247 7 28.3 +14 43

+140/184

8.52 +1.10 +1.04 ① +0.45 ②

+66.3 ②

+67.8

+63°14097 7 21.1 +63 16 497

7 29 51.6 +63 4.12

~~492 -693~~

~~488 -119 S~~

McC-AC -.488 -.119 ~~440 108~~ 10.8 MO +9.2

~~1504~~

~~108~~

~~040~~

017
0924

+20.1

+7.6

-35.0

+17°378-177 7 23.6 +17 39 498

7 29 5.2 +17 27.01

13481 — — 1233 1.01:

1100 +1.43 — 1009 067

942

710

10.74 1.61

G 238°L

IDO

-229 -143 -224 -160

McC-AC -.227 -.177

NO Hyperbola

10.84 M0 +8.7

11" Sm=15 WOR27

~~300~~ 219-177

3335 — 8462 2732 280

9928 — 5324 0139 033

+0.75 +1.8

0864 087

0.3

+55°30267 7 23.6 +55 10 499

7 31 16.6 +54 57.87

McC-AC -.097 +.037 11.3 MO +8.2

+9°56-237 7 24.0 +9 6 248

7 29 10.6 +8 53.98

Toulouse -0.077 +.073 10.2 KS +7:

— 7 28.9 +34 47 116

7 35 6.7 +34 34.29

W5084

+15C 2W
QMO

MC. 491.14

-0.009 +0.123

11.4 M +9;

+19°861-86 7 30.5 +19 33 500

7 36.0 3.0 +19 20.13

55
27
82

McC-AC -.050 -.177 10.2 MO +8.3

+49° 1658 7 30.9 +49 33 501
54.5 26
7 38.0 +49 19.97
71
36
1.07

862
797
51 15

+10.3 (2) 0CW
+81 +1.1 ppm

McC-AC -.058 +.032

9.1 K8 +7.3

+103 +42
-0.058 +0.032
2.15

9.72 9.00 +0.47 (2)

-053 +032
-055 +030
-54
+30
1.8
+9.2

```
501.000*

  7.000*
 38.000*
 49.000*
 20.000*
 -0.058*
  0.032*
  2.150*
 26.915
 10.300

  0.076
  0.866

 10.964

  0.216
  0.165

  7.514

 -0.215
  0.472

 -0.919
```

M	:	-0.2860
MP	:	-203.0860
Ep (M)	:	0.4742
Sp (M)	:	0.1284
Ip (M)	:	0.8972
V	:	1.9461
VP	:	202.2092
Ep (V)	:	0.1913
Sp (V)	:	0.2526
Ip (V)	:	-0.2528
U	:	1.4392
UP	:	12.0803
Ep (U)	:	0.2982
Sp (U)	:	-0.2484
Ip (U)	:	-0.4592
VAR. VEL.	:	0.2009
MODULUS	:	23
DISTANCE	:	1.0008
PM. DEC.	:	30.0000
PM. R.A.	:	-8.4000
DEC.	:	43.3860
R.A.	:	1.2520

R.A.	:	7.650
DEC.	:	49.300
PM. R.A.	:	-84.000
PM. DEC.	:	30.000
DISTANCE	:	1.800
MODULUS	:	23
RAD. VEL.	:	9.200
q1 (U)	:	-0.426
q2 (U)	:	-0.264
q3 (U)	:	0.865
dU	:	73.080
U	:	9.634
q1 (V)	:	-0.259
q2 (V)	:	0.952
q3 (V)	:	0.163
dV	:	202.602
V	:	6.144
q1 (W)	:	0.867
q2 (W)	:	0.154
q3 (W)	:	0.474
dW	:	-203.090
W	:	-0.290

+40° 1926 7 31.8 +40 26 502

7 38 18.5 +40 12.90

10.14 K1.6

Hls. pl. II 78 -.063 -.086

10.14 K8 +7.7

6109 -5226

7417 -4525 1067

-1087

-2.3

0182

3,1

+19°1797 7 32.4 +19 55 504

7 37 57.7 +19 41.89

340 25' L

MeC-AC -.352 -.161

-321 -111 L

-336 -136

10.3: K8 +7.1

3731 8280 3537

9538 5671 0740

+2°1766 7 37.5 +2 29 505

7 42.426.6 +2 15.28

49
24
7 3

McC-AC +.080 -.198 10.2 MO +8.7"

+80
-198

1040
-26

R.A.	:	7.700
DEC.	:	2.250
PM. R.A.	:	80.000
PM. DEC.	:	-198.000
DISTANCE	:	1.600
MODULUS	:	21
RAD. VEL.	:	-26.000

q1 (U)	:	-0.436
q2 (U)	:	0.453
q3 (U)	:	0.777
dU	:	-590.778
U	:	-32.553

q1 (V)	:	-0.251
q2 (V)	:	0.768
q3 (V)	:	-0.589
dV	:	-816.117
V	:	-1.740

q1 (W)	:	0.864
q2 (W)	:	0.452
q3 (W)	:	0.221
dW	:	-96.631
W	:	-7.775

GL285 7 421 +03 41 +265

7 ± 0 Mi

~352 ~456

352
456
103
+265

```
      R.A. :    7.700
      DEC. :    3.700
 PM. R.A. : -352.000
 PM. DEC. : -456.000
 DISTANCE :   -1.030
  MODULUS :   6
RAD. VEL. :   26.500

    q1 (U) :   -0.436
    q2 (U) :    0.434
    q3 (U) :    0.789
        dU : -210.842
         U :   19.584

    q1 (V) :   -0.251
    q2 (V) :    0.783
    q3 (V) :   -0.569
        dV : %-1274.64
         V :  -23.017

    q1 (W) :    0.864
    q2 (W) :    0.446
    q3 (W) :    0.233
        dW : %-2403.1
         W :   -8.786
```

+54° 1175
CC439 7 44.8 +53 47 8.8 dN6 12.8 f
5186

3W

13m 4"

~~130~~
5
0130 - 529 Y
0 -3
-532

-44

4 284 7 45.2 +20 30

+48.4 (2)

+48.4 (3)

10.47 840

958

1.433 -44

L285

7.75

+205

1405

-48

1.530

-44

1.60

+48.5

```
R.A.      :
DEC.      :
PM. R.A.  :
PM. DEC.  :
DISTANCE  :
MODULUS   :
RAD. VEL. :

q1 (U)    :
q2 (U)    :
q3 (U)    :
Ub        :
U         :

q1 (V)    :
q2 (V)    :
q3 (V)    :
Vb        :
V         :

q1 (W)    :
q2 (W)    :
q3 (W)    :
Wb        :
W         :
```

```
      R.A. :      7.750
      DEC. :     20.500
PM.   R.A. :   1409.000
PM.   DEC. :   -980.000
DISTANCE   :      0.650
  MODULUS  :         13
RAD. VEL.  :     49.500

    q1 (U) :     -0.446
    q2 (U) :      0.189
    q3 (U) :      0.875
        dU : %-3669.3
         U :     -6.197

    q1 (V) :     -0.243
    q2 (V) :      0.915
    q3 (V) :     -0.322
        dV : %-5769.7
         V :    -93.756

    q1 (W) :      0.861
    q2 (W) :      0.356
    q3 (W) :      0.361
        dW :   3736.00
         W :     68.33
```

R.A.	:	7.750
DEC.	:	20.500
PM. R.A.	:	1.530
PM. DEC.	:	-966.000
DISTANCE	:	1.600
MODULUS	:	2
RAD. VEL.	:	48.500
q1 (U)	:	-0.446
q2 (U)	:	0.189
q3 (U)	:	0.875
dU	:	-869.202
U	:	24.266
q1 (V)	:	-0.243
q2 (V)	:	0.915
q3 (V)	:	-0.322
dV	:	-4192.22
V	:	-103.190
q1 (W)	:	0.861
q2 (W)	:	0.356
q3 (W)	:	0.362
dW	:	-1623.0
W	:	-16.34

+37°2446 7 39.0 +37 34 SOG

7 45 19.6 +37 20.01

McC-AC -.046 -.215 10.36 K8 +7.7

+21° 600-406 7 39.7 +20 44 507

7 45 16.9 +20 29.97

+484 (5)

1.447 - 550 ft

1.446 -553

1.444 -556

Ci 20.641 +1.50 -.94 1.445 -554 11.4: M2 + 9.8

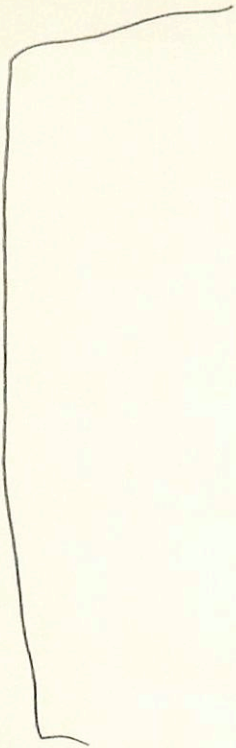
+0.071

1.541 1.50

-940 -554

0.25 0.75

+48.4 +48.4



7 44.4 +22 55 509

7 50 3.5 +22 40.38

44 10.94 M0 +8.2

```
                                    0.861
                                    0.356
                                    0.362
                                4241.765
                                  77.454

                                   -0.243
                                    0.915
                                   -0.322
                             %-5931.562
                                  -99.355

                                   -0.446
                                    0.189
                                    0.875
                             %-3938.340
                                  -13.292

                                   48.400
                                    0.750
                                   14
                                -984.000
                                -543.000
```

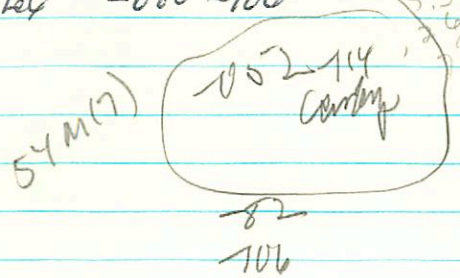
+60°1934 I 42.0 +60 29 508
50 11.6 +60 14.52

McC HC -.074 -.075 10.8; K5 +7.1

+14°1802 7 52.1 +14 12 18

7 57.4 25.8 +13 56.47

EB key −080 −106 5.3 10.3 M10



> 25pc

+80

1886] 125

8723] 10

+33°, 213-242 7 53.9 +34 0 249

8 0,0 0.2 +33 44.20

61
30

Mt. 3, 14, 27

-40.8 (1)

-34 1 day HHR Em -40 8 (2)

McC -0.150 +.089

10.4 MO +7.9
to ".014

+44.1710 Σ 54.2 +44 22 19

Y1911 8 57.4 0.957.6 +44 15 +44 6.13

Holo +152 +008 +180 MoR W5352

9.8 Mo

+27C 2W dMo +20.8 2 occ

+154 +003

8.6 7.93 7.0

9.81 9.03 +0.535 (2)

+0.160 +0.010 +24.0

9.83 +1.27 +1.19 (1)

904 +0.535 (2)

+145 occ +24.0 1-9

```
19.000*

 8.000*
 0.900*
44.000*
 6.000*
 0.165*
 0.000*
 1.900*
23.988
24.000

-0.389
 0.854

11.163

-0.156
 0.061

-2.280

 0.660
 0.517

28.252
```

+34°1740 7 56.4 +34 29 511

G40-43 8 2.5 31.1 +34 12.90

146 0.280 6.1

3

156 ✓

4.9 20LW.

18.6

McC-AC +.156 -.230 10.4 MOp +8.4

156 -232-

189

-232

-1.5

+7°1919 7 59.3 +7 48 512

8 1.8 +7 17 40

8 4.4 24.6 +7 31.62

ADS 6597;
$d = 5''.7$
$\Delta m = 0.5$ mag.

M_c C-AC −.006 −.131
+.003 −.141

9.1 K8 +7.4

0.000 −0.136

+9°61-34 8 0.3 +9 37 513

8 5 28.1 +9 20.50

McC-AC -.235 +.104 10.8 K8+7.6

+33°.1646 7 59.7 +33 14 250

8 5.7 45.1 +32 57.51

+4 H+HP Lum
Hγ Lum

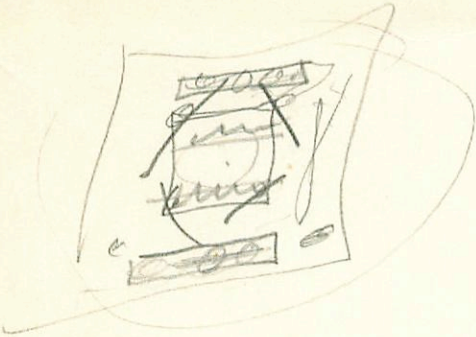
Inc C −0.048 −.192

10.3 170 +8.3
+0".033

35

Dyer (1954) 13" Gp.

−454	012	869	+1124 −0109	10.15 +2.3 +3.5
−202	971	−128	+0460 −8836	−8376 −21.9 −0.5
846	238	478	−1925 −2166	−4091 −10.2 +1.9



+48°242-223 8 0.9 +48 1 514

8 7 46.1 +47 44.32

Wolf 295 -.02 +.11 11.29 M0 +8.7

+52° 40'15-401 8 0.9 +51 45' 515'

8 8 3.1 +51 28.31

MCC-AC +.164 +.015 10.89 K8 +7.4

+32°30817 8 2.7 +32 18 517

8 8 42.0 +32 1.16

McC +.008 +.067 11.2: M0 +8.3

520 1.680

-35 C 2w

CC462 8 09.2 +09 01 12.5 dm5

5-431

Ross 619

1.47 gh(10)

1.5 Gw(8)

1.45 ±.006 VV

213

25.7
25.205

1.555

+1.21 -5.26

+1.14 5.07

1.0803 -5.087 25 n0

+1.076 -5.094 S(R)

1.107 -5.082 VV

1.088 -5.088

270

0426

24.2

$u_l^2 + u_s^2 =$

0

25.205

$u_l^2 = 0.0$

1.140

1.05/90

1102
-5088
-085
-35

−14.°2469 8 12.0 −14 45 518

8 16.4 23.7 −15 2.82

Cantley

0036 054

052-054

+548 20cal

+852 10cal

McC-AC +.055 −.048

9.6' K8 +7.1

+0.055 −0.048 +55 22

870
804
545
0
2
6406 0256
7233 −9997

44.7

1.75

+23.0

−18.8

+13.1

```
518.000*

  8.000*
 16.400*
-15.000*
 -3.000*
  0.055*
 -0.048*
  2.200*
 27.542
 55.000

 -0.289
  0.536

 21.532

 -0.166
 -0.820

-49.679

  0.094
  0.200

 13.572
```

1.75

0130

4.34

+7.2

57.4

-87.9

15.3

+6° 63-88 | 8 12.3 | +6 4V | 519

8 17 22.1 | +6 26.10

ND

✓

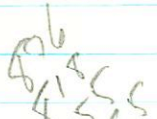
McC-AC -.236 +.047

11.4 K8 +7.4

-.27 +.07

+52°1308 8 16.0 +52 39 520

8 19.5 +52 30
8 23.176 +52 20.57



-57.4 10Lw

A -55.6 3kpp

B -55.5 3kpp

9.2 K8 +7.3

-50.4 10Lw

A -55.4 (3)

B -55.4 (3)

M_c C-AC -.053 +.133
-.057 +.130

-0.055 +0.132

-51.9
2.55

9.74 9.14 +0.415 (2)

B 10.13 9.41 +0.455 (2)

520.000*

8.000*
23.100*
52.000*
21.000*
-0.055*
0.132*
2.550*
155 32.359
-51.900

0.001
0.791

-41.056

0.644
0.190

F12 10.953

-0.212
0.581

-37.001

+14.1876 8 12.8 +14 32 21

8 18.16.9 +14 14.03

53
26

104 MO

EB lw -072 -266

+1982

34 M(4)

+15 C 2W

dMO

-0.072 -0.266

+22.1924 Y1991 W5538 — 8 8 — 15.0 17.6 20,634.5 — +22 +22 +22 — 19 11 0.77 — 22

Lm18-986 +32 -22

9.54 +1.18 +1.02 ②
8.89 +0.485 ②

+239 -214 +284

+0.320 -0.220

+0.244 -0.239 Y
+2 −
+.301 -250

+250 -230 -17.0

-18.5

24.5

-271 Upper
-203 2 DLW

9.8 MO

-17 C 2W

dMO

-557 155 807 | -0792 -0231
-144 935 -325 | -0205 -1108
818 247 493 | 1163 -0351

-1022 | -25.0 -14.9 | -39.9 +286 -257
-1313 | -32.2 +6.0 | -26.2
0812 | -19.9 -9.1 | -28.9

308 -257 155 -203

851 785 301-250 271-265 260-256

22.000*

8.000*
20.600*
22.000*
1.000*
0.280*
-0.230*
2.000*
25.119
~~-17.000~~
-20.3
-0.952
0.807

-10.30
~~-27.644~~

-1.210
-0.325
-23.78
~~-24.054~~

0.762
0.493

9.13
~~10.751~~

R.A.	:	8.350
DEC.	:	22.000
PM. R.A.	:	308.000
PM. DEC.	:	-257.000
DISTANCE	:	1.550
MODULUS	:	20
RAD. VEL.	:	-20.300

q1 (U)	:	-0.558
q2 (U)	:	0.196
q3 (U)	:	0.806
dU	:	-994.423
U	:	-36.668

q1 (V)	:	-0.142
q2 (V)	:	0.935
q3 (V)	:	-0.326
dV	:	%-1331.448
V	:	-20.572

q1 (W)	:	0.817
q2 (W)	:	0.297
q3 (W)	:	0.494
dW	:	744.744
W	:	5.177

+33°.1694 6510 8 16.0 +33 6 251

Y1996 8 21 59.5 +32 47.63

8 18.9 22.0 +32 57

W5550 44M(7) 30V (10)

16.11 1.02 T=20W

10.04 +1.07 +86 R

10.07 +1.02 warm

-77.564W

-77.700W

N T=42 9.50 43 warm

20.473 0.00 -.64

9.6 K8 +7.5

T0°.036

0.000 -0.640

100 -660 G

035 -669 L

+10 -655 3.1

```
   R.A. :     8.150
   DEC. :     9.000
1. R.A. :  1102.000
1. DEC. : %-5088.000
ISTANCE :    -0.850
10DULUS :     7
). VEL. :   -35.000

q1 (U) :    -0.522
q2 (U) :     0.368
q3 (U) :     0.769
     dU : %-11563.160
      U :  -105.104

q1 (V) :    -0.176
q2 (V) :     0.836
q3 (V) :    -0.519
     dV : %-21075.270
      V :  -124.308

q1 (W) :     0.834
q2 (W) :     0.407
q3 (W) :     0.372
     dW : %-5512.307
      W :   -50.284
```

```
1996.000*

   8.000*
  22.000*
  32.000*
  48.000*
   0.010*
  -0.655*
   3.100*
  41.687
 -78.200

  -0.159
   0.826

 -71.257

  -3.048
  -0.145

-115.680

  -0.573
   0.544

 -66.414
```

+29°.1754 8 18.4 +29 23 252

8 21.3 +29 14
8 24.2 ~~+3.8~~ +29 4.37

+34.4 (1)

MeC-AC -0.234 +.250 9.9 K8 +7.7

+5°63-391 8 17.6 +4 44 522

8 22 36.2 +4 25.51

McC-AC -.051 -.090 10.39 KS +7.4

+23°421-363 8 18.4 +22 26 523

8 23.9 58.3 +22 7.38

McC-AC +.008 +.026 10.4 MO +9.0

+62°1883b	8 17.5	+62	12	521
	8 25 36.9	+61	53.34	

McC-AC +.561 -.670 10.0 MO +8.3

+46° 354 -95 8 19.1 +46 13 524

8 25 45.0 +45 54.25

Hg. pl. II, 1 +.159 -.017 11.1 MO +8.0

+36°28826 8 19,3 +35 31 253

8 25 23.2 +35 12.26

P=32.7
a=0.56

Inc C-AC -1.003 -.454 10.8 IMO +10.2

WORK

1940.65 211 0.57 4WOR 11.5 / 11.6

5520 8 28.1 +52 21 Vy 520

+520,1605

9.73 +1.06 +0.88 (1) 9.4 +0.415 (2)

10.14 +1.15 +1.050 9.44 +0.455 (2)

5516 (3)

5512 (3)

+46°14'05"
CC474 8 26.0 +46 05 9.9 dM6 -22.3 8 4w

5587

-.290 - .410 Ci 474

+17°626-136 8 21.6 +16 45 525

8 26 58.5 +16 26.04

McC-AC +.022 -.038 11.0 MO +8.3

-9°2535 8 22.7 -9 30 526

8 27.3 16.5 -9 49.04

46

23

064

0064

McC-AC -.054 +.035 -275 ND 10.3 MO +8.1

017

46

+16°1753 8 24.3 +16 19 527

8 29 39.4 +15 59.74

McC-AC -.097 -.088 10.1 K8 +7.4

254 8 222 +67 28

+67 0 552

MD 310

9.30 +1.42 +1.23 ① +1.06 10.71 ①

+13.0

+43.1827 8 24.2 +43 03 23
Y2036 8 30.6 38.3 +42 43.69

W5623

-9.2W
dec 5

26M(12)

+195-50-9

Mlb +192 -046

+204 -092

+0.192 -0.046

9.8 M0

10.39 9.76 +0.415 (2)

10.34 +111 +109 (1)

```
 23.000*

  8.000*
 30.600*
 42.000*
 44.000*
  0.195*
 -0.050*
  3.250*
 44.668
 -9.000

 -0.521
  0.806

-30.541

 -0.342
  0.022

-15.464

  0.722
  0.592

 26.941
```

M 3107

72445

72986

33505

8 33.2 +6 45

-0084 -111

-133 +11

3

8238-175

5618-3558

+32°.1769 8 29.5 +32 27 255

8 35 25.0 +32 7.14

K5

Inc C-AC -0.078 -.102 10.2 K8 +7: