

1881 photo. pr. 01-1829

KG
11366
n825

Standards of Lunar Brightness.

0°	Black Shadow	
1°	Hem Grimaldi	272
	Riccioli -	273
1½	Intens. Breccia	98
	Billy	266
	Zupus	268
2	Flora Endymion	27
	Democritus	53
	Caesar, Julius	96
	Cerber	278
	Faulstich a -	285
2½	Intens. Agost	6
	Vitruvius	57
	Pitatus	186
	Hippalus	225
	Marius	147
3	Tamantia	326
	Plinius -	61
	Thophilus	319
	Perrot -	290
	Hamstead (1)	223
	Proccator	227
3½	Flora Hansen	11
	Archimedes (1)	120
	Mullerius	231
4°	Intens. Manilius	95
	Ptolemaeus	208
	Euclid	214
4½	Superf. and. Aristillus	83
	Scius Medic	

5° Walls	Arago	63
	Landelsberg	222
	Bullialdus -	213
Surf. m.	Kepler (I)	144
	Antimedes -	120
5½ Walls	Pickard	4
	Timochinus	121
Ray. for	Copernicus -	112
6 Walls	Mastolius	59
	Kant-	302
	Bessel	73
	Misting	211
	Hamstead (II)	223
6½ Walls	dearymus	338
	Theoretus	82
	Dahies	123
7 —	Thon	297.8
	Aradocens -	100
	Bode B (I)	107
	Wichmann	Huber
	Kepler (II)	144
7½	Ukert	109
	Hartelius	119
	Eyelids	221
8 Walls of	Bodini	103
	Bode (II)	107
	Copernicus	112
8½ Walls of	Proclus	60
—	Bode A (III)	107
—	Hipparchus C	288

9°	—	Centorinus	325
		Dionysius	99
		Mosley A	211
		Mosley B (1)	231
		" C (1)	"
9½		Intensy Aristarchus (1)	148
		Lapeyroue Δ —	W 348
10		Centorinus Aristarchus (12)	W 148

Eclipses of Jupiter's Satellites 1878

I		II		III		IV	
D	R	D	R	D	R	D	R
2	(6)	3	(10)	(1)	15	12	~~14~~
(5)	(7)	<u>4</u>	19	14	(16)	35	
	(8)		(20)		27	(36)	
	(9)		(25)				
	(11)		26				
	(13)		(30)				
	17		37				
	(18)						
	(21)						
	~~22~~						
	(23)						
	24						
	(28)						
	29						
	31						
	(32)						
	33						
	(34)						

() denotes Phot.
 — " Eq.

1879								1880					
I		II		III		IV		I		II		III	
D	R	D	R	D	R	D	R	D	R	D	R	D	R
39	(61)	40	62	44	45	(38)	50	92	112	90	117	97	95
(41)	(63)	(42)	74	58	64	48	(51)	96	113	91	124	107	105
46	66	(43)	82	71	65	(49)	76	(98)	114	93	129	131	116
47	(67)	52	85	79	68	69		99	115	94	134		125
(54)	72	(53)	89	87	81	70		(100)	118	102	136		133
55	73	59						101	119	104			137
56	75							103	120	108			
57	77							106	121	109			
60	78							110	122				
	81							111	123				
	83								126				
	84								127				
	86								128				
	88								130				
									132				
									135				

Grouping of Variables Class II

Variables of Series 2nd Class Inside 100 to 600

0	+55	7	+10	13	-2	19	-17
	+38		+9		-23		-20
	<u>-10</u>		+12		<u>-6</u>		-29
			+24				+50
1	+72		<u>+24</u>	14	+54		<u>+33</u>
	+8				+84		
	+2	8	+12		<u>+27</u>	20	+58
	<u>+12</u>		+18				-15
			+19	15	+15		+15
2	+24		+4		+32		+9
	-4		+20		+16		+17
	-1		<u>-9</u>		-16		+16
	<u>+17</u>				+19		-15
		9	+35				-6
3	<u>+35</u>		<u>+12</u>	16	-23		<u>+23</u>
					-23		
4	+10	10	<u>+70</u>		+19	21	+78
	+10				-17		-16
	+17	11	+6		+15		~~+16~~
	+8		<u>+20</u>		-16	22	+12
	<u>-15</u>						-21
		12	-5	17	-		<u>+10</u>
5	<u>+53</u>		-18				
			+60	18	+31	23	-16
6	+22		+8		+6		+57
	<u>+23</u>		+62		+8		
			<u>+6</u>				
7							

Variables II				Err. h.t.			18111	
Name	N ₀	Δ	Mean.					
0	3	+83	+28	0			10	
1	4	+94	+24	2	+102	+51	7	
2	4	+36	+9		~~+2~~		8	
3	1	+35	+35	3	+2	+1	8	
4	5	+60	+12	2	-18	-9	18	
5	1	+53	+53	4	+20	+5	17	
6	2	+45	+22		~~+10~~		3 38 +13	17
7	5	+79	+16	3	-10	-3	1 +19	13
8	6	+64	+11	3	-136	-45	2 -64	5
9	2	+47	+24	6	-120	-40		13
10	1	+70	+70	3	+3	+1		13
11	2	+26	+13	2	+30	+15		9
12	6	+113	+19	3	+41	+14	1 -69	15
13	3	-31	-10	1	+48	+48	1 -3	14
14	3	+165	+55	-	-		1 -68	10
15	5	+66	+13	2	+21	+10	1 -66	14
16	6	-45	-7	1	+24	+24		18
17		-	-	5	-55	-11		7
18	3	+45	+15	10	~~+162.77~~	-6		19
19	5	+27	+5	6	+95	+16		26
20	9	+102	+11	5	+123	+25		24
21	2	+62	+31	3	+131	+44		14
22	3	+1	0	2	+89	+44		7
23	2	+35	+18	1	+42	+42		16
							322	

clusters & Webb.

	<i>h.</i>	<i>m.</i>	<i>s.</i>	
4520	19	47	56	+18
4575	20	18	27	+40
4670	21	23	40	+11
4678		26	43	-1
4681		27	33	+47
4687		32	59	-23
4773	22	10	10	+49
4957	23	18	30	+60
5031		50	36	+56

Nebulae Webb. C. O.

h. m. s.

	3049	12	25	25	+15
	3106		29	53	+26
	3132		33	13	-10
	3182		37	4	+12
	3258		44	47	+41
	3278		46	20	+11
	3321		50	21	+22
	3474	13	9	59	+42
S	3572		24	22	+47
	4029	14	54	46	+54
	4183	16	15	40	-26
S	4234		39	1	+24
	4244		43	13	+47
	4264		54	35	-26
S	4361	17	55	55	-24
S	4373		58	40	+66
S	4403	18	13	7	-16
S	4447		48	44	+32
S	4510	19	36	38	-14
S	4532		53	57	+22
	4540		58	24	-22
	4585	20	27	49	+6
S	4628		57	5	-11
S	4964	23	19	39	+41

Phil Double Stars.
Taken from Birmingham & 346-354

No.	R.A.			Dec.		Mags.	Remarks
	h.	m.	s.	0	1		
11	0	8	21	+77	21.0	8.2-10.7	very red; Herschel. 8.2 subflava. - Large star.
H 620	0	39	5	+31	0.5	9.0-14.0	Large star very red.
H 628							
H 1066							
H 2079	1	38	33	+52	49.8	9.10-15.0	Large star very red.
H 644							
1882	1	50	47	+62	18.9	9.0-10.0	Very red; fine green; Herschel (4th Cat.) Large star deep blood red, & very intense and remarkable colour, small star green.
H 647	1	56	18	+7	6.0	10.0-11.0	
H 2129	2	15	50	+76	46.5	10.0-14.0	Large star very red.
H 2146							
H 2166	2	53	55	+75	19.4	8.9-10.0	Large star very ruddy.
H 2168	2	56	30	+70	57.5	10.0-11.0	Large star very red.
H 2173							
H 345	3	2	13	+73	24.8	6.7-12.0	Large star very ruddy. Large star very red; small dusky red.
H 344	4	28	26	+33	41.0	10.0-14.0	
H 2244	4	52	16	+69	12.0	9.0-9.0	Both stars remarkably red.
H 701	5	22	49	+31	25.3	9.0-15.0	Large star very red.
724	5	23	36	+10	55.0	8.7-10.0	Small star very red. Herschel (7th Cat.)
782	5	37	0	+28	58.0	8.0-9.7	Egizie alba; rubro-purpurea.
H 383	6	8	34	-2	39.3	10.0-10.0	Both very ruddy.
H 2391	7	23	9	-26	35.6	8.9-14.0	Large star very red.
H 3973	7	26	36	-20	40.8	9.0-10.0	Pure white; remarkable brick red.
H 2832	18	20	58	-21	18.7	9.10-11.0	Large star very red, almost ruby.
H 5499	18	32	10	-4	25.0	9.0-12.5	Large star very red.
H 2988	20	35	52	+2	31.9	9.0-11.0	Large star very red.
2850	21	54	17	+23	22.0	7.2 -	Rubro-aurea.
H 3152	22	48	40	+10	1.2	9.0-15.0	Large star very red.
3038	23	40	23	+61	59.5	9.0-9.5	Albae - Both very red; Herschel.

0	June	23	7	44
1		25	19	34
2		28	7	24
3		30	19	14
4	July	3	7	04
5		5	18	54
6		8	6	44
7		10	18	34
8		13	6	24
9		15	18	14
10		18	6	04
11		20	17	54
12		23	5	44
13		25	17	34
14		28	5	24
15		30	17	14
16	Aug.	2	5	04
17		4	16	54

~~8 24~~
~~10 14~~
7 39

+78

+35 Cal.

6 27.4 +107.4 43

Sch.

18 Aug.	7	4	44	6	44	140.4	80.4	Sch
19	9	16	34					
20	12	4	24	5	37.4	133.4	73.4	Sch
21	14	16	14					
22	17	4	04	5	2.4	118.4	58.4	Sch.
23	19	15	54					
24	22	3	44					
25	24	15	34					
26	27	3	24					
27	29	15	14					
28 Sept.	1	3	04					
29	3	14	54					
30	6	2	44					
31	8	14	34					
32	11	2	04					
33	13	14	14					
34	16	2	04					
35	18	13	54					
36	21	1	44					
37	23	13	34	13	39		+5	
38	26	1	24					
39	28	13	14	13	24		+10	
40 Oct.	1	1	04					
41 Oct.	3	12	54					
42	6	0	44					
43	8	12	34	12	50.9	16	+16.9	Sch
44	11	0	24	~~13~~	~~50.9~~	~~136.9~~	~~76.9~~	
45	13	12	14					
46	16	0	04					
47 Oct.	18	11	54					
48	21	23	44					

49	Oct. 23	14	20	11	34	11	10		Knot
50				23	24				
51	28	13	40	~~11~~ 23	~~34~~ 24	11	18.4	+4.4 ~~+60.4~~	Sch
52				23	04				
53	Nov. 2	13	20	10	54	11	0	+71.4 +11.4	Knot Sch.
54				22	44				
55	7	13	0	10	34	10	29.7	~~+55.7~~ - 4.3	Sch.
56				22	24				
57	12	12	40	10	14				
58				22	04				
59	17		20	9	54	10	3.7	+67.7 +9.7	Sch.
60				21	44				
61	22	12	0	9	34	9	40.1	~~+66.1~~ +6.1	Sch.
62				21	24				
63	27			9	14				
64				21	04				
65	Dec. 2			8	54				
66				20	44				
67	7	11	0	8	34	9	0.2	~~+56.2~~ +26.2	Sch.
68				20	24				
69	12			8	54	8	24.1	~~+67.1~~ +8.1	Sch.
70				20	04				
71	17			7	54				
72				19	44				
73	22	10	0	7	34				
74				19	24				
75	27			7	54				
76				19	04				
77	Jan 1			6	54				
78				18	44				

79	Jan	6	9	0	6	24
80		8			18	24
81		11			6	14
82					14	04
83		6			5	54
84					17	44
85		21	8	0	5	34
86					17	24
87		26			5	14
88					17	064
89		31			4	54
90	Feb.	2			16	44
91		5	7	0	4	34
92		7	18	50	16	24
93		10	6	40	4	14
94		12	18	30	16	04
95		15	6	20	3	54
96			18	10	15	44
97		20	6	0	3	34
98			18	50	15	24
99		25	5	~~40~~	3	14
100			17	30	15	04
101	Mar.	2		20	2	64
102				10	14	44
103		7	5	0	2	34
104					14	24
105		12			2	14
106					14	04
107		17			1	54
108					13	44

109	Mar. 22	4	0		
110		15	50	13	24
111	27	3	40		14
112		15	30	13	04
113	Apr. 1	3	20		54
114	3	15	10	12	64
	6	3	0		34
		1			
	11				

16

21 2 0

1111

1111

a-h

a+b

a-h+90

a+b+90

4a + 180

Sec. 71

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Red Stars from Herschel & Webb.

	^h	^m	^{s.d}					
	10	27	40.9	128	41	21	6'	O
	10	52	10.4	107	24	40	8	P
280	12	20	39.9	60	45	49	9	
	14	16	32.4	63	31	1	7'	n2032
333	14	25	0.0	132	37	13	9	
	15	43	27.9	49	54	20	9'	n2228
366	15	52	50.1	53	29	17	10	
374	16	5	50.1	135	22	30	8'	
379	16	17	17.5	102	1	35	8	
385	16	29	44.0	122	2	0	8	
409	17	18	48.3	125	29	33	9	
410	17	19	42.1	109	19	20	8'	
414	17	28	23.8	131	30	58	8	
418	17	34	57.6	108	34	38	8	
420	17	45	35.5	88	11	35	9	
	17	49	31.1	87	15	17	7'	P.
435	18	10	46.4	89	12	32	8	
460	18	37	33.9	81	25	22	9	
	18	41	5.6	98	5	31	9	n2209
	19	24	35.7	106	43	15	7	P
	19	56	30.9	117	42	14	7'	P.B
533	20	3	46.3	49	0	0	10	
	20	7	7.9	111	50	11	6'	P
559	20	17	32.1	118	48	37	8	
	21	37	19.7	52	54	47	8'	P
	21	48	53.5	40	17	34	9	n2228
600	21	56	17.0	62	28	0	8'	
649	23	40	32.3	45	45	40	10	
	14	18	20	* 26	21			W n2032
	17	47	37	1	47			

Red Stars from Herschel & Webb.

	18 ^h	42 ^m	46. ^s	- 8° 3'	n 2209
	18	57	27	- 5 53	n 2000
492	19	14	::	27 1	—
	19	26	51	- 16 40	ρ
	19	53	::	43 55	n 2204
541	20	9	::	38 20	—
	20	9	30	21 45	ρ
	21	37	53	+ 37 25	n 2228
	21	38	59	37 13	ρ

Stars in Zone $17^h 10^m - 17^h 40^m$ $-23^\circ 57' \text{ to } -28^\circ 38'$
 Dec. Magn.

1	0	0	40	10		
2		12	46	13		
3		27	48	49	11	11
4		44	43, 45	43	12, 12	12
5		45	43	45	11	12
6	1	1	44	43	44	11 11
7		10	45		12	
8		15		46	12	
9		36	37	56	56	57
10		56	55	57	7, 7	7
11	2	5	59	38	12	12
12		6	59	40	42	42
3		20	52	53	11	11
4		25	51	52	7	9
5		29	52	52	10, 9	10
6	3	22	40	53	11	11
7		38	40	54	10	11
8		49	46	47	11	12
9		58	48	49	11	11
20	4	17	57	39	12	12
1		38	55	56	12	12
2		41	56	56	11	11
3		42	42	43	11, 11	10 11
4		56	52	39	11	12
5	5	21	41	41	9	12
6		24	41	43	9	10
7		30	46	40	12	12
8		34		40		12
9		36				
20		58	41	43	10	12

0	00	40	10
	12	46	13
	27	48	11
	44	44	12
	45	45	12
1	01	24	11
	10		
	15		
	36		
	56		
2	05		
	6		
	20		
	25		
	29		
	05		
3	22		
	33		
	38		
	49		
	58		
4	17		
	38		
	41		
	42		
	56		
5	21	39	13
	24	41	12
	30	42	9
	34	40?	12
		40	12
	55	43	12

Baltimore, Philadelphia, New York, Boston, etc.

The next *annular* eclipse of the sun in the United States will be on March 16th, 1885; it will be annular in northern California and Montana; the third return of the annular eclipse so successfully observed at the lighthouse off Chatham, Cape Cod, 12th February, 1881.

The next *total* eclipses of the moon will be on April 10th, 1884, visible in California, and October 10th, 1884, the latter part of which may be seen in New England; but during the continuance of both of them there will not be any occultation of a star.

THE PLANETS.

The three planets Venus, Jupiter and Saturn, which attracted so much attention in February and March last by their unusual proximity and their brilliancy (a fourth, little Mercury, so seldom seen, being so near the sun, was also bright in February) have passed their conjunctions with the sun, and are now visible before sunrise near each other and very conspicuous. Jupiter and Saturn were at their least distance (as seen from the earth) on April 22, viz., a degree and a quarter. On June 1 it will be about four degrees, but they will not appear again so near until 1901. They rise in the east about 3 A.M.; Venus, now very bright, at the same time, and Mars, now approaching its next opposition to the sun, in December, is also quite near the three others, toward the east, but it will soon overtake them. On July 1 it will pass within a degree north of Saturn, and on July 22 within a tenth of a degree to the south of Jupiter; Venus will pass within a fifth of a degree of Saturn on June 5, and on the morning of the eclipse, the 12th, will still be quite near; on the 18th, it will pass $2\frac{1}{2}$ degrees to the south of Jupiter. On July 19 the moon will pass quite near Saturn, Mars and Jupiter and on July 21, near Venus, so that the early morning skies in June and July will be as attractive as they were soon after sunset in February and March. Mars, however, will have been substituted for Mercury, which will be the only planet visible in the evenings of June and the beginning of July. Mercury will be at its greatest eastern elongation from the sun on June 13, and, as its declination is very large, it may be seen every clear evening in June in the W. N. W., quite low, and as soon as the strong twilight fades. It resembles a reddish star of the first magnitude; on July 19 it will be again in a line with the sun. It may, however, be seen in California (not here) on the 7th of November next, passing across the sun in the transit of that day, which will be partly visible at San Francisco.

Brookline, May 24, 1881.

0	00	40	10
	12	46	13
	27	48	11
	44	44	12
	45	45	12
1	01	44	11
	10	45	12
	15	46	12
	36	56	7
	56	38	12
2	05	42	11
	6	52	10
	20	-	-
	25	51	9
	29	52	10
	05	40	-
3	22	53	10
	33	40	Dark
	38	46	11
	49	48	11
	58	{ 57	12
		{ 55	12
4	17	38	11
	38	45	11
	41	57	12
		56	12
	42	43	10
	56	39	13
5	21	41	12
	24	42	9
	30	40?	12
	34	40	12
	55	43	12

31 5 58 58

2 6 4 ~~7~~

3 12 16

4 14 14

5 20

6 23

7 29 ~~31~~

8 33

9 38 ~~38~~40 48 ~~48~~

1 7 9 10

2 15 14

3 15

4 21 ~~23~~

5 26

6 28

7 34 ~~34~~

8 46 46

9 50 53

50 55

1 8 21 22 20

2 31 30 31

3 41 48

4 56 58

5 9 23 24

6 38 38 38

3#

7 10 38 37

8 44

9 11 03 4

60 50 48

51

41 ~~39~~ 10 ~~10~~~~37~~ 12~~50 50~~ ~~11~~

50 50 11 12

55 56 11 11

~~46~~ 54 42 10 12

46 47 10 11

56 43 12

40

49 50 11

45 46 10 11

43 44 43 45 9.7 9

46 48 10 12

57 12

37 38 10 10

48 49 10 10

42 45 11 11

~~50~~ 52 41 12 12

52 12

50 55 58 12 12

44 47 12 12

56 47 48 10 10 Double 11

50 50 11 12

37 38 12 12

55 54 55 12 12 12

56 13

55 12

5	58	41	10
6	4	39	12
	1		
	14	50	11
	20	55	11
	29	54	11
	38	47	10
	48	43	12
7	15	50	11

22	45	11
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	<u>34</u>	<u>43</u>	<u>8</u>
	46	47	11
	50	57	12
	55	37	10
8	<u>22</u>	<u>48</u>	<u>9</u>
	30	42	11
	41	41	12
	56	52	12
9	23	44.9	12
	<u>38</u>	<u>48</u>	<u>10</u> Della
10	38	50	11
	44	37	12
11	03	54	12
	50	56	13
	52	55	12

61	12	6			40		12
62	28	~~36~~			~~58~~ 41		12
63	38	38			51 52	12	12
64	39	39			43 45	10	10
65	51				41		24h
66	13	12	12		53 53		12
67	18	19			50 53 53	51	12
68	39	¹⁹ 34 40			⁴⁷ 55 54	56	11 10
69	49	45 49			54	55	12
70	53	53			46 46		12
71	14	0	0		50 ~~53~~	51	12
72	2				50		
73	20	<u>20</u>	20		<u>44</u> 44 46		9 10
74	30	27 33 36			55 44 43	46	12
75	53	45			57		
76	54	<u>54</u>	55		<u>51</u> 52 50	52	7.2 8
77	54						
78	15	0			~~43~~ 43		12
79	7	~~45~~			45		12
80	~~15~~ 10				48		12
81	12						
82	19						
83	22	³²			46 39		12 12
84	35	35 37			54 56		11 11
85	42	41 44			48 44	43	11 12
86	51						
87	55	55			46 46		11 11
88	57	57 09			54 56		10 10
89	¹⁶ 14	15			57 54		12 12
90	17	19			59		11

12	6	40	12
	28	41	12
	35	51	12
	39	44	10
	51	41	sub.

13	12	53	12
	18	52	12
	39	55	10
	49	54	12
	53	46	12

14	0	50	12
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20	44	9
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30	45	12
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54	51	8
	49	12

15	0	43	12
	7	45	12
	10	48	12

22	46	12
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35	54	11
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42	48	11
45	44	11

55	46	11
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16	57	54	10
	19	57	12
	14	54	12
	17	59	11

91	16	30	41	59	43	"	12
92		48	44	58	45	"	10
93		48	46	43		"	
94		52	~~57~~	~~58~~		9	
95	17	51	03 04	53	53	54	11 10
96		14					
97		17					
98		21	21	45	46		11
99		32	32	53	53	12	12
100		33	33	57	57	12	12
101		57	57	57		12	
102		59	59	50	51	12	12
103	18	7	9	47	42	12	12
104		8		55	39	12	12
					40		
105		21	21	44	45	"	12
106		29			48		12
107		29	40	42	44	"	12
108		43	42	41	44	"	12
109		59	59	42	44		11
110	19	1					
111		2			4		
112		3	4	41			
113		5	4	44	48		11
114		10			4		
115		11	12	48	49		"
116		11	12	57			
117		16					
118		27	29	41			
119		31					
120		32	33	42	41		12

	57	~~50~~	9
17	3	53	10

21	45	11
32	53	12
33	57	12
59	50	12

18	21	45	11
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43	43	44 *	11
~~59~~	59	43	11

19	3	41
	5	44

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11	57	

28	41
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32	54	41	134
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121 121	19	34	33	56		11	
122 122		41		38			12
123 123		57	57	42	45	11	11
124 124	20	5		42			10
125 125		19					
126 126		23	-				
127 126		25	-				
128 127		28	-				
129 128		29	-				
130 129		31	-				
131 130		37	-		51		11
132 131		44	44	44	46	11	11
133 132		50	49	50	39	12	10
134 133		52	58	57			
135 134	21	14	5	49	48	49	11, 11
136 135		27					
137 136		28	38	48			
138 137		29			43		12
139 138		41	41	50			
140 139		42			38		12
141 140		50	49	52	53		12
142 141		53	53	47	48		12
143 142		54		49	49		12
144 143	22	3	3	46	48		12
145 144		7	14	50	50	51	Prob.
146 145		21	21	58	56		
147 146		24	24	43	45		12
148 147		29		50	51		12
149 148		28	37	44	45		12
150 149		40			50		12

19	34	56	11
	41	58	12
	57	43?	11
20	5	42	10

23	} 5 class
25	
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37	51	11
44	45	11
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21	14	49	11
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38	48	
39	43	12
41	50	
43	38	12
50	52	12
53	47	12
54	49	12

22	3	47	12
	7	50	Sub.
	14	58	9
	21	44	12
	24	50	12

38	44	12
40	50	12

157	22	42	42	50			
152		43					
153		46	45	54	55	11	
154		53	53	54	55	11	
155	23	1	0			11	
156		2				11	
157		5				11	
158		9		~~38~~ 38		10	
159		9		39		11	
160		33					
161		51	~~48~~	45		12	
162		59					
163	24	6	4	47	49	12	12
164		12	11	44	45	11	12
165		13					
166		19	19 19	46	46	47	9 10
167		22	22	47	48	10	11
168		27					
169		30	29 10	58	56	11	11
170	25	19			53		12
171		20			42		12
172		25			55		12
173		56	55	40	42		11
174	26	10			43		12
175		10			44		12
176		11			44		12
177		14					
178		23					
179		26			51		11
180		30					

22	42	50		801
	46	55		
	53	54	11	not
23	1		11	
	2		11	
	5		11	
	9	38	10	
	9	29	11	
	51	45	12	
24	6	48	12	
	12	44	11	
	19	46	9	
	22	47	10	
	2			
	30	56	11	
25	19	42	12	
	35	55	12	
	55	40	16	
26	10	43	12	
	10	44	12	
	12	44	12	
	26	57	11	

181	26	55		47		12
182		56				
183	27	3		51		12
184		8		47		12
185		19		43		12
186		28		54		12
187		47	47	53		12
188		48	37	39		9
189		49	39	~~41~~ 41		~~10~~ 10
190	28	6		48		12
191		26		38		11
192		27		47		11
193		35				
194		40				
195		50				
196		52		46		11
197		53				
198		54				
199		55				
200	29	1	<u>00</u>	<u>40</u>	42	10
201		2				
202		3		50		11
203		5				
204		11				
205		14				
206		17				
207		25		54		11
208		33		54		12
209		56		41		13
210	30	11		51		12

26	55	47	12
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27	3	51	12
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	8	47	12
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	19	43	12
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		54	12
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	28	53	12
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	47	37	9
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	48	41	10
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	49	43	10
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28	6	48	12
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	26	38	11
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	27	47	11
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	52	46	11
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29	00	40	10
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	3	50	11
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	25	54	11
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	33	54	12
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	56	41	13
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30	11	51	12
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211 30

12 1638 40

9 Dark

212

13

47

12

30	12	38	9 Dark
	13	47	12

Sto = Zone $17^{\text{h}} 10^{\text{m}} 5^{\text{s}}$ to $17^{\text{h}} 40^{\text{m}} - 23^{\circ} 42' \text{ to } 23^{\circ} 23'$

301	0	0	0	40	10
302		12			
303		12			
304		16			
305		18			
306		19			
307		23			
308		29			
309		39			
310		46			
311		53			
312		54			
313	1	11			
314		24			
315		26			
316		29			
317		32			
318		35			
319		37			
320		42			
321		43			
322		52			
323		56			
324		57			
325		5		40	10
326		5		28	10
				29	11
327		14	12	22	12
328		22	22	38	12
329		26	26	30	12
330		28			

331	2	31	30	30	12
332		26	35	21	12
333		39			
334		42	41	23	11
335		47	46	21	12
336		47	46	27	10
337		50			
338		51			
339	3	1	1	20	12
340		5			
341		7	7	26	12
342		16	13	23	12
343		27	26	20	12
344		40	40	24	12
345		44	44	33	11
346		45			
347		48	49	36	11
348		50			
349		59	58	29	10
				28	12
350	4	0			
351		17	16	33	10
352		18			
353		20			
354		27			
355		38			
356		43	42	21	10
357		47	47	21	
358		50	51	20	10
359		52	51	33	10
360		54			

361	4	56	56	36	11
362	5	1			
363		3			
364		14			
365		15	15	36	12
366		21	21	38	12
367		22			
368		24			
369		28			
370		30			
371		34		25 26	9 10
372		39	37 37		
373		40			
374		42			
375		48	49	33	11
376		50			
377		55			
378		56			
379		57			
380	6	4	2	36	11
381		6			
382		12			
383		16	15	26	11
384		17			
385		27			
386		32			
387		35			
388		38			
389		45	45	31	11
390		58	57	35	12

10.

391 7	1	0	34	12
392	5	8	40	12
393	15	14	38	12
394	44	22 27	38	12
395	47	44	31 30	13 13
396	50	51	24	12
397	55		26	12
398	56	56	33	12
399 8	3	3	34	11
400	10	7	30	12
401	22	22	21	11
402	23		27	11
403	35	34		
404	42	38	27	10
405	45	42	31	13
406	50	~~52~~	37	11
407	59			
408 9	2	2		
409	10	10	21	12
410	27	26	21	12
411	41	41	29	11
412 10	4	3	22	12
413	19	18	23	12
414	28	27	32	12
415	37	37	30	12
416	44	44	25	11
417 11	0	59	35	12
418	27	18	21	12
419 12	7	26	27	13
420	26	27	33	12
			37	13
			36	12
			30	17

421 12	28	~~38~~ 27	38	12
422	32	~~39~~	26	12
423	51	~~42~~ 57	~~38~~	~~12~~
424 13	5	57 4	37	13
425	7		29	12
426	32	31	39	12
427	39	40	26	12
428	43	~~44~~	34	12
429 14	2	47 0	~~39~~ 29	12
430	4	4	26 <i>dark</i>	
431	27	25	37	12
432	20	30 32	25	11
433	44	43, 46	27 26	11 11
434	53	51	33, 33	9, 9 <i>red</i>
435	55		35	12
436	59	57		
437 15	8	7	33	12
438	16	14	36	12
439	27	26	28	11
440	22	22	20	12
441	33		35	
442	35	36		
443	43	43	28	12
444 16	30	0 9 20 28	24 21 22, 23, 24	12 12 12, 13, 13
445	43	40	21	11
446 17	13	50 11	29	12
447	13	15 20	31	13 12
448	23	29	27	12
449	31	32	25	12
450	41	40	24	13
			22	13
			24	12

451	17	46	46	32	12
452	18	6	47	35	13
453		7	58	28	
454		7	7	36	
455		8		37	
456		9			
457		11			
458		13			
459		14			
460		14			
461		19			
462		28	28	30	12
463		29	38	27	12
464		41	40	26	12
465		42			
466		46			
467	19	53			
468		3	3,2	32 31	10
469		4			
470		16	14	34	
471		20			
472		24			
473		24			
474		25			
475		30			
476		32			
477		33			
478		39			
479		41			
480	20	58			
		5			

481	20	5 (2)			
482		8	7	31	11
483		18	14	35	11
484		19			
485		21			
486		23			
487		28	26	37	12
488		28	28	35	11
489		41			
490		49	48	35	11
491		50			
492		53	55	30	10
493	21	0			
494		12	9	29	12
495		16	<u>18</u>	18	9
496		39	37	24	10
497		39			
498		42			
499		44	44	34	11
500		46			
501		50	48	27	10
502		50			
503	22	3			
504		9	7	24	
505		13			
506		14			
507		14			
508		18			
509		26	26	35	12
510		27			

511 22	29				
51 2	30				
51 3	41				
51 4	43	44	23	10	
51 5	45				
51 6	47				
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51 9 23	1	0	40	10	
520	2				
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524	9	8	36	11	
525	22				
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528	26				
529	38				
530	41				
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532	47				
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534 24	8				
535	9				
536	16				
537	17				
538	19				
539	23				
540	24				

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541 24	26
542	27
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544	38
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551 25	4
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556	20
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559	28
560	33
561	38
562	39
563	56
564 26	30
565	32
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567	46
568	49
569	58
570	59

571	27	3
572		5
573		7
574		12
575		15
576		17
577		19
578		22
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580		39
581		40
582		48
583		50
584		53
585		58
586	28	18
587		19
588		27
589		28
590		36
591		42
592		45
593		46
594		53
595		56
596	29	1
597		3
598		4
599		5
600		8

601	29	11		
602		18		
603		29		
604		32		
605		37		
606		49		
607		56		
608		58		
609	30	1		
610		4		
611		<u>12</u>	<u>10</u>	<u>38</u>
612		13		9

1 1 01

Oct 12, 1883. Asteroids.

	m_0	Δ	Δ	1883	R.A.	
1	<u>7.4</u>	<u>4.0</u>	7.3	Dec 6	4	+20
2	<u>8.0</u>	<u>4.5</u>	8.0	Oct 13	1	-17
3	<u>8.7</u>	<u>5.5</u>	7.5	Dec 33	6	+1
4	<u>6.5</u>	<u>4.0</u>	6.6	Feb 22	-	Observed
5	<u>9.9</u>	<u>6.9</u>	~~9.6~~	~~May 2~~		
6	<u>8.5</u>	<u>5.8</u>	~~8.2~~	~~Oct 17~~		
7	<u>8.4</u>	<u>5.8</u>	~~8.3~~	~~Oct 40~~		
8	<u>8.9</u>	<u>6.8</u>	8.2	Dec 17	5	+19
9	<u>8.9</u>	<u>6.3</u>	8.3	Dec 40	7	+28
10	<u>9.5</u>	<u>5.4</u>	8.8	May 14	-	
15	<u>8.6</u>	<u>5.4</u>				
16	<u>9.6</u>	<u>5.9</u>				

Asteroids at mean distance higher than 9.0

1, 2, 3, 4, 6, 7, 8, 9, 15.

Asteroids at distance uniting " 6.0

1, 2, 3, 4, 6, 7, 10, 15, 16.

Asteroids = 1883 " 9.0

1, 2, 3, 4, 8, 9, 10

Asteroids to be observed = 1883

2, 1, 8, 3, 7

Oct 12, 1883, Dh. *Mytilus*
 Comparison Dh. and Photo.

6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5
-5	+4	+2	+9	+2	+2	-1	
	+7			+2	-2	-4	
				+13	0	+10	
				+8	+5	+5	
					+11	0	
					+11	-3	
					+12	-7	
						-3	
						0	
						+5	
						+2	
						+2	
						+7	
						+6	
						+12	
						+6	
						+5	

1881phae.proj.1829.

1881phae.pr01.1819.