sequence. It is suggested that one of the coronal lines, $\lambda 5694$, $\lambda 4586$, or $\lambda 4567$, may be due to this transition.

The yellow line is known to exhibit very erratic behavior in its intensity, and therefore simultaneous observations of $\lambda 5694$, $\lambda 4586$, and $\lambda 4567$ should help to confirm or discard these identifications.

The second difficulty with Edlén's identification is the high ionization potential of 814 volts required to produce CaXV ions. There seems to be conflicting observational evidence² regarding the high or low excitation character of the yellow line. An observational check on this point is very important. The intensity variations of the yellow line relative to those of other high as well as low excitation lines should be observed. For this work it is of great importance that intensities of different lines be measured simultaneously and in the same region of the corona.

There may be another high excitation line in the observable region due to the transition $3s3p\ ^3P_2\text{--}^3P_1$ in NiXVII , which should show a behavior somewhat similar to that of the CaXV lines. It is indicated that either of the two lines, $\lambda 4586$ or $\lambda 4567$ may be due to NiXVII . However, it has not as yet been possible to identify one of these lines as due to CaXV and the other as due to NiXVII .

1. *Z. Astroph.* **22**, 30, 1942.

2. W. O. Roberts, Private communication; M. Waldmeier *Physica* **12**, 733, 1946.

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Nelson, Burt. Photoelectric study of SV Camelopardalis.

Light-curves through yellow and blue filters have been made of SV Camelopardalis over a period extending from April 4 to June 4, 1951. A preliminary solution based on these observations yields the value for the ratio of the radii $k = 0.66 \pm 0.04$ as compared to 0.62 determined by Wood. The computation for k was based on only the up-curve portion of primary eclipse and the maximum between primary and secondary. This procedure was followed because the maximum between secondary and primary eclipse appears to be approximately 0.05 mag. lower than the other maximum, and the scatter is greater.

The portion of the curve between secondary and primary eclipse is of particular interest because previous observations made by Wood show

this part of the curve to be higher than the part between primary and secondary.

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Odgers, G. J. Theory of the Russell-Hertzsprung diagram.

It is shown how the four first-order differential equations governing stellar equilibrium may be solved directly. Using the solution, the results of current nuclear physics provide a simple and direct explanation of two features of stellar populations known observationally, viz., the mass-luminosity relation and the spectral-type luminosity relation for the main sequence. The observed features of the high-temperature main-sequence stars are given a direct explanation in terms of these results. Relevant properties of the energy-producing mechanism of the giant sequence of stars are deduced from their observed features, and the results compared with those derived on the basis of present-day nuclear theories. The bearing on theories of stellar evolution is explained.

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Page, Thornton. Radial velocities and masses of the double galaxies.

Differential radial velocities have been measured from 37 spectra of 20 double galaxies, each spectrum taken with the slit across both galaxies. Measured values of Δv range from 0 to 360 km/sec, with errors of the order of ± 50 km/sec, and measured values of the mean radial velocity of each pair, from +500 to +6700 km/sec, with errors of the order of ± 70 km/sec.

Assuming circular orbits, random inclinations of the orbits, i , random angle from the node in each orbit, Ω , and using distances derived from the velocity-distance law, a mean mass of the 40 galaxies is obtained by a simple application of Kepler's third law. Moreover, a double-angled mass function, F , which is a lower limit to the average galaxy mass in each pair, is derived from observed quantities:

$$F = \frac{60}{2^3(4.74\pi)^2 k} \bar{v}s(\Delta v)^2 \leq \bar{M}, \quad (1)$$

where k is the constant in the velocity-distance law (5.26×10^{-4} km sec⁻¹pc⁻¹) and s is the angular separation of the pair in minutes of arc.