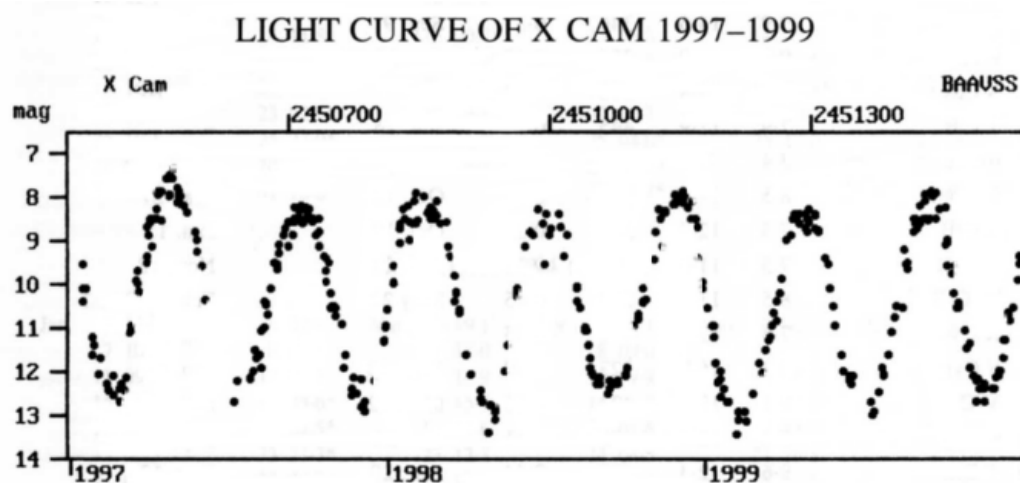


## Variable Star of the Year X Camelopardalis

Miras or Long Period Variables (LPV's) are slowly varying pulsating red giant and supergiant stars that have large amplitudes ranging from about 2 to 10 magnitudes. Their periods are spread between extremes of 90 and 1400 days but the vast majority range between 150 and 400 days. The large amplitude variation means that these stars are easily identified and all stars discovered before 1783 were Miras with the exception of Algol and various bright Novae and Supernovae (P Cyg was originally classed as a Nova). It is surprising therefore that one of the best Northern hemisphere Mira stars, X Cam, lay undiscovered until found in 1903 (by L. Cerski at Moscow).

Although Camelopardalis appears dull to the naked eye it is rich in variable stars that can be followed in binoculars or small telescopes. One easy method of locating X Cam is to imagine a line between Polaris and Capella; X Cam lies roughly one third the way from Polaris, just 2 degrees north preceding the asterism Collinder 464 that comprises six 6<sup>th</sup> magnitude stars including BN Cam. Because of its northerly declination it can be seen at any time on any night from the British Isles and is one of the most reliable circumpolar Mira stars that can be followed in an 8" telescope.



X Cam has an unusually short period of 144 days that ensures at least two maxima are exhibited each year. As can be seen from the light curve, the rate of rise is usually the same as the rate of fall whereas the majority of Mira stars tend to rise faster than they fade. The maxima and minima can vary considerably but the maxima are normally flatter and broader than the minima. The star is nearly always visible in binoculars at maximum (usually around magnitude 8) and sometimes fades only to magnitude 11 but on occasions it has dipped to magnitude 14 briefly. Like many other Mira stars, X Cam's colour changes and it becomes a more deep red when the star is faint. With the exception of S Car however, it is the brightest Mira star to have a spectral classification of K at maximum.

Observers who secure estimates of brightness three times a month (every ten days or so) will record a complete cycle in five months. So if you are a newcomer to observing variable stars you will soon be rewarded with success with X Cam. All you need is a small telescope and clear northern aspect.