

100286/7

11 29.8

-28 50 9F7, dF6

HR4443/4

120

+3.64 +37.1

GC15831/2

P0 369

+16

280

+9.3 -2.7 +19.1

S
-0018
+137 +8.8

+382 +219 +506

MC

329
339
326

157
168
150

409
410
411
412

MC

2629

13
258

182
160
151

409
410
411
412

333
332
331



100289/8

11

15830/1

7073

8055200

4440/4

47.082

880

32.746

14.302

47.048

093

093

096

47.101 1892.1

070
171

888
883
444

-00155 +1355

-00144 +1389

-0189
-017 +143

-0012 ± 38
-0019
29.8

-28

911 (5.8 dFC (+42))

-28

-7.78
28.90

22.28

+9

22.19

66.30

1640

22.70

22.76

22.84

+15

2271

2245

+6.46

+131 ± 3.5
+140

59 (5.9 dF7 +9.86)

59 (5.8 dFC (+42))

59 2.112

1890.6

11.5

11.5

11.5

11.5

11.5

11.5

11.5

11.5

11.5

11.5

11.5

11.5

11.5

11.5

11.5

-002343.2
+13842.8
-0021
+137

15531

47.415
1502.1
-28
09
12.85-
1796.7

$\frac{110}{325}$

$\frac{-7.36}{20.21}$

47.45-4

14.32
+9
1940.0

$\frac{452}{2}$

14.23

3.58

31.7

$\frac{453}{-072}$

33.044
14.30

58.59
16.40
1933.58

47.406

14.99
16.40
2943
14.72

453
454

-0022- +1375
-00209 +1407

15105
+5.49

-0274

2

-024141

18120

368
40.1

11.500
-29.000
-30.000
144.000
1.000
23
4.000

-0.874
-0.446
-0.193
413.887
8.692

0.382
0.386
-0.348
215.868
1.587

0.388
0.888
0.588
513.924
13.884

23

1	1	.500
1	29	.800
1	19	.800
1	43	.800
	1	.950
		25
	9	.800
	1	.874
	8	.446
	1	.193
37	1	.115
	7	.225
	8	.382
	8	.385
1	8	.848
23	1	.467
1	2	.547
	8	.300
	8	.800
	8	.500
52	3	.777
17		.833

100504

A 31.2 46 03 +83.1

100
0316

24.59
11.17
4.3

856 397 173 330 ①
856 385 185 324 2.524 ②
386 185

②

✓

101065 11
 35.1 25
 32.7 -46 9 +98 111
 47 25

47 25
 18 2 4
 19 2 1 4
 16 1 1 4

47 25
 32 7
 9 8 5
 11

~~03 4~~ + 02 5

-049 + 030 Y + C

6.5 -047 + 034

9486 926
 8528 8258
 1522 926
 8528 8258

200 ↓
 -875 353 -330
 394 121 -9 11
 282 927 248
 1534 + 1440 + 1045
 -1096 + 1042
 -0455 + 1096
 +1552
 +1508 + 365 -3.5 + 1380
 -0482 -9.8 -100 -19.5
 +10623 + 10.5 + 127 + 15.5

24

11.600
-46.400
-68.000
34.000
6.500

102

200
11.000

-0.875

0.351

-0.333

251.181

121

46.400

0.396

0.125

-0.910

-0.000

16.5

100.500

0.270

0.300

0.240

07.747

112

20.238

24

Uma

10	32	+57	20	+0660	+0254	+0655	2.18	+0.40	-12.0
10	59	+56	34	+0809	+0257	+081	2.02	+033	-11.5
11	51	+53	58	+0529	+0088	+094	2.13	+011	-13.0
12	13	+57	19	+4018	+0083	+103	2.03	+009	-13.0
12	11	+56	14	+1095	-0102	+111	1.94	-006	-7.0
13	22	+55	11	+1188	-0252	+121	1.92	-021	-5.0

25



5.000*

13.000*

22.000*

53.000*

11.000*

0.121*

-0.021*

1.920*

2+.210

5.000

913

787

3.839

0.010
0.876

-5.891

.125

-3.027

3.879

-7.700

5.000*

12.000*

61.000*

55.000*

14.000*

3.111*

-3.806*

-1.990*

23.003

-7.000

-3.454

0.259

-13.158

0.268
0.407

26



-13.439

9.061
9.047

9.423

9.975
9.267

-15.248

9.344
-9.408

-11.000
9.000

-9.799

9.878
9.071

25

-7.815

9.094
9.817

9.159

9.296
9.259

-13.547

9.495
9.018

-11.500
11.500

*020
*031

*180
*000

*000
*000
*000

25

-13.000
28.665
9.130

9.011
9.094

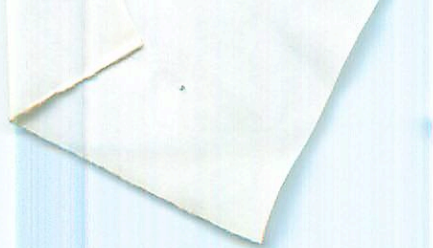
59.000
53.000

51.000
11.000

3.000

25





1871
1872
1873
1874



+57°1331 11 32.4 +57 07

1-7 m, 4
8.47 510 268.315

536

Q = -8 km/sec



924 11 32.7 -55 51 -0.4 (4) C5

100735

+09

0615884

6.97 +92 (1.93) 65 III-IV

41.607 1401.9 $+6014 \pm 8.3$ -014 ± 7.3 $+025$ -014
 -067 \rightarrow -026 44.78 1898.1 -7 -7
 $\hline 40.940$ $+0005$ $+0009$ -021 73 $+015$ -021

30.040 143 72 $+0.010$ -021 26.73 1927.18
 10.745 $+0.956$ $+7.25$ 43.98

40.785 $+0.10$ 43.98 -1.05 437 $\frac{62}{331}$
 $\hline 40.900$ 45.33

417.02
 $\frac{65.6}{626}$

40.900
 $\hline 40.900$
 -055

44.1 45.42 45.02 1939.3
 -24 -97
 $\hline 44.54$

100773 11 32.9 -60 37 4.12 1502.13 6.56137
 -0.8 ± 1.76(5)
 25.7 - 0.228 ± 8.7 -0.38 ± 6.9
 -0.249 -0.24
 F2E

15888

5-4.843 1504.7 -60 37 4.12 1502.13 6.56137
 1.033

$\frac{55.876}{55.535}$
 55.876

$\frac{45.535}{95.68}$
 45.535

33.2

3.85

$\frac{1.81}{2.31}$
 2.31

6.37
6.17252

(1.58)

45.10 1929.53

$\frac{-17.32}{0.2113}$
 0.2113

$\frac{2.55}{-3.5}$
 2.55

$\frac{0.29}{3.15}$
 3.15

$\frac{28.3}{37.9}$
 37.9
 35.6

$\frac{55.134}{23.8}$
 23.8

$\frac{55.050}{80.6}$
 80.6

-0.038-0.31
 -62395-0.22

$\frac{-3.5}{2.190}$
 2.190

1946.3

10200 5641

1694

$\frac{54.814}{2}$
 2

$\frac{5.2}{35}$
 35

-1764
 -175-0.21

$\frac{2.48}{3.6}$
 3.6

$\frac{2.49}{3.13}$
 3.13

2966
 2966



26

HR4464

11 331 +11 11

W2046

6615842

6.40 +0.13^{+0.10} AY III

+0020±5.9 -026±4.1

+024

118.8118 485 488 +0020 -024 7.08 91.1

+026 -020 1.1

+0021

-022 1.53

18.61

7008 7180 0409
-7134 7090 0576

U.44

1224

+00205 -022

16.94

+0020 -0205

Handwritten notes in a box: 0.0346, 0.280

Handwritten notes: 110, 115, 120

8.123
20
53

PK5

5.00

8.144

115
162

6.444

152.07

-19

14.88

+0244

+031-016

0324
0117
+0245

+0

$0 - \phi$ 194 58 / +026 -020 -5 -004 -1.0 -095
 $0 \ 0 \ -026 \ 004 \ -019 \ -123 \ -4.7 \ +4.7 \ 0$

$-0.1 \ -30.8 \ -24.8 \ 00 \ 4$
 $\boxed{-39.7 \ -4.8 \ -6.6}$

$+1.5 \ -20.5 \ -16.8 \ 00 \ 6$
 $\boxed{-25.7 \ -2.7 \ -5.8}$

$+2.8 \ -12.3 \ -10.5 \ 01$
 $\boxed{-5.9 \ -1.0 \ -5.3}$

100764 11 33.2 -19 15

-13.3407

10895
+2
897

334

5957
0
5957

11.55
143

0
-22
7
16

10.905
+13
815

0.39
7.52

1000
-220
781

10.902
+11
811

0.26
-11
1000

1000
1000

1000
1000

1000
1000

1000
1000

1000
1000

27

16

-22

14

R.A. :
DEC. : 11.250
PM. R.A. : -14.300
PM. DEC. : 0.000
DISTANCE : -17.000
MODULUS : 7.000
RAD. VEL. : 251
: 2.000

d1 (W) :
d2 (W) : -0.872
d3 (W) : 0.477
du : -0.004
U : -08.474
: -10.007

d1 (V) :
d2 (V) : 0.389
d3 (V) : 0.288
dv : -0.709
V : -47.348
: -15.440

d1 (W) :
d2 (W) : 0.209
d3 (W) : 0.000

R.A. : 11.550
DEC. : -14.300
PM. R.A. : 0.000
PM. DEC. : -17.000
DISTANCE : 7.000
MODULUS : 251
RAD. VEL. : 5.000

q1 (U) : -0.875
q2 (U) : 0.477
q3 (U) : -0.084
dU : -38.474
U : -10.087

q1 (V) : 0.389
q2 (V) : 0.588
q3 (V) : -0.709
dV : -47.348
V : -15.440

q1 (W) : 0.289
q2 (W) : 0.650
q3 (W) : 0.650

27

-1303407

11 33.2

-14

²⁵
-0.15
19
-0.23
-0.34 ± 7.9

+565(w)

H0(000)BH

-0.002
-0.015
-0.006 ± 7.6

10.896
0.17
5.13
1521.1

0.30
+ 57
54.33
1921.4
286

-0.011 -0.020
-0.16 -0.020
0 ± 2
-0.16

10.895
0.18

59.57
~~-0.18~~
59.608
19.334

32500

-894 + 478 -080
+ 388 + 591 -007
+ 291 + 649 + 704

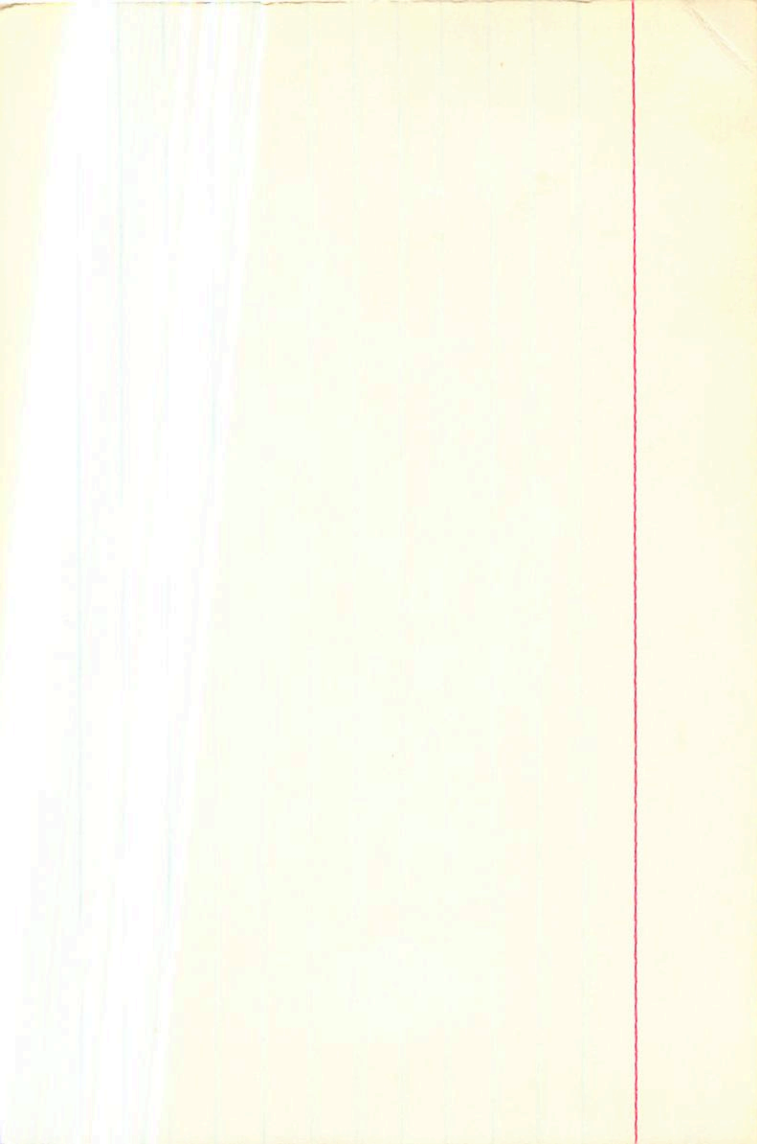
+0663 -0408
-0294 -0504
-0221 -0554

+0255 +83
-0798 -26.0
-0775 -25.1

27
~~27~~

+7.9 -0.4
-295 -3.5
-216 +3.5

829
345
744/9
2.15



~~128 023 94 0228~~
~~142~~

100843

11 308 +25 18

+0032
+0037

51.417 1905.8

$\frac{14}{2}$
 $\frac{76}{2}$

+0035-009

+0035-006
+047

32.594
18.765
51.359
51.154
 $\frac{20}{11}$
 $\frac{11}{9}$

-010
-008

23.42
 $\frac{46}{8}$

23.

28.0
1928.0

41.02
17.28

23.24
1.9

$\frac{23.17}{9}$

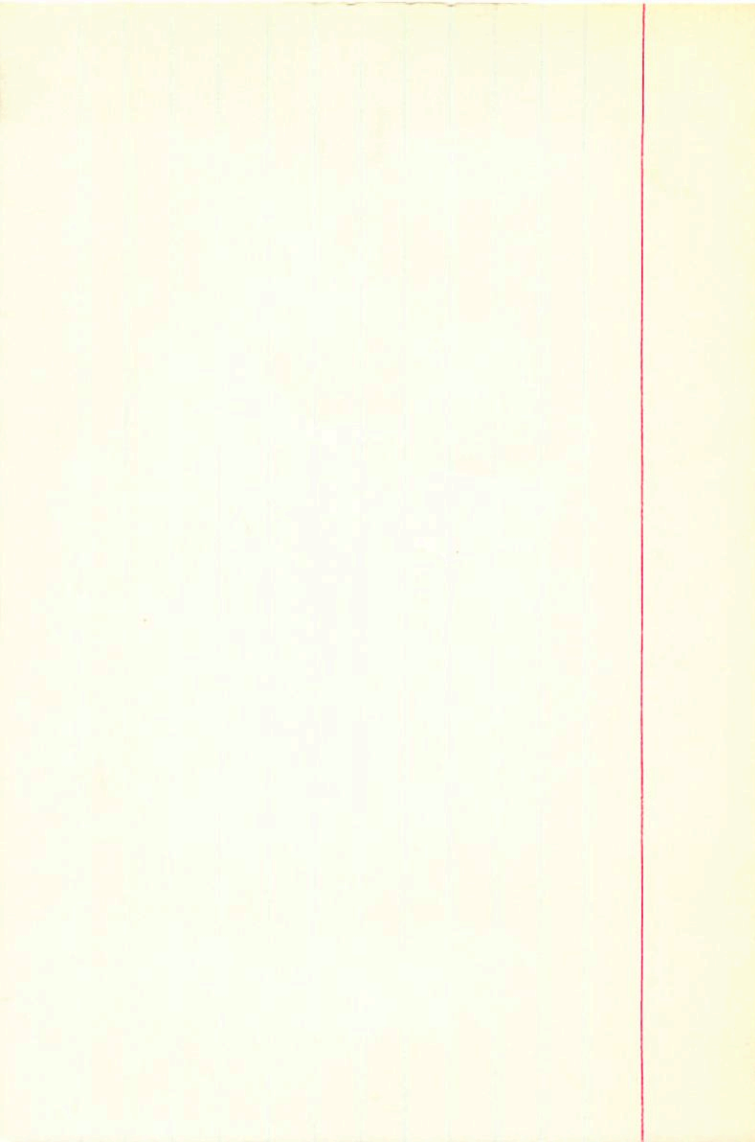
23.63 1928.26

22.92

51.270
 $\frac{21}{9}$
 $\frac{18}{9}$

23.84 1943.4
22
23.62

22.62
-26



$$D_m = 0.46 \quad -0.222 \pm 4.7$$

29

$$100831 \quad 11 \quad 33.9 \quad +56 \quad 25'' \quad (7.9 \quad dG-2 \quad -15.2 \quad 7$$

$$15910 \quad 95 \quad (8.4 \quad dG-6 \quad -18.1 \quad 0$$

$$7053 \quad 52.205 \quad 1906.5 \quad +54 \quad 24 \quad 47.54 \quad -16.6$$

$$5.09 \quad 1898.1$$

$$A058286 \quad 966$$

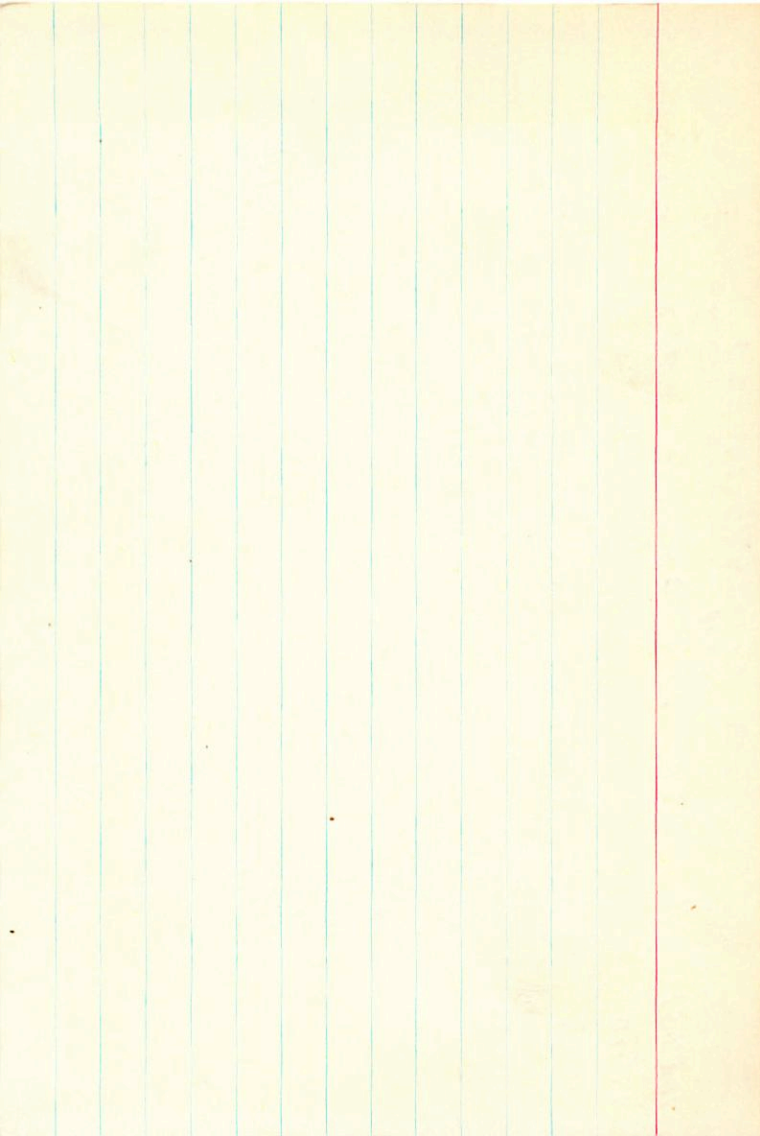
$$53,171$$

$$\begin{array}{r} 30.122 \\ 22.872 \\ \hline 52.992 \\ 1.161 \\ \hline 54.153 \\ 1.836 \\ +1.151 \\ \hline 55.989 \\ 837 \\ \hline 57.146 \\ -0.216 \\ \hline 56.930 \end{array}$$

$$\begin{array}{r} 671.6 \quad 1524.5 \\ -17.52 \\ \hline 654.08 \\ -1.16 \\ \hline 652.92 \\ 49.68 \\ \hline 702.60 \\ -18.32 \quad 1944.45 \\ \hline 684.28 \end{array}$$

$$\begin{array}{r} 49.45 \\ 34.7 \\ \hline 84.15 \end{array}$$

$$\begin{array}{r} 18.32 \quad 1944.45 \\ -18 \\ \hline 18.14 \\ 48.14 \\ \hline 66.28 \\ -3.62 \\ \hline 62.66 \end{array}$$



32.1
~~27.0~~

28

-45° 6657 11 34.5 -48 44 A7D +3442 256

10.89 +0.19 +0.09 4BS

+090-012 c.4 →

+081 -014

+085 -013

.003 110°

136
1303

+70
50

120

89

250

155

364

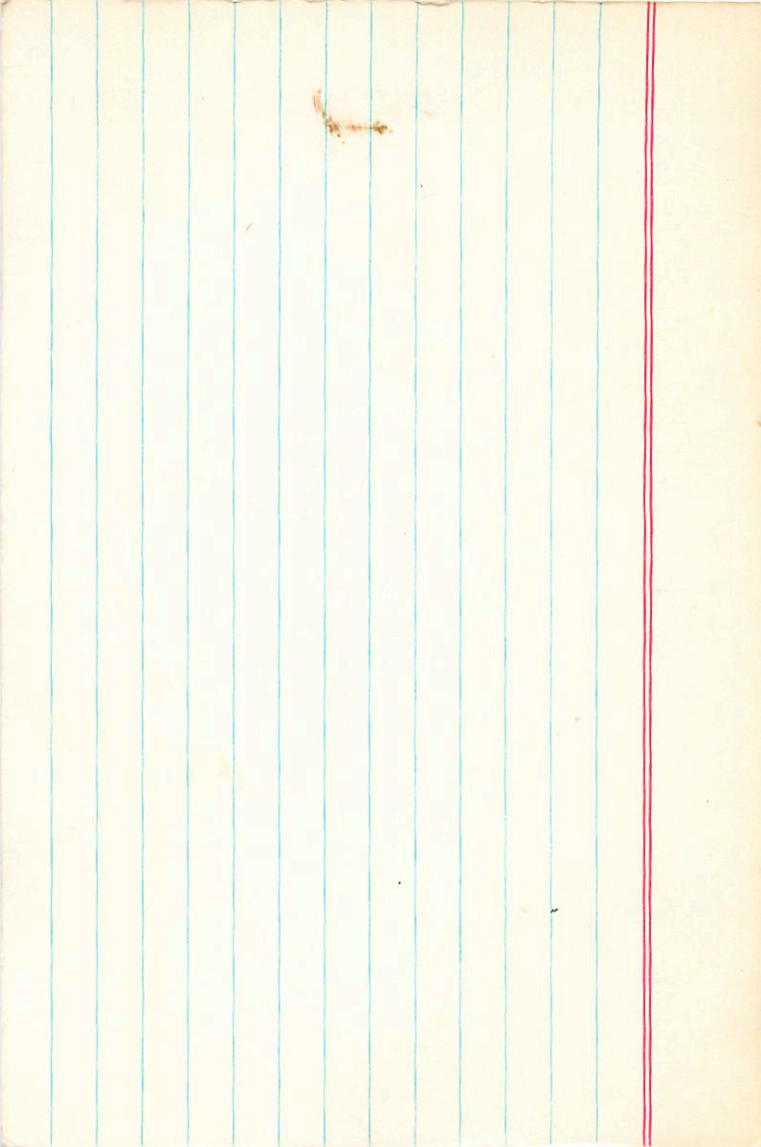
939

03

182

2

+100



-0033±4.8 +037±3.9
-0045 +042

100949 11 34.5 -22 40 6.7 910 +216.8

15928
7058

29.289 1904.2 -22 40 19.64 1401.3
 $\frac{151}{440}$
-1.80
21.44

2.16 434.86

1270

33.9

14037

15.205

291242

283

283

289

151

29.304

295

76.19

38.1

36.8

1941.33

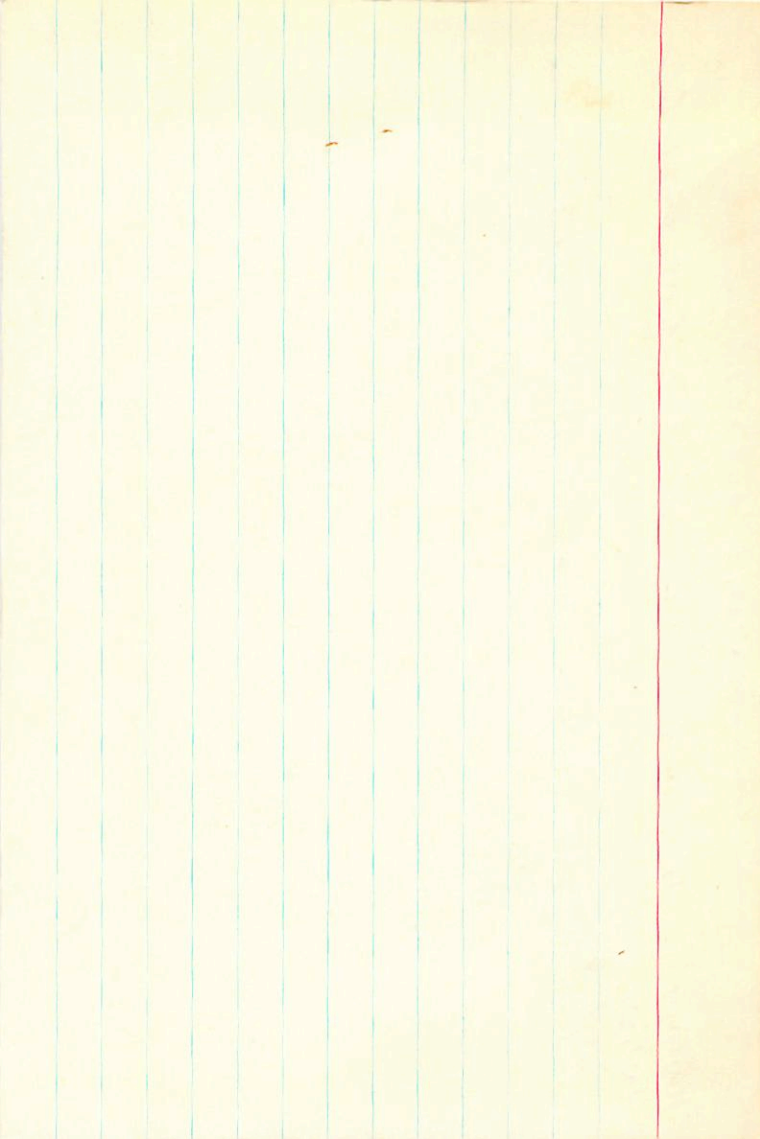
19.79

427

16.55

1990

4.54



29/5

100953 11 34.5 -32 42 F6 D-E

HR4473

GC15930

6.28 + 46 (-2) C

385

$$\begin{array}{r} -0011-0875 \\ 15 \\ -0140 \\ \hline -012-082 \\ \hline +102 \end{array}$$

320

208 + 15

290 296 155.951. 060 2.659 (8) 17,58

243 453 $\frac{15}{66}$ 79

100 = 1100 - 0011 = -014
 -9.8 -15.1 -18.6
 -117 -165 -269 -088 +10.2
 13.15



4473.000*

11.000*

34.500*

2000*

100953

11 34.5

-32 43

FLP-B

+10.2

4c

F=1183

(4473)

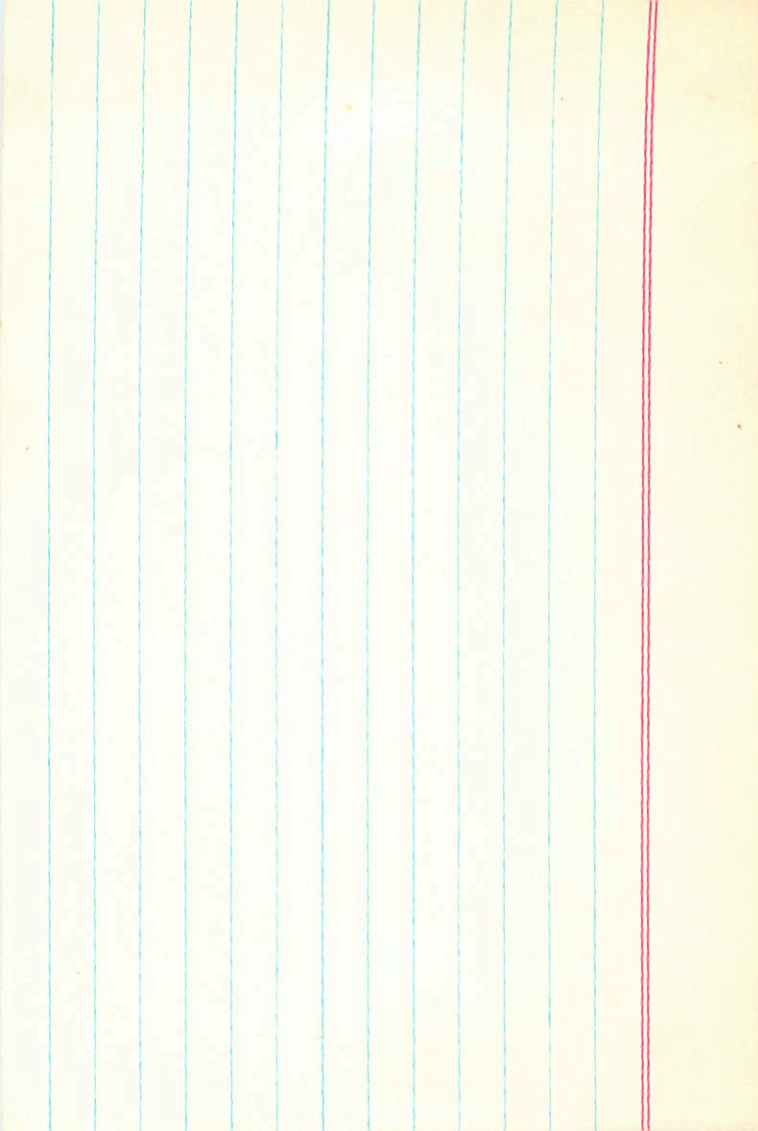
6.28 + 0.46 (1.61)

~~100~~ -090 1130

~~100~~ -085 6c →

100 -088

-014



π Cha 11 35.2 -75 37

-9.8 ± 0.9 G₃(D)

14R4479

5.04 + 34 F210 - 12

101132

(1.55)

-120 -00462

15946

-109 -002 N

-03266 -002⁶ N30

-107 +007 F

-0325-53.7-002 ± 3.2 G₆ 7430 -105

+002
000

1340 +0010

208
53
6
14

12.24

9489 -9784 +059
-0508 2414 0282

12.21 +113

128.23
23.75 0.14

8162

6965 1279
1582 1089

108 -994 -969 249 -105 000 -9.5 0 9.5 0
0 11 0 108 0 0 52.5^v 1.2 -2.4 +2.4 -0.2

+2.4 +51.2 +9.5 01

+2.4 +42.6 +9.5 012
+42.0 -10.8 -4.6

17413

+4.5
u

11 35.2 -25 37 F2 III

3²
1570

101132

HRV479 5313 0110 F14

GC15946 -03547 5.64 +36 -3 C

1303

T Cha

1229 1142 .676 2.707 4427
-98 515 2226 149 625 2708

Am [184] 128 +32

Lim [183]

4.50 +44.2 -9.6 -10.1

[C] 630 130 162

-505 -229 -51

H.7

B

29

10 DE

4473.000*

11.000*

35.200*

-75.000*

-37.000*

-2.129*

3.000*

3.950*

61.660

-3.800

2.527

3.50 3.6

A0512V7
-0022#2.4
-0033
+004#2.0
+010

101154 11 35.8 -02 10 6.2 9121 -15.07

15967 ① 70.8①

7070 50.763 1402.4 -2 9 33.30 1896.7

$$\begin{array}{r} 105 \\ \hline 868 \end{array}$$

$$\begin{array}{r} -17 \\ \hline 33,47 \end{array}$$

34.069
16.690
$$\begin{array}{r} 50.759 \\ \hline 903 \end{array}$$

+9
772

15.46 1429.19

$$\begin{array}{r} 18.02 \\ \hline 48 \end{array}$$

113
156

$$\begin{array}{r} 23.13 \\ \hline 23 \end{array}$$

110.88

31.0

140.3

34.6

$$\begin{array}{r} 3361 \\ \hline 23 \end{array}$$

+38

331

23.09 1940.12

+2.4

32.1

$$\begin{array}{r} 3305 \\ \hline 40142 \end{array}$$

50.730 102/4
11 75/4
741

-1

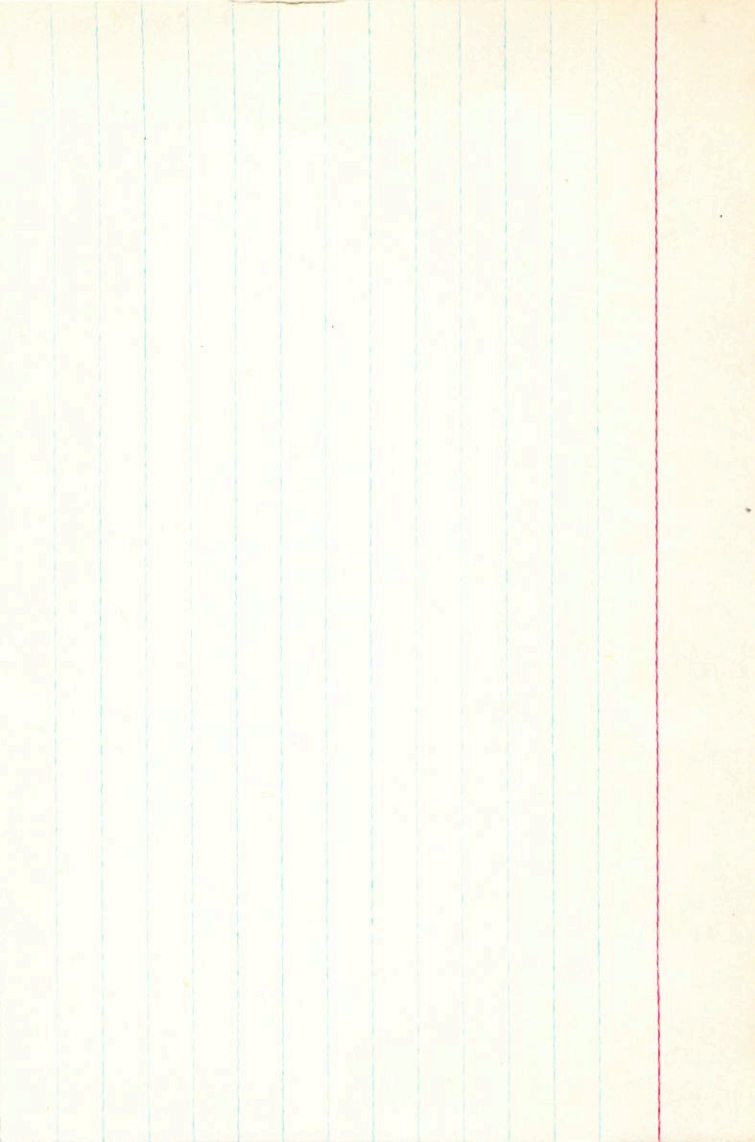
20.076
30.6786
50.75 -1/449

1941.57

13.82
5.20

33.09
-1.17
33.11

+3
133.06



Fluo

11 35.9 + 3 39

20.2
15.4

+ 149 Calbit + 11

- 068 - 061

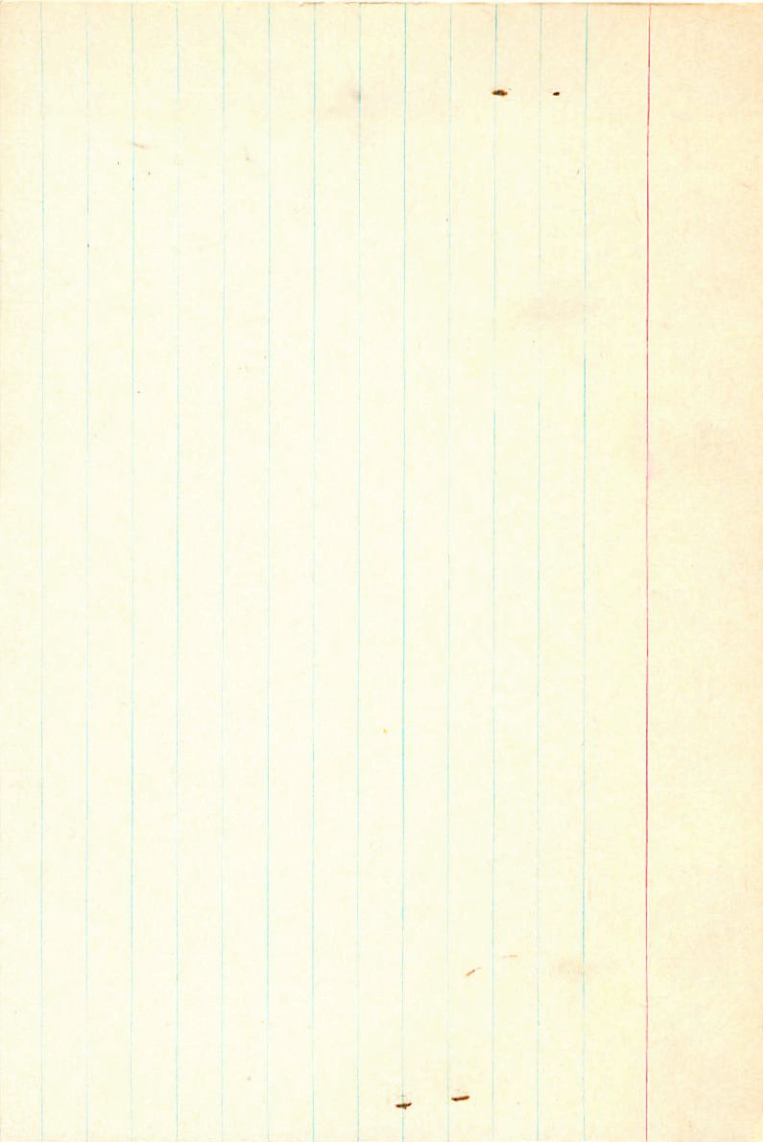
+ 5.5 + 143, - 355, - 200
 + 10.4 + 15, - 40, - 11

875 481 058
 394 775 - 442
 282 408 868

+ 2820 - 1351
 - 1270 - 2241
 - 0909 - 1180

+ 1429
 - 3511
 - 2089

+ 0.6
 - 5.4
 + 9.5



101266

H. 36.4 - 45 05

+20.630.5
515

9.29 + 0.65 RSTP

try 3 Van

-15 -27 -34 .010

-015 -081 Ceyl

25



101265.000*

30

11.000*

36.400*

-45.000*

-5.000*

-0.015*

-0.081*

5.500*

125.893

20.600

-0.075

-0.326

-16.178

-0.084

-0.906

-29.272

-0.374

0.270

-41.500

29.8 page

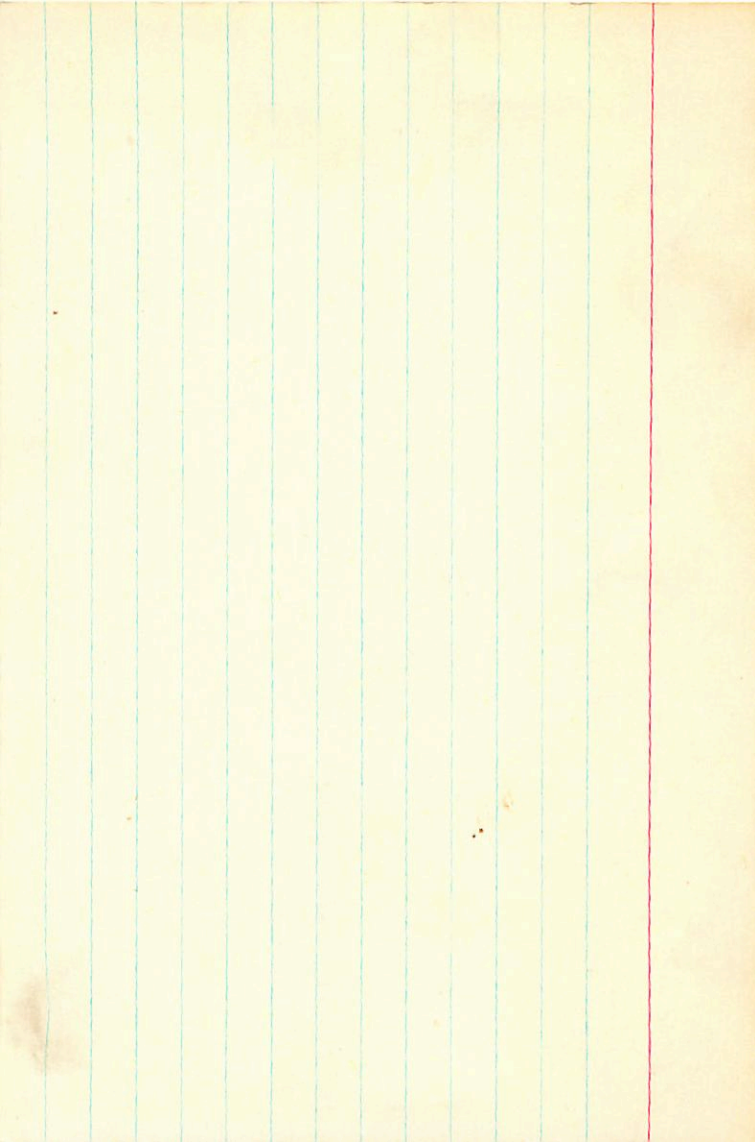
101349 11 37.0 -45 12 -2.950.76, (u)

8.88 10.84 100E

-169 -017 ^{Case} _{num}

+27 -10 -11 -026
+25 -11 -10 .025

-875	337	-346	+7009	-0271	+6728	+20.0	+1.0	+21.0
400	101	-911	-3204	-0081	-3285	-9.8	+2.6	-7.2
272	934	223	-2179	-0754	-2433	-8.7	-0.6	-9.3



662"6-

828"0

877"0

222"2

200"0

236"0

-14"981

2"372

-0"374

-13"000

26"669

*081"2

*011"0

*094"0

*000"5

*000"5

*000"5

*000"1

*000"3



510" 2-

218" 0

460" 0

3" 159

3" 296

3" 259

2" 547

3" 495

3" 310

11" 500

25" 351

*020" 2

*030" 0

*180" 0

*000" 00

*000" 00

*000" 00

*000" 01

*000" 2

Handwritten mark resembling a stylized '28' or '20' with a diagonal slash.

+57°1331

11 32.4

+57

07

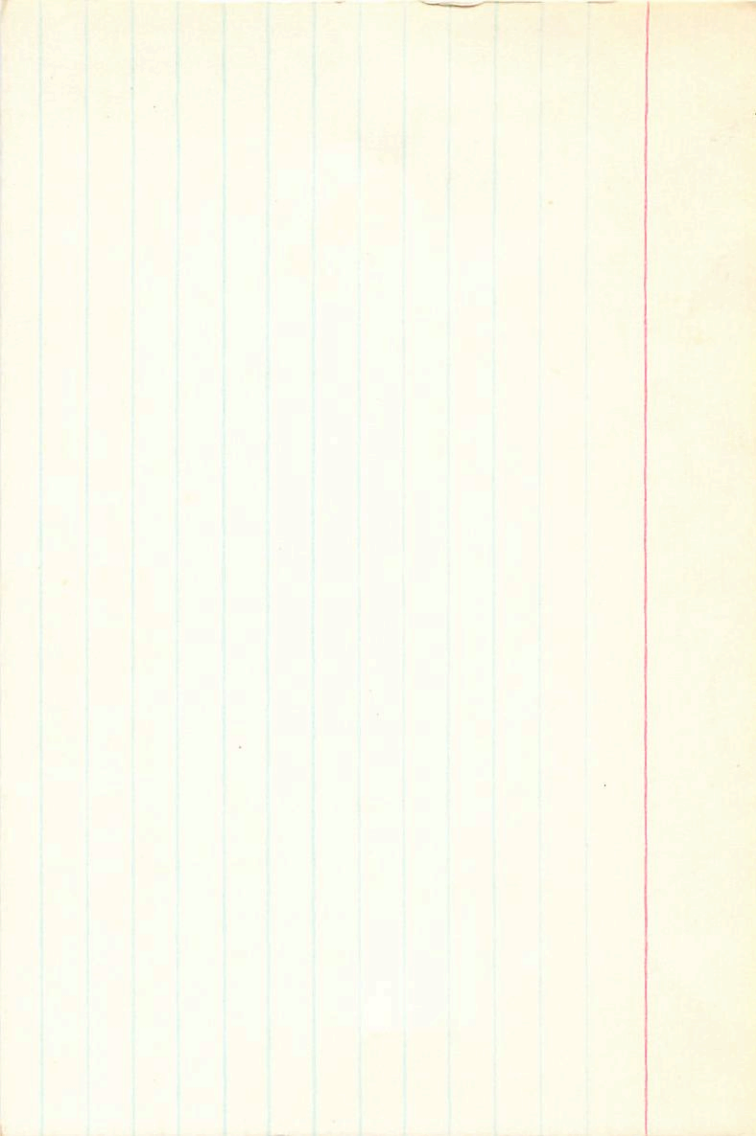
t → m, c,

8.47 .510 .268 .715

536

$\rho = -8 \text{ km/sec}$

$$\begin{array}{r}
 -0054 \\
 \hline
 0 \\
 \hline
 -0054 \\
 \hline
 -011 \\
 \hline
 -010
 \end{array}$$





100773.000*

11.000*

32.900*

-60.000*

-37.000*

-0.175*

-0.021*

3.850*

58.684

0.500

3.75

1.18

54.8

51.27

13

58(60)

HR4464

11 331 +11 11

-5 d

W7046

+029 -026

6615842

6.40 +0.13^{+0.10} 44 111

+025 -02

7462 7957 0411
6657 6663 1529

8.118 984
102
916
+020254 -026±4.1
0202708 911
-022 153
18.81

+024 -018

+026 -020 17.3

110 → 26
0.0346 0280

8.123
20
53

6644

1224
-25
16.44

7008 7180 0409
-7134 -0696 6076

+00205 -022

+0020 -0205

F165
SMT

8.144
415
162

69.44

152.07
-19
16.88

+0244
+031-016

0384
4.87
+2.45

+0

~~0-φ 194 58 / +026 -020 -5 -004 -1.0 -095~~
0 0 -026 004 -019 -123 -4.7 +4.7 0

-0.1 -30.8 -24.8 004
-39.7 -4.8 -6.6

+1.5 -20.5 -16.8 006
-25.7 -2.7 -5.8

+2.8 -12.3 -10.5 01
-15.9 -1.0 -5.3