COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
Number 1152

Konkoly Observatory
Budapest
1976 July 14

ON THE PERIODIC VARIATION IN PERIOD OF SIX RR LYRAE TYPE STARS

We have found periodic fluctuations of the O-C residuals in the following RR Lyrae type stars:

RV CrB $-\Pi \simeq 18400^d$

RR Gem $-\Pi \simeq 25600^d$

The change of the O-C residuals for three other stars (RW Dra, SZ Hya, SV Eri) also indicates a possible periodicity in period variation.

For RV CrB and RR Gem preliminary calculations have been made assuming that these RR Lyrae type stars are components of binary systems. However, this attempt of interpretation cannot be considered satisfactory as the mass sum of the components of suspected binary systems amounts to as high as: $m_1+m_2 \simeq 10^2-10^3$ of the Sun's mass.

Similar variations in period might be caused by dynamic factors.

In figures below the graphs of the O-C fluctuations through the following time intervals are given:

RV CrB - J.D. 2417800-2442800

RR Gem - J.D. 2415000-2442800

RW Dra - J.D. 2417400-2442700

SZ Hya - J.D. 2415000-2442800

SV Eri - J.D. 2414000-2441700

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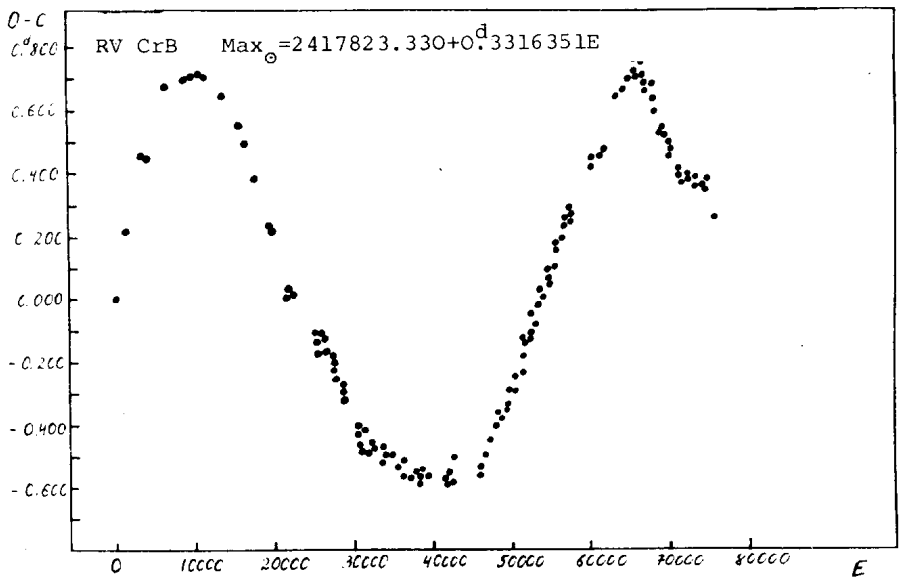
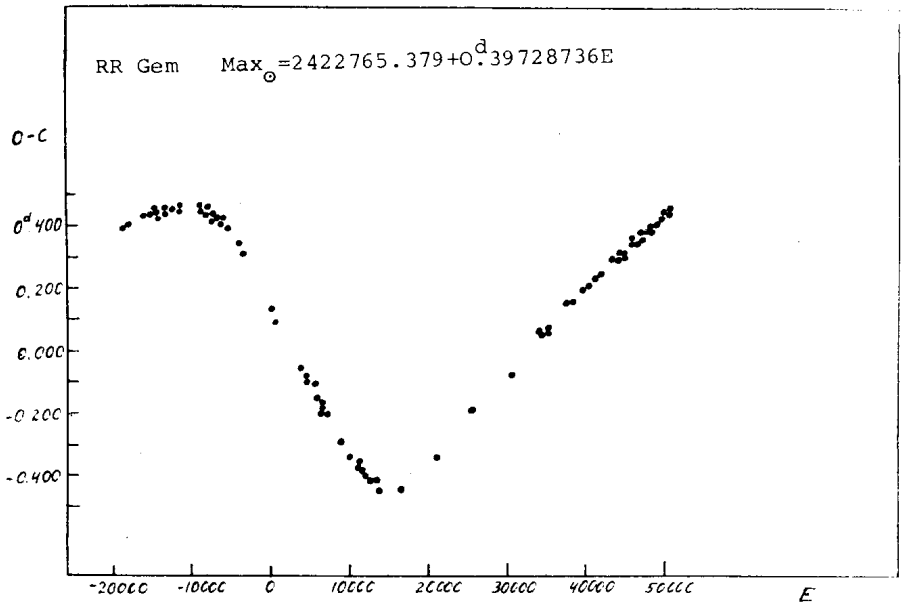
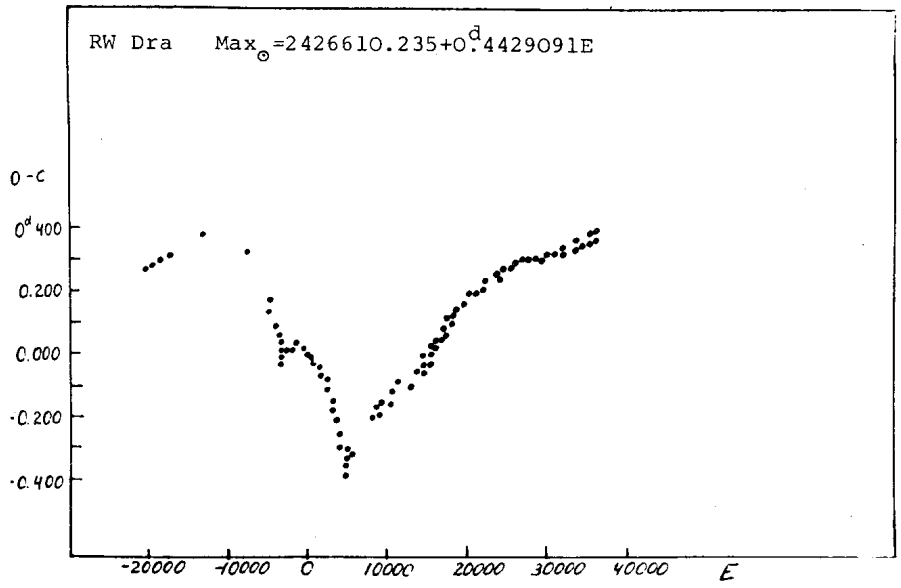
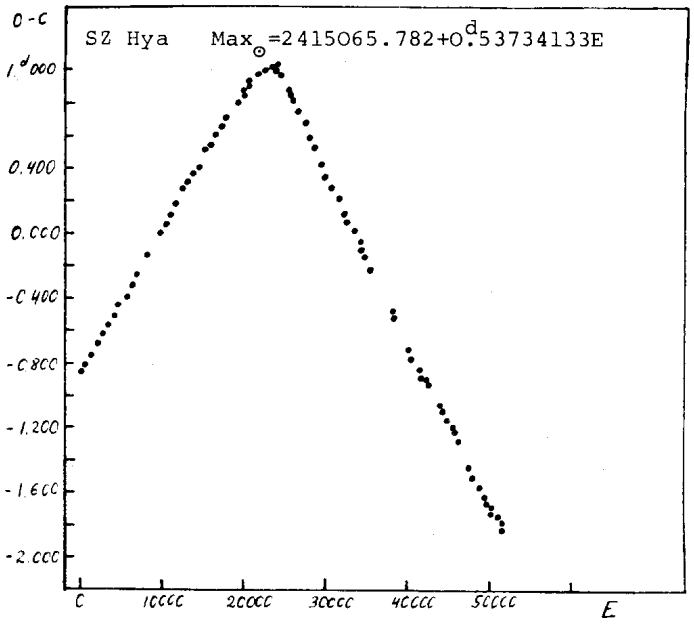
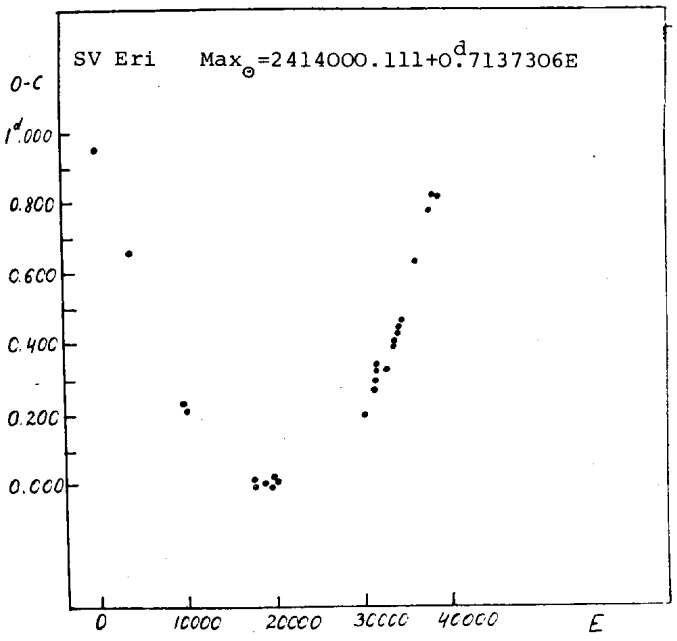

O-C
RV CrB Max⊙=2417823.330+0d.3316351E
0d.800
0.600
0.400
0.200
0.000
-0.200
-0.400
-0.600
0
10000
20000
30000
40000
50000
60000
70000
80000
E


RR Gem Max⊙=2422765.379+0d.39728736E
O-C
0d.400
0.200
0.000
-0.200
-0.400
-20000
-10000
0
10000
20000
30000
40000
50000
E


RW Dra Max⊙=2426610.235+0.d4429091E
O-C
0.d400
0.200
0.000
-0.200
-0.400
-20000
-10000
0
10000
20000
30000
40000
E


SZ Hya Max⊙=2415065.782+0.d53734133E
O-C
1.d000
0.400
0.000
-0.400
-0.800
-1.200
-1.600
-2.000
0
10000
20000
30000
40000
50000
E


SV Eri Max⊙=2414000.111+0d.7137306E
O-C
1d.000
0.800
0.600
0.400
0.200
0.000
0
10000
20000
30000
40000
E