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J. Maulbetsch

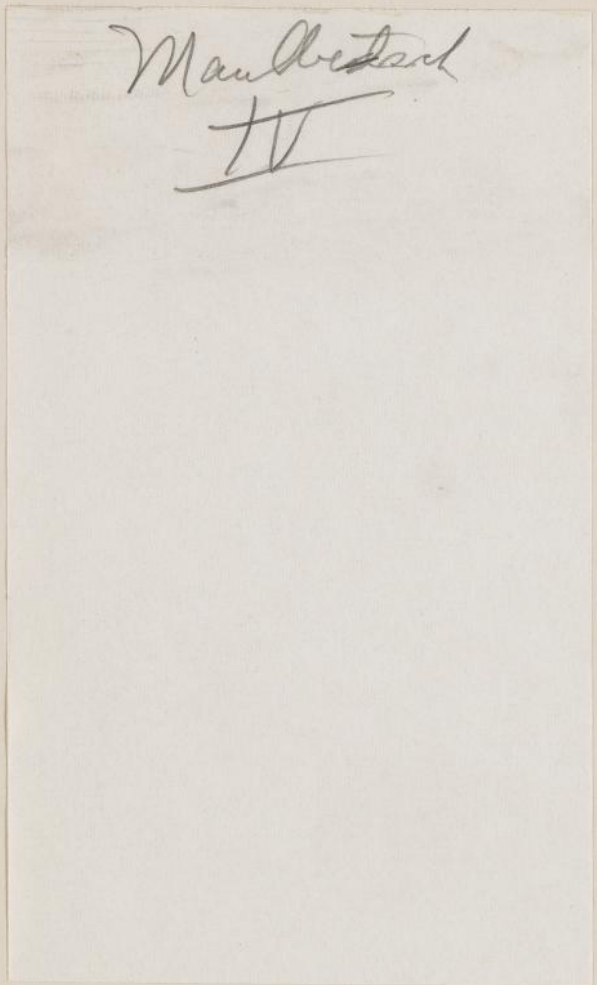
IV

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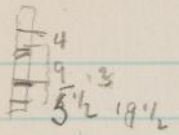
Spectrophotometry 1 — 105

AB 106 — 220

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1933phae.proj.1230M

May 9, 32

J 00611 72 558 8.4 4.07

Ao*	6.1	8.9	1.4	3.35	41.8	1.62
S6	6.10		1.4		41.8	1.62
	6.35		1.65		49.3	1.69
	6.65	9.21	1.95		58.2	1.76

71 598 6.9 5.1

5.9	9.0	.8	4.05	19.8	1.30
5.85		.7		17.3	1.24
6.10		1.0		24.7	1.39
6.00	9.3	1.0		24.7	1.37

70 711 8.9 5.3

8.6	6.8	1.5	3.6	41.7	1.62
	6.8	1.5		41.7	1.62
	7.05	1.75		48.6	1.69
9.1	7.20	1.90		52.8	1.72

70 715 7.8 5.4

6.3	9.5	.9	4.15	21.7	1.34
6.45		1.05		25.3	1.40
6.50		1.1		26.5	1.42
6.50	9.6	1.1		26.5	1.42

69 661 8.4 5.6

6.9	9.7	1.3	4.15	31.3	1.50
6.9		1.3		31.3	1.50
7.0		1.4		33.7	1.53
7.2	9.8	1.6		38.6	1.59

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69	694	6.1					5.6
	5.9	9.85	.3	4.2	7.15	0.85	
	5.9		.2		7.15	0.85	
	6.0		.4		9.53	0.98	
	6.0	9.8	.4		9.53	0.98	
68	701	9.1					5.7
	7.5	10.15	1.8	4.4	41.0	1.61	
	7.4		1.7		38.7	1.59	
	7.9		2.2		50.0	1.70	
	8.2	10.20	2.5		56.8	1.75	
68	722	8.9					5.7
	7.7	10.40	2.0	4.7	42.5	1.63	
	7.7		2.0		42.5	1.63	
	7.8		2.1		44.7	1.65	
end of Aug	8.1	10.40	2.4		51.0	1.71	
70	707						5.7
	6.65	9.6	.95	4.0	23.8	1.38	
	6.70		1.0		25.0	1.40	
	7.00		1.3		32.5	1.57	
	7.40	9.8	1.7		42.5	1.63	
70	718						5.7
	7.4	9.9	1.7	4.2	40.5	1.61	
	7.55		1.85		44.0	1.64	
	7.80		2.1		50.0	1.70	
	7.00	9.9	2.3		54.8	1.74	

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70 722✓ 5.7

7.7	9.8	2.0	4.15	48.4	1.68
7.8		2.1		50.8	1.71
8.2		2.5		60.5	1.78
8.3	9.9	2.6		62.8	1.80

70 719✓ 5.7

7.5	10.1	1.8	4.35	41.4	1.62
7.6		1.9		43.8	1.64
8.1		2.4		55.3	1.74
8.2	10.0	2.5		57.5	1.76

69 639✓ 5.6

7.0	10.0	1.4	4.4	31.8	1.50
7.2		2.0		45.5	1.66
7.9		2.3		52.3	1.72
8.1	10.0	2.5		56.8	1.75

69 645✓ 5.6

6.7	10.0	1.1	4.4	25.0	1.40
7.10		1.5		34.1	1.53
7.25		1.65		37.5	1.57
7.30	10.0	1.9		43.2	1.63

69 647✓ 5.6

7.5	10.0	1.9	4.35	43.7	1.64
7.5		1.9		43.7	1.64
7.9		2.3		53.0	1.72
8.5	9.9	2.9		66.7	1.82

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69 648 ↓ 5.6

7.2	10.0	1.6	4.4	36.4	1.58
7.3		1.7		38.7	1.59
7.45		1.85		42.1	1.62
7.80	10.0	2.2		50.0	1.70

69 649 ↓ 5.5

7.25	9.8	1.75	4.4	39.8	1.60
7.70		2.2		50.0	1.70
7.80		2.3		52.3	1.72
8.10	10.0	2.6		59.1	1.77

69 657 ↓ 5.6

6.4	9.9	.8	4.25	18.8	1.22
6.6		1.0		23.5	1.37
6.9		1.3		30.6	1.49
7.0	9.8	1.4		32.9	1.52

69 664 ↓ 5.5

6.7	9.7	1.2	4.2	28.6	1.46
7.0		1.5		35.7	1.55
7.0		1.5		35.7	1.55
7.3	9.7	1.8		42.8	1.63

69 669 ↓ 5.6

9.7	6.3	.7	4.15	16.9	1.22
	6.4	.8		19.3	1.29
	6.6	1.0		24.2	1.38
9.8	6.7	1.1		26.6	1.42

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69 671 ↓ 5.6

6.7	9.9	1.1	4.3	25.6	1.41
6.7		1.1		25.6	1.41
6.8		1.2		27.9	1.45
7.0	9.9	1.4		32.6	1.51

69 673 ↓ 5.6

7.4	9.9	1.8	4.3	41.8	1.62
7.5		1.9		44.2	1.64
7.7		2.1		48.9	1.69
8.1	9.9	2.5		58.1	1.76

69 680 ~ 677 ↓ 2 5.6

6.5	10.0	.9	4.4	20.4	1.31
6.6		1.0		22.7	1.36
6.8	10.0	1.2		27.3	1.44
7.1		1.5		34.1	1.53

69 682 ~ 681 ↓ 5.6

6.6	10.0	1.0	4.4	22.7	1.36
6.8		1.2		27.3	1.44
7.1		1.5		34.1	1.53
7.3	10.0	1.7		38.6	1.59

69 681 ~ 680 ↓ 5.5

6.2	9.9	.7	4.4	15.9	1.20
6.4		.9		20.5	1.31
6.9		1.4		31.8	1.50
7.0	9.9	1.5		34.1	1.53

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69 689↓ 5.5

10.0	7.5	2.0	4.45	45.0	1.65
	7.8	2.3		51.7	1.71
	8.0	2.5		56.1	1.75
9.9	8.25	2.75		61.8	1.79

69 692↓ 5.5

6.8	9.9	1.3	4.45	29.2	1.47
6.8		1.3		29.2	1.47
7.1		1.6		36.0	1.56
7.4	10.0	1.9		42.7	1.63

69 696↓ 5.6

6.2	10.0	.6	4.4	13.7	1.14
6.2		.6		13.7	1.14
6.6		1.0		22.8	1.36
6.9	10.0	1.3		29.6	1.47

68 683↓ 5.5

7.4	10.0	1.9	4.45	42.8	1.60
7.7		2.2		49.5	1.69
7.9		2.4		54.0	1.73
8.1	9.9	2.6		58.5	1.77

68 693↓ 5.5

6.3	9.8	.8	4.3	18.6	1.27
6.5		1.0		22.3	1.37
6.7		1.2		27.9	1.45
6.9	9.8	1.4		32.6	1.51

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68 695 √ 5.5

7.0	9.9	1.5	4.4	34.1	1.53
7.4		1.9		43.2	1.63
8.2		2.7		61.4	1.79
8.5	9.9	3.0		68.1	1.83

68 702 √ 5.6

7.6	10.1	2.0	4.5	44.4	1.65
7.5		1.9		42.2	1.62
7.6		2.0		44.4	1.65
8.0	10.1	2.4		53.3	1.73

68 703 Hy √ 5.6

5.9	10.0	.3	4.45	6.75	0.83
6.1		.5		11.3	1.05
6.3		.7		15.7	1.20
6.9	10.1	1.2		27.0	1.43

68 705 √ 5.7

6.9	10.2	1.2	4.55	26.4	1.42
7.1		1.4		30.8	1.49
7.3		1.6		35.2	1.55
7.6	10.3	1.9		41.8	1.62

68 709 √ 5.8

10.4	7.6	1.8	4.65	38.8	1.59
	8.0	2.2		47.3	1.67
	8.1	2.3		49.5	1.69
10.5	8.5	2.7		58.1	1.76

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68 7,7 ν

6.5	10.6	.7	4.85	14.4	1.16
6.7		.9		18.6	1.27
7.0		1.2		24.7	1.39
7.2	10.7	1.4		28.9	1.46

68 720 th

6.25	10.7	.45	4.9	9.2	0.96
6.20		.40		8.2	0.66
6.50		.70		14.3	1.15
6.85	10.7	1.05		21.4	1.33

May 10, 1932
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68 721 th

9.2	7.0	2.2	4.6	47.8	1.68
	7.3	2.5		54.4	1.74
	7.4	2.6		56.6	1.75
9.6	7.9	3.1		67.4	1.83

68 730 ν

6.1	9.8	.7	4.55	15.4	1.19
6.4		1.1		24.2	1.38
6.5		1.2		26.4	1.42
6.9	9.9	1.6		35.2	1.55

67 751 ν

7.0	9.4	1.6	4.05	39.5	1.60
7.3		1.9		46.8	1.67
7.45		2.05		50.5	1.70
7.75	9.5	2.35		58.0	1.76

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67 767√ 5.5

6.9	9.7	1.4	4.3	32.6	1.51
7.0		1.6		37.2	1.57
7.35		1.85		43.0	1.63
7.70	9.9	2.2		51.2	1.71

67 771√ 5.6

7.4	9.9	1.8	4.3	41.8	1.62
7.45		1.85		43.0	1.63
7.7		2.1		48.8	1.69
8.0	9.9	2.4		55.8	1.75

66 742√ 5.75

6.5	10.1	.75	4.35	17.3	1.24
6.8		1.05		24.2	1.38
7.6		1.85		42.5	1.63
8.0	10.1	2.25		51.8	1.71

66 746 uttar 5.7

6.5	10.2	.80	4.45	18.0	1.25
6.55		.85		18.7	1.27
6.80		1.10		24.7	1.39
7.05	10.0	1.35		30.4	1.48

66 748√ 5.4

7.2	9.8	1.8	4.45	40.5	1.61
7.4		2.0		45.0	1.65
7.55		2.15		48.4	1.68
8.00	9.9	2.6		58.5	1.77

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66 751 5.6

6.2	10.1	.6	4.6	13.1	1.12
6.4		.8		17.4	1.24
7.0		1.4		30.4	1.48
7.3	10.3	1.7		36.9	1.57

66 752 5.8

6.9	10.3	1.1	4.5	24.4	1.39
7.1		1.3		28.9	1.46
7.2		1.4		31.1	1.49
7.4	10.3	1.6		35.6	1.55

66 754 5.9

7.0	10.3	1.1	4.35	25.3	1.40
7.8		1.9		43.7	1.64
8.8		2.9		66.6	1.82
9.2	10.2	3.3		75.8	1.88

66 761 5.7

6.6	10.1	.9	4.45	20.2	1.31
6.6		.9		20.2	1.31
6.8		1.1		24.8	1.39
7.1	10.2	1.4		31.5	1.50

69 669 5.75

6.1	9.6	.35	3.75	9.3	0.97
6.4		.65		17.3	1.24
6.7		.95		25.2	1.40
7.1	9.4	1.35		36.0	1.56

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69 6822 ✓ 5.6

6.5	9.6	.9	4.0	22.5	1.05
6.6		1.0		25.0	1.40
6.9		1.3		32.5	1.51
7.15	9.6	1.55		38.8	1.59

68 702 ✓ 5.5

7.215	9.7	1.75	4.1	42.7	1.63
7.40		1.9		46.4	1.66
7.55		2.05		50.0	1.70
7.80	9.5	2.3		56.1	1.75

68 705 ✓ 5.5

6.5	9.7	1.0	4.1	24.4	1.39
6.5		1.0		24.4	1.39
6.8		1.8		31.7	1.50
7.05	9.5	1.55		37.8	1.58

[SDG 0.8 71 613 ✓ 5.2

6.7	9.3	1.4	4.0	35.0	1.54
7.0		1.7		42.5	1.63
7.4		2.1		52.5	1.72
7.7	9.3	2.4		60.0	1.78

70 690 ✓ 5.2

6.6	9.1	1.3	3.85	33.8	1.53
6.8		1.5		38.9	1.59
7.1		1.8		46.7	1.67
7.3	9.2	2.0		52.0	1.72

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70 699 ✓ 5.7

7.0	9.2	1.7	3.95	43.1	1.63
7.2		1.9		48.2	1.68
7.5		2.2		55.8	1.75
7.85	9.3	2.55		64.6	1.81

71 638 ✓ 5.4

5.8	9.5	.4	4.2	9.54	0.98
6.1		.7		16.7	1.22
6.7		1.3		31.0	1.49
7.2	9.7	1.8		42.8	1.63

70 693 ✓ 5.2

6.8	9.3	1.5	4.0	37.5	1.57
6.9		1.6		40.0	1.60
7.12		1.82		45.5	1.66
7.50	9.3	2.2		55.0	1.74

70 707 ✓ 5.3

5.8	9.7	.5	4.35	11.5	1.06
5.8		.5		11.5	1.06
6.2		.9		20.7	1.22
6.7	9.6	1.4		32.2	1.51

70 718 5.3

6.5	9.4	1.2	4.1	29.3	1.47
6.95		1.65		40.3	1.61
7.01		1.71		41.7	1.62
7.50	9.45	2.21		53.7	1.73

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70 724 ✓ 5.4

6.6	9.65	1.2	4.2	28.6	1.46
6.75		1.35		32.2	1.51
6.95		1.55		36.9	1.57
7.32	9.55	1.92		45.7	1.66

70 722 5.2

6.9	9.4	1.6	4.2	38.1	1.58
7.1		1.8		42.8	1.63
7.45		2.15		51.3	1.71
7.70	9.6	2.4		57.1	1.76

69 638 ✓ 5.2

5.72	9.4	.52	4.25	12.3	1.09
5.95		.75		17.7	1.25
6.70		1.5		35.4	1.55
7.20	9.5	2.0		47.1	1.67

69 673 ✓ 5.3

6.8	9.2	1.5	3.95	38.0	1.58
7.1		1.8		45.6	1.66
7.3		2.0		50.6	1.70
7.7	9.2	2.4		60.2	1.78

69 677 ✓ 5.3

9.5	5.7	.4	4.15	9.7	0.99
	5.8	.5		12.1	1.08
	6.2	.9		21.7	1.34
9.4	6.4	1.1		26.6	1.42

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69 689 ✓ 5-3

7.2	9.7	1.9	4.35	43.7	1.64
7.2		1.9		43.7	1.64
7.4		2.1		48.3	1.68
7.9	9.6	2.6		59.7	1.78

68 693 ✓ 5-3

6.1	9.6	.8	4.2	19.1	1.28
6.15		.85		20.2	1.31
6.30		1.0		23.8	1.38
6.70	9.4	1.4		33.4	1.52

68 702 ✓ 5-3

7.15	9.6	1.85	4.25	43.6	1.64
7.30		2.0		47.2	1.67
7.50		2.2		51.8	1.71
7.90	9.5	2.6		61.3	1.79

May 13, 1935

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68 605 ✓ 5-2

5.7	8.1	.5	3.0	16.7	1.22
5.80		.6		20.0	1.30
6.20		1.0		33.3	1.52
6.60	8.3	1.4		46.7	1.67

69 558 ✓ 5.35

6.6	8.45	1.25	3.10	40.4	1.61
6.9		1.55		50.0	1.70
7.2		1.85		59.7	1.78
7.3	8.40	1.95		63.0	1.80

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68 587√ 5.4

6.65	8.6	1.25	3.25	38.5	1.24
6.8		1.4		43.2	1.64
7.2		1.8		55.5	1.74
7.5	8.7	2.1		64.7	1.81

70 633√ 5.4

6.2	8.7	.9	3.2	28.2	1.45
6.5		1.1		34.4	1.54
6.8		1.4		43.7	1.64
6.9	8.5	1.5		46.8	1.67

50 607 68 605√ 5.4

5.9	8.9	.5	3.5	14.3	1.16
5.9		.5		14.3	1.16
6.4		1.0		28.6	1.46
6.7	8.95	1.3		37.2	1.57

69 557√ 5.4

6.75	9.1	1.35	3.7	36.5	1.56
6.90		1.5		40.5	1.61
7.50		2.1		56.8	1.75
7.70	9.1	2.3		62.1	179

68 587√ 5.5

9.1	6.7	1.2	3.7	32.2	1.51
	6.95	1.45		39.2	1.59
	7.40	1.9		51.4	1.71
9.8	7.70	2.2		59.5	1.77

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1933phae.proj.1230M

70 632 ↓ 5.5

6.45	9.0	.95	3.4	28.0	1.45
6.60		1.1		32.2	1.51
7.00		1.5		44.2	1.65
7.00	8.8	1.8		53.0	1.72

SD520 67 1244 ↓ 5.5

6.3	8.0	.8	2.5	32.0	1.51
6.5		1.0		40.0	1.60
6.9		1.4		56.0	1.75
7.1	8.0	1.6		64.0	1.81

SD 575 70 669 ↓ 5.6

6.6	11.1	1.0	5.55	18.0	1.25
6.6		1.0		18.0	1.25
7.1		1.5		27.0	1.42
7.5	11.2	1.9		34.2	1.53

69 615 ↓ 5.7

7.6	11.3	1.9	5.55	34.2	1.53
7.8		2.1		37.8	1.58
8.7		3.0		54.0	1.73
9.1	11.2	3.4		61.2	1.79

SD 610 70 669 ↓ 5.6

9.3	6.35	.75	3.65	20.6	1.31
	6.40	.8		21.9	1.34
	6.70	1.1		30.2	1.48
9.2	6.90	1.2		32.9	1.52

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1933phae.proj.1230M

69 615 5.6

6.95	9.4	1.35	3.77	35.8	1.55
7.00		1.4		37.2	1.57
7.50		1.9		50.4	1.70
7.90	9.35	2.3		61.0	1.78

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74 428 9.15 5.0

6.9	8.75	1.9	3.8	50.0	1.70
6.9		1.9		50.0	1.70
7.1		2.1		55.4	1.74
7.9	8.9	2.9		76.4	1.88

75 400 9.40 5.4

7.1	9.0	1.7	3.7	45.9	1.66
7.3		1.9		51.4	1.71
7.7		2.3		62.1	1.79
8.3	9.2	2.9		78.4	1.89

75 434 8.75 5.6

9.2	7.1	1.5	3.6	41.7	1.62
	7.0	1.4		38.9	1.59
	7.0	1.4		38.9	1.59
9.2	7.3	1.7		47.2	1.67

78 349 5.7

6.3	8.9	.6	3.2	18.8	1.27
6.4		.7		21.9	1.34
7.0		1.3		40.6	1.61
7.1	8.9	1.4		43.7	1.64

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1933phae.proj.1230M

78 3 54 ✓ 5.7

6.3	8.8	.6	3.1	19.4	1.29
6.3		.6		19.4	1.29
6.4		.7		22.6	1.35
6.55	8.8	.85		27.5	1.44

78 368 ✓ 5.8

6.2	9.1	.4	3.35	11.9	1.08
6.2		.4		11.9	1.08
6.3		.5		14.9	1.17
6.4	9.2	.6		17.9	1.25

78 375 ✓ 5.8

6.2	9.2	.4	3.4	11.8	1.07
6.5		.7		20.6	1.31
7.2		1.4		41.2	1.61
7.7	9.2	1.9		55.8	1.75

78 378 ✓ 5.7

6.8	9.25	1.1	3.55	31.0	1.49
7.0		1.3		36.6	1.56
7.1		1.4		39.5	1.60
7.3	9.25	1.6		45.1	1.66

78 381 ✓ 5.8

6.8	9.2	1.0	3.4	29.4	1.47
6.9		1.1		32.3	1.51
7.1		1.3		38.2	1.58
7.6	9.2	1.8		53.0	1.72

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1933phae.proj.12.pdf

77 404 ✓ 5.7

6.3	8.9	.6	3.15	19.0	1.28
6.5		.8		25.4	1.40
7.0		1.3		41.3	1.62
7.05	8.8	1.35		42.8	1.63

77 410 ✓ 5.7

6.7	8.7	1.0	3.05	32.8	1.52
6.85		1.15		37.8	1.58
6.80		1.1		36.1	1.56
7.00	8.8	1.3		42.7	1.63

77 412 ✓ 5.6

6.0	8.9	.4	3.3	12.1	1.08
6.2		.6		18.2	1.26
6.8		1.2		36.2	1.56
7.0	8.9	1.4		42.7	1.63

77 419 ✓ 5.6

6.2	9.1	.6	3.4	17.7	1.25
6.2		.6		17.7	1.25
6.3		.7		20.6	1.31
6.5	8.9	.9		26.5	1.42

77 432 ✓ 5.6

6.7	9.1	1.1	3.5	31.4	1.50
7.0		1.4		40.0	1.60
7.1		1.5		42.7	1.63
7.2	9.1	1.6		45.7	1.66

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1933phae.proj.1230

77 433 ↓ 5.5

6.7	9.0	1.2	3.5	34.3	1.54
6.7		1.2		34.3	1.54
6.85		1.35		38.6	1.59
7.40	9.0	1.9		54.4	1.73

76 358 ↓ 5.5

6.5	8.8	1.0	3.3	30.3	1.48
6.6		1.1		33.3	1.52
7.3		1.8		54.5	1.74
7.4	8.8	1.9		57.5	1.76

76 363 ↓ 5.5

6.55	8.8	1.05	3.25	32.3	1.51
6.75		1.25		38.5	1.59
6.65		1.15		35.4	1.55
7.0	8.7	1.50		46.2	1.66

76 375 ↓ 5.5

7.0	8.8	1.5	3.3	45.5	1.66
7.1		1.6		48.5	1.69
7.2		1.7		51.5	1.71
7.4	8.8	1.9		57.5	1.76

76 386 ↓ 5.5

6.3	8.8	.8	3.3	24.2	1.38
6.7		1.2		36.4	1.56
7.2		1.7		51.5	1.71
7.3	8.8	1.8		54.5	1.74

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1933phae.proj.12190

76 388 ✓ 5.5

6.7	8.7	1.2	3.2	37.5	1.57
7.21		1.7		53.2	1.73
7.6		2.1		65.6	1.82
7.7	8.8	2.2		68.8	1.84

76 406 ✓ 5.5

5.9	8.9	.4	3.2	12.5	1.10
5.9		.4		12.5	1.10
6.0		.5		15.6	1.19
6.70	8.65	.9		28.2	1.43

76 421 ✓ 5.5

6.4	8.9	.9	3.45	26.1	1.42
6.4		.9		28.1	1.42
7.1		1.6		46.4	1.67
7.4	9.0	1.9		55.0	1.74

76 423 ✓ 5.6

6.3	9.0	.7	3.35	20.9	1.32
6.35		.75		22.4	1.35
6.40		.8		23.9	1.38
6.50	8.9	.9		26.9	1.43

75 365 ✓ 5.5

6.1	8.9	.6	3.4	17.7	1.25
6.2		.7		20.6	1.31
6.5		1.0		29.4	1.47
6.65	8.9	1.15		33.8	1.53

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1933phae.proj.1230M

75 370						J.J
	5.85	8.9	.35	3.4	10.3	1.01
	5.80		.4		11.8	1.07
	5.90		.4		11.8	1.07
	6.20	8.9	.7		20.3	1.31
75 374						J.J
8.8	6.95		1.45	3.45	42.0	1.62
	6.90		1.4		40.6	1.61
	7.10		1.6		46.4	1.67
8.9	7.20		1.7		49.4	1.69
75 386						J.J
8.8	8.85		3.3			
8.85			3.35			
6.10			.6			
6.10	8.90					
75 396						J.J
8.9	6.9		1.4	3.45	40.7	1.61
	7.2		1.7		49.4	1.69
	7.9		1.4		40.6	1.61
9.0	8.0		2.5		72.5	1.86
75 412						J.J
6.4	8.9		.9	3.35	26.8	1.43
6.5			1.0		29.9	1.47
6.55			1.15		34.4	1.54
6.90	8.8		1.4		41.8	1.62

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1933phae.proj.12rem

7S 425 5.5

6.9	8.7	1.4	3.85	43.0	1.63
7.1		1.6		49.3	1.69
7.20		1.7		52.3	1.72
7.50	8.8	2.0		61.5	1.79

7S 431✓ 5.5

6.3	8.9	.8	3.85	23.9	1.38
6.4		.9		26.9	1.43
6.4		.9		26.9	1.43
6.6	8.8	1.1		32.9	1.52

74 399 5.5

6.4	9.0	.9	3.5	26.8	1.43
7.0		1.5		43.0	1.63
7.4		1.9		54.5	1.74
8.0	9.0	2.5		71.7	1.86

74 403 5.5

6.1	9.0	.6	3.45	17.4	1.24
6.1		.6		17.4	1.24
6.1	6.	.6		17.4	1.24
6.2	8.9	.7		20.3	1.31

74 410 5.4

6.90	9.1	.5	3.7	13.5	1.13
7.20		1.8		48.6	1.69
7.20		1.8		48.6	1.69
7.40	9.1	2.0		54.0	1.73

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1933phae.proj.1230M

74 427 5-5 5C

6.0	9.2	.5	3.7	13.5	1.13
6.0		.5		13.5	1.13
5.9		.4		10.8	1.02
6.0		.5		13.6	1.13

Rep 5

69 677 69 680 69 681

May 18 1932

50 611

69 677 ↓ 46

5.5	9.25	.9	4.55	19.8	1.30
5.5		.9		19.8	1.30
5.95		1.35		29.7	1.47
6.30	9.25	1.6		35.2	1.55

69 680 ↓ 4.7

5.5	9.28	.8	4.65	17.2	1.24
5.7		1.0		21.5	1.33
6.1		1.4		30.1	1.48
6.45	9.40	1.75		37.6	1.57

69 681 ↓ 4.8

5.9	9.20	1.1	4.4	25.0	1.40
5.9		1.1		25.0	1.40
6.4		1.6		36.4	1.56
6.7	9.20	1.9		43.0	1.64

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1933phae.proj.126om

SD 608

69	677					4.85
5.5		9.5	.65	4.60	14.1	1.15
5.5			.65		14.1	1.15
6.0			1.15		25.0	1.40
6.4		9.42	1.55		33.7	1.53

69	680V				4.9	~~6.96~~
5.5		9.5	.6	4.55	13.2	1.12
5.62			.72		15.8	1.20
6.00			1.1		24.2	1.38
6.50		9.4	1.6		35.2	1.40

69	681V					4.9
5.9		9.5	1.0	4.65	21.5	1.30
6.05			1.15		24.7	1.39
6.40			1.5		32.2	1.51
6.80		9.6	1.9		40.8	1.61

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1933phae.proj.1230M

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M F 8207 Ao stars —
A.J.C.b. 187, 58

19		9.2					4.5
	6.40	9.35	$\frac{b-\gamma}{2}$	1.9	4.85	39.2	1.593 1.407
	6.58		γ	2.08		42.8	1.632 1.368
	7.05		δ	2.55		52.6	1.722 1.278
	7.38		ε	2.88		59.4	1.774 1.226
	8.10			3.6		74.2	
14	9.4	~~9.3~~					4.5
	6.95	9.3		2.45	4.8	51.0	1.707 1.293
	6.95			2.45		51.0	1.707 1.293
	7.10			2.60		54.2	1.734 1.266
	7.60			3.1		64.6	1.810 1.190
~~29~~ 9		In of the 2		9.0			4.5
	6.48	9.2		1.98	4.7	42.1	1.624 1.376
	6.40			1.9		40.4	1.606 1.394
	6.60			2.1		44.7	1.650 1.350
	7.10	9.2		2.6		55.4	1.743 1.257
29							4.5
	7.6	9.31		3.1	4.75	65.3	1.814 1.186
	7.6			3.1		65.3	1.814 1.186
	7.9			3.4		71.5	1.853 1.147
	8.4	9.2		3.9		82.1	1.914 1.086

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1933phae.proj.129m

32 very faint —						4.5
8.2N	8.90	3.7	4.45	83.1	1.920	1.080
8.3		3.8		85.4	1.931	1.069
8.5		4.0		90.0	1.954	1.046
8.4	9.0	3.9		87.6	1.942	1.058
35 9.5						4.5
7.3	8.7	2.8	4.3	65.1	1.814	1.186
7.32		2.82		65.6	1.817	1.183
7.60		3.1		72.0	1.857	1.143
7.80	8.9	3.3		76.8	1.885	1.115
39 —						4.4
7.6	9.0	3.2	4.60	69.6	1.843	1.157
7.65		3.25		70.6	1.849	1.150
7.70		3.3		71.8	1.856	1.144
7.82	9.05	3.42		74.4	1.871	1.129
43 —						4.4
8.20	9.1	3.8	4.7	80.8	1.907	1.193
8.15		3.75		79.8	1.902	1.098
~~7.90~~	8.20	3.80		80.9	1.907	1.093
8.00		3.60		76.6	1.884	1.116
75 9.4						4.5
7.2	9.1	2.7	4.6	58.7	1.768	1.292
7.3		2.8		60.9	1.784	1.216
7.4		2.9		63.0	1.799	1.201
7.8	9.1	3.3		71.8	1.856	1.144

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1933phae.proj.1230

96	9.2					4.5
6.6	9.1	2.1	4.6	45.6	1.660	1.340
6.6		2.1		45.6	1.660	1.340
6.7		2.2		47.8	1.680	1.310
7.1	9.1	2.6		56.5	1.752	1.248

109	—					4.5
9.25	8.7	4.2	4.75	88.5	1.946	1.054
	8.3	3.8		80.0	1.903	1.097
	8.3	3.8		80.0	1.903	1.097
	8.7	4.2		88.4	1.946	1.054
	8.7					

116	—					4.5
7.8	9.2	3.3	4.75	69.5	1.842	1.158
7.7		3.2		67.5	1.829	1.171
7.8		3.3		69.5	1.842	1.158
8.1	9.3	3.6		75.8	1.880	1.120

134	9.2					4.5
6.7	8.9	2.2	4.5	49.0	1.690	1.310
6.6		2.1		46.6	1.669	1.331
6.5		2.0		44.5	1.648	1.352
6.8	9.1	2.3		51.2	1.708	1.292

137	—					4.5
7.8	8.7	3.3	4.3	71.8	1.856	1.144
7.9		3.4		79.1	1.898	1.102
8.0		3.5		81.5	1.911	1.089
8.1	8.9	3.6		83.8	1.923	1.077

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1933phae.proj.120m

160	9.5						4.5
7.5	9.2	3.0	4.65	64.5	1.810	1.180	
7.65		3.15		67.8	1.831	1.179	
7.80		3.3		71.0	1.851	1.149	
7.85	9.1	3.35		72.0	1.857	1.142	
171	9.5						4.4
7.8	9.12	3.4	4.72	72.0	1.857	1.143	
7.63		3.23		68.4	1.835	1.165	
7.6		3.2		67.8	1.831	1.169	
7.9		3.5		74.3	1.870	1.120	
185	9.4						4.4
6.7	9.3	2.3	4.85	47.5	1.676	1.324	
6.6		2.2		45.4	1.667	1333	
6.71		2.31		47.6	1.678	1.322	
7.1	9.2	2.7		55.6	1.745	1.255	
194	—						4.4
~~7.1~~ 8.2	9.2	3.7	4.8	77.0	1.886	1.114	
~~7.80~~		3.8		79.1	1.898	1.102	
8.0		3.6		75.0	1.875	1.125	
		3.6		75.0	1.875	1.125	
200	9.5						4.47
7.1	9.1	2.7	4.75	56.8	1.754	1.246	
7.1		2.7		56.8	1.754	1.246	
7.1		2.7		56.8	1.754	1.246	
7.3	9.2	2.9		61.0	1.772	1.215	

End of Ao

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1933phae.proj.1230

Nov 8, 1932
Election Day
N. J. R. H.
G.J.C. 187

1J

						5.4
6.95	10.52	1.65	5.2	31.8	1.502	1.498
7.00		1.7		32.7	1.501	1.499
7.00		1.7		32.7	1.515	1.485
7.60		2.3		44.3	1.646	1.354

2J A5

						5.3
7.32	10.3	2.02	4.95	40.8	1.611	1.389
7.58		2.28		46.2	1.664	1.336
8.00		2.7		54.6	1.738	1.262
8.20	10.2	2.9		58.6	1.768	1.232

5.2

3J ~~10.3~~

7.8	10.3	2.6	5.00	52.0	1.716	1.284
7.6		2.4		48.0	1.681	1.319
7.85		2.65		53.0	1.724	1.276
7.85	10.15	2.85		57.0	1.756	1.244

5J

						5.2
6.88	9.8	1.68	4.65	36.1	1.558	1.442
7.40		2.2		47.3	1.674	1.326
7.40		2.2		47.3	1.674	1.326
8.30	9.9	3.1		66.7	1.824	1.176

7J

						5.1
7.0	10.0	1.9	4.9	38.8	1.589	1.411
7.35		2.25		45.9	1.662	1.338
7.70		2.6		53.0	1.724	1.276
7.80	10.05	2.7		55.1	1.742	1.258

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1933phae.proj.124m

10 ~~0~~							5.1
10.1	8.4		3.3	4.9	67.4	1.828	1.172
	8.7		3.6		73.5	1.866	1.134
	8.9		3.8		77.6	1.890	1.100
9.9	9.12		4.02		82.0	1.914	1.096
11							5.0
7.2	9.9		2.2	5.0	44.0	1.644	1.356
7.1			2.1		42.0	1.623	1.377
7.7			2.7		54.0	1.732	1.268
7.85	10.1		2.85		57.0	1.756	1.244
12							5.0
7.8	10.05		2.8	5.05	55.5	1.744	1.256
8.0			3.0		59.4	1.774	1.226
8.0			3.0		59.4	1.774	1.226
7.9			2.9		57.5	1.760	1.230
13							
7.2	9.9		2.2	4.9	44.9	1.652	1.348 5.0
7.1			2.1		42.8	1.632	1.368
7.3			2.3		47.0	1.672	1.328
7.9	9.9		2.9		59.3	1.773	1.227
15							5.2
~~8.0~~	10.3	6.9	1.7	5.0	34.0	1.532	1.468
		7.2	2.0		40.0	1.602	1.398
		8.1	2.9		58.0	1.764	1.236
	10.1	8.4	3.2		64.0	1.806	1.194

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Nov 12, 1932

26						8.758
8.7	13.4	3.12	7.82	39.9	1.601	1.399
9.3		3.72		47.6	1.679	1.321
9.6		4.02		51.5	1.712	1.288
10.3		4.72		60.4	1.780	1.220
27 [clouding						5.55-
7.3	13.6	1.75	7.95	22.0	1.342	1.658
7.3		1.75		22.0	1.342	1.658
8.05		2.45		30.8	1.488	1.512
8.30	13.4	2.75		34.6	1.539	1.461
28						5.55-
8.50	12.95-	2.95	7.40	39.9	1.601	1.399
8.70		3.15-		42.6	1.630	1.360
9.80		3.75-		50.7	1.705	1.295
9.40		3.85		52.0	1.716	1.284
30						5.4
10.1	12.90	4.7	7.5	62.6	1.796	1.204
9.8		4.4		58.6	1.768	1.232
9.85-		4.45		59.3	1.772	1.228
10.80		5.4		72.0	1.858	1.142
34						5.4
9.25-	12.6	3.85	7.1	54.3	1.735	1.265
9.30		3.9		55.0	1.740	1.260
9.40		4.0		56.4	1.751	1.249
10.10	12.4	4.7		66.3	1.822	1.178

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1933phae.proj.124pm

36 ✓ 5.4

9.3	12.45	3.9	6.95	56.1	1.750	1.240
9.5		4.1		59.0	1.771	1.229
9.6		4.2		60.5	1.782	1.218
10.5	12.25	5.1		73.4	1.866	1.134

37 ✓ 5.4

~~8.9~~	12.25	2.5	6.85	36.5	1.562	1.438
7.85		2.45		35.8	1.554	1.446
8.30		2.9		42.4	1.628	1.372
8.65		3.25		47.5	1.676	1.324

38 ✓ 5.5

8.0	12.45	2.5	6.88	36.4	1.561	1.439
7.8		2.3		33.4	1.524	1.476
8.5		3.0		43.6	1.639	1.361
8.6	12.30	3.1		45.0	1.653	1.347

40 ✓ 5.4

11.0	12.5	5.6	7.1	78.8	1.896	1.104
11.1		5.7		80.4	1.904	1.096
11.5		6.1		86.0	1.934	1.066
11.6		6.2		87.4	1.942	1.058

44 5.4

~~8.0~~ 12.7

~~7.7~~

~~9.4~~

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1933phae.proj.1230

47√ 5.4

8.55	12.7	3.15	7.15	44.1	1.644	1.356
8.40		3.00		42.0	1.624	1.376
8.60		3.2		44.8	1.652	1.348
9.15	12.4	3.75		52.5	1.720	1.270

48√ 5.4

9.7	12.7	4.3	7.3	59.0	1.771	1.229
9.7		4.3		59.0	1.771	1.229
9.8		4.4		60.4	1.780	1.220
10.2		4.8		65.8	1.818	1.172

51√ 5.4

8.0	12.75	2.6	7.85	35.4	1.548	1.452
8.0		2.6		35.4	1.548	1452
8.2		2.8		38.1	1.581	1419
8.5		3.1		42.2	1.625	1.375

5-5√ 5.4

7.7	12.4	2.3	7.0	32.8	1.516	1.484
8.5		3.1		44.3	1.647	1.353
9.2		3.8		54.3	1.735	1.265
9.7		4.3		61.5	1.789	1.211

52√ 5.5

10.1	12.4	4.6	6.9	66.7	1.824	1.176
10.1		4.6		66.7	1.824	1.176
10.7		5.2		75.4	1.876	1.124
11.1		5.6		81.1	1.909	1.091

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1933phae.proj.1250m

57 ✓ 5.5⁻

8.0	12.5	2.5	6.75	37.0	1.528	1.432
8.6		3.1		46.0	1.662	1.338
8.5		3.0		44.5	1.648	1.352
9.1	12.05⁻	3.6		53.4	1.727	1.273

58 ✓ 5.6

8.1	12.4	2.5	6.85	36.5	1.562	1.438
8.8		3.2		46.7	1.669	1.331
9.1		3.5⁻		51.2	1.708	1.292
9.3	12.5⁻	3.7		54.0	1.732	1.268

59 ✓ 5.55⁻

9.7	12.5⁻	4.15	6.95	59.7	1.776	1.224
9.8		4.25		61.2	1.786	1.214
9.9		4.35		62.5⁻	1.796	1.204
10.6		5.05		72.6	1.861	1.139

61 ✓ 5.6

10.3	12.2	4.7	6.6	71.2	1.852	1.148
10.6		5.0		75.8	1.880	1.120
10.5		4.9		74.4	1.871	1.129
10.8		5.2		78.8	1.896	1.104

64 ✓ 5.45⁻

10.4	12.4	4.95	6.95⁻	71.2	1.852	1.148
10.6		5.15		74.1	1.870	1.130
10.9		5.45		78.5	1.894	1.106
11.0		5.55		79.8	1.902	1.098

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1933phae.proj.1230M

65

							5.4
8.9	12.4	3.5	7.05	49.6	1.696	1.304	
9.5		4.1		58.2	1.764	1.236	
9.6		4.2		59.6	1.775	1.225	
10.4	12.5	5.0		71.0	1.852	1.148	

70

							5.5
9.9	12.8	4.4	7.3	60.3	1.780	1.210	
10.2		4.7		64.4	1.808	1.192	
10.6		5.1		69.8	1.844	1.156	
10.7		5.2		71.3	1.853	1.147	

71

							5.4
9.5	13.4	4.1	8.0	51.3	1.710	1.290	
10.1		4.7		58.8	1.770	1.220	
10.4		5.0		62.5	1.796	1.204	
10.8		5.4		67.5	1.829	1.170	

76 2

							5.4
10.7	12.7	5.3	7.3	72.6	1.861	1.139	
10.9		5.5		75.4	1.877	1.123	
10.9		5.5		75.4	1.877	1.123	
11.4		6.0		82.2	1.915	1.084	

77

							5.4
8.2	12.7	2.8	7.3	38.4	1.584	1.416	
8.8		3.4		46.6	1.668	1.332	
8.7		3.3		45.3	1.656	1.344	
9.3		3.9		53.5	1.728	1.272	

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Nov 15-'32

78✓

	12.1	8.9	4.2	7.4	56.8	1.246
		9.3	4.6		62.3	1.206
		9.2	4.5		60.8	1.216
		9.6	4.9		66.3	1.179

79✓ ✱ 4.7

8.0	11.5	3.6	6.8	53.0	1.275
8.3	8.	3.6		53.0	1.275
8.5		3.8		55.8	1.253
8.7		4.0		58.8	1.230

82✓ 4.6

9.2	11.4	4.6	6.8	67.6	1.170
9.1		4.5		66.2	1.179
9.4		4.8		70.5	1.152
10.0		5.4		79.5	1.100

83✓ 4.6

9.0	11.6	4.4	7.0	62.8	1.202
8.95		4.35		62.1	1.206
9.10		4.50		64.3	1.192
9.40		4.80		68.6	1.164

84✓ 4.5

8.~~30~~ 15	11.0	3.65	6.8	53.7	1.270
8.~~40~~		3.90		57.4	1.242
8.70		4.2		63.2	1.199
9.00		4.5		66.2	1.179

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1933phae.proj.1230M

86 J

					4.4
					α
8.5	11.2	4.1	6.8	60.3	1.220
8.9		4.5		66.3	1.178
8.7		4.3		63.3	1.198
9.5		5.1		75.0	1.125

87 J

					4.3
7.7	11.1	3.4	6.8	50.0	1.305
7.7		3.4		50.0	1.305
8.0		3.7		54.5	1.264
8.4		4.1		60.3	1.220

8.8 J

					4.4
6.5	11.1	2.1	6.7	31.4	1.503
6.9		2.5		37.3	1.428
7.1		2.7		40.3	1.394
7.6		3.2		47.8	1.321

92 J

					4.4
8.3	11.0	3.9	6.6	59.2	1.228
8.4		4.0		60.6	1.217
8.4		4.0		60.6	1.217
9.1		4.7		71.2	1.148

9.3 J

					4.4
8.7	11.1	4.3	6.7	64.2	1.192
8.5		4.1		61.3	1.213
8.7		4.3		64.2	1.193
9.0		4.6		68.6	1.164

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1933phae.proj.124pm

94 ✓ 4.4

8.9	11.1	4.5	6.7	67.2	1.172
9.0		4.6		68.6	1.163
9.2		4.8		71.6	1.145
9.3		4.9		73.1	1.136

99 ✓ 4.4

7.75	10.9	3.35	6.5	51.5	1.288
8.20		3.80		58.5	1.233
8.70		4.3		66.2	1.179
8.90		4.5		69.3	1.159

100 for h. 4.4

6.2	11.0	1.8	6.6	27.3	1.564
6.45		2.05		31.1	1.507
6.80		2.4		36.4	1.439
7.10		2.7		40.9	1.386

103 ✓ 4.4

9.9	11.5	5.5	7.1	77.5	1.111
9.8		5.4		76.0	1.119
9.9		5.5		77.5	1.111
10.2		5.8		81.6	1.088

104 ✓ 4.4

8.15	11.35	3.75	6.95	54.0	1.268
8.00		3.6		51.8	1.285
8.40		4.0		57.5	1.240
8.50		4.1		59.0	1.230

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Nov 18, 1932

105J

7.9	11.7	2.6	6.4	40.6	1.391
8.28		2.98		46.6	1.332
8.70		3.40		53.1	1.274
9.20		3.90		61.0	1.214

106

8.6	11.4	3.3	6.1	54.1	1.266
8.6		3.3		54.1	1.266
9.7		4.4		72.1	1.142
9.9		4.6		75.5	1.122

108J

9.35	11.3	4.05	6.0	67.5	1.170
9.55		4.25		70.8	1.150
9.55		4.25		70.8	1.150
9.90		4.60		76.6	1.116

111J

9.2	9.8	4.0	4.5	89.0	1.050
9.6		4.3		95.5	1.020
10.2		4.9	0.920	109.0	0.964
10.2		4.9		109.0	0.962

112J

9.6	10.9	4.4	5.7	77.2	1.112
9.8		4.6		80.6	1.094
9.9		4.7		82.5	1.084
10.4		5.2		91.3	1.040

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1933phae.proj.12[illegible]

N. M.

114 ✓					log 5.2
8.5	11.1	3.3	5.9	17.9	1.252
8.8		3.6		16.4	1.214
8.8		3.6		16.4	1.214
9.2		4.0		14.7	1.167
117 ✓					5.2
8.9	11.0	3.7	5.8	15.7	1.196
9.0		3.8		15.2	1.184
9.1		3.9		14.9	1.173
9.4		4.2		13.8	1.140
119 ✓					5.2
9.8	11.0	4.6	5.8	12.6	1.100
9.5		4.3		13.5	1.133
9.6		4.4		13.2	1.120
9.7		4.5		12.9	1.110
120 ✓					5.2
7.3	11.0	2.1	5.8	27.6	1.441
7.75		2.55		22.8	1.358
7.90		2.7		21.5	1.332
8.10		2.9		20.0	1.301
121 ✓					5.3
8.95	11.0	3.65	5.7	15.6	1.193
8.9		3.6		15.8	1.198
9.6		4.3		13.2	1.120
9.7		4.4		12.9	1.110

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1933phae.proj.1230M

123

						5.7
7.0	10.7	1.7	5.4	34.9	1.542	
7.45		2.15		25.1	1.400	
8.00		2.70		20.0	1.300	
8.60		3.3		16.35	1.213	

126

						5.2
8.7	11.1	3.5	5.9	16.85	1.226	
9.3		4.1		14.40	1.158	
9.0		3.8		15.50	1.190	
9.2		4.0		14.75	1.168	

127

						5.7
7.6	10.8	2.3	5.5	22.90	1.378	
7.9		2.6		21.20	1.326	
7.9		2.6		21.20	1.326	
8.3		3.0		18.30	1.262	

129

						5.2
8.8	10.3	3.6	5.1	14.15	1.150	
9.2		4.0		12.75	1.105	
9.4		4.2		12.15	1.084	
9.5		4.3		11.85	1.074	

130

						5.2
8.75	10.4	3.55	5.2	14.65	1.165	
9.10		3.9		13.32	1.125	
9.35		4.15		12.51	1.098	
9.70		4.5		11.55	1.062	

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121✓ 5.2

7.0	10.5	1.8	5.3	29.4	1.468
7.5		2.3		23.0	1.362
8.1		2.9		18.3	1.262
8.45		3.25		16.30	1.212

133✓ 5.2

9.0	10.6	3.8	5.4	14.2	1.152
9.0		3.8		14.2	1.152
9.1		3.9		13.85	1.141
9.5		4.3		12.55	1.098

138✓ 5.2

9.1	10.4	3.8	5.1	13.40	1.126
9.2		3.9		13.10	1.117
9.3		4.0		12.75	1.105
9.6		4.3		11.85	1.073

140 1.6 5.2

10.9	6.6	1.4	5.7	40.7	1.609
	6.7	1.5		38.0	1.580
	6.7	1.5		38.0	1.580
	7.2	2.0		28.5	1.454

143✓ 5.2

10.7	7.6	2.4	5.5	22.90	1.360
	8.2	2.0		18.35	1.263
	8.8	3.6		15.30	1.184
	9.0	3.8		14.48	1.160

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144

						5.2
7.4	10.9	2.2	5.7	25.90	1.413	
7.0		1.8		31.61	1.500	
7.2		2.0		28.50	1.457	
7.8		2.6		21.90	1.340	

150

						5.1
8.5	10.95	3.4	5.85	17.2	1.236	
8.4		3.3		17.7	1.248	
8.6		3.5		16.7	1.224	
9.1		4.0		14.6	1.164	

156

						5.1
8.4	11.0	3.3	5.9	17.9	1.252	
8.9		3.8		15.5	1.190	
9.2		4.1		14.4	1.158	
9.4		4.3		13.7	1.136	

158

						5.1
6.8	11.2	1.7	6.1	35.87	1.553	
7.25		2.15		28.40	1.453	
7.20		2.1		29.00	1.462	
7.50		2.4		25.40	1.404	

159

						5.1
9.3	10.9	4.2	5.2	13.80	1.140	
8.8		3.7		15.68	1.194	
9.5		4.4		13.20	1.120	
9.9		4.8		12.10	1.082	

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1933phae.proj.1280M

162 ✓ 5-0

8.8	10.5	3.8	5.5	14.50	1.161
8.75		3.75		14.68	1.166
8.70		3.70		14.88	1.172
8.70		3.70		14.88	1.172

164 76. 5.0

6.0	10.7	1.0	5.7	57.00	1.752
6.2		1.2		47.50	1.676
6.5		1.5		38.00	1.580
6.7		1.7		33.50	1.524

(5.0)

Nov 19 '32 165 ✓ 4.9

10.9	8.1	3.2	6.0	18.75	1.272
	8.3	3.4		17.65	1.246
	8.4	3.5		17.12	1.234
	8.8	3.9		15.40	1.187

166 ✓ 4.8

10.6	8.6	3.8	5.8	15.28	1.183
	8.9	4.1		14.15	1.150
	9.15	4.35		13.32	1.124
	9.60	4.8		12.10	1.082

167
168
169

174 ✓ 4.8

10.4	7.5	2.7	5.6	20.70	1.315
	7.9	3.1		18.10	1.257
	7.9	3.1		18.10	1.257
	8.3	3.5		16.00	1.204

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1933phae.proj.1230M

175†

						4.8
6.21	10.3	1.4	5.5	39.3	1.594	
6.7		1.9		28.95	1.462	
6.65		1.85		29.70	1.473	
7.15		2.35		23.40	1.369	

176↓

						4.8
8.3	10.35	3.5	5.55	15.85	1.200	
8.4		3.6		15.40	1.187	
8.55		3.75		14.80	1.170	
8.90		4.1		13.53	1.141	

177↓

						4.8
8.5	10.3	3.7	5.5	14.85	1.172	
8.7		3.9		14.10	1.149	
9.2		4.4		12.10	1.083	
9.3		4.5		12.20	1.086	

178↓

						4.7
9.1	10.2	4.4	5.5	12.50	1.097	
9.0		4.3		12.80	1.107	
9.6		4.9		11.20	1.050	
9.7		5.0		11.00	1.041	

180↓

						4.8
6.35	10.2	1.55	5.4	34.80	1.542	
6.70		1.9		28.40	1.454	
8.10		3.3		16.35	1.214	
8.20		3.4		15.90	1.201	

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1933phae..proj..125M

182 ✓ 4.8

7.5	10.2	2.7	5.4	20.0	1.305
7.6		2.8		19.3	1.285
7.9		3.1		17.4	1.240
8.3		3.5		15.4	1.184

184 ✓ 4.8

8.2	9.9	3.4	5.1	15.0	1.176
8.1		3.3		15.45	1.189
8.1		3.3		15.45	1.189
8.8		4.0		12.75	1.106

186 ✓ 4.8

8.3	9.8	3.5	5.0	14.30	1.156
8.6		3.8		13.15	1.119
8.7		3.9		12.80	1.107
8.7		3.9		12.80	1.107

190 ✓ 4.85

7.4	9.9	2.55	5.05	19.80	1.296
7.3		2.45		20.60	1.314
7.6		2.75		18.35	1.264
8.1		3.25		15.55	1.192

195 ✓ 4.8

8.1	9.9	3.3	5.1	15.45	1.189
8.4		3.6		14.15	1.150
8.5		3.7		13.80	1.140
8.8		4.0		12.75	1.106

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1933phae.proj.1230M

197J

	8.35	9.7	3.45	4.8	13.90	1.143
	8.45		3.55		13.50	1.130
	8.3		3.4		14.10	1.149
	8.80		3.9		12.30	1.090

4.9

199J

	7.3	9.85	2.4	4.95	20.60	1.314
	7.8	95	2.25		22.00	1.342
	7.3		2.4		20.60	1.314
	7.7		2.8		17.70	1.248

4.9

201½

	5.4	10.3	.55	5.45	99.00	1.996
	6.1		1.25		43.60	1.640
	6.7		1.85		29.45	1.469
	7.3		2.45		22.22	1.348

4.85

205J

	6.9	10.3	2.0	5.4	27.00	1.431
	6.75		1.85		29.20	1.466
	7.1		2.2		24.60	1.391
	7.4		2.5		21.60	1.334

4.9

206½

	6.3	10.4	1.4	5.5	39.3	1.594
	6.5		1.6		34.4	1.536
	6.9		2.0		27.5	1.440
	7.4	3	2.4		22.9	1.360

4.9

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1933phae.proj.1250M

NOT 2L

207 ✓ 4.4

7.9	9.9	3.5	5.5	15.7	1.196
8.0		3.6		15.3	1.184
8.0		3.6		15.3	1.184
8.1		3.7		14.85	1.171

208 ✓ 4.5

9.5	6.3	1.8	5.0	27.8	1.444
	6.3	1.8		27.8	1.444
	6.5	2.0		25.0	1.398
	6.55	2.05		24.4	1.387

209 ✓ 4.7

6.2	9.3	1.5	4.6	30.65	1.487
6.1		1.4		32.81	1.516
6.4		1.7		27.10	1.469
6.7		2.0		23.00	1.362

210 ✓ 4.6

6.5	9.0	1.9	4.4	23.1	1.363
6.6		2.0		22.0	1.342
7.7		3.1		14.2	1.152
8.0		3.4		12.95	1.112

211 ✓ 4.45

7.02	8.7	2.57	4.25	16.55	1.280
7.00		2.55		16.68	1.221
7.15		2.70		15.72	1.196
7.45		3.00		14.18	1.157

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1933phae.proj.1230M

212↓ 4.4

6.3	8.9	1.9	4.5	23.7	1.374
6.6		2.2		20.41	1.310
7.22		2.82		15.95	1.202
7.50		3.1		14.50	1.161

215↓ 4.4 N

7.2	8.8	2.8	4.4	15.70	1.196
7.05		2.65		16.60	1.220
7.15		2.75		16.00	1.203
7.50		3.1		14.20	1.152

216↓ 4.4

(6.6	8.8	2.2	4.4	20.0	1.30)
6.2		1.8		24.4	1.387
7.2		2.8		15.7	1.196
7.85		3.45		12.75	1.105
7.80		3.4		12.95	1.112

217↓ 4.4

5.4	8.8	1.0	4.4	44.0	1.643
5.4		1.0		44.0	1.643
5.6		1.2		36.7	1.564
5.9		1.5		29.35	1.467

218↓ 4.4

7.2	8.7	2.8	4.3	15.38	1.186
7.15		2.75		15.63	1.194
7.50		3.1		13.90	1.142
7.70		3.3		13.05	1.115

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1933phae.proj.1260N

219 ✓ 4.4

6.72	8.6	2.32	4.2	18.21	1.260
6.60		2.20		19.1	1.281
7.40		3.0		14.0	1.146
7.80		3.4		12.35	1.095

Nov 21 '32 225 ✓ 4.8

7.86	9.9	2.8	5.1	18.2	1.260
7.4		2.6		19.6	1.292
8.2		3.5		14.55	1.162
8.45		3.65		13.98	1.145

226 ✓ 4.6

9.6 → 6.62		2.02	5.0	24.8	1.394
6.5		1.90		26.3	1.420
6.9		2.30		21.7	1.336
7.1		2.50		20.0	1.301

227 ✓ 4.4

6.5	9.5	2.1	5.1	24.3	1.385
6.6		2.2		23.2	1.365
7.45		3.05		16.7	1.222
7.90		3.5		14.55	1.162

228 ✓ 4.3

7.2	9.2	2.9	4.9	16.9	1.228
7.1		2.8		17.5	1.242
7.2		2.9		16.9	1.228
7.5		3.2		15.3	1.184

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1933phae.proj.1230M

Nov 26, 1932 2 30 ↓ 5.1

7.95	11.1	2.85	6.0	21.1	1.324
7.80		2.7		22.2	1.346
8.00		2.9		20.7	1.316
8.00		2.9		20.7	1.316

2 31 ↓ h. 4.8

6.3	10.50	1.5	5.7	38.0	1.580
6.5		1.7		33.5	1.525
7.2		2.4		23.8	1.376
7.3		2.5		22.8	1.358

2 36 ↓ 4.6

6.75	10.15	2.15	5.55	25.8	1.411
6.70		2.1		26.4	1.421
7.00		2.4		23.1	1.364
7.12		2.52		22.0	1.342

2 57 ↓ h. 4.4

5.3	9.75	.9	5.35	59.5	1.774
5.5		1.1		48.6	1.686
5.7		1.3		41.2	1.614
5.85		1.45		36.9	1.567

2 38 ↓ 4.4

8.35	9.4	3.95	5.0	12.65	1.102
8.20		3.80		13.15	1.118
8.30		3.90		12.80	1.107
8.60		4.2		11.90	1.075

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1933phae.proj.12pm

239 ✓ 4.4

6.8	9.25	2.4	4.85	20.2	1.305
6.95		2.55		19.0	1.278
7.05		2.65		18.3	1.262
7.30		2.90		16.7	1.222

240 H. 4.4

5.8	9.5	1.4	5.1	36.4	1.560
5.85		1.45		35.2	1.546
6.15		1.75		29.2	1.465
6.30		1.90		26.8	1.428

244 ✓ 4.4

8.0	9.4	3.6	5.0	13.9	1.142
8.0		3.6		13.9	1.142
7.9		3.5		13.9	1.142
8.4		4.0		12.5	1.096

250 ✓ 4.45

6.82	9.2	2.37	4.75	20.0	1.300
6.90		2.45		19.4	1.287
7.50		3.05		15.6	1.193
7.80		3.35		14.2	1.152

257 ✓ 4.6

8.1	9.2	3.5	4.6	13.15	1.118
8.1		3.5		13.15	1.118
8.5		3.9		11.80	1.072
8.6		4.0		11.50	1.060

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1933phae.proj.1230M

252 ✓ 4.6

7.9	9.2	3.3	4.6	13.91	1.143
8.1		3.5		13.15	1.118
8.2		3.6		12.80	1.107
8.3		3.7		12.40	1.093

254 ✓ 4.6

8.2	9.25	3.6	4.65	12.9	1.110
8.45		3.85		12.1	1.082
8.55		3.95		11.75	1.070
8.60		4.0		11.60	1.064

255 ✓ 4.8

7.8	9.4	3.0	4.6	15.31	1.184
7.75		2.95		15.60	1.192
7.70		2.90		15.85	1.199
8.00		3.2		14.40	1.158

256 ✓ 4.8

7.4	9.6	2.6	4.8	18.45	1.266
7.8		3.0		16.00	1.204
7.7		2.9		16.55	1.218
8.0		3.2		15.00	1.176

257 ✓ 4.75

6.75	9.6	2.00	4.85	24.2	1.384
6.80		2.05		23.6	1.372
7.05		2.30		21.1	1.324
7.20		2.45		19.8	1.296

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1933phae.proj.12.pm

258 ✓ 4.75

8.3	9.65	3.55	4.90	13.8	1.140
8.15		3.40		14.4	1.158
8.30		3.55		13.8	1.139
8.65		3.90		12.55	1.098

259 ✓ 4.75

8.5	9.65	3.75	4.90	13.05	1.115
8.4		3.65		13.40	1.127
8.6		3.85		12.70	1.104
8.9		4.15		11.80	1.072

260 ✓ 4.8

8.5	9.55	3.7	4.75	12.8	1.107
8.5		3.7		12.8	1.107
8.8		4.0		12.9	1.110
8.7		3.9		12.2	1.086

265 ✓ 4.8

7.6	9.35	2.8	4.55	16.25	1.210
7.8		3.0		15.15	1.180
8.22		3.42		13.30	1.124
8.33		3.53		12.90	1.110

270 ✓ 4.8

8.30	9.5	3.50	4.7	13.4	1.127
8.20		3.40		13.8	1.139
8.65		3.85		12.2	1.086
8.70		3.90		12.05	1.080

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1933phae.proj.1230M

Dec 2, 1932

271 ✓ 3.6

7.35	9.02	3.75	5.42	14.45	1.160
7.02		3.42		15.82	1.200
7.80		4.20		12.90	1.110
7.80		4.2		12.90	1.110

272 ✓ ~~8.85~~ 3.6

7.1	8.85	3.5	5.25	15.00	1.176
6.85		3.25		16.30	1.212
7.30		3.70		14.20	1.152
7.21		3.61		14.55	1.163

273 ✓ 3.6

7.8	8.9	4.2	5.3	12.60	1.10
7.7		4.1		12.90	1.115
7.8		4.2		12.60	1.100
8.0		4.4		12.05	1.085

274 ✓ 3.4

8.05	9.0	4.45	5.4	12.13	1.084
7.78		4.18		12.90	1.115
8.10		4.50		12.00	1.079
8.15		4.55		11.85	1.074

277 ✓ 3.6

7.35	8.95	3.75	5.35	14.28	1.157
6.70		3.10		17.25	1.237
6.40		2.80		19.10	1.281
6.90		3.30		16.20	1.210

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1933phae.proj.12bam

280 ✓ 3.6

6.4	9.2	2.8	5.6	20.00	1.305
6.5		2.9		19.30	1.285
6.5		2.9		19.30	1.285
6.65		3.05		18.35	1.264

281 ✓ 3.6

8.0	9.1	4.4	5.5	12.50	1.096
7.55		3.95		13.90	1.143
7.92		4.32		12.75	1.106
8.10		4.50		12.20	1.086

282 ✓ 3.6

6.5	9.1	2.9	5.5	18.95	1.278
6.1		2.5		22.00	1.342
6.5		2.9		19.00	1.278
7.05		3.45		15.95	1.202

283 ✓ 3.6

6.5	9.2	2.9	5.6	19.30	1.286
6.8		3.2		17.50	1.243
7.3		3.7		15.11	1.180
7.7		4.1		13.65	1.135

284 ✓ 3.6

7.1	9.1	3.5	5.5	15.70	1.196
7.8		3.7		14.85	1.172
7.21		3.61		15.25	1.183
7.60		4.00		13.75	1.138

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1933phae.proj.12300

287 — 3.65

~~8.12 9.1~~

288 — 3.6

7.0	9.1	3.4	5.5	16.20	1.209
6.9		3.3		16.65	1.221
7.8		4.2		13.10	1.117
8.0		5.4		10.20	1.008

292 — 3.65

7.9	8.9	4.25	5.25	12.35	1.092
7.85		4.20		12.50	1.096
7.90		4.25		12.35	1.092
8.20		4.55		11.55	1.062

295 — 3.65

6.5	8.7	2.85	5.05	18.00	1.255
6.4		2.75		18.35	1.263
6.8		3.15		16.05	1.205
7.05		3.40		14.85	1.172

296 — 3.6

6.85	8.6	3.25	5.0	15.40	1.188
6.90		3.30		15.15	1.180
7.60		4.00		12.50	1.096
7.80		4.20		11.90	1.076

297 — 3.6

7.3	8.8	4.7	5.2	11.05	1.060
7.3		4.7		11.05	1.860
7.8		4.2		12.40	1.094
7.9		4.3		12.10	1.083

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299 ✓ 97

6.95	8.7	3.25	5.00	15.40	1.188
7.00		3.30		15.20	1.184
7.50		3.80		13.30	1.124
7.55		3.85		13.00	1.114

Jan 6 '33 122 H 7.2

9.0	14.0	1.7	6.7	39.4	1.595
9.8		2.5		26.8	1.428
10.1		2.8		29.9	1.476
10.6		3.3		20.3	1.307

11 ~~.0~~ ✓ 7.05

9.4	13.4	2.35	6.35	27.0	1.432
9.4		2.35		27.0	1.432
9.8		2.75		23.1	1.363
9.85		2.80		22.7	1.356

12 ✓ 7.1

10.0	13.3	2.9	6.2	21.4	1.330
10.2		3.1		20.0	1.301
10.1		3.0		20.7	1.316
10.3		3.2		19.4	1.288

13 ✓ 7.1

8.9	13.1	1.8	6.0	33.4	1.524
9.05		1.95		30.8	1.489
9.30		2.20		27.3	1.438
9.80		2.70		22.2	1.346

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1933phae.proj.1230M

15 ✓

7.2

9.4	14.1	2.2	6.9	31.4	1.496
9.5		2.3		30.0	1.477
10.3		3.1		22.2	1.346
10.7		3.5		19.7	1.294

37 ✓

7.2

9.40	13.4	2.20	6.2	28.2	1.450
9.30		2.10		29.5	1.470
9.40		2.20		28.2	1.450
9.90		2.70		23.0	1.362

48 ✓

7.2

11.0	13.6	3.80	6.4	16.85	1.226
10.9		3.70		17.30	1.238
11.1		3.90		16.40	1.215
11.35		4.15		15.40	1.188

53 ✓ tb.

7.2

9.2	13.6	2.0	6.4	32.0	1.505
9.6		2.4		26.7	1.426
10.9		3.7		17.3	1.238
11.3		4.1		15.6	1.195

56 ✓ b. faint

7.2

11.3	13.7	4.1	6.5	15.8	1.198
11.0		3.8		17.1	1.233
12.0		4.8		13.5	1.130
12.5		5.3		12.3	1.090

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1933phae.proj.126.gif

58 ✓ 7.5

9.8	13.65	2.3	6.05	26.3	1.420
9.9		2.4		25.2	1.402
10.7		3.2		18.9	1.276
10.9		3.4		17.8	1.250

59 ✓ 7.5

11.1	13.5	3.6	6.0	16.7	1.223
11.9		3.4		17.65	1.247
11.8		4.3		13.95	1.145
11.6		4.1		14.65	1.166

61 ✓ 7.2

11.3	13.0	4.1	5.8	14.15	1.150
11.7	?	4.5		12.90	1.110
12.0		4.8		12.10	1.083
12.65		5.45		10.65	1.027

64 ✓ 7.5

11.8	12.9	4.3	5.4	12.55	1.098
11.7		4.2		12.85	1.109
11.8		4.3		12.35	1.098
12.1		4.6		11.75	1.070

65 ✓ 7.0

9.9	12.9	2.9	5.9	20.30	1.308
10.05		3.05		19.35	1.286
10.45		3.45		17.10	1.233
10.60		3.60		16.40	1.215

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1933phae.proj.1230M

70↓ 6.7

10.5-	12.8	3.8	6.1	16.05-	1.214
10.25-		3.55		17.20	1.235-
10.90		4.20		14.50	1.161
11.00		4.30		14.20	1.152

71↓ 6.5-

9.2	12.1	2.7	5.6	20.7	1.316
9.5		3.0		18.70	1.272
10.35-		3.85		14.50	1.161
10.43		3.93		14.25-	1.154

78↓ 6.5

9.6	12.4	3.1	5.9	19.0	1.279
9.8		3.3		17.85	1.252
10.2		3.7		15.95	1.202
10.6		4.1		14.40	1.158

82↓ 6.5

10.3	12.2	3.8	5.7	15.0	1.176
10.2		3.7		15.40	1.188
10.5-		4.0		14.25	1.154
10.7		4.2		13.55	1.132

88↓ 6.5-

8.4	12.25-	1.9	5.75	30.30	1.481
8.45		1.95		29.50	1.470
8.90		2.40		23.95	1.379
9.35-		2.85		20.10	1.305

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1933phae.proj.126pm

93 ✓ 6.6

9.9	12.5	3.3	5.9	17.90	1.253
10.05		3.45		17.10	1.232
10.45		3.95		14.95	1.174
10.70		4.10		14.40	1.158

94 ✓ 6.7

10.6	12.4	3.9	5.7	14.60	1.164
10.9		4.2		13.60	1.134
11.2		4.5		12.65	1.102
11.4		4.7		12.15	1.084

104 ✓ 6.8

10.2	13.0	3.4	6.2	18.21	1.267
10.15		3.35		18.50	1.267
10.35		3.55		17.45	1.242
10.65		3.85		16.10	1.207

105 ✓ 6.85

9.5	12.90	2.65	6.05	22.8	1.358
9.60		2.75		22.0	1.342
10.60		3.75		16.1	1.207
10.95		4.10		14.75	1.168

106 ✓ 6.75

10.3	12.70	3.55	5.95	16.75	1.224
10.25		3.50		17.00	1.230
11.15		4.40		13.57	1.132
11.19		4.38		13.60	1.134

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1933phae.proj.1230

Jan 31 1933

108 M

19.4 25

18.5

39

112

21.5 26.4

~~13.4~~

~~18.4~~

20.9

3.8

114

11.0	~~24.6~~	7.6	24.9	32.8	1.516
11.6		7.2		34.6	1.540
13.2		9.8		25.4	1.405
14.7	28.3	11.3		22.1	1.344

3.4

112 1/

27.5

3.7

117

19.0	28.1	15.2	24.3	16.0	1.204
19.0		15.2		16.0	1.204
18.5		14.7		16.5	1.218
21.5		17.7		13.7	1.137

3.8

119

21.5	27.8	17.8	24.1	13.54	1.132
20.9		17.2		14.00	1.146
21.8		18.1		13.35	1.126
23.4		19.7		12.21	1.088

3.7

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1933phae.proj.124.tif

130 ✓						3.2
19.1	26.4	15.3	22.6	14.75	1.169	
17.5		14.7		15.38	1.187	
21.0		17.2		13.12	1.118	
22.9		19.1		11.81	1.072	
131 ✓	d^2					39
11.3	26.4	7.4	22.3	30.2	1.480	
10.79		7.0		31.81	1.504	
15.7		11.8		18.90	1.277	
17.2		13.3		16.75	1.224	
143 ✓	$\frac{s^2}{n}$					3.8
14.1		10.3	24.7	24.0	1.380	
13.2		9.4		26.3	1.422	
18.5		14.7		16.8	1.226	
19.0	28.5	15.2		16.25	1.211	
150 ✓						4.1
17.6	28.0	13.5	23.9	17.70	1.248	
15.8		11.7		20.40	1.310	
17.0		12.9		18.51	1.268	
19.5		15.4		15.50	1.191	
156 ✓						4.0
159	28.4	11.9	24.4	20.5	1.312	
170		13.0		18.75	1.273	
20.9		16.9		14.45	1.160	
21.2		17.2		14.20	1.152	

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Feb 4, 1933

158 v+ 3,)

6.15	12.1	2.45	8.4	34.3	1.536
6.00		2.30		36.5	1.562
6.40		2.70		31.1	1.494
6.90		2.20		26.2	1.419

159 wrong ot. 1/ 3.8

6.9	12.0	3.1	8.2	26.4	1.422
6.7		2.9		28.3	1.452
7.0		3.2		25.6	1.408
7.50		3.7		22.2	1.327

162 3.7

9.3	11.65	5.6	7.95	14.2	1.152
9.1		5.4		14.7	1.168
9.0		5.3		15.0	1.176
9.4		5.7		13.95	1.145

165 3.7

8.2	11.8	4.5	8.1	18.0	1.256
8.2		4.5		18.0	1.256
8.7		5.0		16.2	1.210
9.25		5.55		14.6	1.165

166 3.4

8.4	12.0	5.0	8.6	17.2	1.236
9.0		5.6		15.35	1.186
10.1		6.7		12.85	1.110
11.1		7.7		11.13	1.047

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1933phae.proj.124pp

176 ✓ 3.5

9.8	11.9	5.7	8.4	14.7	1.168
9.2		5.7		14.7	1.168
10.1		6.6		12.7	1.104
10.0		6.5		12.9	1.111

177 ✓ 3.5

9.7	12.1	6.2	8.6	13.9	1.144
9.3		5.8		14.8	1.170
9.9		6.4		13.4	1.128
10.3		6.8		12.65	1.102

178 ? 3.4

10.7	12.0	7.3	8.6	11.8	1.072
10.0		6.6		13.0	1.114
10.4		7.0		12.3	1.090
11.0		7.6		11.3	1.053

180 ✓ 3.5

5.8	11.8	2.3	8.3	36.1	1.558
6.5		3.0		27.6	1.442
8.4		4.9		16.95	1.200
8.7		5.2		15.95	1.203

186 ✓ 3.5

8.9	11.5	5.4	8.0	14.8	1.170
9.1		5.6		14.3	1.156
9.6		6.1		13.1	1.118
9.7		6.2		12.9	1.111

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1933phae.proj.1230M

197

12.8 13.8

12.7

12.6

12.7

Feb 4 1933 ~~205~~ 197 ✓ 3.4

10.6	13.4	7.2	10.0	13.90	1.143
10.6		7.2		13.90	1.143
10.5		7.1		14.10	1.149
11.2		8.8		11.40	1.057

205 9.4 3.4

6.7	13.2	3.3	9.8	29.7	1.472
6.7		3.3		29.7	1.472
6.6		3.2		30.6	1.486
8.0		4.6		21.3	1.328

210 3.7

7.5	12.7	4.2	9.4	22.4	1.350
7.4		4.1		22.9	1.360
9.3		6.0		15.7	1.196
*9.8		6.5		14.45	1.160

212 ✓ 3.2

6.6	11.5	3.4	8.3	24.4	1.388
6.6		3.4		24.4	1.388
8.3		5.1		16.8	1.212
8.7		5.5		15.1	1.180

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216 3.1

7.3	11.3	4.2	8.2	19.5	1.290
6.45		3.35		24.5	1.389
8.20		5.10		16.1	1.207
9.20		6.10		13.4	1.127

218 3.1

8.3	10.8	5.2	7.7	14.8	1.170
8.2		5.1		15.1	1.180
8.5		5.4		14.3	1.155
9.0		5.9		13.1	1.120

219 my 2.9

7.45	10.4	4.55	7.5	16.5	1.217
6.50		3.60		20.8	1.318
8.80		5.90		12.7	1.104
9.50		6.60		11.4	1.057

225 my 2.9

7.2	10.7	4.3	7.8	18.1	1.258
7.3		4.4		17.7	1.248
8.3		5.4		14.4	1.158
8.75		5.85		13.3	1.124

226 2.9

5.9	10.4	3.0	7.5	25.0	1.398
5.9		3.0		25.0	1.398
6.7		3.8		19.7	1.294
7.2		4.3		17.5	1.243

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1933phae.proj.1230N

227 ✓ 2.9

6.3	11.0	3.4	8.1	23.8	1.376
5.9		3.0		27.0	1.431
7.2		4.3		18.8	1.274
7.9		5.0		16.2	1.210

223 ✓ 2.7

7.1	10.2	4.4	7.5	17.0	1.230
7.0		4.3		17.4	1.240
7.4		4.7		15.9	1.202
8.0		5.3		14.1	1.150

254 2.7

7.9	9.8	5.2	7.1	13.65	1.135
8.0		5.3		13.40	1.127
8.3		5.6		12.70	1.104
8.4		5.7		12.45	1.095

255 3.0

7.6	10.0	4.6	7.0	15.20	1.182
7.1		4.1		17.10	1.233
7.2		4.2		16.65	1.222
8.25		5.25		13.30	1.124

256 ✓ 2.9

6.2	10.3	3.3	7.4	22.4	1.350
6.4		3.5		21.2	1.326
6.9		4.0		18.5	1.267
7.4		4.5		16.40	1.215

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1933phae.proj.12pap

258 ✓					2.9
7.6	10.3	4.7	7.4	15.7	1.196
7.9		5.0		14.8	1.170
8.3		5.4		13.7	1.137
8.9		6.0		12.3	1.090
259 ✓					3.0
8.3	10.5	5.3	7.5	14.2	1.152
8.7		5.7		13.15	1.119
9.1		6.1		12.30	1.090
9.2		6.2		12.10	1.082
260 ✓					3.0
8.5	10.5	5.5	7.5	13.60	1.133
8.55		5.55		13.50	1.130
8.70		5.70		13.15	1.118
9.10		6.10		12.30	1.090
270 ✓					3.0
8.2	10.2	5.2	7.2	13.85	1.141
8.2		5.2		13.85	1.141
8.6		5.6		12.85	1.080
8.8		5.8		12.40	1.094
271 ✓					3.2
8.1	10.6	4.9	7.4	15.10	1.179
7.3		4.1		18.10	1.258
8.6		5.4		13.70	1.136
9.1		5.9		12.55	1.098

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273					3.0
8.5	10.4	5.5	6.4	11.50	1.060
8.6		5.6		11.40	1.056
9.0		6.0		10.70	1.030
9.2		6.2		10.80	1.013
277					3.1
7.1	10.5	4.0	7.4	18.50	1.267
6.3		3.2		23.10	1.364
7.15		4.05		18.25	1.261
8.00		4.90		15.10	1.179
280					3.1
6.4	11.2	3.3	8.1	24.60	1.391
6.5		3.4		23.80	1.376
7.2		4.1		19.75	1.296
8.3		5.2		15.60	1.193
281					3.1
8.75	10.8	5.65	7.7	13.60	1.134
8.30		5.20		14.80	1.170
9.60		6.50		11.85	1.074
9.60		6.50		11.85	1.074
282					3.2
7.2	10.9	4.0	7.7	19.25	1.284
6.3		3.1		24.80	1.394
9.45		6.25		12.30	1.090
9.80		6.60		11.70	1.068

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1933phae.proj.124pm

283 ν

					3.2
6.7	11.2	3.5	8.0	21.80	1.338
6.7		3.5		21.80	1.338
9.1		5.9		13.50-	1.132
9.6		6.4		12.50	1.097

288 ✓

					3.1
7.2	10.7	4.1	7.6	18.50	1.267
8.0		4.9		15.60	1.193
9.1		6.0		12.70	1.104
9.6		6.5		11.70	1.068

296

					3.1
7.5	10.5	4.4	7.4	16.80	1.226
7.0		3.9		18.95-	1.278
8.4		5.3		13.95-	1.145
8.89		5.79		12.80	1.108

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1933phae.proj.1230M

76

Ao

Mar 24 '33
M.F. 10037

17							
17.1	18.1	6.3	7.1	11.28	1.052	10.8	
16.8		6.0		1181	1.069		
17.0		6.2		1145	1.059		
17.0	17.8	6.2		1145	1.059		
25° 5h 15m							
9.5	9.5	10.7				1.080	
17.1	18.4	630	7.6	1205	1.081		
17.1		630		1205	1.081		
17.2		640		1189	1.078		
17.4	18.4	660		1150	1.061		
28° 5h 17							
111	9.0	9.4				10.70	
13.7	15.4	3.0	4.7	1565	1.194		
13.7	16.0	3.0	5.3	888	0.948		
13.32	16.6	2.62	5.9	796	0.902		
13.19	17.2	249	6.5	724	0.860		
28° 5 18							
116	9.5	10.7				10.60	
15.3	16.61	47	6.0	1278	1.106		
15.5	16.8	49	6.2	1265	1.102		
15.80	17.0	52	6.4	1230	1.090		
16.60	17.20	60	6.6	1100	1.042		
+29 5 20							
122	9.4	10.2				1080	
1585	1720	505	66	1301	1.114		
1570		490		1348	1.129		
1582		502		1315	1.118		
1620	1760	440		1500	1.178		

not used

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1933phae.proj.1230M

			✓	HA 72				
6°	5 32	267	9.4	10.2				108
		15.5	18.2	4.7	7.4	1572	1.196	
		15.8		5.0		1480	1.170	
		16.30		5.5		1345	1.128	
		16.50	18.15	5.7		1280	1.107	
29	5 25	320	9.3	10.0				1065
		15.90	18.10	5 25	7.35	1400	1.146	
		15.90		5 2 5		1400	1.146	
		15.80		5 1 5		1428	1.157	
		37.10	17.90	~~4 5~~				
8.6°	5.37	304	9.1	9.5				10.8
		18.6 15.0		4.2	7.8	1855	1.268	
		14.3		3.5		2230	1.348	
		14.7		3.9		2000	1.305	
Finder 40		18.6 15.0		4.2		1858	1.269	
		~~10.~~ 3✓						109 ~~5~~
		18.1	166	5 7	7 3	1280	1.447	
		~~16.8~~	16.8	5 9		1238	1.357	
			168	5 9		1238	1.357	
		18.3	17.0	6 1		1195	1.077	
		4✓						10.9
		17.0	17.9	6 1	7.0	1145	1.058	
		16.5		5 6		1250	1.097	
		16.9		6 0		1168	1.067	
		17.1		6 2		1130	1.053	

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1933phae.proj.1230M

5-H. 10q

17.0	18.0	6.1	7.1	1163	1.066
17.1		6.2		1145	1.059
17.5		6.6		1075	1.070
17.5	18.0	6.6		1075	1.070

8 10.9

15.6	18.0	47	7.1	1510	1.178
15.6		47		1570	1.178
16.1		5.2		1365	1.135
16.9	18.02	6.0		1181	1.072

9 10.90

16.2	18.0	5.3	7.1	1340	1.127
16.35		545		1300	1.114
16.78		585		1210	1.083
16.72	18.0	582		1220	1.086

12H 10.90

17.3	18.2	6.4	7.3	1140	1057
17.2		6.3		1160	1.064
17.3		6.4		1140	1.057
17.3	18.2	6.4		1140	1.05

13H 11.00

17.2	18.2	6.1	7.1	1162	1.065
17.4		6.4		1110	1.046
17.35		6.35		1119	1.048
17.90	18.05	6.90		1030	1.013

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1933phae.proj.129.em

H.A.72

Ao * Mar 31 '33	32	A_2	8.8	9.0		1085
	18.55	15.15	430	770	1790	1.253
		15.35	450		1710	1.233
		15, 30	445		1730	1238

	58	A_2	9.4	10.2		1075
	18.15	16.40	565	720	1273	1105
		16.50	575		1250	1097
		16.50	575		1250	1097
190		16.85	610		1180	1072
1795		16.70	595		1210	1083
		17.20	645		1118	1048
	1775	17.20	645		1118	1048

	117	A_2	9.3	10.0		1070
	17.45	15.0	43	675	1570	1196
		15.1	44		1532	1186
		15.2	45		1500	1176
		16.0	53		1271	1104
		16.3	56		1205	1081
	17.45	16.8	61		1108	1044

	148	A_2	9.3	10.0		1070
	18.25	15.32	462	760	1645	1216
		15.82	512		1488	1172
1820		15.70	500		1520	1182

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1933phae.proj.1230M

Ord Stars

April 1933

16 ff

21 30	22.6	84			129
21 80		84			
21					

18 ✓

22.75	2216	975	97	995	0.998	1300
20.40		740		1310	1.117	
2080		780		1242	1.094	
2120	2280	820		1182	1.072	

19 ✓

201	22.3	74	95	1282	1.108	127
200		73		1300	1.114	
208		81		1171	1.068	
213	221	86		1105	1.043	

20 ✓ Ao

1970	2182	72	939	1305	1.116	1250
1950		70		1341	1.128	
2070		82		1144	1.058	
2060	2195	81		1160	1.064	

21 ✓

17.45	2220	525	1005	1915	1.282	1220
1772		552		1820	1.260	
1860		640		1570	1.196	
1905	2230	685		1468	1.167	

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1933phae.proj.126om

Ao

148 (cont)				H.A.7v			10.70
δ	16.30	560		760	1358	1132	
δ	16.30	560			1358	1132	
	16.50	580			1310	1118	
184	16.80	610			1248	1096	

2.16			9.2	9.8			10.6
18.0	15.2	A2	46	737	1602	1205	
	15.2		46		1602	1205	
	15.2		46		1602	1205	
	15.7		51		1445	1160	
	16.0		54		1365	1135	
17.95	16.7		61		1210	1083	

379		A2	9.2	9.8			10.50
18.15	14.5		400	763	1905	1280	
	14.78		428		1780	1250	
	1490		440		1730	1238	
	15.30		480		1590	1208	
	15.50		500		1522	1182	
18.10	16.05		555		1271	1138	

401		A2	9.2	10.0			107
18.6	15.4		47	777	1650	1218	
	15.6		49		1583	1200	
	15.8		51		1520	1182	
	16.1		54		1440	1158	
	16.0		53		1468	1166	
1835	17.0		63		1232	1091	

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1933phae.proj.1230M

Old * (cont)

Apr 7.1'32 (cont)

28✓ 1220

2034	2260	814	1040	1280	1.107
1980		760		1370	1.136
2000		780		1335	1.125
2020		800		1300	1.114

32✓ 1225

1809	2190	584	970	1660	1.220
1809		584		1660	1.220
1838		613		1580	1.198
1900	2200	675		1435	1.156

33 ~~ffs~~. 1230

2170	2020	790	940	1190	1.075
	2012	782		1200	1.079
	2060	830		1130	1.053
2170	2065	835		1125	1.050

40✓ 1220

2020	2210	790	980	1240	1.093
2025		795		1231	1.090
2070		840		1168	1.067
2100	2210	870		1125	1.050

45✓ 1225

2010	2205	775	973	1255	1.099
2080		845		1150	1.061
2070		835		1165	1.066
2080	2210	845		1150	1.061

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1933phae.proj.12rem

Do

	356	Bg	9.3		10.0		10.8
		15.9	18.4	510	76	1490	1173
		16.15		535		1420	1152
		15.90		510		1490	1173
		16.40		560		1358	1132
		16.70		590		1288	1110
		16.80	18.4	600		1268	1103

	423	Bg	8.8		9.0		1070
		13.7	18.40	30	77	2568	1410
		13.9		32		2409	1382
		14.0		33		2335	1368
		14.2		35		2200	1342
		14.3		36		2140	1330
		14.4		37		2080	1318
		14.8	18.4	41		1880	1274

	252	B8	9.3		10.0		1070
		14.4	177	37	720	1945	1289
		14.5		38		1895	1278
		14.6		39		1845	1266
158		14.82		412		1750	1243
1790		14.98		428		1680	1226
		15.5	16.1	480		1500	1176

	119	B8	9.3	10.0	

Continued for near edge

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1933phae.proj.1230M

49 ✓ 1255

2012	221	777	975	1255	1.098
2038		803		1215	1.084
2090		855		1140	1.057
2100	221	865		1128	1.052

57 ✓ 1240

2085	2220	845	975	1152	1.062
2060		820		1190	1.076
2090		850		1148	1.060
2100	2210	860		1132	1.054

57 ✓ 1240

210	2220	860	980	1140	1.057
206		820		1195	1.078
206		820		1195	1.078
2105	2220	865		1135	1.055

Apr 8, 1933. 57 ✓ 124

2170	223	930	975	1050	1.022
2001		761		1280	1.108
2070		830		1175	1.070
2095	2200	855		1140	1.057

62 ✓ 125

1760	2210	53	965	1820	1.260
1760		53		1820	1.260
1810		58		1665	1.222
1840	2180	61		1581	1.200

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1933phae.proj.126.pr

Ao

240 B8 8.8 9.0 1080

13.3	18.15	250	723	289	1461
13.75		295		245	1389
13.40		260		278	1444
14.05		325		222	1346
14.10		330		219	1340
14.60	17.90	380		190	1279

398 B8 9.1 9.5 1070

18.4	14.1	34	765	225	1352
	14.4	37		2065	1315
	14.3	36		2121	1327
	14.4	37		2062	1314
	14.7	40		1910	1282
18.3	15.0	43		1780	1250

422 A3 9.1 9.5

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1933phae.proj.1230M

Apr. 8 '33 (cont)

Old *

63 ✓					1225
1980	22.32	755	951	1260	1.100
1970		745		1278	1.106
2035		810		1175	1.070
2070	2120	845		1125	1.052
64 ✓					1230
2010	2230	780	993	1271	1.104
1998		768		1291	1.111
2040		810		1225	1.088
2070	22.15	840		1180	1.072
66					1212
1980	2170	768	958	1245	1.095
1975		763		1258	1.099
1980		768		1248	1.096
1980		768		1248	1.096
69 ✓ Ao					1225
2050	2230	855	1002	1175	1.070
2040		815		1232	1.091
2065		840		1198	1.078
2080	2225	855		1175	1.070
68 ✓					1220
2015	2208	795	989	1241	1.094
2018		798		1240	1.093
2060		840		1178	1.071
2080	2210	860		1150	1.061

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1933phae.proj.1220w

2205

70✓ 1220

2020	2190	800	983	1230	1.090
2040		820		1200	1.089
2069		849		1158	1.063
2080	2215	860		1142	1.058

72✓ 1220

1990	2218	770	1009	1310	1.117
1980		760		1328	1.123
2030		810		1245	1.095
2060	2220	840		1200	1.079

74✓ 1220

1630	2230	410	1010	2460	1.391
1640		420		2400	1.380
1690		470		2150	1.332
1725	2230	505		2000	1.301

75✓ 1220

1830	2200	610	985	1615	1.208
1885		665		1480	1.170
1900		680		1450	1.161
1950	2210	730		1350	1.130

77✓ 1225

1920	2200	695	990	1425	1.164
1990		665		1490	1.173
2030		705		1405	1.148
2060	2230	835		1185	1.074

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1933phae.proj.1230M

79 ✓

					1240
2060	2240	820	1015	1238	1.092
2050		810		1254	1.098
2112		872		1165	1.066
2112	2270	872		1165	1.066

80 ✓

					1220
1680	2230	450	1015	2260	1.354
1670		540		1880	1.274
1750		520		1955	1.291
1780	2260	550		1845	1.266

87 ✓

					1230
1990	2240	760	990	1300	1.114
1980		750		1320	1.120
2030		800		1238	1.092
2050	2200	820		1210	1.082

82 ✓

					1260
2010	2212	750	952	1270	1.104
1990		730		1302	1.114
2130		870		1094	1.038
2140		880		1080	1.034

83 ✓

					1260
1940	2208	680	959	1410	1.149
1970		710		1350	1.130
1970		710		1350	1.130
2010	2230	750		1280	1.107

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1933phae.proj.120m

Afn 15

84 ✓ 120

1940	2360	640	1035	1620	1.210
1950		650		1592	1.202
1940		640		1620	1.210
1992	2310	692		1497	1.174

85 ✓ 125

1881	2260	631	1005	1595	1.202
1880		630		1595	1.202
1940		690		1459	1.164
1970	2250	720		1398	1.146

88 ✓ 1210

1710	2285	500	1062	2125	1.328
1770		560		1900	1.278
1830		620		1715	1.234
1830	2260	620		1715	1.224

89 ✓ 121

2040	2270	830	1065	1285	1.108
2050		840		1268	1.102
2150		940		1132	1.064
2180	2280	970		1100	1.041

90 ✓ 122

2090	2310	870	1100	1265	1.102
2030		810		1360	1.133
2160		940		1170	1.068
2160	2230	940		1170	1.062

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1933phae.proj.1230M

91

					125
1780	223	550	1015	1845	1.266
1852		622		1630	1.212
1910		680		1492	1.174
1960	226	730		1390	1.142

92

					122
1835	226	615	1020	1660	1.220
1855		635		1610	1.207
1905		685		1490	1.173
1950	222	740		1380	1.140

94

					121
1830	2315	620	1097	1770	1.248
1865		655		1670	1.222
1960		750		1460	1.164
1990	2300	780		1405	1.148

95

					121
2115	2310	905	1105	1220	1.086
2130		920		1200	1.079
2160		950		1162	1.066
2180	2320	970		1140	1.057

96

					122
2105	2348	885	1034	1285	1.104
2080		860		1320	1.120
2140		920		1232	1.125
2182	2260	962		1150	1.072

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1933phae.proj.123m

102 ✓ 123

1880	.220	650	975	150	1.176
1900		670		1453	1.162
1935		705		1381	1.140
2050	2210	820		1190	1.076

1081 121

1865	2160	655	930	1420	1.152
1880		670		1385	1.141
1940		730		1272	1.104
1950	2120	740		1258	1.099

105-1 ✓ 121

2070	2180	860	975	1120	1.053
2040		830		1175	1.075
2080		870		1120	1.048
2130	2190	920		1060	1.025

107 ✓ 122

1665	2180	445	960	2160	1.334
1670		450		2130	1.328
1690		470		2040	1.310
1710	2180	490		1960	1.292

104 ✓ 120

1990	2240	790	1035	1310	1.117
2000		800		1295	1.112
2040		840		1231	1.091
2050	2270	880		1178	1.071

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1933phae.proj.1230

Apr. 18

105H

245	256	1070	1175	1005	1.002
242		1040		1035	1.015
2415		1035		1040	1.017
2410	2550	1030		1042	1.018

138

106H

2160	283	790	945	1195	1.078
2125		755		1250	1.097
2170		800		1180	1.072
2162	2300	792		1192	1.076

187

114

20.0	22.98	640	940	1470	1.168
1990		630		1490	1.173
2010		650		1445	1.160
2020	2300	660		1425	1.154

136

115

1910	2230	550	870	1580	1.199
1921		561		1550	1.190
2060		700		1243	1.095
2110	2230	750		1160	1.065

136

118

1960	2420	605	1045	1730	1.238
1910		555		1885	1.276
1940		685		1528	1.184
2000	2380	645		1620	1.210

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1933phae.proj.1230M

121 ✓ 135

2140	246	790	1100	1392	1.144
2210		860		1280	1.108
2260		910		1210	1.083
2290	244	940		1170	1.068

122 ✓ 136

2410	216	1065	800	1459	1.164
✗	2170		810	1440	1.158
	2190		830	1405	1.148
2440	2200		840	1389	1.142

124 ✓ 136s

1960	2460	595	1105	1860	1.270
1920		555		1990	1.298
1990		625		1770	1.248
2030	2480	665		1660	1.220

125 ✓ ng 140

210	2430
2170	
2200	
2	

127 ✓ 139

2010	2380	620	1005	1620	1.210
2050		660		1525	1.184
2150		760		1321	1.122
2210	2410	820		1225	1.087

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1933phae.proj.1230M

129						1390
	2130	2540	740			
2	2230		840			
	2350		960			
	2360	2460	970			
132						129
	2170	255-	780	1145	1470	1.168
	2170		780		1470	1.168
	2280		890		1288	1.110
	2370	2520	980		1170	1.068
135						139
	2000	252	610	1140	1870	1.272
	2020		630		1810	1.258
	2090		700		1630	1.212
	2130	254	740		1540	1.188
136						139
	2160	252	770	1130	1470	1.168
	2185		795		1421	1.153
	2185		795		1421	1.153
	2210	242	820		1380	1.140
139						139
	2190	250	800	1100	1375	1.138
	2180		790		1390	1.143
	2220		840		1310	1.118
	2240	2480	860		1295	1.112

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1933phae.proj.1230M

Apr 19

141✓ 139

208	247	69	1075	1560	1.193
212		73		1471	1.168
217		78		1380	1.140
220	246	81		1328	1.124

143✓ 139

223	240	84	104	1240	1.094
222		83		1252	1.098
226		87		1197	1.078
228	246	89		1170	1.068

144 blr 139

173	245	34	1055	3100	1.482
175		36		2915	1.467
1810		42		2501	1.400
1865	244	475		2220	1.346

145✓ 139

250	206	67	1120	1670	1.223
	207	68		1650	1.218
	209	70		1600	1.204
252	217	78		1438	1.126

147 mf 139

229	249
226	

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1933phae.proj.1230

148 ✓					138
220	267	82	1275	1555	1.192
215		77		1655	1.219
219		81		1575	1.198
226	264	88		1450	1.162
152 ✓					138
2172	259	792	120	1515	1.180
2132		752		1595	1.215
2245		865		1390	1.143
2330	257	950		1265	1.110
156 ✓					1365
1975	261	610	1225	2010	1.305
1950		585		2100	1.322
2172		807		1520	1.182
2220	2570	855		1432	1.156
157 ✓					1370
2210	2580	840	1225	1460	1.164
2210		840		1460	1.164
2305		935		1310	1.118
2320	2610	960		1275	1.106
158 ✓					1370
2010	2590	640	1260	1970	1.294
2040		670		1880	1.274
2120		750		1680	1.226
2270	2670	900		1400	1.146

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1933phae.proj.123pm

160 ✓						138
2070	2605	690	1215	1760	1.246	
2115		735		1655	1.219	
2390		1010		1200	1.080	
2440	2580	1060		1145	1.059	
Afn. 22 166 ✓						123
1810	202	580	775	1335	1.126	
1780		550		1420	1.152	
1820		690		1122	1.050	
1820	19.9	690		1122	1.050	
other minisite?						
170 ✓						122
1770	1960	550	756	1375	1.138	
1790		570		1328	1.123	
1820		600		1260	1.100	
1825	1992	595		1270	1.104	
171 ✓						122
1805	1995	585	775	1325	1.122	
1835		615		1260	1.100	
1830		610		1270	1.104	
1860	1995	640		1210	1.082	
175 ✓						120
1815	2005	595	780	1310	1.118	
1790		570		1369	1.136	
1845		625		1248	1.096	
1990	2000	770		1012	1.006	

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1933phae.proj.1230m

177 ✓ 122

1690	1980	470	765	1628	1.212
1670		450		1700	1.230
1690		470		1628	1.212
—	1990				

185 ✓ 1210

1660	1970	450	770	1710	1.234
1660		450		1710	1.234
1695		485		1588	1.201
1730	1990	520		1480	1.170

186 ✓ 1220

1800	2000	580	775	1335	1.126
1820		600		1290	1.110
1820		600		1290	1.110
1830	1990	610		1270	1.104

189 ✓ 1215

1780	1965	565	750	1325	1.122
1765		550		1362	1.135
1790		575		1305	1.116
1805	1965	690		1085	1.036

190 ✓ 1212

1860	1975	648	761	1175	1.070
1860		648		1175	1.070
1845		633		1205	1.087
1865	1970	653		1168	1.068

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1933phae.proj.1230m

193 ff.					122
1870	1990	650	775	1190	1.076
1862		642		1210	1.083
1850		630		1230	1.090
1860	2000	640		1210	1.083
195					1215
1820	2000	605	770	1280	1.108
1868		653		1186	1.074
1865		650		1191	1.076
1880	1970	665		1165	1.066
196					1215
1730	2010	515	795	1542	1.188
1780		565		1408	1.148
1810		595		1335	1.126
1820	2010	605		1312	1.118
199					1235
1760	1985	525	740	1410	1.149
1760		525		1410	1.149
1825		690		1070	1.030
1830	1965	595		1242	1.095
200 ff					1220
1818	1945	588	707	1200	1.080
1865		635		1112	1.047
1840		610		1160	1.064
1850	1930	620		1140	1.057

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1933phae.proj.1230M

201 H

1750 1860

1780

1225

202

1225

1660	1970	435	745	1712	1.234
1645		420		1772	1.249
1670		445		1675	1.224
1690	1970	465		1600	1.204

May 27

28

12.5

24.4	28.1	10.9	14.55	1335	1.125
24.4		10.9		1335	1.125
25.1		11.6		1253	1.098
25.1	28.0	11.6		1253	1.098

32

13.6

2135	2735	775	1383	1782	1.251
21.40		780		1772	1.248
2160		800		1730	1.238
—	2750				

64

13.4

2390	2756	1050	1418	1330	1.130
24.59		1119		1269	1.103
24.35		1095		1294	1.112
24.70	2760	1130		1255	1.098

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1933phae.proj.12300

66 ✓ 1345

23.21	271	976	13.90	1425	1.154
24.40		1095		1270	1.104
24 75		1130		1280	1.090
25.30	2760	1185		1172	1.069

68 ✓ 1350

24.50	2730	1100	1395	1268	1.102
2462		1112		1252	1.105
2512		1162		1200	1.079
2540	2760	1190		1170	1.068

70 ✓ 1350

2460	2705	1110	1373	1238	1.092
2480		1130		1215	1.084
2540		1190		1155	1.062
2600	2740	1250		1100	1.042

72 ✓ 1355

2440	2735	1085	1380	1270	1.104
2430		1075		1285	1.108
2440		1085		1272	1.105
2735	2730	1180		1280	1.107

74 ✓ 1350

1895	271	545	1360	2500	1.398
1935		585		2321	1.364
2000		650		2090	1.320
2035	271	685		1985	1.298

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1933phae.proj.1230

75 ✓ 1300

2190	2720	840	1390	1655	1.218
2330		980		1420	1.152
2340		990		1405	1.147
2400	2760	1050		1321	1.125

83 ✓ 1340

1905	2700	565	13.72	2430	1.386
1922		582		2362	1.374
1989		649		2120	1.326
2061	2721	721		1906	1.280

May 30 '33 84 ✓ 12.9

17.89	19.90	4.99	6.90	1382	1.140
1780		4.90		1410	1.150
1780		4.90		1410	1.150
1820	1970	5.30		1300	1.114

95 ✓ 1280

1890	20.00	6.10	7.20	1180	1.072
1890		610		1180	1.072
1925		6.55		1100	1.042
1913	20.00	633		1140	1.057

114 ✓ 12.80

1700	18.50	420	5.50	1310	1.117
1720		440		1250	1.097
1730		450		1220	1.086
1760	18.15	480		1145	1.059

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1933phae.proj.123bm

123-H

						1280
18.15	1920	5.35	6.42	1200	1.079	
1810		5.30		1210	1.083	
1820		5.40		1190	1.076	
1820	1925	5.40		1189	1.075	

136 ✓

						1280
1770	1930	4.90	6.60	1348	1.129	
1780		5.00		1320	1.120	
1801		5.21		1268	1.103	
1830	1950	5.50		1200	1.079	

139 ✓

						1280
1800	1930	5.20	6.50	1250	1.097	
1795		5.15		1261	1.105	
1815		5.35		1215	1.084	
1830	1950	5.50		1180	1.072	

141 ✓

						1285
1790	1983	5.05	6.92	1370	1.136	
1800		5.15		1341	1.128	
1800		5.15		1341	1.128	
1827	1970	5.42		1278	1.106	

143 H

						1290
1850	1930	5.60	6.50	1160	1.064	
1850		5.60		1160	1.064	
1820		5.70		1140	1.070	
1861	1950	5.71		1139	1.060	

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1933phae.proj.1230

148

					1290
1775	2000	485	705	1452	1.162
1800		510		1380	1.140
1830		540		1305	1.116
1840	1990	550		1281	1.080

171 my

					1290
1820	1970	530	6.80	1281	1.080
1850		560		1212	1.084
1850		560		1212	1.084
1860	1970	570		1192	1.076

177 My

					1290
1760	1975	4.70	6.90	1470	1.167
1722		432		1600	1.204
1760		470		1469	1.166
—	1990			—	—

186 My

					1290
1850	1972	560	686	1225	1.088
1850		560		1225	1.088
1840		550		1250	1.097
1850	1980	560		1227	1.089

189

					1290
1810	1950	520	650	1250	1.097
1810		520		1250	1.097
1820		530		1228	1.089
1840	1930	550		1181	1.072

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1933phae.proj.1230

1933 October AB plates May Projn

Oct 17 Polar Sequence

AB 490	Name	Zero	clear	Filter	Cl-Zer	Fl-Zer	Dir	log
	1	7075	2220	1352	1513	645		

6	invis
5	1970
4	1930
3	1910
15	790
12	2150 invis
25	1990

1

	1440
	1430
greater	1470
	1325
center	1350
W of "	1370
E " "	1330
N	1290
S	1480

AB 490 Polar Sequence without diaphragm

1	8355	23221	15 10 58	1487	675 713	

Pola Seq with diaphragm

1	792	2290	1450	1498	658	

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1933phae.proj.1230m

Oct 18 AB 849

	Zero	Clear	Film	Cl-Zer	Fl-Zer	Dev.	Coef
1	790	2630	1720	1840	930	1.980	1.2967
2	770	2630	2080	1860	1310	1.420	1.1523
3	780	2620	2290	1840	1510	1.220	1.0864
4	790	2630	2350	1840	1560	1.180	1.0719
5	770	2630	2480	1860	1710	1.089	1.0370
15	778	2610	1000	1842	2222	0.820	0.9191
25	795	2500	2330	1705	1535	1.110	1.0453
25	834	2570	2380	1676	1546	1.085	1.0354
Oct 19 1	930	2530	1730	1600	800	2.00	1.3010
2	920	2490	2060	1570	1140	1.380	1.1399
3	920	2500	2230	1580	1310	1.210	1.0828
4	910	2490	2288	1580	1378	1.150	1.0607
5	900	illegible					
15	910	2640	1110	1730	200	8.65	0.9370

Stars

47	870	2840	2300	1970	1430	1380	1.1399
162	872	2780	2450	1908	1578	1210	.0828
169	862	2270	1962	1408	1100	1280	.1072
170	860	2370	2200	1510	1340	1128	.0892 (61)
164	870	2385	2165	1515	1295	1170	.0682
163	850	2340	2150	1490	1300	1145	.0588
43	840	2140	1962	1300	1122	1160	.0645
154	845	2230	1972	1385	1127	1230	.0899
153	842	2350	1760	1508	918	1640	.2148
40	835	2110	1953	1275	1120	1140	.0569
158	830	2170	2000	1340	1170	1145	.0588
147	838	2260	1970	1422	1132	1258	.0997

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1933phae.proj.1230N

	Zero	Clear	Film	Cl-Zer	Fl-Zer	Den -	Log
148	830	2329	2170	1499	1340	1120	.0492
149	830	2350	2200	1520	1370	1110	.0453
123	842	2420	2295	1578	1393	1130	1.0531
122	840	2460	1330	1620	490	330	1.5185
157	841	2530	1692	1689	851	1981	1.2969
4	831	1970	1740	1139	909	1251	1.0973
30	836	2010	1795	1174	959	1225	.0881
144	840	2160	1880	1320	1040	1270	.1038
145	840	2170	2020	1330	1180	1125	.0511
124	836	2308	2150	1472	1314	1121	.0496
121	841	2400	2250	1559	1409	1108	.0445
120	855	2440	2250	1585	1395	1138	.0561
Oct 23, 1933	710						
-68	710	1930	1645	1220	935	1305	1.122
-101	707	1902	1472	1195	765	1560	1.194
-143	690	1930	1820	1240	1130	1198	1.078
-144	700	1955	1820	1255	1120	1121	1.050
-126	700	2030	1870	1330	1170	1138	1.056
-125	700	2070	1988	1370	1288	1065	1.028
-117	720	2195	1902	1475	1182	1248	1.096
-116	730	2208	1780	1478	1050	1418	1.151
-15	735	1900	1755	1165	1020	1141	1.058
-27	760	1912	1770	1152	1010	1040	1.016
-108	750	2070	1970	1320	1220	1080	1.033
-109	740	2080	1840	1340	1100	1210	1.082
-260	740	1881	1670	1141	930	1230	1.090
-264	730	1848	1740	1118	1010	1080	1.033
-263	725	1932	1840	1207	1115	1080	1.033
-261	721	1950	1760	1229	1039	1080	1.033
-262	715	1955	1790	1215	975	1248	1.096
-131	720	2021	1775	1301	1055	1235	1.092

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1933phae.proj.12300

	Zero	Clear	Film	Cl-Zero	Fl-Zero	Dev	Fog
Hf -107	710	1980	1900	1270	1190	1068	1.028
-106	710	2078	1970	1368	1260	1185	1.074
Hf -132	700	2088	2000	1388	1300	1068	1.028
-105	710	2116	1682	1406	972	1448	1.160
-133	702	2038	1260	1336	558	2392	1.378
p 259	692	1820	1698	1138	1006	1290	1.110
38-258	700	1950	1768	1250	1068	1170	1.068
38- 136	661	2070	1650	1819	989	1840	1.264
-258	670	1903 ~~1890~~	1708	1233	1068	1155	1.062
-265	670	2120	1890	1450	1220	1190	1.078
-266	698	2160	1700	1462	1002	1460	1.164
-135	661	2200	1860	1539	1199	1285	1.108
p 249	670	1778	1700	1108	1030	1075	1.031
-246	670	1800	1678	1130	1008	1121	1.050
-257	670	1930	1802	1260	1132	1112	1.046
-233	680	2140	2098 ~~1820~~	1460	1320	1106	1.043
-252	692	2110		1418	998	1420	1.152
-251	690	1980	1645	1290	955	1357	1.130
-246	700	1840	1682	1140	982	1160	1.064
-245	690	1890	1520	1200	830	1446	1.160
-241	700	2056	1780	1356	1080	1264	1.102
-238	700	2138	1652	1438	952	1510	1.179
-237	690	2130	1770	1440	1080	1430	1.155
-235	700	2040	1240	1240	540	2460	1.390
Oct 23 - 231	760	2010	1850	1250	1090	1148	1.059
-225	770	2330	1960	1560	1190	1310	1.117
-226	770	2290	1075	1520	1205	1165	1.066
-221	755	2180	1992	1435	1237	1160	1.064
-223	752	2198	2085	1446	1333	1084	1.034
-224	750	2200	2010	1450	1260	1150	1.060
-225	740	2270	1920	1530	1180	1298	1.112

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1933phae.proj.1230

	Zero	Clear	Felin				Log
-222	720	2052	1890	1332	1170	1140	1.056
-220	715	2200	2042	1485	1327	1120	1.046
-219c	712	2295	2065	1583	1353	1170	1.066
-218	702	2230	2112	1528	1410	1082	1.034
-214	692	2310	2060	1618	1368	1182	1.073
-216	700	2325	2085	1625	1385	1172	1.069
-217	690	2380	2235	1690	1545	1094	1.039
-190	690	2060	1658	1370	968	1415	1.151
-191	690	2071	1845	1381	1155	1198	1.078
-193	685	2160	1661	1475	976	1510	1.179
-194	680	2142	2016	1462	1336	913	1.960
-98	675	1958	1765	1283	1090	1178	1.070
-92	675	1900	1640	1225	965	1270	1.104
-188	680	2020	1945	1340	1265	945	1.976
-196	680	2112	1800	1432	1120	1280	1.107
? 152	685	2210	2008	1525	1323	1150	1.060
-91	690	1942	1730	1252	1040	1205	1.081
-187	700	2045	1850	1345	1150	1170	1.068
-197	700	2182	1922	1482	1282	1212	1.084
-199	700	2140	1940	1440	1240	1160	1.064
-198	710	2190	2060	1480	1350	1095	1.039
-208	715	2245	2040	1530	1325	1155	1.052
-210	720	2250	1975	1530	1255	1220	1.086
-209	735	2280	1998	1545	1263	1230	1.090
-207	748	2270	1950	1522	772	1975	1.295
-92	755	1965	1820	1215	1065	1141	1.057
-186	765	2180	2065	1415	1300	1090	1.037
-200	770	2300	2180	1530	1410	1185	1.074
-202	780	2200	2170	1520	1390	1095	1.077
185 ~~205~~	785	2290	2030	1505	1245	1210	1.082
182	790	2250	2085	1460	1295	1128	1.052

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	Zero	Clear	Film	C-Zr	FC-Zr	Dia	Log
187	792	2160	2035	1368	1243	1100	1.041
79	762	2065	1718	1303	956	1364	1.134
82	765	1970	1830	1205	1065	1131	1.054
7.6	760	1970	1820	1210	1050	1203	1.080
174	760	2040	1835	1280	1075	1191	1.076
173	760	2052	1950	1292	1190	1185	1.073
176	760	2130	1930	1370	1170	1170	1.068
169	760	2030	1760	1270	1000	1000	1.000
2 239							
128							

Oct 27' 33 AB 490 Polar sequence

1	590	1782	1035	1192	495	2410	1.382
2	585	1840	1400	1255	815	1540	1.187
3	580	1852	1570	1272	990	1285	1.108
4	580	1738	1550	1158	970	1192	1.076
X 5	665	1760	1590	1095	925	1182	1.072
X 15	550	1700	630	1150	80	14400	2.158
X 25	550	1672	1630	1122	1080	1040	1.017
12	552	1835	1760	1283	1208	1065	1.027
				Stan			
51	590	1930	1762	1340	1172	1141	1.057
63	590	2075	1975	1485	1385	1070	1.029
98	590	2205	1940	1615	1350	1196	1.077
103	595	2260	2070	1665	1475	1130	1.053
105	590	2490	2350	1900	1760	1080	1.033
45	571	1950	1542	1379	971	1430	1.155
46	575	2000	1840	1425	1265	1128	1.052
36	600	2205	2015	1605	1415	1135	1.055
28	640	2330	1925	1690	1285	1315	1.118
30	665	2440	2280	1775	1615	1100	1.041
36	680	2290	2076	1610	1396	1155	1.062

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1933phae.proj.1230m

	321	690	2330	2150	1640	1460	1124	1.050
	25	690	2570	2290	1880	1600	1175	1.070
	18	710	2615	2340	1905	1630	1170	1.068
	19	710	2700	2040	1990	1330	1498	1.175
	20	710	2852	2405	2140	1695	1261	1.101
	33	680	2280	1950	1600	1270	1260	1.100
lin	15	690	2630	2425	1940	1735	1120	1.049
	14	700	2750	2420	2050	1720	1170	1.068
	43	700	2245	1970	1545	1270	1215	1.084
lin	40	700	2420	2460	1720	1760	978	+
	39	700	2520	2075	1820	1375	1323	1.122
	4	685	2700	2510	2015	1825	1110	1.045
	2	700	2832	1470	2132	770	2770	1.432
	1	700	2880	2180	2180	1480	1472	1.168
	5	690	2660	1650	1970	960	2050	1.312
	327	690	2270	1980	1580	1290	1224	1.088
	321	680	2360	2130	1680	1450	1160	1.064
	355	680	2570	2040	1860	1360	1370	1.136
	356	680	2610	2300	1930	1620	1190	1.075
	357	680	2650	2470	1970	1290	1530	1.184
	324	675	2255	2040	1580	1365	1160	1.064
	320	680	2370	1940	1690	1260	1340	1.127
	332	675	2400	2190	1725	1515	1140	1.057
	336	670	2590	2400	1920	1730	1110	1.045
	310	670	2120	1715	1450	1045	1390	1.143
	314	670	2310	2160	1640	1490	1100	1.041
	339	660	2580	2280	1920	1220	1571	1.196
	338	650	2570	2040	1920	1390	1380	1.140
	313	655	2300	2060	1645	1405	1170	1.068
	268	660	2470	2240	1810	1580	1145	1.058
	267	640	2530	2365	1890	1725	1095	1.039

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1933phae.proj.12301

			Cl	Fl				
	262	650	2550	2400	1900	1750	1085	1.035
	270	640	2355	1370	1715	730	2350	1.371
	258	640	2510	2230	1870	1590	1175	1.070
Oct 30	26	740	2750	2495	2040	1785	1142	1.058
	307	730	1815	1540	1085	810	1340	1.128
	54	740	1730	1550	990	810	1221	1.088
	111	745	1768	1330	1023	585	1750	1.244
	314	740	2115	1905	1375	1165	1180	1.072
	320	745	2160	1790	1415	1045	1352	1.132
	297	740	1970	1776	1230	1036	1180	1.072
	217	740	2180	2045	1440	1305	1105	1.044
	218	740	2180	2090	1440	1350	1068	1.028
	216	750	2210	1790	1460	1040	1402	1.147
	205	740	1920	1665	1180	925	1278	1.106
	211	735	1990	1750	1255	1015	1236	1.092
	207	730	2020	1850	1290	1120	1152	1.062
	200	730	1952	1800	1222	1070	1142	1.058
Oct 31	193	790	2230	1860	1440	1070	1345	1.129
	191	782	2250	2130	1468	1248	1178	1.072
	188	780	2230	2170	1450	1390	1042	1.018
	185	780	2230	2130	1450	1350	1075	1.032
	182	780	2200	1160	1420	380	3740	1.573
	181	770	2140	1840	1370	1070	1280	1.108
	173	750	2090	1926	1340	1176	1140	1.058
	170	750	2058	1662	1308	912	1432	1.157
	164	750	1985	1510	1235	760	1628	1.212
	162	760	2050	1750	1280	990	1295	1.112
	145	750	2155	1640	1405	890	1580	1.199
	144	755	2130	1770	1375	1015	1335	1.132
	133	745	1950	1735	1205	995	1210	1.083
	135	740	2210	1860	1470	1120	1312	1.118

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1933phae.proj.1230m

136							
~~126~~	740	2180	20.20	1440	1280	1125	1.051
119	730	2090	1730	1360	1000	1360	1.134
123	735	2190	1870	1455	1135	1280	1.108
124	732	2258	2130	1526	1398	1092	1.038
110	735	1960	1800	1225	1065	1150	1.062
71	720	2110	2015	1380	1285	1075	1.032
75	740	2250	2020	1510	1280	1180	1.072
56	735	2040	1790	1305	1055	1238	1.092
70	730	2070	1920	1340	1190	1125	1.052
81	730	2310	2140	1580	1410	1120	1.050
80	730	2340	2140	1610	1410	1142	1.058
79	730	2320	2190	1590	1460	1090	1.038
83	730	2390	2280	1660	1550	1070	1.030
67	720	2180	1762	1460	1042	1400	1.146
61	720	2015	1856	1295	1136	1140	1.057
64	725	2100	1900	1375	1175	1170	1.068
Nov 1 33	99 810	2390	2140	1580	1330	1180	1.075
	28 830	2460	2050	1630	1220	1335	1.126
	332 840	2420	2250	1580	1410	1120	1.050
	360 830	2810	2450	1960	1600	1225	1.088
	351 810	2800	2580	1950	1650	1181	1.073
	365 860	2800	2550	1940	1690	1150	1.061
	183 850	2390	1740	1540	890	1730	1.238
	177 840	2245	1770	1405	930	1510	1.179
	178 840	2240	1952	1400	1112	1260	1.105
	179 840	2215	1630	1175	790	1488	1.172
	155 820	2022	1960	1192	1230	970	0.987
	85 830	2670	2470	1840	1640	1120	1.050
	154 830	2140	1900	1310	1070	1225	1.088
Nov 2	361 735	2640	1045	1905	310	615	1.789
	351 750	2525	2300	1775	1550	1145	1.058

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1933phae..proj..123W

365	750	2560	2330	1810	1580	1145	1.058
183	750	2250	1580	1500	830	1810	1.258
155	740	1940	1803	1200	1063	1128	1.052
130	745	2065	1895	1320	1150	1148	1.060
129	740	2070	1950	1330	1210	1100	1.041
134	740	2090	1950	1350	610	2220	1.246
115	740	1925	1831	1185	1091	1082	1.034
128	735	2140	2000	1405	1265	1110	1.045
186	720	2450	2260	1730	1540	1122	1.050
	AB 436	(Key 490)		Polar sequence			
1	720	2900	1960	2180	1240	1760	1.246
~~2~~	~~730~~		~~2510~~				
2	725	1990	2580	1855	1265	1468	1.166
3	720	2490	2250	1770	1530	1158	1.063
4	720	2435	2195	1715	1475	1162	1.066
15	730	2400	975	1670	245	682	1.833
25	725	2420	2290	1695	1565	1082	1.034
12	730	2430	2330	1700	1600	1062	1.026
98	720	2650	2450	1930	1730	1115	1.047
163	740	2790	2580	2050	1840	1113	1.046
45	735	2485	2080	1750	1345	1300	1.114
28	730	2700	2330	1970	1600	1230	1.090
25	735	2920	2640	2185	1905	1148	1.060
33	730	2730	2350	2000	1620	1235	1.092
15	735	2860	2780	2125	2045	1040	1.017
43	740	2770	2415	2030	1675	1211	1.084
39	740	2920	2450	2180	1710	1275	1.060
5	745	2885	2040	2140	1295	1650	1.218
327	735	2720	2490	1995	1755	1140	1.057
331	730	2840	2530	2110	1800	1171	1.068
355	725	2910	2420	2187	1697	1290	1.110

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1933phae.proj.1230M

Oct 3 '33	356	675	2450	2260	1775	1585	1120	1.050
	337	680	2550	2372	1870	1692	1105	1.043
	320	700	2490	2090	1790	1390	1290	1.110
	332	710	2530	2350	1820	1640	1110	1.045
	336	700	2530	2340	1830	1640	1115	1.047
	310	710	2230	1960	1520	1250	1218	1.086
	314	715	2400	2230	1685	1515	1112	1.046
	268	712	2520	2270	1808	1558	1160	1.064
	270	730	2460	1505	1730	1775	975	0.989
	26	720	2440	2260	1720	1540	1118	1.048
	360	715	2570	2370	1855	1655	1120	1.049
	307	720	2170	1910	1450	1190	1220	1.086
	54	715	2100	1860	1385	1145	1210	1.083
	111	720	2090	1582	1370	862	1590	1.210
	314	720	2430	2230	1710	1510	1132	1.054
	320	730	2475	2050	1745	1320	1320	1.120
	297	730	2310	2110	1580	1380	1145	1.058
	217	730	2520	2360	1800	1630	1105	1.043
	216	720	2540	2180	1810	1450	1250	1.097
	205	720	2323	1990	1603	1270	1260	1.100
	211	720	2380	2160	1660	1440	1152	1.062
	207	712	2390	2260	1678	1548	1082	1.035
	200	720	2390	2180	1670	1460	1142	1.058
	191	710	2475	2315	1765	1605	1100	1.042
	188	715	2440	2350	1725	1635	1055	1.023
	185	715	2480	2370	1765	1655	1068	1.028
	183	720	2501	1790	1781	1070	1670	1.283
	182	720	2430	1280	1710	560	3250	1.516
	181	720	2410	2150	1690	1430	1180	1.072
	177	720	2430	1335	1710	615	2790	1.446
	173	712	2350	2210	1638	1498	3290	1.517

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1933phae.proj.1218n

170	705	2340	1950	1635	1245	1312	1.118
164	710	2250	1672	1540	962	1600	1.204
162	710	2310	1940	1600	1230	1300	1.114
145	710	2360	1840	1650	1130	1460	1.164
144	720	2370	2060	1650	1340	1230	1.090
133	715	~~2180~~ 2200	2042	1485	1327	1120	1.050
135	720	2340	2100	1620	1380	1174	1.070
Nov 6'33 130	950	2530	2380	1580	1430	1105	1.043
129	950	2575	2400	1625	1450	1120	1.048
134	955	2600	2480	1645	1525	1080	1.033
115 10 / 116	950	2460	2380	1510	1430	1055	1.023
128	960	2600	2500	1640	1540	1065	1.027
119	970	2570	2180	1600	1210	1320	1.120
123	960	2610	2302	1650	1342	1230	1.090
124	970	2660	2570	1690	1600	1035	1.022
110	960	2490	2340	1530	1380	1110	1.045
71	960	2520	2435	1570	1475	1065	1.027
75	970	2610	2380	1640	1410	1160	1.064
56	970	2500	2310	1530	1340	1140	1.067
70	960	2530	2425	1570	1465	1070	1.029
81	960	2650	2510	1690	1550	1090	1.037
80	960	2700	2530	1740	1570	1110	1.045
79	950	2700	2590	1750	1640	1065	1.027
83	940	2700	2580	1760	1640	1075	1.031
85	945	2740	2590	1795	1645	1090	1.037
86	950	2700	2580	1750	1630	1075	1.031
67	940	2620	2160	1680	1220	1380	1.140
61	950	2470	2310	1520	1360	1120	1.049
64	950	2530	2350	1580	1400	1130	1.052
99	940	2680	~~2615~~ 2580	1740	1640	1060	1.025
28	945	2660	2300	1715	1355	1265	1.102

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1933phae.proj.1230M

332	915	2700	2510	1785	1595	1.120	1.049
339	910	2860	2370	1950	1460	1.134	1.054
338	925	2810	2130	1885	1205	1.157	1.063
361	915	2870	1330	1955	415	1.472	1.118
351	910	2830	2650	1920	1740	1.110	1.045
365	910	2850	2660	1940	1750	1.110	1.045
178	890	2660	2400	1770	1510	1.117	1.048
179	905	2730	2110	1825	1205	1.151	1.061
155	900	2840	2540	1940	1640	1.118	1.048
pans ne. 193	900	2700	2260	1800	1360	1.132	1.054
Nov 7 32 / 258	880	2400	2150	1520	1270	1195	1.077
AB 490 256	900	2380	2260	1480	1360	1089	1.036
(corners) 213	895	2250	1800	1355	905	1495	1.174
214	900	2220	1930	1320	1030	1280	1.107
253	900	2350	1890	1450	990	1465	1.166
250	900	2400	2110	1500	1210	1240	1.094
221	900	2360	1862	1460	962	1520	1.182
236	910	2340	2160	1430	1250	1142	1.058
237	920	2330	1990	1410	1070	1320	1.120
227	920	2310	1830	1390	910	1530	1.184
142	920	2120	1350	1200	430	2790	1.445
146	920	2130	1740	1210	820	1475	1.168
148	920	2240	1920	1320	1000	1320	1.120
152	920	2040	1650	1120	730	1535	1.186
137	900	2190	1150	1290	250	5160	1.712
246	900	2410	2062	1510	662	2280	1.358
244	900	2350	2180	1450	1280	1132	1.054
229	900	2250	2015	1330	1115	1192	1.076
231	900	2190	1875	1290	975	1325	1.122
235	925	2320	1980	1395	1055	1320	1.120

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1933phae.proj.123bm

Nov 8 '33 AB 537 Polar Sequence

	1	860	2500	1650	1640	790	2080	1.318
	2	875	2450	1962	1575	1087	1450	1.162
	3	870	2460	2145	1590	1275	1250	1.097
	4	870	2470	2212	1600	1342	1191	1.076
	5	870	2410	2230	1540	1360	1132	1.054
	1s	870	2370	1080	1500	210	715	1.854
	2s	870	2460	2310	1590	1440	1104	1.043
	12	870	2470	2370	1600	1500	1068	1.028
<	98	870	2220	2410	1360	1540	884	1.946
	103	880	2960	2660	2080	1780	1170	1.068
	45	880	2560	1990	1680	1110	1505	1.178
×	28	880	2230	2240	1350	1360	992	0.996
	33	875	2700	2300	1825	1425	1280	1.107
×	39	870	2250	2320	1380	1450	953	0.979
	327	880	2650	2390	1770	1510	1170	1.068
	305	870	2830	2320	1960	1450	1351	1.131
	356	880	2880	2650	2000	1770	1120	1.053
	357	880	2950	2680	2070	1800	1150	1.061
	320	890	2590	2220	1700	1330	1280	1.080
	332	890	2760	2540	1870	1650	1132	1.054
	336	885	2860	2660	1975	1775	1112	1.046
	310	885	2550	2180	1665	1295	1285	1.109
	314	885	2710	2480	1825	1595	1145	1.059
	268	890	2860	2670	1970	1780	1108	1.044
	270	890	2750	1680	1860	790	2455	1.390
	26	890	~~2610~~ 2880	2650	1990	1760	1120	1.053
	307	880	2460	2100	1580	1220	1295	1.112
	34	880	2630	2230	1750	1350	1296	1.113
	111	890	2600	1860	1710	970	1762	1.246
	814	900	2720	2500	1820	1600	1140	1.057

25-15-43, -5 = ~~33~~, -360 -

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1933phae.proj.1230M

	320	880	2570	2230	1710	1350	1268	1.102
	297	890	2570	2280	1680	1390	1210	1.083
	217	890	2800	2670	1910	1780	1071	1.030
	216	900	2830	2420	1930	1520	1270	1.104
	205	900	2580	2215	1680	1315	1280	1.107
	211	890	2610	2380	1720	1490	1155	1.062
X	200	880	2610	2822	1730	1942	890	
	191	870	2700	2610	1810	1720	1050	1.022
	188	890	2750	2660	1860	1770	1050	1.022
	183	880	2830	2285	1950	1405	1390	1.143
Nov 9, 33.	98	980	2720	2360	1740	1380	1260	1.100
	39	985	2700	2240	1715	1255	1368	1.136
	28	990	2700	2170	1710	1180	1450	1.162
	200	970	2530	2300	1520	1330	1190	1.076
	182	970	2570	1640	1600	670	2390	1.378
	187	970	2490	2290	1520	1320	1150	1.060
	177	970	2650	2260	1680	1290	1300	1.114
	173	950	2500	2370	1550	1420	1090	1.038
	170	940	2470	2110	1530	1170	1310	1.118
	164	950	2430	1965	1480	1015	1458	1.164
	162	945	2560	2270	1615	1325	1220	1.086
	145	930	2690	2120	1760	1190	1480	1.170
	144	940	2660	2300	1720	1360	1265	1.102
	133	930	2460	2240	1530	1310	1170	1.068
	135	930	2710	2360	1780	1430	1245	1.095
	130	930	2600	2430	1670	1500	1112	1.046
	129	930	2630	2500	1700	1570	1085	1.036
	134	925	2630	2440	1705	1515	1125	1.051
	115	925	2500	2550	1575	1425	1105	1.043
	128	920	2650	2485	1730	1565	1105	1.043
	119	920	2620	2130	1700	1210	1405	1.148

207 1851

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1933phae.proj.1230M

123	905	2620	2200	1715	1295	1325	1.122
110	900	2450	2250	1550	1350	1149	1.060
71	900	2360	2470	1660	1570	1058	1.024
75	910	2680	2380	1770	1470	1200	1.079
56	915	2490	2210	1575	1295	1215	1.085
70	915	2570	2390	1655	1475	1120	1.049
81	915	2700	2450	1885	1535	1228	1.089
80	910	2700	2525	1790	1615	1109	1.044
67	900	2340	1975	1640	1075	1525	1.183
61	910	2405	2210	1495	1300	1150	1.061
64	912	2460	2205	1548	1293	1195	1.078
99	920	2490	2350	1570	1430	1098	1.040
28	930	2600	2110	1670	1180	1415	1.150
332	920	2410	2260	1490	1340	1110	1.046
339	930	2770	2230	1840	1300	1415	1.150
328	930	2550	2040	1620	1110	1460	1.164
357	920	2590	2465	1670	1545	1080	1.034
178	950	2570	2410	1620	1460	1110	1.045
179	990	2600	2260	1610	1270	1270	1.104
193	990	2890	2190	1900	1200	1580	1.199
258	1010	2650	2360	1640	1350	1215	1.084
213	1010	2520	2180	1510	1170	1290	1.110
214	1030	2480	2280	1450	1250	1160	1.064
253	1030	2580	2175	1550	1145	1345	1.128
250	1040	2680	2390	1640	1350	1215	1.084
221	1060	2680	2270	1620	1210	1340	1.127
142	1060	2680	1690	1620	650	2570	1.410
146	1060	2730	2190	1670	1130	1478	1.169
136	1075	2660	2240	1595	1165	1370	1.137
137	1075	2800	1500	1725	425	4060	1.608

~
264. 2961 - ~~281~~ - ~~235~~

124 - 79 - 83 $_{Cl}$ - 85 86, ~~87~~ - 361 - 365 - 155 - 256 - ~~260~~ - ~~237~~ - ~~227~~ - 148 - ~~240~~ $_{C_2}$

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1933phae.proj.1230M

Vor 10	25	930	2620	2300	1690	1370	1232	1.091
	15	925	2620	2370	1695	1445	1172	1.069
	43	920	2860	2110	1440	1190	1210	1.083
	360	910	2560	2320	1650	1410	1170	1.068
	207	910	2310	2190	1400	1280	1092	1.038
	124	910	2620	2500	1710	1590	1075	1.032
	79	910	2610	2530	1700	1620	1050	1.021
	83	910	2630	2500	1720	1590	1080	1.033
	85	910	2620	2460	1710	1550	1105	1.043
	86	910	2620	2420	1710	1510	1132	1.054
	85	920	2610	2460	1690	1540	1098	1.040
	365	910	2580	2360	1670	1450	1150	1.060
	155	910	2490	2360	1580	1450	1090	1.038
	256	910	2500	2340	1590	1430	1110	1.045
	321	900	2330	2120	1430	1220	1170	1.068
(400	x 56	1100	2420	2680	1320	1580	836	
181	400	1100	2885	1720	1785	620	2850	1.459
	404	1100	2820	2690	1720	1590	1080	1.033
	405	1110	2860	2630	1750	1520	1150	1.060
	410	1090	2960	1310	1870	220	8500	1.930
	411	1100	2930	2780	1830	1680	1090	1.037
	412	1090	2930	2860	1840	1770	1040	1.017
	413	1100	2950	2850	1850	1750	1058	1.024
	413	1100	2720	2670	1620	1520	1068	1.028
	414	1080	2620	2510	1540	1430	1078	1.032
	418	1070	2620	2530	1550	1460	1060	1.025
	419	1080	2630	2530	1550	1450	1070	1.029
	420	1070	2600	2350	1530	1280	1195	1.077
	421	1080	2360	1460	1280	580	2205	1.081
	181	1060	2250	2110	1190	1130	1052	1.061
	142	1050	2460	1600	1410	550	2562	1.409

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1933phae.proj.1240N

146	1040	2530	2060	1490	1020	1460	1.164
145	1060	2520	2040	1460	980	1490	1.173
137	1060	2530	1420	1470	360	4090	1.612
200	1050	2520	2140	1270	1090	1165	1.066
193	1070	2570	2130	1300	1060	1225	1.088
181	1060	2520	2150	1260	1090	1155	1.062
290	1060	2540	2080	1180	1020	1158	1.063
Nov 13'33	AB 573						
1	1050	2440	1812	1390	762	1825	1.261
2	1050	2440	2070	1390	1020	1362	1.135
3	1040	2390	2200	1350	1160	1162	1.066
4	1040	2390	2240	1350	1200	1125	1.051
5	1030	2320	2230	1290	1200	1075	1.031
15	1030	2330	1140	1300	110	1180	2.072
25	1010	2330	2240	1320	1230	1072	1.030
12	1010	2360	2310	1350	1300	1040	1.017
98	1010	2460	2240	1450	1230	1180	1.072
103	1015	2530	2360	1515	1345	1125	1.051
45	1010	2370	2010	1360	1000	1360	1.134
28	1000	2460	2100	1360	1100	1235	1.092
33	1010	2440	2200	1430	1190	1200	1.079
39	1020	2515	2240	1495	1220	1225	1.088
327	1025	2430	2285	1405	1260	1115	1.047
355	1020	2520	2215	1500	1195	1255	1.098
up.	~~320~~ 3 1030	2480	2415	1450	1385	1048	1.020
down	320 1020	2420	2240	1400	1220	1148	1.060
	332 1020	2500	2400	1480	1380	1070	1.030
	310 1010	2380	2170	1370	1160	1180	1.072
	314 1020	2490	2380	1470	1360	1080	1.034
	268 1010	2560	2460	1550	1450	1070	1.030
X	220 1020	2530	1235	1510	215	702	1.846

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331	1010	2500	2320	1490	1310	1138	1.056
26	1000	2520	2340	1520	1340	1135	1.055
307	1000	2290	2050	1290	1080	1192	1.077
324	1000	2340	2120	1340	1120	1198	1.078
111	1000	2410	1900	1410	900	1568	1.095
314	1000	2460	2375	1460	1375	1060	1.025
297	990	2400	2240	1410	1250	1130	1.053
217	990	2560	2490	1570	1500	1045	1.019
216	1000	2570	2390	1570	1390	1130	1.053
205	1000	2580	2190	1380	1190	1160	1.064
211	1000	2410	2330	1410	1330	1060	1.026
207	1000	2460	2400	1460	1400	1040	1.017
200	1000	2450	2350	1450	1350	1075	1.031
191	995	2560	2485	1565	1490	1050	1.022
188	990	2600	2560	1610	1570	1025	1.010
185	995	2640	2380	1645	1385	1190	1.076
182	1000	2600	1880	1600	880	1820	1.260
181	1010	2500	2370	1490	1360	1098	1.040
177	1000	2620	2390	1620	1390	1168	1.068
170	990	2520	2260	1530	1290	1185	1.074
164	1000	2490	2150	1490	1150	1295	1.112
162	1000	2560	2380	1560	1380	1120	1.053
145	990	2650	2322	1660	1332	1245	1.095
144	1000	2660	2440	1660	1440	1152	1.062
135	985	2600	2380	1615	1395	1158	1.064
134	985	2560	2440	1575	1455	1081	1.034
128	985	2570	2460	1585	1475	1072	1.030
119	1000	2520	2160	1530	1160	1320	1.120
183	1000	2560	2240	1560	1240	1260	1.100
110	1000	2400	2270	1400	1270	1100	1.041
75	990	2550	2320	1560	1380	1171	1.069

360 -185 cm - 177 cm - 133 cm - 130 cm - 124 cm - 115 cm 124 cm - 71 cm.

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1933phae.proj.1230M

	56	990	2370	2190	1380	1200	1150	1.061
	70	1000	2440	2290	1440	1290	1116	1.048
	81	1000	2520	2370	1520	1370	1101	1.042
	80	1010	2560	2380	1550	1370	1130	1.053
Nov 14	270	980	2330	1730	1350	750	1800	1.256
	67	990	2260	1290	1270	300	424	1627
	61	1010	2210	2060	1200	1050	1142	1.058
	64	1010	2250	2090	1240	1080	1150	1.061
	99	1010	2280	2190	1270	1180	1078	1.032
	28	1015	2260	1980	1245	965	1290	1.111
	332	1010	2290	2190	1280	1180	1082	1.034
	183	1000	2420	2210	1420	1210	1172	1.070
	177	1010	2420	2230	1410	1220	1155	1.062
	178	1010	2450	2380	1440	1370	1050	1.022
	179	1015	2460	2260	1445	1245	1160	1.065
	154	1010	2460	2330	1450	1320	1100	1.042
	142	1000	2460	1740	1460	740	1972	1.296
	146	1020	2460	2220	1440	1200	1200	1.080
	145	1020	2490	2225	1470	1205	1240	1.094
	137	1000	2030	1320	1030	320	3220	1.508
	400	1000	2530	1690	1530	690	2220	1.347
	401	1015	2530	1705	1515	690	2200	1.342
	402	1015	2520	2390	1505	1375	1095	1.040
	402	1030	2570	2015	1480	985	1500	1.176
	404	1030	2500	2430	1470	1400	1050	1.022
	405	1030	2500	2410	1470	1380	1065	1.028
	45	1030	2510	2270	1480	1240	1192	1.077
	416	1040	2540	2410	1500	1370	1095	1.040
	181	1040	2370	2240	1330	1200	1110	1.045
Nov 15	253	1440	2920	2680	1480	1240	1192	1.076
	262	1450	2950	2880	1500	1430	1050	1.022

7900. 830 A — 357 Ca — 85 Ca — 406 Ca —

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1933phae.proj.1230M

250	1440	2920	2780	1480	1340	1105	1.044
221	1450	2910	2760	1460	1310	1112	1.046
213	1440	2820	2630	1380	1190	1160	1.064
214	1440	2820	2690	1380	1250	1105	1.044
258	1440	2950	2820	1510	1380	1092	1.038
256	1440	2950	2900	1510	1460	1035	1.015
67	1445	2780	2380	1335	935	1430	1.156

Nov 23 1933 AB 498

935	1160	2330	2080	1170	920	1270	1.104
892	1160	2050	1930	890	770	1155	1.062
919	1160	1980	1870	820	710	1155	1.062
952	1160	1970	1920	810	760	1065	1.027
991	1150	2010	1880	860	730	1178	1.070
1026	1030	2050	1540	1000	490	2040	1.310
1033	1160	2090	1690	930	530	1755	1.244
1040	1200	2100	1960	900	760	1185	1.074
X 1044	1100	2060	1730	960	630	1520	1.182
1025	1180	2010	1920	830	740	1120	1.049
1029	1180	2020	1630	840	450	1865	1.270
1022	1180	2020	1740	840	560	1500	1.176
1017	1160	2000	1700	840	540	1555	1.192
1018	1160	2000	1860	840	700	1200	1.079
1000	1160	2030	1700	870	540	1610	1.207
1007	1160	2010	1830	850	670	1270	1.104
1004	1160	2030	1900	870	740	1175	1.070
1013	1190	2090	1940	900	750	1200	1.079
1034	1190	2040	1730	850	540	1575	1.197
X 1045	1190	2020	1420	830	230	3605	1.557
1051	1190	2070	1850	880	660	1332	1.124
1055	1180	2090	1830	910	650	1400	1.146
1054	1190	2080	1760	890	570	1520	1.193

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1933phae.proj.1230M

		Dk.	Cl	Int*				
1058	1180	2080	1950	900	770	1169	1.067	
1067	1190	2120	1800	930	610	1525	1.183	
1086	1190	2140	1990	950	800	1190	1.076	
1090	1190	2120	1800	930	610	1525	1.183	
1087	1200	2220	1710	1020	510	2000	1.301	
1114	1200	2330	2090	1130	890	1270	1.104	
1122	1200	2320	2035	1120	835	1340	1.127	
1092	1200	2425	2160	1225	960	1275	1.106	
1226	1210	2560	2300	1350	1090	1240	1.094	
1184	1210	2380	2290	1170	1080	1082	1.034	
1143	1225	2240	1990	1015	765	1330	1.124	
1194	1230	2420	1960	1190	730	1630	1.212	
20	1230	2110	1470	870	240	3620	1.558	
12	1230	2160	1800	930	570	1630	1.212	
19	1230	2160	1360	930	130	7150	1.854	
53	1230	2160	1440	930	210	4430	1.646	
74	1240	2110	1520	870	320	2720	1.434	
Nov 25	AB 835	✓						
1033	1310	2460	1770	1150	460	400	2500	1.398
1040	1330	2460	2200	1130	870	770	1300	1.114
✗ 1044	1330	2460	1830	1130	500	443	2260	1.254
1054	1310	2420	1850	1110	540	486	2060	1.314
1058	1310	2410	2230	1100	940	836	1200	1.079
1051	1300	2390	2130	1090	830	760	1312	1.118
1057	1300	2440	2160	1140	860	715	1325	1.122
1086	1300	2380	2180	1080	880	815	1230	1.090
1090	1300	2370	1860	1070	560	534	1910	1.282
1045	1300	2440	2260	1140	960	842	1190	1.076
1047	1300	2470	1990	1170	690	570	1695	1.229
1056	1300	2440	2110	1140	810	710	1410	1.149
1067	1280	2390	1870	1100	580	528	1900	1.278

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1933phae.proj.1230M

1087	1280	2400	1690	1120	4103662740		1.438
1114	1280	2400	1980	1120	700625 1600		1.204
1122	1280	2360	2050	1080	770 713 1400		1.146
AB 465 61	1270	2290	2120	1020	850 853 1200		1.079
64	1260	2220	2100	960	840 875 1142		1.058
65	1260	2180	2115	920	855 930 930		0.969
66	1260	2160	1970	900	710 790 1270		1.104
80	1250	2210	2130	960	880 1090		1.038
81	1255	2170	2160	915	905 1010		1.040
72	1250	2105	1740	855	490 1745		1.242
83	1255	2100	1850	845	595 1420		1.152
85	1250	2060	1940	810	690 1172		1.068
	AB 574						
1032	1200	2750	2060	1550	860 1802		1.260
1040	1210	2700	~~2550~~ ~~2850~~	1490	1340 1110		1.045
1044	1220	2710	2140	1490	920 1620		1.210
1054	1230	2660	2190	1430	960 1490		1.173
(1055	1200	2710	2390)				
1056	1200	2750	2500	1550	1200 1190		1.076
1086	1200	2800	2600	1600	1400 1141		1.058
1090	1200	2830	2330	1630	1120 1440		1.158
1043	1240	2790	2530	1580	1340 1180		1.072
1047	1210	2820	2400	1610	1190 1350		1.130
1087	1210	2910	2060	1700	850 2000		1.305
1114	1210	3020	2660	1810	1450 1250		1.097
1122	1230	3050	2640	1820	1410 1290		1.110
	AB 173						
1032	1200	2390	2160	1190	960 1240		1.094
1044	1210	2380	2170	1170	960 1220		1.086
1054	1210	2370	2190	1160	980 1182		1.082
1056	1210	2460	2390	1250	1180 1060		1.025

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1933phae.proj.1430M

1090	1200	2330	2250	1130	1050	1075	1.031
1190	1047	2400	2340	1353	1293	1048	1.020
Nov 28 '33 1047	1540	2590	2460	1050	920	1141	1.058
1087	1540	2710	2400	1170	860	1360	1.134
1114	1540	2740	2630	1200	1090	1100	1.041
1122	1540	2740	2650	1200	1110	1080	1.033
1092	1540	2790	2720	1250	1180	1060	1.025
1143	1530	2710	2560	1180	1030	1145	1.058
1194	1530	2850	2620	1320	1090	1201	1.082
Nov 29 '33	AB 837 ✓						
1	1320	2880	2430	1560	1110	712	Ref Mag Nov-Dec Diel Mean Rev. 560 537 549
2	1340	2790	2650	1450	1310	905	
3	1340	2720	2630	1380	1290	935	
4	1350	2760	2670	1410	1320	935	
5	1340	2740	2550	1400	1210	865	
10	1340	2880	2600	1540	1260	820	608 610 = 609
11	1340	2840	2580	1500	1240	827	610 618 = 614
12	1340	2720	1860	1380	520	376	428 428 428
13	1350	2690	2470	1360	1140	840	620 630 = 625
14	1350	2650	2210	1300	860	662	542 512 = 527
15	1340	2680	2560	1340	1220	910	
16	1350	2700	2330	1350	980	726	563 543 = 553
17	1360	2630	2120	1270	760	598	521 490 = 505
18	1350	2650	2480	1300	1130	870	
19	1360	2570	2360	1210	1000	826	610 618 = 614
20	1350	2570	2160	1160	810	698	552 528 = 540
21	1350	2470	2360	1120	1010	902	
22	1350	2520	2420	1170	1070	915	
23	1350	2670	2500	1320	1150	872	
25	1350	2540	2350	1190	1000	840	620 630 = 625
26	1340	2440	2230	1100	890	810	600 660 = 600

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1933phae.proj.1230

							May Nov Dec 6.25 6.45=6.35
27	1330	2400	2240	1070	910	850	
28	1340	2460	2350	1120	1010	901	
29	1340	2440	2310	1100	970	881	
30	1340	2440	2330	1100	990	900	
Dec 1, 1933. 31	1120	2220	2010	1100	890	810	600
32	1120	2320	2180	1200	1060	884	
33	1120	2390	2180	1270	1060	835	625
34	1120	2360	2220	1240	1100	886	
35	1110	2360	2200	1250	1090	873	
36	1130	2410	2080	1280	950	743	554
37	1130	2430	2040	1300	910	700	530
39	1120	2150	2030	1030	910	884	
40	1120	2160	1960	1030	830	805	595
41	1130	2120	1550	990	420	424	443
42	1120	2100	1790	970	660	680	520
43	1130	2110	1440	980	310	316	
44	1130	2080	1900	950	770	810	600
45	1130	2040	1920	910	790	868	
46	1130	2025	1860	895	730	816	607
47	1120	2000	1920	880	800	910	
48	1140	1990	1720	850	530	683	522
49	1140	2040	1880	900	740	823	615
50	1140	2050	1930	910	810	890	
51	1140	2020	1830	880	690	784	582
52	1140	2120	2020	980	880	898	
53	1140	2010	1930	870	790	908	
	AB 835		Sequence ✓				
1033	1250	2490	1750	1240	500	403	
1040	1260	2440	2200	1180	940	796	
1044	1260	2440	1990	1180	730	618	
X 1054	1240	2440	1030	1200	90		

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1933phae.proj.1230m

1058	1240	2430	2240	1190	1000	840
1055	1240	2440	2120	1200	980	816
1057	1240	2400	2140	1160	900	775
1086	1230	2360	2145	1130	915	810
1090	1240	2330	1840	1090	600	550
1043	1230	2430	2200	1200	970	810
1047	1230	2430	1950	1200	720	600
1056	1230	2370	2070	1140	840	736
1067	1230	2360	1820	1130	690	610
1087	1220	2360	1660	1140	440	386
1114	1220	2420	2090	1200	870	725
1122	1250	2380	2065	1130	815	720

AB 835 Pegasus ✓

May

Dec 21 1033	1530	2600	1970	1050	420	400
1040	1530	2680	2400	1080	850	786
1044	1530	2620	2050	1070	500	467
1054	1540	2620	2070	1080	530	490
1058	1540	2610	2430	1070	890	831
1055	1540	2600	2340	1060	800	754
1051	1530	2610	2370	1060	820	774
1086	1530	2570	2370	1040	840	808
1090	1540	2560	2070	1020	530	520
1043	1540	2630	2430	1090	890	816
1047	1540	2660	2200	1120	660	590
1056	1540	2650	2340	1110	800	721
1067	1530	2620	2110	1070	560	524
1087	1540	2640	1940	1100	400	364
1114	1540	2650	2330	1110	790	712
1122	1540	2610	2290	1070	750	700

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1933phae.proj.1230M

AB 837 ✓

							Mag. ref.
54	1520	2330	2230	810	710	877	
55	1530	2390	2290	860	760	884	
56	1530	2520	2330	990	800	809	610
59	1540	2390	1930	850	390	460	460
60	1530	2260	2120	730	590	809	610
61	1520	2310	2240	790	720	912	
62	1520	2300	2170	780	650	834	640
63	1520	2420	2000	900	480	533	488
64	1520	2530	1920	1010	400	396	440
66	1520	2390	2300	870	780	897	
67	1530	2350	2260	820	730	890	
68	1530	2270	2080	740	550	744	565
69	1530	2200	1990	670	460	687	540
70	1530	2190	2030	640	500	782	590
71	1530	2250	1810	700	280	400	440
72	1525	2160	1990	635	465	733	558
73	1530	2180	1960	650	430	662	533
79	1530	2110	1980	580	450	776	585
75	1530	2220	2100	690	570	826	630
76	1530	2300	1780	770	250	325	415
77	1530	2270	2060	740	530	716	550
78	1530	2200	2140	670	610	910	

Dec 4 '33 Sequence ✓

1007	1310	2470	2070	1160	760	655	
× 1017	1320	2450	1820	1130	500	443	
1022	1320	2490	1880	1170	560	478	
1029	1320	2450	1660	1130	340	301	
1034	1320	2460	1840	1140	520	466	
1042	1320	2500	2280	1180	960	814	
1044	1320	2430	1790	1110	470	424	

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1933phae.proj.1230M

1045	1330	2460	1880	1130	550	486	
1046	"	2450	1500	1120	170	152	
1047	1350	2560	2050	1210	700	578	
1054	1360	2470	1870	1110	510	460	
x 1055	1370	2435	2165	1065	795	746	
1067	1370	2490	1950	1120	580	518	
1087	1380	2530	1810	1150	430	374	
1033	1360	2460	1780	1100	420	382	
a	1360	2430	1410	1070	050	47	
120	1370	2260	1370	890	000	000	
19	1375	2240	1420	865	045	52	
h	1385	2640	1520	1255	135	108	
j	1400	2650	1590	1250	190	151	
	AB 837						
							Mag. Rev.
86	1400	2310	2120	910	720	790	600
87	1400	2390	2080	990	680	686	555
88	1420	2385	2130	965	710	735	578
90	1420	2320	2105	900	685	762	590
91	1420	2380	1830	960	410	427	465
92	1415	2320	2020	905	605	619	530
94	1380	2140	2020	760	640	842	
95	1365	2110	1970	745	605	812	610
99	1350	2025	1690	675	340	504	493
103	1340	2140	2000	800	660	825	617
107	1330	1985	1850	655	620	946	
120	1320	2360	2070	1040	750	720	570
123	1310	1970	1840	660	630	955	
x 127	1310	2110	1940	800	630	787	598
128	1310	2170	1810	860	500	582	520
130	1300	1990	1890	690	590	855	
+ 133	1290	1940	1800	650	510	785	598

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1933phae.proj.1230M

135	1280	1960	1870	680	590	818	6.12
136	1280	2420	2290	1140	1010	886	
137	1280	1990	1860	710	580	816	612
138	1280	2020	1910	740	630	852	
140	1270	2100	1980	830	710	855	
143	1270	2160	2050	890	780	876	
8	1270	2650	2130	1380	860	623	533
9	1280	2670	2220	1390	940	676	552
146	1280	2600	2370	1320	1090	825	618
24	1270	2500	1705	1230	435	354	438
57	1270	2320	2110	1050	840	800	605

237 ± 400-5550

~~1st~~ Dec 7 AB835 Sequence ✓

1007	590	2940	2180	2350	1590	677
1017	610	2900	1705	2290	1095	478
1022	610	2940	1775	2330	1165	500
1029	610	2850	1340	2240	730	326
1034	600	2920	1655	2320	1055	455
1043	600	2900	2460	2300	1860	810
1044	600	2750	1570	2150	910	424
× 1045	590	2770	1710	2180	1120	514
× 1046	600	2750	900	2150	300	140
1047	590	2900	1960	2310	1270	593
1054	590	2750	1615	2160	1025	475
1057	600	2760	2180	2160	1580	732
1067	590	2780	1695	2190	1105	505
1087	600	2750	1390	2150	790	368
1090	580	2620	1690	2040	1110	544
× 1026	570	2710	1260	2140	690	322
1032	570	2700	1410	2130	840	394
120	570	2380	580	1810	010	55
19	570	2310	650	1740	080	46

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1933phae.proj.1230M

a	570	2570	650	2000	080	40	
c	560	2680	1160	2120	600	283	
g	560	2570	570	2010	010	005	
L	560	2560	800	2300	240	104	
j	570	2840	935	2270	365	161	
	1913 837 V						
10	550	2680	2320	2130	1770	832	
11	560	2610	2310	2050	1750	853	
12	565	2500	1330	1935	765	395	455
13	550	2420	2160	1870	1610	861	
14	560	2390	1780	1830	1220	667	570
16	560	2440	1940	1880	1380	735	580
17	560	2330	1650	1770	1090	615	530
19	560	2260	1990	1700	1430	842	
20	560	2210	1720	1650	1160	704	523
25	570	2260	1990	1710	1440	843	
26	560	2090	1840	1530	1280	837	
27	560	2045	1850	1485	1290	870	
31	550	2160	1870	1610	1320	820	
33	560	2410	2090	1850	1530	828	
36	570	2410	1930	1840	1360	740	580
37	570	2420	1890	1850	1320	714	568
40	570	2060	1760	1490	1190	800	
41	570	2020	1190	1450	620	428	465
42	570	1990	1560	1420	990	696	522
44	580	1980	1710	1400	1130	808	
48	580	1840	1450	1260	870	690	558
49	580	1950	1710	1370	1130	826	
51	590	1940	1660	1350	1070	793	
59	590	1930	1235	1340	645	482	488
63	590	2020	1340	1430	750	517	500

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1933phae.proj.12300

64	580	2180	1220	1600	640	400	458
68	585	1780	1450	1195	865	724	574
69	590	1680	1345	1090	755	693	560
70	600	1640	1420	1040	820	788	
71	600	1690	1070	1090	470	432	470
72	600	1640	1370	1040	770	740	580
73	610	1650	1310	1040	700	674	552
79	610	1510	1330	940	720	766	
76	610	1830	1045	1220	435	356	440
77	620	1820	1500	1200	880	734	578
86	610	2030	1720	1440	1110	770	
87	620	2070	1620	1450	1000	690	560
88	630	2040	1670	1410	1040	738	578
90	630	1980	1670	1350	1040	770	
91	630	1960	1200	1330	570	428	465
92	630	1960	1535	1330	905	680	554
99	630	1630	1120	1000	490	490	490
120	630	2130	1730	1500	1100	734	578
127	635	1790	1560	1155	925	800	
128	640	1890	1385	1250	745	595	530
133	640	1580	1390	940	750	799	
8	640	2650	1901	2010	1261	628	535
9	650	2660	2020	2010	1370	682	558
24	640	2430	1300	1790	560	313	425
14th Aug 1922	RB 835	Sequence ✓					
1007	780	2360	1840	1580	1060	670	
1017	800	2280	1520	1480	720	486	
1022	810	2320	1580	1510	770	510	
1029	810	2280	1280	1470	470	320	
1034	820	2310	1495	1490	675	453	
1042	820	2300	2030	1480	1210	818	

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1933phae.proj.1230M

1044	830	2240	1435	1410	605	430	
1047	840	2380	1740	1540	900	585	
1054	850	2280	1520	1430	670	468	
1055	870	2230	1900	1360	1030	758	
1067	850	2260	1560	1410	710	504	
1087	835	2240	1330	1405	415	295	
(1090	820	2140	1215	1320	195	148)	
1114	810	2250	1810	1440	1000	695	
1122	800	2170	1770	1370	970	708	
1033	790	2160	1330	1370	540	394	
19	785	1890	830	1105	045	41	
a	780	2070	820	1290	040	31	
MB 837 142	760	1915	1480	1155	720	624	532
	MB 838 ✓	copied					
4	760	2225	1770	1465	1010	690	552
6	760	2220	1620	1470	860	585	520
7	760	2160	1670	1400	910	650	540
8	770	1990	1450	1220	680	557	515
9	760	1960	1770	1200	1010	843	
10	760	1820	1640	1060	880	830	
11	760	1750	1610	990	850	859	
12	750	1910	1130	1160	380	328	428
B.2 14	740	2100	1745	1360	1005	740	578
15	760	2110	1790	1350	1030	762	592
16	740	1790	1490	1050	750	715	565
17	750	4800	1540	1050	790	753	585
18	770	1870	1610	1100	840	764	590
19	775	1785	1640	1010	865	856	
20	780	1840	1480	1060	700	660	543
22	770	1735	1540	965	770	798	610
23	770	1670	1520	900	750	834	

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1933phae.proj.1230

24	760	1660	1480	900	720	800	610
25	780	1800	1230	1020	450	441	472
26	770	1650	1080	880	310	352	438
27	770	1500	1240	730	470	644	540
28	775	1500	810	725	035	48	275
29	780	1590	840	810	060	74	295
30	775	1610	1165	835	390	467	480
32	770	1900	1170	1130	400	354	440
33	770	1480	1310	710	540	760	590
34	770	1640	1390	870	620	713	585
35	780	1760	1530	980	780	796	608
36	780	1980	1420	1200	640	533	575
37	780	1970	1570	1290	790	613	530
38	790	1700	1170	910	380	418	463
39	780	1480	1350	700	570	815	620
40	780	1380	1080	600	300	500	492
41	790	1425	1170	635	380	598	524
42	790	1490	970	700	180	258	400
43	790	1360	1250	570	460	808	615
44	790	1380	1090	590	300	508	495
45	790	1510	1380	720	590	820	622
46	790	1540	1370	760	580	764	590
47	800	1800	1540	1000	740	740	578
48	800	1790	1540	990	740	748	580
AB838	50	810	2020	1850	1210	1040	860
AB837	142	880	1990	1540	1110	660	595	524
AB838	52	940	1750	1670	790	710	900
	53	980	1770	1650	790	670	850
upper -	40	1010	2220	2010	1210	1000	826
	41	1030	2220	2090	1190	1060	892
	42	1050	2260	2150	1210	1100	910

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1933phae.proj.1230m

43a	1070	2310	2040	1240	970	782	603
44	1080	2470	2290	1390	1210	870	
45	1100	2530	2390	1430	1290	903	
46	1100	2600	2380	1500	1280	855	
47	1100	2410	2210	1310	1110	848	
48	1100	2030	1900	930	800	860	
49	1100	2130	1985	1030	885	860	
50	1110	2370	2200	1260	1090	865	
52	1110	2530	2370	1440	1260	875	
58	1100	2180	1920	1080	820	760	590
59	1110	2270	2070	1160	960	828	628
60	1110	2140	2020	1030	910	884	
61	1110	1890	1760	780	650	834	
62	1120	1970	1840	750	720	960	
gauche 57	1110	2400	2260	1290	1150	893	
" 58	1130	2530	2310	1430	1130	825	
Dec 11	AB 835 ✓	Sequence ✓					values e+f
1000	1330	2650	1915	1320	585	443	504
1022	1350	2710	2030	1360	680	500	
1029	1380	2710	1800	1330	420	316	
1034	1400	2720	2000	1320	600	433	
1044	1400	2650	1930	1250	530	424	
1054	1400	2660	1990	1260	590	468	
1090	1400	2600	2050	1200	650	542	
1026	1400	2680	1740	1280	340	366	
1027	1400	2700	2160	1300	760	585	
1033	1410	2680	1900	1270	490	386	
19	1400	2360	1440	960	040	42	
a	1390	2580	1440	1190	050	42	
Dec 17	AB 83	8 copied					
6	1390	2690	2180	1300	790	608	532

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1933phae.proj.1230

	7	1390	2650	2240	1260	850	675	
	8	1400	2540	2030	1140	630	553	515
24	12	1380	2470	1740	1090	360	320	428
	16	1380	2260	2050	880	670	762	
	17	1380	2350	2110	970	730	753	
	18	1390	2390	2185	1000	795	795	
	20	1380	2390	2030	1010	650	644	
	23	1380	2200	2080	820	700	854	
	24	1380	2190	2040	810	660	815	
59	25	1380	2320	1780	940	400	425	468
76	26	1370	2200	1630	830	260	314	422
	27	1365	2040	1790	675	425	630	
	28	1365	2040	1400	675	035	52	280
	29	1360	2120	1410	760	050	66	290
	30	1360	2150	1730	790	370	468	485
	32	1360	1960	1720	600	360	600	530
	33	1360	2015	1860	655	500	764	
	34	1360	2170	1930	810	570	705	
73	36	1350	2450	1960	1100	610	555	515
	37	1360	2470	2120	1110	760	685	
99	38	1360	2210	1720	850	360	424	468
	39	1360	2050	1900	690	540	783	
~~55~~	40	1360	1910	1640	550	280	510	500
	41	1350	1970	1730	620	380	613	
	42	1350	2030	1520	680	170	250	396
	43	1350	1900	1790	550	440	800	
	44	1350	1910	1630	560	280	500	498
121	49	1340	2120	1830	790	490	620	
5 down	50	1350	2090	1770	740	420	518	503
	51	1350	2130	1950	830	600	723	
	52	1350	2030	1930	680	580	853	

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1933phae.proj.1230M

	33	1330	2150	1900	800	550	688
AB 835	g	1300	2470	1305	1170	005	004
	h	1300	2550	1450	1250	150	120
	j	1300.	2660	1520	1360	220	162
Dec 12'33 -		AB 835	Sequence ✓				
	1001	1500	2940	2150	1440	650	452
	1022	1540	2920	2260	1380	720	524
	1029	1540	2910	2000	1370	460	336
	1034	1530	2950	2200	1400	650	464
	1044	1580	2860	2140	1280	560	438
	1054	1520	2880	2200	1320	640	485
	1096	1570	2840	2250	1270	680	535
	1026	1580	2880	1950	1300	370	284
	1027	1590	2920	2430	1330	840	632
	1033	1590	2900	2080	1310	490	374
	19	1590	2600	1630	1010	070	069
	a	1590	2830	1620	1240	030	024
	g	1580	2900	1590	1320	010	008
	h	1580	3020	1730	1440	150	104
	j	1580	2890 ✓	1790	1310	210	160
		AB 839	copied				
12		1560		2590			
	5	1560	3000	2405	1440	845	586 514
	7	1560		1520		000	000 2
10	12	1560	2640	2420	1080	860	796 595
11	13	1520	2730	2480	1170	920	786 590
	14	1580	2780	2380	1220	820	672 550
	16	1560	3000	2600	1440	1040	723 538
	20	1580	2480	2220	920	660	718 565
22	21	1580	2740	2410	1180	850	720 562
	24	1530	2380	2190	830	640	772 585

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1933phae.proj.1230

26	1530	2700	2060	1170	530	453	480
27	1540	2670	1610	1130	070	62	283
28	1540	2800	2500	1260	960	762	582
29	1530	2730	1550	1200	020	017	160
30	1530	2700	2020	1170	490	418	468
31	1540	2600	2180	1060	640	604	518
32	1540	2510	1780	970	240	247	404
33	1530	2240	1860	710	330	465	484
34	1530	2400	2150	870	620	713	564
35	1540	2410	2030	870	490	564	510
37	1520	2760	2360	1240	840	678	550
38	1520	2750	1990	1230	470	382	458
39	1520	2600	2380	1080	860	796	595
41	1520	2380	2120	860	600	698	558
44	1570	2350	1740	840	230	274	415
47	1520	2240	2020	720	500	695	558
48	1520	2260	1940	740	420	568	510
49	1570	2250	2000	740	490	662	545
51	1570	2270	2140	760	630	830	605
1	1490	3030	2660	1540	1170	760	580
2	1500	3040	1850	1510	350	232	398
10	1500	3000	2680	1500	1180	787	590
11	1570	2860	2980	1350	1470	1	
22	1500	2650	2420	1180	920	780	588

RR Lyr Sequence

Dec 13/33 1000	1010	1530	2280	1270	540	425	
1022	1010	2220	1650	1210	640	529	
1029	1010	2170	1390	1160	380	328	
1034	1000	2250	1570	1250	570	456	
1044	990	2160	1500	1170	510	436	
1054	1000	2160	1530	1160	550	474	

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1933phae.proj.123pm

1090	980	2120	1590	1140	610	535	
1026	950	2180	1300	1200	320	267	
1027	980	2170	1740	1190	760	638	
1032	985	240	1430	1155	445	385	
19	980	1910	1020	930	040	43	
a	980	2080	1020	1100	140	127	
g	980		980		000	000	
D	975	2250	1110	1275	135	106	
f j	980	2230	1180	1250	200	160	
	AB 839 ✓ wpicd						
5	970	2250	1720	1280	750	586	508
7					000	000	
14	970	2020	1710	1050	740	705	558
26	980	1970	1430	990	450	455	480
27	980	1970	1050	990	070	708	520
29	980	2040	1000	1060	020	19	210
30	980	2000	1410	1020	430	422	472
31	980	1960	1540	980	560	572	505
32	980	1850	1200	870	220	253	413
33	990	1620	1280	630	290	460	480
35	980	1770	1420	790	440	557	500
38	980	2020	1410	1040	430	413	470
44	985	1700	1190	715	205	287	425
48	990	1630	1360	640	370	578	508
49	990	1625	1410	635	420	662	520
2	990	2260	1280	1270	290	228	398
11	990	2130	1490	1140	500	438	478
11	990	2100	1495	1110	505	455	480
Dec 14 '33	AO 835 Sequence ✓						
1000	1160	2560	1800	1400	640	467	
1022	1170	2510	1860	1340	690	515	

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1933phae.proj.1230M

1029	1160	2420	1560	1260	400	318	
1034	1170	2400	1760	1230	590	480	
1044	1170	2360	1680	1190	510	428	
1054	1160	2370	1740	1210	580	480	
1090	1160	2350	1800	1190	640	538	
1026	1160	2400	1520	1240	360	290	
1027	1160	2380	1960	1220	800	655	
1033	1170	2400	1640	1230	470	382	
a	1170	2330	1210	1160	040	34	
19	1160	2170	1210	1010	050	50	
f	1160	2290	1260	1130	100	89	
g	1160		1160	00	000	00	
h	1150	2505	1300	1355	150	111	
j	1160	2470	1370	1310	210	160	
	AB 840	Liquid					
6	1155	2190	1280	1035	125	121	348
7	1160	2340	1400	1180	240	203	388
8	1160	2270	1880	1110	720	650	530
9	1160	2190	1805	1030	645	626	525
10	1150	2120	1500	970	350	361	445
11	1150	2220	1160	1070	010	93	325
12 d.2	12 1150	2260	1770	1110	620	558	512
14	1150	1990	1680	840	530	631	528
15	1150	2090	1515	940	365	388	434
19	1140	2130	1760	990	620	627	528
16	1130	2530	2060	1420	930	655	520
18 17	1140	1940	1230	800	090	11	180
20	1135	1920	1570	785	375	477	488
21	1130	2040	1790	910	610	725	568
22	1140	2080	1760	940	620	660	531
23	1135	1990	1570	855	455	533	505

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1933phae.proj.124.com

24	1130	2180	1720	1050	590	562	512
25	1130	2220	1640	1090	510	468	485
26	1130	2310	1760	1180	630	534	505
27	1120	2270	1480	1150	360	318	425
30	1120	2060	1340	940	220	234	400
4	1120	2390	1830	1270	710	559	512
12	1120	2230	1740	1110	620	539	512
18	1120	2290	1680	1170	560	478	488
	DB 84 Copied						
3	1110	2100	1730	990	620	626	470
4	1130	2230	1530	1100	400	364	445
5	1130	2100	1860	970	730	753	585
6	1130	2055	1645	925	515	557	512
7	1130	2150	1880	1020	750	735	578
8	1130	2020	1430	890	300	337	425
9	1130	1960	1470	830	340	410	463
10	1120	2020	1260	900	140	156	358
11	1120	1930	1620	810	500	617	523
12	1130	2010	1330	880	200	227	395
13	1130	1950	1310	820	180	220	393
14	1120	1880	1260	760	140	184	380
15	1120	1910	1630	790	510	645	528
16	1120	1880	1200	760	080	105	~~180~~
17	1115	2030	1670	915	555	606	522
18	1120		1120	0	000	000	
19	1120	2060	1700	940	580	617	523
20	1120	1890	1445	770	325	422	468
21	1120	1860	1200	740	080	108	~~180~~
22	1120	1950	1430	830	310	374	450
23	1110	2100	1650	990	540	545	508
24	1120	2150	1880	1030	760	738	

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1933phae. proj. 1230

Dec 15 '33

AB835

(1000)	1485	2850	2090	1415	655	463	
1007	1450	2920	2410	1470	960	654	
1017	1450	2880	2110	1430	660	462	
1022	1450	2840	2180	1390	730	525	
1029	1455	2810	1890	1355	435	321	
(1034)	1440	2780	2080	1340	640	478	
1043	1440	2890	2600	1450	1160	800	
1044	1440	2800	2025	1360	585	430	
1047	1440	2880	2290	1440	850	590	
(1054)	1440	2820	2090	1380	650	470	
1067	1430	2830	2140	1400	710	507	
1087	1430	2830	1940	1400	510	364	
1114	1420	2830	2420	1410	1000	710	
1033	1420	2790	1950	1370	530	387	
a	1420	2730	1480	1300	050	38	
19	1430	2560	1480	1130	050	44	
f	1440	2680	1560	1240	120	97	
k	1430	2850	1590	1420	160	113	
j	1440	2820	1660	1380	220	159	

AB837

1	1390	3020	2530	1630	1140	700	522
26	1400	2680	2430	1280	1030	805	609
27	1400	2680	2490	1280	1090	852	680
27	1400	2680	2500	1280	1100	860	635
51	1400	2550	2320	1150	920	800	608
70	1400	2380	2160	980	760	775	595
79	1410	2220	2040	810	630	778	598
86	1400	2430	2330	1230	930	755	586
90	1400	2630	2300	1230	900	732	578
127	1400	2440	2230	1040	830	798	605

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1933phae.proj.124m

133	1390	2280	2100	890	710	798	605
	AB 838	✓ copied					
4	1390	2920	2420	1530	1030	674	573
7	1390	2800	2330	1410	940	666	530
14	1380	2750	2460	1370	1080	788	600
15	1390	2800	2460	1410	1070	760	590
17	1390	2550	2200	1160	810	698	562
18	1385	2570	2290	1185	905	765	590
20	1385	2540	2160	1155	775	670	550
27	1380	2200	1890	820	510	622	533
33	1380	2190	2000	810	620	765	590
32	1380	2120	1820	740	450	609	528
34	1370	2380	2090	1010	720	713	570
37	1370	2640	2270	1270	900	708	568
41	1370	2080	1800	710	430	605	528
46	1360	2220	1985	860	625	727	575
47	1360	2450	2180	1090	820	752	585
48	1350	2500	2110	1150	760	660	548
58	1360	2460	2250	1100	890	810	610
30a	1360	2300	1840	940	480	511	493
30a	1360	2230	1860	870	500	575	516
838 Dec 16	AB 835 ✓						
1000	860	2240	1470	1380	610	442	
1007	880	2210	1800	1430	920	644	
1022	880	2210	1560	1330	680	511	
1029	900	2230	1315	1330	415	312	
1043	900	2260	2010	1360	1110	816	
1044	890	2170	1460	1280	570	445	
1047	875	2270	1700	1395	825	592	
1067	900	2230	1520	1330	660	496	
1087	890	2230	1380	1340	490	366	

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1933phae.proj.1230

1114	880	2210	1830	1330	950	714	
1033	890	2190	1580	1300	490	377	
a	880	2130	930	1250	050	40	
19	880	1910	930	1030	050	49	
f	880	2070	980	1190	100	84	
h	880	2210	1030	1330	150	113	
j	870	2290	1085	1420	215	151	
	AB 837						
10	830	2440	2170	1690	1320	780	590
11	870	2440	2170	1670	1300	780	590
13	875	2310	2070	1435	1195	833	610
19	875	2110	1920	1235	1045	846	615
25	870	2150	1930	1280	1060	828	608
25	880	2130	1930	1250	1050	840	612
26	870	2040	1800	1170	930	795	595
31	860	2070	1845	1210	985	814	603
40	830	2080	1770	1150	920	800	600
43	855	1930	1210	1075	355	330	428
43	830	1940	1220	1090	370	339	430
44	845	1920	1710	1075	865	805	600
46	845	1840	1690	995	745	750	578
49	840	1900	1710	1060	870	820	605
56	850	2070	1800	1220	950	728	570
60	830	1740	1570	910	740	814	603
62	840	1800	1640	960	800	834	610
71	840	1700	1200	860	360	418	460
75	830	1710	1530	880	700	796	596
95	820	1610	1490	790	670	848	618
103	820	1680	1530	860	710	826	608
106	820	1530	1370	730	550	754	580
105	830	1540	1360	710	530	746	577

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1999phae.proj.124em

107	810	1550	1390	740	580	785	592
135	810	1580	1465	770	655	850	618
137	810	1580	1470	770	660	858	620
146	810	2340	2040	1530	1230	804	600
AB838 16	810	1730	1500	920	690	750	578
copied Dec 18	AB835						
AB837 (1000)	960	2200	1501	1240	541	437	
105							
106							
107							
1007	970	2240	1790	1270	820	645	
57							
1022	965	2180	1575	1215	610	502	
144a							
1029	960	2150	1330	1190	370	311	
79a							
1043	960	2170	1960	1210	1000	826	
54							
59							
1044	950	2100	1435	1150	485	422	
1047	950	2160	1660	1210	710	586	
1067	950	2130	1540	1180	590	500	
1087	950	2140	1385	1190	435	366	
1114	940	2110	1780	1170	840	718	
1033	930	2095	1380	1155	450	389	
~~a~~ a	920	2040	970	1110	040	86	
19	940	1870	980	930	040	43	
h	940	2200	1080	1260	140	111	
j	940	2135	1150	1195	210	176	
	AB839	copied					
22	935	1780	1590	845	655	775	590
24	945	1690	1520	745	575	772	590
35	940	1780	1585	850	645	760	585
39	940	1550	1440	610	500	820	605
42	940	1480	1240	540	400	742	578
45	940	1590	1470	650	530	815	605
59	920	1960	1760	1030	830	805	600
43a	940	2220	1800	1280	860	672	552
31	950	1730	1500	780	550	705	563

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1933phae.proj.1230M

31	940	1720	1500	780	560	718	568
49	950	1680	1410	730	460	630	535
49	950	1680	1410	730	460	630	535
10	950	1840	1710	890	760	855	615
10	950	1830	1710	880	760	864	620
55	960	1700	1600	740	640	865	620
55	960	1700	1590	740	630	852	615
56	960	1700	1620	740	660	898	
56	970	1700	1610	730	640	876	
19	970	1870	1700	900	730	812	604
19	970	1870	1710	900	740	822	608
23	960	1790	1660	830	700	844	612
23	960	1740	1670	780	710	910	
64	980	1630	1520	650	540	831	610
64	980	1650	1550	670	570	850	615
65	990	1710	1530	760	540	711	565
65	1000	1790	1540	790	540	684	555
66	1000	1710	1590	710	590	831	610
67	1000	1700	1610	700	610	872	
67	1000	1725	1580	725	580	800	600
69	990	2360	2050	1370	1060	774	592
69	1010	2350	2070	1340	1060	792	598
68	990	2260	2000	1270	1010	795	598
68	990	2210	2020	1220	1030	845	612
21	1000	2160	1800	1160	800	690	538
21	1000	2150	1800	1150	800	696	560
31a	1000	1950	1730	950	730	768	588
31a	1000	1930	1730	930	730	785	595
		D1840					
~~28,29,~~	34	970	2220	1910	1250	940	751	581
31,~~32,33,35~~	36	970	1990	1770	1020	800	785	595

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1933phae.proj.1236M

Dec 19' 33

838
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23
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67

AB835 ✓

1007	960	2180	1780	1220	820	672	
1022	960	2110	1550	1150	590	513	
1029	960	2120	1330	1160	370	319	
1043	960	2160	1940	1200	980	817	
1044	955	2060	1450	1105	495	448	
1047	950	2175	1670	1225	720	588	
1067	950	2105	1530	1155	580	502	
1087	910	2090	1370	1140	420	368	
1114	940	2110	1770	1170	830	710	
1033	940	2070	1360	1130	420	372	
a	940	2030	980	1090	040	37	
19	940	1840	980	900	040	42	
h	940	2190	1070	1250	130	104	
j	940	2110	1130	1170	190	162	

AB837

105	930	1580	1380	600	450	750	580
106	930	1540	1400	610	470	770	590
107	920	1540	1420	610	490	804	605
− 59	920	1840	1340	920	420	456	470
− 54	920	1790	1660	870	740	850	620
57	920	1980	1730	1060	810	764	588
− 79a	920	1870	1720	950	800	843	620
59	910	1820	1340	910	430	473	478
54	920	1770	1650	850	730	860	628
79a	920	1890	1720	970	800	825	612

AB838 copied

2	920	2310	1120	1390	200	144φ	360
2	930	2290	1130	1360	200	147φ	368
23	930	1750	1590	820	660	805	605
67	930	1610	1520	680	590	868	630

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1933phae.proj.1230M

66	920	1610	1510	690	590	855	625
	AR 840 ✓	copied					
33	920	2140	1930	1220	1010	828	612
35	930	2020	1730	1090	800	734	574
37	940	1880	1710	940	770	820	610
38	940	2110	1670	1170	730	624	528
39	940	1830	1750	990	810	818	608
40	940	1770	1585	830	645	777	591
41	940	1750	1670	810	730	902	
42	940	1750	1660	810	720	890	
43	940	1940	1800	1000	860	860	63
44	940	1840	1680	900	740	822	612
47	940	1720	1570	780	630	808	605
48	940	1660	1540	720	600	834	615
50	940	1860	1680	920	740	805	605
51	940	1780	1700	840	760	905	
52	940	1740	1560	800	620	775	590
53	940	1710	1580	770	640	831	615
56	940	1570	1400	630	460	730	570
57	950	1620	1540	670	590	880	
58	940	1760	1660	820	720	879	
59	940	1740	1630	800	690	863	63
60	950	1710	1640	760	690	908	
61	950	1760	1630	810	680	840	618
62	950	1780	1510	830	560	675	548
63	960	1760	1650	800	690	862	630
64	960	1570	1500	610	540	885	
65	950	1570	1485	620	535	864	63
67	950	1620	1520	670	570	851	622
68	950	1620	1480	670	530	790	598
69	960	1640	1470	680	510	750	580

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1933phae.proj.1230M

	70	950	1665	1530	715	580	812	608
72-77	71	960	1680	1540	720	580	805	605
80-82	78	950	1820	1730	870	780	896	
	83	950	1800	1700	850	750	882	
AB857 Dec 20 58		AB 835	Sequence ✓					
	1007	870	2330	1835	1460	965	660	
	1022	880	2320	1610	1440	730	507	
	1029	890	2280	1520	1390	430	309	
	1043	890	2300	2065	1410	1175	834	
	1044	890	2200	1490	1310	600	458	
	1047	870	2330	1750	1440	860	597	
	1067	890	2270	1600	1380	710	515	
	1087	890	2300	1410	1410	520	369	
	1114	890	2270	1900	1380	1010	733	
	1033	890	2200	1415	1310	525	400	
	a	890	2190	940	1300	50	38	
	19	890	1990	940	1100	50	45	
	b	890	2400	1040	1510	150	99	
	j	890	2280	1130	1390	240	172	
		AB 837	copied					
	58	880	2130	1905	1250	1025	820	599
	58	870	2160	1910	1280	1030	800	590
		AB 840	✓ copied					
	84	870	2400	2070	1530	1200	784	585
	85	890	2210	2040	1320	1150	871	613
	86	880	2150	1920	1270	1040	820	599
	87	890	2220	1880	1330	990	745	574
	88	880	2200	1990	1320	1110	840	605
	89	880	1990	1840	1110	960	865	612
	90	880	2100	1725	1220	845	693	555
	91	875	2030	1780	1155	905	784	585

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1933phae.proj.1230

92	870	1810	1690	940	820	873	615
93	870	1710	1495	840	625	744	570
94	870	1660	1570	790	700	886	
95	870	1660	1560	790	690	875	615
96	870	1650	1510	780	640	822	600
97	860	1650	1530	790	670	848	608
98	860	1660	1530	800	670	837	603
99	860	1730	1640	870	780	896	
100	870	1760	1665	890	795	894	
101	860	1700	1630	840	770	916	
102	860	2110	1930	1250	1070	856	610
103	870	1900	1770	1030	900	874	615
104	860	1700	1580	840	720	857	610
105	865	1770	1610	905	745	823	600
106	860	2060	1930	1200	1070	893	
107	875	2090	1830	1215	955	786	586
108	865	2200	1860	1335	995	745	570
109	870	2170	1980	1300	1060	816	596
110	870	2210	1925	1340	1055	788	588
111	860	2100	1950	1240	1090	880	618

Jan 9 ✓ AB 835 Sequence

1007	850	1780	2260	1410	930	660	
1021	870	2240	1575	1370	705	515	
1029	910	2260	1340	1350	430	318	
1042	910	2310	2060	1400	1150	822	
1044	930	2210	1480	1280	550	430	
1047	930	2340	1770	1410	840	596	
1067	950	2300	1630	1350	680	504	
1087	960	2310	1460	1350	500	370	
1114	950	2315	1915	1365	965	706	
1033	950	2285	1460	1335	510	382	

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1933phae.proj.1230m

a	960	2210	1010	1250	50	40	
1q	960	2030	1010	1070	50	46	
h	960	2400	1120	1440	160	111	
j	960	2320	1190	1360	230	169	
	AB 840	copied					
112	960	2170	2040	1210	1080	893	
113	950	2180	2100	1230	1150	935	
114	960	2390	2170	1430	1210	846	615
115	960	2110	1940	1150	980	852	
116	960	2020	1920	1060	960	905	
117	960	2270	2170	1310	1210	925	
118	970	2330	2030	1360	1060	780	590
119	960	2410	2300	1450	1340	925	
120	970	2560	2340	1590	1370	862	
121	960	2520	2190	1560	1230	788	595
122	980	2430	2270	1550	1290	832	610
123	980	2310	2150	1330	1170	880	
124	990	2410	2075	1420	1085	765	586
125	1000	2250	1980	1250	980	784	593
126	990	2220	1950	1230	960	780	590
127	990	2140	1980	1150	990	860	
128	990	2000	1860	1010	870	860	
129	1000	1940	1800	940	800	851	618
130	990	1950	1850	960	860	896	
131	990	2010	1980	1020	990	970	
132	990	2020	1910	1030	920	894	
132	990	2110	1980	1120	990	884	
134	1010	2090	1970	1080	960	880	
135	1000	2160	2030	1160	1030	888	
136	1010	2160	2050	1150	1040	905	
137	2080	2300	2220	1290	1210	940	

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1933phae.proj.1230

	138	1000	2260	2070	1260	1070	850	618
	139	1000	2290	2020	1290	1020	790	595
	140	1010	2160	1970	1150	960	835	612
141	142	1010	2160	2030	1150	1020	888	
144	143	1010	2200	2100	1190	1090	918	
146–149	145	1010	2110	1960	1100	950	864	625
	147	1010	2350	2080	1340	1070	800	600
151–152	150	1010	2350	2060	1340	1050	785	595
	153	1010	2610	2280	1600	1270	795	597
	154	1030	2600	2380	1570	1350	860	620
156 –	155	1030	2710	2030	1680	1000	595	520
	157	1030	2410	2260	1380	1230	892	
159–62	158	1020	2410	2240	1380	1210	876	
	141	1020	2130	1860	1210	840	695	538
	144	1025	2230	2110	1205	1085	900	
	146	1030	2310	2190	1280	1160	906	
	148	1025	2350	2170	1325	1145	864	625
	149	1025	2360	2235	1335	1210	906	
	157	1030	2490	2360	1460	1330	912	
	152	1020	2510	2390	1480	1360	920	
	156	1040	2610	2160	1570	1120	713	586
	159	1030	2300	2200	1270	1170	921	
	160	1020	2410	2250	1380	1220	885	
	162	1020	2370	2220	1350	1210	897	
Jan 11		RB 835 Sequence						
	1007	940	2160	1740	1220	800	655	
	1022	940	2080	1520	1140	580	509	
	1029	940	2070	1310	1130	370	328	
	1043	960	2140	1940	1180	980	830	
	1044	950	2100	1460	1120	480	428	
	1047	980	2170	1700	1190	720	605	

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1933phae.proj.12300

1067	990	2110	1520	1120	570	508	
1087	990	2160	1415	1170	425	363	
1114	990	2145	1810	1155	820	710	
1033	990	2090	1430	1100	440	400	
a	1000	2070	1040	1070	040	37	
19	1000	1910	1040	910	040	44	
h	1000	2260	1130	1260	130	103	
j	1000	2230	1185	1230	185	150	
f	990	2035	1090	1045	100	96	
	AB839	copied					
50	980	1570	1490	590	510	865	
51	980	1660	1535	680	555	816	602
52	980	1695	1600	715	620	868	
53	980	1640	1540	660	560	850	610
54	980	1690	1590	710	610	860	
55	980	1860	1720	880	740	840	610
56	980	1890	1750	910	770	846	610
57	990	1910	1780	920	790	858	
58	970	1680	1610	710	640	901	
59 inv.	60	970	1690	1605	720	635	882
	61	970	1740	1660	770	690	895
	62	980	1850	1720	870	740	850	610
	63	980	1850	1760	870	780	896	
	64	990	1890	1760	900	770	855	615
	65	990	2010	1900	1020	910	892	
	66	1000	2020	1870	1020	870	853	612
	67	990	2050	1890	1060	890	840	610
	68	1000	2130	2010	1130	1010	895	
	69	1000	2190	2050	1190	1050	882	
	70	1000	2310	2090	1310	1090	833	608
	71	990	2290	2110	1300	1120	862	

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1933phae.proj.1230

	72	990	2360	2100	1370	1110	811	600
7475	73	1000	2340	2200	1340	1200	895	
	76	1000	2310	2080	1310	1080	825	605
	77	1000	2320	2030	1320	1030	780	590
79-80-82	78	1010	2320	2120	1310	1110	848	610
	82	1000	2530	1450	1530	450	294	413
	80	1000	2410	1920	1410	920	652	540
	79	1010	2390	2190	1380	1180	855	615
	78	1010	2390	2160	1380	1150	834	608
	75	1010	2390	2180	1380	1170	848	612
	74	1015	2400	2120	1385	1105	799	595
	81	1010	2590	2190	1580	1180	746	575
			PB 84 ✓ upied					
	25	1000	1890	1460	890	460	517	495
	26	1000	1970	1440	970	440	454	468
	27	1010	2040	1620	1030	610	592	520
	28	1010	2090	1030	1080	020	18	
	29	1010	2180	1640	1170	630	538	500
	30	1010	2130	1520	1120	510	455	472
	31	1010	2230	1300	1230	290	238	397
	32	1010	2210	1380	1200	370	308	418
	33	1010	2200	1085	1190	075	63	280
	34	1010	2180	1510	1170	500	427	460
north	35	1020	2280	1710	1260	690	548	505
south	36	1000	2090	1570	1090	570	523	498
	37	1010	2190	1030	1180	20	17	
	38	1010	2380	1450	1370	440	321	422
	39	1010	2010	1660	1000	650	650	540
	40	1010	1980	1460	970	450	464	475
	41	1010	2100	1750	1090	740	679	550

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1933phae.proj.1230N

Jan 13 use curve Jan 11	AB839 ✓	copied						
	5	920	2600	1915	1680	995	592	520
	12	940	2200	1950	1260	1010	800	598
	13	940	2320	2030	1390	1090	785	592
	14	950	2380	1910	1430	960	670	548
	16	950	2665	2190	1715	1240	723	568
	20	950	2020	1730	1070	780	730	570
	3	950	2810	2140	1860	1190	640	535
	4	950	2650	2135	1700	1185	697	558
	6	960	2440	2245	1480	1285	868	618
	7					000	000	0
	8	950	2390	2130	1440	1180	820	603
1041-	9	950	2700	2170	1750	1220	697	538
	15	940	2450	2245	1510	1305	865	618
	17	945	2550	2280	1605	1335	833	608
	18	950	2430	2115	1480	1165	787	592
21-22	19	950	2130	1945	1180	995	844	610
	23	940	2080	1870	1140	930	815	604
	24	940	1950	1705	1010	765	757	580
	25	940	2200	2010	1260	1070	830	612
	26	930	2260	1530	1330	620	466	478
	27	930	2270	1020	1340	090	67	275
	28	930	2420	2090	1490	1160	780	590
30	29	930	2260	960	1430	30	21	—
	30	920	2360	1530	1440	610	423	460
	31	930	2460	1970	1530	1040	680	530
	32	930	2130	1230	1200	300	250	400
	33	920	1780	1330	860	410	477	480
	34	920	1865	1680	945	760	805	600
	35	915	1990	1540	1075	625	582	515
	36	910	2060	1830	1150	920	800	596

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1933phae.proj.1230

37	940	2410	1910	1510	1010	670	548
38	900	2410	1470	1510	570	377	443
39	910	2160	1985	1250	1075	860	
40	910	2470	2240	1560	1330	853	614
41	910	1901	1680	1000	770	770	585
43	900	1930	1670	1030	770	748	578
44	900	1880	1190	980	290	296	414
46	900	1820	1705	920	805	875	
47	900	1750	1520	880	620	705	560
48	890	1810	1400	920	510	555	508
49	890	1750	1475	860	585	680	550
50	890	1710	1560	820	670	817	602
51	875	1800	1640	925	765	826	606
52	880	1840	1730	960	850	885	
53	870	1780	1625	910	755	830	608
54	870	1820	1685	950	815	860	618
55	860	2010	1860	1150	1000	870	620
56	870	2070	1890	1100	1020	926	
57	870	2115	1930	1245	1060	852	612
61	850	1870	1770	1020	920	903	
62	850	2010	1860	1160	1010	870	620
63	860	2070	1900	1210	1040	880	618
64	860	2120	1910	1270	1050	826	605
65	860	2240	2110	1380	1250	905	
Taurus		AB835 sequence					
1007	1310	2800	2290	1490	980	658	
1017	1330	2810	2015	1480	685	464	
1022	1340	2800	2060	1460	720	494	
1029	1340	2730	1765	1390	425	306	
1043	1320	2820	2540	1500	1220	815	
1044	1330	1760	1940	430	610	427	

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1933phot.proj.1230M

	1047	1330	2880	2240	1550	910	587	
	1067	1330	2790	2070	1450	740	510	
	1087	1330	2800	1880	1470	550	374	
	1914	1335	2830	2380	1495	1045	700	
	1033	1320	2760	1870	1440	550	382	
	a	1330	2740	1280	1410	050	35	
	19	1320	2490	1385	1160	055	47	
	f	1340	2675	1450	1335	110	82	
	h	1330	2940	1500	1610	170	106	
	j	1330	2930	1580	1600	250	156	
		AB841 ✓	copied					
42-43	49	1310	2760	2330	1450	1040	715	570
44-45	50	1320	2390	2230	1070	910	830	—
46-47	51	1330	2540	2370	1210	1040	860	—
48	52	1320	2530	2410	1210	1090	900	—
	53	1320	4000	2710	2680	1390	520	498
	54	1320	2860	2540	1540	1220	793	600
	55	1320	2690	2400	1370	1080	790	600
	56	1320	2980	2590	1660	1270	765	590
	57	1330	2620	2390	1290	1060	822	610
	58	1320	2520	2420	1200	1110	925	—
	59	1320	2360	2240	1040	920	885	—
	60	1310	2360	2240	1050	930	885	—
	61	1280	2300	2000	1020	720	705	565
	62	1290	2460	2320	1170	1030	880	—
X	63	1280	2300	2670	1020	1390	1360	—
	64	1290	2700	2470	1410	1180	837	—
	65	1290	2780	2490	1490	1200	805	605
67-68	66	1300	2820	2620	1520	1330	870	—
	69	1280	2280	2180	980	880	898	—
	70	1290	2260	2150	970	860	886	—

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1933phae.proj.1230

71	1280	2220	2080	940	800	850	—
72	1290	2210	1840	920	550	598	524
73	1280	2210	2200	930	920	990	—
1X4	1280	2180	1450	900	170	189	372
74	1270	2230	2040	960	770	802	605
75	1270	2220	2000	950	730	770	573
76	1270	2220	2105	950	835	880	—
77	1280	2230	2290	950	1010	2	—
78	1270	2090	2080	820	810	2	—
79	1260	2240	2130	980	870	887	—
80	1270	2290	2070	1020	800	785	598
81	1270	2280	1912	1010	642	635	538
82	1270	2430	2290	1160	1020	880	—
83	1270	2490	2400	1220	1130	926	—
84	1260	2470	2300	1210	1040	860	—
85	1270	2540	2270	1270	1000	788	600
86	1270	2540	2380	1270	1110	874	—
87	1270	2660	2500	1390	1230	885	—
88	1280	2660	2490	1380	1210	878	—
89	1280	2540	2320	1260	1050	834	—
90	1280	2630	2420	1350	1140	845	—
91	1280	2410	2170	1130	890	787	600
92	1270	2200	2040	930	770	828	612
93	1270	2230	1910	960	640	666	550
94	1260	2230	2090	970	830	855	—
Jan 16		RB 841 copied					
93	890	1730	1450	840	560	667	550
95	890	1820	1660	930	770	828	612
96	890	1810	1710	920	820	893	
97	900	1950	1850	1050	950	905	
98	900	2010	1870	1110	970	874	

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1933phae.proj.1230M

~~99~~ 100	890	2140	1930	1250	1090	873	
101	900	2130	2040	1230	1140	927	
102	900	2030	1900	1130	1000	885	
103	890	1910	1610	1020	720	706	567
105	880	1890	1690	1010	810	802	605
106	890	1810	1520	920	670	728	577
107	880	1830	1690	950	810	853	
108	890	1940	1780	1050	890	848	
109	890	2040	1860	1150	970	843	
110	890	2160	1965	1270	1075	845	
111	890	2140	1940	1250	1050	840	618
112	880	2200	2020	1320	1140	865	
113	880	2240	2110	1350	1230	912	
114	890	2090	1910	1200	1020	850	620
115	890	2010	1920	1120	1030	920	
116	880	1950	1875	1070	995	930	
117	890	1920	1680	1030	790	766	590
118	880	1980	1860	1100	980	890	
119	880	2010	1680	1130	800	708	538
120	890	2030	1630	1140	740	650	545
121	890	2150	1985	1260	1095	870	
122	880	2010	1950	1130	1070	948	
123-127 128	880	2200	1960	1320	1080	820	610
129	880	2180	1980	1300	1100	846	
130	890	2040	1800	1150	910	790	600
131	890	1990	1650	1100	760	690	520
132	890	2090	1890	1200	1000	834	615
133	890	2040	1680	1150	790	687	558
134	890	2060	1820	1170	930	795	602
135	880	2110	1860	1230	980	795	602
136	880	2090	1925	1210	1045	864	

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1933phae.proj.1230

137	880	2125	1950	1245	1070	860	
138	870	2130	1980	1260	1110	882	
139	880	2210	1850	1330	970	728	575
140	880	2220	2070	1340	1190	890	
141	880	2260	1980	1380	1100	798	602
142	880	2150	1860	1270	980	770	590
143	880	2100	1830	1220	950	778	570
144	880	2200	1990	1320	1110	840	
145	880	2190	2000	1310	1120	856	
2	860	1900	1550	1040	690	664	550
42	860	2220	1810	1360	950	698	562
43	870	2170	1990	1300	1120	863	
44	870	2240	2040	1370	1170	815	
63	810	1770	1520	920	670	730	578
67	820	2200	1930	1350	1080	800	603
68	860	2210	1810	1350	950	704	565
123	860	2300	1970	1440	1110	772	593
124	860	2330	2120	1470	1260	858	
125	860	2280	1970	1420	1110	783	599
126	860	2270	1980	1410	1120	795	602
127	860	2280	1900	1420	1040	732	578
	AB84 ✓ copied						
41	820	1750	1610	930	790	850	
42	830	1690	1600	860	770	895	
72	820	1610	1520	790	700	827	
73	820	1650	1440	830	620	747	583
74	820	1670	1335	850	515	606	528
75	820	1650	1570	865	690	798	602
76	820	1780	1630	960	810	844	
80	820	1670	1540	860	730	850	
82	810	1640	1520	830	710	855	

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1933phae.proj.1230

81	840	1660	1430	850	630	730	575
Jan 17	AB 839 ✓ copied						
839 a join							
65 a join							
de 65	930	2270	2140	1340	1210	904	
66	940	2250	2070	1310	1130	863	625
67	940	2290	2090	1350	1150	852	620
68	940	2400	2240	1460	1300	890	
69	940	2470	2300	1530	1360	890	
70	940	2570	2340	1630	1400	860	623
71	940	2670	2370	1730	1430	826	618
72	940	2660	2350	1720	1410	820	615
7475 73	940	2640	2470	1700	1530	900	
77	930	2590	2240	1660	1310	790	598
76	940	2600	2310	1660	1370	825	618
79 78	920	2640	2360	1710	1430	837	612
74	920	2700	2340	1780	1420	797	600
75	930	2690	2400	1760	1470	835	612
79	930	2700	2450	1770	1520	860	622
80	940	2750	2120	1810	1180	653	574
	AB 838 ✓ copied						
a	920	2150	1840	1230	920	748	585 ✓
61	920	1810	1670	890	750	844	615 ✓
2	920	2790	1180	1870	260	139	340 ✓
	AB 837 ✓ copied						
3	920	2780	2090	1860	1170	630	538 ✓
(838) a	920	2340	2230	1430	1310	923	✓
dc b	930	2620	2188	1690	1570	930	✓
10 9	930	2650	2110	1720	1180	686	538 ✓
61	930	1910	1800	920	870	888	✓
52	930	1850	1520	920	590	642	542 ✓
43	930	1790	1660	860	730	850	✓

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1933phae.proj.1230

(840)	a	920	2880	2560	1960	1640	837	618 ✓
	c	930	2935	2640	2005	1710	850	620 ✓
	10	930	2650	2130	1720	1200	698	562 ✓
		AB 840 ✓ copied						
5	9	920	2190	1700	1270	780	654	548 ✓
	42	920	1970	1860	1050	940	895	✓
	5	920	2390	1250	1470	310	210	378 ✓
		AB 841 copied						
	37	910	2400	930	1490	20	13	170 ✓
	C	910	2090	1920	1180	1010	856	✓
Jan 18		AB 839 ✓ copied						
	61	800	1710	1610	910	810	890	
	81	790	2620	2160	1830	1370	750	580
	82	800	2540	1335	1740	535	340	430
		AB 840						
	108	790	2110	1810	1320	1020	773	590
	74	790	1750	1360	960	570	594	520
	5	770	2110	1070	1340	300	224	390
	35	780	2100	1720	1320	940	712	565
	156	780	2360	1905	1580	1125	713	565
Jan 19	33	AB 842 1						
10-3	4	670	1330	1060	660	390	592 1	520
	48	690	1360	1290	670	600	896	
	49	690	1240	1165	550	475	864	625
	59	700	1630	1560	930	860	925	
	60	710	1520	1470	810	760	938	
	61	715	1575	1380	860	665	774	590
	10	720	1370	910	650	190	292	413
	12	720	1380	990	660	270	410	458
	13	720	1440	930	720	210	292	413
	81	710	1420	1250	710	540	760	584
	80	710	1450	1360	740	650	880	

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1933plate.proj.1230N

	17	710	1460	1260	750	550	734	574
	18	710	1140	720	430	010	256	400
	19	710	1410	1260	700	550	785	594
2L	91	710	1480	1390	770	680	884	
	23	720	1460	1230	740	510	690	558
1.05	24	700	1520	1400	820	700	854	620
	28	710	1490	770	780	060	77	288
	29	710	1360	1200	650	490	754	582n
	30	710	1830	1240	1120	530	473	480
	139	720	1805	1640	1085	920	848	616
	141	710	1640	1520	930	810	871	626
	3	700	1640	1285	940	585	623	531
	50	690	2040	1790	1350	4100	815	605
	11	680	1530	1170	850	490	577	512
	22	680	1570	1000	890	320	360	440
		AB 841 ✓ copied						
2	5	650	1660	1410	1010	760	752n	582n
	6	660	1640	1200	980	540	552n	505
	9	650	1490	1000	840	350	417	460
	14	640	1450	780	810	140	173	365
	15	620	1450	1160	820	530	646	538
	16	620	1400	710	780	090	115	325
	20	620	1480	970	860	350	407	458
	21	620	1480	710	860	090	105	315
	23	620	1660	1180	1040	560	538	500
	24	620	1750	1440	1130	820	725	570
	24	620	1710	1440	1090	820	752n	581
	25	620	1450	1120	1030	500	485	483
	26	610	1670	1110	1060	500	472n	478
	27	620	1750	1310	1130	690	610	525
	31	600	1910	920	1310	220	244	396

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1933phae.proj.1230M

32	600	1900	1000	1300	400	308	418
33	600	1770	690	1170	090	77	285
34	600	1835	1140	1235	540	437	468
35	600	1890	1340	1290	740	574	513
41	580	1810	1390	1230	810	658	542
49	590	1810	1475	1220	885	725	570
65	580	1830	1620	1250	1040	834	612
72	580	1400	1075	820	495	604	524
74	570	1390	1235	820	665	810	602
75	570	1405	1210	835	640	767	588
85	560	1670	1440	1110	830	793	578
92	570	1380	1250	810	620	840	612
93	570	1420	1140	850	570	670	530
105	560	1570	1370	1010	810	802	600
106	570	1500	1240	930	670	720	568
111	560	1810	1620	1250	1060	848	618
114	560	1760	1610	1200	1050	875	
117	560	1600	1370	1040	810	780	590
120	570	1690	1470	1120	900	804	600
131	560	1690	1330	1130	770	681	553
132	570	1760	1560	1190	990	832	610
133	570	1710	1370	1140	800	702	562
134	570	1740	1490	1170	920	786	595
135	560	1820	1560	1260	1000	795	598
142	570	1850	1570	1280	1000	782	592
143	570	1830	1530	1260	960	762	585

Jan 22'84 AB 8H1 ✓ copied

4	920	2210	1400	1290	480	372	445
48 49	930	2280	1910	1350	980	725	570
59	940	1920	1800	980	860	877	630
60	940	1910	1820	970	880	907	

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1933plate.proj.1230n

61	940	1890	1620	950	680	716	568
10	930	1940	1085	1010	155	115	325
12	930	1900	1160	970	230	237	893
13	930	1850	1140	920	210	228	890
81	920	1940	1535	1020	615	603	524
80	920	1890	1670	970	750	773	570
17	920	1930	1540	1010	620	614	528
18	920		920				
19	910	1990	1590	1080	680	630	532
91	910	2000	1770	1090	860	790	595
23	921	2050	1520	1130	600	530	498
24	91	2140	1810	1230	900	730	570
28	910	2220	950	1310	40	31	180
29	910	2330	1660	1420	750	528	498
30	910	2260	1520	1350	610	452	472
139	910	2400	1980	1490	1070	718	570
141	900	2460	2120	1560	1220	783	595
11	900	1820	1470	920	570	620	530
22	900	1880	1270	980	370	378	748
50	890	1920	1760	1030	870	845	615
3	890	2030	1570	1140	680	596	520

AB 859 sequence

1	910	2820	1960	1910	1050	555	
2	930	2850	2100	1920	1170	610	
3	930	2860	1960	1930	1030	533	
4	940	2880	2340	1940	1400	721	
5	940	2900	2410	1960	1470	750	
6	940	2900	2530	1960	1590	812	
7	930	2860	2350	1910	1400	734	
9 8	950	2870	2650	1920	1700	885	
10	950	2960	2600	2010	1650	823	

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1933phae.proj.1230

	11	940	2880	2100	1940	1160	598
	12	950	2900	2600	1950	1650	846
	13	940	2740	2240	1800	1300	723
	14	940	2730	2510	1790	1570	878
	15	940	2610	1780	1670	840	503
	16	930	2740	2440	1810	1510	835
	17	930	2860	1650	1930	720	373
	18	920	2860	2680	1940	1760	906
	19	920	2780	2640	1860	1720	925
	20	920	2790	2640	1870	1720	920
	21	910	2740	2600	1830	1670	925
Jan 23		AB8621					
	1	930	1840	1630	1610	1400	870
	2	940	1730	740	1490	500	334
	3	260	1710	1530	1450	1270	876
	4	260	1800	1580	1540	1320	858
6,7 inv.	5	260	1750	1630	1490	1370	920
	8	250	1720	915	1470	665	452
	9	250	1780	500	1530	250	163
11 inv	10	250	1780	1605	1530	1355	885
	12	260	1780	1380	1530	1130	740
13.14	15	240	1710	1320	1470	1086	735
	16	250	1780	1280	1530	1030	674
18,19 inv	17	250	1770	1370	1520	1120	737
	20	240	1780	1060	1540	820	532
21 inv.	22	240	1720	1560	1480	1320	892
24	23	250	1700	1540	1450	1290	890
25	26	230	1720	1560	1490	1330	893
27	28	920	1780	1480	1550	1170	755
	29	940	1730	1610	1490	1370	920
	35	230	1750	1530	1520	1320	870

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1933plate.proj.1230m

37	240	1720	540	1480	300	202	
38	230	1750	1400	1530	1170	770	
39	240	1690	1410	1450	1170	807	
40	240	1690	1540	1450	1300	896	
41	230	1670	1070	1440	840	583	
42	230	1740	1570	1510	1360	900	
43	230	1720	1560	1500	1330	887	
44	240	1740	1600	1500	1360	906	
46	230	1700	850	1470	620	423	
47	230	1690	1110	1460	880	603	
51	220	1750	1580	1530	1360	890	
52	230	1750	1630	1520	1400	920	
54	220	1700	1360	1480	1140	770	
55	220	1700	1550	1480	1330	900	
a mean 57,58							
59	210	1660	1030	1450	820	565	
60	220	1660	1470	1440	1250	870	
61	220	1670	1440	1450	1220	842	
62	230	1660	1070	1430	840	587	
63	220	1660	1300	1440	1080	750	
64	220	1660	440	1440	220	153	
65	220	1670	610	1450	390	269	
66	220	1660	750	1440	530	368	
67	220	1660	1070	1440	850	590	
68	230	1660	1350	1430	1120	784	
69	220	1660	1070	1440	850	590	
70	220	1670	1470	1450	1250	862	
71	220	1650	320	1430	100	70	70
72	220	1650	1330	1430	1130	790	
73	220	1630	1490	1410	1270	900	
74	220	1640	1480	1420	1260	890	
75	220	1020	280	800	010	12	

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1933phae.proj.1230m

76	200	1620	1250	1420	1050	740	
77	210	1640	1180	1430	970	678	
78	210	1640	1200	1430	990	692	
79	220	1600	760	1380	540	392	
80	200	1620	590	1420	390	274	
82	190	1630	940	1440	750	520	
83	200	1630	1220	1430	1020	715	
84	210	1660	1250	1450	1040	718	
85	200	1650	430	1450	230	159	
86	210	1650	1350	1440	1140	792	
87	200	1660	1310	1460	1110	760	
88	210	1640	1440	1430	1230	820	
X 89	210	1630	530	1420	320	226	
90	180	1640	520	1460	340	233	
91	200	1650	370	1450	170	117	
92	190	1640	1350	1450	1160	800	
93	190	1650	1380	1460	1190	815	
94	190	1640	1440	1450	1250	862	
95	190	1630	1410	1440	1220	848	
96	200	1630	260	1430	060	42	
97	190	1650	1280	1460	1090	746	
98	190	1680	1280	1490	1090	733	
99	190	1680	570	1490	380	255	
108	200	1710	1450	1510	1250	828	
100	190	1700	1530	1510	1340	888	
101	190	1710	1170	1520	980	645	
102	190	1720	1040	1530	850	555	
104	200	1720	1070	1520	870	572	
105	190	1710	1410	1520	1220	803	
106	200	1710	1530	1510	1330	882	
107	200	1730	1510	1520	1310	856	

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1999phae.proj.123m

109	190	1720	3540	1530	350	229
110	190	1740	1590	1550	1400	905
111	200	1720	1530	1520	1330	875
Jan 27-84	RB859	sequence				
1	~~1180~~	~~2800~~	~~2090~~	1620	0	
2	1190	2730	2130	1540	940	610
1	1200	2730	2050	1530	850	555
3	1210	2740	2040	1530	880	542
4	1210	2770	2360	1560	1150	738
5	1210	2800	2410	1590	1200	755
6	1220	2800	2480	1580	1260	798
7	1230	2760	2360	1530	1130	740
10	1230	2820	2560	1590	1330	837
11	1240	2790	2165	1550	925	596
12	1235	2820	2551	1585	1316	830
13	1240	2685	2265	1445	1025	710
14	1235	2670	2490	1435	1255	875
15	1240	2610	1920	1370	680	496
16	1240	2695	2440	1455	1200	825
17	1240	2780	1815	1540	575	373
18	1230	2830	2670	1600	1440	900
19	1240	2725	2620	1485	1380	930
	RB862					
1	1210	2800	2485	1590	1275	802
2	1235	2680	1710	1445	475	329
3	1235	2700	2520	1465	1285	877
4	1235	2800	2550	1565	1315	840
5	1235	2740	2610	1505	1375	915
8	1230	2690	1900	1460	670	459
9	1230	2770	1480	1540	250	162
10	1230	2780	2575	1550	1345	868

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1933phae.proj.1230M

done

12	1220	2760	2330	1540	1110	720
15	1220	2680	2328	1460	1108	760
16	1225	2770	2260	1545	1035	670
17	1230	2745	2315	1515	1085	716
20	1225	2770	2035	1545	810	524
22	1225	2715	2520	1490	1295	868
23	1240	2710	2560	1470	1320	898
26	1230	2740	2570	1510	1340	888
28	1230	2780	2410	1550	1180	762
29	1225	2740	2610	1515	1385	915
35	1220	2760	2540	1540	1320	858
37	1225	2720	1525	1495	300	200
38	1220	2750	2400	1530	1180	771
39	1220	2690	2420	1470	1200	816
40	1220	2695	2540	1475	1320	895
41	1220	2740	2060	1520	840	553
42	1210	2750	2570	1540	1360	884
43	1220	2695	2560	1475	1340	910
44	1190	2720	2570	1530	1380	902
46	1200	2670	1830	1470	630	428
47	1200	2660	2080	1460	880	603
57	1190	2720	2540	1530	1350	885
52	1180	2720	2590	1540	1410	916
54	1180	2670	2380	1490	1150	772
55	1180	2620	2500	1440	1320	916
59	1160	2630	2000	1470	840	571
60	1150	2590	2400	1440	1250	868
61	1155	2600	2350	1445	1195	826
62	1155	2580	1990	1435	835	586
63	1150	2600	2240	1450	1090	753
64	1155	2580	1370	1425	1215	853

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1933phae.proj.1230M

	65	1140	2580	1530	1440	390	271
	66	1150	2570	1660	1420	510	359
	67	1140	2570	1990	1430	850	595
	68	1140	2590	2270	1450	1130	780
	69	1150	2580	2000	1430	850	594
	70	1150	2595	2415	1445	1265	875
X	71	1150	2575	1240	1425	1090	765
X	72	1140	2600	1270	1460	130	89
	73	1150	2580	2430	1430	1280	896
	74	1150	2590	2440	1440	1290	896
	75	1150		1150			
	76	1145	2590	2210	1445	1065	737
	77	1150	2590	2135	1440	985	684
	78	1150	2590	2160	1440	1010	702
	79	1150	2560	1710	1410	560	397
	80	1150	2590	1550	1440	400	278
	82	1145	2570	1870	1425	725	508
	83	1145	2590	2160	1445	1015	702
	84	1150	2610	2190	1460	1040	713
	85	1150	2620	1370	1470	220	150
	86	1140	2580	2295	1440	1155	803
	87	1150	2600	2260	1450	1110	765
	88	1150	2570	2290	1420	1140	803
X	89	1150	2570	1810	1420	660	465
	90	1150	2590	1480	1440	330	229
	91	1160	2600	1340	1440	180	125
	92	1150	2610	2310	1460	1160	795
	93	1160	2610	2320	1450	1160	800
	94	1155	2600	2400	1445	1245	862
	95	1150	2600	2370	1450	1200	841
	96	1160	2590	1222	1430	0062	43

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1933phae.proj.1230M

97	1160	2620	2250	1460	1090	746
98	1160	2660	2265	1500	1075	718
99	1160	2650	1530	1490	370	248
100	1140	2661	2515	1521	1375	907
101	1155	2670	2120	1515	965	636
102	1170	2680	2010	1510	840	556
104	1170	2700	2055	1530	885	572
105	1170	2675	2400	1505	1230	818
106	1170	2700	2515	1530	1345	880
107	1175	2710	2502	1535	1327	865
108	1170	2680	2420	1510	1250	828
109	1180	2720	1540	1540	360	234
110	1180	2720	2570	1540	1390	903
111	1180	2700	2540	1520	1330	875

Thursday
Jan 25

AB 859 Leg.

1	730	2240	1580	1510	850	563
2	750	2240	1670	1490	920	617
3	760	2250	1570	1490	810	544
4	760	2270	1880	1510	1120	742
5	760	2280	1910	1520	1150	756
6	770	2290	2000	1520	1230	810
7	780	2260	1880	1480	1100	744
10	780	2325	2050	1545	1270	823
11	780	2300	1685	1520	905	595
12	780	2310	2050	1530	1270	830
13	790	2170	1800	1380	1010	732
14	780	2185	1990	1405	1210	861
15	770	2100	1450	1330	680	512
16	780	2200	1930	1420	1150	810
17	790	2272	1345	1482	555	374
18	770	2318	2160	1548	1390	900

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1933phae.proj.1230M

	19	775 AB 864	2220	2105	1445	1335	925
1-3	4	768	2100	1080	1332	312	234
6	5	770	2110	1928	1340	1158	865
	7	770	2088	1915	1318	1145	870
	8	770	2120	1790	1350	1020	755
	9	765	2110	1500	1345	735	546
	10	780	2040	835	1260	055	44 456
	11	770	2090	1360	1320	590	447
	1	750	2122	1844	1272	1094	797
	2	760	2140	1770	1380	1010	733
	3	770	2100	1445	1330	675	507
	6	770	2095	1960	1325	1190	889
	12	760	2110	1850	1350	1090	807
	13	765	2120	1870	1355	1105	850
	14	760	2130	1820	1370	1110	810
	15	760	2110	1785	1350	1025	760
	16	760	2100	1400	1340	640	478
1821 f.	17	760	2100	1390	1340	630	470
	19	755	2100	1570	1345	815	606
	20	755	2100	1580	1345	835	620
	22	740	2075	1970	1335	1230	923
	23	750	2100	1790	1350	1040	770
	24	750	2090	1930	1340	1180	881
	25	750	2080	1290	1330	540	406
	26	745	2070	860	1325	115	868
	27	740	1880	1560	1140	820	720
	28	740	2060	1880	1320	1140	865
	29	750	2080	1595	1330	845	635
	30	745	2080	1925	1335	1180	885
	31	750	2075	1880	1325	1130	854

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1933phae.proj.1230

32	740	2032	1665	1292	925	715
33	740	2070	1240	1330	500	376
34	740	2040	1930	1300	1190	915
35	740	1980	1710	1240	970	782
36	740	2070	1910	1330	1170	880
37	740	2070	1730	1330	990	745
38	730	2045	1870	1315	1140	867
39	730	2070	1585	1340	855	638
40	730	2005	1560	1275	830	650
41	730	2050	1640	1320	910	690
42	730	2040	1870	1310	1140	870
43	730	2065	1760	1335	1030	773
44	720	2060	1150	1340	430	321
45	720	2070	1900	1350	1180	875
46	715	2065	1735	1350	1020	756
47	720	1890	865	1170	145	89
48	720	2050	1620	1330	900	676
50	710	2060	1850	1350	1140	845
51	710	2070	1850	1360	1140	840
52	720	2062	1350	1342	630	468
53	720	2050	1595	1330	875	657
(55) 54	720	2050	1700	1330	920	736
56	710	2052	1750	1342	1040	775
57	710	2070	1840	1360	1130	832
58	715	2080	1605	1365	890	652
59	715	2050	1810	1335	1095	820
60	715	2040	1610	1325	895	671
not very certain 61	710	2040	1785	1330	1075	809
64, 62 min 63	65 705	2100	1705	1395	1000	717
66	720	2040	1870	1320	1150	871
67	720	2070	1945	1350	1225	908

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1933plate.proj.1230M

	68	730	2120	1750	1390	1020	735
	69	780	1970	1820	1240	1090	880
	70	740	2070	1845	1330	1105	831
	71	740	2080	1765	1340	1025	765
RC	73	740	2090	1560	1350	820	607
X	74	735	2110	1655	1375	920	668
	75	730	2120	1380	1390	650	468
	76	730	2120	1550	1390	820	590
78,79	77	730	2140	1830	1410	1100	780
	80	730	2140	950	1410	220	156
	81	730	2160	1580	1430	850	594
	82	730	2130	1940	1400	1210	865
	83	725	2120	1850	1395	1125	806
	84	725	2120	1715	1395	990	710
	85	725	2080	1450	1355	725	535
	86	725	2100	1920	1375	1195	870
	87	720	2080	1830	1370	1110	810
	88	715	2080	1900	1365	1185	870
	89	720	2100	1900	1380	1180	855
	90	720	2090	1705	1370	985	719
	91	720	2010	1710	1290	990	767
93H	92	720	2100	1830	1380	1110	805
	94	710	2110	1890	1400	1180	843
	95	720	2105	1140	1385	420	303
	96	710	2105	1930	1395	1220	875
	97	715	2105	1440	1390	725	5221
	98	715	2070	1700	1355	985	720
	99	715	2120	1840	1405	1125	800
	100	710	2120	1530	1410	820	580
	101	710	2110	1890	1400	1180	844
	102	710	2110	1710	1400	1000	715

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1933phae.proj.12300

103	700	2080	1690	1380	990	717
109	710	2100	820	1390	110	79
104	700	2100	990	1400	290	207
Jan 26	AR 859					
1	655	2480	1682	1825	1027	563
2	665	2490	1790	1825	1125	617
3	670	2480	1660	1810	990	547
4	670	2522	2020	1852	1350	728
5	690	2525	2075	1835	1385	755
6	690	2530	2170	1840	1480	804
7	690	2490	2010	1800	1320	734
11	680	2540	1770	1860	1090	587
12	690	2570	2220	1820	1530	840
13	690	2400	1910	1710	1220	714
14	690	2390	2150	1700	1460	860
15	700	2290	1500	1590	800	503
16	700	2400	2140	1700	1440	118
17	690	2530	1380	1840	590	320
18	690	2570	2380	1880	1690	900
19	700	2450	2330	1750	1630	932
20	700	2430	2330	1730	1630	947
	AR 864					
105	670	2420	920	1750	250	143
106	690	2420	2060	1730	1370	792
107	690	2360	1320	1670	640	383
108	690	2418	1485	1728	795	460
109	690	2440	830	1750	140	80
110	690	2450	2072	1760	1382	786
111	690	2420	2100	1730	1410	815
112	685	2425	2130	1740	1445	830
113	700	2360	1150	1660	450	271

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1999phae.proj.1230M

	114	685	2390	1130	1705	445	261
	115	685	2392	1460	1707	775	454
	116	690	2412	990	1722	300	174
	117	695	2420	2030	1725	1335	774
	118	700	2430	2040	1730	1340	775
120	119	700	2400	1440	1700	740	435
121	120	690	2425	1300	1735	610	352
122	121	700	2420	1656	1720	950	552
	122	710	2430	1950	1720	1240	721
	123	715	2450	2000	1735	1285	740
	124	720	2430	2025	1710	1305	764
	125	720	2460	2230	1740	1510	868
	126	720	2410	2130	1690	1410	835
	127	720	2460	1040	1740	320	184
	128	720	2410	1990	1690	1270	752
	129	725	2410	1782	1685	1057	627
	130	720	2480	1350	1760	630	358
	131	721	2472	1570	1751	849	484
	132	720	2470	2250	1750	1530	875
Jan 30		RR 859	Lyrae				
	1	1121	2850	2070	1729	949	548
	2	1155	2870	2190	1715	1035	604
	3	1155	2870	2070	1715	915	533
	4	1160	2910	2440	1750	1280	732
	5	1170	2920	2480	1750	1310	750
	6	1180	2920	2580	1740	1400	805
	7	1180	2880	2418	1700	1238	728
	8	1170	2910	2705	1740	1535	883
	10	1160	2950	2660	1790	1500	839
	11	1155	2920	2180	1765	1025	582
	12	1170	2720	2460	1550	1290	833

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1933phae.proj.1230

13	1150	2770	2295	1630	1145	703
14	1165	2700	2525	1535	1360	886
15	1150	2642	1900	1492	750	502
16	1150	2770	2500	1620	1350	834
17	1160	2840	1975	1680	815	485
18	1150	2850	2720	1700	1570	925
19	1135	2800	2550	1665	1415	850
20	1140	2780	2650	1640	1510	920
21	1135	2740	2630	1605	1495	930
	AB 864					
1	1110	2662	2330	1552	1220	785
2	1120	2660	2235	1540	1115	724
3	1120	2590	1850	1470	720	496
4	1120	2620	1475	1500	335	237
5	1120	2602	2400	1482	1280	864
6	1112	2613	2440	1501	1328	884
7	1110	2590	2410	1480	1300	878
8	1102	2600	2240	1492	1138	760
9	1100	2580	1920	1480	820	554
10	1105	2500	1170	1395	65	47
11	1110	2570	1762	1460	652	446
12	1100	2600	2295	1500	1195	797
13	1110	2550	2280	1440	1170	813
14	1100	2530	2280	1450	1180	820
15	1080	2485	2190	1405	1110	790
16	1100	2530	1780	1430	680	475
17	1090	2540	1760	1450	670	462
19	1075	2530	1940	1455	865	594
20	1065	2535	1965	1470	900	612
22	1062	2530	2390	1468	1328	905
23	1068	2532	2230	1464	1162	795

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1933phae.proj.123pm

24	1060	2540	2360	1480	1300	878
25	1070	2540	1642	1470	572	389
26	1065	2515	1180	1450	115	794
27	1070	2480	1940	1410	270	617
28	1060	2570	2330	1450	1270	876
29	1060	2540	2000	1480	940	635
30	1060	2520	2370	1460	1310	897
31	1065	2530	2305	1465	1240	846
32	1060	2535	2085	1475	1025	696
33	1070	2530	1610	1460	540	370
34	1075	2510	2360	1455	1305	928
35	1065	2420	2135	1355	1070	790
36	1080	2560	2365	1480	1285	870
37	1075	2560	2160	1485	1085	730
38	1070	2530	2325	1460	1255	860
39	1080	2560	2005	1480	925	625
40	1080	2522	1985	1442	905	627
41	1080	2560	2090	1480	1010	683
42	1072	2560	2330	1488	1258	845
43	1080	2560	2225	1480	1145	774
44	1080	2530	1540	1470	460	313
45	1070	2560	2360	1490	1290	866
46	1075	2540	2185	1565	1110	710
47	1080	2390	1240	1310	160	122
48	1085	2530	2060	1465	975	665
50	1060	2565	2310	1505	1250	830
51	1070	2570	2290	1500	1220	814
52	1070	2540	1750	1470	680	463
53	1075	2565	2020	1490	945	634
54	1080	2460	2110	1380	1030	746
56	1065	2560	2230	1495	1165	780

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1933phae.proj.1230

57	1070	2560	2290	1490	1220	820
58	1070	2570	2035	1500	965	644
59	1060	2550	2305	1490	1245	835
60	1070	2555	2065	1485	995	670
61	1075	↑	2225	1445	1150	795
62	1070	2520	2390	1450	1320	910
63	1060	2580	2410	1520	1350	888
65	1060	2610	2170	1550	1110	716
66	1050	2515	2330	1465	1280	874
67	1065	2550	2390	1485	1325	893
68	1060	2695	2185	1555	1125	724
69	1060	2450	2260	1390	1200	864
70	1060	2550	2275	1490	1215	816
71	1060	2550	2190	1490	1130	760
(72d) 73	1060	2560	1970	1500	910	606
X 74	1060	2360	2080	1300	1020	785
75	1055	2600	1780	1545	725	470
76	1060	2610	1960	1550	900	580
78-79 77	1060	2620	2240	1560	1180	755
80	1050	2612	1295	1562	245	157
81	1050	2620	2000	1570	950	605
82	1050	2590	2385	1540	1335	867
83	1045	2590	2295	1545	1250	808
84	1060	2550	2130	1470	1070	728
85	1055	2540	1830	1485	775	522
86	1040	2570	2375	1530	1335	874
87	1045	2590	2270	1545	1225	793
88	1040	2570	2340	1530	1300	850
89	1050	2560	2340	1510	1290	855
90	1050	2560	2120	1510	1070	710
91	1045	2440	2140	1395	1095	785

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1933phae.proj.123pm

100	1035	2630	1950	1595	915	574
101	1020	2580	2320	1560	1300	834
102	1030	2570	2120	1540	1090	708
103	1030	2540	2095	1510	1065	705
104	1030	2570	1360	1540	330	214
Jan 31	AB 859	sequence				
1	1100	2630	1950	1530	850	555
2	1110	2590	2010	1480	910	615
3	1102	2572	1885	1470	783	533
4	1092	2570	2170	1478	1078	730
5	1090	2585	2219	1495	1129	755
6	1085	2582	2270	1497	1185	793
7	1078	2520	2130	1542	1052	683
10	1065	2590	2520	1525	1255	823
11	1060	2560	1930	1500	270	580
12	1055	2530	2310	1495	1255	840
13	1052	2425	2020	1373	968	705
14	1080	2470	2285	1390	1205	867
15	1100	2380	1740	1280	640	500
16	1088	2462	2233	1374	1145	834
17	1090	2555	1625	1465	535	365
18	1080	2592	2440	1512	1360	898
19	1075	2470	2360	1395	1285	922
20	1060	2460	2360	1400	1300	930
21	1050	2430	2320	1380	1270	920
	AB 868					
2	1030	2530	2170	1500	1140	760
3	1030	2560	1810	1530	780	510
4	1030	2530	2160	1500	1130	754
5	1015	2525	1490	1510	475	314
6	1015	2540	1820	1525	805	528

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1933phae.proj.1230M

	7	1010	2540	2010	1530	1000	654
?	8	1030	2580	860	1550	30	19
—	9	1090	2660	1920	1570	830	528
	10	1100	2650	2340	1550	1240	800
	11	1120	2670	2305	1550	1185	765
	12	1130	2660	1860	1530	730	477
	13	1120	2680	1880	1560	760	487
	14	1120	2680	2150	1560	1030	660
	15	1125	2710	1570	1585	445	281
	16	1140	2700	1930	1560	790	506
	17	1130	2700	2150	1570	1050	670
	18	1140	2720	2310	1580	1170	740
	19	1145	2680	2540	1535	1495	975
	20	1145	2710	2405	1565	1260	805
	21	1150	2692	2330	1542	1280	830
	22	1150	2660	2560	1510	1410	934
	23	1150	2475	1828	1325	678	512
25?	24	1145	2680	2500	1535	1355	883
	26	1080	2670	2115	1590	1035	650
	27	1090	2650	1945	1560	855	548
	28	1095	2660	2000	1565	905	578
	29	1090	2620	2240	1530	1150	753
✓	30	1090	2390	1500	1300	410	316
Feb 1		AB 859	sequence				
	1	668	2261	1562	1593	894	560
	2	681	2250	1660	1599	979	613
	3	682	2275	1550	1593	868	545
	4	685	2300	1875	1615	1190	736
	5	685	2315	1925	1630	1240	760
	6	685	2310	2000	1625	1315	810
	7	690	2270	1860	1580	1170	740

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1933phae.proj.123m

8	680	2290	2100	1610	1420	881
10	682	2330	2060	1648	1378	836
11	680	2330	1650	1550	970	625
12	685	2308	1970	1623	1285	790
13	680	2190	1770	1510	1090	723
14	680	2190	1970	1510	1290	855
15	685	2090	1400	1405	715	508
16	675	2190	1952	1515	1277	842
17	672	2300	1280	1628	608	374
18	675	2320	2160	1645	1485	904
19	670	2220	2110	1550	1440	930
20	680	2220	2090	1540	1410	915
21	670	2192	2070	1522	1400	920
	AB864					
105	640	2170	860	1530	220	144
106	652	2160	1840	1508	1188	788
107	652	2130	1212	1478	560	379
108	660	2160	1360	1500	700	477
109	650	2190	775	1540	125	812
110	650	2190	1880	1540	1230	800
111	650	2170	1910	1520	1260	830
112	660	2175	1905	1515	1245	822
113	650	2150	1060	1500	410	273
114	650	2130	1040	1480	390	264
115	650	2160	1330	1510	680	450
116	650	2150	915	1500	265	177
117	650	2135	1825	1485	1175	792
118	650	2130	1800	1480	1150	777
119	662	2090	1290	1448	648	448
120	640	2140	1162	1500	532	348
121	640	2130	1460	1490	820	550

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1933phae.proj.1230M

122	640	2140	1725	1500	1085	724
123	640	2160	1775	1520	1135	746
124	640	2160	1780	1520	1140	750
125	640	2140	1960	1500	1320	880
126	645	2110	1890	1465	1245	850
127	650	2160	929	1510	279	185
128	640	2132	1750	1492	1110	744
129	632	2170	1580	1538	948	617
130	640	2160	1185	1520	545	358
131	640	2170	1380	1530	740	484
132	642	2210	2000	1568	1358	866
	AB865					
25	630	2310	1840	1680	1210	720
31	630	2280	2142	1650	1513	916
32	630	2300	1430	1670	810	485
33	630	2300	1390	1670	760	452
34	630	2320	2090	1690	1460	864
35	640	2290	1980	1650	1340	812
36	630	2295	1942	1665	1312	788
38	640	2290	2068	1650	1428	865
37	630	2290	2080	1660	1430	874
39	630	2290	2148	1660	1518	915
40	635	2270	1515	1635	880	538
41	625	2280	1940	1655	1315	795
42	630	2310	1030	1680	400	238
43	625	2315	1575	1690	950	562
44	630	2300	1872	1670	1242	745
45	630	2320	2015	1690	1385	820
46	620	2340	1930	1720	1310	763
47	625	2320	1475	1695	850	502
48	628	2305	1472	1677	844	502

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49	625	2305	1880	1670	1255	752	
50	605	2270	1110	1665	505	320	
51	620	2280	2020	1660	1400	843	
52	620	2170	680	1550	060	29	
53	620	2240	1520	1620	900	555	
54	620	2260	1820	1640	1200	732	
55	620	2235	1840	1615	1240	768	
56	615	2230	1990	1615	1375	852	
57	625	2238	1400	1613	775	480	
58	610	2260	2010	1650	1400	848	
59	620	2260	1600	1640	920	597	
60	615	2280	1540	1665	935	556	
61	610	2080	1480	1470	870	592	
62	610	2270	1880	1660	1270	765	
63	600	2270	1920	1670	1320	790	
64	600	2260	1860	1660	1260	760	
65	600	2310	1820	1710	1220	714	
66	608	2320	1680	1712	1072	626	
67	590	2310	2060	1720	1470	855	
68	595	2305	1790	1710	1195	700	
70 69	590	2310	2000	1720	1410	820	
71 74	590	2230	1480	1640	890	543	
72 73 75	590	2110	1870	1520	1280	843	
76	590	1935	1580	1345	990	735	
77	590	2170	1960	1580	1370	868	
78	580	2220	1790	1640	1210	738	
79c 80	575	2200	1210	1625	635	390	
81	580	2215	1240	1635	660	404	
82	580	2230	1870	1650	1290	782	
83	580	2250	1315	1670	735	440	
84	570	2220	1580	1650	1010	613	

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1933phae.proj.1230

Feb 2

AB839 sequence

1	385	2015	1310	1630	925	567
2	420	2025	1420	1605	1000	624
3	430	2030	1310	1600	880	550
4	440	2045	1640	1605	1200	750
5	450	2070	1690	1620	1240	765
6	460	2080	1770	1620	1310	810
7	450	2040	1630	1590	1180	743
10	470	2125	1860	1655	1390	840
11	470	2028	1495	1558	975	626
12	470	2110	1860	1640	1390	848
13	470	1970	1570	1500	1100	733
14	470	1950	1760	1480	1290	872
15	480	1880	1200	1400	720	514
16	480	2000	1765	1520	1285	845
17	480	2100	1090	1620	610	376
18	480	2140	1980	1660	1500	904
19	490	2050	1920	1560	1430	916
20	490	2020	1920	1530	1430	935
21	490	2010	1910	1520	1420	935
	AB 865					
85	485	2160	1750	1675	1265	753
86	490	2140	1880	1650	1390	843
87	490	2120	1110	1630	620	380
88	480	2100	1690	1620	1210	746
89	520	2090	1570	1570	1050	670
90	500	2100	1750	1600	1250	782
91	470	2042	1830	1572	1360	865
92	440	1960	990	1520	550	362
93	470	1990	1605	1590	1205	758
94	410	1960	1690	1550	1280	825
95	390	1920	1660	1530	1270	830

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1933phae.proj.123pm

96c	97	400	2000	1590	1600	1190	745
temp change	98	470	1990	1080	1520	560	368
	99	500	2080	1595	1530	1095	730
	100	540	2050	1240	1510	700	463
	101	520	2065	1520	1545	1000	647
	102	480	2100	1505	1620	1025	633
104a	103	470	2090	1570	1620	1100	678
107	108	460	2032	1360	1572	900	571
	109	470	2015	1870	1545	1400	906
	110	470	1990	610	1520	140	92
	104	450	2050	1225	1600	775	484
	105	460	1800	1550	1340	1090	815
	106	460	2045	1520	1585	1060	670
	107	470	2050	1665	1580	1195	756
	70	475	2095	1870	1620	1395	862
	71	470	2110	1900	1640	1430	873
	72	485	2070	1360	1585	875	552
	73	490	2040	1190	1550	700	452
	8	535	2120	1405	1585	870	549
			RB 864				
	78	535	2025	1690	1470	1135	772
	79	560	2010	1810	1450	1250	863
	79	530	2020	1810	1470	1260	858
	78	560	2060	1710	1500	1150	767
	1	550	1935	1680	1385	1130	816
	3	560	1945	1260	1385	700	505
	6	570	1950	1815	1380	1245	904
	2	560	1990	1610	1430	1050	735
Feb 5			RB 859				
	1	930	2660	1910	1730	980	566
	2	960	2700	2030	1740	1070	615

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3	970	2700	1910	1730	940	543	
4	970	2720	2260	1750	1290	737	
5	980	2730	2315	1750	1335	763	
6	980	2760	2410	1780	1430	804	
7	990	2720	2260	1730	1270	735	
10	985	2830	2490	1845	1505	816	
11	990	2790	2040	1800	1050	584	
12	980	2810	2520	1830	1540	842	
13	1010	2660	2205	1650	1195	725	
14	1000	2610	2410	1610	1410	876	
15	980	2560	1280	1580	1300	823	
16	990	2670	2420	1680	1430	852	
17	1010	2760	1670	1750	660	377	
18	990	2830	2640	1840	1650	896	
19	990	2720	2590	1730	1600	925	
20	990	2720	2580	1730	1590	920	
21	990	2670	2540	1680	1550	924	
	AB865						
111	965	2730	1115	1765	250	142	
112	970	2710	2365	1740	1395	802	
113	970	2690	2380	1720	1410	820	
114	980	2710	2395	1730	1415	818	
115	975	2660	1690	1685	715	425	
116	960	2675	2455	1715	1495	872	
c.2 117	960	2700	2280	1740	1320	760	
118	960	2730	2290	1770	1330	752	
119	960	2790	1650	1830	690	377	
121	960	2660	980	1700	020	12	
120	960	2790	2530	1830	1570	860	
122	960	2740	2370	1780	1410	793	
123	955	2710	2140	1755	1185	675	

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	124	940	2660	2385	1720	1445	840
	125	940	2640	2360	1700	1420	835
	126	940	2610	2060	1670	1120	670
	127	930	2590	2200	1660	1270	766
	128	900	2630	2360	1730	1460	845
130	129	890	2650	1880	1760	990	562
131	132	870	2640	1175	1770	305	172
	133	870	2600	1185	1730	315	182
	134	850	2560	2310	1710	1460	854
	135	840	2530	1060	1690	200	118
	136	850	2480	1190	1630	340	208
	137	845	2520	2160	1675	1315	785
	138	840	2520	1710	1680	870	518
	139	840	2512	1540	1672	700	418
	140	840	2500	1275	1660	435	262
	141	830	2380	2110	1550	1280	827
	142	830	2580	2210	1750	1380	790
	144	840	2465	2250	1625	1410	870
	145	830	2460	1270	1630	440	270
	146	820	2440	1745	1620	985	590
C	147	820	2380	1590	1560	770	494
	148	825	2460	2060	1635	1235	755
	149	825	2460	2080	1635	1255	770
	150	820	2460	2170	1640	1350	824
	157	820	2490	1330	1670	510	305
	152	820	2520	1350	1680	530	316
	153	820	2460	2260	1640	1440	878
	154	820	2480	2275	1660	1455	876
	155	825	2510	1620	1685	795	472
157	156	830	2520	1980	1690	1150	680
158	160	820	2500	1165	1680	345	205
159							

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161	810	2450	1540	1640	730	445	
162	810	2430	2190	1620	1380	852	
163	810	2420	1950	1610	1140	710	
164	810	2370	2170	1560	1360	872	
165	800	2480	2270	1680	1470	875	
166	790	2420	2190	1630	1400	860	
167	800	2450	1650	1650	850	515	
168	800	2430	1785	1630	985	605	
169	810	2440	2170	1630	1360	835	
70	810	2430	1840	1620	1030	636	
S 171	810	2420	1720	1610	910	565	
172	810	2420	2000	1610	1190	740	
173	810	2430	1950	1620	1140	704	
N 171	800	2410	1830	1610	1030	640	
S 171	800	2430	1720	1630	920	564	
174	800	2410	1510	1610	710	440	
175	810	2410	2080	1600	1270	795	
176	810	2450	1700	1640	890	543	
177	820	2440	2040	1620	1220	754	
178	780	2420	1950	1640	1170	714	
179	800	2390	1610	1590	810	510	
180	800	2450	1990	1650	1190	722	
181	800	2450	2300	1650	1500	910	
182	790	2435	2230	1645	1440	875	
184 183	800	2450	2070	1650	1270	770	
185	790	2450	1420	1660	630	379	
186	800	2480	1750	1680	950	565	
187	800	2460	1130	1660	330	199	
190 188	790	2470	2180	1680	1390	827	
191	790	2480	2050	1690	1260	746	
192	800	2405	910	1605	110	69	

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1933phae.proj.123am

193	800	2430	2190	1630	1390	854
194	800	2430	2185	1630	1385	850
195						
Feb 6 1924	AB 865					
70	700	2450	2170	1750	1470	840
71	720	2440	2180	1730	1460	850
72	720	2415	16321	1695	912	538
73	720	2280	1435	1560	715	458
104	710	2410	1510	1700	800	470
105	710	2105	1860	1395	1150	825
106	720	2385	1820	1665	1100	662
107	720	2390	1950	1670	1230	737
130	720	1380	2015	1660	1295	780
131	730	2030	1870	1300	1140	878
157	745	2350	2060	1605	1315	820
158	770	2330	2100	1580	1330	842
Feb 7		AB 859	Sequence			
1	840	2590	1800	1750	960	548
2	850	2610	1910	1760	1060	603
3	830	2600	1785	1770	955	540
4	830	2610	2140	1780	1310	736
5	830	2600	2170	1770	1340	758
6	820	2600	2260	1720	1440	810
7	820	2570	2100	1750	1280	733
10	820	2630	2300	1710	1480	865
11	820	2595	1870	1775	1050	592
12	810	2620	2330	1810	1520	840
13	810	2460	2000	1650	1190	721
14	800	2420	2000	1620	1400	865
15	800	2330	1578	1530	778	508
16	800	2440	2180	1640	1380	842
17	800	2530	1450	1730	650	376

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18	785	2570	2400	1785	1615	905
19	790	2470	2340	1680	1550	923
21	800	2420	2320	1620	1520	938
20	800	2470	2340	1670	1540	923
	AB865					
21	780	2610	2150	1830	1370	750
3	790	2590	1725	1800	935	520
4	790	2600	2170	1810	1380	763
5	780	2590	1360	1810	580	320
6	780	2600	1750	1820	970	533
7	780	2590	2320	1810	1540	852
8	780	2540	1740	1760	960	545
9	770	2610	1750	1840	980	533
10	780	2590	2260	1810	1480	818
11	780	2560	2170	1780	1390	781
12	775	2580	1640	1805	865	480
13	770	2565	1680	1795	910	507
14	770	2550	2000	1780	1230	692
15	770	2600	1290	1830	520	284
16	760	2600	1670	1840	910	494
17	755	2580	1935	1805	1180	654
18	760	2570	2130	1810	1370	758
19	760	2530	2400	1790	1640	916
20	770	2570	2140	1800	1470	817
21	760	2540	2140	1780	1380	775
22	770	2560	2390	1790	1620	905
23	765	2520	1590	1755	825	470
24	770	2525	2330	1755	1560	890
25	750	2520	2035	1780	1285	722
26	770	2580	1975	1810	1205	666
27	770	2540	1760	1770	990	560

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28	760	2600	1810	1840	1050	572
29	760	2560	2130	1800	1370	762
30	770	2540	1250	1770	480	271
31	760	2545	2340	1785	1580	886
32	760	2550	1620	1790	860	480
33	760	2550	1560	1790	800	447
34	750	2550	2300	1800	1550	862
35	760	2560	2160	1800	1400	778
36	740	2530	2118	1790	1378	775
37	740	2510	2270	1770	1530	865
38	750	2510	2290	1760	1540	875
39	740	2520	2360	1780	1620	910
40	740	2480	1680	1740	940	540
41	725	2490	2130	1765	1405	796
42	720	2480	1160	1760	440	250
43	730	2500	1730	1770	1000	565
44	730	2490	2060	1760	1330	756
45	720	2490	2210	1770	1490	842
46	710	2540	2125	1830	1415	774
47	720	2530	1630	1810	910	503
48	715	2500	1625	1785	910	510
49	720	2520	2050	1800	1330	740
50	710	2450	1250	1740	540	310
51	710	2415	2210	1705	1500	880
52	720	2440	780	1720	060	35
53	710	2420	1660	1710	950	555
54	700	2400	1980	1700	1280	753
55	710	2450	1980	1740	1270	730
56	710	2430	2095	1720	1325	805
57	710	2410	1520	1700	810	477
58	720	2420	2180	1700	1460	860

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1933phae.proj.1230M

59	710	2290	1745	1580	1035	655	
60	710	2450	1705	1740	995	572	
61	715	2440	1620	1725	905	525	
62	720	2460	2060	1740	1340	770	
63	720	2445	2090	1725	1370	795	
64	730	2480	2030	1750	1300	744	
65	730	2470	2020	1740	1290	742	
66	730	2500	1860	1770	1130	640	
67	730	2490	2230	1760	1500	853	
68	730	2520	1978	1790	1248	697	
69	735	2540	2200	1805	1465	812	
70	730	2500	2250	1770	1520	860	
71	735	2570	2265	1775	1530	862	
72	730	2490	1690	1760	960	545	
73	725	2450	1460	1725	735	426	
74	730	2440	1660	1710	930	544	
75	730	2410	2060	1680	1330	792	
76	730	2340	1760	1610	1030	640	
77	730	2410	2160	1680	1430	852	
78	740	2460	1970	1720	1230	715	
Fld 9	AB 865						
79	960	2890	2260	1930	1300	674	
80	990	2890	1730	1900	740	389	
81	990	2890	1760	1900	770	405	
82	990	2900	2500	1910	1510	790	
83	1000	2940	1840	1940	840	433	
84	990	2930	2170	1940	1180	608	
86	85 1000	2950	2465	1950	1465	752	
88	87 1010	2870	1730	1860	720	387	
	89 1000	2900	2210	1900	1210	638	
	90 1010	2880	2550	1870	1540	825	

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1933phae.proj.1230w

	91	1000	2850	2590	1850	1590	860
	92	1010	2850	1410	1840	400	217
	~~93~~	~~1010~~	~~2820~~	~~2380~~			
	94	1010	2820	2510	1810	1500	830
	93	1010	2800	2370	1790	1360	760
	95	1010	2800	2480	1790	1470	821
96c	97	1020	2825	2370	1805	1350	748
	98	1025	2800	1656	1775	631	356
	99	1025	2800	2240	1775	1215	685
	100	1025	2760	1860	1735	835	480
	101	1020	2780	2160	1760	1140	648
	102	1020	2890	2150	1870	1130	605
	103	1030	2910	2290	1880	1260	670
	105	1035	2890	1910	1855	875	472
	106	1030	2860	2270	1830	1240	678
	107	1040	2900	2420	1860	1380	743
	108	1050	2870	2060	1820	1010	555
	109	1045	2830	2650	1785	1605	900
	110	1050	2800	1205	1750	155	89
	111	1050	2790	1198	1740	148	85
	112	1050	2810	2460	1760	1410	802
	113	1060	2810	2490	1750	1430	818
	114	1060	2820	2490	1760	1430	813
	115	1070	2790	1786	1720	716	417
	116	1070	2840	2580	1770	1510	855
	117	1070	2850	2430	1780	1360	765
	118	1080	2890	2470	1810	1390	768
120	119	1080	2900	1800	1820	720	396
121	122	1075	2860	2560	1785	1485	832
	123	1080	2910	2290	1830	1210	662
	124	1080	2820	2530	1740	1450	835

done

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125	1070	2790	2500	1720	1430	832	
126	1080	2790	2230	1710	1150	673	
127	1080	2810	2340	1730	1260	730	
128	1080	2850	2540	1770	1460	825	
129	1090	2790	2070	1700	980	576	
130	1080	2920	2540	1840	1460	794	
131	1090	2720	2360	1630	1270	780	
132	1090	2900	2420	1810	1330	735	
133	1095	2790	1700	1695	605	357	
134	1080	2860	2540	1780	1460	820	
135	1085	2830	1285	1745	200	114	
136	1080	2790	1405	1710	325	190	
137	1070	2815	2405	1745	1335	765	
138	1060	2790	1910	1730	850	490	
139	1050	2770	1755	1720	705	410	
140	1050	2780	1490	1730	440	254	
141	1050	2860	2400	1810	1350	745	
142	1080	2850	2510	1770	1430	810	
143	1070	2840	2530	1770	1460	825	
144	1075	2840	2605	1765	1530	868	
145	1080	2840	1545	1760	465	264	
146	1050	2760	2020	1680	940	560	
147	1080	2740	1880	1660	800	482	
148	1080	2760	2335	1680	1255	742	
149	1080	2770	2350	1690	1270	752	
150	1080	2780	2450	1700	1370	805	
151	1080	2790	1610	1710	530	310	
152	1080	2820	1610	1740	530	305	
153	1100	2820	2580	1720	1420	860	
154	1100	2855	2610	1755	1510	860	
155	1110	2800	1912	1690	802	474	

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1933phae.proj.1230M

156	1070	2850	2245	1780	1175	660
157	1060	2850	2530	1790	1470	822
158	1070	2850	2600	1780	1530	860
done	AB 8-7	Sequence +		unknown *		
1,2,3,5,6,7,2-4	390	2280	2520	1890	2130	
8	395	2420	870	2025	475	232
9	395	2420	560	2025	165	81
10	400	2420	880	2030	480	248
11	390	2380	2110	1990	1720	864
12	390	2410	2220	2020	1830	905
13	390	2410	2190	2020	1800	892
(14)	390	2420	1320	2030	930	458
15	380	2360	960	1980	580	293
16	360	2370	1780	2010	1420	706
17	330	2380	1680	2050	1350	659
18	360	2280	2180	1930	1820	950 ✓
19	350	2220	1850	1870	1500	803
20	310	2230	1490	1920	1180	615
(21)	320	2230	940	1910	620	324
22	310	2290	1280	1980	970	490
23	320	2260	420	1940	110	57
24	320	2250	1340	1930	1020	530
25	320	2210	1970	1890	1650	873
26	330	2280	1800	1950	1470	755
27	340	2290	1930	1950	1590	816
28	340	2250	700	1910	360	189
29	320	2210	1170	1890	850	450
30c 31	320	2240	1540	1920	1220	635
32	320	2180	1810	1860	1490	802
33	310	2210	1870	1900	1560	820
34	310	2230	1870	1920	1560	813

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1933phae.proj.1230M

	35	310	2230	2040	1920	1730	900
	36	320	2220	1340	1900	1020	537
	37	310	2240	490	1930	180	73
	38	320	2240	1730	1920	1410	735
	39	320	2220	1810	1900	1490	785
	40	330	2200	1380	1870	1050	562
	41	320	2160	1850	1840	1530	832
	42	320	2140	1960	1820	1640	901
	43	330	2160	1450	1830	1120	613
45, 46, 47	44	320	2160	1840	1840	1520	826
	48	320	2220	940	1900	620	326
	49	330	2180	1610	1850	1280	693
	50	330	2150	1920	1820	1590	875
	51	340	2160	1860	1820	1520	835
	52	340	2220	1710	1880	1370	730
	53	340	2230	2000	1890	1660	880
	54	350	2230	820	1880	470	250
56	55	340	2210	1920	1870	1580	845
	57	340	2240	670	1900	350	184
	58	340	2260	1660	1920	1320	688
	59	340	2270	1760	1930	1620	840
	60	360	2250	2090	1890	1730	915 ✓
	61	380	2250	2090	1870	1710	915
	62	380	2190	1920	1810	1540	850
	63	390	2200	1790	1810	1400	773
	65	390	2220	2030	1830	1640	897
	64	390	2210	1410	1820	1020	561
	66	380	2250	1060	1970	680	345
	67	390	2280	2080	1890	1690	895
Ft 14	68	1235	2780	1390	1545	155	105
	69	1210	2700	2600	1490	1390	933

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1933phae.proj.1220m

	70	1180	2680	2450	1500	1270	846
72ff	71	1130	2590	2500	1460	1370	940
	73	1100	2520	2340	1420	1240	868
	74	1090	2500	2200	1410	1110	788
76ff	75	1060	2480	2180	1420	1120	790
	77	1030	2480	2030	1450	1000	690
78 ←	85	1005	2510	2400	1505	1395	926
	86	1000	2480	2030	1430	1030	696
	87	980	2480	2355	1500	1375	916
	88	960	2480	2290	1520	1330	875
	89	960	2410	1150	1450	190	131
	90	940	2380	2280	1440	1340	930
	91	930	2370	2170	1440	1240	860
	92	920	2280	2150	1360	1230	905
	93	920	2180	1780	1260	860	683
	94	900	2290	2060	1390	1160	835
	95	900	2290	2120	1390	1220	878
	96	890	2290	2190	1400	1300	928
	97	890	2380	1540	1490	650	437
	98	890	2370	1705	1480	815	550
	99	890	2340	1870	1450	980	675
	100	870	2350	2210	1475	1335	905
102ff	101	870	2350	2120	1480	1250	845
	103	860	2310	2190	1450	1330	916
	104	860	2260	1500	1400	640	457
	105	860	2260	980	1400	120	86
	106	850	2330	2180	1480	1330	900
	107	830	2340	2230	1490	1380	926
	108	860	2310	2000	1450	1140	786
110ff	109	860	2260	2140	1500	1280	852
	111	850	2380	1640	1530	790	516

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1933phae.proj.12300

	112	850	2380	1850	1530	1000	654
114f	113	850	2330	1810	1480	960	648
	115	850	2270	2140	1420	1290	910
	116	860	2310	2110	1490	1250	840
	117	870	2340	1890	1470	1020	694
	118	870	2380	2120	1510	1350	895
	119	860	2390	1780	1530	920	600
	120	860	2390	1130	1530	270	177
	121	860	2380	2230	1520	1370	900
	122	860	2380	2100	1520	1240	815
	123	860	2360	1970	1500	1110	740
	124	860	2360	2090	1500	1230	820
	125	860	2380	2100	1520	1240	816
	126	850	2320	2220	1470	1370	932
	127	860	2330	2210	1490	1350	906
	128	860	2280	2010	1420	1150	810
	129	840	2300	1350	1460	510	349
	130	850	2300	1970	1450	1120	773
133	~~132~~	840	2370	895	1530	55	36
	1	840	2310	1770	1470	930	632
	2	840	2320	1705	1480	865	584
	3	840	2330	2130	1490	1290	866
	5	840	2290	2060	1450	1220	842
	6	850	2300	1230	1450	320	262
	7	850	2250	910	1400	060	43
	8	860	2280	1200	1420	340	239
	9	865	2280	990	1415	125	88
	45	860	2270	1780	1360	920	676
	46	880	2280	1890	1400	1010	723
	47	870	2260	2040	1380	1160	840
	56	870	2280	1080	1400	200	143
	110	880	2410	1320	1530	440	288

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1933phae.proj.1220m

Feb 15, 1933 AB 851

Faire	4	310	2350	2130	2040	820	400
	8	330	2270	785	1940	455	234
	9	330	2260	490	1930	160	83
	10	310	2260	770	1950	460	236
	11	315	2220	1950	1905	1635	860
	12	310	2260	2060	1950	1750	898
	13	320	2270	2050	1950	1730	887
	14	310	2280	1790	1970	1480	752
	15	310	2230	870	1920	560	292
	16	310	2230	1660	1920	1350	704
	17	310	2230	1570	1920	1260	657
	18	310	2240	2060	1930	1750	907
	19	310	2220	1780	1910	1470	770
	20	300	2140	1440	1840	1140	620
	21	290	2175	1880	1885	1590	845
	22	270	2200	1210	1930	940	487
	23	280	2180	990	1900	110	578
	24	280	2180	1270	1900	990	520
	25	280	2120	1900	1840	1620	880
	26	300	2210	1730	1910	1430	750
	27	300	2210	1870	1910	1570	822
	28	290	2190	640	1900	350	184
20c	29	280	2130	1110	1850	830	448
	31	270	2140	1470	1870	1200	642
	32	270	2110	1740	1840	1470	800
	33	290	2140	1790	1850	1500	812
	34	270	2160	1820	1890	1550	820
	35	280	2160	1980	1880	1700	905
	36	270	2140	1250	1870	980	524
	37	270	2130	410	1860	140	753
	38	260	2090	1630	1830	1370	750

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1933phae.proj.1230

	39	240	2090	1690	1850	1450	785
	40	250	2080	1280	1830	1030	523
	41	240	1810	1690	1570	1450	924
	42	230	2030	1830	1800	1600	890
	43	240	2020	1330	1780	1090	613
45.46.47	44	235	2080	1710	1845	1475	800
	48	230	2040	830	1810	600	332
	49	230	2010	1450	1780	1220	685
	50	220	1990	1720	1770	1500	848
	51	220	1980	1690	1760	1470	835
	52	210	2050	1550	1840	1340	728
	53	210	2060	1840	1850	1630	881
	54	210	2060	670	1850	460	248
56	55	190	2030	1760	1840	1570	854
	57	170	2060	520	1890	350	185
	58	180	2040	1460	1860	1280	688
	59	170	2010	1730	1840	1560	848
	60	150	1970	1810	1820	1660	913
	61	160	1930	1800	1770	1640	926
	62	150	1910	1640	1760	1490	846
	63	150	1910	1300	1760	1150	654
	64	140	1900	1130	1760	990	563
	65	150	1920	1720	1770	1570	888
	66	140	2010	780	1870	640	342
	67	140	2000	1750	1860	1610	866
	68	140	1990	340	1850	200	108
	69	140	1970	1850	1830	1710	935
71,72	70	140	2010	1780	1870	1640	878
	77	140	1980	1400	1840	1260	685
	85	140	2030	1870	1890	1730	916
	86	160	2000	1450	1840	1290	700

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1933phae.proj.1210pm

	87	140	2060	1870	1920	1730	900
	88	160	2060	1840	1900	1680	884
	89	150	2010	410	1860	260	140
90ff	91	130	1950	1695	1820	1565	860
	92	140	1970	1690	1830	1550	846
	93	140	1940	1220	1800	1080	600
	94	140	1920	1620	1780	1480	832
	95	150	1960	1730	1810	1580	874
	96	140	1970	1810	1830	1670	914
	97	150	2050	990	1900	840	443
	98	150	2050	1190	1900	1040	548
	99	150	2040	1160	1890	1010	535
	100	150	2050	1850	1900	1700	895
102ff	101	150	2050	1760	1900	1610	848
Feb 16'34	103	1190	2870	2740	1680	1550	923
	104	200	2820	1930	1620	730	450
	105	1190	2820	1340	1630	150	92
	106	1190	2870	2700	1680	1510	900
	107	1180	2880	2780	1700	1600	943
	108	1190	2880	2500	1690	1310	775
	109	1190	2910	2670	1720	1480	862
110	111	1180	2910	2110	1730	930	537
	112	1190	2920	2330	1730	1140	660
	113	1180	2870	2280	1690	1100	650
	114	1180	2820	2720	1640	1540	940
	115	1170	2830	2690	1660	1520	915
	116	1180	2890	2640	1710	1460	855
	117	1180	2880	2360	1700	1180	695
	118	1180	2930	2740	1750	1560	893
	119	1180	2980	2250	1800	1070	595
	120	1180	2000	1490	1820	310	170

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1933phae.proj.1230

121	1170	2980	2800	1810	1630	900
122	1180	2980	2640	1800	1460	812
123	1170	2920	2490	1750	1320	735
124	1180	2950	2610	1770	1430	818
125	1180	2960	2640	1780	1460	820
126	1190	2900	2780	1710	1590	930
127	1180	2920	2790	1740	1610	925
128	1190	2880	2560	1690	1370	810
129	1200	2910	1790	1710	590	345
130	1200	2890	2500	1690	1300	770
133	1180	2980	1240	1800	60	33
1	1180	2920	2150	1740	1070	615
2	1180	2910	2170	1730	990	572
3	1180	2890	2680	1710	1500	878
5	1180	2860	2490	1670	1420	850
6	1190	2880	1640	1690	1450	860
7	1180	2870	1240	1690	60	36
8	1180	2840	1580	1660	400	240
9	1180	2830	1330	1650	150	91
45	1180	2610	2240	1430	1060	740
46	1180	2780	2340	1600	1160	725
47	1180	2790	2510	1610	1330	826
56	1190	2800	1410	1610	220	137
110	1180	2950	1700	1770	510	288
Feb 21		RB853				
1	2	865	2725	2290	1860	1425	766
	3	875	2740	1278	1865	393	210
	4	880	2735	2365	1855	1485	800
	5	880	2720	2025	1840	1145	622
	6	880	~~2480~~ 2710	890	1830	10	5
	7	870	2720	1650	1870	800	428

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1933phae.proj.12

8	870	2700	2470	1830	1600	875
9	875	2730	2570	1855	1635	882
10	930	2750	2450	1820	1530	835
11	965	2720	1190	1755	225	128
12	955	2810	2675	1855	1720	928
13	970	2810	1870	1840	900	488
14	980	2780	2090	1800	1110	616
15	990	2710	2040	1720	1050	610
16	990	2740	2430	1750	1440	824
17	1000	2740	2500	1740	1500	863
18	1000	2800	2620	1800	1620	900
19	1000	2750	2520	1750	1520	870
20	1000	2775	2570	1775	1510	851
21	1000	2770	2640	1770	1640	926
22	990	2760	2220	1770	1230	695
23	980	2775	2300	1795	1320	735
24	970	2760	2605	1790	1635	914
1	960	2780	2355	1820	1395	768
Mar 12	851					
4	785	1480	1400	695	615	885
8	790	1450	940	660	150	228
9	790	1445	850	655	060	92
10	~~880~~	1460	960	660	160	242
11	790	1460	1365	690	575	834
12	800	1480	1410	680	610	896
13	800	1490	1415	690	615	890
14	790	1500	1330	710	440	620
15	790	1490	1000	700	210	300
16	800	1490	1280	690	480	696
17	800	1500	1255	700	455	650
28	800	1460	930	660	130	197

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1933phae.proj.1230m

48	800	1460	1020	660	220	334
49	800	1440	1240	640	440	688
37	790	1480	850	690	060	87
	833					
2	790	1590	1400	800	610	763
3	800	1600	970	800	170	212
4	800	1610	1440	810	640	790
5	800	1600	1290	800	490	613
6	800	1570	810	770	010	13
7	800	1610	1130	810	330	408
18	800	1610	1500	810	700	864
9	800	1610	1530	810	730	900
10	800	1580	1430	780	630	808
11	800	1500	900	700	100	143
12	800	1590	1530	790	730	924
13	800	1600	1170	800	370	463
14	800	1580	1260	780	460	090
15	800	1520	1250	740	450	608
16	800	1540	1410	740	610	825
17	800	1540	1430	740	630	852
18	800	1580	1490	780	690	895
19	800	1540	1450	740	650	878
20	800	1570	1440	770	640	830
21	800	1580	1490	760	690	908
22	790	1560	1310	770	520	675
23	790	1560	1350	770	560	728
24	800	1570	1470	770	670	870
21	790	1560	1360	770	570	740
Mar 15		21				
8	900	2140	1190	1240	290	234
9	900	2140	1010	1240	110	89

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1933phae.proj.1210m

10	910	2130	1180	1220	270	222	
11	900	2130	1930	1230	1030	838	
12	900	2110	2190	1210	1290	(938)	
14	910	2160	1840	1250	930	744	
15	910	2110	1260	1200	350	292	
18	910	2130	2030	1270	1120	883	
19	900	2080	1850	1170	940	804	
21	910	2100	1910	1190	1000	840	
24	890	2100	1530	1210	640	530	
28	890	2100	1110	1210	220	182	
35	890	2090	1970	1200	1080	900	
	1852						
2	890	2120	1670	1230	780	634	
3	890	2090	990	1200	100	83	
4	890	2060	1910	1170	1020	873	
5	890	2080	1960	1190	1070	900	
6	890	2130	1450	1240	560	452	
7	890	2130	1475	1240	585	472	
8	900	2110	1410	1210	510	421	
9	900	2110	1510	1210	610	504	
10	900	2120	1030	1220	130	107	
11	900	2100	1770	1200	870	725	
12	900	2100	1900	1200	1000	834	
13	900	2100	1950	1200	1050	875	
14	910	2100	1970	1190	1060	890	
15	910	2110	1770	1200	860	716	
16	900	2160	1585	1260	665	547	
18	900	2130	1150	1230	250	205	
19	900	2100	1720	1200	820	684	
20	900	2100	1870	1200	970	808	
21	900	2110	1840	1210	940	776	

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1933phae.proj.1230M

	22	910	2110	1950	1200	1040	866
	23	900	2130	1480	1230	580	472
	24	900	2100	1930	1200	1030	860
	25	900	2060	1160	1160	260	224
	26	900	2060	1910	1160	1010	870
	27	890	2070	1590	1180	700	593
	28	890	2060	1630	1170	740	633
	29	900	2080	1140	1180	240	204
31	30	900	2080	960	1180	060	51
	32	890	2160	2010	1270	1120	883
	33	900	2160	1760	1260	860	683
	34	900	2100	1820	1200	920	766
	35	900	2080	1270	1180	370	314
	36	890	2080	1570	1190	630	570
38, 39?	37	890	2080	1940	1190	1030	866
	40	880	2090	1750	1210	870	720
	41	890	2090	1900	1200	1010	843
	42	890	2060	1660	1170	770	658
	43	890	2080	1700	1190	810	680
	44	890	2060	1470	1170	580	495
46	45	890	2170	2010	1280	1120	875
	47	890	2160	2030	1270	1140	900
	48	890	2180	2030	1290	1160	900
	49	900	2160	2030	1260	1130	896
50 spot	51	890	~~2090~~ 2100	1840	1210	950	785
	52	890	2100	1330	1210	440	364
	53	890	2120	1940	1230	1050	855
	54	890	2090	1960	1200	1070	893
	55	890	2180	1700	1290	810	628
	56	900	2160	1870	1260	970	770
	57	900	2190	1700	1290	800	620

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1933phae.proj.12inch

Mar 16		DB 851					
	8	830	~~2390~~ 2130	1190	1300	360	277
	9	830	2130	930	1300	100	77
	10	830	2110	1130	1280	300	234
	11	825	2120	1920	1295	1095	846
	13	830	2110	1990	1280	1160	906
	14	830	2150	1830	1320	1000	758
	15	830	2120	1200	1290	370	287
	18	820	2130	2010	1310	1190	910
	19	820	2070	1800	1250	990	792
	21	820	2060	1900	1240	1080	870
	24	820	2130	1490	1310	670	512
	28	820	2170	1060	1310	240	183
	~~25~~	815	2120	1990	1305	1175	902
	37	815	2120	930	1305	115	882
	48	810	2110	1250	1300	440	338
		AB 852					
58	~~58~~ 59	810	2350	1120	1540	310	202
	60	820	2320	1780	1500	960	640
	61	820	2320	1260	1500	440	294
	62	820	2260	1920	1440	1100	764
	63	820	2260	1640	1440	820	570
	64	820	2260	1200	1440	380	264
	65	820	2240	1440	1420	620	446
	66	820	2240	1890	1420	1070	754
	67	820	2310	2100	1490	1280	860
	68	820	2270	2070	1450	1250	863
	69	820	2260	2090	1440	1270	883
71,	70	~~810~~					
	1	810	2110	1660	1300	850	604
	17	810	2250	1220	1440	410	275

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1933phae.proj.1230M

31	810	2200	1990	1390	1180	850
46	810	2230	1820	1420	1010	712
58	820	2190	990	1370	170	124
	AB 851					
1	800	2190	1640	1390	840	604
2	810	2190	1580	1380	770	558
3	810	2190	2000	1380	1190	863
4	810	2190	2010	1380	1200	870
5	810	2130	1940	1320	1130	856
6	810	2170	1140	1360	330	242
7	800	2170	850	1370	050	365
Mar 19	AB 85-1					
8	840	1730	1050	890	210	236
9	850	1740	920	890	070	79
10	850	1740	1050	890	200	225
11	850	1730	1600	880	750	854
12	850	1730	1640	880	790	898
13	850	1730	1640	880	790	898
14	850	1750	1530	900	680	755
15	850	1720	1502	870	652	748
18	850	1740	1660	890	710	798
19	850	1680	1520	830	670	807
21	850	1710	1580	860	730	850
24	~~805~~	~~1720~~	~~1010~~			
28	845	1720	1010	875	165	189
35	850	1720	1620	870	770	885
37	850	1710	920	860	070	81
48	850	1710	1482	860	632	735
1	845	1770	1410	925	565	611
2	860	1780	1370	920	510	555
3	860	1780	1660	920	800	870
7	860	1730	890	870	030	34

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AB 85-21

	2	840	1740	1420	900	580	645
	3	860	1720	930	860	070	81
	4	860	1690	1590	830	730	880
	5	860	1710	1620	850	760	895
	6	860	1740	1260	880	400	455
	7	865	1760	1290	895	425	475
	8	870	1750	1238	880	368	418
	9	890	1780	1330	890	440	494
	10	900	1790	990	890	090	101
	11	900	1760	1535	860	635	738
	12	900	1780	1630	880	730	830
	13	910	1790	1670	880	760	865
	14	910	1790	1690	880	780	886
	15	910	1790	1330	880	420	477
	16	910	1810	1400	900	490	545
Nov	18	910	1810	1090	900	180	200
	19	915	1790	1520	875	605	692
	20	920	1790	1640	870	720	878
	21	915	1800	1600	885	685	774
	22	920	1800	1690	880	770	875
	23	920	1820	1350	900	430	477
	24	920	1800	1650	880	730	830
	25	920	1770	1120	850	200	236
	26	920	1760	1660	840	740	881
	27	920	1785	1440	865	520	600
	28	920	1780	1470	860	550	640
	29	925	1790	1100	865	175	202
Dec	30	925	1810	970	885	045	~~0851~~
	32	930	1870	1760	940	820	884
	33	930	1870	1570	940	640	681

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	34	930	1810	1620	880	690	785
	35	930	1810	1210	880	280	318
	36	930	1810	1430	880	500	568
	37	930	1820	1680	890	750	844
	40	925	1830	1580	905	655	724
	41	930	1830	1690	900	760	845
	42	930	1810	1510	880	580	660
	43	940	1830	1550	890	610	685
X	44	940	1830	1875	890	935	
46	45	935	1890	1770	955	835	875
	47	930	1900	1790	970	860	887
March 20 AB 851 Sequence	1	920	1850	1490	930	570	613
	2	930	1850	1442	920	512	556
	3	925	1840	1715	915	790	864
	4	920	1860	1740	940	820	873
	5	930	1830	1670	900	740	823
	6	930	1850	1160	920	230	250
	7	930	1820	970	890	040	45
	9	930	1820	1002	890	072	81
	10	930	1820	1130	890	200	225
	11	930	1800	1670	870	740	850
	12	925	1810	1710	885	785	886
	13	920	1820	1715	900	795	884
	14	920	1810	1580	890	660	742
	15	910	1780	1160	870	250	288
	17	900	1790	1480	890	580	651
	18	910	1790	1700	880	790	898
	19	910	1790	1580	880	660	750
	20	915	1770	1430	855	515	603
	24	920	1780	1380	860	460	535
	29	920	1780	1200	860	380	442
	28	915	1800	1090	885	175	198

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AB 85-2

	48	910	1860	1770	950	860	905
	49	920	1850	1760	930	840	904
	50	910	1810	1660	900	750	834
	51	920	1810	1590	890	670	754
	52	920	1810	1235	890	315	354
	53	920	1810	1690	890	770	865
	54	910	1790	1700	880	790	898
	55	910	1870	1490	960	580	605
	56	915	1850	1650	935	735	787
58 on	57	920	1870	1510	950	590	621
	59	910	1920	1100	1010	190	188
	60	910	1900	1540	990	630	636
	61	910	1900	1200	990	290	293
	62	910	1860	1640	950	730	770
	63	900	1840	1440	940	640	680
	64	900	1860	1140	960	240	250
	65	900	1830	1310	930	410	441
	66	900	1840	1615	940	715	760
	67	900	1870	1730	970	830	855
	68	900	1850	1720	950	820	865
	69	900	1860	1730	960	830	865
	17	890	1830	1160	940	270	287
	31	890	1800	1670	910	780	858
	46	880	1830	1530	950	670	705
done Mar 22	58	880	1840	1000	930	120	131
AB 87-5	~~63~~	840	1920	1770	1080	930	860
	4	840	1900	1450	1060	610	575
	5	850	1900	1620	1050	770	734
	6	850	1870	1460	1020	610	598
	7	850	1890	1520	1040	670	645
	8	840	1922	1475	1082	635	586

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North Polar Sequence

Star	Pg m	c.i.	Pvm
1S	2.55	0.47	2.08
1	4.40	0.03	4.37
2	5.24	0.04	5.20
3	5.78	0.22	5.56
4	5.91	0.07	5.84
5	6.46	0.01	6.45
2S	6.47	0.17	6.30
3S	6.64	0.29	6.35
12	6.69	1.60	5.09
6	7.12	0.06	7.06

$\beta = \frac{80^m}{\cos\delta}$ ∴ reduced by plate ab decl. : δ

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9	850	1920	1440	1080	590	546
10	850	1920	1420	1070	570	533
11	850	1920	1810	1070	960	898
12	850	1890	1740	1040	890	855
13	850	1850	1685	1000	835	835
14	850	1890	1110	1040	260	250
15	850	1900	1290	1050	440	418
16	850	1890	1680	1040	830	798
17	860	1900	1750	1040	890	855
18	860	1910	1690	1050	830	790
19	860	1910	1420	1050	560	533
20	860	1930	1720	1070	860	804
21	860	1940	1710	1080	850	786
22	860	1930	1430	1070	570	533
23	860	1930	1690	1070	830	775
24	850	1900	1675	1050	825	785
25	850	1900	1710	1050	860	820
26	855	1890	1115	1035	260	251
27	850	1900	1140	1050	290	276
28	850	1920	1390	1070	540	505
29	860	1920	1590	1060	720	680
30	860	1920	975	1070	115	107
31	860	1940	1485	1080	625	578
32	860	1940	1700	1080	840	778
33	860	1940	1780	1080	920	852
34	865	1970	1680	1105	815	736
35	870	1950	1660	1080	790	730
36	865	1980	1570	1115	705	632
37	870	1940	1760	1070	890	831
38	870	1950	1640	1080	770	713
39	870	1950	1740	1080	870	805

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40	870	1940	1830	1070	960	897
41	875	~~1960~~ 1840	1810	1085	935	862
42	880	1950	1080	1070	200	187
43	870	2015	1765	1145	895	783
44	900	2019	1690	1119	790	706
45	900	1990	1690	1090	790	725
46	900	1990	1290	1090	390	358
47	890	1980	1810	1090	920	844
48	895	1960	1100	1065	205	192
49	890	1960	1820	1070	930	870
50	895	1970	1735	1075	260	242
51	890	1980	1760	1090	870	798
52	890	1990	1880	1100	940	855
53	900	1990	1880	1090	980	900
54	900	2010	1460	1110	560	505
55	900	1995	1170	1095	270	246
56	890	1990	1810	1100	920	836
57	900	1990	1800	1090	900	825
58	900	1990	1335	1090	435	399
59	900	1990	1880	1090	980	900
60	900	2000	1685	1100	785	714
61	900	1990	1670	1090	770	706
62	900	1980	1360	1080	460	426
63	900	1980	1320	1080	420	389
64	900	1970	1780	1070	880	823
65	900	1990	1400	1090	500	458
66	900	1980	1590	1080	690	639
67	900	1990	1720	1090	820	752
68	900	1990	1740	1090	840	770
69	900	1980	1595	1080	695	644
70	900	1980	1340	1080	440	408

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