

COMMISSION 27 OF THE I. A. U.  
 INFORMATION BULLETIN ON VARIABLE STARS  
 NUMBER 467

Konkoly Observatory  
 Budapest  
 1970 September 30

REMARK ABOUT WZ Sge

WZ Sge is a binary star whose primary is a white dwarf with a mass of 0.59 Me. The period is 81.5 minutes and the mass ratio is 0.05 (see Krzeminski and Kraft 1964). If we suppose that the secondary component is also a white dwarf (see Paczynski 1967) and that it fills up its Roche lobe then we can find the mass of the secondary. We can also find the rate of mass transfer and the rate of period change caused by gravitational waves. Computation were made using Salpeter's (1961) equation of state (zero temperature approximation), and with condition that all the mass lost by the secondary is transferred to the primary. The results are given below as a function of hydrogen content of the secondary.

X	$M_2/M_1$	$dM_2/dt$ (g/sec)	$dP/dt$
0.0	$4.34 \times 10^{-3}$	$-5.90 \times 10^{12}$	$2.00 \times 10^{-15}$
0.3	$1.03 \times 10^{-2}$	$-3.52 \times 10^{13}$	5.79
0.5	1.57	-8.35	9.52
0.7	2.24	$-1.73 \times 10^{14}$	$1.42 \times 10^{-14}$
1.0	3.51	-4.40	2.38

Here X denotes hydrogen content of the secondary.

A more detailed treatment of this problem will be given in Acta Astronomica.

Krzeminski, W., and Kraft, R.P. 1964 Ap. J., 140, 921  
 Paczynski, B., 1967 Acta Astron., 17, 287  
 Salpeter, E.E., 1961 Ap.J., 134, 669

Kraków, May 1970

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