

With greater or less completeness and accuracy the atmospheres of the moon, of Mars, and of other planets have been studied and accounted for.

## IV

### THE ATMOSPHERE

Even at the earliest period in the evolution of a typical star there appears to be a progressive variation in chemical composition from center to periphery. Theoretically it seems inevitable that the heaviest elements should be concentrated in the interior and that those of lowest atomic weight should be present in greatest amount near the surface. Actually, as above stated, spectroscopic investigation fully confirms this view. Thus the spectra of typical hot stars show that hydrogen is an invariable constituent of their superficial parts. Indeed the universal presence of hydrogen under such circumstances is undoubtedly one of the most clearly established facts of stellar astronomy. As stars cool and become red the spectral changes quite as unmistakably point to the presence of carbon. Accordingly we possess the best of evidence and the best of reasons for the belief that large quantities of hy-