KG
11365
495

KG 11365.495

KG 11365.49.5

HARVARD
UNIVERSITY
LIBRARY
MAY 8 1956

Sunday Jan 27, 1884

~~5:40~~

6:0 43 ✓ U Gemini 9.8

m 4-5 U

q 2 U

U 1½ s

9:40 q 3½ U

U 1½ s

117 ✓ X Cygni 9.5

m 7 X

n 3 X

X 3 w

125 ✓ U Cygni 7.7

Color 10

U 4 a

U 3 k

p = U

RD 2 mags

Blue shade

U = g

Jan 27 84

6:10 119 S Cygni 9.1

✓

S 2½ c

b 2 S

a 5-6 S

127a V Cygni 11.5

✓

a 3 V

V 2 b

120 o Ceti 8.7

✓

~~a~~o 4 ~~d~~ w Abr 4

o 1-2 ~~c~~ v RD 4

Jan 27 84

7 δ Cass. 13

✓ not very clear

δ just seen

v ~~*~~ suspected

x & w suspected

y ~~*~~ 5-6 δ

δ 2 v

5 ζ Piscium 11.5

✓

hazy

a 2-3 ζ

c 5 ζ

Jan 29 '84

7:20 15 T Arietis — 9.1

✓ T 1 e — Glr 0 ⅓

d 2 T — RD 1.5

18 R Persei — 10.0

✓ R = m

l 2 R

R 2 n

k 4 R

20 T Tauri — 13

✓ invisible

a ½m + T

Jan 27

21 R Tauri 13

R certainly seen
but faint

i 5 R

22 S Tauri 13?

~~y z~~ ~~y~~ S not certainly
identified ~~with~~
~~with it~~
y & z inserted : ~~it~~ 13 mag stars
z may be the variable
(S = y) : 2 z

Jan 27 84

7:40 23 ✓ V Tauri — 13½

invisible < 13½

o ½ m + V.

24 ✓ R Orionis 13

b, R

x only suspected

y not visible

26 ✓ R Leporis 8.0

R 6 e Color 9

R 3 f R △ 1.5 mags

d 5 R

c 3 R

Jan 27 84

8h.30 28 δ Orionis 125

~~x 5 δ~~

x 5 δ

δ 3-4 y

28a T Orionis 11.7

f 3 T

T 1 k

c must be variable it is not brighter than 11.5 or 12 tonight

f 4 c ~~= d~~

[illegible] 149 b c f = k d 1½ m + c

d 2-3 149 b

18

Jan 27 84

9:0 42 T Gemini — 13
✓
~~str~~
invisible
somewhat hazy

g 3/4 m II

44 R Cancri 9.8
✓
a 4 R

b 2 R

~~R 3 a~~

R 5 n

Jan 27 84

9:10 49 T Cancri 9.1

✓ T 2 b

e 3 T

51 R Leo Mini. —12½

✓ invisible

(b 3/4 m + R

(8 3/4 m + R)

a & 2 invis

hazy

Jan 27 84

9:20 52 ✓ R Leonis 6.5

R 1½ b

35 ✓ R Lyncis 8.0

R = 2 Color 3.5

R 5 b RD 4.

q 6 + R

53 ✓ R Urs Maj. 9.5

R 1 b

Jan 27, 84

52 a ∇ Leonis — 11.5^m

hazy

invisible

(f 5.7 ∇)

(e 1 mag ∇)

Ⓐ26

Friday Feb 1, 1884

6:0 14 R Aquarii ~~8~~ 7.7
✓
n 3/4 mt R Color 6
R 4 x l
R 2 g
f 3-4 R

141 ✓ S Pegasi 8.5
K 2 S Color 3::
S 2 m RD 2
p 3/~~4~~ 3/4 mt S

91 a R Urs Min 9.1
✓
R ~~=~~ 7
a 2 R

for star "s"
~~[illegible]~~ 7 or 1 85

Feb 1

8:0 43 ✓U Gemini 12.2

b 2 U

n 45 a

14 ✓R Ceti 7.5

R 1 d Color 3:!

R 5-6 e RD 4

14 ✓R Persei 9.4

R 4 n

R 2 m

l 2 R

k 3 R

Feb 1

8E30 28p T Monocerotis 6.5

✓

T 3 d Colr 3½

T 1-2 c RD 3

a 2 T

28a T Orionis 11.5

✓

c 4 T

x 3 T

f 5 T

c 2 k

Feb 1

45 V Cancri 8.4

f 5 V Clr 5

d = V RD 3

V 3 a

V 2 c

b 1 V

62 Z Urs Maj 7.8

✓ Z 5 e Clr 3

Z 2 a RD 2.5

Z 1 h

g Z 2

7/1/84

64 δ Urs maj. 8.2

v n 3 4 S Color 4

S 1 d RD 4

S 3 c

91 b R Draco 7.7

v

R 4 d Color 3

R 4 l RD 2.5

q 3/4 m R

S 1 R

7/4/84

9:20 38 R Can Min 8.3

✓

R 4 l Arlr 3.5

f = R RD-4

g 3 R

Resumed after midnight

15:0

58 X Virginis 10.7

✓

e 3 X

X = c

~~e 3 X~~

X 6 z

2/1/84

15:20 61 R Coron 7.8

✓ R 4 a Color 2.5

K 2 R RD 2.

R 1 c

61 a V Virginis — 12

✓ ~~in~~ invisible

[c 34 am t V]

b 3 x

x 5 c

~~bette~~ ~~fw~~

2/1/84

15 40 65 U Virginis 8.5

✓ U 4 b Color 2

U 2-3 c RD 2

U 1 e

U 3 d

66 ~~W~~ Virginis 9.0

✓ W 4 b

W 3 h

67 V Virginis 8.9

✓ V 5 d Color 2 : :

k 3-4 V ~~ct~~

h 1 V RD 3 ::

2/1/84

15 : 50 69 ✓ δ Virginis . 7.4

S 1 a Colr 2,5

δ 3/4 m f w RD 3

59 ✓ R Com. Ber — 12

invisible

[a 1 m R]

60 ✓ T Virginis . — 12½

invisible

[X 1 m f T

b invisible

2/1/84

63 R Virginis 11
✓

n 1 m* R

a = 1 R

R 2 b

g 4 m
b = 1 a

68 R Hydrae 9.7
✓ Arlw 6 h.

c = 1 R RD 6

R 3-4 d

R 5 e

Note — star just prec. e on chart is invisible

7/1/84

16:20 73 ✓ R Bootis 7.7

R 4 e Color 1.

R 3 d RD 2

a 3-4 R

73a ✓ U Bootis 9.1

g 4 U Color 0::

f 1 U RD 3

U 3 b

76 ✓ S Librae [ao

a 5 S

f 2 S

S 2 c

2/1/84

77 ✓ δ Serpentis 10.5

δ 3/4m n

δ 3 g

d 3/4m δ

δ 2 h

f 2 δ

e 5 δ

80 ✓ R Serpentis 7.8

R 2 c Color 3 ~~24~~

R 4 d RΔ 4.5

e 3 R

2/1/84

16:50 81 R Librae

12m about in place of R with 12½m exactly south 5'

these objects may be R and a

Sus Var # 437

~~78a U Librae~~ — 10½

~~region not~~
~~no star in~~

region unrecognizable of the by chart:

otherwise Peters Chart

2/1/84

17:10 94 ✓ R Ophiuchi 7.4

R 1 n Color 4

R 3 m

74a ✓ T Libræ 12

T 5 a

T 2-3 b

c 3 T

x scarcely visible

2/1/84

17:30 86 a ∇ Ophiuchi −12½

v invariable

[y 1 mag + ∇
~~x~~z ½ m + ∇]

nebula

~~*~~ Ra d
14:29½ 10 92 −13 28

87 a ϖ Ophiuchi 10.2

v ϖ = R Color 7

h, ϖ

2/11/84

17:50 85 R Scorpii 11
✓ f 2 R Color — ::
R 2 g

86 S Scorpii — 12#
✓ invisible
[b ½m S]
approaching twilight

83 a W Scorpii — 12
✓ invisible
b = c

x or y not vis.
twilight

7/1/84

18:0 93 a V Herculis 11.2 ~~11.2~~

V 2½ a

V 1½ c

d = V

100 T Herculis 11.0

T 2 q

x = T

40

Feb. 1, 1884

	θ	H.a	d
⊙ F	20 12.2	11 14.2	−17 10
P	20 14.5	11 7.1	−16 59

$d_0 = -17\ 5.5$

$\alpha = 21^{h}\ 3.0^{m}\quad -16\ 50.3$

$\delta = -16\ 48.3$

Refr $+2$

$-16\ 48.3$

[illegible]

$\Delta d = -17.1$ Pole high

F θ − H.a. = 20 58.0   corr $\frac{0.6}{2} = \overset{m}{0}.3$

P " = 20 57.4

20 57.7

α = 21 3.0

[illegible] = −5.3

20 13.35   11 15.65

11 15 65

20 57.70

21 3.0

− 5.3

Saturday Feb 2 1884

Clear — Moon set

11:0 21. R Tauri 13½

✓ i 4 R

R 1 k

k is 13½ mag

22 S Tauri —13½

✓

S invis & < 13½

unless it is z or w

y 3 z 3 w

24 R Orionis 11.5 ~~11.7~~

✓

R 1 b

R 3-4 x

a 5 R

2/2/84

11:45 27a δ Aurigae —— 13

v cirrus.

[g ½ m S
f 1¼ m + S]

b 3-4 c 2 d

28 δ Orionis 11.7

v S = y
x ¾ m S

h 3 x

2/2

12:1 28a Σ Orionis 11.5

✓

k 2 Σ

k 1 c

f 3 c

33 R Monoc 13½

✓

R = 1 f

b 3 R

~~37 1~~

2/2

12:10 37 R Servi — 13½

v

invisible

[w ¾m R]

x 3-4 z

x = 1 e

Sus var #167

v

as usual

8

40 T Can Min 13

v

T 2 x

z 2 T

y 1 T

9)

2/2

12:20 42 'R' Gemin — 13

√ invisible < 13

[x '> T
o > R]

35 R Lyncis 8.3

√ R 1 p Color 5

l 1 R *RD 4.5

q 4-5 R

2/2

13h10 38 a V Semi 12

v

~~x = V~~ x assumed as V

~~x + t~~

V 2 y

V 1 m

K 5 V

39 S Can Min v 8.3

v S 4 d Color 4

S 1-2 m RD 4

S 1 e

f 3 S

2/2

13:30 40 a R Cam Min 13½

✓ X 5 R

R = 2

43 ✓ R Gemin 130

a 2 R

52 ✓ R Leon 6.8

R 2 b Color 7/6

a 7 R

(16)

Saturday Feb 9 1884

Clear — Moon nearly full
& in meridian

10:30 132a T Cephei 6.2
✓ T 5 k Color 6.5
T 3 x RD. 6

28 b, Monoc. 8.0
✓ d 1 V Color 4
V 4 e RD 5
V b + c

91 b R Draco 8.0
✓ R 3 d Color 4
S 5 R RD 3
R 3 f
R 2 e

2/9

11:30 38 R Cam min 7.8

✓ R 4 f Color ~~7~~ 6

R 4 g RD 7

l 2 R

45 V Cam 8.3

✓ f 3/4m V

V 3-4 d

b 1 V

V = c

Full moon very near; Field very bright

62 T Urs Maj 7.8

✓ T 3-4 a Color 3

T 2 h RD 3

g 3 T

2/9/84

12:0 64 S Urs maj 7.9

✓ s 4 d Color 3

n 2 S RD 4

h 3-4 S

71 S Bootis 8.2

✓ p 4 S Color 0 [illegible]

s 2 g RD 2

s = h

91 a R Urs min 9.0

✓ R = b

xa 3 R

Sur var S

S 1 b

R 2 s

2/9/84

73 ✓ R Bootis 7.7

R 3 ~~4~~ b Color — ;;

R 5 d R∆ 2,5

a 4 R

52 ✓ R Leonis 6.2

R 3 b Color 7

a 3/4 m R R∆ 7

11)

Sunday Feb 10 / 1884

Cloudy – Bright moonlight (full)

7h 0 143 R Cassiop 7.2

√ l 8 + R Color 6

l 4 R RD 6.5

R 2 – 0 h

R 7 g

R 1 k

2 R Androm 8.0

√ c 6 R Color 6.5

R = g RD 4

R ~~8~~ 5 h

R ~~2~~ 3 e

2/10

7:20 11 R Arietis ✓ 9.1

R 3-4 m Color — 5.5

R = h RD 3.5

g 5-6 R

p 2-3 R

12 o
~~12 o~~ ✓ Ceti 6.5

66 Ceti (or 63 Ceti?) ~~x~~ 3 o Color 7.

o 4 ~~y~~ 71 Ceti RD 7.5

14 R Ceti ✓ 8.0 ~~7.3~~

d 4 R Color ~~2~~ !!

R 3-4 e RD 3.5

R 3 f

f 1 e

d 7 e

2/10

7:40 ~~35~~ 18 R Persei 9.2

k = R Color —

R 4 z RD 3 ::

R 5 m

h 5 R

35 R Lyncis 7.9

R 4 n Color 5

R 2 l RD 5

R 1 m p

39 S Cam min. 8.0

g 2 S Color 5

e = S RD 5.5

f 1 S

S 6 d

S 7 m

9/10

8h 40 27√ R Aurigæ 9.4

d 3-4 R Color 7 ::

R 2 k ~~RD~~

e is reddish RD 3

d = e

2/10

Instrl. Errors of Equatorial

	Watch	H.A	α	d
Sirius (F)	6 32.3	11 58.1	18 34.2	−16 37.
P	6 35.8	0 1.9	6 33.9	−16 31.
	6 34.1 ΔT +0.4 6 34.5 ~~+0.0~~ ~~6 34.5~~ α 6 40.1 ΔH = −5.6	2)+3.8 +1.9 0 0.0	2)−0.3 c −0.1	~~−16 34.0~~ 2)+6. Δd +3′
L Can Ven (P)	6 49.0	18 3.6	12 45.4	37 57.0
(F)	6 52.2	6 6.1	0 46.1	37 45.0
	6 50.6 +0.4 6 51.0 18 4.8 ~~6 49.8~~ 12 46.2 α 12 50.6 ΔH = −4.4	2)−2.5 −1.2 18 4.8	2)−0.7 c −0.3	2)+6.0 Δd +3.0
~~M Andromedae F~~				
β Andromedae F	7 9.1	17 24.9	13 44.2	21 20.0
P	7 16.5	5 32.7	1 43.8	21 29.0
	7 12.8 +.4 7 13.2 5 28.8 1 44.4 α = 1 48.2 ΔH −3.8	5 28.8	2)−0.4 c −0.2	2)+9.0 Δd +4.5

Sirius:
α 6 40 4
δ −16 33.8
r +1.6

−1.
−16 34.0
δ+r 16 32.0
ξ −2.0

ξ Positive for Instrumental Pole high.

L Can Ven:
α = 12 50 34
δ = +38 56.4
r +2

+37 48.0 D
+38 54. δ+r
η = ∓66′

(Positive for Instrumental Pole West) η = δ+r − D for East Star
η = D − (δ+r) in West star

β Andromedae:
α = 1 48 14
δ = +20 14.4
r = +2

+21 24.5
+20 16.4 δ+r
η = +68.1

Compn (2nd morning) of watch with B 394
B. 394 23 7 50
Watch 22 45 0
whence watch is (now) 2 41 slow of sid. t.
and at above obsns must have been 24 slow

From the above obsns we get the Instrumental ~~General~~ Errors

$\Delta H = -5^m.6$
$\Delta d = +3'$
$c = -0^m.2$
$\xi = -2'$ ~~+3~~ (Instt Pole low)
$\eta = +67'$ {Instt Pole West}

1 degree in azimuth is = .20 inch adjt at base plate
1 " " alt. of pole is = .24 inch " " "

Monday Feb 11, 1884

-5^{m} $-3'$

Adjusted index of Hour & Decln Circles

~~And adjustm~~ and azimuth by

moving Pole to East by 0.22± inches
estimated.

Feb 15, 1883

adjusted w ly. in azimuth, & ft. Index & Then took foll. obsns

	~~Ω~~ T	~~Δ 4~~ H.a	Y	D
α Ceti F.	2 39 50	11 43.3	2 56.5	+3 40.
ρ	2 46 48	23 50.7	2 56.1	+3 40.5
	2 43 19	11 47.0	2) −0.4	+3 40.4
	+10		−0.2	
	2 43 29			
	11 47.			

} +3 40,

α = 2 ~~56~~ ~~44~~

δ = +3 37.9.
+1.5
+3 39.4

2 56.3
α 2 56.2
$0^m.1$

δ = 3 39.4
ξ +0.5

α Cygni (P) 2 59 57 | 6 22.8

44 56.0
Δd. 0.5
D 44 55.5
δ 44 53.0
η = +2.5

α = 20 37 28
δ = +44 52.0
+1.
44 53.0

~~Hence~~
Δd = +0.2
ΔH = $+0^m.1$
c = $0^m.2$
ξ = +0.′5
η = +2.′5

Clear. Friday Feb 15, 1884

6:10 12 o Ceti 6.0

✓

o ~~2~~ 3 66 ~~Color 8~~ 7

o ~~5~~ 6 63 Color 7.5

o 3/4 m = 1m 71 Ceti RD 6

142 R Aquarii

Star close to horizon

& in strong twilight

~~*~~ R invisible

mark p all brighter

f & g easily visible

f 1m + R

g ½m + R

h not visible

2/15

6578 15/141 S Pegasi 9.0

m 3 S Color 2:

h 1 S RD 3

S 3 f

S 5-6 e

114 R Cygni 8.8

R 4 d Color 6

R 2 h RD 5

g 5 R

e 3/4 mt R

2/15

125 U Cygni 8.2

✓ p 2 U Colr g

U 4 ~~8~~ g RA 11

U 5 k

U 4-5 a

137a R Lacertae 12.5 ~~12.0~~

✓

R 3 x

w 4 R

119 S Cygni 11.2

✓

c 1 mag S

S 7 z

w 4 S

2/15

7:0 91a R Urs Maj 8.9

✓

R 1 b

a 2 R

s = b

143 R Cass

✓ t 1m+ R 6.8

~~R 4~~ Color 7.5

l 4 R

k = R RD 7

R 3-4 b

R 1m f

2/15

8:0 14, R Ceti 8.2
√
d 3 R Color 2
R 3 e RD 3
R 2 f

2 R Androm 8.2
√ Color 5
c 5 R
g 2 R RD 4
e 1 R
R 2 h
R 5 b

2/15

8:10 134 S Cephei 8.5

✓ S 1 a Color 10

S 5 d RD 15

g 5-6 S

5 R Piscium 10.5

✓ a 2 R

R 1 e

11✓ R Arietis 9.3

m = R Color 1.5

l 3-4 R RD 2

R 3-4 k

2/15

8h 30 18 ✓ R Persei 9.~~2~~4

h 5 R Color 0.4

k = 1 R RD 2

R 2-3 l

R 6 n

k must be reddish
RD = 3

28 b ✓ T Monoc 8.3

d 3-4 T Color 4

T 3 e RD 3.5

T 5 f

c 5 d

2/15

28 a 'T Orionis

✓ f ~~7~~6 'T

k 5 'T

Sus var c

c 2 k

c 1 f

Sus var 149 b

✓ d 4 149 b

11.6

~~11.7~~

28 S Orionis ✓

x 6 S

S 2 y

S 5 z

2/15

46 U Cancri ~~12~~ 10.1

e 3 U
U = b
U 1 c
U 6 a
U 1 mag m
U 1 mag l

48 S Hydrae ~~12~~ 11.8

S 2 x
S 3 y

~~y is at~~ y has a ft. companion (12/20) 1's.

~~I do not see l tonight~~

Look up } x and y inserted tonight.
I do not see l, Query is it not y

2/15

50✓ T Hydræ 8.8

T 1 a
p 4 T
T 3/4m–1m d

Colr 2.1
RD 3

58✓ X Virginis 11.0

c 3 X
X 2 a
X 3/4m + 2

132a✓ T Cephei 6.

T 4 k
T 1 x

Note star at 20h 59m +67 36′ is a nebulous star; nebulosity 6′ or 7′ diameter; faint star is 7 mag

9/15

35 R Cygni 8.2
✓
Z 5-6 R Color 5
R 5 p RD 5
R 3 n

53 R Ur Maj 10.7
✓
c_2 = R
b 7 R
R 6 m

62 T Ur Maj 8.2
✓
h 3 T Color 3.5
a 1 T RD 4
T 4 e
T 3 b
g 5 T

2/15

64,✓ S Urs Maj 7.9

S 4 d Color 2½

n 2-3 S RD 3

65,✓ U Virginis 8.3

U 5 b Color 1 ,,

U 3 c RD 2

U 4 s

d 1 U

63,✓ R Virginis 10.5

n 1 R

R 3 m

g 4 R

a 1-2 b

2/15

10:30 71 S Boötis 8.0

✓ δ = 1 h Color 2/2

δ 3 g RD 3.5

k 5 S

p 2 S

82 ✓ R Leonis 6.2

Color 8

R 4 b

a 7 R

2/15

11.0 73 ✓ R Boötis 7.7

R 4-5 d Color 2

a 3 R RD 1.5

~~42~~ 73 a ✓ U Boötis 9.3

f 1 U

U 4 b

g 3 U

Obs v. diff.

Stars low; moon rising

2/15

11:0 61, R Corvi ~~7~~.8

R 2 ~~3~~ a Color 6

R 5 b RD 4

c 3 R

(34)

15:0 Compⁿ star of δ Librae

Moon within c 15° or 20°

of region obsⁿ very

uncertain; fainter star scarcely

visible with Field Glass

e 3 (7) 2 c ~~e 3~~

b ~~3~~ (5)

e 5 (15) 2 c = (18) 1 (13) 3 b 4 (17)

d 3 (43) 1 (e) 1 (45) 3 (44) 1 c 2 (35)

Obsns worthless & not to be used at all
when better are obtained

2/15

15ʰ 30 77 ✓ S Serpentis 9.2
d 3 S Colr —½
S ≠ f RD 3 ::
e 45 S

78 a ✓ U Librae ?
a reddish 9 mag star
in place of S with 10½ close
~~sp.~~ np (½') which I
think are S and f
respectively Color 4
~~[illegible]~~ RD 3
δ 3 c
k 3 S (f)
δ = 1 2

2/15

16 80 R Sextantis 8.2

√

R = c abr 4

R 3 d RD 4

e 6 R

R 4 b

81 R Libræ —— 11

√

invis < 11

b & c nearly vis.

[* c 3/4 int R

a invis.

2/15

85 R Scuti 9.6
✓

R 2 f Color 0 ::
R 4-5 g
R 4 c
k 2 R.

86 S Scutii —— 11
✓ invis

91 c ✓ W Herculis .8.5

W 4 b Color 3
W 2 a RD 4
d 2 W

2/15

16:30 94 ✓ R Ophiuchi ~~7.7~~ 7.9

i ~~5~~ 4 R

m 3 R Color ~~6~~ 5

R = g RD 5.

R 5 e

92 ✓ ζ Herculis — 11½

invis,

78 ✓ δ Coronae — 17½

δ invis

[X ½ mt δ]

2/15

88, U Herculis 11.6

c 2 U

x 4 U

U 4 y

~~4~~86, a V Ophiuchi — 10½

✓

invis - ! < 11½

[d 1½ mt V]

y & x invis

87 a W Ophiuchi 9.0

✓ W 3 k

W 2½ h

e 1 W

Color 7

[R D 8+

W diaphanous

7/15

116 ✓ S
~~132~~ ~~R~~ Vulpec 9.2

S ~~R~~ 2 a Color 3
S ~~R~~ 1 b RD 3.5
d 2 ~~R~~ S

132 ✓ R Vulpec 10.5
R = a

182 ✓ T Sagittarii 8.3
b 4 T Color 0::
h = T RD 2::

2/15/84

17:45 122 R Sagittae 9 3

✓

R 1 C

b 1 R

Note b is a little out of place on chart: place b corrected: look up in D-M- & Schonfeld's list of stars

See Schonfeld AN 78.146

⑤

Wednesday Feb 20 1884

Clear

7:0 8 ✓ S Piscium — 11½

cirrus

[S ½m+ y w]
[S ½m+ g]

9 ✓ R Pisc. 11"

r 2 R
R 3 h
s 2-3 R

10 ✓ S Arietis — 11½

cirrus ; hazy

[a ¾m+ S

x 2 invisible

2/20/84

15 'T' Arietis ✓ 9.3

T = 1 e
d 3 T

13 S Persei ✓ 11.7

x 4 S
S 2 z

22 T Tauri ✓ — 13½

invis

[~~T~~ x 3/4 m T
y 1/2 m T]

2/20

$8^h.0$ 24 R Orionis 10.2

√

c 3 R

R = 1 a RD 5+

R 5-6 b

21 R Tauri 13.5

√

i 1¼ m R

z 3 R

R 2 w

22 S Tauri — 13½

√

invisible

y 3 z

z 4-5 w

7/20

26 R Leporis 7.3^m
✓

R 1 a
R 4 d
R 3 c

37 R Gemin — 13½
✓
invisible
[w > R]

e 1 x
x 2 z

Sts var. 167
✓
normal brightness

1/20

40 ζ Can mi — 12.7
✓

ζ 3 ×
y = ζ
z 2 ζ

41 δ Gemin — 13.
✓

invis

[8 z > δ
y > δ]

2/20

42 'I' Gemin. 13.0

√ x 2 'I'

'I' = 0

Sus var 201 —13½

√ cirrus

~~B~~ < x

Sus var 205 12.7

√

b 6 205

205 3-4 a

1/20/84

~~8:30~~
9:0 38a V Geminorum 11.7 ~~12.0~~

✓

R 2 V

V 3 m

V 5 q

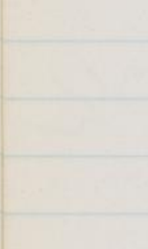
V 3/4 m y

44 R Cancri 10.0 (?) ~~9.7~~

✓

~~B 6 R~~

Can't certainly tell which is R and which is a since the ~~star~~ S. p. ~~[illegible]~~ star wh on chart is a, is a red star (R D 7)



*
o

"a" 3 m
m 4 "R"
"a" 4-5 o
o 3 "R"

(16

2/20

49 T Cancri ✓ 9.4

T 2 b Color 9

a 4 T RD 10 +

51 R Leo min ✓ 12.5

R = x

52 a ✓ T Leonis — 13½

invisible

[y ~~½~~ 3 ½ m t T

x 2 y

2/20/81

Sus. Var # 269 — 13 1/2

Invisible

a	1/4 m +	269
b	1/4 m +	"
e	1/2 m +	"
f	1/2 m +	"

52 b U Leonis — 13 1/2

invisible

x	1/2 m	U
c	1 m +	U

2/20/

10:0 56, ✓ S Leonis 12.5

p 4 S
n 1 S

57, ✓ T Leonis — 13½
invisible

[a 3/4 m + T
x 1/2 m + T]

7/20/84

10:20 55 R Crateris 8.2

✓

R 4 a Color 9

l 3 R RD 10

R 2 f

67 V Virginis 8.3 ~~9.0~~

✓

V 4 k Color 1;

V 3 h RD 2

V 1 n

p = V

66 W Virginis 10.0

✓

b 1 W

W = a

V/20

10:40 69 S Virginis 7.6
✓

S 3 w Color 4
a 4 S RD 3.5

Resumed after midnight

14:30 73a U Bootis 9.4
✓

U 1 b Color 2½;
f 3 U RD 4
h 2 U

Note – b is distinctly red.
Relative Dim = 4
same as variable.

2/20

59 R Com Ber. —12½
✓
[illegible]

[x ½m + R]

60 T Virginis —12½
✓
invisible

[y ½m + T]

x 3 z ~~2 y~~
z 2 y
~~y 2~~

61 a V Virginis 12
✓
e 4 V
V 4 c
V 3 z
[illegible] brightness

9/20

Sun Var to 381 ✓ 8.5

a 3 381 Color 2

381 2-3 b RD ~~R~~

381 1 c

69a Z Virg. ✓ — 13½

invis

[d 1m+ Z]

72 ✓ R Camel 11.0 ~~10.7~~

a 2 R

m 3 R

2/20

15:30 F4a Z Librae 11.7

b 1 Z

Z 1 c

Compar Stars of

δ Librae (algol star)

d 6 (15) 1 c 1 (18) 2 (13) 1 b

d 2 e 1 (45) 2 (43) 1 (44) 2 (35) = c

e 4 (7) 2 c

b 2 5 = 17

2/20

76 S Librae — 13

unus.

g ½m + S
x ½m + S
f 1½-2m · S

78 α² Librae 10.0

k 1-2 u
Colr 0;;
u 1-2 c
RD 3 4
u 7 b

k 3 c 6 b 6 d
k 1 2

2/20

89 a W Scorpii . ——— 12/2
√
not seen

Only one star vis. there: probably b

c 2+ b

This var X as usual

85 R Scorpii 9.6
√
K 2 R Abr θ;

R 1 f RD. 2

R 5 g

84 T Scorpii —12
√
invisible

86 √ S Scorpii — invisible —12

(39)

7/20

16:30 91 c W Herc 8.5

✓ W 2 a Color 3

W 1 b RD 5

d 2 W

93a V Herculis 11.5

✓

V 1 a

V 2 c

b 5 V

94 R Ophiuchi 7.9

✓ Color 5

m 6 R RD 5

m 5 R

g 2 R

R 2-3 e

7/20

100 τ Herculis 12

✓

τ 2 m

n 5 τ

121 δ Aquilae ~~10.~~ 9.8

✓

a = 1 δ

Color 0

RD 2

127 a ν Cygni ~~11.5~~

✓ ~~A~~ ~~12~~ 11.8

a 2 ν

ν = b

2/20

17:0 78 δ Cor. Bor 12
✓
δ = x

79 R Cor Bor 6.5
✓
R ¾ mt b

80 a ν Cor Bor 12
✓
ν = b

(88)

2/20

83 ✓ R Herculis —13

invis.

[or 1½-2 m f R]

9 invis

86a ✓ V Ophiuchi —12½

invis

[y 3/4 m V
x ½ - V

Sus Var 483

✓ a 2 (483)

(483) 2-3 b

483 5 c ✓

d 3/4 m 483

Moonlight ~~7/20~~ 2/20

17.40 90 ✓ Z Ophiuchi —— 12½

invis.

[a 1 m + Z
c ½ m Z]

91 ✓ S Ophiuchi —— 11½

invisible

[B ½ m + S]

a not vis.

(52)

Friday Feb 22/84

Very hazy

7:0 57 R Leonis 7.0

✓

b 1-2 R

12 o Ceti 5.0

✓

o 3/4 n 63 Ceti Color 7

14 R Ceti 8.8

✓

e 1 R

g 2 R

f 3 R

2/22/

35 R Cygnis 8.~~4~~6
✓
R 3 p Color ~~5.0~~ [illegible]
l 6 R RD 4.5
n 2 R
R 4 d

38 R Can Min 8.2
✓
R 3 e ~~Col~~
q 2 R RD 3.
f 6 R

39 S Can Min. 7.9
✓
S ~~4~~3 m
S ~~4~~3 d RD 4
e 6 S
S = 1 q

Nov 22

7:40 45 ✓ V Cancri 8.8

d 4 V

c 6 V

V 4 h

V 6 m

Saturday Feb 23 / 84

Clear — High Windy

15:30 46 U Cancri 9.0

✓ f ~~5~~ 6 U

g 3 U

U ~~5~~ 4 c RD 5::

U ~~3~~ 4 b

b 4 U

U 1-2 d

61 R Corvi 8.1

✓ a 2 R Color 4

R 5 b RD 3.5

R 3 g

2/23

Compⁿ Stars of

δ Libra

f 5 d 2 e 4 c 4 b

e = 1 45

e 1-2 44 3 c

e 2 ~~35~~ ~~43~~ 3 c

e 2½ 35 ~~43~~ 1½ c

e 2 (7) 2 c

b 2 5

b 3 17

18 = b

c 2 13 3 b

c 1 15 4 b

6 is invis in O.S. ; must be at least 1½ - 2 mag < b.

There are several ~~smaller~~ stars near & north of 6 (about = c) one of wh. Herschel may have mistaken for 6

See p. 101

2/23

Note: z ~~ρ Scorpii~~ σ Libræ (of Heis) ~~(not U.A.)~~ ~~(σ Libræ of Uran Arg)~~ is not nearly as bright as given in Uran. Argen. charts. I call it

3/4 mag < x ~~α Libræ~~ or y ~~π Scorpii~~,

and 1 < q ~~ρ Scorpii~~

= v

3 < w ~~σ Scorpii~~

~~γ Scorpii~~ z is a very strong ~~distinct~~ red ~~with~~ even with naked eye.

Rel. Dam. in O G. 4 or 5

~~Ar[illegible]~~ Above is provisional notation for some bright stars ~~[illegible]~~ on U A charts

From abs. obs^ns & U. A. mags. of comp^n stars ~~thus~~ the mag. of z is $\frac{3.8+4.1+4.6+3.9+4.1}{5} = 4^m.1$ instead of 3.5 as given in Uran Argen.

U. A. mags. are

				Phot Mags are
γ Scorpii = σ Libræ	3 5 (red)	14 56 −24 47	= z ~~w~~	3.2
α Libræ	3.1	14 44 −15 31	= x	3.0 α² 5.3 α¹
υ Libræ	3 9 (red)	15 29 −27 43	= v	3 9
τ Libræ	3.8	15 31 −29 22	= w	3.9
ρ Scorpii	4.5	15 49 −28 50	= q	4.0
π Scorpii	3.4	15 51 −25 45	= y	3.1

Heis & U. Nova have z = 3.4 mag.

2/23

73 ✓ R Bootis 7.5

R 5 d Colr 1/2

a 6 R RD 2

t 1 R

~~u~~

R 1 u

look up u & t

77 S Serpentis 8.8

✓

S 2 d Colr 4/6

S 1 e RD 3

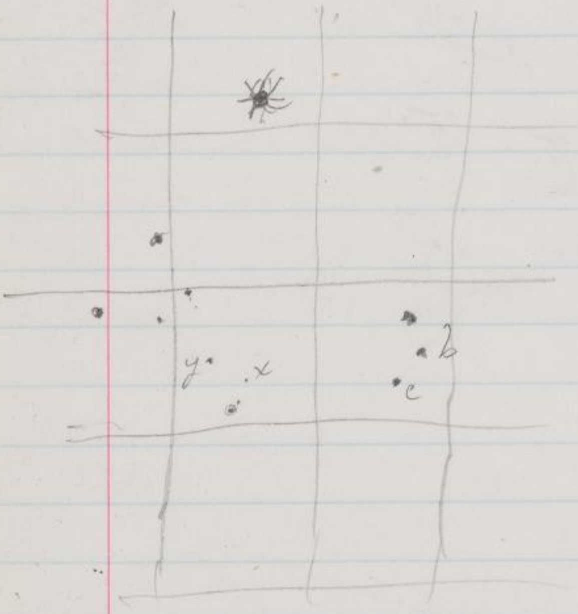
S 6 f

a 4 S

S = 1 c

2/23/84

81 R ✓ [illegible] 12½ 2?



I see a 12½m star in place of R with a compn s.f. (P = 145) and other stars as before noted — chart assuming these to be

R

R 3 x
y = R

87 a ✓ W Ophi

W 2 k
h 1 W
e 4 W

9.0
Color 6 ::
R D 6 ::

2/23/84

131 T Aquarii 7.9

√ T 3 c Color 4

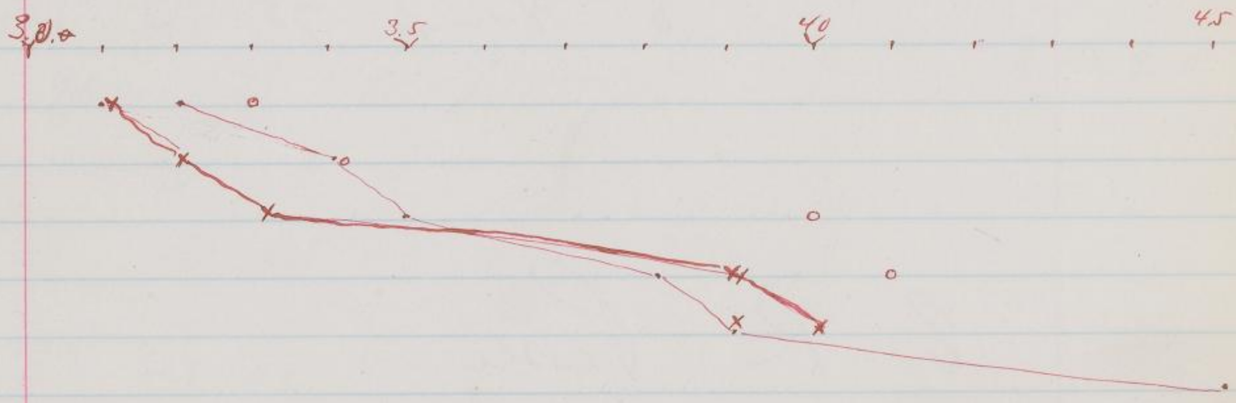
g 4-5 T

T = m

Obs^ns of Stars in Scorpius (see p. 97
Obs 2/23

which seem to point to variability of
γ Scorpii (Bode) = σ Librae of Smith's Uran. Arg.

My Letter	Bode's Let.	U.A.	H.P.	Jeff's Sequences	My Obs of 2/23/84	Behrmann	U. Nova	Heis	Houzeau
x	α Librae	3.1	3.0	3.2	3.4±	—	2⅔	2⅔	3
y	π Scorpii	3.4	3.1	3.4	3.4±	3	3	3	3½
z	γ Scorpii	3.5	3.2	4.0	4.2	3⅔	3⅓	3⅓	3
w	ω Scorpii	3.8	3.9	4.2	3.9	4⅓+	4⅓	4⅓	4
v	d "	3.9	3.9	4.1	4.2	4⅔	4⅓	4½	4
q	ρ "	4.5	4.0	4.5	4.1	4⅔	4⅔	5	4½



Sunday Feb 24/84

7:20 ο 12 0 Ceti 4.7
✓

α Psc 2 0
0 = ξ'' Ceti
0 4 γ ·
0 3/4 mt 69 ·
0 3/4 mt 75 ·
} 0.6

18 R Persei 9.3
✓
Sn 1 R
R 4 l
R 3 k

Color 2 ::
RD 2,5

7/24

143 R Cassiop 7.8

✓ h 2 R Color 6

R 4 f R D 5

R 3 g

R 6-7 q

91 a R Urs Min. 9.0

✓ R = b

a 3 R

Sus Var S

S 1 b

a 2 S

91 b R Draconis 9.6

✓

d 3/4 m + R

f 4 R

a 2 R

R = 1 b

R 5 c

2/24

62 ✓ Σ Urs maj — 8.3

Σ = 1e — Color 0

h 5 Σ — RD 1.5

a 3 Σ

Σ 3 b

Σ 6 c

64 ✓ δ Urs maj — 8.6

~~R~~ Color 3

n 5 δ.

d 1½ δ — RD 3.0

δ 1½ c

132 ✓ a Σ Cephei — 6.8

Color 5

RD 6

Σ 4 k

Σ 2 x

Σ 2 (12)

Σ 3u p

2/24

9:30 28 b V Monoc . 8.4

✓ d 3/4 m V Color 3½

V 1 f RD 3.

V 3 e

V 5-6 h

40 a U Can min . 12.0 ~~11.7~~

✓ x 5 U

U = m

50 'T Hydrae 8.0

✓ 'T 3-4 a Color 0

q 5 'T RD 1.5

~~'T 3 p~~

p 3 'T

k 3 'T

(11

Feb 24 1884

28 a T Orionis 11.5

✓ * k 3/4 m+ T

Sus var. c
c , k

Sus var 149 b - normal
✓

12

Thursday Feb 28, 1884
after midnight
Clear

14h 0 63 R Virginis 8.8 ~~8.7~~

✓ h 5 R Color 2

R 4 g RD 3

65 U Virginis 9.0

✓ c 3 U Color a

U 1 b

U 3 m RD 2.5

t 3-4 U

67 V Virginis 8.2

✓ p = V. Color 2

V 4 n RD ~~#~~3.5

V 3 m

~~Note R [illegible] is not 7 is 2 or 3 & b [illegible]~~
~~[illegible] not before been seen~~
fainter 2

2/28

14 40 66 ϖ Virg. ✓ 8.6

ϖ - k

h = ϖ

69 S Virginis ✓ 8.3

S 4 d Color 4

S 4 e RD 3.5

a 5 S

w 2 S

73 a U Bootis ✓ 9.6

U 2 a Color 2!!

U = b

S 5 U RD 2.5

a 4 U

7/28

76 ✓ δ Librae 12.5 ~~8.3~~

g = δ

δ 1 y

x not vis: unless a star preceding its place a few seconds of time is it.

77 ✓ δ Serpentis 8.6

δ 4 d Ghr 4

δ 1 c~~a~~ RD 4

a 3 δ

2/28

15 ; 10 80 R ~~Herc~~ Serpentis 8.2

✓ c 3 R Color 6

R = d

R 1 b RD 6

R 3 q

91 c W Herc 8.7

✓

W 2-3 a Color 2

W ~~4~~ 3-4 b RD 4

d 1-2 W

78 a U Librae 9.3

✓ K ~~4~~ 5 U Color –::

U = 1 c ~~RD 2~~

U 3/4 int b RD 2::

~~4~~ l 3-4 U

7/28

85 R Scorpii 9.9
v

* K 4 R Color —

f = 1 R RD 3

R 2 g

~~84 T Sco~~

84 T Scorpii 10?
v

~~nebulas~~

nebula seems

to have a sharper

appearance tonight

or condensation

central point about

= K

86 S Scorpii — 12
v

not vis

9/28

93a V Herc. 10.8

✓

V 3 a

V 3 c

V 2 d

b 4 V

94 R Ophiu 8.3

✓

R = d Color 4

R 4 d

R 5 k RD 4.5

100 T Herculis 12.5

✓

T = m

2/28

92 S Herculis — 13½

✓ invis; < 13½

[x ½m S]

101 T Serpentis — 13½

✓ invis ! < 13½

[y 3/4m T)

a invis

x 2 b

b 1-2 y

Nov 28

16 5 30 102 V Sagitt 7.6 ~~7.8~~

✓

b 4 V

k 2 V

V 2 l

103 U Sagitt 8.0±

✓

U 3 l

104 T Aquilae 9.0

✓

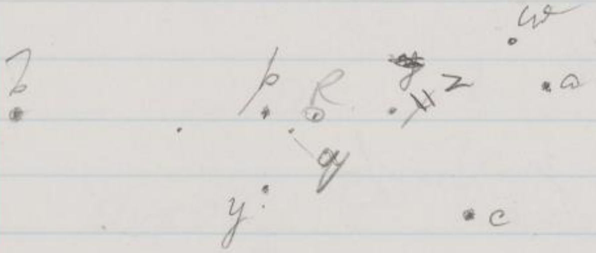
c 1 T

T 5 b

a 3 T

2/28

1 110 ✓ R Aquilae 11.5



R 2 x ~~g~~ 2

R 3 q

Proper configuration

Change chart to

Correspond

(23)

17:30 131 ✓ T Aquarii 8.3

T 4 c

m 3 T

g 3 [illegible] 1 m T

(24)

7/28

Estimates of brightness

γ Scorpii

See pp 97, 101

o 2 γ

γ 1 d

π 5 γ Scorp

γ Libræ 1 γ Scor

γ Scorp. 4 ι Libræ

Mag of γ Scor

U.A. scale	H.P. Scale	
4.0	4.1	
4.0	4.0	
3.9	3.6	
4.5	4.1	
4.6	4.5	
4.2	4.1	mean

			U.A.	H.P.
ι Libræ	15 5	−19 19	5.0	4.9
γ Libræ	15 28	−14 22	4.4	4.0

Friday . Feb 29 1884

7:0 | 12 o Ceti O.S. 4 ±

✓ δ Ceti 3 o

0 2 α Pisc

Moon & haze ; obsⁿ diff.

2 R Androm 9:0 ±

✓ b 3 R

R 3/4 m + b

b scarcely vis

Low in haze ; obsⁿ v. diff

2/29

7:20 13 ✓ S Cephei 8.9

δ 2 d

a 3 S

18 ✓ R Persei 9.1

h 1-2 R

R 5 k

R 5 l

38 R Can Min 8.3

✓ f 6 R Col 5

R 3 e

g 3 R

(5

2/29 84

39 δ Can min. δ-2

v

δ 4 m

δ 5 d

δ 2 q

e 4 δ

40 a R Can min. — 11

v

invis. ; hazy

m ½ wt R

x > R

x scarcely vis.

~~R [illegible]~~

2/28/84

Birm Rd Cat # 99

n.f. of two

red is .2 < ◊ s.p.

Color 5

RD - 6

46 U Cancri   9.0

✓

U 5 b   Color 2:

U 2 c   RD 3.5

g 1 U

f 5-6 U

c is red ; RD - ~~6~~ 5.

2/29/84

50 ✓ T Hydrae 8.2

T 3-4 a Color 2

q 4 T RD 2.5

T = p

k 3 T

52 ✓ R Leonis 6.2

R 2 b Color 8

RD 5

a 6 R

62 ✓ T Urs Maji 8.3

h 6 T Color 3

a 3-4 T

e 2 T

T 2 b

2/29

64 S Urs Maj 8.3
√
S 4 c Color 3
S 2 d
n 4/3 S

91 b R Draco 9.3
√
a 3 R
R = b
d 3/4 m ~~t m~~ R

35 √ R Lyncis 8.5
n a R Color 5
R a p
R 4 d RD 4.5

2/29

8h40 7! δ Bootes 8.3
✓

δ 2 g Color —!!
h 3 S RD .2.5!!

hazy & thin ft.

91a R Urs min 9.1
✓

~~R~~ b = 1 R
a 3 R

See var "5"
s = b

6

Sunday Mar 2 1884

Clear — Moon ☽

9:40 120 Ceti 4.0

✓ δ 3 0

0 3–4 α Pis

114 R Cygni — 9

✓ Star very low ~~in haze~~

& invisible soon

[g 1m * R]

119 S Cygni 10.8

✓ h 2 S

S 1 g

c 6 S

~~14 R Ceti~~ 3/2/84

7:10 14 R Ceti ✓ 8.7

R 3 b

R 5-6 a

~~m~~ n = R

d 5 g 1 f 2 e.

e 4 m .3 n 4 b 2 a

D.M. maps for d g f e & m are discordant ; is one of them var ?

3/2

7:30 10 ✓ δ Arietis —— 10½

single, or ~~[illegible]~~ only occasionally suspected

y ½m sf
a ⅓m s

y and a just vis.

13 ✓ δ Persei 11

δ 3 2
x 3 S
d 4 S

Obs var 59 ✓

59 2 e
59 3 f

3/2

7:40 21 R Tauri —— 11
✓
invis; ~~to~~ near moon

[h ½m R]

i invis

22 S Tauri : —— 11
✓
invis ; near moon

[g ½m + S

23 V Tauri —— 11½
✓
invis ; ~~[illegible]~~

[0 > V]

9/2

7:50 26 ✓ R Leporis 7.7

a 3 R Color 10

R 3 g

R 5+ d

[RD = $1\frac{3}{4}$m

R = e]

28 ✓ δ Orionis 11.

δ 2 y

h 3 x

1 ✓ T Cassiop 10.7

γ 3 T

T 5 x

3/21

8.0 7✓ δ Cassiop —— 11½

invis. —

[z ½m S

y v x & w invis

z vis.

11✓ R Arietis 9.3

R = m Color 1!!

R 3 k RD 3!!

l 3-4 R

p 4-5 R

(4)

J/~

8h 10 132a ✓ T Ceph 7.0

T ~~3~~ 4-5 R

T 3 p

72 ✓ R Camel 10.3

R = a

b 2 R

24 ✓ R Orionis 10.5

R 1 a

c 2 R

9/2

8!20 27 ✓ R Aurigae 8.8

c = R

Color 6

RD 7

38 a ✓ T Gemini 10.7

k 4-5 T

m 2-3 T

T 4-5 q

40 a ✓ U Can Min 11.8

x 4 U

U 2 y

(20)

8/2

8:40 73 R Bootis ✓ 7.7

U 2 t

~~P~~ a 2 R : Alt – 11

U 5 w ~~RD 3~~

Slit very low RD 4

(21)

Tuesday Mar 4 1884

Clear & Bright Moon D

7.0 120 o Ceti

✓ δ Ceti 2 o 3.7±

. o 1 mag α Pisc

143 R Cass 7.7

✓ h 2 R Color 7

R 3 g RD 6

18 R Persei 9.0

✓ h 1 R Color 4

R 4 k RD 4

3/4

7:30 28 3 V Monoc 8.7

✓

~~e 5~~ Color 3

e 5 V

f 3 V RD 3.5

V 1 k

V 3 l

45 ✓ V Canmi 8.9

d 6 V Color 2½

c 6 V

V 2 m RD 3.5

V 3 l

3/4

R: 0 71 S Bootis — 8.3

✓ S 3 g — Color 3

h 3 S — RD ~~4~~

RD 3.5

46 U Camel — 9.0

✓ U 4 B — Color ~~3~~ 0::

U 3 c — RD 2

g = 1 U

h 4 U

3/4

8:20 50 T Hydrae 8.5

p = T Colr 1

1 T 4.5 a RD 2.5

K 3 T

52 R Leonis 6.3

R 2 b Colr 7

a 6 R RD 5

(9)

Monday Mar 10, 1884

7:0 91 a R Urs Min — 9.0

✓ R = b

a = R

S Urs Min

S ≐ b

91 b R Drac 10.5

✓ b 6 R

R 2 c

62 T Urs Maj 8.9

✓ T = c

b 4 T

e 4 T

T 4 w

3/10

7: 20 64 S Urs maj 9.2

✓

d 4 S

S 1 c

Sunday Mar 16 1884

Clear Dark

7:0 14 R Ceti 10.7

✓ c 2 R

R = a

2 R Androm 10.2

✓ b 2 R

R 3 f

24 R Orionis 9.4

✓ R 3 ~~a~~ c Color 4

R 4 a RD 4.5

g 4 R

3/16

7:30 18 R Persei 9.0

✓ Color 3

R 3 k RD 3

h 2 R

28b V Monoc 9.3

✓ k 2 V

V = l

V 4 m

132a T Cephei 7.2

✓

T 2-3 k

T 2 p

T 3 x

⑥

2/16

27 R Aurigae 9.~~6~~7
✓
c = 1 R
R 3-4 f

35 R Lyncis 9.0
✓
f = R
R 3 d

38 R Can min 8.3
✓
f 6 R
R 3 e
g 3 R

3/16

1.45 37 R Gemini ✓ —— < 13

invis.

[x Gem R
0 " R]

x + w invis.

Sus Var #167 ✓
as usual

40 T Cam Min ✓ 11.0

b 6 T

T 1 z

T 4 y

3/16

8! 0 38a V Gemin- 11.7
✓
m 2 V
V 4 q
V 5+ y

39 S Can Min. 8.7
✓
d 4 S
m 5 S
S = n
S 3 c

46 U Cancri 9.3
✓
u 3 b
g 3 U

(4)

3/16/84

8h15 50 Z Hydræ 8.7
✓
Color 3

Z 2-3 b

Z 3 a

k 2 Z

52 R Leonis 6.5
✓

R – b

48 S Hydræ 12.
✓

x 3/4m S

S = z

S 3 w

3/16

8; 30 ~~54~~ 51, R Leo min. 11.5
✓
R = g
R 1 h
z 1 R

~~10.8~~ 12
52 ~∇ Leonis
✓
invis.
[x 3/4 m + ∇
[y " "]

71, δ Bootis 8.7
✓
g 3 δ
h 4 δ
δ 4 e
Color 3.5

③

3/16/84

9:0 73 ✓ R Bootis 7.8

R 1 b
R 3 d
a 4 R

134 ✓ S Cephei 8.7

S = d Color 9
a 2 S

52 ✓ b U Leonis — < 13

Cirrus

[a ½m+ U]

9/16

9h 15 53 ✓ R Urs Maj 11.5

R = m

R 3 x

55 ✓ R Crateris 8.5

f 2 R

R 3 a

R 6+ b

56 ✓ S Leonis 11.0

g 1 S

S 2-3 f

S 6 p

3/16/84

9:20 58 X Virginis 10.7
✓

c 2 X

X 2 a

X 2 mags z

~~z = 13.7 mag~~

z = 12½ m

61 R Corvi 8.3~~4~~
✓

a 4 R

b 1 R

3/16

9' 30 63 R Virginis 8.2
✓

R 3 h
a 2 R

73a U Bootis 11.7 ~~12.7~~
✓

x 3 U
U = d

67 T Virginis 8.9
✓

n 3 T
T = h
T 3 k

66 W Virginis 9.1
✓

W 2 k
h 2 W

(2)

3/16

9! 45 72 R Camelop 9.3 —
✓ Color 0.1
R 1 b
e 2 R

119 δ Cygni —— 12½
✓
Invis.
[y ½ mt δ]

91 c. W Herculis 8.1
✓ Color 3
W 4 b
~~W 1 a~~ RD 4
d 4 W
W ~~3/4 [illegible]~~ 7 c
a 2 W

3/16

10h15 93 a ∇ Hercules ✓ 11.7 ~~12.~~

∇ 3 a

∇ 3 c

b 4 ∇

㊱

Tuesday Mar. 18 1884

Clear — Dark

7:40 143 R Cassiop 83
✓
Color 6

R 1 q
g 3 R
RD 7
~~R 5 g~~
h 6 R

33 R Monoc i 13
✓

b 1m R
a 1.m R
R = f

40 a U Can Mi 11,5
✓

x 2 U
U 1 y

3/18

8! 10 41 S Gemin — 13½
✓ Invis
[y ½m + S]

42 T Gemin. 10.8
✓ g 5 T
T 5 e
T 4 f
T t = T

43 a U Puppis — 13½
✓ Invis
[w ½m U]

3/18

8! 25 44 R Cancri ✓ ~~10.9~~ ~~10.7~~ 10.8

m = a

a 3 R

0 = 1 R

R 2 p

45 V Cancri ✓ 9.~~4~~7

V = m

V 4 n

V 3/4 m + k

60 T Hydr. ✓ —— 13

invis

[x ½ 3/4 m T]

3/18/84

8:50

✓ 61 a V Virginis — 13

tivis

[c ~~#~~ 3/4 m + V]
[y ½ m V]
x between b & c

✓ 65 u Virginis 9.5

u 2 ~~m~~ a
b 6 u

3/18
after midnight.

16:0 69 a 2 Virginis
✓
~~could not enter~~
very ~~haz~~ hazy ~
Stars very low
could not certainly see
anything in place
stars suspected
10 mag stars only
vis on acc of haze

77 S Sextantis B. 0
✓
S 1 W Color 4
t 4 S RD 5
S 4 a

Friday Mar 21, 1884

Clear

9:15 132a T Cephei 6.8

✓ T 1-2 k

T 2-3 p

T 3-4 x

18 R Persei 9.1

✓ h 2 R

R 3-4 k

24 R Orionis ~~9.2~~ 9.1

✓ g 2 R

R 3 c

R 4 a

28b V Monoc 9.5

✓ k 4 ~~V~~

l 2 V

V 2 m

3/21/84

~~9:50~~
10:0

91 c W Herculis 8.4

W 1-2 b

a 3 W

d 3/4 m W

W 6 c

Color 3.3

RD 2

68 R Hydrae 8.8

x 5 R

R 3 y

69 S Virginis 9.2

e 4 S

S 2 f

S 4 h

3/21/84

10:20 80 ✓ R Serpentis 9.1 ~~9.0~~ 7

(southerly q) ~~q~~

q = R

b 3 R

R 5 k

89 a ✓ T Cor Bor 11.8

b 2 T

T = q

3/21/84
after midnight

12:55 69 a Z Virginis — 13½

invisible

[x > Z]

76 S Libræ — 13½

invis

[x > S]

74 a T Libræ 12.3

T 1 b
T 2 x

Probably star called T is not T

3/21

78 a U Libræ ✓ ~~11.5~~ 11.3

b 5 U
U 3 d

8 R Libræ ✓ 11.5 ~~12.8~~

R 3 d
R 1 c
b 3 R

83 a W Scorpii ✓ —— 13

invisible

[a 1m W

b 1½m > a

Sus var x not vis :— appearance as usual that is a bo 13m & that between place of x & y

3/21

13h 31 85 ✓ R Scorpii 11.6

c 3 R
a = R
R 3 b

86 ✓ S Scorpii —13½

invisible;
occasionally suspected

84 ✓ T Scorpii —

nebula as usual

γ Scorpii

as when last seen
certainly not more than
.1 brighter

3/21/84

✓ 86 a V Ophiuchi 10.3

V = d Color 3 [illegible]

c 2 V

✓ 87 a W Ophiuchi ~~10~~ 9.7

W 2 k Color 5

W 3 l

m 3 W

✓ 127 a V Cygni 13.5

b 3/4 m V

V = k

3/21.

14:15 73a R Bootis ✓ ~~10.~~ ~~11.~~ 11.0

d 3 R
R = c
x 4 R

91a R Urs Min. ✓ 9.2

a 3-4 R
b 1 R
R 5 g

23

Sus var S

a 1-2 S
S 1-2 b

Saturday Mar 22 1884
Clear Dark

7:30 134 S Cephei 8.5
✓ d = S Colr 9
a 3 S
S 3 k

1 T Cass. 10.8
✓ T ~~3-4~~ 5 y
n 4 T
T ~~4~~ 3-4 m

28 S Orionis ?
✓ S invis.
y 2-3 z
x 6 y
[have I not heretofore
used y for S]

8/27

8:20 28a II Orionis 11.4

✓

f 6 I

k 4 I

c 5 II

22 21 R Tauri — 12½

✓

invis

[c̄ 1m R]

22 δ Tauri — 12½

✓

invisible

3/22/84

8' 30 23 V Tauri — 13½
✓
invisible
0 ½m + V

27 R Aurigae 9.3
✓ Color 7
R 2 k RD 8
l 2 R

39 S Can Min. 9.2
✓ S 5 k Color 3
S 1 m RD 2
c 4 S
S 2-3 h

3/22/84

8:45 46 ν Cancri 9.2?

✓ ν = b

g 2-3 ν

ν 3/4 m ~~[illegible]~~ c

is not ~~ν~~ c variable?

g 1 m c

b 5 c

d 2 c

50 π Hydrae 8.3

✓

π 3 a Color 2

π = 1 p RA 2

K 6 π

3/22/84

9.0 52 R Leonis 7.3

✓

p 5 R

R 4 c

63 R Virginis 8.3

✓

R 3/4 m h

R 2 ƀa

p 4 R

67 T Virginis 8.8

✓

T 3 k

T 1–2 h

p 5 T

66 ~~W~~ W Virginis 9.2

✓

k 4 W

W 4 d

3/22

9:5 ~~73~~ 71 S Bootis 8.9

✓ ~~82~~

9 5 S BD 2

S 2 p

73 R Bootis 8.0

✓

a 6 R Color 3

R 3-4 d RD 2.5

R 1 b

17

Monday Mar. 24, 1884

Hazy

8:48 13 δ Persei 12

✓ x 5 5

δ 1 2

y 3 5

49 T Cancri 9.4

✓ b 3-4 T

a = 1 T

Tuesday Mar 25 1884

Clear

7:10 28 b T Monoc. 9.8

✓ k 6 T

T = m

~~m~~ p 4 T

26 R Leporis 7.0

✓ Ab 10

R 5 d RD 17

R 4 g

R 2 a

R 4 c

b 3/4m R

132a T Ceph 7.2

✓ T 1 k

T 2 x

T 1 p

3/25

91 a R Leo Min. 9.0

✓

R = b

a 2 R

Sm Var S

S 2 b

a = 1 S

40 a U Cam Min 11.2

✓ X = U

U 4 y

91 c W Herculis 8.8

✓ a 3 W

b = W

W 3/4 m c

Monday Mar 31 1884

Clear — Moon ☽

7:45   28 b T Monoc   10.2 ~~10.2~~

✓

T = m

T 3 p

132 a Z Cephei   7.3

✓

Z 1-2 Z

Z 1 p

Z Hem + g

91 a R Urs Min   9.0

✓

R = B

Sus Lw S

S 2 a

S 3 b

3/31/84

91 c W Herc 9.2

v

b 4-5 W

W 3 c RD.2

a 3/4m # W

Sm. vm near pole

103 b

=

3 × 1b

61 R Corvi 9.3

v

e 1-2 R

R 4-5 f

9/31

62 Z Urs Maj 9.3
✓
m 1 Z
Z 3 p

64 S Urs Maj 9.3
✓ t 3 S
S 4 a
S 5 b
c 3/4 m + S

72 ✓ R Camel 9.7
R 1-2 e
RD 23

7/31/84

91 b R Draco 11.0 ~~10.5~~

m 3 R

R 1 x

c 3/4 m+ R

⑨

61 a ψ Virginis 11.3

ψ 2 c

e 1 m ψ

~~x~~ e tonight is nearly or quite = b ; has this always been so ?

x ~~1~~3/4 m+ c

b 1 m x

3/31/

69 a Z Virginis — 12½
↙

limit

b 1½ mt Z
d 1 mt Z

Apr 1, 1884

Floating Clouds D

8: 0.

27a S Aurigae —11½

✓ haze & clos

[f 1m S]

42 T Gemin 9.3

✓ T 2 g
i 3 T

43 U Gemi —11½

✓ [b > U]

6/1/84

8:40 51 R Leo min 9.5
✓

R 4 l
R 3 g
a 6 R

52 a V Leonis invisible — 11.7
✓
[y > V]

52 b U Leo — 1.2
✓
invisible
[a ½ m+ U]

4/1/84

9.10 53 R Ur Maj 11.3+

✓

~~Am~~ m 3 R

x = 1 R

56 S Leonis 9.2

✓

S 2 e Color 0.5

S 3 b RD 2

S 6 g

d 4 S

58 X Virginis 9.8

✓

c 2 X

X 2 a

X 1½ m z

4/1/86

10.0 93 ✓ a V Herculis 10.7

V 4 a

V 3 c

V 1 d

b 6 V

73 ✓ a U Bootis — 11.2 ~~12~~

invisible

[x 1 [illegible] ± U]

Moonlight & haze

77 ✓ S Serpentis 8.0 ~~7.9~~

S 1 a color 4

b 5 S R X 3.5

Sunday Apr 6, 1884
Clear — D

8:0 43 U Gemin ——— 11
✓ unis
[d > U
[g ½m U

35, R Lyncis 9.5
✓ ~~Clr 0''~~
f 6 R
d 2 R
R 5 e
R 4 b

38, R Cam Min 8.3
✓ R 2-3 e
f 6 R
g 3 R

4/6/84

73 R Bootis 8.9
✓
e 4 R
d 6 R

71 S Bootis 9.7
✓
l 3/4m – 1m S
d 3 S
S 1 a

46 U Cancri 9.4
✓
u = c
g 6 u
b 2 u

4/6/84

9.0 63 ✓ R Virginis 7.6

R 5 p

k 2 R

R 3 i

66 ✓ W Virginis 8.9

W 5 d

k 5 W

67 ✓ V Virginis 9.2

V 1 d

4/6/84

9.10 82 R Leonis 7.7
✓

R 2d

R 5c

2 6 R

50 T Hydrae 8.8
✓

p 4 ~~R~~ T

T 2 a

q 1mag T

Friday Apr 11, 1884

8: 10
~~7: 45~~ 91 a R Urs. Min 9.1
✓

R = b
a 2 R

Sa. Mr s ~~a 1 R s~~
R
a = 1 s
s 1 b

43, U Gemin —— 12
✓
invis
[a b > U

42, T Gemin 9.2
✓
T 5 g
T 2 i
d 5 T

4/14/84

8:30 51 R Leo min 9.3 ~~9.2~~

√

a 5 R

R 3 g

R 3 b

56 S Leonis 9.4

√ Color 0;;

d 5 S

S 4 g

b 2 S

91 c W Herculis 9.4

√

c 2-3 W

W 2 d

4/11/84

9:10 77 S Serpentis 8.2

✓ a 2 S

S 6 c

132a T Cephei 7.5

✓ k 3 T

T 5 g

⑧

Saturday Apr 19/1884

8:30 43✓ U Semi ——→ 12½

cirrus

[a 7 U]

37✓ R Semicir. 9.3

R 4 h Colr 5

d 2 R RD 5

c 4 R

b 5 R

Sus. Var 167✓ as usual

l 3 x

x 1 2

4/12/84

40 T Cam min 11.0 ~~10.5~~

✓

b 3 T

T 3 z

T 1½–2m x

40 a U Cam min 11 57

✓ z 4 U

U 2 x

U = m

59 R Com Ber — 12

✓

invis

[a ½m f R]

4/12/84

9:10 72 R Camelop 8.8

✓ f 4 R Colr 3

R 3 l RD 0'

61 a V Virginis 9.5

✓

a 4 V

V 1 b

V 1 hint c

4/12/84

Moon rising

88 U Herculis 11.5::

✓

U = c

vis. with diff. in moonlight

78 S Coronae 7.6

✓

h 2-3 S Color 5

RD 4.5

~~S 5 g~~

S 3/4 mt g

S 6+ e

S 2 U

[75 U Coronae] Color 0

✓

Sunday Apr 13, 1884
Clear

8:30 43 U Gemin 13.0

√ a 3 U

69a Z Virginis — 13

√ Invis

[b 3/4 m t Z]

18 R Persei 9.3

√ h 3 R Color 0

R 1 k Rd 2

4/113

8:0 24 R Orionis 9.2 ~~9.3~~

v R 6 a ~~[illegible]~~

R 1 = g

h 3 R

27 R Aurigae 7.8

v R 5 b Color 4.5

R 6 d R 2 5

m 4 R

28 b V Monoc 10.7

v p 6 V

m 3 V

V 3 n

4/13/

9! 20 38 a ν Gemin. 7

✓

only one star visible
in place of (ν & y)
which is very likely
not ν but y
k 4 y
y ~~3~~ 1^m

note the confusion in my
article to A.N.

39 δ Can Min 9. 2

✓ δ = k Color 3 ''
h 1 δ R.D 4
c 5 δ

4/13/84

9:40 61 R Comi 10.5 ~~10.0~~ ~~5~~ ~~10.0~~

✓

R 1-2 d

n 3 R

f 6 R

R 6 m

62 T Urs Maj 10.4

✓

n 4 T

T 2 q

64 S Urs Maj. 10.0

✓

a 4 S

S 1 k

9 40 4/13

91 b R Draco 11.8

✓

R 3 z

y 3 R

12

53

Monday Apr 14 1884

8 : 10 43 U Gemin —— 12

✓ invis.

[a > U]

23 V Tauri 11.7

✓

2 4 V

V 1 m

g 3/4 m V

~~V 1/2 m 2/3 o~~

7 ✓ S Cassiop —— 12½ ~~12½~~

invis

[$\left.\begin{matrix}z\\y\end{matrix}\right\}$ > S]

4/14/84

8h 40

13 δ Persei 12.3

✓

x 6 δ

δ = z

Sus var # 59

✓

~~e 2-3 59~~

~~# 3-4~~

59 2-3 e

59 3-4 f

44 R Cancri 11.4

✓

a 2 R

R 1 b

~~m~~

m 1-2 a

4/14

8:50 45 V Cancri 11.

✓

k 4 V

V 3 g

V 5 x

48 ✓ S Hydræ 12.2

x 4 S

y 7 S

49 T Cancri 9,6

✓

T 2 a

b 5 T

4/14

9: 10 55 R Crateris 8.7

✓

f 1 mag R

R 3 a

58 ~~X~~ Virginis 10.3±

✓

c 2 ~~X~~

~~X~~ 3 a

~~X~~ 3/4 mag z

60 T Virginis — B

✓

invis

[> 1/2 m T]

4/14/84

9:15 69 R Virginis 7.3
✓

R 6 p
R 2 i
e 3 R

66 W Virginis 10.5
✓

b 2 W
W 2 a

67 V Virginis 10.7
✓

V = d
V = a
b 3-4 V

4

4/14

9:20 65 ✓ u Virginis 10.2

n 5 u

u = p

68 ✓ R Hydrae 8.2

R 5 a Color 6

x 3 R R D 6

R 1 mag y

69 ✓ δ Virginis 10.0

h 2 S

S = l

4/14/84

9:05 73 a U Boötis ?
V

U 2 m
a 4 U

U seems to be exactly on line
from 8 mag (foll) to m
x is not visible unless
star used for U is x

(18)

(71)

~~Sunday Apr 26, 1884~~
Saturday Apr 25, 1884

43 ✓ η Gemin
minim - or < a

This record was not
made until Tuesday

Tuesday Apr 28 1884

Moon ☽

7:30. 43 U Geminorum —

✓ invisible

[$\bar{b}$ > U

~~a~~ a only suspected.

37 R Gemini 8.7

✓

a 3 R Colr 5

R 4 c RD 6.

42 T Gemini 9.2

✓

d ~~5~~ ^{4} T Colr 3!

T ~~4~~ ^{3} i RD 3

4/28/

50 Σ Hydrae 8.8
√

Color 3

a 4 Σ

Σ 5 d

~~fo 3/4m 1m~~

f 3/4m – 1m Σ

40 a U Can min 10.7
√

l 3 U

U 2 m

U 6 x

9/28

46 U Cancri 10.7

✓

b 1m U

l = U

c 1¼m U

m 8 U

91a R Urs Min 9.0

✓

R = b

a 3 R

Urs var. 5

~~s~~ a 1 S

s 2 b

4/28

61 a' V̄ ✓ Virginis 9.4

d 2 V̄ color 3

V̄ 3 a Rs 4

Sus var X

✓ e 6 ~~3/4 m~~ 3/1 m X

c ~~4 m~~ 3 X

0

Monday May ~~4~~ 5. 1884

43 R Gemi <11

✓ invis~~[illegible]~~.

bright moonlight

e just visible

May 9, 1885

8:30 43 ✓ U Gemin 9.4

U 1 m Color 0

0 3 U

1884pnae.proj..496.