TAYLOR JACOVICH
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EDUCATION

The George Washington University, Washington, D.C.
PhD in Physics **May 2020**
GPA: 3.54
Passed Qualifying Exam **Jan. 2017**

Gettysburg College, Gettysburg, PA
BS Cum Laude in Physics Honors in Physics **May 2015**
Minor: Mathematics
GPA: 3.53
Major GPA: 3.67
Thesis: *Activity-Cycle Viability of Kepler Input Catalog Stars in NGC 6811*
Advisor: Dr. Jacquelynne Milingo

AREAS OF INTEREST

Numerical solutions to nonlinear and open-ended physical problems
Hydrodynamic Modeling of Astrophysical and Terrestrial Phenomena
High-Performance Computing solutions
High Energy and Broadband Astrophysics
GRB Afterglow simulations and their application to constraining massive compact object physics
Gravitational Wave Theory and Modeling

AWARDS

George Washington University Graduate Teaching Fellowship **Aug. 2015 – Present**
Schweizer Summer Research Grant **May 2014 – Aug. 2014**
Anthony Wasilewksi Endowed Scholarship **Aug. 2012 – May 2015**
Presidential Scholarship **Aug. 2011 – May 2015**
Alexion Life Sciences Scholarship **Aug. 2011 – May 2015**
Eagle Scout **Aug. 2011**

TEACHING EXPERIENCE

The George Washington University, Washington, District of Columbia

Graduate Teaching Assistant to Dr. Carol O'Donnell–Astronomy 1001 Scale-Up **Jan. 2017—Present**
Helped conduct class sessions by preparing activity and workbook materials. Led discussions during class and queried students about their understanding during group activities. Circulated among the students to answer questions as needed. Assisted in proctoring exams, and graded all workbooks, lab reports and midterms.

Graduate Teaching Assistant to Dr. Oleg Kargaltsev–Astronomy 1001 Sections 30-33 **Aug. 2016—Dec. 2016**
Prepared quizzes and instructed astronomical laboratory sections in conjunction with the lecture component of the course. Actively answered questions that arose during the laboratory sessions and attempted to connect material to main course wherever possible. Graded lab reports and proctored and graded all examinations.

Graduate Teaching Assistant to Dr. Alexander van der Horst–Astronomy 1002 Scale-Up **Jan. 2016—May 2016**
Helped conduct class sessions by preparing activity and workbook materials. Led discussions during class and queried students about their understanding during group activities. Circulated among the students to answer questions as needed. Assisted in proctoring exams, and graded all workbooks, lab reports and midterms.

Graduate Teaching Assistant to Dr. Tony Moscati–Astronomy 1001 Sections 31-32 **Jan. 2016—May 2016**
Prepared quizzes and instructed astronomical laboratory sections in conjunction with the lecture component of the course. Actively answered questions that arose during the laboratory sessions and attempted to connect material to main course wherever possible. Graded lab reports and proctored the final examination.

Graduate Teaching Assistant to Dr. Kalvir Dhuga–Astronomy 1001 Sections 30-33 **Aug. 2015—Jan. 2016**
Prepared quizzes and instructed astronomical laboratory sections in conjunction with the lecture component of the course. Graded lab reports and proctored the final examination.

Gettysburg College, Gettysburg, PA

Differential Equations Peer Learning Associate to Dr. Kimberly Spayd—Math 225 **Aug. 2014—May 2015**
Organized and held drop-in hours for students seeking help on Matlab based differential equations projects including support for preparing project reports in LaTex.

Astronomy Peer Science Mentor to Dr. Jacquelynne Milingo and Dr. Ryan Johnson **Aug. 2013—May 2015**
Organized and led homework and exam review sessions for students in both sections of Introductory Solar System and Stellar astronomy classes.

Laboratory Teaching Assistant to Dr. Jacquelynne Milingo and Dr. Ryan Johnson **Aug. 2013—May 2015**
Assisted Laboratory instructor in preparing and leading CLEA experiments in astronomy. Actively worked with students to answer questions and review concepts during these labs. Setup and operated telescopes and CCD cameras for observing laboratory sessions.

RESEARCH EXPERIENCE

The George Washington University

Research Assistant to Dr. Alexander van der Horst **Aug. 2016 – Present**
Used the Hydrodynamic model fitting software known as *boxfit* to attempt to fit the unusual Broadband lightcurve behavior of GRB 070125. Attempting to determine physical parameters for the GRB afterglow that required no additional physics to explain the behavior and energetic nature of the burst.

Research Assistant to Dr. Andrei Alexandru **May 2016 – Present**
Simulated a scalar field with a quartic interaction on a D+1-dimensional lattice using a Metropolis based Monte Carlo algorithm to walk through the configuration space of the particle as a precursor to a more robust study of symmetry breaking with respect to the Path Integral sign problem. Performed Lattice regulated perturbation calculations to verify numerical results from the theory.

Gettysburg College

Senior Research Assistant to Dr. Jacquelynne Milingo **May 2014 – Aug. 2014**
Performed V Band differential Photometry on cool dwarf stars in NGC 6811. Utilized Lomb-Scargle period finding routines to extract magnitude and rotational period data for these stars as part of an activity-cycle viability study. Collected data utilizing The National Undergraduate Research Observatory 0.8m telescope in Flagstaff AZ.

Research Assistant to Dr. Laurence Marschall **Mar. 2012 – May 2012**
Collected data of cool dwarfs in M45 utilizing the National Undergraduate Research Observatory 0.8m telescope in Flagstaff AZ for use in an ongoing activity-cycle study. Performed differential photometry on these frames, and on images of two asteroids: Weismann and UETA. Fit sinusoids to the asteroid lightcurves to determine rotational periods.

PUBLICATIONS, PAPERS, AND PRESENTATIONS

Activity-Cycle Viability of Kepler Input Catalog Stars in NGC 6811 Dec. 2014
Capstone Presentation before Physics Faculty and the general public

Search for Starspots in NGC6811 Oct. 2014
Poster Presentation at the Gettysburg College Fall Honor's Day Summer Research Poster Session

Photometry of Rotating Asteroids at NURO Mar. 2012
Poster Presentation at the Central Pennsylvania Consortium Astronomer's Meeting

SELECT SKILLS

Can code in C/C++ with a working knowledge of CUDA and other parallelization schemes..
Previous experience with IRAF and ds9 to manipulate both optical and X-ray data, including chandra images.
Experience working with and in the KIC and Swift-XRT databases, and reducing raw data from both.
Familiarity with GNU/Linux and open source tools as well as shell scripting.
Experience operating ground based telescopes and imaging equipment.
Experience writing up research and reports for interdisciplinary audiences.

LANGUAGES

English — native language
Arabic and Spanish — read and write with basic competence

MEMBERSHIPS

American Association of Variable Star Observers
American Astronomical Society
American Physical Society
American Whitewater
Electronic Frontiers Foundation
National Eagle Scout Association
Sigma Pi Sigma