***NEW RESEARCH METHODS COURSE IN OBSERVATIONAL ASTRONOMY***
***AST 341 Observational Techniques II, Spring Term 2018***

The course begins with an observing run at Kitt Peak National Observatory near Tucson, AZ in January 2018. The class will use the WIYN 0.9-meter telescope and Half Degree Imager CCD Camera to study variations in young low mass stars from a variety of processes: rotating star spots, chromospheric activity, mass accreting from a protoplanetary disk, and eclipsing companions. Each student will get their own data, and reduce and analyze it during weekly seminars through the semester, led by the instructor, Kimberly Ward-Duong. Scientific results will be presented in a poster session to the full Five College Astronomy Department at the end of the semester, and may result in co-authorship on a published paper.

Some experience with techniques of CCD imaging, photometry, astrometry, and statistical image analysis is expected, gained either in AST 337, another course, or previous research experience. *The Five College Astronomy Department will cover the cost of the trip to the telescope, provided you commit to full participation in the class from January through May*.

Enrollment is by permission of the instructor and is limited to 10-12 students. *Interested students must submit a written application (see attached form), provide a current transcript, the name of one astronomy professor for a reference, and a personal statement that includes why you want to take this course and what your qualifications are*. The course is 4 credits and will meet 3 hr/week through the semester, probably Wednesday evenings at Amherst College.

***Course logistics:***

- Prepare for observing prior to departure -- complete reading assignment on telescope, instrument manuals, science justification for observing proposal
- Observing at Kitt Peak National Observatory January 12-19
    - Students will be at the telescope in one of two 4-night shifts
- Class Seminar will meet once a week during spring term, 3 hr/wk, on Wednesday evenings from 7-10 pm. Each student will also be expected to work individually on their data for approximately 6 hours a week in order to complete the project.
- Last week of classes: Final project presentations in poster session to FCAD. No exam.

**Application Form: AST 341 Observational Techniques II, Spring 2018**
**Due Nov 3, 2018**

**Name:**

**School:**

**Email address:**

**Year:**

**Major:**

**Courses in Astronomy:**

**Courses in Physics:**

**Experience with Computer Programming:**

**Have you taken AST337? If not, what previous experience qualifies you for this course?**

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**If accepted for the course, are you prepared to sign a form saying you agree to complete the full semester of AST 341 in order to qualify for travel funding?**

**Do you have a preference for observing in the first or second half of the week of Jan 12-19?**

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**Include with application:** *completed form, academic transcript, one page (or less) personal statement, name of astronomy professor who has agreed to write a reference for you.*

**Submit application to astronomy department at your school:**
**D. Dyar (MHC), S. Hameed (HC), K. Follette (AC), J. Lowenthal (SC), R. Snell (UMass)**