

05:10 ~~mm~~ 9.42 -135 1015-2342.162 (9.02-9.62) 5.2

76ar ✓ 10 35 35 -60 54.5 9.2-10.4

Woolly like  
Chants

✓ 908 -246 946 +3 2.178 07:30 28 Jan 81

904 -271 927 +48 2.181 06:50 6 Mar

9.26 -163 956 -118 2.157 06:20 7 "

9.21 -184 949 -98 2.164 06:35 12 Mar

(182)  
20 March

9.61 -122 1034 -261 2.155 08:30 16 Jan 81

(+) (+) 9.05 -267 929 +56 2.185 08:15 17 Jan 81

(+) (+) 9.20 -207 952 -52 2.166 07:45 18 Jan 81

Downy

9.68 -94 1035 -274 2.153 08:00 21 Jan 81

9.74 -217 946 -18 2.175 08:00 23 Jan 81

9.36 -142 956 -166 2.156 08:25 24 Jan 81  
9.52 -102 1027 -250 2.142 07:50 25 "



Aqlan (3) 9.94 -94 1101 -306 06:45 6/2/81  
 9.10 -49 1126 -365 2134 05:15 7. " "  
 8.74 -211 990 -89 - 05:30 13 Mar 81  
 8.70 -178 1014 180 - 03:35 4 Apr 81  
 9.07 -50 1118 349 2.142 00:45 14 June 81 (6)  
 9.20 -39 1137 482 2.135 00:05 15 June 81 (6)  
 9.15 -77 1095 -336 2.138 23:40 15 June 81  
 8.46 +0.303 02:05 11/7/81

9.56 -232 964 -59 2.166 23:55 29 June 81 8.31 +0.296 01:35 12/7/81  
 8.73 -128 1049 -248 2.137 23:55 11 July 81 8.42 +0.337 04:20 15/7/81  
 8.47 -72 1095 -326 2.142 23:25 2 July 81  
 9.14 -39 1131 -382 2.142 23:30 3 July 81  
 9.50 -258 1015 -224 2.158 23:25 6 July 81

July 28 - Red

90

Aglan (cont)

887-178	1026	-207	2158	00:15	31 June 60 <sup>4</sup>
915-572	1129	-403	-	00:55	29 June 80
970-2144	1002	-103	2159	00:05	2 July 80
856-247	977	-47	2168	00:20	3 July 80
877-209	1001	-106	-	07:05	28 July 80
858-229	964	-34	2166	07:20	2 Aug 80
883-130	1039	-211	2148	07:35	2 Aug 80
					2-1420



Aqlan

10 20 40 60 58.5

Real

~~16 July 81~~

— +0.312 23:20 July 16 81  
8.42 +0.314 23:05 July 17 81  
7.27 +0.279 23:05 July 18 81

~~19 July 81~~

8.24 +0.304 23:10 19 July 81  
8.36 +0.337 07:35 23 Jan 82  
9.51 +0.356 07:55 14 Jan 82

8.89 -96 1066-264 2.143 08:10 25 Dec 81

9.06 -60 1128-337 2.140 07:55 21 Dec 81



→ Feb 5 1984 84  $\Delta$  Aug 20, 21, 22

→ 15 Dec 82

ER on

11 08 50 -58 43.5

23 Dec 82

MARUIT  
4.5

May 3, 4

6.93	-209	1034	-262	2.140	06:25	20 Feb 80
6.85	-170	1050	-253	2.144	06:40	3 Mar 80
6.97	-139	1090	-300	2.134	06:00	4 Mar 80
7.05	-171	1095	-304	2.137	07:20	6 Mar
6.80	-252	1009	-179	2.154	06:45	7 Mar
6.58	-290	994	-27	2.166	06:10	8 "
6.71	-226	998	-135	2.153	06:00	9 "
7.14	-133	1092	-325	2.137	07:58	16 Feb 81
7.03	-190	1053	-28	2.149	05:00	4 Feb 81
6.78	-194	1056	-244	2.161	00:10	30 June 82

20  
20  
1/2 2 July



ERlan 5 July 83 ~~5 Jan 83, 6 Jan 83, 7 Jan 83~~ 83 26 May, 2 June 83  
 10 June, 14 June

	6.78	-205	1045	-236	2.144	07:50	24 June 83
→	6.63	-293	941	+1	2.188	08:00	6 Jan 83
	6.87	-171	1054	-285	2.160	08:15	5 May 83
	6.67	-248	1016	-133	2.177	08:05	28 Jan 84
	6.75	-214	1033	-194	2.160	07:55	29 Jan 84
	6.72	-231	1031	-191	2.171	07:50	5 Feb 84
	6.75	-197	1020	-187	2.170	07:25	6 Feb 84

BP Car 11 08 50 -58 43.5  
11 08 50

13 Mar 89

14 Mar 89

30 Mar 89

8 Jan 81

44

13 05 - 57 48 8.8-9.3

C. low ✓

18 was the site ✓

8.18-227 902 +432.88 0740 6 Mar 80

8.25 227 926 522 + 322 2.17 07:00 "

8.46 998 917 29-446 861-94.8

8.40 926 144 114 126 144 04.8

8.42 536 536 12-936 536-24.8

8.33-270 936 +40 536 062-32.8

8.36 55:00 511.2 52-146 222-14.8

8.45 04:19 761.2 45+ 406 052-81.8

8.41 05:00 191.2 295- 916 522-44.8

9  
May

9.40  
9.45

20 Mar

20

G1 (an 12)

8.48 -213 953 -37

2.175 08:00 3 Jan 81

8.44 -238 943 -12

2.176 08:10 4 Jan 81

8.16 -296 903 +165

2.202 08:05 23 Jan 81

8.33 -252 930 +41

2.184 08:35 24 Jan 81

8.46 -210 939 -31

2.170 08:00 25 Jan 81

→ 8.33 -259 939 +45

2.178 05:35 21 Mar 82

8.33 -251 934 +28

2.187 04:15 30 Mar 82

Dec 9.82. 10 Dec, 20 Dec 82, 27 Dec 82

HW Car ✓ ✓ 10 35 35 - 61 ✓ 2.5 80-98

(9.28 -21 1114 -375 2.136 00:25 31 June 80)

(X) (X) (X) (X) ✓ 9.17 100 1042 -278 2.146 20:56 Mar 80

Eclipse ✓ 9.10 -114 1008 -192 2.146 6:35 "

9.01 -123 996 -168 2.162 16:00 "

9.00 -125 990 -154 2.159 05:50 "

9.00 -131 989 -153 2.152 03:15 2 May 80

9.02 -115 1011 -194 2.149 03:00 4 May 80

9.33 -19 1107 -355 - 02:35 7 May 80

(9.28 -14 1096 -342 2.150 00:10 2 July 80)

9.22 -54 1090 -360 2.151 00:25 3 July 80

23 July  
24 July  
25 July

17  
17  
17

HW (an 12) →

1983  
Jan 34.5

25:00  
6 pm  
25:00  
1501 AC-L26

903 -118 987 -159 2.158 14 July 80 23:30

9.04 -132 1032 -198 (2.144) 07:00 4 Jan 83

9.14 -102 1053 -235 2.126 01:30 5 Jan 82

9.22 -049 1089 -306 2.150 08:15 18 Jan 81

9.26 -039 1122 -333 2.149 07:10 19 "

9.32 -48 1097 -338 2.151 08:10 21 Jan 81

9.14 -110 1033 -218 2.162 08:25 23 Jan 81

9.04 -125 1004 -153 2.169 08:50 24 Jan 81

9.01 -124 1019 -188 2.162 08:20 25 Jan 81

→ 9.22 -89 1064 -240 2.152 05:20 21 Mar 82

→ 9.28 -31 1140 -362 2.140 07:50 10 Apr 82

9.12 -62 1054 -291 2.154 07:45 22 Apr 82

9.25 -26 1099 -340 2.176 08:10 28 Apr 82

→ JAN 24 JAN 24 ~~red July 7-8~~ 7.53  
 IT can ✓ 11 11 10 -61 38.5 ~~9.8-9.5~~

8 hrs

3/ March  
84

8.07	-164	1007	-167	2.160	07:30	6 Mar <sup>80</sup>
7.99	-124	1007	-124	2.159	06:50	7"
8.00	-132	1007	-173	2.155	06:20	8"
8.09	-108	1030	-230	2.147	06:15	9"
8.26	-79	1059	-301	2.175	04:20	4 May 80
8.00	-115	991	-127	2.164	03:20	6 May 80
8.01	-139	1003	-156	2.152	03:35	7 May 80
7.92	-125	981	-148	2.183	07:15	29 Jun 80
8.20	-68	1080	-302	2.147	00:20	2 July 80
8.14	-105	1068	-288	2.142	02:40	31 June 80



26  
+  
27  
28  
29  
30

131  
252

IT can

8.15 87 1024 221 2.57 01:10 29mg

~~28 Feb 01 1 Pm 9~~

~~8.52 -26 922 -32~~      2.164 02:40 31 July 80  
~~IT Can (cont) 8.55 +5 909 -29~~      2.162 02:10 2 Aug 80

8.26 -43 1047 -321      2.142 01:50 31 July 80

~~7.95 -157 1012 -164~~      2.155 00:20 30 July 80

~~8.05 -117 1016 -201~~      2.172 02:40 13 Aug 83

~~8.08 -135 1061 -205~~      2.158 07:40 24 June 84

~~8.15 -91 1083 -255~~      2.155 07:40 25 June 84

~~13 July 83~~

~~25 May 83~~

~~26 May 83~~  
~~27 May 83~~  
~~28 May 83~~

5.75 - 6.16

1.95 d

829

02

50

10

+68

48

60

S4Lao



5.74 -292 867 +227 2.216 11:45 100ft 16"

5.75 -287 850 +240 2.220 11:00 120ft 8"

6.17 -190 896 -28 2.176 07:20 27ft

6.11 -210 868 -92 2.173 08:20 29"

5.85 -245 858 +243 2.199 08:40 30"

6.15 -178 868 +12 2.178 09:30 30ft

5.80 -270 850 +228 2.213 09:50 24"

17727 ✓  
17793 ✓  
17706

DL Cao

50 28 50

8.7-9.2  
+40 06.2 8.0

9.20 +155 987 -287

2.154 08.20 24 Oct 80

8.85 +57 890 -57

2.170 08.20 5 Oct 80

8.90 +92 889 -127

2.171 07.40 6.0

9.110 +142 928 -214

2.167 08.00 7.11

9.120 +158 968 -270

2.168 06.15 0.9

8.87 (116) 957 -280

2.163 08.30 17 Oct 80

9.08 +83 907 -168

2.161 09.00 18 Oct 80

(8.79 +7 860 +4

2.183 } 09.00 19 Oct 80

(8.77 +0 868 +4

2.186 } 09.00 19 Oct 80

8.74 +7 868 +43

2.178 07.40 20 Oct 80

8.85 +52 983 -47

2.179 07.45 21 Oct 80

9.91 +88 899 -137

2.168 07.35 22.11

9.06 +130 929 -210

2.168 07.50 23.11

mean  
ratio

2440665.60 544392

55

V loan (X)

14 31 05 -56 48.5 24-72

Feb 8 34 81 951 (HP only)

April 5 200 -138 942 -142 2.184 03:00 July 80

6.44 -256 868 +221 2.193 03:20 31 July 80

July 21 6.71 -188 907 -2 2.163 02:40 15 July 80

6.83 -175 914 -66 2.151 00:50 12 Aug 80

6.82 -177 930 -70 2.147 00:20 23 Aug 80

7.17 -45 1003 -237 2.138 00:20 25 Aug 80

6.69 -167 910 +6 2.176 23:40 27 Aug 80

7.09 -97 982 -161 2.140 23:20 5 Sept 80

7.21 -43 1012 -247 2.145 01:45 28 July 80

(X) path

Aug 26

14 31 05 -56 48.5

Vlen(2) 6.58 -214 890 +119 2.175 P:40 31 July 90  
6.70 -161 913 +6 2.163 08:35 3 10/87

2 May 7.10 -53 992 -211 2.147 08:40 5 2/87

3 May 7.23 -46 1011 -231 2.142-08:30 6"

→ 1984 March 84, April 84 9.55-9.16 6.3  
 Apr 11 24 10 -60 37.5 9.3-10.2

→ 2 May 84

(X) 8.83 84 948 -152 1.959 172K3 07:10

May 1 1983 8.62 131 909 +37 2.191 122K3 07:20

2 8.76 -69 979 -156 2.184 132K3 08:15

3 8.54 -166 895 +52 2.202 172K3 08:25

4 8.72 -99 942 -62 2.178 172K3 08:00

12 83 8.54 -34 982 -181 2.167 192K3 07:00

May 26 8.62 -9 1011 -231 2.170 202K3 06:55

May 27 8.95 -1 990 -259 2.176 5 May 83 04:25

June 12, 13 8.61 -141 898 +35 2.202 13 May 83 02:50



A Ylen

~~ETA~~ 10 July 53

8.61	-751	881	+32	2.183	01:15	25 mg	B
8.74	-106	967	-81	2.158	07:50	24 Jan 54	
8.92	-24	1022	-24	2.155	07:50	25 Jan 54	

1024

55835 PH

85838

321

AZLm ✓ 11 24 20 - 61 155 155 90-85

① 8.57 -297 896 +84 2.180 07.15 6m 80

② 8.54 -227 921 -57 2.155 07.10 7"

③ 8.59 -298 917 +54 2.184 06.40 8"

8.53 -294 884 +124 2.183 06.35 9"

off track

8.28 -238 932 -15 2.172 07.25 19 (m 8)

8.67 -273 906 +46 2.187 08.45 23 (m 5)

8.76 -241 924 -33 2.162 08.10 25 (m 8)

8.54 -312 915 +80 2.153 07.35 22 (m 9)

8.59 -296 899 +55 2.192 08.15 24 (m 9)

A7(2)	8.51-313 907 +131	2.156 08:05 62A87
	8.77-233 926 -48	2.176 08:10 7"
→	8.53-307 891 +125	2.157 05:40 21MA82
	8.72-264 902 +16	2.180 05:50 23MA82
	8.78-233 913 -34	2.165 05:20 22MA82
	8.90-240 936 -54	2.165 04:45 29MA82
	8.52-314 903 +107	2.202 04:15 30MA82

1901



-60° 53' 15"

1.98 +0.48 02:10 17 July 81  
8.10 +0.48 00:35 18 July 81

9.46 10.5 84-92

125465

14 20 20-61 27.5 F7 II

(X)(X) (Q)

July 26-27-28 → trip out and  
23-24-25 ← supplement  
Exp (1+8)

(W)

8.63	+6	928	-62	2.192	30 Mar 81
8.68	+91	976	-180	2.165	3 Apr 81
8.83	+74	948	-201	2.171	14 June 81 03:40
8.63	+26	913	-72	2.175	15 June 81 03:30
8.63	+22	910	-38	2.176	16 June 81 02:15
8.59	+51	929	-117	2.167	7 July 81 00:40
8.59	+24	904-48		2.182	02:00 24 July 81

444  
252  
= √389 km

→ →

Front card?

V3396ms

8:99+111 1006 /207 2.16.1 00:25 10 Aug 52

V334 km (2) 8.58 +11 906 -71 2.165 09:00 13 Mar 81

8.75 +115 977 -129 ok 2.146 08:45 16 Mar 81

8.20 +0.469 09:15 <sup>11 Mar 81</sup> 8.83 +133 1002 -220 2.169 08:30 21 Mar 82

8.04 +0.455 08:50 <sup>12 Mar 81</sup> 8.88 +173 1074 -343 2.167 08:35 22 Mar 82

7.93 +0.443 04:40 11 Apr 81

7.86 +0.428 04:35 12 Apr 81

8.19 +0.508 06:30 15 Apr 81

8.05 +0.461 04:50 19 Apr 81

7.98 +0.454 05:15 20 Apr 81

7.98 +0.481 02:10 17 July 81

8.10 +0.469 00:35 18 July 81

8.22 +0.507 02:00 19 July 81  
+0.45







V4151w (2)

8.34 -212 982 -58	2.172 08:28 5787
8.18 -253 957 -23	2.180 08:15 611"
8.02 -289 948 +59	2.210 08:20 711"
8.22 -238 958 -15	2.179 06:00 23 Nov 92
8.24 -225 976 -45	2.172 04:55 29 Mar 92
8.33 -165 998 -117	2.176 04:45 30 Mar 92

July 20, 22, 24 15 June, 29 June 30 June, July 3, July 4 2.06  
 ✓ 558 km ✓ 14 75 2.0 -32 06 8.7-9.3  
 July 8, 10, 12 July 20, 22, 24, 26, 28

26 Mar 83  
 28 Apr 83  
 3 Sept 83

(8.74-73 824 -593 2.136 09:00 6 Mar 80  
 8.56-294 1007 -305 2.154 03:50 2 July 80  
 935 -277 1602 -277 2.159 04:05 3 July 80  
 923 -354 936 -54 2.185 03:45 15 July 80  
 8.75 -168 1067 -592 2.155 01:20 12 Aug 80  
 8.24 -31.9 934 -35 2.184 00:35 17 Aug 80  
 8.67 -153 1079 -554 2.132 08:35 18 Aug 80  
 8.68 792 1144 -674 2.154 07:45 30 March 82  
 8.55-196 1011 -623 2.165 06:15 24 Apr 82

Mar 2  
 4  
 Mar 21  
 23  
 25



√ 553 km → 83 20 July, 22, 24, Aug 7, 9

8.24 -359 928 -50 2.142 02:00 30 June ✓

8.75 -177 1110 -633 2.153 03:20 1 July ✓

8.37 -350 956 -95 2.181 00:10 9 Aug ✓

~~8.99 +111~~

8.42 -331 970 +126 2.163 00:35 10 Aug ✓

8.25 -336 952 -107 2.176 23:40 3 Sept 83

18

1983 27 May, 11 June, 13 June

18 Aug 20 Aug 22 Aug 24 Aug 26 Aug

✓ Energy ~~input~~

✓ V659len ✓ 13 30 10 -61 29 71-74 " 5.62  
6.45-6.71 6.45-6.71

✓ Mar 1982  
2.54 ✓ 6.74-211 918-199 2.159-18.456 Mar 80  
6.65-232-920-134 2.17 08.157 "

✓ 1984  
6.50-286 897-43 2.170 08.108 "  
6.57-277 888-25 2.170 08.259

✓ ~~1984~~  
Mar 14 1984  
6.55-271 903-65-2.168 06.40 3mg 70  
6.73-213 946-207 2.159 06.100 6mg 70  
6.72-198 903-156 2.171 02.20 2 July 80  
6.64-223 920-144 2.170 03.00 3 July 80  
6.70-217 926-144 2.172 03.10 31 June 80

1952 July 21, 22, 23 ~~889~~ 889 ly

V6596m (2) 6.51 -217 914 -46 2.184 08:25 3288

6.69 -206 920 -170 2.167 08:25 5388

6.75 -202 932 -208 2.167 08:20 611

83.  
26 May

6.54 -250 913 -73 2.187 08:00 of May 2

27 May

6.50 -222 915 -48 2.198 01:30 30 June 2

2 June →

6.61 -257 936 -77 2.195 02:30 7 July 2

7 June

6.78 -213 945 -140 2.191 02:25 2 July 2

8 June

6.76 -207 943 -212 2.178 02:20 3 July 2

12 June

6.57 -254 919 +67 2.178 00:30 9 Aug 2

13 June

6.65 -208 936 -154 2.165 00:00 10 Aug 2



v6596m

~~5th July 84~~ 28 July, 29 July 84

6.53	-230	910	-108	2.172	02:30	29 July 84
6.53	-270	928	-062	2.184	01:30	9 Aug 83
6.46	-270	903	-025	2.198	08:45	4 Aug 84
6.55	-244	894	-046	2.191	08:40	5 Aug 84
6.56	-248	906	-9	2.176	00:50	29 July 84
6.67	-206	921	-175	2.174	23:55	29 July 84

V737

(FB)

6011 ± 8 V737 am 7.0

125037

← 14 35 35 61 55,5 683

X ⊗

✓

6.81 -64 935 254 2.144 03:25 3 July 80  
 6.61 -133 975 -137 2.156 02:50 15 July  
 6.61 -142 960 -104 2.158 09:00 12 Aug 80  
 6.96 -37 1069 -367 2.143 00:25 23 Aug 80  
 6.57 -158 971 -127 2.172 00:30 25 Aug 80  
 6.76 -75 1017 -227 2.154 2345 27 Aug 80  
 6.83 -34 1044 -281 2.153 2330 5 Sept 80  
 6.73 -104 1008 -203 2.152 01:55 23 July 80  
 6.79 -77 1036 -240 2.151 01:50 31 July 80  
 6.68 -114 996 -179 2.155 03:40 25 Sept 80

July 27  
 42  
 1 2 3 4 5  
 1487

17376m (2)

6.83-50	1011	-242	2.15108.45	22887
6.62-453	961	-112	2.15808.403	" "
6.65-112	992	-155	2.15608.50	52487
6.74-89	1020	-220	2.15308.406	" "
6.84-64	1057	-275	2.145	5418

348-4.24

5.9

9571

22 28 25 +58 19 3.7

2 uph

41" } 7.5 87 IV

(A) (B) (C) (D) (E) (F) (G) (H) (I) (J) (K) (L) (M) (N) (O) (P) (Q) (R) (S) (T) (U) (V) (W) (X) (Y) (Z) ✓

3.72-343 927 +68 2.164 67:10 1000 80 16"

4.16 -207 1022-199 2.128 06:50 120 80 "

3.94-265 955-83 2.152 05:00 270 80

4.33 -191 1034-264 2.135 04:45 290 80

4.05 -290 953-90 2.148 05:40 30 "

446 224 935

Slugs

2.507M

(1.3)

6.31-677 810 -232 ✓

6.31-676 812 -239

6.34-675 820 -244

6.32-676 814 -238

860  
675

869 450 678

196  
148

2.260 (3)

2.259 56000

2.267 6" "

2.261 7" "

2.262

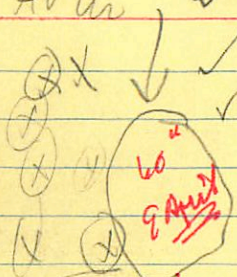
✓ 990 ✓

6.05 ✓  
5.09 ✓  
2.03 ✓

~~June 28, July 1, July 4, 7, 10~~

306

AV Gr ✓ 74 48 45 -67 25 9.0-9.6



7.30	-125	836	+123	2.185	04:00	July 80
7.52	-78	867	-8	2.166	03:15	July 80
7.35	-135	846	+65	2.191	0:55	13 Aug 80
7.54	-78	872	-20	2.159	00:15	18 Aug 80
7.30	-135	834	+132	2.191	00:35	23 Aug 80
7.59	-74	878	-15	2.180	01:05	12 Aug 80
7.31	-150	847	+141	2.193	00:15	26 Aug 80
7.51	-106	867	+21	2.177	00:05	28 Aug 80
7.53	-80	866	-5	2.173	04:00	14 Sept 80
7.29	-147	834	+153	2.197	03:25	16 June

More

22 Mar

25 Mar

31 Mar

3 April

1983

31 Aug 1983

2.172-2.21455 Sep 80

4/11/83

7.30	-157	840	+153	2.191	08:55	162481
7.35	-136	836	+147	2.187	09:10	71
7.54	-74	860	-19	2.170	09:15	8 March
7.42	-133	859	+181	2.185	09:20	9mm
7.34	-135	844	+141	2.186	09:00	10mm
7.58	-76	881	-24	2.180	08:00	23mm
7.53	-90	847	-13	2.179	07:30	29mm
7.43	-103	847	+50	2.188	05:10	50mm
7.48	-93	874	+34	2.201	02:45	2 Aug 82

~~22 Aug 83~~  
~~25 Aug 83~~

31 Aug 83

in  
AX (2)

Aug 7, 5

5.72-274 877 -147 2.188 23:50 2 Sept 80

5.86-220 893 -272 2.103 23:55 3 Sept 80

~~28 May 83 ✓~~

5.96 -197 905 -359 2.159 23:45 4 Sept 80

~~2 June 83~~

5.78 248 904 -224 2.189 01:50 30 June 82

~~7 June 83~~

5.97 216 916 -309 2.182 03:05 1 July 82

~~13 June 83 ✓~~

6.05 -199 917 -370 2.170 00:15 8 Aug 82

6.12 -207 896 -341 2.166 00:45 9 May 84

8 July 83  
9

5.91 -214 916 -255 2.183 02:55 29 May 80

5.83 -238 914 -260 2.182 02:45 8 June 83

5.98 -199 889 -317 2.175 09:30 6 July 84



181