

117
+ 5

592
338
268
96
204-
Mant

109-310-

11.26
F 002.5

015 025
+ 2
+ 4

402 4072
663 402 407 399

402 + 0.65 num (3)

452 + 1.68 + 1.81 : C
453 + 1.8 + 1.82 num

9496
Q8h11

10 29.9 - 72 58 gms
2545
646
1741
90 724 294 (X)

4142

4142.000*

10.000*

29.900*

-72.000*

-58.000*

-0.013*

-0.001*

6.000*

158.489

11.200

0.049

-0.383

3.538

-0.012

-0.896

-11.965

-0.035

-0.226

-8.106

44 Kaya
414

10 31.6 -23 30 124 III

9550

5.07 + 1.57 + 1.82 (2)

422 + 1068

-0000 + 0174 + 41
+ 23
-0125 -36a

478
380
84

250
152

418

30
6.0

+16
+7

380
3.44

9

2.7

5

-010 + 022

4145.000*

10.000*

31.600*

-23.000*

-30.000*

-0.010*

0.022*

6.000*

58

135 ~~157~~ 153.489

-3.900

0.097

0.051

+13 ~~111.9~~ 15.147

0.034

-0.871

+8

186 0.815

0.051

0.489

+5

+58 6.136

84 6/32

(+)

4159 10 33.7 - 57 18 9123

02521

91516

444+162+179: C
7.44+162+1802599

3.68 + 0.62 men 3
3.61 + 0.64 599 -
3.65 70.63

+29
- 30
0021-00- new 1003. 49.94

327
48

1010-1101-
500+ 1101-
8010-
H+ 8010-
ret

~~47~~

2.42
2.65
52

7 1/2
61

359 6.0
321 239
+ 9 270
11.1 308

1908- 04790-
1/2
H+ 224
224
H+ 224
H+ 224

100-110-
4510-
22+

4159.000*

10.000*

33.700*

-57.000*

-18.000*

-0.014*

-0.005*

5.050*

5.25
112.5

102.329

9.900

0.044

-0.267

+2 1.872

-0.013

-0.964

-11 -10.855

-0.053

0.011

-6 -5.353

4153.000*

13.000*

33.700*

-57.000*

-13.000*

-0.017*

-0.002*

5.100*

158

104.713

9.900

0.063

-0.267

47

5.3
4
3.936

-0.018

-0.964

-12

-11.423

-0.048

0.011

-7

-4.922

4181

10 39.5 +69 20

103.11

92523

6

5.00 +1.41 +1.54 2E 4.30 +0.54 2

~~10.535~~

392
34
318

-1.3

July
F00021 -0163 FR4

+6.5
-14.5

-0.2

+0.0011

000 -012

425
890
325
3153
225

4181.000*

10.000*

39.400*

69.000*

20.000*

3.000*

-0.012*

5.500*

129

125.893

-0.200

3.000

0.536

0

0.264

-3.048

3.479

-6

-6.116

0.031

3.695

+7

3.720

HR 4200
14762
93070
14762
6683

10 41.6 -60 18
-0037 ± 6.0
-0037 ± 3.7
4.57
± 0.5
-007

9 M1 + 9.3 B
-028 -003 GC

37.682 1911.4 -60 18 14.42- 1903.2
142
824

37.705 1410
19
724 705
37.68 -119
686

31.8

14.44 1940.41
-17
14.59
13.7 1946.3
-68
14.3 97
14.48
2.20

64.14 14.58
37.68
4.57
± 0.5
-007

671
43.4
40.7

HR 4200
14762
93070

54

46 Lmi 432 10 50.5 +34 29 100 III -10

4247

54264 - 7

3.83 +1.07 +0.92 55

3.27 +0.35 35

3.23 +0.375 3A

3.35 +0.35 3A

298
535
275
0.1
2.25

+0.00694 -0.2832 F104 +1619 2.20 0.17±6

+ 42

+0858

+ 8

+687 -0.279

4247.000*

10.000*

50.500*

34.000*

29.000*

0.087*

-0.279*

2.20

2.350*

27.7

29.512

16.100

-0.732

0.436

-13

-14.572

-1.148

-0.077

-33

-35.115

0.257

0.897

+22

22.026

4624ma

4258

10 53.0

+33 46

101 III

1.135 688 429

94600

-7
1

5.02 +110 +102 5 E

4.55 +0.39 (2)

417 -0.5

372

(475)

±2.5

-0.00870 -0.00318₄₂ 5k4 -22.16

8

7084

-108 -028

4258.000*

10.000*

53.000*

33.000*

46.000*

-0.108*

-0.028*

4.750*

89.125

-22.100

0.398

0.425

+17

26.106

-0.275

-0.086

-16

-22.567

-0.214

0.901

-34

-38.977

2 UMa

11 00.6 +62 01

100 TF -14 0.1

4301

95689

$\Delta m = 2.53$

1.79 +1.07 +0.92 85

48 years

1.36 +0.415 55

5^m

See "

Diagram

+ m m
10641 625 488
674

98 57 24 52

4.759

48.48 49.25
1.211 1.880
1203 .214

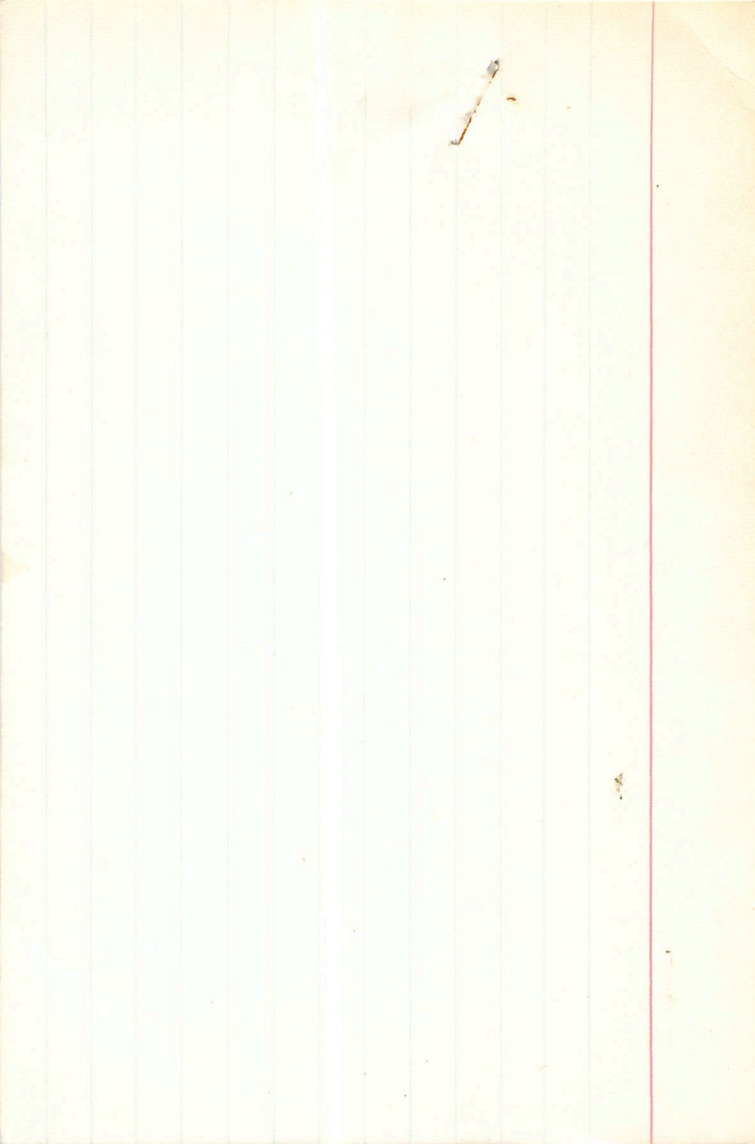
cm

calculated from *

-0.01682 -0.0705 P1P4 -8.9a

43

-1184
-0.118
1203-6



58 454

4801 16 00.6 +6201 100 II-IV

15185

95689 1.89 +1.07 +0.52 1.36 +0.415 J

$\Delta m = 3^m$

c 7.15 +0.51 -0.04 $\mu = 0.033$

$m_V = +46$

$m_V A = -0.63$

$m_V R = +234$

98 50 $m.M$

0.40
1.65
1.95
2.4

$M_V = -0.10 \text{ CW}$

-01682 -0705 F124 -9.3a

J 484
-0163.7
8 1 51
24

John Paul

-1152

-115 -066

+8

4381.000*

11.000*

0.600*

62.000*

1.000*

-0.115*

-0.066*

2.400*

30.200

-9.300

0.442

0.502

8.688

-0.441

0.380

-16.857

-0.070

0.777

-9.332

451511
408.5
451
451
451

WIR

456 57 899

10271

44 46 + 44 46

06.5

2000

45-46 42-45
1232 969

2201

4335

15840

96833

3.01 + 1.14 + 1.12 +

~~2.45 + 0.405 + 5~~
~~2.50 + 0.35 + 2~~

W

2.48 / 1040

7
115

107

1.226 712 584

000637 00315 Fly

+ 43

0678
or

0678 027

1.55

2.10
1.55
2.30
74

4335.000*

11.000*

6.900*

44.000*

46.000*

-0.067*

-0.027*

1.550*

28.8

20.417

-3.800

0.243

0.437

+5

3.301

-0.223

0.110

-7

-4.982

-0.091

0.893

-4

-5.253

4377

(X)

11 15.8

+33 22

20 56

Roman

IP3 $\frac{11}{11}$

5547

98262 3.49 + 1.40 + 1.55 J

2.81 + 0.51 J(S)

3.46 + 1.40 + 1.55 3E

243

3.48 + 1.40 + 1.525

30

-329

+43

-00219 + 0226 PIVY -9.2a

173

210

388

no
yes

$m_v = -0.7$ ^{4.25} _{dcw}

~~-00219 + 0226~~

~~-026 + 027~~

-0281

-027 + 027

+15

4377.000*

4377.000*

11.000*

11.000*

15.800*

15.800*

33.000*

33.000*

22.000*

22.000*

-0.027*

-0.026*

0.027*

0.027*

3.850*

3.900*

603

50.884

60.256

-9.200

-9.200

0.156

0.152

0.351

0.351

46

5.948

5.913

0.075

0.077

-0.066

-0.066

45

5.041

5.243

-0.053

-0.051

0.934

0.934

-11

-11.724

-11.696

562mm

4392

98829

5
13
18

-0.20m

11 20.1

+43 46 68 II

5.2

5.00 + 0.98 + 0.80 25

8 m m
981 598 467
634

4.59 + 0.32 25

4.25
3.90 - 4

000

~~+~~

42-45
.810
4242
.240
45-46
1.190
1.175
-0085

52 ± 1.5
5 kv

-0.156
43

9
-0379

4.9

12.45

-037-012

4392.000*

11.000*

20.100*

43.000*

46.000*

-0.037*

-0.012*

4.900*

95.499

2.900

0.136

0.396

14.163

-0.116

0.108

-10.723

-0.045

0.912

-1.697

Roma

48-48 42-45
1362 1346
4462
cm = 1334 255 (x)
13618
11

-10 36 125 III

15665
99167

484 + 1.55 + 187 2599

70.695 Johann

3.84 70.70 Egg
351
847
257
-32
377

0024 + 0089 new 2002.5 + 3.18
+ 42
0

387 695

349
353

~~1504929~~
~~1504929~~

256
299.5
245

+ 18

15
-0310

-0291026

4402.000*

11.000*
22.100*
-10.000*
-36.000*
-0.029*
0.026*
5.750*
141.254
3.100

5.45

0.180
-0.013

422 25.412

0.028
-0.688

41 1.766

0.029
0.726

46 6.385

4402.000*

11.000*
22.100*
-10.000*
-36.000*
-0.026*
0.027*
5.750*
141.254
3.100

0.170
-0.013

23.989

0.036
-0.688

2.916

0.037
0.726

7.450

6.14 +1.07 + 76 SA +20

101013 11 35.2 +50 57 6.0 960 -400
15947
7065

745

14
-0057 -031N30

-0064 -030

-0055 ± 3.6 -040 ± 3.6 6.6 -700 -0252

-00632

36

56

" 0.53

-0062 -024

-0064
-0065
-0066

1000

-875	+282	+394	+2188	-0480	+1708	+17.1	-1.6	+15.5
+394	+887	+240	0985	-1510	-2445	-250	-1.0	-26
+282	-365	+888	+0705	+0620	+1325	+13.2	-3.5	+9.7

C03
5e7

~~11.127~~
-0072
-0057
-030

-031

11.127 15326
+0049
-0061
+533
4340 15326

1250

-057-031

43.93

11.127 43.59 1951.52

11.035

-23

43.36

.115

11577

11577

43.09

-15

660

41292

-408

4474 # 11 35.2 +50 54 5.521AD

$$\begin{array}{r}
 -053-042-0-0 \\
 \hline
 +7 \quad +2 \\
 \hline
 -052 \quad -040
 \end{array}$$

11

6
-
1
1
3

4474.000*

11.000*

35.200*

50.000*

54.000*

-0.052*

-0.040*

5.000*

100.000

-4.000

0.162

0.393

14.619

-0.266

0.238

-27.503

-0.000

0.000

-3.590

101013

11 35.2 +50 55 KiBa3 -4.08

6.14 +1.07 +0.76

5-3 32

83
44
51

~~-0.0055~~ = -0.0402 GL →

-0.057

-0.57-0.35

101013.000*

11.000*

35.200*

50.000*

55.000*

-0.057*

-0.031*

5.000*

100.000

-4.000

0.195

0.393

17.903

192

-0.237

0.238

-24.652

-0.022

0.888

-5.802

101013

11 35.2 +50 54

-145

d

P=1710.9

1

1

R.A. : 11.600
DEC. : 50.900
*M. R.A. : -98.000
*M. DEC. : -24.000
DISTANCE : 6.500
MODULUS : 200
RD. VEL. : -14.500

q1 (U) : -0.875
q2 (U) : 0.286
q3 (U) : 0.391
dU : 223.816
U : 38.991

q1 (V) : 0.396
q2 (V) : 0.886
q3 (V) : 0.239
dV : -216.959
V : -46.756

q1 (W) : 0.278
q2 (W) : -0.364
q3 (W) : 0.889
dW : -40.035
W : -20.877

10360

50.4404

11 321 -57 25 +100

$\Delta m = 0.02$

055 +030 h₄₀

~~88~~

+34

~~572~~

+100

R.A. : 11.600
DEC. : -51.400
PM. R.A. : -88.000
PM. DEC. : 34.000
DISTANCE : 5.200
MODULUS : 110
RAD. VEL. : 10.000

q1 (U) : -0.875
q2 (U) : 0.321
q3 (U) : -0.363
dU : 279.415
U : 27.012

40.6

q1 (V) : 0.396
q2 (V) : 0.045
q3 (V) : -0.917
dV : -95.932
V : -19.689

243

q1 (W) : 0.278
q2 (W) : 0.946
q3 (W) : 0.166
dW : 80.112
W : 10.448

143

101666 11 33.2 -32 13 M1 433.79 4.65

GC16055

5.2

W7102

B 8.30 +0.49 eye

5.20 +1.48

5.35 +1.96 +1.78

8.44 +0.50 +0.03 A 000 +4 -049 ± 3 G L

B -004 -046 C P

-16 -37 -3 .010

-25 -46 -24 .005

-0002 -046 Sky

-600143.5
-0005
-04942.8
-042

13.868 1902.8 -32 13 18.12 1888.0

$$\begin{array}{r} \cancel{5} \\ 873 \end{array}$$

$$\begin{array}{r} + 2.50 \\ \hline 15.62 \end{array}$$

$$\begin{array}{r} 13.941 \\ + 9 \\ \hline 850 \end{array}$$

$$\begin{array}{r} 17.22 \\ + 3 \\ \hline 1939.24 \end{array}$$

$$\begin{array}{r} \cancel{850} \\ \hline 852 \\ \hline 21 \end{array}$$

$$\begin{array}{r} 17.19 \\ \hline 35 \\ \hline 9570 \\ \hline 47.85 \end{array}$$

$$\begin{array}{r} 13844 \\ - 10 \\ \hline 854 \end{array}$$

$$\begin{array}{r} 56.09 \\ \hline 9533 \end{array}$$

$$\begin{array}{r} 12.92 \\ - 24 \\ \hline 1956.46 \end{array}$$

$$\begin{array}{r} \cancel{854} \\ \hline 44.9 \end{array}$$

$$\begin{array}{r} 47.7 \\ \hline 44.9 \end{array}$$

$$\begin{array}{r} 18.16 \\ \hline 48.8 \end{array}$$

$$\begin{array}{r} 17.68 \\ \hline 2.06 \end{array}$$

$$\begin{array}{r} - \\ \hline 2.06 \end{array}$$

45-48 42-48 $C_m = 190$
1255 996
11 43.4 + 48 04

Norm
170 III

4518

16137

10224

2073

691

-01382

+ 294

-01277

+ 11

+ 2

-1356

-1381

-1385

-1374029

3.72 + 1.18 + 1.16 J

3.22 + 0.42 J

$\frac{3.15}{3.20} + 0.444$

$\frac{3.15}{3.20} + 0.435$

⁴⁴
+0243 FK4 -8.8a

-135

+0225

$\frac{282}{20} = 14.1$
 $\frac{282}{22.2} = 12.7$
 $\frac{282}{23.5} = 12.0$
 $\frac{282}{30} = 9.4$

$M_F = +0.15$
 $M_V = +0.10$
 $M_W = +0.10$

1.2

2073
 668

 16584
 2438

 2438

 384764

4518.000*

11.000*

43.400*

48.000*

4.000*

-0.135*

0.027*

3.550*

51.286

-8.880

0.502

0.357

27.721

-0.151

0.204

-9.538

-0.202

0.912

-18.380

1355708

 12186
 98121
 12186

 16248

 668
 2081

4513.000*

11.000*

43.400*

43.000*

4.000*

-0.137*

0.029*

3.550*

58.9

51.286

-0.000

0.613

0.357

+34

20.305

-0.147

0.204

-11

-9.308

-0.208

0.912

-20

-10.668

2755
 560
 12
 4530
 11
 458
 -66
 32
 5150
 704
 (X)

1674
 102584
 474
 $+153$
 $+190$
 3.91
 $+0.655$
 num
 (3)

4.75
 $+1.51$
 $+189$
 $2E$
 388
 $+0.64$
 89
 4.74
 $+1535$
 $+185$

-30
 1560
 10036
 -027
 num
 $+0030$
 $+3746$

625

352
 266
 260
 250
 55

384
 44
 384
 200
 200
 51

10235
 1024
 1018

100330
 -0217
 $+0198$
 $+7$

1020
 -017

4533.000*

11.000*
45.800*
-66.000*
-32.000*
0.020*
-0.017*
5.400*
120.226
37.400

-0.098
-0.449
-23.507
0.054
-0.890
-26.763
-0.055
-0.082
-9.677

4030.000*

11.000*
45.800*
-66.000*
-32.000*
0.024*
-0.018*
5.550*
120.625
37.400

-0.115
-0.449
-31.593
0.063
-0.890
-25.164
-0.055
-0.082
-10.150