, M. Fraenz, J. Halekas, E. Harnett, M. Holmstrom, E. Kallio, H. Lammer, S. Ledvina, M. Liemohn, K. Liu, J. Luhmann, Y. Ma, R. Modolo, U. Motschmann, A. Nagy, H. Nilsson, H. Shinagawa, S. Simon, and N. Terada (2010) *A Comparison of Global Models for the Solar Wind Interaction with Mars*, *Icarus*, 206, doi:10.1016/j.icarus.2009.06.030.
53. Fillingim, M. O., L. M. Peticolas, R. J. Lillis, **D. A. Brain**, J. S. Halekas, D. Lummerzheim, S. W. Bougher (2010) *Localized Ionization Patches in the Nighttime Ionosphere of Mars and their Electrodynamic Consequences*, *Icarus*, 206, doi:10.1016/j.icarus.2009.03.005.
52. Akalin, F., D. D. Morgan, D. A. Gurnett, D. L. Kirchner, **D. A. Brain**, R. Modolo, M. H. Acuña, J. R. Espley (2010) *Dayside Induced Magnetic Field in the Ionosphere of Mars*, *Icarus*, 206, doi:10.1016/j.icarus.2009.03.021.
51. Morgan, D. D., D. A. Gurnett, D. L. Kirchner, J. D. Winningham, R. Frahm, D. A. **Brain**, D. L. Mitchell, J. G. Luhmann, E. Nielsen, J. R. Espley, M. H. Acuña, and J. J. Plaut (2010) *Radar Absorption Due to a Corotating Interaction Region Encounter with Mars Detected by MARSIS*, *Icarus*, 206, doi:10.1016/j.icarus.2009.03.008.
50. Halekas, J. S., **D. A. Brain** (2010) *Global Distribution, Structure, and Control of Low Altitude Current Sheets at Mars*, *Icarus*, 206, doi:10.1016/j.icarus.2008.12.032.
49. Nilsson, H., E. Carlsson, **D. Brain**, M. Yamauchi, M. Holmstrom, S. Barabash, R. Lundin, Y. Futaana (2010) *Ion Escape from Mars as a Function of Solar Wind Conditions: A Statistical Study*, *Icarus*, 206, doi:10.1016/j.icarus.2009.03.006.
48. **Brain, D. A.**, D. Hurley, M. R. Combi (2010) *The Solar Wind Interaction with Mars: Recent Progress and Future Directions*, *Icarus*, 206, doi:10.1016/j.icarus.2009.10.020.
47. § Edberg, N. J. T., U. Auster, S. Barabash, A. Boßwetter, **D. A. Brain**, J. L. Burch, C. M. Carr, S. W. H. Cowley, E. Cupido, F. Duru, M. Fraenz, K.-H. Glassmeier, R. Goldstein, M. Lester, R. Lundin, R. Modolo, H. Nilsson, I. Richter, M. Samara, J. G. Trotignon (2009), *Rosetta and Mars Express Observations of the Influence of High Solar Wind Pressure on the Martian Plasma Environment*, *Annales Geophysicae*, 27, p.4533–4545, doi:10.5194/angeo-27-4533-2009.

46. Lillis, R. J., M. O. Fillingim, L. M. Peticolas, **D. A. Brain**, R. P. Lin, S.W. Bougher (2009) *Nightside ionosphere of Mars: Modeling the effects of crustal magnetic fields and electron pitch angle distributions on electron impact ionization*, Journal of Geophysical Research, 114, E11009, doi:10.1029/2009JE003379.
45. Halekas, J. S., J. P. Eastwood, **D. A. Brain**, T. D. Phan, M. Oieroset, R. P. Lin (2009) *In situ Observations of reconnection Hall magnetic fields at Mars: Evidence for Ion Diffusion Region Encounters*, Journal of Geophysical Research, 114, A11, doi:10.1029/2009JA014544.
44. § Edberg, N. J. T., **D. A. Brain**, M. Lester, S. W. H. Cowley, R. Modolo, M. Fränz, S. Barabash (2009) *Plasma boundary variability at Mars as observed by Mars Global Surveyor and Mars Express*, Annales Geophysicae, 27, p.3537-3550, doi:10.5194/angeo-27-3537-2009.
43. Luhmann, J. G., A. Fedorov, S. Barabash, E. Carlsson, Y. Futaana, T.-L. Zhang, C. T. Russell, J. G. Lyon, S. A. Ledvina, **D.A. Brain** (2008) *Venus Express Observations of Atmospheric Oxygen Escape During the Passage of Several Coronal Mass Ejections*, Journal of Geophysical Research, 113(52), E00B04, doi:10.1029/2008JE003092.
42. Leblanc, F., O. Witasse, J. Lilensten, R. A. Frahm, A. Safaenili, **D.A. Brain**, J. Mouginot, H. Nilsson, Y. Futaana, J. Halekas, M. Holmstrom, J. L. Bertaux, J. D. Winningham, W. Kofman, R. Lundin (2008) *Observations of aurorae by SPICAM Ultraviolet Spectrograph on Board Mars Express: Simultaneous ASPERA-3 and MARSIS Measurements*, Journal of Geophysical Research, 113(A8), A08311, doi:10.1029/2008JA013033.
41. Halekas, J. S., G. T. Delory, **D. A. Brain**, R. P. Lin, D. L. Mitchell (2008) *Density cavity observed over a strong lunar crustal magnetic anomaly in the solar wind: A mini-magnetosphere?*, Planetary and Space Science, doi:10.1016/j.pss.2008.01.008.
40. Futaana, Y., S. Barabash, M. Yamauchi, S. McKenna-Lawlor, R. Lundin, J. G. Luhmann, **D. Brain**, E. Carlsson, J.-A. Sauvaud, J. D. Winningham, R. A. Frahm, P. Wurz, M. Holmström, H. Gunell, E. Kallio, W. Baumjohann, H. Lammer, J. R. Sharber (e), K. C. Hsieh, H. Andersson, A. Grigoriev, K. Brinkfeldt, H. Nilsson, K. Asamura, T. L. Zhang, A. J. Coates, D. R. Linder, D. O. Kataria, C. C. Curtis, B. R. Sandel, A. Fedorov, C. Mazelle, J.-J. Thocaven, M. Grande, H. E. J. Koskinen, T. Sales, W. Schmidt, P. Riihela, J. Kozyra, N. Krupp, J. Woch, M. Fränz, E. Dubinin, S. Orsini, R. Cerulli-Irelli, A. Mura, A. Milillo, M. Maggi, E. Roelof, P. Brandt, K. Szego, J. Scherrer, P. Bochsler (2008), *Mars Express and Venus Express multi-point observations of geoeffective solar flare events in December 2006*, Planetary and Space Science, doi:10.1016/j.pss.2007.10.014.
39. § Carlsson, E., **D. Brain**, J. Luhmann, S. Barabash, A. Grigoriev, H. Nilsson, R. Lundin (2008) *Influence of IMF draping direction and crustal magnetic field location on Martian ion beams*, Planetary and Space Science, doi:10.1016/j.pss.2007.12.016.

38. Coates, A. J., R. A. Frahm, D. R. Linder, D. O. Kataria, Y. Soobiah, G. Collinson, J. R. Sharber, J. D. Winningham, S. J. Jeffers, S. Barabash, J.-A. Sauvaud, R. Lundin, M. Holmström, Y. Futaana, M. Yamauchi, A. Grigoriev, H. Andersson, H. Gunell, A. Fedorov, J.-J. Thocaven, T. L. Zhang, W. Baumjohann, E. Kallio, H. Koskinen, J. U. Kozyra, M. W. Liemohn, Y. Ma, A. Galli, P. Wurz, P. Bochsler, **D. Brain**, E. C. Roelof, P. Brandt, N. Krupp, J. Woch, M. Fraenz, E. Dubinin, S. McKenna-Lawlor, S. Orsini, R. Cerulli-Irelli, A. Mura, A. Milillo, M. Maggi, C. C. Curtis, B. R. Sandel, K. C. Hsieh, and K. Szego, A. Asamura, M. Grande (2008) *Ionospheric Photoelectrons at Venus: Initial Observations by ASPERA-4 ELS*, Planetary and Space Science, doi:10.1016/j.pss.2007.12.008.
37. Lillis, R. J., S. W. Bougher, D. L. Mitchell, **D. A. Brain**, R. P. Lin, M. H. Acuna (2008) *Continuous monitoring of nightside upper thermospheric mass densities in the Martian southern hemisphere over 4 Martian years using electron reflectometry*, Icarus, 194(2), p.562-574, doi:10.1016/j.icarus.2007.09.031.
36. Eastwood, J. P., **D.A. Brain**, J. S. Halekas, J. F. Drake, T.-D. Phan, M. Øieroset, D. L. Mitchell, R. P. Lin, M. H. Acuña (2008) *Evidence for Collisionless Magnetic Reconnection at Mars*, Geophysical Research Letters, 35, L02106, doi:10.1029/2007GL032289.
35. Halekas, J. S., **D. A. Brain**, R. P. Lin, D. L. Mitchell (2008) *Solar Wind Interaction with Lunar Crustal Magnetic Anomalies*, Advanced Space Research, 41(8), p.1319-1324, doi:10.1016/j.asr.2007.04.003.
34. Halekas, J. S., **D. A. Brain**, R. P. Lin, J. G. Luhmann, D. L. Mitchell (2008) *Distribution and Variability of Accelerated Electrons at Mars*, Advanced Space Research, 41(9), p.1347-1352, doi:10.1016/j.asr.2007.01.034.
33. Luhmann, J. G., C. J. Zeitlin, R. Turner, **D. A. Brain**, G. T. Delory, J. G. Lyon, W. Boynton (2007) *Solar Energetic Particles in Near-Mars Space*, Journal of Geophysical Research, 112, E10001, doi:10.1029/2006JE002886.
32. **Brain, D. A.**, R. J. Lillis, D. L. Mitchell, J. S. Halekas, R. P. Lin (2007) *Electron Pitch Angle Distributions as Indicators of Magnetic Field Topology near Mars*, Journal of Geophysical Research, 112, A09201, doi:10.1029/2007JA012435.
31. Fillingim, M., L. M. Peticolas, R. J. Lillis, **D. A. Brain**, J. S. Halekas, D. L. Mitchell, R. P. Lin, D. Lummerzheim, S. Bougher, D. Kirchner (2007) *Model calculations of electron precipitation induced ionization patches on the nightside of Mars*, Geophysical Research Letters, 34(12), L12101, doi:10.1029/2007GL029986.
30. Espley, J. R., W. M. Farrell, **D. A. Brain**, D. D. Morgan, B. Cantor, J. J. Plaut, M. H. Acuña, G. Picardi (2007) *Absorption of MARSIS radar signals: Solar energetic particles and the daytime ionosphere*, Geophysical Research Letters, 34(9), L09101, doi:10.1029/2007GL028829.
29. Halekas, J. S., G. T. Delory, **D. A. Brain**, R. P. Lin, M. O. Fillingim, C. O. Lee, R. A. Mewaldt, T. J. Stubbs, W. M. Farrell, M.K. Hudson (2007) *Extreme Lunar Surface Charging During Solar Energetic Particle Events*, Geophysical Research Letters, 34(2), L02111, doi:10.1029/2006GL028517.

28. Halekas, J. S., **D. A. Brain**, D. L. Mitchell, R.P. Lin (2006) *Whistler waves observed near lunar crustal magnetic sources*, Geophysical Research Letters., 33(22), L22104, doi:10.1029/2006GL027684.
27. Lundin, R., D. Winningham, S. Barabash, R. Frahm, **D. Brain**, H. Nilsson, M. Holmström, M. Yamauchi, J. R. Sharber, J.-A. Sauvaud, A. Fedorov, K. Asamura, H. Hayakawa, A. J. Coates, Y. Soobiah, C. Curtis, K. C. Hsieh, M. Grande, H. Koskinen, E. Kallio, J. Kozyra, J. Woch, M. Fraenz, J. Luhmann, S. McKenna-Lawler, R. S. Orsini, P. Brandt, P. Wurz (2006) *Auroral Plasma Acceleration Above Martian Magnetic Anomalies*, Space Science Reviews, doi:10.1007/s11214-006-9086-x.
26. **Brain, D. A.** (2006), *Mars Global Surveyor Measurements of the Martian Solar Wind Interaction*, Space Science Reviews, 126, p.77-112, doi:10.1007/s11214-006-9122-x.
25. Leblanc F., O. Witasse, J. Winningham, **D. Brain**, J. Lilensten, P.-L. Blelly, R. A. Frahm, J. S. Halekas, and J. L. Bertaux (2006) *Origins of the Martian aurora observed by Spectroscopy for Investigation of Characteristics of the Atmosphere of Mars (SPICAM) on board Mars Express*, Journal of Geophysical Research, 111(A9), A09313, doi:10.1029/2006JA011763.
24. Ergun, R. E., L. Andersson, W. K. Peterson, **D. Brain**, G. T. Delory, D. L. Mitchell, R. P. Lin, A.W. Yau (2006) *Role of plasma waves in Mars' atmospheric loss*, Geophysical Research Letters, 33(14), L14103, doi:10.1029/2006GL025785.
23. Morgan, D. D., D. A. Gurnett, D. L. Kirchner, R. L. Huff, **D. A. Brain**, W. V. Boynton, M. H. Acuña, J. J. Plaut, G. Picardi (2006) *Solar control of radar wave absorption by the Martian ionosphere*, Geophysical Research Letters, 33, L13202, doi:10.1029/2006GL026637.
22. Halekas, J. S., **D. A. Brain**, R. J. Lillis, M. Fillingim, D. L. Mitchell, R. P. Lin (2006) *Current Sheets at Low Altitudes in the Martian Magnetotail*, Geophysical Research Letters, 33, L13101, doi:10.1029/2006GL026229.
21. **Brain, D. A.**, D. L. Mitchell, J. S. Halekas (2006) *The magnetic field draping direction at Mars from April 1999 through August 2004*, Icarus, 182(2), pp. 464-473, doi:10.1016/j.icarus.2005.09.023.
20. Liemohn, R. A. Frahm, J. D. Winningham, Y. Ma, S. Barabash, R. Lundin, J. U. Kozyra, A. F. Nagy, S. M. Bougher, J. Bell, **D. Brain**, D. Mitchell, J. Luhmann, M. Holmström, H. Andersson, M. Yamauchi, A. Grigoriev, S. McKenna-Lawler, J. R. Sharber, J. R. Scherrer, S. J. Jeffers, A. J. Coates, D. R. Linder, D. O. Kataria, E. Kallio, H. Koskinen, T. Sáles, P. Riihelä, W. Schmidt, E. Roelof, D. Williams, S. Livi, C. C. Curtis, K. C. Hsieh, B. R. Sandel, M. Grande, M. Carter, J.-A. Sauvaud, A. Fedorov, J.-J. Thocaven, S. Orsini, R. Cerulli-Irelli, M. Maggi, P. Wurz, P. Bochsler, N. Krupp, J. Woch, M. Fränz, K. Asamura, and C. Dierker (2006) *Numerical interpretation of high-altitude photoelectron observations*, Icarus, 182(2), p.383-95, doi:10.1016/j.icarus.2005.10.036.

19. Halekas, J. S., **D. A. Brain**, D. L. Mitchell, R. P. Lin, L. Harrison (2006) *On the occurrence of magnetic enhancements caused by solar wind interaction with lunar crustal fields*, Geophysical Research Letters, 33(8), L08106, doi:10.1029/2006GL025931.
18. Lundin, R., D. Winningham, S. Barabash, R. Frahm, M. Holmström, J.-A. Sauvaud, A. Fedorov, K. Asamura, A. J. Coates, Y. Soobiah, K. C. Hsieh, M. Grande, H. Koskinen, E. Kallio, J. Kozyra, J. Woch, M. Fraenz, **D. Brain**, J. Luhmann, S. McKenna-Lawler, R. S. Orsini, P. Brandt, P. Wurz (2006) *Plasma Acceleration Above Martian Magnetic Anomalies*, Science, 311(5763), pp. 980-983, doi:10.1126/science.112207.
17. **Brain, D. A.**, J. S. Halekas, L. M. Peticolas, R. P. Lin, J. G. Luhmann, D. L. Mitchell, G. T. Delory, S. W. Bougher, M. H. Acuña, H. Reme (2006) *On the origin of aurorae on Mars*, Geophysical Research Letters, 33(1), L01201, doi:10.1029/2005GL024782.
16. Lillis, R. J., J. H. Engel, D. L. Mitchell, **D. A. Brain**, R. P. Lin, S. W. Bougher, M. H. Acuña (2005) *Probing upper thermospheric neutral densities at Mars using electron reflectometry*, Geophysical Research Letters, 32(23), L23204, doi:10.1029/2005GL024337.
15. **Brain, D. A.**, J. S. Halekas, R. Lillis, D. L. Mitchell, R. P. Lin (2005) *Variability of the Altitude of the Martian Sheath*, Geophys. Res. Lett., 32(18), L18203, doi:10.1029/2005GL023126.
14. Espley, J. R., P. A. Cloutier, D. H. Crider, **D. A. Brain**, M. H. Acuña (2005) *Low frequency plasma oscillations at Mars during the October 2003 storm*, Journal of Geophysical Research, 110(A9), A09S33, doi:10.1029/2004JA010935.
13. Crider, D. H., J. Espley, **D. A. Brain**, D. L. Mitchell, J. E. P. Connerney, M. H. Acuña (2005) *Mars Global Surveyor observations of the Halloween 2003 solar super-storm's encounter with Mars*, Journal of Geophysical Research, 110(A9), A09S21, doi:10.1029/2004JA010881.
12. Ferguson, B., J. C. Cain, D. Crider, **D. Brain**, E. Harnett (2005), *External fields on the night-side of Mars at Mars Global Surveyor Mapping Altitudes*, Geophysical Research Letters, 32(16), L16105, doi:10.1029/2004GL021964.
11. Espley, J. R., P. A. Cloutier, **D. A. Brain**, D. H. Crider, M. H. Acuña (2004) *Observations of low frequency magnetic oscillations in the Martian magnetosheath, magnetic pileup region, and tail*, Journal of Geophysical Research, 109(A18), 7213, doi:10.1029/2003JA010193.
10. Crider, D. H., **D. A. Brain**, M. H. Acuña, D. Vignes, C. Mazelle, C. Bertucci (2004) *Mars Global Surveyor observations of solar wind magnetic field draping around Mars*, Space Science Review, 111(1), p.203-221, doi:10.1023/B:SPAC.0000032714.66124.4e.
9. Mazelle, C., D. Winterhalter, K. Sauer, J.-G. Trotignon, M. H. Acuña, K. Baumgartel, C. Bertucci, **D. A. Brain**, S. H. Brecht, M. Delva, E. Dubinin, M. Øieroset, J. Slavin (2004) *Bow shock and upstream phenomena at Mars*, Space Science Review, 111(1), p.115-181, doi:10.1023/B:SPAC.0000032717.98679.d0.
8. **Brain, D. A.** (2004), *The bow shocks and upstream waves at Venus and Mars*, Advanced Space Research, 33(11), p.1913-1919, doi:10.1016/j.asr.2003.05.036.

7. **Brain, D. A.**, F. Bagenal, M. H. Acuña, J. E. P. Connerney (2003) *Martian magnetic morphology: Contributions from the solar wind and crust*, Journal of Geophysical Research, 108(A12), 1424, doi:10.1029/2002JA009482.
6. **Brain, D. A.**, F. Bagenal, M. H. Acuña, J. E. P. Connerney, D. H. Crider, C. Mazelle, D. L. Mitchell, N. F. Ness (2002) *Observations of low frequency electromagnetic plasma waves upstream from the Martian shock*, Journal of Geophysical Research, 107(A6), 1076, doi:10.1029/2000JA000416.
5. Crider, D., M. Acuña, J. Connerney, D. Mitchell, R. Lin, P. Cloutier, H. Reme, C. Mazelle, **D. Brain**, N. Ness, S. Bauer (2001) *Magnetic field draping around Mars: Mars Global Surveyor results*, Advanced Space Research, 27(11), p.1831-1836, doi:10.1016/S0273-1177(01)00333-7.
4. Rousselot, P., S. M. Hill, M. H. Burger, **D. A. Brain**, C. Laffont, G. Moreels (2000) *Theoretical modeling of the C2 fluorescence spectrum in comet Hale-Bopp*, Icarus, 146, p.263-269, doi:10.1006/icar.2000.6383.
3. Crider, D., Cloutier, P., C. Law, P. Walker, Y. Chen, M. Acuña, J. Connerney, D. Mitchell, R. Lin, K. Anderson, C. Carlson, J. McFadden, H. Rème, C. Mazelle, C. d'Uston, J. Sauvaud, D. Vignes, **D. Brain**, N.F. Ness (2000) *Evidence of Electron Impact Ionization in the Magnetic Pileup Boundary of Mars*, Geophysical Research Letters, 27, p.45-48, doi:10.1029/1999GL003625.
2. Cloutier, P. A., C. C. Law, D. H. Crider, P. W. Walker, Y. Chen, M. H. Acuña, J. E. P. Connerney, R. P. Lin, K. A. Anderson, D. L. Mitchell, C. W. Carlson, J. McFadden, **D. A. Brain**, H. Rème, C. Mazelle, J. A. Sauvaud, C. d'Uston, C. D. Vignes, S. J. Bauer, N. F. Ness (1999) *Venus-like interaction of the solar wind with Mars*, Geophysical Research Letters, 26, p.2685, doi:10.1029/1999GL900591.
1. **Brain, D. A.**, B. M. Jakosky (1998) *Atmospheric loss since the onset of the Martian geologic record: Combined role of impact erosion and sputtering*, Journal of Geophysical Research, 103, p.22689, doi:10.1029/98JE02074.