It almost suggests that the source of the activity is growing weaker. Then preceding the next "flat" maximum is a long quiet period. It has been found that several of the stars of this class are double and it appears likely that all will eventually be found to have companions.

By contrast, the R Coronae Borealis variables have rather slow non-periodic drops in brightness ranging from one to nine magnitudes. Such drops may last from around 10 days to several hundred days. Stars of this type are of high luminosity and belong to classes F, G, K and R. It has been suggested that their variations are due to a veiling effect. Among stars of this type studied by us are S Apodis and RY Sagittarii. It has been found that for these two stars there is a periodic fluctuation during the time they are bright.

We find another type of dwarf star in the UV Ceti variables. These have infrequent and very short flares with a range of from one to six magnitudes. The increase takes place in a matter of a few seconds, after which they fade away in a period of a few minutes. As some of you know efforts are made to obtain observations both visually, photo-electrically and by radio techniques at the same time for such flares.

We now come to the RW Aurigae and T Tauri stars, which are associated with dark nebulae. One of the best examples of such an association is that in Corona Australis. Here too we have surrounding R Coronae Australis a typical example of the fan-shaped nebula that often exists in association with such stars. The nebula itself is variable, and appears together with similar nebulae attached to two other T Tauri type stars. The R Coronae Australis nebula does not fluctuate in step with the star with which it is associated. Rather it appears as if waves of light spread outwards from the star across the nebula, successively illuminating different portions of it.

RW Aurigae variables are usually considered to be irregular. Their spectra can range from B to M, both with and without emission lines. In brightness they can change by a fraction of a magnitude to as much as four magnitudes. They are among the most interesting stars to observe, since, at times, they are extremely active and changes can take place from one hour to the next or even within a matter of minutes. At other times they shine almost steadily for weeks. Our organisation has paid particular attention to the RW Aurigae class and has taken part in several international programmes of intensive study of them. One result of this is the discovery that a number do actually have a basic period, around two and a-half days, although their actual variation can be quite different at different times. However, this period appears stable no matter how the stars are changing. It lead Hoffmeister, at the Hamburg I.A.U. meeting, to suggest that the cause of variation is something akin to sunspots causing alternate bright and dark areas on the outer surface of the star. It is more probable that being very young stars the cause of the variations is due to instability within the star.

Within the Orion nebula and surrounding regions there lie a large number of these objects. Another of these associations is to be found in the southern sky in Chamaeleon. The star T Chamaeleontis is notable for its almost continuous changes.

So far I have told you something of the nature of some rather wonderful and perhaps weird stars. But it remains to tell you about the most striking of them all. Again it is a star that can only be seen from the southern hemisphere and is one that has been most consistently studied by our members. This is Eta Carinae, a star so complex that it is simply unique. At present this star is almost constant just below naked eye visibility at magnitude 6.4. It was known at the end of the 17th century as a star of third or fourth magnitude. By the middle of the 18th century it was second or third magnitude. It then faded slightly but in 1835 it increased to