Hamish Hay

Curriculum Vitae

Department of Planetary Sciences
Lunar and Planetary Laboratory
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Education

2014 - *present* | Ph.D. Planetary Science, University of Arizona, Tucson, AZ, USA

2014 - 2016 | MSc. Planetary Science, University of Arizona, Tucson, AZ, USA

2010 - 2014 | MSci. Geophysics, with first class honours, Imperial College London, UK

Publications

2019 | **Hay** and Matsuyama, *"Tides between the TRAPPIST-1 planets"*, ApJ, **875**

2019 | **Hay** and Matsuyama, *"Nonlinear tidal dissipation in the subsurface oceans of Enceladus and other icy satellites"*, Icarus, **319**, 68-85

2018 | Matsuyama, Beuthe, **Hay**, et al., *"Ocean tidal heating in icy satellites with solid shells"*, Icarus, **312**, 208-230

2017 | **Hay** and Matsuyama, *"Numerically modelling tidal dissipation with bottom drag in the oceans of Titan and Enceladus"*, Icarus, **281**, 342-356

Workshops Attended

2018 | *"Tidal heating: Lessons from Io and the Jovian system"*, Keck Institute for Space Studies, Caltech, Pasadena, CA

2018 | *"Geology and geophysics of the solar system"*, Petnica, Serbia

2018 | *"Bystander Intervention Training"*, LPSC, The Woodlands, TX

2017 | *"Icy satellite workshop"*, Hokkaido University, Sapporo, Japan

Select Presentations

2019 | Hay and Matsuyama *"Planet-planet tidal heating in the TRAPPIST-1 system"*, Oral Presentation, LPSC 50, #1980, The Woodlands, TX

2018 | Hay and Matsuyama, *"Tidal dissipation in subsurface oceans: Enceladus and other icy moons"*, Oral Presentation, AGU, Washington D.C.

2018 | Hay, Matsuyama, and Vance *"Icy Satellite Subsurface Oceans: Tidal dynamics, dissipation, and the solid shell"*, Poster Presentation, LPSC 49, #2969, The Woodlands, TX

2017 | Hay and Matsuyama, *"Ocean Tidal Dynamics and Dissipation in the Thick Shell Worlds"*, Oral Presentation, DPS, #203.11, Provo, UT

2016 | Hay and Matsuyama, *"Numerically Simulating Tidal Dissipation in the Icy Satellites"*, Poster Presentation, LPSC XLVII, #1234, The Woodlands, TX

2015 | Hay and Matsuyama, *"Modelling Tidal Dissipation in Icy Satellites: A Comparison of Linear and Quadratic Friction"*, Poster Presentation, AGU, #2061, San Francisco, CA

2014 | Hay, Collins, Davison, *"Complex Crater Collapse: A Comparison of the Block and Melosh Models of Acoustic Fluidization"*, Oral Presentation, LPSC XLV, #1938, The Woodlands, TX

Awards and Recognition

2019 | Gerard P. Kuiper Memorial Award, University of Arizona

2019 | College of Science Graduate Student Scholarship Award, University of Arizona

2019 | Theoretical Astrophysics Program small matching grant, University of Arizona

2015 - 2018 | NASA Earth and Space Sciences Fellowship (NESSF), University of Arizona

2016, 17, 19 | Galileo Scholarship Award, University of Arizona

2011 - 2014 | Faculty of Engineering Dean's List, Imperial College London, UK

2012 - 2013 | President of the Royal School of Mines Geophysics Society, Imperial College London, UK

2012 | Engineering and Physical Sciences Research Council (EPSRC) Vacation Bursary, Imperial College London, UK

2011 | Royal School of Mines (RSM) Undergaduate Research Opportunity (UROP) Bursary, Imperial College London, UK

Selected Research, Teaching, and Service Experience

2015 - *present* | Graduate Research Associate, University of Arizona
Title: *"Tidal Dissipation in the Subsurface Oceans of Icy Satellites"*
Advisor: Dr Isamu Matsuyama

2015 -*present* | Developer of Ocean Dissipation in Icy Satellites (ODIS)
A finite volume geophysical fluid dynamics code to simulate global subsurface ocean tides

2017 -*present* | Co-developer of the Department Life webpages for Lunar and Planetary Laboratory
A set of webpages to address and provide information for ally development, diversity, equity, and inclusion

2017 -*present* | Department Life committee member for the Lunar and Planetary Laboratory

2014, 2016 | Graduate Teaching Assistant, University of Arizona

2014 - *present* | Lunar and Planetary Laboratory Public Outreach, University of Arizona

2013 - 2014 | MSci Thesis, Imperial College London, UK
Title: *"Complex Crater Collapse: A Comparison of the Block and Melosh Models of Acoustic Fluidization"*
Advisor: Dr Gareth Collins

2013 | Programming Teacher for CoderDojo, London, UK

2012 | Undergraduate Research Assistant, Imperial College London, UK
Title: *"Dispersion of Smokestack Emissions using High Fidelity Modelling"*
Advisor: Dr Gerard Gorman

2011 | Undergraduate Research Assistant, Imperial College London, UK
Title: *"Tsunami Risk to the UK"*
Advisor: Dr Gareth Collins & Dr Matthew Piggott