

# George D. McDonald

## | Curriculum Vitae

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*Planetary scientist with a focus on atmospheric radiation.*

### Professional Appointments

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**National Defense Science & Engineering Graduate Fellow** **Atlanta GA**  
*Georgia Institute of Technology, School of Earth & Atmo. Sciences (EAS), PhD Candidate* 2014-Present  
Advisor: James Wray

**Student Researcher** **Ithaca NY**  
*Cornell University, Department of Astronomy, Undergraduate research for credit* 2013-2014  
Advisor: Alex Hayes

### Education

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

### Awards

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NDSEG/DoD Fellow (2015-Present)

USMS Swimming Dixie Zone Top 10 (2016)

Kavli Summer Astrophysics Fellow (2016)

GT EAS Symp. Best Presentation (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

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[3]: J.S. Mendez 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. <http://dx.doi.org/10.1038/ngeo2921>

[2]: **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. <http://dx.doi.org/10.1016/j.icarus.2015.11.036>

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

## Seminars

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<b>Georgia Tech:</b> Planetary Seminar, School of EAS, Atlanta GA	Oct. 2016
<b>NASA Ames:</b> Space Science & Astrobiology Division Seminar, Moffett Field CA	Aug. 2016
<b>UC Santa Cruz:</b> Seminar, Kavli Summer Program in Astrophysics, Santa Cruz CA	July 2016
<b>Georgia Tech:</b> Geophysics Seminar, School of EAS, Atlanta GA	2016, 2015
<b>WAS:</b> Monthly Lecture Series, Westport Astronomical Society, Westport CT	2016, 2014
<b>Cornell:</b> Planetary Lunch Seminar, Dept. of Astronomy, Ithaca NY	2013, 2014

## Conference Presentations *(first-authored, 5 most recent)*

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[5]: **G.D. McDonald**, L. Ojha, T.H. McConnochie, M.D. Smith, J.J. Wray (Jan 2017). Water vapor retrievals over north polar craters with ice mounds: Constraints on sublimation rates. *6th Mars Atmosphere Modelling and Observation Workshop*, Granada Spain. [Accepted].

[4]: **G.D. McDonald**, L. Ojha, T.H. McConnochie, M.D. Smith, J.J. Wray (Dec 2016). Constraining the sublimation rate of the Louth crater ice mound with observations of atmospheric water vapor in the thermal infrared. *2016 American Geophysical Union Annual Meeting #P21B-2090*, San Francisco CA. [Accepted].

[3]: **G.D. McDonald**, L. Kreidberg, E. Lopez (Oct. 2016). Investigation of the sub-Neptune photoevaporation desert for M-dwarfs to Sun-like stars. *48<sup>th</sup> AAS Division for Planetary Sciences Meeting & 11<sup>th</sup> European Planetary Science Congress #122.33*, Pasadena CA.

[2]: **G.D. McDonald\***, P. Corlies\*, J.J. Wray, J.D. Hofgartner, S.M. Hörst, A.G. Hayes, L.R. Liuzzo, J. Buffo (Nov. 2015). Transmission windows in Titan's lower troposphere: Implications for IR spectrometers aboard future aerial and surface missions. *47<sup>th</sup> AAS Division for Planetary Sciences Meeting #310.12*, Washington DC. \*Authors contributed equally

[1]: **G.D. McDonald\***, P. Corlies\*, J.J. Wray, S.M. Hörst, J.D. Hofgartner, L.R. Liuzzo, J. Buffo, A.G. Hayes (March 2015). Altitude-dependence of Titan's Methane Transmission Windows: Informing Future Missions. *46<sup>th</sup> Lunar and Planetary Science Conference #2307*, The Woodlands TX. \*Authors contributed equally

## Teaching Experience

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<b>EAS 1601:</b> 'Habitable Planet', Georgia Tech, Teaching Assistant	Spring 2015
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## Professional Activities

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<b>Secretary:</b> Planetary Society, Georgia Tech Chapter	2014-2015
<b>Member:</b> Department Seminar Committee, School of EAS, Georgia Tech	2014-2015

## Public Outreach/Education

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<b>Co-Facilitator:</b> Focus for Teens, 4-H Career Explorations: Earth & the Solar System	July 2014
<b>Volunteer:</b> Cornell Spacecraft Planetary Imaging Facility, Outreach Activities	2013-2014

## Memberships

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American Astronomical Society  
American Geophysical Union

Westport Astronomical Society

## References

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**Professor James J. Wray**  
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**Dr. Laura Kreidberg**  
(Collaborator)  
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**Professor Alex G. Hayes**  
(Collaborator,  
former Undergraduate Advisor)  
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