Shane Wesley Stone *Ph.D. Candidate*

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Education

University of Arizona

Ph.D. Candidate in Planetary Sciences *2017 – Present*
Mars through the inlet of MAVEN NGIMS
Advisor: Prof. Roger V. Yelle

Master of Science in Planetary Sciences *2014 – 2017*

University of California, Los Angeles

Master of Science in Organic Chemistry *2011 – 2014*
Controlled Polymerization of α*-Amino Acid* N*-Thiocarboxyanhydrides*
Advisor: Prof. Timothy J. Deming

University of Texas at Dallas

Bachelor of Science in Chemistry, summa cum laude with honors and distinction *2007 – 2011*
Poly(3-hexylthiophene)-based Block Copolymers for Hybrid Solar Cells
Advisor: Prof. John P. Ferraris

Teaching

University of California, Los Angeles

Teaching Associate, CHEM 136: Organic Spectroscopic Methods *Spring 2014*
Laboratory; chemical problem solving with emphasis on structure determination using 1D and 2D NMR, IR, mass spectrometry, and x-ray crystallography.

Teaching Assistant, CHEM 14D: Organic Reactions *Fall 2013*
Organic reaction mechanisms; nucleophilic and electrophilic substitutions and additions, electrophilic aromatic substitutions, carbonyl reactions, and catalysis.

Teaching Assistant, CHEM 14C: Organic Molecular Structure *5 quarters, 2011 – 2013*
Molecular structure with emphasis on biological applications; stereochemistry; resonance, conjugation, and aromaticity; mass spectrometry, IR, NMR; effects of structure on physical and chemical properties; survey of biomolecular structure.

Awards & Fellowships

- LPL Scholarship Award, *2020*
- LPL Curson Travel Award, *2019*
- UA Galileo Circle Scholarship, *2019*
- ESA Travel Grant, 52nd ESLAB Symposium, *2018*
- AAS International Travel Grant, *2018*
- UA Graduate and Professional Student Council International Travel Grant, *2018*
- Best Graduate Student Talk, Lunar and Planetary Laboratory Conference, *2017*
- NASA Group Achievement Award: MAVEN Science Team, *2016*
- NASA RHG Exceptional Achievement for Science: MAVEN Science Team, *2016*
- Honorable Mention, National Science Foundation Graduate Research Fellowship, *2013*
- UCLA Graduate Division Unrestricted Fellowship, *Spring 2013*
- UCLA Hanson-Dow Teaching Assistant Award, *Fall 2012*
- UCLA Christopher S. Foote Graduate Fellowship, *2011 – 2013*
- UTD Undergraduate Research Scholar Award, *2009 – 2010 and 2010 – 2011*

Service

- LPL Graduate Representative to the Faculty, *2018 – 2019*
- Executive Secretary, NASA Review Panel, *2018*
- LPL Graduate Outreach Coordinator, *2017 – 2019*
- LPL Graduate Student Colloquium Coordinator, *2016 – 2018*
- Student Member, American Geophysical Union, *2015 – Present*
- Junior Member, American Astronomical Society, *2014 – Present*
- President, UCLA Chemistry and Biochemistry Graduate Student Association, *2013 – 2014*
- Founding Member, UCLA Chemistry and Biochemistry Graduate Student Association, *2012 – 2013*
- Student Member, American Chemical Society, *2009 – Present*

Publications

15. W. K. Peterson, L. Andersson, R. Ergun, E. Thiemann, M. Pilinski, S. Thaller, C. Fowler, D. Mitchell, M. Benna, R. V. Yelle, **S. W. Stone**. Subsolar Electron Temperatures in the Lower Martian Ionosphere. *J. Geophys. Res. Space Phys.*, **2020**, *125*, e2019JA027597, doi:10.1029/2019ja027597.
14. D. Bhattacharyya, J.-Y. Chaufray, M. Mayyasi, J. T. Clarke, **S. W. Stone**, R. V. Yelle, W. Pryor, J. L. Bertaux, J. Deighan, S. K. Jain, N. M. Schneider. Two-dimensional model for the Martian exosphere: Applications to hydrogen and deuterium Lyman α observations. *Icarus*, **2020**, *339*, 113573, doi:10.1016/j.icarus.2019.113573.
13. A. G. Siddle, I. C. F. Mueller-Wodarg, **S. W. Stone**, R. V. Yelle. Global characteristics of gravity waves in the upper atmosphere of Mars as measured by MAVEN/NGIMS. *Icarus*, **2019**, *333*, 12–21, doi:10.1016/j.icarus.2019.05.021.
12. J. Cui, Y.-T. Cao, X.-S. Wu, S.-S. Xu, R. V. Yelle, S. Stone, E. Vigren, N. J. T. Edberg, C.-L. Shen, F. He, Y. Wei. Evaluating Local Ionization Balance in the Nightside Martian Upper Atmosphere during MAVEN Deep Dip Campaigns. *Ap. J. Lett.*, **2019**, *876*, L12, doi:10.3847/2041-8213/ab1b34.
11. M. Mayyasi, J. Clarke, D. Bhattacharyya, J.-Y. Chaufray, M. Benna, P. Mahaffy, **S. W. Stone**, R. Yelle, E. Thiemann, M. Chaffin, J. Deighan, S. Jain, N. Schneider, B. Jakosky. Seasonal variability of Deuterium in the Upper Atmosphere of Mars. *J. Geophys. Res. Space Phys.*, **2019**, *124*, 2152–2164, doi:10.1029/2018JA026244.
10. M. Slipski, B. M. Jakosky, M. Benna, M. Elrod, P. Mahaffy, D. Kass, **S. W. Stone**, R. V. Yelle. Variability of Martian Turbopause Altitudes. *J. Geophys. Res. Planets*, **2018**, *123*, doi:10.1029/2018JE005704.
9. **S. W. Stone**, R. V. Yelle, M. Benna, M. K. Elrod, P. R. Mahaffy. Thermal Structure of the Martian Upper Atmosphere from MAVEN NGIMS. *J. Geophys. Res. Planets*, **2018**, *123*, doi:10.1029/2018JE005559.
8. B. M. Jakosky and 131 others including **S. W. Stone**. Loss of the Martian atmosphere to space: Present-day loss rates determined from MAVEN observations and integrated loss through time. *Icarus*, **2018**, *315*, 146–157 doi:10.1016/j.icarus.2018.05.030.
7. J. Cui, R. V. Yelle, L.-L. Zhao, **S. W. Stone**, F.-Y. Zhang, Y.-T. Cao, M.-J. Yao, T. T. Koskinen, Y. Wei. The Impact of Crustal Magnetic Fields on the Thermal Structure of the Martian Upper Atmosphere. *Astrophys. J. Lett.*, **2018**, *853*(2), L33, doi:10.3847/2041-8213/aaa89a.
6. B. M. Jakosky, M. Slipski, M. Benna, P. R. Mahaffy, M. K. Elrod, R. V. Yelle, **S. W. Stone**, N. Alsaeed. Mars' atmospheric history derived from upper-atmosphere measurements of $^{38}Ar/^{36}Ar$. *Science*, **2017**, *355*(6332), 1408–1410, doi:10.1126/science.aai7721.
5. M. K. Elrod, S. W. Bougher, J. Bell, P. R. Mahaffy, M. Benna, **S. W. Stone**, R. V. Yelle, B. M. Jakosky. He bulge revealed: He and CO_2 diurnal and seasonal variations in the upper atmosphere of Mars as detected by MAVEN NGIMS. *J. Geophys. Res. Space Phys.*, **2017**, *122*(2), 2564–2573, doi:10.1002/2016JA023482.
4. P. R. Mahaffy, M. Benna, M. K. Elrod, R. V. Yelle, S. W. Bougher, **S. W. Stone**, B. M. Jakosky. Structure and composition of the neutral upper atmosphere of Mars from the MAVEN NGIMS investigation. *Geophys. Res. Lett.*, **2015**, *42*(21), 8951–8957 doi:10.1002/2015GL065329.
3. S. W. Bougher and 93 others including **S. W. Stone**. Early MAVEN Deep Dip campaign reveals thermo-sphere and ionosphere variability. *Science*, **2015**, *350*(6261), aad0459, doi:10.1126/science.aad0459.
2. B. M. Jakosky and 93 others including **S. W. Stone**. MAVEN observations of the response of Mars to an interplanetary coronal mass ejection. *Science*, **2015**, *350*(6261), aad0210, doi:10.1126/science.aad0210.
1. D. Lee, **S. W. Stone**, J. P. Ferraris. A novel dialkylthio benzo[1,2-b:4,5-b']dithiophene derivative for high open-circuit voltage in polymer solar cells. *Chem. Commun.*, **2011**, *47*(39), 10987–10989, doi:10.1039/C1CC14780C.

Talks & Posters

20. MAVEN Project Science Group Meeting, *April 17, 2019*
    Transport of Water to the Martian Upper Atmosphere amid Regional and Global Dust Storms (*Poster*)
19. American Geophysical Union 2018 Fall Meeting, *December 12, 2018*
    The Variation of Hydrogen in the Upper Atmosphere of Mars as Observed by MAVEN NGIMS
18. MAVEN Project Science Group Meeting, *September 25, 2018*
    Variation of Hydrogen in the Upper Atmosphere of Mars as Observed by MAVEN NGIMS (*Poster*)
17. Lunar and Planetary Laboratory Conference, *August 17, 2018*
    Global Dust Storm 2018a and Upper Atmospheric Hydrogen at Mars
16. 52nd ESLAB Symposium: Comparative Aeronomy and Plasma Environments of Terrestrial Planets, *May 14, 2018*
    Protonated Ions and the Seasonal Variation of Hydrogen Observed by MAVEN NGIMS
15. MAVEN Project Science Group Meeting, *March 15, 2018*
    Protonated Ions and the Seasonal Variation of Hydrogen Observed by NGIMS (*Poster*)
14. Lunar and Planetary Laboratory Conference, *August 18, 2017*
    Temperature Structure of the Martian Upper Atmosphere from MAVEN NGIMS
13. International Conference on Mars Aeronomy, *May 15, 2017*
    Temperature Variations of the Martian Upper Atmosphere from MAVEN NGIMS
12. MAVEN Project Science Group Meeting, *November 14, 2016*
    Validation of NGIMS O Densities

11. Division for Planetary Sciences 48 / European Planetary Science Congress 11, *October 19, 2016*
    Temperature Variations in the Martian Upper Atmosphere from the MAVEN Neutral Gas and Ion Mass Spectrometer
10. Lunar and Planetary Laboratory Conference, *August 19, 2016*
    Temperatures of the Martian Upper Atmosphere from MAVEN NGIMS
9. American Geophysical Union 2015 Fall Meeting, *December 15, 2015*
    He Bulge Detection by MAVEN NGIMS in the Upper Atmosphere of Mars (*Poster*)
8. American Geophysical Union 2015 Fall Meeting, *December 15, 2015*
    Retrieval and Distribution of Neutral and Ionic Species in the Martian Upper Atmosphere as Measured by MAVEN NGIMS (*Poster*)
7. MAVEN Project Science Group Meeting, *October 28, 2015*
    Thermospheric Temperatures Profiles from NGIMS Deep Dip Data
6. Lunar and Planetary Laboratory Graduate Student Colloquium, *September 29, 2015*
    Recent Results from MAVEN NGIMS
5. Lunar and Planetary Laboratory Conference, *August 20, 2015*
    Recent Results from MAVEN NGIMS
4. Lunar and Planetary Laboratory Graduate Student Colloquium, *May 5, 2015*
    Membrane Alternatives in Worlds without Oxygen: Creation of an Azotosome
3. Lunar and Planetary Laboratory Conference, *August 22, 2014*
    The van der Waals Dimer of Hydrogen Cyanide in Titan's Atmosphere
2. UCLA Organic Chemistry Graduate Student Seminar, *March 4, 2013*
    The Chemistry of Borole
1. American Chemical Society 43rd Annual Dallas-Fort Worth Meeting-in-Miniature, *April 17, 2010*
    Progress toward block copolymers for photovoltaic applications