14 31 42.3 −38 57.0

14474 16 35.0 −39 03 6.44 A ...

−38.11087

22354

16 35 06.44 −39 03 11.2

−0015 −027 Stry 6518 −6321 0260
−7584 −7218 00008
+09
0043
6.85

−0013 −024

−0015 −016 −022

BD20? 16 36.9 +16 00

+10 160

15 160 +14-63

Torrich

9762 6628
2167 -2212

+52° 1986 16 35.7 +52 54 772 *

16 36.8 +52 49

16 ~~37~~ 57.5 +52 43.05

38.0

ADS 10147; d = 5."6 —ROS

Δm = 1.2 mag. 8848 −5041 2188

−4464 8636 0114

+21 906

32 po 0384 4.4

2.55 247 585

McC-AC −.120 +.183 −20.5 2188 25 9.82 K8 +7.7

−245	962	−120	+1344	+8344	+9738	+31.2	+2.5	+34
420	249	744	−3526	+2160	−1366	−4.3	−15.2	−19
−745	−107	657	+4238	−0928	+3310	+10.6	−13.5	−3

772.000*

16.000*
38.000*
52.000*
43.000*
-0.120*
0.183*
2.550*
32.359
-20.500

0.973
-0.125

226-24 16 47.6 +59 D9

LP101-148

0.33 -H54-9 L

0.33 153 G

150 -244 G 9524 6820 3166

-7266 0930

142 -304 L -3049 -5.3

3184 0875

? NO -1056 0.24

0.-57

0880

LOB 15,46 6 25.2

2422 -5123
-6701 -8388

6289 16 54.5 -50 34 B 9

168 5.54 +02 1.40

152424 (+13) 036 107 952 2.767 Stetu

118 945
236
1181

,44
16.4
-50.6
-18
-40
63
-44

Vardel

$m_v = -0.6$
vo 5.15
5.75

Cos z Sin z 5 = 0401
-6782 .7349 z +0111

Cos θ Sin θ

-8530 -5220

626
-0135 -038 0395
-0115 -040 +0043

±50 158

25.936 12.8 -.0019 -.054 ±3.4 5.2.07 74
71
26.007 -.0024 -.053 2.30
-.0011 -.034 49.87
-.0013 -.044

25.975 51.32 34.87
-33 -.0017 -.046 -25
942 -.0010 -.0413 51.60

24.972 51.52 57.4
-15 -.009.5 12
.957 51.64

-.011.5 -.040

25.957 52.41 70.57
-23 -23
934 52.64

1710 +683 17 10.1 +68 23

G240-47 11" 11.8 12"

.251 347

79

-3291 2500 -056 +245

GPUS 0 60 44 9705 +843 -0277

+18 -2410 834 -49

BAI

5

1737+419   17 37 +41 54

GD313   .15 345 G

−039 +145

7618 −2212   150.

15.51 −08   6478 8628   −0018

3.44   −0.4

12.07   0205

MO?   3.44

-0007±7.3 +027±6.9 PSB 46 FS!
+0005 +022
161149 17 41.+0003 +14 19 +024 6.2 dF4 -42.46

24052 0000 +00065 +0246
+0291
10241 5.172 1894.2 +14 18 58.67 1895.8

038 1.47
.210 57.20
6604 +0022
+005 +024
5.229 58.11 1934.0
5 600
4 -6
233 58.05
PK5 5M
40.5
+00041 +023 58.25 1939.49
5.233 -5
-4 58.20 7349
229 36.7
+006 +024
231 58.12 41.3
+021 +92
+0004 +024
3450 - 4584
8887
5.219 -9187 55.06 1955.47
+005
5.227 / .+017 -27 1.59
58.79

3

17.700
14.300
5.000
29.000
6.000
158
-42.400

Rs 3157 -43 -37

165853 [illegible] 18 06.2 -22 4

-2204584 8.86 +1.01 Eggen -010

-2201267 75

9.67
2.44
7.15 +0.50 Ar -014

-0128 -083

P = 9.48
a = 0.168 -012 -083

Σ mass = 1.6 Algol

2684 -2900 0829
-9433 ~~-1570~~ 0126
~~-2400~~
-9570
+1.85
0322
2.46

$P_c = -43.8$

15627 50.53 70.55

D-W 180 G

G142-B2A 19 11.3 +13 31

018 174° [illegible]

1405-029+575 [illegible]

019 -179 L 18"154°

00 -100

1130

.75

2.

NO ?

8190 3326 1751

5785 -9431 -0416

-3.5

0563

1.25

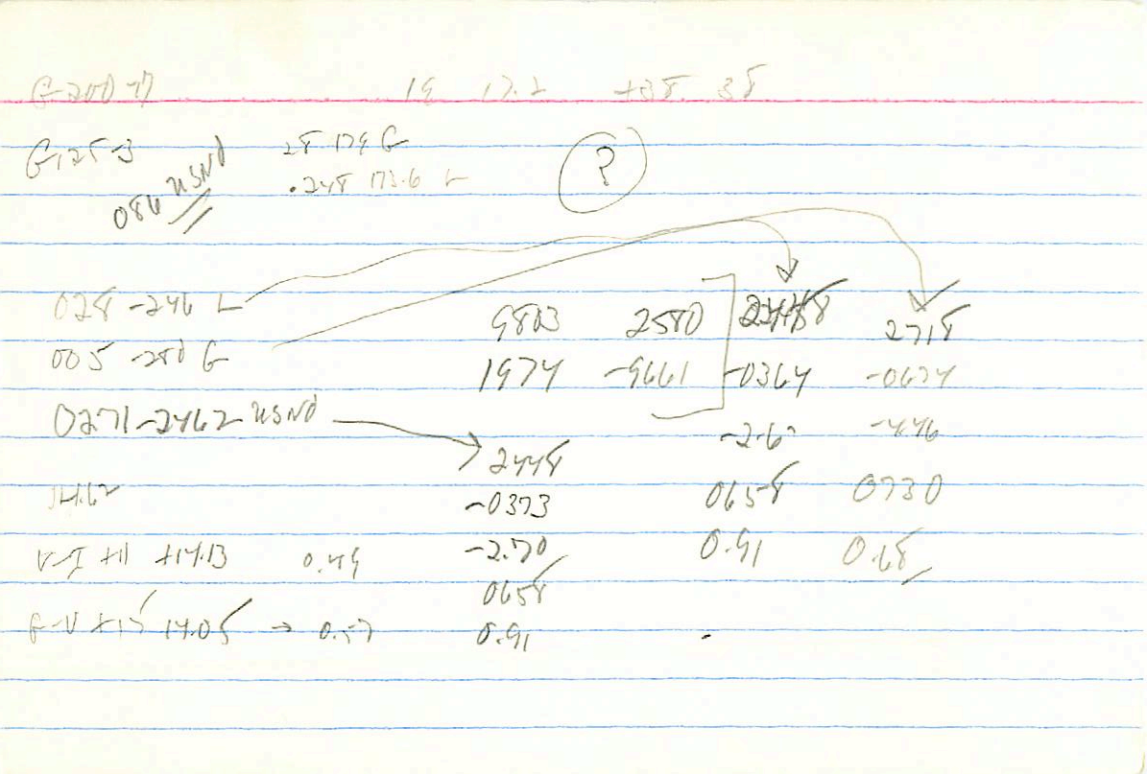
+1 18 45

E3487

.110 183

18 20 45 +60 59.5

LP103-254



+0002±2.4 +062±2.3
+0002 +064

172701 18 37.6 +55 12 7.6 dFL -12.87

25530 6 4

11116 33.119 1894.5 +55 11 54.18 1891.6

Carlber

+0003 +064 -011 -3.62

108

761 231 865 470 50.56

+0001 +064

3.70 31.7 1526.3

29.422 761 +0.45 20.68

33.124 52.38

41.7

114 52.90

124 52.91 7250

2 52.89 36.2

64 33.100 115 54.21 1946.20 44.6

+6 -26

41 106 +007 53.95

53.42

+2.86

J

R.A.	:	18.600
DEC.	:	55.200
. R.A.	:	2.000
. DEC.	:	64.000
STANCE	:	4.100
ODULUS	:	66
. VEL.	:	-12.800
q1 (U)	:	0.203
q2 (U)	:	0.975
q3 (U)	:	-0.089
dU	:	296.933
U	:	20.756
q1 (V)	:	0.416
q2 (V)	:	-0.004
q3 (V)	:	0.909
dV	:	1.163
V	:	-11.562
q1 (W)	:	-0.886
q2 (W)	:	0.221
q3 (W)	:	0.407
dW	:	62.340
W	:	-1.086

4

ADS
12456 19 338 +50 30

+50 2819 -24+34 AGR3 8.6

18508 9.4

9.24 yrs.

0.275 +3.8 1.25

+4.6 1.0

2.25 Ryreln?

Ap. Tsupp 37, 72

~~+0417~~

+0086

+0017 +087 7

+ 1 + 2 +0130+092 8644 3546 0506 Σ mass = 1.7

+0018 +089 +5027 9350 020

+0009 +0935 +8.9

.0109 4.80

000

−42.14462 19 44.2 −42 08

V 3885 Sgr 0.259 d

6410 5365 0455 ±115 −45 ± 20 km/sec

−7675 −5434 +0029

H. 1478

3,465 51.9 Bond, ASP 80, 216

0077 few tenths for 50 yrs.

5265

R. Haug H. Drechsel 1985 AA 151, 157

CoD ~~-42°1446~~ 19 44.20 -42 08 J. W. Russo

HAC 2128

-42°1446 ~~J. W. Russo~~ 1968

+027 -037

YEA

wz 35

+0457

10.33 +07 +08 +29 5 BW +0025

5.61

R.V. +1.6

+4.72

6318 5835 0446

-7752-8394-

BWA

Cowley A.P., Crampton, D. and Hesser J.
Ap. J. 214, 471

Centre-of-mass velocity = ~~110 km/sec~~ km/s −106 ± 9.6

emission line P = 0.2059 ~~per.~~ amplitude ~ 300 km/s

M.N. 163, 25P Warner, B.

Hesser, Lasker, Osmer Ap. J. 189, 315

H-K 3110 4-18 [illegible] 430-481

7556 19 4Dr +28 1F 1.3FBBTy

vuyroorp

~~+0020~~ ±11.3' +026 ±3

-0055
-0110

52.945 07.6 +0007 45.56 05.0
084 -0009 -1.17
52.029 44.39

-014 +012 4 44.23 1944.6
-3 -3 -06 44.08
-022 +004 44.17

53.03 44.1 1942.71
+022 -12
53.052 43.98

53.011 44.60 1928.69

-002 -0.14
.009 44.46

+10' 41.8 189783 +0059 ± 5.6 +032 ± 3.6 P =

2775 4 +0058 +029 A = 50.8

+0049 +048

189783 12374 19 59.1 +60 37 7.5 dF4 -42.5a

4.5 80 dF6 -34 e

AD 513256

3580 5765 7.5 33.14

W 12374/5 4.5 -7 578 8.0 -24 32.90

+0053 +033 +087 +032 Gc

+0053 +035

Δm = 0.50 +076 +085 Gc+

+080 +035

3.545 1893.4 +10 36 31.38 1880 . 6.98 +435 +005

-334 -2.24 75

261 29.14 773

7.366

473 40.4 30.28 1933.6 81

34.0

3.459 12 54.0

4 +2 30.39

463

4404 8237 0059 30.2 1934.5 B 6

B 3 -8714 5671 -0183 -29

-43

483 0182 29.91 30.15

+0059+018 3.20 +1.01

-42.5

-863 486 184 883 +085 +032 ~~60~~ 006 -8 147

073 005 042 003 332 253 -41.8 -21 +36 02

-4 +47 -1

44 µ

+41 -23 -5

+492 +609 -623 | +1924 +0808 | +2732
+204 +615 +762 | +0798 +0816 | +1614
-847 +502 -178 | -3312 +0666 | -2646

+18.0 +26.5 | +44.5
+10.6 -32.4 | -21.8
-17.5 +7.6 | -10.0

-1 +50 +1 017

-8 +45 -2 025

+1 +51 +2 015

+43 -19 -8

016

0 +50 +1

+44 -21 -8

191046 20 04.6 +36 06 Ko III

7.00 +1.16 +0.995 (5)

6.48 +0.45 (2)

6.10

5.5
1.5
7.0

-93.3 Bo
-93.7 Bag
-93.5

-065 -097 Hyd
-042 π

-0.058 -118 FRY (AGK2)

-060 -108

-056 -110

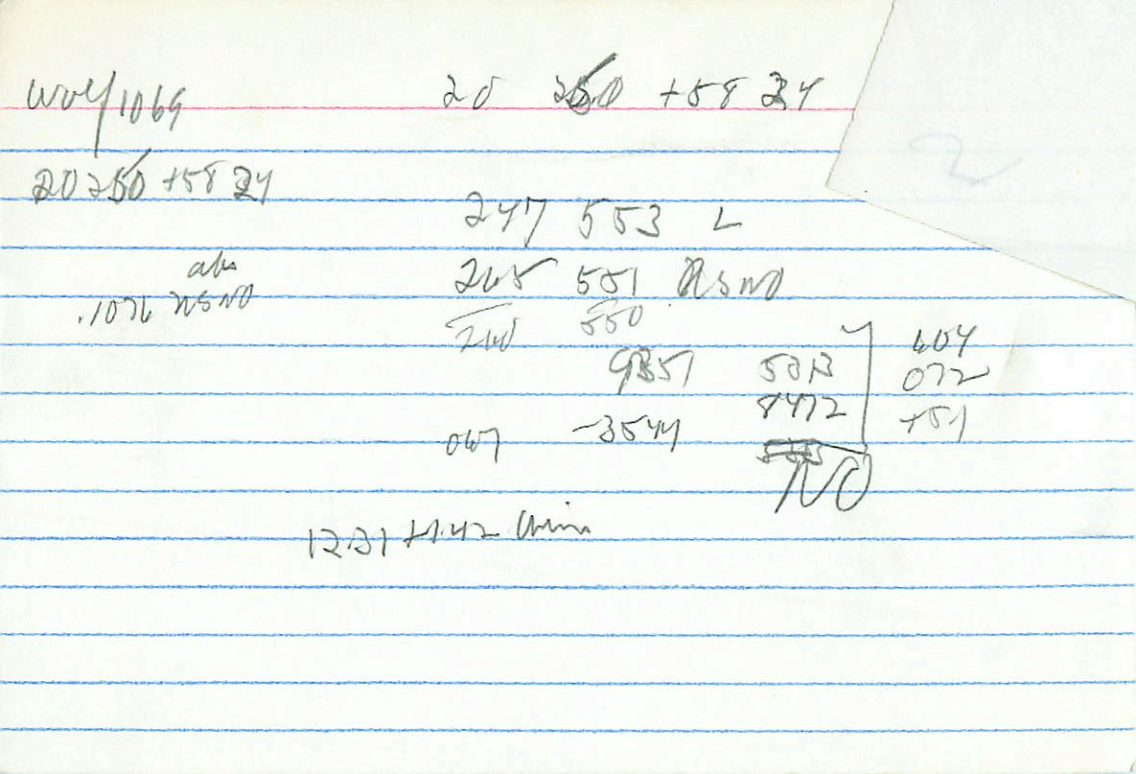
5.75

11.5

11.0

11.0

5



α Aql

7557 F0 V 19 48.3 +8 44 A7 IV

187642

27470 +03637 +8808 ~~534+384~~ 0.74 +23 +08 ✓ +1.58

+158

853

880

97649 π pt 143 8342+383.8 137 178 888 10 SPC

19444 5944

838

179 2888 2.803 IG

0.78 03 1.244

97

-26 281

-26 28.1

204

Bul 51

28

546

384

-0.78

4368 8152 4618 243

-8000 5792 0048

```
R.A.  :    19.800
DEC.  :     8.750
. R.A.  :  546.000
. DEC.  :  384.000
STANCE :    -0.780
ODULUS :     7
). VEL. :  -26.300

q1 (U)  :    0.456
q2 (U)  :    0.592
q3 (U)  :   -0.665
     dU : 2242.963
      U :   33.150

q1 (V)  :    0.235
q2 (V)  :    0.641
q3 (V)  :    0.731
     dV : 1766.484
      V :   -6.890

q1 (W)  :   -0.859
q2 (W)  :    0.489
q3 (W)  :   -0.153
     dW : %-1305.653
      W :   -5.082
```

6

B 230-42 20 327 +41 34

20327+4134

+1485 953 B
542 907 usno

11.13 +1.23 luis

9.90

9534 5558 | 1.058
3000 8818 | 0.836
+2.2
1.152
-0.31

+0035 ± 5.5 +067±3.6 +1.8 DD
+0049 +070

195820 20 29.9 +52 08 6.3 K0 III -9.96

28574

12839 55.356 1902.9 +52 8 18.89 1897.8

-165 -3.50
.191 15.39

618 1.01 036 0.8

12.56 13.2 1926.3
MP 42.740 3.70
1144 870 190 55.300 16.90
55.384 .60
296 7151
C 176 3 348 19.50 612 35.8
299 +157 10
31.9 1760 38.0

55.392 18.85 1945.2
5 -33
397 9026 5757 0776 18.52
0080 18.04
-4304 8181 .580 +2.67

155580 20 55.0 +42 42 dG9 -15.48

W131163

7.9

+226 +220.GC

+221 +214 GLZ)

+223 +217

+0208 +2227 +0207 +2210 [illegible] (X)

4A (20)

430(3)

8646 6956

-5028 7145

+0057

~~718 +98 +72~~

7.20 +98 +70 [illegible]

-722 642 675 735 +243 +217 -15.4 147 -13 ?.5-3

161 106 154 102 290 1.232 14.2 -10 +10 04

-3 +41 +6

+34 -15 -2

038

-3 +42 +7

+40 -15 -2

035

-2

-4 +40 +4 045

+37 -16 -2

~~G25~~ 21 11 0

2111 7072 0.3

G25-20

(200) 6459

-7182 245

N6.19 + 77-08 7400

1.33 0542

8 1.30

14.86

[illegible]

GD 545 21 19.3 +58 07

0.15 150° 0 −150

15.94
13.01
2.93
V−I −1.5 +13.0
B−V = 0.5 +13.45

9532 −1595 1482
−1160 −9880 0232
2.5
0393
2.93

WD

Test for VAR Var? Avg? 38.52 05.08

20170? 21 8.9 -14 41 GFO

HP8102 644 0891287 98

GL29412 Var Yes 645 +30 +18 +10.73

179180 916 2754 +120

1041847

1183 . 170 . 530 2785 ② 10,13,86

M 203 202 645 193/188 167/168 902/916 2753/2769 ② 2,34,8,2

G 883 878

S.OU: +40 -16 +10 +0027 -39.2

+0028 000 Carthy = L +41 +17 -138 +006

4400 8400 9426 0407 -2 0 -827 39.6 516

TLT VAR www -7513 . 1213 1050 542 342

-27.1 39.3 39.6

8102 — Cap   68.9   +0024 ± 3.8   +006 ± 3.5   +0028 00
201707   21   08.9   +0025 1.4   41   +005 6.4   gFOM −39.26

29612 AP8102   55.762   (64.85)   40.54
−10   −16
13321   55.682   19013   −14   4040 40.47   1898.7
<6–7 162   −.117   55.735 (68.00) 40.16   40.75   −31
<m7 145   .565   +00719   −24 40.40   40.78   5.15
See   32.816   +00258   +0033   47.99   1924.54
22845   +039   582
Kalambi 55.661   +0374   17
−35   +038 +000   25.8   42.01
.626
et al 90 .613   41.16
PASP   613   636   5.25   +32   4014
40.84   30.1
+071   31.4
144   55.675   Gamma   40.26   1933.6
−16   −16
1979   .659   184 149   40.42
171 187 900 2.744   40.43   +.15
143 167 902 2.753
182 177 901 2.747

-78
400
528
69
3.5.5
545

+038 000 | 0380
0048
3.75

6458 9919
-7601 -1268
3

8

R.A. :	21.150
DEC. :	-14.700
PM. R.A. :	42.000
PM. DEC. :	0.000
DISTANCE :	5.420
MODULUS :	121
RAD. VEL. :	-39.200
q1 (U) :	0.686
q2 (U) :	0.330
q3 (U) :	-0.648
dU :	132.168
U :	41.445
q1 (V) :	0.004
q2 (V) :	0.890
q3 (V) :	0.457
dV :	0.72
V :	-17.81
q1 (W) :	
q2 (W) :	-0.70

+0334±15.0 +179±12.2
300 #61

204734 204734 21 26.9 +64 10 dK0 -9.7 8

30083

-163°1737 13504 8.5 8.86 0.84 0.45 +218 +179 a c

51.706 19124 +64 10 2.40 1910.5

146(10) 136 -1.266

W13504 50.440 -7.07

55.33

50.94 58.6 1929.7

26 -16

1968 58.42

Alpha

4.6 784

4.5 284/1.60

9397 7264 2874

-2004 4872 0088

-620 785 900 435 +218 +179 -9.7 161 -9 370

135 100 171 126 043 1.284 -4.2 -3 +3 03

-2 +46 +3

+41 -19 -4 032

-2 +43 +3

+39 -15 -4

5

7.62 +66 (1.72) G5V c,(5)

205067 21 306 -25 07 -26.6 ±0.8

30170

7.68 +066 +0.208-

+0164 -070 Bc/AN
+0171 -074 new→N31

31.4

030 +41 -19 -3 2.30 ← Dm=2.50 → 2.70

+220-073

230
-0281

+37.6 | +39.0 | +41.8
-18.0 | -18.7 | -19.1
-2.0 | -4.2 | -7.3

218-74

7542 9556
-1516 -2947

2317
-0044
-0.75

-29.9

0320
2.47

+0160 ± 8.7 -071 ± 5.6
+0167 -075

35.070 1901.8 -28 6 42.75 1899.6
-771 3.58
34.299 +01635 -073 39.17
+01663 -070
7.060 01467 31.6 -0 19.17 1933.22
27.790 2079 36.40
850
34.10 42.77
840 827 2200 96 84
+528 2718 -0784 41.85 33.4
34.816 41.84 33.8
814 41.47 1933.62
41.51
41.69 2.5

R.A.	:	21.500
DEC.	:	-28.100
1. R.A.	:	0.000
1. DEC.	:	0.000
STANCE	:	0.000
10DULUS	:	10
). VEL.	:	0.000
q1 (U)	:	0.733
q2 (U)	:	0.201
q3 (U)	:	-0.650
dU	:	0.000
U	:	0.000
q1 (V)	:	-0.057
q2 (V)	:	0.970
q3 (V)	:	0.236
dV	:	0.000
V	:	0.000
q1 (W)	:	-0.678
q2 (W)	:	0.136
q3 (W)	:	-0.723
dW	:	0.000
W	:	0.000

2143 +3853 21 43.3 +35 1V

G0396 .2060 +173 +100

DA2 8873 8515 1998
4612 5244 0052
-1.1
0238
3.15

NO plate

Any

2224 -344 22 246 -34 27

LD67855A

141mm 9" 0.21 94 209 -015

B

8807 9770 2074

-4787 2131 0744

+58

0245

3115

My

213717 30.4 225.9 22 31.2 -48 19

-4309434 30.4
225
7.9

+0126 +09

1376

138 +036

8.86 476 282 434 8.58 +265

425 329

+9023 9662

-4310 +2580

1426
-0008

3.51

1710 +1.83   17   10.1   +6.8   23

G340-47

.251 347

GAPM   29   -3291 | 2500   -086 +245

+14 .0604   9705   +9443 | -0277

GAZ   -2410   824   -44

0268   2287   Avg

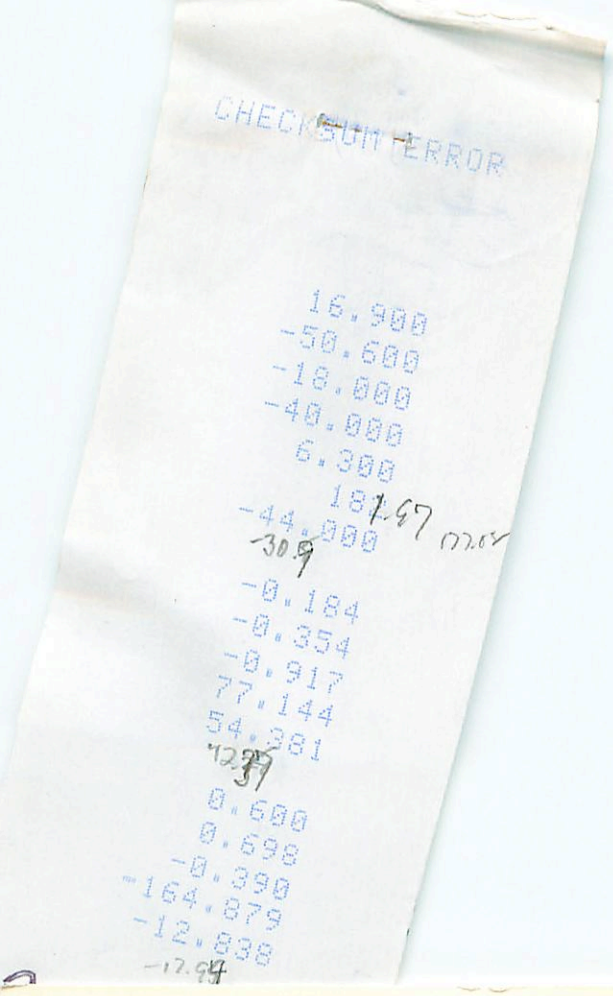
2.86   -0145

1744 +28   -2.3

21.2   GAZ   0299

17.82   2.62

VT 14.20


CHECKSUM ERROR
16.900
-50.600
-18.000
-40.000
6.300
-44.000
-0.184
-0.354
-0.917
77.144
0.600
0.698
-0.390
-164.879
-12.838

```
   R.A.  :    20.900
   DEC.  :    42.700
. R.A.   :     0.000
. DEC.   :     0.000
 STANCE  :     0.000
ODULUS   :    10
. VEL.   :     0.000

q1 (U)   :     0.649
q2 (U)   :     0.753
q3 (U)   :    -0.103
     dU  :     0.000
      U  :     0.000

q1 (V)   :     0.047
q2 (V)   :     0.096
q3 (V)   :     0.994
     dV  :     0.000
      V  :     0.000

q1 (W)   :    -0.759
q2 (W)   :     0.651
q3 (W)   :    -0.026
     dW  :     0.000
      W  :     0.000
```

~~G25~~ 21 110 + 7 14

2111 7072 0.363 70 ~~37~~ 124

G 25-20

(200) (8) 6959 9554 3624

-7182 2953 0175

16.19 + 77-08 2253

1.33 0542

14.86 1.33

Ry