AGK3R stars can be found and used to produce reference stars for the 16 inch with its plate scale of 47.1"/mm. The instrument is inexpensive and easy to build. The usual length of this Schmidt is no problem when it is mounted on a long focus astrograph. Partial support for this work from the American Astronomical Society in the form of a mini grant is gratefully acknowledged.

11.07 Assessment of the U.S. Space Research Program. W.E. HOWARD III & P.R. CHANDLER, OFF. TECH. AMST (OTA). The Space Technology Program of the Office of Technology Assessment (OTA) of the U.S. Congress is undertaking a study of issues, including issue priorities, potential policy solutions, areas of concern and likely future problems related to the nation's space research program. The study is being conducted through a series of interviews, responses to questions posed by OTA, and a formal workshop. The input for the study comes from individuals concerned with the conduct of space research, both inside and outside the government.

A preliminary assessment shows the need for (1) a more stable "base" budget for space research, with planning continuity for a few years to a decade, (2) programs that launch flexibility that will permit the conduct of space research from high orbiters, (3), a greater fraction of resources to be spent for data analysis, (4) scientists to factor cost tradeoffs in more effectively with scientific priorities, (5) better coordinating and priority-setting mechanisms among advisory committees and agencies, and (6) more equitable global-provision understanding in mission participation and onaments with foreign countries.

These preliminary findings are subject to change and further refinement as the study progresses.

11.08 The Analemma—A Lab Exercise for Introductory Astronomy. R.N. ALLEN, U. of WI-LA CROSSE.

A laboratory exercise has been developed which allows a variety of information to be deduced from the analemma. Terms which have to be defined before doing the lab include upper meridian, declination, altitude, apparent sun, mean sun, local apparent time, local mean time, and equation of time. Using the analemma, students can determine: 1. the declination of the apparent sun for any day of the year, 2. the noon altitude of the apparent sun at any latitude on Earth for any day of the year, 3. the amount of time before or after local mean solar noon that the apparent sun crosses the upper meridian on a particular date and 4. the standard (watch) time that the sun crosses the upper meridian on a particular date at a given location.

11.09 Thomas Jefferson Jackson See and the University of Missouri, CHARLES J. PETERSON, U. Mo. - COLUMBIA.

See's undergraduate career (1885-1889) at the University of Missouri is of great relevance to understanding the later events which would effectively destroy his scientific and personal reputation. At UM, See came under the strong influence of Prof. William Benjamin Smith, a noted mathematician and classical scholar—it is to Smith that we must attribute See's attitudes toward classical science which figure so prominently in many of his writings. See also was influenced by astronomer-mathematician Joseph Ficklin and prof. of Physics Benjamin E. Thomas. Thomas, an excellent instructor, resigned in a dispute with Samuel S. lows, the impertinent president of the institution, who replaced him with a person of questionable academic merit. See became one of the leaders who mounted a student revolt against laws. See's testimony was already in other serious political trouble in the state. In 1889 the state legislature investigated the situation on campus; See's testimonial role was a prominent factor in the decision to force the resignation of laws. See, too, strongly impressed politician Champ Clark who became his life-long friend. (Had political fortunes in 1912 been slightly different, Clark could have become President of the United States—there is little doubt that See would have been appointed Director of the U.S. Naval Observatory.) These events, however, do not imply that See was universally favored on campus. Although he obtained high honors in his scholarship and was awarded both the Valedictory Prize and the Laws Astronomical Medal, a gold medal in oratory was denied him in 1889 due to an accusation of plagiarism. The combined membership of the Union Literary and the Athenaeum Societies acquited See of the charge, but the former group condemned the latter for the decision, voted to refuse the award to See, and voted to abolish permanently the competition.

Session 12: Solar II
1440-1700 (Room D)

12.01 Detailed Structure and Energetics of Accelerating Coronal Bullets. J.T. KARPEN*, E.S. ORAN, J.F. MORIS, and J.T. MAIREKA, E.C. BULBS Center for Space Research and Laboratory for Computational Physics, NRL.

The coronal bullets, first identified in EUV spectroscopic observations by the HETE, are jets of cool, dense plasma which accelerate through the solar corona at velocities of 40 to 400 km s^-1. The velocity and temperature evolution of these events has been duplicated successfully by computer simulations using the NRL Dynamic Flux Tube Model (Karpene et al. 1982, Ap. J., in press). This work has been extended and refined through the implementation of an adaptive gridding technique, which enables the physical parameters in and around the model bullet to be determined with much better spatial resolution than was previously available. We present here a more detailed examination of the properties and origin of these bullets, with particular emphasis on the following aspects: the ranges of initial masses, densities, velocities, and temperatures which yield agreement between the simulated bullet behavior and the observations; the dynamic redistribution of energy within the accelerating material; and the range of heights in the solar atmosphere at which the bullets originate.

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