

Joshua Martin Guerrero

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Education

Ph.D. Physics, University of Toronto, Toronto, Canada	2014 - 2020
M.Sc. Physics, University of Toronto, Toronto, Canada	2013 - 2014
B.Sc. Specialist in Physics and its Applications, University of Toronto, Toronto, Canada	2008 - 2013
B.Ed. Concurrent Teacher Education Program, University of Toronto, Toronto, Canada	2008 - 2013

Research Experience

Postdoctoral Fellow, Institute of Earth Science, Academia Sinica Taipei, Taiwan Investigated models of thermal and thermo-chemical convection with heterogeneous thermal conductivity.	October 2020 - Present
Ph.D., Department of Physics, University of Toronto Toronto, Canada Research project on the effect of core size on mantle convection with temperature dependent viscosity.	2014 - 2020
M.Sc., Department of Physics, University of Toronto Toronto, Canada Research project on the effect of core size and heating mode on the ratio of surface-to-basal heat flow.	2013 - 2014
Undergraduate Student Research Award Toronto, Canada Developed grid refinement on my 2D spherical annulus code and performed calculations using StagYY.	May - August, 2013
B.Sc., Department of Physical and Environmental Science, University of Toronto Toronto, Canada Wrote code in MATLAB to perform isoviscous mantle convection calculations in a 2D spherical annulus geometry.	January - April, 2013

Teaching Experience

Teaching Assistant , University of Toronto, Toronto, ON	September 2011 - April 2020
<ul style="list-style-type: none">Prepared and facilitated activities for problem solving sessions and lab experiments to effectively convey conceptual ideas to students.Marked weekly activities, quizzes, midterm and final exams, and managed section grades on time to keep students and course instructors well informed of progress.	
PHYA10H3 , Introduction to Physics IA, University of Toronto, TA,	Fall 2011 - 2019
PHYA21H3 , Introduction to Physics IIA, University of Toronto, TA, Summer 2012, '15; Winter 2013 - '20	
PHYA22H3 , Introduction to Physics IIA, University of Toronto, TA,	Winter 2014
PHYB21H3 , Electricity and Magnetism, University of Toronto, TA (Marker Only),	Fall 2014
PHYB56H3 , Introduction to Quantum Mechanics, University of Toronto, TA (Marker Only),	Fall 2014
PHYC50H3 , Electromagnetic Theory, University of Toronto, TA (Marker Only),	Fall 2014 - Winter 2019
PHYC54H3 , Classical Mechanics, University of Toronto, TA (Marker Only),	Winter 2015
PHYD26H3/2604H , Planetary Geophysics, University of Toronto, TA (Marker Only),	Fall 2015 - 2019
ASTB03H3 , Great Moments in Astronomy, University of Toronto, TA (Marker Only),	Winter 2013
Private Tutor ,	2014 - 2019
<ul style="list-style-type: none">Facilitated learning for Ontario Curriculum Grade 11 and 12 Physics and Grade 12 Calculus and Vectors.Developed personal lesson plans for first year university calculus	

Awards	<i>AGU/CGU Joint Assembly: Best Student Poster Award in Solid Earth Geophysics</i>	Summer 2015
	<i>AGU/CGU Joint Assembly: Outstanding Student Poster Award (OPSA)</i>	Summer 2015
	<i>NSERC: Undergraduate Student Research Award (USRA)</i>	Summer 2013

Posters and Presentations	eLightning talk at the Joint CGU - CIG Mantle and Lithosphere Dynamics Workshop	August, 2020
	ePoster at the Lunar and Planetary Science Conference	February, 2020
	Poster at the AGU Fall Meeting in San Francisco, California	December, 2019
	Oral presentation at the CGU, CSSS, and CIG Joint Annual Meeting in Niagara Falls, Canada	June, 2018
	Oral presentation at the Lunar and Planetary Science Conference in The Woodlands, Texas	February, 2018
	Poster at the Lunar and Planetary Science Conference in The Woodlands, Texas	February, 2018
	Poster at the Gordon Research Conference in South Hadley, Massachusetts	June, 2017
	Poster at the AGU Fall Meeting in San Francisco, California	December, 2016
Poster at the AGU/CGU Joint Assembly in Montreal, Quebec	May, 2015	

Publications	Guerrero, J. M., Lowman, J. P., & Tackley, P. J. (2020). <i>Did the cessation of mantle convection in Mercury's mantle increase the rate of heat loss from its core? Earth and Planetary Science Letters (in prep.)</i>
	Guerrero, J. M., Lowman, J. P., & Tackley, P. J. (2019). <i>Spurious Transitions in Convective Regime Due to Viscosity Clipping: Ramifications for Modeling Planetary Secular Cooling. Geochemistry, Geophysics, Geosystems, 20(7), 3450-3468.</i>
	Guerrero, J. M., Lowman, J. P., Deschamps, F., & Tackley, P. J. (2018). <i>The Influence of Curvature on Convection in a Temperature-Dependent Viscosity Fluid: Implications for the 2-D and 3-D Modeling of Moons. Journal of Geophysical Research: Planets, 123(7), 1863-1880.</i>

Computer Languages	Python, Mathematica, Maple, MATLAB, FORTRAN, wxMaxima, and L ^A T _E X.
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