

10-1153

1380 + 1.09

1383 + 1.19 + 0.65 13 Apr 23

13.22 + 0.49 5 Apr 22

13.86 + 0.51 20 Apr 22

13.24 + 0.50

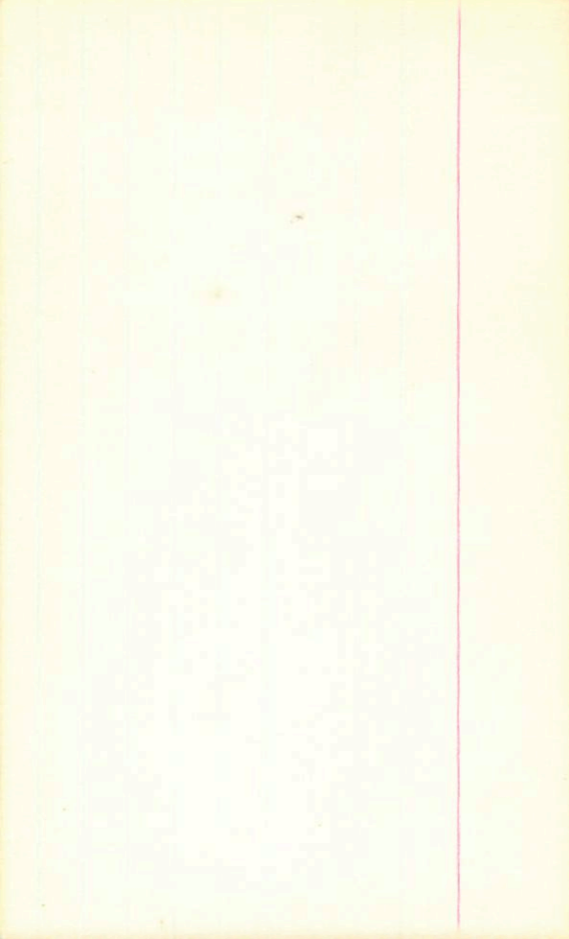


10-IV 55

R-94 + 123

13.21 + 1.12 = 10.81 13Apr 73

12.30 + 0.55 5Apr 72  
12.35 + 0.56 20Apr 72  
12.34 10.55



A-III 56      13.89 + 108

13.88 + 1.19 + 0.83      13 Apr 73

13.20      +0.47      5 July 72  
13.45      +0.51      20 Aug 72  
13.32      +0.49

10-III 85

12.76 + 137

12.24

+ 0.555

20 Aug 72

12.88

+ 1.38  
+ 0.5504  
13 Aug 72

12.10

+ 0.59

5 Aug 72

12.14

+ 0.57

23 Aug 72

12.16

+ 0.57



van

IV 44

11.57 + 1.03

11.62 + 1.18 + 0.815 21 Aug 72  
11.59 + 1.15 + 0.77 3 Aug 72  
11.56 + 1.17 + 0.79 5 Aug 72  
11.62 + 1.165 + 0.80 17 Aug 72

11.06 + 0.50 3 Aug 72  
11.09 + 0.49 20 Aug 72  
11.03 + 0.435 23 Aug 72  
11.13 + 0.505 4 Aug 72



M10

6.12

Van 422

over

189

211

10.31	11.52	+0.965	+0.43	10:15 PM 21 July 72	11.28	+0.425	8:45 PM 21 July 72
11.15	11.76	+0.98	+0.50	9:35 PM 25 July 72	11.13	+0.355	9:38 PM 22 July 72
11.49	12.25	+0.96	+0.77	9:10 PM 27 July 72	11.25	+0.435	9:58 PM 23 July 72
11.45	12.11	+0.71	+0.17	8:50 PM 3 Aug 72	11.47	+0.33	4 Aug 72 9:10
10.93	11.48	+0.73	+0.305	10:20 PM 7 Aug 72	12.11	+0.425	20 Aug 72 9:55
10.35	12.57	+1.055	+0.55	8:20 PM 17 Aug 72	12.08	+0.48	18 Aug 72 9:10
	<del>12.57</del>	<del>+1.078</del>					

744	11.76	+0.935	+0.535	8:25 AM	716	11.24	+0.435	13 Apr 73	2:45 AM
14 Apr 73	11.07	+0.895	+0.505	2:05 AM	.558	11.83	+0.38	3:30 AM	
22 Apr	11.85	+0.91	+0.39	2 AM 756	744	11.16	+0.345	3:20 AM 14 Apr 73	
3 Apr 73	12.83	+0.58	+0.56	00:50 AM .876	.751	11.47	+0.48	2:30 AM 73	
9 Apr	12.46	+0.89	+0.34	00:30 AM .902	.56	11.19	+0.365	9:05 PM	
23 Apr	12.63	+0.97	+0.38	10:00 PM .723	.555	11.05	+0.385	11:30 PM	
3 May	12.25	+0.865	+0.29	8:30 PM 544 73	.551	11.29	+0.35	9:40 PM	
7 May	12.31	+0.865	+0.29	8:30 PM 544 73	.551	11.29	+0.35	3:50 PM 73	
17 May	12.55	+0.78	+0.21	2:40 PM	.444	11.91	+0.42	7:55 PM	
19 25	12.25				.577	11.86	+0.395	7:15 PM 16 Sep 73	

Varas

12.67 +0.76 10.25 AM 2 July 72  
12.10 +0.89 +0.345 5:45 PM 25 July 72  
~~12.59 +1.15 +1.17 9:00 AM 3 Aug 72~~  
12.90 +0.76 +0.265 9:00 AM 3 Aug 72  
13.06 +0.855 +0.44 8:35 PM 17 Aug 72

12.24 +0.385 5:50 PM  
5 July 72

+0.845

12.31 +0.38 9:25 PM  
22 July 72  
12.45 +0.40 10:25 PM  
23 July 72  
12.50 +0.40 9:40 PM  
24 Aug 72  
12.46 +0.38 8:00 PM 25 Aug 72  
12.72 +0.415 9:25 PM 18 Aug 72  
~~13.37 +0.335 8:00 PM 15 Aug 72~~

12.65 +0.77 +0.355 3:30 AM 14 Aug 73  
12.54 +0.71 +0.41 1:40 AM 22 Aug 73  
12.52 +0.88 +0.54 01:00 AM 3 Aug 73  
12.84 +0.87 +0.47 01:40 AM 4 Aug 73  
12.73 +0.77 +0.36 10:00 PM 03 Aug 73  
12.72 +0.71 +0.31 8:40 " 31 Aug 73  
12.67 +0.78 +0.40 8:50 " 17 Sep 73

12.34 +0.365 13 Aug 73  
2:30 AM

12.18 +0.38 3:20 AM  
22 Aug 73

12.37 +0.36 2:35 AM  
14 Aug 73

~~12.22~~ +0.37 2:25 AM  
23 Aug 73

12.67 +0.345 9:10 PM  
25 Aug 73

12.56 +0.365 24 Aug 73

9:40 PM 12.72 +0.385 3 Sep 73

7:30 AM 12.24 +0.37 18 Sep 73

8:00 AM 12.37 +0.335 16 Sep 73

10-IV 54

13.34 + 1.30

12.49 + 1.25 + 0.76 13 April

12.79 + 0.575 5 July 72  
12.83 + 0.575 22 July 72  
12.81 + 0.575

54439

>

07

12

-11

45

7.68

405

Ma 001

7.78 - 588 726 - 860

7.70 - 555 741 - 867

7.74 - 592 734 - 864

2.121 121.2

2.121 16 "

2.121 141/178 40"

102

20

32

2.542

2.121

7.8

39.5  
11.75

5117-10.22

Ravin  
52942

Again ✓

7 01 35 -11 25 8.14 83m

8.22	-538	754	-781	2.144	20 Jun 78 36"
8.12	-553	765	-811	2.156	20 " " "
8.41	-532	759	-727	2.155	3 7658 "
8.10	-537	758	-794	2.144	5 " " 40"

$\checkmark$   
 $11^0 17 61$      $02$      $45$      $-11$      $33$      $9.28 + 0.06 - 0.57$   
 $11^0 17 63$      $02$      $50$      $-11$      $32.5$      $8.57 + 0.4 - 0.69$

$(10)$      $5$      $0$      $0$      $0$      $0$   
 $0$      $0$      $0$      $0$      $0$      $0$

$2.183$      $21.878$      $60$   
 $2.183$      $20$      $60$   
 $2.183$      $20$      $60$   
 $2.183$      $20$      $60$

$8.33$      $-6.03$      $7.90$      $-6.35$   
 $8.33$      $-6.06$      $7.74$      $-6.23$   
 $8.33$      $-6.04$      $7.77$      $-6.20$

$8.57$      $-6.23$      $7.57$      $-8.16$      $2.144$      $20$      $20$      $60$   
 $8.57$      $-6.26$      $7.66$      $-8.23$      $2.160$      $21$      $10$   
 $8.56$      $-6.24$      $7.62$      $-8.20$



1761 C 12.13 -279455 -256 202878 40"

1761 B 11.62 -489737 -214 2.227 202175 60"

-1501794

51961 ✓ 6 57 55 70 51 9.57141-50

✓

9.63 -555 783 -629 2.184207860''

9.63 -547 780 -630 2.19521''

9.63 -551 782 -630 2.190 (2)

-120 1443

55562

7

11 55

-12

33.5

9.02-0.01-0.00

✓

$$9.03 \quad -622-774 \quad -687$$

20255604

$$9.04 \quad -640 \quad 762 \quad -664$$

21 "

$$\begin{array}{r} 9.04 \quad -631 \quad 768 \\ \hline -678 \end{array}$$

$$\begin{array}{r} 2.175 \\ \hline 2.183 \end{array}$$

54574 07 07 50 -11 27

8.73 825

VVV

147  
49

8.70 -643 743-767 2.154 32875 364

8.76 -639 770 -735 2.154 5" " 40"

8.75 -635 770 -745 2.151 8" " "

8.77 -639 775 -749 2.153 (3)

+053 +058 151 2.630

55721 07 10.05 -12 28 965 024

✓ ✓ ✓

8.72 - 647 790 - 733 2.167 32878 36"

8.60 - 662 794 - 720 2.170 5" " 40"

8.65 - 663 804 - 724 2.168 8" " "

8.66 - 658 796 - 727 (3) 2.168

+ 033 077 174 2.648 (3)

Revin

53623 7 04 10 12 17 7.9382~~2~~

Hβ<sub>min</sub>

7.99	680	774	912	2.132	20 Jan 78	36"
8.02	684	774	923	2300	21	" "
<u>8.00</u>	<u>682</u>	774	<u>918</u>			

53756 7 04 36 -12 47 7.36-08

7.36 -689 973 -808 2.129 14 Jan 75

7.50 -681 770 -801 2.147 16 Jun 74

7.43 -684 772 -804 2.138 E(304)  
+11

57 [205] -3.21  
55 93 6.95  
94 2.612

(10.2)

54493 07 07 30 -12 50 2.20 80E

✓✓✓

58

20000?

7.22 612 776 -838

2.124 32875

7.20 617 747 -841

2.124 5" 78 40"

7.20 604 735 -838

2.130 7" " "

7.20 611 753 -839

2.128

+82 38 58 2.600

514740



54306

off 640 117  
742

vine

sp with per mi

1181901 ✓ 67 06 42 -11 52 178 241

8.80	6279	+806	-721	2.161	26 Jan 75
8.82	632	766	-265	2.161	17 Feb 78 401
8.77	628	743	-267	2.167	5 Jan 75
8.79	625	761	-332	2.145	26 Jan 75
8.80	623	797	-664	2.152	21 Feb 78 36
8.82	635	777	-715	2.163	3 Jan 76
8.82	625	769	-640	2.139	18 Jan 76
8.86	636	765	-231	2.185	14 Jan 76
8.81	613	774	-675	2.150	16 Jan 75
8.78	633	768	-744	2.187	2.160
8.81	630	770	-750	2.160	2.160

~~-320577~~

01

27

40

-32

10

84

FS

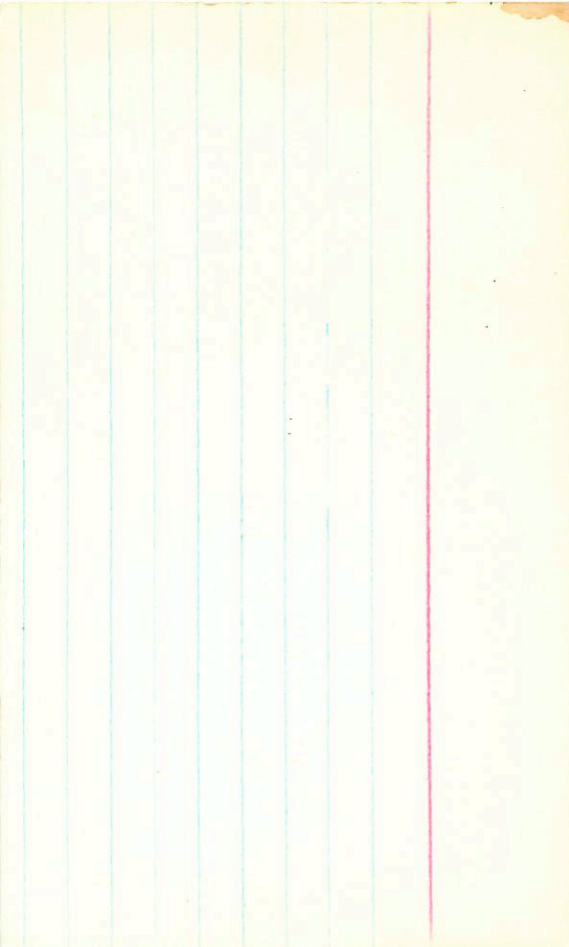
1. More

$$9.46 + 97 + 70$$

2353-3

$$\begin{array}{r} 9.45 \quad 719 \\ 9.46 \quad 1119 \\ 9.45 \quad 1078 \\ \hline 9.45 \quad 1082 \end{array} \quad \begin{array}{r} -452 \\ -456 \\ -452 \\ \hline -450 \end{array} \quad \begin{array}{r} 258076 \\ 250000 \\ 160000 \\ \hline 258076 \end{array}$$

$$602 \quad 340 \quad 460 \quad 2.308 \quad \textcircled{3}$$



075 090 956

9.15-02-80

2353-2

13.0 6' - 10 10

06 -07 +78 2.77432

9.18 -687 +794 -110 2.247 26 Jan 75

9.15 -696 +792 -135 2.250 27 Jan 75

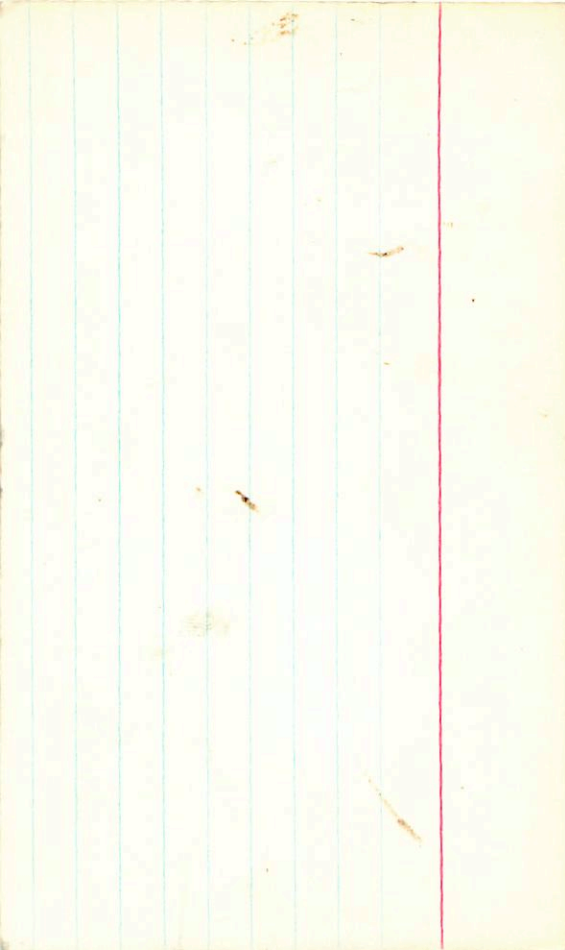
9.20 -709 +939 -116 2.238 28 Jan 74

9.18 -697 +810 -120 2.244

→ 9.18 +042 +082 +764 2.733

9.18 -641 796 -738 2.235

9.18 51 77 767 2.732 (3)



117 402  
-10 836 126

2353-6 +01 +115 +605 2.71

9.73-01-25

9.81 -730 +849 -276 2.234 26 Jan 75

9.84 -764 +853 -274 2.229 27 Jan 75

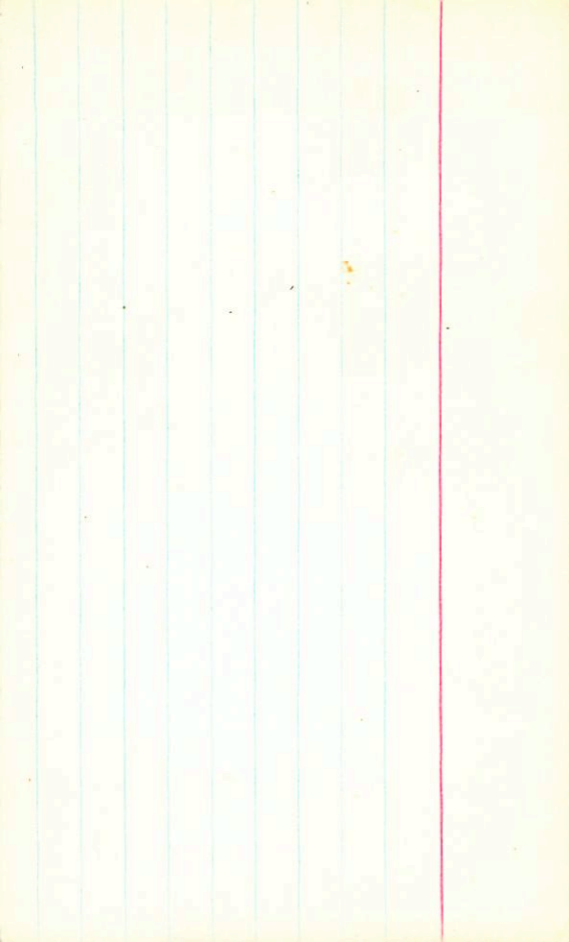
9.86 -782 +850 (-209) 2.236 29 Jan 75

9.84 -742 +851 -275 2.233

→ 9.84 -607 +118 +601 2.721

9.84 -686 836 ~~-280~~ 2.224

9.84 4 114 603 2.719 (3)





-0.1 233 931  
200

2353-y

9.88-11-16

1.165  
205

235

-075 +245 +69 2.295

9.88 -809 +996 -152 2.314 26 Jan 75

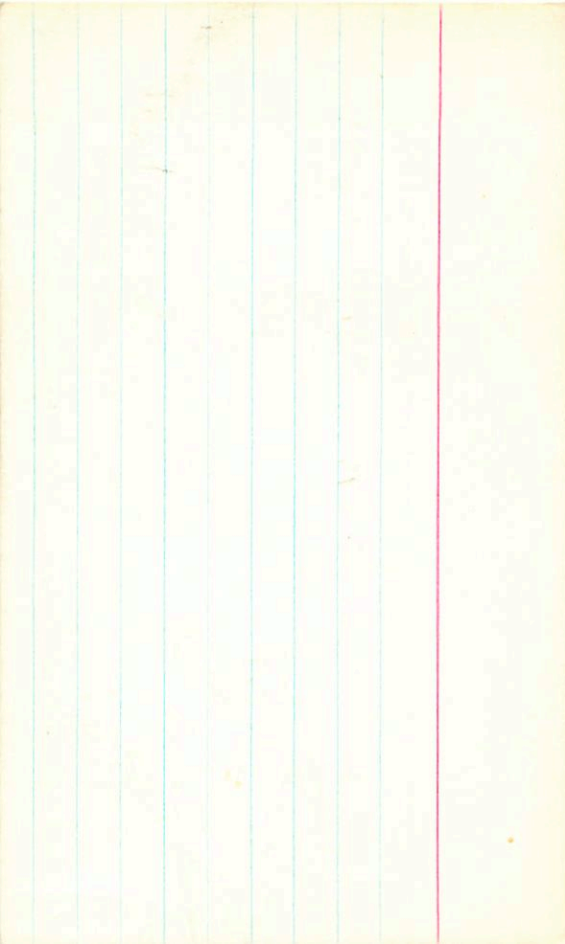
9.88 -827 +1002 -150 2.299 28 Jan 75

9.88 -818 +999 -171 2307

→ 9.88 -889 +249 +716 2.901

9.88 -762 985 -217 2.258

9.88 -766 251 700 2.907 (2)



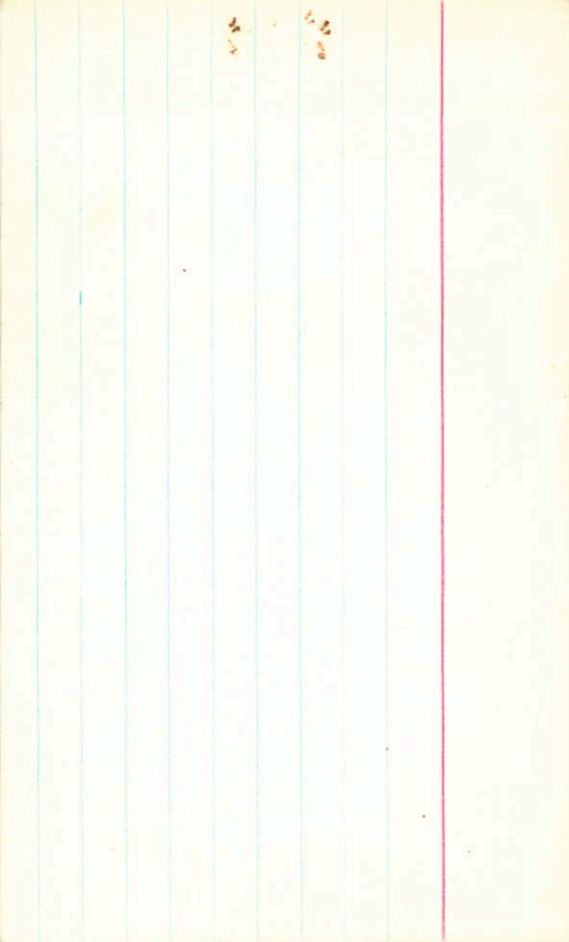
2353-0  
 -2226 097381  
 174 58  
 (55) 52  
 198 198  
 381 381  
 559 559

404 +07 43732 246

882 -694 +794 -491 2.182 26 Jan 75  
 883 -737 +813 -487 2.179 27 Jan 75  
 885 -727 +800 -454 2.182 28 Jan 75

883 -719 +813 -477 2.191  
 → 883 +018 +084 +385 2.665  
 883 -663 599 -432 2.172

883 28 80 396 2.657 (3)



$-1.4$      $0.94$   $706$      $2.0$   $4.5$      $5.01$      $A+B$   
 $2353-A$      $(89)$      $105$      $0.7$      $10$      $9.32$      $-01-30$

$+0.9$      $0.95$      $+6.8$      $2.69$

$9.39$      $-6.90$      $+825$      $(-201)$      $2.220$      $26 \text{ Jan } 75$

$9.38$      $-6.94$      $+787$      $(-139)$      $2.226$      $27 \text{ Jan } 75$

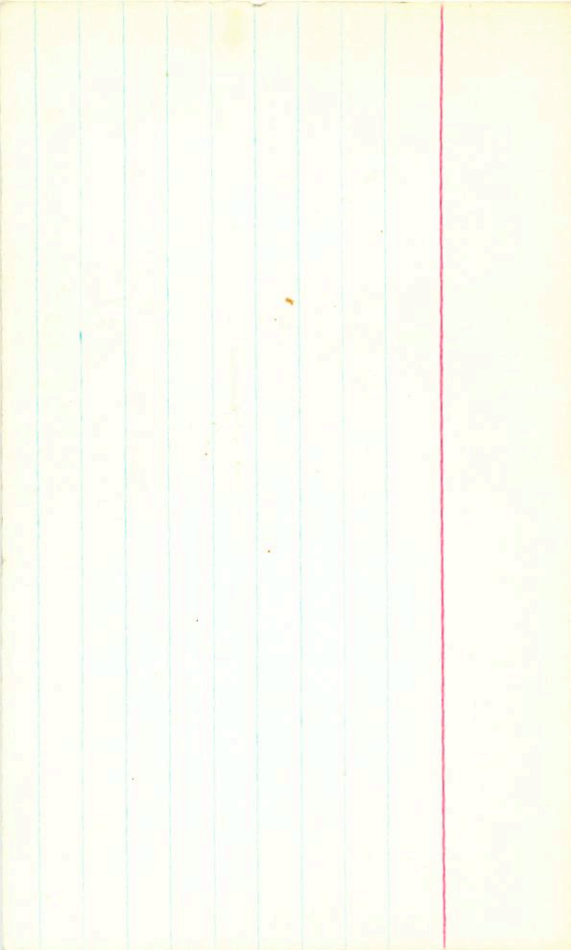
$9.42$      $-7.06$      $+833$      $(-161)$      $2.215$      $28 \text{ Jan } 75$

$9.40$      $-6.97$      $+815$      $(-167)$      $2.220$

$\rightarrow 9.40$      $+0.42$      $+0.86$      $+7.14$      $2.686$

$9.40$      $-6.41$      $801$      $(-122)$      $2.211$

$9.40$      $51$      $82$      $719$      $2.703$      $(3)$



2353-100

10.57 - 626 830 - 223 2.270 14 Jan 78

10.54 - 639 854 - 220 2.290 1st " "

10.86 - 632 841 - ~~225~~ 2.280

060 119 692 2.782

2350-101

$$\begin{array}{r} 10.95 - 647 \quad 814 \quad 231 \quad 2.238 \quad 14 \text{ Jan } 75 \text{ PM} \\ \underline{16.89} \quad \underline{644} \quad 827 \quad \underline{244} \quad 2.238 \quad 16 \text{ " " " } \\ 10.52 \quad \underline{646} \quad 820 \quad \underline{238} \quad 2.238 \quad \textcircled{2} \end{array}$$

$$57 \quad 59 \quad 675 \quad 2.732$$



2353-B

11.49 +03-09

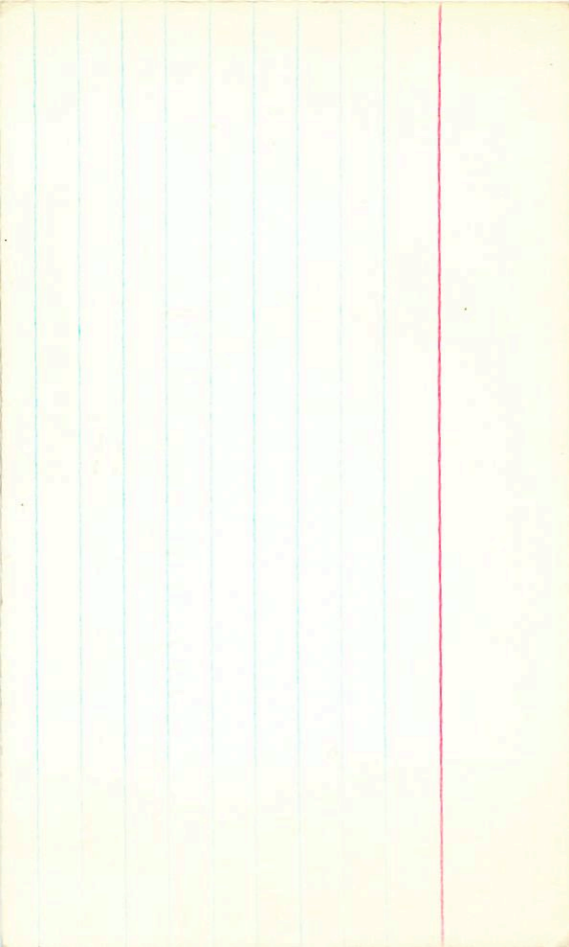
11.47 -709 +870 +062 2.359 27 June 75  
→ 11.47 +029 +135 +958 2.957

11.47 -653 856 ~~708~~ (2.350) 27 June 75  
147 61 +219 ~~27 June 76~~

11.43 -660 860 +27 2.306 27 June 76

11.42 -634 845 +2 2.308 29 "

11.44 -649 853 +20 2.307 (3)



D

11.47 + 0.3 - 0.5

11.56 → 17 + 864 + 0.81 2.381 27 Jan 75

→ 11.56 + 0.20 + 130 + 980 2.781

136 + 918

11.56 - 6.651 850 12.6 - 2.372 27 Jan 75

~~11.48~~

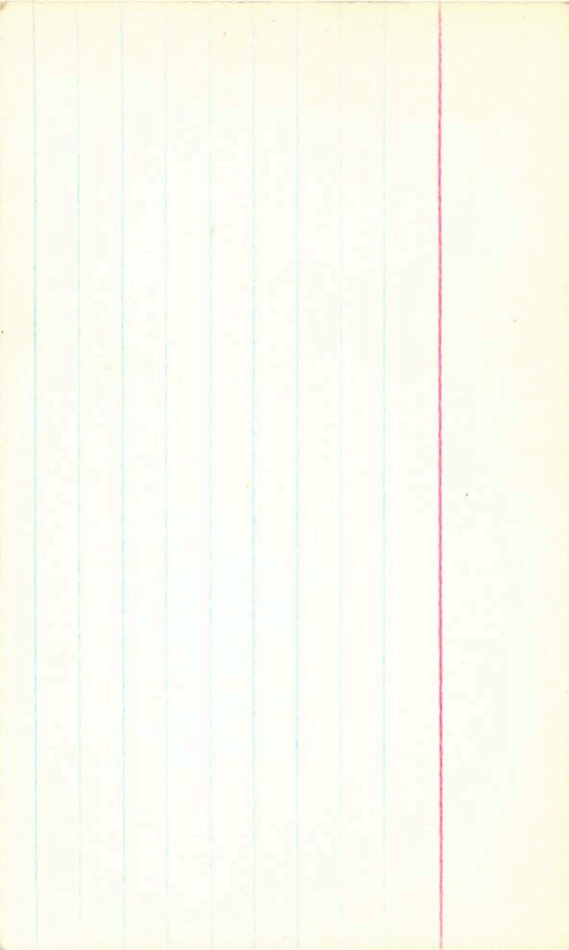
~~11.56 - 5.55 836 + 93~~

11.56 - 6.61 850 + 48 2.872 27 Jan 75

11.48 - 6.48 969 + 33 2.346 28 Dec 76

11.56 - 6.51 901 - 15 2.358 29 "

11.52 - 6.53 873 + 22 2.358



Van?

54025      07 05 50 -11 17      2.60 88

✓✓✓

144

70

2.71 - 670 768 - 827      2.107      32878 30"

2.62 - 640 754 - 874      2.137      5" " 40"

2.63 - 641 748 - 849      2.126      7" " 40"

2.62 - 645 757 - 848

2.123

2.130

(0.15)

+047 444 049 202

100  
260

W Cma -19 11.74 -502816-116 2.330 2.341 152678 60"

12.22 -649 929 -221 16 (p. 71)

11.74 -565 826 -152 2.351 152678 60"

11.75 -572 827 -121 2.321 16 " " "

11.73 -581 836 -117 2.326 17 " " "

11.74 -570 826 -125 2.328 (5)

-20 11.98 -488 858 +46 2.375 2.345 212478 60"  
2.348 185478 40"

296 12.01 -506 873 -9 2.360 152678 60"

12.02 -520 869 +27 2.368 16 " "

11.98 -478 833 -17 2.359 17 " "

12.00 -500 856 +12 2.364 (5)

Wcma - 21      7 07.50      -11      50

11.27	502	82	19	-140	2.312	292678	60"
11.22	503	813	-157		2.305	197615	60"
11.26	509	825	-146		2.305	14	40"
11.29	532	853	-168		2.305	16	" "
11.29	505	820	-153		2.306	17	" "
194	99	766			2.813		

727  
314  
10

$F(1+2x)$

10.3  
10.3  
10.0  
10.0

Racin

~~52329A 6 59 15 -8 50 862 864~~

C=1115

8.66 -739 857 -391

8.67 -738 842 -381

8.66 -738 850 -386

-050 127 526 (800)

2.255 20 Jan 78 86"

2.252 21 " " "

2.256

2.753

10 8.6  
-0.25  
8.45

B(16-7) -10.015



Percent cm

51479

6 56

00 -10

14

8.4286

8.45 -696 841 -357

8.47 -699 836 -360

8.46 -698 839 -360

-009 116 552

[290]

2.256 20 Jan 78 36"

2.252 21 " "

2.254

2.251

$v_0$  9.2

$m_v$  -0.25  
8.45

E(1-2) +0.55

53691 ✓ 1859  
3981 ✓

04 30

- 11 07

9.26-01-64

9.40 - 645 788-723 2.185 20 21 78 60"  
9.42 - 650 787-710 2.184 21 " " "  
9.45 - 649 788-710 2.184 ②

27  
22  
25  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60  
61  
62  
63  
64  
65  
66  
67  
68  
69  
70  
71  
72  
73  
74  
75  
76  
77  
78  
79  
80  
81  
82  
83  
84  
85  
86  
87  
88  
89  
90  
91  
92  
93  
94  
95  
96  
97  
98  
99  
100

2353-X

9.39 +0.02 -0.32 5 Mar 64 200"

9.32 -0.005 -0.20 200" 9 Nov 26 H

9.43 0.00 -0.28 100" 37 Feb 62

9.43 +0.01 -0.25 " 5 " "

9.42 +0.01 -0.23 " 10 Mar "

9.41 0.00 -0.28 " 27 Nov "

9.39 +0.02 -0.28 " 28 " "

9.43 0.00 -0.76 " 29 " "

9.34 0.00 -0.27 " 20 Feb 63

9.36 0.00 -0.27 " 23 " " 10