Be stars. The Michigan record covers more than 40 years with only minor interruptions.

From 1912 to 1932 the variation was fairly regular, with a period of 4.4 years (Lockyer 1930; Curtiss 1932). As in other stars of this type, changes of relative strength of "red" and "violet" components of hydrogen emission lines were accompanied by displacements of the bright lines and their central absorptions. Greatest strength of violet components was associated with maximum longward displacement of both the emission and absorption. Maximum observed amplitudes were about 90 km/sec. Outer red and violet edges of the emission had velocity curves essentially parallel to that of the central absorption lines. When plotted to an appropriate scale, the curve of V/R ratio was also nearly parallel to these.

The cycle following 1932 had strongly reduced amplitude in both velocity and V/R, and the emission faded appreciably but did not disappear. About 1937 the variations ceased, and since then the velocity has remained near its median value and the emission components have remained practically equal. In 1957 there was still no sign of resumption of activity.

Except for the retention of its emission lines, HD 20336 closely paralleled the behavior of 25 Orionis (Dodson 1936, 1940).

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Olson, Edward C.; Stewart, Jon A.; Wrubel, Marshal H. and Schroeder, Leon W. Electronic computations of astrophysical interest.

Using the IBM Type 650 magnetic drum calculator astronomers at Indiana University have programmed several problems of interest in stellar interiors and stellar atmospheres.

Stellar interiors. Olson programmed the computation of Rosseland mean opacities so that the relative abundances of the elements can be varied. Dr. G. Keller generously provided the basic data that were used in the Keller-Meyerott computations. The purpose of this investigation was to permit the computation of opacities for a variety of mixtures of interest in stellar evolution.

The computations at present are limited to the

values of the temperature and density parameters originally used by Keller and Meyerott. A single mean opacity can be obtained in $2\frac{1}{4}$ minutes of machine computation. This program can be run on any IBM 650 and will be made available on request.

Stewart used Olson's calculations and recent revisions by Fowler *et al.* of nuclear cross sections, to find more accurate interpolation formulae for κ and ϵ than have previously been used in the integration of stellar models. These formulae may be easily programmed for electronic computers although they are rather complicated for hand computation. Formulae of this type were used by Sears in the solar models described in another paper at these meetings.

Stellar atmospheres. A program by Wrubel permits the calculation of theoretical line profiles and curves of growth for idealized models. Milne-Eddington profiles for varying ratios of line absorption to line scattering were computed using this program. It can be easily adapted to other models. This program will also be made available on request.

Last year, Heiser reported on some work done at Indiana, in which solar magnesium line profiles were predicted by calculations involving Hubenet's model atmospheres. Heiser took into account the detailed variation of ionization, damping, etc. with depth. Schroeder has now shown, using Wrubel's program, that Heiser's results can be duplicated in terms of the Milne-Eddington model if the appropriate parameters are taken as constant and equal to their values at optical depth 0.80. Schroeder has further extended this work to similar lines of Procyon, using a model atmosphere kindly provided in advance of publication by Dr. F. Edmonds.

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Sahade, Jorge. On the system of β Lyrae.

The "classical" model of the system of β Lyrae postulates two components, a supergiant B8 primary star with a mass of about $80 \odot$ and a secondary star, of perhaps spectral type F, smaller in radius than the B8 star and with a mass of about $50 \odot$. This model encounters difficulties which have not been removed by