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APPENDIX B

PROGRAMMED TELEMETRY MEASUREMENTS

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| MEAS.<br>NO. | FUNCTION                                                    | RANGE       | ACCURACY %<br>FULL SCALE |
|--------------|-------------------------------------------------------------|-------------|--------------------------|
| 1            | TRAVEL, PISTON HYDRAULIC ACTUATOR ENGINE NO. 1, PITCH (4-1) | -5/+5 DEG   | 5                        |
| 2            | TRAVEL, PISTON HYDRAULIC ACTUATOR ENGINE NO. 1, YAW (3-1)   | -5/+5 DEG   | 5                        |
| 3            | TRAVEL, PISTON HYDRAULIC ACTUATOR ENGINE NO. 2, PITCH (1-1) | -5/+5 DEG   | 5                        |
| 4            | TRAVEL, PISTON HYDRAULIC ACTUATOR ENGINE NO. 2, YAW (2-1)   | -5/+5 DEG   | 5                        |
| 10           | PRESSURE, HYDRAULIC PUMP DISCHARGE, STG. I                  | 0-4500 PSIG | 5                        |
| 45           | VOLTAGE, COMMAND RECEIVER NO. 1 AGC BURST                   | 0-5 VDC     | 5                        |
| 55           | VOLTAGE, COMMAND RECEIVER NO. 2 AGC BURST                   | 0-5 VDC     | 5                        |
| 113          | VOLTAGE, IRSS BATTERY                                       | 0-35 VDC    | 5                        |
| 114          | VOLTAGE, TRANSFORMER RECTIFIER OUTPUT 25 VDC                | 0-35 VDC    | 5                        |
| 124          | PRESSURE, GAS LIQUID OXYGEN TANK STG. I                     | 0-50 PSIA   | 5                        |
| 125          | PRESSURE, GAS FUEL TANK STAGE I                             | 0-50 PSIA   | 5                        |
| 140          | PRESSURE, GAS LIQUID OXYGEN TANK, STG. II                   | 0-50 PSIA   | 5                        |
| 141          | PRESSURE, GAS FUEL TANK STAGE II                            | 0-50 PSIA   | 5                        |
| 175          | PRESSURE, THRUST CHAMBER ENGINE NO. 1 (Pc1)                 | 0-800 PSIA  | 5                        |
| 176          | PRESSURE, THRUST CHAMBER ENGINE NO. 2 (Pc2)                 | 0-800 PSIA  | 5                        |

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| MEAS.<br>NO. | FUNCTION                                              | RANGE           | ACCURACY %<br>FULL SCALE |
|--------------|-------------------------------------------------------|-----------------|--------------------------|
| 185          | PRESSURE, GAS GENERATOR CHAMBER ENGINE NO. 1 (P cGG1) | 0-700 PSIA      | 5                        |
| 186          | PRESSURE, GAS GENERATOR CHAMBER ENGINE NO. 2 (P cGG2) | 0-700 PSIA      | 5                        |
| 255          | VOLTAGE, PITCH DISPLACEMENT GYRO PICKOFF              | -10/+10 DEG     | 5                        |
| 257          | VOLTAGE, ROLL DISPLACEMENT GYRO PICKOFF               | -10/+10 DEG     | 5                        |
| 258          | VOLTAGE, PITCH RATE GYRO, STAGE II                    | -10/+10 DEG/SEC | 5                        |
| 259          | VOLTAGE, YAW RATE GYRO PICKOFF (STG. II)              | -10/+10 DEG/SEC | 5                        |
| 442          | STAGING SEQUENCE                                      | ON/OFF          | 5                        |
| 443          | VOLTAGE, TOP 0v DC REFERENCE (CALIB)                  | -0.6/+5 VOLT    | 5                        |
| 444          | VOLTAGE, TOP 5v DC REFERENCE (CALIB)                  | -0/5.6 VOLT     | 5                        |
| 481          | VOLTAGE, BI APS OUTPUT AC (ØA)                        | 105/125 VAC     | 5                        |
| 484          | VOLTAGE, PITCH RATE GYRO PICKOFF STAGE I              | -10/+10 DEG/SEC | 5                        |
| 485          | VOLTAGE, YAW RATE GYRO PICKOFF (STG. I)               | -10/+10 DEG/SEC | 5                        |
| 507          | VOLTAGE, APS OUTPUT DC                                | 0-39 VDC        | 5                        |
| 535          | TEMPERATURE, SKIN STA D440 WL60 BL60L                 | 0-500 DEG. F    | 5                        |
| 537          | TEMPERATURE, SKIN STA D440 WLO BLO                    | 0-500 DEG. F    | 5                        |

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MEAS.  
NO.

FUNCTION

RANGE

ACCURACY %  
FULL SCALE

|     |                                       |              |   |
|-----|---------------------------------------|--------------|---|
| 538 | TEMPERATURE, SKIN STA D257 WL60 BL60L | 0-300 DEG. F | 5 |
| 539 | TEMPERATURE, SKIN STA D257 WLO BLO    | 0-300 DEG. F | 5 |
| 540 | TEMPERATURE, SKIN STA E22 WL60 BL60L  | 0-300 DEG. F | 5 |
| 541 | TEMPERATURE, SKIN STA E22 WLO BLO     | 0-300 DEG. F | 5 |

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APPENDIX C

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VAFB AND PMR DATA ACQUISITION

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OPTICAL COVERAGE

Nineteen out of twenty engineering sequential cameras, seven documentary cameras, five metric cameras and one Mobile Optical Tracking Unit (MOTU) provided optical coverage for the flight test. The LA-24 and ME-16 telescopic cameras that were slaved to the radars did not record any data due to a local fog bank.

RADAR COVERAGE

| <u>Station</u> | <u>Unit</u> | <u>From (sec)</u> | <u>To (sec)</u> | <u>Mode</u> |
|----------------|-------------|-------------------|-----------------|-------------|
| Pt. Arguello   | FPS-16 #1   | T+20.4            | T+305.4         | Skin        |
| Pt. Arguello   | FPS-16 #2   | T+15.4            | T+280.4         | Skin        |
| Pt. Arguello   | MPS-19 #3   | T+27.4            | T+275.4         | Skin        |
| Pt. Arguello   | MPS-19 #4   | T+36.4            | T+215.4         | Skin        |
| VAFB           | COTAR #1    | R-180             | T+485.4         | TMRF        |
| VAFB           | COTAR #2    | R-180             | T+285.4         | TMRF        |

After destruct the skin-track radars were tracking the largest piece of missile structure that could be locked on to.

TELEMETRY COVERAGE

| <u>Station</u> | <u>Link</u> | <u>From (sec)</u> | <u>To (sec)</u>    |
|----------------|-------------|-------------------|--------------------|
| Pt. Arguello   | 246.3       | R-180             | T+180.5 (Destruct) |
| Discoverer     | 246.3       | R-180             | T+180.5 (Destruct) |

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APPENDIX D

TRAJECTORY AND AIRFRAME DATA

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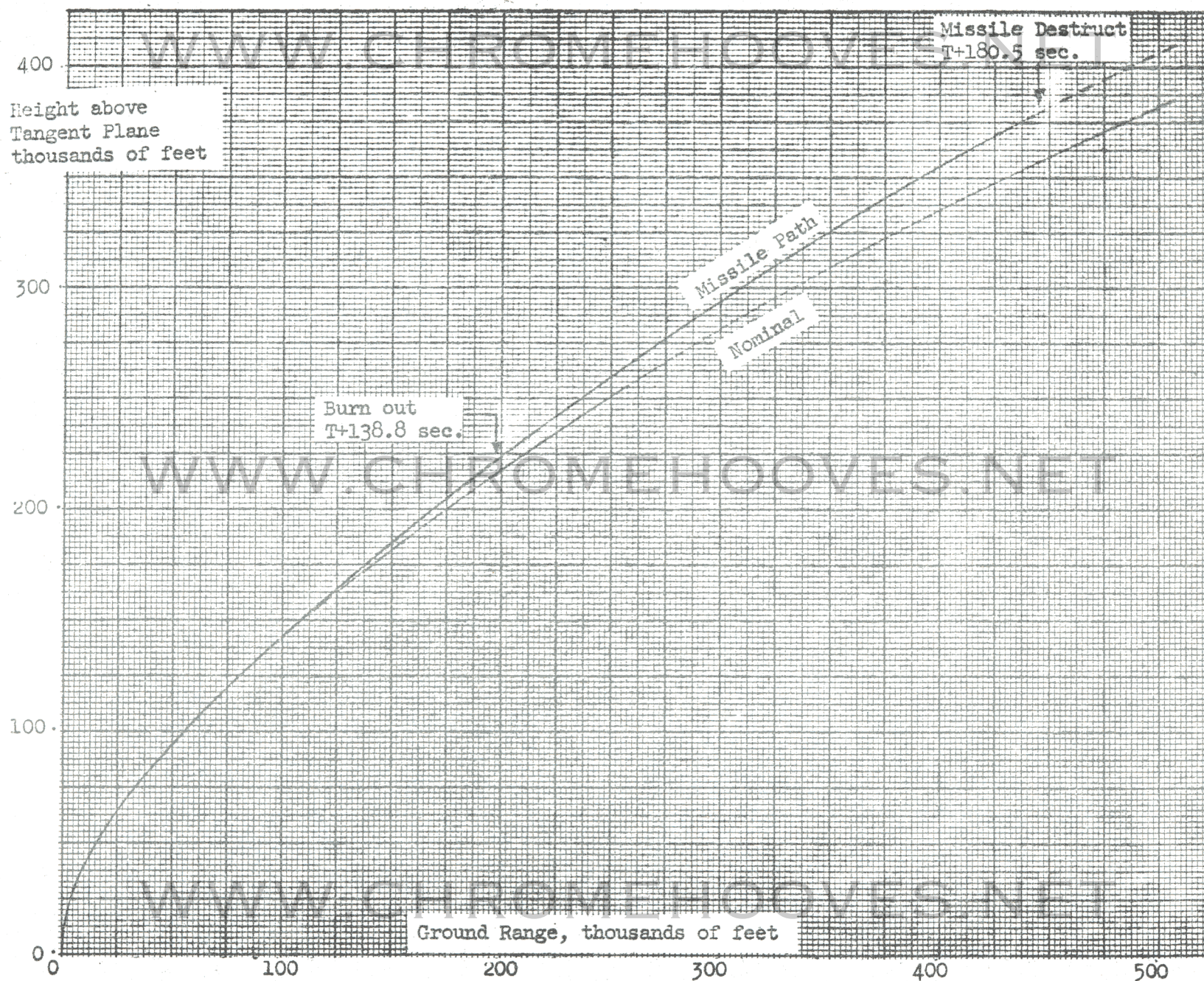


FIGURE 1: RADAR - TRAJECTORY - HEIGHT VS RANGE



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Distance West, thousands of feet

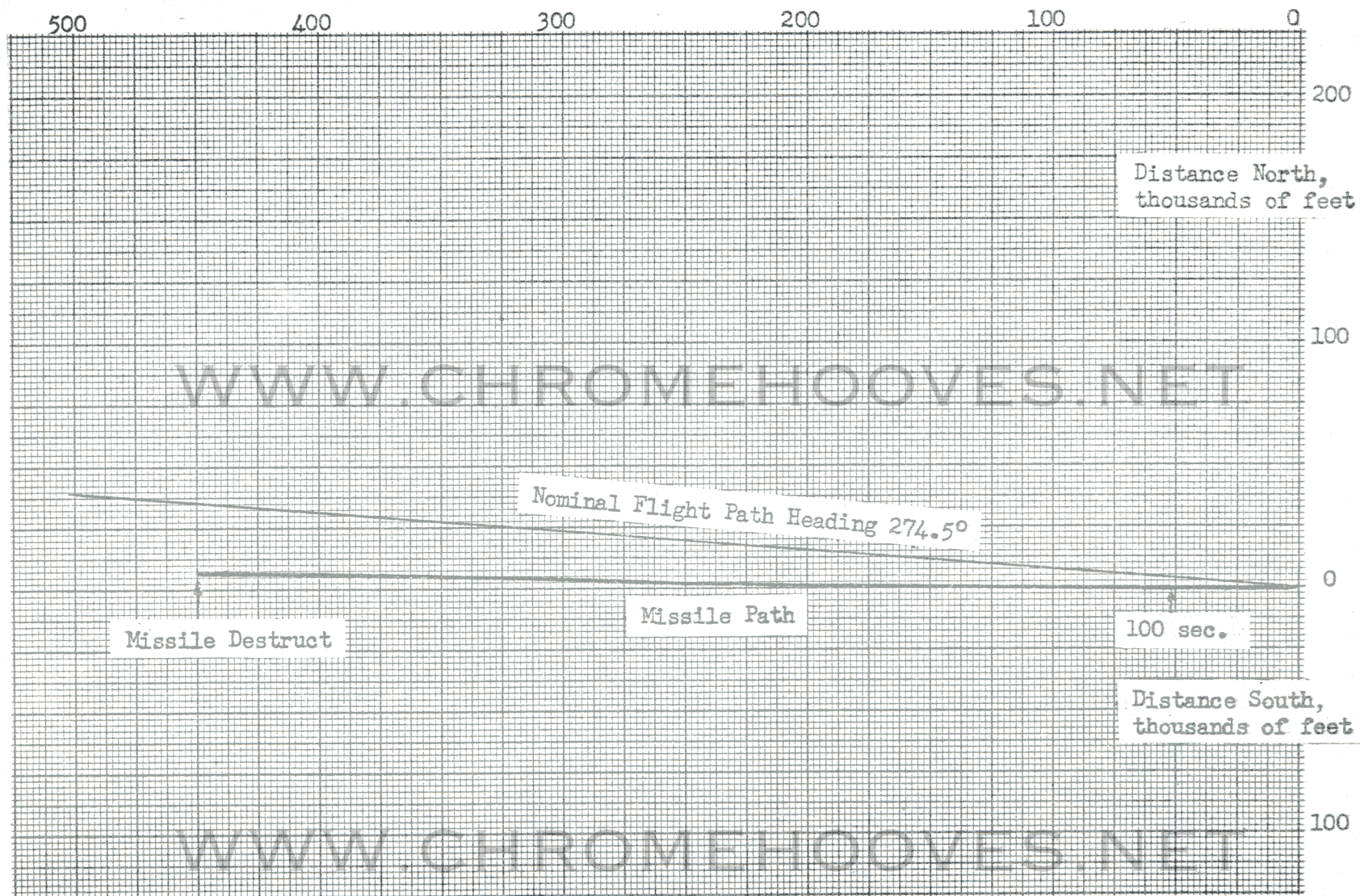


FIGURE 2: RADAR - GROUND PLANE PROJECTION OF TRAJECTORY

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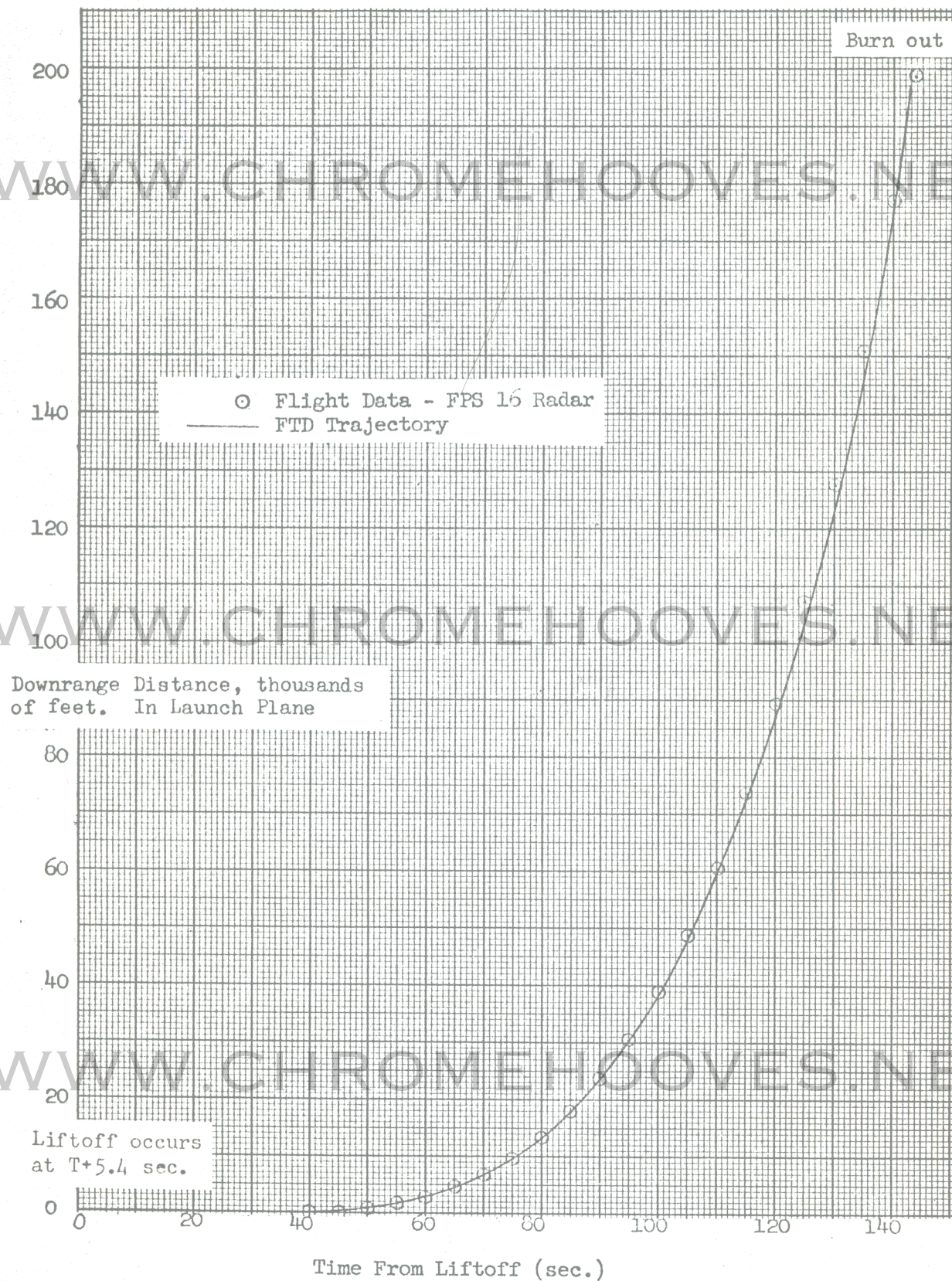


FIGURE 3: RANGE VS TIME



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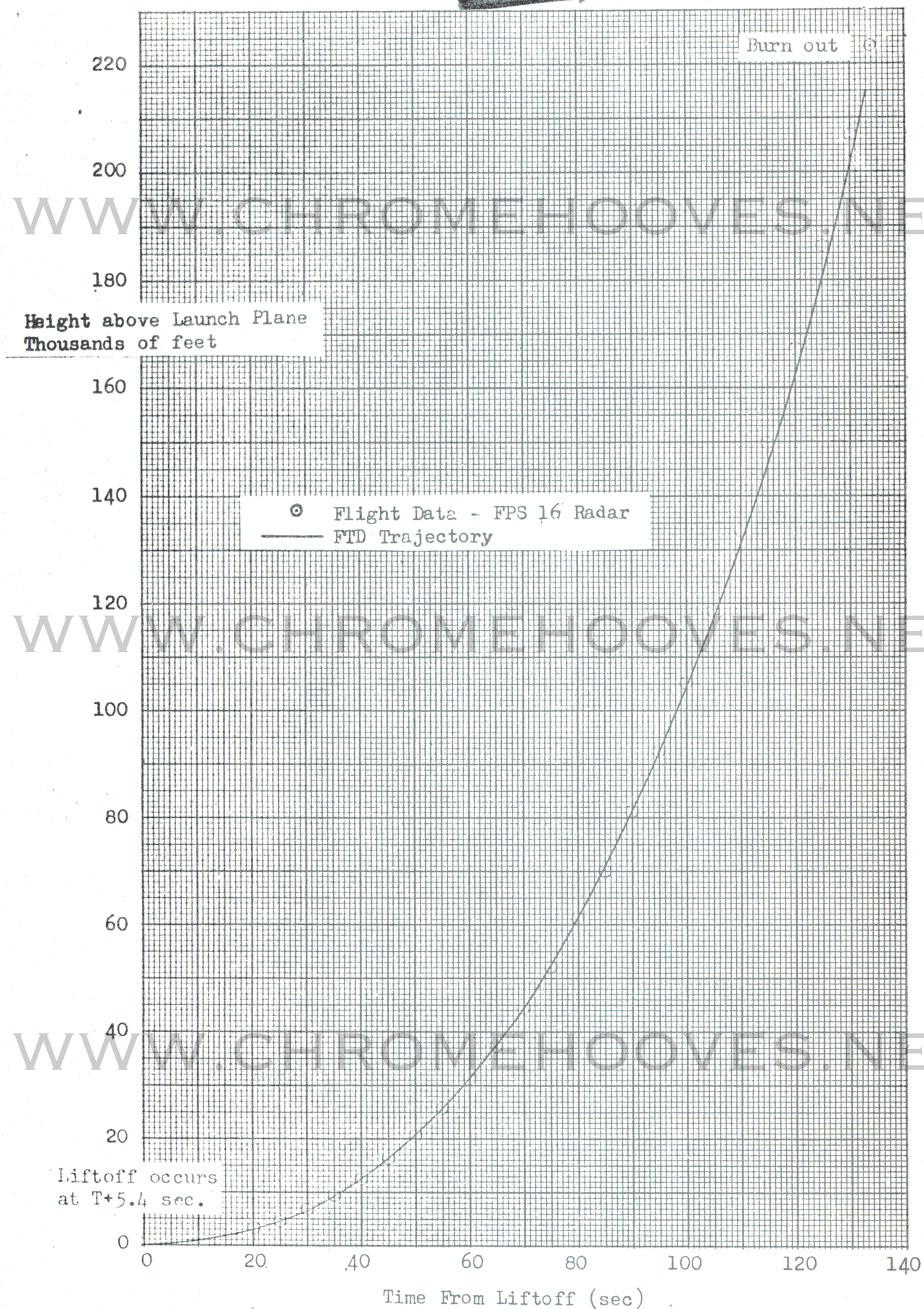


FIGURE 4: ALTITUDE VS TIME

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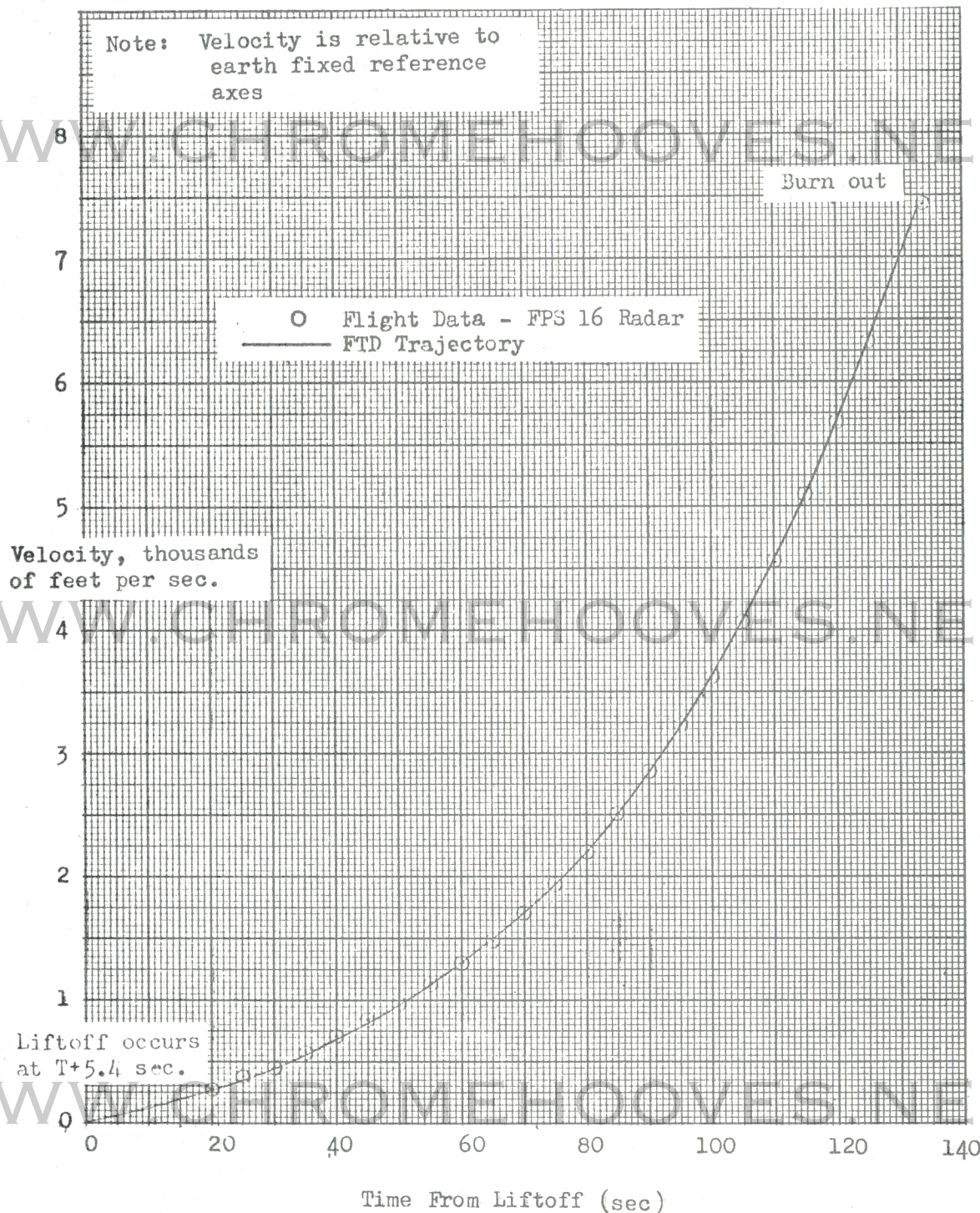


FIGURE 5: VELOCITY VS TIME

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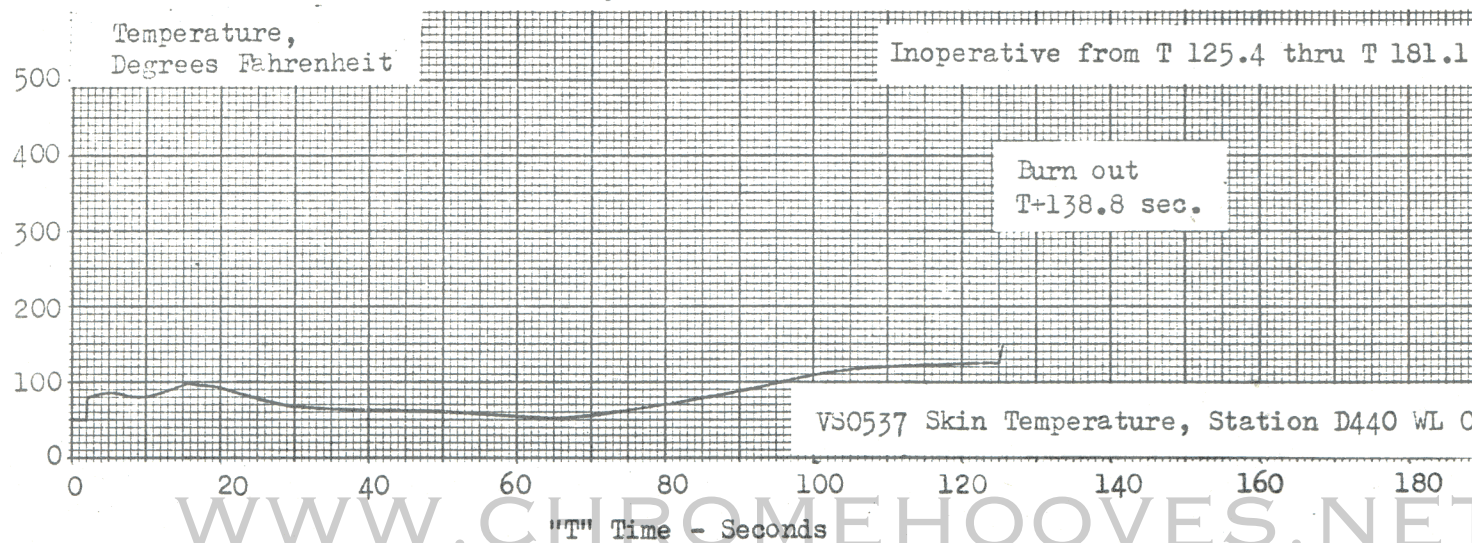
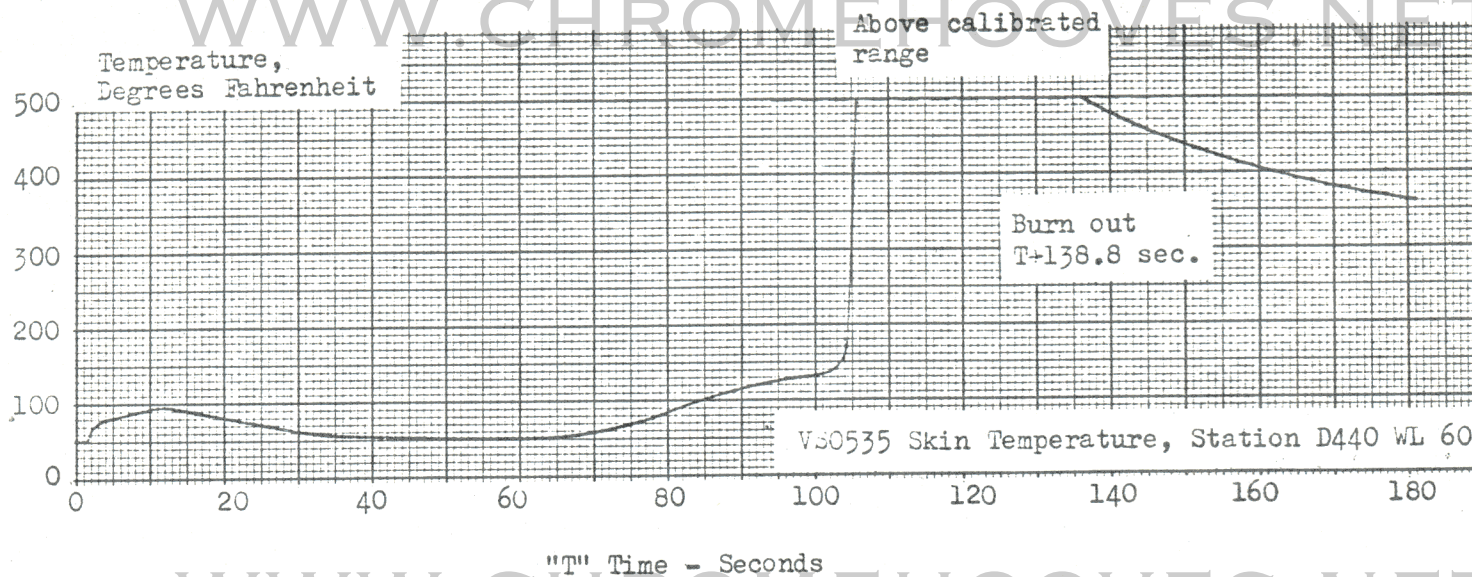


FIGURE 6: TELEMETRY - TEMPERATURES VS TIME

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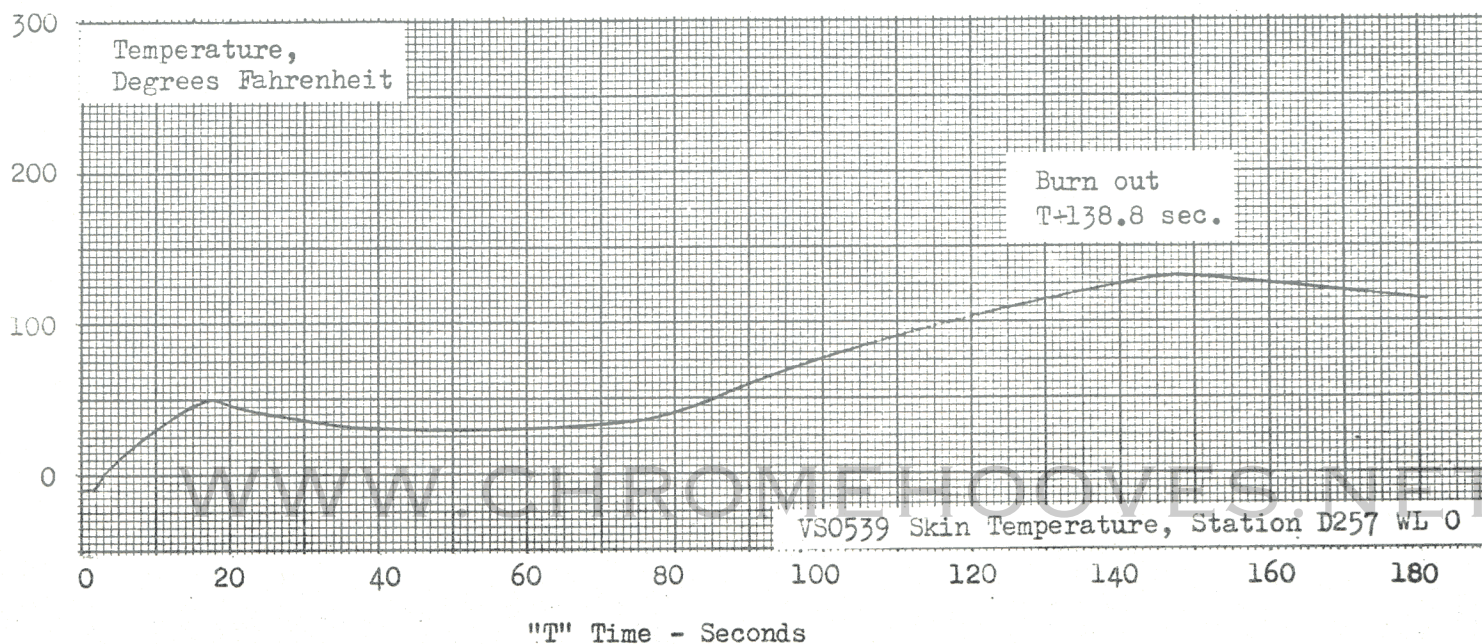
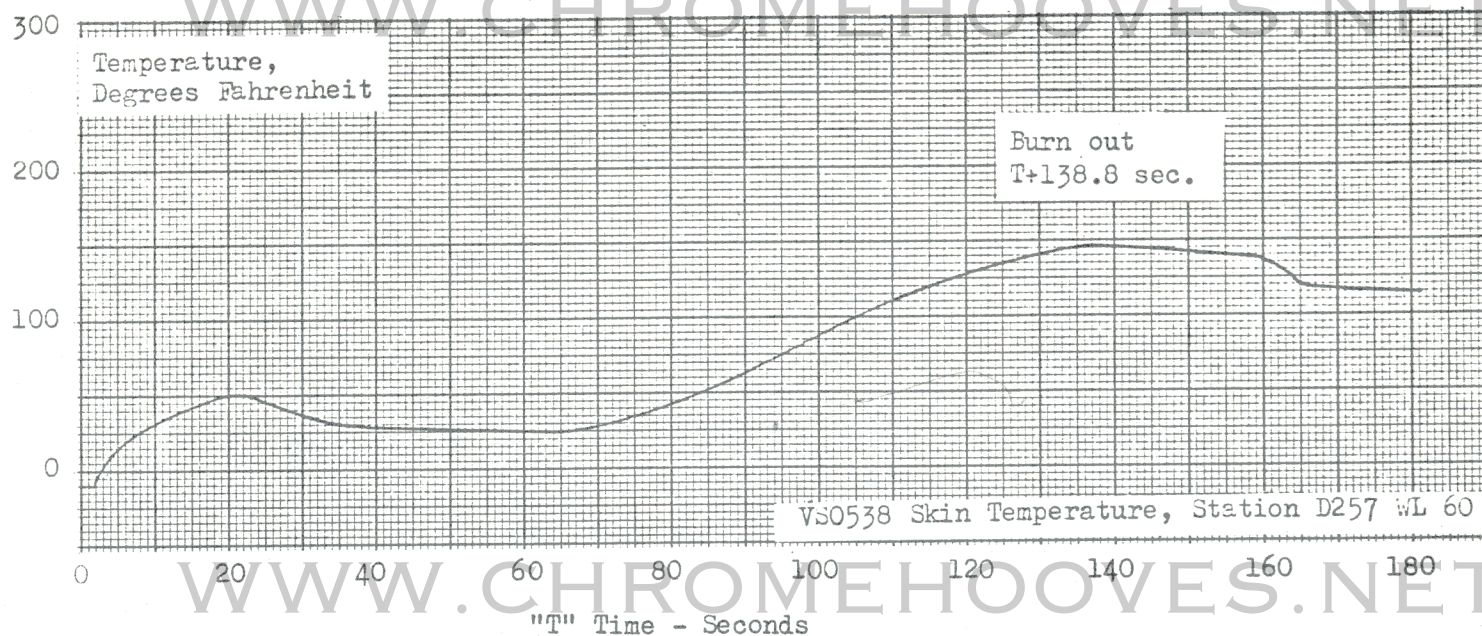


FIGURE 7: TELEMETRY - SKIN TEMPERATURES VS TIME

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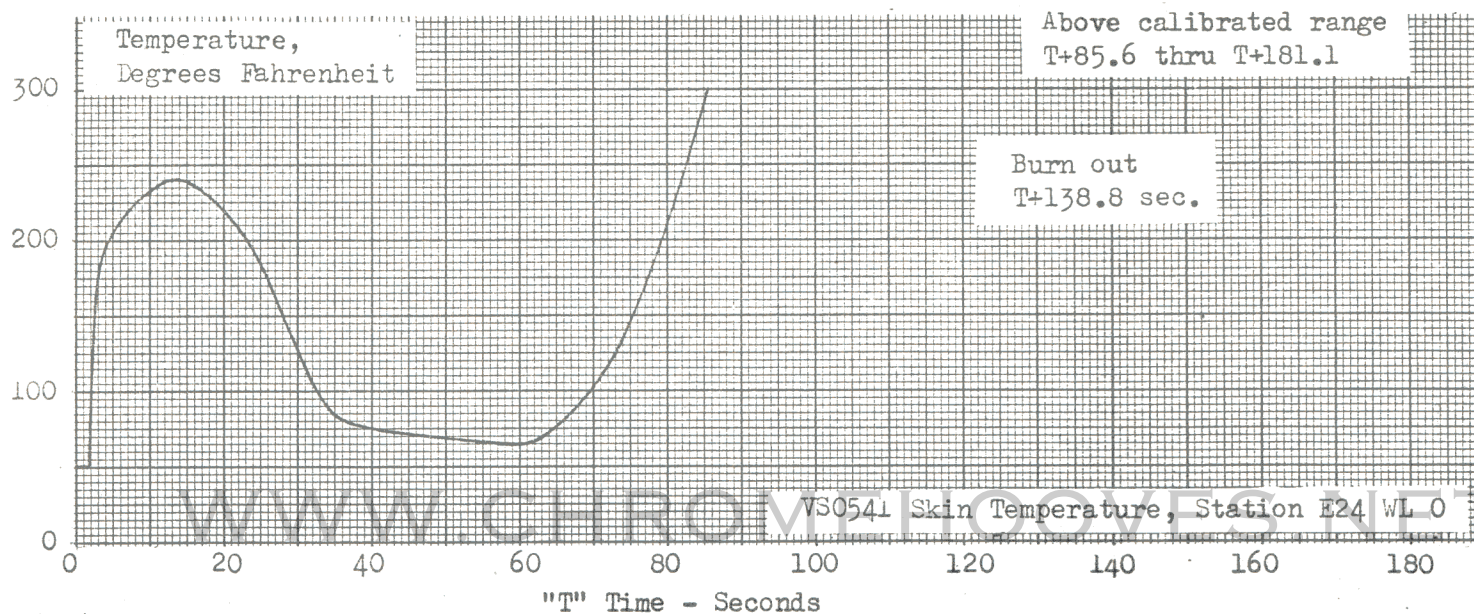
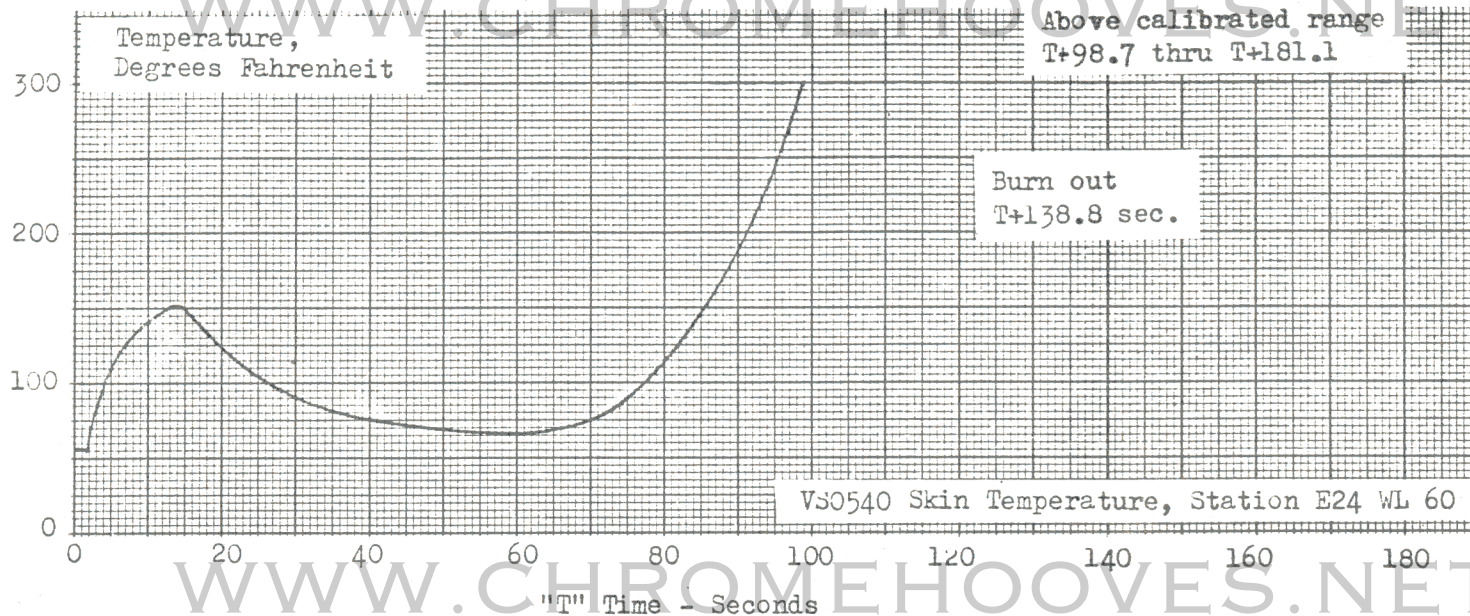


FIGURE 8: TELEMETRY - SKIN TEMPERATURES VS TIME