Abstracts of Papers and Posters Presented at the Joint Meeting of the Society for Astronomical Sciences and the American Association of Variable Star Observers (AAVSO 101st Spring Meeting), Held in Big Bear Lake, California, May 22–24, 2012

Fast Spectrometer Construction and Testing *(Abstract)*

John Menke
22500 Old Hundred Rd, Barnesville, MD 20838; john@menkescientific.com

Abstract This paper describes the construction and operation of a medium resolution spectrometer used in the visual wavelength range. It is homebuilt, but has built in guiding and calibration, is fully remote-operable, and operates at a resolution R = 3000. It features a fast *f*/3.5 system, which allows it to be used with a fast telescope (18-inch *f*/3.5) with no Barlow or other optical matching devices.

Observations Using a Bespoke Medium Resolution Fast Spectrograph *(Abstract)*

John Menke
22500 Old Hundred Rd, Barnesville, MD 20838; john@menkescieentific.com

Abstract Designing and building a medium resolution (R = 3000) spectrograph was the relatively easy part. The really challenging part is learning how to use it: learning the characteristics of the spectrograph, choosing the right kind of astronomical problems, learning the best methods of taking data, and figuring out how to analyze the results. I have used several observing projects to "commission" this system, including measuring the Doppler shifts in several WUMa type stars. I will briefly describe the spectrograph but discuss in more detail the early experiences of using it.

Enhancing the Educational Astronomical Experience of Non-Science Majors With the Use of an iPad and Telescope *(Abstract)*

Robert M. Gill
Michael J. Burin
California State University, San Marcos, Physics Department, 333 S.Twin Oaks Valley Rd., San Marcos, CA 92096; rgill@csusm.edu, mburin@csusm.edu

Abstract General Education (GE) classes are designed to broaden the understanding of all college and university students in areas outside their major interest. However, most GE classes are lecture type and do not facilitate hands-on experimental or observational activities related to the specific subject matter. Utilizing several astronomy application programs (apps), currently available for the iPad and iPhone, in conjunction with a small inexpensive telescope allows students unique hands-on experiences to explore and observe astronomical objects and concepts independently outside of class. These activities enhance the student's overall GE experience in a unique way not possible prior to the development of this technology.

The Rotational Period of the Sun Using the Doppler Shift of the Hα Spectral Line *(Abstract)*

Robert M. Gill
California State University, San Marcos, Physics Department, 333 S.Twin Oaks Valley Rd., San Marcos, CA 92096; rgill@csusm.edu

Abstract The fact that the sun rotates is obvious by observing the daily motion of sunspots. The overall sunspot movement to the west is a result of this solar rotation. However, solar rotation can also be determined by observing the solar spectrum at the solar limbs. The absorption lines in the spectrum will display a Doppler shift since the east limb is coming toward the observer and the west limb is moving away. The velocity of the limb, relative to the observer, can be determined from these spectral line shifts. Knowing the solar radius, the rotational period can be calculated.

A Single Beam Polarimeter *(Poster abstract)*

Jerry D. Horne
3055 Lynview Drive, San Jose, CA 95148; jdhorne@hotmail.com

Abstract As astronomical polarimetry is an emerging field of study for amateur astronomy, the background, theory, and instrumentation of astronomical polarimetry is reviewed. Additionaly, the design and construction of a simple single beam polarimeter is presented, together with the results of its initial calibration.