the meteorites selected for this study showed helium contents far above that of any of the few previously measured for both isotopes separately or of the approximately 60 measured for total helium. Deep Springs has a total helium content about 1.7 times and Clark County about 1.4 times greater than Morden, the metallic meteorite that previously had the greatest known helium content.

The ratio of helium-3 to helium-4 in Deep Springs and Clark County are 0.27 and 0.25, respectively. Since these values are not particularly high these meteorites must have had moderate amounts of shielding and thus their exposure ages must be long. The preliminary estimates of their exposure ages is of the order of 3.5 and 5.5 billion years, respectively, which is considerably longer than the 2.4 billion years found for Williamstown (Schaeffer, 1960, *Phys. Today*, **13**, 18).

The helium contents of the nickel-rich ataxites are distributed much like that of the medium octahedrites. However, the hexahedrites investigated are distinct from other classes of meteorites in that their helium contents are unusually low and also their helium-3 to helium-4 ratios average much lower than other meteorites, ranging from 0.07 to 0.24. This is important because it indicates, for the first time, that these meteorites, as a class, have had a very different exposure history from other classes.

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An Approximation to Effective Temperature from the Curve of Growth. W. R. BEARDSLEY, *Allegheny Observatory, University of Pittsburgh*.—The value of stellar opacity as determined from curve of growth analysis by Greenstein's method is used to calculate an absorption temperature. The same basic assumptions as made by Greenstein are involved, namely: (1) Abundance is quantitatively the same as α Persei. (2) Iron exists nearly all as $Fe II$. In addition, a standard stellar abundance scale must also be assumed. For this I chose that of Aller as given by Suess and Urey, (1956, *Revs. Modern Phys.* **28**, 56). This is used to calculate electron scattering from electron pressure and ionization temperature and to determine a value for hydrogen abundance. The negative hydrogen absorption is calculated from electron pressure and the H^- absorption coefficient is as given by Chandrasekhar and Breen using ionization temperature to enter the table. Subtracting the electron scattering and the H^- absorption from the stellar opacity gives the hydrogen absorption. Correcting this value for induced emission, ionization, and abundance, one can then use it in the fundamental relation between hydrogen absorption and temperature, solving for absorption

temperature. The solution leads to a very sensitive determination of temperature. However, since H^- absorption was originally derived using ionization temperature, one must now use this temperature to get a new value of H absorption and then re-solve for a new absorption temperature. Three such iterations are usually sufficient to achieve a change in temperature of less than 5° . A final absorption temperature is then adopted to be the nearest multiple of 25° . The true probable error is difficult to estimate, however, an absorption temperature so determined should be of the same order of accuracy as the ionization temperature.

Results for supergiants in the range F0 to F8 give temperatures very close to the effective temperatures for this range as derived by Popper from the recently determined interferometric diameter of Sirius. Results for dwarfs give temperatures very much in excess, particularly those for the sun. This difficulty can be directly traced to the assumed hydrogen abundance. When improved values of the hydrogen abundance become available, this method should provide reasonable approximation to effective temperatures.

The Light Variation and Orbital Elements of AH Virginis. L. BINNENDIJK, *Flower and Cook Observatory, University of Pennsylvania*.—See this issue, p. 358, for complete article.

The Space Distribution of Meteoric Dust Particles. ROBERT E. BRIGGS (introduced by L. G. JACCHIA), *Smithsonian Astrophysical Observatory*.—An integral formula due to Haug is used to compute the space density of meteoric dust particles at many points in the solar system. The formula assumes the distribution of dust particles to have rotational symmetry about an axis through the sun which is normal to the ecliptic and also to have plane symmetry about the ecliptic. Data needed for the integration must be in the form of a joint frequency distribution for three orbital parameters of a particle's orbit, namely, inclination, eccentricity, and semi-major axis. Observed meteor orbits published by meteor analysis projects at Harvard were assumed to be typically representative of interplanetary meteoric particles. For simplicity of integration the foregoing parameters were further assumed to be independently distributed, and probability distributions for each were determined empirically. A tabulation of the resulting densities shows a strong concentration in the plane of the ecliptic with a sharp maximum at a distance of 0.06 a.u. from the sun. In planes parallel to the ecliptic the maxima become flatter and appear much farther from the sun as distance from the ecliptic increases. A sphere of