

1940bsee-proj. 24350

6a

HARVARD UNIVERSITY

Physics B

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Harvard Co-operative Society



1942phae.proj.2435N

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Books 6a, 6b

HSL	HV	Bk 6a	6b	Sevens	6a	6b
162	1797 ✓	50, 60	83	37	11186 ✓	47 52 80
163	1790 ✓	51 61	84	77	—	
165	1795 ✓	52 62 107	85	<del>83</del>	11427	
169	1730 ✓	29 39	67 77	86	11195 ✓	73 83
170	1752 ✓	8 18	60 70	123	11202 ✓	86 96 122
171	1729 ✓	6 16	42 52	126	11189 ✓	93 103
173	1781 ✓	46 56	49 59	SMLindsay		
174	1735 ✓	10 20	61 71	<del>266</del>	<del>11401</del>	
175	1770 ✓	13 23 108	41 51	<del>272</del>	<del>11432</del>	
192	1808 ✓		118 128	280	11196 ✓	87 97 107 49
195	1833 ✓	65 75		364	11178 ✓	12 22 109 44 54
196	1818 ✓	69 79		372	11185 ✓	90 100 106 49
197	1838 ✓	106	111 121	<del>375</del>	<del>11410</del>	
198	1844 ✓		112 122	378	—	
199	1847 ✓		113 123	<del>732</del>	<del>=Leavit 538</del>	
200	1862 ✓		114 124	<del>733</del>	<del>=Leavit 196</del>	
201	1875 ✓		115 125	737	—	
350	1835 ✓	84 94 106		743N	11184 ✓	31 41 69 79
351	1830 ✓		91 101 133	<del>1002a</del>	<del>11422</del>	
353	1889 ✓	92		1121	—	
<del>354</del>	<del>1872</del>			FWWI	11194 ✓	91 101 104
422	1728 ✓	7 17	45 53	Bk 6a		
445	1766 ✓		94 104 131	HV		
446	1775 ✓	53 63	86	2121	126, 128, 130	
447	1773 ✓		95 105			
448	1774 ✓	109	97 107			
449	1778 ✓		96 106			
493	1753 ✓	27 37	62 72			
494	1748 ✓	28 38	63 73			
538	1820 ✓	67 77				
539	1812 ✓	48 58	81			
540	1816 ✓	49 59	82			
541	1842 ✓		90 100			
<del>704</del>	<del>1726</del>					
707	1789 ✓		98 108			
708	1814 ✓		60 99 109 131			
709	1822 ✓	66 76 108 3				
710	1784 ✓	44 54 123	47 57			
731	1786 ✓		93 103			
<del>735</del>	<del>1861</del>					
<del>871</del>	<del>11382</del>					
949	1837 ✓		117 127			
<del>986</del>	<del>1819</del>					
<del>1003</del>	<del>1805</del>					
1004	11188 ✓	90 91 100 3	62			
<del>1005</del>	<del>1798</del>	1045				
<del>1006</del>	<del>1853</del>					
1007	1834 ✓					
1008	1852 ✓					
<del>1055</del>	<del>1719</del>					
Riggs 40	11180 ✓	24 34 65 75 130				











Tailly well checked except for <sup>1</sup>  
index, which FGD will check.

Wright region SMC p2 - 124 also 148-152

Examination of suspected cluster type in SMC P125-  
plan - Feb 1951 Vukich



## INDEX For Variables In Small Cloud.

VAR.	BK.I	Page	BK.II	Page	VAR.	BK.I	Page	BK.II	Page
HV									
162 el W Per.	50	60	1797	83	949 el Per?	X	1837	117	127
163 el W Per.	51	61	1790	84	1986 el Ligo	1819		119	129
165 el W Per.	52	62	1795	85	1003 el Per?	1805		92	102
166 el W Per.	4	14	1715	64	1004 el W Per?	X	1115	116	126
167 el	5	15	1722	43	1005 el Per.	1798			
169 el W Per.	29	39	1730	67	1006 el W	1853	68	78, 109, 123	
170 el W Per.	8	18	1752	60	1007 el Ligo	1854	84	94, 123	
171 el W Per.	X	16	1729	42	1008 el Per?	1852	85	95	
173 el D per.	46	56	1781	49	1055 el Long per.	1719	11	21	45 55
174 el W Per.	10	20	1735	61	Rizzo 40 el	X	11180	24 34	65 75, 130
175 el W Per.	X	13	1770	41	Leavens 37 el	X	11186	47 57	80
192 el W Per.			1808	118	not a var.	77	92	102	
195 el Per?	65	75	1833	128	I 79 el	11436	88	98, 104	130
196			= 733 Lindsay	1818	Long P?	83 el	11447	72 82	
197 el W Per.	106		1838	111	86 el	X	11495	73 83	
198 el D Per.	X		1844	112	not a var.	93	11202	93 103	
199 el W Per.			1847	113	123 el	X	11189	86 96, 122	
200 el W Per.			1862	114	126 el	Per.	93	103	
201 el W Per.			1875	115	not a var.	132	91	101	
351 el W Per.	X	106, 84, 94	1830	91	Lindsay 11401	266 km	X	70 80	Exp or relaying?
352 el W Per.	X	92	1872	110	11432	272 el	71	80 81, 122, 123	
354 el Var?	X	79	1872	110	11496	280 el	X	87	97, 107, 122 49
422 el W per.	7	17	1728	45	11178	364 el	Per.	X	12 22, 109 44 54
445 el	X		1766	94	11185	372 el	X	90	100 106 80 81, 122, 123
446 el W Per.	53	63	1775	86	11410	375 el	W Per.	89	99 103 + 105 110 + 116
447 el W Per.			1773	95	11181	379 el	X	26 36	40 50
448 el Var.	X	109	1774	97	Leavitt 538 = 732				
449 el W Per.			1778	96	Leavitt 196 = 733	Net W Per.	69	79	
493 el W per.	27	37	1753	62	737	737	32	42	
494 el W Per.	28	38	1748	63	11184	743	X	31	41 69 79
538 el D	67	77	= 732 Lindsay	1820	11422	1002 el		89	99
539 el W Per.	48	58	1812	81	1121 el	X	25	35	66 76
540 el W Per.	49	59	1816	82	F.W.W. el Per.	X	91	101, 104	
541 el D Per.			1842	90	75 objects	was. (counts	743 M+S	735 A+S)	
704 el Per.	9	19	1726	46	Sequence work	ps 148, 149			
706 el	X	45	1754	48	24 Per.	+			
707 el W Per.			1789	98	6 Per?				
708 el	X		1814	60, 99	29				
709 el Per.	66	76	1823	109, 131					
710 el W Per?	44	54	1784	47					
731 el W Per.			1786	93					
735 el	64	74	1861	132					
871 el	30	40	11382	68					
937 el	33	43	(not a var.)						







mean

.155424

.155484

	1	35							mag.	Qual.	
6860		24 16 710.843	z1	z	z		269		16.05	2	P
6913	4	05 727.653	y7	z	y9		882		16.01	1	P
6980	2	42 753.625	z2	z9	z6	915	921		16.19	2	P
6981	4	37 754.598	z5	d2	z9	067	072		16.26	2	P2
6982	4	53 755.544	y9	y8	y8	214	219		15.97	3	d7
6983	2	51 755.628	y2	z	y6	227	232		15.90		z
6984	4	46 757.542	y2	y3	y3	524	530		15.78		P5
6985	2	44 .627	x7	x9	x8	537	543		15.60	2	P5
6986	4	17 758.559	y5	y2	y4	682	688		15.82	2	d8
6987	2	15 .644	y8	z	y9	695	701		16.01	2	P8
6988	4	06 759.606	z5	z3	z4	845	850		16.14	2	P8
6989	4	50 760.531	z8	z7	z8	989	994		16.23	2	P5
6990	2	50 .614	d1	z8	z9	002	007		16.26	2	P5
6992	1	10 .780	z5	z	z2	027	033		16.10	2	P5
12149	3	13 23289.716	y8	y2	y5		867		15.86	2	d2
12151	3	14 288.713	z5	d5	d5		022		16.46	2	P8
12154	3	12 290.706	z	z	z		332		16.05	2	d7
12192	3	1 315.643	z8	z8	z8		209		16.23	2	d
12197	3	39 320.599	z6	z2	z4		980		16.14	3	d2
12201	1	56 321.667	z2	d	z7		146		16.21	2	P
12232	1	42 338.634	y8	y8	y8	384	784		15.97		y2
12234	2	54 340.586	z5	z1	z3	687	088		16.12	4	z9
12235	0	45 .676	z1	z1	z1	701	102		16.07	2	y3
12236	2	44 341.590	y8	y8	y8	843	244		15.97	4	y3
12237	0	22 .689	y5	y8	y7	859	259		15.94	4	y8
12239	3	37 343.558	x8	x8	x8	149	550		15.60	3	y5
12240	3	40 344.538	y7	y6	y6	301	702		15.90	3	y8
12241	2	20 .790	y8	y5	y7	341	741		15.94	2	z9
12244	3	40 347.586	y9	z	z	781	182		16.05	1	z9
12263	0	22 377.562	z5	z8	z6		837		16.19	2	z6
15421	3	34E26 501.621	x7	y	x9	988	578		15.63	2	y8
15427	2	52E 502.647	x8	x8	x8	147	737		15.60	2	y9
15438	2	30E 504.653	z9	d3	d1	459	049		16.32	2	y8
15444	2	48E 505.642	-							1	-
15453	2	38E 508.640	x9	x9	x9	079	669		15.63		z
15471	2	54E 510.624	y8	y8	y8	387	978		15.97	1	z9
15477	2	03E 511.653	d	d2	d1	547	138		16.32	2	z7
15483	2	48E 512.623	d9	d6	d8	698	289		16.57	2	d5
15488	2	04E 514.648	y1	y1	y1	013	603		15.71	2	d5
15542	1	15E 546.594	y	y	y		571		15.67	2	z6
15545	1	25E 547.584	y2	y	y1		724		15.71	3	d8
15574	0	00 559.611	y1	x9	y	010	594		15.67	2	d8
15588	0	35W 561.629	z1	z	z	315	908		16.05	3	P



		mean	mag.
$\beta$	$\alpha 8$	$\alpha 9$	16.60
$\beta$	$\alpha 9$	$\beta$	16.64
$\beta 8$	$\beta 5$	$\beta$	16.64
$\beta 2$	$\beta 8$	$\beta 5$	16.78
$\alpha 7$	$\beta$	$\alpha 8$	16.57
$\gamma$	$\gamma$	$\gamma$	16.92
$\beta 5$	$\gamma$	$\beta 7$	16.84
$\beta 5$	$\alpha 9$	$\beta 2$	16.70
$\alpha 8$	$\beta$	$\alpha 9$	16.60
$\beta 8$	$\beta 8$	$\beta 8$	16.86
$\beta 8$	$\beta 3$	$\beta 5$	16.78
$\beta 5$	$\beta 5$	$\beta 5$	16.78
$\beta 5$	$\beta 2$	$\beta 4$	16.75
$\beta 5$	$\beta 2$	$\beta 3$	16.72
$\Gamma \alpha$	$\Gamma \alpha$	$\Gamma \alpha$	16.28
$\Gamma \beta$	$\Gamma \beta$	$\Gamma \beta$	16.64
$\alpha 7$	$\alpha 5$	$\alpha 6$	16.50
$\alpha$	$\alpha 5$	$\alpha 3$	16.39
$\alpha 2$	$\alpha 2$	$\alpha 2$	16.35
$\beta$	$\beta$	$\beta$	16.64
$\gamma 2$	$\gamma 5$	$\gamma 3$	15.78
$\alpha 9$	$\gamma 2$	$\gamma$	15.67
$\gamma 3$	$\gamma 3$	$\gamma 3$	15.78
$\gamma 3$	$\gamma$	$\gamma 1$	15.71
$\gamma 8$	$\gamma 2$	$\gamma 5$	15.86
$\gamma 5$	$\gamma 3$	$\gamma 4$	15.82
$\gamma 8$	$\gamma 2$	$\gamma 5$	15.86
$\alpha 9$	$\gamma 3$	$\gamma 1$	15.71
$\alpha 9$	$\gamma 2$	$\gamma 1$	15.71
$\alpha 6$	$\alpha 7$	$\alpha 6$	15.53
$\gamma 8$	$\gamma 3$	$\gamma 6$	15.90
$\gamma 9$	$\gamma 8$	$\gamma 9$	16.01
$\gamma 8$	$\gamma 8$	$\gamma 8$	15.97
$z$	$\alpha 2$	$\alpha 5$	16.26
$z 9$	$z 8$	$z 7$	16.21
$z 7$	$z$	$z 3$	16.12
$\alpha 5$	$\alpha 7$	$\alpha 6$	16.50
$\alpha 5$	$\alpha 5$	$\alpha 5$	16.46
$\Gamma \alpha$	$\Gamma \gamma$	$\Gamma \alpha 5$	16.46
$\alpha 8$	$\alpha 9$	$\alpha 8$	16.57
$\alpha 8$	$\alpha 7$	$\alpha 7$	16.53
$\beta$	$\beta 5$	$\beta 2$	16.70



4

6

171

3

adapted

.507357

.444357

548100

548701

	1	35									mag.
6860		24 16 710.843	d5	d5	d5		580	213	256		16.46
6913	4	05 722.653	y7	y5	y6		050	427	480		15.90
6980	2	42 753.625	y1	y7	y4	069	590	662	731		15.82
6981	4	37 754.598	d8	d6	d7	562	023	195	265		16.53
6982	4	53 755.544	y6	y7	y7	042	443	714	784		15.94
6983	2	51 755.628	y9	y6	y2	085	480	760	830		15.75
6984	4	46 757.542	d5	d9	d7	056	331	809	880		16.53
6985	2	44 .627	z	z2	z1	099	369	855	927		16.07
6986	4	17 758.559	d	d2	d1	572	783	366	438		16.32
6987	2	15 .644	z2	z3	z3	615	821	413	485		16.12
6988	4	06 759.606	d	d5	d2	103	248	940	012		16.35
6989	4	50 760.531	y8	y7	y7	573	659	447	520		15.94
6990	2	50 .614	y7	y9	y8	615	696	492	566		15.97
6992	1	10 .780	y8	y9	y8	699	770	583	657		15.60
12149	3	13 23287.716	z8	d5	d1						16.32
12151	3	14 288.713	y9	y8	z8						16.23
12154	3	12 290.706	y5:	y5:	y7						15.94
12192	3	1 315.643	d5	d7	d6						16.50
12197	3	39 320.599	z7	z7	z7						16.21
12201	1	56 321.667	y5	y9	y2						15.75
12232	1	42 338.634	y7	d2	z7	019	685	905	932		16.21
12234	2	54 340.586	z8	d5	d2	010	553	975	003		16.35
12235	0	45 .676	d5	d9	d7	055	593	024	052		16.53
12236	2	44 341.590	y3	x9	y1	519	999	525	554		15.71
12237	0	22 .689	y4	y7	y5	569	043	580	608		15.86
12239	3	37 343.558	y9	y1	y	517	873	604	634		15.67
12240	3	40 344.538	d9	d8	d9	015	309	141	171		16.60
12241	2	20 .792	d7	d8	d8	143	421	180	310		16.57
12244	3	40 347.586	z	g:	g:	581	681	833	865		16.05
12263	0	22 377.562	d7	d8	d7						16.53
15421	3	34E26 501.621	y7	z2	z1	783	181	538	466		16.07
15427	2	52E 502.647	y	y8	y7	303	637	101	029		15.86
15438	2	30E 504.653	d8	d5	d6	321	528	200	130		16.25
15444	2	48E 505.642	-								-
15453	2	38E 508.640	d7	d4	d5	344	300	385	317		16.46
15471	2	54E 510.624	z3	z4	z4	351	181	473	406		16.14
15477	2	03E 511.653	d8	p	d9	873	638	037	970		16.60
15483	2	48E 512.623	y5	y5	y5	365	070	569	503		15.86
15488	2	04E 514.648	y2	y5	y3	392	969	678	614		15.78
15542	1	15E 546.594	z	z5:	z1:	165					16.28
15545	1	25E 547.584	y8	y9	y8						15.97
15574	0	00 559.611	d	d7	d3	204	949	323	285		16.39
15588	0	35W 561.629	d2	d2	d2	228	846	429	392		16.35



422

very close star

4

7

.269833

.269903

.269600

.269879

.269576

.269056

.268960

offset

z5	z9	z7		307	243	905	842	152	548	mag.
y1	y2	y2		844	775	442	374	675	069	15.75
y2	y2	y2	681	854	777	457	375	663	053	15.75
y5	y7	y6	943	116	040	714	637	925	317	15.90
z3	d3	z8	199	371	295	969	892	180	571	16.23
d	z2	z8	221	394	317	992	915	202	594	16.23
x3	x8	x6	738	911	833	509	431	717	108	15.53
r5	r7	r6	761	934	856	532	454	740	131	15.53
y2	y8	y5	012	186	107	783	705	991	382	15.86
y7	y8	y7	035	208	130	806	725	014	405	15.94
d2	d3	d2	295	468	390	066	987	272	664	16.35
p	d7	d9	544	717	639	315	237	521	912	16.60
d3	d5	d4	567	740	661	338	259	544	935	16.42
p	p	p	611	785	706	382	304	588	979	16.64
d3	d	d2		424	368	865	809	700	464	16.35
p	p	p		693	637	134	078	968	732	16.64
y8	y2	y5		231	174	672	615	504	268	15.86
d8	d8	d8		961	896	401	337	212	974	16.57
y9	y8	y9		300	233	740	674	547	308	16.01
p2	p2	p2		588	521	028	962	834	595	16.70
x9	x9	x9	534	167	096	607	535	399	159	15.63
p	d9	d9	060	694	622	134	062	925	684	16.60
d635	z8	d	085	718	646	158	006	949	708	16.28
p	p2	p1	331	965	893	405	332	195	954	16.67
d8	d9	d8	358	992	919	432	359	221	981	16.57
d5	d5	d5	862	496	423	936	863	724	483	16.46
d7	d7	d7	127	761	687	200	127	988	747	16.53
p	p	p	195	829	756	269	195	056	815	16.64
d1	d3	d2	960	594	520	034	959	818	577	16.35
d2	d7	d5		674	591	113	030	873	629	16.46
p	p	p	012	867	837	231	201	420	876	16.64
y	y	y	289	144	114	508	477	696	152	15.67
d5	d4	d5	830	685	654	049	015	236	691	16.46
d5	d4	d4	906	761	729	125	093	309	764	16.42
z1	y9	z	441	297	264	661	628	842	297	16.05
d	z8	z9	719	575	542	938	905	119	574	16.26
p	p	p	981	836	803	200	167	380	435	16.64
d2	d	d1	527	383	349	747	713	925	380	16.32
z	z2	z:	005	962		368	325	520	972	16.05
y1	x9	y		272	229	635	591	787	238	15.67
z2	z	z1	659	519	471	881	834	023	473	16.07
z8	z9	z8	204	063	015	426	378	566	016	16.23



195393

195363

195069

~~adapted~~[illegible]

42



704

378691

6

9

13

				mag
48	Y2	Y5	246	15.86
Y6	Y7	Y6	612	15.90
Y2	Y5	Y4	447	15.82
Y5	Y7	Y6	815	15.90
X3	X8	X5	174	15.49
42	44	X3	205	15.42
X9	Y	Y	930	15.67
Y	48	X9	962	15.63
X9	X7	X8	315	15.60
Y1	Y3	Y2	348	15.75
Y2	Y3	Y3	712	15.78
48	48	X8	062	15.60
47	46	X6	094	15.53
47	43	X5	156	15.49
48	46	X7		15.56
Y5	Y	Y7		15.94
Y	Y2	Y1		15.71
Z	Y8	Y9		16.01
Z	Y8	Y6		15.90
Y1	48	Y		15.67
Y1	Y	Y1	131	15.71
43	48	X6	870	15.53
45	46	X5	904	15.49
Y5	Y3	Y4	250	15.82
Y1	Y2	Y2	287	15.75
48	48	X8	995	15.60
Y5	Y1	Y3	366	15.78
Y3	Y7	Y5	462	15.86
Y9	Y9	Y9	535	16.01
X2	X5	X4		15.46
Y	Y2	Y1	925	15.71
Y	Y7	Y3	314	15.78
Y2	49	Y	073	15.67
—				
Y2	48	Y	583	15.67
Y2	Y8	Y5	335	15.86
Y1	Y1	Y1	724	15.71
49	Y1	Y	092	15.67
48	44	X6	858	15.53
48	47	X7		15.56
X	Y8	Y8		15.97
48	48	X8	886	15.60
X7	X8	X8	650	15.60



4

10

7

174

milan

200401

200461

48736

203851

203823

mag.

6860	1 35	24 16 710.843	W8	W8	W8	872	600	522	054	15.28	JP
6913	4 05	727.653	Y7	Y5	Y6	242	025	949	480	15.90	JP
6980	2 42	753.625	X3	X3	X3	443	448	316	243	15.42	JA
6981	4 37	754.598	W1	W2	W2	638	643	515	441	15.14	JP
6982	4 53	755.544	X8	X3	X6	828	833	707	634	15.53	JP
6983	2 51	755.628	X2	X8	X5	845	850	725	651	15.49	JP
6984	4 46	757.542	Y8	Y9	Y9	228	234	114	042	16.01	JP
6985	2 44	.627	Z8 <sup>21</sup>	Y8	Z2	245	251	132	059	16.10	JP
6986	4 17	758.559	X5	X3	X4	432	437	322	249	15.46	JP
6987	2 15	.644	W8	W8	W8	449	454	339	266	15.28	JP
6988	4 06	759.606	W9	W9	W9	642	647	535	462	15.30	JP
6989	4 50	760.531	X8	X8	X8	827	833	723	651	15.60	JP
6990	2 50	.614	X8	X8	X8	844	849		668	15.60	JP
6992	1 10	.780	X9	X8	X9	877	883		702	15.63	JP
12149	3 13	23287.716	X	Z8	Z9	279			224	16.26	JP
12151	3 14	288.713	Y2	X8	Y	479			427	15.67	JP
12154	3 12	290.706	X2	X2	X2	878			834	15.39	JP
12192	3 1	315.643	X9	Y	Y	876			916	15.67	JP
12197	3 39	320.599	X8	X9	X9	870			927	15.63	JP
12201	1 56	321.667	Y7	Z	Y8	085			145	15.97	JP
12232	1 42	338.634	W2	W	W1	085	486		604	15.12	JP
12234	2 54	340.586	X8	X5	X7	477	877		002	15.56	JP
12235	0 45	.676	Y5	Y2	Y4	495	893		020	15.82	JP
12236	2 44	341.590	Z	Z	Z	678	078		206	16.05	JP
12237	0 22	.689	Y8	Y4	Y6	699	098		227	15.90	JP
12239	3 37	343.558	W	W	W	072	473		608	15.10	JP
12240	3 40	344.538	X7	X7	X7	269	669		807	15.56	JP
12241	2 20	.790	X2	X2	X2	319	720		859	15.39	JP
12244	3 40	347.586	X7	X8	X7	887	288		437	15.56	JP
12263	0 22	377.562	W2	V8	W	289			539	15.10	JP
15421	3 34E	501.621	Z5	Z5	Z5	951	541		382	16.10	JP
15427	2 52E	502.647	W7	W8	W8	157	747		591	15.28	JP
15438	2 30E	504.653	X8	X5	X7	559	149		000	15.56	JP
15444	2 48E	505.642	X9	Y2	Y	757	347		802	15.67	JP
15453	2 38E	508.640	W8	W7	W7	358	948		813	15.25	JP
15471	2 54E	510.624	X8	X8	X8	755	346		217	15.60	JP
15477	2 03E	511.653	Z2	Z5	Z4	962	552		427	16.14	JP
15483	2 48E	512.623	W2	W	W1	156	747		625	15.12	JP
15488	2 04E	514.648	Y	Y	Y	562	153		037	15.67	JP
15542	1 15E	546.594	W8	X	W9	557			550	15.30	JP
15545	1 25E	547.584	W8	W9	W9	755			751	15.30	JP
15574	0 00	559.611	Y	X8	X9	573	166		203	15.63	JP
15588	0 35W	561.629	W	W	W	977	571		615	15.10	JP



1055

8

11

13

			mag.
J $\beta$	J $\gamma$	J $\gamma$	16.92
J $\beta$	J $\beta$	J $\beta$	16.64
J $\beta$			16.64
J $\gamma$			16.92
J $\beta$			16.64
J $\beta$	J $\beta$	J $\beta$	16.64
J $\gamma$			16.92
J $\gamma$	J $\gamma$	J $\gamma$	16.92
J $\beta$			16.64
J $\beta$	J $\gamma$	J $\gamma$	16.92
J $\gamma$	J $\gamma$	J $\gamma$	16.92
J $\gamma$	J $\beta$	J $\gamma$	16.92
J $\gamma$	J $\gamma$	J $\gamma$	16.92
J $\alpha$	J $\beta$	J $\beta$	16.64
J $\alpha$	J $\alpha$	J $\alpha$	16.28
J $\beta$	J $\beta$	J $\beta$	16.64
J $\alpha$	J $\alpha$	J $\alpha$	16.28
J $\beta$			16.64
J $\beta$			16.64
J $\beta$	J $\beta$	J $\beta$	16.64
$\beta_2$	$\beta$	$\beta_1$	16.67
$\alpha_5$	$\alpha_8$	$\alpha_6$	16.50
$z_9$	$\alpha_5$	$\alpha_2$	16.35
$\alpha_4$	$\alpha_3$	$\alpha_4$	16.42
$\alpha_8$	$\alpha_9$	$\alpha_9$	16.60
$\alpha_8$	$\alpha_5$	$\alpha_6$	16.50
$\alpha$	$z_8$	$z_9$	16.26
$\alpha_4$	$\alpha_2$	$\alpha_3$	16.39
$\alpha$	$\alpha_5$	$\alpha_3$	16.39
$z$	$\gamma_8$	$\gamma_9$	16.01
J $\alpha$	J $\alpha$	J $\alpha$	16.28
J $\alpha$	J $\beta$	J $\beta$	16.64
J $\alpha$	J $\alpha$	J $\alpha$	16.28
J $\gamma$	J $\gamma$	J $\gamma$	15.67
J $\beta$	J $\beta$	J $\beta$	16.64
J $\beta$	J $\alpha$	J $\beta$	16.64
J $\beta$	J $\alpha$	J $\beta$	16.64
J $\beta$	J $\beta$	J $\beta$	16.64
J $\beta$	J $\alpha$	J $\beta$	16.64
$v_6$	$v$	$v_3$	14.82
$w_1$	$w$	$w$	15.10
$v_2$	$v_2$	$v_2$	14.78
$v$	$u_7$	$u_9$	14.65



4

12

Lindsey 364

9

adapters

200781  
401501

183781

186199

may. 7

6860 1 35 24 16 710.843  
 6913 4 05 727.653  
 6980 2 42 753.625  
 6981 4 37 754.598  
 6982 4 53 755.544  
 6983 2 51 755.628  
 6984 4 46 757.542  
 6985 2 44 .627  
 6986 4 17 758.559  
 6987 2 15 .644  
 6988 4 06 759.606  
 6989 4 50 760.531  
 6990 2 50 .614  
 6992 1 10 .780  
 12149 3 13 23287.716  
 12151 3 14 288.713  
 12154 3 12 290.706  
 12192 3 1 315.643  
 12197 3 39 320.599  
 12201 1 56 321.667  
 12232 1 42 338.634  
 12234 2 54 340.586  
 12235 0 45 .676  
 12236 2 44 341.590  
 12237 0 22 .689  
 12239 3 37 343.558  
 12240 3 40 344.538  
 12241 2 20 .790  
 12244 3 40 347.586  
 12263 0 22 377.562  
 15421 3 34E 501.621  
 15427 2 52E 502.647  
 15438 2 30E 504.653  
 15444 2 48E 505.642  
 15453 2 38E 508.640  
 15471 2 54E 510.624  
 15477 2 03E 511.653  
 15483 2 48E 512.623  
 15488 2 04E 514.648  
 15542 1 15E 546.594  
 15545 1 25E 547.584  
 15574 0 00 559.611  
 15588 0 35W 561.629

Y Y X3 X7 220 557 542  
 Y2 Y2 Y2 595 680 672  
 X5 X8 X6 809 505 508  
 Y5 Y1 Y3 005 686 689  
 Z2 Z3 Z2 195 862 865  
 Y4 Y8 Y6 212 877 881  
 Y4 Y2 Y3 Y2 596 233 237  
 Y Y Y9 Y2 613 249 253  
 X9 X8 X8 800 422 427  
 X9 Y2 Y1 817 438 443  
 Y Y1 Y 010 616 622  
 Z1 Y7 Y9 196 788 794  
 Y5 Y8 Y7 213 804 809  
 Y Y2 Y4 246 834 840  
 Z5 Z Z2 731 149  
 X8 X7 X7 971 335  
 X8 Y2 Y 391 706  
 X7 X8 X7 337 349  
 X2 X6 X4 333 272  
 Z Y5 Y8 Y2 547 471  
 Y8 Y8 Y8 954 875 630  
 X Z5 Z Z5 346 237 994  
 X X X 364 254 010  
 Y Y9 Y2 Y8 Y8 548 424 181  
 Y Y2 Y1 568 442 199  
 Y8 Y2 Y5 943 789 547  
 Z Z5 Z2 140 972 730  
 Y1 Y8 Y5 190 019 777  
 X8 X X X3 759 545 304  
 Z Z7 Z8 Z5 770 16.16  
 X8 Y2 Y 022 498 575  
 Y9 Z Z 228 688 766  
 Z Z5 Z2 631 061 140  
 X8 X3 X5 829 245 324  
 Z2 Z5 Z3 431 802 882  
 X8 X7 X8 829 170 252  
 X8 X7 X7 036 361 443  
 Y2 Y7 Y4 231 542 624  
 X5 X2 X3 637 918 010  
 Y8 Y2 Y5 15.86  
 Y3 Y9 Y6 15.90  
 X9 X8 X8 665 271 373  
 Z2 Z Z1 070 646 749

15.56  
 15.75  
 15.53  
 15.78  
 16.10  
 15.90  
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 15.78  
 15.60  
 15.71  
 15.67  
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 16.16  
 16.28  
 15.97  
 15.71  
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 16.10  
 15.86  
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 16.16  
 15.67  
 16.05  
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 15.49  
 16.12  
 15.60  
 15.56  
 15.82  
 16.39  
 15.86  
 15.90  
 15.60  
 16.07

24  
 X2  
 Y8  
 29  
 X5  
 X9  
 X  
 X2  
 X5  
 P  
 X5  
 24  
 Y8  
 X5  
 -  
 X9  
 Z2  
 X5  
 X5  
 X2  
 X  
 29  
 Y4  
 Z8  
 X7  
 Z7  
 Z  
 Z  
 Z5  
 X  
 JY  
 X5  
 JA  
 P  
 Y  
 X  
 Z8  
 Z8



175

.344786 .327492

.337128

10

Z4	Z	Z2	665	667	420
$\alpha_2$	$\alpha_5$	$\alpha_4$	460	172	920
Y8	Y4	Y6	415	678	417
Z9	$\alpha_2$	$\alpha_1$	751	997	736
$\alpha_5$	$\beta$	$\alpha_8$	077	307	045
$\alpha_9$	$\beta_3$	$\beta_1$	106	334	073
$\alpha$	$\alpha_4$	$\alpha_2$	766	961	699
$\alpha_2$	$\alpha_1$	$\alpha_1$	795	989	727
$\alpha_5$	$\alpha_3$	$\alpha_4$	116	294	032
$\beta$	$\beta$	$\beta$	146	322	060
$\alpha_5$	$\alpha_8$	$\alpha_6$	477	637	374
Z4	Z6	Z5	796	940	677
Y8	Z1	Y9	825	967	704
$\alpha_5$	$\alpha_5$	$\alpha_5$	882	021	758
-	J $\alpha$				

X9	Y	Y			
Z2	Z8	Z5			
$\alpha_5$	$\alpha$	$\alpha_2$			
$\alpha_5$	$\alpha_3$	$\alpha_4$			
$\alpha_8$	$\alpha_9$	$\alpha_9$			
$\alpha_7$	$\alpha_8$	$\alpha_7$	834	216	887
X4	X8	X6	507	855	526
X2	Y2	X8	538	885	556
$\alpha$	Z8	Z9	853	184	855
Z9	$\alpha_3$	$\alpha_1$	887	216	887
Y4	X8	Y1	532	828	499
Z8	Z9	Z8	870	149	819
$\alpha_7$	$\alpha_8$	$\alpha_7$	957	232	902
Z7	$\alpha_3$	$\alpha$	934	160	829
Z	Y9	Z			
Z8	$\alpha_5$	$\alpha_4$	388	069	747
Z3	$\alpha_5$	Z8	742	405	083
$\alpha$	Z8	Z9	493	062	739
JY	JY	JY	774	386	063
$\alpha_8$	$\alpha_5$	$\alpha_7$	808	367	044
Z2	Y8	Z	492	017	693
$\alpha_5$	$\beta$	$\alpha_8$	847	354	030
J $\beta$	$\beta$	$\beta$	181	672	347
$\beta$	$\alpha_8$	$\alpha_9$	879	335	009
Y	Y	Y	894		
$\alpha_5$	$\alpha$	$\alpha_3$	235		
Z8	Z	Z4	382	060	720
Z8	Z9	Z8	078	721	381

mag

16.10  
16.42  
15.90  
16.32  
16.57  
16.67  
16.35  
16.32  
16.42  
16.64  
16.50  
16.16  
16.01  
16.46  
16.28  
15.67  
16.16  
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16.42  
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16.53  
15.53  
15.60  
16.26  
16.32  
15.71  
16.23  
16.53  
16.28  
16.05  
16.42  
16.23  
16.26  
15.67  
16.53  
16.05  
16.57  
16.64  
16.60  
15.67  
16.39  
16.14  
16.23



				mean	155424	156484							
15607	0 12W	2426563.608	✓	d2	d7	d5	622	216				mag.	
15621	0 40W	564.625	✓	y5	y7	y6	780	374				16.46	β
15629	2 14E	565.502	✓	y7	y8	y8 <sup>4</sup>	916	510				15.90	d6
15640	0 30W	566.612	✓	y	y	y	089	683				15.97	3 d9
15649	1 35E	567.522	✓	y1	y2	y1	230	824	looks funny)			15.67	d2
15659	1 41E	568.516	✓	y9	z2	z	385	979				15.71	d8
15670	1 30E	570.518	✓	d1	d	d	696	290				16.05	2 d5
15678	2 03E	571.493	✓	y1	y2	y1	848	442				16.28	2 β
15684	1 25E	572.516	✓	y3	y2	y2	007	601				15.71	2 d9
15691	1 17E	573.519	✓	y1	y	y1	163	757				15.75	β
15738	0 47W	593.551	✓	z1	z2	z2		872				15.71	2 Jβ
15746	1 25E	594.456	✓	d2	d3	d3		012				16.10	1 Jd
15755	0 55E	598.466	✓	y5	y8	y7		636				16.39	d8
15771	2 16W	605.579	✓	y7	y2	y4		742				15.94	1 Jg
15795	0 52W	626.464	✓	y7	y7	y7		989				15.82	3 d
15805	0 24E	632.395	✓	d	d	d		911				15.94	2 d8
15811	1 41E	654.281	✓	y1	y5	y3		314				16.28	2 z8
15813	1 56E	656.265	✓	y8	y8	y8		623				15.78	3 d8
15855	0 38W	689.282	✓	y9	z2	z1		756				15.97	y8
												16.07	y8



		mean
$\beta$	$\alpha_9$	$\beta$
$\alpha_6$	$\alpha_7$	$\alpha_7$
$\alpha_9$	$\beta$	$\beta$
$\alpha_2$	$\alpha_5$	$\alpha_3$
$\alpha_8$	$\alpha$	$\alpha_4$
$\alpha_5$	$\alpha_5$	$\alpha_5$
$\beta$	$\alpha_9$	$\beta$
$\alpha_9$	$\beta$	$\alpha_9$
$\beta$	$\beta$	$\beta$
$J\beta$	$J\alpha$	$J\alpha_5$
$J\alpha$	$\beta_i$	$\beta_i$
$\alpha_8$	$\alpha_8$	$\alpha_8$
$J_3$	$J\alpha$	$J_25$
$\alpha$	$\alpha_5$	$\alpha_2$
$\alpha_8$	$\alpha_8$	$\alpha_8$
$z_8$	$\alpha_5$	$\alpha_1$
$\alpha_8$	$\alpha_2$	$\alpha_5$
$y_8$	$y_7$	$y_8$
$y_8$	$y_8$	$y_8$

mag.
16.64
16.53
16.64
16.39
16.42
16.46
16.64
16.60
16.64
$J16.46$
16.64;
16.57
$J16.16$
16.35
16.57
16.32
16.46
15.97
15.97



mean

507357

444357

548100

548701

62  
61  
121

mag.

15607	0 12W	2426563.608	✓	y4	y5	y4	232	725	513	478	15.82	d5
15621	0 40W	564.625	✓	d3	d	d1	748	177	071	036	16.32	d5
15629	2 14E	565.502	✓	y9	z	z	193	567	552	817	16.05	x8
15640	0 30W	566.612	✓	d9	d8	d9	756	060	160	126	16.60	z
15649	1 35E	567.522	✓	y4	y2	y3	218	464	659	626	15.78	z5
15659	1 41E	568.516	✓	d	d3	d2	722	906	204	171	16.35	d7
15670	1 30E	570.518	✓	d8	d8	d8	738	796	301	270	16.57	d2
15678	2 03E	571.493	✓	d5	z8	d1	233	229	835	805	16.32	d7
15684	1 25E	572.516	✓	z	y9	z	752	683	398	366	16.05	d8
15691	1 17E	573.519	✓	<del>d1</del>	<del>d2</del>	<del>d1</del>	261	129	946	916	16.22	x8
15738	0 47W	593.551	✓	y6	z3	z					16.05	d3
15746	1 25E	594.456	✓	d3	d3	d3					16.39	d9
15755	0 55E	598.466	✓	y3	y7	y5	918				15.86	z2
15771	2 16W	605.579	✓	z3	z3	z3					16.12	p
15795	0 52W	626.464	✓	d7	d5	d6					16.50	d8
15805	0 24E	632.395	✓	d7	d4	d6					16.50	x8
15811	1 41E	654.281	✓	d8	d8	d8					16.57	p5
15813	1 56E	656.265	✓	d8	d7	d7					16.53	d3
15855	0 38W	689.282	✓	z8	z8	z8					16.23	y8



422

m. l. a. r.

.269833

.269903

.269600

269879

.269576

.269056

269960

mag.

d5	d3	d4	738	597	549	960	911	098	548	16.42
d5	d7	d6	012	872	823	234	185	372	821	16.50
x8	x8	x8	249	109	059	471	422	608	057	15.60
z	y8	y9	549	408	358	771	721	906	356	16.01
z5	z2	z4	794	654	604	016	966	151	601	16.14
d7	d8	d7	062	922	872	284	234	419	868	16.53
d2	d2	d2	602	462	412	825	774	952	406	16.35
d7	d7	d7	866	726	674	088	037	220	669	16.53
d8	d8	d8	142	002	950	364	312	493	944	16.57
x8	x8	x8	412	272	221	635	583	765	214	15.60
d3	d4	d3		679	621	041	983	154	601	16.39
d9	d8	d8		923	865	285	227	398	845	16.57
z2	z4	z4		006	946	367	308	477	923	16.28
p	d7	d8		925	864	287	225	391	836	16.57
d8	d6	d7		562	495	923	856	010	454	16.53
x8	x8	x8		163	094	524	454	606	049	15.60
p5	p2	p3		070	994	431	354	494	935	16.72
d3	d5	d4		606	529	966	889	028	469	16.42
y8	z2	z		517	430	877	790	911	349	16.05



.195393

.195363

.195069

mag.

15607	0 12W	2426563.608	✓	Y3	Y9	Y6	343	546	736	15.90	Y3
15621	0 40W	564.625	✓	Y	X8	X9	542	745	935	15.63	X4
15629	2 14E	565.502	✓	Y8	Z	Y9	713	916	106	16.01	Y
15640	0 30W	566.612	✓	Z8	d5	d2	930	133	322	16.35	X2
15649	1 35E	567.522	✓	Z8	Z8	Z8	108	311	500	16.23	X9
15659	1 41E	568.516	✓	d5	Z9	d2	302	505	694	16.35	Z7
15670	1 30E	570.518	✓	Y7	Y8	Y7	693	896	084	15.94	X8
15678	2 03E	571.493	✓	Z9	d2	d	884	086	274	16.28	d5
15684	1 25E	572.516	✓	d8	d9	d9	084	286	474	16.60	X9
15691	1 17E	573.519	✓	d5	d9	d7	279	482	670	16.53	Y8
15738	0 47W	593.551	✓	d5	d8	d6		396	577	16.50	Y
15746	1 25E	594.456	✓	Y8	Y8	Y8		573	754	15.97	Y1
15755	0 55E	598.466	✓	JZ	Jd	Jd		356	536	16.28	Y
15771	2 16W	605.579	✓	X9	X6	X7		746	924	15.56	Y
15795	0 52W	626.464	✓	Y7	Y2	Y4		826	998	15.82	X8
15805	0 24E	632.395	✓	Y8	Y2	Y5		984	155	15.86	d2
15811	1 41E	654.281	✓	d8	d4	d6		260	424	16.50	X3
15813	1 56E	656.265	✓	X8	X7	X7		648	811	15.56	X2
15855	0 38W	689.282	✓	d	Z3	Z7		098	251	16.21	X9

61  
37  
98



704

.378691

19

23

Y3	Y3	Y3	399	mag.
X4	X7	X6	784	15.78
Y	Y2	Y1	116	15.53
Y2	Y8	Y5	537	15.71
X9	X7	X8	881	15.86
Z7	Z2	Z5	258	15.60
X8	X7	X8	016	16.16
d5	d1	d3	385	15.60
X9	Y1	Y	773	16.39
Y8	Y8	Y8	152	15.67
Y	Y1	Y		15.97
Y1	Y8	Y5		15.67
Y	Y2	Y1		15.86
Y	Y2	Y1		15.71
X8	X8	X8		15.71
d2	Z8	d		15.60
X3	X8	X5		16.28
X2	X9	X6		15.49
X9	X8	X9		15.53
				15.63



200461

200461

203736

203851

203823

mag.

15607	0 12W	2426563.608	✓	X8	X8	X8	374	967	963	018	274	15.60	V1
15621	0 40W	564.625	✓	Y8	Y	Y3	577	171	170	225	481	15.78	49
15629	2 14E	565.502	✓	Z1	Z2	Z2	753	347	349	404	660	16.10	Y
15640	0 30W	566.612	✓	V	V	V8	976	570	575	630	888	14.82	48
15649	1 35E	567.522	✓	X3	X5	X4	158	752	761	816	072	15.46	V1
15659	1 41E	568.516	✓	X8	X2	X5	357	951	963	018	275	15.49	47
15670	1 30E	570.518	✓	Y7	Z	Y9	758	353	871	427	683	16.01	48
15678	2 03E	571.493	✓	48	V2	V	954	548	570	625	881	14.70	49
15684	1 25E	572.516	✓	X2	W8	X	159	753	778	834	090	15.32	V1
15691	1 17E	573.519	✓	X8	X3	X6	360	954	982	038	294	15.53	49
15738	0 47W	593.551	✓	Y8	Y8	Y8		970	064	121	377	15.97	W2
15746	1 25E	594.456	✓	Y8	Z3	Z		151	248	306	562	16.05	V6
15755	0 55E	598.466	✓	Y5	Y5	Y5		955	065	124	379	15.86	W2
15771	2 16W	605.579	✓	V3	V3	V3		381	574	574	829	14.82	W1
15795	0 52W	626.464	✓	X4	X8	X6		567	769	831	086	15.53	X
15805	0 24E	632.395	✓	Y3	Y8	Y5		756	978	040	295	15.86	X3
15811	1 41E	654.281	✓	X9	X3	X6		144	436	502	755	15.53	Y2
15813	1 56E	656.265	✓	X8	X3	X6		541	841	906	160	15.53	Y3
15855	0 38W	689.282	✓	V5	V8	V7		160	567	637	889	14.98	X5



1055

8

21

23

			mag.
V1	U9	V	14.70
U9	U8	U9	14.65
V	V7	V4	14.86
U8	U9	U9	14.65
V1	V	V	14.70
U7	V	U8	14.61
U8	V2	V	14.70
U9	V	U9	14.65
V1	V	V	14.70
U9	U8	U9	14.65
W2	V9	W	15.10
V6	V8	V7	14.98
W2	W	W1	15.12
W1	W	W1	15.12
X	X7	X4	15.46
X3	W9	X1	15.35
Y2	Y3	Y3	15.78
Y3	X8	Y	15.67
α5	α8	α7	16.53



Lindsay 364

mean

.200781  
.185781  
.186199

	° 12W		Z	Y8	Y9	468	014	117	mag.	
15607	2426563.608	✓	Z	Y8	Y9	468	014	117	16.01	α5
15621	0 40W 564.625	✓	X8	X7	X7	672	202	307	15.56	α d
15629	2 14E 565.502	✓	Y8	Y5	Y7	848	365	470	15.97 <sup>86</sup>	Y8
15640	0 30W 566.612	✓	Y9	Y8	Y9	071	572	676	16.01	Z8
15649	1 35E 567.522	✓	Z2	Z	Z1	254	741	846	16.07	Z8
15659	1 41E 568.516	✓	Z2	Z2	Z2	453	925	031	16.10	Z6
15670	1 30E 570.518	✓	X8:	X8	X8:	855	297	404	15.60:	β
15678	2 03E 571.493	✓	Z	Y9	Z	051	478	585	16.05	Y8
15684	1 25E 572.516	✓	Z2	Z5	Z3	256	668	776	16.12	α4
15691	1 17E 573.519	✓	Jα	α:	Jα	458	855	963	J 16.28	α8
15738	0 47W 593.551	✓	Y8 <sup>Z8</sup>	Z8	Z5				16.16	Jα
15746	1 25E 594.456	✓	Y8 <sup>Z</sup>	X8	Y5				15.86	β3
15755	0 55E 598.466	✓	Y8	Y7	Y8				15.97	Y8:
15771	2 16W 605.579	✓	α4	Z8	α1				16.32	Z8
15795	0 52W 626.464	✓	Z	Z	Z				16.05	Y8
15805	0 24E 632.395	✓	α5	α5	α5				16.46	Y7
15811	1 41E 654.281	✓	Z3	Z2	Z3				16.12	Y5 <sup>Z</sup>
15813	1 56E 656.265	✓	Y	Y	Y				15.67	α5
15855	0 38W 689.282	✓	Y3	Y3	Y3				15.78	α5



175

m.lev

.344786

.327492

.327178

$\alpha 5$	$\alpha 5$	$\alpha 5$	760	369	028
$\alpha 5$	$\alpha 8$	$\alpha 4$	111	702	361
$\gamma 8$	2	$\gamma 9$	413	989	648
28	28	28	796	353	011
28	23	25	110	651	309
26	29	27	452	976	634
$\beta$	$\gamma \alpha$	$\beta$	143	632	289
$\gamma 8$	$\gamma 8$	21	479	951	608
$\alpha 4$	$\alpha$	$\alpha 4$	231	286	943
$\alpha 8$	$\alpha$	$\alpha 4$	172	615	271
$\gamma \alpha$	$\beta$	$\beta$	084		
$\beta 3$	$\alpha 8$	$\beta$	396		
$\gamma 8$	2	$\gamma 9$	779		
28	28	28			
$\gamma 8$	$\gamma 2$	$\gamma 5$	432		
$\gamma 7$	$\gamma 7$	$\gamma 7$			
$\gamma 5$	23	2			
$\alpha 5$	$\alpha 8$	$\alpha 7$			
$\alpha 5$	$\alpha 5$	$\alpha 5$			

mag.

16.46

16.42

16.01

16.23

16.16

16.21

16.64

16.07

16.42

16.42

16.64

16.64

16.01

16.23

15.86

15.94

16.05

16.53

16.46



40 Riggo (close star)

I should be I have Riggo 40

354263

336006

335916

2 stars very close  
Overlap on some platesRiggo  
grades for 40

6860	2416710.843	y8	z	y9	16.01	033	943	439	2	d5
6913	727.653	-	Jd		[16.28	988	592	086	1	y8
6980	753.625	B5d	d	d5	16.46	189	318	811		y8
6981	754.598	γ	B5	B8	16.86	534	645	137		z9
6982	755.544	y9	y7	y8	15.97	869	963	455		d5
6983	755.628	y2	y8:	y5:	15.86:	899	991	483	1	d8
6984	757.542	B	d8	d9	16.60	577	635	126		d8
6985	.627	γ:	Jd:	γ:	16.92:	607	663	155	1	d
6986	758.559	y8	y3	y6	15.90	937	976	468	3	d5
6987	.644	z8	z7	z8	16.23	967	005	497	1	d
6988	759.606	γ	γ	γ	16.92	308	328	820	3	y8
6989	760.531	d5:	d	d3:	16.39:	636	639	130	1	d2
6990	.614	d5:	d:	d2:	16.35:	665	667	158	1	d
6992	.780	-	-	-					0	d3
12149	23287.716	y5:	-	y5:					0	Jd
12151	288.713	-	Jd						1	d5
12154	290.707	-	J2						1	z5
12192	315.640	B	Jd	B						d8
12197	320.599	d9	d7	d8	16.57					z8
12201	321.667	d:	y7:	z3:	X				2	d
12232	338.634	JP	B	B	16.64	014	921	820	2	d8
12234	340.586	d3	d8	d5	16.46	706	577	476	5	z3
12235	.676	d5 <sup>z5</sup>	z5	z8	16.23	738	607	506	2	z8
12236	341.590	B2	d8	B	16.64	062	914	813	5	z2
12237	.689	B5	B5	B5	16.78	097	947	847	4	z9
12239	343.558	z	z4	z2	16.10	759	575	475	3	z8
12240	344.538	B5	B5	B5	16.78	106	905	804	3	z3
12241	.791	B2:	B5	B4:	16.75:	196	990	889	2	d5:
12244	347.586	z1	z2:	z1:	16.67	224	942		1	d
12263	377.562	γ	B8	B9					3	z
15421	26501.621	-	-	-					0	y8
15427	502.647	-	-	-						z8
15438	504.653	d	d	d	16.28	618	722	337	3	z8
15444	505.642	-	-	-					0	-
15453	508.640	-	-	-					1	d5
15471	510.624	z8	-	-					0	z
15477	511.653	B	d8	d9	16.60	098	074	688	2	d
15483	512.623	JP	y:	y:	15.67:	441	400	014		y9
15488	514.648	d7	d8	d8	16.57	159	081	694	3	d1
15542	546.594	-	-	-						z
15545	547.584	d8	d8	d8	16.57				4	d3
15574	559.611	d8	d8	d8	16.57	087	189	798	2	z8
15588	561.629	d5	d5	d5	16.57	802	867	476		z5

cannot be called P. 1st.

aim quite sure to 1/50



1121 S.M.L.

had a way (7:10 W.)

25

33

2	d5	z5	d	16 28	
1	y8	z2	z	16 05	
	y8	z	y9	16 01	
	z9	z5	z7	16 21	
	d5	d	d2	16 35	
1	d8	d2	d5	16 46	
	d8	d7	d8	16 57	
1	d	z8	z9	16 26	
3	d5	d8	d7	16 53	
1	d	z7	z8	16 23	
3	y8	z	y9	16 01	
1	d2	d	d1	16 32	
1	d	z9	z9	16 26	
0	d3	d8	d6	16 50	
0	Jd	Jd	Jd		
	d5	B	d7	16 53	
	z5	z8	z6	16 19	
	d8	d8	d8	16 57	
	z8	d1	z9	16 26	
	d	B	d5	16 46	
	d8	d8	d8	16 57	
	z3	y8	z1	16 07	
	z8	z8	z8	16 23	
	z2	y9	z	16 05	
	z9	z4	z7	16 21	
	z8	d5	d2	16 35	
	z3	z2	z3	16 12	
	d5: d5	z7	d2	16 35	
	d	d	d	16 28	
	z	z2	z1	16 07	
	y8 <sup>z9</sup>	d3	z6	16 19	
	z8	d	z9	16 26	
	z8	z8	z8	16 23	
	-	-	-	-	
	d5	d3	d4	16 42	
	z	z	z8	z6	16 19
	d	d3	d2	16 35	
	y9 <sup>z2</sup>	z8	z3	16 12	
	d1	d2	d1	16 32	
	z	J2	z	16 07	
	d3	d3	d3	16 39	
	z8	d	z9	16 26	
	z5	z3	z4	16 14	

Plots here  
bad for  
measuring this  
star  
apparent var is not  
real, I think.



6860	2416710.843	[7				[1692	269	759	
6913	727.653	JP				[1664	294	787	
6980	753.625	P8	P8	P8		1686	229	735	
6981	754.598	d2	28	d		1628	761	258	
6982	755.544	JY	[P	[Y		[1692	269	766	
6983	755.628	JY				[1692	314	811	
6984	757.542	JY	[Y	[Y		"	342	839	
6985	.627	P5	[Y			"		885	
6986	758.559	P5	d8			1657	888	385	
6987	.644	P8	P8	P8		1686	934	431	
6988	759.606	JY				[1692	450	947	
6989	760.531	P9	P5	P7		1684	947	444	
6990	.614	P3	P5			1678	991	489	
6992	.780	Y	Y			1692	081	578	
12149	23287.716	Jd				[1628			
12151	288.713	JP				[1664			
12154	290.707	Jd				[1628			
12192	315.640	JP	[P	[P		[1664			
12197	320.599	JP	[P	[P		[1664			
12201	321.667	d	d	22	27	1621	706		
12232	23 338.634	d8	d8	d8		1657	816	293	
12234	Sequence 340.586	P3	P			1664	864	342	
12235	.676	P3	d9	P2		1670	912	390	
12236	341.590	JY	JY	[Y		[1692	403	881	
12237	.689	JP				[1664	456	934	
12239	343.558	JY				[1692	460	938	
12240	344.538	P4	Y			1684	986	464	
12241	.791	JP				[1664	122	600	
12244	347.586	JP				"	643	122	
12263	377.562	25	23	24		1614	717		
15421	26501.621	IP				[1664	065	013	
15427	502.647	IP	P:	P:		1664	616	565	
15438	504.653	IP				[1664	693	642	
15444	505.642	Y9	Y8:			1597	224	173	
15453	508.640	IP				[1664	833	783	
15471	510.624	IP				[1664	899	849	
15477	511.653	P	P7			1672	451	401	
15483	512.623	IP	JP	JP		[1664	972	922	
15488	514.648	JP	JP	JP		"	059	010	
15542	546.594	Y7	Y5:	Y6		1590	211		
15545	547.584	P8	JP	P8		1686	743		
15574	559.611	d7	d7	d7		1653	200	158	
15588	561.629	Z	Y8	Y9		1601	284	241	

Y  
P  
X8  
d9  
P5  
P8  
d5  
P  
P5  
P5  
X8  
P  
d8  
P5  
Z  
d  
Y  
P3  
d8  
X5  
X8  
P5  
P5  
X2  
Y1  
d8  
X9  
28  
Y8  
P5  
P5  
d8  
JP  
JY  
X3  
JP  
Y1  
P5  
Y9  
J2  
d8  
Z  
P



493

33

$\gamma$	$\gamma\gamma$	$\gamma$			030	642	526	598	728	
$\beta$	$\beta$	$\beta$			990	642	465	559	694	
X8	X5	X6	851	586	199	852	642	768	912	
$\alpha 9$	$\alpha 8$	$\alpha 9$	179	933	544	197	986	113	259	
$\beta 5$	$\beta 5$	$\beta 5$	499	271	879	533	320	449	593	
$\beta 8$	$\beta$	$\beta 3$	527	301	909	562	350	479	623	
$\alpha 5$	$\beta$	$\alpha 8$	173	984	588	241	026	157	302	
$\beta$	$\alpha 8$	$\alpha 9$	202	014	618	271	056	187	332	
$\beta 5$	$\gamma$	$\beta 7$	516	347	948	602	385	518	663	
$\beta 5$	$\beta 8$	$\beta 6$	545	378	978	632	415	548	693	
X8	Y	X9	870	721	319	973	755	889	634	
$\beta$	$\alpha 8$	$\alpha 9$	182	051	647	301	082	217	363	
$\alpha 8$	$\beta 2$	$\beta$	210	081	677	330	111	247	392	
$\beta 5$	$\beta 5$	$\beta 5$	266	140	736	349	170	305	451	
Z	Z5	Z2								
$\alpha$	$\alpha 5$	$\alpha 3$								
Y	Y2	Y1								
$\beta 3$	$\beta$	$\beta 1$								
$\alpha 8$	$\beta$	$\alpha 9$								
X5	X8	X6								
X8	Y	X9	489	039	993	903	356	786	951	
$\beta 5$	$\beta 5$	$\beta 5$	148	736	685	595	046	478	644	
$\beta 5$	$\beta 8$	$\beta 7$	178	769	717	627	078	510	676	
X2	X4	X3	487	095	041	951	401	834	000	
Y1	X7	X9	520	130	076	946	436	869	035	
$\alpha 8$	$\beta$	$\alpha 9$	151	798	739	649	096	532	699	
X9	X9	X9	482	148	086	996	442	880	046	
Z8 <sup>2</sup>	Y8	Z2	567	238	176	086	532	969	136	
Y8	Y8	Y8	511	236	167	077	533	974	142	
$\beta 5$	$\beta 3$	$\beta 4$								
$\beta 5$	$\beta 8$	$\beta 5$	092	517	468	501	950	369	505	
$\alpha 8$	$\beta$	$\alpha 9$	438	893	831	865	313	733	869	
$\beta 8$	$\alpha 8$	$\alpha 8$	115	599	543	576	021	444	581	
$\gamma$	Y	Y	449	953	893	927	371	795	932	
X3	X8	X6	461	023	956	990	430	858	986	
$\beta 8$	$\beta 8$	$\beta 8$	131	732	660	694	131	561	700	
Y1	Y2	Y1	478	099	025	059	495	926	065	
$\beta 5$	$\alpha 8$	$\beta 2$	806	445	369	403	838	270	409	
Y9	Y2	Y5	489	169	087	121	553	988	128	
$\gamma 2$	$\gamma 2$	$\gamma 2$								
$\alpha 8$	$\alpha 8$	$\alpha 8$								
Z	Y8	Y9	665	225	029	065	440	932	086	
$\beta$	$\beta 5$	$\beta 3$	347	945	744	780	153	647	802	

337530  
357002  
354562  
354601  
353335  
354596  
354903  
adopted  
with corr  $\gamma$  in  
6th place  
no that 354903 is better & adopted finally  
mag.  
27



4

28

494

adapted

517070  
557027  
471568  
474223

mag.

6860	2416710.843	Y1	Y3	Y2	675	391	299	666	15.75	d5
6913	727.653	Y3	Y5	Y4	367	754	226	638	15.82	d5
6980	753.625	X8Y8	X8Y8	Y8	797	221	473	954	15.80	P
6981	754.598	d	d	d	300	763	932	416	16.28	P5
6982	755.544	Z	Z	Z	789	290	378	864	16.05	Y2
6983	755.628	Z	Z	Z	832	337	418	904	16.05	Y3
6984	757.542	Y3	Y2	Y2	822	403	320	812	15.75	P
6985	.627	Y5	Y7	Y6	866	451	361	852	15.90	P
6986	758.559	d3	d5	d4	348	970	800	294	16.42	Y3
6987	.644	Z5	Z7	Z6	392	017	840	334	16.19	Y3
6988	759.606	Y2	Y6	Y4	859	553	294	791	15.82	Z
6989	760.531	d	d1	d	368	068	730	229	16.28	d8
6990	.614	d	d3	d1	411	114	769	269	16.32	d
6992	.780	d3	d3	d3	496	207	847	347	16.39	P
12149	23287.716	Y8	Z3	Z					16.05	Jd
12151	288.713	Y8	Z2	Y					15.67	d:
12154	290.707	Z3	Z2	Z3					16.12	Z
12192	315.640	Z2	Y8	Z					16.05	d7
12199	320.599	Z8	Z7	Z8					16.23	Y9
12201	321.667	Y2	Y2	Y2					15.75	d5
12232	23 338.634	Y3	Y2	Y3	707	249	753	717	15.78	d9
12234	Sequence 340.586	Y	X8	X9	717	336	673	642	15.63	X7
12235	.676	Y5	Y1	Y3	763	387	716	685	15.78	Y2
12236	341.590	d:	d3	d2:	236	896	147	119	16.35	d
12237	.689	Z8	Z2	Z5	287	951	193	166	16.16	Z8
12239	343.558	Z5	Z8	Z6	253	992	075	052	16.19	Z5
12240	344.538	Z3	Z6	Z5	760	538	537	517	16.16	Y8
12241	.791	Y6	Y4	Y5	891	679	656	637	15.86	d3
12244	347.586	Y8	Y9	Y9	336	257	993	981	16.01	Y9
12263	377.562	d2	d2	d2					16.35	Y2
15421	26501.621	Y5	Y7	Y6	193	118	316	678	15.90	P
15427	502.647	d3	d	d1	724	690	800	165	16.32	P
15438	504.653	d2	Z2	Z8	761	807	746	116	16.23	d3
15444	505.642	JY	JY	JY	272	358	212	585	15.67	JY
15453	508.640	Y8	Y8	Y8	822	028	626	007	15.97	d8
15471	510.624	Y5	Y8	Y6	848	133	562	948	15.90	Z2
15477	511.653	d	d3	d1	380	706	047	436	16.32	P
15483	512.623	Y8	Y6	Y7	882	247	505	896	15.94	d5
15488	514.648	Y3	Y8	Y5	929	375	459	856	15.86	d5
15542	546.594	Y7	Y5	Y6					15.90	JZ
15545	547.584	dZ	Z2	Z4					16.14	Y8
15574	557.611	d7	d8	d8	178	420	663	178	16.57	d8
15588	561.629	d2	d1	d1	221	544	614	135	16.32	d5



169

296030 ~~296576~~

29

33

			mag	
$\alpha 5$	$\beta$	$\alpha 8$	16.57	911 035
$\alpha 5$	$\alpha 5$	$\alpha 5$	16.46	887 020
$\beta$	$\beta$	$\beta$	16.64	576 723
$\beta 5$	$\alpha 8$	$\beta 1$	16.67	864 012
$\gamma 2$	$\gamma 8$	$\gamma 5$	15.86	144 292
$\gamma 3$	$\gamma 7$	$\gamma 5$	15.86	168 317
$\beta$	$\beta$	$\beta$	16.64	735 885
$\beta$	$\beta$	$\beta$	16.64	760 910
$\gamma 3$	$\gamma 2$	$\gamma 2$	15.75	036 186
$\gamma 3$	$\gamma$	$\gamma 1$	15.71	061 212
$z$	$z$	$z$	16.05	346 497
$\alpha 8$	$\alpha 8$	$\alpha 8$	16.57	620 771
$\alpha$	$\alpha 7$	$\alpha 3$	16.39	644 796
$\beta$	$\alpha 8$	$\alpha 9$	16.60	694 845
$\gamma \alpha$	$[\alpha]$	$[\alpha]$	[16.28	
$\alpha$	$[\beta]$	$[\beta]$	[16.64	873
$z$	$\gamma 7$	$\gamma 8$	15.97	465
$\alpha 7$	$\alpha 2$	$\alpha 4$	16.42	859
$\gamma 9$	$\gamma 2$	$\gamma 5$	15.86	330
$\alpha 5$	$\beta$	$\alpha 7$	16.53	647
$\alpha 9$	$\alpha 5$	$\alpha 7$	16.53	679
$\alpha 7$	$\alpha 8$	$\alpha 8$	15.60	238
$\gamma 2$	$z$	$\gamma 7$	15.94	284
$\alpha$	$\alpha$	$\alpha 8$	16.39	555
$z 8$	$\alpha 3$	$\alpha 1$	16.32	585
$z 5$	$z 6$	$z 6$	16.10	139
$\gamma 8$	$z 3$	$z 1$	16.07	430
$\alpha 3$	$\alpha 8$	$\alpha 6$	16.50	505
$\gamma 9$	$z 2$	$z 1$	16.07	334
$\gamma 2$	$\gamma 8$	$\gamma 5$		
$\beta$	$[\beta]$	$\beta$	16.64	745
$\beta$	$\beta$	$\beta$	16.64	049
$\alpha 3$	$\alpha 9$	$\alpha 6$	16.50	644
$\gamma \gamma$	$\gamma \gamma$	$\gamma \gamma$	[15.67	937
$\alpha 8$	$\alpha 8$	$\alpha 8$	16.57	526
$z 2$	$z 4$	$z 3$	16.12	415
$\beta$	$\beta 4$	$\beta 2$	16.70	720
$\alpha 5$	$\beta$	$\alpha 8$	16.57	088
$\alpha 5$	$\alpha 3$	$\alpha 4$	16.42	608
$\gamma z$	$\gamma z$	$\gamma z$		
$\gamma 8$	$z$	$\gamma 9$	16.01	376
$\alpha 8$	$\alpha 9$	$\alpha 9$	16.60	442 943
$\alpha 5$	$z 3$	$z 9$	16.26	039 542



6860	2416710.843	y1	y8	y4	15.82
6913	727.653	y1	y1	y1	15.71
6980	753.625	x7	x8	x8	15.60
6981	754.598	y9	y8	y9	16.01
6982	755.544	y2	y9	y5	15.86
6983	755.628	y2	y5	y3	15.78
6984	757.542	y7 <sup>z5</sup>	z5	z2	16.10
6985	.627	y8	y8	y8	15.97
6986	758.559	x9	x5	x7	15.56
6987	.644	y	y2	y1	15.71
6988	759.606	y5	y7	y6	15.90
6989	760.531	y8	y8	y8	15.97
6990	.614	y5	y1	y3	15.78
6992	.780	x8	x8	x8	15.60
12149	23287.716	x9	x9	x9	15.63
12151	288.713	y2	y8	y5	15.86
12154	290.707	y4	x7	y	15.67
12192	315.640	z1	y7	y9	16.01
12197	320.599	y	y2	y1	15.71
12201	321.667	y8	z	y9	16.01
12232	23 338.634	y2	y1	y0	15.71
12234	Sequence 340.586	d6	d6	d6	16.50
12235	.676	y3	y5	y4	15.82
12236	341.590	y1	x7	x9	15.63
12237	.689	x7	x8	x8	15.60
12239	343.558	y5	y	y3	15.78
12240	344.538	y <sup>y8</sup>	y8	y5	15.86
12241	.791	y2	y4	y3	15.78
12244	347.586	y3	y1	y2	15.75
12263	377.562	x7	y2	y	15.67
15421	26501.621	y8	z2	z	16.05
15427	502.647	x8	y	x9	15.63
15438	504.653	y8 <sup>z</sup>	d5	z4	16.14
15444	505.642	y3	y2	y2	15.75
15453	508.640	y5	y4	y5	15.86
15471	510.624	y2	x8	y	15.67
15477	511.653	y8 <sup>z5</sup>	d	z4	16.14
15483	512.623	x8	x8	x8	15.60
15488	514.648	y8 <sup>z</sup>	z8	z2	16.10
15542	546.594	y5	y3	y4	15.82
15545	547.584	y8 <sup>?</sup>	y8	y8:	15.97
15574	559.611	y7 <sup>y5</sup>	x8	y3	15.78
15588	561.629	x8	x7	x7	15.56

y  
 x4  
 x2  
 y  
 d8  
 p  
 d8  
 d8  
 d3  
 y1  
 y5  
 y8  
 z2  
 d7  
 z5  
 Jp  
 Jd  
 d8  
 d4  
 Jp  
 B9  
 Jp  
 Jy  
 B5  
 y  
 d8  
 d3  
 z  
 Jp  
 z2  
 Jp  
 z5  
 Jy  
 d8  
 Jp  
 Jp  
 J2  
 d8  
 Jp  
 y7



F.W.W.

743 S.N

.578034

581240

.578653

.579110

I should be [

31

33

$\gamma$	$\gamma$	$\gamma$	16.92	-435	010	779	416
$x_4$	$y_2$	$x_8$	15.53	152	781	506	151
$y_2$	$y_8$	$y_5$	15.86	165	877	535	192
$\gamma$	$\gamma$	$\gamma$	16.92	727	442	098	755
$\alpha_8$	$\alpha_5$	$\alpha_6$	16.50	274	992	646	303
$\beta$	$\beta_5$	$\beta_3$	16.72	323	041	694	352
$\alpha_8$	$\beta$	$\alpha_9$	16.60	429	157	802	460
$\alpha_8$	$\beta$	$\alpha_9$	16.60	478	203	851	509
$\alpha_3$	$\alpha_7$	$\alpha_5$	16.46	017	745	390	049
$y_1$	$y_2$	$y_2$	15.75	066	794	440	098
$y_5$	$z_1$	$\alpha_2$	15.75	622	253	996	655
$y_8$	$y_3$	$y_5$	15.86	157	891	531	191
$z_2$	$z_5$	$z_4$	16.14	205	939	579	239
$\alpha_7$	$\alpha_8$	$\alpha_7$	16.53	301	036	676	335
$z_5$	$z_5$	$z_5$	16.16			507	149
$J\beta$	$\beta$	$\beta$	[16.64			084	726
$J\alpha$			[16.28			237	881
$\alpha_8$	$\beta$	$\alpha_9$	16.60			665	320
$\alpha_4$	$\alpha$	$\alpha_2$	16.35			534	192
$J\beta$			[16.64			152	810
$\beta_9$	[ $\beta$	$\beta_9$	16.89			970	636
$J\beta$			[16.64			100	767
$J\gamma$			[16.28			152	819
$\beta_5$	$\beta$	$\beta_2$	16.70			681	348
$\gamma$	$\beta$	$\beta_5$	16.78:			738	405
$\alpha_8$	$\beta_5$	$\beta_1$	16.67			820	488
$\alpha_3$	$z_8$	$\alpha$	16.28			387	055
$z$	$\alpha$	$z_5$	16.16:			533	202
$J\beta$			[16.64			173	843
$z_2$	$z$	$z_1$	16.07			180	
$J\beta$			[16.64			242	354
$J\beta$	[ $\beta$	[ $\beta$	[16.64			836	948
$z_5$	$z_3$	$z_4$	16.74 <sup>07</sup>			997	109
$J\gamma$	-		[15.67			569	682
$\alpha_8$	$\alpha_9$	$\alpha_9$	16.60			304	418
$J\beta$			[16.64			452	567
$\alpha$	$\alpha_3$	$\alpha_2$	16.35			047	163
$J\beta$	$J\gamma$	$J\gamma$	[16.92			609	725
$J\beta$	[ $\beta$	[ $\beta$	[16.64			781	898
$Jz$	$Jz$	$Jz$	[16.05				398
$\alpha_8$	$\alpha_8$	$\alpha_8$	16.57				971
$J\beta$	$J\alpha$	[ $\beta$	[16.64			798	936
$y_7$	$z_3$	$z$	16.05			966	105



4

32

S.M.L.

743

KS and a var (FWW)

					mag	
6860	2416710.843	y2	y2	y2	15.75	x6
6913	727.653	x4	x7	x6	15.53	x6
6980	753.625	x8	x8	x8	15.60	x6
6981	754.598	x9	y3	y1	15.71	x7
6982	755.544	y1	y	y1	15.71	x7
6983	755.628	y2	y8	y5	15.86	x6
6984	757.542	y3	y1	y2	15.75	x7
6985	.627	y8	z3	z	16.05	x6
6986	758.559	x8	y	x9	15.63	x6
6987	.644	x8	y1	x9	15.63	x6
6988	759.606	x8	y5	y2	15.75	x6
6989	760.531	y3	y1	y2	15.75	x6
6990	.614	x8	y1	x9	15.63	x6
6992	.780	y4 <sup>z5</sup>	y8	y9	16.01	x7
12149	23287.716	y9	z2	z	16.05	x6
12151	288.713	y7	y3	y5	15.86	x7
12154	290.707	y7	x7	y2	15.75	x6
12192	315.640	y8	z	y9	16.01	x6
12199	320.599	x8	x8	x8	15.60	x6
12201	321.667	y8	y8	y8	15.97	x6
12232	23 338.634	y5	y8	y7	15.94	x6
12234	Sequence 340.586	y	x8	x9	15.63	x6
12235	.676	y5	x8	y2	15.75	x6
12236	341.590	y	y	y	15.67	x8
12237	.689	y3	y8	y5	15.86	x7
12239	343.558	y1	y1	y1	15.71	x6
12240	344.538	y5	y3	y4	15.82	x7
12241	.791	x6 <sup>y3</sup>	y8	y2	15.75	x5
12244	347.586	y8	y2	y5	15.86	x7
12263	377.562	x8	x8	x8	15.60	x6
15421	26501.621	y9	y3	y6	15.90	x7
15427	502.647	y2	y1	y2	15.75	x7
15438	504.653	y4	y3	y3	15.78	x6
15444	505.642	y	-	-	15.67	x6
15453	508.640	y8 <sup>y4</sup>	y	y4	15.82	x7
15471	510.624	y5	y3	y4	15.82	x6
15477	511.653	y2	y2	y2	15.75	x8
15483	512.623	x8	y7	y2	15.75	x5
15488	514.648	x8	y	x9	15.63	x2
15542	546.594	y	x9	y	15.67	x6
15545	547.584	y2 <sup>z5</sup>	z	y9	16.01	x6
15574	559.611	x8	x9	x9	15.63	x6
15588	561.629	y9	y3	y6	15.90	x6



737 S.M.L.

Not a variable. F.W.W.

? by S.M.L.

x6

x6

x6

x7

x7

x6

x7

x6

x6

x6

x6

x6

x6

x7

x6

x7

x6

x6

x6

x6

x6

x6

x6

x8

x7

x6

x7

x5

x7

x6

x7

x7

x6

x6

x7

x6

x8

x5

x2

x5

x6

x6

x6

x6



40 Riggs

I should be [

.354263  
.336006  
.335916

15607	2426563.608	P8	P8	P8	16.86	503	532	141		2
21	564.625	Y8	Y9	Y8	15.97	864	873	482	4	22
29	565.502	Jd	Jd	Jd	[16.28	174	168	777	0	23
40	566.612	d8	P5	P1	16.67	568	541	150	2	22
49	567.522	Z8	Z8	Z8	16.23 alpha gear	890	847	456	3	23
59	568.516	d3	d5	d4	16.42	242	181	790	3	d
70	570.518	d2	d5	d4	16.42	951	853	462	2	d2
78	571.493	d8	d9;	d9;	16.60;	297	181	790	1	d2
84	572.516		?							d5
91	573.519	-	-							22
<del>15738</del>	<del>593.551</del>	<del>Z5</del>	<del>Z5</del>	<del>Z5</del>	16.16				0	d
<del>46</del>	<del>594.456</del>	<del>d5</del>	<del>d5</del>	<del>d5</del>	16.46					25
<del>55</del>	<del>598.466</del>	-	-							d:
<del>71</del>	<del>605.579</del>	<del>J8</del>	<del>Jd</del>	<del>J8</del>	[16.64					28
<del>95</del>	<del>626.464</del>		-							28
<del>15805</del>	<del>632.395</del>	<del>d8;</del>	-							d
<del>11</del>	<del>654.281</del>	<del>d</del>	<del>d</del>	<del>d</del>	16.28					d3
<del>13</del>	<del>656.265</del>	<del>J8</del>	<del>d</del>	<del>d:</del>	16.28				2	Y8
<del>15855</del>	<del>689.282</del>	<del>Z2</del>	<del>Z2</del>	<del>Z2</del>	16.10				3	25

18 omitted

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1121 S.M.L.

Z	Z	Z8	Z3	1612
Z2	$\alpha$ 3	$\alpha$	Z8	1623
Z3	Z6	Z4		1614
Z2	Z2	Z2		1610
Z3	Z6	Z5		1616
$\alpha$	Z5	Z7		1621
$\alpha$ 2	$\alpha$ 3	$\alpha$ 2		1635
$\alpha$ 2	$\alpha$ 5	$\alpha$ 3		1639
$\alpha$ 5	$\alpha$ 2	$\alpha$ 4		1642
Z2:	Y8	Z:		1605:
$\alpha$	$\alpha$	$\alpha$		1625
Z5	Z	Z2		1610
$\alpha$ :	Z3	Z7:		1621:
Z8	Z8	Z8		1623
Z8 $\alpha$ 6	$\alpha$ 8	$\alpha$ 4		1642
$\alpha$	$\alpha$ 3	$\alpha$ 1		1632
$\alpha$ 3	$\alpha$ 3	$\alpha$ 3		1639
Y8	Y8	Y8		1597
Z5	Y9	Z2		1610



379 S.M.L.

536913

537062

15607	2426563.608	$\alpha_7$	$\alpha_8$	$\alpha_8$	[1657	346	304
21	564.625	$\beta$	$\beta$	$\beta$	[1664	892	851
29	565.502	$\beta$	$\beta$	$\beta$	1664	367	322
40	566.612	$\beta$	$\beta$	$\beta$	[1664	959	918
49	567.522	$\beta$	$\beta$	$\beta$	1664	448	406
59	568.516	$\beta$	$\beta$	$\beta$	[1664	982	940
70	570.518	$\beta$	$\beta$	$\beta$	"	058	015
78	571.493	$\beta$	$\beta$	$\beta$	"	580	539
84	572.516	$\beta$	$\beta$	$\beta$	"	129	088
91	573.519	$\beta$	$\beta$	$\beta$	[1628	668	627
<del>15738</del>	<del>593.551</del>	$\beta$	$\alpha_5$	$\alpha_7$	1653	423	
<del>46</del>	<del>594.456</del>	$\beta$	$\beta$	$\beta$	[1664	909	
<del>55</del>	<del>598.466</del>	<del>2</del>	<del>24</del>	<del>22</del>	<del>1610</del>	<del>062</del>	<del>annul</del>
<del>71</del>	<del>605.579</del>	$\gamma$	$\beta$	$\gamma$	[1692	881	
<del>95</del>	<del>626.464</del>	$\gamma$	$\gamma$	$\gamma$	1692	095	
<del>15805</del>	<del>632.395</del>	$\alpha_2$	$\alpha_5$	$\alpha_3$	1639	279	
<del>11</del>	<del>654.281</del>	$\beta$	$\beta$	$\beta$	[1664	030	
<del>13</del>	<del>656.265</del>	$\alpha_8$	$\beta$	$\alpha_8$	1657	095	
<del>15855</del>	<del>689.282</del>	$\beta$	$\gamma$	$\gamma$	1692	822	

18 omitted

44 lines

36

$\beta_2$   
 $\alpha_9$   
 $\gamma$   
 $\beta_5$   
 $z$   
 $\alpha_3$   
 $\alpha_1$   
 $\alpha_3$   
 $\beta$   
 $\alpha_2$   
 $z$   
 $\beta$   
 $\alpha_1$   
 $\beta$   
 $\beta$   
 $\alpha_5$   
 $\alpha_8$   
 $\alpha_8$   
 $\gamma_9$



493

.337530

.357092

354562

354601

.353335

.354596

.354903

adopted

37

43

$\beta_2$	$\beta_5$	$\beta_4$	015	652	446	482	852	349	504	mag.
$\alpha$	$\alpha_8$	$\alpha_9$	$\alpha_6$	358	015	806	842	212	710	865
$\gamma_9$	2	$\gamma_9$	654	328	117	153	522	021	176	16.01
$\beta_5$	$\gamma$	$\beta_8$	028	725	511	547	914	414	570	16.86
Z	Z1	Z1	336	049	834	870	235	737	893	16.07
$\alpha_3$	$\alpha_2$	$\alpha_3$	671	404	186	222	587	089	246	16.39
X1	X3	X2	347	119	896	932	294	799	956	15.39
$\alpha_3$	$\alpha_7$	$\alpha_5$	676	467	242	278	638	145	302	16.46
$\beta$	$\beta_3$	$\beta$	021	833	604	641	000	508	666	16.64
X2	X8	X5	360	191	960	996	354	863	022	15.49
Z	Z	Z								16.05
$\beta$	$\beta$	$\gamma$	$\beta_3$							16.72
$\alpha_1$	J2	$\alpha_1$								16.28
$\beta$	$\beta$	$\beta$								16.64
$\beta$	$\alpha_8$	$\alpha_9$								16.60
$\alpha_3$	$\alpha_5$	$\alpha_5$								16.46
$\alpha_8$	$\beta$	$\alpha_9$								16.60
$\alpha_8$	$\alpha_8$	$\alpha_8$								16.57
$\gamma_9$	$\gamma_5$	$\gamma_7$								15.94



.517070  
.557027  
.471568  
.474223

										mag.	
15607	2426563.608	y8	y8	y8	245	647	547	074		15.97	y9
21	564.625	y8 <sup>y8</sup>	z8	z1	771	213	027	556		16.07	d3
29	565.502	y8 <sup>z2</sup>	z6	z2	224	702	441	972		16.10	d8
40	566.612	d5	d7	d6	798	320	964	498		16.50	d9
49	567.522	y5	y9	y7	269	827	393	930		15.94	y2
59	568.516	d	z8	z9	782	381	862	401		16.26	z7
70	570.518	d2	d2	d2	818	496	806	351		16.35	x9
78	571.493	z	y8	y9	322	039	266	813		16.01	d3
84	572.516	d5	d	d2	851	609	748	298		16.35	p
91	573.519	y8	y7	y7	369	167	221	774		15.94	jd
<del>15738</del>	<del>593.551</del>	z8	d	z9						16.26	p
<del>46</del>	<del>594.456</del>	y8	y7	y8						15.97	z
<del>55</del>	<del>598.466</del>	y8	y8	y8						15.97	d1
<del>71</del>	<del>605.579</del>	y3 <sup>z</sup>	z	y8						15.97	d8
<del>95</del> <i>log. on x12</i>	<del>626.464</del>	z1	y7	y9						16.01	d8
<del>15805</del>	<del>632.395</del>	y	z	y5						15.86	d5
<del>11</del>	<del>654.281</del>	d5	d7	d6						16.50	p
<del>13</del>	<del>656.265</del>	y8	y8	y8						15.97	d8
<del>15855</del>	<del>689.282</del>	y8	y5	y7						15.94	z5

18 omitted

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169

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39

43

mag

Y9	Z3	Z1	16.07	625	129
d3	Z8	d	16.28	926	430
d8	d7	d7	16.53	215	690
d9	P	P	16.64	514	019
Y2	Y4	Y3	15.78	813	289
Z7	Z8	Z7	16.21	078	584
X9	X5	X7	15.56	670	178
d3	d2	d2	16.35	959	467
P	Jd	P	16.64	262	770
Jd	Jd	Jd	16.28	559	068
P	JP	P	16.64		666
Z	Y5	Y7	15.94		277
d:	J2	d:	16.28		466
d8	d3	d6	16.50		576
d8	d7	d7	16.53		770
d5:	d5:	d5	16.46		529
P	d8	d9	16.60		020
d8	d8	d8	16.57		605
Z5	Y7	Z1	16.07		400



15607	2426563.608	X8	Y3	Y2	15.75
21	564.625	Y2	Y3	Y3	15.78
29	565.502	Y8	Y8	Y8	15.97
40	566.612	X8	X8	X8	15.60
49	567.522	Z3	Z	Z1	16.07
59	568.516	X9	Y1	Y	15.67
70	570.518	$\alpha^2$	Z2	Z4	16.14
78	571.493	Z8 <sup>Z5</sup>	Z	Z4	16.14
84	572.516	Y	Y4	Y2	15.75
91	573.519	Z <sup>Z8</sup>	$\alpha$	Z6	16.19
<del>15738</del>	<del>593.551</del>	Z3	Y8	Z	
<del>46</del>	<del>594.456</del>	X9	X8	X8	
<del>55</del>	<del>598.466</del>	Y8	Z2	Y	
<del>71</del>	<del>605.579</del>	Y1	Y2	Y1	
<del>95</del> <i>log. on this</i>	<del>626.464</del>	Y5	Y8	Y6	
<del>15805</del>	<del>632.395</del>	Y8	Y8	Y8	
<del>11</del>	<del>654.281</del>	Z5	Y8	Z1	
<del>13</del>	<del>656.265</del>	X5	X3	X4	
<del>15855</del>	<del>689.282</del>	X8	X8	X8	

8 omitted

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80

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~~S.M.R.~~  
743 S.S

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.578653  
.579110

$\gamma_8$	$z_1$	$z_2$	16.10	111	251
$\gamma_8$	$\gamma_2$	$\gamma_8$	[16.64	700	840
$\gamma_2$	$\gamma_2$	$\gamma_2$	[16.28	207	348
$\gamma_8$	$\gamma_8$	$\gamma_8$	[16.64	850	991
$\beta$	$\gamma$	$\beta$	16.64:	376	518
$\gamma_1$	$\gamma_2$	$\gamma_2$	15.75:	951	093
$\alpha_5$	$\alpha_8$	$\alpha_7$	16.53	110	253
$\gamma_2$	$\gamma_2$	$\gamma_2$	[16.28	674	817
$\gamma_2$	$\gamma_2$	$\gamma_2$	[16.	266	410
$\gamma_2$	$\gamma_2$	$\gamma_2$	[	846	990
$\gamma_8$	$\gamma_2$	$\gamma_8$	16.64		591
$x_7$	$\gamma_2$	$\gamma_1$	15.71		115
-	$\gamma_2$		[16.05		438
$\gamma_8$	$\gamma_8$	$\gamma_8$	[16.64		557
$\gamma_8$	$\beta_5$	$\beta_5$	16.78		651
$\gamma_8$	$\gamma_8$	$\gamma_8$	15.97:		086
$\beta$	$\gamma_8$	$\beta$	16.64		761
$\gamma_8$	$\gamma_2$	$\gamma_8$	[16.64		910
[ $\beta$	$\gamma$	$\gamma$	16.92		030



						mag	
15607	2426563.608	X8	Y3	Y		15.67	X8
21	564.625	X8	X8	X8		15.60	X5
29	565.502	X7	X9	X8		15.60	X6
40	566.612	X8	X8	X8		15.60	X5
49	567.522	Y5	Y2	Y3		15.78	X7
59	568.516	X8	Y	X9		15.63	X3
70	570.518	Y Y	Y8	Y3		15.78	X5
78	571.493	Y2	X9	Y1		15.71	X5
84	572.516	Y2	Y5	Y4		15.82	X7
91	573.519	Y3	Y5	Y4		15.82	X6
<del>15738</del>	<del>593.551</del>	Y2	Y4	Y3		15.78	X2
<del>46</del>	<del>594.456</del>	X5	X8	X6		15.53	X6
<del>55</del>	<del>598.466</del>	Y5	Y4	Y5		15.86	X5
<del>71</del>	<del>605.579</del>	Y2	Y6	Y4		15.82	X6
<del>95</del> <i>log. on this</i>	<del>626.464</del>	Y8	Y2	Y5		15.86	X5
<del>15805</del>	<del>632.395</del>	Y2	Y3	Y3		15.78	X8
<del>11</del>	<del>654.281</del>	Z8 <sup>Y8</sup>	Z	Z2		16.10	X6
<del>13</del>	<del>656.265</del>	Y1	X8	Y		15.67	X2
<del>15855</del>	<del>689.282</del>	Y9	Y8	Y9		16.01	X9

8 omitted

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80  
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X8  
X5  
X6  
X5  
X2  
X3  
X5  
X5  
X7  
X6  
X2 X5  
X6  
X5  
X6  
X5  
X8  
X6  
X2 X5  
X9



mag.

6860	24 16710.843	w8	X1	X	15.32	876
6913	727.653	X8	X8	X8	15.60	805
6980	753.625	X8	X8	X8	15.60	241
6981	754.598	X1	X1	X1	15.35	295
6982	755.544	X2	w8	X	15.32	347
6983	.628	w2	w7	w5	15.21	352
6984	757.542	X1	X5	X3	15.42	457
6985	.627	w8	X	w9	15.30	462
6986	758.559	X8	X8	X8	15.60	514
6987	.644	X7	X8	X7	15.56	518
6988	759.606	X8	Y	X9	15.63	571
6989	760.531	Y8	Y2	Y5	15.86	623
6990	.614	Y3	Y1	Y2	15.75	627
6992	.780	Y7 <sup>Y</sup>	X8	Y2	15.75	636
12149	23287.716					
12151	288.713					
12154	290.707					
12192	315.640					
12197	320.599					
12201	321.667					
12232	338.634	X7	w8	X2	15.39	300
12234	<i>Seq.</i> 340.586	X8	X4	X6	15.53	408
12235	.676	X7	X7	X7	15.56	413
12236	341.590	Y1	Y8	Y4	15.82	463
12237	.689	Z1	Y8	Z	16.05	469
12239	343.558	w2	X	w6	15.23	572
12240	344.538	w4	X1	w7	15.25	626
12241	.791	w <sup>w5</sup>	w9	w5	15.21	640
12244	347.586 <sup>625</sup>	X1	X8	X4	15.46	795
12263	377.562					
15421	26 501.621	Y8	Y8	Y8	15.97	169
15427	502.647	Y	X8	X9	15.63	225
15438	504.653	w	V8	V9	15.06	336
15444	505.642					
15453	508.640	Y	Y	Y	15.67	557
15471	510.624	Z	Y8	Y9	16.01	666
15477	511.653	Y2	X8	Y	15.67	723
15483	512.623	X3	w9	X1	15.35	777
15488	514.648	w3	w1	w2	15.14	889
15542	546.594					
15545	547.584					
15574	559.611	X2	w8	w	15.10	375
15588	561.629	X8	X8	X8	15.60	486

B3

[P

B3

[Y

B2:

B8

B5

[Y

X

d2

[Y

B5

B3

B8

1594

Y7<sup>2</sup>

d5

[P

[Y

[Y

[Y

B3

[P

d2

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d8

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706

.561128

.562604

adopted

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53

$\beta_3$	$\beta$	$\beta_2$	1670	922	587
$\epsilon\beta$	$\epsilon\beta$	$\epsilon\beta$	1664	354	044
$\beta_5$	$\beta_5$	$\beta_5$	1675	928	656
$\epsilon\gamma$	$\epsilon\gamma$	$\epsilon\gamma$	1692	474	204
$\beta_2$	$\beta$	$\beta_1$	1667	005	736
$\beta_8$	$\gamma$	$\beta_9$	1659	052	783
$\beta_5$	$\gamma$	$\beta_7$	1654	126	860
$\epsilon\gamma$	$\epsilon\gamma$	$\epsilon\gamma$	1692	174	908
$\alpha$	$\alpha_7$	$\alpha_4$	1642	697	432
$\alpha_2$	$\alpha_2$	$\alpha_2$	1635	744	480
$\epsilon\gamma$	$\epsilon\gamma$	$\epsilon\gamma$	1692	284	021
$\beta_5$	$\beta$	$\beta_3$	1672	803	542
$\beta_3$	$\beta_5$	$\beta_4$	1675	850	588
$\beta_8$	$\epsilon\beta$	$\beta_8$	1656	943	682

$\gamma_7$	$\alpha$	$\alpha_7$	1614	961	409
$\alpha_5$	$\alpha_5$	$\alpha_5$	1646	056	507
$\epsilon\beta$	$\alpha_5$	$\alpha_5$	1646	107	558
$\epsilon\gamma$	$\epsilon\gamma$	$\epsilon\gamma$	1692	620	072
$\epsilon\gamma$	$\epsilon\gamma$	$\epsilon\gamma$	1692	675	127
$\epsilon\gamma$	$\epsilon\gamma$	$\epsilon\gamma$	1692	724	179
$\beta_3$	$\beta_2$	$\beta_2$	1670	274	730
$\epsilon\beta$	$\epsilon\gamma$	$\epsilon\gamma$	1692	416	873
$\alpha_2$	$\alpha_5$	$\alpha_3$	1639	006	467
$\epsilon\beta$	$\epsilon\beta$	$\epsilon\beta$	1664	801	918
$\alpha_8$	$\beta_5$	$\beta_2$	1670	377	495
$\epsilon\alpha$	$\epsilon\alpha$	$\epsilon\alpha$	1628	503	624
$\epsilon\alpha$	$\epsilon\beta$	$\epsilon\beta$	1664	740	867
$\epsilon\beta$	$\epsilon\beta$	$\epsilon\beta$	1664	853	983
$\alpha_8$	$\beta$	$\alpha_7$	1660	431	562
$\epsilon\beta$	$\epsilon\beta$	$\epsilon\beta$	1664	975	108
$\epsilon\alpha$	$\epsilon\beta$	$\epsilon\beta$	1664	111	247

$\alpha_8$	$\epsilon\beta$	$\alpha_8$	1657	341	543
$\beta$	$\beta$	$\beta$	1664	474	679



251918  
 (252232)  
 252332  
 252329  
 adapted

							mag.	
6860	24 16 710.843	d7	$\beta$	d8	009	680	16.57	Z
6913	727.653	d8	$\beta$	d9	249	922	16.60	Z5:
6980	753.625	$\beta$	d5	d7	800	476	16.53	$\beta$
6981	754.598	$\beta$	$\beta^3$	$\beta^8$	046	721	16.75	X8
6982	755.544	$\beta^2$	d9	$\beta$	284	960	16.64	y3%
6983	.628	d5	d3	d4	305	981	16.42	y8:
6984	757.542	d2	d5	d3	788	464	16.39	d
6985	.627	d1	Z	Z2	810	485	16.14	Z8
6986	758.559	d8	$\beta$	d9	045	721	16.60	X8
6987	.644	d5	$\beta$	d8	066	742	16.57	X8y
6988	759.606	$\beta$	$\beta_1$	$\beta_1$	309	985	16.67	y2
6989	760.531	y	y1	y	542	218	15.67	Z8
6990	.614	x7	y	x9	563	239	15.63	Z2
6992	.780	y8	Z	y9	605	281	16.01	y3
12149	23287.716							
12151	288.713							
12154	290.707							
12192	315.640							
12197	320.599							
12201	321.667							
12232	338.634	y7	y1	y4	750	084	15.82	y2 X
12234	Seq. 340.586	d8	$\beta$	d9	243	577	16.60	d
12235	.676	d	d3	d2	265	599	16.35	Z3
12236	341.590	$\beta$	$\beta$	$\beta$	496	830	16.64	y8
12237	.689	$\beta$	$\beta_2$	$\beta_1$	521	855	16.67	Z3y
12239	343.558	y1	y1	y1	992	327	15.71	Z
12240	344.538	d7	d5	d6	239	574	16.50	d7
12241	.791	d8	d5	d7	303	638	16.53	-
12244	347.586	y5	y3	y4	008	343	15.82	y8
12263	377.562							
15421	26 501.621	x8	x3	x6	235	557	15.53	y2
15427	502.647	Z8	d5	d1	494	816	16.32	d y
15438	504.653	[d	[d	[d	999	322	16.28	d:
15444	505.642							
15453	508.640	$\beta$	$\beta$	$\beta$	003	327	16.64	y
15471	510.624	d	d6	d3	503	828	16.39	d
15477	511.653	[d	$\beta_2$	$\beta_2$	763	087	16.70	d3
15483	512.623	[ $\beta$	[ $\beta$	[ $\beta$	007	332	16.64	y2
15488	514.648	d5	d3	d4	517	843	16.42	d5
15542	546.594							
15545	547.584							
15574	559.611	[ $\beta$	d8	d8	844	184	16.57	d5
15588	561.629	y	y	y	352	693	15.67	y



37 Leavens.

mag.

267570

267466

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adapted

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Z	Y8	Y9	16.01	320	582	712
Z5:	d2	Z8:	16.23:	818	078	214
B	d3	d7	16.53	767	025	168
X8	Y3	Y	15.67	028	285	429
Y3 <sup>18</sup>	Y7	Y5 <sup>8</sup>	15.86 <sup>97</sup>	287	538	682
Y8:	Y2 <sup>18</sup>	Y5 <sup>8</sup>	15.86 <sup>97</sup>	303	561	705
d	d2	d1	16.32	815	073	217
Z8	Z8	Z8	16.23	838	095	240
X8	X9	X9	15.63	088	345	490
X8 <sup>18</sup>	Y	X9 <sup>18</sup>	15.63 <sup>97</sup>	110	367	512
Y2	Y1 <sup>18</sup>	Y2 <sup>18</sup>	15.75 <sup>94</sup>	368	625	770
Z8	Z	Z4	16.14	615	872	018
Z2	Z3	Z3	16.12	637	874	040
Y3	Y8 <sup>25</sup>	Y6 <sup>23</sup>	15.90 <sup>16.12</sup>	682	939	084

Y2 <sup>X8</sup>	X3	X8	15.60	718	291	456
d	d	d	16.28	240	813	979
Z3	d	Z7	16.21	265	837	003
Y8	Z	Y9	16.01	509	082	247
Z3 <sup>Y3</sup>	Y	Y5	15.86	536	108	274
Z	Z4	Z2	16.10	036	608	774
d7	d5	d6	16.50	298	870	037
-	Z8		16.23:	366	938	105
Y8	Y8	Y8	15.97	124	696	863

Y2	Y8	Y5	15.86	039	282	418
d <sup>Y8</sup>	Y8	Z2	16.10	813	557	693
d:	d:	d:	16.28	860	093	230

Y	X8	X9	15.63	917	160	298
d	d4	d2	16.35	448	690	829
d3	d	d2	16.35	723	966	105
Y2	Y2	Y2	15.75	982	225	364
d5	d7	d6	16.50	524	767	907

d5	d	d3	16.39	535	793	947
Y	Y	Y	15.67	095	339	487



6860	24 16710.843	dZ7	Z7	Z7	1610	890	494
6913	727.653	dZ2	Z	Z1	1589	598	003
6980	753.625	PZ8	Z5	Z6	1607	107	515
6981	754.598	PZ <sup>Y3</sup>	X8	Y4	1573	426	834
6982	755.544	PZ7	Z7	Z7	1610	736	144
6983	.628	dZ7	Z2	Z5	1603	764	171
6984	757.542	dX1	X8	X4	1553	391	798
6985	.627	dY7	Y	Y3	1571	419	826
6986	758.559	dZ1	Z5	Z3	1596	724	132
6987	.644	dZ2	Z2	Z2	1593	752	159
6988	759.606	PZ8	d	Z9	1617	067	475
6989	760.531	YX2	X7	X4	1553	370	778
6990	.614	XX8	X8	X8	1560	397	805
6992	.780	YZ	Y8	Y9	1584	452	859
12149	23287.716						
12151	288.713						
12154	290.707						
12192	315.640						
12197	320.599						
12201	321.667						
12232	338.634	Yd9	P2	P1	1663	600	560
12234	Seq. 340.586	dZ5	Z5	Z5	1603	239	200
12235	.676	dZ5	Z7	d1	1625	269	230
12236	341.590	Pd2	d1	d2	1628	568	529
12237	.689	Pd7	d9	d8	1651	601	562
12239	343.558	YZ6	d3	Z9	1617	213	174
12240	344.538	dd2	d5	d4	1636	534	495
12241	.791	dd9	d7	d8	1651	617	578
12244	347.586	Yd8	d8	d8	1651	533	494
12263	377.562						
15421	26 501.621	XZ5	Z8	Z7	1610	911	138
15427	502.647	ZP	LB	P	1658	248	474
15438	504.653	LZ <sup>d</sup>	d	Z7	1610	905	131
15444	505.642						
15453	508.640	PZ8	d	Z9	1617	211	438
15471	510.624	dZ	Z8	Z9	1617	861	088
15477	511.653	Ld5	d	d2	1628	198	425
15483	512.623	LX8	X2	X5	1555	516	743
15488	514.648	ddZ8	Z8	Z8	1614	180	407
15542	546.594						
15545	547.584						
15574	559.611	[P	d3	d7	1647	911	142
15588	561.629	YY4	Y8	Y6	1577	572	804



FWW Seq. 1

540

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275603  
275606 adapted

275862

275766

275605

Z6	Z2	Z4	1600	558	608	886	282	592
Z1	Z1	Z1	1589	191	241	524	918	325
Z1	Y9	Z	1586	349	399	688	080	382
d5	d1	d3	1632	617	668	957	348	651
d7	d9	d8	1651	878	928	218	609	912
d5	d	d2	1628	901	952	241	632	935
Z3	Z7	Z5	1603	429	479	769	160	462
Z8	Z4	Z6	1607	452	502	792	184	486
d8	d	d4	1636	709	759	050	441	743
d5	d5	d5	1639	732	783	073	464	766
d8	d8	d8	1651	998	048	338	729	031
X	X3	X1	1548	253	303	594	984	286
X9	Y5	Y2	1568	275	326	616	007	309
X6	X8	X6	1557	321	371	662	053	355

Z8	Z4	Z6	1607	197	267	242	002	244
d	d8	d4	1636	735	805	781	540	782
d8	d8	d8	1651	760	830	805	565	807
P	P2	P1	1663	012	082	058	817	059
P	P8	P4	1676	039	109	085	844	086
d	d	d	1621	555	624	600	360	601
d8	d8	d8	1657	825	895	871	630	871
d7	d7	d7	1647	894	964	941	700	941
d1	d	d1	1625	665	745	722	481	722
[P	[P	[P	1658	926	006	790	246	979
Y2	Y2	Y2	1568	209	288	073	529	262
[P	Y	Y	1704	762	841	626	082	815
P	P	P	1658	861	940	726	182	914
Z8	Z7	Z8	1614	407	487	274	729	460
d8	d8	d8	1651	691	771	558	012	744
[P	[P	[P	1658	958	038	825	280	011
d8	[P	d8:	1651	516	596	384	838	569
[P	Y	Y	1704	908	988	787	238	961
Z7	Z2	Z5	1603	465	544	344	794	518



162  
1797

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255466

adopted

6860	24 16710.843	10P	d3	d6	1643	048	052
6913	727.653	10X8	X4	X6	1557	329	347
6980	753.625	10d9	d8	d9	1654	942	981
6981	754.598	10W	V9	W	1526	190	230
6982	755.544	10Z7	Z2	Z5	1603	431	472
6983	.628	10Z2	Y2	Y7	1579	452	493
6984	757.542	10d3	Z9	d1	1625	939	982
6985	.627	10d5	d7	d6	1643	961	004
6986	758.559	10W2	W	W1	1528	198	242
6987	.644	10W1	W	W	1526	220	264
6988	759.606	10Z	Z8	Z4	1600	465	509
6989	760.531	10Z8	Z9	Z9	1617	700	746
6990	.614	10Z7	Z8	Z8	1614	722	767
6992	.780	10d7	d2	d5	1639	764	809
12149	23287.716						
12151	288.713						
12154	290.707						
12192	315.640						
12197	320.599						
12201	321.667						
12232	338.634	10W	W2	W2	1530	670	227
12234	Seq. 340.586	10Z8	Z9	Z8	1614	167	726
12235	.676	10Z8	d	Z9	1617	190	749
12236	341.590	10d3	d8	d5	1639	422	983
12237	.689	10d5	d8	d6	1643	447	008
12239	343.558	10X8	X8	X8	1560	923	485
12240	344.538	10Z7	d2	Z9	1617	173	736
12241	.791	10d	d	d	1621	237	800
12244	347.586	10Z8	Z8	Z8	1614	949	514
12263	377.562						
15421	26 501.621	10W2	W2	W2	1530	055	263
15427	502.647	10Y8	Y9	Y8	1542	316	525
15438	504.653	10d8	d8	d8	1657	827	038
15444	505.642						
15453	508.640	10d	d8	d4	1636	842	056
15471	510.624	10Z7	Z2	Z5	1603	347	563
15477	511.653	10d2	Z8	d	1621	609	826
15483	512.623	10d5	d5	d5	1639	856	074
15488	514.648	10Z2	Z6	Z4	1600	372	591
15542	546.594						
15545	547.584						
15574	559.611	10Z7	d	Z8	1614	821	077
15588	561.629	10Z7	Z8	Z7	1610	334	593

X6  
Z1  
Y2  
Y2  
W  
W2  
V3  
V5  
V8  
W  
V9  
X  
X4  
X2  
Y2  
V8  
V6  
V8  
W3  
X6  
X  
Y1  
Y2  
W  
W  
Y5  
W  
V8  
X8  
X8  
Y5  
X4  
Y4



FWW leg. 1

51

53

163

112688  
112855

112705 adopted

X6	X4	X5	1555	111	902	395
Z1	Y2	Y1	1573	206	799	290
Y2	Y2	Y2	1568	932	730	217
Y2	Y	Y1	1566	042	840	327
W	W3	W2	1530	149	947	433
W2	W	W1	1528	158	956	443
V3	V4	V3	1478	374	172	659
V5	V7	V6	1499	383	182	668
V8	V8	V8	1512	488	287	773
W	W3	W2	1530	498	297	783
V9	V8	V9	1519	606	405	891
X	W3	W	1526	711	510	996
X4	X	X2	1550	720	519	606
X2	X1	X2	1550	739	538	624

Y2	Y5	Y3	1571	984	881	381
V8	V3	V5	1492	204	102	601
V6	V3	V4	1465	214	112	611
V8	V7	V7	1506	317	215	714
W3	W1	W2	1530	328	226	725
X6	W9	X2	1550	539	437	936
X	X	X	1546	649	548	046
Y1	X8	Y	1564	678	576	075
Y2	X8	X8	1560	993	892	390

W	V9	W	1526	415	840	865
W	W	W	1526	530	956	981
Y5	Z	Y7	1579	756	183	207
W	V7	V4	1519	206	632	656
V8	V7	V7	1506	429	856	880
X8	Z	Y4	1573	545	972	996
X8	X8	X8	1560	654	082	105
Y5	Z	Y7	1579	883	311	333

X4	X1	X1	1548	949	385	401
V4	V8	V6	1499	177	613	628



6860	24 16 710.843	Z2	Y9	Z	1586	197	378	456	726
6913	727.653	Z2	Z3	Z3	1596	553	549	581	853
6980	753.625	d1	d	d	1621	283	993	954	227
6981	754.598	X1	w6	w8	1542	535	235	193	466
6982	755.544	Z:	Z: def.	Z:	1586:	780	469	425	698
6983	.628	Z1	Z	Z1	1589	802	490	446	719
6984	757.542	d2	d	d1	1625	298	965	915	189
6985	.627	Z3	Z3	Z3	1596	820	986	936	210
6986	758.559	X1	X4	X2	1550	562	217	165	438
6987	.644	X1	X	X1	1548	584	238	186	459
6988	759.606	Z	Y8	Y9	1584	833	477	422	695
6989	760.531	d	Z8	Z9	1617	072	707	649	923
6990	.614	Y9	Z2	Z	1586	094	727	669	943
6992	.780	d5	d	d3	1632	137	768	710	984
12149	23287.716								
12151	288.713								
12154	290.707								
12192	315.640								
12197	320.599								
12201	321.667								
12232	338.634	w2	X	w6	1538	623	898	764	538
12234	340.586	d	Z8	Z9	1617	129	383	243	017
12235	.676	Z8	Z8	Z8	1614	153	405	265	039
12236	341.590	d3	d2	d2	1628	389	632	489	263
12237	.689	B	d4	d7	1647	415	656	514	287
12239	343.558	Y5	X8	Y1	1566	899	120	972	746
12240	344.538	Z7	Z1	Z4	1600	153	363	213	987
12241	.791	d4	Z8	d1	1625	219	426	275	049
12244	347.586	Z1	Z2	Z2	1593	943	120	961	735
12263	377.562								
15421	26 501.621	d	Z8	Z9	1617	232	715	888	902
15427	502.647	Z3	Y8	Z	1586	498	969	140	154
15438	504.653	Y9	Z	Z	1586	018	467	632	646
15444	505.642								
15453	508.640	X7	X5	X6	1557	051	456	610	625
15471	510.624	Z2	Z9	Z6	1607	565	948	097	112
15477	511.653	Z5	Z8	Z7	1610	832	204	350	365
15483	512.623	X7	X7	X7	1559	083	444	588	603
15488	514.648	d2	d	d1	1625	608	947	085	100
15542	546.594								
15545	547.584								
15574	559.611	Z8	Z	Z4	1600	259	103	118	136
15588	561.629	X2	X3	X3	1551	782	604	613	631



F.W.W. Seq. 1  
4 46 close star

143561

146530

shuffled

Z7	Z3	Z5	1603	025	640
X2	X8	X5	1555	438	103
B	d7	d8	1651	167	910
X5	Y	X7	1559	307	051
w8	X	w9	1544	443	190
w9 <sup>w</sup>	w	w3	1532	455	202
Y3	Y	Y2	1568	729	483
Y3	X9	Y1	1566	742	495
Z2	Z7	Z5	1603	875	632
Z8	Z6	Z7	1610	888	644
Z5	Z7	Z6	1607	026	758
Z7	d	Z8	1614	158	921
d	d2	d1	1625	170	933
d	Z8	Z9	1617	194	957

d1	d4	d3	1632	518	810
w	w8	w4	1534	798	096
w	w4	w2	1530	811	109
X3	X4	X4	1553	942	243
X7	Y1	X9	1562	956	258
d	d5	d3	1632	224	531
Z5	Z8	Z6	1607	365	676
d7	d7	d7	1647	401	712
w	w1	w1	1528	803	122

X8	Y2	Y	1564	599	282
Y	Y	Y	1564	746	433
d8	d8	d8	1651	034	727
X8	X6	X7	1559	607	311
Z2	Z2	Z2	1593	892	602
d2	d4	d3	1632	039	752
d7 <sup>d</sup>	Z8	d	1621	179	895
X8	X2	X5	1555	469	191

d5	d6		1643	924	780
X7	X2		1550	214	075



.055286

mag.

15607	2426563.608	Y1	X8	Y	15.67	596
21	564.625	X3	X	X1	15.35	652
29	565.502	w8	w	w4	15.19	700
40	566.612	w2	w1	w2	15.14	762
49	567.522	X2	X	X1	15.35	812
59	568.516	X5	X5	X5	15.49	867
70	570.518	Y8	Y5	Y7	15.94	978
78	571.493	Z	Y8	Y9	16.01	031
84	572.516	Y5	Y2	Y4	15.82	088
91	573.519	X1	X	X1	15.35	143
<del>15738</del>	<del>593.551</del>					
<del>46</del>	<del>594.456</del>					
<del>55</del>	<del>598.466</del>					
<del>71</del>	<del>605.579</del>					
<del>95</del>	<del>626.464</del>					
<del>15805</del>	<del>632.395</del>					
<del>11</del>	<del>654.281</del>					
<del>13</del>	<del>656.265</del>					
<del>15855</del>	<del>689.282</del>					

[P  
Z8  
[P  
d7  
[P  
d8  
[P  
[P  
23



706

55

63

.561128  
.562604

[P	[P	[P	[1664	584	792
28	28	28	1623	155	364
[P	[P	[P	[1064	647	858
27	27	27	1653	270	482
[P	[P	[P	[1664	780	994
28	[P	28	1657	338	553
[P	28	28	1657	462	680
[P	Σ2	[P	[1664	009	228
[P	[P	[P	[1664	583	804
23	25	29	-1626	145	368



251918 252232 252332

									mag.	
15607	2426563.608	B5	B7	B6	851	192	848		16.81	d8
21	564.625	Y2	X7	Y	107	448	105		15.67	Y4
29	565.502	Y5	Y	Y3	328	670	326		15.78	Y8
40	566.612	d8	d3	d6	608	950	606		16.50	Y7
49	567.522	d	d	d	837	179	836		16.28	Z7
59	568.516	Z2	Z3	Z3	087	430	087		16.12	X8
70	570.518	d3	d8	d6	592	935	592		16.50	Y4
78	571.493	LP	Ld	LP	837	181	838		16.64	d8
84	572.516	Y8	Y3	Y5	095	439	096		15.86	Y2
91	573.519	Y7	Y7	Y7	348	692	349		15.94	Z8
<del>15738</del>	<del>593.551</del>									
<del>46</del>	<del>594.456</del>									
<del>55</del>	<del>598.466</del>									
<del>71</del>	<del>605.579</del>									
<del>95</del>	<del>626.464</del>									
<del>15805</del>	<del>632.395</del>									
<del>11</del>	<del>654.281</del>									
<del>13</del>	<del>656.265</del>									
<del>15855</del>	<del>689.282</del>									



37 Leavens

267570

267466

267773

d8	d2	d5	16.46	624	862	017
y4	y	y2	15.75	897	134	289
y8	y8	y8	15.97	131	368	524
y7	y8	y8	15.97	425	665	821
z7	z6	z7	16.21	672	909	065
x8	x8	x8	15.60	938	175	331
y4	y <sup>7</sup>	y <sup>6</sup>	15.90	473	710	867
d8	d2	d5	16.46	734	971	128
y2	y1	y2	15.75	45	244	402
z8	z3	z5	16.16	276	513	671



.327637  
.327721

15607	2426563.608	$\alpha$	$\alpha 8$	$\alpha 4$	1636	221	452
21	564.625	X	X 8	X 4	1553	534	785
29	565.502	Z 8	Z 6	Z 7	1610	841	073
40	566.612	Z 8	$\alpha 1$	$\alpha$	1621	205	437
49	567.522	X 8	X 6	X 7	1559	503	735
59	568.516	Z 5	Z 3	Z 4	1600	829	061
70	570.518	Y 8	Y 2	Y 5	1575	485	717
78	571.493	Y 8	Z 2	Z	1586	804	036
84	572.516	Z 8	Z 6	Z 7	1610	139	371
91	573.519	X 8	X 5	X 7	1559	468	700
<del>15738</del>	<del>593.551</del>						
<del>46</del>	<del>594.456</del>						
<del>55</del>	<del>598.466</del>						
<del>71</del>	<del>605.579</del>						
<del>95</del>	<del>626.464</del>						
<del>15805</del>	<del>632.395</del>						
<del>11</del>	<del>654.281</del>						
<del>13</del>	<del>656.265</del>						
<del>15855</del>	<del>689.282</del>						

$\beta 5$   
 $X 9$   
 $Z 8$   
 $[P]$   
 $Z 8$   
 $Y 8$   
 $[P]$   
 $\alpha$   
 $Z 7$   
 $[d]$



540

F.W.W. Leg. 1

59

63

.275603

275606

.275862

.275766

.275605

$\beta_5$	$\gamma$	$\beta_8$	1695	010	090
X9	X9	X9	1562	290	370
Z8	Z8	Z8	1614	532	639
[P:	$\beta_3$	$\beta_3$	1672	838	918
Z8 $\alpha$	$\beta$	$\alpha_3$	1632	089	168
Y8	Z	Y9	1544	363	442
[P	$\beta$	$\beta$	1658	914	994
$\alpha$ Z $\beta$	Z	Z5	1603	183	263
Z7	Z5	Z6	1607	465	545
[ $\alpha$	[Z	[ $\alpha$	1621	741	821

890	340	063
170	620	343
412	862	585
719	168	891
970	419	142
244	693	416
796	245	968
065	514	236
347	796	518
624	073	795



60

1797

162 F.W.W. Aug. 1

254628

255460

15607	2426563.608	25	28	26	1607	838	099
21	564.625	X3	X5	X4	1553	097	358
29	565.502	X5	X	X3	1632	321	582
40	566.612	X5	X8	X6	1643	603	866
49	567.522	28	27	27	1610	835	098
59	568.516	X7	X8	X8	1560	085	352
70	570.518	X5	X5	X5	1639	598	864
78	571.493	29	21	25	1603	846	113
84	572.516	X8	X2	X5	1555	107	314
91	573.519	25	25	25	1603	362	631
<del>15738</del>	<del>593.551</del>						
<del>46</del>	<del>594.456</del>						
<del>55</del>	<del>598.466</del>						
<del>71</del>	<del>605.579</del>						
<del>95</del>	<del>626.464</del>						
<del>15805</del>	<del>632.395</del>						
<del>11</del>	<del>654.281</del>						
<del>13</del>	<del>656.265</del>						
<del>15855</del>	<del>689.282</del>						

W5  
W8  
X8  
Y2  
X8  
X  
V5  
V8  
V8  
X7



163 F.W.W. Sep. 1

61

63

.112688 .112855

W5	W2	W4	1534	400	836	851
W8	W	W4	1534	514	951	966
X8	Y	X9	1562	613	050	065
Y2	Y2	Y2	1568	738	175	190
X8	X8	X8	1560	841	278	292
X	W8	W9	1544	953	390	404
V5	V4	V4	1485	178	616	630
V8	V7	V7	1506	288	726	740
V8	V9	V8	1512	404	841	855
X7	X4	X5	1555	517	954	968



62

165 F.W.W. Leg. 1

259125

248125

245377

245457

15607	2426563.608	d5	z8	d2	1628	295	095	098	117
21	564.625	z5	z3	z4	1600	558	347	348	367
29	565.502	x4	x	x2	1550	786	565	563	582
40	566.612	z3	z2	z3	1596	073	841	835	855
49	567.522	z8	z5	z6	1607	309	066	059	078
59	568.516	d	z3	z6	1607	567	313	303	322
70	570.518	y8	y8	y8	1582	085	810	794	813
78	571.493	z8	z	z4	1600	338	052	033	053
84	572.516	z	z1	z1	1589	603	305	284	304
91	573.519	x6	x1	x4	1553	863	554	530	550
<del>15738</del>	<del>593.551</del>								
<del>46</del>	<del>594.456</del>								
<del>55</del>	<del>598.466</del>								
<del>71</del>	<del>605.579</del>								
<del>95</del>	<del>626.464</del>								
<del>15805</del>	<del>632.395</del>								
<del>11</del>	<del>654.281</del>								
<del>13</del>	<del>656.265</del>								
<del>15855</del>	<del>689.282</del>								

Y3

—

Z2

Z8

Z3

W7

Y2

Z1

Z2

Z8



446 F.W.W. Seq. 1

.146530

y3	y1	y2	1568	498	365
—					
z2	z5	z4	1600	770	643
z8	d	z9	1617	929	806
d3	z8	d1	1625	060	939
w7	x	w8	1542	203	085
y2	y1	y1	1566	490	378
z1	y6	y8	1582	630	521
z2	d2	z7	1610	777	671
z8	z7	z7	1610	921	818



64

mag 2/1/85  
 sometimes  
 unlap

Confused  
 with

F.W.W. Seq. 1

735-N+S

mag. 5 N <sup>582988</sup>  
 ↓ 43 19 88

		MS	SN	mag NS
6860	24 16 710.843	28	d2	16.51
6913	727.653	d4	d2	16.36
80	753.625	P	d7	16.58
81	754.598	28:	-	16.51
82	755.544	d8	d5	16.51
83	.628	-	-	
84	757.542	d8:	d8	16.51
85	.627	d7	-	16.47
86	758.559	d	25	16.21
87	.644	22	23	15.93
88	759.606	d5	d8	16.39
89	760.531	28	25	16.14
90	.614	d8	26	16.51
6992	.780	-	d2	
12232	23338.634	P8	[7	16.95
34	340.586	d8	7	16.51
35	.676	d8:	d8	16.51:
36	341.590	P	P good	16.58
37	.689	d8	d8	16.51
39	343.558	P	d8	16.58
40	344.538	d8	[7	16.51
41	.791	d2	d	16.28
12244	347.625	d8:	P7:	16.51:
15421	26501.621	d8	P3	16.51
27	502.647	-	-	
38	504.653	d8	P	16.51
44	505.642	-	-	
53	508.640	28	d	16.14
71	510.624	-	-	
77	511.653	d8	-	16.51
83	512.623	d2	d3	16.28
15488	514.648	P:	P8	16.58:
15574	559.611	d5:	d8	16.39
15588	561.629	28	d8	16.14
15607	563.608	28	d8	16.14
21	564.625	P3	7	16.72
29	565.502	d7:	P8:	16.47
40	566.612	[P	[P	[16.58
49	567.522	P5	P	16.81
59	568.516	d7:	d8	16.47
70	570.518	P	d8	16.58
78	571.493	P	P	16.58
84	572.516	[P	[P	[16.58
15691	573.519	[d	-	[16.21

16.28	221	149	P
16.28	021	511	P7
16.47	162	887	7
			23
16.39	281	727	7
			P5
16.51	446	602	d1
			7
16.03	039	048	d8
15.96	088	085	P8
16.51	649	506	d7
16.03	188	911	P8
16.07	237	948	P5
16.28	334	020	[7
[17.04	143	042	P8
17.04	281	896	7
16.51	334	936	[P
16.58	867	336	[7
16.51	924	380	7
16.51	014	198	[7
[17.04	585	627	d8
16.21	733	735	P
16.90	385	979	[P
16.72	127	392	P7
			[P
16.58	895	720	[7
			-
16.21	219	466	P8
			-
			[P
16.32	541	211	d3
16.95	722	098	2
16.51	934	791	d1
16.51	111	675	d8
16.51	265	541	d2
17.04	857	987	P8
16.95	369	371	[P
[16.58	016	857	P
16.58	546	256	[7
16.51	126	691	28
16.51	293	568	Y4
16.58	861	995	[P
[16.58	458		[P
			[d

S B plots show no var in N in age, D in age.  
 N is probably not a var. Decided by F.W.W. finally.



195 F.W.W. Seq. 1

Craig Jod P 65  
adapted by him

73

mag.  $P-1 = .429526$ 

$\beta$	$\alpha_3$	$\alpha_6$	16.43
$\beta_7$	$\beta$	$\beta_3$	16.72
$\gamma$	$\beta_5$	$\beta_8$	16.95
$z_3$	$z_1$	$z_2$	15.93
$\gamma$	$[\gamma]$	$\gamma$	17.04:
$\beta_5$	$\beta_8$	$\beta_7$	16.90
$\alpha_1$	$\alpha_9$	$\alpha_5$	16.39
$\gamma$	$\beta_5$	$\beta_8$	16.95
$\alpha_8$	$\alpha_9$	$\alpha_9$	16.54
$\beta_8$	$[\gamma]$	$\beta_8$	16.95:
$\alpha_7$	$\alpha_2$	$\alpha_4$	16.36
$\beta_8$	$\alpha_9$	$\beta_2$	16.67
$\beta_5$	$\beta_9$	$\beta_7$	16.90
$[\gamma]$	$\gamma$	$\gamma$	17.04:
$\beta_8$	$\beta_8$	$\beta_8$	16.95
$\gamma$	$\beta_8$	$\beta_9$	16.99
$[\beta]$	$[\gamma]$	$[\gamma]$	[17.04:
$[\gamma]$	$[\gamma]$	$[\gamma]$	[17.04:
$\gamma$	$[\gamma]$	$\gamma$	17.04
$[\gamma]$	$[\gamma]$	$[\gamma]$	[17.04
$\alpha_8$	$\alpha_9$	$\alpha_8$	16.51
$\beta$	$\alpha_9$	$\alpha_9$	16.54
$[\beta]$	$[\beta]$	$[\beta]$	[16.58
$\gamma$	$\gamma$	$\gamma$	17.04:
$[\beta]$	$[\beta]$	$[\beta]$	[16.58
$[\gamma]$	$[\gamma]$	$[\gamma]$	[17.04:
-			
$\beta_8$	$\beta_8$	$\beta_8$	16.95
-			
$[\beta]$	$[\gamma]$	$[\gamma]$	[17.04:
$\alpha_3$	$\alpha_4$	$\alpha_4$	16.36
$z$	$z_1$	$z_1$	15.89
$\alpha_1$	$z_8$	$\alpha$	16.21
$\alpha_8$	$\beta$	$\alpha_9$	16.54
$\alpha_2$	$\alpha_3$	$\alpha_3$	16.32
$\beta_8$	$[\beta]$	$\beta_8$	16.95
$[\beta]$	$[\beta]$	$[\beta]$	[16.58
$\beta$	$[\beta]$	$\beta_8$	16.58:
$[\gamma]$	$[\beta]$	$[\gamma]$	[17.04
$z_8$	$z_8$	$z_8$	16.14
$\gamma_4$	$\gamma_5$	$\gamma_4$	15.73
$[\beta]$	$[\beta]$	$[\beta]$	[16.58
$[\beta]$	$[\beta]$	$[\beta]$	[16.58
$[\alpha]$	$[\alpha]$	$[\alpha]$	[16.21



64

Aug 2/195  
 sometimes  
 unlap

66

709 F.W.W. Seq. 1

.478833  
 345415  
 .345427  
 .657311 Sp. pen.

6860	24 16 710.843	Y	P8	P9	16 99	703	176	380	221
6913	727.653	Y	Y	Y	1704	752	952	183	270
80	753.625	P8	P5	P6	16 46	188	953	154	342
81	754.598	d7	d8	d7	16 47	654	289	490	981
82	755.544	P2	P5	P4	16 76	107	616	817	603
83	.628	d <sup>28</sup>	d	d7	16 27	148	645	846	658
84	757.542	P	d7	d9	16 54	064	306	567	917
85	.627	d	d	d	16 21	105	336	537	972
86	758.559	d8	P	d9	16 54	551	658	859	585
87	.644	d5	P	d8	16 51	592	647	888	641
88	759.606	Y	P8	P9	16 99	052	019	220	273
89	760.531	d8	d	d4	16 36	495	339	540	881
90	.614	d	Z8	Z9	16 17	535	367	569	936
6992	.780	d2	d2	d2	16 28	614	425	626	045
12232	23338.634	d9	P6	P2	16 67	308	574	794	741
34	340.586	P7	P7	P7	16 90	243	188	469	024
35	.676	d2	d9	d5	16 39	286	220	500	083
36	341.590	P2	P	P1	16 63	723	535	815	684
37	.689	P8	P8	P4 <sup>34</sup>	16 74	771	569	850	749
39	343.558	P1	P2	P2	16 67	666	215	495	977
40	344.538	P8	P <sup>35</sup>	P9	16 99	135	553	834	622
41	.791	d7	P	d9	16 51	256	641	921	788
12244	347.625	[P	[P	[P	16 58	613	620	900	651
15421	26501.621	Y	Y	Y	1704	851	057	375	
27	502.647	[P	[P	[P	16 58	342	412	730	
38	504.653	P8	Y	P9	16 99	302	105	423	
44	505.642	-	-	-	-	-	446	764	
53	508.640	P5	P	P2	16 67	212	482	800	
71	510.624	-	-	-	-	-	-	-	
77	511.653	P5	P	P3	16 72	654	523	841	
83	512.623	d8	d8	d8	16 51	119	858	176	
15488	514.648	[P	[P	[P	16 58	088	557	876	
15574	559.611	d9	[P	d9	16 54	618	088	407	
15588	561.629	P5	[P	P5	16 41	584	735	104	
15607	563.608	P	d5	d7	16 47	532	469	787	
21	564.625	P8	P8	P8	16 95	019	820	139	
29	565.502	d8	[P	d8	16 51	439	123	442	
40	566.612	d8	d8	d8	16 51	970	506	825	
49	567.522	P3	P3	P3	16 41	406	821	139	
59	568.516	d8	d8	d8	16 51	882	164	483	
70	570.518	P2	P8	P3	16 41	841	855	174	
78	571.493	P7	P3	P5	16 41	308	192	511	
84	572.516	[P	P:	P:	16 58	797	546	864	
15691	573.519	[d	[d	[d	16 21	278	892	211	

S B plots  
 N is horizontal



538 F.W.W. leg. 1  
538 Leavitt = 732 Lindsay

67

73

mag.

308583

307703

308197

adapted

$\beta^{28}$	$\alpha$	$\alpha_3$	16.32	682	976	232
26	24 def.	25	16.03	869	149	412
21	2	2	15.86	884	141	417
$\alpha_8$	$\alpha_8$	$\alpha_8$	16.51	184	440	717
$\beta_7$	$\beta_8$	$\beta_7$	16.90	476	731	008
$\beta_7$	$\beta$	$\beta_4$	16.76	502	757	034
$\alpha_8$	$\alpha_1$	$\alpha_5$	16.39	092	346	624
$\alpha_8$	$\alpha_1$	$\alpha_4$	16.36	119	372	650
$\beta_8$	$\beta_7$	$\beta_7$	16.90	406	659	938
-	-	-				
21	$\gamma_8$	2	15.86	729	981	261
29	28	29	16.17	015	266	545
$\alpha_8$	$\alpha_9$	$\alpha_8$	16.51	040	291	571
$\alpha_7$	$\beta$	$\alpha_9$	16.54	092	342	622
$\beta_8$	$\beta_9$	$\beta_8$	16.95	906	368	897
29 $\alpha_5$	$\alpha_9$	$\alpha_4$	16.36	508	968	498
$\alpha$	$\alpha_1$	$\alpha_1$	16.25	536	996	526
$\beta_8$	$\beta$	$\beta_4$	16.76	818	277	808
$\beta_8$	$\beta_8$	$\beta_8$	16.95	848	308	838
2	28	24	16.00	425	883	414
$\beta_5$	$\beta_5$	$\beta_5$	16.81	727	184	716
$\alpha_2$	$\alpha_8$	$\alpha_5$	16.39	806	262	794
$\beta_2$	$\beta_1$	$\beta_2$	16.67	680	134	668
$\beta_8$	$\beta_8$	$\beta_8$	16.95	950	628	720
[ $\beta$	$\beta_8$	$\beta_8$	16.95	266	944	036
$\alpha_8$	$\alpha_9$	$\alpha_9$	16.54	885	561	654
-	-	-				
$\beta_8$	$\beta_7$	$\beta_8$	16.95	116	788	883
$\alpha_8$	$\alpha_8$	$\alpha_8$	16.51	728	398	495
$\alpha_3$	$\alpha_2$	$\alpha_3$	16.32	045	715	812
$\beta$	$\beta_8$	$\beta_4$	16.76	345	014	111
$\beta_5$	[ $\beta$	$\beta_5$	16.81	970	637	735
$\alpha_9$	[ $\beta$	$\alpha_9$	16.54	844	472	592
$\alpha$	$\alpha_8$	$\alpha_4$	16.36	467	093	214
$\alpha_2$	$\alpha_8$	$\alpha_5$	16.39	078	702	824
$\beta$	$\beta_8$	$\beta_4$	16.76	392	015	138
23	28	26	16.07	662	285	408
$\alpha_5$	$\beta$	$\alpha_7$	16.47	005	626	750
$\gamma$	$\beta_7$	$\beta_8$	16.95	286	906	030
22	2	21	15.89	592	212	337
$\beta$	$\beta_7$	$\beta_3$	16.72	210	828	954
22	29	26	16.07	511	128	254
28	28	28	16.14	827	443	570
[ $\alpha$	[ $\alpha$	[ $\alpha$	[16.21	136	751	879



64

Aug 7/195  
 sometimes  
 unlap

b8

F.W.W. Seq. 1

1006

mag.

6860	24 16 710.843	d5	d5	d5	16.39
6913	727.653	d8	p5	p2	16.67
80	753.625	p	p	p	16.58
81	754.598	d9 p7	p8	p5	16.81
82	755.544	p5	p1	p3	16.72
83	.628	d8	d5	d7	16.47
84	757.542	d3	d1	d2	16.28
85	.627	p	d9	p	16.58
86	758.559	d2	d7	d5	16.39
87	.644	d9	d7	d8	16.51
88	759.606	d8	d3	d6	16.43
89	760.531	z7	z1	z4	16.00
90	.614	d3	d5	d4	16.36
6992	.780	z8	z8	z8	16.14
12232	23338.634	d5	p3	d9	16.54
34	340.586	p4	p	p2	16.67
35	.676	d8	p6	p2	16.67
36	341.590	p	p1	p	16.58
37	.689	p2	p	p1	16.63
39	343.558	p	d9	d9	16.54
40	344.538	d2	d1	d1	16.25
41	.791	d5	d8	d6	16.43
12244	347.625	z8	z2	z5	16.03
15421	26501.621	p3	p2	p3	16.72
27	502.647	[p	p	p	16.58
38	504.653	p	p5	p2	16.67
44	505.642	[z			[15.86
53	508.640	d3	d1	d2	16.28
71	510.624	d2	d2	d2	16.28
77	511.653	z8	z8	z8	16.14
83	512.623	d7	d2	d5	16.39
15488	514.648	[p	[p	[p	[16.58
15574	559.611	z3	z8	z6	16.67
15588	561.629	y9	y5	y7	15.79
15607	563.608	d9	p5	p2	16.67
21	564.625	p2	p8	p3	16.81
29	565.502	d8	d9	d9	16.54
40	566.612	[p	[p	[p	[16.58
49	567.522	y	p5	p8	16.95
59	568.516	p2	d8	p	16.58
70	570.518	z8	d3	d1	16.25
78	571.493	d8	p5	p2	16.67
84	572.516	d	z2	z6	16.07
15691	573.519	z8	d1	z9	16.17

S B plots  
 N is bar

z8  
 d8  
 d4  
 z8  
 d8  
 d9  
 z4  
 d-2  
 z7  
 d  
 d1  
 d  
 d8  
 d8  
 d7  
 z  
 z  
 z7  
 z7  
 d4  
 p2  
 d5  
 d7  
 z8  
 d8<sup>2</sup>  
 p5  
 -  
 z8  
 d8  
 z8  
 z8  
 z8  
 d  
 d8  
 y5  
 z8  
 d  
 d8  
 y3  
 z2  
 d2  
 d8  
 z9  
 y8<sup>x</sup>  
 z3



F.W.W. Aug. 1  
Lindsay. 733 equals 196 Leavitts  
183801 183189 adapted  
819 549 (41)

69

73

28	P	d6	16.43	470 243	334
d8	d5	d6	16.43	539 822	131
d4	d3	d3	16.32	323 050	417
28	d	29	16.17	512 258	214
d8	P	d9	16.54	686 431	989
d9	d2	d6	16.43	701 447	058
24	23	23	15.96	053 797	627
d <sup>22</sup>	28 <sup>23</sup>	28 <sup>22</sup>	15.93 16.17	069 813	696
27	28	28	16.14	240 984	460
d	28	29	16.17	256 999	530
d1	28	29	16.17	432 175	318
d	d	d	16.21	602 345	076
d8	P	d9	16.54	618 360	144
d8	d8	d8	16.51	648 390	280
d7	P3	P	16.58	664 381	154
Z	21	Z	15.86	023 739	754
Z	Z	Z	15.86	040 755	828
27	28	27	16.10	207 922	577
27	d2	d	16.21	226 941	658
d4	d8	d6	16.43	569 283	190
P2	d8	P	16.58	749 462	993
d5	P	d7	16.47	796 509	200
d7	d	d4	16.36	317 028	523
28	27 <sup>21</sup>	27 <sup>22</sup>	15.86 16.18	024 805	377
d8 <sup>25</sup>	22	28	16.14	213 993	
P5	P3	P4	16.76	582 261	
-					
28	d3	d	16.21	314 091	
d8	d8	d8	16.51	679 455	
28	28	28	16.14	868 643	
28	22	25	16.03	047 821	
d	d	d	16.21	419 192	
d8	d8	d8	16.51	683 428	903
Y5	23	Y9	15.84	054 798	556
28	d	29	16.17	418 161	178
d	d8	d4	16.36	605 347	012
d8	d9	d9	16.54	766 508	730
Y3	Z	Y6	15.77	970 711	640
22 <sup>Y1</sup>	X3	Y2	15.68	137 878	386
d2	29	d1	16.25	320 060	201
d8	d8	d8	16.51	688 427	841
29	d5	d2	16.28	867 605	640
Y8 <sup>X8</sup>	X9	Y2	15.68	055 793	479
23	23	23	15.96	239 976	301



64

Aug 7/1955  
 sometimes  
 unclap

70

F.W.W. Seq. 1

266 Lindsay

6860	24 16 710.843	V8	V5	V6
6913	727.653	V7	V7	V7
80	753.625	V8	V7	V8
81	754.598	V8	V6	V7
82	755.544	V8	V7	V7
83	.628	V8	V7	V7
84	757.542	V9	V7	V8
85	.627	w	V7	V8
86	758.559	V8	V7	V7
87	.644	V7	V7	V7
88	759.606	V9	V9	V9
89	760.531	V3	V6	V4
90	.614	V7	V7	V7
6992	.780	V6	V8	V7
12232	23338.634	V8	V7	V7
34	340.586	V9	V6	V8
35	.676	w	V7	V8
36	341.590	V8	V7	V7
37	.689	V7	V7	V7
39	343.558	V7	V7	V7
40	344.538	V2	V7	V4
41	.791	V7	V7	V7
12244	347.625	V7	V7	V7
15421	26501.621	V7	V7	V7
27	502.647	V7	V7	V7
38	504.653	V7	V6	V7
44	505.642	V7		
53	508.640	V6	V6	V6
71	510.624	V7	V7	V7
77	511.653	V7	V6	V6
83	512.623	V7	V6	V7
15488	514.648	V6	V7	V6
15574	559.611	V	V	V
15588	561.629	V2	V1	V1
15607	563.608	V1	V3	V2
21	564.625	V	V1	V
29	565.502	V	V	V
40	566.612	V4	V2	V3
49	567.522	V5	V2	V3
59	568.516	V2	V2	V2
70	570.518	V5	V3	V4
78	571.493	V4	V3	V3
84	572.516	V	V6	V3
15691	573.519	JV	V	V1

X:  
 X:  
 X:  
 X:  
 X2  
 X:  
 w5  
 w X  
 X5  
 X3:  
 X3:  
 Y  
 X2  
 X1:  
 w7  
 Z7  
 X3  
 X2  
 X  
 Y8  
 w2 u  
 w3  
 w2:  
 w2:  
 Y: u  
 X  
 -  
 X2  
 Y2  
 w5 X  
 X5  
 w5  
 Y X  
 Y8  
 X5  
 Z  
 X2  
 Y1 X  
 X9  
 w5  
 X3  
 X2  
 X3  
 X2

SB plots  
 N is for



272 Lindsay

351810  
347009

X:	w3	w6:	15.38	042	813
X:	X3	X1:	15.48	956	646
X:	w8:	w9:	15.44:	093	659
X:	w3	w	15.26	435	996
X2	X2	X2	15.50	768	324
X:	X:	X:	15.46:	797	354
w5	w8	w6	15.38	471	018
w <sup>x</sup>	x1	w7	15.40	501	047
X5	Y3	X9	15.62	829	371
X3:	Y	X7:	15.59	858	400
X3:	X	X2:	15.50:	197	734
Y	X3	X7	15.59	522	055
X2	X7	X4	15.53	552	084
X1:	X3	X2:	15.50:	610	141
w7	w8	w7	15.40	765	716
Z7	Z7	Z7	16.10:	451	393
X3	Y1	X7	15.59	483	425
X2	X2	X2	15.50	805	742
X	w8	w9	15.44	840	776
Y8	Z	Y9	15.84	497	425
w2 <sup>w8</sup>	X5	w8	15.42	842	765
w3	w8	w6	15.38	931	852
w2:	V5:	w3:	15.32:	928	836
w2:	w	w1:	15.28:	535	301
Y:	w <sup>3</sup> w3	w9	15.44	896	657
X	X8	X4	15.53	602	353
-					
X2	Y	X6	15.57	005	737
Y2	Y5	Y4	15.73	703	425
w5 <sup>x</sup>	X3	w9	15.44	065	782
X5	X2	X3	15.51	406	119
w5	w8	w6	15.38	118	821
Y <sup>x8</sup>	Z3	Y4	15.73	937	424
Y8	Y	Y4	15.73	647	124
X5	X	X3	15.51	343	811
Z	Z4	Z2	15.93	701	164
X2	X5	Z4	16.00	009	468
Y <sup>x8</sup>	w8	X5	15.55	400	853
X9	X7	X8	15.60	720	169
w5	X	w7	15.40	070	514
X3	X9	X6	15.57	774	209
X2	w8:	X:	15.46:	117	547
X3	X	X1	15.48	477	902
X2	X2	X2	15.50	830	250



72

F. W. W. Seq. 1

83 Leavens

mag.

6860	2416710.843	V[ $\gamma$	$\gamma$	$\gamma$	[17.04]
6913	727.653	V[ $\gamma$			[
80	753.625	V[ $\gamma$			[
81	754.598	V[ $\gamma$			[
82	755.544	V[ $\beta$			[16.58
83	.628	V[ $\gamma$			[17.04]
84	757.542	V[ $\gamma$			[
85	.627	u[ $\gamma$			[
86	758.559	V[ $\gamma$			[
87	.644	V[ $\gamma$			[
88	759.606	V[ $\gamma$			[
89	760.531	V[ $\gamma$			[
90	.614	V[ $\gamma$			[
6992	.780	V[ $\gamma$			[
12232	23338.634	VZ3	Z8	Z6	16.07
34	340.586	Vd	d2	d1	16.25
35	.676	u d8	d3	d5	16.39
36	341.590	V d9 d2 d	d4		16.36
37	.689	V d8	d7	d8	16.51
39	343.558	VZ8	d3	d1	16.25
40	344.538	V d8	d8	d8	16.51
41	.791	V d2	d8	d5	16.39
12244	347.625	VP	P2	P1	16.63
15421	26501.621	V[ $\beta$	-		
27	502.647	V[ $\beta$	[ $\beta$	[ $\beta$	[16.58
38	504.653	V[ $\gamma$	$\gamma$	$\gamma$	[17.04
44	505.642	V -			
53	508.640	V[ $\gamma$	$\gamma$	$\gamma$	[17.04
71	510.624	V[ $\alpha$	[ $\beta$	[ $\beta$	[16.58
77	511.653	V[ $\beta$	$\gamma$	$\gamma$	[17.04
83	512.623	V[ $\beta$	$\gamma$	$\gamma$	[17.04
15488	514.648	V[ $\beta$	[ $\beta$	[ $\beta$	[16.58
15574	559.611	VP	P	P	16.58
15588	561.629	VP3 d8	d	d7	16.47
15607	563.608	VP	d2	d6	16.43
21	564.625	VP	P5	P2	16.67
29	565.502	Vd	d5	d3	16.32
40	566.612	V d2	d2	d2	16.28
49	567.522	VZ8	Z8	Z8	16.14
59	568.516	V d4	d6	d5	16.39
70	570.518	V d5 Z8	Z3	Z9	16.17
78	571.493	V d3	Z8	d	16.21
84	572.516	VZ5	Z8	Z7	16.10
15691	573.519	J Z Z8	d	Z6	16.07

S.B. plots  
N is suburban



F.W.W. Aug. 1

86 Leavens

73

.515996

.568736

.568627

.568627

adapted

$\gamma$	$\gamma$	$\gamma$	17.04:	728	658	270	236
$\alpha_6$	$\alpha_7$	$\alpha_6$	16.43	402	618	828	795
$\gamma$	$\gamma$	$\gamma$	[17.04:	803	390	597	563
$\gamma$	$\gamma$	$\gamma$	[	305	943	150	117
$\beta$	$\gamma$	$\gamma$	[	794	481	688	655
$\alpha_8$	$\alpha_7$	$\alpha_7$	16.58:	837	529	736	702
$\beta$	$\alpha_9$	$\beta$	16.58	825	617	824	791
$\alpha$	$28^\alpha$	$29$	16.17	868	666	873	839
$\gamma$	$\gamma$	$\gamma$	17.04:	349	196	403	369
$\gamma$	$\gamma$	$\gamma$	[17.04:	393	244	451	417
$\beta_3$	$\beta_2$	$\beta_3$	16.72	890	791	998	964
$\gamma$	$\gamma$	$\gamma$	[17.04:	367	317	524	490
$\gamma$	$\gamma$	$\gamma$	[	410	364	571	538
$\gamma$	$\gamma$	$\gamma$	[	495	459	665	632
$\gamma$	$\beta_8$	$\beta_9$	16.99	642	521	624	977
$\gamma$	$\gamma$	$\gamma$	[17.04:	649	631	134	087
$\gamma$	$\gamma$	$\gamma$	17.04:	695	683	185	138
$\gamma$	$\gamma$	$\gamma$	[	167	202	705	658
$\gamma$	$\gamma$	$\gamma$	[	218	259	761	714
$\alpha_8$	$\alpha_5$	$\alpha_6$	16.43	182	322	824	777
$\gamma$	$\gamma$	$\gamma$	[17.04:	688	879	381	335
$\beta$	$\gamma$	$\gamma$	[	819	023	525	478
$\beta$	$\beta_8$	$\beta_8$	16.95:	281	635	137	090
$\beta$	-						
$\beta$	$\beta$	$\beta$	[16.58	260	009	174	121
$\gamma$	$\gamma$	$\gamma$	[17.04:	295	150	314	261
-							
$\gamma$	$\gamma$	$\gamma$	[	352	418	581	528
$\beta$	$\beta$	$\beta$	[16.58	376	546	710	656
$\beta$	$\beta$	$\beta$	[	907	131	295	242
$\beta_2$	$\alpha_8$	$\beta$	16.58	407	683	846	793
$\beta_5$	$\beta_1$	$\beta_2$	16.67:	452	835	998	945
$\beta$	$\beta$	$\beta$	[16.58	653	407	565	512
$\gamma$	$\beta$	$\gamma$	[17.04:	694	555	712	659
$\beta_8$	$\beta_5$	$\beta_7$	16.90:	715	680	838	785
$\beta$	$\beta$	$\beta$	[16.58	240	258	416	352
$\alpha_5$	$\alpha_9$	$\alpha_7$	16.47	693	757	915	862
$\beta$	$\beta$	$\beta$	[16.58	265	389	546	493
$\beta_7$	$\gamma$	$\beta_7$	16.90	735	906	063	010
$\gamma$	$\gamma$	$\gamma$	[17.04	248	472	629	575
$\gamma$	$\gamma$	$\gamma$	[	281	610	767	714
$\beta$	$\gamma$	$\gamma$	[	784	165	321	268
$\beta$	$\alpha_1$	$\alpha_5$	16.39:	311	746	903	850
$\beta$	$\alpha$	$\beta$	[16.58	829	317	473	420



582988  
437988  
576704  
512820  
429520  
2500

2r	17 04	713	788						d2
β	16 58	766	660						y2
β3	16 72	017	606						β8
β1	16 63	267	550						d2
β1	16 63	854	991						β3
γ	17 04	433	426						β8
28	16 14	912	950						γ
α6	16 43	039	796						d2
γ	17 04	999	020						β8
γ	17 04	368	587	416	628	669	727		d2
α5	16 39	954	027	997	144	101	.23		γ
β7	16 90	495	434	535	620	500	.694		β8
γ	17 04	538	466	577	657	531	.731		d2
27	16 10	114	899	149	165	956	.225		β8
28	16 14	140	918	175	147	975	.247		β8
2r	17 04	703	341	733	682	389	.730		d2
27n	16 10	283	777	309	192	877	.227		β8
α2	16 58	449	653	467	218	676	.228		γ
α8	16 57	611	526	620	240	532	.224		β8
γ	17 04	194	964	199	753	961	.324		β8
28	16 51	779	404	780	268	393	.226		γ
β7	16 90	526	716	574	805	680	.724		β8
γ	17 04	232	257	156	463	094	.191		β8
α3	16 32	856	725	775	011	553	.726		d2
β2	16 95	718	875	616	529	662	.180		β8
β2	16 67	285	302	179	028	050	.667		β8
β2	16 58	975	572	857	515	326	.117		d2
β2	16 07	063	638	945	592	390	.192		β8
2r	17 04	639	334	435	775	919	.120		β8
γ	17 04	664	353	460	796		.141		β8
β8	16 95	693	375	489	822		.166		β8
β8	16 95	736	407	531	859	990	.203		β8
β3	16 58	812	464	667	927	047	.269		β8
28	16 14	219	770	011	285	346	.618		β8
			902	186	440				β8

27256  
57  
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59  
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26  
Compared with  
the S image



195

F.W.W. Seq. 1

735 ~~S~~ N  
5857

75

83

	mag.	
d2	16.28	
y2	15.68	
B8	16.95	
d2	16.28	
[2	[17.04:	
B3	16.72	
B8	16.95	
7	17.04:	
d7	16.47	
B8	16.95	
d9	16.54	
727	7	17.04:
23	[B	[16.58
694	z8	16.14
731	d7	16.47
225	B8	16.95
247	[2	[17.04:
730	d2	16.28
227	[2	[17.04:
228	B8	16.95
524	d	16.21
524	B8	16.95
226	z8	16.14
724	7	17.04:
191	[2	[17.04:
726	d2	16.28
180	B7	16.90
667	[2	[17.04:
805	d8	16.51
117	z9	16.17
192	z8	16.14
	z8	16.14
120	[2	[17.04:
141	[2	[17.04:
166	B	16.58
203	[2	[17.04
	[2	[
269	[2	[
618	d	16.21
	B	16.58
	d8	16.51

368

957

501

544

123

149

714

297

469

635

221

210

525

311

938

813

383

544

081

170

038

799

824

853

896

945

973

382

559

023



478833  
338

8833  
338295  
344

344 295  
345 415

345427

657311

(sp.)  
31156

379290 (SP. moon)

[illegible]

27256  
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59  
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F.W.W. Seq. 1

538 Leavitt = 732 Lindsay

mag      .333333      .308583      .307703      .308197

B8	16.95	210	207	287	838
A4	16.36	406	640	622	228
B8	16.95	408	420	394	004
Z8	16.14	074	889	856	470
B9	16.99	409	199	165	779
Y8	15.82	745	509	474	090
Z8	16.14	076	816	780	396
X5	15.55	536	821	592	316
B8	16.95	180	418	186	912
B5	16.81	192	355	121	847
Z8	16.14	873	985	749	477
B7	16.90	808	589	305	060
Z4	16.00	148	899	615	370
A8	16.51	453	186	901	656
A2	16.28	477	208	923	678
A9	16.54	807	513	227	983
B3	16.72	822	527	241	997
Y2	15.68	143	825	538	294
A8	16.51	475	132	844	601
A8	16.51	142	749	460	218
B5	16.81	806	364	073	832
B8	16.95	139	672	380	140
Z4	16.00	474	983	690	449
Z1	15.89	473	907	611	373
Y	17.04	451	515	207	975
Y8	15.82	807	845	536	305
A2	16.28	444	360	046	818
B9	16.99	768	661	346	118
A8	16.51	860	746	430	203
B8	16.95	735	555	238	012
B7	16.90	785	602	284	058
A4	16.36	418	113	791	568
B9	16.99	404	729	394	178
B	16.58	418	742	407	191
A8	16.51	434	758	422	206
B8	16.95	459	780	445	228
A	16.21	486	806	470	254
X9	15.62	503	821	485	269
A9	16.47	735	036	700	484
A	16.21	836	129	793	577
B5	16.81	100	374	037	821



1006 F.W.W. Aug. 1

mag.

1.897065  
1.920065

21154	2429454.660 <sup>0</sup>	d6	16.43	862	21
21459	566.245 <sup>x</sup>	z4	16.00	112	d7
66	575.253 <sup>4</sup>	P	16.58	408	z4
87	583.253 <sup>x</sup>	P2	16.67	769	d
88	584.258 <sup>v</sup>	Y	17.04:	698	P
93	585.264 <sup>v</sup>	P9	16.99	630	z1
97	586.258 <sup>v</sup>	z5	16.03	538	y8
940	806.637 <sup>x</sup>	Y	17.04:	680	d
56	808.570 <sup>v</sup>	P3	16.72	392	z7
69	811.606 <sup>v</sup>	z8	16.14	221	d
82	813.648 <sup>v</sup>	z9	16.17	142	d8
22117	867.455 <sup>x</sup>	P2	16.67	455	d5
21	868.460 <sup>1</sup>	P7	16.90	385	d2
28	869.389 <sup>v</sup>	P3	16.72	168	y8
29	.462 <sup>3</sup>	P	16.58	308	y8
33	870.451 <sup>v</sup>	P3	16.72	207	d2
34	.495 <sup>q</sup>	P7	16.90	292	z8
39	871.460 <sup>v</sup>	P	16.58	145	d5
45	872.455 <sup>6</sup>	P	16.58	055	d8
51	874.456 <sup>v</sup>	d2	16.28	897	z7
56	876.448 <sup>q</sup>	z3	15.96	564 722	z8
62	877.448 <sup>v</sup>	z3	15.96	461 642	d
68	878.453 <sup>v</sup>	z5	16.03	367 572	d8
73	881.449 <sup>v</sup>	P8	16.95	051 324	z4
89	896.383 <sup>x</sup>	d7	16.47		z2
94	897.452 <sup>3</sup>	d8	16.51		z4
96	902.361 <sup>2</sup>	z829	16.14		z2
22201	903.335 <sup>v</sup>	d4	16.36		z7
6	.670 <sup>04</sup>	z6	16.67		z9
9	906.234 <sup>v</sup>	P3	16.72		P
12	.385 <sup>v</sup>	P	16.58		P
14	911.283 <sup>v</sup>	z6	16.07		d8
46	926.241 <sup>v</sup>	d1 z8	16.25		P
47	.283 <sup>v</sup>	z5 z8	16.03		d1
48	.333 <sup>v</sup>	y3 y5	15.75		d1
50	.406 <sup>v</sup>	z6 z5	16.07		d8
52	.489 <sup>v</sup>	z8 z8	16.14		d
53	.538 <sup>v</sup>	z9 d	16.17		d6
55	927.236 <sup>v</sup>	d2	16.28		d8
62	.538 <sup>v</sup>	d8	16.51		P
22266	928.330 <sup>v</sup>	d2 d8 d5	16.59		d

22256  
57  
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d8  
(d5  
d. 072 v  
z5

22264 d8  
65 d8  
70 d7:  
72 z3



Lindsay 733 equals 196 Leggett

The 1006

79

F.W.W. Leg. 1

183808

183189

mag.

21 537	15.89	796 770
27 986	16.47	305 211
24 369	16.00	961 861
2 925	16.21	431 826
8 749	16.58	616 571
21 573	15.89	801 695
Y8 388	15.82	954 877
2 999	16.21	490 248
27 584	16.10	845 602
2 072	16.21	403 158
28 745	16.51	778 532
25 843	16.39	665 389
22 666	16.28	853 573
Y8 428	15.82	023 743
Y8 488	15.82	037 757
22 298	16.28	219 935
28 335	16.14	227 946
25 125	16.39	404 122
28 941	16.51	557 305
27 580	16.10	955 672
28 213	16.14	321 037
2 033	16.21	505 220
28 856	16.51	659 404
24 312	16.00	240 953
22 551	15.93	955 655
24 427	16.00	181 884
22 450	15.93	084 784
27 248	16.10	263 962
29 474	16.17	313 012
8 624	16.58	796 493
8 748	16.58	823 521
28 762	16.51	724 418
8 021	16.58	473 158
21 055	16.25	481 166
21 096	16.25	490 175
28 156	16.51	503 158
2 224	16.21	519 203
25 264	16.39	528 212
28 836	16.51	656 340
8 084	16.58	711 396
2 733	16.21	857 541

22189	896.383		
22192	897.228		
22194	897.452		
22196	29902.361	1614	964 722
22199	903.227	1611	762 365
22201	335	1636	862 570
3	426	1658	945 743
5	534	1628	045 948
6	610	1607	115 092
9	906.234	1667	535 070
11	327	1654	620 246
12	385	1658	674 356
14	911.263	1607	190 648
46	926241	1625	982 024
47	283	1603	020 104
48	333	1575	066 199
50	406	1607	134 337
52	489	1614	210 495
53	538	1617	256 588
55	927.236	1628	899 912
56	278	1651	938 998
57	325	1639	981 081
59	403	1621	053 229
61	486	1603	130 386
62	538	1651	178 485
64	928.242	1651	827 820
65	283	1651	864 898
66	330	1639	908 987
70	938.243	1647	048 793
72	337	1546	135 971

V. 897 056



266 Lindsay F.W.W. Seq. 1

21154	2429454.660 <sup>0</sup>	w7 r8	1512
21459	566.245 <sup>1</sup>	X1	1548
66	575.253 <sup>4</sup>	X7	1559
87	583.253 <sup>2</sup>	X	1546
88	584.258 <sup>1</sup>	X	1546
93	585.264 <sup>1</sup>	X8	1560
97	586.258 <sup>1</sup>	w9	1544
940	806.637 <sup>1</sup>	X V8	1512
56	808.570 <sup>1</sup>	V8	
69	811.606 <sup>1</sup>	V8	
82	813.648 <sup>1</sup>	V8	
22117	867.455 <sup>1</sup>	X V6	
21	868.460 <sup>1</sup>	V8	
28	869.389 <sup>1</sup>	V8	
29	.462 <sup>2</sup>	V8	
33	870.451 <sup>1</sup>	V7	
34	.495 <sup>1</sup>	V7	
39	871.460 <sup>1</sup>	V7	
45	872.455 <sup>1</sup>	V7	
51	874.456 <sup>1</sup>	V7	
56	876.448 <sup>1</sup>	V8	
62	877.448 <sup>1</sup>	V7	
68	878.453 <sup>1</sup>	V7	
73	881.449 <sup>1</sup>	V8	
89	896.383 <sup>1</sup>	X V8	
94	897.452 <sup>3</sup>	V7	
96	902.361 <sup>1</sup>	V7	
22201	903.335 <sup>1</sup>	V7	
6	.670 <sup>04</sup>	V7	
9	906.234 <sup>1</sup>	V7	
11	.385 <sup>1</sup>	V7	
12	.385 <sup>1</sup>	V7	
14	911.283 <sup>1</sup>	V7	
46	926.241 <sup>1</sup>	V8	
47	.283 <sup>1</sup>	V7	
48	.333 <sup>1</sup>	V7	
50	.406 <sup>1</sup>	V7	
52	.489 <sup>1</sup>	V7	
53	.538 <sup>1</sup>	V7	
55	927.236 <sup>1</sup>	V7	
62	.538 <sup>1</sup>	V4	
22266	928.330 <sup>1</sup>	V7	

27256  
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Plate

22264 29928.242  
65 283  
70 938.243  
72 337  
75 454  
76 502  
958.307

272 Lindsay



overlapping stars  
272 Lindsay

F.W.W. Sep. 1

349650 327428 351810 347009 354401 337009 295009

V8	15.12	822	280	444	032	979	484	
Z3	15.96	837	816	701	753	480	091	
W3	15.32	987	766	870	879	669	123	
X <sup>1</sup> X <sub>3</sub>	15.46 <sup>51</sup>	784	385	684	655	501	819	
Y3	15.71	136	714	038	004	457	161	
d5	16.39	487	044	392	353	213	500	
Y5	15.75	835	369	741	698	565	835	
X8	15.60	891	527	273	171	580	105	
X: def.	15.46	566	160	953	842	263	756	
X2	15.50	628	154	021	895	338	780	
X8	15.60	342	823	739	604	061	468	
X2	15.50	156	441	669	276	109	601	162
X4: Y	15.55 <sup>64</sup>	507	770	023	624	465	940	464
X8:	15.60:	832	074	350	947	793	253	738
X8 Y3	15.60 <sup>71</sup>	857	098	375	972	819	277	760
X1	15.48	203	422	723	315	169	611	052
X2	15.50	218	436	739	330	185	626	065
Y8	15.82	556	752	078	665	527	951	349
Z2 Y <sup>49</sup>	15.82 <sup>84</sup>	904	078	428	011	879	286	643
Z2 Y <sup>47</sup>	15.82 <sup>89</sup>	603	733	132	705	587	960	233
X8	15.60	300	386	833	396	292	632	821
Y5	15.75	650	713	185	743	646	969	116
X	15.46	001	042	538	092	002	307	412
W2 X <sup>46</sup>	15.80 <sup>46</sup>	049	023	592	132	063	317	296
Z7 Y <sup>22</sup>	16.10 <sup>593</sup>	270	913	846	314	349	350	702
X2	15.50	644	263	222	685	728	710	017
X4 X2	15.53	360	870	950	388	466	365	466
X8	15.60	701	189	292	726	810	693	753
X	15.46	797	279	389	822	908	786	834
X5 X <sup>7</sup>	15.54 <sup>7</sup>	715	138	312	732	837	670	608
Z2 X <sup>7</sup>	15.82 <sup>59</sup>	767	188	365	785	890	721	653
Y Y <sup>1</sup>	15.64	480	791	088	484	624	371	097
X1	15.48	710	689	351	675	919	412	510
X2	15.50	725	703	366	689	934	427	523
Y1	15.66	742	719	383	707	952	444	537
X2	15.50	768	743	409	732	978	468	559
V8	15.12	797	770	438	761	007	496	583
W2	15.30	814	786	455	778	024	513	598
X3 X <sup>78</sup>	15.51	058	015	761	020	271	748	804
W2	15.40 <sup>me</sup>	164	114	807	125	338	804	853
Z1	15.89	440	373	086	400	659		127
Z	15.86	410	344	055	369	627	087	101
Z	15.86	424	358	069	383	642	101	113
25: X8	15.83 <sup>60</sup>	907	619	573	840	168	457	051
X8	15.60	939	650	606	872	701	489	079
Y	15.64	980	688	647	913	243	528	113
Y Y <sup>1</sup>	15.89 <sup>64</sup>	997	704	664	930	760	545	127
X2 X <sup>1</sup>	15.50 <sup>122</sup>	704	704	704	704	704	704	704



27256  
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86 Levens F.W.W. leg. 1

.515996 .568736 .568629 .568627

[Y	17.04	487	925	774	715
Y	17.04	064	388	224	165
[Y	17.04	712	511	346	287
Z1	15.89	840	061	895	836
[Y	17.04	359	632	467	408
Y	17.04	878	205	039	980
Y	17.04	391	770	604	545
d2	16.28	106	107	918	858
B8	16.95	103	207	017	958
[Y	17.04	669	933	744	684
27	16.10	723	095	905	845
[Y	17.04	487	697	501	441
B8	16.95	006	268	072	013
[Y	17.04	485	797	601	541
[Y	Σ	523	838	642	582
Y	17.04	033	401	205	145
Y	17.04	056	426	230	170
[Y	Σ	554	975	778	719
[Y	Σ	067	540	344	284
[Y	Σ	100	679	482	422
[Y	Σ	128	811	615	555
[Y	Σ	644	380	183	124
[Y	Σ	162	952	755	695
[Y	Σ	708	656	458	399
d6	16.43	414	149	950	890
[Y	17.04	966	757	558	498
[Y	Σ	499	549	350	290
d2	16.28	001	103	903	844
-Y	17.04	143	259	060	000
[Y	Σ	497	752	552	492
[Y	Σ	575	838	638	578
[Y	Σ	102	623	423	363
d8	16.51	821	131	928	869
d8	16.51	842	154	952	892
d8	16.51	868	183	981	921
B8	16.95	906	224	022	962
Y	17.04	949	272	069	010
B7	16.90	974	299	097	037
[B	Σ 16.58	334	696	494	434
[B	Σ 16.58	490	868	666	606
B	16.58	898	319	116	056



84

4 objects blurred  
 together using plates on  
 the early plates

v.m. 1007

1008

1007

F.W.W. Seq. 2

close to other stars; difficult to measure specially  
 on these early plates.

383750  
 383860  
 offset

350

1008

A 6860	2416710.843	d3:	d	d1	1628:	786	624:
6913	727.653	09:	02	05:	1539:	237	077
80	753.625	07	05	06	1542	203	046
81	754.598	23	y5	y9	1542 <sup>1639</sup>	577	420
82	755.544	d2	d3	d2	1633	940	743
83	.628	d2	z3	z4:	1628	972:	415:
84	757.542	d2	d	d1	1628	707	550
85	.627	d3	d	d1	1628	739	583
86	758.559	X: y8 y3	y6:		1572:	097	940
87	.644	03	09	06	1542	130	913
88	759.606	d3	d	d2	1633	499	342
89	760.531	d	d3	d1	1628	554	097
90	.614	d3	P	d6	1656	886	729
92	.780	:	:			949	793
12232	23338.634	d3	d6	d5	1650	201	765
34	340.586	d3	d2	d2	1633	950	517
35	.676	z5:	d2:	z9:	1614:	984	552
36	341.590	d8	d5	d6	1656	335	903
37	.689	d2	d8	d5	1650	373	941
39	343.558	d	d3	d1	1628	090	658
40	344.538	02	0	01	1529	466	034
41	.791	02	08	05	1539	503	131
12244	347.625	08	y	09	1550	051	219
15421	26501.621		z5:				
27	502.647	z2:	y8	z:	1545:	391	306
38	504.653	08	y3:	y:	1553:	160	076
44	505.642	[z	-	-		540	456
53	508.640	z8	z4	z6	1607	691	606
71	510.624	d	z7	z9	1618	452	368
77	511.653	z1 <sup>x8</sup>	z3	z2	1542 <sup>1667</sup>	847	763
83	512.623	08	y2	y	1553	219	135
15488	514.648	z8	z7	z8	1615	996	913
15574	559.611	y8	z:	y9	1542	251	172
15588	561.629	z2	z8	z5	1603	025	947
15607	563.608	d8	P2	P	1678	784	706
21	564.625	y5	y8	y7	1575	175	097
29	565.502	d	d1	d1	1622:	511	433
40	566.612	z8:	d	z9:	1618:	937	860
49	567.522	z5	z4	z4	1600	246	209
59	568.516	z5	z8	z7	1611	668	590
70	570.518	d	d3	d2	1633	436	359
78	571.493	[d	:	:			
84	572.516	05	y	07	1545	203	126
15691	573.519	d:	z5	z7:	1611:	588	511

V1	.660	1465
V7	740	1506
V4	786	1485
V3	842	1478
	848	
W1	963	1528
W	023	1526
X4	214	1553



F.w.w. Sep. 2

Pded by Craig 85

Sep. 1

93

1008

- 93

 $P^1 = 356198$ Variable F.w.w.  
leavers.

y6	y5	y6	1572
y2	y5	y3	1503
d8	d8	d8	1667
p2	p2	p2	1682
y3	y8	y6	1572
y8	y7	y7	1575
d9	[p	d9:	1672:
p	p2	p1	1680
y8	y8	y8	1579
y3 <sup>25</sup>	22	21	1579
d5	d8	d6	1656
:	[p	[p:	[1678:
p8	p8	p8	1696
i	d8:	d8:	1667:
p3	p5	p4	1687
d7	d7	d7	1661
d5:	d6:	d5:	1650:
z8	d2	d	1622
y8	y5	y6	1572
d5	[p	d5:	1650:
y2	y1	y1	1556
y3	09	y1	1556
09	y5	y2	1559
	[d		[1622
z8:	z8:	z8:	1615:
[d	d8	d8	1667
[z	z8	z8:	1615:
09	y5	y2	1559
d7	d2	d4	1644
y2	y3	y3	1563
p	p	p	1678
z5	z3	z4	1600
d8	d9	d8	1667
d9	d9	d9	1672
p	p5	p3	1685
y8	z	y9	1582
z5	z4	z4	1600
d2:	d	d1:	1628:
y	y8	y4	1566
z6	z8	z7	1611
y8	z	y9	1582
[d	[d	[d	[1622
[d	[d	[d	[1622
d	z3	z7	1611

1753  
 1726  
 11382  
 1752  
 13776  
 13559  
 13662  
 13747  
 8226  
 8135  
 91



Surely a Variable

462107 463557 463427

463507 463524 463824

463816

adapted

objects blurred  
either way after an  
early plate

6860	2416710.843	[P	P7	P7:	16.93	197	850	256	593	877	890	756
6913	727.653	[P	[P	[P	16.78	965	676	046	384	669	687	553
80	753.625	P5	P1	P3	16.85	967	767	052	422	707	733	599
81	754.598	d4	z9	d2	16.33	417	220	533	873	158	185	051
82	755.544	[P	[P	[P	16.78	854	661	971	312	597	623	489
83	.628	[P	d9	d9:	16.72:	893	700	010	351	636	662	528
84	757.542	d9	P	d9	16.72	777	591	897	238	523	550	416
85	.627	[P	[P	[P	16.78	817	630	937	277	562	589	455
86	758.559	[P	[P	[P	16.78	247	064	369	709	994	022	888
87	.644	[d	[P	[P	16.78	287	104	408	749	034	061	927
88	759.606	P2	P	P1	16.80	731	552	854	195	480	507	373
89	760.531	[P	[P	[P	16.78	159	982	282	623	908	936	802
90	.614	[Y	Y	Y:	17.00:	197	021	321	662	947	975	841
92	.780	[P	[P	[P	16.78	274	098	398	739	024	052	918
12232	23338.634	[P	[P	[P	16.78	946	464	753	620	017	018	832
34	340.586	[P	[P	[P	16.78	848	373	658	525	922	924	737
35	.676	[P	[P	[P	16.78	890	415	699	567	963	966	779
36	341.590	d7	d7	d7	16.61	312	841	123	990	387	390	203
37	.689	[P	[P	[P	16.78	358	887	169	036	433	436	249
39	343.558	d5	d8	d7	16.61	221	757	035	902	299	302	116
40	344.538	[P	[P	[P	16.78	674	213	489	357	754	757	570
41	.791	[P	[P	[P	16.78	791	331	606	474	871	874	687
12244	347.625	[d	[d	[d	16.22	101	650	920	788	184	189	002
15421	26501.621	[d			16.22	584	015	567	687	137	088	876
27	502.647	[d	[d	[d	16.22	059	493	042	162	613	564	352
38	504.653	[d	d4	d4	16.44:	986	427	972	092	543	494	282
44	505.642	[z	[d	[d	16.22	443	887	430	551	001	953	741
53	508.640	[d	d8	d8	16.67:	828	283	419	940	391	343	131
71	510.624	[d	d2	d1	16.22	745	206	739	860	310	264	051
77	511.653	[d	[d	[d	16.22	220	686	218	337	787	741	529
83	512.623	d8	d8	d8	16.67:	669	137	605	786	237	191	979
15488	514.648	d1:	[P	d1:	16.22:	604	080	604	725	uncl.		
15574	559.611	[P	[P	[P	16.78	382	013	441	566	017	985	772
15588	561.629	[P	[P	[P	16.78	315	952	376	501	952	921	708
15607	563.608	P8	P7	P8	16.96	229	874	293	418	870	839	626
21	564.625	P	[P	P:	16.78	699	347	764	890	341	311	098
29	565.502	[d	[d	[d	16.22	104	755	171	296	748	717	505
40	566.612	d	d5	d3	16.39	617	272	655	811	262	232	020
49	567.522	[P	[P	[P	16.78	038	696	107	232	684	654	442
59	568.516	d5	d8	d6	16.58	497	159	568	693	145	115	903
70	570.518	[P	[P	[P	16.78	422	091	495	621	073	044	831
78	571.493	[d	d8	d8	16.67:	874	544	947	073	525	496	283
84	572.516	[d	[d	[d	16.22	346	021	421	547	999	971	758
15691	573.519	[d	[d	[d	16.22	809	488	886	012	464	436	223



F.W.W. Seg. 2

87

Seg. 1

93

Lindsay 280 close to other stars, difficult to measure.

- 93

Surely a Variable

757 576

814884

763602

762372

762405

adepted

Variable F.W.W.  
leaves

d8	d8	d8	16.67	733	398	433	879	430
lp	p2	p2	16.82	468	097	269	694	246
p8	p1	p4	16.87	144	261	101	494	047
p	p1	p1	16.78	881	054	844	236	789
d3	d4	d4	16.44	598	825	567	957	510
d	d	d & 5	16.22	662	893	631	022	574
[p	[p	[p	[16.78	112	453	092	481	034
p3	[p	p3	16.85	176	522	157	546	099
[p	[p	[p	[16.78	882	281	869	256	809
[d:	[d	[d:	[16.22	946	351	934	321	874
p	d3	d7	16.61	675	135	669	054	607
d	d8	d8	16.67	376	888	375	759	313
p	p5	p2	16.82	439	956	438	823	376
z8	z8	z8 & 2	16.15	565	091	565	949	502
[p	[p	[p	[16.78	789	279	427	721	491
d2	d3 & 5	d3	16.39	268	870	918	209	979
z8	d5	d2	16.33	336	943	987	278	048
p8	p8	p8 fold	16.96	028	688	685	975	745
[p	[p	[p	[16.78	103	769	760	050	820
d3 & 4	d8	d5	16.58	519	292	187	475	245
d2	d3	d2 fold	16.33	267	090	936	222	992
d8	d3	d5	16.50	453	297	129	415	185
[d	[d	[d	[16.22	600	606	293	575	346
	z8:		16.15:		747	691	094	968
[d	[d	[d	[16.22		583	474	876	750
[d	[d	[d			218	006	405	280
[z	[d	[d			023	761	159	034
[d	[d	[d			466	050	445	320
d7	[d	d7	16.67	083	565	957	832	
[d	[d	[d	[16.22		922	351	742	617
[p	[p	[p	[16.78		712	092	481	356
z8	d	z9	16.18	362	638	025	900	
p	[p	p:	16.78:	002	972	304	180	
[p	[p	[p	[16.78		646	513	842	719
p	p1	p	16.78	259	024	351	227	
d9	p & 5	d9	16.78	088	801	126	003	
[d	[d	[d	[16.22		802	470	795	671
[d	[d	[d			707	318	641	518
[B:	[B:	[B:	[16.78:		448	013	335	212
z7	z6 & 8	z6 fold	16.09	258	772	093	969	
p	d9	d9	16.72	890	301	619	496	
[d	[d	[d	[16.22		684	045	362	239
d:	d:	d:	16.22:		518	826	142	019
[d	[d	[d	[16.22		335	592	907	784

17.2

about 1.2  
after

Ir

Ir slightly

Ir

p8 & y

280

1695 to 16

1700

all 5 after

blurred

together

an old

plate



84

objects blured  
 either way after on  
 early plates

var. 101  
 1008

88

F.W.W. Sep. 2

Leavens 79

Study a Variable

6860	2416710.843	$\alpha_7$	[ $\beta$	$\alpha_9$	16.72:	$\alpha_8$
6913	727.653	[ $\beta$	[ $\beta$	[ $\beta$	16.78	$\beta_7$
80	753.626	$\beta_9$	[ $\beta$	$\beta_9$	16.98	$\beta_1$
81	754.598	$\beta_5$	[ $\beta$	$\beta_5$	16.89	$\beta_3$
82	755.544	$\beta_8$	[ $\beta$	$\beta_8$	16.96	$\beta$
83	.628	[ $\beta$	$\alpha_9$	$\alpha_9$	16.72:	$\alpha_8$
84	757.542	$\beta$	$\alpha_9$	$\beta$	16.78	$\alpha_7$
85	.627	[ $\beta$	$\beta$	$\beta$	16.78:	$\alpha_7$
86	758.559	$\beta$	$\alpha_8$	$\alpha_9$	16.72	[ $\beta$
87	.644	$\alpha_1$	$\alpha_3$	$\alpha_1$	16.28:	[ $\beta$
88	759.606	$\beta_2$	$\beta$	$\beta_1$	16.80	$\alpha_8$
89	760.531	$\alpha_8$	$\alpha_3$	$\alpha_6$	16.56	$\alpha$
90	.614	$\beta_3$	$\beta_2$	$\beta_3$	16.85	$\beta_8$
92	.780	[ $\alpha$	[ $\beta$	[ $\beta$	16.78	$\alpha_7$
12232	23338.634	$\beta$	$\beta_1$	$\beta$	16.78	$\beta_7$
34	340.586	[ $\beta$	$\beta_8$	$\beta_8$	16.96	[ $\beta$
35	.676	$\alpha_8$	$\alpha_7$	$\alpha_7$	16.61	[ $\beta$
36	341.590	[ $\beta$	$\beta_8$	$\beta_8$	16.96	$\alpha_7$
37	.689	[ $\beta$	[ $\beta$	[ $\beta$	16.78	$\beta_2$
39	343.558	$\beta_2$	$\beta_2$	$\beta_2$	16.82	$\alpha_8$
40	344.538	$\alpha_9$	$\beta_3$	$\beta_1$	16.80	$\alpha_8$
41	.791	[ $\beta$	[ $\alpha$	[ $\beta$	16.78	$\alpha_8$
12244	347.625	[ $\alpha$	[ $\alpha$	[ $\alpha$	16.22	[ $\alpha$
15421	26501.621	[ $\alpha$				
27	502.647	[ $\alpha$	[ $\alpha$	[ $\alpha$		[ $\alpha$
38	504.653	[ $\alpha$	[ $\alpha$	[ $\alpha$		[ $\alpha$
44	505.642	[ $\alpha$	[ $\alpha$	[ $\alpha$		[ $\alpha$
53	508.640	[ $\alpha$	$\alpha_7$	$\alpha_7$	16.61	[ $\alpha$
71	510.624	$\alpha_2$	$\alpha_8$	$\alpha_5$	16.50	[ $\beta$
77	511.653	[ $\alpha$	$\beta_1$	$\beta_1$	16.78:	[ $\beta$
83	512.623	[ $\beta$	[ $\beta$	[ $\beta$	16.78	[ $\beta$
15488	514.648	[ $\beta$	[ $\beta$	[ $\beta$		$\beta$
15574	559.611	[ $\beta$	[ $\beta$	[ $\beta$		$\alpha_2$
15588	561.629	$\beta_2$	[ $\beta$	$\beta_2$	16.82:	$\beta$
15607	563.608	[ $\beta$	$\beta_2$	$\beta_2$	16.93	$\alpha_5$
21	564.625	[ $\beta$	[ $\beta$	[ $\beta$	16.78	$\beta$
29	565.502	[ $\alpha$	[ $\alpha$	[ $\alpha$	16.22	[ $\alpha$
40	566.612	[ $\alpha$	[ $\alpha$	[ $\alpha$		$\alpha_2$
49	567.522	[ $\alpha$	[ $\beta$	[ $\beta$	16.78	[ $\beta$
59	568.516	$\alpha_5$	$\alpha_7$	$\alpha_6$	16.56	$\alpha_8$
70	570.518	$\alpha_8$	$\alpha_8$	$\alpha_8$	16.67	$\alpha_5$
78	571.493	[ $\alpha$	[ $\alpha$	[ $\alpha$	16.22	[ $\alpha$
84	572.516	$\alpha_9$	[ $\alpha$	$\alpha_9$	16.72:	$\alpha_8$
15691	573.519	[ $\alpha$	[ $\alpha$	[ $\alpha$	16.22	[ $\alpha$



Lindsay 1002a

F.w.w. Seg. 2

surely a variable.528441  
.514301

Lindsay 375

Seg. 2 89

Seg. 1

- 93

93

.865052  
.154913  
.421241Variable F.w.w.  
leaves

d8	d9	d	16.22	403
p7	p7	p7	16.93	049
p1	p2	p2	16.82	406
p3	d9	p1	16.80	906
p	d5	d7	16.61	393
d8	d9	d8	16.67	436
d7	d7	d7	16.61	421
d7	d4	d5	16.50	464
[p	[p	[p	[16.78	944
[p	p3	p3	16.85	987
d8	d7	d8	16.67	482
d	7	7:	17.00:	958
p8	7	p9	16.98	000
X7	[p	X:7'	16.221	086
p7	p8	p7	16.93	091083
[p	p8	p8	16.96	123087
[p	p7	p7	16.93	170133
d7	d3	d5	16.50	653603
p2	p	p1	16.80	705654
d8	d7	d8	16.67	693615
d8	d8	d8	16.67	211119
d8	d9	d9	16.72	345249
[d	[d	[d	[16.22	842707
[d				
[d	[d	[d	[16.22	338
[d	[p	[p	[16.78	369
[z	[d	[d	[16.22	878
[d	[p	[p	[16.78	420
[p	[d	[p	[16.78	440
[p	d8:	d8:	16.67:	970
[p	p8	p8	16.96	468
p	d9	p	16.78	510
d2	d9	d5	16.50	634
p	d5	d8	16.67	672
d5	p	d7	16.61	690
p	p2	p1	16.80	213
[d	[d	[d	[16.22	664
d2	d7	d5	16.50	235
[p	[p	[p	[16.78	703
d8	d8	d8	16.67	214
d5	d3	d4	16.44	244
[d	[d	[d	[16.22	745
d8	[d	d8	16.67	271
[d	[d	[d	[16.22	787

z8	z	z4	1600	748	727	990
p2	p	p1	1650	290	331	083
z4	z2	z3	1596	757	354	041
p6	p5	p6	1691	598	505	452
p5	p1	p3:	1655:	417	651	851
[p	[p	[p	[1678	489	665	886
d	d	d	1622	145	961	694
d7	d7	d7	1661	219	974	730
08	y3	y	1553	025	119	123
z2	z	z1	1589	098	132	159
d1	z5	z8	1615	931	281	565
p	p7	p3	1655	731	424	955
z8	d2	d	1622	803	437	990
z7	d2	d	1622	946	463	060
p7:	[p	p7:	1693:	132	458	526
d8	p	d9	1672	821	760	350
p	p	p	1678	898	774	388
z9	d	z9	1618	689	916	774
p1	d8	p	1678	775	931	815
d1	d4	d3	1639	391	221	604
d8	p	d9	1672	239	372	018
z5	z3	z4	1600	458	412	124
y8::	-					
[d			[1622	280	446	120
d	d3	d2	1633	168	604	553
[d	[p	[p	[1678	903	915	400
[z	[d	[d	[1622	759	068	817
z1	z	z1	1589	352	533	082
[p	[d	[p	[1678	068	840	919
[d	[d	[d	[1622	958	000	353
d1	z7	z9	1618	797	150	763
d7	p	d8	1667	549	464	617
[p	[p	[p	[1678	445	429	589
d9:	p:	d9:	1672:	190	742	440
[p	p5	p5	1689	902	048	275
[p	[p	[p	[1678	782	206	704
y8	y8	y8	1579	541	342	074
z2	z8	z8	1603	501	513	543
z2	z3	z4	1600	288	654	927
d9	d7	d8	1667	148	808	346
p2	[p	p2	1652	880	119	191
z8	z9	z9	1618	723	270	602
y1	y1	y1	1556	608	428	034
[d	[d	[d	[1622	476	583	457



84

objects blurred  
scattered away after an  
early plate

90

F.W.W. Sep. 2

1004

close to another star; difficult to

Lindsay 372

349153  
349005

6860	2416710.843	[P	[P	[P	[1678	455895	078	y3	07	y	1553	641	168	
6913	727.653	[Y	[P	[Y	[1700	238028	089	y	08	09	1550	510	034	
80	753.625	[Y	[P	[Y	[1700	629049	465	y5	07	y1	1556	578	099	
81	754.598	P4	P7	P6	1691	906462	929	z	y2	y6	1572	918	438	
82	755.544	[P	[P	[P	[1678	175863	380	02	03	02	1531	248	769	
83	.628	[P	[P	[P	[1678	199899	420	x9	04	02	1531	278	798	
84	757.542	[P	[P	[P	[1678	744711	332	05	06	05	1539	946	466	
85	.627	[P	[P	[P	[1678	768747	372	03	03	03	1534	976	499	
86	758.559	d8	P	d9	1672	033142	816	05	07	06	1542	301	821	
87	.644	P	[P	P:	1678	057179	857	03	03	03	1534	331	850	
88	759.606	[Y	[Y	[Y	[1622	331587	315	z4	z8	z6	1607	667	186	
89	760.531	P	P	P	1678	594979	756	03	y	06	1542	990	509	
90	.614	d7	d4	d6	1656	618014	796	05	y1	y5	y	1553	019	538
92	.780	[P	[P	[P	[1678	665085	875	03	05	04	1537	077	596	
12232	23338.634	d8 d3	d3	d3	1678	545259	536	07	y2	y8	y2	1559	754	300
34	340.586	P8	P8	P8	1696	100087	466	z2	z1	z1	1589	436	981	
35	.676	d3 d2	d8	d5	1650	126126	509	y6	y4	y5	1569	467	013	
36	341.590	P8	[Y	P8:	1696	386513	944	z5 z1	z5 z	z5	1603	786	332	
37	.689	[Y	[Y	[Y	[1700	414555	992	y2 y1	y3	y2	1559	821	366	
39	343.558	[Y	P8	P8:	1696	946349	882	07	07	07	1545	473	018	
40	344.538	[Y	[Y	[Y	[1700	225764	349	07	07	07	1545	815	360	
41	.791	[P	[P	[P	[1678	297872	470	y3	08	y1	1556	904	449	
12244	347.625	[d	[d	[d	[1622	104074	820	z	y8	y9	1582	893	438	
15421	26501.621	[d	[d	[d	[1622	938842	280	05	08	06	1542	556		
27	502.647	[d	[P	[P	[1678	509693	236	y3	y2	y3	1563	256		
38	504.653	[z	[d	[d	[1622	790112	707	[z	04	04::	1537	601		
44	505.642	[d	[d	[d	[1622	643385	136	03	04	04	1537	648		
53	508.640	[P	[d	[P	[1678	208226	081	y2	y2	y2	1559	340		
71	510.624	[d	[d	[d	[1622	501663	071	05	08	07	1545	679		
77	511.653	[P	[P	[P	[1678	777075	034	y5	y2	y4	1566	038		
83	512.623	[P	[P	[P	[1678	353934	999	03	07	05	1539	745		
15488	514.648	d5	d3	d4	1644	148013	425	04	08	06	1542	427		
15574	559.611	d	z8	z9	1618	722869	386	z2	y8	z	1585	141		
15588	561.629	P7	P8	P8	1696	286709	329	y8	z	y9	1582	832		
15607	563.608	[P	P3:	P3:	1655	575141	814	z2 z7	d3	z5	1603	187		
21	564.625	[d	[d	[d	[1622	825513	232	y2	y1	y2	1559	493		
29	565.502	[d	d9:	d9:	1672	140984	761	z z	y	y7	1575	880		
40	566.612	[P	[P	[P	[1678	399370	195	z2 y	y	y4	1566	198		
49	567.522	P2	[P	P2	1682	682792	668	08	08	08	1548	545		
59	568.516	P5:	P	P3:	1685	252641	622	z2	z	z1	1579	244		
70	570.518	[d	[d	[d	[1622	529055	087	05	08	06	1542	584		
78	571.493	[d	[d	[d	[1622	820489	574	y5	y2	y3	1563	941		
84	572.516	[d	[d	[d	[1622	106715	052	03	:	:				
15691	573.519	[d	[d	[d	[1622									



Leavens 132

F.W.W. Sep. 2

adopted for F.W.W. 1

91

Seg. 1

93

See p 101 for details

Variable F.W.W. Leavens

Not a Var.  
F.W.W.

476571

was  
adopted

d5	970	351	642	P5	P2	P4	1657	689
d8	981	197	503	d7	d9	d8	1667	530
d5	359	319	648	d9	[P	d9:	1672:	645
d2	822	773	103	[P	P8:	P8:	1696:	098
d2	273	214	546	d7	d6	d7	1661	540
d7	313	257	585	d9:	P	P:	1675:	579
d4	225	147	480	d1	d3	d2	1633	472
d6	266	157	520	d8	d8	d8	1667	511
d4	710	622	956	P3	P2	P3	1655	946
d4	751	661	995	[P	[d	[P	1678	986
d8	209	110	445	d3	d5	d4	1644	434
d5	650	542	878	[P	[P	[P	1678	866
d8	690	581	917	P7	P8	P8	1696	904
d3	769	658	994	[P	[P	[P	1678	982
d8	609	701	055	P8	P7	P7	1693	172 189
d5	540	612	968	d8	P1	P	1678	050 100
d5	583	654	010	[P	2	*	1622:	122 142
d5	018	080	438	d3	d2	d3	1639	547 568
d3	065	126	484	d7	d7	d7	1661	593 614
d5	956	999	358	23	25	24	1600	462 486
d4	423	456	816	d8	P4	P1	1680	918 943
d4	544	574	935	P5	P2	P4	1657	036 061
[d	894	897	260	Y8	21	Y9	1582	354 383
		942	191	22	Y9	2	1585	328 549
[d	499	421	671	[d	[d	[d	1622	805 027
[d	455	358	609	[d	[P	[P	1678	963
03:	926	219	072	[2	[d	[d	1622	424
[d	355	218	474	d7	d8	d7	1661	822
[d	301	144	402	d6	d5	d6	1656	748
[d	791	625	883	[d	[d	[d	1622	228
d6	253	077	336	d8	d7	d7	1661	680
d8	218	022	283	27	d	28	1615	387 625
d4	647	808	310	Y8	Y9	Y9	1582	300 598
d5	608	950	254	25	Y9	22	1592	239 539
d6	551	873	179	08	Y	09	1550	159 462
d5	036	348	655	d8	[P	d8:	1667:	632 936
d5	454	757	065	[d	[d	[d	1622	345
[d	983	275	584	[d	[d	[d	1622	863
d3	417	700	009	[P	[P	[P	1678	288
d:	890	164	474	d5	d7	d6	1656	751
d3	845	098	410	d	d2	d1	1628	685
[d	309	553	866	[d	[d	[d	1622	140
[d	797	031	345	28	28	28	1615	617
[d	275	499	814	[d	[d	[d	1622	086



84

objects blurred  
 with many spots on  
 early plates

92

F.W.W. Seg. 1  
 Leavens 77

Not a star? F.W.W.  
 ? by Beavers

6860	2416710.843	$\beta_3$
6913	727.653	$\beta$
80	753.625	$\beta_3$
81	754.598	$\beta$
82	755.544	$\beta$
83	.628	$\beta_3$
84	757.542	$\beta_3$
85	.627	$\beta_3$
86	758.559	$\beta_2$
87	.644	$\alpha_8$
88	759.606	$\beta_3$
89	760.531	$\beta_3$
90	.614	$\beta_3$
92	.780	$[\beta]$
12232	23338.634	$[\gamma]$
34	340.586	$\beta_3$
35	.676	$\beta_2$
36	341.590	$\beta_3$
37	.689	$\beta_3$
39	343.558	$\beta_3$
40	344.538	$\beta_8$
41	.791	$\beta_3$
12244	347.625	$\beta_3$
15421	26501.621	
27	502.647	$\beta_3$
38	504.653	$[\alpha]$
44	505.642	$[\alpha]$
53	508.640	$\beta_3$
71	510.624	$\alpha_8$
77	511.653	$[\alpha]$
83	512.623	$[\beta]$
15488	514.648	$[\beta]$
15574	559.611	$[\beta]$
15588	561.629	$\beta_3$
15607	563.608	$\beta_8$
21	564.625	$[\beta]$
29	565.502	$\beta$
40	566.612	$[\alpha]$
49	567.522	$[\beta]$
59	568.516	$[\beta]$
70	570.518	$\beta_2$
78	571.493	$[\beta]$
84	572.516	$[\alpha]$
15691	573.519	$[\alpha]$

353 Seg. 1  
 Pub

27 1610  
 2 1586

1586  
 1704  
 ---  
 118  
 59  
 ---  
 1645

17 1704  
 17 1704



F.W.W. *Seg. 1*  
*Leavens 126*  
*489613*  
*489623*  
*489629*  
*513109*  
*adapted*

*Seg. 1*  
*Leavens 93*  
*not a variable F.W.W.*  
*? by Leavens.*

P	P5	P2	1667	846	013	484	a8
L8	L9	L9	1654	076	244	109	a7
P	P	P	1658	792	960	436	a7
P5	P8	P6	1656	269	436	935	a8
L7	L8	L7	1647	732	900	420	a7
P3	L8	P	1658	773	941	463	a7
P2	L8	P	1658	710	878	446	a7
L8	L7	L7	1647	752	920	489	a7
P8	P8	P8	1695	208	376	967	a7
L8	P:	L9	1654	250	417	011	a7
L8	L9	L8	1651	721	888	505	a7
[P	[P	[P	1658	174	341	979	a7
P8	P8	P8	1695	214	382	022	a7
Y	[P	Y	1704	296	463	107	a7
P8	P8	P8	1695	899	132	263	a7
P9	P4	P7	1690	854	088	265	a7
L8	P	L9	1654	898	132	311	a7
P5	P7	P6	1656	346	579	780	a7
Z8	L2	L	1621	394	628	831	a7
P9	P8	P8	1695	309	543	790	a7
P8	P7	P7	1690	789	023	292	a7
P2	[P:	P2:	1667:	913	147	422	a7
[P	[P	[P	1658	301	534	876	a6
[P	[P	[P	1658	040	305	747	a7
[L	[P	[P	1658	023	288	776	a6
[Z	Z8:	Z8:	1614:	507	772	283	a7
P:	[P	P:	1658:	975	240	822	a7
[P	[P	[P	1658	946	211	840	a7
Z1	Z3	Z2	1593	450	715	368	a7
[P	P9	P9	1699	925	190	865	a7
[P	[P	[P	1658	916	181	905	a7
L8:	[P	L8:	1651:	931	196	975	a7
P2	P8	P5	1651	919	184	011	a7
P8	Y	P9	1699	888	153	026	a7
X5	X7	X6	1557	386	651	548	a7
L8	L8	L8	1651	815	081	998	a7
Y9	Z	Z	1556	359	624	568	a7
L2	P	L6	1643	804	070	035	a7
L8	P5	P1	1663	291	556	545	a7
Y	Y	Y	1704	271	537	572	a7
[P	P6	P6	1656	748	014	072	a7
[L	[L	[L	1621	249	515	597	a7
[L	[L	[L	1621	740	006	112	a7

*6*  
*5*  
*1*



F.W.W. Seq. 2

1007

close to other stars; difficult to mens. specially on old plates.

360750  
382750  
382860

.0616 350

Seq 1

A 21154	2429 454.660
21459	566.245
466	575.253
487	583.253
488	584.258
493	585.264
497	586.258
940	806.637
956	808.570
969	811.606
982	813.648
22117	867.455
121	868.460
128	869.389
129	.462
133	870.451
134	.495
139	871.460
145	872.455
151	874.456
156	876.448
162	877.448
168	878.453
173	881.449
189	896.383
194	897.452
196	902.361
201	903.335
206	.610
209	906.234
212	.385
214	911.283
246	926.241
247	.283
248	.333
250	.406
252	.489
253	.538
255	927.236
262	.538
22266	928.330
64	.242
65	.243
70	38.243
72	337
75	454
76	502

d4:	1644	768	226	466
d3	1639	023	046	299
P2	1682	272	503	757
Y1 Y5	15569	158	573	827
d2	1633	521	959	213
P3	1685	884	345	599
Y5	1569	242	726	981
P3	1685	744	297	576
d2	1633	442	039	318
P	1678	537	204	483
d3	1639	273	987	267
d5	1650	654	636	921
d3	1639	047	021	307
L	1622	342	378	664
P	1678	408	406	692
Y3	1563	765	785	071
Y2	1559	741	802	088
d5	1650	129	173	459
P	1678	448	555	840
d8	1667	210	322	609
d8	1667	929	087	373
P	1678	289	471	757
Z2	1592	652	856	143
d2	1633	733	006	293
Y4	154645	120	737	025
d3	1639	506	147	436
d2	1633	277	031	320
d9	1672	628	405	694
d8	1667	727	510	800
d4	1644	674	517	807
d8	1667	575	865	
L	1622	495	405	745
d8	1667	891	195	487
d7	1661		211	503
d5	1650		230	522
d8	1667		258	550
d1	1622		240	582
Z9	1618		309	601
d7	1661	250	576	869
Z8	1615		693	985
Z8	1615	645	997	289

V8	407	1512
V8	281	1512
V5	835	1492
W2	828	1530
V9	390	1519
X5	452	1555
X2	513	1550



1008

F.W.W. Seq. 2

95

93

F.W.W. Seq. 1

103

$$\begin{array}{r} 375 \\ 553097 \\ \hline 603458 \end{array}$$

P 1678  
 Z3 1596  
 d8 1667  
 Z8 1615  
 d8 1667  
 Z8 1615  
 d8 1667  
 P2 1682  
 P5 1689  
 d6 1656  
 d3 1639  
 d8 1667  
 d8 1667  
 Z3 1596  
 Z8 1615  
 d8 1667  
 d2 1633  
 P 1678  
 d 1622  
 d 1622  
 P1 1680  
 Y7 1575  
 d7 1661  
 d8 1667  
 P5 1689  
 Z2 1592  
 d7 1661  
 Z9 1618  
 d5 1650  
 d 1622  
 d 1622  
 Y9: 1582  
 d8 1667  
 d2 1633  
 d 1622  
 d4 1644  
 d: 1622  
 d7 1661  
 d3: 1639  
 d8: 1667  
 Z3 1596

284 650  
 001 987  
 984 423  
 408 251  
 964 857  
 521 464  
 070 064  
 961 053  
 031 220  
 710 052  
 839 284  
 600 755  
 156 361  
 669 922  
 710 966  
 257 563  
 281 589  
 815 171  
 365 772  
 472 979  
 574 181  
 127 785  
 683 391  
 340 199



.462107

.465557

.463427

.463507

.463524

.463824

.463816

.538922

A 21154	2429 454.660	[P	[16.78	204	823	085	441	942	778	542	764
21459	566.245	P3	16.85	769	772	796	161	664	534	297	900
466	575.253	P2	17.13	931	966	971	337	839	712	475	754
487	583.253	P1	16.78	628	690	678	045	548	423	186	066
488	584.258	P8	16.96	093	158	144	511	014	889	652	607
493	585.264	P2	16.82	557	627	610	977	480	356	119	150
497	586.258	[Y	[17.00	017	089	071	438	941	816	580	685
940	806.637	P8	16.96	856	688	200	585	092	033	795	452
956	808.570	P7	16.93	749	588	096	481	988	930	672	494
969	811.606	d2	16.33	152	002	503	888	395	338	100	130
982	813.648	d	16.22	095	952	449	835	341	285	047	231
22117	867.455	z8	16.15	960	003	385	774	282	242	003	228
121	868.460	P5	16.89	424	471	857	240	748	708	470	770
128	869.389	d8 P5	16.89	854	903	281	671	179	139	900	271
129	.462	d8 P	16.67	887	937	315	705	212	173	934	310
133	870.451	Y	17.00	344	397	773	163	671	632	393	843
134	.495	Y	17.00	365	418	794	183	692	652	413	869
139	871.460	P8	16.96	811	867	241	631	139	100	861	387
145	872.455	P8	16.96	270	330	702	092	600	561	322	923
151	874.456	P8	16.96	195	262	629	019	527	490	251	001
156	876.448	d9	16.72	116	189	553	943	451	414	175	075
162	877.448	Y	17.00	578	655	016	406	914	877	638	614
168	878.453	d9	16.72	042	123	482	872	380	343	104	156
173	881.449	P8	16.96	427	518	870	261	769	733	494	770
189	896.383	P7	16.93	328	470	791	183	691	660	421	818
194	897.452	d7	16.61	822	968	286	678	186	156	916	395
196	902.361	d9	16.72	090	253	561	954	462	433	193	040
201	903.335	P6	16.91	540	707	013	405	913	884	645	565
206	.610	[P	[16.78	667	835	140	532	041	012	773	713
209	906.234	d2	16.33	880	056	356	749	257	229	990	127
212	.385	d4	16.44	950	127	426	819	327	298	060	209
214	911.283	P2	16.82	213	407	696	089	597	571	332	848
246	926.241	P2	16.82	125	371	628	022	531	509	269	910
247	.283	P5	16.89	145	370	647	042	550	528	289	932
248	.333	P5	16.89	168	414	671	065	573	551	312	959
250	.406	P8	16.96	202	448	704	099	607	585	346	998
252	.489	[P	[16.78	240	486	743	137	646	624	384	043
253	.538	[P	[	263	509	768	160	668	646	407	070
255	927.236	[P	[	585	834	089	483	992	970	731	446
262	.538	d	[16.22	725	975	229	623	132	110	871	609
22266	928.330	P8	[16.96	091	343	596	990	499	478	238	035
64	.242	P8	16.96				950	458	437	197	988
65	.243	P7	16.93				969	477	456	216	010
70	38.243	P8	[16.78				585	094	076	836	378
71	337	Y	17.00				629	138	119	880	428
75	454	P8	16.94				683	192	173	934	491
76	502	Y	16.67				705	214	196	956	517



Lindsay 280

F.W.W. Seq. 2

97

F.W.W. Seq. 1 103

93

und a bay)

.757576

.814884

.763602

762372

.762405

.796268

.728542

2375

553097

.603458

$\alpha$ 8	16.67	143	131	637	408	380	957	284	650
$\beta$ 8	16.96	678	860	844	477	453	251	001	987
$\beta$ 7	16.93	502	400	722	345	321	814	984	423
-								408	251
$\beta$ 8	16.96	324	738	598	210	186	374	964	857
$\alpha$ 3	16.39	086	558	367	977	953	107	521	464
$\beta$ 8	16.96	839	368	126	735	711	831	070	064
$\beta$ 3	16.85	793	951	408	745	729		961	053
$\alpha$ 9	16.72	257	527	884	219	203		031	220
$\beta$ 2	16.82	557	001	202	534	517		710	052
$\alpha$ 17	16.22	104	665	762	090	074		839	284
$\beta$ 15	16.78	867	511	848	111	097		600	755
$\beta$	16.78	628	330	616	877	863		2	156 361
$\alpha$ 8	16.67	332	087	325	586	571		5	669 922
$\gamma$	17.00	387	147	381	641	627		6	710 966
$\beta$ 5	16.89	137	952	136	395	381		7	257 563
$\beta$ 5	16.89	170	988	170	429	415		10	281 589
$\alpha$ 5	16.50	901	775	906	165	150		4	815 171
$\alpha$ 3	16.39	655	586	666	923	909		7	365 772
$\beta$ 2	16.82	171	216	194	449	435		5	472 979
$\alpha$ 3	16.39	680	839	715	967	953		1	574 181
$\beta$ 5	16.89	437	654	479	730	716		5	127 785
$\beta$ 7	16.93	199	473	246	496	482		1	683 391
$\beta$ 5	16.89	469	915	534	780	766		2	340 199
$\alpha$ 8	16.67	782	084	938	165	152	533	771	
$\alpha$ 3	16.39	592	955	754	980	967	384	549	
$\beta$ 7	16.93	311	955	503	723	709	293	126	
$\beta$	16.78	049	749	246	465	452	069	835	
$\beta$	16.78	257	973	456	675	662	288	036	
$\alpha$	16.22	245	111	460	675	662	377	947	
$\beta$ 2	16.82	359	235	575	790	777	497	057	
$\beta$	16.78	070	226	315	525	512	397	626	
$\alpha$ 5	16.50	402	415	737	928	916	308	523	
$\alpha$ 5	16.50	434	449	769	960	948	341	554	
$\alpha$ 1	16.28	472	490	808	998	986	381	590	
$\alpha$ 2	16.33	527	549	863	054	041	439	644	
$\alpha$ 8:	16.67	590	617	927	117	105	505	704	
$\beta$	16.78	627	657	964	155	142	544	740	
$\beta$	16.78	156							
$\alpha$ 7	16.61	384							
$\beta$ 8	16.96	984							

missed on page 107



A 21154	2429 454.660	$\gamma$	17.00
21459	566.245	$\Delta_3$	16.50
466	575.253	$P_7$	16.93:
487	583.253	$[d]$	$[16.22$
488	584.258	$P_3$	16.89
493	585.264	$P$	16.78
497	586.258	$P_4$	16.87
940	806.637	$P_2$	16.82
956	808.570	$P_8$	16.96
969	811.606	$P$	16.78
982	813.648	$P_6$	16.91
22117	867.455	$[Y]$	$[17.00$
121	868.460	$P_9$	16.98
128	869.389	$[P]$	$[17.00$
129	.462	$P_2$	16.82
133	870.451	$P_7$	16.93
134	.495	$P_7$	16.93
139	871.460	$\Delta_8$	16.67
145	872.455	$P_9$	16.98
151	874.456	$P_4$	16.87
156	876.448	$\Delta_8$	16.67
162	877.448	$P_2$	16.82
168	878.453	$\Delta_8$	16.67
173	881.449	$\Delta_7$	16.61
189	896.383	$P_2$	16.82
194	897.452	$\Delta_8$	16.67
196	902.361	$\Delta_7$	16.61
201	903.335	$\Delta_8$	16.67
206	.610	$\Delta_7$	16.61
209	906.234	$[d]$	$[16.22$
212	.385	$[P]$	$[16.78$
214	911.283	$[P]$	$[16.78$
246	926.241	$P_7$	16.93
247	.283	$\Delta_8$	16.67
248	.333	$\Delta_9$	16.72
250	.406	$P$	16.78
252	.489	$\Delta_3$	16.3567
253	.538	$\Delta_9$	16.9267
255	927.236	$[P]$	$[16.78$
262	.538	$\Delta_5$	16.50
22266	928.330	$P_7$	16.98
64	.242	$P_8$	16.96:
65	.283	$P_7$	16.93:
70	38.243	$P_7$	16.93:
72	337	$P_8$	16.96
75	454	$P_9$	16.98
76	502	$P_9$	16.98

974659	1965834	66555178	332	128	21502
303	584	458	464	232	
144	503	434	133	506	
846	469	260	251	575	
929	540	404	800	900	
791	504	348	458	229	
871	547	435	487	243	
639	487	332	129	505	
461	457	288	792	896	
126	407	221	123	582	
774	349	137	449	225	
606	323	103	115	557	
446	303	079	784	892	
934	223	968	778	889	
245	779	326	717	858	
243	821	428	428		
234	605	078	696		
018	534	993	344		
521	823	533	527		
327	380	692	273		
604	527	988	374		
575	301	617	634		
970	880	022	589	970	
047	921	105	617		
139	970	203	650		
272	041	346	699		
424	122	509	754	424	
514	170	606	787	574	
792	850	978	251	792	
346	144	572	452		
796	916	129	980	796	631



Lindsay 1002a

F.W.W. Seq. 2

Lindsay 375

Seq 2 99

F.W.W. Seq. 1

103

93

und a bay

Z8	16.15	233 050	655	561	129	Z3	1596	812	910	794	284	650
P2	16.82	901 016	089	949	211	29	1672	339	196	075	001	987
P2x5	16.83	799 776	723	582	012	228	1545	132	591	892	984	423
L2	16.22	148 004	838	697	387	Y8	1579	052	830	282	408	251
P5 Bag	16.87	695 535	355	213	811	P5	1689	921	986	708	964	857
P29	16.78	242 066	873	731	236	P8	1696	792	142	134	521	464
P5 Bag	16.84	782 592	304	242	655	P3	1685	652	296	555	070	064
L	16.22	600 049	756	583	642	L7	1661	291	435	936	961	053
L	16.22	651 070	750	577	458	P	1678	963	735	755	031	220
P2	16.82	302 675	312	139	739	P	1678	589	205	042	710	052
L8	16.67	412 754	863	189	600	P	1678	356	522	907	839	284
P3	16.85	666 188	044	862	304	Z3	221596	902	857	707	540	556
P8	16.96	213 719	500	379	728	[P8]	1678	771	013	133	838	852
L7	16.61	718 210	038	857	120	L7	261661	575	157	526	114	125
L8	16.67	758 248	076	894	151	P2	P51682	638	168	557	135	146
Y	17.00	295 771	555	403	568	P7	1678	493	321	976	429	437
P7	16.93	319 794	607	425	586	L7	1661	531	328	995	442	450
L7	16.61	844 304	104	922	994	Z2	231592	366	X	404	728	734
L9	16.72	385 830	616	493	413	P1	P31680	227	632	825	024	027
P4	16.87	473 887	645	462	258	Z5	291603	958	942	673	617	615
L9	16.72	556 940	670	487	098	L	Y521589	681	X	577	208	201
P4	16.87	099 468	104	001	520	P8	P71096	546	405	941	505	495
L2xL1	16.83	646 999	701	518	944	P2	P41682	415	561	367	803	791
P3	16.85	275 583	242	059	208	09	Y11550	007	025	636	692	672
L9	16.72	394 474	925	740		Z5	281603					
P2	17.13	975 039	475	289		P2	P51682					
P	16.78	644 633	000	814		L5	241650					
P6	16.91	174 148	501	315		Z2	241592					
L7	16.61	324 293	643	456		P29	1678					
L2	16.22	750 680	993	806		L2	1678					
L7	16.78	832 760	071	884		L7	1678					
L9	16.72	495 348	590	403		L8	1667					
P3	16.85	628 253	205	096		P5	P87689					
P2	16.82	651 275	307	117		P7	1693					
P7	16.93	678 301	333	143		P	1678					
P8	16.96	718 340	370	180		L7	1678					
L7	16.78	763 384	413	223		Z8	1615					
L7	16.78	789 410	438	248		X8	021522					
P2xL5	16.84	169 778	797	607		L2	1678					
X9	16.84	333 938	952	763		L2	1667					
P9	16.98	764 357	360	170		P7	1693					

page 105  
for day runs



100

F.W.W. Seq. 2

1004

Lindsay 372 11185

Seq. 2

428773  
284573  
424329  
479329  
473529  
476529

333333  
350333  
349153  
349005  
315142  
382868

A 21154	2429 454.660	[Y 1700	363	001	466	473	636	0403	1537	210	939	183	824	400
21459	566.245	72 1713	207	753	815	959	474	07	1545	405	031	143	767	565
466	575.253	P8 1696	070	318	637	276	740	Y5	1569	408	187	288	911	404
487	583.253	d 1622	500	595	032	111	528	07	1545	074	990	081	703	925
488	584.258	73 1720	931	881	459	593	004	23	1596	409	342	432	054	242
493	585.264	d5d8 16567	362	167	882	075	480	Y3	1563	745	694	784	405	559
497	586.258	7 1700	789	450	307	551	951	08	1545	076	042	131	752	872
940	806.637	P7 1693	281	164	820	185	307	05	1539	536	248	077	665	323
956	808.570	P8 1696	110	714	641	112	222	08Y	1545	180	926	752	340	932
969	811.606	[Y 1700	412	578	929	567	660	Y	1553	192	989	812	399	889
982	813.648	[Y 1700	287	159	795	546	627	Y8	1579	873	705	525	112	533
22117	867.455	[Y 1700	358	471	627	337	106	22	1592	808	555	311	891	489
121	868.460	[P 1678	789	757	054	819	582	Y3	1563	143	907	662	242	806
128	869.389	[d 1622	187	022	448	264	022	X8	1522	453	233	987	566	099
129	.462	[Y 1700	219	042	479	299	056	02	1531	477	258	012	591	122
133	870.451	S 1766	643	324	899	773	525	Y3	1563	807	605	357	937	434
134	.495	P8 1696	662	336	917	794	546	Z	1545	822	620	373	952	447
139	871.460	Y 1700	075	611	327	257	002	22	1592	143	958	710	289	752
145	872.455	Y8 1753	502	894	749	734	474	Y3	1545	475	307	057	636	065
151	874.456	[P 1678	360	463	598	693	421	Y5	1569	142	008	756	334	696
156	876.448	[Y 1700	214	030	443	648	364	08	1545	806	706	451	030	323
162	877.448	P3 1685	643	315	868	127	838	Y7	1575	139	056	801	379	639
168	878.453	207 1744	074	601	294	609	314	Y4	1566	474	408	151	729	955
173	881.449	P7 1693	358	453	565	045	733	Y	1553	473	458	197	775	900
189	896.383	P7 1693	762	703	902	203	804	28	1615	451	689	412	987	606
194	897.452	Y5 1733	220	608	356	716	310	Z1	1569	807	064	785	360	943
196	902.361	d9 1672	325	404	439	069	635	Y8	1579	444	784	499	073	490
201	903.335	[P 1678	743	682	852	536	096	Y3	1563	768	125	839	413	797
206	.610	[P 1678	860	760	969	667	226	09	1550	860	221	935	509	883
209	906.234	[d 1622	986	507	082	925	469	03	1534	735	141	851	425	710
211	.385	L3 1639	050	550	146	998	540	Y2	1559	785	193	904	478	757
212	911.283	[P 1678	150	943	225	345	860	Y2	1559	418	909	614	187	301
214	926.241	[P 1678	564	200	572	515	943	Y5	1569	404	150	837	408	015
246	.283	[Y 1700	582	212	590	535	963	Y1	1556	418	164	851	422	029
247	.333	[Y 1700	603	226	611	559	986	Y1	1556	434	182	869	440	044
248	.406	[P 1678	635	247	642	594	021	05	1539	459	207	894	465	067
250	.489	[P 1678	670	270	677	634	060	02	1531	486	237	923	494	093
252	.538	[P 1678	691	285	698	657	084	02	1531	503	254	940	511	109
253	927.236	d8: 1667	991	485				Y2	1559	735	498	184	755	329
255	.538	d8 1667	120	569	p.104			07	1545	836	604	290	860	424
262	928.330	[Y 1700	460	795	458	516	932	222	1592	100	882	566	137	674
22266	.242							Y8	1579	071	851	535	106	646
64	.283							22	1592	084	865	550	120	659
65	38.243							Y1	1556	404	354	027	596	798
70	337	P5 1689						0	1526	436	387	060	629	827
72	454	Y2 1713						08	1548	475	428	101	670	824
75	502	Y8 1753						08	1545	491	445	118	687	879
76														
77														
78														
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97														
98														
99														
100														



F.W.W. leg. 2

Leavens 132 had a var (#WW)

F.W.W. 1

101

F.W.W. leg. 1

103

476575  
no. 1004 (cont. from p. 100)

465116

466445

467639

466724

466724

466724

466724

2 354  
2 533  
8 826  
5 639  
2 118  
2 597  
P 071  
2 098  
8 019  
2 466  
2 429  
2 082  
8 561  
5 004  
2 039  
2 510  
3 531  
2 991  
5 465  
8 419  
8 368  
8 845  
2 324  
7 751  
8 869  
2 378  
2 718  
2 182  
2 313  
4 563  
4 635  
4 970  
2 098  
2 118  
4 142  
4 177  
5 216  
3 240  
5 572  
5 716  
2 094  
2 863  
2 919  
2 941

\*WW 1  
new FWW  
leg 2

\*FWW 1 var.

Marked in  
A 22168

2	1667	834	979	148	197	284	650
P5	1659	734	027	329	276	001	987
P8	1696	923	229	542	440	984	423
29	1618	644	960	283	214	408	251
P8	1696	112	429	753	683	964	857
28	1667	580	898	223	153	521	464
P8	1696	042	362	688	617	070	064
28	1667	544	017	746	473	961	053
P7	1693	443	058	650	375	031	220
P5	1678	855	474	070	792	710	052
P8	1696	805	427	024	745	839	284
09	1550	831	525	187	858	600	755
P5	1659	249	994	657	327	156	361
28	1667	731	427	091	761	669	922
21	1628	765	461	125	795	710	966
P5	1659	225	922	588	256	257	563
29	1672	245	943	608	277	281	589
P	1678	694	393	060	727	815	171
P	1678	157	857	525	192	365	772
21	1672	087	791	461	126	472	979
28	1667	014	720	392	055	574	181
2	1700	479	186	860	522	127	785
28	1615	946	655	330	991	683	391
P	1678	340	052	731	389	340	199
P4	1657	286	018	715	359		
07	1545	743	517	214	858		
27	1661	066	807	510	149		
P8	1696	519	261	966	604		
LP	1678	647	389	094	732		
2	1525	865	613	321	957		
225	1603	938	684	392	028		
P	1678	216	968	682	314		
P4	1657	173	945	677	295		
P3	1655		965	697	314		
27	1661		988	720	338		
P	1678		022	754	372		
P	1678		061	793	411		
P	1678	312	084	816	433		
EP	1678	636	409	143	759		
Y	1553	777	550	284	900		
28	1667	145	920	654	270		
27	1667						
56	28	1615					
57	23	1596					
59	22	1559					
61	21	1556					
62	20	1553					
64	20	1667					

\*FWW 1

very near leg 2

marked in



Leavens 77 F.W.W. Seq. 1  
 had a var? (≠ WW)

A 21154	2429 454.660	$\Delta 3$
21459	566.245	P5
466	575.253	P2
487	583.253	$\Delta 8$
488	584.258	$\gamma$
493	585.264	P8
497	586.258	P
940	806.637	P7
956	808.570	P8
969	811.606	$\Delta 8$
982	813.648	P5
22117	867.455	P5
121	868.460	$\Delta 8$
128	869.389	P
129	.462	P2
133	870.451	P2
134	.495	P
139	871.460	$\Delta 8$
145	872.455	P7
151	874.456	$\Delta 9$
156	876.448	$\Delta 8$
162	877.448	$\Delta 8$
168	878.453	P5
173	881.449	$\Delta 9$
189	896.383	P3
194	897.452	P5
196	902.361	P5
201	903.335	P7
206	.610	P5
209	906.234	P8
212	.385	$\Delta 8$
214	911.283	$\Delta 8$
246	926.241	P5
247	.283	P5
248	.333	$\Delta 7$
250	.406	P7
252	.489	P5
253	.538	P5
255	927.236	$\Delta 8$
262	.538	P5:
22266	928.330	P7
64	.242	
65	.283	
70	38.243	
72	337	
75	454	
76	502	



Learnings 126 F.W.W. Seq. 1  
 .489613 .489623  
 .513109 (SR)  
 .523492  
 .455766

(Learnings 93 F.W.W. Seq. 1) 103  
 (und a bar)  
 Lindsay 375  
 .553097 .603458

X5	1555	384	679	451		
P5	1651	018	313	706		
Z2	1593	428	724	328		
Y8	1582	345	641	433		
P7	1690	837	133	949		
X8	1560	330	626	465		
L8	1651	816	112	975		
P5	1651	717	015	054		
P6	1656	663	961	045		
P8	1695	150	448	603		
P8	1695	150	448	651		
L	1621	494	793	260	374	570
P3	1672	986	285	776	900	628
Z4	1600	441	740	252	386	452
L	1621	477	775	290	424	485
P7	1690	961	260	797	942	936
P5	1651	983	281	820	965	956
L3	1632	455	754	315	470	396
P8	1695	942	241	825	991	849
P3	1672	922	221	852	039	761
P9	1699	897	196	874	081	669
Z2	1593	387	686	387	605	125
P5	1651	879	178	903	131	583
Z	1586	346	645	440	699	948
P1	1663	658	957	103	517	755
P8	1695	181	480	652	077	242
L8	1651	585	884	170	647	479
P8	1695	061	360	670	157	923
[P]	1658	196	495	811	301	049
P45	1658 <sup>39</sup>	481	780	158	674	245
P768	169051	555	854	235	753	313
[P]	1658	953	252	748	317	546
L	1621	277	576	423	148	363
Y8	1582	297	596	445	170	382
X8	1560	322	621	471	196	405
Z1	1589	357	657	508	234	438
Z2	1593	398	697	551	277	476
Z8	1614	422	721	576	303	498
[P]	1658	764	063	934	669	817
[P]	1658	912	211	089	827	954
Z	1586	299	599	495	241	315

284	650
001	987
984	423
408	251
964	857
521	464
070	064
961	053
031	220
710	052
839	284
600	755
156	361
669	922
710	966
257	563
281	589
815	171
365	772
472	979
574	181
127	785
683	391
340	199



F.V.W. No. 1

465116

466445

467639

466724

791155

No 1004

22189 2429896.383

192 897.228

194 897.452

196 902.361

199 903.227

22201 .335

3 .426

5 .534

6 .610

9 906.234

11 .327

12 .385

14 911.283

46 926.241

47 .283

48 .333

50 .406

52 .489

53 .538

55 927.236

56 .278

57 .325

59 .403

61 .486

62 .538

64 928.242

65 .283

66 .330

70 938.243

72 .337

75 .454

76 .502

22309

58.307

018 - 715

412

517 214

807 510

211

261 966

303

354

389 094

613 321

657

684 392

968 682

945 677

965 697

988 720

022 754

061 793

084 816

636 409 143

656 429 162 779

678 451 184 801

714 487 221 837

752 526 260 876

777 550 284 900

819 613 229

898 632

920 654

544 290

588 334

297

152

476575

424329  
479329  
473529  
476575

$\beta$  1675 572  $\alpha$  1667 994 992 414  
 592 28 1615 012 012 434 216  
 $\beta$  1696 615  $\alpha$  1633 032 036 456 238  
 $\alpha$  1656 652  $\alpha$  1622 065 072 493 275  
 $\alpha$  1650 692  $\alpha$  1672 100 112 532  
 $\alpha$  1650 716  $\alpha$  1672 122 137 557 340  
 $\beta$   
 $\beta$   
 $\beta$



Lind 375 Sig 2

350 105 448

605490

109

594344

865052

154913

423729

296729

294118

421941

553097

603458

1.531502

974659

1.965134

665556

332778

25	1603	926	338	964	124	064	510	600	211
		1		374	213	866	067	721	
$\beta_2$	1652	851	504	417	441	379	961	191	856
$\alpha_5$	1650	097	264	497	898	823	032	906	819
$\Gamma \alpha$	1622	846	399	864	155	077	397	385	341
$2\beta_2$	1592	940	415	910	187	109	443	445	407
$2\alpha_2$	1592	018	429	949	214	136	481	495	462
$\alpha$	1622	112	446	994	246	168	527	555	527
$\alpha_2$	1633	178	458	027	868	190	559	597	573
$2\alpha$	1622	447	864	139	047	962	666	048	156
$\beta_3$	1655	528	879	178	074	989	705	100	212
$\Gamma \beta$	1675	578	888	203	092	006	730	132	247
$\beta$	1678	815	646	278	545	447	797	841	203
$\beta_5$	1659	755	964	616	983	846	108	114	229
$\beta_7$	1693	791	970	634	996	838	126	137	255
$\beta_3$	1675	834	978	655	011	873	147	165	286
$\Gamma \beta$	1675	897	989	686	032	895	178	205	329
$28$	1615	969	002	721	057	919	213	251	379
$4\alpha$	1522	011	010	742	072	933	233	278	409
$\alpha_3$	1639	615	000	038	279	139	528	664	830
$\Gamma \beta$	1675	652	964	056	291	151	546	688	855
$\beta$	1706	692	977	075	305	165	565	714	884
$\beta_5$	1659	760	989	108	328	188	598	757	931
$\alpha_8$	1667	832	000	144	353	212	633	803	981
$\alpha_8$	1667	877	010	166	368	228	655	831	012
$\Gamma \beta$	1675	485	274	464	577	435	952	221	437
$\Gamma \beta$	1675	521	280	441	559	447	970	243	462
$\beta_7$	1693	562	287	501	603	460	989	269	490
$2\alpha$	1615	137	823	702	545	376	172	752	472
$2\alpha_4$	1644	218	837	741	573	404	212	804	529

882

214

848

136272

172844

202404

234476

263527

137

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181

817

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880

126

891

937

012

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144

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1634

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1647

803 416 190

868 484 251

922 541 302

986 609 363

031 657 405

591 305 876

646 364 928

680 400 960



104  
197

P. 312 986

350 P. 1

22189 2429896.383

192 897.228

194 897.452

196 902.361

199 903.227

22201 .335

3 .426

5 .534

6 .610

9 906.234

11 .327

12 .385

14 911.283

46 926.241

47 .283

48 .333

50 .406

52 .489

53 .538

55 927.236

56 .278

57 .325

59 .403

61 .486

62 .538

64 928.242

65 .283

66 .330

70 938.243

72 .337

75 .454

76 .502

22309

58.307

22  
22:  
23  
2769  
Y<sub>2</sub> 1559  
Z<sub>5</sub> 1603  
Z 1545  
Z<sub>2</sub> 1592  
X<sub>9</sub> 1672  
X 162209 1550 X<sub>5</sub> 1650 X<sub>8</sub> 51809 1550 X<sub>8</sub> 1667 X<sub>5</sub> 523Y<sub>5</sub> 1569 X 1622Y<sub>2</sub> 1559 X<sub>9</sub> 167208 1548 Z<sub>9</sub> 1618 Y 536Y<sub>8</sub> 1579 X<sub>8</sub> 580Z<sub>1</sub> 1589 Z<sub>8</sub> 1615Z<sub>2</sub> 1592 Z<sub>3</sub> 1596 X<sub>8</sub> 585V<sub>9</sub> 196

Z 1585

Y<sub>8</sub> 1579Z<sub>3</sub> 1596Z<sub>5</sub> 1603W<sub>5</sub> 617

W 643

V<sub>1</sub> 945V<sub>5</sub> 039V<sub>1</sub> 045V<sub>5</sub> 051V<sub>5</sub> 058V<sub>6</sub> 062V<sub>9</sub> 224V<sub>9</sub>V<sub>9</sub> 233Y<sub>8</sub> 535X<sub>3</sub> 456X<sub>3</sub> 459X<sub>5</sub> 467X<sub>2</sub> 475X<sub>5</sub> 518X<sub>5</sub> 523

Y 536

X<sub>8</sub> 580X<sub>8</sub> 585V<sub>9</sub> 196V<sub>9</sub> 196

1536

1526

1465

1492

1465

1492

1492

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1519

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1551

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1555

1550

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1560

1560

1519



105

248125

Sund  
260 Sy 2

107

448

605490

109

594344

628207  
56048

I 1658	803 416 190
1654	868 484 251
I 1658	922 541 302
1639	986 609 363
1658	031 657 405
1651	591 305 876
1647	646 364 928
1632	680 400 960

757576  
814884  
763602  
762372  
762405  
796268  
728542

Y5 1575  
2 1586  
Y5 1575  
25 1603  
Y5 1575

Y 1564 426  
X- 1555 450

CP	16.78	156	226	497	687	674	100	248
B5	16.89	123	298	565	755	742	171	313
B1	16.80	282	362	625	814	802	233	370
X <sup>2</sup> 7	16.39 611	345	429	688	877	865	299	430
L5	16.50	384	472	728	917	905	341	468
B3	16.85	918	045	265	454	441	901	981
B5	16.89	949	079	297	485	473	934	011
B5	16.89	984	117	333	521	508	971	045
ky	16.44	565	272	974	150	138	940	336

1639	642 073 499 647
1632	667 098 525 671
1621	696 126 555 677
1617	743 172 604 741
1593	793 222 655 787
1589	825 253 689 816
1647	251 671 131 211
1658	695 157 224
1634	723 186 260
1651	615 444 816
1647	671 473 869



108/175 by 14

709

338295  
345415

M

22189 2429896.383

192 897.228

194 897.452

196 902.361

199 903.227

22201 .335

3 .426

5 .534

6 .610

9 906.234

11 .327

12 .385

14 911.283

46 926.241

47 .283

48 .333

50 .406

52 .489

53 .538

55 927.236

56 .278

57 .325

59 .403

61 .486

62 .538

64 928.242

65 .283

66 .330

70 938.243

72 .337

75 .454

76 .502

22309

58.307

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Y

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(32

dip 3 X5

17041

1658

1667

1639

149

179

216

242

129

791

851

922

972

SP  
65731



30 y 7355N  
 7355N  
 42955N  
 7355N  
 582988  
 432988  
 578704  
 512820  
 429550  
 512820

1006  
 1.920065

448

605490

109

594344

 $\beta_2$ 

999  
 621  
 051  
 16.14 477  
 16.81 139  
 16.36 347  
 16.58 522  
 16.28 729  
 16.07 875  
 16.67 913  
 16.54 092  
 16.58 203  
 16.07 607  
 16.25 328  
 16.03 408  
 15.75 504  
 16.07 645  
 16.14 804  
 16.17 898

16.28 238  
 16.51 319  
 16.39 409  
 15.93 559  
 15.93 718  
 16.51 818  
 16.51 170  
 16.51 249  
 16.39 339  
 16.47: 372  
 15.96 553

$\beta_2$  16.58  
 $\alpha_9$  16.54  
 $\beta_2$  16.58  
 $\alpha_5$  16.39  
 $\beta_2$  16.58  
 $\alpha_7$  16.51  
 $\alpha_7$  16.47  
 $\alpha_3$  16.32

803 416 190  
 868 484 251  
 922 541 302  
 986 609 363  
 031 657 405  
 591 305 876  
 646 364 928  
 680 400 960

628207  
 560481

$\alpha_7$  16.39 642 073 499 647  
 $\alpha_3$  16.32 667 098 525 671  
 $\alpha_7$  16.21 696 126 535 692  
 $\alpha_9$  16.17 743 172 604 741  
 $\alpha_2$  15.93 793 222 656 787  
 $\alpha_1$  15.89 825 253 689 816  
 $\alpha_7$  16.47 251 671 131 211  
 $\beta_2$  16.58 695 157 224  
 $\alpha_9$  16.54 723 186 260  
 $\alpha_5$  16.51 615 444 816  
 $\alpha_7$  16.47: 671 473 869

y 662 28 16.14 271 809 063  
 y1 701 48 16.51 317 843 105  
 y 743  
 y1 749  
 y1 121  
 y 141  
 y9 165  
 121 074 07: 16.47: 636 591 851 930  
 168 16.39 691 632 435 978  
 227 165 16.21 759 683 503 038  
 251 145 27: 16.10 747 705 531 062  
 153 692 16.90 333 379 992 219 50



Lindsay 375

340118  
790576

A 21154	24 29454.660	15.96			
459	566.246	16.72			
466	575.253	15.85			
487	583.253	15.79			
488	584.258	16.89			
493	585.264	16.96			
497	586.258	16.85			
940	806.637	16.61			
956	808.570	16.78			
969	811.606	16.78			
982	813.648	16.78			
22117	867.455	15.96	459	493	040
121	868.460	16.78	801	288	065
128	869.389	16.61	117	022	061
129	.462	16.82	142	080	061
133	870.451	16.78	478	867	058
134	.495	16.61	493	896	190
139	871.460	15.92	821	659	095
146	872.455	16.80	160	455	
151	874.456	16.03	840	028	
156	876.448	15.89	518	603	
162	877.448	16.96	858	393	
168	878.453	16.82	200	188	
173	881.449	15.50	219	556	
189	896.383	16.03	298	363	
192	897.228				
194	.452	16.82	661	208	
196	902.361	16.50	331	089	
199	903.227	16.22	626	773	
201	.335	15.92	662	859	
3	.426	15.92	693	931	
5	.534	16.22	730	016	
6	.610	16.33	756	076	
9	906.234	16.22	648	151	
11	.327	16.85	680	224	
12	.386	16.78	700	270	
14	911.283	16.78	366	142	

end on p 116







Lindsay 375

.340118  
.790576

7	22246	2429926.241	16.89	453	968
47		.283	16.93	467	001
48		.333	16.78	484	041
50		.406	[16.78	509	098
52		.489	16.15	537	164
53		.538	15.22	554	203
55	927.236	16.39:	792	754	
56		.278	[16.78	806	788
57		.325	17.66:	822	825
59		.403	16.89	848	886
61		.486	16.67	877	952
62		.538	16.67	894	993
64	928.242	[16.78	134	550	
65		.283	[16.78	148	582
66		.330	16.93	164	619
70	938.243	16.15::	535	456	
72		.337	16.15:: 16.44	567	531







122

L 280 Lyl

762405

Heavens 123

Seq. 1

272 Rindsey Lyl

X5 &amp; 28

1555 &amp; 1589

349650

327428

351810

347009

354001

2083	2429578.339	$\beta_3$	1672	673
2094	585.324	$\alpha_5$	1639	999
2539	871.467	$\beta$	1058	156
2546	881.483			
2547	884.483	$\alpha_5$	1639	079
2548	.537	$\alpha_6$	1643	120
2557	924.246	$\beta_5$	1681	395
2560	.381	$\beta_8$	1695	498
2571	925.257	$\alpha_9$	1654	165
2574	.401	$\beta_1$	1663	275
2575	926.250	$\alpha_7$	1647	923
2578	.366	$\alpha_5$	1639	011
2590	927.314	$\beta_3$	1672	734

27	21704	270	143	907
28	1651	508	383	147

27	1704	200	165	926
27	1704	606	583	344
27	1704	669	646	407
27	1704	075	052	813
27	1704	141	119	880
27	1704	535	513	273
27	1704	589	567	327
27	1704	028	006	767

X3	1551	066	776	955	950	761
27	1610	508	063	413	374	234
24	1600	558	755	081	668	529
Y5	1575	109	016	660	184	137
2	1586	128	034	679	203	156
X5	1555	013	036	649	983	213
2	1586	060	080	696	029	261
28	1614	366	367	005	333	571
26	1607	416	414	055	383	622
Y	1564	713	692	354	678	922
Y2	1568	754	730	395	718	963
22	1593	085	040	728	047	299
could be Y	1564					

Log T F.W.W.



709

345427

272 Lind

337009

295009

✓

1006

1007 123

383860

76 17 1704 157  
 234 26 1607 570  
 529 1704 411  
 —  
 137 —  
 156 1704 926  
 23 29 1617 642  
 261 1621 649  
 571 16 81 992  
 622 171 041  
 922 1704 335  
 963 1704 370  
 1299 1628 702

953  
 340  
 355  
 740 922  
 786 962  
 081 220  
 129 263  
 416 513  
 455 547  
 774 827

29 1617  
 16 58  
 16 58  
 —  
 1704  
 25 1603  
 28 1614  
 29 1617  
 29 1617  
 27 1610  
 29 1617  
 28 1614

941 29 1617  
 622 1704  
 461 1204  
 —  
 478 —  
 721 000  
 773 1704  
 109 000  
 164 000  
 490 000  
 535 000  
 899 000

leg always used for  
 the SB plate to leg 1







✓ SMC 100	✓ 4907 ✓	✓ -71° 39'	✓ 4915 ✓
✓ 324	(4908 ✓ 5335 ✓ 4832 ✓)	✓ -79° 85'	(4926 ✓ 4947 ✓)
✓ -72° 64	OK → 4832 ✓	✓ NGC 416 (no circle drawn)	✓ 4904 ✓
✓ "F"	✓ 4818 ✓	✓ seq 42	Series ✓
✓ seq II	Series ✓	✓ CPD -73° 67	✓ 5323 ✓
✓ "G"	✓ 4819 ✓	✓ "P"	✓ 5336 ✓
✓ SMC "H"	patrol ✓	✓ Ic 1655	✓ 5341 ✓
✓ seq 24	Series ✓	✓ "Q"	✓ 5342 ✓
✓ seq I plate with center	Series & patrol	✓ Ic 1660	✓ 5346 ✓ off center
✓ "H"	✓ 4833 ✓	✓ CPD -71° 50	✓ 5347 ✓
✓ "I"	✓ 4839 ✓	✓ NGC 458	✓ 5626 ✓ off center
	{ 4845 ✓ 4874 ✓ 4878 ✓ 4888 ✓ }	✓ seq 36	Series ✓
		✓ "R"	✓ 5348 ✓
✓ 51-73.0 (no circle drawn)	✓ 5977 ✓	✓ CPD -72° 91	✓ 5609 ✓
✓ "J"	(4846 ✓ 4875 ✓)	✓ "S"	(4873 ✓ 5610 ✓)
✓ "K"	✓ 4847 ✓	✓ "T"	✓ 5611 ✓
✓ "L"	{ 4876 ✓ off center for L 4878 ✓ 4887 ✓ }	✓ "U"	✓ 4425 ✓
		✓ NGC 602	(4425 ✓ 5349 ✓)
		✓ "W"	
		✓ Tail SMC circle off map	✓ 2675 ✓
		✓ seq II (eleven)	✓ 2611 ✓

calling the other circle "A"







Examination of Suspected  
Cluster Type stars in SMC  
Jan - Feb 1951 V M K N



126

		(2)	(37)	(405)	(657)	(1006)	SM2	2121	793	1853	11410	2121
24200.000.	810	814	1429	1444	1853	11410	375	376	1869			
26482 32790.387	810	—	15.0	15.0	16.6	16.6	16.1	16.1	16.1	16.7	16.8	16.1
26491 32793.394	810	—	15.2	15.4	16.6	16.9	16.3	16.3	16.0	16.4	<16.4	16.3
26498 32794.392	810	—	15.3	15.3	16.3	16.6	15.9	16.1	16.3	<16.4	16.2	
26516 32797.374	810	—	15.1	15.3	16.2	16.4	16.5	16.3	16.3	<16.4	16.4	
26529 32800.386	810	—	15.2	15.4	16.6	16.7	15.9	16.1	16.8	17.0	15.9	
26538 32804.452	810	—	15.2	15.4	16.5	16.8	16.3	16.6	16.6	16.9	16.3	
26556 32817.346	810	—	15.2	15.4	16.7	16.8	16.6	16.2	16.8	17.0	16.6	
26561 32818.369	810	—	15.2	15.4	16.7	16.8	15.8	16.0	16.5	16.9	15.8	
26567 32819.397	810	—	15.2	15.3	16.8	16.9	16.3	16.1	11.8	16.9	16.5	
26575 32822.403	810	—	15.1	15.5	16.7	16.8	15.7	16.2	16.4	16.4	15.7	
26581 32824.400	810	—	15.2	15.3	17.0	16.9	16.3	16.2				
26584 32825.396	810	—	15.2	15.3	17.0	16.9	16.3	14.2	16.8	16.9	16.4	
26585 32826.387	810	<i>Missing Sample</i>										
26590 32828.390	810	—	15.2	15.4	16.9	16.2	16.4	16.2	16.8	16.3	16.5	
26591 32833.309	810	—	15.2	15.4	<16.0	<16.0	<16.0	<16.0	16.0	<16.0	<16.0	
26595 32845.251	810	15.0	13.9	15.2	15.3	16.4	16.9	16.0	16.4	16.1	16.9	16.3
26596 32845.299	810	15.0	13.7	15.1	15.4	16.3	17.0	16.1	15.9	16.2	16.8	16.3
26597 32846.275	810	14.5	14.4	15.2	15.6	16.0	16.3	16.5	16.1	16.3	16.4	16.3
26598 32849.266	810	—	15.1	15.2	<16.0	<16.0	<16.0	—	<15.9	<15.9	<15.9	
26600 32849.404	810	—	15.3	15.3	<15.5	<16.0	15.9	—	<15.9	<15.9	16.0	
26601 32850.246	810	15.1	14.0	15.2	15.2	16.7	16.9	16.0	16.1	16.6	17.0	16.4
26602 32850.289	810	15.0	14.7	15.3	15.3	16.6	16.5	16.2	16.3	16.7	16.8	16.4
26603 32850.335	810	15.1	14.0	15.2	15.4	16.5	16.5	16.3	16.1	16.4	16.7	16.3
26604 32850.391	810	15.0	13.7	15.3	15.3	16.7	16.1	16.2	16.1	16.7	16.0	16.3
26605 32851.255	810	13.0	13.8	15.2	15.3	16.7	16.6	15.8	16.0	16.9	16.7	15.7



21  
1  
3  
2  
4  
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7  
4  
5  
0  
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3  
3  
9  
1  
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7



128

		(2)	(57)	(405)	(687)	(1006)	(375)	(376)	(793)	1853	11410	2121
JD 24200.000	40810	5.14	14.29	14.44	18.53	11.410	21.21	18.69				
26606	32851.302	15.0: 14.0	15.1	15.3	16.8	16.7	15.8	16.2	16.8	17.0	15.9	
26607	32851.349	15.0: 14.1	15.2	15.2	16.8	16.9	15.8	16.2	16.9	16.9	16.0	
26608	32851.408	15.2: 14.0	15.3	15.3	16.8	17.0	16.4	16.3	17.0	17.0	16.4	
26609	32852.254	15.1: 13.9	15.2	15.4	16.8	16.9	16.4	16.3	16.9	16.8	16.4	
26610	32852.297	15.2: 14.0	15.3	15.4	16.9	16.1	16.4	16.2	16.9	16.1	16.4	
26611	32852.341	15.1: 13.7	15.3	15.3	16.9	16.2	16.4	16.1	16.8	16.0	16.4	
26612	32852.392	15.0: 13.8	15.3	15.3	16.8	16.2	16.4	16.0	16.4	16.1	16.4	
26613	32854.245	15.1: 13.7	15.4	15.3	16.5	16.8	16.3	16.1	16.3	16.8	16.3	
26614	32854.288	15.0: 13.9	15.3	15.2	16.5	16.8	16.3	16.1	16.8	16.8	16.2	
26615	32854.332	15.0: 13.8	15.3	15.3	16.8	16.9	16.3	16.0	16.5	16.9	16.4	
26616	32854.383	15.0: 14.2	15.3	15.2	16.8	17.0	16.4	16.2	16.8	17.0	16.4	
26617	32860.256	15.0: 14.3	15.2	15.0	16.5	17.0	15.8	16.1	16.3	16.9	15.7	
26618	32860.300	15.0: 14.0	15.4	15.1	16.5	16.9	15.9	16.2	16.3	16.9	15.9	
26619	32860.346	15.0: 14.0	15.3	15.3	16.4	16.9	16.2	16.2	16.0	16.8	16.2	
26620	32860.391	15.0: 14.0	15.2	15.4	16.4	17.0	16.2	16.3	16.2	17.0	16.2	
26621	32861.253	15.0: 14.0	15.2	15.2	16.7	16.4	16.3	16.0	16.7	16.7	16.2	
26622	32861.298	15.0: 13.9	15.3	15.1	16.5	16.2	16.0	16.1	16.4	16.5	16.4	
26623	32861.343	15.0: 13.9	15.3	15.4	16.5	16.5	16.4	16.1	16.5	17.0	16.4	
26631	32878.257	15.0: 14.0	15.4	15.2	16.4	16.4	16.0	16.3	16.2	16.2	16.1	
26632	32878.305	15.0: 14.0	15.2	15.2	16.8	16.2	16.0	16.0	16.8	16.4	16.2	
26633	32878.349	15.0: 13.8	15.2	15.2	16.5	16.5	16.1	16.0	16.7	16.3	16.3	
26634	32878.396	15.0: 14.0	15.2	15.2	16.6	16.5	16.1	16.1	16.7	16.5	16.3	
26635	32879.275	14.5: 14.5	15.3	15.3	16.7	16.9	16.4	16.2	16.3	16.6	16.4	
26636	32879.326	14.5: 14.3	15.2	15.2	16.8	16.8	16.4	16.1	16.9	16.8	16.3	
26637	32879.373	15.0: 13.9	15.2	15.3	16.8	16.3	15.8	16.1	17.0	16.3	15.8	







130

		(2)	(57)	(405)	(687)	(1006)	SMV 375	2121 (376)	793	1853	11410	2121
J D 24200,000	HU 810	814	1429	1444	1853	11410	2121	1869				
26638	32879.335 422	14.5: 13.7	13.8	15.2	15.4	17.0	16.3	15.8	16.2	17.0	16.3	15.8
26639	32880.265	15.0: 13.5	13.8	15.3	15.3	16.9	17.0	15.9	16.1	16.9	17.0	16.0
26640	32880.311	15.0: 13.9	14.2	15.2	15.4	16.8	17.0	16.2	16.2	16.8	17.0	16.1
26641	32880.355	15.0: 14.0	14.2	15.2	15.3	16.8	17.0	15.9	16.3	16.7	16.9	16.0
26642	32880.399	15.0: 14.0	14.2	15.3	15.3	16.8	17.0	16.3	16.2	16.8	17.0	16.4

near 47 Tue

Sep 24

Sep 14

Sep 35

Sep 41

No appreciable change

No appreciable change

to 1.456079  
0.686759

No appreciable change















148

A 22145

Binocular fly sp.

	Seq. 14		F.W.W Seq. 1	
U	10.5	14.24	↓	
V	11.1	14.70	10.9	14.66
W	11.3	15.10	11.4	15.05
X	11.7	15.32	11.8	15.33
Y	12.6	15.67	12.2	15.60
Z	13.0	16.05	12.7	15.92
d	13.4	16.28	13.2	16.23
B	13.8	16.64	14.2	16.83
γ	14.7	16.92	15.1	17.20:

A 22145

Ilysparker C

	F.W.W Seq. 1	Seq. 14	
↓		8.9	
U	8.9	14.24	9.1
V	9.5	15.39	9.2
W	9.7	15.62	9.6
X	9.8	15.73	9.8
Y	9.9	15.84	10.0
Z	10.8	16.44	10.8
d	11.2	16.63	11.1
γ	12.1	16.91	12.1

21493

Binocular fly sp.

	F.W.W Seq. 1	Seq. 14	
↓		11.0	
U	11.2	14.60	11.4
V	12.2	15.43	11.5
W	12.4	15.58	12.2
X	12.6	15.73	12.4
Y	12.8	15.87	12.9
Z	13.4	16.23	13.8
B	14.2	16.70	14.1
γ	14.8	17.00	14.6

fly sp. C

A 12234

	F.W.W Seq. 1	Seq. 14	
↓		9.4	
U	9.7	14.70	9.6
V	9.9	15.10	9.7
X	10.2	15.32	10.2
Y	10.8	15.67	11.2
Z	11.2	16.05	11.7
d	11.6	16.28	11.9
B	11.9	16.64	12.1
γ	13.0	16.92	12.8:

Binocular fly sp.

A 22069

	F.W.W Seq. 1	Seq. 14	
↓		11.0	
U	11.2	14.60	11.3
V	12.0	15.29	11.5
W	12.3	15.46	12.2
X	12.4	15.52	12.8
Y	12.8	15.78	13.2
Z	13.2	16.03	13.8
d	13.8	16.38	14.2
γ	15.0	17.02	14.8:

F.W.W Seq!

A 12234

A 22145

A 22145

A 21493

A 22069

	C	C	Bin.	Bin.	Bin.	Mean
U						
V	14.82	14.24	14.66	14.60	14.60	14.58
W	15.12	15.39	15.05	15.43	15.29	15.26
X	15.33	15.62	15.33	15.58	15.46	15.46
Y	15.63	15.73	15.60	15.73	15.52	15.64
Z	15.87	15.84	15.92	15.87	15.78	15.86
d	16.14	16.44	16.23	16.23	16.03	16.21
B	16.37	16.63	16.83	16.70	16.38	16.58
γ	17.07:	16.91	17.20:	17.00	17.02	17.04:

F.W.W Seq.

X — • — 36 (Leant No  
y para  
S.H.C)

B — • — y

Z — • — d

γ — • — w



A21493 Bin Hypphanke			
	F.W.W.	Seq. 14	
U	Seq. 2	9.9	14.24
V	10.4	11.2	14.70
W	11.0	11.4	15.10
X	11.7	12.2	15.32
O	12.1		
Y	12.6	12.7	15.67
Z	13.1	12.8	16.05
L	13.6	13.9	16.28
B	14.0	14.2	16.64
γ	14.7	14.4	16.92
δ	16.2		

A22145 Bin. Hypphanke			
	F.W.W. Seq. 2	Seq. 14	
		10.3	
	10.2	11.2	
	10.8	11.3	
	11.2	12.0	
	11.8		
	12.3	12.5	
	12.8	13.2	
	13.5	13.5	
	13.8	13.8	
	14.8	15.2	
	17.0		

A22069 Bin. Hypphanke			
	F.W.W. Seq. 2	Seq. 14	
U		10.8	14.24
V	10.7	11.3	14.70
W	11.2	11.5	15.10
X	11.8	12.5	15.32
O	12.0		
Y	12.2	12.8	15.67
Z	13.0 12.8	13.3	16.05
L	13.8	13.5	16.28
B	14.6	13.8	16.64
γ	15.0	14.8	16.92
δ	15.7		

A12234 Hypphanke C			
	F.W.W. Seq. 2	Seq. 14	
		9.2	
	9.2	9.7	
	9.6	9.8	
	10.0	10.1	
	10.2		
	10.9	11.3	
	11.3	11.7	
	11.7	11.9	
	12.3	12.0	
	12.7		
	12.8		

A22134 Hypphanke C			
	F.W.W. Seq. 2		
		8.1	
		8.7	
		8.9	
		9.1	
		9.4	
		9.7	
		10.0	
		11.1	
		12.0	
		12.5	

A22134 Hypphanke C

A21493 Bin Hypphanke

A22145

A22069

A12234

(F.W.W. Seq. 2)

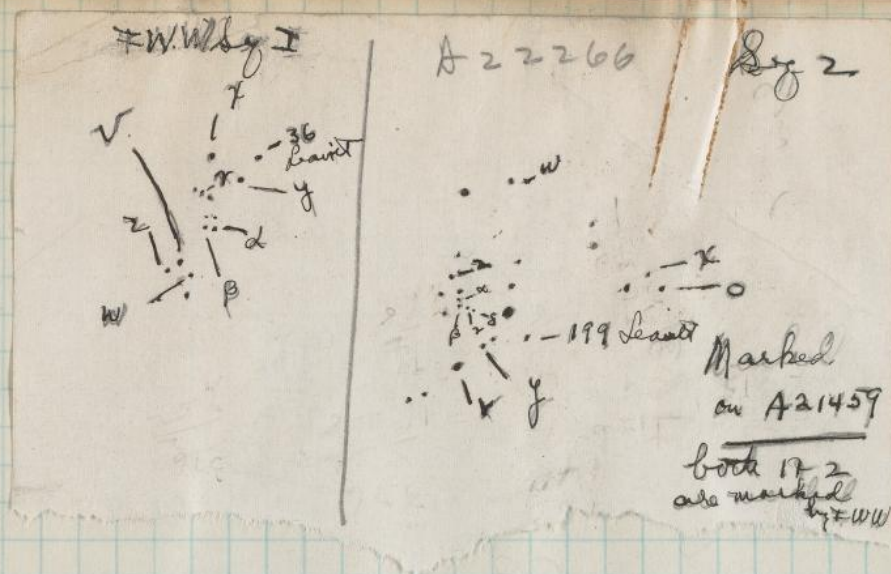
V	14.12	14.47	14.20	14.20	14.27	14.25
W	14.73	14.81	14.60	14.64	14.73	14.70
X	14.95	15.19	14.84	15.10	15.13	15.04
O	15.16	15.42	15.24	15.23	15.26	15.26
Y	15.46	15.67	15.57	15.35	15.58	15.53
Z	15.80	15.93	15.86	15.92	15.72	15.85
L	16.11	16.21	16.29	16.46	16.03	16.22
B	16.88	16.43	16.46	16.92	17.20	16.78
γ	17.42	16.88	16.98	17.14		17.00
δ		17.57	17.88	17.52		17.66

See next page  
for drawing of legs



















Dec 24, '41

Wright Circle S.M.C.

75 objects measured (F.W.W.)  
on 45+ plates

7 not var.  

---

68 vars. (65 sure)  
10 Prob  

---

78 vars in all  
(75 sure)

See later  
sheet  
for  
final  
report

27 Ps. (F.W.W.)  
10 Prob  
2 Craig  

---

39 (accurate)  
20 approx.  

---

59 Ps. accurate  
+ approx.  
  
6 l.f. ex. ch. etc  
13 ? (13 may not  
be var)  

---

78 (75 sure)



F. W. W.

$\begin{array}{r} 16757^{1904} \\ 23342^{1922} \end{array} \quad 6585$   
 $\begin{array}{r} 26508^{1931} \\ 26567 \end{array} \quad 3166$   
 $\begin{array}{r} 29900^{1930} \\ 16757 \end{array} \quad 59$   
 $\begin{array}{r} 3225 \\ 3333 \end{array}$   
 $\begin{array}{r} 29900 \\ 23340 \\ \hline 6560 \end{array}$   
 $\begin{array}{r} 26567 \text{ red} \\ 16757 \end{array} \quad 13143$   
 $\begin{array}{r} 3166 \\ 59 \end{array}$   
 $\begin{array}{r} 16757 \\ 9810 \end{array} \quad \begin{array}{r} .00005412664 \\ 53000 \\ 49050 \\ \hline 39509 \end{array}$   
 $\begin{array}{r} 29900 \\ 23342 \\ \hline 6558 \end{array} \quad 3166$   
 $\begin{array}{r} 12 \\ 88 \end{array} \quad \begin{array}{r} 15830 \\ 15830 \\ \hline 17096 \end{array}$   
 $\begin{array}{r} 29900 \\ 806 \\ \hline 094 \end{array}$   
 $\begin{array}{r} 3166 \\ 59 \end{array}$   
 $\begin{array}{r} 12664 \\ 15830 \\ \hline 17096 \end{array}$   
 $\begin{array}{r} 29900 \\ 806 \\ \hline 094 \end{array}$   
 $\begin{array}{r} 3524 \\ 8019 \\ \hline 4 \end{array}$   
 $\begin{array}{r} 283754 \end{array}$



21397	$\gamma$ 7355
97	$\gamma$
414	2495 19.359
426	$\gamma$
822	$\beta$ 5
863	$\alpha$ 778.637
888	$\gamma$
22021	$\alpha$
	$\alpha$ 9

2083	1672
94	1658
2539	41204



A 21493

Bin. Hyps.

Ly 14

16.0

For Faalig 2

10.0

11.0

12.0

13.0

14.0

15.0

14.0

15.0

16.0

17.0

22145

Bin. Hyps. poor match for Hypsander

14.0

15.0

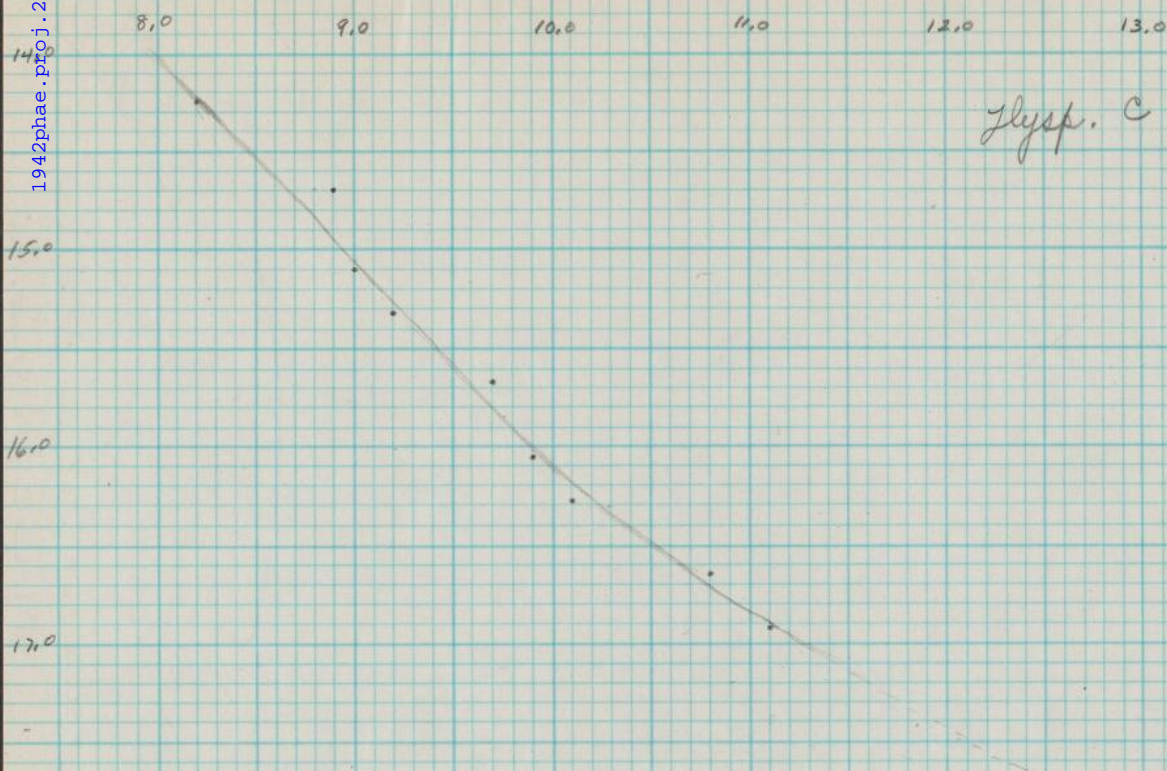
16.0

17.0



A 22134 *Hypp. C*

leg. 14  
<sup>7400</sup>  
 7000 2  
 ^





A 22069

leg 14

In FWW leg 2

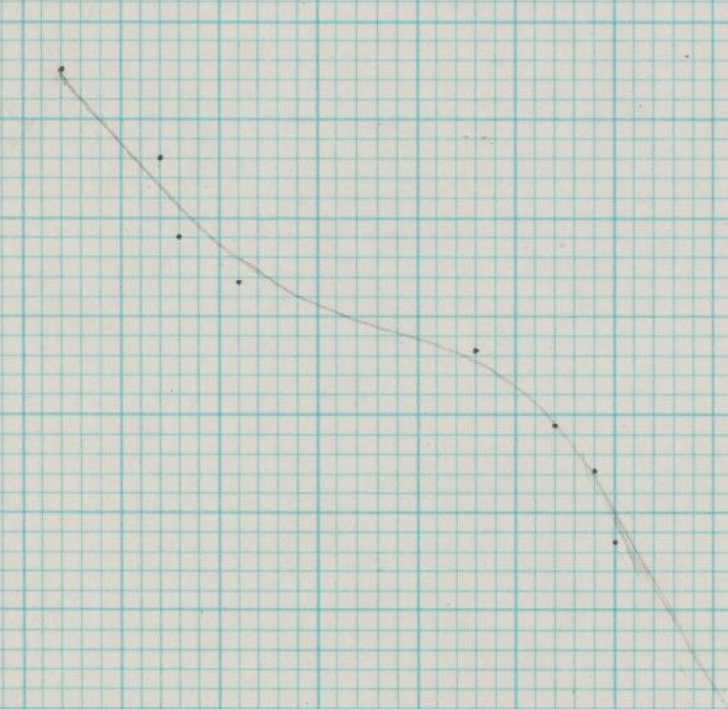
10.0 11.0 12.0 13.0 14.0 15.0

Bin. Hysp.

9.0 10.0 11.0 12.0 13.0

A 12234

Hysp. c





Scale  
11.0

A22145

12.0

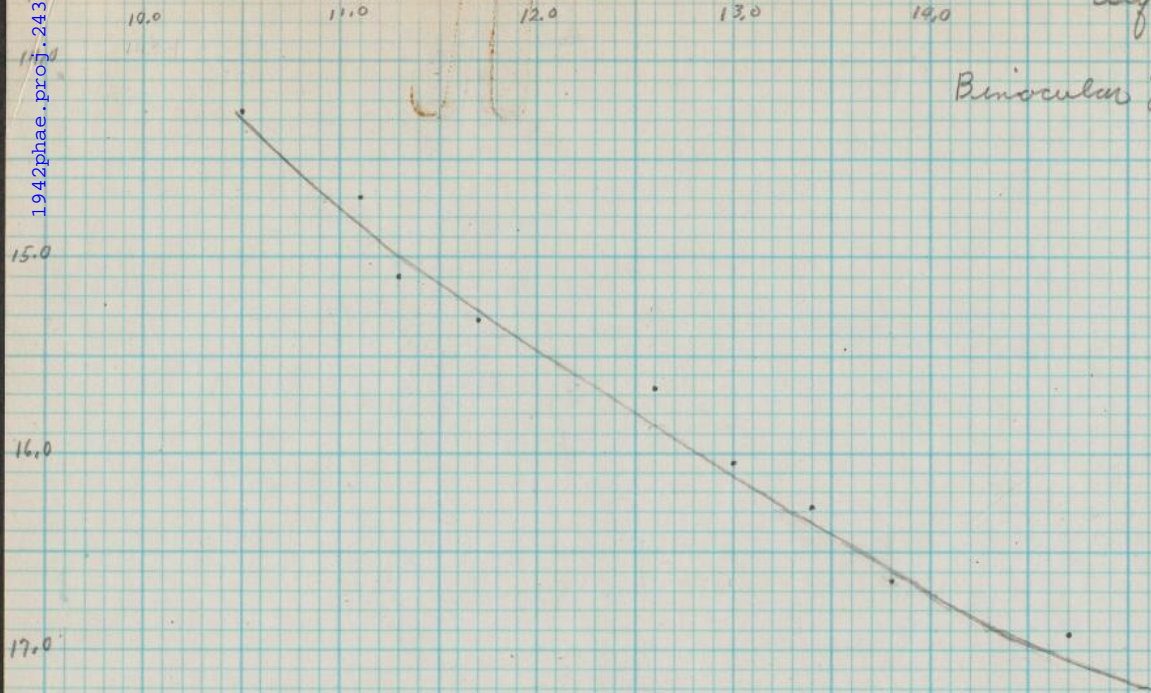
13.0

14.0

Seg. 14

for p.w.w. seg. 1

Binocular Fly Sp.



A22145

9.0

10.0

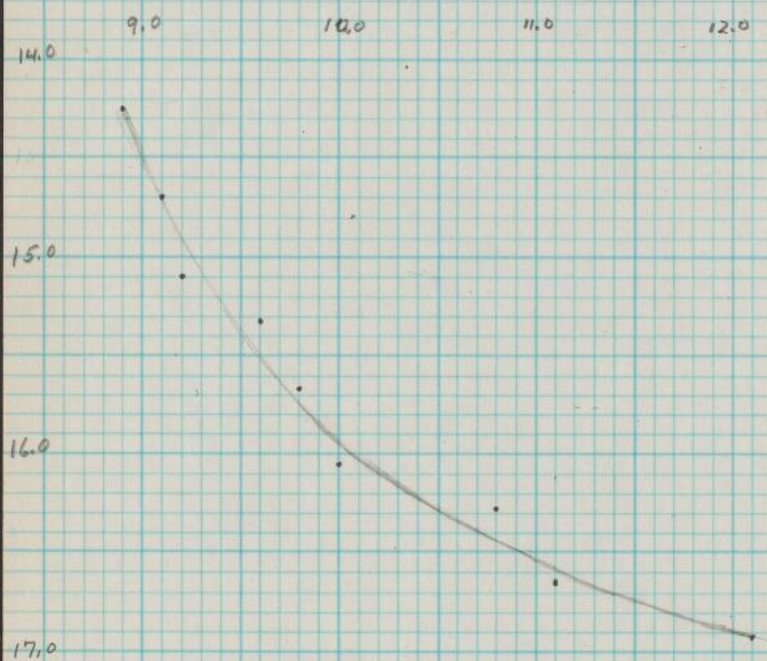
11.0

12.0

13.0

14.0

Fly Sp. C



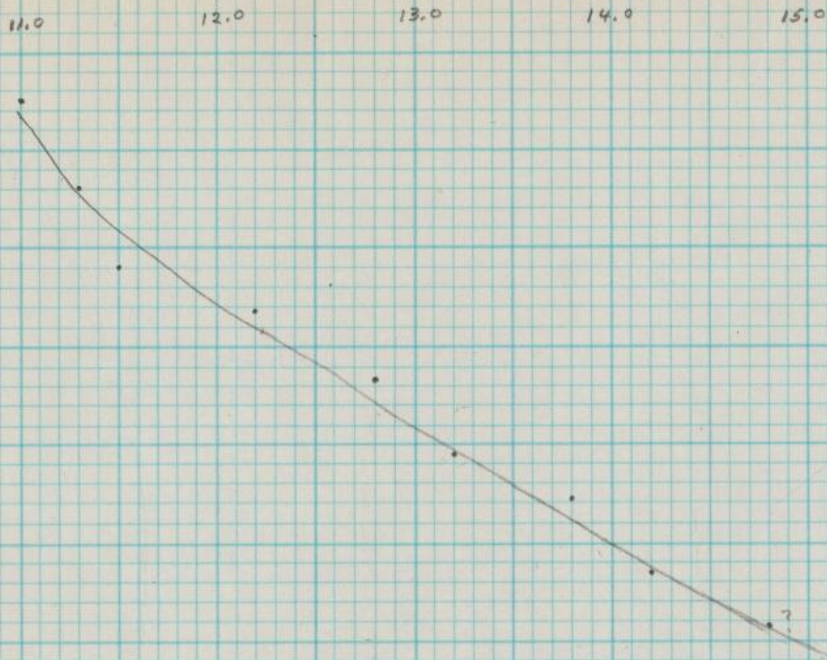


$$\begin{array}{r}
 17 \\
 3 \quad 2 \quad 3 \quad 0 \quad 8 \\
 \hline
 5291 \\
 \hline
 58
 \end{array}$$



A 22069

Key 14  
for  
FWW Seg 1





A 21493

Fig 14  
 $\neq$  WW  
 for Leg 1

11.0 12.0 13.0 14.0 15.0

Binocular Fly. sp.

u

v

w

x

y

z

a

b

c

9.0 10.0 11.0 12.0 13.0

A 1.2234

Fly sp. C

9.0

10.0

11.0

12.0

13.0

14.0

15.0

16.0

17.0

18.0

19.0

20.0

21.0

22.0

23.0

24.0

25.0

26.0

27.0

28.0

29.0

30.0

31.0

32.0

33.0

34.0

35.0

36.0

37.0

38.0

39.0

40.0

41.0

42.0

43.0

44.0

45.0

46.0

47.0

48.0

49.0

50.0

51.0

52.0

53.0

54.0

55.0

56.0

57.0

58.0

59.0

60.0

61.0

62.0

63.0

64.0

65.0

66.0

67.0

68.0

69.0

70.0

71.0

72.0

73.0

74.0

75.0

76.0

77.0

78.0

79.0

80.0

81.0

82.0

83.0

84.0

85.0

86.0

87.0

88.0

89.0

90.0

91.0

92.0

93.0

94.0

95.0

96.0

97.0

98.0

99.0

100.0

101.0

102.0

103.0

104.0

105.0

106.0

107.0

108.0

109.0

110.0

111.0

112.0

113.0

114.0

115.0

116.0

117.0

118.0

119.0

120.0

121.0

122.0

123.0

124.0

125.0

126.0

127.0

128.0

129.0

130.0

131.0

132.0

133.0

134.0

135.0

136.0

137.0

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255.0

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281.0

282.0

283.0

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285.0

286.0

287.0











1942phase.proj.2435N

1942phase.proj.2435N