

НОВЫЕ ПЕРЕМЕННЫЕ ЗВЕЗДЫ В ОБЛАСТИ М 56

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Исследована 21 новая переменная звезда СПЗ 1579–СПЗ 1599 в области $10^{\circ} \times 10^{\circ}$ с центром М 56. 6 звезд относятся к типу RR Lyr, СПЗ 1584 относится к типу Z Cam, СПЗ 1599 – к типу Миры Кита, 6 звезд – к затменным переменным.

New Variable Stars in the Region of M56

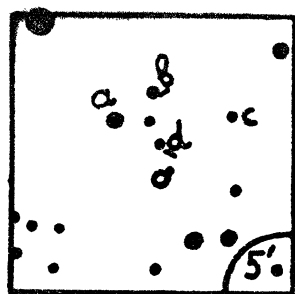
N. E. Kurochkin

21 new variable stars SVS 1579–SVS 1599 in the area of $10^{\circ} \times 10^{\circ}$ with the centre M56 were studied. 6 stars are of RR Lyr type, SVS 1584–of Z Cam type, SVS 1599 – of Mira Ceti type, 6 stars are eclipsing variables.

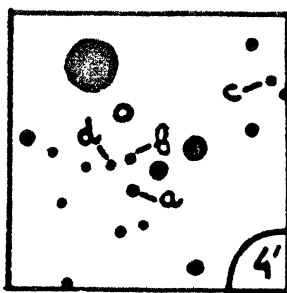
Новые переменные звезды СПЗ 1579 – СПЗ 1599 в области $10^{\circ} \times 10^{\circ}$ с центром в М 56 были открыты методом цветового контраста при помощи двойного спектропроектора ДСП-1. Определение звездных величин звезд сравнения производилось глазомерной привязкой к стандартам SA 63 и в М 56. На рис. 1, 2 приведены карты окрестностей переменных звезд. Север вверху. Звездные величины звезд сравнения даны в табл. 1.

Таблица 1

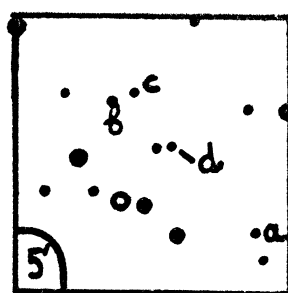
СПЗ	a	b	c	d	e	f	g	h
1579	14.62	15.06	16.07	16.55				
1580	14.93	15.60	16.04	16.78				
1581	14.93	15.48	16.33	16.70:				
1582	14.47	14.85	15.13	15.88	15.98	16.30	16.81	
1583	12.66	13.94	14.20	14.92				
1584	14.98	15.66	16.13	16.32	17.03			
1585	13.32	14.55	15.10	16.12	16.46	16.97	17.21	17.5:
1586	13.90	14.14	14.66	15.00	15.20	15.91	16.76	
1587	13.21	14.20	14.44	14.82	15.32	15.58	16.22	16.93
1588	14.07	14.66	14.95	15.40	15.68	16.44		



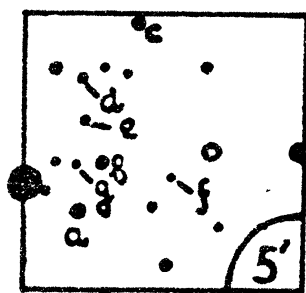
СПЗ 1579



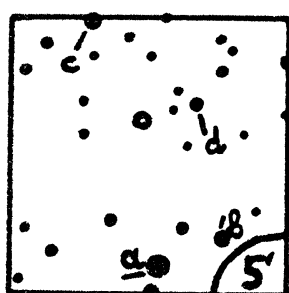
СПЗ 1580



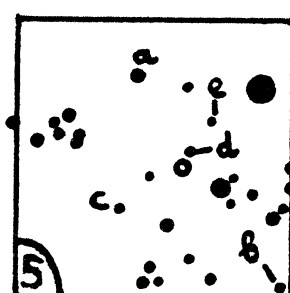
СПЗ 1581



СПЗ 1582



СПЗ 1583



СПЗ 1584



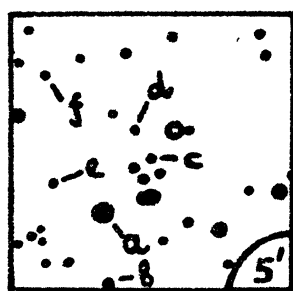
СПЗ 1585



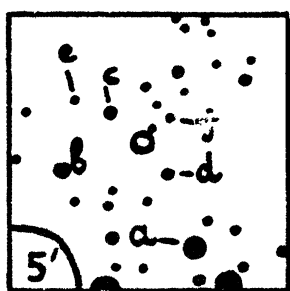
СПЗ 1586



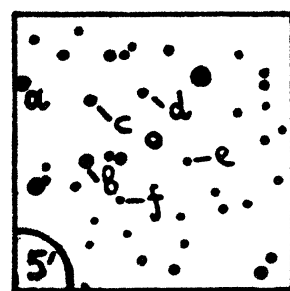
СПЗ 1587



СПЗ 1588



СПЗ 1589



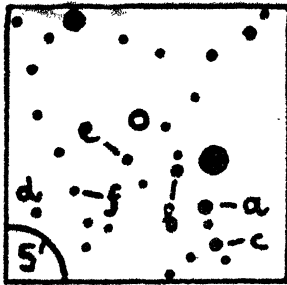
СПЗ 1590

Р и с. 1

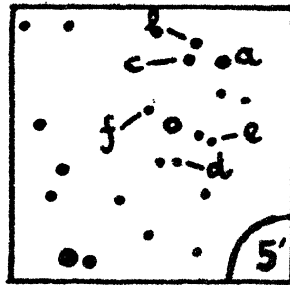
Таблица 1 (продолжение)

СПЗ	а	б	с	д	е	ф	г
1589	12.45	13.22	14.40	14.92	15.62	16.13	
1590	14.14	15.08	15.98	16.36	16.60	16.99	
1591	14.14	14.66	15.08	15.46	16.34	16.64	
1592	14.16	14.51	14.98	15.06	15.40	10.40	
1593	13.90	14.32	14.65	15.06	15.73	16.5:	
1594	14.25	14.47	14.99	15.47	15.89	16.53	16.82
1595	14.84	15.30	16.02	16.49	16.95		
1596	13.36	14.11	14.43	15.03	15.50	15.90	16.62
1597	13.87	14.38	14.53	15.10	15.90		
1598	13.60	14.48	14.56	15.30	15.21	15.88	16.46
1599	12.78	13.17	13.56	14.19	14.71	15.41	16.15

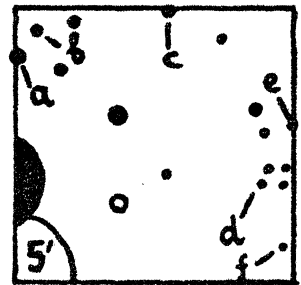
Звезда сравнения а находится на 1' к югу и 4.2 к востоку от СПЗ 1599. На карте не нанесена.



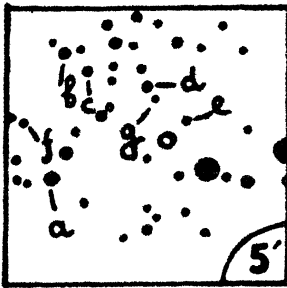
СПЗ 1591



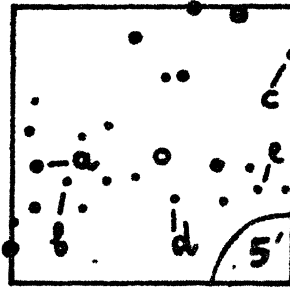
СПЗ 1592



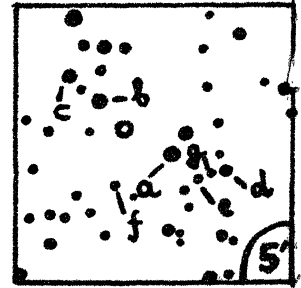
СПЗ 1593



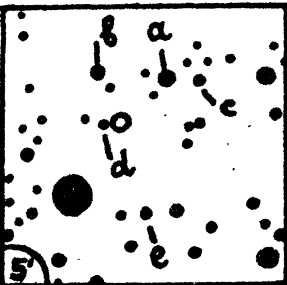
СПЗ 1594



СПЗ 1595



СПЗ 1596



СПЗ 1597



СПЗ 1598



СПЗ 1599

Рис. 2

В табл.2 приведены координаты, число наблюдений по московским фотографиям, полученным при помощи 40-см астрографа Южной Станции ГАИШ, пределы изменения блеска, тип, элементы,

Таблица 2

СПЗ	α (1900)	δ (1900)	n	Max	Min	Тип	Эпоха	24...	Период
1579	18 ^h 55 ^m 04 ^s	+34°24'0	110	14.5	16.0	E?			
1580	18 56 39	+28 22.4	103	15.4	17.0	?			
1581*	18 56 54	+26 11.2	107	14.7	16.8	RRa	39034.320	0.4594566	
1582*	18 57 40	+28 50.2	115	14.4	16.0	RRa	39379.237	0.444993	
1583*	19 02 54	+29 07.4	116	13.7	14.7	EB	38260.393	0.931469	
1584	19 06 18	+28 55.7	112	14.4	(17.5	Z Cam		(8 ^d - 14 ^d)	
1585*	19 06 19	+28 20.4	101	15.7	17.5	RRa	38998.440	0.592697	
1586*	19 06 35	+26 20.6	112	14.5	16.6	RRa	39404.250	0.427578	
1587*	19 08 11	+33 03.1	116	14.9	15.6	EW	39404.240	0.4165460	
1588*	19 08 48	+26 05.3	109	14.5	16.2	RRa	38914.400	0.5796816	
1589	19 09 16	+26 49.4	118	14.3	15.1	EA			
1590*	19 09 41	+27 51.7	108	15.3	17.3	RRa	38887.529	0.424602	
1591	19 17 54	+26 32.7	108	15.4	16.6	?			
1592*	19 18 14	+25 36.3	102	15.0	16.6	E?			
1593	19 18 33	+26 04.2	111	14.9	15.8	E?			
1594	19 20 57	+29 33.4	106	15.8	16.6	E?			
1595*	19 22 22	+26 45.3	109	15.1	16.1	EA	39406.232	2.273500	
1596*	19 27 32	+29 33.4	106	14.8	16.3	EA	39031.390	1.427184	
1597*	19 31 34	+29 32.4	105	13.9	14.6	EW	39029.450	0.426056	
1598*	19 34 05	+29 09.9	102	14.7	(16.5	EA	39035.374	5.580363	
1599	19 36 29	+32 32.0	128	12.7	(16.1	M	39955	121.38	

Примечания к табл. 2

СПЗ 1581. $M - m = 0.18$. Возможны изменения периода и эффект Блажко. В J.D. 2433000-2434500 наблюдения элемента-ми не представляются.

СПЗ 1582. $M - m = 0.15$.

СПЗ 1583. $D = 0.155$. $\text{Min } \Pi = 14^m.1$; $\text{Min } \Pi - \text{Min } I = 0^p.48$

СПЗ 1585. $M - m = 0.15$.

СПЗ 1586. $M - m = 0.22$.

СПЗ 1587. Возможно, период меняется. Элементы и кривая блеска даны для наблюдений после J.D. 2437118.

СПЗ 1588. $M - m = 0.20$. Возможен эффект Блажко.

СПЗ 1590. $M - m = 0.12$

СПЗ 1592. Возможно, тесная двойная.

СПЗ 1595. $D = 0.10$. $\text{Min } \Pi = 16^m.1$; $D_2 = 0.10$,
 $\text{Min } \Pi - \text{Min } I = 0^p.518$

СПЗ 1596. $D = 0.125$. Возможен $\text{Min } \Pi = 15^m.15$ на фазе $0^p.580$.

СПЗ 1597. $\text{Min } \Pi = 14.6$

СПЗ 1598. Возможные элементы. $D = 0.085$.

Наблюдения приведены в табл.3,4.

Определение элементов в большинстве случаев произведено при помощи ЭВМ М-20 по программе, составленной П.Н. Холоповым [1]. Программа позволяет быстро производить поиски периода для всех периодических звезд, включая и затменные переменные, по заданным экстремумам. Схема вычислений по этой программе была предложена автором в [2]. За составление программы и организацию вычислений автор выражает благодарность П.Н. Холопову.

Таблица 3

$m - 10^m$

СПЗ J.D.	1579	1580	1581	1582	1583	1584	1585	1586	1587	1588	1589
2433...											
031.551	4.50	6.65	5.50	5.20	4.10	(7.0	6.72	5.90	5.34	5.04	4.30
034.545	4.50	6.10	6.63	4.74	3.84	(7.5	7.44	6.40	5.17	5.40	4.37
2434...											
471.473	5.15:	-	5.30:	4.85	3.72	(6.3	-	(5.5	5.32	5.48:	4.32
472.545	5.06:	-	-	5.50:	3.90	(6.0	-	4.77	5.17	5.68:	4.80
476.532	-	-	5.20:	6.00:	3.75	4.55	-	5.63	-	5.40	4.40
477.461	4.82	6.10	6.40	5.50	3.82	4.55	7.20:	5.84	5.34	5.68:	4.38
479.543	-	-	-	-	-	-	-	-	-	-	-
480.437	4.82	6.63	6.45	5.10	4.20	4.66	6.72:	6.34	5.20	-	4.38
2437...											
118.377	4.80	6.06	4.88	5.28	4.27	(6.5	6.66:	5.30	5.17	5.90	4.38
135.482	5.06	6.39	6.33	5.80	3.90	(7.0	7.40:	5.16	5.27	5.57	4.40
137.473	5.06	6.18	6.36	4.94	3.92	(6.3	6.82:	6.12	5.17	5.65	4.30
138.457	4.93	6.26	6.50	5.50	3.92	(6.8	7.21:	5.91	5.49	5.62	4.40
160.318	4.90	6.16	6.26	5.73	4.34	6.90	7.35:	4.61	5.45	5.18	4.35
162.294	4.88	6.36	6.63	4.55	3.88	5.34	6.12	6.00	5.12	5.76	5.00
164.337	4.97	6.65	5.11	5.73	3.80	6.26	7.30:	5.94	5.02	4.95	4.40
166.327	4.90	6.42	6.37	4.74	3.90	(7.0	7.50:	4.96	5.40	5.63	4.35
168.379	5.26	6.45	6.58	5.73	3.80	(7.0	6.46	5.88	5.32	5.10	4.40
175.332	5.06	6.65	5.80	5.35	3.85	4.51	6.00	5.10	5.32	4.90	4.30
176.512	5.06	-	-	4.81	3.80	4.47	-	-	5.40	4.92:	4.45
194.317	5.89	6.41	6.06	4.55	3.88	(7.0	6.12	5.91	5.35	5.76	4.34
218.213	5.67	6.26	6.37	5.63	3.74	5.40	6.87	5.91	5.45	4.69	4.35
525.504	5.00	6.50	4.93	5.08	4.27:	4.43	6.96	5.00	5.02	4.90	4.40
527.512	-	-	-	-	3.85	4.66	-	-	5.37	-	4.38
546.352	5.90	6.17	6.60:	4.81	3.88	(6.8	6.12	-	4.97	4.70	4.28
549.445	-	-	-	-	3.80	-	-	-	5.00	-	4.80::
557.377	5.02	6.60::	-	5.88	3.70	(6.5	6.77::	5.95	5.07	4.80	4.32
761.502	6.00::	-	-	5.93	3.70	-	-	4.60:	5.18	-	4.35
845.491	4.92	6.40:	6.50:	5.25	3.85	4.70	6.88:	6.00:	5.27	4.92	4.35

1970PZ.....17..186K

Таблица 3 (продолжение)

СПЗ											
J. D.	1579	1580	1581	1582	1583	1584	1585	1586	1587	1588	1589
2437...											
854.504	5.02	-	5.90:	5.90	3.70	4.98	6.30:	6.08	5.22	5.65	4.35
876.459	5.06	6.80	-	5.20	3.70	(6.3	5.72	-	5.02	-	4.40
885.416	5.03	6.64:	6.44:	4.51	4.07	(7.0	6.16	5.88	5.00	5.18	5.06
902.302	-	-	-	4.85::	3.94	(6.5	6.72	5.84	5.00	5.09	4.32
2438...											
142.521	5.36	6.64	4.71	5.80	4.00	(7.0	6.87	5.13	5.54	5.68	4.28
176.422	4.98:	-	6.60::	4.58	3.70	4.95	6.00	5.91	5.22	5.18	4.36
196.450	5.00	6.40::	6.52:	4.47	3.88	(6.5	6.72	5.84	5.32	5.83	4.45
227.348	5.02	6.63::	6.55:	5.25	3.81	(7.0	5.72	5.95	5.20	5.65	4.38
255.418	5.20	6.70:	6.40:	5.50	3.76	5.00	7.02	5.40	5.45	5.40	4.39
260.393	5.15	6.48:	6.33	5.80	4.70	(7.0	7.35	6.00	5.41	5.65	4.35
261.411	5.36:	6.55:	6.48	4.42	3.82	(7.0	7.35	5.16	5.32	5.68	4.32
263.447	5.20:	6.56	5.66	5.73	3.84	(7.0	6.39	4.76	5.00	4.90	4.32
268.374	5.50:	6.54	5.74	5.63::	3.89	(7.0	7.40::	6.00::	5.17	5.83	4.35
281.270	5.57:	6.52	4.90	5.73	4.00	(7.0	6.02	6.56:	5.15	5.80	4.35
289.434	-	-	-	4.70	3.82	-	-	6.40::	5.22::	-	4.35
290.345	5.56:	6.78	6.50	4.66	3.85	5.66	6.97	5.92	5.17	6.06	4.35
326.227	4.95	6.41	6.25	5.48	3.85	4.62	7.21	6.60:	5.45::	5.70	4.48
552.489	4.84	6.40	6.25:	4.89	3.86	4.70	7.30::	4.77	5.22	5.58	4.30
560.455	5.15	6.63	6.30:	4.66	3.82	5.40	6.00	6.76::	4.92	6.00::	4.34
562.424	5.06	6.26	6.30:	5.73	3.90	6.82:	6.87	5.24	5.25	5.83	4.40
619.458	-	-	4.75::	5.50::	-	(6.3	7.30::	6.17	5.48,	5.43	4.30
676.242	-	-	-	-	-	-	-	-	5.00::	-	4.42
676.272	4.96	6.06	6.50	4.91	4.00	5.58	7.27	6.00:	5.22	5.30	4.39
676.311	4.78	-	6.40	5.28	4.00	5.60	-	7.00::	5.41	5.76	4.40
678.213	5.06	6.48	6.30	5.80	3.84	6.13	7.21	4.66	5.29	5.68	4.30
678.255	4.90	6.40:	5.11	5.80	3.89	6.22	6.97	4.98	5.12	5.83	4.30
678.316	4.68::	6.32::	5.30	5.84	3.88	6.68::	6.97	5.48	5.00	5.65	4.30
680.250	5.00:	6.43::	6.45	5.00	3.82	7.03	6.72:	5.90	5.32	4.63	4.30
680.290	4.84:	6.33::	6.40	5.20	3.87	(7.0	7.09:	5.95	5.53	5.13	4.35
680.331	5.02	6.63:	6.52	5.50	3.90	(7.0	6.72	5.10	5.12	5.46	4.35
680.379	4.88	6.65::	6.70	5.50	3.94	(6.5	7.05:	4.93	5.22	5.58	4.38
681.308	5.10	6.85:	6.37	5.58	3.75	(6.5	6.29	5.77	5.32	5.50	4.35
681.350	4.73	5.43	6.40	5.80	4.20	(6.5	6.07	5.84	5.22	4.88	4.40
825.561	5.16	6.78	6.48	5.72	3.84	(6.3	7.25	5.95	4.97	5.85	4.41
876.435	5.00	6.20	6.40	4.66	3.96	(6.5	6.46	5.95	5.22	5.92	4.32
886.420	5.10	6.55	5.20	5.58	3.97	(7.0	6.02	5.00	5.34	5.85	4.36
887.528	5.06	6.70:	6.20:	4.62	3.75	(6.5	-	5.88	5.45	5.87	4.51:
904.400	4.98	6.40::	5.60::	5.00	3.90	(6.3	-	4.73	5.53	5.75::	4.32
907.468	5.10	6.50::	6.10:	5.73	3.88	(6.5	6.90	5.24	5.35	4.72	4.40
914.402	5.08	6.80:	4.98	5.65	3.90	(6.3	7.21	5.80	5.45	4.54	4.33
918.449	5.06	7.08::	6.70:	5.50	4.22	(6.5	6.02	6.30:	5.22	4.70	4.39

Таблица 3 (продолжение)

С173 J. D.	1579	1580	1581	1582	1583	1584	1585	1586	1587	1588	1589
2438...											
938.392	4.88	6.50::5.65	5.50	3.90	(6.5	7.20::6.00:5.35	5.68	5.03			
939.425	5.08	6.56: 6.66	5.80	4.70	(6.5	7.35::5.48 5.27	5.28	4.32			
943.395	4.84	6.04 5.56	5.66	3.75	(6.8	6.46 5.27 5.27	4.66	4.39			
965.430	5.06	6.48: 5.30	4.72	4.05	5.05	7.10::5.84 5.58	4.76	4.38			
967.505	5.16	6.50: 6.63	5.65	3.78	(6.5	7.10::6.33::5.45	5.68	4.32			
969.466	5.10	6.53: 6.37	4.85	3.84	(6.5	6.22 5.10 5.00	4.80	4.38			
971.481	5.06	6.80::5.76	5.66	3.92	(6.6	7.20::6.20::5.32	5.76	4.35			
973.492	5.00	6.70: 6.33	4.85	3.90	5.39	6.87::5.84 5.35	5.30	4.32			
975.441	5.46	6.20 6.33	5.66	3.86	5.90	6.19 5.10 5.40	5.40	4.30			
978.493	5.10	6.50::6.25	5.66	4.17	(7.0	7.09 5.84 5.50	5.76	4.37			
981.495	5.00::6.80::5.12::4.88	4.07	(6.0	-	5.90::5.37	-	4.32				
998.427	5.00	7.00::6.42	4.81	3.89	4.76	5.82 6.16:5.12	5.38	4.35			
2439...											
029.413	4.84	6.65::6.00::5.58	3.90	(6.5	6.50 6.05: 5.07	5.54	4.35				
030.244	5.00	6.40: 5.37	5.66	3.90	(6.5	7.20 5.84 5.22	5.50	4.40			
030.291	5.00	6.60::6.33	5.88	3.97	(7.0	7.10 6.16:5.27	5.54	4.40			
030.338	5.00	6.20: 6.25	5.00	3.97	(7.0	6.92 5.86 5.22	4.95	4.38			
030.383	4.98	6.28::6.36	4.58	3.87	(6.8	7.09: 6.12:5.58	4.88	4.35			
031.354	4.92	6.20: 6.33	4.99	3.77	(6.5	6.97: 6.20 5.25	5.85	4.39			
033.291	4.75	6.25: 6.55	5.65	3.90	6.15	7.50: 5.84 5.55	4.88	4.35			
033.337	4.98	6.34: 6.45	-	3.75	6.17	7.50 5.88 5.40	5.25	4.36			
033.384	4.98	6.41: 5.10	5.60	3.84	6.46	6.00 6.34:5.32	5.25	4.38			
034.328	4.95	6.20::4.75	5.50	3.80	(7.0	7.27 6.50:5.60	5.63	4.35			
034.372	4.90	6.46: 5.20	4.55	3.90	(7.0	7.50 4.90 5.30	5.30	4.38			
035.318	4.70	6.30::5.90	4.85	4.07	(7.0	6.46 5.27 5.07	6.03	4.32			
185.592	5.20	6.40::5.56	5.66	3.80	(6.8	7.50::6.24:5.35	6.20	4.40			
236.490	6.00	6.36::4.85	4.94	3.97	6.22	7.36: 5.84 5.00	5.83	4.28			
237.511	6.00	6.80: -	5.73	4.63	7.00::7.30:5.00::5.17	-	4.38				
262.515	5.00	6.56::6.30::5.80	3.89	(6.5	6.92: 6.34:5.13	5.98	4.41				
269.468	5.30	6.80: 6.55	5.35	3.75	6.32	6.97: 6.42:5.60	5.83	4.32			
290.422	5.15	6.19: 6.25	5.66	3.82	4.98	7.27: 6.60::5.22	5.68	4.38			
293.469	5.60::6.56	5.13: 4.98	4.02	6.68::7.35: 5.30	5.30	5.40	4.40				
297.417	5.06	6.70 6.47: 4.72	3.82	(6.8	6.97: 5.27 5.32	5.62	4.40				
318.344	5.18	6.15: 6.16	4.88	3.80	4.50	- 5.07 5.12	5.70	4.38			
324.467	5.60::6.50	6.40 5.20	3.92	6.28	6.51: 6.33:5.35	5.54	4.35				
328.510	5.00	6.70::6.55: 4.58	3.82	-	- 5.90 4.90	5.35	4.32				
330.455	5.50::6.50::6.50::5.13	3.86	5.32	-	6.20::5.27	5.68	4.40				
335.498	5.36	6.80::6.33	5.73	3.90	(6.5	7.35 5.42 5.50	5.60	4.40			
343.292	5.30	6.22 6.30	5.20	3.88	5.12	- 6.08: -	5.60	4.31			
345.298	5.36	6.65 6.30	5.73	3.92	(6.3	6.90 5.10 5.35	5.57	4.31			
376.331	5.00	6.64::6.25	5.75	4.20	(6.3 (6.6	5.84 5.60 5.35	4.40				
377.318	5.25::6.80::6.80::5.73	3.82	(6.5	6.72	4.70 5.07	5.65	4.40				
379.268	5.35::6.20: 6.60: 4.60	3.84	(6.8	7.09: 6.08: 5.34	5.22	4.30					

Таблица 3 (продолжение)

СПЗ J.D.	1579	1580	1581	1582	1583	1584	1585	1586	1587	1588	1589
2439...											
380.384	4.95	6.48:	6.40::	5.58	3.97		6.72	5.56	5.25:	5.54	4.38
332.247	5.10	6.50::	5.80::	5.88	3.87	(7.0	7.36::	5.84	4.92	4.85	4.41
383.302	5.06	6.34:	6.50:	4.81	3.97	(7.0	7.36::	4.63	5.23	5.54	4.32
404.249	5.08	6.41:	5.43	5.00	4.56	(7.0	7.36::	4.50	5.45	4.82	4.38
406.247	5.10	6.40:	6.44	5.58	3.90	4.51	6.05	6.68:	5.25	6.00	4.41
945.578	-	-	6.30	5.73	4.00	(6.5	5.92	4.90	5.32	6.22	4.35
969.449	5.10	6.70	6.16	5.80	3.85	(6.5	6.51	6.08	5.39	4.72	4.30
969.485	5.00:	6.06	6.50	5.50	3.90	(6.5	6.87	5.13	5.37:	4.95	4.40

m - 10^m

СПЗ J.D.	1590	1591	1592	1593	1594	1595	1596	1597	1598	1599
2433...										
031.551	6.48	5.42	6.10::	5.10	5.80:	5.30	-	-	-	-
034.545	6.72	6.08	5.75::	5.26	6.30:	5.48	-	-	-	-
2434...										
471.473	-	-	-	-	-	-	-	-	-	--
472.545	6.00::	-	-	5.70::	-	5.20	-	-	-	-
476.532	-	-	-	-	-	-	-	-	-	-
477.461	7.10::	6.16	5.48:	5.65	6.53::	5.25	-	-	-	-
479.543	-	-	-	-	-	-	-	-	-	-
480.437	6.52	5.64	5.90::	5.33	5.95:	5.52	-	-	-	-
2437...										
118.377	6.32	5.46	5.96	5.33	6.20	5.37	5.16	4.60	5.08	(6.1
135.482	7.10::	5.46	5.76	5.06	5.82	5.26	5.00	4.46	5.20	(6.1
137.473	6.80::	-	5.93	5.06	6.50::	5.25	5.32::	4.40::	-	-
138.457	7.30::	6.40	5.58	5.20	6.52	5.80	5.00	4.38	5.15	(6.1
160.316	6.06	5.50	5.41	5.06	5.82	5.30	5.45	4.64	6.42	3.40
162.294	7.10::	6.45	5.75	5.50:	6.45	5.95	4.92	4.38	5.00	3.40
164.337	7.00	5.46	5.75	5.50	6.40	5.40	4.85	4.33	5.15	3.60
166.327	6.48	6.58	6.10	5.75	6.18	5.52	4.90	4.50	5.10	3.60
168.379	6.13	6.10	-	5.33	6.50	5.52	4.95	4.38	4.95	3.20
175.332	7.10	6.52	5.58	5.20	6.32	5.37	4.97	4.33	5.15	3.62
176.512	-	5.08::	-	5.70	5.88	-	4.80	4.38	4.93	3.68
194.317	6.36	6.70	5.65	5.80	6.12	5.30	4.85	4.10	5.00	4.13
218.213	6.58	6.30	5.45	5.26	6.53	5.25	5.03	4.40	5.08	(5.4
525.504	6.32::	6.34	5.40	5.26	6.10::	5.42	4.97	4.51	5.08	3.13
527.512	-	-	-	-	-	-	5.09	4.07	4.93	3.21
546.352	6.55::	5.50	5.30:	5.55	5.98	5.60	5.00	4.53	5.05	-
549.445	-	-	-	5.06	6.00::	5.25	5.03	3.92	4.86	3.56
557.377	6.60::	6.70:	6.28::	5.40	6.30::	5.50	4.85	4.30	4.93	3.81

Таблица 3 (продолжение)

СПЗ J.D.	1590	1591	1592	1593	1594	1595	1596	1597	1598	1599
2434....										
761.502	-	-	-	-	-	-	4.95	4.53	-	-
845.491	7.00::	6.50	5.45:	5.20	6.54	6.10	5.03	4.53	5.00	(6.1
854.504	6.06	5.97	5.30::	5.53	5.72	6.02	5.12	4.28	-	-
876.459	7.00::	5.80	-	-	6.50	5.50	4.97	4.28	5.20	4.20
885.416	7.00::	5.85	5.60::	5.47	5.95	5.87	5.70	4.33	5.12	3.56
902.302	6.75:	5.90	5.27:	5.40	5.85	5.80	4.90	4.60	5.00	3.09
2438...										
142.521	6.60	6.12	5.96	5.13	5.89	5.20	4.90	3.92	(6.5	3.00
176.422	-	6.20::	-	5.53	-	5.80	5.18	4.40	4.95	5.13
196.450	6.85	6.00:	5.35	5.40	6.50	5.30	5.48	4.33	4.95	-
227.348	6.10	6.00:	5.70	5.00	6.53	5.50	4.91	4.40	4.93	5.48
255.418	6.42	6.00:	5.48	5.75	6.00	5.44	4.83	4.28	5.00	2.97
260.393	5.62	5.85:	5.75::	5.00	6.53	6.02	4.83	4.50	4.72	2.78
261.411	6.64	6.64	5.35	5.15	6.27	5.30	5.00	4.28	4.93	2.80
263.447	6.02	6.18:	5.45	5.20	6.25	5.35	5.05	4.33	5.00	2.78
268.374	7.10::	5.90:	5.41	5.26	6.47	5.95	5.06	4.15	5.05	2.70
281.270	6.28::	6.27	5.55	5.25	6.60	5.46	5.06	4.53	5.08	3.30
289.434	-	-	-	5.10	-	-	5.12	4.38	5.05	4.20
290.345	7.05::	5.85:	5.58	5.40	6.27	5.37	4.87	4.12	5.15	4.20
326.227	6.00	6.64:	5.74::	5.40	6.56	5.58	4.95	4.51	5.10	(6.1
552.489	6.50	6.25:	5.20::	5.06	6.00::	5.90	5.07	4.60	5.30	(6.1
560.455	7.20::	5.75:	5.55::	5.15	6.20:	5.88	6.00	4.23	5.10	(5.6
562.424	6.48	6.54	5.35	5.20	5.92:	5.25	4.90	4.40	5.05	5.63:
619.458	6.90	5.55	6.10:	5.20	6.53	5.90	5.15	4.18	5.08	3.07
676.242	-	5.90::	5.30::	5.60:	6.33	5.25	4.97	4.43	5.00	5.35
676.272	6.65	5.60	5.58	5.46	5.90	5.25	4.97	4.35	5.00	5.48
676.311	6.36:	5.82	5.55::	5.33	6.10::	5.30	4.73	4.08	5.00	5.26
678.213	5.90	6.30	5.20:	5.40	6.55::	5.45	4.90	4.33	6.50	5.60:
678.255	5.90	6.12	5.00:	5.26	5.80	5.45	4.97	3.92	(6.5	5.78:
678.316	6.90	6.19	5.20::	5.00	6.50::	5.20	4.93	4.38	(5.9	5.41:
680.250	6.83	5.50	5.55	5.60	6.60	5.25	5.41	4.60	5.30	5.56
680.290	6.80	5.80	5.75::	5.33	6.32:	5.30	6.26	4.53	5.23	5.35
680.331	5.80	5.70	5.55::	5.15	6.60:	5.30	5.86	4.40	5.20	5.70::
680.379	5.80	5.68	5.40	5.20	5.85	5.25	5.12	4.40	5.25	5.06:
681.308	6.60	6.50	6.10	5.15	5.80	5.25	5.00	4.38	5.10	5.88
681.350	7.10:	6.34	6.46	5.10	6.55	5.33	4.80	4.64	5.15	5.90
825.561	5.62	6.40	5.45	5.65	6.60:	5.37	4.73	4.40	5.00	(6.1
876.435	7.10::	6.34	5.80:	5.40	6.20:	5.95	4.90	4.33	5.00	3.36
886.420	6.80	6.30	5.55:	5.40	6.10:	5.34	4.97	4.35	5.20	4.45
887.528	5.28	5.80	-	5.13	5.88	5.25	4.80	4.33	5.23	4.06
904.400	6.36::	5.90	5.20::	5.80::	-	5.07	5.27::	4.53	5.08	5.40
907.468	6.02	5.60	5.50::	5.10	6.40:	5.33	4.90	4.38	5.15	5.93

Таблица 3 (продолжение)

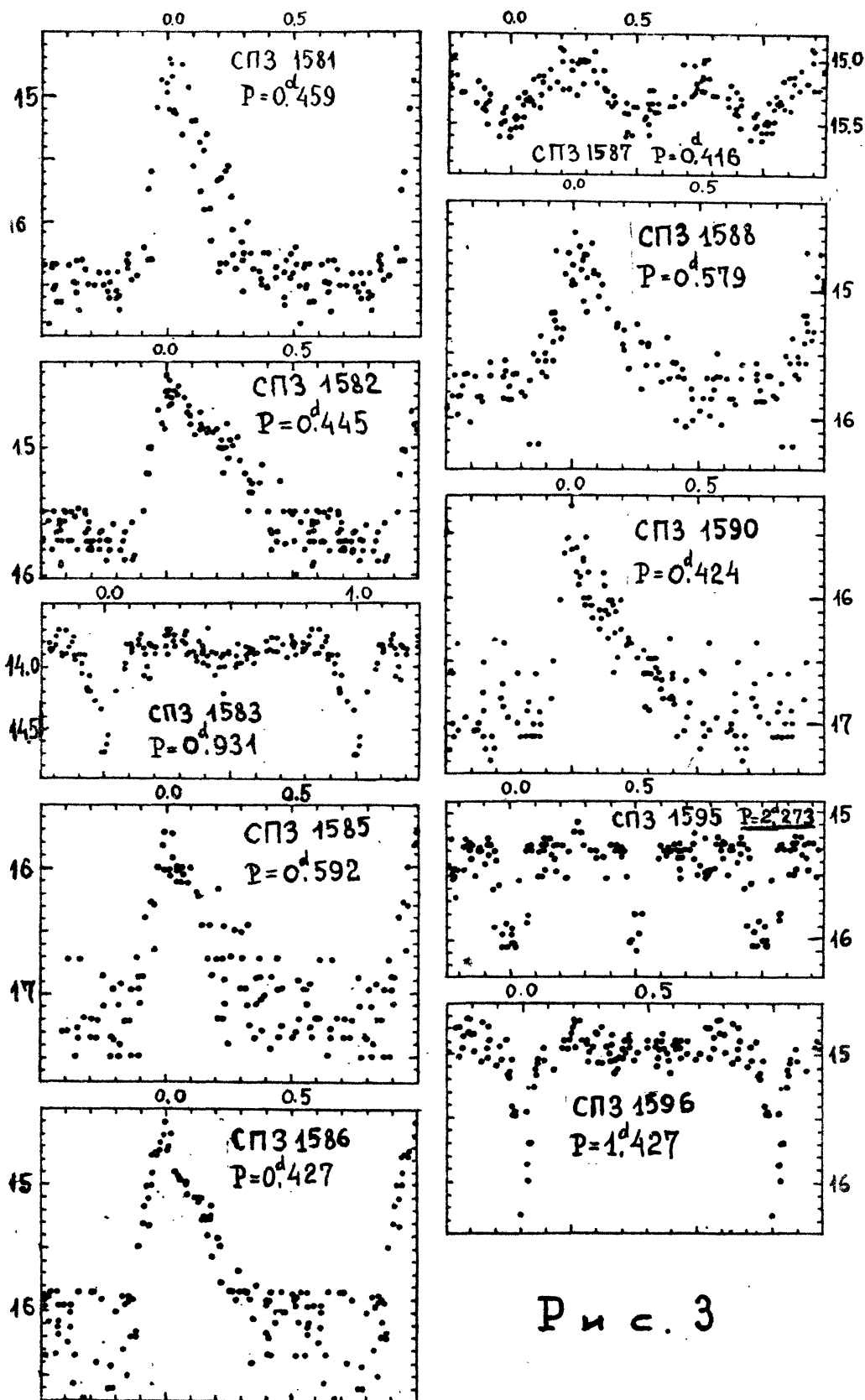
J.D. \ СПЗ										
	1590	1591	1592	1593	1594	1595	1596	1597	1598	1599
2438...										
914.402	6.87	6.34	5.45::5.47	6.55: 5.30	5.70	4.53	5.20	6.10:		
918.449	6.90	6.50	5.10: 5.40	6.40	5.33	4.80	4.70	5.20	-	
938.392	6.60	6.60::5.40: 5.53	5.85	5.51	4.78	4.30	5.15	-		
939.425	6.38	5.85	5.45: 5.60	6.55::5.45	4.85	-	-	-		
943.395	6.95: 5.82::5.90::5.26	6.20::5.25	5.00	4.50	5.20	-				
965.430	6.83	5.67	5.40: 5.70	6.20::5.30	4.73	4.22	5.20	3.62		
967.505	6.65: 6.50	6.05: 5.30	5.85	6.08	4.90	4.43	4.93	3.62		
969.466	5.65	6.30	5.60	5.35	6.45	5.28	4.97	4.07	4.95	3.21
971.481	6.80	5.70	5.35	4.90	6.00::5.20	5.48	4.41	5.00	3.26	
973.492	6.95	6.28	5.55::5.70	6.50	5.25	4.85	4.38	5.10	3.09	
975.441	5.70	5.82	5.40: 5.60	-	-	-	-	-	-	
978.493	6.36	6.12	5.50: 5.40	6.30::5.50	4.90	4.28	5.15	2.90		
981.495	6.60::6.04	-	5.70	-	5.25	-	-	-	2.98	
998.427	6.48	6.15	5.35: 5.06	5.90: 5.30	5.10	3.97	5.20	3.36		
2439...										
029.413	6.02	5.88	5.50::5.48	5.95::5.25	4.90	4.43	5.30: 5.78			
030.244	6.10	6.12	5.70::5.60	6.40: 5.30	4.85	4.55	5.08	6.10:		
030.291	6.32	6.19	5.45: 5.40	5.90	5.30	4.85	4.53	5.15	6.10:	
030.338	6.64	5.60	5.20::5.10	5.80	5.30	4.92	4.25	5.30:	-	
030.383	7.05::5.80	5.55::5.40	6.10: 5.30	4.85	4.05	5.10	6.10:			
031.354	6.68	5.70: 5.28::5.20	6.45: 5.50	5.48	4.53	5.23	(5.6			
033.291	6.60	6.00: 5.85::5.00	6.00	6.07	4.95	4.40	4.93	-		
033.337	6.80	6.30	5.35::5.75	5.80	6.07	4.85	4.18	5.10 (5.8		
033.384	7.20::6.27	5.30::5.33	5.82	5.90	4.97	4.23	4.86 (6.1			
034.328	6.86	6.12	6.05::5.20	6.35	5.30	5.18	4.55	5.08 (6.0		
034.372	7.10::6.15	5.50::5.20	6.40	5.37	5.05	4.45	5.00 (6.1			
035.318	5.80	5.86	5.40::5.40	6.10: 5.25	4.80	4.03 (6.5	6.10::			
185.592	5.53	6.19	5.30::5.46	5.85	5.37	5.26	4.45	4.93 (6.1		
236.490	7.10::	-	-	-	-	-	-	-	-	
237.511	6.48	-	-	-	-	-	-	-	-	
262.515	6.32	5.90	5.10::5.46	5.85	5.66	5.20	4.75	5.00	4.00	
269.468	7.00: 6.40	5.20::5.35	5.80	5.30	5.00	4.18	5.15	4.40		
290.422	6.90	5.55	5.50::5.20	6.53	5.30	4.90	4.53	5.15 (5.4		
293.469	5.68	6.20	5.45::5.26	5.90	5.25	4.90	4.15	5.25	-	
297.417	6.60	5.82	5.55::5.40	6.10	5.20	5.03	4.53	5.08 (6.1		
318.344	7.05: 6.15	5.10::5.30	6.55	5.30	5.08	4.32	5.05 (5.8			
324.467	6.06	6.45	5.75::5.75	5.75	5.52	5.08	4.35	5.18	5.40:	
328.510	-	6.10::5.20::5.40	5.80::5.25	-	-	-	-	-	-	
330.455	6.02	5.55: 6.00::5.06	5.80: 5.37	4.98	4.55	5.20	5.41:			
335.498	5.83	5.60	6.60	5.28	6.00: 5.30	4.98	4.23	5.20	4.78	
343.292	6.80	5.55	6.20::5.45	5.90: 5.30	5.03	4.28	5.25	3.48		
345.298	6.24::5.50	6.25: 5.20	6.05	5.25	5.15	4.45	5.25	3.56		

Таблица 3 (окончание)

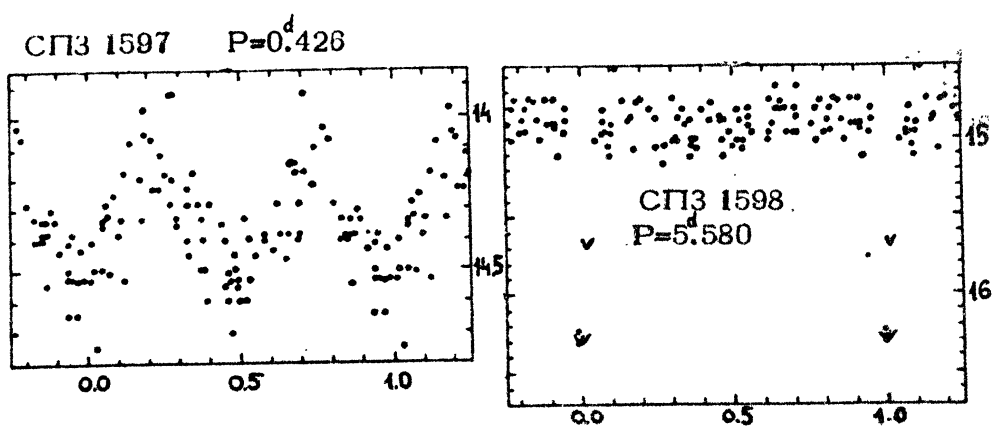
J.D. \ СПЗ	1590	1591	1592	1593	1594	1595	1596	1597	1598	1599
2439...										
376.331	6.25:	6.40	-	5.40	6.40	5.37	5.05	4.20	5.23	-
377.318	6.60:	6.00::	5.50::	5.60	6.05:	5.15	5.03	4.50	5.35:	-
379.268	6.17:	5.50	5.60::	5.35	6.50:	5.44	5.03	4.28	5.20	4.12
380.384	6.95::	6.36	5.40::	5.55	6.00::	5.30	5.10	4.18	5.15	3.56
382.247	6.10	6.00:	5.60::	5.46	5.95:	5.30	5.08	4.35	5.08	-
383.302	7.05:	5.90	6.30::	5.40	6.00:	5.33	5.05	4.40	5.10	3.81
404.249	6.02	6.60	5.40::	5.48	5.80:	5.25	4.90	4.28	5.15	(5.5
406.247	7.20:	5.55	5.45::	5.47	6.20:	6.02	4.90	4.50	5.05	6.10
945.578	6.60:	6.08	5.50:	5.06	5.95	5.21	4.93	4.18	4.93	-
969.449	6.16	5.90	5.42:	5.53	6.65:	5.26	5.00	4.33	4.88	2.90
969.485	6.60	6.08:	5.55:	5.26	6.55:	5.29	5.09	4.50	4.78	3.09

Таблица 4

J.D.	СПЗ	J.D.	СПЗ	J.D.	СПЗ
24...	1599	2434...	1599	2435...	1599
15253.372	(14.7	333.151	(13.5	035.274	(13.5
16734.308	(14.7	623.357	13.37:	334.393	13.25
17849.249	(13.6	628.252	14.45:	334.420	13.30
18239.216	13.37	871.457	13.10	335.356	13.30
29161.372	(14.7	978.365	12.90	335.407	13.12
29485.401	13.09	978.388	12.82	336.356	13.37
29488.368	13.13	980.393	12.80	337.371	13.09
29491.380	13.30	982.365	12.86	347.417	12.90
29496.411	13.36	982.390	13.05	362.284	13.70::
29497.383	13.25	2435...		395.185	(14.7
30607.316	(14.7	006.290	13.56	718.335	12.78
30664.226	(14.7	011.258	(13.5	723.331	12.86
		012.316	(13.5	724.331	13.05



$P \approx 3$



Р и с. 4

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