end deviates from its normal trend, turning toward higher luminosities, and in type II often forms a bridge from the main sequence to the giant branch.

A close relationship between the stars of the same clusters is generally shown by common spectral peculiarities such as predominance of diffuse lines or sharp lines, hydrogen emission, etc.

The luminosity-spectral class distribution of all galactic star clusters appear to be variations of Baade's population type I. One exception, Messier 67, resembling Baade's population type II should probably be considered as a poor globular cluster; its relatively large distance from the galactic plane also supports this suggestion.

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Bauer, Carl August. On the origin of meteorites.

This paper develops and extends the arguments in favor of the hypothesis that the meteorites had their origin in the disruption of an ancient planet that once revolved about the sun in an orbit lying between the orbits of Mars and Jupiter. In addition it reconstructs a detailed description or model for this proposed ancient planet from a study of the composition and structure of the meteorites.

There is shown to be a complete absence of a correlation between the falls of meteorites and the occurrence of meteor showers that are associated with comets. On the other hand, there are evidences that the meteorites are related to the minor planets which revolve about the sun in orbits between the orbits of Mars and Jupiter. The many evidences that the meteorites solidified within a large body are discussed and extended. Formerly, the extreme differences in the ages of the metallic meteorites presented a serious difficulty to the hypothesis that they had all originated within the metallic core of a single body. However, it has recently been recognized that cosmic radiation produces helium in meteorites. Therefore, their ages, calculated on the assumption that the helium was derived only from the decay of uranium and thorium, are greater than the true times since their solidification. An allowance for the effects of cosmic radiation eliminates much of the scatter in the ages and makes it appear possible that the metallic meteorites solidified while part of the core of an ancient planet. This parent planet of the meteorites was disrupted after it had com-

pletely solidified, probably several hundred million years ago. This fact is important because it indicates at once that this planet was considerably smaller than the earth.

The model proposed for the ancient planet has a nickel-iron core similar to that believed to exist at the center of the earth. Within this metallic core the nickel is concentrated toward the center. Surrounding this metallic core is a transition layer of which the stony-iron meteorites are representative. Outside of this transition layer is a stony shell. Within the stony shell the model specifies that the percentage of free metal decreases with distance from the metallic core. The small number of stony meteorites in which there is no free metal represents a thin outer mantle that is similar to the rocks observed near the surface of the earth. Specifically, the achondrites are placed near the outside surface of the planet while the stony material in which the chondrites occur is at a greater depth in the stony shell. This model has the advantage that, in going outward along a radial line, it not only gives a continuous change in the per cent of free metal present, but it also gives a continuous change in the per cent of nickel in this free metal and arranges the meteorites in a continuous sequence with respect to their structure. In addition, this model satisfies other requirements and has a logical explanation in terms of the physical processes that occur.

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Beals, C. S. and R. D. Hatcher. The photoelectric temperatures of the P Cygni stars.

The photoelectric temperatures of 52 P Cygni stars of spectral type from A4 to O5 have been determined from emission lines by Zanstra's method. For approximately half the stars accurate spectrophotometric measures of emission line intensity were available and for the remainder the intensities were estimated on the basis of published descriptions of spectra.

The computed temperatures were found to range from 10,000° to 42,000° and after smoothing by graphical methods a temperature scale for the O- and B-type stars showed the following values: A0, 16,000°; B0, 35,000°; O5, 40,000°. Comparisons are made with temperatures derived by other methods and reasons are given for attributing greater weight to the values from B0 to O5 than to those in the lower range of the sequence.

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