

W. L. L.

1230

18

13.2

+ 36

34

2.2 g m r e

20-153

E = +10

685 + 97

4.45 990

4.29

4.17

4.11

4.6

XY legs

18 36.4 +39 37

0550 +001 1B

- 2 +5

-0002 +006

-000

499m 131

1368

381
38
90

E=+05

XY legs 5.9 +1.05 +1.50 -1.4 +13-16 -2 -2 -14.0

HR9809 8.8 +1.58 7.15 +2 0 +2 +6

Aug 6-II +150 ?

$\Sigma Y = 68.4 + 19.3$

171301 59.0 +17.1 5.48 -0.11 -0.38 +0.2 5.50
171750 43.0 +18.0 6.11 -0.13 -0.57 +0.5 6.85

270

- 802 + 026

-15.6

199 916 -249	-0019 +0260	+0241	+6.5	+13	+2.6
415 203 875	-0040 +0069	+0029	+0.5	0.16	-166
-886 320 335	+0094 +0091	+0175		-2	-6.7

S² days

PR 7139

18 52.8

+ 36 50

Clark

156

27
38

4.36 + 147 145 ~~440~~

232

2.50 + 1.30

141

7
0

-699

Clark
13

Σ
+005-

S² days

PR 7139

4.15 + 1.00 + 1.55 - 5.45 + 1.3 - 27 + 7 - 9 - 26.2 ?

2.80 + 1.28

7.0

+ 5 MY II + 15.3

v mon 8.25
5.55 + 1169

(NO)

-70

V MON 6 20.2 -2 10 6.0-13.7 V_{is}

3349

V	R	R-I	Phase	
8.00	6.12	+1.86	0.455	244000
7.31	5.65	+1.72	0.49 -	208.9
7.27	5.53	+1.69	0.535 -	220.8
7.40	5.58	+1.68	0.55 -	236.7
8.02	5.92	+1.87	0.61	241.7
7.98	5.90	+1.87	0.615	260.6
8.14	5.93	+1.93	0.63	2626
7.86	5.69	+1.87	1.655	267.6
8.83	6.33	+2.08	1.74	610.8
				638.7

+30e

-0.002 } Power
-0.035 }

May

+0.1 -0.07 Mc

5.50 +1.68
R R-I

E = +10

5.30 R₀
1.60 (R-I)₀

-16 -72 -45

(over)

492
205
287.49

3.70
477
8.47 m-M 8.45

440M2

Landolt

2489553.6 6.99 1.3483

61.5 6.79 1.3789

64.6 6.77 1.4190

68.5 6.79 1.4291

P V Morn L 55.7 +L 14

E+AD

7.0 +2.70

250M.

+16.0

+20

5.7 +1.20

1.13

7.9

-18 +12

5.50

-3.25

7.9

5.72
1.43
7.16

-272 394 878

-372 748 -474

498 455 671

+0232 +0224

+0456 +31

14.0

+0317 +0454

+0771 +22

-7.6

-0756 +0254

-0560

8

11.1

Vaph

16

23.9

-12 19

12

-329a

+0001 = 170.3 - 010 ± 67
-0007

K8R2

22-113

9441

+007

-015-

56.568

1498.8

-12 18

5498

-0.009

-0.006 GCT

-0.22

+69

~~1.545~~

~~5429~~

032

24.28 143349

33.057

23.432

26.70

~~56.489~~

~~519~~

~~5340~~

~~1.578~~

529

54.512
5246

-913.407 - 2.1 977 - 009 - 006 - 37.4 002 + 8 - 035
-008 002 004 - 001 - 033 028 + 36.5 + 15 + 33 001

~~+7 + 30 - 1~~

~~+4 + 11 - 5~~

04

+7 + 11 + 4

+35 = 18 - 15

C = -0.55, +.21 1983.49
emp

+4 + 43 - 5

003

+36 - 20 - 12

P₀ = 6.25

1905.0

P_{2.21M} = 1.47

002

-1 + 47 - 11

$\Delta M_S = +0.005$

22.865

$\Delta M_D = -.016$

+36 - 27 - 11

2 Qph 17 17.0 +01 34 345 d

NO

2 Qph 78 - -

6.45 +003

+21.0

V 5200ph 17 21 00 29 11.5 10-11.5 120

Survey 11450 20.8 1939

19 May

9200

12

157416

17

22

24

24

51

79489

18 Aug
20 Sept
3 Oct

⊙...
⊙...
⊙...

N

29 May

155418 17 18 22 -75 19 7.5 80

(2100)

(210)

10-11-12-13-14

MSA 17 54 17 -46 46.5

R
 bin
 Y
 56.3
 + 8 03
 + 36.0

+ 0216
 - 013
 + 2
 + 0214
 - 011
 + 0220
 + 013
 + 2
 + 0214
 - 011
 + 0220

2237 108 8.70 +1.07
 236.7 9.83 8.40 +1.00
 241.7 9.71 8.45 +0.95
 262.6 9.90 8.51 +1.03
 267.6 9.69 8.31 +0.96
 674.6 9.05 7.73 +1.60

7.50 +0.95
 38
 7.12
 1.2
 1.50
 5.74
 1.50

+180 +360 +916
 -599 +776 -148
 +780 +515 -256
 +0171 -0198
 -0566 -0405
 +0739 -0266
 -0617 +31
 +33.0
 -6.8
 -17.0

296348

GP Dev

05 01 04

+15 17

12.3 - 13.3

S

W

4
○

Indi S

05 33 06 - 05

42.5'

96-11.1

1021#

○

Blue

14031747

✓

4

57

06

+14

30

8.0 R9

14031373

✓

4

54

08

+15

60(5.64)

-0.04-0.46

Camford ①

JF709

353.22

+28

RR Mon

7 15.0

f01 11

57.2

2440

237.6 10.83 8.34 +2.35

262.7 9.07 7.16 +1.79

303.6 8.51 6.59 +1.52

323.6 9.41 7.11 +1.73

331.6 9.69 7.28 +1.83

X No

V Man

+ 0020411.3
+ 0005
6 20.2
- 0066 N.3
- 0080
6-190 333
+ 300e

44639

-0001-034
0-000
10
fulwin

5213

12466 14077
-085
-014
10 9.98 1506.0
2.84
7.14

1381

7.14

-00003
-00015

56.814
15.568

31.7

24.99 4335.61
41.38

-003-030

12.3 83
385

382
352
0.00

0627
-130
7.34

7.32
7.46
7.32

7.89
389
32.0

42.149
20228

50.54
172

7.19

1422.26

12.3 94
0
3/371

78.25 / 763

-002 -035

+30

-143 513 846
-452 227 -519
881 456 -178

+0014 -0851
+0043 -1206
-0087 -0756

-0837
-1163
-0840

800m

-164
-736
-478

^{41.6}
+25.4
-15.5
-38

M2Iad

Δ Ori 5 52.5 +07 24 0.4-13 km

1FR2061

2070^d

Ori 2081

E=405

Δ Ori 0.25 +185 +202 -7.5 +21 -11 +18 +26 +21.6 ?

1FR2061 -1.0 +0.97 5.8 +1 -2 +13 +10 M2Iad -9°

Pr. Div

5 52.5 + 7 24

$P = +21.0$

+0017 +010 LR

+0026 +010 →

140

-038 365 930 | -0047 +0173 | +0126 +24 +14.5 = +21.4

-506 794 -332 | -0623 +0376 | -0247 -4.7 -7.0 = -11.7

760 484 -154 | +1060 +0224 | +1289 +24.5 -3.2 +21.3

~~Relph~~

	15	A-I	IO	
0.51	7.36	5.45	11.47	838
1.03	7.64	5.55	11.54	8675
1.99	7.92	6.07	11.59	6574
2.09	8.50			

Play

23013 +27 44

Johnson

AD27906

③ 545

2.38 +16 +196 1.30 +103

1408775

2-15

1.20 1.94

30 Aug

2.7 +118 41.96

-3.15 +62 +6 +4

+186 +8.7 ?

-25°

14R9775

1.3 +103

3.7 +111 -3 +8

+142 ADII-III

E=102

Rice Blue

7.18 +1.20 +1.22 L. 27/16
 8.88 +1.66 +1.29 17 "
 9.73 +1.68 +1.10 21 "
 9.68 +1.66 +1.78 23 "
 7.93 +1.65 +1.76 30 "
 6.82 +1.58 +1.33 15 "
 6.48 +1.55 +1.18 27 "
 6.41 +1.49 +1.10 30 "
 6.36 +1.50 +1.03 4 Jan 20
 6.57 +1.72 +1.39 31 Jan "
 6.68 +1.93 +1.57 9 Feb
 7.21 +1.50 +1.95 25 "
 7.89 +1.91 +1.94 10 Mar

7.99 +1.53 +1.88 11 Mar 20
 9.37 +1.89 +1.66 3 Apr "
 9.49 +1.88 +1.35 6 "
 9.64 +1.84 +1.50 11 "
 10.00 4.89 +1.35 28 Apr

892 RT Bar

427064w

9307 1 11.1 talc 52 8.7 gms

W707

$\frac{u}{du}$ $\frac{w}{dw}$

Calc +15C
35
423
973
-008
-036
-1
-3
1030
1036
Ridly

~~890 pms~~

9.75

212
-8

-30 -116
~~-7~~
~~forward~~
-14 / 100 p.m. 4.5

-008 -039
0 +2
-008 -037

W 4300

+811 +252 4513
-579 4514 4632
+085 +810 -550

-0615 -0414
+0439 -0755
-0064 -1140

-1029
-0316
-1254

+138
+17.0
-157

226

TX Doc 23 435 + 03 12.5 4.9-2.7

AM 9009

119 Pump

7 32 25 -14 22.5 4.9

R+M

60448 7 32 31 -15 25 8.4 8.9

60325 7 32 01 -14 17 4.24 8.5

60350 7 32 19 -14 23 9.2 8.9

~~57435~~



MPY

Shms
S2838

-3013

(12)

120

Rx Ret 3 47 25 -66 47 9.1-11.3

ms

2585

L 540 445 09

A2E

332

50973

1059

9113

1731

4.50 + 0.3 + 0.6 345

5 West

D11 142 1.10 1 2879 (3) 5AC

GD 166 1059

1.427

2871
2875
56

7/16 1/8
2/16 1/8

1.009
1.339
1.360

a=0.23
n=0.75

1.69

10.4
4.5

41

-G014
-G016

-D21-1001
-D21-1001

G017
G018

445

4075
4.15

2585.000*

6.000*

54.000*

45.000*

9.000*

-0.018*

-0.004*

4.150*

79.4

67.608

-7.600

0.028

0.930

-5

-5.199

0.015

0.138

0

-0.067

-0.082

0.340

-9

-8.102

2585.000*

6.000*

54.000*

45.000*

9.000*

-0.021*

-0.001*

4.450*

77.625

-8.000

0.028

0.930

-5.273

0.033

0.138

1.449

-0.090

0.340

-9.692

2659

7 023 + 22 43 185.5 $\frac{1}{2}$

-008 140 1.028 2.831

138 1.040

276
1316

$\frac{1}{2}$
 $\frac{1}{2}$

1

-000 5 -016 1130
-000 9 -015 1124

-11!

+0.15

-0055

-005-014

5.75

2659.000*

7.000*

2.300*

22.000*

43.000*

-0.005*

-0.014*

5.750*

141.254

-11.000

-0.001

0.946

-10.604

-0.052

-0.235

-4.722

-0.048

0.225

-9.237

Sm = 1m 2.5

2674 7 625 -59 06 R9

5.45 - 12

Shing

5.54 - 20 124 2246 259

49.8

①

103 527

$\frac{204}{733}$

+0022 ±6.7 +004#49
-0021 +004

29.356 1901.0

248
-108

10.56 1956.2

10.77
-21

29.193

180
-16

10.62 1939.26

10.60
+2

+1.7

2714 7 09.3 -0 25 40 12

55185

9518

4.15 -01 00 C 86

①

016	146	1220	2.820	76
011	129	1.219	2.834	of 6
10	134	1.219	2.824	

$\frac{100 \times 5}{100 - 17.5} = 0$

18030

+18047

1804

1804

1.487

1.509

a=38

132 1217

110

264

1217

1981

410

46

51

1981

1981

2714.000*

7.000*

9.300*

0.000*

-25.000*

-0.003*

0.006*

5.100*

104.713

15.000

0.019

0.810

14.085

0.026

-0.582

-6.025

0.001

0.075

1.183

2716 7 095 -20 48 40

-011 127 1.872 2.942 Stahns

124 1.044

248

1.292

MY = 40.35
V₀ 5.7!

535

Wahl

2751 7 14.2 449 34 A3 III -IV

5664
9681

504 + 08 + 09 J

(3)

060 138 1.266

(2) SPCL

2.815 JG.

-11.7

156
1312510

$\frac{276}{1492}$
1.602

030 147 1200

-0010
-003 + 011
-6601

+6095

-0.95
4.9

(585)

~~1609~~
~~1609~~

2751.000*

7.000*

14.700*

49.000*

34.000*

-0.003*

0.011*

5.850*

147.911

-11.700

-0.011

0.890

-12.005

0.053

0.188

5.637

-0.001

0.415

-4.989

2757

)

149

+ 81

03

85.5 $\frac{1}{2}$

~~100~~ - 03 - 10

103

6.14 - 006 128 996 2.784 102

126 997

257

1249

-0013 - 0086 CT
-00955 - 0264
+ 29:

$a_1 = -0.45$
 $\sqrt{0.62}$
 $\frac{1}{1.63}$

-0120

-013 - 025

$$\begin{array}{r}
 -0.20 \pm 4.4 \\
 -0.35 \\
 \hline
 50.58 \quad 1898.4
 \end{array}$$

$$\begin{array}{r}
 1.03 \\
 \hline
 52.01
 \end{array}$$

$$1857.76$$

$$44.89$$

$$+ 0.3$$

$$\hline 49.92$$

$$\hline -20.9$$

$$\begin{array}{r}
 -0.18 \pm 56 \\
 -0.008 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 18 \\
 \hline
 484
 \end{array}$$

$$-0.13 - 0.28$$

$$52.443$$

$$\begin{array}{r}
 0.05 \\
 \hline
 20.484
 \end{array}$$

$$52.438$$

$$- 0.16$$

$$52.356 \quad 150.11$$

Comments:

-10.017

0.323
-0.095

-22.067

-0.117
-0.091

31.581

0.939
0.021

29.000
204.174

hit

6.550*
-0.025*
-0.013*
3.000*
31.000*

14.900*
2.000*

TIME

ST

2757.000*

Observer:

2762 7 13.2 -48 16 88

5645b
9635

~~482~~

476-09-24

-040

121 772

2.765 62

218
998

M12-0.4
V0 4.7
5.1

Vandorf

2784 7 189 +55 22 56 85 114

L.C. Ad

$$Sp. \sigma = 2.26$$

$$\sigma_{max} = 1.1$$

25p

5.81 -042 120 648 2774

107 656 214

870

F-124

$$-0.0025 \cdot 0.05 \cdot 6$$

$$M_1 = 0.002$$

$$V_0 = \frac{5.75}{5.75}$$

$$\frac{575}{650}$$

$$\frac{-1021}{-104024}$$

-3.288

7

0.444

-0.040

-15.366

m

0.277

-0.119

12.818

16

0.852

0.059

5.200

141.254

5.750*

-0.029*

-0.004*

22.000*

55.000*

18.800*

7.000*

we

LS

2784.000*

2799 9 16.5 -43 58 89

Being

171

5.78 -57 118 512 2.788

(27)

101 523

202

203

Jan 1911

2815 7 19.4 -52 00 134

Varied

5.40-24 105 814 2.781 2

~~98~~ 814
196
1013

2826

7

22.2

-22

49

88

② 54

6.22-29

110

720

2743

162

726

204

930

Post

2829 7 22.2 -35 45 R8

~~No Value~~

149

②59

6.34 - 49 101 356 2.712

86 406

172

578

317 1 03.6 -10 07 A1E

4580

5.570 00

0

104 1105
316

10.2

5.35

326

1 0 5.5

+ 5 8

00

85E

6676

5.74

025 089 731 2.742

75 097 726

6676

$\frac{194}{926}$

-41700

E(1.2) + 007

+007 -002 0-6

$V_0 = 5.5$

+007 -005 0-04

$\Delta H_V = -0.7$

+008 -005

$\frac{6.2}{}$

-3.361

-0.079

-0.021

-7.439

0.815

-0.024

3.124

0.575

0.031

-4.000

173.780

6.200*

-0.005*

0.008*

0.000*

58.000*

5.500*

1.000*

326.000*

30pk

338

1 062

-55

31

07E

07E

6882

1387

-039

+118

+559

2748

315

4-45 edgini 167 2 Sp

+18 Dk

+0010

394

-0.3

$\frac{243}{547} = 0.444$

2.811
0.13

7^m 0.8⁴
7 6⁴ } spec

- V + 2x

+0018 +028 N30

-09

-42

+00126 +0305

+00220 -0042

+0101

+012 +026

E = +05

V0 3.82 44

B-V0 -14

R-V0 -45

A_y = -60

-19.947

-0.881
-0.054

-3.423

-0.419
0.054

4.517

-0.221
0.112

18.000
75.858

4.400*

0.026*

0.012*

-31.000*

-55.000*

6.300*

1.000*

338.000*

335 SPhe 1 06.3 -55 31 B7E

hydrogen

^{1.7}
-029 119 559 2.748

Wale bond

oxid

+15.4 E(1.4) = +0.2

106 567 2.17
579
10 375
46

4012 +026

Fire alarm

$$M_v = \frac{-0.35}{4.95}$$



338.000*
1.000*
6.300*
-55.000*
-31.000*
0.012*
0.026*
4.950*
97.724
15.400
0.112
-0.221
7.542
0.054
-0.419
-1.145
-0.054
-0.881
-18.839

51

354 1 10.0 461 26 B57

7157

488
126

+023 122 644 2752 2 9-012

6.40

69 129 639

$\frac{258}{899}$

(-5.0)

E(4.2) + 0.08

$M_V = +10.3$

+034 -016 6L
+034 -015 4124

$V_0 = 6.05$

$\frac{4.3}{5.75}$

+034-019 462

-10.735
-0.019
-0.077
-18.012
0.814
-0.099
16.291
0.581
0.136
-5.000
141.254
5.750*
-0.019*
0.034*
26.000*
61.000*
10.000*
1.000*
354.000*

502

1 41.5

+56 50

A#E

10597

6.1

173

(+1.5)

+2.5

632

163

1187

2862

62

+6315

167

1134

+0015 0020

+0.15

+0015 +002

5.90

012-002

346
1120
1496

1000-1007 Y

+0017 525
+0021
+0000 000 ± 110

27.613 1804.6

~~18.45~~ 1405.8

$-\frac{77}{536}$

27.631

+0019 +005

19.11 1544.5d

$-\frac{012}{27.619}$

+0010 -007

$-\frac{24}{1587}$

~~0015~~ 000

42

502.000*

1.000*
41.500*
56.000*
50.000*
0.012*
-0.002*
5.900*
151.356
2.500
0.044
0.642
8.290
-0.037
0.761
-3.699
0.002
-0.088
0.116

IBF

1 49.6 + 51 14

618

A2E

11335

72 172

026 164 1141-2.876 62

(41.5)

001 160 1142

+12:

$$\begin{array}{r}
 344 \\
 1141 \\
 \hline
 84
 \end{array}$$

$$\begin{array}{r}
 40.15 \\
 6.15 \\
 \hline
 5.4
 \end{array}$$

apple

5.11-05-14 C 28

-120
-012
-000

558

1 523

-42

45

AD

5.10

-028 127 977 2.837 Stokes

119 993

2-051

N 072

288
122

~~TR~~

E(1-g) = 00

12:10 am

MV

+0.35

-0034 -0276 ER4

ND

5.10

-0374

475

-035-032

F14Horn

-11.585
-0.940
-0.003
-4.234
-0.342
-0.001
-19.830
0.017
-0.225
12.000
89.125
4.750*
-0.032*
-0.035*
-45.000*
-42.000*
52.300*
1.000*
558.000*

9/5/5

SL1

1 55.0 46.1 26

85 π

11857

L.01 4009 091 0.559 ③ 0723

099 0557

~~MV = 885~~

$E(1.4) = 40070$

138
⑦ 48

MV = -0.9

$V_0 = 5.7$

6.6

1016-003 GC

1115-002 FRY

1015-007

Thom

-2.978

-0.003

-0.014

-6.531

0.757

-0.050

15.662

0.653

0.058

5.300

208.930

6.600*

-0.007*

0.015*

26.000*

61.000*

55.000*

1.000*

561.000*

599

1247)

2

00.0

+33

03

A2

III

5.50 + 00 06

0.0

+3.3

006 169 1098 2.897

5.50

-0012 -0125 66 +

+0011 171

372

+0.45

-0012 -010

~~1137~~
39

~~5.05~~

-015

-015 -014

-9.231

-0.458

-0.075

3.036

0.575

0.011

-3.939

0.678

-0.060

3.300

102.329

5.050*

-0.014*

-0.015*

3.000*

33.000*

0.000*

2.000*

599.000*

658	2	13.0	-9	42	AD	-104 +21 +019
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Novel

4.56

007 125 1.113 2.798

127 1.112

(B) 157

254
1366

(A) 007

-115

ϕ Sei $\begin{matrix} +0011 \\ +0011 \\ 2 \end{matrix}$ 147 -51 45- 05E

14228 3.56 = 0.12 - 0.39 C

~~110.2 b~~

~~046 + 094 + 640 + 276 + 65~~

2821
 2761
 60

~~138
 -046 102 631 2761~~

98 640

$\begin{matrix} 82 \\ 207 \\ 621 \\ \hline \end{matrix}$
 $\Sigma = +02$
 $V_0 = 3.50$
 $\textcircled{3.54}$

$\text{B}_0 = -114$
 $\text{a}_{-0.50} = -0.01$

$\begin{matrix} 60 \times 109 \\ +01019 \\ 1528 \\ -6237 \\ \hline \end{matrix}$

$\begin{matrix} 0036 \\ +6945 \\ \hline \end{matrix}$

$M_V = -0.1$
 $V_0 = 3.5$
 3.6

$M_V = 2.94$

$\begin{matrix} +698 \\ +650 \\ \hline \end{matrix}$

674.000*

2.000*

14.700*

-51.000*

-45.000*

0.098*

0.050*

3.550*

52.0

51.286

10.200

0.492

-0.046

24.743

-0.162

-0.485

-13.255

0.064

-0.873

-5.605

2260

6 15.5

16

48

123

111

-8.16

43827

514 +126 -123 (2)

~~544~~

24.5

5.16 +130 (+126) C

-5012 +0855

462 +0455 (3)

2259
43821

L 16.0 +9 05 120 -142

6.24 +0.87 +0.52 C

02

2243

6 13.1 = 18 25 100 →

43429

5.99 + 1.06

BL