

## *Star Twinkle Helps Measure Space Distance*

**A**STRONOMERS AT the Mt. Palomar Observatory here have completed studies of twinkling stars which will help measure astronomical distances far more accurately than ever before.

For more than 40 years astronomers have based their measurements on the twinklers, pulsating stars known as cepheid variables. But the calibrations were not as accurate.

These stars have two unique habits that make it possible to use them as distance indicators. They dim and brighten in a rhythmic cycle, called a period, and the length of their blink period and their brightness are related.

The longer the period, the brighter the star. Twinklers with half-day periods are 100 times brighter than the sun and those with 40-day blinks are 6,000 times brighter than the sun.

This means that if two cepheids of the same period are compared and one of them appears brighter than the other, the difference in brightness will be due entirely to the fact that one is farther away than the other.

If one appears to be one fourth as bright as the other, it means that it is twice as far away because brightness varies inversely with the square of the distance.