

# GREGORY A. FEIDEN

## *Curriculum Vitae*

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### **Research Interests:**

Structure and evolution of (very-)low-mass stars; Improving stellar evolution model predictions; Convection; Magneto-convection; Starspots; Resolved stellar populations.

### **Education:**

2008 – 2013	Ph.D. (Physics & Astronomy)	Dartmouth College
2004 – 2008	B.S. (Physics)	State University of New York at Oswego

### **Appointments:**

2013 – 2015	Postdoctoral Fellow	Uppsala University
2012 – 2013	Gordon F. Hull Graduate Fellow	Dartmouth College
2011 – 2013	Neukom Graduate Fellow	Dartmouth College
2008 – 2013	Graduate Research Assistant	Dartmouth College
2007	NSF REU Research Assistant	University of Rochester
2006 – 2007	Research Assistant	State University of New York at Oswego

### **Grants & Fellowships:**

2014	Swedish National Space Board travel grant	11 000 SEK
2013 – 2015	Uppsala U. Postdoctoral Fellowship in Physics & Astronomy	840 000 SEK
2012 – 2013	Gordon F. Hull Graduate Fellowship	26 000 USD
2011 – 2012	Neukom Institute for Computational Science Grad. Fellowship	26 000 USD

### **Honors & Awards:**

2013	Physics & Astronomy Graduate Research Award	Dartmouth College
2012	Selamawit Tsehaye Excellence in Teaching Award	Dartmouth College
2010	Outstanding Graduate TA selected by students	Dartmouth College
2008	Chancellor's Award for Student Excellence	SUNY

### **Publication Summary:**

16 refereed publications, 7 first-author,  $h$ -index = 7.

**Summary of Talks Given:**

9 total talks – 3 invited reviews; 3 contributed talks; 4 invited colloquia.

**Students Advised:**

Jaquille Jones, Undergraduate class of 2015, Dartmouth College

**Observing Time Allocation:**

Telescope	Instrument	Year	Role	PI	Time Allocated
SALT	HRS	2014a	Co-I	B. Chaboyer	5 hours
NOT	FIES	2014a	PI	G. Feiden	20 hours
SALT	HRS	2013b	Co-I	B. Chaboyer	7 hours
SALT	HRS	2013b	Co-I	B. Chaboyer	7 hours

**Teaching Experience:**

2014 – Instructor Uppsala University  
 Taught recitation and exercise lessons for introductory physics and led a reading course on selected astrophysical topics from the popular and professional literature.

2008 – 2013 Teaching assistant & guest lecturer Dartmouth College  
 TA for undergraduate courses in introductory physics and astronomy as well as a graduate course in advanced stellar astrophysics. Duties included leading laboratory exercises, holding office hours, and grading assignments and tests. Substitute/guest lecturer for introductory astronomy courses. Topics included a two part series on stellar evolution, two lectures on special relativity, terrestrial planet atmospheres and volcanism, and exoplanet detection.

**Professional Service**

2014 External proposal referee French CFHT TAC  
 2014 – Co-organizer, Cool Stars 19 workshop Uppsala University  
 2013 – Organizer of astronomy division’s weekly meetings Uppsala University  
 2011 – 2013 Organized weekly journal club for astronomers Dartmouth College

**Synergistic Activities:**

- Development of the Dartmouth magnetic & pre-MS stellar evolution model grid.
  - Publicly available collection of magnetic stellar models developed (*coming 2015*).
- Co-developer of Dartmouth's *Stellar Forensics* exhibition. Presented at:
  - USA Science and Engineering Festival Exposition, Washington, D.C. (2010)
  - New Hampshire Space Grant Consortium Exposition, Durham, NH (2011)
  - McAuliffe-Shepard Discovery Center Space Camps, Concord, NH (2010 – 2011)
- Public Lectures:
  - *The Origin of the Universe*, McAuliffe-Shepard Discovery Center, Oct. 2011
- Public Observing at Dartmouth College & Quechee (VT) State Park

**Technical Skills:**

**Proficient in:** Fortran, Python,  $\text{\LaTeX}$ , Gnuplot, HTML, CSS, Unix/Linux

**Experience in:** C/C++, Bash scripting, Awk, Git, Mercurial, IDL, IRAF, Java, Javascript, PHP

– *Publication Record Below* –

**Submitted Publications:**

2. *KOI-2704, KOI-2842, and the Occurrence of Compact Multiples Orbiting Mid-M Dwarf Stars*  
Muirhead, P. S., Mann, A. W., Morton, T. D., et al. (incl. **Feiden, G. A.**), ApJ (Oct 2014).
1. *Stellar Diameters and Temperature VI. High angular resolution measurements of the transiting exoplanet host stars HD 189733 and HD 209458 and implications for models of cool dwarfs*  
Boyajian, T. S., von Braun, K., **Feiden, G. A.**, et al. MNRAS (Aug 2014).

**Refereed Publications:**

First-author: 7 publications.

7. *Revised age for CM Draconis and WD 1633+572: Toward a resolution of model–observation radius discrepancies.*  
**Feiden, G. A.** & Chaboyer, B. (2014) A&A, in press. ([ADS](#))
6. *Magnetic Inhibition of Convection and the Fundamental Properties of Low-Mass Stars. II. Fully Convective Main Sequence Stars*  
**Feiden, G. A.** & Chaboyer, B. (2014) ApJ, 787, 53. ([ADS](#))
5. *Magnetic Inhibition of Convection and the Fundamental Properties of Low-Mass Stars. I. Stars with a Radiative Core*  
**Feiden, G. A.** & Chaboyer, B. (2013) ApJ, 779, 183. ([ADS](#))
4. *The Interior Structure Constants as an Age Diagnostic for Low-Mass, Pre-Main Sequence Detached Eclipsing Binary Stars*  
**Feiden, G. A.** & Dotter, A. (2013) ApJ, 765, 86. ([ADS](#))
3. *Self-Consistent Magnetic Stellar Evolution Models of the Detached, Solar-Type Eclipsing Binary EF Aquarii*  
**Feiden, G. A.** & Chaboyer, B. (2012) ApJ, 761, 30. ([ADS](#))
2. *Reevaluating the Mass-Radius Relation for Low-Mass, Main Sequence Stars*  
**Feiden, G. A.** & Chaboyer, B. (2012) ApJ, 757, 42. ([ADS](#))
1. *Accurate Low-Mass Stellar Models of KOI-126*  
**Feiden, G. A.**, Chaboyer, B., & Dotter, A. (2011) ApJL, 739, L25. ([ADS](#))

Co-author: 7 publications.

7. *The G+M Eclipsing Binary V530 Orionis: A Stringent Test of Magnetic Stellar Evolution Models for Low–Mass Stars*  
Torres, G., Lacy, C. H. S., Pavlovski, K., **Feiden, G. A.**, et al. ApJ, in press.
6. *Empirical Tests of Pre–Main–Sequence Stellar Evolution Models with Young Eclipsing Binary Stars*  
Stassun, K. G., **Feiden, G. A.**, & Torres, G. (2014) New Astronomy Reviews, 60, 1. ([ADS](#))
5. *BANYAN. IV. Fundamental Parameters of Low-Mass Star Candidates in Nearby Young Stellar Kinematic Groups – Isochronal Age Determination Using Magnetic Evolutionary Models*  
Malo, L., Doyon, R., **Feiden, G. A.**, et al. (2014) ApJ, 792, 37. ([ADS](#))
4. *Characterizing the Cool KOIs. VI. H– and K–Band Spectra of Kepler MDwarf Planet-Candidate Hosts*  
Muirhead, P. S., Becker, J., **Feiden, G. A.**, et al. (2014) ApJS, 213, 5. ([ADS](#))
3. *The Metallicity of the CM Draconis System*  
Terrien, R. C., Fleming, S. W., Mahadevan, S., et al. (inc. **Feiden, G. A.**) (2012) ApJL, 760, L9. ([ADS](#))
2. *Age and helium content of the open cluster NGC 6791 from multiple eclipsing binary members II. age dependencies and new insights*  
Brogaard, K., VandenBerg, D. A., Bruntt, H., et al. (inc. **Feiden, G. A.**) (2012) A&A, 543, A106. ([ADS](#))
1. *Period-colour and amplitude-colour relations in classical Cepheid variables – V. The Small Magellanic Cloud Cepheid models*  
Kanbur, S., Ngeow, C., & **Feiden, G. A.** (2007) MNRAS, 380, 819. ([ADS](#)).

#### Non-Refereed Publications:

7. *Eclipsing binaries as tests of low-mass stellar evolution theory*  
**Feiden, G. A.**, to appear in “Living Together: Planets, Host Stars, and Binaries.”
6. *The Benchmark Eclipsing Binary V530 Ori: A Critical Test of Magnetic Evolution Models for Low–Mass Stars*  
Torres, G., Lacy, C. H. S., Pavlovski, K., **Feiden, G. A.**, et al., to appear in “Living Together: Planets, Host Stars, and Binaries.”

5. *Touchstone Stars: Highlights from the Cool Stars 18 Splinter Session*  
Mann, A. W., Kraus, A., Boyajian, T. S., et al. (inc. **Feiden, G. A.**) (2014) in proceedings of the 18th Workshop on Cool Stars, Stellar Systems, and the Sun.
4. *Updating the Dartmouth Stellar Evolution Model Grid: Pre-Main-Sequence Models & Magnetic Fields*  
**Feiden, G. A.**, Jones, J., & Chaboyer, B. (2014) in proceedings of the 18th Workshop on Cool Stars, Stellar Systems, and the Sun. ([ADS](#))
3. *Magnetically Induced Radius Inflation of Low-Mass Stars*  
**Feiden, G. A.** & Chaboyer, B. (2013) in “Setting a new standard in the analysis of binary stars,” EAS Publication Series, 64, 127. ([ADS](#))
2. *Do Magnetic Fields Actually Inflate Low-Mass Stars?*  
**Feiden, G. A.** & Chaboyer, B. (2013), to appear in “Magnetic Fields Throughout Stellar Evolution,” IAU Symposium, 302 ([ADS](#)).
1. *Parallaxes of metal-poor main-sequence stars*  
Chaboyer, B., **Feiden, G. A.**, Benedict, G. F., et al. (2013), in “Advancing the Physics of Cosmic Distances,” IAU Symposium, 289, 87. ([ADS](#))

### Conferences & Seminars:

#### Talks:

9. *Current state of stellar evolution models of young stars*  
(Invited) IAU Symp. #314, Atlanta, Georgia, May 2015
8. *Eclipsing binaries as tests of low-mass stellar evolution theory*  
(Invited) “Living Together: Planets, Host Stars, and Binaries,” Litomyšl, Czech Republic, 08 September 2014.
7. *Confronting Predictions of Stellar Evolution Theory with Touchstone Stars*  
(Invited) Cool Stars 18 Splinter Session: Touchstone Stars, Flagstaff, AZ, 09 June 2014.
6. *Do Magnetic Fields Actually Inflate Low-Mass Stars?*  
Binary 2013 conference, Leuven, Belgium, 17 September 2013.
5. *Do Magnetic Fields Actually Inflate Low-Mass Stars?*  
IAU Symp. #302, Biarritz, France, 26 August 2013.

4. *Can Magnetic Fields Inflate Low-Mass Stars?*  
Science Today Colloquium, SUNY Oswego, Oswego, NY, 06 February 2013.
3. *Self-Consistent Magnetic Stellar Evolution Models of Low-Mass Stars in Detached Eclipsing Binaries*  
Dissertation Presentation - AAS Meeting 221, Long Beach, CA, 08 January 2013.
2. *1-D Magnetic Stellar Evolution Models of Low-Mass Stars*  
Astrophysics Group Seminar, NORDITA, Stockholm, Sweden, 19 December 2012.
1. *Self-Consistent Magnetic Stellar Evolution Models*  
Astronomy Seminar, Uppsala University, Uppsala, Sweden, 13 September 2012.

**Posters:**

6. *Spectroscopic Study of the Low Mass Benchmark Eclipsing Binary UV Piscium*  
**Feiden, G. A.**, Stempels, E., Hebb, L., et al. "Living Together: Planets, Host Stars, and Binaries," Litomyšl, Czech Republic, 08 September 2014.
5. *Updating the Dartmouth Stellar Evolution Model Grid: Pre-Main-Sequence Models & Magnetic Fields*  
**Feiden, G. A.**, Jones, J., & Chaboyer, B. Cool Stars 18, Flagstaff, AZ, 09 – 13 June 2014.
4. *Self-Consistent Magnetic Stellar Evolution Models*  
**Feiden, G. A.** & Chaboyer, B. Cool Stars 17, Barcelona, Spain, 24 – 29 June 2012.
3. *The Low Mass, Stellar Mass-Radius Relationship*  
**Feiden, G. A.** & Chaboyer, B. First Kepler Science Conference, Moffett Field, CA, 5 – 9 December 2011.
2. *Mining the Kepler Mission Database: Rotations, Starspots, Ages and Possible Tidal Interactions of Stars with Close-in Planets*  
**Feiden, G. A.**, Guinan, E., Boyajian, T. S., et al. AAS Meeting 217, Seattle, WA, 9 – 13 January 2011.
1. *A Theoretical Investigation into the Properties of RR Lyraes at Maximum and Minimum Light*  
**Feiden, G. A.**, Kanbur, S., & Szabo, R. AAS Meeting 209, Seattle, WA, 05 – 10 January 2007.