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THE DELTA SCUTI VARIABLE HR 1287

The variability of HR 1287 (44 Tauri) was noted by Henriksson (1977), who listed it as a Delta Scuti variable with amplitude 0^m104 and period 0^d1266 on the basis of six nights of observations over a six-month period. HR 1287 was observed at the Blue Mountain Observatory on September 24-25, 1979 with the 40-cm Cassegrain reflector and a Johnson single-channel photoelectric photometer equipped with an EMI 6256B photomultiplier. A Corning 3384 filter was used to define the V band. The photomultiplier signal was fed through a DC amplifier to a voltage-to-frequency converter, whose output was integrated by an electronic counter for ten seconds.

The stars HR 1269 and SAO 76480 were used as the comparison and check stars, respectively. The smoothed magnitude differences between HR 1287 and HR 1269 are plotted in Figure 1 as a function of Heliocentric Julian Date. A five-point running average was used to smooth the original data, which consisted of averages of three ten-second integrations spaced about two minutes apart. An additional straight average of pairs of successive points was applied to arrive at the points plotted in Figure 1. The scatter in the magnitude difference between the comparison and check stars was $\pm 0^m007$.

It appears from Figure 1 that the amplitude and period of HR 1287 were 0^m083 and 0^d1724 , respectively, on September 24-25, 1979. The maximum brightness occurred at HJD 2,444,141.8975, and the minimum brightness occurred at HJD 2,444,141.9837. The period given above was determined by doubling the time difference between maximum and minimum brightness. Thus it assumes that the brightness variation is perfectly

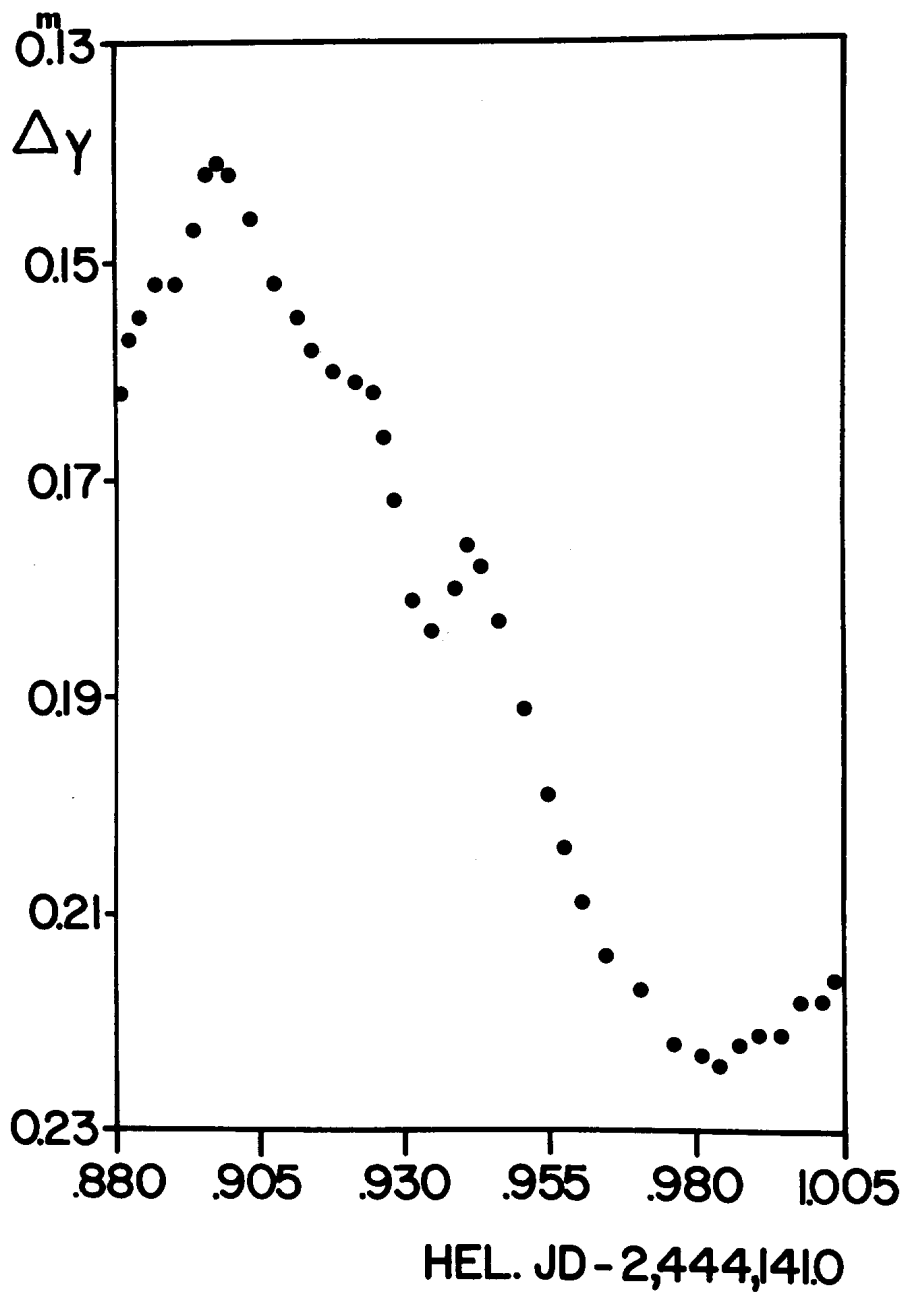


Figure 1. V-filter light curve of HR 1287 on September 24-25, 1979.

sinusoidal, which, of course, is not very likely. Even so the large difference between the value for the period given by Henriksson and that found above suggests either multiperiodic behavior for HR 1287 or a very rapid rise from minimum to maximum brightness (about $0^d.04$ to permit the observations presented here to be consistent with Henriksson's period of $0^d.1266$). The fragmentary portions of the rising brightness section of the light curve given in Figure 1 do not seem to indicate such a rapid brightness rise. Thus it appears more likely that HR 1287 is multiply periodic. A much less likely prospect is that it has only a single fundamental period which underwent rapid change between the time of Henriksson's observations and those presented here. However, the elapsed time of 3-4 years would seem to rule out this possibility. Further monitoring of HR 1287 will be carried out in order to clarify its behavior.

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Reference:

Henriksson, G. 1977, Astr. and Ap., 54, 309.