

1922phae.proj. 2309M







This book checked for  
Positions of Nebulae  
X<sub>124</sub>

This book checked for  
N.G.C. and I.C. Objects.  
X<sub>124</sub>







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✓ 2	7033 <sup>(cont)</sup> ✓	30 <sup>134</sup>	0 20 -67.5°	CPD
✓ 14	7382 ✓	2	16 10 -52.5°	CPD
✓ 14	6810 ✓	34	22 16 -62.5°	CPD ✓
✓ 28	7372 ✓	44	16 30 +17.5°	BD ✓
46	7353	45	14 22 -16.0°	SD 120 <sup>m</sup>
✓ 64	2208 ✓	8	10 40 -59°	CPD
66	4373	122	23 55 -3.0°	SD 120 <sup>m</sup>
✓ 116	7373 ✓	60	21 10 +17.5°	BD
140	7375 ✓	14	21 30 +17.5°	BD
144	7616	62	5 00 -15.0°	SD 120 <sup>m</sup>
✓ 170	7374 ✓	129 <sup>134</sup>	16 10 +17.5°	BD







Book # 3

Nebulae discovered on  
a Plate by Strong

Aug 12-1922



## Plate 7033 (continued)

<u>58</u>	7.3 -5.2	-7.8 15.4	43 23	0 30 47.0 0 33 11.0 7.7.3 -56.2
<u>59</u> =57 (new m.b.)	23.7 -16.0	7.9 -4.1	43 51	0 30 47.0 0 38 24.6 245.0 -168.8
<u>60</u>	5.8 -29.9	3.0 21.0	24 27	0 34 14.5 0 40 38.6 60.8 -334.0
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<u>62</u>	12.2 -23.4	10.0 26.0	24 27	132.1 -255.0



From Book II)

67 53.1 0 32 4 -68° 0.9 e F. 1d 6 M

68 16.3 0 32 5 -68° 0.9

.376 5 0.9

.370 1 5 + 8.3

0 33 10 -67° 52.6

67 53.1 0 34 52 -67° 45.2 e F. 1d

67 40.4 0 35 -67° 44.5

.376

.379

44.8

68 15.8 0 35 15 -68° 12.8 v F. 2d 6 M

68 33.3 0 35 4 -68° 12.3

.370 1 9 12.5

.365 1 4 + 8.2

0 36 13 -68° 4.3

0 35 25 -68° 11.1 v F. 3d 6 M

0 35 20 -68° 10.8

23 10.9

1 4 + 8.2

0 36 27 -68° 2.7

0 36 27 -68° 5.8 v F. 3d by 170°

0 36 23 -68° 5.3

25 5.5

1 4 + 8.2

0 37 29 -67° 5.3



4

6318.8  
-16.811.5  
29.424  
270 34 111.5  
0 40 38.0  
203.8  
-184.06418.2  
-17.2-1.8  
16.224  
27197.0  
-188.06521.4  
-14.0-3.8  
14.024  
27231.0  
-153.5664.9  
-8.9-3.8  
12.725  
260 41 31.5  
0 44 12.5  
56.1  
-103.4675.1  
-11.08.2  
5.939  
480 23 32.6  
0 26 9.5  
50.0  
-107.7



68 15.8 0 37 38 -68° 4.3 v F .4d BM

68 33.3 0 37 34 -68° 3.9

370 36 4.1

365 1 4 +8.3

0 38 40 -67° 55.8

0 37 31 -68° 17.6 e F .1d BM

0 37 30 -68° 17.1

31 17.4

1 3 +8.2

0 38 34 -68° 9.2

0 38 5 -68° 19.6 e F .1d BM

0 38 4 -68° 19.3

5 19.4

1 3 +8.2

0 39 8 -68° 11.2

69 32.3 0 42 28 -69° 36.1 F .7d 16 M

69 46.3 0 42 30 -69° 35.5

349 29 35.8

345 1 0 +8.2

0 43 29 -69° 27.6

65 57.0 0 24 23 -68° 48.8 e F .2d BM

65 54.6 0 24 21 -68° 48.7

407 22 48.8

408 1 7 +8.3

0 25 29 -68° 40.5



6

<u>68</u>	3.9 -13.7	4.9 2.8	39 48	0 23 326 0 26 9.5 38.3 -133.5
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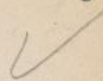
<u>69</u>	3.4 -12.7	9.1 6.9	39 41	33.3 -124.1
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<u>70</u>	5.8 -10.3	11.0 8.5	39 48	56.8 -102.3
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<u>71</u>	9.9 -4.0	-1.5 -2.1	42 50	0 24 49.5 0 26 59.5 83.5 -32.0
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<u>72</u>	9.9 -4.0	6.9 6.1	42 50	83.5 -32.0
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65 57.0 0 24 11 -65° 52.1 eF. 2d bM

65 54.6 0 23 55 -65° 51.8

.407 0 24 3 52.0

.408 1 9 +8.3

0 25 12 -65° 43.7

0 24 6 -65° 47.9 F. 2d bM

0 24 5 -65° 47.7

6 47.8

1 9 +8.3

0 25 15 -65° 39.5

0 24 29 -65° 46.0 eF 1.2 by .05 at 45°

0 24 27 -65° 46.1 spin

28 46.0

1 9 +8.3

0 25 37 -65° 37.7

-60<sup>5</sup> 3.6 0 26 13 -60<sup>5</sup> 5.1 cB 1.2 by 2' at 120° bM

-60<sup>5</sup> 2.8 0 26 27 -60<sup>5</sup> 4.6 spin

.499 20 5.0

.499 1 10 +8.3

0 27 30 -58° 56.7

0 26 23 -58° 56.7 B 1.2 by .2 at 135° bM

0 26 27 -58° 56.7 spin

25 56.7

1 11 +8.3

0 27 36 -58° 48.4



7318.6  
-14.310.5  
9.648  
610 26 9.5  
0 31 29.5  
182.8  
-140.57423.7  
-9.1-1.8  
-2.9232.0  
-89.074 ←24.9  
-7.9-2.1  
-3.1244.0  
-77.2753.3  
-15.910.3  
-2.366  
710 34 16.5  
0 37 22.5  
31.5  
-152.0767.3  
-10.3-7.3  
4.466  
480 34 16.5  
0 37 9.9  
71.4  
-101.6



65 54.6 0 29 12 -65° 43.8 CF .2d 6M

65 53.2 0 29 9 -65° 43.6

.407 11 43.7

.408 1 7 +8.3

0 30 18 -65° 35.4

0 30 2 -65° 56.4 VF .2d 6M

0 30 1 -65° 56.1

2 56.2

1 7 +8.3

0 31 9 -65° 47.9

0 30 14 -65° 56.7 VF .2d 6M

0 30 13 -65° 56.3

14 56.5

1 7 +8.3

0 31 21 -65° 48.2

65 52.6 0 34 48 -65° 42.3 VF .2d 6M

65 39.8 0 34 51 -65° 42.1

.408 50 42.2

.412 1 6 +8.3

0 35 56 -65° 33.9

65 52.6 0 35 28 -65° 59.9 VF .3 by .1 at 120°

66 41.3 0 35 28 -65° 59.9 spin

.408 28 59.9

.405 1 6 +8.3

0 36 34 -65° 51.6



<u>77</u>	22.8	3.4	40	0 30 36.6
	-6.4	6.8	46	0 35 29.4
				237.5
				- 64.0

<u>79</u>	15.0	0.0	40	
	-14.1	3.1	46	
				150.1
				- 141.5

<u>78</u>	11.0	-0.1	40	
	-18.1	3.0	46	
				110.0
				- 181.8

<u>80</u>	30.9	-5.3	40	
	1.8	-2.1	46	
				308.0
				18.1

<u>81</u>	10.9	-16.7	56	0 43 99
	-17.0	20.9	57	0 47 57.3
				111.1
				+035
				-176.2



66 29.4 0 34 34 -66° 26.0  
 66 32.6 0 34 36 -66° 25.8  
 .399 35 25.9  
 .398 1 5 8.3  
 0 35 40 -66° 17.6

VF 1364.2 at 135° BM

0 33 7 -66° 29.4  
 0 33 9 -66° 29.5  
 8 29.4  
 1 5 8.3  
 0 34 13 -66° 21.1

eF. 11d BM

0 32 27 -66° 29.5  
 0 32 27 -66° 29.6  
 27 29.6  
 1 5 8.3  
 0 33 32 -66° 21.3

VF 1364.2 at 135° BM

0 35 45 -66° 34.7  
 0 35 47 -66° 34.7  
 46 34.7  
 1 5 8.3  
 0 36 51 -66° 26.4

VF. 11d BM

66 57.6 0 45 1.0 44 53.4 -67° 14.3  
 67 34.4 0 45 1.1 -67° 13.9  
 .391 1 14.1  
 .381 1 1 8.2  
 0 46 2 -67° 5.9

Plan  
B 1.2d R 9p 56M  $\Phi?$ 

OK



12

12

9.3

17.0

34

0 52 23.5

-6.9

2.3

65

0 55 13.0

100.5

-73.8

f3

11.3

3.8

35

0 53 17.0

-3.7

-1.9

37

0 56 0.0

125.8

-41.2

Plate 5995

1

3.2

-3.0

7430

15 49 47.4

-4.7

6.2

6579

15 50 47.1

24.0

-35.6

2

1.9

-0.2

6934

15 51 52.2

-8.3

-0.6

6958

15 53 5.2

14.4

-44.7

Plate 6452

1

5.2

0.7

7507

16 6 56.4

-7.1

0.7

7533

16 8 24.7

37.7

-51.3



6f 10.4 0 54 4.0 -67° 53'4 v F 6M .16

67 55.5 0 53 59.2 53.2

.371 0 54 2 53.3

.375 58 +8.2

0 55 0 -67° 45.1

6f 52.2 0 55 22.8 -68° 48.4 c F .36 6M

6f 46.0 0 55 18.8 -68° 47.9

.360 21 48.1

.362 56 +8.1

0 56 17 -68° 40.0

57 55.8 15 50 11 -57° 58.8 e F .36 4.1 at 150°

5f 55.0 15 50 11 -57° 58.8

.531 11 58.8

.528 2 1 +4.5

15 52 12 -58° 3.3

55 42.0 15 52 9 -55° 42.2 e F .36 4.1 at 180° 6M

55 42.0 15 52 9 -55° 42.6 spin?

.563 9 42.4

.363 1 58 +4.4

15 54 7 -55° 46.8

56 32.3 16 7 34 -56° 31.6 e F .36

56 32.3 16 7 34 -56° 31.6

.551 34 31.6

.551 2 2 -4.0

16 9 36 -56° 27.6 35.6



$\Delta X$  $\Delta y$ Plate 7382  
no. of Comp. Star

RA Comp

1.8

-2.1

7269

16<sup>h</sup> 4<sup>m</sup> 28.3<sup>s</sup>

0.1

2.0

7273

16 4 37.8

15.5  
0.7

2.3

5.8

9183

16 7 22.5

1.6

-4.0

9185

16 7 30.0

15.2  
10.6

Plate 6810

7.9

-5.0

6324

22 9 57.6

-9.2

-8.0

6331

22 12 26.6

68.7  
-80.5

9.4

2.0

6324

-7.8

1.0

6331

82.1  
-67.8

12.4

4.9

6324

-4.3

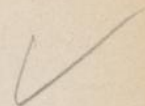
3.9

6331

112.2  
-37.5



$$\Delta X^S = \frac{4 \Delta X'}{\cos S}$$



Dec. Comp	RA Neb.	Dec. Neb.	
-54° 35.4	16 4 40.7	-54° 37.5	p F R .561 ⊙
-54. 39.8	16 4 38.5	-54° 37.8	
.579	39	37.6	
.578	<u>1 57</u>	-4.1	
	16 6 36	-54° <del>33.5</del>	
		41.7	
51 45.8	16 7 37.7	-51° 40.0	c F .2d ⊙
51 36.2	16 7 40.6	-51° 40.2	
.619	40	40.1	
.621	<u>1 54</u>	-3.9	
	16 9 34	-51° 36.2	
62 44.6	22 11 6	-62° 49.6	e F .2 by .1 at 170°
62 43.5	22 11 7	-62° 49.5	
.458	7	49.6	
.458	<u>1 46</u>	+7.4	
	22 12 53	-62° 42.2	
	22 11 18	-62° 42.6	v F .2 cl b M
	22 11 19	-62° 42.5	
	19	42.6	
	<u>1 46</u>	+7.4	
	22 13 5	-62° 35.2	
	22 11 50	-62° 39.7	v F .2 cl b M
	22 11 50	-62° 39.8	
	50	39.6	
	<u>1 46</u>	+7.4	
	22 13 36	-62° 32.2	



416.3  
-30.7-15.8  
3.26642  
665322 11 240  
22 18 65

140.0

-263.0

515.2  
-2.87.7  
6.26332  
633422 14 334  
22 17 7.2

131.6

-240.8

611.6  
-13.56.7  
19.06333  
479122 14 484  
22 18 256

101.0

-119.5

719.5  
-5.3-0.1  
12.36333  
4791

172.0

-46.8

817.0  
-7.9-7.4  
4.86333  
4791

149.7

-70.2



✓

61 38.7 22 13 48 -61° 54.5 vF . 3 by 1 at 60°  
 61 57.6 22 13 43 -61° 54.4  
 .475 46 54.4  
 .470 1 44 +7.3  
 22 15 30 -61° 47.1

62 25.7 22 16 45 -62° 18.0 cF . 16/6M  
 62 24.4 22 16 43 -62° 18.2  
 .463 44 18.1  
 .463 1 45 +7.5  
 22 18 29 -62° 10.6

62 57.2 22 16 29 -62° 50.5 vF . 16/6M  
 63 9.7 22 16 26 -62° 50.7  
 .454 28 50.6  
 .451 1 45 +7.5  
 22 18 13 -62° 43.1

22 17 30 -62° 57.3 vF . 2d 6M  
 22 17 38 -62° 57.4  
 34 57.4  
 1 45 +7.5  
 22 19 19 -62° 48.9

22 17 18 -63° 5.0 eF . 2d  
 22 17 15 -63° 4.9  
 17 - 5.0  
 1 40 -7.9  
 22 18 57 -62° 57.1



<u>9</u>	16.1 -0.1	-7.9 3.1	4230 4233	22 6 49.2 27 9 19.5 147.4 - 9.3
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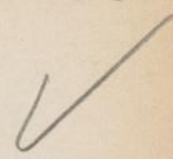
<u>10</u>	16.8 -6.9	1.3 7.0	4247 4259	22 15 41.8 22 18 43.5 156.7 - 64.7
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<u>11</u>	19.1 -4.2	-0.8 4.9	4247 4259	178.2 - 39.2
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<u>12</u>	22.3 -3.0	-8.2 0.0	4780 4786	22 11 35.2 22 15 22.4 201.0 - 24.4
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<u>13</u>	13.1 -12.3	-8.1 -2.8	4786 4794	22 15 22.4 22 19 12.2 118.8 - 11.8
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64 5.4 22 9 19 -64° 13.3 e F .16 bM

64 16.4 22 9 11 -64° 13.3

.437 15 13.3

.434 1 49 +7.4

22 11 4 -64° 5.9

64 39.7 22 17 44 -64° 38.4 a F .36 y.2 at 150°

64 45.3 22 17 40 -64° 38.3

.428 41 38.4

.426 1 47 +7.6

22 19 28 -64° 30.8

22 18 3 -64° 40.5 a F .2 d bM

22 18 4 -64° 40.4

4 40.4

1 47 +7.6

22 19 51 -64° 32.8

63 38.4 22 14 56 -63° 46.6 F .5 d ps bM

63 46.8 22 14 58 -63° 46.8

.444 57 46.7

.442 1 40 +7.9

22 16 37 -63° 38.8

63 46.8 22 17 21 -63° 54.9 p F .2 d bM

63 52.1 22 17 20 -63° 54.9

.442 21 54.9

.440 1 40 +7.9

22 19 1 -63° 47.0



14

6.1

-2.1

4794

22 19 12.2

1.2

-6.0

4795

22 19 56.5

55.4

10.9

15

7.5

13.7

6653

22 18 65

-41.3

-16.9

6657

22 24 54.5

63.8

-430.0

16

16.0

26.9

6653

-33.1

-3.7

6657

136.0

-276.0

17

15.3

22.9

6653

-33.7

-7.8

6657

130.1

-282

18

22.6

18.5

6653

-26.7

-12.0

6657

210.0

-225.0





63	52.1	22	20	8	-63	54.2	v F .3d BM
63	48.5	22	20	7	-63	54.5	
	440			8		54.3	
	441		1	40		+7.9	
		22	21	48	-63°	46.4	

61	57.6	22	19	10	-61°	43.9	e F .1d BM
61	27.4	22	19	10	-61°	44.3	
	470			10		44.1	
	477		1	43		+7.6	
		22	20	53	-61°	36.5	

22	20	23	-61°	30.7	p F .3d BM
22	20	36	-61°	31.1	
		30		30.9	
		1	43	+7.6	
22	22	13	-61°	23.3	

22	20	16	-61°	34.7	p F .2 by .1' at 60°
22	20	18	-61°	35.2	spin
		17		35.0	
		1	43	+7.6	
22	22	0	-61°	27.4	

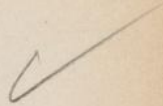
22	21	36	-61°	39.1	F .2 by .1' at 160° spin
22	21	15	-61°	39.4	
		26		39.2	
		1	43	+7.6	
22	23	9	-61°	31.6	



22

1924.8  
-24.429.3  
- 1.16653  
665722 15 6.5  
22 24 59.5210.2  
- 201.02028.7  
-20.719.8  
- 10.96653  
6657244.0  
-173.02128.8  
-20.65.8  
- 24.86653  
6657244.0  
-173.02329.9  
-19.222.8  
- 7.86653  
6657254.0  
- 160.8225.9  
4.9-16.1  
7.16656  
665722 24 50.5  
22 24 59.5  
46.7  
40.9





61 57.6 22 21 36  $-61^\circ$  27.3 F .2 by 1' at  $115^\circ$  spin

61 27.4 22 21 39  $-61^\circ$  28.5

.470 38 27.9

.477 1 43 +7.6

22 23 21  $-61^\circ$  26.3

22 ~~20~~ 10  $-61^\circ$  37.8 F .2 by 1' at  $135^\circ$  spin

22 22 7  $-61^\circ$  38.3

9 38.0

1 42 +7.6

22 23 51  $-61^\circ$  30.4

22 22 10  $-61^\circ$  51.6 eF .16 6M

22 22 7  $-61^\circ$  52.2

9 52.0

1 42 +7.6

22 23 51  $-61^\circ$  44.4

22 ~~20~~ 20  $-61^\circ$  34.8 eF .36 6M

22 22 19  $-61^\circ$  35.2

20 35.0

1 42 +7.6

22 24 2  $-61^\circ$  27.4

61 4.7 22 25 39  $-61^\circ$  20.8 eF .16 6M

61 27.4 22 25 40  $-61^\circ$  26.3

.483 40 20.6

.477 1 42 +7.6

22 27 22  $-61^\circ$  13.0



22'1.8  
-2.8-7.4  
1.97573  
757522 24 56.5  
22 25 44.0

146.

- 23.0

2416.9  
-20.2-0.5  
-3.56659  
667022 26 29.5  
22 31 58.3

150.4

- 171.5

2519.0  
-20.11.3  
-1.76659  
6670

161.5

- 171.5

277.3  
-3.925.4  
-1.26662  
666422 28 29.5  
22 30 20

61.6

- 32.3  
- 75.927 ←0.9  
-10.221.2  
-5.76662  
6664

+ 7.5

- 85.0





60 39.3 22 25 11 -60 46.7 eF .3' by .2' at 170° spin

60 47.1 22 25 11 -60 46.2

.490 11 46.4

.488 1 41 +7.7

22 26 52 -60° 38.7

61 56.2 22 29 0 -61 56.7 vF .2' by 6M

61 53.2 22 29 7 -61 56.7

.470 4 56.7

.471 1 40 +7.7

22 30 44 -61° 49.0

22 29 11 -61° 54.9 eF .2' by 6M

22 29 7 -61° 54.9

9 54.9

1 40 +7.7

22 30 49 -61° 47.2

61 39.0 22 29 31 -61 13.6 vF .3' by 6M

61 12.3 22 29 31 -61 13.5

.474 31 13.6

.461 1 40 +7.7

22 31 11 -61° 5.9

22 28 37 -61° 17.8 eF .1' by 6M

22 28 37 -61° 18.0

37 17.9

1 40 +7.7

22 30 17 -61° 10.2



<u>26</u>	10.3 -0.8	4.1 -22.7	6662 6664	22 28 29.5 22 30 2.0 86.7. - 6.6
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<u>28</u>	6.7 -9.3	10.1 0.7	6670 6673	22 31 54.3 22 34 14.5 56.9 - 78.7
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<u>29</u>	9.9 5.0	-14.4 11.9	4810 4812	22 32 0.0 22 32 40.5 88.0 45.0
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<u>30</u>	6.9 4.8	17.3 -6.0	6368 6369	22 39 57.8 22 40 13.4 60.2 41.3
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<u>31</u>	6.2 4.1	17.2 -6.1	6368 6369	54.3 35.2
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61 39.0 22 29 56 -61° 34.9 e F. i'd b M

61 12.3 22 29 56 -61° 35.0

.474 56 35.0

.481 140 +7.7

22 31 36 -61° 27.3

61 53.2 22 32 55 -61° 43.1 F. i'd b M

61 43.6 22 32 55 -61° 42.9

.471 55 43.0

.473 140 +7.7

22 34 35 -61° 35.3

63 9.2 22 33 28 -63° 23.6 v F. 2'd b M

63 35.4 22 33 25 -63° 23.5

.451 27 23.6

.444 140 +7.9

22 35 7 -63° 15.7

62 43.4 22 40 58 -62° 26.1 F. 2'd b M

62 20.6 22 41 5 -62° 26.6

.458 22 41 3 26.3

.464 139 +7.9

22 42 42 -62° 18.4

22 40 52 -62° 26.2 F. 2'd b M

22 40 47 -62° 26.7

50 26.4

139 +7.9

22 42 29 -62° 18.5



328.0  
-2.0-6.9  
-2.94419  
442122 39 590  
22 40 570

70.7

-17.7

Plate 7372

L

-2.0  
-5.81.2  
-11.83013  
301516 16 49.1  
16 17 29

-83.8

-24.2

212.3  
-18.3-7.8  
12.93083  
309016 14 37.9  
16 16 78.6

52.2

-77.6

34.3  
-2.79.4  
-1.03093  
309416 17 45.8  
16 18 15.6

18.5

-10.5

4-32.5  
21.9  
6.2  
-17.2  
-1.916.2  
17.8  
16.9  
2.1  
-9.72948  
2935  
2940  
2946  
294116 21 20.5  
16 17 31.5  
16 18 34.1  
16 20 17.6  
16 19 7.7

136.0

91.6

25.8

-71.8

-7.9



63 1.1 22 40 40 -63° 8.0 vF .6'd 1R bM defect?

63 5.1 22 40 31 -63° 8.0

.453

36

8.0

.452

1 40

7.9

22 42 16 -63° 0.1

17 15.3 16 15 25 17° 16.5 vF .2'd bM

17 26.2 16 15 39 17° 16.4

.955

32

16.4

+2

1

-6.8

16 17 35

17

9.6

19 42.9 16 15 30 19° 35.1 F 15' by 2' at 15°

19 23.4 16 15 30 19° 36.3

.941

30

35.7

.943

1 59

-6.8

16 17 29 19 28.9

19 40.3 16 18 4 19° 49.7 vF .3'd bM

19 50.0 16 18 5 19° 49.0

941

5

49.3

.940

2 0

-6.3

IL.1219

16 20 5 19° 43.0

16 51.1 16 23 36 47.3

16 30.6 16 19 8 47.8

16 51.4 16 19 43 48.3

16 46.3 16 19 7 48.2

16 35.8 16 19 0 48.1

95.8

95.8

95.8

95.7

95.6

8

47.6

2 3

-6.3

16 21 11 16° 41.3



<u>5</u>	3.1	15.1	2939	16 18 28.6
	0.3	-4.3	2940	16 18 39.1
				12.9
				1.2

<u>6</u>	-3.0	8.7	2947	16 20 55.9
	-8.2	-11.9	2948	16 21 30.5
				- 12.4
				- 34.2

<u>7</u>	7.0	-0.8	3008	16 21 49.8
	-7.8	-19.5	2954	16 22 44.3
	-7.0	-16.3	2953	
				29.2
				-32.4
				-29.2

<u>8</u>	17.8	13.8	3008	
	3.0	-5.2	2953	
	3.9	-2.1		
				74.0
				12.5
				16.3

<u>9</u>	12	2.5	2960	16 24 123
	-8.2	-1.9	2962	16 24 52.4
				50.0
				- 34.3



16 11.7 16 18 41 16° 26.8 vF .2 by 1' at 20°  
 16 31.4 16 18 40 16° 27.1  
 .960 41 27.0  
 .958 2 2 -6.3  
 16 20 43 16° 20.7

16 10.9 16 20 44 16° 19.6 vF .5 by 1' at 20° st. nff  
 16 31.1 16 20 56 16° 19.2 spin  
 .960 50 19.4  
 .958 2 2 -6.3  
 16 22 52 16° 13.1

15 46.3 16 22 19 15° 45.5 vF .2 d bM  
 16 43 16 22 16 15° 44.8  
 16 0.5 16 22 15 15° 44.2  
 .962 16 44.5  
 .960 2 3 -6.3  
 .960 16 24 19 15° 38.2

16 23 4 16° 0.1 vF .3 by 1.2' at 90° bM  
 16 23 1 15° 48.4 spin  
 16 23 1 16° 0.0  
 2 1 -6.3  
 16 25 2 +15° 53.7

16 32.1 16 24 17 16° 34.6 F .3 by 1' at 150° spin bM  
 16 42.4 16 24 18 16° 33.9  
 .958 18 34.3  
 .957 2 1 -6.3  
 16 26 19 16° 28.0



<u>15</u>	13.2	6.9	3100	16 20 78
	0.0	7.8	3103	16 21 12
				56.2
				0.0

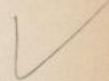
<u>16</u>	9.9	13.5	3182	16 22 30.5
	-15.8	0.0	3187	16 24 28.0
				41.8
				-67.2

<u>17</u>	1.9	15.9	3192	16 25 12.0
	1.9	2.6	3191	16 25 99
	-18.2	-4.8	3117	16 26 35.5
				10.1
				10.1
				-77.1

<u>18</u>	11.9	20.1	3191	
	-8.7	6.9	3117	
		-0.3		
				49.4
				49.4
				-36.8

<u>19</u>	19.2	5.0	3198	16 27 46.5
	-22.7	-0.2	3204	16 30 44.9
				81.3
				-96.3





19 41.9 16 21 3 19° 55.8 F. 2d BM

19 51.0 16 21 1 19° 54.8

.940 2 55.3 (N6149)

.940 1 58 -6.3

16 23 0 19° 49.0

18 44.2 16 23 12 18° 57.8 e F. 1d BM

18 58.8 16 23 23 18° 58.8

.947 18 58.2

.945 2 0 -6.3

16 25 18 18° 51.9

18 41.1 16 25 22 18° 57.0

18 53.4 16 25 20 18° 56.0 ✓ F. 2d BM

19 2.3 16 25 18 18° 57.5 ✓

.946 19 57.0

.945 2 0 -6.3

16 27 19 18° 50.7

16 26 1 19° 0.3 ✓ e F. 1d BM

16 25 59 19° 2.0 ✓

16 25 59 ✓ 1.2

59 -6.3

16 27 58 18° 54.9

18 50.8 16 28 10 18° 55.8 e F. 1d BM

18 55.0 16 29 9 18° 54.8

.946 10 55.2

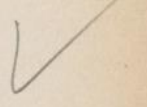
.945 2 0 -6.3

16 31 10 18° 48.9



2636.4  
- 5.68.0  
2.83198  
320416 27 46.5  
16 30449  
154.4  
- 23.7204.2  
1.1-3.7  
4.13126  
312716 28 49.0  
16 29 3.1  
17.8  
46212.1  
-7.8-7.3  
1.03121  
312516 27 15.7  
16 28 0.0  
8.9  
- 33.2222.3  
-7.4-7.2  
1.13121  
31259.9  
- 31.6237.9  
-2.02.1  
10.63121  
312533.7  
- 8.5





18 50.8 16 30 23 16° 58.8 VF 2d BM

18 55.0 16 30 21 16° 57.7

.9416 22 58.2

.9415 20 -6.3

16 32 22 +16° 51.9

19 23.4 16 29 16 19° 19.7 eF 2' by 1' at 45°

19 14.8 16 29 8 19° 18.9

.9413 12 18.3

.9414 1 59 -6.3

16 31 11 19° 13.0

19 54.3 16 27 24 19° 47.0 eF 1d BM sp of 2

19 47.0 16 27 27 19° 47.0

.9410 26 47.6

.9410 1 59 -6.3

16 29 25 19° 40.7

16 27 25 19° 47.1 VF 2d BM sp of 2

16 27 28 19° 47.1

27 47.1

1 59 -6.3

16 29 26 19° 40.8

16 27 49 19° 56.4 VF 3d 9 BM

16 27 51 19° 57.6

50 57.0

1 59 -6.3

16 29 49 19° 50.7



24

7.0	0.2	3200	16	28	59.7
-7.2	-4.8	3202	16	30	0.5
				31.3	
				-30.6	

25

7.2	0.2	3200			
-7.0	-4.8	3202			
				30.6	
				-31.3	

27

9.1	8.4	3136	16	31	34.5
-1.1	-21.2	3140	16	32	16.6
				38.6	
				4.6	

28

10.4	5.0	3049	16	27	7.7
-5.2	10.8	3052	16	28	11.4
-3.9	3.1	3051	16	28	8.4
				43.7	
				-21.8	
				-16.3	

29

20.1	0.6	3049	16	27	7.7
2.0	-0.3	3051	16	28	8.4
0.7	7.2	3052	16	28	12.4
				64.4	
				8.4	
				2.9	



~~Note~~  
~~Notice that these~~  
~~values have the~~  
~~same description~~  
~~and the same~~  
~~position.~~

18	22.7	16	29	31	18°	22.9	eF. 1d BM
18	27.7	16	29	29	18°	22.9	
	.948			30		22.9	
	.948			1 59		-6.3	
		16	31	29	18°	16.6	

16	29	30	18°	22.9	eF. 1d BM
16	29	29	18°	22.9	
		30		22.9	
		1 59		-6.3	
16	31	29	18°	16.6	

19	25.0	16	32	13	19°	33.4	VF 3 by 1 at 30° BM
19	54.6	16	32	20	19°	33.4	
	.943			17		33.4	
	.940			1 58		-6.3	
		16	34	15	19°	26.1	

17	23.0	16	27	51	17°	28.0	eF. 2d BM
17	17.4	16	27	50	17°	29.7	
17	26.7	16	27	52		28.0	
	.954			51		-5.8	
	.954			2 1		2.2	
	.954	16	29	52	17°	2.2	

17	23.0	16	28	12	17°	24.6	eF. 2d BM
17	26.7	16	28	17	17°	24.6	
17	17.4	16	28	15		24.6	
	.954			14		-5.8	
	.954			2 1		18.8	
	.954	16	30	15	17°	18.8	



<u>30</u>	6.3	5.3	3059	16 30 44
	-7.2	-6.8	3061	16 30 38.0
				1.21
				-30.4

<u>31</u>	15.2	-14.1	3202	16 30 0.5
	-7.8	11.0	3206	16 31 35.6
				64.0
				-32.7

<u>32</u>	-1.1	3.9	3063	16 32 33.5
	-3.2	-12.7	3064	16 32 44.1
				-4.6
				-13.4

<u>33</u>	2.9	5.9	2987	16 31 56.7
	-9.3	-7.9	2991	16 32 47.6
				12.0
				-38.7

<u>34</u>	5.2	-9.2	2991	16 32 47.4
	-11.8	12.8	2994	16 33 58.6
				21.8
				-49.0





17 36.7 16 30 6 17° 42.0 eF. 2d BM

17 49.7 16 30 8 17° 42.9

.953 7 42.4

.952 2 1 -5.6

16 32 8 17° 36.6

18 27.7 16 31 4 18° 13.8 vF. 4d BM

18 2.4 16 31 3 18° 13.4

.948 4 13.5

.950 2 0 -5.7

16 33 4 18° 7.8

17 34.0 16 32 29 17° 37.9 vF. 6 by 5 at 140° BM

17 50.4 16 32 31 17° 37.7

.953 30 37.8

.951 2 1 -5.8

16 34 31 17 32.0

16 17.9 16 32 9 16° 23.8 eF. 1d BM

16 31.6 16 32 9 16° 23.7

.959 9 23.8

.958 2 1 -5.4

16 34 10 16° 18.4

16 31.6 16 33 9 16° 22.4 vF. 1d BM

16 9.3 16 33 9 16° 21.9

.958 9 22.2

.960 2 1 -5.4

16 35 10 16° 16.8



35

10.2

-21.3

2991

16 32 117.6

-6.8

0.2

2996

16 33 58.6

42.6

-28.3

36

-1.1

-18.7

3141

16 33 48.6

-2.5

19.8

3142

16 33 53.5

-4.6

-10.4

37

-35.7

16.1

3147

16 37 47.7

11.1

17.1

3141

16 33 48.6

-0.2

15.1

3143

16 34 37.1

-151.8

47.3

-0.8

38

28.0

2.2

3143

16 34 37.1

19.9

26.0

3144

16 34 56.6

-7.5

3.0

3147

16 37 4.7

100.0

84.2

-31.8

39

3.9

-8.3

3083

16 54 32.5

-2.8

18.2

3014

16 38 58.3

16.3

1.2

-12.4





16	31.6	16	33	30	16°	10.3	b F .36 RR 6M
16	9.35	16	33	30	16°	9.5	
.958			30			9.9	
.960			2	1		-5.4	
		16	35	31	16°	4.5	

19	50.8	16	33	44	19°	32.1	e F .16 6M
19	12.4	16	33	43	19°	32.2	
.940			44			32.2	
.944			1	59		-5.4	
		16	35	43	19°	26.8	

19	51.5				20°	7.6	
19	50.8	16	34	33	20°	7.9	✓ F .26 6M
19	51.2	16	34	36	20°	6.3	✓
.940		16	34	36		7.1	
.940			36			-5.4	
.940		16	36	33	+20°	1.7	

19	51.2					53.4	
19	30.3	16	36	17	19°	56.3	✓ F .16 6M
19	51.5	16	36	21	19°	54.5	
.940		16	36	33		54.8	
.942			19			-5.4	
.940			1	59			
		16	38	18	19°	49.4	

16	49.3	16	54	49	16°	41.0	e F .26 ps 6M
16	32.9	16			16°	41.1	
.957							
.958							

(Cannot be found on plate to correct 26.2)



40-2.7  
-8.11.1  
-9.53231  
323416 39 11.0  
16 39 34.8  
- 11.4  
- 34.242-2.5  
-8.01.7  
-9.03231  
3234- 10.5  
- 33.7437.8  
2.11.7  
-9.03231  
323432.9  
8.8416.2  
-22.9-0.3  
-4.73061  
306616 38 15.3  
16 40 15.7  
27.5  
- 95.8445.3  
-15.09.0  
-11.03241  
324616 41 21.7  
16 42 49.6  
22.3  
- 63.2



18 26.7 16 39 0 18° 27.8 vF 3'6" BM

18 36.9 16 39 0 18° 27.4

948 0 27.6

.947 1 59 -5.4

16 40 59 18° 22.2

16 39 0 18° 28.4 F 8'6" 2' at 100°

16 39 1 18° 27.9

1 28.2

1 59 -5.4

16 41 0 18° 22.8

16 39 44 18° 28.4 F 13'6" BM

16 39 43 18° 27.9

44 28.2

1 59 -5.4

16 41 43 18° 22.8

17 18.9 16 38 43 16° 16.6 vF 2' R BM

17 22.7 16 38 40 16° 16.0

.934 42 18.3

.934 2 1 -5.4

16 40 43 16° 12.9

18 27.8 16 41 44 18° 16.6 vF 13'6" BM

18 27.4 16 41 47 18° 16.4

.950 46 16.6

.948 1 59 -5.4

16 43 45 18° 11.2



Plate 1353

1

5.3  
3.3-11.5  
-0.13839  
384014 9 3.5  
14 9 7.3

21.8

13.7

2

-1.2  
-2.210.4  
-3.93846  
384714 13 26.7  
14 13 27.8

-5.0

-9.2

3

5.6  
-2.1-11.8  
-2.04069  
407214 13 0.8  
14 13 30.2

20.9

-8.7

4

15.7  
-35.0  
-26.06.7  
-1.9  
-3.84069  
~~3859~~  
408214 12 0.8  
14 16 29.1  
15 54.7

65.5

~~70.8~~  
-145.6

5

19.8  
-21.9  
-30.36.5  
7.1  
-3.2  
-0.34069  
~~3859~~  
4082

87.4

~~96.4~~  
-126.0



-15 45.6 14 9 25-15° 57.3 vF .54 6M

15 57.2 14 9 21-15 57.3

.962 23 57.3

.961 2 26 -12.6

14 11 49 -17 ~~29.9~~  
6 9.9

-16 33.8 14 13 17-16° 23.4 eF .3 by .1 at 120°

16 19.4 14 13 17-16° 23.3

.958 17 23.4

.959 2 28 -12.2

14 15 45 -16 35.6

17 7.7 14 18<sup>3</sup> 22-17° 19.5 eF .2 by .1 at 170°

17 17.7 14 13 21-17° 19.5

.955 22 19.5

.954 2 29 -12.2

14 15 51 -17 31.3

17 7.7 14 14 6-17° 1.0 eF .12 6M

17 57.3<sup>0.3</sup> 14 14 5-17° 2.2

.955 6 1.6

.956 2 29 -12.2

14 16 35 -16° ~~49.4~~  
13.8

14 14 28 -17° 1.2 vF .34 6M

14 14 23-17° 0.5

0.6

26 0.9

2 29 -12.6

14 16 55 -17° ~~49.4~~ 13.5



6

$$\begin{array}{r} 21.1 \\ -20.51 \\ \hline -29.0 \end{array}$$

$$\begin{array}{r} 7.7 \\ -2.8 \\ \hline \end{array}$$

$$\begin{array}{r} 4069 \\ 3859 \\ \hline 4082 \end{array}$$

$$\begin{array}{r} 14 \quad 13 \\ \quad 42 \quad 08 \\ \quad 16 \quad 29.1 \\ 14 \quad 15.5417 \\ \hline 88.5 \\ -81.5 \\ \hline -120.0 \end{array}$$
7

$$\begin{array}{r} 24.6 \\ -17.0 \\ \hline -25.7 \end{array}$$

$$\begin{array}{r} 15.4 \\ 5.0 \\ \hline 8.0 \end{array}$$

$$\begin{array}{r} 4069 \\ 3859 \\ \hline 4082 \end{array}$$

$$\begin{array}{r} 102.8 \\ -71.2 \\ \hline -106.9 \end{array}$$
8

$$\begin{array}{r} 29.1 \\ -12.4 \\ \hline -21.0 \end{array}$$

$$\begin{array}{r} 6.3 \\ 4.0 \\ \hline -0.9 \end{array}$$

$$\begin{array}{r} 4069 \\ 3859 \\ \hline 4082 \end{array}$$

$$\begin{array}{r} 121.6 \\ -51.8 \\ \hline -87.8 \end{array}$$
9

$$\begin{array}{r} -0.1 \\ -5.3 \\ \hline \end{array}$$

$$\begin{array}{r} -3.1 \\ 6.1 \\ \hline \end{array}$$

$$\begin{array}{r} 11078 \\ 4079 \\ \hline \end{array}$$

$$\begin{array}{r} 14 \quad 15 \quad 59 \\ 14 \quad 15 \quad 26.5 \\ \hline -4.1 \\ -221 \end{array}$$
10

$$\begin{array}{r} 9.2 \\ 4.0 \\ \hline \end{array}$$

$$\begin{array}{r} -0.9 \\ 8.4 \\ \hline \end{array}$$

$$\begin{array}{r} 4078 \\ 4079 \\ \hline \end{array}$$

$$\begin{array}{r} 40.8 \\ 16.8 \\ \hline \end{array}$$



$\begin{array}{r} 17 \\ 17 \\ \hline 16 \end{array}$ 
 $\begin{array}{r} 7.7 \\ 0.3 \\ \hline 57.3 \end{array}$ 
 $\begin{array}{r} 14 \\ 14 \\ \hline 29 \end{array}$ 
 $\begin{array}{r} 14 \\ 14 \\ \hline 29 \end{array}$ 
 $\begin{array}{r} 17^\circ \\ 17^\circ \\ \hline 17^\circ \end{array}$ 
 $\begin{array}{r} 0.0 \\ 0.1 \\ \hline 0.1 \end{array}$ 
 vF. 2d BM

.955

.956

$\begin{array}{r} 29 \\ 29 \\ \hline 29 \end{array}$ 
 $\begin{array}{r} 0.1 \\ 12.6 \\ \hline 12.7 \end{array}$ 
 $\begin{array}{r} 14 \\ 16 \\ \hline 16 \end{array}$ 
 $\begin{array}{r} 58 \\ 58 \\ \hline 58 \end{array}$ 
 $\begin{array}{r} 17^\circ \\ 17^\circ \\ \hline 17^\circ \end{array}$ 
 $\begin{array}{r} 47.5 \\ 47.5 \\ \hline 47.5 \end{array}$

$\begin{array}{r} 14 \\ 14 \\ \hline 14 \end{array}$ 
 $\begin{array}{r} 14 \\ 14 \\ \hline 14 \end{array}$ 
 $\begin{array}{r} 44 \\ 42 \\ \hline 43 \end{array}$ 
 $\begin{array}{r} 16^\circ \\ 16^\circ \\ \hline 16^\circ \end{array}$ 
 $\begin{array}{r} 52.3 \\ 52.3 \\ \hline 52.3 \end{array}$ 
 eF. 2d BM

$\begin{array}{r} 43 \\ 43 \\ \hline 43 \end{array}$ 
 $\begin{array}{r} 52.3 \\ 52.3 \\ \hline 52.3 \end{array}$ 
 $\begin{array}{r} 2 \\ 2 \\ \hline 2 \end{array}$ 
 $\begin{array}{r} 31 \\ 31 \\ \hline 31 \end{array}$ 
 $\begin{array}{r} -9.9 \\ -9.9 \\ \hline -9.9 \end{array}$ 
 $\begin{array}{r} 14 \\ 17 \\ \hline 14 \end{array}$ 
 $\begin{array}{r} 17 \\ 17 \\ \hline 17 \end{array}$ 
 $\begin{array}{r} 14 \\ 14 \\ \hline 14 \end{array}$ 
 $\begin{array}{r} 17^\circ \\ 17^\circ \\ \hline 17^\circ \end{array}$ 
 $\begin{array}{r} 42.4 \\ 42.4 \\ \hline 42.4 \end{array}$

$\begin{array}{r} 14 \\ 14 \\ \hline 14 \end{array}$ 
 $\begin{array}{r} 15 \\ 15 \\ \hline 15 \end{array}$ 
 $\begin{array}{r} 1 \\ 1 \\ \hline 1 \end{array}$ 
 $\begin{array}{r} 17^\circ \\ 17^\circ \\ \hline 17^\circ \end{array}$ 
 $\begin{array}{r} 1.4 \\ 1.3 \\ \hline 1.2 \end{array}$ 
 vF. 2d BM.

$\begin{array}{r} 2 \\ 2 \\ \hline 2 \end{array}$ 
 $\begin{array}{r} 29 \\ 29 \\ \hline 29 \end{array}$ 
 $\begin{array}{r} -12.6 \\ -12.6 \\ \hline -12.6 \end{array}$ 
 $\begin{array}{r} 14 \\ 17 \\ \hline 14 \end{array}$ 
 $\begin{array}{r} 30 \\ 30 \\ \hline 30 \end{array}$ 
 $\begin{array}{r} 17^\circ \\ 17^\circ \\ \hline 17^\circ \end{array}$ 
 $\begin{array}{r} 48.7 \\ 48.7 \\ \hline 48.7 \end{array}$

$\begin{array}{r} 17 \\ 17 \\ \hline 17 \end{array}$ 
 $\begin{array}{r} 23.5 \\ 23.5 \\ \hline 23.5 \end{array}$ 
 $\begin{array}{r} 14 \\ 14 \\ \hline 14 \end{array}$ 
 $\begin{array}{r} 15 \\ 15 \\ \hline 15 \end{array}$ 
 $\begin{array}{r} 1 \\ 1 \\ \hline 1 \end{array}$ 
 $\begin{array}{r} 17^\circ \\ 17^\circ \\ \hline 17^\circ \end{array}$ 
 $\begin{array}{r} 26.6 \\ 26.6 \\ \hline 26.6 \end{array}$ 
 eF. 1d BM

$\begin{array}{r} 17 \\ 17 \\ \hline 17 \end{array}$ 
 $\begin{array}{r} 32.7 \\ 32.7 \\ \hline 32.7 \end{array}$ 
 $\begin{array}{r} 14 \\ 14 \\ \hline 14 \end{array}$ 
 $\begin{array}{r} 15 \\ 15 \\ \hline 15 \end{array}$ 
 $\begin{array}{r} 1 \\ 1 \\ \hline 1 \end{array}$ 
 $\begin{array}{r} 17^\circ \\ 17^\circ \\ \hline 17^\circ \end{array}$ 
 $\begin{array}{r} 26.6 \\ 26.6 \\ \hline 26.6 \end{array}$

.954

.953

$\begin{array}{r} 2 \\ 2 \\ \hline 2 \end{array}$ 
 $\begin{array}{r} 29 \\ 29 \\ \hline 29 \end{array}$ 
 $\begin{array}{r} -12.6 \\ -12.6 \\ \hline -12.6 \end{array}$ 
 $\begin{array}{r} 14 \\ 17 \\ \hline 14 \end{array}$ 
 $\begin{array}{r} 30 \\ 30 \\ \hline 30 \end{array}$ 
 $\begin{array}{r} 17^\circ \\ 17^\circ \\ \hline 17^\circ \end{array}$ 
 $\begin{array}{r} 44.0 \\ 44.0 \\ \hline 44.0 \end{array}$

$\begin{array}{r} 14 \\ 14 \\ \hline 14 \end{array}$ 
 $\begin{array}{r} 15 \\ 15 \\ \hline 15 \end{array}$ 
 $\begin{array}{r} 47 \\ 43 \\ \hline 45 \end{array}$ 
 $\begin{array}{r} 17^\circ \\ 17^\circ \\ \hline 17^\circ \end{array}$ 
 $\begin{array}{r} 24.4 \\ 24.3 \\ \hline 24.4 \end{array}$ 
 eF. 1d BM x

$\begin{array}{r} 14 \\ 14 \\ \hline 14 \end{array}$ 
 $\begin{array}{r} 15 \\ 15 \\ \hline 15 \end{array}$ 
 $\begin{array}{r} 43 \\ 43 \\ \hline 43 \end{array}$ 
 $\begin{array}{r} 17^\circ \\ 17^\circ \\ \hline 17^\circ \end{array}$ 
 $\begin{array}{r} 24.3 \\ 24.3 \\ \hline 24.3 \end{array}$

$\begin{array}{r} 45 \\ 45 \\ \hline 45 \end{array}$ 
 $\begin{array}{r} 24.4 \\ 24.4 \\ \hline 24.4 \end{array}$

$\begin{array}{r} 2 \\ 2 \\ \hline 2 \end{array}$ 
 $\begin{array}{r} 29 \\ 29 \\ \hline 29 \end{array}$ 
 $\begin{array}{r} -12.6 \\ -12.6 \\ \hline -12.6 \end{array}$ 
 $\begin{array}{r} 14 \\ 18 \\ \hline 14 \end{array}$ 
 $\begin{array}{r} 14 \\ 14 \\ \hline 14 \end{array}$ 
 $\begin{array}{r} 17^\circ \\ 17^\circ \\ \hline 17^\circ \end{array}$ 
 $\begin{array}{r} 37.0 \\ 37.0 \\ \hline 37.0 \end{array}$



<u>11</u>	0.6 -7.9	1.2 4.2	3859 4082	14 16 547 141 16 291
				2.5 -32.3

<u>12</u>	6.3 -5.2	19.1 -3.1	3855 3858	14 141 599 14 15 38.5
				26.3 -21.7

<u>13</u>	9.2 -3.7	18.7 -3.4	3855 3858	38.4 -15.4
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<u>14</u>	10.0 -2.7	11.9 -10.3	3855 3858	41.7 -11.2
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<u>15</u>	11.8 -1.0	16.1 -5.1	3855 3858	49.2 -4.1
-----------	--------------	--------------	--------------	--------------



16 57.3 14 16 57 -16° 56.1 vF .56

17 0.3 14 17 1 -16° 56.1

.956 14 16 59 56.1

.956 2 31 -9.9

14 19 30 -17° 46.2  
6.0

16 28.5 14 15 26 -16° 9.4 eF .16 bM

16 5.8 14 15 32 -16° 8.9

.958 34 9.2

.960 2 31 -9.9

14 18 5 -16° 59.3  
19.1

14 15 38 -16° 9.8 eF .16 bM

14 15 38 -16° 9.2

38 9.5

2 31 -9.9

14 18 9 -16° 59.6  
19.4

14 15 42 -16° 16.6 vF .12 bM

14 15 42 -16° 16.1

42 16.3

2 31 -9.9

14 18 13 -16° 6.4  
26.2

14 15 49 -16° 12.4 vF .12 bM

14 15 49 -16° 11.9

49 12.1

2 31 -9.9

14 18 20 -16° 22.0



16	-3.9	13.8	3857	14	13	20.5
	-8.1	9.1	3858	14	13	38.1

- 15.2  
- 33.7

17	6.0	3.1	3857
	1.7	-1.6	3858

24.9  
3.5

18	1.7	10.0	3858	14	15	53.5
	-8.7	-6.0	3864	14	16	38.2

3.5  
-36.2

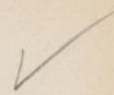
19	7.3	14.1	3858
	-3.7	-2.0	3864

30.4  
- 15.4

20	6.7	23.4	3858
	-4.0	7.3	3864

28.0  
- 17.0





15 39.7 14 13 5 -15° 25.9 eF .3 by .1 at 45°

15 35.4 14 13 5 -15° 26.3

.962 5 26.2

.963 2 27 -12.1

14 15 32 -15° 38.3 ~~38.3~~

14 13 45 -15° 36.6 vF .7 by .1 at 60° BM

14 13 42 -15° 37.8

44 36.8

2 27 -12.1

14 16 11 -15° 24.7  
48.9

15 5.8 14 15 59 -15° 55.8 vF .2 by .1 at 90° BM

15 50.6 14 16 2 -15° 56.6

.960 14 16 1 56.2

.961 2 27 -12.1

14 18 28 -15° 44.1  
8.3

14 16 24 -15° 51.7 vF BM .7 by .1 at 90°

14 16 23 -15° 52.6

24 52.2

2 27 -12.1

14 18 51 -15° 40.1  
4.3

14 16 21 -15° 42.4 vF .9 by .1 at 65° BM

14 16 21 -15° 43.3 spin

21 42.9

2 27 -12.1

14 18 48 -15° 30.8 5.10



N.G.C. 5595

5.2

2.5

3858

14

15 53.5

-5.4

-13.6

3864

14

16 38.2

21.7

- 22.4

N.G.C. 5597

8.8

0.1

3858

2.1

-16.0

3864

35.6

- 8.7

21

11.2

-5.7

3929

14

13 36.2

-7.9

17.2

3943

14

15 52.6

arrived to h 39 37

14 14 55.1

-14 36.1

46.3

-32.7

22

13.3

-18.8

3929

-5.9

4.2

3943

see above \*

54.9

-24.3

23

4.7

12.4

3924

14

14 55.1

-1.9

-5.0

3937

14

14 27.6

19.4

-7.8



16 5.8 14 16 14  $-16^\circ$  3.3 B 1.3 by 1' at  $60^\circ$  spir  
 15 50.6 14 16 16  $-16^\circ$  4.2 psm rh  
 .960 15 3.8  
 .962 2 28  $-12.6$   
 14 18 43  $-16^\circ$  ~~16.4~~ 16.4

N.6E

14 16 29  $-16^\circ$  5.7 pB 1.3 d R psm spir  
 14 16 30  $-16^\circ$  6.6 rh  
 30 6.2  
 2 28  $-12.6$   
 14 18 58  $-16^\circ$  ~~53.6~~ 18.8

NGC.

14 13.1 14 14 22  $-14^\circ$  18.8 eF 1.3 by 1.2 at  $25^\circ$   
 14 35.0 14 14 22  $-14^\circ$  ~~17.8~~  
 .969 22 18.9  
 .967 2 26  $-12.1$   
 14 16 48  $-14^\circ$  ~~6.7~~ 30.9

14 14 31  $-14^\circ$  31.9 eF 1.6 by 1' at  $80^\circ$   
 14 14 31  $-14^\circ$  ~~30.8~~  
 31 32.1  
 2 26  $-12.1$   
 14 16 57  $-14^\circ$  ~~19.9~~ 44.1

14 53.1 14 14 47  $-14^\circ$  40.7 VF 2' d BM  
 14 36.1 14 14 47  $-14^\circ$  41.1  
 .966 47 40.0  
 .967 2 26  $-12.1$   
 14 17 13  $-14^\circ$  ~~27.9~~ 52.1



23 ←1.3  
-5.21.0  
-16.3

3934

3937

14 14 55.1

14 14 27.6

5.3

-21.6

2411.3  
-9.38.1  
-15.9

39413

3952

14 15 52.6

14 17 16.1

46.7

-38.4

251.7  
-13.0-5.0  
0.0

3952

3953

14 17 16.1

14 18 16.6

7.0

-53.8

262.1  
-12.7-7.2  
-2.1

3952

3953

8.6

-52.3

273.8  
-11.0-6.7  
-1.2

3952

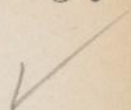
3953

4

15.6

-45.4





14 53.1 14 14 33 -14' 52.1 F .26/ R b M

14 36.1 14 14 33 -14' 52.4

.966 33 52.2

.967 2 26 -12.1

14 16 59 -15° 40.1  
4.3

14 35.0 14 16 38 -14° 26.9 F .26/ b M

14 11.4 14 16 48 -14° 27.3

.967 43 27.1

.969 2 26 -12.1

14 19 9 -14° 15.0  
39.2

14 11.4 14 17 23 -14° 16.5 v F .26/ b M

14 16.5 14 17 23 -14° 16.5

.969 23 16.5

.969 2 26 -12.1

14 19 49 -14° 44  
28.6

14 17 25 -14° 18.6 e F .26/ b M

14 17 24 -14° 18.6

25 18.6

2 26 -12.1

14 19 51 -14° 6.5  
30.7

14 17 31 -14° 18.1 v F .36/ b M

14 17 32 -14° 17.7

32 17.9

2 26 -12.1

14 19 58 -14° 58.0



28-2.1  
-5.36.7  
-6.03892  
389314 16.489  
14 16.593-8.6  
-21.7296.9  
-7.20.9  
-12.53897  
389814 18 30.7  
14 19 26.926.5  
29.8302.0  
-1.913.0  
-2.73953  
395514 18 16.6  
14 18 32.08.2  
-7.6319.3  
-12.8-3.8  
4.93956  
396114 18 38.1  
14 20 9.511.6  
-53.2329.0  
-4.711.0  
-13.83869  
387114 17 58.3  
14 18 56.437.4  
-19.5



13 43.6 14 16 37  $-13^\circ$  36.9 vF .6 by .1 at  $115^\circ$  spin

13 31.5 14 16 38  $-13^\circ$  37.5

.921 38  $-13^\circ$  37.2

.972 2 27  $-11.7$

14 19 5  $-13^\circ$  ~~25.5~~  
48.9

~~13~~ 33.2 14 18 59 ~~13~~ 32.3 eF .16 BM

~~13~~ 19.8 14 18 57 ~~13~~ 32.3

.967 58 32.3

.968 2 27  $-12.1$

14 21 25 ~~13~~  $-14^\circ$  ~~20.2~~  
44.4

14 16.5 14 18 15  $-14^\circ$  3.5 F .36 BM T

14 1.2 14 18 24  $-14^\circ$  3.9

.967 20 9.7

.970 2 27  $-12.1$

14 20 47  $-14^\circ$  ~~57.6~~  
21.8

14 14.1 14 19 27  $-14^\circ$  17.9 vF .26 BM

14 22.5 14 19 16  $-14^\circ$  17.6

.969 22 17.8

.968 2 27  $-12.1$

14 21 49  $-14^\circ$  ~~5.7~~  
29.9

15 38.3 14 18 36  $-15^\circ$  20.3 vF 12 by .1 at  $150^\circ$

15 7.4 14 18 37  $-15^\circ$  21.2

.963 37 20.8

.965 2 28  $-12.6$

14 21 5  $-15^\circ$  ~~8.2~~  
33.4



33

4.7	-2.0
-3.8	3.7

3960
3962

14	19	41.2
14	20	15.0

19.4

-15.6

34

8.2	-0.9
-25.9	6.7

3898
3910

14	19	26.9
14	21	45.8

33.7

-106.3

35

30.2	2.0
-3.9	9.5

3898
3910

124.0

-16.0

36\*

37

9.7	15.3
-3.8	-9.1

3965
3912

14	21	35.9
14	22	31.9

40.2

-15.6

38

-3.7	11.9
6.0	7.9
-4.0	-7.9

3976
3974
3977

14	25	8.9
14	24	29.4
14	25	9.9

-15.2

24.8

-16.4



14	30.2	14	20 1	-14°	32.2	eF 5d defect?
14	35.7	14	20 0	-14°	32.0	
.968			1		32.1	
.967			<u>2 27</u>		<u>-12.1</u>	
		14	22 28	-14°	20.0	
					44.2	
13	19.8	14	20 1	-13°	20.7	cF 3d bM
13	27.0	14	20 0	-13°	20.3	
.973			1		20.5	
.972			<u>2 26</u>		<u>-12.6</u>	
		14	22 27	-13°	<del>7.9</del>	
					53.1	
		14	21 31	-13°	17.8	vF 2d bM 1E?
		14	21 30	-13°	16.5	
			31		17.1	
			<u>2 26</u>		<u>-12.6</u>	
		14	23 57	-13°	<del>4.5</del>	
					29.7	
14	22.1	14	22 16	-14°	6.8	F 2d bMR
13	57.7	14	22 16	-14°	6.8	
.968			16		6.8	
.970			<u>2 27</u>		<u>-12.1</u>	
		14	24 43	-14°	<del>54.7</del>	
					18.9	
	21.9			-14°	10.0	
14	16.9	14	24 54	-14°	9.0	eF 1d bM
14	2.5	14	24 54	-14°	10.4	
.968					9.5	
.969		14	24 53			
			<u>54</u>		<u>-12.1</u>	
970			<u>2 27</u>			
		14	27 21	-14°	<del>57.4</del>	
					21.6	



33

4.7      -2.0  
-3.8      3.7

3960  
3962

14 19 41.2  
14 20 15.0

19.4

-15.6

34

8.2      -0.9  
-25.9      6.7

3898  
3910

14 19 26.9  
14 21 45.8

33.7

-106.3

35

30.2      2.0  
-3.9      9.5

3898  
3910

124.0

-16.0

36\*

37

9.7      15.3  
-3.8      -9.1

3965  
3912

14 21 35.9  
14 22 31.9

40.2

-15.6

38

-3.7      7.9  
6.0      -7.9  
-4.0

3976  
3974  
3977

14 25 8.9  
14 24 29.4  
14 25 9.9

-15.2

24.8

-16.4



14 30.2 14 20 1 -14° 32.2 eF 5d defect?

14 35.7 14 20 0 -14° 32.0

.968 1 32.1

.967 2 27 -12.1

14 22 28 -14° 20.0  
44.2

13 19.8 14 20 1 -13° 20.7 cF 3d bM

13 27.0 14 20 0 -13° 20.3

.973 1 20.5

.972 2 26 -12.6

14 22 27 -13° 7.9  
53.1

14 21 31 -13° 17.8 vF 2d bM 1E?

14 21 30 -13° 16.5

31 17.1

2 26 -12.6

14 23 57 -13° 4.5  
29.7

14 22.1 14 22 14 -14° 6.8 F 2d bMR

13 57.7 14 22 16 -14° 6.8

.968 16 6.8

.970 2 27 -12.1

14 24 43 -14° 54.7  
18.9

14 16.9 14 24 54 -14° 10.0  
10.0

14 2.5 14 24 54 -14° 10.4

.968 9.5

.969 14 24 53

970 2 27 -12.1

14 27 31 -14° 57.4 21.6



<u>39</u>	10.1	-3.3	3887	14	23	57.2	1
	-4.7	-1.5	3889	14	24	56.9	16
					42.0		
					-19.6		
<u>40</u>	-1.1	4.3	3888	14	24	54.8	1
	-11.9	-2.9	3891	14	25	41.1	16
					-4.6		
					-49.7		
<u>41</u>	4.2	13.1	3891	14	25	41.1	16
	-16.0	8.8	3896	14	27	4.2	16
					17.5		
					-66.8		
<u>42</u>	0.9	17.3	3903	14	27	9.9	13
	0.8	0.0	3904	14	27	10.7	13
					3.7		
					3.3		
<u>43</u>	11.0	-9.2	4119	14	27	39.9	17
	1.8	-5.8	4123	14	28	16.0	17
					46.1		
					7.5		



16 9.8 14 24 39  $-16^\circ$  13.1 v F. 2' d BM

16 11.5 14 24 40  $-16^\circ$  13.0

.960 40 13.0

.960 2 28  $-12.1$

14 27 8  $-16^\circ$  ~~13.9~~  
25.1

16 46.3 14 24 50  $-16^\circ$  42.0 e F. 2' d BM

16 39.3 14 24 51  $-16^\circ$  42.2

.957 51 42.1

.958 2 28  $-12.1$

14 27 19  $-16^\circ$  ~~38.0~~  
54.2

16 39.3 14 25 59  $-16^\circ$  26.2 e F. 1' d BM a/m.t

16 34.5 14 25 57  $-16^\circ$  25.7

.958 58 26.0

.958 2 28  $-12.1$

14 28 26  $-16^\circ$  ~~13.9~~  
48.1

15 49.0 14 27 14  $-15^\circ$  31.7 F. 5' by 1' at  $0^\circ$  Br

15 31.0 14 27 14  $-15^\circ$  31.0

.962 14 31.3

.963 2 28  $-12.6$

14 29 42  $-15^\circ$  43.9

17 4.4 14 28 26  $-17^\circ$  13.6 p F. 3' d BM

17 20.0 14 28 26  $-17^\circ$  14.2

.955 26 13.9

.954 2 30  $-12.6$

14 28 26  $-17^\circ$  ~~13.9~~



## PLATE NO. 2208

1

-0.2

-1.7

3356

10 26 5.9

-3.8

1.2

3370

10 26 30.9

-2.4

-20.8

No. 2. \* 3 MISSING

4

4.1

3.8

2792

10 46 25.0

2.2

-5.3

2800

10 46 39.0

31.2

16.6

5

1.7

-3.2

2853

10 49 18.5

-6.6

10.5

2867

10 50 24.8

13.0

-50.7

6

1.7

-3.0

2853

-6.6

10.7

2867

13.0

-50.8

7

4.5

-4.3

3972

10 49 42.1

-2.3

-0.8

3991

10 50 33.9

33.7

-17.2



57 49.8 10 26 3.5 -57° 51.5 eF .2d RBM 0?

57 52.8 10 26 10.1 -57° 51.6

.532 7 51.6

.531 56 -7.7

10 27 3 -57° 43.9

58 13.2 10 46 56 -58° 9.4 eF .3' by .1' at 120° bf

58 3.9 10 46 56 -58° 9.2

.526 56 9.3

.529 59 -8.0

10 47 55 -58° 1.3

58 26.5 10 47 32 -58° 29.7 F .2' by .1' at 70° bf

58 39.9 10 49 35 -58° 29.4

50 of 2

.523 34 29.6

.520 1 0 -8.0

10 50 34 -58° 21.6

10 49 32 -58° 29.5 F .2' by .1' at 75° bf

10 49 34 -58° 29.2 Nos. 5 and 6 form a bar so has

33 29.4

very interesting object.

1 0 -8.0

10 of 2

10 50 33 -58° 21.4

57 45.7 10 50 16 -57° 50.0 vF .3' by .1' at 110°

57 49.1 10 50 27 -57° 49.9

.533 22 50.0

.532 1 1 -8.0

10 51 23 -57° 42.0



85.1  
-1.9-1.1  
2.33972  
399110 49 42.1  
10 50 33.9

38.3

- 12.6

92.7  
-3.2-1.0  
6.02949  
295910 56 20.0  
10 57 4.5

17.4

- 25.5

102.3  
-2.05.4  
-3.12421  
249110 58 4.8  
10 58 40.5

18.6

-16.1

Plate 8373

1-0.1  
-2.28.2  
-18.65705  
570623 40 18.3  
23 40 25.2

- 0.4

- 4.4

24.8  
2.812.1  
-14.85705  
570619.2  
11.2



1 57 45.7 10 50 20 -57° 46.8 F 6M .4 by .1 at 140°  
 57 49.1 10 50 21 -57° 46.8  
 .533 21 46.8  
 .532 1 1 -8.0  
 10 51 22 -57° 38.8  
 54.8

0 59 46.0 10 56 37 -59° 47.0 v F .2 d 6M  
 59 53.7 10 56 39 -59° 47.1  
 .503 38 47.6  
 .501 1 1 -8.0  
 10 57 39 -59° 39.0  
 55.0

60 17.2 10 58 24 -60° 11.8 v F .2 d 6M  
 60 8.8 10 58 24 -60° 11.9  
 .495 24 11.8  
 .497 1 2 -8.1  
 10 59 26 -60° 19.9

3 33.7 23 40 18 -3° 25.5 v F .8 by .1 at 0°  
 3 6.7 23 40 21 -3° 25.3  
 .998 20 25.4  
 .998 2 17 +14.8  
 23 42 27 -3° 10.6

~~NGC 5357~~

23 40 38 -3° 21.6 v F .3 d 6M  
 23 40 37 -3° 21.5  
 38 21.6  
 2 17 +14.8  
 23 42 27 -3° 10.6

I.C.  
~~NGC 5357~~



<u>3</u>	5.0 3.0	20.5 -6.7	5705 5706	23 40 16.3 23 40 25.2 20.0 12.0	3 3
<u>4</u>	7.2 -7.3	-20.8 -6.2	5705 5708	23 40 18.3 23 41 16.7 28.8 -29.2	3 3
<u>5</u>	11.3 -17.0	-2.5 13.1	5706 5713	23 40 25.2 23 42 18.3 115.2 -68.0	3 3
<u>6</u>	12.4 -16.0	-3.7 12.0	5706 5713	419.6 -64.0	
<u>7</u>	17.5 -10.9	0.8 16.3	5706 5713	70.0 -43.6	



3	33.5	23	40	38	-3°	13.0	EF .5d BM
3	6.7	23	40	37	-3°	13.4	
	.998			38		13.2	
	.998		2	17		+14.8	
		23	42	55	-2°	58.4	

I.C.  
~~AGC~~ 5352

3	33.5	23	40	47	-3°	54.3	EF .1d BM
3	47.9	23	40	48	-3°	54.1	
	.998			48		54.2	
	.997		2	17		+14.8	
		23	43	5	-3°	39.4	

3	6.7	23	41	10	-3°	9.2	EF .1d BM
3	22.1	23	41	10	-3°	9.0	
	.998			10		9.1	
	.998		2	17		+14.8	
		23	43	27	-2°	54.2	

23	41	15	-3°	10.4	VF .5d BM
23	41	14	-3°	10.1	
		15		10.3	
	2	17		+14.8	
23	43	32	-2°	55.5	

23	41	35	-3°	5.9	F .7 by .6 at 120° BM
23	41	34	-3°	5.8	
		35		5.8	
	2	17		+14.8	
23	43	52	-2°	51.0	

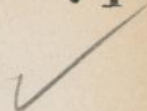


822.2  
-6.11.4  
17.15706  
571323 40 25.2 3  
23 42 18.3 3  
88.8  
-24.49-6.2  
-7.7-4.8  
6.75715  
596323 42 55.2 3  
23 42 59.3 4  
-24.8  
-30.810-3.3  
-4.3-1.0  
10.2-13.2  
-17.21118.3  
-30.7-3.7  
-7.95960  
596923 41 33.1 4  
23 44 47.1 4  
73.2  
-122.812+ 31.6  
-17.26.8  
1.65960  
5969-126.4  
-68.8



Start here next time  
to check for positions  
2.8.97

71



3 6.7 23 41 54 -3° 5.8 vF. 3' 34.1" at 120° 6M

3 22.1 23 41 54 -3° 5.0

.998 54 5.2

.997 2 17 +14.8

23 44 11 -2° 50.4

3 57.5 23 42 30 -4° 2.3 F. 2' 6M

4 8.5 23 42 28 -4° 1.8

.997 29 2.0

.998 2 19 +14.8

23 44 48 -3° 57.2

23 42 42 -3° 58.5 eF. 2' 6M

23 42 42 -3° 58.3

42 58.4

2 17 +14.8

23 44 59 -3° 43.6

4 4.4.4 23 42 46 -4° 48.1 vF. 2' 6M

4 39.6 23 42 44 -4° 47.5

.997 45 47.8

.996 2 19 +14.8

23 45 4 -4° 33.0

23 43 40 -4° 37.6 eF. 2' 6M

23 43 38 -4° 38.0

39 37.8

2 19 +14.8

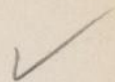
23 45 58 -4° 33.0



2

<u>13</u>	6.3 -1.3	2.3 -0.9	5964 5967	23 43 35.5 23 44 7.1 250.2 -5.2	4 4
<u>14</u>	11.6 -22.3	-18.2 21.1	5718 5721	23 43 44.1 23 45 19.3 6.1 -89.2	3 3
<u>15</u>	3.3 -5.8	-7.3 20.0	6047 5718	23 43 7.5 23 43 44.1 13.2 -23.2	2 3
<u>16</u>	14.4 -9.0	-0.1 6.3	6067 6072	23 44 24.7 23 45 56.9 57.6 -36.0	5 5
<u>17</u>	12.8 -28.7	2.9 20.2	5969 5977	23 44 27.1 23 47 32.1 51.2 -114.8	4 4





4 22.0 23 44 1 -4° 20.7 eFes  
 4 19.2 23 44 2 -4° 20.1  
 997 2 21.4  
 997 2 19 +14.8  
 23 46 21 -4° 6.6

3 19.5 23 43 51 -3° 37.7 vF RR .26/bM  
 3 58.8 23 43 50 -3° 37.7  
 998 51 37.7  
 997 2 17 +14.8  
 23 46 8 -3° 22.9

2 52.6 23 43 21 -2° 59.9 vF .26/bM  
 3 19.5 23 43 21 -2° 59.5  
 998 21 59.7  
 998 2 18 +14.8  
 23 45 39 -2° 44.9

5 44.5 23 45 23 -5° 44.6 eFid  
 5 51.5 23 45 21 -5° 45.2  
 995 22 44.9  
 994 2 18 +14.8  
 23 47 40 -5° 30.1

4 39.6 23 45 38 -5° 16.7 F .6d psbM  
 4 56.7 23 45 37 -5° 16.5  
 996 38 16.6  
 996 2 18 +14.8  
 23 47 56 -5° 1.8



46

33.2

-6.0

5969

23 44 47.1

-8.1

11.2

5977

23 47 32.1

132.8

-32.4

47

33.9

-6.8

5969

-7.5

10.3

5977

136.6

-30.0

18

6.7

3.2

5972

23 45 26.4

-9.2

-10.0

5973

23 46 31.9

26.8

-37.8

34

-20.7

-27.7

4500

23 47 26.6

-16.8

-7.0

4499

23 47 13.8

17.2

4.0

4495

23 45 17.3

-16.2

-9.2

4492

23 47 9.8

-12.9

1.9

4498

23 46 57.3

-82.8

-67.2

68.8

-64.8

-51.6

19

-1.2

9.2

5721

23 45 19.3

-4.1

-26.0

5723

23 45 27.9

-4.8

-16.4



✓

4 39.6 23 43 0 -4° 45.6 v F. 2d/6M

4 56.7 23 47 0 -4° 45.5

996 0 45.6

996 2 19 +14.8

23 49 19 -4° 30.8

23 47 7 -4° 46.4 e F. 1d/6M defect?

23 47 2 -4° 46.4

4 46.4

2 19 +14.8

23 49 23 -4° 31.6

4 16.8 23 45 56 -4° 13.6 e F. 1d/

4 3.8 23 45 54 -4° 13.8

997 55 13.7

997 2 19 +14.8

23 48 14 -3° 58.9

1 4.4 1° 32.1

35.6 1° 32.6

1 38.6 23 46 4 -1° 34.6 v F. 2d/6M

1 23.9 23 46 7 -1° 31.6

1 33.5 23 46 7 -1° 31.6

23 46 26 31.6

23 46 5 +14.8

23 46 6 -1° 17.0

2 18

23 46 24

3 58.8 23 45 14 -3° 49.6 e F. 1d/6M

3 23.9 23 45 11 -3° 49.9

997 13 49.8

998 2 17 +14.8

23 47 30 -3° 35.0



20-3.6  
-6.218.2  
-17.0

5721

5722

23 45 19.3

23 45 27.9

-14.4

-24.8

216.1  
3.713.8  
-21.3

5721

5722

24.4

14.8

226.0  
3.219.1  
-16.1

5721

5722

24.0

12.8

233.7  
1.027.0  
-8.2

5721

5722

14.8

4.0

241.0  
-12.35.3  
-9.7

5722

5726

23 45 27.9

23 46 21.6

4.0

-49.2



3 5 f.f 23 45 5 -3° 40.6 eF. 3' 6M bin

3 23.9 23 45 3 -3° 48.9

.997 4 40.8

.998 2 17 41.4

23 47 21 -3° 26.0

23 45 44 -3° 45.0 eF. 2' 6M

23 45 43 -3° 46.2

44 45.4

2 17 41.4

23 48 1 -3° 30.8

23 45 43 -3° 39.7 VF. 2' 6M

23 45 41 -3° 40.0

42 39.8

2 17 41.4

23 47 59 -3° 25.0

23 45 34 -3° 51.8 VF. 3' 4.1 at 120° 6M

23 45 32 -3° 32.1

33 31.9

2 17 41.4

23 47 50 -3° 17.1

3 23.9 23 45 32 -3° 18.6 eF. 1.7 by 1 at 120° spin

3 9.0 23 45 33 -3° 18.7

.998 33 18.6

.998 2 17 41.4

23 47 50 -3° 3.8



250.9  
-12.712.3  
-2.55722  
572623 45 27.9  
23 46 21.6  
3.6  
-50.8261.2  
-12.112.7  
-2.25722  
57264.8  
-48.4278.9  
-4.714.8  
-0.15722  
572635.6  
-10.828-0.8  
-4.12.3  
-7.26051  
605223 45 31.2  
23 45 44.4  
-3.2  
-16.4292.1  
-7.85.2  
71.96052  
605723 45 44.4  
23 46 23.9  
8.4  
-24.2



3 23.9 23 45 32 -3° 11.6 e F. id sp of 2

3 9.0 23 45 31 -3° 11.5

.998 32 11.6

998 2 17 +14.8

23 47 49 -2° 56.8

23 45 33 -3° 11.2 e F. id nf of 2

23 45 34 -3° 11.2

34 11.2

2 17 +14.8

23 47 51 -2° 56.4

23 46 4 -3° 9.1 e F. id bM.

23 46 12 -3° 9.1

8 9.1

2 17 +14.8

23 48 25 -2° 54.3

2 31.9 23 45 28 -2° 29.6 e F. id bM

2 22.5 23 45 28 -2° 29.7

.998 28 29.6

998 2 18 +14.8

23 47 46 -2° 14.8

2 22.5 23 45 53 -2° 17.3 e F e S bM

2 5.4 23 46 0 -2° 17.3

.999 23 45 57 17.3

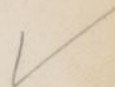
999 2 18 +14.8

23 46 15 -2° 2.5



301.3  
-8.512.5  
-4.86052  
605723 45 44.4  
23 46 23.95.2  
-34.03118.9  
-26.1-11.5  
-2.74493✓  
450123 44 59.0  
23 47 56.3  
75.6  
-104.43221.3  
-23.3-2.3  
6.54493✓  
450185.2  
-93.23325.2  
-19.8-2.8  
6.14493✓  
450110 0.8  
-79.23638.8  
-6.0-6.6  
2.14493✓  
450115 5.2  
-24.0





14 2 22.5 23 45 50 -2' 18.0 e F 1.0 BM

9 2 5.4 23 45 50 -2' 10.2

.999

50 10.1

.999

2 18 +14.8

23 48 8 -10 55.3

-1 45.6 23 46 14 -1° 57.1 v F 1.2 by 1' BM at 150°

3 -1 52.8 23 46 12 -1° 55.5

.999

13 56.3

.999

2 18 +14.8

23 48 31 -1° 41.5

23 46 24 -10 47.9 p F 1.6 by 1' at 30° BM

23 46 23 -10 46.3 spin

24 47.1

2 18 +14.8

23 48 42 -10 32.3

23 46 40 -10 48.4 v F 1.2 BM

23 46 37 -10 46.7

39 47.6

2 18 +14.8

23 48 57 -10 32.8

23 47 34 -10 52.4 v F 1.3 BM

23 47 32 -10 50.7

33 51.6

2 18 +14.8

23 49 51 -10 36.8



37-5.0  
-6.317.0  
-13.16060  
450123 47 52.4  
23 47 56.3

-20.0

-25.2

5311.4  
10.05.2  
-24.76060  
4501

45.6

40.0

547.1  
5.719.0  
-10.86060  
4501

28.4

22.8

3512.8  
-1.8  
2.215.0  
-3.2  
17.364491  
4500  
449923 47 9.8  
23 47 26.6  
23 47 13.8

11.2

-7.2

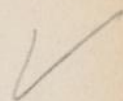
8.8

3822.7  
-3.0-12.3  
0.96051  
605923 45 31.2  
23 47 13.2

90.8

-12.0





4 2 22.7 23 47 32 -2° 5.7 e F. 16/6M

1 52.8 23 47 31 -2° 5.9

999

32 5.8

999

2 18 +14.8

23 49 50 -1° 51.0

23 48 38 -2° 17.5 F 130/6M

23 48 36 -2° 17.5

37 17.5

2 18 +14.8

23 50 55 -2° 2.7

23 48 22 -2° 3.7 v F. 16/6M

23 48 17 -2° 3.6

21 3.6

2 18 +14.8

23 50 39 -1° 58.8

1 23.9 23 47 21 -1° 8.9 v F 120/6M

1 44.4 23 47 19 -1° 7.6

1 25.6 23 47 21 8.3

999

21 8.6

999

2 18 +14.8

999

23 49 39 -0° 53.8

2 2 31.9 23 47 2 -2° 44.2 p F 160/ps 6M

2 2 45.1 23 47 1 -2° 44.2

999

2 44.2

999

2 18 +14.8

23 49 20 -2° 20.4



395.0  
-7.0-11.7  
27.05726  
572823 46 21.0  
23 47 9.6  
20.0  
- 28.0407.4  
-4.9-15.1  
23.35726  
572829.6  
- 19.6419.1  
-3.0-15.3  
23.15726  
572836.4  
- 12.0

412 \*

4319.7  
7.3-20.3  
18.25726  
572878.8  
29.2446.3  
-5.9-23.7  
14.95726  
572825.2  
- 23.6





3 90 23 46 41  $-3^{\circ}$  20.7 vF .2' d/bM

3 47.1 23 46 42  $-3^{\circ}$  20.1

998 42 20.4

997 2 17 +14.8

23 48 59  $-3^{\circ}$  5.6

23 46 51  $-3^{\circ}$  24.1 eF .2' d/bM

23 46 51  $-3^{\circ}$  23.8

51 24.0

2 17 +14.8

23 49 8  $-3^{\circ}$  9.2

23 46 57  $-3^{\circ}$  24.3 eF .3' d/bM

23 46 58  $-3^{\circ}$  24.0

58 24.2

2 17 +14.8

23 49 15  $-3^{\circ}$  9.4

\*

23 47 40  $-3^{\circ}$  29.3 vF .1' d/bM st. hr.

23 47 38  $-3^{\circ}$  28.9

39 29.1

2 17 +14.8

23 49 56  $-3^{\circ}$  14.3

23 46 46  $-3^{\circ}$  32.7 vF .2' d/bM

23 46 46  $-3^{\circ}$  32.2

46 32.4

2 17 +14.8

23 49 3  $-3^{\circ}$  17.6



454.8  
-7.76.4  
-4.35973  
572923 46 31.9  
23 47 20.8

19.2

-29.8

485.9  
4.012.2  
-10.26080  
597723 47 24.7  
23 47 32.1

23.6

16.0

491.1  
-7.023.4  
-3.05977  
597823 47 32.1  
23 48 3.4

4.4

-28.0

504.0  
-4.033.4  
-3.15977  
5978

16.0

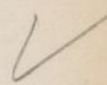
-16.0

517.9  
-7.2-10.0  
-7.25729  
573223 47 20.8  
23 48 26.7

39.6

-28.8





4	3.8	23	46 51	-3°	57.0	e F. 3d BM
3	52.5	23	46 51	-3°	56.8	
	997		51		56.9	
	997		2 17		+14.8	
		23	48 8	-3°	42.1	

5	19.1	23	47 49	-5°	6.9	e Fes 7/mx
4	56.7	23	47 49	-5°	6.9	
	995		49		6.9	
	996		2 18		+14.8	
		23	50 7	-4°	52.1	

4	56.7	23	47 36	-4°	32.9	F. 2d BM
4	30.6	23	47 35	-4°	33.0	
	996		36		33.0	
	996		2 17		+14.8	
		23	49 55	-4°	18.2	

23	47 48	-4°	33.3	p F. 3b y. 2 at 60° BM
23	47 47	-4°	33.1	spin
	48		33.2	
	2 19		+14.8	
23	50 7	-4°	18.4	

3	52.5	23	48 0	-4°	12.5	e F. 1d BM
3	55.5	23	48 0	-4°	2.7	
	997		0		2.6	
	997		2 19		+14.8	
		23	50 19	-3°	57.8	



52

9.3

-3.1

6059

23 47 13.2

-2.0

6.8

6062

23 47 58.9

37.2

- 8.0

53

-0.3

-14.6

4502

23 48 26.8

-9.4

7.9

4504

23 49 1.8

- 1.2

-37.6

56

8.9

-17.2

4502

0.0

5.3

4504

35.6

0.0

58

1.1

-7.1

4502

-7.9

15.3

4504

4.4

-31.6

59

8.0

-6.1

4505

23 49 1.8

-3.1

-2.3

4507

23 49 46.3

32.0

-12.4





2 45.1 23 47 50 -2° 48.2 eF. 2d/6M

2 55.1 23 47 51 -2 48.3

.998 51 48.2

.998 2 18 +14.8

23 50 9 -2° 33.4

-1 21.8 23 48 26 -1° 36.4 eF. 2d/6M

-1 45.2 23 48 24 -1 37.3

.999 25 37.0

.999 2 18 +14.8

23 50 43 -1° 22.2

23 49 2 -1° 39.0 eF. 2d/6M

23 49 2 -1° 39.9

2 39.4

2 18 +14.8

23 51 20 -1° 24.6

23 48 31 -1° 28.9 eF. 2d/6M

23 48 30 -1° 29.9

31 29.4

2 18 +14.8

23 50 49 -1° 14.6

-1 24.5 23 49 34 -1° 30.6 eF es a/m.\*

-1 27.6 23 49 34 -1° 29.9

.999 34 30.3

.999 2 18 +14.8

23 51 52 -1° 15.5



00

59	5.7	1.2	4502	23 48 26.8	-1
	-3.4	2.9	4505	23 49 11.8	-1
				22.8	
				-13.6	

60	10.3	-1.1	4507	23 49 46.3	-1
	0.1	22.0	4509	23 50 27.8	-1
				4.2	
				0.4	

61	17.3	-8.0	4507		
	7.1	15.1	4509		
				69.2	
				28.4	

62	11.3	-12.8	4504	23 49 1.8	-1
	-13.0	30.3	6066	23 50 37.2	-2
				45.2	
				-52.0	

63	17.1	-23.1	4504		
	-12.2	19.9	6066		
				65.4	
				-48.8	



✓

f	-1	21.8	23	48 50	-1°	20.6	VF .5 by .1 at 45°
	-1	24.5	23	48 48	-1°	21.6	
		999		49		21.1	
		999		2 18		+14.8	
			23	51 7	-1°	6.3	

3	-1	27.6	23	50 27	-1°	28.7	VF .3 by .1 at 90°
8	-1	50.7	23	50 28	-1°	28.7	
		999		28		28.7	
		999		2 18		+14.8	
			23	52 46	-1°	13.9	

			23	50 55	-1°	35.6	EF .5 by .1 at 60°
			23	50 56	-1°	35.6	
				56		35.6	
				2 18		+14.8	
			23	53 14	-1°	20.8	

	-1	45.2	23	49 47	-1°	58.0	EF .2 by .1 at 45°
2	-2	27.0	23	49 45	-1°	56.7	ump
		999		46		57.4	
		999		2 18		+14.8	
			23	52 4	-1°	42.6	

			23	50 10	-2°	8.3	VF .2 by .1 M
			23	49 48	-2°	7.1	
				2 18		7.7	
						+14.8	

(Cannot be found on plate 26-j.)



02

6419.0  
-10.3-26.1  
17.04504  
606623 49 11.8 -1  
23 50 37.2 -276.0  
-41.26520.7  
-8.8-26.1  
17.04504  
606682.8  
-35.266-10.0  
-10.1-1.3  
18.86066  
606723 50 37.2 2  
23 50 37.4 2  
-40.0  
-40.4

67

-9.7  
-9.8-0.8  
19.5-38.8  
-39.2683.8  
-3.815.7  
-8.75738  
606723 50 35.8 3  
23 50 37.4 2  
15.2  
-15.2



✓

7 45.2 23 50 18 -2° 11.3 eF. id bM \*?  
 2 -2 27.0 23 39 -2° 10.0

.999

.999

✓  
 (Cannot be found on Plate L. G. Jr.)

23

-2° 11.3 eF. id bM

23

-2° 10.0

✓  
 (Cannot be found on Plate L. G. Jr.)

72 12 27.0 23 49 57 -2° 28.3 eF. id bM

4 2 47.1 23 49 57 -2° 28.3

.999

57

28.3

.998

2 18

+14.8

23 52 15 -2° 13.5

23 49 56 -2° 27.6 eF. id bM

23 49 56 -2° 27.6

56

27.7

2 18

+14.8

23 52 14 -2° 12.9

8 3 10.5 23 50 51 -2° 54.8 eF. id bM o/m.\*

7.4 2 47.1 23 50 53 -2° 55.8

.998

52

55.3

.997

2 18

+14.8

23 53 10 -2° 40.5



<u>81</u>	14.0	7.7	5738	23	50	35.8	3
	14.0	-16.1	6067	23	50	37.4	2

56.0

56.0

<u>69</u>	10.1	1.7	5734	23	48	40.4	3
	-4.5	-2.0	5736	23	49	37.8	2

40.9

-18.0

<u>70</u>	9.1	1.1	5732	23	48	28.7	3
	-8.4	-7.5	5735	23	49	37.2	3

36.4

-33.6

<u>71</u>	6.1	4.4	5735	23	49	37.2	3
	-20.3	-7.0	5739	23	51	24.6	5

24.4

-8.2

<u>72</u>	17.3	0.6	5735				
	-9.1	-10.6	5739				

69.2

-36.4



5.8	3	10.5	23	51	32	-3°	2.8	F .9 by .1 at 150° BM
1.4	2	47.1	23	51	34	-3°	5.2	spin
		.998			33		3.0	
		.998		2	17		+14.8	
			23	53	50	-2°	58.2	
4	3	28.9	23	49	21	-3°	27.2	F .3d R BM
f	2	25.4	23	49	20	-3°	27.4	
		.998			21		27.3	
		.998		2	17		+14.8	
			23	51	38	-3°	12.5	
7	3	55.5	23	49	5	-3°	54.4	eF .3' by .1 at 135°
2	3	47.0	23	49	4	-3°	54.5	surp.
		.998			5		54.4	
		.998		2	17		+14.8	
			23	51	22	-3°	39.6	
2	3	47.0	23	50	2	-3°	42.6	eF .5d BM surp.
	3	36.7	23	50	4	-3°	43.7	
		.998			3		43.2	
		.998		2	17		+14.8	
			23	52	20	-3°	28.4	
			23	50	46	-3°	46.4	eF .2 by .1 at 120°
			23	50	49	-3°	47.3	
					48		46.8	
				2	17		+14.8	
			23	53	5	-3°	32.0	



737.2  
-16.0-7.7  
15.75982  
598723 48 55.3  
23 50 26.028.8  
-64.0747.1  
-16.1-9.8  
13.25982  
598728.4  
-56.47510.1  
-13.0-13.9  
9.25982  
598740.4  
-52.07620.4  
-2.3-22.5  
1.05982  
598743.2  
-9.27811.8  
-18.02.4  
3.05980  
598923 48 45.7  
23 50 43.247.2  
-72.0



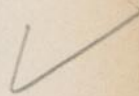


3	4	1.8	23	49	24	-4°	9.5	pF .7 by .5 at 120°
	4	24.6	23	49	24	-4°	8.9	BM spin
		.997			24		9.2	
		.997			<u>2</u>	<u>19</u>	+14.8	
			23	51	43	-3°	54.4	
			23	49	24	-4°	11.6	pF .7 by .5 at 160°
			23	49	32	-4°	11.4	BM spin
					28		11.5	
					<u>2</u>	<u>19</u>	+14.8	
			23	51	47	-3°	56.7	
			23	49	36	-4°	15.7	rF .5 by .1 at 90° spin
			23	49	36	-4°	15.4	
					36		15.6	
					<u>2</u>	<u>19</u>	+14.8	
			23	51	55	-4°	00.8	
			23	50	10	-4°	24.3	eF .9 by .1 at 410° spin
			23	50	17	-4°	23.6	
					14		24.0	
					<u>2</u>	<u>19</u>	+14.8	
			23	52	33	-4°	9.2	
	4	46.7	23	49	33	-4°	44.3	eF .1 by .1 BM
2	4	47.1	23	49	31	-4°	44.1	
		.997			32		44.2	
		.997			<u>2</u>	<u>19</u>	+14.8	
			23	51	51	-4°	29.4	



7722.7  
-7.06.2  
6.95980  
598923 48 45.7  
23 50 43.2  
90.8  
- 28.0790.3  
-17.712.8  
-10.85997  
600023 51 27.2  
23 52 40.4  
1.2  
- 70.8807.2  
-10.915.3  
-8.25997  
600028.8  
- 43.6821.1  
-6.02.2  
-23.16070  
607323 51 56.2  
23 52 24.8  
4.4  
- 24.6832.0  
-5.22.8  
-22.76070  
60738.0  
- 20.8





4 46.7 23 50 17 -4 40.5 v F. 3'd BM

4 47.1 23 50 15 -4 40.2

.996 16 40.3

.996 2 19 +14.8

23 52 35 -4° 25.5

4 34.4 23 51 28 -4° 21.6 e F. 1st BM sp arms

4 11.1 23 51 30 -4° 21.9 at 165° scnp.

.996 29 21.8

.997 2 19 +14.8

23 53 48 -4° 7.0

23 51 56 -4° 19.1 e F. 2d scnp

23 51 57 -4° 19.3

57 19.2

2 19 +14.8

23 54 16 -4° 4.4

2 25.7 23 52 1 -2° 23.5 e F. 1st BM

2 0.3 23 52 1 -2° 23.4

.999 1 23.4

.999 2 18 +14.8

23 54 19 -2° 8.6

23 52 4 -2° 22.9 e F. 2d BM

23 52 4 -2° 23.0

4 23.0

2 18 +14.8

23 54 22 -2° 8.2



840.9  
-13.76.6  
-6.85740  
574423 52 31  
23 53 3.5  
3.6  
-54.88511.6  
-2.913.7  
0.35744  
574446.4  
-11.68512.8  
-1.9-0.2  
-13.55740  
574451.2  
-7.68718.8  
-10.8-8.7  
-8.76070  
607823 51 56.2  
23 53 56.6  
75.2  
-43.28814.3  
-8.9-13.0  
12.56073  
607823 52 24.8  
23 53 56.6  
57.2  
-35.6





3 25.0 23 52 7 -3° 18.4 VF 8 by 105 at 135° spin

3 11.6 23 52 9 -3° 18.4

.998 8 18.4

.998 2 17 +14.8

23 54 25 -3° 3.6

23 52 49 -3° 11.3

23 52 49 -3° 11.3

49 11.3

2 17 +14.8

23 55 16 -2° 56.5

23 52 54 -3° 25.2

23 52 56 -3° 25.1

55 25.2

2 17 +14.8

23 55 12 -3° 10.4

2 25.7 23 53 11 -2° 34.4

2 26.1 23 53 13 -2° 34.8

.999 12 34.6

.999 2 18 +14.8

23 55 30 -2° 19.8

2 0.3 23 53 22 -2° 13.3

2 26.1 23 53 21 -2° 13.6

.999 22 13.4

.999 2 18 +14.8

23 55 30 -1° 58.6

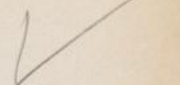
VF 4 cl psp M

ef es



89- 10.8  
- 4.33.7  
- 5.04513  
451523 51 44.6  
23 52 47.2432  
- 17.29018.2  
3.31.3  
- 7.34513  
451572.8  
13.2914.8  
- 6.82.3  
- 0.75744  
574623 53 3.5  
23 53 49.6  
19.2  
- 27.2927.0  
5.8- 2.1  
11.35746  
574823 53 49.6  
23 53 55.8  
28.0  
23.2939.8  
3.2- 6.1  
12.86000  
600423 52 40.8  
23 53 39.4  
39.2  
- 12.8





6	1	17.3	23	52	28	-1°	13.6	v F bM. 2 by 1 at 90°
1		9.5	23	52	30	-1°	14.5	
	.999			29			14.0	
	.999			2	18		+14.8	
			23	54	47	-0°	59.2	
			23	52	58	-1°	16.0	e F .10 bM
			23	53	0	-1°	16.8	
			23	52	59		16.4	
				2	18		14.8	
			23	55	17	-1°	1.6	
3	11.6		23	53	23	-3°	9.3	e F e s bM
3	8.6		23	53	22	-3°	9.3	
	.998			23			9.3	
	.998			2	17		+14.8	
			23	55	40	-3°	54.5	
3	8.6		23	54	18	-3°	10.7	e F .10 bM
3	22.3		23	54	18	-3°	11.0	
	.998			18			10.8	
	.998			2	17		+14.8	
			23	56	35	-3°	56.0	
4	11.1		23	53	20	-4°	17.2	e F .10 bM
4	30.0		23	53	18	-4°	17.2	
	.997			19			17.2	
	.996			2	19		+14.8	
			23	55	28	-4°	2.4	



94

11.9

-16.2

6001

23 52 48.5

4

1.0

17.8

6096

23 53 30.4

5

47.6

4.0

95

11.8

-15.0

6001

0.9

19.0

6096

47.2

3.6

98

23.3

-17.1

6001

12.3

16.7

6096

93.2

49.2

96

14.6

-0.1

6334

23 51 41.8

6

-4.2

-9.7

6095

23 52 57.3

5

58.4

-16.8

97

16.0

2.9

6334

-2.8

-6.7

6095

64.0

-11.2



4 51.7 23 53 35 -5° 7.9 vF. id bMalm\*

5 25.6 23 53 34 -5 7.8

996 35 7.8

995 2 18 +14.8

23 55 53 -4° 53.0

23 53 35 -5° 6.7 eF. id bM

23 53 35 -5° 6.6

35 6.6

2 18 +14.8

23 55 53 -4° 52.8

23 54 22 -5° 8.8 vF. 2d bM

23 54 20 -5° 8.9

21 8.8

2 18 +14.8

23 56 39 -4° 54.0

6 0.9 23 52 40 -6° 1.0 vF. 5d bM

5 51.5 23 52 40 -6° 1.2

994 46 1.1

994 2 19 +14.8

23 54 59 -5° 46.3

23 52 46 -5° 58.0 F. 9 by 2 at 30° bM

23 52 46 -5° 58.2 spin

46 58.1

2 18 +14.8

23 55 4 -5° 43.3



99-3.4  
-7.16.9  
-13.26008  
601123 55 21.5 4  
23 55 38.5 4

-13.6

-28.4

100-2.6  
-6.211.7  
-8.76008  
6011

-10.4

-24.8

1010.0  
-3.713.2  
-7.16008  
6011

0.0

-14.8

102-0.7  
-4.116.1  
-4.16008  
6011

-2.8

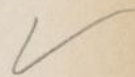
-16.4

1036.3  
2.710.7  
-1.66008  
6011

25.2

10.8





4 37.5 23 55 6 -4° 30.6 cF .8 by .2' at 0° bM  
 4 17.9 23 55 10 -4° 31.1 spin  
 .996 8 30.8  
 997 2 18 +14.8  
 23 57 26 -4° 16.0

23 55 11 -4° 25.8 vF .2 by .1' at 90° spin  
 23 55 14 -4° 26.6 bM  
 13 26.2  
2 18 +14.8  
 23 57 31 -4° 11.4

23 55 21 -4° 24.3 cF 1 by .1' at 30° bM spin  
 23 55 14 -4° 25.0  
 18 24.7  
2 18 +14.8  
 23 57 36 -4° 9.9

23 55 19 -4° 21.4 vF .2 by .1' bM  
 23 55 26 -4° 22.0  
 23 21.7  
2 18 +14.8  
 23 57 41 -4° 8.9

23 55 47 -4° 18.8 eF .2 by .1' bM  
 23 55 49 -4° 19.5  
 48 19.1  
2 18 +14.8  
 23 58 6 -4° 4.3



10410.2  
-16.8-6.1  
12.95747  
601123 53 51.8  
23 55 38.5  
40.8  
-67.21052.9  
-18.9-0.8  
-1.06081  
608723 55 28.2  
23 56 55.3  
11.6  
-75.610620.2  
-1.3-0.3  
-0.66081  
608780.8  
-5.210720.3  
-1.13.1  
2.86081  
608781.2  
-4.410816.3  
-33-0.9  
-1.76084  
608923 56 16.2  
23 57 44.3  
65.2  
-13.2



✓

3 58.6 23 54 33 -4° 4.7 CF .5 by .4 at 30° BM  
 4 17.9 23 54 31 -4° 5.0 spin  
 .997 32 4.8

.997 2 18 +14.8  
 23 56 50 -3° 50.0

2 43.0 23 55 40 -2° 43.8 pB .1 by .3 at 45° BM  
 3 2 42.6 23 55 40 -2° 43.6 spin  
 .998 40 43.7

.998 2 18 +14.8  
 23 57 58 -2° 28.9

23 56 49 -2° 43.3 F.A.B.M.  
 23 56 50 -2° 43.2  
 50 43.2

2 18 +14.8  
 23 59 8 -2° 28.4

23 56 49 -2° 39.9 eF .2 by .6 BM

23 56 51 -2° 39.8  
 50 39.8

2 18 +14.8  
 23 59 8 -2° 25.0

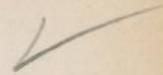
2 21.9 23 57 42 -2 22.8 pB .3 by .2 at 90° BM  
 3 2 21.8 23 57 31 -2 22.5  
 .999 37 -2° 22.7

.999 2 18 +14.8  
 23 59 55 -2° 7.9



10916.9  
-2.93.7  
2.96084  
608923 56 16.2  
23 57 44.3  
67.6  
-11.61104.7  
-8.0-4.2  
-7.26087  
609023 56 55.3  
23 57 44.3  
18.8  
-32.011118.6  
-2.84.9  
-6.85755  
575723 56 29.6  
23 57 51.5  
72.0  
-11.21122.3  
-3.3-14.9  
10.26011  
601823 57 21.6  
23 57 43.8  
9.2  
-13.21135.3  
-0.4-11.2  
13.96017  
601821.2  
-1.6





2	2	21.9	23	57	24	-2°	19.2	pB .3d RBM
3	2	21.8	23	57	33	-2°	18.9	
		.999			29		19.0	
		.999		2	18		+ 14.8	
			23	59	47	-2°	4.2	

3	2	42.6	23	57	14	-2°	46.8	eF .2d BM
3	2	39.8	23	57	12	-2°	47.0	
		.999			13		46.9	
		.999		2	18		+ 14.8	
			23	59	31	-2°	32.1	

6	3	50.4	23	57	42	-3°	45.5	eF eS BM alm.*
	3	39.5	23	57	41	-3°	46.3	
		.998			42		45.9	
		.998		2	17		+ 14.8	
			23	59	59	-3°	31.1	

	4	25.9	23	57	31	-4°	40.8	pF .6d RBM
f	4	30.6	23	57	31	-4°	40.4	
		.997			31		40.6	
		.997		2	18		+ 14.8	
			23	59	49	-4°	25.8	

	23	57	43	-4°	37.1	eF .6by. 1st 120° BM
	23	57	42	-4°	36.7	
			43		36.9	
		2	18		+ 14.8	
	23	59	49	-4°	22.1	



114-8.3  
-14.37.6  
-6.26022  
602523 59 4.7  
23 59 30.6

-33.2

-57.2

**N.G.C. 7832**-0.5  
-6.78.0  
-5.86022  
6025

-2.0

-36.8

1155.1  
-1.17.8  
-6.06022  
6025

20.4

-4.4

11610.7  
4.83.5  
-10.36022  
6025

42.8

19.2

1172.2  
1.11.7  
-7.45762  
576323 59 50.5  
23 59 57.6

8.8

4.4



side  
Vica  
Versa

7 4 39.7 23 58 32  $-4^\circ$  32.1 v F. 2d BM

6 4 25.8 23 58 33  $-4^\circ$  32.0

.996 33 32.0

.997  $\frac{2}{24} \frac{18}{0} + 14.8$

24 0 5.1  $-4^\circ$  17.2

23 59 3  $-4^\circ$  31.7 e B. 3d ps BM

23 58 54  $-4^\circ$  31.6

23 58 59 31.6

$\frac{2}{24} \frac{18}{1} + 14.8$

24 1 17  $-4^\circ$  16.8

23 59 25  $-4^\circ$  31.9 v F. 2d BM st. of 5

23 59 26  $-4^\circ$  31.8

26 31.8

$\frac{2}{24} \frac{18}{1} + 14.8$

24 1 44  $-4^\circ$  17.0

23 59 48  $-4^\circ$  36.2 e F. 3d BM

23 59 49  $-4^\circ$  36.1

49 36.2

$\frac{2}{24} \frac{18}{2} + 14.8$

24 2 7  $-4^\circ$  21.4

3 45.0 23 59 59  $-3^\circ$  43.3 e F. 1d BM

3 36.5 23 60 2  $-3^\circ$  43.9

.997 24 60 1 43.6

.998  $\frac{2}{24} \frac{17}{2} + 14.8$

24 2 18  $-3^\circ$  28.8



118 \*

1197.0  
-8.242.7  
-1.65760  
423 59 35.7  
-03 0 36.3  
28.0 ✓  
-32.8 ✓12010.8  
-3.823.8  
-20.45760  
443.2 ✓  
-15.2 ✓12113.2  
-1.721.2  
-22.95760  
452.8  
-6.8122-5.9  
-7.05.3  
-10.26.  
70 1 43.2  
0 1 51.1  
-23.6  
-28.0123-2.8  
-3.87.1  
-8.36  
7-11.2  
-15.2



7 3 8.5 0 0 4 -2° 25.8 eFes ps/bM  
 2 24.8 0 0 4 -2° 26.4  
 .998 4 26.4  
 .999 2 18 +14.4  
 0 2 22 -2° 12.0

0 0 19 -2° 44.7 vF .3d/bM  
 0 0 21 -2° 45.2  
 20 45.0  
 2 18 +14.4  
 0 2 38 -2° 30.6

0 0 29 -2° 47.3 vF .3d/bM  
 0 0 30 -2° 47.7  
 30 47.5  
 2 18 +14.4  
 0 2 48 -2° 33.1

2 3 19.1 0 1 20 -3° 13.8 cF .9' by 11' at 120°  
 3 3.2 0 1 23 -3° 15.5  
 .998 22 14.6  
 .998 2 17 +14.8  
 0 3 39 -2° 59.8

0 1 32 -3° 12.0 pF .3d/bM R  
 0 1 36 -3° 11.5  
 34 11.8  
 2 17 +14.8  
 3 51 -2° 57.0



Plate N<sup>o</sup>. 7373

<u>1</u>	5.3 -13.9	18.3 -11.3	4322 4324	20 57 11.2 20 58 30.9 <del>21.8</del> 22.0 - 0.58
<u>2</u>	7.3 -11.9	23.3 0.3	4322 4324	30.3 - 40.6
<u>3</u>	14.1 - 51.1	23.9 1.0	4322 4324	58.5 - 21.2
<u>4</u>	2.2 - 5.3	10.2 - 1.1	4325 4331	20 59 29 20 59 39.6 09.1 - 22.0
<u>5</u>	-0.6 -16.3	-9.3 10.8	4335 4340	20 59 39.6 20 0 45.9 - 2.49 - 468.0



2 15 7.5 20 57 35 +15° 25.8 e F 12d 6M

15 30.8 20 57 33 +15° 26.5

.965 34 26.2

.963 2 6 +10.8

20 59 40 +15° 38.0

20 57 42 +15° 30.8 F 17 by 3 at 90° spin

20 57 50 +15° 31.8

46 30.0

2 6 +11.8

20 59 52 +15° 41.8

20 58 9 +15° 31.4 e F 12d 6M

20 58 10 +15° 31.8

10 31.6

2 6 +11.8

21 0 16 +15° 43.4

15 13.5 20 59 18 +15° 23.7 F 13d 6M

15 25.3 20 59 18 +15° 24.2

.964 18 24.0

.964 2 6 +10.8

21 1 24 +15° 35.8

9.6 15 25.3 20 59 38 +15° 16.0 v F 13 by 1 at 65° 6M

9 15 9.8 20 59 38 +15° 15.6 spin

.964 38 15.8

.965 2 6 +10.8

21 1 44 +15° 27.6



6	3.9	-7.6	4331	20	59	396	15
	-11.9	12.3	4340	21	0	4579	15
					16.2		
					-49.4		

7	7.1	-20.1	4331				
	-8.7	0.1	4340				
					29.5		
					-36.1		

8	7.2	-18.1	4331				
	-8.5	2.0	4340				
					29.9		
					-35.3		

9	1.3	4.8	4457	21	59	348	17
	-4.9	-12.8	4503	22	0	4.6	17
					055		
					-21.0		

10	6.1	-5.2	4501	20	58	432	17
	-15.8	24.1	4504	21	0	1510	17
					+25.7		
					-66.4		





6 15 25.3 20 59 56 +15° 17.5 e F 12d 6M

9 15 4.8 20 59 57 +15° 17.1

964 57 17.3

965 2 6 +10.8

21 2 3 +15° 29.1

21 00 09 +15° 5.2 v F 15d 6M

00 4<sub>10</sub> +15° 4.9

10 5.0

2 6 +10.8

21 2 16 +15° 16.8

21 00 10 +15° 7.2 v F 15d 6M

00 11 +15° 6.8

11 7.0

2 6 +10.8

21 2 17 +15° 18.8

16 58.4 20 59 45 +17° 3.2 v F 6d 9.1 at 135° 2st 17d

17 16.5 20 59 44 +17° 3.7

956 45 3.4

955 2 4 +10.3

21 1 49 +17° 13.7

2 17 58.7 20 59 09 +17° 53.5 c B 13d 9.6M

17 29.9 20 59 09 +17° 54.0

951 9 53.8

953 2 4 +10.3

21 1 13 +18° 4.1



11	-0.1 6.7	2.8 -16.7	4698 4702	20 59 24.1 20 59 50.6
----	-------------	--------------	--------------	--------------------------

-0.4  
-18.2

12	2.0 -4.3	-3.3 -16.0	4698 4702	
----	-------------	---------------	--------------	--

08.4  
-18.1

13	2.0 -4.2	8.1 -11.2	4698 4702	
----	-------------	--------------	--------------	--

08.4  
-18.1

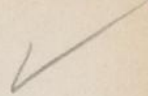
14	12.9 -2.0	5.7 -6.3	4702 4706	20 59 50.6 21 0 31.1
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55.  
-8.4

15	4.3 3.1	2.3 -14.8	4701 4620	20 59 50.1 20 59 48.6
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18.2  
13.1





18 141.6 20 59 24 +18° 17.4 eF bM 2d

18 32.3 20 59 22 +18° 15.6

949 23 16.5

948 2 4 +10.3

21 1 27 +18° 26.8

20 59 32 +18° 17.9 eF 2d bM

20 59 32 +18° 16.3

32 17.1

2 4 +10.3

21 1 36 +18° 27.4

20 59 33 +18° 22.7 vF 364.1 at 45° bM

20 59 32 +18° 21.1

33 21.9

2 4 +10.3

21 1 37 +18° 32.2

18 32.3 21 0 41 +18° 38.0 eF 2 by 1' at 30° bM spin?

18 43.3 21 0 43 +18° 39.0

948 42 38.5

947 2 4 +10.3

21 2 46 +18° 48.8

01 18 59.4 21 0 8 +19° 1.9 vF 3c/bM

0 19 16.2 21 0 1 +19° 2.4

945 4 2.2

943 2 3 +10.3

21 2 7 +19° 12.5



<u>16</u>	17.3	10.9	4611	20	57	41.3
	14.7	-6.7	4620	20	59	48.0
					733	
					623	

<u>17</u>	1.5	17.0	4507	21	1	33.3
	-6.9	-16.0	4508	21	2	7.1
					06.8	
					-29.1	

<u>18</u>	2.9	16.3	4507		12.2	
	-5.7	-16.9	4508		-24.0	

<u>19</u>	4.3	5.4	4471	21	3	52.2
	-16.9	-13.0	4474	21	5	20.6
					18.0	
					-71.0	

<u>20</u>	31.7	+5.59	4340	21	0	45.9
	-11.5		4350	21	2	47
	15.0	-9.2	4358	21	3	38.6
		11.8			181.0	
					-47.4	
					65.0	



$$\begin{array}{r} 90 \\ 19 \\ \hline 71 \end{array}$$

19 1.3 20 58 55  $19^\circ$  12.2 vF .56 bM

19 16.2 20 58 50  $19^\circ$  9.5

.945

53

10.8

.943

23

+10.3

21 0 56  $+19^\circ$  21.1

17 20.2

21 1 40  $+17^\circ$  37.2

pB R .76 psbM

17 52.7

21 1 38  $+17^\circ$  36.7

.954

39

37.0

.951

24

+10.3

21 3 43  $+17^\circ$  47.3

21 1 46  $+17^\circ$  36.5

pF 1.2' by .2' at  $170^\circ$  bM spin.

21 1 43  $+17^\circ$  35.8

45

36.2

24

+10.3

21 3 49  $+17^\circ$  46.5

16 40.6

21 4 10  $+16^\circ$  46.0

eF .10' bM

16 59.2

21 4 10  $+16^\circ$  46.2

.958

10

46.1

.956

25

+10.8

21 6 15  $+16^\circ$  56.9

15 4.8

21 2 57  $+15^\circ$  10.3

10.7

15 37.3

21 2 57  $+15^\circ$  30.7

eF .3' by .2' at  $0^\circ$  bM spin

15 22.5

21 2 52  $+15^\circ$  5.7

10.7

.963

54

11.2

.964

26

+10.3

21 5 0  $+15^\circ$  21.5

21.0



21

~~10.0~~  
~~18.0~~  
~~2.0~~  
~~7.7~~

~~8.3~~  
~~5.9~~  
~~27.2~~ 39.2

4349  
4348

21 2 3.1  
21 3 296  
77  
~~54.0~~  
~~9.7~~  
~~22.0~~

22

17.5  
-2.8

-14.9  
16.3

4349  
4348

73.0  
-11.7

23

22.2  
1.9

-20.3  
10.9

4349  
4348

92.0  
7.9

24

17.7  
-2.9

8.0  
39.1

4349  
4348

74.0  
-12.1

25

21.6  
-7.2

3.2  
-7.6

4365  
4376

21 4 53.2  
21 6 58.0  
90.0  
-30.0



15 4.6 21 <sup>3</sup>~~2~~ <sup>20</sup>~~58~~ +15° <sup>12.9</sup>~~10.5~~ vF .2d bM  
 14 33.6 21 <sup>3</sup>~~2~~ <sup>21</sup>~~57~~ 15° <sup>10.8</sup>~~10.8~~ 12.8  
 .965 <sup>20</sup>~~59~~ 10.6 12.8

Let me be sure  
with bank corrections

.967 2 6 +10.3  
 21 5 <sup>5</sup>~~5~~ +15° <sup>20.9</sup>~~20.9~~ 22.1  
<sup>26</sup>

21 3 16 +14° 49.7 eF .9 by 1.0 at 100° bM  
 21 3 18 +14° 49.9 spin  
 17 49.8  
2 7 +10.8  
 21 5 24 +15° 0.6

21 3 35 +14° 44.3 vF .6d bM  
 21 3 36 +14° 44.5  
 36 44.4  
2 7 +10.8  
 21 5 43 +14° 55.2

21 3 17 +11° <sup>5</sup>~~11~~ 12.6 eF .4 by 1.0 at 100 bM  
 21 3 17 <sup>5</sup>~~11~~ 12.7 spin  
 17 12.6  
2 7 +10.8  
 21 5 24 +14° <sup>5</sup>~~14~~ 23.4

15 4.10 21 6 23 15° 44.2 eF .2d bM  
 15 51.2 21 6 28 15° 43.6  
 .962 26 43.8  
 .961 2 7 +10.3  
 21 <sup>8</sup>~~30~~ +15° 54.1



26

$$\begin{array}{r} 11.3 \\ + 1.0 \\ - 2.5 \end{array}$$

$$\begin{array}{r} 13.7 \\ + 1.6 \\ - 25.1 \end{array}$$

$$\begin{array}{r} 4521 \\ 4526 \end{array}$$

$$\begin{array}{r} 21 \quad 5 \quad 31.0 \\ 21 \quad 6 \quad 35.0 \\ 48.0 \\ 4.2 \\ 20.0 \end{array}$$
27

$$\begin{array}{r} 4.9 \\ 0.6 \end{array}$$

$$\begin{array}{r} 8.0 \\ - 8.2 \end{array}$$

$$\begin{array}{r} 4721 \\ 4725 \end{array}$$

$$\begin{array}{r} 21 \quad 3 \quad 31.9 \\ 21 \quad 3 \quad 51.1 \\ 21.0 \\ 2.5 \end{array}$$
28

$$\begin{array}{r} 25.3 \\ - 9.3 \end{array}$$

$$\begin{array}{r} - 2.7 \\ - 0.8 \end{array}$$

$$\begin{array}{r} 4635 \\ 4644 \end{array}$$

$$\begin{array}{r} 21 \quad 3 \quad 11.2 \\ 21 \quad 5 \quad 38.0 \\ 107.5 \\ - 39.4 \end{array}$$
29

$$\begin{array}{r} 25.4 \\ - 9.3 \end{array}$$

$$\begin{array}{r} 6.8 \\ 8.6 \end{array}$$

$$\begin{array}{r} 4635 \\ 4644 \end{array}$$

$$\begin{array}{r} 107.5 \\ - 39.4 \end{array}$$
30

$$\begin{array}{r} 23.9 \\ - 10.8 \end{array}$$

$$\begin{array}{r} 9.9 \\ 11.9 \end{array}$$

$$\begin{array}{r} 4635 \\ 4644 \end{array}$$

$$\begin{array}{r} 101.5 \\ - 46.0 \end{array}$$



✓

17 1.6 21 6 19+17° 15.3 e F .3' d psb M

17 40.0 21 6 20+17° 14.9

.956 20 15.1

.954 25 +10.3

21 8 25+17° 25.4

18 28.3 21 5 53+17° 36.3

18 45.0 21 3 54+17° 36.8

.948 54 36.6

.946 24 +10.8

21 5 58 +18° 47.1

F .3' by 1' at 40° spin

19 36.6 21 4 59 +19° 33.9

19 35.6 21 4 59 +19° 34.8

.942 59 34.4

.942 23 +10.8

21 7 2 +19° 45.2

v F .2' d 6 M

21 4 59 +19° 43.4

21 4 59 +19° 44.2

59 43.8

23 +10.8

21 7 2 +19° 54.6

v F .2' d 6 M

21 4 53 +19° 46.5

21 4 52 +19° 47.5

53 47.0

23 +10.8

21 6 56 +19° 57.8

v F .3' by 2' at 15° susp



31

7.1

6.1

4739

21 7 27.6

1.7

-4.8

4741

21 7 48.6

~~30.0~~  
~~78.6~~

7.2

32

8.8

-0.8

4561

21 6 56.6

-20.2

-4.9

4572

21 8 56.6

37.2

- 86.0

33

25.3

-2.9

4561

-3.7

-7.0

4572

107.5

- 16.0

34

25.2

-2.4

4561

-3.8

-6.7

4572

107.5

- 16.0

36

35.8

-2.1

4561

-3.2

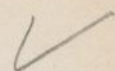
-6.3

4572

110.0

13.6





18 18.1 21 7 58 +15° 24.2 pB .3d 9.6M

18 29.1 21 7 56 +15° 24.3

94.9 57 24.2

94.8 24 +10.8

21 10 1 +18° 35.0

14 39.0 21 7 34 +14° 38.2 cF 1.2 by 1' at 60°

14 44.1 21 7 31 +14° 37.7 bM spin

967 33 37.7

967 27 +10.8

21 9 40 +14° 48.5

21 8 44 +14° 36.1 eF .1d 6M

21 8 46 +14° 37.1

42 36.6

27 +10.8

21 10 49 +14° 47.4

21 8 44 +14° 36.6 eF .5 by 1' at 90°

21 8 49 +14° 37.4 spin

42 37.0

27 +10.8

21 10 49 +14° 47.8

21 8 47 +14° 36.9 eF .5 by 1' at 135°

21 8 10 +14° 37.8 spin





3521.8  
-44.77.2  
11.84564  
438721.7 21.3  
21 11 54.4  
91.0  
-186.53648.3  
-18.0-5.9  
-11.24564  
4387201.5  
- 75.03747.4  
-18.90.7  
-5.04564  
4387197.7  
- 79.0382.3  
-6.1-27.8  
2.94385  
438721 11 19.8  
21 11 54.4  
10.0  
-25.43910.5  
1.9-28.7  
2.04385  
438743.7  
7.9



14 56.8 21 8 52 +15° 4.0 F .9 by .2 at 0° 556M  
 15 1.1 21 8 47 +15° 2.9 spin

966

50

3.4

962

2 7

+10.3

21 10 57 +15° 13.7

21 10 43 +14° 50.9 CF .28 BM

21 10 39 +14° 49.9

41

50.4

2 8

+11.2

21 12 49 +15° 1.6

21 10 39 +14° 56.1

21 10 35 +14° 56.1

37

56.1

2 8

+11.2

21 12 45 +15° 7.3

VF .7 by .1 at 45° spin

15 34.2

21 11 30 +15° 6.4 VF .28 BM

15 1.1

21 11 29 +15° 4.0

963

30

5.2

965

2 7

+10.3

21 13 37 +15° 15.5

21 12 4 +15° 5.5 CF 1.3 by .2 at 160° spin

21 12 2 +15° 3.1

3

4.3

2 7

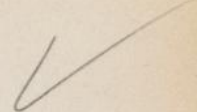
+10.3

21 14 10 +15° 14.6



402.0  
-6.7-15.3  
15.34385  
438721 11 19.8  
21 11 54.4  
8.0  
-28.04017.1  
8.5-12.9  
17.84385  
438771.0  
35.3412.7  
-18.2-14.9  
-5.24490  
449321 10 14.5  
21 11 0.6  
11.0  
-76.042-4.7  
-12.9-15.2  
18.04670  
467321 10 25.6  
21 11 2.2  
-20.0  
-55.0437.1  
-1.1-15.2  
18.14670  
467330.2  
-4.7





15 34.2 21 11 28  $+15^\circ$  18.9  $\nu F, .3 \text{ by } .1 \text{ at } 40^\circ \text{ bM}$   
 15 16.5 21 11 26  $+15^\circ$  16.4 spin

963

27

17.6

965

2 3+10.721 13 30  $+15^\circ$  28.321 12 31  $+15^\circ$  21.321 12 30  $+15^\circ$  18.9

31

20.1

2 3+10.721 14 34  $+15^\circ$  30.8 $\nu F, .3 \text{ by } .1, \text{ at } 120^\circ, \text{ bM, spin}$ 16 20.2 21 10 25  $+16^\circ$  5.316 9.5 21 1 15  $+16^\circ$  4.3

959

+10.8

960

19 5.6 21 10 6  $+19^\circ$  41.719 24.5 21 10 7  $+19^\circ$  42.5

940

7

42.1

943

2 4+10.821 12 11  $+19^\circ$  52.9 $F, .3d, \text{ bM.}$ 21 10 56  $+19^\circ$  41.721 10 57  $+19^\circ$  42.6

57

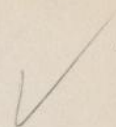
42.2

2 4+10.821 13 1  $+19^\circ$  53.0 $eF, .3d \text{ bM}$



443.8  
-16.711.4  
5.94757  
475421 12 48.8  
21 32 16.7  
16.1  
- 71.04514.2  
-6.0+1.7  
-4.34757  
475460.5  
- 25.044 ←0.1  
-4.3-0.7  
12.14676  
475721 11 54.4  
21 12 48.8  
2.5  
- 18.244 ←2.8  
-1.91.2  
14.04676  
475711.9  
- 8.1463.2  
- 9.7-4.5  
9.84493  
439021 11 0.6  
21 12 38.5  
13.3  
- 40.4

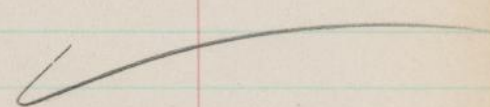




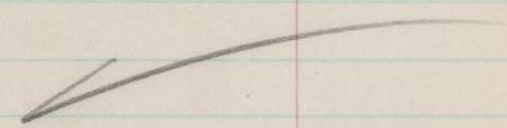
18 58.8 21 13 5 19° 10.6 e F .3' by .1" at 30° spin  
 19 37.5 21 190 10.4 st. 9th up

.945

.945



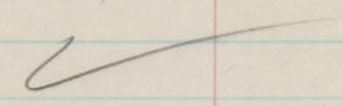
21 13 49 19° 0.5 F .10' 6M  
 21 19° 0.2



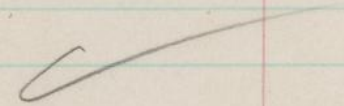
19 13.5 21 11 57 19° 12.6 c F .4' by .2" at 60° bms spin  
 18 54.8 21 19° 10.9 st. 10th up .8" scup

.944

.945



21 12 6 19° 14.5 F .28' 6M st 10th s  
 21 19° 12.8 .5"



16 9.5 21 11 14 16° 5.0 F .30' p 56M  
 15 53.4 21 16° 3.2

.960

.961





4710.9  
- 8.8- 2.0  
37.24391  
439621 12 55.1  
21 14 18.1  
45.5  
- 36.54810.7  
- 9.0- 16.8  
22.44391  
439644.5  
- 37.44919.3  
- 0.7- 25.3  
13.94391  
439680.5  
- 13.05013.5  
- 6.03.9  
- 3.24594  
460021 14 41.7  
21 16 3.1  
56.3  
- 24.9516.0  
2.4- 9.8  
3.44599  
460021 15 46.6  
21 16 3.1  
24.9  
10.0



15 5.13 21 13 40 +15° 49.3 v F .12 b M

15 12.9 21 13 41 +15° 50.1

.961

41

49.7

.964

2 7

+10.8

21 15 48 +16° 6.5

21 13 40 +15° 34.5 e F .2 by 11 at 0° spin

21 13 41 +15° 35.3

41

34.9

2 7

+10.8

21 15 48 +15° 45.7

21 14 16 +15° 26.0 v F .2 d b M

21 14 15 +15° 26.8

16

26.4

2 7

+10.8

21 16 23 +15° 37.2

14 36.8 21 15 51 140° 40.7 c F .5 d b M

14 42.4 21 15 48 140° 39.2

.967

50

40.2

.967

2 7

+11.2

21 17 57 +140° 51.4

14 56.5 21 16 13 140° 46.7 F .4 d b M

14 42.4 21 16 13 140° 45.8

.966

13

46.2

.967

2 7

+11.2

21 18 20 +140° 57.4

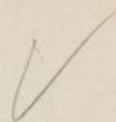


521.9  
-7.3-1.9  
12.54408  
441121 17 10.6  
21 17 50.68.0  
-30.553-2.0  
-6.713.3  
-13.14398  
439921 15 30.1  
21 15 48.7- 10.0  
- 28.0543.2  
-2.77.2  
-5.84409  
441021 17 13.1  
21 17 33.513.5  
- 11.5

55\*

561.0  
-12.24.5  
-6.84531  
458821 20 5.9  
21 21 1.74.2  
-52.6two stars  
of H7375572.0  
-1.3-7.2  
3.34417  
442021 20 18.1  
21 20 30.38.5  
-5.4





6 15 23.7 21 17 19 +15° 21.8 cF .5d psbM  
 15 9.0 21 17 20 +15° 21.5  
 .964 20 21.6  
 .965 2 7 +10.8  
 21 19 27 +15° 32.4

1 15 30.2 21 15 20 +15° 43.5 vF .2d Hy II & T 30° spin  
 7 15 56.0 21 15 20 15° 42.9  
 .963 20 43.2  
 .961 2 7 +10.8  
 21 12 27 +15° 54.0

1 15 44.1 21 17 26 +15° 51.3 eF .1d bM alm.\*  
 5 15 57.6 21 17 22 +15° 51.8  
 .962 25 51.6  
 .961 2 7 +10.8  
 21 19 32 +16° 2.4

9 16 58.1 21 20 10 +17° 2.6 vF .3d bM  
 7 17 10.0 21 20 9 +17° 3.2  
 .956 10 2.9  
 .955 2 6 +10.8  
 21 22 16 +17° 13.7

12 15 53.6 21 20 27 +15° 46.4 vF .2d bM alm.\*  
 3 15 41.9 21 20 25 +15° 45.2  
 .961 26 45.8  
 .962 2 7 +10.8  
 21 22 33 +15° 56.6



## Plate 7375

1

268

-4.2

4415

21 19 17.0

-3.2

-3.1

4612

21 21 19.1

111.5

-13.3

2

11.9

-8.7

4432

21 23 43.5

-3.2

-6.5

4439

21 24 47.9

49.5

-13.5

see next page

3

1.1

-4.2

4798

21 21 42.7

-24.4

-20.1

4804

21 22 59.7

5.0

-103.0

4

2.2

-7.2

4808

21 23 49.2

-15.1

15.3

4816

21 25 2.7

9.5

-64.0

5

11.4

-10.3

4814

21 27 0.2

-4.3

2.1

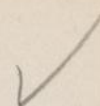
4818

21 28 7.7

48.3

-18.3





0 15 0.9 21 21 9  $+14^{\circ} 56.7$  v F. 2d 6M

1 14 59.8 21 21 6  $+14^{\circ} 56.7$

.965 8 56.7

.965 28  $+11.7$

21 23 16  $+15^{\circ} 8.4$

15 20.5- 21 24 33  $15^{\circ} 11.8$  v F. 3d 6M

15 3.9 21 24 34  $15^{\circ} 10.4$

.964 34 11.1

.965 28  $+11.7$

21 26 42  $+15^{\circ} 22.8$

7 18 32.5- 21 21 18  $18^{\circ} 36.7$  F. 2d 6M

7 18 56.0 21 21 16  $18^{\circ} 35.9$

.948 17 36.3

.946 25  $+11.2$

21 23 22  $+11^{\circ} 47.5$

9.2 18 51.6- 21 24 0  $18^{\circ} 44.4$  v F. 7d 1 F st. inv

7 18 29.1 21 23 58  $18^{\circ} 44.4$

.945- 21 23 59 44.4

.948 25  $+11.2$

21 26 4  $+18^{\circ} 55.6$

2 18 28.8 21 27 48  $18^{\circ} 18.5$  v F. 1.2' by 1.9'  $+500$  6M

18 17.4 21 27 30  $18^{\circ} 19.5$  spin

.948 149 19.0

.949 25  $+11.2$

21 29 54  $+18^{\circ} 30.2$



6x  
 2  
 repeated by  
 accident  
 repeated

12.0

-8.7

4432

21 23 435

-3.3

7.9

4439

21 24 479

50.0

-14.0

7

2.3

-2.7

4457

21 29 254

-7.3

-2.7

4465

21 30 4.5

9.6

-30.5

8

2.3

-3.0

4457

-7.3

-3.0

4465

9.6

-30.5

9

6.0

7.9

4471

21 32.83

-20.3

-4.8

4576

21 33 593

25.0

-84.5

10

23.1

10.8

4471

-3.3

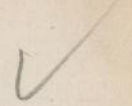
-2.7

4576

96.0

-14.0





5 15 20.5 21 ~~24 34 +15 11.8~~ pF .36 R bM.  
 15 3.9 21 ~~24 34 +15 11.8~~  
 .964 ~~34 11.8~~  
 .965 ~~2 8 +11.7~~  
 21 ~~26 42 +15° 23.5~~

4 15 48.8 21 29 35 +15 46.1 vF .3 by .1 at 150° bM spin  
 15 48.8 21 29 33 +15 46.1 nof 2  
 .962 34 46.1  
 .963 2 8 +11.7  
 21 31 42 +15° 57.8

21 29 35 +15° 45.8 vF .3 by .1 at 30° bM  
 21 29 33 +15° 45.8 spin sof 2  
 34 45.8  
 2 8 +11.7  
 21 31 42 +15° 57.5

15 499 21 32 33 +15° 57.8 eF .1 d bM  
 16 3.3 21 32 34 +15 58.5  
 .962 34 58.2  
 .961 2 8 +11.7  
 21 34 42 +16° 9.9

21 33 44 +16° 0.70 F .1 d bM  
 21 33 45 +16° 1.2  
 45 0.9  
 2 7 +12.1  
 21 35 52 +16° 13.0



11 \*

12
 $\begin{cases} 7.3 \\ 4.7 \\ -2.7 \end{cases}$ 
 $\begin{cases} 7.1 \\ -2.9 \end{cases}$ 
 $\begin{cases} 4578 \\ 4579 \end{cases}$ 
 $\begin{matrix} 21 & 34 & 34.2 \\ 21 & 34 & 51.9 \end{matrix}$ 

30.5

7.3

-12.3

12 ←
 $\begin{cases} 7.5 \\ 4.8 \\ -2.8 \end{cases}$ 
 $\begin{cases} 1.0 \\ -3.0 \end{cases}$ 
 $\begin{cases} 4578 \\ 4579 \end{cases}$ 

31.3

8.0

-12.0

13
 $\begin{cases} 13.6 \\ -7.7 \end{cases}$ 
 $\begin{cases} 7.1 \\ 1.9 \end{cases}$ 
 $\begin{cases} 4842 \\ 4847 \end{cases}$ 
 $\begin{matrix} 21 & 35 & 30.4 \\ 21 & 36 & 59.2 \end{matrix}$ 

57.0

-32.0

14
 $\begin{cases} 13.0 \\ -10.1 \end{cases}$ 
 $\begin{cases} -1.3 \\ 7.2 \end{cases}$ 
 $\begin{cases} 4854 \\ 4860 \end{cases}$ 
 $\begin{matrix} 21 & 38 & 45.0 \\ 21 & 40 & 20.3 \end{matrix}$ 

55.0

-42.0

1
 $\begin{cases} -0.3 \\ -0.7 \end{cases}$ 
 $\begin{cases} 8.7 \\ -4.2 \end{cases}$ 
 $\begin{cases} 989 \\ 990 \end{cases}$ 
 $\begin{matrix} 4 & 48 & 9.7 \\ 4 & 48 & 9.7 \end{matrix}$ 

-1.5

-3.0

Plate No 7616



✓

16	20.7	21	35 5 <sup>+16°</sup>	21.8	c F .2d bM n p of 2
16	24.9	21	34.4 <sup>+16°</sup>	22.0	
.964		21	34 40 <sup>r</sup>	21.9	
.964			<u>2 41</u>	+11.7	
		21	36 49 <sup>+16°</sup>	33.6	

21	35 6 <sup>+16°</sup>	21.7	c F .2d bM s f of 2
21	35 0 <sup>+16°</sup>	21.9	
21	34 40	21.8	
21	34 50	+11.7	
	<u>2 8</u>		
21	36 58 <sup>+16°</sup>	33.5	

4	18	36.7	21	36 27 <sup>+18°</sup>	43.8	v F .2d bM
2	18	40.6	21	36 27 <sup>+18°</sup>	42.5	
	.963			27	43.2	
	.962			<u>2 6</u>	+12.1	
			21	38 33 <sup>18°</sup>	55.3	

510	18	10.8	21	39 50 <sup>+18°</sup>	9.5	p B .1d R p b M
3	18	3.2	21	39 38 <sup>+18°</sup>	10.4	
	.950			44	10.0	
	.950			<u>2 6</u>	+12.1	
			21	41 50 <sup>18°</sup>	22.1	

16	47.9	4	48 8 <sup>-16°</sup>	39.2	e F .2d bM
16	35.0	4	48 6 <sup>-16°</sup>	39.2	
	.957		7	39.2	
	.958		<u>2 1</u>	+4.9	
		4	50 8 <sup>-16°</sup>	34.3	



3

1.8

8.9

989

4

48 9.7

1.7

-4.0

990

4

48 9.7

7.6

7.1

2

3.8

-15.2

988

4

47 54.8

0.4

1.5

990

4

48 9.7

16.0

2.0

4

10.2

-4.9

988

7.0

11.9

990

43.0

30.0

5

3.2

2.2

988

0.0

19.0

990

13.5

0.0

6

-3.7

2.3

901

4

49 10.1

-6.4

-13.7

903

4

49 22.0

- 15.6

- 27.0



✓

16 47.9 4 48 2-16° 39.0 eF. 2'd bM

16 35.0 4 48 2-16° 39.0

957 2 39.0

958 2 1 +4.9

4 50 3-16° 43.9  
34.1

48 16 18.3 4 48 11-16° 33.5 F 2'd bM

7 16 35.0 4 48 12-16° 33.5

959 12 33.5

958 2 1 +4.9

4 50 13-16° 28.6

4 48 38-16° 23.2 pF 1.3 by 2' at 150°

4 48 40-16° 23.1 psbm spin

39 23.2

2 1 +4.1

4 50 40-16° 19.1

4 48 8-16° 16.1 v F 3 by 1' at 0° bM

4 48 9-16° 16.0 spin F

9 16.0

2 1 +4.1

4 50 10-16° 11.9

15 22.5 4 48 54-15° 20.2 F 12'd bM

15 6.7 4 48 55-15° 20.4

964 55- 20.3

965 2 2 +4.1

4 50 57-15° 16.2



7-2.1  
-5.02.5  
-13.2901  
90324 49.10.1  
4 49.22.0- 8.7  
- 20.58-4.3  
-7.113.1  
-2.8901  
903-17.9  
-29.59-3.2  
-6.013.8  
-2.2901  
903-13.3  
-24.9100.0  
-2.89.4  
-6.7901  
9030.0  
-11.611-0.9  
-3.78.7  
-7.3901  
903-3.7  
-15.3



15 22.5 4 49 11 -15° 19.7 F. 4' 6M

15 6.7 4 49 1 -15° 19.9

964

1

19.8

965

2 2

+4.1

4 51 3 -15° 15.7

4 48 52 -14° 5' 9.4 F. 2' 6M

4 48 53 -14° 9.5

53

9.4

2 3

+4.5

4 50 56 -14° 4.9

4 48 57 -14° 5' 8.9 F. 2' 6M

4 48 58 -14° 8.9

58

8.8

2 3

+4.5

4 51 1 -14° 4.3

4 49 10 -14° 5' 13.1 F. 2' 6M

4 49 11 -14° 13.1

11

13.3

2 3

+4.5

4 51 14 -14° 8.8

4 49 6 -14° 5' 13.8 F. 4' 6M

4 49 7 -14° 14.0

7

13.9

2 3

+4.5

4 51 10 -14° 9.4



1211.9  
70.0-9.2  
-5.6996  
10014 49 11.2  
4 50 41.449.2  
-41.4135.1  
-2.715.3  
-1.5996  
9054 49 33.6  
4 50 5.321.1  
-11.2145.4  
-2.24.5  
-12.1996  
90522.3  
-09.1158.7  
-2.35.8  
-13.8905  
9074 50 5.3  
4 50 46.1  
36.0  
-09.51620.7  
-2.7-3.3  
-6.1901  
9074 49 10.1  
4 50 46.1  
85.7  
-11.2



2. 14 15.8 4 50 0 -14° 25.0 e F. 1.61 bM

4. 14 19.7 4 50 0 -14° 25.3

.969 0 25.2

.969 2 3 +4.5

4 52 3 -14° 20.7

3.6 16 8.2 4 49 55 -15° 52.9 v F. 3.64. 1.2 + 100°

3 15 51.8 4 49 54 -15° 52.3

.961 55 52.6

.961 2 2 +4.5

4 51 57 -15° 48.1

4 49 33 -16° 4.1 e F. 1.2 bM

4 49 40 -16° 3.9

37 4.0

2 1 +4.5

4 51 38 -15° 59.5

3. 15 51.8 4 50 41 -15° 46.0 F. 7.64. 3' + 90° bM

1 15 32.1 4 50 37 -15° 45.9

.961 39 46.0

.963 2 2 +4.5

4 52 41 -15° 41.5

1 15 22.5 4 50 36 -15° 25.8 v F. 1.2 by 2' + 25°

1 15 32.1 4 50 36 -15° 26.0 bM spin.

.967 36 25.9

.963 2 2 +4.5

4 52 38 -15° 21.4



<u>17</u>	10.1 -12.8	6.3 -25.3	907 912	4 50 46.1 4 52 21.9 41.5 -53.2
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<u>18</u>	15.2 -7.8	21.0 -10.8	907 912	63.1 -32.4
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<u>19</u>	7.4 -7.1	5.2 -0.1	1003 1010	4 51 3.2 4 52 4.6 30.7 -29.5
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<u>20</u>	2.6 -0.5	7.1 -6.3	1014 1015	4 52 46.7 4 52 59.1 10.4 -02.1
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<u>21</u>	10.0 -20.7	2.4 8.9	1003 1009	4 52 9.5 4 54 17.8 41.5 -85.9
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15 32.1 4 51 26 -15° 25.8 F. 3'd 6M

15 0.4 4 51 29 -15° 25.7

.963 28 25.8

.965 2 2 +4.5

4 53 30 -15° 21.3

4 51 49 -15° 11.1 vF. 3'd

4 51 50 -15° 11.2

50 11.2

2 2 +4.5

4 53 52 -15° 6.7

16 13.6 4 51 34 -16° 8.4 e.F. 2' by 1' at 130° 6M

16 2.5 4 51 35 -16° 8.6 spin

.960 35 8.5

.960 2 1 +4.5

4 53 36 -16° 4.0

16 53.7 4 52 56 -16° 46.6 pB 1.0'd 1E at 0°

16 40.9 4 52 57 -16° 47.1 b.N.

.958 57 46.8

.957 2 1 +4.5

4 54 58 -16° 42.3

17 42.1 4 52 51 -17° 39.7 e.F. 1'd 6M

17 40.0 4 52 52 -17° 39.1

.952 52 39.4

.952 2 0 +4.5

4 54 52 -17° 34.9



2213.7  
-17.61.1  
7.41003  
10094 52 9.5  
4 54 17.8  
57.6  
~~-71.5~~2314.5  
-16.02.2  
2.71003  
100961.0  
-67.22419.8  
-10.81.1  
7.41003  
100983.2  
-45.42521.2  
-9.2-0.2  
6.11003  
100989.1  
-38.72626.9  
-3.52.8  
9.01003  
1009113.0  
-15.0





17 42.1 4 53 7 -17° 41.0 F. 5' by 1" at 90° BM

17 48.0 4 53 6 -17° 40.6 spin

952 7 40.8

952 2 0 +4.5

4 55 7 -17° 36.3

4 53 11 -17° 39.9 e F. 10' BM abn. x

4 53 10 -17° 39.3

11 39.6

2 0 +4.5

4 55 11 -17° 35.1

4 53 33 -17° 41.0 F. 6' by 1" at 100° BM

4 53 33 -17° 40.6 spin

33 40.8

2 0 +4.5

4 55 33 -17° 36.3

4 53 39 -17° 41.9 e F. 10' BM

4 53 40 -17° 41.9

40 41.9

2 0 +4.5

4 55 40 -17° 37.4

4 54 3 -17° 39.3 v F. 9' d R 96M

4 54 3 -17° 39.0

3 39.2

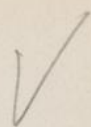
2 0 +4.5

4 56 3 -17° 34.7



2716.3  
-12.01.9  
-0.11025  
10264 53 53.5 16  
4 55 51.0 1667.9  
-40.0285.5  
3.012.8  
-4.0917  
9184 53 15.0 15  
4 53 26.6 1522.9  
12.5298.9  
-2.91.8  
-12.9924  
9254 54 35.2 15  
4 55 24.0 1537.1  
-12.1307.6  
-3.221.8  
-9.9924  
9253.7  
-13.4319.8  
-3.8-17.9  
4.5923  
9254 54 29.4 15  
4 55 24.0 1540.7  
-15.8





16 25.1 4 55 11 -16° 23.2 pB 164.161 250 BM

16 22.5 4 55 11 -16° 22.6 spin

.959 11 22.9

.959 2 1 +4.0

4 57 12 -16° 18.9

15 35.8 4 53 38 -15° 23.0 vF 124 BM

15 19.8 4 53 39 -15° 23.8

.963 39 23.4

.964 2 2 +3.6

4 55 41 -15° 19.8

15 41.4 4 55 12 -15° 39.6 vF 164 BM

15 27.1 4 55 12 -15° 40.0

.962 12 39.8

.963 2 2 +3.6

4 57 14 -15° 36.2

4 55 6 -15° 36.8 eF 164 BM

4 55 11 -15° 37.0

9 36.8

2 2 +3.6

4 57 11 -15° 33.2

15 31.0 4 55 10 -15° 22.9 pF 184 psBM R

15 27.0 4 55 8 -15° 22.6

.965 9 22.7

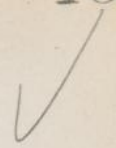
.963 2 2 +3.6

4 57 11 -15° 19.1



3210.7  
-3.8-7.9  
14.7923  
9254 5429.4  
4 5524.044.4  
-15.8331.4  
-4.8-3.8  
6.81008  
10114 5234.3  
4 5256.6  
5.8  
-19.8344.6  
-1.2-4.8  
5.81008  
101119.1  
-5.1352.0  
-12.9-4.0  
-5.61043  
10464 52 56.8  
4 53 57.5  
3.1  
-53.3368.8  
-6.1-1.5  
-3.01043  
104636.4  
-25.3





4 15 5.0 4 55 14-15° 12.9 c F .8 by .1 at 120' spin  
 15 27.1 4 55 8 -15° 12.4  
 .965 11 12.6  
 .964 2 2 +3.6  
 4 57 13 -15° 9.0

14 32.9 4 52 40-14° 36.7 e F .16 6M  
 14 43.6 4 52 36-14° 36.8  
 .967 38 36.8  
 .967 2 3 +4.0  
 4 54 41 -14° 32.8

4 52 53 -14° 37.7 v F .26 6M  
 4 52 51 -14° 37.8  
 52 37.8  
 2 3 +4.0  
 4 54 55 -14° 33.8

4 13 56.1 4 53 0-14° 2.1 e F .16 6M  
 5 13 56.8 4 53 1 -14° 2.4  
 .970 2 2.3  
 .961 2 2 3 +4.0  
 4 55 5 -13° 58.3

4 53 33 -<sup>3</sup>14° 59.6 c F .6 by .4 at 90° 6M  
 4 53 32 -13° 59.8  
 33 -<sup>3</sup>14° 59.7  
 2 3 +4.0  
 4 55 36 -<sup>3</sup>14° 58.7



3713.8  
-2.8-16.8  
2.31044  
10494 53 20.2  
4 54 24.956.8  
-17.637 \*3.8  
-7.8-11.8  
3.01045  
10494 52 49.6  
4 53 36.515.7  
-32.1389.8  
-5.3-1.1  
10.41046  
10174 53 57.5  
4 54 59.640.4  
-21.839-3.8  
-5.27.3  
-6.71016  
10174 54 46.4  
4 54 59.6-15.7  
-21.5404.1  
-10.9-6.9  
2.01016  
10214 54 48.4  
4 55 49.117.0  
-45.1



✓

13 21.5 4 54 17 -13° 38.3 p F .32 bM

13 40.9 4 54 13 -13° 38.6

972 15 38.4

971 - 2 4 +4.0

4 56 19 -13° 34.4

12 28.6 4 53 5 -12° 40.4 p F .62 TR

12 43.1 4 53 4 -12° 40.1

976 5 40.3

975 2 5 +4.0

4 55 10 -12° 36.3

13 56.8 4 54 38 -13° 57.9 F .126/R bM

14 17.6 4, 54 38 -13° 57.2

970 38 57.5

970 - 2 4 +4.0

4 56 42 -13° 53.5

14 21.7 4 54 32 -14° 14.4 a F .564.1 at 30° bM

14 7.6 4 54 38 -14° 14.3 spin

968 35 14.4

969 2 3 +4.0

4 56 38 -14° 10.4

14 21.7 4 55 5 -14° 28.6 a F .1264.1 at 170° bM

14 30.6 4 55 5 -14° 28.6 spin

968 5 28.6

968 2 3 +4.0

4 57 8 -14° 24.6



414.2  
-6.21.3  
0.2934  
9384 57 18.6  
4 58 1.5  
17.5  
-25.8424.6  
-16.31.9  
3.0943  
9494 59 30.5  
5 0 57.0  
19.1  
-67.7437.8  
-13.2-3.8  
0.31030  
10364 57 28.5  
4 58 56.1  
32.7  
-53.3447.8  
-13.1-4.6  
-0.51030  
103633.1  
-54.94515.1  
-12.0-1.4  
5.11016  
10214 57 47.9  
4 59 39.6  
63.2  
-50.2



✓

6 15 10.4 4 57 36 -15° 9.1 e F .16/6M st. att  
 15 9.1 4 57 36 -15° 8.9  
 965 36 9.0  
 965 2 2 +3.6  
 4 59 38 -15° 5.4

5 15 4.0 4 59 50 -15° 2.1 e F .16/6M  
 15 5.3 4 59 50 -15° 2.3  
 965 50 2.2  
 965 2 2 +3.6  
 5 1 52 -14° 58.6

5 16 42.9 4 58 1 -16° 46.7 e F .16/6M  
 16 46.9 4 58 3 -16° 46.8  
 957 2 46.6  
 957 2 1 +3.6  
 5 0 3 -16° 43.0

4 58 2 -16° 47.5 c F .46/96M  
 4 58 1 -16° 47.4  
 2 47.4  
 2 1 +3.6  
 5 0 3 -16° 43.8

7.9 17 31.6 4 58 49 -17° 33.0 c F .66/16M  
 6 17 38.4 4 58 50 -17° 33.3  
 953 50 33.2  
 952 2 0 +3.6  
 5 0 50 -17° 29.6



461.8  
-15.15.3  
8.21020  
10274 59 28.4  
5 0 38.0  
07.6  
-63.5477.9  
-6.2-6.7  
-21.81021  
10274 59 37.6  
5 0 38.0  
33.2  
-26.2488.2  
-10.9-23.2  
0.01048  
10335 1 33.7  
5 2 54.8  
34.5  
-45.8499.9  
-9.3-10.0  
13.31048  
103341.6  
-39.15010.0  
-7.82.2  
10.81044  
10495 0 36.3  
5 1 48.5  
42.0  
-32.8



✓

4	17	18.3	4	59	36	-17°	15.0	e F. 226M
0	17	23.7	4	59	34	-17°	15.5	
	.954			35			15.3	
	.954			<u>20</u>			+3.6	
			5	1	35	-17°	11.7	

6	17	38.4	5	0	13	-17°	45.1	e F. 964.5 at 150° pos/bM
0	17	23.7	5	0	12	-17°	43.5	
	.953			13			45.3	
	.954			<u>20</u>			+3.6	
			5	2	13	-17°	41.7	

7	16	59.0	5	2	8	-17°	22.2	10 F. 366M
8	17	22.6	5	2	8	-17°	22.6	
	.956			8			22.4	
	.954			<u>20</u>			+3.6	
			5	4	8	-17°	18.8	

5	2	15-17°	19.0	v F. 88 pos/bM susp
5	2	15-17°	9.3	
	15		9.2	
	<u>20</u>		+2.7	
5	4	15-17°	6.5	

13	16	31.6	5	1	18	-16°	29.4	v F. 164.1 at 60° spin
0.5	16	29.9	5	1	16	-16°	29.1	
	.958			17			29.3	
	.958			<u>21</u>			+3.6	
			5	3	18	-16°	25.7	



51 MISSING

52	2.5	-7.7	956	5 3 19.4	15
	-3.8	2.7	958	5 3 44.1	15

10.4  
-15.8

53	-0.6	-8.9	1062	5 4 09	19
	-15.7	25.5	966	5 5 1.6	15

02.5  
-65.2

54	9.3	-4.8	1062		
	-5.8	29.7	966		

38.6  
-24.1

57	18.3	-10.2	1062		
	3.2	24.0	966		

75.9  
13.3

58	16.0	-26.7	1062		
	1.0	7.5	966		

66.4  
04.2





15 0.4 5 3 30 -15° 8.1 e F 1.2' by 1.3' at 150° 16M

15 10.9 5 3 28 -15° 8.2 spin

965 29 8.2

965  $\begin{array}{r} 22 \\ 5 \end{array}$   $\begin{array}{r} 22 \\ 5 \end{array}$  31 -15° 5.1  $\begin{array}{r} +3.1 \\ \hline \end{array}$

9 14 31.8 5 4 3 -14° 40.7 e F 1.2' by 1.3' at 150° 16M

15 6.0 5 3 57 14° 40.5

968 5 4 0 40.6

965  $\begin{array}{r} 23 \\ 5 \end{array}$   $\begin{array}{r} 23 \\ 6 \end{array}$  3 -14° 36.6  $\begin{array}{r} +4.0 \\ \hline \end{array}$

5 4 40 -14° 36.6 e F 1.2' by 1.3' at 150° 16M

5 4 38 -14° 36.3

39 36.4

$\begin{array}{r} 23 \\ 5 \end{array}$   $\begin{array}{r} 23 \\ 6 \end{array}$  42 -14° 32.4  $\begin{array}{r} +4.0 \\ \hline \end{array}$

5 5 17 -14° 42.0 F 1.2' by 1.3' at 150° 16M

5 5 14 -14° 42.0

16 42.0

$\begin{array}{r} 23 \\ 5 \end{array}$   $\begin{array}{r} 23 \\ 7 \end{array}$  19 -14° 38.0  $\begin{array}{r} +4.0 \\ \hline \end{array}$

5 5 7 -14° 58.5 F 1.2' by 1.3' at 150° 16M

5 5 6 -14° 58.5

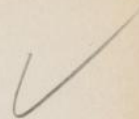
7 58.5

$\begin{array}{r} 23 \\ 5 \end{array}$   $\begin{array}{r} 23 \\ 7 \end{array}$  10 -14° 54.5  $\begin{array}{r} +4.0 \\ \hline \end{array}$



556.5  
-13.0-7.4  
13.21067  
10715 5 21.7  
5 6 41.926.9  
-53.7566.2  
-13.3-16.6  
4.21067  
107125.7  
-55.0595.9  
-2.2-6.5  
12.31077  
10795 8 25.6  
5 9 1.824.4  
-09.16014.2  
4.3-3.4  
15.21074  
9835 7 24.3  
5 8 28.975.2  
17.461-3.7  
-4.4-7.5  
14.71088  
10895 9 26.9  
5 9 29.9-15.3  
-18.2





7	14	15.7	5	5	49	-14°	23.1	pB .96 RgBM
1	14	36.2	5	5	48	-14°	23.0	
		.969			49		23.0	
		.967			2	3	+4.0	
			5	7	52	-14°	19.0	

5	5	48	-14°	32.3	pF 16.2 at 90. bM spin
5	5	47	-14°	32.0	
		48		32.2	
		2	3	+4.0	
5	7	51	-14°	28.2	

6	14	7.5	5	8	50	-14°	14.0	pF .66 RgBM
2	14	25.4	5	8	53	-14°	13.1	
		.969			52		13.6	
		.968			2	3	+4.0	
			5	10	55	-14°	9.6	

3	14	46.5	5	8	40	-14°	49.9	pF .76 RgBM
9	15	7.0	5	8	47	-14°	51.8	
		.966			44		51.4	
		.965			2	3	+4.0	
			5	10	47	-14°	47.4	

9	16	9.1	5	9	12	-16°	16.6	pB .96 RgBM
9	16	31.0	5	9	12	-16°	16.3	
		.960			12		16.4	
		.958			2	5	+3.6	
			5	11	17	-16°	12.8	



170

62

14.1

-5.0

1085

5 9 09

-0.3

5.6

1067

5 10 20

59.0

-1.2

Plate N<sup>o</sup> 73741

-1.9

-24.6

3102

15 55 28.9

-2.1

13.1

3103

15 55 28.6

-0.0

-0.0

2

18.0

3.1

3103

15 55 28.6

-6.3

7.9

3106

15 57 11.3

75.6

-26.5

3

7.1

30.4

2954

15 56 31.1

-2.9

-11.4

3106

15 57 11.3

29.8

-12.2

4

10.7

19.0

3106

15 57 11.3

-34.0

-20.7

3121

16 0 10.0

42.3

-143.



9 16 56.9 5 10 0 -17° 19 p F .5d 6M  
 0 7 7.2 5 10 3 -17° 1.6  
 .956 2 1.7  
 .955 2 0 +2.7  
 5 12 2 -16° 59.0

9 16 46.6 15 55 21+18° 22.0 F .3d 6M  
 16 9.0 15 55 20 18° 22.1  
 .946 21 22.0  
 .950 2 0 -7.6  
 15 57 21+18° 14.4

6 16 9.0 15 56 45+18° 12.1 e F .2d 6M  
 3 16 5.0 15 56 45+18° 12.9  
 .950 45 12.5  
 .950 2 0 -7.6  
 15 58 45+18° 4.9

1 17 22.2 15 57 1+70° 52.6 e F .2d 6M  
 13 16 5.0 15 56 58+17° 53.6  
 .954 15 57 0 53.1  
 .950 2 2 -8.1  
 15 59 2 +17° 45.0

3 16 5.0 15 57 54+18° 24.0 e F .1d 6M  
 0 16 44.3 15 57 55+18° 23.6  
 .950 55 23.8  
 .947 2 0 -7.6  
 15 59 55+18° 16.2

79C 6030  
 From 1855 to 1860 +15s

new

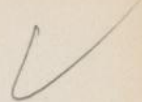
new

new



59.8  
-35.012.3  
-27.23106  
312115 57 11.3  
16 0 18.041.2  
-147.3610.5  
-34.24.7  
-35.13106  
3121044.2  
-144.0712.7  
-32.02.9  
-36.93106  
312153.4  
-134.3813.6  
-31.11.7  
-38.13106  
312157.2  
-131.0918.7  
-26.211.9  
-28.03106  
312178.6  
-100.3





15 57 53 18° 17.3 e F .2d BM  
 15 57 51 18° 17.1  
 52 17.2  
 20 -7.6  
 15 59 52 18° 9.6

15 57 55 18° 9.7 p F 16y.2' at 45° BM  
 15 57 54 18° 9.2 spin F neb att sp  
 55 9.4  
 20 -7.6  
 15 59 55 18° 1.8

15 58 8 18° 7.9 p F .3d BM  
 15 58 4 18 7.4  
 6 7.6  
 20 -7.6  
 16 0 6 18° 0.0

N6041

15 58 9 18° 6.7 p F 13d BM  
 15 58 7 18° 5.2  
 8 6.4  
 20 -7.6  
 16 0 8 17° 58.8

N6042

15 58 30 18° 16.9 p B .3d BM  
 15 58 28 18° 16.3  
 29 16.6  
 20 -7.6  
 16 0 29 18° 9.0

I.C. 1172  
 N6044



1018.9  
-25.86.0  
-33.83106  
312115 57 11.3  
16. 0 18.079.4  
-108.31120.3  
-24.34.9  
-34.985.3  
-102.31222.2  
-22.51.8  
-38.097.5  
-94.6  
x1324.9  
-20.01.2  
-38.7105.0  
-84.11426.2  
-18.3-4.7  
-44.3110.3  
-76.6





18 5.0 15 58 21 18 11.0 pF.2d/bM  
 18 44.3 15 58 30 18 10.5  
 950 26 10.8  
 947 20 -7.6  
 16 0 26 180 3.2

15 58 37 18° 9.9 pB 1.4 by .3 at 80° p/bM  
 15 58 36 18° 9.4 spin  
 37 9.6  
 20 -7.6  
 16 0 37 18° 2.0

15 58 41 18° 6.8 rF.3d/bM  
 15 58 43 18° 6.3  
 42 6.6  
 20 -7.6  
 16 0 42 17° 59.6

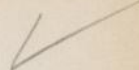
15 58 56 18° 6.2 eF.5 by .1 at 165°  
 15 58 54 18° 5.6 spin  
 55 5.9  
 20 -7.6  
 16 0 55 17° 58.3

15 59 2 18° 0.3 pF.2d/bM  
 15 59 2 18° 0.0  
 2 0.2  
 20 -7.6  
 16 0 2 17° 0.0



<u>15</u>	25.9 -15.9	5.7 -34.2	3106 3121	15 57 11.3 16 0 18.0
				109.0 -66.8
<u>16</u>	27.8 -17.1	5.3 -34.3	3106 3121	117.0 -71.9
<u>17</u>	27.3 -17.3	7.5 -32.3	3106	115.0 -72.7
<u>18</u>	24.0 -20.7	10.8 -29.0	3106 3121	101.0 -82.0
<u>19</u>	25.1 -19.7	14.0 -25.8	3406 3121	105.7 -82.8





3 18 5.0 15 59 0 18° 10.7 pF 3'd 6M

18 44.3 15 59 11 18° 10.1

.950

6

10.4

N6054

.947

20

-7.6

16 1 6 18° 2.8

15 59 8 18° 10.3 pF 3'd 6M

15 59 6 18° 10.0

7

10.2

IC 1184

20

-7.6

16 1 7 18° 2.6

15 59 6 18° 12.5 pF 13'd 6M

15 59 5 18° 12.0

6

12.2

IC 1182

20

-7.6

16 1 6 18° 4.6

15 58 52 18° 15.8 F 12'd 6M

15 58 51 18° 15.3

52

15.6

20

-7.6

16 0 52 18° 8.0

15 58 57 18° 19.0 cF 12'd 6M

15 58 56 18° 18.5

57

18.7

20

-7.6

16 0 57 18° 18.7



2026.2  
-18.617.2  
-22.63106  
312115 57 11.3  
16 0 18.0110.3  
-72.22129.9  
-14.920.4  
-19.23106  
3121126.0  
-62.62228.3  
-16.322.9  
-17.03106  
3121119.0  
-62.52326.8  
-18.029.1  
-10.53106  
3121113.0  
-75.72427.9  
-16.936.0  
-3.93106  
3121117.3  
-71.0





1f 5.0 15 59 2 18° 22.2 pB .56/ BM

1f 44.3 15 59 0 18° 21.7

.950 1 22.0

.947 2 0 -7.6

16 1 1 18° 14.4

15 59 17 18° 25.4 cF .28/ BM

15 59 15 18° 25.1

16 25.3

2 0 -7.6

16 1 16 18° 17.7

15 59 10 18° 27.9

15 59 10 18° 27.3

10 27.6

2 0 -7.6

16 1 10 18° 20.0

15 59 4 18° 34.1 pF .36/ BM

15 59 2 18° 33.5

3 33.8

2 0 -7.6

16 1 3 18° 26.2

N6059

15 59 9 18° 41.0 pF .56/ RBM

15 59 7 18° 40.5

8 40.8

2 0 -7.6

16 1 8 18° 33.2



<u>25</u>	25.8 -19.1	40.1 +0.3	3106 3121	15 57 11.3 16 0 16.0 108.3 - 80.3
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<u>26</u>	28.3 -16.2	29.3 -10.3	3106 3121	119.0 - 68.1
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<u>27</u>	31.7 -13.2	32.8 -7.1	3106 3121	133.3 - 55.5
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<u>28</u>	33.3 -11.3	31.2 -8.7	3106 3121	140.0 - 47.5
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<u>29</u>	32.2 -12.4	25.1 -14.7	3106 3121	135.3 - 52.1
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18 5.0 15 59 0 18° 45.1 VF 3d BM  
 18 44.3 15 58 58 18° 44.6  
 950 15 58 59 44.8  
 947 2 0 -7.6  
 16 0 59 18° 37.2

15 59 10 18° 34.3 cF 2d BM  
 15 59 10 18° 34.0  
 10 34.2  
 2 0 -7.6  
 16 1 10 18° 26.6

15 59 25 18° 37.8 pF 15d R BM  
 15 59 23 18° 37.2  
 24 37.5  
 2 0 -7.6  
 16 1 24 18° 29.9

15 59 30 18° 36.2 pF 16 by 3 at 70° BM  
 15 59 31 18° 35.6 spin  
 31 35.9  
 2 0 -7.6  
 16 1 31 18° 28.3

15 59 26 18° 30.1 eF 12d BM  
 15 59 26 18° 29.6  
 26 29.8  
 2 0 -7.6  
 16 1 26 18° 22.2

I.C. 1180



82

<u>30</u>	33.2 -11.7	24.3 -15.7	3106 3121	15 57 11.3 16 0 16.0 139.7 -49.2
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<u>31</u>	36.7 -10.3	21.1 -18.2	3106 3121	154.3 -43.3
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<u>32</u>	36.3 -8.3	16.7 -23.2	3106 3121	152.7 -34.9
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<u>33</u>	37.0 -7.8	15.9 -24.0	3106 3121	155.7 -32.8
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<u>34</u>	41.6 -3.2	12.8 -27.1	3186 3121	175.0 -13.5
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3 8 5.0 15 59 31 18° 29.3 e F.2d bM

18 44.3 15 59 31 18° 29.6

.950 31 29.4

.947 2 0 -7.6

16 1 31 18° 21.8

15 59 46 18° 26.1 e F.2d bM st. sp 1'

15 59 35 18° 26.1

41 26.1

2 0 -7.6

16 1 41 18° 18.5

15 59 44 18° 21.7 F.2d bM

15 59 43 18° 21.1

44 21.4

2 0 -7.6

16 1 44 18° 13.8

15 59 47 18° 20.9 c F.2d bM

15 59 45 18° 20.3

46 20.6

2 0 -7.6

16 1 46 18° 13.0

15 0 6 18° 17.8 c F.2d bM

15 0 5 18° 17.2

6 17.5

2 0 -7.6

16 2 7 18° 9.9



35

40.9

5.8

3106

16 57 11.3

-3.8

-33.8

3121

16 0 18.0

172.0  
-16.036

41.3

2.4

3106

-3.2

-37.3

3121

173.7  
-13.537

42.2

6.2

3106

-2.7

-33.8

3121

177.3  
-11.438

48.0

20.7

3106

+ 3.2

-19.3

3121

202.0  
+13.539

40.5

35.6

3106

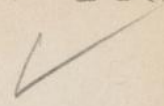
-4.2

-4.4

3121

170.7  
-18.0





18 5.0 16 0 3 18° 10.4 cF .5'd bM F wisps  
 18 44.3 16 0 2 18° 10.5 cF 135° spin?

95.0

3

10.6

74.7

2

φ

-7.6

16 2 4 18° 3.0

16 0 5 18° 7.4 cF .3'd bM

16 0 5 18° 7.0

5

7.2

2

φ

-7.6

16 2 6 17° 59.6

16 0 8 18° 11.2 cF .3'd bM

16 0 7 18° 10.5

8

10.8

IC. 1194

2

φ

-7.6

16 2 9 18° 3.2

16 0 33 18° 25.7 pF .4'd bM

16 0 31 18° 25.0

32

25.3

2

1

-7.6

16 2 33 18° 17.7

16 0 2 18° 40.6 pF .5'd bM

16 0 0 18° 39.9

1

40.3

IC. 1191

2

1

-7.6

16 2 2 18° 32.7



N.G.C 6055

33.8  
- 11.126.2  
- 13.73106  
312115 57 11.3  
16 0 18.0142.3  
- 46.6

N.G.C 6057

34.4  
- 10.227.1  
- 12.83106  
3121144.7  
- 43.0

N.G.C 6061

37.2  
- 7.734.3  
- 5.33106  
3121156.3  
- 32.413<sup>14</sup>24.1  
- 20.94.5  
- 34.83106  
3121101.5  
- 87.1

✓

40

- 1.8  
- 2.25.4  
- 21.62867  
286815 55 47.6  
15 55 48.6  
- 07.6  
- 09.2





13	18	5.0	15	59	34	18°	31.2	c F .5 d bM
	18	44.3	15	59	32	18°	30.6	
		.950			33		30.9	
		.947			20		-7.6	
			16	1	33	18°	23.3	

15	59	37	18°	32.1	F .3 d bM
15	59	35	18°	31.5	
		36		31.8	
		20		-7.6	
16	1	36	18°	24.2	

15	59	48	18°	37.3	pB .3 d bM
15	59	46	18°	39.0	
		47		39.2	
		20		-7.6	
16	1	47	18°	31.6	

13			15	58	53	18°	9.5	pB 1 by 15 at 75°
			15	58	50	18°	9.5	bM
					52		9.5	
					20		-7.6	
			16	0	52	18°	1.9	

6	16	17.3	15	55	41	16°	22.7	c F .3 d bM
	16	44.2	15	55	40	16°	22.6	
		.959			41		22.6	
		.957			23		-7.6	
			15	55	44	16°	15.0	



41	-2.8	3.2	2867	15 55 47.6
	-3.0	-23.8	2868	15 55 48.6
				-11.7
				-12.6

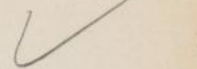
42	-2.9	1.5	2867	
	-3.2	-25.7	2868	
				-12.1
				-13.4

43	-3.9	0.3	2867	
	-4.1	-26.8	2868	
				-16.3
				-17.2

44	16.0	-0.9	2868	15 55 48.6
	-20.7	7.2	2873	15 58 24.0
				67.0
				-86.6

45	18.7	-0.7	2868	
	-18.0	-17.5	2873	
				78.3
				-75.3





26 16 17.3 15 55 36 16° 20.5 c F .3d bM

16 44.2 15 55 36 16° 20.4

.959

36

20.4

.957

2 3

-7.6

15 57 39 16° 12.8

15 55 36 16° 18.3 F .2d bM

15 55 36 16° 18.5

36

18.4

2 3

-7.6

15 57 39 16° 10.8

15 55 32 16° 17.8 F .2d bM

15 55 32 16° 17.4

32

17.5

2 3

-7.6

15 57 35 16° 9.9

26 16 44.2 15 56 54 15° 43.3 c F .3d bM

1.0 16 34.8 15 56 57 15° 42.0

.957

56

42.8

.958

2 4

-7.6

15 59 0 15° 35.2

15 57 5 15° 43.5 v F .2d bM

15 57 9 15° 43.3

7

43.4

2 4

-7.6

15 59 11 15° 35.5



46	22.8	6.2	2867	15	55	47.6	1
	-15.1	-12.3	2873	15	58	24.0	1

95.0  
-62.9

47	26.1	-14.2	2867	15	55	47.6	1
	-23.2	2.8	2880	15	59	10.3	16

109.0  
-96.7

48	1.3	-11.5	2956	15	58	0.3	17
	-4.0	13.2	2873	16	8	31.1	16

05.4  
-16.7

49	0.7	-8.9	2956				
	-4.8	15.8	2873				

02.9  
-20.0

50	2.1	-5.9	2956				
	-3.3	18.8	2873				

9.0  
-14.0



6 16 17.3 15 57 23 16° 23.5 e F. 3d BM  
 16 34.8 15 57 21 16° 22.0  
 .959 22 23.0  
 .958 2 3 -7.6  
 15 59 25 16° 15.4

76 16 17.3 15 57 35 16° 3.1 e F. 2d BM  
 13 16 2.1 15 57 33 16° 4.9  
 .959 34 4.5  
 .961 2 3 -7.6  
 15 59 37 15° 56.9

3 17 1.5 15 58 6 16° 50.0 c F. 2d BM  
 1 16 37.3 15 16° 50.5  
 .956  
 .958

15 58 3 52.6 F. 3d BM  
 15 53.1

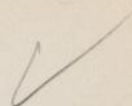
15 58 9 55.6 F. 3d BM  
 15 56.1

(Cannot be formed on 76 to 16. p.)



<u>51</u>	3.7 -1.9	-2.1 22.3	2956 2873	15 58 0.3 15 58 24.0  15.5 - 8.0
<u>52</u>	-7.0 -37.8	-1.0 2.0	2954 2958	15 56 31.1 15 59 35.3  - 29.3 - 158.3
<u>53</u>	-21.8 -22.9	-4.4 -1.4	2954 2958	- 91.2 - 95.9
<u>54</u>	-24.9 -19.8	-5.8 -2.7	2954 2958	-104.7 - 82.9
<u>55</u>	7.0 -23.7	-2.9 0.0	2894 2884	15 58 32.0 16 0 38.4  29.3 - 99.2





17 1.5 15 58 16 16° 59.4 F. 3d bM  
 16 34.8 15 58 16 17° 0.0  
 956 16 16° 59.7  
 958 2 3 -7.6  
 16 0 19 16° 52.1

17 22.2 15 56 2 17° 21.2 e F. 2d bM  
 17 20.1 15 56 17° 22.1  
 954  
 954

15 55 0 17.8 c F. 2d bM  
 15 0 18.7

15 54 46 16.4 v F. 3' b, 2' a t 25° bM  
 15 54 17.4

16 59.0 15 59 1 16° 56.1 F. 2d bM  
 16 56.0 15 59 0 16° 56.0  
 956 15 59 1 56.0  
 956 2 3 -7.6  
 16 1 4 16° 48.4

(cannot be found on 17 to 18 (8.8.94))



5613.0  
-17.80.1  
3.02874  
288415 58 32.0  
16 0 38.454.5  
- 74.85717.7  
-13.2-2.2  
0.72874  
288474.6  
- 55.56329.9  
- 0.8-0.2  
2.82874  
2884125.3  
- 3.558-0.3  
-28.410.3  
5.22880  
288515 59 10.2  
16 1 5.6  
- 1.5  
- 119.0592.2  
-25.88.5  
3.62880  
28859.5  
- 108.0





16 59.0 15 59 26 16° 59.1 v F.46/6M

16 56.6 15 59 23 16° 59.0

956 25 59.0

956 2 3 -7.6

16 1 28 16° 51.4

15 59 47 16° 56.8 c F.56/11 6M

15 59 43 16 56.7

45 56.4

2 3 -7.6

16 1 48 16° 49.2

16 0 37 16° 58.8 c F.56/11 at 25° 6M

16 0 35 16 58.8 spin

36 58.8

2 3 -7.6

16 2 39 16° 51.2

16 2.1 15 59 9 16 12.4 c F.26/6M

16 67 15 59 10 16 11.9

961 10 12.2

961 2 3 -7.6

16 1 13 16 4.6

15 59 20 16° 10.6 v F.26/6M

15 59 20 16° 10.3

20 10.4

2 3 -7.6

16 1 23 16 2.8



196

60

15.9

3.0

2880

15 59 10.3

-12.1

-2.1

2885

16 1 8.6

66.5

-50.5

61

17.9

-1.8

2880

-10.2

-7.0

2885

74.6

-42.5

62

22.0

13.7

2880

-5.9

8.6

2885

93.0

-24.3

64

0.4

-28.2

2960

15 59 43.4

-6.8

2.8

2961 ✓

16 0 35.8

2.0

-28.5

65

1.2

-12.9

2960

-6.1

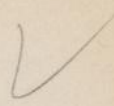
18.0

2961 ✓

5.0

-25.5





16 2.1 16 0 17 16° 5.1 c F. 46 RBM

16 6.7 16 0 17 16° 4.6

961 17 4.8

961 2 3 -7.6  
16 2 20 15° 57.2

16 0 25 16° 0.3 c F. 26 RBM

16 0 25 17° 59.7

25 17° 0.0

2 3 -7.6  
16 2 28 18° 52.4

16 0 43 16° 15.8 c F. 36 RBM

16 0 44 16° 16.3

44 16.0

2 3 -7.6  
16 2 47 16° 8.4

17 47.4 15 59 45 17° 19.2 c F. 26 RBM

17 16.7 15 17° 19.5

95.2

95.4

15 59 48 34.5 F. 26 RBM

15 34.7

Missing on plate 197



66

8.2

5.2

2960

15 59 43.4 17

-30.7

-7.7

3123

16 2 24.7 18

35.0

-131.0

67

17.1

15.2

2960

-21.9

2.4

3123

73.0

-92.6

68

19.2

14.0

2960

-19.8

1.1

3123

81.4

-83.9

69

15.9

3.0

3121

16 0 16.0 16

-12.1

-21.7

3058

16 2 16.6 19

67.4

-57.3

70

12.3

8.1

3121

-15.8

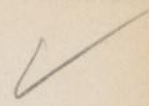
-10.3

3058

52.2

-67.0





4 17 47.4 16 0 18 17° 52.6 p.B. 30/bM

18 1.2 16 0 14 17° 53.5

.952

16 52.0

.951

2 1 -7.6  
16 2 17 17° 44.4

16 0 56 18° 2.6 v.F. 30/bM

16 0 52 18° 3.6

54 3.1

2 1 -7.6  
16 2 55 17° 55.5

16 1 3 18° 1.4 e.F. 20/bM

16 1 1 18° 2.3

2 1.8

2 1 -7.6  
16 3 3 17° 54.2

18 44.3 16 1 25 18° 41.3 F. 20/bM

19 3.1 16 1 25 18° 41.4

.947

25 41.3

.945

2 1 -7.6  
16 3 26 18° 33.7

16 1 10 18° 52.4 F. 20/bM

16 1 10 18° 52.8

10 52.6

2 1 -7.6

16 3 11 18° 45.0



71

10.8

18.1

3121

16

0

16.0

-22.3

-0.6

3058

66

2

16.6

46.0

-94.6

72

21.1

13.7

3121

-6.9

-5.1

3058

89.5

-29.5

74

13.3

6.3

3058

16

2

16.6

-25.4

-14.3

3065

16

5

0.1

56.5

-108.0

75

19.1

13.1

5058

-19.8

-7.8

3065

81.0

-84.0

76

27.5

14.2

3058

-11.3

-6.4

3065

168.0

-48.0





18 44.3 16 1 4 19° 2.4 CF. 2'd BM  
 19 3.1 16 0 42 19° 2.5

.947

.945

✓ missing on plate  
 2.6.9

16 1 48 18° 58.0 F 18'd BM  
 16 1 46 18° 58.0  
 47 58.0  
 2 1 -7.6  
 16 3 48 18° 50.4

19 3.1 16 3 13 19° 9.4 F .66 by 1' at 135° BM  
 19 23.4 16 3 12 19° 9.1 spin

.945

.943

13 9.3  
 2 0 9.6  
 16 5 13 19° 1.7

16 3 38 19° 16.2 v F .3'd BM  
 16 3 36 19° 15.6  
 37 15.9  
 2 0 -7.6  
 16 5 37 19° 8.3

16 5 5 19 17.3 v F .66 by 1' at 20° spin  
 16 5 12 19° 17.0  
 9 17.2  
 2 0 -7.6  
 16 7 9 19° 9.6



7724.8  
-14.117.9  
-2.93058  
306516 2 46.6  
16 5 0.1  
105.3  
-60.07827.8  
-11.123.8  
3.13058  
3065118.0  
-47.37930.3  
-8.426.1  
5.33058  
3065127.6  
-36.0804.7  
-9.817.3  
-8.23124  
312716 2 46.5  
16 3 44.2  
20  
-41.88113.0  
-11.36.2  
-4.03127  
313616 3 44.2  
16 5 23.6  
58.0  
48.0





6 19 31 16 4 2 19° 21.0 v F .764.1' at 30°

19 23.4 16 4 0 19° 20.5 bp

.945

1

20.8

.943

20

-7.6

16

6

1

19°

13.2

16 4 15 19° 26.9 p F .46 BM

16 4 13 19° 26.5

14

26.7

20

-7.6

16 6 14 19° 19.1

16 4 24 19° 29.2 p F .46 BM

16 4 24 19° 28.7

24

29.0

20

-7.6

16 6 24 19° 21.4

5 18 20.7 16 3 7 18° 38.0 p F .36 BM 1E?

2 18 46.3 16 3 2 18° 38.1

.949

4

38.0

.946

21

-7.6

16 5 5 18° 38.4

2 18 46.3 16 4 42 18° 52.5 p F .36 BM

6 18 56.8 16 4 36 18° 52.0

.946

39

52.6

.945

21

-7.6

16 6 40 18° 45.0



✓ 82

2.6  
-5.23.0  
-17.13129  
313316 4 9.3 16  
16 4 44.2 16  
11.3  
-22.3

93

10.2  
-19.4-1.3  
-0.13130  
314116 4 10.1 16  
16 6 19.2 16  
43.5  
-82.5

91

4.9  
8.8  
-10.8-16.1  
3.2  
6.22969  
2968  
297516 2 34.2 17  
16 2 18.8 17  
16 3 38.2 17  
21.0  
-37.5

83

6.2  
-21.32.2  
-1.92962  
297216 1 11.3 17  
16 3 6.3 17  
26.5  
-90.3

90

14.7  
-13.01.2  
-2.72962  
297262.5  
-55.3



1F	17.5	16	4	21	18°	20.5	pB 1.6 by 3' at 0° pos bM
18	36.5	16	4	22	18°	19.4	spin?
949				22		20.0	
947			2	1		-7.6	
		16	6	23	18°	12.4	
18	5.4	16	4	54	18°	4.1	eF 2' d bM
18	4.5	16	4	54	18°	4.4	
950				54		4.3	
950			2	1		-7.6	
		16	6	55	17°	56.7	
17	46.1				17°	30.0	
17	28.2	16			17°	31.4	eF 3' d bM
17	22.2	16	2	39	17°	28.4	
952							
953		16	3	1		-7.6	
954			2	2			
			5	3			
17	7.3	16	1	38	17°	9.5	pF 1.3' d R bM bM
17	10.5	16	1	36	17°	8.6	F wisps at 90°?
955				37		9.0	spin with absorption
955			2	2		-7.6	line?
		16	3	39	17°	1.4	
		16	2	14	17°	8.5	pF 1.2' by 2' at 50°
		16	2	11	17°	7.8	spin bM Detatt's
				13		8.1	
			2	2		-7.6	
		16	4	15	17°	0.5	

✓ missing on plate 4.6.2.



8421.3  
-22.8-1.8  
2.32884  
289516 0 38.4  
16 3 41.090.5  
- 97.08828.9  
-15.3-5.4  
-1.12884  
2895122.5  
- 65.08932.3  
-11.4-1.9  
2.72884  
2895137.0  
- 48.5854.2  
-13.116.2  
-13.12887  
289316 2 15.1  
16 3 27.1  
18.0  
- 56.3866.3  
-12.910.3  
-1.02959  
296216 2 48.5  
16 4 61.5  
27.0  
- 55.0



16. 56.0 16 2 9 16° 54.2 v F. 28/6M

16 51.0 16 2 4 16° 53.3

.956 7 53.7

.956 2 3 -7.6

16 4 10 16° 46.1

16 2 41 16° 50.6 e F. 30/6M

16 2 36 16° 49.9

16 2 39 50.3

2 3 -7.6

16 4 42 16° 42.7

16 2 54 16° 54.1 e F. 30

16 2 53 16° 53.7

54 53.8

2 3 -7.6

16 4 57 16° 46.2

16 11.6 16 2 35 16° 27.8 v F. 30/6M

16 39.7 16 2 31 16° 26.6

.960 33 27.7

.958 2 3 -7.6

16 4 36 16° 20.1

15 44.9 16 3 15 15° 59.2 p F. 30/6M

15 59.3 16 3 11 15° 58.3

.962 13 58.8

.961 2 4 -7.6

16 5 17 15° 61.2



208

8713.1  
-6.111.8  
0.42959  
296216 2 48.5 15  
16 4 6.5 15  
56.0  
-26.39217.3  
-33.314.9  
21.32972  
298816 3 6.3 17  
16 6 36.0 17  
73.5  
-139.59431.0  
-19.7-3.9  
2.82972  
2988130.0  
-83.69532.7  
-18.2-3.5  
2.72972  
2988147.8  
-77.39633.0  
-17.8-1.9  
4.22972  
2988138.4  
-75.5





15 48.9 16 3 45 16° 0.7 pB .3d/6M

15 59.3 16 3 31 15° 59.7

.962

38 15° 0.2

.961

2 3  
16 5 41 15° 53.6

17 10.5 16 4 20 17° 25.4 cB .3d/6M R

17 5.0 16 4 16 17° 26.3

.955

18 17° 25.8

.955

2 2  
16 6 20 17° 19.1

16 5 16 17° 16.6 FR 3d/6M

16 5 12 17° 7.8

14 7.2

2 2  
16 7 16 17° 0.5

16 5 34 17° 7.0 eF .2d/6M

16 5 29 17° 7.7

32 7.3

2 2  
16 7 34 17° 0.6

16 5 25 17° 8.6 cF 2d/6M

16 5 21 17° 9.2

23 8.9

2 2  
16 7 25 17° 2.2



9746.1  
-4.74.5  
10.52972  
298816 3 6.3 17  
16 6 36.0 17185.2  
-18.8983.8  
-5.212.9  
-7.32900  
290416 5 38.8 16  
16 6 16.6 1616.5  
-22.39921.7  
-7.410.3  
3.92964  
296616 4 57.6 16  
16 6 49.9 1693.0  
-32.610022.8  
-6.27.7  
1.32964  
296697.6  
-26.51016.3  
-34.5-18.5  
7.92966  
297116 6 49.7 16  
16 9 39.5 1627.0  
-132.5



3 17 10.5 16 6 12 17° 14.0 v F. 3'd 6M  
 17 5.0 16 6 6 17° 15.5  
 .955 9 14.7  
 .955 22 -6.7  
 16 8 11 17° 8.0

8 16 20.3 16 5 55 16° 33.2 F. 3'd 6M  
 16 41.4 16 5 55 16° 34.1  
 .959 55 33.7  
 .957 22 -6.7  
 16 7 57 16° 27.0

6 15 30.3 16 6 25 15° 40.6 v F. 1'd 6M  
 9 15 36.6 16 6 78 15° 40.5  
 .963 22 40.6  
 .963 24 -7.6  
 16 8 26 15° 33.0

16 6 30 15° 38.2 v F. 12'd 6M  
 16 6 24 15° 37.9  
 27 38.0  
 24 -7.6  
 16 8 31 15° 30.4

7 15 36.6 16 7 27 15° 18.1 p F RR 13'd 6M  
 15 15 9.3 16 7 27 15° 17.2  
 .963 27 17.7  
 .965 24 -7.6  
 16 9 31 15° 16.1



212

102

36.3

-4.8

2966

16

649.9

-4.4

21.7

2971

16

939.5

150.0

- 19.0

103

43.7

-21.2

2965

2.8

5.2

2971

187.0

12.0

105

0.2

-6.0

2972

16

89.6

-19.0

31.8

2914

16

929.1

1.0

- 83.0

106

17.5

-16.6

2992

-1.7

21.2

2914

75.0

- 7.5

104

1.8

0.8

3144

16

739.4

-14.3

-5.8

3150

16

845.6

8.0

- 61.3





9 15 36.6 16 9 20 15° 31.8 F 5d 6M

15 9.3 16 9 20 15° 31.0

.963 20 31.4

.965 2 4 -7.6

16 11 24 15° 23.8

16 9 57 15° 15.4 c F 3d 6M

16 9 51 15° 14.5

54 14.9

2 4 -7.6

16 11 58 15° 7.3

17 25.6 16 8 11 17° 19.6 c F 3d 6M

16 48.7 16 8 6 17° 20.5

.959 9 20.0

.962 2 2 -7.4

16 10 11 17° 12.6

16 9 25 17° 9.0 v F 2d 6M 1E?

16 9 22 17° 9.9

23 9.4

2 2 -7.4

16 11 25 17° 2.0

18 6.8 16 7 47 18° 7.6 p B 3d p 5d M

18 13.4 16 7 45 18° 7.6

.950 46 7.6

.949 2 0 -7.4

16 9 46 18° 0.2

N6084?? (is it b.c. pos. a few seconds  
off in R.A.?)



214

107

17.2

20.2

3136

16 5 23.6

2.9

-12.0

3072

16 6 26.9

73.0

12.5

108

16.7

25.9

3136

2.2

-6.1

3072

71.6

9.5

109

19.2

12.4

3072

16 6 26.9

-5.2

4.8

3073

16 8 4.4

81.5

-22.3

110

0.0

5.7

3075

16 9 3.2

~~11.1~~~~-37.0~~~~3076~~~~16 9 52.1~~

-32.8

-5.2

3080

16 11 20.8

0.0

139.0

111

5.3

18.2

3075

~~5.9~~~~-24.3~~~~3076~~

-27.3

7.4

3080

22.6

116.0



18 56.8 16 6 37 19° 17.0 F .4d BM

19 28.2 16 6 39 19° 16.2

.945 38 16.6

.942  $\frac{2}{1}$  -8.1

16 8 39 19° 8.5

16 6 35 19° 22.7 V/F .2d BM

16 6 37 19° 22.1

36 22.4

$\frac{2}{1}$  -8.1

16 8 37 19° 14.3

19 28.2 16 7 48 19° 40.6 pF .4d BM

19 35.3 16 7 42 19° 40.1

46 40.4

$\frac{2}{1}$  -8.1

16 9 47 19° 32.3

19 11.8 16 9 3 19° 17.5 cB liby. i at 0° BM

19 52.3 19° 15.3 spin

19 20.8 16 9 3 19° 15.2

.944 3 16.6

.943  $\frac{2}{1}$  -8.1

16 11 4 19° 8.5

16 9 25 19° 30.0 pF .3d BM 1E at 135°

16 9 25 28.0 st. 10th. i nf.

25 19° 28.2

29.1

$\frac{2}{1}$  -8.1

16 11 26 19° 21.0



216

~~112~~10.7  
-10.9-24.4  
7.33076  
308016 9 52.1  
16 11 20.8  
46.3  
- 46.5~~114~~7.9  
-13.7-2.9  
29.03076  
308034.0  
- 58.5~~115~~7.5  
-13.90.0  
31.83076  
308032.0  
-59.3~~73~~→ { 2.9  
4.7  
- 3.2-2.7  
-4.7  
3.83206  
320715 59 42.2  
15 59 44.4  
12.5  
-20.0  
- 14.0~~113~~-7.7  
-16.57.3  
-9.83076  
323616 9 52.1  
16 10 27.7  
- 33.0  
- 70.3





19 52.3 16 10 38 19° 27.9 pF.3d 6M

19 20.8 16 10 35 19° 28.1

.940 37 28.0

.943 2 1 -8.1

16 12 38 19° 19.9

16 10 26 19° 49.4 pF.4d 6M

16 10 23 19° 49.8

24 49.6

2 1 -8.1

16 12 25 19° 41.5

16 10 24 19° 52.3 pB.664.3 at 95° 6M sp. 1/2

16 10 22 19° 52.6

23 52.4

2 1 -8.1

16 12 24 19° 44.3

20° 14.3 16 59 55 20° 11.6 pB.5d 6M

20° 6.5 16 59 22 20° 10.1

.938 16 59 30 9.8

.939 26 -8.1

16 2 1 +20° 1.7

19 52.3 16 9 19 19° 59.6 cF.2d 6M

20 9.8 16 9 18 20° 0.0

.940 19 19° 59.8

.938 2 1 -8.1

16 11 20 19° 51.7



116

2.8

16.2

3076

16 9 52.1

-6.4

-0.9

3236

16 10 27.7

12.0

-27.5

117

6.9

13.1

3076

-2.1

-3.8

3236

29.5

-9.5

118

6.3

21.0

3076

-2.7

4.0

3236

27.0

-11.3

119

-1.9

-15.4

3081

16 12 57.1

-10.0

-21.9

3159

16 13 29.8

-8.0

-42.2

120

1.2

-6.9

3081

5.3

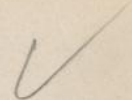
-7.2

30.4

3159

-30.6





19 52.3 16 10 2 20° 8.5 VF .2d BM  
 20 9.8 16 10 0 20° 8.9  
 .940 1 8.7  
 .938 2 1 -8.1  
 16 12 2 +20° 6.6

16 10 22 20° 5.4 c F .6 by 1 at 160°  
 16 10 17 20° 6.0 BM spin?  
 21 5.7  
 21 -8.1  
 16 12 22 +19° 57.6

16 10 19 20° 13.3 VF .2d BM x?  
 16 10 16 20° 13.8  
 18 13.5  
 2 1 -8.1  
 16 12 19 +20° 5.4

19 24.3 16 13 5 19° 8.9 VF .3d BM  
 18 48.2 16 12 58 19° 9.9  
 .942 16 13 1 9.4  
 .946 2 1 -8.1  
 16 15 2 19 1.3

16 13 2 19° 17.4 VF .2d BM  
 16 12 59 19° 18.4  
 16 13 1 17.9  
 2 1 -8.1  
 16 15 2 19° 9.8



220

144

8.9

-10.9

3081

16 12 57.1

0.7

26.5

3159✓

16 13 29.81

38.0

3.0

122

2.9

-29.0

3081

-5.2

8.2

3159✓

12.5

-22.3

123

1.8

-35.0

3081

-6.2

2.2

3159✓

8.0

-26.5

121

8.3

24.2

3081

16 12 57.1

-3.3

-2.0

3082

16 13 45.4

35.5

-14.0

126

6.0

5.1

3003

16 13 45.5

11.9

-4.1

3006

16 14 58.7

25.5

-50.5



221

  
RA Reductions

Declination  
Reductions

19 24.3

18 48.2

.943

.946

19°

13.4

14.5

13.9

- 8.1

19°

5.8

✓ F 12d bM

16 13 35

16 13 33

34

2 1

16 15 35

18°

55.3

18°

56.2

55.8

- 6.3

18°

49.5

c F 13b 1/2 ot

30° bM spin

16 13 10

16 13 7

9

2 0

16 15 9

18°

49.3

18°

50.2

49.8

- 6.3

18°

43.5

p F 15d R p bM

16 13 5

16 13 3

4

2 0

16 15 4

19 24.3

18 51.2

.943

.940

19°

48.5

19°

49.2

48.8

- 8.1

19°

40.7

F 12d bM

16 13 33

16 13 31

32

2 1

16 15 33

17 414.4

17 52.6

.952

.951

17°

49.5

17°

48.5

49.0

- 7.2

17°

41.8

✓ F 2d bM

16 14 11

16 14 8

10

2 1

16 16 11

L.H.C.K. Obs. L.G.J. Rec.

August 21, 1922



















1922phae.proj.2309M