Daniel Yiu Wah Lo

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Lunar and Planetary Laboratory
University of Arizona

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Education

Doctor of Philosophy, Planetary Sciences — in progress

Lunar and Planetary Laboratory, University of Arizona, USA
Minor: Optics

Master of Science, Planetary Sciences — 2017

Lunar and Planetary Laboratory, University of Arizona, USA

Bachelor of Science with Honors, Double major in Physics and Planetary Science — 2014

California Institute of Technology, USA
Minor: Philosophy

Honors and Awards

Lieutenant Colonel Kenneth Rondo Carson and Virginia Bryan Carson Graduate Fellowship — 2014

Lunar and Planetary Laboratory

Fritz Burns Prize in Geology — 2013

California Institute of Technology

Publications

Lo D. **Y.**, et. al. (2015). *Nonmigrating tides in the Martian atmosphere as observed by MAVEN IUVS.* Geophysical Research Letters, 42 (21), 9057–9063. doi:10.1002/2015GL066268

Scheingross J. S., **Lo D. Y.**, & Lamb M. P. (2017). *Self-formed waterfall plunge pools in homogeneous rock.* Geophysical Research Letters, 44 (1), 200–208. doi: 10.1002/2016GL071730

England S. L., Liu G., Withers P., Yiğit E., **Lo D. Y.**, et. al. (2016). *Simultaneous observations of atmospheric tides from combined in situ and remote observations at Mars from the MAVEN spacecraft.* Journal of Geophysical Research: Planets, 121, 594–607. doi:10.1002/2016JE004997

Scheingross J. S., Brun F., **Lo D. Y.**, Omerdin K., & Lamb M. P. (2014). *Experimental evidence for fluvial bedrock incision by suspended and bedload sediment.* Geology, 42 (6), 523–526. doi:10.1130/G35432.1

Stiepen A., et. al. (2017). *Nitric oxide nightglow and Martian mesospheric circulation from MAVEN/IUVS observations and LMD-MGCM predictions. Journal of* Geophysical Research: Space Physics, 122 (5), 5782–5797. doi: 10.1002/2016JA023523

Stevens M. H., et. al. (2017). *Martian mesospheric cloud observations by IUVS on MAVEN: Thermal tides coupled to the upper atmosphere.* Geophysical Research Letters, 44 (10), 4709–4715. doi: 10.1002/2017GL072717

Medvedev A. S., et. al. (2016). *Comparison of the Martian thermospheric density and temperature from IUVS/MAVEN data and general circulation modeling.* Geophysical Research Letters, 43 (7), 3095–3104. doi:10.1002/2016GL068388

Jakosky B. M., et. al. (2015). *MAVEN observations of the response of Mars to an interplanetary coronal mass ejection.* Science, 350 (6261), aad0210. doi:10.1126/science.aad0210

Schneider N. M., et. al. (2015). *Discovery of diffuse aurora on Mars.* Science, 350 (6261), aad0313. doi:10.1126/science.aad0313

Bougher S. W., et. al. (2015). *Early MAVEN Deep Dip campaign reveals thermosphere and ionosphere variability*. Science, 350 (6261), aad0459. doi:10.1126/science.aad0459

Thiemann E. M. B., et. al. (2015). *Neutral density response to solar flares at Mars.* Geophysical Research Letters, 42 (21), 8986–8992. doi:10.1002/2015GL066334

Jain S. K., et. al. (2015). *The structure and variability of Mars upper atmosphere as seen in MAVEN/IUVS dayglow observations.* Geophysical Research Letters, 42 (21), 9023–9030. doi:10.1002/2015GL065419

Evans J. S., et. al. (2015). *Retrieval of CO_2 and N_2 in the Martian thermosphere using dayglow observations by IUVS on MAVEN.* Geophysical Research Letters, 42 (21), 9040–9049. doi:10.1002/2015GL065489

Stevens M. H., et. al. (2015). *New observations of molecular nitrogen in the Martian upper atmosphere by IUVS on MAVEN.* Geophysical Research Letters, 42 (21), 9050–9056. doi:10.1002/2015GL065319

Conference Presentations

MAVEN IUVS Observations of C I Emissions at 156.1 nm and 165.7 nm. Mars Aeronomy Conference 2017.

Twilight Limb Observations of the Martian North Polar Hood by MAVEN IUVS. Division of Planetary Science/European Planetary Science Conference 2016.

Twilight Limb Observations of Clouds in the Martian Atmosphere by MAVEN IUVS. Lunar Planetary Science Conference 2016.

Tides in the Martian Atmosphere as Observed by MAVEN IUVS. American Geophysical Union Fall Meeting 2015.

Research Experience

Imaging Ultraviolet Spectrograph (IUVS), Mars Atmosphere and Volatile Evolution (MAVEN) mission 2014 – present

Science team member
Research topics: atmospheric tides, clouds and carbon photochemistry
Advisor: Roger V. Yelle, University of Arizona, USA

Summer Undergraduate Research Fellowship 2013

Homer J. Stewart Summer Undergraduate Research Fellow

Electron Response of STRERO High Energy Telescope Through GEANT4 Modeling
Mentors: Edward C. Stone, Mark E. Wiedenbeck, California Institute of Technology, USA

Summer Undergraduate Research Fellowship 2012

Summer Undergraduate Research Fellow
Waterfall Plunge Pools Evolution Under Constant Forcing: A Study Using Low Temperature Polyurethane Foam
Mentor: Michael P. Lamb, California Institute of Technology, USA

Summer Undergraduate Research Fellowship 2011

Homer J. Stewart Summer Undergraduate Research Fellow
Atmospheric Features at the Jupiter North Pole from Cassini Images
Mentor: Andrew P. Ingersoll, California Institute of Technology, USA

Science Research Programme 2006

Degradation of Ascorbic Acid
Mentor: Leong Lai Peng, National University of Singapore, Singapore

Science Mentorship Programme 2004

Polynomials over $\mathbb{Z}_p^n$
Mentor: Lang Mong Lung, National University of Singapore, Singapore
Obtained Distinction for Poster Category in national Youth Science Conference, Silver Award for Singapore Science and Engineering Fair

Teaching Experience

University of Arizona, USA

Member of Curriculum Development Committee 2016-2017

Teaching assistant for ASTR/PTYS 170B2 (The Universe and Humanity: Origin and Destiny), conducted by Renu Maholtra 2017

Teaching assistant for ASTR/PTYS 170B2 (The Universe and Humanity: Origin and Destiny), conducted by Kat Volk 2015

National University of Singapore, Singapore

Coach for the Singapore national team to the International Young Physicists' Tournament. The team eventually obtained the top position in the competition. 2010

Raffles Institution, Singapore

Trainer for the Singapore Junior Physics Olympiad 2010

Coach for the Singapore Young Physicists' Tournament. All four teams eventually obtained the top positions in the competition, leading to subsequent employment in a similar job as the coach for the national team. 2009-2010

Planetary Exploration Mission Experience

Imaging Ultraviolet Spectrograph (IUVS), Mars Atmosphere and Volatile Evolution (MAVEN) mission 2014 – present

RASC-AL Exploration Robo-Ops (Team Second) 2012

Project Manager in a team for a competition organized by the US National Institute of Aerospace for graduate and undergraduate students to design and build a remotely controlled planetary rover that can perform a series of competitive tasks.

Caltech Space Challenge (Team First) 2011

Science instrumentation team member for a competition involving graduate and undergraduate students from various universities internationally to design a manned sample return mission from a Near Earth Asteroid.

Xichang Astronautics Winter Camp 2006

A week of activities for high school students that provided an introduction to the Chinese space program

Outreach Activities

Cassini Scientist for a Day (Singapore Edition) 2013

US Coordinator

Students for the Exploration and Development of Space (SEDS) 2010-2013

President (2012-2013) for the Caltech chapter

Professional Affiliations

American Geophysical Union; American Astronomical Society