+10°.1032 6 2.9 +10 23 236

6 8.29.1 +10 21.90

W 3895

+1426 104M(8) 89V(10)

52 58 9

+52C 2md

dm3

+50 Dy M2

10.3 MS +12:

+0°.101

Ci 20.375 +0.07 -.92

+0.883 -0.932 v(R)

+0.3

3" Van del Ramp

+0.080 -0.930

0.8 -9.5

74Ri

43386 6 13.6 +12 17 5.1 dF5 +8.7a

3969

8033

56

+0056 +185 N30

+0054±1.7 +189±1.5 Rc N30

+00555 +1836

+00557 +1834

+0816

+092 +183

+84

+183

1.65

+8.7

43386 6 13.6 +12 17 F5IV-V

HR2241
GC8033

74Bri

5.04 +42 -025

52
.284 .153 .438 (8) SRC 2.663 (4) C+
291 133 516
(218) (469)

[m$_1$] 204 +18

[C$_1$] 381 +6 170 +12.9 +9.4 +16.5
+209 +553 +770

+

R.A.	:	6.200
DEC.	:	12.300
PM. R.A.	:	84.000
PM. DEC.	:	183.000
DISTANCE	:	1.650
MODULUS	:	21
RAD. VEL.	:	8.700

q1 (U)	:	-0.113
q2 (U)	:	0.288
q3 (U)	:	0.951
dU	:	205.605
U	:	12.671

q1 (V)	:	-0.468
q2 (V)	:	0.829
q3 (V)	:	-0.306
dV	:	536.664
V	:	8.812

q1 (W)	:	0.876
q2 (W)	:	0.480
q3 (W)	:	-0.041
dW	:	757.293
W	:	15.830

R.A.	:	6.200
DEC.	:	12.300
PM. R.A.	:	84.000
PM. DEC.	:	183.000
DISTANCE	:	1.650
MODULUS	:	21
RAD. VEL.	:	8.700
q1 (U)	:	-0.113
q2 (U)	:	0.288
q3 (U)	:	0.951
dU	:	205.605
U	:	12.671
q1 (V)	:	-0.468
q2 (V)	:	0.829
q3 (V)	:	-0.306
dV	:	536.664
V	:	8.812
q1 (W)	:	0.876
q2 (W)	:	0.480
q3 (W)	:	-0.041
dW	:	757.283
W	:	15.830

+18° 1160 6 8.9 +18 2 472

6 14.5 27.1 +18 0.05

5 6
2 8
6 4

McC-AC +.111 -.082 10.26 MO +7.9

43587 Ida-86 G10-86 6 14-6 +05 09

bl 2821

B 9 C"

Tel 180 4H0 2604

43745 2284 6 65.0 -22 42 -4.5

BC8065

Y 1465

-220,364

0585

w3893

optimum 10m 20"

6.39 +0.56 Caps

B-V dGO -2.96 a(4)

6.03 + 59 (1.69)

85

54

GO± -6.1 25k

	+125	-256
BC	+122±5	-252±4
Y	+100±10	-293±10
Caps	~~+119±10~~ +167	~~-275±8~~ -254

+0088 -255

+0078 -255

106.5

+119

+120 -255 -4.5

2.15

857

537

6.25

-22.7

+119

-255

12.1

-41

Bill

Bill Smith

Sery +6.1

-3 -67 5 0 20

-2 -45 -4 0 030

-52 -41 0 020

-34 -26 -1

11±3 C(4)

+0088 ± 4.6 −252 ± 4.0
+0090 −256
+0070 −255

57.294 1908.0 −22 41 31.45 1902.0
370 +12.10
56,924 19.55

54,256 +0089 −255
02.882 +.123
57.138
15
156

56.52
+30.12
26.64
−1.14
27.78
+46
27.32

1933.62

57.135 25.4
15
150

153
+.229

68.85
86.54
−1
8654

57,499
1
499

28.11 1933.15 33.4
+24 31.4
27.87 119

27.60
−8.05

43745.000*

6.000*
15.000*
-22.000*
-42.000*
0.122*
-0.255*
2.150*
40.8 26.915
-4.500

-1.015
0.613

-44 -30.077

-0.873
-0.732

-32 -20.203

0.056
-0.299

+3 2.846

9/14 1/8 1/8 ② 9.3N 047 ①

−13°1434 6 11.7 −13 49 473

6 16.0 2.7 −13 51.26

Tacubaya +.067 +.327 9.8:M0 +8.1

+0.067 +0.327

+316

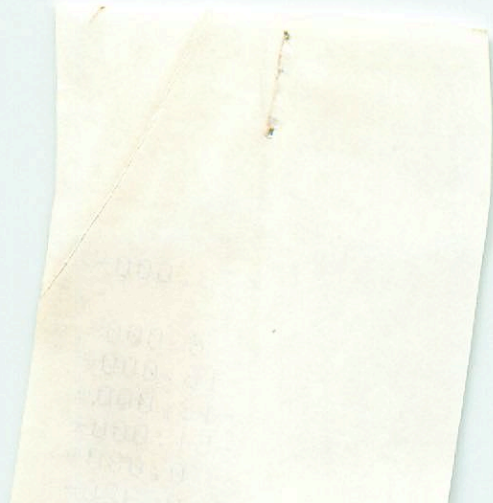
+091

091

316

+080 +320 24

1064



473.000*

6.000*
16.000*
-13.000*
-51.000*
0.000*

0398

100.0

-513

-0

+67°.2080 6 14.5 +67 41 237

6 24 29.7 +67 37.97

Green Ast. +0.034 −.080 11.0 M +7°

45088 6 232 +18 47

+16414

283

-0055 +71 candy

30630

12+121

11952 -16406

6820 +10

2

5544 -3506 2038

-8284 -6607 +1484

1981

0441

-559

RLH AB 06 24.8 -02 14

5 406

V577AM

4860 2302
8740 4731

+154 @ Dark
+24 7 MPH

704
-64
1.9x
+30.4

35.6
34.7
(16.0)
46.4
(131)

W4143 6 26.8 -2 47 11.3 Amer +240
CC390

4 recs.

+706 -686
+713 -688 S(R)
+705 -646
705 -641

-172	+528	+834	-5813 -11721	-2.3032 -9.2	20.0 +41
-435	+717	-544	-14701 -2.3382	-3,8083 -1.5.2	-13.0 -28
+884	+455	-107	2.9876 -1.4838	+1,5038	+6.0 -2.6 +3

16.5
0.55
Wooley Axis

6 265 -02 4/6 +24 dmge

Orbit 1107
14.4

G 106 4/4

+30.4 Ag. J. Suppl 19,357

Rosebud

+24 Mexican cat.

244.

4509

UCB40

4860 2255 935
2702
8740 4738

Heim

T 25

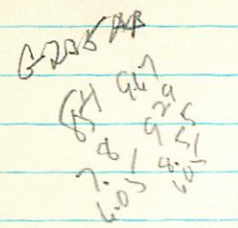
v-b=0.48

u-b=

323

446

+52° 10 88 6 20.7 +52 30 474



McC-AC +.100 +

WORK

1940.09 151.7 0.8s swoon

474.000*

6.000*
28.300*
52.000*
26.000*
0.100*
0.089*
2.500*
31.623
3.000

-0.245
0.906

-5.027

0.156
0.281

5.768

0.564
0.316

18.791

474 6 28.3 +52 56

+52.1058

9.72 +1.26 +1.17 (1) +0.54 (1)

Wooley 6

$\Delta m = 0.^m 1$

1"

+0.100 +0.089 $m_2 - m_6$

+3.0

~~23.253~~

+401623

6 28.5 +40 26

9.50 9.50 II = 9.06

10.15 1.20 0.47 -6.06

3.0

+245 (4) 444

1

4.1

Пальто23 -010 -140 ИЯ

13

-140

3.0

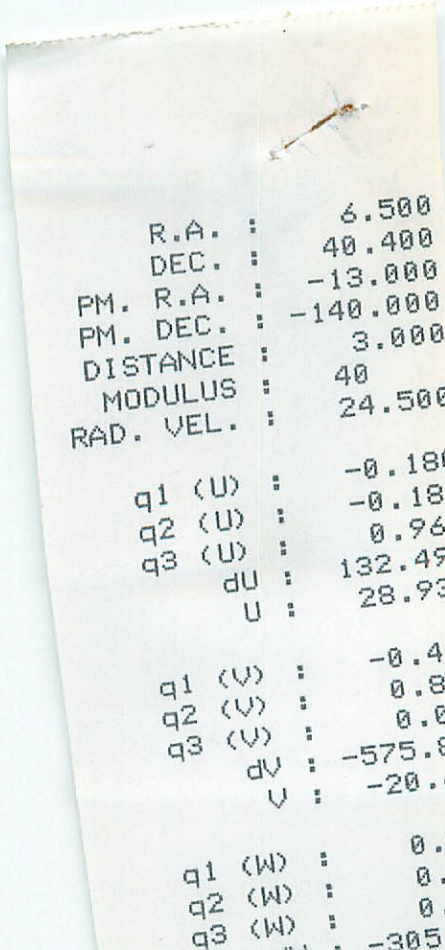
R.A. : 6.500
DEC. : 40.400
PM. R.A. : -13.000
PM. DEC. : -140.000
DISTANCE : 3.000
MODULUS : 40
RAD. VEL. : 24.500

qi (U) : -0.150
q2 (U) : -0.187
q3 (U) : 0.966
Ub : 132.478
U : 28.934

qi (V) : -0.430
q2 (V) : 0.898
q3 (V) : 0.094
Vb : -575.810
V : -20.630

0.885

qi (W) : 0.398
q2 (W) : 0.242
q3 (W) : -305.706



R.A. :	6.500
DEC. :	40.400
PM. R.A. :	-13.000
PM. DEC. :	-140.000
DISTANCE :	3.000
MODULUS :	40
RAD. VEL. :	24.500
q1 (U) :	-0.180
q2 (U) :	-0.187
q3 (U) :	0.966
dU :	132.498
U :	28.934
q1 (V) :	-0.430
q2 (V) :	0.898
q3 (V) :	0.094
dV :	-575.810
V :	-20.630
q1 (W) :	0.885
q2 (W) :	0.398
q3 (W) :	0.242
dW :	-305.706

+34°1378 6 22.5 +34 38 475

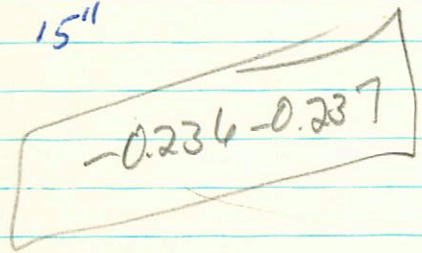
6 28,8 48.9 +34 34.12

63
31
54

+0.4 10CW

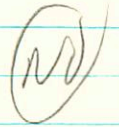
McC-AC -.236 -.237 9.81 MO +0.1

K7-M2 15"



6 23.1 +68 1 476

6 33 9.5 +67 56.78



McC -.015 -.074

11.0: MO +8.3

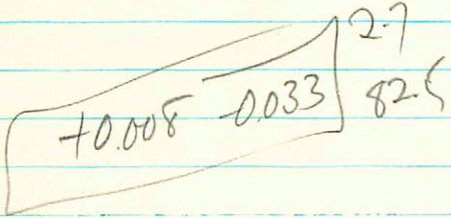
+19°1405 6 28.5 +19 52 477

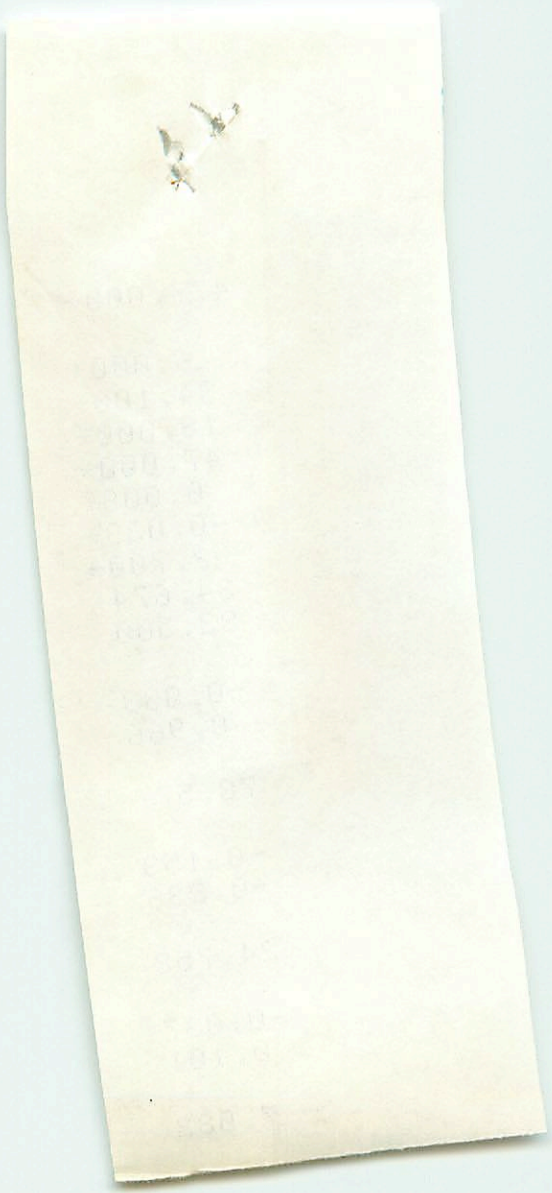
6 34.1 7.2 +19 47.34

10.16 1.20 1.14 0.47 ② op +82.5 ①

McC-AC r.008 -.033

+82.6 2 up fm 20cu 9.8 MO +7.7
+82.5





477.000*

6.000*
34.100*
19.000*
47.000*
0.008*
-0.033*
2.700*
34.674
82.500

-0.033
0.966

78.577

-0.153
-0.236

-24.758

-0.037
0.101

7.082

+72°.3338 6 27.3 +72 3 238

6 38 36.9 +71 58.12

Green. Ast. -0.111 -.544 11.0 Mo tg. 6

+0".040

474 6 454 +4.0 23

+4.0°1003

8.58 +1.20 +1.15 (2) +0.485 (2)

241 415 AOR3
243 417
200 395
245 422
---
228 713

6336 408 (11)

249 408
+1 +22

472 504
473 408
0.70 1.58
-50.0 -52.2

-474

+60° 1003 6 36.9 +60 29

6 45.4 26.1 +60 23.00

17048948

+9 46 VV

8.5 4.2 1.9

747 1.9 5.8

-47.4 10cW

Berg. mill +.22 +.41

8.6: MOp +8.2

'06 +0.220 +0.410

'34 435

8.56 285 +0.485 (2)

+243 +417 VVR

+215 +440 4(1)

+224 +467

+225 +435 0.95 -47.4

0534
1.34

-64.7

+3.0

+7.7

479.000*

6.000*
45.400*
60.000*
23.000*
0.225*
0.435*
0.950*
15.488
-47.400

-1.271
0.837

-59.342

1.303
0.381

2.118

1.441
0.393

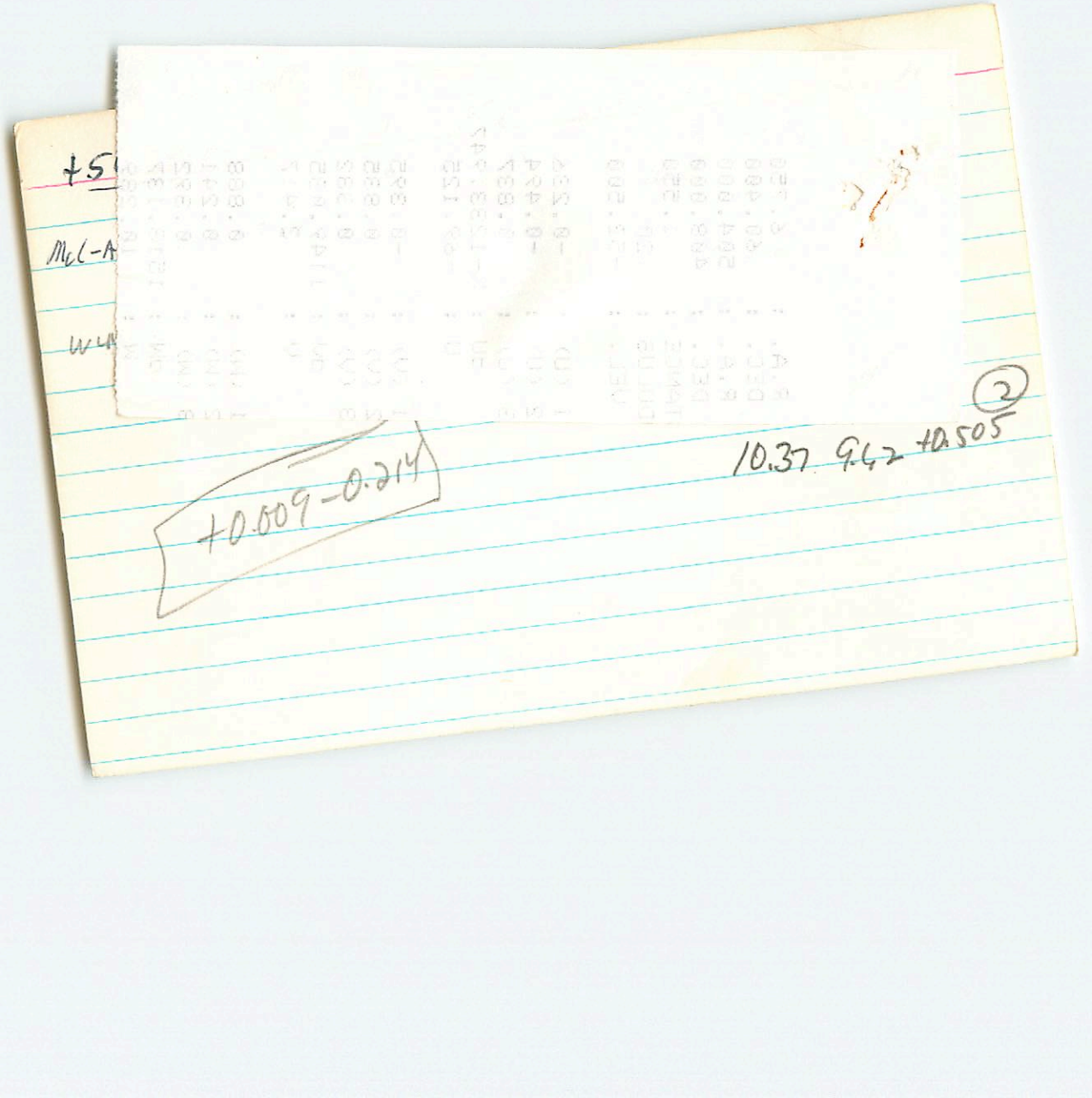
3.677

```
    R.A.  :      6.750
    DEC.  :     60.400
M. R.A.   :    482.000
M. DEC.   :    413.000
ISTANCE   :      0.700
MODULUS   :     14
D. VEL.   :    -50.000

 q1 (U)   :     -0.236
 q2 (U)   :     -0.494
 q3 (U)   :      0.837
      dU  : %-1233.503
       U  :    -58.867

 q1 (V)   :     -0.395
 q2 (V)   :      0.835
 q3 (V)   :      0.382
      dV  :   1189.201
       V  :     -2.673

 q1 (W)   :      0.888
 q2 (W)   :      0.241
 q3 (W)   :      0.392
      dW  :   1473.121
       W  :      0.710
```


+0.009 -0.214
10.37 9.42 +0.505
2

6 46.0 +55 55 10.5 dHG +45 C

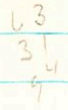
4433

+.010 -210

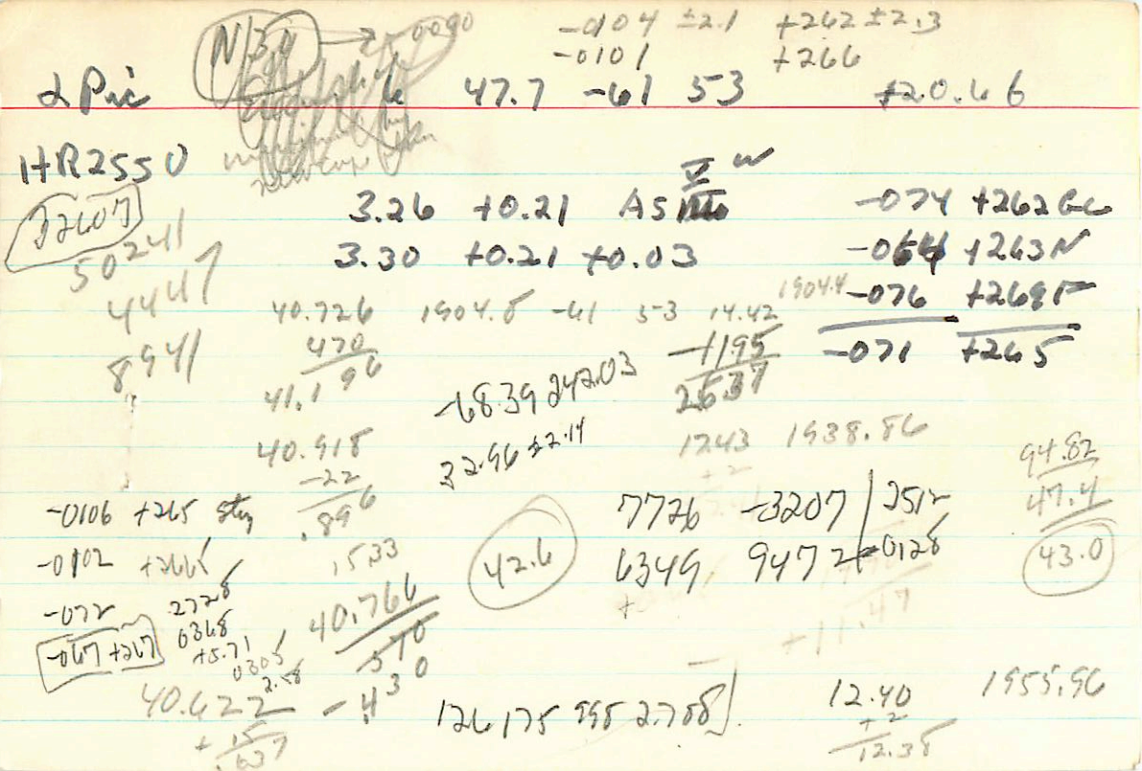
+009 -214 MC-AC Unp.

+35°1493 6 39.9 +35 19 480

6 46 14.1 +35 12.74



McC-AC +.165 -.279 10.5 MO +8.0

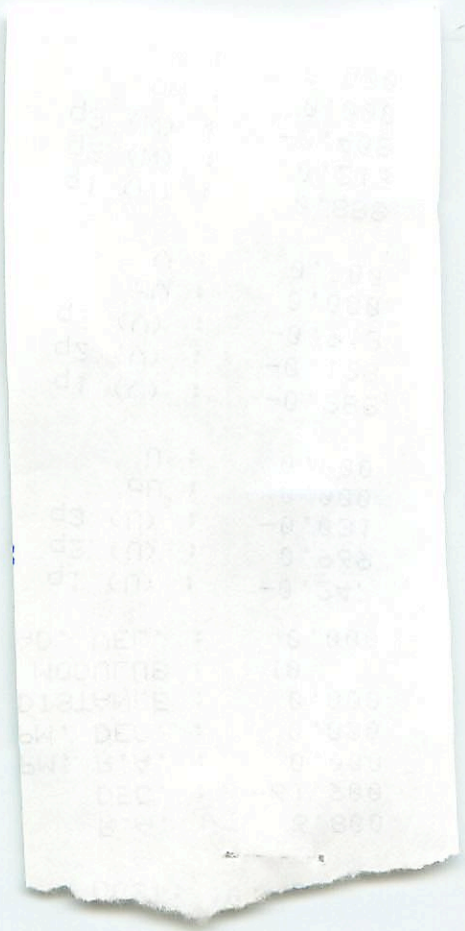


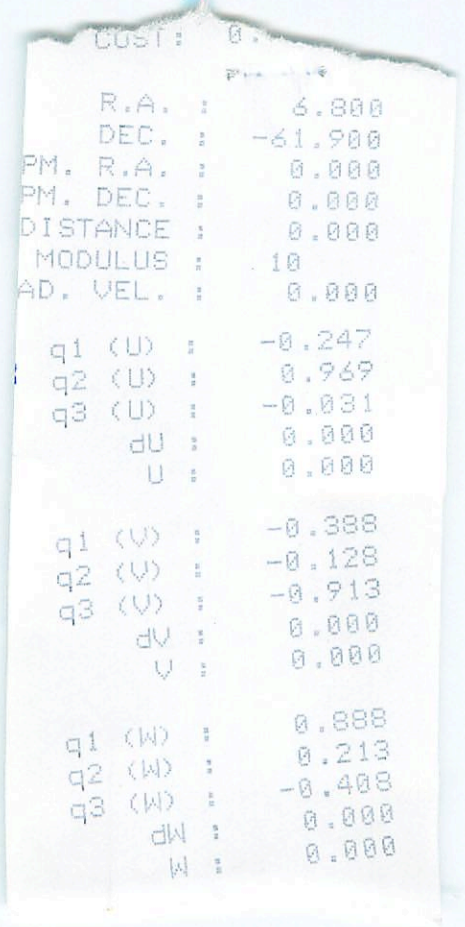
938 -206 -882 471 -071 +265 +20.6 -23 -18 592

069 229 015 048 095 1.156 +9.7 -2 +9 063

0 +27 -9

F20 -19 -8




COST: 0.
R.A. : 6.800
DEC. : -61.900
PM. R.A. : 0.000
PM. DEC. : 0.000
DISTANCE : 0.000
MODULUS : 10
AD. VEL. : 0.000
q1 (U) : -0.247
q2 (U) : 0.969
q3 (U) : -0.031
dU : 0.000
U : 0.000
q1 (V) : -0.388
q2 (V) : -0.128
q3 (V) : -0.913
dV : 0.000
V : 0.000
q1 (W) : 0.888
q2 (W) : 0.213
q3 (W) : -0.408
dW : 0.000
W : 0.000

6·57 592 607 204 21
605 596 597 187 20

6.800
-5.100
-547.000
-8.000
0.000
10
-10.300

-0.247
0.556
0.793
616.744
-2.005

-0.388
0.693
-0.607
976.580
16.018

0.880
0.459
-0.045
-2310.145
-22.640

A257 6 5M +38 20

687m

~~857~~ 426

-714

~~68~~-854

426

- 1.28

23.0

+55°1142 6 43.8 +55 48 481

6 51 42.3 +55 41.10

McC-AC +.077 +.062 10.6 1110 +8.5

+47° 1321-215 6 45.5 +47 10 483

6 52 35.4 +47 2.93

McC-AC -.064 -.125 10.88 K8 +7.4

+12.1343 MJ051.1 6 46.6 +12 21 12

6 52.16.9 +12 13.87

Rasgil -03 -34 B-V 53 24

10.56 1.21 —

9.82 0.50 —

9.72 0.58 -328 Ly

10.2 M0

30 Rasgil (2)

+30 C. 2W

dM2

W4524

66 Mic (2) W0

Y1614

G110-21

-0.030 -0.340

6.9 +394 (2) WA1

+12.2 15.7

-0.9 -328

-328 12

1.5

+15.4

10.53 1.26 1.23

9.49 709

9.77

```
    -6.300
    12.200
   -59.000
  -320.000
     1.500
        20
    15.400
    -0.269
     0.297
     0.916
  -387.600
     6.378
    -0.374
     0.845
    -0.383
 -1210.921
   -30.061
     0.888
     0.446
     0.116
  -935.584
   -16.878
```

90
3.16
0.23

-3.

23.5

-57.9

-17.2

-38.4

CC402A

6 53.0 +40 09

9083

4537

3254

20A
26M
27 gl
34W
43 ✓

+40017 58

+0086 +0090 ± 10.6 −457 ± 8.7

−443

8.4 dM10

10.7

+60.57 34

−9.159

−342

58.817

58.96

06
906

+0096 −442

+0933 −440

+107
106 −439

1912.0 +40 8 45.85 19093

18.60
4.45

+5185 (3)

55.3
−2
55.28

1930.0

54.377
374

(14.11)

−9
4061
4052

9.12 1/12 1.0 8.7043
11.13 1.42 10.09 81

764
382
6 4 6

076
038
1 1 4

(580)

4265
−9
4256

189
−43
145
+49.5

164

+40° 1758 L 53.0 +40 09 A +49.46 w(15)

GC 9083

w 4537 A 9.08 +1.15 +1.09 1.5 R B +60.58 w(3) ?

Y 1616 B 10.8 37" M1

Virgo 240

A +513 B +513 +0108 +0110 +0099 +090

A +123±2 −423±4 V

B +126±2 −407±3 ✓

124 415 −443 mm −457 dec

+103 −457

+55 −69 +6 .030

+53 −51 +10 .040

+52 −41 +12 .050

A +51.3 B +51.2

.40cw +5.2 W ✓ +49.3 ccw

V 0.5

48 V(16)

23 A 120

27 M(7)

36 Y 4(9)

33 w(10)

32 ± Y

```
R.A.      :    6.988
DEC.      :   40.150
RM: R.A.  :  139.000
PM: DEC.  : -439.000
DISTANCE  :    1.650
MODULUS   :       21
AD. VEL.  :   49.500

dl (U)    :   -0.269
d2 (U)    :   -0.168
d3 (U)    :    0.948
dU        :  213.170
U         :   51.508

dl (V)    :   -0.374
d2 (V)    :    0.926
d3 (V)    :    0.857
dV        : X-2114.497
V         :  -42.362

dl (W)    :    0.888
d2 (W)    :    0.339
d3 (W)    :    0.312
dW        :  -258.978
W         :    9.884
```

R.A.	:	6.900
DEC.	:	40.150
PM. R.A.	:	139.000
PM. DEC.	:	-439.000
DISTANCE	:	1.650
MODULUS	:	21
RAD. VEL.	:	49.500
q1 (U)	:	-0.269
q2 (U)	:	-0.168
q3 (U)	:	0.948
dU	:	213.170
U	:	51.508
q1 (V)	:	-0.374
q2 (V)	:	0.926
q3 (V)	:	0.057
dV	:	%-2114.497
V	:	-42.362
q1 (W)	:	0.888
q2 (W)	:	0.339
q3 (W)	:	0.312
dW	:	-258.978
W	:	9.884

+40°.1758 GC40 83 6 46.5 +51 +18 −47 −204 +40 16 +12 −15 240

Y 1616 6 49.5 +40 13

h4537/8 6 53.1/6.7 +40 8.83 +51.2 (3) A

+51.5 (3) B

A 9.8 +1.15 +1.09 N5E R

23 A(20)
28 M(7)
37 Y/K(8)
33 W (10)
43 V (16)

C 18.837 +0.13 −.41

8.4 K8 +7.5

+0".032

A +44.4 6 5W dm0

B +60.5 / 3W dm2

8.7 K4, 10.8 M1, Yale

* Mt. Wilson gives sp. of 2 components as K5 and M1.5 + a comb. spectrum of M0. Not in ADS

37 " A, M, + Y/K - measured the brighter, W + V relative equalizers are the means for the 2 components.

9.07 8.41 +0.43 (2)

11.22 10.09 +0.81 (1)

+0.123 −0.423

+0.124 −0.407

+0.124 −0.415

+30° 1367 a 6, 47.7 50.6 +30 55 54

Y1624 6 53.8 47.9 +30 47.70

McC-AC +092 -215 6/30 9.5 MO

158° .25

71 M(6)

-5 dy +1.16 W

-17.8 1 OCW

16.5 (2) OCW

8.50
7.86
64

+0067 -213 070

0846 +0092 -0215 03 -3035 -9528

9.74 +186 +1.23 (2)

8.88 +0.62 (2)

+104 -240 G.

674 -224 L

+090 -235 -16.5 1.25

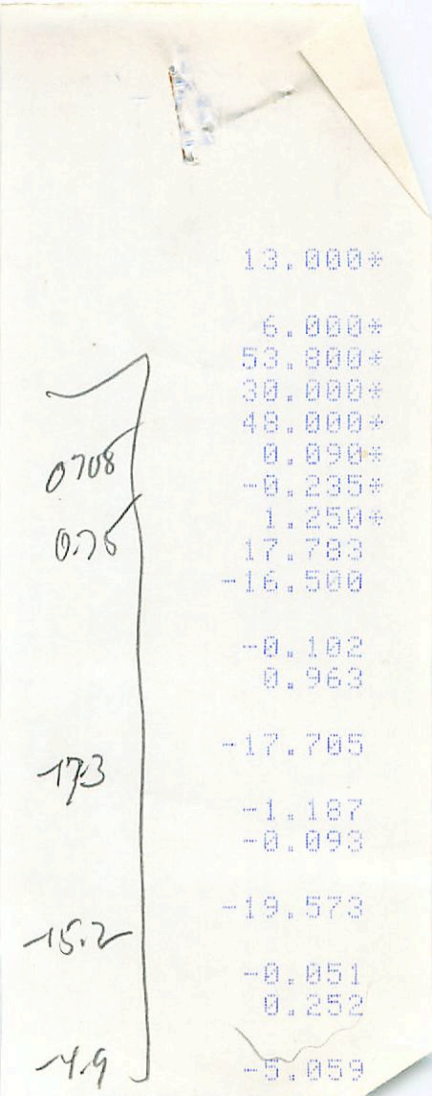
095 — MP

+091 -220 AGN

92 -215

092 -218

108
-218
075
-16.5


13.000*
6.000*
53.800*
30.000*
48.000*
0.090*
-0.235*
1.250*
17.783
-16.500
-0.102
0.963
-17.705
-1.187
-0.093
-19.573
-0.051
0.252
-5.059
0708
0.78
17.3
-15.2
-4.9

```
R.A.      :   6.900
DEC.      :  30.800
PM. R.A.  :  100.000
PM. DEC.  : -210.000
DISTANCE  :   0.750
MODULUS   :  14
RAD. VEL. :

                  (U)  1p
                  (U)  2p
                  (U)  3p
                  Ub
                  U

                  (V)  1p
                  (V)  2p
                  (V)  3p
                  Vb
                  V

                  (W)  1p
                  (W)  2p
                  (W)  3p
                  Wb
                  W
```

R.A.	:	6.900
DEC.	:	30.800
PM. R.A.	:	108.000
PM. DEC.	:	-218.000
DISTANCE	:	0.750
MODULUS	:	14
RAD. VEL.	:	-16.500
q1 (U)	:	-0.269
q2 (U)	:	-0.011
q3 (U)	:	0.963
dU	:	-106.665
U	:	-17.398
q1 (V)	:	-0.374
q2 (V)	:	0.923
q3 (V)	:	-0.094
dV	:	%-1117.886
V	:	-14.245
q1 (W)	:	0.888
q2 (W)	:	0.385
q3 (W)	:	0.252
dW	:	-7.924
W	:	-4.274

6 48.4 +60 2 484

6 56 49.8 +59 54.45

10.7: M0 +8.5

−12°1724 6 51.7 −12 48 485

6 56.15.7 −12 55.72

44

90.5
73.1
54

24 VV

+1.9 30cW
7.3 2 kppm

Yale Zone +.090 −.085
−1 +2
−1

+0089 −0.084

+088 −104 VVR

9.0 K8 +7.7

+89 −95 +1.9
1.4

485.000*

6.000*
56.100*
-12.000*
-56.000*
0.089*
-0.095*
1.450*
19.498
1.900

-0.413
0.701
~~-10.12~~
~~-6.712~~

-0.426
-0.709
~~-6.20~~
~~-9.660~~

0.170
-0.076
~~3.53~~
~~3.162~~

1.65
0.467
-10.9
-7.0
12.5

+16°.222-203 6 52.9 +16 6 241

6 58 21.3 +15 58.04

K5

TmC-AC -0.018 -.007 10.0 K8 +7:

+0".026

+27.1311 6 56.7 +27 41

7 2.6 38.1 +27 32.50

AlC-AL -047 -097 10.6 no

W4654 $\not\beta$2654

27.7 ① 4

-42 c 2w

dmo

12" 2.8 MOR 18

-52 -117 AG.P3

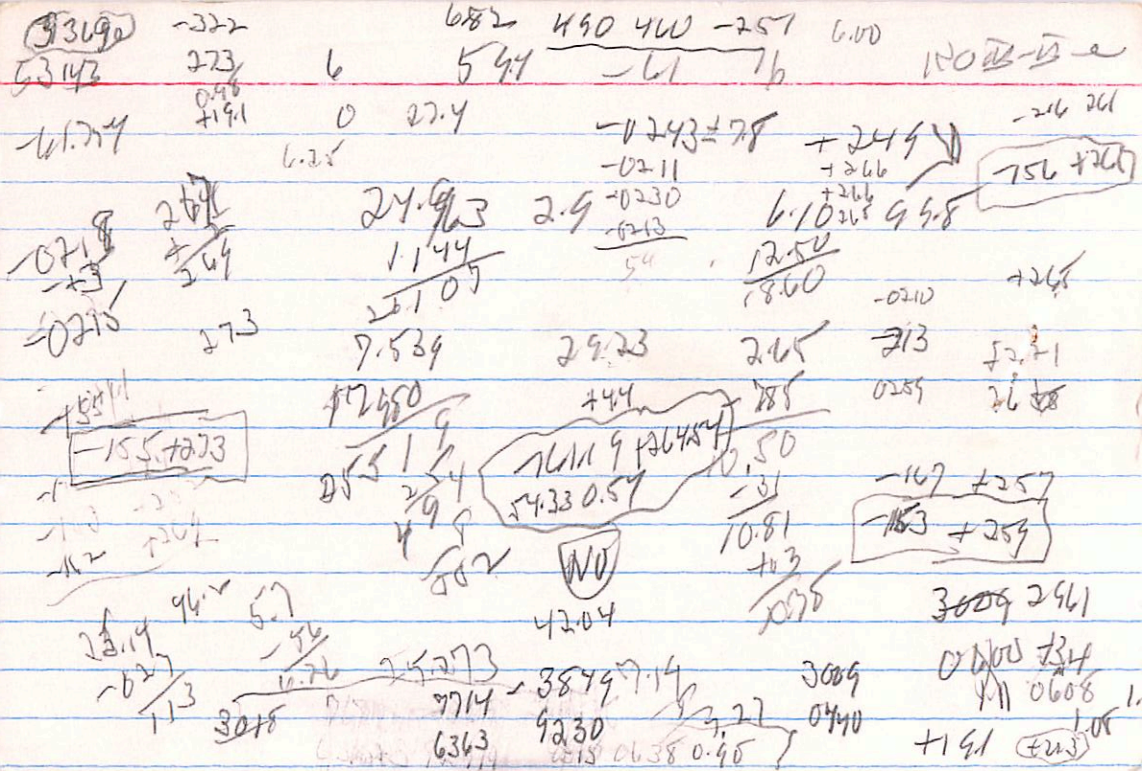
-0.047 -0.097

NO

+67°.2334 6 53.0 +67 26 242

7 2 46.7 +67 17.74

Green. Astr. -0.259 -.077 m_2 10.8 M0 +9.3



R.A.	:	7.000
DEC.	:	-61.250
RED.	:	-270.000
ANCE	:	0.980
ULUS	:	16
VEL.	:	19.100
	:	174
(U)	:	-0.291
(U)	:	0.956
(U)	:	-0.027
dU	:	1451.031
U	:	22.275 22.37
(V)	:	-0.359
(V)	:	-0.135
(V)	:	-0.923
dV	:	89.089
V	:	-16.257 -14.64
(W)	:	0.887
(W)	:	0.259
(W)	:	-0.383
dW	:	-316.265
W	:	-12.282 -11.43

R.A.	:	6.450
DEC.	:	-2.250
M. R.A.	:	709.000
M. DEC.	:	-691.000
ISTANCE	:	-1.920
MODULUS	:	4
AD. VEL.	:	30.400

q1 (U)	:	-0.169
q2 (U)	:	0.517
q3 (U)	:	0.839
dU	:	%-2260.849
U	:	16.173

q1 (V)	:	-0.436
q2 (V)	:	0.724
q3 (V)	:	-0.534
dV	:	%-3837.355
V	:	-32.083

q1 (W)	:	0.884
q2 (W)	:	0.457
q3 (W)	:	-0.103
dW	:	1472.413
W	:	2.948

+52° 1088 6 20.7 +52 30 474

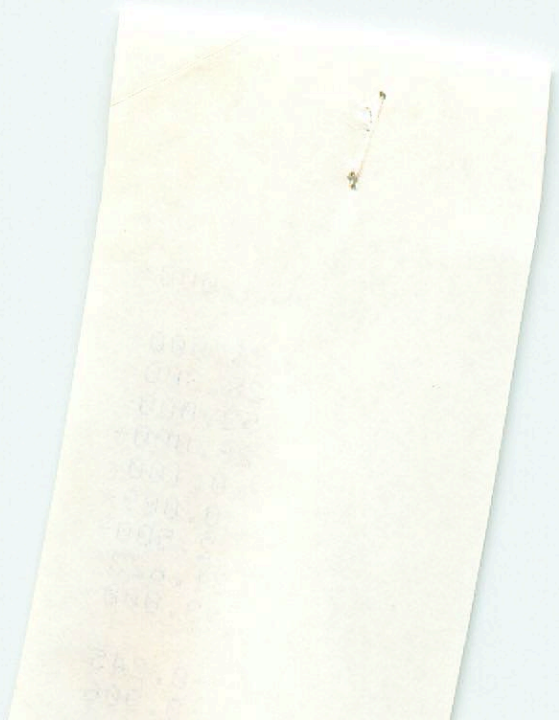
6 28.3 18.2 +52 26.28 +9.2

+0.100 +0.089 2.5 +3.0 −0.1 10CW

McC-AC +.100 +.089 9.6: MO +8.2

WOR 6 5m −0.7

1940.09 151.7 0.85 3 WOR



474.000*

6.000*
28.300*
52.000*
26.000*
0.100*
0.089*
2.500*
31.623
3.000

-0.245
0.906