

FW²
3
LMC

3

HARVARD UNIVERSITY

Physics B

NAME *James G. Butler*

Harvard Co-op.

LMC
Fw #
3

THIS BOOK BELONGS TO

Irene G. Butler

Cepheus

CLASS OF _____

HARVARD COÖPERATIVE SOCIETY

• • • JOIN THE COÖP • • •

COÖP PURCHASES PAY DIVIDENDS

FWW Record Book 3

LMC

Received from CPG 9/73

Measures of Radial Velocities
MC 30 223

IGB 5-15
1938 ± 1

Form, Concentration + Position Angle of
Elongated ribs in HA 88 #5 (Gamma
1940 ± 1 M. Dorse 19-31

Large Magellanic Cloud.
p. 33 ff - 75

Summer 1948
JWW

Measures of Variables in Oris + MC
Jan 1949 V.M.K.N.

77

Continuation of measures of SMC long period variables

128

measures of Long Period variables in SMC, ^B plates, ^R plates,
HVP49 X VMCKN

142

Spring 1949,

MC30223

P402, 403

402
movable

5

Image

	H8 #4-3	Nd A 3-3	Hγ 4-3		H8 3-3	Nd A 3-3	Hγ 3-2
66.	107.782-3	116.599-4	119.528+11	83.	106.191-8	115.093+5	118.078-1
	.773-12	.609+6	.507-12		.203+4	.080-8	.084+5
	.791+6	.613+10	.514-5		.193-6	.095+7	.077-2
	.789+4	.596-7	.516-3		.205+6	.082-6	.077-2
	.790+5	.598-5	.529+10		.201+2	.096+2	.078-1
	107.785	116.603	119.519		106.199	115.088	118.079
	5-3	4-3			5-3	4-3	4-3
67.	106.310	115.152		87.	106.439-1	117.260+1	118.169+3
	.319	.166			.450+9	.258-1	.161-5
	.321	.149			.430-10	.255-4	.168+2
	.311	.167			.440+-	.265+6	.163-3
	.321				.441+1	.256-3	.169+3
	5-3	3-3	5-3		106.440	117.259	118.166
67.	106.010-1	114.768-14	117.774+4	65.	2-4	3-2	2-3
	.019+8	.790+8	.763-7		106.200	114.989-1	117.806+1
	.005-5	.782-0	.769-1		.195-5	.989-1	.808+3
	.010-1	.790+8	.772+2		.198-2	.998+8	.802-3
	.009-2	.779-3	.771+1		.197-3	.990	.806+1
	106.011	114.782	117.770		.208+8	.985-5	.802-3
	4-3	3-3	4-3		106.200	114.990	117.805
77.	106.311-1	115.169+2	118.120-2	60	3-3	2-4	3-3
	.319+4	.168+1	.120+8		106.229+13	115.060+6	117.949+7
	.312-3	.174+7	.107-5		.206-10	.049-5	.938-4
	.317+2	.160-7	.105-7		.212-4	.058+4	.938-4
	.312-3	.163-4	.120+8		.221+5	.097+3	.946+4
	106.315	115.167	118.112		.213-3	.091-3	.937-5
	4-3	3-3	4-3		106.216	115.054	117.942
79.	106.504-5	115.362+2	118.297-3	61A	106.079-2	3-3	3-3
	.515+6	.361+1	.310+10	61B	.080-1	114.862+6	117.809+6
	.502-7	.358-2	.297-3	3-3	.088+7	.850-6	.810+7
	.515+6	.357-3	.293-7		.079-2	.854-2	.793-10
	.511+2	.363+3	.303+3		.080-1	.861+5	.812+9
	106.509	115.360	118.300		106.081	.852-4	.794-9
	5-3	4-3	5-3			114.856	117.803
76.	106.080±	114.950+2	117.961	59	106.572-6	3-3	3-3
	.072+8	.948±	.941		.580+2	115.330	118.277+4
	.080±	.951+3	.949	3-3	.578-	.324-6	.268-5
	.088+8	.950+2	.960		.580+2	.330	.273
	.078-2	.942-6	.946		.582+4	.333+3	.269-4
	106.080	114.948	117.957		106.578	.335+5	.278+5
	3-2	3-3	3-2			115.330	118.273
82.	106.019-11	114.781+5	117.780+4	58	3-2	3-2	3-2
	.021-9	.770-6	.770-6		106.472+2	115.251+6	118.127-9
	.039+9	.777+1	.780+4		.470	.252+7	.145+9
	.042+2	.770-6	.773-3		.472+2	.234-11	.139+3
	.027-3	.780+4	.777+1		.466-4	.249+4	.134-2
	106.030	114.776	117.776		.469-1	.241-4	.133-3
					106.470	115.245	118.136

6 MC 30223 —

Image	H6 3-3	Nd A 4-4	H7 3-3
56-	106.759-6 .761-4 .772+7 .765 .769+4 106.765	115.546 .552+6 .541-5 .551+5 .541-5 106.546	118.398-3 .387-14 .409+8 .410+8 .402+1 118.401
60(a)	2-3	2-3	2-3
	106.008-11 .012-7 .030+11 .025+6 .019 106.019	114.789-2 .782-9 .782-9 .805+14 .797+6 114.791	118.729-7 .739+3 .741+5 .735-1 .736 118.736
89	2-3	3-3	3-3
	106.263-2 .270+5 .261-4 .265 .264-11 106.265	115.066+2 .069+5 .059-5 .059-5 .069+5 115.064	118.050 .047 .056 .050 .050 118.051
90-	4-3	4-4	4-3
	106.055+3 .053+1 .051-1 .048-9 .056+4 106.052	114.772+2 .768-2 .773+3 .766-4 .769-1 114.770	117.786+5 .771-10 .780-1 .780-1 .787+5 117.781
91(b)	2-2	2-2	2-2
	106.199+3 .206+10 .190-6 .196 .190-6 106.196	114.957-2 .952-7 .960+1 .967+8 .961+2 114.959	118.086-7 .099+6 .096+3 .095+2 .088-5 118.093
91	4-3	3-4	4-3
	106.306-7 .318+5 .316+3 .314+1 .311-2 106.313	115.198+2 .194-2 .197+1 .199+3 .192-4 115.196	118.229 .226-3 .231+2 .231+2 .229 118.229
91+92	4-3	3-4	4-3
	106.300+5 .289-6 .302+7 .293-2 .291-4 106.295	114.153+3 .147-3 .149-1 .149-1 .150 0 114.150	118.109-1 .115+5 .104-6 .108-2 .113+3 118.110

Image	H6 3-2	Nd A 3-2	H7 3-2
93.	105.872-2 .877+3 .872-2 .871-3 .880+6 105.874	114.441-2 .446+3 .438-5 .451+8 .437-6 114.443	116.659+3 .659+3 .651-5 .652-4 .660+4 116.656
95.	3-3	3-3	3-3
	106.491- .495+4 .488-3 .490-1 .493+2 106.491	115.292+7 .281-4 .286+1 .282-3 .286+1 115.285	118.290-7 .297 0 .302+5 .295-2 .300+3 118.297
96.	4-2	4-3	4-2
	106.472-2 .479+5 .482+8 .468-6 .469-5 106.474	115.368+6 .356-6 .364+2 .357-5 .363+1 115.362	118.280 .277 .277 .281 .274 118.278
97.	2-3	2-3	2-3
	106.295 .288 .280 .290 .286 106.288	115.049 .041 .043 .041 .043 115.044	118.172 .178 .168 .178 .173 118.174
98.	2-3	2-3	2-3
	106.262 .269 .273 .276 .273 106.271	115.136 .140 .143 .137 .145 115.140	118.098 .112 .099 .098 .101 118.102
98(a)	2-3	2-3	2-3
	106.187 .178 .175 .186 .182 106.182	115.044 .042 .042 .040 .041 115.042	118.129 .123 .129 .124 .128 118.127
43.	2-3		
	106.090 .089 .096		

too faint.

Image	H8	NdA	H γ
48.	3-4	3-3	3-4
	106.038	114.889	117.790
	.047	.898	.785
	.041	.897	.781
	.042	.899	.782
	.041	.897	.791
	106.042	114.896	117.786

52.	4-3	3-4	4-3
	106.331	115.143	118.218
	.332	.140	.214
	.333	.151	.212
	.338	.148	.218
	.331	.145	.217
	106.333	115.145	118.216

51.	3-2		
	106.837		
	.825		

lines not sharp

58.	3-3	2-3	3-3
	106.588	115.410	118.298
	.600	.411	.294
	.592	.408	.308
	.590	.401	.300
	.597	.403	.301
	106.593	115.407	118.300

134.

no measures for MR needed

Image	3-3 H8	NdA	H γ
135(a)	106.110	3-3	3-3
	.099	114.841	117.859
	.105	.842	.862
	.112	.852	.863
	.106	.844	.859
	106.106	.851	.858
		114.846	117.860

137.	4-3	3-3	3-3
	106.033	114.925	117.916
	.031	.930	.913
	.026	.925	.919
	.022	.928	.915
	.028	.926	.918
	106.028	114.927	117.916

177(a)	3-3	3-3	3-3
	106.158	114.959	117.911
	.157	.956	.905
	.169	.960	.908
	.167	.952	.912
	.166	.957	.913
	106.163	114.957	117.913

177	4-4	4-4	4-3
	106.230	115.080	118.049
	.223	.076	.039
	.224	.073	.041
	.224	.076	.040
	.231	.075	.041
	106.226	115.076	118.043

176

4-3	
105.95382	
.96681	
.990	
.989	
.978	

out machine trouble -

135.	5-4	4-4	5-4
	105.994	114.912	117.859
	.991	.906	.865
	.993	.908	.860
	.997	.908	.858
	.990	.909	.861
	105.993	114.909	117.861

133.	4-4	4-3	4-4
	106.251	115.120	118.068
	.249	.128	.064
	.242	.122	.070
	.243	.120	.069
	.245	.124	.065
	106.246	115.123	118.067

176	4-3	3-3	4-3
	106.17890	115.108	118.121
	.196	.112	.109
	.192	.116	.111
	.193	.115	.113
	.193	.120	.116
	106.193	115.114	118.114
174	105.90879	3-3	3-3
	.9283	114.884	117.920
	3-3 .984	.873	.911
	.987	.878	.927
	.983	.876	.921
	105.983	.876	.925
		114.877	117.921

8

Image	HS	NdA	HY
173	3-3 106.392+4 .385-3 .388 .385-3 .389+1 106.388	3-3 115.310-5 .314-1 .311-4 .319+4 .319+4 115.315	3-3 118.242+2 .238-2 .240 .241+1 .239-1 118.240
172	3-24 106.165+3 .162 .157-5 .161-1 .163+1 106.162	3-3 115.088 .078-10 .098+10 .087-1 .090+2 115.088	3-3 118.131 .132+1 .132+1 .131 .128-3 118.131
171	3-3 106.263-6 .277+8 .266-2 .268-1 .269 106.269	4-4 115.288+5 .287+4 .278-5 .280-3 .284+1 115.283	3-3 118.281+4 .278+1 .271-6 .279+2 .276-1 118.277
207	5-3 106.789042 .0 .0 .0 .0		
168	3-34 106.147-1 .145-3 .145-3 .151+3 .151+3 106.148	3-3 115.112-4 .118+2 .119+3 .120+4 .113-3 115.116	4-4 118.166+2 .158-6 .168+4 .163-1 .163-1 118.164
139	3-3 106.153 .170 .158 .160 .161 106.160	3-4 115.002 .004 .000 .003 .006 115.003	3-3 117.962 .948 .952 .960 .954 117.955
148	3-3 106.090 .095 .086 .089 .090 106.090	3-4 114.882 .879 .880 .883 .882 114.881	3-3 117.823 .839 .828 .831 .828 117.830

Image	HS	NdA	HY
156	3-3 106.129 .127 .126 .128 .131 106.128	3-3 115.010 .008 .009 .024 .019 115.014	3-3 117.973 .982 .972 .979 .987 117.979
161	4-4 106.078 .088 .086 .087 .083 106.084	3-4 114.951 .954 .952 .953 .955 114.951	4-3 117.993 .991 .994 .991 .992 117.992
144	3-3 105.983 .972 .979 .972 .980 105.977	3-3 114.775 .766 .770 .771 .774 114.771	3-3 117.751 .752 .748 .749 .750 117.750
165	3-3 106.127 .139 .137 .132 .131 106.133	3-3 115.059 .061 .056 .054 .061 115.058	3-3 117.992 .990 .996 118.000 117.999 117.995
166	4-34 105.941 .940 .936 .940 .938 105.939	3-3 114.817 .811 .819 .812 .811 114.814	4-4 117.810 .808 .812 .814 .812 117.813
164	3-2 106.002 .007 .010 .015 .004 106.008	2-3 114.927 .924 .930 .926 .929 114.927	3-2 118.000 117.993 .985 .988 .993 117.992
167	3-3 106.029 .023 .029 .028 .023 106.027	3-3 114.958 .962 .955 .958 .961 114.959	3-2 117.998 .997 .994 .997 .989 117.995

Image	Hδ	Nd A	Hγ
207.	5-3	4-3	5-3
	106.089	114.899	117.914
	.080	.911	.918
	.081	.906	.922
	.079	.909	.919
	.082	.900	.915
	106.082	114.905	117.918
112.	7-4	2-3	2-3
2nd measured at p. 8	105.905	114.768	117.830
	.907	.778	.823
	.905	.772	.824
	.903	.776	.823
	.906	.771	.825
			117.82

142.	3-2	3-3	3-2
	106.532	115.474	118.325
	.547	.470	.340
	.533	.467	.332
	.541	.468	.338
	.540	.471	.339

143.	3-2	3-3	3-2
	106.162	115.050	117.936
	.179	.036	.921
	.164	.040	.929
	.170	.043	.925
	.162	.041	.934
	106.167	115.042	117.929

128.	5-4	5-4	5-4
	106.158	114.982	117.998
	.158	.977	.990
	.164	.978	.990
	.161	.978	.999
	.169	.977	.999
	106.164	114.978	117.995

127.	4-3	3-3	3-2
	106.478	115.367	118.280
	.492	.356	.281
	.480	.361	.281
	.488	.359	.284
	.479	.359	.287
	106.483	115.360	118.282

124.	5-3	4-4	5-3
	106.032	114.953	117.945
	.036	.948	.942
	.032	.952	.946
	.035	.943	.940
	.042	.952	.949
	106.035	114.950	117.944

Image	Hδ	Nd A	Hγ
121.	5-4	3-4	5-4
	106.096	114.957	117.951
	.099	.965	.948
	.100	.960	.951
	.105	.958	.948
	.102	.959	.947
	106.100	114.960	117.949
119.	5-3	3-3	5-3
	106.326	115.182	118.146
	.333	.187	.151
	.331	.189	.150
	.333	.187	.140
	.330	.188	.151
	106.331	115.187	118.148

196	3-3	2-3	3-2
	106.518	115.502	118.523
	.511	.511	.531
	.515	.518	.521
	.509	.502	.522
	.517	.512	.527
	106.514	115.509	118.525

182	3-4	3-4	
	106.044	114.958	
	.036	.962	
	.042	.958	
	.043	.9	
	.040	.9	

182	3-3	3-4	
	106.075	114.941	
	.075	.947	
	.070	.943	
	.075	.9	
	.076	.9	

182	3-4		
	106.812		
	.819		

182	3-4	3-3	3-3
	105.981	114.861	117.908
	.965	.873	.916
	.973	.868	.909
	.968	.871	.910
	.969	.866	.910
	105.969	114.868	117.911

10

MC 30223 —

Image

	HS	Nd A	HY
181.	3-2	3-4	3-2
✓	106.380	115.296	118.272
	.370	.295	.272
	.368	.295	.274
	.371	.298	.272
	.369	.293	.279
	106.372	115.295	118.274

178(c) 2-2
105.781
.794
.792
too faint

178(a) 2-3
~~105.540~~
~~.523~~
~~.539~~

178(a) 2-3
105.618
.611
.609
too faint

	3-4	2-3	2-4
178	105.999	114.847	117.871
✓	.992	.837	.870
	.996	.830	.877
	.998	.840	.879
	.992	.841	.879
	105.995	114.839	117.875
130.	3-3	3-3	3-3
✓	106.429	115.266	118.198
	.428	.259	.211
	.431	.261	.210
	.429	.268	.200
	.427	.260	.198
	106.429	115.263	118.203

Image HS Nd A HY

Reverse

	HS	Nd A	HY
66.	3-3	3-2	
	105.943	108.998	
X	.947	109.002	
	.936		
	.938		too faint
	.948		

65. 106.060
~~.062~~
2-3 .066
~~.065~~
~~.055~~
.0

65 106.060
~~.052~~

	2-3	2-3	3-3
65	106.120	109.012	117.740
✓	.117	.004	.730
	.116	.003	.740
	.113	.008	.736
	.113	.012	.737
	106.116	109.008	117.737
76	4-4	3-3	5-4
	106.127	109.111	117.925
✓	.120	.116	.923
	.118	.111	.919
	.130	.111	.920
	.130	.112	.920
	106.125	109.112	117.921
90	3-4	3-4	4-4
✓	106.008	109.006	117.849
	.005	.011	.863
	.003	.004	.857
	.002	.006	.861
	.010	.004	.862
	106.006	109.006	117.858

Image	Hr	nda	H σ
89.	3-4	3-3	2-3
✓	106.140	109.120	117.865
	.130	.110	.850
	.137	.111	.850
	.133	.110	.861
	.135	.117	.850
	106.135	109.114	117.855
b(9)	2-3	2-3	3-3
	106.112	109.079	117.822
	.123	.072	.830
	.117	.074	.829
	.122	.079	.822
	.111	.081	.830

58	2-3	2-2	2-2
✓	106.289	109.109	117.804
	.291	.125	.819
	.290	.118	.818
	.294	.114	.811
	.300	.122	.8105
	106.293	109.118	117.812

59	3-3		
	105.939		
	.951		
	.944		
	.950		
	.9		
	lines too blurred		

56	3-3		
	106.343		
	.329		
	.345		
	.340		
	.338		

56.	3-2	3-4	3-2
✓	106.069	109.037	117.880
	.081	.040	.867
	.081	.033	.862
	.071	.037	.862
	.071	.039	.860
	106.075	109.037	117.864

52.	3-2	3-4	4-3
✓	106.357	109.423	118.146
	.371	.431	.146
	.361	.423	.137
	.359	.424	.137
	.361	.428	.142
	106.362	109.426	118.142

Image	Hr	nda	H σ
91.	4-3	3-2	4-3
✓	105.988	108.904	117.778
	.975	.908	.772
	.979	.906	.773
	.981	.902	.780
	.986	.902	.773
	105.982	108.904	117.775
87.	5-3	3-4	5-4
✓	106.142	109.142	117.965
	.149	.140	.960
	.140	.141	.969
	.142	.144	.968
	.148	.142	.960
	106.144	109.142	117.964

92.	3-3	3-4	2-3
✓	106.021	109.077	117.882
	.013	.064	.871
	.012	.070	.878
	.011	.078	.870
	.009	.064	.873
	106.013	109.071	117.875

95.	3-4	3-3	3-3
	106.070	109.088	117.859
	.068	.079	.851
✓	.068	.080	.849
	.078	.078	.852
	.072	.085	.860
	106.071	109.082	117.854

96.	3-2	3-3	3-2
✓	106.318	109.368	118.239
	.319	.361	.228
	.332	.366	.233
	.320	.369	.225
	.328	.369	.230
	106.323	109.367	118.231

97.	2-2	2-3	2-2
✓	106.120	109.207	117.918
	.136	.202	.917
	.133	.210	.907
	.135	.210	.910
	.130	.203	.909
	106.131	109.206	117.912

98.	2-3	2-3	
	106.151	109.200	
	.142	.208	
	.140	.207	
	.146	.213	
	.156		

lines too faint, not sharp

Image	HY	N.A.	HS
98a	2-2		
	106.021		
	.023		
	.028		
	.031		
	lines too blurred		

142.	3-2		
	105.970		
	.982		
	too blurred		

143.	2-3	3-3	2-3
	106.049	108.940	117.880
	.036	.944	.878
	.051	.942	
	.041	.940	
	.040	.938	

143.	2-3		
	105.900		

166.	5-4	4-4	5-4
	105.980	109.009	117.840
	.982	.003	.837
	.971	.015	.832
	.971	.003	.832
	.973	.015	.828
	105.975	109.009	117.834

165.	4-4	4-4	4-3
	105.600	108.510	117.370
	.601	.515	.368
	.608	.520	.371
	.605	.513	.372
	.605	.512	.368
	105.606	108.514	117.370

144.	4-3	3-3	4-3
	105.919	108.901	117.729
	.929	.912	.727
	.928	.902	.721
	.928	.911	.720
	.917	.911	.724
	105.924	108.907	117.724

Image	HY	N.A.	HS
143.	3-2	3-3	2-3
	106.061	109.004	117.936
	.071	.000	.928
	.062	.006	.940
	.067	.004	.933
	.071	.010	.929
	106.066	109.005	117.933

161.	4-3	3-4	5-4
	106.190	108.343	118.154
	.197	.332	.150
	.198	.337	.148
	.189	.340	.157
	.192	.337	.149
	106.193	109.338	118.152

164.	4-2	3-3	4-3
	105.988	109.090	117.997
	.991	.088	.998
	.990	.092	.990
	.993	.085	.999
	.991	.099	.995

164.	3-2		
	106.343		
	.376		

lines too blurred

167.	3-2	3-4	3-3
	106.008	109.122	118.007
	.006	.109	.007
	.028	.113	.000
	.003	.109	.010
	.023	.116	.009
	106.014	109.114	118.007

207	4-3	3-3	5-3
	106.084	109.113	118.032
	.075	.113	.032
	.077	.110	.020
	.076	.119	.020
	.077	.109	.023
	106.078	109.113	118.025

168	3-4	4-3	3-4
	105.973	108.990	117.798
	.965	.992	.810
	.972	.989	.799
	.970	.987	.808
	.973	.992	.800
	105.971	108.990	117.803

Image	H γ	ndA	H δ
171	3-4	4-4	4-4
	105.984	108.948	117.936
	.978	.951	.924
	.979	.949	.933
	.987	.955	.929
	.984	.945	.931
	105.982	108.950	117.931

172	3-2	too faint	
	105.938		

173	4-3	3-4	4-3
	106.070	109.080	117.982
	.059	.076	.980
	.069	.082	.977
	.071	.078	.982
	.061	.089	.979
	106.066	109.081	117.980

174	4-4	4-4	4-4
	106.018	109.110	117.898
	.019	.107	.898
	.009	.106	.897
	.010	.103	.801
	.011	.103	.897
	106.013	109.106	117.898

176	4-4	4-4	4-3
	105.902	108.888	117.792
	.910	.891	.794
	.904	.889	.804
	.906	.900	.792
	.909	.893	.800
	105.906	108.892	117.796

177	4-4	4-4	4-4
	105.496	109.007	117.870
	.988	.001	.863
	.992	.002	.860
	.991	.001	.861
	.999	.012	.868
	105.993	109.007	117.864

177	2-2	too faint & blurred	
(a)	105.872		

Image	H γ	ndA	H δ
137	4-4	4-4	4-4
	105.941	108.893	117.746
	.947	.890	.744
	.949	.897	.745
	.948	.895	.752
	.947	.900	.746
	105.946	108.895	117.747

135(a)	3-3	3-4	3-3
	106.236	109.333	118.023
	.229	.338	.015
	.229	.342	.017
	.239	.332	.022
	.232	.337	.017
	106.233	109.336	118.019

133.	4-5	4-4	4-5
	106.047	109.031	117.890
	.039	.040	.889
	.049	.032	.887
	.049	.031	.889
	.048	.036	.883

139.	4-3	4-4	4-3
	106.188	109.303	118.129
	.179	.292	.132
	.179	.302	.128
	.186	.292	.122
	.185	.295	.121

13a	4-3	4-3	4-3
	106.338	109.360	118.171
	.340	.367	.171
	.331	.360	.168
	.330	.367	.170
	.343	.362	.172

128.	5-4	4-4	4-4
	106.220	109.248	118.000
	.223	.248	.011
	.228	.248	.005
	.230	.243	.012
	.220	.244	.007
	106.224	109.246	118.007

127.	4-2	3-4	4-2
	108.074	109.050	117.878
	.076	.043	.870
	.065	.038	.870
	.080	.041	.878
	.077	.038	.873
	106.074	109.042	117.874

14 MC20223 -

Image	H γ	Nd A	H δ	Image.	H γ	Nd A	H δ
124.	5-3	3-4	5-3				
	106.135	109.089	118.002				
	.131	.192	.013				
	.125	.198	.006				
	.130	.190	.011				
	.135	.190	.010				
	106.131	109.192	118.008				
121.	5-4	3-4	5-4				
	105.959	108.958	117.820				
	.950	.958	.814				
	.957	.961	.812				
	.956	.962	.812				
	.960	.953	.820				
	105.956	108.958	117.816				
119.	5-3	3-3	5-3				
	106.370	109.440	118.269				
	.368	.442	.263				
	.365	.438	.262				
	.363	.449	.271				
	.360	.442	.269				
	106.365	109.442	118.267				
178.	2-4	2-4	2-4				
	106.119	109.252	118.063				
	.113	.258	.063				
	.110	.253	.057				
	.120	.259	.058				
	.111	.250	.059				
	106.115	109.254	118.060				
181.	4 -3	3-4	4-2				
	106.167	109.309	118.149				
	.172	.310	.149				
	.169	.319	.140				
	.162	.310	.145				
	.160	.310	.146				
	106.166	109.312	118.146				
182.	4-3	3-3	4-3				
	106.309	109.362	118.268				
	.312	.362	.275				
	.320	.360	.280				
	.318	.353	.272				
	.317	.356	.268				
	106.315	109.359	118.273				
196.	3 A -3	2-3	4-2				
	106.292	109.315	118.175				
	.247	.310	.178				
	.249	.316	.172				
	.243	.308	.180				
	.243	.310	.179				
	106.247	109.312	118.177				

35

Form, Concentration + Position Angle of
Elongated nebs in H&R #5 (Gamma region)

M. Dowse 1940 \pm 1

A 14279	p 20-21, 29
15344	22-24
15879	26-28

20 A14299

Neb	Form	Orientation				
2 F :	a 5	160°	390 F :	b 6	170°	982
8 I :	b 6	10°	412 F	b 5	40	1013
43 F :	b 6	80°	473 I !	c 4	50	104
65 F :	a 6	100°	476 F :	b 6	140	103
140 F	c 3	40°	500 F	a 4	20	1035
161 I :	b 5	30°	572			104
166 vF !	a 3	30°	633 B :	c 5	110	106
202 F :	a 6	100°	676 F !	b 2	40	109
205 F :	b 6	110°	690 F :	a 6	140	110
207 F	b 4	40°	702 F !	c 3	160	1109
225 F !	a 4	140°	737 B :	c 5	60	112
243 F	c 5	40°	744 F	c 5	100	124
247 F !	b 3	100°	747 F	b 6	140	124
252 F :	c 6	130°	759 F !	c 3	10	124
257 F :	b 5	0°	773 F !	b 3	60	126
264 F :	b 6	80	793 F !	b 2	80	130
281 I	b 5	150	808 vF !	a 1	30	137
283 F	a 5	50	845 I :	c 6	40	N15
302 F :	b 6	40	902 F	d 3	60	N15
326 F !	b 4	40	911 F !	b 2	40	N15
349 F :	b 6	110	912 I	b 3	150	N15
364 F :	e 3	40	942 F	a 5	50	I196
365 F	b 5	50	943 I !	b 3	40	198
369			982 F :	b 6	30	199

983 F	b 4	40°		I2010 B	d 4	70°	
1013 F !	b 3	60	✓	2014 I !	d 6	100	SB?
1019 F	a 4	120	✓	2017 I !	d 4	40	
1035 I !	c 3	10	✓	2022 I !	d 2	170	
1039				2034 I !	b 2	130	
1048 F !	a 3	30	✓	2037 B !	a 2	100	
1066 I !	d 3	160	✓	2038 I !	c 2	140	
1096 F !	a 2	70	✓	2058 I !	b 2	30	
1107 F !	c 2	20	✓	Black Nos. 1 I	c 4	140	
(1109) :				2 I !	b 6	140	
1129 F !	d 4	50	✓	3 F !	c 6	130	
1202 I	e 3	60	✓	4 F !	p 2	160	
1242 F !	b 3	170	✓	5 I !	b 5	100	
1248 F	a 4	40	✓	6 I !	c 3	20	
1268 F !	c 3	150	✓	7			
1305 F	a 4	140		8 F	a 4	10	
1371 I !	b 6	130		9 I	d 3	70	
N1536 B !				10 I	d 5	70	
N1543 B	f 3:	100		11 I	b 5	110	
N1546 B	F 3	140		12 F !	c 4	140	
N1553 B	d 5	140		Blue Nos. 7 I	d 5	60	
I1960 I	d 4	110		10 F	d 4	110	✓
1980 B	b 3	30		6			
1996 I !	d 3	100		11			
1997 B	e 5	70					

2 F :	b 5	PA 90°	309 F !	b 1	20°	509
5 F :	a 6	160 :	320			511
47 F	a 5	80	321 F :	a 5	0	52
96 I X	d 3	20 ✓	324 F	c 3	60 ✓	539
103 F	b 6	120	337 F :	a 4	40	540
109 F !	a 3	130	346 F !	c 2	50	547
123 F !	c 2	10	350 F !	b 3	140	562
126 I	d 5	140	360 F :	c 5	0	577
138 F	c 3	10 ✓	368 F :	d 6	30	579
144 F :	b 5	40	369 F	f 3	50	580
156 I	e 3	100	387 I	f 5	110	585
172 vF	a 4:	140	398a F !	b 3	80	595
198 F	b 3	30 ✓	399 F	d 3	150 ✓	605
209 F !	a 2	70 ✓	410 F	b 3	40 ✓	623
212 F :	b 6	0	415 F	e 3	60 ✓	637
257 F !	c 3	40 ✓	417 F :	b 5	130	638
258 F :	e 5	110	431 I :	c 5	30	644
262 F	b 3	140	442 F	b 4	170 ✓	653
270 F !	b 2	30 ✓	454 F :	a 5	90	659
271 F :	c 5	70	469 F !	b 2	130 ✓	655
278 I :	d 5	80	470 F	e 3	100	658
279 vF !	d 2	90 ✓	487 F	b 3	80 ✓	668
283 F :	a 6	90	494 F	b 3	30	670
297 F :	b 5	140	504 F :	b 6	50	677

509 F	a 3	130	✓	681a F :	b 6	130
511 F !	c 2	90		654		
529 F :	a 6	90		694 I :	e 5	40
539 BI	e 4	60	✓	695 I	f 4	50 ✓
540 F	b 5	30	✓	705 F !	b 2	90 ✓
547 I	b 6	120		708 F :	a 5	140 ✓
562 F	a 5	⁴ 130		733 I :	d 5	40 ✓
577 I	e 4	90	—	744		
579 F !	b 3	130	✓	746 F	a 5	140
580 I :	e 5	0		749 I :	d 5	120
585 F :	c 6	80		752 F	b 4	70
595 I :	e 6	150		753 I !	f 3	120 ✓
605 I !	f 6	90		755 F	b 5	140 ✓
623 F !	a 2	60	✓	756 F :	b 5	0 ✓
637 F :	a 5	140		763 F !	b 2	70 ✓
638 F :	f 5 :	120		790 I	e 4	50
641 B	f 4	40	✓	806 F	f 3	120
653 vF !	e 2	40	✓	845 vF :	a 5	150
654 F :	c 5	130		865 F :	b 5	70
655 F :	b 5	120		866 I	f 5	40
658 F	a 3	110		876 vF !	a 3	150
668 F	f 2	30	✓	892 F !	d 2	40 ✓
670 F :	b 6	10	✓	893 F :	f 6	30
677 F :	a 6	150		722 F	a 3	60 —

Handwritten
1800

879
879
822-4
800
743
742
643
537
344
303
316
315
283
117
37
14

1949phae:pr

77 I	b 3	70	522 F	a 5	140	✓	
108 I!	b 3	30	✓	622 I	b 5	90	
				elongation real? very near edge of plate			
1010 F!	a 3	120	✓	883 F!	a 3	10	✓
1012 I!	b 3	50	—	932 F:	b 5	40	✓
N1515 B!	b 2	30		Doubtful			
1581 B	c 3	80		933 F:	a 5	40	✓
				Doubtful			
1596 B!	d 2	30		949 vF	a 5	160	✓
				large & very far			
1602 F:	e 6	80		966 F:	a 5	30	—
				Doubtful			
1617 B	f 5	110		967 F	b 5	30	✓
				Doubtful			
I 2073 I!	c 2	10		986 I	b 5	90	—
				Doubtful			
2044 F	a 5	50		1014 F	a 4	40	—
2052 I	e 3	140					
2065 B!	d 3	40	✓				
2071 F	a 5	60					
2073 I	b 4	40	✓				
2079 I	e 3	130	✓				
2083 I	d 5	90					
I 2085 I!	c 2	120					
43: F	a 3	30	✓				
elongated like neighboring stars, real?							
121 vF:	a 6	10	✓				
173: vF:	a 5	0	✓				
elongated like stars							
430	scratches implied						
453 vF:	a 5	130	—				
465 F	c 4	50	✓				

		FWW	180°	1st	2nd	mean				FWW	180°	1st	2nd	mean	
31	F	a 5	50	130°	50	50	50	486							
38	F	a 5	153	20°	160	150	155	580	F	a 6	75	110	70	50	50
67	I	b 5	6	160	20	10	15	581	F	a 6	50	120	60	50	40
68	I	b 4	160	30	150	160	155	583	F	a 5	30	150	30	20	25
74	F	a 6	75	120	60	60	60	584	I	c 5	40	140	40	10	10
103	F	a 6	179	130	50	50	50	587	I	d 6	45	130	50	50	50
121	F	b 4	125	50	130	130	130	514	I	b 5	20	140	40	20	20
128	F	a 4	140	60	120	120	120	519	F	b 3	50	140	40	40	40
137	F	b 6	?	100	80	60	67	532	I	d 6	160	10	170	170	170
224	F	c 3	45	140	40	30	35	533	I	e 5	120	60	120	130	120
230	F	b 4	40	150	30	30	30	536	F	a 2	135	40	140	150	145
232	F	c 5	60	140	40	60	57	570	I	c 6	5	130	50	50	50
261	I	d 6	170	10	170	170	170	573	F	b 4	95	90	90	90	90
266	F	c 3	165	30°	150	160	155	591	F	b 6	10	150	30	40	35
268	F	c 4	15	160	20	10	15	601	F	b 7	15	160	20	30	25
269	F	a 3	110	70	110	110	110								
272	I	e 6	178	0	0	0	0	618	F	d 4	170	40	140	140	140
277	F	a 3	5	160	20	10	15	633	I	b 6	80	90	90	90	90
292	I	d 3	100	70	110	90	100	653	I	e 3	120	50	130	130	130
314	F	b 6	10	60	(120)	20	10	15	657	F	a 5	90	90	90	100
423	F	e 3	86	90	90	80	85	686	F	b 5	50	110	70	70	70
435	I	c 5	0	130	50	50	50	691	I	e 3	165	30	150	160	155
457	I	e 5	25	140	40	40	40	693	I	b 5	40	130	50	40	45
476	F	a 6	30	140	40	40	40	695	F	b 6	35	140	40	40	40
481	I	b 5	45	130	50	30	20	33	721	I	b 6	75	100	80	80

		FWW	180°	1st	2nd	mean		FWW	180°	1st	2nd	mean				
734	I !	b4	50	120	60	60	60	1314	I	c5	100	160	80	90	85	
746	F	a5	55	110	70	60	65	1318	F :	a5	20	140	40	40	40	
749	F :	f6	40	130	50	40	45	1327	F :	b6	10	120	60	50	40	50
766								1335	I	d5	30	130	50	50	50	
778	I :	c6	20	130	50	40	45	1246	B !!	b2	130	40	140	130	135	
785	vF !	f3	160	90	70	90	90	1371	FI :	b6	10	140	40	40	40	
798	F :	a6	130	40	140	150	145	1406	FI :	e6	15	160	20	10	15	
814	F	a5	120	10	10	10	10	1441	F	e4	7	100	50	80	80	
831	F	b5	10	170	10	10	10	1450	F :	a6	120	60	120	130	125	
856	F	d4	130	50	130	130	130	14515 vB !	e2	10	150	30	30	30		
923	I ::	b7	80	100	80	70	75	1522	B ::	f7	20	140	40	40	40	
1087	F	f4	60	90	90	80	85	1556	B !	d3	160	20	160	160	160	
1129			70	90	90	80	85	1617	vB	f4	110	60	120	110	115	
1139	F	a5	175	170	10	0	5	12024	I :	b3	30	140	40	40	40	
1162	F !	b3	80	110	70	70	70	2025	I :	d3	120	50	130	130	130	
1167	F	e5	120	40	135	130	132	2033	IB	d5	110	60	120	130	125	
1194	I	a5	40	130	50	50	50	2043	IB !	f2	120	60	120	130	125	
1216	F	b5	30	130	50	50	50	2071	I !	a4	15	160	20	20	20	
1217	I :	a6	140	30	150	150	150	2073	B !	d3	80	100	80	80	80	
1230	F	d5	140	50	130	140	135	2079	B	e4	50	130	50	50	50	
1248	F !	f3	10	150	30	20	10	20	2079	B	125	40	140	130	135	
1264	B	d6	160	20	160	160	160	2085	I !	b3	110	50	130	110	110	117
1275	F !	a3	145	20	160	160	160	88	distorted like stars							
1276	I :	e6	?	130	50	50	50	178	"	"						
			20	140	40	30	35	361	distorted like stars							

74	distorted like stars						FWW
			1st	2nd	mean		
71:	VF c5	150	30	20	25	15	
	looks like defect running thru	neb					
1041	VF a5	80:	100	110	105	105?	
1202	distorted like stars						
1295	distorted like stars						

A14299 Cont

29

10	no			507	no		
11	no			521	no		
15	F		30 ✓	523	no		
21	no			590	vF	a 5 ✓	20 ✓
22	no			657	no		
23	no			658	no		
33	no			659	no		
49	no			692	vF	a 4 ✓	160 —
51	no			696	F	F 5	120 ✓
65	no			711	no		
110	no			861	no		
114	F		30 ✓	863	no		
116	no			886	F	e 5	10 ✓
124			50 ✓	916	I	a 5	60 ✓
126	no			917	no		
214	F	b 5 ✓	130 ✓	1008	vF	a 5 ✓	30 ✓
251	no			1021	F	b 5 ✓	40 ✓
274	F	a 4 ✓	20 ✓	1037	no		
339	vF		60 ✓	1063	F	a 4 ✓	170 ✓
381	no			1074	vF	a	30 —
389	F		30 ✓	1078	I	a 5	10 ✓
410	F	a 5 ✓	30 —	1154	no		
304	no			1174	F	e 5 ✓	80 —
505	no			1228	F	e 5 ✓	10 ✓

1335	no		
1260	vF	F3	30 ✓
1288	F	a5 ✓	90 ✓
1339	F	a2 ✓	160 ✓
1366	F	e5	70 ✓
1368	no		
1374	no		
1376	no		
1379	no		
1383	no		
1394	no		
1387	no		
1391	no		
1398	"		
1400	"		
1401	"		
1405	"		
1410	F	a5 ✓	60 ✓
1411	vF	a5 ✓	170 ✓
1422	no		

Cape LMC

J W Warrick Summer 1978

SEARCH FOR VARS. ALONG AXIS OF LMS FOLLOWING HALF OF AXIS

33

J W Warrick

PICTURE	BRIGHT	FAINT	REMARKS
	A 21445	A 15036	NOT 2458 BLUE See plate 45 HSL 305 (HSL no. unknown)
	A 21445	A 15036	NOT 2438 BLUE MIGHT BE 927 BLACK see plate 45 HSL 301
	A 21445	A 15036	Numbered JWW 53 on print (HSL 306) see plate 45 (HV 2479)
	A 15036	A 21445	Same as JWW 61 see plate 45
	A 15036	A 21445	see plate 45 Also MD 13
	A 21445	A 15036	See plate 45 Also HV 987
	A 21445	A 15036	see plate 45
	A 21445	A 15036	Large range see plate 45 Also - HSL 235

A 7123

A21463

see pl 63

Not measured on 15 pl survey

9 *mg*10 *Ng*

A 7123

A21463

see print

~~see pl 63~~Emulsion defect
on 23, just to east
of imageIn *inhomogeneity*, all *magnitudes uncertain on A plates*

12

A 7123

A21463

~~see pl 63~~

see print

11 *Ng* $\Delta = 5.5$ 066 HV12011

12 (see picture above) A 7123 A 21463

~~ditto~~
see print13 *mg*

A 7123

A21463

ditto

~~A21463~~~~A 7123~~

A21463

A 7123

ditto

14 *mg*15 *mg*

A 7123

A 21463

ditto

16 *Ng*

HV 12018

A 7123

A 21463

ditto

17 *mg*

A 21463

A 7123

ditto

18

HV 578!

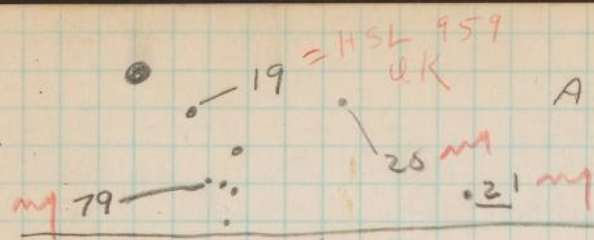
HV 578!

A 7123

A21463

ditto

see print 35



A 7123 A 21463

(959) - suspected
variable
I found independent
of chart

20 (see picture above) A 21463 A 7123

see print
Probably
large range

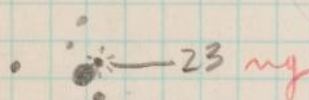
21 (ditto) A 7123 A 21463

see print



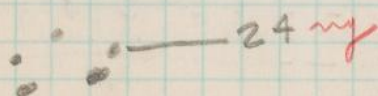
A 7123 A 21463

see print

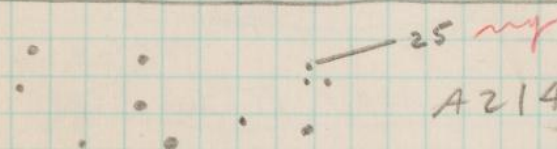


A 21463 A 7123

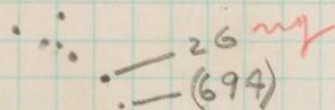
see print



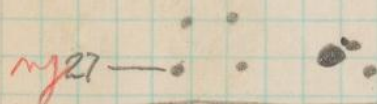
A 7123 A 21463

see print. Has
nebular appearance
on 63.

A 21463 A 7123

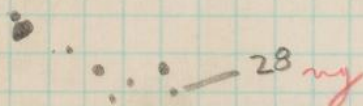
see print.
25

A 7123 A 21463

see print
26SM (694) - probably
variable on 23-63

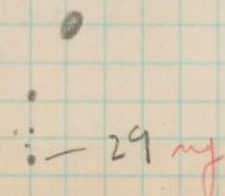
A 7123 A 21463

see print



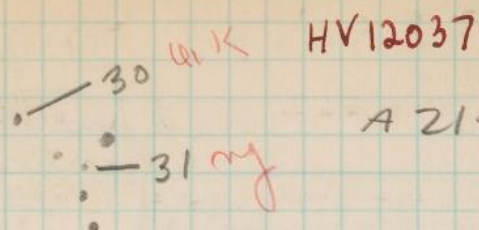
A 21463 A 7123

ditto



A 7123 A 21463

ditto



HV12037

A 21463

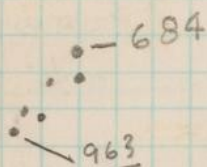
A 7123

see print

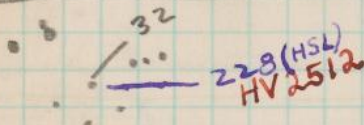
31 (see picture above)

ditto
large range

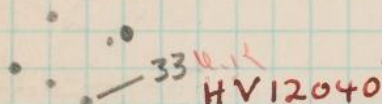
A 21463 A 7123



A 7123 A 21463

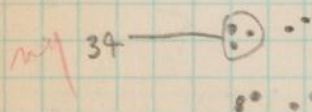
(684) - discovered
independent of chart

A 7123 A 21463

see print
large rangeThis maybe (228). If so
228 is mislabeled on chart

A 7123 A 21463

see print



A 21463

Nov, 1939

see print

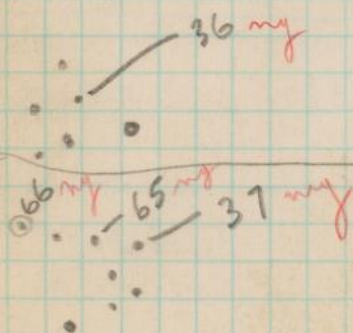
A 7123

Jan, 1905

A 21463

A 7123

see print



A 7123

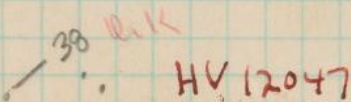
A 21463

ditto

A 7123

A 21463

ditto



A 21463

A 7123

ditto

39 my

A 7123

A 21463

See print

HSL 187 = HV 2539

A 7123

A 21463

ditto

40 W.K. = HV 12046

42 my

41 my

A 7123

A 21463

See plate #63

42 (see picture above) A 7123 A 21463

ditto

43 my

A 7123

A 21463

ditto

IGB #1 discovered independently — A 7123 A 21463

A4 my

A 7123

A 21463

Star involved in
nebulousity

See plate #63

Star is double on SB467
Take upper (↑) component.

45

a defect
on
A 22131

A 22131

A 7123

See print

Very large range
PL #31 shows a sharp image

HSL 830

A 22131

A 7123

discovered independent
-ly

46 W.K. HV 12009 = HV 5742?

A 22131

A 7123

see print

47 = P = 4.2058 = HV 12010

A 22131

A 7123

ditto
large range

49 = HSL 220 HV 2439 P 3.3982

49

A 7123

A 22131

See print

48 = P = 3.17908 = HV 12008

48

A

A

See print

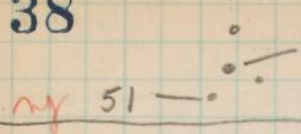
50 my

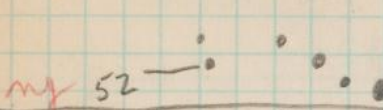
A 22131

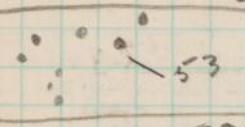
A 7123

ditto

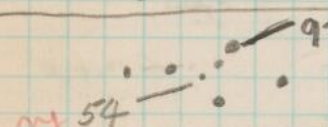
38


 HSL 836 A 22131 A 7123 See print


 A 7123 A 22131 ditto

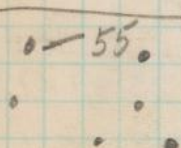

 A 7123 A 22131 Same star as JWW3
See print
Slight nebulosity

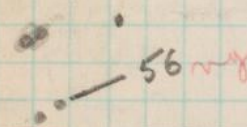
= HSL 306 = HV 2479

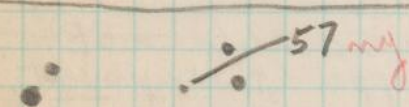

 A 22131 A 7123 See print

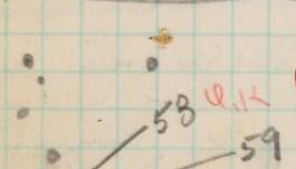
Rediscovered 19

Rediscovered 29


 A 7123 A 22131 See print
(HSL 22) Slight nebulosity

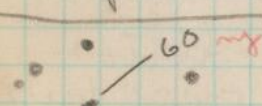

 A 22131 A 7123 See print

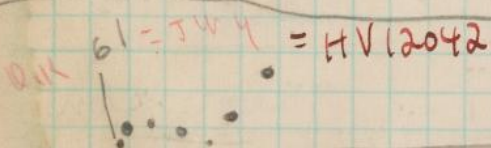

 A 22131 A 7123 ditto

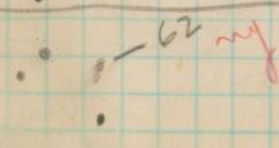

 HV 12039 n.v. from 2nd meas.
A 7123 A 22131 ditto

 59 (see picture above) A 22131 A 7123 Emulsion
defect on pl 23?

 HSL 960 discovered independently. Large range on
pl 22131 and 7123 (Bright on 22131)


 A 22131 A 7123 see print


 A 7123 A 22131 See JWW 4
ditto


 A 22131 A 7123 See print
Slight nebulosity

63 *my* 86 *QIK* HV12044
A22131

A7123

See print

64 = MID 18 HV12043
QIK

A22131

A7123

ditto

65 (see pict for #37) A22131 A7123 ditto

66 (see pict for #37) A7123 A22131 ditto

40 independently found A7123 A22131

41 ditto ditto ditto

103 = HV977
68 = HV976

A7123

A22131

See plate #31

68, 103 HV976, 977

67 *my*

A22131

A7123

see plate #31

69 *my*

A22131

A7123

See plate #31

70 *my*

A22131

A7123

see plate #31

HSL843 = HV2581

71 *my*

A22131

A7123

See plate #31
Same as JWW89

Butterfly van

72 *my*

A22131

A7123

See plate #31

73 - see picture for 50 A7123 A20589 See print

50 rediscovered A20589 A7123

CW 86 rediscovered A20589 A7123

74

A 7123

A 20589

See print
Plate defect near
by on 23

75

A 20589

A 7123

See print

49 Rediscovered A 7123 A 20589

76

A 20589

A 7123

See picture
for 48 and 49
see picture for 47

77

A 20589

A 7123

78

A 20589

A 7123

See print

Rediscovered 18 and 19

79

see plate picture for 19 A 20589 A 7123

80

A 20589

A 7123

See print. Var
at plate limit of 23

53 rediscovered

A 7123

A 20589

81

A 20589

A 7123

Star below plate limit
of 23. see print

82

H V 12024

A 20589

A 7123

See print
large range

83

HSL 224 = HV 2497

A 20589

A 7123

See print

HSL 762 seen on A 20584 - not seen on A 7123 - tremendous range

HSL 960

found independently

84

H V 12048

A 20584

A 7123

See print
Tremendous range? Noir

Long period

at 540

85

A 20585

A 7123

See print

86 See print for 63 A20589 A7123 See print 41

... A20589 A7123 ditto
... 87 *my*

41 rediscovered A7123 A20589

HV2576

88 - HV2576

A20589 A7123

See plate 589
HV2576 may be mis-
labeled on charts

Buttery variable rediscovered

2581

89 = JWW 71 *my*

A20589 A7123

See plate 589
Same star as JWW 71

91 *OK* HV12019

A20589 A7123

see print

90 *my*

A20589 A7123

See print

92 see pic for 54 A23471 A12294 See print

96 rediscovered A23471 A12294

A23471 A12294

See print

93 *my*

Image of 93 peculiar on
plate 294

94 *my*

A23471 A12294

See print. Resolution
poor on 294

95 *my*

Proper motion star - may also be variable

See print

96 *OK*

HV12029

A12294 A23471

See print

2 images show on 294 -
only one on 471. Also variable

97 *OK* HV12038

A12294 A23471

See print

84 rediscovered A12294 A23471

HV947

HSL 447 = HV2307

HV12025

P = 2.54

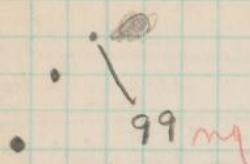
A23471 A12294

See print
large range

42

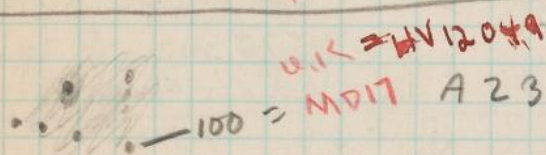
55 rediscovered A12294 A23471

HSL 684 discovered independently A 23471 A 12294

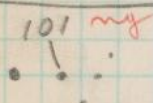


A 23471 A 12294

See print



A 23471 A 12294

See print
large range

A 12294 A 23471

See print

41 rediscovered A12294 A23471

38 rediscovered - identified with HV 2576 on original charts

102 my
 Discovered on print from
 A 123. Emulsion defect? — Yes — see copy of
 chart 13 LMC

See print

103
 chart for 68 (HV 976, 977)

A 20572 A 20574

See print

star	A20547 Spitzer Magnitude	A20559	A20572	A20574	A20585	A20589	A20596	A21380	
CW 92	1.6 4.7	0.8 14.5	0.0: 14.4	0.8 14.6	0.7: 14.6	0.8: 14.7	0.5: 14.3	1.5 14.7	✓
JW 49	3.7 16.1	4.1 16.2	4.4 16.7	2.0 15.5	3.4 16.1	4.0 16.3	6.4 16.6	6.8 16.6	✓
- 76	4.2 16.3	5.4 16.3	3.8 16.5	5.7 16.5	6.2 16.7	6.3 16.7	6.6 16.7	7.5 16.9	✓
- 48	3.6 16.0	4.5 16.0	5.6 16.6	5.8 16.6	5.5 16.5	6.5 16.8	7.2 16.9	5.6 16.0	✓
CW 71	3.7 16.1	5.7 16.4	5.7 16.6	3.1 16.2	5.4 16.4	5.7 16.4	6.4 16.6	6.2 16.3	✓
JW 46	1.8 14.8	2.8 15.9	2.4 15.8	2.7 16.0	3.6 16.2	3.4 16.1	5.8 16.3	4.3 16.1	✓
- 77	3.4 16.0	3.6 16.2	5.2 16.4	3.1 16.2	4.0 16.3	5.8 16.5	6.4 16.6	6.6 16.5	✓
- 47	3.8 16.1	3.1 16.1	3.3 16.2	3.3 16.3	2.4 15.7	3.1 16.0	6.0 16.4	5.5 15.9	✓
- 12	3.6 16.0	3.4 16.2	3.7 16.4	3.4 16.3	3.7 16.3	5.6 16.4	7.0 16.8	6.4 16.4	✓
- 11	2.1 15.0	2.0 15.3	0.9 14.8	1.7 15.2	3.9 16.3	2.8 15.9	5.6 16.2	3.0 15.7	✓
- 13	7.1 16.9	7.0 17.1	6.3 16.9	7.0 17.2	6.6 16.8	6.6 16.9	7.0 16.8	7.5 16.9	✓
CW 82	1.9 14.9	1.0 14.6	0.9 14.8	1.5 15.1	1.4 15.0	1.0 14.8	1.9 15.1	2.5 15.3	✓
CW 124	2.6 15.5	2.6 15.8	2.0 15.6	2.5 15.8	2.1 15.5	2.7 15.9	3.1 15.9	3.6 15.9	✓
JW 74	6.1 16.4	5.6 16.4	3.9 16.5	3.8 16.4	5.6 16.5	6.3 16.7	6.6 16.7	6.8 16.6	✓
HSL 959	2.2 15.1	1.4 14.9	1.5 15.2	1.6 16.2	1.5 15.1	1.1 14.8	1.7 15.0	3.0 15.7	✓
JW 20	3.1 15.8	3.1 16.1	3.1 16.1	3.0 16.1	3.1 16.0	3.4 16.1	5.7 16.2	6.1 16.2	✓
21	1.5 14.6	0.9 14.6	0.8 14.8	1.1 14.8	0.0: 14.3	0.8: 14.7	0.6: 14.4	1.5 14.7	✓
79	6.7 16.7	7.3 17.3	7.2 17.3	6.7 17.0	7.3 17.0	6.8 17.0	7.2 16.9	8.2 17.1	✓
90	6.6 16.6	7.2 17.2	7.8 17.2	7.0 17.2	7.1 16.9	7.1 17.1	7.1 16.9	7.3 16.8	✓
91	5.7 16.2	5.9 16.5	5.7 16.6	2.7 16.0	5.6 16.5	3.3 16.1	3.2 15.9	5.9 16.1	✓
22	5.7 16.2	2.7 15.9	2.7 15.9	3.0 16.2	2.5 15.8	2.5 15.8	2.5 15.6	5.7 16.0	✓
Seq FWW STAR g	(2.9 15.7)	2.9 16.0	3.0 16.1	2.6 16.0	3.2 16.1	3.5 16.3	4.1 16.1	4.0 16.0	

omitting A20547: FWW g $m = 16.14$ (14 plates)

Sequence FWW
~~| Star | A20547 |
|------|--------|
| 13.9 | |
| 14.4 | 1.1 |
| 14.7 | 1.7 |
| 15.0 | 1.8 |
| 15.7 | 2.7 |
| 16.1 | 3.2 |
| 16.3 | 4.2 |
| 16.5 | 5.7 |
| 16.5 | 6.5 |
| 16.9 | 7.3 |~~
Sequence FWW (with p.43

A20572, A20574, A20585, A20589, A20596, A21380

a	14.0								
B	14.4	1.0	0.1::				0.8:	1.2	
c	14.8	1.6	1.3	0.8	0.9	0.7:	0.9	1.5	1.6
d	15.0	2.0	1.6	1.0	1.7	1.1	1.4	1.6	2.1
e	15.3	2.5	2.0	1.6	1.9	1.3	1.7	2.0	2.5
f	15.8	3.0	2.5	2.2	2.4	2.4	2.6	2.7	3.4
g	16.0	2.9	2.9	3.0	2.6	3.2	3.5	4.1	4.0
h	16.2	[5.6 4.1]	[5.0 3.7]	[4.9 3.3]	3.7	4.0	3.5	[4.6 5.1]	[4.8 6.1]
K	16.5	6.4	5.8	5.2	[4.1 5.7]	[5.6 4.1]	[5.8 4.2]	6.2	6.5
l	17.0	7.3	6.8	7.3	6.6	7.3	6.8	7.8	8.0

	A21400		A21416		A21463		A21491		A21555		A22278		A23450		
CW92	0.7	14.5	0.9	14.7	0.2	14.6	1.4	14.8	1.0	14.6	1.0	14.6	2.7	14.5	✓
JW49	2.8	15.9	3.6	16.4	5.8	16.4	5.9	16.1	3.1	16.1	3.6	16.4	6.8	16.1	✓
- 76	5.6	16.5	6.3	16.7	6.7	16.8	7.0	16.9	6.9	17.1	5.4	16.4	8.2	16.8	✓
- 48	5.9	16.6	3.6	16.4	3.1	16.0	6.5	16.6	5.6	16.2	4.1	16.6	6.7	16.1	✓
CW71	5.7	16.5	5.2	16.3	6.2	16.6	4.0	16.2	6.0	16.5	3.9	16.5	7.1	16.2	✓
JW46	3.1	16.0	5.0	16.2	2.1	15.4	5.3	15.7	2.9	15.9	3.4	16.3	5.7	15.7	✓
77	3.5	16.2	3.5	16.4	3.6	16.2	5.7	15.9	3.5	16.2	5.1	16.3	7.1	16.2	✓
47	4.0	16.4	2.7	16.0	4.4	16.5	2.8	15.8	2.6	15.7	3.3	16.3	6.9	16.2	✓
12	2.9	15.9	3.5	16.4	3.6	16.2	4.0	16.2	3.4	16.2	3.3	16.3	6.4	16.0	✓
11	3.0	16.0	2.6	16.0	2.7	15.8	2.6	15.7	2.0	15.2	2.9	16.1	6.1	15.9	✓
13	7.6	17.1	6.7	16.9	6.4	16.7	6.7	16.7	6.2	16.7	6.5	16.9	8.7	17.0	✓
CW82	1.2	14.9	1.1	14.9	1.1	14.9	1.9	15.2	1.4	14.8	1.4	14.9	3.0	14.7	✓
CW124	1.8	15.3	2.5	15.9	1.9	15.3	2.5	15.6	2.6	15.7	2.0	15.4	5.7	15.7	✓
JW74	5.7	16.5	4.0	16.5	4.1	16.4	5.6	15.8	5.7	16.3	4.0	16.5	7.3	16.3	✓
HSL959	1.5	15.1	1.4	15.1	1.8	15.3	2.3	15.4	2.5	15.6	1.6	15.1	3.6	15.1	✓
JW20	3.2	16.1	3.1	16.2	2.7	15.8	5.6	15.8	5.7	16.3	3.1	16.2	7.1	16.2	✓
21	0.4	14.3	0.7	14.6	0.3	14.6	0.9	14.5	1.0	14.6	0.8	14.5	2.6	14.4	✓
79	7.0	16.9	7.1	17.0	7.1	17.1	7.2	17.0	6.8	17.1	6.9	17.0	—	—	✓
90	7.3	17.0	6.5	16.8	7.4	17.2	7.3	17.1	6.9	17.1	6.7	17.0	8.7	17.0	✓
91	3.5	16.2	2.9	16.1	4.1	16.4	6.1	16.2	5.6	16.2	3.9	16.5	7.9	16.6	✓
22	3.6	16.2	2.2	15.7	3.0	15.9	2.7	15.7	3.2	16.1	2.3	15.6	7.1	16.2	✓
Seq FWW STAR 8	3.4	16.2	3.4	16.3	3.5	16.2	3.9	16.2	3.2	16.1	3.1	16.2	7.0	16.2	✓

46

Sequence FWW (with p. 45)

a	14.0	A21400	A21416	A21463	A21491	A21555	A22278	A23450
B	14.4	0.6:		0.8:				2.7
c	14.8	1.0	1.0	0.9	1.4	1.3	1.1	3.0
d	15.0	1.2	1.2	1.0	1.5	1.9	1.6	3.4
e	15.3	1.8	1.7	1.9	2.0	2.1	2.0	3.9
f	15.8	2.5	2.3	2.5	2.6	2.6	2.4	[4.6 5.8]
g	16.0	3.4	3.4	3.5	[3.9 5.6]	3.2	3.1	7.0
h	16.2	3.6	3.0	3.5	6.1	[3.3 4.9]	3.1	7.3
k	16.5	[4.1 5.7]	[3.9 5.7]	[4.2 5.9]	6.3	6.1	[3.9 5.6]	7.4
l	17.0	7.4	7.1	7.0	7.2	6.5	6.8	8.5

X CW 92

14.3.4.5.6.7.8

 $p = 3.3982^d$
 ✓ JW 49

15.5.6.7.8.9.0.4.1.6.2.3.4.4.6.5.6.6.7

✓ JW 76 ?

16.3.4.5.6.7.8.9.7.0.7.1

✓ JW 48 $p = 3.7908^d$

16.0.1.2.3.4.5.6.7.8.9

CW 71 X

16.1.2.3.4.5.6

JW 46

14.8.9.5.0.5.1.5.2.5.3.5.4.5.5.5.6.5.7.5.8.5.9.16.0.1.2.3

JW 77

15.9.0.1.2.3.4.5.6

JW 47 4.2058^d

15.7.8.9.0.1.2.3.4.5

JW 12 X

15.9.6.0.1.2.3.4.5.6.7.8

JW 11

14.8.9.5.0.1.2.3.4.5.6.7.8.9.6.0.1.2.3

✓ JW 13 (Imp)?

16.7.8.9.7.0.1.2

CW 82

14.6.7.8.9.5.0.1.2.3

Imp

CW 124

15.3.4.5.6.7.8.9

JW 74 ??

15.8.9.6.0.1.2.3.4.5.6.7

HSL 959

14.8.9.5.0.1.2.3.4.5.6.7

JW 20

15.8.9.6.0.1.2.3

JW 21

14.3.4.5.6.7.8

JW 79

16.7.8.9.7.0.1.2.3

JW 90

16.6.7.8.9.7.0.1.2

JW 91

15.9.6.0.1.2.3.4.5.6

JW 22

15.6.7.8.9.6.0.1.2

48	JW	48	49	76
A20539 ✓	16.2	16.3	16.3	
A20556 ✓	16.5	15.9	16.4	
A20592 ✓	16.6	16.2	16.3	
A20578 ✓	16.1	16.0	16.3	
A20568 ✓	16.0	16.1	16.3	
A21469 ✓	16.2	16.2	16.5	
A21445 ✓	16.4	15.9	16.5	
A21395 ✓	16.6	16.0	16.5	
A21496 ✓	15.9	16.3	16.4	
A21520 ✓	16.0	16.0	16.5	
A21522 ✓	16.2	15.9	16.4	
A21557 ✓	16.0	16.2	16.3	
A22099 ✓	16.4	15.7	16.4	
A22131 ✓	16.0	16.2	16.2	
A22175 ✓	16.1	16.1	16.2	
A22225 ✓	16.3	15.8	16.3	
A22260 ✓	16.3	16.1	16.3	
A22269 ✓	16.4	16.0	16.2	
A22277 ✓	16.2	16.0	16.3	
[A22278 ✓	16.4	16.3	16.4]	
A22305 ✓	16.4	16.1	16.2	
A22360 ✓	16.4	16.4	16.2	
A23411 ✓	16.4	16.2	16.4	
A23415 ✓	16.2	16.3	16.4	
A23422 ✓	15.9	15.9	16.4	
A23424 ✓	16.1	16.3	16.4	

	48	49	76
A23427	15.9	16.2	16.3
A23430	15.8	16.4	16.3
A23449	16.4	16.3	16.3
[A23450	16.0	16.1	16.5]
A23453	16.0	16.4	16.4
A23458	16.1	16.2	16.5
A23462	16.5	15.6	16.4
A23466	16.5	16.0	16.4
A23904	16.3	15.7	16.5
A23953	16.5	16.1	16.5
A23954	16.2	16.3	16.5

(plates, p. 48)	5	W	48	47	13	90	(plates, p. 48)	48	47	13	90	49
	16.3		16.3		16.9	16.9		15.9	15.7	17.2	17.0	
	16.5		15.4		17.0	17.0		defect	15.5	N.v.	N.v.	
	16.6		16.2		17.0	16.9		16.4	16.0	16.9	16.9	
	16.1	defect			17.0	16.8		Not measured				
	16.1		15.8		16.9	16.8		16.2	16.3	17.1	16.9	
	16.2		16.4		N.v.	16.8		16.0	15.3	16.9	17.0	
	16.4		16.0		17.1	17.0		16.4	15.8	17.1	16.9	
	16.6		16.5		N.v.	N.v.		16.4	16.4	17.1	16.8	
	15.9		16.0		17.0	16.8		16.3	15.9	16.8	16.9	
	16.0		15.4		16.8	17.1		16.5	15.1	Not measured		
	16.3		15.8		16.9	16.8		16.3	15.7	16.7	17.0	
	15.8		16.3		17.1	16.9	A23968	16.3	15.4	17.1	17.1	
	16.3		16.3		17.0	16.7	A23959	16.6	16.3	N.v.	16.8	
	16.0		15.3		17.1	16.8	A23971	16.5	16.1	17.2	16.8	
	16.1		16.4		17.0	16.7	A23979	16.6	16.3	16.9	17.0	
	16.4		16.1		17.0	16.7	A23987	15.9	16.4	Not measured		
	16.2		16.4		16.8	16.8	A24446	16.0	15.4	N.m.	16.8	
	16.4		15.7		17.1	17.0	A24451	16.3	15.9	16.9	16.7	
	16.2		16.1		16.9	16.8	A24467	16.1	16.3	16.9	16.8	
Not measured							A24469	16.3	15.3	17.1	16.7	
	16.3		16.1		16.9	16.8	A24483	16.1	16.0	Not measured		
	16.4		16.4		17.0	16.8	A24487	16.0	16.0	16.9	16.9	
	16.4		15.7		17.1	17.0	A24502	15.9	15.8	17.1	16.9	
	16.3		15.9		17.1	16.9	A24509	16.4	16.1	17.2	17.0	
	16.1		15.9		17.0	16.6	bad plate A24516	16.6	16.6	17.1	17.0	
	16.3		16.3		17.0	N.v.						

50

A 24526	✓ 48 16.2	✓ 47 15.7	2 13 17.0	2 90 16.8	A 17302	13 17.0	90 16.9	(expl)
A 25444	16.4	16.2	17.0	16.8	303	16.9	17.0	
A 25462	16.3	15.9	17.0	17.0	304	(below pl limit)		
A 25472	16.5	16.2	17.0	17.1	305	16.7	16.8	
A 25474	16.3	15.5	17.2	17.0	306	16.8	16.8	
A 25477	16.1	16.3	17.1	16.7	307	17.0	17.1	
A 25484	16.4	15.7	17.0	16.8	308	16.9	17.0	
A 17280			17.1	17.2	309	16.9	17.1	
A 281			17.1	17.0	310	17.1	16.8	(expl)
282			17.0	16.8	311	16.9	17.0	
283			16.9	17.1				
284			17.0	17.0				
285			17.0	16.9				
287			16.9	17.0				
288			16.7	16.9				
289			16.9	16.9	(expl)			
290			16.9	16.9				
291			16.8	16.8				
292			17.1	16.9				
293			16.8	16.9				
294			17.0	17.1				
295			16.9	16.8				
298			17.1	16.7				
299			16.7	16.8				
300		n.m.		17.0				
301			17.0	16.9				

	X CW71	✓ JW46	22 JW77	X JW12	✓ JW11	✓ CW124	22 JW74
A20539	16.1	15.4	16.3	n.m.	15.5	15.2	16.4
(547)							
553	16.2	15.7	16.1	n.m.	15.0	15.0	16.4
556	15.9	n.m.	16.4	15.7	15.8	15.6	n.m.
568	16.2	15.8	16.2	n.m.	16.0	15.7	16.3
(572)							
(574)							
578	16.2	16.1	16.5	n.m.	15.7	15.8	16.4 ↑ binoc measures
(585)							
(589)							
592	16.1	15.5	16.2	n.m.	14.9	15.3	16.3 ↓ eyepiece measures
(596)							
(21) 380	n.m.	16.3	16.1	16.0	15.8	15.5	16.5
395							
(400)							
(416)							
445	16.2	15.2	16.2	15.9	16.1	15.7	16.3
(463)							
469	16.0	16.3	n.m.	n.m.	14.7	15.8	n.m.
(491)							
496	16.3	15.8	16.3	16.1	15.7	15.7	16.4
520	16.3	15.8	16.3	16.1	15.4	15.7	16.4
522	16.1	15.9	16.2	16.1	15.7	15.7	16.2
(555)							
557	n.m.	n.m.	16.4	16.2	15.3	16.0	16.3
22099	16.0	16.3	16.2	16.1	15.9	15.7	16.3
131	16.0	16.0	16.4	16.0	14.9	15.7	16.4
175	16.1	16.3	16.4	n.m.	15.7	15.6	16.3
225	16.2	16.2	16.3	16.0	14.9	15.3	16.2
260	16.1	16.1	16.3	15.7	16.0	15.2	16.4
269	16.3	16.2	16.4	16.0	16.1	15.2	16.3
277	16.2	16.2	16.3	16.0	15.9	15.2	16.2
(278)							
305	16.3	15.9	16.2	15.7	15.5	15.4	16.3
360	16.1	16.2	16.4	15.9	14.7	15.7	16.2
23411	16.2	16.0	16.6	15.6	14.8	15.7	16.4

	CW71	JW46	JW77	JW12	JW11	CW124	JW74
23415	16.3	16.4	16.5	15.6	14.9	15.6	n.m.
422	n.m.	n.m.	16.4	15.8	15.7	15.8	16.4
424	16.4	16.1	16.5	15.9	14.7	15.7	16.5
430	16.2	16.0	16.2	15.4	15.8	15.0	16.1
427	16.1	15.1	16.4	16.0	16.0	15.6	16.3
449	16.0	15.1	16.3	15.7	15.2	15.6	16.3
(450)	16.0	16.3	16.5	15.9	15.2	15.6	16.4
453	16.0	15.4	defect	15.7	15.0	15.4	16.4
462	16.1	15.8	16.3	15.7	15.0	15.1	16.2
466	16.1	15.9	16.3	15.6	15.6	15.5	16.2
904	16.2	15.9	16.6	15.6	15.2	15.6	16.4
953	16.1	16.1	16.4	15.7	15.8	15.9	16.3
954	16.1	15.8	16.4	15.6	15.7	15.5	16.3
959	n.m.	n.m.		15.6	15.6	15.9	
968		16.0			16.1	15.3	
971		16.1			15.7	15.6	
979		16.2			14.6	15.2	
987		16.0			15.4	15.5	
24 446		15.9			16.0	15.7	
451		15.5			16.1	15.3	
467		16.2			15.8	15.4	
469		15.5			15.8	15.2	
483		15.2			14.9	15.5	
487		16.3			16.0	15.6	
502		16.0			15.9	15.8	
509		16.0			16.1	15.5	

	JW 46	JW 11	CW 124
516	16.2	15.9	15.8
526	16.0	14.6	15.4
25 444	16.2	15.3	15.3
462	16.1	15.5	15.7
472	16.3	15.9	15.6
474	15.4	14.7	15.2
477	16.2	15.9	15.6
484	16.2	16.1	15.5

HV12017

HV2475

HV943

HV944

	A20547 FS	A20553 FS	A20572 FS	A20574 FS	A20585 FS	A20589 FS	A20596 FS	A21380 FS
CW69	12.5 13.8	<12.0 14.1	<12.8 14.1	<12.0 13.8	<12.0 14.1	<12.0 14.1	12.2 14.1	13.5 14.1
70	18.0 16.8	17.2 16.7	17.0 16.7 16.7	16.7	17.0 16.6 15.4 16.2	17.0 16.6	18.5 16.7	18.1 16.8
84	14.3 14.9	14.0 15.0	13.3 14.9 13.2	15.0	13.3 14.9	13.5 14.9	14.7 14.9	15.0 15.0
JW75	15.3 15.5	14.9 15.5	14.1 15.4 14.0	15.5	14.0 15.3	14.2 15.3	15.5 15.5	15.8 15.5
10	15.8 15.9	15.0 15.6 14.0: 15.3: 14.3 star double		15.6	14.2 15.4	14.8: 15.6: 16.2	15.9 15.9	15.6
CW73	17.3 16.6	16.9 16.5 17.0	16.7 16.9 16.8	17.6 16.8	16.8 16.5	18.8 16.8	18.5 17.0	
75	15.6 15.7 15.8	14.7 15.4 13.9	15.3 14.0 15.5	14.4 15.5	14.4 15.4	15.6 15.5	15.6 15.2	
125	n.m. —	17.2 16.7 16.7	16.6 17.0 16.9	16.8 16.6	17.0 16.6	18.5: 16.6: 19.0: 17.2:		
88	15.2 15.5	14.6 15.4 14.9	15.8 14.0 15.5	14.3 15.5	14.7 15.5	15.9 15.7	16.0 15.6	
86	16.0 16.0	16.0 16.1 15.0	15.9 14.8 15.8	14.9 15.8	15.5 16.0	16.5 16.0	18.0 16.7	
76	15.9 15.9	15.5 15.9 14.5	15.6 14.1 15.5	13.1 14.9	15.1 15.8	15.8 15.6	15.9 15.6	
87	14.2 14.8 14.0	15.0 13.5 15.1	13.1 14.9 13.3	14.9 13.9	15.1: 14.7 15.7 14.9	15.6 15.4		
JW73	off range	— 0.1. — 0.1. — 0.1. — 0.1. — 0.1. — 0.1. — 0.1. —						
50	16.1 16.0	15.8 16.0 15.5	16.1 15.6 16.1	15.4 16.0	15.6 16.0	16.3 15.9	16.3 15.8	
52	15.0 15.3 14.0 14.7	14.0 15.0 13.4	15.0 14.3 15.6 14.0 15.8	13.3 14.9	13.8 15.0	14.6 15.0	15.0	
53	14.6 15.1 14.4	15.2 14.2 15.4	14.0 15.4 14.2	15.4 14.6	15.5 15.1	15.2 14.8	14.9	
H2 83C	14.0 14.7	13.8 14.9 14.0	15.3 13.5 15.2	13.0 14.8	14.0 15.2	15.0 15.1	14.9 15.0	
JW 51	16.0 16.0	16.5 16.3 15.9	16.3 15.5 16.1	15.8 16.1	16.2 16.3	16.9 16.2	16.5 15.9	
14	16.5 16.2	16.0 16.1 16.0	16.3 15.5 16.1	15.5 16.0	15.8 16.1	17.0 16.2	16.8 16.1	
81	18.9 17.0	18.0 16.9 18.0	17.0 18.0 17.4	17.9 16.9	17.8 16.9	19.0 16.9	19.1: 17.3:	
16	14.9 15.3 15.5	15.5 15.9 15.0	15.9 14.5 15.7	14.7 15.7	15.0 15.7	16.1 15.8	16.1 15.7	
HSL223	14.0 14.7	13.4 14.6 12.9	14.7 13.0 14.8	13.1 14.8	13.0 14.6	14.0 14.6	15.3 15.2	
160	14.0 14.7	13.7 14.8 13.2	14.9 13.2 15.0	13.3 14.9	13.5 14.9	14.9 15.1	15.0 15.0	
JW15	13.9 14.6	13.2 14.5 13.0	14.8 12.8 14.6	13.2 14.9	13.0 14.6	14.4 14.8	15.1 15.1	
HSL18	15.0 15.3	14.8 15.5 13.0	14.8 14.1 15.5	13.4 15.0	13.7 15.0	14.2 14.7	16.4 15.9	
JW17	17.1 16.5	17.7 16.6 16.5	16.7 16.7 16.9	16.6 16.6	17.0 16.6	18.1 16.5	17.5 16.5	

56

A21400 A21416 A21463 A21491 A21555 A22278 A23450

N69	42.0	14.4	12.0	14.2	12.0	14.4	12.0	13.9	12.2	13.9	12.0	14.5	14.5	14.0
70	17.2	16.7	16.9	16.7	17.0	16.6	17.8	16.6	17.7	17.0	^{17.0} 16.8	^{16.7} 16.5	19.5	16.4
84	13.3	14.9	13.3	14.9	13.7	15.1	14.4	15.0	14.3	15.1	13.9	14.8	16.6	15.0
JW75	14.9	15.5	14.6	15.6	15.3	15.8	15.9	15.8	15.2	15.8	15.5	15.6	17.7	15.5
10	14.7	15.4	15.0	15.8	15.0	15.6	15.8	15.7	15.0	15.7	15.3	15.4	12.7	15.5
CW73	17.5	16.8	17.5	16.9	17.5	16.9	17.7	16.5	17.1	16.7	17.3	16.8	19.4	16.4
75	14.6	15.4	14.3	15.4	14.5	15.4	15.0	15.3	14.8	15.5	15.0	15.2	16.8	15.0
125	16.9	16.5	16.2	16.4	17.7	16.9	18.1	16.7	17.5	16.9	18.0	17.0	n.m.	—
88	14.8	15.5	14.5	15.5	15.0	15.6	15.4	15.5	15.2	15.8	15.5 14.8	15.5 15.1	17.3 16.9	15.3 15.1
86	17.5	16.8	16.8	16.6	15.5	15.9	16.3	16.0	16.9	16.6	15.9	16.0	14.3	16.3
76	15.0	15.6	14.5	15.5	16.2	16.2	15.3	15.5	15.5	16.0	15.2	15.3	17.5	15.3
87	^{13.8} 14.0	15.1 15.2	13.4	15.0	13.9	15.1	14.2	14.9	14.5	15.3	13.6	14.7	16.4	14.9
JW73	0.1	—	0.1	—	0.1	—	0.1	—	0.1	—	0.1	—	0.1	—
50	15.7	15.9	15.0	15.8	15.8	16.0	16.2	15.9	^{15.7} 16.0	^{16.1} 16.2	^{15.6} 15.1	^{15.6} 15.3	18.0	15.8
52	13.8	15.1	13.3	14.9	13.7	15.1	14.7	15.2	14.3	15.1	13.9	14.8	16.3	14.9
53	13.5	15.0	13.2	14.9	13.8	15.1	15.3	15.5	14.6	15.4	14.4	14.9	16.9	15.1
HSL836	13.2	14.8	13.0	14.8	13.0	14.8	13.6	14.7	14.0	14.8	13.4	14.7	16.0	14.8
JW51	15.8	16.0	16.0	16.2	16.1	16.1	16.6	16.1	16.0	16.2	16.0	16.0	18.6	16.1
14	16.2	16.2	15.8	16.2	^{15.7} 15.5	^{16.0} 15.9	16.9	16.2	15.9	16.2	^{16.0} 15.7	^{16.0} 15.8	19.0	16.2
81	18.5	17.3	17.7	17.0	18.0	17.1	19.0	17.1	17.6	17.0	17.6	16.9	n.m.	—
16	14.7	15.4	^{15.0} 15.0	15.8	15.5	15.9	15.5	15.6	15.2	15.8	15.2	15.3	17.7	15.5
HSL223	13.8	15.1	13.8	15.2	13.3	14.9	14.0	14.9	13.9	14.8	14.1	14.8	16.2	14.8
160	13.9	15.1	13.8	15.2	13.7	15.1	14.1	14.9	14.5	15.3	14.2	14.8	16.4	14.9
JW15	12.7	14.6	13.1	14.8	13.0	14.8	13.8	14.7	13.9	14.8	13.8	14.8	16.0	14.8
HSL18	13.3	14.9	13.1	14.8	13.8	15.1	15.9	15.8	13.4	14.4	14.3	14.9	16.8	15.0
JW17	16.8	16.5	16.5	16.5	17.2	16.7	17.9	16.6	16.8	16.6	17.4	16.8	19.3	16.3

HV2478 → H

HV5790 → SM

HV2478 HSL

HV5790 SM

JW 82	A20547	A 20553	A 20572	A20574	A20585	A20589	A20596	A 21380
69	17.0 16.5	16.9 16.0 16.3	16.2 16.4	16.1 16.3	15.8 16.1	17.5 16.4	16.8 16.1	
93	16.2 16.1	16.4 16.0 16.3	15.8 16.2 15.5	16.0 15.9	16.2 16.9	16.1 16.8	16.1	
18	16.3 16.2	16.0 15.7 16.2	15.7 16.1	16.0 16.3	16.0 16.2	17.0 16.2	16.8 16.1	
8→ HSL 222	16.0 16.0	16.4 15.5 16.1	16.0 16.3	15.7 16.1	16.3 16.3	15.7 15.6	15.9 15.5	
10→ SM 158	14.0 14.7	13.5 12.1 14.2	13.0 14.8	13.0 14.8	13.0 14.5	13.5 14.5	14.1 14.5	
JW 78	17.9 16.8	17.5 17.0 16.7	16.8 16.7	17.4 16.8	17.0 16.6	18.9 16.8	18.2 16.8	
54	17.1 16.5	16.7 16.5 16.5	16.1 16.3	16.4 16.4	17.0 16.6	17.4 16.3	17.6 16.5	
92	14.7 15.1	14.8 14.0 15.3	13.9 15.4	14.0 15.3	14.6 15.5	15.4 15.4	15.4 15.3	

JW 82	A21400	A21416	A 21463	A21491	A21555	A22278	A23450
	17.0 16.6 16.1 16.3	16.4 16.3	16.1 15.9	16.5 16.5	15.9 16.0	18.6 16.1	
93	15.9 16.0 15.4 16.0	15.6 15.9	16.7 16.1	16.0 16.2	16.4 16.3	18.7 16.1	
18	16.4 16.3 15.6 16.1	16.0 16.1	16.5 16.1	15.9 16.2	16.3 16.3	18.5 16.1	
8 HSL 222	16.4 16.3 15.9 16.2	16.1 16.1	16.1 15.9	16.1 16.3	15.5 15.5	18.5 16.1	
0 SM 158	13.2 14.8 12.9 14.7	12.8 14.7	13.2 14.5	13.7 14.6	13.2 14.6	15.5 14.5	
JW 78	17.5 16.8 16.6 16.5	17.5 16.9	17.7 17.0	17.8 16.6	16.9 16.7	16.9 16.6	n.m. —
54	17.4 16.6	16.2 16.3 16.8 16.5	17.0 16.3	16.5 16.5	16.8 16.5	18.8 16.2	
92	13.8 15.1 14.7 15.6	14.0 15.2	14.7 15.2	14.3 15.1	14.6 15.0	16.1 14.8	
B	A20547, 20553, 20572, 20574, 20585, 20589, 20596, 21380, 21400, 21416, 21463, 21491, 21555, 22278, 23450	13.8 13.0 12.0 12.7	12.5 12.8	13.1 14.0	12.5 12.3 12.2	12.9 13.5	13.0 15.3
c	14.1 14.0	13.2 12.9 12.8	13.3 14.7	14.5 12.9	13.0 13.2	13.9 13.8	13.9 16.0
d	14.2 14.0	13.4 13.2 13.5	14.0 14.8	15.0 13.7	13.6 13.8	14.6 14.3	14.8 16.7
e	15.1 14.3	14.0 13.5 13.9	14.4 15.1	15.8 14.5	14.6 14.0	14.8 14.5	15.4 17.6
f	15.7 15.5	14.7 14.8 14.7	15.1 16.0	16.1 15.5	14.8 15.1	15.7 15.0	15.7 17.8
g	16.2 15.9	15.9 15.2 15.6	15.6 16.6	16.4 15.9	15.4 16.0	16.5 15.5	15.8 18.0
h	16.3 16.0	15.8 15.9 15.9	16.0 17.0	17.0 16.0	15.7 16.1	16.6 16.0	15.9 19.0
k	17.0 17.0	16.6 16.4 16.6	16.8 18.0	17.8 16.9	16.7 17.0	17.7 16.6	16.9 19.7
l	18.9 19.2	17.8 17.1 18.0	18.1 19.0	18.5 17.9	17.8 17.7	18.6 17.6	17.8 n.m.

Sequence
FWW

^A ²⁰⁵⁴⁷ ²⁰⁵⁵³ ²⁰⁵⁷² ²⁰⁵⁷⁴ ²⁰⁵⁸⁵ ²⁰⁵⁸⁹ ²⁰⁵⁹⁶ ²¹³⁸⁰ ²¹⁴⁰⁰ ²¹⁴¹⁶ ²¹⁴⁶³ ²¹⁴⁹¹ ²¹⁵⁵⁵ ²²²⁷⁸ ²³⁴⁵⁰																
✓ HV995	15.6	16.2	16.3	16.3	16.2	16.4	16.5	16.3	15.6	15.4	16.2	16.0	16.3	16.3	15.6	
MD1	14.5	14.6	14.6	14.6	14.8	14.6	14.5	14.5	14.6	14.5	14.5	14.5	14.6	14.5	14.6	sequence
MD2	15.5	15.9	15.9	15.8	15.9	15.9	15.8	15.8	15.7	15.8	15.8	15.6	16.0	16.0	15.6	β
MD3	15.8	16.0	16.0	15.9	15.9	15.9	15.8	15.9	15.9	16.0	15.9	16.0	16.0	15.9	16.0	(V Mark N)
✓ HV993	17.0	16.6	16.9	16.9	17.0	17.0	off limits	16.9	17.0	17.0	17.0	17.0	17.0	17.0	17.0	off limits
994	15.9	15.5	16.4	16.0	15.9	16.2	16.6	15.8	16.4	15.9	16.2	15.4	15.9	15.5	15.5	
5898	15.6	15.9	15.7	15.6	15.7	15.4	15.7	16.1	15.7	15.8	15.3	15.4	15.5	15.6	15.9	
987	16.4	16.0	16.7	15.6	16.5	16.0	15.5	16.6	16.4	15.7	16.8	16.2	16.3	16.4	16.4	
MD13	15.3	15.7	16.0	15.4	15.0	15.7	15.6	15.9	15.7	15.7	15.8	15.8	15.8	15.9	15.5	
JW72	16.1	16.0	15.9	16.2	15.8	16.0	16.2	15.9	15.9	16.4	15.9	16.2	16.2	15.9	16.0	
MD12	17.0	17.1	16.9	17.0	17.0	16.9	17.0	17.0	17.0	17.0	17.1	16.9	17.1	17.0	off limits	
✓ HV5881	16.0	15.7	16.0	15.7	15.6	16.2	15.8	16.3	16.2	15.9	15.9	16.0	16.2	16.2	16.3	
JW42	15.4	15.4	15.4	15.5	15.4	15.6	15.5	15.5	15.5	15.4	15.5	15.5	15.5	15.6	15.6	Not Van
✓ HV2576	17.0	17.1	16.9	16.5	16.5	16.6	16.3	16.4	16.4	16.7	17.0	17.0	17.1	16.4	off limits	
SW7	15.6	15.8	16.2	15.9	15.8	15.7	15.6	15.7	15.8	15.9	15.7	15.6	15.7	15.7	15.7	
MD11	16.9	16.9	16.9	17.0	17.0	17.0	17.0	17.0	17.0	17.0	17.1	16.9	16.9	17.0	off limits	
JW43	15.7	15.7	15.6	15.7	15.7	15.8	15.7	15.8	15.8	15.7	15.6	15.6	15.8	15.8	15.9	Not Van
HV985	15.5	15.5	15.5	15.5	14.6	14.6	15.4	15.6	15.7	14.6	14.6	15.8	15.1	15.6	15.4	
2589	16.5	17.0	16.9	16.9	16.8	16.8	16.8	16.7	16.9	wrong star measured						
JW71	15.8	15.8	15.7	15.9	16.0	15.7	15.7	15.8	15.6	16.0	16.0	15.9	16.0	16.1	15.7	
70	15.4	15.5	15.3	15.4	15.5	15.6	15.2	15.6	15.6	15.6	15.5	15.4	15.6	15.5	15.4	Not Van
JW44	15.5	15.6	15.6	15.7	15.8	15.5	15.5	15.7	15.4	15.5	15.6	15.4	15.5	15.5	15.5	Not Van
JW8	15.5	15.5	15.6	14.6	15.1	15.2	14.5	15.1	15.7	15.4	15.6	15.0	15.7	14.7	15.1	
JW69	16.8	16.2	16.8	16.7	16.5	16.7	16.7	16.3	16.3	16.6	16.9	16.4	16.5	16.5	16.8	
JW68	15.8	15.7	15.7	15.7	15.6	15.6	15.6	15.8	15.9	15.6	15.7	15.6	15.6	15.8	15.7	Not Van
IGB1	15.7	15.8	15.9	16.0	16.4	15.6	15.6	16.4	15.9	16.3	15.9	16.0	16.2	16.3	15.7	

HV 993MD 12

These are ^{the} stars measured on page 61. Those measured on p59 were adjacent.

HSL31 →

	²⁰⁵⁴⁷	²⁰⁵⁵³	²⁰⁵⁷²	²⁰⁵⁷⁴	²⁰⁵⁸⁵	²⁰⁵⁸⁹	²⁰⁵⁹⁶	²¹³⁸⁰	²¹⁴⁰⁰	²¹⁴¹⁶	²¹⁴⁶³	²¹⁴⁹¹	²¹⁵⁵⁵	²²²⁷⁸	²³⁴⁵⁰
HV993(B)	15.7	15.9	15.7	15.5	15.7	15.5	15.4	15.7	15.9	15.8	15.5	15.6	15.7	16.0	15.6
MD12(B)	16.9	16.8	16.8	16.8	16.8	16.6	n.m.	16.5	16.5	16.7	16.9	16.8	16.4	16.2	16.2
✓HV2589	15.6	15.9	14.8 (plate defect)	15.5	15.9	15.9	15.9	15.5	16.1	16.0	16.0	15.8	16.0	15.6	15.5
JW103	16.2	16.0	15.6	15.8	16.1	15.6	16.3	16.2	16.0	16.0	16.1	16.0	16.0	16.1	16.0
✓HV2563	(15.6) (double)	14.8	15.6	15.4	15.3	16.5	15.5	15.6	15.4	15.3	15.5	15.4	15.6	15.0	15.5
JW36	15.0	15.2	15.3	15.1	15.1	15.1	15.0	15.3	14.9	15.3	14.9	14.9	15.1	15.1	14.9
✓(HV972) (HSL29)	15.6	15.6	15.6	15.6	14.5	14.8	15.5	15.4	15.7	15.8	14.7	15.4	14.8	15.9	16.1
JW100	16.1	15.5	15.3	15.4	15.6	16.0	15.6	15.6	15.8	15.9	15.6	15.8	15.9	15.6	15.4
✓(HV2552) (HSL484)	(15.4) (double)	15.3	15.5	15.6	15.4	14.9	15.8	15.5	15.7	15.7	14.9	15.2	14.8	15.5	15.6
✓HV2554	(15.9) (double)	15.8	16.3	15.7	16.3	16.5	16.5	16.2	16.4	16.6	16.4	16.2	16.3	16.3	16.2
JW101	15.7	15.6	15.9	15.6	15.9	15.6	15.6	15.8	15.5	16.0	15.9	15.7	15.9	15.7	15.6
MD15	(16.1) (double)	15.8	15.8	16.0	16.3	15.7	15.9	16.1	16.3	16.5	16.3	16.2	16.4	15.6	16.3
JW39	15.7	15.9	15.7	15.7	15.7	15.7	15.6	15.6	15.8	15.8	15.7	15.5	15.7	15.7	15.7
JW38	(15.8) (double)	16.0	15.9	16.1	16.2	16.1	16.2	16.1	16.1	16.3	16.0	15.9	16.2	16.1	16.2
JW60	15.7	15.7	15.7	15.8	15.7	15.7	15.7	15.8	15.7	15.9	15.8	15.7	15.9	15.7	15.8
JW87	16.0	16.2	15.9	16.2	16.3	16.2	16.1	16.3	16.3	16.4	16.2	16.2	16.2	16.3	16.2
✓(HV2540) (HSL483)	14.2	14.3	14.0	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.	n.m.
SM441	15.8	15.9	15.8	16.0	15.8	16.1	15.8	16.1	16.1	16.4	16.1	15.9	16.0	15.9	16.0
✓(HV2547) (HSL188)	15.6	14.5	15.4	15.5	14.8	14.9	15.5	14.8	15.5	14.8	15.6	14.6	15.6	15.6	15.0
✓(HV2546) (HSL189)	15.6	15.5	15.5	15.6	15.6	15.5	15.6	15.6	15.7	15.7	15.7	15.7	15.7	15.7	15.6
✓(HV2539) (HSL187)	15.7	15.7	15.8	14.6	15.7	16.0	15.7	15.3	15.7	15.0	15.9	16.1	15.4	15.8	15.6
JW40	15.6	15.7	15.9	16.0	15.6	16.1	plate defect	15.6	16.1	15.5	16.0	15.5	15.9	16.0	16.1
SM692	15.6	15.2	15.4	15.7	15.8	16.3	15.5	16.2	15.3	15.5	15.9	15.4	15.7	15.9	15.7
✓(HSL190) (HV2558)	15.4	15.7	15.8	16.0	15.5	16.1	15.5	15.8	15.7	15.8	15.6	15.9	15.7	15.8	15.6
→ HV973	14.6	14.6	14.6	14.7	15.1	15.4	14.8	14.4	14.4	15.4	15.4	14.8	13.6	15.1	15.2
SW67	16.4	16.7	16.5	16.3	16.5	16.4	16.5	16.2	16.4	16.4	16.3	16.3	16.5	16.3	16.3
JW41	15.7	15.7	15.8	15.7	15.7	16.0	15.6	15.9	15.7	15.7	15.7	15.7	15.8	15.9	15.7
MD14	16.9	16.8	16.5	16.4	16.1	16.6	16.4	16.5	16.6	16.8	16.9	16.5	16.9	16.5	16.4

529/β

JW61

• • — measured on p. 63

HV966✓

HV965✓

JW62

• • — measured on page 63

HV2531✓

HV961✓

JW57

measured
on p. 63

HSL658

measured
on p. 63

HV2514✓

HV2515✓

HV2513✓

HV958✓

Triple — HV2581✓

double

HV5830✓

double

HV954✓

HV2502✓

JW66 ^{120547, 20553, 20572, 20574, 20585, 20589, 20596, 21380, 21400, 21416, 21463, 21491, 21535, 22278, 23450,}
16.3 16.2 16.5 16.4 16.4 16.4 16.4 16.5 16.4 16.6 16.5 16.4 16.4 16.5 16.2

JW65 15.9 15.7 15.6 15.7 15.6 15.6 15.7: 15.8: 15.8: 15.9 15.6 15.7 15.6 15.6 15.7

JW37 ^{triple and numerous} 15.2 15.4 15.4 15.4 15.2 15.5 15.4 15.3 15.5 15.5 15.4 15.5 15.5 15.4 15.5

HSL28 ^{triple + net} 15.7 15.1 15.8 15.5 15.3 15.1 15.5 15.9 14.9 16.1 15.9 15.0 15.4 15.1 15.4

HSL30 ^{net} 15.7 15.0 15.4 15.5 14.4 14.7 14.9 15.2 15.5 16.2 15.5 15.6 15.6 15.3 15.6

JW63 15.8 15.8 16.1 15.9 15.8 16.0 16.2 15.9 16.1 16.4: 15.8 15.7 16.2 15.7 16.1

JW86 ^{double} 14.9 15.2 14.6 15.0 14.7 14.6 14.9 15.2 14.9 15.2 14.9 15.0: 15.3: 14.6 15.4

JW64 15.7 15.9 16.2 16.0: 16.2 16.6: 16.0 16.2 16.1 16.1: 16.2 16.2 16.2 16.2 16.1

HSL230 16.2 15.5 16.4 15.6 15.6 16.1 15.8 15.6 16.4: 16.3: 15.7 16.2 16.1 15.5 15.9

HSL103 15.5 15.6 16.1 15.6 16.3 16.1 15.5 16.1 15.5 16.3: 16.8 15.6 16.2 15.6 16.0

JW61 16.2 15.8 16.2 16.0 15.8 16.0: 16.4 16.5: 16.0 16.3 15.9 15.8 15.7: 16.0 16.0

JW62 16.2 16.0: 16.2: 16.1: 16.4: 16.3 16.3 16.1 16.3: 16.5: 16.3 16.2/6.4 16.1 16.2

JW33 16.1 15.5 15.5 15.4 15.5 15.8 15.7 15.7 15.5 15.7 15.9 15.4 15.9 16.0 15.5

JW99 16.4 16.8 16.5 16.6 16.6 16.4 16.4 16.5 16.5: 16.6 16.8 16.3 16.6: 16.6: 16.4

~~JW84~~

MD20 ^{net} 16.0: 15.6: 15.8: 16.2: 15.6: 15.6: 15.8 16.1: 16.0: 16.6: 16.1 15.9: 15.9: 15.4: 15.7

JW57 16.3: 16.1: 16.4 16.3: 16.2 16.4: 16.5 16.1 16.5 16.6 16.6: 16.2 16.6: 16.5: 16.3

HSL658 15.7 15.7 15.9 15.4 15.6 15.9 15.7 16.0 16.3 16.4 15.7 15.9 15.8 15.6 16.0

HSL684 15.5 15.3 16.0 16.3 14.9 15.5 15.1 15.9 15.4 15.9 15.7 15.2 15.5 15.5 15.9

HSL963 15.8 15.6 16.3 16.3 15.6 15.8 15.5 16.2 16.2 16.0 15.6 16.2 16.5 15.6 15.6

HSL841 15.8 16.1 15.7 15.5 15.9 16.0 15.6 15.6 16.0 16.2 16.4 15.6 15.9 15.9 16.1

MD19 15.5 15.7 15.9 15.9 15.7: 15.8: 15.7: 16.1: 16.0: 16.0: 15.5 15.9 15.7 15.6: 15.9

HSL23 15.3 15.2 14.6 15.1 15.4 15.6 15.4 15.3 15.6 15.1 15.2 15.9 14.8 15.5 15.9

HSL843 16.0 16.3: 15.5 16.0 16.3 16.2 n.m. 16.0: 16.4 16.1: 16.1: 16.1: 16.0: 15.5 16.3

JW30 16.3 16.2 16.1 15.9 16.0 16.2 15.9 16.5 15.9 16.0 15.9 16.1 16.4: 16.5 16.0

JW31 16.4 16.6 16.4 16.6 16.5 16.6: 16.6: 16.6 16.7: 16.8 16.8 16.3 16.5: 16.6 16.4

JW29 15.4 15.4 15.4 15.5 15.5 15.4 15.5 15.4 15.5 15.7 15.5 15.5 15.5: 15.5 15.5

JW58 16.5 16.3 16.6 16.4 16.5 16.8 16.3 16.6 16.6 16.7 16.6 16.7 16.5 16.4 16.7

JW59 16.9 17.0 16.9 17.0 17.0 17.0 17.0 16.8 17.0 16.9 16.9 17.0 16.9 16.9 n.m.

SM440 16.4 16.1 16.4 16.5 16.3 16.5 16.4 16.4 16.6: 16.5 16.6 16.4 16.5 16.5 16.5

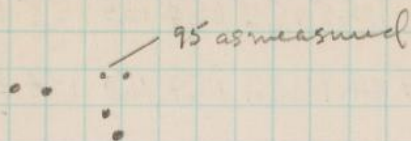
JW35 16.2 16.3 16.3 16.2 16.3 16.4 16.3 16.2 16.2 16.6: 16.2 16.3 16.4 16.3 16.4

HSL447 15.1 14.8 15.0 15.1 14.9 14.8 14.9 15.3 15.0 15.0 14.8 14.8 14.9 15.5 15.0

HSL840 16.3 15.5 16.4 16.5 15.6 16.0 16.2: 15.9 16.4 16.5 15.6 15.5 16.4 16.2 16.0

MD31 16.7 16.4 16.5 16.9 16.9 16.6 16.8 16.1 16.1 16.8 16.7 16.6 16.5 16.7 16.8

JW 95



95 as measured

HV 2497 ✓

HV 962 ✓

(measuring surface density)

HV 2506 ✓

HV 2503 ✓

HV 2499 ✓

HV 947 ✓

HV 5797 ✓

Seq

/3

JW84	16.3	15.8	15.0	14.9	14.8	15.1	14.8	[17.3]	[17.3]	[17.6]	[17.3]	[17.3]	17.4	[17.3]	[17.0]
JW83	15.7	15.7	15.8	15.7	15.6	15.7	15.7	15.6	15.7	16.0	15.5	15.8	15.8	15.8	15.6
HSL224	15.3	14.3	15.0	14.3	14.6	15.3	14.5	14.7	15.4	15.2	15.4	14.9	15.0	15.6	15.0
JW94	16.3	16.8	16.5	16.1	16.4	16.3	16.5	16.6	16.4	16.6	16.6	16.2	16.7	16.6	16.7
JW95	16.7	16.4	16.4	16.6	16.5	16.4	16.5	16.4	16.5	16.5	16.7	16.4	16.5	16.6	16.5
JW96	16.1	16.4	16.2	16.5	16.1	16.1	16.2	16.2	16.2	16.4	16.3	15.9	16.5	16.1	16.3
HSL26	16.2	15.5	16.4	15.7	15.7	16.3	15.9	16.0	15.6	16.5	15.5	16.0	16.0	15.5	16.3
JW85	16.2	16.2	16.0	16.1	16.4	16.1	16.2	defect	16.3	16.6	16.3	16.1	16.4	16.3	16.1
JW97	15.2	15.0	14.9	14.9	14.8	15.2	15.0	15.3	14.9	15.0	15.0	14.9	15.1	14.9	15.3
JW24	(16.0: double)	16.0	16.1	16.2	16.2	16.2	16.2	16.2	16.2	16.5	16.2	16.1	16.1	16.1	16.1
HSL225	15.9	15.9	15.5	16.1	15.4	15.7	15.9	16.3	15.5	16.3	16.0	16.3	15.6	15.3	15.6
JW23	15.8	15.9	16.0	16.1	15.8	16.1	16.2	16.3	15.9	16.3	16.0	16.0	16.0	16.0	16.0
HSL226	16.2	16.2	16.1	16.0	15.9	16.4	15.6	15.6	16.3	15.9	16.2	15.5	15.9	16.4	15.4
HSL962	16.0	16.1	defect	16.0	15.6	15.6	15.5	16.2	15.9	15.6	15.4	16.1	16.1	15.9	16.5
JW56	15.7	15.3	15.4	15.4	15.4	15.3	15.4	15.6	15.4	15.2	15.4	15.5	15.5	15.5	15.5
MD23	15.9	16.2	16.1	16.1	15.7	16.1	16.1	16.3	16.1	16.2	15.9	15.9	16.1	16.2	15.6
JW25	16.6	16.3	16.5	16.4	16.5	16.5	16.4	16.5	16.4	16.4	16.7	16.4	16.2	16.3	16.8
JW26	(16.2 double)	16.2	16.2	16.0	16.4	16.2	16.1	16.3	16.3	16.4	16.5	16.2	16.5	16.5	16.2
SM694	16.8	17.0	16.8	16.8	16.9	16.9	16.7	16.8	16.8	16.9	16.8	16.9	17.0	16.9	17.0
JW28	15.6	15.6	15.5	15.4	15.6	15.6	15.6	15.5	15.5	15.6	15.5	15.6	15.5	15.6	15.7
JW27	16.9	16.7	16.7	16.9	16.6	16.6	16.6	16.7	16.6	16.7	16.7	16.4	16.8	16.7	16.5
HSL17	15.2	15.6	15.0	15.4	15.6	15.3	15.5	15.1	15.6	15.4	14.9	15.3	14.8	15.5	15.5
JW98	16.3	16.9	16.8	16.8	16.9	15.9	15.8	15.9	16.9	16.8	16.5	16.3	17.0	16.0	16.6
MD25	16.1	16.2	15.7	15.9	16.4	15.9	16.3	15.8	16.3	16.5	15.9	15.6	16.2	15.7	15.9
HSL960	15.6	15.6	15.7	15.5	15.5	15.8	15.7	15.6	15.5	15.6	15.6	15.7	15.6	15.5	15.7
JW80	17.2	17.1	17.0	17.0	17.0	17.0	17.0	17.2	17.4	17.5	17.3	[17.3]	17.3	17.3	[17.0]
SM157	15.8	15.8	16.1	15.7	15.6	16.0	16.0	15.9	15.9	16.2	15.9	15.9	16.4	16.3	16.3

HV 974 ✓

HV 2511 ✓

(JW55) HV 950 ✓

(JW32) HV 2512 ✓

HV 2467 ✓

	20547	20553	20572	20574	20585	20589	20596	21380	21400	21416	21463	21491	21535	22278	23450
HSL104	15.5	15.5	15.6	15.5	14.3	14.6	15.1	15.6	14.3	14.6	14.8	15.6	15.0	15.2	14.9
480	15.4	15.3	15.5	15.4	15.4	15.3	15.3	15.5	15.4	15.5	15.4	15.5	15.4	15.5	
22	15.7	15.0	15.6	15.7	14.7	14.8	14.9	15.4	15.6	15.9	15.6	15.3	15.5	15.0	15.6
228	16.2	16.6	16.5	16.0	15.7	16.3	16.2	16.5	16.4	15.7	16.5	15.9	16.6	15.6	16.5
539	15.6	15.5	15.6	15.5	15.8	15.7	15.7	15.7	15.7	15.8	15.7	15.8	15.9	15.8	15.9

Seq 1/3

Seq FWW

	JW 98	JW 84		JW 98	JW 84
A17305	16.4	>16.8	20568	17.0	15.3
17306	16.6	>17.1	578	16.8	15.1
307	16.4	17.0:	592	16.5	15.3:
308	16.7	>17.1	21395	16.0	>16.8
309	17.0	>17.1	21445	16.2	>16.8
310	16.6	>17.5	21469	16.9	>17.1
311	16.8	>17.2	21496	16.8	>17.3
17300	16.2	>17.3	21520	17.0	>17.2
301	16.3	>17.2	21522	15.9	>17.0
302	16.0	>17.3	21557	16.2	>17.0
303	16.1	>17.3	17285	15.8	17.1:
304	16.5	>16.9	17287	16.6	>17.3
17280	15.7	>17.1	17288	16.8	17.4:
281	15.8	>17.1	17289	16.7	17.5:
282	16.0	>17.1	17290	16.9	>17.3
283	16.2	>17.0	17291	16.8	17.4:
284	15.7	17.0:	17292	16.9	>17.2
20590			17293	16.9	17.3:
20539	17.0	16.6	17294	17.0	17.4:
542	17.0:	16.6:	17295	17.1	>17.2
556	15.7	16.0			

	JW 98	JW 84		98	84
17298	16.6	717.2	953	16.9	> 17.4
299	16.7	17.3:	954	16.8	> 17.1
22099	16.0	17.3	959	16.2	> 17.0
22131	16.9	17.0	968	16.9	> 17.1
22175	16.8	717.0	971	16.2	> 17.0
22225	16.0	717.3	979	16.7	> 17.1
251	15.6	717.2	987	15.8	> 17.0
260	16.9	717.1	24 425	16.2	> 17.0
269	17.0	717.1	446	15.9	17.2;
277	17.2	717.2	451	16.7	16.8
305	17.0	717.2	467	16.6	16.0
343	<hr/>		469	16.8	15.7
360	16.3	717.2	483	15.8	15.8
23411	16.5	717.1	487	16.8	15.6
415	17.0	717.1	496	715.6	15.6;
422	not measured	716.9	502	16.3	15.4
424	17.1	717.1	509	16.9	15.4
427	16.6	717.0	516	15.7	15.5
430	16.9	717.1	526	16.8	15.4
449	15.7	717.1	531	16.4	15.3
453	15.9	717.0	25 444	16.9	> 17.1
458	16.1	17.1;	462	16.2	> 17.0
462	16.8	717.2	472	16.9	> 17.0
466	17.1	717.2	474	17.0	> 17.1
471	15.8	717.4	477	16.7	> 17.2
904	15.6	717.1	484	16.8	> 17.1

415036	JW 98 16.3	JW 84 16.3
7123	16.8	17.1
12294	17.0	15.3

Réseau measurements - system of HSL, HA 60.

Star	Whole Divisions		Mm			Whole Divisions		Mm		
	X	Y	X	Y		X	Y	X	Y	
✓ MD1	135	69	9.2 ⁵⁵²	0.4 ⁰²⁴	✓ JW 60	123	63	6.9 ⁴¹⁴	7.5 ⁴⁵⁰	
	14052	6924				12714	6750			
✓ 2	135	63	8.6 ⁵¹⁶	8.3 ⁴⁹⁸	✓ 87	123	63	5.4 ³²⁴	7.0 ⁴²⁰	
HV12060	14016	6798				12624	6720			
✓ 3	135	63	5.5 ³³⁰	9.9 ⁵⁹⁴	✓ SM 441	123	63	6.2 ⁴⁴²	7.6 ⁴⁵²	
HV12054	13830	6894	9.5⁵¹⁰	9.8⁵⁸⁸		12672	6752			
✓ JW 5	129	57			✓ JW 40	123	63	8.2 ⁴⁹²	3.8 ²²⁸	
(MD13)	13410	6288			HV12046	12792	6528			
✓ 72	135	63	1.5 ⁹⁰	4.4 ²⁶⁴	✓ 67	129	63	2.7 ¹⁶²	3.4 ²⁰⁴	
	13590	6564				13062	6504			
MD12	129	63	9.6 ⁵⁷⁶	2.4 ¹⁴⁴	✓ 41	129	63	5.1 ³⁰⁶	3.8 ²²⁸	
HV12044	13476	6444				13206	6528			
JW 42	129	63	7.5 ⁴⁵⁰	3.9 ²³⁴	✓ MD 14	129	63	3.8 ²²⁸	5.0 ³⁰⁰	
	13350	6534				13128	6600			
JW 7	129	69	7.9 ⁴⁷⁴	1.8 ¹⁰⁸	✓ JW 66	129	69	0.4 ²⁴	8.3 ⁴⁹⁸	
	13374	7008				12924	7398			
MD11	129	69	6.7 ⁴⁰²	2.2 ¹³²	✓ 65	123	69	9.8 ⁵⁸⁸	8.2 ⁴⁹²	
	13302	7032				12888	7392			
JW 43	135	69	0.4 ²⁴	1.6 ⁹⁶	✓ 37	123	69	9.2 ⁵⁵²	8.2 ⁴⁹²	
	13524	6996				12852	7392			
✓ 71	129	69	8.3 ⁴⁹⁸	2.2 ¹³²	✓ 63	123	69	7.3 ⁴³⁸	3.6 ²¹⁶	
	13398	7032				12738	7116			
✓ 70	129	69	5.6 ³³⁶	4.8 ²⁸⁸	✓ 86	123	69	6.7 ⁴⁰²	4.0 ²⁴⁰	
	13236	7188			HV12044	12702	7140			
✓ 44	135	69	6.7 ⁴⁰²	8.9 ⁵³⁴	✓ 64 (MD18)	123	69	5.6 ³³⁶	6.2 ³⁷²	
	13902	7434				12636	7272			
✓ 69	135	75	1.0 ⁶⁰	2.7 ¹⁶²	✓ 61	123	69	4.6 ²⁷⁶	2.8 ¹⁶⁸	
	13560	7662			HV12042	12576	7068			
✓ 103	129	75	6.1 ³⁶⁶	4.8 ²⁸⁸	✓ 62	123	69	5.1 ³⁰⁶	4.5 ²⁷⁰	
HV976 (H)	13266	7788 (HV976?)	(HV977?) inc in HA90			12606	7170			
✓ 36	129	69	1.9 ¹¹⁴	4.8 ²⁸⁸	✓ 33	123	69	3.1 ¹⁸⁶	5.0 ³⁰⁰	
	13014	7188			HV12040	12486	7200			
✓ 100 (MD17)	123	69	9.5 ⁵⁷⁰	3.2 ¹⁹²	✓ 99	123	69	2.6 ¹⁵⁶	6.0 ³⁶⁰	
HV12049	12870	7092				12456	7260			
✓ 101 (MD16)	129	63	1.2 ⁷²	9.7 ⁵⁸²	✓ 34	123	69	1.5 ⁹⁰	5.4 ³²⁴	
	12972	6882				12390	7224	(HV12037) 90		
✓ MD15	129	63	0.9 ⁵⁴	9.1 ⁵⁴⁶	MD 20	117	69	9.6 ⁵⁷⁶	8.6 ⁵⁷⁶	
HV12052	12954	6846			HV12036	12276	7416			
✓ 39	123	63	9.3 ⁵⁵⁸	7.2 ⁴³²	JW 57	117	69	7.6 ⁴⁵⁶	6.6 ⁴⁵⁶	
	12858	6732				12156	7296			
✓ 38	123	63	8.5 ⁵¹⁰	8.1 ⁴⁸⁶	MD 19	123	69	4.3 ²⁵⁸	2.2 ¹³²	
HV12047	12810	6786								

JW46; coordinates of HV5742 are $x = 10147''$
Is this star (HV5742) the same $y = 7844''$
as the star marked SFM 411 on several
charts? If so JW46 is a new variable
since no chart has JW46 marked.

MD23 is probably a new variable. HV950, I presume,
is HSL22, adjacent to MD23.

	X	Y	X	Y		X	Y	X	Y	
✓ JW 30	123	69	0.0	0.0	✓ JW 80	111	69	6.13668	0.480	73
HV12037	12300	6900				11466	7380	(HV24802?)	390	366
✓ 31	117	63	9.6 ⁵⁷⁶	9.8 ⁵⁸⁸	✓ CW 92	93	75	6.5	6.1	
HV12030	12276	6888	(HV5826?)			9690	7866			
✓ 29	117	63	8.5 ⁵¹⁰	9.8 ⁵⁸⁸	JW 49	99	75	0.1 ⁶	5.0 ³⁰⁰	HSL 250
	12210	6888				9906	7800	(HV2439?)		312
✓ 58	123	63	2.1 ¹²⁶	7.8 ⁴⁶⁸	✓ 76	99	75	0.8 ⁴⁸	5.2	
HV12034	12426	6768				9948	7812			
✓ 59	123	63	1.4 ⁸⁴	8.0 ⁴⁸⁰	✓ 48	99	75	1.0 ⁶⁰	5.0 ³⁰⁰	
	12384	6780			HV12008	9960	7800			
✓ 35	117	63	8.2 ⁴⁹²	7.4 ⁴⁴⁴	CW 71	99	75	3.4 ²⁰⁴	6.3 ³⁷⁸	
	12192	6744				10104	7878			
✓ MD 31	117	63	2.6 ¹⁵⁶	6.8 ⁴⁰⁸	✓ JW 46	99	75	4.0 ²⁴⁰	5.8 ³⁴⁸	
HV12030	11856	6708			HV12004	10140	7848	(HV5742?)	77	see across
✓ JW 84	123	75	8.3 ⁴⁹⁸	9.0 ⁵⁴⁰	✓ 77	99	75	4.6 ²⁷⁶	4.8 ²⁸⁸	
HV12048	12798	8040				10176	7788	(HV5742?)		
✓ 83	117	75	5.2 ³¹²	9.1 ⁵⁴⁶	✓ 47	99	75	4.8	5.0 ³⁰⁰	
	12012	8046			HV12010	10188	7800	(HV5742?)		
✓ 94	117	75	3.7 ²²²	9.1 ⁵⁴⁶	✓ 12	99	75	5.6 ³³⁶	4.7	282
	11922	8046				10236	7782			
✓ 95	117	75	2.2 ¹³²	6.5 ³⁹⁰	✓ 11	99	75	5.9 ³⁵⁴	4.1	246
	11832	7890			HV12011	10254	7746			
✓ 96	117	75	0.9 ⁵⁴	5.6 ³³⁶	✓ 13	99	75	8.3 ⁴⁹⁸	3.4	204
HV12029	11754	7836				10398	7704			
✓ 85	123	75	2.9 ¹⁷⁴	3.3 ¹⁹⁸	CW 82	99	75	6.8 ⁴⁰⁸	1.8	108
	12474	7698	(HV2522?)		HV12012	10308	7608			
✓ 97	123	75	2.0 ¹²⁰	4.3 ²⁵⁸	✓ 124	99	75	7.4 ⁴⁴⁴	5.3	318
HV12038	12420	7758			HV12013	10344	7818			
✓ 24	117	75	6.2 ³⁷²	4.3 ²⁵⁸	JW 74	99	75	4.4 ²⁶⁴	9.1 ⁵⁴⁶	
	12072	7758				10164	8046	(HV5743?)		
✓ 23	117	75	3.5 ²¹⁰	2.8 ¹⁶⁸	✓ 20	111	69	0.8 ⁴⁸	8.8 ⁵²⁸	
	11910	7668				11148	7428	(HV5781?)		
✓ 56	117	69	3.5 ²¹⁰	8.8 ⁵²⁸	✓ 21	105	69	9.2	8.3 ⁴⁹⁸	
	11910	7428				11052	7398			
✓ MD 23	117	69	2.7 ¹⁶²	6.9 ⁴¹⁴	✓ 79	111	69	1.6 ⁹⁶	7.9 ⁴⁷⁴	
HV12031	11862	7314	(HV950?)			11196	7374	(HV5781?)		
✓ JW 25	117	69	1.1 ⁶⁶	6.9 ⁴¹⁴	✓ 90	111	69	2.5 ¹⁵⁰	5.9 ³⁵⁴	
	11766	7314				11250	7254			
✓ 26	117	69	1.3 ⁷⁸	4.6 ²⁷⁶	✓ 91	111	69	3.1 ¹⁸⁶	5.4 ³²⁴	
	11778	7176			HV12019	11286	7224			
✓ SM 694	117	69	1.2 ¹³²	4.2 ²⁵²	22					
	11832	7152								
✓ JW 28	117	69	1.0 ⁶⁰	2.1 ¹²⁶	CW 69	99	75	1.2 ⁷²	3.9 ²³⁴	
	11760	7026				9972	7734			
✓ 27	111	69	8.7 ⁵²²	2.7 ¹⁶²	✓ 70	99	75	4.7 ²⁸⁸	4.6 ²⁸²	
	11622	7062				10188	7782			
✓ 98	111	69	8.3 ⁴⁹⁸	1.1 ⁶⁶	✓ 84	105	75	0.1 ⁶	7.3 ⁴³⁸	
HV12025	11598	6966	(HV4472?)			10506	7938			
✓ MD 25	111	69	6.2 ³⁷²	1.6 ⁹⁶	JW 75	105	75	1.9 ¹¹²	9.6 ⁵⁷⁶	
HV12023	11472	6996				10612	8076			
✓ JW 22	111	69	4.2 ²⁵²	1.6 ⁹⁶	✓ 10	99	81	9.7	0.2	
HV12020	11352	6986				10482	8112			

- CW 73	X 99	Y 81	X 9.0 ⁵⁴⁰	Y 1.8 ¹⁰⁸
✓ 75	10440 99	8208 81	4.3 ²⁵⁸	6.7 ⁴⁰²
✓ 125	10158 99	8502 81	3.2 ¹⁹²	8.9 ⁵³⁴
✓ 88	10092 99	8634 81	8.5 ⁵¹⁰	9.7 ⁵⁸²
✓ 86	10410 99	8682 81	8.7 ⁵²²	5.8 ³⁴⁸
HV12014	10422	8448		
✓ 76	99	81	9.5 ⁵⁷⁰	6.1 ³⁶⁶
HV12015	10470	8466		
✓ 87	105	81	2.4 ¹⁴⁴	5.7 ³⁴²
	10644	8442		
- JW 73	105	87	8.6 ⁵⁰⁴	0.0 ⁰
	11004	8700		
✓ 50	105	87	9.3 ⁵⁵⁸	0.1 ⁶
	11058	8706		
✓ 52	111	81	2.1 ¹²⁶	8.3 ⁴⁹⁸
	11226	8598		
✓ 53	111	81	5.9 ³⁵⁴	8.7 ⁵²²
	11454	8622		
✓ 57	105	81	8.2 ⁴⁹²	4.4 ²⁶⁴
	10992	8364		
✓ 14	111	81	3.7 ²²²	1.9 ¹¹⁴
	11322	8214		
✓ 81	111	81	2.5 ¹⁵⁰	2.4 ¹⁴⁴
	11250	8244		
✓ 16	111	81	2.9 ¹⁷⁴	0.9 ⁵⁴
HV12018	11274	8154		
✓ 15	105	75	8.4 ⁵⁰⁴	9.0 ⁵⁴⁰
	11004	8040		
✓ 17	111	75	7.7 ⁴⁶²	9.2 ⁵⁵²
	11562	8052		
✓ 82	111	81	7.0 ⁴²⁰	1.3 ⁷⁸
HV12024	11520	8178		
✓ 93	117	81	1.1 ⁶⁶	2.4 ¹⁴⁴
	11766	8244		
✓ 18	111	75	2.2 ¹³²	2.8 ¹⁶⁸
	11232	7668		
✓ 78	105	75	8.2 ⁴⁹²	1.7 ¹⁰²
	10992	7602		
✓ 54	105	75	4.9 ²⁹²	1.3 ⁷⁸
	10792	7578		
✓ 92	105	75	4.7 ²⁸²	1.7 ¹⁰²
	10282	7602		

~~HV 5760.7; in HA 90, #1~~

(HV 2479⁸) HSL 306; in HA 90.1

Measures of
variables in Cetus L.M.C.

Jan, 1949 U M-K N.

78

A

JD

		2453 (748)	2471 (986)	5763 (408)	5757 (409)	5717 (405)	2445 (67)	12014 (86)	12015 (76)	12017 (836)	
17225	2427746.482	14.5	15.9	14.6	15.4	14.5	16.0	16.5	15.3	15.6	1
17228	27747.424	14.5	15.9	14.7	15.6	14.5	16.3	16.4	15.4	15.5	1
17232	27749.409	14.5	15.9	14.6	15.2	14.6	16.2	16.2	15.5	15.4	
17234	27749.489	14.2	15.8	14.7	14.9	14.6	16.2	16.3	15.7	15.2	
17239	27750.440	14.2	15.9	14.6	15.6	14.6	16.0	16.4	15.6	15.8	
17247	27755.362	14.7	16.0	14.8	14.9	14.8	16.0	16.1	15.7	15.7	
17249	27755.452	14.5	16.0	14.9	15.0	14.6	16.2	16.2	15.2	15.4	
17268	27786.315	15.2	16.3	14.7	15.2	14.8	16.4	16.2	15.7	15.8	
17280	27799.286	14.5	16.0	14.8	15.4	14.8	16.2	16.2	15.4	15.3	
17281	27799.331	14.4	16.0	14.7	15.6	14.5	16.0	16.3	15.2	15.4	
17282	27799.379	14.3	15.9	14.6	15.5	14.7	15.9	16.3	15.1	15.3	
17283	27799.446	14.6	16.0	14.4	15.4	14.6	16.0	16.3	15.4	15.3	
17284	27799.482	14.9	16.1	14.8	15.3	14.5	16.2	16.6	15.2	15.6	
17285	27799.532	14.7	16.0	14.5	15.5	14.8	def	16.4	15.6	15.7	
17287	27800.283	14.5	16.0	14.5	15.8	14.6	16.4	16.3	15.6	15.6	
17288	27800.320	14.7	16.2	14.6	15.9	14.8	16.4	16.2	15.0	15.6	
17289	27800.377	14.7	16.2	14.5	16.0	14.5	16.4	16.4	15.6	15.7	
17290	27800.414	14.6	16.1	14.7	15.8	14.5	16.3	16.7	15.4	15.7	
17291	27800.472	14.8	16.0	14.8	15.7	14.6	16.4	16.2	15.6	15.4	
17292	27800.507	14.6	16.2	15.0	15.7	14.8	16.5	16.4	15.6	15.4	
17293	27800.555	14.3	16.3	14.8	15.7	14.5	16.6	16.4	15.6	15.3	
17294	27801.283	14.5	15.5	14.6	15.5	14.4	16.4	16.3	15.6	15.6	
17295	27801.321	14.6	15.5	14.8	14.8	14.7	16.4	16.4	15.4	15.3	
17298	27802.499	14.9	16.1	14.8	15.6	14.6	16.1	16.3	15.4	15.4	
17299	27802.552	14.8	16.0	14.8	15.6	14.5	16.0	16.2	15.3	15.3	

12016	12013	12012	12011	2478	5790	12007	
JW92	CW124	CW82	JW11	(222)	JW46	(158)	CW94 CW66
15.1	14.9	15.5	15.6	16.0	15.3	14.5	15.4 16.1 ^{15.1}
15.4	15.1	14.8	16.2	16.7	15.8	14.4	15.5 15.4
15.1	14.9	14.4	14.7	15.6	16.0	14.3	15.2 15.5
15.2	15.3	14.6	14.6	15.6	16.3	14.2	15.6 15.8
15.1	15.0	14.9	15.2	16.5	16.3	^{14.5} 14.8	15.1 15.4
15.0	15.3	14.5	15.0	16.7	16.4	14.3	14.9 15.3
15.0	14.9	14.6	14.5	16.7	16.0	^{14.5} 14.8	15.4 14.8
15.2	15.3	14.7	15.7	16.0	15.8	^{14.2} 14.1	15.4 15.3
15.3	15.2	14.8	14.9	16.5	16.0	14.2	15.4 15.1
15.2	15.0	14.8	14.8	16.7	15.8	14.3	15.1 14.7
14.9	15.1	14.8	14.6	16.4	15.7	14.4	15.2 14.7
15.0	15.2	15.0	14.8	16.7	16.0	14.3	15.2 15.1
15.2	14.7	14.9	14.5	16.6	16.0	^{14.3} 14.1	15.4 14.9
15.1	14.8	15.3	14.7	16.7	15.7	14.2	15.5 14.8
^{15.3} 15.7	15.4	14.7	15.3	16.2	15.9	14.3	15.4 14.9
15.2	15.4	14.9	15.4	16.1	16.0	14.5	15.2 15.2
^{15.5} 15.6	15.6	14.8	14.9	16.1	15.8	14.2	15.1 15.1
def	15.8	14.6	15.4	15.9	15.8	14.2	15.4 14.7
^{15.2} 15.5	15.5	14.6	15.5	15.7	16.0	14.2	15.5 15.2
15.3	15.4	14.9	15.3	15.8	16.1	14.2	15.3 15.4
15.1	15.4	15.1	15.1	15.6	16.0	^{14.3} 14.1	15.2 15.2
15.4	15.4	14.6	15.2	16.0	16.2	14.2	15.5 15.5
15.3	15.2	14.9	15.7	16.0	16.1	^{14.3} 14.1	15.2 15.4
15.4	15.3	14.9	15.8	16.5	16.2	^{14.2} 14.6	15.3 15.5
15.2	15.4	14.8	15.6	16.4	16.1	14.4	15.1 15.5

HV2467 (539)	HV9436 (160)	12018 JW16	2475 223	12016 JW42	939 43	5772 478	24680 477	12020 JW22	120 JW
15.6 15.4	15.2	15.8	14.8	15.1 15.0	14.6	15.3	15.7	16.4	16.1
15.9 16.0	15.5 15.4	15.9 16.2	15.4	15.1 15.4 15.7	15.5-15.5 15.6	16.0	16.3	16.0	16
15.8 15.3	15.1	15.8	14.5	14.7 14.5	15.5	15.0	14.0	16.1	16
15.7	15.2	15.9	14.7	14.6	15.4	15.4	14.0	16.2	16
15.8	14.9	15.8	14.9	15.0	16.1-16.2 16.3	15.1	14.8	16.0	16
15.8	15.3 15.5	15.6	14.9	14.9	15.3	15.1	13.8	16.2	16
15.9	14.9	15.8	14.9	15.0	15.5	15.3	14.0	16.1	16
15.9 15.4	14.8 14.5	15.8	14.5	15.1 14.4	15.2	15.1	15.7	16.2	16
15.7	15.1	15.5	14.8	14.8	15.2	15.3	15.4	16.0	16
15.7	15.0	15.5	14.9	14.8	15.2	15.4	15.4	16.0	16
15.5	15.1	15.6	15.1	14.8	15.0	15.2	15.2	16.0	16
15.7	14.8	15.8	15.0	15.1	15.1	15.5	15.2	15.9	16
15.8	15.1	15.7	15.0	15.0	15.0	15.4	15.3	15.9	16
15.7	15.1	15.8	15.0	15.0	14.9	15.6	15.2	16.0	16
15.7	15.3 15.4	15.7	15.3	15.3	15.4	15.7	13.9	15.9	16
15.5	15.2	15.9	15.1	15.0	15.2	15.4	14.0	16.1	16
15.8	15.3	15.7	15.1	15.3	15.3	15.5	14.0	16.0	16
15.8	15.2	15.9	15.0	15.2	15.2	15.6	14.0	15.8	16
15.8	14.9	15.8	15.1	15.3	15.4	15.5	13.9	15.9	16
15.7	14.9	15.9	15.2	15.2	15.4	15.6	13.8	15.9	16
15.6	14.8	15.9	15.2	15.3	15.4	15.5	13.8	15.9	16
15.9	14.9	16.0	15.0	15.2	15.8	15.3	14.1	16.0	16
15.9	14.9	15.8	15.0	15.3	15.7	15.2	14.1	16.0	16
15.9 15.4	14.9	15.5	14.9	15.0	15.6	15.1	14.8	16.1	16
15.5	15.1	15.6	14.8	14.9	15.5	15.0	14.8	16.2	16

12019	947	5791	2480	5797	12029	2497	12024	2492	2483	2479	5787	5770
JW91	17	959	479	SL157	JW96	224	JW82	657	307	306	837	SL50
				16.5		15.3					16.3	14.5
16.6	15.2	15.2	16.0	15.9	16.7	14.4	16.0	14.0	14.7	14.8	16.4	14.1
15.9	15.6	15.7	16.8	16.5	16.4	15.9	16.8	13.7	14.7	14.8	16.3	14.5
16.9	15.9	15.6	16.0	16.4	16.4	15.4	16.8	14.1	14.9	14.9	16.0	14.0
16.8	16.0	15.5	15.8	14.2	16.5	15.7	16.6	13.5	14.7	14.8	15.7	14.2
16.0	15.2	15.2	15.9	15.9	16.5	14.1	16.0	14.1	14.8	14.8	16.0	14.5
16.0	15.4	15.2	16.0	16.0	16.6	15.6	16.5	13.8	14.8	15.0	16.1	14.6
16.3	15.8	15.4	16.5	16.3	16.9	15.8	16.8	14.3	14.9	15.2	16.0	14.8
16.0	15.2	15.2	16.5	16.2	16.8	15.6	16.7	13.9	14.7	14.7	15.8	14.3
16.1	15.8	15.2	16.3	16.2	16.4	14.6	16.4	13.9	14.8	15.6	15.5	14.3
16.2	15.6	15.4	16.4	16.2	16.5	14.8	16.4	13.9	15.2	15.5	16.0	14.2
16.1	15.5	15.2	16.1	16.2	16.4	14.6	16.6	13.9	14.7	15.5	16.0	14.9
16.0	15.6	15.2	16.0	16.1	16.2	14.8	16.6	13.9	14.9	15.7	16.0	14.3
16.0	15.4	15.2	16.6	16.2	16.4	14.5	16.6	13.9	14.8	15.6	15.9	14.9
16.2	15.7	15.1	16.5	16.4	16.6	14.9	16.6	14.5	15.0	15.6	15.9	14.9
16.4	15.9	15.2	16.4	16.1	16.4	15.6	15.9	14.3	15.2	15.8	16.3	14.9
16.4	15.8	15.2	16.4	16.0	16.5	14.8	15.9	14.8	14.9	15.7	16.0	15.1
16.6	15.8	15.5	16.6	16.2	16.4	14.8	15.9	13.9	15.0	15.4	16.2	15.6
16.5	15.9	15.3	16.6	16.4	16.4	15.0	15.9	13.9	14.9	15.7	16.2	15.0
16.5	15.7	15.3	16.6	16.1	16.4	14.9	16.2	13.9	14.9	15.6	16.2	14.8
16.6	15.8	15.4	16.6	16.4	16.6	14.9	16.5	13.7	15.1	15.6	16.5	14.8
16.5	15.5	15.2	16.5	16.3	16.6	15.0	16.6	13.9	14.8	15.4	16.2	14.6
16.5	16.0	15.5	16.0	16.2	16.4	15.5	16.3	14.2	14.6	15.7	16.2	14.9
16.6	15.9	15.4	16.0	16.2	16.2	15.5	16.3	14.1	14.5	15.3	16.2	14.9
16.3	14.5	15.1	16.1	16.0	16.4	15.5	16.5	14.1	15.0	15.5	16.1	14.8
16.4	14.5	15.0	16.1	16.0	16.2	15.7	16.5	13.9	15.1	15.6	15.9	14.6

5744 ^v	5750 ^v		945 ^v	2476 ^v	2485 ^v	950 ^v	2499	2503	2506 ^v	
393	835	767B	HSL 73	186	838	HSL 22	962	226	225	
16.0	15.6	16.3	16.4	16.6	16.4	15.8	15.8	15.6	16.4	
15.9	15.8	16.2	16.7	16.5	16.3	15.4	15.8	16.0	16.4	
15.8	15.5	16.2	15.8	16.2	16.7	15.9	16.1	16.4	15.5	
16.0	15.2	16.0	16.2	16.2	16.6	15.8	16.1	16.4	16.0	
15.7	15.2	16.2	16.7	16.3	16.7	15.9	16.3	15.4	16.3	
15.6	15.6	16.2	16.9	16.3	15.9	15.8	16.3	15.9	16.3	
15.1	15.8	16.2	16.8	16.5	16.1	15.8	16.3	15.9	16.5	
16.0	15.7	16.1	16.5	16.4	16.5	16.0	16.4	15.9	16.1	
15.8	15.9	16.2	16.0	16.5	16.3	16.2	16.4	16.3	16.4	
16.0	15.7	16.3	16.0	16.4	16.3	16.1	16.4	16.1	16.3	
15.9	15.7	16.2	16.0	16.5	16.2	15.8	15.9	16.0	16.3	
15.5	15.8	16.2	15.9	16.5	16.1	16.0	16.3	15.9	16.4	
15.8	15.7	16.1	15.9	del	16.1	16.1	16.2	16.3	16.3	
15.8	15.8	16.3	15.9	16.6	16.3	16.4	16.3	16.2	16.4	
15.9	15.8	16.0	16.4	16.7	16.3	del	15.9	16.4	16.6	
15.8	15.7	16.0	16.3	16.7	16.3	15.9	15.7	16.4	16.3	
15.8	15.6	16.0	16.5	16.6	16.4	15.9	15.8	16.5	16.5	
15.7	15.5	16.1	16.3	16.8	16.3	15.8	15.8	16.4	16.5	
15.8	15.6	16.0	16.4	16.7	16.3	15.9	15.8	16.3	16.4	
15.9	15.8	16.0	16.5	16.6	16.3	15.9	15.8	16.6	16.4	
15.8	15.6	16.2	16.4	16.7	16.0	15.8	15.7	16.5	16.5	
15.8	15.3	16.1	16.6	16.0	16.1	15.6	15.8	15.5	16.0	
15.8	15.3	16.1	16.9	16.0	16.4	15.6	15.7	16.0	15.7	
15.9	15.8	16.1	15.5	16.4	16.6	15.6	15.8	15.7	15.8	
15.6	15.7	del	15.7	16.6	16.6	15.7	15.8	15.8	15.8	

25212516	5803 ^v	5780 ^v	5769 ^v	933 ^v	5759 ^v	5747 ^v	5736	5732
761A227	449	541	391	120	65.1	386	385	384
15.9 15.6	14.7	16.4	17.0	15.7	16.6	16.6	16.5	16.5
16.2	16.0	15.2	16.8	17.0	15.5	16.5	16.1	16.4
16.0	16.8	16.2	16.6	17.0	16.2	16.3	16.8	16.2
15.9	16.8	16.4	16.7	17.0	15.9	16.5	16.8	16.2
16.0	15.7	14.9	16.8	17.0	16.0	16.4	16.3	16.2
15.8	16.0	15.9	16.2	17.1	16.0	16.2	16.5	16.5
16.1	15.9	16.2	16.5	17.1	16.2	16.4	16.6	16.5
16.0	15.9	15.8	16.4	16.3	16.1	16.4	16.6	16.4
16.0	16.3	16.4	16.4	16.3	16.3	16.5	16.7	16.4
16.0	16.4	16.2	16.4	16.4	16.4	16.4	16.6	16.3
15.8	15.9	16.2	16.5	16.5	16.3	16.3	16.8	16.3
15.9	16.0	16.2	16.4	16.5	16.2	16.2	16.7	16.2
15.9	16.0	15.7	16.5	16.6	16.2	16.2	16.5	16.3
15.8	16.3	16.2	16.4	16.6	16.3	16.3	16.7	16.4
15.9	16.3	16.4	16.6	16.5	16.2	16.3	16.1	16.1
16.0	16.2	16.3	16.6	16.7	16.4	16.4	16.0	16.3
16.0	16.4	16.0	16.7	16.6	16.3	16.5	16.1	16.3
16.0	16.6	16.1	16.8	16.7	16.2	16.3	16.1	16.2
16.0	16.8	16.3	16.8	16.8	16.3	16.4	16.3	16.2
15.9	16.4	16.2	16.8	16.7	16.2	16.2	16.2	16.2
16.2	16.7	16.0	16.9	16.8	16.1	16.2	16.1	16.3
16.0	16.8	14.9	16.9	16.8	16.0	16.2	16.7	16.5
16.0	16.7	14.9	16.8	16.7	16.0	16.4	16.6	16.2
16.0	15.5	16.0	16.6	def	16.1	16.5	16.7	16.4
16.0	15.6	15.8	16.6	16.6	16.0	16.5	16.8	16.3

5724	5720	5725	5723	5714	5712	2412	2406	2409	5701
383	^{HSL} 334	^{SML} 382	381	^{HSL} 533	984	528	527	529	^{SML} 649
16.3									16.5
16.5	16.0	16.1	16.1	16.2	15.8	16.5	16.7	16.0	16.7
16.3									16.5
16.6	15.8	15.8	15.8	16.0	16.0	16.7	16.6	16.0	16.7
									16.6
16.2	15.9	15.8	15.8	16.2	15.3	16.7	16.8	16.2	16.8
16.3	16.0	15.8	15.8	16.0	15.1	16.8	17.0	16.5	16.4
16.2	16.0	15.8	15.8	15.9	14.7	16.6	16.6	16.3	16.7
									16.5
del	16.0	15.9	15.8	16.0	15.8	16.7	16.7	16.1	16.5
16.2	16.1	15.8	15.7	16.2	16.0	16.6	16.5	16.5	16.7
									16.3
16.4	15.8	15.9	15.8	16.1	15.4	16.5	16.8	15.9	16.8
16.0	15.9	15.9	15.7	16.1	15.4	16.8	15.3	15.8	16.8
									16.4
16.2	15.9	15.8	15.7	16.2	15.3	16.8	15.8	15.9	16.7
									16.3
16.3	15.8	15.9	15.8	16.2	15.2	16.9	15.5	15.9	16.8
									16.1
16.1	15.8	16.0	15.8	16.1	15.3	16.6	16.0	16.0	16.8
									16.1
16.2	15.8	15.9	15.8	16.0	15.0	16.8	15.8	16.0	16.8
									16.1
16.1	15.9	16.1	16.0	16.2	15.0	16.9	16.0	15.9	16.7
									16.1
16.0	15.9	16.0	15.8	16.2	15.7	16.5	16.4	16.1	16.5
									16.1
16.0	15.8	16.0	16.0	16.2	15.7	16.6	16.5	16.0	16.7
									16.1
16.0	15.7	16.0	15.9	16.0	15.4	16.4	16.5	16.0	16.5
									16.1
16.2	15.8	15.8	15.8	16.0	15.5	16.5	16.4	16.0	16.1
									16.3
16.0	15.9	16.0	16.0	16.1	15.4	16.2	16.7	16.3	16.4
									16.1
16.1	15.9	15.9	15.8	15.9	15.4	16.3	16.7	16.3	16.6
									16.1
16.0	15.9	15.8	15.7	16.0	15.4	16.2	16.4	16.1	16.8
									16.1
16.1	16.0	16.0	16.0	16.0	15.3	16.3	16.7	16.2	16.6
									16.1
16.1	16.0	15.8	15.8	15.9	15.5	16.3	16.8	16.0	16.5
									16.1
16.2	16.0	15.8	15.8	15.9	15.8	16.6	16.0	16.2	16.3
									16.1
16.0	15.8	15.9	15.7	15.9	15.5	16.8	16.0	16.3	16.4

2410	5685	923	2397	2396
287	644	100	292	293
16.4	16.8	15.4 15.4	16.3 16.3	17.0 16.9
16.8	16.9	15.4 15.4	15.9 16.0	16.5 16.4
16.2	16.9	14.9 14.8	16.0 16.0	16.8 16.9
16.1	16.9	14.6 14.7	16.3 16.3	16.6 16.7
16.5	17.0	14.6 14.6	15.1 15.5	16.7 16.8
16.9	16.3	15.6 15.7	15.5 16.4	16.5 16.5
16.5	16.6	15.4 15.3	15.6 15.7	16.4 16.6
16.9	16.8	15.8 15.8	15.8 15.9	16.4 16.5
16.7	16.8	15.1 15.3	15.5 15.6	17.0 17.0
16.8	16.5	15.0 15.1	15.7 15.7	16.9 16.9
16.8	16.5	15.1 15.2	15.8 15.7	17.0 16.9
16.8	16.9	15.2 15.2	15.9 15.9	16.8 16.8
16.5	16.9	15.3 15.2	15.7 15.7	17.0 16.9
16.9	17.0	15.4 15.2	15.7 15.8	17.0 17.0
16.7	16.9	15.0 14.9	15.8 15.9	17.0 17.0
16.5	17.0	14.8 14.8	16.1 16.2	17.1 17.0
16.8	16.8	15.0 14.9	16.2 16.1	16.9 16.9
16.5	16.9	14.8 14.7	16.0 16.0	16.9 16.8
16.8	16.8	14.9 14.6	16.1 16.1	17.0 16.9
16.8	16.9	14.9 14.9	16.2 16.2	17.0 17.0
16.9	16.9	14.7 14.6	16.0 15.9	16.8 16.7
16.2	16.7	15.3 15.3	15.7 15.7	16.4 16.6
16.2	16.5	15.3 15.3	15.7 15.6	16.4 16.5
16.2	16.6	14.9 14.7	16.2 16.1	17.0 16.9
16.2	16.7	14.8 14.6	16.1 15.9	17.0 16.9

	JD	2453 (748)	2471 (986)	5763 (408)	5757 (409)	5717 (405)	2445 (67)	12014 (86)	12015 (76)	12017 (836)	12016 JW92
17309	24,27807.283	15.3	16.2	14.9	15.2	15.3	16.2	16.4	15.7	15.2	15.1
17301	27807.317	15.3	16.1	14.9	15.0	14.6	16.3	16.4	15.8	15.6	15.2
17302	27807.365	15.0	16.3	14.9	15.3	14.5	16.4	16.5	15.8	15.5	15.7
17303	27807.399	15.0	16.0	14.8	15.0	14.5	16.3	16.5	15.7	15.8	15.3
17304	27807.443	15.1	16.3	14.8	15.1	14.6	16.2	16.4	15.5	15.5	15.1
17305	27807.476	14.9	16.3	14.9	15.0	14.7	16.1	16.3	15.6	15.6	14.9
17306	27807.516	14.9	16.0	14.9	15.1	14.5	16.0	16.5	15.7	15.7	15.4
17307	27807.549	14.7	16.0	14.8	15.1	14.4	15.9	16.4	15.4	15.6	15.3
17308	27808.282	14.8	15.5	14.7	15.2	14.6	15.9	16.5	15.4	15.4	15.1
17309	27808.317	15.2	15.5	14.8	15.4	14.8	15.9	16.4	15.5	15.6	15.0
17310	27808.368	15.0	15.6	14.9	15.5	14.5	16.0	16.3	15.3	15.7	15.4
17311	27808.402	14.9	15.7	14.8	15.5	14.5	15.9	16.4	15.4	15.4	15.1
17315	27811.274	14.9	15.8	14.9	15.4	14.4	16.0	16.3	15.6	15.8	15.3
20539	29199.447	13.8	def	15.3	15.7	13.8	15.8	16.2	15.4	15.2	15.2
20542	29202.385	14.6	16.0	15.2	15.7	14.5	—	16.0	15.6	15.4	15.1
20547	29203.456	14.5	15.7	15.1	15.5	14.5	16.1	16.2	15.6	15.6	15.2
20553	29204.484	14.6	15.8	15.4	15.6	14.3	16.4	16.2	15.4	15.4	14.9
20556	29205.575	14.9	—	15.0	def	—	—	16.1	15.1	15.3	15.0
20568	29217.448	14.5	16.0	14.9	15.8	14.5	16.0	16.0	14.8	14.7	14.9
20572	29219.343	14.3	15.9	15.1	15.3	14.3	16.1	16.0	15.5	15.6	15.2
20574	29220.400	14.2	15.8	15.1	15.6	14.5	16.0	16.0	15.3	15.7	15.0
20578	29221.336	14.0	16.1	15.2	15.4	14.4	—	16.0	15.5	15.5	15.0
20585	29222.409	13.8	16.0	15.1	14.9	14.2	16.0	15.9	15.3	15.3	14.9
20589	29223.406	14.5	15.7	15.4	15.7	14.5	16.1	16.2	15.4	15.3	15.0
20592	29224.395	14.5	15.7	15.0	15.7	14.2	16.2	16.0	15.5	15.3	15.7

12013 CW124	12012 CW82	JW11	2478 (222)	JW46	5790 (158)	12007 CW94	CW66	H12467 (539)
14.6	15.1		16.4	16.2	14.3	15.2	15.2	15.7
14.8	14.9		16.5	16.2	14.5	15.2	15.4	15.6
14.8	14.7		16.6	16.2	14.4	15.2	15.3	15.9 16.0
14.5	14.9		16.5	16.0	14.5	15.3	15.6	15.9 16.0
14.8	14.9		16.5	—	14.5	15.3	15.3	—
14.9	14.9		16.4	15.9	14.2	15.1	16.0	15.9
14.6	14.8		16.4	16.1	14.4	15.3	15.9	15.8
14.5	14.6		16.2	16.0	14.2	15.1	15.8	15.6
14.8	14.8		16.0	16.2	14.3	15.2	15.6	15.6
14.8	14.6		16.2	16.2	14.4	14.9	15.2	15.6
14.7	14.9		16.0	16.2	14.3	15.1	15.2	15.9
14.8	14.8		16.0	16.2	14.2	15.2	15.2	16.0 16.1
14.9	14.9		16.5	15.8	14.0	15.2	15.6	15.9
14.9	14.7		15.8	15.5	14.1	15.1	14.9	15.9 15.4
15.4	14.8		—	—	14.7	—	—	15.2 15.8
15.2	14.5		16.1	16.6	14.4	15.6	14.8	15.8 16.0
15.0	14.5		16.5	16.4	14.4	15.1	14.9	15.8
15.1	15.0		—	15.0	14.8	15.0	15.4	15.5
15.2	14.6		15.2	16.0	14.6	15.0	14.6	15.6
14.8	14.9		16.6	15.6	14.7	15.4	15.2	15.9 16.0
15.5	14.8		16.6	15.8	14.2	15.1	15.1	15.5
15.6	14.5		16.0	16.0	14.0	15.2	15.8	15.6
15.3	14.8		16.0	16.3	14.0	15.1	15.1	15.6
15.3	14.8		16.4	16.2	13.8	15.2	14.8	15.8
15.4	15.1		16.2	—	14.4	15.3	15.7	15.6

HU946 (160)	12018 JW16	2475 223	12016 JW92	939 43	5772 478	2468 477	12020 JW22	12019 JW91	947 17
15.0	15.5	15.1	15.0	15.4	15.1	14.1	16.2	16.3	15.6
15.0	15.6	14.9	14.8	15.6	15.2	14.3	16.1	16.2	15.7
15.2	15.7	15.0	15.1	15.7	15.4	14.3	16.2	16.2	15.8
14.9	15.7	15.1	15.2	15.7	15.3	14.2	16.1	16.2	15.7
15.0	15.7	14.9	15.0	15.7	15.2	14.1	16.2	16.2	15.6
15.2	15.8	14.8	14.9	15.6	15.3	14.8	16.3	16.3	15.6
15.1	15.8	15.1	14.9	15.6	15.3	14.2	16.3	16.2	15.6
15.0	15.6	15.0	14.9	15.7	15.4	14.1	16.4	16.2	15.4
14.8	def	14.9	15.1	15.8	15.2	14.8	16.3	16.6	14.8
14.9	15.6	14.8	15.0	15.9	15.3	15.0	16.2	16.7	14.7
15.2	15.8	15.0	15.2	16.0	15.4	14.9	16.4	16.7	14.7
15.3	15.8	15.1	15.2	15.9	15.5	14.9	16.3	16.5	14.9
15.1	15.6	14.7	15.1	14.5	15.0	15.6	15.8	16.4	15.7
15.1	15.3	14.5	15.0	15.1	15.3	14.6	15.8	16.7	16.0
15.0	15.6	14.9	14.9	15.7	14.8	15.6	16.0	16.0	15.0
15.1	15.7	14.4	14.9	14.1	15.6	15.5	16.3	16.4	15.5
15.2	15.7	14.3	14.5	14.7	15.3	14.6	16.0	16.6	15.0
15.0	15.6	14.4	15.0	15.1	14.8	13.8	15.4	16.2	15.7
14.9	15.7	14.5	14.8	14.7	14.3	14.4	16.0	16.5	15.0
14.8	15.6	14.3	14.6	15.6	15.1	14.3	16.3	16.4	15.2
15.2	15.7	14.2	15.0	15.7	15.2	14.5	16.2	15.8	15.6
14.8	15.6	14.3	14.7	16.0	15.0	15.1	16.1	—	15.5
14.3	15.6	14.1	14.7	14.6	15.2	15.6	15.7	16.3	15.9
15.2	15.8	14.3	15.2	14.8	15.4	15.4	16.0	16.2	15.2
14.9	15.8	14.6	14.9	15.2	15.0	14.4	16.1	16.2	14.9

5791	2480	5797	12029	2497	12024	2492	2483	2479	5727	5720
459	479	SL157	JW96	224	JW82	657	307	306	837	SL150
15.1	16.2	16.5	16.5	15.2	16.3	14.2	15.1	15.5	15.6	14.7
15.3	16.4	16.4	16.6	14.8	16.5	14.4	14.9	15.5	15.8	14.8
15.1	15.9	16.4	16.6	14.6	16.3	14.2	14.9	15.8	16.0	14.9
15.2	16.2	16.4	16.5	15.0	16.5	14.5	14.9	15.6	15.9	14.7
15.1	16.2	16.1	16.5	14.6	16.5	14.5	14.9	15.6	16.0	14.8
15.2	16.3	16.1	16.7	14.7	16.6	14.4	14.9	15.7	16.0	14.6
15.1	16.3	16.1	16.6	14.7	16.5	14.6	14.9	15.6	16.0	14.5
15.2	16.3	16.2	16.5	14.8	16.6	14.0	14.9	15.5	16.0	14.5
15.4	16.4	16.4	16.5	14.6	16.5	13.8	14.9	15.5	16.0	14.5
15.4	16.6	16.3	16.5	14.8	16.4	13.7	14.9	15.5	16.1	14.7
15.5	16.5	16.4	16.5	15.1	16.3	13.9	15.0	15.7	16.0	14.7
15.2	16.6	16.2	16.5	15.0	16.2	14.2	14.8	15.3	16.0	14.6
15.2	16.4	16.1	16.6	15.6	16.7	14.5	14.6	14.9	16.0	14.3
15.1	16.4	16.3	16.4	14.7	16.6	14.2	14.9	14.7	16.0	14.6
15.0	15.8	15.8	16.3	15.2	16.1	14.5	15.1	15.0	15.8	14.5
15.1	16.5	16.3	16.3	15.2	16.4	14.5	15.0	15.0	16.0	14.5
15.4	16.6	16.5	16.5	14.4	16.5	14.1	14.8	14.8	16.1	14.7
14.9	15.5	15.7	15.9	14.1	16.4	14.0	14.7	14.9	16.1	14.8
14.6	16.5	16.3	16.4	14.5	16.4	14.1	14.8	14.9	16.0	14.6
15.4	15.6	15.9	16.3	14.9	16.2	13.7	14.9	15.5	15.8	14.7
15.3	16.5	16.0	16.1	14.1	16.3	13.7	15.0	15.6	15.9	14.3
15.2	16.5	16.1	16.4	14.6	16.4	14.1	15.0	15.3	16.1	14.5
15.2	16.6	16.3	16.4	14.2	16.4	14.3	14.9	15.4	15.9	14.4
15.1	15.8	16.1	16.2	15.2	16.0	14.2	15.0	15.5	16.0	14.5
15.2	16.3	16.2	16.3	15.8	16.5	14.1	14.7	15.6	15.9	14.7

5744	5750	945	2476	2485	950	2499	2503	2506	25	
393	535	761B	1573	156	838	HSL22	962	226	225	76
15.8	15.6	16.2	16.4	16.4	16.4	15.4	15.8	16.3	16.2	1
15.5	15.6	16.2	16.4	16.4	16.4	15.4	15.8	16.3	16.4	1
15.7	15.6	16.2	16.6	16.7	16.7	15.4	15.8	16.3	16.4	1
15.7	15.7	16.1	16.2	16.3	16.4	15.3	15.5	16.2	16.1	1
15.8	15.8	16.1	16.3	16.5	16.6	15.2	15.6	16.2	16.3	1
15.7	15.7	16.2	16.2	16.3	16.2	15.0	14.6	16.4	16.2	1
15.8	15.8	16.2	16.4	16.5	16.3	14.9	15.5	16.1	16.2	1
15.8	15.8	16.2	16.5	16.6	16.4	15.4	15.8	16.2	16.2	1
15.8	15.8	16.2	16.4	16.6	16.4	15.2	15.9	16.0	16.4	1
15.9	15.8	16.2	16.7	16.6	16.2	15.4	16.2	16.3	16.4	1
15.8	15.7	16.2	16.8	16.8	16.1	15.5	16.0	16.4	16.5	1
15.8	15.7	16.0	16.6	16.7	16.3	15.4	16.0	16.7	16.4	1
15.7	15.7	16.1	16.7	16.5	16.0	15.6	15.9	16.4	16.3	1
15.8	15.7	16.3	16.8	16.2	16.5	15.8	15.7	16.2	16.2	1
15.7	15.6	16.2	16.8	16.4	16.4	15.2	16.0	16.2	15.9	1
15.8	15.6	16.0	16.4	16.0	15.8	15.7	15.6	15.9	15.2	1
15.7	15.6	16.1	16.6	16.5	16.2	15.9	16.1	16.2	16.1	1
15.8	15.8	16.2	15.8	16.7	16.4	15.0	15.9	16.2	16.3	1
15.6	15.6	16.1	16.2	16.1	16.0	15.5	16.1	15.4	16.2	1
15.5	15.6	16.0	16.8	16.5	16.4	15.6	15.7	15.6	16.4	1
15.7	15.6	16.1	16.1	16.3	16.3	15.8	15.8	16.1	15.9	1
15.8	15.7	16.7	16.6	15.9	16.4	15.9	16.0	15.9	16.0	1
15.7	15.7	16.2	16.6	16.1	16.4	15.9	15.9	15.3	16.2	1
15.6	15.6	16.0	15.7	16.5	15.9	15.0	15.6	15.9	15.7	1
15.6	15.6	16.0	16.4	16.2	16.3	15.6	15.7	16.4	15.9	1
15.8	15.7	15.9	16.6	16.5	16.2	15.6	15.8	15.8	15.9	1

6	2521 76.10	2516 22.7	5803 44.9	5780 45.541	5769 39.1	933 12.0	5759 6.51	5747 38.6	5736 38.5	5732 38.4
2	16.1	16.1	16.3	15.9	16.7	15.5	16.4	16.2	16.6	16.5
4	16.2	16.1	16.3	16.9	16.9	15.2	16.6	16.4	16.5	16.8
	16.0	16.1	16.3	16.9	16.8	15.3	16.5	16.4	16.5	16.4
	16.0	16.0	15.9	16.8	16.7	15.1	16.4	16.4	16.6	16.4
	16.0	16.3	16.2	16.3	16.3	15.3	16.3	16.3	16.2	16.4
2	16.2	16.1	16.3	16.7	16.7	15.4	16.5	16.4	16.7	16.4
	16.2	16.2	16.2	16.9	16.8	15.4	16.4	16.4	16.5	16.7
	16.1	16.3	16.4	16.9	16.9	15.5	16.6	16.5	16.8	16.5
	16.2	16.5	16.3	16.5	16.9	15.6	16.4	16.8	16.2	16.3
5	16.0	16.6	16.1	16.2	16.9	15.9	16.6	16.5	16.3	16.3
	16.1	16.6	16.0	16.3	16.6	15.9	16.7	16.8	16.1	16.3
3	16.0	16.5	16.0	16.2	16.5	15.5	16.4	16.5	16.0	16.2
	16.0	16.2	16.2	16.3	16.9	16.0	16.3	16.5	16.4	16.3
9	15.7	16.5	16.1	16.6	17.1	16.3	16.4	16.2	16.2	16.4
	16.0	16.1	16.1	16.6	16.6	14.9	16.4	15.8	16.3	16.0
	15.9	16.2	16.0	16.7	17.1	14.2	16.6	16.4	16.1	16.3
	15.9	16.6	14.5	16.5	17.0	15.3	16.4	16.7	16.4	16.2
	15.7	15.7	15.6	16.4	16.6	15.2	16.4	16.2	16.3	16.3
	15.6	15.6	15.5	16.3	16.9	15.7	16.4	16.6	16.2	16.3
	15.8	16.0	16.1	16.8	17.0	15.0	16.3	16.3	16.1	16.2
	15.9	16.5	14.7	16.0	17.0	15.1	16.4	16.5	16.3	16.3
2	15.8	15.5	15.5	16.5	def	15.1	16.3	16.6	16.1	16.2
	15.8	15.9	16.1	16.8	16.9	15.1	16.4	15.9	16.3	16.3
9	15.7	16.5	16.2	16.5	16.8	15.5	16.4	16.5	16.2	16.2
	15.6	16.3	15.1	16.6	16.8	15.7	16.4	16.6	16.3	def

5724 383	5720 534	5725 582	5723 381	5714 533	5712 984	2412 528	2406 527	2409 529	5706 549
16.3	15.5	16.1	15.8	16.1	15.5	16.3	16.6	16.3	16.2
16.2	15.9	16.0	15.8	16.0	15.5	16.4	16.8	16.6	16.7
16.2	15.9	16.0	15.7	16.2	15.5	16.2	16.8	16.2	16.7
16.0	15.8	16.0	15.8	15.9	15.4	16.2	16.7	16.1	16.5
16.2	16.0	15.9	15.8	16.0	15.5	16.2	16.6	16.3	16.3
16.1	16.0	16.0	15.8	16.0	15.3	16.3	16.6	16.4	16.4
16.2	16.1	16.0	15.8	15.9	15.2	16.7	16.8	16.6	16.5
16.2	15.8	15.8	15.7	15.8	15.2	16.5	16.9	16.2	16.5
16.2	15.8	16.1	15.9	15.8	15.5	16.7	15.6	16.3	16.4
16.0	15.9	16.2	15.8	15.9	15.3	16.9	15.7	16.1	16.2
16.2	16.0	16.0	15.9	15.9	15.2	16.6	15.5	16.3	16.4
16.0	15.9	15.9	15.8	16.0	15.3	16.8	15.8	16.0	16.4
16.2	16.1	16.1	15.8	16.0	15.7	16.8	15.6	16.1	16.5
16.2	16.1	15.9	15.9	16.0	15.8	16.0	16.4	16.2	16.4
16.2	15.7	16.1	15.9	15.9	15.4	16.4	16.4	15.3	16.4
16.2	15.9	16.0	16.0	15.9	15.8	16.2	16.4	16.0	16.5
16.1	15.7	16.0	15.9	15.9	15.2	16.6	15.6	16.1	16.5
16.2	15.8	16.0	15.9	15.9	15.2	16.2	16.4	16.2	16.5
16.1	15.7	15.9	15.9	15.9	16.0	16.6	16.2	16.2	16.2
16.0	15.9	16.0	15.9	16.0	15.9	16.4	16.0	15.9	16.3
16.2	15.8	16.0	16.0	16.0	15.8	16.6	16.1	16.0	16.3
16.1	15.8	15.9	15.8	16.8	15.2	15.9	16.5	16.0	16.3
16.2	15.8	16.1	16.0	15.9	15.1	16.3	15.7	16.2	16.5
16.1	15.9	16.0	16.0	16.0	15.1	16.8	16.5	16.4	16.6
16.2	15.8	15.9	15.9	15.9	15.2	15.7	16.6	15.8	16.6

1949phae.proj.2457W

2410	5685	223	2397	2396
287	644	100	292	293
6.5	16.9	15.3 ^{15.4}	16.3 ^{16.7}	17.1 ^{17.0}
		15.5	16.0	16.8
6.9	17.0	15.4 ^{15.5}	16.1 ^{16.1}	17.1 ^{17.1}
		15.7	16.0	17.0
6.7	17.0	15.5 ^{15.3}	16.2 ^{16.1}	17.1 ^{17.0}
		15.1	16.0	16.8
6.7	16.8	15.5 ^{15.4}	15.8 ^{15.8}	16.7 ^{16.7}
		15.4	15.9	16.8
6.4	<16.6	15.4 ^{15.3}	16.1 ^{16.1}	<16.6
		15.3	16.0	<16.6
6.6	<16.6	15.5 ^{15.6}	16.0 ^{16.0}	16.9 ^{16.9}
		15.8	16.1	<16.6
6.8	<16.6	15.6 ^{15.7}	16.2 ^{16.2}	17.0 ^{16.9}
		15.7	16.2	16.7
6.8	16.9	15.2 ^{15.6}	16.2 ^{16.1}	17.0 ^{17.0}
		15.4	16.0	16.9
6.2	16.3	15.5 ^{15.5}	16.0 ^{16.0}	16.6 ^{16.5}
		15.6	16.0	16.5
6.1	16.0	15.4 ^{15.4}	15.9 ^{15.9}	16.4 ^{16.4}
		15.5	15.9	16.4
6.1	16.2	15.2 ^{15.2}	15.7 ^{15.5}	16.1 ^{16.2}
		15.2	15.3	16.2
15.9	16.2	15.4 ^{15.5}	15.9 ^{15.9}	—
		15.5	16.0	Def
6.6	16.3	15.1 ^{15.0}	15.7 ^{15.7}	16.4 ^{16.4}
		14.9	15.5	16.2
6.0	16.9	15.2 ^{15.3}	16.0 ^{16.0}	17.1 ^{17.0}
		15.4	16.0	17.0
<16.6	<16.6	15.5 ^{15.6}	15.7 ^{15.8}	16.5 ^{16.6}
		15.7	15.9	16.6
6.2	16.2	15.2 ^{15.1}	15.7 ^{15.5}	17.0 ^{17.0}
		15.7	15.3	16.9
6.4	16.5	15.2 ^{15.2}	16.0 ^{16.1}	17.0 ^{16.9}
		15.1	16.1	16.8
6.4	16.6	14.8 ^{14.8}	15.3 ^{15.4}	16.3 ^{16.3}
		14.8	15.5	16.3
6.2	16.3	14.6 ^{14.7}	16.0 ^{15.8}	17.0 ^{16.9}
		14.9	15.7	16.9
6.7	16.8	15.1 ^{15.2}	16.0 ^{16.1}	17.0 ^{16.9}
		15.3	16.2	16.8
6.0	16.2	15.3 ^{15.4}	15.6 ^{15.7}	16.4 ^{16.4}
		15.5	15.8	16.3
6.3	16.6	15.0 ^{15.2}	15.7 ^{15.8}	16.9 ^{16.8}
		15.4	15.8	16.7
6.7	16.8	15.2 ^{15.4}	15.8 ^{15.8}	17.1 ^{17.0}
		15.5	15.9	16.9
6.5	16.4	15.3 ^{15.5}	15.8 ^{15.8}	16.5 ^{16.5}
		15.7	16.8	16.5
6.0	16.2	14.9 ^{15.0}	15.8 ^{15.7}	17.0 ^{16.9}
		15.1	15.9	16.8

2 61 3
5 73
2 2 91

		2453 (748)	2471 (986)	5763 (408)	5757 (409)	5717 (405)	2445 (67)	12014 CW86	12015 CW76	12017 HSL836	12016 J492	12
	JD											
20596	24,29228.404	14.8	15.8 ^{16.04}	15.3	15.2 ^{15.21}	14.1	16.0	16.2 ^{16.16.15}	15.6	15.2	15.3	15
21380	29517.624	14.8	16.0	15.4	15.8	15.0	16.3	16.8	15.4	14.2	15.3	15
21395	29518.630	14.9	16.0	14.7	14.8	14.6	—	—	15.3	15.8	14.9	15
21400	29519.613	14.9	15.8	15.3	15.6	14.5	16.3	16.9	15.8 ^{15.7}	14.8	14.9	1
21416	29526.598	14.8	15.9	14.9	15.9	14.5	16.4	16.8	15.6	15.0	15.3	1
21445	29553.600	14.9	15.8	15.0	15.8	14.6	16.2	15.9 ^{16.0 15.35}	16.1 ^{15.4}	14.9	15.1	1
21463	29574.385	14.6	15.9	15.1	15.1	14.3	16.3	16.0 ^{15.8 15.9}	15.9 ^{15.5}	14.8	15.0	1
21469	29577.384	14.8	16.0	14.8	15.0	14.8	—	16.2 ^{16.1 16.1}	15.6	14.8	15.2	1
21491	29584.400	14.5	15.9	15.4	15.6	14.2	15.9	16.3	15.6	14.8	15.2	1
21496	29585.388	14.6	16.0	14.9	15.7	14.3	16.4	16.4	15.7	15.0	14.9	1
21520	29600.430	15.3	15.8	15.0	15.9	14.4	16.3	16.3 ^{15.8 15.8}	15.8	15.1	15.1	1
21522	29601.390	14.9	15.7	15.1	15.2 ^{15.2}	14.0	16.2	16.2 ^{16.1 16.15}	15.7	15.0	15.1	1
21555	29626.788 ²⁷⁸	14.9	16.0	15.1	15.8	14.3	16.1	16.7	15.7	15.3	15.1	1
21557	29627.308	15.0	15.9	15.4	15.5	14.8	16.2	16.4	15.4	15.3	15.1	1
22099	29855.636 ²⁹⁸ 29629.338	14.9	16.0	15.6	15.3	14.8	16.2	16.4	15.2	14.9	15.1	1
22101	29869.637 ²⁹⁸ 29655.636	14.1	16.0	14.8	15.8	14.6	16.3	16.5	15.4	14.7	15.0	1
22175	29881.575	15.1	15.9	15.0	15.8	14.0	16.0	16.5	15.4	15.0	15.1	1
22225	29913.598	14.6	15.8	15.0	15.6	14.8	16.1	16.4	15.7	14.8	14.9	1
22251	29926.449	14.7	16.0	14.6	15.2	14.9	16.3	16.3	15.6	14.6	15.0	1
22263	29927.447	14.6	15.8	15.1	15.7	14.6	15.6	16.4 ^{15.7 15.75}	15.8	14.6	15.4	1
22269	29933.563	13.9	16.2	15.2	15.8	14.7	15.9	16.2 ^{16.3 16.25}	16.0 ^{15.3}	14.4	14.9	1
22277	29938.541	14.3	15.9	14.9	15.4	14.5	16.3	16.0 ^{16.2 16.1}	15.3	14.7	15.1	1
22278	29939.499	14.5	15.8	15.2	15.5	14.7	15.9	16.3	15.7	14.4	15.0	1
22305	29956.396	14.2	16.0	15.0	15.2	14.4	16.3	16.5	15.7	14.6	15.4	1
22348	29994.482	14.6	15.7 ^{15.5 15.4}	15.0	15.5	14.8	—	—	15.9 ^{15.7 15.75}	14.6	15.7	1

12013	12012		2478	5790	12007		H12467	H1943	
(0124)	CW82	JW11	(222) JW46	(158)	CW94	CW66	(539)	(160)	
15.6	15.1		15.2	16.2	14.3	15.6	15.2 ^{15.9}	16.0	15.1
15.2	15.3		15.7	16.3	14.5	15.2	16.0 ^{15.9}	16.0	14.8
15.2	14.8		16.3	16.1	14.5	15.4	16.0	15.8	15.0
15.1	15.1		16.5	16.2 ^{14.6}	14.6	15.6	15.1	15.8	15.2
15.7	15.1		16.7	16.3	14.2	15.7	15.6 ^{15.9}	16.0 ^{15.4}	15.6
15.6	14.8		16.3	15.1	14.5	15.4	15.0	15.7	15.2
15.3	14.6		16.4	15.8	14.2	15.7	15.4	15.6	15.1
15.7	15.1		16.4	16.4	14.3	15.2	15.4	15.5	15.1
15.1	15.1		16.1	16.5	14.2	15.9	15.8	15.8 ^{15.3}	15.8
15.6	14.4		16.5	16.5 ^{14.3}	13.9	14.9	15.8 ^{15.8}	15.4	14.8
15.8	15.0		16.6	15.8	14.2	15.3	15.9 ^{15.9}	16.0 ^{15.0}	15.4
15.6	15.2		16.4	15.9 ^{14.3}	13.8	15.3	15.4	15.7	15.0
15.6	14.7		16.4	15.7	14.3	15.4	15.1 ^{15.9}	16.0 ^{15.4}	15.6
15.6	15.1		15.5	15.6 ^{14.4}	14.6	15.5	15.8 ^{15.7}	15.4	15.0
15.5	14.9		16.0	16.2	14.3	15.0	14.9	15.7 ^{15.2}	15.6
15.3	15.2		15.8	16.0 ^{14.4}	14.1	15.4	15.4	15.9	15.2
15.5	15.0		16.5	16.4	14.2	15.3	15.1	15.7	15.2
15.4	14.8		16.2	16.3	14.3	15.1	15.0	15.8	15.1
15.1	15.1		16.3	16.2	14.2	15.6	16.0	15.9	14.9
14.8	14.7		16.2	16.1 ^{14.5}	14.0	15.8	14.9	15.7	15.2
14.9	15.4		16.7	16.5 ^{14.3}	14.7	15.0	15.2	15.5	14.8
15.0	14.8		15.9	16.1	14.2	15.6	15.2	15.6 ^{15.2}	15.4
15.1	14.4		16.1	16.4	14.3	15.2	15.8	15.9 ^{15.6}	15.8
15.3	14.7		16.7	15.8	14.4	15.6	14.7	15.6	14.9
14.9	14.8		15.9	15.8 ^{14.6}	14.6	15.3	15.1	15.6	15.1

12018	2475	12016	939	5772	2468	12020	12019	947	5791	2
JW16	22.3	JW92	4.3	478	477	JW22	JW91	17	959	2
16.0		15.3								
16.1	14.1	14.7	15.1	15.2	15.6	15.5	16.0	15.6	15.1	1
15.8	15.2	15.0	14.5	15.1	15.3	16.1	16.4	15.1	15.1	1
15.9	15.0	14.8	15.2	15.1	15.5	16.0	16.0	15.1	15.2	
15.8	15.2	14.9	15.2	15.1	14.1	16.1	16.2	15.8	15.7	
15.8	15.1	15.1	15.8	15.2	14.0	15.8	16.2	15.9	15.2	
15.9	15.0	15.1	15.8	15.0	14.7	15.9	16.4	15.2	15.1	
15.8	14.8	15.0	14.8	15.1	15.0	15.9	16.4	15.3	15.4	
15.8	14.8	15.0	15.8	15.2	14.1	15.9	16.4	15.8	15.3	
15.8	14.7	15.0	15.9	15.4	14.0	15.5	16.6	15.6	15.5	
15.8	14.9	15.1	15.7	15.3	14.2	15.9	16.4	14.8	15.0	
15.8	14.9	15.2	14.8	15.1	15.4	15.9	16.6	15.8	15.4	
15.8	15.1	14.9	15.1	14.9	15.8	15.8	16.0	15.6	15.4	
16.0	14.9	15.0	14.9	15.1	15.6	16.0	16.6	15.4	15.3	
15.5	14.6	14.9	14.8	14.8	15.5	16.0	16.0	15.5	14.9	
15.5	14.9	14.7	14.6	14.8	14.9	15.8	16.6	15.0	15.2	
15.8	15.1	14.7	15.1	15.0	15.6	16.0	16.2	15.8	15.2	
15.9	15.4	15.1	15.0	15.5	15.6	16.2	16.5	15.7	15.2	
16.1	15.4	15.0	15.0	15.1	14.6	16.1	16.5	15.8	15.4	
15.8	15.0	15.0	15.9	15.5	14.9	16.3	16.3	16.0	15.3	
16.0	15.1	15.1	15.3	15.7	15.5	16.2	16.5	16.0	15.0	
15.7	14.6	14.7	14.9	14.9	15.7	16.1	16.0	16.0	15.2	
15.7	15.1	15.2	14.5	15.1	15.0	16.0	16.2	15.7	15.2	
15.7	14.9	15.0	14.9	15.6	14.8	15.8	16.5	15.9	15.3	
15.8	14.8	14.6	15.6	15.3	14.1	15.8	16.6	16.0	14.9	
15.8	15.0	14.3	15.9	15.0	14.1	16.0	—	15.8	15.1	

2480	5797	12029	2497	12024	2492	2483	2479	5777	5770
479	SL157	JW96	224	JW82	657	307	306	837	SL150
16.3	16.2	16.6	14.4	16.5	14.0	14.7	15.4	16.0	14.6
15.7	16.3	16.4	14.7	16.4	14.4	15.1	14.5	16.0	14.6
15.7	15.8	16.0	15.1	16.4	14.0	14.9	14.4	15.9	14.6
16.6	16.0	16.1	15.7	16.6	13.7	15.1	14.6	16.0	14.5
15.8	16.1	16.6	15.4	16.3	14.3	15.3	15.2	15.9	14.4
16.5	16.0	16.5	14.5	16.4	14.4	15.1	14.5	15.8	14.7
15.7	16.2	16.3	15.7	16.2	13.6	14.8	14.6	16.0	14.6
16.6	16.2	16.4	14.2	16.5	14.1	14.6	15.1	15.9	14.7
16.2	16.1	16.2	14.8	16.3	14.0	15.0	15.8	15.8	14.6
16.4	16.1	16.4	14.0	16.5	13.9	15.0	15.8	16.0	14.7
15.8	16.2	16.3	14.6	16.4	14.0	14.6	14.5	15.8	14.6
16.3	16.2	16.4	14.7	16.5	13.9	15.2	14.9	16.1	14.6
15.7	16.1	16.4	15.1	16.5	13.9	14.7	15.5	16.0	14.7
15.9	15.9	16.4	15.0	16.4	14.3	14.9	15.1	16.1	14.5
15.5	16.1	16.3	15.6	16.5	14.7	14.8	15.0	16.0	14.6
16.2	16.1	16.3	15.9	16.4	13.7	15.4	15.5	16.0	14.5
15.6	16.2	16.5	14.6	16.6	14.6	15.1	14.6	16.0	14.5
16.4	16.1	16.3	14.9	16.4	14.1	15.1	14.9	16.0	14.6
16.2	16.0	16.3	15.0	16.5	14.3	15.2	14.9	16.1	14.5
16.6	16.2	16.4	14.2	16.5	14.4	14.9	14.7	15.9	14.5
16.0	16.1	16.4	15.8	16.5	14.0	15.7	15.6	16.1	14.5
15.8	16.1	16.4	15.3	16.5	14.2	15.2	15.2	16.1	14.5
16.4	16.1	16.4	15.9	16.4	13.7	15.4	15.4	15.9	14.7
16.2	16.2	16.4	15.8	16.4	14.5	15.0	14.9	15.8	14.5
15.6	16.2	16.3	15.5	16.4	14.6	14.7	14.8	16.0	14.5

5744	5750	761B	945	2476	2485	950	2499	2503	2506
393	835		H ³ L 73	186	838	H ³ L 22	962	226	225
15.6	15.5	16.0	16.8	16.0	16.5	15.2	15.5	15.7	16.3
15.7	15.0	16.0	16.6	16.3	16.8	15.4	16.2	15.5	16.5
15.8:	15.7:	16.0:	15.5:	16.3:	16.3:	15.3:	16.0:	16.0:	16.3:
15.8	15.9	16.2	16.5	16.4	16.2	15.8	15.9	16.2	15.9
15.6	15.4	16.1	16.0	16.4	16.3	16.0	15.9	16.0	16.3
15.8	15.7	16.0	16.7	16.2	16.6	15.2	15.6	15.7	15.7
15.5	15.2	16.0	16.8	16.4	16.8	15.7	15.5	16.4	16.2
15.6	15.7	16.0	16.5	16.3	16.5	15.5	16.0	15.7	15.8
15.8	15.8	16.3	16.7	16.0	16.1	15.8	16.1	15.6	16.3
15.8	15.7	15.9	16.8	16.4	16.3	15.5	15.6	15.6	15.7
15.6	15.5	16.0	15.7	16.3	16.3	16.2	16.2	15.4	16.4
15.7	15.8	16.1	16.2	16.4	16.5	15.5	15.6	15.8	15.4
15.7	15.6	16.0	16.6	16.7	16.5	15.5	16.1	16.3	15.8
15.7	15.7	15.8:	16.4:	16.5:	16.6:	15.5:	15.8:	15.9:	15.8:
15.7	15.7	16.0	16.6	16.2	16.4	15.3	15.3	16.3	16.2
15.6	15.7	16.1	16.5	16.6	16.4	16.0	16.0	15.7	16.0
15.8	15.7	16.0	16.8	16.5	16.2	16.0	16.1	15.3	16.1
15.9	15.8	16.8	16.8	16.5	16.0	16.0	16.0	15.7	16.3
15.8	15.9	16.2	16.4	16.5	16.5	15.9	15.8	16.2	16.4
15.8	15.7	16.4	16.9	16.4	16.7	15.5	15.9	16.3	15.7
15.8	15.7	16.1	16.4	16.4	16.1	15.1	15.8	15.9	16.3
15.8	15.8	16.3	16.9	16.5	16.4	15.5	15.8	16.1	16.3
15.7	15.8	16.0	15.9	16.5	16.7	15.6	16.0	16.5	15.6
15.7	15.7	16.0	16.8	16.3	16.8	15.9	16.2	15.4	15.6
15.8	15.7	16.0:	16.3:	16.3:	16.0:	15.4:	15.9:	16.0:	16.3:

2521 761A	2516 227	5803 SML 449	5780 HSL 541	5769 SML 391	933 HSL 120	5759 SML 651	5747 386	5736 385	5732 384
15.8	16.3	15.1	16.8	16.8	16.2	16.4	16.7	16.5 ^{16.0}	16.2
15.9	16.0	15.4	16.4	<17.0	15.5	16.4	16.7	16.0 ^{11.3}	16.1 ^{11.1}
15.9	16.3	15.5	16.6	<16.6	15.7	16.4	16.6	16.5	16.4
16.0	16.5	16.1	16.4	<17.0	16.0	16.4	16.2	16.3	16.4
15.8	16.4	15.4	16.5	17.1	16.0	16.4	16.4	16.3	16.5
15.8	16.1	16.2	16.6	<16.6	16.0	16.2 ^{16.4}	16.5	16.2	16.3
15.7	16.5	16.0	16.8	16.6	16.0	16.5	16.6	16.4 ^{16.3}	16.4
15.7	16.2	16.2	16.8	16.7	14.3	16.4	16.8	16.3	16.2
15.8	16.4 ^{15.6}	del	16.9	16.8	16.2	16.4	16.7	16.1 ^{16.2}	16.3
15.7	16.2	16.1	16.3	16.6	16.2	16.3	16.1	16.3	16.3
15.9	15.7 ^{16.2}	16.2	16.8	16.5	16.2	16.3	16.7	16.6 ^{16.3}	16.5
15.9	15.3	16.1	16.7	16.6	16.4	16.4	16.2	16.2	16.3
15.8	16.5	15.5	16.4	16.9	15.5	16.6	16.7	16.3	16.4
15.7	16.4	15.6	16.5	16.7	15.4	16.4	16.4	16.3	16.2
15.6	15.5	14.3	17.0	<17.0	14.5	16.4	16.2	16.2	16.2
15.8	16.5	16.2	16.8	<17.0	16.0	16.4	16.4	16.2 ^{11.3}	16.1
15.8	16.4	16.3	16.3	<17.0	16.3	16.4	16.5 ^{16.3}	16.4	16.2
16.0	16.4	16.0	16.6	16.5	16.3	16.4	16.5	16.3	16.2
15.0	16.6	15.4	16.9	16.9	16.2	16.4	16.6	16.3	16.4
16.2	15.9	16.2	16.9	16.8	16.3	16.4	16.9	16.3	16.4
16.0	16.6	14.8	16.9	16.8	14.0	16.4	16.7	16.3 ^{16.3}	16.3
15.9	16.4	15.5	16.9	17.0	15.6	16.5	16.3	16.4	16.3
15.9	15.9	15.9	17.0	17.0	15.9	16.5	16.6	16.5 ^{16.1}	16.4
15.7	16.4	16.1	16.1	16.7	16.2	16.5	16.7	16.3	16.4
15.9	16.0	16.2	<16.3	<16.3	16.1	16.2 ^{16.4}	16.2	16.3	16.3

5724 383	5720 HSL 534	5725 SML 382	5723 381	5714 HSL 533	5712 984	2412 528	2406 527	2409 529	5706 SML 649
16.0	15.7	16.0	15.9	15.9	16.0	16.3	15.8	16.2	16.5
16.0	15.8	16.0	16.0	16.0	15.3	16.0	15.8 16.6	16.4	16.4
16.2	15.8	16.0	15.9	15.9	15.0	<16.3	<16.3	<16.3	<16.3
16.2	15.9	15.9	16.0	16.0	15.9	16.8	16.1	16.2	16.7
16.0	15.8	15.8	15.9	15.9	15.0	16.8	16.6	15.9	16.6
16.2	15.8	15.9	15.9	15.9	15.2	16.6	16.5	16.4	16.6
16.2	16.0	16.0	15.9	16.0	15.4	16.6	16.1	16.1	16.3
16.1	15.9	16.0	15.9	15.9	15.7	16.5	16.1	15.3	16.5
16.2	15.9	15.9	16.0	15.9	15.8	16.8	16.8	16.1	16.5
16.2	15.9	16.0	16.0	16.0	15.9	16.4	16.6	16.2	16.6
16.1	15.9	16.0	16.0	16.0	def	16.8	16.7	15.8	16.8
16.1	15.9	16.0	16.1	16.0	15.8	16.2	16.0	15.9	16.6
16.3	15.9	16.0	16.1	16.0	15.7	16.4	16.5	16.3	16.6
16.1	16.0	15.7	15.8	15.8	15.1	16.6	16.8	16.2	16.3
16.1	15.4	15.9	16.0	15.9	15.8	16.7	15.9	15.8	16.7
16.2	15.5	16.0	16.0	15.9	16.0	16.4	16.8	16.1	16.8
16.2	15.5	16.0	15.9	15.9	15.8	16.8	16.8	16.2	16.7
16.2	15.8	15.9	15.9	16.0	15.4	16.4	16.3	15.9	16.5
16.2	15.9	16.0	15.9	16.0	16.1	16.4	16.5	16.3	16.5
16.2	15.5	15.9	15.9	15.8	15.9	16.8	16.9	16.3	16.3
16.2	15.8	15.9	15.9	15.9	16.4	16.9	16.8	16.5	16.5
16.1	15.6	15.9	15.8	15.9	15.7	16.5	16.4	16.2	16.5
16.2	15.7	16.1	16.1	16.0	15.4	16.8	16.7	16.5	16.5
16.2	15.9	16.0	15.9	15.9	15.5	16.2	16.3	16.2	16.4
16.2	15.5	15.8	15.7	—	15.2	<16.3	15.8	15.7	<16.3

410	56.85	9.23	23.97	23.96
287	6.44	10.0	29.2	29.3
6.3	16.9	15.2 ^{15.2}	16.0 ^{15.9}	16.4 ^{16.4}
6.3	16.3	15.6 ^{15.3}	15.5 ^{15.6}	16.9 ^{16.9}
<16.3	<16.3	15.9 ^{15.9}	16.0 ^{15.9}	<16.3
16.6	16.9	15.8 ^{15.6}	15.6 ^{15.7}	16.5 ^{16.5}
16.5	16.9	15.2 ^{15.2}	15.3 ^{15.5}	16.5 ^{16.5}
16.8	16.9	15.1 ^{15.0}	15.3 ^{15.4}	16.9 ^{17.0}
16.6	16.3	15.2 ^{15.1}	15.9 ^{15.9}	16.8 ^{16.8}
16.6	16.3	15.1 ^{15.0}	15.8 ^{15.7}	16.8 ^{16.8}
16.6	16.2	15.3 ^{15.3}	16.0 ^{15.9}	16.9 ^{17.0}
16.8	16.9	15.0 ^{14.9}	15.1 ^{15.2}	16.5 ^{16.5}
16.0	16.8	15.8 ^{15.6}	16.0 ^{15.9}	16.9 ^{17.0}
16.5	16.6	15.7 ^{15.5}	16.1 ^{16.0}	16.5 ^{16.5}
16.7	16.9	15.1 ^{15.1}	15.3 ^{15.3}	16.5 ^{16.6}
16.5	16.7	14.8 ^{14.8}	15.7 ^{15.7}	16.8 ^{16.8}
16.2	16.5	15.1 ^{15.0}	15.9 ^{15.9}	16.8 ^{16.9}
16.6	16.9	15.8 ^{15.7}	16.0 ^{15.9}	16.9 ^{16.9}
16.8	16.3	15.2 ^{15.1}	15.4 ^{15.6}	16.8 ^{16.8}
16.5	16.9	15.0 ^{15.0}	16.0 ^{15.9}	16.9 ^{17.0}
16.7	16.9	15.1 ^{15.2}	16.0 ^{16.0}	17.0 ^{17.1}
16.6	16.9	15.1 ^{15.3}	16.0 ^{15.9}	17.0 ^{17.0}
16.8	17.0	15.2 ^{15.1}	16.1 ^{16.0}	16.9 ^{17.0}
16.0	16.5	15.3 ^{15.3}	16.1 ^{16.1}	16.8 ^{16.9}
16.6	16.7	15.7 ^{15.7}	15.9 ^{15.8}	16.9 ^{17.0}
16.3	16.9	14.9 ^{14.8}	16.0 ^{15.9}	16.9 ^{17.0}
15.8	<16.3	15.0 ^{14.9}	15.8 ^{15.8}	16.2 ^{16.1}

		2453 (748)	2471 (986)	5763 (408)	5757 (409)	5717 (405)	2445 (67)	12014 CW86	12015 CW76	12017 HSL 836	12016 JW92	12
	JD											
2360	24,30023.355	14.2	15.9	14.7	15.7	14.7	16.1	16.3	15.8	15.2	14.8	12
3411	30584.644	14.3	15.8	14.8	15.5	14.8	15.8	16.6	15.7	14.8	14.8	1
23415	30585.640	14.6	16.0	14.9	15.8	14.9	16.0	16.5	15.7	14.8	14.9	1
23422	30589.627	14.4	15.8	14.5	15.4	14.7	16.2	16.6	15.6	14.7	14.5	1
23424	30590.621	15.1	16.2	14.5	15.2	14.8	15.7	16.7	15.6	14.3	14.7	1
23427	30593.636	14.9	16.2	14.5	15.4	14.8	15.9	16.7	15.6	14.6	14.4	1
23430	30605.532	14.3	16.2	14.9	14.8	14.9	15.8	16.8	15.7	14.7	14.8	1
23449	30619.612	14.8	16.0	14.8	15.5	14.8	16.2	16.8	15.3	14.8	14.5	1
23450	30620.535	14.9	15.9	14.6	15.6	14.6	16.0	16.8	15.8	15.0	14.7	1
23453	30624.618	14.1	15.8	14.6	15.3	14.7	16.3	16.8	15.6	14.8	14.1	1
23458	30639.589	14.9	15.8	14.7	15.0	14.8	16.2	16.6	15.6	14.7	14.7	1
23462	30640.598	14.9	16.2	14.7	15.6	14.5	16.3	16.5	15.6	14.3	14.2	1
23466	30641.581	14.8	15.5	14.6	15.7	14.2	16.3	16.3	15.7	14.6	14.6	1
23471	30647.582	14.4	16.2	14.9	15.5	14.8	16.1	16.4	15.3	15.2	14.4	1
23904	30977.564	14.8	15.8	14.9	15.7	14.5	16.3	16.6	15.7	14.7	15.2	1
23953	31055.568	14.7	16.2	14.6	15.9	15.7	16.0	16.3	15.7	14.7	14.8	1
23954	31060.548	14.1	15.9	15.3	15.6	15.5	16.3	16.4	15.8	14.7	15.0	1
23959	31066.565	14.8	15.5	14.6	15.6	15.5	16.3	16.6	15.3	14.8	15.1	1
23968	31106.359	14.6	15.7	14.8	15.5	15.6	16.2	16.7	15.5	14.5	14.8	1
23971	31107.354	14.8	16.1	14.9	16.0	15.5	16.3	16.8	15.6	14.5	14.8	1
23979	31108.358	14.6	16.0	14.8	15.5	15.5	16.1	16.8	15.6	14.6	14.8	1
23987	31109.457	14.8	16.1	14.7	15.4	15.5	16.0	16.7	15.6	14.5	14.8	1
24425	31292.632	14.2	—	15.0	15.4	15.0	—	16.8	15.6	15.2	14.8	1
24426	31297.628	14.1	16.0	15.0	15.6	14.4	16.1	16.6	15.5	15.0	14.9	1
24457	31304.630	15.3	16.3	15.2	15.5	15.0	16.0	16.7	15.8	15.1	15.1	1

6	12013 CW124	12012 CW82	JW11	2428 (L222)	JW46	5790 (158)	12007 CW94	CW66	2467 (539)	946 (160)
8	15.4	15.1		15.9	16.0	14.2	15.3	14.9	15.6	15.1
8	15.3	14.9		16.4	16.2	14.1	15.0	15.4	15.7	15.1
	15.6	15.1		16.2	16.2	14.4	15.4	15.4	15.7	15.2
	15.6	14.9		—	15.8	14.2	15.0	14.9	15.6	15.4
7	15.6	15.4		15.3	16.0	14.8	15.1	15.5	15.8	15.3
	15.0	15.3		16.4	15.2	14.5	15.4	15.5	15.6	14.9
8	15.2	15.1		16.0	16.2	14.3	15.2	15.8	15.5	15.2
	15.3	15.2		15.6	14.8	14.3	15.3	15.1	15.5	15.3
7	15.2	15.0		15.9	15.6	14.7	15.6	15.9	15.8	15.1
	15.2	15.1		16.3	16.2	15.2	15.4	15.6	15.4	15.4
	15.3	14.9		16.8	15.5	14.8	15.4	15.3	15.6	15.1
	15.2	14.9		16.5	16.0	14.3	15.4	15.8	15.7	15.0
	15.5	15.0		15.8	16.0	14.6	15.6	14.8	15.6	15.1
	15.8	15.0		16.8	16.0	14.1	15.4	15.4	15.8	15.3
	15.6	14.8		16.4	16.1	13.9	15.8	14.8	15.7	15.7
	15.8	15.2		15.6	16.0	14.0	15.7	15.9	15.8	15.2
	15.4	15.2		16.2	15.6	14.3	15.6	15.8	15.7	15.4
	15.4	14.9		15.4	15.5	14.6	14.9	15.4	15.4	15.0
	15.2	15.5		16.1	16.1	14.2	15.6	15.3	15.4	15.4
	15.1	14.9		16.2	16.2	14.2	15.0	15.0	15.9	15.1
	14.8	14.7		16.4	16.3	14.7	15.3	15.1	15.6	15.1
	14.9	14.7		16.5	—	14.4	15.1	15.6	15.4	14.9
8	14.8	15.0		15.9	15.2	14.5	15.1	15.8	15.5	15.4
	15.2	15.1		16.7	16.2	14.4	15.4	15.4	15.6	15.5
	15.1	15.1		15.7	15.2	14.3	15.6	15.6	15.5	15.4

12016	939	5772	2468	12020	12019	947	5791
JW16	43	478	477	JW22	JW91	17	959
15.7	15.1	14.8	15.2	15.0	15.4	16.2	16.4
15.6	14.9	14.6	14.8	14.8	14.2	16.2	16.2
15.7	14.8	14.7	15.2	15.0	14.3	16.1	16.2
15.2	14.8	14.8	14.9	14.8	15.8	16.0	15.2
16.0	14.7	14.8	14.9	14.8	14.5	16.2	16.2
15.7	14.9	14.7	15.6	14.6	15.1	16.0	16.7
15.6	15.0	14.7	15.3	15.1	14.8	16.1	16.2
15.8	14.6	14.5	15.4	15.1	14.9	16.1	16.5
15.8	14.7	14.5	15.7	14.9	15.6	16.1	16.5
15.6	14.7	14.2	15.2	14.9	14.5	16.0	16.4
15.8	14.6	14.5	15.9	15.2	15.1	16.0	16.3
15.5	14.9	14.6	15.2	15.1	15.6	16.0	16.5
15.6	15.0	14.5	14.5	15.0	15.2	16.0	15.9
15.7	14.8	14.4	14.5	15.1	15.2	16.1	16.5
def.	14.8	14.9	15.9	14.9	14.8	16.2	16.6
15.6	14.5	14.9	15.9	14.9	14.8	16.0	16.4
15.9	14.6	14.9	15.8	14.9	14.2	16.0	16.5
16.0	14.7	14.7	15.4	14.8	13.9	16.1	16.0
15.9	15.0	14.7	16.0	14.8	15.1	15.9	16.7
15.4	14.7	14.7	14.8	14.6	15.3	16.2	16.6
15.8	14.5	14.6	14.8	14.8	15.8	16.1	16.7
15.8	14.7	14.8	15.1	14.9	15.6	15.8	16.5
15.8	14.6	14.8	15.8	14.6	14.1	16.1	16.5
15.7	14.7	14.7	14.5	14.8	15.1	15.6	16.5
15.7	14.5	14.8	15.5	14.9	15.1	15.9	16.5

2480	5797	12029	2497	12024	2492	2483	2479	5777	5770
479	SL157	JW96	224	JW82	657	307	306	837	SL150
16.7	16.2	16.6	15.1	16.5	14.4	14.8	15.3	16.0	14.5
16.2	16.2	16.5	15.5	16.6	14.1	14.6	15.2	16.0	14.5
16.3	16.1	16.4	15.8	16.5	14.0	14.6	15.5	16.0	14.5
16.4	16.0	16.3	14.9	16.5	14.3	14.9	15.0	15.9	14.6
16.5	^{16.0} 15.8	16.6	14.8	16.6	14.2	15.0	14.9	16.0	^{14.2} 14.8
16.2	16.2	16.5	15.9	16.6	14.5	14.8	14.4	16.1	14.4
15.9	16.1	16.5	14.7	16.6	14.3	15.1	14.7	15.9	14.5
16.1	16.0	16.5	14.6	16.4	14.1	15.2	15.2	16.0	14.6
16.2	15.9	16.3	14.8	16.1	14.2	15.2	15.3	16.0	14.7
16.3	16.0	16.4	15.6	16.5	14.3	15.1	15.2	16.0	14.5
16.4	16.2	16.6	15.8	16.5	13.8	15.1	14.8	16.0	14.5
15.8	16.0	16.4	15.8	16.5	14.3	14.9	14.7	16.0	14.4
16.3	del	16.4	15.3	16.2	14.1	14.8	14.7	16.0	14.6
16.6	16.2	16.4	16.0	16.8	14.3	15.1	15.0	15.8	14.5
16.0	16.0	16.5	14.5	16.0	>13.9	15.1	14.9	16.0	del
16.3	16.0	16.4	14.8	16.6	>13.9	15.3	15.1	16.0	14.5
15.6	16.1	16.5	15.8	16.6	>13.9	15.1	15.6	16.0	14.5
16.3	16.1	16.4	15.3	16.3	14.6	14.9	15.5	15.9	14.7
^{16.7} 16.6	16.2	16.5	15.9	16.5	14.2	15.0	15.0	16.0	14.5
16.6	16.1	^{16.6} 16.7	15.5	16.2	14.4	14.8	14.9	16.1	14.5
16.0	16.0	16.5	14.2	16.6	14.2	15.2	14.9	16.0	14.5
16.3	16.1	16.6	14.1	16.6	14.1	14.7	14.6	16.0	14.4
16.7	16.2	16.4	14.5	16.5	14.2	14.6	14.8	15.9	14.5
16.0	16.2	16.4	15.8	16.6	13.9	14.7	15.5	16.2	14.5
16.3	16.2	16.5	14.2	16.4	13.7	14.6	15.7	16.0	14.6

5744	5750		945	2476	2485	950	2499	2503	2506
393	635	7616	HSL 73	186	838	HSL 22	962	226	225
15.8	15.7 ^{15.9}	16.0	16.6	16.2	16.2	15.2	15.3	15.2	16.4
15.8	15.8 ^{15.5}	16.3	16.6	16.6	16.4	15.7	16.3	15.5	16.5
15.8	15.5 ^{15.3}	16.2	16.0	15.9	16.8	15.7	15.7	15.8	16.5
15.9	15.4 ^{15.2}	16.2	16.2	16.3	16.5	15.1	16.2	15.5	16.5
15.9	15.7 ^{15.6}	16.1	16.5	16.3	16.7	15.2	15.9	16.1	15.8
15.9	15.8 ^{15.4}	16.3	16.1	16.3	16.6	16.0	15.8	15.5	16.5
15.8	15.8 ^{15.6}	16.1	16.8	16.4	16.3	16.1	16.1	16.0	16.2
15.8	15.6 ^{15.7}	16.0	16.6	16.2	16.8	15.5	15.9	16.4	15.5
15.8	15.7 ^{15.5}	16.1	15.9	16.3	16.3	15.2	15.9	15.2	15.9
15.7	15.6 ^{15.4}	16.6	15.3	16.3	16.2	15.8	15.7	15.2	15.6
15.8	15.9 ^{15.8}	16.1	16.4	16.3	16.8	15.8	15.8	16.4	15.1
15.8	15.8 ^{15.7}	16.1	16.5	16.4	16.2	15.9	15.8	15.5	15.8
15.8	15.6 ^{15.4}	16.0	16.5	16.6	16.2	15.9	15.9	16.0	16.1
def	15.5 ^{15.5}	16.0	16.5	15.7	16.4	16.0	16.0	16.3	15.8
15.8	15.9 ^{15.8}	16.0	15.6	16.5	16.6	15.9	16.0	16.0	15.1
15.9	15.8 ^{15.6}	16.0	16.6	16.1	16.0	15.8	15.9	15.7	15.8
15.8	15.7 ^{15.5}	16.1	16.0	15.9	16.2	15.7	16.0	15.9	16.2
15.8	15.7 ^{15.6}	16.0	15.5	16.3	16.5	15.2	15.8	16.2	16.1
15.9	15.9 ^{15.9}	16.8	16.1	16.5	16.8	15.5	15.9	16.0	16.2
15.9	15.8 ^{15.8}	16.1	16.7	16.2	16.4	15.0	15.9	15.6	16.2
15.8	15.7 ^{15.5}	16.2	16.7	16.6	16.1	15.5	16.1	16.2	15.6
15.8	15.7 ^{15.6}	16.2	15.7	16.2	16.5	15.7	15.9	16.2	16.0
15.8	15.8 ^{15.7}	16.2	16.5	16.4	16.7	16.1	16.3	16.0	16.5
15.8	15.5 ^{15.3}	16.2	16.5	16.8	16.2	15.4	15.7	16.5	15.6
15.8	15.8 ^{15.8}	16.0	16.8	16.5	16.5	16.1	15.6	15.4	16.0

2521 761A	2516 227	5803 cmv 449	5780 HSL 541	5769 SML 391	933 HSL 120	5759 SML 651	5747 386	5736 385	5732 384
<u>15.9</u>	<u>16.0</u>	<u>15.2</u>	<u>16.8</u>	<u>16.7</u>	<u>def</u>	<u>16.5</u>	<u>16.6</u>	<u>16.5</u>	<u>16.2</u>
16.0	15.9	15.0	16.9	16.8	16.2	16.5	16.2	16.4	16.3
15.8	15.9	15.7	16.7	16.7	15.6	16.2	16.2	16.2	16.3
15.9	16.0	15.7	16.3	<16.3	14.8	16.3	16.4	16.2	16.3
15.8	16.4	16.0	16.7	def	15.8	16.3	16.7	16.3	16.3
15.8	15.9	15.9	<u>16.9</u> 15.5	16.9	16.0	16.4	16.8	16.4	16.2
15.6	15.8	16.0	16.9	<17.0	15.1	16.5	16.6	16.3	16.4
15.6	16.4	15.1	16.8	<17.0	15.1	16.4	16.6	16.5	16.3
15.8	15.3	16.1	def	<17.0	15.2	16.4	16.8	16.2	def
15.6	15.2	15.7	16.7	<17.0	16.0	16.3	16.1	16.0	16.0
15.9	16.6	14.9	16.6	<17.0	15.9	16.3	16.2	16.2	16.2
15.9	15.7	15.6	16.5	<17.0	16.0	16.4	16.3	16.2	16.3
15.9	15.9	16.2	16.7	<17.0	16.3	16.4	16.3	16.4	16.4
15.8	16.6	14.7	16.9	<17.1	15.7	16.4	16.1	16.4	16.3
15.9	16.5	16.2	16.9	<17.0	15.1	16.3	16.1	16.0	16.2
15.8	15.8	16.0	16.7	16.8	15.1	16.3	16.7	16.3	16.2
15.9	16.1	15.2	16.4	16.9	16.0	16.4	16.3	16.2	16.3
15.5	16.4	16.0	16.3	16.9	16.0	16.4	16.1	16.2	16.4
15.9	16.5	16.2	16.5	16.8	16.0	16.4	16.2	16.2	16.3
16.0	15.5	14.3	16.6	16.8	16.2	16.4	16.7	16.5	16.4
15.9	16.4	16.0	17.0	16.9	16.1	16.4	16.9	16.4	16.3
15.9	16.5	16.2	16.6	16.8	16.3	16.3	16.1	16.3	16.3
16.0	16.4	16.0	16.3	<16.6	16.2	16.3	16.1	16.0	16.2
15.9	16.3	16.0	16.3	<17.0	16.1	16.3	16.8	16.1	16.2
15.8	16.6	16.2	16.9	<17.0	15.2	16.5	16.1	16.2	16.2

5724 383	5720 HSL 534	5725 SML 382	5723 381	5714 HSL 533	5712 984	2412 528	2406 527	2409 529	5706 SML 549	
16.1	15.7	15.9	15.9	16.0	15.2	16.9	16.7	16.4	16.5	1
16.1	15.4	16.0	15.9	15.9	14.8	16.9	16.8	15.9	16.5	1
16.2	15.5	16.0	16.0	16.0	15.1	16.6	16.0	15.7	16.8	1
16.2	15.7	15.9	15.9	15.9	15.7	15.8	16.2	15.5	16.5	1
16.1	15.8	15.9	15.9	16.0	15.7	16.6	16.8	16.0	16.5	1
16.1	15.7	15.9	15.8	15.9	15.7	16.8	16.7	16.4	16.4	1
def	15.6	15.9	15.9	15.8	15.2	16.3	16.8	16.2	16.6	1
16.1	15.6	15.9	15.9	15.9	15.7	16.8	16.4	16.0	16.4	2
16.0	15.4	15.9	15.8	15.9	15.2	15.9	16.7	16.0	16.4	1
16.0	15.3	16.0	16.0	16.0	15.6	16.6	15.7	15.8	16.4	1
16.1	15.8	15.9	15.8	16.0	15.4	16.3	15.7	16.2	16.6	1
16.0	15.2	16.0	16.0	16.0	15.5	16.7	16.3	16.3 15.5	16.4	1
16.3	16.3	15.8	15.9	15.9	15.1	16.5	16.8	15.9	16.4	1
16.1	15.4	16.0	15.9	15.9	15.2	16.8	16.5	15.8	16.3	1
16.0	15.7	15.9	15.9	16.0	15.7	16.5	16.6	16.0	16.4	1
16.0	15.4	15.9	15.8	15.9	15.2	16.0	16.2	15.2	16.6	1
16.0	15.3	15.9	15.9	15.9	15.2	16.8	15.5	15.9	16.8	1
16.1	15.5	15.9	15.8	15.9	15.2	16.3	15.5	15.7	16.3	<
16.2	16.0	16.0	15.9	15.9	15.8	16.9	15.9	15.8	16.5	1
16.3	15.9	15.9	15.9	15.9	15.8	16.9	16.6	15.8	16.5	1
16.2	15.7	16.0	15.9	15.9	15.3	16.0	<16.6	15.9	16.4	1
16.0	15.7	16.0	15.9	16.0	15.3	16.5	16.2	16.2	16.5	1
16.2	15.5	15.9	15.9	15.9	15.4	16.3	16.3	15.9	def	1
16.1	15.7	15.9	15.9	15.9	15.8	16.3	16.0	16.0	16.6	1
16.1	15.3	16.0	16.0	16.0	15.3	16.7	16.8	16.2	16.5	1

2410	5.655	9.23	2397	2396
287	644	100	292	293
6.7	16.9	15.4 15.6	15.9 15.9	17.0 17.0
6.6	16.9	15.3 15.5	16.0 16.1	16.8 16.9
16.5	16.0	15.7 15.7	15.8 15.8	16.9 17.0
16.7	16.3	14.9 14.9	16.1 16.0	16.8 16.7
16.0	16.9	14.4 14.1	15.9 15.9	16.9 16.9
16.0	16.8	15.2 15.3	15.6 15.7	16.9 16.9
16.5	16.3	15.5 15.4	15.5 15.7	17.1 17.0
Ref	16.3	14.9 14.9	15.8 15.8	16.0 16.1
16.8	17.0	15.0 15.0	15.9 15.9	16.8 16.9
16.6	17.0	15.4 15.6	15.8 15.8	16.9 16.8
16.2	16.3	15.2 15.2	15.4 15.5	17.0 17.0
16.6	16.9	14.9 15.0	16.1 16.2	16.4 16.5
16.8	16.9	14.6 14.8	15.7 15.7	17.1 17.0
16.3	16.8	15.6 15.7	15.9 16.0	16.6 16.7
16.2	16.9	15.2 15.2	15.9 15.9	16.6 16.6
16.5	16.8	15.7 15.7	15.8 15.8	16.9 16.9
15.9	16.3	15.2 15.2	15.8 15.9	17.0 17.0
<16.3	16.0	15.7 15.7	15.6 15.4	16.1 16.1
16.1	16.4	15.5 15.5	16.1 16.0	16.9 17.0
16.6	16.5	15.2 15.3	16.2 16.2	16.4 16.5
16.6	<16.6	15.2 15.2	15.3 15.4	16.9 16.8
16.0	16.8	15.7 15.7	16.0 16.1	<16.9 <16.6
16.2	16.4	14.7 15.0	15.7 15.8	16.9 16.6
16.9	16.8	15.4 15.6	15.9 16.1	17.0 17.0
16.1	16.9	15.2 15.3	16.0 16.1	16.8 16.7

110

A

JD

		2453 (248)	2471 (986)	5763 (408)	5757 (405)	5717 (405)	2445 (47)	12014 (C086)	12015 (C076)	12017 HSLP36	12016 J092
24467	2431314.617	14.6	16.3	15.1	16.2	14.9	16.3	16.6	15.6	15.0	14.8
24469	31316.606	14.2	15.7	15.2	15.6	14.0	16.2	16.7	15.6	14.8	14.7
24483	31317.599	14.0	16.0	14.8	15.9	14.5	16.1	16.8	15.5	15.1	14.8
24487	31321.627	14.8	16.1	15.0	15.5	14.6	15.8	16.4	15.4	15.2	14.8
24496	31324.624	14.8	—	14.6	^{15.4} 15.9	14.2	—	—	15.7	—	15.1
24502	31325.615	14.6	15.9	14.9	15.6	14.3	16.0	16.7	15.7	15.1	14.8
24509	31326.634	14.9	15.8	15.4	16.0	14.4	16.1	16.6	15.6	15.1	14.8
24516	31327.634	15.1	16.0	14.9	15.6	14.5	15.7	16.5	15.6	15.1	14.8
24526	31328.617	14.9	16.0	14.7	15.3	14.0	16.2	16.6	15.4	15.3	14.8
24531	31332.625	14.5	16.1	14.8	15.8	14.1	—	16.4	15.6	15.1	14.6
24547	^{cracked} 31348.570	14.9	15.9	14.8	15.9	13.8	16.0	16.5	^{15.7} 15.8	15.0	15.1
25443	32011.649	13.9	16.2	15.0	15.6	13.8	15.8	16.5	15.2	15.6	14.8
25444	32012.641	14.2	^{15.9} 15.9	15.4	15.8	13.9	16.0	16.5	15.2	15.6	15.1
25462	32023.644	14.8	15.9	15.1	15.3	13.8	15.8	16.4	15.6	15.6	14.8
25472	32024.646	14.7	16.0	14.8	15.8	13.9	16.3	16.7	15.2	15.7	15.0
25474	32027.647	14.6	16.0	15.4	15.9	13.7	16.2	16.6	15.6	15.6	14.8
25477	32030.615	14.2	15.8	15.1	15.6	14.2	16.2	16.4	15.6	15.7	15.0
25474	32031.640	13.8	16.0	14.9	15.2	14.1	16.1	16.6	15.6	15.6	14.8
25501	32035.638	14.4	15.9	15.1	15.1	14.3	15.9	16.4	15.4	15.8	15.0
25504	32037.641	14.9	15.9	15.5	15.5	14.1	16.2	16.6	15.2	15.6	14.9
25507	32042.646	15.2	15.9	15.3	15.6	14.2	—	16.7	15.6	15.8	15.0
25522	32053.628	14.1	16.0	15.2	15.5	13.8	16.2	16.8	15.3	15.6	15.1
25533	32056.622	14.5	15.6	15.2	15.4	13.8	15.8	16.7	15.6	15.7	14.8
25538	32058.600	14.9	16.2	15.2	15.7	13.9	16.1	16.5	15.6	15.8	14.9
25544	32059.506	14.9	^{15.6} 15.6	15.0	15.6	13.8	16.1	16.4	15.5	15.7	14.8
25555	32061.610	15.4	16.0	15.2	15.8	13.9	16.2	16.4	15.7	15.6	14.8

12013	12012	2478	5790	12007	2462	946
CW124	CW42	JW11	JW46	CW94	CW66	(160)
15.4		12.22	14.5		(5.39)	
15.1	15.1	16.5	16.2	15.0	15.4	15.6
15.0	15.3	16.4	15.4	14.5	15.5	15.8
15.2	15.5	16.7	15.2	14.2	15.1	15.0
15.0	15.1	16.4	16.5	14.1	15.2	15.6
15.1	15.2	—	—	—	—	—
15.3	14.7	16.6	16.0	14.2	15.6	15.9
15.6	14.8	15.9	16.1	14.2	15.7	15.9
15.2	15.0	16.4	16.2	14.4	15.8	15.1
14.7	15.1	16.5	16.4	14.2	15.2	15.1
14.9	15.6	16.6	16.0	14.3	15.1	14.8
15.2	15.0	15.9	15.7	14.4	—	15.6
15.2	15.1	16.0	16.0	14.2	15.1	15.4
14.9	14.8	16.5	16.0	14.3	15.7	14.9
15.3	14.8	16.2	16.0	14.2	15.2	15.4
15.2	14.6	16.6	16.2	14.4	15.4	15.8
14.8	14.8	16.7	15.2	14.7	15.4	15.2
15.1	15.0	16.2	16.1	14.3	15.2	15.6
15.2	15.1	16.5	16.1	14.3	15.2	15.1
15.0	14.8	16.6	15.9	14.6	15.3	15.8
15.2	15.1	16.3	16.0	14.6	15.4	15.1
15.5	14.9	16.4	16.0	14.3	15.4	15.6
15.1	14.8	16.6	15.5	14.4	15.2	15.4
14.8	15.3	16.2	16.3	14.6	15.8	14.9
15.3	14.8	15.8	16.4	14.2	15.2	15.5
15.4	14.2	16.0	14.9	14.2	15.4	15.4
15.1	14.8	16.7	16.0	14.5	15.2	15.1

12018	2475	12016	939	5772	2468	12020	12019	947	5791	2
JW16	223	JW92	43	478	477	JW22	JW91	17	959	6
15.8	14.8	14.9	15.4	15.1	15.8	16.1	16.3	15.9	15.2	1
15.6	14.7	14.8	15.5	14.9	13.9	15.5	16.2	15.1	15.3	1
14.7	14.8	14.8	15.8	14.9	14.8	15.9	16.5	15.2	15.1	1
15.6	14.6	14.8	15.4	15.1	15.2	16.0	16.1	14.8	15.1	1
15.6	15.0	15.0	14.5	14.6	15.3	—	—	15.6	15.4	3
15.7	14.3	14.6	14.6	15.0	15.1	16.0	16.4	15.8	15.0	149
15.9	14.8	14.9	15.1	14.9	15.8	16.3	16.0	15.6	15.2	148
15.8	14.6	14.9	15.4	15.1	15.8	16.0	16.5	14.6	15.2	148
15.8	14.6	14.8	15.5	15.1	14.2	15.6	16.6	14.6	15.0	148
15.8	14.4	14.8	15.1	15.0	15.5	16.2	16.4	15.4	15.3	147
15.7	14.8	15.0	15.9	15.0	14.2	16.1	16.4	15.9	15.4	147
15.7	14.9	14.8	15.3	15.0	14.8	15.5	16.1	15.2	15.0	147
15.8	14.7	14.9	15.9	15.1	15.3	16.0	16.4	15.7	14.9	147
15.8	14.2	14.7	15.1	14.7	15.1	15.8	16.4	15.6	15.0	147
15.9	14.8	14.9	15.2	14.7	14.9	16.0	16.1	15.7	14.6	147
16.0	14.6	14.9	14.6	15.0	14.8	16.0	16.4	15.0	15.0	147
15.8	14.8	15.1	15.2	15.1	15.0	16.0	16.6	15.8	15.2	147
16.0	14.8	14.9	15.7	15.1	15.5	16.1	16.4	15.6	15.0	147
16.0	15.0	15.0	15.1	15.0	14.6	16.0	16.6	15.7	15.0	147
16.0	14.8	14.9	15.7	15.2	15.5	16.4	16.5	15.3	15.0	147
16.0	14.8	15.0	15.8	15.2	15.0	16.2	16.3	15.7	15.1	147
15.8	14.7	14.9	14.3	15.1	14.4	16.2	16.6	15.8	15.1	147
15.7	14.7	14.7	15.5	15.4	15.1	16.0	16.6	15.4	15.0	147
16.0	14.9	14.9	16.0	15.0	16.0	16.0	16.3	15.7	14.9	147
15.7	14.8	14.9	14.8	15.1	14.5	15.9	16.4	15.8	14.8	147
15.7	14.9	15.1	15.4	15.2	15.1	16.4	16.5	14.8	14.9	147

2480	5797	12029	2497	12024	2492	2483	2479	5777	5770
47.9	SL157	JW96	224	JW82	657	307	306	837	SL150
16.6	16.2	16.5	15.4	16.7	14.0	14.7	14.5	16.0	14.6
16.0	16.1	16.4	15.9	16.5	13.7	14.9	14.5	16.1	14.5
16.5	16.2	16.4	15.1	16.5	14.5	14.8	14.5	16.0	14.6
16.1	16.0	16.4	14.9	16.3	13.9	14.7	14.8	16.0	14.5
15.8	16.0	16.1	15.8	16.1	14.4	14.6	14.5	16.0	14.5
16.0	16.0	16.5	14.9	16.3	14.0	14.9	14.7	16.0	14.4
16.5	16.0	16.6	14.1	16.1	13.9	14.8	14.7	16.0	14.6
16.6	16.0	16.4	14.4	16.5	14.5	14.7	14.7	16.0	14.6
16.1	16.0	16.4	14.6	16.4	14.4	14.8	14.7	16.0	14.6
16.7	16.1	16.6	15.7	16.7	14.2	14.8	14.8	16.1	14.6
16.4	16.0	16.5	14.9	16.6	14.5	14.8	15.8	16.0	14.5
16.6	16.1	16.3	14.6	16.5	14.1	15.1	14.8	16.1	14.5
16.6	16.0	16.3	14.8	16.4	14.1	14.9	14.8	16.1	14.7
16.3	16.1	16.3	15.8	16.5	13.7	15.1	14.9	16.0	14.6
16.7	16.2	16.3	15.3	16.7	13.9	15.0	15.1	16.1	14.6
16.2	16.1	16.4	14.6	16.3	14.0	15.0	15.0	16.0	14.5
16.3	16.1	16.4	15.6	16.2	14.2	14.9	14.9	16.0	14.6
16.0	16.1	16.4	15.6	16.4	14.5	14.9	14.8	16.1	14.7
15.8	16.0	16.4	14.8	16.0	14.5	15.1	14.8	16.1	14.5
16.5	16.0	16.6	15.2	16.6	14.5	15.1	14.7	16.1	14.6
16.4	16.1	16.4	14.7	16.4	14.2	15.1	15.1	15.9	14.6
16.1	16.2	16.5	15.9	16.6	14.2	14.9	15.4	16.0	14.5
16.3	16.2	16.4	14.6	16.0	14.3	15.0	15.5	16.0	14.5
16.4	16.2	16.3	14.8	16.6	14.2	14.9	15.1	16.0	14.6
16.6	16.1	16.4	14.8	16.0	13.9	14.9	15.0	15.8	14.5
15.8	16.0	16.4	15.7	16.5	14.1	14.8	15.2	16.1	14.1

5744	5750		945	2476	2485	950	2499	2503	2506
393	835	7616	73	186	838	MSL22	962	226	225
15.8	15.9	16.1	16.4	16.2	16.5	15.9	16.2	16.0	16.3
15.9	15.6	16.2	15.7	16.2	16.3	16.1	15.6	15.4	15.8
15.8	15.8	16.6	16.2	16.3	16.4	15.2	15.8	15.9	16.1
15.8	15.6	16.0	16.4	16.4	16.6	16.0	15.8	16.0	16.0
15.7	15.7	<16.1	<16.1	<16.1	<16.1	15.2	16.1	15.2	16.1
15.8	15.7	15.9	16.5	16.4	16.5	15.8	16.1	15.9	16.2
15.8	15.8	16.0	16.7	16.2	16.8	15.9	15.5	16.2	16.5
15.8	15.8	16.0	16.0	16.3	16.0	16.2	16.0	16.2	15.2
15.8	15.7	16.3	16.7	16.5	16.4	16.1	16.0	15.6	15.8
15.7	15.8	16.2	16.8	16.7	16.4	15.9	15.6	15.6	15.7
del	15.8	16.2	15.3	16.3	16.0	15.5	15.4	15.6	15.6
15.6	15.5	16.0	16.3	16.4	16.5	15.9	16.2	16.2	15.1
15.8	15.7	16.0	16.2	16.1	16.4	16.0	16.0	15.5	15.8
15.7	15.8	16.0	16.3	16.5	16.4	15.9	16.0	16.0	16.0
15.8	15.7	16.0	16.7	16.6	16.5	16.0	15.6	15.7	15.7
15.8	15.8	16.2	16.4	16.5	16.3	15.9	16.2	15.8	15.9
15.7	15.5	15.9	16.0	16.0	16.1	15.7	15.7	16.2	16.2
15.9	15.8	16.2	16.6	16.5	16.2	16.0	16.1	15.8	16.2
15.7	15.8	16.2	16.8	16.7	16.5	15.6	15.7	15.5	16.4
15.8	15.7	16.2	16.5	16.6	16.7	15.6	16.0	16.3	16.1
15.6	15.4	16.0	16.8	16.6	16.3	15.7	16.1	16.3	16.3
15.9	15.8	16.0	16.8	16.7	16.6	15.5	16.1	16.2	16.0
15.7	15.5	16.0	16.7	15.8	16.5	16.1	15.2	15.8	15.3
15.8	15.8	16.2	16.0	16.5	16.5	15.1	15.7	16.2	16.2
15.8	15.4	16.0	16.4	16.1	15.8	15.7	16.1	15.5	16.3
15.8	15.8	15.9	16.2	16.2	16.6	16.1	15.9	16.3	16.0

2521 761A	2516 227	5803 SML 449	5780 HSL 541	5769 SML 391	933 HSL 120	5759 SML 651	5747 386	5736 385	5732 384
15.8	15.9	15.7	16.9	<17.0	16.2	16.4	16.6	16.3	16.2
16.0	16.5	16.3	16.4	<17.0	14.7	16.4	16.6	16.3	16.2
15.9	16.4	15.1	16.8	17.0	14.6	16.3	16.2	16.2	16.1
15.9	16.3	15.1 16.1	16.3	17.1	15.7	16.4	16.3	16.2	16.2
16.0	<16.1	16.1	<16.1	<16.1	<16.1	<16.1	<16.1	<16.1	<16.1
15.5	16.2	14.5	16.5	16.8	16.0	16.4	16.6	15.9	16.2
15.8	15.6	15.9	16.8	16.9	16.3	16.4	16.7	16.4	16.3
15.8	16.0	16.0	16.5	16.9	16.3	16.4	16.2	16.3	16.3
15.8	16.4	16.2	16.8	16.9	16.2	16.3	16.7	16.2	16.2
15.7	16.6	16.3	16.8	16.9	14.1	16.3	16.8	16.2	16.2
16.0	16.5	15.2	16.9	def	14.4	16.4	16.6	16.3	16.2
15.9	15.8	15.0	16.9	16.8	16.2	16.4	16.5	16.7	16.3
15.8	16.0	16.7	16.9	16.8	16.2	16.4	16.8	16.4	16.3
15.9	15.7	14.9	16.3	def	15.9	16.3	16.2	16.3	16.2
15.8	15.9	16.0	16.9	16.7	16.0	16.5	16.7	16.1	16.2
15.8	15.9	15.1	16.8	16.3	16.1	16.2	16.3	16.3	16.2
15.8	16.5	16.0	16.7	16.3	16.0	16.3	16.2	16.2	16.2
15.8	15.8	15.2	16.9	16.4	15.1	16.5	16.7	16.3	16.2
16.0	15.8	15.4	16.4	16.5	15.2	16.2	16.7	16.1	16.1
15.9	16.3	16.2	16.9	17.0	15.5	16.3	16.5	16.1	16.1
15.9	16.6	14.8	16.3	16.8	16.4	16.4	16.6	16.3	def.
15.9	16.6	16.2	16.8	<17.0	15.9	16.4	16.3	16.4	16.3
15.8	15.9	16.1	16.7	16.9	16.0	16.3	16.1	16.1	16.2
15.9	16.5	14.9	16.6	<17.0	16.3	16.4	16.7	16.2	16.1
15.8	15.6	15.6	16.7	17.1	16.3	16.4	16.0	16.1	16.1
15.8	16.4	16.1	16.5	<17.0	16.2	16.3	16.7	16.2	16.1

5724 383	5720 534	5725 382	5723 381	5714 533	5712 984	2412 528	2406 527	2409 529	5706 649	
16.0	15.3	15.8	15.8	15.9	15.4	16.6	16.3	16.2	16.5	
16.1	15.8	15.8	15.9	15.9	15.6	16.5	16.5	15.9	16.4	
16.0	15.7	15.9	15.9	16.0	15.8	16.7	16.7	15.6	16.3	
16.0	15.3	15.9	15.9	15.9	15.3	16.2	16.2	16.1	16.6	
<16.1	15.3	15.9	15.9	16.0	15.8	<16.1	<16.1	<16.1	<16.1	
16.0	15.2	15.9	15.9	15.9	15.7	16.5	16.4	16.3	16.4	
16.0	15.5	15.9	16.0	15.9	15.8	16.8	16.7	16.3	16.4	
16.0	15.3	15.9	15.9	15.9	15.5	15.9	16.0	16.0	16.4	
16.0	15.3	15.9	15.9	16.0	15.3	16.4	16.5	15.8	16.4	
16.2	15.5	15.9	15.9	15.9	15.4	16.8	16.7	16.2	16.3	
16.1	15.8	16.1	16.0	16.0	15.2	16.8	15.9	16.0	16.3	
16.2	15.2	16.0	15.9	15.9	15.7	16.8	15.8	15.8	16.4	
16.0	15.5	16.0	15.9	15.9	15.5	16.5	16.4	16.2	16.4	
15.9	15.3	15.9	15.8	15.9	15.6	16.6	15.7	15.7	16.4	
16.0	15.2	16.0	15.9	15.8	15.7	16.6	16.5	16.2	16.3	
16.1	15.5	16.0	15.8	15.7	16.3	16.7	16.4	15.8	16.3	
16.1	15.5	15.9	15.8	15.8	15.0	16.7	16.5	16.4	16.4	
16.1	15.2	16.0	15.9	15.8	15.3	15.9	16.6	16.4	16.4	
16.1	15.4	16.0	15.8	15.7	15.7	16.5	15.7	16.0	16.4	
16.0	15.6	15.9	15.8	15.8	15.2	16.2	16.8	16.1	16.3	
16.0	15.2	15.9	15.9	15.9	15.8	16.6	16.3	16.2	16.3	
16.1	15.2	15.9	15.8	15.7	15.6	16.1	15.9	16.3	16.3	
16.0	15.3	15.9	15.8	15.7	15.2	def	16.1	15.9	16.3	
16.1	15.4	15.9	15.9	15.9	15.4	16.8	16.7	16.1	16.4	
16.0	15.5	15.9	15.8	15.7	15.4	15.8	15.9	16.3	16.3	
16.2	15.2	15.9	15.8	15.7	15.8	16.8	16.7	15.9	16.4	

2410	5685	923	2397	2396
287	644	100	292	293
def	16.8	15.7	15.9	16.4
16.5	16.3	14.9	16.0	16.6
16.8	16.8	14.8	15.6	16.9
16.8	16.8	15.3	15.8	16.5
<16.1	<16.1	15.9	16.0	<16.1
15.9	16.7	15.9	15.9	16.9
16.4	16.3	15.8	16.0	16.9
16.6	16.8	15.4	15.6	16.5
16.7	16.9	15.2	16.2	16.9
15.9	16.9	15.8	16.0	16.5
16.6	16.5	15.0	15.7	<16.6
16.9	16.6	15.7	16.0	16.9
16.0	16.9	15.8	15.9	16.9
16.3	16.9	15.5	16.2	16.8
16.6	16.2	15.2	15.7	16.5
16.5	def.	15.1	16.0	16.8
16.4	16.8	15.3	16.1	16.9
16.5	16.4	16.0	15.7	16.2
16.6	16.5	15.2	16.1	def
16.3	16.2	15.2	16.1	17.0
16.7	16.8	15.5	def	16.7
16.7	16.9	15.8	15.9	17.0
16.8	16.8	14.8	16.0	16.8
16.2	16.5	14.9	16.0	16.9
16.5	16.8	14.8	16.0	16.6
16.2	16.4	15.9	16.0	16.8

A

JD

25562

24,32067.621

2453 (748)

2471 (986)

5763 (408)

5757 (409)

5717 (405)

2445 (67)

12014 CW86

12015 CW76

12017 HSL836

12016 JW92

1

25564

32069.566

14.7

16.0

15.5

15.5

14.2

16.0

16.3

15.3

15.7

15.2

25566

32070.603

14.6

15.9

15.5

15.7

14.6

16.0

16.5

15.8

16.0

15.2

25636

32129.569

Double Star

double-lined

Double star

from these obs.

stat

$P = 21.413$
 $P = 0.46212$

P_{33688}
 $P = 29684$

P_{3061}

good
dial
rather

A17279
A229A
A23048
A23050

$P_{2.96036}$

NOT VARIABLE

red

variability questioned
or merged period

check published period

published period 2.395846

Irregular

Irregular or Long Period

remerged in other books

Irregular

Irregular or Long Period

12013✓	12012✓	12011✓	2478✓	12009✓	5790✓	12007✓	12006✓	2467✓	946✓
CW124	CW82	JW11	(222)	JW46	(158)	CW94	CW66	(539)	(160)
15.2	15.1		16.3	15.8	14.4	15.4	15.4	15.5	15.0
15.2	15.1		15.6	16.0	14.2	15.4	15.5	15.6	15.2
15.2	14.8		16.2	16.4	14.7	15.3	15.2	15.6	15.2

ln
subal-
ity 5.51

Period
by JW

P

3.6613 6.4574

0.2086

4.794

good
deal
scatter

amplitude

15.1

Irregular
type

to be represented in
other work

Not a variable

to be represented in
other work

Not a variable

Red star Not variable

JW 16	223	JW 92	43	428	437	SW 22	SW 91	17	959
12018	H 473	12016	939	5772	2468	12020	12019	HV 947	HV 5791
15.9	14.6	14.9	15.2	15.0	14.8	16.2	16.3	15.1	15.1
15.9	14.6	14.8	15.9	15.2	15.1	15.8	16.6	15.6	15.1
16.0	14.6	14.8	15.9	15.2	15.1	15.8	16.6	15.6	15.1
16.0	14.6	14.8	15.8	15.2	15.4	16.0	16.0	15.8	14.4

my
red
star

mm

A 17279

A 22919

A 23048

$P = 6.39006$

day

$\frac{1}{P} = .156493$

Irregular

$P = 6.41577$

$\frac{1}{P} = .155866$

$P = 5.7382$

$\frac{1}{P} = .17427$

$P = 2.5745$

$\frac{1}{P} = .38841$

$P = 5.73124$

$\frac{1}{P} = .174464$

15.0 - 15.16

Not a variable

Irregular

second minimum variable?

9	479	157	SW96	224	JW82	657	307	306	837	570
91	480	5797	12029	2497	12024	2492	2483	2479	5777	5770
	16.5	16.2	16.3	15.1	16.3	14.5	15.1	15.5	16.0	14.6
1	16.2	16.2	16.4	15.5	16.5	13.9	14.8	14.9	16.0	14.6
4	16.0	16.0	16.4	15.8	16.5	13.9	15.1	15.1	16.0	14.7

$P = 4.333 \times 10^{-23073}$
 100% full

Not Variable close to bright stars effect?
 supposed variability due to cluster?

Not Variable

PS
 7.730
 0.12865

Remeasured in
 other work.

For ground cluster 74.50
 blue star to 1.807907 $P.O. 531257$
 see w.c. Taffel's new work.

Irregular May be a real star
 15/95

Double Star Not a Variable

Double Star Not a Variable

5744✓	5750✓	7616	9415✓ H ₆ 73	2476✓	2485✓	9501✓ H ₅₂ 22	2499✓	2503✓	2506✓
393	835		186	838		962	226	225	
15.7	15.7 ^{15.6 15.7}	16.1	16.5	16.2	16.0	15.9	15.6	14.8	16.5
15.9 ^{15.9}	15.8 ^{15.2 15.8}	16.8	16.0	15.9	16.5	15.9	16.0	16.2	15.7
15.8	15.9 ^{15.7 15.8}	16.0	16.3	16.3	16.7	15.2	16.0	16.6	16.3

2nd
measures15.2
15.9

remeasured

companion
17.0

P=3.5678

P=2.7407

From
2nd measure

P4.0645

P0.2463

companion
16.4blended
imageprojected
on a clustercompanion
16.8

P=3.9572

P0.252926

companion
16.3

P=0.245377

P=4.0717

Not a variable

In nebulaosity

Eclipsing star

2521✓ 764	2516✓ 227	5803✓ SUL 449	5780✓ HSL 541	5769✓ SUL 391	933✓ HSL 120	5759✓ SUL 651	5747✓ 386	5736✓ 385	5732✓ 384
16.0	15.4	15.9	16.4	17.0	15.4	16.3	16.5	16.0	16.3
15.8	16.2	16.0	16.5	17.0	15.5	16.3	16.0	16.1	16.2
15.8	16.5	15.4	16.5	17.0	16.0	16.3	16.7	16.2	16.1

Not a variable

$$P = 3.9861$$

$$\frac{1}{P} = 0.25087$$

$$P = 3.8983$$

$$\frac{1}{P} = 0.25652$$

unmeasured

Period

Long

Nothing irregular or
abundantPulsed
Period
15.9411

Not a variable

$$P = 32.992$$

$$\frac{1}{P} = 0.30310$$

Pulsed
unmeasured
not a variable

Not variable

5724 ✓ 383	5720 ✓ H ₂ 534	5725 ✓ S ₂ 382	5723 ✓ 381	5714 ✓ H ₂ 533	5712 ✓ H ₂ 984	2412 ✓ 528	2406 ✓ 527	2409 ✓ 529	5706 ✓ S ₂ 644
16.1	15.4	16.0	15.9	15.9	15.2	16.7	16.8	15.9	16.3
16.0	15.2	15.9	15.9	15.8	16.2	16.3	16.2	16.0	16.6
16.0	15.2	15.9	15.8	15.7	15.5	16.8	16.7	16.0	16.5

Not Variable

Slow moving / irregular

Not variable

Not variable

background
Not variable
has too companions
To be represented in
other work

$$P = 3.0882$$

$$\frac{1}{H+L} = 32381$$

$$P = 3.0280$$

$$\frac{1}{H+L} = 33056$$

$$P = 0.17589$$

$$P = 5.68537$$

Not a variable

2410	5685	923	2397	2396
287	694	100	292	293
16.6	16.5	14.8	16.2	16.4
16.5	16.9	15.0	16.1	16.9
16.6	16.9	15.2	15.7	16.6

$x = 0.28557$
 $P = 3.3382$
 UHHL

$x = 0.29956$
 $P = 3.3382$
 UHHL

P10.25397
 Second measure
 cluster type

$P = 2.5534$
 $P = 0.39164$
 Second measure
 UHHL

Long Period Variables in SMC

127

Continuation of measures of
Long Period Variables in SMC

28

Long Period Variables in SMC

		1644	1645	1722	1719	HV 1853	HV 11417	HV 11427
22168	29878.453	15.7	16.8	16.8	16.7	16.4	17.0	16.5
22173	29881.449	15.4	16.8	16.7	16.5	16.6	17.0	16.2
22189	29896.382	15.7	17.1	17.0	16.9	16.4	17.1	16.8
22194	29897.453	16.0	17.1	17.0	16.8	16.3	17.1	16.9
22196	29902.361	16.2	17.1	17.1	17.1	16.2	17.1	17.1
22199	29903.227	16.3	16.5	16.5	16.5	16.3	16.5	16.5
22201	29903.335	16.0	16.8	16.9	16.9	16.4	16.8	17.0
22203	29903.426	16.1	16.1	16.1	16.1	16.0	16.1	16.1
22205	29903.534	16.0	16.8	16.8	16.8	16.3	16.8	16.8
22206	29903.610	16.0	16.8	16.9	16.9	15.9	16.8	16.8
22209	29906.234	16.0	16.8	16.8	16.8	16.1	16.8	17.0
22211	29906.327	16.1	16.8	17.1	17.1	16.5	17.1	17.1
22212	29906.385	15.9	16.8	17.1	17.1	16.4	17.1	17.0
22214	29911.283	16.0	16.5	16.5	16.5	16.3	16.5	16.5
22246	29926.240	16.0	16.8	17.0	16.8	16.2	16.8	16.8
22247	29926.283	16.1	16.8	17.0	16.8	16.2	16.8	16.8
22248	29926.333	16.1	17.0	17.1	17.1	16.0	17.1	17.1
22250	29926.405	16.3	16.8	16.8	16.8	15.9	16.8	16.8
22252	29926.488	16.4	16.8	16.8	16.8	16.1	16.8	16.8
22253	29926.537	16.2	16.8	16.8	16.8	16.2	16.8	16.8
22255	29927.236	15.9	15.9	15.9	15.9	15.9	15.9	15.9
22256	29927.277							
22257	29927.325	16.4	17.1	17.1	17.1	16.0	17.1	17.1
22259	29927.403	16.3	16.8	16.8	16.8	16.0	16.8	16.8
22261	29927.486	16.3	16.8	16.8	16.8	16.2	16.8	16.8
22262	29927.538	16.1	16.8	16.8	16.8	16.1	16.8	16.8

Seg I No 037	11373	smL 258	HV 11470	HV 859	HV 2112	HV 1865	HV 11303	HV 1475	HV 838	#25 w
15.3	15.0	14.9	15.3	16.5	14.5	16.3	15.8	13.4	15.4	<17.0
15.1	15.2	14.6	15.2	16.7	14.4	16.4	15.6	13.4	15.4	17.1
15.5	15.3	14.9	15.0	16.7	14.3	16.6	15.7	13.3	15.4	17.3
15.0	15.2	15.1	15.1	16.5	14.3	16.7	15.8	13.5	15.4	17.2
15.0	15.2	14.8	15.0	16.6	14.3	16.8	15.8	13.2	15.4	17.3
14.9	15.2	14.9	15.5	<16.5	14.5	16.5	15.7	13.3	15.3	<17.0
14.9	15.3	14.8	15.2	<16.5	14.2	16.8	15.9	13.1	15.4	17.2
15.0	15.0	14.9	15.1	<16.3	14.2	<16.1	16.1	13.2	15.5	<17.0
15.1	15.0	14.9	15.1	16.6	14.1	16.7	15.6	13.1	15.3	<17.0
15.0	15.2	14.9	15.2	16.7	14.4	16.6	15.9	13.2	15.4	<17.0
14.9	15.3	15.0	15.1	<16.5	14.4	16.8	15.8	13.2	15.4	17.2
15.0	15.0	14.9	15.0	16.7	14.1	16.8	16.0	13.4	15.6	<17.0
15.2	15.2	15.0	15.1	16.9	14.2	16.9	16.0	13.2	15.7	<17.0
15.4	15.3	15.2	15.1	<16.8	14.3	16.8	16.1	13.3	15.8	<17.0
15.5	15.3	15.4	14.9	17.0	14.2	17.1	15.9	13.1	15.4	<17.0
15.0	15.2	15.0	14.9	17.0	14.4	17.0	15.9	13.0	15.6	17.2
15.1	15.0	14.9	14.9	<16.8	14.4	17.1	16.0	13.2	15.5	<17.0
15.3	15.2	15.2	15.3	<16.8	14.6	<16.8	15.9	13.2	15.5	<17.0
15.2	15.2	15.2	15.2	<16.8	14.6	<16.8	16.1	13.3	15.4	<16.7
15.5	15.1	15.3	15.1	<16.8	14.3	<16.8	15.7	13.5	15.4	<17.0
15.3	15.4	15.3	15.2	<16.1	14.5	<16.1	15.8	13.2	15.4	<16.0
15.2	14.9	15.1	15.2	—	14.5	—	15.7	13.1	15.4	—
15.5	15.4	15.2	15.3	<17.0	14.4	<17.0	15.9	13.4	15.5	<17.0
15.0	15.1	15.2	15.1	<17.0	14.3	<17.0	15.9	13.3	15.6	<17.0
15.3	15.1	15.3	15.2	<16.5	14.5	16.6	15.8	13.3	15.3	<17.0
15.5	15.4	15.3	15.2	<16.8	14.5	<16.8	15.8	13.3	15.4	<17.0

30

HV

16.44

16.45

1722

1719

1853

11417

11427

22264

29928.242

16.4

<16.8

<16.8

<16.8

16.5

<16.8

<16.8

22265

29928.283

16.1

<16.8

<16.8

<16.8

16.6

<16.8

<16.8

22266

29928.330

16.3

<16.8

16.8

<16.8

16.5

<16.8

<16.8

22270

29938.243

16.3

<16.5

<16.5

<16.5

16.2

<16.5

<16.5

22272

29938.336

16.3

<16.8

16.8

16.8

16.1

<16.8

<16.8

22274

29938.411

16.2

<16.8

16.9

<16.8

16.2

16.8

<16.8

22275

29938.453

16.4

16.7

<16.8

<16.8

16.3

<16.8

<16.8

22276

29938.501

16.3

16.8

16.9

<16.8

16.3

<16.8

<16.8

22309

29958.306

16.3

<16.8

16.8

<16.8

16.5

16.8

<16.8

22325

29968.352

22916

30264.346

15.0

17.0

16.4

16.5

16.9

17.1

<17.1

22920

30267.379

15.0

<16.8

16.2

14.3

16.4

<16.8

<16.8

23027

30344.395

15.1

23252

30507.635

15.4

<16.5

16.6

<16.5

16.3

16.3

<16.5

23288

30521.643

15.4

<16.8

16.3

<16.8

16.2

16.1

<16.8

23293

30523.640

15.2

<16.8

16.4

<16.8

16.5

16.0

<16.8

23302

30528.640

15.2

<16.8

16.3

<16.8

16.2

16.0

<16.8

23343

30547.583

15.9

<16.8

16.2

<16.8

16.3

16.3

<16.8

23349

30548.613

16.0

<16.8

16.0

<16.8

16.4

16.0

<16.8

23354

30549.587

15.9

<16.8

16.1

<16.8

16.5

16.2

<16.8

23385

30560.614

16.0

<16.1

15.8

<16.1

<16.1

16.1

<16.1

23392

30561.604

15.9

<16.5

15.8

<16.5

16.6

16.1

<16.1

23401

30575.539

16.0

<16.8

15.8

<16.8

16.4

16.4

<16.8

23407

30578.573

16.0

<16.8

16.0

<16.8

16.3

16.3

<16.8

23426

30593.593

15.4

<16.5

15.8

<16.5

16.2

16.2

<16.5

23441

30618.527

15.2

<15.9

15.7

<15.9

<15.9

<15.9

<15.9

23445

30619.350

15.6

<16.5

16.0

<16.9

16.2

16.4

<16.9

2-5F No 37	11323	SMC 250	11470	HU 859	HU 2112	HU 1865	HU 11303	HU 1475	HU 838	H ² S w
15.2	15.3	15.1	15.2	<16.5	14.4	<16.8	15.7	13.2	15.8	<17.0
15.2	15.4	15.3	15.2	<16.5	14.3	<16.5	15.7	13.1	15.5	<17.0
15.0	15.3	15.2	15.3	<16.5	14.4	<16.5	15.8	13.2	15.4	<17.0
15.2	15.2	15.3	15.1	<16.3	14.6	<16.1	15.7	13.0	15.4	<16.7
15.5	15.0	15.5	15.1	<16.8	14.8	<16.8	15.6	13.0	15.3	<17.0
15.4	15.2	15.5	15.4	<17.0	14.8	<17.0	15.7	12.9	15.4	<17.0
15.5	15.0	15.4	15.0	<16.8	14.7	<16.8	15.8	13.0	15.4	<17.0
15.3	15.2	15.2	14.9	17.0	14.9	<17.0	15.7	13.0	15.3	<17.0
15.3	15.2	15.3	15.0	17.1	14.8	<17.1	15.5	13.3	13.9	17.3

16.2	14.6	<17.0	14.9	14.1	16.3	16.1	<17.0	13.4	16.9	14.7
15.9	14.8	<16.7	15.2	14.4	16.0	16.3	<16.3	13.2	<16.5	16.8
				14.5	15.4	15.0	16.6	13.0	<16.3	<17.0
16.2	14.9	16.4	14.9	<16.0	15.0	<16.0	15.9	13.2	16.5	<17.0
16.4	15.0	15.5	def.	<16.2	15.0	<16.0	15.9	13.2	16.5	<17.0
16.5	14.6	15.5	15.4	<16.3	15.1	<16.5	15.8	13.2	16.5	<17.0
16.6	15.1	15.2	15.0	<16.3	15.2	<16.5	15.9	13.2	16.6	17.3
<16.7	14.9	15.0	15.5	<16.3	15.6	<16.5	16.0	13.3	16.4	<17.0
<16.7	15.3	15.0	14.9	<16.5	15.2	<16.5	15.8	13.4	16.3	<17.0
<16.7	14.9	15.0	15.2	<16.8	15.4	<16.8	16.0	13.5	16.2	<17.0
<16.0	15.0	15.2	15.3	<16.1	15.5	<16.0	15.9	13.6	15.9	<16.7
<16.7	14.8	15.1	15.4	<16.3	15.2	<16.5	15.9	13.7	16.1	<17.0
<17.0	15.0	15.4	15.2	<17.0	15.6	<17.0	16.1	13.6	15.6	17.3
17.2	15.0	15.4	15.2	17.1	15.3	<17.1	16.0	13.9	15.4	17.5
<16.7	15.1	15.3	15.2	<16.3	15.8	<16.1	16.1	13.6	15.4	<17.0
<16.4	14.9	15.5	15.2	<16.0	15.9	<16.0	16.0	13.1	15.2	<17.0
<17.0	15.1	15.4	15.1	<17.0	15.8	<17.0	16.6	13.6	15.3	17.3

		HU							
23456	30639.396	15.2	16.44	16.45	17.22	17.19	18.53	11.417	11.427
23472	30648.240	15.1	15.2	16.1	16.8	16.4	16.7	16.5	
23477	30659.244	15.5	15.3	16.9	16.3	16.8	16.9	16.9	16.4
23503	30700.279	15.2	15.6	16.8	16.4	16.9	16.8	16.9	16.3
23505	30700.335	15.4	15.2	15.2	15.2	15.2	15.2	15.2	15.2
23750	30882.642	15.2	15.4	15.9	15.9	15.9	15.9	15.9	15.9
24331	31274.639	15.2	15.1	15.9	15.9	15.9	15.9	15.9	15.8
24348	31284.609	15.3	15.3	16.8	15.9	16.6	16.0	16.8	16.8
24367	31289.514	15.3	15.3	16.5	16.3	16.4	16.5	16.5	16.5
24369	31289.636	15.0	15.3	16.8	16.3	16.6	16.5	16.8	16.8
24375	31290.495	15.0	15.3	16.8	16.2	16.4	16.6	16.8	16.8
24380	31291.478	15.0	15.3	16.8	16.4	16.3	16.6	16.8	16.8
24388	31292.489	15.1	15.3	16.8	16.6	16.3	16.7	16.8	16.8
24390	31292.605	15.3	15.3	16.8	16.7	16.4	16.8	16.8	16.8
24397	31293.486	15.1	15.3	16.8	16.3	16.0	16.5	16.8	16.8
24399	31293.606	15.1	15.3	16.8	16.2	16.2	16.8	16.8	16.8
24415	31296.478	15.0	15.3	16.8	16.2	15.9	16.0	16.8	16.8
24465	31313.373	15.0	15.3	16.8	16.6	14.8	16.6	16.8	16.8
24485	31321.524	14.8	15.3	16.8	16.4	14.7	16.2	16.9	16.9
24493	31324.386	15.1	15.3	16.8	16.3	14.7	16.1	16.8	16.8
24514	31327.456	15.2	15.3	16.8	16.4	14.8	16.4	16.8	16.8
24539	31342.355	15.1	15.3	16.8	16.4	14.8	16.6	16.8	16.9
24546	31345.385	15.3	15.3	16.8	16.4	15.0	16.4	16.8	16.9
24561	31379.370	15.1	15.3	16.8	16.3	15.3	16.7	16.9	16.3
24566	31392.251	15.2	15.3	16.7	16.8	15.7	16.2	16.8	16.0
24567	31398.246	15.5	15.3	16.5	16.5	15.5	16.3	16.5	15.9
24592	31415.257	15.6	15.3	16.5	16.5	15.9	16.5	16.5	16.0

5737	11373	smc 250	HV 11470	HU 859	HU 2112	HU 1565	HU 11303	HU 1475 838	HU 13.4	H25W 17.3
<16.7	15.0	15.6	15.2	<17.0	16.2	<17.0	16.0	13.4	15.0	17.3
<16.7	15.2	15.8	15.0	<16.5	16.0	<16.5	16.8	13.5	15.3	<17.0
<16.7	14.9	15.9	15.0	def.	16.3	<16.5	def.	13.7	15.3	<17.0
<15.5	15.3	<15.5	15.3	<15.9	<15.9	15.9	<15.5	13.6	<15.5	
<15.6	14.9	<15.6	15.4	<16.0	<16.0	16.0	<15.5	13.6	<16.0	
16.0	14.9	<16.0	15.2	14.7	<16.0	16.0	—	13.6	<16.3	<16.7
<16.7	15.1	15.6	15.3	15.9	15.9	16.1	<16.3	13.6	14.6	
<16.4	15.2	15.5	15.2	15.9	16.2	16.0	<16.6	13.8	14.7	
<16.7	15.2	15.1	15.2	16.3	16.5	16.2	off plate	13.8	14.5	
<16.7	15.0	15.5	15.2	16.4	16.5	16.5	off plate	13.7	14.9	
<17.0	15.0	15.5	15.3	16.4	16.2	15.8	<16.6	13.8	14.9	
<17.0	15.1	15.7	15.3	16.0	16.2	16.0	<16.6	13.7	14.9	
<16.7	15.3	15.5	15.4	15.9	16.3	15.8	<16.6	13.7	15.1	
<16.7	15.0	15.5	15.3	16.1	16.0	16.1	<16.6	13.8	15.2	
<16.4	15.0	15.5	def.	16.1	16.3	15.9	off plate	13.6	15.0	
<16.7	15.0	15.9	15.4	16.0	16.3	16.0	off plate	13.6	14.8	
<17.0	15.5	15.6	15.4	16.0	16.3	16.1	<16.6	13.8	14.8	
16.8	15.0	15.5	15.4	15.9	16.4	16.1	<16.8	13.6	15.3	
16.5	15.0	15.5	15.4	15.8	16.6	16.0	<16.8	13.8	15.5	
16.5	15.1	15.5	15.2	15.8	16.6	15.9	<17.0	13.7	15.4	
16.3	15.4	15.5	15.4	15.8	16.6	16.1	<16.6	13.8	15.4	
16.1	15.2	15.4	15.4	15.8	16.8	16.0	<16.8	13.7	15.6	
15.9	15.1	15.5	15.2	15.8	<16.5	16.2	<16.6	13.7	15.7	
15.6	15.0	15.4	15.2	16.0	<16.8	16.2	16.9	13.7	16.1	
15.7	15.4	15.5	15.5	15.7	<16.8	16.4	16.9	13.7	16.3	
15.9	15.4	15.9	15.4	15.8	<16.5	16.3	def.	13.6	<16.3	
16.0	15.2	15.9	15.4	15.0	<16.0	15.7	16.4	13.4	<16.0	

Later observations in
Type 2 "big" 14.9 "supernova" plate by H. S. Searcy
Discovered on Yale-Columbia plate by H. Searcy

134

		HO								
24600	31436.285	16.44	16.45	17.22	17.19	18.53	114.17	114.27		
		15.1	<16.8	<16.8	16.2	16.1	<16.8	16.6		
24602	31436.340	15.4	<16.8	<16.8	16.4	16.2	<16.8	16.8		
24787	31589.631	15.9	<16.5	<16.5	<16.5	16.2	15.7	<16.5		
24831	31610.648	15.6	<16.8	17.0	<16.8	16.4	15.7	16.6		
24839	31611.626	15.7	17.0	17.0	<17.1	16.4	15.6	17.0		
24894	31625.631	15.6	<16.8	16.8	<16.8	16.3	15.5	16.6		
24896	31626.627	15.6	<16.8	16.9	<16.8	16.8	15.6	16.8		
24911	31639.636	15.7	<16.8	17.0	<16.8	16.7	15.5	16.6		
24927	31642.644	15.7	<16.8	16.9	<16.8	16.8	15.5	16.6		
24947	31650.654	15.5	<16.5	16.7	<16.5	16.7	15.6	16.6		
24955	31655.524	15.4	<16.8	16.8	<16.8	16.4	15.5	16.7		
24958	31657.596	15.4	<16.8	16.7	<16.8	16.0	15.5	16.4		
24974	31669.540	15.4	<16.8	16.4	<16.8	16.3	15.5	16.7		
24981	31670.549	15.4	<16.8	16.6	<16.8	16.8	15.7	16.8		
24991	31674.549	15.2	<17.1	16.3	<17.1	16.5	15.7	16.9		
24998	31675.572	15.1	<16.1	<16.1	<16.1	<16.1	15.6	16.1		
25020	31680.531	15.1	<16.8	16.4	<16.8	16.3	15.5	16.7		
25026	31681.541	15.2	<16.8	16.7	<16.8	16.1	15.5	16.9		
25047	31697.371	15.2	<16.8	16.7	<16.8	16.3	15.5	16.8		
25056	31698.467	15.1	<16.8	16.7	<16.8	16.4	15.5	16.9		
25058	31699.454	15.0	<16.8	16.5	<17.1	16.8	15.5	17.0		
25066	31701.458	15.1	<17.1	16.4	17.1	16.5	15.7	17.1		
25074	31702.459	14.9	<16.8	16.4	<16.8	16.6	15.4	<16.8		
25083	31704.450	14.9	<16.8	16.6	<16.8	16.4	15.7	<16.8		
25095	31710.455	15.0	<16.8	16.7	<16.8	16.3	15.7	<16.8		
25107	31712.374	14.8	<17.1	16.5	17.1	16.8	15.6	<17.1		

Seg 1 No 37	11373	smc 250	11470	HU 859	HU 2112	HU 1865	HU 11303	HU 1475	HU 838
16.4	15.0	15.9	15.2	14.8	16.0	15.8	16.5	13.5	<16.6
16.2	15.1	16.0	15.3	14.2	16.3	15.7	def	13.3	<16.6
16.1	15.3	<17.0	15.2	16.2	15.8	16.5	15.6	13.1	<17.0
16.5	15.0	17.1	15.1	16.4	15.0	<16.8	15.9	13.2	<17.0
16.4	def.	17.1	15.1	16.3	15.5	<16.8	15.8	13.1	<17.0
16.6	15.1	17.1	15.2	16.7	15.5	<16.8	16.0	13.2	17.0
16.7	15.0	<16.7	15.0	16.5	15.6	<16.8	16.5	13.0	17.1
16.7	15.1	<17.0	15.2	<16.8	15.4	<17.0	16.7	13.1	16.9
<16.7	15.2	<16.7	15.3	<16.8	15.8	<16.8	16.7	13.1	16.9
<16.7	15.1	<16.7	15.2	<16.0	15.7	<16.0	16.3	13.5	16.4
<17.0	15.0	def.	15.2	<16.5	15.0	<16.8	16.7	13.2	16.6
17.1	15.2	<17.0	15.2	<17.0	14.9	<17.0	16.9	13.2	16.5
<17.0	15.2	17.1	15.0	<16.8	14.4	<17.0	17.0	13.3	16.3
<17.0	15.0	<17.0	15.3	<17.0	14.4	<17.0	17.1	13.3	16.3
<17.0	15.0	<17.0	15.2	<17.0	14.1	<17.0	17.0	13.2	16.2
<16.4	15.4	<16.4	15.5	<15.9	14.3	<16.0	<16.6	13.2	16.1
<16.7	15.2	<16.7	15.2	<16.8	14.1	<17.0	17.1	13.1	16.1
<16.7	15.2	16.7	15.1	<16.8	14.3	<17.0	<16.6	13.9	16.0
<16.7	15.2	<16.7	15.2	<16.8	14.0	<16.8	<16.6	13.8	15.9
<16.7	15.0	16.8	15.3	<16.8	14.1	<16.8	<17.0	13.3	15.9
<17.0	15.0	17.0	15.2	<16.5	14.0	<16.5	<17.0	13.3	15.9
<17.0	15.5	17.0	15.2	<17.0	14.0	17.0	<17.0	13.4	15.8
<17.0	15.1	<17.0	15.0	16.8	14.0	<17.0	<17.0	13.2	15.8
<17.0	15.1	<17.0	15.0	<16.8	14.0	17.1	<17.0	13.3	15.9
<16.7	15.1	<16.7	15.5	<16.5	14.4	<16.5	<16.6	13.2	15.7
<17.0	15.0	17.0	15.3	<16.8	14.3	<16.8	<16.8	13.2	15.9

136

H₀

25123	31729.387	16.44 15.2	16.45 <16.8	17.22 16.4	17.19 16.3	18.53 16.4	114.7 15.8	114.27 <16.8	
25126	31734.237	15.2	<16.8 def.		16.6	16.7	15.8	<16.8	
25132	31738.367	15.1	<16.8	16.3	16.4	16.6	15.7	<16.8	
25137	31739.356	15.3	<16.8	16.4	16.2	16.4	15.8	<16.8	
25147	31757.240	15.2	<16.5	16.4	16.5	16.4	15.9	<16.5	
25160	31782.262	15.5	16.4	16.3	16.4	16.3	16.0	<17.1	
25171	31796.310	15.6	16.5	16.2	16.2	16.0	16.0	<16.5	
25178	31799.291	15.7	<16.5	16.3	16.4	16.3	16.3	<16.5	
25180	31799.349	15.6	<16.5	16.1	16.5	16.5	16.4	<16.5	
25183	31800.288	15.7	<16.5	16.0	16.4	16.5	16.5	<16.5	
25187	31801.286	15.5	16.5	16.3	16.5	16.5	16.4	<16.5	
25374	31976.647	15.5	<17.1	16.6	16.9	16.4	<17.1	<17.1	15
25396	31998.632	15.7	<16.8	16.7	<16.7	16.6	<16.8	<16.8	15
25401	31999.640	15.5	<16.8	16.6	16.9	16.4	<16.8	<16.8	15
25407	32000.655	15.5	<16.8	16.8	16.9	16.4	<16.8	<16.8	15
25418	32003.648	15.7	<17.1	16.8	17.1	16.2	<17.1	<17.1	15
25423	32004.637	15.7	<17.1	17.0	17.0	16.1	<17.1	<17.1	15
25437	32006.650								
25442	32011.598	15.5	<17.1	17.0	17.1	16.3	17.1	<17.1	15
25445	32013.653	15.5	<17.1	17.0	17.1	16.3	<17.1	<17.1	15
25461	32023.603	15.5	<16.5	<16.5	<16.5	16.4	<16.5	<16.5	15
25470	32024.572	15.5	<17.1	17.0	17.1	16.4	<17.1	<17.1	15
25483	32031.595	15.7	<16.8	16.9	17.0	16.0	<16.8	<16.8	15
25492	32034.461	15.7	<16.8	16.9	<16.8	16.5	<16.8	<16.8	15
25493	32034.583	15.7	<16.5	<16.5	<16.5	16.4	<16.5	<16.5	15
25502	32037.518	15.6	<17.1	17.0	<17.1	16.2	<17.1	<17.1	14
25503	32037.601	15.5	<16.8	16.9	<16.8	16.4	<16.8	<16.8	15

Seg I		SPML		HU	HU	HU	HU	HU	HU
37	11373	250	11470	859	2112	1865	11307	1475	838
<12.0	15.3	17.0	15.2	<16.8	14.3	<17.0	<17.0	13.4	16.0
<16.7	15.2	<16.7	15.2	<16.5	14.5	<16.5	<17.0	13.6	15.9
<17.0	15.2	17.11	15.4	<16.5	14.3	16.9	<17.0	13.0	15.8
<17.0	15.0	17.0	15.2	<16.5	14.3	<16.5	<16.6	13.4	15.9
<16.4	15.2	<16.4	15.4	<16.0	14.5	<16.0	<16.0	13.4	15.7
<17.0	15.1	17.0	15.0	<17.0	15.4	<u>17.0 16.9</u>	<16.8	13.5	14.8
<16.4	15.2	<16.4	15.4	def.	15.7	<16.5	<16.6	13.2	14.7
<16.7	15.2	<16.7	15.4	<16.3	15.8	<16.8	<16.6	13.2	14.7
<17.0	15.5	<17.0	15.4	<16.5	15.9	<16.8	<16.6	13.2	14.9
<16.7	15.3	<16.7	15.2	<16.3	15.8	<u>16.6 16.6</u>	<16.6	13.4	14.7
<16.7	15.2	<16.7	15.2	16.3	15.8	16.8	<16.6	13.2	14.8
15.5	15.2	16.3	15.2	15.4	<16.8	15.9	16.4	13.4	15.4
15.5	15.2	14.5	15.3	15.0	<16.5	15.7	16.5	13.6	15.6
15.2	15.4	14.6	15.4	14.4	<16.5	15.5	16.6	13.3	15.9
15.3	15.3	14.5	15.2	14.5	<16.8	15.5	16.5	13.0	15.6
15.0	15.3	14.4	15.1	14.5	<16.8	15.5	16.4	13.1	15.7
15.3	15.3	14.3	15.2	14.3	<16.8	15.5	16.7	13.5	15.9
15.2	15.2	14.3	15.4	14.4	—	15.6	16.5	13.4	15.8
15.2	15.3	14.3	15.4	14.3	<17.0	15.7	16.4	13.4	15.7
15.0	15.1	14.3	15.5	14.2	<16.8	15.7	16.6	13.5	15.8
15.0	15.2	14.3	15.4	14.3	<16.5	15.8	16.3	13.5	15.9
15.0	15.1	14.2	15.2	14.4	<16.8	15.9	16.6	13.4	15.9
15.0	15.3	14.2	15.3	14.4	<16.8	15.9	16.5	13.5	16.1
14.9	15.2	14.5	15.0	14.4	<17.0	15.8	16.4	13.5	16.1
14.9	15.2	14.5	15.4	14.1	<16.3	15.8	16.2	13.2	16.3
14.9	14.9	14.4	15.2	14.4	<17.2	15.8	16.3	13.6	16.2
15.0	15.0	14.4	15.5	14.4	<16.8	15.9	16.2	13.2	16.2

138

H0

		1644	1645	1722	1719	1853	11417	11427
A 25516	32052.381	15.5	16.8	16.9	<17.1	16.0	<17.1	<17.1
25521	32053.587	15.7	16.8	16.8	<17.1	16.2	<17.1	<17.1
25527	32055.383	15.6	<16.8	16.9	<16.8	16.1	<16.8	<16.8
25530	32056.390	15.7	<17.1	17.0	<17.1	16.3	<17.1	<17.1
25542	32059.283	15.5	<16.8	16.9	<16.8	16.5	<16.8	<16.8
25548	32060.374	15.2	<16.1	<16.1	<16.1	<16.1	<16.1	<16.1
25553	32061.385	15.5	<17.1	16.9	<17.1	16.5	<17.1	<17.1
25557	32062.363	15.5	<16.1	<16.1	<16.1	<16.1	<16.1	<16.1
25637	32135.248	15.4	16.8	16.8	<16.8	16.7	<16.8	16.3
25638	32136.259	15.0	16.9	16.3	<17.1	16.4	<17.1	16.2
25639	32142.259	15.3	17.0	16.4	<17.1	16.0	<17.1	16.2
25983	32436.384	exp. thrust plane out of focus 30 cm						
26010	32441.399	15.3	16.1	16.0	16.1	16.1	<16.1	<16.1
26029	32462.292	15.4	17.0	16.1	16.0	15.9	16.9	<17.1
26032	32466.394	15.4	16.9	16.4	16.0	16.3	<16.8	<16.8
26034	32467.374	15.5	<17.1	16.2	15.9	16.7	<16.8	16.8
26037	32473.362	15.5	<16.5	16.1	16.1	16.4	<16.5	<16.5
26039	32475.373	15.5	<17.1	16.3	16.0	16.0	<17.1	<17.1
26041	32490.255	15.1	<17.1	16.4	16.3	16.3	<17.1	<17.1
26044	32503.365							
26045	32504.261	15.3	<17.1	16.6	16.7	16.4	<17.1	<17.1
26047	32505.363	15.4	<16.5	16.6	16.4	16.3	<16.8	<16.8
26049	32505.419	15.5	<16.5	16.8	16.9	16.5	<16.8	<16.8
26050	32507.306	15.4	<17.5	17.0	16.7	16.4	17.5	<17.5
26053	32508.261	15.3	<16.8	16.8	16.9	16.8	<16.8	<16.8
26055	32508.352	15.7	<16.5	16.7	16.6	16.6	<16.8	<16.8

Seg I	HV	smc	HU	HU	HU	HU	HU	HU	HU	HU
37	11378	250	11470	859	2112	1865	11303	1475	838	
15.0	15.2	14.5	15.4	14.5	<16.8	15.9	16.2	13.7	16.4	
15.0	15.1	14.4	15.4	14.5	<16.8	16.0	16.0	13.5	16.4	
15.0	15.2	14.4	15.3	14.7	<16.8	16.0	16.0	13.3	16.5	
15.0	15.2	14.4	15.3	14.5	<16.8	16.0	15.9	13.5	16.5	
15.1	15.2	14.4	15.2	14.5	<16.8	16.1	16.0	13.2	16.5	
15.0	15.4	14.6	15.4	14.7	<16.0	16.0	15.9	13.4	16.3	
14.9	15.2	14.5	15.4	14.6	<16.5	16.1	15.9	13.5	16.5	
<hr/>										
15.9	15.0	15.5	15.4	15.6	15.7	<16.5	16.0	13.2	<16.6	
15.9	15.2	15.4	15.2	15.7	15.6	17.0	15.7	13.5	<17.0	
15.9	15.3	15.3	15.4	15.7	15.3	<17.0	15.8	13.3	<17.0	
<hr/>										
16.1	15.0	<16.7	15.3	<16.0	15.9	16.0	16.6	13.6	14.2	
15.5	15.0	17.0	15.0	16.4	16.2	16.5	16.7	13.4	14.3	
15.5	15.3	<16.7	15.4	16.4	16.2	16.4	16.7	13.7	14.3	
15.4	15.2	17.0	15.2	16.4	16.4	16.6	16.8	13.4	14.1	
15.5	14.9	<16.7	15.4	16.6	16.6	16.5	16.6	13.8	14.2	
15.5	15.4	17.1	15.3	16.4	16.5	16.6	16.7	13.6	14.3	
15.5	15.0	17.1	15.0	16.7	16.8	16.5	16.8	13.5	14.4	
							16.7	13.6	14.1	
15.8	14.9	17.1	14.9	16.5	16.8	15.9	16.6	13.3	14.4	
15.8	15.3	<17.0	15.2	16.6	<16.8	15.8	16.8	13.5	14.7	
15.9	15.2	17.0	15.4	16.5	<16.5	16.0	16.8	13.4	14.9	
15.7	14.8	17.2	15.5	16.4	16.8	16.0	16.8	13.8	14.3	
15.7	15.1	17.1	15.2	16.4	17.0	16.0	16.5	13.4	14.4	
15.8	15.4	<15.7	15.4	16.6	<16.8	15.9	16.7	13.4	14.7	

140

		HU							
A 26057	32508.408	15.4	16.44	16.45	17.22	17.19	18.53	11417	11427
26059	32509.259	15.5	16.8	16.8	16.7	16.7	16.4	16.8	16.8
26061	32510.349	15.2	16.8	16.4	16.9	16.5	16.5	16.8	16.8
26063	32510.405	15.6	16.8	16.6	16.8	16.4	16.8	16.8	16.8
26078	32538.272	15.4	16.8	16.8	16.8	16.0	16.8	16.8	16.8
26080	32538.329	15.5	16.8	16.8	16.8	16.4	16.8	16.8	16.8
26482	32790.387	15.7	16.5	16.0	16.5	16.4	15.5	16.5	16.5
26491	32793.394	15.9	16.5	16.3	16.5	16.4	16.0	16.5	16.5
26498	32794.393	15.9	16.5	16.4	16.5	16.3	15.9	16.5	16.5
26516	32797.374	15.7	16.5	16.0	16.5	16.5	16.0	16.5	16.5
26529	32800.380	15.7	16.5	16.2	16.5	16.8	15.8	16.5	16.5
26538	32804.452	15.8	16.8	16.1	17.0	16.7	15.8	16.8	16.8
26567	32819.397	15.9	16.8	16.3	17.1	16.2	15.8	17.1	17.1
26575	32822.403	15.9	16.5	16.3	16.5	16.3	16.0	16.5	16.5
26581	32824.400	15.5	16.5	16.2	16.5	16.3	15.9	16.5	16.5
26584	32825.396	15.5	16.5	16.3	16.5	16.5	15.8	16.5	16.5
26585	32826.387		wrong center						

Irregular

Irregular

P 531.9

NOT
longer

Irregular

1050

P 254.45

Sag F	HU	SmC	HU	HU	HU	HU	HU	HU	HU
37	11373	250	11470	859	2112	1865	11303	1475	838
15.7	15.2	<16.7	15.5	16.6	<16.8	16.0	16.6	13.5	14.7
15.7	15.3	<16.7	15.0	17.1	<17.0	16.0	16.5	13.5	14.4
15.9	15.2	<16.7	15.5	16.4	<16.5	15.8	16.7	13.2	14.8
15.7	15.0	17.0	15.5	16.5	<16.5	15.9	16.7	13.2	14.7
15.4	15.0	<17.0	15.3	16.1	<16.8	15.5 15.3	16.8	13.1	14.9
15.5	14.9	17.0	15.5	16.2	<16.8	15.7	16.8	13.1	14.8
<17.0	14.5	15.2	15.2	<16.3	14.9	14.9	<16.5	<16.3	<16.6
<16.4	15.2	15.2	14.9	<16.5	14.8	14.8	<16.5	—	13.2
<16.4	14.9	15.3	15.0	<16.5	14.5	14.5	<16.5	<16.6	13.8
<16.0	14.8	def.	15.2	<16.0	14.8	14.8	<16.0	<16.0	13.4
<17.0	14.9	15.2	14.9	<16.5	14.7	14.7	<17.0	<17.0	13.5
<17.0	14.9	15.4	14.9	17.0	14.9	14.9	<17.0	<17.0	13.2
<16.7	14.9	15.4	15.0	<16.5	15.6	15.6	<16.8	<16.6	13.5
<16.4	14.8	15.5	15.1	<16.5	15.4	15.4	<16.8	—	13.3
<17.0	14.5	15.4	14.8	17.1	15.5	15.5	<16.8	<17.0	13.5
<16.4	14.9	15.4	15.1	<16.0	15.6	15.6	<16.0	<16.8	13.5

Irregular

Irregular

P740.7

Irregular

P573.39

P607.2

P562.4

P540

Irregular

Irregular

142

0-75 - incl (63)
(052-73) H0849

50/10

H0849

B	JD		B	JD	
93	25689.282	14.4	4085	11240.789	<13.5
94	25612.298	14.3	4331	11277.710	<13.8
96	25613.297	14.5	5593	11573.890	<13.5
404	25727.653	—	5715	11623.681	<15.0
570	25737.14	19.35	5725	11624.679	<14.0
588	25889.372	14.3	6469	11914.809	<13.5
667	25944.291	14.4	6851	11980.609	<13.0
1164	26182.476	—	7061	12027.613	—
1265	26218.550	14.0	7062	12027.729	<15.0
1340	26445.7930	14.0	7064	12028.599	—
1850	26504.646	14.3	7137	12067.628	—
1931	26544.569	14.5	9808	12661.851	<14.5
2026	26567.547	14.3	10264	12719.615	<14.5
2109	26591.612	14.0	20638	14213.574	11.4;
2169	26614.311	Wright	20645	14217.552	12.3
2285	26662.234	<13.0	20650	14218.619	12.5
3142	26902.647	14.0	20655	14221.593	12.8
3197	26910.550	—	24467	14962.612	<15.0
3236	26914.542	14.0	34116	16650.850	<14.5
3292	26925.545	14.0	40899	18587.749	<15.0
3402	26956.529	14.0	48612	21150.672	yellow plate
3422	26960.459	—	52058	21566.556	—
3542	26976.493	<14.0	52100	21568.550	—
3562	26980.441	13.8	54658	26221.455	def.
3695	27039.264	—	54871	26347.268	—

63 HUS49			HUS49		
RB	JD		B	JD	
4649	27341.436	—	56470	26924.540	<15.5
5329	27603.611	wrong center	56494	26927.589	<15.5
5415	27628.614	<14.0	56505	26928.509	<15.5
5489	27641.611	<14.0	56510	26929.526	<15.0
5566	27669.524	14.0	56512	26930.520	<15.0
5648	27694.430	14.2	56514	26931.557	<15.0
5654	27695.431	<14.0	56558	26945.544	<15.0
5796	27767.307	—	56569	26946.538	<15.5
6230	27984.602	14.5	56581	26948.483	<15.5
6302	28010.574	14.3	56592	26949.525	<16.0
6326	28019.488	14.5	56602	26950.535	<16.0
6483	28091.246	14.3	56626	26955.545	<15.5
6484	28094.325	14.5	56636	26956.428	<15.5
6834	28335.635	14.5	56640	26960.568	<15.5
6881	28348.626	14.3	56650	26971.449	<15.5
6933	28389.617	14.4	56661	26973.514	<15.0
6969	28391.514	14.2	56669	26976.390	<15.5
7056	28400.540	14.1	56683	26978.325	<15.0
7083	28419.442	14.3	56688	26980.522	<15.5
7101	28430.425	14.4	56705	27006.380	<15.0
7126	28448.405	14.2	56712	27011.326	<15.3
7157	28476.352	14.2	56717	27028.254	<15.0
7162	28486.366	14.0	56718	27030.256	<15.0
7363	28672.607	14.3	56719	27033.269	<15.0
7432	28703.626	14.2	56720	27039.262	<15.0

144

HV849

B

JD

HV849

RB	<u>JD</u>				
7488	28733.569	14.3	56728	27040.354	<15.0
7569	28777.494	14.3	56736	27041.355	<15.0
7599	28801.337	14.2	56763	27061.321	<15.3
7601	28803.337	14.0	56765	27064.274	<14.0
7649	28861.368	14.0	59967	27981.661	<15.5
7657	28864.290	14.3			
7683	28897.306	14.2	60226	28066.359	<15.8
8074	29077.579	14.3	60977	28339.597	<15.8
8116	29101.535	14.3	61083	28365.570	<16.0
8137	29107.574	14.0	61141	28373.506	<15.3
8181	29139.634	14.0	61257	28397.474	<15.5
F212					
F235	29155.552	—	61313	28405.600	<15.5
8320	29203.330	14.3	61363	28429.554	<15.5
8352	29214.408	14.0	61555	28517.341	<15.5
8376	29221.453	14.1	62118	28701.635	<15.5
8379	29222.370	14.0	62204	28722.606	<15.5
8406	29247.388	14.3	62262	28733.556	<15.5
8431	29272.319	14.0	62354	28754.489	<15.5
8770	29408.600	14.2	62551	28804.556	<16.0
8911	29442.507	14.0	63511	29113.510	<15.5
8942	29449.533	—	63683	29158.584	<16.0
8943	29449.555	—	63844	29220.419	<16.0
8994	29470.469	14.0	64732	29494.474	<16.0
9002	29471.408	—	65028	29629.285	<16.5
9003	29471.440	—	65871	29872.613	<16.5

RB	JD	#V849	B	SD	H _α 49
9014	29472.495	—	—	—	—
9051	29489.436	14.1	65884	29874.613	def
9086	29501.408	—	66798	30176.580	<15.5
9108	29508.497	—	66984	30206.502	<15.5
9133	29519.418	14.4	67594	30523.639	<15.0
9210	29563.387	—	67804	30555.547	<15.5
9230	29577.360	14.0	68088	30647.300	<16.5
9249	29586.384	14.3	68157	30700.311	<15.0
9301	29619.312	—	68159	30700.341	<15.0
9627	29776.646	def.	68622	30885.638	<15.0
9725	29806.583	13.9	68810	30943.472	<15.5
9740	29808.571	14.0	69023	31080.315	<15.5
9780	29819.573	14.4	69513	31274.590	<15.0
9793	29821.640	14.3	69705	31299.511	<16.3
9817	29825.547	14.3	69785	31323.448	<16.5
9856	29840.477	14.4	69857	31330.604	<15.0
9910	29854.588	14.2	69862	31331.601	<15.0
9938	29863.562	—	69865	31332.542	<15.0
10013	29881.447	14.1	69867	31332.607	<15.3
10014	29881.521	wrong center	69938	31379.299	<16.5
10019	29896.371	14.3	69957	31402.439	<16.5
10021	29897.336	—	69964	31405.397	<15.0
10039	29911.492	14.4	69975	31407.376	<15.5
10071	29923.478	—	69977	31407.407	<15.3
10108	29938.267	—	69985	omitted	

146

HV 849

#UP49

RB	JD		B	JD	
10128	29946.425	—	70012	31429.315	<14.0
10158	29959.373	14.2	70014	31429.345	<15.0
10221	30010.288	—	70033	31438.334	<16.0
10662	30135.637	14.2	70041	31439.302	<15.0
10789	30157.623	—	70602	31614.647	<15.5
10903	30192.488	14.3	70841	31642.577	<16.5
10904	30192.544	14.3	70999	31676.480	<16.0
10997	30232.578	14.1	71038	31680.478	<16.0
11025	30253.525	14.2	71164	31705.385	<14.5
11063	30281.343	14.3	71270	31740.305	<16.5
11100	30289.485	14.4	71775	31981.647	<16.5
11116	30298.349	—	71897	32005.572	<16.5
11147	30305.504	—	72187	32063.641	<16.5
11204	30324.349	14.4	72914	32359.607	<16.0
11239	30346.302	14.2	73216	32476.269	<16.0
11553	30513.625	—	73797	32723.586	<16.0
11672	30535.629	14.2	73858	32747.547	<16.0
11707	30550.575	14.3	74090	32801.419	<16.0
11837	30618.336	14.4			
12244	30890.617	wrong center			
12245	30891.651	14.2			
12278	30905.572	14.4			
12296	30915.569	14.3			
12315	30934.576	14.5			
12365	30964.494	14.4			

RB	JD	HU849		JD	HU849
12383	30988.424	14.3	X7012	13415.	<16.0
12385	30990.340	—	7029	13426.	<15.3
12441	31074.302	14.0	7041	13422.	<14.0
12901	31251.648	—	7047	13423.	—
13013	31281.602	—	7050	13424.	—
13028	31283.512	14.3	7054	13425.	—
13068	31291.646	14.2	7332	13516.	<15.0
13139	31302.434	—	8004	13829.	<16.0
13192	31316.625	—	8065	13848.	<16.5
13222	31321.492	14.2	8121	13875.	—
13275	31327.491	14.0	8872	14202.	<16.5
13320	31344.416	14.2	8928	14213.	11.5
13347	31369.321	14.3	8934	14217.	11.4
13377	31407.363	14.2	8937	14218.	11.7
13403	31429.299	14.1	8954	14248.	14.2
13418	31439.300	14.3	8963	14251.	<15.0
13781	31638.509	14.5	8967	14252.	15.3
13782	31638.642	14.0	8971	14253.	15.5
13758	31635.586	—	8988	14256.	—
13874	31666.575	14.2	9341	14577.	—
13914	31674.574	14.3	10095	14961.	—
13960	31683.491	14.0	10096	14962.	—
13987	31699.427	14.3	10099	14965.	—
14032	31711.419	14.3	12160	18181.	<14.5
14047	31715.528	14.1			
14092	31755.299	—			

148

	JD	H0849
14116	31772.258	14.3
4129	31774.260	—
4138	31785.273	14.2
14466	31967.635	14.3
14547	32016.477	14.1
14640	32039.438	14.2
14689	32052.515	14.2
14720	32058.494	14.2
14774	32081.387	14.2
14792	32088.340	14.2
14810	32112.372	14.2
14837	32154.298	14.4
14877	32203.300	14.3
15093	32326.633	14.2
15173	32355.620	14.2
15246	32389.599	14.2
15292	32416.434	14.2
15295	32418.462	14.2
15319	32439.335	14.0
15340	32446.423	14.1
15341	32446.508	14.3
15411	32501.252	14.4
15419	32508.457	14.2
15675	32692.626	14.5
15703	32707.636	14.2
15808	32762.489	14.4

RB

JD

H 0849

149

15813	32763.490	14.2
15831	32769.	14.3
15845	32776.	13.8
15903	32801.	14.0
15931	32818.	14.0
15936	32821.	14.2

1949ghae.proj.2457W