

COMMISSION 27 OF THE I. A. U
 INFORMATION BULLETIN ON VARIABLE STARS

NUMBER 259

Konkoly Observatory
 Budapest
 1968 March 7

RT LACERTAE - A PHOTOMETRIC PUZZLE

In 1965 at Kitt Peak National Observatory, UBV photo-electric observations were made of the eclipsing binary RT Lacertae. The 36-in. telescope was used in August and the No.4 16-in. in October. The data are given below. Column 1 is the date. Column 2 is the phase calculated using the elements 2421913.499 + 59074052 E. Column 3 is the differential V magnitude in the sense RT Lac minus BD+42°4270. Columns 4 and 5 are the B-V and U-B indices; these were measured directly with respect to several UBV standards, not differentially with respect to the comparison star.

Date	P	ΔV	B-V	U-B	Date	P	ΔV	B-V	U-B
Aug					Oct				
19-20	.9817	2.174			1 - 2	.4688	1.969		
	.9821	2.134				.4712	1.964	1.152	1.028
	.9935	1.954				.4720	1.975		
	.9939	1.944				.4724	1.989		
	.9945	1.944				.4734	1.975		
	.9994	1.924				.4736	1.971	1.157	1.043
	.9998	1.864				.4744	1.965		
	.0004	1.884				.4768	1.947	1.161	1.005
	.0014	1.864				.4797	1.919		
						.4811	1.912		
Oct						.4815	1.900		
1 - 2	.4532	1.865				.4834	1.895		
	.4538	1.879				.4872	1.855		
	.4557	1.879				.4892	1.867		
	.4620	1.919							
	.4661	1.958							
	.4667	1.953							

Date	P	ΔV	B-V	U-B	Date	P	ΔV	B-V	U-B
Oct 24-25	.9704	2.247	1.038	0.735	Oct 28-29	.7806	1.208	1.076	.837
	.9714	2.272	1.003	.751					
	.9720	2.257	1.027	.738	Oct 29-30	.9622	2.167		
	.9736	2.257				.9626	2.172		
	.9738	2.267	1.005	.806		.9630	2.182		
	.9746	2.252	1.029	.759		.9636	2.187		
	.9752	2.247				.9653	2.207		
	.9756	2.252				.9665	2.222	1.066	.692
	.9760	2.267	1.006	.772		.9675	2.232	1.044	.702
	.9766	2.237				.9685	2.252		
	.9780	2.237				.9700	2.282	1.031	.711
	.9785	2.217				.9706	2.252		
	.9811	2.212				.9782	2.207		
	.9921	1.997				.9787	2.202		
	.9923	1.982							
	.9927	1.982			Oct 31-1	.3544	-	1.225	.828
	.9957	1.922				.3579	-	1.107	.920
	.9963	1.912							
	.9967	1.917							
	.9978	1.892							
	.9980	1.887							
	.0027	1.822							
	.0030	1.822							

An intriguing paradox is apparent from the data. Both the B-V and U-B indices suggest that the cooler star is visible at secondary minimum and the hotter star is visible at primary minimum.

DOUGLAS S. HALL
Kitt Peak National Observatory
and Indiana University

(present address:
Dyer Observatory
Nashville, Tennessee)