

SHANNON MACKENZIE

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EDUCATION

University of Idaho

Expected: Dec 2017

PhD. in Physics

University of Idaho

August 2015

M.Sc. in Physics

University of Louisville, Kentucky

May 2012

B.S. in Physics

PUBLICATIONS

S.M. MacKenzie and nineteen coauthors, “*THEO Concept Mission: Testing the Habitability of Enceladus’s Ocean*”, 2016, *Advances in Space Research*, doi:10.1016/j.asr.2016.05.037

S.M. MacKenzie, J.W. Barnes, “*Compositional similarities and distinctions between Titan’s Evaporitic Terrains*”, 2016, *Astrophysical Journal*, 821, 17

D. Cordier, T. Cornet, J. W. Barnes, **S.M. MacKenzie**, T. Le Bahers, D. Nna-Mvondo, P. Rannou, A. G. Ferreira, “*Structure of Titan’s evaporites*”, 2016, *Icarus* 270, 41-56

vspace1mm

C.D. Neish, J.W. Barnes, C. Sotin, **S.M. MacKenzie**, J.M. Soderblom, S. Le Moulic, R.L. Kirk, B.W. Stiles, M.J. Malaska, A. Le Gall, R. H. Brown, K. H. Baines, B. J. Buratti, R. N. Clark, P. D. Nicholson, “*Spectral properties of Titan’s impact craters imply chemical weathering of its surface*”, 2015, *Icarus*, 42, 3746-3754

G. Vixie, J. W. Barnes, B. Jackson, S. Rodriguez, S. Le Moulic, C. Sotin, **S.M. MacKenzie**, P. Wilson, “*Possible temperate lakes on Titan*”, 2015, *Icarus*, 257, 313-323

S.M. MacKenzie, J.W. Barnes, R.H. Brown, C. Sotin, S. Le Moulic, S. Rodriguez, B. Buratti, R. Clark, K. H. Baines, P.D. Nicholson, “*Evidence of Titan’s Climate History from Evaporite Distribution*”, 2014, *Icarus* 243, 191-207

A. Pipino, T. Szabo, E. Pierpaoli, **S.M. MacKenzie**, F. Dong, “*The Properties of Brightest Cluster Galaxies in the SDSS DR6 Adaptive Matched Filter Cluster Catalogue*”, 2011, *Monthly Notices of the Royal Astronomical Society*, 417, 2817-2830

SELECT PRESENTATIONS

Titan Surface Working Group

November 2-4 2016

“Spherical Radiative Transfer in C++” (talk)

48th Meeting of the Division of Planetary Sciences

October 16-21 2016

“Compositional mapping of Titan’s North Pole with VIMS” (talk)

Outer Planets Assessment Group Meeting

August 9-12 2016

“Titan’s North Pole: Defining the Spectral Units” (poster)

International Association of Sedimentology

May 23-25 2016

“Exploring Titan’s Dynamic Surface with Evaporites” (talk)

Cassini VIMS Team Meeting

May 9-11 2016

“North Polar Mapping with VIMS” (talk)

Outer Planets Assessment Group Meeting

February 1-2 2016

“THEO Concept Mission: Testing the Habitability of Enceladus’s Ocean” (poster)

<i>47th Meeting for the Division for Planetary Science</i>	November 8-13 2015
“THEO Concept Mission: Testing the Habitability of Enceladus’s Ocean” (poster)	
<i>4th International Planetary Dunes Workshop</i>	May 19-22 2015
“The Lake-Dune Connection: Investigating Titan’s Sand Sources” (talk)	
<i>46th Meeting for the Division for Planetary Science</i>	November 9-14 2014
“Characteristics of the 5- μ m-bright spectral unit from spectral analysis of Tui Regio” (poster)	
<i>Cassini Titan Surface Meeting</i>	October 6-8 2014
“Is all 5- μ m-bright material the same?” (talk)	
<i>Titan Through Time</i>	April 8-10 2014
“Spectral Characteristics of Titan’s 5- μ m-bright Material” (poster)	
<i>45th Meeting for the Division for Planetary Science</i>	October 6-11 2013
“Evidence of Titan’s Climate History from Evaporite Distribution” (talk)	
<i>Cassini Titan Surface Meeting</i>	August 19-20 2013
“Evidence of Titan’s Climate History from Evaporite Distribution” (talk)	

FELLOWSHIPS AND GRANTS

NASA Earth and Space Science Fellowship 2014-2017	\$90,000
Leonard Halland Centennial Scholarship	\$2,056.00
Glen E. and Jean K. Nielsen Science Scholarship 2014-2015	\$1,500
Idaho Space Grant Consortium 2013 Research Fellowship	\$16,000
Barry M. Goldwater Scholarship 2011	\$5,500

HONORS AND AWARDS

<i>University of Idaho 3 Minute Thesis Competition 1st Place (April 2016)</i>	
<i>University of Idaho College of Science Innovation Showcase 3rd Place Disciplinary Science (April 2016)</i>	
<i>University of Idaho College of Science Video Competition 1st Place (April 2016)</i>	
<i>NSF Graduate Research Fellowship Program 2012 Honorable Mention</i>	
<i>University of Louisville College of Arts and Sciences Woodcock Medalist 2012</i>	
<i>University of Louisville Honors Scholar Summa Cum Laude 2012</i>	
<i>University of Louisville Department of Physics and Astronomy Graduating Senior 2012</i>	
<i>William Marshal Bullitt Award in Astronomy 2012</i>	

RELEVANT EXPERIENCE

<i>Dragonfly New Frontiers Proposal</i>	March 2016 - April 2016
<u>Co-Investigator</u> : co-wrote the science section of the proposal, created maps for landing site selection, geology science team lead	
<i>Oceanus New Frontiers Proposal</i>	May 2016 - April 2016
<u>Student collaborator</u> : assisted in the design and writing of evaporite investigation, science section of the proposal, and STM development	
<i>Field Work: Veevers Crater, Western Australia</i>	July 8-14 2016
Assisted in OSL and photographic data collection	

<i>Biosignatures of Extant Life on Ocean Worlds Workshop</i>	September 2016
Contributed to discussions and development of recommended strategy	
<i>NASA Mission Instrument Selection Panel</i>	February 2015
<u>Executive Secretary</u> responsible for recording and summarizing panel findings	
<i>Roadmap to Ocean Worlds Committee</i>	February 2016 - present
Contributed to summary document, participated in Titan documentation and discussion	
<i>University of Idaho Department of Physics</i>	August 2015 - December 2015
<u>Graduate Teaching Assistant</u> : Redesigned introductory astronomy lab, co-authored new curriculum, and obtained new equipment	
<i>Jet Propulsion Laboratory Planetary Science Summer School</i>	May- August 2015
<u>Principal Investigator</u> led the design, planning, and execution of a mock mission; presented poster at several conferences; wrote manuscript	
<i>Titan Surface Working Group Meeting</i>	September 10-12 2015
Wrote local field trip guide and assisted in meeting planning and execution	
<i>Field Work: United Arab Emirates</i>	April 20-27 2015
Assisted in OSL, GPR, and photographic data collection	
<i>University of Idaho Department of Physics</i>	August 2012 - present
<u>Graduate Research Assistant</u> : Developing spherical, 3D radiative transfer model in C++; analyzing and mapping multispectral data from the Cassini spacecraft; writing and presenting findings to journals and conferences	