

1.255888 292 W (W) 1450 19 90 40.3 +04 22 03

1.350 1.251 315 E

186293

18631 ✓

7.79 +1.17 W

7.79 +1.47 E

19 42 10

+09 27

NOIG

19 42 20

+09 27

143 II

~~(W) 1450 19 90 43 +09 22 03~~

(W) 8.28 1.225 0.612 0.278 7.36 -512 (3) 8/19

8.29 1039 0.509 199

19 July 87

9.30 1028 530 200

20 July 87

8.28 1025 516 199

Jan 90

1126 870245

8.46 1.325 0.972 0.316 7.15 -351 (3)

8.44 1.123 997 248

19 July 87

9.45 1.119 973 248

20

8.44 1.123 874 245

Jan 90

713893

22 33 35 +00 29.5

710

MO III

1.360 1.320 190 ON

1986.5 22 33 59.4 +00 32 13

6.71 4.52

7.36 1.336 1.050 195 (3) July 06

7.37 1.331 1.059 187 22 Oct 04

1.136 934 <sup>121</sup>~~806~~ 1.132 948 123 19 July 07

9.38 1129 944 123 20

0.985 0.481 0.034

23 16.05

-13 56

Fl. 75

2.97 0.000 PI

219617

As 219617 & 211210

G273-1

1986.5 23.16 27.1 -13 5-4 37

8.17 47

~~8.38~~

0.963

0.193

0.009

8.00

-708

③ pgs

8.39

0.960

0.159

0.009

22 Oct 86

8.37

0.961

0.156

0.013

7.99

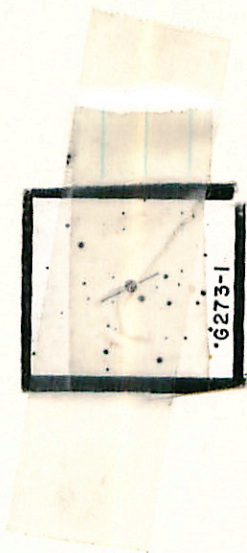
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22 Oct 86

761 884-061

8.37 764 088 -057

19 Aug 87



6273-1

+1.4724  
G29-68

8.95 1.48

1.242 1.429 2.224

23 48 10 402 18

254 865  
M28

1986.5 23 48 344 +02 20 45

9.64

1.226 1.145 -226 7.97

+0085

③ 9.97

9.66

1.221 1.150 -234 7.90

0.009

23.64

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●  
G29-68

L94-6-1975 2 52 08 -00 05 08

8.99 -565 15 sec

9.01 -558 16 sec

5.99 -559 17 "

B124

07

18

191

45 03

8.37 508  
25.0

8.39 180 15

8.39 177 14 *hr*

8.39 178 17

178



EY1104  $\overline{15868}$  9 18 12 54 -45 24 13 8.76 0.935

8.76 -180 18.5m

8.77 -177 16"

8.76 -178 17

E894

06 47 821

-47

12.003

8.54 752

8.55

-316

18

8.56

-310

16

She

8.57

-319

17

B009

6 36 05.0

44 38 21.1

8.43 -02A

889 -1.119 15

887 -1.121 14 *see*

889 -1.122 17

E301

06 07 012

44

840-044  
59 443

8.07	-1146	7PM 15
8.07	-1140	} 19 per
8.06	-1148	

E388

03 56 14.0

244 39 15.1

8.40 6.03

842

-428

15

Dec

843

-436

14

843

-434

17

E237

04 02 388

44 13 274

9.46 444

9.58	6.48	15
9.54	6.50	16
9.47	6.50	17

John

E201

04 02 225 44 20 04

875056

8.72	-1041	15	
8.72	-1049	14	pl
8.73	-1054	17	

E175

01 35 345

44 09 310 <sup>9.57</sup> 187

9.54 - 965 15

9.53 - 961 14

9.54 - 956 17

flr



B176

01

17 260

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8.27  
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622

8.24 -476 15

8.27 -476 16

8.29 -472 17

plu

197 300  
198 309 258  
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156 58  
262  
-8.86  
119-18  
Cody

14932 115043  
17919  
17875-  
7875  
6.84 1060 1007 820 -10.3 1860 2/14  
7891 -4286 8584 4416 15004 4110 -0356c

+5201425  
34420 1403.1 +56 58 22.17 1116 -028 (m12)  
433  
10136 -030 +174 113 -030

6.54 24 46 w(6)  
1189 33 1787  
101315 -028 23.91 209

36.0 1004  
1108-024 20.6 19254  
57.58 11840 78  
23.02 39.1 901  
23.90 -10.1

11.91 2198 0344  
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23.37  
38.7

11.91 2198 0344  
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22.98  
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34405 1407  
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307-952 838 545 +113-030-8.8-025-7.4-076  
035-008-108024 052-550-4.8+4.6+1.5 044

+5.8-11.0-9.1  
-13.4+0.2.7.4  
+5.9-12.0-9.3  
-14.4+1.3-7.4

194 391 194 310 04

1960 1971  
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1982 1983 1984  
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1991 1992 1993  
1994 1995 1996  
1997 1998 1999  
2000 2001 2002  
2003 2004 2005  
2006 2007 2008  
2009 2010 2011  
2012 2013 2014  
2015 2016 2017  
2018 2019 2020  
2021 2022 2023  
2024 2025 2026  
2027 2028 2029  
2030

R.A. : 13.200  
DEC. : 56.950  
PM. R.A. : 209.000  
PM. DEC. : -18.000  
DISTANCE : 2.010  
MODULUS : 25  
RAD. VEL. : -10.100

q1 (U) : -0.809  
q2 (U) : 0.543  
q3 (U) : 0.223  
dU : -483.613  
U : -14.461

q1 (V) : 0.581  
q2 (V) : 0.682  
q3 (V) : 0.444  
dV : 255.456  
V : 1.958

q1 (W) : -0.089  
q2 (W) : -0.489  
q3 (W) : 0.867  
dW : -6.295  
W : -8.920

M 229

AKS-

Denver 272, 1919

Nature 378, 463

AKS

1919

967 L101

824

6 55 -21 57

AKS 491

L107

1005 + 464 21

5/42/51

47388

120678

12 33.4

+51 30

655

944

8.55 1067

61451

12 33 +57 30

109667

8.49 + 0.55  
 38.08 1.01  
 113.00 - 806

6607

8.49

6858  
-7276

9936 | 1131  
 -1111 | 0845

6421 9921 | 1138  
 -9218 7257 | -6032  
 4209 -0.4

155-1536

12 250.2 + 55-24

122 - 4

6766  
2364

9996  
- 0284 } 1220  
UV

0462  
46.24 0.0  
mul 1.67



1500013 (KMS)

11

2811-12-96

F22

710

0354

7014 -57 37

15.52

0.85

710 384

+214

9023

5-971

0705

4206

-8022

0605

0592

0605

16.12-1.8

x.3.1

6.50 291 178

505  
210  
507

←

1.8

26292

120655

384  
84  
3.81  
3.81

+3 12

6.00  
-0.54

18.96 0.96

3.23  
-0036.85

-0.54  
-0.44 25.2

66 26442

6.090 1.4 -0037

35.57 54.7

Sum

175  
265

-0035

0038

-0036.6 -0.543 38.73

3.22

-0039 -0.544

6.611

64.54

35.23

-0.584

120  
0.31

-0.57 - 0.61

0.979  
6.004

64.55 Sum 34.67

35.20

4388 -9700

0.144

120  
0.24

-0036 -0.60

3

3414 -4378

120  
0.144

-0.54 - 0.60

34.64

6032

6.005

6.774

34.64

3.17

11  
0.14

34.64

698 69327 655

13 21.4 +58 09

+580 144 58 64

127 144 48  
24 64 1.44  
0 144 2 22

118-022

723

521 384  
454 366 1.07  
294 1.44 1.07  
294 1.07

9.24 +1.27 +1.14 (2)

830 681

0.57 (2)

278  
-1.24

976  
-157

116 1200 1267  
~~116~~ 1200 - 0153  
-112

9311 2.54

1.44

27.40 1221

143.84 41.7

-6.4

1221

61546

12 33.8 + 5600 63

1/24/63

121.57

~4.30

1/24/63

43.06

0.52

PL.52

8.27 to 96 123 F

PA5P 57  
311

-5.8 P. 1.1 (3)

~5.6

R. Williams  
PA5P 57  
311

7842

9955

11.89

PA5P 57  
F94C

-6191

2449

11.89

44.20 to 12

6924

9928 12.08

~7215

~0469

10.16

(1916)

601100

290  
12 RBP

+55 29

1916 10-2-19  
RBP  
458062

(1916)

3970-13-25

4213 -

RBP 956 (2010  
-0104  
✓ RBP 1746  
RBP 1746

10943

12 35 ✓

+ 56 in

113 ✓

61940

8.27.56 ✓

43.05 ✓ D.82

4.36

12153

16.51

6424	9988	1211
9211	2489	10216

548.00 40.2

133

228, 1443

336 6350

PO 165

14 22.2 49 41

✓

✓

12 H

A

14116

14488

-

1575

1409

14126

Recklin E

Quarman D

1988

Nature 336

686

13.3

13.2

13.4

COB  
172-45

13 06.4 494 73 10.5 11.1

198 014

7093 5526  
6412 - 3043



151' 25 f

12

09.9

94.25+

12.4 12.1  
1.21 9.11

6.11'

250/52

ST<sup>2</sup>  
1.21

6378	9994	2916
5066	4336	0440
	0339	0470

+58° 1441

13

17.7

+58 39

688

5091

13

21.423.7

+58 9.27

late @ OGW

AT 92 905

886 +57

$P = -8.2$   
HMA

.114  
1039

3  
120  
5

NO

898

830  
6854  
7

7  
2

9.6: MOP +7.7

Yale Zone +.090 -.020

+0.01413 -0.025 Y

+2 +1

-795

+0.0143 -024

+ 112 -024 Y 9.

115 -040 AGW

+0.112 -0.024

1.5 224

1.5 22

1.6 197

1.21

+112 -032

19.2 m.

+112 -0.27

-6.6

-795	+566	+217	-4220	-0641	-4864	-9.3	-1.4	-10.7
+594	+653	+471	+3153	-0742	+2411	+4.6	-3.1	+1.5
-125	-504	+854	-0664	+0573	<del>0099</del>	-0.2	-5.6	-5.8

688.000\*  
 13.000\*  
 21.400\*  
 58.000\*  
 9.000\*  
 0.112\*  
 -0.024\*  
 1.500\*  
 19.953  
 -6.600  
 -0.486  
 0.217  
 -11.141  
 0.241  
 0.471  
 1.696  
 -0.009  
 0.855  
 -5.823

R.A. : 13.350  
 DEC. : 58.150  
 R.A. : 224.000  
 DEC. : -22.000  
 DISTANCE : 1.970  
 MODULUS : 25  
 D. VEL. : -12.100  
 q1 (U) : -0.796  
 q2 (U) : 0.565  
 q3 (U) : 0.218  
 PU : -504.715  
 U : -15.144  
 q1 (V) : 0.593  
 q2 (V) : 0.653  
 q3 (V) : 0.471  
 PV : 264.163  
 V : 0.848  
 q1 (M) : -0.124  
 q2 (M) : -0.504  
 q3 (M) : 0.855  
 MP : -16.674  
 M : -10.757

6-22-2007

854000

+ 17 - 45

150706

91

204

16

378

+ 24

570

- 14

7,000 0.289 158 312 @alum

+0334  
+0338

+0334  
-096

7106 042

+0321 ± 41

-087 ± 47

1247

1392

44 +0331

34.54 5.7

~~8354 8505~~

1210

28.220

44 +0331

438

~~8197 8156~~

246

26 827

57.73

43.82

0334

18.448

57.73

38.46

246

18.448

57.73

38.46

10301 - 098

28.074

4521

54.92

140318 - 0431

47

4521

54.92

0536

087 - 092

13

4521

54.92

60-

LM10-  
1985  
1988  
1991

1985

1988

LM10-1985

1985 0-50

1985

1985

115043

64532

11.9 17.86

3842 047

9462 9844 1133  
4657 1450 10014

3479

8840 047

+59.1428

~~12~~

12 4.8

+59 44

291

8.62 5.55

12 9.433.1

+59 12.29

Sumin

$\Sigma = 866$   
RT 0.555  
+100 -003  
+10

18.5

Sumin

NEW  
120317  
+0121 +014  
+093 +014

McC-AC +0.102 +0.012

10.0 MA +9.2

R

8.56 71  
11.44 120  
Lewis

PC = -106  
2.16

6418 9919  
7668 1267  
100001  
-0.10  
0.72  
1.58

+0100

8.96 75 11.44

$\pi = 040$

+045

100001  
-0.10  
0.72  
1.58

135  
182  
19 8.32  
2.14 6.7  
=15

MAN 120,317

19.4

+9.75 1865



NO. 2313

Station B  
Page 2 B

1960 Mar 20, 307

R.A. : 12.150  
 DEC. : 59.200  
 PM. R.A. : 182.000  
 PM. DEC. : 14.000  
 DISTANCE : 2.140  
 MODULUS : 27  
 RAD. VEL. : -15.000

q1 (U) : -0.869  
 q2 (U) : 0.335  
 q3 (U) : 0.364  
 dU : -361.866  
 U : -15.148

q1 (V) : 0.469  
 q2 (V) : 0.789  
 q3 (V) : 0.397  
 dV : 259.677  
 V : 1.009

q1 (W) : 0.154  
 q2 (W) : -0.515  
 q3 (W) : 0.843  
 dW : 33.903  
 W : -11.736

41593

28954

6

038

715

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220

28964

-0087-107

715 184

-126-107

H

722310.81

676

648

-7464

165-1037

-7664

-1655

0241 1037

0.95

122.30

103.24

6461

0.01

0.5

19381

21.5633

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1970

59.1425

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5996

996

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053 016

6418

9919

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-7669

1265

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0942

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