

#237

PIONEER VENUS PROBES
GAS & PLASMA ENVIRONMENT SIGNAL STRENGTH

78-078D-11C

78-078E-07C

78-078F-07C

78-078G-07C

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1. INTRODUCTION:

The documentation for this data set was originally on paper, kept in NSSDC's Data Set Catalogs (DSCs). The paper documentation in the Data Set Catalogs have been made into digital images, and then collected into a single PDF file for each Data Set Catalog. The inventory information in these DSCs is current as of July 1, 2004. This inventory information is now no longer maintained in the DSCs, but is now managed in the inventory part of the NSSDC information system. The information existing in the DSCs is now not needed for locating the data files, but we did not remove that inventory information.

The offline tape datasets have now been migrated from the original magnetic tape to Archival Information Packages (AIP's).

A prior restoration may have been done on data sets, if a requestor of this data set has questions; they should send an inquiry to the request office to see if additional information exists.

2. ERRATA/CHANGE LOG:

NOTE: Changes are made in a text box, and will show up that way when displayed on screen with a PDF reader.

When printing, special settings may be required to make the text box appear on the printed output.

Version	Date	Person	Page	Description of Change
01				
02				

3 LINKS TO RELEVANT INFORMATION IN THE ONLINE NSSDC
INFORMATION SYSTEM:

<http://nssdc.gsfc.nasa.gov/nmc/>

[NOTE: This link will take you to the main page of the NSSDC Master Catalog. There you will be able to perform searches to find additional information]

4. CATALOG MATERIALS:

- a. Associated Documents To find associated documents you will need to know the document ID number and then click here.
<http://nssdcftp.gsfc.nasa.gov/miscellaneous/documents/>

- b. Core Catalog Materials

PIONEER VENUS PROBE
GAS + PLASMA ENVIRONMENT SIGNAL STRENGTH

78-078D-11C, 78-078E-07C

78-078F-07C, 78-078G-07C

THESE DATA SETS HAVE BEEN RESTORED. ORIGINALLY THEY CONTAINED ONE 9-TRACK, 1600 BPI TAPE WRITTEN IN ASCII. THERE IS ONE RESTORED TAPE. THE DR TAPE IS A 3480 CARTRIDGE AND THE DS TAPE IS 9-TRACK, 6250 BPI. THE ORIGINAL TAPE WAS CREATED ON THE MODCOMP IV COMPUTER AND WAS RESTORED ON AN IBM 9021 COMPUTER. THE DATA WERE ORIGINALLY CREATED ON A PRIME COMPUTER IN A VERSION OF ASCII THAT WAS NOT READABLE ON OUR SYSTEM, THEREFORE, THE D TAPE WAS REMADE ON THE MODCOMP IN ASCII CARD IMAGE FORM TO FACILITATE DUPING AND LISTING THE DATA. THE DR AND DS NUMBER ALONG WITH THE CORRESPONDING D NUMBER AND TIME SPAN IS AS FOLLOWS:

DR#	DS#	D#	FILES	TIME SPAN
DR005309	DS005309	D046069	1-10	12/09/78 - 12/09/78

Documentation: First file on Tape

REQ. AGENT
RSH

RAND NO.

ACQ. AGENT
WSC

PIONEER VENUS PROBES
GAS & PLASMA ENVIRONMENT SIGNAL STRENGTH
78-078D-11C
78-078E-07C
78-078F-07C
78-078G-07C

These data sets are contained on one 9-track, 1600 BPI, ASCII magnetic tape created on the MODCOMP IV computer. The data were originally created on a PRIME computer in a version of ASCII that was not readable on our system, therefore, the D tape was remade on the MODCOMP in ASCII card image form to facilitate duping and listing the data.

<u>D#</u>	<u>C#</u>	<u>TIME SPAN</u>
D-46069	C-23658	12/09/78

1 On this tape are ten files covering the subject of the
2 signal strength from the descending probes and, in the case
3 of Day probe, after landing. All of these data were
4 provided by the Deep Space Network (DSN) to the radio scientists
5 in the form of listings of numbers, from which it was necessary
6 to hand punch all the numbers onto cards. This task was shared
7 between SRI and JPL. As a result of the manual step, there
8 remains the possibility of occasional errors. Large errors were
9 found by plotting the result and then checking all points that
10 were markedly different from their neighbors. However small
11 errors may persist.

12 This first file is called INTRODUCTION

13
14 This is a list of the first few lines from each AGC file
15 together with some comments on their interpretation.

16
17 written by Tom Croft of SRI International in 1980.

18
19 Next are 4 files of California DSN measurements with one
20 point every 10 seconds. These are called PI.IN.COLUMN
21 for probe 1 and by similar names for probes 2 and 3.
22 The large probe is called LP.

23
24 We next provide 4 files for the Australian DSN with a
25 point each second. Records from all 4 probes are
26 together in each file. We found it convenient to
27 break this long data set into four parts called boxes.
28 Thus you will find BOX.1, BOX.2, BOX.3 and BOX.4.
29 In each there are 5 columns. First is time in UT.
30 Next is AGC from probe 1, then 2, then 3, and then 4.

31
32 There is a tenth file called ALLP2 that contains all
33 of the probe 2 record during the final part of its
34 life on the surface after the end of BOX.4. The time
35 in this extra file is given as minutes after 18:00:00 UT
36 and it is a continuation without interruption of the
37 data in column 3 of BOX.4.

38
39 Here are some excerpts:

40
41 This is the first part of probe 1 measurements from the
42 California DSN.
43 Each probe has a number used by the communication network
44 that is given here following the popular name. Generally
45 this is called the "spacecraft number". Of course in addition
46 the small probes have numbers 1, 2, or 3 assigned. The use
47 of the latter numbers is much more widespread than is the
48 use of spacecraft numbers.

49 PI.IN.COLUMN

50 AGC FROM SMALL PROBE 1 NORTH PROBE S/C 8
51
52 Hour Min Sec AGC (dB)

53 18 : 31 : 43 - 158.35
54 18 : 31 : 53 - 151.81
55 18 : 32 : 3 - 151.52
56 18 : 32 : 13 - 152
57 18 : 32 : 23 - 151.92
58 18 : 32 : 33 - 151.96

ASC #297

File 1

```

59 16 : 32 : 43 - 151.91
60 18 : 32 : 53 - 152.04
61 18 : 33 : 3 - 152.05
62 18 : 33 : 13 - 152.1
63 18 : 33 : 23 - 152.05
64 18 : 33 : 33 - 152.09
65 18 : 33 : 43 - 152.01
66 18 : 33 : 53 - 152.19
67 18 : 34 : 3 - 152.07
68 18 : 34 : 13 - 152.14
69 18 : 34 : 23 - 151.79
70 18 : 34 : 33 - 151.94
71 18 : 34 : 43 - 151.82
72 18 : 34 : 53 - 151.89
73 18 : 35 : 3 - 151.9
74 18 : 35 : 13 - 151.83
75 18 : 35 : 23 - 151.68
76 18 : 35 : 33 - 151.89
77 18 : 35 : 43 - 151.72
78 18 : 35 : 53 - 151.74
79 18 : 36 : 3 - 153.32
80 18 : 36 : 13 - 157.29

```

Next is a sample of the combined data from all process. The format is explained by the headings. AGC is in decibels but care in interpretation is required since the receiver is complex. We recommend that users of these data contact the Deep Space Network in Pasadena before attempting to draw important inferences from such numbers.

BOX.3

TIME

AGC MEASURED IN AUSTRALIA FOR:

	SP1	SP2	LP	SP3
HRMNSC	154.82	153.13	153.17	153.88
153303	154.78	153.00	153.28	153.94
153304	154.67	154.82	153.17	153.89
153305	154.67	154.67	153.07	153.97
153306	154.63	154.68	153.14	154.02
153307	154.64	154.78	153.05	154.04
153308	154.64	154.57	153.09	153.98
153309	154.75	153.32	153.01	153.82
153310	154.65	153.59	152.96	153.80
153311	154.61	153.75	152.85	153.71
153312	155.02	155.74	152.92	153.67
153313	155.07	155.68	152.90	153.81
153314	155.18	155.58	152.76	153.95
153315	155.33	155.57	152.88	153.98
153316	155.50	155.55	153.00	153.97
153317	155.53	155.37	152.88	153.89
153318	155.53	155.28	152.92	153.92
153319	155.34	155.25	152.78	153.82
153320	155.21	155.17	152.68	153.78
153321	155.08	155.18	152.62	153.66
153322	154.91	155.15	152.71	153.57

Here is the one-of-a-kind file providing the final minutes of small probe 2 measurements.

117 ALLP2
118 SMALL PRCEE 2 ("DAY") SURVIVED ITS LANDING
119 TIME AGC MEASUREMENT
120 MINUTES IN DECIBELS
121 PAST 18:00:00 UT BY AUSTRALIAN DSN
122 34.2333 173.00
123 34.2500 164.63
124 34.2667 160.35
125 34.2833 157.63
126 That was the beginning and is in box.1 -- the
127 remainder is a continuation after box.4.
128 159.6000 157.07
129 159.6166 156.99
130 159.6333 156.97
131 159.6500 157.03
132 159.6667 157.03
133 159.6833 157.07
134 159.7000 157.03
135 159.7166 157.07
136 159.7333 157.03
137 159.7500 157.07
138 159.7667 157.02
139 159.7833 157.16
140 159.8000 157.06
141 159.8167 157.10
142 159.8333 157.18
143 159.8500 157.25
144 159.8666 157.21
145 159.8833 157.16
146 159.9000 157.24
147 159.9167 157.18
148 159.9333 157.17
149 159.9500 157.08
150 159.9666 157.10
151 159.9833 157.08
152 160.0000 157.06
153 160.0167 157.12
154 160.0333 157.25
155
156

LTs This is the end of the INTRODUCTION file.

b5c #237

NORTH PROBE S/C 8

	ASC	FROM	SMALL	PROBE 1
1	18	31	43	158.35
2	18	31	43	151.81
3	18	32	3	151.92
4	18	32	13	152
5	18	32	23	151.92
6	18	32	33	151.96
7	18	32	43	151.91
8	18	32	53	152.04
9	18	33	3	152.03
10	18	33	13	152.1
11	18	33	23	152.05
12	18	33	33	152.09
13	18	33	43	152.01
14	18	33	53	152.19
15	18	34	3	152.07
16	18	34	13	152.14
17	18	34	23	151.79
18	18	34	33	151.94
19	18	34	43	151.82
20	18	34	53	151.89
21	18	35	3	151.9
22	18	35	13	151.83
23	18	35	23	151.88
24	18	35	33	151.85
25	18	35	43	151.72
26	18	35	53	151.74
27	18	36	3	153.32
28	18	36	13	157.29
29	18	36	23	157.42
30	18	36	33	157.53
31	18	36	43	157.53
32	18	36	53	157.43
33	18	37	3	157.58
34	18	37	13	157.79
35	18	37	23	157.75
36	18	37	33	157.74
37	18	37	43	157.64
38	18	37	53	157.67
39	18	38	3	157.8
40	18	38	13	157.91
41	18	38	23	157.65
42	18	38	33	157.81
43	18	38	43	157.75
44	18	38	53	157.86
45	18	39	3	157.78
46	18	39	13	157.84
47	18	39	23	157.79
48	18	39	33	157.64
49	18	39	43	157.52
50	18	39	53	157.44
51	18	40	3	157.47
52	18	40	13	157.59
53	18	40	23	157.46
54	18	40	33	157.5
55	18	40	43	157.47
56	18	40	53	157.52
57	18	41	3	157.55
58	18	41	13	157.55

DSC #37
File 2

ASC # 237

File 2 p. 2

```
59 18 : 41 : 13 - 157.7
60 18 : 41 : 23 - 157.71
61 18 : 41 : 33 - 157.55
62 18 : 41 : 43 - 157.72
63 18 : 41 : 53 - 157.62
64 18 : 42 : 3 - 157.62
65 18 : 42 : 13 - 157.54
66 18 : 42 : 23 - 157.52
67 18 : 42 : 33 - 157.6
68 18 : 42 : 43 - 157.66
69 18 : 42 : 53 - 157.74
70 18 : 43 : 3 - 157.83
71 18 : 43 : 13 - 157.64
72 18 : 43 : 23 - 157.69
73 18 : 43 : 33 - 157.7
74 18 : 43 : 43 - 157.64
75 18 : 43 : 53 - 157.51
76 18 : 44 : 3 - 157.57
77 18 : 44 : 13 - 157.5
78 18 : 44 : 23 - 157.79
79 18 : 44 : 33 - 157.45
80 18 : 44 : 43 - 157.57
81 18 : 44 : 53 - 157.61
82 18 : 45 : 3 - 157.31
83 18 : 45 : 13 - 157.42
84 18 : 45 : 23 - 157.53
85 18 : 45 : 33 - 157.7
86 18 : 45 : 43 - 157.69
87 18 : 45 : 53 - 157.57
88 18 : 46 : 3 - 157.71
89 18 : 46 : 13 - 157.79
90 18 : 46 : 23 - 157.59
91 18 : 46 : 33 - 157.72
92 18 : 46 : 43 - 157.76
93 18 : 46 : 53 - 157.71
94 18 : 47 : 3 - 157.24
95 18 : 47 : 13 - 157.42
96 18 : 47 : 23 - 157.64
97 18 : 47 : 33 - 157.44
98 18 : 47 : 43 - 157.6
99 18 : 47 : 53 - 157.71
100 18 : 48 : 3 - 157.67
101 18 : 48 : 13 - 157.82
102 18 : 48 : 23 - 157.97
103 18 : 48 : 33 - 157.73
104 18 : 48 : 43 - 157.51
105 18 : 48 : 53 - 157.51
106 18 : 49 : 3 - 157.52
107 18 : 49 : 13 - 157.79
108 18 : 49 : 23 - 158.17
109 18 : 49 : 33 - 158.35
110 18 : 49 : 43 - 158.15
111 18 : 49 : 53 - 158.09
112 18 : 50 : 3 - 158.84
113 18 : 50 : 13 - 159.07
114 18 : 50 : 23 - 159.24
115 18 : 50 : 33 - 158.22
116 18 : 50 : 43 - 158
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