George (譲治) D. McDonald
| Curriculum Vitae

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Last Update: January 2023

Planetary scientist; surface-atmosphere interactions and atmospheric evolution

Professional Appointments

Postdoctoral Scholar (Advisor: Dr. Josef Dufek) **Eugene, OR**
University of Oregon, Dept. of Earth Sciences *2022-Present*

Postdoctoral Scholar (Advisor: Dr. Luju Ojha)
Rutgers University, Dept. of Earth & Planetary Sciences (EPS) *2020-2022*

Founder/Programmer **Atlanta, GA**
15hr automations, LLC *2019-2021*

Senior Performance Analyst
Georgia State Road & Tollway Authority *2018-2019*

National Defense Science & Engineering Grad. Fellow (Advisor: Dr. James Wray)
Georgia Institute of Technology, School of Earth & Atmo. Sciences (EAS) *2014-2018*

Education

Ph.D.: Planetary Science, Georgia Institute of Technology, Aug 2018

B.A.: Physics, Cornell University, May 2014

Exchange Student: 国際基督教大学 (Intn'l Christian University. Tokyo, Japan), 2011-2012

Awards

NDSEG/DoD Fellow (2015-2018)
Kavli Summer Astrophysics Fellow (2016)
GT EAS Symp. Best Pres. (2016, 2015)
DPS Hartmann Student Travel Grant (2015)
LPI Career Development Award (2015)
GSA Stephen E. Dwornik Award (2014)
German Consulate NYC Book Award (2011)
Cornell Dean's List (2010)

Peer-reviewed Publications

h-index: 6, **i10-index:** 6, **Citations:** 183 (Google Scholar), **ADS Link**. **Format:** [#] [# 1st author]

[10] [5]: **G.D. McDonald**, L. Ojha. Spatially variable crater morphology on the dwarf planet Haumea. *[Submitted].*

[9]: L. Ojha, B. Troncone, J. Buffo, B. Journaux, **G.D. McDonald**. Liquid Water on Cold Exo-Earths via Basal Melting of Ice Sheets. *[Revised].*

[8] [4]: **G.D. McDonald**, J.S. Méndez Harper, L. Ojha, P. Corlies, J. Dufek, R.C. Ewing, L. Kerber. Aeolian sediment transport on Io from lava-frost interactions. ***Nature Communications*** 13:2076, 2022. https://doi.org/10.1038/s41467-022-29682-x *(1 citation)*

[7]: J.S. Méndez Harper, J. Dufek, **G.D. McDonald**. Detection of spark discharges in an agitated Mars dust simulant isolated from foreign surfaces. *Icarus* 357, 114268, 2021. https://10.1016/j.icarus.2020.114268

[6] [3]: P. Corlies*, **G.D. McDonald***, A.G. Hayes, J.J. Wray, M. Adamkovics, M.J. Malaska, M.L. Cable, J.D. Hofgartner, S. Hörst, L.R. Liuzzo, J.J. Buffo, R.D. Lorenz, E.P. Turtle. Transmission windows in Titan's lower troposhere: Implications for infrared spectrometers aboard future aerial and surface missions. *Icarus* 357, 114228, 2021. https://doi.org/10.1016/j.icarus.2020.114228 ***Authors contributed equally** *(4 citations)*

[5] [2]: **G.D. McDonald**, L. Kreidberg, E. Lopez. The sub-Neptune desert and its dependence on stellar type: Controlled by lifetime X-ray irradiation, *The Astrophysical Journal* 876 (1), 22, 2019. https://doi.org/10.3847/1538-4357/ab1095 *(34 citations)*

[4]: L. Ojha, M. Chojnacki, **G.D. McDonald**, A. Shumway, M.J. Wolff, M.D. Smith, A.S. McEwen, K. Ferrier, C. Huber, J.J. Wray, A. Toigo. Seasonal slumps in Juventae Chasma, Mars, *Journal of Geophysical Research: Planets* 122, 2017. https://doi.org/10.1002/2017JE005375

[3]: J.S. Méndez Harper, **G.D. McDonald**, J. Dufek, M.J. Malaska, D.M. Burr, A.G. Hayes, J. McAdams, J.J. Wray. Electrification of sand on Titan and its influence on sediment transport, ***Nature Geoscience*** 10, 260-265, 2017. https://dx.doi.org/10.1038/ngeo2921

[2] [1]: **G.D. McDonald**, A.G. Hayes, R.C. Ewing, J.M. Lora, C.E. Newman, T. Tokano, A. Lucas, A. Soto, G. Chen. Variations in Titan's dune orientations as a result of orbital forcing, *Icarus* 270, 197-210, 2016. https://dx.doi.org/10.1016/j.icarus.2015.11.036 *(19 citations)*

[1]: R.C. Ewing, **G.D. McDonald**, A.G. Hayes. Multi-spatial analysis of aeolian dune-field patterns, *Geomorphology* 240, 44-53, 2015. https://doi.org/10.1016/j.geomorph.2014.11.023

Seminars

U Oregon: Department Seminar, Dept. of Earth Sciences *2022*
Fernbank: At-Home Planetarium Show, Fernbank Science Center, Online *2022*
Rutgers: Department Seminar, School of EPS, Online *2022, 2020*
Georgia Tech: Geophysics Seminar, School of EAS, Atlanta GA *2018, 2016, 2015*
NASA Ames: Space Science & Astrobiology Division Seminar, Moffett Field CA *2016*
UC Santa Cruz: Seminar, Kavli Summer Program in Astrophysics, Santa Cruz CA *2016*
Georgia Tech: Planetary Seminar, School of EAS, Atlanta GA *2016*
WAS: Monthly Lecture Series, Westport Astronomical Society, Westport CT *2016, 2014*
Cornell: Planetary Lunch Seminar, Dept. of Astronomy, Ithaca NY *2013, 2014*

Research Funding Proposals

Role: Science PI. Observing the impacts of local sources and sinks on atmospheric water vapor.
NASA Mars Data Analysis Program *2022: Submitted; 2021: Not Funded*

Teaching Experience

ERTH 399: 'Building an Atmosphere', University of Oregon, 2 Guest Lectures *Spring 2022*
EAS 1601: 'Habitable Planet', Georgia Tech, Teaching Assistant *Spring 2015*

Media Coverage

News Media: First-authored research covered in: *Forbes, Yahoo News, Space.com* *2022*
Documentary: Interviewed and appeared in BBC's *Goodbye Cassini* *2017*

Public Outreach/Education

Organizer: Martian New Years' Celebrations *2019,2017*
Volunteer: Planetary Society, Georgia Tech Chapter *2015-2017*
Co-Facilitator: Focus for Teens, 4-H Career Explorations: Earth & the Solar System *July 2014*
Volunteer: Cornell Spacecraft Planetary Imaging Facility, Outreach Activities *2013-2014*

Professional Activities

Facilitator: Planetary Journal Club, Dept. of Earth Sciences, University of Oregon *Fall 2022*
Co-Facilitator: Planetary Seminar, School of EAS, Georgia Tech *2015-2017*
Secretary: Planetary Society, Georgia Tech Chapter *2014-2015*
Member: Department Seminar Committee, School of EAS, Georgia Tech *2014-2015*

Other Activities

Conversation Partner: For Students of JPN 203 & 303, University of Oregon, Weekly *2022*

Conference Presentations *(first-authored, 3 most recent)*

[3]: **G.D. McDonald**, L. Ojha (Dec 2022). Spatially variable crater morphology on the dwarf planet Haumea. *2022 American Geophysical Union Annual Meeting* (Accepted), Chicago IL.

[2]: **G.D. McDonald**, J.S. Méndez Harper, L. Ojha, P. Corlies, J. Dufek, R.C. Ewing, L. Kerber (Dec 2021). Aeolian sediment transport on Io from lava-frost interactions. *2021 American Geophysical Union Annual Meeting* #EP12A-04, New Orleans LA.

[1]: **G.D. McDonald**, L. Kreidberg, E. Lopez (Oct. 2017). Planet occurrence in the sub-Neptune photoevaporation desert. *49th AAS Division for Planetary Sciences Meeting* #300.06, Provo UT.

Languages

English (Native)
Deutsch (B2)
Español (A2)
日本語 (Japanese, Native)
Français (B1)

References

Prof. Luju Ojha
(Collaborator, Postdoc Advisor)
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Dr. Laura Kreidberg
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Dr. Claire E. Newman
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Prof. Alex G. Hayes
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Dr. Eric D. Lopez
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