

## Variable Star of the Year HU Tau

Neither of the stars which make up the HU Tauri system actually vary in brightness. HU Tau is only variable because the orbit of the system is edge on as seen from Earth and so the two stars can eclipse each other.

Analyses of observations have indicated that the brighter primary star is a main sequence star of about 4-5 Solar masses. The fainter secondary is only slightly more massive than our Sun but has expanded to fill its Roche Lobe, making it larger in size than the primary. Thus, during primary eclipse, the secondary star occults the primary, whereas, during the shallow secondary eclipse, the primary merely transits across the secondary.

Lying close to the Hyades cluster in the sky, HU Tau is fairly easy to locate and is well placed for observation during the autumn and winter months. Primary eclipses occur approximately every 2 days 1 hour 21 minutes. Thus, if an eclipse is observed at a particular time on one night, the next eclipse will occur two nights later, but at a slightly later time in the night (see table for predicted times in 2002).

The magnitude range is 5.9-6.7V, so outside of eclipses, HU Tauri will be similar in brightness to comparison stars A & B on the BAA chart.. During primary eclipse it becomes noticeably fainter than these comparisons and by mid eclipse it is close in brightness to comparisons E and F.

Eclipses are flat bottomed and last approximately 7 hours. To create your own light curve of an eclipse, start observing about 3-4 hours before the predicted time of minimum and make brightness estimates every 30 minutes until the eclipse is over. It is best to delay plotting the light curve until after the eclipse so as to avoid subconsciously influencing your brightness estimates.