

David A. Brain

Associate Professor
Laboratory for Atmospheric and Space Physics
& Department of Astrophysical and Planetary Sciences
University of Colorado Boulder

(as of Aug 2023)
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Research Interests

- Planetary atmosphere evolution and habitability
- Planetary atmospheric escape
- Plasma environments and upper atmospheres of unmagnetized planets
- Interpretation of spacecraft measurements of magnetic fields and charged particles

Education

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

Professional Experience

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| 2017 – | Associate Professor
CU Boulder LASP & APS |
| 2011 – 2017 | Assistant Professor
CU Boulder LASP & APS |
| 2005 – 2011 | Assistant Research Physicist I, III, IV
UC Berkeley Space Sciences Laboratory |
| 2003 – 2005 | Visiting Postdoctoral Researcher
UC Berkeley Space Sciences Laboratory |
| 2003 – 2005 | Independent Consultant
Addison Wesley |
| 2002 – 2003 | Postdoctoral Research Associate
CU Boulder LASP |
| Fall, 2002 | Instructor
CU Boulder APS Department |
| 1995 – 2002 | Graduate Research Assistant
CU Boulder LASP |

Management Experience

2023 – 2026	Department Chair CU Department of Astrophysical and Planetary Sciences
2022 –	Science Advisory Board Chair NASA's MAVEN Mission
2020 – 2024	Coordinator Khalifa University - LASP EMM Postdoc Program
2019 – Present	Principal Investigator MACH Team Science Center
2019 – 2021	Undergraduate Associate Chair CU Department of Astrophysical and Planetary Sciences
2016 – 2021	U.S. Science Lead Emirates Mars Mission
2015 – 2021	Co-Deputy Principal Investigator NASA's MAVEN Mission

Awards and Honors

2023	Laurels for Team Achievement of the International Academy of Astronautics – Emirates Mars Mission Team
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 Geophys. Res. Lett.
2006	NASA Carl Sagan Early Career Fellowship in Planetary Sciences
2002	CU Residence Life Academic Teaching Award
2001	American Geophysical Union Outstanding Student Presentation (Spring Meeting)

Professional Organizations

American Geophysical Union

Division for Planetary Sciences of the American Astronomical Society

PI Grants and Contracts

2023 - 2028	Retention of Habitable Atmospheres in Planetary Systems NASA Interdisciplinary Consortia for Astrobiology Research \$5,091,935
2020 - 2024	<i>Do Habitable Worlds Require Magnetic Fields?</i> NASA Heliophysics DRIVE Team Science \$1,290,027 (No Cost Extension from 2022)
2020 - 2024	<i>Postdoctoral Program KU Agreement - (for EMM)</i> Contract between KU (in Abu Dhabi) and CU LASP \$3,768,470
2019 - 2024	<i>Temporal Evolution of Plasma Near Mars: A Multi-Point Approach</i> NASA Mars Data Analysis Program \$372,941 (No Cost Extension from 2022)
2018 - 2020	<i>The Role of Crustal Fields in Atmospheric Escape at Mars</i> NASA Earth and Space Science Fellowship for Tristan Weber (APS) \$90,000
2018 - 2024	<i>Scaling Laws for Ion Escape from Planets</i> NASA Habitable Worlds \$457,285 (No Cost Extension from 2021)
2017 - 2022	<i>Charged Particle Transport in Martian Magnetic Cusps</i> NASA Solar System Workings \$453,051 (No Cost Extension from 2020)
2015 - 2019	<i>Ion Escape Rates from the Martian Atmosphere</i> NASA Mars Data Analysis \$199,851 (No Cost Extension from 2017)
2014 - 2017	<i>Influence of Asteroid and Comet Impacts on Atmospheric Abundances at Venus, Earth, and Mars</i> NASA Earth and Space Science Fellowship for Caitlin Heath (APS) \$90,000
2012 - 2016	<i>Plasma Environments of Unmagnetized Planets</i> NASA Fellowships for Early Career Researchers \$100,000 (No Cost Extension from 2015)
2010 - 2016	<i>Modeling Atmospheric Erosion by Impacts at Mars, Earth, and Venus</i> NASA Planetary Atmospheres \$252,764 (No Cost Extension from 2013)

2008 - 2010	<i>Intercomparison of Global Models and Measurements of the Martian Plasma Environment</i> International Space Science Institute, Switzerland Room+Board for 2 weeks, plus 2 round trip flights for PI
2008 - 2015	<i>Magnetic Reconnection and Shear in the Martian Plasma Environment</i> NASA Mars Data Analysis \$349,322 (No Cost Extension from 2011)
2006 - 2015	<i>The First Suprathermal Electron Measurements at Venus: Implications for Planetary Evolution</i> NASA/ESA Venus Express Supporting Investigator ~\$250,000 (~\$25-40K/yr)
2006 - 2011	<i>Martian Aurorae from Acceleration to Emission</i> NASA Mars Data Analysis \$288,129 (No Cost Extension from 2009)
2006 - 2010	<i>Atmospheric Energy Deposition at Mars, Venus and Extrasolar Planets from Solar Energetic Particle events</i> NASA Planetary Atmospheres \$238,311 (No Cost Extension from 2009)
1998 - 2001	<i>The Martian Surface Magnetic Field</i> NASA Graduate Student Research Program ~\$63,000

Current Active Co-I Grants and Contracts

2025 - 2027	<i>EscaPADE: (Escape and Plasma Acceleration and Dynamics Explorers)</i> NASA Small Innovative Missions for Planetary Exploration PI: Robert Lillis (UC Berkeley) ~\$103,538 for D. Brain
2023 - 2024	<i>Understanding the Mars Space Environment through Multi-Spacecraft Measurements</i> International Space Science Institute, Switzerland PI: Wenya Li (National Space Science Center) and Andre Galli (U. Bern) Room+Board for 2 weeks
2020 - 2023	<i>The M-Dwarf Opportunity: Characterizing Nearby M-Dwarf Habitable Zone Planets</i> NASA Interdisciplinary Consortia for Astrobiology Research PI: Kevin Stevenson (JHU-APL) ~\$43K for D. Brain (0.15 total FTE)
2019 - 2023	<i>Flows, Fields, and Forces in the Magnetospheres of Unmagnetized Bodies</i> NASA Solar System Workings PI: Jasper Halekas (U. Iowa) ~\$162,493K for D. Brain (No Cost Extension from 2022)

- 2014 - 2024 *Emirates Mars Mission*
 Mohammed bin Rashid Space Center, UAE Space Agency
 PI: Pete Withnell (CU LASP)
 \$178,820 for D. Brain through 2022, currently ~\$31K/yr
- 2008 - 2025 *MAVEN (Mars Atmosphere and Volatile Evolution) mission*
 NASA Mars Scout
 PI: Bruce Jakosky, Shannon Curry (CU, UC Berkeley)
 ~\$2,294,291 for D. Brain, currently \$250K/yr

Over his career, Dave Brain has been a named Co-I on ~12 additional NASA grants from the Mars Data Analysis, Geospace Science, Planetary Atmospheres, Mars Fundamental Research, Discovery Data Analysis, Hubble Space Telescope, and Solar System Exploration Research Virtual Institute programs. He has been a named Co-I on 2 additional ISSI International Teams.

Service to the Research Community

- 2023 – Member of NASA Heliophysics Advisory Committee
- 2023 Convener of AAS session on “Planetary Atmospheres, Space Weather, and Magnetic Fields: A Joint AGU-AAS Session”
- 2022 Convener of Fall AGU session on “Planetary Atmospheres, Space Weather, and Magnetic Fields: A Joint AGU-AAS Session”
- 2022 – Member of Khalifa University (UAE) Space Science Center Advisory Board
- 2022 – 2023 Member of MEPAG Mars Concurrent Exploration Science Analysis Group (MCE-SAG)
- 2021 Convener of ~150-person workshop on “Influence of a Global Magnetic Field on Ion and Atmospheric Loss and Planetary Habitability”
- 2021 – 2022 Editor of *Space Science Reviews* special issue on “EMM Mission”
- 2021 – 2022 Editor of *Icarus* special issue on “Mars at Solar Minimum”
- 2020 Convener of Fall AGU session “Do Habitable Worlds Require Magnetic Fields?”
- 2020 – 2021 Review panelist for Puerto Rico Science Technology and Research Trust
- 2020 Panelist for NASA Planetary Mission Senior Review for NASA’s InSight mission
- 2020 Review panelist for the NASA Solar System Workings Program
- 2019 Convener of Fall AGU session on “Magnetized and Unmagnetized Planets: From Atmospheric Escape to Radiation Belts”
- 2019 – 2021 Astrophysics 2020 Decadal Survey Sub-panel member on Exoplanets, Astrobiology, and the Solar System

2019 – 2020	Scientific Organizing Committee for 9th International Mars Conference
2018	Review panelist for Cassini Data Analysis
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”
2013	Review panelist for the NASA MAVEN Participating Scientist Program
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 <i>Journal of Geophysical Research - Space Physics</i>
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 - External Reviewer for data sets on the Planetary Data System: *Lunar Prospector Magnetometer and Electron Reflectometer; Cassini Plasma Spectrometer; MAVEN Key Parameter Data*
- 2003 - External Reviewer for proposals submitted to: NASA Solar System Workings, NASA Mars Data Analysis, NASA Mars Fundamental Research, NASA Europa Clipper Mission Instruments, NASA Living with a Star, NASA Planetary Geology and Geophysics, NASA Geospace Science, NASA Planetary Atmospheres, NASA Astrobiology Institute, NASA Heliophysics Supporting Research, NASA Jupiter Data Analysis, NASA Cassini Data Analysis, NASA JUNO Participating Scientist Program, NASA Planetary Data Archiving, NASA Lunar Advanced Science and Exploration Research, NASA Postdoc Program, NASA NESSF / FINESST, Puerto Rico Advanced Research Grant Program, Emirates Mars Mission Science Center, NSF Planetary Astronomy, German Research Foundation (DFG), Swiss National Science Foundation, European Research Council, Austrian Science Fund.
- 2001 - 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, Earth Planets Space, Monthly Notices of the Royal Astronomical Society, Astrophysical Journal, Annales Geophysicae, Advances in Space Research, Astrobiology*

Invited Presentations (1st/sole Author), Colloquia, and Seminars

- July 2023 *Do Habitable Worlds Require Magnetic Fields?*
Boulder Solar REU Program (virtual)
- Feb 2023 *EMM First Results*
University of Tokyo Space Physics Seminar
- Feb 2023 *What Makes a World Habitable?*
Forefront Physics and Mathematics Program Workshop, Tokyo
- Apr. 2022 *Do Habitable Worlds Require Magnetic Fields?*
International Space University (virtual)
- Mar. 2022 *Introduction to Mars Atmospheric Science*

	Khalifa University Emirates Mars Mission Workshop
Feb. 2022	<i>Mars Today</i> Emirates Mars Mission Science Workshop
Feb. 2022	<i>Do Habitable Worlds Require Magnetic Fields?</i> University of Munich Joint Astronomy Colloquium (virtual)
Nov. 2021	<i>Do Habitable Worlds Require Magnetic Fields?</i> University of Heidelberg Joint Astronomical Colloquium (virtual)
July 2021	<i>Do Habitable Worlds Require Magnetic Fields?</i> Boulder Solar REU Program (virtual)
June 2021	<i>Martian Magnetic Fields: Implications for the Interior, Surface, Atmosphere, and Evolution</i> NYU Abu Dhabi Seminar (virtual)
May 2021	<i>Atmospheric Response of Unmagnetized Planets to Stellar EUV</i> Stars and Planets in the UV (workshop hosted at Arizona State University) (virtual)
Mar. 2021	<i>Do Habitable Worlds Require Magnetic Fields?</i> Arizona State University School of Earth and Space Exploration Colloquium (virtual)
Mar. 2021	<i>Interaction of the Sun and Solar Wind on Venus Atmospheric Evolution</i> Venus Subpanel of the Planetary Decadal Survey (virtual)
Nov. 2020	<i>Do Habitable Worlds Require Magnetic Fields?</i> Queen Mary University London (virtual)
Nov. 2020	<i>Upper Atmosphere, Ionosphere, Magnetosphere</i> Mars Subpanel of the Planetary Decadal Survey (virtual)
Oct. 2020	<i>Do Habitable Worlds Require Magnetic Fields?</i> UMass Lowell Physics Colloquium (virtual)
June 2020	<i>Space Weather at Mars</i> Whole Heliosphere and Planetary Interactions seminar (virtual)
Mar. 2020	<i>Do Habitable Worlds Require Magnetic Fields?</i> Goddard Space Flight Center Science Colloquium, Greenbelt, Maryland
Feb. 2020	<i>Atmospheric Escape from Mars: Lessons for Studies of Exoplanets</i> Exoplanets in our Backyard, Houston
Jan. 2020	<i>The Emirates Mars Mission</i> MEPAG Mars Architecture Strategy Working Group
Dec. 2019	<i>Observations of Space Weather at Mars</i> AGU Fall Meeting, San Francisco
Oct. 2019	<i>Atmospheric Loss from Mars</i>

- Exoplanet Transit Spectroscopy e-Workshop, CU Boulder / NSO
- June 2019 *Do Habitable Worlds Require Magnetic Fields?*
Tokyo Area Planetary Science Meeting
- May 2019 *Overview of the Emirates Mars Mission*
JPGU Planetary Sciences Section reception
- Mar. 2019 *Atmospheric Escape Processes from Mars*
ISEE Workshop on Ancient Mars, University of Nagoya, Japan
- Mar. 2019 *Retaining a Habitable Atmosphere: Lessons from Mars*
Aquaplanetology I, Earth Life Sciences Institute, Tokyo
- Feb. 2019 *Do Habitable Worlds Require Magnetic Fields?*
21st Symposium on Planetary Sciences, Sendai, Japan
- Feb. 2019 *Do Habitable Worlds Require Magnetic Fields?*
University of Tokyo Earth and Planetary Science Seminar
- 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 Earth, Oceans, and Atmospheric Sciences Colloquium
- Oct. 2018 *MAVEN Status and Future Plans*
Mars Upper Atmosphere Network, Nicosia, Cyprus
- May 2018 *Atmospheric Escape from Mars*
52nd ESLAB Symposium, Noordwijk, Netherlands
- Apr. 2018 *The MAVEN Project*
Conference on "Space" at the Chilean Air Show, Santiago, Chile
- 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
- Dec. 2017 *Do Habitable Worlds Require Magnetic Fields?*
AGU Fall Meeting, New Orleans
- 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 Plenary Talk, 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 Symposium: 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*
AGU Fall Meeting, San Francisco
- Oct. 2016 *The World of Science Fiction*
United Arab Emirates Mars Mission Science Workshop, Dubai
- Aug. 2016 *Has the Martian Atmosphere Disappeared over Time?*
University of Colorado APS Department Colloquium
- 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*
EGU Meeting, Vienna, Austria
- Mar. 2016 *Martian Atmospheric Ion Loss Rates*
Geospace Environment Modeling System for Integrated Studies (GEMSIS) Workshop, University of Nagoya, Japan
- Mar. 2016 *Has the Martian Atmosphere Disappeared over Time?*
University of Minnesota Physics and Astronomy Colloquium
- Jan. 2016 *Has the Martian Atmosphere Disappeared over Time?*
University of Arizona Lunar and Planetary Laboratory Colloquium
- 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, United Arab Emirates
- 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
- 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
- Dec. 2014 *Suprathermal Electrons in the Plasma Environments of Mars and Venus*
AGU Fall Meeting, San Francisco
- Sept. 2014 *MRO-MAVEN Collaborations*
MArs Reconnaissance Orbiter Project Science Group Meeting, Boulder
- Aug. 2014 *What Happened to the Ancient Martian Atmosphere?*
Southwest Research Institute, Boulder
- July 2014 *Climates of Terrestrial Planets*
Heliophysics Summer School, Boulder
- 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 Physics Colloquium, Golden
- Sept. 2013 *MAVEN (Part 1): Why?*
LASP Friends of the Magnetosphere Seminar
- 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?*
University of Washington Astrobiology Colloquium
- Oct. 2012 *Lunar Crustal Magnetic Fields in the Solar Wind*
Cluster/THEMIS Joint Workshop, LASP, Boulder, Colorado
- July 2012 *The 2013 MAVEN Mission to Mars*
International Symposium on Atmospheres of Terrestrial Planets:
Observations and Modeling, 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*

- AGU 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*
AGU Fall Meeting, San Francisco
- Oct. 2010 *The Physics of Mini-Magnetospheres at Mars*
5th Alfvén 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
- 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*
AGU Chapman Conference on the Solar Wind Interaction with Mars (SWIM),
San Diego
- Dec. 2006 *Origin, Variability, and Consequences of the Martian Aurora*
AGU Fall Meeting, San Francisco
- Sept. 2006 *Aurora at Planets Lacking Global Magnetic Fields*
EPSC Meeting, 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*
AGU Fall Meeting, San Francisco, California
- Nov. 2005 *Auroral Electrons in Mars's Neato Magneto(sphere)*
Rice University Space Physics Seminar, Houston
- Oct. 2002 *The bow shock and upstream waves at Venus and Mars*
COSPAR Meeting, Houston
- Oct. 2001 *Observation of low frequency waves upstream from the Martian bow shock*
ISSI Workshop, Bern, Switzerland
- June 2000 *Comparative magnetospheres in the solar system*
CEDAR 2000 Student Workshop, Boulder
- Mar. 1999 *Implications of Mars Global Surveyor MAG/ER data for atmospheric water
loss at Mars*
30th Annual Lunar and Planetary Science Conference, Houston

Publications (as of August 2023 via NASA ADS; h-index=48; ~7700 citations)

* First author supervised graduate students

† First author supervised post doc,

§ First author supervised visiting student or post doc)

All 'doi's are hyperlinks

224. Ramstad, R., **D.A. Brain**, Y. Dong, J.S. Halekas, J.P. McFadden, D.L. Mitchell, J. Espley, F.G. Eparvier, and B.M. Jakosky (2023), *Solar wind driven influences on the Martian oxygen corona: Constraints on atmospheric sputtering from a synthesis of MAVEN measurements during solar minimum*, *Icarus*, 393, doi.org/10.1016/j.icarus.2023.115491.
223. Xu, S., D.L. Mitchell, J.P. McFadden, C.M. Fowler, K. Hanley, T. Weber, **D.A. Brain**, Y. Ma, G.A. DiBraccio, C. Mazelle, and S.M. Curry (2023), *Photoelectron boundary: The top of the dayside ionosphere at Mars*, *Journal of Geophysical Research: Space Physics*, 128, doi.org/10.1029/2023JA031353.
222. Sun, W., Y. Ma, C.T. Russell, J. Luhmann, A. Nagy, and **D. Brain** (2023), *5-Species MHD study of Martian proton loss and source*, *Journal of Geophysical Research: Space Physics*, 128, doi.org/10.1029/2023JA031301.
221. Madanian, H., N. Omid, D.G. Sibeck, L. Andersson, R. Ramstad, S. Xu, J.R. Gruesbeck, S.J. Schwartz, R.A. Frahm, **D.A. Brain**, P. Kajdic, F.G. Eparvier, D.L. Mitchell, and S.M. Curry (2023), *Transient foreshock structures upstream of Mars: Implications of the small Martian bow shock*, *Geophysical Research Letters*, 50, doi.org/10.1029/2022GL101734.
220. Jakosky, B.M., **D.A. Brain**, and F.G. Eparvier (2023), *The Mars upper atmosphere at solar minimum*, *Icarus*, 393, doi.org/10.1016/j.icarus.2023.115450.
219. Dong, Y., **D.A. Brain**, R. Ramstad, X. Fang, J.P. McFadden, J.S. Halekas, F. Eparvier, J.R. Espley, J.R. Gruesbeck, and B.M. Jakosky (2023), *The dependence of Martian ion escape on solar EUV irradiance as observed by MAVEN*, *Icarus*, 393, doi.org/10.1016/j.icarus.2022.115288.
218. * Jolitz, R. D., A. Rahmati, **D.A. Brain**, C.O. Lee, R.J. Lillis, E. Thiemann, F. Eparvier, D. Mitchell, J. Halekas, D. Larson, S.M. Curry, and B.M. Jakosky (2023), *Energy input of EUV, solar wind, and SEPs at Mars: MAVEN observations during solar minimum*, *Journal of Geophysical Research: Space Physics*, 128, doi.org/10.1029/2022JA030884.
217. Ogohara, K., Hiromu Nakagawa, S. Aoki, T. Kouyama, T. Usui, N. Terada, T. Imamura, F. Montmessin, **D. Brain**, A. Doressoundiram, T. Gautier, T. Hara, Y. Harada, H. Ikeda, M. Koike, F. Leblanc, R. Ramirez, E. Sawyer, K. Seki, A. Spiga, A. Vandaele, S. Yokota, A. Barucci, and S. Kameda (2022), *The Mars system revealed by the Martian Moons exploration mission*, *Earth Planets Space* 74(1), doi.org/10.1186/s40623-021-01417-0.
216. Xu, S., D.L. Mitchell, J.P. McFadden, C.M. Fowler, K. Hanley, T. Weber, **D.A. Brain**, G.A. DiBraccio, M.W. Liemohn, R.J. Lillis, J.S. Halekas, S. Ruhunusiri, L. Andersson, C. Mazelle, and S.M. Curry (2022). *Nightside auroral electrons at Mars:*

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Public Lectures

June 2023	<i>The Martian Atmosphere</i> IEEE of Northern Colorado
July 2022	<i>Do Habitable Worlds Require Magnetic Fields?</i> Longmont Astronomical Society
Feb. 2021	<i>Do Habitable Worlds Require Magnetic Fields?</i> University of Colorado/LASP
Oct. 2020	<i>Science of the Martian</i> CU Boulder Prospective Student Day
Dec. 2019	<i>Earth is Just Right</i> Denver Astronomical Society Holiday Banquet (Keynote speaker)
Dec. 2019	<i>Science of the Martian</i> CU Boulder Prospective Student Day
Nov. 2019	<i>Do Habitable Worlds Require Magnetic Fields?</i> CU Prime, Fiske Planetarium
Nov. 2019	<i>Do Habitable Worlds Require Magnetic Fields?</i> CU Astronomy Club

- Dec. 2018 *MAVEN and the Missing Martian Atmosphere*
Boulder Country Day School (Keynote speaker)
- Nov. 2018 *The Science of Science Fiction*
Dubai Future Academy, Dubai, UAE
- Nov. 2018 *Mars and the Emirates Mars Mission*
JESS School Dubai, UAE
- Nov. 2018 *Mars and the UAE's Emirates Mars Mission*
Al Reyada School Abu Dhabi, UAE
- Oct. 2018 *Mars and Life and the Universe*
CU Family Weekend, Boulder, Colorado
- Oct. 2018 *Do Habitable Worlds Require Magnetic Fields?*
Northern Colorado Astronomical Society, Ft. Collins, Colorado
- Oct. 2018 *Mars and Life and the Universe*
Boulder County Philharmonic presentation at Fiske Planetarium, Boulder, Colorado
- Aug. 2018 *Earth is Just Right*
Inner Circle of Advocates 2018 Meeting, Chicago, Illinois
- Apr. 2018 *Do Habitable Worlds Require Magnetic Fields?*
oSTEM a CU Boulder
- Apr. 2018 *Do Habitable Worlds Require Magnetic Fields?*
MAVEN Outreach Webinar
- Mar. 2018 Boulder County Philharmonic performance of space-themed music
(Science Speaker Between Pieces), Boulder, Colorado
- Aug. 2017 *Venus is too Hot, Mars is too Cold, Earth is Just Right*
Stars Above Aspen, Colorado (Keynote speaker)
- June 2017 *Earth is Just Right*
CU Director's Club, Boulder, Colorado
- Apr. 2017 *Venus is too Hot, Mars is too Cold, Earth is Just Right*
The Academy (retirement community), Boulder, Colorado
- Aug. 2016 *Do Habitable Worlds Require Magnetic Fields?*
Promoted to "TED talk" at the TED.com website, ~1 million views.
- Apr. 2016 *CU: A Leader in Space and Teaching*
CU Admitted Students Day, Boulder, Colorado
- Mar. 2016 *Update on CU's MAVEN Mission*
CU Scoop, Boulder, Colorado
- Jan. 2016 *CUs MAVEN Mission to Mars: Update on MAVEN*
CU Advocacy Day at Colorado State Capitol, Denver, Colorado

- Sept.2015 *Do Habitable Worlds Require Magnetic Fields?*
TEDx Boulder, Colorado
- July 2015 *What happened to the ancient Martian atmosphere?*
Western Alliance Conference K-12 Science Teachers
- July 2015 *What happened to the ancient Martian atmosphere?*
Lunar and Planetary Institute “Mars Through Time” professional
development program for high school teachers
- May 2015 *CU’s MAVEN Mission*
Boulder Alumni Chapter: Fiske Planetarium, Boulder, Colorado
- May 2015 *Bubbles in Space*
Boulder Bubble Day, Boulder, Colorado
- Mar. 2015 *Update on CU’s MAVEN Mission*
CU Scoop, Boulder, Colorado
- Nov. 2014 *An Insider’s Look: CU Boulder and the Red Planet*
eTown Hall, Boulder, Colorado
- Sept. 2014 *MAVEN and the Mystery of the Martian Climate*
NASA JPL Museum Alliance and Solar System Ambassadors
- Aug. 2014 *Total Recall and Terraforming Mars*
Science on Screen at Boulder Dairy Center for the Arts, Boulder, Colorado
- Aug. 2014 *MAVEN: CU’s Mission to Mars*
CU Lunch and Learn for Denver Metro Alumni Chapter
- June 2014 *MAVEN: CU’s Mission to Mars*
Denver – (CU Chancellor’s Tour of Colorado)
- June 2014 *MAVEN: CU’s Mission to Mars*
Colorado Springs – (CU Chancellor’s Tour of Colorado)
- June 2014 *MAVEN: CU’s Mission to Mars*
Pueblo – (CU Chancellor’s Tour of Colorado)
- June 2014 *MAVEN: CU’s Mission to Mars*
Durango – (CU Chancellor’s Tour of Colorado)
- June 2014 *MAVEN: CU’s Mission to Mars*
Grand Junction – (CU Chancellor’s Tour of Colorado)
- June 2014 *MAVEN: CU’s Mission to Mars*
Carbondale – (CU Chancellor’s Tour of Colorado)
- June 2014 *MAVEN: CU’s Mission to Mars*
Vail – (CU Chancellor’s Tour of Colorado)
- Apr. 2014 *Was Ancient Mars Earth-like?*
CU Seminar, Boulder, Colorado

- Mar. 2014 *The MAVEN Mission to Mars*
The Academy (Retirement community in Boulder)
- Mar. 2014 *Was Ancient Mars Earth-like?*
Fiske Planetarium, CU Boulder, Colorado
- Nov. 2013 *Post-Launch MAVEN Briefing* (Panelist)
Hosted by the Denver Museum of Nature and Science, Cape Canaveral, Florida
- Oct. 2013 *Was Ancient Mars Earth-like?*
Chautauqua Space Series, Boulder, Colorado
- Oct. 2013 *The 2013 MAVEN Mission to Mars*
University of Colorado College of Arts and Sciences Leadership Society, Boulder, Colorado
- Oct. 2013 *The 2013 MAVEN Mission to Mars*
University of Colorado 50th Reunion and Golden Anniversary Club Dinner, Boulder, Colorado
- Sept. 2013 *The 2013 MAVEN Mission to Mars*
Holly Creek Retirement Community, Centennial, Colorado
- Aug. 2013 *Mars Exploration: The Next Steps* (Panelist)
16th Mars Society Convention, Boulder, Colorado
- June 2013 *The 2013 MAVEN Mission to Mars*
CU Director's Club, Vail, Colorado
- Feb. 2013 *Was Ancient Mars Earth-like*
CU in the Community, Trinidad State Junior College, Trinidad, Colorado
- Dec. 2012 *The 2013 MAVEN Mission to Mars*
Denver Space Society, Colorado
- Aug. 2012 *The Mars Science Laboratory*
CU Fiske Planetarium, Boulder, Colorado
- Aug. 2012 *The Mars Science Laboratory*
MSL Public Event at LASP, Boulder, Colorado
- Feb. 2012 *The Disappearing Martian Atmosphere*
CU SEDS, Boulder, Colorado
- Nov. 2010 *Mars's Lumpy Bumpy Neato Magneto (Sphero)*
Nerd Nite San Francisco, California
- Oct. 2006 *Life in the Solar System*
Berkeley City Commons Club, California
- Aug. 2003 *Invisible Mars: More than a Big Red Rock*
Mars Night at Fiske Planetarium, CU Boulder, Boulder, Colorado

Courses Taught	(at CU Boulder unless otherwise specified)
Fall 2023	ASTR 4840 – <i>Independent Study</i> 1 credit; 1 student
Spring 2023	ASTR/ATOC 3720 – <i>Planets and Their Atmospheres</i> 3 credits; 109 students
Spring 2023	ASTR 4840 – <i>Independent Study</i> 3 credits; 1 student
Fall 2022	ASTR 1030 – <i>Accelerated Introductory Astronomy 1</i> 4 credits; 130 students
Fall 2022	ASTR 4840 – <i>Independent Study</i> 2 credits; 1 student
Spring 2022	ASTR 1010 – <i>Introductory Astronomy 1</i> 4 credits; 211 students
Spring 2022	ASTR 4840 – <i>Independent Study</i> 2 credits; 1 student
Spring 2021	ASTR/ATOC 3720 – <i>Planets and Their Atmospheres (Recitations)</i> 4 sections; 108 students
Spring 2021	ASTR 4840 – <i>Independent Study</i> 4 total credits; 2 students
Fall 2020	ASTR 3750 – <i>Planets, Moons, and Rings (Recitations)</i> 4 sections; 98 students
Fall 2020	ASTR/GEOL 5835 – <i>Seminar in Planetary Science</i> 1 credit; 17 students
Spring 2020	ASTR/ATOC 3720 – <i>Planets and Their Atmospheres</i> 3 credits; 105 students
Spring 2020	ASTR 4840 – <i>Independent Study</i> 3 credits; 1 student
Spring 2019	Graduate Seminar Course at U. Tokyo: <i>Martian Climate Evolution</i> 1 credit; 6 students; seven 90-minute lectures over 3 days
Fall 2019	FYSM 1000 – <i>The Science of Science Fiction Movies</i> 3 credits; 20 students
Fall 2018	ASTR 4840 – <i>Independent Study</i> 3 credits; 1 student
Spring 2018	ASTR 4840 – <i>Independent Study</i> 3 total credits; 2 students
Fall 2017	ASTR 1030 – <i>Accelerated Introductory Astronomy 1</i>

	4 credits; 114 students
Fall 2017	ASTR 4840 – <i>Independent Study</i> 3 credits; 1 student
Spring 2017	FYSM 1000 – <i>The Science of Science Fiction Movies</i> 3 credits; 20 students
Spring 2017	ASTR/ATOC 3720 – <i>Planets and Their Atmospheres</i> 3 credits; 110 students
Fall 2016	ASTR 3750 – <i>Planets, Moons, and Rings</i> 3 credits; 105 students
Summer 2016	ASTR 4840 – <i>Independent Study</i> 4 total credits; 2 students
Spring 2016	ASTR 5550 – <i>Observations and Statistics</i> 3 credits; 9 students
Fall 2015	ASTR 1030 – <i>Accelerated Introductory Astronomy 1</i> 4 credits; 117 students
Fall 2015	ASTR 4840 – <i>Independent Study</i> 1 credit; 1 student
Fall 2014	ASTR 1010 – <i>Introductory Astronomy 1</i> 4 credits; 207 students
Spring 2014	ASTR 5550 – <i>Observations and Statistics</i> 3 credits; 12 students
Spring 2014	ASTR 4840 – <i>Independent Study</i> 3 credits; 1 student
Fall 2013	ASTR 1000 – <i>The Solar System</i> 3 credits; 207 students
Spring 2013	ASTR 1000 – <i>The Solar System</i> 3 credits; 206 students
Spring 2012	ASTR/ATOC 3720 – <i>Planets and Their Atmospheres</i> 3 credits; 47 students
Fall 2011	ASTR 1000 – <i>The Solar System</i> 3 credits; 210 students
Fall 2002	ASTR 1110 – <i>General Astronomy: The Solar System</i> 3 credits; 327 students

Student and Postdoc Supervision (at CU unless otherwise specified)

Postdocs

2022 Rebecca Jolitz
LASP

2021 - Neesha Schnepf
LASP

2021 - Krishnaprasad (KP) Chirrakil
EMM - I coordinate the program, someone else supervises KP

2021 - Sam Atwood
EMM - I coordinate the program, someone else supervises Sam

2021 - Anton Fernando
EMM - I coordinate the program, someone else supervises Anton

2019 Hilary Egan
LASP

2018 - 2020 Robin Ramstad
LASP

2015, 2016 Kei Masunaga
visiting from U. Tokyo

2014 - 2016 Yaxue Dong
LASP - co-supervised with Xiaohua Fang

2013 - 2014 Riku Jarvinen
visiting from Finnish Meteorological Institute

2013 - 2014 Tess McEnulty

2009 - 2011 Demet Ulusen
UC Berkeley - co-supervised with Janet Luhmann

Graduate Students

2022 - Michael Rothman
CU APS

2022 - Mikayla Huffman
CU APS

2022 - Judit Bergfalk
CU APS

2022 - Josephine Johnson - M.S. expected Dec 2023
CU Aerospace Engineering

2022 - Parker Hinton
CU APS - advised after Comps II

2021 Rachel Bowyer
CU APS - advised after Comps II

2019 - 2020	Daniel Everding - Ph.D. 2020 CU APS - advised 1 chapter of their dissertation
2016 - 2019	Hilary Egan - Ph.D. 2019 CU APS - advised after Comps II
2015 - 2022	Rebecca Jolitz - Ph.D. 2022 CU Physics
2015 - 2020	Tristan Weber - Ph.D. 2020 CU APS
2013 - 2016	Caitlin Caldwell (née Heath) - M.S. 2016 CU APS - advised through Comps II
2012, 15, 16	Kazunari Matsunaga Visited LASP from U. Nagoya (Japan)
2012	Takuya Hara Visited LASP from U. Nagoya (Japan)
2011 - 2014	Karan Molaverdikhani - M.S. 2014 CU APS - advised through Comps II
2011 - 2014	Will Ames - M.S. 2014 CU Physics - advised through Comps II
2010	Thea Falkenberg Visited UC Berkeley from DTU (Denmark)
2008	Niklas Edberg Visited UC Berkeley from U. Leicester (UK)
2006 - 2007	Ella Carlsson Visited UC Berkeley from IRF Sweden - co-supervised with J. Luhmann

Undergraduate Students

2023 -	Shelby Opp (CU APS)
2023 -	Ebenezer Solomon (CU CHEM) - McNair Scholar
2022 -	Xinrun Du (CU PHYS)
2022	Alia AlMansoori (UAE) - Summer REU student
2022	William Solorio (CU PHYS) - Summer REU student co-supervised with A. Merkel
2021 - 2023	Jay Cessna (CU APS) - now Postbac researcher at LASP
2021	Jade Fitzgerald (UNH) - Summer REU student
2020 - 2022	Josephine Johnson (CU ASEN) - now completing M.S. in CU ASEN

2020 - 2021 Ferris Bosworth (CU APS) - now at NASA GSFC
 2020 - 2021 Maddie Pettine (CU APS) - now in grad school at Cornell
 2020 Dhabya AlFalasi (UAE) - summer REU student
 2019 Elysia Lucas (CU APPM) - now at CU CIRES
 2018 - 2019 Robby Stevens (CU APS) - Now Ph.D. student in CU APS
 2018 - 2019 Jeremy Osowski (CU APS) - now at Fiske Planetarium
 2018 Hamda Al Khoori (UAE) - Summer REU student
 2017 Stephanie Panoncillo (CU APS) - now RA at UNC school of medicine
 2016 - 2018 Iris Altman (CU ASEN) - 2019 Brooke Owens Fellow
 2016 - 2017 Jacob Hermann (CU APS)
 2016 - 2017 Gwen Hanley (CU APS) - Ph.D. from UC Berkeley, now research scientist
 2016 Danny Thompson (CU CSEN) - now software developer at Cigna
 2015 - 2017 Charlie Bowers (CU APS) - Ph.D. from U. Mich, now postdoc at DIAS
 2012 - 2013 Fatmah AlKindi (UAE) - Summer REU student
 2014 - 2015 Kier Fortier (CU ASEN) - Now Managing Director at Exolaunch
 2012 - 2013 Keita Linden (CU APS)
 2009 - 2011 Justin Briggs (UC Berkeley) - Honor's Thesis, Stanford grad school

High School Students

2023 - Luka Kosovic
 2023 - Helen Scarborough
 2016 - 2017 Kate Richardson - now in grad school for Physics at M.I.T.
 2012 - 2014 Elise Steichen - went to undergraduate at St. Olaf College
 2009 - 2011 Sebastian Fisher - went to undergraduate at M.I.T.

Student Examination Committees (at CU unless otherwise specified)

Ph.D. Thesis Committee

2023 Samantha Walker (APS)
 2023 Perianne Johnson (APS)
 2022 Chris "Gilly Gilbert (APS)
 2022 Noora AlSaeed (APS)

2021 Rebecca Jolitz (Physics) - research advisor
2021 Kerry Hensley (Boston University) - external member
2021 Jessica Libby-Roberts (APS)
2021 Heather Wenke (APS)
2020 Daniel Everding (APS) - secondary research advisor
2020 Ryan Orvedahl (APS)
2020 Tristan Weber (APS) - research advisor
2020 Drake Ranquist (APS)
2019 Hilary Egan (APS) - research advisor
2019 Anna Mittelholz (U. British Columbia) - external examiner
2017 Marek Slipski (APS/Geophysics)
2017 Robin Ramstad (Swedish Institute of Space Physics) - thesis opponent
2017 Morgan Rehnberg (APS)
2017 Matteo Crismani (APS)
2017 Parke Lloyd (APS)
2016 Bryan Holler (APS)
2016 Chris Fowler (APS)
2015 Chuan Qin (APS)
2015 Mike Chaffin (APS)
2014 Timothy Ellsworth-Bowers (APS)
2012 Richard Urata (APS)
2012 Jianfeng Xie (Physics)
2012 Addie Dove (APS)
2011 Monica Hoke (APS)

Comps III

2012 Chuan Qin (Physics)

Comps II / Masters

2023 Robby Stevens (APS)

2023	Pat Wachiraphan (APS) - Impartial Chair
2022	Sajal Gupta (APS) - Impartial Chair
2021	Amanda Alexander (GEOL)
2021	Isaiah Tristan (APS) - Impartial Chair
2021	Heshani Pieris (APS) - Impartial Chair
2021	Kya Sorli (APS)
2021	Aimee Schechter (APS)
2020	Katerina Stergiopoulou (U. Uppsala, Sweden) - Licentiate external examiner
2020	Rachel Bowyer (APS) - Impartial Chair
2020	Jonathan Stauffer (APS) - Impartial Chair
2020	Fernando Cruz-Aguirre (APS)
2020	Hoor Al Mazmi (ASEN) - M.S.
2019	Andrew Wilcoski (APS) - Impartial Chair
2019	Noora Al Saeed (APS)
2019	Eryn Cangi (APS)
2019	Denis Tilipman (APS)
2018	Arika Egan (APS)
2018	Samantha Walker (APS) - Impartial Chair
2018	Ryan Diaz-Perez (APS) - Impartial Chair
2018	Jennie Paine (APS)
2018	Heather Wernke (APS)
2018	Rebecca Jolitz (Physics) - research advisor
2017	Kyle Connour (APS)
2017	Chris "Gilly" Gilbert (APS) - Impartial Chair
2017	Aaron Stemo (APS)
2016	Piyush Agrawal (APS) - Impartial Chair
2016	Sam Van Kooten (APS) - Impartial Chair
2016	Evan Anders (APS) - Impartial Chair
2015	Dan Gole (APS)

2015	Rebecca Nevin (APS) - Impartial Chair
2015	Adalyn Fyhrie (APS)
2015	Marek Slipski (Geophysics) - Impartial Chair
2014	Bryan Holler (APS)
2014	Alexandra Truebenbach (APS)
2014	Caitlin Caldwell (née Heath) (APS) - research advisor
2014	Keri Hoadley (APS)
2013	Jennifer Kulow (APS)
2013	Chris Fowler (APS)
2012	Karan Molverdikhani (APS) - research advisor
2012	Matthew McJunkin (APS)
2012	Mike Chaffin (APS)

Honors Thesis

2023	Jay Cessna (APS) - thesis advisor
2023	Ben Johnston (APS)
2020	Ferris Bosworth (APS) - thesis advisor
2020	Maddie Pettine (APS) - thesis advisor
2019	Dylan Gatlin (APS) - titular thesis advisor
2019	Maya Yanez (APS) - thesis advisor
2018	Odysseus Quarles (APS) - thesis advisor
2017	Laura Cummings (APS) - thesis advisor
2017	Kerrie Dochen (Physics)
2013	Bryan Barnhart (Physics)

Service within the University

2023 - 2026	APS Department Chair
2022 - 2026	College of Arts and Sciences Natural Sciences Council
2022 - 2023	APS FDAP Faculty Search Committee (briefly served as Chair)
2021 - 2023	APS TA Coordinator

2020	Chair: LASP Promotion Evaluation Committee for Daniel Vech
2021 - 2022	APS Strategic Hiring Plan committee
2020 - 2022	APS Lead Mentor
2020 - 2021	Chair: APS Hiring Principles Committee
2020 - 2021	Chair: APS Undergraduate Curriculum and Concerns Committee
2020	College of Arts and Sciences Committee on Best Teaching Practices
2020	Chair: APS Fall 2020 (Pandemic) Course Scheduling Committee
2020	Chair: LASP Promotion Evaluation Committee for Robin Ramstad
2019 - 2021	APS Executive Committee
2019 - 2021	APS Undergraduate Associate Chair
2019	FTEP Seminar on "Building Student Rapport"
2019	APS Search Committee for Business Manager
2019	APS Interview Committee for possible special tenure-track hire
2019	APS PUEC for Prof. Steve Cranmer
2019	Chair: LASP Promotion Evaluation Committee for Wilson Cauley
2019	Chair: LASP Promotion Evaluation Committee for Xiangning Chu
2018 - 2020	FTEP Faculty Associate
2018 - 2019	Chair: LASP Promotion Evaluation Committee for Xiaohua Fang
2018	Chair: LASP Science Review panel for ESCAPE SMEX mission concept
2018	Chair: LASP Science Review panel for COMPASS DISCOVERY mission concept
2018	Faculty sponsor for URSA (Under-Represented Students in Astronomy)
2018	APS Faculty Hire Set-up Committee (developed rubrics, best-practices)
2017 - 2018	APS Graduate Concerns Committee
2016 - 2018	Faculty Teaching Excellence Program Workshop Co-Leader on "Teaching Large Classes"
2016 - 2017	APS Academic Review and Planning Department Committee
2016 - 2017	APS Planetary Faculty Search Committee
2016, 2017	LASP Research Associate Evaluations Committee

2016	Coordinated LASP ARPAC response on undergraduate education
2016	LASP Promotion Evaluation Committee Chair for Yaxue Dong
2015 - 2020	CU Geophysics PhD Program Committee
2015 - 2016	APS Faculty Search Committee
2014 - 2016	APS Department Executive Committee
2014 - 2015	LASP Office of Communications and Outreach Director Search Committee
2014, 2015	LASP Faculty Performance Evaluation Committee
2014	CU Chancellor's Tour faculty speaker
2014	LASP Office of Communications and Outreach Evaluation Committee
2014	LASP Promotion Evaluation Committee Chair for Mikki Osterloo
2013 – 2017	APS Department Lead Undergraduate Mentor
2013	LASP Promotion Evaluation Committee Chair for Sean Hsu
2013	APS Department Strategic Planning Committee
2012 - 2013	LASP Education and Public Outreach Advisory Committee
2012 - 2013	APS Department Colloquium Organizer
2011 - 2014	APS Department Graduate Admissions Committee
2011 –	APS Department Undergraduate Mentor

Additional Outreach Activities

Ongoing	Print, radio, podcast, and television press interviews. At least 34 since arriving at CU (local, state, national, and international), most about MAVEN and/or the Martian climate and EMM. Highlights include NPR's "Science Friday", NY Times, BBC, the Atlantic, BBC Radio, The John Batchelor Show, Denver Post, 9 News, Daily Camera, Colorado Public Matters, Sky and Telescope
2022	Presentation to U. Alabama Physics and Astronomy Club on "The Science of Science Fiction"
2019 - 2020	Voice of Cosmo Nutt character created by Worker Studio Animation. I record ~60 second snippets about Mars science that are turned into YouTube videos with an android character.
2018, 2019	Presentation to Bear Creek Elementary 4th grade at Fiske Planetarium
2016	Conducted 1-week short course in Planetary Science, with Bruce Jakosky, for employees of the United Arab Emirates Maktoum Bin Rashed Space Center

- 2016 Present MAVEN results at CU Advocacy Day
- 2016 Gave NASA “Hyperwall” presentation at the European Geophysical Union General Assembly
- 2016 Presented MAVEN results at CU Scoop event at Fiske Planetarium
- 2015 CBS Facebook Hangout and Reddit AMA, both for MAVEN results
- 2015 Participated in NASA Press Conference about MAVEN results
- 2015 Participated in workshop for science teachers in the United Arab Emirates, organized by the Mohammed Bin Rashid Space Center
- 2014 - 2015 Panelist and presenter at two New Media Workshops for MAVEN
- 2013 - 2017 Give presentations about Mars and/or MAVEN at teacher workshops sponsored by CU LASP, MAVEN, and the American Astronomical Society Division for Planetary Sciences. 11 talks given so far (none listed below), starting in 2013.
- 2013 - 2016 Visit K-12 classrooms or school groups to talk about planets, Mars, or MAVEN. At least 8 classrooms or schools visited since arrival at CU.
- 2013 Science Advisor for “Red Planet” curriculum development pertaining to Mars atmospheric evolution, for K-12 teachers (sponsored by MAVEN)
- 2011 - 2012 Science Advisor (1 of 2) for “Science on a Sphere” spherical projection program development related to the MAVEN mission
- 2009 - 2012 Constructed slide sets for the American Astronomical Society Division for Planetary Sciences on recent discoveries in planetary science, for use by college and high school astronomy instructors in their classrooms
- 2009 - 2011 Science Advisor (1 of 2) for construction of 3D wire magnetic field models of Mars and Venus, and development of three “Science on a Sphere” presentations geared toward K-12 students about planetary magnetic fields