KG
11366
v.614

ADS Digitized Plate Archive

Fundamental Stars
Observations and Reductions
From Oct. 9 1883 to Mar. 16 1884
B1

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Observations of Fundamental stars from Oct 9 1883 to Mar 16 '84

Reduction from $A_{\frac{1}{2}}$ to $A_1 + \frac{A + A_1}{3}$

$16^s.500$ Log = 1.21748

1 interval = $2^s.0625$

log interval = 0.31439

$i = 4^\circ\ 57'\ 5''$ Pass to Disc

tan i 8.93769n

log 15 1.17609

log 15 tan i 0.11378, from Oct 9 1883 to Mar 15 1884

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

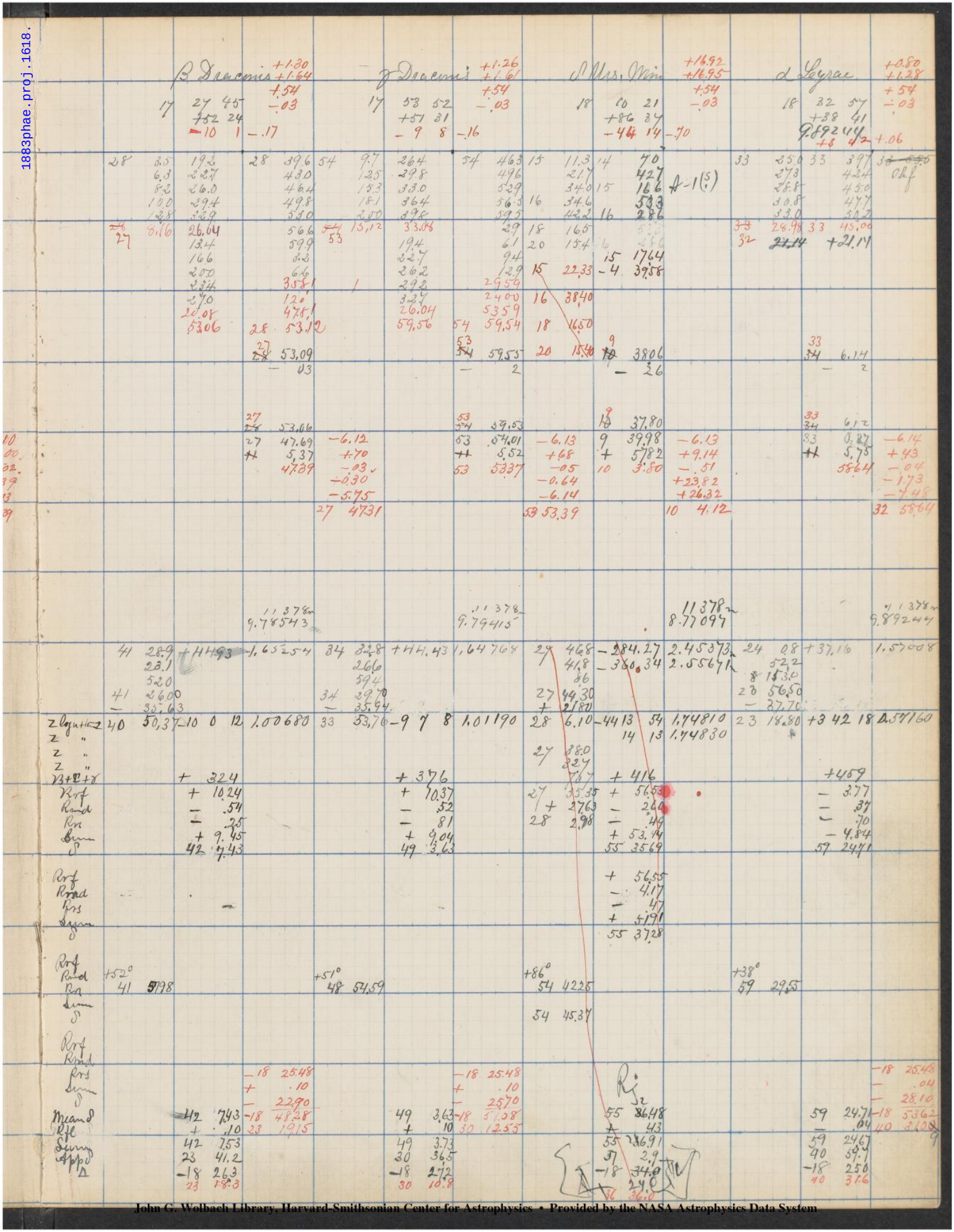
1883phae.proj.1618.

1883

Subtract one minute for these two pages.

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.



John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Oct. 9 1883

3 Leaonis +1.26 +1.61 +.54 −.05

22 18 58
+51 39
− 9 16 −.16

γ Leaonis +1.18 +1.55 +.54 −.05

22 26 29
+49 41
− 7 18 −.13

10 Leaonis + 0.79 +1.28 +.54 −.05

22 34 1
+88 26
9,89395
+3 57 +.07

	23.4	34.3		18	54.2	25	57.1	6.3		26	25.7	34	7.7			33	59.8		
	26.0	37.4			57.8		59.7	9.5			29.0		10.4				2.7		
	31.0	40.8			1.0		1.8	12.8			32.0		12.5				5.5		
	34.6	44.4			4.2		4.3	16.0			35.3		14.4				8.2		
	36.3	47.4			7.5		5.7	19.1			38.4		16.5				10.8		
18	31.04	40.86			10.7	26	1.72	12.74			41.6	34	12.30				13.4		
19	38.7	27.3			14.0	27	31.7	5.74			44.8	34	4.77	26.5			16.1		
	41.0	30.7			17.2		32.8	0.8			47.8		49.3	29.3			18.7		
	42.6	34.0			20.8		34.5	3.9			51.2		51.0	31.8			21.2		
	45.3	37.4			18.74		35.8	7.1			34.58		52.5	34.5			10.71		
	48.0	40.7			42.00		37.0	10.3			38.47		54.6	37.1					
19	43.12	34.02			60.74	27	34.36	3.90		34	51.02			31.84					
		7.44		19	7.49			38.32		26	38.42			21.06					
														10.78		34	10.71		
				19	7.46					26	38.37					35	10.73		
					−1 2						− 2						− 2		
																34			
I		P		19	7.44					26	38.35					35	10.71		
R.A.		Diam		19	1.88		−6.21			26	32.77	68	−6.21			34	4.89	−6.22	
I-Rd		a band		+0	5.56		+4.68			+0	5.57	62	+.64			+0	5.82	+.43	
Mean of 1883.0		Red			57.61		−.08				28.35		−.07				0.74	−.06	
		Red to app place					−4.27						−4.33					−4.15	
		Sum					−9.88						−9.997					−10.00	
		+ 1883.0				18	57.56			26	28.388					35		0.71	
																34			

.11378n
9.79272

.11378n
9.81091

0.11378n
9.89385

25	57.8	+36.42	1.56134	23	36.9	+36.65	1.56407	37	17.0	−58.41	1.76649						− 1.59	0.20140n	
	48.3	− 35.66	1.55218n		30.1	− 55.99	1.74811n		8.0	+14.69	1.25858						− 40.31	1.60541n	
	10.5				67.0				25.0		1469								
25	53.8			23	33.8			37	12.50										
−	29.37			−	30.82				59.41	+1.62									
25	23.45	−9 15 46	0.97270	23	2.68	−7 18 5	0.86880	37	13.05	+3 55 34	0.59690								
		16 47	0.97350			19 23	0.86930		14.12	54 54	0.59560								
24	54.9			22	18.6			37	34.0										
	47.8				10.7				26.5										
	10.27	+ 9.87			2.96	+ 9.83			6.45	+9.65									
24	51.35	+ 9.61		22	14.7	+ 7.55		37	32.3	− 4.04	−4.04								
+	28.7	− .34		+	42.08	− .37			41.0	− .89	− .93								
25	20.10	+− .16		23	1.7	+− .65		37	12.2	+− .60	− .59								
		+ 9.11				+ 6.53			13.27	− 5.53	−4.63								
		57 34.28				59 52.20				48 29.99	29.60								
										5									
		+ 9.62				+ 7.57				− 4.03	− 4.06								
		− .34				− .84				− .11	− .46								
		+− .86				+− .40				+− .17	− .65								
		+ 8.42				+ 6.33				− 4.61	−5.17								
		36.67				52.98				31.55	29.91								

Oct 9
Reg.

−18	24.9 25.0
	24.9
	22.0
	24.0
	26.3
	27.2
	25.0
	26.1
	26.4
	268 27.7

Mean −18 25.48 25.37

−18 25.48 Year used for Zone and Fundamental Obs

+59°				+49°				+38°											
57	25.17			59	45.67			46	34.23										
								5	35.40										
57	28.25			59	46.65			46	36.16										
								5	35.26										
			−18 25.48				−18 25.48				−18 25.48								
			+ .10				+ .08				− .04								
			− 34.40				− 34.10				− 33.30								
		57 35.48	−18 59.78		59 52.59		−18 59.50			46	30.67	−18	58.2						
		+ .10	38 35.70		+ .08		40 53.09			− .04	27.72	27	32.05						
		57 35.58			59 52.67					46	30.63	27.76	31.85						
		39 9.5			41 26.3					27	29.4								
		−18 26.1			−18 26.4					1268	27.7								
		38 35.1			40 52.2					26	27.6								

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Oct. 10 1883

η Ursæ Maj. | γ Draconis | η Serpentis | θ Draconis



John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Oct. 10-1883

α Lyrae

β Cygni

2749 N.A.

γ Cygni

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

α Cephei +1.89 +2.14 — β Cephei +2.75 +2.92 — 79 Draconis

21 15 48 −.04 +62 5 −19 42 −.34

21 27 11 −.04 +70 3 9.53301 −27 40 −.46

21 57 25 −.05 +73 9 9.46220 −30 46 −.51

17 17 11.3 15.2 30.4 24.9 39.4 20.74 22.3 37.0 30.9 35.3 45.9 31.10 55.67

85 38.2 42.7 47.0 51.5 56.2 04 4.7 9.2 13.5 26.34 24 50.34 55.93

28 29.2 34.3 63.5 28 31.75

55.7 0.0 5.6 11.8 17.6 5.74 48.36 17.38

26 53.8 59.3 5.5 11.4 17.0 23.9 29.4 35.6 41.5 27.74 42 69.74 27 17.49

53 2.5 52 7.6

18 55.80 − 3

27 17.44 − 4

18 55.77

15 50.60 + 5.17 47.20 −5.98 +.89 −.08 −3.40 −.57 15 47.20

27 17.40

27 12.66 + 4.784 8.83 −5.98 +.82 1.29 −.12 −3.83 −9.1+2.864 27 8.29 8.76

61 29.33

.11378n 9.67018 1.81889n 0.77085n

11378m 9.53301 1.87105m

58 21 −65.90 56.7 11.88 57 59.40 +40.59 58 39.99 39.47

0 53.6 −74.31 47.4 −10.10 0 50.50 + 33.95 1 23.45

54 56.4 50.9 10 7.3 54 53.65

−19 43 39 1.31480 −27 40 48 1.48000

Oct-10 Reg.

−18 26.3 27.4 25.9 25.4 25.9 26.1 26.9 27.4 28.1 −18 26.64 .57

+914 + 21.08 − .98 +− .54 + 19.56 24 28.44

+986 + 30.89 − .97 +− .14 + 29.78 21 54.68

+62° 24 8.88

+70° 21 24.90

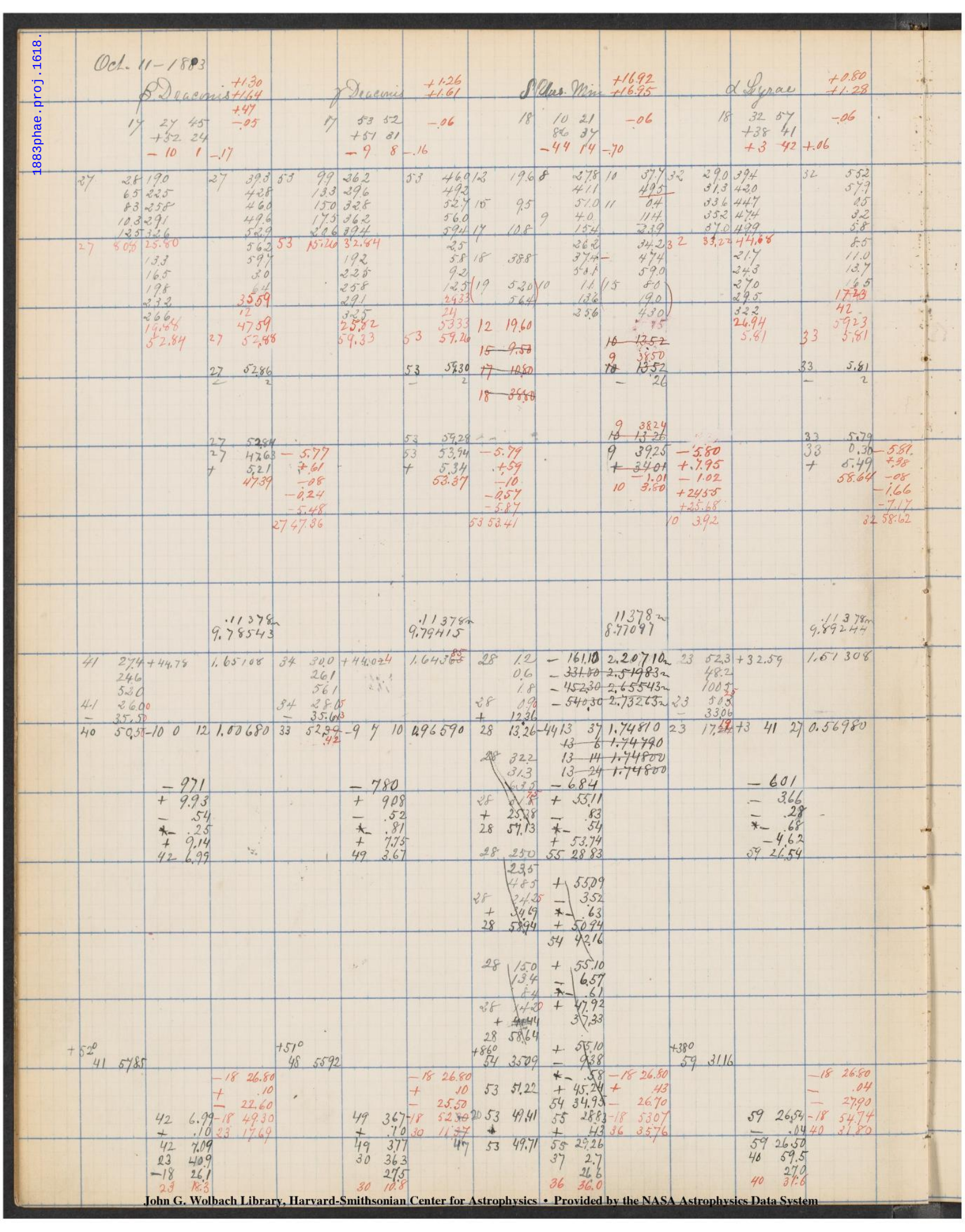
−18 26.57 + .21 − 37.20 24 28.44 −19 35.6 + .21 5 24.88 24 28.65 6 1.2 −18 27.4 5 24.0

−18 26.57 + .28 − 37.00 21 54.68 −19 32.9 + .28 2 51.39 21 54.96 3 26.9 −18 28.1 2 49.9

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Oct. 11 – 1883



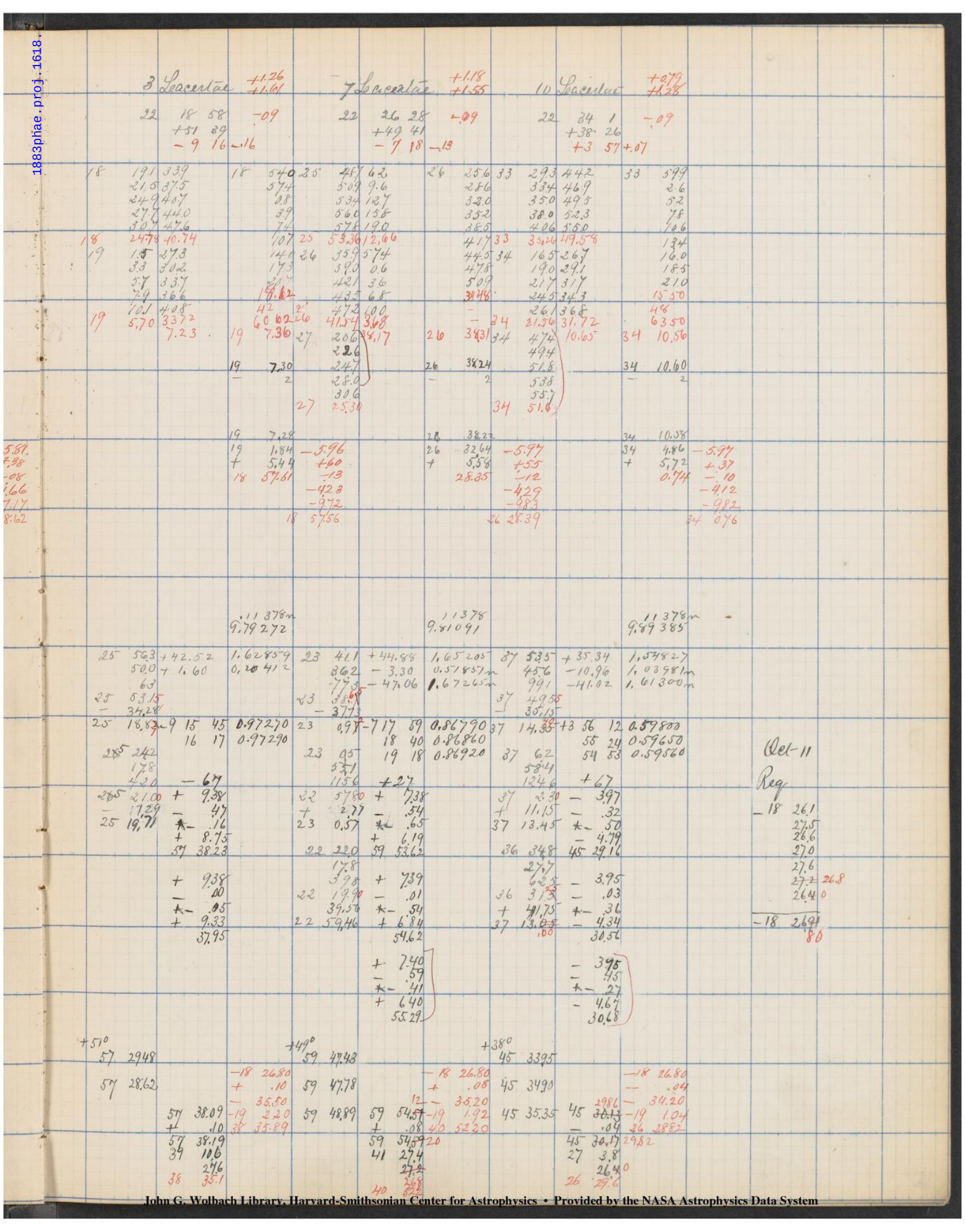
John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

3 Leacrilae +1.26 +1.61

7 Leacrilae +1.18 +1.55

10 Leacrilae +0.79 +1.28



Oct-11
Req
-18 26.1
27.5
26.6
27.0
27.6
27.2 26.8
26.4 0
-18 26.9
80

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Oct. 15 – 1883

ζ Ursae Maj. | χ Draconis | α Lyrae | β Lacertae

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

η Lacertae +1.18 +1.55 −.02 −.13

22 26 29 +49 41 −7 18

25 456 48 488 80 507 114 532 148 559 175

25 50.66 11.30 26 29.4 56.1 31.0 59.5 34.1 2.5 36.1 5.7 38.7 8.9

24 33.86 2.54

27 19.5 36.42 21.7 24.3 25.8 28.0

27 23.86

η Pegasi +0.57 +1.15 −.02 +.22

22 37 31 +29 34 +42 46

26 24.2 27.5 30.5 33.8 36.9 40.0 43.4 46.6 49.7 332.6

26 36.96 26 36.94 2

26 36.92

37 5.7 7.5 9.8 11.8 13.2 37 9.60 38.5 40.2 41.7 42.9 44.6 46.8 42.45 38 14.7 16.6 18.7 20.8 22.4 1864

37 16.3 18.6 20.8 22.9 25.7 37 20.66 5.37 56.3 58.7 1.0 3.3 58.60 39.73

37 39.16

37 30.1 32.4 34.9 37.5 39.5 42.0 44.3 46.7 49.2 35.40

37 39.70 2

37 29.84 37 35.10 + 4.58 31.12

−4.88 +.28 −.02 −3.98 −8.60

4.88 −.64 −.03 4.15 −8.43 −7.60

26 28.39

37 31.08

11378m 9.81091

11378m 9.93920

23 42.1 38.0 80.1 23 40.0 − 38.79

+46.08 + 3.08 −46.92

1.66351 0.48855 1.67136m

27 32.1 31.9 71.0 27 35.50 − 35.02

+30.10 −38.94

1.49136 1.55040m

23 1.31 23 6.9 2.5 9.4

−7 17 58 18 33 19 14 +2025

0.86790 0.86840 0.86920

27 0.48 27 29 57.5 26 11.74 27 58.70 + 3.11 27 1.81 26 21.0 52.5 53.5 26 16.6 + 43.99 27 0.74

+12 45 57 45 21 44 39 +2047 − 13.68 − .21 − .49 − 14.38 55 33.49 − 13.66 − .00 − .38 − 14.84 32.50

1.11550 1.11510 1.11470

23 4.70 + 7.73 − .57 23 2.11 ± .70 + 5.46 22 23.3 59 52.50

+ 3.19.15 424 22 21.20 + 39.45 23 7.75 8.68 + 7.74 − .00 ± .59 − + 7.15 53.39

+ 7.75 − .59 ± .46 + 6.70 54.40

− 13.65 − .36 ± .25 − 14.26 33.35

Oct-15

Reg

18 26.0 25.7 24.8 25.3 24.8 18 25.32

260 25.7 25.1 25.3 25.1 25.44

+49° 59 47.04 59 46.24 59 47.70

+29° 55 47.87 55 46.54 55 47.61

−18 25.44 + .08 − 36.00 −19 1.36 40 52.09

−18 25.44 − .13 42 − 33.80 −18 59.37 36 34.05

59 53.43 − .08 59 53.35 41 28.2 25.3 40 52.2

55 33.78 55 32.98 37 8.2 24.8 25.1 36 34.4 33.29

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Oct. 16 1883

η Ursæ Maj | α Draconis | χ Draconis | α Lyrae

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

ρ Cygni +0.52 +1.13 | A Cygni +1.19 +1.55 | 3 Sagittae +1.26 −1.61 | 7 Sagittae +1.18 +1.55

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Oct. 16 1883

10 Lacaille +0.79 +1.28

22 34 1 −.04
+38 26
+3 57 +.07

33	272	43.4	33	58.7
	306	45.4		1.1
	334	47.6		3.7
	351	58.3		6.5
	376	5.34		9.0
33	3290	48.0		11.8
34	215	24.8		14.3
	235	27.4		17.0
	258	29.9		19.8
	281	32.5		1419
	304	35.8		46
34	25.80	29.98		6219
		9.00	34	9.10
			34	9.05
			−	2
			34	9.03
			34	4.79
			+	4.21
				0.74

−4.64
+.42
−.05
−4.05
−.832
34 0.71

11 378
9.89385

37	53.9	+36.15	1.55811
	42.9	−16.81	1.22557
	96.8		
37	48.40		
−	36.79		
37	11.61	+3 56 10	0.59880
		55 18	0.59630
37	0.8		
	57.7		
	11.5	+25.41	
8	56.25	− 4.20	
4	17.11	− .34	
37	13.36	+ .53	
		− 5.07	
		45 31.67	
		− 4.18	
		− .08	
		+ .36	
		− 4.62	
		30.37	

Oct-16
R_{app}

−18	23.3
	23.0
	23.0
	23.9
	26.9
	24.3
	25.9
	24.4
	26.4
−18	24.57

+38°
45 36.71

3499

	−18	24.57
	−	.84
	−	35.00
45 31.02	−18	59.61
− .04	26	31.41
45 30.98		
27 4.6		
−18 26.4		
26 29.6		

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Oct. 17 1883

α Lyrae

β Cygni

θ Cygni

32 Vulpeculae

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Oct. 17 1883 Ex.

ζ Cygni +.57 +1.15 α Cephei

21 [illegible] 56 −.03 21 27 11

+29 45 +62 5

+12 38 +.22

346 40.5 7 55.1

43.0 57.2

45.5 59.6

47.5 2.0

50.3 4.3

46.36 6.6

18.3 9.0

21.0 11.3

23.3 13.7

25.7 16.0

27.0 18.6

23.26 5787

4.31 8 4.30

8 4.30

− 2

8 4.28

8 0.59 −3.94

+ 3.69 +.28

57.41 −.04

−3.18

−.688

7 5740

.11378n

1.93862

19 21.8 +29.70 1.49276 59 16.4

12.9 8.3

34.7 23.7

19 17.5 59 11.85

− 36.09

18 42.26 +12 37 39 1.11050

+2305

− 1360

− .21

× .82

− 14.63

3 51.46

+20°

4 6.09

−18 2460

− .13

− 34.00

3 51.46 −18 58.73

× .13 44 52.73

3 51.33

45 24.8

−18 26.5

44 50.8

1 Draconis L.C. −.696 −7.03

21 20 19 −.03

+98 10

9.15245 −.83

−55 47

21 39.4 21 10.9 A 8.9.

25.6

39.4

58.8

22 9.0

23.0 A-1

35.1

52.6

22 2354

1 56.15

27.39

20 27.40

+ 10

20 27.50

20 20.89 −3.94

+ 6.61 − 3.41

18.31 + .21

− 2.58

− 9.72

20 17.78

11378n

9.15245n

56 64 + 72.80

1.0 1.85733

3.4

56 3.70

+ 1329

55 59.41 −55 45 34 1.92630

+2333 +2333

+ 8905

× .40

× .40

+ 8905

28 1800

+98

26 4895

28 18.80

+ .57

28 18.37

10 5.8

12.7

9 30.8

n. A +3.30 +2.47

79 Draconis

21 57 25 −.04

+43 9

9.46220

−30 46 −.51

52 51.7 20.0

52 51.70 38.8

41.7

45.4

33.9 43420

14.0

21.3

28.5

35.1

42.5

28.28 27.48

31.13

24

+73

28 2274

+2440

+ 36.29

− 98

× .93

+ 34.38

28 5712

28 57.12

+ .31

28 57.43

9 33.9

235

8 56.0

51 24

51 31.33

51 31.28

− 5

51 31.23

51 28.91 −3.93

+ 2.38 +1.62

24.52 − .14

−.439

−.684

51 24.39

11378n

9.46220

−18 2460

+ .31

− 37.90

−19 2.19

9 54.93

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

N.T.

97 Draconis −4.10 −4.32 | 226 (B) Cephei +3.90 +4.02 | i Cephei +220 +2.42 | α Ursæ Majoris −1.91 −2.16

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

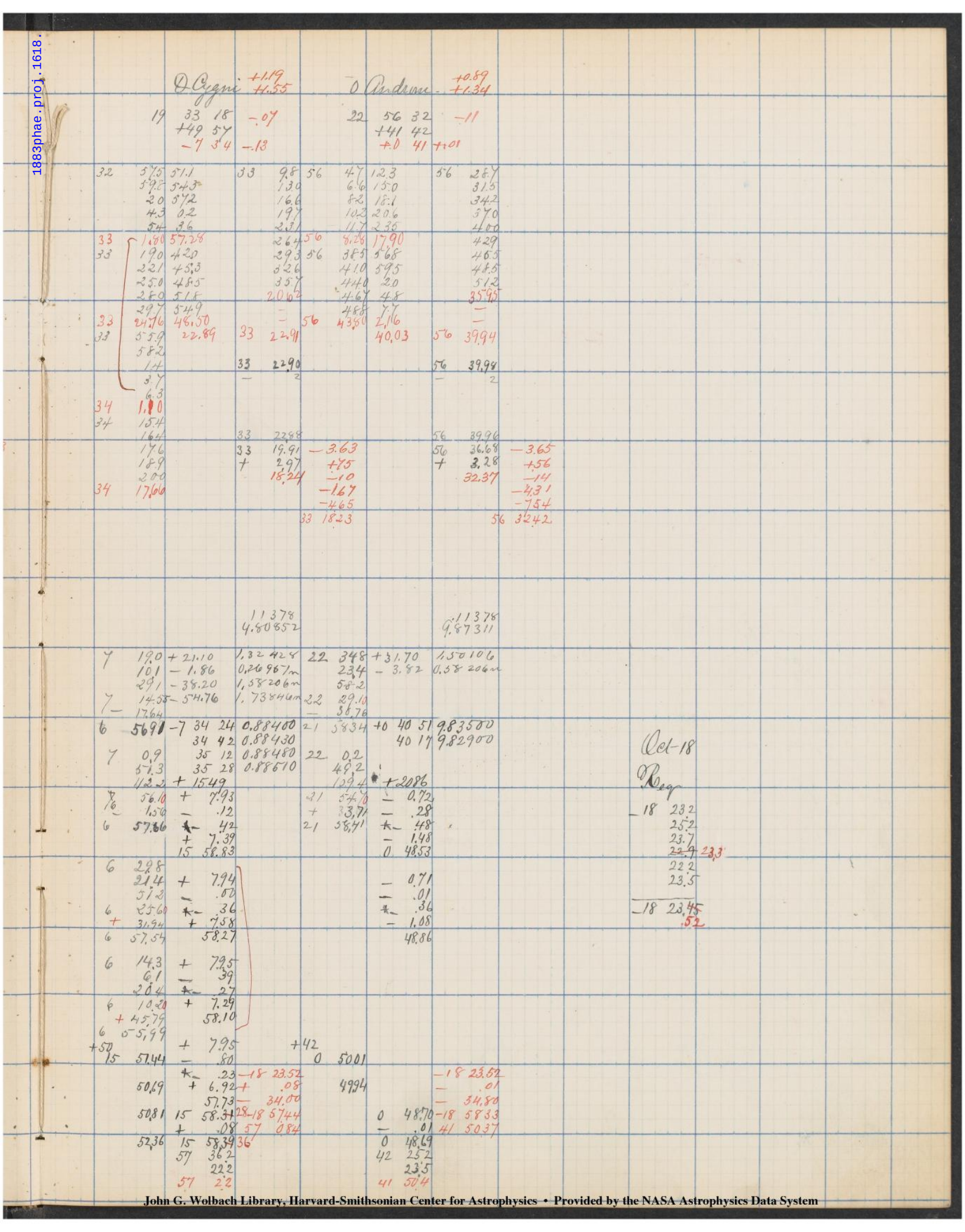
1883phae.proj.1618.

Oct. 18 1883

γ Ursæ Maj. ζ Draco. χ Cygni i Cygni

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.



John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Oct. 22 1883

α Lyrae

+0.80
+1.28
+58
+00

18 32 57
+38 41
+3 42 +.06

32	27.4 35.5	32	51.4
	29.6 38.1		53.9
	31.5 40.9		56.6
	35.0 43.4		59.1
	37.0 46.0		2.0
32	32.10 40.78		4.6
33	34.8 17.6		7.3
	36.4 20.4		9.8
	38.5 22.9		12.3
	39.7 25.7		25.70
	40.6 28.2		30
33	38.00 22.96		55.70
	1.87	33	1.89
		33	1.88
		—	2
		33	1.86
		33	0.03
		+	1.83
			58.64

−2.34
+.46
+00
−1.39
−3.27
32 58.59

.11378n
9.89244

23 59.1 +29.78 1.47392
48.1 −36.12 1.65775n
107.2
23 58.60
— 24.52
23 24.08 +3 42 16 0.57160
41 9 0.56940
22 52.1
41.5
93.6 +17.88
22 46.80 — 3.89
+ 36.64 — .24
23 23.44 *— .74
— 4.87
59 19.40

— 3.87
— .35
*— .53
— 4.75
20.16

+38°
59 24.27
24.91
59 19.78
— .04
59 19.74
40 58.8
−18 20.9
40 31.6

−18 22.96
— .04
— 27.20
−18 50.20
40 29.58

R Lyrae

+0.96
+1.39

18 51 46 −.01
+43 47
−1 24 −.02

51	14.3 21.1	51 38.3
	16.3 23.8	41.5
	18.3 26.8	44.0
	20.5 29.6	46.8
	24.2 32.5	49.6
51	18.74 26.76	52.5
52	0.6 7.0	55.5
	4.0 9.6	58.3
	7.3 12.5	1.2
	9.9 15.8	38.77
	11.4 18.1	16
52	6.64 12.50	44.77
52	29.1 49.63	51 49.74
	31.7	
	33.7	51 49.68
	35.4	— 2
	37.2	
52	33.42	
		51 49.60
		51 47.82
		+ 1.84
		46.50

−2.35
+.56
−.01
−1.32
−3.12
51 46.54

.11378n
9.85839

16 59.2 +30.96 1.49080
46.7 −16.96 1.22943n
105.9 −43.74 1.64088n
16 52.95
— 29.04
16 23.91 −1 24 45 0.15240
25 30 0.15600
25 56 0.15810
16 14.4
1.9
16.3 +18.42
16 8.35 + 1.48
+ 15.91 — .26
16 24.06 *— .36
+ 0.86
6 25.30

16 48.9
36.0 + 1.49
84.9 — .08
15 42.45 *— .21
+ 41.02 + 1.20
16 23.47 25.49

+ 1.50
— .52
*— .13
+ 0.85
25.73

+44
6 24.44
24.29
24.88

−18 22.96
+ .01
— 29.50
61 −18 52.45
47 33.16

6 25.51
+ .01
6 25.52 62
48 2.4
23.2 2
47 32.9

ζ Draconis

+2.41
+2.60

19 12 32 −.02
+67 24
−25 4 −.42

11	9.4 38.0	13 10.9
	12.4 44.0	16.0
	17.1 49.0	22.1
	21.2 54.0	26.8
	25.8 0.0	32.9
11	17.18 49.00	37.8
12	23.3 4.5	42.8
	25.3 9.7	47.7
	29.3 15.6	54.0
	31.8 20.5	24.05
	33.9 25.8	—
12	28.72 15.22	
	32.11	12 32.28
		12 32.20
		— 4
		12 32.16
		12 31.17
		+ 0.99
		31.52

−2.35
+1.40
−.05
+0.36
−0.64
12 31.52

11378n
9.58345

37 39.5 +75.02 1.87518
31.8 +3.48 0.54158
71.3
37 35.64
— 37.36
36 58.29 −25 4 2 1.43020
4 36 1.43040
37 5.8
58.1
12.39 +18.97
37 1.95 + 28.13
— 17.73 — 1.08
37 0.22 *— .49
+ 26.56
46 16.62

+ 28.14
— .00
*— .38
+ 27.76
15.89

+67
45 50.06
48.13
46 16.26
+ .27
46 16.53
27 53.9
22.6
27 20.6

−18 22.96
+ .27
— 33.30
−18 55.99
27 20.27

χ Cygni

+1.34
+1.67

19 14 23 −.02
+53 9
−10 46 −.19

14	3.0 52.4	14 13.0
	5.2 56.0	16.5
	6.8 59.1	20.0
	8.2 2.7	23.3
	10.8 6.0	26.8
14	6.80 56.24	29.9
15	1.3 47.6	33.3
	3.7 50.8	37.0
	6.8 54.2	40.3
	9.0 57.5	24.01
	11.4 6.0	—
15	6.44 54.22	
	26.73	14 26.68
		14 26.70
		— 3
		14 26.67
		14 25.03
		+ 1.64
		23.93

−2.35
+.77
−.03
−1.10
−2.70
14 23.97

.11378n
9.77778

55 13.6 +19.90 1.29885
2.3 −39.74 1.59923n
15.9
55 7.95
— 15.50
54 52.45 −10 46 30 1.03980
47 16 1.04030
54 26.7
16.5
43.2 +19.02
54 21.60 + 11.45
+ 30.94 — .10
54 52.54 *— .02
+ 11.33
28 7.23

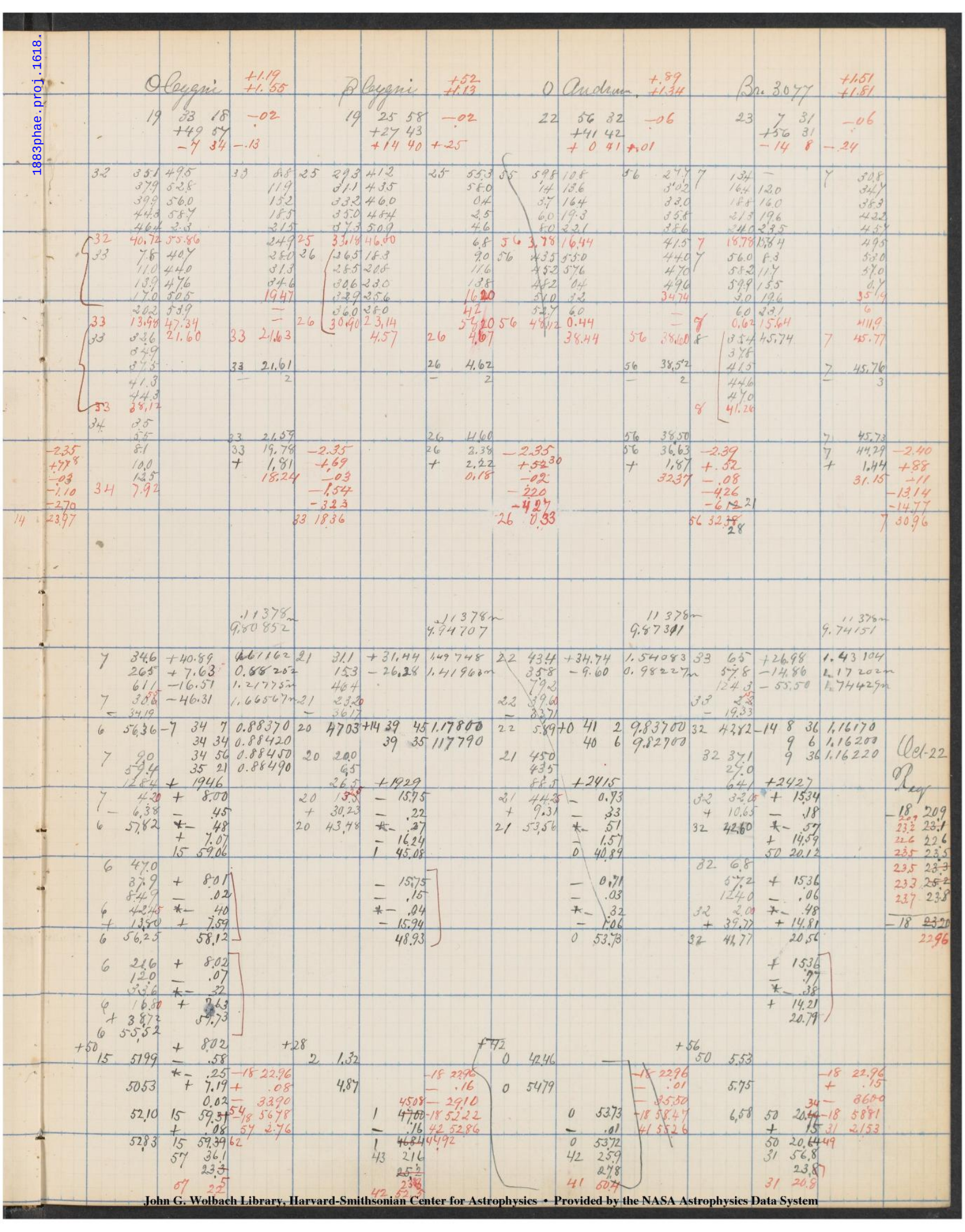
+ 11.46
— .41
*— .84
+ 10.21
6.02

+53
27 55.90
55.81
28 6.64
+ .12
28 6.76
9 43.3
23.5
9 10.6

−18 22.96
+ .12
— 32.70
−18 55.54
9 11.10

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.



John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Oct. 30 - 1883 -

β Cygni +52 +1.13

19 25 58 +52
+27 43 +.00
+1 4 40 +.25

δ Cygni +1.19 +1.55

19 33 18 -.01
+49 57
9.80852
-7 34 -.13

20 Ophii

22 1 27 -.04
+62 13

β Cassiopea +1.63 +1.91

0 2 56 -.05
+58 30
-16 7 -.28

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

No Ephemeris.

κ Cass. +1.90 +2.15

0	26 21	−05	
	+62 17		
	−19 54	−.34	

ζ Cass. +1.34 +1.67

0	30 27	−05	
	+53 15		
	−10 52	−.19	

α Cass. +1.48 +1.78

0	33 52	−05	
	+55 53		
	−13 30	−.23	

21 Cass. +3.56 +3.70

0	37 56	−05	
	+74 21		
	−31 58	−.53	

25	16.5	42.6		26	9.3	29	52.6	58.0		30	18.6	33	6.6	21.0		33	42.7	36	43.5	48.0		37	34.3		
	20.2	47.0			13.7		55.2	1.6			22.0		8.7	24.5			46.5		49.1	55.7			41.4		
	24.6	51.5			18.0		57.5	5.0			25.7		11.5	28.0			50.1		55.0	3.0			49.0		
	27.5	56.0			22.5		59.9	8.3			29.0		13.8	31.9			53.9		0.1	11.0			57.2		
	30.0	0.4			27.0		2.2	12.0			32.3		17.7	35.4			57.6		4.9	18.5			4.5		
25	23.76	51.50			31.5	29	57.46	4.96			36.0	33	11.66	28.16			1.4	36	54.52	3.24			12.6		
26	16.0	53.6			35.8	31	1.8	5.3	1		39.6	34	29.8	19.7			5.0	37	3.84	5.05			20.2		
	19.5	56.0			40.3		2.0.1	5.6.6			42.7		32.6	23.44			8.7		42.8	58.3			27.7		
	23.0	2.5			44.9		22.5	59.8			46.3		35.3	27.0			12.5		47.9	5.8			35.0		
	26.1	7.0			24.30		25.0	3.5			29.24		37.5	31.0			27.44		54.7	13.3			1.8.19		
	29.5	11.3			—		28.0	6.8			—		40.6	34.5			24		59.3	21.3			3.0		
26	22.82	2.48		31	—		22.74	59.96		34	35.16		27.12				5.18.4	37	48.62	5.62.84			5.619		
27	36.0	26.99		26	27.00			32.47		30	32.49		57.64			33	57.60	38	50.9	4.42 4.54		38	4.66		
	37.0																		56.7						
	37.2			26	27.00					30	32.48					33	57.62		3.4			38	4.60		
	40.4			—	3					—	3					—	3		7.8			—	7		
	42.1																		13.4						
27	39.00																	38 39	2.50						
				26	2.697					30	32.45					33	57.59					38	4.53		
							+0.15			30	33.25		+0.14			33	58.42		+0.14			38	6.24		+0.14
							+.99			—	0.80		+.70			—	0.83		+.77			—	1.75		+1.85
					21.45		−.11				27.46		−.08				52.37		−.09				56.53		−.18
													−5.79						−6.05						−9.75
													−5.03						−5.23						−7.94
												30	27.42			33	52.36					37	56.59		

11378m
4.66755

11378m
9.77677

11378m
9.74868

11378m
9.43098

47	44.0	+63.24	1.80099	49	23.0	+ 35.00	1.54407	11	0.0	+ 45.96	1.66238	44	4.5	+ 70.08	1.85003										
	37.9	+ 4.18	0.62118		17.1	− 50.26	1.70122m		51.9	− 37.54	1.57449m		58.2	+ 15.98	1.20358										
	41.9	− 72.00	1.85733m		40.1				14.5				12.3.7	− 57.90	1.76268m										
47	40.9			49	20.0			10	56.5			44	1.35												
	38.22				− 27.20				33.48				− 24.82												
47	2.73	−19 53	57	1.31890	48	52.85	−10 52	18	1.04370	10	22.47	−13 30	42	1.14190	43	36.53	31	57	37	1.55530					
		54	31	1.31910			52	25	1.04380			31	42	1.14160				57	55	1.55540					
47	10.4	55	20	1.31940	48	16.6				9	57.8				43	46.5		58	20	1.55550					
	8.4					18.0					57.5					39.9									
	1.38					26.6	− 86				1.1.1.3	− 83				56.4		− 79							
47	6.90	+	20.80		48	13.30	+	11.04		9	55.63	+	13.81		43	43.20		+	35.85						
	2.58	−	.90			+ 39.06	−	.32		+	27.35	−	.53			− 5.60		−	.70						
47	4.37	±	.51		48	52.36	±	.82		10	23.00	±	.17		43	37.60		−	.76						
		+	19.39				+	9.90				+	13.11					+	34.39						
46	21.5		36 5.01				34	5.40				12	38.99			43 20.8		39	46.21						
	15.2															14.3									
	8.6.7	+	20.81				+	11.04				+	13.83			3.51		+	35.86						
46	18.7	−	.01				−	.67				−	.36		43	17.5		−	.04						
+	43.52	±	.40				±	.61				±	.93		+	20.30		−	.70						
47	1.87	+	20.40				+	9.76				+	12.54		43	37.85		±	35.72						
			4.38					5.75					37.89						45.87						
		+	20.82															+	35.87						
		−	1.16															−	.48						
		±	.25															−	.63						
		+	19.41															+	34.76						
			5.89																45.26						

+62				+ 53					+ 56					+ 74											
35	45.62			33	55.50				12.	2588				39	11.82										
			−18 24.07								−18 24.07						−18 24.07								
	43.98		+ .24		58.99						+ .13		25.30				+ .16		10.75				+ .27		
											− 30.80						− 30.40						56 − 29.30		
	46.48	36	5.09				34	5.58	−18	5474			12	38.44	−18	5431		10.50		39	45.78	−18	5300		
		+	.24				+	.13	15	10.84			+	.16	33	44.13				+	.87	20	52.56		
		36	5.33				34	5.71					12	38.60						39	46.75	45.93			
							15	4.08					54	1.40						21	2.29				
								24.9						24.6							2.33				
		17	8.8				15	10.0					63	43.6						20	53.6				

Oct-30

18	24.8	
23.8	23.9	
23.3	23.3	
	24.9	
	24.6	
23.0	23.3	
18	24.13	
	07	

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

Nov. 1 1883

θ Cygni	+4.19 +1.55	7 Lacertae	+1.18 +1.55	41 H Cephei	+2.38 +2.58	N.A. Go. 4163	+3.43 +3.57
19 33 18 +49 57 −7 34	+58 +00 −.13	22 26 28 +45 41 −37 18	−.03 −.93	23 42 19 +67 9 −24 46	−.04 −.42	23 49 9 +73 45 9.44689 −31 22	−.04 −.52

33	0.0 46.3	33 5.3	35 47.0	59.3	26 18.5	41 23.5	42 2.7	25.8	50 58.2	−	48	44.7
	3.2 49.0	8.5	50.5	2.3	21.5	27.6	4.4	27.5				52.7
	5.6 52.3	11.7	53.9	5.6	24.5	33.5	6.3	29.5				0.4
	7.9 55.6	15.0	56.3	8.6	27.8	37.5	8.0	30.8				8.3
	10.4 59.0	18.1	58.0	11.8	31.0	41.5	9.7	32.7		30.9		14.8
33	5.42 52.44	21.3	25 53.14	5.52	34.4	41 32.72	11.6	34.4		−		22.2
33	33.0 37.5	24.7	26 34.8	50.2	37.4	42 47.0	13.4	36.5		−		29.8
	37.8 40.6	27.8	37.8	53.5	40.4	51.9	15.1	38.2		−		37.1
	40.0 43.8	31.0	39.8	56.4	43.8	55.6	16.7	39.8		13.6		44.4
	42.7 47.0	16.34	42.0	59.6	27.93	0.3	18.7	41.8		20.1		25.44
	45.0 50.1	−	44.4	2.9	−	3.5	20.3	43.6		28.3		42
33	39.70 43.80	−	26 39.76	56.52	−	42 55.66	22.0	45.3		12.51 13.17		67.44
34	0.2 18.12	33 18.16	27 3.5	31.02	26 31.03	43 11.7	24.1	42.59		58.96	49	14.93
	3.0		6.5			16.8	17.30	59.80		12.85 14.21		
	4.7	33 18.14	10.0		26 31.03	19.5		42 23.96			49	14.57
	7.6	− 2	12.4		− 2	22.3		← 4			−	5
	9.3		15.0			27.1						
34	4.96		27 9.48			43 19.48						
			27 25.7			43 50.5						
		33 18.12	26.4		26 31.01	52.0		42 23.92			49	14.52
		33 19.46	27.2	+0.65	26 32.20	53.7	+0.680	42 25.63	+0.597		49	17.10 +0.597
		− 1.34	28.0	+.4169	− 1.19	55.6	+.668	− 1.71	+1.438			−2.58 +2.06 1.99
		18.24	28.6	−.02	28.35	57.3	−.04	19.28	−10			9.17 −.14
			27 27.18	−1.22		43 53.82	−3.85		−6.35			−7.93
				+0.180			−2.761		−4.350			−5.42 .51
				33 18.242			26 28.410		42 19.482			49 9.10.01

.11378n 9.80852	.11378n 9.81091	.11378n 9.58889	.11378n 9.44689

7	12.2	+12.72 +18.14	1.10449 1.25864	23 35.4	+37.89	1.57852	55 21.5	+51.24	1.70961	18 16.5	−103.63	2.01543n
	4.6	−21.56	1.33365n	28.1	−8.73	0.94101n	14.1	−31.70	1.50106n	8.1		
	16.8	−46.82	1.67034n	63.5	−38.45	1.58490n	35.6	−55.52	1.74445n	24.6		
7	8.48			23 31.8	−56.15	1.74935n	55 17.8	−69.86	1.95357n	18 12.30		
				− 31.86	86.800		− 25.84			+ 37.68		
6	53.23 57.76	−7 34 30	0.88410	22 59.89	−37 18 6	0.52140	54 51.96	−24 46 20	1.42440	18 49.98	−31 23 26	1.54560
		34 59	0.88460		18 45	0.52250		47 3	1.42460			
6	42.9	35 21	0.88490	22 57.4	19 10	0.52380	54 39.7	47 14	1.42470			
	35.0			48.3	19 26	0.52430	30.8	47 33	1.42480			
	77.0	+5.21		105.7	+9.42		70.5	+9.34			+9.24	
6	38.15	+7.75		22 52.9	+3.39	7.54	54 33.3	+27.15			+35.88	
+	18.63	−.05		7.34	−.39		+ 15.99	−.51			−1.59	
6	56.98	−.40		23 0.19	−.66		54 51.24	−.06			−.61	
		+7.30			+2.34	6.49		+26.58			+33.68	
6	21.1	15 57.89		22 31.8	59 50.80	54.95	54 26.8	28 22.97			4 32.05	
	12.8			24.9			20.5					
	33.9	+7.76		56.7	+3.40	7.55	47.3	+27.16				
6	16.95	−.13		22 28.4	−.03		54 23.8	−.20				
+	39.14	−.30		32.34	−.55		+ 28.60	−.87				
6	56.09	+7.33		23 0.69	+2.82	1.77	54 51.65	+26.09				
		58.70			50.98	55.13		23.20				
				22 16.2			54 8.4					
		+7.77		8.3	+3.41		1.5	+27.17				
		−.59		24.5	−.40		10.2	−.60				
		−.25		22 12.25	−.48		54 5.10	−.84				
		+6.93		47.21	+2.53		+ 45.32	+25.73				
		59.19		22 59.46	50.19		54 50.42	22.43				
+58			+45		+3.42			+27.17				
15	50.59			59 48.46	−.85		27 56.39	−1.60		3 58.37		
			−18 24.04		−.42	−18 24.04		−.78	−18 24.04			−18 24.04
	51.37		+.09	48.16	+2.16	+.09	57.11	+24.79	+.31			+.38
		94	−33.40		51.04	−38.80		22.72	−35.80			−35.10
	52.26	15 58.59	−18 57.35	47.66	59 55.80	−19 2.75	56.70	28 22.83	−18 59.53		4 32.05	−18 58.76
		+ .09	57 1.59		+ .04	40 52.29		+ .31	9 23.31		+ .38	45 33.29
		15 58.68	59.03	48.89	59 50.74		54.93	28 23.14			4 32.43	
		57 35.6			40 58.1 31.0			10 0.2			.46 8.3	
		−18 23.4			5 24.1 19.89			22.9			24.1	
		57 2.2 4			40 52.2			9 24.4			45 33.2	

1883phae.proj.1618.

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1963phae.proj.tom8.

β Cassiop +1.63 +1.91 — κ Cass. +1.90 +2.15

0 2 56 −.04 | 0 26 21 −.04
+58 30 | +62 17
−16 34 −.28 | −19 54 −.34

2	9.0	21.3	2	449	25	27.0	424	26 8.6
		25.2		49.0			46.5	13.2
		29.3		53.0			51.2	17.5
		33.5		56.8			55.3	22.2
		37.3		0.7			0.0	26.7
		29.32		4.5			51.08	31.0
		24.8		8.7			—	35.4
		28.4		12.7			5.73	39.9
		32.4		16.4			1.8	44.3
		36.8		24.67			6.3	23.67
		4.2		30			10.7	—
		32.42		54.67			1.80	—
		0.87	3	0.74			26.44	26 2.652
			3	0.80				26 26.48
			−	3			→	− 3
			3	0.77				26 26.45
			3	2.24		+0.586		+0.58
			−	1.47		+98.5		+1.44
				56.38		−.08		21.45 −.09
						−5.86		
						−43743		
					2	56.40 34		

41378
9.71788

1 1 378
4.66753

84	28.6	+51.80	1.71433	47	47.8	+56.48	01.77437	
	19.6				38.0			
	48.3				55.6			
34	24.18			47	42.90			
−	35.13				35.63			
33	48.95	−16 7 14	1.22120	47	6.95	−19 53 55	1.31890	

Nov 1
Rel V

−18	23.1	23.4
	19.8	~~19.9~~ 24.1
	22.9	22.9
	24.1	24.1
		25.7
−18	22.48	~~23.20~~ 24.04

+906
+16.99
−.66
−.84
+15.49
49 14.89

+837
+21.25
−.78
−.51
+19.96
36 1.36

+58 48 5940

+62 35 41.40

−18 24.04
+.20
−33.80
−18 5.64
30 17.25

49 14.89
+.20
49 15.09
30 49.4
25.7
30 15.6

36 1.36
+.25
17 86

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Nov. 5 1883

β Cygni +.52 +1.13 +.48 +.00

19 25 58 +27 43 +14 40 +.25

α Cygni +1.19 +1.55 +.00 −.13

19 33 18 +49 57 −7 34

ε Draconis +2.75 +2.92 −.01 −.46

19 48 34 +69 58 −27 35

ψ Cygni +1.28 +1.63 −.01 −.17

19 52 36 +52 7 −9 44

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

No Ephemeris — No Ephemeris

3 Urs. Maj.		+2.58 / +2.77	B Cass.	+1.63 / +1.91	Br. 6		T Cass.	+1.90 / +2.15
20 1 9 / +111 11 / −68 48		−.01 / −.93	0 2 56 / +58 30 / −16 7	−.04 / −.28	0 9 36 / +76 18 / −33 55	−.04 / −.56	0 26 21 / +62 17 / −19 54	−.04 / −.34

0 67 17.6	0 52.0	16.6	2 6.1 19.7	2 43.1	8 4.5 15.0	9 7.4	25 18.3 40.5	26 7.3
8.8 23.5	53.9	18.5	9.2 23.5	47.2	15.5 23.5	16.2	23.2 45.0	11.9
16.2 29.0	55.8	20.2	12.9 27.5	51.3	29.5 32.1	24.9	26.7 49.6	16.2
19.1 34.8	57.5	22.2	15.3 31.7	55.3	8 16.50 40.9	33.6	30.2 53.8	20.7
22.0 40.5	59.4	24.0	17.7 35.6	59.1	49.7	42.4	34.4 58.4	25.0
0 14.56 29.08	1.5	26.0	2 12.24 27.60	3.0	32.24	51.3	25 26.56 49.46	29.1
1 45.7 49.0	3.3	27.9	3 56.6 22.8	7.0	9 27.4 34.2	0.0	26 23.4 51.7	34.1
50.0 54.6	5.2	30.0	59.8 26.8	10.9	39.4 43.0	8.4	27.5 56.0	38.4
53.2 0.4	7.0	31.9	2.1 30.6	15.0	53.7 52.4	17.4	31.0 3.3	42.6
56.8 6.1	9.0	33.5	5.0 34.6	29.19	9 40.17 0.1	20.16	34.5 4.9	22.03
0.7 11.9	11.0	35.6	7.7 38.7	24 53.19	9.2	18	38.7 9.0	
1 53.24 0.40	12.7	37.6	4 2.24 30.70		51.78	38.16	26 31.02 0.38	
	14.5	32.40	59.15	2 59.10	10 50.0 42.01	9 4.240	26 55.0 24.92	26 25.03
	16.6 / 34.26	1 14.67			55.2		58.8	
		1 14.67		2 59.12	59.0	9 42.20	3.0	26 24.97
		+ 04		− 3	6.3	− 6	7.4	− 3
					12.6		27 1.05	
					10 / 11 58.02 / 0.62			
							27 26.8	
		1 14.71		2 59.09		9 42.14	29.5	26 24.94
		1 15.85 +2.16		3 2.17 +2.21			32.8 +2.21	
		− 1.14 +1.24		− 3.08 +.78			35.2 +.91	
		9.46 +.03		56.38 −.04			38.0 −.09	21.43
		−6.39		−5.79			27 32.46	
		−3.02 5.50		−2.84				
		1 4.69		2 56.25				
		9.21						

11378m / 9.55793n	11378m / 9.71788	11378m / 9.37445	11378m / 1.66753

54 54.2	+60.11	1.77895	34 27.1	+46.88	1.67099	48 58.0	+85.70	1.93298	47 41.8	+58.41	1.76649
54.2	−38.61	1.58640n	17.9	−63.12	1.80017n	48.5	+2.03	0.30750	33.9	−6.05	0.78176n
108.4			45.0			106.5	−78.42	1.89443n	75.7	−36.08	1.53727n
54 54.20			34 25.8			48 53.3			47 37.85	−67.49	1.82924n
+ 28.23			− 31.82			− 26.38			+ 35.30		
55 22.43	−68 46 44	2.16784	33 50.68	−16 7 15	1.22130	48 26.87	−33 55 45	1.58790	47 25.5	−19 54 0	1.31890
	45 57	2.16759		8 29	1.22180		56 9	1.58810		54 37	1.31910
55 42.0			33 13.5			45 33.8	56 34	1.58820	47 5.0	54 56	1.31930
39.9			4.0			24.0			56.6	55 16	1.31940
81.9	+2.89		17.5	+9.91		57.8	+10.06		121.6	+10.49	
55 40.95	+2 28.16		33 8.75	+17.03		45 28.90	+39.62		47 0.80	+21.35	
− 18.13	+ .66		+ 42.84	− .53		− 0.62	− .91		+ 3.66	− .78	
55 22.82	− .98		33 51.59	− .88		45 28.28	− .18		47 4.46	− .52	
	+2 27.84			+ 15.62			+ 38.53			+ 20.05	
	29 53.76			49 13.29		45 8.5	38 0.01		46 14.2	36 5.85	
						58.4			87.1		
	+2 28.07			+ 17.05		167.9	+ 39.64		83.3	+ 21.36	
	+ .28			− .96		45 3.95	− .00		46 41.65	− .01	
	− .14			− .62		+ 24.14	− .10		+ 21.87	− .40	
	+2 28.21			+ 15.47		45 28.09	+ 39.54		47 3.46	+ 20.95	
	53.74			12.23			37 59.61			4.84	
							+ 39.65		47 26.1		
							− .82		18.2	+ 21.37	
							− .00		44.3	− .29	
							+ 38.83		47 22.15	− .34	
							59.09		+ 40.79	+ 20.74	
									47 2.94	5.63	
+111 / 27 25.92			+58 / 48 57.67			+76 / 37 21.48			+62 / 35 45.80	+ 21.37	
		−18 23.04			−18 23.04					− 1.02	
25.53		+ .72	56.76		+ .22	37 20.87			43.89	− 28	−18 23.04
		− 32.30			− 34.70					+ 20.07	+ 26
	29 53.75	−18 54.62		49 12.76	−18 57.52	37 20.26	37 59.57		44.89	5.48	
	+ .72	10 59.13		+ .22	30 15.24		+ .43			36 5.45	
	29 54.47			49 12.98			38 0.00			+ .26	
	11 32.8			30 50.3					45.41	36 5.71	
	21.7			22.7							
	11 0.5			30 15.6						17 8.8	

1883phae.proj.1618.
John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Nov. 5 1883

g Cass

α Cass.

Nov 5

Reg

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

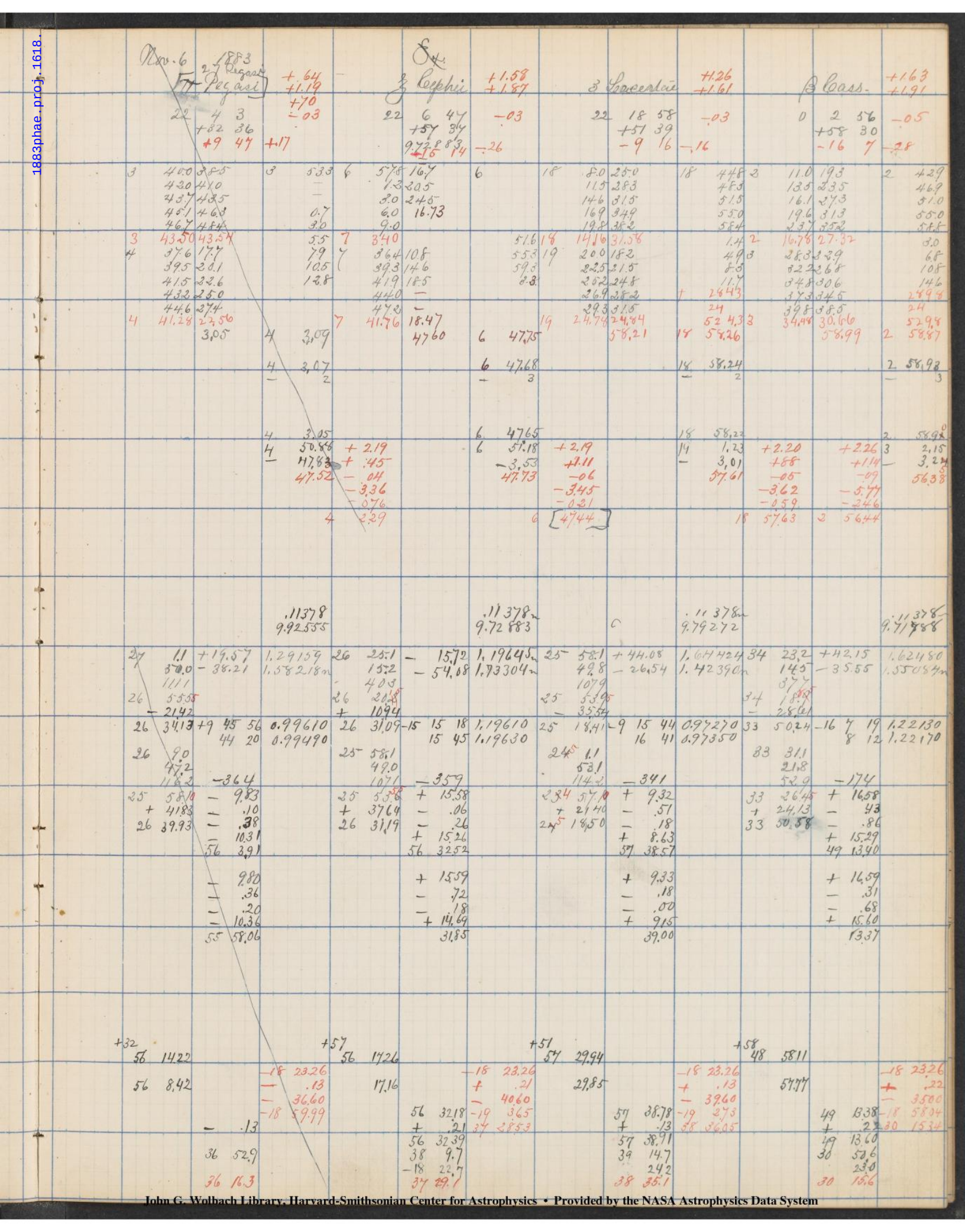
1883phae.proj.1618.

Nov. 6 1883

Pegasi

ε Cephei

β Cass.



John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Nov. 6 1883

Nov. Ephemeris

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Nov. 7. 1883

α Cygni +1.19 +1.55 +51 −.01 −.13

19 83 18 +49 57 9.80852 −7 34

ε Draco. +2.75 +2.92 −.01 −1.16

19 48 34 +69 58 −27 35

ψ Cygni +1.28 +1.63 −.01 −1.17

19 52 36 +52 8 −9 45

ο Cygni +1.05 +1.45 −.01 −.07

20 9 57 +46 23 −4 0

33 34.1 37.0 39.8 42.0 45.7

33 39.72 35.0 38.1 41.4 44.6 47.7 41.36 25.64 15.72

33 3.0 6.1 9.3 12.6 15.8 19.0 22.2 25.5 28.7 14.22 — 15.80 15.77 — 2 15.75 19.5 28 3.1 57 18.24

46 52.7 57.4 18 6.5 11.4 47 2.02 48 29.46 49 2.92 8.59 50 4.7 5.6 6.4 8.5 6.48

283 343 403 465 524 40.36 4.6 11.0 16.7 22.8 29.0 16.82 24.59 37.1 41.1 46.8 37.48 +2.91 +.61 −.02 −1.04 +2.46 18.21

48 48.7 107 166 227 287 34.7 40.6 46.6 52.6 25.40 48 28.67 48 28.63 48 28.59 48 32.97 4.38 33.82

52 159 186 208 230 258 20.82 53 130 184 232 279 53 22.54 53 30.4 33.0 34.9 37.4 33.92 +2.91 +1.40 −.03 +.85 +5.13 48 33.72

0.2 37 7.0 10.4 13.8 7.02 540 54.3 0.7 4.1 7.4 0.70 33.86 +13.06 −48.66 −60.04 −9 45 10 45 57 46 8 +6.93 +10.06 −.04 −.30 +9.72 26 40.64 +10.07 −.63 −.14 +9.30 37.68 +10.07 −.95 −1.10 +9.02 38.98 26 39.18 +.14 26 39.32 8 17.7 7 22.3

52 20.5 23.9 27.2 30.5 33.8 37.3 40.6 44.0 47.3 30.51 52 33.10 52 33.88 52 33.86 52 32.48 3.62 36.29 52 36.21

1.11378m 9.80852 1.3793 1m 1.93757 9.91968m 1.83790m 1.99052m 1.47820 1.47840 1.47850 1.47860 0.88460 0.99560 0.99620 0.99630 1.11594 1.68717m 1.77844m 0.99560 0.99620 0.99630

9 12.0 15.2 17.3 19.6 31.4 17.10 5.24 5.94 1.5 57.00 33.2 35.0 37.6 40.0 42.0 10 37.56 +2.91 +.65 −.02 −1.19 +2.35

41 22.0 11.2 8.32 41 16.60 40 42.49 40 46.0 35.5 40 40.75 1,65 40 42.40 40 8.1 40 41.65 40 48.5 48.1 9.76 35 48.80 40 42.03

+38.06 −1.84 −59.40 42 +8.00 +4.11 −.39 −26 +3.46 42 9.32 +4.12 −.00 −14 +3.98 9.93 +4.13 −.49 −.02 +3.62 10.32

+46 42 5.86 5.95 6.70

9 12.0 15.2 17.3 19.6 31.4 17.10 5.24 5.94 1.5 57.00 33.2 35.0 37.6 40.0 42.0 10 37.56

31.26 13.0 16.0 19.0 2 19.00 55.13

9 43.3 46.2 49.2 52.1 55.1 58.3 13 4.1 7.1 31.66 59.66 9 55.18 9 58.16 2 9 55.14 9 58.57 3.43 56.86

1.11378m 1.88861 0.58047 0.26482m 1.62737m 0.60550 0.60680 0.60790

+2.91 +.54 −.01 −1.71 +1.73 9 56.87

42 23 48.0 23 12.9

15 52.02 15 59.33 +.10 16 59.43 57 3.50 18 2.44 57 2.2

+50 +70 +52 +46

16 41.13 −1.67 −18 22.73 +.10 −32.80 −18 5543 57 390 −18 22.73 +.37 8.19 −35.50 10-18 5786 58 11.24 −18 22.73 +.14 −34.60 −18 5719 7 42.62 −18 22.73 +.06 −35.10 −18 5777 23 12.35

39.87 39.37 39.36 17 9.35 17 9.72 47 58 47.1 −18 22.64 58 11.6 28.38 29.96 7 22.3 43.7

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Nov-7 1883

χ Cephei +4.44 +4.55

γ Leygni +.84 +1.30

4 Cass. +1.85 +2.10

θ Cass. +1.10 +1.48

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

γ Cass -

0 49 39 −.05
+60 5
−17 42 −.30

48 44.4
49.0
53.1
56.6
59.7
46 52.58
49 15.7
18.2
22.2
26.1
28.0
49 22.034

49 25.8
29.7
33.5
38.0
42.2
46.0
50.2
54.3
58.8
3777
−85
49 44.97
42.06
49 44.97 42.06
− 3
4203
49 44.94
49 45.88 +2.93
− 3.94 +.89
85
39.24 −.12
−.64
−.294
49 39.09

59 51.2 + 49.47
42.0 + 28.02
93.2
59 46.60
− 32.08

59 14.58 −17 41 57 1.26420
42 9 1.26440

59 34.2
24.7
58.9 +16.524

59 29.45
− 12.92
59 16.53
+ 19.09
− .58
− .96
+ 17.55
23 51.38

+ 19.10
− .09
− .90
+ 18.11
49.99

Nov 7
Reg

−18 24.4 24.4
22.6 22.4
21.5 22.3
21.9 22.2
22.5 22.7
22.5 22.5
23.8 22.7
22.9 23.1
22.3 22.3
−18 22.71 22.73

+60
23 33.83
31.88

−18 22.73
+ .24
− 30.60
23 50.18 −18 5[illegible]7.09
+ .24 4 5.76.59
50.92
5 28.6
22.3
4 58.0

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Nov. 8 1883

α Cygni +1.19 +1.55 +.68 −.03

19 33 18
+49 57
9.40852
−7 34 −.13

β Cygni +.99 +1.41

19 41 19 −.04
+44 31
−2 28 −.04

ε Draco +2.75 +2.92

19 48 24 −.04
+69 58
9.53475
−27 35 −.46

γ Cygni +1.28 +1.63

19 52 36 −.04
+52 8
9.78805
−9 45 −.17

11378m
9.80852

11378m
9.85062

11378m
9.53475

11378m
9.78805

+2.98 +.51 −.05 −1.01 +2.73

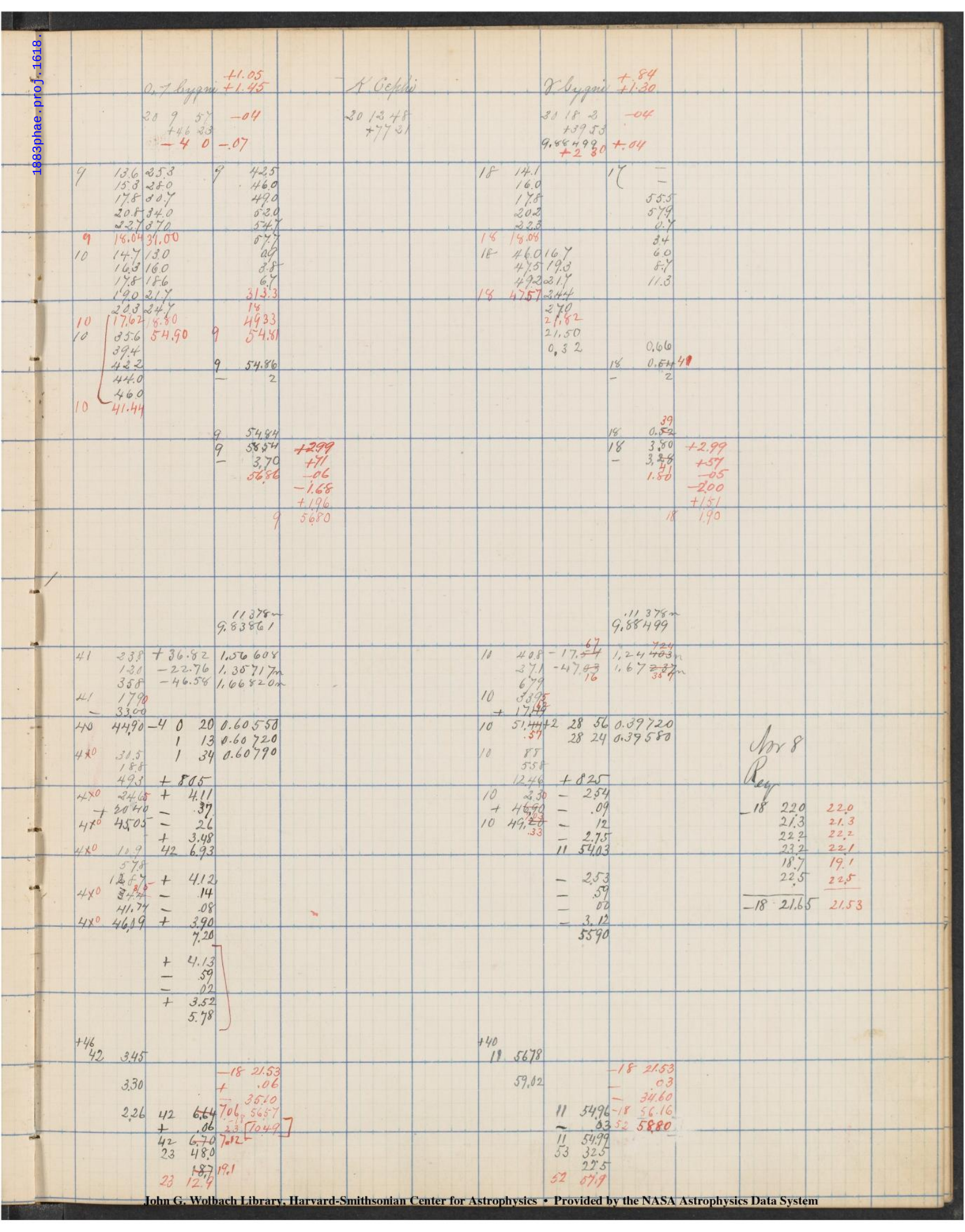
+2.98 +.67 −.06 −1.39 +2.20

+2.98 +1.87 −.12 +0.91 +5.64

+2.99 +.57 −.06 −1.16 +2.64

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.



John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Nov. 12 1883

N.A

Grd 3244

+3.10 +3.25 +53 .00

20 31 30.0 +72 8 9.48686 −29 45 −.50

δ Cygni +1.00 +1.41

20 37 26 −.01 +44 52 −2 29 −.04

61 Cygni +.79 +1.27

21 1 39 −.01 +38 10 +4 13 +.07

Gr 2777 +4.55 +4.66

21 7 49 −.01 +47 39 −35 16 −.58

11 378m 9,48686

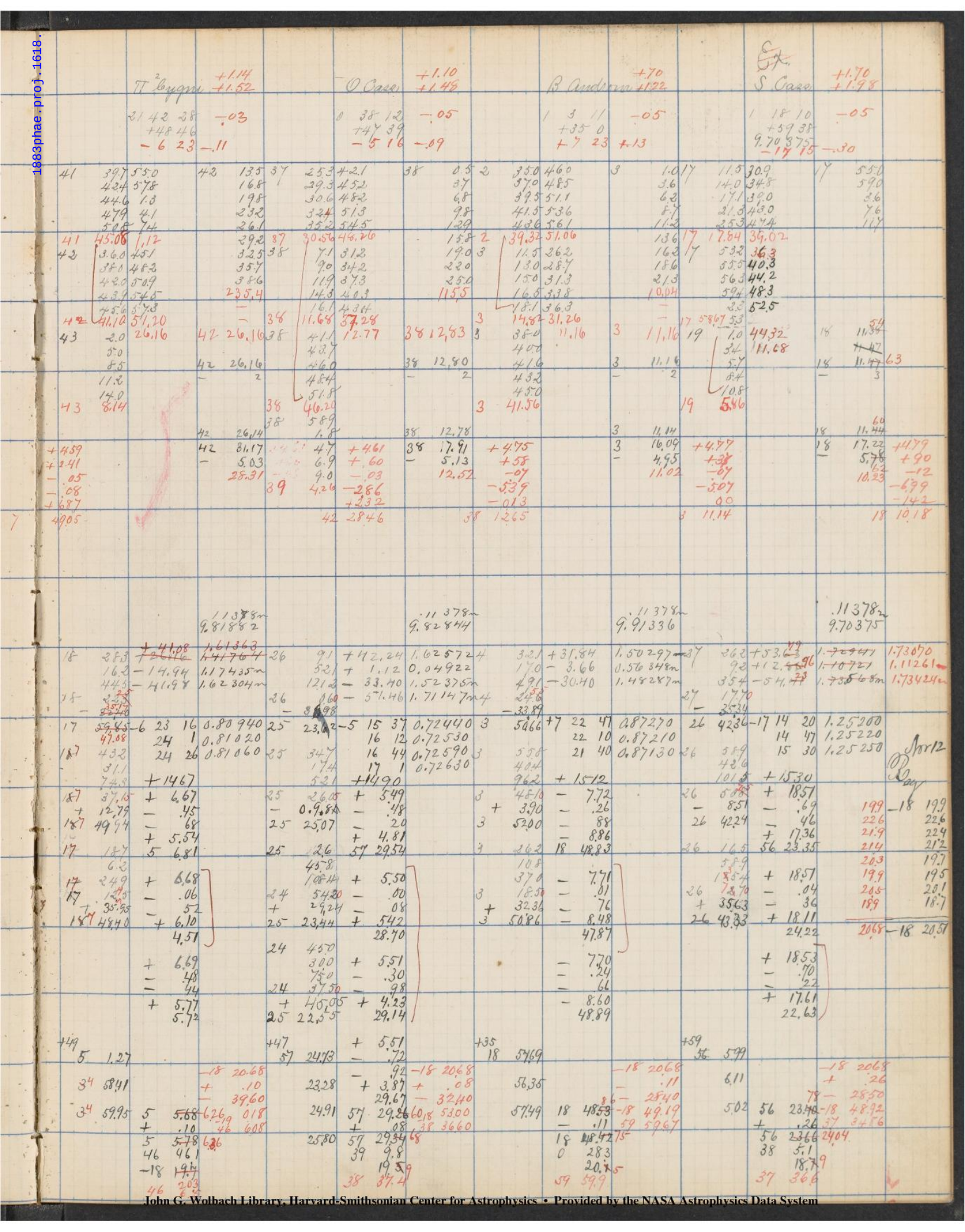
11 378m 4,85049

11 378m 9,89544

11 378m 9,32960 2.02839

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.



John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Nov. 14 1883

κ Cephei +4.44 +4.55 +.58 +1.00

20 13 48
+7 7 21
9.34043
+1.7 −34 58 −.57

γ Cygni +.84 +1.30 +.04

20 18 21 +1.00
+39 53
9.88499
+2 30

θ Cephei +1.93 +2.17

20 27 37 −.01
+62 36
9.66295
−20 13 −.35

λ Cygni +1.00 +1.41

20 37 26 −.01
+44 53
−2 29 −.04

.11378n
9.34043

.11378n
9.88499

.11378n
9.66295

.11378n
9.85049

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618

T Bryant +1.14 +1.52 | i Andromedae +.92 +1.36 | O Cass +1.10 +1.48 | B Andromedae +.70 +1.22

21 42 28 −.03 +48 46 −6 23 −.11 | 23 32 24 −.04 +42 37 −0 14 −.00 | 0 38 12 −.05 +47 39 −5 16 −.09 | 1 3 11 −.05 +35 6 +7 23 +.13

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Nov. 14 1883

S Cass

+1.70
+1.98
+58
+05

1 18 10
+59 38
−17 15 −.30

17	41.6	30.5	17	53.0
	45.0	34.5		59.0
	47.5	38.9		3.2
	50.4	42.8		7.2
	54.0	47.1		11.3
17	47.70	38.76		15.3
18	20.0	35.6		19.6
	23.0	39.9		23.7
	24.0	44.0		24.8
	29.9	48.0		21.3
	32.5	52.0		42
18	26.48	43.90		64.23
19	12.0	11.33	18	11.37
	13.0			
	15.4		18	11.35
	17.7		−	3
	21.3			
19	15.84			
			18	11.32
			18	17.20
			−	5.88
				10.23

+4.82
+.89
−.12
−6.97
−1.28

18 10.04

.11378₂
9.70375

27	7.0	+23.65	1.37383
	50.8	−15.13	1.17984₂
	1178	−64.53	2.80976₂
26	58.90		
	−15.54		
26	43.36	−17 14 39	1.25210
		15 5	1.25240
26	41.1	15 38	1.25260
	24.7		
	65.8	+2178	
26	32.90	+ 18.79	
+	9.94	− .14	
26	42.84	− .40	
		+ 18.25	
26	8.9	56 23.24	
	5.14		
	1203	+ 1880	
26	0.85	− .05	
+	42.39	− .30	
26	42.54	+ 18.45	
		24.46	
		+ 1881	
		− 100	
		− .20	
		+ 17.61	
		23.42	

Nov. 14

Rep

−18	20.5	20.4
	20.4	20.4
	19.6	20.0
	20.6	20.1
	21.0	21.0
	20.1	20.2
	19.8	19.8
	19.7	19.9
	18.9	19.1
−18	20.07	20.16

+59°
56 4.99

6.01

5.81

−18 20.16
+ .27
94 − 2850
56 23.71 −18 4839
+ 27 37 3555
56 23.98 2421
38 5.1
−18 18.9 19.1
37 36.6

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Nov. 17 1883

Rm. 3241

30 30 30
+7 28

ζ Cygni

+1.00
+1.41
+68
−.01
−.04

20 37 26
+44 52
−2 29

36 440 525 37 100 52 85 169 52 331 0 580 89 1 246
460 553 128 110 195 360 1.7 115 272
487 584 157 129 222 387 3.5 144 298
508 1.2 187 147 250 414 5.7 170 326
538 42 218 162 278 443 7.6 196 352

36 48.46 58.32 2445 52 12.66 22.28 467 1 1.78 14.28 376
37 400 390 27.3 52 354 0.4 49.7 56.5 51.0 403
427 420 30.3 360 32 525 588 536 430
445 4488 334 408 60 551 1.3 562 457
463 477 19 45 428 85 375 3.4 588 460
490 5058 445 116 6.0 1.6 −
37 44.50 44.50 52 40.30 5.94 2 1.20 56.24
21.86 37 21.61 53 74 44.11 52 4417 35.26 1 35.11
105
37 21.58 121 52 44.14 1 35.18
− 2 140 − 2
165
53 12.10

37 2156 52 44.12 1 35.16
37 2857 +6.18 52 5091 +6.19 1 41.79 +6.20
− 695 +68 − 6.79 +58 − 6.63 +54
2663 −00 4871 −01 3912 −03
−1.88 −220 −2.67
+49.8 +456 +404
37 26.54 52 48.68 1 39.20

11378
9.85049

11378
9.87964

11378
9.89554

γ Cygni

+.86
+1.32

30 52 49
−02
+40 43
+1 40
+.03

61 Cygni

+.79
+1.27

21 1 39
−02
38 10
+4 13
+.07

56 546 12 485 +33.12 1.52609 21 290 +31.48 1.49803 53 381 +23.33 1.52284
361 296 −22.92 1.36021 32 + 3.84 0.58433 390 − 26.09 1.41647
907 781 382 − 27.96 1.44654 971 531
56 45.35 12 39.05 21 19.10 53 48.6
− 3050 − 3100 − 3465

12 8.55 −2 28 59 0.39750 20 48.10 +1 39 41 0.22290 53 14.50 +4 12 11 0.62660
29 49 0.39980 39 13 0.22070 43 11 11 0.62480
18 58.4 21 11 38 43 0.21850 52 590
38.7 41.0 39.0
97.1 +2173 102.1 +2210 98.0 +2330

18 48.35 + 2.63 20 51.05 − 1.76 52 49.00 − 4.46
+ 21.11 − .30 − 3.78 − .26 + 26.66 − .30
12 966 − .54 20 47.27 − 26 53 15.66 − .76
+ 1.79 − 2.28 .58 − 5.52
10 41.59 28 31.2 1 57.97 29 28.40
10.5 9.45
+ .264 X 4.17 − 1.75 − 4.44
− .14 20 20.85 − .01 − .18
− .36 + 27.54 − 16 − .54
+ 2.14 20 48.39 − 1.32 − 5.18
40.83 59.16 28.59

− 1.74
− .21
− .10
− 2.05
57.91

+45 +41 +38
10 39.80 2 0.25 29 33.92

38.69 −18 19.82 −18 19.82 −18 19.82
+ .04 2 1.08 − .03 33.77 − .07
− 36.10 54 − 36.50 − 38.50
10 41.21 −18 5.588 1 59.96 1 58.35 −18 56.35 29 28.50 −18 58.79
+ .84 51 45.33 − .03 43 2.19 − .07 10 29.71
50 41.25 1 58.32 29 28.43
52 21.8 43 38.3 11 1.3
− 18 19.4 20.0 21.1
51 45.7 43 1.8 10 28.4

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Nov. 17 1883

Bu 2777 +4.55 +4.66 +.68 −.02

21 7 57 +47 39 −35 16 −.58

II Cygni +1.14 +1.52

21 42 28 +48 46 −6 23 −.11

B Cass +1.63 +1.91

0 2 56 +58 30 9.71744 −16 7 −.28

Jos Ekheimers

K Cass +1.90 +2.15

0 26 21 +62 17 −19 54 −.34

.11378m 9.33018

.11378m 9.81897

.11378m 9.71809

.11378m 9.66755

+6.2 +1.3 −.0

1883phae.proj.1618.

D Cass +1.10 +1.48 | B Andrews +.79 +1.22 | S Cass +1.70 +1.98 | No Ephemeris. | F M Cass. +1.55 +1.85

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Nov 21 1883.

ε Cygni +.66 +1.20 +.70

20 41 27 −.01

+33 32

+ 8 51 +.15

W Cephei +1.83 +2.09

20 42 54 −.01

+61 24

−19 1 −.33

L Cygni +.86 +1.32

20 52 49 −.01

+40 43

9.87964 +1 40 +.03

61 Cygni +.79 +1.27

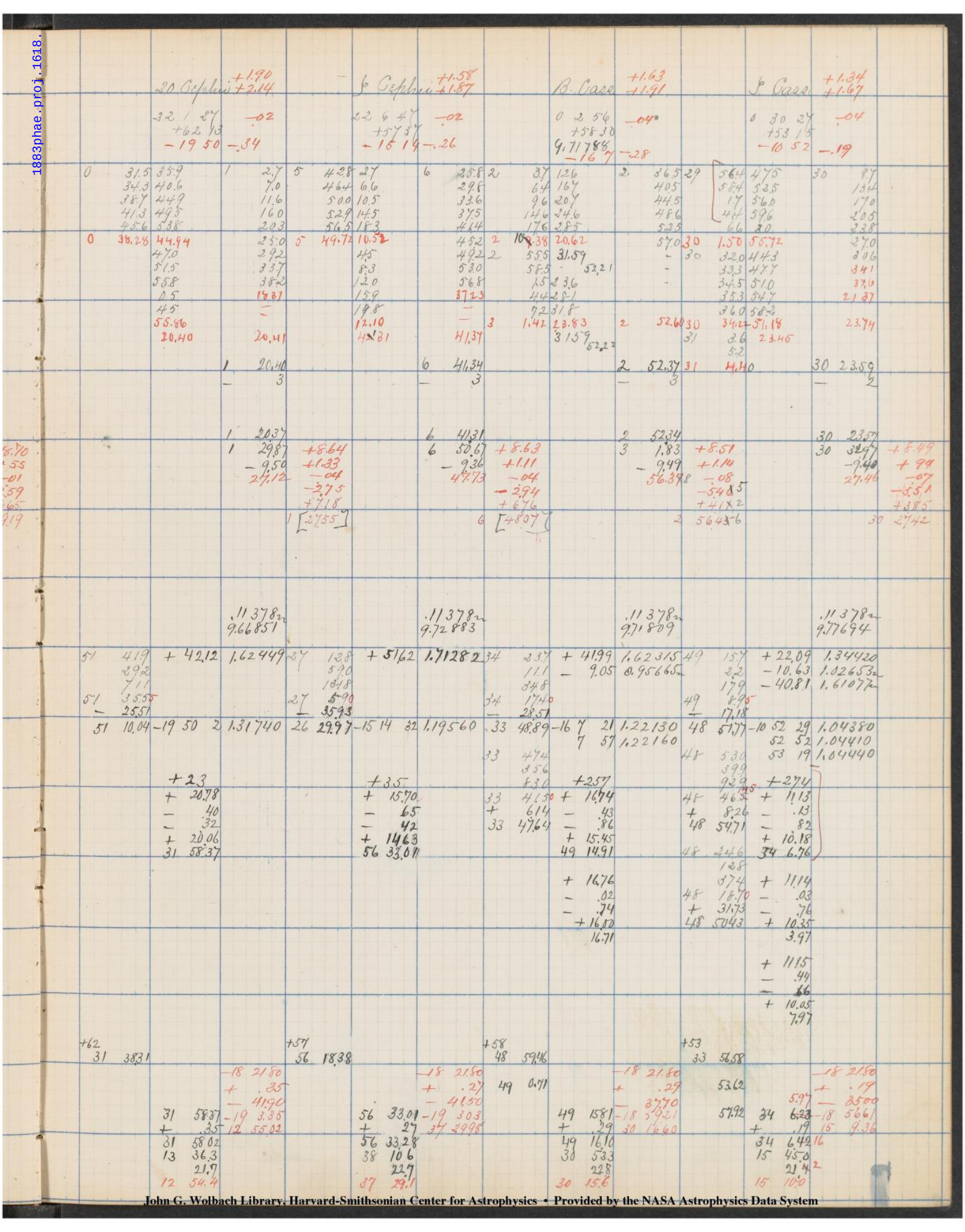
21 1 39 −.01

+38 10

+4 13 +.07

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.



John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Nov 21 1883
+1148
X Case +6.78
+70
0 33 52 —.04
+55.54
— 13 31 —.23

33 5.88 11.7 33 34.0
24 15.5 37.6
50 19.2 41.4
7.8 22.8 45.0
10.3 26.6 48.5
33 41.90 19.16 52.5
33 53.0 10.6 56.0
55.0 14.4 59.7
59.2 18.0 3.5
1.3 21.7 4382
4.5 25.6 —
33 55.60 18.86 — 69
34 30.2 48.61 48.7
3.23
35.0 33 48.65
37.6 — 3
39.8
34 34.96

33 48.62
33 58.12 +8.48
— 9.50 +.04
52.37 —.04
— 3.75
+3.70
33 52.32

.11378n
9.74868

10 58.8 + 43.69 1.64038
45.3 — 9.95 0.99782n
104.0 — 46.33 1.66586n
10 52.00
— 31.83
10 20.17 —13 30 46 1.14110
31 24 1.14140
10 20.8 31 51 1.14170
7.5
26.3 + 2.76

10 14.8 + 13.93
+ 7.25 — .48
10 21.40 — .18
+ 13.27
9 53.4 12 41.45
4.13
9.47 + 13.94
9 47.7 — .03
+ 33.75 — .04
10 21.10 + 13.87
40.82
+ 13.95
— .54
— .96
+ 12.45
39.70

+56°
12 28.18

—18 21.80
26.95 + .23
— 35.00
27.25 12 40.66 —18 56.57
+ .23 53 43.69
12 40.89
54 18.6
—18 21.9
21.9
53 43.9

Nov 21
Reg

—18	20.8	20.8
	20.7	20.7
	22.6	22.6
	21.7	21.7
	22.7	22.7
	22.8	22.8
	21.4	21.2
	22.3	21.9
—18	21.88	21.80

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Nov 22 1883

3 Lacertae +1.26 +1.61 +66 −.03 −.16

22 18 58 +51 39 −9 16

10 Lacertae +.79 +1.28 −.03 +.07

22 34 0 +38 26 9.89385 +3 57

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Nov. 27. 1883

6 1 Cygni +.79 +1.27 +.62 +.00

21 1 39 +38 11 +4 12 +.07

Bd. 2777 +4.55 +4.66

21 7 49 +77 39 −35 16 −.58

74 Cygni +.84 +1.30

21 32 16 +39 53 +2 30 +.04

2 Π Cygni +1.14 +1.52

21 42 28 +48 46 9.81863 −6 23 −.01 −.11

12 29 40 5.5 62 8.0 74 10.7 96 13.3

1 5.68 8.08 1 436 447 461 474 477 50.0 480 52.8 512 55.4 1 47.5 50.6 29.07

1 18.5 212 238 265 291 317 344 370 395 26.17 29.04 1 29.08 − 2 29.06

5 206 274 35.8 44.7 54.1 3652 ~~3~~02 396 460 524 597 74 49.64 5302 265 348 427 493 570 42.06 260 333 376 452 536 39.14 1 39.086

558 5.0 15.5 3.50 1526 40.0 50.0 59.5 8.5 7 3245 11.98 +12.00 + .49 − .00 −2.47 +100.0

6 540 40 13.7 23.5 33.0 424 522 18 11.7 2363 60 8363 32.92 265 348 427 493 570 42.06 260 333 376 452 536 39.14 7

31 240 25.7 27.3 29.4 31.6 2760 7.9 10.0 12.2 14.0 18.5 32 11,92 32 36.5 38.0 404 424 440 32 40.26 4.99 +12.01 +2.82 .00 +1.47 +163.28 48.9489

39.0 41.5 44.1 47.0 49.5 44.22 21.7 24.4 27.2 29.8 32.4 27.10 5.66

31 54.7 57.3 0.5 3.0 5.6 83 11.0 13.6 16.2 17.02 42 59.02 32 5.58 32 5.62 − 2 32 5.60 32 18.11 − 12.51 15.60

41 27.3 31.6 33.6 36.4 39.5 41 33.68 +12.03 +.52 .00 −2.51 +100.3 32 15.63

46.8 50.0 53.0 56.2 59.4 53.08 25.04 18.12

42 5.6 8.6 11.8 15.0 18.3 21.3 24.3 27.5 30.6 16.30 18.11 42 18.11 − 2 42 18.09 42 30.79 − 12.70 28.31

+12.05 +.41 −.01 −2.48 +10.285 42 28.384

11378 9.89544

11378 9.33018

11378 9.88499

11378 9.81897

53 45.0 32.0 77.0 +23.40 − 18.44 1.36922 1.26576

53 38.50 − 23.90

25 5.92 46.0 10.52 +11.616 +39.66 − 9.38 25 52.60 − 66.46 − 32.29 2.06508 1.57835 0.97220 1.82256

11 12.0 5.76 12.96 + 38.02 − 6.30 − 34.64 11 4.80 − 37.91 1.58501 0.79934 1.53958

18 31.4 19.2 50.6 18 25.30 − 38.06 + .44.43 1.64768

18

18

53 14.60 +4 12 0 11 18 0.62620 0.62500

53 3.2 4.9 11.3 +19.22

25 20.31 25 4.06 2.78 6.84 −35 15 45 16 4 16 17 16 34 +19.48 1.60950 1.60960 1.60970 1.60970

10 26.89 10 2.8 1.5 4.3 +2 29 27 28 44 28 15 +20.31 0.39890 0.39660 0.39550

17 47.24 +20.60 −6 23 13 0.80930

17

17

52 56.15 + 1884 53 11.99 − 4.42 − .14 − .72 − 5.28 29 28.47

25 34.20 − 11.02 25 23.18 + 42.56 − 1.55 − .18 + 40.83

10 21.90 + 6.28 10 28.18 − 2.63 − .39 − .22 − 3.24

10 0.2 4.5 10.6 12 18.22

+ 6.76 − .53 − .68 + 5.53 5 6.66

− 4.41 − .09 − .58 − 5.08 28.28

25 279 14.3 42.2 + 42.59

25 21.10 + 2.67 25 23.71 − .18 − .12 + 42.27 7.44

10 53.00 9+ 34.54 10 27.54 − .61 − .02 − .08 − 2.71 17.46

25 11.3 5.76 12.88 25 44.9 + 18.47 25 22.87 + 42.58 − .01 − .08 + 42.49 7.13

− 2.60 − .32 − .98 − 3.90 16.91

+380 29 33.75

+17 57 28.04 + 42.58 − .51 ± − .02 2517 + 42.05 7.53

12 21.46 20.17

+49 5 1.11

−18 21.03 − .08 − 38.20 29 28.38 − .08 29 28.30 11 6.6 −18 21.7 10 28.4

−18 21.03 + .64 − 40.60 246.4 58 7.74 + .64 2548 58 8.38 39 46.2 22.9 21.8

2081 12 17.55 − .04 12 17.49 53 54.5 53.0 22.6

−18 21.03 − .04 −18 38.20 −18 59.27 53 14.91

−18 21.03 + .12 − 39.30 −19 0.21 46 6.45 5 6.66 + .12 5 6.78 46 4.58 21.0 46 6.5

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

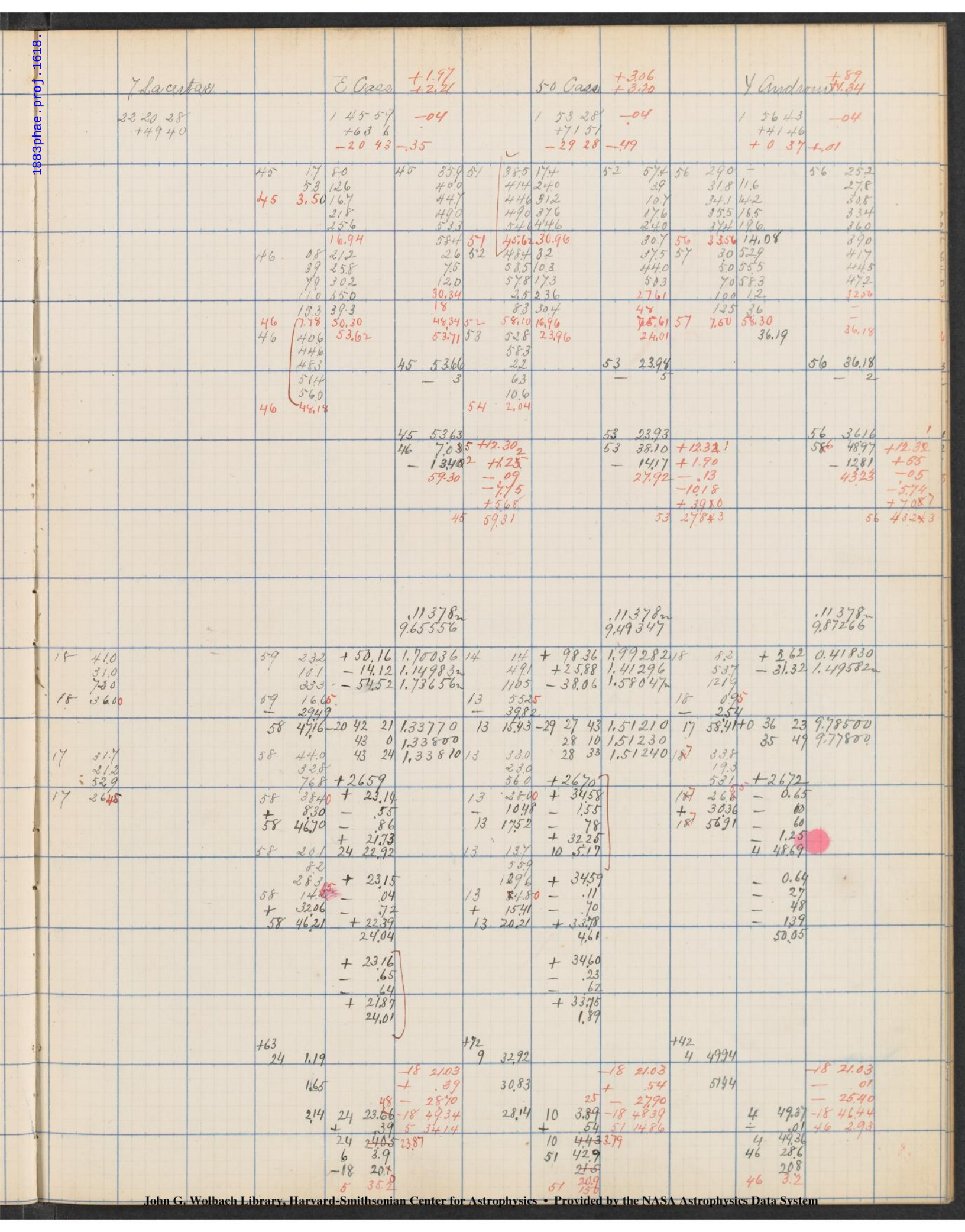
1883phae.proj.1618.

γ Lacertae

E Cass +1.97 +2.54

S Cass +3.06 +3.20

γ Andromedae +.89 +1.34



John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Nov. 27 1883

α Arietis +.42 +1.09

β Trianguli +.68 +1.21

γ Hyi. Maj.

Nov 27
Reg

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Nov. 28 1883

Br 2777 | 74 Cygni | π² Cygni | 7 Lacertae

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Nov 24 1883

o Cassiop.			β Androm.			ε Cassiop.			50 Cass.		
	+1.10			+.70			+1.97			+3.06	
	+1.48			+1.22			+2.21			+3.20	
	+.60										
0 38 13	-.03		1								
+ 47 39			1 3 11	-.03		1 45 59	-.04		1 53 28	-.04	
- 5 16	-.09		+ 35 0			+ 63 6			+ 71 51		
			+ 7 23	+.13		- 20 43	-.35		- 29 28	-.49	

37	22.8	33.8	37	52.3	2	26.8	37.6	2	52.7	44	43.3	7.7	45	35.1	51	59.8	17.8	52	57.4				
	23.4	37.1		55.5		29.2	40.2		55.4		46.3	12.2		39.7		5.0	23.5		3.7				
	28.2	40.2		58.3		31.5	43.7		58.0		49.5	16.7		44.5		11.5	30.9		10.8				
	30.7	44.0		1.6		33.4	45.3		0.3		52.0	21.0		48.8		15.8	37.3		17.0				
	24.1	46.3		4.5		35.4	47.7		3.9		56.5	25.6		53.5		22.8	44.0		24.1				
37	28.24	40.04		7.4	2	31.26	42.70		7.5	44	49.52	16.64		57.9	52	10.68	30.70		30.5				
37	5.8	22.8		10.6	2	38.3	1.8.0		8.0	45	45.0	20.2		2.2	52	5.96	3.9		37.7				
	5.6.0	25.7		13.8		0.0	20.9		10.5		47.5	25.0		7.4		6.3	10.2		44.0				
	59.3	28.8		16.8		2.0	23.0		13.0		51.6	29.7		11.6		13.1	17.0		50.5				
	0.8	31.9		22.08		4.2	25.2		24.3		54.0	34.4		30.07		17.5	23.4		27.37				
	30	35.0		360		6.0	28.0		-		59.3	39.90		18		22.2	29.7		48				
37	58.58	28.44		58.08	3	2.10	22.94			45	51.44	29.66		48.07	53	11.74	16.84		7.537				
38	2.72	4.46		4.53			2.82	3	0.29	46	36.9	53.15	45	53.41	53	4.53	23.77	53	23.97				
	30.5										42.0					51.7							
	33.5		38	4.50				3	2.87		44.8		45	53.28		58.0		53	23.87				
	35.5		-	2				-	2		48.3			- 3		2.2		-	5				
38	31.67										52.1				53	54.30							
										46	44.82												
										47	6.6				57	30.2							
											9.4					54.2		53	23.82				
			38	4.48				3	2.85				45	53.25									
			38	1.70		+12.64		3	15.96		12.3	+1.266	46	7.04		34.4	+1.267	53	38.91		+12		
				- 13.22		+.66			-13.11		15.6	+ .42		- 13.79		45.0	+ 1.18		14.285		+ 1.		
				12.52		-.04			11.02		17.0	- .04	45	59.30		49.0	- .09		27.92		-		
						-5.18				47	12.04	-.494			54	38.80	-.774				-16		
						+.808						+.810					+.602				+ 4		
						38 1.256						3 1.095				45 59.27				53	2.8		

.11378n
9.82844

.11378n
9.91336

.11378n
9.65556

.11378n
9.49347

25	59.9	+ 36.26	1.55943	4	31.7	+ 31.61	1.49982	59	29.4	+ 63.76	1.80455	13	54.3	+ 72.89	1.86267								
	43.6	+ 5.92	0.77232		15.8	+ 0.77	9.88649		14.9	+ 1.80	0.25527		38.1	+ 12.13	1.08386								
	10.35	- 27.17	1.13409n		47.5				44.3	- 51.54	1.71214n	13	92.4	- 30.43	1.48330n								
25	51.8	75		4	23.8	75		59	23.8	- 78.78	1.89642n	13	46.20	- 75.93	1.88041n								
-	31.74			-	33.65			-	37.49				29.51										
25	20.01	- 5 15 46	0.72470	3	50.10	+7 22 46	0.87270	58	44.66	-20 42 16	1.33770	13	16.69	-29 27 52	1.51220								
		16 11	0.72530			22 13	0.87210			42 50	1.33790			28 14	1.51220								
25	31.8	16 40	0.72590	3	58.3			58	55.8	43 22	1.33810	13	31.8	28 30	1.51230								
	19.1				43.6				40.9	43 39	1.33820		15.8	28 51	1.51240								
	5.2.9	+ 18.94			10.19	+19.61			9.67	+20.72			47.6	+20.92									
25	27.85	+ 5.54		3	50.95	- 7.80		58	48.35	+ 22.83		13	23.80	+ 34.13									
-	5.18	- .36		-	0.82	- .26			1.06	- .90		13	4.91	- 85									
25	21.77	- .18		3	50.13	- .88		58	47.29	- .88		13	18.89	- .76									
		+ 5.00				- 8.94				+ 21.05				+ 32.52									
25	5.9	57 33.34				18 49.31		58	23.1	24 24.74		13	15.8	10 4.18									
	49.6								8.0				0.0										
	11.55	+ 5.55				- 7.79			31.1	+ 22.84			1.58	+ 34.17									
24	57.75	- .01				- .00		58	15.0	55 - .00		13	7.90	- .02									
+	23.79	- .08				- .76		+	30.30	- .76		+	12.32	- .68									
25	21.54	+ 5.46				- 8.55		58	45.85	+ 22.08		13	20.22	+ 33.44									
		32.04				49.67		5		23.14				1.90									
		+ 5.56						58	7.2			12	55.1										
		- .20							51.8	+ 22.85			39.8	+ 34.16									
		- .00							11.90	- .09			9.49	- .14									
		+ 5.36						57	59.50	- .66		12	47.45	- .62									
		32.17						+	46.32	+ 21.60		+	30.79	+ 33.38									
								58	45.82	24.10		13	18.19	1.51									
+47°				+35				+63		+ 22.85		+72°		+ 34.14									
57	28.34			18	58.25			24	3.69	- .37		9	31.66	- .03									
			-18 20.84			-18 20.84				- .60	-18 20.84			- .56	-18 20.84								
	26.58		+ .10		58.22	- .15			1.06	+ 20.88	+ .40		29.46	+ 32.65	+ .55								
		69 - 34.60				- 30.00				23.41	- 28.70			2.81	- 27.90								
	26.81	57 32.52	-18 55.34			18 49.49	-18 50.99		2.50	24 23.85	14 -18 49.14		28.13	10 2.60	170 18 48.19								
		+ .10	38 37.35			- .15	59 58.50			+ .40	5 34.80			+ 5.5	51 1.351								
		57 32.62	79			18 49.34			2.53	24 24.25	34		30.16	10 3.15	25								
		39 12.0	8			0 29.9				6 3.9				51 42.9									
		18 20.0				19.4				20.34				20.4									
		38 37.4				59 54.9				5 35.2				14.3									
														57 15.8									

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

γ Androm +.89 +1.34

1 56 43 −.04
+ 41 46
+0 37 +.01

55 58.7 8.1 56 25.0
1.0 11.0 27.6
35 13.6 30.5
60 16.4 33.2
84 19.2 36.0

56 3.52 13.66 38.7
56 40.4 52.5 41.4
43.0 55.0 44.2
44.5 58.0 47.0
46.6 0.8 53.6
49.3 3.6

56 44.76 57.98
57 12.0 35.82 56 35.96
14.4
16.5 56 25.89
18.4
20.4
57 16.34

56 35.87
56 48.97 +12.67
− 13.10 +.53
43.23 −.85
−5.74
+.741
56 43.28

+12.67
+1.84
− .13
−10.15
+4.23
53 2.805

.11378
9.87266

18 36.1 + 32.37 1.51014
19.7 − 8.87 0.94792
55.8 − 40.45 1.60692
18 27.90
− 31.37

17 56.53 +0 36 50 9.79000
36 11 9.78200
17 57.0 35 41 9.77600
41.1
98.1 +2103

17 49.05 − 0.65
+ 8.60 − .29
17 57.65 − .70
− 1.64
17 27.2 4 50.18
11.9
34.1 − 0.64
17 19.55 − .03
+ 39.21 − .56
17 58.76 − 1.23
49.47

− 0.63
− .44
− .46
− 1.53
48.06

+42
4 51.82

50.70

49.59 4 49.24
− .01
4 49.23
46 28.7
20.54
46 3.2

Nov 28
Reg

18 21.0 21.0
22.0 22.0
21.9 21.9
22.1 22.4
20.6 20.8
19.4 19.4
20.3 20.4
20.2 19.3
20.5 20.4
18 20.89 20.84

18 20.84
− .01
12 − 25.50
18 46.35
46 2.77

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

DEC 3 1883

β Cephei +2.75 +2.92 +.75 −.03 9.53301 −27 40 −.46

74 Cygni +.84 +1.30 21 32 15 +39 53 −.03 +2 30 +.04

π² Cygni +1.14 +1.52 21 42 28 +48 46 −.11 −6 23 −.04

21 Cephei +1.90 +2.14 22 1 27 +62 13 −19 50 −.34 −.04

.11378 9.53301

.11378 9.88499

.11378 9.81897

.11378 9.66851

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

3 Lacertae | B Androm | B Trianguli | 55 Cass.

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Dec 3 1883

θ Persei +1.14 +1.52

2 36 13 +.75
+48 44 −.07
−6 21 −.11

τ Persei +1.29 +1.63

2 45 38 +.75
+52 17 −.07
−9 54 −.17

	20.2	320		95	50.8	44	55.0	15.1		45	35.2		
	22.3	35.2			53.9		57.5	18.4			38.7		
	24.3	38.2			57.0		0.0	21.8			42.1		
	27.5	41.3			0.2		2.7	25.2			45.5		
	30.0	44.6			3.3		6.0	28.5			49.0		
35	24.90	38.26			6.4	45	0.24	21.80			52.2		
35	47.2	22.0			9.7	45	47.3	9.0			55.7		
	49.4	25.0			12.7		50.1	12.5			59.0		
	51.1	28.3			15.8		51.5	15.9			2.3		
	54.1	31.3			29.4		54.3	19.0			43.97		
	56.3	34.5			—		56.5	22.5			—		
35	51.62	26.22			—	45	54.94	15.78			—		
36	30.7	32.4		36	3.31	46	16.3	48.79		45	48.86		
	32.4						18.6						
	34.8			36	3.27		20.7			45	48.83		
	36.5			—	2		23.4			—	2		
	39.2						25.6						
36	34.72					46	20.92						
				36	32.5					45	4881		
				36	19.39		+15.34			46	5.85	+15.34	
					−16.14		+.86				−1624	+.97	
					12.79		−.10				58.06	−.11	
							−6.60					−6.99	
							+9.50					+9.21	
						36	12.75				45	58.02	

.11378
9.81926

.11378
9.78658

21	1.0	+	38.37	1.58399	48	1.0.0	+	48.59	1.68655				
	38.4	+	11.65	1.06633		49.0	−	3.00	0.48				
	99.4	−	31.45	1.49762		11.98	−	32.06	1.50				
20	49.70				48	59.50							
−	32.89					38.63							
	20 16.81	−6	20 48	0.80660	48	20.87	−9	53 38	1.60190				
			21 10	0.80700				54 17	1.60240				
20	39.0		21 46	0.80770	47	30.9		54 40	1.60270				
	16.1					10.9							
	55.1	+	34.30			41.8	+	34.35					
20	27.55	+	6.93		47	20.90	+	10.87					
−	9.98	−	.40		+	2.45	−	.63					
20	17.57	−	.16		47	23.35	−	.60					
		+	6.37				+	9.64					
20	32.2	2	37.91		47	68	35	37.12					
	40.2					47.3							
	10.32	+	6.94			11.61	+	10.88					
19	51.70	−	.04		46	58.05	−	.01					
+	26.95	−	.10		+	25.59	−	.46					
20	18.65	+	6.80		47	23.54	+	10.41					
			37.58			6		35.39					
		+	6.95				+	10.89					
		−	.27				−	.27					
		−	.96				−	.40					
		+	5.72				+	10.22					
			35.42					35.00					
+49°					+52								
2	31.54				345	27.48							
				−18	17.82				−18	17.82			
	30.78			+	.13	35	24.98		+	.20			
				66	21.70			36.06	−	20.70			
	30.70	2	36.47	−18	39.39	35	24.78	35	35.84	−18	38.32		
		+	.13	43	57.27			+	.20	16	57.84		
		2	36.10		36.79			35	36.04				
		44	18.9					17	17.8				
		−18	18.2						18.25				
		43	57.9					16	57.1				

Dec 3
Ray

−18	18.3	18.3
	18.3	18.3
	17.9	18.3
	16.7	17.0
	17.7	17.7
	17.6	17.6
	16.5	16.5
	18.0	18.1
	18.2	17.9
	18.2	18.5
−18	17.74	17.82

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Dec 4 1883

π^2 Cygni +1.14 +1.52 +.70 +.00

21 42 28 + 48 46 − 6 23 −.11

20 Aphei +1.90 +2.14 +.00 −.34

22 1 27 +62 13 −19 50

3 Lacertae +1.26 +1.61 +.00 −.16

22 18 57 +51 39 −9 16

7 Lacertae +1.18 +1.55 +.00 −.13

22 26 29 +49 41 −7 18

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Dec 4 1883

10 Yacutat

22 34 0
+ 38 26
+ 3 57

Dec 4
Reg

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Dec. 6 1883

η Pegasi		o Androm.		π Cephei		Br 3077	
22 37 31	+57 +1.15 +.65 +.00	22 56 32	+89 +1.34 +.00	23 4 11	+3.36 +3.80 .00	23 7 31	+1.51 +1.81 +.00
+29 36		+41 42		+74 45		+56 31	
+12 47	+.22	+0 41	+.01	−32 22	−.54	−14 8	−.24

36 59.7 53.0 · 1.7 55.6 · 3.9 57.9 · 6.0 0.3 · 7.5 2.5
37 7.3 · 9.8 · 12.1 · 14.6 · 17.0 · 19.2 · 21.8 · 24.0 · 26.4 · 15.22
55 48.9 50.6 · 50.3 53.2 · 52.0 56.3 · 53.5 59.2 · 55.2 1.7
56 7.2 · 10.0 · 12.9 · 15.6 · 18.4 · 21.1 · 23.8 · 26.6 · 29.3 · 16.49
2 19.5 36.6 · 24.0 45.0 · 27.2 53.5 · 35.7 0.6 · 46.3 8.1
3 24.2 · 31.9 · 40.0 · 48.3 · 57.0 · 3.9 · 11.6 · 19.0 · 26.7 · 26.10 · 24
6 49.2 48.3 · 52.3 51.8 · 56.0 55.5 · 0.2 59.2 · 3.2 3.0
7 10.2 · 14.3 · 17.7 · 21.4 · 25.1 · 29.0 · 32.7 · 36.3 · 39.9 · 22.66

37 37.6 57.86 · 37 46.0 31.0 · 47.7 33.5 · 49.5 35.9 · 51.0 38.3 · 52.3 40.5 · 37 49.30 35.84 · 16.85
55 51.98 56.20 · 56 33.0 34.9 · 35.2 37.5 · 36.7 40.4 · 38.1 43.0 · 40.7 45.7 · 56 36.74 40.30 · 18.25
2 30.54 52.56 · 3 1.0 42.? · 7.4 50.? · 12.6 58.4 · 18.2 5.5 · 25.8 14.0 · 29.0 58.10 · 15.67 55.33
6 56.18 55.56 · 7 31.5 47.5 · 34.0 51.3 · 36.6 55.0 · 39.0 58.7 · 42.0 2.7 · 7 36.62 55.04 · 8 14.0 25.30 · 16.3 · 18.8 · 21.0 · 23.3 · 8 16.28

37 16.91 · 56 18.32 · 3 55.84 · 7 25.18
37 16.88 − 2 · 56 18.29 − 2 · 3 55.58 − 6 · 7 25.24 − 3
4 17.3 · 25.4 · 30.8 · 37.5 · 41.2 · 4 30.84

37 16.86		56 18.27		5 11.6		3 55.52		7 25.21	
37 34.32	+16.97	56 35.81		18.0	+16.98	4 14.86	+16.99	7 43.12	+16.99
− 17.46	+37	− 17.54		24.0	+.58	− 19.34	+2.98	− 17.91	+98
31.12	+00	32.37		32.1	+.00	10.74	00	31.15	+00
	−3.20			37.2	−3.44		−4.12		−11.97
	+14.14			5 24.58	+14.12		+15.05		+6.00
	37 31.00				56 32.39		4 10.57		7 31.21

.11378 · 9.93927 | .11378 · 9.87311 | .11378 · 9.42001 | .11378 · 9.74170

28 1.1 + 13.12 1.11793 · 41.2 − 32.42 1.51081 · 10.23 · 27 51.? · − 14.8?
23 8.2 + 26.31 1.42012 · 48.0 − 18.45 1.26600 · 11.62 · 22 58.10 · − 25.53
20 16.0 + 85.04 1.92962 · 57.0 + 39.91 1.60108 · 13.30 − 35.26 1.54728 · 20 6.50 − 89.00 1.94939
33 43.9 + 29.06 1.46330 · 25.3 − 11.38 1.05614 · 69.3 − 53.44 1.72787 · 33 34.60 · − 20.83

27 36.33 +12 45 39 1.11530 · 44 47 1.11480
22 32.57 +0 40 46 9.83500 · 40 1 9.82600
19 37.43 −32 22 6 1.56210 · 22 19 1.56220 · 22 46 1.56230 · 23 8 1.56230
33 13.77 −14 8 37 1.16170 · 9 7 1.16190 · 9 38 1.16220

27 9.0 · 48.3 · 11.73 +20.74
22[2] 28.8 · 25 · 26.3 +21.49
20 2.8 · 43.7 · 10.65 +21.74
33 14.9 · 55.4 · 13.03 +21.85

26 58.65 − 13.68 · + 36.63 − .04 · 27 35.28 − .58 · − 14.30 · 54 57.72
22[2] 13.15 − 0.72 · + 17.90 − .19 · 22 31.05 − .60 · − 1.51 · 0 14.27
19 53.25 + 38.36 · + 13.64 − .99 · 19 39.61 − .02 · + 37.35 · 19 3.40 3 48.27
33 5.15 + 8.16 · + 33 13.31 · 32 43.8
+ 15.26 · − .21 · − .72 · + 14.33 · 49 48.91

− 13.66 · − .25 · − .40 · − 14.31 · 58.76
− 0.70 · − .09 · − .44 · − 1.23 · 16.07
17.1 · 5.11 + 38.37 · 19 25.55 − .22 · + 12.05 − .98 · 19 37.60 + 37.17 · 45.91
24.9 · 6.8 · 32 34.4 · + 38.31 · 33 12.66
+ 15.27 · − .03 · − .62 · + 14.62 · 47.66

19 13.1 · 55.0 + 38.37 · 8.1 − .18 · 19 4.05 − .88 · + 30.42 + 37.31 · 19 34.47 48.16
+ 15.28 · − .72 · − .52 · + 14.04 · 49.73

+29 55 12.02 · 13.07 · −17 47.28 · − .27 · − 35.40 · 54 58.24 −18 22.95 · − .27 36 35.29 · 54 58.51 · 37 9.8 · −17 48.7 · 38 34.4
+42 0 15.78 · 17.30 · −17 47.28 · − .01 · − 38.50 · 0 15.17 −18 25.79 · − .01 41 49.38 · 0 15.16 · 42 28.9 · 46.3 · 41 50.4
+75 3 10.92 + 38.37 · − 1.10 · − 82 −17 47.28 · 8.74 + 36.45 + .67 · 50.33 − 43.20 · 10.75 3 48.17 −18 30.01 · + .67 45 18.21 · 13.88 3 48.84 · 46 1.7 · 47.? · 45 18.3
+56 49 34.58 · 35.04 · 35.69 · 49 49.43 · −17 47.28 · + .30 · − 41.60 · −18 28.58 · + .30 31 20.74 · 49 49.7 · 32 2.4 · 47.3 · 31 20.8

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618

Dec 6 1883

φ Persei +1.20 +1.56 +.65 −.02

1 36 20
+ 50 6
9.80 716
−7 43 −.13

θ Persei +1.14 +1.52 −.03 −.11

2 26 13
+ 48 44
−6 21

41 Arietis +.50 +.12 −.03 +.27

2 43 6
+26 47
+15 36

τ Persi +1.29 +1.63 −.03 −.17

2 45 58
+ 52 17
−9 54

11378
9.80716

11378
9.81926

11378
9.95071

11378
9.78658

Dec 6

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Dec. 10 1883

φ Persei +1.20 +1.56 +.77 −.09 −.13

1 36 20
+30 6
9.80716
−7 43

θ Persei +1.14 +1.52 −.12 −.11

2 36 13
+48 44
−6 21

μ Cet +.17 +1.61 −.12 −.54

2 38 37
+9 37
+32 .46

No Ephemeris

η Persei +1.45 +1.76 −.12 −.22

2 42 10
+55 24
−13 1

.11378
9.80716

.11378
9.81926

.11378
9.99385

.11378
9.75423

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Dec 10 1883

τ Persei

2 45 58
+52 17
−9 54 −.17

+1.29
+1.62
+.77
−.12

ψ Persei

2 56 20
+53 3
−10 40 −.19

+1.33
+1.66
+.77
−.12

23 10.6
52 14.0
80 17.3
99 20.8
113 24.2

45 31.0
34.3
37.6
41.0
44.2

55 335 319
362 354
39.0 38.7
40.8 42.0 45.8
43.7

55 522
560
594
27
64

45 7.34 17.38
50 43.7
51.7 8.0
54.0 11.5
57.0 14.8
59.7 18.3
45 54.48 11.40

47.7
51.0
54.5
58.0
3.93
—
—

55 38.64 38.76
56 5.3 26.6
8.2 30.1
10.0 33.5
12.0 36.9
14.1 40.4
56 9.92 33.50

97
131
166
199
23.60
36
56 59.60

46 1.87 44.39
2.22
2.53
27.1
29.6
46 24.58

45 44.37
45 44.38
— .2

56 37.4 6.13
39.8
43.0
44.9
47.0
56 42.42

57 6.22

45 44.36
46 5.01
−20.65
58.06

+19.83
+.99
−.19
−6.95
+13.68
45 58.04

56 6.16
56 26.84
−20.68
19.68

+19.83
+.052
−.20
−.716
+.359
56 19.75

.11378n
9.78658

.11378n
9.77896

48 29.0 +37.08 1.56914
14.4 −10.10 1.00432n
43.4 −40.20 1.60423n
48 2.170
−29.48

2 313 + 2.754 1.43996
16.0 − 3.74 0.57287n
47.3 − 36.24 1.55919n
2 3.365
− 2.151

47 52.22 −9 53 50 1.00200
54 29 1.00260
47 50.2 54 53 1.00280
35.0
85.2 +14.79

2 21.4 −10 39 48 1.03520
40 14 1.03540
2 6.0 40 40 1.03580
50.2
116.2 +14.91

47 42.60 + 10.39
+ 8.03 − .36
47 50.63 − .66
+ 9.37
47 26.1 35 5.50
11.6
37.7 + 10.41
47 18.8 − .03
+ 31.96 − .54
47 50.81 + 9.84
7.56

1 58.10 + 11.22
+ 2.92 − .20
2 1.02 − .48
+ 10.34
1 3.94 20 58.75
24.1
63.5 + 11.23
1 31.75 − .01
+ 28.31 − .40
2 0.06 + 10.82
58.15

+ 10.41
− .43
− .48
+ 9.52
7.06

+ 11.24
− .34
− .30
+ 10.60
58.89

Dec 10
Mer

−17 49.0 49.0
48.0 47.7
47.3 47.3
47.9 47.5
48.2 47.7
−17 48.08 47.84

+52
34 56.18

+53
20 46.21

57.72

−17 47.84
+ .22
28 − 21.90
57.54 35 6.71
+ .22
35 6.93
17 1.90
−17 47.25
16 59.1

47.33

48.29

−17 47.84
+ .25
48 − 20.40
−18 7.02
2 .056
20 57.93 57.99
+ .25
20 58.18 57.10 49.46
3 10.0
48.2
2 48.7
46.6

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Dec. 11 1883 too faint to read

β Cass.	γ Cassiop	α Cassiop	δ Cassiop
0 2 56	0 38 28	0 33 52	0 38 13
+ 58 30	+ 53 15	+ 55 54	+ 47 39
P	P	P	P

34 7.1	50 30	11 29.0	25 24.0
499	450	12.9	54
1170	1080	419	294
33 58.50	49 54.00	11 30.5	25 14.6

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Dec. 11 1883

γ Androm. +.89 +1.34 +.74 −.09

1 56 41
+41 46
+0 37 +.01

α Arietis +.42 +1.09

2 0 33
+2 2 37
+19 29 +.33 −.10

β Trianguli +.68 +1.21

2 2 35
+34 26
9.91631 +.14 −.10

55 Cass. +2.24 +2.45

2 5 18
+65 58
9.60988
−23 35 −.40 −.10

#

.11878ₙ
9.87266

.11378ₙ
9.96435

.11378ₙ
9.91634

.11378ₙ
9.60988

Dec 11
Obs

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618..

Dec 12 1883

10 Leporis

i Cephei

Br 3077

41 H Cephei

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Dec 12 1883

β Arietis +.37 +1.07 +.71 −.08 +2.38

50 Cass. −.08

γ Androm. +.89 +1.34 −.08 +.01

α Arietis +.42 +1.09 −.08 +.33

Dec 12 Reg

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

Dec. 13. 1883.

7 Lacertae — +.75 −.01
22 26 28
+49 41
P

10 Lacertae
22 34 1
+38 26
P

i Cephei +2.20 +2.42
22 45 31 −02
+65 35
9.61634
−23 12 −.39 51.4

Br 3077 +1.51 +1.81
23 7 31 −05
+56 31
−14 8 −.24

44 8.0 21.2 44 56.4 6 26.6 43.2 7 5.8
10.7 26.2 10 29.3 47.0 9.4
13.5 31.0 60 31.8 50.8 13.1
17.4 36.2 11.1 34.9 54.4 17.0
20.7 41.0 16.0 37.2 58.3 20.7
44 14.06 31.12 21.0 6 31.96 50.74 23.7
44 40.5 41.0 25.8 7 26.6 43.2 28.2
45.0 46.0 31.0 30.3 47.1 31.9
48.4 50.0 33.5 50.7 35.8
51.4 55.7 36.0 54.4 18.56
44 44.63 0.7 50.74 68 58.2 50.74
31.60 20.74
45 37.5 10.90 45 15.99 8 15.0 7 20.62
41.4 11.08 19.5
44.0 45 10.99 22.3 7 20.68
48.2 4 24.4 3
51.3 25.4
46 44.48 8 21.32

34 21.0
23.7
27.0
30.0

45 10.95 7 20.65
45 33.94 7 +21.27 7 42.91 +21.28
− 22.99 +1.65 − 22.26 +1.13
− 23.02 −.05 31.15 −.09
31.03 −2.94 −11.76
+19.93 +10.56
45 30.88 7 31.21

.11378n .11378n
9.61634 9.74170

23 57.0 37 12.0
43.4 54.4
100.4 126.4
23 50.20 37 3.20

30 16.1 + 56.93 1.75534 33 55.4 + 48.66 1.68777
0.3 + 26.36 1.42095 39.3 − 10.98 1.04860n
16.4 − 33.49 1.52492n 94.7 − 60.70 1.78319n
30 8.20 33 47.35
− 30.58 − 34.87
29 37.62 −23 12 4 1.39230 33 12.46 −14 8 25 1.16150
12 22 1.39240 9 6 1.16190
29 57.6 12 54 1.39260 33 14.0 9 44 1.16220
43.0 57.8
100.6 +9.54 131.8 +9.97
29 50.30 + 25.23 33 5.90 + 14.84
− 14.16 − .67 + 7.87 − .60
29 36.14 − .02 33 13.77 − .72
+ 24.54 + 13.52
29 26.0 53 35.27 32 36.0 49 49.45
9.9 20.0
33.9 + 25.23 56.0 + 14.85
29 17.95 − .14 32 28.00 − .03
+ 17.99 − .91 + 43.52 − .59
29 35.94 + 24.18 33 11.52 + 14.23
36.39 48.85
+ 25.24 + 14.87
− .23 − .95
− .82 − .48
+ 24.19 + 13.44
36.60 50.31

+65 +56
53 10.73 49 35.93
−17 47.71 −17 47.71
53 12.21 + .51 34.62 + .32
35.94 − 42.50 41.50
53 12.41 53 36.09 −18 29.70 36.87 49 49.58 −18 28.89
+ .51 35 6.24 + .32 31 20.69
53 36.60 45 49 49.90
35 49.0 32 2.3
−17 47.64 47.6
35 6.5 31 20.8

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Dec 13 1883

41 H Cph +2.38 +2.58 +.75 −.05 −.42

φ Persei +1.20 +1.56 −.05 −.13

γ Orionis +.89 +1.34 −.05 +.01

ζ Persei +.42 +1.09 −.05 +.33

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

3 Triangles +.68 +1.21 — 55 Case +2.24 2.45

2 2 35 −.05 | 2 5 19 −.05
+ 34 26 | + 65 58
+ 7 57 +.14 | − 23 35 −.40

1	422	526		2	86	4	31.9	135		4	442
	446	56.0			111		34.9	1887			493
	470	58.5			13.6		39.2	23.7			544
	48.5	1.1			16.1		41.6	29.0			593
	502	3.6			18.5		45.3	34.4			43
1	46.50	58.36			21.0		47.8	23.86			9.5
2	37.5	32.7			33.5	4	40.12				14.5
	39.6	36.1			26.1	5	0.5	24.6			19.8
	414	38.6			28.6		39	39.7			24.7
	430	41.1			16.71		7.3	45.0			24.600
	448	43.5			—		10.2	50.0			30
2	41.26	38.60			—		13.7	55.0			38.00
		16.48		2	18.47	5	7.12	44.86			4.44
					57	5	30.7	4.36			
				2	18.52		35.0			5	4.40
				−	2		36.4			−	4
							38.9				
							43.0				
						5	36.86				
				2	18.58					5	4.36
				2	40.37		+21.34			5	27.22
					−21.87		+.57				−2.86
					35.05		−.07				18.85
							−5.32				−8.37
							+16.46				+14.53
					2		34.96				5 1889

c

.11378
9.91634

11378
9.60988

39	13.1	+ 32.02	1.50542	6	47.3	+ 24.28	1.38525				
	54.8	− 22.74	1.35679		31.8	− 2.72	0.43457				
	1279				791	− 32.46	1.51135				
39	3.95			6	8955						
−	34.32			−	12.85						
38	29.63	+7 56 52	0.96520	6	26.70	−23 35 32	1.40050				
		55 51	0.90420			35 47	1.40050				
38	12.5			6	32.5	36 3	1.40060				
	540				17.2						
	12.65	+1063			49.7	+ 1068					
38	3.25	— 8.24		6	2.485	+ 25.77					
+	24.37	— .26		+	1.44	— .12					
38	27.62	— .78		6	26.29	— .32					
		— 9.28				+ 25.33					
		44 9.44		6	1.74	16 46.98					
					1.5						
		— 8.22			1.89	+ 25.77					
		— .13		6	9.45	— .00					
		— .59		+	17.18	— .27					
		— 8.94		6	26.63	+ 25.50					
		11.79				47.50					
						+ 25.78					
						— .21					
						— .23					
						+ 25.34					
						47.06					
+34				+66							
44	18.72			16	21.65						
	20.73		−17 4271		22.06			−17 47.71			
			— .18					+ .53			
			— 24.50					02 − 29.80			
		44 10.62	−18 12.69		21.72	16 47.26		−18 16.98			
		— .18	−25 5.793			+ .53	58	30.04			
		44 10.44				16 47.73	55				
		26 24.2				58 59.1					
		46.2				48.0					
		25 59.4				47.9					
						58 28.9					

Dec 13

Rey

−17	47.6	47.4
	47.6	47.6
	48.4	48.5
	48.7	48.7
	48.0	48.0
	47.4	47.4
	46.2	46.2
	48.0	47.9
		47.71
−17	47.74	

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Dec. 22 1883

Gr. 3077 +1.51 +1.81 | τ Pegasi +.43 +1.09 | 4 Cassiop | θ Persei +1.14 +1.52

+23 731 +.82 | 23 14 57 -.12 | 2.3 19 38 | 2 36 13 -.18

+56 31 -.12 | +23 6 | +61 38 | +48 44

9.74170 | +19 17 +.33 | Ch. f | -6 21 -.11

-14 8 -.24

8.0 | 7 1.0 14 55.3 5.8 | 14 18.6 | 35 17.5 21.6 | 35 402

10.9 4.8 7.4 7.9 21.8 22.0 24.5 435

13.7 8.4 9.6 10.3 23.8 24.5 28.0 465

16.6 11.9 11.6 12.6 26.0 27.6 30.7 49.6

18.8 535 16.0 13.7 14.8 28.3 34.0 52.7

7 13.60 4602 19.4 14 9.52 10.28 30.7 35 22.27 27.76 55.8

8 0.2 3851 23.4 14 5.70 11.7 32.7 36 04 31.6 58.9

2.6 4421 27.0 5.93 13.9 35.2 27 35.3 2.1

5.5 453 30.6 1.1 16.0 37.3 48 18.0 8.3

7.8 402 1425 3.2 18.5 44 78 21.0 35 46

9.8 530 — 5.4 50.5 — 105 23.9 12

8 5.18 45.54 — 15 1.20 46.12 36 5.24 17.90 4746

15.78 7 15.83 28.20 14 28.27 36 35.2 52.83 35 52.73

37.7

7 15.80 14 28.24 40.2 35 52.78

— 3 — 2 42.6 — 2

44.7

36 40.68

7 15.77 14 28.22 35 52.76

7 4265 +25.79 14 54.14 +25.79 36 19.23 +25.87

— 2688 +1.24 — 25.92 +.35 — 26.47 +.93

31.15 -.22 50.80 -.14 12.79 -.27

-1.50 -3.34 -.644

+15.31 +22.66 +2.009

7 31.08 14 50.88 36 1.285

.11378$_2$ .11378

9.74170 9.96378$_2$ -.11378$_2$

9.81926$_2$

33 33.1 + 2.20 0.34242 58 48.5 + 18.75 1.27300 26 42.0 21 30.7 +30.51 1.48444

7.2 - 49.38 1.69355$_2$ 21.0 - 32.93 1.51759$_2$ 17.0 34 - 12.46 1.09552$_2$

40.3 6.95 5.90 341 - 47.30 1.67486$_2$

33 20.15 58 34.75 26 29.50 21 17.05

— 1.58 - 22.41 + 26.15

33 18.57 -14 8 52 1.16180 58 12.34 +19 16 23 1.30450 20 50.90 -6 20 55 0.80670

9 30 1.16210 15 18 1.30350 21 31 0.80740

32 55.5 57 4.82 35 54.5 20 54.1 22 2 0.80790

29.4 16.1 29.7 38.0

84.9 +4360 5.93 +4382 8.43 6.21 +4956

32 42.5 + 16.05 57 29.7 - 22.27 25 43.10 20 41.05 + 7.18

+ 35.45 - .00 + 39.35 - .07 + 10.68 - .25

33 17.85 - .63 58 4.01 - .68 20 51.73 - .25

+ 15.42 4.05 - 23.02 + 6.68

49 45.20 24 12.96 20 3.31 2 4.13

56.2

+ 16.06 - 22.25 139.3 + 7.19

- .62 - .21 20 96.5 - .04

- .51 - .48 + 46.54 - .13

+ 14.93 - 22.94 20 50.19 + .702

45.43 24 16.36 3.64

+ 7.20

- .61

- .04

+ 6.55

4.71

+56 +23 +49

49 29.78 24 35.98 1 57.45

-17 43.52 -17 43.52 -17 43.52

30.50 + .33 39.30 - .46 56.2 + .15

- 41.00 - 32.00 - 24.30

49 45.32 -18 24.19 24 14.64 -18 15.98 58.16 2 4.16 8 -18 7.67

+ .33 31 2.113 - .46 5 5.866 + .15 43 56.51

49 45.65 24 14.18 2 4.31 3

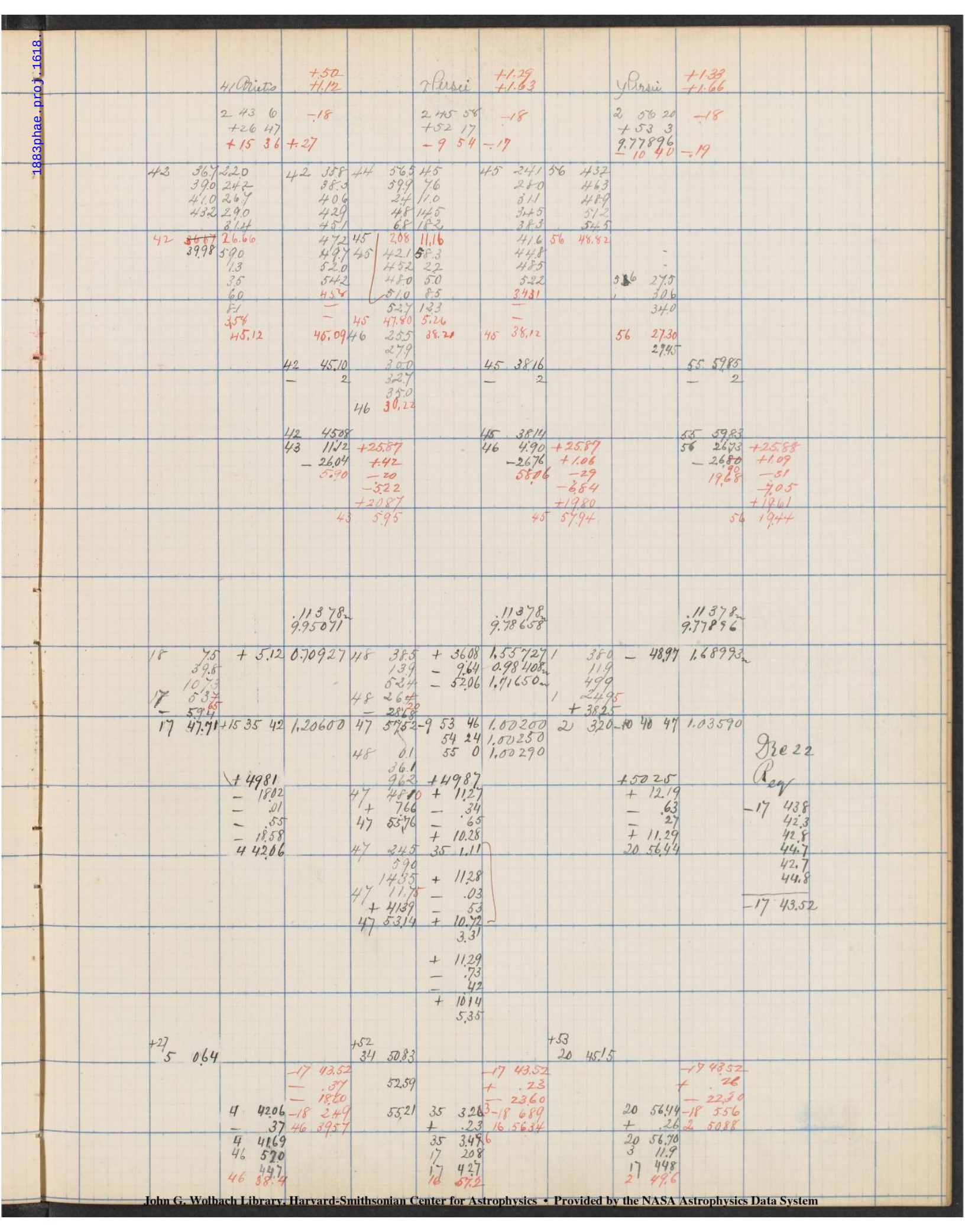
32 1.8 6 31.8 44 21.5

17 43.8 423 428

31 20.8 5 59.8 43 57.2

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae..proj.1618..



John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

Dec 26 1883

α Lyrae +.80 +1.28 +80 −.03

18 32 57
+38 41
+3 42 +.06

Br 3077 +1.57 +1.81

23 7 31 +.04
+ 56 31
−14P 8 −.24

Ex.

τ Pegasi +43 +1.09

23 14 57 +.04
+23 6
9.96 370
+19P 17 +.33

31 525 40 | 32 19.7 6 | ? 364 355 | 6 579 | 14 165
540 65 | 224 | 434 392 | 1.5 | 187
555 92 | 251 | 440 429 | 5.5 | 209
575 118 | 278 | 467 | 91 | 245
593 144 | 304 | 502 | 12.5 | 275
31 58.76 9.18 | 33.0 | 42.90 | 16.6 | 310
32 586 463 | 35.7 7 | 325 35.3 | 20.3
05 490 | 38.3 | 37.0 39.3 | 24.0
24 515 | 41.0 | 40.0 42.6 | 27.7
40 540 | 27 44 | 414 46.5 | 17 51
58 567 | −3 | 446 50.1 | 48
33 2.26 51.50 | − | 7 39.10 42.76 | 65 57
30.34 | 32 30.39 | 12.83 | 12.79 | 14 2542

32 30.36 | 7 12.81 | 14 2542
− 2 | − 3 | − 2

32 3034 | 7 1278 | 14 2540
32 5931 +28.37 | 7 425X3 +28.39 | 14 5408 +28.39
−28.97 +.64 | − 29.35 +1.21 | −28.68 +.34
58.64 −.04 | 31.15 +07 | 50.80 +04
−0.67 | −1.38 | −3.28
+28.30 | +18.29 | +25.49
32 5864 | 7 3107 | 14 50.89

.11378n | .11378n
9.89244 | 9.74170

25 63 + 34.60 1.53908 33 7.2 − 26.29 1.41977n 57 42.9
41.2 − 31.90 1.50379n 42.2 | 16.1
1075 | 1094 | 59.0
24 53.85 | 32 54.70 | 57 29.50
− 35.10 | + 18.85
24 18.75 +3 42 42 0.57240 33 13.55 −14 9 17 1.16210
41 32 0.57000

23 56.7
32.1
88.8 + 21.39 | +22.90
23 44.40 − 3.92 | + 15.31
+ 32.36 − .32 | − .17
24 16.76 − .93 | − .55
− 5.17 | + 14.59
58 24.43 | 49 49.39

Dec 26
Reg
−17

− 3.90
− .27
− .70
− 4.87
26.72

+38 | +56
58 29.60 | 49 34.80

31.59

58 25.58 | 49 4939
− .08 | + .34
58 25.50 | 49 49.73
40 442 | 32 1.5
−17 41.3 ? | 48.2 ?
40 31.6 | 31 20.8

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618..

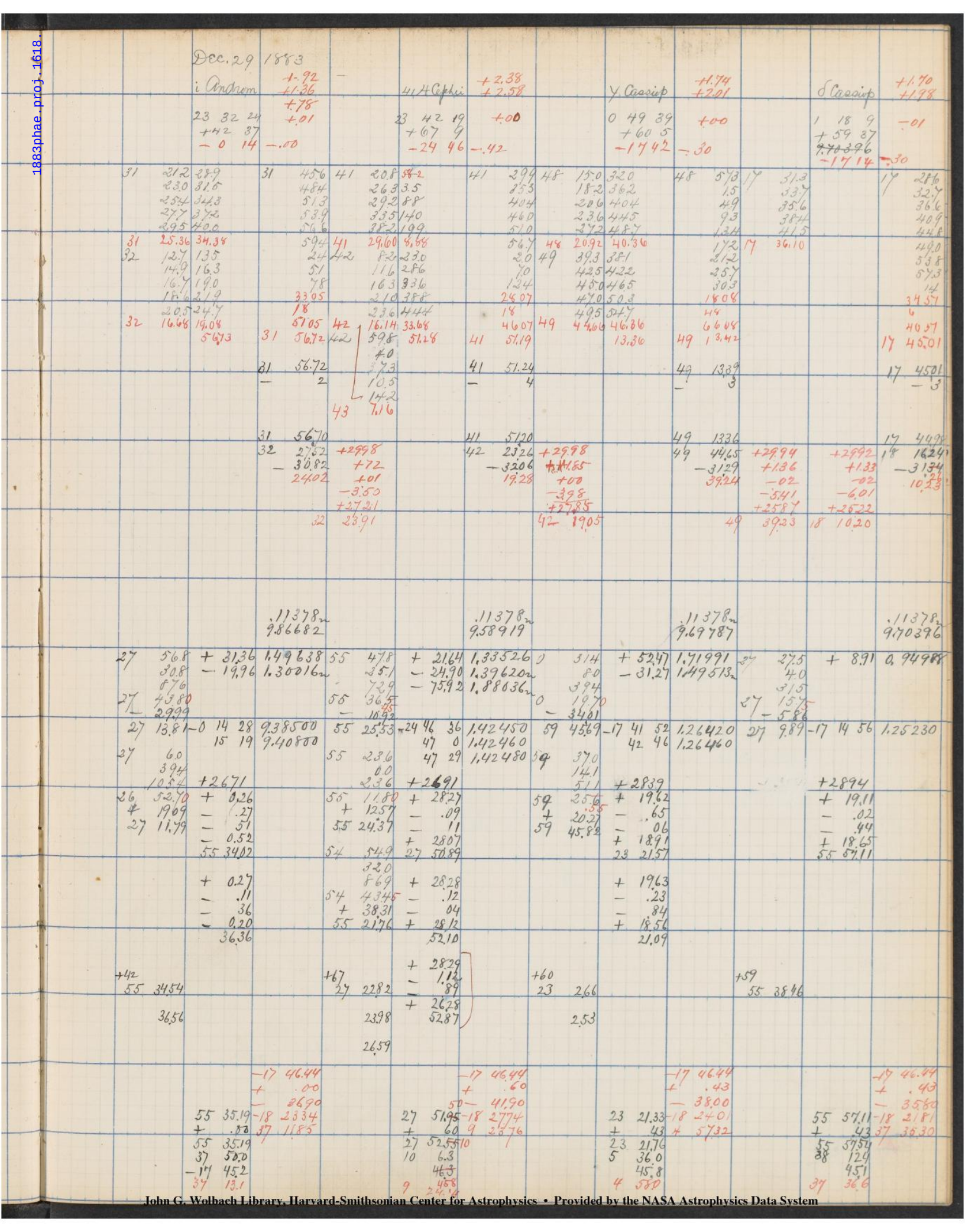
Dec. 29 1883

i Androm

41 Cephei

γ Cassiop

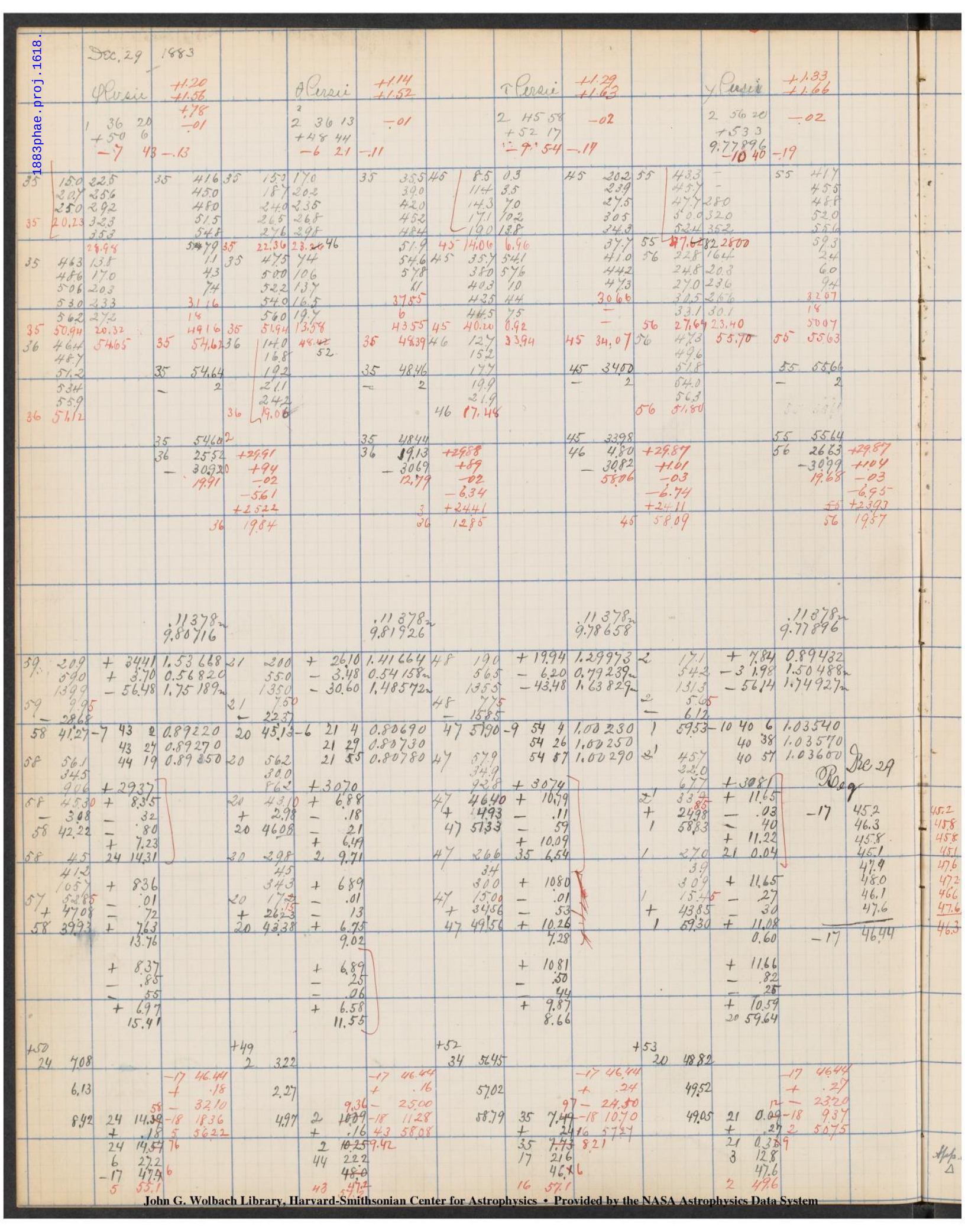
δ Cassiop



John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

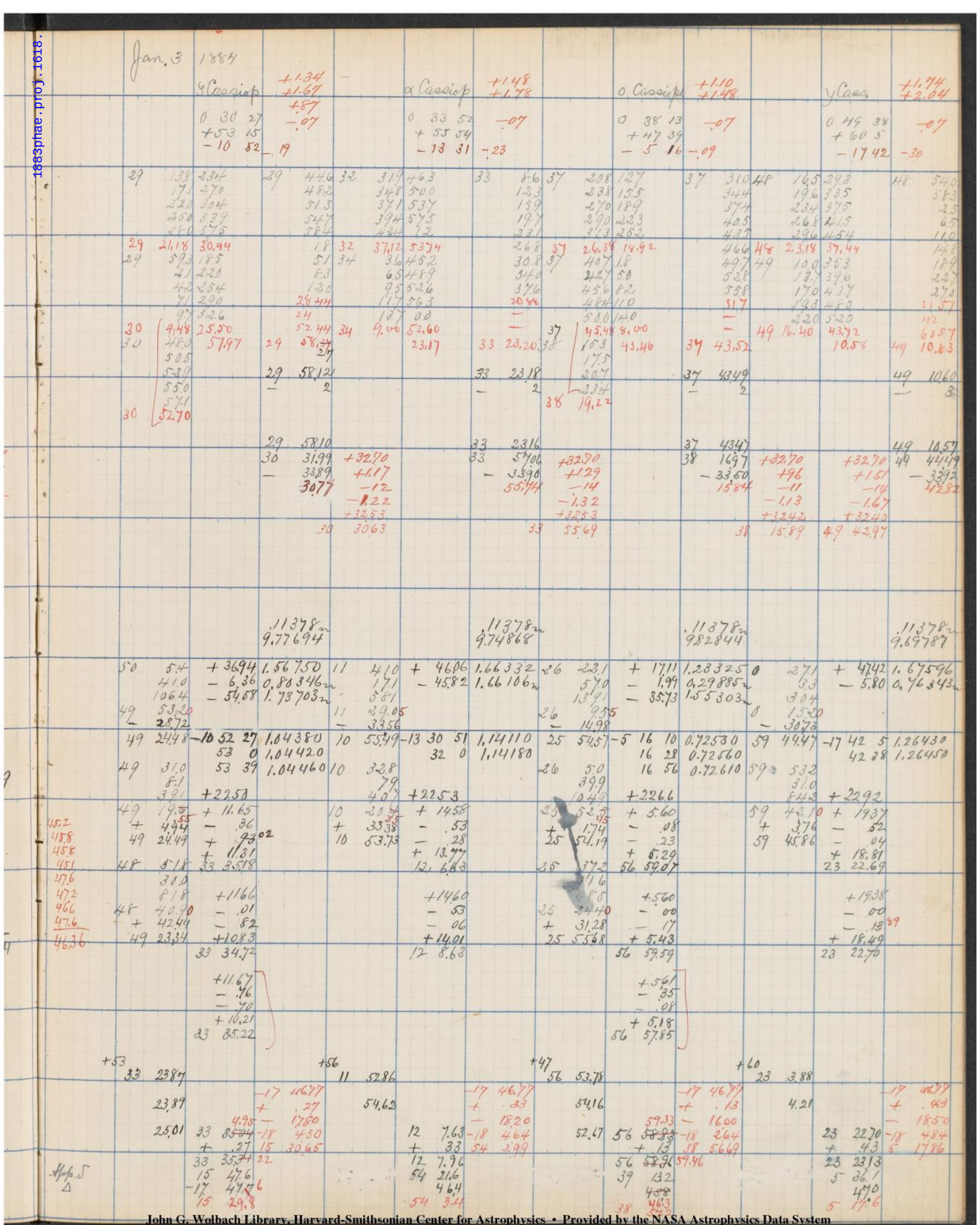
1883phae.proj.1618.

Dec. 29 1883



John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.



John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Jan 3 1884

97 Camel. +1.79 +2.05 +87 −089

3 47 10
+ 6046
9.68875
− 18 23 − 32

46 33.5 36.8 39.0 43.5

46 38.20
47 33.9 37.7 40.0 42.9 45.9 47 40.08
100 142 183 223 268 18.32 33.79 44.53

46 27.5 32.0 36.2 40.3 44.8 46 44.58 − 3

48.6 52.8 57.1 34.06 40.06 46 44.51

.11378n
9.68875

19 28.0 59 33.9 19 16.95 − 4.01
+ 6.32 − 55.56 0.80072 1.74476n

19 12.94 − 18 23 3 1.28180
23 43 1.28210

18 48.4 26.2 74.6
+ 2550

18 37.30 + 20.29
+ 35.26 − .00
19 12.56 − .82
+ 19.47
3 54.88

+ 20.30
− .71
− .68
+ 18.91
3 54.70

+61 3 35.41 35.79

3 54.79
+ .46
3 55.25
46 10.0
− 17 45.2
46 3.5

Persei +1.09 +1.48

4 0 10
+ 47 24
9.83051
− 5 1 − 09

59 31.5 34.3 37.6 40.4 43.7 59 43.61 59 43.70 2

59 43.68
0 17.15
− 33.47
14.54

.11378n
9.83051

19 29.3 31.8 33.7 36.0 38.0 46 27.59 33.76 0 7.3 9.6 11.6 14.4 16.2 0 11.82 0 33.0 35.4 36.2 40.4 42.6 0 37.92

46 44.49
47 18.62
− 34.13
15.16

41 19.8 24.6 44.4 41 22.20 − 8.74

40 46.8 −21.1 6.79

40 33.95
+ 24.73
40 58.68
− .27
+ 5.06
40 20.8
55.8
13.66
40 8.30
+ 47.69
40 55.99

+ 9.94 0.99739 48 23.0 56.5 139.5 48 27.75 +17.60 48 27.35
− 28.12 1.44902n
− 54.22 1.73416n

−5 0 58 0.70370
1 46 0.70490
2 12 0.70550

+ 2560

+ 5.36
− .03
− .27
+ 5.06
41

+ 5.38
− .79
− .02
+ 4.57
41 56.93

+47 −

41 49.67

52.36 41 55.83
+ 13
41 55.96
24 7.9 48.1
24 5.0

+17 34 21.01

−17 46.77
+ .13
− 2.90
−17 49.54
24 6.29

Saurii +.31 +1.05

4 16 11
+ 17 10
9.97997
+28 7

+42 38.6

15 35.8 37.9 40.0 42.3 44.4 15 42.27 15 42.14

15 42.12
16 16.56
1472

+32.71 +.27 −.09 −1.84 +31.05 16 13.17

+32.71 +.95 −.14 −2.61 +30.91 0 14.59

.11378n
9.97997

− 14.18 1.15168n

+25 5 50 1.43080

+2573
− 28.61
− .03
− .61
− 29.25
33 51.75

15 46.6 48.8 51.0 38.04

59.56
42.02

24.48 55.3 57.5 59.5 1.6 3.9 56.32

− 60
16 5.4
16 9.6

−17 46.77
− .60
+ 4.20
−17 48.17
16 8.56

Jan 3
Reg
−17 47.6 46.4 46.3 47.0 45.2 48.1
−17 46.77

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Jan 10 1884

β Cassiop +1.63 +1.91 +.96 −.07

0 2 56 +54 30 −16 7 −.28

γ Cassiop +1.34 +1.67 −.07

0 30 38 53 15 9.77694 −10 52 −19

α Cass. 0 33 52 +55 54 ch. f.

σ Cass. 0 38 12 +47 39 ch. f.

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Jan 10 1884

γ Cass. | δ Persei | γ Persei | ε Persei

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Jan 16 1884

ε Cass. +1.97 +2.21 +85 −.12

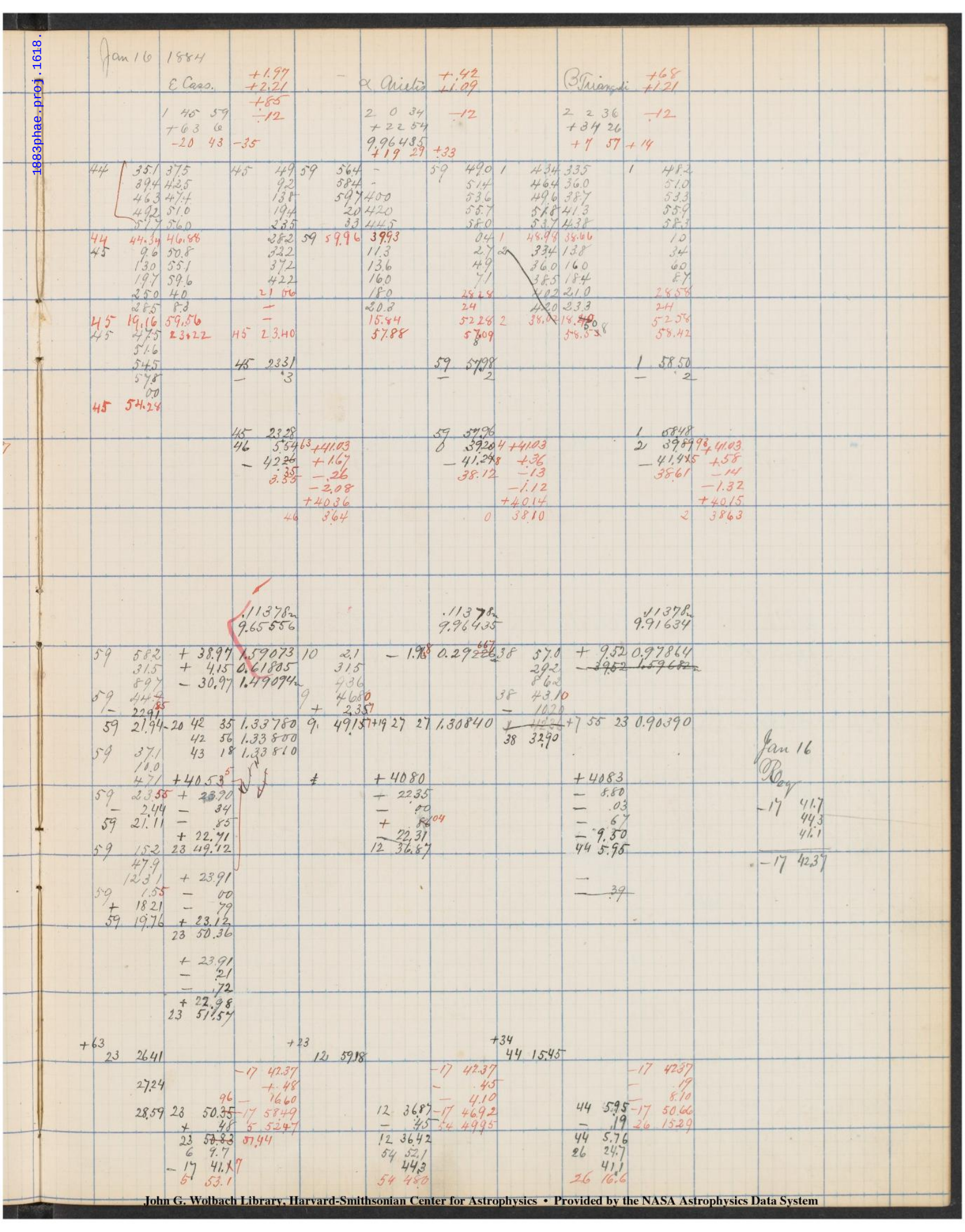
1 46 59 +63 6 −20 43 −35

α Arietis +.42 +1.09

2 0 34 +22 54 9.96435 +19 29 −12 +33

β Trianguli +68 +1.21

2 2 36 +34 26 +7 57 −12 +14



Jan 16
Roy
−17 41.7
44.3
41.1
−17 42.37

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Jan 17 1884

δ Cassiop +1.70 +1.98 +.91 +.19

1 18 9
+59 37
9.70396
-17 14 -.29

Rasi +1.11 +1.49

1 30 49 -.20
+ 48 2
- 5 39 -.10

43 Cass +2.42 +2.60

1 33 41 -.20
+67 27
-25 4 -.42

ρ Pisc +1.20 +1.56

1 36 20 -.20
+50 6
- 7 43 -.13

.11378n
9.70396

.11378n
9.82523

.11378n
9.58375

.11378n
9.80716

Jan. 17
Reg

-17 43.3
44.6
44.4
44.9
-17 44.30

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Jan 21 1884

δ Cassiop +1.70 +1.78 +.84 −.05 −.30

1 18 9
+59 37
−17 14

α Persei +1.14 +1.52

2 36 13 −.07
+48 44
9.81926
−6 21 −11

ε Persei +1.29 +1.63

2 45 58 −.07
+52 17
9.78658
−9 54 −17

can't read: γ Persei

2 56 20 −.07
+53 3

16 329 490
352 526
378 570
413 12
433 52

16 38.10 57.00
17 23.8 54.3
26.0 58.2
30.0 2.3
32.5 .64
358 10.6

17 29.62 2.36
18 21.3 29.68
23.8
26.3
28.5
32.0
14 26.38

17 1.35.34 51.3 2.3
33.0 5.5
55.0 8.8
67.0 18.5
68.2 14.8

34 54.90 8.64
35 24.8 25.02
26.8 33.66
30.0
32.3
340

35 29.58

17 29.81

17 29.74
− 3

17 29.71
18 15.50 +44.31
− 45.79 +1.43
14.10 −.10
−1.40
+44.24

18 13.95

35 2.11 45 1.82 4.44
2.45 2.08 4.90
2.75 2.31 5.24
3.10 2.40 5.55
3.35 2.58 5.89
36.7 22.44 52.04
39.7 24 3.93
42.8 4.26
46.0 4.50
30 26

35 33.64

35 33.65
− .2

35 23.63
36 18.68 +44.30
− 45.05 +.96
16.86 −.11
−1.82
+43.33

36 16.96

4600
1902

45 56.55 1.42
9.0 17.0
12.4 20.0
16.0
19.3 55 17.07
.4
23.9
25.0
32.5

45 19.17

45 19.10
− .2

45 19.08
46 4.30 +44.30
− 45.22 +1.08
2.27 −.11
−2.03
−.5 +43.24

46 2.32

.11378
9.70396

.11378
9.81926

.11378
9.78658

28 1.5 +.5164 1.71299
33.1 +.0.12 9.07918
94.6 −56.64 1.75312
27 47.30
− 33.94

21 41.7 +38.75 1.58827
13.1 +4.07 0.60959
54.8
21 27.40
− 33.21

48 37.7 − 3.07 0.48714
10.8
48.5
48 34.7
+ 2.75

2 4.04
12.2
53.6
2 26.30

27 13.36 −17 14 33 1.25210
15 7 1.25230
27 27.6 15 46 1.25270
59.0
146.6 +.3644

20 54.19 −6 20 53 0.80670
21 27 0.80720
21 7.1
39.0
106.1 +.3957

48 26.7 −9 53 56 1.00210
48 3.2
36.7
99.9 +.3994

2 6.5
38.6
105.1

27 13.30 +.1943
+ .028 − .64
27 13.38 − .48
+.1831
26 495 55 53.30
194
689 +.1944
26 344.5 − .00
+ 37.23 − .37
27 11.68 +.1907
55 54.04

20 53.05 + 7.02
− 3.49 − .41
20 49.56 − .24
+ 6.34
(2 0.53)

+ 7.03
− .00
− .15
+ 6.88
2 5.67

47 49.95 +.1101
+ 2.44 − .00
47 52.39 − .48
+.1053
47 400 3 649
12.8
52.8
47 .640

1 52.5 .55

1 44.1
16.0
6.01
1 30.05

+59 55 34.99

+49 1 .5416

+52 34.5596

34.97

36.67 55 54.14
+ .40
55 54.54
38 12.1
−17 42.45
37 55.5

−17 43.45
+ .40
16.60
−17 59.65
37 54.54

58.79

−17 43.45
+ .15
− 10.50
2 5.67
+ .15
2 5.82
44 23.1
42.7
44 12.6

−17 43.45
+ .23
− 10.90
35 6.49 −17 54.12
+ .23 17 12.37
35 6.72
17 23.0
43.7
17 12.1

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Jan 21 1884

4 Camelop +1.57 +1.81

4 38 16 −.09
+ 56 33
9.74132
−14 10 −24

10 Camelop +1.75 +2.02

4 53 1 −.09
+ 60 16
−17 53 −.31

η Aurigæ +.87 +1.23

4 58 19 −.09
+41 4
+1 19 +.02

37	36.3			37	23.3	51	33.1	42.5		52	7.8	57	5.0	13.0		57	29.3		
	38.8				27.6		39.0	46.8			11.9		7.0	16.0			32.1		
	43.1	8.2			31.2		43.3	50.6			15.7		10.2	18.4			34.9		
	48.1	12.0			35.3		47.3	54.6			19.8		12.0	21.0			37.9		
	51.5	16.0			38.8		49.6	58.8			24.1		13.7	24.3			40.7		
37	48.5	8.33			42.3	51	42.46	50.66			28.1	57	9.54	18.54			43.0		
38	9.0	0.8			46.2	52	4.21	48.2			32.5	57	5.79	57.0			46.2		
	12.3	4.6			50.8		45.6	53.4			36.5		8.3	0.0			48.9		
	14.3	8.0			53.3		48.9	57.4			3.99		2.0	2.6			51.2		
	17.7	12.0			34.40		51.7	14			2.58		8.8	5.0			36.42		
	21.2	16.1			—		54.0	6.2			—		13.5	8.2			—		
36	14.90	8.30			—		55.4	57.32			—	56	1.90	2.56			—		
		38.32		37	36.64	52	49.62	23.99			25.04			40.55		57	40.47		
					32						23.98								
				37	38.58					52	23.98					57	40.51		
				—	3					—	3					—	2		
				37	38.29											57	40.49		
				38	23.64		+44.27			53	9.64		+44.27			58	25.28		+44.27
					45.17		+1.28				45.89		+1.47				44.79		+.73
					35		−.16				6.19		−.18				22.87		−.12
					20.57		−3.07						−8.45						−2.41
							+42.32						+42.11						+42.47
					38		20.61				53		6.06				58		22.96

$\cdot 11378_n$
9.74132

$\cdot 11378_n$
9.69545

$\cdot 11378_n$
9.87734

32	27.0	−	5.06	0.76415	49	47.3	+	41.52	1.61826	1	13.0	+	30.93	1.49038					
	59.9	−	36.40	1.56110		21.3	−	25.64	1.40892		45.0	−	21.39	1.33021					
	146.9		58	324		68.6					118.0								
32	13.45				49	34.30				0	59.00								
+	3.62		75			26.76				—	30.30								
32	17.07	−14	10 7	1.16240	49	7.54	−17	52 46	1.26890	0	28.70	+1	18 39	0.11960					
	17.20		10 29	1.16260				53 29	1.26920				17 49	0.11510					
32	5.1				49	4.0				0	2.34								
	3.75					38.3					54.2								
	10.36	+	43.49			102.3		+ 43.46			137.6		+ 43.45						
31	51.30	+	16.07		48	51.2		+ 20.53		0	8.80	−	1.46						
+	27.04	−	00		+	16.53		− .43		+	20.96	−	.26						
32	19.24	−	37		49	7.68		− .78		0	29.76	−	1.57						
	17.50	+	15.76					+ 19.32				−	1.89						
		50	46.85				34	0.13		59	59.5	22	17.76						
											21.9								
		+	16.07				+	20.54			91.4	−	1.44						
		−	.29				−	.16		59	45.70	−	.12						
		−	.32				−	.66				−	.02						
		+	16.46				+	19.72				−	1.58						
		50	46.31				34	0.39				22	17.01						

Jan 21
Reg

−17	42.5
	42.7
	43.7
	44.9
	42.1
	43.9
−17	43.45

+56 +60 +41

50	31.15					33	40.81					22	19.65						
			−17	43.45					−17	43.45						−17	43.45		
	36.85		+	.32			40.67		+	.41			18.59			−	.03		
				4.10						3.70						+	0.80		
		50	46.58	−17	47.23			34	0.26	−17	46.74		65	22	17.38	−17	42.68		
		+	.32	32	59.35			+	.41	16	13.52			−	.03	4	34.70		
		50	46.90					34	0.67					22	17.35				
		33	2.0					16	18.6					4	33.5				
			44.9						42.1						43.9				
		32	57.9					16	14.9					4	24.3				

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Jan 22 1884

δ Cassiop

α Persei

τ Persei

γ Persei

Jan 22
O Key

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Jan 26 1884

γ Androm. +.89 +1.34

α Persei +1.17 +1.54

δ Persei +1.09 +1.48

η Aurigæ +.87 +1.33

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

α Aurigae +1.03 +1.44

5 8 2 −19
+ 45 52
−3 29 −.06

17 Camel +1.96 +2.20

5 19 7 −19
+ 02 58
9.65754
−20 35 −35

6	538	514	7	94	18	38.5			18	8.5	
	56.3	544		12.7		34.8				13.5	
	58.6	57.4		15.3		38.6				17.8	
	0.5	0.3		18.0		42.5				22.8	
	2.0	3.8		21.0		46.0				27.2	
6	58.24	57.40		24.2	18	38.48				32.0	
7	26.8	38.8		27.3	19	5.7	54.8			36.2	
	27.7	42.0		30.4		9.3	58.9			40.6	
	29.7	45.0		33.2		13.4	3.3			45.3	
	32.2	48.0		19.15		19.0	8.0			24.89	
	35.2	51.0		—	19	11.85	12.6			—	
7	30.12	44.96		—			3.52			—	
7	57.0	21.18		21.28			3630		18	27.10	
	59.0						2722				
	1.5		7	21.23					18	27.18	
	3.5			— 2						— 3	
	6.5										
8	1.50										

			7	21.21					18	27.15	
			8	9.80		47.98			19	16.70	+47.98
				− 48.59		+.95				− 49.55	+1.80
				7.24		−.27				12.97	−.42
						−2.56					−.273
						+46.10					+45.63
					8	7.31				19	12.78

.11378$_n$ .11378$_n$
9.84282 9.65754

13	2.0	+ 22.99	1.36154	7	28.9	− 11.30	1.05308$_n$				
	34.5	− 8.89	0.94890$_n$		1.6	− 44.67	1.65802$_n$				
	96.5	− 40.27	1.60498$_n$		30.5						
12	48.3				15.25						
−	20.85			+	6.67						
	12 27.45	−3 29 32	0.54570	7	21.92	−20 35 5	1.33490				
		30 2	0.54680			35 25	1.33510				
12	31.6	30 32	0.54740	7	8.2						
	37				4.19						
	3.53	+.4229			11.01	+.4257					
12	17.85	+ 3.87		6	55.05	+ 23.85					
+	8.04	− .14		+	26.38	− .03					
12	25.69	− .45		7	21.43	− .37					
		+ 3.28				+ 23.45					
12	32	10 24.18				15 49.88					
	32.5										
	9.57	+ .388				+ 23.86					
12	4.72	− .03				− .44					
1+	36.44	− .367				− .30					
12	24.29	+ 3.48				+ 23.12					
		10 26.14				15 50.04					
		+ 3.89									
		− .44									
		− .29									
		+ 3.16									
		10 27.22									

Jan 26
Reg
−17 42.7
43.9
42.8
43.1
42.8
41.9
−17 42.87

+46 +63

10	20.90				15	26.43					
			−17	42.87					−19	42.87	
	22.66		+	.08		26.92			+	.45	
			16	0.10					−	2.80	
	24.06	10 25.85	−17	42.89			15	49.96	−17	45.22	
		+ .08	52	42.27			+	.45	58	4.74	
		10 25.93	24				15	50.41			
		52 42.4					58	6.5			
		43.5						41.9			
		42.8					58	5.7			
		52	23.3								

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Feb 2 1884

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Feb. 9 1884

27 Lyncis

Br 1147

o Uro. Maj

ζ Uro. Maj

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Feb 9 1884

40 Lyncis +.70 +1.22

9 1355 +.81

+34 53 −.14

+7 30 +13

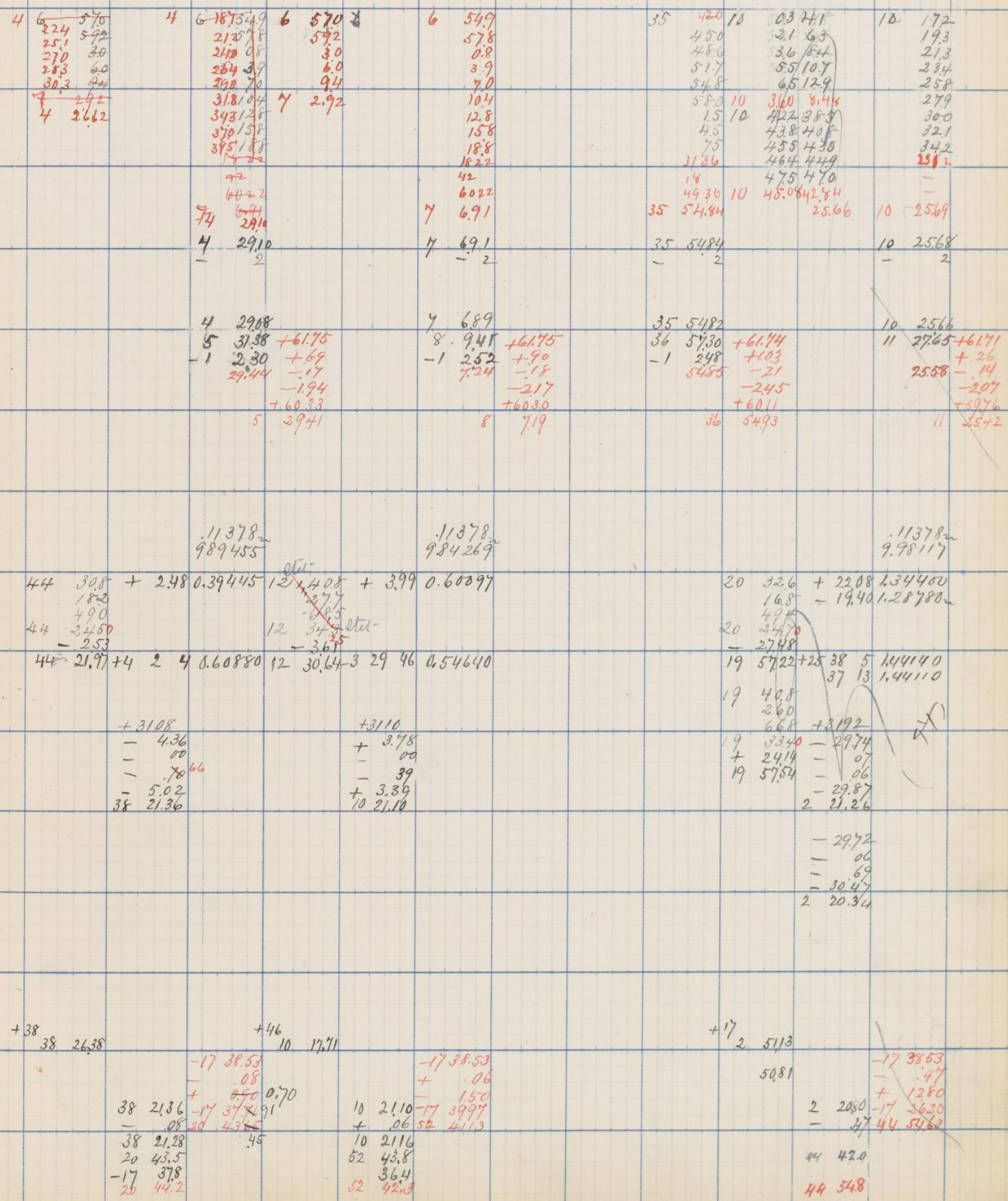
12	38.8	12	53.4
	41.0		56.0
	43.5		58.6
	46.0		1.0
	48.3		3.7
+2	43.42		6.0
	16.6		8.5
	21.0		11.2
	23.6		13.6
	26.3		21.20
	28.6		36
	23.62		57.20
	35.2	13	3.56
		13	3.54
		−	2
		13	3.52
		14	1.53 +57.54
		−	58.01 +.54
			57.16 −.17
			−2.37
			+55.54
		13	59.06

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

feb 16 1884

α Aurigae +.79 +1.27 +1.03 +1.44 ο Aurigae +1.18 +1.55 λ Geminorum +.20 +1.04



John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Feb 16 1884

19 Lyncis +146 +1.77 +87 −13 −23

Gr 1308 +2.56 +2.75 −13 −44

Gr 1374 +3.53 +3.67 −13 −53

χ Geminor +.53 +1.13 −13 +.25

11 50 54 78 / 53 45 11 / 56 14 68 / 57 64 91 / 58 81 14 23

12 9.8 13.3 14.3 20.6 24.2

16 31.0 33.1 34.5 36.0 39.0

52.0 58 0 75 8.8 14.6

17 26.0 31.8 37.6 43.5 49.0

43 40.8 47.8 57.4 55.3 62.3

2.6 10.4 17.1 25.3 32.5

44 48.5 56.0 3.3 11.3 19.1

54 55.2 57.3 59.2 0.9 2.3

0.5 2.6 4.9 7.2 9.6

55 14.8 16.6 19.0 21.5 23.8

11 56.10 55.04 / 12 57.6 46.8 49.8 55.0 38.6 41.5 34.5 46.0 39.7

28.0 31.6 35.0 38.6 41.4 — 21.84

16 34.72 3.22 / 17 30.5 22.7 35.0 28.2 41.5 34.6 46.0 39.7

26.6 33.7 41.1 49.4 38.90 42

54 58.98 49.6 / 55 50.5 38.0 52.4 40.0 53.9 42.5 55.5 44.8 57.6 47.2

26.0 28.5 30.6 33.1 21.84 —

13 2.40 53.44 / 12 48.4 24.24 / 22.0 24.0 / 26.4 28.7 / 13 23.40

— — 12 24.27 — 3 12 24.26 — 3

17 40.70 34.08 / 18 52.6 48.65 33 65 / 57.4 0.8 4.4 9.0 / 19 0.84

17 43.97 48.86 75 / 17 48.60 — 4

46 7.64 45 4.5 13.9 18.2 24.3 46 47.78 13.

70 90 42 / 55 53.98 42.50 23.73 / 45 16.78

45 18.66 — 6

55 23.71 / 55 23.72 — 2

12 24.23 13 27.00 −1 2.77 23.92

+61.71 +1.27 −.23 −3.08 +59.67

17 48.56 18 52.43 −1 3.87 46.10

+61.70 +2.23 −.36 −4.33 +59.24

45 18.60 46 22.75 −1 4.15 17.24

+61.69 +3.07 −.48 −5.51 +58.77

55 23.70 56 25.87 −1 2.17 23.56

+61.69 +.46 −.15 −2.31 +59.69

13 23.90 / 18 47.95 / 46 17.37 / 56 23.39

.11378₂ 9.75313 / .11378₂ 9.56021 / .11378₂ 9.43457 / .11378₂ 9.94546

35 59.8 48.8 108.6 35 54.30 −20.73

+28.16 −38.14 −59.64

1.44963 1.58138₂ 1.77554₂

24 17.0 8.3 25.3 24 12.75 −34.88

+73.88 +7.90 −72.24

1.86853 0.89763 1.85878₂

52 50.4 39.8 90.2 52 45.10 −28.95

+81.90 +10.88 −55.12

1.91328 1.03665 1.74132

58 32.1 20.0 52.1 58 26.05 −28.36

+24.74 −30.26

1.39340 1.48087₂

35 33.57 12.1 1.33

−13 6 26 7 13 7 30

+31.94

1.12730 1.12780 1.12800

23 37.77 23.4 40.0 64.4

−26 18 7 18 36 19 15

+31.97

1.45410 1.45430 1.45460

52 16.15 27.9 44.2

31 49 35 49 57 50 21

+32.16

1.55300 1.55310 1.55320

57 57.69 29.5 16.2 45.7

+14 16 6 15 3

+32.23

1.16560 1.16510

35 66.5 + 14.43 / + 28.07 − .20 / 35 34.72 − .14 / + 14.09 / 34 54.8 47 28.87

23 44.20 − 3.73 / 23 40.47 / + 28.99 / 23 10.2 59 39.57

+30.62 − 1.00 − .83 + 28.99

52 22.60 − 3.848 / 52 18.782 − .41 / + 37.09 / 52 50 31 9.29

+38.47 − .97

57 32.0 + 34.68 / 57 57.53 / 24 34.24

−.85 − 15.77 − .14 − .51 − 16.42

444 992 / + 14.45 − .37 / 34 49.60 / + 44.92 − .02 / 35 34.52 + 14.06 / 47 27.69

06 108 / 23 5.40 + 34.10 / 23 39.50

+30.64 − .01 − .56 + 30.07 / 59 37.95

53.7 118.7 / 51 59.40 − 19.48 / 52 18.83

+38.48 − .02 − .36 + 38.10 / 31 7.73

24 34.51 − 15.75 − .20 − .36 − 16.31

+ 14.45 − .91 − .72 + 12.82 / 47 26.65

+ 30.66 − .95 − .46 + 29.25 / 59 38.10

+ 38.49 − .44 − .30 + 37.75 / 31 7.27

+55 47 14.78

+68 59 10.58

+74 30 32.20

+28 24 50.62

−17 38.53 + .25 + 3.90 / 13.63 / 13.83 47 27.78 −17 34.38 / + 25 29 53.38 / 47 27.78 29 50.1 37.9 / 29 54.0

788 / 8.85

−17 38.53 + .48 + 1.60 / 29.63 / 29.52

76 −17 36.45 42 2.31 / 59 38.54 + .48 / 59 39.02 42 0.0 39.82 / 42 1.6

24 / 24 / 59 39.02

−17 38.53 + .58 / 50.82

750 + 2.90 −17 35.05 13 32.45 / 31 8.10 + .58 / 31 8.68 13 29.1 39.80 / 13 32.0

08 / 0

−17 38.53 − .27 + 12.10 −17 26.40 / 24 34.38 − 27 / 24 34.11 6 54.5 39.6 / 7 6.6

768

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

27
+1.59
+1.62

27 Lyncis

7 59 39 −13
+51 50
−9 27 −16

57 593 10.8 58 308
16 140 340
40 173 372
60 206 405
91 240 441
58 4.00 17.34 472
59 340 4.1 505
368 7.5 536
390 11.0 574
412 14.0 39.53
442 17.5
59 39.04 10.82
44.08

58 43.92

58 4400
− 2

58 4398
59 46.53 +61.69
−1 255 +1.10
4360 −21
−2.93
+59.65
59 43.63

.11378₂
9.79095

15 40.1 +4500 1.60206
30.2 −55.04 1.74068₂
703
15 135.15
− 32.12

15 3.03 −9 26 45 0.98140
28 2 0.93310

Sat. 16

14 22.8
13.4
36.2 +3225

Reg

14 18.10 + 10.32 −17 37.8
+ 4420 − .42 36.4
15 230 − .09 37.9
+ 9.81 39.2
7 55.13 39.0
39.6
+ 9.23 39.8
− .80
− .64
+ 8.79 −17 38.53
7 54.84

+52
7 45.32

46.05 −17 38.53
+ .17
+ 7.80
7 54.98 −17 30.56
+ .17 80 24.42
7 55.15
50 15.3
3.98
50 23.1

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Feb. 20 1884

c Persei

+1.09 +1.48 +.94 −.01 −.09

4 0 10 +47 24 9.83051 −5 1

59 11.8 140 16.8 19.3 21.6

59 16.70 59 54.3 56.7 59.6 20.3 3.8 59 59.28 2.95 3.25 3.55 3.85 4.17 35.54 24.38 11.16

59 54.0 20 52 8.2 11.4 14.4 17.4 20.4 22.5 10.15 11.24 11.22 1622 4.99 14.54

27 52.0 53.0 54.8 56.3 58.3 27 54.86 28 49.0 50.0 51.1 52.5 53.9 28 51.30

51.5 53.7 55.8 58.0 00 55.80 25.9 28.0 30.2 32.3 34.5 30.14 12.99 +63.91 +1.02 −.02 −1.67 +63.24

0 1446

+1.29 +1.64 −.02 +.44

4 09 12 +1 16 +26 7

+18.08 −38.34

1.25720 1.58365

48 46.5 38.2 38.4 −22.55

+26 6 19 5 9 1.45040 1.45000

47 36.8 21.4 58.2 +1432

47 29.10 +47.83 48 16.94

11378 9.98226

28 44.4 6.6 8.6 10.8 13.0 15.0 17.2 19.3 21.4 11.63 12.92 12.96 +63.92 +.27 −.02 −1.33 +62.84

29 1578

52 34.5 36.7 39.3 40.8 42.3 52 38.72

26 11.5 02 11.7 5.85 +2.56

26 8.41

+43 56 39.94

−2.72

Eq. Auriga

+.95 +1.38 −.03

4 53 0 +43 39 9.85948 −1 16

−.02

52 − 30.3 33.2 36.0 39.0 41.7 44.5 47.2 52 36.00 − 2 52 36.00 − 2 52 35.98 53 40.67 −1 4.69 38.74

−2.72

0.43457

1 6.3 54.9 12.12 − 26.90 0 33.70 0 16.2 26.4 42.6 +1539 + 1.32 − .00 − .15 + 1.17 56 41.51

−1 16 14

0.10610

+41 22 14.65 15.09

η Auriga

+.87 +1.23 −.03

4 58 18 +41 4 +1 19 +.02

56 48.5 51.1 52.3 54.3 56.7 56 52.58 57 27.6 29.8 32.5 34.1 35.6 31.92 57 51.2 54.0 56.2 58.1 59.9 57 53.68 53 +63.93 +.59 −.03 −1.93 +62.86

53 3884

1.43870 1.07482 1.53437

0.12010 0.11620 0.11400

52.7 55.1 55.6 58.2 0.9 3.7 58.22 47.3 41.90 20.06 +27.46 − 11.88 − 35.84 0 33.70 18 41 18 1 0 16.2 17 38 26.4 42.6 +1547.37 0 21.30 − 13.66 + 1164 − .20 0 32.94 − .14 − 1.71 0 34 22 12.94 52.9 116.3 59 58.2 .15 + 35.11 0 33.26 1.35 − 13.54 − .04 − .04 − 1.43 22 13.98 1.35 − 13.47 − .35 + .00 − 1.70 22 13.39

11378 9.87734

57 92 11.8 14.4 17.3 20.1 22.6 25.5 28.2 31.0 18.01 − − 57 20.01 57 20.04 − 2 57 20.02 58 24.76 −1 4.74 22.87 +63.93 +.82 −.03 −1.89 +62.83

58 2285

11378 9.85948

−17 38.23 + .02 − 1.80 56 41.11 + .02 56 41.13 39 2.5 38.6 39 07 −17 4001 39 110

15.09

−17 38.23 15.41

−17 38.23 − .02 − 0.70 22 13.47 4 35.0 38.4 4 34.3 −17 38.95 4 34.51

11378 9.83051

41 54 53.0 11.84 40 59.20 + 4.80 41 4.00 40 28.1 15.1 39.2 40 28.60 + 42.26 41 7.86 41 44.35 44.49 41 49.24 + .09 41 49.33 24 10.5 −17 38.8 24 5.0

− 5.46 − 48.04 0.73719 1.68160

−5 1 21 0.70420

−5 1 58 + 5.23 − .00 − .14 + 5.09 41 49.44 0.70520

+ 5.24 − .63 − .06 + .45 41 49.04

−17 38.23 + .09 − 5.50 −17 4364 24 560

3141

16 29.7

+16 34 32.05

+41 22 14.65

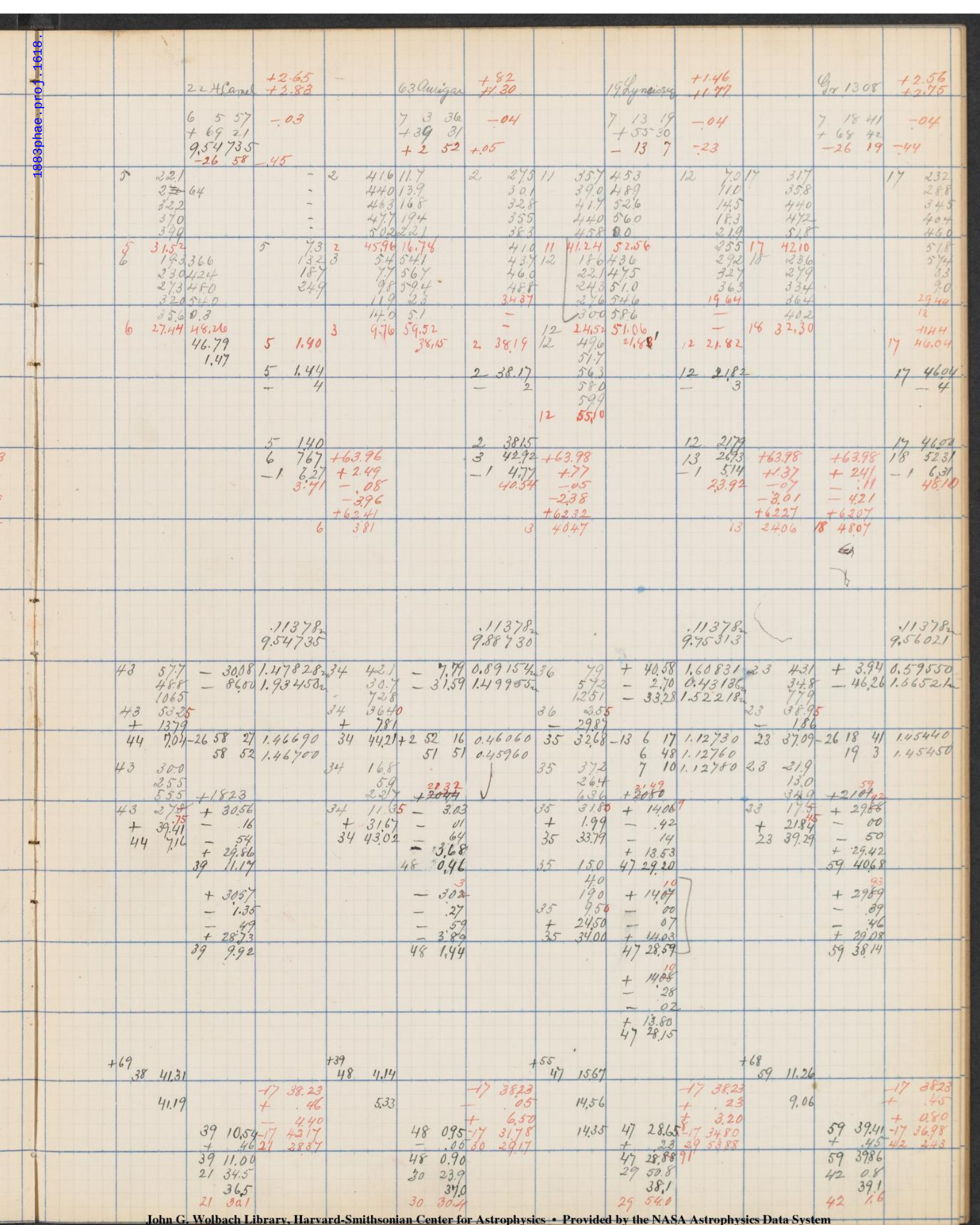
−17 38.23 + .09 − 5.50 −17 4364 24 560

3141

16 29.7

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1893phae.proj.1618..



John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Feb 20 1884

ζ Geminor

7 27 3
+ 32 9
+ 10 14

+63
+1.18
+.94
−.05
+18

566 45.0
58.5 47.6
0.5 50.0
2.0 52.4
3.9 55.0
26 8.30 50.00
26 25.8 24.3
27.7 26.5
29.5 29.0
34.0 31.5
32.7 34.0
26 29.34 29.06
26 46.0 9.53
48.0
49.6
50.8
53.1
26 49.50

26 00
2.5
4.7
7.0
9.5
12.0
14.5
16.8
19.3
86.3
—
—
9.59
26 9.56
— 2

26 954
27 13.93 +63.99
−1 4.39 +.59
11.64 −.06
−2.29
+62.23
27 11.77

.11378
9.92771

56 54.0 +9.26 0.96661
43.1 −19.78 1.29623
96.1 −39.94 1.60141
56 48.05
— 10.19
56 37.86 +10 14 28 1.01720
13 33 1.01650
56 0.0
+68
1068 +2133 74

55 53.40 − 10.93 4
+ 43.94 − .02
56 37.34 − .28 5
− 11.21
25 59.28
− 10.91 2
− .10
− .13 7
− 11.15
25 59.86

+32
26 10.49
11.01

Feb. 20
Roy
−17 38.8
38.6
38.4
36.5
37.0
38.1
39.1
39.3
−17 38.23

−17 38.23
— .18
+ 9.70
−17 38.71
8 30.86

25 59.57
— 18
25 59.39
8 20.1
39.3
8 29.8

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Feb. 21 1884

β Arietis +37 +1.07 +78 +.00

1 48 9 +38
+20 14
+22 9

γ Andromedis +89 +1.34

1 56 41 +.00
+41 46
+0 37 +.01

γ Persei +1.33 +1.67

2 56 17 +.00
53 3
9.77896
−10 40 −18

ζ Persei +1.17 +1.54

3 15 56 +.00
+49 26
9.81314
−7 3 −12

46	46.0	47.7	47	0.8	55	8.7	146	55	31.4	55	55.4				15	11.8			14	46.0
	48.0	49.8		3.0		10.6	17.6		34.0		58.0					13.7				49.0
	49.4	52.1		5.3		12.9	20.2		36.9		0.4					16.1				52.2
	51.0	54.3		7.5			23.0		39.6		2.5					18.0				55.3
	52.5	56.4		9.7	55	10.73	25.8		42.3		5.0					20.0				58.7
46	49.38	52.06		11.9			20.24		45.1	55	0.26				15	15.92				1.7
47	33.5	22.7		14.0	56	177	889		48.0	6		55	40.6					17.7		5.0
	35.2	25.0		16.2		19.4	1.6		50.7				43.5					20.9		8.0
	37.0	27.2		18.5		21.4	4.5		53.5				47.0					24.0		11.4
	38.8	29.4		4.69		23.0	7.2		3815				50.4					27.0		24.73
	39.4	31.5		−		25.7	9.9		−				53.8					30.2		24
47	36.64	27.16			56	21.44	4.42					55	46.94					23.96		5.273
		6.61	47	9.66			1.337	55	42.39				27.45					25.37	14	58.69
							42.33						19.49					5.859		
			47	9.64				55	42.36					55	19.49			14	58.57
			−	2				−	2					−	2			−	2
			47	962				55	4234					55	1947			14	5857
			48	1445		+64.56		56	4758		+64.57			56	2527		+64.60	16	4.06
			−1	4.83		+.29		−1	5.24		+.69			−1	580		+1.04	−1	5.49
				13.96		+.00			46.89		.00				23.98		.00		2.69
						−0.49					−0.69						−1.29		
						+6436					+64.57						+64.35		
					48	13.98				56	4691					56	2.82	16	2.72

.11378n
9.97234

.11378n
9.87266

.11378n
9.77896

.11378n
9.81314

50	52.1	+ 20.26	1.30664	19	20.2	+ 31.63	1.58010	1	39.6	− 40.77	1.61034	37	10.6	− 17.33	1.23880				
	35.2	− 27.80	1.43136n		5.1	− 39.08	1.59195n		51.1				59.5						
	873				25.3				70.7				13.1						
50	43.65			19	13.65			1	35.35			37	5.05						
−	24.70			−	30.66			+	31.85			+	14.65						
50	18.95	+22 8 24	1.36970	18	41.99	+0 36 53	9.79100	2	7.20	−10 40 45	1.03580	37	19.70	− 7 4 15	0.85390				
		7 24	1.36930			35 43	9.77600												
49	52.7			18	10.1														
	36.1				56.0														
	88.8	+2107			12.61	+2099				+2128				+2190					
49	44.40	− 24.59		18	3.05	− 0.65				+ 11.40				+ 7.51					
+	32.92	− .07		+	37.88	− .27				− .44				− .08					
50	17.32	− .10		18	40.93	− .59				− .22				− .43					
		− 24.76				− 1.51				+ 10.74				+ .00					
		32 4.64				4 4.85				20 51.89				45 34.65					
		− 24.57				− 0.63													
		− .13				− .41													
		− .66				− .42													
		− 25.36				− 1.46													
		32 5.67				4 5.96													

+20				+42				+53				+49							
32	29.40			4	6.36			20	41.15			454	28.65						
			−17	38.16			−17	38.16			−17	38.16			−17	38.16			
	31.03		−	.58		7.42	−	.01			+	.18			+	.12			
			−	0.90			−	7.10			−	9.30			−	7.60			
		32 5.16	−17	39.44			4	5.40	−17	45.27	20	5189	−17	47.28	44	3465	−17	45.64	
		− .38	14	35.72			−	.01	46	20.13	+	18	8	46.1	+	12.26		49.01	
		32 4.78					4	5.39			20	5207	3		44	34.77			
		14 26.5					46	27.8			3	13.3			26	57.3			
		−17 38.3						37.6				38.8				37.5			
		14 25.6					46	20.7			3	4.0			26	49.7			

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Feb. 21. 1884

√ Persei +1.09 +1.48 +.78

3 34 33 +.00
+47 24
- 5 1 -.09

33 5.6 33 24.0
8.7 27.0
11.8 30.0
14.8 33.0
17.9 36.0
33 11.76 39.3
54.7 42.2
57.6 45.3
0.6 48.4
3.5 32.52
6.6 —
0.60 —
36,18 33 36.13

33 36.16
— 2

33 36.14
34 40.58 +64.62
-1 5.44 +.55
40.12 +.00
-1.46
+64.01
34 40.15

39 41.639
3.921
.708
39 45.40

γ Persei +.61 +1.17

3 46 44 +.00
+31 32
+10 51 +.19

225 45 37.0
25.0 39.5
27.4 42.0
29.8 44.4
32.2 46.7
27.38 49.2
46 13.5 1.3 51.6
15.2 3.6 54.1
16.8 6.1 56.5
18.4 8.5 61.0
20.3 10.8 —
46 16.84 6.06 —
46.72 45 46.78

45 46.75
— 2

45 46.73
46 51.77 +64.62
-1 5.04 +.48
50.50 +.00
-1.27
+63.83
46 50.56

.11378
9.93061

32 13.7 — 30.09 1.47842
59.8
13.35
32 6.75
+.3333
32 40.08 +10 49 47 1.04207

+2312
— 11.62
— .22
— .29
— 12.13
49 56.14

+31
50 8.27

49
49 56.14
— .19
49 55.95
32 17.4
-17 38.6
32 16.9

27 Lyncis
7 39 39
+51 60

31 Lyncis
8 17 49
+43 34

Feb. 21
Reg
-17 38.3
37.6
38.8
37.5
38.6
-17 38.16

-17 38.16
— .19
— 0.50
-17 38.85
32 17.29

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Feb. 27 1884

R Argelia

Y Androm

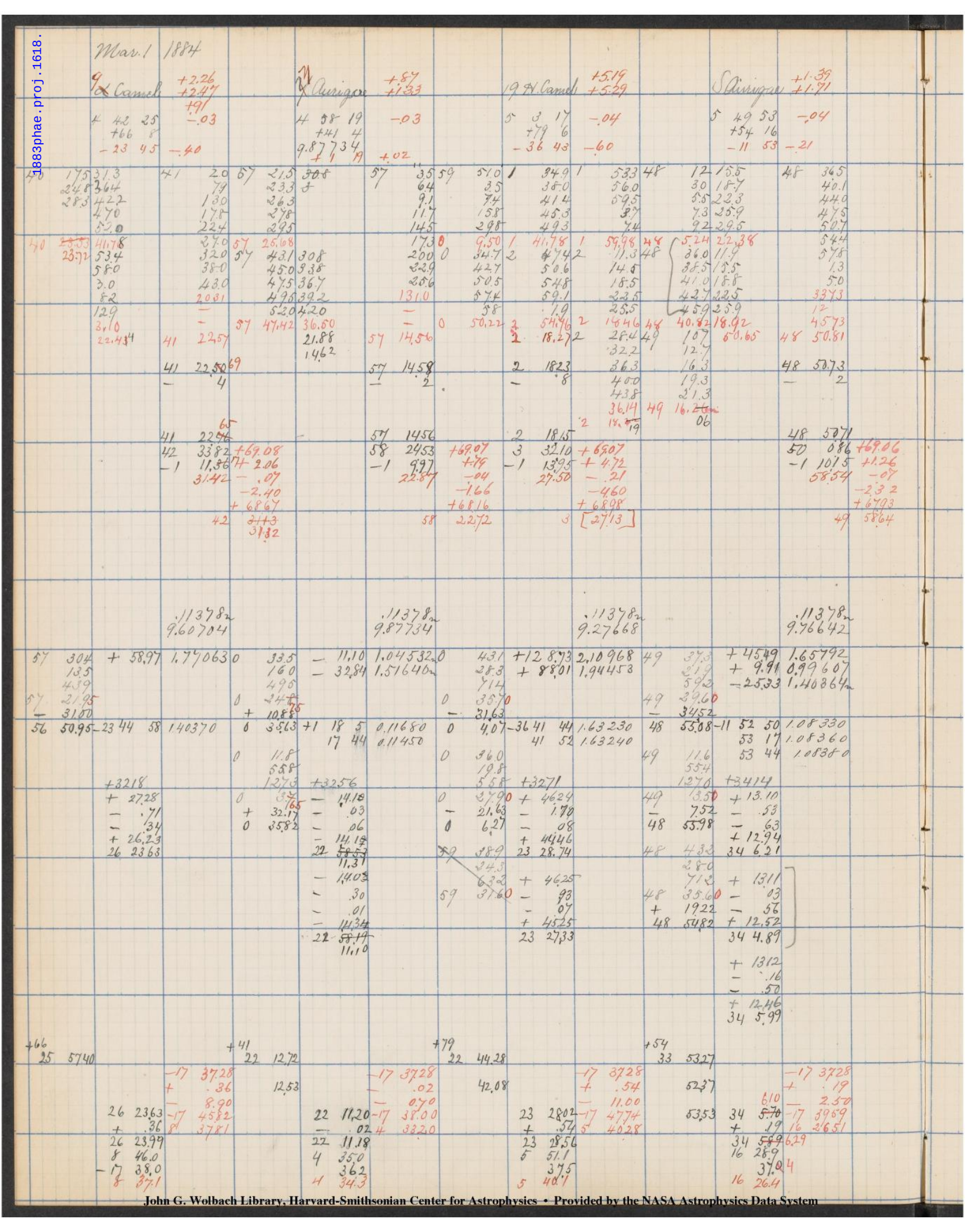
27 Lyncis

31 Lyncis

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Mar. 1 1884



John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1893phae.proj.1618.

Cw. f.
β Draco
17 27 48
+52 23

chf.
ε Ophi
17 29 30
+2 39

27.0
10.9
37.9
18.9

26 27.4
6.2
33.6
26 16.8

Mar. 1
Rey

-17 38.0
36.2
37.5
37.4

-17 37.28

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Mar. 3 1884

ζ Orionis

22 H Camel

S Ura Min

27 Lyncis

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1993phae.proj.1618..

31 Lyncis +.95 +1.38

8 14 49 −.08
+43 34
−1 11 −02

13 22.5 16.3
35.5 19.3
36.1 22.2
29.0 25.2
30.5 28.0

13 26.72 22.20
14 1.3 2.1
4.0 5.0
6.4 8.0
8.3 10.7
10.3 13.6
14 6.06 7.68
48.04

13 33.7
36.5
39.3
42.4
45.1
48.0
50.9
53.6
56.4
45.9
—
—
13 45.10
13 45.07
— 2
13 45.05
14 56.01
−1 10.96
53.54
14 53.50

.11378ₙ
9.86 608

32 13.3 + 18.35 1.26364
57.2 − 20.99 1.32201ₙ
1805
32 5.25
− 17.28
31 47.97 −1 10 15 0.07040
10 52 0.07470
31 37.2
1.93
56.5 +3085
31 28.75 + 1.26
+ 19.76 − .09
31 48.01 − .29
+ 0.88
51 1.26
+ 1.27
− .12
− .21
+ 0.94
51 1.28

+43
57 0.38
0.34
51 1.27
+ .02
51 1.29
33 29.8
36.5
33 32.6

O Ursæ Maj. +1.81 +2.07

8 20 32 −.08
+61 6
−18 43 −32

18 56.0 46.1
0.0 5.01
3.6 54.7
8.7 58.7
11.3 3.0
18 39.2 54.46
19 18.5 54.3
22.6 58.8
25.2 3.7
27.3 7.2
33.2 11.5
19 25.16 2.90
19 5.74 28.68
0.4
3.8
6.3
10.5
20 3.58

19 11.9
16.0
20.3
24.5
28.5
33.3
37.3
41.5
45.9
25.92
—
—
19 26.80
19 28.74
— 3
19 28.71
20 40.35
−1 11.64
37.12

.11378ₙ
9.68420

59 44.3 + 24.82 1.39480
30.1 + 3.58 0.55388
74.4 − 34.84 1.54208ₙ
59 3.720
15.59
59 21.61 −18 42 43 1.29010
42 57 1.29020
43 21 1.29030
59 29.9
16.2
46.1 +3112
59 23.05 + 20.95
− 2.25 − .14
59 20.80 − .64
+ 20.17
59 6.3 23 46.91
52.6
11.89 + 20.96
58 59.45 − .00
+ 21.88 − .62
59 21.33 + 20.34
23 47.89
+ 2096
− .28
− .56
+ 20.12
23 47.14

+61
23 26.71
27.55
27.02
23 47.31
+ .28
6 12.4
35.2
6 16.5

24 20.1 52.9
22.6 55.5
25.3 58.3
26.8 52.913
28.5
24 24.166
24 47.2
50.6
54.5
—
—
24 50.77
19 28.80

.11378ₙ
9.89405

24 3.7
6.5
8.8
11.5
14.1
16.7
19.3
22.3
24.9
12.74
—
—
24 14.20
24 14.12
— 2
24 14.10
25 24.73
−1 10.63
22.36

40 28.1 − 10.54 1.02284ₙ
11.2 − 36.57 1.56565ₙ
39.3 65 407
40 19.7 65
+ 10.73
40 30.38 +3 58 0 0.60130
57 32 0.60040
39 58.8
44.2
10.30 +3136
39 51.50 − 4.29
+ 37.23 32 − .03
40 28.73 − .04
82 − 4.36
42 13.61
− 4.28
− .35
− .68
− 5.31
42 14.22

+38
42 17.97
19.53
42 13.92
− .06
42 13.86
24 37.0
36.9
24 46.6

Gr. 1450 +.79 +1.28

8 25 18 −.09
+38 25
9.89405
+3 58 +.07

24 +70.19
+1.59
− .19
−3.23
+68.36
20 37.07

24 +70.19
+ .70
− .12
−2.37
+68.40
25 2250

Mar 3
Reg
−17 37.4
36.5
37.2
36.4
36.5
35.4
36.9
−17 36.61

−17 36.61
+ .02
+ 7.80
−17 28.79
33 32.48

−17 36.61
+ .28
52 + 4.10
−17 32.23
6 15.29

−17 36.61
− .06
+ 9.60
−17 27.07
24 46.85

+ .10
+ .70
− .12
− 2.37
+ 68.40
25 22.50

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Mar. 4. 1884

ζ Tauri

4 29 10
+16 16
9.98226
+26 7

+.29
+.04
+.89
.00
+.44

ζ Tauri

27 574 40 319 29.8
595 353 34.9
1.6 435 40.0
3.8 47.3 45.1
6.0 49.7 50.4
8.0 40 41.54 40.04
10.2 41 6.7 51.4
12.3 9.8 56.4
14.5 13.7 1.6
17.33 16.6 6.8
42 19.0 11.9
59.33 41 13.16 1.62
28 5.92 42 54 20.83
8.5
28 5.92 13.3
— 2 15.6
19.8 5
42 12.26

28 5.90
29 16.94 +70.87
-1 11.04 + 26
15.87 + 00
-.07
+70.06

39 1596

α Camel

4 42 25
+66 8
-23 45

+2.26
+2.47
-.02
-.40

α Camel

41 04 47 39.5 51.8
55 41.1 54.3
10.7 43.0 56.7
15.4 45.6 59.1
20.5 47.5 1.6
26.0 47 43.34 56.70
31.0 48 52.1 31.2
36.2 54.3 33.6
41.2 55.9 36.0
46.2 57.5 38.6
— — 59.5 41.0
— — 48 55.86 36.08
41 20.80 16.39

41 20.82
— 4

41 20.78
42 33.38 +70.87
-1 12.85 + 2.01
31.42 — .05
— 2.26
+70.57

42 3133

ι Aurigæ

4 49 19
+32 59
+9 24

+.65
+1.19
-.03
+.16

ι Aurigæ

48 66 51 0.0
90 3.0
11.5 5.7
14.0 8.6
16.5 11.7
18.9 51 5.80
21.4 52 17.1 20.8
23.7 19.6 25.1
26.3 22.3 28.9
14.79 25.5 33.2
— 27.6 37.4
52 22.42 29.08
48 16.43 52 24.82 33.27
50.0 55.81
53.1
56.2
59.5
52 53.40

48 16.39
— 2

48 16.41
49 27.781 +70.87
-1 11.482 + .58
26.42 — .02
— .39
+70.04

49 2643

10 Camel

4 53 0
+60 16
9.69545
-17 53

1.75
+.95
+1.38
2.02
-.03
-.31

10 Camel

51 39.1
43.4
47.5
51.7
55.7
59.8
4.0
8.1
12.8
32.21
16
37.21
51 55.79

51 55.80
— 3

51 55.77
53 8.25 +70.87
-1 12.38 +1.62
48 -.06
53 6.19 -2.06
+70.31

53 6.08

.11378₂
9.98226

.11378₂
9.60704

.11378₂
9.92367

.11378₂
9.69545

47 48 5.8 — 19.40 1.28780₂
440
1098
47 5490
+ 2420
19.10

+26 5 35 1.45020

+3716
— 30.72
— .05
— .41
— 31.18
33 58.07

57 248 + 39.28 1.59417
9.9 + 1.66 0.88423
347 — 51.44 1.71130₂
57 17.7
— 20.65
56 56.70 -23 45 3 1.40370
45 21 1.40380
57 77 45 51 1.40390
51.3
1190
+3740
56 59.50 + 27.61
— 4.03 — .31
56 55.47 — .32
+ 26.98
56 369 26 18.63
204
573 + 27.62
56 28.7 — .00
+ 27.05 — .28
56 55.70 + 27.34
26 20.22

+ 27.63
— .54
— .21
+ 26.88
26 19.53

6 57.5 + 33.07 1.51943
3.95 — 39.45 1.59605₂
9.70
6 48.50
— 36.05
6 12.45 +9 24 28 0.97960
23 9 0.97860
5 38.4
20.0
58.4
+3764
5 29.20 — 10.40
+ 43.50 — 27
6 12.20 — 25
— 10.92
16 24.98

— 10.38
— .38
— .07
— 10.83
16 25.32

49 50.2 + 50.80 1.69897
36.5 — 26.62 1.42521₂
86.7 — 57.60 1.76042₂
49 43.7
— 32.23
49 11.12 -17 52 37 1.26880
53 25 1.26920
49 2.0 53 46 1.26940
47.8
109.8
+3780
48 54.90 + 20.26
+ 17.16 — .57
49 12.06 — .66
+ 19.01
48 41.9 33 56.24
26.7
68.6 + 20.28
48 34.30 — .17
+ 37.12 — .65
49 11.42 + 19.56
33 55.85

+ 20.29
— .78
— .50
+ 19.01
33 55.94

+16
34 29.25

+66
25 51.65

+33
16 35.90

+60
33 37.23

-17 34.96
— .38
+ 7.00
-17 28.34
16 29.73

52.88

-17 34.96
+ .34
— 8.80
-17 43.42
8 36.46
2022

-17 34.96
— .14
+ 1.90
-17 33.20
58 51.90

36.15

36.29

36.93

-17 34.96
+ .27
— 6.90
-17 41.59
16 14.45

33 58.07
— .38
33 57.69
16 22.7
-17 35.0
16 29.7

52.65

26 19.46
+ .34
26 19.80
8 45.9
33.9
34.3
8 37.1

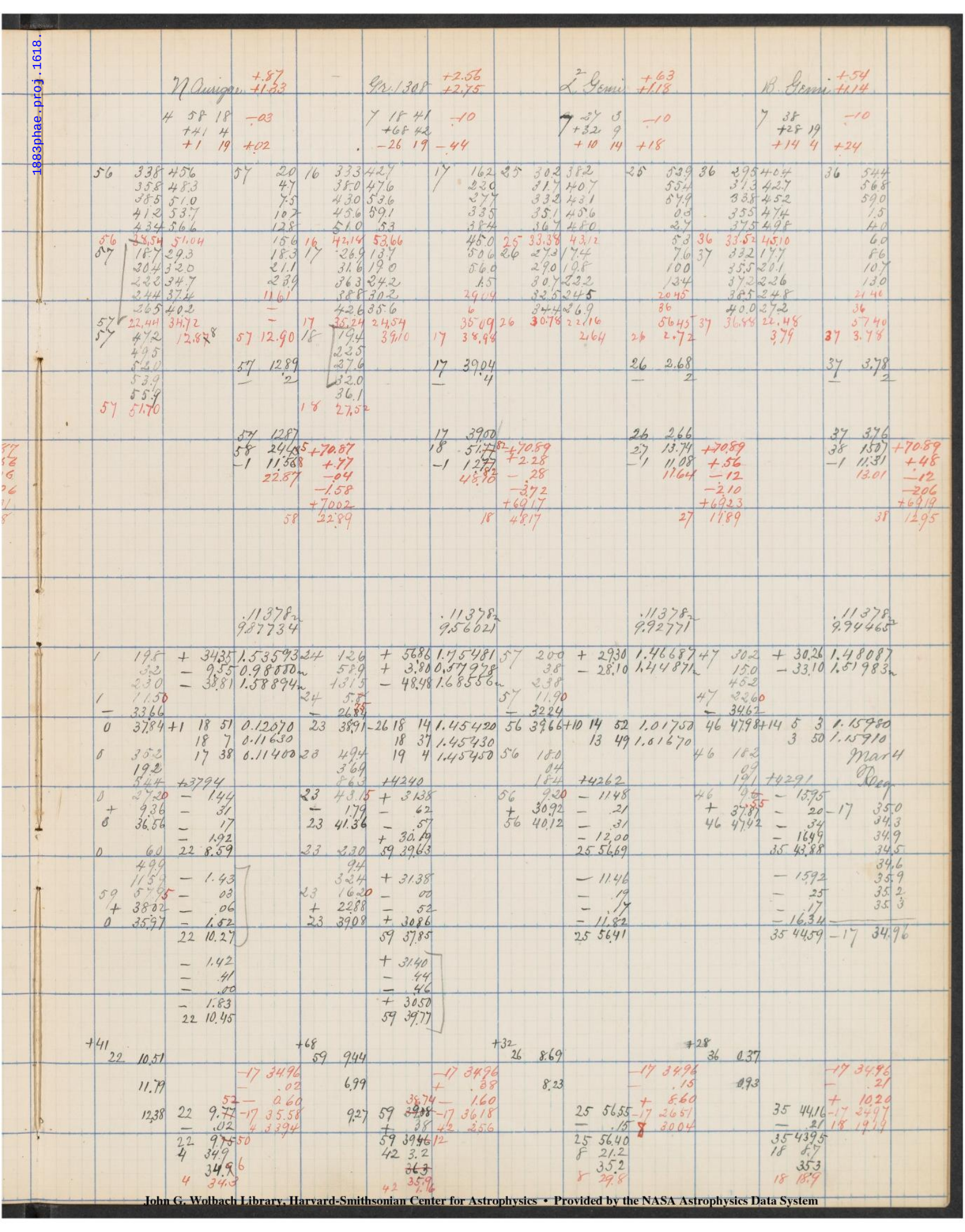
16 25.10
— .14
16 24.96
58 60.1
34.9
58 52.0

33 56.01
+ .27
33 56.28
16 21.8
34.5
16 14.9

31

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.



John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Mar. 10. 1884

γ Androm. +.89 +1.34 +.88 +.01

1 56 41 +41 46 +0 37 +.01

α Aurig. +.42 +1.09

2 0 33 +22 54 +19 29 −.01 +.33

ν Persei

2 56 17 +53 3 −.02

ζ Persei +1.17 +1.54

3 15 56 +49 26 −7 3 −.03 −.12

54 55.7 41 57.6 68 02 94 2.51 2.3 44 1.50

55 20.6 233 260 28.7 31.6 344 372 40.0 42.7 2.945 — 51.4 59.2

58 56.3 0.8 57.7 3.0 59.7 52 1.3 7.4 3.3 9.8 58 59.66 5.24 59 44.5 36.6 46.7 38.9 48.0 41.1 49.6 43.4 51.4 45.6

59 14.2 16.5 18.6 21.0 23.0 25.5 27.7 30.0 32.2 2.087 — —

14 5.7 7.7 10.0 11.6 14.9 14 9.98 6.4 9.8 13.0 16.2 19.4 13.82

14 35.0 38.3 41.3 44.7 47.7 51.0 54.0 57.3 0.4 3.697 6 14.297

55 47.52 53.76 31.64 55 31.61 58 48.04 41.12 23.18 59 23.19 47.68 14 47.74

55 31.62 — 2

59 23.18 — 2

14 47.71 — 2

55 31.60 56 47.28 −1 15.60 46.89

59 23.16 0 38.45 38.12

+75.03 +.76 −.01 −.039 +75.39 56 46.99

+75.03 +.26 −.01 −0.33 +.7505 0 38.21

14 47.69 16 36.0 −1 15.91 2.69 −.91 +.7508 16 2.77

+75.01 +.01 −.03

.11378₂ 9.87266

.11378₂ 9.96435

.11378₂ 9.81314

19 21.4 8.2 2.96 19 14.80 − 3.057

+ 31.54 −15.90

1.49886 1.20140₂

10 36.8 23.2 6.90 10 29.50 − 28.16

+ 23.52 − 24.86

1.37144 1.39550₂

36.2 35.0 61.2 1 30.60

38 58.2 47.2 105.4 38 53.70 − 31.88

+ 37.78 3

1.57657

18 44.23 36 55 36 9

+0 36 55 9.79100 9.78200

10 1.34 9 38.0 24.1 6.21

+19 28 9 27 11

1.30870 1.30830

38 20.82

−7 3 27 0.85310

18 35.2 22.2 5.74

+18.10

9 38.0 24.1 6.21

+18.10

+18.93

18 38.70 + 15.41 18 44.11

− 0.64 − .27 − .59 − 1.50 4 2.62

9 31.05 + 29.76 10 0.81

− 21.22 − .11 − .07 − 21.40 12 25.61

+ 7.45 − .39 − .55 + 6.51 44 34.04

− 0.63 − .07 − .49 − 1.19 4 3.05

− 21.20 − .12 − .63 − 21.95 12 25.59

+42 4 4.12 4.24

+23 12 47.01 47.54

+49 44 27.53

−17 37.98 — .01 — 4.20 4 2.83 − .01 4 2.82 46 24.9 −17 37.9 46 20.7

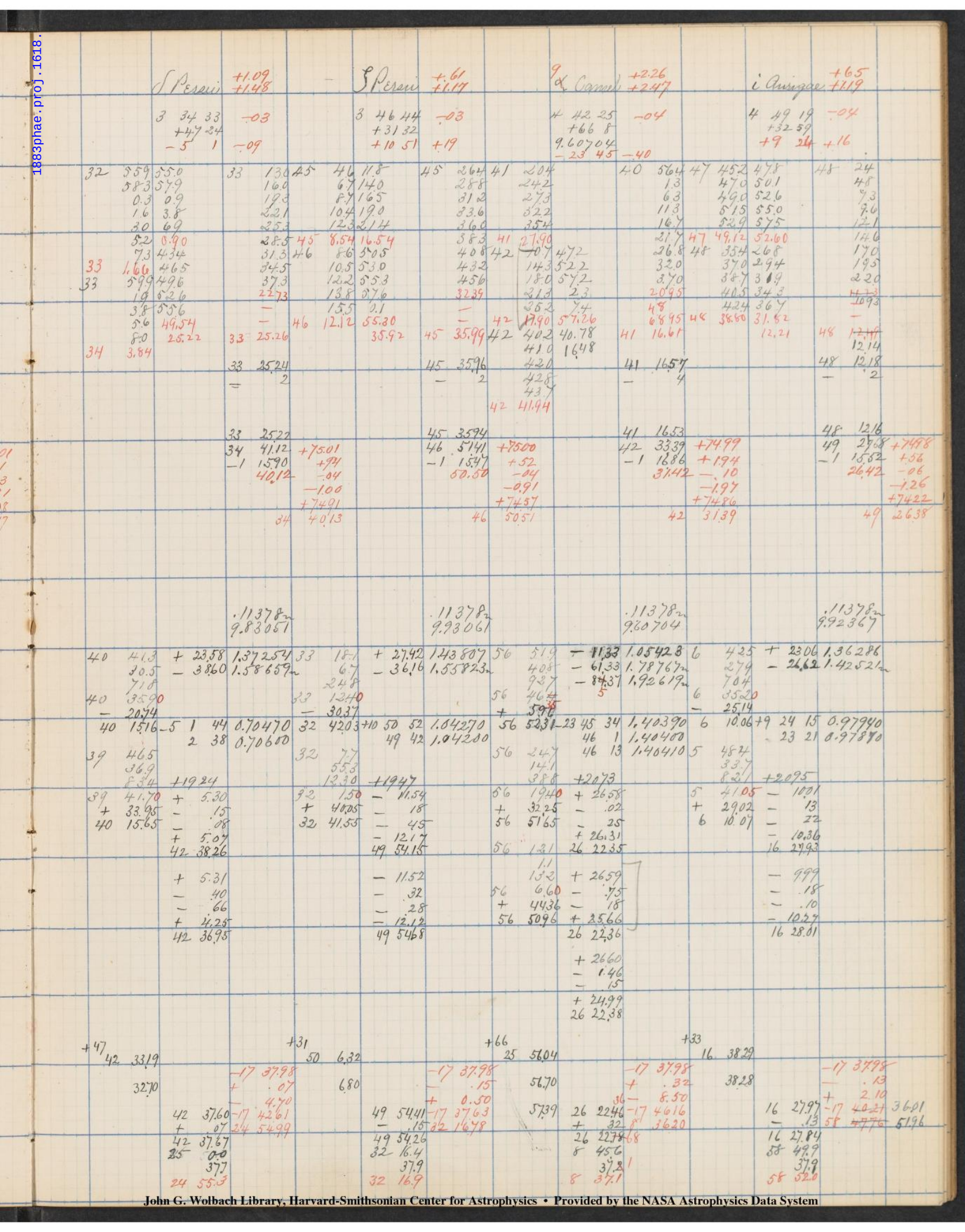
−17 37.98 — .26 + 0.50 12 25.60 − .26 12 25.34 54 47.5 37.8 54 48.0

−17 37.98 + .09 — 5.60 44 34.04 + .09 44 34.13 26 55.3 38.8 26 49.7

−17 43.49 −17 37.74 46 50.55

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.



John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Mar. 10 1884

E Ure Min.

4 58 00
+97 46
chf.

α Aurigae +1.03 +1.44 +86

5 7 59 −.05
+45 52
−3 29 −.06

6 17.6 23.4
30.3 26.2
22.2 29.3
23.8 32.2
26.5 35.2
6 22.08 29.26
10.7
13.7
16.6
19.5
22.5
16.60
52.93

6 41.0
44.0
46.9
50.0
53.0
56.0
59.0
18
49
3566
12
4766
6 52.96

6 52.94
− 2

6 52.92 4
8 8.82 +7598
−1 15.90 +.89
7.24 −.07
−1.58
+7522 74.22
8 844 7.14

.11378 m
9.84282

18³ 38 + 30.86 1.48940
5.2.1
1159
18² 5795
− 27.93
18² 30.02 −3 29 22 0.54550

+2178
+ 3.69
− .26
− .42
+ 3.01
10 21.34

+46
10 18.33

−17 37.98
+ .05
− 1.70
10 21.34 −17 39.63
+ .05 52 41.71
10 21.39
52 44.6
37.4
52 42.3

β Tauri +.54 +1.14

5 18 50 −.05
+28 30
+13 53 +.24

17 99 19.9
11.6 22.3
13.3 24.6
14.7 27.0
16.4 29.3
17 13.18 24.62
18 42 57.6
60 59.9
7.3 2.3
8.9 4.8
16.5 7.0
18 7.58 2.32
43.47

17 43.44
− 2

17 43.42 4
18 58.93 +7398
−1 15.51 +.46
57.55 −.07
−1.38
+7379 73.99
18 5841 57.41

.11378 m
9.94390

35 11.2 + 30.26 1.48087
57.1 − 24.14 1.38274 m
12.83
35 4.8
− 34.56
34 29.59 +13 52 44 1.15310
51 41 1.15260
34 6.2
5.53
12.15
34 08 − 14.97
+ 27.59 − .20
34 28.32 − .01
− 15.18
48 3.58

− 14.95
− .13
− .56
− 15.64
48 4.39

+28
48 18.76
20.03

48 3.98
− .19
48 3.79
30 24.5
39.3
30 29.2

+2219

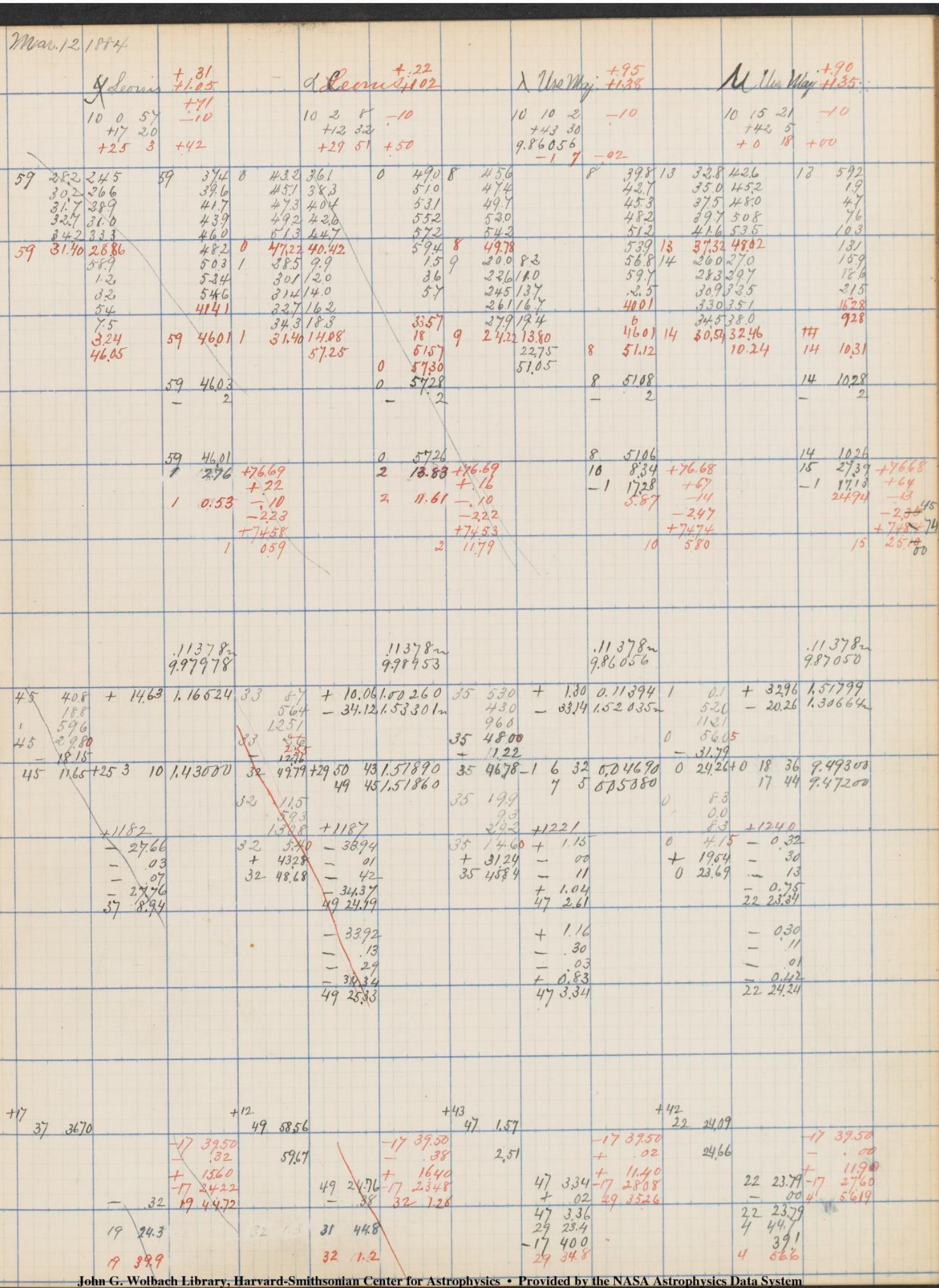
Mar 10
R24

17 37.9
37.8
38.8
37.7
37.9
37.1
37.9
37.4
39.3
17 37.98

−17 37.98
19
+ 4.70
−17 33.47
30 30.51

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.



John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Mar. 12 1884

+4.10

9 H Draconis +4.22

+.71

10 35 6 −.10

+76 18

−33 55 −.56

21 456 308 23 232

516 395 31.8

1.0 480 40.5

744 572 49.6

121 60 58.3

21 595 448.30 6.7

22 580 500 15.4

53 590 24.5

124 73 33.0

208 164 282.9

252 250 24

23 1284 784 52.29

24 504 5782 28 58.10

556 92

23 58.01

78 − 7

146

25 2.14

25 324

399

23 57.94

435 25 17.14 +76.68

508 −1 19.20 +2.91

569 12.17 − .42

25 447.0 −4.97

+74.20

25 12.14

.11378

9.37445

47 570 +118.47 2.07361

510 +45.67 1.65963

1080 − 64.13 1.80706

47 5400 − 106.69 2.02812

− 3646

47 1754 −33 54 26 1.58750

54 47 1.58760

47 868 55 20 1.58780

302 55 35 1.58790

670 +1281

47 33.50 + 39.84

− 14.06 − 1.79

47 19.44 − .41

+ 37.64

47 30 36 8.45

560

1190 + 3985

46 59.50 − .26

+ 19.74 − .86

47 19.24 + 39.23

36 8.14

486 490

420 + 3987

910 − .52

486 4550 − .28

+ 3284 + 39.07

47 1834 36 8.18

+76 + 39.88

35 30.81 − 1.46

− .25 −17 39.50

28.91 + 38.17 + .43

36 8.18 16 + 6.50

29.11 36 8.24 −17 3257

+ .43 18 35.59

30.01 36 8.67

18 29.2

39.54

18 35.7

Mar 12

Ray

−17 40.0

39.1

39.4

−17 39.50

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Mar. 15 1884

22 H Camelo +2.65 +2.83 +.76 −.05 −.45

6 5 57 +69 22 −26 59

ε Gemi + 47 +1.10 −.05 +.29

6 36 44 +25 15 +17 8

12 Lyncis reg +1.46 +1.77 −.07 −.23

7 13 19 +55 30 −13 7

Gr. 1308 +2.56 +2.75 −.07 −.44

Y 18 41 +68 42 −26 19

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Mar. 15. 1884

24 Lyncis +1.66 +1.94 +76 −.08 −28

7 33 6 +58 59 −16 36 31 38.3

i Ursæ Maj. +1.13 +1.51 −15 −11

6 51 12 +48 30 −6 7

10 Ursæ Maj. +.91 +1.35 −15 +00

8 33 2 +42 15 +0 8

K Ursæ Maj. +1.10 +1.48 −15 −09

8 55 38 +47 37 −5 14

.11378n
9.71205

.11378n
9.82126

.11378n
9.86936

.11378n
9.82872

+1052 +1404 +1837 +1841

+59 16 9.48 +48 47 13.62 +42 31 58.54 +47 54 19.23

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Mar. 16 1884

	δ Cass			ζ Tauri			i Aurigae			ℓ Aurigae		
		+1.74			+.29			+.65				+1.03
		+2.04			+1.04			+1.19				+1.44
			+.59									
	0 49 38		+.00	4 29 10		-.02	4 49 19		-.02	5 7		-.03
	+60 5			+16 16			+32 59			+45 52		
	-17 42		-.30	+26 4		+.44	9.92367			-3 29		-.06
							+9 24		+.16			
47	59 8 41.7		48 6.2	27 31.8	36.3	27 49.1	47			47 58.5	6 6.0	19.6
	34 45.7		10.4	33.4	38.3	51.3				10	8.5	22.4
	66 49.7		14.4	34.9	40.6	53.5				34	10.6	25.4
	94 54.0		18.5	36.6	42.7	55.6				60	13.0	28.4
	131 58.0		22.8	37.9	44.9	57.8				83	15.1	31.5
48	6.46 49.82		26.8	27 34.92	40.386	.00				110	6 10.64	25.46
	47.5		31.0		10.7	20	48 4.70	230		133		6.9
	51.6		35.0		12.8	42	48.8	25.6		157		9.7
	55.7		39.4		14.9	6.3	50.7	28.0		181		12.8
	59.8		20.45		17.0	27.98	53.0	30.5		13.53		15.7
	4.0				19.2	51.98	53.7	33.0		7.53		18.7
	55.72				14.92		48 50.44	28.02				12.76
	22.77		48 22.72		57.754	27 57.76		19.67		48 8.37		49.11
								8.35				
			48 22.74			27 57.75				48 8.36		49.11
			- 3			- 2				- 2		- 2
			48 22.71			27 57.73				48 8.34		49.09
			49 42.60		+78.94	29 16.74		+78.87		49 27.56	+78.86	8.67
			-1 19.89		+1.03	-1 19.01		+.17		-1 19.22	+.39	-1 19.58
			42.82		.00	15.87		.00		26.42	-.01	7.24
					+0.22			-0.87			-1.14	
					+80.19			+78.17			+78.10	
				49	42.90	29		15.90			49 26.448	7.10
			.11378			.11378				.11378		.11378
			9.69787			9.98226				9.92367		9.84282
0	19.7	+16.28	1.21765	48 50.0	+22.83	1.35851	5 26.6	-42.08	1.62408	3 7.2	+38.49	1.58512
	11.1			37.6			16.1			58.6		
	30.8			87.6			42.7			125.8		
0	13.40			48 43.80			5 21.38			13 29.0		
-	10.55			- 28.48			+ 4.587			- 3.481		
0	4.85	-17 42 5	1.26440	48 15.32	+26 6 24	1.45840	6 7.22	+9 23 1	0.97840	12 28.09	-3 29 17	0.54530
		+.854			+.1860			+.1895			+.1928	
		+ 18.75			- 29.41			- 9.94			+ 3.67	
		- .06			- .08			- .44			- .40	
		- .03			- .56			- .06			- .45	
		+ 18.66			- 30.08			- 10.44			+ 2.82	
		23 2.16			34 2.95			16 30.69			10 23.08	
+60			+16			+33			+46			
	22 43.50			34 33.03			16 41.13			10 20.26		
			-17 40.05			-17 40.05			-17 40.05			-17 40.05
			+ .22			- .32			- .11			+ .04
			- 5.70			+ 7.40			+ 2.30			- 1.50
		23 2.16	-17 45.53		34 2.95	-17 32.97		16 30.69	-17 37.86		10 23.08	-17 41.51
		+ .22	5 16.63		- .32	16 29.98		- .11	58 52.83		+ .04	52 41.57
		23 2.38			34 2.63			16 30.58			10 23.12	
		5 23.3			16 22.3			58 49.7			52 43.8	
		-17 39.1			40.3			40.9			39.3	
		5 17.6			16 29.7			58 52.0			52 42.3	

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Mar. 16 1884

B Tauri +.54 +1.14 +59 −.03

5 18 50 +28 30 +13 53 +.24

17 16.3 18.5 20.9 23.2 25.7 20.92

18 6.5 53.7 8.3 56.1 10.0 58.5 12.0 0.8 13.3 3.2

18 18.02 58.46 39.69

17 30.3 32.6 35.0 37.3 39.7 42.0 44.4 46.7 49.0 35.70

17 39.67

17 39.68 − 2

17 39.66 18 58.81 −1 19.15 57.55 +78.86 +.32 −.03 −1.26 +77.89

18 57.55

.11378 9.94390

33 56.6 49.2 10.58 33 52.90 + 34.65 − 30.34 1.48202

84 27.55 +1351 33 1.15250

+1947 − 14.86 − 20 − .58 − 15.64 48 5.16

+28 48 2080

48 5.16 − .18 48 4.98 30 24.4 40.6 30 29.2

S Orionis +.01 +1.00

5 25 59 −.23 9.99999 +42 46 −.03 +.68

25 66.595 8.0 1.6 9.2 3.6 11.0 5.7 12.3 7.7 9.42 3.62 1650 47.12

27 15.6 2.5 18.1 27 9.05 + 2904 − 42.35 27 38.09 +42 46 49

+1960 − 8.563 + .00 − .33 − 5.96 5 45.70

5 45.70 − .50 5 45.20 23 25.3 40.1 23 10.13

24 + 43.0 45.0 47.0 49.0 51.2 53.2 55.3

24 47.04

24 47.08 − 1

24 47.07 26 5.80 −1 18.73 4.80 +78.86 −.01 −.03 −1.00 +77.82

26 4.89

.11378 9.99999

1.34928

1.72570

Mar 16 Reg

−17 39.1 40.3 40.9 39.3 40.6 40.1 −17 40.05

−17 40.05 − .18 + 4.80 −17 35.43 30 29.73

−17 40.05 − .50 + 15.00 −17 25.55 23 11.25

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Sept. 21

c = 25 80.

α Aquilae

20 5 16
−1 9
9.99991

	3	5.7
13.7		7.6
16.0		9.7
18.1		
20.2		
22.2		
18.04		
16.50	3	1.50
1.54		
	3	1.52
	−	2
	2	1.50
	5	22.31
	−2	20.81

Gr 3 80.

α² Capricorni

20 11 53
−12 55

		−
		−
		−
		−
		−
	24	
28		32.0
		54.0
		55
		13.0
		18.7
		56.4
		57.78
		11.86

Gr 3241 (A.A.)

20 30 30
72 8
9.48686

		−
		−
		−
	24	4.7
		11.8
		18.6
		25.0
		31.6
		38.7
28		11.65
28		11.76
−		5
28		11.71
30		33.37
−2		21.66

73 Draconis 80.

20 32 58
+ 74 33

30		12.2
		20.2
		27.7
		35.6
		43.2
		51.2
		58.4
		6.6
		14.4
		26.95
		12
		38.95
30		43.28
30		43.28
−		6
30		43.22
33		5.19
−2		21.97

ζ Cygni 80.

20 37 26
+ 44 51

34		41.3
		44.3
		47.2
		50.2
		53.2
		47.24
		26.0
		30.9
		33.8
		36.7
		39.7
		33.42
		10.33

		55.6
		1.7
		4.7
		7.6
		10.5
		13.5
		16.3
		19.3
		22.2
		15.44
		9.44
35		10.49
35		10.49
−		2
35		10.47
37		31.82
−2		21.35

Observations to determine the sign of c

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

8-0.

ε Aquarii

20 40 21
− 9 55

38	45.2		57.8												
	47.3		57.7												
	49.6		1.9												
	51.6		3.9												
	53.6		6.2												
	49.46		8.2												
			10.2												
	18.7		12.3												
	20.7		14.5												
	229		1747												
	25.0		547												
	27.2														
	2290														
49	6.18	39	6.08												
049		39	6.13												
2		—	2												
047		39	6.11												
182		41	27.17												
135		−2	21.06												

C = 26 8v.

π Cephei

20 42 53
+61 23
9.6802 9

	—		—												
	—		—												
	—		—												
	—		—												
	—		—												
			—												
41	0.7	40	48.0												
	5.4		52.1												
	9.8														
	13.8														
	18.76														
	9.66														
	34.45	40	3580												
	35.21														
		40	35.15												
		—	3												
		40	3512												
		42	59.12												
		−2	24.00												

32 Pulpsculae

20 49 34
+27 37

46	54.4	47	8.3												
	56.7		10.7												
	58.9		13.0												
	1.3		15.3												
	3.8		17.7												
	59.02		20.0												
			22.2												
47	31.7		24.7												
	33.9		27.0												
	36.2		1589												
	38.6														
	41.6														
	36.40														
	17.71	47	17.66												
		47	17.68												
		—	2												
		47	17.66												
		49	40.24												
		−2	22.58												

N.A

12 Year Cat.

20 52 54
+10 7

—		49	352												
—			4.0												
—		50	1.0												
—			12.8												
—			25.4												
			36.7												
			47.0												
—			1.3												
—			13.0												
—			2234												
—															
—															
		50	2482												
		50	2482												
		—	10												
		50	2472												
		52	53.96												
		−2	29.24												

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Sept. 24
C = 25 65.0
γ Cygni

20 57 40
+40 48

52 5.4
8.1
10.7
13.5
16.2
10.78
19.0
51.8
54.4
57.2
59.9
54.46
32.62

21.8
24.5
27.2
30.0
32.7
35.5
38.2
40.9
43.6

52 32.71

52 32.66
− 2

52 32.64
52 54.18
− 21.54

C = 25 65.0
δ² Draconis

20 58 59
112 23

58 56.3
1.6
7.3
12.7
17.9
7.16
22.9
28.4
33.7
39.3
44.5
33.36
50.26

26.8
34.6
38.8
45.2
50.4
56.0
1.0
6.7
12.3

59 50.31

59 50.28
+ 4

59 50.32
0 11.59
− 21.27

n = +.20

− 21.37
21.24

n = +.01

+.05 − 21.49
+.05 21.36

n = +13

+.11 − 21.43
+.10 21.30
21.37

C = 25 65.0
61 Cygni

21 1 38
+38 11
9.89544

24.0 24.8
26.6 4.0
29.3 4.1
31.8 4.0
34.2 3.8

1 23.98

1 23.98
− 2

1 2396
1 45.36
− 21.40

C = 25 65.0
73 2077

21 7 44
+77 40

6 52.1 +2.0
7 11.5
21.0
30.9
40.8
52.2
59.8
8 9.3

4 30.84

4 30.84
− 4

4 3077
4 52.99
− 22.22

20.9 .56

20.9
21.0
20.0

+.86
+.79
+.82

− 21.54 + .17
21.40 + 16
− 21.47

0 = − 3.25 + 0.20
+ 3.77 − 0.75

n = +.06
+.20

n = +.20

21.0
21.1

− 2.43
+ 4.59

− 21.27
22.22

For an increased reading of the collimation the value of c is +1.26 sec δ, and for a decreased reading of the collimation the value of c is − 1.26 sec δ, for each revolution, when applied to [illegible] or I − R.A. or [illegible]. When the setting for c is less than the true value the sign of c is minus, when the setting for c is greater than the true value, the sign of c is plus.

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

c = 24 65.0 — c = −1.26 sec — c = 24 65.0 — c = 24 65.0

α Equulei — α Cephei — β Cephei Edpanconi

21 9 58 — 21 17 46 — 21 19 58

+4 45 — +6 26 — − 22 54

1518

9	24		36.6	14	42.1		20.3	19	23.9		37.3
	26.2		38.6		53.7		24.4		26.2		39.6
	28.2		40.7		58.0		28.9		28.3		41.9
	30.3		42.7		2.5		33.5		30.6		44.0
	32.3		44.7		7.0		37.8		32.8		46.3
	28.28		46.7		58.06		42.3		28.36		48.4
	57.1		48.7		0.0		46.6		57.8		50.8
	57.2		51.0		4.3		61.2		2.0		53.1
	1.3		53.1		8.7				4.2		55.2
	3.3				13.1				6.3		
	54				17				8.7		
	1.26				8.76				4.20		
	44.77	9	44.76		33.41	15	33.42		46.28	19	46.29
		9	44.76			15	33.42			19	46.28
			− .2				− .3				− .02
		9	44.74			15	33.39			19	46.26
		10	4.86			15	51.42			20	6.22
			− 20.12				− 18.03				− 19.96

21.2	+.08	100 − 20.12	−1.26	− 21.38	
21.3	− 42	1.09 19.96	1.37	− 21.33	
21.2	−.17			− 21.36	

21.2 + 1.89 24 − 1803 − 270 − 20.73

C = +2.06 + 0.63 n = −.31

n = +.06
+.20
+2.6
+22
+.18

n = +.18

21.2	+.08	− 21.38	+.01	− 21.37
21.3	− 42	21.33	−.07	21.40
21.2	+1.89	20.73	+.34	21.39
				21.39

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

Sept. 24
C = 26 65.0
β Aquarii

21 25 24
− 6 5

24 47.4 48.3 51.4 53.5 55.5 57.7 1.7 3.9 6.0 8.0 10.1 12.1 14.2 16.2 51.42 20.3 22.5 24.7 26.7 28.8 24.60 8.01

C = +1.26 med δ

25 7.99
25 8.00
− 2
25 7.98
25 30.59
− 22.61

C = 26 65.0
β Cephei

21 27 7
+70 8
9.53 301

27 29.7 30.8 36.8 43.3 49.0 38.92 48.34 48.56

26 48.56
− 4
26 48.52
27 14.26
− 25.74

C = 26 65.0
74 Cygni

21 32 15
+ 39 53

31 31.6 34.3 37.0 39.7 42.3 36.98 14.7 17.2 20.1 22.6 25.3 19.98 58.48

31 58.44
31 58.46
− 2
31 58.44
32 21.60
− 23.16

C = 26 65.0
11 Cephei N.A.

c m s
21 40 11
+70 46

38 48.7 56.4 2.2 8.6 14.7 23.2 30.4 36.6 42.7 48.0 55.4 42.82 52.57

27.4 33.7 40.0 46.2 52.3 58.7 5.0 11.2 17.7

39 52.47
39 52.52
− 4
39 52.48
40 18.29
− 25.81

21.4	−11.101	−22.61	+1.27	−21.34	−.03	−21.81		
21.5	+.84 1.30	23.16	+1.64	21.52	−.20	21.32		
21.4	+.36			−21.43				
21.4							+2.75 292	−25.74 +3.68 −22.06
21.7							+2.87 3.04	25.81 +3.83 −21.98

O = +2.39 −0.63
+2.51 −0.55

n = +.26
+.22
+.24

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

1883phae.proj.1618.

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System

John G. Wolbach Library, Harvard-Smithsonian Center for Astrophysics • Provided by the NASA Astrophysics Data System