

739-674 477879 -481-240 +26.6 -114 +13 1.500

355 054 324 077 1.377 1.533 23.4 -16 +17 088

-0365 1.377 -1 +239 +2

822847 216 -0316 240714 2308 00.7

-2 095

1.728
39.127 -26 436 3491

0 +11 0 08

822789 +21 8517 2576
810 -366-239 2556

+1 +13 0 075

3663 19.15 1582 07

26762 -60.13 19.44

+26 748 19.39

556e

436360

-0364 -232 Cambus

+274 F (29)

75732

F 49.6

+28 31 dno

+26.6

"0.0865

G-C12244

3527

-0264 -237
4805

+26.44(17)

W5843

5.94 +0.87

-440 -235

+22.80(13)

0.30

42117

13" MS 85"

-083
-012
12.74

6434 -9062
7655 -4228

5048
+0.15

+250640

11.58 1.30

10.25 -0369 -240 N30

28

-237 +432 GC

+38 -19 -9

1895
-0367 ± 1.7 -240 ± 1.7 N30

10.25
-0367 ± 1.7 -240 ± 1.7 N30

-481 -240 GC

A +23E +30

(7)

B +4E +15

(4)

+260 +101

(5)

-0368 -240 N80 T

-0364 -232
-486 ± 2.2 F

-507
-232 ✓

-0367 -239

22A(10)

22A(10)
22M(1)

586
494
492

(3)

4838

26.6

2457

5856

-484 -236

26.6

2457

5856

735-677 477 577 5 - 881-240 +26.6 -114 +13 -955

355 084 324 077 1.317 1.833 +23.4 -16 +17

- 3 + 36 + 3

+33-13-3

• 1

3

R.A. : 8.800
DEC. : 28.500
1. R.A. : -553.000
1. DEC. : -232.000
DISTANCE : 0.310
MODULUS : 12
D. VEL. : 27.900

q1 (U) : -0.634
q2 (U) : 0.137
q3 (U) : 0.761
dU : 1309.449
U : 36.345

q1 (V) : -0.065
q2 (V) : 0.971
q3 (V) : -0.229
dV : -918.844
V : -16.976

q1 (W) : 0.771
q2 (W) : 0.194
q3 (W) : 0.607
dW : -1989.185
W : -6.814

B

M47

8

50

+12

00

+33

$$\pi = 0017$$

$$-0.0067 \quad -0.0056$$

737 -676 208 978 -0067-0054 +33 -0012 +17-026 ✓

0049 0009 0045 0008 0194 0251 +32.3 -22 +24

-9 +41 -10

0015

+30-30-4

-3 +49

001

G-47-4

8 503 409 23

18826

11024

$$\begin{array}{r} 862 \\ 861 \\ \hline 862 \end{array}$$

$$\begin{array}{r} 424 \\ 436 \\ \hline 430 \end{array}$$

$$\begin{array}{r} 243 \\ 225 \\ \hline 234 \end{array}$$

$$\begin{array}{r} 382 \\ 380 \\ \hline 381 \end{array}$$

325

light

25824

5

504

47

33

241414

689 490 11

0036 044 Carlsheng

684 482

59

44

3.5

474



24



001	50	0
002	50	0
003	50	0
004	50	0
005	50	0
006	50	0
007	50	0
008	50	0
009	50	0
010	50	0
011	50	0
012	50	0
013	50	0
014	50	0
015	50	0
016	50	0
017	50	0
018	50	0
019	50	0
020	50	0
021	50	0
022	50	0
023	50	0
024	50	0
025	50	0
026	50	0
027	50	0
028	50	0
029	50	0
030	50	0
031	50	0
032	50	0
033	50	0
034	50	0
035	50	0
036	50	0
037	50	0
038	50	0
039	50	0
040	50	0
041	50	0
042	50	0
043	50	0
044	50	0
045	50	0
046	50	0
047	50	0
048	50	0
049	50	0
050	50	0

001 50 0
 002 50 0
 003 50 0
 004 50 0
 005 50 0
 006 50 0
 007 50 0
 008 50 0
 009 50 0
 010 50 0
 011 50 0
 012 50 0
 013 50 0
 014 50 0
 015 50 0
 016 50 0
 017 50 0
 018 50 0
 019 50 0
 020 50 0
 021 50 0
 022 50 0
 023 50 0
 024 50 0
 025 50 0
 026 50 0
 027 50 0
 028 50 0
 029 50 0
 030 50 0
 031 50 0
 032 50 0
 033 50 0
 034 50 0
 035 50 0
 036 50 0
 037 50 0
 038 50 0
 039 50 0
 040 50 0
 041 50 0
 042 50 0
 043 50 0
 044 50 0
 045 50 0
 046 50 0
 047 50 0
 048 50 0
 049 50 0
 050 50 0

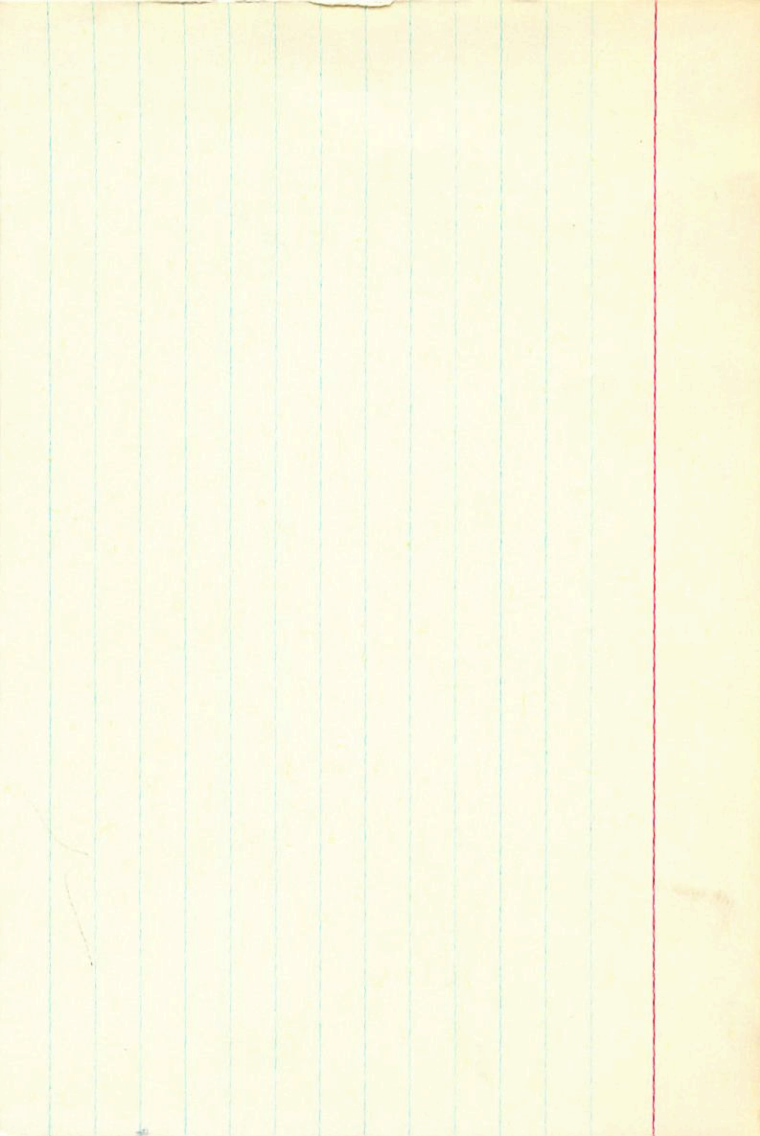
R.A. : 8.850
 DEC. : 17.550
 M. R.A. : -57.000
 M. DEC. : -44.000
 DISTANCE : 3.500
 MODULUS : 50
 AD. VEL. : 17.400

q1 (U) : -0.642
 q2 (U) : 0.281
 q3 (U) : 0.714
 dU : 106.576
 U : 17.756

q1 (V) : -0.056
 q2 (V) : 0.911
 q3 (V) : -0.410
 dV : -175.435
 V : -15.921

q1 (W) : 0.765
 q2 (W) : 0.303
 q3 (W) : 0.568
 dW : -260.234
 W : -3.153

14



5762

8 51.2 +30 46 967 -60.18 w(4)

75959

GC12289

6.3 } 1.5
6.5 }

w(40.5, +0.7)

G7 121

w5853

A057071

$\Delta m = 0.20$ muller

HR3532

+043^{±15} -024^{±13} GC

-73 -6 -25 .005

keep records

+0033 ±1.5
+0033

-024 ±1.3
-027

11.932 1904.6 +3046 12.26 1903.0

-150

782

1.13

13.39

35.307

11.899

28.42 1941.39

-15.74

11.899

12.63

12.44

896
+17
905

12.36

+123

-1.03

V Pay 4

8 51.4

-34 38

142

15 20-14

76339 9.27 -0.06 -0.235 140 +0.05 8.80

$$\begin{array}{r} -0.0012 \\ -0.010 \\ \hline -0.013 \\ -0.011 \\ \hline -0.024 \end{array}$$
 Cash + 100

V Pay A
 1.4 0.14 9.7
 6.8 10.50

E = 105

9.7

15

0.000*

8.000*

51.400*

-34.000*

-38.000*

-0.016*

-0.011*

9.700*

870.964

0.000

0.010

0.214

9.045

-0.008

-0.971

-7.021

-0.091

0.110

-79.336

15

3549

9

51.7

-56.28

AD

13120

needed

27.86 36.48

11.61 54.9 19.11

603-8-1505662877

25

~~157~~

148 841

296

4921

66.23

68.02

18.55

96.45

5.04

L.B. 29

SB esp

3551

8

52.2 -40

20

Am

76360

-324

12314

5m=00

5.34 +225 (+04) C

5.31
76
11

168
504
174

179818

224 -64

220 666

2760 0,9,8,6,5

2

+2.6 +16.5

-0012 -030 stay

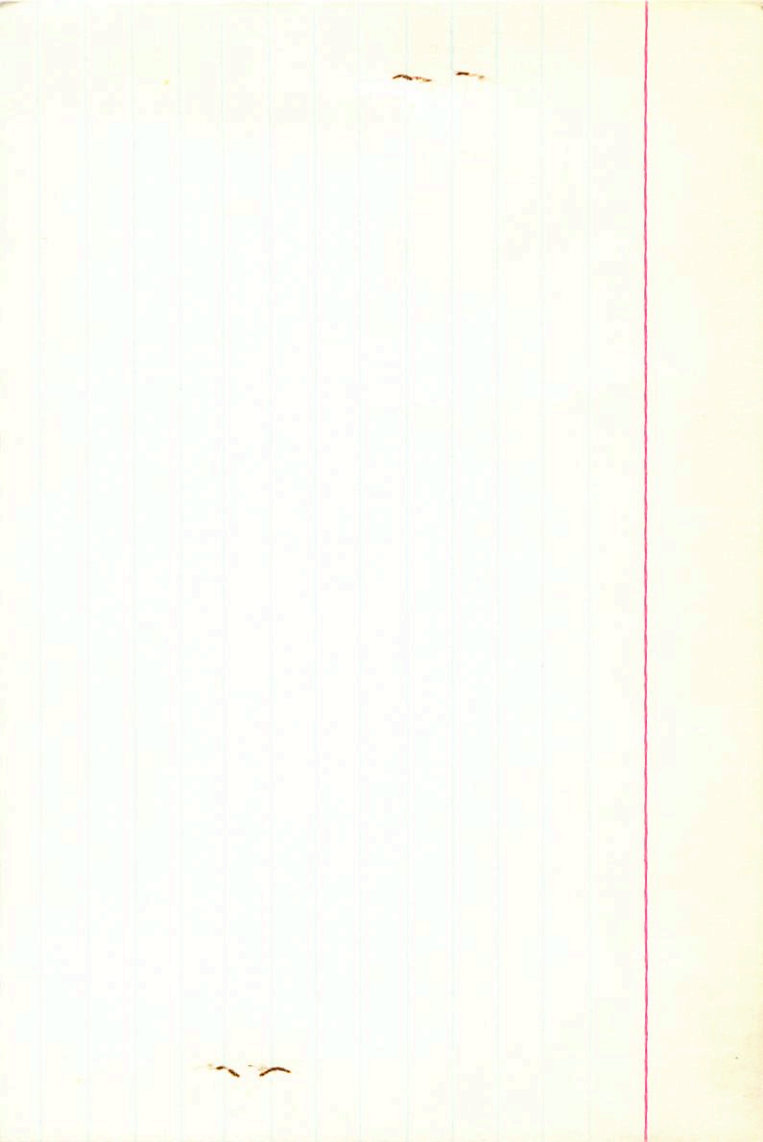
9964
-0796

1345
-541

-0009 -027

-0090

1004 -1004



3531 8 52.4 +64 47 5.55903

-025 -085 62

+084

+30

16

57mc

+8012 ± 3.4 -018 ± 3.0

75972

8 52.6 +65 43 7.4 966 -33.78

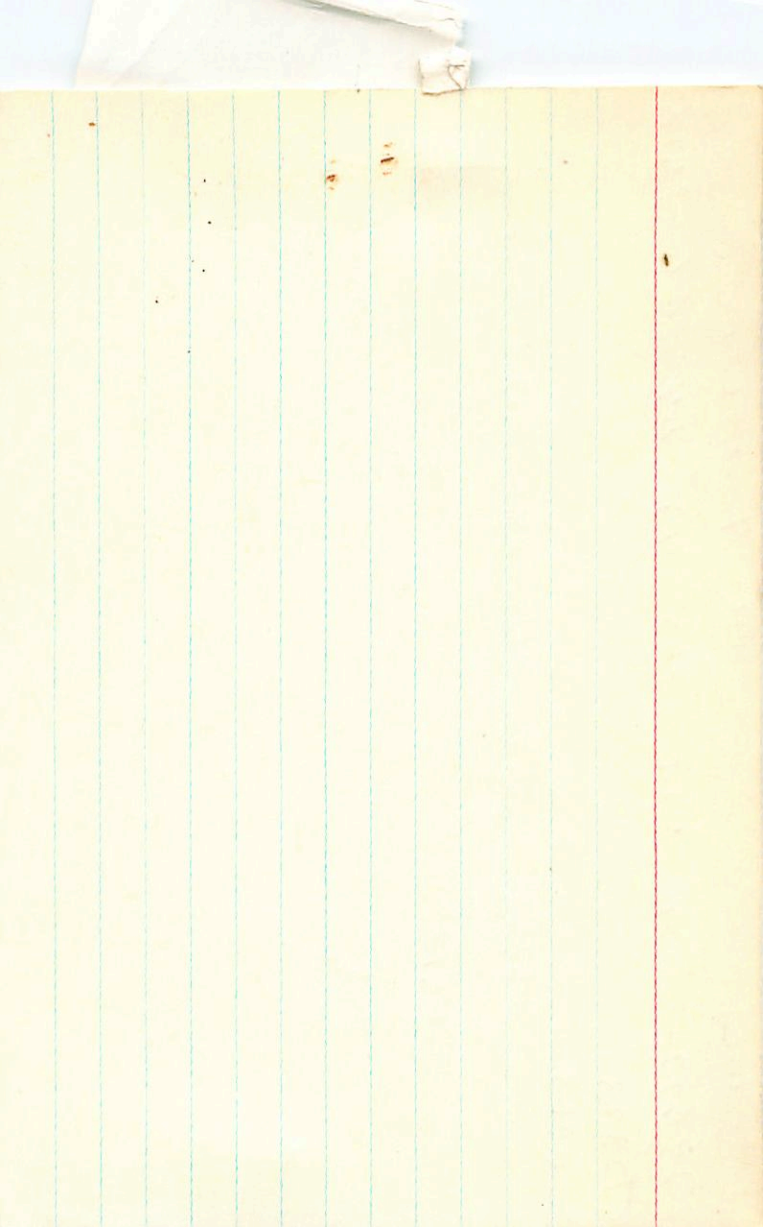
12323

5863

34.265
070
195

1891.7 +65 43 5.17 1887.8
1.12

34300
40



-16 + 5 10.65
113-1152

T Rya 8 53.2 -8 57 7.2-13.2 2.2

-0.12 + 0.02 11.4
-0.18 -3.0

-0.08 + 0.03
-0.012 24 + 0.01 24
-0.018
0.000

7
u¹² u⁴ u³ u⁵ u¹⁷
u⁵ u² u¹⁹ u² u²⁰

-6.45 - 5.08
-6.51 - 5.74
5.62 - 3.78

+0.550 -35.5
+0.473 +2.5
-0.650 -42.0

-1.8 = +34
+2.3 = +5
-1.1 = -43

17
+0.6

T Rya 8.0 +1.39 +0.65 -3.8 +34 +5 -43 -18 -3.0 288
6.5 +1.39 9.05 9.05 +6 0 -6 0 +22

E 24-14

T Reg 236.8 + 224

75283

230.4 + 242

5.30 - 09 - 0.37139 + 04 5.13

238 + 25

5.54 - 06 - 0.18 88 + 03 5.0

+ 06 9.5

✓

0.460

8.000*

53.200*

-8.000*

-57.000*

-0.016*

0.005*

10.650*

1348.963

-3.000

0.063

0.507

82.904

0.019

-0.773

27.613

-0.045

0.381

-62.146

A handwritten mark, possibly a signature or initials, consisting of several overlapping, curved lines.

AOS 7095

+0058 ± 3.2 -106 ± 2.8
+0058 -103

SP 4
HR 3556

8 53.4 -27 29 +4.66
4.89 +0.13 +1.56 26" +6.2

+077 -107.6E

76483
12343
5875

22.803 1903.7 -27 29 18.81 1899.2

-264

1534

+5135

13.43

22.734
+4

742

33.6

17.93 1939.64
+30

17.63

18.512
4.175

22.687
+696

+17
713

728

+194

34.19 1934.99 4.63
-42.25

16.44
+4

17.28
+16

17.09

37.3

38.1

17.36

-3.93

727-686-462957 +077-107 +4.6 049-2.1-450
-056-036-053-034 -104-422+4.1-2.8 +3.0 02

~~0.0~~-18.1-24.6

-27.7 -14.1 -1.6

-6.3 -11.1 -17.1 03

-15.3 -10.9 -0.7

~~1036~~ 013 ~~00000~~
~~046~~ 0038

76318 53.3 +26 34 dF2 +26.56

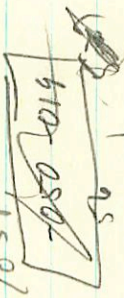
+2601869

8.2

WS874

~~053~~ ~~026~~

-056 -074 024 506 59
-051 -082
-044 -015



8.12 105M

-050 -022
-053 -021

~~044 -015~~ ~~055 -028~~ ~~015~~
~~055 -025~~

-052 -028
-5 -2
-055 -027

+1674 -0218 +1461
+0138 -1233 -1095
-1989 -0264 -2258

+153 +20.0 +35.3
-11.4 -7.1 -18.5
-23.6 +16.4 -7.2

6849 ~ 9236
7557 ~ 2824

727-686 + 448 894 - 055 - 025 726.8 - 011 + 12 - 104
040 008 038 007 156 218 + 270 - 16 + 17

0 + 39 + 2

01

$\frac{+4 + 44 - 1}{+39 - 18 - 10}$

008

+6 + 49 - 3

007

$\frac{+42 - 20 - 14}{}$

8

01
8
8
152

5606

76700 8 53.3 -66 37 68V +366 4C

F01162

8.13 +0.75 (1.86)

2,326

(A9)

8.15 956 250 431 (2)

-284 +101

+095 CR

-286 +100 CR

87.900
26.600
-59.000
-25.000
5.120
105.65
26.500
-0.640

110.05

19

8.900
-66.600
-720.000
100.000
2.500
32
36.600

-0.649
0.731
-0.211
1226.500
31.075

-0.047
-0.315
-0.948
-85.210
27.384

HR 3570

8 53.8 = 54 46 - 22

4076653

+033 -097 GC

+031 -090 GC+

309	167	402	2.649
304	158	458	
		426	

5036-090

031-090

0 914
 0
 +4.10

307

142
 3/4

726 - 688 - 818 575 + 031 - 040 - 2 074 2 - 246

-022 - 054 - 021 - 051 $\sqrt{137}$ - $\sqrt{355}$ - 1.1 + 1 - 1

025

+6 - 15 - 8

$\boxed{-76 + 4 - 7}$

03

+5 - 13 - 6

$\boxed{-14 + 5 - 6}$

02

+7.8 - 18.7 - 10

$\boxed{-20 + 5 - 8}$

04

+4 - 10 - 4

$\boxed{-11 + 3 - 3}$

GL12434
H020942
10 UMa

Bud 5-1

8 57.2 442 "

$-0.390 - 0.254$
 $+26.4$

44201956

999 ~ Ap. J. Sup. 8, 125, 1963
Ap. J. 154, 241, 1969

A 4.14 40.37

Bari

B 5.97 40.65

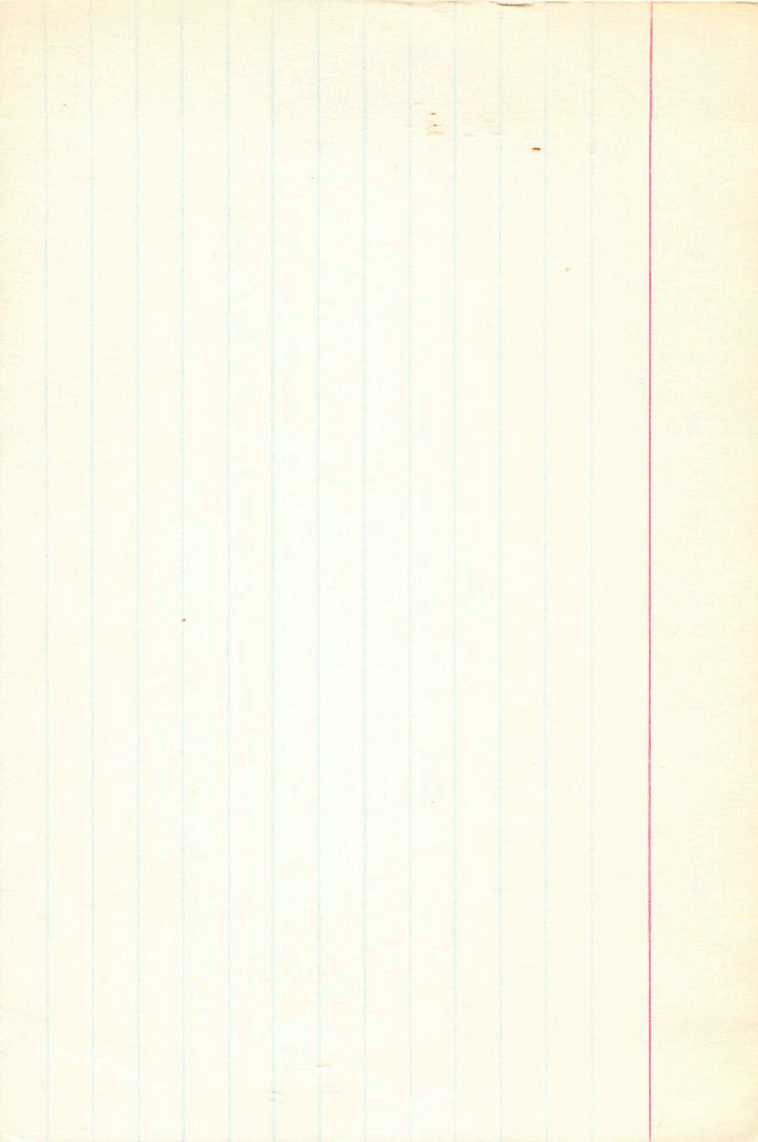
$P = 2.22$
 $Q = 0.58$

J.O. 3540 1955

070A(16)
069S(20)

π 066 441 -17 -6 0.90 0.48

$m_v(1)$ $m_v(2)$
+3.25 +5.05



76572 8 54.9 +30 26 dF3 +8.8t

HR3563

BC12388

616me

F7,10

057 019 66

9²
246
16

.303 .135 .504 ② SRC - 2.636 ③
64

[m] 189 +40

[C] 443 107
143

no
955
f

-652	-120	749	-1700	+0108	-15.92
-044	140	516	-0115	+0882	+0767
757	161	630	+1973	+0145	+2118

+6.2
-1.6
+5.2

18.36

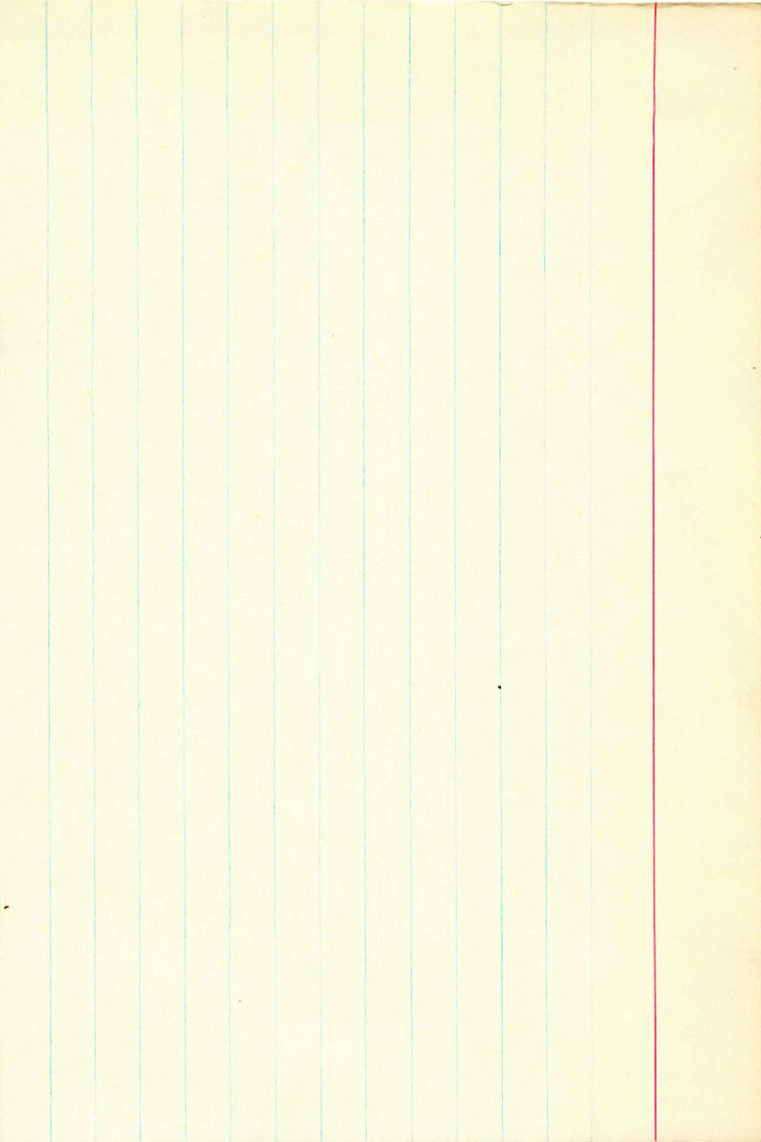
1058-10196
→

12101947 5 55.0 +20 39 dF2 136.01

-0071 063 Carlberg Y -020 -064 Y

Carlberg

036 063



G-9-36

8 55.0 + 24 A/O

-47.5

① 447

11.96 + 57 - 15

565

① 25

① 6.25

1345 1310

→

$$A^{1.322} = \frac{1190 - M_2}{M_2}$$

→

① 260 - 225

f3
-002 ✓ -026 8124

-037
-036-003

505 + 175

460

242
5
2/2

RT we 8 55.6 ¹⁶ +11 02.5 -0278 -0266 4854
 $\frac{11}{036} \frac{13}{026}$ N1511

RT we 8-3-9.4 90.5

now down

7.33 +44-47 -32 511er -0.0371 p=+360

297m.

Fig 103

210

-037 -024 -001

-0026

L B

7.3 4.7

4.64 +1.68

-038 -026

N1511er

22

+1.56 +1.70

$\frac{3.26}{2.14}$

$\frac{4.14}{2.1}$

-038 -026

N1511er

+1.15 1104

$\frac{2.1}{2.1}$

8.1

7.2

RT we

~~7.3~~ 7.2

+1.55 +1.15 -4.85

+54 -60 -58 -37

+360.100 ± 103

4.9 +1.70

8.15

+7 -10 -16 -26

+33°

0.000*

8.000*

55.600*

11.000*

2.000*

-0.036*

-0.023*

8.100*

416.869

36.000

0.067

0.664

51.737

-0.098

-0.511

-59.462

-0.174

0.545

-52.755

20

10-1-1

10-1-1

10-1-1

10-1-1

10-1-1

10-1-1

10-1-1

10-1-1

10-1-1

10-1-1

10-1-1

10-1-1

10-1-1

10-1-1

OP

557.55-

0.545
-0.181

-59.292

-0.511
-0.699

54.326

0.664
0.073

36.000

416.869

*001.8

*920.0-

*820.0-

*000.2

*000.11

*000.55

*000.8

*000.0

20



1888

1889

1890

1891

1892

1893

1894

1895

1896

1897

1898

1899

1900

1901

1902

1903

1904

1905

1906

9.000*

8.000*

55.600*

11.000*

2.500*

-0.036*

-0.023*

8.200*

436.516

36.000

0.072

0.664

55.309

-0.086

-0.511

-56.068

-0.168

0.545

-53.911

26

RT Inc

8 55.6 +11 0T⁰³³ 7.32 GMS

76734
+1101954

M4111

23.26 1911.8
107

33.001
127
128

1513.8

24.33

-008 ± 7 -032 ± 6
2
-006

47
184
286

33.08

BL
-0.037-0.026
292 mo

24.29

1929.6

+545
-60
-50

33.070

m-M

+44 +7/100

23.30

1940.11

+24.0

26
098

7.33

-47 -10/100

23.40

142

-18.4

-32 -13/100

23.40

142

+19.2

-652 363 666

+1143

-0447 +0696

-044 858 -512

+1047

-1057 -0980

+757 363 543

-1028

-0447 -1723

-0023

-026

bu 50

5.0
4.62
2.24
2.152

-0022 ± 5.9
-0018

-012 ± 5.7
-011

76757 8 55.6 +01 44 6.5 A0 +26.26

12398

5895

-0020 -011

-0021

33.236 1896.7 +1 44 8.53 1895.8

117

353

-031

65
918

33.265

21
286

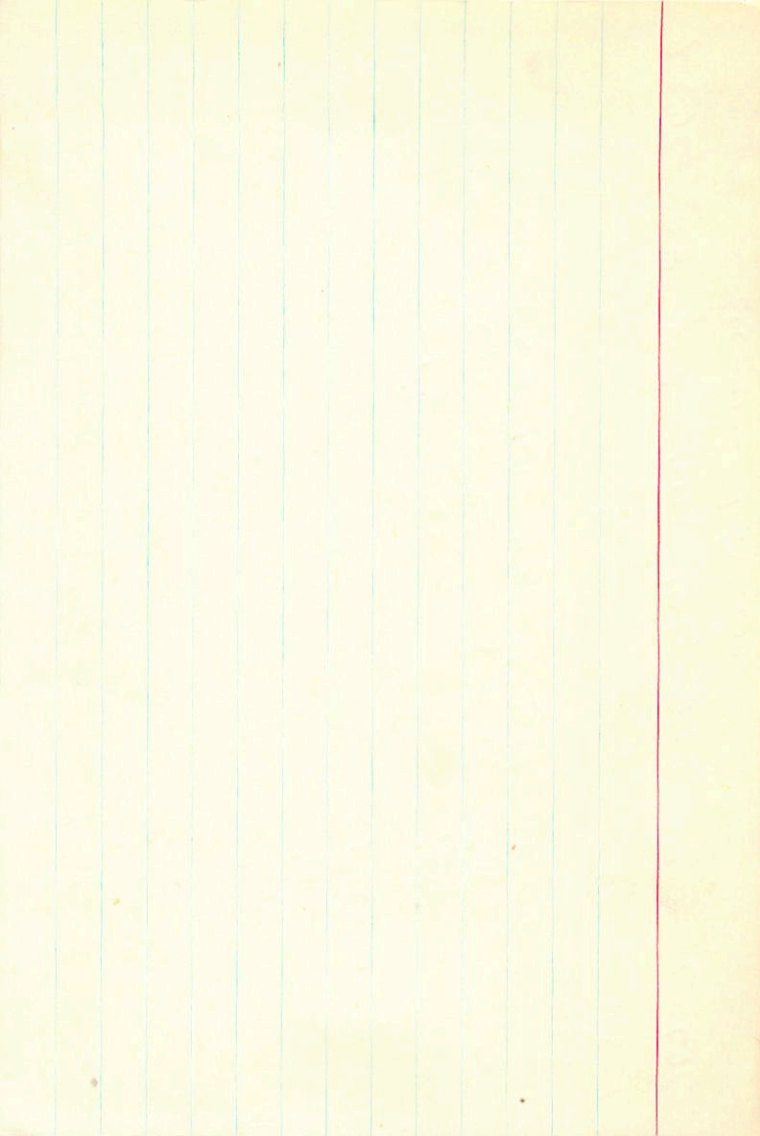
067

8.56 1933.8

19

73

43



76539

8

52.7

+74

36

dG-1

+1488

+760335

7.8

-056-18466

-040-211642

-050-200

707-707 973 232 -050 -200 414.6 -197 +14-215
035-140 035-140

0.

PKMC

35764A

8 58.1 +67 50

9M3 +4.6a

76827

-026 +016 FM3

12447

4.71 +1.56

-020 +014 GC

5-918

80

-018 +015 - 430

~~-014~~ ~~+015~~

-0031 +015 N30

-024 +015

-0034 +1.4 +015 ± 1.3
GC → N30

t8 t5 -4

.011

t10 t9 -9

.007

213 201 924 328 -014 +015 +4.6 014 +4 038
014 +010 014 +010 $\sqrt{19}$ + $\sqrt{19}$ 4.5 -3 +3 . 011

$$\begin{array}{l} +7 +5 +6 \\ \boxed{+8 +5 -4} \\ +13 +6 +8 \\ \boxed{+10 +9 -9} \end{array}$$

007

TT Dyn

8 59.8 +44 94

-63

-085-051

21



0.000*

000*

78408

W5941

7 00.2 +33 05 dF6

7.03 +0.50 -0.04 F25

$\delta = 07$

-406 -000

707-707 546 838 -406 -002 +20.5 -001 +39 -009 ✓
256 001 256 001 1.375 1.360 -41 +41 025

1 79 18
3 -40 26
-6 -15 18

0 70 18

-1-36 24

2-12 18

+7 +50 +39
+58 -8 -3
-03 +79 +39 035
+58 -8 +8

77586

9

01.4 +29 25

M #

+88.2 ←

-024 -019 Yalc
 +1 -4
 =-023 -023 GL

-0253 -0276

-025 -019

6.28 +1.065 (2)

5.90 133

17

45

43.5
9.8

5.66

4.54

1.12

40

13

22

77586.000*

9.000*

1.400*

29.000*

28.000*

-0.024*

-0.019*

8.850*

588.844

88.200

0.063

0.730

101.596

-0.085

-0.214

-68.960

-0.099

0.648

-1.224



-0034±8.0 +025±7.1

77907 9 01.6 -53 21 6.5 B9 -7.07

12528

5946

34735 1901.0

$\frac{167}{902}$

49.558

45.245

$\frac{34853}{+3}$

$\frac{856}{12.4}$

$\frac{-3}{853}$

3476

$\frac{+0.1}{7.71}$

-53 21 4.51

$\frac{-1.33}{5.84}$

9.82

- 55.62

$\frac{5.44}{-56}$

$\frac{6.00}{6.10}$

$\frac{-1.2}{6.10}$

5.7

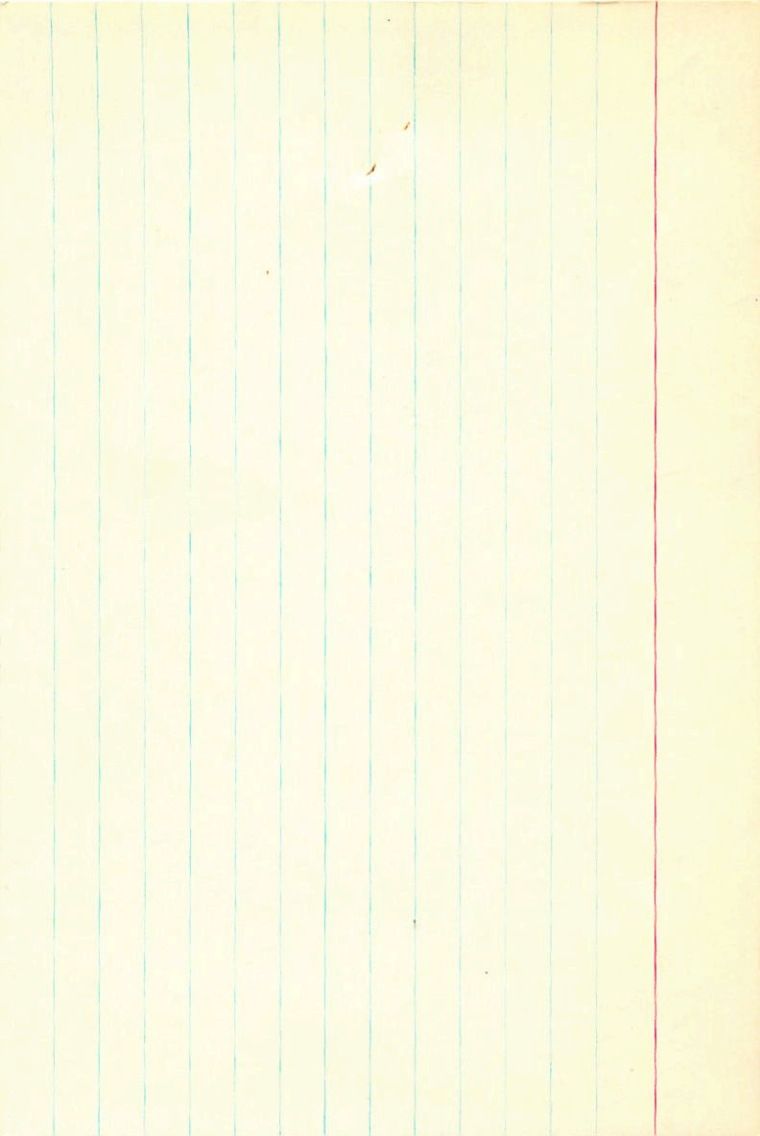
$\frac{-16}{6.16}$

1946.8

1927.20

$\frac{6.12}{6.29}$

1938.1



96

23

R.A. :	9.050
DEC. :	5.300
PM. R.A. :	-18.000
PM. DEC. :	-10.000
DISTANCE :	5.350
MODULUS :	117.49
RAD. VEL. :	24.700

q1 (U) :	-0.672
q2 (U) :	0.430
q3 (U) :	0.603
dU :	36.716
U :	19.215

q1 (V) :	-0.021
q2 (V) :	0.803
q3 (V) :	-0.596
dV :	-36.259
V :	-18.970

W5966 9 040 +67 05 5.39ms +15c
 403609 474 474/4
 +134②

4077800 474 474/4
 315 474/4
 4105 893
 4105 1139
 -017 -042
 -0029 -041 0c
 -017

126

-679 -322 662	+0542	+0610	+1152 -1114 +9.9
-015 505 425	+0012	-1710	-1648 -212 +6.3
726 -277 618	-0590	+0525	-0065 -0.7 +9.2

-0829 #20 ~~0925~~ 1.7

~~1.082~~ 94.7

~~779~~ 3311 ~~940~~⁴

~~235~~

3546

~~2.082~~
1.821 | 4408 | 82.33

~~31~~
954

~~12~~
20

-00305 -0935

-10321 -0427

-0197

-021-040

AD57187

-0120 ± 3.4
-0117

+003 ± 2.4

7303 (E)

78175

9 04.6 + 23 11

6.5 dF3 + 29.1 8

12583 HR 8617
5571

$\Delta m = 0.39$

711

7.2 dF3 + 32.3 6

30.7

37.192
 $\frac{55}{78}$
7

1500.4

+ 23 10

58.03

1896.9

-16
57.87

34.365
 $\frac{63}{378}$

627

414

31.9

57.53
 $\frac{28}{81}$

1935.6

67.66

7.625
26.845
34.470
 $\frac{51}{9}$
430
+ 730
6449

-373

1 17.81
- 59.15

1929.06

32.3

58.66
- 1.06
57.58
+ 57.25
57.83

57.82
-05

35.4

24

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Handwritten initials or signature in the bottom right corner.

9.100
23.200
-170.000
0.000
4.000
63
30.700

-0.679
0.227
0.698
526.707
54.662

-0.013
0.947
-0.320
0.700
-0.215

0.734
0.226
0.641
-569.105
-16.243

24

15429 9 05.4 +51 8F Am -0.19

3619

4.46 10.27 t.11

-134 -04260
-140 -039 F

939

692 -722 786 618 -134 -042 -0.1 -033 0 -123

093 023 097 024 327 569 0 0 0

034

+10 +17 -4

+14 -6 -14

+8 +15 -3

039

+13 -5 -10

78233 9 05.4 +51 00 8.1 d66 +21.18

+51⁰1985

5982

5

-0199 ± 1 -1377 ± 1 y

-0195 -384 Gm_{PT}

144389

XPyf

78541

9 05.9 -25 89 g mo +44.786(14)

GC12614

W5984

Y2183

-2506895

4.59 +1.60

HR3628

4.9-10.12"

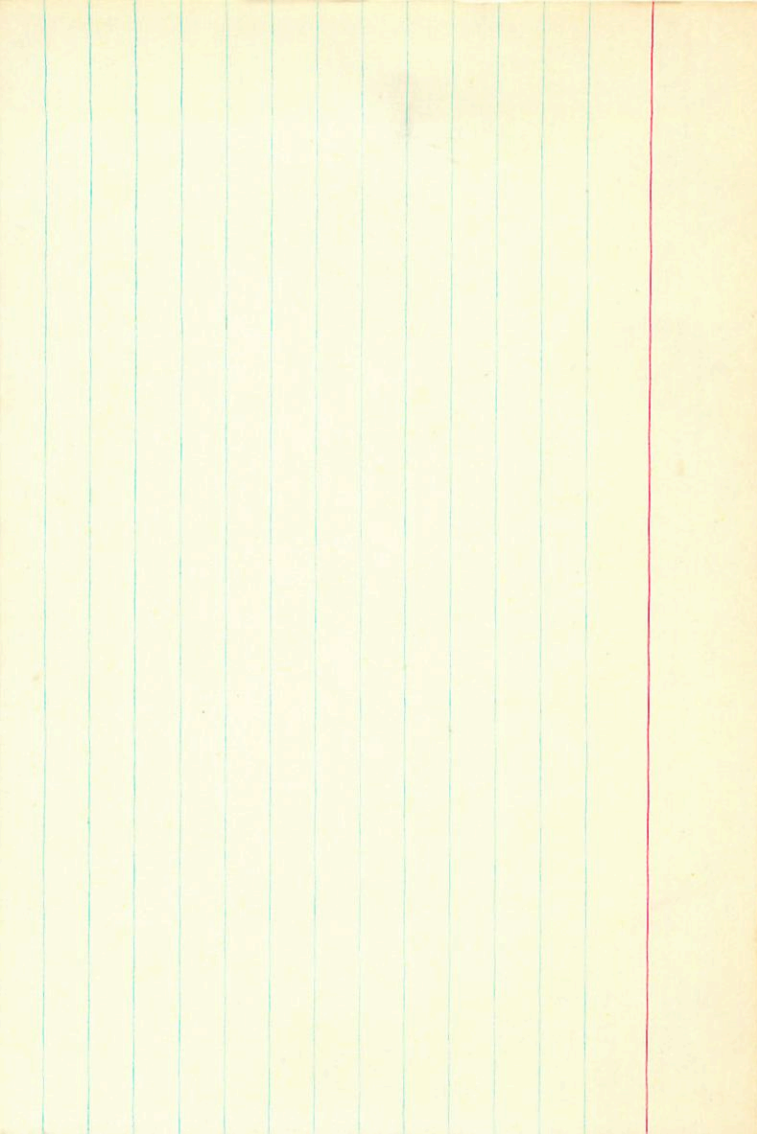
±2.4

±2.4

+039 +004

+006±5 +012±8 Y

8±12



14620

3642

78764

12602

1871 9.89

1244e

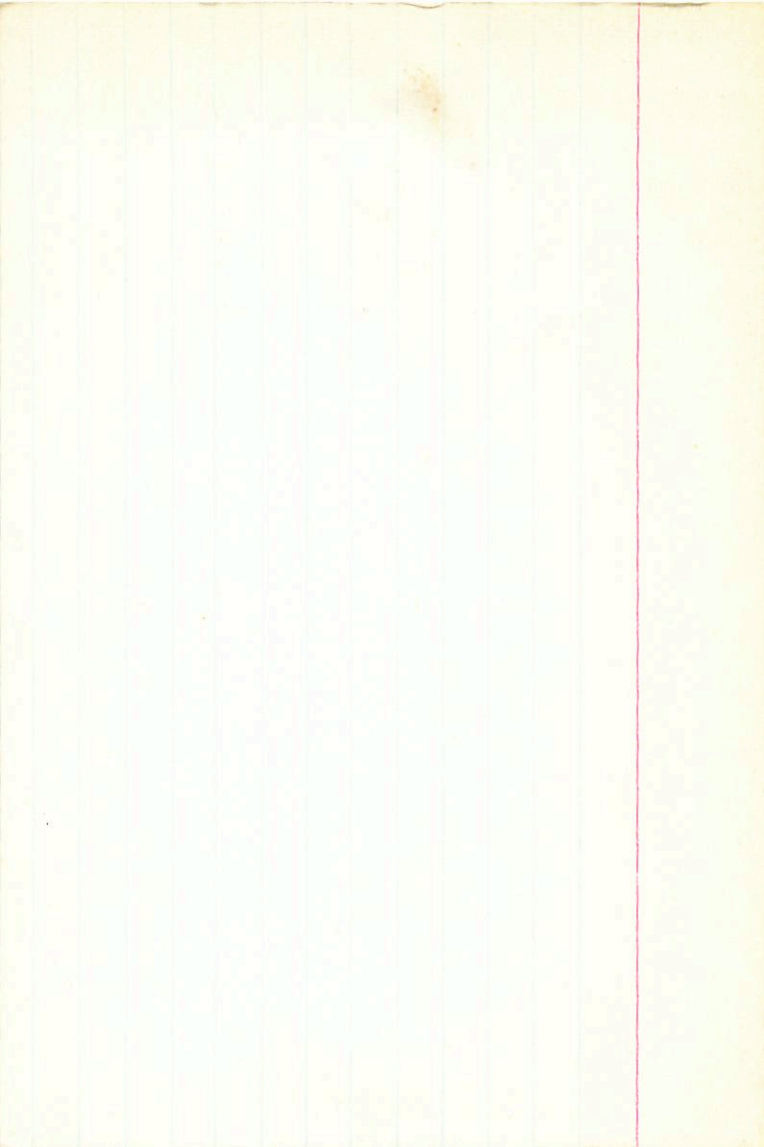
1244

9 05.2 -70 20

4.70 -16 -80 C

-059 +070 +150 $\textcircled{3\frac{1}{2}}$ $\textcircled{2.5473}$

$\textcircled{+004 -007} \neq 7$ Variable



120577202 10^{-20}

40029 ± 2.4
 $+0022$

280px

5 05.9 -25 39

500 -44.77

HR3625

~~4.66 +1.62 Cape~~

78541
12614
5984

4.63 +1.58 (2.58) +039 +004 6.2

51.123 1909.1 -25 39 20.69 1908.4

$\frac{119}{.004}$

$\frac{17}{20.86}$

-22 483 -1
-29 +43 +8

012
007

$\frac{45.207}{55.760}$
 $\frac{51.029}{034}$
 $\frac{132}{000}$
 $\frac{27.5}{000}$
 $\frac{132}{000}$
 $\frac{132}{000}$

15.78
 $\frac{41.62}{20.81}$
 $\frac{21.21}{21.14}$
 $\frac{1934.74}{20.81}$
 $\frac{1934.74}{20.81}$

3.74
36.9
28.5

21.00 1934.0
 $\frac{21.00}{20.81}$

51.087
 $\frac{132}{1899}$

688 -725 -433 502 +009 +009 -44.7 -002 +19 017 ✓

-027 001 -028 001 -433 -435 -403 +29 -28 012

+18 -38 +20

-22 +43 -1

+10 -46 +22

007

-29 +43 +8



3031.000*

8.000*
52.400*
64.000*
47.000*
-0.025*
0.005*
5.000*
100.000
3.000

-0.056
0.689

-3.545

0.377
0.390

38.826

-0.177
0.610

-15.896

16

57mc

+0012 ± 3.4 -018 ± 3.0

75972

8 5-2.6

+65

43

7.4

966

-33.78

12323

5863

34.265

$\frac{070}{195}$

1891.7

+65

43

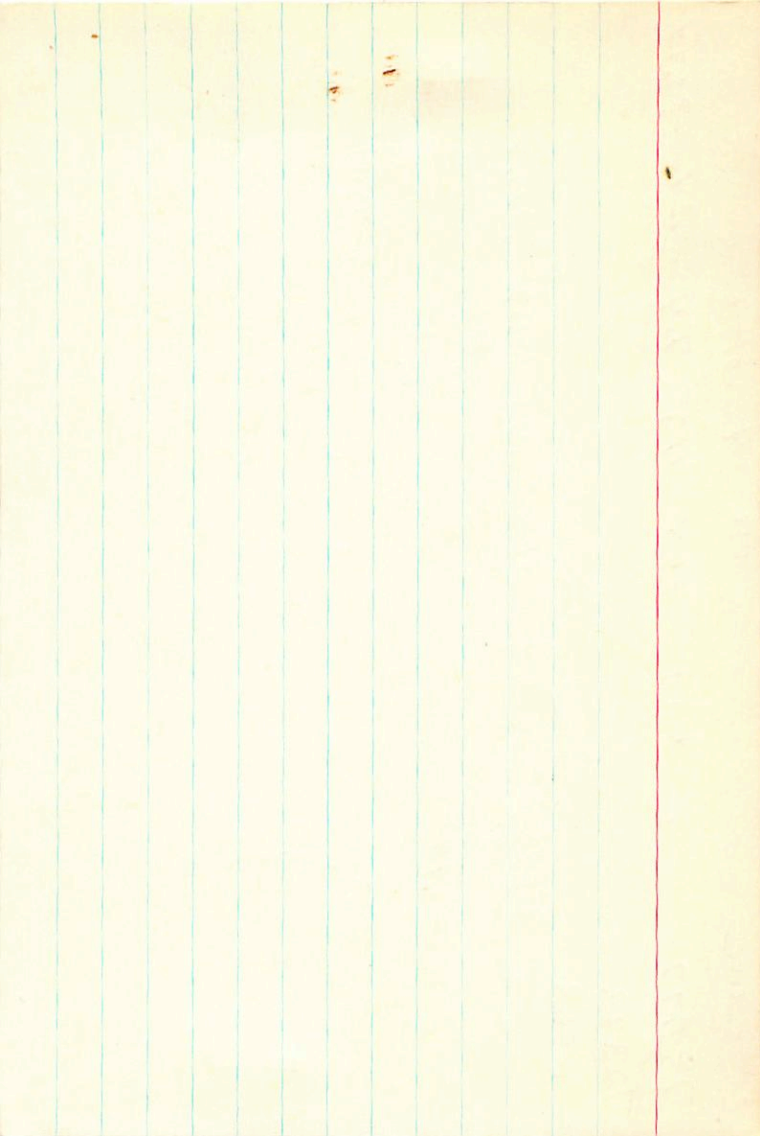
5.17

1887.8

$\frac{112}{6.29}$

$\frac{34.300}{44}$
344

6.07 1945.07
 $\frac{-7}{6.00}$



8006

76700 8 53.3 -66 37 68V +366 4C

FD1162

2,326

(A9)

8.13 +0.75 (1.86)

8.15 956 250 431 (2)

-284 +101

+095 CR

-286 +100 CR

19