Ariel II Engineering Data Analysis
Phase I Report
Volume II of Two Volumes

23 June 1965

Contract No. NAS5-9104

Prepared by
Westinghouse Electric Corporation
Aerospace Division
Baltimore, Maryland

for
Goddard Space Flight Center
Greenbelt, Maryland
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## VOLUME II

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DESCRIPTION OF GRAPHS

I. Composite Orbit Graphs (378)

A composite graph containing 2-4 orbits is presented approximately each 100 orbits. The orbit with the most data was taken as the base orbit. Zero-time for the composite graph is taken from the base orbit and is identified in days, hours and minutes (GMT).

A point-by-point plot of a five-minute interval is included for the signals of Dump Current and Solar Current to show the effects of spin modulation. For these two signals maximum and minimum points were plotted. For all other signals, the points plotted were the values at the five-minute interval.

A listing of the composite orbits is provided by Table II.

II. Percent Sunlight Graphs (25)

One plot for each base orbit (except the last two for which insufficient data was available) shows entrance and exit times.

III. 200-Day Graphs (16)

a. One graph for each of the 14 performance parameters shows maximum and minimum points for sunlight (□—□) and darkness (○—○) for Battery Current. All other parameters are orbit maximum and minimum points regardless of whether in sunlight or darkness.

b. A Percent Sunlight Graph
c. A Spin Rate Graph

IV. Special Purpose Graphs (63)

a. Plots for maximum sunlight (100%) orbits (#409 and #1391), minimum sunlight (62.9% for orbit #2629 and 63.2% for orbit #100), the hottest day, and the coldest day were made using the following combinations:

1. Both ozone temperatures
2. Spectrometer A and upper shelf temperatures

3. Battery and lower shelf temperatures

4. Spectrometer A and lower shelf temperatures

b. Ten-Orbit Thermal Stabilization Graphs, one graph for each temperature.

c. Sunrise, Pure Sunlight, and Sunset Graphs of both Ozone Spectrometer and Broadband Ozone Data. Ordinates are in GSFC frequency printout units. Abscissas are time with the time markers on the left hand edge. Eight pulses make up one complete revolution of the satellite.

d. High Speed (HS) and Low Speed (LS) Galactic Noise Graphs. Ordinates are in GSFC frequency printout units.

   HS - Swept oscillator 0.75-3 mc. Sequence numbers refer to 1/6 of range being swept.

   LS - Ferrite core antenna tuned to approximately 2 mc.

e. Sample Ozone Spectrometer responses illustrate sensor degradation with time.

f. Sample Micrometeorite responses show the effects of attitude variations.
### Table II

**Test Object Catalog Listing**

<table>
<thead>
<tr>
<th>Test Object</th>
<th>Composite orbits</th>
<th>Day of Year</th>
<th>Days from Launch*</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>10, 10, 11</td>
<td>86</td>
<td>1</td>
</tr>
<tr>
<td>109</td>
<td>100, 106, 107</td>
<td>94</td>
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<td>368</td>
<td>190, 191, 192</td>
<td>101</td>
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<td>393</td>
<td>293, 294, 301</td>
<td>107</td>
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<tr>
<td>401</td>
<td>402, 415</td>
<td>116</td>
<td>22</td>
</tr>
<tr>
<td>515</td>
<td>500, 514, 515, 516</td>
<td>123</td>
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<td>614</td>
<td>608, 614, 615</td>
<td>130</td>
<td>43</td>
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<tr>
<td>704</td>
<td>704, 710</td>
<td>137</td>
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<td>825</td>
<td>808, 809, 815</td>
<td>144</td>
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<tr>
<td>926</td>
<td>906, 907, 914</td>
<td>151</td>
<td>64</td>
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<tr>
<td>1013</td>
<td>1004, 1005, 1013</td>
<td>158</td>
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<td>1106</td>
<td>1106, 1116</td>
<td>165</td>
<td>76</td>
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<td>1204</td>
<td>1204, 1210</td>
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<td>1391</td>
<td>1391, 1396, 1399</td>
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<td>1503, 1513</td>
<td>193</td>
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<td>1603</td>
<td>1603, 1610</td>
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<td>1701</td>
<td>1701, 1709, 1710</td>
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<td>1799</td>
<td>1799, 1800, 1807</td>
<td>214</td>
<td>127</td>
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<td>1926</td>
<td>1904, 1926</td>
<td>222</td>
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<td>2101, 2102, 2109</td>
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<td>2213, 2214, 2222</td>
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<td>2320</td>
<td>2311, 2312, 2320</td>
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<td>2425, 2432</td>
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<td>2531</td>
<td>2521, 2536</td>
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<td>178</td>
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<td>2629</td>
<td>2628, 2629</td>
<td>272</td>
<td>185</td>
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<tr>
<td>2706</td>
<td>2706, 2707</td>
<td>277</td>
<td>190</td>
</tr>
</tbody>
</table>

*Launched 27 March 1964*
PP# 01

SIGNAL 0.0 ± 0.1

ORBIT 8/10/72 9/10/72 10/72

O-TIME 9/14/72 12/10/72

Plotted by: R. R. Kruske
Date Plotted: 1/24/75

Resolution:
-3.8°C at +60°C
+1.0°C at -2°C
±4.6°C at ±5°C

TEMPERATURE, Degrees Centigrade

TIME, Minutes
Plotted by:

Resolution: 19 ma at 0-700 ma
122 ma at 0-1000 ma
+11 ma at 0-1000 ma
<table>
<thead>
<tr>
<th>PP#</th>
<th>SIGNAL</th>
<th>ORBIT</th>
<th>O-TIME</th>
<th>Plotted by</th>
<th>Date Plotted</th>
<th>Resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>08</td>
<td>GN. REEL/+12V</td>
<td>01 04/19/01 04/01</td>
<td>01 04/15/04/00</td>
<td>Eugene P. Royer</td>
<td>V12/85</td>
<td>±0.06V at 11V</td>
</tr>
</tbody>
</table>

**Graph:***

- **Voltage (Volts)**: 0 to 10
- **Time (Minutes)**: 0 to 100

---

**Notes:**
- Voltage values are marked at various intervals along the graph.
- The graph appears to be used for plotting voltage over time data.
<table>
<thead>
<tr>
<th>THERMAL SENSITIVITY</th>
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<tbody>
<tr>
<td>SIGNAL</td>
</tr>
<tr>
<td>LOWER SHEET TEMP</td>
</tr>
<tr>
<td>ORBIT</td>
</tr>
<tr>
<td>O-TIME</td>
</tr>
<tr>
<td>Plotting by</td>
</tr>
<tr>
<td>Date Plotted</td>
</tr>
<tr>
<td>Resolution</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PP#</th>
<th>14</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIGNAL</td>
<td></td>
</tr>
<tr>
<td>LOWER SHEET TEMP</td>
<td></td>
</tr>
<tr>
<td>ORBIT</td>
<td></td>
</tr>
<tr>
<td>O-TIME</td>
<td>11/11/198</td>
</tr>
<tr>
<td>Plotted by</td>
<td></td>
</tr>
<tr>
<td>Date Plotted</td>
<td>11/11/1</td>
</tr>
<tr>
<td>Resolution</td>
<td>±0.9°</td>
</tr>
</tbody>
</table>
TEMPERATURE, Degrees Centigrade

TIME, Minutes

PP# 0

ORBIT 0.283/1.293/0.294/0.301

O-TIME 0.07/0.02/00

Date Plotted 1/13/66

Resolution ±3.8°C at +60°C

±1.0°C at -2°C

±4.6°C at -50°C

Plotted by R.G. Spencer

DRONE CELL
<table>
<thead>
<tr>
<th>PP #</th>
<th>SIGNAL</th>
<th>BATTERY CURRENT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ORBIT</td>
<td>O/TIME</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DATA PLotted</td>
</tr>
<tr>
<td></td>
<td></td>
<td>RESOLUTION</td>
</tr>
</tbody>
</table>

- 9 ma at 100-700 ma
- 22 ma at 0-100 diam.
- 11 ma at 0-100 diam.
PH# 0
SIGNAL OZONE CELL
ORBIT 040° / 41°
O-TIME 01/16/67
Plotted by Eugene Royer
Date Plotted 1/14/67
Resolution ±3.8°C at ±60°
±1.0°C at -2°C
±4.6°C at -50°C
<table>
<thead>
<tr>
<th>PP#</th>
<th>SIGNAL</th>
<th>ORBIT</th>
<th>O-TIME</th>
<th>Date Plotted</th>
<th>Resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>GN.REEL/ +12V</td>
<td>6423</td>
<td>1/16/1057/00</td>
<td>11/4/62</td>
<td>± 0.06V ± 11V</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>± 0.09V ± 13V</td>
</tr>
</tbody>
</table>

**Plotting Information:**
- Plotter: Eugene R. Keeler
- Date Plotted: 11/4/62
- Resolution: ± 0.06V ± 11V
- ± 0.09V ± 13V

**Graph Details:**
- **X-axis:** Time, Minutes
- **Y-axis:** Voltage, Volts

**Graph Description:**
- The graph shows a plot of voltage over time, with marked points at various intervals.
PH: 11
SIGNAL BATTERY TEMP
ORBIT: 1/16/65 0409/49/15
O-TIME: 1/16/65 0409/49/15
Data Plotted 1/16/65
Resolutions ± 1.2°C
TEMPERATURE, Degrees Centigrade

TIME, Minutes

PP # 12
SIGNAL PADDLE # 4 TEMP
ORBIT A5-09 / A5 415
O-TIME 0 116/10 57/80
Plotted by Eugene E. Poyer
Date Plotted 11/14/65
Resolution ±2.5 °C at -80 °C
±1.5 °C at +60 °C
PP# 14
SIGNAL LOWER SELF TEMP
ORBIT 60/60.4/65
O-TIME 0.13/11.8/20
Plotted by J. G. G. JENIFER
Date Plotted 2-8-66
Resolution ± 0.9°C

TEMPERATURE, Degrees Centigrade

TIME, Minutes

-70 -60 -50 -40 -30 -20 -10 0 10 20 30 40 50 60 70 80 90 100
PP # 35
SIGNAL TAPE RECORDER
ORBIT 6704 / A 710
O-TIME 6/137 / 142 / 100
Plotted by F. G. Spenser
Date Plotted 2-8-65
Resolution ± 4°C at -56°C
± 1.6°C at +80°C

TEMPERATURE, Degrees Centigrade

TIME, Minutes
TEMPEATUR, Degrees Centigrade

TIME, Minutes

PP # 13
SIGNAL
ORBIT 0704/3-710
O-TIME 031/37/04/21/05
Plotted by R. S. SPENCER
Date Plotted 2-18-64
Resolution ±0.9°C
<table>
<thead>
<tr>
<th>PP.#</th>
<th>SIGNAL</th>
<th>ORBIT</th>
<th>O-TIME</th>
<th>Resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>0A</td>
<td>±0.5 VOLTAGE</td>
<td>±0.2 V a±17 V</td>
<td>±0.18 V a±0 V</td>
<td></td>
</tr>
<tr>
<td>PP #</td>
<td>SIGNAL</td>
<td>SOLNP CURRENT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>--------</td>
<td>---------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>09</td>
<td>ORBIT</td>
<td>08/15/69 2688</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>0-TIME</td>
<td>06/14/69 00/00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Plotted by: E/H/B.

Date Plotted: 2/1/69.

Resolution:
- ±0.02 amp at 2 amp
- ±0.04 amp at 25 amp
- ±0.15 amp at 3.5 amp
<table>
<thead>
<tr>
<th>PP #</th>
<th>SIGNAL</th>
<th>ORBIT</th>
<th>O-TIME</th>
<th>Plotted by</th>
<th>Date Plotted</th>
<th>Resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>04</td>
<td>+15 V</td>
<td>LTS</td>
<td>1</td>
<td>01/10/94</td>
<td>12/13/94</td>
<td>±0.5 V @ 17 V</td>
</tr>
<tr>
<td></td>
<td>±0.1 V @ 0 V</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

VOLTAGE, Volts

TIME, Minutes

- ORBIT
Plotting of Signal Orbit Current

- Time (O-Time): 05/12/4/10
- Resolution: ±0.04 amp at 25 amp
- Current at 5 amp, 7.5 amp

Current, Amperes

Time, Minutes
PP #

SIGNAL

ORBIT

O-TIME

Plotted by

Date Plotted

Resolution

± 9 ma at 100-700 ma
± 22 ma at 0-100 d.s.
± 11 ma at 0-100 ch.

TIME, Minutes
TEMPERATURE, Degrees Celsius

TIME, Minutes

PP# 61
SIGNAL ORBIT
SINE ORBIT 0.162 / 0.3958 / 0.00

O-TIME Plotted by R. D. Spencer

Date Plotted 3-7-69

Resolution ±3.8°C at 60°C
±1.0°C at -2°C
±4.2°C at -50°C
PP# 02
SIGNAL SPECTROMETER
ORBIT 11/06/64
O-TIME 0/45/095A100
Plotted by L.G. SPENCER
Date Plotted 3-2-65
Resolution ±1.7°C at 60°C
±0.7°C at -9°C
TEMPERATURE, Degrees Centigrade

TIME, Minutes

-PLotted by

Resolution

±1.7°C @ ±60°C

±0.7°C at -9°C

SIGNAL

PP# 02

TORBIT

DATE Plotted

3/18/87

3/18/87
<table>
<thead>
<tr>
<th>PP #</th>
<th>SIGNAL</th>
<th>ORBIT</th>
<th>O-TIME</th>
<th>Date Plotted</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNIFC</td>
<td>BUS VOL</td>
<td>0.125</td>
<td>0.047</td>
<td>07/04/1967</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Robert H. Koff</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3/16/67</td>
</tr>
</tbody>
</table>

Resolution ± 0.05v

**VOLTAGE, Volts**

**TIME, Minutes**
Current: Amperes

Time: Minutes

PP # 10

SIGNAL

ORBIT

O-TIME

Plotted by

Date Plotted

Resolution

±9 ma at 100-700 ma

±22 ma at 0-100 dist

±11 ma at 0-100 ohm
PP# 01  
SIGNAL 0.1391/0.1398/0.1399  
ORBIT 4.1391/4.1398/4.1399  
O-TIME 4.1391/4.1398/4.1399  
Plotted by K.G. SPENCER  
Date Plotted 10/165  
Resolution ±3.8°C at +60°C  
±1.0°C at -2°C  
±4.6°C at -50°C  

TIME, Minutes  
TEMPERATURE, Degrees Centigrade
<table>
<thead>
<tr>
<th>PP#</th>
<th>SIGNAL</th>
<th>ORBIT</th>
<th>D-TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>+15 VOLT</td>
<td>01391</td>
<td>01393</td>
</tr>
</tbody>
</table>

Plotted by: K. G. Spencer
Date Plotted: 3-10-65
Resolution: ±0.1V at 17V
±0.18V at 0V
<table>
<thead>
<tr>
<th>Current, Amperes</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
</tr>
<tr>
<td><strong>TIME, Minutes</strong></td>
</tr>
</tbody>
</table>

**Signal**

<table>
<thead>
<tr>
<th>ORBIT</th>
<th>O-TIME</th>
<th>Date Plotted</th>
</tr>
</thead>
<tbody>
<tr>
<td>0/351/6</td>
<td>3/9/65</td>
<td>3-10-65</td>
</tr>
</tbody>
</table>

**Resolution**

<p>| ±2 ma at 0-100 ch |
| ±11 ma at 0-100 ch |</p>
<table>
<thead>
<tr>
<th>PP #</th>
<th>SIGNAL</th>
<th>ORBIT</th>
<th>OR TIME</th>
<th>DATE Plotted</th>
<th>RESOLUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1A</td>
<td>0.39°F</td>
<td>1391/392/399</td>
<td>1856/10/01 PM</td>
<td>3-10-65</td>
<td>±0.9°C</td>
</tr>
</tbody>
</table>

**Plot**

- **Temperature:** Degrees Fahrenheit
- **Time:** Minutes

**Grid**

- **X-Axis:** TIME, Minutes
- **Y-Axis:** TEMPERATURE, Degrees Fahrenheit

**Scale:**

- Vertical Scale: 0 to 70°F
- Horizontal Scale: 0 to 100 Minutes
<table>
<thead>
<tr>
<th>VOLTAGE (V)</th>
<th>PP#</th>
<th>SIGNAL</th>
<th>ORBIT</th>
<th>O-TIME</th>
<th>Plotted by</th>
<th>Date Plotted</th>
<th>Resolution</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>±0.06 V at 11V</td>
</tr>
<tr>
<td>11.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>±0.09 V at 13V</td>
</tr>
<tr>
<td>10.0</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
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<td>9.0</td>
<td></td>
<td></td>
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<td>8.0</td>
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<td>7.0</td>
<td></td>
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<tr>
<td>6.0</td>
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</tr>
</tbody>
</table>

TIME, Minutes

Date Plotted: 7/11/65
Plot of Signal Orbit O-Time

PP# 07
SIGNAL
ORBIT
O-TIME 3/13/60
Plotted by
Date Plotted
Resolution
± 0.2 V at 17 V
± 0.18 V at 0 V

TIME, Minutes

VOLTAGE, Volts

19 18 17 16 15 14 13 12 11 10 9 8 7 6
PP# 31
SIGNAL 02.12.11 CELL
ORBIT 1.716/16111NO
O-TIME 1/22/22 4:5:01

Plotted by: L. P. C.
Date Plotted: 1/22/22

Resolution: ±3.8°C at ±60°C
±1.6°C at ±2°C
±4.6°C at ±50°C
<table>
<thead>
<tr>
<th>PP #</th>
<th>02</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIGNAL</td>
<td>SPECTRUMETER A</td>
</tr>
<tr>
<td>ORBIT</td>
<td>01/01/2010 A 11/10</td>
</tr>
<tr>
<td>O-TIME</td>
<td>02/07/2010 03/10</td>
</tr>
<tr>
<td>Plotted By</td>
<td>+4 ft. P.O.K. 6/16</td>
</tr>
<tr>
<td>Date Plotted</td>
<td>11/16</td>
</tr>
<tr>
<td>Resolution</td>
<td>± 1.7°C at +60°C</td>
</tr>
<tr>
<td></td>
<td>± 0.7°C at -9°C</td>
</tr>
</tbody>
</table>

**Chart:**
- **Temperature vs Time**
- **Axes:**
  - Y-axis: Temperature (°C)
  - X-axis: Time (Minutes)
PP # 08
SIGNAL G N REEL +12 V
ORBIT 01/76/1 9/31/1 17/0
O-TIME 02/07/04/13/00
Plotted by P. O'Keefe
Date Plotted 3/13/65
Resolution ± 0.06 V ± 11 V
± 0.09 V ± 13 V
PP #
SIGNAL
ORBIT
O-TIME
Plotted by
Date Plotted
Resolution

0/7/69

0/2/69

9/12/69

±9 mA at 100-700 mA

±22 mA at 0-100000

TIME, Minutes
<table>
<thead>
<tr>
<th>PP#</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIGNAL</td>
<td>ULFF SHELF TEMP</td>
</tr>
<tr>
<td>ORBIT</td>
<td>2/7/73 - 5/1/73</td>
</tr>
<tr>
<td>O-TIME</td>
<td>2:37/4/3/73</td>
</tr>
<tr>
<td>Plotted by</td>
<td>J.J. P. Christ</td>
</tr>
<tr>
<td>Data Plotted</td>
<td>3/1/73</td>
</tr>
<tr>
<td>Resolution</td>
<td>± 0.9°C</td>
</tr>
</tbody>
</table>

**Graph: Temperature vs. Time**

- **Axes:**
  - Y-axis: Temperature, Degrees Centigrade
  - X-axis: Time, Minutes

- **Grid:**
  - Temperature range: 0 to 70°C
  - Time range: 0 to 100 minutes

- **Data Points:**
  - Several points marked on the graph indicating temperature measurements over time.
Plotting Temperature vs. Time

- Temperature Range: -70°C to 80°C
- Time Range: 0 to 100 Minutes

Resolution:
- ±3.8°C at ±60°C
- ±1.5°C at ±2°C
- ±0.6°C at ±50°C

SIGNAL ORBIT

Plotted by:

Date Plotted:

Resolution:

PP#:

31
PP# 10 - 2
SIGNAL
ORBIT
O-TIME
Plotted by
Date Plotted
Resolution

± 0.2 V at 17 V
± 0.18 V at 0 V

TIME, Minutes
VOLTAGE, Volts

TIME, Minutes

Plot by Date Plotted

Resolution

±0.18V at 0V

±0.3V at 17V

±15V ±15

1A954 +198

R. G. Schaffner

4-28-45

PP# 44

SIGNAL ORBIT O-TIME

Plotted by:
PP # 106

SIGNAL DUMP CURRENT

ORBIT A 1904 6 1926

O-TIME 0228 2259 00

Plotted by P. A. T. R. N. E.

Date Plotted 4-28-65

Resolution vari.dbl.

Max. Error ± 0.05 Amp

CURRENT, Amperes

TIME, Minutes

-20 -10 0 10 20 30 40 50 60 70 80 90 100

0 1 2 3 4 5
<table>
<thead>
<tr>
<th>PP#</th>
<th>CS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIGNAL</td>
<td>( \text{REF: } +12 \text{V} )</td>
</tr>
<tr>
<td>ORBIT</td>
<td>( \text{A1934 0/329} )</td>
</tr>
<tr>
<td>O-TIME</td>
<td>( \text{DPA2/2458/23} )</td>
</tr>
</tbody>
</table>

- **Plotted by:** Rig Spencer
- **Date Plotted:** 4-28-64
- **Resolution:**
  - 10.06V @ 11V
  - \( \pm 0.09 \text{V at 13V} \)

![Graph with time and voltage axes]
VOLTAGE, Volts

TIME, Minutes

PP#  SIGNAL  ORBIT  O-TIME  Plotted by  Date Plotted  Resolution
03  ON PEEL/412V  April 03, 1984  02224  5-2-81  ±0.06V at 11V  ±0.09V at 13V
Plotter by
Date Plotted
Resolution
± 0.4°C at -56°C
± 1.6°C at +80°C
CURRENT, Amperes

TIME, Minutes

PP #
SIGNAL
ORBIT
O-TIME
Plotte by
Date Plotted
Resolution

BATTERY CURRENT
0 10 25 36
0 20 00 08 00 06
E. G. Spenker

+9 min at 100-200 mA
±22 mA at 0-100 dB S
±11 mA at 0-100 dB
<table>
<thead>
<tr>
<th>PP#</th>
<th>14</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIGNAL LOWER CAFE TEMP</td>
<td>22</td>
</tr>
<tr>
<td>ORBIT</td>
<td>25</td>
</tr>
<tr>
<td>O-TIME</td>
<td>25</td>
</tr>
<tr>
<td>Date Plotted</td>
<td>5-4-65</td>
</tr>
<tr>
<td>Resolution</td>
<td>±0.9°C</td>
</tr>
</tbody>
</table>

**Diagram:**
- **Axes:**
  - X-axis: TIME, Minutes (0 to 100 minutes)
  - Y-axis: TEMPERATURE, Degrees Centigrade (−70 to 80 degrees)

**Plot Symbols:**
- Different symbols represent different data points for the SIGNAL, ORBIT, and O-TIME conditions.

**Notes:**
- The plot was created by a named person.
- The resolution of the measurements is ±0.9°C.
TIME, Minutes

- VOLTAGE, Volts

PP#  08
SIGNAL G N. REEL /+11V
ORBIT 0.283 B. 0.891 30
O-TIME 0.292 10528/10
Plotted by A. F. O'BRIEN
Date Plotted 5-11-65
Resolution ±0.06v at 11v
±0.09v at 15v
TEMPERATURE, Degrees Centigrade

TIME, Days

S-52/UK-2
PP# 00
SIGNAL OZONE MONITOR
PLOTTED BY E.R. ROYER
DATE PLOTTED: 5/20/66
S-52/UK-2
PP # 04
SIGNAL +15 VOLTS
PLOTTED BY E.R. ROYER
DATE PLOTTED 5-20-65
S-52/UK-2

PP # 08

Signal GN REEL/12V

Plotted by E.R. Royer

Date Plotted 6-20-65

VOLTAGE, Volts

TIME, Days
SIGNAL Spin Rate S-52/UK-2

PLOTTED BY Eugene R. Royer

DATE PLOTTED Dec 1964 - Feb 1965

Derived from:
O - Ozone Exp.
D - Micrometeorite Exp.
A - Solar Current Waveform

SPIN RATE, RPM

TIME, Days
MAY SUNLIGHT FOR
BATTERY TEMP 0° ± 11
LOWER SHELF TEMP 0° ± 14

PP#: 11 0° ± 14 δ ±
SIGNAL BATTERY & LOWER SHELF
ORBIT 0° 0409 AA 15
O-TIME 0116/1057/00
Plotted by R.G. SPENCER
DATE Plotted 5/18/65
RESOLUTION

TIME, MINUTES

TEMPERATURE, Degrees Centigrade
Max. Sunlight For
Spectrometer A PP#2
Lower Shelf Temp PP#4

PP# 2 OMA & 4 & 8
Signal Spectra & Lower Shelf
Orbit ○ 1331 A 1332 B 1339 H
O-Time ○ 1851 1010 100
Plotted by R.G. Spencer
Date Plotted 5-19-65
Resolution

Time (Minutes)
MINIMUM SUNLIGHT FOR
OZONE MONITOR PP #00 PLUS
OZONE CELL PP #01

PP#: 20 20 10 10
SIGNAL: OZONE MONITOR: CELL
ORBIT: 12:26 0 16:29
O-TIME: 00:212/05/23/00

Plotted by
R.G. SPENCER

Data Plotted
Resolution 5-19-65

TEMPERATURE, Degrees Centigrade

TIME, Minutes
MINIMUM SUNLIGHT FOR
SPECTROMETER A  PP4 OR
UPPER SHELF TEMP PP413

PP4: 02 00 513
SIGNAL SPECTRA 4 UPPER SHELF
ORBIT 2628 02679
O-TIME 0292/0523/00
Plotted by R.G. SPENCER
Date Plotted 5-19-65
Resolution

TIME, Minutes
MINIMUM SUNLIGHT FOR SIGNAL SPECT. A & LOWER SHELF
SPECTROMETER A PP 02
LOWER SHELF TEMP PP 14

Orbit 2568 2629
O-time 0.212/05/23/00
Plotted by R.G. Spencer
Date Plotted 5-19-65
Resolution

TIME, Minutes

TEMPERATURE, Degrees Centigrade

0 10 20 30 40 50 60 70
60 50 40 30 20 10 0
MINIMAL SUNLIGHT FOR
BATTERY TEMP APRIL PLUS
LOWER SHELF TEMP APRIL

TEMPERATURE, Degrees Centigrade

TIME, Minutes

PP: 14.03.62
SIGNAL BATTERY 1: 22.03.62
ORBIT 310/B/a/A
O-TIME
Plotted by
DATE: 3/2/62
Resolution 6.25°F
Coldest Day for Spectrometer A PP=2 plus Lower Shelf Temp. PP=4

<table>
<thead>
<tr>
<th>PPs: O2 O2A 144 144</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIGNAL SPECTRA L &amp; LOWER SHELF</td>
</tr>
<tr>
<td>ORBIT 0.815 0.809 0.808</td>
</tr>
<tr>
<td>O-TIME 0144/2330/100</td>
</tr>
<tr>
<td>Plotted by R.G. Spencer</td>
</tr>
</tbody>
</table>

Data Plotted 5/20/65
Resolution
Coldest Day For
Battery Temp ppm ±1 plus
Lower Shelf Temp ppm

PP.: 11-07-65 ± 14 ppm
Signal: Battery & Lower Shelf
Orbit: 215 1801 1808
O-Time: 04/02 2330 100

Plotted by R.G. Spencer
Data Plotted 4-20-65
Resolution
10 ORBIT TEMPERATURE STABILIZATION GRAPH

TEMPERATURE, DEGREES CENTIGRADE

ENTER SUNLIGHT

LEAVE SUNLIGHT

9 = ORBIT #

6 = DATA POINT

PP# 05

SIGNAL TAPE RECORDER

ORBIT 1-10

D-TIME 10:33/6/43/22...

PLOTTED BY R.G. SPENCER

DATE PLOTTED 6/29/45

TIME, MINUTES
10 ORBIT TEMPERATURE STABILIZATION GRAPH

TEMPERATURE, DEGREES CENTIGRADE

ENTER SUNLIGHT

LEAVE SUNLIGHT

ORBIT #1

ORBIT #2

DATA POINT

ORBIT #3

ORBIT #4

ORBIT #5

ORBIT #6

ORBIT #7

ORBIT #8

ORBIT #9

ORBIT #10

SIGNAL UPPER SHELF TRAP

O-TIME (10) 3/6/68

DATE PLOTTED 6/29/65

P# 13

PLotted by P.G. SPENCER
OZONE SPECTROMETER RESPONSE
PURE SUNLIGHT

PASS 1219
173 DAY
6 HR.
59 MIN.

22:25 EST/REV
2.64 REV/MIN
PURE SUN-LIGHT at 100 min.
before 11:30 day eight 11 min.

OZONE CELL

MONITOR CELL

TRANSMISSION TIME = 0.03638 sec/1 div
REAL TIME = 0.79 sec/1 div
OZONE SPECTROMETER RESPONSE

PURE SUNLIGHT before 11 a.m.

OZONE CELL

TRANSMISSION TIME = 0.03638 sec/div
REAL TIME = 1.74 sec/div

MONITOR CELL

2.29.61 A.G.
OZONE SPECTROMETER RESPONSE
SUNSET approx. 107 min
before 1/8 day 00h 11 min

OZONE CELL

TRANSMISSION TIME = 0.03685 sec/plt
REAL TIME = 1.74 sec/plt

MONITOR CELL
LOW SPEED GALACTIC NOISE

INTERROGATE TIME: Monday 23rd 28 May 04.319 Sec.

T.T. = TRANSMISSION TIME
R.T. = TIME OF RECEIVED DATA

9  B.155 sec. 33 MIN.

9  4806377 sec 45 MIN.

GZOME:

Eugene R. Fryer
Feb 1965
LOW SPEED GALACTIC NOISE

INTERROGATION TIME: 11/24/235, 36 MIN, 06:30:00
T.T. = TRANSMISSION TIME
R.T. = TIME OF RECORDED DATA
A.R.T. = 45 T.T.

Feb. 1969

Eugene A. Royer
LOW SPEED GALACTIC NOISE

INTERROGATE TIME: 11/01 23h 36min 04.31566
T.T. = TRANSMISSION TIME
R.T. = TIME OF RECORDED DATA
O.R.T. = 48ATI. Eugene H. Royster
Feb. 1965
ORPRAE SPECTrometer RESPONSE
PASS 5  88 DAY  02 HR

TIME SCALE
0.3635 sec/in

EST. pic./min

Period = 10.708 sec
or 5.603 rev/min

En. 11/28/66
MICROMETEORITE RESPONSE

2/13 Day
15 Min

36.894 sec

51.122 sec

05.225 sec