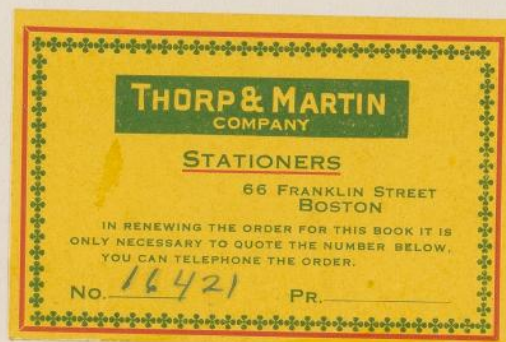


HLF 355

11 54 235

259 427

M. Douse



M D Ashbrook

(Martha Dowse Ashbrook)

$$\frac{1}{365} = .00274$$

$$\frac{1}{29} = .03448$$

w UMa $P < .5^d$

$P > .5^d$, want $P = 2^d$

β Lyr

$P > .5^d$ want $P = 2^d$

Algol

Amp $c_{14} = 4^m$ want at 1.2

H L F 355

11 54 ~35

	Page		
List of Plates, I.D.'s, Discovery of Variables, Notes, etc.	2		
Flyspanning of Sequences	12	none	Page
Measures of Variables near Counted Sequence 9, 35, 60, 78, 113, 65s, 67, 55?	16	5	5
Seq. A. 48, 56, 51, 57, 69, 91, 98, 102, 104, 109, 124, 125,		12	45
67s, 103s, 126s, 75?	24		
Seq. B 38, 129, 3s, 73s, 101?	40	2	1
Seq C 2, 5, 72, 83, 70?	48	4	2
Seq D 18, 19, 45, 46, 53, 86, 92, 100, 118, 130, 10s,		10	84
44s, 80?, 106?	56		
Seq E 21, 22, 27, 28, 31, 49, 79, 84, 112, 120, 123,		11	4
17, 64?, 81?, 82?, 122?	72		
Seq F 23, 32, 47, 57, 87, 63s, 71s, 76s, 119s, 131s, 11?		5	95
30? 114? F' 85, 111	84		
Seq G 7, 16, 37, 76, 73, 77, 117, 137, 407, 60?, 99?	100	7	45
Seq H 29, 48, 61, 110, 62s, 105s, 117s, 20?, 58?	116	4	2
Seq I 13, 14, 15, 36, 36, 74, 77, 83, 99, 108, 115, 7?, 8?	124	11	7
Seq J 43, 116, 127s, 68?, 121?	140	3	1
Seq K 17, 26, 59, 52, 90, 128, 24?, 25?, 94?, 95?	148	1, 2s	42

2

Plates

J.D.

MF	20222	1	2427869.3182	Positive made
	20224	2	7991.3840	
	226	3	7891.4498	Compared with 20222. Variables 1-4 marked,
	228	4	7891.5149	
	232	5	7870.3189	
	234	6	.3847	
	236	7	.4498	
	238	8	.5149	
	240	9	.5869	
	243	10	7874.5324	
	249	11	7889.2574	
	251	12	.3225	
	253	13	.3876	Compared with 20222, variables 79-84. With 24711,
	255	14	7890.2401	
	257	15	.3052	
	259	16	.3730	
	261	17	.4402	
	263	18	.5053	
	265	19	.5704	
	268	20	7891.2374	
5	269	21	.3067	
1	271	22	.3801	
2	273	23	.4521	
	275	24	.5172	
	277	25	.5823	
	287	26	7893.4923	
	310	27	7900.5237	
	356	28	7919.4130	Compared with 24711, vars. 100-105. With 20222, vars. 106-110
	505	29	7958.2145	Compared with 20222, vars. 10-17, With 24711, vars. 18-20
	21404		8190.4861	

1?, 3 possibly small variation of γ part of double

variables 85-91, 80, 81, 82, 89? ~~83 possibly small variation~~

2022 2, 4, 16, 18, 22, 23, 27, 36, 73
2471 26, 46, 67, 78

101, 106?, 103 possibly small variation, 105 small variation, No 106 scratch involved, No 107 m of 3
11, 13, 20?, 10 small variation No. 18 = HV 8375 (Luyten)

2022 2, 4, 5, 17, 18, 22, 23, 47, 56, 60
2471 7, 15, 32, 41, 57, 92

6

	Var. No.	Bright	Faint	Remarks
1356	1	102	1356	
102	2	102	1356	
	3	102	1356	
	4	1356	102	
OK. ?	5	1356	647 102	
	6	1356	102	
OK	7	1356	55 102	
	8	102	1356	
	9	102	1356	
Variable ??	10	102	1356	
Plate 55 } 102 }	11	55	102	

Bright

617

55

Faint

617

#6 - ok.

7 - fuzzy - perhaps double? uncertain.)

8 - not discernible. The star I think is meant is so close to the limit of the plates that it is unverifiable.

9 - ok

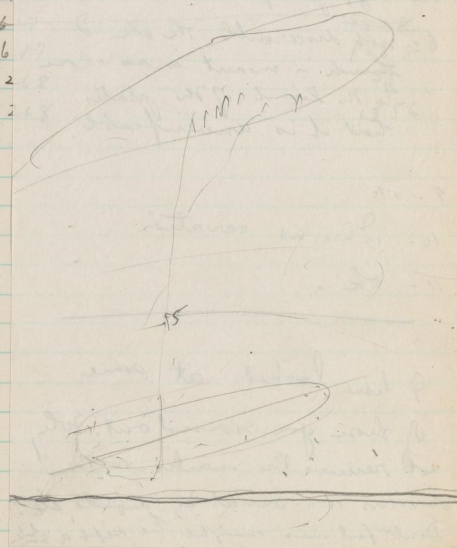
10 - I see no variation.

11 - ok.

I have looked at some of those you crossed out. Why not remove the marks on the obvious non-variables, defects, etc? Doubtful ones might be kept a while.

	Dark	Bright	Faint	Remarks
Plat 1356	1	102	1356	
Cont 102	2	102	1356	
	3	102	1356	
	4	1356	102	
OK. X	5	1356	617 102	
	6	1356	102	
OK X	7	1356	55 102	
	8	102	1356	
Variable ??	9	102	1356	
	10	102	1356	
Plat 55	11	55	102	
102				

Bright	Faint
617	
55	617
12	
5	
5	
5	
12	
6	
6	
12	
12	



	Var No	Bright	Faint	Remarks
Plat 1356	1	102	1356	
Cont (102)	2	102	1356	
	3	102	1356	
	4	1356	102	
OK. ? x	5	1356	617 102	
	6	1356	102	
OK x	7	1356	55 102	
	8	102	1356	
	9	102	1356	
Variable ??	10	102	1356	
Plat 55 } 102 }	11	55	102	

Bright	Faint
617	
55	617
1268	
55	617
55	1268 (617)
55	617
1268	617 (55)
617	1268
617	1268
1268	55
1268	1356

6

MF 21431	242 8198.5633	
485	8226.5921	
495	8227.5540	
(511	(8245.5402)	discarded
538	8253.5426	Compared with 20222, vars. 125-129. With 24711,
544	8259.5401	
553	8272.2505	
588	8274.4541	
614	8278.2181	
616	.2860	
622	8279.4134	
625	8282.2093	
627	.2744	Compared with 20222, vars. 49-52. With 24711,
628	8283.3464	
647	8286.4075	
677	8302.3734	
693	8303.3985	
745	8309.3841	
755	8314.3739	
835	8336.2723	
22915	8601.5793	
926	8602.5462	
956	8605.5441	
966	8610.5408	
973	8611.5326	
982	8614.5313	
23017	8631.4891	
150	8668.2087	Compared with 20222, vars. 59-62. With 24711, vars.
165	(8670.2095)	Wrong center
337	8696.2701	
403	8714.2382	

vars. 130, 131, 126, 127, 131 small variation. No. 129 ft * p. No. 130 → 20222 21.18, 26.27, 32.60, 74.100, 108.114
24711 31.46, 56.109

vars. 53-58. 54 omitted, 55, 58? No. 53 = 3 Hya No. 52 has ft. & near. No. 55 has scratch involved.
20222 17
24711 21.19, 26.42, 47

63-69: 64, 66, 68?, 62 possibly small, 63, 65, 67 small variation. No. 61 = HV8416 (Luyten)
No. 62 is p of 2. No. 65 is HF of 2. No. 69 is p of 2
20222 21.4.5, 22.25, 29, 32, 47, 52, 53
24711 14, 23, 27, 37, 42, 51

MF 23410	242 8715.2355	Compared with 20222, vars. 118-121. With 24711, vars.
437	8719.2412	
452	8720.2093	
462	8721.2066	
471	8722.2421	
24317	(8934.6046)	Wrong center
366	8957.5969	
381	8959.5859	
400	8960.5866	Compared with 24711, vars. 111-113. With 20222, vars.
419	8961.5867	
425	8965.5744	
434	8967.5731	Compared with 24711, vars. 21-26. With 20222, vars.
496	8986.2692	
498	.3343	
500	.3993	
502	.4645	
504	.5295	
509	8987.3315	
511	.3933	
517	8988.2654	
523	8993.3261	Compared with 24711, vars. 92-95. With 20222, vars.
528	.4889	
534	8994.2577	
553	8995.4523	
620	9015.4461	
633	9016.4060	
648	9017.4379	
673	9019.3376	
688	9020.3703	
697	9022.2068	
699	.2719	

122-124. 121, 122? 119 small variation 20222 214, 27, 29, 84
24711 22, 23, 36, 37, 47, 50, 51, 56, 60, 71, 93

114-117. 114?, 117 small variation. No. 112 20222 214, 17, 46, 47, 60, 76, 107
24711 14, 18, 23, 26, 27, 36, 37, 51, 56, 61, 100

27-29, 24, 25? No. 28 20222 214, 18
24711 14, 17

96-98. 94, 95?, 96 possibly small variation. No. 93 = HV8400 (Luyten) 20222 4, 48, 51
24711 2, 14, 22, 23, 33, 35, 46, 52,
56, 61, 67, 71

10

MF 24701	242 9022. 3370	Compared with 24711, vars. 30-43. ³³ 4 ₁ crossed off,
703	.4021	" 20222 " 44-48. 44 possibly small
705	.4693	
711	9023. 2096	Positive made
713	(.2747)	Wrong center
715	.3398	
717	.4049	
719	.4721	Compared with 24711, vars. 5-9. 6, 7, 8?
757	9039. 2996	
788	9044. 3670	
804	9046. 3484	
25997	9319. 4257	
26004	9320. 2963	
012	.5580	
018	9321. 3926	Compared with 24711, vars. 70-75, 99. With 20222

34 omitted, 30, ~~32~~, 40?
variation

No. 37 = KX Cen

No. 31

No. 32 is middle of 3 st.

20222 4.14
24711 2.27

rars. 76-78. 70, 75?, 71 small variation, 73 ~~possibly~~ small variation. No. 76 = V357 Cen. No. 77 is not 2
20222 2.41, 27.53
24711 14, 17, 18, 19, 23, 26, 33, 36, 39, 47

Fly spanning of Sequences

Counted Sequence (5)				Seq. A (12)			
		VR	Curve		1 st	2 nd	Mean
L	9.8	16.43	16.4				Mag. from Curve
1	9.4	16.06	16.1	1	9.0	9.1	9.05
2	9.0	15.69	15.7	2	7.8	7.8	7.97
3	8.6	15.36	15.3	3	7.2	7.5	7.35
4	8.3	14.87	14.9	4	4.7	4.9	4.8
5	8.0-1	5.8	14.37	5	3.8	4.1	3.95
6	7.6	5.2	13.79	6	2.7	2.7	2.83
7	7.1	4.8	13.44	7	1.7	2.1	2.07
8	4.1	12.82	12.8	1b			14.7
9	3.6	12.45	12.4	1a			15.3
10	2.2	11.68	11.7				
11	0.9	11.11	11.1				

Seq. B (2)

Seq. C (4)

1	5.0	5.2	5.1	13.7	1	5.1	5.1	5.1	13.7
2	(4.1)	4.7	4.9	4.8	13.4	2	4.4	4.5	4.45
3	(3.4)	4.3	4.3	4.3	13.0	3	4.1	4.1	4.1
4	(3.1)	3.9	3.7	3.8	12.6	4	3.3	3.4	3.35
5				12.5	5	2.8	3.1	2.95	12.0
6				12.1					

C M Hanley's fly-spanker used - two scales, 1-6, 7-10
7 is between 4 + 5.

Order: A, B, C --- K, Counted, A, B --- K

Seg. D (10)

1	8.3	8.3	8.3	14.9
2	7.6	7.6	7.6	13.8
3	7.0	7.2	7.1	13.4
(4)	4.7	4.9	4.8	13.3
5	4.3	4.5	4.4	13.1
6	3.8	4.1	3.95	12.7
7	3.035	3.5	3.33	12.3
8	2.5	2.8	2.65	11.9
9	1.6	1.8	1.7	11.4
10				14.5

Seg. E

1	9.2	9.3	9.25	16.0
2	8.589	8.9	8.77	15.5
3	8.186	8.7	8.47	15.1
4	7.983	8.4	8.2	14.7
5	7.6	7.9	7.75	14.0
6	4.347	7.1	4.5	13.2
7	(3.1)3.8	4.1	3.95	12.7
8	(2.4)1.6	1.5	1.55	11.4
9	(1.6)0.9	0.9	0.9	11.1

Seg. F

1	8.2	8.6	8.8 (6.0)	8.8	15.5
2	8.0	8.2	8.6 (5.8)	8.4	15.0
3	7.7	8.0	5.7 5.6	5.65	14.2
4	7.4	7.7	5.2 5.4	5.3	13.9
(5)		7.5	5.0 5.2	5.1	13.7
6		7.2	4.9 5.0	4.83	13.5
7		2.6	2.9 3.2	2.9	12.0
8		1.3	1.9 1.9	1.7	11.4

Seg. G

1	5.987	8.6	8.65	15.4
2	5.783	8.2	8.25	14.8
3	5.581	8.0	8.05	14.4
4	5.3	5.6	5.45	14.0
5	4.9	5.2	5.05	13.7
6	4.5	4.8	4.65	13.3
7				12.7
8				12.6

Seg. H

1	(8.2)5.9	5.8	5.85	14.4
(2)	(8.0)5.8	5.6	5.7	14.3
3	7.7	5.4	5.5	14.0
4		5.2	5.2	13.8
(5)		5.0	5.1	13.7
6		4.8	4.9	13.5
7				13.1
10				14.7
10				15.0

Seg. I

1	9.1	9.1	9.1	15.8
2	8.8	8.8	8.8	15.5
3	8.3	8.4	8.35	14.9
4	8.0	8.1	8.05	14.4
5	7.8	7.8	7.8	14.0
6	7.672	7.2	7.33	13.6
7	4.2	4.5	4.35	13.0
8	3.6	3.7	3.65	12.5
9				11.9

Sag. J

1	9.2	9.2	8.8	9.07	15.8
(2)	9.0		8.7	8.85	15.6)
3	8.8		8.6	8.7	15.4
(4)	8.6		8.5	8.55	15.2)
5	8.5		8.3	8.4	15.0
6	8.3		8.1	8.2	14.7
7	8.0	5.6	5.5	5.55	14.1
8	7.7	5.2	5.2	5.2	13.7
9					13.3

Sag. K

1	9.2	9.3	9.25	16.0
2	8.8	8.8	8.8	15.5
3	8.5	8.6	8.55	15.2
4	8.2	8.2	8.2	14.7
5	8.0	7.9	7.95	14.3
6	7.8	7.7	7.75	14.0
7	7.8	7.9	7.85	13.5
8	7.0	3.7	3.85	12.6
9	2.8	2.9	2.85	12.0

Sag. F'

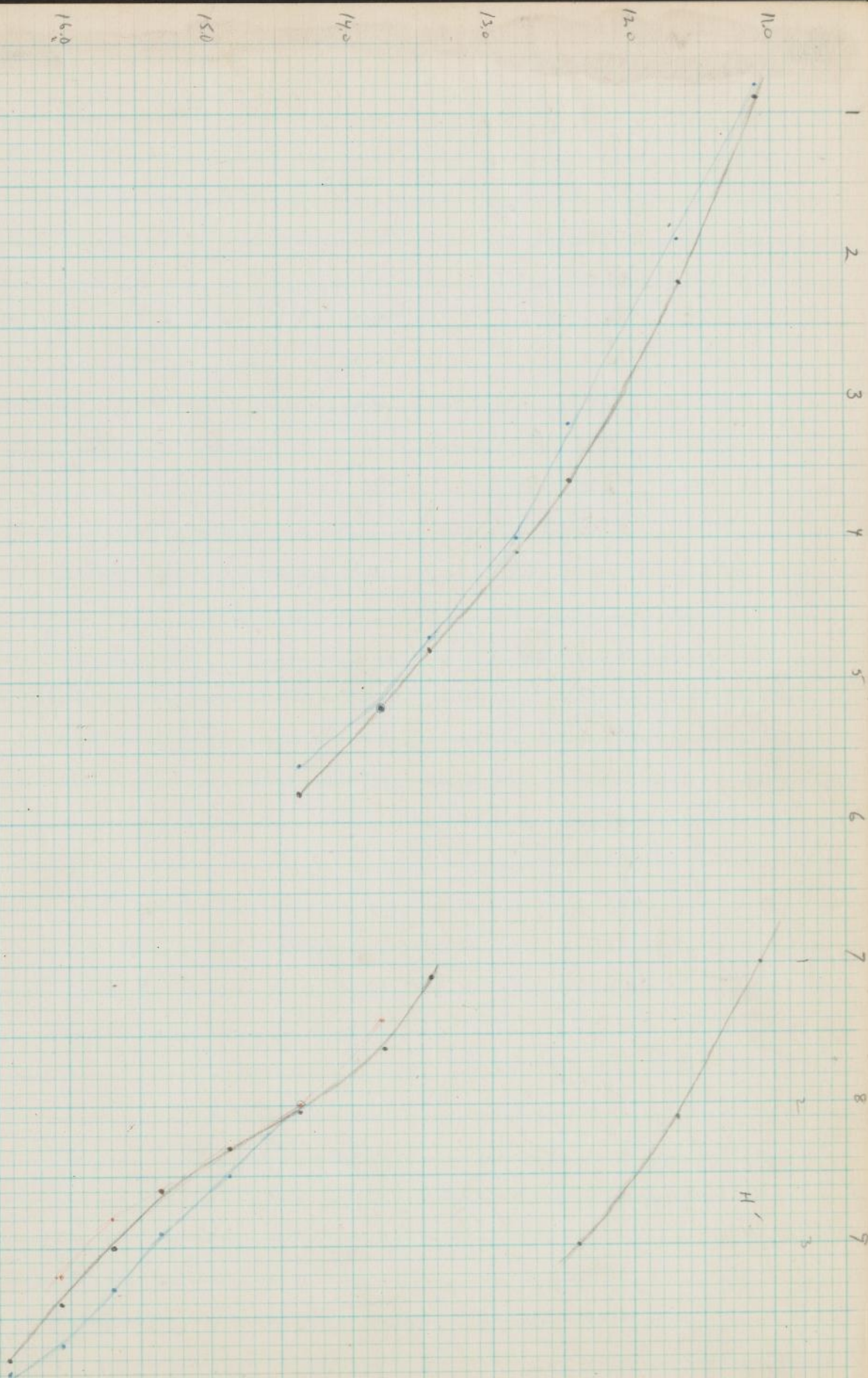
1	8.6	15.0
2	7.8	14.1
3	7.5	13.7
4	7.2	13.5
5	2.3	11.9
6	1.7	11.6

Sag. H'

9	3.0	12.4
10	2.7	11.7
11	1.0	11.1
1	2.7	12.1
2	2.2	11.8
3	1.0	11.1
4	0.8	11.0

Crustal Sequence on MF 24711 - HLE 355

- distance for Seq A ± 10, 11, 12
- distance for other additional stars



Variables near Counted Sequence

		9	Phase	35	Phase	60	Phase	78
MF 20222	13.8	14.2	.684	14.6	.655	13.9	.870	14.3
224	13.9	14.1	.725	14.1	.759	14.3	.998	14.3
226	14.2		.766	14.5	.863	14.6	.126	14.3
228	14.2		.807	14.7	.966	14.8	.252	14.3
232	14.2		.309	15.2	.238	13.9	.811	14.2
234	14.1		.350	15.1	.343	14.2	.939	14.3
236	14.2		.390	15.1	.445	14.4	.066	14.3
238	14.1		.431	15.2	.548	14.8	.192	14.3
240	14.2		.476	14.3	.662	15.0	.331	14.2
243	14.5		.938	14.7	.903	14.3	.982	14.3
249	14.3		.128	15.2	.199	15.1	.541	14.3
251	14.3		.168	15.0	.302	15.1	.667	14.2
253	14.2		.209	15.0	.406	14.0	.795	14.3
255	14.3		.741	14.1	.754	15.0	.447	14.3
257	14.3		.782	14.5	.857	15.0	.573	14.4
259	14.2		.824	14.6	.965	15.0	.705	14.3
261	14.3		.866	14.8	.071	13.9	.835	14.5
263	14.3		.906	14.9	.173	14.2	.961	14.5
265	14.5		.947	15.2	.276	14.6	.087	14.4
268	14.3		.363	15.0	.331	15.0	.381	14.5
269	14.1		.407	15.0	.442	14.8	.516	14.3
271	14.3		.452	15.1	.558	15.1	.658	14.2
273	14.2		.497	14.3	.672	14.1	.798	14.3
275	14.2		.538	14.2	.774	14.2	.924	14.3
277	14.2		.578	14.7	.879	14.9	.050	14.3
287	14.2		.770	14.6	.899	14.8	.754	14.4
310	14.3		.159	14.9	.024	15.0	.392	14.3
356	14.3		.947	14.3	.907	14.4	.026	14.3
505	14.3		.162	15.0	.292	14.8	.279	14.7

13.8-14.5

14.1-15.2

13.9-15.1

14.2-14.7

not really var

	113	65 (sm)	6	55
7869	11.5	14.0		
	11.7	14.2		
	11.6 ^{11.55}	14.3		
	11.4	14.2		
7870	11.6	14.1		
	11.6	14.3		
	11.6 ^{ml}	14.1		
	11.6	14.1		
	11.6	14.1		
7874	11.5	14.2		
7889	11.5	14.2		
	11.5 ^{11.51}	14.3		
	11.6	14.2		
7890	11.5	14.2		
	11.6	14.2		
	11.6 ^{11.55}	14.1		
	11.5	14.2		
	11.4	14.4		
	11.7	14.4		
7891	11.4	14.2		
	11.5	14.2		
	11.5 ^{11.47}	14.4		
	11.5	14.2		
	11.5	14.2		
	11.4	14.1		
7893	11.5	scratch		
7900	11.5	14.1		
7919	11.4	14.2		
7958	11.8	14.2		

11.4-8

9 35 60 78

MF 21404	14.2	.119	14.1	.758	14.8	.756	14.5
431	14.3	.159	15.0	.537	15.0	.421	14.5
485	14.3	.652	14.4	.880	14.2	.782	14.4
495	14.2	.252	15.0	.402	15.1	.647	14.3
538	14.3	.471	15.1	.518	14.5 ^{2.0222}	.051	14.7
544	14.3	.214	15.1	15.0	.005	.682	14.7
553	14.2	.146	14.7	.113	15.0	.333	14.5
588	14.3	.521	15.1	.600	15.0	.607	14.8
614	14.2	.870	15.2	.555	14.1	.907	14.8
616	14.3	.913	14.6	.662	14.5	.039	14.7
622	14.2	.616	15.1	.445	14.8	.225	14.8
625	14.3	.361	14.3	.869	15.0	.647	14.8
627	14.3	.402	14.7	.972	14.5	.773	14.8
628	14.3	.071	14.3	.668	13.6	.853	14.8
647	15.1	.981	15.0	.510	14.3	.789	14.7
very poor 677	14.6	.945	14.6	can't measure .769	15.0	.754	15.0
693	14.1	.585	15.2	.391	14.9	.742	14.7
745	14.2	.320	14.6	.861	15.0	.352	14.8
off center 755	14.1	.435	14.2	.755	14.1	.030	14.8
835	14.3	.101	15.0	.399	15.0	.499	14.5
22 915	14.3	.673	14.8	.128	14.6	.046	14.7
926	14.2	.277	14.5	.658	14.1	.922	14.7
956	14.3	.148	15.0	.401	15.0	.736	14.8
966	14.3	.266	15.2	.306	15.0	.428	14.8
973	14.2	.886	14.5	.876	15.1	.352	14.7
982	14.2	.757	15.0	.619	14.6	.166	14.8
23017	14.3	.340	15.1	.447	14.5	.055	14.6
150	14.3	.256	15.2	.540	14.9 ^{with 2022}	.271	14.7
off center 165							
337	14.2	.768	14.3	.934	15.1	.694	14.6

14.1-15.1

14.1-15.2

13.6-15.1

14.3-15.0

	113	65	6	55
8190	11.8			
8198	11.7			
8226	11.4			
8227	11.5			
8253	11.5			
8259	11.4			
8272	11.5			
8274	11.6			
8278	11.6			
	11.6			
8279	11.6			
8282	11.6			
	11.7			
8293	11.7			
8286	11.6			
8302	11.7			
8303	11.6			
8309	11.7			
8314	11			
8336	11.2			
8601	11.8			
8602	11.7			
8605	11.8			
8610	11.7			
8611	11.9			
8614	12.0			
8631	12.2			
8668	11.8			
8670				
8696	11.6			

11.2-12.2

1938B

		9		35		60		78	
MF 23 403	15.2		.982	15.1		.360	15.0	.542	14.5
410	14.3		.604	14.6		.938	15.0	.475	14.5
437	14.3		.104	14.9		.275	14.8	.245	14.5
452	14.3		.708	14.2		.807	14.6	.122	14.4
462	14.2		.331	14.9		.386	14.6	.058	14.5
471	15.2		.977	14.8		.023	14.5	.065	14.6
wrong center 24 317									
366	14.2		.857	15.1		.366	15.1	.522	14.7
381	14.3		.098	15.2		.513	15.2	.379	14.8
400	14.4		.723	15.0		.097	14.9	.321	14.7
419	14.3		.347	14.4		.679	14.9	.260	14.7
425	14.3		.835	14.8		.986	14.5	.993	14.7
434	14.3		.083	15.2		.149	13.9	.870	14.8
496	14.3		.751	14.2		.727	14.7	.130	14.7
498	14.3		.791	14.3		.830	14.9	.256	14.5
500	14.3		.832	14.6		.933	15.0	.382	14.6
502	14.2		.872	14.8		.035	14.9	.508	14.6
504	14.5		.913	14.9		.140	14.9	.634	14.5
509	14.5	14.3	.414	15.0		.407	14.8	.189	14.5
511	14.3		.452	15.0		.505	15.0	.309	14.5
517	15.2		.996	14.6		.885	14.5	.001	14.7
523	14.3		.155	14.5		.891	14.0	.816	14.5
528	14.3		.257	14.9		.149	14.7	.132	14.6
534	14.3		.737	14.9		.366	15.0	.624	14.6
553	14.5	14.2	.482	14.9		.255	14.2	.939	14.7
620	15.1		.960	14.6		.886	15.1	.717	14.8
633	14.3		.559	14.9		.405	15.0	.578	14.8
648	14.3		.203	14.7		.038	14.9	.580	14.7
673	14.3		.388	14.7		.044	14.8	.265	14.6
688	14.4		.033	14.6		.676	14.9	.266	14.7

14.2-15.2

14.2-15.2

13.9-15.2

14.4-8

	113	65	6	55
8714	11.8			
8715	11.7			
8719	12.0			
8720	11.9			
8721	11.8			
8722	12.0			
8957	11.9			
8959	12.0			
8960	* with 24711 11.9			
8961	12.1			
8965	11.9			
8967	11.7			
8986	11.4			
	11.3			
	11.3	11.25		
	11.0			
	11.1			
8987	11.2			
	11.3	11.25		
8988	11.3			
8993	11.3			
	11.1	11.0		
8994	11.3			
8995	11.0			
9015	11.4			
9016	11.3			
9017	11.3			
9019	11.5			
9020	11.3			
	11.0-12.0			

	9	35	60	78
MF 24697	14.3	.179 15.0	.583 13.9	.829 14.5
699	14.2	.220 14.3	.685 14.3	.955 14.8
701	14.2	.260 14.3	.788 14.6	.081 14.7
703	14.3	.301 14.4	.891 14.8	.207 14.7
705	14.3	.342 14.7	.997 14.8	.337 14.7
711	14.3	.805 14.9	.169 14.5	.774 14.7
wrong center 713				
715	14.3	.886 15.1	.375 14.5	.027 14.7
717	14.3	.927 15.1	.478 14.6	.153 14.6
719	15.0	.968 15.0	.584 14.9	.283 14.6
757	14.3	.846 14.9	.625 14.3	.980 14.7
788	14.9	.009 14.8	.641 14.0	.807 14.3
804	14.3	.245 14.2	.775 14.9	.649 14.6
25997	14.3	.667 14.3	.798 14.9	.268 14.8
26004	14.2	.210 15.1	.174 14.3	.955 15.0
012	14.3	.374 15.0	.589 15.1	.463 14.7
018	14.2	.895 14.4	.910 14.5	.082 14.8
	14.2-15.0	14.2-15.1	13.9-15.1	14.3-15.0
	13.8-15.2	14.1-15.2	13.6-15.2	14.2-15.0
	$\chi^2_p = 0.62408$	$\chi^2_p = 1.59205$	$\chi^2_p = 1.93944$	$\chi^2_p = 0.318$
	$p = 1.60236$	$p = 0.63209$	$p = 0.51561$	$p = 3.145$
	$A = 0.95$	$m = 14.6, A = 1.0$	$m = 14.45, A = 1.1$	$m = 14.55, A = 0.9$
	Ed. p.ing	cl. type	cl. type	Emg?
	14V 11659	HV 11644	HV 11652	

	113	65	6	55
9022	11.6			
	11.5			
	11.6	11.52		
	11.4			
	11.5			
9023	11.5			

	11.4	11.39		
	11.3			
	11.3			

9039	11.6			
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9044	11.6			
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9046	11.6			
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9319	11.6			
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9320	11.6			
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	11.6			
--	------	--	--	--

9321	11.6			
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	11.5-1.6			
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	11.0-12.2			
--	-----------	--	--	--

$P = 11.1^d$

$m = 11.55, A = 0.7$

Long

red star

Variables near Sequence A

		48 Phase		50 Phase		51		57	Phase
MF 20222	12.5	.934	11.4	.543	12.5			14.5	.558
224	12.6	.042	11.5	.603	12.8			14.5	.670
226	12.6	.150	11.5	.664	12.5			14.2	.781
228	12.6	.256	11.5	.724	12.6			13.9	.891
232	12.8	.571	11.5	.463	12.5			14.1	.251
234	12.5	.679	11.4	.524	12.5			14.2	.363
236	12.5	.785	11.5	.583	12.6			14.2	.473
238	12.6	.892	11.5	.643	12.6			14.3	.583
240	12.9	.009	11.5	.709	12.6			14.3	.704
243	12.9	.463	11.4	.336	12.7			14.3	.277
249	13.0	.549	11.5	.873	12.7			14.3	.284
251	12.6	.656	11.5	.933	12.6			14.2	.394
253	12.5	.764	11.5	.993	12.6			14.5	.505
255	12.6	.157	11.5	.777	12.6			13.6	.946
257	12.5	.264	11.3-4	.836	12.6			13.8	.056
259	12.7	.375	11.5	.899	12.5			14.1	.171
261	13.0	.484	11.4	.960	12.6			14.4	.285
263	12.9	.591	11.5	.020	12.6			14.4	.395
265	12.6	.697	11.4	.080	12.6			14.2	.505
268	12.5	.788	11.4	.693	12.5			14.4	.633
269	12.6	.903	11.4	.757	12.6			14.2	.751
271	13.0	.022	11.6	.825	12.6			14.1	.875
273	12.7	.140	11.5	.891	12.8			13.6	.996
275	12.5	.246	11.4	.950	12.7			14.0	.106
277	12.6	.353	11.4	.010	12.6			14.2	.216
287	13.0	.477	11.4-5	.766	12.6			14.2	.447
310	13.0	.980	11.7	.231	12.8			14.2	.341
356	12.6	.878	11.5	.596	12.6			14.2	.291
505	12.8	.348	11.6	.266	12.8			14.0	.921

12.5-13.0

11.3-7

12.5-8

13.6-14.5

69	91 not var	98 not var	102 not var
12.2	11.9	13.8	13.5
12.4	11.9	13.9	13.55
12.4	11.9	13.9	13.4
0/6	11.9	13.9	13.55
12.9	12.0	13.9	13.5
12.9	11.9	13.8	13.4
12.9	12.0	13.9	13.5
12.8	11.9	13.9	13.5
13.4	11.9	14.0	13.5
4/6	12.0	13.9	13.5
12.8	11.9	13.8	13.5
12.9	11.8	13.9	13.5
13.0	with 24711 11.8	13.9	13.5
12.9	11.8	13.9	13.55
12.8	11.7	13.9	13.6
12.9	11.8	13.9	13.5
13.0	11.6	13.9	13.5
12.8	11.9	13.9	13.5
12.8	11.8	13.9	13.5
12.8	11.9	13.9	13.6
12.6	11.8	13.8	13.5
12.6	11.7	13.9	13.5
12.8	11.8	13.9	13.5
12.6	11.7	13.8	13.5
12.5	11.8	13.9	13.5
12.5	11.8	13.9	13.5
12.5	11.8	13.9	13.55
12.6	12.0	13.9	with 24711 13.4
12.4	11.8	14.1	13.4
12.2-13.4	11.7-12.0	13.8-14.1	

	104 not var	109	124 not var	125	Phase
13.8		15.2 15.2 15.2	13.6	14.2 14.2	14.2 .491
13.8		14.1 14.2 14.15	13.7	14.7 14.6	14.65 .601
13.9		14.4 ^{14.8} 14.8 14.67	13.7	14.8 15.0	14.9 .710
13.8		14.2 14.1 14.15	13.7	14.5 14.2	14.35 .817
13.9		14.3 14.2 14.25	13.7	15.2 15.4	15.3 .147
13.9		14.3 14.3 14.3	13.7	14.9 14.6	14.75 .257
13.9		14.2 14.1 14.15	13.7	14.2 14.2	14.2 .364
13.9		14.7 ^{14.9} 15.1 14.9	13.7	14.2 14.2	14.2 .472
13.9		14.2 14.3 14.25	13.7	15.0 14.8	14.9 .591
13.9		14.8 15.0 14.9	13.7	14.5 14.8	14.65 .117
14.0		14.3 14.2 14.25	13.7	14.4 14.2	14.3 .477
14.0		14.3 14.1 14.2	13.7	14.7 14.8	14.75 .584
14.0		14.4 14.3 14.35	13.6	15.2 15.0	15.1 .693
14.0		14.7 14.8 14.75	13.7	14.7 14.8	14.75 .103
14.0		14.2 14.2 14.2	13.8	15.1 15.0	15.05 .210
14.0		14.2 14.3 14.25	13.6	14.3 14.2	14.25 .323
14.0		14.2 14.3 14.25	13.6	14.2 14.2	14.2 .434
14.0		14.4 14.2 14.3	13.7	14.3 14.6	14.45 .541
14.0		14.8 ^{14.9} 15.1 14.93	13.7	15.2 15.2	15.2 .649
14.0		14.2 14.1 14.15	13.7	15.0 14.7	14.85 .752
14.1		14.7 14.8 14.75	13.9	14.5 14.2	14.35 .868
14.1		14.2 14.1 14.15	13.7	14.3 14.2	14.25 .989
13.9		14.5 ^{14.5} 15.1 14.7	13.7	14.8 14.8	14.8 .108
14.0		14.0 14.2 14.1	13.7	15.6 ^{15.2} 15.2 15.33	15.33 .215
13.9		15.6 ^{15.2} 15.1 15.3	13.7	15.2 ^{14.6} 14.6 14.8	14.8 .323
14.0		14.3 14.3 14.3	13.6	14.2 14.2	14.2 .483
14.0		14.3 14.4 14.35	13.6	15.4 ^{15.0} 14.8 15.17	15.17 .116
with 24711 13.9		with 20220 14.2 14.2 14.2	13.5	14.2 14.2	14.2 .364
13.9		14.7 14.6 14.65	13.4	15.0 14.7	14.65 .553
13.9-14.1		14.1-15.3	13.4-9	14.142-15.33	

	not var.	not var.	not really var.
	67 sm	103 sm	126 sm
252			75?
491	13.6	13.9	14.6
501	13.7	13.8	14.4
710	13.7	13.9	14.3
817	13.7	13.9	14.2
147	13.7	13.9	14.5
257	13.6	13.9	14.2
364	13.7	13.9	14.3
472	13.7	13.8	14.4
591	13.6	def. inv.	14.5
117	13.7	13.8	14.6
477	13.7	13.9	14.3
584	13.7	13.8	14.4
693	13.6	13.9	14.2
103	13.7	13.9	14.2
210	13.6	13.8	14.3
323	13.6	13.9	14.2
434	13.7	13.9	14.2
541	13.7	14.0	14.5
649	13.7	13.9	14.2
752	13.6	13.9	14.3
868	13.6	13.9	14.2
989	13.5	13.9	14.3
108	13.6	13.9	14.2
215	13.7	13.9	14.2
323	13.7	13.9	14.5
483	13.6	13.9	14.2
116	13.7	13.9	14.3
364	13.6	13.9	14.3
553	13.6	13.9	14.6

1938

		48		50		51		57	
MF 21404	12.6	.293	11.5	.796	12.6		14.3	.798	
431	13.0	.504	11.7	.221	12.6		14.5	.460	
485	12.8	.354	11.5	.988	12.7	65	14.5	.869	
495	12.7	.927	11.5	.873	12.6		14.4	.496	
538	12.7	.439	11.5	.765	12.6		14.4	.455	
544	12.5	.249	11.4	.278	12.6		14.3	.599	
553	12.8	.040	11.4	.962	12.4		13.9	.097	
588	12.7	.645	11.5	.988	15.7?		14.4	.825	
- 614	12.5	.802	11.5	.449	12.6		14.0	.192	
616	12.7	.913	11.4	.511	12.5		14.2	.307	
622	12.6	.757	11.5	.547	12.7		14.0	.213	
625	12.7	.330	11.5	.118	12.8		14.1	.942	
627	12.8	.437	with 2022 11.9	.177	with 2022 12.8		with 24711 13.8	.052	
628	12.5	.190	11.8	.163	12.6		14.3	.866	
647	12.6	.197	11.5	.977	12.8		13.8	.043	
very poor 677	12.5	.314	11.3	.655	12.7		13.7	.049	
693	12.9	.991	11.4	.597	12.6		14.4	.783	
745	12.6	.783	11.4	.100	12.6		14.2	.908	
755 1/6		.945		.687				.348	
835	12.7	.765	11.3	.818	12.6		14.4	.387	
22915	12.7	.748	11.5	.718	12.6		13.9	.141	
926	12.8	.330	11.3	.607	12.7		14.5	.776	
956	12.5	.234	11.5	.363	12.5		14.3	.847	
966	12.7	.408	11.5	.956	12.5		14.1	.300	
973	12.6	.030	11.5	.868	12.4		13.7	.977	
982	12.7	.934	11.5	.624	12.5		13.9	.048	
- 23017	12.6	.674	11.8	.214	12.3		14.5	.732	
150	12.8	.740	11.3	.971	12.6	R 24711	14.4	.842	
wrong at (165)									
337	12.8	.641	11.4	.768	12.7		14.1	.306	
	12.5-13.0		11.3-9		12.5-8		13.7-14.5		

69	91	98	102
12.8	11.9	13.9	13.5
12.8	12.2	13.9	13.5
12.5	11.9	13.8	13.5
12.8	11.9	13.9	13.5
^{on edge} 12.5!	11.9	13.9	13.5
12.7	11.9	13.8	13.5
13.0	11.9	14.0	13.5
12.8	11.8	13.9	13.5
12.9	11.9	13.8	13.5
13.0	12.0	13.9	13.5
^{on edge} 12.5!	11.9	13.9	13.5
13.0	11.9	14.0-1	13.5
13.0	11.9	13.9	13.5
12.8	11.9	13.9	13.5
12.6	11.8	13.8	13.5
^{on edge} 12.5!	12.0!	13.9	13.6
12.7	11.9	13.9	13.5
12.5	11.9	13.8	13.5
4/6			
^{on edge} 12.5!	11.9	13.9	13.5
4/6	11.9	13.9	13.5
^{on edge} 12.7!	12.1	13.9	13.5
12.9	12.3	13.9	13.5
12.8	12.1	13.9	13.5
^{on edge} 12.8!	11.9	13.9	13.5
^{on edge} 12.9!	12.0	13.9	13.5
^{on edge} 12.8!	11.9	13.9	13.5
^{with 24711} 12.8	12.1	13.9	13.5
^{on edge} 12.5!	11.8	13.9	13.5
12.5-13.0	11.8-12.3	13.8-14.0	

	104	109	124	125
13.9		14.2 14.1 14.15 13.7		14.3 14.3 14.3 .803
14.0		14.3 14.4 14.35 13.7		15.2 14.9 15.05 .165
13.9		14.2 14.1 14.15 13.6		14.4 14.5 14.45 .533
14.0		14.8 14.8 14.8 13.7		15.0 15.1 15.05 .125
13.9		15.0 15.1 15.05 13.6		15.0 15.0 15.0 .119
13.9		14.2 14.1 14.15 13.7		14.3 14.4 14.35 .640
14.1		14.8 15.1 14.95 13.7		15.0 14.9 14.95 .066
14.1		14.7 14.8 14.75 13.7		14.9 14.9 14.9 .712
14.1		14.2 14.1 14.15 13.8		14.2 14.2 14.2 .939
14.1		14.2 14.2 14.2 13.8		14.6 14.5 14.55 .051
14.1		14.2 14.1 14.15 13.7		14.2 14.1 14.15 .916
14.0		14.6 14.5 14.55 13.7		14.8 14.6 14.7 .541
14.1		14.3 14.2 14.25 13.7		15.2 15.0 15.1 .649
14.0		14.3 ^{14.6} 14.9 14.6 13.7		14.2 14.2 14.2 .422
14.0		14.2 14.1 14.15 13.7		14.4 14.2 14.3 .486
13.7		— as 13.6		— as .899
13.9		14.5 14.6 14.55 13.7		14.8 15.0 14.9 .594
13.9		14.3 14.2 14.25 13.7		14.2 14.3 14.25 .497
		76		15.0 ^{15.2} .752
14.0		14.3 14.4 14.35 13.5		14.5 14.5 14.5 .978
14.1		14.2 14.1 14.15 13.6		14.3 14.2 14.25 .878
14.1		14.5 14.5 14.5 13.7		14.3 14.4 14.35 .478
14.1		14.6 14.6 14.6 13.7		14.2 14.2 14.2 .437
14.0		14.2 14.2 14.2 13.7		15.2 15.4 15.3 .704
14.0		14.2 14.1 14.15 13.9		14.3 14.2 14.25 .345
14.0		14.2 14.2 14.2 13.7		14.3 14.2 14.25 .305
13.9		14.6 14.6 14.6 13.7		14.2 14.3 14.25 .359
14.0		14.4 14.2 14.3 13.7		14.8 ^{15.2} 15.4 15.13 .105
14.0		14.3 14.2 14.25 13.6		14.4 14.6 14.5 .526
13.7-14.1		14.15-15.05	13.5-8	14.15-15.3

67

103

126

75

03

65

533

25

19

590

66

112

939

051

116

541

49

22

86

99

594

497

52

78

878

478

437

704

345

305

359

105

526

48

50

51

57

MF 23403	13.0	.033	11.5 <small>R 24711</small>	.286	12.8 <small>R 24711</small>		14.4	.698
410	12.9	.664	11.9	.203	12.8		14.3	.384
437	12.6	.216	11.4	.885	12.7	12.0	13.9	.160
452	12.5	.800	11.5	.775	12.5	11.9	14.2	.798
462	12.9	.432	11.5	.693	12.7	11.9	14.4	.486
471	12.8	.125	11.4	.644	12.7	11.9	14.0	.236
<i>wrong center</i> (24317)								
366	12.8	.113	11.4	.008	12.8	11.9	14.2	.327
381	12.8	.367	11.4	.837	12.5 <small>R 24711</small>	11.9	14.4	.692
400	13.1	.004	11.5	.757	12.6	11.9	14.3	.385
419	12.8	.640	11.3	.677	12.7	12.0	14.0	.076
425	12.8	.162	11.4	.342	12.6	11.9	14.3	.820
434	12.8	.432	11.9	.180	12.7	12.1	14.1	.201
496	13.1	.014	11.4	.367	12.8	11.9	14.5	.825
498	12.6	.120	11.3	.427	12.6	11.8	13.6	.935
500	12.6	.227	11.5	.486	12.5		13.9	.045
502	12.9	.333	11.7; <small>11.45;</small>	.546	12.9		14.1	.155
504	13.0	.439	11.6	.606	12.8		14.2	.264
509	12.6	.751	11.5	.343	12.7	11.9	14.4	.621
511	12.6	.853	11.5	.400	12.7	11.9	14.5	.726
517	12.6	.279	11.9	.202	12.7	11.8	14.2	.201
523	13.1 <small>R 24711</small>	.558	11.4	.855	12.7 <small>R 24711</small>	11.7	14.2	.761
528	12.8	.824	11.4	.004	12.8	11.7	13.9	.036
534	13.0	.082	11.3	.711	12.8	11.7	14.3	.338
553	13.1	.035	11.5	.809	12.8	11.6	14.2	.357
620	12.6	.741	11.9	.190	12.7	11.7	14.1	.176
633	12.8	.312	11.4	.072	12.9	11.7	14.4	.800
648	13.2	.000	11.3	.021	13.0	11.7	14.4	.546
673	13.1	.108	11.4	.768	12.8	11.7	14.4	.759
688	12.8	.796	11.4	.716	13.1	11.8	14.4	.505

12.5-13.2

11.3-1.9

12.5-13.1

13.6-14.4

69	91	98	102
12.6	11.9	13.9	13.5
12.6	11.9	13.9	13.5
12.9	12.0	14.0	13.5
12.6	11.9	13.9	13.5
12.5	11.8	13.9	13.5
12.5	11.9	13.9	13.45
12.5	11.9	13.9	13.5
12.6	12.0	13.8	13.55
12.6	11.9	13.9	13.5
12.6	11.9	13.8	13.45
12.8	11.9	13.8	13.5
12.6	11.9	13.9	13.5
12.9	12.1	13.8	13.5
12.8	12.0	13.9	13.5
12.6	12.1	14.0	13.5
12.5	12.0	14.0	13.5
12.8	11.9	13.9	13.5
12.8	12.2	13.9	13.55
12.6	12.1	13.9	13.55
12.9	12.1	13.9	13.55
12.7	12.1	13.7	13.5
12.6	12.2	13.9	13.5
12.9	12.2	13.9	13.45
12.6	12.0	13.9	13.5
12.8	12.0	13.9	13.5
12.5	11.9	13.9	13.5
12.5	12.0	13.9	13.5
12.8	11.9	13.8	13.55
12.5	11.9	13.9	13.35
12.5-12.9	11.8-12.2	13.7-14.0	

disc on this plate, 2022

	104	109	124	125
	13.9	14.2 14.3 14.25 13.6	14.5 ^{15.1} 15.0 14.87 .251	
	13.8	15.0 ^{15.2} 15.4 15.2 13.7 ^{with 24.711}	14.2 14.2 14.2 .900	
	14.0	14.9 15.1 15.0 13.6	14.5 ^{14.6} 14.9 14.67 .528	
	14.0	14.2 14.1 14.15 13.6	15.2 15.0 15.1 .129	
	14.0	14.8 14.8 14.6 13.6	14.5 14.6 14.55 .780	
	13.9	14.5 14.3 14.4 13.6	14.2 14.3 14.25 .492	
4957	14.0	14.2 14.2 14.2 13.7	14.2 14.2 14.2 .842	
	14.0	14.6 ^{15.1} 15.0 14.9 13.7	15.0 15.0 15.0 .133	
	13.9	14.3 14.2 14.25 13.6	14.2 14.2 14.2 .789	
	14.0	14.2 14.3 14.25 13.6	14.4 14.4 14.4 .443	
	14.0	14.6 14.5 14.55 13.7	15.0 15.2 15.1 .039	
67	14.0	14.2 14.2 14.2 13.6	14.2 14.2 14.2 .346	
61	14.0	14.3 14.2 14.25 13.8	14.2 14.2 14.2 .275	
	13.9	14.7 ^{15.2} 15.3 15.13 13.6	14.2 14.2 14.2 .392	
	14.0	14.2 14.2 14.2 13.7	14.3 14.2 14.25 .490	
	13.9	14.7 14.6 14.65 13.6	14.8 14.7 14.75 .597	
	14.0	14.3 14.2 14.25 13.6	14.8 14.7 14.75 .705	
	14.1	14.3 ^{14.3} 14.7 14.43 13.7	14.5 14.8 14.65 .032	
	14.0	14.2 14.2 14.2 13.7	14.5 14.5 14.5 .134	
	14.1	14.8 14.9 14.85 13.8	15.0 15.1 15.05 .577	
	14.0	14.3 14.2 14.25 13.6	14.2 14.2 14.2 .949	
	13.9	14.3 14.2 14.25 13.6	14.8 14.8 14.8 .219	
	14.0	14.2 14.1 14.15 13.6	14.3 14.2 14.25 .491	
95	14.0	14.2 14.2 14.2 13.7	14.4 14.2 14.3 .466	
9016	14.1	14.4 14.4 14.4 13.7	14.3 14.4 14.35 .542	
	14.0	14.3 14.3 14.3 13.7	14.8 15.1 14.95 .131	
	14.0	14.3 14.2 14.25 13.5	14.2 14.2 14.2 .838	
	14.05	14.3 14.2 14.25 13.6	14.3 14.3 14.3 .981	
	14.05	14.3 14.2 14.25 13.4	15.0 15.1 15.05 .688	
	13.8-14.1	14.15-15.2	13.4-18	14.2-15.1

67

103

126

75

51

00

28

29

80

92

92

33

89

43

39

46

75

82

90

97

05

32

34

57

49

19

91

46

54

13

38

81

88

	48			50			51			57		
MF 24697	12.6		.801	11.4		.405	12.7	11.8		14.4		.612
699	12.6		.907	11.4		.465	12.7	11.9		14.4		.722
701	13.1 <i>with 2000v</i>		.013	11.4		.525	12.8	11.8		14.4		.832
703	12.9		.120	11.4		.584	13.0	11.7		13.7		.942
705	12.6		.229	11.4		.646	12.7	11.8		14.0		.055
711	13.1		.441	11.4		.327	13.1	11.8		14.4		.309
(713)												
715	13.0		.654	11.4		.447	13.1	11.8		14.3		.528
717	12.8		.760	11.4		.506	12.9	11.7		14.4		.638
719	12.6		.870	11.4		.568	12.8	11.9		14.4		.752
757	12.6		.761	11.5		.119	12.8	11.8		14.5		.524
788	13.1		.049	11.4		.777	12.9	11.8		14.0		.095
804	12.8		.290	11.4		.598	12.7	11.8		14.4		.445
25997	12.9		.984	11.4		.642	12.6	11.9		14.2		.343
26004	12.8		.407	11.4		.441	12.6	12.1		14.4		.815
012	12.7		.836	11.5		.682	12.5	11.9		14.0		.258
018	12.9	12.7	.202	11.4		.450	12.7	12.0		14.3		.670

12.6-13.1

11.4-1.5

12.5-13.1

13.7-14.5

12.5-13.2

11.3-1.9

12.3-13.1

13.6-14.0

$$\frac{1}{p} = 1.635775$$

$$\frac{1}{p} = 0.91931$$

$$\frac{1}{p} = 1.69145$$

$$p = 0.611331$$

$$p = 1.08778$$

$$p = 0.59121$$

$$A = 0.4$$

$$A = 0.5$$

$$A = 14.05 \quad A = 0.7$$

W UMa

Ecl.

d

HV 11664

HV 11657

HV 11667

69	91	98	102
12.8	11.9	14.0	13.5
12.8	11.9	13.9	13.5
12.7	11.9	13.9	13.5
12.4	11.9	13.7	13.5
12.7	11.9	13.9	13.45
13.4	12.0	14.0	13.55
12.6	11.9	13.8	13.5
13.2	11.8	14.0	13.4
12.6	11.8	13.9	13.55
12.6	11.9	13.9	13.5
13.2	12.0	13.8	13.5
12.5	12.1	13.9	13.5
12.9	11.8	14.0	13.5
12.7	11.8	13.9	13.4
12.7	11.9	13.9	13.5
12.9	11.9	13.9	13.5
12.4-13.4		13.7-14.0	
12.2-12.4	11.7-12.3	13.7-14.1	13.35-1.6
	h _g	h _g	h _g

red star

	104			109		124			125
14.1			14.3	14.2	14.25	13.6		14.7 ^{14.6}	14.3 14.53 .727
14.1			14.7	14.5	14.6	13.6		14.2	14.2 14.2 .835
14.1			14.3	14.2	14.25	13.7		14.4	14.2 14.3 .942
14.0			14.9	14.7	14.8	13.5		14.8	15.0 14.9 .050
14.0			14.2	14.3	14.25	13.6		15.2	15.3 15.25 .161
14.0			14.3	14.3	14.3	13.6		14.3	14.2 14.25 .387
14.0			14.3	14.3	14.3	13.6			
14.0			14.3	14.3	14.3	13.5		15.0	15.1 15.05 .602
14.1			14.6	14.6	14.6	12.7		15.0	15.2 15.1 .709
14.0			14.5	14.3	14.4	13.5		14.2	14.3 14.25 .820
14.0			14.5	14.2	14.35	13.6		14.3	14.3 14.3 .004
14.05			15.0	15.0	15.0	13.7		14.2	14.2 14.2 .387
14.0			14.3	14.2	14.25	13.5		15.0	15.1 15.05 .664
14.0			14.3	14.2	14.25	13.7		14.3	14.2 14.25 .420
14.0			14.3	14.2	14.25	13.7		14.2	14.2 14.2 .859
14.0			14.2	14.2	14.2	13.7		14.2	14.1 14.15 .292
14.0			14.7	14.9	14.8	13.6		15.0	15.1 15.05 .674

14.2-15.0

14.15-15.25

13.8-14.1

14.1-15.3

13.4-1.9

14.15-15.33

uq

q_p = 3.36797

uq

q_p = 1.65431

q = 0.29691

q = 0.60448

14.2-14.9-15.1

A = 0.9

uq?

W U Ma

W U Ma

H V 11665

H V 11649

67

103

126

75

Variables near Sequence B

	38		129 Phase		3 sm. hot var.		73 sm. hot var.
MF 20 222	12.9		13.0	.495	12.7		13.2
224	13.1		12.9	.586	12.5		13.2
226	12.7		12.9	.677	12.8		15.2
228	12.9		12.0 12.3	.767	12.6		12.9
232	12.9 OK		12.0 12.3	.877	13.0		13.1
234	12.9		12.2 12.4	.968	12.6		13.2
236	13.6		12.7	.058	12.6		13.0
238	12.8		12.6	.148	12.9		13.2
240	13.3		12.8	.247	12.7		13.3
243	12.8		96	.694	12.8		13.2
249	13.0		12.5	.024	12.7		13.1
251	12.8		12.6	.114	12.8		13.2
253	12.8		12.9	.205	12.7		13.2
255	12.7		12.9	.381	12.8		13.1
257	13.5		12.9	.471	12.7		13.2
259	12.9		12.9	.565	12.8		13.2
261	13.1 OK		12.9	.657	12.9		13.1
263	13.1		12.1 12.3	.747	12.6		13.2
265	12.9 OK		12.0 12.4	.837	12.6		12.9
268	13.1		12.1 12.4	.757	12.8		13.1
269	13.0		11.9 12.3	.854	12.8		13.2
271	12.9		12.1 12.4	.955	12.8		13.2
273	12.9		12.4 12.5	.054	12.9		13.2
275	13.2 OK		12.8	.144	12.7		13.1
277	12.9		12.7	.234	12.8		13.3
287	12.9		12.0 12.3	.871	12.6		13.1
310	13.3		12.9	.579	12.7		13.1
356	13.0		12.9	.658	12.6		13.1
505	13.5		12.9	.229	12.9		13.1

1012

38

129

3

73

MF 21404	13.1		12.0	12.3	.913
431	13.1		12.5		.064
485	12.9		12.0	12.3	.762
495	13.1		12.6		.090
538	12.9		12.4		.972
544	13.0		12.8		.251
553	12.9		11.9	12.4	.799
588	12.7		12.2	12.3	.842
614	13.1		12.6		.039
616	12.9	OK	12.7		.133
622	13.4		12.8		.689
625	12.9		12.9		.549
627	12.9	OK	13.0		.639
628	12.8		12.8		.119
647	13.0		12.9		.345
677	—		—		.388
693	12.8		12.0	12.3	.803
745	13.6		12.5		.068
755	13		12.6		.957
835	13.0		12.4	12.5	.191
22915	12.8		13.0		.484
926	13.3	OK	12.0	12.3	.819
956	13.1		12.0	12.3	.958
966	13.1		12.0	12.3	.857
973	12.8	OK	12.9		.227
982	13.0		12.8		.366
23017	12.9		12.0	12.3	.779
150	13.0		12.9		.462
337	13.4		—		.218
403	13.2		12.2	12.4	.026

101

	38	129	3	73
MF 23410	13.3	12.7	.402	
437	13.4	12.0 12.3	.933	
452	12.8	12.8	.269	
462	13.2	13.1	.647	
471	13.5	12.2 12.4	.076	
24366	12.9	12.0 12.4	.017	
381	12.9	12.0 12.5	.763	
400	12.8	12.3 12.4	.145	
419	13.0	12.9	.525	
425	13.3	—	.030	
434	12.8	12.0 12.3	.790	
496	12.9	12.9	.602	
498	13.3	12.9	.692	
500	12.8	12.9 12.3	.782	
502	13.5	12.0 12.2	.872	
504	12.9	—	.961	
509	13.1	12.3 12.5	.069	
511	12.9	12.5	.154	
517	13.4	12.9	.358	
523	13.0	12.9	.346	
528	12.9	—	.571	
534	12.9	12.9	.632	
553	12.9	12.8	.281	
620	12.8	11.9 12.3	.885	
633	13.3	<u>bc</u>	.211	
648	13.4	13.0	.636	
673	12.9	12.5	.259	
688	13.0	13.0	.684	
697	13.5	12.7	.220	
699	12.8	12.8	.310	

101

	38	129	3	73
MF 24701	13.3 ^{with 24711}	12.9	.399	
703	13.2	13.0	.489	
705	13.2	12.9	.582	
711	12.9	12.9	.605	
715	12.9	12.0 12.3	.784	
717	12.9	12.4 12.2	.874	
719	13.3	11.6 —	.966	
757	13.0	12.0 12.2	.819	
788	12.8	11.9 12.2	.815	
804	13.0	12.9	.550	
25997	12.9	12.9	.572	
26004	13.0	12.2 12.4	.773	
012	13.4 OK	12.8	.135	
018	12.8	12.9	.288	

12.7-13.6

11.9-13.1

$$\gamma_p = 1.35064$$

$$p = 0.72430$$

$$m = 12.45, A = 0.9$$

W W M₂ >

CR

HV 11654?

HV 11670?

101

Variables near Sequence C

		2	Phase	5	Phase	72 wt	83
MF 20222	11.6	.000	11.8	.526	12.9		13.5
224	12.1 with 20222	.116	11.9	.566	13.0		13.5
226	12.1	.232	11.8	.606	13.0		13.2
228	12.5	.347	11.9	.645	13.0		13.3
232	12.9	.762	11.9	.129	12.9		13.6
234	12.1	.879	12.0	.169	13.0		13.1
236	12.1 ⁷	.993	11.8	.208	12.8		13.4
238	12.1	.107	12.0	.247	13.0		13.1
240	12.2	.234	11.9	.291	12.9		13.3
243	12.2	.180	11.9	.667	13.0		13.1
249	12.2	.105	11.8	.536	12.9		13.1
251	12.4 R 20222	.219	11.8	.575	12.9		13.3
253	12.4	.335	11.8	.615	12.8	with 20222	13.1
255	12.2	.835	11.9	.128	13.0		13.2
257	11.8	.950	11.9	.167	12.8		13.4
259	12.1	.070	11.8	.208	12.9		13.3
261	12.3	.188	11.8	.249	12.9		13.2
263	12.5	.302	12.0	.288	12.9		13.4
265	12.6	.416	11.9	.327	12.9		13.4
268	12.7	.591	13.4 ¹	.729	13.0		13.3
269	12.6	.714	12.7 ¹	.771	13.0		13.1
271	12.2	.843	12.1	.815	13.0		13.0
273	11.7	.969	11.8	.858	13.1		13.1
275	12.1	.084	12.0	.897	13.0		13.2
277	12.2	.198	11.7	.936	12.9		13.4
287	12.6	.561	11.8	.087	12.9		13.5
310	11.7 R 20222	.942	11.9 R 20222	.323	12.9		13.0
356	12.1	.198	12.2	.700	12.9		13.2
505	12.5	.511	12.0	.071	12.9		13.4
	11.6-12.9		11.8-13.4		12.5-13.1		13.0-13.6

70 ?

	2		5		72		83
MF 21404	12.5	.452	11.8		.975	12.9	13.0
431	12.5	.672	11.9		.840	13.0	13.2
485	11.6	.020	11.9	13.0	.723	12.8	13.0
495	12.6	.714	12.0		.303	12.9	13.2
538	^{R 20222} 12.5	.470	11.8		.957	12.9	13.1
544	12.1	.029	11.9		.569	12.7	13.4
553	12.6	.406	11.9		.224	12.9	13.5
588	12.4	.286	11.9		.552	12.9	13.2
614	11.8	.913	12.1		.819	12.9	13.1
616	11.9	.033	12.1		.860	12.9	13.0
622	11.8	.017	11.8		.539	12.9	13.1
625	11.8	.940	12.1		.223	12.7	13.0
627	^{R 24711} 12.0	.054	12.1		.262	12.9	13.1
628	11.8	.942	11.9		.908	12.9	13.3
647	12.5	.331	14.0!		.752	12.9	13.0
677	—	.441	12.0!		.368	—	—
693	12.3	.246	11.8		.986	12.9	13.3
745	12.6	.785	11.8		.591	12.9	13.3
755	12.5	.570	11.8		.597	12.9	13.0
835	12.2	.124	12.8		.787	12.7	13.2
22915	12.3	.226	11.8		.589	12.9	13.1
926	11.7	.929	11.9		.172	12.9	13.0
956	12.2	.207	11.8		.977	12.9	13.1
966	11.8	.005	11.8		.987	12.9	13.0
973	12.6	.751	11.9		.585	12.8	13.1
982	12.0	.029	11.9		.390	12.8	13.1
23017	11.8	.886	11.9		.605	12.8	13.1
150	^{R 20222} 12.6	.535	13.0		.722	12.9	13.2
337	11.8	.940	11.8		.624	12.7	13.0
403	12.6	.575	11.9		.447	12.9	13.5

70

	2	5	72	83	
MF 23410	^{R 20220} 12.4	.330	11.8	.047 12.9	13.2
437	12.6	.383	11.8	.460 12.9	13.2
452	12.2	.087	11.9	.043 12.9	13.3
462	12.3	.844	11.8	.645 12.9	13.1
471	12.7	.666	11.9	.268 12.9	13.1
24366	12.1	.035	11.9	.029 13.0	13.1
381	12.6	.537	11.9	.227 12.9	13.05
400	^{R 20220} 12.4	.299	11.9	.830 12.9	13.0
419	12.1	.060	11.8	.433 12.9	13.1
425	12.0	.079	11.8	.834 12.7	13.2
434	^{R 20220} 12.5	.599	11.8	.038 13.0	13.2
496	12.6	.515	11.9	.299 12.9	13.5
498	12.6	.430	11.9	.339 13.0	13.1
500	12.6	.744	12.0	.378 13.0	13.1
502	12.1	.858	11.8	.417 12.9	13.2
504	11.8	.973	11.9	.456 12.9	13.2
509	12.5	.385	11.9	.939 12.9	13.1
511	12.6	.494	11.9	.976 12.9	13.0
517	12.1	.029	11.9	.502 12.8	13.4
523	^{R 20220} 11.8	.940	12.0	.550 12.9	13.1
528	12.3	.227	11.9	.648 12.7	13.5
534	12.6	.581	11.9	.111 12.8	13.1
553	12.6	.683	11.9	.831 12.9	13.2
620	12.1	.884	12.1	.874 13.0	13.1
633	12.7	.575	11.8	.452 12.9	13.1
648	12.7	.392	11.9	.073 12.9	13.1
673	12.6	.737	11.8	.218 12.9	13.3
688	12.7	.550	11.8	.839 12.9	13.2
697	12.6	.788	12.0	.946 12.9	13.1
699	11.7	.902	11.9	.985 12.9	13.1

70

54

	2	5	72	83		
MF 24701	11.8 K 24711	.017	11.9	.024	12.9	13.1
703	12.2	.131	11.8	.063	12.9	13.3
705	12.5	.249	11.9	.104	12.9	13.5
711	12.6	.554	12.2	.550	12.9	13.2
715	12.7	.783	11.8	.628	12.9	13.2
717	12.0	.897	12.0 with 24711	.668	12.9	13.2
719	11.9	.015	12.5	.708	12.9	13.2
757	12.1	.882	12.0	.242	12.9	13.1
788	12.6	.803	11.92	.294	13.0	13.1
804	12.3	.291	11.8	.487	12.9	13.1
25997	12.2	.075	11.9	.970	12.9	13.2
26004	12.6	.606	12.0	.494	12.9	13.1
012	11.9 K 20222	.068	11.8	.652	12.9	13.1
018	12.5	.538	12.0	.155	12.8 with 24711	13.7

11.6-12.7

11.7-14.0

12.7-13.1

13.0-1.7

 $\chi^2_p = 1.76061$ $\chi^2_p = 0.60233$ $p = 0.56798$ $p = 1.66022$ $\mu = 12.2$ $A = 0.9$ $A = 2.1$

Cl

Ed

HV 11639

HV 11641

70

Variables near Sequence D

HV8375 18 Phase 19 ^{left} raw 45 ^{Per} 46

MF 20222	12.1		.792	12.0		13.2		13.4
224	12.2			12.0		13.3		13.5
226	12.2 ^{12.18}			11.8		13.3		13.6
228	12.2			11.8		13.3		13.6
232	12.2		.797	12.0		12.9		13.5
234	12.2			11.8		12.9		13.5
236	12.2 ^{12.18}			11.8		12.9		13.4
238	12.3			11.8		13.2		13.1
240	12.2			11.9		13.3		13.2
243	12.2		.819	11.9		13.3		13.4
249	13.0		.901	12.0		13.3		13.6
251	13.1 ^{13.07}			11.8		13.4		13.7
253	13.1 ^{R 20222}			11.9		13.4		13.7
255	13.1		.907	11.9		13.2		13.6
257	13.2			11.8		12.9		13.0
259	13.0 ^{13.05}			11.8		12.8		12.9
261	13.1			11.8		12.9		13.2
263	12.9			11.9		13.2		13.4
265	13.0			11.9		13.0		13.3
268	13.1		.912	11.8		13.0		13.2
269	13.0			11.8		13.2		13.4
271	13.1 ^{13.08}			11.8		13.4		13.5
273	13.2			11.8		13.4		13.7
275	13.1			11.8		13.3		13.7
277 ^{poor plate}	13.0			11.8		13.3		13.6
287	13.2		.923	11.8		13.3		13.3
310	13.1		.962	11.8		13.1		13.4
356	13.7 ^{R 20222}		.066	11.8		13.3		13.3 ^{R 24711}
505	12.0 ^{with 24711}		.280	11.9 ^{with 24711}		13.2		13.2

12.5-13.4

12.5-13.7

	53 (3 Hya)	86 not van	92 not van	100 not van
	11.5	13.0	13.0	13.3
	11.4	13.1-2	13.2	13.3
	11.5 ^{11.45}	13.3	13.1	13.3
	11.4	13.3	13.3	13.3
run plate	11.5	13.1	13.3	13.2
	11.5	13.2	13.3	13.3
	11.6 ^{11.46}	13.1	13.2	13.4
	11.4	13.3	13.3	13.4
	11.3	13.2	13.2	13.3
	11.4	13.2	13.3	13.3
	11.5	13.2	13.2	13.4
	11.5 ^{11.5}	13.3	13.3	13.4
	R 20222	with 24711		
	11.5	13.3-2	13.2	13.3
	11.4	13.3	13.3	13.3
	11.5	13.3	13.3	13.2
	11.4 ^{11.48}	13.3	13.2	13.3
	11.5	13.2	13.3	13.4
	11.6	13.2	13.3	13.5
	11.5	13.0	13.2	13.2
	11.6	13.2	13.3	13.3
	11.5	13.2	13.3	13.4
	11.3 ^{11.47}	13.3	13.3	13.4
	11.3	13.3	13.3	13.3
	11.5	13.1	13.3	13.3
podu	11.6	13.2	13.1	13.3
	11.5	13.1	13.2	13.2
	11.6	13.0	13.2	13.1
	R 20222		R 24711	with 24711
	11.5	13.3	13.3	13.3
	11.5	13.3	13.2	13.3

	118 ^{not} _{ran}	130 ^{not} _{ran}	1.0 ^{not} _{sm ran}	44 ^{not} _{sm ran}
12.7		13.3	13.4	12.0
12.8		13.5	13.4	11.95
12.6		13.3	13.4	12.0
12.7		13.4	13.4	12.1
12.7		13.4	13.3	11.9
12.6		13.3	13.4	12.0
12.9		13.35	13.4	12.0
12.7		13.3	13.4	12.0
12.7		13.2	13.4	12.0
12.7		13.5	13.4	12.0
12.7		13.5	13.4	12.0
13.0		13.35	13.4	12.0
12.8		13.3	13.4	12.0
12.7		13.3	13.4	12.0
12.7		13.35	13.4	12.0
12.7		13.5	13.3	12.1
12.9		13.3	13.4	12.0
12.6		13.4	13.4	12.1
12.7		13.5	13.4	12.0
13.0		13.35	13.4	12.0
12.6		13.4	13.4	11.9
12.6		13.3	13.4	12.1
12.6		13.4	13.4	12.1
12.6		13.4	13.4	12.0
12.7		13.3	13.4	12.2
12.6		13.45	13.5	12.0
12.7		13.5	13.4	12.0
12.6		13.3	13.4	12.0
12.8		13.45	13.6	12.0

80 ?

106 ?

18

19

45

46

MF 21404	11.6	.552	12.0	13.4	13.7
431	11.7	.596	11.9	12.9	13.6
485	12.5	.749	11.8	13.2	13.2
495	12.4	.755	11.9	13.2	13.4
538	^{R 2022} 13.4	.897	12.0	13.1	^{R 24711} 13.7
544	13.7	.930	11.8	13.3	13.4
553	14.5!	.001	12.0	13.1	12.6
588	13.8!	.012	11.8	13.3	13.3
614	14.5	.034	11.9	13.3	13.5
616	14.5		11.9	13.2	12.9
622	14.0	.040	11.8	13.3	13.5
625	14.5	.056	12.0	13.0	12.9
627	14.5		^{R 24711} 12.0!	13.2	13.3
628	14.5	.062	12.0	12.6	13.7
647	14.0	.078	11.9	13.0	13.7
^{very poor} 677	13.5	.166	12.1	13.3	13.5
673	13.4	.171	11.8	12.6	13.5
745	13.0	.204	11.8	13.3	13.5
755	12.8	.232	11.8	13.2	13.4
835	12.0	.352	11.9	13.0	12.9
22915	12.9	.805	12.0	12.7	13.0
926	13.0	.810	12.0	13.3	13.5
956	13.1	.827	11.8	13.3	13.4
966	13.3	.854	11.8	13.3	13.5
973	13.4	.860	12.0	12.8	13.2
982	13.4	.876	11.8	13.2	13.2
23017	14.5	.969	12.0	12.6	13.5
150	13.5	.172	11.9	13.4	13.7
337	12.0	.326	11.8	13.3	13.4
403	11.6	.425	12.0	12.6	13.5

	53	86	92	100
11.5		13.2	13.3	13.4
11.3		13.3	13.3	13.4
12.0		13.2	13.3	13.4
12.1		13.1	13.3	13.4
^{R 24711} 11.3		13.0	13.2	^{R 24711} 13.2
11.4		13.2	13.35	13.4
11.6		13.2	13.3	13.3
11.4		13.2	13.3	13.35
11.7		13.0	13.3	13.1
11.7		13.0	13.35	13.35
11.6		13.2	13.35	13.35
11.9		13.2	13.3	13.35
^{with 24711} 11.7		13.1	13.3	13.2
11.8		13.2	13.35	13.4
11.7		13.2	13.35	13.15
12.1		13.0	13.4	13.4
12.0		13.2	13.3	13.3
11.7		13.2	13.3	13.35
11.6		13.2	13.2	13.2
11.4		13.0	13.3	13.3
12.0		12.9	13.1	13.4
12.0		13.2	13.2	13.4
11.9		13.2	13.2	13.3
11.9		13.0	13.2	13.1
11.8		13.1-2	13.35	13.4
11.7		12.8	13.3	13.4
11.3		13.1	13.25	13.35
^{R 24711} 12.0		13.2	13.2	13.4
11.3		13.0	13.2	13.2
11.3		13.2	13.3	13.2

	118	130	10	44
13.1		13.4		
12.6		13.3		
12.8		13.3		
12.8		13.45		
12.7		with 24711 13.45		
12.7		13.2		
12.9		13.3		
12.7		13.3		
12.8		13.5		
13.0		13.35		
13.0		13.3		
12.8		13.3		
12.7		13.5		
12.8		13.35		
12.8		13.3		
13.2?		13.8?		
12.9		13.35		
12.8		13.45		
12.8		13.5		
12.8		13.5		
12.8		13.5		
12.7		13.35		
12.8		13.3		
12.8		13.3		
12.7		13.5		
12.7		13.35		
12.8		13.35		
12.7		13.3		
12.9		13.45		
12.8		13.35		

	18	19	45	46
ME 23410	11.6	.430 11.8	13.3	13.3
437	11.6	.452 11.9	12.6	13.6
452	11.6	.457 12.0	13.3	13.6
462	11.6	.463 11.8	13.4	12.9
471	11.6	.468 11.8	13.2	13.4
24366	12.5	.757 11.8	12.8	13.2
381	12.5	.768 11.8	12.6	13.5
400	^{R 24711} 12.6	.773 12.0	13.3	^{R 24711} 13.1
419	12.7	.779 11.8	13.3	13.5
425	13.0	.801 11.8	13.2	13.7
434	13.2	.812 11.8	13.1	13.3
496	14.5	.916 11.8	13.2	13.5
498	14.5	11.8	13.2	13.5
500	14.5	11.8	13.3	13.2
502	14.5	11.9	13.3	12.8
504	14.5	11.8	13.4	13.2
509	14.5	.921 11.8	13.3	13.4
511	14.5	12.0	12.7	13.4
517	14.5	.927 11.8	12.9	13.6
523	14.5	.954 12.2	13.3	^{R 24711} 13.2
528	14.5	11.8	13.2	13.3
534	14.5	.960 12.1	13.4	13.4
553	14.5	.965 11.8	13.2	13.5
620	14.5	.075 11.7	13.2	13.0
633	14.5	.080 11.7	13.4	13.4
648	14.5	.086 11.7	12.8	13.6
673	14.5	.097 11.8	13.4	13.4
688	14.5	.102 11.9	13.0	13.5
697	14.5	.113 11.9	13.3	13.3
699	14.5	12.0	13.3	13.2

	53	86	92	100
12.3		13.2	13.1	13.4
11.4		13.2	13.1	13.3
11.4		13.3	13.25	13.4
11.6		13.1	13.2	13.3
11.6		13.0	13.0	13.4
11.3		13.2	13.0	13.2
11.4		13.2	13.2	13.3
11.3		13.2	13.2	13.3
11.3		13.2	13.1	13.4
11.4		13.2	13.3	13.35
11.4		13.1	13.2	13.3
11.7		13.2	13.3	13.4
11.6	11.5	13.1	13.3	13.2
11.5		13.2	13.3	13.35
11.5		13.1	13.1	13.4
11.6		13.2	13.3	13.35
11.3	11.4	13.3	13.2	13.4
11.5		13.2	13.3	13.4
11.6		13.1	13.3	13.4
11.4	11.5	13.3	13.3	13.4
11.5		13.1	13.3	13.35
11.6		13.2	13.35	13.35
11.5		13.2	13.35	13.3
11.2		13.1	13.1	13.2
11.4		13.0	13.1	13.35
11.3		13.1	13.2	13.3
11.2		13.3	13.0	13.35
11.5		13.0	13.0	13.2
11.4		13.2	13.2	13.35
11.3		13.2	13.0	13.35

with 20112		118	130	10	44
12.9		13.45			
12.7		13.3			
13.0		13.35			
12.9		13.4			
13.0		13.4			
12.9		13.4			
13.0		13.5			
12.9		13.3			
13.0		13.45			
12.7		13.3			
13.0		13.35			
12.7		13.4			
12.6		13.4			
12.6		13.25			
12.6		13.45			
12.7		13.3			
12.6		13.35			
12.6		13.45			
12.7		13.35			
12.7		13.4			
12.9		13.45			
12.6		13.45			
12.8		13.3			
12.7		13.4			
12.8		13.35			
12.6		13.5			
12.6		13.3			
12.7		13.5			
12.7		13.4			
12.6		13.35			

	18	19	45 with 2022	46 with 2022
MF 24701	14.5	11.7	12.7	13.3
703	14.5	11.7	12.6	13.3
705	14.5	11.7	12.8	13.4
711	14.5	11.9	13.0	13.4
715	14.5	11.7	13.3	13.5
717	14.5	11.8	13.3	13.7
719	14.5	11.8	13.3	13.6
757	13.3	11.9	13.4	13.4
788	13.0	11.8	13.3	12.8
804	12.7	11.7	13.3	13.7
25997	12.2	11.9	13.2	13.4
26004	12.3	11.8	13.3	12.9
012	12.3	12.0	12.6	13.4
018	12.2	11.8	13.2	13.6

11.7-12.2

12.5-13.7

11.6-14.5

 $\mu_p = 10054825$
 $\mu_p = 405503$
 $p = 1.447$ 162.4 $m = 13.1$ $A = 3.0$

long

1890-1939

HV 8375

 $\mu_p = 1.40191$ $p = 0.71331$ $m = 12.97$ $A = 0.75$

Cluster

HV 11628

	53	86	92	100
201	11.2	13.3	13.1	13.4
3	11.4	13.0	13.0	13.35
5	11.5	13.2	13.0	13.1
11	11.5	13.3	13.0	13.4
15	11.4	13.2	13.1	13.1
17	11.4	13.0	13.1	13.25
19	11.4	13.2	13.0	13.35
57	11.7	13.0	13.1	13.3
83	11.8	13.2	13.2	13.4
204	11.8	13.1	13.2	13.35
297	11.6	13.1	13.1	13.4
004	11.3	13.2	13.1	13.4
12	11.3	13.1	13.0	13.3
18	11.3	13.3	13.2	13.2

11.2-12.1

12.6-13.3

13.0-4

13.1-5

 $\frac{1}{p} = .0133$ $p = 75^d$ $m = 11.65 \quad A = .6$

Long?

ug

ug

ug

 $\frac{1}{p} = .015873$ $p = 63^d$

1929-1939

HV11643 ??

	118	130	10	44
12.7		13.35		
12.7		13.45		
12.7		13.35		
12.8		13.3		
12.7		13.45		
12.8		13.2		
12.7		13.35		
12.7		13.35		
12.7		13.4		
12.7		13.4		
12.8		13.45		
12.6		13.4		
12.6		13.35		
def		13.3		
12.6 - 13.1		13.2 - 13.5		

wq

wq

Variables near Sequence E

	21	22	Phase	27	Phase	28	Phase
MF 20222	13.1	13.8	.036	13.5		15.4	.388
224	13.1	12.9	.194	13.7		15.3	.501
226	12.9	13.1	.353	13.8		15.3	.614
228	13.1	13.5	.509	13.9		15.3	.725
232	13.1	13.4	.440	14.2		14.5	.103
234	13.1	13.7	.598	14.1		14.8	.216
236	13.1	13.7	.754	14.0		15.0	.327
238	13.1	13.8	.910	13.3		15.0	.439
240	13.1	13.0	.083	13.4		15.0	.562
243	13.2	13.6	.556	13.1		15.2	.321
249	13.3	13.7	.915	13.7		15.5	.548
251	13.3	13.2	.071	13.8		15.4	.660
253	12.9	12.9	.230	13.9		15.3	.773
255	13.3	13.1	.276	14.1		14.8	.233
257	13.3	13.4	.432	14.1		14.9	.344
259	13.4	13.7	.595	13.9		14.8	.460
261	13.3	13.7	.756	13.2		15.4	.575
263	13.4	13.7	.912	13.7		15.4	.687
265	13.1	13.3	.068	13.7		15.3	.798
268	13.3	13.7	.670	13.6		14.1	.941
269	13.1	13.8	.838	13.8		14.4	.061
271	13.0	13.8	.013	14.1		14.8	.186
273	13.1	12.9	.186	14.1		15.2	.309
275	13.2	13.1	.342	14.0		15.1	.420
277	13.2	13.4	.498	14.1		15.3	.532
287	13.2	13.0	.084	14.0		15.4	.804
310	13.2	13.9	.970	13.7		15.2	.852
356	13.0	13.1	.328	13.9		14.9	.214
505	13.0	13.7	.560	13.7	13.5	15.3	.690

12.9-13.4

12.9-13.6

13.1-14.2

14.1-15.4

	31 int rev	49 int rev	79	84 int rev
14.6		11.3	14.3	13.0
14.8		11.0	14.6	12.6
14.4		11.4	14.4	12.5
14.9		11.0	13.9	12.5
14.5		11.1	13.7	12.6
14.5		11.6	13.7	12.7
14.5		11.1	13.7	12.6
14.6		11.1	13.9	12.6
14.6		11.3	13.9	12.6
14.8		11.0	14.4	12.6
14.5		11.5	14.3	12.5
14.8		11.1	14.2	12.5
14.8		11.0	13.7	12.5
14.7		11.1	13.8	12.6
14.6		11.1	13.8	12.6
14.6		11.5	13.7	12.6
14.8		11.1	13.9	12.6
14.6		11.2	13.9	12.7
14.7		11.3	13.9	12.5
14.8		11.0	13.9	12.7
14.7		11.3	13.9	12.7
15.0		11.0	14.0	12.5
14.6		11.2	13.9	12.6
14.8		11.3	14.2	12.5
14.6		11.0	14.6	12.5
14.6		11.3	13.8	12.5
14.6		11.4	13.9	12.5
14.7		11.2	13.9	12.5
14.7		11.0	13.7	12.5

11.4 + 11.1 after
permutation

*Do the star, sometimes
past middle, can't come
separately*

	112 Phase	120 not in	123	17
[16.0]	.720	13.1	13.3	
[16.0]		13.0	13.3	
[16.0]		13.0	13.1	
[16.0]		13.0	13.1	
[15.5]	.724	13.1	13.1	
[15.5]		13.1	13.0	
[15.3]		13.3	13.0	
[15.5]		13.0	13.2	
[15.3]		13.1	13.1	
[14.0]	.740	13.0	13.1	
[15.5]	.799	13.1	13.1	
[16.0]		13.1	13.1	
[15.8]		13.0	13.1	
[15.5]	.803	13.1	13.0	
[15.5]		13.2	13.1	
[15.5]		13.1	13.2	
[15.5]		13.0	13.1	
[15.5]		13.1	13.3	
[15.3]		13.1	13.1	
[15.3]	.807	13.2	13.1	
[16.0]		13.0	13.1	
[16.2]		13.0	13.1	
[15.5]		13.0	13.2	
[15.8]		13.2	13.1	
[15.1]		13.15	13.1	
[16.0]	.815	13.0	scratched	
[15.8]	.842	13.1	13.1	
[15.3]	.917	12.95	13.2	
[13.2]	.071	12.9	13.0	
[16.0-13.2]		12.9-13.3	13.0-3	

64°

81°

82°

122°

	21	22	27	28
MF 21404	12.8	12.9	.250 14.0	15.2 .632
431	12.8	13.7	.645 14.0	15.3 .470
485	13.0	13.8	.951 13.7	15.0 .491
495	12.9	13.0	.261 13.9	14.5 .139
538	13.0	13.7	.668 13.9	15.2 .665
544	13.0	13.3	.068 14.0	14.1 .940
553	13.1	13.6	.588 14.0	15.1 .715
588	13.0	13.7	.881 13.5	15.1 .491
614	13.1	13.8	.919 14.0	14.1 .940
616	13.0	13.3	.083 13.7	14.2 .056
622	13.0	13.8	.789 14.1	14.1 .987
625	13.1	13.6	.503 13.9	15.3 .777
627	13.0	13.8	.659 13.8	14.9 .889
628	13.1	12.9	.233 14.0	15.2 .725
647	13.1	13.7	.583 13.7	14.0 .970
677	13.1	13.8	.922 13.7	14.8 .324
693	13.1	13.1	.384 13.9	14.5 .080
745	13.1	13.8	.758 14.1	15.1 .335
755	13.0	13.6	.740 13.7	15.3 .884
835	12.8	13.0	.323 13.7	15.2 .401
22915	13.2	13.2	.400 14.0	14.1 .941
926	13.1	13.7	.722 13.4	15.1 .598
956	13.1	13.7	.921 14.0	15.2 .734
966	13.2	13.8	.920 13.4	15.1 .295
973	13.1	13.0	.302 14.1	14.1 .995
782	13.1	13.5	.501 13.7	14.7 .131
23017	13.1	12.9	.174 13.8	15.0 .185
150	13.0	13.3	.397 13.6	14.7 .096
337	12.9	13.9	.779 13.8	15.0 .172
403	13.0	13.7	.925 13.8	14.1 .955
	12.8-13.2	12.9-13.9	13.4-14.1	14.1-15.3

31	49	79	84
14.6	11.3	13.9	12.6
14.6	11.2	14.4	12.5
14.7	11.1	13.9	12.6
14.6	11.0	14.5	12.7
R 24711 14.7	11.3	14.3	R 24722 12.5
14.7	11.2	14.3	12.5
14.6	11.3	13.9	12.8
14.7	11.2	13.8	12.5
14.7	11.4	13.7	12.7
14.6	11.2	13.8	12.7
14.7	11.1	14.0	12.5
14.6	11.1	13.8	12.8
14.7	11.4	13.9	12.6
14.7	11.3	14.3	12.7
14.6	11.1	14.2	12.6
14.6	11.2	14.3	12.5
14.6	11.1	13.7	12.5
14.6	11.0	13.8	12.6
15.1	11.2	14.1	12.5
14.6	11.1	13.8	12.5
14.6	11.3	13.9	12.6
14.6	11.2	14.2	12.8
14.6	11.0	14.0	12.5
14.7	11.2	13.9	12.6
14.7	11.3	14.1	12.6
14.7	11.5	14.3	12.6
14.6	11.1	14.5	12.5
14.9	11.2	14.2	12.6
14.6	11.1	14.0	12.5
14.6	11.2	13.8	12.5

	112	120	123
13.1	.984	13.1	13.1
13.0	.016	13.0	12.9
13.3	.126	13.1	13.1
13.1	.130	13.1	13.1
13.9	.232	13.0	13.1
14.2	.256	13.4	13.1
15.3	.307	13.1	13.0
15.2	.315	13.1	13.2
To transit	.330	13.1	13.1
15.8		13.0	13.1
15.5	.334	13.05	13.1
15.6	.346	13.1	13.1
15.8		13.0	13.1
16.0	.350	13.0	13.1
15.7	.362	13.05	13.05
[15.1	.425	13.2	13.3
16.0	.429	13.1	13.1
[15.1	.453	13.2	13.2
16.1	.472	12.95	13.1
[16.0	.559	13.0	13.1
[16.0	.602	13.0	13.2
[15.8	.606	13.1	13.3
[16.0	.618	13.0	13.3
[15.5	.638	13.0	13.2
[16.0	.642	13.1	13.2
[15.8	.653	13.1	13.2
[15.5	.720	13.1	13.1
15.8	.866	13.1	13.1
13.7	.976	13.0	13.2
13.7	.047	13.1	13.6
[16.0-13.0		12.95-13.2	12.9-13.6

		31	22	27	28
MF 23410	13.0	R 24711 12.9	.320	R 20222 13.9	15.2 .664
437	12.9	13.7	.939	14.1	15.3 .527
452	13.0	13.0	.263	13.8	14.8 .185
462	13.0	13.8	.660	13.9	14.9 .895
471	13.0	12.7	.145	13.7	15.4 .668
24 366	12.7	12.9	.299	13.9	14.5 .893
381	12.8	13.5	.075	14.0	15.0 .300
400	12.7	13.3	.478	R 24711 13.5	14.5 .015
419	12.9	13.8	.880	13.9	15.1 .729
425	12.7	13.3	.454	13.9	15.2 .559
434	with 24711 12.7	with 24711 12.9	.254	with 20222 13.9	with 20222 14.4 .984
496	12.7	12.8	.148	14.1	14.3 .015
498	12.8	12.9	.304	13.9	14.7 .128
500	12.6	13.3	.460	13.2	15.0 .238
502	12.8	13.7	.616	13.5	15.1 .349
504	12.7	13.7	.772	13.7	15.3 .461
509	12.7	13.8	.698	14.0	15.4 .835
511	12.7	13.8	.847	14.0	14.2 .941
517	12.7	13.9	.941	14.0	15.2 .435
523	12.6	R 24711 13.2	.094	14.0	14.7 .106
528	12.8	13.3	.485	14.0	15.1 .385
534	12.7	13.2	.332	14.2	15.2 .702
553	12.9	12.8	.199	14.1	15.2 .748
620	13.0	12.9	.210	14.0	14.2 .003
633	13.0	13.4	.515	13.6	15.1 .648
648	13.0	13.8	.994	14.0	15.2 .416
673	12.9	13.7	.556	14.0	15.3 .671
688	13.1	13.7	.034	13.6	15.1 .439
697	12.9	13.6	.445	13.9	15.3 .586
699	13.0	13.7	.601	13.3	15.1 .698

12.6-13.1

31	49	79	84
14.8	11.3	13.9	12.5
14.8	11.1	14.2	12.5
14.8	11.3	13.6	12.6
14.7			12.5
14.6	11.2	14.0	12.5
14.6	11.3	14.4	12.8
14.5	11.5	13.9	12.6
14.7	11.1	14.0	12.6
14.6	11.2	13.6	12.5
14.2	11.2	13.9	12.5
14.5	11.4	13.9	12.6
14.6	11.3	14.0	12.7
14.6	11.2	14.0	12.7
14.8	11.2	13.9	12.6
14.6	11.3	14.1	12.6
14.6	11.2	14.1	12.6
14.9	11.2	14.4	12.8
14.8	11.2	14.0	12.6
14.6	11.2	13.7	12.7
14.9	11.2	14.1	12.6
14.6	11.4	14.2	12.5
14.8	11.2	14.5	12.6
14.6	11.1	13.9	12.5
14.9	11.2	13.9	12.5
14.6	11.3	14.2	12.5
14.7	11.2	13.8	12.5
14.8	11.2	14.3	12.6
14.7	11.2	13.6	12.8
14.6	11.2	14.2	12.7
14.6	11.1	14.3	12.5

	112	120	123
13.7	.051	13.1	13.6
13.7	.067	13.0	13.6
13.7	.071	13.1	13.6
13.8	.075	13.1	13.5
13.6	.079	13.1	13.6
13.1	.004	13.0	13.0
13.1	.012	13.15	13.1
13.1	.016	13.1	13.0
13.1	.019	13.1	13.0
13.2	.035	13.1	13.0
13.1	.043	13.1	12.9
13.3	.118	13.1	13.1
13.4		13.1	13.1
13.5		13.0	13.0
13.5		13.0	13.0
13.5		13.1	13.0
13.5	.122	13.0	13.0
13.5		13.0	13.0
13.5	.126	13.1	13.0
13.4	.145	13.0	13.1
13.7		13.0	13.0
13.7	.149	13.0	13.1
13.6	.153	13.0	13.0
15.0	.232	13.0	13.2
15.0	.236	13.0	13.2
14.9	.240	13.1	13.2
15.0	.248	13.0	13.2
15.2	.252	13.1	13.2
15.2	.260	13.0	13.2
15.5		13.1	13.2

218

	21	22	27	28
MF 24701	12.8	13.7	^{R24711} 13.6	15.3
703	13.0	13.8	13.8	14.2
705	13.1	13.6	13.9	14.3
711	13.0	13.7	13.9	15.0
715	13.0	12.6	13.9	15.1
717	12.9	13.0	13.9	15.0
719	13.0	13.5	14.0	15.1
757	13.0	13.6	13.9	15.0
788	13.1	13.8	13.9	15.2
804	13.1	13.2	13.8	14.1
25997	12.9	12.8	13.9	15.3
26004	12.8	12.9	14.2	15.1
012	12.8	13.6	13.6	15.2
018	12.8	13.7	^{R22002} 13.9	14.8

12.6-13.4

13.1-14.2

$$\frac{1}{p} = 2.40128$$

$$\frac{1}{p} = 1.50553$$

$$\frac{1}{p} = 1.71326$$

$$p = 0.41644$$

$$p = 0.66422$$

$$p = 0.58368$$

$$m = 13.3 \quad A = 1.0$$

$$m = 13.6 \quad A = 0.9$$

$$m = 14.7 \quad A = 1.2$$

h₂?

CL

CL

CL

red!

HV 11631

HV 11636

HV 11638

31	49	79	84
14.7	11.2	14.2	12.6
14.7	11.3	14.3	12.5
14.8	11.1	14.4	12.5
14.5	11.1	14.5	12.6
14.8	11.2	13.8	12.5
14.6	11.2	13.6	12.5
14.7	11.4	13.8	12.5
14.6	11.1	14.0	12.6
14.6	11.3	14.1	12.6
14.7	11.1	13.7	12.6
14.7	11.2	14.3	12.5
14.6	11.1	14.3	12.6
14.6	11.4	13.7	12.6
R 24711 14.6	11.2	13.7	12.6
14.5-15.1	11.0-11.5	13.6-14.6	12.5-13.0

ug

ug

ug

112	120	123
15.3	13.0	13.1
15.3	13.1	13.15
15.3	13.1	13.15
15.6	13.1	13.3
15.3	13.0	13.2
15.3	13.1	13.2
15.6	13.1	13.1
15.8	13.05	13.05
15.9	13.1	13.1
15.5	13.1	13.0
16.0	13.0	12.95
16.1	13.0	12.9
16.3	13.0	13.0

13.0-16.0

12.9-13.2

12.9-13.6

 $\frac{1}{P} = .00393015$ $P = 254.4$ $A = 3.0^+$

Long

kg

Hamster type?

1896-1939

can't get period with
just these measures

Hr 11626

Variables near Sequence F

	23 Phase		32 Phase		47 ^{Per}		59
MF 20222	13.4	.555	14.1	.052	12.7		14.4
224	13.5		14.1	.185	12.7		14.4
226	13.5	13.45	14.1	.318	12.7		14.3
228	13.4		14.1	.449	12.7		14.2
232	13.3	.558	14.1	.068	12.6		14.2
234	13.2		14.1	.201	12.6		14.4
236	13.4	13.32	14.3	.332	12.7		14.7
238	13.3		14.3	.463	12.5		14.5
240	13.4		14.4	.608	12.8		14.1
243	13.5	.568	14.5	.551	12.8		14.6
249	13.6	.605	14.3	.202	12.7		14.5
251	13.6	13.6	14.3	.333	12.5		14.7
253	13.6	R 20222	14.4	.466	12.4		14.5
255	13.6	.608	14.2	.182	12.4		14.5
257	13.6		14.3	.313	12.3		14.4
259	13.6	13.62	14.5	.450	12.7		14.1
261	13.6		14.4	.585	12.6		14.5
263	13.7		13.3	.715	12.7		14.1
265	13.6		13.6	.846	12.4		14.7
268	13.7	.610	14.3	.189	12.3		14.5
269	13.7		14.8	.330	12.2		14.6
271	13.7	13.7	14.3	.477	12.7		14.4
273	13.8		14.1	.622	12.3		14.5
275	13.6		13.1	.753	12.4		14.4
277	13.7		13.5	.884	12.6		14.6
287	13.7	.615	13.2	.730	12.4		14.5
310	13.8	.633	13.6	.890	12.5		14.3
356	14.1	.680	13.8	.926	12.2		14.1
505	15.5!	.778	14.0	.058	12.4		14.1
	13.2-45.3		13.1-14.8		12.2-8		14.1-7

87 ^{Par}	63 ^{sun} ^{int var}	71 ^{sun} ^{int var}	96 ^{sun} ^{not var}
14.1	13.3	13.6	13.5
13.9	13.3	13.6	13.4
14.0	13.3	13.6	13.5
14.0	13.3	13.6	13.5
13.8	13.3	13.6	13.6
14.0	13.2	13.6	13.6
13.9	13.3	13.6	13.6
14.0	13.3	13.5	13.6
13.8	13.3	13.6	13.6
14.1	13.3	13.6	13.3
14.05	13.3	13.6	13.6
14.1	13.2	13.6	13.5
with 24711 14.1	13.2	13.5	13.5
14.1	13.3	13.6	13.6
14.1	13.3	13.6	13.5
14.0	13.2	13.5	13.6
14.1	13.3	13.6	13.6
14.0	13.3	13.6	13.5
14.1	13.3	13.6	13.6
14.1	13.3	13.6	13.6
14.0	13.3	13.6	13.6
14.1	13.3	13.4	13.5
14.1	13.3	13.6	13.6
14.1	13.2	13.5	13.4
14.0	13.3	13.5	13.6
14.3	13.3	13.6	13.5
14.2	13.3	13.5	13.5
with 24711 14.5	13.3	13.5	13.5
14.7	13.4	13.5	13.5
13.8-14.7			

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F'

114°	utran 85	111	Phase
	11.7	14.3	.098
	11.9	14.2	.207
	11.8	13.3	.316
	11.9	13.4	.424
	11.8	14.3	.754
	11.8	14.3	.863
	11.8	14.3	.971
	11.7	14.5	.078
	11.8	14.3	.197
	11.9	14.2	.723
	11.7	14.5	.082
	11.7	14.3	.190
	with 24711		
	11.6	13.6	.299
	11.6	14.0	.708
	11.7	14.1	.816
	11.7	14.3	.928
	11.7	14.2	.039
	11.8	14.3	.147
	11.8	13.8	.254
	11.6	13.6	.358
	11.7	13.6	.474
	11.7	13.7	.594
	11.7	14.2	.713
	11.7	14.0	.821
	11.8	14.1	.928
	11.7	14.5	.088
	11.7	14.1	.721
	11.9	14.4	.968
	11.9	14.3	.155

20253

		23		32		47		59
MF	21404	13.6	.357	13.2	.772	12.1		14.0
	431	13.4	.377	14.0	.036	12.0		13.9
	485	13.2	.446	14.2	.477	12.0		14.1
	495	13.4	.449	14.5 R 20222	.414	12.2		14.1
	538	13.1	.514	13.3	.747	12.3		14.0
	544	13.2	.529	13.6	.823	12.4		14.0
	553	13.1	.561	14.6	.416	12.5		14.1
	588	13.5	.566	13.6	.854	12.7		14.1
	614	13.4	.576	14.5	.434	12.7		14.1
	616	13.3		14.5	.571	12.7		14.1
	622	13.5	.579	13.6	.840	12.8		14.2
	625	13.6	.586	14.6	.470	12.7 R 24711		14.1
	627	13.6		14.4	.601	12.6		14.1
	628	13.6	.589	13.6	.760	12.6		14.1
	647	13.6	.596	13.7	.923	12.6		14.1
	677	13.7	.636	14.1	.073	12.4		14.1
	673	13.7	.639	14.1	.137	12.6		14.1
	745	13.9	.654	14.4	.191	12.7		14.1
	755	14.0	.666	14.4	.229	12.6		14.3
	835	14.3	.721	14.3	.334	11.9		14.1
	22915	13.5	.382	14.4	.570	12.0		14.4
	926	13.6	.385	14.3	.517	12.2		14.3
	956	13.6	.392	14.5	.554	12.1		14.2
	966	13.5	.405	14.5	.616	12.3		14.2
	973	13.4	.407	14.1	.613	12.2		14.2
	982	13.4	.415	14.1	.650	12.2		14.1
	23017	13.2 R 24711	.457	13.6 R 20222	.798	12.0 R 20222		14.1 with 20222
	150	13.6	.550	13.1	.739	12.2		13.8
	337	13.8	.619	14.1	.244	12.4		14.2
	403	14.4	.664	14.3	.425	12.6		14.4
		13.1-14.4		13.2-14.6		11.9-12.8		13.8-14.4

87

14.1

14.2

14.4

14.3

14.5

14.6

14.1

14.4

14.2

14.31

14.5

14.2

14.2

14.2

14.2

14.3

14.1

14.1

14.1

14.1

14.1

14.2

14.1

14.2

14.4

14.1

14.1

14.1

13.8

13.9

13.7-14.6

85

111

11.8	13.5	.393
11.7	14.3	.755
11.6	14.4	.122
11.7	14.0	.713
11.7	14.0	.706
11.7	13.7	.627
11.8	14.4 ?	.652
11.7	13.5	.298
11.7	13.9	.525
11.8	14.0	.637
11.8	13.5	.502
11.8	14.4	.127
11.8	14.1	.235
11.75	14.2	.008
11.7	14.3	.072
11.7	13.6	.484
11.7	14.4	.179
11.7	14.3	.082
11.8	13.9 ?	.336
12.0	13.6	.561
11.8	13.6	.448
11.7	14.3	.048
11.7	14.3	.007
11.6	13.6	.274
11.7	14.3	.915
11.8	14.2	.874
11.7	14.3	.927
11.8	14.3 ?	.671
11.9	14.0 ?	.092
11.8	13.9	.815

21677

23

32

47

59

MF 23410

R 24711

14.1

.667

14.2

.433

R 24711

12.8

14.2

437

14.4

.677

14.1

.500

12.4

14.6

452

14.3

.679

14.5

.449

12.4

14.6

462

14.6

.682

14.3

.458

12.4

14.5

471

14.2

.684

14.3

.543

12.4

14.6

24 366

13.6

.271

14.5

.465

12.3

14.5

381

13.6

.276

14.5

.470

12.6

14.4

400

R 24711

13.7

.278

14.2

.486

R 20222

12.3

14.2

419

13.7

.281

14.5

.500

12.5

14.4

425

13.6

.291

14.4

.528

12.1

14.6

434

13.6

with 24711

.296

14.3

.553

12.3

14.2

496

13.4

.343

14.5

.201

12.3

14.3

498

13.4

14.6

.331

12.1

14.1

500

13.4

13.4

14.4

.462

12.3

14.3

502

13.4

14.5

.593

12.1

14.5

504

13.4

13.2

.724

12.3

14.1

509

13.6

.346

14.4

.339

12.0

14.2

511

13.6

13.6

14.2

.464

12.4

14.1

517

13.5

.348

14.6

.220

12.1

14.4

523

R 24711

13.6

13.6

.361

14.3

.411

12.0

14.2

528

13.4

13.3

.739

12.3

14.1

534

13.6

.363

14.6

.288

12.1

14.1

553

13.4

.366

13.5

.692

12.2

14.2

620

13.4

.416

13.9

.953

12.2

14.4

633

13.2

.418

13.6

.886

12.2

14.4

648

13.3

.421

13.7

.964

12.2

14.4

673

13.3

.426

13.5

.790

12.0

14.3

688

13.2

.428

13.7

.868

12.2

14.1

697

13.3

.433

14.2

.567

11.9

14.4

699

13.3

13.5

.698

11.9

14.2

13.2-14.4

13.2-14.6

11.9-12.6

14.1-14.6

87

14.0

13.8

14.0

14.0

14.1

14.1

14.1

14.05

14.1

14.05

13.9

14.1

13.9

13.9

14.0

14.0

14.1

14.0

14.1

14.0

14.1

14.1

14.1

14.0

13.8

13.9

14.0

14.0

13.9

14.05

13.8-14.1

24400

85	111
11.8	13.4 .465
11.7	14.6 .092
11.7	14.0 .693
11.7	13.5 .344
11.8	14.6 .056
11.7	13.3 .394
11.8	14.0 .685
11.8	with 24711 13.4 .341
11.8	14.4 .995
11.8	13.7 .590
11.8	14.2 .897
11.7	14.5 .825
11.7	14.5 .933
11.75	14.5 .040
11.8	14.4 .148
11.7	13.8 .255
11.8	14.0 .582
11.7	14.0 .685
11.8	14.4 .127
11.8	13.9 .499
11.7	14.3 .769
11.7	14.4 .041
11.75	14.2 .016
11.75	14.4 .092
12.0	14.0 .680
12.0	13.5 .387
11.6	13.8 .530
12.0	13.9 .237
11.7	14.0 .276
11.75	13.4 .384

	23		32		47		59
MF 24701	13.4		mid 24711 13.6	.829	mid 24722 11.8		14.1
703	13.3		13.8	.960	12.2		14.2
705	13.3		14.1	.095	12.3		14.1
711	13.4	.436	14.6	.587	11.9		14.1
715	13.2		13.6	.849	12.2		14.2
717				.979			
719	13.3		14.2	.114	11.9		14.3
757	13.3	.476	14.0	.986	12.1		14.2
788	13.3	.488	14.2	.190	12.2		14.4
804	13.5	.493	14.1	.179	12.2		14.6
25997	14.1	.174	14.1	.062	12.5		14.0
26004	14.0	.177	13.6	.814	12.4		13.9
012	14.1		14.5	.342	12.4		14.0
018	14.0	.179	13.8	.023	12.2		14.0

13.1-15.5
 $\log 24958$
 $1/p = .0025153$
 400.7
 $p = 397.6$
 $A = > 2.4$

Long
 1890-1939

HV 11640

13.1-14.6
 $1/p = 2.01365$
 $p = 0.49661$
 $m = 13.8$ $A = 1.2$

Q

HV 11637

11.8-12.8
 $1/p = .0074074$
 $p = 135.3$
 $A = 0.6$

Hann Type

red star

HV 11634

13.5-14.7

Hannbata Type?
 need measures on
 longer period than

87

13.8

14.0

13.9

13.9

14.0

13.9

14.1

13.9

14.1

14.0

13.9

13.9

14.0

13.6-14.7

 $p = 300^{\circ}$ $A = 0.7$

Humboldt type

	85	111
24701	11.7	13.9 .491
703	11.9	13.7 .599
705	11.8	13.8 .710
711	11.75	14.0 .935
715	11.9	14.2 .150
717	11.9	14.0 .258
719	11.8	13.5 .369
757	11.81	13.6 .552
788	11.8	14.5 .935
804	11.7	14.3 .212
25997	11.8	14.4 .954
26004	11.8	13.3 .393
012	11.75	14.3 .826
018	11.6	14.3 .208

$$\gamma_p = 1.65426$$

$$p = 0.60450$$

$$m = 13.9 \quad A = 1.0$$

HV 11625

Variables near Sequence G

		4	Phase	16	Phase	37 (KXGn)	76 (V357 Cn)
MF 20222	13.0	13.1	.194	12.7	12.6	.414 12.65	13.6
224	13.5		.338	12.8	12.7	.521 12.75	13.9
226	13.5	with 20222	.482	12.8	12.7	.629 12.75	14.0
228	14.0		.624	12.8	12.6	.734 12.9	14.3
232	13.5		.375	13.1	13.2	.043 13.15	13.2
234	13.6		.519	13.4	13.4	.151 13.4	13.5
236	13.7		.661	12.9	13.1	.256 13.0	13.9
238	14.1		.802	12.7	12.7	.362 12.7	14.2
240	13.9		.959	12.8	12.8	.480 12.9	14.3
243	13.6		.553	12.7	12.8	.902 12.75	14.2
249	13.9		.631	12.7	12.7	.874 12.7	13.9
251	13.8		.772	12.8	12.8	.980 12.9	13.1
253	13.9	R20222	.916	13.2	13.2	.087 13.2	13.5
255	13.9		.772	12.8	12.9	.474 12.95	14.5
257	14.0		.914	13.0	13.2	.580 13.1	14.3
259	13.4		.062	12.8	12.7	.691 12.75	14.5
261	12.8	12.9	.208	12.8	13.1	.800 12.95	13.1
263	13.5		.350	12.7	12.6	.905 12.65	13.2
265	13.6		.491	13.0	13.0	.011 13.0	13.7
268	13.9		.944	13.4	13.3	.097 13.35	13.9
269	13.3		.097	12.9	12.6	.211 12.75	14.2
271	13.4		.256	12.7	12.6	.330 12.65	14.3
273	13.5		.413	12.8	12.8	.447 12.8	14.4
275	13.7		.554	12.7	13.0	.553 12.85	14.4
277	13.8		.696	13.0	13.1	.659 13.05	13.5
287	13.9		.857	12.7	12.7	.768 12.7	13.6
310	13.0	12.8	.176	12.8	12.8	.216 12.9	14.4
356	13.3	R20222	.324	12.8	12.8	.967 12.9	13.6
505	14.0	R20222	.851	13.1	12.8	.134 12.95	14.4

12.8-14.1

12.7-13.4

13.1-14.5

13.6-14.7

	^{Per} 93 (H28400)		97 not ran.		107 not ran.		13?
14.1	.541	13.7			13.9		
14.5	.652	13.7			14.0		
14.5	.755	13.8			13.8		
14.6	.857	13.8			13.9		
14.7	.111	13.7			14.0		
15.2	.214	13.8			13.7		
13.9	.316	13.8			13.9		
13.9	.417	13.8			14.0		
14.1	.529	13.8			13.85		
14.4	.685	13.85			13.85		
14.5	.660	13.8			13.95		
14.7	.761	13.9			13.9		
14.8	.864	13.8			13.9		
15.1	.194	13.85			13.9		
14.0	.295	13.85			13.95		
13.9	.401	13.8			14.0		
13.9	.506	13.8			13.8		
14.3	.607	13.8			13.9		
14.3	.709	13.8			13.9		
14.3	.749	13.8			13.9		
14.7	.858	13.8			14.0		
14.7	.972	13.8			13.9		
14.7	.085	13.8			13.9		
15.2	.186	13.8			13.95		
14.2	.288	13.8			13.85		
14.3	.268	13.8			13.85		
14.8	.240	13.8			13.9		
14.6	.712	13.85			13.95		
14.7	.252	13.85			14.0		

MTH 20222

40

66

89

19388

	4		16		37		76	
MF 21404	14.0	.846	12.7	12.6	.265 12.65	14.5	14.7	
431	13.6	.441	12.7	12.6	.415 12.65	14.5	14.5	
485	13.6	.502	13.0	13.2	.045 13.1	14.3	14.1	
495	13.7	.597	12.9	13.2	.611 13.05	13.3	14.3	
538	13.0	12.8 .213	12.8	13.3	.920 13.05	13.8	14.3	
544	13.3	.278	13.1	13.2	.683 13.15	14.3	14.3	
553	13.9	.966	12.7	12.8	.375 12.75	14.5	14.4	
588	13.8	.767	12.8	12.7	.963 12.75	14.4	14.5	
614	13.9	.967	13.3	13.4	.091 13.35	13.1	14.8	
616	13.4	.115	13.2	13.4	.201 13.3	13.6	14.7	
622	13.8	.570	13.0	12.8	.036 12.9	13.3	14.7	
625	13.9	.661	13.1	13.1	.588 13.1	13.5	14.5	
627	14.0	.803	12.8	13.0	.694 12.9	13.1	14.7	
628	13.2	.138	12.8	12.8	.439 12.8	13.8	14.7	
647	13.8	.806	12.7	12.9	.422 12.8	13.8	14.6	
677	13.9	.587	12.8	12.9	.414 12.85	13.6	14.3	
693	13.9	.820	13.6	13.6	.083 13.6	14.5	14.7	
745	13.9	.861	13.0	13.1	.828 13.05	13.5	14.4	
755	46	.731	76	—		14.6	14.2	
835	13.6	.435	12.9	12.7	.601 12.8	14.3	14.0	
22915	13.5	.396	12.8	12.9	.513 12.85	13.9	13.6	
926	13.6	.502	13.4	13.3	.087 13.35	13.5	13.6	
956	13.9	.033	12.8	13.0	.967 12.9	13.3	13.5	
966	13.9	.919	13.5	13.5	.102 13.5	14.6	13.6	
973	13.5	.080	13.0	13.2	.717 13.1	14.3	13.6	
982	13.6	.611	13.2	13.1	.598 13.15	14.4	13.5	
23017	13.8	.554	13.5	13.4	.205 13.45	13.7	14.2	
150	13.8	.547	12.8	13.0	.984 12.9	14.0	13.7	
337	13.9	.676	13.1	13.3	.667 13.2	14.5	13.9	
403	13.9	.819	12.8	12.7	.918 12.75	14.5	14.3	
	13.6-14.0		12.7-13.6			13.1-14.6	13.5-14.8	

	93	97	107
14.5	.657	13.85	14.0
14.7	.260	13.9	14.0
14.6	.993	13.8	13.9
14.0	.494	13.85	13.9
15.0	.044	13.85	13.9
13.8	.401	13.8	13.8
15.2	.232	13.85	13.95
14.6	.671	13.85	14.2
14.3	.544	13.9	14.1
14.3	.650	13.9	13.95
13.9	.409	13.85	13.9
14.4	.771	13.85	13.85
14.6	.872	13.85	13.9
14.2	.545	13.8	13.85
13.95	.321	13.85	14.0
15.1	.233	13.85	14.0
14.7	.832	13.85	13.95
14.7	.172	13.85	13.9
14.3	14.4 .957	13.8	13.9
14.7	.124	13.7	14.1
14.7	.071	13.85	14.0
14.2	.579	13.85	13.95
14.6	.257	13.85	13.9
14.8	.054	13.85	13.9
14.3	.602	13.85	13.95
14.3	.279	13.85	14.0
14.5	.739	13.85	13.9
14.7	.032	13.9	13.9
14.7	.815	13.85	13.9
14.7	.850	13.8	13.9

	4	16	37	76
MF 23410	14.0	.991	12.9 12.7	14.3 13.9
437	14.0	.718	12.8 12.8	14.2 14.2
452	14.0	.826	12.9 13.0	13.4 14.0
462	13.8	.001	13.0 13.3	14.4 14.0
471	13.3	.255	12.9 12.7	14.5 14.3
24366	13.8	.967	13.4 13.5	13.7 14.2
381	13.4	.300	12.8 12.8	14.3 14.0
400	13.6	.480	12.7 12.7	14.2 14.2
419	13.9	.659	13.0 12.9	13.5 14.3
425	13.2	.344	13.4 13.4	13.5 13.9
434	14.0	.699	13.0 12.8	14.4 14.3
496	13.6	.428	12.8 13.0	13.4 14.6
498	13.8	.569	12.8 12.7	13.5 14.6
500	14.0	.711	12.7 12.6	13.4 14.6
502	13.8	.852	13.4 13.4	14.0 14.7
504	13.9	.994	13.1 13.4	14.3 14.6
509	13.9	.741	12.8 12.7	14.3 14.6
511	13.9	.876	12.8 12.8	13.8 14.6
517	13.7	.776	12.8 12.7	14.0 14.6
523	13.9	.801	12.8 12.7	13.5 14.7
528	13.0 12.9	.156	12.9 12.8	14.3 14.4
534	14.0	.837	12.8 12.7	14.4 14.7
553	13.5	.432	13.1 12.9	14.2 14.5
620	14.0	.988	13.0 13.0	14.3 14.1
633	13.6	.080	12.8 12.6	12.7 13.6
648	13.5	.328	12.8 12.6	12.7 13.3
673	13.6	.467	13.0 12.8	12.9 13.9
688	13.8	.715	12.8 12.6	12.7 13.4
697	13.9	.717	12.8 12.7	12.7 14.0
699	14.0	.859	12.8 12.8	12.8 14.3
	13.2-14.0		12.7-13.4	13.4-14.5

93			97			107		
R 24711								
13.8		.406	13.85			13.9		
14.4		.656	13.8			14.1		
14.9		.167	13.8			13.95		
14.4		.724	13.8			13.9		
14.0		.339	13.85			14.2		
14.3		.554	13.85			14.1		
14.5		.658	13.85			13.9		
15.2		.220	13.85			R 20222		
14.7		.780	13.85			14.1		
15.0		.001	13.85			13.95		
14.3	14.7	.120	13.85			13.9		
15.0	14.5	.291	13.9			14.0		
14.7	13.8	.392	13.9			13.9		
14.1		.494	13.85			13.9		
14.2		.595	13.9			14.0		
14.6		.696	13.9			13.95		
14.6		.948	13.85			13.9		
15.0		.045	13.9			13.9		
13.8		.405	13.9			13.9		
R 24711			R 20222					
14.3		.302	13.9			13.95		
14.2		.556	13.9			13.9		
14.6		.756	13.9			14.0		
14.3		.619	13.8			14.0		
14.5		.815	13.85			13.95		
14.8	14.3	.313	13.85			13.9		
14.7		.923	13.8			13.85		
14.4	14.7	.888	13.85			13.95		
13.8		.498	13.85			13.9		
13.8		.364	13.85			14.0		
13.9		.466	13.9			13.9		

	4	16	37	76
MF 24701	14.0	.000	12.9 12.7	13.9
703	13.2	.142	12.9 12.7	14.0
705	13.1	.288	12.9 12.7	13.9
711	14.0	.902	12.7 12.7	13.9
715	13.2	.185	13.1 13.0	13.9
717	13.5	.327	13.0 13.1	13.9
719	13.6	.473	12.8 12.6	13.8
757	14.0	.953	13.4 13.1	13.8
788	13.9	.992	12.9 12.6	13.9
804	13.4	.307	12.9 12.8	14.3
25997	12.9 12.9	.197	13.4 13.4	14.0
26004	13.6	.092	12.9 12.7	13.9
012	14.0	.663	12.8 12.6	14.1
018	13.6	.482	12.7 12.6	14.2

	13.6-14.1	12.7-13.6	13.5-14.8
γp	$\gamma p = 2.17846$	$\gamma p = 1.62797$	Martini's period
p	$p = 0.45904$	$p = .61426$	checkers
in A q m m	in = 13.45 A = 1.0	A = 0.7	13.8-14.7
Type	CE	Ed	Sunneq
	HV 11658	HV 11661	Hand measures on longer period 7 min
			HV 11635

93		97		107	
14.3		.567	13.9		13.9
14.4		.668	13.9		14.2
14.7		.773	13.85		13.95
15.1	14.9	.929	13.8		13.9
14.9		.132	13.9		14.2
15.2		.233	13.65		13.9
13.9		.338	13.8		13.9
15.0		.034	13.65		14.0
15.1	14.9	.940	13.65		13.95
15.0		.031	13.65		14.1
14.8		.104	13.8		13.9
13.9		.461	13.9		14.2
14.7		.870	13.85		13.95
14.9		.173	13.9		13.9

13.7-9

13.7-14.2

$$\frac{1}{p} = 1.56028^{66}$$

$$p = 0.640916$$

$$m = 14.45 \quad A = 1.2$$

ca

mg

mg

HV 8400

Variables near Sequence H

	29 not van	42	Phase	(HV8416) 61	Phase	110 not van
MF 20222	13.45	13.9	.914	13.75	.912	13.5
224	13.6	14.3	.039	13.75		13.55
226	13.4	14.1	.164	13.7	13.75	13.65
228	13.1	14.1	.287	13.7		76
232	13.2	13.75	.809	13.8	.916	13.6
234	13.3	13.9	.934	13.75		13.7
236	13.2	14.0	.057	13.7	13.75	13.6
238	13.2	14.1	.180	13.7		13.7
240	13.3	14.1	.317	13.8		13.7
243	76 →		.785		.930	
249	13.2	13.5	.662	14.2	.982	13.65
251	13.4	13.65	.786	14.0	14.05	13.55
253	13.4	13.8	.910	13.95		13.65
255	13.3	14.1	.523	14.0	.986	13.7
257	13.2	13.2 13.3	.647	14.2		13.65
259	13.2	13.65	.775	14.2	14.1	13.6
261	13.2	13.8	.902	13.7		13.65
263	13.0	14.0	.025	14.2		13.65
265	13.1	14.0	.148	14.3		13.6
268	13.1	14.1	.411	14.2	.989	13.6
269	13.5	14.0	.543	14.1		13.5
271	13.4	13.6	.682	14.1	14.15	13.5
273	13.2	13.7	.818	14.1		13.6
275	13.3	13.9	.941	14.1		13.55
277	13.2	14.0	.064	14.3		13.6
287	13.3	13.55	.680	14.3	.996	13.55
310	13.2	13.95	.993	14.3	.021	13.55
356	13.3	13.7	.753	13.6	14.8	13.4
505	13.4	14.2	.211	14.5	15.5	13.35
	13.2-14	13.2-14.3		13.6-14.5		13.4-.7

62 sm

105 sm

117 sm

20

58

4'

seg. 7/6 →

14.3	13.3	13.2	10.9
14.3	13.3	13.3	10.9
14.2	13.4	13.3	10.9
14.3	13.4	13.2	11.0
14.2	13.4	13.3	11.0
14.2	13.4	13.3	11.0
14.3	13.4	13.4	11.0
14.3	13.3	13.3	11.0
14.2	13.4	13.4	11.0
			11.1
14.3	13.4	13.4	11.1
14.2	13.4	13.3	11.0
14.3	13.3	13.3	11.1
14.3	13.4	13.3	11.0
14.3	13.3	13.3	11.1
14.3	13.3	13.3	11.1
14.2	13.4	13.3	11.0
14.2	13.4	13.4	10.9
14.2	13.4	13.5	10.9
14.3	13.4	13.4	11.0
14.2	13.3	13.3	11.0
14.2	13.3	13.3	11.0
14.3	13.3	13.3	10.9
14.2	13.4	13.3	10.8
14.2	13.4	13.3	11.1
14.3	13.4	13.3	11.0
14.2	13.4	13.3	11.1
14.2	13.3	13.3	10.9
14.2	13.3	13.2	11.0

118

	29	42	61	110
MF 21404	13.4	14.0	.946 14.8 15.3 .040 13.4	
431	13.2	14.2	.237 15.0 15.4 .068 13.65	
485	13.2	14.15	.302 [15.0 15.5] .166 13.7	
495	13.4	14.2	.123 [15.0 15.6] .170 13.5	
538	13.2	14.0	.325 [15.0 15.5] .261 13.8	
544	13.2	13.4	.679 [15.0 15.5] .282 13.7	
553	13.2	13.55	.741 [15.0 15.6] .328 13.6	
588	13.1	13.75	.914 [15.0 15.5] .335 13.65	
614	13.6	14.0	.040 14.8 15.4 .349 13.55	
616	13.55	14.1	.168 14.8 15.4	13.5
622	13.2	14.0	.302 — [15.5] .353 13.65	
625	13.4	13.6	.595 [14.8 15.5] .363 13.65	
627	13.2	13.6	.718 [14.8 15.5]	13.6
628	13.4	13.6	.748 [15.0 15.5] .367 13.6	
647	13.2	13.95	.543 [15.0 15.5] .377 13.25	
677	13.3	13.6	.770 14.6 [15.6] .433 13.9	
693	13.4	13.5	.710 [15.0 15.5] .437 13.95	
745	13.2	14.0	.043 [15.0 15.5] .458 13.7	
755	76 →		.490 — .476	
835	13.3	13.8	.947 [15.0 15.5] .553 13.4	
22915	13.2	14.1	.223 [15.0 15.5] .484 76	
926	13.1	13.9	.054 [15.0 15.1] .487 76	
956	13.3	13.6	.730 [14.8 15.4] .498 13.65	
966	13.1	14.0	.190 [14.8 15.0] .516 76	
973	13.1	13.85	.068 [14.8 15.5] .519 76	
982	13.2	13.4	.744 [14.8 15.5] .530 76	
23017	13.1	13.7	.849 14.8 15.4 .589 76	
150	13.1	14.3	.367 13.4 13.4 .719 13.65	
337	13.7	14.1	.491 13.7 13.6 .818 76	
403	13.3	14.1	.508 13.75 13.7 .881 13.7	

Do not
use
↓Second measure done
after adjustment of
sequence.

H¹

11.0
10.9
11.1
11.0
11.1
11.1
11.1
11.1
11.0
11.1
11.4
10.9
11.1
10.9
11.3
11.0
11.1
11.2
—
11.1
11.1
11.1
11.0
11.2
11.2
11.2
11.2
10.9
11.1
11.1

	29	42	61	110
MF 23410	13.2	14.2	.396 13.8	.884 13.7
437	13.7	13.9	.980 13.8	.898 13.7
452	13.2	13.7	.812 13.8	.902 13.65
462	13.1	13.2 13.3	.702 14.0	.905 13.7
471	13.3	13.4	.661 13.85	.909 13.7
24366	13.3	14.0	.233 13.1	.735 13.7
.381	13.1	13.9	.999 13.2	.742 13.65
400	13.3	13.8	.894 13.2	.745 13.65
419	13.2	13.65	.787 13.2	.749 13.7
425	13.2	14.1	.335 13.3	.763 13.65
434	13.2	14.0	.120 13.2	.770 13.65
496	13.3	14.1	.515 13.5	.837 13.4
498	13.2	13.5	.638 13.6	13.55
500	13.2	13.65	.761 13.6	13.4
502	13.2	13.75	.884 13.6	13.65
504	13.1	13.85	.007 13.55	13.4
509	13.3	14.2	.525 13.55	.840 13.4
511	13.2	13.3	.643 13.5	13.4
517	13.2	14.1	.293 13.4	.844 13.3
523	13.2	13.8	.875 13.6	.861 13.5
528	13.2	14.0	.183 13.65	13.6
534	13.4	13.6	.639 13.65	.865 13.4
553	13.2	13.75	.900 13.65	.868 13.6
620	13.2	13.5	.752 14.1	.938 13.6
633	13.2	13.9	.570 14.1	.942 13.6
648	13.4	14.1	.523 14.1	.945 13.6
673	13.2	14.2	.121 14.2	.952 13.6
688	13.3	14.0	.074 14.3	.956 13.7
697	13.3	14.0	.552 14.3	.963 13.6
699	13.2	13.4	.675 14.3	13.65

H'

122

29

42

61

110

MF 24701

13.2

with 24701
13.55

.798

14.2

13.55

703

13.55

13.8

.921

14.2

13.7

705

13.6

14.0

.648

14.3

13.7

711

13.4

14.3

.451

14.5

.967

13.6

715

13.1

13.55

.697

14.3

13.65

717

13.3

13.7

.820

14.3

14.55

13.7

719

13.3

13.8

.947

14.3

13.7

757

13.2

13.8

.912

14.8

.023

13.55

788

13.2

14.2

.505

15.01

.040

13.6

804

13.3

14.2

.256

15.01

.047

13.65

25997

13.1

14.2

.244

14.3

.006

13.65

26004

13.3

13.8

.891

14.6

.010

13.5

012

13.2

14.1

.387

14.7

13.6

018

13.2

14.0

.968

14.7

.013

13.4

13.1-7

13.2-14.5

13.1-15.0

13.2-7

 $\chi^2_p = 1.89319$ $\chi^2_p = 0.0351604$ $p = 0.52821$ $P = 284.4$ $m = 13.8 \quad A = 0.8$

13.3-15.5

Cl

Long

mg

1897-1939

HV 11669

HV 8416

rt'

Variables near Sequence I

	12	Phase	14	Phase	15	hot var	36	Phase
MF 20222	12.4	.887	16.0	.828	14.0		14.9	.465
224	13.4	.062	16.0		14.1		14.8	.577
226	12.8	.237	16.0		14.1		14.0	.690
228	12.8	.408	16.0		14.2		14.3	.801
232	13.3	.535	15.8	.831	14.1		14.6	.170
234	12.6	.710	16.0		14.2		14.8	.282
236	12.4	.882	15.9		14.2		14.8	.393
238	13.5	.054	15.9		14.2		14.8	.504
240	12.7	.244	15.0		14.0		14.1	.626
243	12.8	.681	16.0	.844	14.2		14.7	.345
249	13.1	.635	[15.8	.893	14.1		14.9	.425
251	12.6	.807	[15.8		14.2		14.8	.535
253	13.0	.981	15.9		14.0		14.3	.648
255	12.7	.235	16.0	.896	14.0		14.8	.099
257	12.8	.407	16.0		14.3		14.8	.210
259	13.5	.587	16.0		14.0		14.6	.325
261	12.7	.764	15.8		14.1		14.7	.440
263	12.9	.936	16.0		14.3		14.8	.550
265	13.2	.108	16.0		14.2		14.1	.661
268	12.5	.873	[16.0	.900	14.1		14.0	.797
269	13.4	.058	16.0		14.0		14.5	.916
271	12.6	.251	16.0		14.0		14.4	.041
273	12.9	.442	16.0		14.2		14.6	.163
275	13.2	.614	[16.0		14.1		14.7	.274
277	12.7	.786	[15.8		14.0		14.8	.385
287	12.6	.838	16.0	.906	14.3		14.3	.638
310	13.1	.441	16.0	.929	14.0		14.7	.614
356	12.6 with noise	.411	15.9 with noise	.991	14.3 with noise		scratch	.786
505	13.4	.057	14.0	.118	14.3		14.5	.871

12.4-13.5

14.0-16.0

14.0-1.3

14.1-1.9

	56 Phase		74 Phase		77 not var		88 Phase
12.9	.339	15.5	.268	13.9		15.4	.240
12.7		15.5	.373	14.0		15.4	.334
12.4		15.1	.479	13.9		15.3	.428
12.4		15.5	.582	14.0		15.4	.521
12.5	.343	14.6	.866	14.1		15.8	.671
12.5		14.4 ^{defect}	.972	13.9		15.5	.765
12.5		15.1	.075	14.2		14.7	.858
12.6		15.2	.179	13.9		14.7	.951
12.5		15.2	.294	13.9		15.1	.054
12.5	.357	15.2	.593	14.1		15.6	.696
13.3	.429	15.3	.103	13.9		15.7	.753
13.4		15.2	.207	14.1		14.7	.846
R20222		15.5	.312	14.2		14.6 ^{with 2471}	.940
13.4	.434	14.8	.673	13.9		15.2	.159
13.4		14.6	.777	13.9		15.4	.252
13.4		14.7	.885	14.0		15.5	.349
13.4		15.1	.992	14.2		15.4	.445
13.4		15.3	.096	13.9		15.7	.538
13.4		15.3	.200	14.1		15.7	.631
13.3	.438	15.3	.265	13.9		15.6	.585
13.6		15.4	.376	13.9		15.7	.685
13.4		15.3	.493	13.9		15.2	.789
13.5		14.6	.608	14.0		14.5	.892
13.4		14.5	.712	14.0		14.8	.985
13.3		14.4	.815	13.9		15.0	.078
13.5	.447	14.8	.865	14.1		15.0	.809
13.7	.479	15.3	.093	14.0		14.7	.865
R20222		15.3	.252	13.9		14.7	.877
14.3	.565						
16.0	.742	15.4	.203	14.4		15.4	.364
12.4-16.0		14.4-15.5		13.9-14.4		14.5-15.8	

	79	Phase	108	115	77
14.6	.834	15.0		14.5	
14.5	.945	14.3		14.6	
14.6	.056	14.5		14.8	
14.6	.165	14.7		14.5	
14.5	.520	14.6		14.8	
14.6	.631	14.6		14.5	
14.6	.741	14.3		14.5	
14.7	.850	14.7		14.5	
14.7	.971	14.4		14.6	
14.6	.618	14.8		14.6	
14.7	.426	14.8		14.8	
14.5	.535	14.3		14.6	
14.4	.646	14.8		14.6	
14.7	.082	14.6		14.7	
15.0	.191	14.7		14.6	
14.7	.306	14.4		14.5	
14.5	.419	14.7		14.4	
14.6	.528	14.5		14.4	
14.7	.638	14.3		14.5	
14.6	.762	14.2		14.4	
14.8	.879	14.8		14.5	
14.7	.002	14.4		14.7	
14.7	.124	14.6		14.7	
15.0	.233	14.6		14.7	
14.7	.343	14.4		14.6	
14.6	.561	14.5		14.6	
14.6	.408	14.7		14.7	
15.4	.231	14.6		14.6	
14.6	.601	14.6		14.6	
14.4-15.4		14.2-15.0		14.4-.8	

87

	12		14		15		36
MF 21404	13.2	.521	[16.0]	.874	14.0	14.7	.472
431	12.8	.888	[16.0]	.900	13.95	14.7	.229
485	13.3	.038	[16.0]	.991	13.9	14.7	.967
495	13.2	.583	[16.0]	.995	14.0	14.6	.605
538	12.8	.335	16.0	.079	13.95	14.3	.869
544	13.1	.200	16.0	.099	13.9	14.6	.083
553	(13.1)	12.6	.824	.141	14.1	14.0	.731
588	13.1	.654	15.7	.148	13.9	14.8	.485
614	13.1	.612	15.7	.161	14.1	14.2	.895
616	12.7	.792	15.4		14.1	14.5	.011
622	12.4	.773	15.6	.164	13.9	14.3	.931
625	13.1	.170	15.5	.174	14.0	13.9	.693
627	12.6	.342	15.5		14.0	13.9	.803
628	12.9	.178	15.5	.177	14.0	14.1	.629
647	12.5	.275	15.3	.187	14.0	14.3	.843
677	12.9	.513	13.7	.239	14.0	14.3	.036
693	12.9	.224	13.8	.242	14.0	14.3	.781
745	13.4	.060	13.2	.262	13.95	14.6	.977
755	13.0	.261	76	.278	76	14.8	.476
835	12.7	.191	12.8	.350	13.9	14.2	.772
22915	13.4	.047	13.6	.214	13.9	14.3	.637
926	13.4	.605	13.4	.217	13.9	14.8	.284
956	13.4	.536	13.5	.227	13.9	14.7	.390
966	12.6	.756	13.1	.243	13.9	14.5	.901
973	12.9	.380	12.9	.246	13.8	14.7	.591
982	12.8	.311	12.5	.256	13.9	13.9	.697
23017	13.3	.173	12.0; 12.4711	.311	13.9	14.7	.579
150	12.6	.313	12.0	.432	13.9	14.6	.120
337	13.3	.547	13.2	.523	13.9	14.3	.913
403	13.4	.081	13.9	.582	13.9	14.8	.516

12.4-13.4

12.0-16.0

13.5-14.1

13.9-14.8

56		74		77		88	
[16.0	.794	14.8	.058	14.0		15.7	.523
[16.0	.830	14.8	.954	13.9		15.0	.073
[16.0	.957	14.1	.706	14.0		15.3	.156
16.0 with 24711	.961	15.3 with 24711	.242	13.8		15.5	.531
14.7	.079	14.6	.737	14.0		15.7	.697
13.9	.107	15.4	.312	14.0		15.3	.273
12.5	.165	15.4	.605	14.1		15.6	.448
12.4	.175	15.2	.124	14.0		15.6	.600
12.5	.193	15.1	.134	13.9		14.9	.983
12.3 12.0		15.1	.243	14.0		15.1	.080
12.2 12.0	.197	15.3	.042	13.9		15.7	.692
12.4 with 24711	.211	15.6	.506	13.9		15.6	.690
12.5		15.3	.610	13.9		15.5	.783
12.4	.215	15.4	.322	14.0		15.4	.316
12.4	.229	15.4	.209	14.0		15.6	.693
12.9	.301	14.4	.701	13.9		15.4	.525
13.0	.306	15.3	.337	14.2		14.8	.991
13.2	.333	14.7	.895	14.1		15.6	.551
76	.356	76	.862	14.21		15.71	.687
14.0	.456	14.5	.825	13.9		15.1	.002
15.8	.657	15.3	.425	14.0		15.5	.402
15.9	.661	14.9	.969	14.1		15.1	.785
15.8	.675	14.7	.756	15.0		14.8	.072
scratch	.698	14.5	.734	14.1		15.3	.218
16.0	.702	15.2	.318	14.1		15.6	.637
16.0	.716	15.1	.105	14.0		14.7	.924
[16.0	.793	15.2	.181	13.9		15.1	.175
14.9	.961	14.8	.809	14.2		15.7	.685
12.9	.088	15.4	.613	14.0		15.0	.814
12.0; 11.6	.169	15.4	.301	14.1		15.3	.509
12.0; -11.6		14.1-15.6		13.8-14.2		14.7-15.7	

	99	108	115
14.5	.921	14.5	14.5
14.7	.529	14.6	14.8
14.7	.751	14.5	14.7
14.5	.372	14.6	14.5
14.7	.156	14.6	14.7
15.0	.260	14.9	14.7
14.6	.673	14.6	14.7
14.7	.386	14.7	14.6
14.6	.728	14.7	14.7
14.6	.842	14.7	14.9
14.8	.751	14.7	14.7
14.8	.452	14.9	14.7
14.7	.561	14.6	14.7
14.7	.367	14.3	14.6
14.8	.524	14.7	15.2
14.9	.423	14.6	14.7
14.8	.150	14.6	14.6
15.2	.235	14.8	14.7
14.6	.642	14.5	14.8
14.7	.534	14.7	14.6
14.7	.510	14.6	14.5
14.7	.139	14.6	14.6
14.8	.190	14.6	14.7
14.7	.609	14.6	14.7
14.8	.280	14.6	14.5
14.6	.331	14.5	14.6
14.7	.901	14.3	14.4
14.5	.765	14.5	14.8
14.6	.041	14.6	14.7
14.7	.312	14.6	14.8
14.5-15.2		14.3-14.9	14.4-15.2

	12		14		15		36
MF 23 410	12.6	.718	13.9	.585	13.9	R 24711 14.8	.214
437	12.7	.316	13.9	.598	13.9	14.6	.037
452	12.7	.877	14.0	.601	14.0	13.9	.686
462	13.2	.517	13.9	.605	13.9	14.8	.385
471	12.8	.255	14.1	.608	13.9	14.8	.148
24366	12.4	.875	12.0	.374	13.8	14.6	.000
381	13.3	.137	12.3	.380	13.9	14.8	.388
400	12.4	.785	12.2	.384	13.9	R 24711 14.5	.093
419	12.7	.430	12.1	.387	13.9	14.0	.796
425	12.8	.978	12.1	.400	13.85	14.7	.586
434	12.7	.266	12.1	.406	13.9	14.6	.991
496	12.8	.725	13.2	.468	13.9	14.3	.834
498	12.7	.897	13.1		13.9	14.6	.944
500	13.5	.069	12.9		13.9	14.7	.055
502	12.8	.241	12.8		13.8	14.8	.166
504	12.8	.413	12.7		13.8	14.7	.276
509	13.2	.535	13.3	.472	13.9	14.3	.642
511	12.9	.699	13.0		13.9	14.0	.748
517	12.8	.006	13.2	.475	13.9	14.8	.233
523	12.8	.394	13.4	.491	13.9	14.1	.853
528	12.5	.825	13.4		13.8	14.8	.131
534	12.7	.860	13.4	.494	13.9	14.8	.440
553	13.4	.018	13.1	.498	13.8	14.7	.474
620	12.7	.912	13.9	.563	13.8	14.9	.527
633	12.7	.451	13.9	.566	13.9	14.8	.162
648	12.7	.181	13.85	.569	13.9	14.5	.920
673	13.0	.208	13.9	.576	13.9	14.8	.156
688	12.7	.938	13.9	.579	13.8	14.3	.914
697	12.6	.798	13.9	.586	13.9	14.6	.043
699	12.8	.969	14.0		13.9	14.7	.153
	12.4-13.5		12.0-14.1		13.8-14.0	13.9-14.9	

	56		74		77		88
12.0'	12.0	.174	14.8	.893	14.1	14.7	.935
12.0'	11.9	.192	15.3	.289	14.0	15.4	.663
12.0'	12.0	.196	14.7	.834	14.0	15.0	.048
]12.0	11.7	.201	15.3	.428	14.0	15.6	.475
]12.0	11.9	.205	15.3	.080	14.0	14.9	.955
12.6		.271	14.4	.858	14.1	15.6	.522
12.6		.280	15.0	.033	14.2	15.6	.366
12.5		.284	15.1	.632	14.0	15.1	.798
13.0		.289	15.3	.228	14.0	15.3	.228
12.6		.307	15.4	.594	14.0	14.7	.929
12.6		.316	14.3	.786	14.1	14.8	.788
13.9		.402	14.6	.637	14.0	15.7	.524
13.8			14.3	.740	13.9	15.6	.617
13.9			14.6	.844	14.0	15.6	.710
14.0			15.0	.948	14.0	14.9	.803
13.9			15.1	.052	14.0	14.9	.896
13.9		.407	15.3	.332	14.1	14.8	.043
13.8			15.3	.431	14.0	15.2	.131
13.9		.411	14.4	.823	14.0	15.6	.378
14.0		.434	14.8	.904	14.0	15.5	.616
14.1			15.3	.164	14.0	14.6	.849
14.0		.439	15.4	.392	14.2	14.7	.949
14.1		.443	15.4	.298	14.0	15.6	.656
15.5		.534	15.2	.222	14.0	15.6	.248
15.2		.538	14.7	.754	14.0	15.7	.621
15.4		.543	15.3	.402	14.0	15.2	.097
15.5		.552	15.1	.436	14.0	14.8	.814
15.6		.556	15.2	.084	14.0	15.5	.290
15.7		.565	14.7	.017	14.0	14.6	.917
15.6			15.1	.120	14.0	15.0	.010
]12.0 - 15.7		14.3 - 15.4		13.9 - 14.2		14.6 - 15.7	

	99	108	115
14.6	.992	14.7	14.7
14.8	.741	14.7	14.7
14.5	.372	14.7	14.7
14.7	.053	14.5	14.7
14.7	.797	14.6	14.7
14.6	.312	14.7	14.5
14.5	.663	14.3	14.5
14.5: <i>scratch thru *</i>	.349	14.6	14.8 <i>with 2022v</i>
14.7	.034	14.7	14.7
14.7	.751	14.6	14.6
14.5	.119	14.6	14.6
14.6	.617	14.6	14.6
14.4	.726	14.6	14.6
14.7	.836	14.5	14.6
14.5	.945	14.8	14.7
14.7	.055	14.6	14.6
14.7	.406	14.7	14.7
14.6	.510	14.7	14.7
14.7	.979	14.5	14.6
14.7	.506	14.5	14.6
14.7	.781	14.5	14.6
14.7	.076	14.8	14.6
14.5	.088	14.7	14.7
14.6	.773	14.6	14.7
14.7	.390	14.7: <i>defect</i>	14.7
14.7	.129	14.7	14.8
14.6	.330	14.7	14.5
14.7	.068	14.7	14.6
14.7	.163	14.4	14.4
14.8	.273	14.7	14.7
14.5		14.3-8	14.5-8

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	12	14	15	36
MF 24701	13.2	14.0	13.9	14.6
703	12.6	13.9	13.9	14.8
705	12.7	14.0	13.9	14.8
711	12.7	14.1	13.9	14.0
715	12.6	14.0	13.9	14.4
717	12.6	14.0	13.9	14.6
719	13.1	14.0	13.9	14.9
757	13.2	14.3	13.8	14.8
788	12.7	14.7	13.8	13.9
804	13.1	14.7	13.7	14.8
25997	13.4	13.7	14.3	14.7
26004	12.7	13.7	14.2	13.9
012	13.5	13.6	14.2	14.8
018	12.7	13.6	14.0	14.4

12.4-13.5

 $\chi^2/p = 2.64545$ $p = 0.37801$ $A = 0.6$

W UMa type

HV 11642

12.0 - 14.0

 $\chi^2/p = 1.02223, 1.03259$ $p = 3.001 \quad 306.8$ $A = 4.0$

Long

1890-1939

HV 11656

13.7-14.3

var?

red?

13.5-14.9

 $\chi^2/p = 1.70318$ $p = 0.58714$ $m = 14.4 \quad A = 0.9$

C

HV 11647

56		74		77		88	
15.5		15.2	.224	14.0		15.1	.103
15.6		15.3	.328	14.2		15.3	.196
15.6		15.3	.435	14.2		15.5	.292
15.8	.570	15.3	.618	14.2		15.5	.351
15.6		14.5	.826	14.3		15.6	.537
15.7		14.7	.929	14.0		15.7	.630
15.6		15.2	.036	14.2		15.7	.726
[16.0	.642	15.3	.308	14.0		15.6	.361
[16.0	.665	15.3	.398	14.1		15.7	.607
[16.0	.674	15.3	.561	14.0		15.4	.439
16.0	.912	14.8	.568	14.0		14.6	.952
[16.0	.916	14.8	.957	14.1		15.4	.196
16.0		15.4	.376	13.9		15.6	.571
16.0	.921	with 2nd 11 14.0	.709	with 20000 14.2		15.3	.765

[12.0 - [16.0

.0045333

1/p = .004555

p = 220.4 220.6

A = 4

Long

1890 - 1939

HV 11663

14.0 - 15.6

1/p = 1.59664

p = 0.62632

m = 14.8 A = 1.1

ce

HV 11653

13.8 - 14.4

1/p = 1.43004

p = 0.69928

m = 15.1 A = 1.1

cl

HV 11646

99	108	115
14.6	14.9	14.7
.382		
14.7	14.6	14.7
.492		
14.7	14.7	14.7
.605		
14.6	14.8	14.7
.853		
14.6	14.9	14.7
.072		
15.0	14.7	14.7
.182		
14.8	14.7	14.7
.294		
14.7	14.8	14.7
.961		
14.7	14.7	14.6
.497		
14.7	14.6	14.9
.835		
14.6	14.7	14.6
.903		
14.7	14.7	14.6
.369		
14.7	14.5	14.6
.810		
15.0	14.4	14.5
.217		
14.4-15.4	14.2-15.0	14.4-15.2
$\chi^2/p = 1.62475$	$\chi^2/p = 2.90632$	
$p = 0.59356$	$p = 0.34408$	
$A = 0.6$ 14.6-15.2	14.4-17.8	
Ed	Ed (w/ data)	Ed? with only 1 min
HV 11645	HV 11648	HV 11656?

Variables near Sequence J

	43	116	Phase	127 sm	68 ?
MF 20222	14.6	15.7	.100		
224	13.0 13.5	15.9	.223		
226	13.0 14.0	15.8	.347		
228	76	15.1	.468		
232	14.8	15.9	.972		
234	14.0	15.7	.095		
236	14.8	15.8	.216		
238	13.0 13.6	15.9	.338		
240	14.3	15.2	.473		
243	76	ft sig 76	.849		
249	13.0 13.5	15.5	.390		
251	14.7	15.2	.502		
253	14.7	15.5	.625		
255	13.2 13.7	15.9	.218		
257	15.0	15.7	.340		
259	13.0 13.4	15.2	.467		
261	14.4	15.3	.592		
263	14.8	15.6	.714		
265	13.9	15.8	.835		
268	14.5	15.5	.083		
269	15.1	15.9	.213		
271	13.5	15.8	.350		
273	14.3	15.2	.485		
275	13.7	15.6	.606		
277	14.8	15.7	.728		
287	14.9	15.8	.299		
310	14.9	15.2	.447		
356	13.9	15.7	.764		
505	13.8	15.9	.311		

121 ?

142

		43		116	
MF 21404	14.8			15.5	.597
431	13.2	13.7		15.5	.699
485	13.5			15.8	.106
495	13.6			15.9	.905
538	14.9:			15.4	.497
544	13.9			15.6	.710
553	14.4			15.3	.474
588	13.5			15.7	.595
614	14.8			15.6	.633
616	13.8			15.8	.760
622	13.0	13.6		15.9	.867
625	14.8			15.9	.095
627	14.5			15.8	.216
628	14.4			15.9	.221
647	14.9			15.8	.944
677	15.1			15.9	.796
693	15.1			15.6	.712
745	13.5			15.9	.905
755	76 - >				.234
835	13.0	13.5		15.8	.178
22915	76			15.9	.230
926	76			15.8	.038
956	13.9			15.5	.644
966	76			15.7	.987
973	76			15.7	.842
982	76			15.6	15.3 .447
23017	76			15.9	.154
150	14.6			15.7	.810
337	76			15.8	.277
403	15.1			15.8	.872

		43		116	
MF 23410	13.0	13.5	15.7	.736	
437	13.0	13.5	15.9	.226	
452	13.4		15.7	.036	
462	14.4		15.7	.902	
471	15.1		15.7	.838	
24366	14.3		15.9	.888	
381	14.9		15.5	.607	
400	13.6		15.3	.478	
419	13.2	13.6	15.6	.348	
425	13.2	13.7	15.9	.803	
434	15.1		15.4	.540	
496	14.5		15.2	.497	
498	14.9		15.7	.618	
500	13.5		15.7	.740	
502	15.0		15.8	.861	
504	14.3		15.9	.983	
509	13.6		15.2	.482	
511	14.4		15.6	.598	
517	14.9		16.0	.229	
523	14.3		15.7	.691	
528	14.6		15.9	.996	
534	13.9		15.2	.434	
553	15.1		15.7	.666	
620	14.5		15.9	.050	
633	14.8		15.9	.845	
648	13.8		15.8	.774	
673	15.1		15.7	.327	
688	13.5		15.9	.256	
697	14.8		15.7	.691	
699	13.5		15.7	.813	

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	with 27711	43	116	
MF 24701	14.5		15.8	.934
703	14.0		15.8	.056
705	14.1		15.9	.181
711	13.7		15.7	.566
715	14.5		16.0	.809
717	13.5		15.9	.931
719	15.0		15.9	.056
757	14.8		15.6	.650
788	13.2	13.5	15.9	.124
804	14.8		15.7	.828
25997	14.2		15.2	.410
26004	14.8		15.9	.037
012	14.5		15.4	.527
018	14.8		15.9	.088

15.0-15.1

15.1-16.0

$$q_p = 1.86973$$

$$p = 0.93484$$

$$m = 15.55, A = 0.7$$

Ecl

Cl

HV 11666

Variables near Sequence K

	17	26	39	52
MF 20222	13.3	13.1	14.6	13.1
224	13.1	13.9	14.6	12.9
226	13.3	13.1	14.6	13.1
228	13.8	13.3	14.6	13.3
232	13.7	13.2	14.5	12.7
234	13.3	13.3	14.5	12.8
236	13.4	13.2	14.6	12.6
238	13.8	13.3	14.5	13.0
240	13.8	13.1	14.4	12.8
243	96	76	14.4	13.2
249	13.5	13.5	14.6	12.7
251	13.5	13.5 R 24711	14.6	12.8
253	13.6	13.0	14.5	12.7
255	13.8	13.5	14.5	12.7
257	13.6	13.7	14.6	12.5
259	13.3	13.8	14.9	12.6
261	13.8	13.7	14.6	12.8
263	13.9	13.6	14.6	13.2
265	13.8	13.4	14.6	12.9
268	13.8	13.4	14.4	12.5
269	13.3	13.1	14.5	12.5
271	13.4	13.3	14.4	12.7
273	13.7	13.6	14.5	12.5
275	13.8	13.6	14.5	12.5
277	13.8	13.4	14.8	12.6
287	13.6	13.7	14.5	12.5
310	13.8	13.6	14.6	12.9
356	13.8 R 20222 with lower	13.5	14.8	12.5
505	13.7	13.1	14.7	12.5
	13.1-9	12.9-13.6	14.4-9	12.5-13.3

	90	Phase	128 int. var.	24?	25?
15.3		.034	13.8		
15.4		.132	13.7		
15.4		.230	13.7		
15.5		.326	13.7		
15.6		.518	13.8		
15.8		.616	13.8		
15.4		.712	13.8		
14.7		.809	13.8		
15.1		.916	13.6		
14.7		.764	13.7		
15.8		.592	13.7		
15.6		.689	13.8		
with 24711					
14.7		.787	13.7		
15.2		.650	13.7		
15.4		.146	13.9		
15.4		.247	13.8		
15.8		.346	13.8		
15.8		.442	13.7		
15.8		.539	13.7		
15.8		.528	13.7		
15.7		.631	13.6		
defect		.740	13.7		
14.8		.846	13.8		
15.3		.943	13.7		
15.4:		.039	13.8		
14.9		.870	13.8		
15.7		.295	13.7		
15.6		.296	13.7		
15.0		.816	13.6		

94 ?

95 ?

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	17	26	39	52
MF 21404	13.7	13.5	14.5	12.4
431	13.6	13.7	14.4	12.4
485	13.7	13.0	14.6	12.5
2nd 495	13.6	13.8 R20222	14.5	12.4
538	13.4	13.6	14.6	12.6
544	13.8	13.4	14.5	12.5
553	13.8	13.6	14.3	12.5
588	13.7	13.0	14.5	12.5
614	13.7	13.2	14.5	12.3
616	13.6	13.7	14.5	12.5
622	13.5	13.1	14.6	12.4
625	13.7	13.6	14.6	12.5
2nd 627	R20222 13.8	R24711 13.4	14.5	with R20222 12.4
628	13.7	13.4	14.6	12.5
647	13.7	13.1	14.6	12.4
677	13.4	13.3?	14.6?	12.7?
693	13.6	13.4	14.6	12.5
745	13.8	13.7	14.6	12.5
755	16→			
835	13.7	13.5	14.9	12.6
22915	13.5	13.6	14.5	12.4
926	13.6	13.1	14.5	12.4
956	13.9	13.5	14.6	12.4
966	13.3	13.4	14.6	12.5
973	13.1 ⁴	13.5	14.6	12.5
982	13.8	13.3	14.5	12.5
23017	13.5	13.5	14.5	12.4
150	13.6	13.5	14.5	R20222 12.4
337	13.5	13.1	14.5	12.7
403	13.3	13.2	14.6	12.7
	13.1-8	13.1-7	14.3-9	12.3-7

	90	128
15.3	.140	13.7
15.4	.114	13.8
15.7	.665	13.8
15.3	.091	13.6
15.9	.617	13.7 ^{with error}
15.7	.507	13.8
15.4	.349	13.7
15.8	.616	13.7
15.3	.196	13.7
15.4	.297	13.8
15.2	.967	13.7
15.3	.112	13.6
15.4	.209	13.8
14.6	.798	13.8
15.5	.335	13.8
15.4	.004	13.7
15.7	.523	13.7
15.4	.397	13.8
→	.794	
15.5	.256	13.6
15.6	.553	13.7
18.3	.986	13.7
15.6	.431	13.7
14.5	.838	13.7
15.4	.309	13.7
14.6	.753	13.7
14.7 ^{15.7?}	.410	13.8
15.5	.326	13.7
15.1	.925	13.6
15.8	.561	13.7

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	17	26	39	52
MF 23410	13.6	13.2	14.6	12.5
437	13.9	13.6	14.6	12.5
452	13.6	13.4	14.6	12.5
462	13.4	13.2	14.5	12.5
471	13.5	13.6	14.5	12.5
24366	13.7	13.5	14.6	12.6
381	13.8 <i>R20222</i>	13.7 <i>R24711</i>	14.5	12.7
400	13.7	13.1	14.6	12.7
419	13.8	13.1	14.6	12.5
425	13.5 <i>R24711</i>	13.5 <i>with 24711</i>	14.5	13.0
434	13.3	13.1	14.5	12.5
496	13.6	13.5	14.4	13.1
498	13.8	13.6	14.3	13.1
500	13.9	13.6	14.5	13.1
502	13.5	13.4	14.5	13.4
504	13.2	13.2?	14.5	13.5
509	13.8	13.7	14.5	13.1
511	13.9	13.6	14.6	13.1
517	13.3	13.4	14.4	13.1
523	13.7	13.6	14.5	<i>R24711</i> 13.1
528	13.6	13.4	14.6	13.1
534	13.8	13.5	14.6	<i>scratched</i>
553	13.3	13.1	14.5	13.0
620	13.6	13.8	14.4	12.5
633	13.5	13.4	14.7	12.4
648	13.5	13.6	14.6	12.4
673	13.8	13.3	14.6	12.4
688	13.8	13.6	14.6	12.5
697	13.8	13.6	14.5	12.4
699	13.5	13.6	14.7	12.4
	13.2-9	13.1-8	14.3-7	12.4-12.5

	90	128
15.4	.039	
15.0	.977	
15.4	.412	
14.8	.892	
15.6	.426	
15.5	.321	
15.4	.269	
14.9	.753	
15.7	.236	
15.5	.146	
15.4	.110	
14.5	.825	
14.8	.921	
15.2	.018	
15.6	.714	
15.4	.210	
15.4	.399	
15.4	.491	
14.5	.784	
15.5	.286	
15.8	.528	
15.5	.668	
15.6	.438	
15.2	.077	
15.7	.501	
15.4	.030	
14.9	.847	
15.6	.377	
15.3	.100	
15.4	.196	

	17	26	39	52
MF 24701	13.5	13.6	with 24711 15.1	12.4
703	13.6	13.2	15.4	12.4
705	13.7	13.3	15.5	12.4
711	13.9	13.7	14.5	12.4
715	13.6	13.5	14.7	12.5
717	13.6	13.4	14.5	12.4
719	13.7	13.3	14.6	12.4
757	13.8	13.3	14.5	12.4
788	13.6	13.4	14.6	12.5
804	13.5	13.5	14.5	12.5
25997	13.6	13.5	14.4	12.5
26004	13.6	13.4	14.6	12.6
012	13.7	13.3	14.5	12.5
018	R 24711 13.35	R 24711 13.1	R 24711 15.1	R 20222 12.5

13.1-14

12.9-13.6

14.5-15.5

12.3-13.5

 $\chi^2_p = 2.91278$ $p = 0.34331$ $m = 13.57$ $A = 0.45$

Cluster (type c)

Much scatter

Needs further measure

red star

HV 11671

	90	128
15.6	.293	
15.6	.389	
15.7	.488	
15.7	.587	
14.8	.780	
15.0	.876	
15.4	.975	
15.7	.439	
15.1	.941	
14.9	.887	
15.3	.763	
15.2	.993	
15.4	.382	
15.8	.619	

14.5-15.9

$$p = 1.48242$$

not variable

$$p = 0.67457$$

$$m = 15.25 \quad A = 1.1$$

CI.

HV 11660

	JD	C ₀ 78	C ₀ 113	D 16	D 53	E 112	E 123	F 47	F 59
RB 176	2425659.504	[14.0	11.6	12.2	11.5	<u>13.1</u>	13.0	12.3	[13.8
209	5687.464	14.6	11.3	13.3	11.7	<u>13.0</u>	13.0	12.2	[13.9
226	5705.440	14.8	11.3	13.8	11.8	<u>13.4</u>	13.1	12.2	[14.2
265	5712.366	14.7	11.3	[14.0	11.5	13.5	12.9	12.2	[14.0
355	5762.279	14.3	11.6	13.4	11.5	[13.6	12.9	12.5	[13.9
373	5771.276	[13.8	11.6	13.2	11.5	[13.4	12.9	13.0	[13.5
427	5796.229	[14.4	11.6	11.7	11.6	13.3	13.0	12.7	[13.9
761	6005.483	14.2	11.5	11.3	11.4	[14.0	13.0	12.6	[13.9
814	6034.456	14.5	11.5	12.1	11.8	14.1	12.9	12.2	[14.0
843	6046.552	14.5	11.5	12.6	11.7	[14.0	12.9	12.1	14.1
861	6060.496	14.7	11.4	13.2	11.7	13.8	12.9	12.2	14.2
914	6089.362	14.6	11.4	[13.8	11.6	13.8	12.9	12.2	[13.8
933	6092.352	14.4	11.4	[13.8	11.7	13.9	12.9	12.1	[13.9
1000	6119.290	14.4	10.8	13.5	12.2	14.0	13.1	12.6	[13.9
1026	6131.278	14.3	11.3	13.5	11.8	13.6	13.0	12.7	[13.9
1058	6153.221	[14.1	11.6	12.1	11.6	<u>13.2</u>	12.6	12.9	[13.7
1472	6389.475	[14.4	12.2	12.0	11.5	[13.5	13.1	12.9	[13.7
1594	6452.424	14.8	11.2	[14.0	11.5	<u>13.1</u>	13.0	12.5	14.3
1815	6497.216	14.5	11.5	12.6	11.7	13.6	13.1	12.4	14.1
1832	6502.276	14.5	11.6	12.4	11.6	[13.8	13.1	12.3	[13.9
2551	6801.435	14.2	11.5	13.2	11.7	14.0	13.1	13.0	[13.9
2604	6808.410	14.2	11.5	14.0	11.6	14.0	13.1	12.6	[13.9
2811	6864.278	14.3	11.3	13.0	11.5	14.4	13.0	12.4	[14.2
4224	7239.285		11.6	12.3	14.6				
4875	7484.517	14.8	11.7	11.7	11.7	<u>13.6</u>	13.1	12.6	[14.2
5010	7545.351	14.3	11.6	[13.8	11.8	14.0	13.1	12.5	13.9
5283	7595.	[14.4	11.6	12.7	12.1	13.8	13.0	12.5	14.1
5909	7840.575	15.0	11.4	11.6	11.8	[14.0	13.4	13.0	14.2
5928	7844.589	14.9	11.5	11.6	11.7	13.8	13.4	13.0	14.3

many
place may
be used

	F 87	G 76	H 61	I 14	J 56	K 52	P 23	A 51
25659	[13.7	[13.7	[13.8	[13.8	12.6	12.7	13.9	
5687	[13.8	14.4	[14.0	[14.0	13.8	13.6	[13.9	
5705	14.2	14.1	[14.4	[14.9	14.5	12.8	[14.2	
5712	14.1	13.9	[14.4	[14.6	[14.6	13.1	[13.9	
5722	14.0	14.1	[14.0	[14.4	[14.4	13.5	[13.9	
71	[13.7	[13.7	[13.8	[14.0	[14.0	13.2	13.7	
96	[13.9	[14.0	[13.9	14.4	[14.5	12.8	[13.7	
6006	14.1	13.9	[14.4	[14.4	[14.4	12.4	[13.9	
34	14.0	[14.4	14.2	[14.9	[14.9	12.3	14.2	
6046	14.0	[14.6	[14.4	[14.9	14.8	12.4	[14.2	
6060	14.3	14.1	[14.4	[14.9	13.9	12.4	[14.2	
6089	13.9	14.3	[14.2	[14.4	]12.0	12.2	[13.9	
6092	14.0	14.3	[14.2	14.8	]12.0	12.1	[13.9	
6119	14.1	13.9	[14.0	[14.0	13.0	12.8	[13.9	
6131	[13.9	13.8	[14.0	13.9	13.4	12.4	[13.9	
6153	[13.7	[13.7	[13.6	13.1	[13.8	12.4	[13.7	
6389	[13.7	[13.7	[13.5	[13.7	[13.7	12.3	[13.7	
6452	14.1	14.2	13.8	13.9	[14.9	12.3	[14.2	
6497	13.9	14.2	[14.0	12.1	14.2	12.4	[13.9	
6502	[14.0	14.4	[14.0	12.0	13.8	11.9	[13.9	
6801	13.9	14.2	[14.0	]12.0	14.6	12.7	[13.9	
6808	13.9	[14.0	14.0	]12.0	[14.4	12.8	[13.9	
6864	14.2	13.6	14.2	13.9	[14.4	12.2	[14.2	
					12.7			
7484	14.2	14.4	[13.9	14.1	[14.3	12.5	13.7	
7545	13.9	14.0	13.4	[14.4	[14.4	12.8	[13.9	
7555	[14.2	[14.0	[13.9	[14.4	[14.4	12.5	[14.2	
7840	14.0	14.2	13.4	[14.9	]12.0	12.9	13.4	
7844	14.3	[14.4	13.6	[14.9	]12.0	12.5	13.3	

			D	E	F	H	I	I
	JD		18	112	23	61	14	56
B 5370	2411526	1890	12.5	[14.0	[13.5	16	13.2	12.5!
6127	11883	91	12.8	[13.2	[13.5	—	[14.0	[14.0
7518	12219	92	[13.5	[14.0	[13.5	—	[13.6	[13.6
24894	15106	1900	—	—	—	[14.3	13.6	13.9
24929	15113		13.6	—	—	—	13.3	—
27317	15520	1901	14.1	13.4	—	—	—	—
27322	15522		—	13.7	15.0	[14.0	14.3	13.3
27622	15544		—	—	—	—	—	—
31336	16149	1903	—	—	—	13.7	14.5	11.8
32036	16289		—	—	—	[15.0	14.8	[14.9
32046	16290		11.6	13.6	—	—	[14.9	—
A 2295	2414066	1897		[15.1	[15.5	[14.4	[15.8	[15.8
3009	14424	1898	15.0					
5214	15530	1901				[15.0	14.6	13.2;
14652	26070	1930					[16.0	12.5
14755	26131					14.0		13.8
15237	26410	1931		14.2	[15.5		15.7	16.0
15898	26722	1932	11.2					
15914	26739		11.4					
15926	26767		11.9	[16.0				
16069	26851				[15.5			

Summary of Variables

H	1	Seq E	ng		
	2	Seq C	Cluster	$p = 0.56798$	HV 11639
	3	Seq B	ng		
	4	Seq G	Cluster	$p = 0.45904$	11658
	5	Seq C	Eclipsing	$p = 1.66022$	11641
	6	Counted Seq	ng		
	7	Seq I	ng		
	8	Seq I	ng		
	9	Counted Seq	Eclipsing	$p = 1.60236$	11659
	10	Seq D	ng		
	11	Seq F	ng		
	12	Seq I	Eclipsing	$p = 0.37801$	11642
	13	Seq G	ng		
	14	Seq I	Long	$p = 306.8$ (1890-1939)	11656
	15	Seq I	ng		
	16	Seq G	Eclipsing	$p = 0.61426$	11661
	17	Seq K	Cluster?		
	18	Seq D	Long	$p = 182.4$ (1890-1939)	= HV 8375
	19	Seq D	ng		
	20	Seq H'	ng		
	21	Seq E	var?		
	22	Seq E	Cluster	$p = 0.41644$	11631
	23	Seq F	Long	$p = 400.7$ (1890-1939)	11640
	24	Seq K	ng		
	25	Seq K	ng		
	26	Seq K	Type?		
	27	Seq E	Cluster	$p = 0.66422$	11636
	28	Seq E	Cluster	$p = 0.58368$	11638
	29	Seq H	ng		
	30	Seq F	ng		

- 31 Seg E ng
- 32 Seg F Cluster $p = 0.49661$ HV 11637 = V5746
- 33 crossed off
- 34 omitted by mistake
- 35 Counted Seg Cluster $p = 0.63209$ 11644
- 36 Seg I Cluster $p = 0.58714$ 11647
- 37 Seg G Cluster = KX Cen
- 38 Seg B Eclipsing?
- 39 Seg K Eclipsing? (2 minima) 11662?
- 40 Seg G ng
- 41 crossed off
- 42 Seg H Cluster $p = 0.52821$ 11669
- 43 Seg J Eclipsing
- 44 Seg D ng
- 45 Seg D Cepheid?? $p = 2.5 \pm$
- 46 Seg D Cluster?
- 47 Seg F Long! $p = 135, A = 0.6$ 11634
- 48 Seg A Eclipsing $p = 0.61133$ 11664
- 49 Seg E ng
- 50 Seg A Eclipsing $p = 1.08778$ 11657
- 51 Seg A Irregular?
- 52 Seg K Irregular?
- 53 Seg D Irregular = Z Hya
- 54 omitted by mistake
- 55 Counted Seg ng
- 56 Seg I Long $p = 220.6$ (1890-1959) 11663
- 57 Seg A Cluster $p = 0.59121$ 11667
- 58 Seg H ng
- 59 Seg F Irregular?
- 60 Counted Seg Cluster $p = 0.51561$ 11652

61	Seq H	Long	$p = 284.6$ (1890-1939)	= HV8416
62	Seq H	ng		
63	Seq F	ng		
64	Seq E	ng		
65	Counted Seq	ng		
66	Seq G	ng		
67	Seq A	ng		
68	Seq J	ng		
69	Seq A	Type?		
70	Seq C	ng		
71	Seq F	ng		
72	Seq C	ng		
73	Seq B	ng		
74	Seq I	Cluster	$p = 0.62632$	11653
75	Seq A	ng		
76	Seq G	Irregular?		= V357 Cen
77	Seq I	ng		
78	Counted Seq	Long:	$p = 314.5, A = 0.7$?
79	Seq E	Eclipsing?		
80	Seq D	ng		
81	Seq E	ng		
82	Seq E	ng		
83	Seq C	Eclipsing?		
84	Seq E	ng		
85	Seq F'	ng		
86	Seq D	ng		
87	Seq F	Long:	$p = 300, A = 0.7$	
88	Seq I	Cluster	$p = 0.69928$	11646
89	Seq G	ng		
90	Seq K	Cluster	$p = 0.67457$	11660

91	Seq A	ng		
92	Seq D	ng		
93	Seq G	Cluster	$p = 0.640916$	$= 1408400$
94	Seq K	ng		
95	Seq K	ng		
96	Seq F	ng		
97	Seq G	ng		
98	Seq A	ng		
99	Seq I	Eclipsing	$p = 0.59356$	11645
100	Seq D	ng		
101	Seq B	ng		
102	Seq A	ng		
103	Seq A	ng		
104	Seq A	ng		
105	Seq H	ng		
106	Seq D	ng		
107	Seq G	ng		
108	Seq I	Eclipsing?		
109	Seq A	Eclipsing		
110	Seq H	ng		
111	Seq F'	Cluster	$p = 0.60450$	11625
112	Seq E	Long	$p = 254$ (1890-1939)	11626
113	Counted Seq.	Long:	$p = 111, A = 0.7$	
114	Seq F	ng		
115	Seq I	Eclipsing?? (1 minimum)		11650?
116	Seq J	Cluster	$p = 0.53484$	11666
117	Seq H	ng		
118	Seq D	ng		
119	Seq P	ng		
120	Seq E	ng		

121	Seq J	ng		
122	Seq E	ng		
123	Seq E	Irregular?		
124	Seq A	ng		
125	Seq A	Eclipsing	$p = 0.60448$	HV 11649
126	Seq A	ng		
127	Seq J	ng		
128	Seq K	ng		
129	Seq B	Cluster	$p = 0.72430$	11670
130	Seq D	ng		
131	Seq F	ng		

Table For Spurious Periods : $P_s = \frac{P}{\text{int} \pm 1}$

from EHB

 $P = \frac{P_{\text{orig}}}{\text{int} \pm 1}$ Original
Period $n=1$

-1

+1

 $n=2$

-1

+1

 $n=3$

-1

+1

1.33	.800	4.04	.572	.800	.364	.444	.266
1.50	.750	3.00	.600	.750	.375	.430	.273
1.75	.700	2.33	.635	.700	.389	.411	.279
1.93	.675	2.08	.658	.675	.397	.404	.284
2.16	.650	1.86	.685	.650	.408	.395	.289
2.50	.625	1.66	.715	.625	.417	.385	.294
3.00	.600	1.50	.750	.600	.429	.375	.300
3.27	.590	1.44	.766	.590	.433	.372	.302
3.62	.580	1.38	.784	.580	.439	.367	.305
4.06	.570	1.33	.804	.570	.445	.363	.308
4.66	.560	1.27	.824	.560	.451	.359	.311
5.50	.550	1.22	.846	.550	.457	.355	.314
6.75	.540	1.17	.870	.540	.465	.350	.317
8.83	.530	1.12	.900	.530	.473	.346	.321
13.00	.520	1.08	.930	.520	.481	.343	.325
25.50	.510	1.04	.964	.510	.491	.338	.329
50.50	.505	1.02	.980	.505	.495	.335	.331
50 \rightarrow ∞	.500	1.00	—	.500	—	—	.333
49.50	.495	1.02	.980	.505	.495	.335	.331
24.50	.490	1.04	.964	.510	.490	.338	.329
12.00	.480	1.09	.925	.522	.480	.343	.325
7.83	.470	1.14	.887	.534	.470	.348	.319
5.75	.460	1.21	.851	.548	.460	.353	.315
4.50	.450	1.27	.820	.563	.450	.360	.310

orig	n = 1		n = 2		n = 3	
	-1	+1	-1	+1	-1	+1
0.8	4.00	0.444	1.33	0.306	0.572	0.235
.75	3.00	.430	1.50	.300	.600	.230
.7	2.33	.411	1.75	.291	.635	.226
.675	2.00	.404	1.93	.287	.656	.223
.65	1.86	.395	2.16	.282	.685	.220
.625	1.66	.385	2.50	.276	.715	.217
.60	1.50	.375	3.00	.272	.750	.214
.59	1.44	.372	3.27	.270	.766	.213
.58	1.38	.367	3.62	.268	.784	.212
.57	1.33	.363	4.06	.266	.804	.210
.56	1.27	.359	4.66	.264	.824	.209
.55	1.22	.355	5.50	.262	.846	.208
.54	1.17	.350	6.75	.260	.870	.206
.53	1.12	.346	8.83	.258	.900	.205
.52	1.08	.343	13.00	.255	.930	.203
.51	1.04	.338	25.50	.253	.964	.202
.505	1.02	.335	50.50	.251	0.980	.201
.5	1.0	.333	50 → ∞	.25	1.0	.200
.495	.980	.331	49.50	.249	1.02	.199
.490	.964	.329	24.50	.247	1.04	.198
.480	.925	.325	12.00	.245	1.09	.197
.470	.887	.319	7.83	.242	1.14	.195
.460	.851	.315	5.75	.240	1.21	.193
.450	.820	.310	4.50	.237	1.27	.192
.440						
.430	.755	.301	3.07	.231	1.46	.186

