

Визуальные наблюдения звезд типа RR Лиры в 1934–1935 гг.

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Visual Observations of RR Lyrae Type Variables in 1934–1935

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Настоящая работа содержит результаты обработки визуальных наблюдений короткопериодических цефеид, полученных Г.А. Ланге в 1934–1935 г.г. в Душанбе.

В выполнении плана систематических ежегодных наблюдений короткопериодических цефеид, принятого в 1930г. по инициативе В.П. Цесевича и Б.В. Окунева, активное участие приняли сотрудники Таджикской астрономической обсерватории; в число наблюдателей входил Г.А.Ланге.

Целью настоящей работы является обработка визуальных наблюдений Г.А. Ланге 1934–1935 г.г. (часть полученного наблюдательного материала обработана и опубликована [11,17]), получение индивидуальных и нормальных моментов максимумов блеска, исследование изменения периодов короткопериодических цефеид.

В работу включено более трех тысяч визуальных оценок блеска звезд, полученных с 163 мм рефрактором Штейнгеля в Душанбе.

Опубликованные ранее моменты максимумов перерабатывались только для тех звезд, для которых имелись новые элементы. Обработка проводилась в основном с элементами из ОКПЗ, 1958 и Д 1, ОКПЗ 1958.

При выполнении работы учитывались указания наблюдателя, для некоторых звезд использовались результаты его более поздних визуальных наблюдений.

Для большей компактности работа напечатана в следующем порядке:

- 1). Таблица 1 – список звезд с указанием полученного числа визуальных оценок блеска.
- 2). Таблица 2 – список звезд сравнения в степенной шкале наблюдателя или в звездных величинах, выравненных его степенной шкалой.
- 3). Карты окрестностей (Рис. 1, 2)

- 4). Таблица 3 - гелиоцентрические моменты максимумов блеска звезд с указанием элементов, использованных при обработке.
- 5). Примечания по отдельным звездам.
- 6). Таблица 4 - таблицы средних кривых за 1934 и 1935г.г.
- 7). Чертежи средних кривых. (Рис. 3, 4, 5)
- 8). Наблюдения.
- 9). Литература.

Количество полученных визуальных оценок блеска.

Таблица 1

Звезда	1934	1935	Звезда	1934	1935	Звезда	1934	1935
XX And	-	41	RX Cet	5	6	WZ Hya	30	133
AC And	-	158	RZ Cet	5	18	XX Hya	7	-
AT And	-	121	RV CrB	-	52	DG Hya	21	-
SW Aqr	28	48	W Crt	-	32	RR Leo	62	-
SX Aqr	19	53	X Crt	-	93	RX Leo	-	19
TZ Aqr	-	43	SW Dra	15	-	TV Leo	-	82
AA Aqr	-	9	RX Eri	-	20	TV Lib	34	221
BO Aqr	8	45	SV Eri	-	15	VY Lib	-	52
BR Aqr	50	49	RR Gem	14	32	VV Peg	20	29
AA Aql	39	160	TW Her	5	1	AR Per	23	12
TZ Aur	70	46	CW Her	-	19	RY Psc	40	49
SW Boo	-	35	SV Hya	-	68	XX Pup	-	66
SZ Boo	-	21	SZ Hya	-	146	T Sex	21	-
TW Boo	-	9	UU Hya	-	82	AV Vir	-	66
RR Cet	7	-	VX Hya	48	109	BN Vul	-	188

Шкала звезд сравнения

Таблица 2

Звезда	L	к	а	б	с	д	е	ф	Лит.
XX And	-	-	-	9.98	11.04	11.86	12.11	-	1
AC And	-	-	10.38	10.89	11.17	11.36	-	-	2
AT And	-	-	0.0	20.9	37.1	-	-	-	
SW Aqr	-	-	10.93	11.33	11.50	12.18	-	-	3
SX Aqr	-	-	0.0	15.4	20.8	35.3	-	-	
TZ Aqr	-	-	0.0	13.7	22.7	-	-	-	
AA Aqr	-	-	0.0	12.0	-	-	-	-	
BO Aqr	-	-	0.0	5.3	12.4	22.2	-	-	
BR Aqr	-	-	10.51	11.23	12.70	13.73	-	-	4

Таблица 2 (продолжение)

Звезда	L	к	a	b	c	d	e	f	Лит.
AA Aql	-	-	0.0	7.4	14.4	22.5	-	-	
TZ Aur	-	-	-	11.22	11.65	12.34	12.54	-	5'
SZ Boo	-	-	0.0	3.8	11.0	14.0	28.3	-	
TW Boo	-	9.80	10.04	10.30	11.06	-	-	-	6
RR Cet	-	-	8.02	8.85	-	-	-	-	7
RX Cet	-	-	-	0.0	10.5	-	-	-	
RZ Cet	-	-	0.0	10.1	19.3	-	-	-	
RV CrB	-	-	-	0.0	8.3	18.2	28.9	-	
W Crt	-	-	0.0	16.2	33.2	-	-	-	
X Crt	-	-	-	0.0	16.0	-	-	-	
SW Dra	-	-	0.0	4.0	20.7	-	-	-	
RX Eri	-	0.0	-	-	22.0	-	-	-	
SV Eri	-	-	0.0	17.0	-	-	-	-	
RR Gem	-	-	10.09	10.83	11.42	11.75	-	-	8
TW Her	-	-	0.0	26.0	39.5	47.5	-	-	
CW Her	-	-	-	-	0.0	16.3	-	-	
SV Hya	9.20	9.67	9.91	10.77	11.28	-	-	-	9
SZ Hya	-	-	0.0	10.0	29.0	40.0	44.0	-	
UU Hya	-	-	0.0	13.0	34.9	-	-	-	
VX Hya	-	0.0	6.3	22.8	37.4	-	-	-	
WZ Hya	-	-	0.0	32.0	40.0	-	-	-	
XX Hya	-	-	0.0	17.0	-	-	-	-	
DG Hya	-	-	-	-	22.0	29.0	36.0	-	
RR Leo	-13.0	0.0	2.0	17.0	37.0	-	-	-	
RX Leo	-	-	-	0.0	15.0	-	-	-	
TV Leo	-	-	0.0	13.0	26.0	35.0	-	-	
TV Lib	-	-	0.0	10.0	20.0	26.0	-	-	
VY Lib	-	-	0.0	12.6	20.6	-	-	-	
VV Peg	-	-	10.35	10.74	11.16	11.52	11.87	12.10	4/
AR Per	-	9.78	10.32	11.10	-	-	-	-	4/
RY Psc	-	-	0.0	9.0	22.0	26.0	-	-	
T Sex	-	-	9.58	10.12	10.92	-	-	-	4/
AV Vir	-2.0	0.0	5.3	8.0	18.0	21.5	-	-	
BN Vul	-	-	0.0	10.0	-	22.0	31.0	-	

Звездные величины звезд сравнения выравнены степенной шкалой наблюдателя. В последнем столбце указана литература, из которой взяты звездные величины звезд сравнения.

При отождествлении звезд сравнения карты наблюдателя сравнивались с картами других авторов и с фотографическими картами атласа В.П. Цесевича и М.С. Казанасмаса. [21]. Карты, не имеющие контроля сравнения, даны так, как зарисованы в журнале наблюдений.

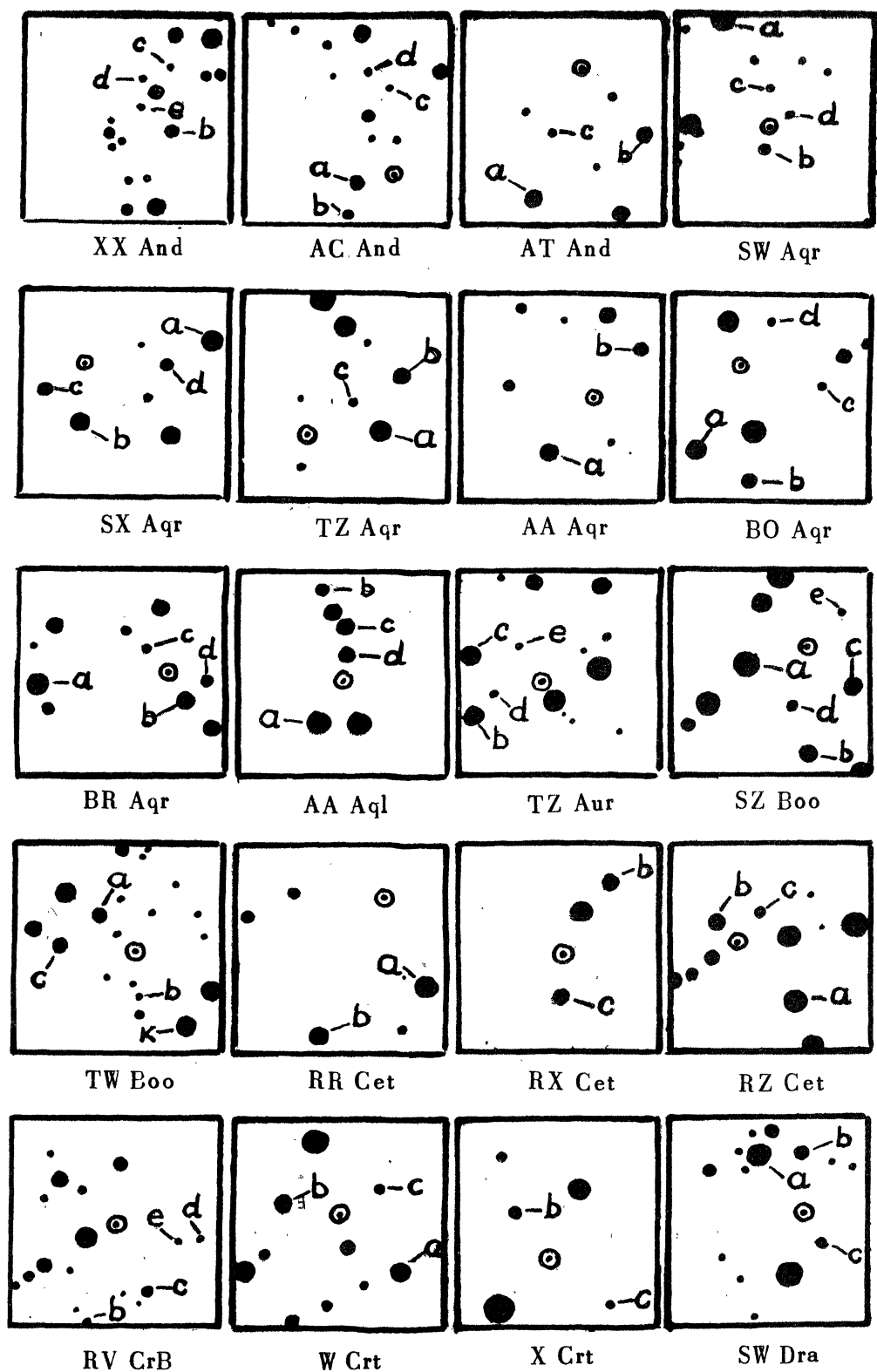


Рис. 1

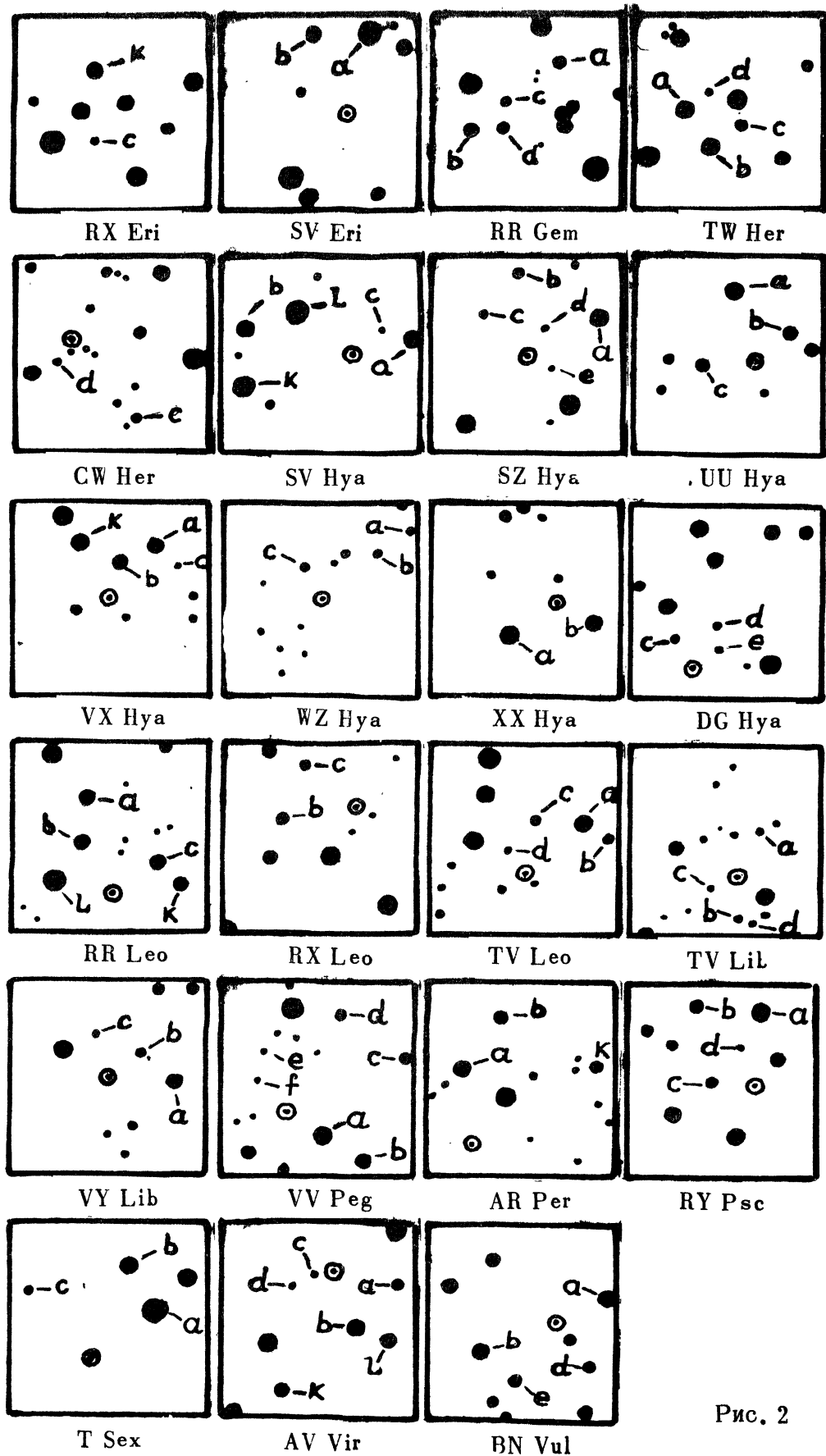


Рис. 2

Таблица 3

Моменты максимумов короткопериодических цефеид

Звезда	Мах 24...	E	Q-C	Зв. вел.	n	Элементы
XX And	27829.172	+ 1000	+0.010	10 ^m .43	9	Д 1
	842.160	1018	- .012	10.47	10	"
AC And	980.335	- 8545	+ .170	10.70	5	ОКПЗ
	981.307	- 8543	+ .092	10.82	5	
	983.334	- 8539	+ .019	10.66	5	
	985.352	- 8535	- .064	10.65	5	
	28007.272	- 8493	- .199	10.98	5	
	010.256	- 8488	+ .159	11.07	3	
	020.230	- 8469	+ .156	10.70	3	
	022.247	- 8465	+ .072	10.58	4	
	067.262	- 8379	- .074	11.03	6	
AT And	27999.542 *	+ 1859	+ .009	19 ^s .0	121	ОКПЗ
SW Aqr	769.139	+ 5817	- .004	11.01	28	"
	28021.302	+ 6866	+ .002	10.77	6	
	031.872 *	6389	+ .008	10.93	48	
	067.238	6466	+ .008	10.81	11	
SX Aqr	052.948 *	+14897	+ .002	7 ^s .0	55	Д 1
TZ Aqr	018.510 *	+ 5754	- .018	8 ^s .5	43	"
AA Aqr	016.261	+11936	+ .004	6 ^s .0	9	ОКПЗ
BO Aqr	27769.228	+ 1700	- .025	5 ^s .2	8	Д 1
	28016.315	2056	- .010	5 ^s .8	9	
	046.160 *	2099	- .008	7 ^s .0	45	
BR Aqr	27784.697 *	+ 2503	+ .004	10.88	50	"
	28019.851 *	2991	.000	10.92	49	"
AA Aql	27636.649 *	+ 9092	+ .002	5 ^s .4	39	"
	28011.811 *	+10129	.000	4 ^s .1	161	"
TZ Aur	27772.3480	19664	- .0005	11.45	19	ОКПЗ
	780.1800	19684	- .0020	11.42	19	
	784.0987 *	19694	.0000	11.44	77	
	800.1574	19735	.0000	11.44	27	
	805.2494	19748	+ .0002	11.40	22	
	817.3916 *	19779	+ .0005	11.44	47	
	829.1441	19809	+ .0028	11.41	9	
SW Boo	984.289	+ 2214	- .008	14 ^s .1	12	ОКПЗ
	984.814 *	2215	+ .003	15 ^s .0	37	
	985.325	2216	+ .001	13 ^s .8	17	
SZ Boo	984.772 *	+ 659	+ .003	7 ^s .0	21	
	985.287	660	- .005	7 ^s .0	14	
TW Boo	27512.430	+13474	- .002	3 ^s .0	9	ОКПЗ
	864.800	14136	- .002	9.92	17	
RR Cet	484.118	+18051	+ .016	8.48	7	ОКПЗ
RV CrB	985.204	- 2853	+ .108	1 ^s .0	9	АЦ 213
	988.195	- 2844	+ .111	3 ^s .5	12	
W Crt	874.286 *	+ 1007	- .002	7 ^s .0	33	ОКПЗ
RX Eri	849.167 *	+ 788	+ .006	11.3	20	ОКПЗ

Звезда	Мах 24...	E	O-C	Зв.вел.	n	Элементы
RR Gem	27812.501*	-13153	+0.064	10.44	48	ОКПЗ
CW Her	858.460*	- 718	- .111	8 ^s .1	19	ОКПЗ
SV Hya	865.334*	+ 2192	+ .012	9.50	69	АЦ 219
UU Hya	850.204*	- 658	- .012	18 ^s .5	83	Д 1
VX Hya	27508.284	+ 3499	+ .031	0 ^s .0	8	Д 1
	509.350:	3504	- .020:	-0 ^s .2	6	
	510.229	3508	- .034	0 ^s .0	11	
	512.273	3517	- .001	-1 ^s .0	11	
	842.204:	4994	- .015	0 ^s .0	9	
	.470:	4995	+ .028	0 ^s .0	5	
	843.360:	4999	+ .024	0 ^s .0	3	
WZ Hya	518.193*	+ 2451	+ .004		34	ОКПЗ
RR Leo	498.536*	- 6503	+ .011	9 ^s .4	59	"
RX Leo	866.205*	+10578	+ .006	7 ^s .0	20	"
TV Leo	842.262	-14253	- .054	11 ^s .5	6	"
	858.384	-14229	- .080	9 ^s .1	9	
	862.402	-14223	- .099	13 ^s .8	6	
TV Lib	601.2825	+28128	- .0037	5 ^s .5	13	Д 1
	861.4700*	29093	- .0034	5 ^s .0	45	
	865.5128	29108	- .0050	5 ^s .0	39	
	890.3200	29200	- .0032	5 ^s .0	22	
	928.3376	29341	- .0026	5 ^s .0	12	
	985.2300	29552	- .0009	4 ^s .5	21	
VY Lib	861.518	+ 4135	- .024	0 ^s .0	12	ОКПЗ
	869.525:	4150	- .026:	4 ^s .4:	9	
	871.661*	4154	- .026	3 ^s .5	52	
	890.334	4189	- .041	5 ^s .8	11	
VV Peg	28051.192	+16270	- .011	10.91	10	Д 1
	067.312	16303	- .008	10.92	11	
AR Per	27769.276	+ 2803	- .003	10.13	13	ОКПЗ
	772.263	2810	+ .005	10.13	8	
	804.173	2885	- .001	10.13	8	
RY Psc	767.142	+ 4264	- .014	4 ^s .5	11	Д 1
	767.152*	4264	- .004	7 ^s .7	41	
	768.212	4266	- .003	4 ^s .3	10	
	28080.321	4855	+ .097	4 ^s .5	8	
	080.234*	4855	+ .010	5 ^s .0	49	
	081.300:	4857	+ .016	4 ^s .5	7	
XX Pup	27861.130:	+2944	+ .003	10.15	8	ОКПЗ
	862.159:	2946	.000	10.27	9	
	863.194*	2948	.000	10.20	67	
	864.232	2950	+ .004	10.10	13	
	865.262	2952	- .001	10.20	12	
AV Vir	985.231*	+ 173	- .026	8 ^s .5	66	ОКПЗ
BN Vul	28012.553*	-10489	+ .001	4 ^s .7	188	ОКПЗ

ОКПЗ, 1958; Д 1 - 1-е Дополнение к ОКПЗ, 1958

Звездочкой (*) отмечены нормальные максимумы блеска, полученные по средней кривой блеска звезды.

n — количество оценок блеска звезды.

Примечания

1. XX And — нормальный максимум опубликован в [11]. В [12] Г.А. Ланге дает нормальную эпоху по своим и В.П. Цесевича наблюдениям.
2. AC And — отклонения О-С даны по первому периоду элементов ОКПЗ: $P=0.52512677$.
3. AA Aqr — нормальный максимум выведен из 9 оценок блеска звезды.
4. RV CrB — отклонения О-С вычислены по элементам П.А. Нерта [13] и согласованно ложатся в список остатков О-С, приведенный В.П. Цесевичем в этой работе.
5. W Crt — средняя кривая построена по элементам [14], а момент вычислен по элементам ОКПЗ, 1958. Поэтому расхождение с опубликованным ранее моментом.
6. RX Eri — полученный результат согласуется с выводами А. Соловьева и Н. Шаховского [15].
7. RR Gem — отклонения вычислены от элементов ОКПЗ, 1958: при $E=-13153$ О-С = $+0.065$
Если взять период, действовавший в промежутке $17000E-23000E$ [16], а за начальную эпоху момент, данный Г.А. Ланге в 1933г. [17]:
 $Max = 2427340.552 + 0.3972596 \cdot E$,
то О-С = $+0.005$ ($E=1188$).
8. CW Her — отклонение от новых элементов В.П. Цесевича [18] О-С = $+0.014$ ($E=-14207$).
9. TV Leo — отклонения О-С даны от новых элементов В.П. Цесевича [18].
10. VY Lib — наблюдения 1935г. подтверждают укорочение периода. По визуальным наблюдениям Г.А. Ланге в 1961г. [19] О-С порядка -0.140 .
11. BN Vul — обработка наблюдений звезды произведена Г.А. Ланге и результаты опубликованы в [20].

Изменяемость периодов данных звезд подробно исследована В.П. Цесевичем [18]. Полученные данные согласованно ложатся на графики $E/O-S$, приводимые в монографии.

Необходимо отметить, что многие средние кривые блеска звезд сглажены и не отражают горбы, наблюдаемые на восходящих и нисходящих ветвях кривых блеска.

Средние кривые блеска

Таблица 4

Фаза	Зв. вел.	n	Фаза	Зв. вел.	n	Фаза	Зв. вел.	n
<u>AT And, 1935</u>			<u>SX Aqr, 1935</u>			<u>AA Aql, 1934</u>		
0.018	19. ^s 0	10	0.324	28.9	3	0.280	12.5	4
.089	23.5	10	.462	32.2	4	.427	14.8	4
.219	28.1	10	.629	30.8	4	.656	14.2	3
.349	30.0	10	.706	32.4	3	.729	14.9	4
.453	30.1	10	.871	32.5	5	.805	16.8	1
.559	30.7	10	.923	28.9	5	.838	17.6	1
.624	30.5	10	.954	17.5	5	.847	18.4	1
.699	30.5	10	.972	9.3	5	.907	19.3	1
.757	30.9	10	.989	7.3	5	.949	11.4	4
.850	30.6	10				.966	8.3	3
.924	26.5	10	<u>TZ Aqr, 1935</u>			.977	7.4	3
.973	21.4	11	0.012	9. ^s 3	5	<u>AA Aql, 1935</u>		
<u>SW Aqr, 1934</u>			.065	11.7	5	0.010	4.0	10
0.025	4. ^s 3	4	.114	12.6	3	.038	4.9	10
.089	6.8	3	.178	17.7	1	.069	7.7	10
.114	10.0	1	.326	17.9	2	.150	10.0	10
.311	15.5	1	.559	19.7	3	.234	11.0	10
.728	20.4	4	.626	21.2	3	.340	12.2	10
.770	18.8	3	.748	22.7	1	.418	14.0	10
.939	18.3	3	.860	20.3	2	.535	15.3	12
.964	9.5	3	.914	13.3	3	.714	17.5	10
.977	2.3	3	.932	10.3	5	.847	18.1	10
.992	2.0	3	.959	8.6	5	.901	17.0	9
<u>SW Aqr, 1935</u>			.986	8.6	5	.929	11.5	10
0.032	0. ^s 3	6	<u>BR Aqr, 1935</u>			.947	9.2	10
.077	4.7	6	0.020	11. ^m 39	6	.963	6.3	10
.135	7.8	6	.066	11.90	6	.975	5.0	10
.258	14.9	4	.180	12.25	6	.986	4.4	10
.383	17.7	4	.325	12.72	6	<u>SW Boo, 1935</u>		
.465	18.7	6	.575	12.78	6	0.011	14.9	3
.676	20.2	4	.687	12.74	6	.049	19.8	3
.815	22.9	4	.792	13.01	3	.116	20.8	3
.893	23.8	3	.923	12.55	3	.155	20.2	3
.960	10.0	2	.977	11.45	3	.318	34.0	1
.987	2.3	3	.994	10.92	3	.571	34.6	1
<u>SX Aqr, 1935</u>			<u>AA Aql, 1934</u>			.785	34.7	3
0.013	7. ^s 2	5	0.006	5. ^s 4	4	.823	31.9	5
.050	8.6	5	.038	5.6	3	.869	34.2	5
.110	13.7	4	.105	9.0	3	.931	23.1	5

Таблица 4 (продолжение)

Фаза	Зв. вел.	n	Фаза	Зв. вел.	n	Фаза	Зв. вел.	n
<u>SW Boo, 1935</u>			<u>RR Gem, 1934/35</u>			<u>UU Hya, 1935</u>		
0.975	15.2	5	0.040	11 ^m .70	5	0.911	25.9	7
<u>SZ Boo, 1935</u>			.094	11.17	1	.928	22.5	7
0.014	9 ^s .1	2	.118	10.72	2	.948	20.9	7
.050	8.0	2	.153	10.44	4	.979	17.5	7
.068	11.4	2	.182	10.47	2	<u>WZ Hya, 1934</u>		
.090	10.7	2	.203	10.63	6	0.022	16 ^s .0	2
.111	17.1	1	.244	10.76	3	.055	17.8	1
.176	20.1	1	.297	10.94	4	.083	20.8	1
.536	24.7	1	.386	11.38	2	.119	25.6	1
.725	25.8	1	.577	11.62	4	.240	29.6	2
.834	24.8	2	.773	11.70	5	.330	34.25	4
.885	25.3	2	.878	11.70	3	.389	34.5	4
.929	22.3	2	.948	11.70	5	.487	35.0	4
.987	8.3	2	<u>SV Hya, 1935</u>			.725	36.2	4
<u>W Crt, 1935</u>			0.009	9 ^m .51	5	.844	36.5	2
0.035	8 ^s .2	3	.036	9.45	5	.889	36.5	3
.132	10.3	3	.078	9.67	5	.917	35.6	1
.206	16.2	1	.118	10.14	5	.934	32.0	1
.267	21.9	1	.160	10.32	5	.962	19.2	1
.331	24.7	2	.224	10.40	5	.984	16.6	3
.507	25.6	1	.278	10.51	2	<u>WZ Hya, 1935</u>		
.713	26.3	2	.358	10.45	1	0.012	14 ^s .3	8
.801	28.5	3	.555	10.93	2	.042	16.1	8
.875	30.6	3	.663	11.00	2	.080	18.2	8
.899	30.6	3	.748	10.97	2	.175	20.3	8
.929	23.2	2	.823	10.92	4	.398	28.8	8
.938	19.6	2	.862	10.96	5	.502	34.1	8
.949	11.3	1	.923	10.55	5	.576	34.9	8
.980	7.9	4	.959	10.22	5	.658	35.1	8
.989	7.0	3	.978	9.70	5	.746	36.2	8
<u>RX Eri, 1935</u>			.992	9.58	5	.807	35.3	8
0.018	10 ^s .6	3	<u>UU Hya, 1935</u>			.857	35.8	8
.039	12.1	1	0.013	21 ^s .1	6	.886	36.5	8
.132	13.4	2	.062	23.35	6	.921	35.2	8
.227	14.3	1	.141	24.8	4	.974	18.0	8
.357	16.6	4	.234	26.3	4	.991	15.5	10
.448	17.6	1	.353	31.7	6	<u>VY Lib, 1935</u>		
.626	18.15	2	.462	31.9	4	0.019	4 ^s .9	5
.686	18.7	2	.657	33.0	6	.175	6.6	3
.958	14.3	2	.734	31.9	6	.274	8.4	2
.989	12.45	2	.820	34.4	6	.392	9.3	4
			.883	27.3	6			

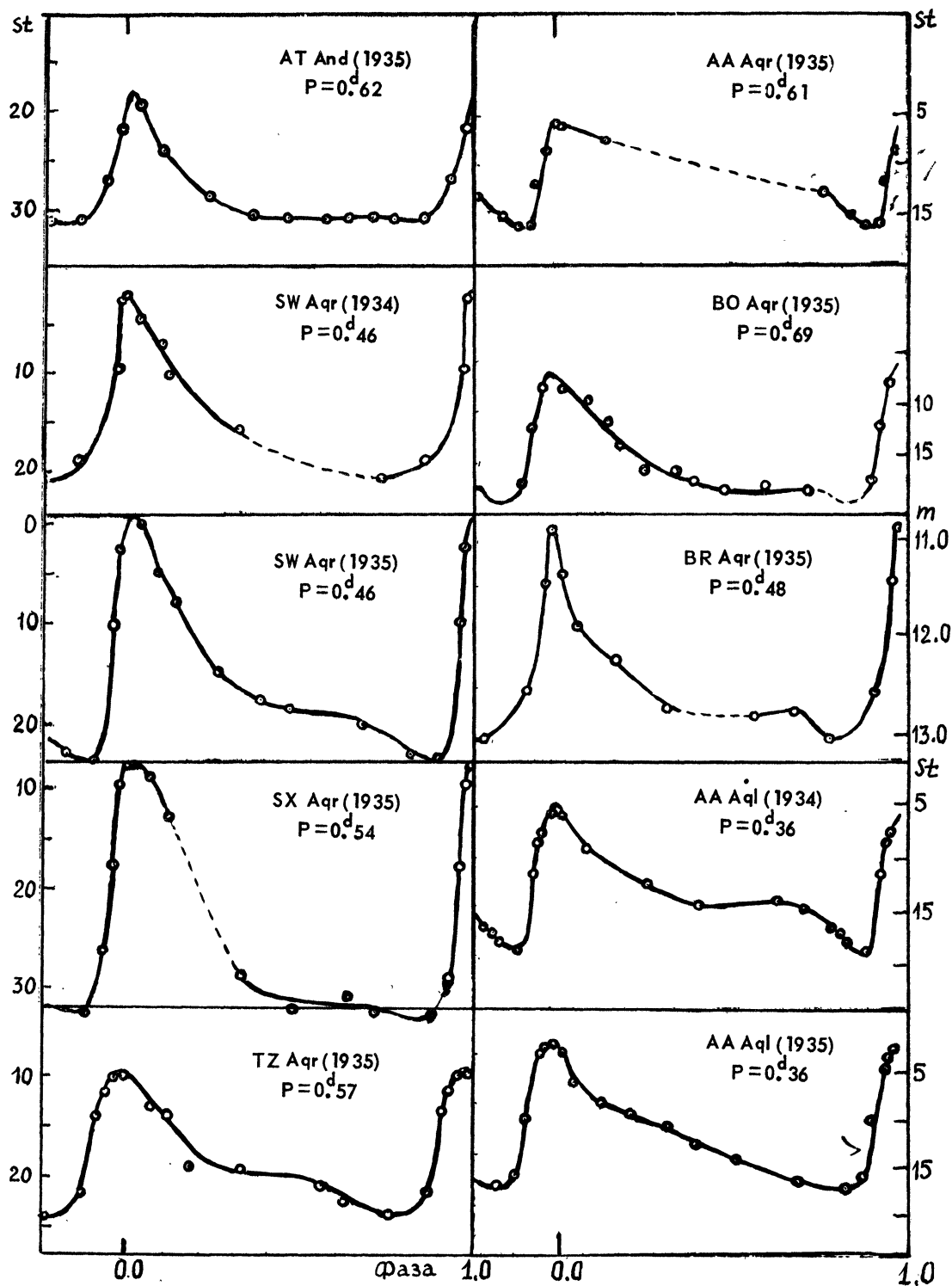


Рис. 3

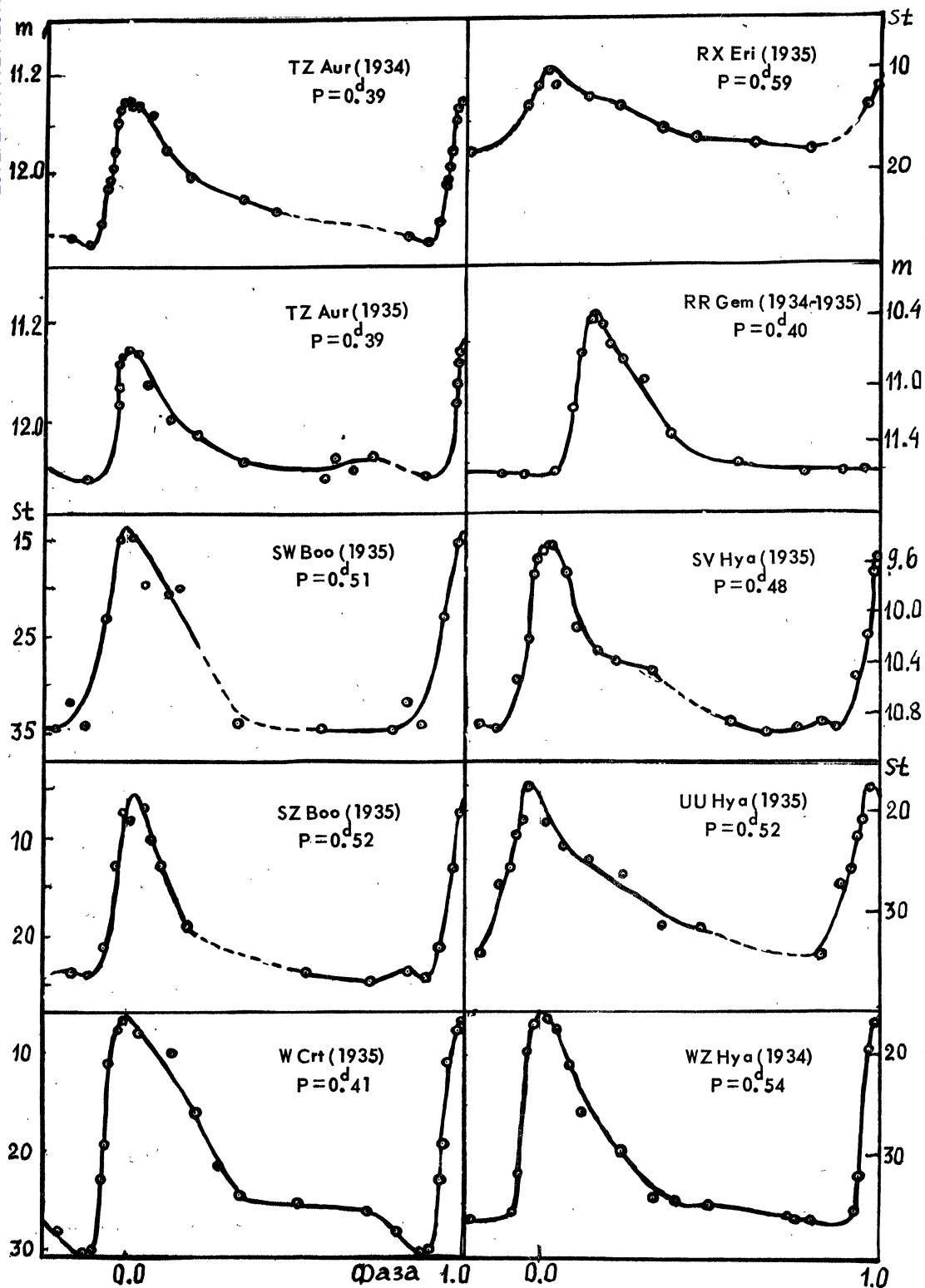


Рис. 4

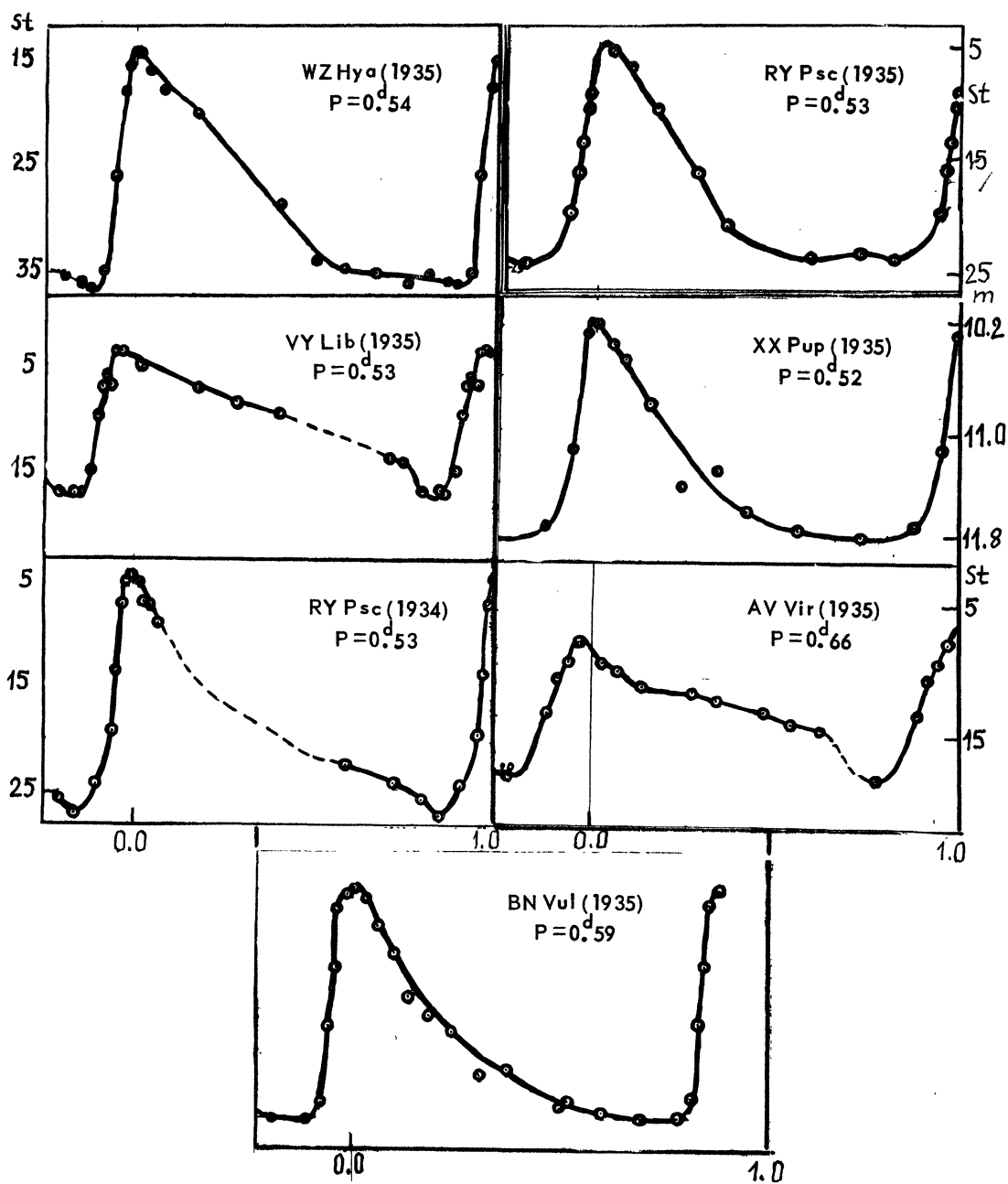


Рис. 5

Таблица 4(продолжение)

Фаза	Зв.вел.		Фаза	Зв.вел.		Фаза	Зв.вел.	
<u>VY Lib, 1935</u>			<u>RY Psc, 1935</u>			<u>AV Vir, 1935</u>		
0.694	13. ^s 6	3	0.157	10. ^s 3	10	0.466	14. ^s 2	11
.735	14.0	3	.268	16.3	5	.536	15.4	9
.786	16.7	3	.347	21.2	5	.623	15.9	6
.835	16.6	3	.573	24.2	5	.772	20.3	3
.855	17.0	3	.705	22.8	5	.875	14.5	4
.880	14.8	5	.795	24.6	3	.912	11.2	4
.897	9.5	3	.924	20.0	4	.939	9.7	4
.911	6.9	3	.943	16.2	4	.967	7.6	4
.923	5.9	3	.956	13.6	2	<u>BN Vul, 1935</u>		
.942	6.1	3	.972	10.3	1	0.0098	4. ^s 71	10
.953	3.6	3	.976	9.0	1	.0381	5.62	10
.964	3.5	3	<u>XX Pup, 1935</u>			.0716	8.27	10
<u>RY Psc, 1934</u>			0.009	10. ^m 19	6	.1135	10.84	10
0.007	4. ^s 9	2	.048	10.35	6	.1555	15.05	10
.020	5.8	2	.084	10.47	6	.2089	16.85	10
.035	7.3	2	.151	10.81	6	.2722	18.20	10
.059	9.0	1	.238	11.42	6	.3327	22.31	10
.576	22.3	3	.336	11.30	4	.4235	21.77	10
.709	23.8	5	.416	11.60	4	.5065	25.52	10
.785	25.3	6	.552	11.77	6	.5824	24.79	10
.830	26.9	7	.719	11.79	6	.6802	26.00	8
.888	24.1	3	.869	11.72	5	.7835	26.46	10
.922	19.4	2	.941	11.15	6	.8798	26.59	10
.953	13.6	1	.985	10.28	6	.9176	24.71	10
.964	7.2	3	<u>AV Vir, 1935</u>			.9392	17.68	10
.979	4.7	2	0.027	9. ^s 7	5	.9544	13.35	10
.992	4.4	2	.072	10.4	4	.9705	6.64	10
<u>RY Psc, 1935</u>			.138	12.0	3	.9907	5.30	10
0.035	5. ^s 0	2	.271	12.4	5			
.083	6.3	2	.338	13.2	4			

Таблица 5

Визуальные наблюдения Г.А. Ланге, 1934/35 г.г.

		2427...		2427...		2427...	
<u>XX And</u>		829.171	10. ^m 40	842.114	11. ^m 54	842.166	10. ^m 47
J.D. $\odot$		.185	10.51	.124	11.04	.183	10.51
2427...		.206	10.51	.128	10.81	.220	10.72
829.116	11. ^m 45	.223	10.62	.135	10.61	843.194	11.65
.145	10.82	.251	11.04	.141	10.51	.230	11.65
.154	10.51	834.097	11.93	.146	10.51	857.102	11.51
.161	10.46	.116	11.98	.153	10.51	.113	12.11

2427...		2427...		2428...		2427...	
857.132	11 ^m .80	980.331	10 ^m .70	014.347	10 ^m .66	980.387	20 ^s .9
.147	11.94	.341	10.70	.388	10.63	.410	20.9
.163	11.80	.364	10.89	015.211	11.04	981.287	29.0
858.139	10.74	.388	10.97	.277	10.78	.323	29.7
.148	10.57	981.287	11.03	016.201	11.28	983.314	31.2
.154	10.57	.295	10.95	.285	11.27	.353	30.2
.163	10.62	.305	10.80	.319	11.27	984.270	30.9
.178	10.52	.324	10.89	.364	11.22	.310	32.3
861.150	11.37	983.315	10.79	017.207	11.06	985.230	31.2
.166	11.60	.328	10.67	.247	11.03	.333	20.9
.173	11.66	.340	10.66	.275	11.03	.344	12.5
862.148	11.68	.356	10.75	.323	11.03	.356	10.4
.162	11.68	.389	10.89	.439	10.89	.378	11.9
864.148	11.68	984.270	11.27	018.208	11.28	.401	18.4
.164	11.57	985.335	10.75	.242	11.27	986.386	29.5
.173	11.68	.345	10.66	020.208	10.76	.414	29.5
<u>AC And</u>		.356	10.63	.232	10.67	.425	30.4
J.D. ☉		.378	10.89	.263	10.89	988.261	29.8
2427...		.402	10.80	021.200	11.17	.276	31.4
804.104	11 ^m .03	986.389	11.28	.295	11.27	.288	31.7
.149	11.01	.416	11.27	022.230	10.61	.318	30.6
.192	11.27	.427	11.27	.247	10.56	.368	28.3
.217	11.27	988.262	10.72	.256	10.61	.381	27.1
805.100	11.17	.276	10.89	.276	10.62	.394	24.1
.114	11.36	.369	11.03	023.179	11.27	.402	20.9
.125	11.24	.417	11.17	.396	11.28	.414	15.3
.139	11.17	28004.227	11.03	024.268	11.32	.425	12.5
.150	11.27	005.262	11.23	040.190	11.26	.439	13.1
.163	11.28	006.282	11.28	043.248	11.28	991.265	30.6
.177	11.27	.307	11.28	051.198	11.03	.274	29.8
.211	11.32	007.209	11.27	.246	11.07	.289	29.8
.227	11.26	.241	11.03	067.212	11.24	.297	29.8
.253	11.27	.253	11.03	.221	11.17	.313	29.8
.276	10.78	.274	10.95	.248	11.03	.335	29.8
829.106	10.89	.293	11.03	.256	11.03	994.342	29.0
.128	11.27	.307	11.06	.320	11.03	.365	29.8
.154	11.30	010.250	10.89	069.166	11.03	.392	29.8
.173	11.28	.256	10.75	.180	11.03	28004.224	29.4
.206	11.28	.262	10.89	.231	11.02	.236	29.8
834.095	11.30	012.235	10.61	070.186	11.27	005.209	29.0
.113	11.27	.240	10.65	<u>AT And</u>		.242	29.0
.138	11.23	.247	10.61	J.D. ☉		.258	29.8
979.313	11.03	013.172	11.03	2427...		006.279	26.6
.328	11.08	014.266	11.22	979.442	29 ^s .0	.290	20.9
.369	11.17	.276	11.27	980.329	27.1	.304	27.4
.394	11.27	.327	10.89	.340	28.2	.331	20.9
980.325	10.72	.334	10.72	.363	27.4	007.206	28.2

<u>AT And</u>		2428...	2427...	2428...
J.D. ☉		018.275 29 ^s 8	769.188 11 ^m 19	079.223 11 ^m 50
2428...		.303 30.6	.195 11.33	080.261 11.69
007.222 30 ^s 6		020.205 30.6	780.134 11.38	.265 11.47
.238 30.9		.229 32.2	.146 11.29	.285 11.43
.251 30.9		.259 31.4	.152 11.13	.296 11.47
.271 31.4		.286 31.4	.159 11.09	.311 11.77
.291 30.6		.332 30.6	.166 11.01	081.298 11.77
.304 30.6		021.223 29.0	28016.279 11.13	
010.248 29.0		.292 30.6	.292 11.17	<u>SX Aqr</u>
.253 29.8		022.226 33.9	.318 11.19	J.D. ☉
012.232 30.6		.242 37.1	.354 11.40	2427...
.244 31.4		.273 32.2	.446 11.50	753.204 29 ^s 5
013.169 24.1		.293 29.0	017.297 11.43	768.106 20.8
.178 27.4		.309 20.9	.334 11.44	.109 18.6
.348 29.8		.319 24.1	.358 11.45	.114 15.4
014.262 29.0		.348 16.7	.436 11.50	.121 12.5
.274 29.0		023.176 29.8	020.260 11.74	.129 12.5
.324 29.0		.212 30.6	.274 11.67	.142 14.4
.346 28.2		.392 32.5	.291 11.67	.173 26.8
.358 27.4		.447 32.2	.334 11.78	.205 29.7
.370 28.2		024.265 27.4	.343 11.73	769.112 11.0
.385 20.9		.292 28.2	.356 11.43	.137 10.8
.392 20.9		.395 29.0	021.228 11.80	.140 11.7
.424 27.4			.239 11.81	.145 13.2
015.208 31.4		<u>SW Aqr</u>	.291 10.93	.159 15.4
.233 30.6		J.D. ☉	.304 10.77	.167 20.8
.259 31.4		2427...	.317 11.02	.177 24.9
.273 30.6		753.210 11 ^m 44	.332 11.13	.186 26.6
016.198 29.0		768.095 11.64	022.238 10.93	780.135 31.2
.206 27.4		.097 11.84	.248 11.07	.148 31.2
.217 27.4		.100 11.50	.261 11.13	28016.345 31.7
.281 20.9		.104 11.47	024.318 11.50	017.298 30.5
.317 25.8		.109 11.47	049.205 11.44	.334 32.4
.350 27.4		.114 11.33	.247 11.80	.437 33.5
017.203 32.2		.132 11.62	067.219 11.13	020.252 9.2
.232 31.4		769.110 11.50	.224 11.21	.256 7.7
.243 30.6		.123 11.41	.228 10.93	.265 7.7
.255 30.3		.127 11.13	.238 10.77	.273 6.2
.263 29.3		.129 11.09	.244 10.93	.290 7.7
.273 30.6		.132 11.02	.255 11.05	.334 15.4
.301 30.9		.135 10.93	.263 11.09	021.240 31.2
.320 30.6		.139 10.93	.276 11.15	.291 28.8
.362 29.0		.144 11.02	.285 11.19	.294 28.0
.383 28.2		.149 11.09	.297 11.27	.301 28.0
.435 27.4		.158 11.13	.314 11.33	.318 20.8
018.205 30.6		.166 11.14	069.172 11.43	.338 7.7
.239 29.8		.177 11.21	.199 11.46	023.410 34.4
		.186 11.21	.269 11.50	.429 34.3

		2428...		2428...		2428...	
<u>SX Agr</u>		016.299	10 ^s .3	017.437	16 ^s .0	067.299	16 ^s .6
J.D. ☉		.345	17.7	022.316	12.0	069.181	10.6
2428...		.447	19.1	<u>BO Agr</u>		.281	15.9
023.438	31 ^s .2	017.333	13.7	J.D. ☉		.333	16.3
.444	28.0	.337	12.6	2427...		070.188	18.0
.451	25.6	.341	10.8	769.190	18 ^s .0	079.217	17.3
.456	18.1	.345	9.5	.202	15.7	080.261	9.3
.459	15.4	.351	9.8	.207	12.4	.287	11.0
.463	10.8	.358	7.8	.213	9.6	.312	12.4
.468	7.7	.368	7.8	.219	5.3	081.297	16.6
024.317	31.7	.375	7.4	.223	5.3	.318	17.3
066.319	7.7:	.381	8.8	.235	5.3	<u>BR Agr</u>	
067.218	29.9	.391	9.1	.244	8.8	J.D. ☉	
.223	30.4	.398	11.8	986.407	17.3	2427...	
.233	31.0	.424	12.8	.433	16.2	752.191	12 ^m .53
.263	32.0	.438	12.6	.440	12.4	.212	12.70
.339	33.6	.449	13.7	988.404	17.6	.266	12.92
069.172	30.4	018.277	19.4	994.373	16.3	753.133	12.26
.198	28.0	020.208	11.0	28016.273	16.9	.157	12.41
.205	28.4	.224	9.6	.283	10.6	.166	12.43
.234	32.2	.234	8.9	.294	9.2	.215	12.84
.268	33.6	.244	8.2	.302	7.6	.255	13.00
079.223	7.1	.274	13.7	.317	5.3	754.266	13.20
.236	9.5	021.240	22.7	.328	7.5	767.099	12.45
080.261	7.7	.292	20.9	.342	8.7	.150	12.96
.275	6.8	.316	19.7	.355	8.4	.159	13.08
.286	9.0	.337	13.7	.447	14.2	768.102	12.45
.296	9.6	.343	10.3	017.298	16.3	.114	12.26
.312	11.0	.372	8.2	.332	17.3	.137	13.04
080.326	13.2	.380	9.6	.374	17.3	.149	12.70
.337	15.4	022.263	18.7	.422	17.3	.172	12.70
081.298	29.4	.298	21.6	020.395	18.1	.211	13.14
.326	11.0	.327	20.0	021.244	8.7	769.115	13.10
.328	7.7	023.428	20.9	.294	11.4	.128	12.70
.332	5.9	.449	22.0	.336	12.4	.133	12.70
.342	6.6	024.316	13.7	.376	15.2	.149	13.10
.346	7.7	.409	16.7	023.333	8.6	.163	13.20
.353	8.8	<u>AA Agr</u>		.392	12.4	.170	13.14
<u>TZ Agr</u>		J.D. ☉		.426	15.6	.181	13.27
J.D. ☉		2428...		.454	16.3	.187	13.33
2428...		016.249	8 ^s .7	024.300	18.0	.194	13.32
016.211	9.8	.264	6.0	.315	18.4	.204	13.27
.221	8.2	.271	6.5	049.203	16.3	.218	13.27
.244	6.9	.346	7.7	066.321	5.3	.221	13.27
.256	8.2	017.341	13.0	067.216	14.6	.240	12.41
.270	9.6	.389	15.0	.234	15.6	.245	12.11
.280	9.6	.413	16.0	.269	18.6	.251	11.22

<u>BR Aqr</u>		2428...	2427...	2427...
J.D. $\odot$		021.335 11 ^m .62	767.097 11 ^s .6	988.280 16 ^s .8
2427...		024.313 12.02	.126 14.4	.323 18.4
769.254 10 ^m .99		036.222 12.30	.154 16.8	.366 19.3
.260 10.92		.248 12.10	768.081 6.7	.381 16.8
.270 10.87		.259 12.10	.096 7.4	.383 13.7
780.193 13.20		.266 12.10	.103 8.1	.386 13.0
.206 13.14		.280 11.83	.129 10.2	.389 11.9
800.074 13.20		.287 12.25	769.107 16.8	.393 10.2
.087 12.20		.338 12.54	.119 17.6	.395 9.5
.090 12.11		038.177 12.44	.132 18.4	.398 9.1
.090 11.99		.202 12.53	.144 19.3	.402 7.4
.093 11.89		.235 12.40	.156 14.4	.405 4.4
.097 11.74		.271 12.50	.162 11.6	.412 3.7
.109 10.94		.291 13.04	.163 10.9	.423 4.4
.114 10.87		.297 13.04	.167 9.5	.429 4.4
.119 10.90		.312 13.16	.169 7.4	.436 5.9
.131 10.87		.321 12.21	780.128 13.7	994.344 13.0
.136 10.94		.328 12.70	983.316 16.8	.366 14.4
.147 11.01		081.300 12.70	.323 13.7	28004.224 17.6
805.131 12.20		.304 12.70	.325 12.3	006.297 13.0
986.398 12.97		.335 12.81	.327 11.6	.307 13.3
.433 12.48		.344 12.71	.329 10.9	.317 13.7
.440 12.37	<u>AA Aql</u>		.332 10.2	.328 15.2
988.376 12.44	J.D. $\odot$		.334 9.5	007.209 10.9
.407 12.70	2427...		.337 8.8	.215 7.4
994.376 11.79	599.309 13 ^s .7		.339 5.2	.220 4.8
28016.299 12.70	.318 14.4		.340 4.0	.224 3.8
.328 12.82	600.330 12.3		.345 3.8	.227 4.0
.354 13.09	.335 12.4		.350 4.0	.238 4.4
017.298 13.22	601.313 4.4		.355 4.0	.253 5.2
.330 13.09	.320 4.0		.363 4.3	.270 7.4
.349 13.13	.353 7.4		.370 4.4	.296 10.2
.370 13.13	602.271 13.0		.389 7.4	.304 10.2
.398 13.15	.277 14.4		984.226 18.4	008.298 7.4
.422 11.81	.374 10.9		.245 18.4	010.250 12.6
.429 11.01	.383 7.4		.272 18.4	.253 10.2
.435 11.05	.388 5.2		.295 18.8	.257 10.9
.442 10.81	752.157 8.8		.308 18.8	011.169 18.4
.449 10.90	.174 4.4		.334 18.8	.176 18.4
.456 10.87	.187 4.8		985.237 10.9	012.235 18.4
020.287 12.20	.207 9.5		.245 10.2	014.266 13.3
.330 11.05	753.126 15.2		.257 12.1	.269 12.6
.339 10.81	.155 14.4		.276 12.1	.276 13.0
021.292 10.91	.157 12.6		.289 12.3	.338 16.0
.302 11.23	.159 14.4		.356 16.4	.393 16.8
.315 11.23	.165 16.0		986.383 12.3	016.209 17.6
			.426 14.4	.227 17.6

<u>AA Aql</u>		2428...	2427...	2427...
J.D. ☉		021.202 16 ^s .8	772.2625 12 ^m .44	800.1418 11 ^m .93
2428...		.223 17.6	.2850 12.62	.1433 11.82
016.242 16 ^s .8		.245 18.4	.2968 12.58	.1448 11.69
.253 12.3		.284 18.4	.3079 12.62	.1460 11.61
.263 6.6		.301 18.4	.3191 12.51	.1467 11.58
.264 5.2		.328 7.4	.3229 12.46	.1490 11.48
.267 4.0		.334 4.0	.3260 12.34	.1492 11.47
.273 3.7		.340 3.7	.3288 12.19	.1517 11.45
.279 4.0		.367 7.4	.3295 12.14	.1548 11.43
.287 4.4	022.248 13.0	.277 13.0	.3309 12.09	.1586 11.45
.293 4.8		.323 14.4	.3329 11.99	.1631 11.48
.311 7.4	024.314 10.9	.3357 11.85	.3343 11.95	.1675 11.49
.335 10.2	.327 11.6	.3371 11.65	.1914 11.65	.2022 11.82
017.263 18.0	039.126 16.0	.3399 11.61	.2140 11.85	
.298 18.4	040.176 8.8	.3417 11.56	.2711 12.19	
.308 19.3	044.249 14.4	.3447 11.52	803.2342 12.66	
.320 18.4	.251 13.3	.3482 11.44	.2416 12.62	
.328: 7.4:	.255 12.3	.3545 11.48	.2481 12.66	
.329 18.4	.258 12.3	780.1484 12.44	804.0997 12.01	
.336 11.9	.263 10.2	.1550 12.38	.1149 12.00	
.338 11.2	067.278 8.8	.1584 12.24	.1480 12.07	
.342 9.5	.281 7.4	.1620 12.04	.1553 12.14	
.346 7.4	.282 5.9	.1636 11.99	.1643 12.14	
.349 4.0	.284 4.0	.1685 11.65	.1855 12.17	
.352 3.7	.287 3.7	.1708 11.58	.1980 12.34	
.355 3.7	.292 3.8	.1711 11.54	.2181 12.45	
.362 3.8	.295 4.4	.1728 11.45	.2257 12.47	
.372 4.4	.301 4.8	.1775 11.43	805.0799 12.70	
.386 5.2	.306 7.4	.1836 11.43	.0869 12.52	
.392 7.4	.310 8.8	.1877 11.45	.0876 12.47	
.413 10.2	.319 9.5	.1942 11.47	.0899 12.34	
.428 10.9	069.167 9.5	.2006 11.48	.0930 12.26	
020.202 15.2	.169 10.2	.2065 11.48	.0966 12.26	
.218 16.8	.175 10.9	.2140 11.54	.1007 12.46	
.236 11.6	.201 11.9	.2314 11.65	.1191 12.46	
.239 10.2	.223 12.3	800.0907 12.54	.1494 12.47	
.241 8.1	.267 14.4	.0946 12.60	.1799 12.54	
.244 7.4		.1157 12.66	.2070 12.50	
.246 4.4	<u>TZ Aur</u>	.1270 12.50	.2373 11.89	
.247 4.0	J.D. ☉	.1295 12.43	.2413 11.56	
.251 3.7	2427...	.1334 12.19	.2421 11.50	
.256 3.7	769.2883 12 ^m .47	.1358 12.14	.2430 11.45	
.263 4.0	.2980 12.03	.1362 12.11	.2440 11.42	
.270 4.4	.3069 12.06	.1383 12.08	.2477 11.43	
.286 8.4	.3682 12.30	.1386 12.04	.2514 11.43	
.321 10.5	.3873 12.34	.1412 11.97	.2559 11.42	

		2427...		2427...		<u>RZ Cet</u>	
<u>TZ Aur</u>		985.283	23 ^s .5	512.432	10 ^m .14	J.D. ☉	
J.D. ☉		.293	19.2	.440	10.17	2427...	
2427...		.304	16.3	864.264	9.97	772.269	6 ^s .0
805.2605	11 ^m .44	.319	14.0	.280	10.04	.287	6.0
.2677	11.48	.331	13.6	.328	10.14	800.092	4.5
.2727	11.49	.348	14.7	.335	10.15	.097	3.9
829.1094	12.44	.384	24.8	.357	10.16	.128	4.5
.1406	11.60	2428...		865.257	10.60	804.135	5.3
.1419	11.49	004.240	24.2	.279	10.26	.148	4.6
.1420	11.47	015.271	34.0	.284	10.18	.159	5.3
.1426	11.42	016.218	23.8	.292	10.16	.176	6.6
.1482	11.44	.224	21.4	.303	10.11	805.106	8.3
.1489	11.47	<u>SZ Boo</u>		.312	10.04	.119	8.5
.1621	11.69	J.D. ☉		.319	9.94	.131	7.6
.1895	12.00	2427...		.324	9.93	.138	8.1
834.0948	12.46	984.243	7 ^s .8	.335	9.93	.153	5.3
.1091	12.34	.270	6.1	.351	9.94	.161	4.6
.1160	12.27	.277	8.8	.389	10.15	.175	5.1
.1223	12.22	.290	9.3	.417	10.16	.197	5.8
842.1276	12.00	.297	12.0	<u>RR Cet</u>		.221	9.2
<u>SW Boo</u>		985.201	24.7	J.D. ☉		.235	9.4
J.D. ☉		.209	25.0	2427...		.256	9.7
2427...		.224	25.4	484.100	9 ^s .6	829.108	7.6
983.326	14 ^s .3	.235	25.2	.105	7.2	.148	9.2
.336	15.4	.251	23.5	.112	6.6	.160	8.1
984.226	35.2	985.258	21.1	.118	6.6	<u>RV CrB</u>	
.231	34.9	.274	14.0	.128	6.9	J.D. ☉	
.268	22.3	.282	8.8	.137	8.4	2427...	
.272	18.8	.294	8.0	.142	7.8	983.223	11 ^s .8
.278	17.6	.304	10.2	<u>RX Cet</u>		.230	12.7
.283	14.1	.321	9.8	J.D. ☉		.232	13.2
.291	14.1	.332	14.0	2427...		.241	13.7
.297	14.1	.350	17.1	769.215	7 ^s .9	.253	12.8
.307	16.9	.384	20.1	.222	8.4	.264	13.3
.313	21.5	988.168	24.7	.261	7.3	.275	13.2
.333	23.1	.285	25.8	780.144	6.3	.315	13.5
.360	23.3	<u>TW Boo</u>		.199	8.4	.330	13.5
985.200	33.3	J.D. ☉		804.133	5.7	.342	13.5
.208	36.7	2427...		.176	6.3	.353	13.8
.222	34.2	512.380	10 ^m .61	805.104	0.0	.374	14.2
.229	33.1	.388	10.61	.132	2.2	.393	13.8
.233	34.1	.397	10.29	.153	4.2	984.229	13.2
.242	34.0	.402	10.20	.177	5.7	.281	14.5
.248	34.6	.411	10.20			.344	14.5
.259	33.0	.420	10.20			.398	18.2
.267	33.4	.421	10.17			.404	21.8
.274	31.5					985.200	2.8
						.206	0.0

<u>RV CrB</u>		2427...		2427...		2427...	
J.D. ☉		865.280	10 ^s .0	857.378	12 ^s .0	865.252	9 ^s .6
2427...		.291	11.3	.443	12.8	.336	10.4
985.212	2 ^s .3:	.309	16.2	.487	12.0	.433	11.2
.218	4.2	.334	21.9	858.198	12.8	869.197	12.8
.223	4.7	.382	24.7	.234	12.0	.243	11.2
.228	12.6	.433	25.6	.267	10.4	.415	8.0
.238	13.5	867.224	26.4	.273	9.6	.433	9.6
.253	14.2	.239	27.6	.282	8.0	.459	9.6
.384	23.5	.245	27.6	.287	8.0	889.343	9.6
988.179	13.2	.256	23.8	.315	6.4	.359	10.4
.182	13.2	.265	8.1	.337	6.4	890.247	12.8
.186	11.6	.269	7.3	.351	4.8	.265	12.8
.188	4.2	.280	7.3	.414	6.4	.276	12.0
.190	3.1	.296	8.1	.449	8.0	.284	9.9
.194	4.2	869.216	25.6	860.396	12.8	.304	11.2
.199	4.2	.257	28.4	.455	10.4	.316	11.2
.210	4.6	890.249	27.0	.496	6.4	.332	11.2
.220	4.6	.265	28.1	861.228	8.0	928.336	11.2
.241	8.3	.290	29.0	.238	6.4	949.227	8.0
.252	8.3	.332	23.0	.289	7.2	.237	7.5
.283	12.0	.343	8.1	.326	4.8	953.172	11.2
990.191	4.6	.350	7.2	.391	8.0	957.182	10.4
.194	4.2	949.226	38.2	861.436	8.8	.199	11.2
.195	4.5	<u>X Crt</u>		.492	10.4	.216	11.2
.221	4.5	J.D. ☉		862.185	11.2	<u>SW Dra</u>	
994.178	4.6	2427...		.220	9.1	J.D. ☉	
.186	4.2	829.376	11 ^s .2	.233	9.6	2427...	
.207	4.6	.397	11.2	.283	9.6	484.140	0 ^s .0
2428...		.459	11.7	.323	9.6	.303	14.4
002.184	5.9	842.251	4.0	.378	9.6	492.141	0.0
003.182	4.8	.272	6.0	.456	9.6	.164	4.0
005.185	5.9	.310	7.5	.481	11.2	.178	8.2
.215	12.5	.405	8.0	.509	11.2	.187	9.8
011.165	10.3	.453	9.1	863.263	11.2	.226	14.3
.171	8.3	.488	9.6	.305	12.8	.246	13.0
<u>W Crt</u>		.515	11.2	864.192	3.2	510.212	16.8
J.D. ☉		843.240	8.8	.196	1.6	.242	19.7
2427...		.252	9.6	.204	3.2	512.373	14.3
864.374	16 ^s .2	.281	9.6	.226	4.8	.387	12.0
865.180	33.2	.317	11.2	.236	4.0	.395:	14.3
.194	22.7	.516	11.2	.255	6.4	.414	17.4
.203	11.3	.546	11.2	.260	8.0	.443	20.7
.207	8.2	.618	12.0	.293	8.8	<u>RX Eri</u>	
.222	6.5	848.484	12.8	.314	9.6	J.D. ☉	
.230	7.6	.549	11.2	.352	9.6	2427...	
.250	8.9	857.215	12.0	865.194	8.6	848.185	17 ^s .0
.265	9.6	.274	12.8	.212	8.0	.205	16.5
		.313	12.0	.221	8.8	.222	16.5

<u>RX Eri</u>		2427...	2427...	<u>TW Her</u>		2427...	2427...
J.D. ☉		769.261	11 ^m .19	J.D. ☉		861.512	9 ^m .51
2427...		.306	11.50	2427...		.520	9.51
849.133	13 ^s .2	772.263	11.67	2427...		.532	9.67
.141	15.4	.286	11.70	767.122	31 ^s .8	862.320	10.96
.158	12.1	.309	11.71	.131	34.3	.375	10.96
.167	11.0	.320	11.75	768.090	43.9	.434	10.35
.171	9.9	780.186	11.68	.117	43.5	.447	9.65
.178	11.0	.202	11.68	769.114	57.5	.455	9.54
.184	12.1	.234	11.69	861.292	18.0	.460	9.43
857.172	18.7	800.169	10.68	<u>CW Her</u>		.474	9.43
.208	17.6	.194	10.53	J.D. ☉		.484	9.48
858.158	16.5	.204	10.83	2427...		.495	9.54
861.169	17.6	.215	10.83	848.490	8 ^s .2	.506	9.93
862.151	13.2	804.122	11.85	.496	9.5	.515	10.26
.165	13.6	.150	10.46	858.400	20.3	.523	10.35
865.150	14.3	.158	10.31	.458	8.1	.532	10.35
867.138	17.6	.164	10.42	.462	7.2	863.261	11.05
.172	19.8	.172	10.46	.469	6.1	.314	10.95
869.118	12.8	.180	10.53	860.405	14.7	864.258	10.98
<u>SV Eri</u>		.198	10.61	.412	13.3	.291	10.96
J.D. ☉		.218	10.83	.417	14.6	.301	10.96
2427...		.222	11.17	.435	16.3	.313	10.96
848.163	7 ^s .5	805.090	11.59	861.373	24.3	.353	10.01
.173	6.0	.101	11.60	.489	28.3	.357	9.48
.180	8.5	.126	11.61	.526	28.3	.361	9.46
.188	8.5	.149	11.68	862.408	28.3	.366	9.43
.202	9.3	.180	11.72	.442	26.3	865.250	10.98
849.130	8.5	.207	11.68	.462	26.3	.261	10.96
.138	9.3	.239	11.75	.482	28.3	.283	10.77
.155	9.3	.263	11.81	.508	29.3	.288	10.43
.164	9.7	815.192	11.68	.523	30.3	.293	10.43
857.169	0.0	.294	10.77	<u>SV Hya</u>		.297	10.35
858.156	8.5	.303	10.68	J.D. ☉		.306	10.01
861.166	10.2	.310	10.62	2427...		.311	9.67
.178	8.5	829.109	11.67	842.447	10 ^m .35	.316	9.54
862.149	5.1	.140	11.62	.471	10.43	.323	9.43
.203	5.1	.147	11.59	.487	10.50	.330	9.43
<u>RR Gem</u>		829.161	11.17	843.359	10.26	.340	9.39
J.D. ☉		.169	10.76	.372	10.22	.354	9.67
2427...		.181	10.46	848.490	10.77	.370	10.01
769.245	11 ^m .07	.189	10.53	.527	10.77	.380	10.01
		.200	10.53	858.271	10.43	.393	10.12
		.214	10.83	.279	10.52	.424	10.35
		842.125	11.73	861.414	10.96	.495	10.45
		.131	11.75	.486	9.81	869.415	10.96
				.501	9.58	.457	10.96
						890.285	10.39

		2427...		2427...			
<u>SV Hya</u>		849.159	6 ^s .0	862.290	25 ^s .2	<u>UU Hya</u>	
J.D. ☉		.166	7.0:	.332	25.2	J.D. ☉	
2427...		.188	9.0:	.372	24.2	2427...	
890.295	10 ^m .37	857.140	5.0	.372	24.2	815.446	34 ^s .9
.309	10.43	.157	10.0	863.259	21.4	.476	24.0
890.349	10.43	.210	15.7	.313	24.2	.536	34.9:
953.166	10.90	.269	19.5	.367	25.2	829.205	26.6
957.176	10.35	.305	21.4	.382	25.2	.217	24.4
.187	10.23	858.126	21.4	864.188	10.0	.230	24.0
.198	9.93	.130	21.4	.194	15.7	.246	13.0
.208	9.54	.138	19.5	.201	16.7	.260	10.0
		.143	18.5	.228	17.6	.273	17.4
<u>SZ Hya</u>		.151	17.6	.262	19.5	.280	21.8
J.D. ☉		.158	15.7	.291	21.4	.293	21.8
2427...		.164	13.8	.315	21.4	.361	24.8
815.324	10 ^s .0	.171	10.0	.349	23.3	.470	31.7
.364	18.4	.177	5.5	.376	25.2	842.270	40.9
816.499	19.5	.187	4.0	865.118	29.0	.308	27.6
.503	21.6	.196	4.0	.127	27.1	.316	23.2
.536	22.4	.208	5.0	.131	25.2	.320	19.8
.558	29.0	.227	6.0	.137	22.4	.325	15.4
829.205	29.0	.240	10.0	.142	20.4	.333	17.9
.206	29.0	.257	10.0	.146	20.4	.346	20.3
.250	17.6	.272	13.8	.156	17.6	.369	21.8
.271	19.5	.320	19.5	.161	10.0	843.245	38.9
.280	21.4	.335	20.4	.164	5.5	.328	34.9
.292	19.5	860.393	5.5	.169	4.0	.362	23.2
.360	21.4	.410	10.0	.172	0.0	.372	21.8
.469	23.3	861.141	21.4	.177	- 5.0	.381	21.8
842.199	5.0	.152	22.6	.187	0.0	.390	21.8
.205	6.4	.162	23.3	.196	4.0	857.213	30.5
.231	16.3	.175	23.3	.203	5.0	861.167	24.0
.269	19.5	.192	22.4	.222	6.0	.176	22.9
.319	20.4	.201	23.3	.232	7.0	.188	19.6
.366	21.4	.210	25.2	.238	6.0	.192	28.3
843.198	3.8	.232	24.2	.253	8.0	.201	17.4
.207	5.0	.251	24.2	.265	10.0	.211	20.4
.231	5.0	.329	25.2	.280	13.8	.223	21.8
.242	14.4	.396	10.0	.314	15.2	.224	22.9
.323	19.5	.406	7.0	.337	19.2	.252	24.8
.366	21.4	.413	5.0	.359	20.4	.331	27.2
.389	22.4	.420	4.4	.427	21.4	.398	29.4
848.219	22.4:	.429	5.0	867.149	21.4	.439	30.5
.227	20.4	.441	6.0	.178	21.4	862.164	30.5
.232	21.4	862.162	20.4	.212	22.4	.207	26.1
.245	22.4	.205	22.4	.239	25.2	.221	24.0
849.148	19.5:	.223	23.3			.231	24.0
.155	10.0						

<u>UU Hya</u>		2427...		2427...		2427...	
J.D. $\odot$		485.327	6. ^s 3	815.311	28. ^s 5	857.213	15. ^s 4
2427...		.334	14.7	.324	30.0	.230	16.6
862.241	19. ^s 6	.351	21.1	.358	31.5	.262	20.5
.305	24.0	.377	16.6	.410	0.0	.299	21.1
.334	24.8	.425	17.8	.458	22.7	858.122	14.1
.374	24.8	.438	14.7	.472	28.5	.140	18.4
863.260	24.8	.443	16.2	816.493	28.5	.162	19.7
.271	24.0	.479	3.2	.531	31.5	.189	21.1
.315	20.7	508.190	16.2	829.226	37.3	.202	21.1
.361	24.8	.256	14.7	.232	5.3	.233	21.5
.380	24.8	.266	9.0	.240	14.0	.251	20.2
864.191	28.3	.276	3.2	.253	22.7	.261	20.2
.203	30.5	.290	0.0	.266	29.3	.266	21.1
.230	30.5	.304	6.3	.273	30.0	.313	20.6
.264	30.5	.326	8.1	.285	22.7	861.150	20.2
.295	27.7	509.351	-0.2	.296	28.5	.160	21.3
.316	23.4	.353	0.0	.354	30.0	.169	19.3
.324	21.8	.372	3.2	.393	29.3	.210	16.6
.347	19.6	.384	6.3	842.192	14.5	.226	21.1
.362	21.8	.397	6.3	.199	10.4	.244	21.5
.379	22.9	510.148	16.0	.203	12.5	.324	21.5
865.134	34.9	.183	12.1	.225	13.5	862.156	18.8
.212	36.9	.194	11.7	.240	15.4	.199	20.2
.224	38.9	.207	4.8	.261	19.6	.221	21.1
.236	34.9	.218	2.8	.312	20.4	.253	21.5
.256	28.3	.231	0.0	.342	20.4	.326	19.3
.280	28.3	.243	3.2	.360	20.4	.366	13.5
.297	34.9	.281	10.4	.378	19.6	863.257	16.6
.309	34.9	.304	10.4	.385	12.6	.307	22.0
.335	30.5	.335	13.5	.425	21.1	.360	22.0
.343	28.3	.383	13.5	.447	16.6	.378	21.1
.356	24.8	512.161	11.8	.471	10.4	.394	16.6
867.150	29.4	.166	13.8	843.190	18.1	864.183	20.2
.170	30.5	.186	14.7	.230	10.4	.194	18.4
.214	31.6	.233	14.7	.234	18.1	.196	20.2
.240	30.5	.242	15.3	.277	21.1	.224	21.1
869.133	24.8	.251	12.5	.317	20.5	.258	20.2
.196	24.8	.258	12.1	.360	10.4	.293	21.1
.219	28.3	.265	3.2	.386	16.6	.300	20.2
.245	38.9	.277	0.0	848.222	17.3	.345	21.1
		.279	-1.0	.226	17.9	865.167	19.3
		.291	5.2	.240	16.6	.182	20.2
<u>VX Hya</u>		.331	12.9	849.149	16.6	.227	16.6
J.D. $\odot$		805.536	25.4	.159	18.8	.232	21.1
2427...		.539	27.1	857.133	21.1	.247	21.1
484.348	14. ^s 7	.552	22.7	.154	21.1	.300	21.1
.370	14.7	815.285	28.8	.166	18.1	.354	21.1
485.313	7.9						

2427...		2427...		2427...		2427...	
867.143	21 ^s .1	815.329	35 ^s .2	842.453	19 ^s .2	862.279	16 ^s .0
.176	21.1	.361	36.0	.477	21.4	.292	12.8
.206	16.6	.392	36.8	843.210	33.6	.305	16.0
.234	17.5	.414	36.8	.322	36.0	.333	19.2
869.129	21.1	.428	36.0	.365	36.0	.356	19.2
.185	21.1	.445	36.0	.389	36.6	863.260	36.0
.204	20.6	.462	32.0	.439	22.4	.314	36.4
.216	21.1	.466	25.5	.444	17.6	.360	16.0
WZ Hya		.471	19.1	848.183	32.0	.368	14.4
J.D. ☉		.475	19.2	.191	33.6	.381	14.4
2427...		.482	16.0	.225	36.0	.399	17.6
508.337	37 ^s .0	.498	13.7	.247	36.0	864.189	35.0
509.365	36.4	.519	13.7	.485	24.0	.202	35.6
.378	36.4	.521	19.2	857.156	32.0	.229	36.0
510.180	20.8	816.497	35.2	.233	35.4	.263	36.4
.204	22.4	.535	32.0	.268	36.0	.295	36.0
.230	36.0	.558	19.2	.304	36.0	.316	36.0
.278	32.0	.564	16.0	.360	36.4	.350	32.4
.346	36.0	.567	14.2	.380	36.4	.368	36.4
511.342	35.2	.570	16.0	.402	34.0	865.133	24.0
.361	36.0	829.214	32.0	.420	22.4	.188	32.0
.389	36.0	.231	32.0	.432	17.9	.211	35.0
512.167	36.0	.276	35.7	.434	16.0	.232	35.6
.223	16.0	.358	36.8	.445	16.8	.256	35.6
.229	16.0	.390	37.3	.455	16.0	.316	35.8
.244	17.6	.399	36.8	.469	17.6	.360	36.0
.259	20.8	.414	36.2	858.194	25.6	867.148	16.0
.278	25.6	.431	36.8	.209	28.8	.180	16.6
.332	27.2	.460	24.0	.256	35.4	.213	20.8
.391	35.6	.466	17.6	.319	36.2	869.258	16.0
.419	36.0	.472	16.0	860.142	36.4	.411	19.2
513.203	36.3	.483	16.0	.151	37.3	890.253	13.4
.209	36.8	.499	16.6	.162	36.4	.302	17.6
.220	36.7	.509	19.2	.167	33.8		
.228	36.8	.522	19.2	.176	31.7	DG Hya	
.245	35.6	842.197	32.0	861.186	19.2	J.D. ☉	
.254	32.0	.207	33.6	.192	16.0	2427...	
.269	19.2	.261	36.0	.202	12.8	508.263	26 ^s .7:
.278	16.0	.306	36.0	.211	15.2	.288	26.7:
.279	17.7	.347	35.4	.222	16.8	.344	29.0
.287	16.0	.369	16.0	.233	16.0	509.324	33.2
805.531	32.0	.378	12.8	.292	22.4	.355	36.0
.540	31.7	.381	16.0	.330	24.0	.369	36.0
.549	35.2	.392	13.4	.396	28.8	.382	33.7
.568	36.0	.405	16.0	862.164	35.0	.396	36.0
815.291	36.0	.414	17.6	.206	36.4	510.151	36.0
.312	36.0	.430	19.2	.224	37.0	.279	36.0

<u>DG Hya</u>		2421...		2421...		2427...	
J.D. $\odot$		490.402	9 ^s .9	869.249	15 ^s .0	858.335	23 ^s .4
2427...		.410	10.2	.413	8.3	.342	22.1
510.336	33 ^s .0	.420	11.1	.425	9.0	.352	19.5
.375	18.5	.459	12.4	.437	10.4	.364	13.0
.394	20.1	492.130	32.0:	.486	7.5	.371	10.4
511.340	32.0	.138	28.1:	.549	6.7	.384	9.1
.359	32.5	.142	29.2	.569	8.3	.391	9.1
.373	29.0	.150	33.0	<u>TV Leo</u>		.404	13.0
.383	32.5	.162	29.0	J.D. $\odot$		.415	18.2
512.159	13.6	.167	29.0	2427...		.450	19.5
.183	16.0	.177	23.7	829.388	31 ^s .0:	860.405	9.9
.231	22.0	.182	17.0	.405	26.0	.417	13.0
513.202	36.0:	.185	11.6	.406	20.8	.445	18.8
<u>RR Leo</u>		.186	10.3	.407	19.5	.455	19.5
J.D. $\odot$		.192	8.7	.408	18.6	.496	23.4
2427...		.195	9.5	.409	19.5	.500	22.1
485.396	25 ^s .0	.203	9.1	.410	19.5	861.179	26.0
.400	17.0	.216	9.5	.415	19.5	.187	20.2
.401	15.3	.223	10.2	.420	18.8	.192	19.5
.404	10.2	.229	9.9	.435	13.0	.206	19.5
.407	10.2	.246	10.6	.463	18.2	.216	20.8
.411	10.2	510.217	32.6	.472	18.2	.223	21.4
.417	9.4	.238	33.6	.510	19.5	.239	21.7
.422	11.3	.274	20.3	842.242	16.7	.290	23.4
.427	11.3	.275	18.6	.242	16.0	.327	26.0
.438	12.2	.284	9.9	.260	10.8	.393	28.6
.446	13.6	.295	8.0	.271	12.0	.438	30.5
.480	17.0	.305	8.7	.309	16.7	.499	33.0
.510	27.0	.314	10.8	.335	18.6	862.174	32.0
.527	27.0	.336	11.5	.366	19.5	.212	30.5
490.327	30.6	.381	23.0	.405	20.2	.221	30.5
.338	32.0	512.174	12.0	.452	20.8	.227	27.8
.360	29.0	<u>RX Leo</u>		843.235	31.0	.233	30.5
.364	27.0	J.D. $\odot$		.277	29.0	.283	31.0
.368	25.5	2427...		.295	26.0	.324	32.0
.370	23.0	864.222	7 ^s .2	.319	30.5	.378	19.5
.371	22.0	.232	6.7	848.489	26.0	863.270	23.4
.375	17.0	.257	7.5	.502	26.0	.304	26.0
.378	11.0	.268	7.5	.541	30.5	.378	29.4
.378	10.2	.290	8.2	857.214	23.8	864.187	28.6
.380	9.5	.300	7.5	.234	23.4	.200	30.0
.381	8.4	.350	8.2	.274	26.0	.227	29.4
.384	9.1	865.153	11.6	858.199	31.4	.261	30.3
.389	9.9	.237	12.0	.238	31.4	.293	30.5
.391	9.5	.266	12.0	.262	32.3	.350	31.0
.395	9.5	.441	12.0	.281	31.4	865.151	13.0
		.476	15.0	.315	30.5	.163	13.0

		2427...		2427...		2427...	
<u>TV Leo</u>		602.3754	5.5	861.4815	6.7	865.5056	14.0
J.D. ☉		.3830	5.7	.4824	7.0	.5064	13.0
2427...		842.4635	26.0	.4839	7.2	.5070	12.0
865.210	19.5	848.5260	7.0	.4894	7.8	.5073	10.0
.252	20.8	.5251	10.0	.4921	8.0	.5077	9.0
.290	24.7	.5277	6.0	.4966	8.5	.5079	7.5
.387	31.4	.5302	5.0	.5010	9.0	.5089	6.5
.481	31.0	.5334	4.5	.5050	10.0	.5090	6.0
867.156	9.1	.5345	5.0	.5064	9.5	.5096	5.5
.187	15.4	.5380	5.5	.5103	10.0	.5101	5.5
.221	18.3	.5411	6.0	.5192	12.0	.5110	5.5
<u>TV Lib</u>		.5462	6.5	.5254	13.3	.5115	5.5
J.D. ☉		.5494	6.8	.5317	14.0	.5127	5.0
2427...		.5505	7.0	.5383	15.0	.5133	5.0
485.4846	33.5	861.4064	23.0	862.3898	23.0	.5142	5.0
.5016	34.5	.4182	25.5	.4120	24.0	.5150	4.5
.5196	37.5	.4515	26.0	.4412	26.0	.5160	4.5
.5405	36.5	.4569	24.4	.4919	30.5	.5163	5.0
510.4281	26.0	.4584	23.0	.5127	31.0	.5173	5.0
600.2438	7.5	.4589	21.5	.5294	31.0	.5181	5.5
.2457	7.0	.4591	20.0	865.3360	16.0	.5185	5.0
.2527	6.5	.4603	16.0	.3671	22.0	.5210	5.0
.2587	7.0	.4607	17.0	.3747	23.0	.5225	6.5
.2621	10.0	.4612	15.4	.3855	25.0	.5242	5.5
.3048	17.0	.4617	14.0	.4183	25.0	.5263	6.0
.3187	20.0	.4622	13.0	.4198	26.0	.5274	6.0
.3381	20.0	.4626	13.0	.4315	31.0	.5300	7.0
601.2665	29.0	.4632	12.0	.4351	31.0	.5310	6.5
.2786	15.0	.4643	12.0	.4483	30.5	.5331	6.5
.2805	10.0	.4645	9.0	.4631	31.0	.5341	7.0
.2818	7.5	.4652	8.0	.4710	31.0	869.4118	20.0
.2842	6.0	.4656	7.0	.4788	30.0	.4158	20.0
.2866	5.5	.4667	6.0	.4817	31.0	.4277	26.0
.2901	6.0	.4677	6.0	.4848	31.0	.4351	26.0
.2901	5.7	.4684	5.5	.4886	31.0	.4679	26.0
.2944	6.0	.4688	5.0	.4927	31.0	.4806	30.0
.3019	7.0	.4694	5.0	.4947	31.5	.5010	30.0
.3123	8.0	.4700	5.5	.4980	31.0	890.2924	32.0
.3206	9.0	.4713	5.0	.4995	31.0	.3041	23.0
.3588	15.5	.4720	5.0	.5020	26.0	.3095	20.0
602.2077	20.0	.4732	5.5	.5027	24.0	.3115	16.0
.2192	24.8	.4753	5.5	.5032	23.0	.3119	15.0
.2439	26.0	.4768	5.7	.5036	23.0	.3122	14.5
.2622	27.0	.4787	6.0	.5046	20.0	.3127	14.5
.3657	7.0	.4788	6.2	.5050	16.0	.3134	14.0
.3698	5.7	.4801	6.2	.5053	15.0	.3152	13.0

TV Lib

J.D. ♂

2427...

890.3159	10.5
.3166	8.0
.3175	7.5
.3182	6.0
.3196	5.5
.3231	5.0
.3256	5.0
.3289	5.2
.3319	5.2
.3360	5.2
.3412	6.0
.3484	6.5
.3535	7.0
.3562	7.2
928.3267	16.3
.3288	15.0
.3305	10.0
.3323	7.5
.3334	6.0
.3343	5.5
.3361	5.0
.3388	5.5
.3465	6.0
.3524	6.2
.3635	6.7
.3737	7.5
.3969	13.0
949.2914	23.0
953.1945	14.0
.1962	14.0
957.1829	16.5
.1829	17.0
.1878	5.5
985.1979	30.0
.1996	30.0
.2035	30.5
.2074	27.0
.2091	26.0
.2122	23.6
.2152	20.0
.2167	13.0
.2182	14.0
.2210	7.0
.2229	6.0

2427...

985.2239	5.5
.2276	4.5
.2300	4.7
.2329	4.8
.2355	5.0
.2388	5.0
.2429	5.5
.2499	6.5
.2595	6.0
.2831	10.0
.2995	15.0
988.1923	6.0
.1952	5.0
.1981	4.5
.2024	5.5
.2091	6.0
.2151	7.0
.2221	7.5
.2304	10.0
.2895	20.0
2428...	
005.1841	5.5
007.2120	23.0
.2155	23.0
013.1689	12.0
016.1885	31.0
.1947	30.0
.2039	30.0
.2131	30.5
.2256	23.6
.2318	10.0
.2388	6.0
.2430	5.5
020.1939	30.0
.2055	30.0
.2089	30.0
.2246	30.0
040.1796	28.0
.1879	30.0
043.1820	24.0
<u>VY Lib</u>	
J.D. ♂	
2427...	
861.454	16.6
.474	12.6
.479	11.4

2427...

861.484	9.0
.487	9.7
.494	6.9
.498	6.3
.504	5.7
.518	0.0
.524	0.2
.530	2.5
.538	2.9
862.438	16.0
.447	16.0
.464	13.7
.471	15.6
.484	16.2
.501	16.6
.502	17.2
.531	17.0
865.364	6.3
.373	6.3
.382	7.2
.416	8.1
.436	8.8
.460	10.1
.478	8.8
.498	8.8
.521	9.5
869.395	8.8
.412	12.6
.464	16.6
.475	16.9
.491	16.3
.522	5.0
.525	3.8
.530	5.0
.534	5.3
889.315	6.1
.327	6.3
.345	6.9
890.286	16.6
.298	17.0
.306	17.0
.316	16.6
.323	9.7
.325	7.6
.329	6.3
.334	5.7
.341	6.3

2427...

890.346	6.9
.351	6.9

VV Peg

J.D. ♂

2427...

768.114	11.52 ^m
.117	11.46
.124	11.43
.131	11.52
.144	11.87
.207	11.98
769.121	11.52
.181	11.95
.195	11.98
.221	12.00
780.131	11.40
.134	11.16
.137	11.10
.142	11.01
.154	11.00
.162	11.00
.170	11.04
.176	11.03
.192	11.16
.207	11.35
2428...	
051.181	11.30
.182	11.28
.184	11.11
.188	10.96
.189	10.94
.194	10.91
.198	10.94
.205	10.96
.211	10.96
.244	11.07
066.322	11.40
067.216	11.62
.232	11.67
.265	11.80
.287	11.52
.303	11.16
.306	10.92
.310	10.94
.316	10.92
.327	10.94

<u>VV Peg</u>		<u>2427...</u>		<u>2427...</u>		<u>2428...</u>	
J.D. $\odot$		804.219 10 ^m .63		780.198 23 ^s .0		081.322 5 ^s .6	
2428...		805.104 10.71		804.126 24.8		.334 7.0	
067.338 11 ^m .00		.118 10.71		805.106 19.0		.346 11.2	
.350 10.99		.158 10.75		.133 18.7		.357 12.9	
079.237 11.27				.160 19.5		.361 12.2	
080.260 11.94		<u>RY Psc</u>		956.396 20.3			
.274 11.87		J.D. $\odot$		.430 17.4		<u>XX Pup</u>	
.288 11.96		2427...		.434 12.8		J.D. $\odot$	
.315 11.99		752.183 22 ^s .0		988.375 26.0		2427...	
080.301 11.61		.215 24.0		.406 26.0		815.278 11 ^m .50	
.329 11.87		.269 23.2		994.373 19.4		.310 11.58	
		753.136 22.0		.375 16.8		.365 11.71	
		.158 22.0		.377 15.0		829.186 11.31	
<u>AR Per</u>		.219 22.0		.381 14.2		.282 11.48	
J.D. $\odot$		.258 22.0		.384 12.9		842.151 10.89	
2427...		.290 26.0		.394 10.3		.196 11.52	
769.163 10 ^m .94		754.270 22.0		2428...		.266 11.82	
.182 10.84		767.098 22.0		016.339 20.2		.323 11.90	
.213 10.84		.116 19.8		.353 20.3		843.239 11.82	
.223 10.87		.131 13.6		017.330 18.1		.287 11.88	
.253 10.68		.134 9.0		.369 19.6		858.123 11.46	
.260 10.44		.137 4.5		020.327 22.0		.129 11.50	
.265 10.32		.144 4.5		.338 15.5		.141 11.46	
.274 10.13		.152 4.9		.343 14.2		.151 11.55	
.282 10.13		.160 5.4		.353 9.0		.163 11.50	
.292 10.20		.167 6.3		021.291 24.0		861.125 10.13	
.299 10.42		.173 7.9		.334 27.0		.140 10.34	
.305 10.55		.187 8.0		.371 22.0		.152 10.32	
.312 10.55		768.105 26.0		.391 19.4		.163 10.44	
.376 10.90		.117 26.0		024.313 22.0		.179 10.59	
772.242 10.55		.127 27.0		066.328 22.0		.206 10.85	
.249 10.32		.136 26.0		067.223 23.8		.241 11.20	
.255 10.13		.150 27.0		.248 23.8		.297 11.47	
.262 10.13		.173 19.0		.266 26.0		862.148 10.39	
.275 10.13		.199 8.0		.286 26.0		.155 10.13	
.287 10.32		.206 5.0		.338 26.0		.159 10.26	
.294 10.48		.211 4.0		080.291 18.1		.165 10.39	
.305 10.55		.219 4.5		.296 15.5		.171 10.40	
780.153 10.84		.226 5.4		.311 9.0		.188 10.41	
804.120 10.79		.236 6.8		.317 6.0		.204 10.52	
.149 10.63		769.118 26.0		.320 4.5		.224 10.60	
.156 10.52		.137 27.0		.326 5.6		.240 10.85	
.163 10.32		.152 28.0		.332 9.0		864.158 11.52	
.170 10.13		.167 23.0		.337 12.9		.172 11.91	
.178 10.13		.172 27.0		081.301 4.5		.180 11.50	
.185 10.44		.183 28.0		.304 5.4		.185 11.55	
.203 10.55		.197 29.0					

	<u>XX Pup</u>	2427...	2427...	2427...
	J.D. ☉	484.377 10 ^m 12	991.192 10 ^s 0	981.218 17 ^s 2
	2427...	485.331 10.43	.197 10.6	.227 17.2
	864.194 11 ^m 47	.376 9.58	.206 10.6	.239 17.2
	.201 11.10	.398 10.12	.262 12.0	.263 18.7
	.205 11.04	.425 10.28	994.177 13.3	.291 17.6
	.218 10.48	.440 10.44	.205 15.6	.327 17.8
	.223 10.19	.476 10.44	2428...	.373 26.2
	.234 10.06	490.330 10.03	001.177 12.0	.382 26.3
	.238 10.13	.335 10.16	.189 12.6	983.214 25.4
	.254 10.40	.369 10.44	002.177 18.0	.230 26.7
	.269 10.45	<u>AV Vir</u>	.186 21.5	.246 26.3
	.291 10.52	J.D. ☉	.197 21.5	.257 26.5
	865.147 11.64	2427...	003.179 12.6	.273 26.5
	.160 11.71	979.304 6 ^s 7	.183 12.0	.318 26.7
	.201 11.96	.316 9.0	.189 13.0	.337 26.8
	.223 11.48	981.251 11.7	.202 13.0	.374 26.0
	.248 10.26	983.209 13.5	004.210 14.6	.398 17.5
	.249 10.32	.224 11.2	.222 15.3	984.229 19.2
	.261 10.19	.242 12.0	005.174 12.0	.252 18.6
	.280 10.26	.263 10.7	.192 13.3	.273 18.6
	.297 10.32	984.224 12.6	.206 14.4	.304 18.4
	.313 10.48	.247 13.3	006.209 14.6	.316 24.2
	.342 10.59	.267 16.6	007.224 13.3	985.214 5.0
	867.145 11.86	.276 15.0	011.170 13.3	.223 5.0
	.170 11.71	.294 15.9	.191 14.6	.231 4.8
	.181 11.85	.309 15.0	013.164 15.6	.242 5.0
	.211 11.71	.309 15.0	.176 15.3	.271 5.4
	869.147 11.65	985.202 11.0	.188 15.3	.288 10.0
	.189 11.71	.207 11.1	016.187 10.6	.337 10.0
	.258 11.87	.217 9.7	.193 11.3	.381 16.8
	890.266 11.36	.220 10.3	017.197 17.3	.409 22.0
	<u>T Sex</u>	.237 5.3	.215 15.3	988.285 10.0
	J.D. ☉	.241 5.3	018.187 12.0	.388 25.8
	2427...	.269 5.3	.197 12.0	991.192 5.0
	471.242 10 ^m 12	.295 9.1	021.166 18.0	.268 5.7
	.261 9.90	988.181 15.3	<u>BN Vul</u>	994.183 15.6
	472.197 10.29	.190 14.0	J.D. ☉	.211 14.8
	.266 9.95	.203 15.3	2427...	.346 20.9
	.303 9.95	.210 13.0	979.436 16 ^s 0	2428...
	484.138 9.85	.247 15.3	980.340 25.4	001.201 25.8
	.146 10.01	.261 15.9	.351 26.5	002.204 22.0
	.158 10.12	.280 16.0	.368 26.5	.207 19.6:
	.171 10.21	990.193 15.3	.393 27.1	.215 24.2:
	.294 10.52	.227 15.7	.419 25.4	003.186 16.3
	.320 10.49	991.178 12.0	.429 19.6	.193 16.0
		.186 10.6	.433 16.0	.208 17.2

BN Vul	2428...	2428...	2428...
J.D. ☉	014.353 5.0	017.378 10.0	023.218 14.8
2428...	.364 5.5	.418 16.2	.219 14.0
004.216 6.4	.377 6.3	.433 17.2	.220 12.4
.227 5.6	.392 7.5	018.208 22.0	.222 11.6
.244 3.8	.402 10.6	.236 26.0	.223 10.0
005.213 25.4	.413 16.0	.314 26.5	.225 8.0
.245 25.1	.431 16.9	020.212 26.9	.226 7.0
.264 25.9	.463 18.6	.225 26.9	.227 7.0
006.287 26.0	015.214 25.4	.241 17.5	.230 6.0
.300 25.4	.230 26.5	.246 14.8	.233 5.2
.310 25.6	.239 26.5	.252 10.0	.233 5.5
.338 26.0	.268 26.2	.275 5.0	.239 5.0
007.210 4.0	.288 26.8	.291 6.0	.247 5.0
.232 6.7	016.198 15.1	.323 14.8	.253 4.7
.245 6.0	.214 14.6	.360 16.5	.254 5.0
.259 7.5	.261 16.5	021.180 26.5	.262 5.5
.276 10.0	.296 19.0	.228 26.5	.270 5.8
.300 15.3	.322 22.0	.297 26.8	.280 6.3
.310 16.7	.346 24.0	.377 27.1	.290 7.2
008.302 26.0	.439 25.2:	.395 27.1	.299 8.0
010.252 14.0	017.205 27.0	022.228 16.9	.325 13.4
011.178 25.0	.252 26.5	.304 25.5	.346 16.0
012.237 25.8	.262 24.6	023.181 27.0	.358 17.0
.249 26.0	.270 16.6	.187 26.9	.364 18.0
013.173 5.7	.275 15.5	.191 26.5	.385 22.0
.238 16.0	.280 10.0	.197 26.1	.401 22.0
.355 22.0	.288 5.3	.201 25.6	.423 23.5
014.267 26.0	.292 5.0	.205 22.0	.432 24.5
.280 26.0	.304 4.7	.206 20.2	.455 25.0
.329 7.0	.314 5.3	.208 19.2	024.268 26.5
.332 5.0	.327 6.0	.210 17.4	.318 26.5
.337 5.0	.338 6.7	.211 17.2	.402 16.9
.342 4.5	.343 7.0	.213 16.0	.409 12.4
	.353 7.4	.216 16.0	.429 5.0

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