

+16 577 46 114.5 +16 50

27120

7.50
11.50

10069

012100 L
1201109 VA
118 -212
119 -20, 1004

11.50
+35.22 20000

0.5 min 0-8
Ap 5 125 832296

125 019 Annen
VA 114-021
120

Double Attention

8570 9193

4550

8370 -2459 -1-5848

1.61
714
120 -021 VA

016

0109

118017

119-031

195
Mc Ann Sp. 5.254.606

118-055

116-021 116
118-021 111

100716+002

see 0
118

8

ADS 48 F 00 02.5 +45 31 +2 R

AB 030 +45 32 +2 C

Yabu 4 87 8.73 153.87 + 1 C

0.090 55 55.10 2.11 +17.6

2 5.03 / AB 8.23 11.41 +12.5 R

2 1.8 2.1 2.5 3.0 3.5 4.0 4.5 5.0 5.5 6.0 6.5 7.0 7.5 8.0 8.5 9.0 9.5 10.0

17 8.57 151

AB +0.872 -0.130

OR 599 986 991 996 1000

1355 1435 1520 1531 1532

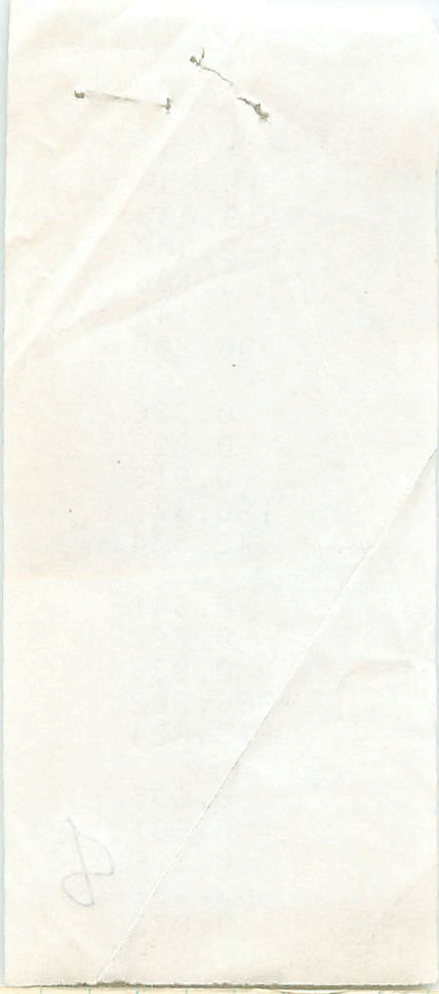
1565 1645 1725

415 927 425 43.7 435 437 445 43.7

A -1.5 B 11.6

+17.6 0.0

2



4.250
16.850
119.000
-2.000
3.100
42
38.200

0.326
0.227
0.918
180.377
42.574

44

-0.641
0.767
0.038
-366.302
-18.824

0.695
0.601
-0.396
383.422
0.873

8

9

6. A. 1. 0.000
2. 0.000
3. 0.000
4. 0.000
5. 0.000
6. 0.000
7. 0.000
8. 0.000
9. 0.000
10. 0.000

11. 0.000
12. 0.000
13. 0.000
14. 0.000
15. 0.000
16. 0.000
17. 0.000
18. 0.000
19. 0.000
20. 0.000

21. 0.000
22. 0.000
23. 0.000
24. 0.000
25. 0.000
26. 0.000
27. 0.000
28. 0.000
29. 0.000
30. 0.000

31. 0.000
32. 0.000
33. 0.000
34. 0.000
35. 0.000
36. 0.000
37. 0.000
38. 0.000
39. 0.000
40. 0.000

R.A. : 0.050
DEC. : 45.500
R.A. : 0.000
DEC. : 0.000
TANCE : 0.000
DULUS : 10
VEL. : 0.000

1 (U) : 0.872
2 (U) : 0.283
3 (U) : 0.400
dU : 0.000
U : 0.000

1 (V) : -0.457
2 (V) : 0.175
3 (V) : 0.872
dV : 0.000
V : 0.000

1 (W) : -0.177
2 (W) : 0.943
3 (W) : -0.282
dW : 0.000
W : 0.000

Q

6114

1 0.1 +46 24

+3.2

9911

+3.7 ± 111

29

~~562003~~

8/6.92 15.47

0111

9.25 ± 1.01

9819	9994	} 07/03	
1592	1595		-0069
			088?
			0072

44.55
58 46.1

0092

60 46.2 005.2

137 306

55 45.55

75 96.85

10

1.000
45.488
0.000
0.000
0.000
10
0.000

0.000
0.000
0.000
0.000
0.000
0.000

-0.000
0.000
0.000
0.000
0.000

0.000
0.000
0.000
0.000
0.000

9

DEC.
R.A.
DEC.
STANCE
ODIUS
UEL.

P1 (U)
P2 (U)
P3 (U)
UB
U

P1 (U)
P2 (U)
P3 (U)
UB
U

P1 (U)
P2 (U)
P3 (U)
UB
U

R.A.	:	1.000
DEC.	:	46.400
R.A.	:	0.000
DEC.	:	0.000
STANCE	:	0.000
MODULUS	:	10
VEL.	:	0.000

q1 (U)	:	0.826
q2 (U)	:	0.123
q3 (U)	:	0.551
dp	:	0.000
U	:	0.000

q1 (V)	:	-0.563
q2 (V)	:	0.253
q3 (V)	:	0.787
dp	:	0.000
V	:	0.000

q1 (W)	:	0.043
q2 (W)	:	0.960
q3 (W)	:	-0.278
dp	:	0.000
W	:	0.000

2

+10 194 ~~Ass~~ 64

1 00.2

+01 58

76
38
11
11880

+117 - 34
-10 +10

+107 - 0244

+106 000 Ass 3

+107 - 24

+107 - 012

11444 - 9.78
11.43 to 1.14

0.220
+10 191

9523 9718
2692 - 2357

1096
+0.5
0.0181
3.71

1142
0175

107
-12
3.71
1.54

0.21

28 4475 12.6
28 4476 12.5

92

9.52+77 +25
-2.4 (4)
10.27
5.85
4.4

100.2 L 1 59

$P=0.25$
 $\alpha=0.25$

ADS864

+10194

orbit #3

ASD 19 156

826 478 299

-562075 372

043 476 -874

+17.5 to -11 4 HX plates

+4268 +0068 +4336

-2904 +0105 -2900

+0222 +0068 +0240

+0072 +004
+1
+073
+003
1013

9.52
10.27
5.85
4.4

+108 +0104 +000
+108 +004 +004
+108 +007

77P.

+333

-21.5

+108 +002 ~

+108 +002 1074 ✓
-0112

9972 992 ✓
1598 1223

-47
0113

Σ mms

175 = 197
473

11

R.A. :
DEL. :
M. R.A. :
M. DEL. :
DISTANCE :
MODULUS :
D. VEL. :

P1 (U) :
P2 (U) :
P3 (U) :
DU :
U :

P1 (U) :
P2 (U) :
P3 (U) :
DU :
U :

P1 (U) :
P2 (U) :
P3 (U) :

R.A. : 1.000
 DEC. : 2.000
 1. R.A. : 107.000
 4. DEC. : -12.000
 DISTANCE : 3.700
 MODULUS : 55
 D. VEL. : -2.400

q1 (U) : 0.826
 q2 (U) : 0.473
 q3 (U) : 0.307
 DU : 391.605
 U : 20.783

q1 (V) : -0.563
 q2 (V) : 0.732
 q3 (V) : 0.385
 DV : -326.740
 V : -18.880

q1 (W) : 0.043
 q2 (W) : 0.491
 q3 (W) : -0.491

25/10/21

778840 / 141 49 08

540
15.10
199.9

5896

540 0147

127.43

4/1/11

48.94 0.553

9794		4216
2463		1000

5996

0277

43.8 486 7

12

4.55
1.55

4.9 (2)

33.8 -30 10 50 +5, 2

esol.

5.67

+099 1044 6-6

407

6.0

5:67 +0.31 +107 +035 ✓

7.1

+102 +040

15.0 25

+0082 +043

9816 9651

106 035

+00845 +0434

1595 2618

1096

7.112 +040

+1186 +855

9803 9690 1114

+0093 P.H. 2.1

1977

2510 0073

1519

4.50 may

7.50

9210

113 036

15.7 28.45
15.7 28.15 / 3.0

9.11

398 917 - 502 265 + 102 1040 + 5 - 020 03 166

-041008 093-015-109 475 +4.3 +4 +2

488244 941
408
416

0073 +044
+035

-5 +42 +11

012

49495
5681

4627 +11 268 49.0
4657 4888

4-12-22-22

015

48835
3892

4714
4806

4 +34 +5
434 -11 +1

017

50021
4437

11
510
454

-2 +30 +7
429-10 0

50.025

6526

4544

065

4544

3

RAD. VEL. : 0.00
 MODULUS : 10
 DISTANCE : 0.00
 PM. DEC. : 0.000
 PM. R.A. : 0.000
 DEC. # : 30.150
 R.A. : 1.250

d1 (U) : 0.75

u : 0.000
 ub : 0.000
 d2 (U) : 0.100
 d3 (U) : 0.850

v : 0.000
 vb : 0.000
 d3 (V) : -0.130
 d2 (V) : 0.780
 d1 (V) : -0.200

w : 0.000
 wb : 0.000
 p3 (W) : -0.280
 p2 (W) : -0.040
 p1 (W) : 0.100

R.A. : 1.550
 DEC. : -30.150
 R.A. : 0.000
 PM. DEC. : 0.000
 DISTANCE : 10
 MODULUS : 0.00
 RAD. VEL. :

q1 (U) : 0.77

q2 (U) : 0.622
 q3 (U) : 0.108
 dU : 0.000
 U : 0.000

q1 (V) : -0.608
 q2 (V) : 0.782
 q3 (V) : -0.136
 dV : 0.000
 V : 0.000

13

q1 (W) : 0.169
 q2 (W) : -0.040
 q3 (W) : -0.985
 dW : 0.000
 W : 0.000

15 (1)

338 - 30 10 dFY

9406

2463

HR462
201947

5-68 + 34 (-02) C

250

5.67 ⁶¹⁵ .215 .164 .727 2.730 2,4231
¹⁴⁵ 230 654

[m] 205 + 11

[C, J] 684 ¹²⁴ / ¹³⁵

3.50 + 25.2 - 7.5 - 1.0

+ 492 - 145 + 76

119.46
19206
19206

1023 697

8 4385 0141

9802
1979

9280 9280 / 1779
2508 2508 / 0164

A.	:	1.550
C.	:	-30.150
A.	:	0.000
C.	:	0.000
ICE	:	0.000
US	:	10
L.	:	0.000
U)	:	0.775
U)	:	0.622
U)	:	0.108
DU	:	0.000
U	:	0.000
J)	:	-0.608
J)	:	0.782
J)	:	-0.136
JU	:	0.000
V	:	0.000

L 726-8 16 1060 1.70 0.5 43.4 1000 170
 inlet 3. 3 18.2 1 36.5 0.5 43.4 C-272-61 8.30
 583 2.77

3.270 + 565 + 11.7

3.275 + 559 45WD
 3.270 + 559

$P_c = 11.4$

12.00 + 1.321

12.52 + 1.85 20 + 2.8

13.02 + 1.85

3.275 + 583 12.50 + 1.81 + 1.10

10.50
 6.0

26.52
 " 2.06

3.2770 + 6479

3321 562 → 10.00 + 1.70
 33649

0.383 #028

Worby, C.E. A.S. 78, 450

-1497

0.448 F041

Bohall, A.L. 1973

OR

9666 9776
 2503 2105

3340 3281

0.369 2015 sp

376? 436

1970

0.385 007 454

Mearns, J.L.

Apr. 5. 161, 519

-0.564

0.379 022 76

Mueggenbauer, G.

Mentagant

-0.75

0.333 028 A-

Becklin, F.E.

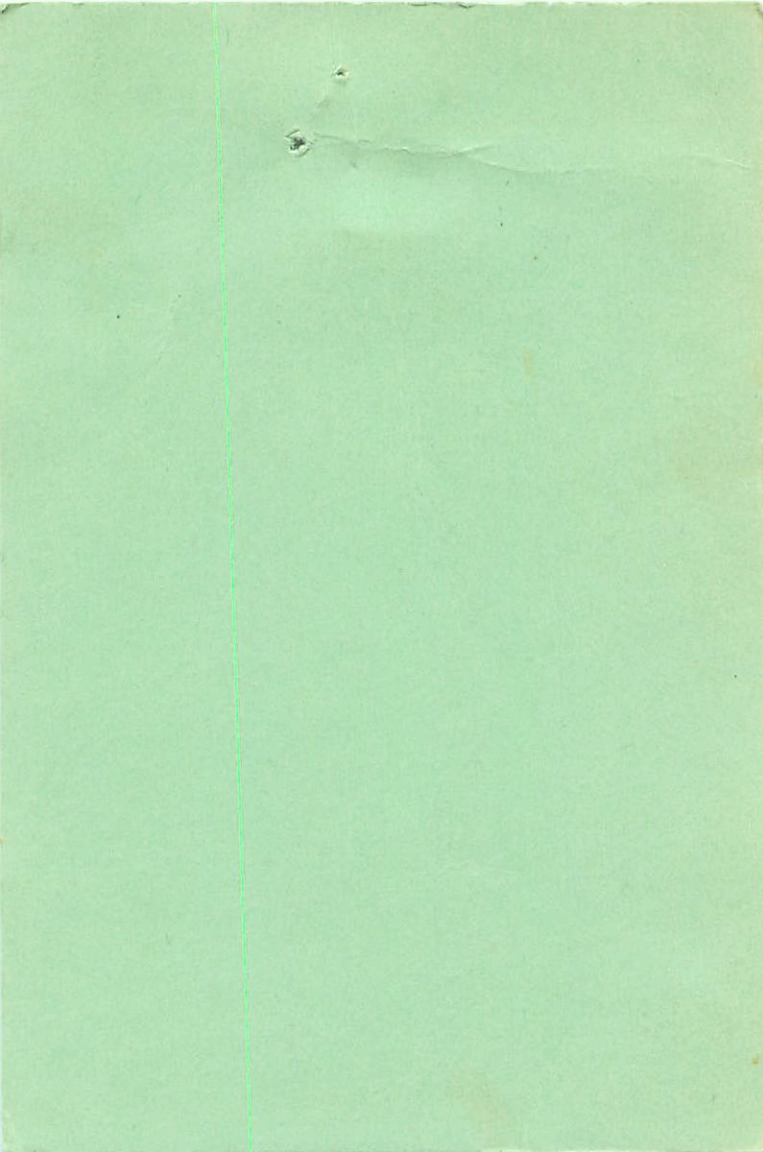
violet because
 they are parallel

0.361 70

$Z_{mass} = 0.27$

2776

of 0.029 !!



3.3274 800

3.355

21 v cut workup

36.4 -18 13

days

AS 18651

12.4 }
12.95 } in

R=2652

62206

+2908

+3.308 ± 0.27 70.570 ± 0.37

385 143 -19 -18

$m, \tau_{m, \tau} > 0.27$

$m, \tau_{m, \tau} = 0.114$

1.350
5.555

+3.271 ± 0.020

+1.548 ± 0.025

2.500
1.942
-1.915
-1.717
-20.1

2.481

+29.5

-17.0
-20.1

975 974
2518 2024

33232

-1676

length

Apr. 10.9

532

3.27 ± 0.55 vdec

$P_{11} = -2.2$

$P_{12} = 0.3577$

$P_{22} = 4.8114$

$\omega_1 = 172.808$

$\omega_2 = 43.202 \times 10^{-4}$

$\omega_3 = 43.202 \times 10^{-4}$

$\tau_1 = 72.5117 \times 10^{-4}$

$\tau_2 = 54.872$

$m, \tau_{m, \tau} = 0.05$

$\pi = 0.360$

3.277
5.777

1.850
17.1 = +10.5

1.850
10.6

3.

2119695 15247

-94732 220572

+2.7443 + 4350

+772 + 587 + 243

-611 + 792 + 026

+177 + 149 - 970

408 913 - 312 950 + 3,205²⁷ + 10,550 + 29.0 - 178 - 9 2.4.64
- 1.334 070 2.985 - 107 - 5.577 N1475 + 226 + 25: + 11

+ 11447 - 3

+44	-19	-15
-----	-----	-----

+ 10 + 51 - 2 . 36

+44	-19	-15
-----	-----	-----

✓

+ 10 + 50 - 3 . 37

+ 11 + 48 - 3 . 39

+ 42 - 19 - 4

1.600
- 18.200
3447.800
583.000
- 2.770
3
11.700

0.770
0.589
0.244
13586.964
40.784

41
J
B
- 0.612
0.791
0.021
- 7311.159
- 20.171

15
0.181
0.166
- 0.969
3264.002
- 2.228

23588

3 43.0 -28 01

22 II

2812124

244 + 146 Standing

AD5274

7894	805	3596	329	3432
6134	5760	0450	-83	0902
		-517		

4250

" 021 cap

(176)

176

772 + 898

0775

4250 1/2

714 + 400

1142

78.70 + 849

2.3

0814

1120 95

1120 95

545

13.8

16

70915

AOS 3135 4 17.0 +16 24 +36.86

5m or 1.8 . 0215

+115 -032 H

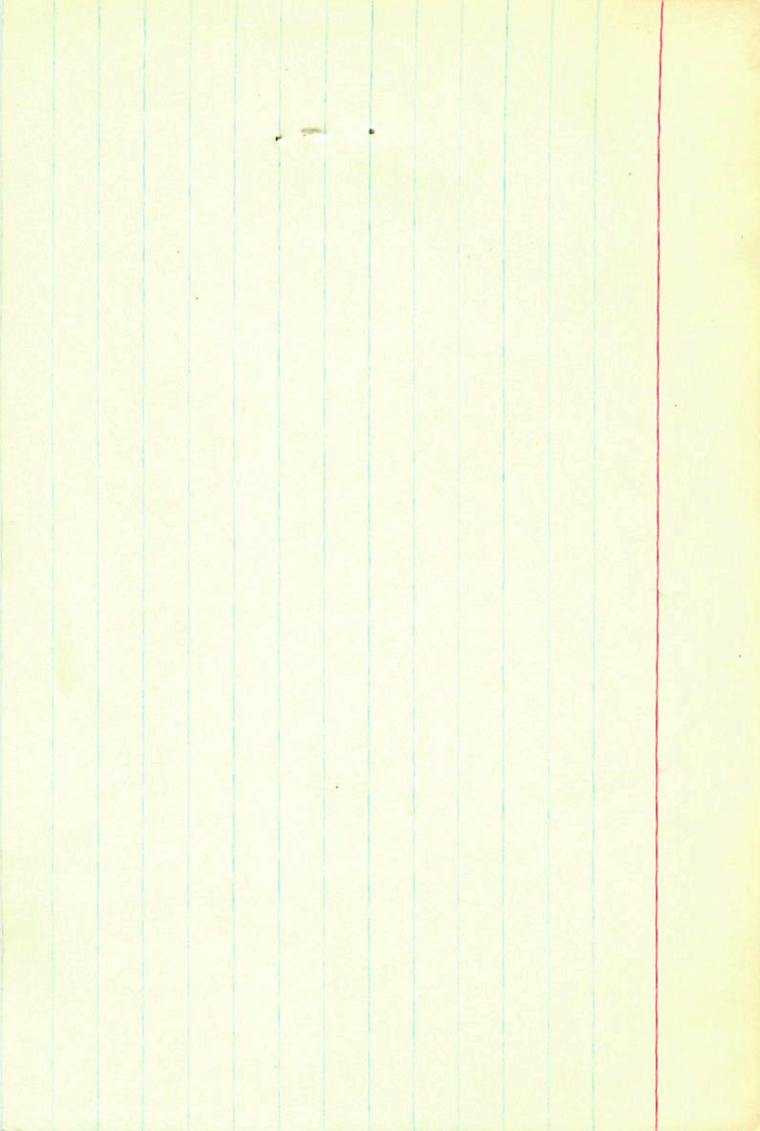
1977.11 01.3 0.403 ± 0.03 0.5

AMS 1.05

Hand Rec sheet still ~~with~~ out, ~~containing~~ and on the basis of the month from the standard observations (see log on 1963, Apr. 5, Sept 8, 12, 15, P=50 yrs to 20.55) still holds well and out in recent years. Observation; the pen is working. Found present work.

5315	9752	+115-31.5	1191	121.77	-36.6
8470	-2215	1864	-0052		
		6089	-705		
			0933		
			3.15		

23.27 1.14 25
 4/14 015.45 027.16 37 0045.16



AB305

+0083±3.5
+0079

27383 4 17.0 24 24 6.9 dF7 +36.88

2490 +0081 -0315 → 1144 +115 -0315

5230 2.596 1897.8 ±00795 -02874 12.73 1893.2

5353 9698 $\frac{432}{463}$
8446 -2440 $\frac{463}{463}$

$+81 -32$
 $+77 -27$

667030

1163 2.731 $\frac{22}{753}$

-1060 $\frac{22}{753}$

1060 37.033
0232 $\frac{25.417}{2.626}$

317 2.187 $\frac{2.626}{2.626}$

8294 $\frac{2.796}{2.796}$
 $\frac{2.796}{2.796}$

0.114 -030

tan $\theta = -3.800$

$\theta =$

$\phi = 1180$

36.9

19354 10377

13.82 $\frac{16}{13.95}$

34.54 1928.25

40.42 $\frac{1033}{14496}$

13.54 $\frac{1033}{13.54}$
 $\frac{11}{13.68}$
-1.22

12.51 1940.02

12.67

34.7 41.5

17

R.A. : 4.300
DEC. : 16.400
R.A. : 0.000
DEC. : 0.000
ANCE : 0.000
ULUS : 10
VEL. : 0.000

1 (U) : 0.315
2 (U) : 0.233
3 (U) : 0.920
dU : 0.000
U : 0.000

1 (V) : -0.639
2 (V) : 0.769
3 (V) : 0.024
dV : 0.000
V : 0.000

q1 (W) : 0.702
q2 (W) : 0.595
q3 (W) : -0.391
dW : 0.000
W : 0.000

A

27641 94 A Sp3 P=4 d in 7 cm cl
ADS 3169 4 19.9 +14 56 +329a

→ 6.95 356 174 479 2128 (1) R=177
02221

255.5 yea 1264 200 325 2.585 on

6.44 56 09

1211 F101
H20 A2A

Hendy M. D. 2760 1012 -028 Wagon 19.88R

71015 -030

7145 2.74

1052 ✓
1110 -011
Sum 288

WAT 62

5270 9834
1385 0173
7498 -1813

2.5 1065
0305 9086

BC 1

113 54.54 214

3.40

18

+150621

sm 20.81

645 314 157 471 2638

27991

+15 50 (240) (400)

5356

1391

85

4 Wheel 22.7

max letter: 225,932-381/-027

+0736 -0170 26

+0.20

+00758 -0161 → 60

+55.9

Provisional letter Apr 5 1989, 6111

+3611

+00743 -0143 → F104

new orbit?

fehle A 585 940

1072

10462

-28.83

108 -016

Billman 1551 AT 7111 1557

10016

24

10774
10727

[M] [S]

257 408

5124 9652
8588 -2212

1086

+0109

+105

-04

-020 (Arbitary)

5124 9646 120 0203

BM

+0075-030

8588 -2447

3257

1081

39 45.9 22.1425 +0.13

108-030

88

200

0900-

1033

1075-018

19

99-61+

63028+

14-81+

678,89+

0.000	:	M
0.000	:	ON
-0.379	:	P3 (M)
0.289	:	P2 (M)
0.710	:	P1 (M)
0.000	:	U
0.000	:	U
0.000	:	P3
0.000	:	P2 (U)
0.240	:	P2 (U)
0.294	:	P1 (U)
0.000	:	D. VELL
0.000	:	MODULUS
10	:	ISTANCE
0.000	:	M. DEC
0.000	:	M. R.A.
0.000	:	DEC
0.000	:	R.A.



R.A.	:	4.400
DEC.	:	15.850
R.A.	:	0.000
DEC.	:	0.000
STANCE	:	0.000
MODULUS	:	10
VEL.	:	0.000

q1 (U)	:	0.294
q2 (U)	:	0.240
q3 (U)	:	0.925
MP	:	0.000
U	:	0.000

q1 (V)	:	-0.633
q2 (V)	:	0.774
q3 (V)	:	0.000
MP	:	0.000
V	:	0.000

q1 (W)	:	0.716
q2 (W)	:	0.586
q3 (W)	:	-0.379
MP	:	0.000
W	:	0.000

19

405 3210

(1858)

22.9 + 18 45-

+46.07

27589

131

Order
Seelye number

.134 - 030 20

~~165~~ → 19

1-02

111 -035

p=22.6 2.54 +0.434 207 432

111.5 -070

a=0.237 429

(337) (845)

5202-9526
8541 -3012

1153

1159

11087

233.75

2208 ± 1.22

~~10446~~
~~045-04005~~
0228

40 45.2 23.3

~~947~~ 912 411 321 947 134 -030 +41.0 -010 +13 -133 ✓

-122 +009 055 -004 -559 303 +35.8 +16 +35 .0189

-14 +51 +6

+46 -26 +7

-12 +50 +7

1021

+45 -23 +5

20

325
6-2 545 5
786
4 26.1
+0069=49
+0072
+16 03-019

28003
+60722 -02222
80744 -02206
10003
106 106 -030
106 106 -032

26 7,919
60730 -0210
1585
334
311
1901.6
0224
3.24
2 59.52
1.98
2.50

try 1052
342
106022
+67 -38
+70 -16
3
1.1 1925.0 48
-00
1.02

Δm20.5
but A in 7.816
7.810
7.806
2.431 90.28
20.86 0.91
0.44
154002

no odd data around
quad
5.725
-0.59
10.07
2.42
2.06
1.04
1924.0

24 42.58
1 25.58
1 1.14
20
16.6 10.457
15.9 46.56
10 11
3
0
10.6 1.08 278

110
0.0229
3.28
-0.0229
-0.070

5028 9655
8888 = 2003

1901.7
310

48
327

1571

1924.0

48
958

342-177 387 2136

313

205
108
435

345
246
582

1991 Special for M
Pub. for M
P.B. 21.21

908
~~104~~
535

735
039

398
381

21

4.429

8.858

8.858

8.858

8.858

8.858

8.858

8.858

8.858

8.858

8.858

8.858

8.858

8.858

DEC.

DEC.

DEC.

ANCE

ULUS

VEL.

(U)

(U)

(U)

BU

U

U

U

U

U

U

U

U

U

U

U

U

U

R.A. :
DEC. : 4.450
R.A. : 16.050
DEC. : 0.000
ANCE : 0.000
ULUS : 0.000
VEL. : 10
 : 0.000

1 (U) :
2 (U) : 0.283
3 (U) : 0.236
NP : 0.930
U : 0.000
 : 0.000

1 (V) :
2 (V) : -0.630
3 (V) : 0.776
NP : -0.005
U : 0.000
 : 0.000

17 (M) :
28 (M) :

8.48 71 45.14
10.24 1.5 7.44

4 14.8 416 44

207.120
V B 32

116.177
416.577
T096-026 A43 ^{mod} 1.74 T0.50

11307 ~ 10.35

27130
+117 -24 y
+2 +5
-2 +4

4213 06.18

41.5

150-114

+117 -017
096 -020

22.1 42 45.36

1181 1148

2475 0495
8330 2472

41.9 42 46.4

0023 / 0072
T0.91
0225 8.24

3/10/81 (54)

484

484

410

57

2250

12.32 + 10.10

21.18

57.605 - 5.72

20.5 + 1.42

4089	9884	8879
9264	- 5151	- 0849
6804	5151	6400

2251 11 1838

F

22