Figure 1. Density as a function of height above the solid surface.

coefficient of the gas.² The melting curve was extrapolated into the high pressure range by using a semitheoretical formula of F. Simon.³ Several model isothermal atmospheres of hydrogen, all at temperatures above critical, were constructed using the measured *PVT* data where possible and the extrapolations where necessary. Figure 1 shows the density as a function of height (in units of the scale height) measured upward from a hypothetical surface of solid hydrogen. The rapid decrease in density in the region of .075 g/cm³ and the physical properties of the gas at densities greater than this justifies use of the term ocean to describe the region up to this point. On this basis a hydrogen planet with the surface gravity of Jupiter would have an ocean 340 miles deep if the temperature were 150°K. A hydrogen planet with the surface gravity of Saturn at a temperature of 130°K would have an ocean 620 miles deep.

1. H. W. Woolley, R. B. Scott and F. B. Brickwedde, *J. Res. Nat. Bu. Standards* **41**, 379, 1948.
2. Fowler and Guggenheim, *Statistical Mechanics*, p. 285, 1949.
3. F. Simon, M. Ruhemann and W. A. M. Edwards, *Zs. Phys. Chem. B* **6**, 331, 1929.

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Deutsch, Armin J. The spectrum variable 56 Arietis and the period-line width relation.

In fair accord with an earlier prediction, the period of the spectrum variable 56 Arietis has

been found to be only 0^d.728 instead of the published value 2^d.5. It now follows that for all 10 spectrum variables of known period, the line-profiles can be quantitatively accounted for if we suppose that in each case the star rotates with the period of spectrum variation and is viewed in the equatorial plane. The spectrum variation results as large, spectroscopically peculiar areas are carried across the disk of the star by the axial rotation. The Doppler shifts of the variable lines are in rough quantitative accord with this model. In the case of 56 Arietis, at least four such spectroscopically distinct areas are indicated. Very roughly, these are bounded by meridians 90° apart.

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Dolder, Frederick P. and Walter Orr Roberts. Solar limb flares and the yellow coronal line.

A list of all solar flares published in the I. A. U. *Quarterly Bulletin of Solar Activity* for 1946 through 1950, when treated by simple statistical procedures, reveals an unmistakable degree of association between flares that occurred within 5° of the solar limb and the 43 instances of occurrence in this period of the yellow coronal line observed at Climax and Sacramento Peak. The probability for a number of chance coincidences equal to or greater than the observed number is less than 2×10^{-5} .

Additional evidences of association between the yellow coronal line and solar prominences exist. Prominences associated with this line showed, for example, decidedly more marked tendencies towards downward motion and towards apparent inflow of material from "space" than did prominences in general. The yellow line prominences showed more tendency towards breaking up into scattered knots, and less tendency towards formation of large stable masses than did prominences chosen at random.

The results combine to suggest that there is a strong relationship between solar prominences of the character associated with the yellow coronal line and areas of the sun exhibiting intense coronal line emission in $\lambda 5303$ and $\lambda 6374$ of *FexIV* and *Fex*.

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