Kyle A. Corcoran

Curriculum Vitae

Graduate Student
Department of Astronomy
University of Virginia

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Research Interests

Hot subdwarf stars, white dwarf stars, Type Ia supervonae progenitors, variable candidate identification methods, compact binary stars, asteroseismology, stellar evolution, substellar objects

Education

University of Virginia — Charlottesville, VA
Doctor of Philosophy [First Year] — Projected 2024
Dissertation: TBD
Adviser: TBD

High Point University — High Point, NC
Bachelor of Science, **summa cum laude** – physics — May, 2019
Adviser: Dr. Brad N. Barlow
Double Major: Mathematics [B.A.]

Publications

2. A Method to Select Candidate WD Variables from Gaia DR2 [*in prep*]
   J. J. Hermes, **Kyle A. Corcoran**, Thomas M. Boudreaux, Brad Barlow, John Kuehne, Zach Vanderbosch, J. S. Reding, B. H. Dunlap, A. Aungwerojwit, B. T. Gänsicke, ...

1. EVR-CB-001: An Evolving, Progenitor, White Dwarf Compact Binary Discovered With The Evryscope [*submitted*]
   Jeff Ratzloff, Brad N. Barlow, Thomas Kupfer, **Kyle A. Corcoran**, Nick Law, Hank Corbett, Ward Howard, Octavi Fors

Published Abstracts

5. A Radial Velocity Survey of Candidate Variable Hot Subdwarfs from Gaia DR2
   Nathan Grinalds, **Kyle Corcoran**, Will Frondorf, Isaac Parker, David Vestal, Brad Barlow

4. Evryscope Photometry of the New Hot Subdwarf Reflection Effect Binary EC 01578-1743
   Walser, Stephen, **Corcoran, Kyle A.**, Barlow, Brad, Mycroft, Sam, Aube, John, Ratzloff, Jeff, Law, Nicholas, Corbett, Henry T., Fors, Octavi, Howard, Ward S., 2019, AAS Meeting, 233, #464.03

3. Evryscope Observations of Post-Common-Envelope Hot Subdwarf Systems
Corcoran, Kyle A., Barlow, Brad, Walser, Stephen, Mycroft, Sam, Aube, John, Ratzloff, Jeff, Law, Nicholas, Corbett, Henry T., Howard, Ward S., Fors, Octavi, 2019, AAS Meeting, 233, #360.16

2. A Journey to Mars: HPUniverse Day and Its Impact on Young Minds and a Community
Corcoran, Kyle A., Barlow, Brad, Welter, Michael, Brady, Erin, Roth, Nolan, Boudreaux, Thomas Macauly, Walser, Stephen, 2019, AAS Meeting, 233, #147.05

1. Updated O-C Diagrams for Several Bright HW Vir Binaries Observed with the Evryscope
Corcoran, Kyle A., Barlow, Brad, Corbett, Hank, Fors, Octavi, Howard, Ward S., Law, Nicholas, Ratzloff, Jeff, 2018, AAS Meeting, 231, #150.23.

Observing Experience

- **4.1m SOAR Telescope** (Goodman Spectrograph)
  - 4 nights of observing experience (awarded through NOAO)
- **SMARTS Consortium Telescopes** (CTIO 1.5m/CHIRON, CTIO 0.9m)
  - 7 nights of observing experience on the 0.9m
  - reduced and analyzed around 80 hours of time-series photometry from our 7 night run
  - obtained, reduced, and analyzed over 5 hours of spectroscopy on the 1.5m telescope
- **SKYNET/PROMPT – CTIO**
  - obtained, reduced, and analyzed over 15 hours of time-series photometry

Academic Employment

High Point University High Point, NC
Research Assistant – NSF AST #1812874 2018-2019
- conducted research projects on hot subdwarfs using SOAR, the Evryscope, SKYNET, and the SMARTS 1.5m/CHIRON
- advised five undergraduate students with research projects on hot subdwarfs
- helped to submit two observing proposals – one to NOAO for which we were awarded four nights on SOAR's Goodman spectrograph and one to the TESS Guest Investigator program for Cycle 2
- gave multiple presentations at national and international conferences

High Point University High Point, NC
Supplemental Instructor and Tutor 2018-2019
- held office hours and review sessions for student questions
- worked with students both in one-on-one and group settings

Awards and Honors

- **All University Honors**, 2019, High Point University
- **Chief Junior Marshall**, 2018, High Point University
- **Sigma Pi Sigma, National Honors Society**, 2018, Elected Member
- **Walt and Susan Patterson Prize for Outstanding Presentation**, 2017, MAA 96th Southeastern Regional Meeting
- **Alpha Lambda Delta, National Honors Society**, 2015, Elected Member
- **Presidential Fellowship Scholarship**, 2015-2019, High Point University
- **Honors Scholars Program**, 2015-2019, High Point University
- **Dean's List**, 2015-2019, High Point University

Professional Memberships

- Junior Member, American Astronomical Society
- Member, Society of Physics Students

Educational & Public Outreach

- HPUniverse Day Volunteer where I gave presentations about spacetime to young children (2016-Present)
- Piedmont Triad Science fair for Non-Public Schools Volunteer (2016-2019)
- Spaceport America Cup (Intercollegiate Rocketry and Engineering Competition) Volunteer (2016)

Computing Skills

- Programming Languages
  1. Expert: Python, C
  2. Comfortable: MATLAB, C++, Arduino
  3. Familiar: R, HTML
- Miscellaneous: IRAF, LaTeX, GitHub, Period04, ds9, Windows, macOS, Linux

Oral Presentations

2. **Ninth Meeting on Hot Subdwarfs and Related Objects** Hendaye, France
   "A Radial Velocity Survey of Candidate Variable Hot Subdwarfs from Gaia DR2" Jun 23rd, 2019

1. **MAA Southeastern Section 96th Annual Meeting** Macon, GA
   "The O-C Diagram and its Applications to Astrophysical Systems" Mar 11th, 2017

Poster Presentations

6. **233rd Meeting of the American Astronomical Society** Seattle, WA
   "Evryscope Observations of Post-CommonEnvelope Hot Subdwarf Systems" Jan 9th, 2019

5. **233rd Meeting of the American Astronomical Society** — Seattle, WA
   "A Journey to Mars: HPUniverse Day and Its Impact on Young Minds and a Community" — Jan 7th, 2019

4. **North Carolina Astronomer's Meeting – 2018** — Greensboro, NC
   "A Method to Select Candidate WD Variables from Gaia DR2" — Sep 22nd, 2018

3. **High Point University Research and Creative Works Symposium** — High Point, NC
   "Updated O-C Diagrams for Several Bright HW Vir Binaries Observed with the Evryscope" — Apr 10th, 2018

2. **231st Meeting of the American Astronomical Society** — Washington D.C.
   "Updated O-C Diagrams for Several Bright HW Vir Binaries Observed with the Evryscope" — Jan 9th, 2018

1. **North Carolina Astronomer's Meeting – 2017** — Greensboro, NC
   "AA Dor: An Irritatingly Stable Post-Common-Envelope Binary " — Sep 23rd, 2017

Research Projects

- Identifying Variable sdB Candidates from Gaia DR2 — 2019-Present
- EC 01578-1743 Case Study — 2018-2019
- DAV White Dwarf Analysis — 2018-2019
- O-C Analyses of Post-Common-Envelope Binaries — 2017-Present
- Educational Research in Radio Astronomy — Aug 2017
- Reflection Effect Studies in Post-Common-Envelope Binaries — 2016-2017

References

Dr. Brad Barlow — bbarlow@highpoint.edu
High Point University — (336) 841-9542

Dr. Aaron Titus — atitus@highpoint.edu
High Point University — (336) 841-4668

Dr. Briana Fiser — bfiser@highpoint.edu
High Point University — (336) 841-9412

Dr. David Moffett — david.moffett@furman.edu
Furman University — (864) 294-2259

Dr. Lindsay Piechnik — lpiechni@highpoint.edu
High Point University — (336) 841-9458

Dr. Dan Reichart — reichart@physics.unc.edu
University of North Carolina – Chapel Hill — (919) 962-5310

Contact Information

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