x

W Cet 1960 00 00 26 -14 57.5 (v)

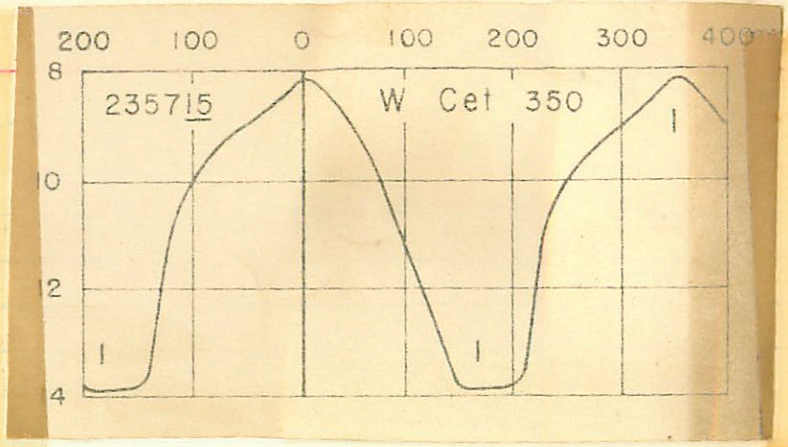
HD224440 7.1 - 14.6 351 57 -74°

1850 ~~t~~
2044

3 Oct

2 Nov

Not Dec 3


200
100
0
100
200
300
400
8
10
12
14
235715
W Cet 350
I
I
I

(XX) ?

5054 00 00 00 +65 49 G8 IH

225009

1

5.96 +1.09 +0.91 5

5.45 +37

509
454
584
-76
+025

7.34 +0.08 +0.05 5

+2.0
5.34

5.86 +1.09 +0.91 J
7.34 +0.08 +0.05
HD225009 0 00.0 +65 49

W2 6.0 G5 -18.1

ADS1 A ~~7.5 A1 -6.7~~

GC1 GC +0017 ± 2.4 +004 ± 2.0

+0017 ± 2.4 +004 ± 2.0 +0020 +011

+0007 +005

0 0 1.428 1896.6 +65 49 14.30 1897.7
-091 -21
1.337 14.09

42.3 N30 40.2

1.335 820 +0010 14.2 1929.7
035 1.410 +005 -10 Wash
.383 +.073 14.10
96

0 1.411 14.69 1946.09
+024 -09 .58
1.435 14.60 37.5
14.37 /12.6

66
33342 0 00.0 +15 59 -11.06

w / 7.2 A2 -14±5 -1±6 Yale

+15° 4 923

-0031 ±10.0 +015 ±9.3

1900+ -0011 +005

N30 -0011 +002

+007

23 5-9 58.464 1894.0 +15 5-8 41.57 1897.5

158 -79

.622 40.78

41.00 1929.4

5-9 58.571

+004 5-8 40.75 1934.0

58.575 .041 +10

-047 40.85

58.581 40.94 1934.86

+8 589 Yale +14

225010 0 00.1 +65 49

W3 7.5 A1 -6.7 6

GL2 s +0008 ± 3.5 -010 ± 4.6

0 0 3.749 1954.4 +65 49 18,72 1856.4
-044
3.705 +54
19,26

228045

00 00 23 −20 19 32

33 181 479 264

+0076 ±7.5 +035 ±5.6
0074 048

23.561 54.3 32.32 51.7
−423 −4.37
128
6.577 36.69
16.868 54.42
23445 21.12
−029 33.30
.416 −02
12 3332
404 +26
33.04

+108 +75

+110 +071

117
+71
2.0
−4.0

R.A. : 0.000
DEC. : -20.300
. R.A. : 117.000
. DEC. : 71.000
STANCE : 2.000
MODULUS : 25
D. VEL. : -4.000

q1 (U) : 0.873
q2 (U) : 0.477
q3 (U) : -0.105
dU : 614.397
U : 15.853

q1 (V) : -0.450
q2 (V) : 0.869
q3 (V) : 0.204
dV : 58.313
V : 0.650

q1 (W) : -0.188
q2 (W) : 0.131
q3 (W) : -0.973
dW : -54.026

R.A.	:	0.000
DEC.	:	-20.300
. R.A.	:	117.000
. DEC.	:	71.000
STANCE	:	2.000
ODULUS	:	25
D. VEL.	:	-4.000
q1 (U)	:	0.873
q2 (U)	:	0.477
q3 (U)	:	-0.105
dU	:	614.397
U	:	15.853
q1 (V)	:	-0.450
q2 (V)	:	0.869
q3 (V)	:	0.204
dV	:	58.313
V	:	0.650
q1 (W)	:	-0.188
q2 (W)	:	0.131
q3 (W)	:	-0.973
dW	:	-54.026
W	:	2.536

225076 00 00.6 -24 52 F8 5̄ +8

+19 +22
-4 +12

+15 +34

+18 -3

+14 +31

0.0
-24.9
+21
+31

4.5
+8

+32.4756   038 -00

TW And   0   00.7   +32 34   -46.0 8

0   43.85   +32 34   4.0   19 40.80   calculated
    024   -11
    .874   3.89

+0.067 ± 007   +0.043 ± 8
    61   45
    64   44
    -1   +2
    +062   +046 →

43.875   5831   3.22
        -.4
        3.04

0   43.85   +32
    0
    3.85

0 1 539 842 +067 +043 -46.0 023 -25 +171

0 0 067 023 -109 317 -35.7 -39 0

-50 +32 -5 01

+20 -43 +36

02

-44 +16 -17

+3 -41 +27

03

-43 +11 -19

-3 -40 +26

006

-57 +53 +4

+44 -45 +43

225094 0 00.8 +63 22 -39 w (7)

+62°2356 -48 v (2)

-43 e

6.24 +0.33 -0.54 B3 Ia Hilt

N30

$3E_{B-V}$ = 1.59 -0.013±5 +0.030±5

V_0 = 4.65

M_V = -6.9

0 1 894 446 -0.013 +0.030 -43 027 -35 062

0 0 -013 027 -178 -062 -19.3 -19 0 0.0005

-179 -78 +40

-66 -22 +185 800

$\sin\delta_0$	$\cos\delta_0$	~~$\cos\delta_0 \sin\delta_0$~~	~~$\sin\delta_0 \sin\delta_0$~~			δ_0	α_0
.940	.342	.330	.110	.965	~~352~~	+70°	309

2215/20 00 1.1 -31 22 -221 (4)

-81.6889

+0080 -054 Carillonburg

102 -054

9991

22513 ~ OW 01.2 73 36

9058

+026.3 -004.1

1=165

4221

Cat I

225180 0 01.6 +62 01 6.0 A2 -17.76

#4

GL 30 GL -0007 ±2.8 +010 ± 1.8

glass new -0008 +005

0 1 38,288 1886.0 +62 0 34.04 1890.9
+045 -59
.333 33.45

0 21.21 Gn 25
61 52 12.1 1927.3
0 +29
21.21 12.39 +23
1 16.92
18 9 21.12
1 38.31 33.51
1 62 0 33.48 wash
33.92 1945.18
1 38.278 .295 0 +03
0 33.99 33.68 1936.2
275

225187 0 1.6 − 30 25 20R8

−0006 ±8.7 +012 ±8.0
+012
38.446 1899.0 +0030 48.23 18961
+0012 −.65
031
.477 48.88

+0018

+.021 69.81 19296.2

21.809 21.12
16.788 48.69
38.597 +.22
.7 48.47
38.592 +.092 +41
.23
.569 +.192

ζ Lup 21 23.8 −22 38. +3.0a

W13481 3.76 +99 +55

−0.0001 +0.024 N30

+0.0002 +0.024 GC→

0.0001 +0.024

OCW −3.5

250

142			250				250
+723	+257	+641	0	+0292	+7.3	−1.9	+54
−043	+943	+330	0	+1072	+26.8	+1.0	+28
−640	+211	−692	0	+0240	+6.0	−2.1	+4

237

C244-50 2 07.8 +71 19 +07

+70163

245-439 658 +0.54 -0.4

5706 5296

2406 ~3486

SU And 0 01.8 +39 50 7.7 gM7e 313d

225~~1~~92 -87.6

cm -98.8

HR9101

HD225197 0 01.8 -16 48 -26.9 B

'17 5.5 gK2

+034 -054 GC

GC 33 +0038 062

GC +0024 ± 4.2 -054 ± 4.2

+0055 -062

new +0031 -049

0 1 46.062 1507.4 -16 48 23.83 1905.1

-102

45.960

46.034

-002

.032

46.087

-018

46.069

-0

46.050

+090

+80

-62

5.0

-26.9

29.3

+2.42

21.41

23.27

+44

22.83

23.43

+29

23.06

22.95

-1.54

1903.85 Cape

1939.56 Cape

5.69

2.84

36.72

31.6

0 1 -289 557 1034 -054 -26.9 016 +8 - 276

0 0 034 016 -076 161 -25.7 -26 0

-34 +16 -17 01

+3 -36 +19

-30 +5 -4 02

+2 -21 +24

R.A.	:	0.000
DEC.	:	-16.800
. R.A.	:	57.000
. DEC.	:	-62.000
STANCE	:	5.000
ODULUS	:	100
. VEL.	:	-26.900
q1 (U)	:	0.873
q2 (U)	:	0.482
q3 (U)	:	-0.076
dU	:	84.010
U	:	10.435
q1 (V)	:	-0.450
q2 (V)	:	0.855
q3 (V)	:	0.256
dV	:	-367.813
V	:	-43.681
q1 (W)	:	-0.188
q2 (W)	:	0.190
q3 (W)	:	-0.964
dW	:	-104.501
W	:	15.470

-42.0

225212 0 01.9 -10 47 . -41.9 L(13)
-42.7 G(3)
-42.0 W(4)

W 18

GC 3y 5.0 R3I6 -0.010 -0.005 GC

HR 9103 -0007 ±2.5 -005 2.5
-0001 -004 + [illegible]

GC 0 01 56.521 1898.4 -10 47 15.99 1894.8
36 28
56.557 15.71

I Cape 0 01 56.564 -10 47 16.05 1938.97
-13 +16
630
56.551 15.89

+873487 -026 -.006 40.57 - .18 44.17
-450825 342
-148256940 -0001 -007

0 -0162	-10.2 +1.1	-9
0 -0273	-17.2 -144	-31
0 -0095	-5.9 +39.5	+34

7,1

9105

225218 -4.5 0 02.0 +41 49 6.0 A2 -8.0 6

-9.7

20 -8.9 B = 9.2 Sp.B (49) 4 plate

GC 38 -11.4

-8.3

GC 0000 ± 3.5 -021 ± 3.2

AOS 30 A -11.3

00 -004

-9.0

0000 ± 2.5 -021 ± 3.2

0 2 2.055 1502.1 +41 48 51.15 1897.6

0 +1.10

0 2.055 0.0 52.25

0 45.03 +41.5 40 30.9 1927.4 Gm 25

1 16.92 +5.5 8 21.12

+09

2 2.04 -21 → 59 48 52.02

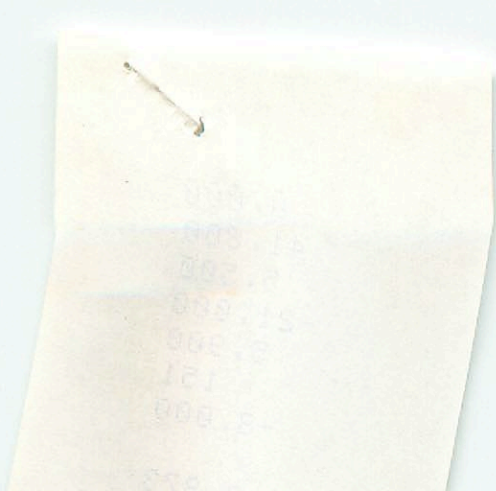
-01 -8 -03

2.03 80 51.99

.025 +18

52.17

.11



```
 0.000
41.800
 5.500
-21.000
 5.900
   151
-8.000
```

I

225216 0 02.1 +66 53 g 161 −221.8

22 5.8

6639 5.56 +1.07 +0.93 3A

+092 +035 GG
+092 +033 GAZ
+092 +034

N30 − 0003 GG +0157 ± 4.4 +035 ± 3.3
new +0162 +030

0 2 5.082 1897.7
−821
4.261

+66 53 16.48 1902.5
−1.66
14.82

1.34

978

wash

2 5.003
+036
5.039

16.28 1945.67
−12
16.16

0 1 920.352 +092 +034 -27.1 031 -25 062

0 0 092031 -147 436 -10.6 -11 0

-26 +44 -19 01

+28 -46 +6

9108 00 2.2 -71 43

4027.6 -V14.4 Fice

5748 1000
2230 -V1 2

145 1095 1418
-V45 129 555 2,737

820

5.55
-0.85
4.24

I

225-239 0 02.3 +34 23 +4.48

GC44 v G1 (+3.5) +3.6 v(3)

w F7 (+4.0) +3.8 w(3)

W24

Y5819 6.12 +0.62 +0.09 G2 Ⅲ R

+33°4825 δ =0.06

410

+68-24 -6 -05-0 +0.755 +0.100 GC

43 A(16)
37 m (6)
10 w (6)
34±6

+0610 ± 5.7 +100 ± 4.6
+0678 +097

0 2 16.094 1897.3 +34 22 48.83 1894.0
-3.215 -5.60
12.879 43.23

Cm₂ 25

0 57.75 14 25.2 1926.8
1 16.92 8 21.10
07 22 46.30
2 14.74 -04
-02 46.26
14.72 +16
1.847 46.42

(29.5)

369
14.684
+1.805

26.4
(32.4)

24.6 1926.0
21.12 46.19
45.72 +2.96
45.3
45.69
27
45.96

57.23
16.915
14.670
.7566
649

225299 0 0 29 -70 30 G5B

-70.3038 -0004 0+16 -003 -0.99 -102 8.13 71 +131

+058 -0.99 -0.52

0084
.0033

0495

+050 -096

+150
-96
3.4
.131

R.A. : 0.850
DEC. : -70.500
R.A. : 150.000
DEC. : -0.000
STANCE : 3.400
ODULUS : 98
. VEL. : 13.100

qi (U) : 0.872
q2 (U) : 0.253
q3 (U) : -0.430
dU : 72.832
U : -0.850

qi (V) : -0.457
q2 (V) : 0.707
q3 (U) : -0.539
dV : -438.309
V : -22.642

qi (W) : -0.127
q2 (W) : -0.466
q3 (W) : -0.724
dW : 261.261
W : 3.818

R.A.	:	0.050
DEC.	:	-70.500
. R.A.	:	150.000
. DEC.	:	-96.000
STANCE	:	3.400
ODULUS	:	48
. VEL.	:	13.100
q1 (U)	:	0.872
q2 (U)	:	0.235
q3 (U)	:	-0.430
dU	:	99.832
U	:	-0.850
q1 (V)	:	-0.457
q2 (V)	:	0.707
q3 (V)	:	-0.539
dV	:	-430.309
V	:	-27.662
q1 (W)	:	-0.177
q2 (W)	:	-0.666
q3 (W)	:	-0.724
dW	:	261.261
W	:	3.018

474 474 0379 592 0374
113 0126 x3 1695 565

225276 0 02.4 +26 22 -4.6 8

26 6.5 ×2

GC 47 +105 -009 G

GC +0079 ±6.9 -009 ±4.7 +118 -008 Y
+0085 -010
-008
.113 82

0 2 21.280 1900.4 +26 22 14.33 1895.5
-392 +49
20.888 14.82

Yale

2 21.122 14.51 1927.89
0 50 ±03
21.122 14.48

872	398	283	+4675	-0150	+4525	+22.6	-1.3	+21.3
-455	448	769	-2435	-0170	-2605	-13.0	-3.6	-16.6
-178	799	-523	-0955	-0303	-1258	-6.3	+2.6	-3.7

0 1 445 996 +110-007 -4.6 -003 -2.0 -035

0 0 110-003 014 447 -4.0 -4.1 0.0

57.1

74.4

-0.2 65.5 -2.8

-1.0 -33.3 -4.5

1.7 -12.1 -2.8

-2 +50 -6 01

+41 -27 -9

-1.2 015

-2.0 +74.4 -6.0 007

+62.5 -37.8 -13.2

108 0 03.4 +63 24 7.4 06 ep −62.86

43

GC85 −0021 ± 17.0 +018 ± 13.0 0

−0020 000

−0029 +009
− 8 0
−0028

0 3 26.865 1912.8 +63 24 6.09 1912.0
+078 −68
.943 3.41

.0054

2 9.201 15 43.4 1528.4 −65
1 17.443 018 8 21.1
3 26.2449 24 04.3
26.889 −46
26.889 4.30
4.76 +62

3 26.871 +63 5.41 1544.67
−03
.38

108 0 03.4 +63 24 -62.88

w 43 -64.1 4(11)

GC 85 -60.5 w(6)

7.40 +0.18 -0.74 08 sp

+62°23'63

$3 E_{B-V} = 1.47$

$-0.027^{\pm 8}$ $0.000^{\pm 8}$ N_{30}

$V_0 = 5.93$

$m = -5.1$

$m - V_0 = 11$

0 1 594 448 -027 000 -62.8 0 -56 0

0 0 -027 0 0 -128 -56.1 -56 0 001

~~184~~

-56 -128 -56

-143 -12 +44