

204670

21 284 -46 657 4/1/20

4.7.4

902 712 200  
411 199

3057

-0.23

3800  
3800

9476

9545  
02

2046 ✓

8201

21 28.7

+11 55

(16)

5.99

204

-020 140 928 2.943

133 933  
266

1199

21.5

+11.9

5.9

+22.5

+0.5

-5

5.4

5.4

494

-16

$$\begin{array}{r} 44435 \\ - 60 \\ \hline 375 \end{array}$$

$$\begin{array}{r} 89.5 \\ \frac{40012}{10011} \end{array}$$

$$\begin{array}{r} 0.52 \\ \hline 1.32 \end{array}$$

$$\begin{array}{r} +0011 \text{ 54.1} \\ -013 \text{ 74.0} \\ \hline 716 \end{array}$$

$$\begin{array}{r} 0.52 \\ \hline 1.32 \end{array}$$

$$\begin{array}{r} 44.406 \\ + 20 \\ \hline 44.426 \\ + 81 \end{array}$$

$$\boxed{\begin{array}{r} +022-005 \end{array}}$$

45011-0145

450138-0015

40198

$$\begin{array}{r} 00.34 \\ + 24 \\ \hline 33.5 \end{array}$$

$$\begin{array}{r} 00.60 \\ \hline 1.72 \end{array}$$

42

21.500

11.900

22.500

- 5.000

5.400

B1

120

- 16.000

0.733

0.572

- 0.260

62.964

114

13.461

- 0.057

0.591

0.004

- 20.000

-15

- 15.273

- 0.670

0.569

24

- 0.466

- 04.190

-4

- 2.659

3 Run

204783

21 28.9

-41 24

5.4 185 -7.8 a

+0013 ± 4.6

+0017

+016

+006 ± 3.5

30138

13531

5-6.353

1907.9

-41

24

3.27

1901.6

-055

298

-29

3.56

56.388

-27

365

3.15 1939.48

12

3.03

39.8

364

+066

9473

47.4

45.8

56.7

2.84

+72

2.52

1955.25

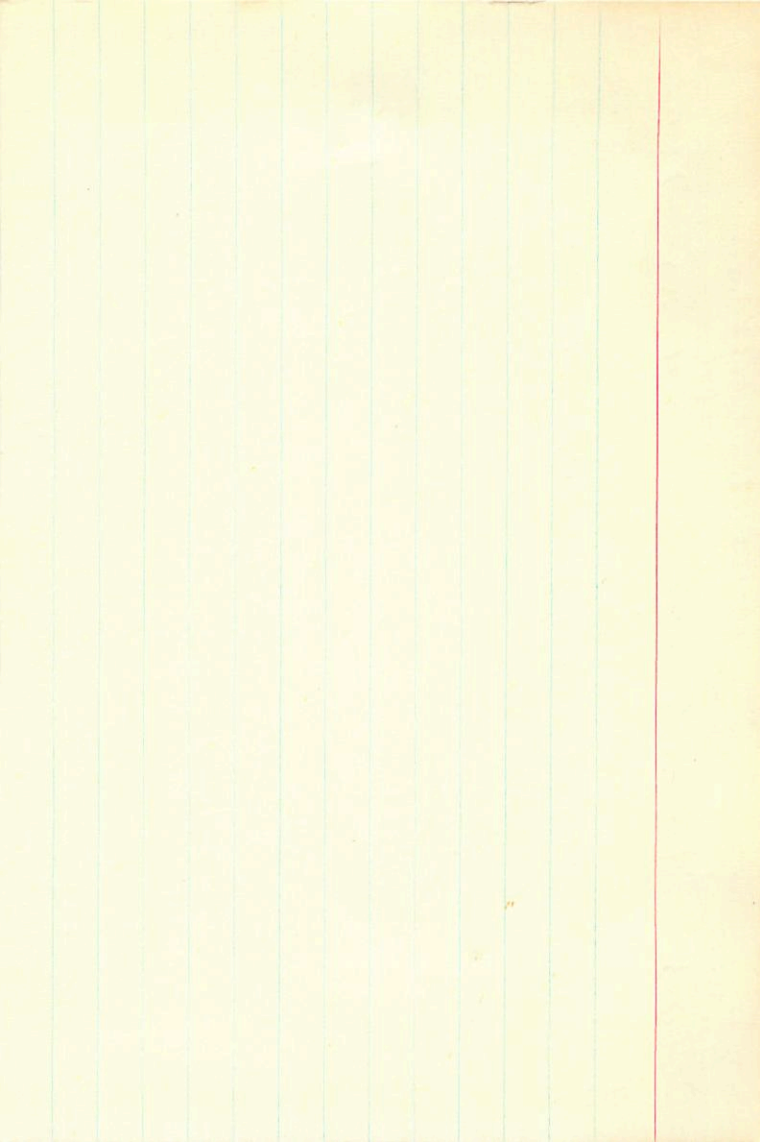
-12

2.64

56.378

-14

364



21 25.6 00 00 140-78C Hd(2)

(X)

004234

CC1259

9.7 110M AG1257 9.90 0.97 (3) Rom

Y5191

13.5 1344

9.5-10.96 (8-23.7.6)

422+045  
206 20"

Composite

564 Bonds  
Sumbly

W13534

1888 + 31 AG12 38

224-9 WDF

~~1397 + 028~~

+48 00 Cui

+121 -59 -28

2.15

580 588 346 188 (3)

(X)

9517 954

1516 1588

980 588 346 188 (3)

987 579 385 175 (2)

Composite?

Good sample

16510 Y(10)



-610792 0 1 7.450 0 -75.0 0 0 0  
293 0.350 0 1.355 1.500 -75.0 -62-45

-15+1090 0255

+95-56-5

-0<sup>0</sup>4234 +360  
+0.45 +28  
250 -75

+75  
-1.45

Open WD  
→ EGYS (DB)  
134 Avenue  
dist. 1st

Dist. 1st may be correct

Dist. 1st  
Dist. 1st  
Dist. 1st

22



M	:	-82'585
Q1	:	-132'529
d3 (M)	:	-0'024
	:	0'490
d3 (M)	:	-0'013
d1 (M)	:	-4'240
	:	44'188
d1	:	0'002
d3 (M)	:	0'240
d3 (M)	:	-0'022
d1 (M)	:	14'000
	:	104'300
d1	:	120'250
(M)	:	-0'420
(M)	:	0'484
(M)	:	0'133
DEG	:	-13'000
DEG	:	100
PRICE	:	0'000
	:	42'000

ANCE : 45.000  
PLUS : 5.000  
VEL. : 100  
-78.000

(U) : 0.733  
(U) : 0.484  
(U) : -0.478  
DU : 1569.720  
U : 194.268

(U) : 196.30

(U) : -0.057

(U) : 0.745  
(U) : 0.665  
DU : 44.158

(M) : -47.459

(M) : -0.678  
(M) : 0.460  
(M) : -0.574

MP : -1257.256  
M : -80.982

9.76

1057

204943 21 29.7 -24 49 A>E -8.6±1.1<sup>4C</sup>

FD1063

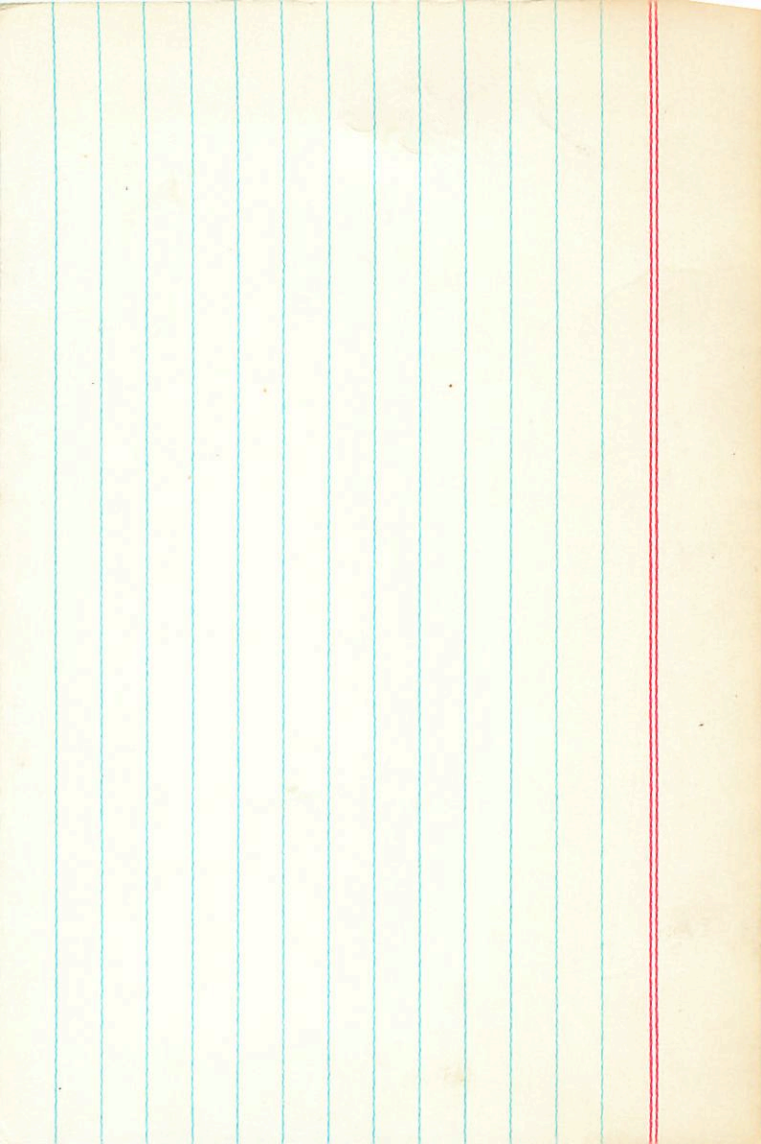
6.42 +20 (1.59)

+0056 +010 1030

+0032 +019 66

+0054 +014

+007



2092  
NGC ~~7059~~ (M39)

$-016 \pm 003$   $-018 \pm 003$  4 stars

7 mag  $E=+03$  21 30.4 + 48 13  
 $S(B-R)=+03$

$$\begin{array}{r} -3 \\ -019 \\ \hline \end{array} \quad \begin{array}{r} +2 \\ -016 \\ \hline \end{array}$$

14 \*'s - 14 stars Triangle PASP VO

250 papers.

+32 -35  
-0096 -0139

F104 +12  
+20

-009 -017

7.1 89 155

-30  
-13  
+2

+733 +678 +045  
-057 000 +948  
-677 +734 -035

-0660 -0514 | -117.4 -29.4 -0.6  
+0051 - | +005.1 +1.3 -14.0  
+0609 -0556 | +005.3 +1.3 +0.5

26







7892.000\*

21.000\*

33.000\*

43.000\*

13.000\*

-3.009\*

-3.017\*

7.100\*

263.027

-14.000

-3.086

0.042

-23.200

3.000

+700 1183

HO 205372

BV 382

21 30.4 +70 36  
21 2.7  
22 2.5  
2 2.48

6630165

21021 1888.8  
084  
20.935  
+70014  
+70017  
+70019  
+70006  
+70014  
+7002  
-0016  
6.508 1894.1  
-4  
6.79

20-583

+583

9478 31.031

21.047  
+28  
128

7013-001

21.5  
+70.0  
89

184679

57.20

2.23

733 615 291

-057-370 927

-678 656 236

+0104 +0087

-0008 -0052

-0096 +0099

+0191 +1.5

-0060

-0000

-0.4

-20.4

-5.2

11  
11

-0

-5.2

26

-19,800

27





21.588

70.688

39.888

-1.888

7.588

316

-22.888

8.733

8.612

8.297

42.121

6.788

-8.857

-6.388

8.923

-1.719

88.854

ANSI 5076

-0018 ± 3.4 = 030 ± 2.6  
+0006

205160 21 30.7 +20 29 7.6 dF4 +15.50

30172

8.2 dF7 F11C

13541

39.659 1912.0 +20 29 24.49 1905.2

068  
-----  
727

1.34  
-----  
2583

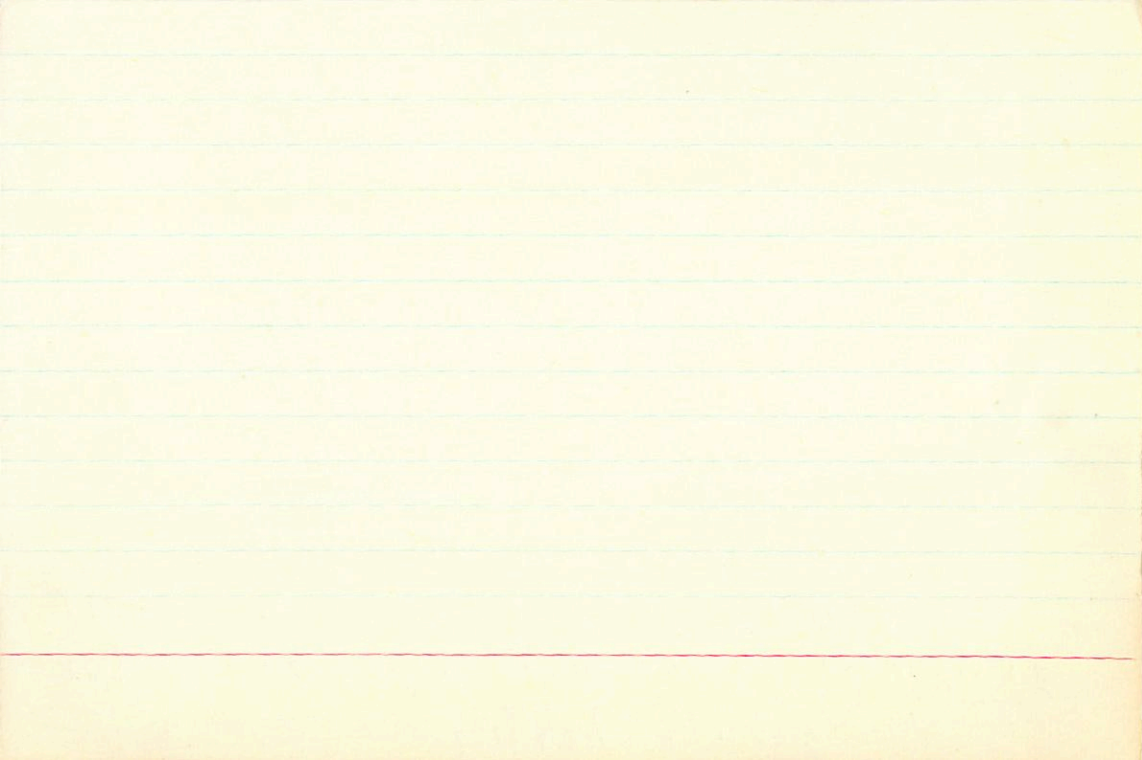
39.739

23.76 1934.3

1  
-----  
740

21  
-----  
23.97  
-----  
1.56

+01.3





A10515090

+0015 ± 3.2  
+0019

-108 ± 2.7  
-106

205132 21 30.9 -16 25 7.1 dF4-39.68

30178

13550

54.572  
-0.070  
50.2

1403.6 -16

25 19.35 1900.2

5.38  
13.97

7.1-10.5  
1.4

31.727

22.872  
54.599  
-40  
-5.59  
-1.1  
-5.45

32.1

54.93 1926.93

36.55  
17.98

10719  
35.7

18.5  
56.2  
+0.0

17.90 2320  
17.08 17.73  
32 3.76

35.5

21.482

33.130

59.616  
-32  
15.94

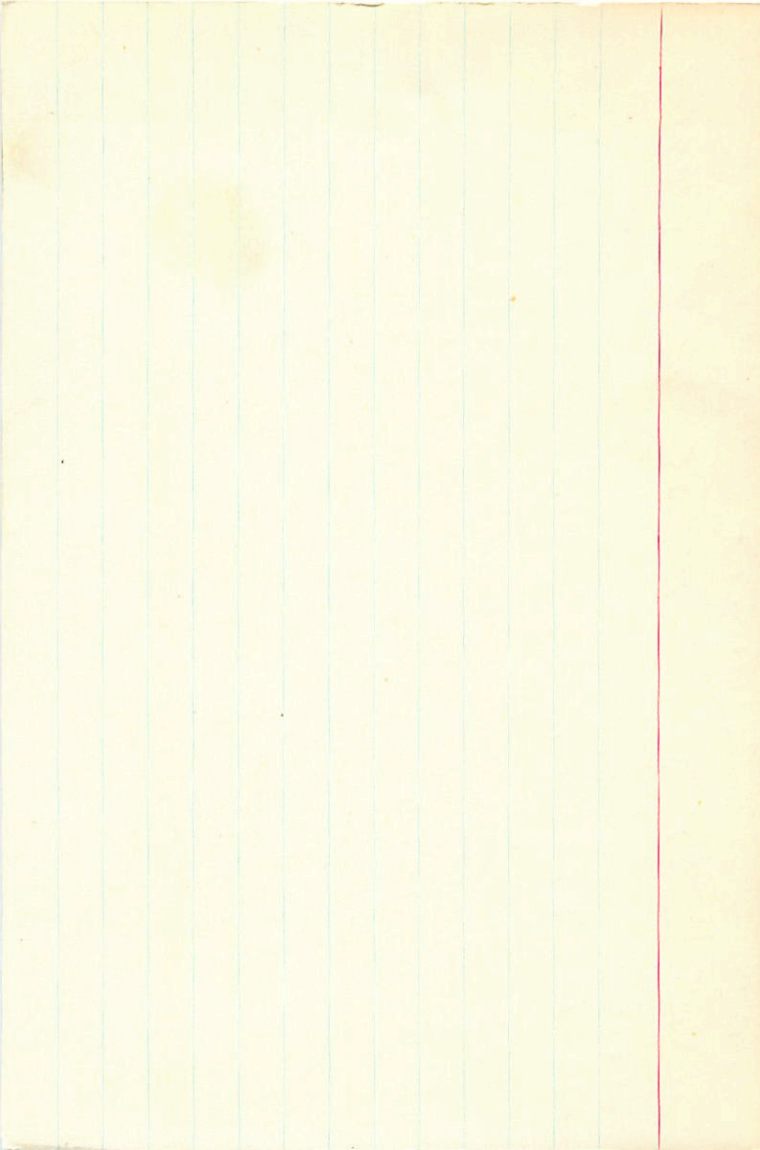
58.00

39.21  
19.79  
+1.4  
+13  
1.52

16.76- 3.76  
18.23 1938.94

17.92

1946.32



1224409

24 3/10 + 23 20

451-581  
40094-155

730 0281  
8454 9068  
1872 0250

$+0051 \pm 9.0 - 0.82 \pm 5.6$   $C_1(\gamma)$   
 $+ 55$   
 $-28$  07  $60 \pm 15$   $-15.0 \pm 0.9$

205153 21 31.2 8.20  $\pm 155$  8.23  $\pm 54$

30186 13.847 1902.5 -28  $\nabla$  23.99 1859.7

$\frac{174.12}{19.87}$

$\frac{+0053 - 080}{+3}$   
 $\frac{+0056 - 080}{+3}$   
 $\frac{+074 - 080}{+3}$

17480.  
 $\frac{13.785}{-10}$   
 $\frac{775}{-10}$

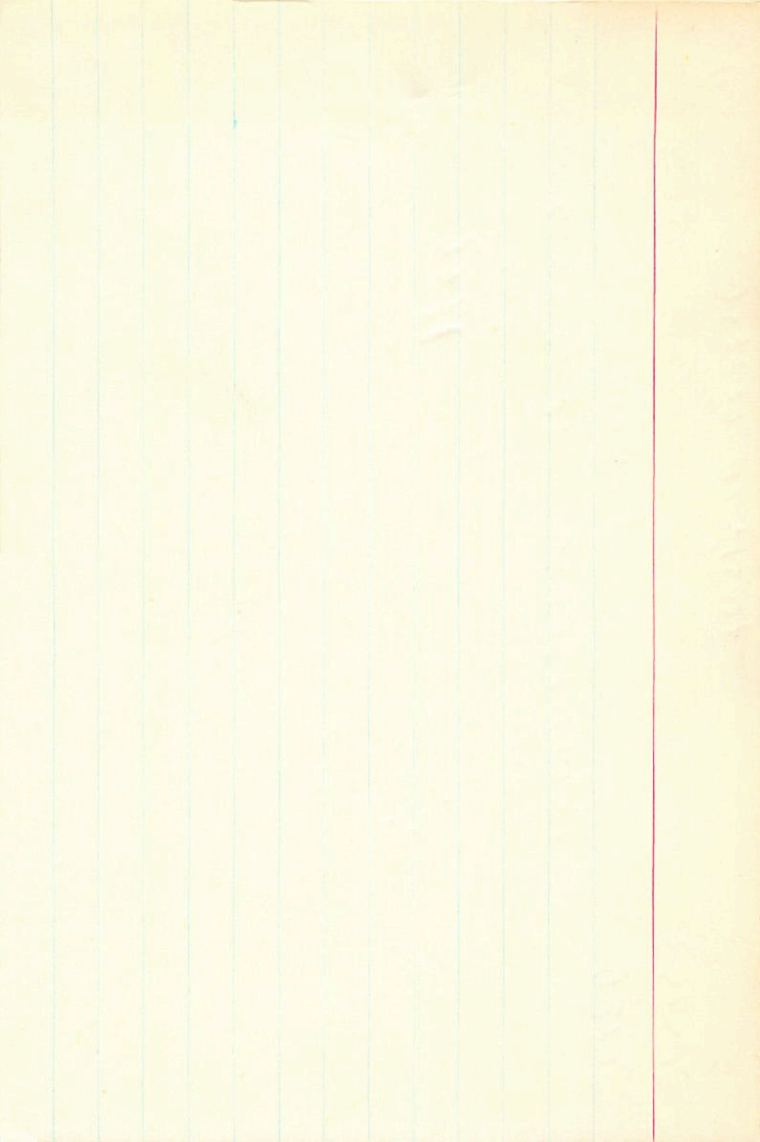
22.41 1933.62

$\frac{17}{24}$   
 22, 17480.9

733 202 -649  
 -057 970 238  
 -678 137 -722

$1450$  |  $+25.2$   $+9.7 = 34.9$   
 $-3877$  |  $-67.4$   $-3.6$   $-71.0$   
 $-2898$  |  $-50.4$   $+10.8$   $-39.6$   
 $+678$   $\pm 8$

$+2220$   $-0746$   
 $-0199$   $-3678$   
 $-2378$   $-0520$



1406070

20 25.1  
21 316

73 42

2570 Out

205249

+0010 546 +008 543

33.049 586

+0022

+014

2463 878

051

0004

+011

50  
2513

32.988

+0012

+011

2447 33.24

33.039

33.005

2457 37.08

33.092

24.42 197105



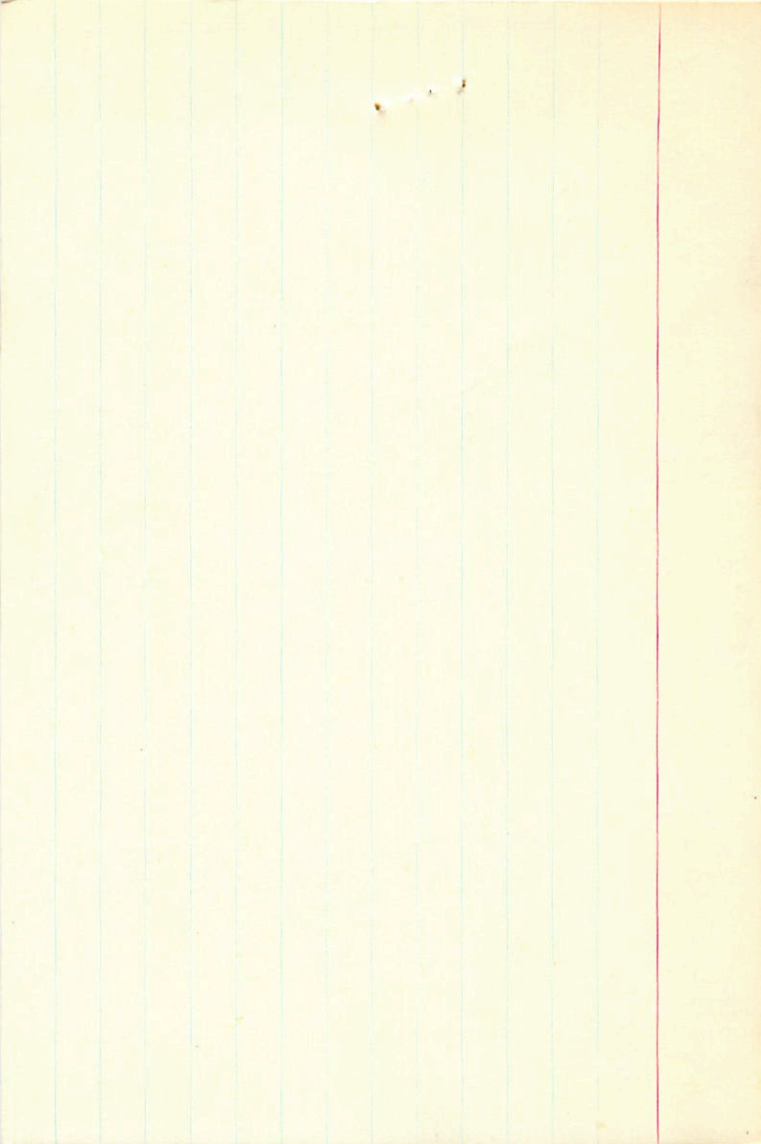
37 cap -1026 +1037 21.5  
 205289 -10053 +10082 2039  
 30204 8245 21 32.0 -20 18 5.8 def 2 +6.08 2036  
 13555 -10025 -10025

2.689 1907.4 -20 18 29.95 19064  
 2842 2682 2402 -1.45  
 -14 808 37.450  
 2906 38.461 2405 10.34 1927.25  
 24362 24362 3842 119  
 2.827 7.74 30.40  
 762 762 +1.00

2842 284  
 106 106  
 735 735  
 762 762  
 2.749 -073 10.30  
 -11 3980  
 732 30.50  
 712 411  
 30.25

29036 30.7 193.878  
 337239 36.50 1946.38  
 2756 +26  
 -39 20.24  
 712





205289

21 320 -20 19 dF1

ARR224

6680204

5.75 440-10 3544

376ap

.274 .180 .480 2.661 @0.35, L

164

290

[m] 129 ml

[L] 425 38 <sup>9</sup> <sub>14</sub> <sub>4</sub>

2.50 -5.8 +6.8 / 0.0

taxt 68 +144 +134

28

R.A. :  
DEC. : 31  
PM. R.A. : 21.200  
DEC. : -20.300  
PM. R.A. : -37.000  
DEC. : 32.000  
DISTANCE : 2.450  
MODULES : 31  
RAD. VEL. : 2.000

D1 (U) : 0.283  
D2 (U) : 0.288  
D3 (U) : -0.210  
BU : -22.884  
U : -0.220

D1 (U) : 0.227  
D2 (U) : 0.229  
D3 (U) : 0.229

R.A. : 21.500  
DEC. : -20.300  
PM. R.A. : -37.000  
PM. DEC. : 35.000  
DISTANCE : 2.450  
MODULUS : 31  
RAD. VEL. : 6.000

q1 (U) : 0.733  
q2 (U) : 0.288  
q3 (U) : -0.616  
dU : -72.884  
U : -5.950

q1 (V) : -0.057  
q2 (V) : 0.929  
q3 (V) : 0.345  
dV : 0.345



P. King 205435

921

HR 8252-30207

21

32.1

+45

22

965

+6.9c

+7.52F

W13556

13556

4.02

10.88

70.55

W13556

39

044

43

N30

658

-024

-0916c

7.140 772 131

W102

-0022 ± 1.8

-089 ± 0.6c

71130

-031

-052N

-024 -090F

-027 -052

1130709 - 60223 - 089 (W3 6-0223 - 0541 FNS)

584

72812

W102

6610

38.2

1435

3.21

4100

2046

0566

0086

916

343

W102

71180

0944

4918

203

203

203

203

203

203

203

722-092

1091-1001

1135-0951

4300-0036

4200-0036

4167-0036

4167-0036

4167-0036

4167-0036

4167-0036

4167-0036

4167-0036

4167-0036

4167-0036

722-092

1091-1001

1135-0951

4300-0036

4200-0036

4167-0036

4167-0036

4167-0036

4167-0036

4167-0036

4167-0036

4167-0036

4167-0036

4167-0036

3.07

3.07

3.07

3.07

3.07

3.07

3.07

-602794 712 20 ✓ -217-092 ✓ +6.9-066 +49 -308 ✓  
-016-040-022-053 175 -294 +4.8 440-2.6

02

+12.7 -17.3 -10.3

025

-18.9 +6.3

+11.0 -14.2 -7.4

03

$\boxed{-15 + 6 - 11}$

-18.7 -22.2 -15.6

015

$\boxed{-25.4 + 5.8 - 17.3}$

N<sub>9</sub>

S<sub>7</sub>

829.678  
0.238  
MP  
(M)  
M  
8b





R.A.	21.550
DEC.	45.400
R.A.	-33.200
DEC.	-94.100
DANCE	3.210
IS	44
	7.200

739

427 295  
427 166  
427 166  
+10  
2 / 32.3

+22 32 28

205420  
H18250  
G630211

4 08 " 30  
+010 -040 02  
+0105 -0320  
+ 37 -37  
+013 -040

6.3 +15.10

1330 . 170  
334 188  
532-  
466

1462 35 AC  
2.635 3

335

280 +11  
396 +81  
+92

+142a

+2.55

Out

10004 - 052. ~~10030~~

BC 10006-100 + 1022a

10005-044

1007

20

205342  
30212

13559

21 32.4  
24521 19033

-252  
269

58.769  
25732  
40542

50257  
39268  
24529  
-46  
47  
181  
0.7  
4.4  
24.493  
-10  
475

70054 ± 3.5  
70058  
-008 ± 3.4  
-009

-23

41

6.4 967 -1498

-23 40 40.09 15000  
40

39.69

19.73 193446  
38.88

38.88

50257  
39268  
24529  
-46  
47  
181  
0.7  
4.4  
24.493  
-10  
475

38.88

50257  
39268  
24529  
-46  
47  
181  
0.7  
4.4  
24.493  
-10  
475



8258.000\*

21.000\*

32.300\*

270.000\*

205423

30218

13560

21

327

-04

12

5.8

969

-1.88

$$\begin{array}{r} -0007 \pm 3.2 \\ -0008 \\ \hline \end{array}$$

41.025 1902.7 -4 12 25.20 1900.8

$$\begin{array}{r} 033 \\ \hline 058 \\ \hline \end{array}$$

$$\begin{array}{r} -20 \\ \hline 25.40 \\ \hline \end{array}$$

$$\begin{array}{r} 22.744 \\ 18342 \\ \hline 41.086 \\ \hline \end{array}$$

$$\begin{array}{r} 066 \\ -20 \\ \hline 040 \\ \hline \end{array}$$

$$\begin{array}{r} 030 \\ \hline -028 \\ \hline \end{array}$$

33.9

$$\begin{array}{r} 6.04 \\ 8940 \\ \hline 2692 \\ \hline \end{array}$$

$$\begin{array}{r} 25.91 \\ + 24 \\ \hline 25.47 \\ \hline \end{array}$$

$$\begin{array}{r} 527 \\ \hline 36.6 \\ \hline \end{array}$$

$$\begin{array}{r} 41.027 \\ \hline 019 \\ \hline \end{array}$$

$$\begin{array}{r} 25. \\ 25.66 \\ + 19 \\ \hline 25.47 \\ \hline \end{array}$$

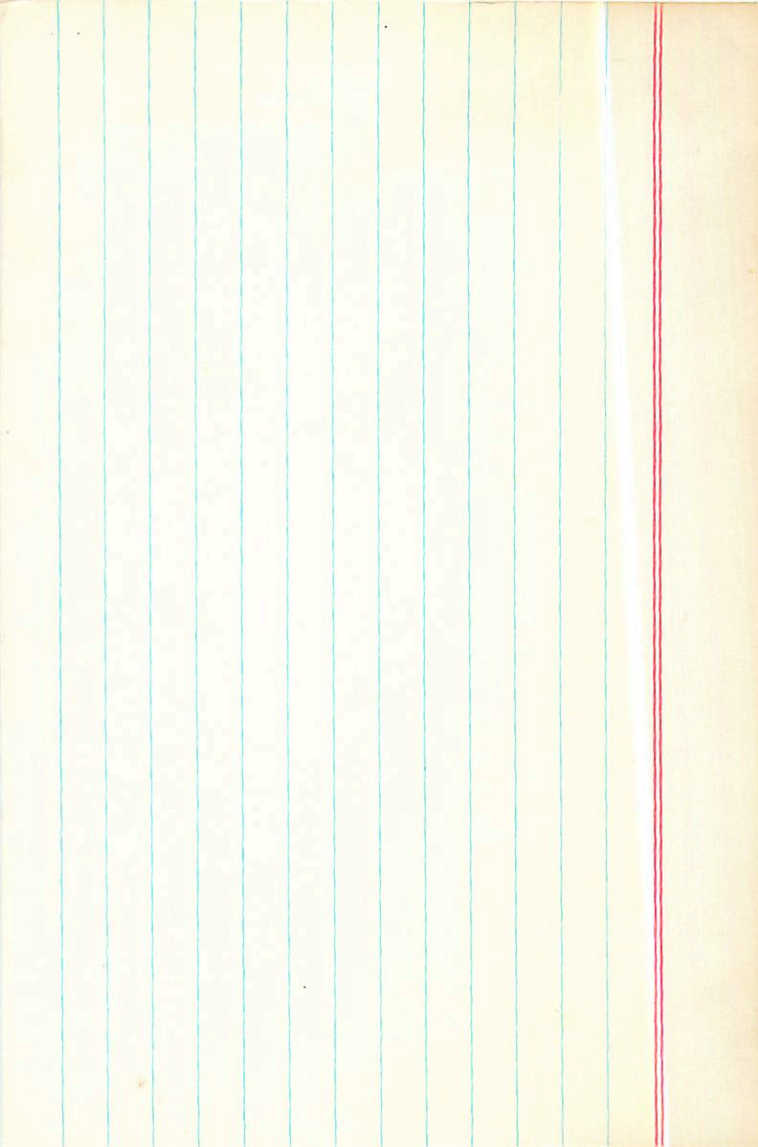
1939.76

35.8

204504 21 32.8 -79 40 F5E -5.6 4C

FD1064

(6.67 + 46 (1.62))



R4

141)

SK Age

21 33.6 +3 00

-220 d

MS<sup>2</sup>

and 11.7 v.

11.10 +0.03

10.3

+0.5

-031±5 -043±5 0±0



-597 503 052 599 -031-043 -220 -002 -11 -204

-015 -001 -025 -002 -076 -123 -220 -177 +131

-272 -23 -244

0008

-168 -322 +116

-253 +5 -215

001

-115 -289 +120

-140 -304 +118

009

009

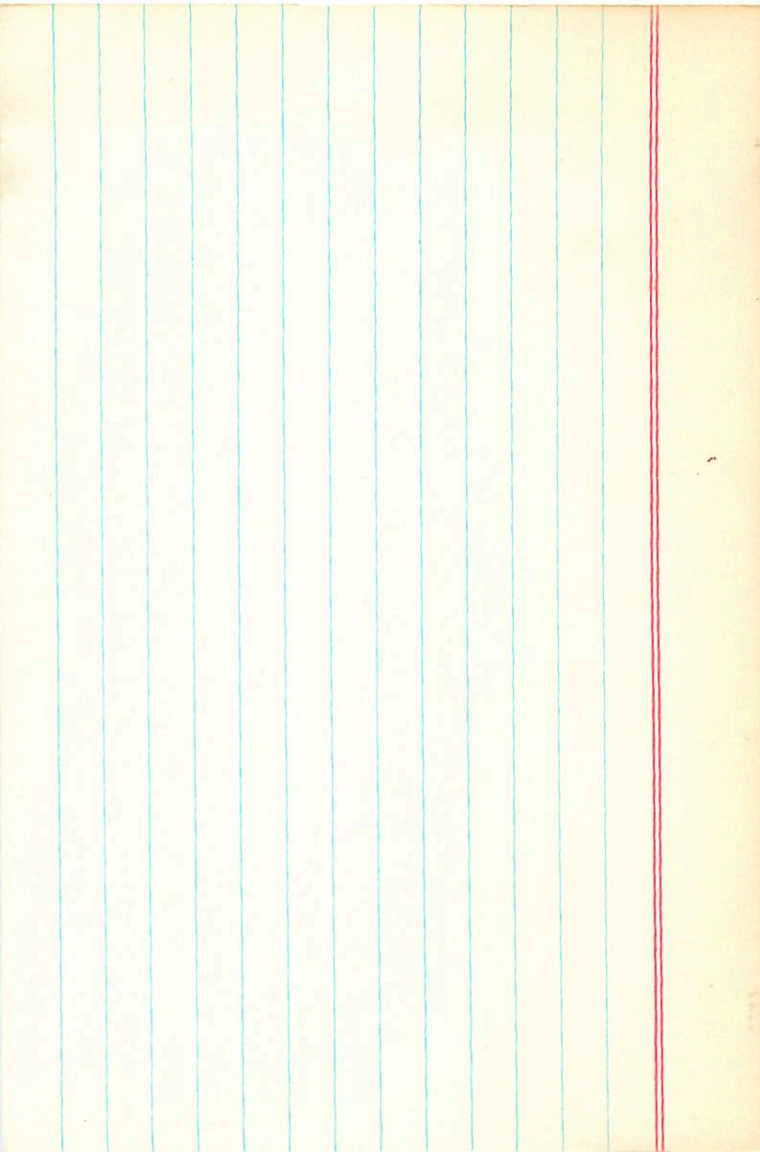
205529 2133.8 -33 16 A7E<sub>m</sub> -2±34C

FD1065

6.10 122 (1.58)

+0069 +006 N30  
+0070 0000 000 →  
+0069 +003

4087



+0023 + 3.7 +0006 + 2.9  
+0020 +001

205850 30257  
13575 21 34.5 +57 15 912 -15.08

8.8

+019 +006 GC  
+030 +007 G0121  
+026 +005

ADS15137 10" 9.3

30.421 15868 +57 14 46.16 15775  
+45  
276  
45.72

4438  
46.0155  
30.341  
406  
412 789 +118  
394 +06  
59.5  
2.6 19243 5-18  
42.50  
45.10  
45.60  
45.78

1262  
463  
68.9

Possible very dirt at number

45.40 1946.84  
20  
45.20

30.377  
0

-593805 842 846 +026+005 -15.0 004 -13 ~~025~~

015 002 021 003 057 109 -8.1 ÷ 6 +5 0025

+14 +44 -8 0026

+26 -18 -23

+15 +45 = 0 0027

+37 -19 -25



A0515142 205765 -0014 ± 2.8 -0.20 ± 2.2  
30265 -0015 -0.26

HRT 263 13579 21 35.0 -00 37 +16.96

W13579 35 17.037 6.25 40.05 10.04 -0.21 -0.206

-018 -0.27 9m31" A2 -0.22

59.643 1898.5 -0 36 56.02 1899.52  
072 6454 5.8309821  
59.765 -00125 -0.27 55.02 -7.35 = 1948.1  
42.641 59.54 1434.5 / -1424  
17.072 42.45

-017 -0.26

40.4

57.09 1807  
56.24 56.02  
+ 56.03 - 1.00

11.657  
38.9  
39.1

56.10 1940.86  
19 1941.20  
55.91

37.56  
41.37  
56.19

59 56.13  
59.703  
6.45

-015 -0.24

28.918  
308220  
59.74 2  
37 76.25  
701



$-591 \ 806 \ 0 \ 1 \ -0.21 \ -0.22 \ +16.9 \ 0 \ 0 \ -0.04$  50  
 $-012 \ 0 \ -017 \ 0 \ -0.59 \ -0.60 \ +16.9 \ +13.6 \ -10.0$  011

$+5.8$   
 $+8.5 \ -17.3 \ -9.4$   
 $\boxed{-18.9 \ +9.8 \ -9.0}$

$+11.7 \ -12.7 \ -2.5$  03

$+6.5 \ -20.0 \ -13.0$  005  
 $\boxed{-23.1 \ +2.4 \ -8.4}$

$+4.1 \ -23.3 \ -17.3$  006  
 $\boxed{-28.2 \ -0.6 \ -7.9}$

00605



R.A. :  
DEC. : 21.500  
R.A. : -0.500  
DEC. : 0.000  
ANCE : 0.000  
PLUS : 0.000  
VEL. : 10.000

(U) : 0.000  
(U) : 0.742  
(U) : 0.472  
DU : -0.464  
U : 0.000  
0.000

(V) :  
(V) :  
(V) :  
0 :  
0 :  
0.000  
0.000

(M) :  
(M) :  
(M) :  
0M :

R.A. :  
DEC. : 21.600  
R.A. : -0.600  
DEC. : 0.000  
ANCE : 0.000  
ULUS : 0.000  
VEL. : 10  
0.000

(U) :  
(U) : 0.745  
(U) : 0.479  
dU : -0.464  
U : 0.000  
0.000

(V) :  
(V) : -0.075  
(V) : 0.751  
dV : 0.655  
V : 0.000  
0.000

(W) :  
(W) : -0.662  
(W) : 0.450  
MP

21 35.2 + 06 24

$$P = 136 \begin{pmatrix} +116 \text{ L unit} \\ -5 \text{ W unit} \end{pmatrix}$$

A

$$\begin{array}{l} +0037 - 002 \text{ BL } \rightarrow 1130 \\ +0036 - 001 \text{ new} \\ \hline +0036 - 001 \end{array}$$

B

$$+0030 - 005 \text{ BL } \rightarrow 1130$$

90 ps

+743	+532	-404	+1891	+17.0	-1.2	= +15.8
-072	+665	+743	-0183	-1.6	+2.2	+0.6
-665	+524	-532	-1692	-15.2	-1.0	-16.8

90 ps.

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+0036 - 003

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1885.1<sup>54</sup>



$7.40 + 1.00 + 8.00 + 9.00 + 7.8$   $+ 0.55 \pm 7.8$   $28.9$   $(3)$   
 $205941$   $21$   $35.8$   $+ 32$   $55$   $- 29.68$

$30283$   $7.5$   $+ 099 + 055$   $6-6$   
 $46.893$   $+ 32$   $58$   $2610$   $+ 103$   $+ 066$   $6(12)$   
 $- 357$   $- 2.54$   $+ 101$   $+ 063$   
 $536$

$42.627$   $40.0$   $1926.5$   $3.2$   
 $4.036$   $43.75$   $28.1$   
 $46.6520$   $23.75$   $24.54$   $24.3$   
 $678$   $24.47$   $98$

$46.70$   $13.75$   $24.49$   $1929.7$   
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~~-016 -040 -022 -053 175 -294 +4.8 +4.0 -2.6~~ 02

+12.7 -17.3 -10.3  
-15.9 +6.3

025

+11.0 -14.2 -7.4

-15 +6 -11

03

~~+10.7 -22.2 -15.6~~

015

-25.4 +5.8 -17.3

20

21



R.A. : 21.500  
DEC. : -20.300  
PM. R.A. : -37.000  
PM. DEC. : 32.000  
DISTANCE : 2.450  
MODULUS : 31  
RAD. VEL. : 2.000

d1 (U) : 0.233  
d2 (U) : 0.288  
d3 (U) : -0.219  
d4 : -22.884  
U : -5.250

d1 (V) : -0.027  
d2 (V) : 0.252  
d3 (V) : 0.382  
d4 : 123.283  
U : 2.247

d1 (W) : -0.278  
d2 (W) : 0.233  
d3 (W) : -0.288  
d4 : 123.283  
U : 2.247



$+6054 \pm 3.5$   
 $+008 \pm 3.4$   
 $+0055$   
 $-009$   
 $-23$   
 $41$   
 $6.4$   
 $907$   
 $-14.98$

205312  
30212

13559 24.521 19033 -23 40 40.09 15003

$$\begin{array}{r} -252 \\ 269 \\ \hline \end{array}$$

$$\begin{array}{r} 39.69 \\ 40 \\ \hline \end{array}$$

$$\begin{array}{r} 5-8.769 \\ 25735 \\ 24504 \\ 54 \end{array}$$

38.0

$$\begin{array}{r} 14.73 \\ 38.88 \\ \hline 40.85 \\ 49.23 \\ 12007 \\ 135.05 \end{array}$$

$$\begin{array}{r} 184 \\ 450 \\ 440 \\ \hline 462 \\ +198 \end{array}$$

$$\begin{array}{r} 39.95 \\ 29.58 \\ \hline 38.3 \end{array}$$

+198

$$\begin{array}{r} 40.14 \\ +22 \\ \hline 193938 \\ 38.3 \end{array}$$

$$\begin{array}{r} 50257 \\ 34264 \\ 24529 \\ -46 \\ \hline 471 \\ 24.493 \\ -10 \\ \hline 475 \end{array}$$

$$\begin{array}{r} 20.37 \\ 3449 \\ 40.34 \\ +13 \\ \hline 40.15 \end{array}$$

$$\begin{array}{r} 39.94 \\ 40.00 \\ \hline 33 \\ 1941.21 \end{array}$$

