Morgan Taylor Chidester
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Education

Southern Utah University
Bachelor of Science, Aug. 2015 - May 2019
Emphasis: Applied Mathematics, minor in physics
GPA: 3.98

Arizona State University
Astrophysics P.h.D, Aug. 2019 - Expected May 2023
GPA: 4.0

Papers

On Trapped Modes in Variable White Dwarfs as Probes of the $^{12}C(\alpha, \gamma)\ ^{16}O$ Reaction Rate
Morgan T. Chidester, Ebraheem Farag, F.X. Timmes (ApJ Vol. 935 Aug 10 2022).

On the Impact of ^{22}Ne On the Pulsation Periods of Carbon-Oxygen White Dwarfs with Helium Dominated Atmospheres
Morgan T. Chidester, F.X. Timmes, Josiah Schwab, Richard H.D. Townsend, Ebraheem Farag, Anne Thoul, C.E. Fields, Evan B. Bauer, Michael H. Montgomery (ApJ Vol. 910 Mar 20 2021).

On Stellar Evolution in a Neutrino Hertzsprung-Russell Diagram
Ebraheem Farag, F.X. Timmes, Morgan Taylor, Kelly M. Patton, R. Farmer (ApJ Vol. 893 April 2020).

The Effects of Radio Jet Feedback on Star Formation in Satellite Galaxies
Taylor Hammack, Kasen Lisonbee, Bryan May, Jordan Memmott, Kallin Raymond, Morgan Taylor, and Cameron Pace (Journal of Utah Academy 2018).

CCD Measurements of AB and AC Components of WDS 20023+6438
William Zerkle, Dallas Anselmo, Taylor Hammack Gideon Johnson, Morgan Taylor, Sterling Young, and Rhett Zollinger (JDSO Vol. 15 Jan. 1 2019).

Papers in Prep

Habitable Worlds Course Modifications: How Spreadsheet and Graph coaching impacts student performance
Morgan T. Chidester, Chris Mead (submitting to ApJ December 2022)

Uncertainties in the $^{12}C(\alpha,\gamma)^{16}O$ seismic signature from Variable White Dwarfs
Morgan T. Chidester, F.X. Timmes, Ebraheem Farag (submitting to ApJ Spring of 2023)

Presentations

● *On Trapped Modes In Variable White Dwarfs As Probes of the $^{12}C(\alpha,\gamma)^{16}O$ Reaction Rate*
Oral talk presented at the American Astronomical Society 240th Meeting June 16, 2022
Morgan T. Chidester, F.X. Timmes
● *$^{12}C(a,g)$ and white dwarf seismology*
Guest presenter (via zoom) at the IReNA/ChETEC meeting on nuclear reaction measurements underground April 6, 2022
Morgan T. Chidester, F.X. Timmes
● *The Impact of ^{22}Ne On The Pulsation Periods of Carbon-Oxygen White Dwarfs With Helium Dominated Atmospheres*
iPoster presented at the American Astronomical Society 237th Virtual Meeting Jan. 11-15 2021
Morgan T. Chidester, F.X. Timmes
● *Perturbing DBV white dwarf core composition and its effects on pulsation frequencies*
Poster presented at the American Astronomical Society 236th Virtual Meeting June 1, 2020
Morgan T. Chidester, F.X. Timmes
● *The Cosmological Origins of Water*
Presented at LANL, Aug 10, 2017
Alex Gagliano, Morgan Taylor
● *Active Galaxy Feedback on Neighboring Galaxies: A Pilot Study*

Poster presented at Maxwell Walter Gibson College of Science and Engineering Research Symposium, Nov 7, 2016
Taylor Hammack, Kasen Lisonbee, Bryan May, Jordan Memmottt, Kallin Raymond, Morgan Taylor , & Cameron Pace

Conferences
● 240th American Astronomical Society Meeting June 2022
● IReNA/ChETEC meeting on nuclear reaction measurements underground April 2022
● 237th Virtual American Astronomical Society Meeting Jan 2021
● 236th Virtual American Astronomical Society Meeting Jun 2020
● JINA-CEE Conference Mar 2020
● 231st American Astronomical Society Meeting Jan 2018
● Utah Academy Conference April 2017
● Utah Conference on Undergraduate Research at Utah Valley University Feb 2017

Awards and Honors
● Chambliss Honorable Mention (Jan. 2021)
● Alice Gibson Scholarship (2018 - 2019)
● Math Departmental Scholarship (2017)
● Regent's Scholarship Recipient (2015 - 2017)
● Presidential Scholarship Recipient (Fall 2015 - Spring 2019)

Research Experience
White Dwarf (WD) Asteroseismology (Aug. 2019 - present)
Arizona State University
Mentored by F.X. Timmes
- Used the MESA stellar evolution code to run a suite of theoretical WD models, modifying the internal composition/nuclear reaction rates for each model
- Obtained g-mode periods with GYRE oscillation code
- Analyzed results using matplotlib (Python)

Core Collapse Supernova Light Curves (May 2018 - Aug. 2019)
Los Alamos National Laboratory
Mentored by Wes Even and Ryan Wollaeger
- Used SuperNu and RAGE codes to obtain light curve calculations for a suite of Core Collapse Supernova models (taken from Chris Fryer)
- Verified nucleosynthesis results with SKYNET code
- Analyzed data in matplotlib

Cosmological Origins of Water
Los Alamos National Laboratory
Mentored by Joseph Smidt and Brandon Wiggins
- Ran cosmological simulations with ENZO code on a supercomputer
- interpreted/visualized cosmological data using yt-toolkit

Active Galaxy Feedback
Southern Utah University
Mentored by Cameron Pace
- Used SDSS catalog to analyze neighboring galaxies near the active host
- Determined if those galaxies were quenched in star formation based on color

Astrometry
Southern Utah University
Mentored by Rhett Zollinger
- Took CCD measurements of AB and AC components of WDS 20023+6438

Teaching Experience
● MESA summer school TA (Aug 2021, Aug 2022)
● AST 114 TA (Spring 2020)
● Calculus III TA (Fall 2017 - Spring 2018)

Skills
● Programming languages: Python, R, Fortran, MATLAB
● Operating systems: Mac OS
● Software: LaTeX, Excel
● Other: MESA, GYRE, SuperNu, ENZO codes; matplotlib and yt plotting

Service and Community Involvement
● Youth Leader for The Church of Jesus Christ of Latter Day Saints (Spring 2021-present)
● Church pianist (2018)
● Volunteer at Cedar City Beehive Home (Fall 2016-Spring 2017)
● Volunteer Track Coach, Summer, 2013

Professional Memberships
● American Astronomical Society member (2019-present)
● JINA-CEE member (2019-present)
● Utah Academy of Sciences, Arts and Letters, 2017

Extracurricular Activities
● Long Distance Running
● Muay Thai (Jun. 2020 - present)
● Cross Country/ Track and Field member, Southern Utah University (Fall 2015-Fall 2017)