

Ryan Thomas Hamilton

320 East Union Ave, Apt. 1434
Las Cruces, NM 88001
Phone: (610) 246 – 1275
email: rthamilt@nmsu.edu

Education

Ph.D. Candidate, New Mexico State University

- Entered August 2006
- Cumulative GPA: 3.60

B.S. *Cum Laude* May 2005, Villanova University

Astronomy & Astrophysics Major

- Entered August 2001
- Cumulative GPA: 3.57
- Physics and Mathematics Minors

Research

Experience

New Mexico State University, Dr. Jon Holtzman [2006-Present]

- Obtained and analyzed Echelle spectroscopy of nearby giants and red clump stars from ARC 3.5m telescope at Apache Point Observatory, to trace chemical evolution of solar neighborhood

Villanova University, Dr. Edward Sion [2003-04,05-Present]

- Examined Cataclysmic Variable systems with measured parallaxes. Determined temperature for intermediate polar T Leo, mass accretion rates and system properties for T Leo, RU Peg and VY Aqr. Presented at 204th AAS Meeting, and published October 2004 in PASP
- New analysis of systems in MAST IUE archive without previous analysis to determine mass accretion rates and system properties. Submitted for publication in ApJ.

Villanova University, Dr. Edward Guinan & Dr. Marc Audard [2004-06]

- Conducted photometric support observations of the young low-mass star V1118 Ori in collaboration with Dr. Marc Audard of University of Geneva. Published November 2005 in ApJL

Villanova University, Dr. Edward Guinan [2004-05]

- Pilot program of undergraduate small telescope spectroscopy. Observed short timescale variations of Be star BU Tau, monitored changes of Mira. Presented at 205th AAS Meeting

Villanova University, Dr. Edward Guinan & Prof. Laurence DeWarf [2002-05]

- Studied Solar analogs and twins. Confirmed identification of Solar Twin 18 Scorpii, rotation-age-activity correlation for single solar-type stars. Results presented at 203rd AAS Meeting. In preparation for publication for AJ with new XMM observations

Teaching

Experience

New Mexico State University [2006 – Present]

- Campus Observatory Operator [2006-Present]
- Teaching Assistant for Undergraduate Astronomy Courses [2006-Present]

Villanova University [2001 – 2005]

- Teaching Assistant for Undergraduate Astronomy Laboratory Courses [2001-05]
- Undergraduate Research Lab Assistant, Dr. Edward Fitzpatrick [2003-04]
- Observational Lab I & II Assistant, Dr. George McCook [2003-2006]
- Public Observatory Assistant [2001-02], Supervisor [2002-05]

Computer

Experience

Programming Languages & Background

- C, C++, Fortran (F77), Basic, Visual Basic, Perl, Python, LaTeX, HTML
- Shell Scripting (sh/csh), Standard UNIX filters (sed, awk, etc.), Windows Scripting, Javascript

Operating Systems & Software Packages

- Windows, UNIX, Linux, Dos, IRAF, IDL, DAOPHOT/ALLSTAR, PGPLOT, SuperMongo,
- TUI, DFM Telescope Software, SBIG Software, MaxIm DL, Microsoft & Adobe software

University Activities

New Mexico State Astronomy Graduate Student Organization (NMSU AGSO) [2006-Present]
 Villanova Astronomical Society (VAS) [2001-05]
 ▪ Secretary / Treasurer [2003-04], President [2004-05]
 Villanova Space Shuttle Experiment Program (VUSSEP) [2001-03]
 ▪ President [2002-03]
 Villanova University Small Radio Telescope Project [2002-05]
 ▪ Designed and tested an antenna to operate in a high noise environment [2004-05]
 Engineering Science Recruiting Network (ESRN) [2003-05]
 ▪ Executive Officer [2003-05]

Publications

Hamilton, R.T., Urban, J.A., Sion, E.M., Riedel, A.R., Voyer, E.N., Marcy, J.T., Lakatos, S.L. 2006, *An International Ultraviolet Explorer Archival Study of Dwarf Novae in Outburst*, ApJ In Review

Audard, M., Güdel, M., Skinner, S. L., Briggs, K. R., Walter, F. M., Stringfellow, G., **Hamilton, R. T.**, Guinan, E. F. 2005, *X-Ray Spectral Variability during an Outburst in V1118 Ori*, ApJL, Volume 635, 81

Hamilton, R.T., Sion, E.M. 2004, *Dwarf Novae with Newly Determined Parallaxes: Model Analyses of VY Aquarii, RU Pegasi, and T Leonis*, PASP, Volume 116, 926

Guinan, E.F., DeWarf, L.E., **Hamilton, R.T.** 2005, *Rotation-Activity-Age Relations of Sun-like Stars: In Search of the Solar Twin*, In Preparation for AJ

Audard, M., Güdel, M., Skinner, S., Briggs, K., Walter, F., Stringfellow, G., **Hamilton, R. T.**, Guinan, E., *The 2005 Accretion Outburst in V1118 Ori: Evidence for A Spectral Change in X-rays*, 207th AAS, 74.12

Hamilton, R.T., Engle, S.G., Guinan, E.F., McCook, G.P., Wasatonic, R.P. 2005, *Spectroscopy on a Shoestring: Worthwhile Science for Undergraduates*, BAAS, Volume 36, 1601

Hamilton, R.T., Sion, E.M. 2004, *Dwarf Novae in Outburst with Newly Determined Parallaxes: Analyses of VY Aquari and RU Peg*, BAAS, Volume 36, 777

Hamilton, R.T., Guinan, E.F., DeWarf, L.E. 2003, *Rotation-Activity-Age Relations of Sun-like Stars: In Search of the Much Coveted Solar Twin*, BAAS, Volume 35, 1283 ****Chosen for a Press Conference****

Drescher, J. W., Guinan, E. F., DeWarf, L. E., McCook, G. P., **Hamilton, R. T.**, Ribas, I. 2003, *Determination of Age, Rotation, and Magnetic Activity Relations for dG, dK, and dM Stars: A Search for Candidates that may be Suitable for Life*, BAAS, Volume 35, 692

Research Proposals

Co – Investigator:

- *Monitoring the X-ray emission of V1118 Ori during its outburst*, Observed Chandra Cycle 7
- *A Deep Observation of V1118 Ori in Outburst with XMM-Newton*, Observed XMM AO-5
- *The X-Ray Sun in Time: XMM Observations of the Solar Twin 18 Scorpii*, Observed XMM AO-4
- *FUSE Observations of the Sun in Time: FUV Studies of Solar Analogs and Twins*, Accepted but unobserved FUSE Cycle 6 due to telescope malfunctions

Awards

The Jason A. Cardelli Memorial Award for Undergraduate Research [2005]
 The Father Edward F. Jenkins, O.S.A. Medallion Award for Academic Excellence in Astronomy [2005]
 Dean's List – Freshman, Sophomore, Junior, Senior year [2001-05]
 Delaware Space Grant College Tuition Scholarship, NASA Grant NGT5-40024 [2004-05]
 Delaware Space Grant Undergraduate Summer Research Assistance Program, NASA Grant NTG5-40024 [Summer 2004]
 Jenkins Scholarship for Astronomy Major [2002-03, 2004-05]
 Bailey Scholarship for Astronomy Freshman [2001-02]

Professional Memberships

AAS, American Astronomical Society, Junior Member
 ΣπΣ, Sigma Pi Sigma, Physics Honor Society
 National Society of Collegiate Scholars