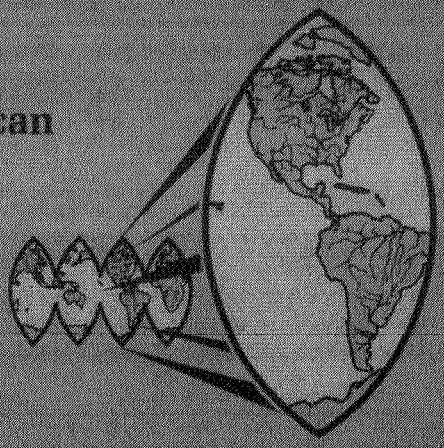
N70-29741

NASA SP-231

# EXAMETNET DATA REPORT SERIES

Experimental InterAmerican
Meteorological
Rocket
Network



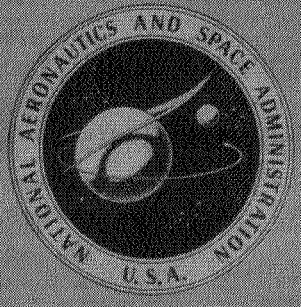
# ANNUAL REPORT, 1968

**Sponsored by the EXAMETNET Executive Committee of the participating national scientific organizations**

ARGENTINA — *Comisión Nacional de Investigaciones Espaciales*

BRAZIL — *Comissão Nacional de Atividades Espaciais*

UNITED STATES — *National Aeronautics and Space Administration*




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NASA SP-231

# EXAMETNET DATA REPORT SERIES

# ANNUAL REPORT, 1968

Prepared under contract for NASA's Wallops Station and the Exametnet Executive Committee by Shellenger Research Laboratories, University of Texas at El Paso




*Scientific and Technical Information Division*
OFFICE OF TECHNOLOGY UTILIZATION 1970
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
*Washington, D.C.*

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## FOREWORD

The Experimental InterAmerican Meteorological Rocket Network (EXAMETNET) is a cooperative program among the national space organizations of Argentina, Brazil, and the United States of America with potential for growth and participation by other countries and national space organizations. The purpose of this program is to establish and demonstrate the capabilities of an inter-hemispheric network of meteorological sounding rocket launch sites. The EXAMETNET provides scientific measurements of the state of the upper atmosphere. These measurements will facilitate research into structure and circulation of the atmosphere in both the Northern and Southern Hemispheres and the interrelation of the atmospheric behavior in both hemispheres. The data from this network, when combined with data from other networks and launching sites, will furnish upper-air observational coverage extending from the Antarctic to the Arctic regions.

Each participating national space organization has provided personnel, facilities, and equipment to carry out the functions necessary for successful operation of this program. One such function is the preparation and dissemination of scientific and technical data. This annual EXAMETNET data report is a compilation of the Quarter Data Reports that have been disseminated to the network participants for their early review and editing. Broader dissemination is then possible by this annual presentation of quality controlled network data. The EXAMETNET reports contain wind and temperature data from each observation and the additional information needed for proper evaluation and interpretation of the soundings.

# PROLOGO

La Red Interamericana Experimental de Investigaciones Meteorológicas con Cohetes (Experimental InterAmerican Meteorological Rocket Network, EXAMETNET) constituye un programa cooperativo entre las organizaciones nacionales espaciales de la Argentina, Brasil y los Estados Unidos de América con capacidad para desarrollarso y admitir la participación de otros países y otras organizaciones nacionales espaciales. El objetivo de este programa es demostrar las posibilidades de una red interhemisférica de bases de lanzamiento de cohetes sonda meteorológicos. Por medio de la red EXAMETNET se obtienen mediciones científicas del estado de la alta atmósfera. Estos datos facilitarán la investigación de la estructura y circulación atmosféricas en los hemisferios norte y sur y la interrelación del comportamiento atmosférico en los mismos. Al considerarse en cojunto con los datos suministrados por otras redes y bases de lanzamiento y al materializarse el crecimiento potencial existente, los resultados de las mediciones proporcionarán información sobre la alta atmósfera desde una a otra región polar.

Cada organización nacional participante ha designado y proporcionado personal, instalaciones y equipos para llevar a cabo las funciones y cumplir con las responsabilidades necesarias para la operación exitosa de la red. Una de dichas funciones es la preparación y distribución de datos científicos y técnicos. Este Informe EXAMETNET Anual es una compilación de los Informes de Datos Trimestrales que han sido distribuídos a los participantes de la red para su revisión y corrección. Por medio de esta presentación anual de información de alta calidad se hace posible una distribución en mayor escala. Los informes de EXAMETNET contienen datos de viento y temperatura de cada una de las observaciones e información adicional para una correcta evaluación e interpretación de los sondeos.

# PREFÁCIO

A Rêde Experimental InterAmericana de Foguetes Meteorológicos (EXAMETNET) é um programa cooperativo entre as organizações espaciais nacionais da Argentina, Brasil e Estados Unidos da América, com potencial para crescer e para ter a participação de outros países e respectivas organizações espaciais. Sua finalidade é estabelecer e demonstrar as capabilidades de uma rêde interhemisférica de campos de lançamento de foguetes meteorológicos. A EXAMETNET obtem, na alta atmosfera, medições de interêsse científico. Tais medições facilitarão as pesquisas sôbre a estrutura e a circulação da atmosfera, tanto no hemisfério norte, como no hemisfério sul, e também a interrelação do comportamento atmosférico nos dois hemisférios. Os dados desta rêde, se combinados com os dados fornecidos por outras rêdes e campos de lançamento, permitirão uma cobertura observacional das camades superiores da atmosfera, desde a Antártica até o Ártico.

Cada organização participante tem provido o pessoal, as facilidades e o equipamento destinados às funções necessárias ao êxito das operações. Uma das referidas funções é o preparo e a disseminação dos dados científicos e técnicos. Êste relatório anual de dados da EXAMETNET é uma compilação des Relatórios Trimestrais de Dados, que têm sido distribuidos aos participantes da rêde para conhecimento e revisão. Uma disseminação mais ampla fica sendo possível por esta apresentação anual de dados de qualidade controlada. As sondagens EXAMETNET contêm dados de ventos e temperatura de cada observação, e as informações adicionais necessárias a adequada avaliação e interpretação das sondagens.

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# INTRODUCTION

EXAMETNET meteorological rocket launchings and data dissemination are conducted synoptically from launch sites at Chamical, Argentina; Mar Chiquita, Argentina; Natal, Brazil; and Wallops Island, Virginia, U.S.A. The reduced data from the launchings for each quarter are checked, further reduced, compiled, and published in the EXAMETNET Data Report Series by Schellenger Research Laboratories of the University of Texas at El Paso. These network data reports, after being reviewed and edited by all participants of the EXAMETNET, are then compiled into the annual publication for broad dissemination.

This annual publication contains, for the year 1968, the meteorological rocket observational data acquired by each participant. Appendixes concerning related activities of the EXAMETNET are also included in the annual reports. The appendixes for this report describe the data and some of the technical and scientific activities of EXAMETNET and participants, and in addition, list all EXAMETNET and related publications.

## METEOROLOGICAL ROCKET SUMMARY

| Page No. | Date of Launch (GMT) | Time of Launch (GMT) | Motor Type | Flight System: Payload Type | Flight System: Sensor Type 1. Wind 2. Temp. | Temp. Profile (Tens of Meters MSL) | Wind Profile (Tens of Meters MSL) |
|---|---|---|---|---|---|---|---|
| *CHAMICAL, ARGENTINA | | | | | | Lat. 30° 22'S | Long. 66° 17'W |
| 16 | 17 Jan 68 | 1725 | Arcas | Arcasonde 2B | 1. Chute<br>2. Bead Therm. | N. A. | 6200-2200 |
| 24 | 14 Feb 68 | 1333 | Judi | Chaff | 1. Chaff<br>2. N. A. | N. A. | 4600-2500 |
| 34 | 13 Mar 68 | 1528 | Arcas | Arcasonde 1A | 1. Chute<br>2. Bead Therm. | 4940-2250 | 4400-2300 |
| 38 | 20 Mar 68 | 1600 | Judi | Chaff | 1. Chaff<br>2. N. A. | N. A. | 6000-2900 |
| 42 | 27 Mar 68 | 1558 | Arcas | Arcasonde 1A | 1. Chute<br>2. Bead Therm. | 4350-2420 | 5000-2300 |
| 46 | 3 Apr 68 | 1339 | Judi | Chaff | 1. Chaff<br>2. N. A. | N. A. | 5900-2100 |
| 50 | 10 Apr 68 | 0210 | Arcas | Arcasonde 1A | 1. Chute<br>2. Bead Therm. | 5828-2880 | 6000-2600 |
| 56 | 17 Apr 68 | 1626 | Judi | Chaff | 1. Chaff<br>2. N. A. | N. A. | 6800-3300 |
| MAR CHIQUITA, ARGENTINA | | | | | | Lat. 37° 45'S | Long. 57° 25'W |
| 72 | 15 May 68 | 1955 | Judi | Chaff | 1. Chaff<br>2. N. A. | N. A. | 4700-3300 |
| 78 | 29 May 68 | 1732 | Judi | Chaff | 1. Chaff<br>2. N. A. | N. A. | 6500-4400 |
| 86 | 13 Jun 68 | 1820 | Arcas | Arcasonde 1A | 1. Chute<br>2. Bead Therm. | 5260-1800 | 5100-1600 |
| 90 | 26 Jun 68 | 1650 | Judi | Chaff | 1. Chaff<br>2. N. A. | N. A. | 6300-4000 |
| 96 | 16 Jul 68 | 0145 | Arcas | Arcasonde 1A | 1. Chute<br>2. Bead Therm. | N. A. | 4500-2400 |
| 106 | 31 Jul 68 | 2228 | Judi | Chaff | 1. Chaff<br>2. N. A. | N. A. | 6300-3800 |
| 112 | 14 Aug 68 | 2328 | Arcas | Arcasonde 1A | 1. Chute<br>2. Bead Therm. | 4050-1630 | 3800-1800 |
| 118 | 28 Aug 68 | 2240 | Judi | Chaff | 1. Chaff<br>2. N. A. | N. A. | 6200-4700 |

METEOROLOGICAL ROCKET SUMMARY

| Page No. | Date of Launch (GMT) | Time of Launch (GMT) | Motor Type | Flight System: Payload Type | Flight System: Sensor Type 1. Wind 2. Temp. | Temp. Profile (Tens of Meters MSL) | Wind Profile (Tens of Meters MSL) |
|---|---|---|---|---|---|---|---|
| MAR CHIQUITA, ARGENTINA (continued) | | | | | | Lat. 37° 45'S | Long. 57° 25'W |
| 128 | 20 Sep 68 | 0340 | Arcas | Arcasonde 1A | 1. Chute<br>2. Bead Therm. | N. A. | 5200-1900 |
| 132 | 25 Sep 68 | 1959 | Judi | Chaff | 1. Chaff<br>2. N. A. | N. A. | 5800-1600 |
| 134 | 2 Oct 68 | 1520 | Judi | Chaff | 1. Chaff<br>2. N. A. | N. A. | 6000-1700 |
| 138 | 10 Oct 68 | 1835 | Arcas | Arcasonde 1A | 1. Chute<br>2. Bead Therm. | N. A. | 5000-1800 |
| 156 | 13 Nov 68 | 1910 | Arcas | Arcasonde 1A | 1. Chute<br>2. Bead Therm. | 5750-1880 | 5700-1800 |
| 160 | 27 Nov 68 | 1550 | Internal Burning | Chaff | 1. Chaff<br>2. N. A. | N. A. | 4900-2000 |
| 170 | 18 Dec 68 | 1802 | Arcas | Arcasonde 1A | 1. Chute<br>2. Bead Therm. | 6516-1679 | 6600-1800 |
| NATAL, BRAZIL | | | | | | Lat. 05° 55'S | Long. 35° 10'W |
| 12 | 17 Jan 68 | 1500 | Judi | WOX-1A | 1. Chute<br>2. Bead Therm. | 2816-1942 | 5000-1800 |
| 20 | 31 Jan 68 | 1512 | Judi | Chaff | 1. Chaff<br>2. N. A. | N. A. | 5300-1800 |
| 54 | 17 Apr 68 | 1500 | Judi | WOX-1A | 1. Chute<br>2. Bead Therm. | N. A. | 5400-1800 |
| 62 | 1 May 68 | 1500 | Judi | Chaff | 1. Chaff<br>2. N. A. | N. A. | 6100-1800 |
| 68 | 15 May 68 | 1500 | Judi | WOX-1A | 1. Chute<br>2. Bead Therm. | N. A. | 5100-1800 |
| 76 | 29 May 68 | 1500 | Judi | Chaff | 1. Chaff<br>2. N. A. | N. A. | 6200-1800 |
| 82 | 12 Jun 68 | 1502 | Judi | Chaff | 1. Chaff<br>2. N. A. | N. A. | 6400-1800 |
| 102 | 24 Jul 68 | 1602 | Arcas | Arcasonde 1A | 1. Chute<br>2. Bead Therm. | 5691-1993 | 5800-1800 |
| 126 | 18 Sep 68 | 1519 | Arcas | Arcasonde 1A | 1. Chute<br>2. Bead Therm. | N. A. | 5800-1800 |

## METEOROLOGICAL ROCKET SUMMARY

| Page No. | Date of Launch (GMT) | Time of Launch (GMT) | Motor Type | Flight System | | Temp. Profile (Tens of Meters MSL) | Wind Profile (Tens of Meters MSL) |
|---|---|---|---|---|---|---|---|
| | | | | Payload Type | Sensor Type<br>1. Wind<br>2. Temp. | | |
| NATAL, BRAZIL (continued) | | | | | | Lat. 05° 55'S | Long. 35° 10'W |
| 142 | 16 Oct 68 | 1514 | Arcas | Arcasonde 1A | 1. Chute<br>2. Bead Therm. | 5273-1945 | 5100-1900 |
| 152 | 13 Nov 68 | 1530 | Arcas | Arcasonde 1A | 1. Chute<br>2. Bead Therm. | 5995-2310 | 6000-1800 |
| 168 | 18 Dec 68 | 1500 | Arcas | Arcasonde 1A | 1. Chute<br>2. Bead Therm. | 5700-2277 | 5500-1800 |
| WALLOPS ISLAND, VIRGINIA, U.S.A. | | | | | | Lat. 37° 51'N | Long. 75° 29'W |
| 8 | 5 Jan 68 | 1650 | Arcas | Arcasonde 1A | 1. Chute<br>2. Bead Therm. | 5000-1689 | 5000-1700 |
| 10 | 10 Jan 68 | 1840 | Arcas | Arcasonde 1A | 1. Chute<br>2. Bead Therm. | 5553-1700 | 5500-1800 |
| 14 | 17 Jan 68 | 1612 | Arcas | Arcasonde 1A | 1. Chute<br>2. Bead Therm. | 5514-1743 | 5400-1800 |
| 18 | 26 Jan 68 | 1559 | Arcas | Arcasonde 1A | 1. Chute<br>2. Bead Therm. | 4368-1682 | 5200-1700 |
| 22 | 7 Feb 68 | 1644 | Judi | Chaff | 1. Chaff<br>2. N. A. | N. A. | 6400-3900 |
| 26 | 14 Feb 68 | 1513 | Arcas | Arcasonde 1A | 1. Chute<br>2. Bead Therm. | 5977-2000 | 5600-1800 |
| 28 | 20 Feb 68 | 2144 | Arcas | Arcasonde 1A | 1. Chute<br>2. Bead Therm. | 5410-1700 | 5300-1700 |
| 30 | 28 Feb 68 | 1528 | Arcas | Arcasonde 1A | 1. Chute<br>2. Bead Therm. | 5236-1740 | 5200-1800 |
| 32 | 6 Mar 68 | 1503 | Arcas | Arcasonde 1A | 1. Chute<br>2. Bead Therm. | 5660-1731 | 5600-1800 |
| 36 | 14 Mar 68 | 1500 | Arcas | Arcasonde 1A | 1. Chute<br>2. Bead Therm. | 5136-1765 | 5100-1800 |
| 40 | 21 Mar 68 | 1618 | Arcas | Arcasonde 1A | 1. Chute<br>2. Bead Therm. | N. A. | 5400-1800 |
| 44 | 27 Mar 68 | 1841 | Arcas | Arcasonde 1A | 1. Chute<br>2. Bead Therm. | 5889-1795 | 5700-1800 |
| 48 | 3 Apr 68 | 1559 | Arcas | Arcasonde 1A | 1. Chute<br>2. Bead Therm. | 5404-1771 | 5700-1800 |
| 52 | 10 Apr 68 | 1505 | Arcas | Arcasonde 1A | 1. Chute<br>2. Bead Therm. | 5837-1713 | 5600-1800 |

## METEOROLOGICAL ROCKET SUMMARY

| Page No. | Date of Launch (GMT) | Time of Launch (GMT) | Motor Type | Flight System: Payload Type | Flight System: Sensor Type 1. Wind 2. Temp. | Temp. Profile (Tens of Meters MSL) | Wind Profile (Tens of Meters MSL) |
|---|---|---|---|---|---|---|---|
| WALLOPS ISLAND, VIRGINIA, U.S.A. (continued) | | | | | | Lat. 37° 51'N | Long. 75° 29'W |
| 58 | 17 Apr 68 | 1851 | Judi | WOX-1A | 1. Chute<br>2. Bead Therm. | 5291-1700 | 5500-1800 |
| 60 | 24 Apr 68 | 1612 | Judi | WOX-1A | 1. Chute<br>2. Bead Therm. | N. A. | 5000-1800 |
| 64 | 2 May 68 | 1459 | Judi | WOX-1A | 1. Chute<br>2. Bead Therm. | 3316-1768 | 5500-1800 |
| 66 | 8 May 68 | 1459 | Arcas | Arcasonde 1A | 1. Chute<br>2. Bead Therm. | 5587-1722 | 5400-1800 |
| 70 | 15 May 68 | 1712 | Arcas | Arcasonde 1A | 1. Chute<br>2. Bead Therm. | 5627-1725 | 5400-1800 |
| 74 | 22 May 68 | 1420 | Arcas | Arcasonde 1A | 1. Chute<br>2. Bead Therm. | 6035-1740 | 5800-1800 |
| 80 | 5 Jun 68 | 1915 | Arcas | Arcasonde 1A | 1. Chute<br>2. Bead Therm. | 5900-1713 | 5700-1800 |
| 84 | 13 Jun 68 | 1413 | Arcas | Arcasonde 1A | 1. Chute<br>2. Bead Therm. | 5572-1774 | 5500-1800 |
| 88 | 19 Jun 68 | 1432 | Arcas | Arcasonde 1A | 1. Chute<br>2. Bead Therm. | 5733-1737 | 5700-1800 |
| 92 | 2 Jul 68 | 1554 | Arcas | Arcasonde 1A | 1. Chute<br>2. Bead Therm. | 5331-1750 | 5300-1800 |
| 94 | 10 Jul 68 | 1447 | Arcas | Arcasonde 1A | 1. Chute<br>2. Bead Therm. | 5243-1707 | 5200-1800 |
| 98 | 17 Jul 68 | 1412 | Arcas | Arcasonde 1A | 1. Chute<br>2. Bead Therm. | N. A. | 5600-1800 |
| 100 | 24 Jul 68 | 1506 | Arcas | Arcasonde 1A | 1. Chute<br>2. Bead Therm. | 5690-1737 | 5600-1800 |
| 104 | 31 Jul 68 | 1618 | Arcas | Arcasonde 1A | 1. Chute<br>2. Bead Therm. | 5800-1730 | 5700-1800 |
| 108 | 8 Aug 68 | 1506 | Judi | WOX-1A | 1. Chute<br>2. Bead Therm. | N. A. | 5600-1500 |
| 110 | 14 Aug 68 | 1730 | Arcas | Arcasonde 1A | 1. Chute<br>2. Bead Therm. | 5834-1826 | 5700-1900 |
| 114 | 21 Aug 68 | 1321 | Arcas | Arcasonde 1A | 1. Chute<br>2. Bead Therm. | 5880-1747 | 5300-1800 |
| 116 | 28 Aug 68 | 1421 | Arcas | Arcasonde 1A | 1. Chute<br>2. Bead Therm. | 5087-1737 | 5100-1800 |
| 120 | 4 Sep 68 | 1544 | Arcas | Arcasonde 1A | 1. Chute<br>2. Bead Therm. | 5182-1719 | 5100-1800 |

## METEOROLOGICAL ROCKET SUMMARY

| Page No. | Date of Launch (GMT) | Time of Launch (GMT) | Motor Type | Flight System: Payload Type | Flight System: Sensor Type 1. Wind 2. Temp. | Temp. Profile (Tens of Meters MSL) | Wind Profile (Tens of Meters MSL) |
|---|---|---|---|---|---|---|---|
| WALLOPS ISLAND, VIRGINIA, U.S.A. (continued) | | | | | | Lat. 37° 51'N | Long. 75° 29'W |
| 122 | 11 Sep 68 | 1810 | Arcas | Arcasonde 1A | 1. Chute<br>2. Bead Therm. | 6046-1731 | 5800-1800 |
| 124 | 18 Sep 68 | 1441 | Arcas | Arcasonde 1A | 1. Chute<br>2. Bead Therm. | 5989-1728 | 5700-1800 |
| 130 | 25 Sep 68 | 1424 | Arcas | Arcasonde 1A | 1. Chute<br>2. Bead Therm. | 5712-1725 | 5600-1800 |
| 136 | 2 Oct 68 | 1745 | Arcas | Arcasonde 1A | 1. Chute<br>2. Bead Therm. | 5873-1728 | 5700-1800 |
| 140 | 11 Oct 68 | 1517 | 5 Inch Gun Probe | Chute | 1. Chute<br>2. N. A. | N. A. | 6400-1900 |
| 144 | 16 Oct 68 | 1920 | Arcas | Arcasonde 1A | 1. Chute<br>2. Bead Therm. | 6056-1759 | 6000-1800 |
| 146 | 23 Oct 68 | 1810 | Arcas | Arcasonde 1A | 1. Chute<br>2. Bead Therm. | 5907-1770 | 5900-1800 |
| 148 | 30 Oct 68 | 1652 | Arcas | Arcasonde 1A | 1. Chute<br>2. Bead Therm. | 5773-2030 | 5500-1700 |
| 150 | 7 Nov 68 | 1551 | Loki | Datasonde | 1. Chute<br>2. Bead Therm. | N. A. | 6000-1800 |
| 154 | 13 Nov 68 | 1552 | Loki | Datasonde | 1. Chute<br>2. Bead Therm. | N. A. | 5800-1800 |
| 158 | 20 Nov 68 | 1556 | Loki | Datasonde | 1. Chute<br>2. Bead Therm. | 3983-1710 | 4000-1800 |
| 162 | 27 Nov 68 | 1626 | Loki | Datasonde | 1. Chute<br>2. Bead Therm. | 6136-1792 | 6100-1800 |
| 164 | 5 Dec 68 | 1525 | Loki | Datasonde | 1. Chute<br>2. Bead Therm. | 5944-1615 | 5900-1700 |
| 166 | 11 Dec 68 | 2059 | Arcas | Arcasonde 1A | 1. Chute<br>2. Bead Therm. | 6401-1759 | 6200-1800 |
| 172 | 19 Dec 68 | 1922 | Loki | Datasonde | 1. Chute<br>2. Bead Therm. | 5669-1719 | 5300-1800 |

N. A. NOT APPLICABLE

* The station at Chamical, Argentina has been moved to Mar Chiquita, Argentina and is no longer operational as an EXAMETNET site.

# ROCKET OBSERVATION DATA

RP STATION NAME

72402 (NASA) WALLOPS ISLAND, VIRGINIA

LAT. 37°51'N LONG. 75°29'W

ROCKET LAUNCH

DATE JANUARY 5, 1968 TIME 1650 Z

RAWINSONDE RELEASE

DATE JANUARY 5, 1968 TIME 1412 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | WIND COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 064 | 50 | 293 | 057 | -022 | +052 |
| 067 | 49 | 293 | 041 | -016 | +037 |
| 062 | 48 | 290 | 034 | -012 | +032 |
| 065 | 47 | 304 | 030 | -017 | +025 |
| 056 | 46 | 302 | 027 | -014 | +023 |
| 049 | 45 | 303 | 019 | -011 | +016 |
| 044 | 44 | 351 | 012 | -011 | +002 |
| 044 | 43 | 011 | 018 | -018 | -003 |
| 044 | 42 | 012 | 019 | -019 | -004 |
| 037 | 41 | 358 | 016 | -016 | +001 |
| 033 | 40 | 054 | 006 | -003 | -005 |
| 033 | 39 | 099 | 013 | +002 | -013 |
| 033 | 38 | 092 | 018 | +001 | -018 |
| 029 | 37 | 090 | 013 | +000 | -013 |
| 025 | 36 | 095 | 013 | +001 | -013 |
| 025 | 35 | 104 | 016 | +004 | -016 |
| 022 | 34 | 105 | 012 | +003 | -012 |
| 020 | 33 | 116 | 009 | +004 | -008 |
| 019 | 32 | 140 | 010 | +008 | -007 |
| 018 | 31 | 145 | 014 | +012 | -008 |
| 016 | 30 | 154 | 017 | +015 | -007 |
| 013 | 29 | 164 | 020 | +019 | -006 |
| 012 | 28 | 164 | 019 | +018 | -005 |
| 012 | 27 | 165 | 014 | +014 | -004 |
| 011 | 26 | 177 | 010 | +010 | -001 |
| 009 | 25 | 218 | 007 | +005 | +004 |
| 008 | 24 | 240 | 010 | +005 | +009 |
| 007 | 23 | 239 | 013 | +006 | +011 |
| 007 | 22 | 251 | 013 | +004 | +012 |
| 006 | 21 | 258 | 018 | +004 | +017 |
| 006 | 20 | 263 | 022 | +003 | +022 |
| 005 | 19 | 269 | 027 | +000 | +027 |
| 005 | 18 | 265 | 035 | +003 | +034 |
| 005 | 17 | 260 | 038 | +007 | +037 |

ROCKET THERMODYNAMICS

| ALT TENS OF METERS | TEMP DEG C | PRESSURE MB | DENSITY G M -3 | WIND POLAR DEG | MPS | WIND COMPONENTS MPS N-S | E-W |
|---|---|---|---|---|---|---|---|
| 5000 | -05.9 | 00.793 | 01.034 | 293 | 057 | -022 | +052 |
| 4877 | -10.8 | 00.927 | 01.231 | 293 | 040 | -015 | +036 |
| 4685 | -11.7 | 01.186 | 01.580 | 304 | 030 | -017 | +025 |
| 4514 | -15.6 | 01.480 | 02.002 | 303 | 020 | -011 | +017 |
| 4331 | -16.5 | 01.881 | 02.553 | 005 | 016 | -016 | -001 |
| 4267 | -15.1 | 02.045 | 02.761 | 011 | 019 | -018 | -004 |
| 4221 | -17.0 | 02.173 | 02.955 | 012 | 019 | -019 | -004 |
| 4182 | -15.4 | 02.287 | 03.091 | 010 | 019 | -018 | -004 |
| 4054 | -15.5 | 02.703 | 03.655 | 025 | 011 | -010 | -005 |
| 3965 | -24.9 | 03.043 | 04.271 | 066 | 008 | -003 | -007 |
| 3856 | -26.9 | 03.531 | 04.996 | 096 | 015 | +001 | -015 |
| 3822 | -32.3 | 03.701 | 05.354 | 093 | 017 | +001 | -017 |
| 3606 | -29.2 | 05.000 | 07.140 | 095 | 013 | +001 | -013 |
| 3490 | -39.8 | 05.892 | 08.796 | 104 | 015 | +004 | -015 |
| 3072 | -42.1 | 10.826 | 16.323 | 148 | 015 | +013 | -008 |
| 2975 | -47.0 | 12.497 | 19.251 | 156 | 017 | +016 | -007 |
| 2615 | -50.0 | 21.496 | 33.559 | 175 | 011 | +011 | -001 |
| 2524 | -47.8 | 24.663 | 38.128 | 211 | 007 | +006 | +004 |
| 2469 | -52.4 | 26.812 | 42.315 | 224 | 008 | +006 | +005 |
| 2323 | -51.0 | 33.525 | 52.575 | 239 | 012 | +006 | +010 |
| 2289 | -48.7 | 35.301 | 54.793 | 240 | 012 | +006 | +011 |
| 2000 | -56.7 | 55.061 | 88.623 | 263 | 022 | +003 | +022 |
| 1900 | -56.0 | | | 269 | 027 | +000 | +027 |
| 1800 | -62.5 | | | 265 | 035 | +003 | +034 |
| 1689 | -60.0 | | | | | | |

CONSTANT PRESSURE SURFACES (GEOPOTENTIAL HEIGHT)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2055 | -54.7 | 50.000 | 79.722 | 258 | 020 | +004 | +019 |
| 2387 | -51.7 | 30.000 | 47.203 | 229 | 011 | +007 | +008 |
| 2651 | -49.5 | 20.000 | 31.155 | 172 | 012 | +012 | -002 |
| 3111 | -41.7 | 10.000 | 15.053 | 145 | 014 | +012 | -008 |
| 3353 | -40.3 | 07.000 | 10.474 | 112 | 010 | +004 | -010 |
| 3586 | -29.2 | 05.000 | 07.140 | 098 | 014 | +002 | -014 |
| 3951 | -23.7 | 03.000 | 04.190 | 088 | 011 | +000 | -011 |
| 4255 | -15.5 | 02.000 | 02.704 | 011 | 014 | -014 | -003 |
| 4781 | -11.1 | 01.000 | 01.329 | 297 | 032 | -014 | +029 |

RAWINSONDE

| PRESSURE | ALT TENS OF METERS | WIND POLAR DEG | MPS | WIND COMPONENTS MPS N-S | E-W | RH % | TEMP DEG C |
|---|---|---|---|---|---|---|---|
| MB | | | | | | | |
| 1035.0 | 0000 | 320 | 006 | -005 | +004 | 46 | -06.7 |
| 0799.0 | 0200 | 317 | 020 | -015 | +014 | 21 | -11.4 |
| 0618.0 | 0400 | 281 | 029 | -006 | +029 | 31 | -11.9 |
| 0471.0 | 0600 | 280 | 045 | -008 | +045 | 29 | -24.4 |
| 0358.0 | 0800 | 280 | 048 | -008 | +048 | 24 | -37.0 |
| 0266.0 | 1000 | 280 | 051 | -009 | +050 | | -50.6 |
| 0243.0 | 1059 | 280 | 058 | -010 | +058 | | -55.0 |
| 0216.0 | 1131 | | | | | | -57.2 |
| 0195.0 | 1200 | | | | | | -55.6 |
| 0143.0 | 1400 | | | | | | -59.5 |
| 0104.0 | 1600 | | | | | | -63.2 |
| 0075.0 | 1800 | | | | | | -62.5 |
| 0054.0 | 2000 | | | | | | -58.7 |
| 0039.5 | 2200 | | | | | | -54.6 |
| 0029.0 | 2400 | | | | | | -50.3 |
| 0022.0 | 2600 | | | | | | -49.3 |
| 0016.0 | 2800 | | | | | | -49.3 |
| 0011.8 | 3000 | | | | | | -48.6 |
| 0008.7 | 3200 | | | | | | -41.0 |
| 0006.5 | 3400 | | | | | | -40.2 |
| 0006.0 | 3455 | | | | | | -39.8 |

# TECHNICAL DATA

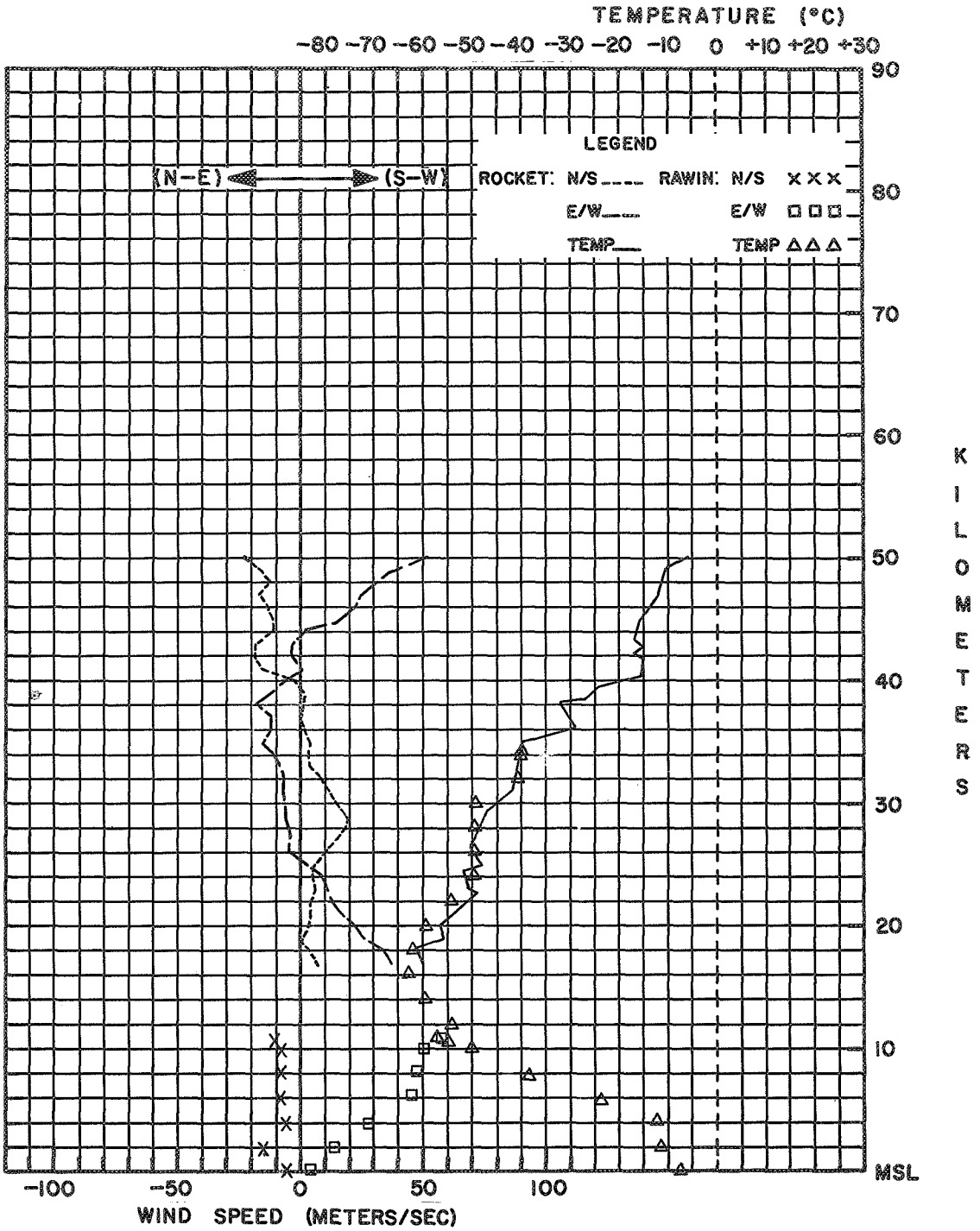
MOTOR TYPE..ARCAS
PAYLOAD TYPE..ARCASONDE-1A
FUSE TYPE..GAS GENERATED SEPARATION DEVICE
LAUNCHER SETTING..133° AZIMUTH 74.5° ELEVATION
RADAR TYPE..FPS-16 APOGEE 53,640 METERS
WIND SENSOR TYPE..15 FT. DIAMETER PARACHUTE
TEMPERATURE SENSOR TYPE..0.010 INCH BEAD THERMISTOR
GROUND EQUIPMENT TYPE..GMD-1B
REMARKS..NO RAWINSONDE WINDS ABOVE 10,590 METERS
DUE TO GMD-1B LIMITING ANGLES.

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..149 SEC

SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..MOLDED INSULATION CO.
TEMPERATURE ELEMENT TYPE..ROD THERMISTOR
PRESSURE SENSOR TYPE..ANEROID AND HYPSOMETER
GROUND EQUIPMENT TYPE..GMD-1B
WIND AT ROCKET LAUNCH..SFC. 335DEG/07MPS 15M 290DEG/05MPS 31M 297DEG/05MPS
46M MISSING 61M 297DEG/05MPS 76M 299DEG/05MPS
BALLISTIC WIND.. 319 AZIMUTH 09.4 MPS
THERMODYNAMIC BASE DATA..PRESSURE 104.0 MBS
TEMPERATURE -63.2°C
ALTITUDE 16,000 METERS

RADIOSONDE TYPE..1680 MHZ
BALLOON TYPE..NEOPRENE
BALLOON SIZE..1,200 GRAMS




STATION: (NASA) Wallops Island, Va. ROCKET TIME: 1150 LST 1650 GCT PAYLOAD TYPE: Arcasonde 1A

DATE: 5 January 1968 ROCKET MOTOR TYPE: Arcas RADIOSONDE TYPE: 1680 MHZ

# ROCKET OBSERVATION DATA

RP STATION NAME

72402 (NASA) WALLOPS ISLAND, VIRGINIA

LAT. 37°51'N LONG. 75°29'W

ROCKET LAUNCH

DATE JANUARY 10, 1968 TIME 1840 Z

RAWINSONDE RELEASE

DATE JANUARY 10, 1968 TIME 2315 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 100 | 55 | 275 | 098 | -009 | +098 |
| 111 | 54 | 274 | 075 | -005 | +075 |
| 105 | 53 | 271 | 059 | -002 | +059 |
| 095 | 52 | 270 | 052 | +000 | +052 |
| 095 | 51 | 264 | 055 | +006 | +055 |
| 091 | 50 | 261 | 053 | +008 | +053 |
| 083 | 49 | 257 | 044 | +010 | +043 |
| 074 | 48 | 256 | 043 | +010 | +042 |
| 074 | 47 | 256 | 043 | +010 | +042 |
| 069 | 46 | 256 | 030 | +007 | +029 |
| 062 | 45 | 268 | 022 | +001 | +022 |
| 061 | 44 | 280 | 021 | -004 | +020 |
| 054 | 43 | 291 | 016 | -006 | +015 |
| 057 | 42 | 300 | 012 | -006 | +010 |
| 044 | 41 | 299 | 007 | -003 | +006 |
| 036 | 40 | 262 | 004 | +001 | +004 |
| 040 | 39 | 193 | 006 | +005 | +001 |
| 036 | 38 | 135 | 005 | +004 | -004 |
| 036 | 37 | 103 | 007 | +002 | -007 |
| 031 | 36 | 108 | 010 | +003 | -010 |
| 027 | 35 | 104 | 013 | +003 | -013 |
| 029 | 34 | 096 | 012 | +001 | -012 |
| 025 | 33 | 095 | 009 | +001 | -009 |
| 024 | 32 | 100 | 010 | +002 | -010 |
| 022 | 31 | 109 | 009 | +003 | -009 |
| 019 | 30 | 113 | 007 | +003 | -007 |
| 017 | 29 | 113 | 008 | +003 | -007 |
| 017 | 28 | 105 | 010 | +003 | -010 |
| 016 | 27 | 093 | 010 | +000 | -010 |
| 013 | 26 | 079 | 008 | -002 | -008 |
| 011 | 25 | 058 | 007 | -004 | -006 |
| 011 | 24 | 025 | 005 | -005 | -002 |
| 011 | 23 | 336 | 005 | -004 | +002 |
| 010 | 22 | 300 | 006 | -003 | +005 |
| 010 | 21 | 292 | 007 | -003 | +007 |
| 009 | 20 | 277 | 013 | -002 | +013 |
| 008 | 19 | 267 | 018 | +001 | +018 |
| 008 | 18 | 264 | 023 | +002 | +023 |

ROCKET THERMODYNAMICS

| ALT TENS OF METERS | TEMP DEG C | PRESSURE MB | DENSITY G M -3 | WIND POLAR DEG | MPS | COMPONENTS MPS N-S | E-W |
|---|---|---|---|---|---|---|---|
| 5553 | -03.5 | 00.369 | 00.477 | | | | |
| 5291 | +00.7 | 00.510 | 00.649 | 271 | 059 | -001 | +058 |
| 4919 | -05.7 | 00.809 | 01.054 | 257 | 046 | +011 | +045 |
| 4758 | -02.1 | 00.989 | 01.271 | 256 | 043 | +010 | +042 |
| 4651 | -02.1 | 01.129 | 01.452 | 256 | 037 | +009 | +036 |
| 4468 | -09.5 | 01.422 | 01.879 | 272 | 022 | -001 | +021 |
| 4386 | -16.2 | 01.581 | 02.144 | 281 | 020 | -004 | +020 |
| 4300 | -14.5 | 01.769 | 02.383 | 291 | 016 | -006 | +015 |
| 4161 | -25.5 | 02.129 | 02.994 | 300 | 010 | -005 | +009 |
| 3993 | -29.2 | 02.680 | 03.827 | 254 | 004 | +001 | +004 |
| 3914 | -28.3 | 02.989 | 04.253 | 198 | 006 | +005 | +002 |
| 3819 | -31.6 | 03.410 | 04.918 | 145 | 006 | +005 | -003 |
| 3719 | -39.7 | 03.930 | 05.865 | 109 | 007 | +002 | -006 |
| 3594 | -42.0 | 04.713 | 07.103 | 108 | 011 | +003 | -009 |
| 3466 | -42.7 | 05.683 | 08.591 | 102 | 012 | +003 | -012 |
| 3383 | -46.7 | 06.425 | 09.884 | 096 | 011 | +001 | -011 |
| 3280 | -45.8 | 07.490 | 11.477 | 096 | 009 | +001 | -009 |
| 2926 | -50.7 | 12.749 | 19.966 | 113 | 008 | +003 | -007 |
| 2838 | -50.9 | 14.575 | 22.847 | 108 | 009 | +003 | -009 |
| 2594 | -57.0 | 21.246 | 34.244 | 076 | 008 | -002 | -008 |
| 2265 | -56.3 | 35.554 | 57.119 | 324 | 005 | -004 | +003 |
| 2000 | -60.1 | 54.052 | 88.387 | 277 | 013 | -002 | +013 |
| 1800 | -57.9 | | | 264 | 023 | +002 | +023 |
| 1700 | -59.5 | | | | | | |

CONSTANT PRESSURE SURFACES (GEOPOTENTIAL HEIGHT)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2042 | -59.9 | 50.000 | 81.683 | 285 | 010 | -002 | +010 |
| 2365 | -56.6 | 30.000 | 48.253 | 010 | 005 | -005 | -001 |
| 2622 | -56.0 | 20.000 | 32.092 | 083 | 009 | -001 | -009 |
| 3072 | -48.3 | 10.000 | 15.492 | 109 | 009 | +003 | -009 |
| 3308 | -46.2 | 07.000 | 10.743 | 095 | 010 | +001 | -010 |
| 3534 | -42.2 | 05.000 | 07.543 | 106 | 012 | +003 | -011 |
| 3887 | -28.4 | 03.000 | 04.271 | 200 | 006 | +005 | +002 |
| 4179 | -21.8 | 02.000 | 02.772 | 299 | 012 | -006 | +011 |
| 4714 | -02.1 | 01.000 | 01.285 | 256 | 043 | +010 | +042 |

RAWINSONDE

| PRESSURE MB | ALT TENS OF METERS | WIND POLAR DEG | MPS | COMPONENTS MPS N-S | E-W | RH % | TEMP DEG C |
|---|---|---|---|---|---|---|---|
| 1031.0 | 0000 | 040 | 005 | -004 | -003 | 40 | -02.8 |
| 0800.0 | 0200 | 293 | 003 | -001 | +003 | 35 | -01.4 |
| 0622.0 | 0400 | 296 | 014 | -006 | +012 | 42 | -10.0 |
| 0479.0 | 0600 | 260 | 033 | +006 | +033 | 90 | -18.6 |
| 0364.0 | 0800 | 260 | 039 | +007 | +039 | 74 | -33.0 |
| 0272.0 | 1000 | 256 | 051 | +012 | +050 | | -50.0 |
| 0198.0 | 1200 | 256 | 072 | +017 | +070 | | -62.7 |
| 0177.0 | 1268 | 265 | 062 | +005 | +062 | | -65.8 |
| 0143.0 | 1400 | 270 | 041 | +000 | +041 | | -58.2 |
| 0102.0 | 1600 | 266 | 036 | +003 | +036 | | -61.6 |
| 0078.0 | 1800 | 276 | 023 | -002 | +023 | | -61.1 |
| 0055.0 | 2000 | 297 | 013 | -006 | +012 | | -59.5 |
| 0040.0 | 2200 | 031 | 007 | -006 | -004 | | -58.0 |
| 0029.3 | 2400 | 058 | 005 | -003 | -004 | | -56.7 |
| 0021.4 | 2600 | 079 | 009 | -002 | -009 | | -55.2 |
| 0015.8 | 2800 | 103 | 007 | +002 | -007 | | -53.8 |
| 0013.3 | 2911 | 092 | 006 | +000 | -006 | | -53.0 |
| 0012.0 | 2975 | | | | | | -52.5 |

# TECHNICAL DATA

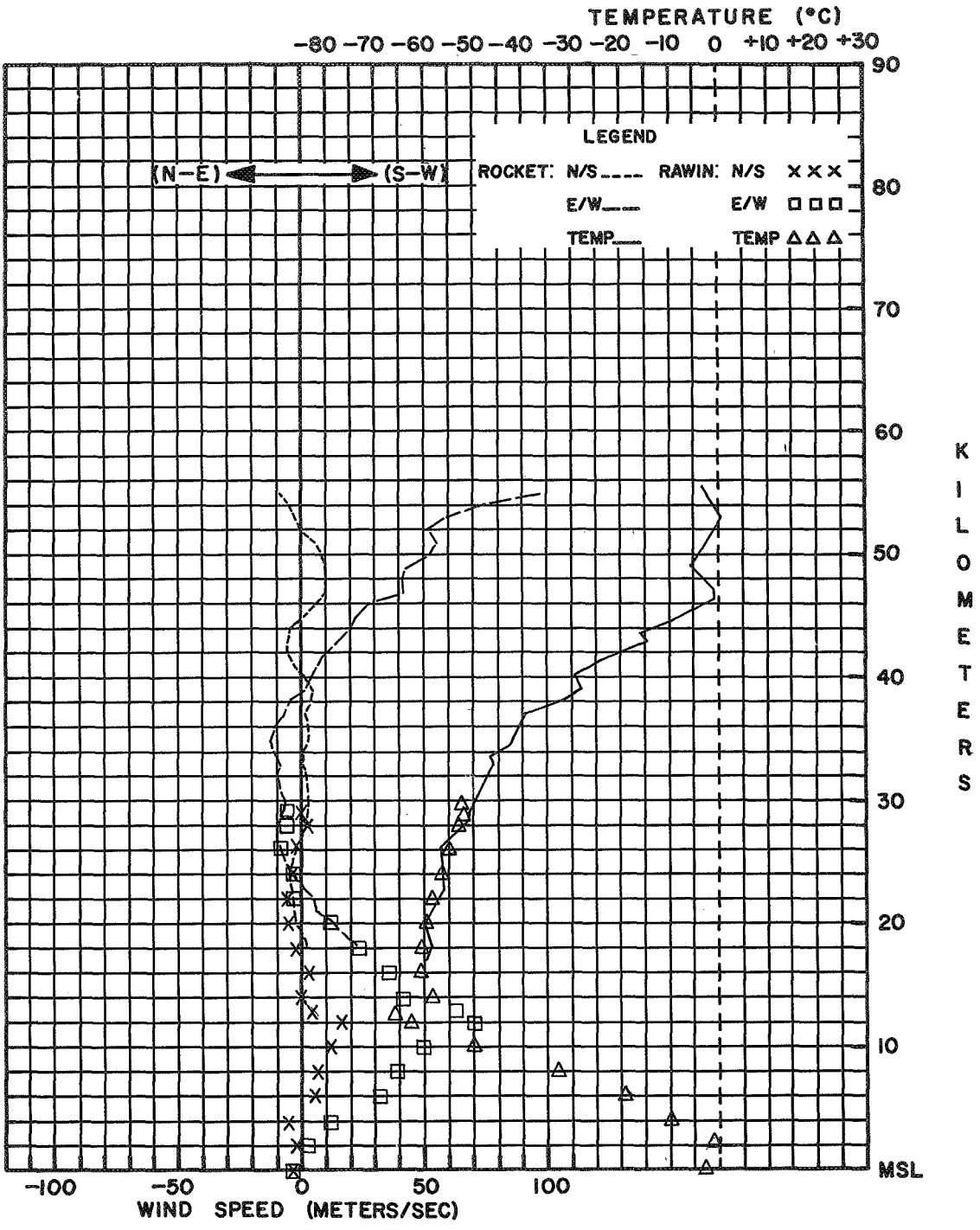
MOTOR TYPE..ARCAS
PAYLOAD TYPE..ARCASONDE-1A
FUSE TYPE..GAS GENERATED SEPARATION DEVICE
LAUNCHER SETTING..121° AZIMUTH 79.6° ELEVATION
RADAR TYPE..FPQ-6 APOGEE 57,760 METERS
WIND SENSOR TYPE..15 FT. DIAMETER PARACHUTE
TEMPERATURE SENSOR TYPE..0.010 INCH BEAD THERMISTOR
GROUND EQUIPMENT TYPE..GMD-1B
REMARKS..NONE

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..123 SEC

SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..MOLDED INSULATION CO.
TEMPERATURE ELEMENT TYPE..ROD THERMISTOR
PRESSURE SENSOR TYPE..ANEROID AND HYPSOMETER
GROUND EQUIPMENT TYPE..GMD-1B
WIND AT ROCKET LAUNCH..SFC. 060DEG/05MPS 15M 034DEG/05MPS 31M 022DEG/05MPS
46M 029DEG/05MPS 61M 029DEG/05MPS 76M 045DEG/05MPS
BALLISTIC WIND.. 350° AZIMUTH 05.0 MPS
THERMODYNAMIC BASE DATA..PRESSURE 102.0 MBS
TEMPERATURE -61.6°C
ALTITUDE 16,000 METERS

RADIOSONDE TYPE..1680 MHZ
BALLOON TYPE..NEOPRENE
BALLOON SIZE..1,200 GRAMS




STATION: (NASA) Wallops Island, Va. ROCKET TIME: 1340 LST 1840 GCT PAYLOAD TYPE: Arcasonde 1A

DATE: 10 January, 1968 ROCKET MOTOR TYPE: Arcas RADIOSONDE TYPE: 1680 MHZ

# ROCKET OBSERVATION DATA

RP STATION NAME

82599 (CNAE) NATAL, BRAZIL

LAT. 05°55'S LONG. 35°10'W

ROCKET LAUNCH

DATE JANUARY 17, 1968 TIME 1500 Z

RAWINSONDE RELEASE

DATE JANUARY 17, 1968 TIME 1046 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | WIND COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 067 | 50 | 084 | 053 | -006 | -055 |
| 057 | 49 | 085 | 052 | -005 | -053 |
| 059 | 48 | 082 | 055 | -008 | -056 |
| 061 | 47 | 079 | 052 | -010 | -053 |
| 059 | 46 | 082 | 059 | -008 | -060 |
| 057 | 45 | 086 | 054 | -005 | -055 |
| 056 | 44 | 088 | 052 | -002 | -053 |
| 051 | 43 | 089 | 052 | -001 | -053 |
| 048 | 42 | 095 | 046 | +004 | -046 |
| 043 | 41 | 099 | 036 | +006 | -039 |
| 041 | 40 | 097 | 033 | +005 | -034 |
| 038 | 39 | 088 | 028 | -001 | -029 |
| 035 | 38 | 081 | 022 | -004 | -022 |
| 033 | 37 | 079 | 021 | -004 | -020 |
| 033 | 36 | 087 | 022 | -001 | -023 |
| 028 | 35 | 095 | 026 | +002 | -026 |
| 028 | 34 | 092 | 030 | +001 | -030 |
| 025 | 33 | 085 | 032 | -003 | -032 |
| 024 | 32 | 084 | 037 | -004 | -037 |
| 021 | 31 | 085 | 038 | -003 | -038 |
| 019 | 30 | 087 | 038 | -002 | -039 |
| 018 | 29 | 085 | 038 | -003 | -038 |
| 017 | 28 | 083 | 038 | -005 | -038 |
| 015 | 27 | 085 | 037 | -003 | -037 |
| 013 | 26 | 090 | 033 | +000 | -034 |
| 013 | 25 | 096 | 027 | +003 | -028 |
| 012 | 24 | 084 | 019 | -002 | -019 |
| 010 | 23 | 069 | 011 | +004 | -011 |
| 010 | 22 | 058 | 004 | -002 | -003 |
| 009 | 21 | 061 | 007 | -004 | -007 |
| 008 | 20 | 097 | 006 | +001 | -006 |
| 007 | 19 | 191 | 008 | +009 | +002 |
| 007 | 18 | 208 | 010 | +009 | +005 |

ROCKET THERMODYNAMICS

| ALT TENS OF METERS | TEMP DEG C | PRESSURE MB | DENSITY G M -3 | WIND POLAR DEG | MPS | WIND COMPONENTS MPS N-S | E-W |
|---|---|---|---|---|---|---|---|
| 2816 | -47.8 | | | 083 | 038 | -004 | -038 |
| 2704 | -51.9 | 17,661 | 28,105 | 085 | 037 | -003 | -037 |
| 2670 | -53.2 | 18,754 | 30,021 | 087 | 036 | -002 | -036 |
| 2661 | -52.7 | 18,992 | 30,033 | 087 | 036 | -002 | -036 |
| 2627 | -56.9 | 20,008 | 32,576 | 088 | 034 | -001 | -034 |
| 2588 | -58.7 | 21,275 | 34,930 | 091 | 032 | +000 | -032 |
| 2536 | -57.1 | 23,211 | 37,827 | 094 | 029 | +005 | +029 |
| 2493 | -61.4 | 24,653 | 40,992 | 096 | 026 | +003 | -026 |
| 2414 | -60.3 | 27,988 | 46,298 | 086 | 020 | -001 | -020 |
| 2384 | -63.2 | 29,437 | 49,367 | 082 | 018 | -002 | -018 |
| 2295 | -59.7 | 33,802 | 55,758 | 068 | 011 | -004 | -010 |
| 2280 | -64.7 | 34,638 | 58,508 | 069 | 010 | -003 | -009 |
| 2246 | -65.5 | 36,729 | 62,279 | 063 | 007 | -003 | -006 |
| 2179 | -63.6 | 40,087 | 67,356 | 057 | 005 | -003 | -004 |
| 2115 | -68.6 | 45,468 | 78,265 | 060 | 007 | -003 | -006 |
| 2051 | -66.3 | 50,067 | 85,225 | 077 | 007 | -002 | -007 |
| 2024 | -69.2 | 52,875 | 91,283 | 087 | 006 | +000 | -006 |
| 2000 | -66.9 | 55,000 | 93,892 | 097 | 006 | +001 | -006 |
| 1957 | -68.7 | | | 133 | 007 | +005 | -005 |
| 1942 | -73.7 | | | 145 | 007 | +006 | -004 |
| CONSTANT PRESSURE SURFACES (GEOPOTENTIAL HEIGHT) | | | | | | | |
| 2045 | -66.3 | 50.000 | 84.225 | 077 | 007 | -002 | -007 |
| 2361 | -62.7 | 30.000 | 49.674 | 080 | 018 | -002 | -018 |
| 2616 | -56.9 | 20.000 | 32.216 | 088 | 034 | -001 | -034 |

RAWINSONDE

| PRESSURE MB | ALT TENS OF METERS | WIND POLAR DEG | MPS | WIND COMPONENTS MPS N-S | E-W | RH % | TEMP DEG C |
|---|---|---|---|---|---|---|---|
| 1008.4 | 0004 | 140 | 004 | +003 | -003 | 60 | +28.4 |
| 0804.0 | 0200 | 088 | 007 | +000 | -007 | 51 | +15.0 |
| 0603.0 | 0400 | 086 | 006 | +000 | -006 | 32 | +00.1 |
| 0480.0 | 0600 | 033 | 003 | -003 | -002 | 19 | -09.9 |
| 0376.0 | 0800 | 268 | 013 | +001 | +013 | 21 | -23.4 |
| 0283.5 | 1000 | 241 | 009 | +004 | +008 | 24 | -38.0 |
| 0212.9 | 1200 | 272 | 030 | -001 | +030 | 24 | -49.8 |
| 0153.6 | 1400 | 262 | 041 | +006 | +041 | | -66.4 |
| 0119.0 | 1547 | 240 | 038 | +020 | +033 | | -75.0 |
| 0109.6 | 1600 | 228 | 016 | +011 | +012 | | -75.2 |
| 0079.0 | 1785 | 213 | 005 | +004 | +003 | | -82.9 |
| 0077.6 | 1800 | 218 | 006 | +005 | +004 | | -82.1 |
| 0055.0 | 2000 | 112 | 006 | +002 | -006 | | -66.9 |
| 0039.5 | 2200 | 012 | 005 | -005 | -001 | | -65.0 |
| 0028.6 | 2400 | 076 | 024 | -006 | -023 | | -59.7 |
| 0020.9 | 2600 | 094 | 034 | +003 | -034 | | -57.2 |
| 0015.3 | 2800 | 094 | 038 | +003 | -038 | | -50.2 |
| 0011.4 | 3000 | 091 | 038 | +001 | -038 | | -43.6 |
| 0008.5 | 3200 | 083 | 036 | -005 | -035 | | -36.0 |
| 0006.4 | 3400 | 089 | 030 | +000 | -030 | | -31.1 |
| 0004.9 | 3600 | 090 | 027 | +000 | -027 | | -27.3 |
| 0003.7 | 3800 | 081 | 022 | -004 | -022 | | -24.9 |
| 0003.0 | 3932 | 090 | 030 | +000 | -030 | | -26.0 |

# TECHNICAL DATA

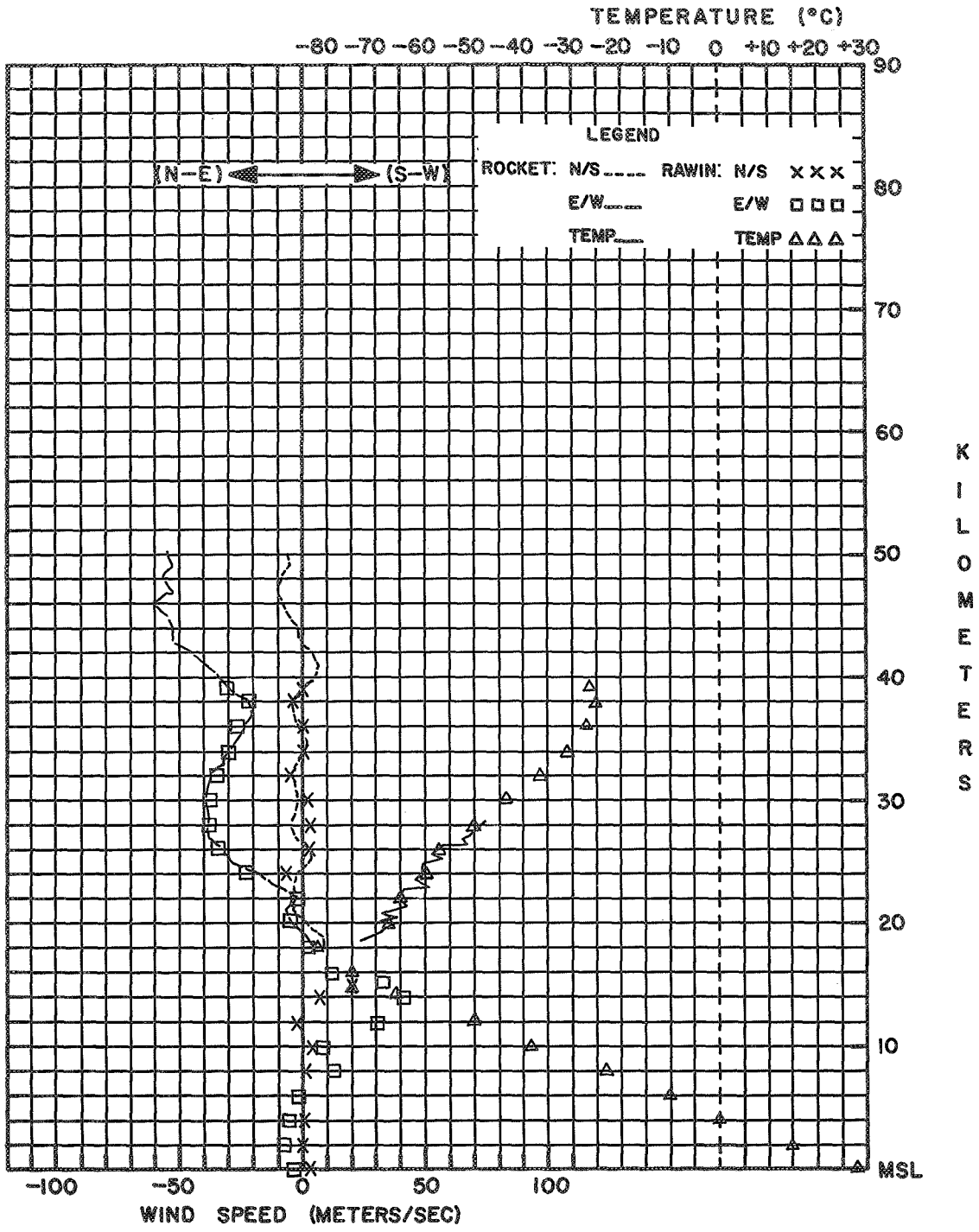
MOTOR TYPE..JUDI
PAYLOAD TYPE..WDX-1A
FUSE TYPE..ELECTRICALLY ACTIVATED PYROTECHNIC
LAUNCHER SETTING..060°AZIMUTH 78.0°ELEVATION
RADAR TYPE..MPS-19 APOGEE 55,839 METERS
WIND SENSOR TYPE..6 FT. SQUARE PARACHUTE
TEMPERATURE SENSOR TYPE..0.014 INCH BEAD THERMISTOR
GROUND EQUIPMENT TYPE..403 MHZ PORTABLE RECEIVER-RECORDER
REMARKS..NO SIGNAL RECEIVED FROM EJECTION TO 28 KM.

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..POOR
ACTUAL FUSE DELAY TIME..UNKNOWN

SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..MOLDED INSULATION CO.
TEMPERATURE ELEMENT TYPE..ROD THERMISTOR
PRESSURE SENSOR TYPE..ANEROID
GROUND EQUIPMENT TYPE..GMD-1A
WIND AT ROCKET LAUNCH..UNKNOWN
BALLISTIC WIND..UNKNOWN AZIMUTH UNKNOWN MPS
THERMODYNAMIC BASE DATA..PRESSURE 55.0 MBS
TEMPERATURE -66.9°C
ALTITUDE 20,000 METERS

RADIOSONDE TYPE..1680 MHZ
BALLOON TYPE..NEOPRENE
BALLOON SIZE..1,200 GRAMS




STATION: (CNAE) Natal, Brazil
DATE: 17 January, 1968

ROCKET TIME: 1200 LST 1500 GCT
ROCKET MOTOR TYPE: Judi

PAYLOAD TYPE: WOX-1A
RADIOSONDE TYPE: 1680 MHZ

# ROCKET OBSERVATION DATA

RP STATION NAME

72402 (NASA) WALLOPS ISLAND, VIRGINIA

LAT. 37°51'N LONG. 75°29'W

ROCKET LAUNCH

DATE JANUARY 17, 1968 TIME 1612 Z

RAWINSONDE RELEASE

DATE JANUARY 17, 1968 TIME 1115 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 090 | 54 | 273 | 084 | -005 | +084 |
| 083 | 53 | 266 | 080 | +006 | +079 |
| 083 | 52 | 260 | 076 | +013 | +075 |
| 074 | 51 | 257 | 079 | +018 | +077 |
| 067 | 50 | 253 | 081 | +024 | +077 |
| 064 | 49 | 254 | 079 | +021 | +075 |
| 061 | 48 | 253 | 071 | +021 | +068 |
| 061 | 47 | 252 | 066 | +021 | +063 |
| 055 | 46 | 252 | 063 | +020 | +060 |
| 051 | 45 | 257 | 059 | +014 | +057 |
| 049 | 44 | 265 | 050 | +004 | +049 |
| 043 | 43 | 266 | 042 | +003 | +041 |
| 040 | 42 | 259 | 032 | +006 | +032 |
| 038 | 41 | 262 | 026 | +004 | +026 |
| 034 | 40 | 270 | 025 | +000 | +024 |
| 033 | 39 | 272 | 024 | -001 | +024 |
| 032 | 38 | 267 | 018 | +001 | +017 |
| 028 | 37 | 279 | 008 | -001 | +008 |
| 025 | 36 | 269 | 006 | +000 | +006 |
| 025 | 35 | 270 | 006 | +000 | +006 |
| 022 | 34 | 315 | 004 | -003 | +003 |
| 020 | 33 | 012 | 002 | -002 | +000 |
| 019 | 32 | 146 | 002 | +002 | -001 |
| 017 | 31 | 143 | 003 | +002 | -002 |
| 014 | 30 | 133 | 005 | +004 | -004 |
| 013 | 29 | 116 | 008 | +004 | -007 |
| 013 | 28 | 094 | 011 | +001 | -011 |
| 011 | 27 | 090 | 008 | +000 | -008 |
| 010 | 26 | 089 | 007 | +000 | -007 |
| 009 | 25 | 092 | 007 | +000 | -007 |
| 008 | 24 | 067 | 005 | -002 | -005 |
| 007 | 23 | 051 | 002 | -001 | -002 |
| 006 | 22 | 015 | 001 | -001 | +000 |
| 006 | 21 | 337 | 006 | -006 | +002 |
| 006 | 20 | 317 | 009 | -007 | +003 |
| 005 | 19 | 305 | 011 | -007 | +009 |
| 005 | 18 | 306 | 016 | -010 | +013 |

ROCKET THERMODYNAMICS

| ALT TENS OF METERS | TEMP DEG C | PRESSURE MB | DENSITY G M -3 | WIND POLAR DEG | MPS | COMPONENTS MPS N-S | E-W |
|---|---|---|---|---|---|---|---|
| 5514 | -05.5 | 00.393 | 00.512 | | | | |
| 5288 | -01.4 | 00.521 | 00.668 | 265 | 079 | +006 | +079 |
| 5203 | -03.8 | 00.579 | 00.749 | 260 | 076 | +013 | +075 |
| 5108 | -02.5 | 00.652 | 00.839 | 258 | 078 | +017 | +076 |
| 4987 | -06.6 | 00.758 | 00.991 | 254 | 081 | +022 | +077 |
| 4892 | -03.9 | 00.854 | 01.105 | 254 | 078 | +021 | +074 |
| 4606 | -03.3 | 01.220 | 01.576 | 252 | 063 | +020 | +060 |
| 4511 | -09.7 | 01.376 | 01.820 | 256 | 059 | +014 | +058 |
| 4456 | -07.8 | 01.476 | 01.938 | 260 | 055 | +010 | +055 |
| 4243 | -19.2 | 01.945 | 02.669 | 262 | 037 | +005 | +036 |
| 4206 | -17.0 | 02.043 | 02.778 | 260 | 033 | +006 | +033 |
| 3904 | -32.1 | 03.077 | 04.448 | 272 | 024 | -001 | +024 |
| 3749 | -32.2 | 03.823 | 05.528 | 272 | 013 | -001 | +013 |
| 3533 | -44.0 | 05.214 | 07.927 | 270 | 006 | +000 | +006 |
| 3450 | -45.1 | 05.894 | 09.004 | 292 | 005 | -002 | +005 |
| 3371 | -43.2 | 06.623 | 10.033 | 333 | 004 | -003 | +002 |
| 2966 | -52.6 | 12.163 | 19.212 | 128 | 006 | +004 | -005 |
| 2798 | -50.0 | 15.714 | 24.533 | 094 | 011 | +001 | -011 |
| 2579 | -55.7 | 22.002 | 35.249 | 089 | 007 | +000 | -007 |
| 2393 | -53.0 | 29.343 | 46.434 | 067 | 005 | -002 | -005 |
| 2225 | -57.9 | 38.115 | 61.689 | 026 | 002 | -001 | -001 |
| 2000 | -57.6 | 54.322 | 87.798 | 317 | 009 | -007 | +003 |
| 1800 | -61.7 | | | 306 | 016 | -010 | +013 |
| 1743 | -59.4 | | | | | | |

CONSTANT PRESSURE SURFACES (GEOPOTENTIAL HEIGHT)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2046 | -57.7 | 50.000 | 80.854 | 328 | 007 | -007 | +004 |
| 2370 | -53.4 | 30.000 | 47.559 | 063 | 004 | -002 | -004 |
| 2629 | -54.0 | 20.000 | 31.800 | 089 | 007 | +000 | -007 |
| 3079 | -49.6 | 10.000 | 15.585 | 141 | 004 | +003 | -002 |
| 3316 | -44.1 | 07.000 | 10.646 | 001 | 002 | -002 | +000 |
| 3542 | -42.4 | 05.000 | 07.550 | 270 | 006 | +000 | +006 |
| 3898 | -31.2 | 03.000 | 04.319 | 272 | 024 | -001 | +024 |
| 4194 | -18.0 | 02.000 | 02.730 | 260 | 032 | +006 | +032 |
| 4730 | -03.7 | 01.000 | 01.293 | 252 | 068 | +021 | +065 |

RAWINSONDE

| PRESSURE MB | ALT TENS OF METERS | WIND POLAR DEG | MPS | COMPONENTS MPS N-S | E-W | RH % | TEMP DEG C |
|---|---|---|---|---|---|---|---|
| 1031.0 | 0000 | 000 | 000 | +000 | +000 | 82 | -07.2 |
| 0800.0 | 0200 | 296 | 012 | -005 | +011 | 27 | -03.5 |
| 0620.0 | 0400 | 315 | 022 | -015 | +015 | 47 | -11.6 |
| 0475.0 | 0600 | 315 | 024 | -017 | +017 | 59 | -24.0 |
| 0358.0 | 0800 | 330 | 029 | -026 | +015 | 52 | -38.8 |
| 0265.0 | 1000 | 338 | 030 | -028 | +011 | | -54.2 |
| 0200.0 | 1176 | 313 | 030 | -020 | +022 | | -62.7 |
| 0193.0 | 1200 | 310 | 030 | -019 | +023 | | -60.0 |
| 0141.0 | 1400 | 285 | 025 | -006 | +025 | | -57.7 |
| 0102.7 | 1600 | 292 | 020 | -007 | +019 | | -60.9 |
| 0074.5 | 1800 | 296 | 015 | -005 | +014 | | -60.4 |
| 0054.0 | 2000 | 296 | 007 | -003 | +006 | | -59.5 |
| 0039.4 | 2200 | 320 | 005 | -004 | +003 | | -58.3 |
| 0028.8 | 2400 | 004 | 003 | -003 | +000 | | -55.9 |
| 0020.2 | 2600 | 078 | 008 | -002 | -008 | | -53.6 |
| 0015.5 | 2800 | 097 | 009 | +001 | -009 | | -51.3 |
| 0011.5 | 3000 | 107 | 009 | +003 | -009 | | -48.7 |
| 0008.5 | 3200 | 104 | 002 | +000 | -002 | | -46.7 |
| 0007.0 | 3332 | 192 | 003 | +002 | +000 | | -45.8 |
| 0006.7 | 3360 | | | | | | -45.4 |

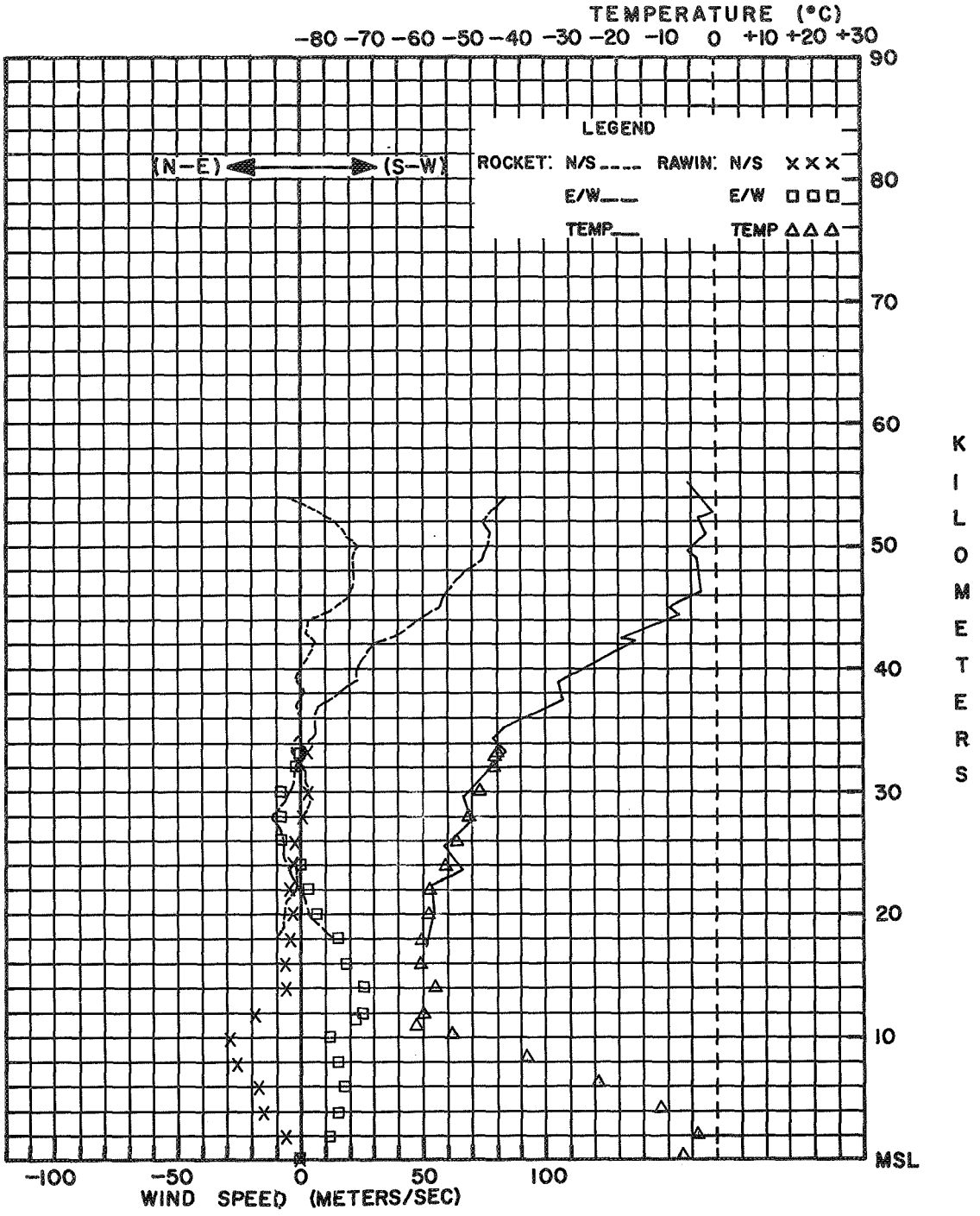
# TECHNICAL DATA

MOTOR TYPE..ARCAS
PAYLOAD TYPE..ARCASONDE-1A
FUSE TYPE..GAS GENERATED SEPARATION DEVICE
LAUNCHER SETTING..132°AZIMUTH 80.0°ELEVATION
RADAR TYPE..FPS-16 APOGEE 58,460 METERS
WIND SENSOR TYPE..15 FT. DIAMETER PARACHUTE
TEMPERATURE SENSOR TYPE..0.010 INCH BEAD THERMISTOR
GROUND EQUIPMENT TYPE..GMD-1B
REMARKS..NONE

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..142 SEC

SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..MOLDED INSULATION CO. RADIOSONDE TYPE..1680 MHZ
TEMPERATURE ELEMENT TYPE..ROD THERMISTOR BALLOON TYPE..NEOPRENE
PRESSURE SENSOR TYPE..ANEROID AND HYPSOMETER BALLOON SIZE..1,200 GRAMS
GROUND EQUIPMENT TYPE..GMD-1B
WIND AT ROCKET LAUNCH..SFC. 160DEG/02MPS 15M 145DEG/01MPS 31M 000DEG/00MPS
46M 138DEG/02MPS 61M 154DEG/01MPS 76M 150DEG/02MPS
BALLISTIC WIND.. 311°AZIMUTH 03.1 MPS
THERMODYNAMIC BASE DATA..PRESSURE 102.7 MBS
TEMPERATURE -60.8°C
ALTITUDE 16,000 METERS




STATION: (NASA) Wallops Island, Va. ROCKET TIME: 1112 LST 1612 GCT PAYLOAD TYPE: Arcasonde 1A

DATE: 17 January, 1968 ROCKET MOTOR TYPE: Arcas RADIOSONDE TYPE: 1680 MHZ

# ROCKET OBSERVATION DATA

RP STATION NAME

87320 (CNIE) CHAMICAL, ARGENTINA

LAT. 30°22'S LONG. 66°17'W

ROCKET LAUNCH

DATE JANUARY 17, 1968 TIME 1725 Z

RAWINSONDE RELEASE

DATE JANUARY 17, 1968 TIME 1410 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 072 | 62 | 052 | 050 | -031 | -039 |
| 063 | 61 | 069 | 058 | -019 | -049 |
| 067 | 60 | 083 | 058 | -007 | -058 |
| 059 | 59 | 086 | 067 | -005 | -068 |
| 059 | 58 | 081 | 062 | -010 | -061 |
| 056 | 57 | 084 | 064 | -007 | -063 |
| 053 | 56 | 084 | 062 | -007 | -061 |
| 050 | 55 | 078 | 057 | -012 | -056 |
| 037 | 54 | 073 | 057 | -017 | -054 |
| 042 | 53 | 068 | 055 | -021 | -051 |
| 044 | 52 | 067 | 060 | -024 | -056 |
| 036 | 51 | 071 | 062 | -020 | -059 |
| 035 | 50 | 076 | 066 | -016 | -064 |
| 033 | 49 | 079 | 069 | -013 | -068 |
| 030 | 48 | 084 | 068 | -007 | -068 |
| 025 | 47 | 087 | 064 | -003 | -064 |
| 026 | 46 | 087 | 058 | -003 | -058 |
| 028 | 45 | 086 | 053 | -004 | -053 |
| 026 | 44 | 086 | 059 | -004 | -059 |
| 023 | 43 | 088 | 050 | -002 | -050 |
| 022 | 42 | 088 | 048 | -002 | -048 |
| 020 | 41 | 088 | 046 | -002 | -047 |
| 017 | 40 | 086 | 045 | -003 | -045 |
| 015 | 39 | 080 | 043 | -008 | -042 |
| 017 | 38 | 080 | 042 | -008 | -042 |
| 017 | 37 | 082 | 039 | -006 | -039 |
| 013 | 36 | 080 | 044 | -008 | -044 |
| 013 | 35 | 080 | 038 | -007 | -037 |
| 012 | 34 | 084 | 037 | -004 | -037 |
| 010 | 33 | 089 | 035 | -001 | -035 |
| 010 | 32 | 096 | 032 | +003 | -032 |
| 010 | 31 | 104 | 026 | +006 | -025 |
| 009 | 30 | 098 | 021 | +003 | -021 |
| 007 | 29 | 089 | 020 | +000 | -020 |
| 007 | 28 | 083 | 020 | -002 | -020 |
| 006 | 27 | 080 | 021 | -004 | -021 |
| 005 | 26 | 081 | 021 | -003 | -021 |
| 004 | 25 | 078 | 020 | -004 | -018 |
| 004 | 24 | 080 | 017 | -003 | -017 |
| 004 | 23 | 080 | 017 | -003 | -017 |
| 004 | 22 | 079 | 012 | -002 | -012 |

RAWINSONDE

| PRESSURE | ALT TENS OF METERS | WIND POLAR DEG | MPS | COMPONENTS MPS N-S | E-W | RH % | TEMP DEG C |
|---|---|---|---|---|---|---|---|
| MB | | | | | | | |
| 0956.2 | 0046 | 090 | 002 | +000 | -002 | 40 | +32.4 |
| 0802.0 | 0200 | 132 | 002 | +001 | -001 | 33 | +19.4 |
| 0631.0 | 0400 | 082 | 006 | -001 | -006 | 43 | +01.6 |
| 0490.0 | 0600 | 214 | 005 | +004 | +003 | 68 | -14.3 |
| 0374.0 | 0800 | 216 | 010 | +008 | +006 | 43 | -26.1 |
| 0282.0 | 1000 | 226 | 015 | +010 | +011 | | -39.8 |
| 0208.0 | 1200 | 233 | 026 | +017 | +021 | | -50.9 |
| 0153.0 | 1400 | 247 | 028 | +011 | +026 | | -56.3 |
| 0111.3 | 1600 | 263 | 023 | +003 | +022 | | -57.0 |
| 0106.0 | 1625 | 270 | 020 | +000 | +020 | | -70.1 |
| 0080.3 | 1800 | 000 | 000 | +000 | +000 | | -69.9 |
| 0057.8 | 2000 | 010 | 006 | -006 | -001 | | -61.0 |
| 0042.0 | 2200 | 095 | 012 | +002 | -012 | | -61.0 |
| 0030.5 | 2400 | 085 | 017 | -002 | -017 | | -55.7 |
| 0025.2 | 2600 | 081 | 019 | -003 | -019 | | -49.4 |
| 0016.8 | 2800 | 079 | 021 | -004 | -019 | | -43.9 |
| 0012.5 | 3000 | 072 | 025 | -008 | -024 | | -40.0 |
| 0009.4 | 3200 | 094 | 024 | +002 | +024 | | -36.2 |
| 0008.0 | 3287 | | | | | | -34.2 |

# TECHNICAL DATA

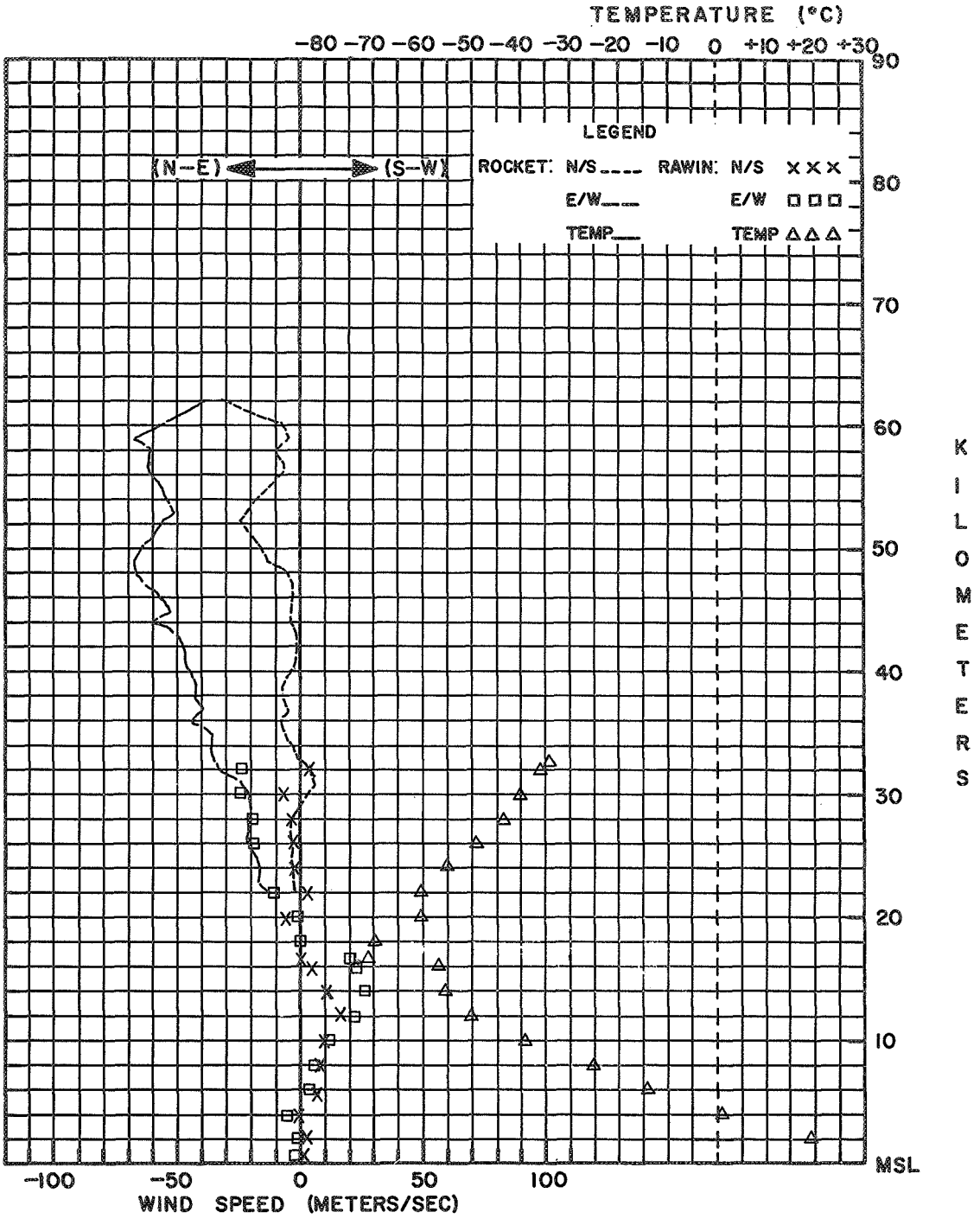
MOTOR TYPE..ARCAS
PAYLOAD TYPE..ARCASONDE-2B
FUSE TYPE..GAS GENERATED SEPARATION DEVICE
LAUNCHER SETTING..048°AZIMUTH 84.5°ELEVATION
RADAR TYPE..MPS-19 APOGEE 71,000 METERS
WIND SENSOR TYPE..15 FT. DIAMETER PARACHUTE
TEMPERATURE SENSOR TYPE..0.010 INCH BEAD THERMISTOR
GROUND EQUIPMENT TYPE..GMD-2B
REMARKS..ABOVE 63 KM DATA MODIFIED BY BALLISTIC EFFECTS.

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..POOR
ACTUAL FUSE DELAY TIME..125 SEC

SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..VAISALA
TEMPERATURE ELEMENT TYPE..RESISTANCE WIRE
PRESSURE SENSOR TYPE..DOUBLE ANEROID
GROUND EQUIPMENT TYPE..VAISALA
WIND AT ROCKET LAUNCH..SFC. 110DEG/01MPS
BALLISTIC WIND.. 011°AZIMUTH 02.0 MPS
THERMODYNAMIC BASE DATA..PRESSURE N.A. MBS
TEMPERATURE N.A. C
ALTITUDE N.A. METERS

RADIOSONDE TYPE..VAISALA
BALLOON TYPE..NEOPRENE
BALLOON SIZE..1,200 GRAMS




STATION: (CNIE) Chamical, Arg.
DATE: 17 January, 1968

ROCKET TIME: 1325 LST 1725 GCT
ROCKET MOTOR TYPE: Arcas

PAYLOAD TYPE: Arcasonde 2B
RADIOSONDE TYPE: Vaisala

# ROCKET OBSERVATION DATA

RP STATION NAME

72402 (NASA) WALLOPS ISLAND, VIRGINIA

LAT. 37°51'N LONG. 75°29'W

ROCKET LAUNCH

DATE JANUARY 26, 1968 TIME 1559 Z

RAWINSONDE RELEASE

DATE JANUARY 26, 1968 TIME 1115 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 089 | 52 | 266 | 107 | +008 | +106 |
| 083 | 51 | 264 | 099 | +010 | +098 |
| 083 | 50 | 261 | 096 | +015 | +095 |
| 080 | 49 | 258 | 095 | +020 | +093 |
| 071 | 48 | 253 | 088 | +026 | +084 |
| 067 | 47 | 253 | 088 | +026 | +083 |
| 064 | 46 | 255 | 085 | +022 | +083 |
| 059 | 45 | 258 | 083 | +018 | +081 |
| 054 | 44 | 265 | 081 | +006 | +080 |
| 054 | 43 | 271 | 074 | -001 | +073 |
| 050 | 42 | 268 | 069 | +003 | +069 |
| 045 | 41 | 262 | 064 | +009 | +063 |
| 044 | 40 | 256 | 054 | +012 | +052 |
| 040 | 39 | 253 | 047 | +014 | +045 |
| 036 | 38 | 256 | 043 | +010 | +042 |
| 034 | 37 | 258 | 038 | +008 | +037 |
| 032 | 36 | 258 | 036 | +008 | +035 |
| 028 | 35 | 259 | 032 | +006 | +032 |
| 026 | 34 | 258 | 028 | +006 | +028 |
| 026 | 33 | 257 | 025 | +006 | +024 |
| 023 | 32 | 257 | 016 | +004 | +016 |
| 020 | 31 | 267 | 011 | +000 | +011 |
| 019 | 30 | 254 | 011 | +003 | +011 |
| 017 | 29 | 241 | 010 | +005 | +009 |
| 014 | 27 | 213 | 006 | +005 | +003 |
| 016 | 28 | 227 | 007 | +005 | +005 |
| 013 | 26 | 178 | 003 | +003 | +000 |
| 012 | 25 | 103 | 004 | +001 | -004 |
| 011 | 24 | 118 | 003 | +001 | -002 |
| 010 | 23 | 156 | 003 | +002 | -001 |
| 010 | 22 | 165 | 003 | +003 | -001 |
| 010 | 21 | 189 | 002 | +002 | +000 |
| 008 | 20 | 229 | 004 | +002 | +003 |
| 007 | 19 | 237 | 006 | +003 | +005 |
| 007 | 18 | 251 | 007 | +002 | +006 |
| 007 | 17 | 262 | 007 | +001 | +007 |

ROCKET THERMODYNAMICS

| ALT TENS OF METERS | TEMP DEG C | PRESSURE MB | DENSITY G M -3 | WIND POLAR DEG | MPS | COMPONENTS MPS N-S | E-W |
|---|---|---|---|---|---|---|---|
| 4368 | -02.5 | 01.743 | 02.244 | 267 | 079 | +005 | +078 |
| 4310 | -03.6 | 01.874 | 02.422 | 270 | 075 | +000 | +075 |
| 4209 | -14.0 | 02.132 | 02.866 | 268 | 070 | +003 | +069 |
| 3984 | -22.3 | 02.870 | 03.986 | 255 | 052 | +013 | +051 |
| 3923 | -19.1 | 03.114 | 04.270 | 254 | 048 | +013 | +046 |
| 3740 | -29.9 | 03.992 | 05.717 | 257 | 040 | +009 | +039 |
| 3429 | -34.9 | 06.174 | 09.028 | 258 | 029 | +006 | +029 |
| 3289 | -41.7 | 07.552 | 11.367 | 257 | 024 | +006 | +023 |
| 3182 | -42.6 | 08.832 | 13.346 | 259 | 015 | +003 | +015 |
| 3115 | -48.8 | 09.751 | 15.151 | 266 | 012 | +001 | +012 |
| 3057 | -51.9 | 10.654 | 16.777 | 261 | 011 | +002 | +011 |
| 2972 | -49.7 | 12.125 | 18.904 | 250 | 011 | +004 | +010 |
| 2457 | -56.2 | 26.769 | 42.987 | 109 | 003 | +001 | -003 |
| 2000 | -58.7 | 54.910 | 89.204 | 229 | 004 | +002 | +003 |
| 1868 | -60.9 | | | 240 | 006 | +003 | +005 |
| 1798 | -58.0 | | | 251 | 007 | +002 | +006 |
| 1682 | -61.0 | | | | | | |

CONSTANT PRESSURE SURFACES (GEOPOTENTIAL HEIGHT)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2043 | -58.3 | 50.000 | 81.088 | 205 | 003 | +002 | +001 |
| 2375 | -56.8 | 30.000 | 48.299 | 125 | 003 | +002 | -002 |
| 2634 | -53.9 | 20.000 | 31.779 | 194 | 009 | +009 | +002 |
| 3084 | -49.8 | 10.000 | 15.596 | 267 | 011 | +000 | +011 |
| 3324 | -39.0 | 07.000 | 10.416 | 257 | 026 | +006 | +025 |
| 3558 | -32.4 | 05.000 | 07.237 | 258 | 034 | +007 | +034 |
| 3926 | -20.6 | 03.000 | 04.138 | 254 | 049 | +013 | +047 |
| 4230 | -08.8 | 02.000 | 02.636 | 269 | 071 | +001 | +070 |

RAWINSONDE

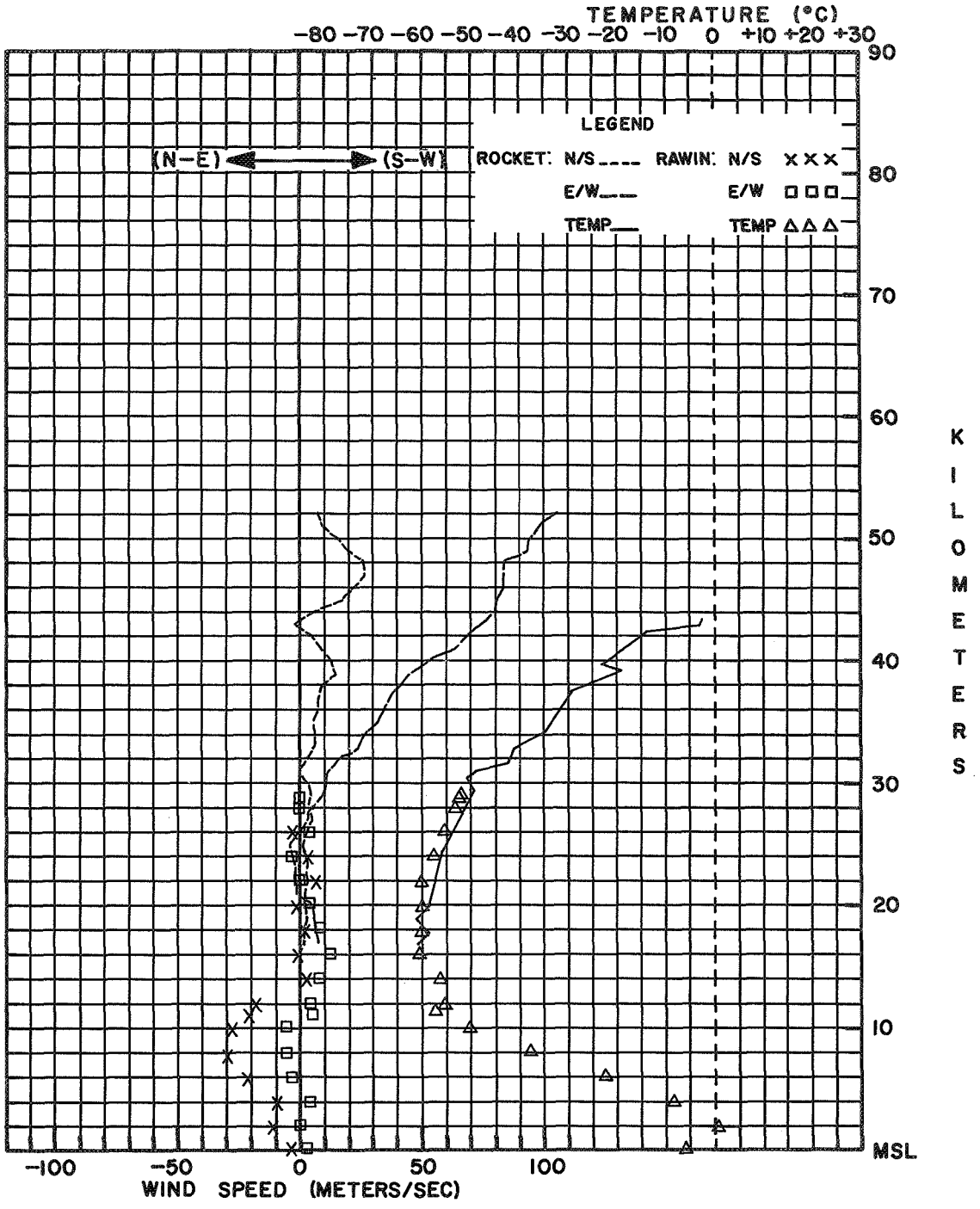
| PRESSURE MB | ALT TENS OF METERS | WIND POLAR DEG | MPS | COMPONENTS MPS N-S | E-W | RH % | TEMP DEG C |
|---|---|---|---|---|---|---|---|
| 1021.0 | 0000 | 335 | 004 | -004 | +002 | 70 | -05.6 |
| 0793.0 | 0200 | 358 | 011 | -011 | +000 | 17 | -08.6 |
| 0617.0 | 0400 | 343 | 011 | -010 | +003 | 17 | -08.6 |
| 0473.0 | 0600 | 007 | 022 | -022 | -003 | 19 | -22.6 |
| 0357.0 | 0800 | 009 | 030 | -030 | -005 | 24 | -37.0 |
| 0266.0 | 1000 | 010 | 028 | -028 | -005 | | -50.3 |
| 0208.0 | 1158 | 350 | 022 | -021 | +004 | | -58.1 |
| 0195.0 | 1200 | 347 | 019 | -019 | +004 | | -55.7 |
| 0143.0 | 1400 | 253 | 008 | +002 | +008 | | -56.7 |
| 0103.8 | 1600 | 274 | 011 | -001 | +011 | | -61.0 |
| 0075.2 | 1800 | 263 | 008 | +001 | +008 | | -60.7 |
| 0054.6 | 2000 | 302 | 003 | -002 | +003 | | -60.4 |
| 0039.7 | 2200 | 185 | 006 | +006 | +000 | | -60.0 |
| 0028.8 | 2400 | 122 | 003 | +002 | -003 | | -57.7 |
| 0021.3 | 2600 | 315 | 003 | -002 | +002 | | -55.5 |
| 0015.6 | 2800 | 175 | 003 | +003 | +000 | | -53.6 |
| 0013.8 | 2878 | 173 | 008 | +004 | +000 | | -52.8 |
| 0013.5 | 2892 | | | | | | -52.6 |

# TECHNICAL DATA

MOTOR TYPE..ARCAS
PAYLOAD TYPE..ARCASONDE-1A
FUSE TYPE..GAS GENERATED SEPARATION DEVICE
LAUNCHER SETTING..150° AZIMUTH 77.0° ELEVATION
RADAR TYPE..FPQ-16 APOGEE 55,320 METERS
WIND SENSOR TYPE..16 FT. DISC-GAP-BAND PARACHUTE SENSOR FALL-RATE..NOMINAL
TEMPERATURE SENSOR TYPE..0.010 INCH BEAD THERMISTOR
GROUND EQUIPMENT TYPE..GMD-1B
REMARKS..NO USABLE T/M FROM EJECTION TO 4 MINUTES
45 SECONDS (43,680 METERS).

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..FAIR
ACTUAL FUSE DELAY TIME..136 SEC

RADIOSONDE MANUFACTURER..MOLDED INSULATION CO. RADIOSONDE TYPE..1680 MHZ
TEMPERATURE ELEMENT TYPE..ROD THERMISTOR BALLOON TYPE..NEOPRENE
PRESSURE SENSOR TYPE..ANEROID AND HYPSOMETER BALLOON SIZE..1,200 GRAMS
GROUND EQUIPMENT TYPE..GMD-1B
WIND AT ROCKET LAUNCH..SFC. 350DEG/05MPS 15M 330DEG/04MPS 31M 337DEG/04MPS
46M 333DEG/05MPS 61M 315DEG/05MPS 76M 339 DEG/05MPS
BALLISTIC WIND.. 334° AZIMUTH 08.7 MPS
THERMODYNAMIC BASE DATA..PRESSURE 103.8 MBS
TEMPERATURE -61.0°C
ALTITUDE 16,000 METERS




STATION: (NASA) Wallops Island, Va. ROCKET TIME: 1059 LST 1559 GCT PAYLOAD TYPE: Arcasonde 1A

DATE: 26 January, 1968 ROCKET MOTOR TYPE: Arcas RADIOSONDE TYPE: 1680 MHZ

# ROCKET OBSERVATION DATA

RP STATION NAME

82599 (CNAE) NATAL, BRAZIL

LAT. 05°55'S LONG. 35°10'W

ROCKET LAUNCH

DATE JANUARY 31, 1968 TIME 1512 Z

RAWINSONDE RELEASE

DATE JANUARY 31, 1968 TIME 1147 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | WIND COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| | 53 | 308 | 025 | -015 | +020 |
| 027 | 52 | 312 | 012 | -008 | +009 |
| 026 | 51 | 327 | 006 | -005 | +003 |
| 025 | 50 | 091 | 008 | +000 | -008 |
| 024 | 49 | 100 | 019 | +003 | -019 |
| 024 | 48 | 095 | 028 | +003 | -029 |
| 022 | 47 | 090 | 039 | +000 | -039 |
| 022 | 46 | 087 | 040 | -002 | -041 |
| 021 | 45 | 083 | 037 | -005 | -037 |
| 019 | 44 | 079 | 028 | -005 | -028 |
| 020 | 43 | 071 | 023 | +008 | -022 |
| 019 | 42 | 078 | 024 | -005 | -023 |
| 018 | 40 | 086 | 027 | -002 | -027 |
| 017 | 40 | 095 | 033 | +003 | -033 |
| 016 | 39 | 108 | 030 | +010 | -029 |
| 016 | 38 | 106 | 027 | +008 | -027 |
| 016 | 37 | 097 | 027 | +003 | -027 |
| 014 | 36 | 098 | 027 | +004 | -027 |
| 013 | 35 | 100 | 030 | +005 | -030 |
| 013 | 34 | 098 | 034 | +005 | -034 |
| 014 | 33 | 094 | 037 | +003 | -037 |
| 013 | 32 | 092 | 039 | +001 | -040 |
| 013 | 31 | 091 | 041 | +001 | -042 |
| 012 | 30 | 090 | 044 | +000 | -045 |
| 011 | 29 | 086 | 043 | -003 | -044 |
| 010 | 28 | 086 | 040 | -003 | -041 |
| 010 | 27 | 085 | 037 | -003 | -037 |
| 010 | 26 | 086 | 036 | -002 | -037 |
| 009 | 25 | 094 | 029 | -002 | -029 |
| 009 | 24 | 090 | 020 | +000 | -020 |
| 009 | 23 | 073 | 013 | -004 | -012 |
| 008 | 22 | 085 | 007 | -001 | -007 |
| 008 | 21 | 106 | 003 | +001 | -003 |
| 007 | 20 | 066 | 002 | -001 | -002 |
| 007 | 19 | 098 | 004 | +001 | -004 |
| 007 | 18 | 156 | 006 | +006 | -003 |

RAWINSONDE

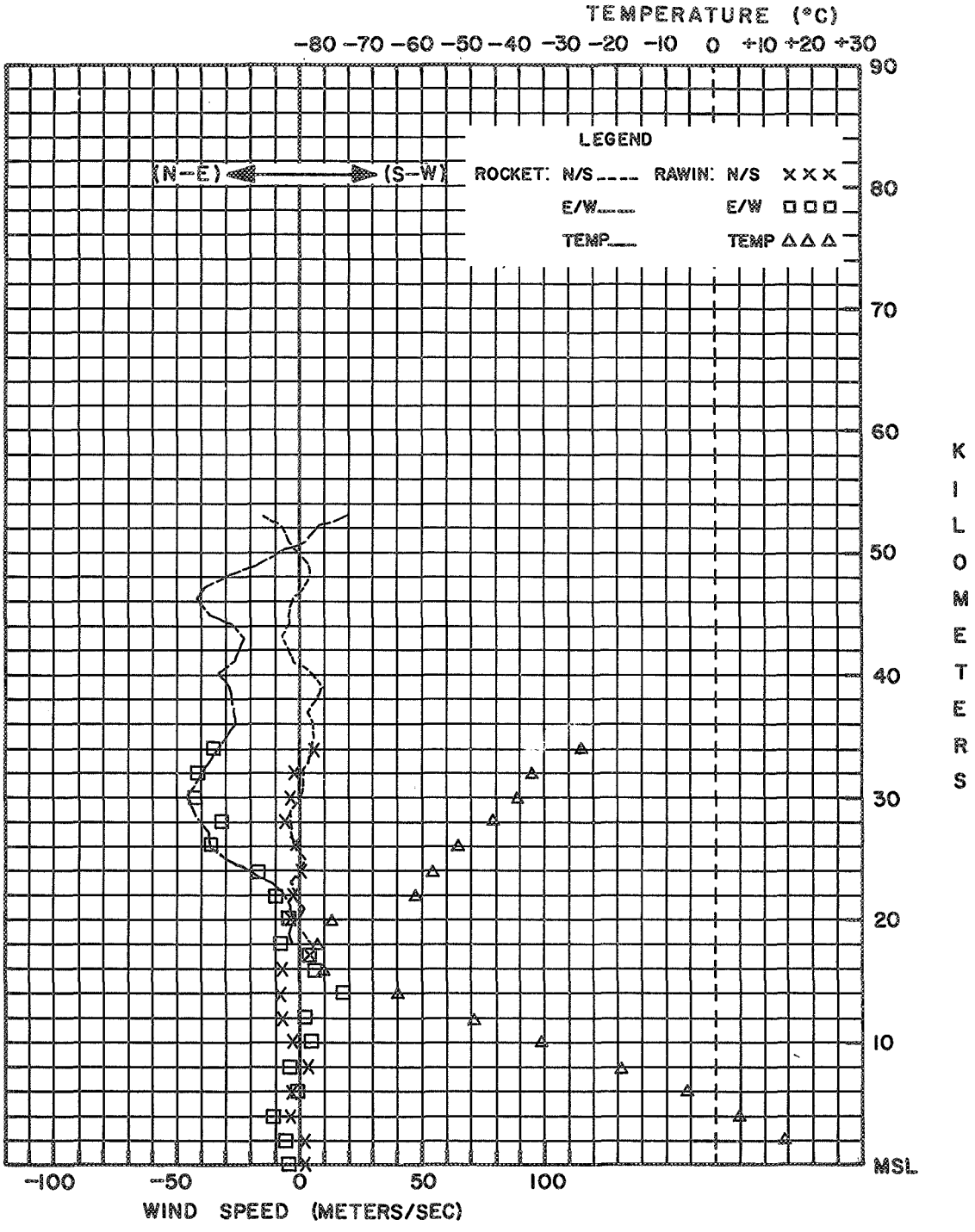
| PRESSURE | ALT TENS OF | WIND POLAR | | WIND COMPONENTS MPS | | RH | TEMP |
|---|---|---|---|---|---|---|---|
| MB | METERS | DEG | MPS | N-S | E-W | % | DEG C |
| 1007.4 | 0004 | 100 | 005 | +001 | -005 | 66 | +29.6 |
| 0802.1 | 0200 | 097 | 006 | +001 | -006 | 44 | +14.2 |
| 0630.2 | 0400 | 077 | 011 | -003 | -011 | 18 | +04.8 |
| 0491.0 | 0600 | 045 | 002 | -002 | -001 | 16 | -05.6 |
| 0378.2 | 0800 | 121 | 004 | +002 | -004 | 14 | -19.3 |
| 0287.0 | 1000 | 301 | 003 | -002 | +003 | 16 | -35.8 |
| 0213.6 | 1200 | 350 | 007 | -007 | +001 | 17 | -49.3 |
| 0155.7 | 1400 | 300 | 019 | -009 | +017 | | -65.0 |
| 0111.2 | 1600 | 322 | 011 | -008 | +007 | | -80.0 |
| 0095.0 | 1684 | 227 | 007 | +004 | +004 | | -84.3 |
| 0077.8 | 1800 | 128 | 012 | -007 | -009 | | -82.2 |
| 0054.7 | 2000 | 052 | 007 | -004 | -005 | | -78.5 |
| 0039.4 | 2200 | 088 | 010 | -001 | -010 | | -61.4 |
| 0028.6 | 2400 | 090 | 017 | +000 | -017 | | -58.1 |
| 0021.0 | 2600 | 088 | 035 | -001 | -036 | | -53.1 |
| 0015.6 | 2800 | 080 | 032 | -006 | -032 | | -46.8 |
| 0011.6 | 3000 | 085 | 042 | -004 | -042 | | -41.5 |
| 0008.6 | 3200 | 087 | 040 | -002 | -041 | | -37.3 |
| 0006.5 | 3400 | 100 | 035 | +006 | -036 | | -27.0 |

# TECHNICAL DATA

MOTOR TYPE..JUDI
PAYLOAD TYPE..CHAFF
FUSE TYPE..ELECTRICALLY ACTIVATED PYROTECHNIC
LAUNCHER SETTING..055° AZIMUTH 78.0° ELEVATION
RADAR TYPE..MPS-19 APOGEE 60,869 METERS
WIND SENSOR TYPE..0.005 INCH S BAND COPPER CHAFF SENSOR FALL-RATE..NOMINAL
TEMPERATURE SENSOR TYPE..N.A.
GROUND EQUIPMENT TYPE..N.A.
REMARKS..NONE

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..104 SEC

RADIOSONDE MANUFACTURER..MOLDED INSULATION CO.
TEMPERATURE ELEMENT TYPE..ROD THERMISTOR
PRESSURE SENSOR TYPE..ANEROID
RADIOSONDE TYPE..1680 MHZ
BALLOON TYPE..NEOPRENE
BALLOON SIZE..1,200 GRAMS
GROUND EQUIPMENT TYPE..GMD-1A
WIND AT ROCKET LAUNCH..6M 100DEG/03MPS 9M 100DEG/02MPS 16M 110DEG/04MPS 25M 080DEG/04MPS
BALLISTIC WIND.. UNKNOWN AZIMUTH UNKNOWN MPS
THERMODYNAMIC BASE DATA..PRESSURE N.A. MBS
TEMPERATURE N.A. C
ALTITUDE N.A. METERS




STATION: (CNAE) Natal, Brazil

DATE: 31 January, 1968

ROCKET TIME: 1212 LST 1512 GCT

ROCKET MOTOR TYPE: Judi

PAYLOAD TYPE: Chaff

RADIOSONDE TYPE: 1680 MHZ

# ROCKET OBSERVATION DATA

RP STATION NAME

72402 (NASA) WALLOPS ISLAND, VIRGINIA

LAT. 37°51' N LONG. 75°29' W

ROCKET LAUNCH

DATE FEBRUARY 7, 1968 TIME 1644 Z

RAWINSONDE RELEASE

DATE FEBRUARY 7, 1968 TIME 1206 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | WIND COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 090 | 64 | 260 | 079 | +014 | +078 |
| 100 | 63 | 249 | 070 | +024 | +065 |
| 105 | 62 | 252 | 071 | +022 | +067 |
| 087 | 61 | 258 | 070 | +015 | +068 |
| 067 | 60 | 265 | 075 | +006 | +074 |
| 059 | 59 | 276 | 080 | -008 | +079 |
| 055 | 58 | 283 | 080 | -019 | +078 |
| 053 | 57 | 283 | 082 | -019 | +080 |
| 049 | 56 | 281 | 084 | -018 | +083 |
| 044 | 55 | 274 | 083 | -006 | +083 |
| 038 | 54 | 269 | 084 | +002 | +084 |
| 034 | 53 | 270 | 087 | +000 | +087 |
| 033 | 52 | 268 | 083 | +003 | +083 |
| 032 | 51 | 267 | 079 | +005 | +078 |
| 031 | 50 | 269 | 079 | +002 | +079 |
| 029 | 49 | 271 | 075 | -001 | +074 |
| 026 | 48 | 272 | 071 | -003 | +070 |
| 025 | 47 | 271 | 070 | -001 | +069 |
| 023 | 46 | 275 | 069 | -005 | +069 |
| 021 | 45 | 277 | 069 | -008 | +068 |
| 022 | 44 | 284 | 069 | -016 | +068 |
| 020 | 43 | 287 | 068 | -020 | +065 |
| 018 | 42 | 284 | 067 | -016 | +065 |
| 021 | 41 | 287 | 067 | -020 | +064 |
| 021 | 40 | 287 | 056 | -016 | +053 |
| 017 | 39 | 280 | 051 | -009 | +051 |

RAWINSONDE

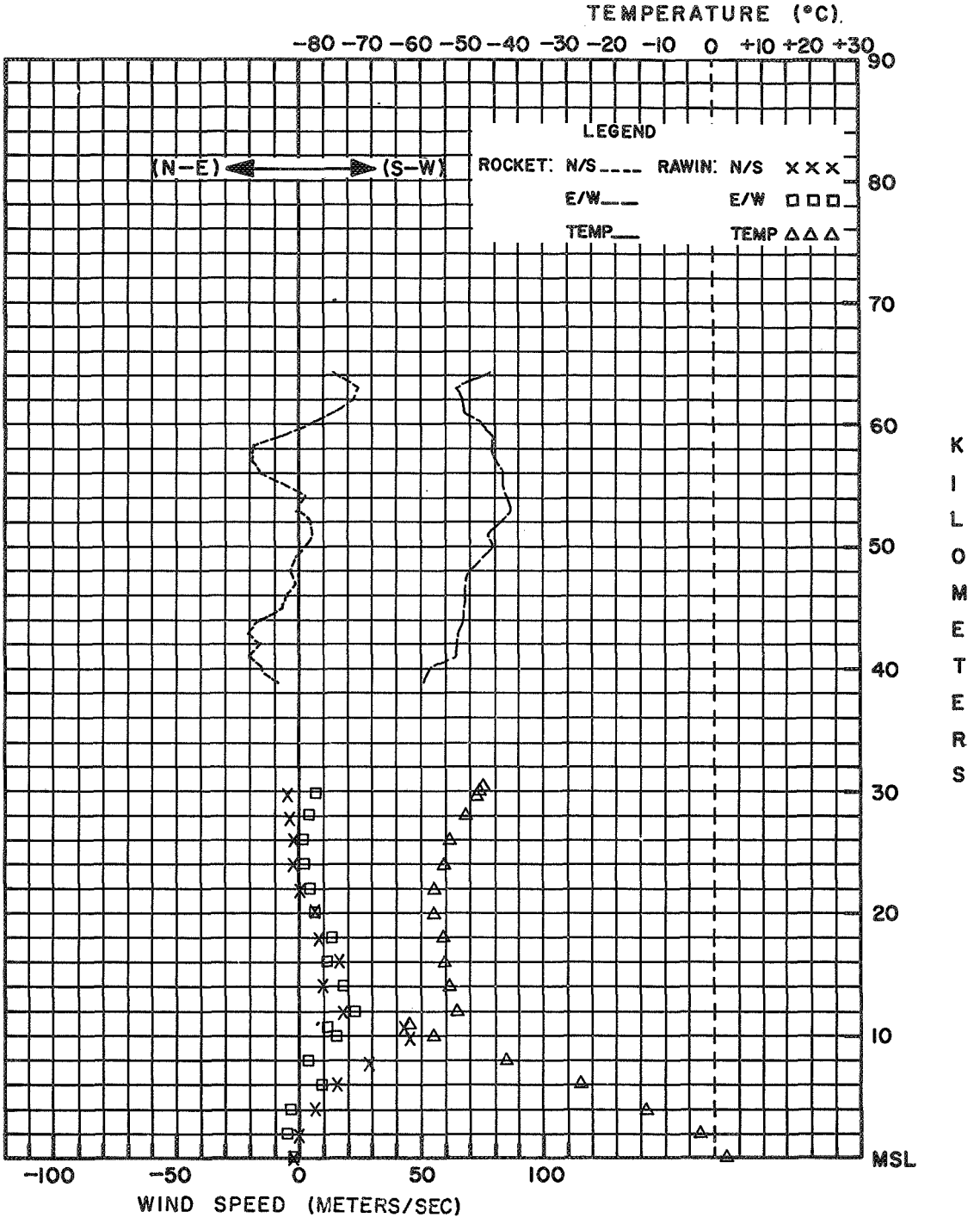
| PRESSURE | ALT TENS OF | WIND POLAR | | WIND COMPONENTS MPS | | RH | TEMP |
|---|---|---|---|---|---|---|---|
| MB | METERS | DEG | MPS | N-S | E-W | % | DEG C |
| 1014.0 | 0000 | 040 | 004 | -003 | -002 | 61 | +02.2 |
| 0793.0 | 0200 | 065 | 005 | -002 | -005 | 26 | -03.2 |
| 0612.0 | 0400 | 156 | 008 | +007 | -003 | 100 | -14.5 |
| 0467.0 | 0600 | 210 | 017 | +015 | +009 | 85 | -27.3 |
| 0352.0 | 0800 | 187 | 029 | +029 | +003 | | -42.6 |
| 0259.0 | 1000 | 198 | 047 | +045 | +015 | | -58.5 |
| 0234.0 | 1060 | 195 | 044 | +043 | +011 | | -62.9 |
| 0187.0 | 1200 | 230 | 029 | +018 | +022 | | -52.8 |
| 0138.0 | 1400 | 240 | 021 | +010 | +018 | | -54.0 |
| 0101.0 | 1600 | 215 | 020 | +016 | +011 | | -55.9 |
| 0074.0 | 1800 | 231 | 015 | +009 | +012 | | -56.8 |
| 0054.0 | 2000 | 226 | 009 | +006 | +006 | | -57.9 |
| 0039.3 | 2200 | 270 | 004 | +000 | +004 | | -57.7 |
| 0028.8 | 2400 | 319 | 002 | -002 | +001 | | -55.9 |
| 0021.2 | 2600 | 322 | 002 | -002 | +001 | | -54.0 |
| 0015.5 | 2800 | 318 | 005 | -004 | +003 | | -51.1 |
| 0012.3 | 2960 | 305 | 008 | -005 | +006 | | -49.1 |
| 0011.4 | 3000 | | | | | | -48.5 |
| 0011.0 | 3026 | | | | | | -48.2 |

# TECHNICAL DATA

MOTOR TYPE..JUDI
PAYLOAD TYPE..CHAFF
FUSE TYPE..ELECTRICALLY ACTIVATED PYROTECHNIC
LAUNCHER SETTING..130°AZIMUTH 80.0°ELEVATION
RADAR TYPE..SPANDAR APOGEE 65,260 METERS
WIND SENSOR TYPE..0.005 INCH S BAND COPPER CHAFF SENSOR FALL-RATE..NOMINAL
TEMPERATURE SENSOR TYPE..N.A.
GROUND EQUIPMENT TYPE..N.A.
REMARKS..WIDE CHAFF DISPERSION BELOW 39 KM.

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..091 SEC

RADIOSONDE MANUFACTURER..MOLDED INSULATION CO. RADIOSONDE TYPE..1680 MHZ
TEMPERATURE ELEMENT TYPE..ROD THERMISTOR BALLOON TYPE..NEOPRENE
PRESSURE SENSOR TYPE..ANEROID AND HYPSOMETER BALLOON SIZE..1,200 GRAMS
GROUND EQUIPMENT TYPE..GMD-1B
WIND AT ROCKET LAUNCH..SFC. 050DEG/12MPS 15M 015DEG/09MPS 31M 003DEG/08MPS
46M 017DEG/11MPS 61M 012DEG/10MPS 76M 038DEG/11MPS
BALLISTIC WIND.. 012°AZIMUTH 10.3 MPS
THERMODYNAMIC BASE DATA..PRESSURE N.A. MBS
TEMPERATURE N.A. C
ALTITUDE N.A. METERS




STATION: (NASA) Wallops Island, Va. ROCKET TIME: 1144 LST 1644 GCT PAYLOAD TYPE: Chaff

DATE: 7 February, 1968 ROCKET MOTOR TYPE: Judi RADIOSONDE TYPE: 1680 MHZ

# ROCKET OBSERVATION DATA

RP STATION NAME

87320 (CNIE) CHAMICAL, ARGENTINA

LAT. 30°22'S LONG. 66°17'W

ROCKET LAUNCH

DATE FEBRUARY 14, 1968 TIME 1333 Z

RAWINSONDE RELEASE

DATE FEBRUARY 14, 1968 TIME 1133 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | WIND COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 021 | 46 | 065 | 032 | -014 | -029 |
| 022 | 45 | 069 | 032 | -011 | -030 |
| 020 | 44 | 079 | 029 | -006 | -028 |
| 019 | 43 | 087 | 030 | -002 | -029 |
| 018 | 42 | 092 | 024 | +001 | -024 |
| 018 | 41 | 089 | 026 | +000 | -026 |
| 017 | 40 | 082 | 030 | -004 | -030 |
| 016 | 39 | 071 | 020 | -007 | -019 |
| 016 | 38 | 053 | 023 | -014 | -018 |
| 016 | 37 | 056 | 024 | -014 | -021 |
| 015 | 36 | 064 | 029 | -013 | -026 |
| 015 | 35 | 076 | 032 | -008 | -031 |
| 014 | 34 | 083 | 029 | -004 | -029 |
| 012 | 33 | 089 | 025 | +000 | -025 |
| 013 | 32 | 092 | 026 | +001 | -026 |
| 013 | 31 | 084 | 025 | -003 | -025 |
| 012 | 30 | 085 | 025 | -002 | -025 |
| 011 | 29 | 093 | 022 | +001 | -022 |
| 011 | 28 | 086 | 019 | -001 | -019 |
| 010 | 27 | 063 | 020 | -009 | -018 |
| 010 | 26 | 075 | 021 | -006 | -021 |
| 009 | 25 | 083 | 017 | -002 | -017 |

RAWINSONDE

| PRESSURE | ALT TENS OF METERS | WIND POLAR | | WIND COMPONENTS MPS | | RH | TEMP |
|---|---|---|---|---|---|---|---|
| MB | | DEG | MPS | N-S | E-W | % | DEG C |
| 0963.5 | 0046 | 155 | 007 | +006 | -003 | 27 | +23.1 |
| 0805.0 | 0200 | 280 | 003 | +000 | +003 | 64 | +03.8 |
| 0635.0 | 0400 | 249 | 012 | +004 | +011 | 68 | +02.7 |
| 0560.0 | 0600 | 188 | 019 | +019 | +003 | 70 | -04.2 |
| 0377.0 | 0800 | 183 | 027 | +027 | +001 | 05 | -26.4 |
| 0283.0 | 1000 | 232 | 023 | +014 | +018 | 05 | -38.4 |
| 0211.5 | 1200 | 247 | 043 | +017 | +040 | | -48.8 |
| 0154.5 | 1400 | 263 | 044 | +005 | +044 | | -59.3 |
| 0111.8 | 1600 | 251 | 036 | +012 | +035 | | -69.5 |
| 0080.0 | 1800 | 208 | 021 | +019 | +010 | | -70.0 |
| 0067.8 | 2000 | 213 | 002 | +002 | +001 | | -63.6 |
| 0041.8 | 2200 | 085 | 008 | -001 | -028 | | -57.0 |
| 0030.9 | 2400 | 075 | 014 | -004 | -013 | | -52.2 |
| 0025.7 | 2600 | 070 | 019 | -007 | -018 | | -47.9 |
| 0018.0 | 2751 | 080 | 019 | -003 | -019 | | -44.9 |
| | 2800 | 082 | 019 | -003 | -019 | | |

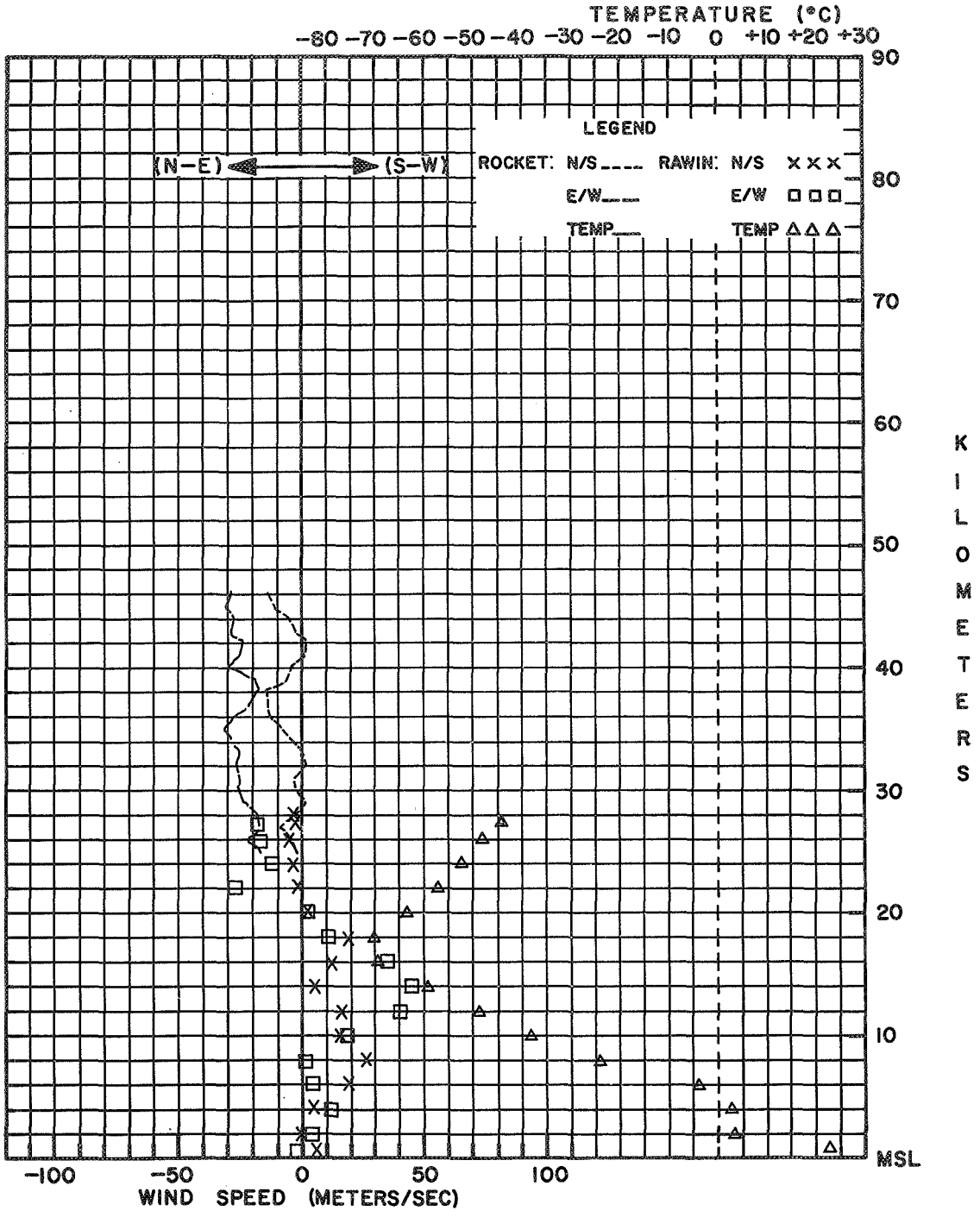
# TECHNICAL DATA

MOTOR TYPE..JUDI
PAYLOAD TYPE..CHAFF
FUSE TYPE..ELECTRICALLY ACTIVATED PYROTECHNIC
LAUNCHER SETTING..034° AZIMUTH 85.5° ELEVATION
RADAR TYPE..MPS-19 APOGEE 68,123 METERS
WIND SENSOR TYPE..0.005 INCH S BAND COPPER CHAFF SENSOR FALL-RATE..NOMINAL
TEMPERATURE SENSOR TYPE..N.A.
GROUND EQUIPMENT TYPE..N.A.
REMARKS..LARGE DISPERSION ON CHAFF.

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..110 SEC

RADIOSONDE MANUFACTURER..VAISALA
TEMPERATURE ELEMENT TYPE..RESISTANCE WIRE
PRESSURE SENSOR TYPE..ANEROID
GROUND EQUIPMENT TYPE..VAISALA + MPS-19
WIND AT ROCKET LAUNCH..SFC, 120DEG/01MPS
BALLISTIC WIND.. 340° AZIMUTH 02.2 MPS
THERMODYNAMIC BASE DATA..PRESSURE N.A. MBS
TEMPERATURE N.A. C
ALTITUDE N.A. METERS

RADIOSONDE TYPE..VAISALA
BALLOON TYPE..NEOPRENE
BALLOON SIZE..1,200 GRAMS




STATION: (CNIE) Chamical, Arg.
DATE: 14 February, 1968

ROCKET TIME: 0933 LST 1533 GCT
ROCKET MOTOR TYPE: Judi

PAYLOAD TYPE: Chaff
RADIOSONDE TYPE: Vaisala

# ROCKET OBSERVATION DATA

RP STATION NAME

72402 (NASA) WALLOPS ISLAND, VIRGINIA

LAT. 37°51'N LONG. 75°29'W

ROCKET LAUNCH

DATE FEBRUARY 14, 1968 TIME 1513 Z

RAWINSONDE RELEASE

DATE FEBRUARY 14, 1968 TIME 1150 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | WIND COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 125 | 56 | 263 | 092 | +011 | +091 |
| 105 | 55 | 263 | 082 | +010 | +081 |
| 100 | 54 | 266 | 081 | +006 | +080 |
| 095 | 53 | 268 | 081 | +003 | +081 |
| 080 | 52 | 269 | 082 | +002 | +081 |
| 080 | 51 | 269 | 083 | +002 | +082 |
| 083 | 50 | 272 | 092 | -004 | +091 |
| 069 | 49 | 272 | 102 | -004 | +101 |
| 064 | 48 | 270 | 103 | +000 | +107 |
| 067 | 47 | 268 | 094 | +004 | +093 |
| 061 | 46 | 268 | 085 | +003 | +084 |
| 055 | 45 | 263 | 084 | +010 | +083 |
| 053 | 44 | 265 | 086 | +007 | +085 |
| 049 | 43 | 265 | 077 | +006 | +077 |
| 045 | 42 | 268 | 067 | +003 | +066 |
| 042 | 41 | 273 | 068 | -004 | +067 |
| 040 | 40 | 274 | 070 | -005 | +069 |
| 035 | 39 | 278 | 073 | -011 | +072 |
| 032 | 38 | 275 | 073 | -006 | +072 |
| 031 | 37 | 272 | 072 | -003 | +071 |
| 030 | 36 | 269 | 065 | +001 | +065 |
| 029 | 35 | 266 | 058 | +004 | +057 |
| 025 | 34 | 266 | 055 | +004 | +055 |
| 022 | 33 | 270 | 050 | +000 | +050 |
| 020 | 32 | 266 | 043 | +003 | +043 |
| 020 | 31 | 263 | 034 | +004 | +034 |
| 019 | 30 | 263 | 031 | +004 | +031 |
| 017 | 29 | 263 | 028 | +003 | +028 |
| 016 | 28 | 262 | 025 | +003 | +024 |
| 014 | 27 | 261 | 022 | +003 | +022 |
| 013 | 26 | 259 | 019 | +004 | +019 |
| 012 | 25 | 263 | 016 | +002 | +016 |
| 011 | 24 | 275 | 016 | -001 | +016 |
| 012 | 23 | 267 | 020 | +001 | +019 |
| 010 | 22 | 257 | 017 | +004 | +017 |
| 008 | 21 | 267 | 013 | +001 | +013 |
| 007 | 20 | 273 | 015 | -001 | +015 |
| 008 | 19 | 275 | 019 | -001 | +019 |
| 012 | 18 | 284 | 022 | -005 | +022 |

ROCKET THERMODYNAMICS

| ALT TENS OF METERS | TEMP DEG C | PRESSURE MB | DENSITY $10^{-3}$ G M | WIND POLAR DEG | POLAR MPS | COMPONENTS MPS N-S | COMPONENTS MPS E-W |
|---|---|---|---|---|---|---|---|
| 5977 | +00.2 | 00.209 | 00.266 | | | | |
| 5761 | +07.8 | 00.271 | 00.336 | | | | |
| 5520 | +00.0 | 00.363 | 00.463 | 263 | 083 | +010 | +083 |
| 5401 | +04.4 | 00.419 | 00.526 | 266 | 081 | +006 | +080 |
| 4977 | -11.5 | 00.711 | 00.947 | 272 | 094 | -004 | +093 |
| 4877 | -10.7 | 00.808 | 01.073 | 271 | 102 | -002 | +101 |
| 4810 | -17.1 | 00.882 | 01.200 | 270 | 103 | +000 | +103 |
| 4630 | -19.6 | 01.118 | 01.537 | 268 | 088 | +003 | +087 |
| 4313 | -19.5 | 01.703 | 02.340 | 265 | 078 | +006 | +078 |
| 4109 | -23.2 | 02.238 | 03.119 | 273 | 068 | -004 | +067 |
| 4054 | -22.5 | 02.410 | 03.350 | 273 | 069 | -004 | +068 |
| 3950 | -30.3 | 02.778 | 03.985 | 276 | 072 | -007 | +071 |
| 3645 | -40.0 | 04.281 | 06.397 | 270 | 068 | +000 | +068 |
| 3487 | -39.9 | 05.381 | 08.038 | 266 | 057 | +004 | +057 |
| 3152 | -48.2 | 08.821 | 13.662 | 265 | 039 | +003 | +039 |
| 2829 | -52.7 | 14.407 | 22.768 | 262 | 026 | +004 | +026 |
| 2682 | -51.0 | 18.038 | 28.288 | 261 | 022 | +003 | +021 |
| 2280 | -57.7 | 33.606 | 54.341 | 266 | 019 | +001 | +019 |
| 2234 | -52.1 | 36.095 | 56.887 | 261 | 018 | +003 | +018 |
| 2188 | -58.9 | 38.776 | 63.052 | 258 | 016 | +004 | +016 |
| 2067 | -53.5 | 46.848 | 74.305 | 269 | 014 | +000 | +014 |
| 2000 | -57.1 | 52.000 | 83.851 | 273 | 015 | -001 | +015 |
| CONSTANT PRESSURE SURFACES (GEOPOTENTIAL HEIGHT) | | | | | | | |
| 2019 | -55.7 | 50.000 | 80.107 | 271 | 015 | +000 | +015 |
| 2344 | -56.3 | 30.000 | 48.203 | 271 | 018 | +000 | +018 |
| 2604 | -52.1 | 20.000 | 31.526 | 259 | 020 | +004 | +019 |
| 3056 | -49.4 | 10.000 | 15.569 | 263 | 033 | +004 | +033 |
| 3290 | -44.4 | 07.000 | 10.666 | 270 | 050 | +000 | +050 |
| 3518 | -39.9 | 05.000 | 07.469 | 267 | 060 | +004 | +060 |
| 3871 | -32.1 | 03.000 | 04.337 | 275 | 073 | -006 | +072 |
| 4165 | -21.8 | 02.000 | 02.772 | 269 | 067 | +001 | +066 |
| 4679 | -18.5 | 01.000 | 01.368 | 268 | 095 | +004 | +094 |

RAWINSONDE

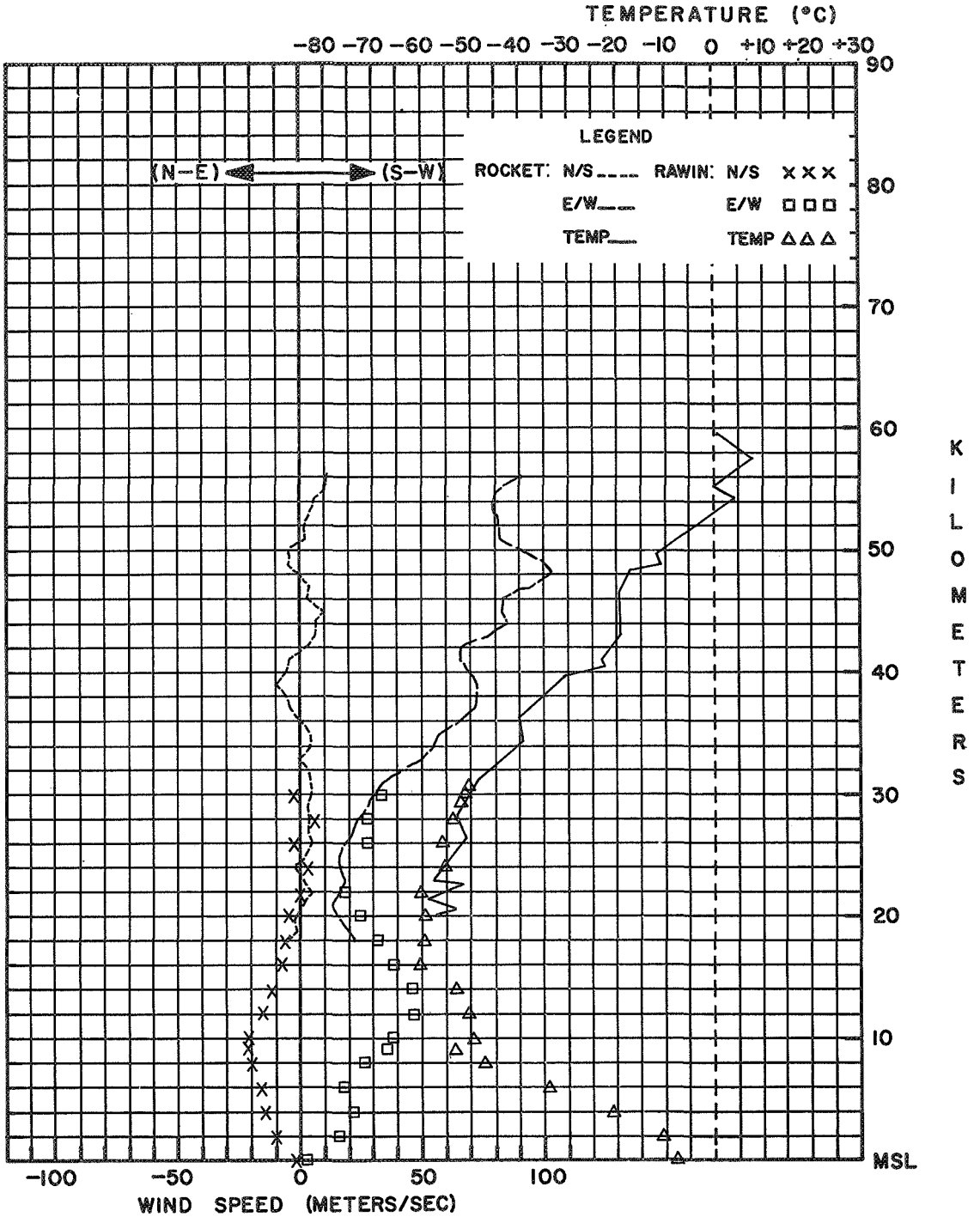
| PRESSURE MB | ALT TENS OF METERS | WIND POLAR DEG | POLAR MPS | COMPONENTS MPS N-S | COMPONENTS MPS E-W | RH % | TEMP DEG C |
|---|---|---|---|---|---|---|---|
| 1021.0 | 0000 | 290 | 002 | -001 | +002 | 77 | -07.8 |
| 0789.0 | 0200 | 304 | 018 | -010 | +015 | 26 | -10.7 |
| 0606.0 | 0400 | 305 | 026 | -015 | +021 | 50 | -21.2 |
| 0458.0 | 0600 | 314 | 023 | -016 | +017 | 20 | -34.0 |
| 0342.0 | 0800 | 307 | 033 | -020 | +026 | | -47.0 |
| 0292.0 | 0903 | 300 | 041 | -021 | +036 | | -53.5 |
| 0252.0 | 1000 | 299 | 043 | -021 | +038 | | -49.7 |
| 0186.0 | 1200 | 288 | 049 | -015 | +047 | | -50.8 |
| 0137.0 | 1400 | 285 | 047 | -012 | +046 | | -53.5 |
| 0099.8 | 1600 | 282 | 039 | -008 | +039 | | -60.4 |
| 0072.3 | 1800 | 283 | 033 | -008 | +032 | | -59.3 |
| 0052.0 | 2000 | 280 | 024 | -004 | +024 | | -59.4 |
| 0038.3 | 2200 | 271 | 018 | +000 | +018 | | -60.3 |
| 0028.0 | 2400 | 263 | 017 | +002 | +017 | | -55.6 |
| 0020.5 | 2600 | 271 | 027 | -001 | +027 | | -56.9 |
| 0015.0 | 2800 | 257 | 028 | +006 | +027 | | -54.6 |
| 0011.3 | 2984 | 276 | 032 | -003 | +032 | | -52.4 |
| 0011.0 | 3000 | | | | | | -52.2 |
| 0010.0 | 3064 | | | | | | -51.5 |

# TECHNICAL DATA

MOTOR TYPE..ARCAS
PAYLOAD TYPE..ARCASONDE-1A
FUSE TYPE..GAS GENERATED SEPARATION DEVICE
LAUNCHER SETTING..103° AZIMUTH 75.0° ELEVATION
RADAR TYPE..FPS-16 APOGEE 62,360 METERS
WIND SENSOR TYPE..16 FT. DISC-GAP-BAND PARACHUTE SENSOR FALL-RATE..NOMINAL
TEMPERATURE SENSOR TYPE..0.010 INCH BEAD THERMISTOR
GROUND EQUIPMENT TYPE..GMD-1B
REMARKS..NONE

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..137 SEC

RADIOSONDE MANUFACTURER..MOLDED INSULATION CO. RADIOSONDE TYPE..1680 MHZ
TEMPERATURE ELEMENT TYPE..ROD THERMISTOR BALLOON TYPE..NEOPRENE
PRESSURE SENSOR TYPE..ANEROID AND HYPSOMETER BALLOON SIZE..1,200 GRAMS
GROUND EQUIPMENT TYPE..GMD-1B
WIND AT ROCKET LAUNCH..SFC. 289DEG/08MPS 15M 266DEG/07MPS 31M 266DEG/06MPS
46M 262DEG/07MPS 61M 266DEG/06MPS 76M 274DEG/06MPS
BALLISTIC WIND.. 285° AZIMUTH 09.9 MPS
THERMODYNAMIC BASE DATA..PRESSURE 52.0 MBS
TEMPERATURE -59.4° C
ALTITUDE 20,000 METERS




STATION: (NASA) Wallops Island, Va. ROCKET TIME: 1013 LST 1513 GCT PAYLOAD TYPE: Arcasonde 1A

DATE: 14 February, 1968 ROCKET MOTOR TYPE: Arcas RADIOSONDE TYPE: 1680 MHZ

# ROCKET OBSERVATION DATA

RP STATION NAME

72402 (WASA) WALLOPS ISLAND, VIRGINIA

LAT. 37°51'N LONG. 75°29'W

ROCKET LAUNCH

DATE FEBRUARY 20, 1968 TIME 2144 Z

RAWINSONDE RELEASE

DATE FEBRUARY 20, 1968 TIME 2315 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 095 | 53 | 270 | 101 | +000 | +101 |
| 095 | 52 | 269 | 095 | +002 | +094 |
| 083 | 51 | 264 | 090 | +009 | +089 |
| 080 | 50 | 261 | 086 | +013 | +086 |
| 077 | 49 | 262 | 086 | +012 | +086 |
| 071 | 48 | 263 | 085 | +010 | +084 |
| 067 | 47 | 262 | 084 | +011 | +084 |
| 061 | 46 | 265 | 083 | +006 | +082 |
| 059 | 45 | 263 | 081 | +009 | +080 |
| 055 | 44 | 261 | 078 | +012 | +077 |
| 050 | 43 | 260 | 073 | +013 | +072 |
| 048 | 42 | 259 | 068 | +013 | +067 |
| 048 | 41 | 265 | 065 | +005 | +064 |
| 044 | 40 | 272 | 069 | -003 | +068 |
| 037 | 39 | 268 | 075 | +003 | +074 |
| 033 | 38 | 265 | 073 | +006 | +072 |
| 033 | 37 | 261 | 072 | +011 | +071 |
| 032 | 36 | 259 | 072 | +014 | +071 |
| 029 | 3 | 260 | 069 | +012 | +068 |
| 026 | 34 | 264 | 070 | +007 | +069 |
| 025 | 33 | 265 | 073 | +006 | +072 |
| 024 | 32 | 263 | 071 | +008 | +070 |
| 022 | 31 | 260 | 067 | +012 | +065 |
| 021 | 30 | 253 | 059 | +017 | +056 |
| 018 | 29 | 250 | 051 | +018 | +049 |
| 017 | 28 | 255 | 050 | +013 | +049 |
| 017 | 27 | 258 | 045 | +010 | +044 |
| 015 | 26 | 261 | 037 | +006 | +037 |
| 013 | 25 | 261 | 030 | +005 | +030 |
| 013 | 24 | 258 | 026 | +006 | +026 |
| 013 | 23 | 255 | 025 | +006 | +024 |
| 010 | 22 | 255 | 022 | +005 | +021 |
| 010 | 21 | 266 | 019 | +001 | +019 |
| 009 | 20 | 275 | 024 | -002 | +023 |
| 008 | 19 | 265 | 028 | +002 | +028 |
| 007 | 18 | 262 | 027 | +004 | +027 |
| 007 | 17 | 265 | 028 | +002 | +028 |

ROCKET THERMODYNAMICS

| ALT TENS OF METERS | TEMP DEG C | PRESSURE MB | DENSITY G M | WIND POLAR DEG | MPS | COMPONENTS MPS N-S | E-W |
|---|---|---|---|---|---|---|---|
| 5410 | -05.7 | 00.471 | 00.613 | | | | |
| 4919 | -04.6 | 00.871 | 01.130 | 262 | 086 | +012 | +086 |
| 4545 | -14.5 | 01.403 | 01.890 | 264 | 082 | +008 | +081 |
| 4322 | -11.7 | 01.873 | 02.496 | 260 | 074 | +013 | +073 |
| 4237 | -12.2 | 02.090 | 02.790 | 259 | 069 | +014 | +069 |
| 4185 | -09.3 | 02.234 | 02.950 | 260 | 067 | +012 | +067 |
| 4045 | -11.9 | 02.674 | 03.556 | 268 | 067 | +003 | +066 |
| 3981 | -16.1 | 02.906 | 03.939 | 271 | 070 | -001 | +069 |
| 3825 | -20.6 | 03.573 | 04.929 | 266 | 074 | +006 | +073 |
| 3798 | -24.9 | 03.705 | 05.200 | 265 | 074 | +006 | +073 |
| 3755 | -24.7 | 03.928 | 05.508 | 263 | 073 | +008 | +072 |
| 3700 | -28.2 | 04.235 | 06.024 | 261 | 072 | +011 | +071 |
| 3658 | -35.2 | 04.491 | 06.576 | 260 | 072 | +013 | +071 |
| 3447 | -32.0 | 06.047 | 08.736 | 262 | 069 | +009 | +069 |
| 3353 | -37.6 | 06.909 | 10.219 | 264 | 072 | +007 | +071 |
| 3289 | -35.9 | 07.571 | 11.117 | 265 | 073 | +006 | +072 |
| 3240 | -40.6 | 08.124 | 12.170 | 264 | 072 | +007 | +071 |
| 3170 | -37.2 | 08.987 | 13.270 | 262 | 070 | +010 | +069 |
| 3075 | -40.6 | 10.308 | 15.442 | 258 | 065 | +014 | +063 |
| 2983 | -40.9 | 13.630 | 20.446 | 251 | 052 | +017 | +049 |
| 2800 | -38.4 | 15.372 | 22.814 | 255 | 050 | +013 | +049 |
| 2582 | -51.3 | 21.242 | 33.357 | 261 | 036 | +006 | +035 |
| 2505 | -48.2 | 23.872 | 36.971 | 261 | 031 | +005 | +031 |
| 2429 | -52.2 | 26.795 | 42.249 | 259 | 027 | +005 | +027 |
| 2353 | -50.4 | 30.093 | 47.065 | 256 | 025 | +006 | +025 |
| 2287 | -54.6 | 37.658 | 60.030 | 255 | 022 | +006 | +022 |
| 2000 | -54.8 | 51.932 | 82.858 | 275 | 024 | -002 | +023 |
| 1884 | -59.5 | | | 264 | 028 | +003 | +028 |
| 1700 | -57.0 | | | 265 | 028 | +002 | +028 |
| CONSTANT PRESSURE SURFACES (GEOPOTENTIAL HEIGHT) | | | | | | | |
| 2018 | -54.8 | 50.000 | 79.767 | 273 | 023 | -001 | +022 |
| 2346 | -50.4 | 30.000 | 46.931 | 257 | 026 | +006 | +025 |
| 2611 | -48.9 | 20.000 | 31.075 | 260 | 039 | +007 | +038 |
| 3081 | -39.8 | 10.000 | 14.933 | 260 | 067 | +012 | +065 |
| 3326 | -37.3 | 07.000 | 10.342 | 265 | 072 | +006 | +071 |
| 3562 | -34.1 | 05.000 | 07.288 | 259 | 072 | +014 | +071 |
| 3932 | -16.8 | 03.000 | 04.077 | 270 | 072 | +000 | +071 |
| 4242 | -12.0 | 02.000 | 02.668 | 260 | 071 | +012 | +070 |
| 4773 | -07.4 | 01.000 | 01.311 | 263 | 085 | +010 | +084 |

RAWINSONDE

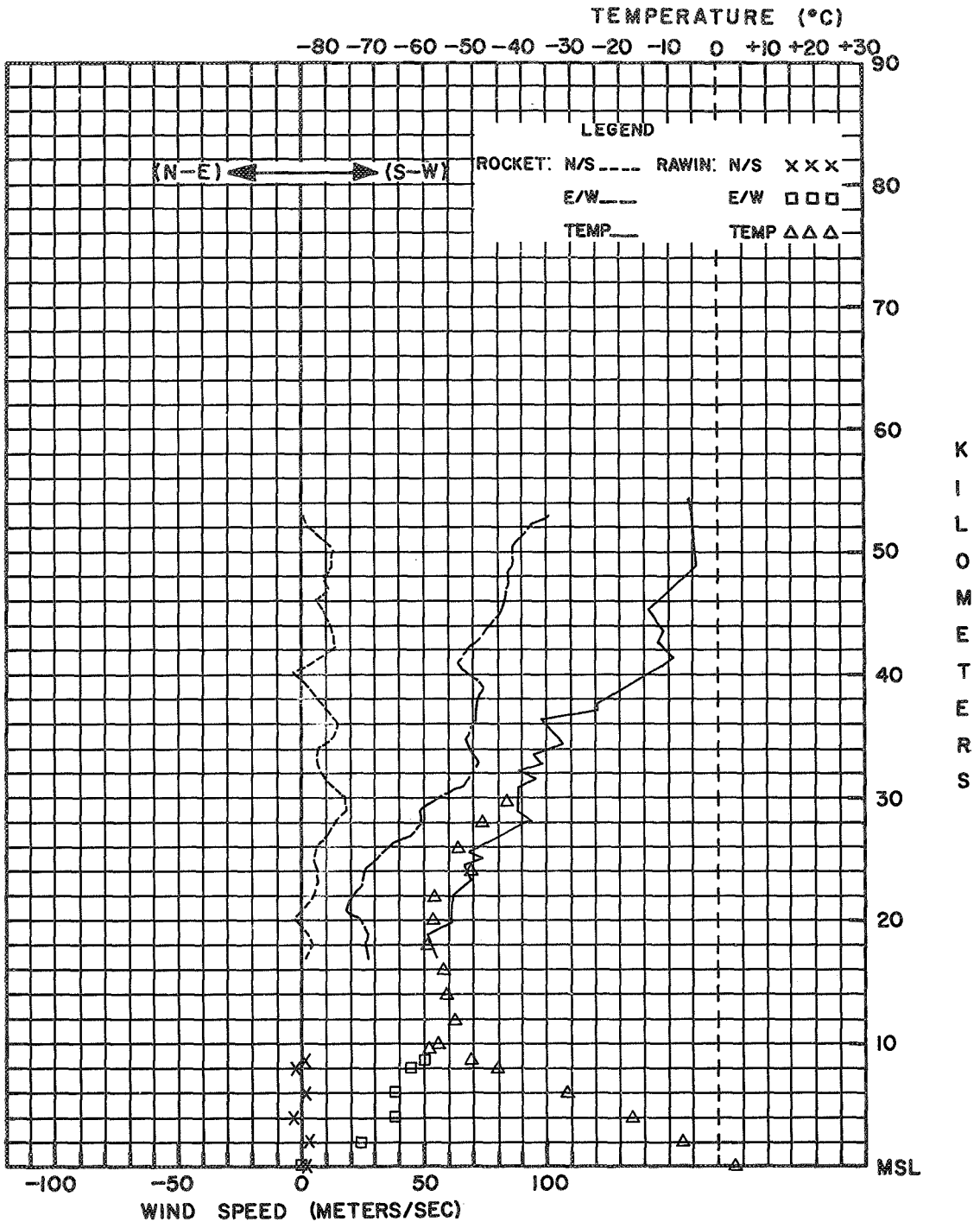
| PRESSURE MB | ALT TENS OF METERS | WIND POLAR DEG | MPS | COMPONENTS MPS N-S | E-W | RH % | TEMP DEG C |
|---|---|---|---|---|---|---|---|
| 0996.0 | 0000 | 170 | 002 | +002 | +000 | 72 | +03.3 |
| 0778.0 | 0200 | 262 | 025 | +003 | +024 | 93 | -07.3 |
| 0597.0 | 0400 | 275 | 038 | -003 | +038 | 82 | -17.4 |
| 0455.0 | 0600 | 268 | 038 | +001 | +038 | 39 | -31.3 |
| 0341.0 | 0800 | 272 | 045 | -002 | +044 | | -45.9 |
| 0314.0 | 0864 | 269 | 051 | +001 | +050 | | -50.1 |
| 0261.0 | 0972 | | | | | | -58.9 |
| 0249.8 | 1000 | | | | | | -57.6 |
| 0182.7 | 1200 | | | | | | -54.5 |
| 0134.3 | 1400 | | | | | | -55.3 |
| 0098.0 | 1600 | | | | | | -56.6 |
| 0071.5 | 1800 | | | | | | -59.4 |
| 0054.0 | 2000 | | | | | | -58.8 |
| 0037.8 | 2200 | | | | | | -58.0 |
| 0027.7 | 2400 | | | | | | -50.4 |
| 0020.4 | 2600 | | | | | | -53.3 |
| 0015.1 | 2800 | | | | | | -48.1 |
| 0011.5 | 2981 | | | | | | -43.6 |

# TECHNICAL DATA

MOTOR TYPE..ARCAS
PAYLOAD TYPE..ARCASONDE-1A
FUSE TYPE..GAS GENERATED SEPARATION DEVICE
LAUNCHER SETTING..080°AZIMUTH 76.5°ELEVATION
RADAR TYPE..FPQ-6 APOGEE 55,290 METERS
WIND SENSOR TYPE..16 FT. DISC-GAP-BAND PARACHUTE SENSOR FALL-RATE..NOMINAL
TEMPERATURE SENSOR TYPE..0.010 INCH BEAD THERMISTOR
GROUND EQUIPMENT TYPE..GMD-1B
REMARKS..NO RAWINSONDE WINDS ABOVE 8640 METERS
DUE TO LIMITING ANGLES.

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..136 SEC

RADIOSONDE MANUFACTURER..MOLDED INSULATION CO. RADIOSONDE TYPE..1680 MHZ
TEMPERATURE ELEMENT TYPE..ROD THERMISTOR BALLOON TYPE..NEOPRENE
PRESSURE SENSOR TYPE..ANEROID AND HYPSOMETER BALLOON SIZE..1,200 GRAMS
GROUND EQUIPMENT TYPE..GMD-1B
WIND AT ROCKET LAUNCH..SFC. 176DEG/02MPS 15M 179DEG/02MPS 31M 180DEG/02MPS
46M 181DEG/03MPS 61M 192DEG/04MPS 76M 202DEG/05MPS
BALLISTIC WIND.. 230°AZIMUTH 07.9 MPS
THERMODYNAMIC BASE DATA..PRESSURE 07.5 MBS
TEMPERATURE -56.7°C
ALTITUDE 16,000 METERS




STATION: (NASA) Wallops Island, Va. ROCKET TIME: 1644 LST 2144 GCT PAYLOAD TYPE: Arcasonde 1A

DATE: 20 February, 1968 ROCKET MOTOR TYPE: Arcas RADIOSONDE TYPE: 1680 MHz

# ROCKET OBSERVATION DATA

RP STATION NAME

72402 (NASA) WALLOPS ISLAND, VIRGINIA

LAT. 37°51'N LONG. 75°29'W

ROCKET LAUNCH

DATE FEBRUARY 28, 1968 TIME 1528 Z

RAWINSONDE RELEASE

DATE FEBRUARY 28, 1968 TIME 1115 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 111 | 52 | 266 | 122 | +009 | +121 |
| 105 | 51 | 266 | 107 | +008 | +106 |
| 100 | 50 | 265 | 096 | +007 | +095 |
| 100 | 49 | 263 | 084 | +010 | +083 |
| 090 | 48 | 263 | 071 | +008 | +070 |
| 083 | 47 | 265 | 067 | +005 | +066 |
| 074 | 46 | 272 | 075 | -003 | +074 |
| 069 | 45 | 277 | 077 | -009 | +076 |
| 069 | 44 | 282 | 072 | -015 | +071 |
| 061 | 43 | 278 | 072 | -010 | +071 |
| 054 | 42 | 272 | 073 | -003 | +072 |
| 049 | 41 | 268 | 064 | +002 | +063 |
| 043 | 40 | 270 | 059 | +000 | +059 |
| 042 | 39 | 278 | 059 | -008 | +059 |
| 038 | 38 | 283 | 058 | -013 | +056 |
| 034 | 37 | 283 | 061 | -014 | +060 |
| 033 | 36 | 280 | 063 | -011 | +063 |
| 033 | 35 | 274 | 060 | -005 | +060 |
| 029 | 34 | 271 | 057 | -001 | +057 |
| 024 | 33 | 269 | 057 | +001 | +057 |
| 022 | 32 | 264 | 058 | +006 | +057 |
| 021 | 31 | 258 | 054 | +011 | +052 |
| 018 | 30 | 252 | 050 | +016 | +048 |
| 015 | 29 | 253 | 044 | +013 | +042 |
| 013 | 28 | 253 | 036 | +011 | +034 |
| 013 | 27 | 252 | 032 | +010 | +031 |
| 013 | 26 | 253 | 032 | +009 | +031 |
| 013 | 25 | 250 | 030 | +011 | +028 |
| 011 | 24 | 252 | 026 | +008 | +025 |
| 010 | 23 | 252 | 023 | +007 | +022 |
| 009 | 22 | 243 | 018 | +008 | +016 |
| 008 | 21 | 251 | 018 | +006 | +017 |
| 008 | 20 | 255 | 019 | +005 | +018 |
| 007 | 19 | 251 | 014 | +005 | +014 |
| 006 | 18 | 256 | 015 | +003 | +015 |

ROCKET THERMODYNAMICS

| ALT TENS OF METERS | TEMP DEG C | PRESSURE MB | DENSITY G M $^{-3}$ | WIND POLAR DEG | MPS | COMPONENTS MPS N-S | E-W |
|---|---|---|---|---|---|---|---|
| 5236 | -02.4 | 00.556 | 00.715 | | | | |
| 4755 | -08.3 | 01.017 | 01.337 | 264 | 069 | +007 | +068 |
| 4487 | -22.2 | 01.442 | 02.002 | 278 | 076 | -010 | +075 |
| 4438 | -21.1 | 01.540 | 02.138 | 280 | 074 | -013 | +073 |
| 4346 | -28.1 | 01.745 | 02.481 | 280 | 072 | -013 | +071 |
| 4292 | -25.6 | 01.879 | 02.644 | 277 | 072 | -008 | +071 |
| 4033 | -23.3 | 02.669 | 03.722 | 269 | 060 | +001 | +060 |
| 3880 | -30.3 | 03.291 | 04.721 | 279 | 059 | -009 | +058 |
| 3767 | -31.0 | 03.851 | 05.541 | 283 | 059 | -014 | +057 |
| 3609 | -35.8 | 04.811 | 07.061 | 280 | 063 | -011 | +063 |
| 3511 | -35.1 | 05.529 | 08.091 | 275 | 061 | -005 | +060 |
| 3295 | -44.0 | 07.557 | 11.489 | 269 | 057 | +001 | +057 |
| 3139 | -44.5 | 09.514 | 14.496 | 260 | 055 | +010 | +055 |
| 3091 | -48.5 | 10.220 | 15.849 | 258 | 053 | +011 | +052 |
| 2874 | -47.4 | 14.157 | 21.847 | 253 | 042 | +012 | +040 |
| 2822 | -49.9 | 15.311 | 23.893 | 253 | 038 | +011 | +036 |
| 2691 | -49.0 | 18.666 | 29.012 | 252 | 032 | +010 | +031 |
| 2566 | -44.0 | 22.500 | 34.208 | 252 | 032 | +010 | +031 |
| 2524 | -47.9 | 23.954 | 37.048 | 251 | 031 | +010 | +029 |
| 2155 | -52.8 | 41.992 | 66.391 | 246 | 018 | +007 | +016 |
| 2060 | -50.2 | 48.564 | 75.886 | 253 | 018 | +005 | +017 |
| 2000 | -54.9 | 53.258 | 85.013 | 255 | 019 | +005 | +018 |
| 1939 | -57.0 | 58.582 | 94.421 | 253 | 016 | +005 | +015 |
| 1740 | -51.9 | | | | | | |

CONSTANT PRESSURE SURFACES (GEOPOTENTIAL HEIGHT)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2032 | -51.6 | 50.000 | 82.356 | 253 | 019 | +005 | +018 |
| 2363 | -49.9 | 30.000 | 49.012 | 252 | 025 | +008 | +024 |
| 2632 | -47.3 | 20.000 | 32.278 | 253 | 032 | +009 | +031 |
| 3090 | -47.3 | 10.000 | 16.162 | 258 | 054 | +011 | +052 |
| 3327 | -41.9 | 07.000 | 11.021 | 270 | 057 | +000 | +057 |
| 3559 | -35.6 | 05.000 | 07.656 | 279 | 063 | -010 | +062 |
| 3921 | -27.3 | 03.000 | 04.432 | 274 | 059 | -005 | +059 |
| 4216 | -25.2 | 02.000 | 02.928 | 274 | 073 | -006 | +072 |
| 4732 | -08.2 | 01.000 | 01.366 | 263 | 072 | +008 | +071 |

RAWINSONDE

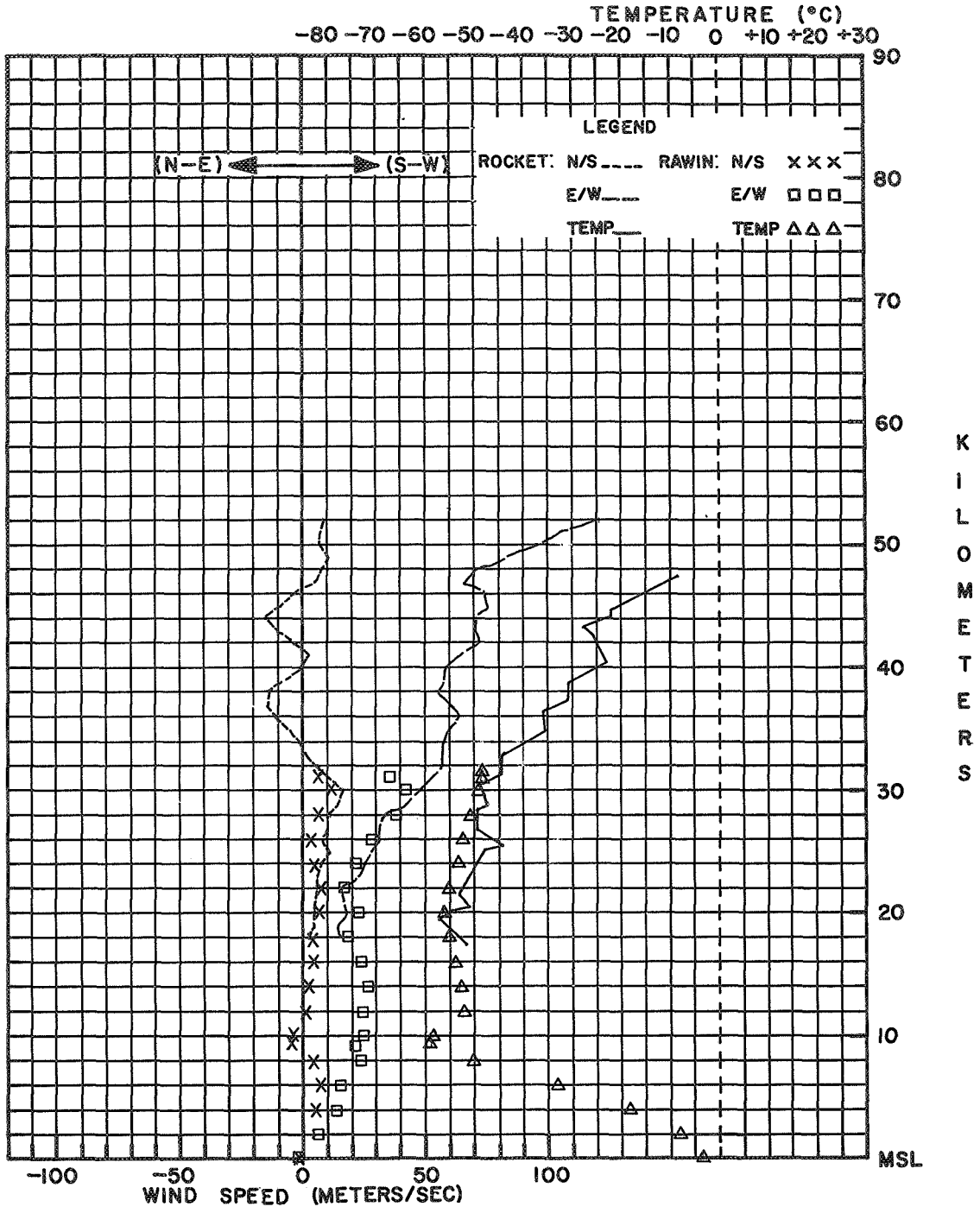
| PRESSURE | ALT TENS OF METERS | WIND POLAR DEG | MPS | COMPONENTS MPS N-S | E-W | RH % | TEMP DEG C |
|---|---|---|---|---|---|---|---|
| MB | | | | | | | |
| 1015.6 | 0000 | 040 | 001 | -001 | -001 | 92 | -03.3 |
| 0791.0 | 0200 | 237 | 008 | +004 | +006 | 36 | -08.0 |
| 0608.0 | 0400 | 250 | 014 | +005 | +013 | 30 | -18.4 |
| 0461.0 | 0600 | 242 | 017 | +008 | +015 | 69 | -33.1 |
| 0345.0 | 0800 | 261 | 023 | +004 | +023 | | -50.0 |
| 0268.0 | 0958 | 280 | 022 | -004 | +021 | | -59.9 |
| 0252.0 | 1000 | 277 | 024 | -003 | +024 | | -58.6 |
| 0184.0 | 1200 | 271 | 024 | +000 | +024 | | -52.1 |
| 0135.0 | 1400 | 266 | 026 | +002 | +026 | | -52.6 |
| 0099.0 | 1600 | 260 | 024 | +004 | +024 | | -53.8 |
| 0073.0 | 1800 | 261 | 019 | +003 | +019 | | -55.3 |
| 0053.0 | 2000 | 252 | 023 | +007 | +022 | | -56.6 |
| 0038.8 | 2200 | 248 | 019 | +007 | +018 | | -55.3 |
| 0028.3 | 2400 | 258 | 021 | +005 | +021 | | -53.9 |
| 0020.9 | 2600 | 263 | 029 | +003 | +029 | | -52.4 |
| 0015.4 | 2800 | 260 | 037 | +006 | +037 | | -51.0 |
| 0011.4 | 3000 | 255 | 043 | +011 | +042 | | -49.4 |
| 0009.3 | 3135 | 259 | 036 | +007 | +036 | | -48.8 |
| 0009.0 | 3156 | | | | | | -48.8 |

# TECHNICAL DATA

MOTOR TYPE..ARCAS
PAYLOAD TYPE..ARCASONDE-1A
FUSE TYPE..GAS GENERATED SEPARATION DEVICE
LAUNCHER SETTING..077°AZIMUTH 80.0° ELEVATION
RADAR TYPE..FPQ-6 APOGEE 53.520 METERS
WIND SENSOR TYPE..16 FT. DISC-GAP-BAND PARACHUTE SENSOR FALL-RATE..NOMINAL
TEMPERATURE SENSOR TYPE..0.010 INCH BEAD THERMISTOR
GROUND EQUIPMENT TYPE..GMD-1B
REMARKS..NONE

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..132 SEC

RADIOSONDE MANUFACTURER..MOLDED INSULATION CO. RADIOSONDE TYPE..1680 MHZ
TEMPERATURE ELEMENT TYPE..ROD THERMISTOR BALLOON TYPE..NEOPRENE
PRESSURE SENSOR TYPE..ANEROID AND HYPSOMETER BALLOON SIZE..1,200 GRAMS
GROUND EQUIPMENT TYPE..GMD-1B
WIND AT ROCKET LAUNCH..SFC- 160DEG/02MPS 15M 117DEG/02MPS 31M 124DEG/03MPS
46M 131DEG/04MPS 61M 122DEG/04MPS 76M 143DEG/04MPS
BALLISTIC WIND.. 172°AZIMUTH 04.0 MPS
THERMODYNAMIC BASE DATA..PRESSURE 99.0 MBS
TEMPERATURE -53.8°C
ALTITUDE 16,000 METERS




STATION: (NASA) Wallops Island, Va. ROCKET TIME: 1028 LST 1528 GCT PAYLOAD TYPE: Arcasonde 1A

DATE: 28 February, 1968 ROCKET MOTOR TYPE: Arcas RADIOSONDE TYPE: 1680 MHZ

# ROCKET OBSERVATION DATA

RP STATION NAME

72402 (NASA) WALLOPS ISLAND, VIRGINIA

LAT. 37°51' N LONG. 75°29' W

ROCKET LAUNCH

DATE MARCH 6, 1968 TIME 1503 Z

RAWINSONDE RELEASE

DATE MARCH 6, 1968 TIME 1225 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 107 | 56 | 273 | 059 | -003 | +058 |
| 100 | 55 | 276 | 059 | -006 | +059 |
| 095 | 54 | 276 | 058 | -006 | +057 |
| 100 | 53 | 276 | 057 | -006 | +056 |
| 083 | 52 | 273 | 058 | -003 | +058 |
| 080 | 51 | 273 | 055 | -003 | +054 |
| 077 | 50 | 273 | 048 | -003 | +047 |
| 067 | 49 | 280 | 050 | -009 | +049 |
| 071 | 48 | 285 | 040 | -010 | +039 |
| 069 | 47 | 282 | 044 | -009 | +044 |
| 061 | 46 | 278 | 053 | -007 | +052 |
| 057 | 45 | 269 | 047 | +001 | +046 |
| 053 | 44 | 268 | 042 | +002 | +042 |
| 044 | 43 | 264 | 045 | +004 | +045 |
| 041 | 42 | 258 | 041 | +009 | +040 |
| 042 | 41 | 256 | 036 | +008 | +035 |
| 038 | 40 | 271 | 036 | -001 | +035 |
| 034 | 39 | 278 | 038 | -005 | +038 |
| 034 | 38 | 270 | 035 | +000 | +035 |
| 031 | 37 | 276 | 034 | -003 | +034 |
| 027 | 36 | 285 | 035 | -009 | +034 |
| 026 | 35 | 278 | 031 | -008 | +030 |
| 024 | 34 | 277 | 029 | -004 | +029 |
| 021 | 33 | 269 | 023 | -003 | +023 |
| 020 | 32 | 273 | 015 | +000 | +015 |
| 019 | 31 | 279 | 012 | -001 | +012 |
| 018 | 30 | 286 | 009 | -001 | +009 |
| 016 | 29 | 323 | 005 | -001 | +004 |
| 013 | 28 | 345 | 006 | -005 | +003 |
| 013 | 27 | 039 | 003 | -003 | +001 |
| 013 | 26 | 046 | 003 | -002 | -002 |
| 011 | 25 | 044 | 005 | -003 | -003 |
| 010 | 24 | 015 | 008 | -006 | -005 |
| 010 | 23 | 348 | 008 | -008 | -002 |
| 009 | 22 | 313 | 006 | -006 | +001 |
| 009 | 21 | 274 | 006 | -004 | +004 |
| 008 | 20 | 274 | 005 | +000 | +005 |
| 007 | 19 | 285 | 006 | -002 | +006 |
| 006 | 18 | 298 | 013 | -006 | +012 |

ROCKET THERMODYNAMICS

| ALT TENS OF METERS | TEMP DEG C | PRESSURE MB | DENSITY -3 G M | WIND POLAR DEG | MPS | COMPONENTS MPS N-S | E-W |
|---|---|---|---|---|---|---|---|
| 5660 | -13.9 | 00.331 | 00.444 | | | | |
| 5550 | -11.3 | 00.406 | 00.540 | 276 | 059 | -006 | +059 |
| 5364 | -05.6 | 00.483 | 00.628 | 276 | 057 | -006 | +059 |
| 5240 | -04.7 | 00.564 | 00.731 | 274 | 058 | -004 | +057 |
| 5084 | -06.7 | 00.686 | 00.896 | 273 | 053 | -003 | +053 |
| 4980 | -00.8 | 00.781 | 00.998 | 274 | 048 | -004 | +048 |
| 4667 | -03.6 | 01.166 | 01.506 | 280 | 048 | -008 | +047 |
| 4593 | -08.5 | 01.263 | 01.663 | 277 | 052 | -006 | +052 |
| 4450 | -11.7 | 01.517 | 02.021 | 269 | 045 | +001 | +044 |
| 4404 | -15.4 | 01.610 | 02.177 | 268 | 042 | +002 | +042 |
| 4292 | -15.6 | 01.864 | 02.521 | 264 | 045 | +004 | +045 |
| 4118 | -20.6 | 02.364 | 03.236 | 256 | 037 | +009 | +036 |
| 4066 | -17.6 | 02.513 | 03.426 | 260 | 036 | +006 | +035 |
| 3944 | -20.3 | 02.954 | 04.071 | 275 | 037 | -003 | +037 |
| 3911 | -24.0 | 03.088 | 04.318 | 277 | 038 | -004 | +037 |
| 3810 | -30.4 | 03.547 | 05.091 | 271 | 036 | -001 | +035 |
| 3548 | -34.3 | 05.121 | 07.469 | 285 | 033 | -008 | +032 |
| 3185 | -51.7 | 08.726 | 13.727 | 270 | 015 | +000 | +015 |
| 2938 | -49.8 | 12.702 | 19.812 | 283 | 006 | -001 | +006 |
| 2749 | -54.7 | 16.965 | 27.056 | 334 | 004 | -004 | +002 |
| 2256 | -56.2 | 36.529 | 58.659 | 004 | 007 | -007 | -001 |
| 2085 | -53.0 | 47.629 | 75.369 | 305 | 006 | -003 | +005 |
| 2051 | -58.1 | 50.219 | 81.355 | 293 | 005 | -002 | +005 |
| 2000 | -58.5 | 54.430 | 88.342 | 274 | 005 | +000 | +005 |
| 1841 | -55.9 | | | 292 | 010 | -002 | +005 |
| 1731 | -57.8 | | | | | | |

CONSTANT PRESSURE SURFACES (GEOPOTENTIAL HEIGHT)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2047 | -57.7 | 50.000 | 80.839 | 293 | 005 | -002 | +005 |
| 2373 | -55.8 | 30.000 | 48.079 | 040 | 008 | -006 | -005 |
| 2632 | -55.0 | 20.000 | 31.935 | 015 | 003 | -003 | -001 |
| 3080 | -51.0 | 10.000 | 15.680 | 273 | 012 | -001 | +012 |
| 3314 | -44.5 | 07.000 | 10.667 | 277 | 025 | -003 | +025 |
| 3545 | -34.0 | 05.000 | 07.285 | 285 | 033 | -008 | +033 |
| 3908 | -21.6 | 03.000 | 04.154 | 276 | 037 | -004 | +037 |
| 4210 | -17.1 | 02.000 | 02.722 | 260 | 043 | +007 | +042 |
| 4744 | -02.6 | 01.000 | 01.288 | 284 | 041 | -009 | +040 |

RAWINSONDE

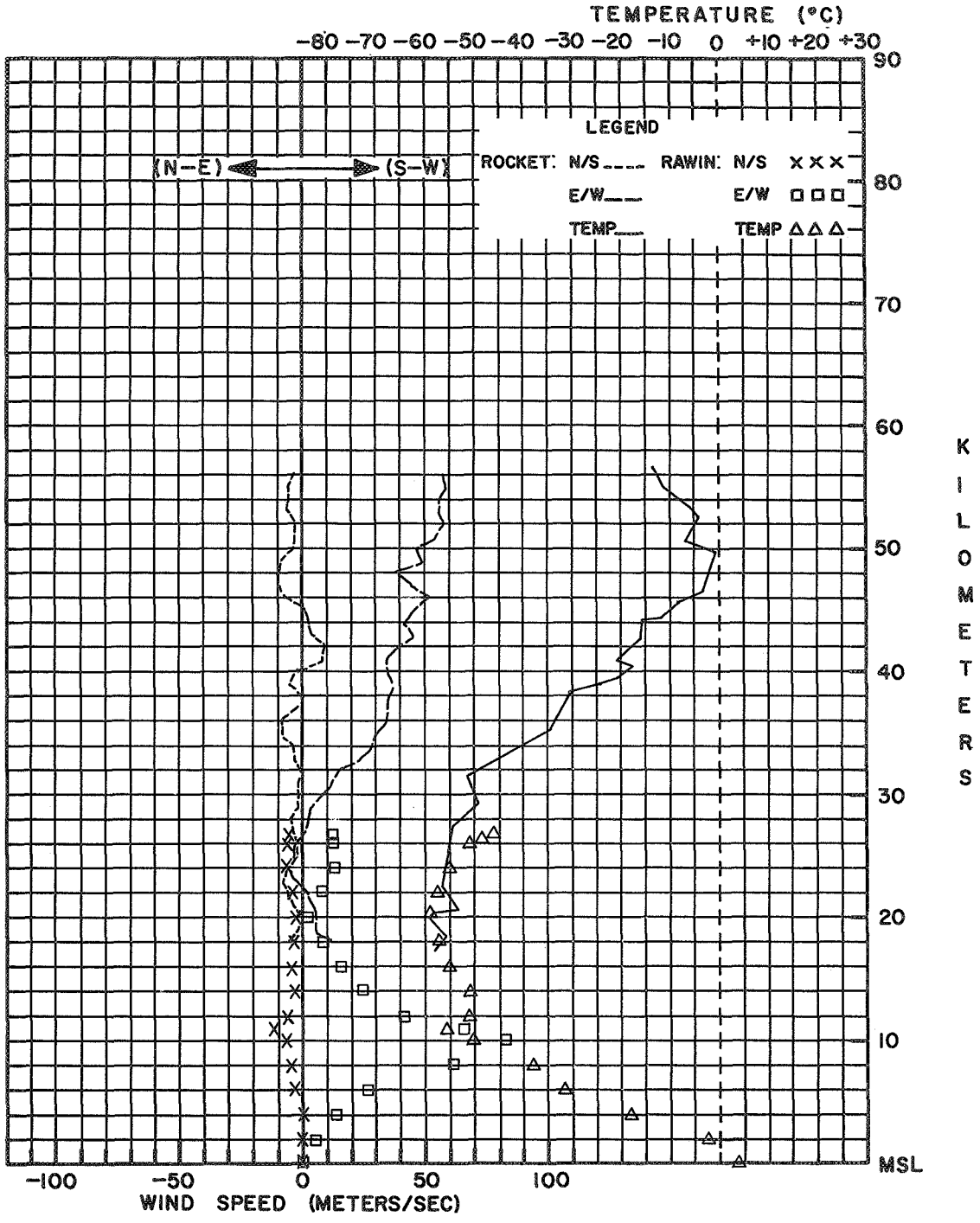
| PRESSURE | ALT TENS OF | WIND POLAR | | COMPONENTS MPS | | RH | TEMP |
|---|---|---|---|---|---|---|---|
| MB | METERS | DEG | MPS | N-S | E-W | % | DEG C |
| 1004.0 | 0000 | 000 | 000 | +000 | +000 | 30 | +04.2 |
| 0788.0 | 0200 | 277 | 004 | +000 | +004 | 27 | -02.5 |
| 0607.0 | 0400 | 269 | 013 | +000 | +013 | 68 | -18.6 |
| 0461.0 | 0600 | 277 | 027 | -003 | +027 | 27 | -31.7 |
| 0345.0 | 0800 | 275 | 062 | -005 | +061 | 16 | -38.6 |
| 0257.0 | 1000 | 276 | 081 | -008 | +081 | | -50.5 |
| 0222.0 | 1094 | 280 | 066 | -012 | +065 | | -56.9 |
| 0188.0 | 1200 | 281 | 042 | -008 | +041 | | -51.4 |
| 0139.0 | 1400 | 278 | 024 | -003 | +024 | | -51.4 |
| 0102.0 | 1600 | 286 | 017 | -005 | +016 | | -55.6 |
| 0074.0 | 1800 | 296 | 010 | -004 | +009 | | -57.6 |
| 0054.5 | 2000 | 314 | 003 | -002 | +002 | | -59.1 |
| 0039.5 | 2200 | 304 | 009 | -005 | +008 | | -57.4 |
| 0029.0 | 2400 | 302 | 014 | -007 | +012 | | -55.6 |
| 0021.4 | 2600 | 295 | 013 | -006 | +012 | | -51.2 |
| 0020.0 | 2640 | 294 | 013 | -005 | +012 | | -48.6 |
| 0019.0 | 2673 | | | | | | -46.6 |

# TECHNICAL DATA

MOTOR TYPE..ARCAS
PAYLOAD TYPE..ARCASONDE-1A
FUSE TYPE..GAS GENERATED SEPARATION DEVICE
LAUNCHER SETTING..135° AZIMUTH 79.5° ELEVATION
RADAR TYPE..FPS-16 APOGEE 59,280 METERS
WIND SENSOR TYPE..16 FT. DISC-GAP-BAND PARACHUTE SENSOR FALL-RATE..NOMINAL
TEMPERATURE SENSOR TYPE..0.010 INCH BEAD THERMISTOR
GROUND EQUIPMENT TYPE..GMD-18
REMARKS..NONE

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..128 SEC

RADIOSONDE MANUFACTURER..MOLDED INSULATION CO. RADIOSONDE TYPE..1680 MHZ
TEMPERATURE ELEMENT TYPE..ROD THERMISTOR BALLOON TYPE..NEOPRENE
PRESSURE SENSOR TYPE..ANEROID AND HYPSOMETER BALLOON SIZE..1,200 GRAMS
GROUND EQUIPMENT TYPE..GMD-1B
WIND AT ROCKET LAUNCH..SFC. 022DEG/01MPS 15M 000DEG/00MPS 31M 000DEG/00MPS
46M 000DEG/00MPS 61M 360DEG/01MPS 76M 333DEG/01MPS
BALLISTIC WIND.. 316° AZIMUTH 03.3 MPS
THERMODYNAMIC BASE DATA..PRESSURE 102.0 MBS
TEMPERATURE -55.6° C
ALTITUDE 16,000 METERS




STATION: (NASA) Wallops Island, Va. ROCKET TIME: 1003 LST 1503 GCT PAYLOAD TYPE: Arcasonde 1A

DATE: 6 March, 1968 ROCKET MOTOR TYPE: Arcas RADIOSONDE TYPE: 1680 MHZ

# ROCKET OBSERVATION DATA

RP STATION NAME

87320 (CNIE) CHAMICAL, ARGENTINA

LAT. 36°22'S LONG. 66°17'W

ROCKET LAUNCH

DATE MARCH 13, 1968 TIME 1528 Z

RAWINSONDE RELEASE

DATE MARCH 13, 1968 TIME 1140 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | WIND COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 044 | 44 | 017 | 003 | -003 | -001 |
| 043 | 43 | 050 | 008 | -005 | -006 |
| 037 | 42 | 035 | 008 | -007 | -005 |
| 041 | 41 | 030 | 012 | -010 | -006 |
| 034 | 40 | 073 | 013 | -004 | -012 |
| 027 | 39 | 082 | 012 | -002 | -012 |
| 027 | 38 | 070 | 010 | -003 | -010 |
| 026 | 37 | 074 | 015 | -004 | -015 |
| 025 | 36 | 080 | 013 | -002 | -013 |
| 022 | 35 | 075 | 009 | -002 | -009 |
| 020 | 34 | 068 | 007 | -003 | -007 |
| 020 | 33 | 053 | 008 | -005 | -007 |
| 018 | 32 | 060 | 010 | -005 | -009 |
| 017 | 31 | 078 | 012 | -002 | -011 |
| 015 | 30 | 083 | 014 | -002 | -013 |
| 013 | 29 | 079 | 013 | -003 | -013 |
| 012 | 28 | 083 | 012 | -002 | -012 |
| 011 | 27 | 076 | 010 | -002 | -010 |
| 010 | 26 | 066 | 009 | -004 | -008 |
| 009 | 25 | 068 | 008 | -003 | -008 |
| 007 | 23 | 061 | 008 | -004 | -007 |

ROCKET THERMODYNAMICS

| ALT TENS OF METERS | TEMP DEG C | PRESSURE MB | DENSITY G M$^{-3}$ | WIND POLAR DEG | MPS | WIND COMPONENTS MPS N-S | E-W |
|---|---|---|---|---|---|---|---|
| 4940 | +05.4 | 00.970 | 01.213 | | | | |
| 4630 | -01.8 | 01.417 | 01.819 | | | | |
| 4400 | -02.9 | 01.885 | 02.430 | 017 | 003 | -003 | -001 |
| 4300 | -09.7 | 02.139 | 02.828 | 050 | 008 | -005 | -006 |
| 3550 | -30.7 | 05.813 | 08.353 | 078 | 011 | -002 | -011 |
| 3140 | -35.9 | 10.356 | 15.207 | 071 | 011 | -004 | -010 |
| 2780 | -42.7 | 17.431 | 26.352 | 082 | 012 | -002 | -012 |
| 2580 | -42.9 | 23.387 | 35.387 | 067 | 009 | -004 | -008 |
| 2350 | -50.6 | 32.995 | 51.651 | 063 | 008 | -004 | -007 |
| 2250 | -55.9 | 38.493 | 61.728 | 058 | 008 | -004 | -007 |

CONSTANT PRESSURE SURFACES (GEOPOTENTIAL HEIGHT)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2404 | -48.2 | 30.000 | 46.461 | | | | |
| 2675 | -42.8 | 20.000 | 30.246 | 076 | 010 | -002 | -010 |
| 3141 | -35.5 | 10.000 | 14.659 | 071 | 011 | -004 | -010 |
| 3391 | -32.1 | 07.000 | 10.115 | 068 | 007 | -003 | -007 |
| 3638 | -26.1 | 05.000 | 07.050 | 078 | 014 | -003 | -014 |
| 4015 | -14.6 | 03.000 | 04.043 | 073 | 013 | -004 | -012 |
| 4323 | -06.0 | 02.000 | 02.608 | 045 | 007 | -005 | -005 |
| 4876 | +04.9 | 01.000 | 01.253 | | | | |

RAWINSONDE

| PRESSURE MB | ALT TENS OF METERS | WIND POLAR DEG | MPS | WIND COMPONENTS MPS N-S | E-W | RH % | TEMP DEG C |
|---|---|---|---|---|---|---|---|
| 0953.3 | 0046 | 140 | 003 | +002 | -002 | 70 | +23.8 |
| 0799.0 | 0200 | 029 | 005 | -005 | -003 | 48 | +15.8 |
| 0628.0 | 0400 | 322 | 008 | -006 | +005 | 35 | +04.5 |
| 0487.8 | 0600 | 280 | 010 | -002 | +010 | 23 | -08.5 |
| 0374.0 | 0800 | 280 | 019 | -006 | +019 | 20 | -23.2 |
| 0282.5 | 1000 | 295 | 026 | -012 | +024 | | -35.6 |
| 0210.0 | 1200 | 305 | 029 | -017 | +024 | | -48.1 |
| 0154.5 | 1400 | 303 | 028 | -015 | +024 | | -60.2 |
| 0111.8 | 1600 | 288 | 014 | -004 | +014 | | -67.0 |
| 0079.4 | 1800 | 281 | 007 | +001 | +007 | | -70.1 |
| 0057.0 | 2000 | 150 | 006 | +005 | -003 | | -64.3 |
| 0041.6 | 2200 | 067 | 007 | -004 | -006 | | -53.6 |
| 0030.9 | 2400 | 074 | 011 | -003 | -011 | | -48.2 |
| 0026.0 | 2600 | 073 | 013 | -004 | -013 | | -44.0 |
| 0019.0 | 2715 | | | | | | -41.9 |

# TECHNICAL DATA

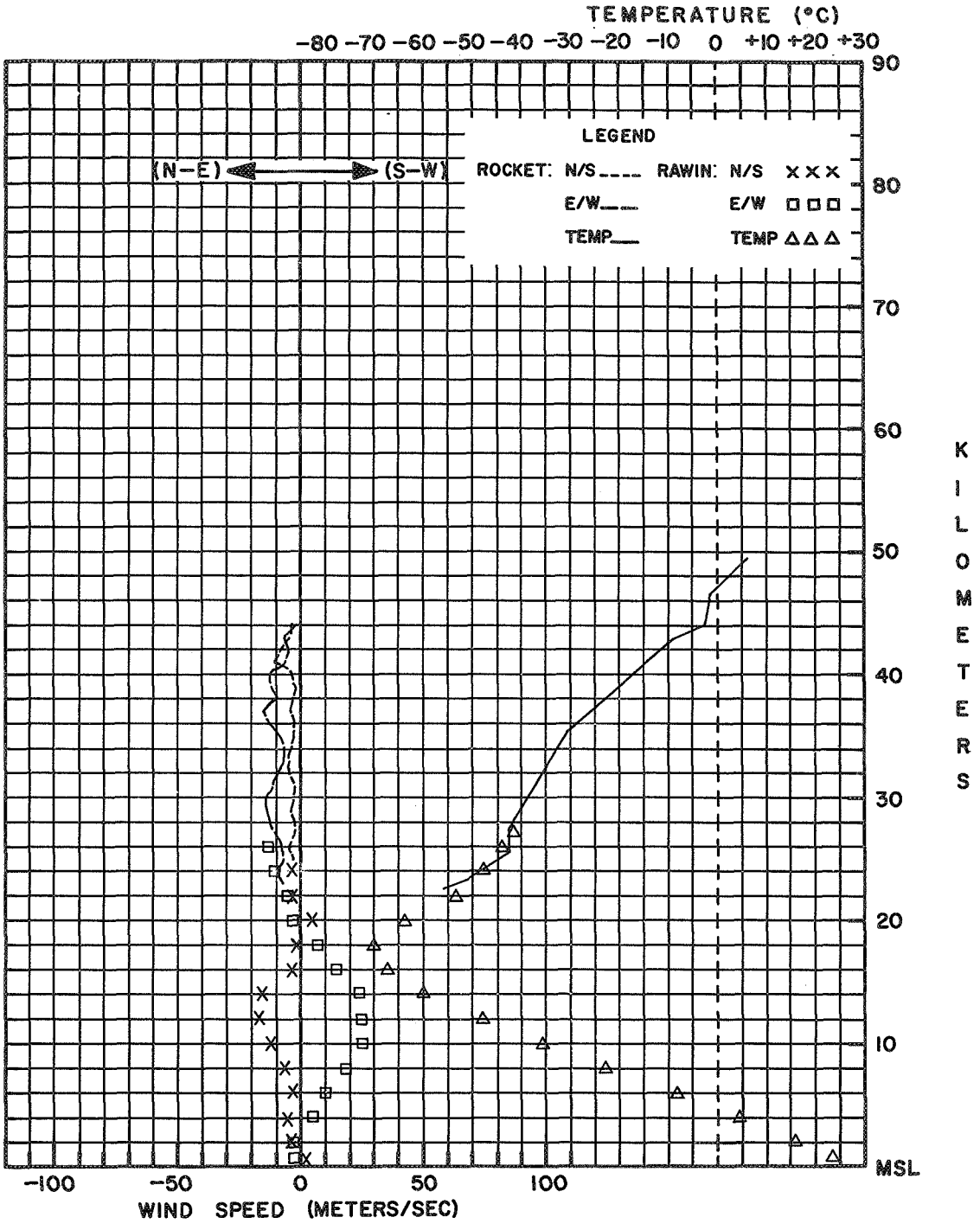
MOTOR TYPE..ARCAS
PAYLOAD TYPE..ARCASONDE-1A
FUSE TYPE..GAS GENERATED SEPARATION DEVICE
LAUNCHER SETTING..048°AZIMUTH 84.5°ELEVATION
RADAR TYPE..MPS-19 APOGEE 74,000 METERS
WIND SENSOR TYPE..15 FT. DIAMETER PARACHUTE
TEMPERATURE SENSOR TYPE..0.010 INCH BEAD THERMISTOR
GROUND EQUIPMENT TYPE..GMD-2B
REMARKS..NONE

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..130 SEC

SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..VAISALA
TEMPERATURE ELEMENT TYPE..RESISTANCE WIRE
PRESSURE SENSOR TYPE..DOUBLE ANEROID
GROUND EQUIPMENT TYPE..VAISALA
WIND AT ROCKET LAUNCH..SFC. 010DEG/01MPS
BALLISTIC WIND.. 011° AZIMUTH 02.0 MPS
THERMODYNAMIC BASE DATA..PRESSURE 41.6 MBS
TEMPERATURE -53.6° C
ALTITUDE 22,000 METERS

RADIOSONDE TYPE..VAISALA
BALLOON TYPE..NEOPRENE
BALLOON SIZE..1,200 GRAMS




STATION: (CNIE) Chamical, Arg. ROCKET TIME: 1128 LST 1528 GCT PAYLOAD TYPE: Arcasonde 1A

DATE: 15 March, 1968 ROCKET MOTOR TYPE: Arcas RADIOSONDE TYPE: Vaisala

# ROCKET OBSERVATION DATA

RP STATION NAME

72402 (NASA) WALLOPS ISLAND, VIRGINIA

LAT. 37°51'N LONG. 75°29'W

ROCKET LAUNCH

DATE MARCH 14, 1968 TIME 1500 Z

RAWINSONDE RELEASE

DATE MARCH 14, 1968 TIME 1115 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | WIND COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 067 | 51 | 267 | 059 | +003 | +058 |
| 067 | 50 | 271 | 049 | -001 | +048 |
| 067 | 49 | 268 | 041 | +002 | +040 |
| 061 | 48 | 265 | 044 | +003 | +044 |
| 057 | 47 | 263 | 048 | +006 | +047 |
| 054 | 46 | 261 | 044 | +007 | +044 |
| 051 | 45 | 259 | 040 | +008 | +039 |
| 051 | 44 | 257 | 041 | +009 | +040 |
| 043 | 43 | 258 | 046 | +010 | +045 |
| 038 | 42 | 258 | 052 | +011 | +051 |
| 039 | 41 | 257 | 055 | +013 | +053 |
| 036 | 40 | 255 | 050 | +013 | +049 |
| 034 | 39 | 254 | 047 | +013 | +045 |
| 031 | 38 | 252 | 046 | +014 | +044 |
| 029 | 37 | 258 | 043 | +009 | +042 |
| 027 | 36 | 265 | 050 | +004 | +050 |
| 025 | 35 | 264 | 057 | +006 | +057 |
| 022 | 34 | 261 | 055 | +009 | +055 |
| 020 | 33 | 262 | 048 | +007 | +048 |
| 020 | 32 | 264 | 037 | +004 | +036 |
| 020 | 31 | 259 | 029 | +006 | +029 |
| 018 | 30 | 253 | 023 | +007 | +022 |
| 014 | 29 | 255 | 018 | +004 | +017 |
| 013 | 28 | 267 | 018 | +001 | +017 |
| 011 | 27 | 266 | 018 | +001 | +018 |
| 010 | 26 | 265 | 016 | +001 | +016 |
| 009 | 25 | 249 | 011 | +004 | +011 |
| 008 | 24 | 235 | 008 | +005 | +007 |
| 007 | 23 | 242 | 006 | +003 | +005 |
| 006 | 22 | 262 | 006 | +001 | +006 |
| 006 | 21 | 255 | 007 | +002 | +007 |
| 006 | 20 | 244 | 007 | +003 | +006 |
| 006 | 19 | 249 | 008 | +003 | +008 |
| 005 | 18 | 257 | 010 | +002 | +010 |

ROCKET THERMODYNAMICS

| ALT TENS OF METERS | TEMP DEG C | PRESSURE MB | DENSITY G M $^{-3}$ | WIND POLAR DEG | MPS | WIND COMPONENTS MPS N-S | E-W |
|---|---|---|---|---|---|---|---|
| 5136 | +04.1 | 00.719 | 00.904 | | | | |
| 5035 | -01.5 | 00.814 | 01.044 | 269 | 053 | +001 | +052 |
| 4971 | -00.6 | 00.881 | 01.126 | 270 | 046 | +000 | +046 |
| 4743 | -04.9 | 01.170 | 01.519 | 264 | 046 | +005 | +046 |
| 4500 | -04.3 | 01.586 | 02.055 | 259 | 040 | +008 | +039 |
| 4304 | -05.9 | 02.029 | 02.645 | 258 | 046 | +010 | +045 |
| 4221 | -10.9 | 02.255 | 02.995 | 258 | 045 | +010 | +044 |
| 4072 | -09.1 | 02.729 | 03.600 | 257 | 054 | +012 | +052 |
| 4005 | -18.8 | 02.977 | 04.078 | 255 | 050 | +013 | +049 |
| 3783 | -25.4 | 04.012 | 05.641 | 253 | 046 | +013 | +044 |
| 3673 | -26.3 | 04.661 | 06.579 | 260 | 045 | +008 | +044 |
| 3554 | -31.9 | 05.495 | 07.936 | 265 | 054 | +004 | +053 |
| 3310 | -30.6 | 07.726 | 11.097 | 262 | 049 | +007 | +048 |
| 3255 | -37.0 | 08.349 | 12.318 | 263 | 044 | +005 | +044 |
| 3091 | -37.4 | 10.561 | 15.606 | 259 | 028 | +006 | +028 |
| 3045 | -42.2 | 11.288 | 17.028 | 256 | 026 | +006 | +025 |
| 2941 | -43.7 | 13.152 | 19.970 | 254 | 020 | +005 | +019 |
| 2890 | -41.1 | 14.173 | 21.279 | 253 | 018 | +005 | +017 |
| 2850 | -47.2 | 15.036 | 23.184 | 261 | 018 | +003 | +017 |
| 2758 | -46.2 | 17.253 | 26.484 | 267 | 018 | +001 | +017 |
| 2524 | -52.1 | 24.574 | 38.730 | 252 | 012 | +004 | +012 |
| 2475 | -50.3 | 26.483 | 41.401 | 246 | 011 | +004 | +010 |
| 2341 | -54.0 | 32.523 | 51.702 | 239 | 007 | +004 | +006 |
| 2137 | -53.0 | 44.559 | 70.513 | 258 | 007 | +001 | +007 |
| 2000 | -56.4 | 55.123 | 88.600 | 244 | 007 | +003 | +006 |
| 1900 | -53.3 | | | 249 | 008 | +003 | +008 |
| 1835 | -58.0 | | | 254 | 009 | +003 | +009 |
| 1765 | -55.1 | | | | | | |

CONSTANT PRESSURE SURFACES (GEOPOTENTIAL HEIGHT)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2056 | -54.9 | 50.000 | 79.796 | 251 | 007 | +002 | +007 |
| 2384 | -52.6 | 30.000 | 47.382 | 235 | 008 | +005 | +006 |
| 2648 | -48.7 | 20.000 | 31.038 | 266 | 017 | +001 | +017 |
| 3114 | -37.3 | 10.000 | 14.772 | 261 | 031 | +005 | +031 |
| 3363 | -31.0 | 07.000 | 10.071 | 261 | 054 | +008 | +053 |
| 3601 | -28.7 | 05.000 | 07.126 | 263 | 049 | +006 | +048 |
| 3974 | -19.0 | 03.000 | 04.113 | 255 | 050 | +013 | +049 |
| 4286 | -05.8 | 02.000 | 02.606 | 258 | 046 | +010 | +045 |
| 4831 | -02.5 | 01.000 | 01.287 | 267 | 042 | +002 | +042 |

RAWINSONDE

| PRESSURE MB | ALT TENS OF METERS | WIND POLAR DEG | MPS | WIND COMPONENTS MPS N-S | E-W | RH % | TEMP DEG C |
|---|---|---|---|---|---|---|---|
| 1033.0 | 0000 | 330 | 004 | -004 | +002 | 52 | -03.9 |
| 0799.0 | 0200 | 316 | 013 | -009 | +009 | 16 | -11.1 |
| 0604.0 | 0400 | 319 | 029 | -022 | +019 | 18 | -18.1 |
| 0467.0 | 0600 | 314 | 041 | -029 | +030 | 19 | -28.7 |
| 0352.0 | 0800 | 321 | 048 | -037 | +030 | | -41.0 |
| 0278.0 | 0954 | | | | | | -58.5 |
| 0260.0 | 1000 | | | | | | -50.6 |
| 0191.0 | 1200 | | | | | | -49.6 |
| 0141.0 | 1400 | | | | | | -53.6 |
| 0103.0 | 1600 | 255 | 018 | +005 | +018 | | -57.8 |
| 0071.0 | 1800 | 259 | 018 | +004 | +018 | | -55.3 |
| 0055.0 | 2000 | 258 | 010 | +002 | +010 | | -58.2 |
| 0040.0 | 2200 | 255 | 008 | +002 | +008 | | -56.0 |
| 0029.5 | 2400 | 260 | 008 | +001 | +008 | | -54.1 |
| 0021.5 | 2600 | 263 | 013 | +002 | +013 | | -52.0 |
| 0016.0 | 2800 | 271 | 023 | +000 | +023 | | -51.7 |
| 0011.7 | 3000 | 270 | 023 | +000 | +023 | | -48.4 |
| 0008.6 | 3200 | 260 | 027 | +005 | +027 | | -43.0 |
| 0006.5 | 3400 | 259 | 049 | +010 | +048 | | -38.0 |
| 0005.2 | 3566 | 255 | 055 | +014 | +053 | | -34.1 |
| 0005.0 | 3585 | | | | | | -33.6 |

# TECHNICAL DATA

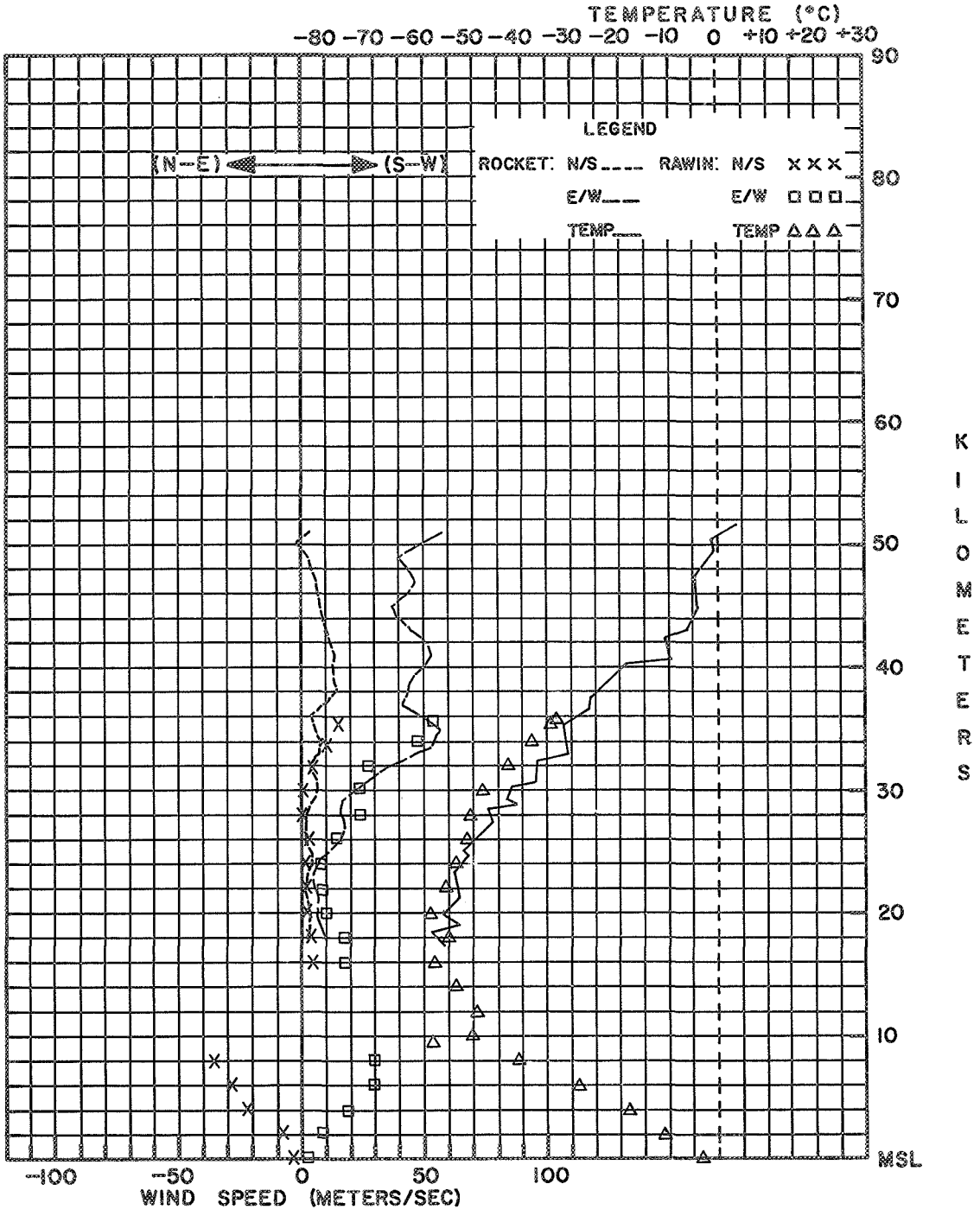
MOTOR TYPE..ARCAS
PAYLOAD TYPE..ARCASONDE-1A
FUSE TYPE..GAS GENERATED SEPARATION DEVICE
LAUNCHER SETTING..117° AZIMUTH 74.5° ELEVATION
RADAR TYPE..FPS-16 APOGEE 53,370 METERS
WIND SENSOR TYPE..15 FT. DIAMETER PARACHUTE
TEMPERATURE SENSOR TYPE..0.010 INCH BEAD THERMISTOR
GROUND EQUIPMENT TYPE..GMD-1B
REMARKS..NONE

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..136 SEC

SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..MOLDED INSULATION CO.
TEMPERATURE ELEMENT TYPE..ROD THERMISTOR
PRESSURE SENSOR TYPE..ANEROID AND HYPSOMETER
GROUND EQUIPMENT TYPE..GMD-1B
WIND AT ROCKET LAUNCH..SFC. 348DEG/06MPS 15M 338DEG/05MPS 31M 350DEG/05MPS
46M 340DEG/05MPS 61M 333DEG/06MPS 76M 342DEG/06MPS
BALLISTIC WIND.. 317° AZIMUTH 09.4 MPS
THERMODYNAMIC BASE DATA..PRESSURE 103.0 MBS
TEMPERATURE -57.8°C
ALTITUDE 16,000 METERS

RADIOSONDE TYPE..1680 MH7
BALLOON TYPE..NEOPRENE
BALLOON SIZE..1,200 GRAMS




STATION: (NASA) Wallops Island, Va. ROCKET TIME: 1000 LST 1500 GCT PAYLOAD TYPE: Arcasonde 1A

DATE: 14 March, 1968 ROCKET MOTOR TYPE: Arcas RADIOSONDE TYPE: 1680 MHZ

# ROCKET OBSERVATION DATA

RP STATION
87320 (CNIE) CHAMICAL, ARGENTINA
LAT. 30°22'S LONG. 66°17'W

ROCKET LAUNCH
DATE MARCH 20, 1968 TIME 1600 Z

RAWINSONDE RELEASE
DATE MARCH 20, 1968 TIME 1340 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 049 | 68 | 280 | 029 | -001 | +029 |
| 044 | 67 | 270 | 029 | +000 | +027 |
| 039 | 66 | 273 | 028 | +000 | +027 |
| 037 | 65 | 281 | 021 | -004 | +020 |
| 034 | 64 | 268 | 015 | +000 | +015 |
| 031 | 63 | 266 | 014 | +000 | +014 |
| 031 | 62 | 275 | 008 | +000 | +008 |
| 034 | 61 | 307 | 009 | -001 | +007 |
| 027 | 60 | 328 | 015 | -015 | +009 |
| 025 | 59 | 010 | 006 | -006 | -001 |
| 026 | 58 | 327 | 005 | -004 | +003 |
| 023 | 57 | 324 | 012 | -009 | +007 |
| 022 | 56 | 328 | 005 | -004 | +003 |
| 024 | 55 | 240 | 006 | +003 | +004 |
| 020 | 54 | 257 | 006 | +001 | +006 |
| 018 | 53 | 297 | 008 | -004 | +007 |
| 019 | 52 | 352 | 008 | -008 | +001 |
| 018 | 51 | 046 | 013 | -009 | -010 |
| 017 | 50 | 066 | 018 | -007 | -017 |
| 016 | 49 | 088 | 010 | +000 | -011 |
| 016 | 48 | 075 | 009 | -002 | -008 |
| 017 | 47 | 075 | 009 | -002 | -008 |
| 018 | 46 | 076 | 005 | -001 | -005 |
| 016 | 45 | 098 | 007 | +001 | -007 |
| 018 | 44 | 115 | 007 | +003 | -006 |
| 013 | 43 | 122 | 004 | +002 | -003 |
| 010 | 42 | 074 | 004 | -001 | -004 |
| 012 | 41 | 065 | 006 | -002 | -005 |
| 013 | 40 | 072 | 009 | -002 | -007 |
| 012 | 39 | 060 | 008 | -004 | -007 |
| 011 | 38 | 057 | 010 | -005 | -007 |
| 010 | 37 | 067 | 009 | -004 | -009 |
| 010 | 36 | 076 | 007 | -002 | -007 |
| 010 | 35 | 093 | 006 | +000 | -006 |
| 009 | 34 | 090 | 004 | +000 | -004 |
| 009 | 33 | 052 | 003 | -002 | -002 |
| 009 | 32 | 045 | 004 | -003 | -003 |
| 008 | 31 | 060 | 004 | -002 | -004 |
| 008 | 30 | 042 | 004 | -003 | -002 |
| 007 | 29 | 042 | 004 | -003 | -003 |

RAWINSONDE

| PRESSURE | ALT TENS OF | WIND POLAR | | COMPONENTS MPS | | RH | TEMP |
|---|---|---|---|---|---|---|---|
| MB | METERS | DEG | MPS | N-S | E-W | % | DEG C |
| 0956.5 | 0046 | 000 | 000 | +000 | +000 | 54 | +26.8 |
| 0800.0 | 0200 | 270 | 003 | +000 | +000 | 62 | +14.8 |
| 0630.0 | 0400 | 257 | 018 | +000 | +017 | 19 | +03.9 |
| 0489.5 | 0600 | 256 | 020 | +001 | +019 | 14 | -13.1 |
| 0372.8 | 0800 | 261 | 026 | +000 | +026 | 06 | -25.4 |
| 0280.5 | 1000 | 272 | 051 | +000 | +051 | 06 | -37.5 |
| 0208.0 | 1200 | 277 | 060 | -001 | +058 | | -52.1 |
| 0151.5 | 1400 | 277 | 041 | -001 | +041 | | -61.0 |
| 0109.5 | 1600 | 271 | 028 | +000 | +028 | | -70.4 |
| 0078.2 | 1800 | 255 | 013 | +000 | +013 | | -69.0 |
| 0056.4 | 2000 | 302 | 008 | -004 | +007 | | -60.5 |
| 0041.8 | 2200 | 326 | 006 | -005 | +003 | | -54.6 |
| 0030.9 | 2400 | | | | | | -49.5 |
| 0022.7 | 2600 | | | | | | -45.1 |

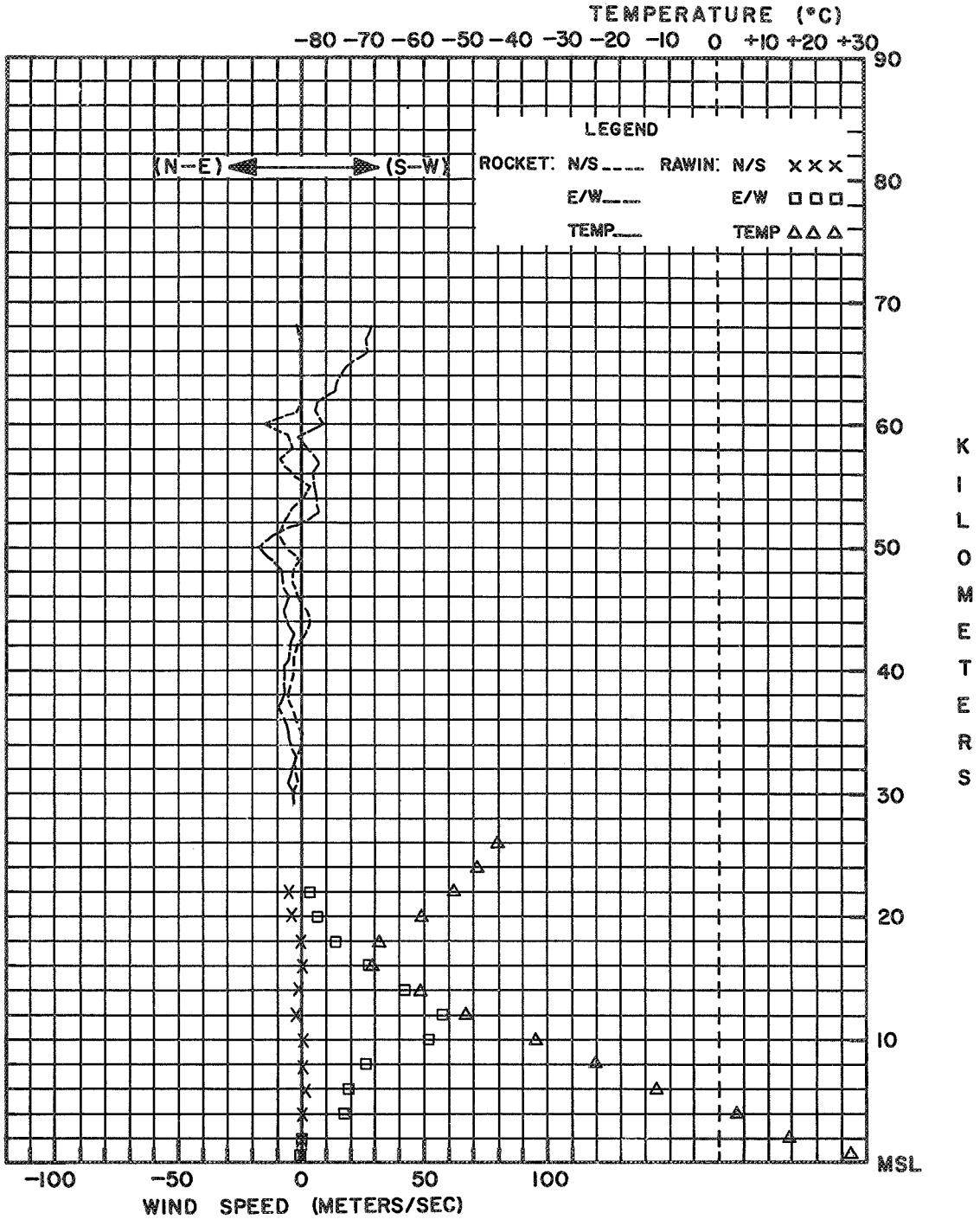
# TECHNICAL DATA

MOTOR TYPE..JUDI
PAYLOAD TYPE..CHAFF
FUSE TYPE..ELECTRICALLY ACTIVATED PYROTECHNIC
LAUNCHER SETTING..020° AZIMUTH 85.0° ELEVATION
RADAR TYPE..MPS-19 APOGEE 72,000 METERS
WIND SENSOR TYPE..0.005 INCH S BAND COPPER CHAFF SENSOR FALL-RATE..BELOW NOMINAL
TEMPERATURE SENSOR TYPE..N.A.
GROUND EQUIPMENT TYPE.. N.A.
REMARKS..NONE

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..110 SEC

RADIOSONDE MANUFACTURER..VAISALA
TEMPERATURE ELEMENT TYPE..RESISTANCE WIRE
PRESSURE SENSOR TYPE..ANEROID
GROUND EQUIPMENT TYPE..VAISALA
WIND AT ROCKET LAUNCH..SFC. 000DEG/00MPS
BALLISTIC WIND.. 092° AZIMUTH 01.5 MPS
THERMODYNAMIC BASE DATA..PRESSURE N.A. MBS
TEMPERATURE N.A. C
ALTITUDE N.A. METERS

RADIOSONDE TYPE..VAISALA
BALLOON TYPE..NEOPRENE
BALLOON SIZE..1,200 GRAMS




STATION: (CNIE) Chamical, Arg. ROCKET TIME: 1200 LST 1600 GCT PAYLOAD TYPE: Chaff

DATE: 20 March, 1968 ROCKET MOTOR TYPE: Judi RADIOSONDE TYPE: Vaisala

# ROCKET OBSERVATION DATA

RP STATION NAME

72402 (NASA) WALLOPS ISLAND, VIRGINIA

LAT. 37°51' N LONG. 75°29' W

ROCKET LAUNCH

DATE MARCH 21, 1968 TIME 1618 Z

RAWINSONDE RELEASE

DATE MARCH 21, 1968 TIME 1115 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 094 | 54 | 251 | 059 | +020 | +056 |
| 090 | 53 | 254 | 053 | +014 | +050 |
| 083 | 52 | 262 | 053 | +007 | +053 |
| 077 | 51 | 264 | 049 | +005 | +048 |
| 071 | 50 | 264 | 043 | +004 | +043 |
| 067 | 49 | 254 | 043 | +012 | +041 |
| 064 | 48 | 247 | 043 | +017 | +039 |
| 059 | 47 | 253 | 043 | +013 | +041 |
| 050 | 46 | 258 | 042 | +009 | +041 |
| 044 | 45 | 258 | 050 | +011 | +049 |
| 045 | 44 | 259 | 055 | +011 | +054 |
| 044 | 43 | 266 | 048 | +004 | +048 |
| 041 | 42 | 270 | 053 | +000 | +053 |
| 038 | 41 | 266 | 058 | +004 | +057 |
| 036 | 40 | 263 | 055 | +006 | +055 |
| 034 | 39 | 260 | 058 | +010 | +057 |
| 033 | 38 | 262 | 061 | +008 | +060 |
| 031 | 37 | 276 | 064 | -006 | +063 |
| 028 | 36 | 281 | 067 | -013 | +066 |
| 026 | 35 | 277 | 065 | -008 | +064 |
| 022 | 34 | 269 | 064 | +001 | +064 |
| 020 | 33 | 264 | 062 | +006 | +062 |
| 020 | 32 | 261 | 060 | +009 | +059 |
| 018 | 31 | 259 | 056 | +011 | +055 |
| 017 | 30 | 260 | 050 | +009 | +050 |
| 016 | 29 | 262 | 047 | +006 | +046 |
| 013 | 28 | 266 | 042 | +003 | +041 |
| 013 | 27 | 272 | 035 | -001 | +035 |
| 011 | 26 | 272 | 031 | -001 | +031 |
| 010 | 25 | 266 | 023 | +002 | +023 |
| 009 | 24 | 262 | 016 | +002 | +016 |
| 008 | 23 | 269 | 013 | +000 | +013 |
| 007 | 22 | 268 | 009 | +000 | +009 |
| 006 | 21 | 268 | 007 | +000 | +007 |
| 006 | 20 | 277 | 008 | -001 | +008 |
| 006 | 19 | 278 | 007 | -001 | +007 |
| 005 | 18 | 279 | 008 | -001 | +008 |

RAWINSONDE

| PRESSURE | ALT TENS OF METERS | WIND POLAR | | COMPONENTS MPS | | RH | TEMP |
|---|---|---|---|---|---|---|---|
| MB | | DEG | MPS | N-S | E-W | % | DEG C |
| 1015.9 | 0000 | 240 | 002 | +001 | +002 | 100 | +05.6 |
| 0804.0 | 0200 | 214 | 008 | +006 | +004 | 40 | +11.2 |
| 0631.0 | 0400 | 275 | 023 | -002 | +023 | 29 | -00.9 |
| 0487.0 | 0600 | 283 | 023 | -005 | +023 | 27 | -14.3 |
| 0372.0 | 0800 | 272 | 016 | -001 | +016 | 31 | -29.6 |
| 0278.0 | 1000 | 283 | 019 | -004 | +019 | | -47.1 |
| 0204.0 | 1200 | 280 | 029 | -005 | +029 | | -64.0 |
| 0200.0 | 1210 | 290 | 029 | -010 | +027 | | -65.0 |
| 0148.0 | 1400 | 287 | 036 | -011 | +034 | | -64.4 |
| 0103.2 | 1600 | 285 | 027 | -007 | +026 | | -58.9 |
| 0076.8 | 1800 | 295 | 012 | -005 | +011 | | -66.4 |
| 0055.2 | 2000 | 283 | 009 | -002 | +009 | | -63.3 |
| 0040.3 | 2200 | 283 | 008 | -002 | +008 | | -59.0 |
| 0029.4 | 2400 | 283 | 015 | -003 | +015 | | -54.8 |
| 0021.8 | 2600 | 269 | 023 | +000 | +023 | | -50.5 |
| 0015.8 | 2800 | 271 | 033 | -001 | +033 | | -47.3 |
| 0011.8 | 3000 | 270 | 041 | +000 | +041 | | -44.6 |
| 0008.8 | 3200 | 264 | 058 | +006 | +058 | | -42.5 |
| 0006.8 | 3400 | 261 | 069 | +011 | +068 | | -41.8 |
| 0005.7 | 3492 | 261 | 070 | +011 | +069 | | -41.5 |
| 0005.5 | 3521 | | | | | | -41.3 |

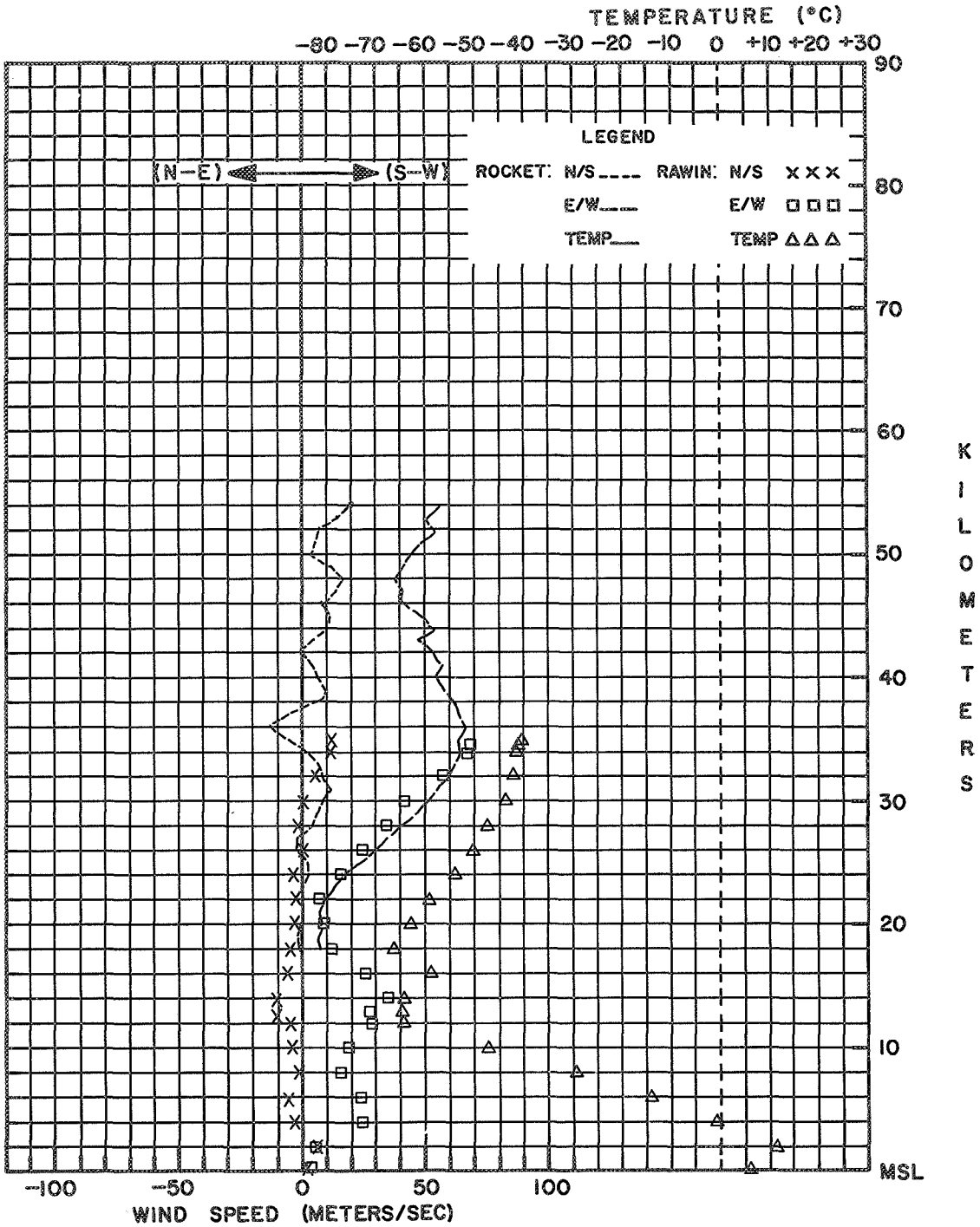
# TECHNICAL DATA

MOTOR TYPE..ARCAS
PAYLOAD TYPE..ARCASONDE-1A
FUSE TYPE..GAS GENERATED SEPARATION DEVICE
LAUNCHER SETTING..080° AZIMUTH 77.0° ELEVATION
RADAR TYPE..FPQ-6 APOGEE 56,055 METERS
WIND SENSOR TYPE..15 FT. DIAMETER PARACHUTE
TEMPERATURE SENSOR TYPE..0.010 INCH BEAD THERMISTOR
GROUND EQUIPMENT TYPE..GMD-1B
REMARKS..NO T/M-OPEN THERMISTOR AT EJECTION.

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..POOR
ACTUAL FUSE DELAY TIME..128 SEC

SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..MOLDED INSULATION CO. RADIOSONDE TYPE..1680 MHZ
TEMPERATURE ELEMENT TYPE..ROD THERMISTOR BALLOON TYPE..NEOPRENE
PRESSURE SENSOR TYPE..ANEROID AND HYPSOMETER BALLOON SIZE..1,200 GRAMS
GROUND EQUIPMENT TYPE..GMD-1B
WIND AT ROCKET LAUNCH..SFC. 202DEG/03MPS 15M 196DEG/05MPS 31M 200DEG/06MPS
46M MISSING 61M 218DEG/05MPS 76M 239DEG/04MPS
BALLISTIC WIND.. 241° AZIMUTH 08.2 MPS
THERMODYNAMIC BASE DATA..PRESSURE N.A. MBS
TEMPERATURE N.A. C
ALTITUDE N.A. METERS




STATION: (NASA) Wallops Island, Va. ROCKET TIME: 1118 LST 1618 GCT PAYLOAD TYPE: Arcasonde 1A

DATE: 21 March, 1968 ROCKET MOTOR TYPE: Arcas RADIOSONDE TYPE: 1680 MHZ

# ROCKET OBSERVATION DATA

RP STATION NAME

87320 (CNIE) CHAMICAL, ARGENTINA

LAT. 30°22'S LONG. 66°17'W

ROCKET LAUNCH

DATE MARCH 27, 1968 TIME 1558 Z

RAWINSONDE RELEASE

DATE MARCH 27, 1968 TIME 1900 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 059 | 50 | 354 | 008 | -008 | +001 |
| 060 | 49 | 360 | 009 | -009 | +000 |
| 060 | 48 | 007 | 009 | -009 | -001 |
| 053 | 47 | 307 | 010 | -008 | +006 |
| 059 | 46 | 320 | 007 | -006 | +005 |
| 051 | 45 | 011 | 003 | -003 | -001 |
| 042 | 44 | 337 | 005 | -004 | +002 |
| 043 | 43 | 020 | 009 | -009 | -003 |
| 033 | 42 | 052 | 013 | -008 | -010 |
| 037 | 41 | 088 | 012 | +000 | -012 |
| 035 | 40 | 110 | 014 | +005 | -013 |
| 027 | 39 | 123 | 012 | +008 | -010 |
| 029 | 38 | 124 | 006 | +003 | -005 |
| 030 | 37 | 004 | 006 | -005 | +000 |
| 024 | 36 | 285 | 002 | +000 | +001 |
| 022 | 35 | 160 | 003 | +002 | -001 |
| 020 | 34 | 142 | 004 | +003 | -002 |
| 019 | 33 | 080 | 001 | +000 | -001 |
| 019 | 32 | 012 | 006 | -006 | -001 |
| 017 | 31 | 023 | 007 | -006 | -003 |
| 015 | 30 | 048 | 005 | -003 | -004 |
| 014 | 29 | 091 | 004 | +000 | -004 |
| 012 | 28 | 100 | 006 | +001 | -006 |
| 009 | 27 | 078 | 006 | -001 | -005 |
| 009 | 26 | 076 | 006 | -001 | -005 |
| 009 | 25 | 076 | 006 | -001 | -005 |
| 007 | 24 | 071 | 007 | -002 | -006 |
| 009 | 23 | 070 | 007 | -002 | -007 |

ROCKET THERMODYNAMICS

| ALT TENS OF METERS | TEMP DEG C | PRESSURE MB | DENSITY G M -3 | WIND POLAR DEG | MPS | COMPONENTS MPS N-S | E-W |
|---|---|---|---|---|---|---|---|
| 4350 | -05.0 | | | 358 | 007 | -007 | +000 |
| 4140 | -06.5 | | | 074 | 013 | -004 | -012 |
| 4050 | -19.0 | | | 099 | 013 | +002 | -013 |
| 3850 | -31.5 | | | 123 | 009 | +005 | -007 |
| 3680 | -34.8 | | | 350 | 005 | -005 | +001 |
| 3500 | -28.5 | | | 159 | 003 | +003 | -001 |
| 3450 | -31.5 | | | 151 | 003 | +003 | -002 |
| 3430 | -31.5 | | | 143 | 004 | +002 | -002 |
| 3360 | -34.8 | | | 118 | 003 | +001 | -003 |
| 3320 | -34.8 | | | 095 | 003 | +000 | -003 |
| 3300 | -35.5 | | | 082 | 001 | +000 | -001 |
| 3265 | -34.8 | | | 058 | 003 | -002 | -003 |
| 3210 | -34.8 | | | 019 | 006 | -006 | -002 |
| 3100 | -39.8 | | | 023 | 007 | -006 | -003 |
| 2970 | -41.0 | | | 063 | 005 | -003 | -004 |
| 2900 | -44.0 | | | 091 | 004 | +000 | -004 |
| 2730 | -45.0 | | | 084 | 006 | -001 | -006 |
| 2620 | -49.0 | | | 076 | 006 | -002 | -006 |
| 2490 | -51.0 | | | 076 | 006 | -002 | -006 |
| 2420 | -53.7 | | | 072 | 007 | -003 | -007 |

RAWINSONDE

| PRESSURE | ALT TENS OF | WIND POLAR | | COMPONENTS MPS | | RH | TEMP |
|---|---|---|---|---|---|---|---|
| MB | METERS | DEG | MPS | N-S | E-W | % | DEG C |
| 0961.0 | 0046 | 140 | 001 | +001 | -001 | 33 | +27.8 |
| 0803.0 | 0200 | 352 | 003 | -003 | +000 | 41 | +10.5 |
| 0629.0 | 0400 | 033 | 005 | -004 | -003 | 07 | +04.0 |
| 0489.0 | 0600 | 327 | 005 | -004 | +003 | 05 | -08.0 |
| 0376.0 | 0800 | 266 | 015 | +001 | +015 | 08 | -22.2 |
| 0273.0 | 1000 | 283 | 028 | -006 | +026 | 10 | -39.8 |
| 0211.0 | 1200 | 285 | 032 | -011 | +030 | | -50.0 |
| 0153.0 | 1400 | 285 | 033 | -011 | +031 | | -62.2 |
| 0111.0 | 1600 | 265 | 019 | +001 | +019 | | -67.5 |
| 0110.0 | 1603 | 265 | 019 | +001 | +019 | | -67.8 |
| 0080.0 | 1800 | 220 | 013 | +010 | +008 | | -63.1 |
| 0070.0 | 1877 | 213 | 005 | +004 | +003 | | -61.1 |
| | 2000 | 000 | 000 | +000 | +000 | | |
| | 2200 | 126 | 006 | +005 | -006 | | |
| | 2400 | 077 | 009 | -002 | -009 | | |
| | 2600 | 074 | 006 | -002 | -007 | | |

# TECHNICAL DATA

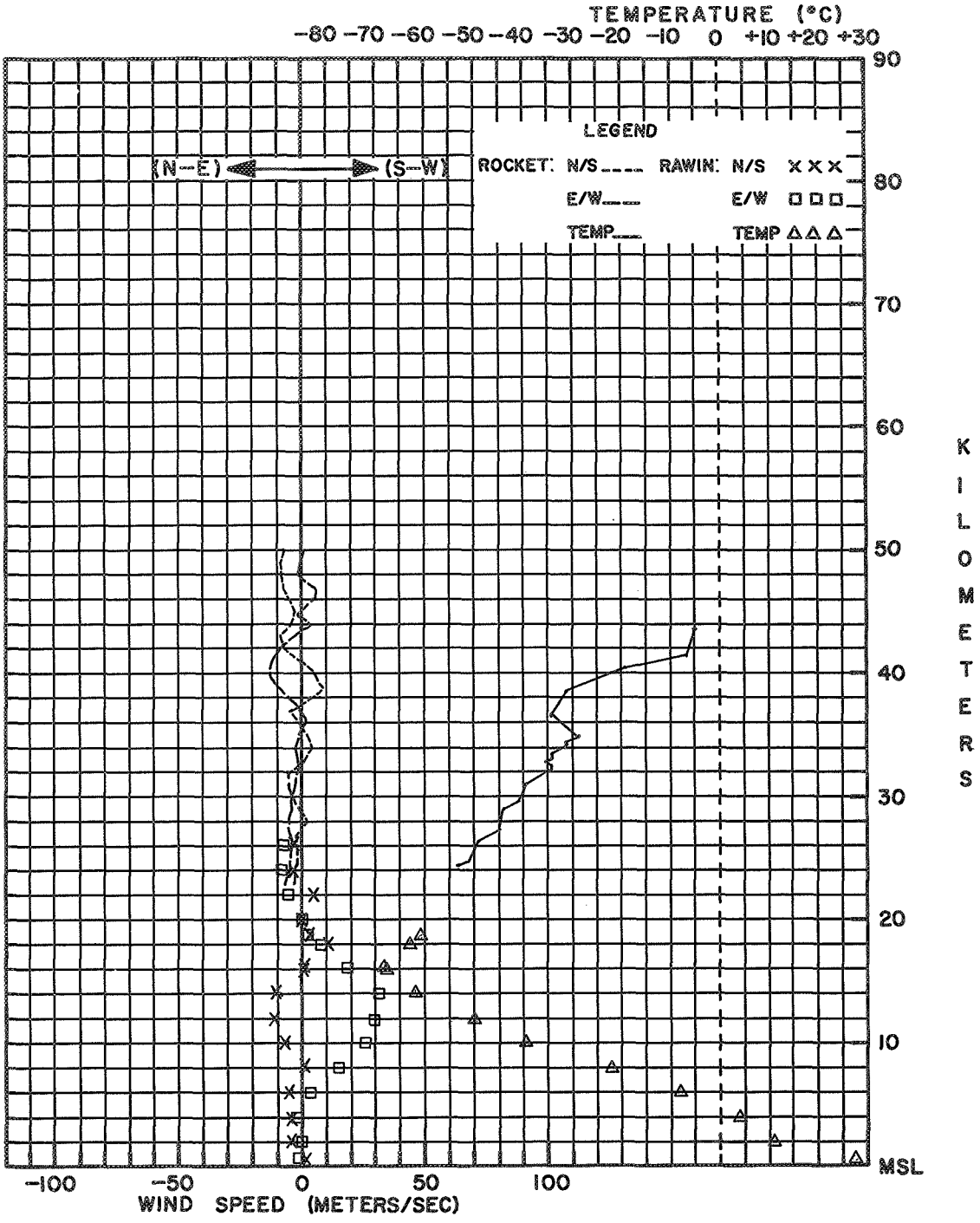
MOTOR TYPE..ARCAS
PAYLOAD TYPE.. ARCASONDE-1A
FUSE TYPE.. GAS GENERATED SEPARATION DEVICE
LAUNCHER SETTING..015° AZIMUTH 82.5° ELEVATION
RADAR TYPE..MPS-19 APOGEE 75,000 METERS
WIND SENSOR TYPE..15 FT. DIAMETER PARACHUTE
TEMPERATURE SENSOR TYPE..0.010 INCH BEAD THERMISTOR
GROUND EQUIPMENT TYPE..GMD-1A
REMARKS..NONE

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..130 SEC

SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..VAISALA
TEMPERATURE ELEMENT TYPE..RESISTANCE WIRE
PRESSURE SENSOR TYPE..DOUBLE ANEROID
GROUND EQUIPMENT TYPE..VAISALA
WIND AT ROCKET LAUNCH..SFC. 140DEG/02MPS
BALLISTIC WIND.. 105° AZIMUTH 03.1 MPS
THERMODYNAMIC BASE DATA..PRESSURE N.A. MBS
TEMPERATURE N.A. C
ALTITUDE N.A. METERS

RADIOSONDE TYPE..VAISALA
BALLOON TYPE..NEOPRENE
BALLOON SIZE..800 GRAMS




STATION: (CNIE) Chamical, Arg. ROCKET TIME: 1185 LST 1558 GCT PAYLOAD TYPE: Arcasonde 1A

DATE: 27 March, 1968 ROCKET MOTOR TYPE: Arcas RADIOSONDE TYPE: Vaisala

# ROCKET OBSERVATION DATA

RP STATION NAME

72402 (NASA) WALLOPS ISLAND, VIRGINIA

LAT. 37°51 N LONG. 75°29 W

ROCKET LAUNCH

DATE MARCH 27, 1968 TIME 1841 Z

RAWINSONDE RELEASE

DATE MARCH 27, 1968 TIME 1541 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR COMPONENTS MPS | | | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 103 | 57 | 277 | 038 | -004 | +037 |
| 100 | 56 | 271 | 029 | -001 | +029 |
| 095 | 55 | 267 | 028 | +002 | +028 |
| 090 | 54 | 272 | 033 | -001 | +033 |
| 087 | 53 | 275 | 036 | -003 | +035 |
| 080 | 52 | 284 | 028 | -006 | +027 |
| 069 | 51 | 284 | 031 | -007 | +031 |
| 067 | 50 | 269 | 034 | +001 | +034 |
| 067 | 49 | 261 | 034 | +005 | +034 |
| 061 | 48 | 269 | 033 | +001 | +033 |
| 053 | 47 | 274 | 033 | -003 | +033 |
| 048 | 46 | 278 | 031 | -004 | +031 |
| 048 | 45 | 283 | 033 | -008 | +033 |
| 043 | 44 | 298 | 037 | -017 | +032 |
| 040 | 43 | 298 | 036 | -017 | +031 |
| 039 | 42 | 292 | 034 | -013 | +032 |
| 038 | 41 | 297 | 036 | -016 | +032 |
| 034 | 40 | 295 | 037 | -016 | +033 |
| 032 | 39 | 290 | 035 | -012 | +033 |
| 030 | 38 | 285 | 030 | -008 | +030 |
| 026 | 37 | 290 | 028 | -010 | +026 |
| 025 | 36 | 300 | 024 | -012 | +021 |
| 024 | 35 | 302 | 024 | -012 | +020 |
| 022 | 34 | 293 | 024 | -009 | +022 |
| 020 | 33 | 288 | 022 | -007 | +021 |
| 018 | 32 | 286 | 020 | -005 | +019 |
| 017 | 31 | 281 | 020 | -004 | +020 |
| 015 | 30 | 284 | 019 | -004 | +018 |
| 013 | 29 | 287 | 015 | -004 | +014 |
| 012 | 28 | 293 | 014 | -003 | +013 |
| 011 | 27 | 276 | 014 | -001 | +014 |
| 010 | 26 | 263 | 014 | +002 | +014 |
| 009 | 25 | 259 | 012 | +002 | +012 |
| 008 | 24 | 277 | 009 | -001 | +009 |
| 007 | 23 | 289 | 008 | -003 | +008 |
| 006 | 22 | 284 | 007 | -002 | +007 |
| 006 | 21 | 285 | 007 | -002 | +007 |
| 006 | 20 | 280 | 007 | -001 | +007 |
| 005 | 19 | 275 | 008 | -001 | +008 |
| 005 | 18 | 278 | 010 | -001 | +010 |

ROCKET THERMODYNAMICS

| ALT TENS OF METERS | TEMP DEG C | PRESSURE MB | DENSITY G M -3 | WIND POLAR DEG | MPS | COMPONENTS MPS N-S | E-W |
|---|---|---|---|---|---|---|---|
| 5889 | -02.6 | 00.274 | 00.353 | | | | |
| 5599 | -04.9 | 00.393 | 00.511 | 271 | 029 | -001 | +029 |
| 5550 | +00.6 | 00.418 | 00.532 | 269 | 028 | +001 | +028 |
| 5288 | -13.4 | 00.581 | 00.779 | 276 | 034 | -003 | +034 |
| 4986 | -15.0 | 00.859 | 01.160 | 268 | 034 | +001 | +034 |
| 4895 | -11.8 | 00.967 | 01.289 | 261 | 034 | +005 | +034 |
| 4520 | -14.9 | 01.571 | 02.119 | 282 | 033 | -007 | +033 |
| 4374 | -20.4 | 01.904 | 02.625 | 298 | 037 | -017 | +032 |
| 4267 | -19.1 | 02.195 | 03.010 | 296 | 035 | -016 | +031 |
| 4197 | -23.7 | 02.411 | 03.367 | 292 | 034 | -013 | +032 |
| 3917 | -28.5 | 03.532 | 05.030 | 291 | 036 | -012 | +033 |
| 3822 | -25.5 | 04.023 | 05.660 | 286 | 031 | -009 | +030 |
| 3630 | -29.8 | 05.238 | 07.499 | 297 | 025 | -011 | +023 |
| 3341 | -26.8 | 07.803 | 11.035 | 290 | 023 | -008 | +021 |
| 3085 | -28.0 | 11.095 | 15.767 | 281 | 020 | -004 | +020 |
| 2847 | -41.1 | 15.549 | 23.344 | 290 | 015 | -005 | +014 |
| 2670 | -47.7 | 20.197 | 31.210 | 272 | 014 | -001 | +014 |
| 2585 | -45.6 | 22.933 | 35.111 | 262 | 013 | +002 | +013 |
| 2411 | -50.3 | 29.796 | 46.580 | 275 | 009 | -001 | +009 |
| 2301 | -47.9 | 35.190 | 54.427 | 289 | 008 | -003 | +008 |
| 2198 | -53.8 | 41.176 | 65.398 | 284 | 007 | -002 | +007 |
| 2000 | -54.1 | 55.934 | 88.960 | 280 | 007 | -001 | +007 |
| 1960 | -53.1 | 59.501 | 94.202 | 278 | 008 | -001 | +008 |
| 1929 | -57.0 | | | 276 | 008 | -001 | +008 |
| 1878 | -53.4 | | | 276 | 009 | -001 | +009 |
| 1862 | -56.0 | | | 276 | 009 | -001 | +009 |
| 1795 | -56.1 | | | | | | |

CONSTANT PRESSURE SURFACES (GEOPOTENTIAL HEIGHT)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2066 | -54.0 | 50.000 | 79.468 | 283 | 007 | -002 | +007 |
| 2406 | -50.2 | 30.000 | 46.882 | 275 | 009 | -001 | +009 |
| 2665 | -47.3 | 20.000 | 30.845 | 273 | 009 | -001 | +009 |
| 3145 | -27.6 | 10.000 | 14.187 | 284 | 020 | -005 | +020 |
| 3402 | -27.5 | 07.000 | 09.929 | 295 | 024 | -010 | +022 |
| 3642 | -29.0 | 05.000 | 07.135 | 294 | 027 | -011 | +024 |
| 4010 | -26.4 | 03.000 | 04.236 | 296 | 036 | -016 | +032 |
| 4307 | -20.0 | 02.000 | 02.752 | 298 | 036 | -017 | +032 |
| 4831 | -12.0 | 01.000 | 01.334 | 265 | 034 | +003 | +034 |

RAWINSONDE

| PRESSURE MB | ALT TENS OF METERS | WIND POLAR DEG | MPS | COMPONENTS MPS N-S | E-W | RH % | TEMP DEG C |
|---|---|---|---|---|---|---|---|
| 1030.0 | 0000 | 290 | 002 | -001 | +002 | 44 | +16.0 |
| 0811.0 | 0200 | 277 | 011 | -001 | +011 | 39 | +03.9 |
| 0629.0 | 0400 | 320 | 017 | -013 | +011 | 17 | -08.8 |
| 0483.0 | 0600 | 316 | 023 | -017 | +016 | 23 | -24.6 |
| 0363.0 | 0800 | 316 | 026 | -019 | +018 | | -41.3 |
| 0268.0 | 1000 | 316 | 036 | -026 | +025 | | -55.6 |
| 0236.0 | 1082 | 317 | 030 | -022 | +021 | | -60.4 |
| 0196.0 | 1200 | 300 | 024 | -012 | +021 | | -58.0 |
| 0143.0 | 1400 | 286 | 024 | -007 | +023 | | -54.8 |
| 0104.5 | 1600 | 288 | 015 | -005 | +014 | | -57.3 |
| 0076.5 | 1800 | 285 | 009 | -002 | +009 | | -56.7 |
| 0055.6 | 2000 | 253 | 009 | +003 | +008 | | -54.7 |
| 0041.1 | 2200 | 286 | 006 | -002 | +006 | | -52.3 |
| 0030.2 | 2400 | 284 | 006 | -001 | +006 | | -48.5 |
| 0025.0 | 2528 | 290 | 005 | -002 | +005 | | -46.1 |
| 0024.0 | 2552 | | | | | | -45.7 |

# TECHNICAL DATA

MOTOR TYPE..ARCAS
PAYLOAD TYPE..ARCASONE-1A
FUSE TYPE..GAS GENERATED SEPARATION DEVICE
LAUNCHER SETTING..123°AZIMUTH 79.5°ELEVATION
RADAR TYPE..FPS-16 APOGEE 60.170 METERS
WIND SENSOR TYPE..15 FT. DIAMETER PARACHUTE
TEMPERATURE SENSOR TYPE..0.010 INCH BEAD THERMISTOR
GROUND EQUIPMENT TYPE..GMD-1B
REMARKS..NONE

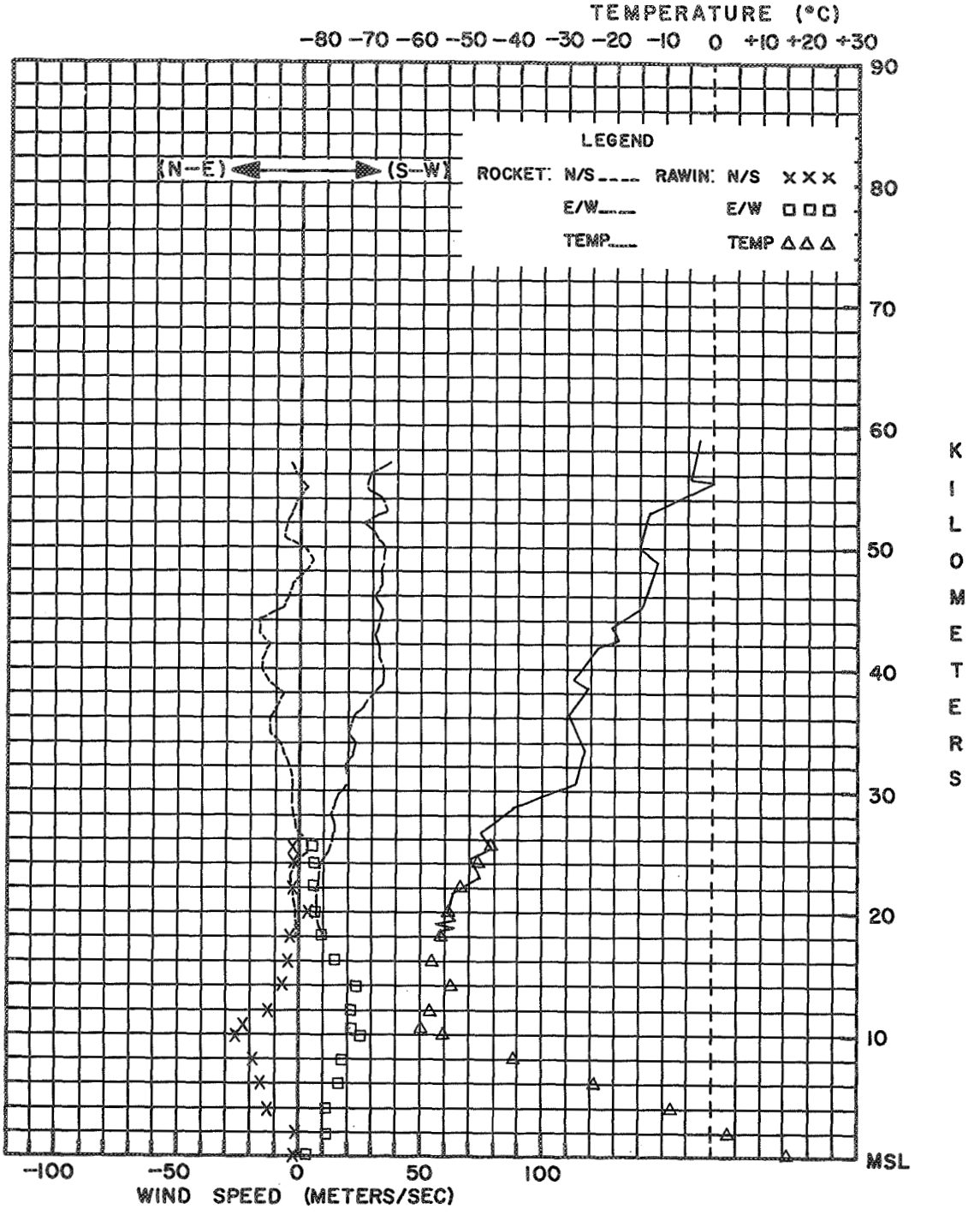
MOTOR PERFORMANCE.. GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..136 SEC

SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..MOLDED INSULATION CO.
TEMPERATURE ELEMENT TYPE..ROD THERMISTOR
PRESSURE SENSOR TYPE..ANEROID AND HYPSOMETER
GROUND EQUIPMENT TYPE..GMD-1B
RADIOSONDE TYPE..1680 MHZ
RALLOON TYPE..NEOPRENE
RALLOON SIZE..1,200 GRAMS

WIND AT ROCKET LAUNCH..SFC. 208DEG/04MPS 15M 192DEG/04MPS 31M 201DEG/04MPS
46M 201DEG/04MPS 61M 210DEG/04MPS 76M 225DEG/04MPS

BALLISTIC WIND.. 292°AZIMUTH 03.5 MPS
THERMODYNAMIC BASE DATA..PRESSURE 104.5 MBS
TEMPERATURE -57.3°C
ALTITUDE 16,000 METERS




STATION: (NASA) Wallops Island, Va. ROCKET TIME: 1341 LST 1841 GCT PAYLOAD TYPE: Arcasonde 1A

DATE: 27 March, 1968 ROCKET MOTOR TYPE: Arcas RADIOSONDE TYPE: 1680 MHZ

# ROCKET OBSERVATION DATA

RP STATION NAME

87320 (CNIE) CHAMICAL, ARGENTINA

LAT. 30°22' S LONG. 66°17' W

ROCKET LAUNCH

DATE APRIL 3, 1968 TIME 1339 Z

RAWINSONDE RELEASE

DATE APRIL 3, 1968 TIME 1418 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 042 | 59 | 287 | 030 | -009 | +028 |
| 047 | 58 | 278 | 026 | -004 | +026 |
| 042 | 57 | 274 | 030 | -002 | +030 |
| 033 | 56 | 236 | 021 | +012 | +017 |
| 035 | 55 | 228 | 022 | +015 | +016 |
| 024 | 54 | 235 | 027 | +015 | +022 |
| 022 | 53 | 232 | 027 | +017 | +021 |
| 029 | 52 | 222 | 028 | +021 | +019 |
| 030 | 51 | 224 | 028 | +020 | +019 |
| 030 | 50 | 231 | 022 | +014 | +017 |
| 026 | 49 | 239 | 022 | +011 | +019 |
| 027 | 48 | 259 | 018 | +003 | +018 |
| 019 | 47 | 276 | 013 | -001 | +013 |
| 019 | 46 | 270 | 008 | +000 | +008 |
| 024 | 45 | 261 | 006 | +001 | +006 |
| 018 | 44 | 249 | 004 | +001 | +004 |
| 018 | 43 | 236 | 004 | +002 | +003 |
| 019 | 42 | 181 | 008 | +008 | +000 |
| 020 | 41 | 178 | 007 | +007 | +000 |
| 027 | 40 | 229 | 002 | +001 | +002 |
| 017 | 39 | 254 | 004 | +001 | +004 |
| 012 | 38 | 260 | 005 | +001 | +005 |
| 015 | 37 | 259 | 008 | +002 | +008 |
| 015 | 36 | 244 | 008 | +004 | +007 |
| 013 | 35 | 203 | 009 | +008 | +004 |
| 013 | 34 | 218 | 007 | +005 | +004 |
| 013 | 33 | 282 | 008 | -002 | +008 |
| 012 | 32 | 283 | 006 | -001 | +006 |
| 012 | 31 | 263 | 004 | +000 | +004 |
| 013 | 30 | 011 | 005 | -005 | -001 |
| 011 | 29 | 009 | 005 | -005 | -001 |
| 010 | 28 | 324 | 004 | -003 | +002 |
| 009 | 27 | 248 | 006 | +002 | +006 |
| 009 | 26 | 322 | 003 | +002 | +002 |
| 010 | 25 | 357 | 008 | -008 | +000 |
| 009 | 24 | 031 | 003 | -003 | +002 |
| 007 | 23 | 100 | 003 | +001 | -003 |
| 007 | 22 | 000 | 000 | +000 | +000 |
| 010 | 21 | 244 | 003 | +001 | +003 |

RAWINSONDE

| PRESSURE | ALT TENS OF | WIND POLAR | | COMPONENTS MPS | | RH | TEMP |
|---|---|---|---|---|---|---|---|
| MB | METERS | DEG | MPS | N-S | E-W | % | DEG C |
| 0967.4 | 0046 | 000 | 000 | +000 | +000 | 60 | +19.8 |
| 0806.5 | 0200 | 121 | 003 | +001 | -002 | 85 | +05.7 |
| 0629.8 | 0400 | 352 | 003 | -003 | +000 | 25 | -02.5 |
| 0487.0 | 0600 | 278 | 008 | -001 | +008 | 19 | -12.3 |
| 0372.5 | 0800 | 261 | 014 | +002 | +014 | 13 | -26.7 |
| 0279.5 | 1000 | 270 | 015 | +000 | +015 | | -40.6 |
| 0207.5 | 1200 | 252 | 022 | +007 | +021 | | -53.8 |
| 0191.0 | 1251 | 255 | 024 | +006 | +023 | | -57.3 |
| 0151.0 | 1400 | 265 | 028 | +002 | +027 | | -57.8 |
| 0110.6 | 1600 | 242 | 026 | +012 | +023 | | -61.8 |
| 0090.0 | 1722 | 221 | 022 | +017 | +014 | | -65.8 |
| 0080.2 | 1800 | 207 | 019 | +016 | +008 | | -66.5 |
| 0057.7 | 2000 | 153 | 008 | +007 | -003 | | -63.4 |
| 0041.9 | 2200 | 092 | 003 | +000 | -003 | | -58.9 |
| 0030.5 | 2400 | 038 | 005 | -004 | -003 | | -55.5 |
| 0022.4 | 2600 | | | | | | -52.7 |
| 0016.5 | 2800 | | | | | | -50.0 |
| 0012.2 | 3000 | | | | | | -48.3 |
| 0009.0 | 3200 | | | | | | -46.6 |
| 0007.0 | 3351 | | | | | | -45.2 |

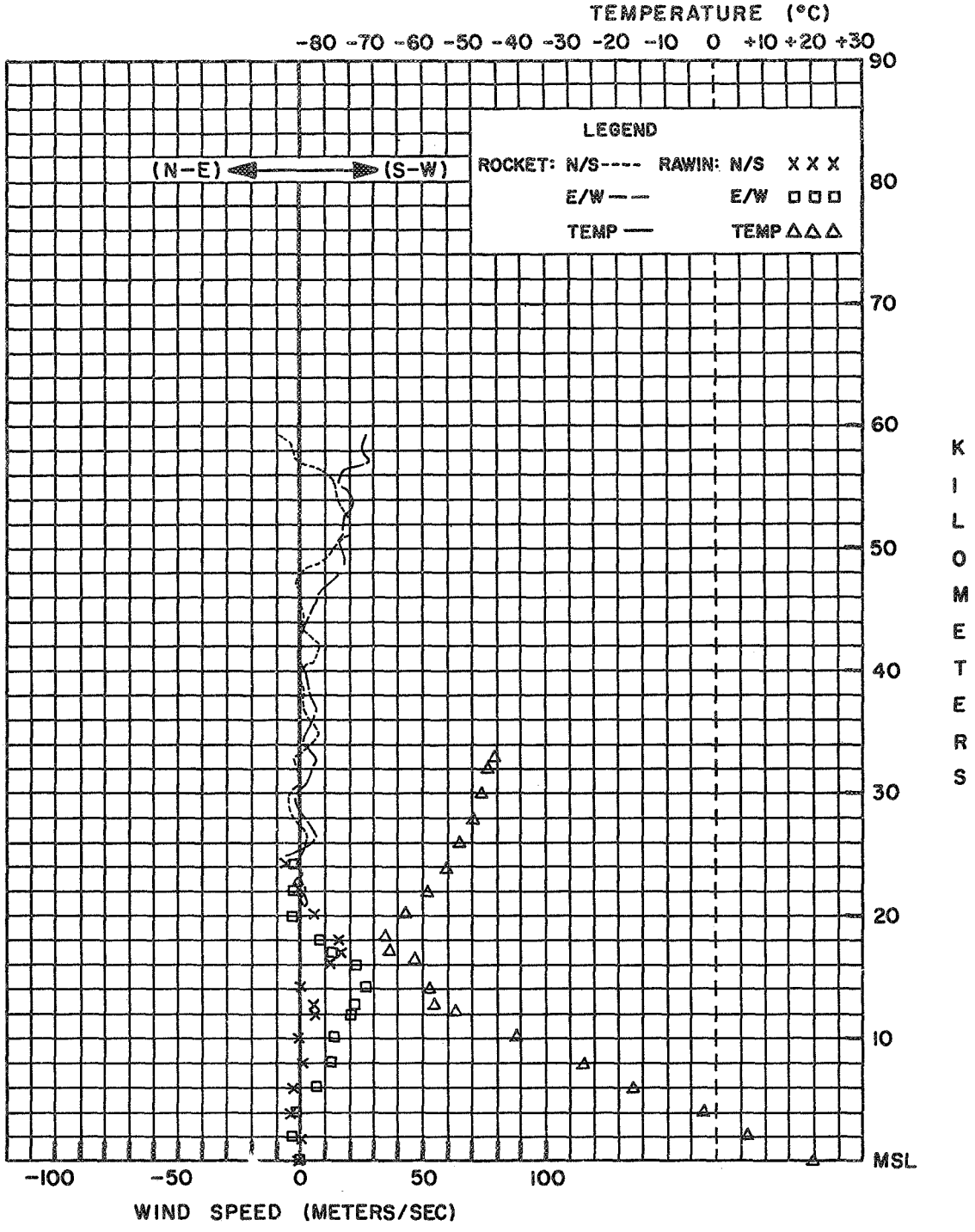
# TECHNICAL DATA

MOTOR TYPE..JUDI
PAYLOAD TYPE..CHAFF
FUSE TYPE..ELECTRICALLY ACTIVATED PYROTECHNIC
LAUNCHER SETTING..031° AZIMUTH 86.5°ELEVATION
RADAR TYPE..MPS-19 APOGEE 70,000 METERS
WIND SENSOR TYPE..0.005 INCH S BAND COPPER CHAFF SENSOR FALL-RATE..NOMINAL
TEMPERATURE SENSOR TYPE..N.A.
GROUND EQUIPMENT TYPE..N.A.
REMARKS..NONE

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..110 SEC

RADIOSONDE MANUFACTURER..VAISALA
TEMPERATURE ELEMENT TYPE..RESISTANCE WIRE
PRESSURE SENSOR TYPE..DOUBLE ANEROID
GROUND EQUIPMENT TYPE..VAISALA
WIND AT ROCKET LAUNCH..SFC, 170DEG/01MPS
BALLISTIC WIND.. 120°AZIMUTH 03.0 MPS
THERMODYNAMIC BASE DATA..PRESSURE N.A. MBS
TEMPERATURE N.A. C
ALTITUDE N.A. METERS

RADIOSONDE TYPE..VAISALA
BALLOON TYPE..NEOPRENE
BALLOON SIZE..1,200 GRAMS




STATION: (CNIE) Chamical, Arg. ROCKET TIME: 0939 LST 1339 GCT PAYLOAD TYPE: Chaff

DATE: 3 April, 1968 ROCKET MOTOR TYPE: Judi RADIOSONDE TYPE: Vaisala

# ROCKET OBSERVATION DATA

RP STATION NAME

72402 (NASA) WALLOPS ISLAND, VIRGINIA

LAT. 37°51' N LONG. 75°29' W

ROCKET LAUNCH

DATE APRIL 3, 1968 TIME 1559 Z

RAWINSONDE RELEASE

DATE APRIL 3, 1968 TIME 1750 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | WIND COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 105 | 57 | 271 | 062 | -001 | +062 |
| 111 | 56 | 267 | 062 | +004 | +061 |
| 105 | 55 | 260 | 053 | +009 | +053 |
| 100 | 54 | 254 | 051 | +014 | +049 |
| 090 | 53 | 249 | 046 | +016 | +043 |
| 083 | 52 | 256 | 038 | +009 | +037 |
| 080 | 51 | 269 | 039 | +001 | +039 |
| 077 | 50 | 270 | 041 | +000 | +041 |
| 071 | 49 | 261 | 039 | +006 | +039 |
| 067 | 48 | 257 | 038 | +009 | +037 |
| 064 | 47 | 264 | 036 | +003 | +035 |
| 061 | 46 | 266 | 036 | +003 | +035 |
| 057 | 45 | 270 | 034 | +000 | +034 |
| 054 | 44 | 273 | 035 | -002 | +035 |
| 049 | 43 | 272 | 042 | -002 | +041 |
| 043 | 42 | 272 | 042 | -002 | +042 |
| 042 | 41 | 269 | 042 | +001 | +042 |
| 039 | 40 | 268 | 042 | +002 | +041 |
| 037 | 39 | 267 | 040 | +002 | +039 |
| 036 | 38 | 262 | 036 | +005 | +035 |
| 030 | 37 | 268 | 032 | +001 | +032 |
| 028 | 36 | 280 | 034 | -006 | +034 |
| 028 | 35 | 283 | 037 | -009 | +036 |
| 025 | 34 | 276 | 038 | -004 | +037 |
| 023 | 33 | 268 | 039 | +002 | +038 |
| 021 | 32 | 260 | 038 | +007 | +038 |
| 019 | 31 | 257 | 034 | +008 | +034 |
| 018 | 30 | 260 | 031 | +005 | +031 |
| 017 | 29 | 259 | 028 | +006 | +028 |
| 015 | 28 | 258 | 022 | +005 | +021 |
| 013 | 27 | 262 | 018 | +002 | +017 |
| 013 | 26 | 260 | 013 | +002 | +013 |
| 012 | 25 | 256 | 012 | +003 | +012 |
| 011 | 24 | 260 | 009 | +002 | +009 |
| 010 | 23 | 260 | 008 | +001 | +008 |
| 010 | 22 | 268 | 007 | +000 | +007 |
| 009 | 21 | 283 | 007 | -002 | +007 |
| 008 | 20 | 276 | 009 | -001 | +009 |
| 007 | 19 | 275 | 010 | -001 | +010 |
| 007 | 18 | 284 | 011 | -003 | +011 |

ROCKET THERMODYNAMICS

| ALT TENS OF METERS | TEMP DEG C | PRESSURE MB | DENSITY G M -3 | WIND POLAR DEG | MPS | WIND COMPONENTS MPS N-S | E-W |
|---|---|---|---|---|---|---|---|
| 5404 | +00.1 | 00.527 | 00.671 | 254 | 051 | +014 | +049 |
| 5258 | -04.6 | 00.631 | 00.819 | 252 | 042 | +013 | +040 |
| 5188 | -04.2 | 00.689 | 00.892 | 257 | 038 | +009 | +037 |
| 5110 | -00.2 | 00.750 | 00.968 | 268 | 039 | +002 | +039 |
| 4900 | +01.2 | 00.982 | 01.247 | 261 | 039 | +006 | +039 |
| 4800 | -02.3 | 01.111 | 01.429 | 257 | 038 | +009 | +037 |
| 4663 | +00.0 | 01.316 | 01.678 | 265 | 036 | +003 | +035 |
| 4484 | -01.0 | 01.641 | 02.100 | 270 | 034 | +000 | +034 |
| 4112 | -14.4 | 02.630 | 03.542 | 269 | 042 | +001 | +042 |
| 4011 | -23.9 | 03.008 | 04.204 | 268 | 042 | +002 | +041 |
| 3889 | -25.1 | 03.549 | 04.984 | 266 | 039 | +003 | +039 |
| 3840 | -23.6 | 03.792 | 05.294 | 264 | 037 | +004 | +037 |
| 3542 | -31.8 | 05.712 | 08.246 | 282 | 036 | -008 | +035 |
| 3325 | -36.9 | 07.764 | 11.449 | 270 | 038 | +000 | +038 |
| 3255 | -35.0 | 08.579 | 12.548 | 264 | 039 | +004 | +038 |
| 3069 | -42.7 | 11.213 | 16.951 | 258 | 033 | +007 | +033 |
| 2963 | -40.6 | 13.091 | 19.611 | 260 | 030 | +005 | +030 |
| 2893 | -44.9 | 14.508 | 22.143 | 259 | 028 | +005 | +028 |
| 2771 | -47.4 | 17.400 | 26.853 | 259 | 021 | +004 | +020 |
| 2240 | -51.2 | 38.861 | 60.999 | 264 | 007 | +001 | +007 |
| 2000 | -54.8 | 56.245 | 89.741 | 276 | 009 | -001 | +009 |
| 1771 | -60.1 | | | | | | |

CONSTANT PRESSURE SURFACES (GEOPOTENTIAL HEIGHT)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2070 | -53.6 | 50.000 | 79.351 | 282 | 008 | -002 | +008 |
| 2401 | -49.9 | 30.000 | 46.823 | 259 | 010 | +002 | +010 |
| 2667 | -48.0 | 20.000 | 30.953 | 262 | 016 | +002 | +016 |
| 3132 | -39.3 | 10.000 | 14.898 | 258 | 033 | +007 | +032 |
| 3380 | -35.1 | 07.000 | 10.242 | 276 | 038 | -004 | +037 |
| 3617 | -29.0 | 05.000 | 07.142 | 275 | 033 | -003 | +033 |
| 3987 | -23.7 | 03.000 | 04.190 | 268 | 042 | +002 | +041 |
| 4296 | -06.6 | 02.000 | 02.614 | 272 | 040 | -002 | +040 |
| 4847 | +00.7 | 01.000 | 01.272 | 260 | 039 | +007 | +039 |

RAWINSONDE

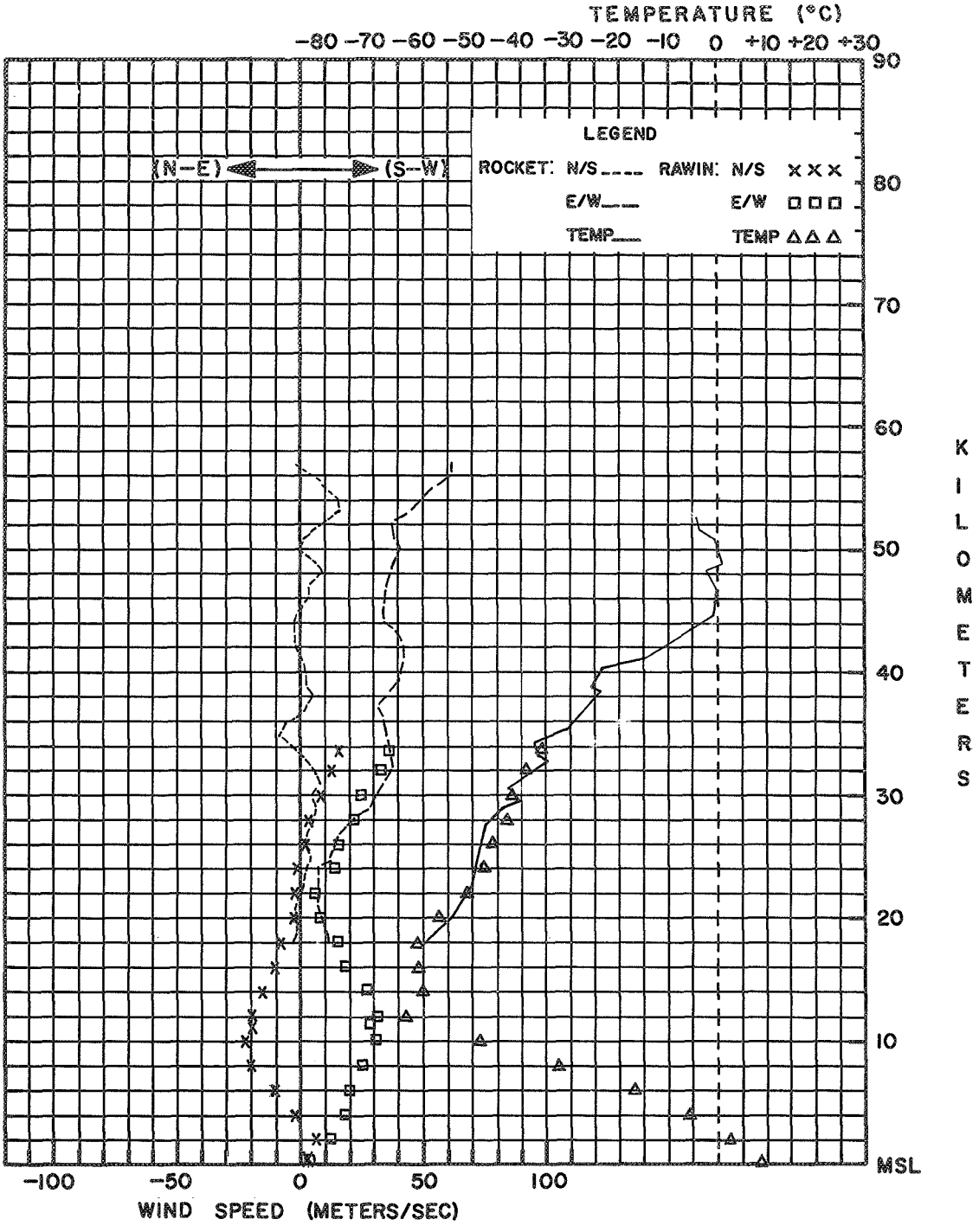
| PRESSURE | ALT TENS OF METERS | WIND POLAR DEG | MPS | WIND COMPONENTS MPS N-S | E-W | RH % | TEMP DEG C |
|---|---|---|---|---|---|---|---|
| 1028.0 | 0000 | 220 | 004 | +003 | +003 | 74 | +08.9 |
| 0805.0 | 0200 | 241 | 013 | +006 | +011 | 66 | +02.8 |
| 0626.0 | 0400 | 278 | 018 | -002 | +018 | 50 | -05.6 |
| 0482.0 | 0600 | 298 | 023 | -011 | +020 | 22 | -16.8 |
| 0366.0 | 0800 | 308 | 032 | -020 | +025 | 22 | -32.9 |
| 0274.0 | 1000 | 305 | 038 | -022 | +031 | | -48.4 |
| 0205.0 | 1186 | 306 | 035 | -020 | +029 | | -63.0 |
| 0199.0 | 1200 | 303 | 037 | -020 | +031 | | -63.3 |
| 0145.0 | 1400 | 300 | 032 | -016 | +028 | | -60.6 |
| 0106.0 | 1600 | 302 | 022 | -011 | +018 | | -61.4 |
| 0076.4 | 1800 | 298 | 017 | -008 | +015 | | -61.4 |
| 0055.8 | 2000 | 297 | 010 | -004 | +009 | | -56.7 |
| 0041.0 | 2200 | 296 | 007 | -003 | +006 | | -51.8 |
| 0030.4 | 2400 | 273 | 013 | -001 | +013 | | -47.8 |
| 0022.3 | 2600 | 267 | 016 | +001 | +016 | | -46.0 |
| 0016.6 | 2800 | 263 | 021 | +002 | +021 | | -43.8 |
| 0012.3 | 3000 | 253 | 027 | +008 | +025 | | -42.2 |
| 0009.3 | 3200 | 250 | 036 | +012 | +033 | | -39.8 |
| 0007.0 | 3394 | 248 | 038 | +014 | +036 | | -36.4 |

# TECHNICAL DATA

MOTOR TYPE..ARCAS
PAYLOAD TYPE..ARCASONDE-1A
FUSE TYPE..GAS GENERATED SEPARATION DEVICE
LAUNCHER SETTING..095°AZIMUTH 80.0°ELEVATION
RADAR TYPE..SPANDAR APOGEE 59,770 METERS
WIND SENSOR TYPE..14 FT. DISC-GAP-BAND PARACHUTE SENSOR FALL-RATE..NOMINAL
TEMPERATURE SENSOR TYPE..0.010 INCH BEAD THERMISTOR
GROUND EQUIPMENT TYPE..GMD-1B
REMARKS..NONE

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..130 SEC

RADIOSONDE MANUFACTURER..MOLDED INSULATION CO. RADIOSONDE TYPE..1680 MHZ
TEMPERATURE ELEMENT TYPE..ROD THERMISTOR BALLOON TYPE..NEOPRENE
PRESSURE SENSOR TYPE..ANEROID AND HYPSOMETER BALLOON SIZE..1,200 GRAMS
GROUND EQUIPMENT TYPE..GMD-1B
WIND AT ROCKET LAUNCH..SFC. 210DEG/05MPS 15M 212DEG/04MPS 31M 214DEG/05MPS
46M 200DEG/05MPS 61M 198DEG/06MPS 76M 198DEG/07MPS
BALLISTIC WIND.. 209°AZIMUTH 06.6 MPS
THERMODYNAMIC BASE DATA..PRESSURE 106.0 MBS
TEMPERATURE -61.4° C
ALTITUDE 16,000 METERS




STATION: (NASA) Wallops Island, Va. ROCKET TIME: 1059 LST 1559 GCT PAYLOAD TYPE: Arcasonde 1A

DATE: 3 April, 1968 ROCKET MOTOR TYPE: Arcas RADIOSONDE TYPE: 1680 MHz

# ROCKET OBSERVATION DATA

RP STATION NAME

87320 (CNIE) CHAMICAL, ARGENTINA

LAT. 30°22'S LONG. 66°17'W

ROCKET LAUNCH

DATE APRIL 10, 1968 TIME 0210 Z

RAWINSONDE RELEASE

DATE APRIL 9, 1968 TIME 2330 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | WIND COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 143 | 60 | 212 | 047 | +038 | +026 |
| 125 | 59 | 209 | 041 | +036 | +020 |
| 125 | 58 | 211 | 033 | +028 | +018 |
| 118 | 57 | 210 | 029 | +024 | +015 |
| 118 | 56 | 241 | 021 | +010 | +018 |
| 105 | 55 | 270 | 025 | +000 | +025 |
| 091 | 54 | 270 | 027 | +000 | +027 |
| 087 | 53 | 257 | 044 | +010 | +043 |
| 083 | 52 | 262 | 059 | +008 | +058 |
| 074 | 51 | 264 | 056 | +003 | +056 |
| 067 | 50 | 274 | 048 | -004 | +048 |
| 067 | 49 | 290 | 045 | -016 | +042 |
| 062 | 48 | 280 | 029 | -006 | +029 |
| 051 | 47 | 235 | 031 | +017 | +026 |
| 056 | 46 | 231 | 029 | +016 | +023 |
| 056 | 45 | 234 | 023 | +013 | +019 |
| 049 | 44 | 230 | 025 | +015 | +020 |
| 049 | 43 | 245 | 023 | +009 | +021 |
| 044 | 42 | 257 | 013 | +003 | +013 |
| 036 | 41 | 199 | 011 | +010 | +003 |
| 035 | 40 | 234 | 008 | +005 | +006 |
| 036 | 39 | 264 | 010 | +001 | +010 |
| 029 | 38 | 270 | 013 | +000 | +013 |
| 027 | 37 | 290 | 012 | -004 | +011 |
| 025 | 36 | 284 | 008 | -002 | +008 |
| 022 | 35 | 240 | 006 | +003 | +005 |
| 020 | 34 | 230 | 004 | +003 | +003 |
| 019 | 33 | 276 | 004 | +000 | +004 |
| 020 | 32 | 270 | 004 | +000 | +004 |
| 018 | 31 | 270 | 004 | +000 | +004 |
| 015 | 30 | 275 | 003 | +000 | +003 |
| 013 | 29 | 260 | 002 | +000 | +002 |
| 012 | 28 | 255 | 002 | +000 | +002 |
| 011 | 27 | 331 | 002 | -002 | +001 |
| 010 | 26 | 128 | 002 | +001 | -002 |

ROCKET THERMODYNAMICS

| ALT TENS OF METERS | TEMP DEG C | PRESSURE MB | DENSITY G M -3 | WIND POLAR DEG | MPS | WIND COMPONENTS MPS N-S | E-W |
|---|---|---|---|---|---|---|---|
| 5828 | -05.7 | 00.329 | 00.428 | 210 | 036 | +031 | +018 |
| 5355 | -01.5 | 00.592 | 00.759 | 264 | 038 | +004 | +036 |
| 4930 | -00.9 | 01.001 | 01.281 | 285 | 046 | -012 | +042 |
| 4870 | -04.0 | 01.078 | 01.396 | 287 | 040 | -012 | +039 |
| 4590 | -03.9 | 01.530 | 01.980 | 231 | 028 | +018 | +022 |
| 4475 | -07.9 | 01.762 | 02.323 | 233 | 024 | +015 | +019 |
| 4200 | -12.2 | 02.515 | 03.357 | 257 | 013 | +003 | +013 |
| 3918 | -24.0 | 03.650 | 05.104 | 257 | 009 | +002 | +009 |
| 3740 | -29.5 | 04.658 | 06.660 | 281 | 012 | -002 | +012 |
| 3640 | -37.0 | 05.361 | 07.909 | 286 | 010 | -003 | +010 |
| 3585 | -36.8 | 05.799 | 08.548 | 277 | 008 | -001 | +008 |
| 3524 | -39.2 | 06.330 | 09.426 | 252 | 006 | +002 | +006 |
| 3450 | -39.0 | 07.043 | 10.479 | 235 | 005 | +003 | +004 |
| 3340 | -38.0 | 08.252 | 12.225 | 258 | 004 | +001 | +004 |
| 3308 | -37.3 | 08.639 | 12.761 | 274 | 004 | +000 | +004 |
| 3228 | -42.3 | 09.700 | 14.639 | 272 | 004 | +000 | +004 |
| 3087 | -41.0 | 11.918 | 17.885 | 271 | 004 | +000 | +004 |
| 2880 | -40.0 | 16.102 | 24.061 | 259 | 002 | +000 | +002 |

CONSTANT PRESSURE SURFACES (GEOPOTENTIAL HEIGHT)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 3191 | -42.7 | 10.000 | 15.080 | 270 | 004 | +000 | +004 |
| 3435 | -39.0 | 07.000 | 10.416 | 234 | 005 | +003 | +004 |
| 3668 | -33.2 | 05.000 | 07.258 | 287 | 010 | -003 | +010 |
| 4039 | -17.2 | 03.000 | 04.084 | 220 | 010 | +008 | +006 |
| 4348 | -09.2 | 02.000 | 02.640 | 238 | 024 | +013 | +021 |
| 4893 | -00.9 | 01.000 | 01.280 | 289 | 044 | -015 | +043 |

RAWINSONDE

| PRESSURE MB | ALT TENS OF METERS | WIND POLAR DEG | MPS | WIND COMPONENTS MPS N-S | E-W | RH % | TEMP DEG C |
|---|---|---|---|---|---|---|---|
| 0954.6 | 0046 | 140 | 002 | +002 | -001 | 37 | +25.5 |
| 0803.0 | 0200 | 026 | 008 | -007 | -004 | 54 | +17.8 |
| 0623.0 | 0400 | 195 | 008 | +008 | +002 | 19 | +07.4 |
| 0491.0 | 0600 | 235 | 015 | +009 | +012 | 20 | -09.8 |
| 0376.0 | 0800 | 236 | 016 | +010 | +013 | 32 | -27.7 |
| 0283.0 | 1000 | 256 | 019 | +005 | +019 | 25 | -40.0 |
| 0232.0 | 1130 | 269 | 020 | +000 | +020 | | -49.2 |
| 0209.0 | 1200 | 275 | 026 | -002 | +026 | | -50.4 |
| 0153.0 | 1400 | 265 | 032 | +002 | +032 | | -52.0 |
| 0113.0 | 1600 | 264 | 027 | +002 | +027 | | -56.7 |
| 0082.5 | 1800 | 287 | 016 | -005 | +016 | | -61.5 |
| 0071.0 | 1888 | 295 | 010 | -005 | +008 | | -63.6 |
| 0055.1 | 2000 | 360 | 010 | -010 | +000 | | -58.3 |
| 0044.2 | 2200 | 210 | 003 | +003 | +002 | | -49.0 |
| 0032.7 | 2400 | 315 | 005 | -004 | +004 | | -47.2 |
| 0024.3 | 2600 | 138 | 003 | +002 | -002 | | -45.8 |
| 0018.1 | 2800 | 302 | 010 | -005 | +008 | | -43.4 |
| 0013.6 | 3000 | 265 | 004 | +000 | +004 | | -41.1 |
| 0010.0 | 3200 | 286 | 006 | -002 | +006 | | -40.7 |
| 0008.0 | 3353 | 250 | 006 | +002 | +006 | | -37.3 |
| | 3400 | 250 | 006 | +002 | +006 | | |

# TECHNICAL DATA

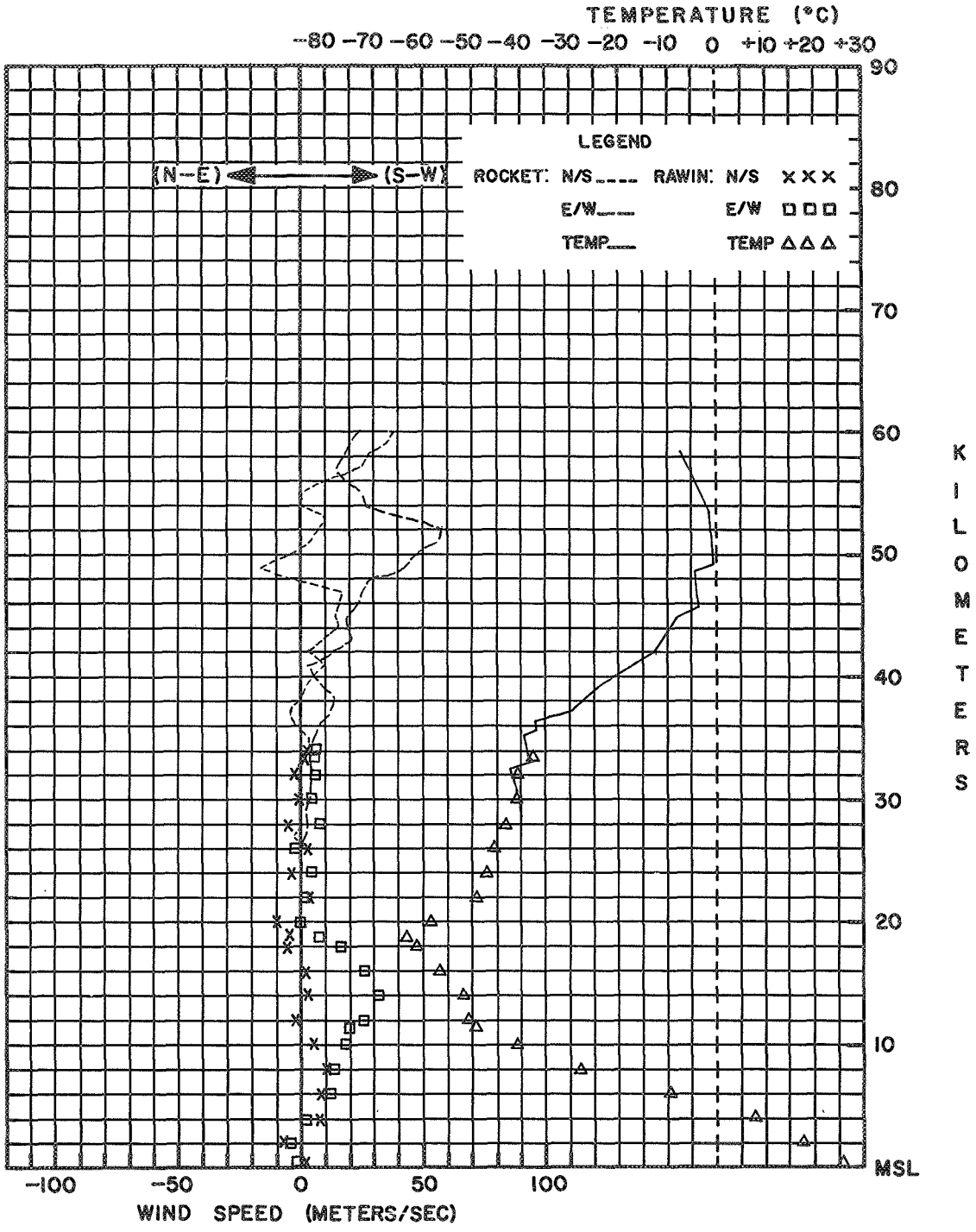
MOTOR TYPE..ARCAS
PAYLOAD TYPE..ARCASONDE-1A
FUSE TYPE..GAS GENERATED SEPARATION DEVICE
LAUNCHER SETTING..020°AZIMUTH 83.5°ELEVATION
RADAR TYPE..MPS-19 APOGEE 71,700 METERS
WIND SENSOR TYPE..15 FT. DIAMETER PARACHUTE
TEMPERATURE SENSOR TYPE..0.010 INCH BEAD THERMISTOR
GROUND EQUIPMENT TYPE..GMD-2B
*REMARKS..NONE*

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..130 SEC

SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..VAISALA
TEMPERATURE ELEMENT TYPE..RESISTANCE WIRE
PRESSURE SENSOR TYPE..DOUBLE ANEROID
GROUND EQUIPMENT TYPE..VAISALA
WIND AT ROCKET LAUNCH..SFC. 130DEG/02MPS
BALLISTIC WIND.. 075°AZIMUTH 02.8 MPS
THERMODYNAMIC BASE DATA..PRESSURE 18.1 MBS
TEMPERATURE -43.4°C
ALTITUDE 28,000 METERS

RADIOSONDE TYPE..VAISALA
BALLOON TYPE..NEOPRENE
BALLOON SIZE..1,200 GRAMS




STATION: (CNIE) Chanical, Arg. ROCKET TIME: 2210 LST 0210 GCT PAYLOAD TYPE: Arcasonde 1A

DATE: 10 April, 1968 ROCKET MOTOR TYPE: Arcas RADIOSONDE TYPE: Vaisala

# ROCKET OBSERVATION DATA

RP STATION NAME

72402 (NASA) WALLOPS ISLAND, VIRGINIA

LAT. 37°51' N LONG. 75°29' W

ROCKET LAUNCH

DATE APRIL 10, 1968 TIME 1505 Z

RAWINSONDE RELEASE

DATE APRIL 10, 1968 TIME 1205 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 100 | 56 | 248 | 030 | +011 | +028 |
| 095 | 55 | 251 | 032 | +011 | +031 |
| 095 | 54 | 256 | 033 | +008 | +033 |
| 087 | 53 | 257 | 037 | +009 | +036 |
| 080 | 52 | 261 | 038 | +006 | +037 |
| 071 | 51 | 257 | 035 | +008 | +034 |
| 069 | 50 | 248 | 033 | +012 | +031 |
| 064 | 49 | 242 | 031 | +015 | +027 |
| 061 | 48 | 238 | 025 | +013 | +021 |
| 061 | 47 | 235 | 020 | +012 | +016 |
| 054 | 46 | 238 | 022 | +011 | +018 |
| 051 | 45 | 254 | 021 | +006 | +020 |
| 050 | 44 | 275 | 026 | -002 | +026 |
| 042 | 43 | 279 | 031 | -005 | +031 |
| 040 | 42 | 271 | 034 | -001 | +034 |
| 040 | 41 | 260 | 037 | +006 | +036 |
| 035 | 40 | 255 | 036 | +009 | +035 |
| 033 | 39 | 250 | 031 | +011 | +029 |
| 031 | 38 | 249 | 028 | +010 | +026 |
| 028 | 37 | 248 | 030 | +011 | +028 |
| 026 | 36 | 249 | 033 | +012 | +031 |
| 026 | 35 | 257 | 034 | +008 | +034 |
| 023 | 34 | 258 | 034 | +007 | +033 |
| 020 | 33 | 256 | 031 | +007 | +031 |
| 018 | 32 | 261 | 030 | +005 | +030 |
| 017 | 31 | 265 | 032 | +002 | +032 |
| 016 | 30 | 256 | 030 | +007 | +029 |
| 013 | 29 | 249 | 025 | +009 | +023 |
| 013 | 28 | 250 | 020 | +007 | +018 |
| 012 | 27 | 245 | 015 | +007 | +014 |
| 010 | 26 | 254 | 013 | +004 | +012 |
| 009 | 25 | 259 | 011 | +002 | +011 |
| 008 | 24 | 252 | 007 | +002 | +006 |
| 007 | 23 | 272 | 004 | +000 | +004 |
| 007 | 22 | 300 | 005 | -002 | +004 |
| 007 | 21 | 295 | 005 | -002 | +005 |
| 007 | 20 | 319 | 007 | -005 | +004 |
| 005 | 19 | 283 | 008 | -002 | +008 |
| 005 | 18 | 273 | 011 | -001 | +011 |

ROCKET THERMODYNAMICS

| ALT TENS OF METERS | TEMP DEG C | PRESSURE MB | DENSITY G M -3 | WIND POLAR DEG | MPS | COMPONENTS MPS N-S | E-W |
|---|---|---|---|---|---|---|---|
| 5837 | -02.0 | 00.318 | 00.409 | | | | |
| 5599 | -02.8 | 00.427 | 00.551 | 248 | 030 | +011 | +028 |
| 5087 | +01.9 | 00.802 | 01.016 | 256 | 035 | +008 | +034 |
| 4962 | -01.3 | 00.936 | 01.199 | 245 | 032 | +014 | +030 |
| 4500 | -00.3 | 01.655 | 02.114 | 254 | 021 | +006 | +020 |
| 4432 | -04.6 | 01.801 | 02.337 | 268 | 024 | +001 | +024 |
| 4319 | -05.1 | 02.076 | 02.698 | 278 | 030 | -004 | +030 |
| 4097 | -17.0 | 02.763 | 03.771 | 260 | 037 | +006 | +036 |
| 3895 | -19.7 | 03.611 | 04.964 | 250 | 031 | +011 | +029 |
| 3800 | -23.3 | 04.101 | 05.719 | 249 | 028 | +010 | +026 |
| 3743 | -22.8 | 04.429 | 06.164 | 248 | 029 | +011 | +027 |
| 3633 | -26.2 | 05.142 | 07.254 | 249 | 032 | +011 | +030 |
| 3572 | -26.4 | 05.590 | 07.892 | 251 | 034 | +011 | +032 |
| 3533 | -29.7 | 05.898 | 08.440 | 254 | 034 | +009 | +032 |
| 3426 | -28.0 | 06.838 | 09.718 | 258 | 034 | +007 | +033 |
| 3316 | -34.5 | 07.974 | 11.640 | 256 | 032 | +007 | +031 |
| 3085 | -34.5 | 11.060 | 16.145 | 264 | 031 | +005 | +031 |
| 2947 | -41.3 | 13.487 | 20.266 | 252 | 027 | +008 | +026 |
| 2487 | -48.6 | 26.687 | 41.404 | 258 | 010 | +002 | +010 |
| 2219 | -50.9 | 40.072 | 62.815 | 294 | 005 | -002 | +004 |
| 2000 | -57.7 | 56.266 | 90.983 | 319 | 007 | -005 | +004 |
| 1951 | -55.8 | 60.759 | 97.389 | 301 | 008 | -004 | +007 |
| 1847 | -60.0 | | | 278 | 010 | -001 | +010 |
| 1713 | -59.3 | | | | | | |

CONSTANT PRESSURE SURFACES (GEOPOTENTIAL HEIGHT)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2069 | -55.3 | 50.000 | 79.965 | 300 | 006 | -003 | +005 |
| 2400 | -49.3 | 30.000 | 46.691 | 253 | 007 | +002 | +007 |
| 2668 | -45.5 | 20.000 | 30.608 | 247 | 015 | +006 | +014 |
| 3140 | -34.5 | 10.000 | 14.598 | 263 | 031 | +004 | +031 |
| 3391 | -29.1 | 07.000 | 09.993 | 258 | 034 | +007 | +033 |
| 3633 | -25.5 | 05.000 | 07.035 | 248 | 032 | +012 | +030 |
| 4009 | -18.4 | 03.000 | 04.103 | 257 | 036 | +008 | +035 |
| 4319 | -05.0 | 02.000 | 02.598 | 277 | 028 | -003 | +028 |
| 4870 | -01.2 | 01.000 | 01.281 | 242 | 031 | +015 | +027 |

RAWINSONDE

| PRESSURE MB | ALT TENS OF METERS | WIND POLAR DEG | MPS | COMPONENTS MPS N-S | E-W | RH % | TEMP DEG C |
|---|---|---|---|---|---|---|---|
| 1024.0 | 0000 | 080 | 005 | -001 | -005 | 47 | +13.3 |
| 0804.0 | 0200 | 282 | 007 | -002 | +007 | 50 | +00.3 |
| 0624.0 | 0400 | 257 | 019 | +004 | +018 | 88 | -08.4 |
| 0464.0 | 0600 | 255 | 036 | +009 | +035 | 78 | -20.0 |
| 0364.0 | 0800 | 249 | 042 | +015 | +039 | 68 | -32.9 |
| 0273.0 | 1000 | 253 | 044 | +013 | +042 | | -46.8 |
| 0199.0 | 1200 | 264 | 044 | +004 | +044 | | -59.8 |
| 0198.0 | 1205 | 265 | 044 | +003 | +044 | | -59.8 |
| 0145.0 | 1400 | 265 | 042 | +003 | +041 | | -55.4 |
| 0106.0 | 1600 | 260 | 026 | +005 | +026 | | -59.3 |
| 0077.0 | 1800 | 279 | 013 | -002 | +013 | | -60.4 |
| 0056.0 | 2000 | 285 | 011 | -003 | +011 | | -60.0 |
| 0041.0 | 2200 | 306 | 004 | -002 | +003 | | -57.7 |
| 0029.5 | 2400 | 269 | 005 | +000 | +005 | | -53.4 |
| 0022.0 | 2600 | 265 | 015 | +001 | +015 | | -49.8 |
| 0016.0 | 2800 | 261 | 020 | +003 | +020 | | -45.8 |
| 0012.0 | 3000 | 252 | 027 | +008 | +026 | | -42.0 |
| 0011.0 | 3130 | 260 | 028 | +005 | +028 | | -40.5 |
| 0010.0 | 3152 | | | | | | -39.5 |

# TECHNICAL DATA

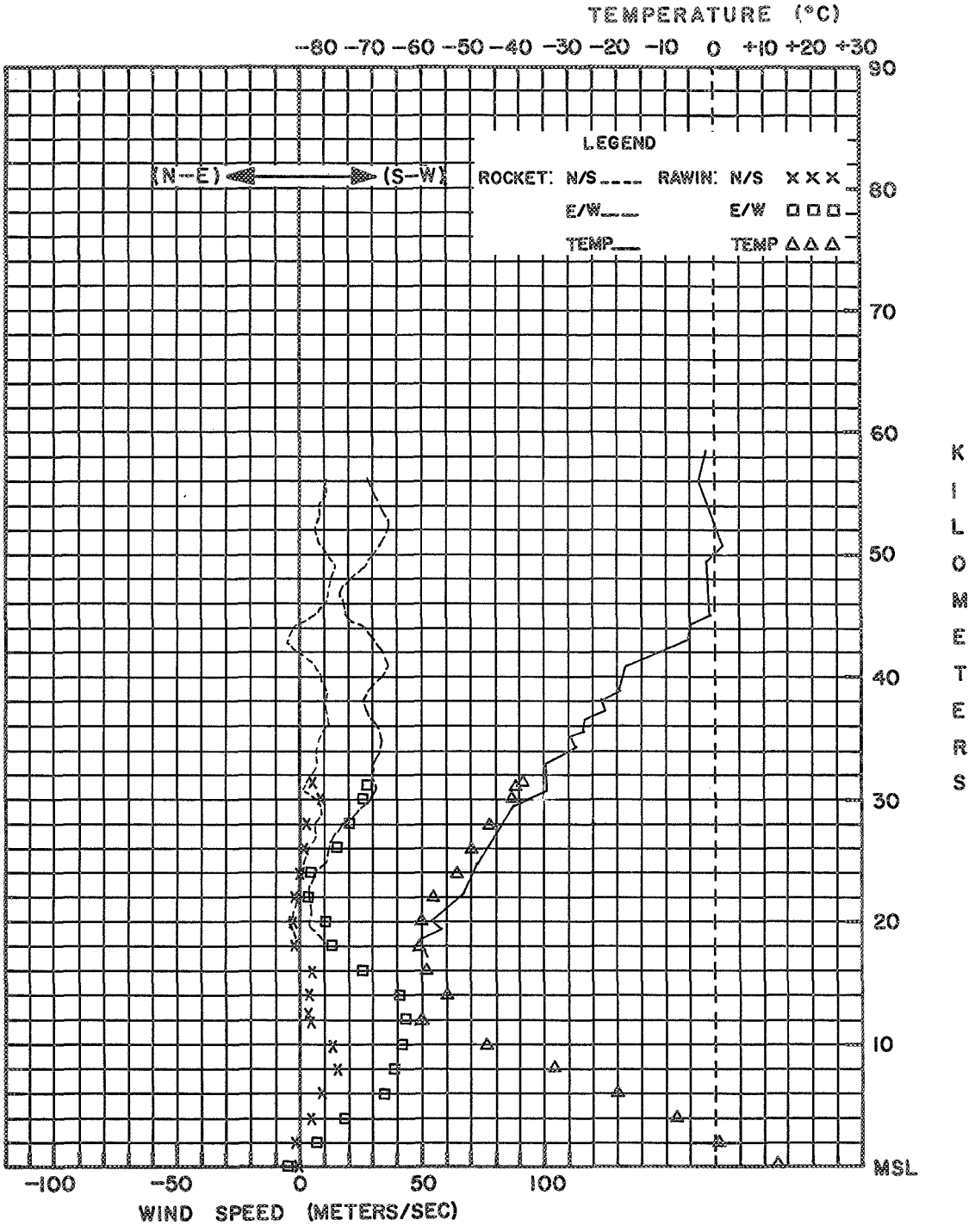
MOTOR TYPE..ARCAS
PAYLOAD TYPE..ARCASONDE-1A
FUSE TYPE..GAS GENERATED SEPARATION DEVICE
LAUNCHER SETTING..115° AZIMUTH 83.2° ELEVATION
RADAR TYPE..SPANDAR APOGEE 60,230 METERS
WIND SENSOR TYPE..15 FT. DIAMETER PARACHUTE
*TEMPERATURE SENSOR TYPE..0.010 INCH BEAD THERMISTOR*
GROUND EQUIPMENT TYPE..GMD-1B
REMARKS..HYPSOMETER ON RADIOSONDE DID NOT WORK.

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..136 SEC

SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..MOLDED INSULATION CO.
TEMPERATURE ELEMENT TYPE..ROD THERMISTOR
PRESSURE SENSOR TYPE..ANEROID AND HYPSOMETER
GROUND EQUIPMENT TYPE..GMD-1B
WIND AT ROCKET LAUNCH..SFC. 095DEG/04MPS 15M 073DEG/04MPS 31M 063DEG/05MPS
46M 073DEG/06MPS 61M 074DEG/06MPS 76M 093DEG/09MPS
*BALLISTIC WIND.. 084° AZIMUTH 04.1 MPS*
THERMODYNAMIC BASE DATA..PRESSURE 106.0 MBS
TEMPERATURE -59.3°C
ALTITUDE 16,000 METERS

RADIOSONDE TYPE..1680 MHZ
BALLOON TYPE..NEOPRENE
BALLOON SIZE..1,200 GRAMS




STATION: (NASA) Wallops Island, Va. ROCKET TIME: 1005 LST 1505 GCT PAYLOAD TYPE: Arcasonde 1A

DATE: 10 April, 1968 ROCKET MOTOR TYPE: Arcas RADIOSONDE TYPE: 1680 MHZ

# ROCKET OBSERVATION DATA

RP STATION NAME

82599 (CNAE) NATAL, BRAZIL

LAT. 05°55'S LONG. 35°10'W

ROCKET LAUNCH

DATE APRIL 17, 1968 TIME 1500 Z

RAWINSONDE RELEASE

DATE APRIL 17, 1968 TIME 1058 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 090 | 54 | 301 | 015 | -008 | +013 |
| 076 | 53 | 300 | 021 | -010 | +018 |
| 074 | 52 | 296 | 020 | -009 | +018 |
| 074 | 51 | 296 | 008 | -003 | +007 |
| 071 | 50 | 265 | 004 | +000 | +004 |
| 068 | 49 | 265 | 015 | +002 | +015 |
| 068 | 48 | 279 | 021 | -003 | +021 |
| 076 | 47 | 270 | 023 | +000 | +024 |
| 058 | 46 | 259 | 023 | +005 | +023 |
| 046 | 45 | 281 | 017 | -003 | +017 |
| 050 | 44 | 269 | 017 | +001 | +017 |
| 052 | 43 | 249 | 024 | +009 | +023 |
| 046 | 42 | 259 | 017 | +004 | +017 |
| 042 | 41 | 258 | 021 | +005 | +021 |
| 042 | 40 | 254 | 028 | +008 | +027 |
| 037 | 39 | 260 | 025 | +005 | +025 |
| 035 | 38 | 269 | 024 | +000 | +025 |
| 033 | 37 | 271 | 020 | +000 | +021 |
| 029 | 36 | 274 | 020 | -001 | +020 |
| 029 | 35 | 270 | 010 | +000 | +010 |
| 026 | 34 | 082 | 007 | -001 | -007 |
| 023 | 33 | 080 | 014 | -002 | -013 |
| 023 | 32 | 089 | 030 | +000 | -031 |
| 021 | 31 | 085 | 041 | +004 | -043 |
| 020 | 30 | 096 | 035 | +004 | -035 |
| 020 | 29 | 084 | 036 | -004 | -036 |
| 017 | 28 | 084 | 035 | -004 | -035 |
| 015 | 27 | 086 | 030 | -002 | -030 |
| 014 | 26 | 090 | 026 | +000 | -027 |
| 013 | 25 | 094 | 024 | +002 | -025 |
| 012 | 24 | 089 | 020 | +000 | -021 |
| 011 | 23 | 083 | 018 | -002 | -018 |
| 010 | 22 | 081 | 013 | -002 | -013 |
| 009 | 21 | 088 | 006 | +000 | -006 |
| 008 | 20 | 065 | 002 | -002 | -001 |
| 007 | 19 | 311 | 005 | -003 | +004 |
| 006 | 18 | 258 | 001 | +000 | +001 |

RAWINSONDE

| PRESSURE | ALT TENS OF METERS | WIND POLAR | | COMPONENTS MPS | | RH | TEMP |
|---|---|---|---|---|---|---|---|
| MB | | DEG | MPS | N-S | E-W | % | DEG C |
| 1007.6 | 0004 | 170 | 002 | +002 | +000 | 84 | +27.8 |
| 0805.0 | 0200 | 127 | 005 | +003 | -004 | 60 | +19.5 |
| 0636.0 | 0400 | 102 | 005 | +001 | -005 | 29 | +08.9 |
| 0497.0 | 0600 | 095 | 006 | +001 | -006 | 35 | -02.9 |
| 0384.0 | 0800 | 082 | 010 | -002 | -010 | 22 | -15.9 |
| 0293.0 | 1000 | 062 | 012 | -006 | -010 | 27 | -30.8 |
| 0218.5 | 1200 | 061 | 009 | -005 | -008 | 29 | -47.9 |
| 0160.0 | 1400 | 099 | 013 | +002 | -012 | | -64.4 |
| 0114.3 | 1600 | 018 | 005 | -004 | -001 | | -74.5 |
| 0084.0 | 1722 | 292 | 006 | -002 | +005 | | -82.8 |
| 0080.4 | 1800 | 144 | 007 | +005 | -004 | | -80.3 |
| 0057.6 | 2000 | 263 | 006 | +001 | +006 | | -66.7 |
| 0041.8 | 2200 | 085 | 012 | -001 | -012 | | -58.0 |
| 0030.5 | 2400 | 087 | 022 | -001 | -021 | | -52.9 |
| 0022.7 | 2600 | 095 | 025 | +002 | -025 | | -47.5 |
| 0016.9 | 2800 | 088 | 031 | -001 | -031 | | -44.7 |
| 0012.7 | 3000 | 085 | 038 | -003 | -039 | | -38.8 |
| 0009.4 | 3200 | 094 | 035 | +002 | -036 | | -33.3 |
| 0007.1 | 3400 | 090 | 015 | +000 | -015 | | -30.3 |
| 0005.4 | 3600 | | | | | | -27.7 |
| 0005.0 | 3637 | | | | | | -26.7 |

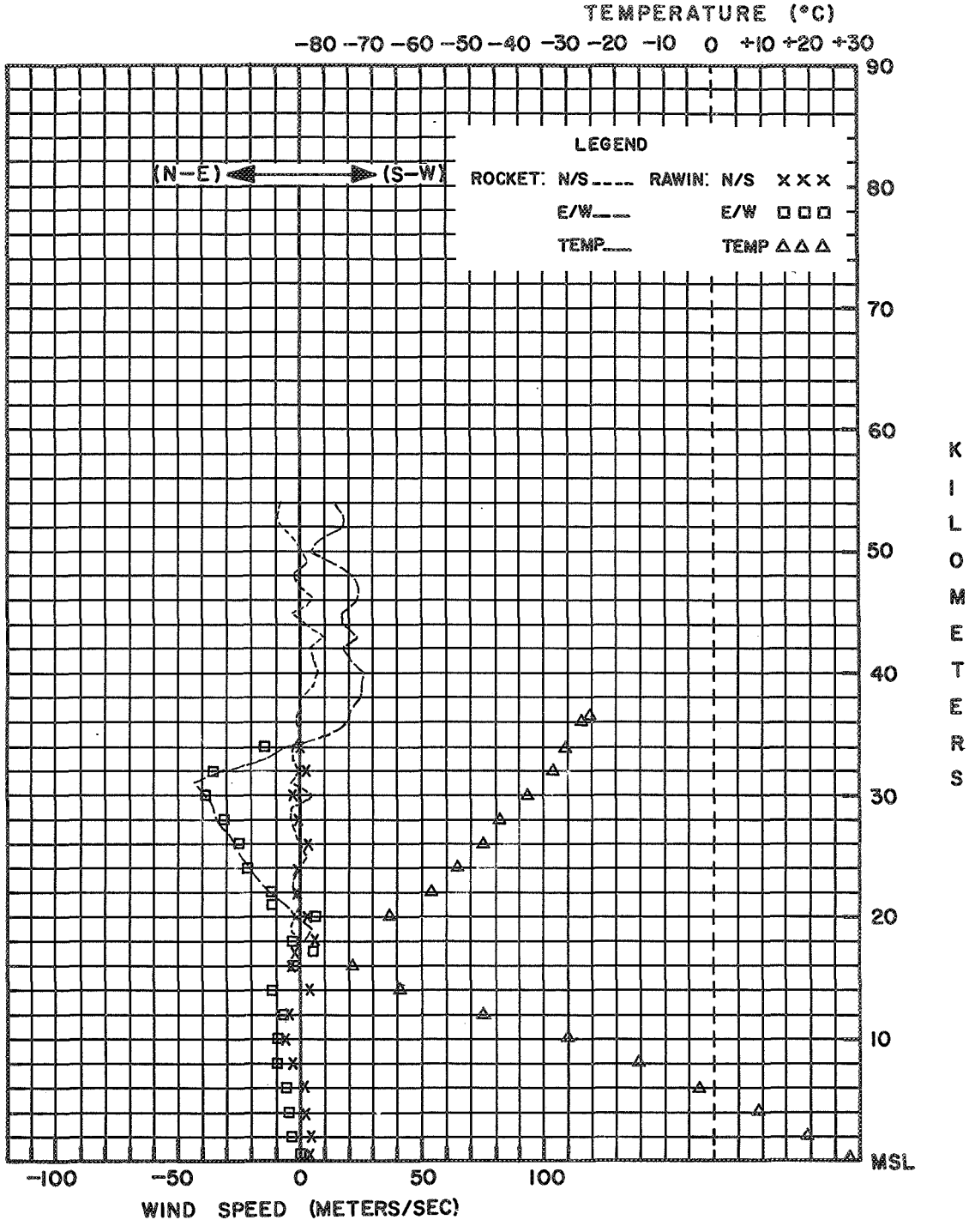
# TECHNICAL DATA

MOTOR TYPE..JUDI
PAYLOAD TYPE..WQX-1A
FUSE TYPE..ELECTRICALLY ACTIVATED PYROTECHNIC
LAUNCHER SETTING..058° AZIMUTH 80.0° ELEVATION
RADAR TYPE..MPS-19 APOGEE UNKNOWN METERS
WIND SENSOR TYPE..6 FT. SQUARE PARACHUTE
TEMPERATURE SENSOR TYPE..0.014 INCH BEAD THERMISTOR
GROUND EQUIPMENT TYPE..403 MHZ PORTABLE RECEIVER-RECORDER
REMARKS..NONE

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..FAILURE
ACTUAL FUSE DELAY TIME..UNKNOWN

SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..MOLDED INSULATION CO. RADIOSONDE TYPE..1680 MHZ
TEMPERATURE ELEMENT TYPE..ROD THERMISTOR BALLOON TYPE..NEOPRENE
PRESSURE SENSOR TYPE..ANEROID BALLOON SIZE..1,200 GRAMS
GROUND EQUIPMENT TYPE..GMD-1A
WIND AT ROCKET LAUNCH..SFC. 090DEG/03MPS 9M 100DEG/04MPS 16M 090DEG/04MPS
25M 090DEG/04MPS 40M 110DEG/06MPS
BALLISTIC WIND..UNKNOWN AZIMUTH UNKNOWN MPS
THERMODYNAMIC BASE DATA..PRESSURE N.A. MBS
TEMPERATURE N.A. C
ALTITUDE N.A. METERS




STATION: (CNAE) Natal, Brazil
DATE: 17 April, 1968

ROCKET TIME: 1200 LST 1500 GCT
ROCKET MOTOR TYPE: Judi

PAYLOAD TYPE: WOX-1A
RADIOSONDE TYPE: 1680 MHZ

# ROCKET OBSERVATION DATA

RP STATION NAME

87320 (CNIE) CHAMICAL, ARGENTINA

LAT. 30°22'S LONG. 66°17'W

ROCKET LAUNCH

DATE APRIL 17, 1968 TIME 1626 Z

RAWINSONDE RELEASE

DATE APRIL 17, 1968 TIME 1314 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | WIND COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 133 | 68 | 245 | 041 | +017 | +037 |
| 133 | 67 | 248 | 046 | +017 | +043 |
| 118 | 66 | 250 | 055 | +019 | +052 |
| 105 | 65 | 247 | 054 | +021 | +049 |
| 087 | 64 | 263 | 050 | +006 | +048 |
| 087 | 63 | 276 | 046 | -005 | +045 |
| 074 | 62 | 286 | 041 | -011 | +039 |
| 061 | 61 | 289 | 041 | -013 | +039 |
| 057 | 60 | 285 | 043 | -011 | +041 |
| 040 | 59 | 278 | 044 | -006 | +043 |
| 034 | 58 | 274 | 041 | -001 | +041 |
| 037 | 57 | 258 | 036 | +007 | +034 |
| 032 | 56 | 244 | 036 | +016 | +032 |
| 033 | 55 | 247 | 040 | +016 | +037 |
| 035 | 54 | 247 | 040 | +016 | +037 |
| 030 | 53 | 246 | 041 | +017 | +037 |
| 028 | 52 | 254 | 042 | +012 | +040 |
| 024 | 51 | 257 | 039 | +009 | +038 |
| 024 | 50 | 261 | 037 | +006 | +036 |
| 024 | 49 | 259 | 039 | +007 | +038 |
| 023 | 48 | 260 | 037 | +006 | +036 |
| 022 | 47 | 265 | 032 | +003 | +032 |
| 021 | 46 | 261 | 033 | +005 | +031 |
| 021 | 45 | 260 | 030 | +005 | +029 |
| 020 | 44 | 258 | 028 | +006 | +027 |
| 018 | 43 | 258 | 021 | +004 | +020 |
| 018 | 42 | 277 | 015 | +002 | +015 |
| 017 | 41 | 289 | 017 | -006 | +016 |
| 015 | 40 | 288 | 015 | -005 | +014 |
| 017 | 39 | 305 | 008 | -005 | +007 |
| 018 | 38 | 276 | 008 | -001 | +008 |
| 015 | 37 | 279 | 006 | +000 | +006 |
| 014 | 36 | 288 | 003 | -001 | +002 |
| 013 | 35 | 324 | 002 | -001 | +001 |
| 015 | 34 | 013 | 002 | -002 | +000 |
| 012 | 33 | 076 | 001 | +000 | -001 |

RAWINSONDE

| PRESSURE | ALT TENS OF | WIND POLAR | | WIND COMPONENTS MPS | | RH | TEMP |
|---|---|---|---|---|---|---|---|
| MB | METERS | DEG | MPS | N-S | E-W | % | DEG C |
| 0964.2 | 0046 | 140 | 002 | +002 | -001 | 97 | +15.3 |
| 0805.0 | 0200 | 005 | 007 | -007 | -001 | 99 | +09.8 |
| 0629.0 | 0400 | 332 | 011 | -010 | +005 | 45 | -01.4 |
| 0485.0 | 0600 | 307 | 009 | -005 | +007 | 17 | -13.0 |
| 0371.0 | 0800 | 229 | 019 | +012 | +014 | 09 | -26.0 |
| 0280.0 | 1000 | 305 | 028 | -017 | +023 | | -39.0 |
| 0208.0 | 1200 | 290 | 051 | -017 | +045 | | -47.2 |
| 0153.0 | 1398 | 290 | 031 | -010 | +029 | | -56.6 |
| 0153.0 | 1400 | 296 | 032 | -014 | +029 | | -56.2 |
| 0112.0 | 1600 | 275 | 016 | -001 | +016 | | -56.5 |
| 0089.0 | 1740 | 270 | 005 | +000 | +005 | | -64.5 |
| 0081.0 | 1800 | 000 | 000 | +000 | +000 | | -64.1 |
| 0050.5 | 2000 | 076 | 004 | -001 | -004 | | -62.9 |
| 0042.9 | 2200 | 035 | 002 | -002 | -001 | | -54.1 |
| 0031.3 | 2400 | 331 | 006 | -005 | +003 | | -45.7 |
| 0023.2 | 2600 | 230 | 004 | +003 | +003 | | -44.0 |
| 0017.2 | 2800 | 360 | 005 | -005 | +000 | | -41.4 |
| 0015.0 | 2891 | 360 | 003 | -003 | +000 | | -41.1 |
| | 3000 | 015 | 003 | -003 | -001 | | |
| | 3200 | 020 | 003 | -003 | -001 | | |
| | 3400 | 360 | 009 | -009 | +000 | | |

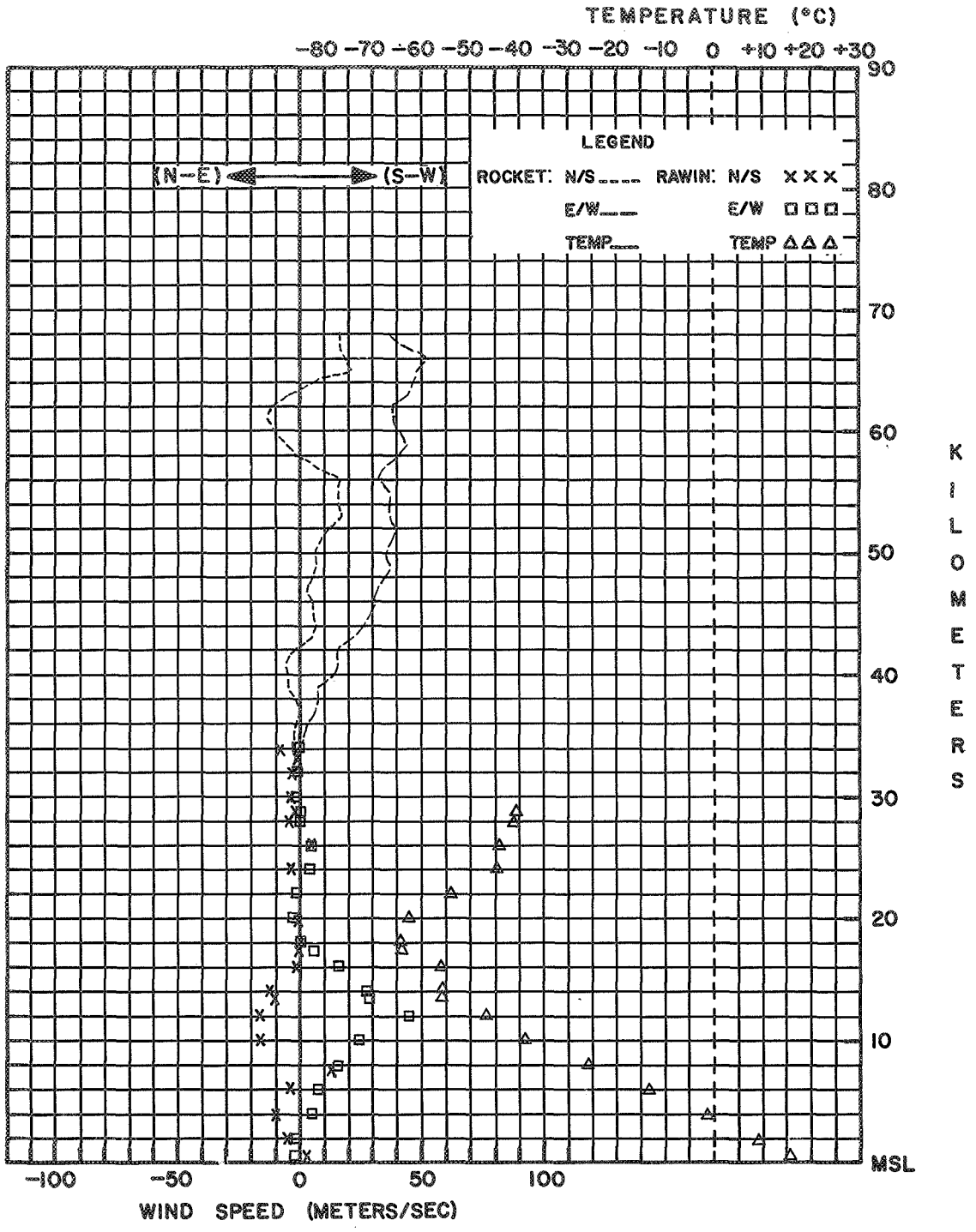
# TECHNICAL DATA

MOTOR TYPE..JUDI
PAYLOAD TYPE..CHAFF
FUSE TYPE..ELECTRICALLY ACTIVATED PYROTECHNIC
LAUNCHER SETTING..032°AZIMUTH 86.0°ELEVATION
RADAR TYPE..MPS-19 APOGEE 72,000 METERS
WIND SENSOR TYPE..0.005 INCH S BAND COPPER CHAFF SENSOR FALL-RATE..NOMINAL
TEMPERATURE SENSOR TYPE..N.A.
GROUND EQUIPMENT TYPE..N.A.
REMARKS..NONE

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..110 SEC

RADIOSONDE MANUFACTURER..VAISALA
TEMPERATURE ELEMENT TYPE..RESISTANCE WIRE
PRESSURE SENSOR TYPE..DOUBLE ANEROID
GROUND EQUIPMENT TYPE..VAISALA
WIND AT ROCKET LAUNCH..SFC. 030DEG/01MPS
BALLISTIC WIND.. 079°AZIMUTH 02.2 MPS
THERMODYNAMIC BASE DATA..PRESSURE N.A. MBS
TEMPERATURE N.A. C
ALTITUDE N.A. METERS

RADIOSONDE TYPE..VAISALA
BALLOON TYPE..NEOPRENE
BALLOON SIZE..1,200 GRAMS




STATION: (CNIE) Chamical, Arg.
DATE: 17 April, 1968

ROCKET TIME: 1226 LST 1626 GCT
ROCKET MOTOR TYPE: Judi

PAYLOAD TYPE: Chaff
RADIOSONDE TYPE: Vaisala

# ROCKET OBSERVATION DATA

RP STATION NAME

72402 (NASA) WALLOPS ISLAND, VIRGINIA

LAT. 37°51' N LONG. 75°29' W

ROCKET LAUNCH

DATE APRIL 17, 1968 TIME 1851 Z

RAWINSONDE RELEASE

DATE APRIL 17, 1968 TIME 1910 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | WIND COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 089 | 55 | 255 | 025 | +006 | +025 |
| 087 | 54 | 249 | 024 | +009 | +022 |
| 083 | 53 | 258 | 020 | +004 | +020 |
| 083 | 52 | 264 | 022 | +002 | +021 |
| 083 | 51 | 258 | 024 | +005 | +024 |
| 077 | 50 | 264 | 025 | +002 | +024 |
| 071 | 49 | 258 | 025 | +005 | +024 |
| 067 | 48 | 260 | 021 | +004 | +020 |
| 062 | 47 | 281 | 014 | -003 | +014 |
| 059 | 46 | 270 | 021 | +000 | +021 |
| 057 | 45 | 265 | 034 | +003 | +034 |
| 059 | 44 | 271 | 035 | -001 | +035 |
| 053 | 43 | 269 | 036 | +001 | +035 |
| 046 | 42 | 263 | 032 | +004 | +032 |
| 045 | 41 | 267 | 034 | +002 | +034 |
| 041 | 40 | 261 | 037 | +006 | +037 |
| 038 | 39 | 256 | 036 | +008 | +035 |
| 034 | 38 | 265 | 035 | +003 | +035 |
| 031 | 37 | 274 | 035 | -003 | +035 |
| 032 | 36 | 271 | 037 | -001 | +036 |
| 029 | 35 | 283 | 038 | -009 | +037 |
| 026 | 34 | 293 | 040 | -016 | +037 |
| 025 | 33 | 288 | 039 | -012 | +037 |
| 024 | 32 | 289 | 036 | -012 | +034 |
| 022 | 31 | 290 | 030 | -011 | +028 |
| 020 | 30 | 284 | 021 | -005 | +021 |
| 018 | 29 | 288 | 012 | -004 | +012 |
| 017 | 28 | 287 | 009 | -003 | +008 |
| 015 | 27 | 277 | 004 | +000 | +004 |
| 013 | 26 | 002 | 002 | -002 | +000 |
| 013 | 25 | 025 | 003 | -002 | -001 |
| 013 | 24 | 021 | 005 | -004 | -002 |
| 011 | 23 | 002 | 005 | -005 | +000 |
| 010 | 22 | 324 | 003 | -003 | +002 |
| 010 | 21 | 043 | 002 | -002 | -001 |
| 008 | 20 | 065 | 004 | -002 | -004 |
| 007 | 19 | 035 | 003 | -002 | -002 |
| 007 | 18 | 354 | 005 | -005 | +000 |

ROCKET THERMODYNAMICS

| ALT TENS OF METERS | TEMP DEG C | PRESSURE MB | DENSITY G M -3 | WIND POLAR DEG | WIND POLAR MPS | WIND COMPONENTS MPS N-S | WIND COMPONENTS MPS E-W |
|---|---|---|---|---|---|---|---|
| 5291 | +08.9 | | | 259 | 020 | +004 | +020 |
| 4950 | +02.6 | | | 261 | 025 | +004 | +024 |
| 4791 | -08.3 | | | 262 | 020 | +003 | +020 |
| MISSING DATA | | | | | | | |
| 3459 | -32.4 | 06.425 | 09.298 | 287 | 039 | -011 | +037 |
| 3365 | -33.7 | 07.339 | 10.670 | 292 | 040 | -015 | +037 |
| 3127 | -36.1 | 10.272 | 15.107 | 290 | 032 | -011 | +030 |
| 3002 | -43.3 | 12.324 | 18.673 | 284 | 021 | -005 | +021 |
| 2923 | -43.8 | 13.840 | 21.024 | 287 | 014 | -004 | +013 |
| 2844 | -47.6 | 15.566 | 24.044 | 287 | 010 | -003 | +010 |
| 2646 | -48.3 | 20.962 | 32.478 | 318 | 003 | -002 | +002 |
| 2618 | -51.4 | 21.871 | 34.361 | 346 | 002 | -002 | +000 |
| 2371 | -52.6 | 31.927 | 50.432 | 015 | 005 | -005 | -001 |
| 2188 | -55.8 | 42.385 | 67.938 | 331 | 003 | -003 | +002 |
| 2118 | -53.1 | 47.244 | 74.798 | 025 | 002 | -002 | -001 |
| 2000 | -56.2 | 56.720 | 90.665 | 065 | 004 | -002 | -004 |
| 1890 | -54.9 | | | 031 | 003 | -002 | -001 |
| 1780 | -57.5 | | | | | | |
| 1737 | -54.8 | | | | | | |
| 1700 | -55.9 | | | | | | |

CONSTANT PRESSURE SURFACES (GEOPOTENTIAL HEIGHT)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2074 | -53.8 | 50.000 | 79.412 | 047 | 003 | -002 | -002 |
| 2402 | -52.4 | 30.000 | 47.335 | 021 | 005 | -004 | -002 |
| 2666 | -48.2 | 20.000 | 30.972 | 295 | 003 | -001 | +003 |
| 3131 | -35.9 | 10.000 | 14.686 | 290 | 033 | -012 | +031 |
| 3380 | -33.2 | 07.000 | 10.164 | 293 | 040 | -016 | +037 |

RAWINSONDE

| PRESSURE MB | ALT TENS OF METERS | WIND POLAR DEG | WIND POLAR MPS | WIND COMPONENTS MPS N-S | WIND COMPONENTS MPS E-W | RH % | TEMP DEG C |
|---|---|---|---|---|---|---|---|
| 1021.5 | 0000 | 075 | 010 | -003 | -010 | 40 | +13.9 |
| 0801.0 | 0200 | 036 | 009 | -007 | -005 | 53 | +00.9 |
| 0624.0 | 0400 | 046 | 007 | -005 | -005 | 24 | -06.4 |
| 0481.0 | 0600 | 356 | 011 | -011 | +001 | 18 | -18.5 |
| 0364.0 | 0800 | 351 | 026 | -026 | +004 | 20 | -33.2 |
| 0273.0 | 1000 | 333 | 030 | -027 | +013 | | -47.6 |
| 0199.0 | 1200 | 318 | 034 | -025 | +022 | | -62.1 |
| 0195.0 | 1212 | 320 | 034 | -026 | +022 | | -63.0 |
| 0145.0 | 1400 | 320 | 017 | -013 | +011 | | -58.0 |
| 0106.0 | 1600 | 350 | 015 | -015 | +003 | | -58.0 |
| 0077.0 | 1800 | 010 | 007 | -007 | -001 | | -58.6 |
| 0056.0 | 2000 | 292 | 004 | -002 | +004 | | -57.9 |
| 0041.0 | 2200 | 244 | 003 | +001 | +003 | | -56.9 |
| 0030.0 | 2400 | 014 | 005 | -005 | -001 | | -54.6 |
| 0022.0 | 2600 | 004 | 004 | -004 | +000 | | -51.0 |
| 0016.5 | 2800 | 290 | 010 | -003 | +009 | | -47.0 |
| 0012.0 | 3000 | 282 | 020 | -004 | +020 | | -44.6 |
| 0009.3 | 3177 | 288 | 024 | -008 | +023 | | -40.0 |
| 0009.1 | 3195 | | | | | | -39.6 |

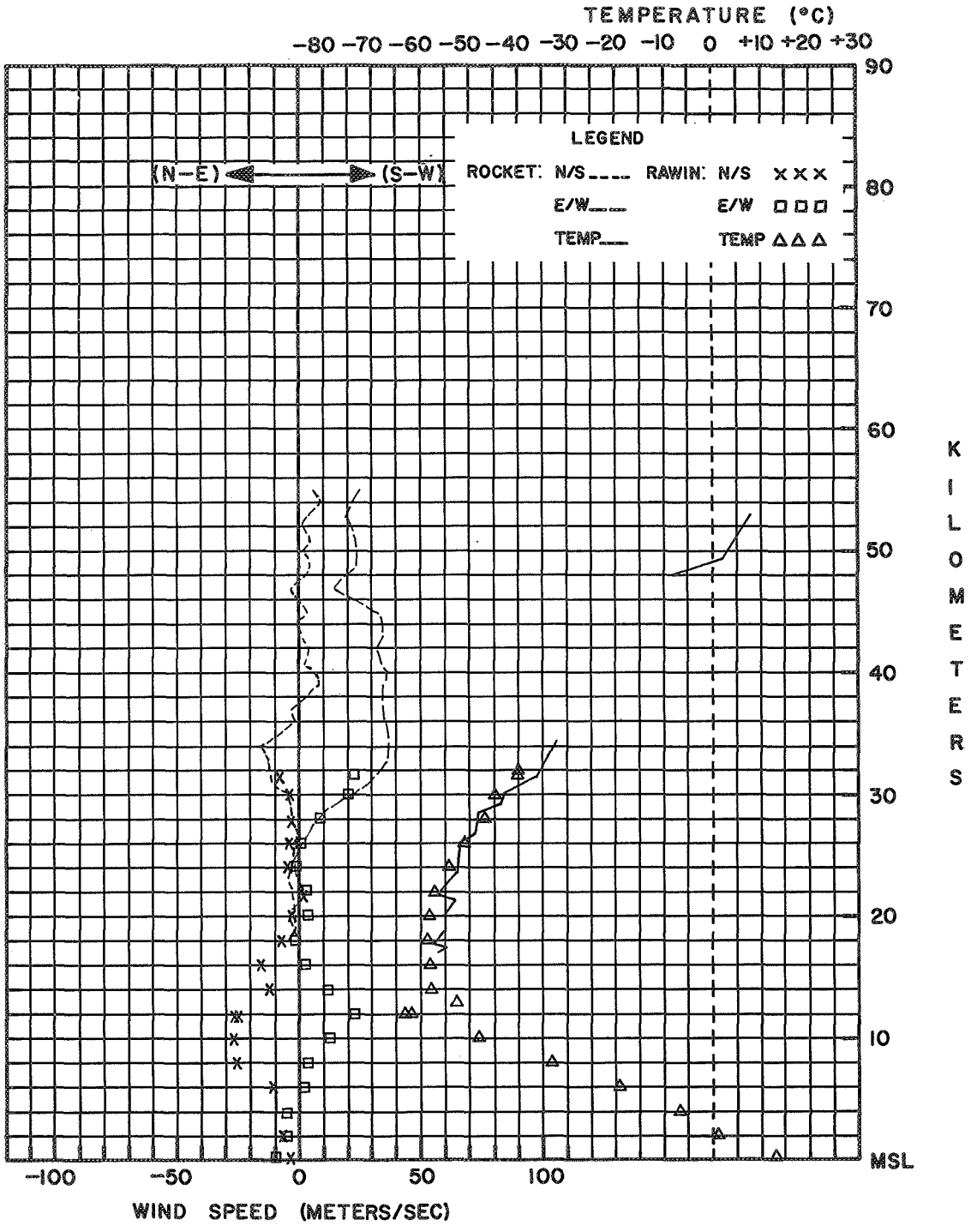
# TECHNICAL DATA

MOTOR TYPE..JUDI
PAYLOAD TYPE..WPK-1A
FUSE TYPE..ELECTRICALLY ACTIVATED PYROTECHNIC
LAUNCHER SETTING..150° AZIMUTH 80.0° ELEVATION
RADAR TYPE..SPANDAR APOGEE 57.090 METERS
WIND SENSOR TYPE..6 FT. SQUARE PARACHUTE
TEMPERATURE SENSOR TYPE..0.014 INCH BEAD THERMISTOR
GROUND EQUIPMENT TYPE..403 MHZ PORTABLE RECEIVER-RECORDER
REMARKS..PAYLOAD WAS A PREPRODUCTION MODEL. TEMPERATURE DATA MISSING BETWEEN 34,590 METERS AND 47,910 METERS DUE TO LOSS OF T/M SIGNAL.

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..FAIR
ACTUAL FUSE DELAY TIME..096 SEC
SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..MOLDED INSULATION CO.
TEMPERATURE ELEMENT TYPE..ROD THERMISTOR
PRESSURE SENSOR TYPE..ANEROID AND HYPSOMETER
GROUND EQUIPMENT TYPE..GMD-18
WIND AT ROCKET LAUNCH..SFC. 051DEG/13MPS 15M 051DEG/09MPS 31M 047DEG/09MPS 46M 054DEG/10MPS 61M 056DEG/10MPS 76M 060DEG/10MPS
BALLISTIC WIND.. 056° AZIMUTH 09.8 MPS
THERMODYNAMIC BASE DATA..PRESSURE 106.0 MBS
TEMPERATURE -58.0°C
ALTITUDE 16,000 METERS

RADIOSONDE TYPE..1680 MHZ
BALLOON TYPE..NEOPRENE
BALLOON SIZE..1,200 GRAMS




STATION: (NASA) Wallops Island, Va. ROCKET TIME: 1351 LST 1851 GCT PAYLOAD TYPE: WOX-1A

DATE: 17 April, 1968 ROCKET MOTOR TYPE: Judi RADIOSONDE TYPE: 1680 MHZ

# ROCKET OBSERVATION DATA

RP STATION NAME

72402 (NASA) WALLOPS ISLAND, VIRGINIA

LAT. 37°51' N LONG. 75°29' W

ROCKET LAUNCH

DATE APRIL 24, 1968 TIME 1612 Z

RAWINSONDE RELEASE

DATE APRIL 24, 1968 TIME 1115 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 065 | 50 | 356 | 003 | -003 | +000 |
| 062 | 49 | 355 | 001 | -001 | +000 |
| 059 | 48 | 000 | 000 | +000 | +000 |
| 054 | 47 | 338 | 004 | -003 | +001 |
| 053 | 46 | 316 | 008 | -006 | +005 |
| 053 | 45 | 293 | 008 | -003 | +008 |
| 051 | 44 | 321 | 009 | -007 | +006 |
| 050 | 43 | 337 | 014 | -013 | +006 |
| 045 | 42 | 331 | 016 | -014 | +008 |
| 044 | 41 | 321 | 017 | -013 | +011 |
| 041 | 40 | 311 | 011 | -007 | +008 |
| 036 | 39 | 266 | 008 | +001 | +008 |
| 037 | 38 | 251 | 010 | +003 | +009 |
| 035 | 37 | 259 | 005 | +001 | +005 |
| 030 | 36 | 331 | 005 | -004 | +002 |
| 029 | 35 | 342 | 010 | -009 | +003 |
| 027 | 34 | 326 | 009 | -007 | +005 |
| 025 | 33 | 292 | 008 | -003 | +007 |
| 023 | 32 | 286 | 010 | -003 | +010 |
| 020 | 31 | 289 | 010 | -003 | +010 |
| 020 | 30 | 291 | 010 | -004 | +010 |
| 019 | 29 | 293 | 011 | -004 | +010 |
| 017 | 28 | 296 | 015 | -007 | +013 |
| 015 | 27 | 292 | 014 | -005 | +013 |
| 013 | 26 | 281 | 010 | -002 | +010 |
| 013 | 25 | 275 | 007 | -001 | +007 |
| 012 | 24 | 224 | 003 | +002 | +002 |
| 011 | 23 | 130 | 003 | +002 | -002 |
| 010 | 22 | 077 | 004 | -001 | -004 |
| 009 | 21 | 040 | 003 | -002 | -002 |
| 008 | 20 | 323 | 001 | -001 | +001 |
| 008 | 19 | 298 | 003 | -001 | +002 |
| 007 | 18 | 301 | 006 | -003 | +005 |

RAWINSONDE

| PRESSURE | ALT TENS OF METERS | WIND POLAR | | COMPONENTS MPS | | RH | TEMP |
|---|---|---|---|---|---|---|---|
| MB | METERS | DEG | MPS | N-S | E-W | % | DEG C |
| 1015.0 | 0000 | 120 | 005 | +003 | -005 | 100 | +09.4 |
| 0799.0 | 0200 | 229 | 012 | +008 | +009 | 70 | +06.2 |
| 0624.0 | 0400 | 231 | 009 | +006 | +007 | 63 | -05.0 |
| 0482.0 | 0600 | 260 | 012 | +002 | +012 | 65 | -18.1 |
| 0365.0 | 0800 | 258 | 026 | +006 | +026 | 52 | -32.5 |
| 0273.5 | 1000 | 264 | 044 | +004 | +043 | | -49.4 |
| 0200.0 | 1200 | 278 | 054 | -007 | +053 | | -60.6 |
| 0189.0 | 1232 | 280 | 055 | -010 | +054 | | -62.3 |
| 0145.0 | 1400 | 278 | 020 | -003 | +020 | | -58.8 |
| 0105.5 | 1600 | 277 | 014 | -002 | +014 | | -61.6 |
| 0076.3 | 1800 | 297 | 007 | -003 | +006 | | -61.3 |
| 0055.4 | 2000 | 001 | 002 | -002 | +000 | | -60.3 |
| 0040.4 | 2200 | 001 | 002 | -002 | +000 | | -58.0 |
| 0029.5 | 2400 | 001 | 002 | -002 | +000 | | -53.6 |
| 0021.8 | 2600 | 279 | 008 | -001 | +008 | | -49.4 |
| 0016.1 | 2800 | 298 | 017 | -008 | +015 | | -45.1 |
| 0012.0 | 3000 | 303 | 016 | -009 | +013 | | -41.0 |
| 0010.5 | 3093 | 303 | 017 | -009 | +014 | | -39.0 |

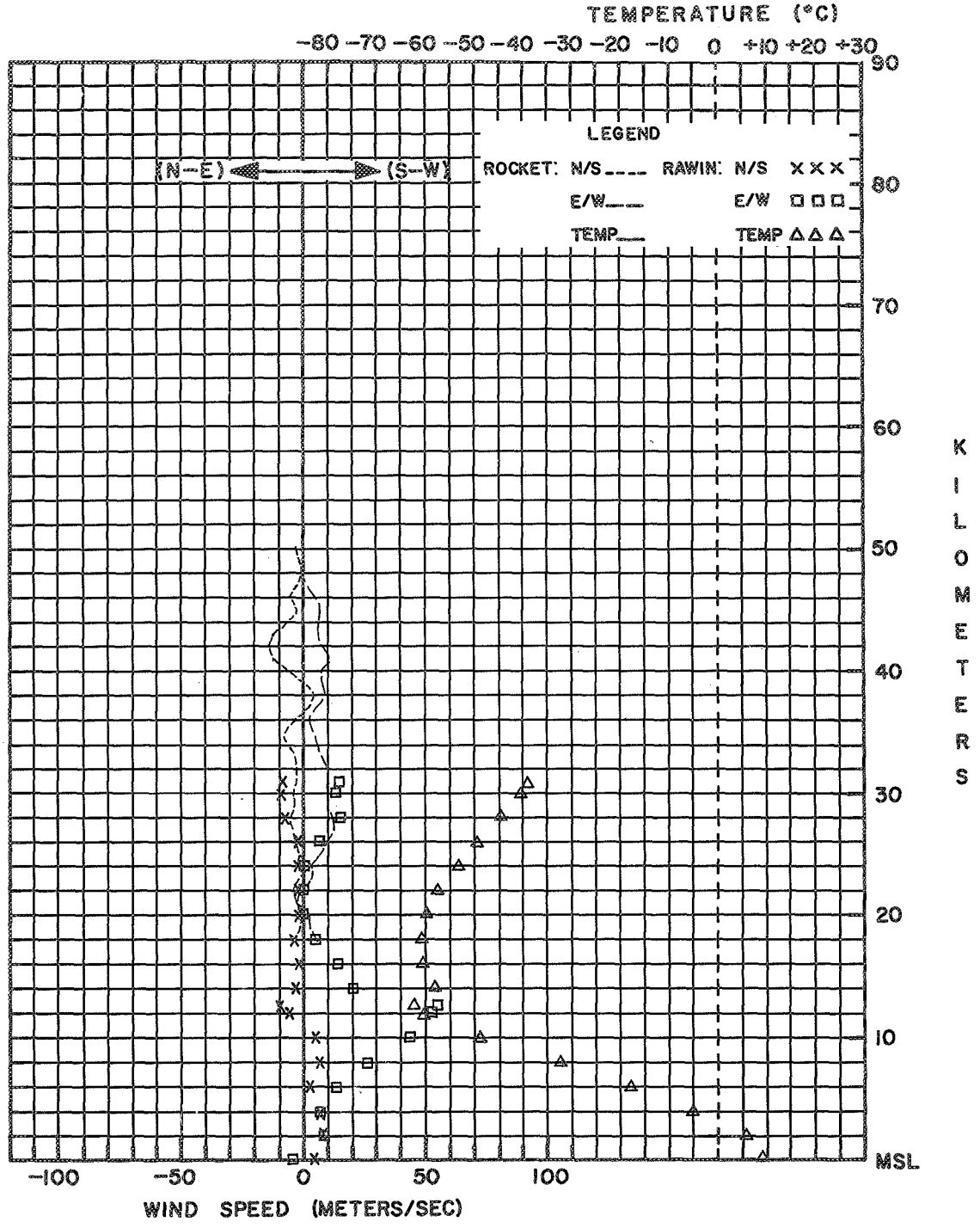
# TECHNICAL DATA

MOTOR TYPE..JUNI
PAYLOAD TYPE..WBX-14
FUSE TYPE..ELECTRICALLY ACTIVATED PYROTECHNIC
LAUNCHER SETTING..145° AZIMUTH 75.0° ELEVATION
RADAR TYPE..SPANDAR APOGEE 50,780 METERS
WIND SENSOR TYPE..6 FT. SQUARE PARACHUTE
TEMPERATURE SENSOR TYPE..0.014 INCH BEAD THERMISTOR
GROUND EQUIPMENT TYPE..403 MHZ PORTABLE RECEIVER-RECORDER
REMARKS..COMPLETE LOSS OF SIGNAL AT +3 MINUTES.
THIS PAYLOAD WAS A PREPRODUCTION MODEL.

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..FAILURE
ACTUAL FUSE DELAY TIME..084 SEC

SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..MOLDED INSULATION CO. RADIOSONDE TYPE..1680 MHZ
TEMPERATURE ELEMENT TYPE..ROD THERMISTOR BALLOON TYPE..NEOPRENE
PRESSURE SENSOR TYPE..ANEROID AND HYPSOMETER BALLOON SIZE..1,200 GRAMS
GROUND EQUIPMENT TYPE..GMD-1B
WIND AT ROCKET LAUNCH..SFC. 160DEG/05MPS 15M 163DEG/05MPS 31M 167DEG/06MPS
46M 155DEG/06MPS 61M 169DEG/07MPS 76M 177DEG/09MPS
BALLISTIC WIND.. 169° AZIMUTH 07.2 MPS
THERMODYNAMIC BASE DATA..PRESSURE N.A. MBS
TEMPERATURE N.A. C
ALTITUDE N.A. METERS




STATION: (NASA) Wallops Island, Va. ROCKET TIME: 1112 LST 1612 GCT PAYLOAD TYPE: WOX-1A

DATE: 24 April, 1968 ROCKET MOTOR TYPE: Judi RADIOSONDE TYPE: 1680 MHZ

# ROCKET OBSERVATION DATA

PP STATION NAME

82599 (CNAE) NATAL, BRAZIL

LAT. 05°55'S LONG. 35°10'W

ROCKET LAUNCH

DATE MAY 1, 1968 TIME 1500 Z

RAWINSONDE RELEASE

DATE MAY 1, 1968 TIME 1154 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | WIND COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 052 | 61 | 287 | 013 | -004 | +013 |
| 049 | 60 | 308 | 015 | -009 | +012 |
| 043 | 59 | 290 | 018 | -006 | +017 |
| 039 | 58 | 288 | 026 | -008 | +025 |
| 040 | 57 | 274 | 028 | -002 | +028 |
| 040 | 56 | 268 | 029 | +001 | +029 |
| 034 | 55 | 269 | 021 | +000 | +021 |
| 031 | 54 | 276 | 017 | -002 | +017 |
| 030 | 53 | 304 | 016 | -009 | +013 |
| 028 | 52 | 338 | 018 | -017 | +007 |
| 026 | 51 | 330 | 020 | -017 | +010 |
| 025 | 50 | 303 | 017 | -009 | +014 |
| 024 | 49 | 291 | 014 | -005 | +013 |
| 024 | 48 | 288 | 017 | -005 | +016 |
| 023 | 47 | 265 | 020 | +002 | +020 |
| 021 | 46 | 255 | 026 | +007 | +025 |
| 021 | 45 | 253 | 033 | +010 | +032 |
| 021 | 44 | 254 | 039 | +011 | +038 |
| 020 | 43 | 256 | 042 | +010 | +041 |
| 018 | 42 | 263 | 038 | +004 | +038 |
| 017 | 41 | 270 | 033 | +000 | +033 |
| 016 | 40 | 279 | 027 | -004 | +027 |
| 016 | 39 | 279 | 033 | -005 | +033 |
| 017 | 38 | 269 | 019 | +000 | +019 |
| 016 | 37 | 266 | 026 | +002 | +026 |
| 015 | 36 | 285 | 026 | -007 | +025 |
| 015 | 35 | 276 | 019 | -002 | +019 |
| 013 | 34 | 244 | 014 | +006 | +013 |
| 013 | 33 | 179 | 008 | +008 | +000 |
| 012 | 32 | 104 | 015 | +004 | -015 |
| 012 | 31 | 088 | 026 | -001 | -026 |
| 012 | 30 | 084 | 035 | -003 | -035 |
| 011 | 29 | 089 | 036 | +000 | -036 |
| 011 | 28 | 091 | 034 | +000 | -034 |
| 010 | 27 | 087 | 036 | -002 | -036 |
| 010 | 26 | 087 | 037 | -002 | -037 |
| 009 | 25 | 089 | 034 | +000 | -034 |
| 009 | 24 | 089 | 029 | +000 | -029 |
| 009 | 23 | 088 | 022 | -001 | -022 |
| 008 | 22 | 091 | 014 | +000 | -014 |
| 008 | 21 | 102 | 002 | +000 | -002 |
| 007 | 20 | 293 | 004 | -002 | +004 |
| 007 | 19 | 032 | 002 | -002 | -001 |
| 006 | 18 | 054 | 004 | -002 | -003 |

RAWINSONDE

| PRESSURE | ALT TENS OF METERS | WIND POLAR | | WIND COMPONENTS MPS | | RH | TEMP |
|---|---|---|---|---|---|---|---|
| MB | | DEG | MPS | N-S | E-W | % | DEG C |
| 1007.5 | 0004 | 130 | 005 | +003 | -004 | 76 | +28.7 |
| 0803.0 | 0200 | 110 | 009 | +003 | -009 | 41 | +15.7 |
| 0630.9 | 0400 | 102 | 004 | +001 | -004 | 47 | +04.6 |
| 0490.8 | 0600 | 016 | 003 | -003 | -001 | 58 | -08.7 |
| 0377.0 | 0800 | 336 | 003 | -002 | +002 | 18 | -19.3 |
| 0285.1 | 1000 | 176 | 007 | +007 | -001 | | -35.0 |
| 0212.0 | 1200 | 196 | 016 | +015 | +004 | | -51.8 |
| 0154.8 | 1400 | 232 | 018 | +011 | +014 | | -66.4 |
| 0110.4 | 1600 | 228 | 011 | +007 | +008 | | -76.9 |
| 0088.0 | 1722 | 290 | 004 | -001 | +004 | | -84.4 |
| 0092.4 | 1800 | 123 | 006 | +003 | +005 | | -82.5 |
| 0065.5 | 2000 | 283 | 007 | -001 | +007 | | -71.3 |
| 0040.2 | 2200 | 095 | 012 | +001 | -012 | | -61.2 |
| 0029.4 | 2400 | 095 | 027 | +002 | -027 | | -54.5 |
| 0021.6 | 2600 | 092 | 034 | +001 | -034 | | -48.4 |
| 0016.1 | 2800 | 086 | 035 | -003 | -035 | | -43.8 |
| 0011.9 | 3000 | 082 | 039 | -006 | -039 | | -42.9 |
| 0009.0 | 3200 | 079 | 024 | -004 | -024 | | -29.0 |
| 0006.8 | 3400 | 239 | 012 | +006 | +010 | | -30.4 |
| 0006.0 | 3472 | 230 | 018 | +011 | +014 | | -25.5 |

# TECHNICAL DATA

MOTOR TYPE..JUNI

PAYLOAD TYPE..CHAFF

FUSE TYPE..ELECTRICALLY ACTIVATED PYROTECHNIC

LAUNCHER SETTING..080° AZIMUTH 79.0° ELEVATION

RADAR TYPE..MPS-19 APOGEE 61.950 METERS

WIND SENSOR TYPE..0.005 INCH S BAND COPPER CHAFF SENSOR FALL-RATE..NOMINAL

TEMPERATURE SENSOR TYPE..N.A.

GROUND EQUIPMENT TYPE..N.A.

REMARKS..NONE

MOTOR PERFORMANCE..GOOD

PAYLOAD PERFORMANCE..GOOD

ACTUAL FUSE DELAY TIME..100 SEC

RADIOSONDE MANUFACTURER..BENDIX

TEMPERATURE ELEMENT TYPE..ROD THERMISTOR

PRESSURE SENSOR TYPE..ANEROID

GROUND EQUIPMENT TYPE..GMD-1A

RADIOSONDE TYPE..1680 MHZ

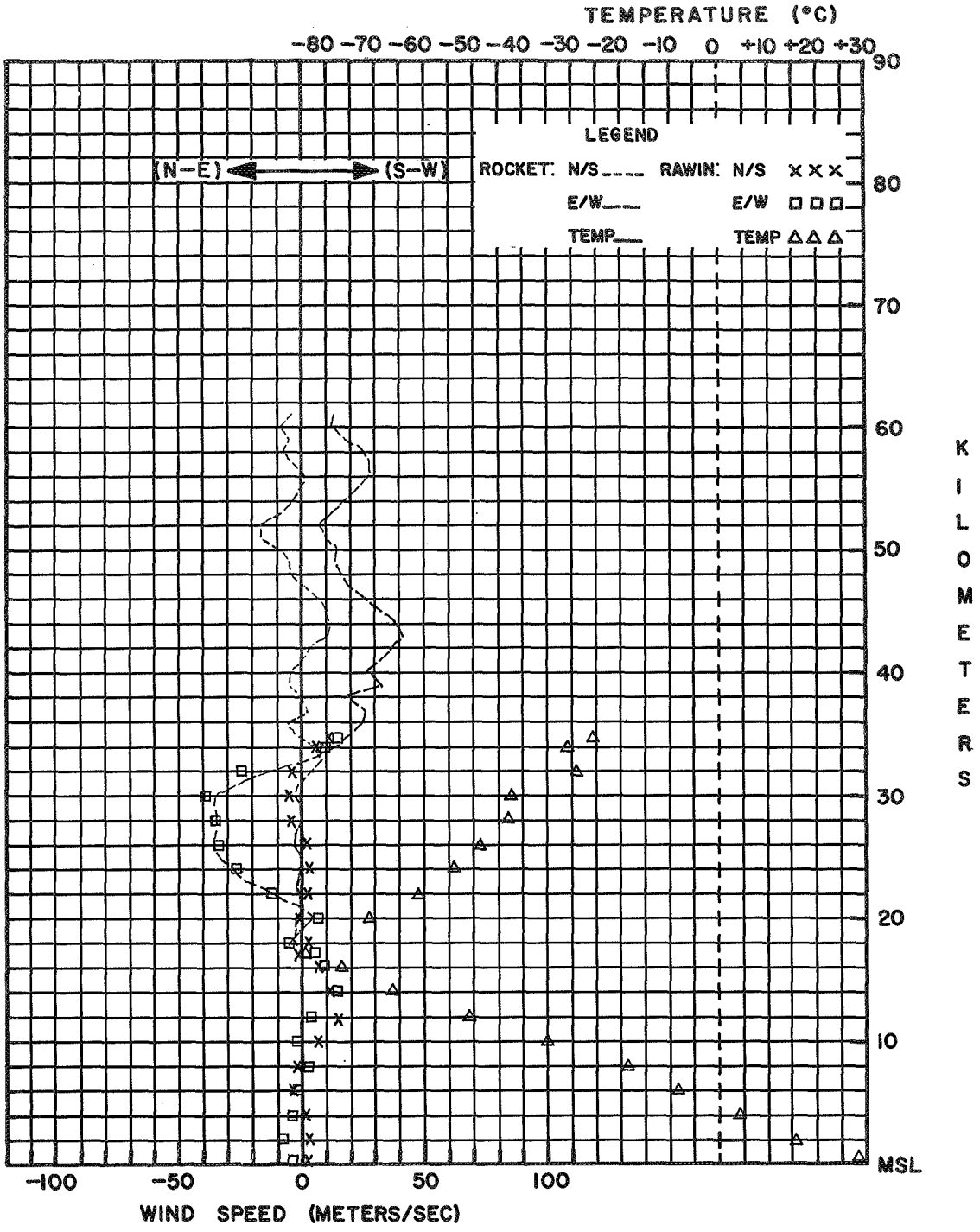
BALLOON TYPE..NEOPRENE

BALLOON SIZE..1.200 GRAMS

WIND AT ROCKET LAUNCH..6M 130DEG/04MPS 9M 150DEG/05MPS 16M 150DEG/05MPS
25M 150DEG/05MPS 40M 140DEG/06MPS

BALLISTIC WIND..UNKNOWN AZIMUTH UNKNOWN MPS

THERMODYNAMIC BASE DATA..PRESSURE N.A. MBS
TEMPERATURE N.A. C
ALTITUDE N.A. METERS




STATION: (CNAE) Natal, Brazil
DATE: 1 May; 1968

ROCKET TIME: 1200 LST 1500 GCT
ROCKET MOTOR TYPE: Judi

PAYLOAD TYPE: Chaff
RADIOSONDE TYPE: 1680 MHZ

# ROCKET OBSERVATION DATA

RP STATION NAME

72402 (NASA) WALLOPS ISLAND, VIRGINIA

LAT. 37°51' N LONG. 75°29' W

ROCKET LAUNCH

DATE MAY 2, 1968 TIME 1459 Z

RAWINSONDE RELEASE

DATE MAY 2, 1968 TIME 1115 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 083 | 55 | 243 | 005 | +002 | +005 |
| 074 | 54 | 198 | 008 | +007 | +002 |
| 069 | 53 | 163 | 009 | +008 | -003 |
| 067 | 52 | 150 | 008 | +007 | -004 |
| 069 | 51 | 155 | 012 | +011 | -005 |
| 067 | 50 | 114 | 015 | +006 | -014 |
| 064 | 49 | 106 | 010 | +003 | -009 |
| 061 | 48 | 132 | 005 | +003 | -003 |
| 057 | 47 | 098 | 005 | +001 | -005 |
| 055 | 46 | 157 | 003 | +003 | -001 |
| 054 | 45 | 202 | 006 | +006 | +002 |
| 055 | 44 | 245 | 007 | +002 | +006 |
| 050 | 43 | 247 | 012 | +005 | +011 |
| 044 | 42 | 235 | 011 | +007 | +009 |
| 038 | 41 | 212 | 010 | +008 | +005 |
| 036 | 40 | 198 | 008 | +008 | +003 |
| 039 | 39 | 264 | 005 | +001 | +005 |
| 035 | 38 | 267 | 008 | +000 | +008 |
| 031 | 37 | 261 | 007 | +001 | +007 |
| 029 | 36 | 273 | 011 | -001 | +011 |
| 027 | 35 | 271 | 015 | +000 | +015 |
| 025 | 34 | 264 | 013 | +001 | +013 |
| 024 | 33 | 265 | 012 | +001 | +012 |
| 022 | 32 | 268 | 012 | +000 | +012 |
| 020 | 31 | 267 | 012 | +001 | +012 |
| 018 | 30 | 263 | 012 | +001 | +012 |
| 017 | 29 | 252 | 010 | +003 | +009 |
| 015 | 28 | 252 | 009 | +003 | +008 |
| 014 | 27 | 275 | 008 | -001 | +008 |
| 013 | 26 | 279 | 006 | -001 | +006 |
| 013 | 25 | 266 | 006 | +000 | +006 |
| 011 | 24 | 247 | 006 | +002 | +006 |
| 010 | 23 | 218 | 006 | +005 | +004 |
| 010 | 22 | 229 | 004 | +003 | +003 |
| 010 | 21 | 255 | 004 | +001 | +004 |
| 008 | 20 | 252 | 005 | +002 | +005 |
| 007 | 19 | 278 | 004 | -001 | +004 |
| 009 | 18 | 319 | 006 | -004 | +004 |

ROCKET THERMODYNAMICS

| ALT TENS OF METERS | TEMP DEG C | PRESSURE MB | DENSITY G M $^{-3}$ | WIND POLAR DEG | MPS | COMPONENTS MPS N-S | E-W |
|---|---|---|---|---|---|---|---|
| 3316 | -35.7 | 07.752 | 11.373 | 265 | 012 | +001 | +012 |
| 3176 | -39.4 | 09.475 | 14.121 | 268 | 012 | +000 | +012 |
| 2969 | -47.6 | 12.851 | 19.850 | 260 | 011 | +002 | +011 |
| 2950 | -46.5 | 13.222 | 20.323 | 257 | 011 | +003 | +011 |
| 2902 | -47.4 | 14.206 | 21.923 | 252 | 010 | +003 | +009 |
| 2825 | -46.3 | 15.939 | 24.478 | 252 | 009 | +003 | +008 |
| 2731 | -49.4 | 18.356 | 28.580 | 268 | 008 | +000 | +008 |
| 2713 | -48.1 | 18.861 | 29.197 | 273 | 008 | +000 | +008 |
| 2606 | -50.9 | 22.178 | 34.765 | 279 | 006 | -001 | +006 |
| 2524 | -48.8 | 25.117 | 39.003 | 269 | 006 | +000 | +006 |
| 2481 | -51.5 | 26.817 | 42.150 | 262 | 006 | +001 | +006 |
| 2438 | -48.6 | 28.626 | 44.413 | 254 | 006 | +002 | +006 |
| 2341 | -50.0 | 33.153 | 51.759 | 229 | 006 | +004 | +004 |
| 2329 | -49.0 | 33.762 | 52.474 | 227 | 006 | +004 | +004 |
| 2286 | -51.3 | 36.042 | 56.599 | 219 | 006 | +004 | +004 |
| 2192 | -49.6 | 41.586 | 64.808 | 231 | 004 | +003 | +003 |
| 2103 | -52.9 | 47.645 | 75.363 | 255 | 004 | +001 | +004 |
| 2094 | -52.2 | 48.309 | 76.171 | 255 | 004 | +001 | +004 |
| 2060 | -53.9 | 50.907 | 80.890 | 254 | 005 | +001 | +004 |
| 2042 | -52.4 | 52.340 | 82.602 | 253 | 005 | +001 | +004 |
| 2018 | -55.6 | 54.321 | 86.989 | 253 | 005 | +002 | +005 |
| 2000 | -54.9 | 55.865 | 89.174 | 252 | 005 | +002 | +005 |
| 1975 | -52.8 | 58.068 | 91.808 | 257 | 005 | +001 | +005 |
| 1893 | -54.4 | | | 281 | 004 | -001 | +004 |
| 1832 | -54.0 | | | 306 | 005 | -003 | +004 |
| 1804 | -50.3 | | | 317 | 006 | -004 | +004 |
| 1768 | -55.4 | | | | | | |

CONSTANT PRESSURE SURFACES (GEOPOTENTIAL HEIGHT)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2065 | -53.3 | 50.000 | 79.234 | 254 | 005 | +001 | +004 |
| 2398 | -49.0 | 30.000 | 46.629 | 248 | 006 | +002 | +006 |
| 2663 | -43.2 | 20.000 | 31.112 | 276 | 007 | -001 | +007 |
| 3123 | -40.7 | 10.000 | 14.989 | 267 | 012 | +001 | +012 |

RAWINSONDE

| PRESSURE MB | ALT TENS OF METERS | WIND POLAR DEG | MPS | COMPONENTS MPS N-S | E-W | RH % | TEMP DEG C |
|---|---|---|---|---|---|---|---|
| 1011.8 | 0000 | 360 | 002 | -002 | +000 | 86 | +08.3 |
| 0793.0 | 0200 | 328 | 015 | -013 | +008 | 21 | +00.5 |
| 0613.0 | 0400 | 317 | 028 | -021 | +019 | 20 | -10.2 |
| 0471.0 | 0600 | 314 | 039 | -027 | +028 | 23 | -21.6 |
| 0357.0 | 0800 | 307 | 039 | -023 | +031 | 24 | -39.1 |
| 0265.0 | 1000 | 293 | 047 | -018 | +043 | | -52.4 |
| 0225.0 | 1104 | 290 | 050 | -018 | +047 | | -57.9 |
| 0194.0 | 1200 | 292 | 040 | -015 | +037 | | -57.6 |
| 0142.6 | 1400 | 293 | 025 | -010 | +023 | | +54.3 |
| 0103.8 | 1600 | 282 | 018 | -004 | +018 | | -55.9 |
| 0075.9 | 1800 | 299 | 016 | -008 | +014 | | -56.8 |
| 0055.3 | 2000 | 277 | 005 | -001 | +005 | | -52.3 |
| 0040.8 | 2200 | 247 | 004 | +002 | +004 | | -51.8 |
| 0030.3 | 2400 | 257 | 005 | +001 | +005 | | -51.4 |
| 0022.3 | 2600 | 264 | 007 | +001 | +007 | | -50.8 |
| 0016.4 | 2800 | 268 | 012 | +000 | +012 | | -47.9 |
| 0012.3 | 3000 | 231 | 006 | +004 | +005 | | -46.2 |
| 0009.1 | 3200 | 289 | 014 | -005 | +013 | | -42.3 |
| 0007.6 | 3324 | 312 | 016 | -011 | +012 | | -37.8 |
| 0006.8 | 3400 | | | | | | -34.7 |
| 0006.4 | 3442 | | | | | | -33.4 |

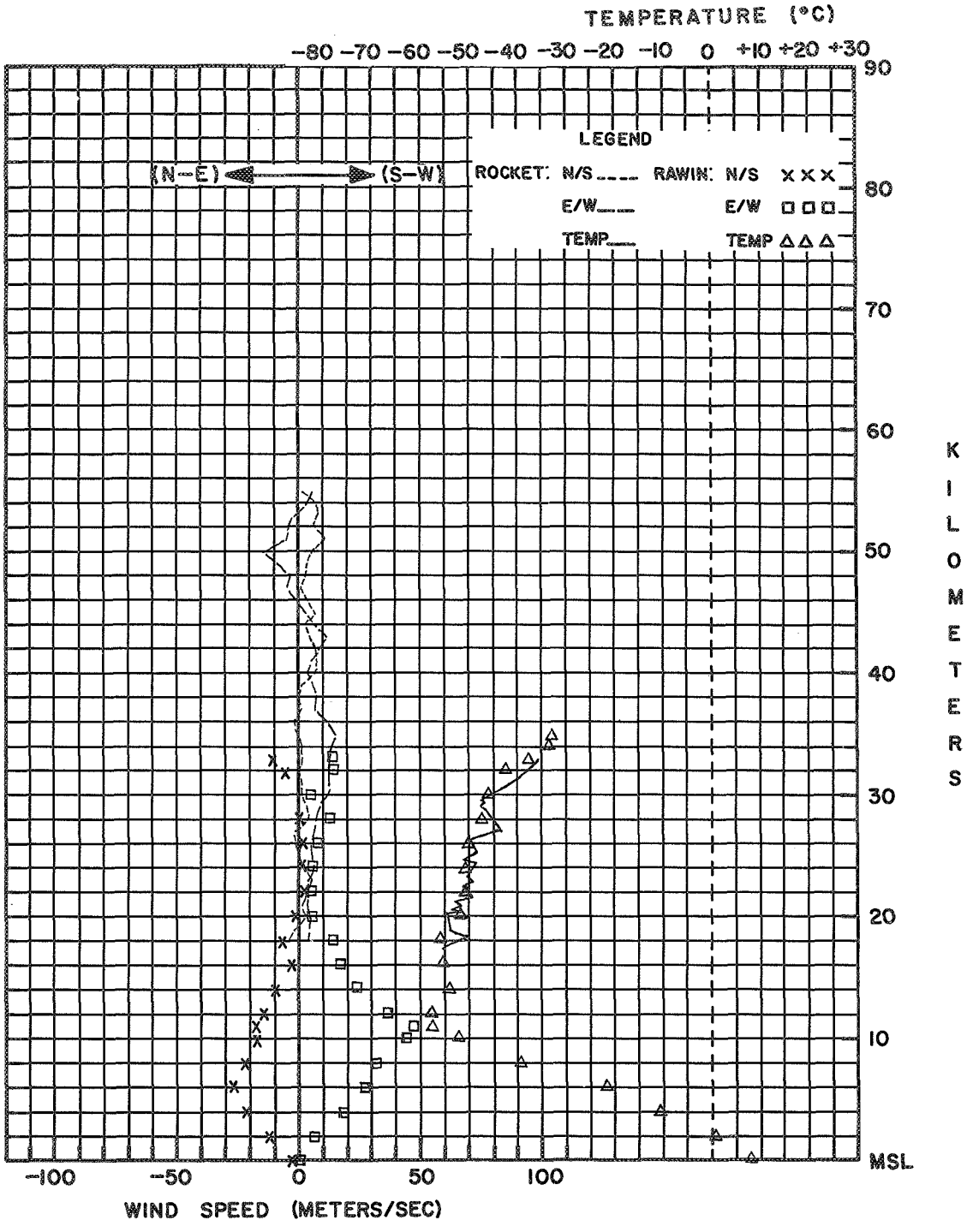
# TECHNICAL DATA

MOTOR TYPE..JUNI
PAYLOAD TYPE..WOX-1A
FUSE TYPE..ELECTRICALLY ACTIVATED PYROTECHNIC
LAUNCHER SETTING..130° AZIMUTH 80.0° ELEVATION
RADAR TYPE..SPANDAR APOGEE 60,440 METERS
WIND SENSOR TYPE..6 FT. SQUARE PARACHUTE
TEMPERATURE SENSOR TYPE..0.014 INCH BEAD THERMISTOR
GROUND EQUIPMENT TYPE..403 MHZ PORTABLE RECEIVER-RECORDER
REMARKS..THIS PAYLOAD WAS A PREPRODUCTION MODEL.
SIGNAL NOT RECEIVED UNTIL PLUS 10 MINUTES 55 SECONDS.

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..FAIR
ACTUAL FUSE DELAY TIME..090 SEC

SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..MOLDED INSULATION CO. RADIOSONDE TYPE..1680 MHZ
TEMPERATURE ELEMENT TYPE..ROD THERMISTOR BALLOON TYPE..NEOPRENE
PRESSURE SENSOR TYPE..ANEROID AND HYPOMETER BALLOON SIZE..1,200 GRAMS
GROUND EQUIPMENT TYPE..GMD-1B
WIND AT ROCKET LAUNCH..SFC, 310DEG/09MPS 15M 260DEG/09MPS 31M 263DEG/09MPS 46M 267DEG/09MPS 61M 277DEG/09MPS 76M 273DEG/09MPS
BALLISTIC WIND.. 277° AZIMUTH 08.8 MPS
THERMODYNAMIC BASE DATA..PRESSURE 103.8 MBS
TEMPERATURE +55.9°C
ALTITUDE 16,000 METERS




STATION: (NASA) Wallops Island, Va. ROCKET TIME: 0959 LST 1459 GCT PAYLOAD TYPE: WOX-1A

DATE: 2 May, 1968 ROCKET MOTOR TYPE: Judi RADIOSONDE TYPE: 1680 MHz

# ROCKET OBSERVATION DATA

RP STATION NAME

72402 (NASA) WALLOPS ISLAND, VIRGINIA

LAT. 37°51' N LONG. 75°29' W

ROCKET LAUNCH

DATE MAY 8, 1968 TIME 1459 Z

RAWINSONDE RELEASE

DATE MAY 8, 1968 TIME 1150 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | WIND COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 083 | 54 | 121 | 024 | +013 | -021 |
| 087 | 53 | 115 | 021 | +009 | -019 |
| 080 | 52 | 115 | 027 | +012 | -025 |
| 077 | 51 | 108 | 024 | +007 | -023 |
| 069 | 50 | 086 | 017 | -001 | -017 |
| 064 | 49 | 099 | 010 | +002 | -010 |
| 064 | 48 | 154 | 007 | +006 | -003 |
| 059 | 47 | 119 | 008 | +004 | -007 |
| 053 | 46 | 105 | 005 | +001 | -005 |
| 050 | 45 | 175 | 007 | +007 | -001 |
| 048 | 44 | 166 | 012 | +012 | -003 |
| 044 | 43 | 128 | 015 | +010 | -012 |
| 042 | 42 | 093 | 015 | +001 | -015 |
| 038 | 41 | 044 | 009 | -006 | -006 |
| 034 | 40 | 302 | 004 | -002 | +004 |
| 031 | 39 | 233 | 007 | +004 | +006 |
| 031 | 38 | 213 | 009 | +007 | +005 |
| 030 | 37 | 223 | 010 | +008 | +007 |
| 026 | 36 | 215 | 013 | +011 | +008 |
| 024 | 35 | 191 | 011 | +011 | +002 |
| 023 | 34 | 221 | 004 | +003 | +002 |
| 021 | 33 | 253 | 009 | +003 | +008 |
| 019 | 32 | 224 | 012 | +009 | +008 |
| 018 | 31 | 223 | 012 | +009 | +008 |
| 016 | 30 | 237 | 009 | +005 | +007 |
| 014 | 29 | 257 | 006 | +001 | +006 |
| 013 | 28 | 249 | 005 | +002 | +004 |
| 012 | 27 | 214 | 004 | +003 | +002 |
| 010 | 26 | 283 | 003 | -001 | +003 |
| 010 | 25 | 276 | 005 | -001 | +005 |
| 008 | 24 | 256 | 003 | +001 | +003 |
| 007 | 23 | 337 | 001 | -001 | +000 |
| 007 | 22 | 346 | 004 | -004 | +001 |
| 006 | 21 | 290 | 003 | -001 | +002 |
| 006 | 20 | 249 | 002 | +001 | +002 |
| 005 | 19 | 304 | 004 | -002 | +003 |
| 005 | 18 | 303 | 008 | -004 | +006 |

ROCKET THERMODYNAMICS

| ALT TENS OF METERS | TEMP DEG C | PRESSURE MB | DENSITY G M -3 | WIND POLAR DEG | WIND POLAR MPS | WIND COMPONENTS MPS N-S | WIND COMPONENTS MPS E-W |
|---|---|---|---|---|---|---|---|
| 5587 | -01.5 | 00.444 | 00.569 | | | | |
| 5447 | -01.5 | 00.527 | 00.676 | | | | |
| 5322 | +03.6 | 00.615 | 00.774 | 116 | 021 | +010 | -019 |
| 4895 | +03.4 | 01.032 | 01.300 | 099 | 010 | +002 | +010 |
| 4675 | +00.6 | 01.351 | 01.727 | 140 | 007 | +005 | +005 |
| 4490 | +00.4 | 01.697 | 02.162 | 174 | 007 | +007 | -001 |
| 4289 | -11.6 | 02.186 | 02.912 | 124 | 015 | +009 | -013 |
| 4188 | -09.8 | 02.486 | 03.292 | 088 | 014 | -001 | -014 |
| 4087 | -16.7 | 02.837 | 03.854 | 034 | 008 | -007 | +005 |
| 4042 | -16.9 | 03.010 | 04.090 | 341 | 005 | -005 | +002 |
| 3900 | -19.3 | 03.631 | 04.984 | 233 | 007 | +004 | +006 |
| 3755 | -18.6 | 04.402 | 06.024 | 217 | 009 | +007 | +006 |
| 3563 | -25.9 | 05.699 | 08.030 | 205 | 012 | +011 | +005 |
| 3500 | -29.3 | 06.215 | 08.879 | 191 | 011 | +011 | +002 |
| 3417 | -28.1 | 06.970 | 09.909 | 210 | 006 | +005 | +003 |
| 3331 | -33.4 | 07.857 | 11.417 | 244 | 007 | +003 | +006 |
| 3283 | -31.6 | 08.405 | 12.122 | 247 | 009 | +004 | +008 |
| 3243 | -32.9 | 08.890 | 12.891 | 237 | 010 | +006 | +009 |
| 3176 | -32.8 | 09.766 | 14.109 | 224 | 012 | +009 | +008 |
| 3109 | -35.5 | 10.735 | 15.737 | 223 | 012 | +009 | +008 |
| 3045 | -35.5 | 11.759 | 17.238 | 230 | 010 | +007 | +008 |
| 2993 | -40.6 | 12.672 | 18.984 | 239 | 008 | +004 | +007 |
| 2707 | -48.5 | 19.351 | 30.009 | 219 | 004 | +003 | +002 |
| 2615 | -48.5 | 22.229 | 34.472 | 270 | 003 | +000 | +003 |
| 2573 | -54.2 | 23.701 | 37.712 | 281 | 004 | -001 | +004 |
| 2496 | -51.5 | 26.679 | 41.934 | 276 | 005 | -001 | +005 |
| 2414 | -54.2 | 30.265 | 48.156 | 259 | 004 | +001 | +004 |
| 2286 | -51.6 | 36.857 | 57.957 | 338 | 002 | -001 | +001 |
| 2233 | -54.2 | 54.418 | 86.588 | 262 | 002 | +000 | +002 |
| 2000 | -56.2 | 57.287 | 91.992 | 249 | 002 | +001 | +002 |
| 1884 | -50.4 | | | 304 | 005 | -003 | +004 |
| 1722 | -59.9 | | | | | | |

CONSTANT PRESSURE SURFACES (GEOPOTENTIAL HEIGHT)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2088 | -53.7 | 50.000 | 79.378 | 286 | 003 | -001 | +002 |
| 2419 | -54.8 | 30.000 | 47.691 | 260 | 004 | +001 | +004 |
| 2685 | -48.5 | 20.000 | 31.016 | 228 | 004 | +002 | +003 |
| 3156 | -32.8 | 10.000 | 14.498 | 223 | 012 | +009 | +008 |
| 3414 | -28.3 | 07.000 | 09.958 | 218 | 005 | +004 | +003 |
| 3660 | -22.2 | 05.000 | 06.940 | 220 | 011 | +009 | +007 |
| 4045 | -16.8 | 03.000 | 04.077 | 346 | 006 | -006 | +001 |
| 4358 | -07.4 | 02.000 | 02.622 | 150 | 013 | +012 | -007 |
| 4920 | +03.4 | 01.000 | 01.260 | 096 | 011 | +001 | -011 |

RAWINSONDE

| PRESSURE MB | ALT TENS OF METERS | WIND POLAR DEG | WIND POLAR MPS | WIND COMPONENTS MPS N-S | WIND COMPONENTS MPS E-W | RH % | TEMP DEG C |
|---|---|---|---|---|---|---|---|
| 1035.0 | 0000 | 290 | 004 | -001 | +004 | 87 | +12.2 |
| 0823.0 | 0200 | 337 | 002 | -002 | +001 | 27 | +05.5 |
| 0634.0 | 0400 | 327 | 009 | -007 | +005 | 35 | +05.6 |
| 0490.0 | 0600 | 310 | 014 | -009 | +011 | 49 | -18.4 |
| 0372.0 | 0800 | 291 | 010 | -003 | +009 | 50 | -32.7 |
| 0277.0 | 1000 | 294 | 013 | -005 | +012 | | -46.7 |
| 0203.0 | 1200 | 299 | 017 | -008 | +015 | | -61.6 |
| 0181.0 | 1273 | 290 | 018 | -006 | +017 | | -66.4 |
| 0147.0 | 1400 | 294 | 015 | -006 | +014 | | -64.1 |
| 0106.0 | 1600 | 294 | 016 | -007 | +015 | | -60.4 |
| 0078.0 | 1800 | 299 | 006 | -003 | +005 | | -58.4 |
| 0056.3 | 2000 | 288 | 004 | -001 | +004 | | -56.4 |
| 0041.3 | 2200 | 322 | 003 | -002 | +002 | | -54.6 |
| 0030.4 | 2400 | 313 | 004 | -003 | +003 | | -52.7 |
| 0022.5 | 2600 | 268 | 004 | +000 | +004 | | -50.1 |
| 0016.6 | 2800 | 257 | 005 | +001 | +005 | | -44.7 |
| 0012.4 | 3000 | 227 | 004 | +003 | +003 | | -39.5 |
| 0008.8 | 3200 | 223 | 010 | +007 | +007 | | -34.4 |
| 0007.0 | 3400 | 253 | 008 | +002 | +008 | | -28.9 |
| 0005.6 | 3570 | 246 | 006 | +003 | +006 | | -29.0 |
| 0005.3 | 3600 | | | | | | -29.2 |
| 0005.3 | 3605 | | | | | | -29.3 |

# TECHNICAL DATA

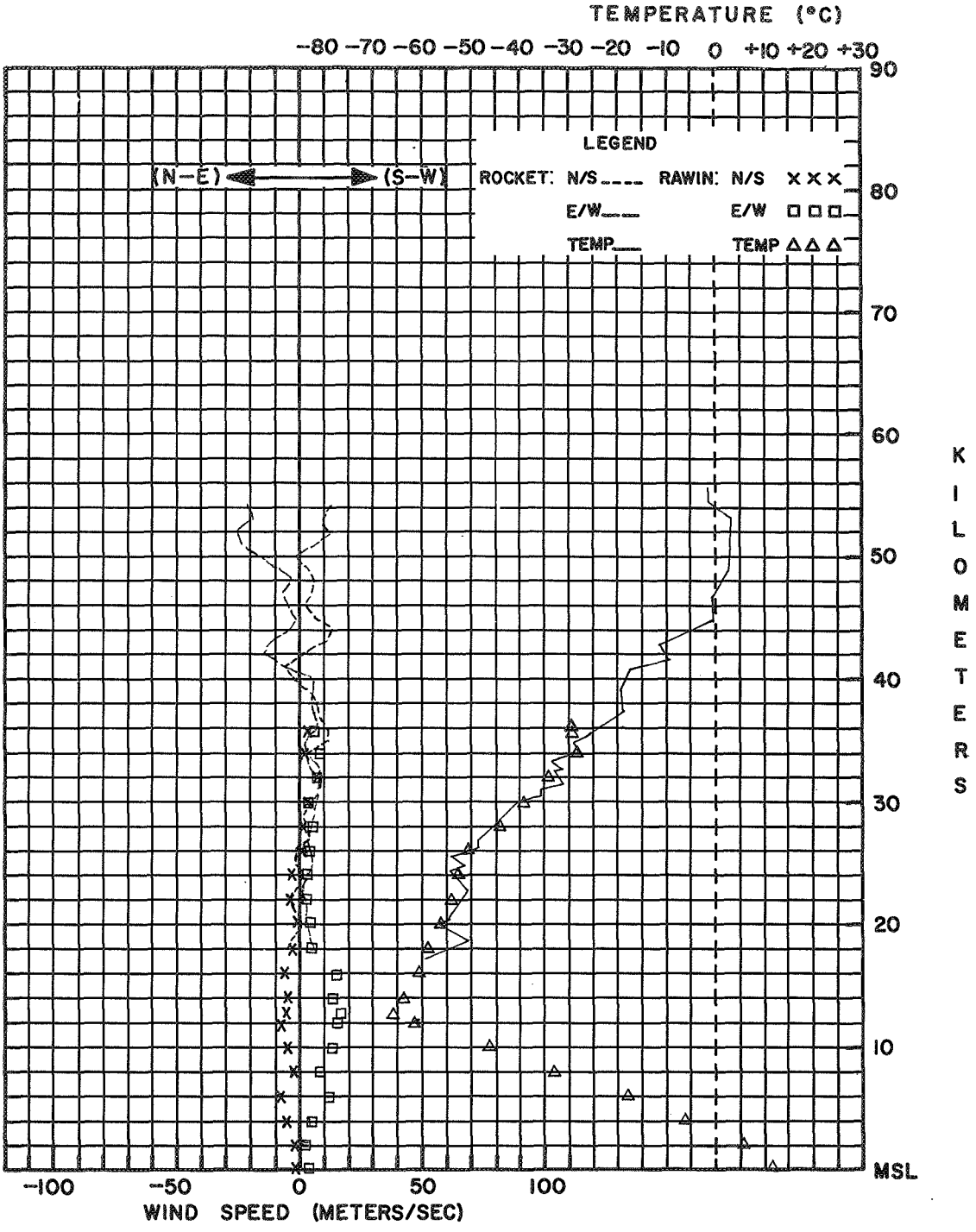
MOTOR TYPE..ARCAS
PAYLOAD TYPE..ARCASONDE-1A
FUSE TYPE..GAS GENERATED SEPARATION DEVICE
LAUNCHER SETTING..122° AZIMUTH 78.5° ELEVATION
RADAR TYPE..SPANDAR APOGEE 60,505 METERS
WIND SENSOR TYPE..15 FT. DIAMETER PARACHUTE
TEMPERATURE SENSOR TYPE..0.010 INCH BEAD THERMISTOR
GROUND EQUIPMENT TYPE..GMD-1B
REMARKS..NONE

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..137 SEC

SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..MOLDED INSULATION CO.
TEMPERATURE ELEMENT TYPE..ROD THERMISTOR
PRESSURE SENSOR TYPE..ANEROID AND HYPSOMETER
GROUND EQUIPMENT TYPE..GMD-1B
WIND AT ROCKET LAUNCH..SFC. 290DEG/03MPS 1SM 259DEG/02MPS 3.1M 259DEG/02MPS
4SM 259DEG/02MPS 6.1M 274DEG/01MPS 7SM 270DEG/02MPS
BALLISTIC WIND.. 287° AZIMUTH 03.6 MPS
THERMODYNAMIC BASE DATA..PRESSURE 106.0 MBS
TEMPERATURE -60.4°C
ALTITUDE 16,000 METERS

RADIOSONDE TYPE..1680 MHZ
BALLOON TYPE..NEOPRENE
BALLOON SIZE..1,200 GRAMS




STATION: (NASA) Wallops Island, Va. ROCKET TIME: 0959 LST 1459 GCT PAYLOAD TYPE: Arcasonde 1A

DATE: 8 May, 1968 ROCKET MOTOR TYPE: Arcas RADIOSONDE TYPE: 1680 MHZ

# ROCKET OBSERVATION DATA

RP STATION NAME

82599 (CNAE) NATAL, BRAZIL

LAT. 05°55'S LONG. 35°10'W

ROCKET LAUNCH

DATE MAY 15, 1968 TIME 1500 Z

RAWINSONDE RELEASE

DATE MAY 15, 1968 TIME 1203 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 052 | 51 | 277 | 035 | -004 | +035 |
| 065 | 50 | 295 | 032 | -014 | +029 |
| 062 | 49 | 269 | 033 | +000 | +032 |
| 061 | 48 | 270 | 033 | +000 | +033 |
| 061 | 47 | 260 | 032 | +005 | +032 |
| 059 | 46 | 258 | 030 | +006 | +029 |
| 057 | 45 | 256 | 030 | +007 | +029 |
| 054 | 44 | 264 | 030 | +003 | +030 |
| 048 | 43 | 269 | 033 | +000 | +033 |
| 045 | 42 | 270 | 029 | +000 | +029 |
| 045 | 41 | 276 | 022 | -002 | +022 |
| 040 | 40 | 263 | 025 | +003 | +025 |
| 037 | 39 | 262 | 029 | +004 | +029 |
| 036 | 38 | 264 | 033 | +003 | +033 |
| 033 | 37 | 261 | 033 | +005 | +033 |
| 030 | 36 | 264 | 032 | +003 | +032 |
| 027 | 35 | 259 | 030 | +006 | +030 |
| 025 | 34 | 251 | 027 | +009 | +026 |
| 024 | 33 | 250 | 021 | +007 | +020 |
| 023 | 32 | 263 | 015 | +002 | +015 |
| 021 | 31 | 032 | 005 | -004 | -003 |
| 020 | 30 | 084 | 025 | -003 | -025 |
| 018 | 29 | 089 | 032 | +000 | -032 |
| 016 | 28 | 084 | 031 | -003 | -031 |
| 016 | 27 | 084 | 029 | -003 | -029 |
| 013 | 26 | 084 | 027 | -003 | -027 |
| 013 | 25 | 087 | 024 | -001 | -024 |
| 012 | 24 | 085 | 019 | -002 | -019 |
| 011 | 23 | 085 | 015 | -001 | -015 |
| 010 | 22 | 097 | 007 | +001 | -007 |
| 008 | 21 | 324 | 007 | -006 | +004 |
| 007 | 20 | 320 | 007 | -005 | +005 |
| 006 | 19 | 198 | 004 | +004 | +001 |
| 005 | 18 | 238 | 010 | +005 | +009 |

RAWINSONDE

| PRESSURE | ALT TENS OF METERS | WIND POLAR | | COMPONENTS MPS | | RH | TEMP |
|---|---|---|---|---|---|---|---|
| MB | | DEG | MPS | N-S | E-W | % | DEG C |
| 1006.6 | 0004 | 140 | 006 | +005 | -004 | 73 | +28.2 |
| 0801.0 | 0200 | 117 | 007 | +003 | -006 | 63 | +15.7 |
| 0630.0 | 0400 | 083 | 003 | +000 | -003 | 36 | +04.8 |
| 0493.0 | 0600 | 041 | 003 | -002 | -002 | 61 | -07.2 |
| 0379.0 | 0800 | 169 | 014 | +012 | -007 | | -18.9 |
| 0288.0 | 1000 | 176 | 003 | +003 | +000 | | -35.0 |
| 0221.0 | 1200 | 029 | 014 | -012 | -007 | | -49.8 |
| 0155.3 | 1400 | 247 | 016 | +001 | +016 | | -67.2 |
| 0110.5 | 1600 | 277 | 013 | +001 | +013 | | -78.2 |
| 0093.0 | 1696 | 335 | 007 | -006 | +003 | | -81.3 |
| 0078.4 | 1800 | 263 | 007 | +001 | +007 | | -75.1 |
| 0055.9 | 2000 | 325 | 006 | -005 | +004 | | -67.6 |
| 0040.3 | 2200 | 080 | 011 | -002 | -011 | | -63.4 |
| 0029.4 | 2400 | 074 | 017 | -005 | -016 | | -56.7 |
| 0021.5 | 2600 | 090 | 027 | +000 | -027 | | -49.3 |
| 0015.9 | 2800 | 083 | 030 | -003 | -030 | | -44.5 |
| 0011.9 | 3000 | 042 | 031 | +004 | -031 | | -40.8 |
| 0008.5 | 3200 | 260 | 011 | +002 | +011 | | -34.8 |
| 0006.8 | 3400 | 263 | 028 | +003 | +028 | | -29.9 |
| 0005.0 | 3600 | 257 | 030 | +007 | +029 | | -23.2 |

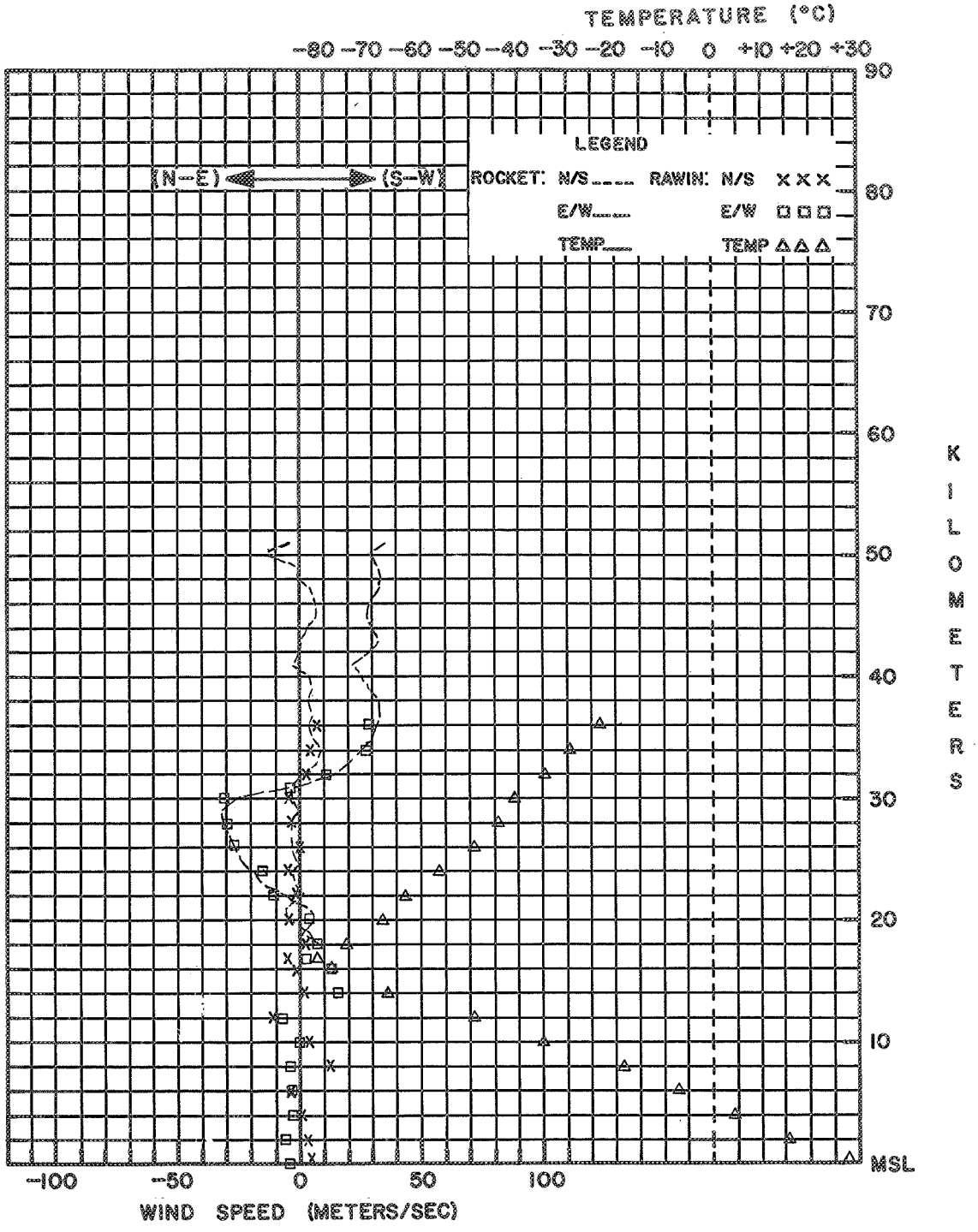
# TECHNICAL DATA

MOTOR TYPE..JUNI
PAYLOAD TYPE..WOX-1A
FUSE TYPE..ELECTRICALLY ACTIVATED PYROTECHNIC
LAUNCHER SETTING..050° AZIMUTH 78.0° ELEVATION
RADAR TYPE..MPS-19 APOGEE 51,816 METERS
WIND SENSOR TYPE..6 FT. SQUARE PARACHUTE SENSOR FALL-RATE..NOMINAL
TEMPERATURE SENSOR TYPE..0.014 INCH BEAD THERMISTOR
GROUND EQUIPMENT TYPE..403 MHZ PORTABLE RECEIVER-RECORDER
REMARKS..TEMPERATURE DATA ASSUMED NOT APPLICABLE DUE TO EXCESSIVE DYNAMIC HEATING OF PAYLOAD.

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..POOR
ACTUAL FUSE DELAY TIME..090 SEC

RADIOSONDE MANUFACTURER..BENDIX
TEMPERATURE ELEMENT TYPE..R00 THERMISTOR
PRESSURE SENSOR TYPE..ANEROID
GROUND EQUIPMENT TYPE..GMD-1A
WIND AT ROCKET LAUNCH..6M 140DEG/04MPS 9M 150DEG/04MPS 16M 130DEG/05MPS
25M 130DEG/06MPS 40M 130DEG/07MPS
BALLISTIC WIND..UNKNOWN AZIMUTH UNKNOWN MPS
THERMODYNAMIC BASE DATA..PRESSURE N.A. MHS
TEMPERATURE N.A. C
ALTITUDE N.A. METERS

RADIOSONDE TYPE..1680 MHZ
BALLOON TYPE..NEOPRENE
BALLOON SIZE..1,200 GRAMS




STATION: (CNAE) Natal, Brazil
DATE: 15 May, 1968

ROCKET TIME: 1200 LST 1500 GCT
ROCKET MOTOR TYPE: Judi

PAYLOAD TYPE: WOX-1A
RADIOSONDE TYPE: 1680 MHZ

# ROCKET OBSERVATION DATA

RP STATION NAME

72402 (NASA) WALLOPS ISLAND, VIRGINIA

LAT. 37°51' N LONG. 75°29' W

ROCKET LAUNCH

DATE MAY 15, 1968 TIME 1712 Z

RAWINSONDE RELEASE

DATE MAY 15, 1968 TIME 2315 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 087 | 54 | 110 | 008 | +003 | -008 |
| 080 | 53 | 112 | 011 | +004 | -010 |
| 077 | 52 | 115 | 016 | +007 | -015 |
| 074 | 51 | 117 | 023 | +010 | -020 |
| 067 | 50 | 106 | 023 | +006 | -022 |
| 062 | 49 | 095 | 020 | +002 | -020 |
| 062 | 48 | 094 | 020 | +002 | -019 |
| 055 | 47 | 080 | 015 | -003 | -015 |
| 050 | 46 | 084 | 012 | -001 | -012 |
| 051 | 45 | 111 | 015 | +005 | -014 |
| 046 | 44 | 106 | 013 | +004 | -012 |
| 042 | 43 | 090 | 012 | +000 | -012 |
| 041 | 42 | 093 | 009 | +001 | -009 |
| 040 | 41 | 159 | 001 | +001 | +000 |
| 036 | 40 | 242 | 006 | +003 | +005 |
| 033 | 39 | 197 | 008 | +008 | +002 |
| 031 | 38 | 171 | 008 | +008 | -001 |
| 027 | 37 | 172 | 001 | +001 | +000 |
| 025 | 36 | 270 | 003 | +000 | +003 |
| 024 | 35 | 287 | 005 | -002 | +005 |
| 022 | 34 | 304 | 008 | -005 | +007 |
| 022 | 33 | 294 | 008 | -002 | +008 |
| 019 | 32 | 244 | 006 | +003 | +006 |
| 017 | 31 | 231 | 006 | +004 | +005 |
| 015 | 30 | 266 | 005 | +000 | +005 |
| 014 | 29 | 261 | 005 | +001 | +005 |
| 013 | 28 | 235 | 006 | +003 | +005 |
| 011 | 27 | 234 | 006 | +004 | +005 |
| 010 | 26 | 244 | 005 | +002 | +005 |
| 009 | 25 | 254 | 003 | +001 | +003 |
| 008 | 24 | 239 | 002 | +001 | +001 |
| 007 | 23 | 353 | 002 | -002 | +000 |
| 006 | 22 | 343 | 003 | -003 | +001 |
| 006 | 21 | 339 | 006 | -005 | +002 |
| 006 | 20 | 330 | 010 | -009 | +005 |
| 005 | 19 | 317 | 012 | -009 | +008 |
| 005 | 18 | 308 | 013 | -008 | +011 |

ROCKET THERMODYNAMICS

| ALT TENS OF METERS | TEMP DEG C | PRESSURE MB | DENSITY G M$^{-3}$ | WIND POLAR DEG | MPS | COMPONENTS MPS N-S | E-W |
|---|---|---|---|---|---|---|---|
| 5627 | +02.4 | 00.440 | 00.556 | | | | |
| 5316 | +00.5 | 00.630 | 00.787 | 112 | 010 | +004 | -010 |
| 5206 | +00.3 | 00.728 | 00.898 | 115 | 016 | +007 | -015 |
| 5054 | +03.5 | 00.874 | 01.095 | 112 | 023 | +008 | -021 |
| 4968 | +05.0 | 00.970 | 01.215 | 102 | 022 | +005 | -022 |
| 4615 | +03.2 | 01.488 | 01.876 | 083 | 013 | -002 | -013 |
| 4481 | -02.6 | 01.755 | 02.256 | 110 | 014 | +005 | -013 |
| 4249 | +02.2 | 02.336 | 02.956 | 091 | 011 | +000 | -011 |
| 4057 | -12.1 | 02.974 | 03.969 | 193 | 003 | +003 | +001 |
| 3798 | -15.2 | 04.164 | 05.624 | 171 | 008 | +008 | -001 |
| 3645 | -24.9 | 05.106 | 07.166 | 230 | 002 | +001 | +002 |
| 3554 | -27.9 | 05.783 | 08.215 | 283 | 004 | -001 | +004 |
| 3414 | -27.6 | 07.012 | 09.949 | 301 | 008 | -004 | +007 |
| 3286 | -33.4 | 08.381 | 12.178 | 278 | 008 | -001 | +008 |
| 3069 | -36.8 | 11.405 | 16.810 | 240 | 006 | +003 | +005 |
| 3002 | -41.0 | 12.563 | 18.853 | 266 | 005 | +000 | +005 |
| 2758 | -40.0 | 17.915 | 26.770 | 235 | 006 | +004 | +005 |
| 2566 | -46.1 | 23.764 | 36.463 | 248 | 005 | +002 | +004 |
| 2350 | -48.0 | 32.844 | 50.825 | 295 | 002 | -001 | +001 |
| 2307 | -51.0 | 35.063 | 55.210 | 344 | 002 | -001 | +000 |
| 2225 | -50.2 | 39.739 | 62.094 | 350 | 003 | -003 | +000 |
| 2176 | -54.4 | 42.844 | 68.233 | 347 | 004 | -004 | +001 |
| 2000 | -55.2 | 56.314 | 90.018 | 330 | 010 | +009 | +005 |
| 1956 | -60.0 | | | 313 | 013 | +009 | +010 |
| 1725 | -61.1 | | | | | | |

CONSTANT PRESSURE SURFACES (GEOPOTENTIAL HEIGHT)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2070 | -54.9 | 50.000 | 79.809 | 333 | 007 | -006 | +003 |
| 2401 | -47.5 | 30.000 | 46.317 | 241 | 004 | +002 | +004 |
| 2671 | -42.4 | 20.000 | 30.196 | 236 | 006 | +003 | +005 |
| 3145 | -35.3 | 10.000 | 14.648 | 239 | 006 | +003 | +005 |
| 3397 | -27.6 | 07.000 | 09.932 | 301 | 008 | -004 | +007 |
| 3639 | -23.9 | 05.000 | 06.989 | 214 | 006 | +005 | +003 |
| 4024 | -12.2 | 03.000 | 04.005 | 199 | 007 | +007 | +002 |
| 4345 | -00.4 | 02.000 | 02.555 | 102 | 013 | +003 | -013 |
| 4904 | +04.9 | 01.000 | 01.253 | 099 | 021 | +003 | -021 |

RAWINSONDE

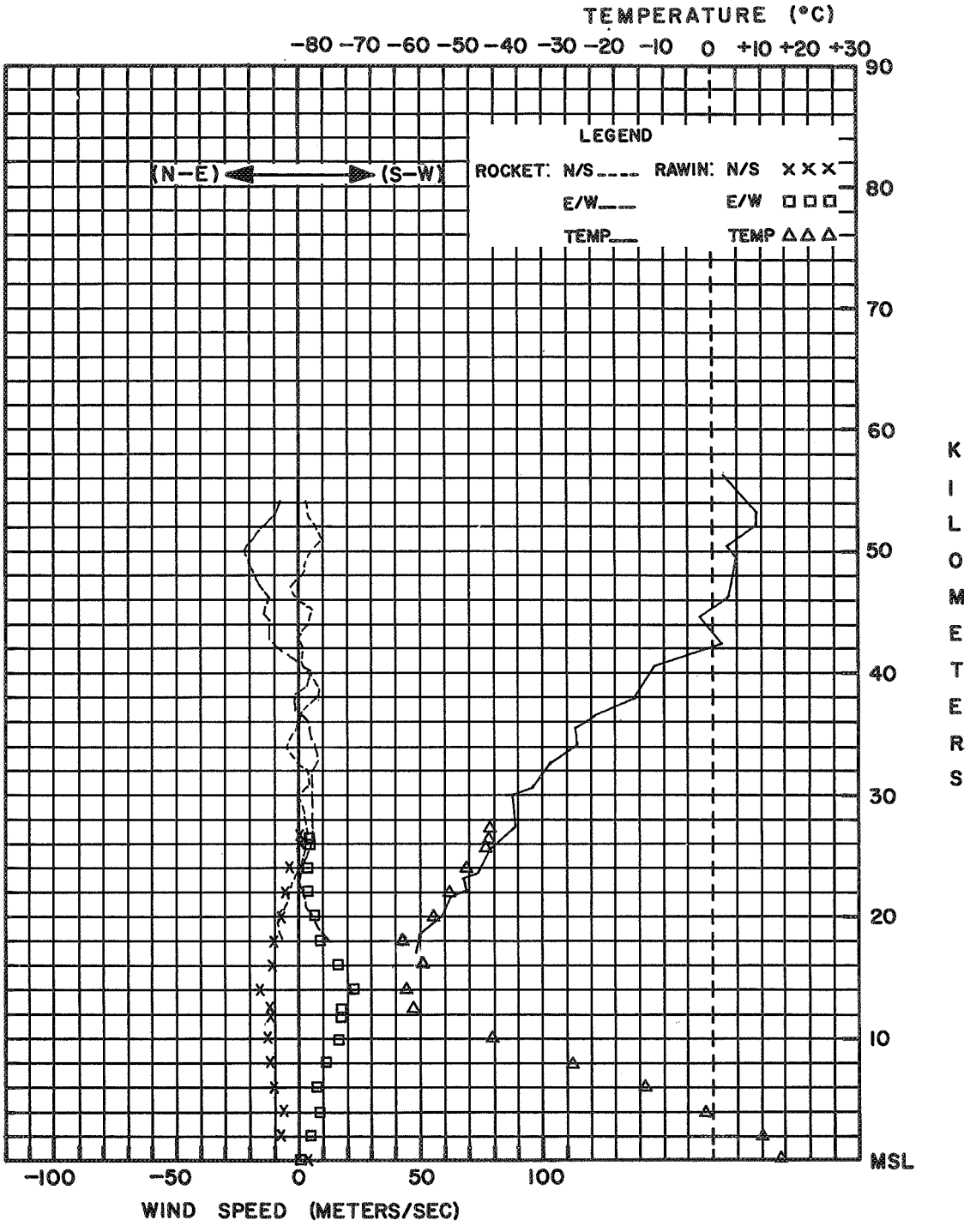
| PRESSURE MB | ALT TENS OF METERS | WIND POLAR DEG | MPS | COMPONENTS MPS N-S | E-W | RH % | TEMP DEG C |
|---|---|---|---|---|---|---|---|
| 1015.0 | 0000 | 200 | 003 | +003 | +001 | 80 | +14.7 |
| 0800.0 | 0200 | 328 | 009 | -008 | +005 | 53 | +10.0 |
| 0626.0 | 0400 | 312 | 012 | -008 | +009 | 33 | -01.9 |
| 0484.0 | 0600 | 320 | 013 | -010 | +008 | 18 | -14.2 |
| 0369.0 | 0800 | 318 | 016 | -012 | +011 | 30 | -29.4 |
| 0278.0 | 1000 | 304 | 022 | -013 | +017 | | -45.6 |
| 0204.0 | 1200 | 304 | 022 | -012 | +018 | | -61.0 |
| 0199.0 | 1214 | 304 | 022 | -012 | +018 | | -61.7 |
| 0147.0 | 1400 | 307 | 027 | -016 | +022 | | -62.7 |
| 0106.3 | 1600 | 304 | 020 | -011 | +017 | | -59.4 |
| 0077.5 | 1800 | 317 | 014 | -010 | +009 | | -63.5 |
| 0056.3 | 2000 | 322 | 010 | -008 | +006 | | -57.1 |
| 0041.3 | 2200 | 331 | 007 | -006 | +004 | | -54.4 |
| 0030.3 | 2400 | 314 | 006 | -004 | +004 | | -50.4 |
| 0022.6 | 2600 | 274 | 004 | +000 | +004 | | -46.8 |
| 0021.2 | 2645 | 272 | 004 | +000 | +004 | | -46.6 |
| 0018.0 | 2749 | | | | | | -46.2 |

# TECHNICAL DATA

MOTOR TYPE..ARCAS
PAYLOAD TYPE..ARCASONDE-1A
FUSE TYPE..GAS GENERATED SEPARATION DEVICE
LAUNCHER SETTING..140° AZIMUTH 80.0° ELEVATION
RADAR TYPE..FPS-16 APOGEE 57,550 METERS
WIND SENSOR TYPE..15 FT. DIAMETER PARACHUTE
TEMPERATURE SENSOR TYPE..0.010 INCH BEAD THERMISTOR
GROUND EQUIPMENT TYPE..GMD-1A
REMARKS..NONE

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..130 SEC
SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..MOLDED INSULATION CO. RADIOSONDE TYPE..1680 MHZ
TEMPERATURE ELEMENT TYPE..ROD THERMISTOR BALLOON TYPE..NEOPRENE
PRESSURE SENSOR TYPE..ANEROID AND HYPSOMETER BALLOON SIZE..1,200 GRAMS
GROUND EQUIPMENT TYPE..GMD-1B
WIND AT ROCKET LAUNCH..SFC. 139DEG/03MPS 15M 146DEG/02MPS 31M 159DEG/04MPS
46M 145DEG/04MPS 61M 145DEG/04MPS 76M 150DEG/04MPS
BALLISTIC WIND.. 353° AZIMUTH 01.1 MPS
THERMODYNAMIC BASE DATA..PRESSURE 106.3 MBS
TEMPERATURE -59.4°C
ALTITUDE 16,000 METERS




STATION: (NASA) Wallops Island, Va. ROCKET TIME: 1212 LST 1712 GCT PAYLOAD TYPE: Arcasonde 1A

DATE: 15 May, 1968 ROCKET MOTOR TYPE: Arcas RADIOSONDE TYPE: 1680 MHZ

# ROCKET OBSERVATION DATA

RP STATION 44E

87689 (CNIE) MAR CHIQUITA, ARGENTINA

LAT. 37°45'S LONG. 57°25'W

ROCKET LAUNCH

DATE MAY 15, 1968 TIME 1955 Z

RAWINSONDE RELEASE

DATE MAY 15, 1968 TIME 1305 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | WIND COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 023 | 47 | 268 | 064 | +002 | +063 |
| 023 | 46 | 265 | 061 | +005 | +061 |
| 024 | 45 | 263 | 077 | +009 | +076 |
| 023 | 44 | 260 | 074 | +013 | +073 |
| 023 | 43 | 262 | 057 | +008 | +056 |
| 019 | 42 | 268 | 051 | +002 | +051 |
| 018 | 41 | 271 | 053 | -001 | +053 |
| 015 | 40 | 268 | 045 | +002 | +045 |
| 020 | 39 | 269 | 045 | +001 | +045 |
| 019 | 38 | 265 | 044 | +004 | +044 |
| 015 | 37 | 264 | 041 | +004 | +041 |
| 015 | 36 | 260 | 039 | +007 | +038 |
| 015 | 35 | 255 | 040 | +010 | +039 |
| 013 | 34 | 251 | 037 | +012 | +035 |
| 017 | 33 | 240 | 039 | +019 | +034 |

RAWINSONDE

| PRESSURE | ALT TENS OF | WIND POLAR | | WIND COMPONENTS MPS | | RH | TEMP |
|---|---|---|---|---|---|---|---|
| MB | METERS | DEG | MPS | N-S | E-W | % | DEG C |
| 1019.1 | 0002 | 220 | 010 | +008 | +006 | 75 | +11.4 |
| 0800.0 | 0200 | 214 | 016 | +013 | +009 | 77 | -02.6 |
| 0619.7 | 0400 | 196 | 017 | +016 | +005 | 43 | -12.1 |
| 0474.2 | 0600 | 174 | 027 | +027 | -003 | 34 | -22.0 |
| 0359.1 | 0800 | 151 | 034 | +030 | -016 | 39 | -37.0 |
| 0267.1 | 1000 | 153 | 057 | +051 | -025 | 37 | -46.5 |
| 0218.0 | 1130 | 155 | 039 | +035 | -016 | | -51.1 |
| 0196.8 | 1200 | 176 | 029 | +029 | -002 | | -51.1 |
| 0143.5 | 1400 | 192 | 019 | +018 | +004 | | -50.7 |
| 0107.1 | 1600 | 195 | 010 | +010 | +003 | | -50.3 |
| 0078.2 | 1800 | 220 | 012 | +009 | +008 | | -50.2 |
| 0059.7 | 2000 | 211 | 006 | +005 | +003 | | -50.8 |
| 0050.0 | 2090 | 225 | 008 | +006 | +006 | | -51.0 |
| | 2200 | 231 | 007 | +004 | +005 | | |
| | 2400 | 260 | 009 | +002 | +009 | | |
| | 2600 | 251 | 014 | +005 | +013 | | |
| | 2800 | 274 | 015 | -001 | +015 | | |

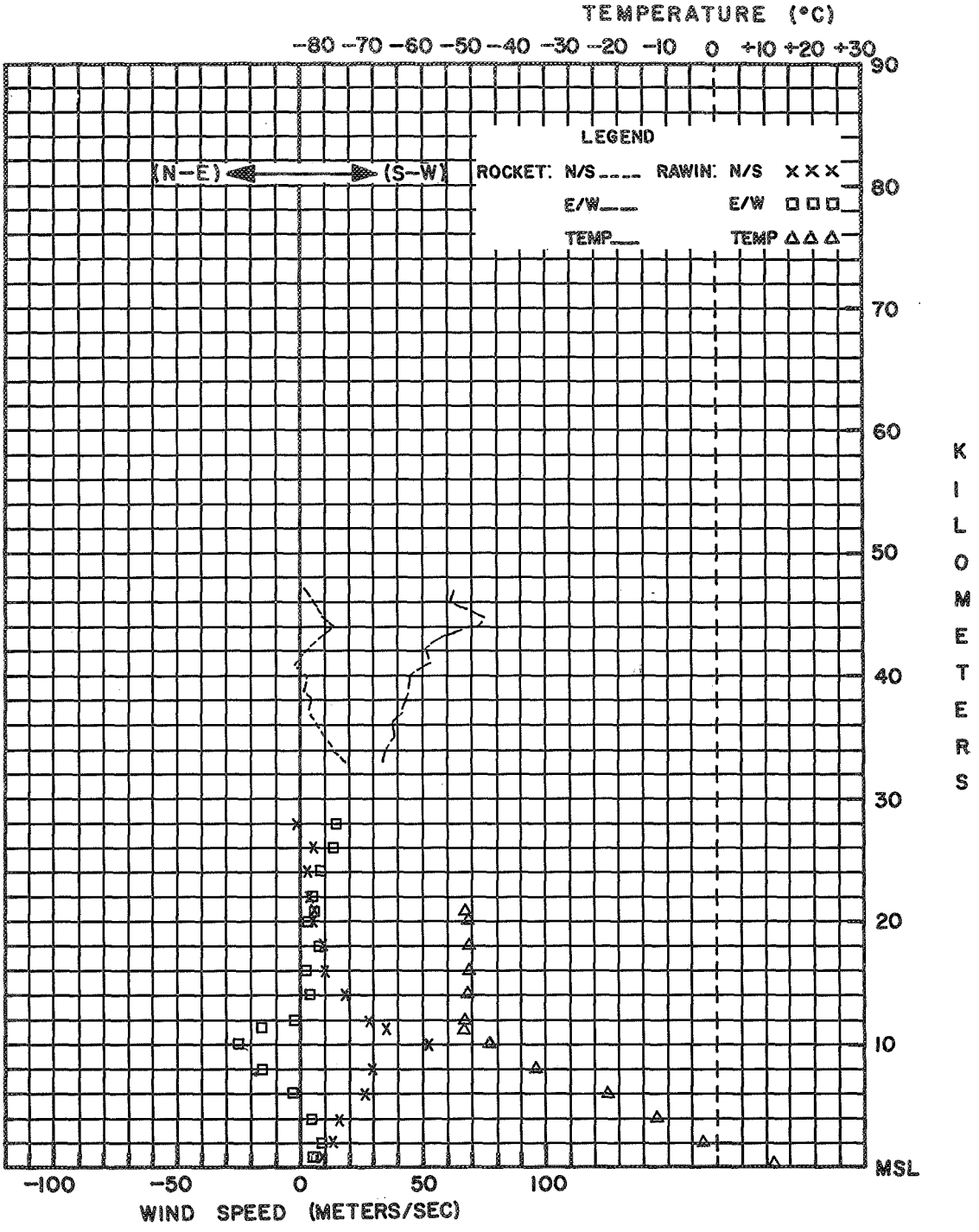
# TECHNICAL DATA

MOTOR TYPE..JUDI
PAYLOAD TYPE..CHAFF
FUSE TYPE..ELECTRICALLY ACTIVATED PYROTECHNIC
LAUNCHER SETTING..070° AZIMUTH 82.5° ELEVATION
RADAR TYPE..MPS-19 APOGEE UNKNOWN METERS
WIND SENSOR TYPE..0.005 INCH S BAND COPPER CHAFF SENSOR FALL-RATE..NOMINAL
TEMPERATURE SENSOR TYPE..N.A.
GROUND EQUIPMENT TYPE..N.A.
REMARKS..NONE

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..110 SEC

RADIOSONDE MANUFACTURER..VAISALA
TEMPERATURE ELEMENT TYPE..RESISTANCE WIRE
PRESSURE SENSOR TYPE..ANEROID
GROUND EQUIPMENT TYPE..VAISALA
WIND AT ROCKET LAUNCH..SFC, 170DEG/09MPS
BALLISTIC WIND.. 190° AZIMUTH 08.5 MPS
THERMODYNAMIC BASE DATA..PRESSURE N.A. MBS
TEMPERATURE N.A. C
ALTITUDE N.A. METERS

RADIOSONDE TYPE..VAISALA
BALLOON TYPE..NEOPRENE
BALLOON SIZE..3,000 GRAMS




STATION: (CNIE) Mar Chiquita, Arg. ROCKET TIME: 1655 LST 1955 GCT PAYLOAD TYPE: Chaff

DATE: 15 May, 1968 ROCKET MOTOR TYPE: Judi RADIOSONDE TYPE: Vaisala

# ROCKET OBSERVATION DATA

RP STATION NAME

72402 (NASA) WALLOPS ISLAND, VIRGINIA

LAT. 37°51' N LONG. 75°29' W

ROCKET LAUNCH

DATE MAY 22, 1968 TIME 1420 Z

RAWINSONDE RELEASE

DATE MAY 22, 1968 TIME 1645 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | WIND COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 118 | 58 | 086 | 037 | -003 | -036 |
| 100 | 57 | 087 | 030 | -002 | -030 |
| 100 | 56 | 093 | 024 | +001 | -024 |
| 100 | 55 | 103 | 019 | +004 | -018 |
| 097 | 54 | 120 | 023 | +011 | -020 |
| 077 | 53 | 122 | 022 | +012 | -019 |
| 074 | 52 | 112 | 019 | +007 | -018 |
| 069 | 51 | 105 | 021 | +005 | -021 |
| 067 | 50 | 094 | 019 | +001 | -019 |
| 067 | 49 | 089 | 019 | +000 | -019 |
| 067 | 48 | 092 | 020 | +001 | -020 |
| 059 | 47 | 095 | 017 | +001 | -017 |
| 051 | 46 | 092 | 017 | +001 | -017 |
| 050 | 45 | 100 | 020 | +003 | -019 |
| 044 | 44 | 108 | 017 | +005 | -016 |
| 042 | 43 | 115 | 018 | +008 | -016 |
| 043 | 42 | 108 | 017 | +005 | -016 |
| 037 | 41 | 093 | 012 | +001 | -012 |
| 033 | 40 | 096 | 012 | +001 | -012 |
| 033 | 39 | 091 | 011 | +000 | -011 |
| 032 | 38 | 074 | 008 | -002 | -008 |
| 029 | 37 | 053 | 002 | -001 | -002 |
| 026 | 36 | 233 | 004 | +002 | +003 |
| 025 | 35 | 205 | 007 | +007 | +003 |
| 021 | 34 | 186 | 007 | +007 | +001 |
| 019 | 33 | 132 | 005 | +003 | -003 |
| 019 | 32 | 074 | 007 | -002 | -007 |
| 017 | 31 | 047 | 006 | -004 | -004 |
| 017 | 30 | 055 | 005 | -003 | -004 |
| 014 | 29 | 063 | 006 | -003 | -006 |
| 012 | 28 | 061 | 007 | -003 | -006 |
| 011 | 27 | 062 | 006 | -003 | -005 |
| 010 | 26 | 079 | 004 | -001 | -004 |
| 009 | 25 | 105 | 004 | +001 | -004 |
| 009 | 24 | 098 | 004 | +001 | -004 |
| 007 | 23 | 142 | 004 | +003 | -002 |
| 006 | 22 | 171 | 004 | +004 | -001 |
| 006 | 21 | 225 | 004 | +003 | +003 |
| 006 | 20 | 261 | 006 | +001 | +006 |
| 005 | 19 | 259 | 010 | +002 | +010 |
| 005 | 18 | 260 | 012 | +002 | +012 |

ROCKET THERMODYNAMICS

| ALT TENS OF METERS | TEMP DEG C | PRESSURE MB | DENSITY G M -3 | WIND POLAR DEG | WIND POLAR MPS | WIND COMPONENTS MPS N-S | WIND COMPONENTS MPS E-W |
|---|---|---|---|---|---|---|---|
| 6035 | -03.5 | 00.256 | 00.331 | | | | |
| 5776 | -04.6 | 00.354 | 00.459 | 086 | 036 | -003 | -035 |
| 5633 | -02.7 | 00.422 | 00.544 | 091 | 026 | +001 | -026 |
| 5499 | +01.2 | 00.498 | 00.633 | 103 | 019 | +004 | -018 |
| 5255 | +01.1 | 00.672 | 00.853 | 118 | 021 | +010 | -018 |
| 4935 | +04.4 | 00.989 | 01.224 | 091 | 019 | +000 | -019 |
| 4758 | +05.6 | 01.223 | 01.528 | 093 | 019 | +001 | -019 |
| 4587 | +03.1 | 01.508 | 01.946 | 093 | 018 | +001 | -017 |
| 4499 | +01.3 | 01.682 | 02.156 | 100 | 020 | +003 | -019 |
| 4414 | +05.8 | 01.871 | 02.438 | 107 | 018 | +005 | -017 |
| 4191 | +10.8 | 02.484 | 03.298 | 106 | 016 | +004 | -016 |
| 4093 | +10.6 | 02.817 | 03.738 | 093 | 012 | +001 | -012 |
| 3844 | +19.0 | 03.899 | 05.344 | 081 | 010 | -002 | +010 |
| 3697 | +17.1 | 04.735 | 06.443 | 053 | 002 | -001 | +002 |
| 2996 | +43.3 | 12.564 | 19.043 | 055 | 005 | -003 | +004 |
| 2969 | +41.9 | 13.072 | 19.693 | 057 | 005 | -003 | +004 |
| 2795 | +47.6 | 16.914 | 26.125 | 061 | 007 | -003 | +006 |
| 2652 | +45.4 | 20.941 | 32.032 | 070 | 005 | -002 | +005 |
| 2374 | +50.1 | 31.803 | 49.673 | 111 | 004 | +001 | -004 |
| 2298 | +49.1 | 35.686 | 55.489 | 142 | 004 | +003 | -002 |
| 2176 | +52.0 | 42.974 | 67.698 | 182 | 004 | +004 | +000 |
| 2000 | +51.6 | 56.270 | 88.497 | 261 | 006 | +001 | +006 |
| 1978 | +50.3 | 58.201 | 90.986 | 261 | 007 | +001 | +007 |
| 1957 | +53.2 | 60.105 | 95.201 | 260 | 008 | +001 | +008 |
| 1804 | +55.6 | | | 260 | 012 | +002 | +012 |
| 1788 | +53.0 | | | | | | |
| 1740 | +55.2 | | | | | | |

CONSTANT PRESSURE SURFACES (GEOPOTENTIAL HEIGHT)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2070 | -51.8 | 50.000 | 78.708 | 232 | 004 | +003 | -003 |
| 2403 | -49.6 | 30.000 | 46.744 | 099 | 004 | +001 | -004 |
| 2672 | -45.9 | 20.000 | 30.655 | 065 | 006 | -002 | +005 |
| 3137 | -37.4 | 10.000 | 14.775 | 060 | 007 | -003 | +006 |
| 3389 | -27.9 | 07.000 | 09.945 | 186 | 007 | +007 | +001 |
| 3635 | -18.6 | 05.000 | 06.842 | 340 | 003 | +003 | +001 |
| 4018 | -12.2 | 03.000 | 04.006 | 095 | 012 | +001 | -012 |
| 4331 | -06.9 | 02.000 | 02.617 | 111 | 018 | +006 | -016 |
| 4887 | +08.3 | 01.000 | 01.238 | 090 | 019 | +000 | +019 |

RAWINSONDE

| PRESSURE MB | ALT TENS OF METERS | WIND POLAR DEG | WIND POLAR MPS | WIND COMPONENTS MPS N-S | WIND COMPONENTS MPS E-W | RH % | TEMP DEG C |
|---|---|---|---|---|---|---|---|
| 1016.0 | 0000 | 290 | 005 | -002 | +005 | 30 | +20.8 |
| 0800.0 | 0200 | 304 | 008 | -005 | +007 | 52 | +01.8 |
| 0620.0 | 0400 | 280 | 013 | -002 | +013 | 25 | -11.0 |
| 0474.0 | 0600 | 283 | 030 | -007 | +029 | 21 | -22.9 |
| 0359.0 | 0800 | 280 | 030 | -005 | +030 | 23 | -38.0 |
| 0282.0 | 0963 | 280 | 037 | -006 | +037 | | -49.9 |
| 0266.0 | 1000 | 278 | 036 | -005 | +036 | | -50.6 |
| 0195.0 | 1200 | 278 | 035 | -005 | +035 | | -51.2 |
| 0144.0 | 1400 | 279 | 025 | -004 | +025 | | -53.4 |
| 0104.7 | 1600 | 272 | 024 | -001 | +024 | | -55.7 |
| 0077.0 | 1800 | 260 | 015 | +003 | +015 | | -55.9 |
| 0056.2 | 2000 | 241 | 006 | +003 | +005 | | -54.7 |
| 0041.3 | 2200 | 326 | 002 | +002 | +001 | | -51.5 |
| 0030.5 | 2400 | 080 | 003 | -001 | +003 | | -50.0 |
| 0022.6 | 2600 | 069 | 003 | -001 | -003 | | -48.6 |
| 0014.5 | 2800 | 044 | 008 | -006 | -006 | | -44.3 |
| 0010.7 | 3000 | 031 | 005 | -004 | -003 | | -40.3 |
| 0010.0 | 3150 | 047 | 004 | -003 | -003 | | -39.0 |
| 0008.8 | 3200 | | | | | | -37.7 |
| 0008.5 | 3269 | | | | | | -36.3 |

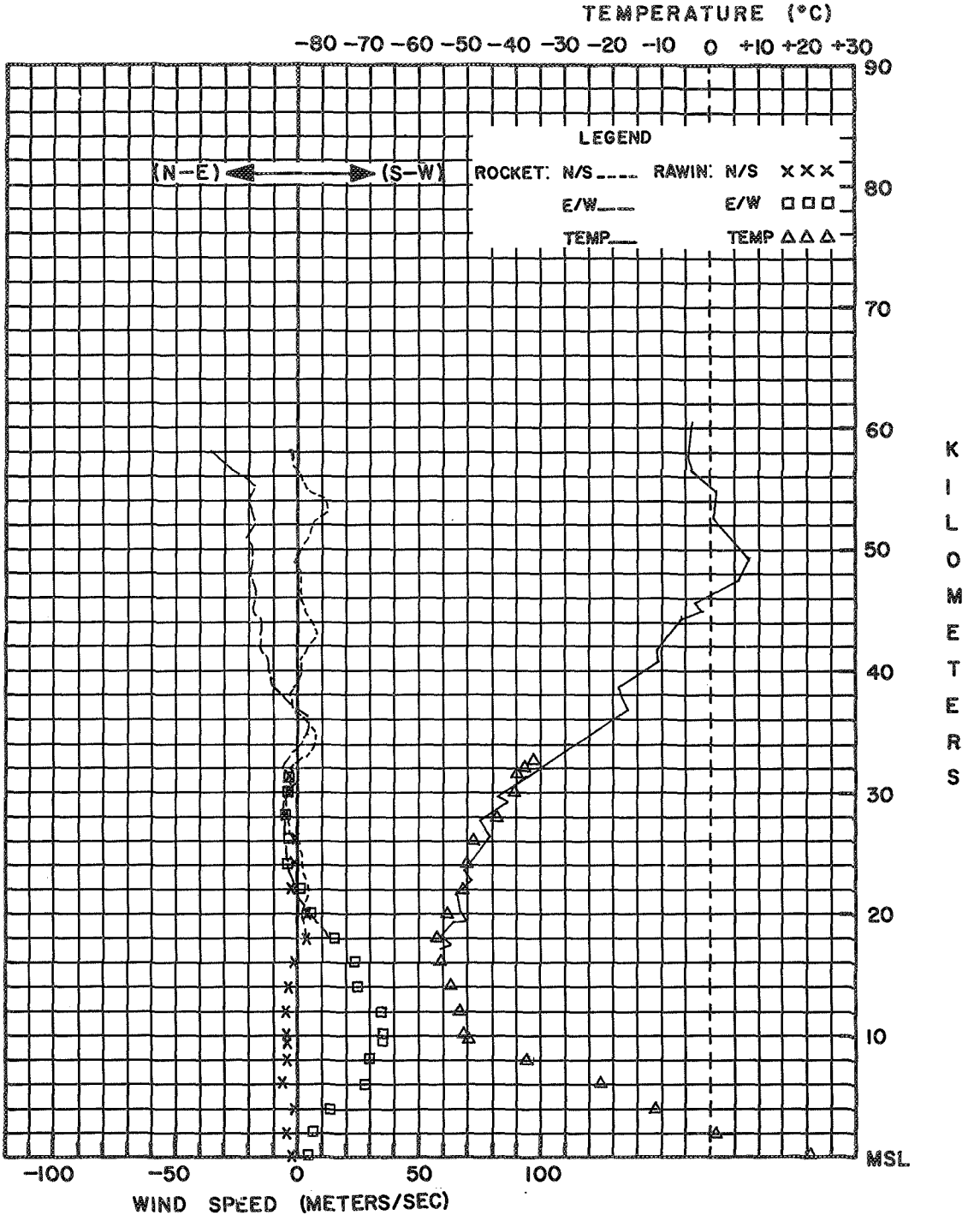
# TECHNICAL DATA

MOTOR TYPE..ARCAS
PAYLOAD TYPE..ARCASONDE-1A
FUSE TYPE..GAS GENERATED SEPARATION DEVICE
LAUNCHER SETTING..130° AZIMUTH 77.0° ELEVATION
RADAR TYPE..FPS-16 APOGEE 62,850 METERS
WIND SENSOR TYPE..15 FT. DIAMETER PARACHUTE
TEMPERATURE SENSOR TYPE..0.010 INCH BEAD THERMISTOR
GROUND EQUIPMENT TYPE..GMD-1B
REMARKS..NONE

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..135 SEC

SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..MOLDED INSULATION CO. RADIOSONDE TYPE..1680 MHZ
TEMPERATURE ELEMENT TYPE..ROD THERMISTOR BALLOON TYPE..NEOPRENE
PRESSURE SENSOR TYPE..ANEROID AND HYPSOMETER BALLOON SIZE..1,200 GRAMS
GROUND EQUIPMENT TYPE..GMD-1B
WIND AT ROCKET LAUNCH..SFC. 301DEG/02MPS 15M 333DEG/02MPS 31M 342DEG/02MPS
46M 344DEG/02MPS 61M 344DEG/02MPS 76M 326DEG/02MPS
BALLISTIC WIND.. 315° AZIMUTH 04.9 MPS
THERMODYNAMIC BASE DATA..PRESSURE 104.7 MBS
TEMPERATURE -55.7°C
ALTITUDE 16,000 METERS




STATION: (NASA) Wallops Island, Va. ROCKET TIME: 0920 LST 1420 GCT PAYLOAD TYPE: Arcasonde 1A

DATE: 22 May, 1968 ROCKET MOTOR TYPE: Arcas RADIOSONDE TYPE: 1680 MHz

# ROCKET OBSERVATION DATA

RP STATION NAME

82599 (CNAE) NATAL, BRAZIL

LAT. 05° 55' S LONG. 35° 10' W

ROCKET LAUNCH

DATE MAY 29, 1968 TIME 1500 Z

RAWINSONDE RELEASE

DATE MAY 29, 1968 TIME 1145 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| | 62 | 271 | 022 | +000 | +022 |
| 057 | 61 | 157 | 002 | +002 | -001 |
| 051 | 60 | 054 | 007 | -004 | -006 |
| 045 | 59 | 089 | 006 | +000 | -006 |
| 039 | 58 | 122 | 013 | +007 | -011 |
| 038 | 57 | 122 | 022 | +012 | -019 |
| 036 | 56 | 108 | 027 | +008 | -026 |
| 034 | 55 | 105 | 024 | +006 | -023 |
| 032 | 54 | 103 | 023 | +005 | -022 |
| 029 | 53 | 093 | 025 | +001 | -025 |
| 029 | 52 | 092 | 023 | +001 | -023 |
| 027 | 51 | 099 | 017 | +003 | -017 |
| 025 | 50 | 095 | 013 | +001 | -013 |
| 024 | 49 | 096 | 011 | +001 | -011 |
| 023 | 48 | 114 | 011 | +004 | -010 |
| 022 | 47 | 129 | 012 | +007 | -009 |
| 022 | 46 | 128 | 012 | +007 | -010 |
| 020 | 45 | 111 | 011 | +004 | -010 |
| 019 | 44 | 114 | 008 | +003 | -007 |
| 019 | 43 | 152 | 005 | +004 | -002 |
| 018 | 42 | 174 | 007 | +007 | -001 |
| 017 | 41 | 187 | 007 | +007 | +001 |
| 017 | 40 | 218 | 005 | +004 | +003 |
| 016 | 39 | 246 | 008 | +003 | +007 |
| 016 | 38 | 254 | 011 | +003 | +011 |
| 015 | 37 | 251 | 012 | +004 | +011 |
| 014 | 36 | 248 | 015 | +006 | +014 |
| 014 | 35 | 254 | 018 | +005 | +017 |
| 013 | 34 | 253 | 016 | +005 | +015 |
| 013 | 33 | 244 | 008 | +003 | +007 |
| 012 | 32 | 130 | 004 | +002 | -003 |
| 012 | 31 | 106 | 017 | +005 | -016 |
| 012 | 30 | 099 | 027 | +004 | -027 |
| 011 | 29 | 093 | 033 | +002 | -033 |
| 011 | 28 | 091 | 035 | +001 | -035 |
| 011 | 27 | 089 | 033 | -001 | -033 |
| 010 | 26 | 086 | 033 | -002 | -033 |
| 010 | 25 | 088 | 029 | -001 | -029 |
| 009 | 24 | 090 | 026 | +000 | -026 |
| 009 | 23 | 091 | 028 | +000 | -028 |
| 008 | 22 | 088 | 024 | -001 | -024 |
| 007 | 21 | 081 | 012 | -002 | -012 |
| 007 | 20 | 060 | 015 | -007 | -013 |
| 007 | 19 | 259 | 002 | +000 | +002 |
| 006 | 18 | 270 | 006 | +000 | +006 |

RAWINSONDE

| PRESSURE MB | ALT TENS OF METERS | WIND POLAR DEG | MPS | COMPONENTS MPS N-S | E-W | RH % | TEMP DEG C |
|---|---|---|---|---|---|---|---|
| 1010.5 | 0004 | 170 | 003 | +003 | -001 | 88 | +24.3 |
| 0805.0 | 0200 | 113 | 005 | +002 | -005 | 90 | +13.8 |
| | 0400 | 062 | 005 | -002 | -005 | | |
| | 0600 | 047 | 006 | -004 | -005 | | |
| | 0800 | 170 | 005 | +006 | -001 | | |
| | 1000 | 330 | 004 | -003 | +002 | | |
| | 1200 | 275 | 006 | -001 | +006 | | |
| | 1400 | 225 | 014 | +010 | +010 | | |
| | 1600 | 320 | 009 | -007 | +006 | | |
| | 1800 | 248 | 006 | +002 | +006 | | |
| | 2000 | 067 | 004 | -002 | -004 | | |
| | 2200 | 090 | 024 | +000 | -024 | | |
| | 2400 | 086 | 026 | -002 | -026 | | |
| | 2590 | 079 | 030 | -006 | -030 | | |

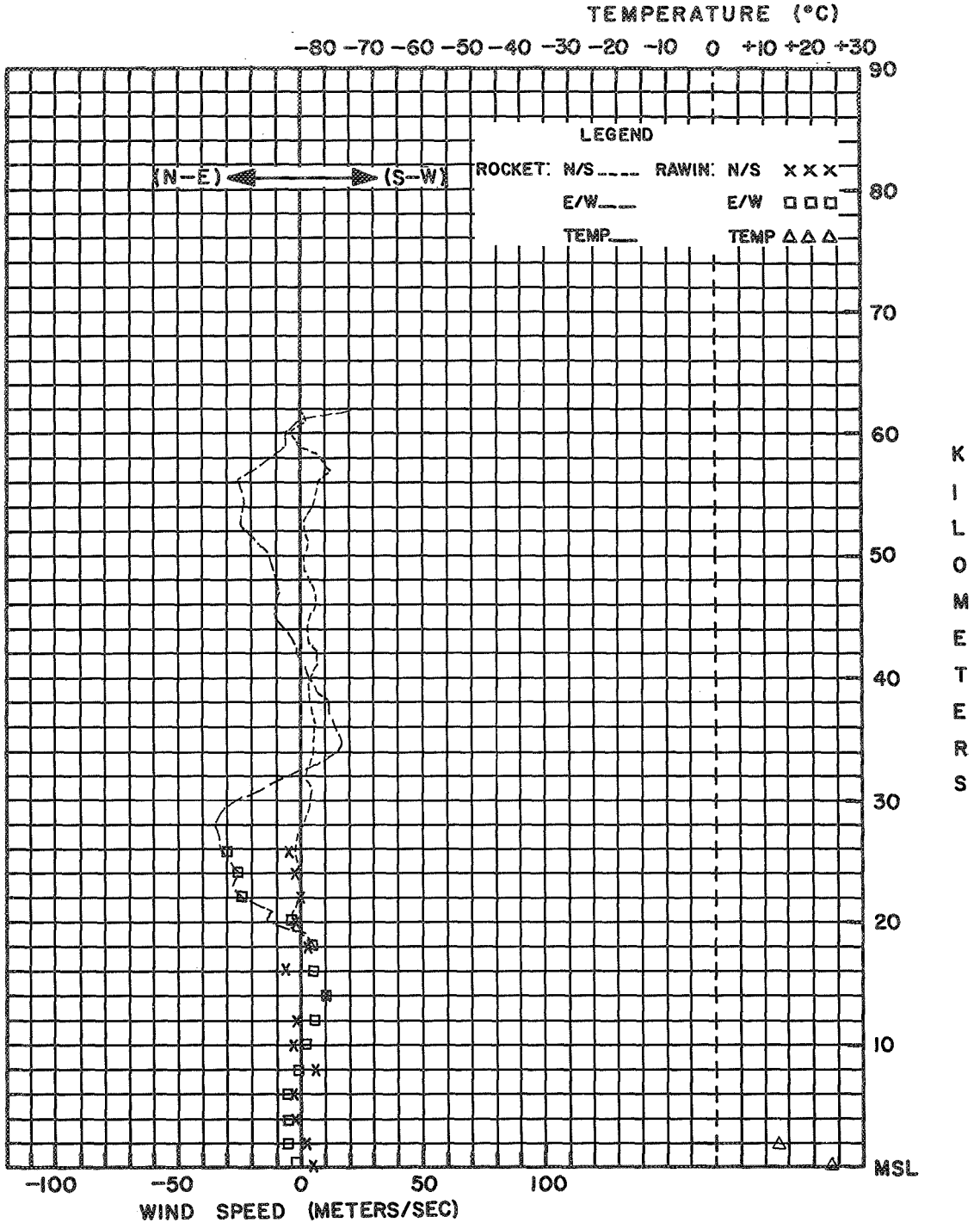
# TECHNICAL DATA

MOTOR TYPE..JUDI
PAYLOAD TYPE..CHAFF
FUSE TYPE..ELECTRICALLY ACTIVATED PYROTECHNIC
LAUNCHER SETTING..068° AZIMUTH 80.0° ELEVATION
RADAR TYPE..MPS-19 APOGEE 62,606 METERS
WIND SENSOR TYPE..0.005 INCH S BAND COPPER CHAFF SENSOR FALL-RATE..NOMINAL
TEMPERATURE SENSOR TYPE..N.A.
GROUND EQUIPMENT TYPE..N.A.
REMARKS..GMD-1A POWER FAILURE.

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..094 SEC

RADIOSONDE MANUFACTURER..BENDIX
TEMPERATURE ELEMENT TYPE..ROD THERMISTOR
PRESSURE SENSOR TYPE..ANEROID
GROUND EQUIPMENT TYPE..GMD-1A
WIND AT ROCKET LAUNCH..6M 150DEG/05MPS 9M 150DEG/05MPS 16M 150DEG/06MPS
25M 140DEG/07MPS 40M 140DEG/07MPS
BALLISTIC WIND..UNKNOWN AZIMUTH UNKNOWN MPS
THERMODYNAMIC BASE DATA..PRESSURE N.A. MBS
TEMPERATURE N.A. C
ALTITUDE N.A. METERS

RADIOSONDE TYPE..1680 MHZ
BALLOON TYPE..NEOPRENE
BALLOON SIZE..1,200 GRAMS




STATION: (CNAE) Natal, Brazil
DATE: 29 May, 1968

ROCKET TIME: 1200 LST 1500GCT
ROCKET MOTOR TYPE: Judi

PAYLOAD TYPE: Chaff
RADIOSONDE TYPE: 1680 MHZ

# ROCKET OBSERVATION DATA

RP STATION NAME

87689 (CNIE) MAR CHIQUITA, ARGENTINA

LAT. 37°45'S LONG. 57°25'W

ROCKET LAUNCH

DATE MAY 29, 1968 TIME 1732 Z

RAWINSONDE RELEASE

DATE MAY 29, 1968 TIME 1754 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | WIND COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 125 | 65 | 276 | 066 | -007 | +065 |
| 118 | 64 | 275 | 092 | -008 | +091 |
| 111 | 63 | 272 | 122 | -004 | +120 |
| 100 | 62 | 269 | 124 | +002 | +124 |
| 091 | 61 | 270 | 143 | +000 | +143 |
| 080 | 60 | 270 | 139 | +000 | +139 |
| 069 | 59 | 267 | 127 | +006 | +126 |
| 065 | 58 | 269 | 129 | +002 | +129 |
| 065 | 57 | 274 | 130 | -009 | +129 |
| 056 | 56 | 276 | 127 | -013 | +126 |
| 049 | 55 | 276 | 127 | -013 | +126 |
| 047 | 54 | 276 | 133 | -014 | +132 |
| 045 | 53 | 282 | 125 | -026 | +122 |
| 044 | 52 | 281 | 124 | -024 | +122 |
| 039 | 51 | 280 | 114 | -020 | +112 |
| 038 | 50 | 286 | 122 | -033 | +116 |
| 034 | 49 | 284 | 120 | -029 | +116 |
| 031 | 48 | 282 | 103 | -021 | +100 |
| 030 | 47 | 282 | 112 | -023 | +109 |
| 029 | 46 | 284 | 123 | -030 | +118 |
| 027 | 45 | 285 | 104 | -027 | +100 |
| 025 | 44 | 282 | 094 | -020 | +091 |

RAWINSONDE

| PRESSURE | ALT TENS OF | WIND POLAR | | WIND COMPONENTS MPS | | RH | TEMP |
|---|---|---|---|---|---|---|---|
| MB | METERS | DEG | MPS | N-S | E-W | % | DEG C |
| | 0200 | 303 | 008 | -004 | +006 | | |
| | 0400 | 249 | 017 | +006 | +016 | | |
| | 0600 | 260 | 015 | +003 | +015 | | |
| | 0800 | 266 | 021 | +001 | +021 | | |
| | 1000 | 238 | 031 | +016 | +026 | | |
| | 1200 | 239 | 037 | +019 | +032 | | |
| | 1400 | 244 | 028 | +012 | +025 | | |
| | 1600 | 241 | 023 | +011 | +020 | | |
| | 1800 | 258 | 018 | +004 | +018 | | |
| | 2000 | 270 | 022 | +000 | +022 | | |
| | 2200 | 281 | 023 | -006 | +022 | | |
| | 2400 | 260 | 028 | +005 | +028 | | |
| | 2600 | 260 | 039 | +007 | +038 | | |
| | 2800 | 265 | 046 | +004 | +046 | | |
| | 2890 | 265 | 054 | +005 | +054 | | |

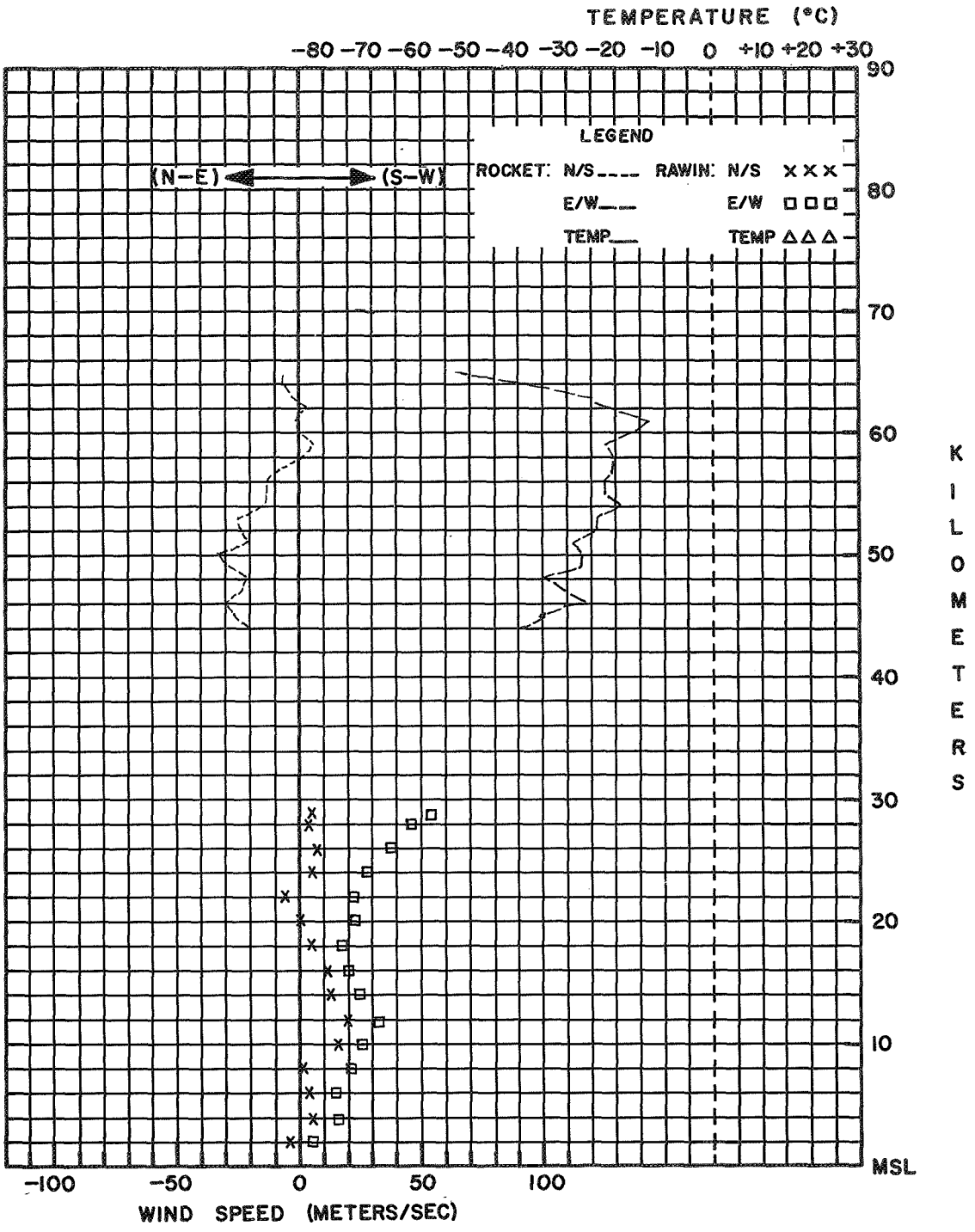
# TECHNICAL DATA

MOTOR TYPE..JUNI
PAYLOAD TYPE..CHAFF
FUSE TYPE..ELECTRICALLY ACTIVATED PYROTECHNIC
LAUNCHER SETTING..125°AZIMUTH 82.5°ELEVATION
RADAR TYPE..MPS-19 APOGEE 71,000 METERS
WIND SENSOR TYPE..0.005 INCH S BAND COPPER CHAFF SENSOR FALL-RATE..NOMINAL
TEMPERATURE SENSOR TYPE..N.A.
GROUND EQUIPMENT TYPE..N.A.
REMARKS..EXTREME DISPERSION OF CHAFF. RAWINSONDE DATA WITHOUT ITEMS OF PRESSURE, RH, AND TEMP. DUE TO RADIOSONDE FAILURE IN MATING RADAR HEIGHTS FOR CORRELATION.

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..100 SEC

RADIOSONDE MANUFACTURER..VAISALA
TEMPERATURE ELEMENT TYPE..RESISTANCE WIRE
PRESSURE SENSOR TYPE..ANEROID
GROUND EQUIPMENT TYPE..VAISALA
WIND AT ROCKET LAUNCH..SFC. 338DEG/07MPS
BALLISTIC WIND.. 295°AZIMUTH 07.5 MPS
THERMODYNAMIC BASE DATA..PRESSURE N.A. MBS
TEMPERATURE N.A. C
ALTITUDE N.A. METERS

RADIOSONDE TYPE..VAISALA
BALLOON TYPE..NEOPRENE
BALLOON SIZE..3,000 GRAMS




STATION: (CNIE) Mar Chiquita, Arg. ROCKET TIME: 1432 LST 1732GCT PAYLOAD TYPE: Chaff

DATE: 29 May, 1968 ROCKET MOTOR TYPE: Judi RADIOSONDE TYPE: Vaisala

# ROCKET OBSERVATION DATA

RP STATION NAME

72402 (NASA) WALLOPS ISLAND, VIRGINIA

LAT. 37°51'N LONG. 75°29'W

ROCKET LAUNCH

DATE JUNE 5, 1968 TIME 1915 Z

RAWINSONDE RELEASE

DATE JUNE 5, 1968 TIME 1641 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 094 | 57 | 089 | 027 | -001 | -027 |
| 090 | 56 | 092 | 032 | +001 | +032 |
| 090 | 55 | 097 | 036 | +004 | -035 |
| 090 | 54 | 109 | 030 | +010 | -028 |
| 083 | 53 | 110 | 031 | +011 | -029 |
| 077 | 52 | 110 | 035 | +012 | -033 |
| 069 | 51 | 108 | 032 | +010 | -031 |
| 064 | 50 | 099 | 027 | +004 | -027 |
| 067 | 49 | 089 | 025 | +000 | -025 |
| 062 | 48 | 078 | 024 | -005 | -024 |
| 057 | 47 | 078 | 021 | -005 | -021 |
| 053 | 46 | 085 | 021 | -002 | -020 |
| 053 | 45 | 089 | 020 | +000 | -020 |
| 049 | 44 | 094 | 020 | +002 | -019 |
| 044 | 43 | 105 | 025 | +007 | -025 |
| 041 | 42 | 106 | 025 | +007 | -024 |
| 034 | 41 | 108 | 024 | +007 | -023 |
| 033 | 40 | 098 | 019 | +003 | -019 |
| 033 | 39 | 092 | 011 | +000 | -011 |
| 031 | 38 | 118 | 012 | +006 | -010 |
| 029 | 37 | 101 | 013 | +003 | -013 |
| 027 | 36 | 072 | 009 | +003 | -008 |
| 024 | 35 | 041 | 006 | +005 | -004 |
| 022 | 34 | 066 | 002 | -001 | +001 |
| 020 | 33 | 151 | 004 | +004 | -002 |
| 019 | 32 | 136 | 004 | +003 | -003 |
| 017 | 31 | 133 | 003 | +002 | -002 |
| 015 | 30 | 165 | 004 | +004 | -001 |
| 014 | 29 | 132 | 004 | +002 | -003 |
| 013 | 28 | 093 | 003 | +000 | -003 |
| 011 | 27 | 108 | 003 | +001 | -003 |
| 010 | 26 | 089 | 006 | +000 | -006 |
| 009 | 25 | 071 | 009 | -003 | -008 |
| 008 | 24 | 058 | 006 | -003 | -005 |
| 007 | 23 | 053 | 003 | -002 | -002 |
| 007 | 22 | 047 | 004 | +000 | -004 |
| 006 | 21 | 090 | 003 | +000 | -003 |
| 005 | 20 | 018 | 002 | -002 | +000 |
| 005 | 19 | 351 | 004 | -004 | +001 |
| 005 | 18 | 305 | 006 | -004 | +005 |

ROCKET THERMODYNAMICS

| ALT TENS OF METERS | TEMP DEG C | PRESSURE MB | DENSITY G M$^{-3}$ | WIND POLAR DEG | MPS | COMPONENTS MPS N-S | E-W |
|---|---|---|---|---|---|---|---|
| 5900 | -02.1 | 00.323 | 00.416 | | | | |
| 5709 | -00.3 | 00.409 | 00.522 | | | | |
| 5557 | -03.0 | 00.494 | 00.637 | 094 | 033 | +003 | -033 |
| 5453 | -01.9 | 00.562 | 00.721 | 103 | 032 | +008 | -032 |
| 5355 | -03.7 | 00.634 | 00.820 | 109 | 030 | +010 | -029 |
| 5264 | -00.5 | 00.710 | 00.907 | 110 | 032 | +011 | -030 |
| 4944 | +04.7 | 01.049 | 01.316 | 093 | 026 | +002 | -026 |
| 4389 | +03.4 | 02.058 | 02.592 | 095 | 020 | +002 | -020 |
| 4008 | -12.7 | 03.319 | 04.440 | 099 | 020 | +003 | -019 |
| 3947 | -12.3 | 03.592 | 04.797 | 095 | 015 | +001 | -015 |
| 3752 | -19.5 | 04.638 | 06.371 | 109 | 012 | +004 | -012 |
| 3703 | -17.0 | 04.940 | 06.731 | 101 | 013 | +003 | -013 |
| 3612 | -17.2 | 05.580 | 07.595 | 074 | 009 | +003 | -009 |
| 3520 | -21.0 | 06.306 | 08.713 | 047 | 007 | +005 | -005 |
| 3484 | -20.2 | 06.617 | 09.114 | 045 | 005 | +004 | -004 |
| 3417 | -24.1 | 07.241 | 10.129 | 061 | 002 | -001 | -002 |
| 3362 | -24.3 | 07.802 | 10.923 | 098 | 002 | +000 | -002 |
| 3313 | -28.4 | 08.344 | 11.877 | 141 | 004 | +003 | -002 |
| 3286 | -27.1 | 08.664 | 12.261 | 150 | 004 | +004 | -002 |
| 3261 | -31.0 | 08.965 | 12.897 | 145 | 004 | +003 | -002 |
| 3237 | -29.2 | 09.269 | 13.237 | 142 | 004 | +003 | -003 |
| 3216 | -30.3 | 09.563 | 13.690 | 138 | 004 | +003 | -003 |
| 3146 | -30.0 | 10.519 | 15.071 | 135 | 004 | +003 | -003 |
| 3078 | -34.5 | 11.572 | 16.893 | 140 | 003 | +002 | -002 |
| 3054 | -33.4 | 11.971 | 17.396 | 148 | 003 | +003 | -002 |
| 3002 | -39.3 | 12.894 | 19.206 | 165 | 004 | +004 | -001 |
| 2893 | -37.1 | 15.085 | 22.265 | 128 | 004 | +002 | -003 |
| 2722 | -41.2 | 19.320 | 29.018 | 105 | 003 | +001 | -003 |
| 2676 | -40.9 | 20.660 | 30.991 | 104 | 004 | +001 | -004 |
| 2484 | -48.6 | 27.465 | 42.611 | 069 | 008 | -003 | -008 |
| 2460 | -46.1 | 28.472 | 43.686 | 065 | 007 | -003 | -007 |
| 2400 | -50.0 | 31.162 | 48.651 | 058 | 006 | -003 | -005 |
| 2362 | -48.4 | 33.007 | 51.163 | 056 | 005 | -002 | -004 |
| 2326 | -50.9 | 34.958 | 54.642 | 054 | 004 | -002 | -003 |
| 2249 | -51.4 | 39.207 | 61.596 | 070 | 003 | -001 | -003 |
| 2170 | -54.7 | 44.281 | 70.619 | 088 | 004 | +000 | -004 |
| 2106 | -53.7 | 48.895 | 77.622 | 090 | 003 | +000 | -003 |
| 2085 | -56.1 | 50.517 | 81.085 | 079 | 003 | -001 | -003 |
| 2027 | -53.9 | 55.285 | 87.847 | 038 | 002 | -002 | -001 |
| 2000 | -55.1 | 57.650 | 92.109 | 018 | 002 | -002 | +000 |
| 1975 | -57.5 | 59.951 | 96.849 | 012 | 002 | -002 | +000 |
| 1960 | -56.2 | 61.377 | 98.561 | 007 | 003 | -003 | +000 |
| 1900 | -60.7 | | | 351 | 004 | -004 | +001 |
| 1875 | -58.7 | | | 339 | 005 | -002 | +001 |
| 1777 | -61.1 | | | | | | |
| 1713 | -59.9 | | | | | | |

CONSTANT PRESSURE SURFACES (GEOPOTENTIAL HEIGHT)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2085 | -55.4 | 50.000 | 79.993 | 084 | 003 | +000 | -003 |
| 2416 | -48.3 | 30.000 | 46.485 | 061 | 006 | -003 | -005 |
| 2687 | -41.1 | 20.000 | 30.025 | 108 | 003 | +001 | -003 |
| 3166 | -30.1 | 10.000 | 14.336 | 136 | 004 | +003 | -003 |
| 3423 | -22.6 | 07.000 | 09.733 | 055 | 003 | -002 | -003 |
| 3674 | -17.1 | 05.000 | 06.803 | 100 | 013 | +002 | -013 |
| 4060 | -09.2 | 03.000 | 03.960 | 107 | 023 | +007 | -022 |
| 4382 | +03.4 | 02.000 | 02.519 | 093 | 020 | +001 | -020 |
| 4945 | +04.0 | 01.000 | 01.257 | 097 | 027 | +003 | -027 |

RAWINSONDE

| PRESSURE MB | ALT TENS OF METERS | WIND POLAR DEG | MPS | COMPONENTS MPS N-S | E-W | RH % | TEMP DEG C |
|---|---|---|---|---|---|---|---|
| 1017.6 | 0000 | 140 | 004 | +003 | -002 | 68 | +22.2 |
| 0804.0 | 0200 | 032 | 007 | -006 | -004 | 15 | +11.6 |
| 0634.0 | 0400 | 359 | 009 | -009 | +000 | 17 | +04.0 |
| 0484.0 | 0600 | 360 | 009 | -009 | +000 | 20 | -09.3 |
| 0377.0 | 0800 | 360 | 009 | -009 | +000 | 19 | -24.1 |
| 0284.0 | 1000 | 342 | 010 | -010 | +003 | | -41.3 |
| 0209.0 | 1200 | 337 | 012 | -011 | +005 | | -57.7 |
| 0154.0 | 1388 | 300 | 015 | -008 | +013 | | -67.0 |
| 0151.0 | 1400 | 330 | 017 | -009 | +015 | | -66.9 |
| 0109.0 | 1600 | 298 | 016 | -007 | +014 | | -63.6 |
| 0079.0 | 1800 | 324 | 005 | -004 | +003 | | -60.7 |
| 0057.5 | 2000 | 035 | 003 | -002 | -002 | | -58.8 |
| 0044.0 | 2200 | 110 | 003 | +001 | -003 | | -56.6 |
| 0030.5 | 2400 | 105 | 004 | +001 | -004 | | -53.1 |
| 0022.8 | 2600 | 063 | 006 | -003 | -006 | | -49.0 |
| 0016.7 | 2800 | 060 | 007 | -003 | -006 | | -44.6 |
| 0012.4 | 3000 | 100 | 006 | +001 | -006 | | -40.4 |
| 0011.4 | 3047 | 104 | 006 | +002 | -006 | | -39.1 |
| 0010.0 | 3157 | | | | | | -37.1 |

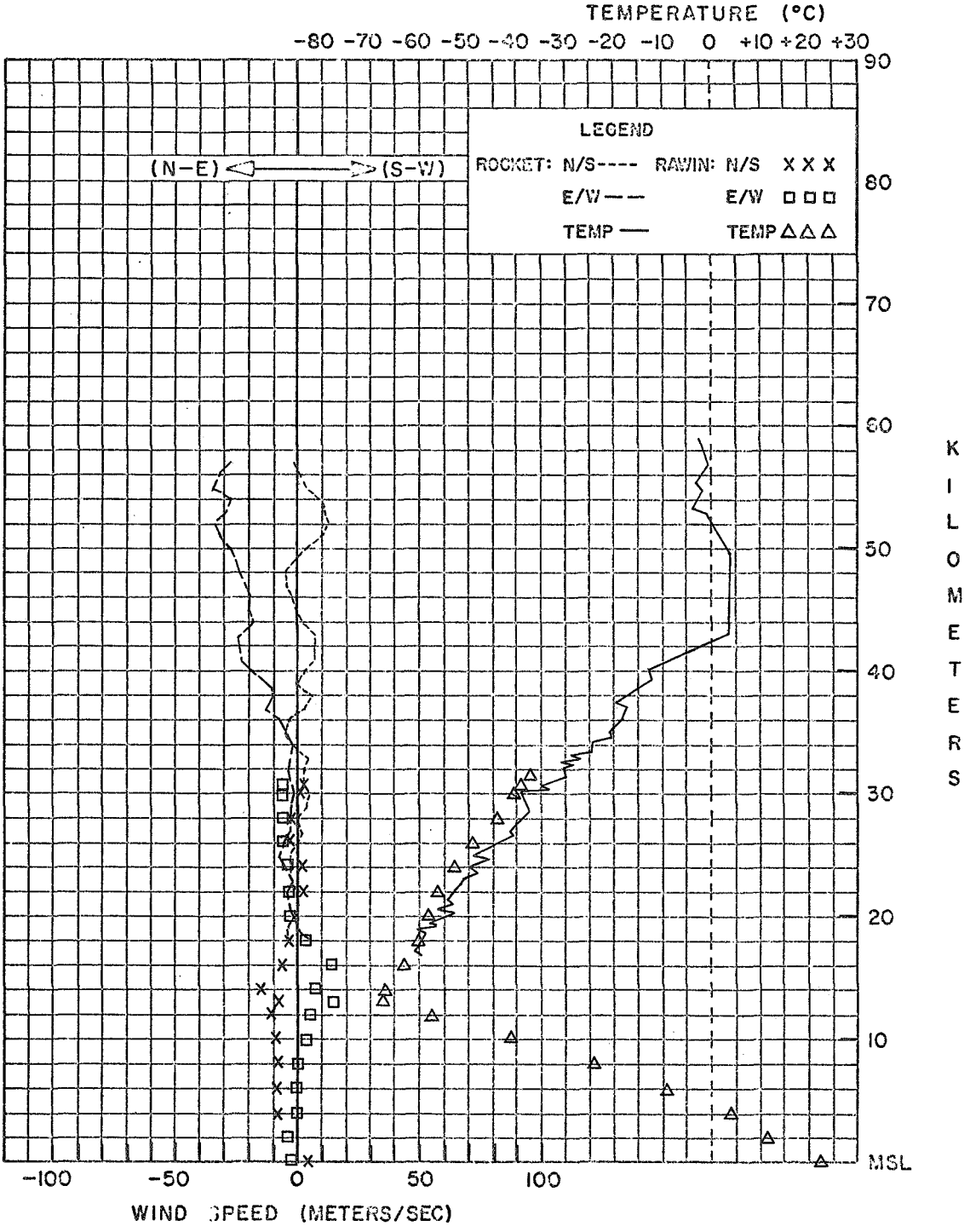
## TECHNICAL DATA

MOTOR TYPE..ARC4S
PAYLOAD TYPE..ARCASONDE-1A
FUSE TYPE..GAS GENERATED SEPARATION DEVICE
LAUNCHER SETTING..148°AZIMUTH 81.0°ELEVATION
RADAR TYPE..SPANDAR APOGEE 59.955 METERS
WIND SENSOR TYPE..15 FT. DIAMETER PARACHUTE
TEMPERATURE SENSOR TYPE..0.010 INCH BEAD THERMISTOR
GROUND EQUIPMENT TYPE..GMD-1B
REMARKS..NONE

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..FAIR
ACTUAL FUSE DELAY TIME..130 SEC

SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..MOLDED INSULATION CO. RADIOSONDE TYPE..1680 MHZ
TEMPERATURE ELEMENT TYPE..ROD THERMISTOR BALLOON TYPE..NEOPRENE
PRESSURE SENSOR TYPE..ANEROID AND HYPSOMETER BALLOON SIZE..1-200 GRAMS
GROUND EQUIPMENT TYPE..GMD-1B
WIND AT ROCKET LAUNCH..SFC. 120DEG/05MPS 15M 095DEG/03MPS 31M 104DEG/04MPS
46M 101DEG/05MPS 61M 104DEG/05MPS 76M 108DEG/05MPS
BALLISTIC WIND.. 070°AZIMUTH 04.7 MPS
THERMODYNAMIC BASE DATA..PRESSURE 109.0 MBS
TEMPERATURE -63.6°C
ALTITUDE 16.000 METERS




STATION: (NASA) Wallops Island, Va. ROCKET TIME: 1415 LST 1915 GCT PAYLOAD TYPE: Arcasonde 1A

DATE: 5 June, 1968 ROCKET MOTOR TYPE: Arcas RADIOSONDE TYPE: 1680 MHz

# ROCKET OBSERVATION DATA

RP STATION NAME

82599 (CNAE) NATAL, BRAZIL

LAT. 05°55' S LONG. 35°10' W

ROCKET LAUNCH

DATE JUNE 12, 1968 TIME 1502 Z

RAWINSONDE RELEASE

DATE JUNE 12, 1968 TIME 1201 Z

ROCKET WINDS

| FALL VEL | ALT | POLAR | | WIND COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| | 64 | 251 | 033 | +011 | +032 |
| 087 | 63 | 242 | 029 | +014 | +026 |
| 069 | 62 | 206 | 027 | +024 | +012 |
| 061 | 61 | 205 | 023 | +021 | +010 |
| 050 | 60 | 187 | 017 | +017 | +002 |
| 045 | 59 | 152 | 016 | +013 | -009 |
| 042 | 58 | 140 | 016 | +012 | -010 |
| 038 | 57 | 147 | 018 | +015 | -010 |
| 038 | 56 | 122 | 015 | +008 | -013 |
| 034 | 55 | 083 | 024 | -003 | -024 |
| 033 | 54 | 077 | 027 | -006 | -026 |
| 031 | 53 | 070 | 012 | -004 | -011 |
| 029 | 52 | 160 | 007 | +006 | -003 |
| 026 | 51 | 179 | 008 | +008 | +000 |
| 025 | 50 | 303 | 003 | -002 | +003 |
| 024 | 49 | 014 | 004 | -004 | -001 |
| 024 | 48 | 305 | 007 | -004 | +006 |
| 023 | 47 | 286 | 013 | -003 | +013 |
| 021 | 46 | 285 | 012 | -003 | +012 |
| 020 | 45 | 290 | 010 | -003 | +009 |
| 019 | 44 | 290 | 011 | -004 | +010 |
| 019 | 43 | 282 | 018 | -004 | +018 |
| 018 | 42 | 281 | 020 | -004 | +020 |
| 017 | 41 | 280 | 017 | -003 | +017 |
| 017 | 40 | 288 | 013 | -004 | +012 |
| 017 | 39 | 300 | 011 | -007 | +009 |
| 017 | 38 | 309 | 010 | -006 | +008 |
| 016 | 37 | 279 | 011 | -002 | +011 |
| 015 | 36 | 263 | 009 | +001 | +009 |
| 014 | 35 | 253 | 009 | +003 | +009 |
| 013 | 34 | 266 | 007 | +000 | +007 |
| 013 | 33 | 332 | 002 | -002 | +001 |
| 013 | 32 | 076 | 003 | -001 | -003 |
| 012 | 31 | 031 | 005 | -004 | -003 |
| 012 | 30 | 057 | 009 | -005 | -008 |
| 011 | 29 | 088 | 021 | -001 | -021 |
| 011 | 28 | 088 | 030 | -001 | -030 |
| 010 | 27 | 087 | 033 | -002 | -033 |
| 010 | 26 | 087 | 033 | -002 | -033 |
| 009 | 25 | 086 | 030 | -002 | -030 |
| 009 | 24 | 090 | 024 | +000 | -024 |
| 008 | 23 | 092 | 022 | +001 | -022 |
| 008 | 22 | 088 | 021 | -001 | -021 |
| 008 | 21 | 090 | 014 | +000 | -014 |
| 007 | 20 | 184 | 005 | +005 | +000 |
| 007 | 19 | 245 | 014 | +006 | +013 |
| 006 | 18 | 282 | 010 | -002 | +010 |

RAWINSONDE

| PRESSURE | ALT TENS OF | POLAR | | WIND COMPONENTS MPS | | RH | TEMP |
|---|---|---|---|---|---|---|---|
| MB | METERS | DEG | MPS | N-S | E-W | % | DEG C |
| 1012.2 | 0002 | 170 | 005 | +005 | -001 | 88 | +24.6 |
| 0805.0 | 0200 | 134 | 012 | +008 | -009 | 87 | +12.3 |
| 0633.0 | 0400 | 013 | 005 | -005 | -001 | 57 | +02.9 |
| 0492.0 | 0600 | 115 | 008 | +003 | -007 | 14 | -06.9 |
| 0378.0 | 0800 | 152 | 013 | +011 | -006 | 17 | -20.7 |
| 0286.8 | 1000 | 060 | 010 | -005 | -009 | 40 | -38.7 |
| 0212.0 | 1200 | 359 | 006 | -006 | +000 | | -53.5 |
| 0154.0 | 1400 | 302 | 012 | -006 | +010 | | -68.7 |
| 0126.0 | 1523 | 310 | 014 | -009 | +011 | | -76.5 |
| 0109.7 | 1600 | 303 | 018 | -010 | +016 | | -76.3 |
| 0077.8 | 1800 | 298 | 010 | -005 | +009 | | -74.0 |
| 0055.3 | 2000 | 180 | 007 | +007 | +000 | | -69.4 |
| 0040.0 | 2200 | 086 | 021 | -001 | -021 | | -60.3 |
| 0029.3 | 2400 | 083 | 023 | -003 | -023 | | -53.7 |
| 0021.5 | 2600 | 086 | 031 | -002 | -031 | | -49.5 |
| 0015.9 | 2800 | 097 | 033 | +004 | -033 | | -41.5 |
| 0013.0 | 2928 | 097 | 016 | +002 | -016 | | -37.4 |

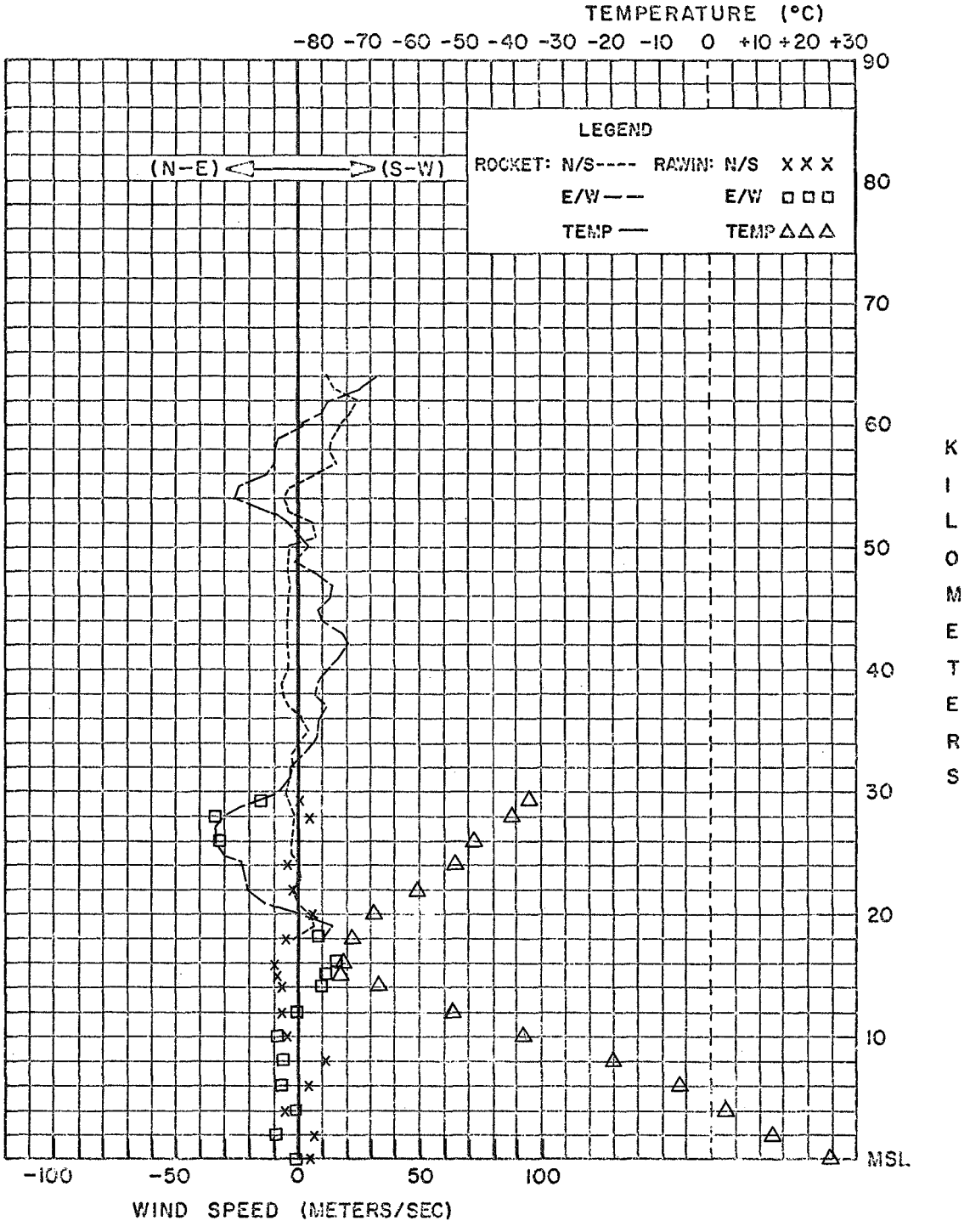
# TECHNICAL DATA

MOTOR TYPE..JUDI
PAYLOAD TYPE..CHAFF
FUSE TYPE..ELECTRICALLY ACTIVATED PYROTECHNIC
LAUNCHER SETTING..055°AZIMUTH 74.0°ELEVATION
RADAR TYPE..MPS-19 APOGEE 64,618 METERS
WIND SENSOR TYPE..0.005 INCH S BAND COPPER CHAFF SENSOR FALL-RATE..NOMINAL
TEMPERATURE SENSOR TYPE..N.A.
GROUND EQUIPMENT TYPE..N.A.
REMARKS..NONE

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..098 SEC

RADIOSONDE MANUFACTURER..BENDIX
TEMPERATURE ELEMENT TYPE..ROD THERMISTOR
PRESSURE SENSOR TYPE..ANEROID
GROUND EQUIPMENT TYPE..GMD-1A
WIND AT ROCKET LAUNCH..6M 150DEG/07MPS 9M 160DEG/08MPS 16M 150DEG/08MPS
40M 140DEG/09MPS
BALLISTIC WIND..UNKNOWN AZIMUTH UNKNOWN MPS
THERMODYNAMIC BASE DATA..PRESSURE N.A. MBS
TEMPERATURE N.A. C
ALTITUDE N.A. METERS

RADIOSONDE TYPE..1680 MHZ
BALLOON TYPE..NEOPRENE
BALLOON SIZE..1,000 GRAMS




STATION: (CNAE) Natal, Brazil
DATE: 12 June, 1968

ROCKET TIME: 1202 LST 1502 GCT
ROCKET MOTOR TYPE: Judi

PAYLOAD TYPE: Chaff
RADIOSONDE TYPE: 1680 MHZ

# ROCKET OBSERVATION DATA

RP STATION NAME

72402 (NASA) WALLOPS ISLAND, VIRGINIA

LAT. 37°51' N LONG. 75°29' W

ROCKET LAUNCH

DATE JUNE 13, 1968 TIME 1413 Z

RAWINSONDE RELEASE

DATE JUNE 13, 1968 TIME 1115 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 085 | 55 | 089 | 038 | -001 | -038 |
| 083 | 54 | 090 | 038 | +000 | -038 |
| 080 | 53 | 088 | 039 | -002 | -039 |
| 074 | 52 | 090 | 041 | +000 | -041 |
| 067 | 51 | 100 | 043 | +008 | -043 |
| 067 | 50 | 104 | 045 | +011 | -044 |
| 064 | 49 | 102 | 046 | +010 | -045 |
| 057 | 48 | 104 | 041 | +009 | -040 |
| 057 | 47 | 104 | 038 | +009 | -037 |
| 053 | 46 | 096 | 037 | +004 | -037 |
| 048 | 45 | 091 | 034 | +001 | -034 |
| 045 | 44 | 094 | 028 | +002 | -028 |
| 043 | 43 | 098 | 028 | +004 | -028 |
| 038 | 42 | 088 | 033 | -001 | -033 |
| 034 | 41 | 086 | 029 | -002 | -029 |
| 033 | 40 | 091 | 023 | +000 | -023 |
| 031 | 39 | 095 | 022 | +002 | -021 |
| 029 | 38 | 100 | 022 | +004 | -021 |
| 028 | 37 | 090 | 021 | +000 | -021 |
| 025 | 36 | 073 | 020 | -006 | -019 |
| 022 | 35 | 069 | 016 | -006 | -015 |
| 021 | 34 | 078 | 010 | -002 | -010 |
| 020 | 33 | 095 | 006 | +000 | -006 |
| 018 | 32 | 121 | 007 | +004 | -006 |
| 017 | 31 | 115 | 011 | +005 | -010 |
| 015 | 30 | 105 | 011 | +003 | -011 |
| 013 | 29 | 098 | 010 | +001 | -010 |
| 012 | 28 | 077 | 008 | -002 | -008 |
| 011 | 27 | 088 | 006 | +000 | -006 |
| 010 | 26 | 113 | 007 | +003 | -006 |
| 009 | 25 | 073 | 004 | -001 | -003 |
| 008 | 24 | 024 | 001 | -001 | +000 |
| 007 | 23 | 126 | 003 | +002 | -003 |
| 006 | 22 | 110 | 005 | +002 | -005 |
| 006 | 21 | 106 | 005 | +001 | -005 |
| 006 | 20 | 101 | 003 | +001 | -003 |
| 005 | 19 | 167 | 002 | +002 | +000 |
| 005 | 18 | 177 | 005 | +005 | +000 |

ROCKET THERMODYNAMICS

| ALT TENS OF METERS | TEMP DEG C | PRESSURE MB | DENSITY G M -3 | WIND POLAR DEG | MPS | COMPONENTS MPS N-S | E-W |
|---|---|---|---|---|---|---|---|
| 5572 | +06.7 | 00.479 | 00.596 | | | | |
| 5389 | +01.0 | 00.598 | 00.760 | 090 | 038 | +000 | -038 |
| 5319 | +03.9 | 00.651 | 00.819 | 088 | 039 | -002 | -039 |
| 5215 | +04.5 | 00.738 | 00.927 | 090 | 040 | +000 | -040 |
| 5005 | +08.6 | 00.950 | 01.175 | 104 | 045 | +011 | -044 |
| 4883 | +08.6 | 01.099 | 01.359 | 102 | 045 | +010 | -044 |
| 4651 | +02.0 | 01.455 | 01.842 | 100 | 038 | +007 | -037 |
| 4578 | +03.0 | 01.590 | 02.006 | 095 | 037 | +003 | -036 |
| 4508 | +02.6 | 01.733 | 02.232 | 091 | 034 | +001 | -034 |
| 4471 | -01.2 | 01.815 | 02.325 | 092 | 032 | +001 | -032 |
| 4380 | -02.1 | 02.031 | 02.611 | 095 | 028 | +002 | -028 |
| 4285 | +01.6 | 02.284 | 02.896 | 097 | 029 | +003 | -029 |
| 4191 | -04.6 | 02.567 | 03.330 | 088 | 032 | -001 | -032 |
| 4121 | -09.0 | 02.804 | 03.698 | 086 | 030 | -002 | -030 |
| 4060 | -13.7 | 03.033 | 04.073 | 088 | 027 | -001 | -027 |
| 3929 | -16.8 | 03.600 | 04.892 | 094 | 022 | +002 | -022 |
| 3900 | -21.1 | 03.741 | 05.171 | 095 | 022 | +002 | -021 |
| 3630 | -22.0 | 05.373 | 07.453 | 078 | 021 | -004 | +020 |
| 3545 | -27.0 | 06.030 | 08.534 | 071 | 018 | -006 | +017 |
| 3496 | -27.6 | 06.450 | 09.151 | 069 | 016 | -006 | +015 |
| 3432 | -33.6 | 07.051 | 10.254 | 075 | 012 | -003 | +012 |
| 3347 | -36.6 | 07.955 | 11.716 | 087 | 008 | +000 | +008 |
| 3188 | -34.2 | 09.973 | 14.540 | 120 | 007 | +004 | +006 |
| 3082 | -36.6 | 11.595 | 17.077 | 113 | 011 | +004 | +010 |
| 3039 | -32.7 | 12.324 | 17.856 | 109 | 011 | +004 | +010 |
| 2969 | -36.9 | 13.610 | 20.070 | 103 | 010 | +002 | -010 |
| 2938 | -36.2 | 14.227 | 20.918 | 100 | 010 | +002 | +010 |
| 2911 | -38.3 | 14.789 | 21.938 | 099 | 010 | +002 | +010 |
| 2886 | -37.5 | 15.339 | 22.664 | 095 | 010 | +001 | -010 |
| 2874 | -39.0 | 15.597 | 23.207 | 092 | 009 | +000 | +009 |
| 2862 | -37.9 | 15.869 | 23.501 | 089 | 009 | +000 | +009 |
| 2841 | -40.4 | 16.359 | 24.486 | 085 | 009 | -001 | +009 |
| 2704 | -38.1 | 19.945 | 29.562 | 088 | 006 | +000 | +006 |
| 2670 | -42.9 | 20.957 | 31.709 | 096 | 006 | +001 | +006 |
| 2655 | -41.1 | 21.422 | 32.162 | 099 | 006 | +001 | -006 |
| 2490 | -48.0 | 27.354 | 42.325 | 067 | 004 | -001 | +003 |
| 2368 | -47.3 | 32.857 | 50.683 | 053 | 002 | -001 | -001 |
| 2124 | -53.4 | 47.626 | 75.504 | 107 | 005 | +002 | +005 |
| 2106 | -55.0 | 48.972 | 78.208 | 106 | 005 | +001 | +005 |
| 2000 | -56.7 | 57.785 | 93.006 | 101 | 003 | +001 | +003 |
| 1798 | -65.4 | | | 177 | 005 | +005 | +000 |
| 1774 | -63.4 | | | | | | |

CONSTANT PRESSURE SURFACES (GEOPOTENTIAL HEIGHT)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2086 | -55.2 | 50.000 | 79.926 | 106 | 005 | +001 | +005 |
| 2419 | -47.7 | 30.000 | 46.351 | 039 | 002 | -002 | -001 |
| 2691 | -38.4 | 20.000 | 29.679 | 088 | 006 | +000 | +006 |
| 3170 | -34.2 | 10.000 | 14.582 | 120 | 007 | +004 | +006 |
| 3418 | -33.1 | 07.000 | 10.159 | 075 | 012 | -003 | -012 |
| 3662 | -21.8 | 05.000 | 06.929 | 086 | 021 | -002 | -021 |
| 4042 | -13.0 | 03.000 | 04.018 | 087 | 028 | -002 | -028 |
| 4362 | -02.0 | 02.000 | 02.570 | 095 | 028 | +002 | -028 |
| 4923 | +08.6 | 01.000 | 01.236 | 103 | 045 | +011 | -044 |

RAWINSONDE

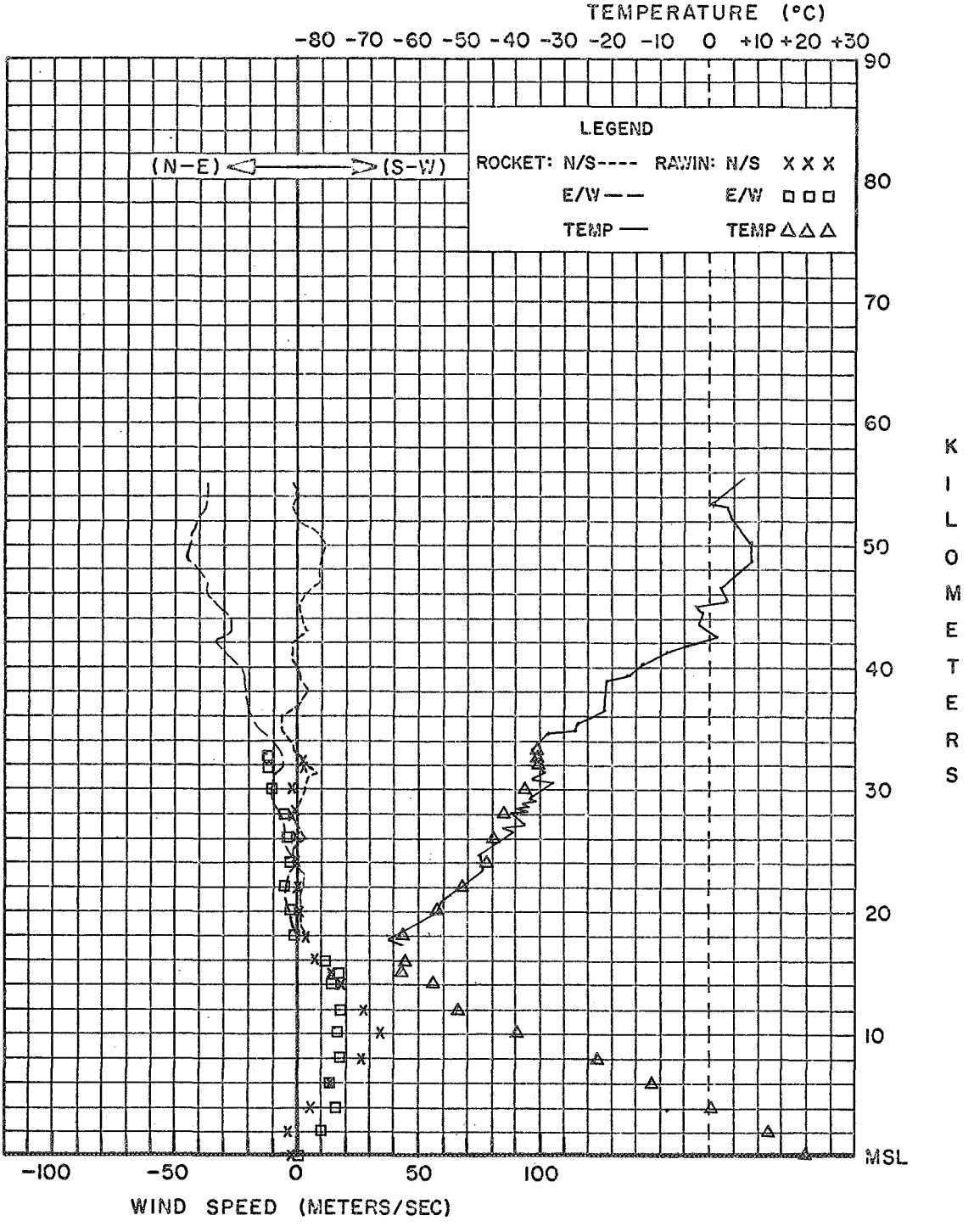
| PRESSURE MB | ALT TENS OF METERS | WIND POLAR DEG | MPS | COMPONENTS MPS N-S | E-W | RH % | TEMP DEG C |
|---|---|---|---|---|---|---|---|
| 1004.0 | 0000 | 360 | 003 | -003 | +000 | 93 | +20.0 |
| 0795.0 | 0200 | 260 | 010 | -004 | +010 | 44 | +12.5 |
| 0623.0 | 0400 | 252 | 017 | +005 | +016 | 49 | +00.8 |
| 0482.0 | 0600 | 226 | 019 | +013 | +013 | 65 | -12.0 |
| 0370.0 | 0800 | 216 | 031 | +026 | +018 | 27 | -23.1 |
| 0280.0 | 1000 | 207 | 038 | +034 | +017 | | -39.2 |
| 0207.0 | 1200 | 213 | 034 | +028 | +018 | | -52.2 |
| 0151.0 | 1400 | 219 | 023 | +018 | +014 | | -57.1 |
| 0126.0 | 1518 | 230 | 021 | +013 | +016 | | -63.1 |
| 0110.0 | 1600 | 236 | 013 | +007 | +011 | | -63.1 |
| 0080.0 | 1800 | 163 | 003 | +003 | -001 | | -63.7 |
| 0057.5 | 2000 | 125 | 002 | +001 | -002 | | -55.8 |
| 0043.0 | 2200 | 086 | 005 | +000 | -005 | | -51.1 |
| 0031.5 | 2400 | 087 | 003 | +000 | -003 | | +46.8 |
| 0023.3 | 2600 | 094 | 004 | +000 | -004 | | +45.0 |
| 0017.0 | 2800 | 082 | 005 | -001 | -005 | | +42.3 |
| 0012.7 | 3000 | 076 | 010 | -002 | -010 | | +38.2 |
| 0009.6 | 3200 | 094 | 012 | +002 | -012 | | +35.1 |
| 0009.5 | 3216 | 098 | 012 | +002 | -012 | | +35.1 |
| 0008.8 | 3273 | | | | | | +35.5 |

# TECHNICAL DATA

MOTOR TYPE..ARC45
PAYLOAD TYPE..ARC4SONDE-1A
FUSE TYPE..GAS GENERATED SEPARATION DEVICE
LAUNCHER SETTING..130° AZIMUTH 75.0° ELEVATION
RADAR TYPE..MOD 2, MPS-19 APOGEE 57,455 METERS
WIND SENSOR TYPE..15 FT, DIAMETER PARACHUTE SENSOR FALL-RATE..NOMINAL
TEMPERATURE SENSOR TYPE..0.010 INCH BEAD THERMISTOR
GROUND EQUIPMENT TYPE..GMD-1B
REMARKS..MOD 2 RADAR TRACK USED FROM ZERO TIME TO PLUS 23 MINUTES (24,545 METERS). MPS-19 RADAR TRACK USED FROM 24,565 METERS DOWN TO DROP TRACK AT 17,740 METERS.

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..FAIR
ACTUAL FUSE DELAY TIME..129 SEC

RADIOSONDE MANUFACTURER..MOLDED INSULATION CO. RADIOSONDE TYPE..1680 MHZ
TEMPERATURE ELEMENT TYPE..ROD THERMISTOR BALLOON TYPE..NEOPRENE
PRESSURE SENSOR TYPE..ANEROID AND HYPSOMETER BALLOON SIZE..1,700 GRAMS
GROUND EQUIPMENT TYPE..GMD-1B
WIND AT ROCKET LAUNCH..SFC. 340DEG/07MPS 15M 315DEG/03MPS 31M 315DEG/04MPS 46M 312DEG/04MPS 61M 306DEG/04MPS 76M 304DEG/04MPS
BALLISTIC WIND.. 297° AZIMUTH 05.9 MPS
THERMODYNAMIC BASE DATA..PRESSURE 110.0 MBS
TEMPERATURE -63.1° C
ALTITUDE 16,000 METERS




STATION: (NASA) Wallops Island, Va. ROCKET TIME: 0913 LST 1413 GCT PAYLOAD TYPE: Arcasonde 1A

DATE: 13 June, 1968 ROCKET MOTOR TYPE: Arcas RADIOSONDE TYPE: 1680 MHz

# ROCKET OBSERVATION DATA

RP STATION NAME

87689 (CNIE) MAR CHIQUITA, ARGENTINA

LAT. 37°45'S LONG. 57°25'W

ROCKET LAUNCH

DATE JUNE 13, 1968 TIME 1820 Z

RAWINSONDE RELEASE

DATE JUNE 13, 1968 TIME 1225 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | WIND COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 083 | 51 | 283 | 149 | -030 | +140 |
| 083 | 50 | 282 | 142 | -025 | +135 |
| 083 | 49 | 279 | 145 | -025 | +140 |
| 083 | 48 | 279 | 155 | -027 | +150 |
| 080 | 47 | 279 | 140 | -020 | +135 |
| 067 | 46 | 274 | 137 | -010 | +132 |
| 057 | 45 | 270 | 126 | +000 | +126 |
| 056 | 44 | 274 | 108 | -010 | +105 |
| 054 | 43 | 274 | 103 | -010 | +111 |
| 053 | 42 | 274 | 107 | -010 | +105 |
| 045 | 41 | 274 | 068 | -005 | +067 |
| 038 | 40 | 275 | 065 | -003 | +064 |
| 039 | 39 | 275 | 084 | -003 | +082 |
| 039 | 38 | 275 | 079 | -003 | +077 |
| 034 | 37 | 280 | 052 | -003 | +047 |
| 028 | 36 | 281 | 069 | -003 | +067 |
| 027 | 35 | 280 | 054 | -003 | +052 |
| 024 | 34 | 279 | 057 | -003 | +055 |
| 022 | 33 | 278 | 060 | -003 | +058 |
| 022 | 32 | 280 | 052 | -003 | +050 |
| 021 | 31 | 281 | 050 | -003 | +048 |
| 019 | 30 | 275 | 046 | -001 | +044 |
| 018 | 29 | 272 | 042 | +000 | +042 |
| 015 | 28 | 270 | 041 | +000 | +041 |
| 015 | 27 | 270 | 040 | +000 | +040 |
| 014 | 26 | 274 | 037 | -001 | +036 |
| 012 | 25 | 276 | 033 | -001 | +032 |
| 010 | 24 | 280 | 028 | -002 | +027 |
| 010 | 23 | 279 | 021 | -001 | +019 |
| 009 | 22 | 278 | 016 | -001 | +013 |
| 008 | 21 | 276 | 015 | -001 | +014 |
| 007 | 20 | 280 | 015 | -001 | +013 |
| 007 | 19 | 285 | 015 | -001 | +013 |
| 006 | 18 | 285 | 015 | -001 | +013 |
| 005 | 17 | 285 | 015 | -001 | +013 |
| 004 | 16 | 292 | 016 | -002 | +013 |

ROCKET THERMODYNAMICS

| ALT TENS OF METERS | TEMP DEG C | PRESSURE MB | DENSITY G M -3 | WIND POLAR DEG | MPS | WIND COMPONENTS MPS N-S | E-W |
|---|---|---|---|---|---|---|---|
| 5260 | -05.0 | 00.589 | 00.765 | | | | |
| 5110 | -03.0 | 00.710 | 00.916 | 283 | 149 | -030 | +140 |
| 5050 | +00.5 | 00.765 | 00.974 | 282 | 142 | -025 | +135 |
| 4762 | +00.5 | 01.090 | 01.387 | 279 | 150 | -023 | +138 |
| 4660 | -03.0 | 01.236 | 01.594 | 270 | 139 | +000 | +139 |
| 4560 | -05.0 | 01.401 | 01.820 | 273 | 136 | -002 | +130 |
| 4440 | -05.5 | 01.629 | 02.120 | 274 | 108 | -010 | +105 |
| 4140 | -23.0 | 02.407 | 03.351 | 274 | 087 | -008 | +086 |
| 4000 | -25.0 | 02.908 | 04.082 | 275 | 065 | -003 | +064 |
| 3890 | -25.0 | 03.377 | 04.740 | 275 | 084 | -003 | +082 |
| 3800 | -32.0 | 03.823 | 05.522 | 275 | 079 | -003 | +077 |
| 3600 | -38.0 | 05.075 | 07.519 | 281 | 069 | -003 | +067 |
| 3562 | -40.0 | 05.361 | 08.010 | 281 | 062 | -004 | +062 |
| 3530 | -43.0 | 05.617 | 08.502 | 281 | 062 | -004 | +062 |
| 3470 | -45.0 | 06.136 | 09.369 | 280 | 054 | -003 | +052 |
| 3330 | -45.5 | 07.551 | 11.555 | 278 | 060 | -003 | +058 |
| 3290 | -46.0 | 08.013 | 12.290 | 278 | 060 | -003 | +058 |
| 3150 | -49.0 | 09.882 | 15.359 | 281 | 050 | -003 | +048 |
| 3130 | -46.0 | 10.183 | 15.618 | 281 | 050 | -003 | +048 |
| 3095 | -49.0 | 10.731 | 16.679 | 281 | 050 | -003 | +048 |
| 3048 | -46.0 | 11.514 | 17.659 | 278 | 048 | -002 | +046 |
| 2960 | -51.0 | 13.145 | 20.614 | 274 | 045 | -001 | +043 |
| 2850 | -51.0 | 15.542 | 24.374 | 271 | 042 | +000 | +042 |
| 2820 | -49.0 | 16.265 | 25.280 | 270 | 041 | +000 | +041 |
| 2810 | -53.0 | 16.515 | 26.135 | 270 | 041 | +000 | +041 |
| 2800 | -49.0 | 16.769 | 26.862 | 270 | 041 | +000 | +041 |
| 2570 | -51.0 | 23.770 | 37.277 | 274 | 037 | -001 | +036 |
| 2115 | -55.0 | 47.887 | 76.475 | 276 | 015 | -001 | +014 |
| 1800 | -56.0 | | | 285 | 015 | -001 | +013 |

CONSTANT PRESSURE SURFACES (GEOPOTENTIAL HEIGHT)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2080 | -55.1 | 50.000 | 79.875 | 277 | 015 | -001 | +014 |
| 2409 | -52.0 | 30.000 | 47.267 | 280 | 028 | -002 | +027 |
| 2672 | -49.9 | 20.000 | 31.213 | 274 | 036 | -001 | +036 |
| 3127 | -47.8 | 10.000 | 15.461 | 281 | 050 | -003 | +048 |
| 3363 | -45.3 | 07.000 | 10.703 | 278 | 060 | -003 | +058 |
| 3590 | -37.6 | 05.000 | 07.396 | 281 | 069 | -003 | +067 |
| 3949 | -25.0 | 03.000 | 04.389 | 275 | 070 | -003 | +068 |
| 4251 | -13.9 | 02.000 | 02.687 | 274 | 105 | -010 | +103 |
| 4795 | +00.5 | 01.000 | 01.273 | 279 | 155 | -027 | +150 |

RAWINSONDE

| PRESSURE | ALT TENS OF | WIND POLAR | | WIND COMPONENTS MPS | | RH | TEMP |
|---|---|---|---|---|---|---|---|
| MB | METERS | DEG | MPS | N-S | E-W | % | DEG C |
| 0799.5 | 0200 | 280 | 010 | -001 | +008 | 45 | +04.9 |
| 0620.5 | 0400 | 280 | 021 | -002 | +019 | 38 | -07.8 |
| 0478.0 | 0600 | 300 | 034 | -017 | +030 | 34 | -20.0 |
| 0362.5 | 0800 | 312 | 050 | -030 | +040 | 39 | -34.6 |
| 0269.5 | 1000 | 310 | 055 | -032 | +042 | 40 | -50.1 |
| 0266.0 | 1005 | 310 | 055 | -032 | +042 | 40 | -50.8 |
| 0199.0 | 1200 | 305 | 042 | -028 | +031 | | -52.2 |
| 0145.0 | 1400 | 285 | 033 | +007 | +030 | | -54.9 |
| 0107.0 | 1600 | 272 | 022 | -001 | +021 | | -56.2 |
| 0078.0 | 1800 | 305 | 012 | -005 | +009 | | -57.6 |
| 0057.0 | 2000 | 270 | 015 | +000 | +015 | | -55.5 |
| 0041.3 | 2200 | 276 | 016 | -002 | +014 | | -56.0 |
| 0034.0 | 2305 | 263 | 014 | +003 | +013 | | -51.5 |
| | 2400 | 272 | 020 | -001 | +019 | | |
| | 2600 | 278 | 030 | -003 | +028 | | |

# TECHNICAL DATA

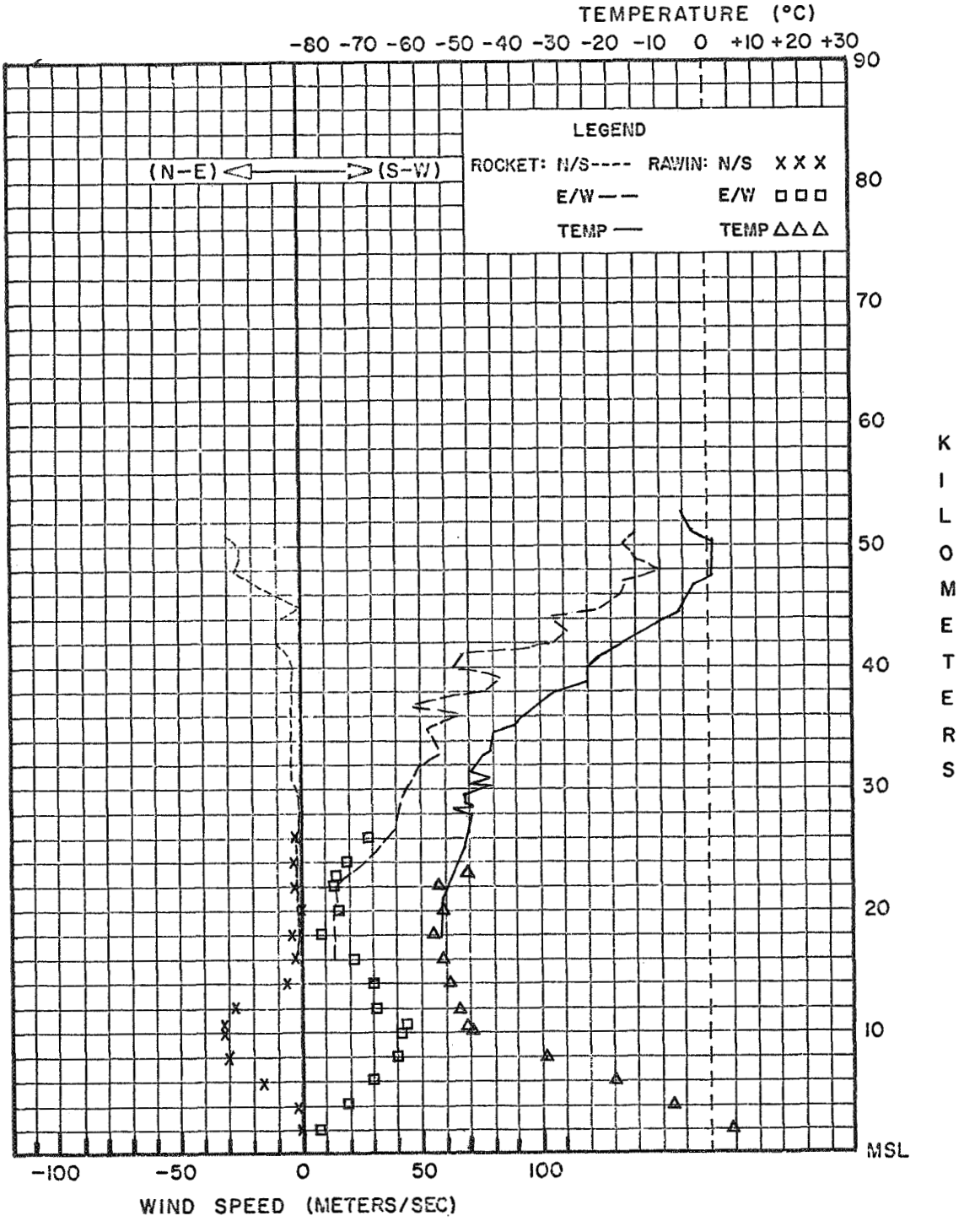
MOTOR TYPE..ARCAS
PAYLOAD TYPE..ARCASONDE-1A
FUSE TYPE..GAS GENERATED SEPARATION DEVICE
LAUNCHER SETTING..068° AZIMUTH 81.6°ELEVATION
RADAR TYPE..MPS-19 APOGEE 62,000 METERS
WIND SENSOR TYPE..18 FT. DIAMETER PARACHUTE
TEMPERATURE SENSOR TYPE..0.010 INCH BEAD THERMISTOR
GROUND EQUIPMENT TYPE..GMD-28 WITH PARAMPLIFIER
REMARKS..NONE

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..130 SEC

SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..VAISALA
TEMPERATURE ELEMENT TYPE..RESISTANCE WIRE
PRESSURE SENSOR TYPE..DOUBLE ANEROID
GROUND EQUIPMENT TYPE..VAISALA
WIND AT ROCKET LAUNCH..SFC. 200DEG/05MPS
BALLISTIC WIND.. 263°AZIMUTH 12.4 MPS
THERMODYNAMIC BASE DATA..PRESSURE 107.0 MBS
TEMPERATURE -56.2°C
ALTITUDE 16,000 METERS

RADIOSONDE TYPE..VAISALA
BALLOON TYPE..NEOPRENE
BALLOON SIZE..1,200 GRAMS




STATION: (CNIE) Mar Chiquita, Arg. ROCKET TIME: 1520 LST 1820GCT PAYLOAD TYPE: Arcasonde 1A

DATE: 13 June, 1968 ROCKET MOTOR TYPE: Arcas RADIOSONDE TYPE: Vaisala

# ROCKET OBSERVATION DATA

RP STATION NAME

72402 (NASA) WALLOPS ISLAND, VIRGINIA

LAT. 37°51' N LONG. 75°29' W

ROCKET LAUNCH

DATE JUNE 19, 1968 TIME 1432 Z

RAWINSONDE RELEASE

DATE JUNE 19, 1968 TIME 1115 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | WIND COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 087 | 57 | 090 | 063 | +000 | -063 |
| 090 | 56 | 087 | 061 | -004 | -060 |
| 090 | 55 | 085 | 054 | -004 | -054 |
| 087 | 54 | 088 | 047 | -002 | -046 |
| 080 | 53 | 095 | 050 | +004 | -049 |
| 074 | 52 | 103 | 048 | +011 | -047 |
| 069 | 51 | 103 | 046 | +011 | -045 |
| 064 | 50 | 105 | 039 | +010 | -038 |
| 062 | 49 | 105 | 033 | +008 | -033 |
| 061 | 48 | 105 | 029 | +007 | -029 |
| 055 | 47 | 115 | 025 | +011 | -023 |
| 050 | 46 | 112 | 027 | +010 | -025 |
| 049 | 45 | 105 | 029 | +007 | -028 |
| 046 | 44 | 095 | 031 | +002 | -031 |
| 042 | 43 | 091 | 031 | +001 | -031 |
| 039 | 42 | 090 | 028 | +000 | -028 |
| 037 | 41 | 083 | 026 | -003 | -026 |
| 034 | 40 | 082 | 020 | -003 | -020 |
| 032 | 39 | 088 | 016 | -001 | -016 |
| 030 | 38 | 095 | 016 | +001 | -016 |
| 028 | 37 | 098 | 020 | +003 | -019 |
| 025 | 36 | 095 | 021 | +002 | -021 |
| 024 | 35 | 089 | 019 | +000 | -019 |
| 022 | 34 | 081 | 016 | -002 | -016 |
| 020 | 33 | 072 | 015 | -005 | -015 |
| 019 | 32 | 068 | 014 | -005 | -013 |
| 017 | 31 | 078 | 010 | -002 | -010 |
| 015 | 30 | 099 | 010 | +002 | -010 |
| 013 | 29 | 098 | 011 | +002 | -011 |
| 012 | 28 | 085 | 009 | -001 | -009 |
| 011 | 27 | 080 | 008 | -001 | -008 |
| 010 | 26 | 088 | 007 | +000 | -007 |
| 009 | 25 | 103 | 006 | +001 | -006 |
| 008 | 24 | 106 | 005 | +001 | -004 |
| 007 | 23 | 095 | 004 | +000 | -004 |
| 007 | 22 | 051 | 002 | -001 | -001 |
| 006 | 21 | 351 | 002 | -002 | +000 |
| 005 | 20 | 338 | 002 | -001 | +001 |
| 005 | 19 | 256 | 002 | +000 | +002 |
| 005 | 18 | 241 | 005 | +003 | +005 |

ROCKET THERMODYNAMICS

| ALT TENS OF METERS | TEMP DEG C | PRESSURE MB | DENSITY G M$^{-3}$ | WIND POLAR DEG | WIND POLAR MPS | WIND COMPONENTS MPS N-S | WIND COMPONENTS MPS E-W |
|---|---|---|---|---|---|---|---|
| 5733 | -06.3 | 00.384 | 00.501 | | | | |
| 5640 | -09.0 | 00.432 | 00.569 | 088 | 062 | -002 | -061 |
| 5580 | -12.1 | 00.466 | 00.622 | 087 | 059 | -003 | -059 |
| 5517 | -04.9 | 00.505 | 00.666 | 085 | 055 | -004 | -055 |
| 5444 | -06.8 | 00.554 | 00.724 | 087 | 050 | -003 | -049 |
| 5400 | -07.0 | 00.585 | 00.766 | 088 | 047 | -002 | -046 |
| 5290 | -02.8 | 00.672 | 00.866 | 096 | 050 | +005 | -049 |
| 5110 | -00.5 | 00.835 | 01.072 | 103 | 046 | +011 | -045 |
| 4830 | -00.6 | 01.185 | 01.515 | 105 | 031 | +007 | -030 |
| 4610 | +03.0 | 01.552 | 01.958 | 112 | 026 | +010 | -024 |
| 4520 | +01.4 | 01.733 | 02.199 | 106 | 028 | +008 | -027 |
| 4465 | +02.6 | 01.853 | 02.342 | 102 | 029 | +006 | -029 |
| 4383 | +00.2 | 02.049 | 02.612 | 094 | 031 | +002 | -031 |
| 4334 | +02.1 | 02.176 | 02.755 | 092 | 031 | +001 | -031 |
| 4243 | -05.0 | 02.436 | 03.155 | 090 | 029 | +000 | -029 |
| 4110 | -11.0 | 02.885 | 03.834 | 084 | 026 | -003 | -026 |
| 4063 | -10.8 | 03.065 | 04.070 | 083 | 024 | -003 | -023 |
| 3947 | -13.4 | 03.560 | 04.775 | 085 | 018 | -001 | -018 |
| 3860 | -18.0 | 03.990 | 05.447 | 091 | 016 | +000 | -016 |
| 3746 | -22.0 | 04.644 | 06.442 | 097 | 018 | +002 | -017 |
| 3720 | -21.8 | 04.809 | 06.665 | 098 | 019 | +003 | -019 |
| 3633 | -24.0 | 05.408 | 07.561 | 096 | 021 | +002 | -020 |
| 3594 | -23.1 | 05.701 | 07.942 | 095 | 021 | +002 | -021 |
| 3514 | -23.7 | 06.351 | 08.871 | 090 | 019 | +000 | -019 |
| 3466 | -25.9 | 06.780 | 09.553 | 087 | 018 | -001 | -017 |
| 3440 | -26.4 | 07.025 | 09.919 | 084 | 017 | -002 | -017 |
| 3386 | -30.7 | 07.569 | 10.876 | 080 | 016 | -003 | -016 |
| 3216 | -37.2 | 09.624 | 14.209 | 069 | 014 | -005 | -013 |
| 3120 | -33.7 | 11.032 | 16.050 | 076 | 011 | -003 | -011 |
| 3097 | -36.7 | 11.398 | 16.794 | 074 | 010 | -002 | -010 |
| 3057 | -32.0 | 12.062 | 17.426 | 086 | 010 | -001 | -010 |
| 3033 | -33.0 | 12.476 | 18.099 | 092 | 010 | +000 | -010 |
| 3020 | -31.9 | 12.706 | 18.348 | 095 | 010 | +001 | -010 |
| 3000 | -40.4 | 13.074 | 19.569 | 099 | 010 | +002 | -010 |
| 2610 | -46.6 | 23.225 | 35.715 | 087 | 007 | +000 | -007 |
| 2429 | -46.6 | 30.443 | 46.814 | 105 | 005 | +001 | -005 |
| 2360 | -49.0 | 33.771 | 52.488 | 101 | 004 | +001 | -004 |
| 2323 | -48.2 | 35.710 | 55.305 | 097 | 004 | +000 | -004 |
| 2196 | -52.4 | 43.718 | 68.994 | 045 | 002 | -001 | -001 |
| 2000 | -54.0 | 54.598 | 93.153 | 338 | 002 | -001 | +001 |
| 1900 | -53.6 | | | 256 | 002 | +000 | +002 |
| 1737 | -60.4 | | | | | | |

CONSTANT PRESSURE SURFACES (GEOPOTENTIAL HEIGHT)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2096 | -53.1 | 50.000 | 79.152 | 351 | 002 | -002 | +000 |
| 2429 | -46.6 | 30.000 | 46.133 | 105 | 005 | +001 | -005 |
| 2699 | -44.9 | 20.000 | 30.531 | 080 | 008 | -001 | -008 |
| 3173 | -36.3 | 10.000 | 14.710 | 069 | 013 | -005 | -012 |
| 3424 | -26.3 | 07.000 | 09.881 | 084 | 017 | -002 | -017 |
| 3670 | -22.5 | 05.000 | 06.950 | 098 | 020 | +003 | -019 |
| 4053 | -10.9 | 03.000 | 03.985 | 083 | 026 | +003 | -026 |
| 4372 | +00.9 | 02.000 | 02.543 | 095 | 031 | +002 | -031 |
| 4929 | -00.6 | 01.000 | 01.278 | 105 | 038 | +009 | -037 |

RAWINSONDE

| PRESSURE MB | ALT TENS OF METERS | WIND POLAR DEG | WIND POLAR MPS | WIND COMPONENTS MPS N-S | WIND COMPONENTS MPS E-W | RH % | TEMP DEG C |
|---|---|---|---|---|---|---|---|
| 1019.0 | 0000 | 060 | 002 | -001 | -002 | 90 | +20.0 |
| 0808.0 | 0200 | 256 | 012 | +003 | +012 | 71 | +11.4 |
| 0633.0 | 0400 | 256 | 014 | +003 | +014 | 18 | +03.1 |
| 0491.0 | 0600 | 250 | 016 | +006 | +015 | 19 | -10.4 |
| 0374.0 | 0800 | 255 | 017 | +004 | +017 | 24 | -25.3 |
| 0283.0 | 1000 | 265 | 024 | +002 | +024 | | -41.4 |
| 0209.0 | 1200 | 270 | 032 | +000 | +032 | | -55.8 |
| 0170.0 | 1332 | 275 | 030 | -002 | +030 | | -65.5 |
| 0153.0 | 1400 | 273 | 029 | -002 | +029 | | -65.0 |
| 0110.0 | 1600 | 261 | 016 | +002 | +016 | | -61.2 |
| 0080.0 | 1800 | 277 | 006 | -001 | +006 | | -60.4 |
| 0058.5 | 2000 | 175 | 002 | +002 | +000 | | -54.8 |
| 0043.0 | 2200 | 077 | 002 | +000 | -002 | | -51.1 |
| 0031.6 | 2400 | 081 | 005 | -001 | +005 | | -48.9 |
| 0023.5 | 2600 | 068 | 009 | -003 | -008 | | -46.8 |
| 0017.5 | 2800 | 083 | 011 | -001 | -011 | | -42.4 |
| 0015.5 | 2879 | 087 | 017 | -001 | -017 | | -40.8 |
| 0014.5 | 2925 | | | | | | -39.5 |

# TECHNICAL DATA

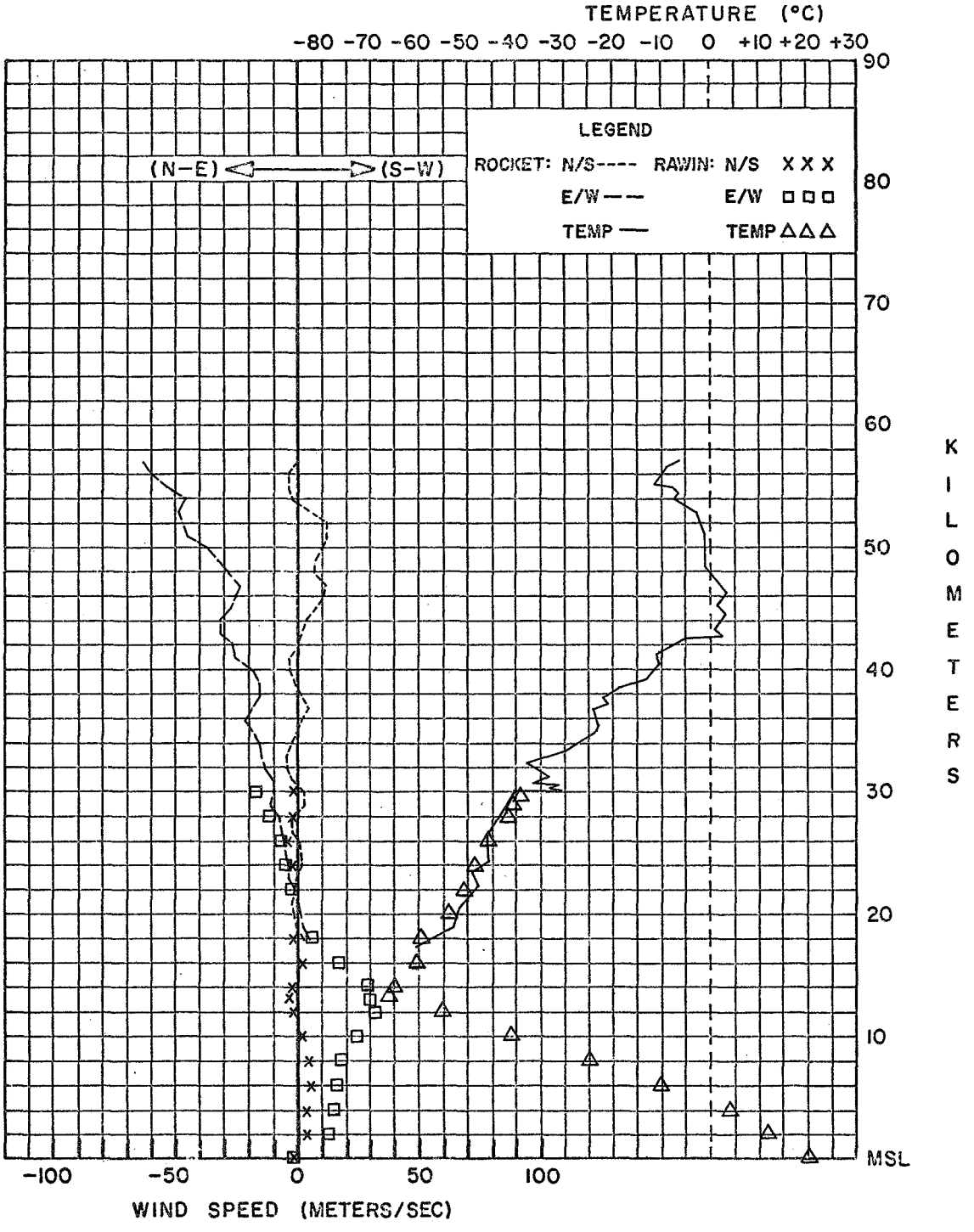
MOTOR TYPE..ARCAS
PAYLOAD TYPE..ARCASONDE-1A
FUSE TYPE..GAS GENERATED SEPARATION DEVICE
LAUNCHER SETTING..090° AZIMUTH 80.0° ELEVATION
RADAR TYPE..SPANDAR APOGEE 59,900 METERS
WIND SENSOR TYPE..15 FT. DIAMETER PARACHUTE
TEMPERATURE SENSOR TYPE..0.010 INCH BEAD THERMISTOR
GROUND EQUIPMENT TYPE..GMD-1B
REMARKS..NONE

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..FAIR
ACTUAL FUSE DELAY TIME..128 SEC

SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..MOLDED INSULATION CO.
TEMPERATURE ELEMENT TYPE..ROD THERMISTOR
PRESSURE SENSOR TYPE..ANEROID AND HYPSOMETER
GROUND EQUIPMENT TYPE..GMD-1B
WIND AT ROCKET LAUNCH..SFC. 125DEG/02MPS 15M 127DEG/02MPS 31M 127DEG/02MPS
46M 143DEG/02MPS 61M 130DEG/04MPS 76M 149DEG/03MPS
BALLISTIC WIND.. 200° AZIMUTH 01.9 MPS
THERMODYNAMIC BASE DATA..PRESSURE 110.0 MBS
TEMPERATURE -61.2° C
ALTITUDE 16,000 METERS

RADIOSONDE TYPE..1680 MHZ
BALLOON TYPE..NEOPRENE
BALLOON SIZE..1,700 GRAMS




STATION: (NASA) Wallops Island, Va. ROCKET TIME: 0932 LST 1432 GCT PAYLOAD TYPE: Arcasonde 1A

DATE: 19 June, 1968 ROCKET MOTOR TYPE: Arcas RADIOSONDE TYPE: 1680 MHZ

# ROCKET OBSERVATION DATA

RP STATION NAME

87689 (CNIE) MAR CHIQUITA, ARGENTINA

LAT. 37°45' S LONG. 57°25' W

ROCKET LAUNCH

DATE JUNE 26, 1968 TIME 1650 Z

RAWINSONDE RELEASE

DATE JUNE 26, 1968 TIME 1800 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | WIND COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 080 | 63 | 248 | 146 | +055 | +135 |
| 091 | 62 | 258 | 145 | +030 | +142 |
| 074 | 61 | 263 | 130 | +016 | +128 |
| 054 | 60 | 270 | 135 | +000 | +135 |
| 057 | 59 | 275 | 142 | -012 | +141 |
| 048 | 58 | 276 | 121 | -013 | +119 |
| 048 | 57 | 281 | 131 | -025 | +129 |
| 046 | 56 | 280 | 130 | -023 | +127 |
| 039 | 55 | 276 | 130 | -014 | +129 |
| 039 | 54 | 278 | 132 | -018 | +130 |
| 042 | 53 | 280 | 134 | -023 | +131 |
| 038 | 52 | 282 | 131 | -027 | +127 |
| 032 | 51 | 282 | 127 | -026 | +124 |
| 029 | 50 | 282 | 121 | -025 | +117 |
| 029 | 49 | 285 | 122 | -031 | +117 |
| 031 | 48 | 283 | 122 | -027 | +118 |
| 029 | 47 | 285 | 125 | -032 | +121 |
| 025 | 46 | 283 | 122 | -027 | +117 |
| 030 | 45 | 280 | 085 | -015 | +083 |
| 027 | 44 | 280 | 091 | -016 | +089 |
| 020 | 43 | 280 | 121 | -021 | +118 |
| 022 | 42 | 276 | 117 | -012 | +116 |
| 034 | 41 | 269 | 119 | +003 | +116 |
| 034 | 40 | 269 | 110 | +008 | +109 |

RAWINSONDE

| PRESSURE | ALT TENS OF METERS | WIND POLAR | | WIND COMPONENTS MPS | | RH | TEMP |
|---|---|---|---|---|---|---|---|
| MB | | DEG | MPS | N-S | E-W | % | DEG C |
| 1022.6 | 0002 | 290 | 005 | -001 | +004 | 60 | +12.8 |
| 0806.8 | 0200 | 355 | 010 | -010 | +001 | 50 | +04.6 |
| 0629.4 | 0400 | 349 | 011 | -011 | +002 | 56 | -11.4 |
| 0484.0 | 0600 | 310 | 014 | -009 | +011 | 27 | -15.9 |
| 0369.8 | 0800 | 307 | 016 | -010 | +013 | 30 | -31.0 |
| 0275.0 | 1000 | 281 | 022 | -004 | +021 | 32 | -47.5 |
| 0200.7 | 1200 | 274 | 031 | -002 | +031 | | -59.9 |
| 0146.7 | 1400 | 270 | 029 | +000 | +029 | | -58.8 |
| 0106.8 | 1600 | 270 | 021 | +000 | +021 | | -63.2 |
| 0076.6 | 1800 | 252 | 018 | +005 | +017 | | -61.5 |
| 0056.0 | 2000 | 270 | 016 | +000 | +016 | | -58.3 |
| 0040.8 | 2200 | 270 | 026 | +000 | +026 | | -56.7 |
| 0029.5 | 2400 | 278 | 033 | -005 | +032 | | -56.3 |
| 0021.3 | 2600 | 280 | 040 | -007 | +039 | | -56.0 |
| | 2800 | 280 | 054 | -009 | +053 | | |

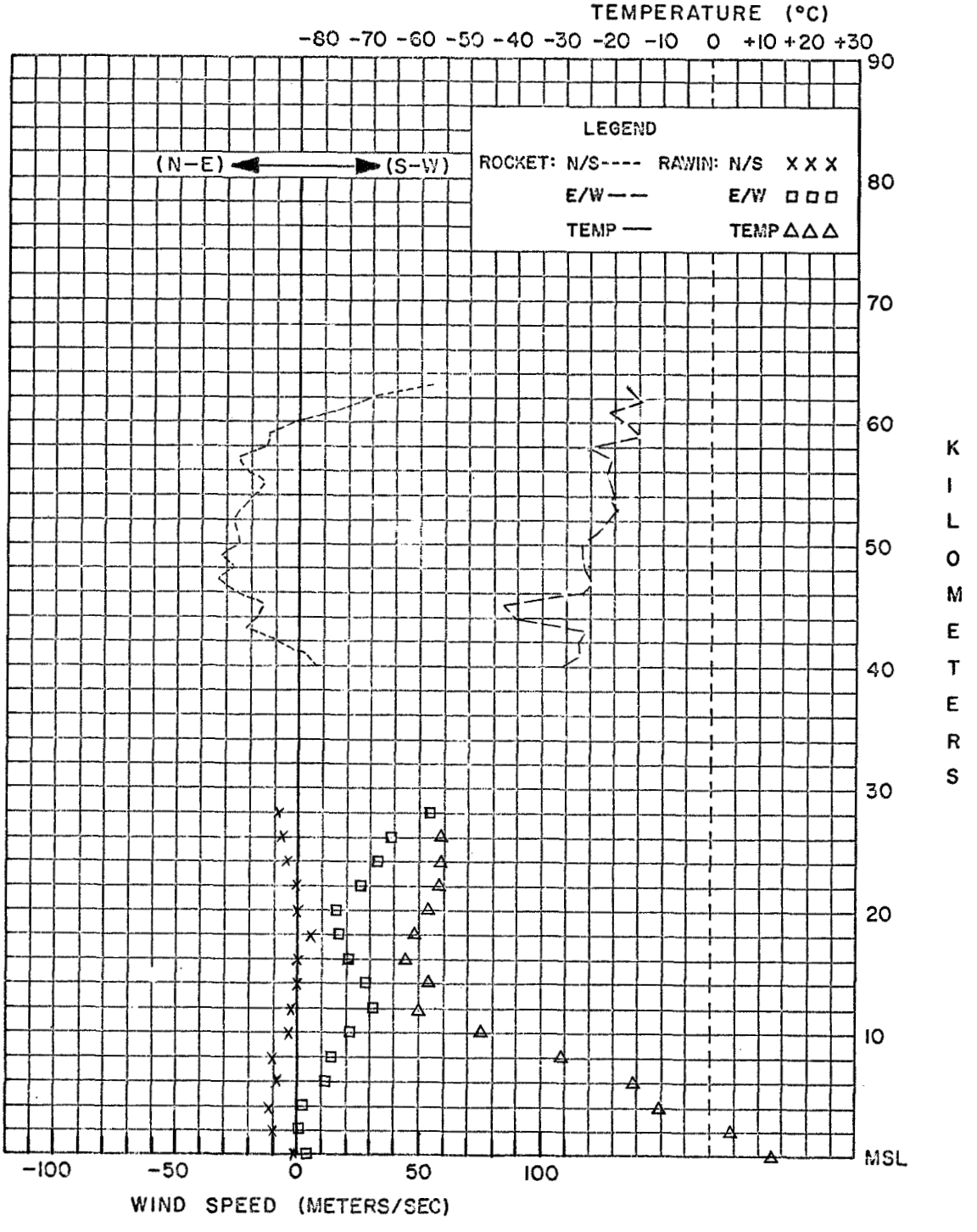
# TECHNICAL DATA

MOTOR TYPE..JUNI
PAYLOAD TYPE..CHAFF
FUSE TYPE..ELECTRICALLY ACTIVATED PYROTECHNIC
LAUNCHER SETTING..070° AZIMUTH 82.5°ELEVATION
RADAR TYPE..MPS-19 APOGEE 69,000 METERS
WIND SENSOR TYPE..0.005 INCH S BAND COPPER CHAFF SENSOR FALL-RATE..NOMINAL
TEMPERATURE SENSOR TYPE..N.A.
GROUND EQUIPMENT TYPE..N.A.
REMARKS..LARGE CHAFF DIFUSSION.

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..100 SEC

RADIOSONDE MANUFACTURER..VAISALA
TEMPERATURE ELEMENT TYPE..RESISTANCE WIRE
PRESSURE SENSOR TYPE..DOUBLE ANEROID
GROUND EQUIPMENT TYPE..VAISALA
WIND AT ROCKET LAUNCH..SFC, 160DEG/03MPS
BALLISTIC WIND.. 265°AZIMUTH 11.2 MPS
THERMODYNAMIC BASE DATA..PRESSURE N.A. MBS
TEMPERATURE N.A. C
ALTITUDE N.A. METERS

RADIOSONDE TYPE..VAISALA
BALLOON TYPE..NEOPRENE
BALLOON SIZE..800 GRAMS




STATION: (CNIE) Mar Chiquita, Arg. ROCKET TIME: 1350 LST 1650 GCT PAYLOAD TYPE: Chaff

DATE: 26 June, 1968 ROCKET MOTOR TYPE: Judi RADIOSONDE TYPE: Vaisala

# ROCKET OBSERVATION DATA

WP STATION NAME

72402 (NASA) WALLOPS ISLAND, VIRGINIA

LAT. 37°51' N LONG. 75°29' W

ROCKET LAUNCH

DATE JULY 2, 1968 TIME 1554 Z

RAWINSONDE RELEASE

DATE JULY 2, 1968 TIME 1115 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | WIND COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 080 | 53 | 099 | 043 | +007 | -042 |
| 077 | 52 | 101 | 047 | +009 | -046 |
| 069 | 51 | 102 | 050 | +011 | -050 |
| 062 | 50 | 101 | 049 | +010 | -049 |
| 062 | 49 | 103 | 045 | +010 | -044 |
| 062 | 48 | 098 | 046 | +006 | -045 |
| 053 | 47 | 099 | 046 | +007 | -046 |
| 046 | 46 | 103 | 047 | +011 | -046 |
| 046 | 45 | 099 | 049 | +008 | -049 |
| 042 | 44 | 088 | 044 | -002 | -044 |
| 040 | 43 | 087 | 039 | -002 | -039 |
| 036 | 42 | 089 | 032 | -001 | -032 |
| 034 | 41 | 095 | 027 | +002 | -027 |
| 034 | 40 | 096 | 023 | +002 | -023 |
| 031 | 39 | 089 | 023 | +000 | -023 |
| 031 | 38 | 091 | 027 | +001 | -027 |
| 027 | 37 | 095 | 026 | +002 | -026 |
| 023 | 36 | 100 | 023 | +004 | -023 |
| 023 | 35 | 101 | 019 | +004 | -019 |
| 024 | 34 | 095 | 016 | +001 | -016 |
| 020 | 33 | 095 | 016 | +001 | -016 |
| 017 | 32 | 099 | 016 | +003 | -016 |
| 017 | 31 | 102 | 015 | +003 | -015 |
| 014 | 30 | 108 | 014 | +004 | -013 |
| 014 | 29 | 111 | 014 | +005 | -013 |
| 013 | 28 | 104 | 012 | +003 | -012 |
| 010 | 27 | 091 | 010 | +000 | -010 |
| 010 | 26 | 093 | 009 | +001 | -009 |
| 008 | 25 | 105 | 008 | +002 | -008 |
| 007 | 24 | 107 | 009 | +003 | -008 |
| 007 | 23 | 122 | 009 | +005 | -008 |
| 007 | 22 | 125 | 009 | +005 | -008 |
| 007 | 21 | 107 | 006 | +002 | -006 |
| 007 | 20 | 102 | 005 | +001 | -005 |
| 006 | 19 | 048 | 003 | -002 | -002 |
| 004 | 18 | 350 | 002 | -002 | +000 |

ROCKET THERMODYNAMICS

| ALT TENS OF METERS | TEMP DEG C | PRESSURE MB | DENSITY G M -3 | WIND POLAR DEG | WIND POLAR MPS | WIND COMPONENTS MPS N-S | WIND COMPONENTS MPS E-W |
|---|---|---|---|---|---|---|---|
| 5331 | +08.0 | 00.652 | 00.808 | | | | |
| 5212 | +05.6 | 00.752 | 00.940 | 101 | 046 | +009 | -046 |
| 5011 | +08.1 | 00.957 | 01.186 | 101 | 049 | +010 | -049 |
| 4609 | +03.7 | 01.554 | 01.955 | 103 | 047 | +011 | -046 |
| 4414 | -01.8 | 01.974 | 02.535 | 090 | 045 | +000 | -045 |
| 4124 | -15.7 | 02.856 | 03.865 | 093 | 028 | +002 | -028 |
| 3999 | -17.6 | 03.366 | 04.588 | 096 | 023 | +002 | -023 |
| 3895 | -15.2 | 03.858 | 05.211 | 089 | 023 | +000 | -023 |
| 3691 | -16.2 | 05.041 | 06.835 | 096 | 026 | +003 | -026 |
| 3633 | -23.2 | 05.446 | 07.590 | 098 | 024 | +003 | -024 |
| 3572 | -26.3 | 05.916 | 08.350 | 100 | 022 | +004 | -022 |
| 3487 | -27.4 | 06.648 | 09.426 | 101 | 019 | +004 | -019 |
| 3438 | -26.1 | 07.109 | 10.025 | 098 | 017 | +002 | -017 |
| 3414 | -29.0 | 07.368 | 10.485 | 095 | 016 | +001 | -016 |
| 3225 | -24.7 | 09.522 | 13.352 | 098 | 016 | +002 | -016 |
| 3048 | -40.0 | 12.210 | 18.244 | 105 | 015 | +004 | -015 |
| 2728 | -44.7 | 19.517 | 29.763 | 095 | 011 | +001 | -011 |
| 2460 | -45.4 | 29.049 | 44.436 | 106 | 008 | +002 | -008 |
| 2399 | -48.9 | 31.831 | 49.451 | 107 | 009 | +003 | -008 |
| 2326 | -48.3 | 35.538 | 55.063 | 117 | 009 | +004 | -008 |
| 2222 | -52.3 | 41.629 | 65.669 | 125 | 009 | +005 | -008 |
| 2000 | -56.9 | 58.751 | 94.650 | 102 | 005 | +001 | -005 |
| 1750 | -63.1 | | | | | | |

CONSTANT PRESSURE SURFACES (GEOPOTENTIAL HEIGHT)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2096 | -54.7 | 50.000 | 79.750 | 107 | 006 | +002 | -006 |
| 2429 | -46.6 | 30.000 | 46.137 | 106 | 008 | +002 | -008 |
| 2700 | -44.7 | 20.000 | 30.500 | 093 | 011 | +001 | -011 |
| 3173 | -27.8 | 10.000 | 14.202 | 099 | 016 | +003 | -016 |
| 3431 | -26.4 | 07.000 | 09.884 | 098 | 018 | +002 | -017 |
| 3676 | -16.2 | 05.000 | 06.779 | 095 | 026 | +002 | -026 |
| 4060 | -16.2 | 03.000 | 04.064 | 095 | 026 | +002 | -026 |
| 4373 | -02.2 | 02.000 | 02.571 | 088 | 044 | -002 | -044 |
| 4935 | +06.9 | 01.000 | 01.244 | 102 | 048 | +010 | -047 |

RAWINSONDE

| PRESSURE MB | ALT TENS OF METERS | WIND POLAR DEG | WIND POLAR MPS | WIND COMPONENTS MPS N-S | WIND COMPONENTS MPS E-W | RH % | TEMP DEG C |
|---|---|---|---|---|---|---|---|
| 1017.0 | 0000 | 270 | 003 | +000 | +003 | 74 | +20.7 |
| 0989.0 | 0200 | 242 | 011 | +005 | +009 | 32 | +18.6 |
| 0937.0 | 0400 | 235 | 012 | +007 | +010 | 39 | +03.7 |
| 0896.0 | 0600 | 241 | 014 | +007 | +012 | 40 | -11.3 |
| 0840.0 | 0800 | 240 | 013 | +007 | +011 | 17 | -21.7 |
| 0787.0 | 1000 | 263 | 018 | +002 | +018 | 17 | -36.3 |
| 0713.0 | 1200 | 265 | 015 | +001 | +015 | | -52.6 |
| 0655.0 | 1400 | 263 | 015 | +002 | +015 | | -64.9 |
| 0612.0 | 1600 | 252 | 006 | +002 | +006 | | -70.9 |
| 0608.0 | 1623 | 245 | 007 | +003 | +007 | | -71.3 |
| 0580.0 | 1800 | 224 | 003 | +002 | +002 | | -62.7 |
| 0558.0 | 2000 | 010 | 002 | -002 | +000 | | -57.2 |
| 0543.0 | 2200 | 094 | 006 | +000 | -006 | | -56.0 |
| 0531.2 | 2400 | 090 | 008 | +000 | -008 | | -51.6 |
| 0523.2 | 2600 | 084 | 014 | -001 | -014 | | -47.5 |
| 0517.3 | 2800 | 080 | 013 | -002 | -013 | | -43.1 |
| 0513.0 | 3000 | 099 | 015 | +002 | -015 | | -39.1 |
| 0509.7 | 3200 | 104 | 013 | +003 | -013 | | -35.1 |
| 0507.3 | 3400 | 101 | 015 | +003 | -015 | | -31.1 |
| 0506.0 | 3540 | 100 | 017 | +003 | -017 | | -28.5 |

# TECHNICAL DATA

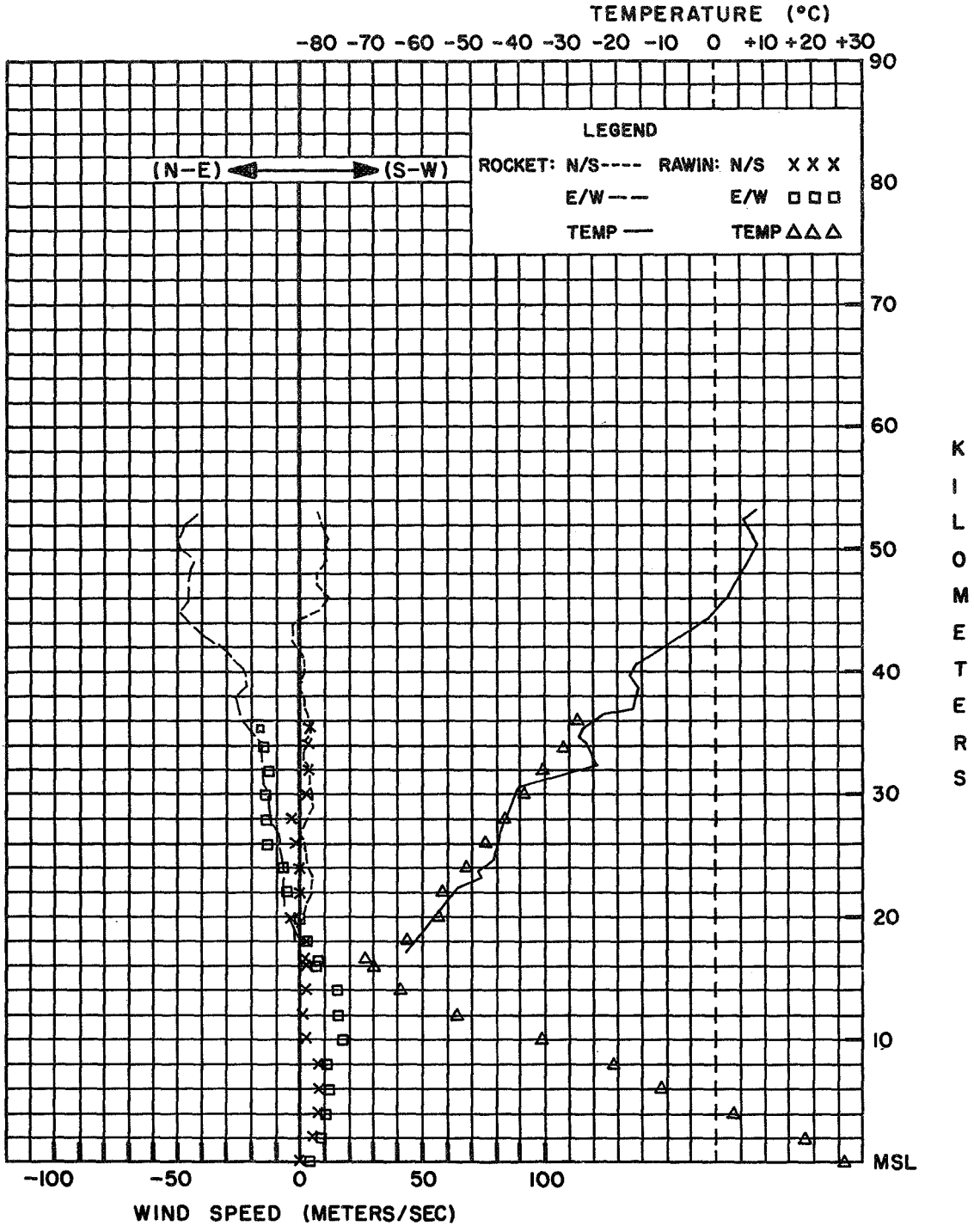
MOTOR TYPE..ARCAS
PAYLOAD TYPE..ARCASONDE-1A
FUSE TYPE..GAS GENERATED SEPARATION DEVICE
LAUNCHER SETTING..120°AZIMUTH 78.0°ELEVATION
RADAR TYPE..FPS-16 APOGEE 54,130 METERS
WIND SENSOR TYPE..15 FT. DIAMETER PARACHUTE
TEMPERATURE SENSOR TYPE..0.010 INCH BEAD THERMISTOR
GROUND EQUIPMENT TYPE..GMD-1B
REMARKS..NONE

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..125 SEC

SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..MOLDED INSULATION CO.
TEMPERATURE ELEMENT TYPE..ROD THERMISTOR
PRESSURE SENSOR TYPE..ANEROID AND HYPSOMETER
GROUND EQUIPMENT TYPE..GMD-1B
WIND AT ROCKET LAUNCH..SFC. 339DEG/01MPS 15M 225DEG/02MPS 31M 225DEG/02MPS
46M 236DEG/02MPS 61M 236DEG/02MPS 76M 243DEG/03MPS
BALLISTIC WIND.. 268°AZIMUTH 06.2 MPS
THERMODYNAMIC BASE DATA..PRESSURE 112.0 MBS
TEMPERATURE -70.9°C
ALTITUDE 16,000 METERS

RADIOSONDE TYPE..1680 MHZ
BALLOON TYPE..NEOPRENE
BALLOON SIZE..1,200 GRAMS




STATION: (NASA) Wallops Island, Va. ROCKET TIME: 1054 LST 1554 GCT PAYLOAD TYPE: Arcasonde 1A

DATE: 2 July, 1968 ROCKET MOTOR TYPE: Arcas RADIOSONDE TYPE: 1680 MHz

# ROCKET OBSERVATION DATA

RP STATION NAME

72402 (NASA) WALLOPS ISLAND, VIRGINIA

LAT. 37°51' N LONG. 75°29' W

ROCKET LAUNCH

DATE JULY 10, 1968 TIME 1447 Z

RAWINSONDE RELEASE

DATE JULY 10, 1968 TIME 1203 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 081 | 52 | 088 | 051 | -002 | -051 |
| 059 | 51 | 090 | 054 | +000 | -054 |
| 062 | 50 | 091 | 053 | +001 | -052 |
| 061 | 49 | 091 | 051 | +001 | -050 |
| 057 | 48 | 091 | 047 | +001 | -046 |
| 054 | 47 | 098 | 041 | +006 | -041 |
| 045 | 46 | 108 | 040 | +012 | -038 |
| 048 | 45 | 108 | 039 | +012 | -037 |
| 050 | 44 | 107 | 041 | +012 | -039 |
| 042 | 43 | 105 | 041 | +010 | -040 |
| 038 | 42 | 100 | 035 | +006 | -035 |
| 036 | 41 | 090 | 034 | +000 | -034 |
| 034 | 40 | 086 | 030 | -002 | -030 |
| 033 | 39 | 072 | 025 | -008 | -024 |
| 032 | 38 | 067 | 024 | -009 | -022 |
| 029 | 37 | 082 | 020 | -003 | +019 |
| 025 | 36 | 090 | 021 | +000 | -021 |
| 024 | 35 | 084 | 020 | -002 | -020 |
| 021 | 34 | 100 | 014 | +002 | -014 |
| 019 | 33 | 101 | 018 | +003 | -017 |
| 019 | 32 | 085 | 019 | -001 | -018 |
| 017 | 31 | 083 | 014 | -002 | -014 |
| 015 | 30 | 095 | 014 | +001 | -014 |
| 014 | 29 | 094 | 014 | +001 | -014 |
| 012 | 28 | 090 | 011 | +000 | -011 |
| 011 | 27 | 107 | 011 | +003 | -010 |
| 010 | 26 | 105 | 013 | +003 | -013 |
| 010 | 25 | 099 | 012 | +002 | -012 |
| 008 | 24 | 100 | 011 | +002 | -011 |
| 007 | 23 | 082 | 009 | -001 | -009 |
| 006 | 22 | 068 | 006 | -002 | -006 |
| 006 | 21 | 093 | 006 | +000 | -006 |
| 006 | 20 | 109 | 006 | +002 | -005 |
| 005 | 19 | 091 | 004 | +000 | -004 |
| 005 | 18 | 071 | 002 | -001 | -002 |

ROCKET THERMODYNAMICS

| ALT TENS OF METERS | TEMP DEG C | PRESSURE MB | DENSITY G M -3 | WIND POLAR DEG | MPS | COMPONENTS MPS N-S | E-W |
|---|---|---|---|---|---|---|---|
| 5243 | +03.0 | 00.704 | 00.889 | | | | |
| 5188 | +03.2 | 00.753 | 00.949 | 088 | 052 | -002 | -052 |
| 4993 | -02.3 | 00.957 | 01.231 | 091 | 053 | +001 | -052 |
| 4926 | -01.6 | 01.040 | 01.334 | 091 | 051 | +001 | -051 |
| 4791 | -02.7 | 01.229 | 01.584 | 092 | 046 | +002 | -046 |
| 4700 | -05.8 | 01.377 | 01.795 | 098 | 041 | +006 | -041 |
| 4450 | -03.5 | 01.884 | 02.435 | 108 | 040 | +012 | -038 |
| 4349 | -04.9 | 02.138 | 02.777 | 106 | 041 | +011 | -039 |
| 4292 | -07.7 | 02.298 | 03.016 | 105 | 040 | +010 | -039 |
| 4270 | -07.1 | 02.363 | 03.094 | 104 | 039 | +009 | -038 |
| 4115 | -12.7 | 02.881 | 03.854 | 092 | 034 | +001 | -034 |
| 4054 | -12.9 | 03.118 | 04.174 | 088 | 032 | -001 | -032 |
| 4017 | -15.0 | 03.272 | 04.415 | 087 | 031 | -002 | -031 |
| 3981 | -14.8 | 03.429 | 04.624 | 083 | 030 | -003 | -030 |
| 3877 | -17.7 | 03.931 | 05.361 | 071 | 025 | -008 | -024 |
| 3847 | -15.8 | 04.089 | 05.535 | 070 | 025 | -009 | -023 |
| 3773 | -18.2 | 04.507 | 06.159 | 072 | 023 | -007 | -022 |
| 3731 | -17.5 | 04.769 | 06.493 | 078 | 021 | -004 | -020 |
| 3606 | -24.4 | 05.632 | 07.888 | 089 | 021 | +000 | -021 |
| 3505 | -25.1 | 06.461 | 09.075 | 085 | 020 | -002 | -020 |
| 3463 | -26.7 | 06.843 | 09.673 | 090 | 018 | +000 | -018 |
| 3441 | -26.6 | 07.052 | 09.965 | 093 | 016 | +001 | -016 |
| 3400 | -29.4 | 07.462 | 10.665 | 100 | 014 | +002 | -014 |
| 3347 | -27.3 | 08.028 | 11.376 | 100 | 015 | +003 | -015 |
| 3304 | -30.8 | 08.520 | 12.248 | 101 | 018 | +003 | -017 |
| 3264 | -30.7 | 09.009 | 12.945 | 095 | 018 | +001 | -018 |
| 3176 | -34.1 | 10.193 | 14.855 | 085 | 018 | -001 | -017 |
| 3109 | -33.5 | 11.205 | 16.289 | 083 | 014 | -002 | -014 |
| 3078 | -36.9 | 11.709 | 17.267 | 085 | 014 | -001 | -014 |
| 3021 | -35.2 | 12.701 | 18.596 | 093 | 014 | +001 | -014 |
| 2902 | -42.8 | 15.084 | 22.813 | 094 | 014 | +001 | -014 |
| 2835 | -41.5 | 16.639 | 25.023 | 092 | 012 | +000 | -012 |
| 2801 | -44.0 | 17.491 | 26.591 | 090 | 011 | +000 | -011 |
| 2758 | -42.5 | 18.633 | 28.144 | 096 | 011 | +001 | -011 |
| 2679 | -46.0 | 20.942 | 32.119 | 107 | 011 | +003 | -011 |
| 2579 | -45.2 | 24.302 | 37.142 | 104 | 013 | +003 | -013 |
| 2536 | -48.0 | 25.916 | 40.100 | 102 | 012 | +003 | -012 |
| 2490 | -46.2 | 27.765 | 42.622 | 099 | 012 | +002 | -012 |
| 2374 | -50.6 | 33.071 | 51.770 | 095 | 011 | +001 | -011 |
| 2210 | -51.9 | 42.483 | 66.895 | 070 | 007 | -002 | -006 |
| 2152 | -50.5 | 46.419 | 72.632 | 080 | 006 | -001 | -006 |
| 2000 | -56.0 | 58.687 | 94.155 | 109 | 006 | +002 | -005 |
| 1832 | -59.2 | | | 078 | 003 | -001 | -003 |
| 1707 | -60.1 | | | | | | |

CONSTANT PRESSURE SURFACES (GEOPOTENTIAL HEIGHT)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2096 | -52.4 | 50.000 | 78.896 | 100 | 014 | +002 | -014 |
| 2429 | -48.1 | 30.000 | 46.438 | 100 | 012 | +002 | -012 |
| 2698 | -44.6 | 20.000 | 30.480 | 105 | 011 | +003 | -011 |
| 3174 | -33.5 | 10.000 | 14.539 | 085 | 018 | -001 | -018 |
| 3428 | -26.6 | 07.000 | 09.892 | 092 | 017 | +001 | -017 |
| 3673 | -19.6 | 05.000 | 06.869 | 083 | 018 | -002 | -017 |
| 4058 | -12.8 | 03.000 | 04.015 | 089 | 033 | -001 | -033 |
| 4372 | -04.1 | 02.000 | 02.589 | 107 | 041 | +012 | -039 |
| 4919 | -01.9 | 01.000 | 01.285 | 091 | 052 | +001 | -052 |

RAWINSONDE

| PRESSURE MB | ALT TENS OF METERS | WIND POLAR DEG | MPS | COMPONENTS MPS N-S | E-W | RH % | TEMP DEG C |
|---|---|---|---|---|---|---|---|
| 1013.3 | 0000 | 315 | 003 | -002 | +002 | 96 | +22.2 |
| 0801.0 | 0200 | 332 | 002 | -002 | +001 | 78 | +13.4 |
| 0629.0 | 0400 | 262 | 007 | +001 | +007 | 68 | +02.9 |
| 0491.0 | 0600 | 262 | 010 | +001 | +010 | 48 | -06.9 |
| 0377.0 | 0800 | 242 | 013 | +006 | +011 | 37 | -20.7 |
| 0286.0 | 1000 | 236 | 015 | +008 | +012 | 37 | -36.2 |
| 0213.0 | 1200 | 230 | 022 | +014 | +017 | | -52.6 |
| 0154.5 | 1400 | 241 | 028 | +014 | +024 | | -69.6 |
| 0145.0 | 1436 | 240 | 025 | +012 | +022 | | -72.6 |
| 0110.8 | 1600 | 263 | 011 | +001 | +011 | | -64.2 |
| 0079.6 | 1800 | 328 | 003 | -003 | +002 | | -61.3 |
| 0058.4 | 2000 | 082 | 007 | -001 | -007 | | -57.4 |
| 0042.7 | 2200 | 108 | 008 | +003 | -008 | | -52.4 |
| 0031.3 | 2400 | 085 | 005 | +000 | -005 | | -49.9 |
| 0023.3 | 2600 | 095 | 007 | +001 | -007 | | -50.3 |
| 0017.2 | 2800 | 088 | 011 | +000 | -011 | | -47.2 |
| 0014.7 | 3000 | 086 | 013 | -001 | -013 | | -45.7 |
| 0011.1 | 3200 | 096 | 015 | +001 | -014 | | -41.2 |
| 0007.2 | 3400 | 101 | 011 | +002 | -011 | | -37.3 |
| 0005.4 | 3600 | 091 | 011 | +000 | -011 | | -35.4 |
| 0004.2 | 3791 | 085 | 012 | -001 | -012 | | -33.2 |
| 0004.1 | 3800 | | | | | | -33.1 |
| 0004.0 | 3808 | | | | | | -33.0 |

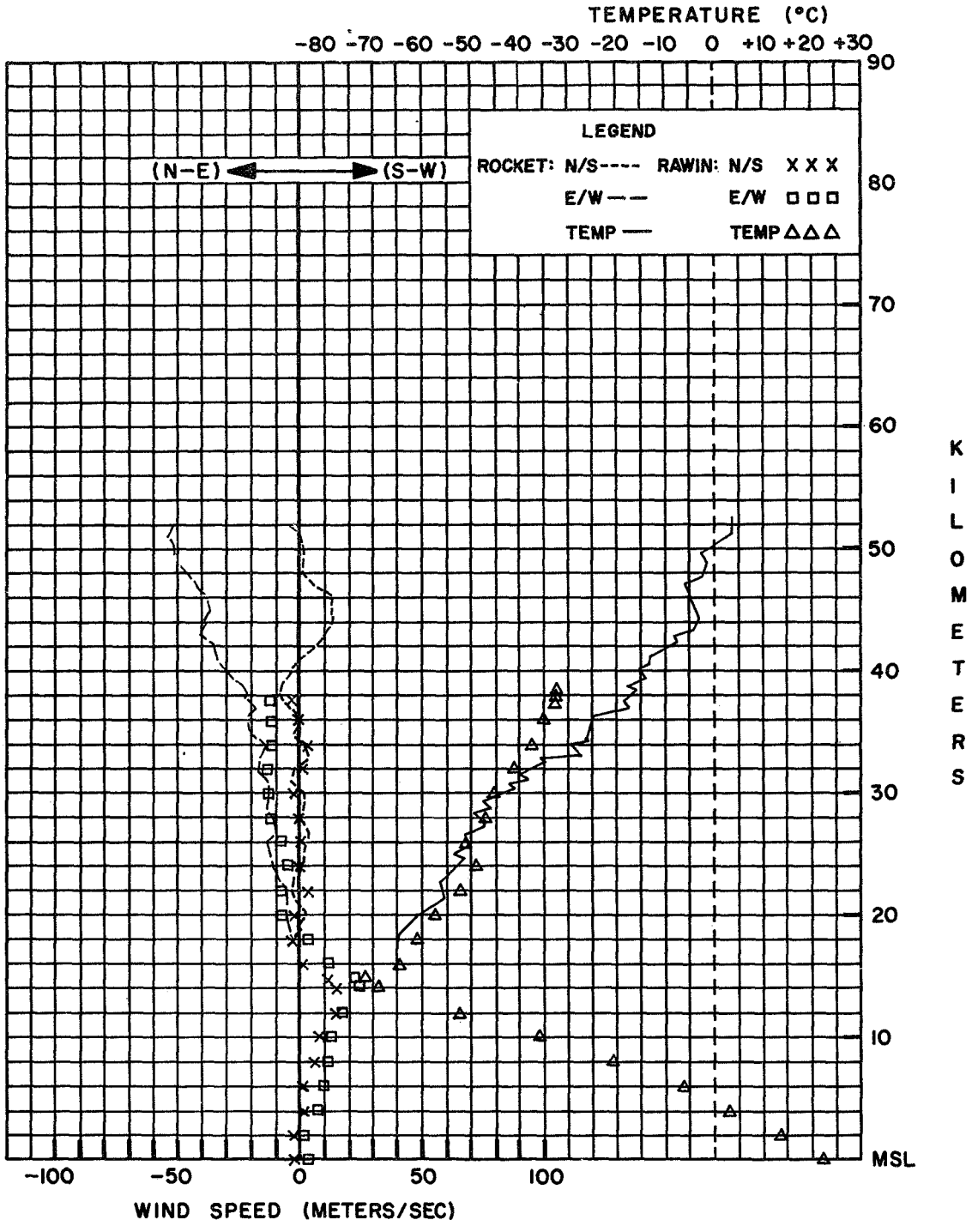
# TECHNICAL DATA

MOTOR TYPE..ARCAS
PAYLOAD TYPE..ARCASONDE-1A
FUSE TYPE..GAS GENERATED SEPARATION DEVICE
LAUNCHER SETTING..125° AZIMUTH 74.5° ELEVATION
RADAR TYPE..SPANDAR APOGEE 54.040 METERS
WIND SENSOR TYPE..15 FT. DIAMETER PARACHUTE
TEMPERATURE SENSOR TYPE..0.010 INCH BEAD THERMISTOR
GROUND EQUIPMENT TYPE..GMD-1A
REMARKS..SOME SIGNAL DROPOUT BUT NOT BAD ENOUGH TO IMPAIR DATA QUALITY.

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..134 SEC

SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..MOLDED INSULATION CO. RADIOSONDE TYPE..1680 MHZ
TEMPERATURE ELEMENT TYPE..ROD THERMISTOR BALLOON TYPE..NEOPRENE
PRESSURE SENSOR TYPE..ANEROID AND HYPSOMETER BALLOON SIZE..1,200 GRAMS
GROUND EQUIPMENT TYPE..GMD-1B
#IND AT ROCKET LAUNCH..SFC, 305DEG/07MPS 15M 283DEG/06MPS 31M 286DEG/08MPS 46M 284DEG/08MPS 61M 277DEG/08MPS 76M 281DEG/07MPS
BALLISTIC WIND.. 296° AZIMUTH 08.4 MPS
THERMODYNAMIC BASE DATA..PRESSURE 110.8 MBS
TEMPERATURE -64.2°C
ALTITUDE 16,080 METERS




STATION: (NASA) Wallops Island, Va. ROCKET TIME: 0947 LST 1447 GCT PAYLOAD TYPE: Arcasonde 1A

DATE: 10 July, 1968 ROCKET MOTOR TYPE: Arcas RADIOSONDE TYPE: 1680 MHZ

# ROCKET OBSERVATION DATA

RP STATION NAME

87689 (CNIE) MAR CHIQUITA, ARGENTINA

LAT. 37°45'S LONG. 57°25'W

ROCKET LAUNCH

DATE JULY 16, 1968 TIME 0145 Z

RAWINSONDE RELEASE

DATE JULY 15, 1968 TIME 2250 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | WIND COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 091 | 45 | 265 | 138 | +012 | +137 |
| 062 | 44 | 265 | 124 | +010 | +123 |
| 071 | 43 | 260 | 133 | +023 | +131 |
| 066 | 42 | 265 | 124 | +010 | +123 |
| 040 | 41 | 270 | 118 | +000 | +118 |
| 034 | 40 | 270 | 095 | +000 | +095 |
| 035 | 39 | 270 | 083 | +000 | +083 |
| 041 | 38 | 270 | 091 | +000 | +091 |
| 038 | 37 | 270 | 085 | +000 | +085 |
| 032 | 36 | 270 | 085 | +000 | +085 |
| 030 | 35 | 270 | 079 | +000 | +079 |
| 028 | 34 | 270 | 072 | +000 | +072 |
| 027 | 33 | 275 | 064 | -006 | +063 |
| 021 | 32 | 275 | 058 | -005 | +056 |
| 020 | 31 | 280 | 053 | -009 | +052 |
| 018 | 30 | 280 | 049 | -008 | +048 |
| 016 | 29 | 280 | 048 | -008 | +047 |
| 016 | 28 | 275 | 044 | -004 | +044 |
| 016 | 27 | 270 | 043 | +000 | +043 |
| 016 | 26 | 265 | 042 | +004 | +042 |
| 015 | 25 | 265 | 046 | +004 | +046 |
| 014 | 24 | 270 | 036 | +000 | +036 |

RAWINSONDE

| PRESSURE | ALT IENS OF | WIND POLAR | | WIND COMPONENTS MPS | | RH | TEMP |
|---|---|---|---|---|---|---|---|
| MB | METERS | DEG | MPS | N-S | E-W | % | DEG C |
| 0808.0 | 0200 | 345 | 013 | -012 | +006 | 38 | +06.8 |
| 0630.0 | 0400 | 270 | 012 | +000 | +012 | 35 | -06.2 |
| 0488.0 | 0600 | 270 | 009 | +000 | +009 | | -30.9 |
| 0365.0 | 0800 | 317 | 010 | -008 | +007 | | -35.2 |
| 0272.5 | 1000 | 000 | 000 | +000 | +000 | | -49.8 |
| 0198.0 | 1200 | 360 | 008 | -008 | +000 | | -58.7 |
| 0189.9 | 1230 | 270 | 021 | +000 | +021 | | |
| 0146.0 | 1400 | 288 | 024 | -007 | +023 | | -57.3 |
| 0107.0 | 1600 | 270 | 028 | +000 | +028 | | -57.4 |
| 0078.0 | 1800 | 262 | 023 | +003 | +023 | | -64.9 |
| 0055.7 | 2000 | 285 | 026 | -007 | +025 | | -64.9 |
| 0040.4 | 2200 | 270 | 030 | +000 | +030 | | -64.9 |
| 0029.0 | 2400 | 275 | 028 | -002 | +028 | | -62.8 |
| 0021.2 | 2600 | 270 | 037 | +000 | +037 | | -60.4 |
| 0015.4 | 2760 | 275 | 032 | -003 | +032 | | -58.1 |

# TECHNICAL DATA

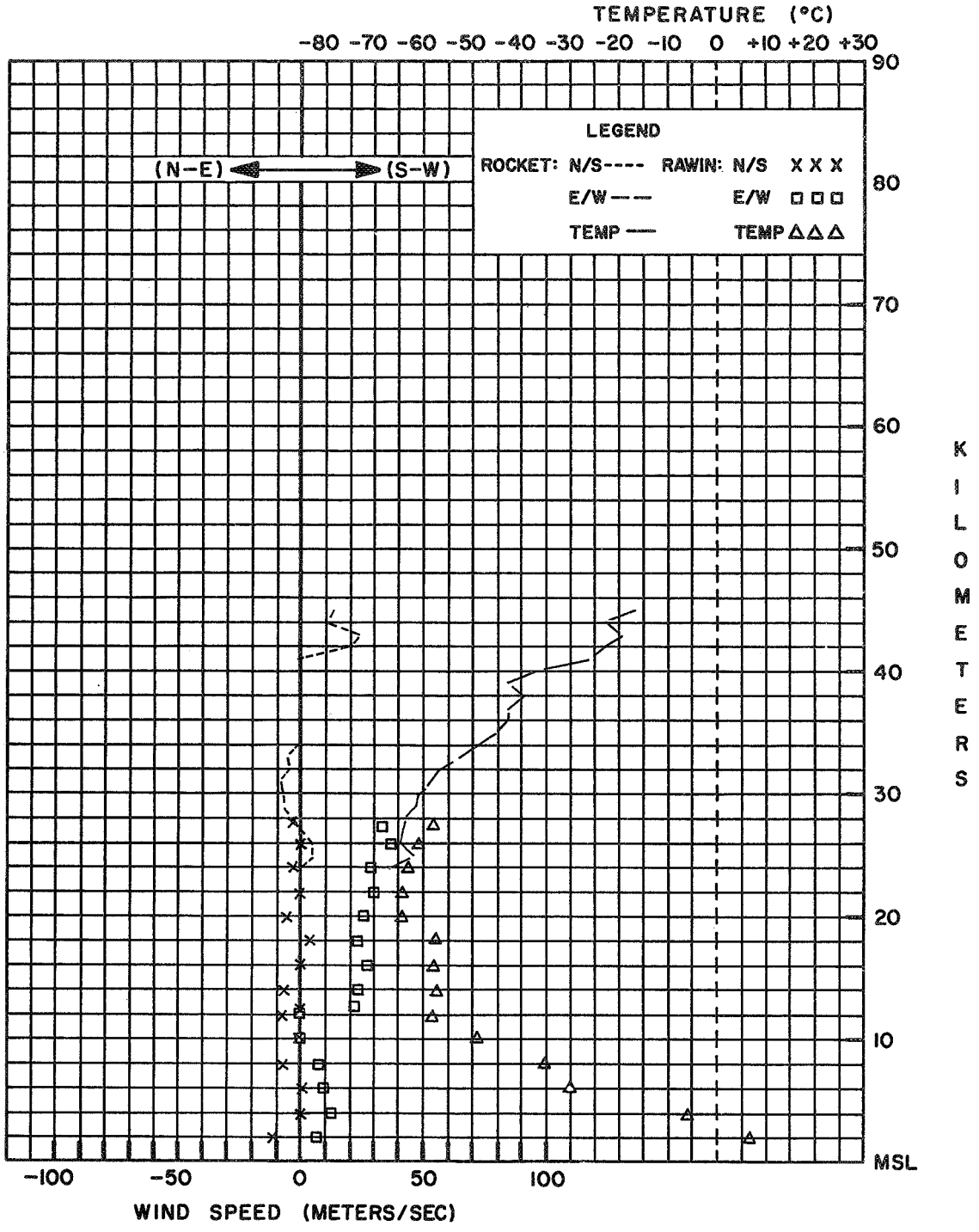
MOTOR TYPE..ARCAS
PAYLOAD TYPE..ARCASONDE-1A
FUSE TYPE..GAS GENERATED SEPARATION DEVICE
LAUNCHER SETTING..065°AZIMUTH 81.0°ELEVATION
RADAR TYPE..MPS-19 APOGEE 56,500 METERS
WIND SENSOR TYPE..15 FT. DIAMETER PARACHUTE
TEMPERATURE SENSOR TYPE..0.010 INCH BEAD THERMISTOR
GROUND EQUIPMENT TYPE..GMD-2B WITH PARAMPLIFIER
REMARKS..PAYLOAD SHOWED GOOD RF LEVEL BUT LACK OF REFERENCE SIGNAL IMPAIRED TEMPERATURE MEASUREMENT.

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..POOR
ACTUAL FUSE DELAY TIME..130 SEC

SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..VAISALA
TEMPERATURE ELEMENT TYPE..RESISTANCE WIRE
PRESSURE SENSOR TYPE..DOUBLE ANEROID
GROUND EQUIPMENT TYPE..VAISALA
WIND AT ROCKET LAUNCH..SFC. 140DEG/07MPS
BALLISTIC WIND.. 184°AZIMUTH 06.5 MPS
THERMODYNAMIC BASE DATA..PRESSURE N.A. MB
TEMPERATURE N.A. °C
ALTITUDE N.A. METERS

RADIOSONDE TYPE..VAISALA
BALLOON TYPE..NEOPRENE
BALLOON SIZE..1,200 GRAMS




STATION: (CNIE) Mar Chiquita, Arg. ROCKET TIME: 2245 LST 0145 GCT PAYLOAD TYPE: Arcasonde 1A

DATE: 16 July, 1968 ROCKET MOTOR TYPE: Arcas RADIOSONDE TYPE: Vaisala

# ROCKET OBSERVATION DATA

RP STATION NAME

72402 (NASA) WALLOPS ISLAND, VIRGINIA

LAT. 37°51' N LONG. 75°29' W

ROCKET LAUNCH

DATE JULY 17, 1968 TIME 1412 Z

RAWINSONDE RELEASE

DATE JULY 17, 1968 TIME 1115 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | WIND COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 083 | 56 | 102 | 032 | +007 | -032 |
| 083 | 55 | 102 | 036 | +008 | -036 |
| 083 | 54 | 105 | 044 | +011 | -043 |
| 080 | 53 | 105 | 049 | +012 | -048 |
| 077 | 52 | 099 | 051 | +008 | -050 |
| 071 | 51 | 094 | 051 | +004 | -051 |
| 064 | 50 | 088 | 049 | -002 | -049 |
| 062 | 49 | 084 | 049 | -005 | -048 |
| 059 | 48 | 085 | 044 | -003 | -043 |
| 055 | 47 | 089 | 032 | -001 | -032 |
| 051 | 46 | 091 | 032 | +001 | -032 |
| 048 | 45 | 097 | 034 | +004 | -034 |
| 044 | 44 | 101 | 040 | +008 | -040 |
| 040 | 43 | 097 | 043 | +005 | -042 |
| 036 | 42 | 092 | 038 | +001 | -038 |
| 034 | 41 | 096 | 033 | +003 | -033 |
| 035 | 40 | 098 | 033 | +004 | -033 |
| 032 | 39 | 090 | 029 | +000 | -029 |
| 031 | 38 | 088 | 023 | -001 | -023 |
| 029 | 37 | 088 | 021 | -001 | -021 |
| 026 | 36 | 077 | 021 | -005 | -021 |
| 023 | 35 | 071 | 020 | -007 | -019 |
| 020 | 34 | 082 | 020 | -003 | -020 |
| 019 | 33 | 096 | 024 | +002 | -023 |
| 018 | 32 | 100 | 025 | +004 | -025 |
| 017 | 31 | 095 | 026 | +002 | -026 |
| 015 | 30 | 093 | 026 | +002 | -026 |
| 014 | 29 | 097 | 022 | +003 | -021 |
| 013 | 28 | 096 | 018 | +002 | -017 |
| 011 | 27 | 091 | 015 | +000 | -015 |
| 010 | 26 | 085 | 014 | -001 | -014 |
| 009 | 25 | 085 | 012 | -001 | -012 |
| 008 | 24 | 089 | 011 | +000 | -011 |
| 007 | 23 | 085 | 012 | -001 | -012 |
| 006 | 22 | 088 | 011 | +000 | -011 |
| 006 | 21 | 099 | 010 | +002 | -010 |
| 005 | 20 | 101 | 012 | +002 | -012 |
| 005 | 19 | 092 | 011 | +000 | -011 |
| 005 | 18 | 086 | 009 | -001 | -009 |

RAWINSONDE

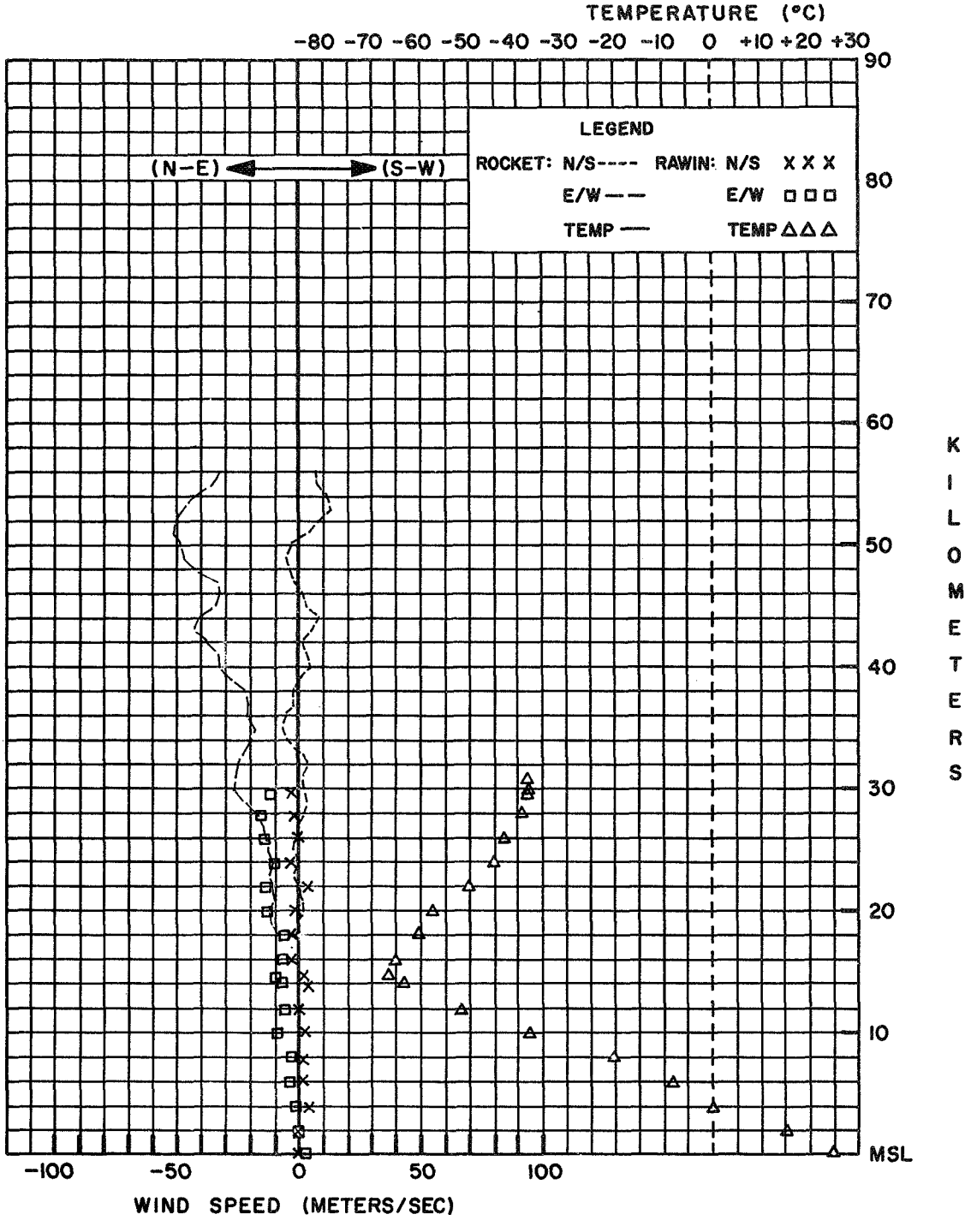
| PRESSURE MB | ALT IENS OF METERS | WIND POLAR DEG | MPS | WIND COMPONENTS MPS N-S | E-W | RH % | TEMP DEG C |
|---|---|---|---|---|---|---|---|
| 1015.0 | 0000 | 270 | 002 | +000 | +002 | 90 | +25.0 |
| 0808.0 | 0200 | 005 | 001 | -001 | +000 | 67 | +15.4 |
| 0635.0 | 0400 | 162 | 003 | +003 | -001 | 37 | +00.0 |
| 0492.0 | 0600 | 121 | 004 | +002 | -004 | 18 | -08.6 |
| 0379.0 | 0800 | 104 | 003 | +001 | -003 | 19 | -20.4 |
| 0286.5 | 1000 | 102 | 009 | +002 | -009 | 21 | -37.6 |
| 0213.5 | 1200 | 085 | 006 | +000 | -006 | | -51.7 |
| 0154.5 | 1400 | 115 | 009 | +004 | -008 | | -63.2 |
| 0138.0 | 1473 | 105 | 010 | +002 | -010 | | -66.9 |
| 0112.5 | 1600 | 069 | 007 | -003 | -007 | | -65.1 |
| 0081.3 | 1800 | 074 | 007 | -002 | -006 | | -61.6 |
| 0058.8 | 2000 | 085 | 012 | -001 | -012 | | -57.6 |
| 0042.9 | 2200 | 104 | 014 | +003 | -014 | | -50.1 |
| 0031.8 | 2400 | 080 | 010 | -002 | -010 | | -45.4 |
| 0023.7 | 2600 | 089 | 015 | +000 | -015 | | -43.9 |
| 0017.8 | 2800 | 085 | 016 | -001 | -016 | | -39.9 |
| 0013.5 | 2990 | 080 | 012 | -002 | -012 | | -38.7 |
| 0013.4 | 3000 | | | | | | -38.7 |
| 0012.0 | 3072 | | | | | | -38.4 |

# TECHNICAL DATA

MOTOR TYPE..ARCAS
PAYLOAD TYPE..ARCASONDE-1A
FUSE TYPE..GAS GENERATED SEPARATION DEVICE
LAUNCHER SETTING..130°AZIMUTH 81.0°ELEVATION
RADAR TYPE..FPQ-6 APOGEE 57.150 METERS
WIND SENSOR TYPE..15 FT. DIAMETER PARACHUTE
TEMPERATURE SENSOR TYPE..0.010 INCH BEAD THERMISTOR
GROUND EQUIPMENT TYPE..GMD-1B
REMARKS..TEMPERATURE DATA WAS UNUSABLE.

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..POOR
ACTUAL FUSE DELAY TIME..129 SEC
SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..MOLDED INSULATION CO. RADIOSONDE TYPE..1680 MHZ
TEMPERATURE ELEMENT TYPE..ROD THERMISTOR BALLOON TYPE..NEOPRENE
PRESSURE SENSOR TYPE..ANEROID AND HYPSOMETER BALLOON SIZE..1200 GRAMS
GROUND EQUIPMENT TYPE..GMD-1B
WIND AT ROCKET LAUNCH..SFC. 192DEG/03MPS 15M 188DEG/03MPS 31M 188DEG/03MPS
46M 189DEG/03MPS 61M 211DEG/03MPS 76M 233DEG/02MPS
BALLISTIC WIND.. 278° AZIMUTH 01.0 MPS
THERMODYNAMIC BASE DATA..PRESSURE N.A. MB
TEMPERATURE N.A.°C
ALTITUDE N.A. METERS




STATION: (NASA) Wallops Island, Va. ROCKET TIME: 0912 LST 1412 GCT PAYLOAD TYPE: Arcasonde 1A

DATE: 17 July, 1968 ROCKET MOTOR TYPE: Arcas RADIOSONDE TYPE: 1680 MHZ

# ROCKET OBSERVATION DATA

RP STATION NAME

72402 (NASA) WALLOPS ISLAND, VIRGINIA

LAT. 37°51' N LONG.75°29' W

ROCKET LAUNCH

DATE JULY 24, 1968 TIME 1506 Z

RAWINSONDE RELEASE

DATE JULY 24, 1968 TIME 1115 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 089 | 56 | 096 | 034 | +003 | -034 |
| 095 | 55 | 098 | 046 | +006 | -046 |
| 095 | 54 | 098 | 060 | +008 | -059 |
| 083 | 53 | 099 | 051 | +008 | -050 |
| 077 | 52 | 099 | 058 | +009 | -057 |
| 071 | 51 | 098 | 057 | +008 | -056 |
| 067 | 50 | 098 | 054 | +007 | -054 |
| 067 | 49 | 098 | 062 | +008 | -061 |
| 067 | 48 | 099 | 061 | +009 | -060 |
| 064 | 47 | 099 | 052 | +008 | -051 |
| 059 | 46 | 099 | 047 | +007 | -046 |
| 045 | 45 | 096 | 045 | +004 | -044 |
| 043 | 44 | 095 | 048 | +004 | -047 |
| 044 | 43 | 095 | 039 | +003 | -039 |
| 041 | 42 | 094 | 031 | +002 | -031 |
| 039 | 41 | 096 | 029 | +003 | -029 |
| 035 | 40 | 103 | 029 | +007 | -029 |
| 029 | 39 | 103 | 023 | +005 | -023 |
| 029 | 38 | 103 | 022 | +005 | -021 |
| 028 | 37 | 089 | 027 | -001 | -027 |
| 029 | 36 | 076 | 020 | -005 | -019 |
| 025 | 35 | 086 | 016 | -001 | -016 |
| 023 | 34 | 093 | 018 | +001 | -017 |
| 020 | 33 | 094 | 018 | +001 | -018 |
| 020 | 32 | 093 | 019 | +001 | -018 |
| 016 | 31 | 098 | 015 | +002 | -015 |
| 013 | 30 | 099 | 012 | +002 | -012 |
| 014 | 29 | 093 | 009 | +001 | -009 |
| 013 | 28 | 089 | 010 | +000 | -010 |
| 012 | 27 | 086 | 013 | -001 | -013 |
| 010 | 26 | 087 | 013 | -001 | -013 |
| 008 | 25 | 097 | 009 | +001 | -009 |
| 009 | 24 | 110 | 009 | +003 | -009 |
| 007 | 23 | 103 | 010 | +002 | -010 |
| 006 | 22 | 102 | 009 | +002 | -009 |
| 006 | 21 | 104 | 009 | +002 | -009 |
| 006 | 20 | 092 | 007 | +000 | -007 |
| 005 | 19 | 089 | 005 | +000 | -005 |
| 004 | 18 | 078 | 004 | -001 | -004 |

ROCKET THERMODYNAMICS

| ALT TENS OF METERS | TEMP DEG C | PRESSURE MB | DENSITY G M -3 | WIND POLAR DEG | MPS | COMPONENTS MPS N-S | E-W |
|---|---|---|---|---|---|---|---|
| 5690 | -00.3 | 00.404 | 00.516 | | | | |
| 5547 | -01.6 | 00.482 | 00.618 | 097 | 043 | +005 | -042 |
| 5386 | +01.5 | 00.587 | 00.744 | 098 | 059 | +008 | -059 |
| 5264 | +01.1 | 00.681 | 00.866 | 099 | 055 | +009 | -055 |
| 5000 | +00.3 | 00.942 | 01.200 | 098 | 054 | +007 | -054 |
| 4550 | -07.6 | 01.651 | 02.166 | 098 | 046 | +006 | -045 |
| 4426 | -07.0 | 01.932 | 02.529 | 095 | 048 | +004 | -047 |
| 4316 | -11.4 | 02.223 | 02.959 | 095 | 041 | +003 | -041 |
| 4180 | -15.3 | 02.652 | 03.583 | 094 | 030 | +002 | -030 |
| 4103 | -15.0 | 02.933 | 03.958 | 096 | 029 | +003 | -029 |
| 4030 | -18.9 | 03.229 | 04.424 | 102 | 029 | +006 | -029 |
| 3870 | -20.6 | 03.994 | 05.510 | 103 | 023 | +005 | -023 |
| 3810 | -18.9 | 04.328 | 05.928 | 103 | 022 | +005 | -021 |
| 3685 | -19.6 | 05.108 | 07.019 | 100 | 023 | +004 | -022 |
| 3615 | -22.8 | 05.610 | 07.807 | 079 | 021 | -004 | -020 |
| 3584 | -21.4 | 05.849 | 08.094 | 079 | 018 | -004 | -018 |
| 3487 | -25.6 | 06.669 | 09.385 | 088 | 016 | -001 | -016 |
| 3353 | -27.9 | 08.013 | 11.383 | 094 | 018 | +001 | -018 |
| 3310 | -31.0 | 08.505 | 12.236 | 094 | 018 | +001 | -018 |
| 3277 | -30.6 | 08.906 | 12.791 | 094 | 018 | +001 | -018 |
| 3225 | -35.0 | 09.581 | 14.016 | 093 | 019 | +001 | -018 |
| 3150 | -35.9 | 10.659 | 15.652 | 096 | 017 | +002 | -017 |
| 3085 | -38.9 | 11.701 | 17.401 | 098 | 014 | +002 | -014 |
| 2877 | -38.5 | 15.793 | 23.448 | 092 | 010 | +000 | -010 |
| 2774 | -41.1 | 18.337 | 27.530 | 088 | 011 | +000 | -011 |
| 2633 | -43.4 | 22.549 | 34.193 | 086 | 013 | -001 | -013 |
| 2573 | -46.9 | 24.651 | 37.957 | 089 | 012 | +000 | -012 |
| 2460 | -47.4 | 29.198 | 45.056 | 102 | 009 | +002 | -009 |
| 2360 | -49.4 | 33.950 | 52.980 | 107 | 009 | +003 | -009 |
| 2250 | -48.0 | 40.089 | 62.031 | 102 | 010 | +002 | -010 |
| 2106 | -54.4 | 49.933 | 79.524 | 104 | 009 | +002 | -008 |
| 2000 | -56.0 | 58.834 | 94.391 | 092 | 007 | +000 | -007 |
| 1910 | -58.0 | | | 089 | 005 | +000 | -005 |
| 1790 | -63.7 | | | | | | |
| 1737 | -62.4 | | | | | | |

CONSTANT PRESSURE SURFACES (GEOPOTENTIAL HEIGHT)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2098 | -54.1 | 50.000 | 79.505 | 104 | 009 | +002 | -009 |
| 2433 | -47.7 | 30.000 | 46.362 | 106 | 009 | +002 | -009 |
| 2703 | -42.1 | 20.000 | 30.160 | 086 | 012 | -001 | -012 |
| 3179 | -35.4 | 10.000 | 14.651 | 093 | 019 | +001 | -018 |
| 3432 | -26.2 | 07.000 | 09.873 | 090 | 016 | +000 | -016 |
| 3679 | -19.5 | 05.000 | 06.867 | 089 | 027 | -001 | -027 |
| 4059 | -15.9 | 03.000 | 04.062 | 097 | 029 | +003 | -029 |
| 4368 | -08.0 | 02.000 | 02.628 | 095 | 048 | +004 | -047 |
| 4913 | -00.5 | 01.000 | 01.278 | 098 | 058 | +008 | -057 |

RAWINSONDE

| PRESSURE MB | ALT TENS OF METERS | WIND POLAR DEG | MPS | COMPONENTS MPS N-S | E-W | RH % | TEMP DEG C |
|---|---|---|---|---|---|---|---|
| 1018.0 | 0000 | 210 | 002 | +002 | +001 | 100 | +23.9 |
| 0809.0 | 0200 | 252 | 005 | +002 | +005 | 56 | +13.3 |
| 0633.0 | 0400 | 269 | 009 | +000 | +009 | 60 | +00.9 |
| 0493.0 | 0600 | 262 | 004 | +001 | +004 | 14 | -07.5 |
| 0379.0 | 0800 | 244 | 006 | +003 | +005 | 15 | -19.6 |
| 0287.0 | 1000 | 312 | 009 | -006 | +007 | 27 | -36.7 |
| 0213.0 | 1200 | 338 | 020 | -019 | +007 | | -52.3 |
| 0156.0 | 1400 | 344 | 013 | -012 | +004 | | -65.5 |
| 0122.0 | 1548 | 310 | 008 | -005 | +006 | | -71.5 |
| 0112.0 | 1600 | 307 | 009 | -006 | +007 | | -70.3 |
| 0080.0 | 1800 | 070 | 002 | -001 | -002 | | -64.9 |
| 0057.5 | 2000 | 074 | 007 | -002 | -007 | | -59.7 |
| 0041.5 | 2200 | 095 | 007 | +001 | -007 | | -54.5 |
| 0031.2 | 2400 | 100 | 007 | +001 | -007 | | -49.8 |
| 0030.4 | 2419 | 101 | 014 | +003 | -014 | | -49.3 |
| 0027.0 | 2496 | | | | | | -47.5 |

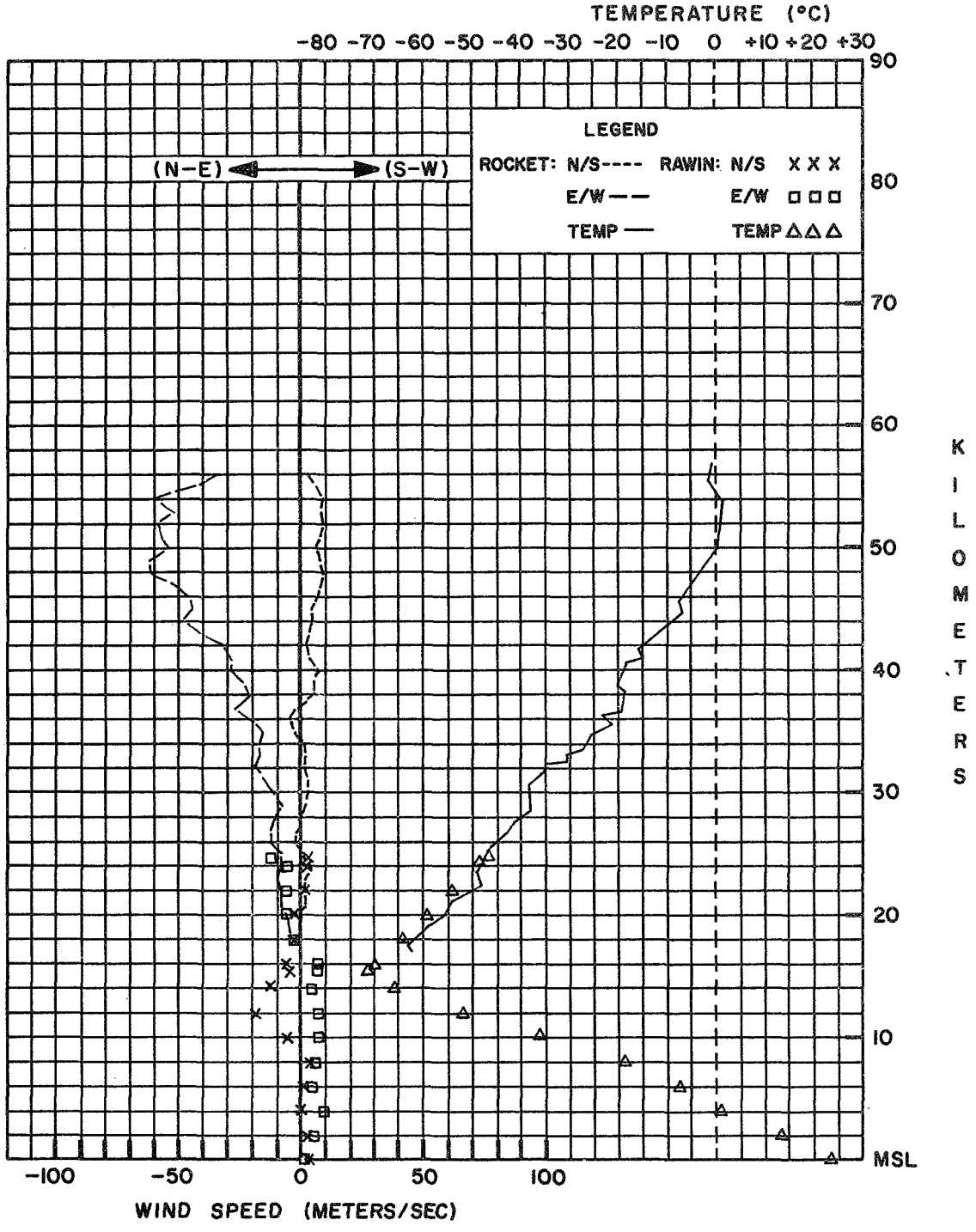
# TECHNICAL DATA

MOTOR TYPE..ARCAS
PAYLOAD TYPE..ARCASONDE-1A
FUSE TYPE..GAS GENERATED SEPARATION DEVICE
LAUNCHER SETTING..100° AZIMUTH 80.0° ELEVATION
RADAR TYPE..FPS-16 APOGEE 58.000 METERS
WIND SENSOR TYPE..15 FT. DIAMETER PARACHUTE
TEMPERATURE SENSOR TYPE..0.010 INCH BEAD THERMISTOR
GROUND EQUIPMENT TYPE..GMD-1B
REMARKS..NONE

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..131 SEC

SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..MOLDED INSULATION CO. RADIOSONDE TYPE..1680 MHZ
TEMPERATURE ELEMENT TYPE..ROD THERMISTOR BALLOON TYPE..NEOPRENE
PRESSURE SENSOR TYPE..ANEROID AND HYPSOMETER BALLOON SIZE..1200 GRAMS
GROUND EQUIPMENT TYPE..GMD-1B
WIND AT ROCKET LAUNCH..SFC. 206DEG/05MPS 15M 188DEG/06MPS 31M 197DEG/08MPS
46M 198DEG/09MPS 61M 212DEG/09MPS 76M 222DEG/07MPS
BALLISTIC WIND.. 226° AZIMUTH 05.1 MPS
THERMODYNAMIC BASE DATA..PRESSURE 112.0 MBS
TEMPERATURE -70.3°C
ALTITUDE 16.000 METERS




STATION: (NASA) Wallops Island, Va. ROCKET TIME: 1006 LST 1506 GCT PAYLOAD TYPE: Arcasonde 1A

DATE: 24 July, 1968 ROCKET MOTOR TYPE: Arcas RADIOSONDE TYPE: 1680 MHz

# ROCKET OBSERVATION DATA

RP STATION NAME

82599 (CNAE) NATAL, BRAZIL

LAT. 05°55' S LONG. 35°10' W

ROCKET LAUNCH

DATE JULY 24, 1968 TIME 1602 Z

RAWINSONDE RELEASE

DATE JULY 24, 1968 TIME 1115 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | WIND COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 100 | 58 | 115 | 003 | +001 | -003 |
| 100 | 57 | 091 | 017 | +000 | -017 |
| 105 | 56 | 087 | 029 | -001 | -029 |
| 095 | 55 | 089 | 038 | -001 | -038 |
| 083 | 54 | 090 | 047 | +000 | -047 |
| 076 | 53 | 094 | 043 | +003 | -043 |
| 080 | 52 | 092 | 038 | +001 | -038 |
| 074 | 51 | 089 | 029 | +000 | -029 |
| 068 | 50 | 082 | 020 | -003 | -020 |
| 066 | 49 | 075 | 013 | -003 | -012 |
| 062 | 48 | 097 | 008 | +001 | -008 |
| 057 | 47 | 120 | 009 | +004 | -008 |
| 052 | 46 | 092 | 009 | +000 | -009 |
| 046 | 45 | 099 | 007 | +001 | -007 |
| 044 | 44 | 128 | 006 | +004 | -005 |
| 043 | 43 | 136 | 004 | +003 | -003 |
| 038 | 42 | 035 | 002 | -002 | -001 |
| 037 | 41 | 329 | 004 | -003 | +002 |
| 034 | 40 | 318 | 004 | -003 | +004 |
| 030 | 39 | 223 | 001 | +001 | +001 |
| 028 | 38 | 221 | 001 | +001 | +001 |
| 026 | 37 | 161 | 003 | +003 | -001 |
| 024 | 36 | 162 | 003 | +003 | -001 |
| 022 | 35 | 256 | 003 | +001 | +003 |
| 021 | 34 | 255 | 004 | +002 | +008 |
| 019 | 33 | 265 | 004 | +001 | +008 |
| 016 | 32 | 263 | 006 | +001 | +006 |
| 015 | 31 | 251 | 011 | +004 | +011 |
| 014 | 30 | 254 | 012 | +004 | +012 |
| 012 | 29 | 278 | 006 | -001 | +006 |
| 011 | 28 | 081 | 017 | -003 | -017 |
| 010 | 27 | 090 | 024 | +000 | -024 |
| 009 | 26 | 091 | 029 | +000 | -029 |
| 008 | 25 | 090 | 031 | +000 | -031 |
| 006 | 24 | 094 | 033 | +002 | -033 |
| 006 | 23 | 096 | 031 | +003 | -031 |
| 006 | 22 | 094 | 023 | +002 | -023 |
| 006 | 21 | 070 | 010 | -003 | -009 |
| 005 | 20 | 360 | 004 | +000 | +000 |
| 005 | 19 | 261 | 006 | +001 | +006 |
| 005 | 18 | 275 | 007 | -001 | +007 |

ROCKET THERMODYNAMICS

| ALT TENS OF METERS | TEMP DEG C | PRESSURE MB | DENSITY G M -3 | WIND POLAR DEG | MPS | WIND COMPONENTS MPS N-S | E-W |
|---|---|---|---|---|---|---|---|
| 5691 | -02.5 | 00.368 | 00.478 | 088 | 028 | -002 | -028 |
| 5371 | +03.6 | 00.549 | 00.696 | 092 | 046 | +002 | -046 |
| 5054 | -03.9 | 00.814 | 01.064 | 087 | 025 | -001 | -025 |
| 4993 | -01.7 | 00.879 | 01.140 | 082 | 020 | -003 | -020 |
| 4481 | -10.0 | 01.691 | 02.262 | 104 | 007 | +001 | -007 |
| 4170 | -11.8 | 02.533 | 03.512 | 020 | 003 | -003 | -001 |
| 3892 | -17.3 | 03.612 | 04.971 | 223 | 001 | +001 | +001 |
| 3737 | -18.9 | 04.425 | 06.128 | 183 | 002 | +002 | +002 |
| 3658 | -23.7 | 04.914 | 06.936 | 161 | 003 | +003 | +001 |
| 3572 | -23.7 | 05.526 | 07.800 | 195 | 003 | +003 | +001 |
| 3408 | -29.9 | 06.898 | 09.985 | 255 | 008 | +002 | +008 |
| 3298 | -29.3 | 08.027 | 11.591 | 265 | 008 | +001 | +008 |
| 3078 | -35.8 | 10.986 | 16.299 | 251 | 011 | +004 | +010 |
| 2923 | -35.0 | 13.646 | 20.177 | 274 | 014 | -001 | +014 |
| 2877 | -39.6 | 14.620 | 22.043 | 310 | 015 | -010 | +012 |
| 2829 | -39.6 | 15.700 | 23.671 | 046 | 016 | -011 | -012 |
| 2737 | -45.1 | 18.000 | 27.794 | 087 | 021 | -001 | -021 |
| 2646 | -47.5 | 20.371 | 31.190 | 092 | 027 | +001 | -027 |
| 2588 | -46.8 | 22.285 | 34.669 | 091 | 029 | +000 | -029 |
| 2475 | -50.2 | 26.534 | 41.909 | 092 | 032 | +001 | -032 |
| 2347 | -51.7 | 32.220 | 51.235 | 096 | 032 | +003 | -032 |
| 2173 | -61.8 | 42.510 | 70.829 | 087 | 021 | -001 | -021 |
| 2042 | -64.0 | 52.650 | 88.647 | 030 | 007 | -006 | -003 |
| 2000 | -62.1 | 56.100 | 92.989 | 360 | 004 | -004 | +000 |
| 1993 | -60.4 | 56.180 | 93.605 | 341 | 004 | -004 | +001 |

CONSTANT PRESSURE SURFACES (GEOPOTENTIAL HEIGHT)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2065 | -63.4 | 50.000 | 83.944 | 072 | 013 | -004 | -012 |
| 2384 | -54.1 | 30.000 | 48.227 | 082 | 034 | -005 | -034 |
| 2649 | -46.8 | 20.000 | 31.114 | 091 | 027 | +001 | -027 |
| 3115 | -39.3 | 10.000 | 15.058 | 243 | 014 | +006 | +013 |
| 3331 | -36.7 | 07.000 | 10.424 | 242 | 008 | +004 | +007 |
| 3594 | -35.8 | 05.000 | 07.418 | 026 | 003 | -003 | -001 |
| 4029 | -15.6 | 03.000 | 04.102 | 322 | 007 | -005 | +004 |
| 4348 | -10.8 | 02.000 | 02.684 | 132 | 009 | +006 | -007 |
| 4893 | -03.4 | 01.000 | 01.305 | 077 | 024 | -005 | -023 |

RAWINSONDE

| PRESSURE | ALT TENS OF | WIND POLAR | | WIND COMPONENTS MPS | | RH | TEMP |
|---|---|---|---|---|---|---|---|
| MB | METERS | DEG | MPS | N-S | E-W | % | DEG C |
| 1012.1 | 0004 | 180 | 006 | +006 | +000 | 69 | +24.8 |
| 0805.7 | 0200 | 215 | 004 | +003 | +002 | 36 | +13.2 |
| 0632.8 | 0400 | 086 | 009 | -001 | -009 | | +03.2 |
| 0492.0 | 0600 | 066 | 007 | -003 | -007 | | -07.5 |
| 0379.8 | 0800 | 017 | 008 | -008 | -002 | | -21.3 |
| 0286.7 | 1000 | 321 | 011 | -010 | -003 | | -35.9 |
| 0212.6 | 1200 | 320 | 006 | -004 | +004 | | -53.0 |
| 0154.6 | 1400 | 347 | 002 | -002 | +000 | | -69.0 |
| 0130.0 | 1498 | 275 | 011 | -001 | +011 | | -75.1 |
| 0110.0 | 1600 | 140 | 002 | +001 | -001 | | -71.4 |
| 0093.0 | 1695 | 017 | 006 | -006 | -002 | | -77.5 |
| 0078.2 | 1800 | 212 | 007 | +006 | +004 | | -71.8 |
| 0056.1 | 2000 | 039 | 009 | -008 | -006 | | -62.1 |
| 0040.6 | 2200 | 100 | 022 | +004 | -022 | | -62.0 |
| 0029.7 | 2400 | 082 | 034 | -005 | -034 | | -56.0 |
| 0021.6 | 2600 | 102 | 028 | +006 | -027 | | -47.4 |
| 0016.3 | 2800 | 088 | 020 | -001 | -020 | | -45.6 |
| 0012.2 | 3000 | 250 | 009 | +003 | +009 | | -39.3 |
| 0009.0 | 3200 | 255 | 007 | +002 | +006 | | -38.6 |
| 0006.8 | 3400 | 272 | 006 | +000 | +006 | | -37.2 |
| 0005.1 | 3600 | 356 | 007 | -007 | +000 | | -35.9 |
| 0004.0 | 3749 | 030 | 003 | -003 | -001 | | -34.8 |

# TECHNICAL DATA

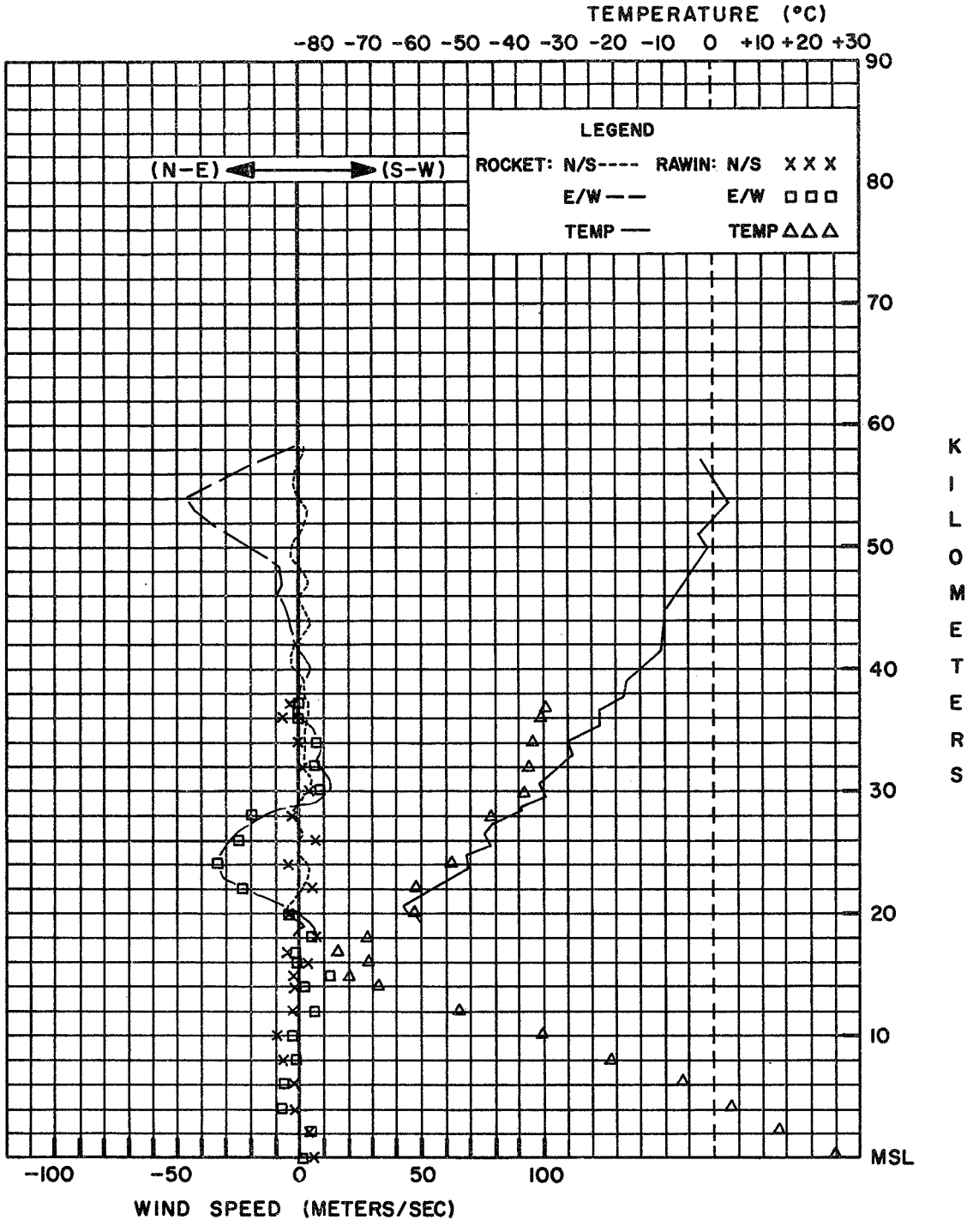
MOTOR TYPE..ARCAS
PAYLOAD TYPE..ARCASONDE-1A
FUSE TYPE..GAS GENERATED SEPARATION DEVICE
LAUNCHER SETTING..046°AZIMUTH 84.0°ELEVATION
RADAR TYPE..MPS-19 APOGEE 60.259 METERS
WIND SENSOR TYPE..15 FT. DIAMETER PARACHUTE
TEMPERATURE SENSOR TYPE..0.010 INCH BEAD THERMISTOR
GROUND EQUIPMENT TYPE..GMD-1A
REMARKS..NONE

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..120 SEC

SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..BENDIX
TEMPERATURE ELEMENT TYPE..ROD THERMISTOR
PRESSURE SENSOR TYPE..ANEROID
GROUND EQUIPMENT TYPE..GMD-1A
WIND AT ROCKET LAUNCH..06M 120DEG/06MPS 09M 120DEG/08MPS 16M 120DEG/10MPS
25M 120DEG/12MPS 40M 120DEG/14MPS
BALLISTIC WIND.. 169°AZIMUTH 06.2 MPS
THERMODYNAMIC BASE DATA..PRESSURE 056.1 MBS
TEMPERATURE -62.1°C
ALTITUDE 20,000 METERS

RADIOSONDE TYPE..1680 MHZ
BALLOON TYPE..NEOPRENE
BALLOON SIZE..1,200 GRAMS




STATION: (CNAE) Natal, Brazil
DATE: 24 July, 1968

ROCKET TIME: 1302 LST 1602 GCT
ROCKET MOTOR TYPE: Arcas

PAYLOAD TYPE: Arcasonde 1A
RADIOSONDE TYPE: 1680 MHz

# ROCKET OBSERVATION DATA

RP STATION NAME

72402 (NASA) WALLOPS ISLAND, VIRGINIA

LAT. 37°51' N LONG. 75°29' W

ROCKET LAUNCH

DATE JULY 31, 1968 TIME 1618 Z

RAWINSONDE RELEASE

DATE JULY 31, 1968 TIME 1826 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 083 | 57 | 098 | 030 | +004 | -030 |
| 090 | 56 | 097 | 033 | +004 | -033 |
| 087 | 55 | 101 | 041 | +008 | -041 |
| 077 | 54 | 108 | 049 | +015 | -047 |
| 080 | 53 | 111 | 048 | +017 | -045 |
| 083 | 52 | 106 | 046 | +012 | -044 |
| 069 | 51 | 097 | 054 | +006 | -053 |
| 067 | 50 | 098 | 051 | +007 | -051 |
| 067 | 49 | 092 | 049 | +002 | -048 |
| 061 | 48 | 096 | 053 | +005 | -052 |
| 055 | 47 | 104 | 046 | +011 | -045 |
| 046 | 46 | 107 | 041 | +012 | -039 |
| 044 | 45 | 106 | 042 | +011 | -040 |
| 042 | 44 | 105 | 039 | +010 | -038 |
| 036 | 43 | 096 | 032 | +003 | -032 |
| 035 | 42 | 085 | 027 | -002 | -027 |
| 033 | 41 | 079 | 019 | -004 | -018 |
| 032 | 40 | 092 | 014 | +000 | -014 |
| 031 | 39 | 098 | 016 | +002 | -016 |
| 029 | 38 | 082 | 019 | -003 | -019 |
| 026 | 37 | 069 | 018 | -006 | -016 |
| 024 | 36 | 069 | 013 | -005 | -012 |
| 022 | 35 | 085 | 015 | -001 | -015 |
| 018 | 34 | 088 | 020 | -001 | -019 |
| 018 | 33 | 094 | 019 | +001 | -019 |
| 018 | 32 | 101 | 020 | +004 | -020 |
| 016 | 31 | 103 | 020 | +005 | -020 |
| 015 | 30 | 101 | 020 | +004 | -019 |
| 013 | 29 | 094 | 020 | +002 | -019 |
| 011 | 28 | 078 | 016 | -004 | -016 |
| 010 | 27 | 073 | 014 | -004 | -014 |
| 009 | 26 | 085 | 013 | -001 | -013 |
| 008 | 25 | 089 | 011 | +000 | -011 |
| 007 | 24 | 083 | 010 | -001 | -010 |
| 007 | 23 | 077 | 008 | -002 | -008 |
| 006 | 22 | 094 | 007 | +001 | -007 |
| 006 | 21 | 106 | 005 | +001 | -004 |
| 005 | 20 | 099 | 005 | +001 | -005 |
| 005 | 19 | 116 | 005 | +002 | -004 |
| 005 | 18 | 123 | 005 | +003 | -004 |

ROCKET THERMODYNAMICS

| ALT TENS OF METERS | TEMP DEG C | PRESSURE MB | DENSITY G M -3 | WIND POLAR DEG | MPS | COMPONENTS MPS N-S | E-W |
|---|---|---|---|---|---|---|---|
| 5800 | -00.7 | 00.364 | 00.466 | | | | |
| 5540 | -03.1 | 00.444 | 00.572 | 097 | 032 | +004 | -032 |
| 5390 | +05.0 | 00.603 | 00.755 | 108 | 049 | +015 | -047 |
| 5227 | +07.5 | 00.733 | 00.910 | 107 | 047 | +014 | -045 |
| 4950 | -00.7 | 01.026 | 01.312 | 098 | 051 | +007 | -051 |
| 4865 | +01.1 | 01.139 | 01.447 | 093 | 050 | +003 | -049 |
| 4740 | -02.5 | 01.329 | 01.711 | 101 | 049 | +010 | -048 |
| 4685 | -02.7 | 01.423 | 01.834 | 097 | 052 | +006 | -052 |
| 4605 | -01.5 | 01.572 | 02.016 | 106 | 041 | +011 | -039 |
| 4525 | -03.3 | 01.736 | 02.242 | 106 | 041 | +011 | -039 |
| 4345 | -14.9 | 02.184 | 02.947 | 101 | 036 | +007 | -035 |
| 4320 | -13.9 | 02.257 | 03.033 | 098 | 033 | +005 | -033 |
| 4265 | -17.1 | 02.425 | 03.299 | 093 | 030 | +002 | -030 |
| 4190 | -16.7 | 02.676 | 03.636 | 084 | 026 | -003 | -026 |
| 4155 | -13.9 | 02.801 | 03.765 | 083 | 023 | -003 | -023 |
| 4087 | -12.7 | 03.060 | 04.093 | 080 | 018 | -003 | -018 |
| 4050 | -13.7 | 03.210 | 04.310 | 085 | 016 | -001 | -016 |
| 3990 | -13.7 | 03.470 | 04.660 | 092 | 014 | +000 | -014 |
| 3925 | -15.3 | 03.777 | 05.103 | 096 | 015 | +002 | -015 |
| 3860 | -14.5 | 04.112 | 05.538 | 092 | 017 | +001 | -017 |
| 3795 | -15.1 | 04.476 | 06.043 | 082 | 019 | -003 | -019 |
| 3750 | -19.2 | 04.749 | 06.515 | 080 | 018 | -003 | -018 |
| 3727 | -18.0 | 04.896 | 06.685 | 080 | 018 | -003 | -018 |
| 3490 | -23.9 | 06.723 | 09.397 | 085 | 015 | -001 | -015 |
| 3345 | -25.0 | 08.180 | 11.493 | 090 | 019 | +000 | -019 |
| 3320 | -28.1 | 08.471 | 12.044 | 092 | 018 | +001 | -019 |
| 3300 | -27.7 | 08.708 | 12.360 | 094 | 019 | +001 | -019 |
| 2975 | -41.1 | 13.798 | 20.715 | 100 | 019 | +003 | -019 |
| 2790 | -47.8 | 18.140 | 28.045 | 078 | 016 | -004 | -016 |
| 2700 | -46.3 | 20.757 | 31.878 | 073 | 014 | -004 | -014 |
| 2640 | -48.3 | 22.710 | 35.188 | 080 | 013 | -002 | -013 |
| 2565 | -47.4 | 25.420 | 39.229 | 086 | 012 | -001 | -012 |
| 2440 | -51.2 | 30.711 | 48.205 | 085 | 010 | -001 | -010 |
| 2407 | -50.2 | 32.294 | 50.463 | 083 | 010 | -001 | -010 |
| 2377 | -52.8 | 33.809 | 53.454 | 082 | 009 | -001 | -009 |
| 2283 | -52.4 | 39.064 | 61.650 | 082 | 008 | -001 | -008 |
| 2145 | -54.6 | 48.339 | 77.056 | 101 | 006 | +001 | -006 |
| 2000 | -53.3 | 60.495 | 95.863 | 099 | 005 | +001 | -005 |
| 1900 | -56.1 | | | 116 | 005 | +002 | -004 |
| 1855 | -60.1 | | | 118 | 005 | +002 | -005 |
| 1800 | -59.1 | | | 123 | 005 | +003 | -004 |
| 1730 | -65.2 | | | | | | |

CONSTANT PRESSURE SURFACES (GEOPOTENTIAL HEIGHT)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2116 | -54.4 | 50.000 | 79.617 | 105 | 005 | +001 | -005 |
| 2446 | -50.7 | 30.000 | 46.977 | 087 | 010 | -001 | -010 |
| 2713 | -48.7 | 20.000 | 30.774 | 075 | 015 | -004 | -015 |
| 3184 | -31.8 | 10.000 | 14.434 | 101 | 020 | +004 | -020 |
| 3441 | -24.1 | 07.000 | 09.792 | 086 | 017 | -001 | -017 |
| 3689 | -18.3 | 05.000 | 06.836 | 069 | 017 | -006 | -016 |
| 4076 | -12.9 | 03.000 | 04.017 | 079 | 019 | -004 | -018 |
| 4383 | -10.5 | 02.000 | 02.653 | 105 | 039 | +010 | -038 |
| 4932 | +00.0 | 01.000 | 01.275 | 096 | 050 | +005 | -050 |

RAWINSONDE

| PRESSURE MB | ALT TENS OF METERS | WIND POLAR DEG | MPS | COMPONENTS MPS N-S | E-W | RH % | TEMP DEG C |
|---|---|---|---|---|---|---|---|
| 1020.5 | 0000 | 140 | 005 | +004 | -003 | 85 | +26.7 |
| 0810.0 | 0200 | 232 | 004 | +003 | +003 | 37 | +14.8 |
| 0637.0 | 0400 | 235 | 006 | +004 | +005 | 54 | +04.0 |
| 0495.0 | 0600 | 256 | 010 | +002 | +010 | 15 | -07.4 |
| 0380.0 | 0800 | 256 | 018 | +007 | +018 | 18 | -20.7 |
| 0287.0 | 1000 | 250 | 031 | +011 | +029 | 20 | -35.7 |
| 0213.0 | 1200 | 240 | 029 | +015 | +026 | | -52.4 |
| 0160.0 | 1388 | 242 | 009 | +004 | +008 | | -62.2 |
| 0155.0 | 1400 | 243 | 007 | +003 | +006 | | -62.3 |
| 0114.5 | 1600 | 145 | 003 | +003 | -002 | | -63.8 |
| 0082.5 | 1800 | 290 | 002 | -001 | +002 | | -60.7 |
| 0059.3 | 2000 | 111 | 004 | +001 | -004 | | -57.7 |
| 0043.3 | 2200 | 116 | 007 | +003 | -006 | | -54.5 |
| 0031.7 | 2400 | 077 | 010 | -002 | -010 | | -51.4 |
| 0023.7 | 2600 | 082 | 015 | -002 | -015 | | -48.0 |
| 0017.6 | 2800 | 088 | 013 | -001 | -013 | | -44.0 |
| 0013.2 | 3000 | 076 | 016 | -004 | -016 | | -40.0 |
| 0009.7 | 3200 | 101 | 016 | +003 | -016 | | -36.0 |
| 0007.3 | 3400 | 116 | 014 | +006 | -012 | | -32.7 |
| 0005.6 | 3600 | 120 | 014 | +007 | -012 | | -29.2 |
| 0005.5 | 3621 | 120 | 014 | +007 | -012 | | -28.9 |
| 0005.2 | 3656 | | | | | | -28.3 |

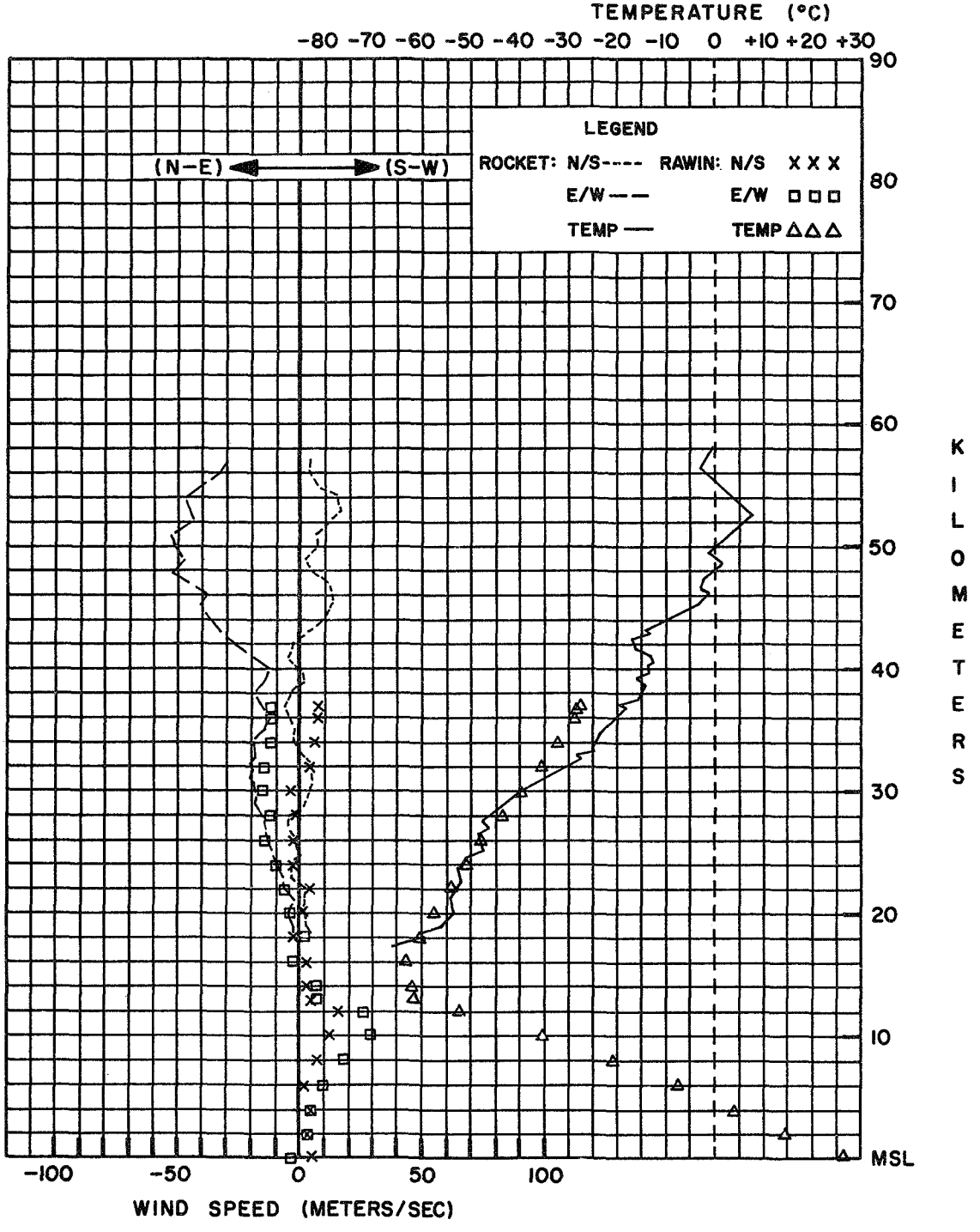
# TECHNICAL DATA

MOTOR TYPE..ARCAS
PAYLOAD TYPE..ARCASONDE-1A
FUSE TYPE..GAS GENERATED SEPARATION DEVICE
LAUNCHER SETTING..096° AZIMUTH 83.0° ELEVATION
RADAR TYPE..FPQ-6 APOGEE 59.58.0 METERS
WIND SENSOR TYPE..15 FT. DIAMETER PARACHUTE
TEMPERATURE SENSOR TYPE..0.010 INCH BEAD THERMISTOR
GROUND EQUIPMENT TYPE..GMD-1B
REMARKS..FREQUENT DROPOUT OF SIGNAL STRENGTH DEGRADED QUALITY OF TEMPERATURE DATA IN UPPER LEVELS.

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..FAIR
ACTUAL FUSE DELAY TIME..141 SEC

SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..MOLDED INSULATION CO. RADIOSONDE TYPE..1680 MHZ
TEMPERATURE ELEMENT TYPE..ROD THERMISTOR BALLOON TYPE..NEOPRENE
PRESSURE SENSOR TYPE..ANEROID AND HYPSOMETER BALLOON SIZE..1,200 GRAMS
GROUND EQUIPMENT TYPE..GMD-1B
WIND AT ROCKET LAUNCH..SFC. 115DEG/04MPS 15M 090DEG/02MPS 31M 081DEG/02MPS 46M 104DEG/04MPS 61M 117DEG/04MPS 76M 127DEG/05MPS
BALLISTIC WIND.. 128° AZIMUTH 05.4 MPS
THERMODYNAMIC BASE DATA..PRESSURE 114.5 MB
TEMPERATURE -63.8°C
ALTITUDE 16,000 METERS




STATION: (NASA) Wallops Island, Va. ROCKET TIME: 1118 LST 1618 GCT PAYLOAD TYPE: Arcasonde 1A

DATE: 31 July, 1968 ROCKET MOTOR TYPE: Arcas RADIOSONDE TYPE: 1680 MHz

# ROCKET OBSERVATION DATA

WP STATION NAME

87689 (CNIE) MAR CHIQUITA, ARGENTINA

LAT. 37°45'S LONG. 57°25'W

ROCKET LAUNCH

DATE JULY 31, 1968 TIME 2228 Z

RAWINSONDE RELEASE

DATE JULY 31, 1968 TIME 2314 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | WIND COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 091 | 63 | 295 | 086 | -036 | +077 |
| 069 | 62 | 292 | 083 | -031 | +077 |
| 074 | 61 | 280 | 074 | -013 | +072 |
| 110 | 60 | 269 | 082 | +014 | +080 |
| 083 | 59 | 269 | 108 | +002 | +108 |
| 071 | 58 | 275 | 109 | -010 | +108 |
| 064 | 57 | 275 | 114 | -010 | +113 |
| 062 | 56 | 276 | 134 | -019 | +132 |
| 052 | 55 | 284 | 134 | -033 | +130 |
| 041 | 54 | 285 | 139 | -036 | +134 |
| 043 | 53 | 284 | 137 | -033 | +131 |
| 044 | 52 | 285 | 138 | -036 | +133 |
| 042 | 51 | 285 | 142 | -037 | +136 |
| 042 | 50 | 287 | 139 | -041 | +133 |
| 035 | 49 | 282 | 112 | -023 | +108 |
| 033 | 48 | 285 | 111 | -029 | +107 |
| 031 | 47 | 288 | 123 | -038 | +117 |
| 029 | 46 | 286 | 125 | -035 | +120 |
| 026 | 45 | 280 | 108 | -019 | +106 |
| 030 | 44 | 285 | 119 | -031 | +114 |
| 034 | 43 | 286 | 119 | -031 | +109 |
| 042 | 42 | 271 | 113 | -002 | +113 |
| 057 | 41 | 272 | 121 | -004 | +120 |
| 054 | 40 | 280 | 120 | -021 | +116 |
| 034 | 39 | 276 | 107 | -011 | +105 |
| 036 | 38 | 270 | 099 | +000 | +099 |

RAWINSONDE

| PRESSURE | ALT IN TENS OF METERS | WIND POLAR | | WIND COMPONENTS MPS | | RH | TEMP |
|---|---|---|---|---|---|---|---|
| MB | | DEG | MPS | N-S | E-W | % | DEG C |
| 1022.6 | 0002 | 090 | 005 | +000 | -005 | 92 | +10.8 |
| 0806.5 | 0200 | 001 | 001 | -001 | +000 | 75 | +05.6 |
| 0629.8 | 0400 | 330 | 010 | -009 | +005 | 58 | -02.9 |
| 0485.0 | 0600 | 302 | 021 | -011 | +018 | 27 | -14.6 |
| 0371.9 | 0800 | 290 | 028 | -010 | +026 | 34 | -28.8 |
| 0278.3 | 1000 | 275 | 032 | -003 | +031 | | -38.0 |
| 0207.9 | 1200 | 269 | 036 | +001 | +036 | | -49.3 |
| 0193.0 | 1270 | 268 | 031 | +001 | +031 | | -53.0 |
| 0153.2 | 1400 | 265 | 023 | +002 | +023 | | -51.8 |
| 0112.8 | 1600 | 258 | 021 | +004 | +021 | | -55.3 |
| 0081.9 | 1800 | | | | | | -56.5 |
| 0059.9 | 2000 | | | | | | -56.8 |
| 0043.8 | 2200 | | | | | | -56.6 |
| 0030.9 | 2400 | | | | | | -56.1 |
| 0023.3 | 2600 | | | | | | -55.5 |
| 0017.2 | 2800 | | | | | | -54.7 |
| 0012.6 | 3000 | | | | | | -53.8 |
| 0012.0 | 3077 | | | | | | -53.8 |

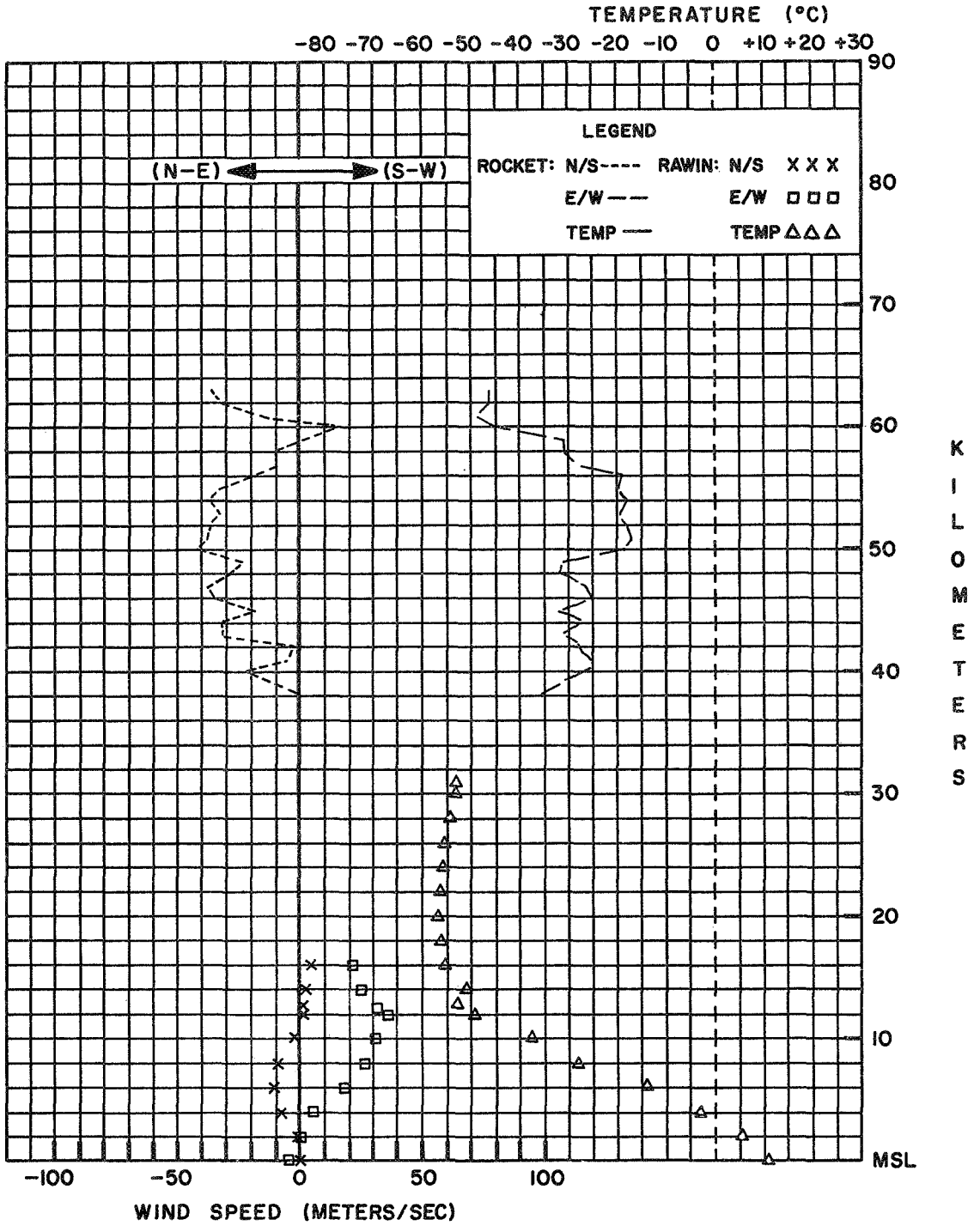
# TECHNICAL DATA

MOTOR TYPE..JUDI
PAYLOAD TYPE..CHAFF
FUSE TYPE..ELECTRICALLY ACTIVATED PYROTECHNIC
LAUNCHER SETTING..070°AZIMUTH 85.5°ELEVATION
RADAR TYPE..MPS-19 APOGEE 65,000 METERS
WIND SENSOR TYPE..0.005 INCH S BAND COPPER CHAFF SENSOR FALL-RATE..ABOVE NOMINAL
TEMPERATURE SENSOR TYPE..N.A.
GROUND EQUIPMENT TYPE..MPS-19
REMARKS..EXCESSIVE CHAFF SPREAD CAUSE TO CUT TRACKING AT 38 KM. LEVEL.

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..110 SEC

RADIOSONDE MANUFACTURER..VAISALA
TEMPERATURE ELEMENT TYPE..RESISTANCE WIRE
PRESSURE SENSOR TYPE..DOUBLE ANEMOID
GROUND EQUIPMENT TYPE..VAISALA
WIND AT ROCKET LAUNCH..SFC. 090DEG/04MPS
BALLISTIC WIND.. 124°AZIMUTH 02.7 MPS
THERMODYNAMIC BASE DATA..PRESSURE N.A. MBS
TEMPERATURE N.A.°C
ALTITUDE N.A. METERS

RADIOSONDE TYPE..VAISALA
BALLOON TYPE..NEOPRENE
BALLOON SIZE..1,200 GRAMS




STATION: (CNIE) Mar Chiquita, Arg. ROCKET TIME: 1928 LST 2228 GCT PAYLOAD TYPE: Chaff

DATE: 31 July, 1968 ROCKET MOTOR TYPE: Judi RADIOSONDE TYPE: Vaisala

# ROCKET OBSERVATION DATA

RP STATION NAME

72402 (NASA) WALLOPS ISLAND, VIRGINIA

LAT. 37°51' N LONG. 75°29' W

ROCKET LAUNCH

DATE AUGUST 8, 1968 TIME 1506 Z

RAWINSONDE RELEASE

DATE AUGUST 8, 1968 TIME 1204 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 111 | 56 | 097 | 044 | +005 | -044 |
| 105 | 55 | 104 | 053 | +012 | -052 |
| 105 | 54 | 103 | 059 | +014 | -058 |
| 095 | 53 | 096 | 058 | +006 | -058 |
| 080 | 52 | 095 | 053 | +004 | -052 |
| 071 | 51 | 095 | 046 | +004 | -045 |
| 069 | 50 | 105 | 047 | +012 | -046 |
| 074 | 49 | 108 | 046 | +014 | -044 |
| 069 | 48 | 096 | 042 | +004 | -042 |
| 059 | 47 | 091 | 039 | +001 | -039 |
| 055 | 46 | 091 | 036 | +001 | -036 |
| 051 | 45 | 087 | 031 | -002 | -031 |
| 051 | 44 | 084 | 029 | -003 | -029 |
| 049 | 43 | 088 | 030 | -001 | -030 |
| 044 | 42 | 090 | 026 | +000 | -026 |
| 041 | 41 | 094 | 020 | +002 | -020 |
| 035 | 40 | 095 | 019 | +001 | -019 |
| 034 | 39 | 106 | 020 | +005 | -019 |
| 033 | 38 | 112 | 022 | +008 | -021 |
| 032 | 37 | 105 | 023 | +006 | -022 |
| 029 | 36 | 101 | 023 | +005 | -023 |
| 028 | 35 | 090 | 023 | +000 | -023 |
| 026 | 34 | 077 | 020 | -005 | -019 |
| 024 | 33 | 076 | 020 | -005 | -020 |
| 025 | 32 | 079 | 024 | -005 | -023 |
| 021 | 31 | 086 | 023 | -002 | -022 |
| 018 | 30 | 092 | 021 | +001 | -021 |
| 017 | 29 | 099 | 020 | +003 | -020 |
| 017 | 28 | 096 | 019 | +002 | -018 |
| 017 | 27 | 093 | 016 | +001 | -016 |
| 014 | 26 | 095 | 014 | +001 | -014 |
| 013 | 25 | 092 | 016 | +001 | -016 |
| 013 | 24 | 090 | 015 | +000 | -015 |
| 012 | 23 | 095 | 007 | +001 | -007 |
| 010 | 22 | 103 | 007 | +002 | -007 |
| 010 | 21 | 106 | 006 | +002 | -005 |
| 010 | 20 | 099 | 004 | +001 | -004 |
| 009 | 19 | 062 | 003 | -001 | -003 |
| 009 | 18 | 031 | 003 | -002 | -001 |
| 009 | 17 | 329 | 005 | -004 | +002 |
| 008 | 16 | 330 | 009 | -008 | +005 |
| 007 | 15 | 309 | 013 | -008 | +010 |

RAWINSONDE

| PRESSURE | ALT IENS OF METERS | WIND POLAR DEG | MPS | COMPONENTS MPS N-S | E-W | RH % | TEMP DEG C |
|---|---|---|---|---|---|---|---|
| MB | | | | | | | |
| 1016.3 | 0000 | 315 | 002 | -001 | +001 | 85 | +26.1 |
| 0808.0 | 0200 | 296 | 003 | -001 | +003 | 65 | +14.5 |
| 0634.0 | 0400 | 316 | 005 | -004 | +004 | 20 | +04.7 |
| 0496.0 | 0600 | 004 | 008 | -008 | -001 | 14 | -04.6 |
| 0380.0 | 0800 | 336 | 009 | -008 | +004 | 16 | -20.1 |
| 0289.0 | 1000 | 307 | 017 | -010 | +014 | 24 | -34.3 |
| 0214.0 | 1200 | 319 | 021 | -016 | +014 | | -49.8 |
| 0157.0 | 1400 | 298 | 014 | -007 | +014 | | -65.0 |
| 0122.0 | 1553 | 295 | 011 | -005 | +010 | | -72.3 |
| 0113.0 | 1600 | 299 | 009 | -005 | +008 | | -69.6 |
| 0081.3 | 1800 | 360 | 004 | -004 | +000 | | -61.1 |
| 0059.2 | 2000 | 055 | 004 | -002 | -003 | | -55.5 |
| 0043.7 | 2200 | 106 | 007 | +002 | -007 | | -50.7 |
| 0032.2 | 2400 | 106 | 008 | +002 | -008 | | -47.7 |
| 0023.6 | 2600 | 082 | 012 | -002 | -012 | | -44.6 |
| 0017.7 | 2800 | 084 | 016 | -002 | -016 | | -42.7 |
| 0013.3 | 3000 | 094 | 019 | +001 | -019 | | -41.3 |
| 0009.9 | 3200 | 098 | 022 | +003 | -021 | | -39.5 |
| 0009.3 | 3239 | 098 | 022 | +003 | -021 | | -38.3 |
| 0008.8 | 3284 | | | | | | -37.0 |

# TECHNICAL DATA

MOTOR TYPE..JUDI

PAYLOAD TYPE..WOX-1A

FUSE TYPE..ELECTRICALLY ACTIVATED PYROTECHNIC

LAUNCHER SETTING..130°AZIMUTH 80.0°ELEVATION

RADAR TYPE..FPS-16 APOGEE 59.100 METERS

WIND SENSOR TYPE..6 FT. SQUARE PARACHUTE

TEMPERATURE SENSOR TYPE..0.014 INCH BEAD THERMISTOR

GROUND EQUIPMENT TYPE..403 MHZ PORTABLE RECEIVER-RECORDER

REMARKS..THIS WAS A PERFORMANCE TEST. TELEMETRY DATA WAS NOT EVALUATED.

MOTOR PERFORMANCE..GOOD

PAYLOAD PERFORMANCE..FAIR

ACTUAL FUSE DELAY TIME..085 SEC

SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..MOLDED INSULATION CO. RADIOSONDE TYPE..1680 MHZ

TEMPERATURE ELEMENT TYPE..ROD THERMISTOR BALLOON TYPE..NEOPRENE

PRESSURE SENSOR TYPE..ANEROID AND HYPSOMETER BALLOON SIZE..1.200 GRAMS

GROUND EQUIPMENT TYPE..GMD-1B

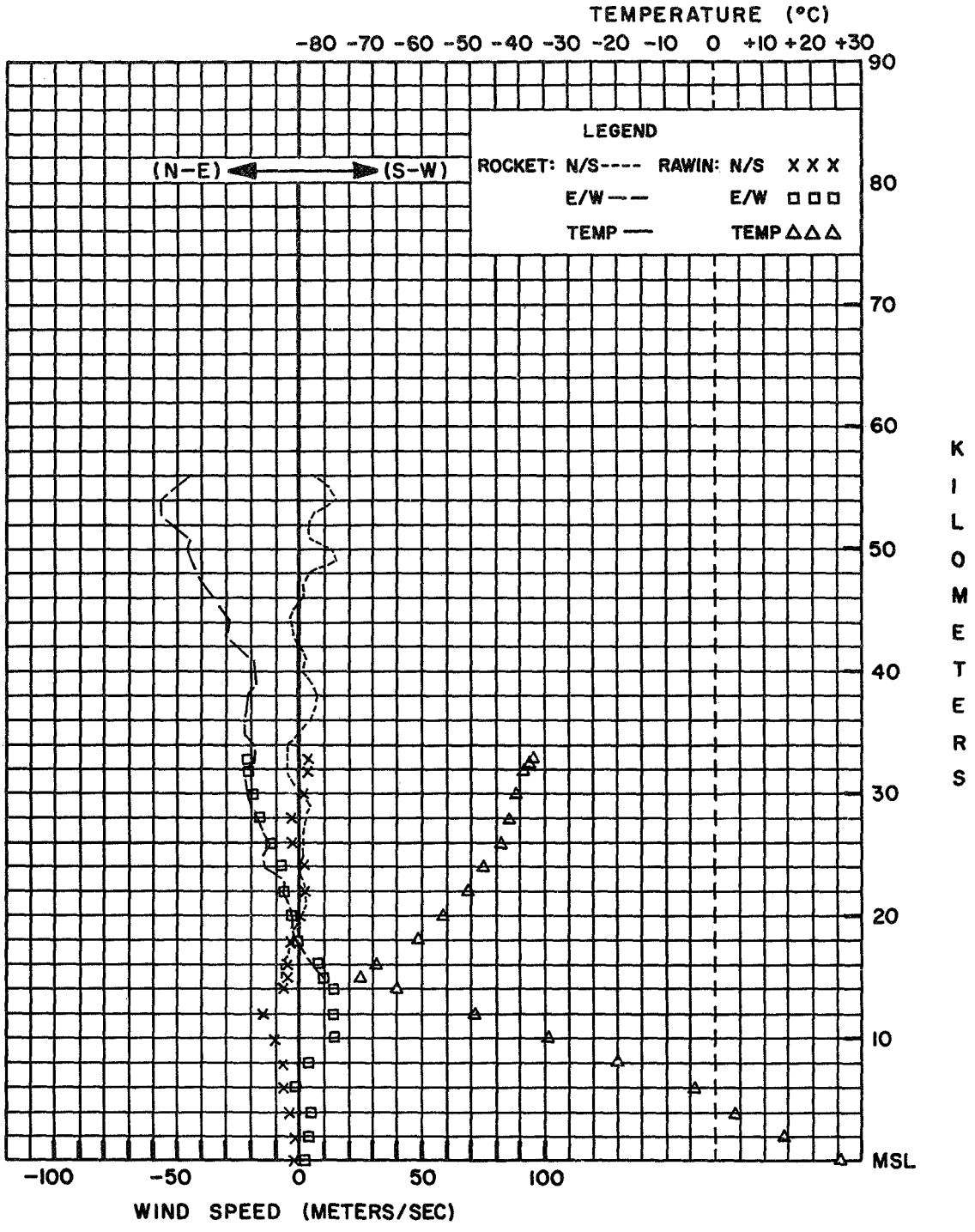
WIND AT ROCKET LAUNCH..SFC. 090DEG/03MPS 15M 063DEG/02MPS 31M 079DEG/02MPS 46M 059DEG/03MPS 61M 059DEG/03MPS 76M 059DEG/03MPS

BALLISTIC WIND.. 059°AZIMUTH 02.7 MPS

THERMODYNAMIC BASE DATA..PRESSURE N.A. MBS

TEMPERATURE N.A.°C

ALTITUDE N.A. METERS




STATION: (NASA) Wallops Island, Va. ROCKET TIME: 1006 LST 1506 GCT PAYLOAD TYPE: WOX-1A

DATE: 8 August, 1968 ROCKET MOTOR TYPE: Judi RADIOSONDE TYPE: 1680 MHZ

# ROCKET OBSERVATION DATA

MP STATION NAME

72402 (NASA) WALLOPS ISLAND, VIRGINIA

LAT. 37°51' N LONG. 75°29' W

ROCKET LAUNCH

DATE AUGUST 14, 1968 TIME 1730 Z

RAWINSONDE RELEASE

DATE AUGUST 14, 1968 TIME 2100 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 083 | 57 | 155 | 028 | +025 | -012 |
| 071 | 56 | 138 | 028 | +021 | -019 |
| 071 | 55 | 114 | 032 | +013 | -030 |
| 083 | 54 | 097 | 048 | +007 | -048 |
| 074 | 53 | 092 | 036 | +001 | -036 |
| 071 | 52 | 092 | 037 | +001 | -037 |
| 071 | 51 | 099 | 043 | +007 | -043 |
| 064 | 50 | 104 | 041 | +010 | -040 |
| 061 | 49 | 107 | 035 | +010 | -033 |
| 064 | 48 | 110 | 039 | +014 | -036 |
| 062 | 47 | 110 | 042 | +015 | -039 |
| 051 | 46 | 101 | 034 | +007 | -034 |
| 046 | 45 | 101 | 032 | +007 | -032 |
| 042 | 44 | 100 | 030 | +005 | -031 |
| 042 | 43 | 103 | 030 | +007 | -030 |
| 033 | 42 | 105 | 027 | +007 | -027 |
| 037 | 41 | 096 | 027 | +003 | -027 |
| 038 | 40 | 095 | 027 | +002 | -027 |
| 031 | 39 | 094 | 020 | +002 | -020 |
| 032 | 38 | 097 | 016 | +002 | -016 |
| 025 | 37 | 099 | 016 | +003 | -016 |
| 024 | 36 | 097 | 014 | +002 | -014 |
| 025 | 35 | 097 | 015 | +002 | -015 |
| 022 | 34 | 100 | 017 | +003 | -017 |
| 020 | 33 | 106 | 016 | +004 | -016 |
| 017 | 32 | 120 | 016 | +008 | -014 |
| 016 | 31 | 112 | 018 | +006 | -016 |
| 015 | 30 | 104 | 016 | +004 | -016 |
| 015 | 29 | 104 | 014 | +003 | -014 |
| 011 | 28 | 098 | 011 | +001 | -011 |
| 011 | 27 | 097 | 009 | +001 | -009 |
| 009 | 26 | 097 | 008 | +001 | -008 |
| 007 | 25 | 086 | 007 | -001 | -007 |
| 008 | 24 | 084 | 006 | -001 | -006 |
| 007 | 23 | 094 | 006 | +000 | -006 |
| 006 | 22 | 097 | 005 | +001 | -005 |
| 006 | 21 | 167 | 002 | +002 | +000 |
| 005 | 20 | 184 | 003 | +003 | +000 |
| 004 | 19 | 181 | 003 | +003 | +000 |

ROCKET THERMODYNAMICS

| ALT TENS OF METERS | TEMP DEG C | PRESSURE MB | DENSITY G M$^{-3}$ | WIND POLAR DEG | MPS | COMPONENTS MPS N-S | E-W |
|---|---|---|---|---|---|---|---|
| 5834 | -09.9 | 00.342 | 00.452 | | | | |
| 5657 | -11.7 | 00.428 | 00.571 | 148 | 028 | +024 | -015 |
| 5517 | -07.1 | 00.512 | 00.670 | 120 | 031 | +016 | -027 |
| 5407 | -08.9 | 00.588 | 00.776 | 098 | 047 | +006 | -047 |
| 5190 | -05.0 | 00.774 | 01.005 | 093 | 039 | +002 | -038 |
| 5157 | -06.4 | 00.806 | 01.053 | 095 | 041 | +003 | -040 |
| 5087 | -01.5 | 00.880 | 01.128 | 100 | 044 | +008 | -043 |
| 4760 | +03.0 | 01.314 | 01.658 | 110 | 040 | +014 | -037 |
| 4423 | -02.7 | 01.990 | 02.564 | 100 | 031 | +005 | -031 |
| 4140 | -12.0 | 02.849 | 03.800 | 100 | 027 | +005 | -027 |
| 4090 | -11.1 | 03.038 | 04.039 | 096 | 027 | +003 | -027 |
| 3970 | -16.1 | 03.551 | 04.812 | 095 | 024 | +002 | -024 |
| 3880 | -13.7 | 03.993 | 05.362 | 094 | 020 | +002 | -019 |
| 3694 | -18.7 | 05.098 | 06.980 | 098 | 016 | +002 | -016 |
| 3667 | -17.2 | 05.283 | 07.191 | 098 | 015 | +002 | -015 |
| 3606 | -20.6 | 05.729 | 07.903 | 097 | 014 | +002 | -014 |
| 3550 | -18.2 | 06.172 | 08.434 | 097 | 015 | +002 | -015 |
| 3456 | -18.6 | 06.991 | 09.566 | 098 | 016 | +002 | -016 |
| 3356 | -22.1 | 07.990 | 11.088 | 102 | 017 | +004 | -017 |
| 3307 | -21.3 | 08.534 | 11.805 | 106 | 016 | +004 | -016 |
| 3290 | -25.0 | 08.732 | 12.259 | 106 | 016 | +004 | -016 |
| 3264 | -22.6 | 09.045 | 12.577 | 110 | 016 | +006 | -015 |
| 3237 | -24.8 | 09.382 | 13.161 | 112 | 016 | +006 | -015 |
| 3210 | -22.6 | 09.732 | 13.532 | 116 | 016 | +007 | -015 |
| 3133 | -27.6 | 10.808 | 15.335 | 116 | 018 | +008 | -016 |
| 3120 | -26.6 | 11.003 | 15.548 | 116 | 018 | +008 | -016 |
| 3094 | -25.8 | 11.410 | 16.748 | 116 | 018 | +008 | -016 |
| 3040 | -36.5 | 12.324 | 18.143 | 116 | 016 | +007 | -015 |
| 3027 | -39.0 | 12.556 | 18.682 | 116 | 016 | +007 | -015 |
| 3000 | -37.5 | 13.054 | 19.299 | 104 | 016 | +004 | -016 |
| 2800 | -46.0 | 17.484 | 26.821 | 098 | 010 | +001 | -010 |
| 2496 | -46.4 | 27.523 | 42.248 | 086 | 007 | -001 | -007 |
| 2234 | -52.4 | 40.928 | 64.592 | 096 | 005 | +001 | -005 |
| 2000 | -53.9 | 58.705 | 93.282 | 184 | 003 | +003 | +000 |
| 1826 | -61.4 | | | | | | |

CONSTANT PRESSURE SURFACES (GEOPOTENTIAL HEIGHT)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2097 | -53.2 | 50.000 | 79.184 | 167 | 002 | +002 | +000 |
| 2429 | -47.5 | 30.000 | 46.319 | 085 | 006 | +000 | -006 |
| 2698 | -46.1 | 20.000 | 30.688 | 097 | 009 | +001 | -009 |
| 3174 | -23.8 | 10.000 | 13.974 | 116 | 016 | +007 | -015 |
| 3436 | -18.6 | 07.000 | 09.582 | 098 | 016 | +002 | -016 |
| 3687 | -18.3 | 05.000 | 06.834 | 099 | 016 | +003 | -016 |
| 4073 | -11.3 | 03.000 | 03.991 | 096 | 027 | +003 | -027 |
| 4388 | -02.8 | 02.000 | 02.577 | 100 | 031 | +005 | -031 |
| 4944 | -00.3 | 01.000 | 01.277 | 104 | 040 | +009 | -039 |

RAWINSONDE

| PRESSURE MB | ALT TENS OF METERS | WIND POLAR DEG | MPS | COMPONENTS MPS N-S | E-W | RH % | TEMP DEG C |
|---|---|---|---|---|---|---|---|
| 1014.0 | 0000 | 200 | 005 | +005 | +002 | 74 | +25.0 |
| 0808.0 | 0200 | 293 | 007 | -003 | +007 | 74 | +19.9 |
| 0633.0 | 0400 | 267 | 007 | +000 | +007 | 90 | +03.2 |
| 0492.0 | 0600 | 289 | 012 | -004 | +012 | 79 | -07.7 |
| 0380.0 | 0800 | 283 | 013 | -003 | +013 | 64 | -19.4 |
| 0289.0 | 1000 | 284 | 015 | -003 | +015 | 42 | -34.0 |
| 0215.0 | 1200 | 273 | 021 | -001 | +020 | | -50.3 |
| 0157.0 | 1400 | 279 | 017 | -001 | +017 | | -64.4 |
| 0129.0 | 1518 | 280 | 019 | -003 | +019 | | -71.1 |
| 0112.0 | 1600 | 280 | 016 | -003 | +016 | | -68.7 |
| 0080.5 | 1800 | 256 | 004 | +001 | +004 | | -61.8 |
| 0059.0 | 2000 | 253 | 002 | +000 | +002 | | -54.6 |
| 0043.4 | 2200 | 118 | 002 | +001 | -002 | | -51.2 |
| 0031.9 | 2400 | 042 | 005 | -003 | -003 | | -50.8 |
| 0023.7 | 2600 | 083 | 008 | -001 | -008 | | -48.6 |
| 0017.9 | 2800 | 082 | 012 | -002 | -012 | | -43.4 |
| 0014.9 | 2910 | 088 | 008 | +000 | -008 | | -40.8 |
| 0014.0 | 2950 | | | | | | -39.6 |

# TECHNICAL DATA

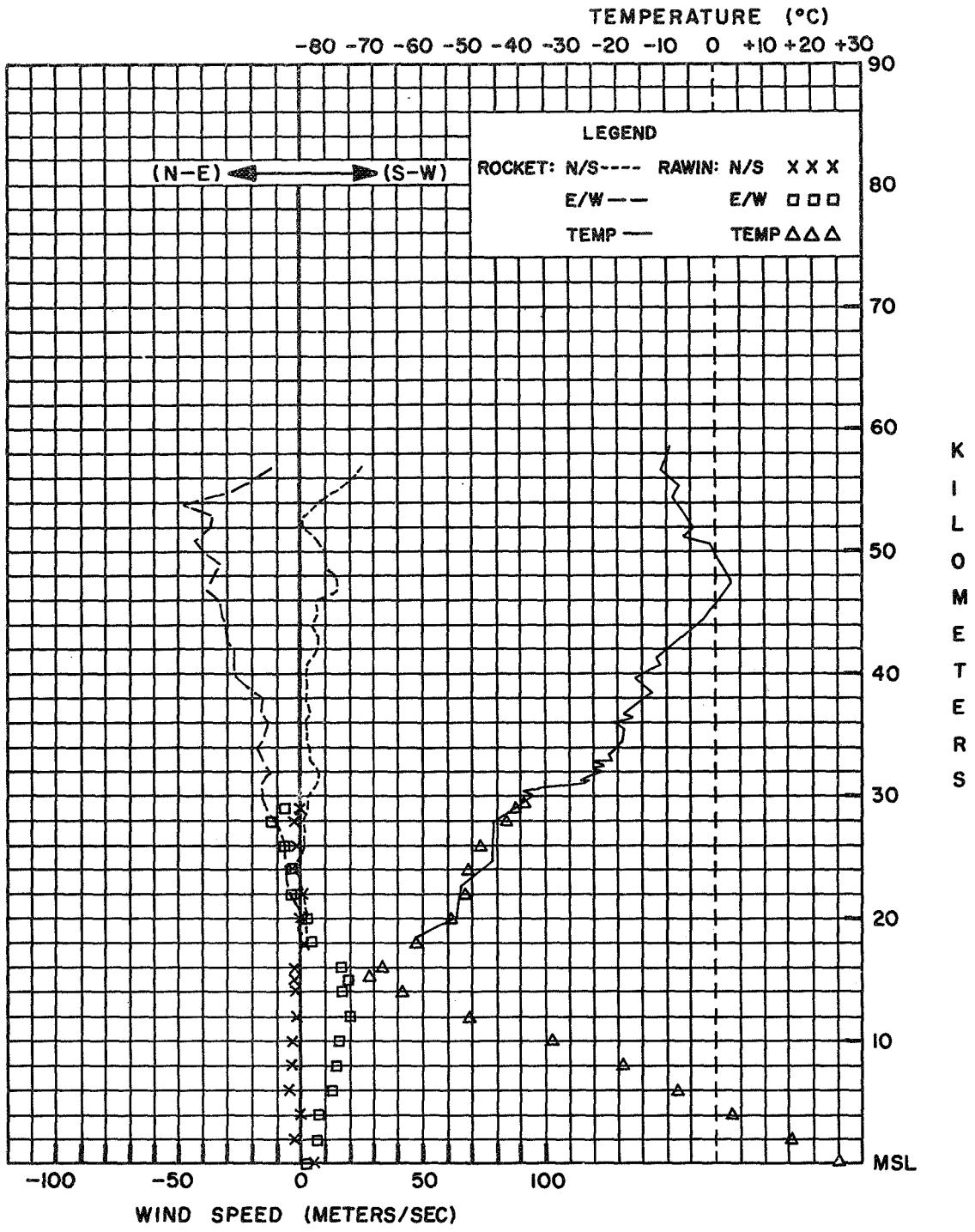
MOTOR TYPE..ARCAS
PAYLOAD TYPE..ARCASONDE-1A
FUSE TYPE..GAS GENERATED SEPARATION DEVICE
LAUNCHER SETTING..077°AZIMUTH 75.4° ELEVATION
RADAR TYPE..FPS-16 APOGEE 59.410 METERS
WIND SENSOR TYPE..15 FT. DIAMETER PARACHUTE
TEMPERATURE SENSOR TYPE..0.010 INCH BEAD THERMISTOR
GROUND EQUIPMENT TYPE..GMD-1H
REMARKS..NONE

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..1.35 SEC

SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..MOLDED INSULATION CO.
TEMPERATURE ELEMENT TYPE..ROD THERMISTOR
PRESSURE SENSOR TYPE..ANEROID AND HYPSOMETER
GROUND EQUIPMENT TYPE..GMD-1B
WIND AT ROCKET LAUNCH..SFC. 207DEG/05MPS 15M 187DEG/07MPS 31M 186DEG/08MPS
46M 193DEG/10MPS 61M 194DEG/11MPS 76M 199DEG/12MPS
BALLISTIC WIND.. 212°AZIMUTH 10.7 MPS
THERMODYNAMIC BASE DATA..PRESSURE 080.5 MBS
TEMPERATURE -61.8°C
ALTITUDE 18,000 METERS

RADIOSONDE TYPE..1680 MHZ
BALLOON TYPE..NEOPHENE
BALLOON SIZE..1,200 GRAMS




STATION: (NASA) Wallops Island, Va. ROCKET TIME: 1230 LST 1730 GCT PAYLOAD TYPE: Arcasonde 1A

DATE: 14 August, 1968 ROCKET MOTOR TYPE: Arcas RADIOSONDE TYPE: 1680 MHz

# ROCKET OBSERVATION DATA

WP STATION NAME

87689 (CNIE) MAR CHIQUITA, ARGENTINA

LAT. 37°45'S LONG. 57°25'W

ROCKET LAUNCH

DATE AUGUST 14, 1968 TIME 2328 Z

RAWINSONDE RELEASE

DATE AUGUST 14, 1968 TIME 1900 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 028 | 38 | 230 | 054 | +035 | +041 |
| 026 | 37 | 230 | 045 | +029 | +034 |
| 026 | 36 | 229 | 043 | +028 | +032 |
| 028 | 35 | 229 | 045 | +029 | +034 |
| 028 | 34 | 229 | 037 | +024 | +028 |
| 014 | 33 | 230 | 033 | +021 | +025 |
| 018 | 32 | 230 | 033 | +021 | +025 |
| 027 | 31 | 230 | 032 | +020 | +025 |
| 027 | 30 | 230 | 028 | +018 | +021 |
| 019 | 29 | 203 | 025 | +023 | +010 |
| 016 | 28 | 206 | 019 | +017 | +008 |
| 012 | 27 | 210 | 016 | +014 | +008 |
| 009 | 26 | 209 | 013 | +011 | +006 |
| 008 | 25 | 280 | 012 | -002 | +012 |
| 010 | 24 | 275 | 011 | -001 | +011 |
| 008 | 23 | 275 | 014 | -001 | +014 |
| 010 | 22 | 280 | 012 | -002 | +012 |
| 008 | 21 | 270 | 012 | +000 | +012 |
| 006 | 20 | 275 | 012 | -001 | +012 |
| 006 | 20 | 275 | 012 | -001 | +012 |
| 007 | 19 | 275 | 012 | -001 | +012 |
| 005 | 18 | 275 | 015 | -001 | +015 |

ROCKET THERMODYNAMICS

| ALT IN METERS | TEMP DEG C | PRESSURE MB | DENSITY G M⁻³ | WIND POLAR DEG | MPS | COMPONENTS MPS N-S | E-W |
|---|---|---|---|---|---|---|---|
| 4050 | -35.7 | 02.813 | 04.126 | | | | |
| 3850 | -40.9 | 03.749 | 05.623 | 230 | 054 | +035 | +041 |
| 3770 | -35.1 | 04.205 | 06.154 | 230 | 045 | +029 | +034 |
| 3560 | -34.7 | 05.663 | 08.273 | 229 | 045 | +029 | +034 |
| 3440 | -33.1 | 06.709 | 09.736 | 229 | 037 | +024 | +028 |
| 3310 | -38.2 | 08.072 | 11.969 | 230 | 033 | +021 | +025 |
| 3260 | -37.5 | 08.674 | 12.823 | 230 | 033 | +021 | +025 |
| 3160 | -44.1 | 10.033 | 15.259 | 230 | 033 | +021 | +025 |
| 3010 | -40.5 | 12.500 | 18.717 | 230 | 028 | +018 | +021 |
| 2980 | -49.4 | 13.068 | 20.347 | 230 | 028 | +018 | +021 |
| 2940 | -47.5 | 13.880 | 21.428 | 214 | 026 | +022 | +015 |
| 2880 | -49.1 | 15.192 | 23.621 | 204 | 024 | +022 | +010 |
| 2780 | -47.8 | 17.663 | 27.305 | 207 | 018 | +016 | +008 |
| 2690 | -45.8 | 20.209 | 30.966 | 210 | 016 | +014 | +005 |
| 2660 | -46.6 | 21.135 | 32.499 | 210 | 015 | +013 | +008 |
| 2630 | -45.4 | 22.102 | 33.807 | 209 | 014 | +012 | +007 |
| 2600 | -49.0 | 23.119 | 35.931 | 209 | 013 | +011 | +006 |
| 2530 | -48.3 | 25.695 | 39.811 | 280 | 012 | -002 | +012 |
| 2440 | -50.5 | 29.449 | 46.007 | 275 | 011 | -001 | +011 |
| 2420 | -49.0 | 30.356 | 47.179 | 275 | 011 | -001 | +011 |
| 2380 | -49.1 | 32.250 | 50.145 | 275 | 011 | -001 | +011 |
| 2360 | -51.7 | 33.247 | 52.302 | 275 | 011 | -001 | +011 |
| 2260 | -52.5 | 38.760 | 61.196 | 275 | 014 | -001 | +014 |
| 2240 | -53.9 | 39.975 | 63.518 | 280 | 012 | -002 | +012 |
| 2170 | -51.5 | 44.521 | 69.974 | 280 | 012 | -002 | +012 |
| 2090 | -51.5 | 50.322 | 79.092 | 270 | 012 | +000 | +012 |
| 1980 | -52.6 | 59.580 | 94.110 | 275 | 012 | -001 | +012 |
| 1960 | -52.5 | 61.443 | 97.008 | 275 | 012 | -001 | +012 |
| 1940 | -55.1 | | | 275 | 012 | -001 | +012 |
| 1820 | -53.4 | | | 275 | 015 | -001 | +015 |
| 1790 | -57.2 | | | 275 | 015 | -001 | +015 |
| 1630 | -54.8 | | | | | | |

CONSTANT PRESSURE SURFACES (GEOPOTENTIAL HEIGHT)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2087 | -51.5 | 50.000 | 78.586 | 270 | 012 | +000 | +012 |
| 2419 | -49.6 | 30.000 | 46.746 | 275 | 011 | -001 | +011 |
| 2686 | -46.0 | 20.000 | 30.665 | 210 | 016 | +014 | +008 |
| 3146 | -43.9 | 10.000 | 15.200 | 230 | 033 | +021 | +025 |
| 3394 | -34.2 | 07.000 | 10.213 | 229 | 036 | +024 | +027 |
| 3634 | -34.9 | 05.000 | 07.309 | 229 | 045 | +029 | +034 |
| 3985 | -36.7 | 03.000 | 04.425 | 230 | 051 | +033 | +040 |

RAWINSONDE

| PRESSURE MB | ALT IN METERS | WIND POLAR DEG | MPS | COMPONENTS MPS N-S | E-W | RH % | TEMP DEG C |
|---|---|---|---|---|---|---|---|
| 1022.8 | 0002 | 070 | 015 | -005 | -013 | 78 | +11.4 |
| 0803.5 | 0200 | 310 | 008 | -005 | +006 | 43 | +00.4 |
| 0622.0 | 0400 | 230 | 016 | +010 | +012 | 22 | -08.7 |
| 0479.8 | 0600 | 230 | 022 | +014 | +017 | 39 | -18.4 |
| 0364.8 | 0800 | 230 | 023 | +015 | +017 | 40 | -31.6 |
| 0272.5 | 1000 | 230 | 032 | +020 | +025 | | -46.8 |
| 0199.1 | 1200 | 245 | 033 | +014 | +032 | | -61.1 |
| 0186.0 | 1220 | 246 | 032 | +013 | +029 | | -62.6 |
| 0144.7 | 1400 | 255 | 021 | +005 | +020 | | -55.6 |
| 0106.3 | 1600 | 265 | 016 | +001 | +016 | | -51.7 |
| 0074.7 | 1800 | 305 | 014 | -008 | +011 | | -46.0 |
| 0058.1 | 2000 | 280 | 016 | -003 | +016 | | -46.3 |
| 0043.0 | 2200 | 275 | 010 | -001 | +010 | | -45.0 |
| 0031.9 | 2400 | | | | | | -43.6 |
| 0028.0 | 2420 | | | | | | -43.0 |

# TECHNICAL DATA

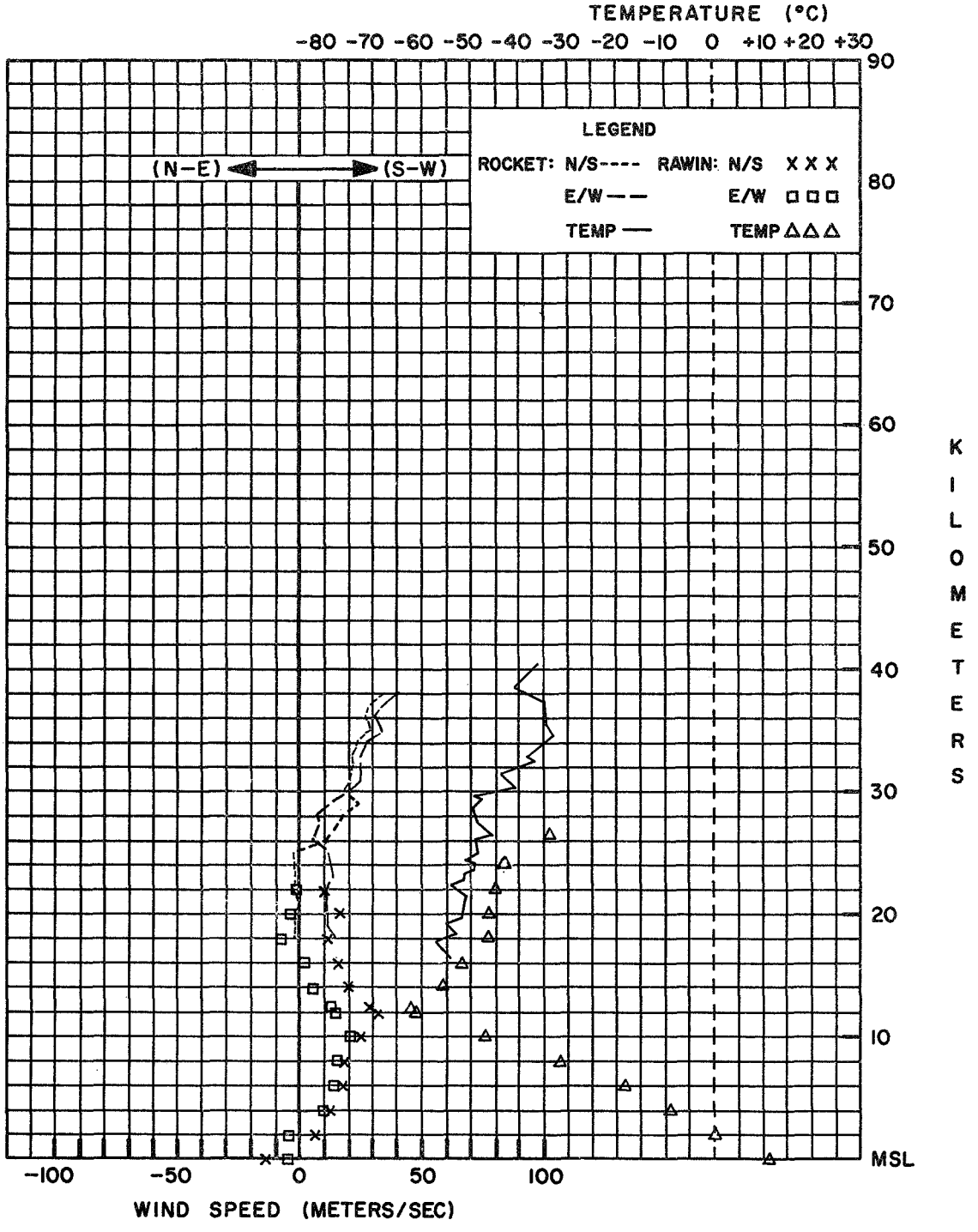
MOTOR TYPE..ARCAS
PAYLOAD TYPE..ARCASONDE-1A
FUSE TYPE..GAS GENERATED SEPARATION DEVICE
LAUNCHER SETTING..072°AZIMUTH 82.5°ELEVATION
RADAR TYPE..MPS-19 APOGEE 48,000 METERS
WIND SENSOR TYPE..15 FT. DIAMETER PARACHUTE
TEMPERATURE SENSOR TYPE..0.010 INCH BEAD THERMISTOR
GROUND EQUIPMENT TYPE..GMD-2B
REMARKS..FAILURE IN GAS GENERATOR CAUSED LOW APOGEE.
QUESTIONABLE DATA BETWEEN 30 KM AND 25 KM.

MOTOR PERFORMANCE..FAIR
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..UNKNOWN

SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..VAISALA
TEMPERATURE ELEMENT TYPE..RESISTANCE WIRE
PRESSURE SENSOR TYPE..ANEROID
GROUND EQUIPMENT TYPE..VAISALA
WIND AT ROCKET LAUNCH..SFC. 020DEG/03MPS
BALLISTIC WIND.. 048°AZIMUTH 07.2 MPS
THERMODYNAMIC BASE DATA..PRESSURE 078.7 MB
TEMPERATURE -46.0°C
ALTITUDE 18,000 METERS

RADIOSONDE TYPE..VAISALA
BALLOON TYPE..NEOPRENE
BALLOON SIZE..1,200 GRAMS




STATION: (CNIE) Mar Chiquita, Arg. ROCKET TIME: 2028 LST 2328 GCT PAYLOAD TYPE: Arcasonde 1A

DATE: 14 August, 1968 ROCKET MOTOR TYPE: Arcas RADIOSONDE TYPE: Vaisala

# ROCKET OBSERVATION DATA

RP STATION NAME

72402 (NASA) WALLOPS ISLAND, VIRGINIA

LAT. 37°51' N LONG. 75°29' W

ROCKET LAUNCH

DATE AUGUST 21, 1968 TIME 1321 Z

RAWINSONDE RELEASE

DATE AUGUST 21, 1968 TIME 1115 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | WIND COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 090 | 53 | 099 | 042 | +006 | -041 |
| 077 | 52 | 099 | 038 | +006 | -037 |
| 071 | 51 | 103 | 039 | +009 | -038 |
| 074 | 50 | 101 | 043 | +008 | -042 |
| 062 | 49 | 083 | 038 | -004 | -038 |
| 055 | 48 | 086 | 029 | -002 | -029 |
| 054 | 47 | 109 | 030 | +010 | -028 |
| 054 | 46 | 109 | 031 | +010 | -030 |
| 050 | 45 | 108 | 030 | +009 | -029 |
| 045 | 44 | 108 | 034 | +011 | -033 |
| 044 | 43 | 106 | 034 | +009 | -032 |
| 038 | 42 | 097 | 028 | +003 | -028 |
| 033 | 41 | 097 | 022 | +003 | -022 |
| 033 | 40 | 084 | 021 | -002 | -021 |
| 030 | 39 | 082 | 020 | -003 | -020 |
| 029 | 38 | 094 | 022 | +002 | -022 |
| 029 | 37 | 099 | 021 | +003 | -021 |
| 025 | 36 | 088 | 014 | -001 | -014 |
| 022 | 35 | 081 | 020 | -003 | -019 |
| 019 | 34 | 093 | 018 | +001 | -017 |
| 021 | 33 | 094 | 021 | +001 | -021 |
| 021 | 32 | 088 | 022 | -001 | -022 |
| 019 | 31 | 079 | 017 | -003 | -017 |
| 016 | 30 | 079 | 014 | -002 | -014 |
| 013 | 29 | 086 | 012 | -001 | -012 |
| 013 | 28 | 093 | 013 | +001 | -013 |
| 011 | 27 | 099 | 012 | +002 | -012 |
| 010 | 26 | 100 | 010 | +002 | -010 |
| 010 | 25 | 103 | 009 | +002 | -009 |
| 008 | 24 | 097 | 009 | +002 | -009 |
| 007 | 23 | 080 | 007 | -001 | -007 |
| 007 | 22 | 088 | 004 | +000 | -004 |
| 006 | 21 | 083 | 003 | +000 | -003 |
| 007 | 20 | 055 | 003 | -002 | -003 |
| 005 | 19 | 014 | 006 | -006 | -001 |
| 004 | 18 | 003 | 006 | -006 | +000 |

ROCKET THERMODYNAMICS

| ALT TENS OF METERS | TEMP DEG C | PRESSURE MB | DENSITY G M⁻³ | WIND POLAR DEG | WIND POLAR MPS | WIND COMPONENTS MPS N-S | WIND COMPONENTS MPS E-W |
|---|---|---|---|---|---|---|---|
| 5880 | -02.7 | 00.316 | 00.407 | | | | |
| 5740 | -05.0 | 00.376 | 00.488 | | | | |
| 5535 | -03.7 | 00.485 | 00.628 | | | | |
| 5413 | -06.6 | 00.565 | 00.739 | | | | |
| 5364 | -09.6 | 00.601 | 00.768 | | | | |
| 5060 | +01.0 | 00.873 | 01.110 | 102 | 041 | +009 | -040 |
| 4965 | +00.4 | 00.961 | 01.249 | 095 | 042 | +003 | -041 |
| 4926 | -02.8 | 01.030 | 01.327 | 088 | 040 | -002 | -039 |
| 4816 | -01.5 | 01.180 | 01.513 | 085 | 030 | -002 | -030 |
| 4690 | -04.6 | 01.380 | 01.791 | 109 | 030 | +010 | -028 |
| 4480 | -02.5 | 01.794 | 02.309 | 108 | 031 | +010 | -029 |
| 4407 | -04.8 | 01.965 | 02.552 | 108 | 034 | +011 | -033 |
| 4340 | -04.1 | 02.138 | 02.768 | 107 | 034 | +010 | -032 |
| 4115 | -15.6 | 02.851 | 03.856 | 097 | 023 | +003 | -023 |
| 4023 | -16.8 | 03.216 | 04.371 | 086 | 022 | -002 | -021 |
| 3984 | -19.4 | 03.386 | 04.649 | 083 | 021 | -002 | -021 |
| 3920 | -18.6 | 03.686 | 05.045 | 083 | 020 | -002 | -020 |
| 3865 | -22.3 | 03.967 | 05.509 | 086 | 021 | -002 | -020 |
| 3834 | -21.7 | 04.136 | 05.730 | 090 | 022 | +000 | -022 |
| 3776 | -24.5 | 04.472 | 06.266 | 095 | 022 | +002 | -022 |
| 3725 | -23.7 | 04.792 | 06.693 | 097 | 022 | +003 | -021 |
| 3640 | -28.5 | 05.382 | 07.664 | 093 | 015 | +001 | -015 |
| 3557 | -29.0 | 06.036 | 08.612 | 086 | 017 | -001 | -017 |
| 3517 | -28.0 | 06.378 | 09.064 | 083 | 019 | -002 | -018 |
| 3463 | -30.0 | 06.873 | 09.847 | 085 | 019 | -001 | -018 |
| 3304 | -32.3 | 08.581 | 12.412 | 094 | 021 | +002 | -021 |
| 3127 | -38.1 | 11.034 | 16.355 | 082 | 019 | -003 | -018 |
| 3020 | -40.2 | 12.879 | 19.261 | 079 | 015 | -003 | -015 |
| 2910 | -40.2 | 15.110 | 22.597 | 085 | 013 | -001 | -013 |
| 2860 | -42.1 | 16.253 | 24.506 | 089 | 012 | +000 | -012 |
| 2740 | -40.2 | 19.362 | 28.957 | 097 | 013 | +002 | -013 |
| 2670 | -41.4 | 21.441 | 32.232 | 094 | 012 | +002 | -012 |
| 2603 | -46.5 | 23.672 | 36.386 | 100 | 010 | +002 | -010 |
| 2554 | -44.9 | 25.463 | 38.865 | 102 | 010 | +002 | -010 |
| 2440 | -48.3 | 30.196 | 46.786 | 100 | 009 | +002 | -009 |
| 2326 | -48.6 | 35.860 | 55.637 | 086 | 007 | -001 | -007 |
| 2134 | -51.2 | 48.003 | 75.349 | 085 | 004 | +000 | -004 |
| 2090 | -50.8 | 51.339 | 80.439 | 081 | 003 | +000 | -003 |
| 2036 | -54.0 | 55.790 | 88.674 | 066 | 003 | -001 | -003 |
| 2000 | -56.9 | 58.999 | 95.049 | 055 | 003 | -002 | -003 |
| 1987 | -55.4 | 60.210 | 96.332 | 052 | 004 | -002 | -003 |
| 1940 | -55.0 | | | 030 | 005 | -005 | -003 |
| 1856 | -60.6 | | | 010 | 006 | -006 | -001 |
| 1770 | -57.9 | | | | | | |
| 1747 | -61.2 | | | | | | |

CONSTANT PRESSURE SURFACES (GEOPOTENTIAL HEIGHT)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2100 | -51.0 | 50.000 | 82.095 | 084 | 003 | +000 | -003 |
| 2435 | -48.2 | 30.000 | 48.617 | 100 | 009 | +002 | -009 |
| 2705 | -40.6 | 20.000 | 31.306 | 098 | 013 | +002 | -013 |
| 3177 | -35.9 | 10.000 | 15.332 | 088 | 022 | -001 | -021 |
| 3429 | -30.2 | 07.000 | 10.469 | 086 | 019 | -001 | -018 |
| 3670 | -25.4 | 05.000 | 07.325 | 099 | 019 | +003 | -018 |
| 4048 | -16.0 | 03.000 | 04.229 | 094 | 022 | +003 | -022 |
| 4361 | -04.6 | 02.000 | 02.695 | 108 | 034 | +011 | -033 |
| 4910 | -00.8 | 01.000 | 01.328 | 092 | 041 | +002 | -040 |

RAWINSONDE

| PRESSURE MB | ALT TENS OF METERS | WIND POLAR DEG | WIND POLAR MPS | WIND COMPONENTS MPS N-S | WIND COMPONENTS MPS E-W | RH % | TEMP DEG C |
|---|---|---|---|---|---|---|---|
| 1014.3 | 0000 | 300 | 004 | -002 | +004 | 90 | +26.1 |
| 0807.3 | 0200 | 308 | 006 | -004 | +005 | 65 | +17.0 |
| 0636.0 | 0400 | 298 | 006 | -003 | +005 | 26 | +05.0 |
| 0494.0 | 0600 | 321 | 008 | -006 | +005 | 17 | -07.5 |
| 0380.0 | 0800 | 326 | 004 | -003 | +002 | 17 | -22.3 |
| 0286.0 | 1000 | 336 | 006 | -005 | +002 | 22 | -38.6 |
| 0229.0 | 1200 | 321 | 006 | -004 | +004 | | -49.9 |
| 0154.5 | 1400 | 303 | 008 | -004 | +006 | | -63.7 |
| 0114.0 | 1587 | 303 | 007 | -004 | +006 | | -68.5 |
| 0111.7 | 1600 | 305 | 007 | -004 | +005 | | -68.0 |
| 0081.0 | 1800 | 318 | 002 | -002 | +001 | | -61.6 |
| 0058.7 | 2000 | 052 | 003 | -002 | -002 | | -54.8 |
| 0043.0 | 2200 | 069 | 004 | -001 | -003 | | -51.7 |
| 0031.8 | 2400 | 083 | 004 | +000 | -004 | | -48.7 |
| 0023.5 | 2600 | 093 | 006 | +000 | -006 | | -45.9 |
| 0017.5 | 2800 | 097 | 007 | +001 | -007 | | -43.5 |
| 0013.1 | 3000 | 084 | 008 | -001 | -008 | | -41.1 |
| 0012.9 | 3012 | 084 | 008 | -001 | -008 | | -40.9 |
| 0012.0 | 3059 | | | | | | -40.3 |

# TECHNICAL DATA

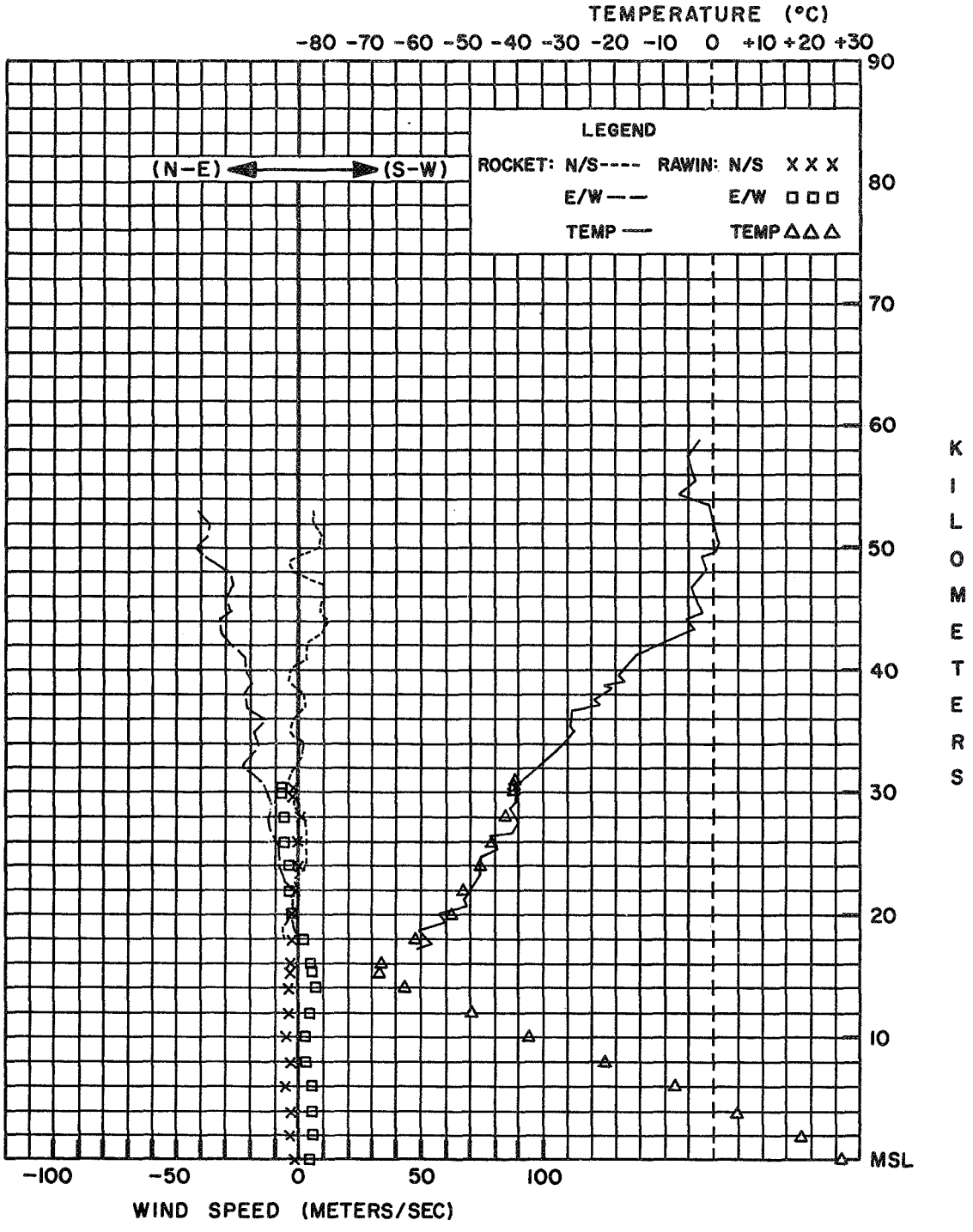
MOTOR TYPE..ARCAS
PAYLOAD TYPE..ARCASONDE-1A
FUSE TYPE..GAS GENERATED SEPARATION DEVICE
LAUNCHER SETTING..125°AZIMUTH 75.5°ELEVATION
RADAR TYPE..FPS-16 APOGEE 60.290 METERS
WIND SENSOR TYPE..15 FT. DIAMETER PARACHUTE
TEMPERATURE SENSOR TYPE..0.010 INCH BEAD THERMISTOR
GROUND EQUIPMENT TYPE..GMD-1B
REMARKS..NONE

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..134 SEC

SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..MOLDED INSULATION CO.
TEMPERATURE ELEMENT TYPE..ROD THERMISTOR
PRESSURE SENSOR TYPE..ANEROID AND HYPSOMETER
GROUND EQUIPMENT TYPE..GMD-1B
WIND AT ROCKET LAUNCH..SFC. 330DEG/06MPS 15M 308DEG/05MPS 31M 305DEG/05MPS
46M 328DEG/04MPS 61M 329DEG/05MPS 76M 326DEG/05MPS
BALLISTIC WIND.. 325°AZIMUTH 07.2 MPS
THERMODYNAMIC BASE DATA..PRESSURE 111.7 MBS
TEMPERATURE -68.0°C
ALTITUDE 16,000 METERS

RADIOSONDE TYPE..1680 MHZ
BALLOON TYPE..NEOPRENE
BALLOON SIZE..1,200 GRAMS




STATION: (NASA) Wallops Island, Va. ROCKET TIME: 0821 LST 1321 GCT PAYLOAD TYPE: Arcasonde 1A

DATE: 21 August, 1968 ROCKET MOTOR TYPE: Arcas RADIOSONDE TYPE: 1680 MHz

# ROCKET OBSERVATION DATA

RP STATION NAME

72402 (NASA) WALLOPS ISLAND, VIRGINIA

LAT. 37°51'N LONG. 75°29'W

ROCKET LAUNCH

DATE AUGUST 28, 1968 TIME 1421 Z

RAWINSONDE RELEASE

DATE AUGUST 28, 1968 TIME 1115 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 069 | 51 | 065 | 013 | -006 | -012 |
| 067 | 50 | 083 | 015 | -002 | -015 |
| 064 | 49 | 095 | 024 | +002 | -023 |
| 057 | 48 | 101 | 029 | +006 | -029 |
| 057 | 47 | 106 | 028 | +008 | -027 |
| 055 | 46 | 110 | 027 | +010 | -025 |
| 051 | 45 | 103 | 024 | +006 | -024 |
| 044 | 44 | 097 | 020 | +002 | -019 |
| 041 | 43 | 101 | 015 | +003 | -015 |
| 037 | 42 | 095 | 010 | +001 | -010 |
| 035 | 41 | 080 | 011 | -002 | -011 |
| 036 | 40 | 092 | 011 | +000 | -011 |
| 032 | 39 | 095 | 012 | +001 | -012 |
| 031 | 38 | 110 | 016 | +006 | -015 |
| 029 | 37 | 100 | 018 | +003 | -017 |
| 025 | 36 | 095 | 015 | +001 | -015 |
| 024 | 35 | 107 | 013 | +004 | -012 |
| 021 | 34 | 094 | 009 | +001 | -009 |
| 020 | 33 | 107 | 007 | +002 | -007 |
| 019 | 32 | 124 | 008 | +004 | -006 |
| 017 | 31 | 116 | 009 | +004 | -008 |
| 015 | 30 | 085 | 008 | -001 | -008 |
| 013 | 29 | 073 | 007 | -002 | -007 |
| 012 | 28 | 090 | 007 | +000 | -007 |
| 011 | 27 | 085 | 008 | -001 | -008 |
| 010 | 26 | 083 | 009 | -001 | -009 |
| 008 | 25 | 078 | 009 | -002 | -009 |
| 008 | 24 | 092 | 008 | +000 | -008 |
| 007 | 23 | 104 | 009 | +002 | -009 |
| 006 | 22 | 099 | 010 | +002 | -010 |
| 006 | 21 | 095 | 008 | +001 | -008 |
| 006 | 20 | 115 | 003 | +001 | -003 |
| 005 | 19 | 146 | 004 | +003 | -002 |
| 005 | 18 | 142 | 004 | +004 | -003 |

ROCKET THERMODYNAMICS

| ALT TENS OF METERS | TEMP DEG C | PRESSURE MB | DENSITY G M -3 | WIND POLAR DEG | MPS | COMPONENTS MPS N-S | E-W |
|---|---|---|---|---|---|---|---|
| 5087 | -05.1 | 00.803 | 01.044 | 067 | 013 | -005 | -012 |
| 4965 | -06.0 | 00.936 | 01.220 | 097 | 018 | +002 | -017 |
| 4837 | -01.7 | 01.098 | 01.409 | 099 | 027 | +004 | -027 |
| 4645 | -05.3 | 01.395 | 01.815 | 108 | 028 | +009 | -026 |
| 4548 | -04.2 | 01.576 | 02.041 | 100 | 022 | +004 | -021 |
| 4139 | -15.8 | 02.660 | 03.600 | 085 | 011 | -001 | -011 |
| 4072 | -15.3 | 02.903 | 03.922 | 083 | 011 | -001 | -011 |
| 3773 | -28.9 | 04.339 | 06.189 | 107 | 017 | +005 | -016 |
| 3700 | -27.2 | 04.797 | 06.795 | 100 | 018 | +003 | -017 |
| 3536 | -30.6 | 06.018 | 08.644 | 102 | 014 | +003 | -014 |
| 3499 | -34.3 | 06.339 | 09.246 | 107 | 013 | +004 | -012 |
| 3353 | -37.3 | 07.803 | 11.526 | 100 | 008 | +001 | -008 |
| 3237 | -34.8 | 09.205 | 13.454 | 117 | 008 | +003 | -007 |
| 3164 | -38.6 | 10.218 | 15.176 | 121 | 008 | +004 | -007 |
| 3109 | -36.2 | 11.056 | 16.256 | 117 | 009 | +004 | -008 |
| 3088 | -39.9 | 11.395 | 17.020 | 114 | 009 | +004 | -008 |
| 3045 | -37.8 | 12.125 | 17.948 | 101 | 008 | +002 | -008 |
| 2509 | -49.7 | 26.740 | 41.691 | 079 | 009 | -002 | -009 |
| 2097 | -55.3 | 50.366 | 80.544 | 095 | 008 | +001 | -008 |
| 2000 | -54.9 | 58.569 | 93.492 | 115 | 003 | +001 | -003 |
| 1987 | -53.0 | 59.760 | 94.569 | 118 | 003 | +001 | -003 |
| 1920 | -53.1 | | | 140 | 004 | +003 | -002 |
| 1865 | -58.9 | | | 145 | 004 | +003 | -002 |
| 1835 | -56.9 | | | 144 | 004 | +003 | -002 |
| 1737 | -60.2 | | | | | | |

CONSTANT PRESSURE SURFACES (GEOPOTENTIAL HEIGHT)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2095 | -55.3 | 50.000 | 79.951 | 095 | 008 | +001 | -008 |
| 2424 | -50.7 | 30.000 | 46.993 | 088 | 008 | +000 | -008 |
| 2691 | -45.4 | 20.000 | 30.599 | 085 | 008 | -001 | -008 |
| 3163 | -37.8 | 10.000 | 14.805 | 123 | 008 | +004 | -007 |
| 3410 | -35.8 | 07.000 | 10.273 | 098 | 010 | +001 | -010 |
| 3649 | -27.8 | 05.000 | 07.101 | 099 | 017 | +003 | -017 |
| 4021 | -16.4 | 03.000 | 04.071 | 086 | 011 | -001 | -011 |
| 4329 | -09.6 | 02.000 | 02.644 | 099 | 018 | +003 | -018 |
| 4874 | -03.8 | 01.000 | 01.293 | 094 | 022 | +002 | -022 |

RAWINSONDE

| PRESSURE MB | ALT TENS OF METERS | WIND POLAR DEG | MPS | COMPONENTS MPS N-S | E-W | RH % | TEMP DEG C |
|---|---|---|---|---|---|---|---|
| 1021.0 | 0000 | 030 | 008 | -007 | -004 | 69 | +16.7 |
| 0805.0 | 0200 | 330 | 001 | -001 | +001 | 75 | +03.7 |
| 0628.0 | 0400 | 248 | 010 | +004 | +009 | 17 | -00.8 |
| 0486.0 | 0600 | 242 | 015 | +007 | +013 | 26 | -12.3 |
| 0373.0 | 0800 | 226 | 026 | +018 | +019 | 47 | -25.0 |
| 0281.0 | 1000 | 223 | 040 | +029 | +027 | 47 | -39.1 |
| 0207.0 | 1200 | 235 | 044 | +026 | +036 | | -55.0 |
| 0198.0 | 1225 | 240 | 044 | +022 | +039 | | -57.5 |
| 0151.0 | 1400 | 219 | 030 | +023 | +019 | | -58.9 |
| 0110.0 | 1600 | 231 | 017 | +011 | +013 | | -60.7 |
| 0080.0 | 1800 | 220 | 003 | +002 | +002 | | -59.1 |
| 0058.5 | 2000 | 100 | 005 | +001 | -005 | | -56.1 |
| 0042.8 | 2200 | 083 | 010 | -001 | -010 | | -53.1 |
| 0031.6 | 2400 | 108 | 008 | +003 | -008 | | -50.0 |
| 0023.4 | 2600 | 085 | 011 | -001 | -011 | | -47.2 |
| 0017.3 | 2800 | 096 | 006 | +001 | -006 | | -44.2 |
| 0012.7 | 3000 | 081 | 004 | -001 | -004 | | -41.7 |
| 0009.6 | 3200 | 112 | 007 | +003 | -007 | | -38.5 |
| 0009.0 | 3250 | 112 | 007 | +003 | -007 | | -37.2 |

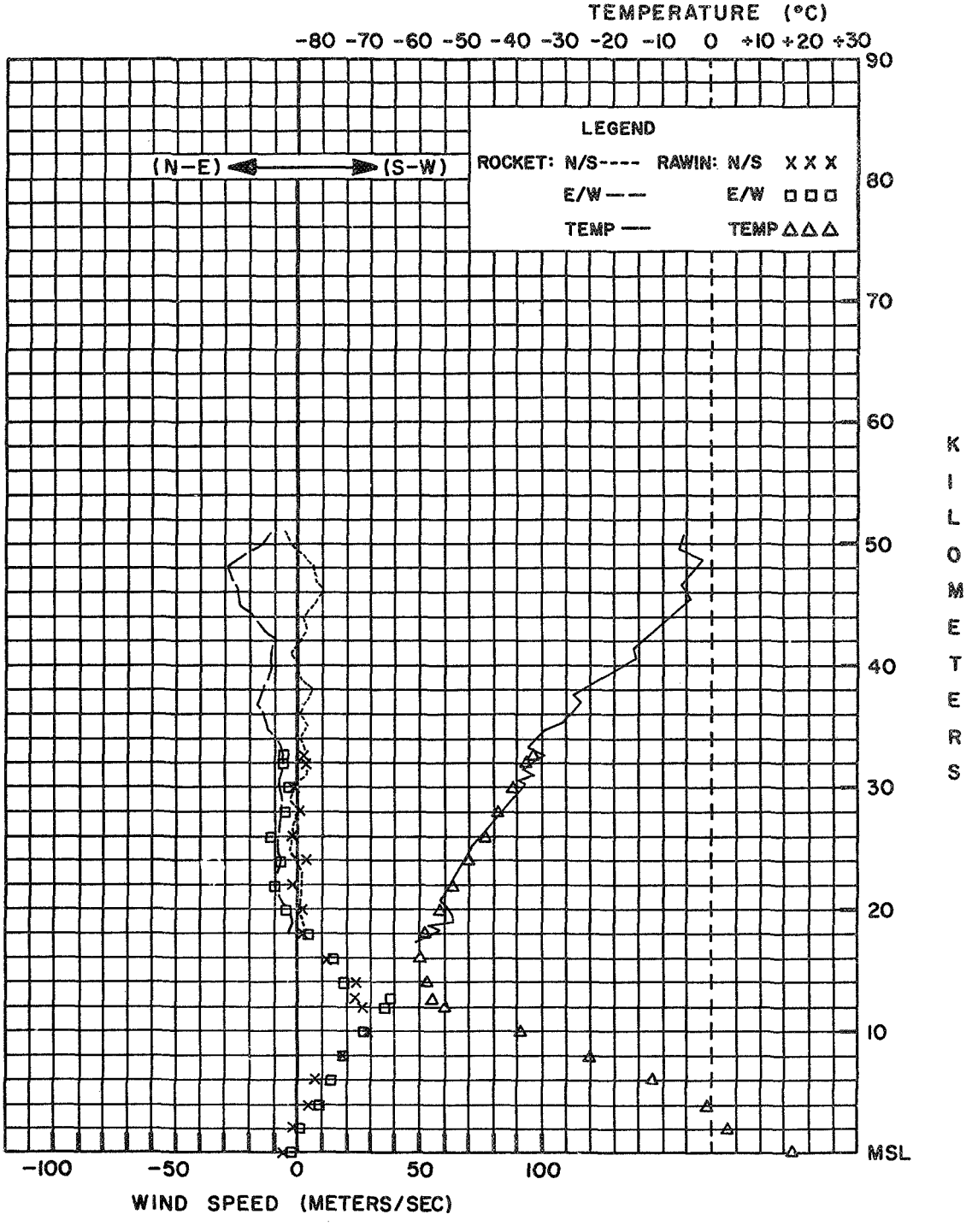
# TECHNICAL DATA

MOTOR TYPE..ARCAS
PAYLOAD TYPE..ARCASONDE-1A
FUSE TYPE..GAS GENERATED SEPARATION DEVICE
LAUNCHER SETTING..150°AZIMUTH 77.0°ELEVATION
RADAR TYPE..SPANDAR APOGEE 53,250 METERS
WIND SENSOR TYPE..15 FT. DIAMETER PARACHUTE
TEMPERATURE SENSOR TYPE..0.010 INCH BEAD THERMISTOR
GROUND EQUIPMENT TYPE..GMD-1B
REMARKS..NONE

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..139 SEC

SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..MOLDED INSULATION CO. RADIOSONDE TYPE..1680 MHZ
TEMPERATURE ELEMENT TYPE..ROD THERMISTOR BALLOON TYPE..NEOPRENE
PRESSURE SENSOR TYPE..ANEROID AND HYPSOMETER BALLOON SIZE..1,200 GRAMS
GROUND EQUIPMENT TYPE..GMD-1B
WIND AT ROCKET LAUNCH..SFC. 045DEG/07MPS 15M 020DEG/05MPS 31M 005DEG/05MPS
46M 016DEG/06MPS 61M 005DEG/05MPS 76M 017DEG/06MPS
HALLISTIC WIND.. 010°AZIMUTH 05.5 MPS
THERMODYNAMIC BASE DATA..PRESSURE 110.0 MBS
TEMPERATURE -60.7°C
ALTITUDE 16,000 METERS




STATION: (GSFC) Wallops Island, Va. ROCKET TIME: 0921 LST 1421 GCT PAYLOAD TYPE: Arcasonde 1A

DATE: 28 August, 1968 ROCKET MOTOR TYPE: Arcas RADIOSONDE TYPE: 1680 MHz

# ROCKET OBSERVATION DATA

RP STATION NAME

87689 (CNIE) MAR CHIQUITA, ARGENTINA

LAT. 37°45' S LONG. 57°25' W

ROCKET LAUNCH

DATE AUGUST 28, 1968 TIME 2240 Z

RAWINSONDE RELEASE

DATE AUGUST 28, 1968 TIME 2000 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | WIND COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 105 | 62 | 283 | 137 | -031 | +133 |
| 095 | 61 | 287 | 131 | -038 | +125 |
| 077 | 60 | 288 | 121 | -037 | +114 |
| 074 | 59 | 285 | 122 | -031 | +117 |
| 067 | 58 | 287 | 125 | -037 | +119 |
| 053 | 57 | 287 | 123 | -036 | +118 |
| 048 | 56 | 295 | 126 | -053 | +114 |
| 026 | 55 | 291 | 133 | -048 | +124 |
| 022 | 54 | 289 | 103 | -033 | +099 |
| 034 | 53 | 292 | 137 | -052 | +128 |
| 032 | 52 | 293 | 156 | -060 | +140 |
| 031 | 51 | 295 | 110 | -046 | +099 |
| 029 | 50 | 293 | 111 | -043 | +102 |
| 026 | 49 | 293 | 133 | -052 | +122 |
| 028 | 48 | 289 | 130 | -042 | +123 |
| 027 | 47 | 283 | 125 | -028 | +122 |

RAWINSONDE

| PRESSURE MB | ALT TENS OF METERS | WIND POLAR DEG | MPS | WIND COMPONENTS MPS N-S | E-W | RH % | TEMP DEG C |
|---|---|---|---|---|---|---|---|
| 1012.2 | 0002 | 180 | 010 | +010 | +000 | 100 | +10.1 |
| 0796.4 | 0200 | 140 | 008 | +006 | -005 | 98 | +03.5 |
| 0620.7 | 0400 | 203 | 009 | +008 | +004 | 92 | -07.8 |
| 0479.3 | 0600 | 217 | 005 | +004 | +003 | 32 | -20.0 |
| 0361.6 | 0800 | 242 | 006 | +003 | +005 | 75 | -32.8 |
| 0271.0 | 1000 | 296 | 005 | -002 | +004 | 66 | -45.4 |
| 0250.0 | 1050 | 287 | 035 | -010 | +033 | | -48.6 |
| 0199.4 | 1200 | 287 | 022 | -007 | +021 | | -48.8 |
| 0147.4 | 1400 | 271 | 029 | -001 | +029 | | -53.6 |
| 0107.7 | 1600 | 273 | 026 | -002 | +028 | | -59.5 |
| 0078.4 | 1800 | 270 | 020 | +000 | +020 | | -62.0 |
| 0057.1 | 2000 | 282 | 021 | -004 | +020 | | -60.0 |
| 0041.2 | 2200 | 269 | 026 | +001 | +026 | | -59.4 |
| 0030.1 | 2400 | 265 | 031 | +003 | +031 | | -58.9 |
| 0022.0 | 2600 | 260 | 040 | +007 | +039 | | -58.1 |
| 0020.0 | 2646 | 260 | 040 | +007 | +039 | | -58.1 |

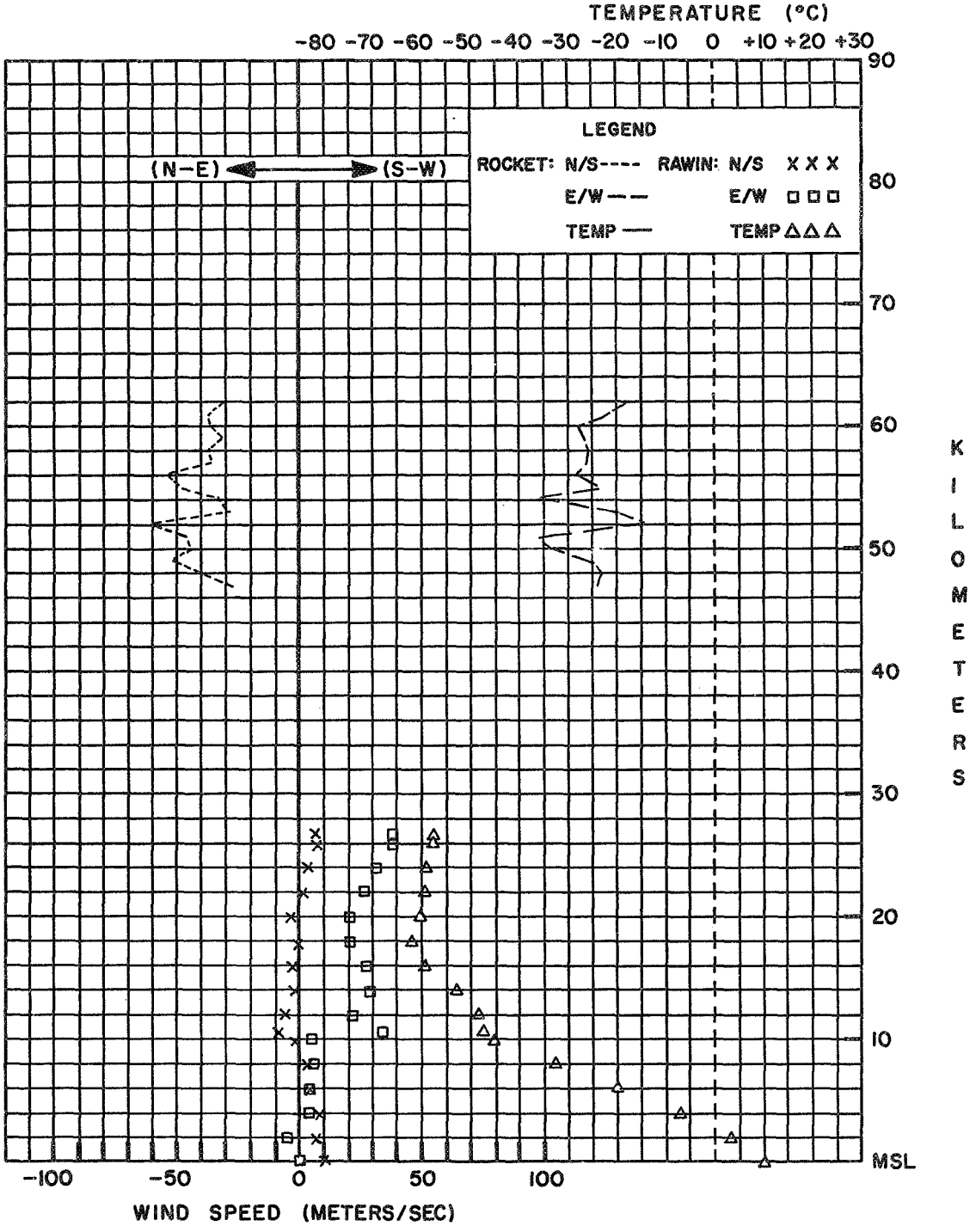
# TECHNICAL DATA

MOTOR TYPE..JUDI
PAYLOAD TYPE..CHAFF
FUSE TYPE..ELECTRICALLY ACTIVATED PYROTECHNIC
LAUNCHER SETTING..055° AZIMUTH 81.5° ELEVATION
RADAR TYPE..MPS-19 APOGEE 68,000 METERS
WIND SENSOR TYPE..0.005 INCH S BAND COPPER CHAFF SENSOR FALL-RATE..NOMINAL
TEMPERATURE SENSOR TYPE..N.A.
GROUND EQUIPMENT TYPE..N.A.
REMARKS..NONE

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..110 SEC

RADIOSONDE MANUFACTURER..VAISALA
TEMPERATURE ELEMENT TYPE..RESISTANCE WIRE
PRESSURE SENSOR TYPE..ANEROID
GROUND EQUIPMENT TYPE..VAISALA
WIND AT ROCKET LAUNCH..SFC. 128DEG/03MPS
BALLISTIC WIND.. UNKNOWN AZIMUTH UNKNOWN MPS
THERMODYNAMIC BASE DATA..PRESSURE N.A. MBS
TEMPERATURE N.A. °C
ALTITUDE N.A. METERS

RADIOSONDE TYPE..VAISALA
BALLOON TYPE..LATEX
BALLOON SIZE..1,200 GRAMS




STATION: (CNIE) Mar Chiquita, Arg. ROCKET TIME: 1940 LST 2240 GCT PAYLOAD TYPE: Chaff

DATE: 28 August, 1968 ROCKET MOTOR TYPE: Judi RADIOSONDE TYPE: Vaisala

# ROCKET OBSERVATION DATA

RP STATION NAME

72402 (NASA) WALLOPS ISLAND, VIRGINIA

LAT. 37°51'N LONG. 75°29'W

ROCKET LAUNCH

DATE SEPTEMBER 4, 1968 TIME 1544 Z

RAWINSONDE RELEASE

DATE SEPTEMBER 4, 1968 TIME 1115 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 068 | 51 | 093 | 018 | +001 | -017 |
| 067 | 50 | 096 | 019 | +002 | -018 |
| 067 | 49 | 107 | 023 | +007 | -022 |
| 062 | 48 | 108 | 025 | +008 | -024 |
| 055 | 47 | 103 | 029 | +007 | -028 |
| 049 | 46 | 098 | 029 | +004 | -029 |
| 045 | 45 | 099 | 027 | +004 | -027 |
| 048 | 44 | 097 | 026 | +003 | -026 |
| 044 | 43 | 089 | 023 | +000 | -023 |
| 040 | 42 | 092 | 019 | +001 | -018 |
| 036 | 41 | 102 | 018 | +004 | -017 |
| 033 | 40 | 093 | 019 | +001 | -018 |
| 033 | 39 | 091 | 019 | +000 | -019 |
| 031 | 38 | 100 | 014 | +002 | -014 |
| 027 | 37 | 117 | 014 | +006 | -013 |
| 025 | 36 | 118 | 016 | +007 | -014 |
| 022 | 35 | 110 | 013 | +005 | -012 |
| 020 | 34 | 112 | 013 | +005 | -012 |
| 019 | 33 | 107 | 013 | +004 | -013 |
| 019 | 32 | 104 | 015 | +003 | -015 |
| 017 | 31 | 099 | 014 | +002 | -014 |
| 015 | 30 | 101 | 012 | +002 | -012 |
| 014 | 29 | 105 | 010 | +002 | -010 |
| 013 | 28 | 103 | 008 | +002 | -008 |
| 011 | 27 | 102 | 005 | +001 | -005 |
| 010 | 26 | 099 | 002 | +000 | -002 |
| 009 | 25 | 142 | 001 | +001 | -001 |
| 008 | 24 | 171 | 003 | +003 | +000 |
| 007 | 23 | 143 | 005 | +004 | -003 |
| 007 | 22 | 120 | 006 | +003 | -005 |
| 006 | 21 | 081 | 005 | -001 | -005 |
| 006 | 20 | 049 | 005 | -003 | -004 |
| 006 | 19 | 018 | 003 | -002 | -001 |
| 005 | 18 | 311 | 004 | -002 | +003 |

ROCKET THERMODYNAMICS

| ALT TENS OF METERS | TEMP DEG C | PRESSURE MB | DENSITY G M -3 | WIND POLAR DEG | MPS | COMPONENTS MPS N-S | E-W |
|---|---|---|---|---|---|---|---|
| 5182 | -02.5 | 00.712 | 00.917 | | | | |
| 5133 | -05.4 | 00.757 | 00.985 | | | | |
| 5041 | -01.4 | 00.849 | 01.089 | 095 | 018 | +001 | -018 |
| 4749 | -03.0 | 01.220 | 01.573 | 105 | 027 | +007 | -026 |
| 4642 | -09.7 | 01.396 | 01.846 | 100 | 029 | +005 | -029 |
| 3914 | -19.9 | 03.607 | 04.962 | 091 | 019 | +000 | -019 |
| 3847 | -26.4 | 03.948 | 05.574 | 095 | 016 | +001 | -016 |
| 3694 | -30.3 | 04.875 | 06.994 | 117 | 014 | +006 | -013 |
| 3591 | -27.7 | 05.621 | 07.979 | 117 | 016 | +007 | -014 |
| 3450 | -32.5 | 06.838 | 09.899 | 111 | 013 | +005 | -012 |
| 3365 | -32.3 | 07.704 | 11.143 | 110 | 013 | +005 | -012 |
| 3264 | -37.2 | 08.869 | 13.125 | 106 | 014 | +004 | -013 |
| 2841 | -43.0 | 16.425 | 24.862 | 104 | 009 | +002 | -009 |
| 2774 | -41.3 | 18.118 | 27.225 | 103 | 007 | +002 | -007 |
| 2573 | -46.8 | 24.384 | 37.530 | 110 | 002 | +001 | -002 |
| 2518 | -46.0 | 26.471 | 40.599 | 133 | 002 | +001 | -001 |
| 2377 | -51.2 | 32.748 | 51.402 | 166 | 003 | +003 | -001 |
| 2277 | -53.9 | 38.186 | 60.677 | 139 | 005 | +004 | -003 |
| 2000 | -56.8 | 58.775 | 94.645 | 049 | 005 | -003 | -004 |
| 1893 | -57.0 | | | 011 | 003 | -003 | -001 |
| 1859 | -60.3 | | | 350 | 003 | -003 | +001 |
| 1719 | -60.3 | | | | | | |

CONSTANT PRESSURE SURFACES (GEOPOTENTIAL HEIGHT)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2096 | -55.7 | 50.000 | 80.093 | 081 | 005 | -001 | -005 |
| 2425 | -49.0 | 30.000 | 46.637 | 160 | 002 | +002 | -001 |
| 2695 | -43.1 | 20.000 | 30.289 | 102 | 005 | +001 | -005 |
| 3166 | -38.4 | 10.000 | 14.842 | 103 | 015 | +003 | -015 |
| 3415 | -32.5 | 07.000 | 10.132 | 111 | 013 | +005 | -012 |
| 3654 | -29.9 | 05.000 | 07.160 | 117 | 015 | +007 | -013 |
| 4027 | -17.9 | 03.000 | 04.094 | 097 | 018 | +002 | -018 |
| 4333 | -13.5 | 02.000 | 02.693 | 094 | 025 | +002 | -024 |
| 4871 | -02.2 | 01.000 | 01.286 | 106 | 023 | +006 | -022 |

RAWINSONDE

| PRESSURE MB | ALT TENS OF METERS | WIND POLAR DEG | MPS | COMPONENTS MPS N-S | E-W | RH % | TEMP DEG C |
|---|---|---|---|---|---|---|---|
| 1021.0 | 0000 | 250 | 002 | +001 | +002 | 80 | +20.0 |
| 0809.0 | 0200 | 314 | 006 | -004 | +004 | 78 | +10.5 |
| 0635.0 | 0400 | 298 | 011 | -005 | +010 | 27 | +02.0 |
| 0494.0 | 0600 | 267 | 008 | +000 | +008 | 22 | -10.8 |
| 0377.0 | 0800 | 278 | 014 | -002 | +014 | 60 | -25.9 |
| 0284.0 | 1000 | 288 | 031 | -010 | +029 | | -41.0 |
| 0210.0 | 1200 | 293 | 031 | -012 | +028 | | -55.4 |
| 0174.0 | 1318 | 298 | 030 | -014 | +026 | | -63.3 |
| 0153.0 | 1400 | 292 | 024 | -009 | +022 | | -61.0 |
| 0111.0 | 1600 | 292 | 015 | -006 | +014 | | -62.4 |
| 0080.0 | 1800 | 306 | 003 | -002 | +002 | | -60.1 |
| 0058.0 | 2000 | 342 | 004 | -004 | +001 | | -57.3 |
| 0042.5 | 2200 | 044 | 007 | -005 | -005 | | -54.7 |
| 0031.2 | 2400 | 105 | 005 | +001 | -005 | | -50.7 |
| 0023.3 | 2600 | 105 | 004 | +001 | -004 | | -46.1 |
| 0017.3 | 2800 | 126 | 005 | +003 | -004 | | -43.0 |
| 0012.8 | 3000 | 063 | 004 | -002 | -004 | | -41.4 |
| 0009.6 | 3200 | 052 | 006 | -004 | -005 | | -39.7 |
| 0007.3 | 3393 | 075 | 010 | -002 | -010 | | -36.8 |
| 0007.2 | 3400 | | | | | | -36.5 |
| 0007.2 | 3402 | | | | | | -36.5 |

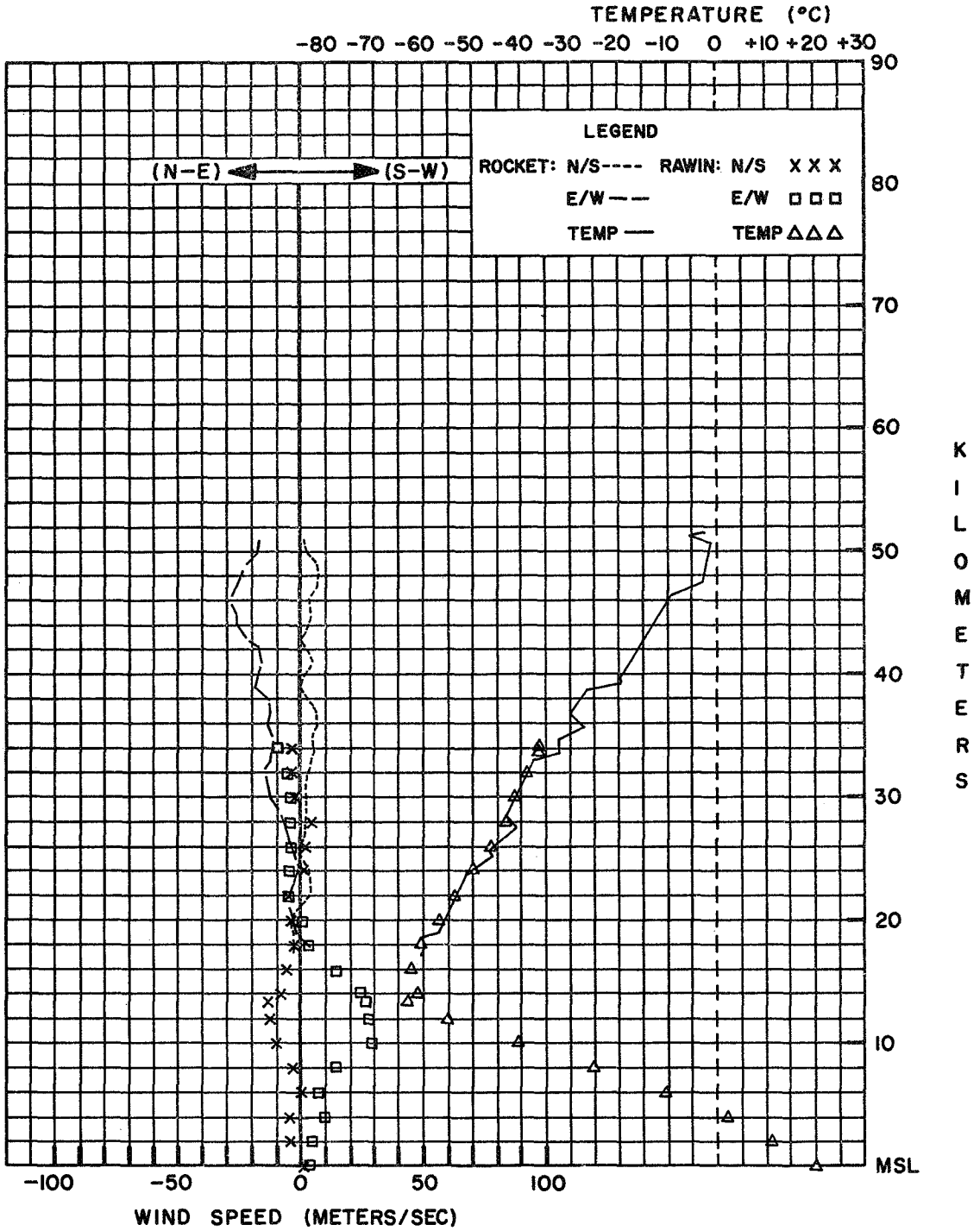
# TECHNICAL DATA

MOTOR TYPE..ARCAS
PAYLOAD TYPE..ARCASONDE-1A
FUSE TYPE..GAS GENERATED SEPARATION DEVICE
LAUNCHER SETTING..125°AZIMUTH 77.5°ELEVATION
RADAR TYPE..FPS-16 APOGEE 53,890 METERS
WIND SENSOR TYPE..15 FT. DIAMETER PARACHUTE
TEMPERATURE SENSOR TYPE..0.010 INCH BEAD THERMISTOR
GROUND EQUIPMENT TYPE..GMD-1B
REMARKS..NONE

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..130 SEC

SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..MOLDED INSULATION CO. RADIOSONDE TYPE..1680 MHZ
TEMPERATURE ELEMENT TYPE..ROD THERMISTOR BALLOON TYPE..NEUPRENE
PRESSURE SENSOR TYPE..ANEROID AND HYPSOMETER BALLOON SIZE..1,700 GRAMS
GROUND EQUIPMENT TYPE..GMD-1M
WIND AT ROCKET LAUNCH..SFC, 280DEG/04MPS 15M 259DEG/03MPS 31M 259DEG/03MPS
46M 252DEG/03MPS 61M 248DEG/03MPS 76M 261DEG/03MPS
BALLISTIC WIND.. 272°AZIMUTH 04.9 MPS
THERMODYNAMIC BASE DATA..PRESSURE 111.0 MB
TEMPERATURE -02.4°C
ALTITUDE 16,000 METERS




STATION: (NASA) Wallops Island, Va. ROCKET TIME: 1044 LST 1544 GCT PAYLOAD TYPE: Arcasonde 1A

DATE: 4 September, 1968 ROCKET MOTOR TYPE: Arcas RADIOSONDE TYPE: 1680 MHz

# ROCKET OBSERVATION DATA

RP STATION NAME

72402 (NASA) WALLOPS ISLAND, VIRGINIA

LAT. 37°51' N LONG. 75°29' W

ROCKET LAUNCH

DATE SEPTEMBER 11, 1968 TIME 1810 Z

RAWINSONDE RELEASE

DATE SEPTEMBER 11, 1968 TIME 1910 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | WIND COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 118 | 58 | 033 | 012 | -010 | -006 |
| 111 | 57 | 017 | 016 | -015 | -005 |
| 105 | 56 | 031 | 014 | -012 | -008 |
| 095 | 55 | 072 | 013 | -004 | -012 |
| 090 | 54 | 081 | 010 | -002 | -010 |
| 083 | 53 | 083 | 009 | -001 | -009 |
| 074 | 52 | 061 | 005 | -003 | -005 |
| 069 | 51 | 093 | 004 | +000 | -004 |
| 062 | 50 | 148 | 011 | +009 | -006 |
| 064 | 49 | 159 | 017 | +016 | -006 |
| 064 | 48 | 168 | 021 | +021 | -005 |
| 059 | 47 | 152 | 014 | +013 | -007 |
| 056 | 46 | 112 | 011 | +004 | -011 |
| 049 | 45 | 095 | 011 | +001 | -011 |
| 048 | 44 | 080 | 011 | -002 | -011 |
| 044 | 43 | 076 | 008 | -002 | -008 |
| 042 | 42 | 093 | 007 | +000 | -007 |
| 040 | 41 | 108 | 007 | +002 | -007 |
| 037 | 40 | 113 | 006 | +002 | -006 |
| 034 | 39 | 106 | 005 | +001 | -004 |
| 031 | 38 | 102 | 005 | +001 | -005 |
| 028 | 37 | 109 | 006 | +002 | -006 |
| 026 | 36 | 090 | 006 | +000 | -006 |
| 024 | 35 | 069 | 004 | -001 | -004 |
| 022 | 34 | 106 | 003 | +001 | -003 |
| 020 | 33 | 104 | 004 | +001 | -004 |
| 019 | 32 | 082 | 006 | -001 | -006 |
| 019 | 31 | 094 | 007 | +001 | -007 |
| 017 | 30 | 108 | 008 | +002 | -007 |
| 015 | 29 | 079 | 007 | -001 | -007 |
| 013 | 28 | 064 | 005 | -002 | -004 |
| 012 | 27 | 105 | 003 | +001 | -003 |
| 010 | 26 | 081 | 004 | -001 | -004 |
| 009 | 25 | 059 | 004 | -002 | -003 |
| 009 | 24 | 061 | 003 | -001 | -002 |
| 007 | 23 | 073 | 002 | +000 | -002 |
| 006 | 22 | 290 | 001 | +000 | +001 |
| 006 | 21 | 242 | 001 | +000 | +001 |
| 006 | 20 | 193 | 002 | +002 | +000 |
| 005 | 19 | 192 | 002 | +002 | +000 |
| 005 | 18 | 240 | 003 | +002 | +003 |

ROCKET THERMODYNAMICS

| ALT TENS OF METERS | TEMP DEG C | PRESSURE MB | DENSITY G M -3 | WIND POLAR DEG | MPS | WIND COMPONENTS MPS N-S | E-W |
|---|---|---|---|---|---|---|---|
| 6046 | -11.2 | 00.249 | 00.331 | | | | |
| 5611 | -07.1 | 00.432 | 00.566 | 030 | 014 | -013 | -007 |
| 5477 | -08.1 | 00.512 | 00.672 | 074 | 012 | -003 | -012 |
| 5227 | -05.5 | 00.701 | 00.912 | 068 | 006 | -002 | -006 |
| 5099 | -01.0 | 00.822 | 01.052 | 093 | 004 | +000 | -004 |
| 5020 | -04.9 | 00.907 | 01.178 | 138 | 010 | +007 | -006 |
| 4907 | +01.5 | 01.043 | 01.323 | 158 | 016 | +015 | -006 |
| 4657 | -01.9 | 01.419 | 01.823 | 136 | 013 | +010 | -009 |
| 4493 | +00.8 | 01.738 | 02.210 | 093 | 011 | +001 | -011 |
| 4404 | -06.3 | 01.941 | 02.535 | 081 | 011 | -002 | -011 |
| 4301 | -06.8 | 02.211 | 02.892 | 076 | 008 | -002 | -008 |
| 3908 | -20.2 | 03.684 | 05.073 | 106 | 005 | +001 | -004 |
| 3813 | -20.9 | 04.182 | 05.776 | 102 | 005 | +001 | -005 |
| 3426 | -35.1 | 07.126 | 10.429 | 097 | 004 | +000 | -004 |
| 3362 | -33.6 | 07.801 | 11.346 | 105 | 004 | +001 | -004 |
| 2771 | -46.3 | 18.383 | 28.231 | 078 | 004 | -001 | -004 |
| 2362 | -50.2 | 34.039 | 53.190 | 066 | 002 | -001 | -002 |
| 2198 | -53.5 | 43.763 | 69.411 | 290 | 001 | +000 | +001 |
| 2000 | -53.5 | 59.413 | 94.234 | 193 | 002 | +002 | +000 |
| 1908 | -55.0 | | | 192 | 002 | +002 | +000 |
| 1731 | -56.6 | | | | | | |

CONSTANT PRESSURE SURFACES (GEOPOTENTIAL HEIGHT)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2105 | -53.5 | 50.000 | 79.304 | 248 | 001 | +000 | +001 |
| 2436 | -49.5 | 30.000 | 46.737 | 060 | 003 | -002 | -003 |
| 2703 | -46.9 | 20.000 | 30.790 | 099 | 004 | +001 | -004 |
| 3171 | -37.3 | 10.000 | 14.769 | 084 | 006 | -001 | -006 |
| 3420 | -34.6 | 07.000 | 10.224 | 093 | 004 | +000 | -004 |
| 3659 | -25.7 | 05.000 | 07.039 | 105 | 006 | +002 | -006 |
| 4038 | -15.0 | 03.000 | 04.048 | 111 | 007 | +002 | -006 |
| 4350 | -06.5 | 02.000 | 02.613 | 079 | 010 | -002 | -010 |
| 4903 | -00.6 | 01.000 | 01.278 | 155 | 014 | +013 | -006 |

RAWINSONDE

| PRESSURE | ALT TENS OF | WIND POLAR | | WIND COMPONENTS MPS | | RH | TEMP |
|---|---|---|---|---|---|---|---|
| MB | METERS | DEG | MPS | N-S | E-W | % | DEG C |
| 1009.0 | 0000 | 270 | 004 | +000 | +004 | 59 | +27.8 |
| 0800.0 | 0200 | 225 | 011 | +008 | +008 | 58 | +09.5 |
| 0627.0 | 0400 | 222 | 024 | +018 | +016 | 15 | +00.1 |
| 0485.0 | 0600 | 218 | 035 | +028 | +022 | 15 | -10.9 |
| 0399.0 | 0749 | 219 | 041 | +032 | +025 | 16 | -21.8 |
| 0372.0 | 0800 | | | | | 16 | -26.0 |
| 0279.0 | 1000 | | | | | | -42.5 |
| 0216.0 | 1170 | | | | | | -52.9 |
| 0206.0 | 1200 | | | | | | -51.0 |
| 0152.0 | 1400 | | | | | | -55.6 |
| 0111.0 | 1600 | | | | | | -57.7 |
| 0081.0 | 1800 | | | | | | -58.0 |
| 0059.0 | 2000 | | | | | | -56.3 |
| 0043.0 | 2200 | | | | | | -54.0 |
| 0031.5 | 2400 | | | | | | -51.8 |
| 0023.4 | 2600 | | | | | | -49.3 |
| 0017.3 | 2800 | | | | | | -46.6 |
| 0012.8 | 3000 | | | | | | -44.0 |
| 0009.6 | 3200 | | | | | | -41.4 |
| 0007.2 | 3400 | | | | | | -38.7 |
| 0005.4 | 3599 | | | | | | -35.7 |

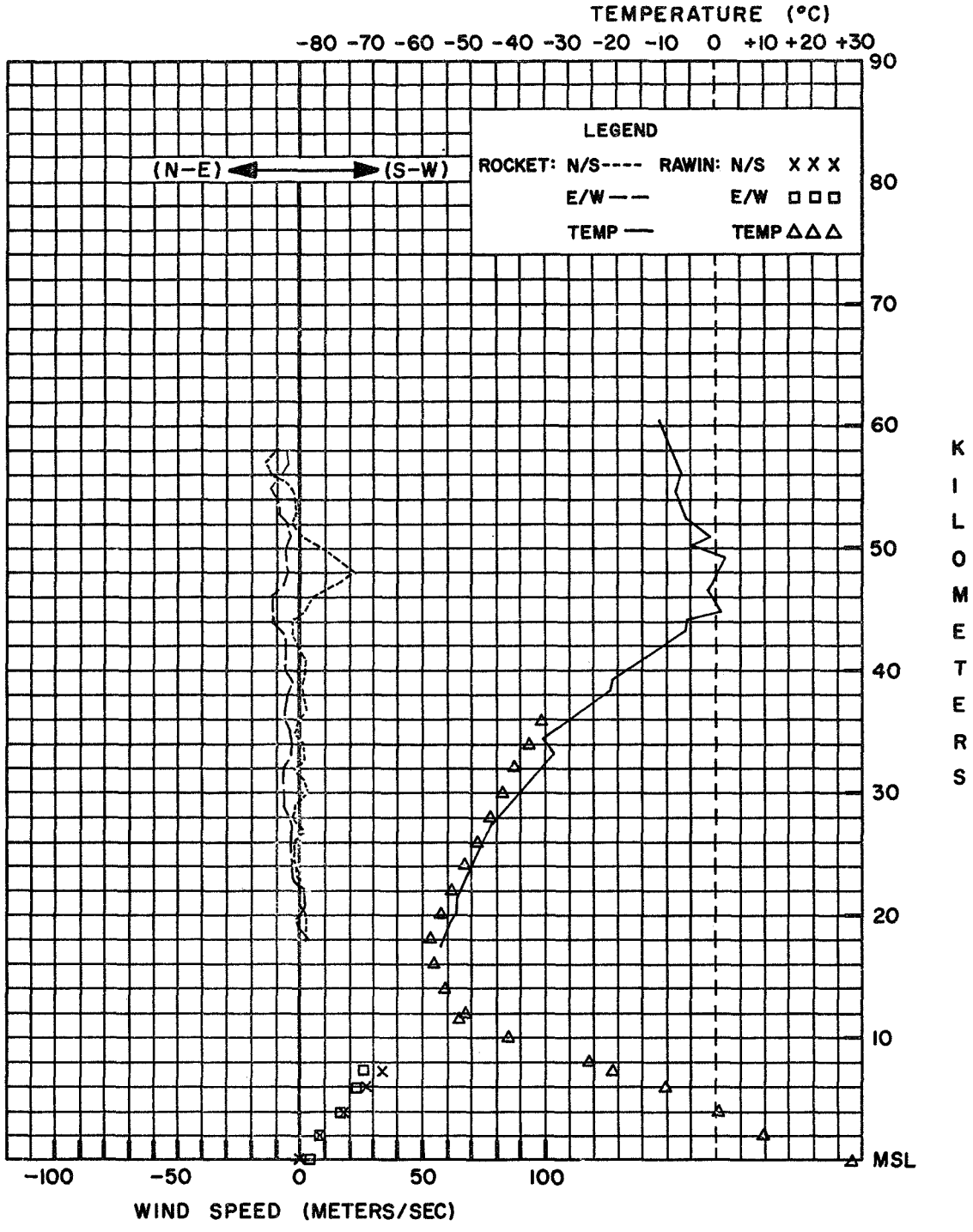
# TECHNICAL DATA

MOTOR TYPE..ARCAS
PAYLOAD TYPE..ARCASONDE-1A
FUSE TYPE..GAS GENERATED SEPARATION DEVICE
LAUNCHER SETTING..112° AZIMUTH 77.0° ELEVATION
RADAR TYPE..FPS-16 APOGEE 61.420 METERS
WIND SENSOR TYPE..15 FT. DIAMETER PARACHUTE
TEMPERATURE SENSOR TYPE..0.010 INCH BEAD THERMISTOR
GROUND EQUIPMENT TYPE..GMD-1B
REMARKS..NO RAWINSONDE WINDS ABOVE 7,490 METERS DUE TO GMD-1B LIMITING ANGLES.

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..132 SEC
SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..MOLDED INSULATION CO.
TEMPERATURE ELEMENT TYPE..ROD THERMISTOR
PRESSURE SENSOR TYPE..ANEROID AND HYPSOMETER
GROUND EQUIPMENT TYPE..GMD-1B
WIND AT ROCKET LAUNCH..SFC. 270DEG/03MPS 15M 275DEG/04MPS 31M 276DEG/05MPS 46M 268DEG/05MPS 61M 248DEG/05MPS 76M 246DEG/05MPS
BALLISTIC WIND.. 253° AZIMUTH 05.6 MPS
THERMODYNAMIC BASE DATA..PRESSURE 111.0 MBS
TEMPERATURE -57.7°C
ALTITUDE 16,000 METERS

RADIOSONDE TYPE..1680 MHZ
BALLOON TYPE..NEOPRENE
BALLOON SIZE..1,200 GRAMS




STATION: (NASA) Wallops Island, Va. ROCKET TIME: 1310 LST1310 GCT PAYLOAD TYPE: Arcasonde 1A

DATE: 11 September, 1968 ROCKET MOTOR TYPE: Arcas RADIOSONDE TYPE: 1680 MHz

# ROCKET OBSERVATION DATA

RP STATION NAME

72402 (NASA) WALLOPS ISLAND, VIRGINIA

LAT. 37°51' N LONG. 75°29' W

ROCKET LAUNCH

DATE SEPTEMBER 18, 1968 TIME 1441 Z

RAWINSONDE RELEASE

DATE SEPTEMBER 18, 1968 TIME 1228 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | WIND COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 100 | 57 | 235 | 012 | +007 | +010 |
| 095 | 56 | 213 | 011 | +009 | +006 |
| 083 | 55 | 190 | 013 | +013 | +002 |
| 083 | 54 | 191 | 010 | +010 | +002 |
| 087 | 53 | 162 | 011 | +011 | -004 |
| 074 | 52 | 118 | 019 | +009 | -017 |
| 064 | 51 | 090 | 016 | +000 | -016 |
| 062 | 50 | 070 | 008 | -003 | -008 |
| 061 | 49 | 063 | 000 | -003 | -005 |
| 057 | 48 | 098 | 005 | +001 | -005 |
| 057 | 47 | 116 | 005 | +002 | -005 |
| 051 | 46 | 112 | 003 | +001 | -003 |
| 044 | 45 | 108 | 003 | +001 | -002 |
| 043 | 44 | 095 | 003 | +000 | -003 |
| 040 | 43 | 068 | 002 | -001 | -001 |
| 036 | 42 | 092 | 002 | +000 | -002 |
| 034 | 41 | 178 | 003 | +003 | +000 |
| 031 | 40 | 214 | 004 | +003 | +003 |
| 030 | 39 | 151 | 002 | +002 | -001 |
| 029 | 38 | 097 | 003 | +000 | -003 |
| 028 | 37 | 103 | 003 | +001 | -003 |
| 025 | 36 | 115 | 004 | +002 | -004 |
| 022 | 35 | 127 | 007 | +004 | -006 |
| 021 | 34 | 110 | 007 | +002 | -006 |
| 018 | 33 | 039 | 004 | -003 | -002 |
| 017 | 32 | 340 | 003 | -003 | +001 |
| 016 | 31 | 091 | 001 | +000 | -001 |
| 014 | 30 | 090 | 003 | +000 | -003 |
| 014 | 29 | 026 | 002 | -002 | -001 |
| 011 | 28 | 327 | 001 | -001 | +001 |
| 010 | 27 | 330 | 001 | +000 | +000 |
| 009 | 26 | 106 | 002 | +000 | -002 |
| 008 | 25 | 098 | 006 | +001 | -006 |
| 007 | 24 | 076 | 006 | -001 | -006 |
| 006 | 23 | 051 | 005 | -003 | -004 |
| 006 | 22 | 035 | 004 | -003 | -002 |
| 006 | 21 | 052 | 004 | -003 | -003 |
| 005 | 20 | 071 | 005 | -002 | -005 |
| 005 | 19 | 058 | 005 | -003 | -004 |
| 004 | 18 | 039 | 004 | -003 | -003 |

ROCKET THERMODYNAMICS

| ALT TENS OF METERS | TEMP DEG C | PRESSURE MB | DENSITY G M -3 | WIND POLAR DEG | MPS | WIND COMPONENTS MPS N-S | E-W |
|---|---|---|---|---|---|---|---|
| 5989 | -03.9 | 00.255 | 00.330 | | | | |
| 5715 | -05.5 | 00.359 | 00.468 | | | | |
| 5590 | +00.3 | 00.419 | 00.534 | 211 | 011 | +010 | +006 |
| 5230 | -07.1 | 00.657 | 00.860 | 130 | 017 | +011 | -013 |
| 4910 | -06.5 | 00.983 | 01.284 | 064 | 006 | -003 | -006 |
| 4749 | -00.9 | 01.202 | 01.538 | 108 | 005 | +001 | -004 |
| 4423 | -08.0 | 01.808 | 02.375 | 098 | 003 | +000 | -003 |
| 4368 | -12.6 | 01.940 | 02.594 | 087 | 002 | +000 | -002 |
| 4276 | -16.8 | 02.187 | 02.972 | 073 | 002 | +000 | -002 |
| 4170 | -14.9 | 02.513 | 03.390 | 110 | 002 | +001 | -002 |
| 3844 | -21.1 | 03.805 | 05.343 | 118 | 003 | +001 | -002 |
| 3731 | -28.1 | 04.506 | 06.405 | 101 | 003 | +001 | -003 |
| 3679 | -25.5 | 04.838 | 06.806 | 105 | 003 | +001 | -003 |
| 3503 | -35.8 | 05.953 | 08.738 | 123 | 001 | +001 | -001 |
| 3136 | -41.0 | 10.495 | 15.749 | 047 | 002 | -001 | -002 |
| 3057 | -38.0 | 11.766 | 17.431 | 091 | 002 | +000 | -002 |
| 2795 | -46.0 | 17.285 | 26.480 | 327 | 001 | -001 | +001 |
| 2582 | -48.1 | 23.752 | 36.769 | 104 | 003 | +001 | -003 |
| 2505 | -51.4 | 26.693 | 41.937 | 098 | 006 | +001 | -006 |
| 2390 | -49.5 | 31.798 | 49.532 | 073 | 006 | -002 | -006 |
| 2219 | -56.9 | 41.386 | 66.673 | 038 | 004 | -003 | -003 |
| 2000 | -57.3 | 58.363 | 94.198 | 071 | 005 | -002 | -005 |
| 1957 | -56.4 | | | 066 | 005 | -002 | -005 |
| 1884 | -61.8 | | | 055 | 005 | -003 | -004 |
| 1728 | -63.4 | | | | | | |

CONSTANT PRESSURE SURFACES (GEOPOTENTIAL HEIGHT)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2091 | -57.1 | 50.000 | 80.627 | 052 | 004 | -003 | -002 |
| 2419 | -50.2 | 30.000 | 46.880 | 082 | 006 | -001 | -006 |
| 2685 | -47.0 | 20.000 | 30.814 | 330 | 001 | +000 | +000 |
| 3153 | -40.5 | 10.000 | 14.976 | 012 | 003 | -003 | -001 |
| 3398 | -37.3 | 07.000 | 10.338 | 112 | 007 | +002 | -006 |
| 3634 | -27.1 | 05.000 | 07.080 | 109 | 004 | +001 | -003 |
| 4009 | -17.4 | 03.000 | 04.087 | 203 | 004 | +003 | +001 |
| 4315 | -13.7 | 02.000 | 02.685 | 080 | 002 | +000 | -002 |
| 4859 | -06.1 | 01.000 | 01.304 | 063 | 006 | -003 | -005 |

RAWINSONDE

| PRESSURE | ALT TENS OF | WIND POLAR | | WIND COMPONENTS MPS | | RH | TEMP |
|---|---|---|---|---|---|---|---|
| MB | METERS | DEG | MPS | N-S | E-W | % | DEG C |
| 1020.5 | 0000 | 040 | 003 | -002 | -002 | 80 | +18.9 |
| 0807.0 | 0200 | 068 | 007 | -002 | -006 | 26 | +09.7 |
| 0631.0 | 0400 | 323 | 001 | -001 | +001 | 18 | +00.0 |
| 0488.0 | 0600 | 308 | 005 | -003 | +004 | 18 | -13.3 |
| 0375.0 | 0800 | 294 | 021 | -008 | +019 | 47 | -26.1 |
| 0282.0 | 1000 | 298 | 028 | -013 | +024 | | -40.0 |
| 0209.0 | 1200 | 318 | 026 | -019 | +017 | | -49.6 |
| 0153.0 | 1400 | 306 | 016 | -009 | +013 | | -59.8 |
| 0142.0 | 1446 | 310 | 015 | -010 | +012 | | -62.2 |
| 0111.0 | 1600 | 338 | 005 | -005 | +002 | | -65.2 |
| 0080.0 | 1800 | 036 | 004 | -003 | -002 | | -63.6 |
| 0057.7 | 2000 | 043 | 004 | -003 | -003 | | -60.1 |
| 0042.3 | 2200 | 052 | 005 | -003 | -004 | | -56.7 |
| 0031.0 | 2400 | 031 | 004 | -004 | -002 | | -53.6 |
| 0022.8 | 2600 | 053 | 003 | -002 | -002 | | -50.5 |
| 0016.9 | 2800 | 217 | 002 | +002 | +001 | | -47.4 |
| 0012.6 | 3000 | 038 | 004 | -003 | -003 | | -44.3 |
| 0010.8 | 3095 | 058 | 007 | -004 | -006 | | -42.7 |
| 0009.3 | 3200 | | | | | | -42.3 |
| 0009.3 | 3202 | | | | | | -42.3 |

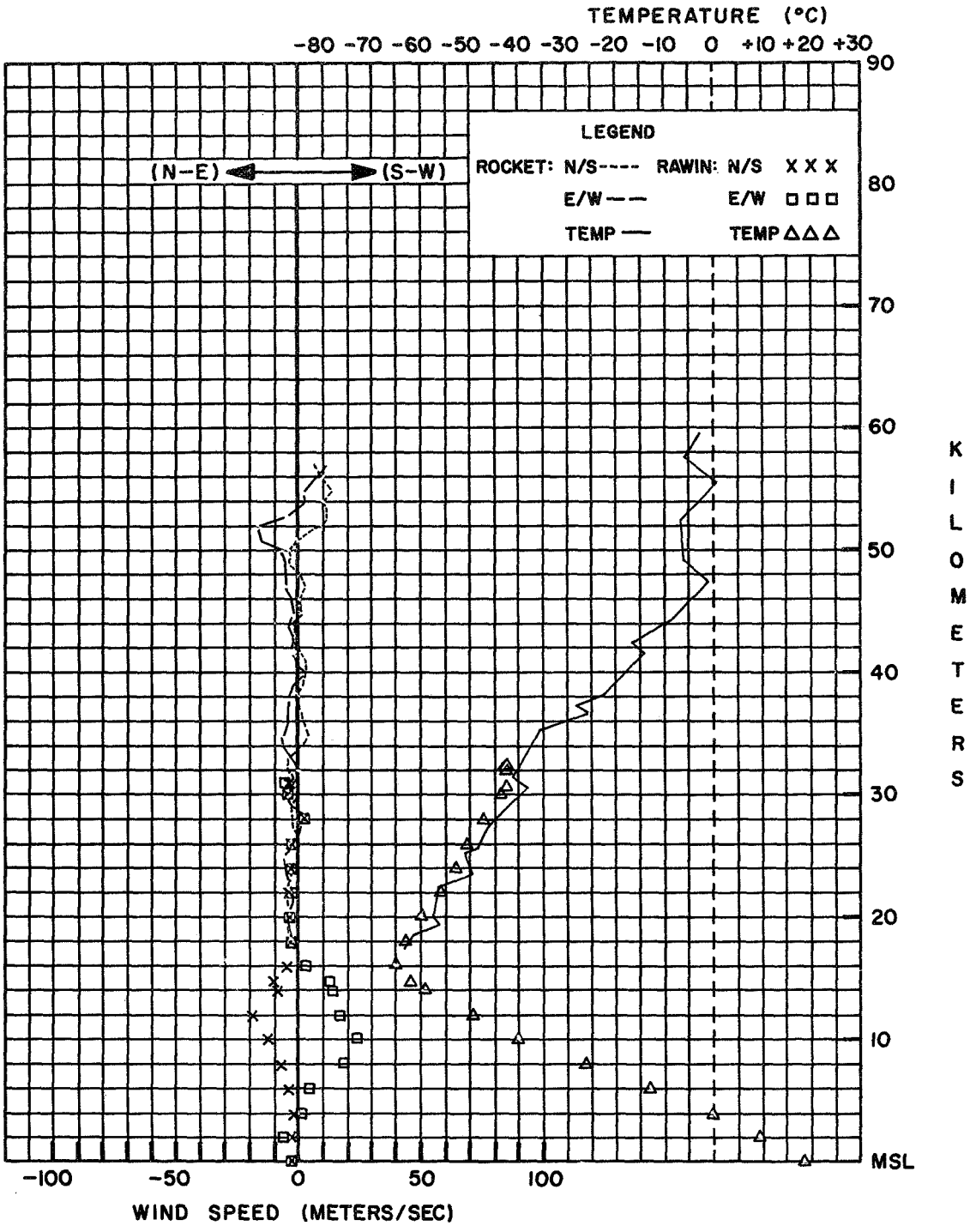
# TECHNICAL DATA

MOTOR TYPE..ARCAS
PAYLOAD TYPE..ARCASONDE-1A
FUSE TYPE..GAS GENERATED SEPARATION DEVICE
LAUNCHER SETTING..160° AZIMUTH 82.0° ELEVATION
RADAR TYPE..FPS-16 APOGEE 61.110 METERS
WIND SENSOR TYPE..15 FT. DIAMETER PARACHUTE
TEMPERATURE SENSOR TYPE..0.010 INCH BEAD THERMISTOR
GROUND EQUIPMENT TYPE..GMD-1d
REMARKS..NONE

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..130 SEC

SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..MOLDED INSULATION CO. RADIOSONDE TYPE..1680 MHZ
TEMPERATURE ELEMENT TYPE..ROD THERMISTOR BALLOON TYPE..NEOPRENE
PRESSURE SENSOR TYPE..ANEROID AND HYPSOMETER BALLOON SIZE..1.200 GRAMS
GROUND EQUIPMENT TYPE..GMD-1H
WIND AT ROCKET LAUNCH..SFC. 088DEG/04MPS 15M 061DEG/04MPS 31M 061DEG/04MPS
46M 060DEG/04MPS 61M 063DEG/04MPS 76M 067DEG/04MPS
BALLISTIC WIND.. 065° AZIMUTH 05.3 MPS
THERMODYNAMIC BASE DATA..PRESSURE 111.0 MBS
TEMPERATURE -65.2°C
ALTITUDE 16.000 METERS




STATION: (NASA) Wallops Island, Va. ROCKET TIME: 0941 LST 1441 GCT PAYLOAD TYPE: Arcasonde 1A

DATE: 18 September, 1968 ROCKET MOTOR TYPE: Arcas RADIOSONDE TYPE: 1680 MHz

# ROCKET OBSERVATION DATA

WP STATION NAME

WP599 (CNAE) NATAL, BRAZIL

LAT. 05°55'S LONG. 35°10'W

ROCKET LAUNCH

DATE SEPTEMBER 18, 1968 TIME 1519 Z

RAWINSONDE RELEASE

DATE SEPTEMBER 18, 1968 TIME 1128 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | WIND COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 088 | 58 | 276 | 051 | -005 | +050 |
| 095 | 57 | 265 | 036 | +003 | +036 |
| 095 | 56 | 239 | 019 | +010 | +016 |
| 091 | 55 | 225 | 023 | +016 | +016 |
| 087 | 54 | 216 | 017 | +014 | +010 |
| 080 | 53 | 187 | 009 | +009 | +001 |
| 077 | 52 | 078 | 007 | -002 | -007 |
| 071 | 51 | 050 | 014 | -009 | -011 |
| 067 | 50 | 056 | 019 | -011 | -016 |
| 063 | 49 | 065 | 024 | -010 | -023 |
| 061 | 48 | 080 | 023 | -004 | -023 |
| 059 | 47 | 097 | 015 | +002 | -015 |
| 056 | 46 | 108 | 011 | +003 | -010 |
| 049 | 45 | 108 | 010 | +003 | -010 |
| 044 | 44 | 111 | 007 | +002 | -007 |
| 043 | 43 | 102 | 008 | +002 | -008 |
| 041 | 42 | 083 | 009 | -004 | -008 |
| 038 | 41 | 051 | 015 | -010 | -012 |
| 035 | 40 | 042 | 023 | -017 | -015 |
| 031 | 39 | 032 | 021 | -018 | -011 |
| 030 | 38 | 020 | 017 | -016 | -006 |
| 029 | 37 | 039 | 011 | -009 | -007 |
| 025 | 36 | 073 | 010 | -004 | -010 |
| 024 | 35 | 096 | 007 | +001 | -007 |
| 022 | 34 | 164 | 005 | +005 | -002 |
| 019 | 33 | 230 | 005 | +003 | +004 |
| 019 | 32 | 269 | 005 | +000 | +005 |
| 017 | 31 | 259 | 003 | +001 | +003 |
| 016 | 30 | 228 | 007 | +005 | +005 |
| 014 | 29 | 262 | 009 | +002 | +009 |
| 012 | 28 | 304 | 009 | -005 | +008 |
| 011 | 27 | 058 | 008 | -005 | -007 |
| 010 | 26 | 089 | 023 | +000 | -023 |
| 009 | 25 | 085 | 034 | -003 | -034 |
| 008 | 24 | 089 | 038 | -001 | -038 |
| 007 | 23 | 092 | 035 | +001 | -035 |
| 006 | 22 | 095 | 028 | +002 | -028 |
| 006 | 21 | 099 | 016 | +002 | -016 |
| 005 | 20 | 080 | 002 | +000 | -002 |
| 005 | 19 | 020 | 005 | -005 | -002 |
| 005 | 18 | 054 | 010 | -006 | -008 |

RAWINSONDE

| PRESSURE | ALT TENS OF METERS | WIND POLAR | | WIND COMPONENTS MPS | | RH | TEMP |
|---|---|---|---|---|---|---|---|
| MB | | DEG | MPS | N-S | E-W | % | DEG C |
| 1010.6 | 0004 | 120 | 006 | +003 | -005 | 67 | +28.6 |
| 0805.0 | 0200 | 128 | 005 | +003 | -004 | 16 | +15.3 |
| 0631.6 | 0400 | 102 | 004 | +001 | -004 | | +02.4 |
| 0491.5 | 0600 | 062 | 009 | -004 | -008 | | -08.5 |
| 0377.8 | 0800 | 089 | 005 | +000 | -005 | | -20.7 |
| 0285.9 | 1000 | 343 | 007 | -007 | +002 | | -35.9 |
| 0211.7 | 1200 | 338 | 008 | -007 | +003 | | -54.3 |
| 0153.4 | 1400 | 322 | 011 | -008 | +007 | | -68.4 |
| 0109.2 | 1600 | 261 | 008 | +001 | +008 | | -76.2 |
| 0097.0 | 1664 | 140 | 009 | +007 | -006 | | -79.0 |
| 0076.6 | 1800 | 060 | 013 | -007 | -011 | | -70.1 |
| 0055.7 | 2000 | 314 | 008 | -006 | +006 | | -71.0 |
| 0040.3 | 2200 | 088 | 034 | -001 | -034 | | -60.0 |
| 0029.6 | 2400 | 093 | 037 | +002 | -037 | | -54.5 |
| 0021.9 | 2600 | 093 | 028 | +001 | -028 | | -43.0 |
| 0016.3 | 2800 | 328 | 012 | -010 | +007 | | -43.3 |
| 0012.2 | 3000 | 253 | 007 | +002 | +007 | | -41.6 |
| 0009.1 | 3200 | 206 | 001 | +001 | +000 | | -36.6 |
| 0006.9 | 3400 | 320 | 001 | -001 | +001 | | -31.5 |
| 0006.0 | 3476 | 100 | 008 | +001 | -008 | | -30.8 |

# TECHNICAL DATA

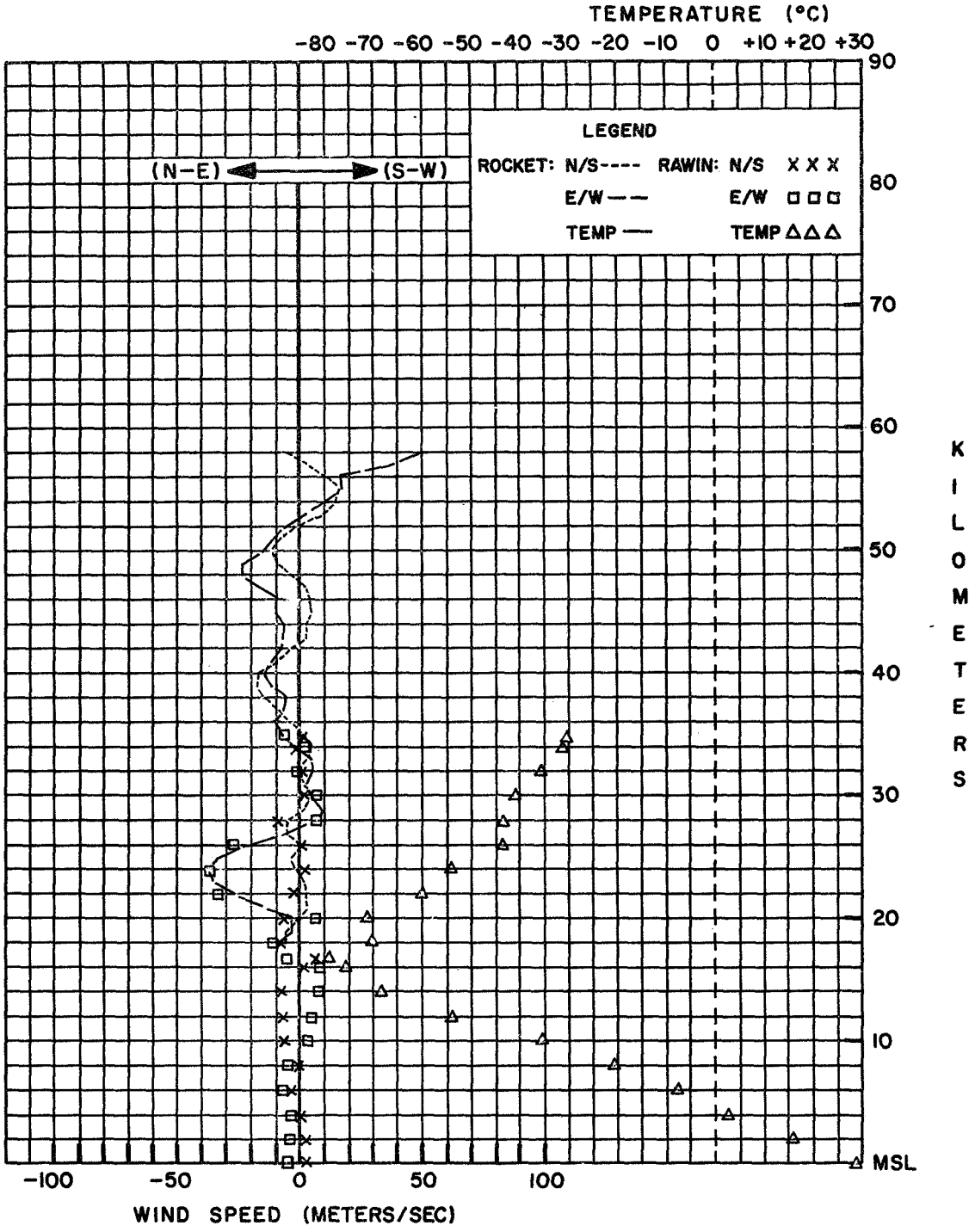
MOTOR TYPE..ARCAS
PAYLOAD TYPE..ARCASONDE-1A
FUSE TYPE..GAS GENERATED SEPARATION DEVICE
LAUNCHER SETTING..040°AZIMUTH 85.0°ELEVATION
RADAR TYPE..MPS-19 APOGEE 58.613 METERS
WIND SENSOR TYPE..15 FT. DIAMETER PARACHUTE
TEMPERATURE SENSOR TYPE..0.010 INCH BEAD THERMISTOR
GROUND EQUIPMENT TYPE..GMD-1A
REMARKS..TEMPERATURE DATA WAS ASSUMED UNUSABLE.

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..POOR
ACTUAL FUSE DELAY TIME..128 SEC

SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..MOLDED INSULATION CO.
TEMPERATURE ELEMENT TYPE..ROD THERMISTOR
PRESSURE SENSOR TYPE..ANEROID
GROUND EQUIPMENT TYPE..GMD-1A
WIND AT ROCKET LAUNCH..06M 120DEG/06MPS 09M 150DEG/06MPS 16M 120DEG/07MPS
25M 120DEG/07MPS 40M 130DEG/09MPS
BALLISTIC WIND.. 121°AZIMUTH 06.3 MPS
THERMODYNAMIC BASE DATA..PRESSURE N.A. MBS
TEMPERATURE N.A. °C
ALTITUDE N.A. METERS

RADIOSONDE TYPE..1680 MHZ
BALLOON TYPE..NEOPRENE
BALLOON SIZE..1.200 GRAMS




STATION: (CNAE) Natal, Brazil
DATE: 18 September, 1968

ROCKET TIME: 1219 LST 1519 GCT
ROCKET MOTOR TYPE: Arcas

PAYLOAD TYPE: Arcasonde 1A
RADIOSONDE TYPE: 1680 MHz

# ROCKET OBSERVATION DATA

WP STATION NAME

87689 (CNIE) MAR CHIQUITA, ARGENTINA

LAT. 37°45'S LONG. 57°25'W

ROCKET LAUNCH

DATE SEPTEMBER 20, 1968 TIME 0340 Z

RAWINSONDE RELEASE

DATE SEPTEMBER 20, 1968 TIME 0020 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | WIND COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 080 | 52 | 292 | 030 | -011 | +028 |
| 072 | 51 | 310 | 029 | -018 | +022 |
| 072 | 50 | 325 | 032 | -026 | +018 |
| 062 | 49 | 319 | 030 | -023 | +020 |
| 064 | 48 | 314 | 029 | -020 | +021 |
| 060 | 47 | 313 | 027 | -016 | +017 |
| 053 | 46 | 280 | 030 | -005 | +029 |
| 051 | 45 | 263 | 029 | +004 | +029 |
| 051 | 44 | 269 | 032 | +001 | +032 |
| 047 | 43 | 270 | 046 | +000 | +046 |
| 042 | 42 | 291 | 051 | -018 | +048 |
| 041 | 41 | 281 | 052 | -010 | +051 |
| 039 | 40 | 274 | 056 | -004 | +056 |
| 032 | 39 | 281 | 061 | -012 | +060 |
| 031 | 38 | 286 | 066 | -018 | +061 |
| 030 | 37 | 294 | 067 | -027 | +061 |
| 028 | 36 | 303 | 071 | -039 | +059 |
| 029 | 35 | 300 | 063 | -031 | +054 |
| 024 | 34 | 288 | 061 | -019 | +058 |
| 023 | 33 | 283 | 062 | -014 | +060 |
| 021 | 32 | 279 | 061 | -009 | +060 |
| 018 | 31 | 279 | 059 | -009 | +058 |
| 017 | 30 | 279 | 055 | -009 | +054 |
| 016 | 29 | 280 | 055 | -010 | +054 |
| 015 | 28 | 284 | 051 | -012 | +049 |
| 013 | 27 | 283 | 045 | -010 | +043 |
| 011 | 26 | 279 | 042 | -007 | +041 |
| 010 | 25 | 281 | 036 | -007 | +035 |
| 009 | 24 | 286 | 031 | -008 | +030 |
| 008 | 23 | 279 | 029 | -005 | +029 |
| 008 | 22 | 265 | 028 | +002 | +028 |
| 008 | 21 | 268 | 025 | +001 | +025 |
| 007 | 20 | 273 | 023 | -001 | +023 |
| 006 | 19 | 273 | 018 | -001 | +018 |

RAWINSONDE

| PRESSURE | ALT IN OF | WIND POLAR | | WIND COMPONENTS MPS | | RH | TEMP |
|---|---|---|---|---|---|---|---|
| MB | METERS | DEG | MPS | N-S | E-W | % | DEG C |
| 1013.0 | 0002 | | | | | 91 | +06.0 |
| 0799.0 | 0200 | | | | | 68 | -01.0 |
| 0615.0 | 0400 | 265 | 018 | +002 | +018 | 34 | -15.9 |
| 0470.0 | 0600 | 280 | 025 | -004 | +024 | 11 | -22.9 |
| 0354.0 | 0800 | 285 | 026 | -007 | +025 | 05 | -34.9 |
| 0269.0 | 0999 | 295 | 029 | -012 | +026 | 05 | -45.4 |
| 0266.0 | 1000 | 295 | 029 | -012 | +026 | 05 | -44.9 |
| 0197.0 | 1200 | 300 | 027 | -013 | +023 | | -45.8 |
| 0143.0 | 1400 | 282 | 025 | -005 | +024 | | -50.0 |
| 0107.0 | 1600 | 279 | 028 | -004 | +028 | | -54.0 |
| 0079.0 | 1800 | 274 | 022 | -002 | +022 | | -55.4 |
| 0057.3 | 2000 | 277 | 022 | -003 | +022 | | -56.8 |
| 0041.9 | 2200 | 270 | 026 | +000 | +026 | | -57.9 |
| 0030.3 | 2400 | 267 | 028 | +002 | +028 | | -60.0 |
| 0022.2 | 2600 | 263 | 032 | +004 | +032 | | -59.5 |
| 0016.2 | 2800 | 283 | 031 | -007 | +030 | | -58.1 |
| 0011.9 | 3000 | 274 | 041 | -003 | +041 | | -56.9 |
| 0008.6 | 3200 | 276 | 040 | -004 | +039 | | -54.9 |
| 0006.3 | 3400 | 289 | 045 | -015 | +042 | | -52.9 |
| 0004.8 | 3600 | | | | | | -47.7 |
| 0004.0 | 3640 | | | | | | -44.8 |

# TECHNICAL DATA

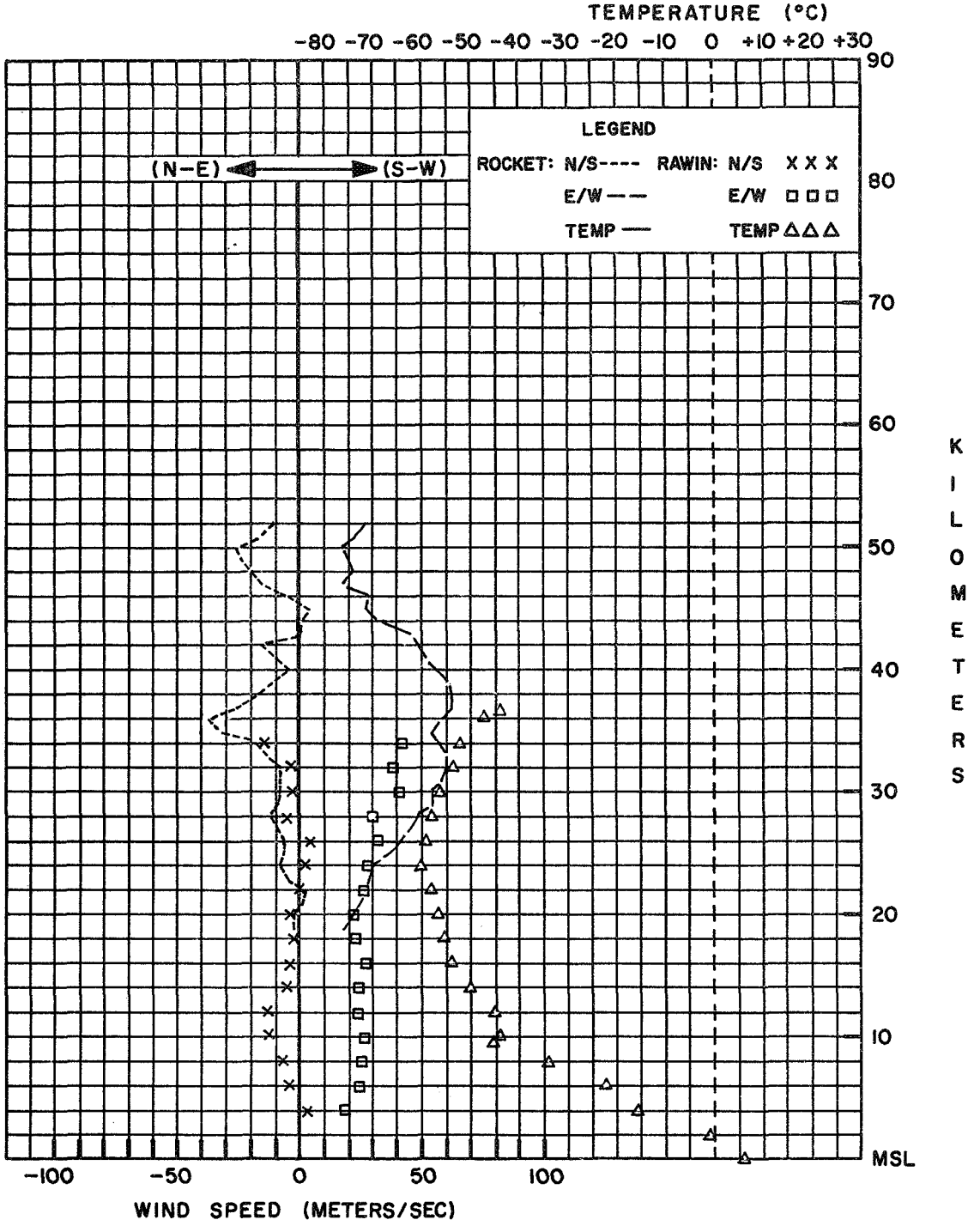
MOTOR TYPE..ARCAS
PAYLOAD TYPE..ARCASONDE-1A
FUSE TYPE..GAS GENERATED SEPARATION DEVICE
LAUNCHER SETTING..055°AZIMUTH 79.0°ELEVATION
RADAR TYPE..MPS-19 APOGEE 70,000 METERS
WIND SENSOR TYPE..15 FT. DIAMETER PARACHUTE
TEMPERATURE SENSOR TYPE..0.010 INCH BEAD THERMISTOR
GROUND EQUIPMENT TYPE..GMD-2B
REMARKS..HEAVY NOISE CAUSED BLANKING OF I/M SIGNAL IMPAIRING TEMPERATURE DATA. TEMPERATURE RECORD SHOWED SOME INFORMATION BELOW 36,400 METERS. FAILURE NON-ATTRIBUTABLE TO PAYLOAD.

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..POOR
ACTUAL FUSE DELAY TIME..130 SEC

SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..VAISALA
TEMPERATURE ELEMENT TYPE..RESISTANCE WIRE
PRESSURE SENSOR TYPE..ANEROID
GROUND EQUIPMENT TYPE..VAISALA
WIND AT ROCKET LAUNCH..SFC. 225M/05MPS
BALLISTIC WIND.. 232°AZIMUTH 9.7 MPS
THERMODYNAMIC BASE DATA..PRESSURE N.A. MBS
TEMPERATURE N.A. °C
ALTITUDE N.A. METERS

RADIOSONDE TYPE..VAISALA
BALLOON TYPE..LAIEX
BALLOON SIZE..1200 GRAMS




STATION: (CNIE) Mar Chiquita, Arg. ROCKET TIME: 0040 LST 0540 GCT PAYLOAD TYPE: Arcasonde 1A

DATE: 20 September, 1968 ROCKET MOTOR TYPE: Arcas RADIOSONDE TYPE: Vaisala

# ROCKET OBSERVATION DATA

RP STATION NAME

72402 (NASA) WALLOPS ISLAND, VIRGINIA

LAT. 37°51' N LONG. 75°29' W

ROCKET LAUNCH

DATE SEPTEMBER 25, 1968 TIME 1424 Z

RAWINSONDE RELEASE

DATE SEPTEMBER 25, 1968 TIME 1115 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 092 | 56 | 216 | 018 | +015 | +011 |
| 083 | 55 | 230 | 015 | +010 | +012 |
| 083 | 54 | 198 | 024 | +023 | +004 |
| 080 | 53 | 162 | 022 | +021 | -007 |
| 074 | 52 | 129 | 009 | +006 | -007 |
| 074 | 51 | 143 | 007 | +005 | -004 |
| 067 | 50 | 205 | 003 | +003 | +001 |
| 061 | 49 | 271 | 007 | +000 | +007 |
| 057 | 48 | 252 | 009 | +003 | +004 |
| 054 | 47 | 200 | 011 | +011 | +004 |
| 053 | 46 | 155 | 013 | +012 | -006 |
| 050 | 45 | 120 | 011 | +006 | -010 |
| 044 | 44 | 104 | 010 | +002 | -010 |
| 040 | 43 | 107 | 009 | +003 | -009 |
| 037 | 42 | 124 | 007 | +004 | -006 |
| 034 | 41 | 094 | 006 | +000 | -006 |
| 033 | 40 | 029 | 008 | -007 | -004 |
| 030 | 39 | 331 | 005 | -005 | +003 |
| 029 | 38 | 282 | 005 | -001 | +005 |
| 028 | 37 | 013 | 002 | -002 | +000 |
| 024 | 36 | 044 | 002 | -001 | -001 |
| 023 | 35 | 192 | 002 | +002 | +000 |
| 022 | 34 | 172 | 004 | +004 | -001 |
| 018 | 33 | 167 | 001 | +001 | +000 |
| 017 | 32 | 187 | 002 | +002 | +000 |
| 016 | 31 | 167 | 006 | +006 | -001 |
| 015 | 30 | 154 | 008 | +007 | -003 |
| 014 | 29 | 141 | 002 | +002 | -001 |
| 013 | 28 | 174 | 002 | +002 | +000 |
| 011 | 27 | 257 | 003 | +001 | +003 |
| 009 | 26 | 285 | 005 | -001 | +005 |
| 008 | 25 | 257 | 007 | +002 | +007 |
| 008 | 24 | 221 | 006 | +005 | +004 |
| 007 | 23 | 185 | 002 | +002 | +000 |
| 006 | 22 | 223 | 003 | +002 | +002 |
| 006 | 21 | 205 | 002 | +002 | +001 |
| 005 | 20 | 254 | 003 | +001 | +002 |
| 005 | 19 | 248 | 004 | +002 | +004 |
| 005 | 18 | 257 | 006 | +001 | +006 |

ROCKET THERMODYNAMICS

| ALT | TEMP | PRESSURE | DENSITY | | WIND POLAR | | COMPONENTS MPS | |
|---|---|---|---|---|---|---|---|---|
| OF METERS | DEG C | MB | G M -3 | | DEG | MPS | N-S | E-W |
| 5712 | -02.6 | 00.357 | 00.459 | | | | | |
| 5480 | -06.8 | 00.477 | 00.624 | | 223 | 018 | +013 | +012 |
| 5420 | -03.7 | 00.514 | 00.665 | | 204 | 023 | +021 | +009 |
| 5080 | -03.1 | 00.785 | 01.012 | | 156 | 006 | +005 | -002 |
| 4953 | -05.3 | 00.920 | 01.196 | | 240 | 005 | +003 | +005 |
| 4730 | -01.8 | 01.214 | 01.559 | | 214 | 010 | +009 | +006 |
| 4633 | -05.2 | 01.371 | 01.782 | | 168 | 012 | +012 | -003 |
| 4545 | -04.2 | 01.531 | 01.983 | | 112 | 011 | +004 | -010 |
| 4368 | -17.2 | 01.921 | 02.615 | | 105 | 010 | +002 | -010 |
| 4252 | -18.7 | 02.234 | 03.065 | | 115 | 008 | +004 | -008 |
| 4182 | -17.9 | 02.456 | 03.351 | | 117 | 007 | +003 | -006 |
| 4090 | -20.2 | 02.774 | 03.821 | | 085 | 006 | +000 | -006 |
| 4023 | -19.6 | 03.033 | 04.167 | | 040 | 008 | -006 | -005 |
| 3993 | -23.8 | 03.157 | 04.411 | | 023 | 008 | -007 | -003 |
| 3830 | -24.1 | 03.937 | 05.507 | | 296 | 005 | -002 | +005 |
| 3807 | -28.0 | 04.062 | 05.773 | | 285 | 005 | -001 | +005 |
| 3710 | -31.2 | 04.646 | 06.690 | | 002 | 002 | -002 | +000 |
| 3584 | -36.6 | 05.550 | 08.174 | | 070 | 002 | -001 | -001 |
| 3548 | -36.7 | 05.843 | 08.604 | | 117 | 002 | +001 | -001 |
| 3505 | -38.9 | 06.214 | 09.242 | | 182 | 002 | +002 | +000 |
| 3360 | -33.1 | 07.639 | 11.087 | | 170 | 003 | +003 | -001 |
| 3194 | -39.6 | 09.680 | 14.440 | | 185 | 002 | +002 | +000 |
| 3150 | -37.9 | 10.315 | 15.275 | | 177 | 004 | +004 | +000 |
| 3066 | -41.6 | 11.649 | 17.527 | | 162 | 006 | +006 | -002 |
| 2890 | -40.0 | 15.050 | 22.490 | | 144 | 002 | +002 | -001 |
| 2664 | -49.0 | 21.033 | 32.690 | | 268 | 004 | +000 | +004 |
| 2582 | -47.7 | 23.798 | 36.774 | | 280 | 006 | -001 | +006 |
| 2493 | -49.7 | 27.218 | 42.436 | | 254 | 007 | +002 | +007 |
| 2435 | -48.2 | 29.711 | 46.014 | | 234 | 007 | +004 | +005 |
| 2274 | -53.4 | 37.974 | 60.203 | | 197 | 002 | +002 | +001 |
| 2164 | -51.7 | 44.969 | 70.745 | | 216 | 003 | +002 | +002 |
| 2000 | -55.5 | 57.947 | 92.753 | | 254 | 003 | +001 | +002 |
| 1725 | -63.0 | | | | | | | |

CONSTANT PRESSURE SURFACES (GEOPOTENTIAL HEIGHT)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2088 | -53.6 | 50.000 | 79.337 | 205 | 002 | +002 | +007 |
| 2419 | -48.4 | 30.000 | 46.502 | 234 | 007 | +004 | +005 |
| 2686 | -47.8 | 20.000 | 30.918 | 257 | 003 | +001 | +003 |
| 3156 | -38.7 | 10.000 | 14.862 | 181 | 003 | +003 | +000 |
| 3403 | -35.5 | 07.000 | 10.262 | 176 | 004 | +004 | +000 |
| 3637 | -33.3 | 05.000 | 07.264 | 025 | 002 | -001 | -001 |
| 4006 | -19.7 | 03.000 | 04.123 | 047 | 007 | -005 | -005 |
| 4308 | -17.6 | 02.000 | 02.726 | 106 | 010 | +003 | -009 |
| 4849 | -04.2 | 01.000 | 01.295 | 269 | 007 | +000 | +007 |

RAWINSONDE

| PRESSURE | ALT | WIND POLAR | | COMPONENTS MPS | | RH | TEMP |
|---|---|---|---|---|---|---|---|
| MB | OF METERS | DEG | MPS | N-S | E-W | % | DEG C |
| 1015.6 | 0000 | 225 | 004 | +003 | +003 | 93 | +20.0 |
| 0805.0 | 0200 | 215 | 005 | +004 | +003 | 22 | +13.0 |
| 0630.0 | 0400 | 245 | 008 | +003 | +007 | 20 | +01.0 |
| 0489.0 | 0600 | 265 | 008 | +001 | +008 | 16 | -05.9 |
| 0376.0 | 0800 | 211 | 009 | +007 | +005 | 15 | -21.6 |
| 0283.0 | 1000 | 218 | 006 | +005 | +004 | 16 | -37.9 |
| 0210.0 | 1200 | 304 | 005 | -003 | +004 | | -53.6 |
| 0153.0 | 1400 | 268 | 003 | +000 | +003 | | -60.0 |
| 0118.0 | 1555 | 272 | 005 | +000 | +005 | | -72.9 |
| 0110.0 | 1600 | 261 | 005 | +001 | +005 | | -68.3 |
| 0079.0 | 1800 | 247 | 004 | +002 | +004 | | -64.9 |
| 0057.0 | 2000 | 253 | 003 | +001 | +003 | | -59.9 |
| 0042.0 | 2200 | 274 | 004 | +000 | +004 | | -52.0 |
| 0030.8 | 2400 | 225 | 005 | +003 | +003 | | -52.3 |
| 0022.7 | 2600 | 248 | 007 | +002 | +006 | | -47.6 |
| 0016.9 | 2800 | 265 | 006 | +000 | +006 | | -45.9 |
| 0012.6 | 3000 | 243 | 004 | +002 | +004 | | -45.7 |
| 0009.2 | 3200 | 156 | 004 | +004 | -002 | | -40.7 |
| 0006.9 | 3400 | 184 | 005 | +005 | +000 | | -39.4 |
| 0006.1 | 3497 | 203 | 006 | +005 | +002 | | -38.8 |
| 0006.0 | 3503 | | | | | | -38.7 |

# TECHNICAL DATA

MOTOR TYPE..ARCAS

PAYLOAD TYPE..AMCASONDE-1A

FUSE TYPE..GAS GENERATED SEPARATION DEVICE

LAUNCHER SETTING..101° AZIMUTH 78.0° ELEVATION

RADAR TYPE..FPS-16 APOGEE 58,690 METERS

WIND SENSOR TYPE..15 FT. DIAMETER PARACHUTE

TEMPERATURE SENSOR TYPE..0.010 INCH HEAD THERMISTOR

GROUND EQUIPMENT TYPE..GMD-1B

REMARKS..NONE

MOTOR PERFORMANCE..GOOD

PAYLOAD PERFORMANCE..GOOD

ACTUAL FUSE DELAY TIME..138 SEC

SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..MOLDED INSULATION CO.

TEMPERATURE ELEMENT TYPE..ROD THERMISTOR

PRESSURE SENSOR TYPE..ANEROID AND HYPSOMETER

GROUND EQUIPMENT TYPE..GMD-1B

RADIOSONDE TYPE..1680 MHZ

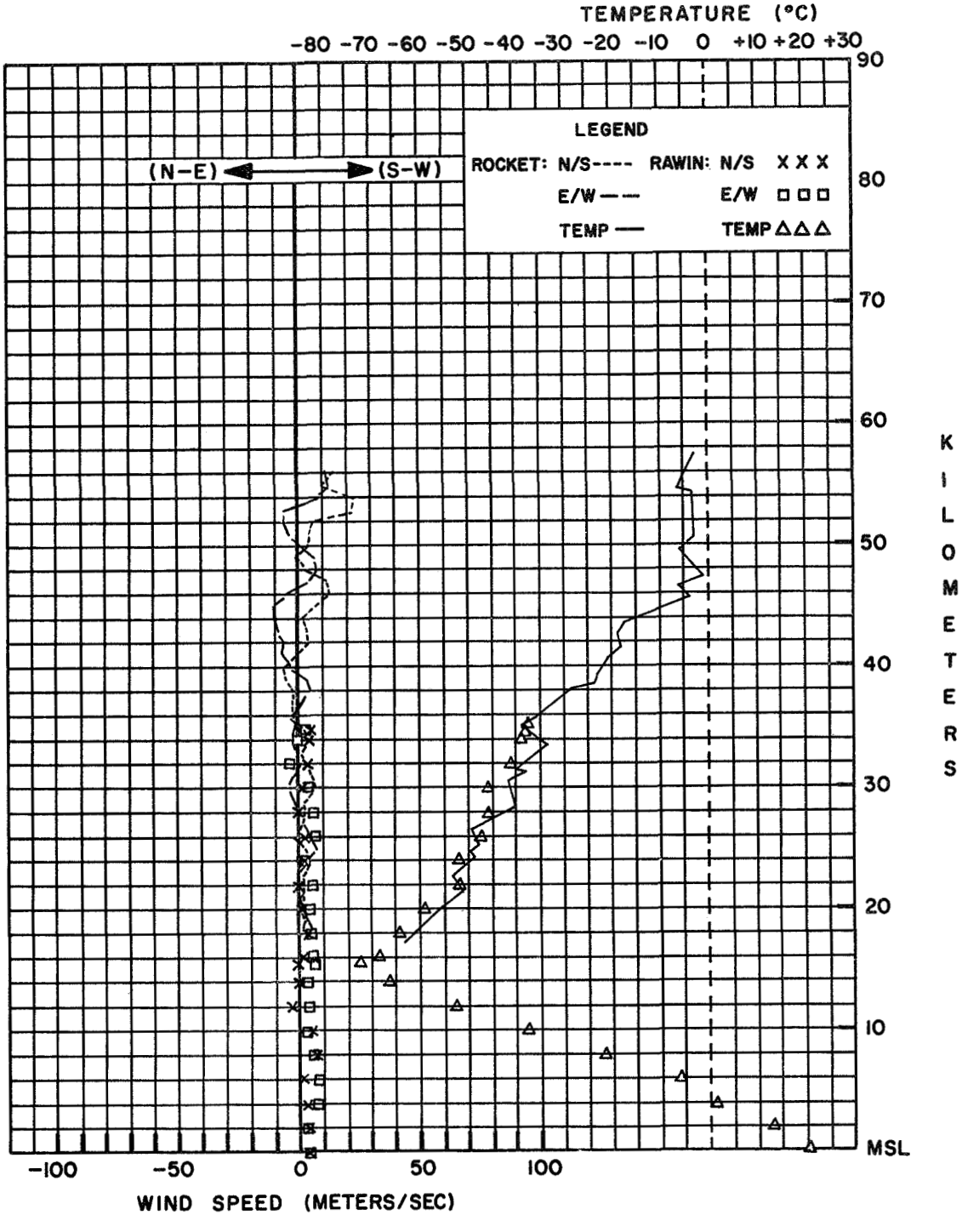
BALLOON TYPE..NEOPRENE

BALLOON SIZE..1,700 GRAMS

WIND AT ROCKET LAUNCH..SFC. 285DEG/06MPS 15M 225DEG/05MPS 31M 225DEG/06MPS
46M 225DEG/06MPS 61M 234DEG/06MPS 76M 237DEG/06MPS

BALLISTIC WIND.. 231° AZIMUTH 06.6 MPS

THERMODYNAMIC BASE DATA..PRESSURE 110.0 MBS
TEMPERATURE -68.3°C
ALTITUDE 16,000 METERS




STATION: (NASA) Wallops Island, Va. ROCKET TIME: 0924 LST 1424 GCT PAYLOAD TYPE: Arcasonde 1A

DATE: 25 September, 1968 ROCKET MOTOR TYPE: Arcas RADIOSONDE TYPE: 1680 MHz

# ROCKET OBSERVATION DATA

RP STATION NAME

87686 (CNIE) MAR CHIQUITA, ARGENTINA

LAT. 37°45'S LONG. 57°25'W

ROCKET LAUNCH

DATE SEPTEMBER 25, 1968 TIME 1959 Z

RAWINSONDE RELEASE

DATE SEPTEMBER 25, 1968 TIME 1959 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 057 | 58 | 270 | 076 | +000 | +076 |
| 043 | 57 | 280 | 074 | -012 | +072 |
| 040 | 56 | 285 | 072 | -018 | +069 |
| 040 | 55 | 285 | 070 | -018 | +067 |
| 033 | 54 | 290 | 067 | -023 | +063 |
| 031 | 53 | 300 | 069 | -035 | +060 |
| 031 | 52 | 300 | 065 | -032 | +056 |
| 030 | 51 | 300 | 066 | -033 | +057 |
| 028 | 50 | 300 | 064 | -032 | +055 |
| 026 | 49 | 285 | 060 | -015 | +057 |
| 026 | 48 | 290 | 059 | -020 | +055 |
| 021 | 47 | 290 | 052 | -018 | +049 |
| 023 | 46 | 290 | 048 | -016 | +045 |
| 026 | 45 | 285 | 050 | -013 | +048 |
| 022 | 44 | 285 | 050 | -013 | +048 |
| 023 | 43 | 275 | 057 | -005 | +057 |
| 021 | 42 | 280 | 057 | -010 | +056 |
| 017 | 41 | 285 | 043 | -011 | +041 |
| 019 | 40 | 280 | 044 | -008 | +043 |
| 016 | 39 | 260 | 051 | +009 | +050 |
| 017 | 38 | 260 | 046 | +008 | +045 |
| 019 | 37 | 260 | 035 | +006 | +034 |
| 017 | 36 | 260 | 030 | +005 | +029 |
| 016 | 35 | 250 | 027 | +009 | +025 |
| 016 | 34 | 240 | 023 | +011 | +020 |
| 015 | 33 | 235 | 025 | +014 | +020 |
| 012 | 32 | 225 | 028 | +020 | +020 |
| 013 | 31 | 225 | 028 | +020 | +020 |
| 014 | 30 | 240 | 025 | +012 | +022 |
| 012 | 29 | 240 | 020 | +010 | +017 |
| 010 | 28 | 245 | 016 | +007 | +015 |
| 011 | 27 | 230 | 016 | +010 | +012 |
| 012 | 26 | 235 | 015 | +008 | +012 |
| 010 | 25 | 235 | 013 | +007 | +011 |
| 010 | 24 | 240 | 012 | +006 | +010 |
| 009 | 23 | 235 | 012 | +007 | +010 |
| 010 | 22 | 230 | 011 | +007 | +008 |
| 008 | 21 | 230 | 007 | +005 | +005 |
| 007 | 20 | 240 | 008 | +004 | +007 |
| 008 | 19 | 250 | 011 | +004 | +010 |
| 008 | 18 | 250 | 012 | +004 | +011 |
| 007 | 17 | 245 | 010 | +004 | +009 |
| 006 | 16 | 240 | 016 | +008 | +014 |

RAWINSONDE

| PRESSURE | ALT IN OR METERS | WIND POLAR | | COMPONENTS MPS | | RH | TEMP |
|---|---|---|---|---|---|---|---|
| MB | | DEG | MPS | N-S | E-W | % | DEG C |
| 1017.5 | 0002 | 080 | 011 | -002 | -011 | 87 | +13.8 |
| 0808.4 | 0200 | 015 | 016 | -015 | -004 | 80 | +06.1 |
| 0628.8 | 0400 | 313 | 013 | -011 | +006 | 96 | -04.0 |
| 0485.2 | 0600 | 330 | 018 | -016 | +009 | 88 | -14.9 |
| 0369.0 | 0800 | 310 | 017 | -011 | +013 | 74 | -28.8 |
| 0276.5 | 1000 | 310 | 025 | -016 | +019 | 60 | -42.7 |
| 0203.6 | 1200 | 279 | 029 | -003 | +029 | | -59.5 |
| 0200.0 | 1208 | 275 | 029 | -003 | +029 | | -58.2 |
| 0148.0 | 1400 | 290 | 023 | -008 | +022 | | -55.1 |
| 0107.7 | 1600 | | | | | | -57.7 |
| 0079.3 | 1800 | | | | | | -53.2 |
| 0054.0 | 2000 | | | | | | -54.0 |
| 0042.1 | 2200 | | | | | | -52.0 |
| 0030.1 | 2400 | | | | | | -50.0 |
| 0030.0 | 2405 | | | | | | -50.0 |

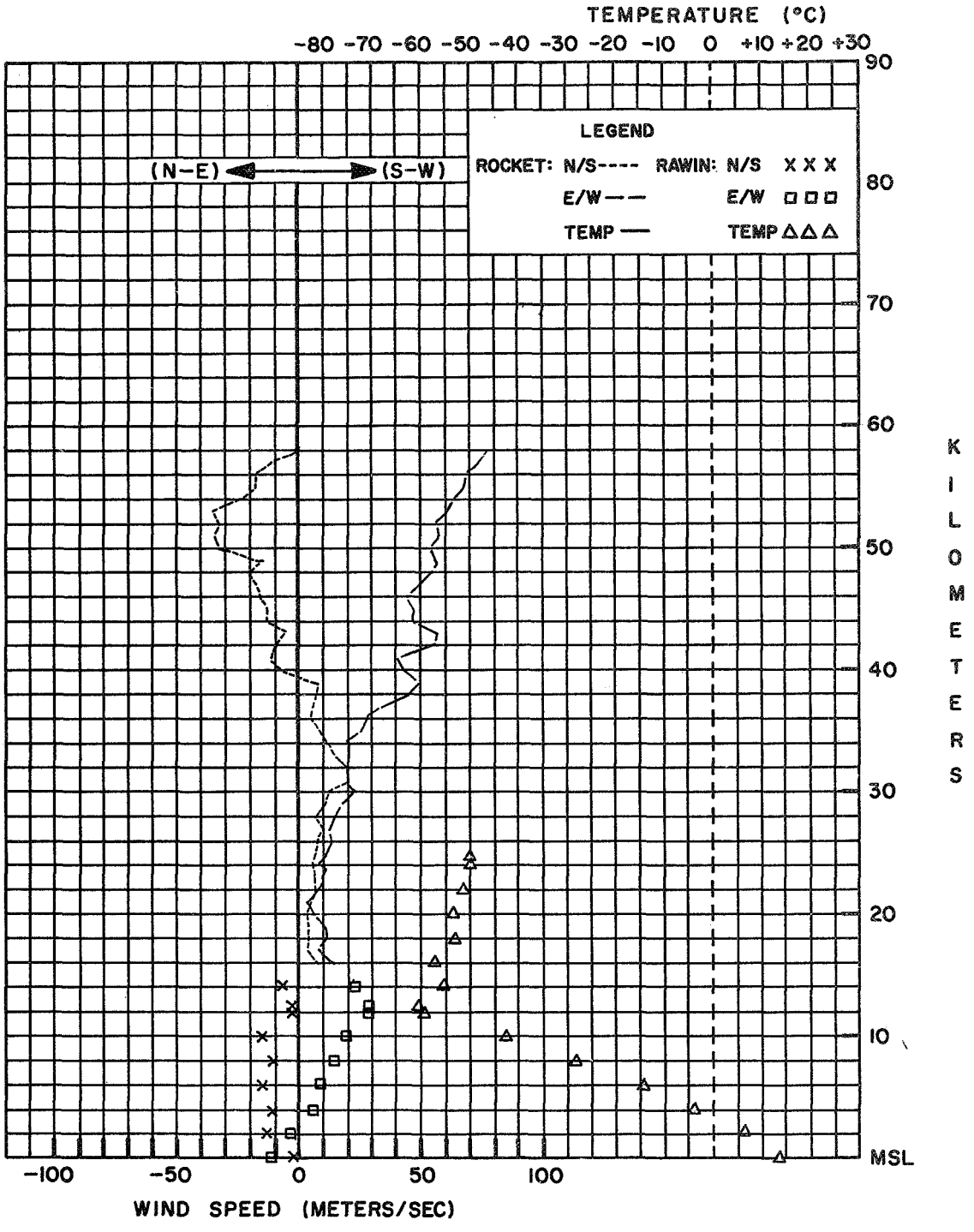
# TECHNICAL DATA

MOTOR TYPE..JUDI
PAYLOAD TYPE..CHAFF
FUSE TYPE..ELECTRICALLY ACTIVATED PYROTECHNIC
LAUNCHER SETTING..085°AZIMUTH 81.5°ELEVATION
RADAR TYPE..MPS-19 APOGEE UNKNOWN METERS
WIND SENSOR TYPE..0.005 INCH S BAND COPPER CHAFF SENSOR FALL-RATE..NOMINAL
TEMPERATURE SENSOR TYPE..N.A.
GROUND EQUIPMENT TYPE..N.A.
REMARKS..NO TRACKING DURING ASCENT. RADAR ON TARGET AT T + 180 SECONDS.

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..110 SEC

RADIOSONDE MANUFACTURER..VAISALA
TEMPERATURE ELEMENT TYPE..RESISTANCE WIRE
PRESSURE SENSOR TYPE..ANEROID
GROUND EQUIPMENT TYPE..VAISALA
WIND AT ROCKET LAUNCH..SFC. 300DEG/09MPS
BALLISTIC WIND.. 295°AZIMUTH 07.8 MPS
THERMODYNAMIC BASE DATA..PRESSURE N.A. MBS
TEMPERATURE N.A. °C
ALTITUDE N.A. METERS

RADIOSONDE TYPE..VAISALA
BALLOON TYPE..NEOPRENE
BALLOON SIZE..1.000 GRAMS




STATION: (CNIE) Mar Chiquita, Arg. ROCKET TIME: 1659 LST 1959 GCT PAYLOAD TYPE: Chaff

DATE: 25 September, 1968 ROCKET MOTOR TYPE: Judi RADIOSONDE TYPE: Vaisala

# ROCKET OBSERVATION DATA

RP SECTION 0416

87489 (CNIE) MAR CHIQUITA, ARGENTINA

LAT. 37°44' S LONG. 57°25' W

ROCKET LAUNCH

DATE OCTOBER 2, 1968 TIME 1520 Z

RAWINSONDE RELEASE

DATE OCTOBER 2, 1968 TIME 1450 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | MPS | COMPONENTS MPS N-S | E-W |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 041 | 61 | 274 | 015 | -001 | +015 |
| 048 | 59 | 294 | 025 | -006 | +024 |
| 048 | 58 | 285 | 036 | -010 | +035 |
| 036 | 57 | 290 | 042 | -014 | +039 |
| 038 | 56 | 300 | 044 | -022 | +038 |
| 043 | 55 | 303 | 052 | -028 | +043 |
| 041 | 54 | 303 | 054 | -029 | +045 |
| 037 | 53 | 294 | 049 | -019 | +045 |
| 033 | 52 | 287 | 051 | -015 | +049 |
| 029 | 51 | 300 | 047 | -023 | +041 |
| 026 | 50 | 310 | 047 | -024 | +040 |
| 026 | 49 | 300 | 045 | -022 | +039 |
| 025 | 48 | 288 | 047 | -013 | +045 |
| 025 | 47 | 274 | 048 | -007 | +047 |
| 024 | 46 | 282 | 050 | -010 | +049 |
| 021 | 45 | 297 | 053 | -024 | +047 |
| MISSING DATA | | | | | |
| 017 | 40 | 290 | 047 | -016 | +044 |
| 017 | 39 | 287 | 046 | -013 | +044 |
| 017 | 38 | 290 | 034 | -012 | +032 |
| 017 | 37 | 284 | 030 | -007 | +029 |
| 017 | 36 | 278 | 024 | -003 | +024 |
| 012 | 35 | 276 | 018 | -003 | +018 |
| 013 | 34 | 276 | 014 | -002 | +013 |
| 016 | 33 | 280 | 020 | -004 | +020 |
| 013 | 32 | 290 | 023 | -008 | +022 |
| 013 | 31 | 285 | 029 | -008 | +028 |
| 013 | 30 | 281 | 033 | -006 | +032 |
| 012 | 29 | 282 | 031 | -006 | +030 |
| 012 | 28 | 286 | 031 | -009 | +030 |
| 011 | 27 | 277 | 029 | -004 | +029 |
| 010 | 26 | 284 | 029 | -007 | +028 |
| 010 | 25 | 293 | 027 | -006 | +026 |
| 010 | 24 | 293 | 024 | -008 | +023 |
| 009 | 23 | 300 | 019 | -010 | +016 |
| 009 | 22 | 290 | 015 | -005 | +014 |
| 009 | 21 | 280 | 017 | -003 | +017 |
| 009 | 20 | 290 | 018 | -006 | +017 |
| 008 | 19 | 290 | 015 | -005 | +014 |
| 007 | 18 | 293 | 018 | -007 | +017 |
| 008 | 17 | 290 | 026 | -009 | +024 |

RAWINSONDE

| PRESSURE | ALT IN METERS OR | WIND POLAR | MPS | COMPONENTS MPS N-S | E-W | RH | TEMP |
|---|---|---|---|---|---|---|---|
| MB | METERS | DEG | MPS | N-S | E-W | % | DEG C |
| 1023.9 | 0002 | 120 | 010 | +005 | -009 | 82 | +12.6 |
| 0803.5 | 0200 | 253 | 012 | +004 | +011 | 10 | +02.8 |
| 0626.2 | 0400 | 269 | 026 | +000 | +026 | 56 | -06.8 |
| 0482.0 | 0600 | 292 | 041 | -015 | +038 | 59 | -17.4 |
| 0366.5 | 0800 | 280 | 046 | -008 | +045 | 52 | -31.9 |
| 0274.8 | 1000 | 281 | 059 | -011 | +058 | | -44.6 |
| 0203.0 | 1200 | 283 | 059 | -013 | +058 | | -54.8 |
| 0148.0 | 1400 | 287 | 057 | -017 | +054 | | -57.0 |
| 0107.9 | 1600 | 278 | 028 | -004 | +028 | | -57.0 |
| 0079.7 | 1800 | 292 | 018 | -007 | +017 | | -54.8 |
| 0059.1 | 2000 | 290 | 017 | -006 | +016 | | -51.9 |
| 0041.3 | 2200 | 294 | 021 | -009 | +019 | | -49.1 |
| 0031.8 | 2400 | | | | | | -47.0 |
| 0027.5 | 2600 | | | | | | -45.0 |
| 0017.5 | 2800 | | | | | | -43.0 |

# TECHNICAL DATA

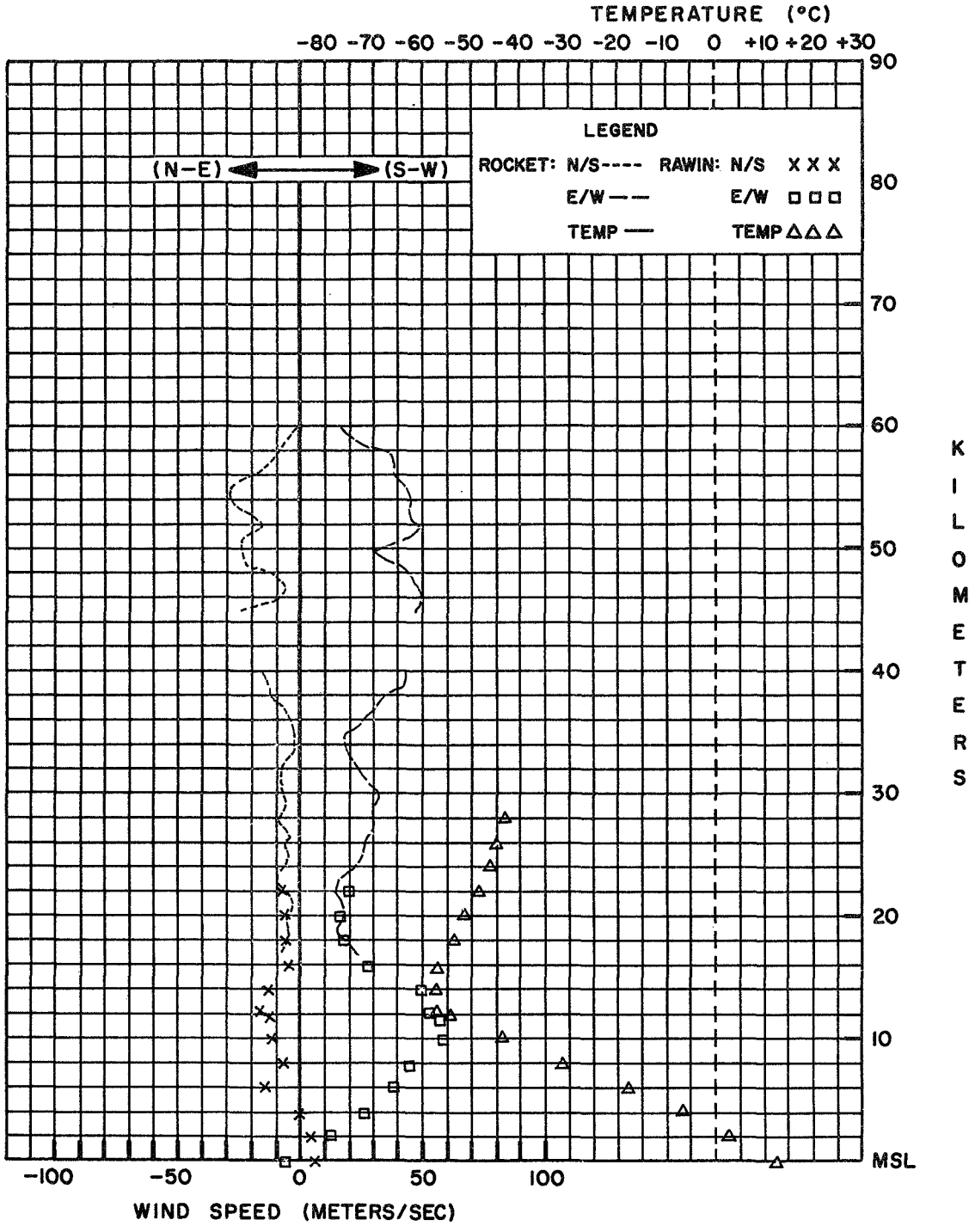
MOTOR TYPE..JUPI
PAYLOAD TYPE..C AFF
FUSE TYPE..ELECTRICALLY ACTIVATED PYROTECHNIC
LAUNCHER SETTING..080°AZIMUTH 83.5°ELEVATION
RADAR TYPE..MPS-19 APOGEE 65,000 METERS
WIND SENSOR TYPE..0.005 INCH S BAND COPPER CHAFF
TEMPERATURE SENSOR TYPE..N.A.
GROUND EQUIPMENT TYPE..N.A.
REMARKS..MISSING DATA BETWEEN 45 KM. AND 40 KM. DUE TO UNRELIABLE ALTITUDE TRACE.

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..110 SEC

SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..VAISALA
TEMPERATURE ELEMENT TYPE..RESISTANCE WIRE
PRESSURE SENSOR TYPE..ANEROID
GROUND EQUIPMENT TYPE..VAISALA
WIND AT ROCKET LAUNCH..SFC. 100DEG/03MPS
BALLISTIC WIND.. 110°AZIMUTH 04.8 MPS
THERMODYNAMIC BASE DATA..PRESSURE N.A. MBS
TEMPERATURE N.A. C
ALTITUDE N.A. METERS

RADIOSONDE TYPE..VAISALA
BALLOON TYPE..LATEX
BALLOON SIZE..1,200 GRAMS




STATION: (CNIE) Mar Chiquita, Arg. ROCKET TIME: 1220 LST 1520 GCT PAYLOAD TYPE: Chaff

DATE: 2 October, 1968 ROCKET MOTOR TYPE: Judi RADIOSONDE TYPE: Vaisala

# ROCKET OBSERVATION DATA

RP STATION NAME

72402 (NASA) WALLOPS ISLAND, VIRGINIA

LAT. 37° 51' N LONG. 75° 29' W

ROCKET LAUNCH

DATE OCTOBER 2, 1968 TIME 1745 Z

RAWINSONDE RELEASE

DATE OCTOBER 2, 1968 TIME 2315 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | WIND COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 110 | 57 | 211 | 030 | +026 | +016 |
| 090 | 56 | 228 | 024 | +016 | +017 |
| 083 | 55 | 220 | 018 | +014 | +012 |
| 087 | 54 | 221 | 016 | +012 | +011 |
| 077 | 53 | 247 | 021 | +008 | +019 |
| 080 | 52 | 251 | 017 | +006 | +016 |
| 080 | 51 | 237 | 009 | +005 | +008 |
| 077 | 50 | 223 | 008 | +006 | +006 |
| 071 | 49 | 209 | 009 | +008 | +006 |
| 061 | 48 | 239 | 008 | +004 | +007 |
| 061 | 47 | 253 | 007 | +002 | +006 |
| 054 | 46 | 265 | 009 | +001 | +009 |
| 045 | 45 | 231 | 010 | +006 | +008 |
| 046 | 44 | 209 | 012 | +010 | +006 |
| 045 | 43 | 219 | 009 | +007 | +005 |
| 038 | 42 | 246 | 007 | +003 | +007 |
| 036 | 41 | 243 | 012 | +006 | +011 |
| 033 | 40 | 253 | 018 | +005 | +017 |
| 030 | 39 | 242 | 014 | +007 | +013 |
| 029 | 38 | 208 | 009 | +008 | +004 |
| 027 | 37 | 210 | 003 | +003 | +002 |
| 024 | 36 | 225 | 006 | +004 | +004 |
| 022 | 35 | 237 | 007 | +004 | +006 |
| 021 | 34 | 250 | 007 | +002 | +006 |
| 019 | 33 | 263 | 007 | +001 | +007 |
| 018 | 32 | 234 | 005 | +003 | +004 |
| 017 | 31 | 220 | 002 | +002 | +001 |
| 015 | 30 | 183 | 003 | +003 | +000 |
| 013 | 29 | 166 | 003 | +003 | -001 |
| 013 | 28 | 152 | 005 | +004 | -002 |
| 010 | 27 | 140 | 006 | +004 | -004 |
| 008 | 26 | 149 | 004 | +004 | -002 |
| 008 | 25 | 159 | 005 | +005 | -002 |
| 008 | 24 | 170 | 006 | +006 | -001 |
| 006 | 23 | 217 | 005 | +004 | +003 |
| 006 | 22 | 242 | 007 | +003 | +006 |
| 006 | 21 | 227 | 010 | +007 | +008 |
| 005 | 20 | 230 | 007 | +005 | +005 |
| 005 | 19 | 251 | 009 | +003 | +008 |
| 005 | 18 | 247 | 013 | +005 | +012 |

ROCKET THERMODYNAMICS

| ALT TENS OF METERS | TEMP DEG C | PRESSURE MB | DENSITY G M -3 | WIND POLAR DEG | WIND POLAR MPS | WIND COMPONENTS MPS N-S | WIND COMPONENTS MPS E-W |
|---|---|---|---|---|---|---|---|
| 5873 | -05.4 | 00.285 | 00.371 | | | | |
| 5685 | -10.9 | 00.361 | 00.480 | 213 | 030 | +025 | +016 |
| 5569 | -07.4 | 00.419 | 00.549 | 226 | 022 | +015 | +016 |
| 5322 | -03.8 | 00.571 | 00.734 | 242 | 020 | +009 | +018 |
| 5142 | -03.9 | 00.715 | 00.925 | 242 | 012 | +006 | +011 |
| 5071 | -01.1 | 00.781 | 01.000 | 233 | 009 | +005 | +007 |
| 4919 | +00.3 | 00.942 | 01.200 | 211 | 009 | +007 | +005 |
| 4606 | -01.1 | 01.386 | 01.774 | 264 | 009 | +001 | +009 |
| 4450 | -07.3 | 01.684 | 02.207 | 220 | 011 | +009 | +007 |
| 4365 | -06.9 | 01.876 | 02.454 | 212 | 011 | +009 | +005 |
| 4292 | -14.1 | 02.060 | 02.770 | 222 | 009 | +006 | +006 |
| 4164 | -17.2 | 02.435 | 03.315 | 245 | 009 | +004 | +008 |
| 4069 | -23.8 | 02.764 | 03.862 | 246 | 014 | +006 | +013 |
| 3984 | -24.8 | 03.102 | 04.351 | 251 | 017 | +006 | +016 |
| 3929 | -22.4 | 03.341 | 04.642 | 245 | 015 | +007 | +014 |
| 3874 | -22.7 | 03.598 | 05.005 | 232 | 013 | +008 | +010 |
| 3837 | -27.4 | 03.783 | 05.363 | 222 | 011 | +008 | +007 |
| 3664 | -36.7 | 04.820 | 07.102 | 216 | 004 | +003 | +002 |
| 3514 | -35.5 | 05.968 | 08.749 | 236 | 007 | +004 | +006 |
| 3490 | -39.2 | 06.177 | 09.198 | 239 | 007 | +004 | +006 |
| 3231 | -35.8 | 08.954 | 13.142 | 243 | 005 | +002 | +005 |
| 3164 | -40.0 | 09.859 | 14.731 | 228 | 004 | +002 | +003 |
| 3048 | -40.0 | 11.664 | 17.429 | 201 | 002 | +002 | +001 |
| 2944 | -45.2 | 13.587 | 20.766 | 173 | 003 | +003 | +000 |
| 2874 | -44.2 | 15.172 | 22.934 | 162 | 004 | +003 | -001 |
| 2679 | -49.5 | 20.178 | 31.429 | 142 | 005 | +004 | -003 |
| 2320 | -54.6 | 34.965 | 55.737 | 207 | 005 | +005 | +002 |
| 2237 | -52.1 | 39.740 | 62.632 | 232 | 006 | +004 | +005 |
| 2088 | -56.1 | 50.050 | 80.335 | 227 | 010 | +007 | +007 |
| 2000 | -53.3 | 57.379 | 90.925 | 230 | 007 | +005 | +005 |
| 1850 | -59.7 | | | 249 | 011 | +004 | +010 |
| 1728 | -58.0 | | | | | | |

CONSTANT PRESSURE SURFACES (GEOPOTENTIAL HEIGHT)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2082 | -56.1 | 50.000 | 80.248 | 227 | 010 | +007 | +007 |
| 2410 | -53.1 | 30.000 | 47.499 | 168 | 006 | +006 | -001 |
| 2673 | -49.3 | 20.000 | 31.131 | 142 | 005 | +004 | -003 |
| 3138 | -48.0 | 10.000 | 14.942 | 227 | 004 | +002 | +003 |
| 3385 | -39.0 | 07.000 | 10.373 | 250 | 007 | +002 | +006 |
| 3617 | -36.5 | 05.000 | 07.360 | 219 | 005 | +004 | +003 |
| 3983 | -24.6 | 03.000 | 04.205 | 252 | 017 | +005 | +016 |
| 4285 | -11.9 | 02.000 | 02.667 | 218 | 009 | +007 | +005 |
| 4833 | +00.1 | 01.000 | 01.275 | 218 | 008 | +007 | +005 |

RAWINSONDE

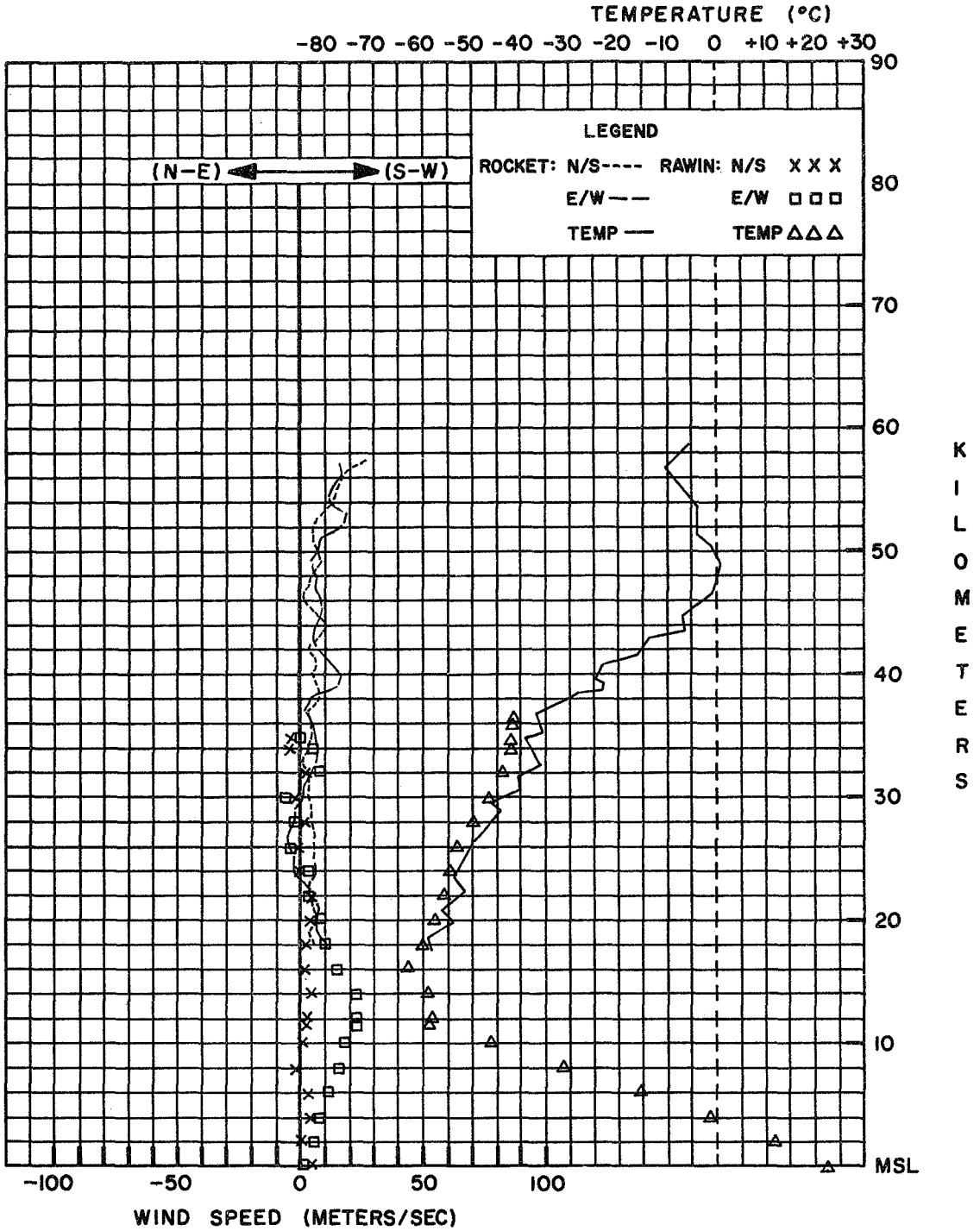
| PRESSURE MB | ALT TENS OF METERS | WIND POLAR DEG | WIND POLAR MPS | WIND COMPONENTS MPS N-S | WIND COMPONENTS MPS E-W | RH % | TEMP DEG C |
|---|---|---|---|---|---|---|---|
| 1017.0 | 0000 | 210 | 006 | +005 | +003 | 80 | +23.3 |
| 0806.0 | 0200 | 270 | 004 | +000 | +004 | 25 | +12.3 |
| 0631.0 | 0400 | 260 | 004 | +004 | +008 | 39 | -00.9 |
| 0487.0 | 0600 | 261 | 011 | +002 | +011 | 26 | -15.3 |
| 0371.0 | 0800 | 275 | 016 | -001 | +016 | 48 | -30.2 |
| 0277.0 | 1000 | 266 | 018 | +001 | +018 | | -46.0 |
| 0208.0 | 1190 | 265 | 023 | +002 | +023 | | -58.4 |
| 0205.0 | 1200 | 265 | 023 | +002 | +023 | | -58.3 |
| 0149.0 | 1400 | 260 | 022 | +004 | +021 | | -59.6 |
| 0108.0 | 1600 | 265 | 014 | +011 | +014 | | -62.6 |
| 0078.0 | 1800 | 257 | 010 | +002 | +010 | | -60.0 |
| 0057.0 | 2000 | 242 | 009 | +004 | +008 | | -57.5 |
| 0042.0 | 2200 | 215 | 003 | +003 | +002 | | -55.3 |
| 0031.0 | 2400 | 266 | 003 | +000 | +003 | | -54.0 |
| 0023.0 | 2600 | 074 | 002 | -001 | -002 | | -52.4 |
| 0017.0 | 2800 | 114 | 003 | +001 | -002 | | -50.0 |
| 0012.5 | 3000 | 080 | 006 | -001 | -006 | | -46.2 |
| 0009.2 | 3200 | 255 | 007 | +002 | +007 | | -43.5 |
| 0006.7 | 3400 | 315 | 006 | -004 | +004 | | -42.3 |
| 0006.0 | 3489 | 351 | 003 | -003 | +000 | | -41.9 |
| 0005.1 | 3600 | | | | | | -41.3 |
| 0005.0 | 3611 | | | | | | -41.3 |

## TECHNICAL DATA

MOTOR TYPE..ARCAS
PAYLOAD TYPE..ARCASONDE-1A
FUSE TYPE..GAS GENERATED SEPARATION DEVICE
LAUNCHER SETTING..093° AZIMUTH 81.0° ELEVATION
RADAR TYPE..FPS-16 APOGEE 60,810 METERS
WIND SENSOR TYPE..1.5 FT. DIAMETER PARACHUTE
TEMPERATURE SENSOR TYPE..0.010 INCH BEAD THERMISTOR
GROUND EQUIPMENT TYPE..GMD-1B
REMARKS..NONE

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..140 SEC
SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..MOLDED INSULATION CO. RADIOSONDE TYPE..1680 MHZ
TEMPERATURE ELEMENT TYPE..ROD THERMISTOR BALLOON TYPE..NEOPRENE
PRESSURE SENSOR TYPE..ANEROID AND HYPSOMETER BALLOON SIZE..1,200 GRAMS
GROUND EQUIPMENT TYPE..GMD-1B
WIND AT ROCKET LAUNCH..SFC. 182DEG/06MPS 15M 170DEG/06MPS 31M 177DEG/05MPS
46M 171DEG/05MPS 61M 178DEG/06MPS 76M 179DEG/06MPS
BALLISTIC WIND.. 197° AZIMUTH 05.8 MPS
THERMODYNAMIC BASE DATA..PRESSURE 1018.0 MBS
TEMPERATURE +62.6°C
ALTITUDE 16,000 METERS




STATION: (NASA) Wallops Island, Va. ROCKET TIME: 1245 LST 1745 GCT PAYLOAD TYPE: Arcasonde 1A

DATE: 2 October, 1968 ROCKET MOTOR TYPE: Arcas RADIOSONDE TYPE: 1680 MHZ

# ROCKET OBSERVATION DATA

WP STATION NAME

87689 (CNIF) MAR CHIQUITA, ARGENTINA

LAT. 37° 45' S LONG. 57° 25' W

ROCKET LAUNCH

DATE OCTOBER 10, 1968 TIME 1835 Z

RAWINSJNDE RELEASE

DATE OCTOBER 10, 1968 TIME 1350 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | WIND COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 074 | 50 | 309 | 028 | -018 | +022 |
| 066 | 49 | 307 | 024 | -014 | +019 |
| 066 | 48 | 307 | 020 | -012 | +016 |
| 062 | 47 | 321 | 022 | -017 | +014 |
| 055 | 46 | 336 | 022 | -020 | +010 |
| 052 | 45 | 329 | 023 | -020 | +012 |
| 051 | 44 | 320 | 024 | -019 | +015 |
| 050 | 43 | 322 | 022 | -017 | +014 |
| 046 | 42 | 337 | 022 | -020 | +009 |
| 043 | 41 | 324 | 018 | -015 | +011 |
| 038 | 40 | 317 | 011 | -008 | +007 |
| 031 | 39 | 324 | 015 | -013 | +008 |
| 033 | 34 | 324 | 021 | -018 | +011 |
| 035 | 37 | 318 | 018 | -013 | +012 |
| 028 | 36 | 310 | 016 | -010 | +012 |
| 026 | 35 | 304 | 016 | -009 | +013 |
| 023 | 34 | 303 | 022 | -012 | +018 |
| 021 | 33 | 287 | 019 | -006 | +018 |
| 019 | 32 | 304 | 018 | -011 | +014 |
| 018 | 31 | 335 | 022 | -020 | +009 |
| 016 | 30 | 338 | 017 | -016 | +006 |
| 016 | 29 | 319 | 015 | -011 | +010 |
| 014 | 28 | 304 | 018 | -010 | +015 |
| 014 | 27 | 305 | 019 | -011 | +016 |
| 012 | 26 | 300 | 017 | -009 | +015 |
| 010 | 25 | 304 | 016 | -009 | +013 |
| 009 | 24 | 313 | 013 | -009 | +010 |
| 009 | 23 | 315 | 011 | -008 | +008 |
| 008 | 22 | 300 | 013 | -007 | +011 |
| 008 | 21 | 303 | 014 | -008 | +012 |
| 007 | 20 | 302 | 015 | -008 | +013 |
| 006 | 19 | 297 | 013 | -006 | +012 |
| 006 | 18 | 290 | 011 | -004 | +010 |

RAWINSONDE

| PRESSURE MB | ALT IENS OF METERS | WIND POLAR DEG | MPS | WIND COMPONENTS MPS N-S | E-W | RH % | TEMP DEG C |
|---|---|---|---|---|---|---|---|
| 1022.7 | 0002 | 070 | 005 | -002 | +005 | 81 | +13.4 |
| 0804.6 | 0200 | 044 | 006 | -004 | -004 | 15 | +06.0 |
| 0628.5 | 0400 | 270 | 002 | +000 | +002 | 12 | -06.0 |
| 0482.7 | 0600 | 265 | 011 | +001 | +011 | 21 | -18.8 |
| 0377.0 | 0800 | 265 | 019 | +002 | +019 | 22 | -31.1 |
| 0275.0 | 1000 | 247 | 030 | +012 | +027 | 25 | -43.3 |
| 0242.0 | 1065 | 247 | 030 | +012 | +027 | | -48.1 |
| 0204.3 | 1200 | 250 | 036 | +012 | +034 | | -48.0 |
| 0150.1 | 1400 | 260 | 028 | +005 | +027 | | -51.0 |
| 0110.8 | 1600 | 252 | 020 | +006 | +019 | | -53.6 |
| 0081.0 | 1800 | 260 | 018 | +003 | +018 | | -55.6 |
| 0059.7 | 2000 | 290 | 015 | -005 | +014 | | -51.3 |
| 0043.9 | 2200 | 300 | 006 | -003 | +005 | | -51.4 |
| 0032.2 | 2400 | 320 | 013 | -010 | +008 | | -51.7 |
| 0024.0 | 2600 | 308 | 018 | -011 | +014 | | -49.6 |
| 0017.8 | 2800 | 308 | 020 | -012 | +016 | | -46.6 |
| 0013.3 | 3000 | | | | | | -43.1 |
| 0009.7 | 3200 | | | | | | -41.0 |
| 0007.3 | 3400 | | | | | | -38.5 |
| 0006.3 | 3480 | | | | | | -37.2 |

# TECHNICAL DATA

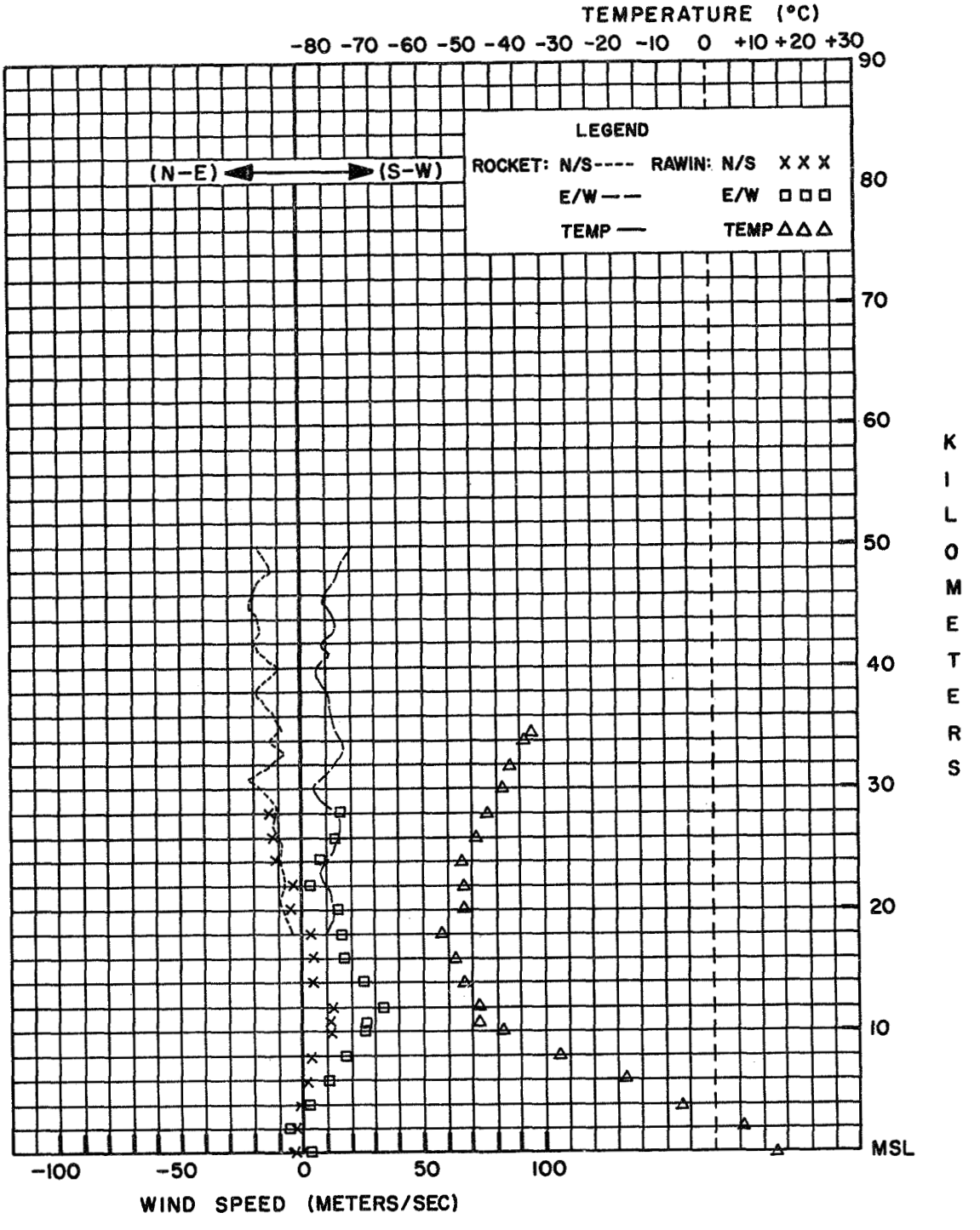
MOTOR TYPE..ARCAS
PAYLOAD TYPE..ARCASONDE-14
FUSE TYPE..GAS GENERATED SEPARATION DEVICE
LAUNCHER SETTING..074° AZIMUTH 83.0° ELEVATION
RADAR TYPE..MPS-19 APOGEE 51,907 METERS
WIND SENSOR TYPE..15 FT. DIAMETER PARACHUTE
TEMPERATURE SENSOR TYPE..0.010 INCH HEAD THERMISTOR
GROUND EQUIPMENT TYPE..GMD-2B
REMARKS..LOW RF LEVEL FROM PAYLOAD IMPAIRED DATA QUALITY.

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..POOR
ACTUAL FUSE DELAY TIME..130 SEC

SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..VAISALA
TEMPERATURE ELEMENT TYPE..RESISTANCE WIRE
PRESSURE SENSOR TYPE..ANEROID
GROUND EQUIPMENT TYPE..VAISALA
WIND AT ROCKET LAUNCH..SFC. 020DEG/06MPS
BALLISTIC WIND.. 048° AZIMUTH 07.7 MPS
THERMODYNAMIC BASE DATA..PRESSURE N.A. MBS
TEMPERATURE N.A. C
ALTITUDE N.A. METERS

RADIOSONDE TYPE..VAISALA
BALLOON TYPE..LATEX
BALLOON SIZE..1,200 GRAMS




STATION: (CNIE) Mar Chiquita, Arg. ROCKET TIME: 1535 LST 1835 GCT PAYLOAD TYPE: Arcasonde 1A

DATE: 10 October, 1968 ROCKET MOTOR TYPE: Arcas RADIOSONDE TYPE: Vaisala

# ROCKET OBSERVATION DATA

RP STATION NAME

72402 (NASA) WALLOPS ISLAND, VIRGINIA

LAT. 37°51'N LONG. 75°29'W

ROCKET LAUNCH

DATE OCTOBER 11, 1968 TIME 1517 Z

RAWINSONDE RELEASE

DATE OCTOBER 11, 1968 TIME 1145 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 125 | 64 | 257 | 036 | +008 | +035 |
| 125 | 63 | 259 | 030 | +006 | +030 |
| 111 | 62 | 253 | 030 | +009 | +029 |
| 100 | 61 | 242 | 035 | +016 | +031 |
| 100 | 60 | 243 | 046 | +020 | +041 |
| 095 | 59 | 250 | 049 | +017 | +046 |
| 090 | 58 | 253 | 050 | +015 | +048 |
| 080 | 57 | 246 | 056 | +023 | +051 |
| 071 | 56 | 246 | 054 | +022 | +049 |
| 064 | 55 | 248 | 047 | +017 | +044 |
| 062 | 54 | 253 | 046 | +013 | +044 |
| 059 | 53 | 257 | 045 | +010 | +044 |
| 057 | 52 | 253 | 044 | +013 | +042 |
| 054 | 51 | 253 | 043 | +012 | +041 |
| 049 | 50 | 255 | 042 | +011 | +041 |
| 046 | 49 | 245 | 043 | +018 | +039 |
| 048 | 48 | 243 | 039 | +017 | +035 |
| 044 | 47 | 251 | 038 | +013 | +036 |
| 039 | 46 | 253 | 037 | +011 | +035 |
| 039 | 45 | 252 | 032 | +010 | +031 |
| 037 | 44 | 261 | 030 | +005 | +030 |
| 031 | 43 | 265 | 029 | +002 | +029 |
| 031 | 42 | 267 | 030 | +002 | +030 |
| 033 | 41 | 273 | 030 | -002 | +030 |
| 033 | 40 | 270 | 027 | +000 | +027 |
| 033 | 39 | 266 | 027 | +002 | +027 |
| 027 | 38 | 266 | 026 | +002 | +026 |
| 025 | 37 | 270 | 024 | +000 | +024 |
| 025 | 36 | 268 | 021 | +001 | +021 |
| 020 | 35 | 259 | 020 | +004 | +019 |
| 019 | 34 | 256 | 017 | +004 | +017 |
| 018 | 33 | 262 | 014 | +002 | +014 |
| 017 | 32 | 257 | 011 | +003 | +011 |
| 014 | 31 | 256 | 010 | +002 | +010 |
| 013 | 30 | 263 | 008 | +001 | +008 |
| 013 | 29 | 264 | 005 | +000 | +005 |
| 011 | 28 | 275 | 005 | +000 | +005 |
| 010 | 27 | 277 | 006 | -001 | +006 |
| 009 | 26 | 271 | 006 | +000 | +006 |
| 010 | 25 | 281 | 005 | -001 | +005 |
| 009 | 24 | 298 | 007 | -003 | +006 |
| 006 | 23 | 277 | 006 | -001 | +006 |
| 006 | 22 | 264 | 006 | +001 | +006 |
| 006 | 21 | 292 | 007 | -002 | +006 |
| 005 | 20 | 302 | 009 | -005 | +008 |
| 004 | 19 | 285 | 009 | -002 | +009 |

RAWINSONDE

| PRESSURE | ALT IN TENS OF | WIND POLAR | | COMPONENTS MPS | | RH | TEMP |
|---|---|---|---|---|---|---|---|
| MB | METERS | DEG | MPS | N-S | E-W | % | DEG C |
| 1025.0 | 0000 | 030 | 002 | -002 | -001 | 90 | +14.4 |
| 0908.0 | 0900 | 313 | 004 | -003 | +003 | 77 | +06.8 |
| 0831.0 | 0400 | 299 | 008 | -004 | +007 | 27 | -01.1 |
| 0787.0 | 0600 | 309 | 012 | -007 | +009 | 31 | -13.6 |
| 0372.0 | 0800 | 297 | 017 | -008 | +015 | 39 | -29.8 |
| 0240.0 | 1000 | 302 | 023 | -012 | +020 | | -44.9 |
| 0204.5 | 1200 | 302 | 023 | -012 | +020 | | -51.8 |
| 0194.0 | 1232 | 300 | 024 | -012 | +021 | | -54.2 |
| 0148.5 | 1400 | 296 | 023 | -010 | +021 | | -63.4 |
| 0107.0 | 1600 | 292 | 016 | -006 | +015 | | -65.0 |
| 0077.7 | 1800 | 296 | 012 | -005 | +011 | | -62.2 |
| 0056.2 | 2000 | 301 | 011 | -006 | +009 | | -59.7 |
| 0040.5 | 2200 | 294 | 005 | -003 | -005 | | -57.1 |
| 0029.7 | 2400 | 288 | 004 | -001 | +004 | | -54.4 |
| 0022.2 | 2600 | 254 | 005 | +001 | +005 | | -51.8 |
| 0016.3 | 2800 | 264 | 007 | +001 | +007 | | -49.3 |
| 0012.2 | 3000 | 274 | 008 | -001 | +008 | | -46.9 |
| 0008.9 | 3200 | 284 | 010 | -002 | +010 | | -41.3 |
| 0006.8 | 3387 | 288 | 012 | -004 | +011 | | -42.1 |

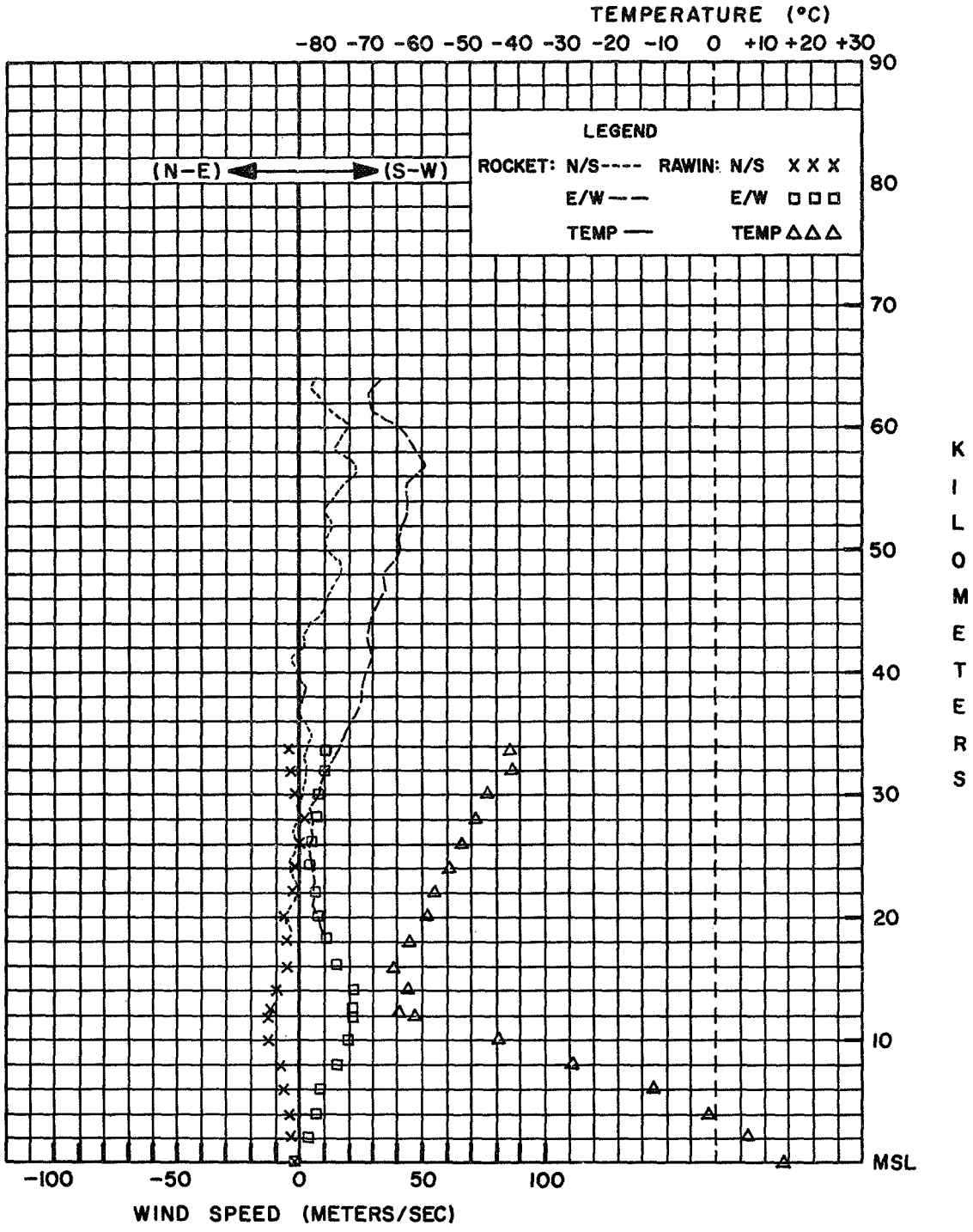
# TECHNICAL DATA

MOTOR TYPE..5 INCH GUN PROBE
PAYLOAD TYPE..PARACHUTE
FUSE TYPE..ELECTRICALLY ACTIVATED PYROTECHNIC
LAUNCHER SETTING..130° AZIMUTH 86.0° ELEVATION
RADAR TYPE..FPS-16 APOGEE 68425 METERS
WIND SENSOR TYPE..5 FT. SQUARE PARACHUTE
TEMPERATURE SENSOR TYPE..N.A.
GROUND EQUIPMENT TYPE..N.A.
REMARKS..NONE

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..126 SEC

SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..MOLDED INSULATION CO. RADIOSONDE TYPE..1680 MHZ
TEMPERATURE ELEMENT TYPE..ROD THERMISTOR H-LLOON TYPE..NEOPRENE
PRESSURE SENSOR TYPE..ANEROID AND HYPSOMETER H-LLOON SIZE..1200 GRAMS
GROUND EQUIPMENT TYPE..GMD-1H
WIND AT ROCKET LAUNCH..SFC. 096DEG/03MPS 15M 053DEG/02MPS 31M 045DEG/02MPS
46M 053DEG/02MPS 61M 053DEG/02MPS 76M 059DEG/03MPS
BALLISTIC WIND.. N.A. AZIMUTH N.A. MPS
THERMODYNAMIC BASE DATA..PRESSURE N.A. MMS
TEMPERATURE N.A. C
ALTITUDE N.A. METERS




STATION: (NASA) Wallops Island, Va. ROCKET TIME: 1217 LST 1517 GCT PAYLOAD TYPE: Parachute

DATE: 11 October, 1968 ROCKET MOTOR TYPE: Gun Probe RADIOSONDE TYPE: 1680 MHZ

# ROCKET OBSERVATION DATA

WP STATION NAME

W2599 (CNAE) NATAL, BRAZIL

LAT. 05° 55' S LONG. 35° 10' W

ROCKET LAUNCH

DATE OCTOBER 16, 1968 TIME 1514 Z

RAWINSONDE RELEASE

DATE OCTOBER 16, 1968 TIME 1124 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 068 | 51 | 243 | 018 | +008 | +016 |
| 071 | 50 | 298 | 016 | -006 | +016 |
| 069 | 49 | 276 | 031 | -003 | +031 |
| 060 | 48 | 261 | 031 | +005 | +030 |
| 060 | 47 | 277 | 018 | -002 | +018 |
| 052 | 46 | 269 | 028 | +001 | +028 |
| 048 | 45 | 265 | 027 | +002 | +026 |
| 045 | 44 | 270 | 018 | +000 | +018 |
| 043 | 43 | 295 | 012 | -005 | +011 |
| 038 | 42 | 319 | 007 | -005 | +005 |
| 035 | 41 | 049 | 002 | -001 | -002 |
| 031 | 40 | 084 | 003 | +000 | -003 |
| 030 | 39 | 123 | 008 | +004 | -007 |
| 026 | 38 | 171 | 009 | +009 | -002 |
| 026 | 37 | 284 | 014 | -003 | +014 |
| 025 | 36 | 236 | 012 | +007 | +010 |
| 025 | 35 | 249 | 019 | +007 | +018 |
| 022 | 34 | 259 | 016 | +003 | +016 |
| 020 | 33 | 240 | 016 | +008 | +014 |
| 019 | 32 | 243 | 019 | +009 | +017 |
| 016 | 31 | 278 | 017 | -002 | +017 |
| 015 | 30 | 290 | 016 | -005 | +015 |
| 014 | 29 | 270 | 009 | +000 | +009 |
| 012 | 28 | 251 | 005 | +002 | +004 |
| 011 | 27 | 250 | 004 | +002 | +004 |
| 010 | 26 | 270 | 005 | +000 | +005 |
| 009 | 25 | 083 | 017 | -002 | -017 |
| 008 | 24 | 085 | 024 | -002 | -024 |
| 007 | 23 | 089 | 023 | -001 | -023 |
| 006 | 22 | 095 | 021 | +002 | -021 |
| 006 | 21 | 101 | 014 | +003 | -014 |
| 005 | 20 | 095 | 011 | +001 | -011 |
| 005 | 19 | 079 | 007 | -002 | -007 |

ROCKET THERMODYNAMICS

| ALT TENS OF METERS | TEMP DEG C | PRESSURE MB | DENSITY G M⁻³ | WIND POLAR DEG | WIND POLAR MPS | COMPONENTS MPS N-S | COMPONENTS MPS E-W |
|---|---|---|---|---|---|---|---|
| 5273 | +02.7 | 00.697 | 00.849 | | | | |
| 5160 | +05.0 | 00.792 | 01.002 | | | | |
| 4709 | +01.6 | 01.361 | 01.744 | 277 | 018 | -002 | +018 |
| 4535 | +03.5 | 01.682 | 02.140 | 266 | 027 | +002 | +027 |
| 4368 | +01.0 | 02.048 | 02.630 | 281 | 016 | -003 | +015 |
| 4238 | -04.6 | 02.405 | 03.153 | 313 | 008 | -005 | +006 |
| 4106 | -07.0 | 02.862 | 03.786 | 090 | 002 | +000 | -002 |
| 3892 | -11.4 | 03.749 | 05.049 | 131 | 008 | +005 | -005 |
| 3822 | -09.8 | 04.093 | 05.462 | 165 | 009 | +009 | -002 |
| 3781 | -10.0 | 04.453 | 05.958 | 196 | 012 | +011 | +003 |
| 3575 | -12.5 | 05.723 | 07.731 | 240 | 021 | +011 | +018 |
| 3463 | -20.6 | 06.592 | 09.191 | 254 | 018 | +005 | +017 |
| 3359 | -19.5 | 07.571 | 10.510 | 251 | 016 | +005 | +017 |
| 3307 | -21.0 | 08.037 | 11.223 | 241 | 016 | +008 | +014 |
| 3039 | -26.6 | 11.603 | 16.531 | 287 | 016 | -004 | +015 |
| 3011 | -41.7 | 12.004 | 18.269 | 289 | 016 | -005 | +015 |
| 2947 | -45.5 | 13.347 | 20.645 | 278 | 012 | -002 | +012 |
| 2774 | -47.1 | 17.196 | 26.787 | 251 | 005 | +002 | +005 |
| 2682 | -42.2 | 19.745 | 30.107 | 208 | 004 | +004 | +002 |
| 2597 | -45.5 | 22.350 | 34.117 | 072 | 006 | -002 | +006 |
| 2539 | -52.1 | 24.095 | 38.384 | 078 | 012 | -003 | +012 |
| 2490 | -49.5 | 25.981 | 40.907 | 084 | 017 | -002 | +017 |
| 2356 | -57.6 | 31.887 | 52.093 | 092 | 024 | +001 | -024 |
| 2201 | -57.2 | 34.965 | 57.015 | 100 | 023 | +004 | -023 |
| 2240 | -60.6 | 38.340 | 63.520 | 094 | 022 | +002 | -022 |
| 2203 | -60.2 | 40.530 | 67.022 | 095 | 021 | +002 | -021 |
| 2079 | -65.2 | 49.591 | 83.826 | 099 | 016 | +002 | -016 |
| 2000 | -62.5 | 56.200 | 93.950 | 096 | 011 | +001 | -011 |
| 1945 | -62.8 | | | 085 | 009 | -001 | -009 |
| CONSTANT PRESSURE SURFACES (GEOPOTENTIAL HEIGHT) | | | | | | | |
| 2067 | -63.4 | 50.000 | 83.944 | 102 | 018 | +004 | -018 |
| 2388 | -54.7 | 30.000 | 48.360 | 083 | 021 | -003 | -021 |
| 2654 | -42.4 | 20.000 | 30.521 | 189 | 003 | +003 | +000 |
| 3135 | -36.9 | 10.000 | 14.905 | 278 | 018 | -002 | +018 |
| 3383 | -34.1 | 07.000 | 10.311 | 269 | 033 | +001 | +033 |
| 3659 | -11.4 | 05.000 | 06.726 | 243 | 021 | +010 | +019 |
| 4039 | -08.3 | 03.000 | 03.988 | 085 | 003 | +000 | -003 |
| 4352 | +00.4 | 02.000 | 02.574 | 285 | 015 | -004 | +014 |
| 4917 | +03.3 | 01.000 | 01.273 | 279 | 031 | -005 | +030 |

RAWINSONDE

| PRESSURE MB | ALT TENS OF METERS | WIND POLAR DEG | WIND POLAR MPS | COMPONENTS MPS N-S | COMPONENTS MPS E-W | RH % | TEMP DEG C |
|---|---|---|---|---|---|---|---|
| 1008.3 | 0004 | 110 | 008 | +003 | -008 | 63 | +28.3 |
| 0803.0 | 0200 | 102 | 014 | +003 | -014 | 30 | +12.3 |
| 0633.4 | 0400 | 131 | 009 | +006 | -007 | 18 | +03.1 |
| 0493.5 | 0600 | 152 | 005 | +004 | -002 | 14 | -06.1 |
| 0381.0 | 0800 | 313 | 002 | -001 | +002 | 15 | -19.3 |
| 0289.5 | 1000 | 266 | 011 | +001 | +011 | 16 | -34.9 |
| 0214.9 | 1200 | 278 | 010 | -001 | +010 | 17 | -50.8 |
| 0156.1 | 1400 | 222 | 005 | +004 | +003 | | -67.1 |
| 0114.0 | 1580 | 291 | 013 | -004 | +012 | | -80.8 |
| 0111.0 | 1600 | 260 | 004 | +001 | +004 | | -79.1 |
| 0078.5 | 1800 | 156 | 004 | +004 | -002 | | -76.4 |
| 0056.2 | 2000 | 270 | 011 | +000 | +011 | | -62.5 |
| 0040.7 | 2200 | 090 | 023 | +000 | -023 | | -57.7 |
| 0029.8 | 2400 | 083 | 022 | -003 | -002 | | -54.4 |
| 0022.1 | 2600 | 105 | 008 | +002 | -008 | | -47.7 |
| 0016.6 | 2800 | 240 | 006 | +003 | +005 | | -41.9 |
| 0012.1 | 3000 | 275 | 010 | -001 | +010 | | -41.1 |
| 0009.3 | 3200 | 265 | 013 | +001 | +013 | | -35.1 |
| 0007.0 | 3400 | 268 | 017 | +001 | +017 | | -34.1 |
| 0006.0 | 3492 | 265 | 022 | +002 | +022 | | -31.5 |

# TECHNICAL DATA

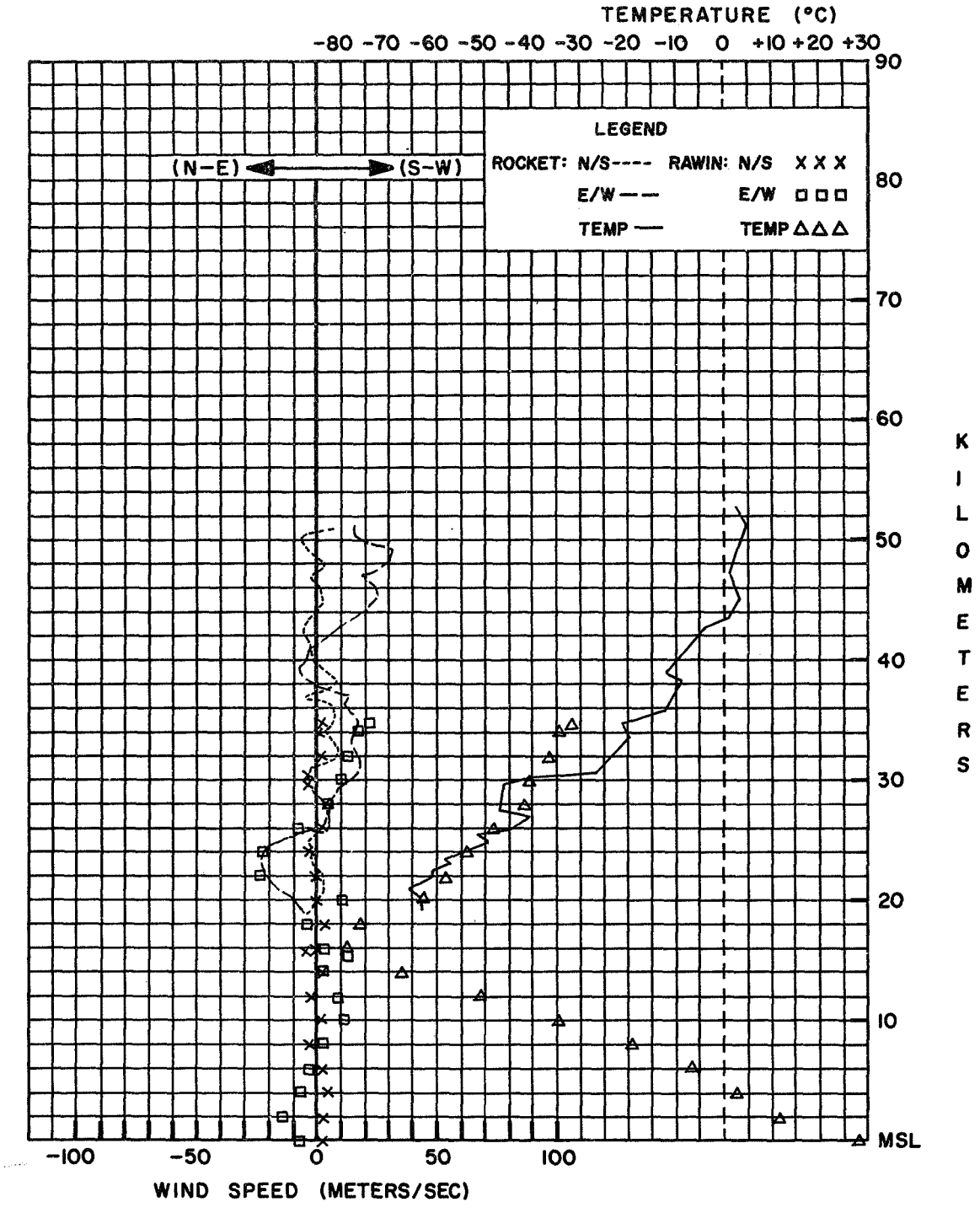
MOTOR TYPE..ARCAS
PAYLOAD TYPE..ANCASONDE-1A
FUSE TYPE..GAS GENERATED SEPARATION DEVICE
LAUNCHER SETTING..045° AZIMUTH 84.0° ELEVATION
RADAR TYPE..MPS-19 APOGEE 62,270 METERS
WIND SENSOR TYPE..15 FT. DIAMETER PARACHUTE
TEMPERATURE SENSOR TYPE..0.010 INCH BEAD THERMISTOR
GROUND EQUIPMENT TYPE..GMD-1A
REMARKS..NONE

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..110 SEC

SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..MOLDED INSULATION CO.
TEMPERATURE ELEMENT TYPE..ROD THERMISTOR
PRESSURE SENSOR TYPE..ANEROID
GROUND EQUIPMENT TYPE..GMD-1A
WIND AT ROCKET LAUNCH..06M 090DEG/10MPS 09M 120DEG/10MPS 16M 120DEG/12MPS
25M 120DEG/12MPS 40M 120DEG/14MPS
HALLISTIC WIND.. 112° AZIMUTH 08.7 MPS
THERMODYNAMIC BASE DATA..PRESSURE 56.2 MBS
TEMPERATURE -62.6°C
ALTITUDE 20,000 METERS

RADIOSONDE TYPE..1680 MHZ
BALLOON TYPE..NEOPRENE
BALLOON SIZE..1,200 GRAMS




STATION: (CNAE) Natal, Brazil
DATE: 16 October, 1968

ROCKET TIME: 1214 LST 1514 GCT
ROCKET MOTOR TYPE: Arcas

PAYLOAD TYPE: Arcasonde 1A
RADIOSONDE TYPE: 1680 MHZ

# ROCKET OBSERVATION DATA

RP STATION NAME

72402 (NASA) WALLOPS ISLAND, VIRGINIA

LAT. 37° 51' N LONG. 75° 29' W

ROCKET LAUNCH

DATE OCTOBER 14, 1968 TIME 1920 Z

RAWINSONDE RELEASE

DATE OCTOBER 14, 1968 TIME 2315 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 108 | 60 | 257 | 101 | +024 | +098 |
| 105 | 59 | 257 | 088 | +021 | +086 |
| 118 | 58 | 254 | 066 | +018 | +063 |
| 111 | 57 | 247 | 062 | +024 | +057 |
| 095 | 56 | 244 | 066 | +030 | +059 |
| 090 | 55 | 247 | 060 | +023 | +055 |
| 087 | 54 | 251 | 058 | +019 | +055 |
| 080 | 53 | 252 | 061 | +019 | +058 |
| 077 | 52 | 250 | 055 | +019 | +051 |
| 069 | 51 | 250 | 058 | +020 | +054 |
| 069 | 50 | 251 | 057 | +019 | +054 |
| 077 | 49 | 252 | 059 | +018 | +056 |
| 074 | 48 | 251 | 060 | +020 | +057 |
| 062 | 47 | 248 | 057 | +021 | +053 |
| 051 | 46 | 249 | 058 | +020 | +054 |
| 045 | 45 | 251 | 054 | +018 | +051 |
| 044 | 44 | 254 | 051 | +014 | +049 |
| 044 | 43 | 243 | 051 | +023 | +046 |
| 040 | 42 | 238 | 046 | +024 | +040 |
| 038 | 41 | 244 | 037 | +017 | +033 |
| 035 | 40 | 250 | 035 | +012 | +033 |
| 031 | 39 | 255 | 037 | +009 | +036 |
| 029 | 38 | 257 | 039 | +009 | +038 |
| 027 | 37 | 255 | 037 | +009 | +036 |
| 024 | 36 | 256 | 031 | +007 | +030 |
| 022 | 35 | 259 | 025 | +005 | +025 |
| 021 | 34 | 254 | 027 | +007 | +026 |
| 019 | 33 | 245 | 025 | +011 | +023 |
| 017 | 32 | 246 | 019 | +008 | +017 |
| 015 | 31 | 259 | 016 | +003 | +016 |
| 015 | 30 | 253 | 017 | +005 | +016 |
| 013 | 29 | 265 | 014 | +001 | +014 |
| 011 | 28 | 280 | 011 | -002 | +011 |
| 010 | 27 | 266 | 009 | +001 | +009 |
| 010 | 26 | 245 | 007 | +003 | +007 |
| 009 | 25 | 278 | 007 | -001 | +007 |
| 008 | 24 | 304 | 008 | -004 | +006 |
| 007 | 23 | 285 | 005 | -001 | +005 |
| 006 | 22 | 255 | 003 | +001 | +003 |
| 006 | 21 | 220 | 002 | +002 | +001 |
| 005 | 20 | 162 | 001 | +001 | +000 |
| 004 | 19 | 290 | 001 | +000 | +001 |
| 005 | 18 | 262 | 005 | +001 | +005 |

ROCKET THERMODYNAMICS

| ALT TENS OF METERS | TEMP DEG C | PRESSURE MB | DENSITY G/M³ | WIND POLAR DEG | MPS | COMPONENTS MPS N-S | E-W |
|---|---|---|---|---|---|---|---|
| 6056 | -05.0 | 00.236 | 00.307 | | | | |
| 5934 | -06.1 | 00.275 | 00.359 | 257 | 093 | +022 | +090 |
| 5752 | -00.9 | 00.345 | 00.441 | 251 | 064 | +021 | +061 |
| 5584 | +00.6 | 00.424 | 00.540 | 244 | 065 | +029 | +059 |
| 5517 | -02.1 | 00.461 | 00.592 | 247 | 061 | +024 | +055 |
| 5261 | -03.7 | 00.633 | 00.818 | 251 | 059 | +019 | +056 |
| 5127 | +01.7 | 00.747 | 00.947 | 250 | 057 | +020 | +053 |
| 4849 | +03.3 | 01.048 | 01.321 | 252 | 059 | +018 | +056 |
| 4743 | +01.7 | 01.193 | 01.512 | 249 | 058 | +020 | +054 |
| 4514 | -06.4 | 01.545 | 02.971 | 251 | 055 | +018 | +052 |
| 4468 | -03.7 | 01.640 | 02.172 | 252 | 054 | +017 | +051 |
| 4310 | -05.6 | 02.048 | 02.667 | 246 | 051 | +021 | +047 |
| 4267 | -09.3 | 02.163 | 02.855 | 242 | 050 | +023 | +044 |
| 4191 | -09.2 | 02.343 | 03.145 | 239 | 045 | +024 | +039 |
| 4048 | -16.8 | 02.805 | 03.894 | 247 | 036 | +014 | +033 |
| 4002 | -17.0 | 03.044 | 04.149 | 250 | 035 | +012 | +033 |
| 3850 | -25.0 | 03.730 | 05.237 | 256 | 038 | +009 | +037 |
| 3825 | -22.9 | 03.858 | 05.372 | 257 | 038 | +009 | +037 |
| 3624 | -25.3 | 05.066 | 07.121 | 256 | 032 | +008 | +032 |
| 3603 | -28.9 | 05.214 | 07.437 | 256 | 031 | +007 | +030 |
| 3554 | -30.9 | 05.581 | 08.026 | 258 | 028 | +006 | +028 |
| 3505 | -36.0 | 05.980 | 08.784 | 259 | 025 | +005 | +025 |
| 3322 | -38.8 | 07.772 | 11.554 | 247 | 025 | +010 | +023 |
| 3206 | -37.2 | 09.182 | 13.557 | 246 | 020 | +008 | +018 |
| 3188 | -40.9 | 09.423 | 14.136 | 248 | 019 | +007 | +017 |
| 3124 | -43.7 | 10.349 | 15.714 | 256 | 017 | +004 | +017 |
| 3097 | -41.8 | 10.768 | 16.215 | 259 | 016 | +003 | +016 |
| 3060 | -47.0 | 11.373 | 17.520 | 257 | 016 | +004 | +016 |
| 3011 | -46.3 | 12.238 | 18.791 | 254 | 017 | +005 | +016 |
| 2999 | -49.0 | 12.458 | 19.363 | 253 | 017 | +005 | +016 |
| 2963 | -46.5 | 13.150 | 20.212 | 257 | 016 | +004 | +016 |
| 2765 | -46.7 | 17.675 | 27.192 | 275 | 010 | -001 | +010 |
| 2694 | -44.2 | 19.643 | 29.849 | 266 | 009 | +001 | +009 |
| 2582 | -50.3 | 23.234 | 36.323 | 251 | 007 | +002 | +007 |
| 2332 | -50.2 | 33.974 | 53.089 | 292 | 006 | -002 | +005 |
| 2185 | -58.0 | 42.656 | 69.070 | 252 | 003 | +001 | +002 |
| 2000 | -58.0 | 57.099 | 92.459 | 162 | 001 | +001 | +000 |
| 1881 | -62.7 | | | 285 | 002 | +000 | +002 |
| 1759 | -61.7 | | | | | | |

CONSTANT PRESSURE SURFACES (GEOPOTENTIAL HEIGHT)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2077 | -58.0 | 50.000 | 80.963 | 210 | 002 | +002 | +001 |
| 2404 | -50.2 | 30.000 | 46.881 | 301 | 008 | -004 | +007 |
| 2670 | -44.8 | 20.000 | 30.518 | 262 | 008 | +001 | +008 |
| 3132 | -42.6 | 10.000 | 15.114 | 253 | 018 | +005 | +017 |
| 3377 | -47.7 | 07.000 | 10.357 | 253 | 027 | +008 | +025 |
| 3613 | -25.2 | 05.000 | 07.024 | 256 | 033 | +008 | +032 |
| 3988 | -17.0 | 03.000 | 04.079 | 249 | 035 | +012 | +033 |
| 4299 | -05.4 | 02.000 | 02.602 | 246 | 051 | +021 | +047 |
| 4850 | -03.1 | 01.000 | 01.261 | 252 | 059 | +018 | +056 |

RAWINSONDE

| PRESSURE MB | ALT TENS OF METERS | WIND POLAR DEG | MPS | COMPONENTS MPS N-S | E-W | RH % | TEMP DEG C |
|---|---|---|---|---|---|---|---|
| 1025.0 | 0000 | 100 | 004 | +001 | -004 | 60 | +20.6 |
| 0810.0 | 0200 | 173 | 010 | +010 | -001 | 29 | +11.5 |
| 0620.0 | 0400 | 155 | 008 | +007 | -003 | 18 | +00.0 |
| 0494.0 | 0600 | 164 | 012 | +011 | -003 | 18 | -10.2 |
| 0379.0 | 0800 | 160 | 012 | +011 | -004 | 20 | -25.4 |
| 0276.0 | 1000 | 294 | 012 | -005 | +011 | | -40.1 |
| 0211.0 | 1200 | 278 | 014 | -002 | +014 | | -57.2 |
| 0153.0 | 1400 | 241 | 008 | +004 | +007 | | -66.5 |
| 0135.0 | 1471 | 250 | 009 | +003 | +008 | | -69.9 |
| 0109.0 | 1600 | 275 | 007 | -001 | +007 | | -70.0 |
| 0079.0 | 1800 | 254 | 006 | +002 | +006 | | -62.7 |
| 0057.0 | 2000 | 250 | 003 | +001 | +003 | | -61.1 |
| 0041.5 | 2200 | 321 | 004 | -003 | +003 | | -58.8 |
| 0030.2 | 2400 | 333 | 004 | -004 | +002 | | -55.3 |
| 0022.2 | 2600 | 296 | 009 | -004 | +008 | | -52.0 |
| 0016.4 | 2800 | 248 | 008 | +003 | +007 | | -53.5 |
| 0012.1 | 3000 | 264 | 018 | +002 | +018 | | -51.6 |
| 0009.3 | 3175 | 266 | 018 | +003 | +017 | | -47.6 |
| 0008.9 | 3200 | | | | | | -47.3 |
| 0008.5 | 3231 | | | | | | -46.8 |

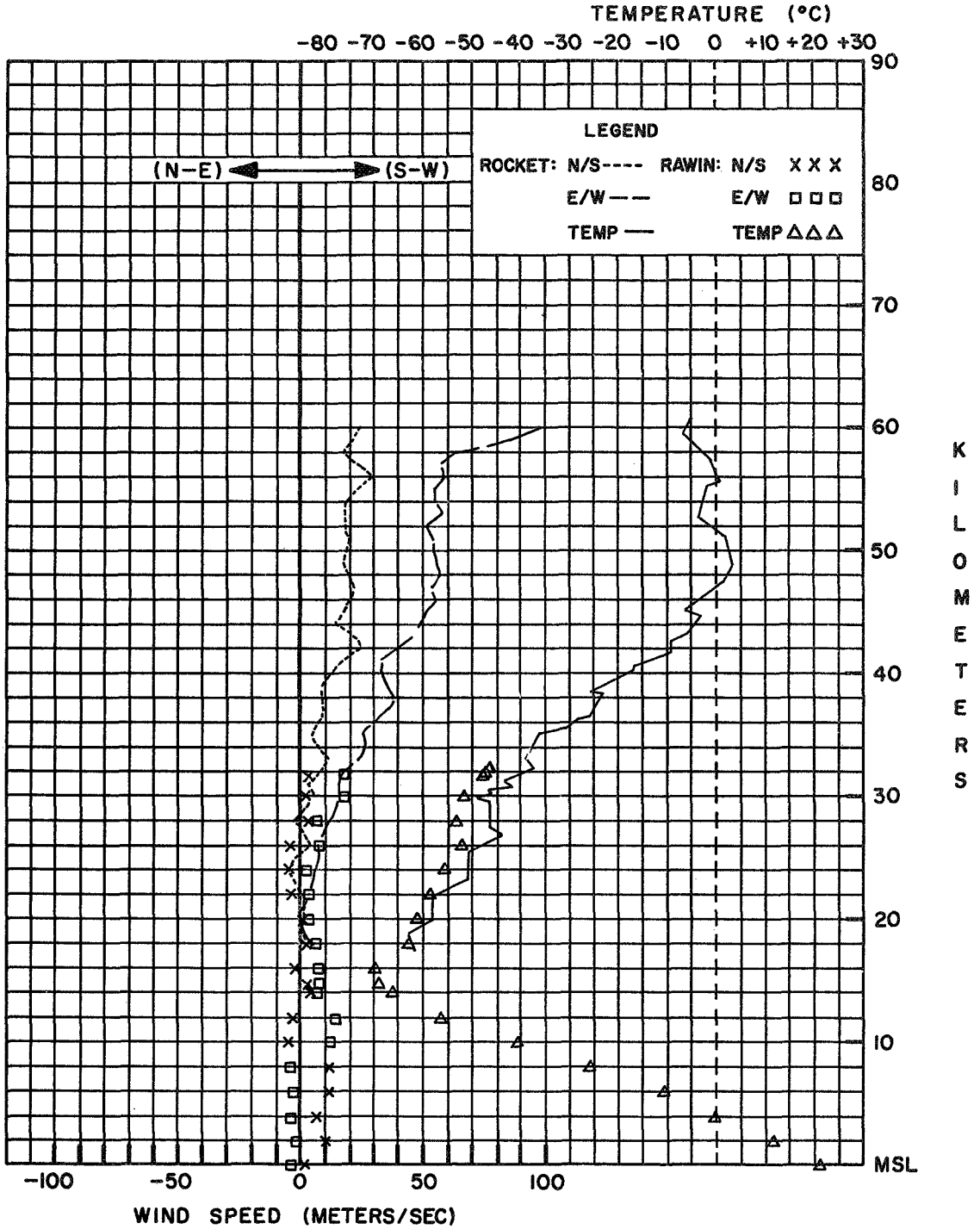
# TECHNICAL DATA

MOTOR TYPE..ARCAS
PAYLOAD TYPE..ARCASONDE-1A
FUSE TYPE..GAS GENERATED SEPARATION DEVICE
LAUNCHER SETTING..077° AZIMUTH 83.0° ELEVATION
RADAR TYPE..FPS-16 APOGEE 61,720 METERS
WIND SENSOR TYPE..15 FT. DIAMETER PARACHUTE
TEMPERATURE SENSOR TYPE..0.010 INCH BEAD THERMISTOR
GROUND EQUIPMENT TYPE..GMD-1B
REMARKS..NONE

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..140 SEC

SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..MOLDED INSULATION CO. RADIOSONDE TYPE..1680 MHZ
TEMPERATURE ELEMENT TYPE..GOD THERMISTOR G-BALLOON TYPE..NEOPRENE
PRESSURE SENSOR TYPE..ANEROID AND HYPSOMETER BALLOON SIZE..1,200 GRAMS
GROUND EQUIPMENT TYPE..GMD-1A
WIND AT ROCKET LAUNCH..SFC. 129DEG/03MPS 15M 108DEG/03MPS 30M 130DEG/04MPS
45M 106DEG/03MPS 61M 135DEG/03MPS 76M 135DEG/06MPS
BALLISTIC WIND.. 137° AZIMUTH 07.0 MPS
THERMODYNAMIC BASE DATA..PRESSURE 109.0 MBS
TEMPERATURE -70.0°C
ALTITUDE 16,000 METERS




STATION: (NASA) Wallops Island, Va. ROCKET TIME: 1420 LST 1920 GCT PAYLOAD TYPE: Arcasonde 1A

DATE: 16 October, 1968 ROCKET MOTOR TYPE: Arcas RADIOSONDE TYPE: 1680 MHz

# ROCKET OBSERVATION DATA

WP STATION WAFF

72402 (WASH) WALLOPS ISLAND, VIRGINIA

LAT. 37°51' N LONG. 75°29' W

ROCKET LAUNCH

DATE OCTOBER 23, 1968 TIME 1810 Z

RAWINSONDE RELEASE

DATE OCTOBER 23, 1968 TIME 2315 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | WIND COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 108 | 54 | 271 | 101 | -002 | +100 |
| 105 | 52 | 270 | 085 | +000 | +085 |
| 105 | 51 | 262 | 067 | +009 | +067 |
| 100 | 50 | 253 | 064 | +012 | +063 |
| 100 | 49 | 252 | 070 | +010 | +069 |
| 095 | 48 | 250 | 071 | +012 | +070 |
| 093 | 47 | 258 | 069 | +015 | +065 |
| 093 | 46 | 255 | 074 | +019 | +072 |
| 097 | 45 | 252 | 077 | +024 | +074 |
| 097 | 44 | 249 | 075 | +026 | +070 |
| 097 | 43 | 248 | 073 | +025 | +069 |
| 091 | 42 | 243 | 069 | +031 | +062 |
| 087 | 41 | 243 | 068 | +027 | +059 |
| 087 | 40 | 243 | 059 | +026 | +052 |
| 091 | 39 | 245 | 054 | +023 | +049 |
| 088 | 38 | 247 | 050 | +019 | +046 |
| 084 | 37 | 250 | 041 | +014 | +038 |
| 080 | 36 | 255 | 039 | +010 | +038 |
| 087 | 35 | 268 | 037 | +004 | +037 |
| 084 | 34 | 272 | 039 | -002 | +039 |
| 083 | 33 | 289 | 042 | +001 | +042 |
| 081 | 32 | 283 | 035 | +004 | +035 |
| 077 | 31 | 281 | 029 | +010 | +028 |
| 075 | 30 | 284 | 027 | +012 | +024 |
| 072 | 29 | 280 | 023 | +004 | +022 |
| 070 | 28 | 288 | 023 | +005 | +023 |
| 070 | 27 | 284 | 023 | +008 | +021 |
| 069 | 26 | 283 | 021 | +006 | +020 |
| 066 | 25 | 281 | 019 | +006 | +018 |
| 065 | 24 | 282 | 018 | +007 | +017 |
| 064 | 23 | 283 | 015 | +005 | +014 |
| 062 | 22 | 280 | 013 | +003 | +013 |
| 060 | 21 | 284 | 014 | +004 | +014 |
| 060 | 20 | 287 | 011 | +004 | +010 |
| 059 | 19 | 292 | 012 | +004 | +012 |
| 058 | 18 | 291 | 012 | +004 | +012 |
| 057 | 17 | 286 | 011 | +004 | +010 |
| 055 | 16 | 281 | 009 | +005 | +007 |
| 055 | 15 | 282 | 008 | +005 | +007 |
| 055 | 14 | 290 | 009 | +002 | +009 |
| 055 | 13 | 293 | 013 | +004 | +013 |
| 055 | 12 | 292 | 013 | +006 | +012 |

ROCKET THERMODYNAMICS

| ALT TENS OF METERS | TEMP DEG C | PRESSURE MB | DENSITY G M -3 | WIND POLAR DEG | WIND POLAR MPS | WIND COMPONENTS MPS N-S | WIND COMPONENTS MPS E-W |
|---|---|---|---|---|---|---|---|
| 5907 | +02.5 | 00.245 | 00.309 | | | | |
| 5610 | -04.0 | 00.353 | 00.457 | 259 | 064 | +013 | +064 |
| 5430 | -00.6 | 00.441 | 00.564 | 260 | 071 | +012 | +070 |
| 5350 | -07.1 | 00.487 | 00.636 | 259 | 071 | +014 | +070 |
| 5260 | -09.3 | 00.545 | 00.721 | 257 | 071 | +017 | +069 |
| 5100 | -06.1 | 00.658 | 00.872 | 252 | 077 | +024 | +074 |
| 4970 | -11.6 | 00.789 | 01.050 | 247 | 076 | +029 | +069 |
| 4870 | -06.6 | 00.896 | 01.171 | 243 | 075 | +033 | +067 |
| 4720 | -11.0 | 01.084 | 01.441 | 243 | 062 | +024 | +056 |
| 4596 | -08.9 | 01.270 | 01.674 | 243 | 058 | +026 | +052 |
| 4474 | -09.5 | 01.484 | 01.961 | 246 | 053 | +021 | +045 |
| 4423 | -13.3 | 01.584 | 02.124 | 247 | 050 | +020 | +046 |
| 4346 | -14.5 | 01.751 | 02.359 | 249 | 045 | +016 | +042 |
| 4090 | -28.6 | 02.467 | 03.515 | 264 | 037 | +004 | +037 |
| 3890 | -31.7 | 03.257 | 04.699 | 268 | 041 | +002 | +041 |
| 3820 | -40.4 | 03.598 | 05.385 | 264 | 036 | +004 | +036 |
| 3584 | -43.0 | 05.070 | 07.683 | 246 | 027 | +011 | +024 |
| 3377 | -38.5 | 06.857 | 10.180 | 256 | 023 | +005 | +023 |
| 3255 | -45.1 | 08.194 | 12.518 | 250 | 022 | +008 | +020 |
| 3090 | -46.1 | 10.471 | 16.050 | 251 | 019 | +006 | +018 |
| 3050 | -50.0 | 11.119 | 17.359 | 250 | 019 | +006 | +017 |
| 2820 | -52.2 | 15.786 | 24.891 | 259 | 015 | +003 | +015 |
| 2414 | -52.2 | 29.247 | 46.116 | 251 | 012 | +004 | +012 |
| 2274 | -57.0 | 36.799 | 59.311 | 242 | 010 | +005 | +009 |
| 2185 | -54.7 | 42.283 | 67.432 | 231 | 009 | +005 | +007 |
| 2130 | -57.0 | 46.072 | 74.257 | 232 | 008 | +005 | +007 |
| 2110 | -55.6 | 47.536 | 76.124 | 232 | 008 | +005 | +007 |
| 2073 | -58.4 | 50.379 | 81.729 | 239 | 009 | +005 | +007 |
| 2000 | -56.6 | 56.509 | 90.912 | 258 | 009 | +002 | +009 |
| 1770 | -60.5 | | | | | | |

CONSTANT PRESSURE SURFACES (GEOPOTENTIAL HEIGHT)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2071 | -58.1 | 50.000 | 80.991 | 238 | 009 | +005 | +007 |
| 2396 | -52.9 | 30.000 | 47.447 | 251 | 012 | +004 | +012 |
| 2651 | -52.2 | 20.000 | 31.535 | 251 | 013 | +004 | +013 |
| 3106 | -46.0 | 10.000 | 15.335 | 252 | 020 | +006 | +019 |
| 3345 | -39.2 | 07.000 | 10.426 | 254 | 023 | +006 | +022 |
| 3574 | -42.9 | 05.000 | 07.567 | 245 | 027 | +011 | +024 |
| 3924 | -38.8 | 03.000 | 04.313 | 271 | 041 | -001 | +040 |
| 4217 | -20.0 | 02.000 | 02.752 | 253 | 040 | +012 | +038 |
| 4747 | -09.2 | 01.000 | 01.320 | 243 | 067 | +030 | +060 |

RAWINSONDE

| PRESSURE MB | ALT TENS OF METERS | WIND POLAR DEG | WIND POLAR MPS | WIND COMPONENTS MPS N-S | WIND COMPONENTS MPS E-W | RH % | TEMP DEG C |
|---|---|---|---|---|---|---|---|
| 1012.4 | 0000 | 220 | 003 | +002 | +002 | 87 | +18.9 |
| 0799.0 | 0200 | 239 | 013 | +007 | +011 | 42 | +07.0 |
| 0624.0 | 0400 | 226 | 014 | +010 | +010 | 14 | -00.9 |
| 0483.0 | 0600 | 234 | 021 | +012 | +017 | 39 | -15.9 |
| 0367.0 | 0800 | 241 | 024 | +012 | +021 | 26 | -31.0 |
| 0275.0 | 1000 | 235 | 037 | +022 | +030 | | -47.7 |
| 0202.0 | 1200 | 237 | 045 | +024 | +037 | | -57.2 |
| 0147.0 | 1398 | 245 | 042 | +018 | +038 | | -63.9 |
| 0146.0 | 1400 | 245 | 042 | +018 | +038 | | -63.8 |
| 0106.5 | 1600 | 239 | 031 | +016 | +027 | | -59.2 |
| 0094.8 | 1647 | 233 | 030 | +017 | +024 | | -57.0 |
| 0086.0 | 1735 | | | | | | -62.9 |

# TECHNICAL DATA

MOTOR TYPE..ARCAS
PAYLOAD TYPE..ARCASONDE-1A
FUSE TYPE..GMD GENERATED SEPARATION DEVICE
LAUNCHER SETTING..049° AZIMUTH 79.0° ELEVATION
RADAR TYPE..FPS-6 APOGEE 59,787 METERS
WIND SENSOR TYPE..15 FT. DIAMETER PARACHUTE
TEMPERATURE SENSOR TYPE..0.010 INCH HEAD THERMISTOR
GROUND EQUIPMENT TYPE..GMD-1A
REMARKS..RAWINSONDE TERMINATED AT 17,350 METERS DUE TO BALLOON BURST.

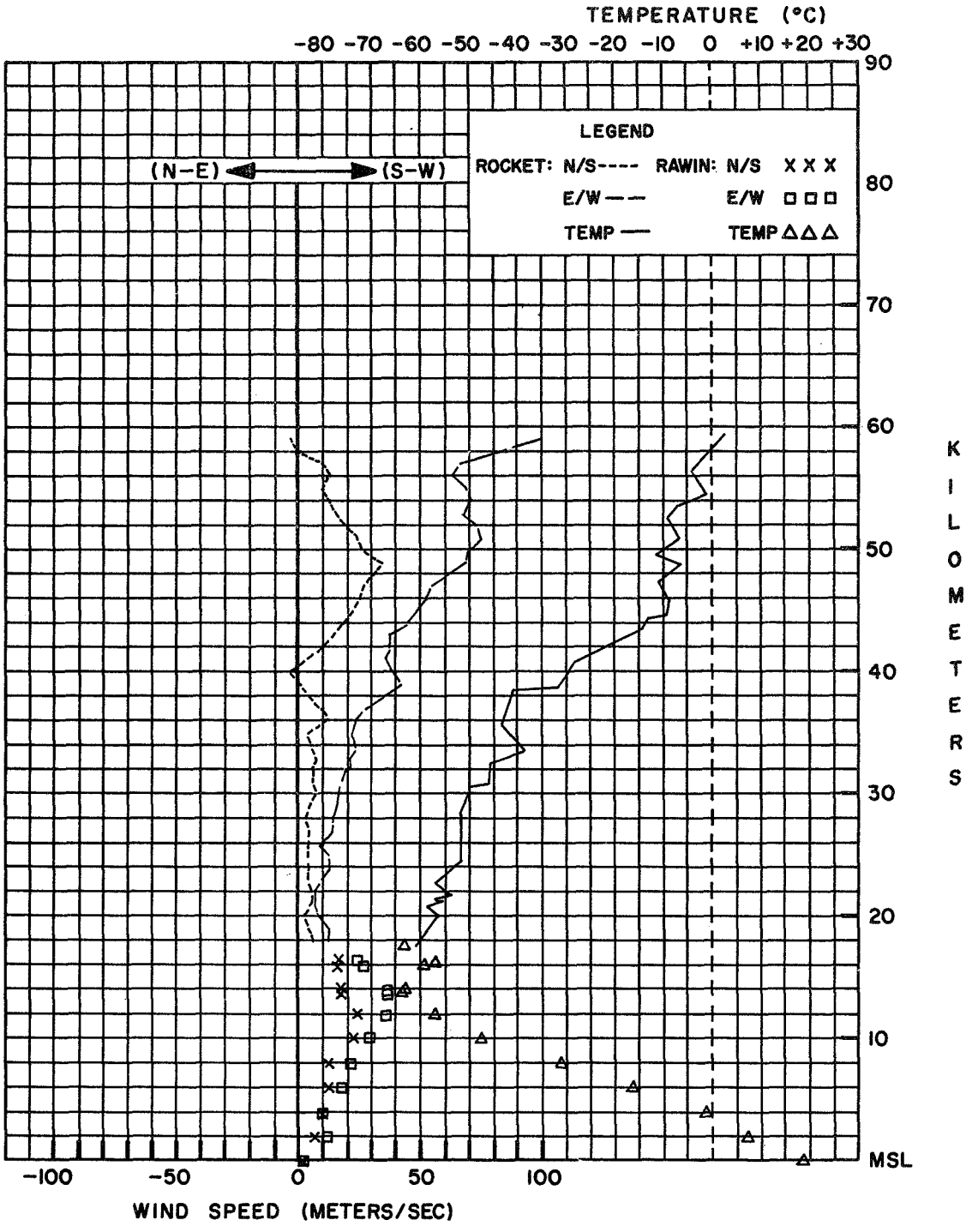
MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..125 SEC

SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..MOLDED INSULATION CO.
TEMPERATURE ELEMENT TYPE..ROD THERMISTOR
PRESSURE SENSOR TYPE..ANEROID AND HYPSOMETER
GROUND EQUIPMENT TYPE..GMD-1A
RADIOSONDE TYPE..1680 MHZ
BALLOON TYPE..NEOPRENE
BALLOON SIZE..1,200 GRAMS

WIND AT ROCKET LAUNCH..SFC. 180DEG/03MPS 15M 189DEG/03MPS 31M 175DEG/03MPS
45M 181DEG/03MPS 61M 190DEG/03MPS 76M 198DEG/03MPS

BALLISTIC WIND.. 247° AZIMUTH 04.7 MPS
THERMODYNAMIC BASE DATA..PRESSURE 86.0 MB
TEMPERATURE -62.9°C
ALTITUDE 17,350 METERS




STATION: (NASA) Wallops Island, Va. ROCKET TIME: 1310 LST 1810 GCT PAYLOAD TYPE: Arcasonde 1A

DATE: 23 October, 1968 ROCKET MOTOR TYPE: Arcas RADIOSONDE TYPE: 1680 MHZ

# ROCKET OBSERVATION DATA

RP STATION NAME

72402 (WASA) WALLOPS ISLAND, VIRGINIA

LAT. 37° 51' N LONG. 75° 29' W

ROCKET LAUNCH

DATE OCTOBER 30, 1968 TIME 1652 Z

RAWINSONDE RELEASE

DATE OCTOBER 30, 1968 TIME 1425 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 100 | 55 | 266 | 100 | +008 | +099 |
| 100 | 54 | 265 | 089 | +007 | +088 |
| 090 | 53 | 266 | 084 | +007 | +084 |
| 087 | 52 | 258 | 095 | +020 | +093 |
| 083 | 51 | 256 | 096 | +022 | +094 |
| 074 | 50 | 259 | 083 | +016 | +083 |
| 069 | 49 | 265 | 083 | +006 | +082 |
| 064 | 48 | 266 | 083 | +006 | +083 |
| 064 | 47 | 264 | 077 | +007 | +076 |
| 062 | 46 | 269 | 063 | +001 | +062 |
| 059 | 45 | 278 | 056 | -008 | +055 |
| 057 | 44 | 281 | 059 | -012 | +059 |
| 051 | 43 | 281 | 063 | -012 | +063 |
| 045 | 42 | 278 | 058 | -008 | +057 |
| 042 | 41 | 279 | 057 | -009 | +056 |
| 039 | 40 | 281 | 062 | -012 | +062 |
| 036 | 39 | 280 | 058 | -010 | +058 |
| 032 | 38 | 280 | 054 | -009 | +054 |
| 029 | 37 | 276 | 050 | -005 | +050 |
| 027 | 36 | 272 | 041 | -002 | +041 |
| 027 | 35 | 273 | 032 | -002 | +032 |
| 024 | 34 | 273 | 028 | -002 | +028 |
| 021 | 33 | 278 | 026 | -004 | +026 |
| 020 | 32 | 279 | 022 | -003 | +022 |
| 019 | 31 | 275 | 021 | -002 | +020 |
| 017 | 30 | 275 | 023 | -002 | +022 |
| 015 | 29 | 269 | 023 | +000 | +023 |
| 013 | 28 | 264 | 019 | +002 | +019 |
| 012 | 27 | 256 | 015 | +003 | +015 |
| 011 | 26 | 258 | 013 | +003 | +013 |
| 010 | 25 | 267 | 012 | +001 | +012 |
| 008 | 24 | 261 | 009 | +001 | +009 |
| 008 | 23 | 267 | 008 | +000 | +008 |
| 007 | 22 | 268 | 012 | +000 | +012 |
| 007 | 21 | 262 | 012 | +002 | +012 |
| 006 | 20 | 262 | 010 | +001 | +010 |
| 006 | 19 | 265 | 012 | +001 | +012 |
| 006 | 18 | 273 | 014 | -001 | +014 |
| 005 | 17 | 281 | 016 | -003 | +016 |

ROCKET THERMODYNAMICS

| ALT IN FEET OF METERS | TEMP DEG C | PRESSURE MB | DENSITY GM/M**3 | WIND POLAR DEG | MPS | COMPONENTS MPS N-S | E-W |
|---|---|---|---|---|---|---|---|
| 5773 | -00.9 | 00.304 | 00.389 | | | | |
| 5596 | -01.2 | 00.324 | 00.404 | | | | |
| 5304 | -02.2 | 00.344 | 00.409 | 266 | 084 | +007 | +084 |
| 5130 | -05.2 | 00.375 | 00.478 | 257 | 096 | +022 | +093 |
| 5002 | -02.0 | 00.392 | 01.018 | 259 | 083 | +016 | +083 |
| 4900 | -01.9 | 00.399 | 01.154 | 265 | 083 | +006 | +082 |
| 4822 | -00.1 | 00.990 | 01.263 | 266 | 083 | +006 | +083 |
| 4715 | -05.9 | 01.131 | 01.474 | 264 | 078 | +005 | +078 |
| 4615 | -06.7 | 01.283 | 01.677 | 268 | 065 | +003 | +064 |
| 4493 | -09.2 | 01.447 | 01.976 | 278 | 056 | -008 | +055 |
| 4362 | -08.1 | 01.769 | 02.325 | 281 | 061 | -012 | +060 |
| 4310 | -11.0 | 01.891 | 02.512 | 281 | 063 | -012 | +062 |
| 4173 | -13.4 | 02.256 | 03.026 | 278 | 057 | -008 | +057 |
| 4054 | -18.4 | 02.637 | 03.606 | 280 | 059 | -010 | +058 |
| 4030 | -20.5 | 02.722 | 03.754 | 280 | 061 | -011 | +060 |
| 3923 | -23.2 | 03.143 | 04.340 | 280 | 059 | -010 | +059 |
| 3786 | -32.3 | 03.794 | 05.488 | 279 | 054 | -008 | +053 |
| 3664 | -36.1 | 04.307 | 06.624 | 274 | 047 | -004 | +046 |
| 3615 | -34.4 | 04.832 | 07.051 | 273 | 043 | -002 | +042 |
| 3566 | -37.5 | 05.181 | 07.659 | 272 | 039 | -002 | +038 |
| 3496 | -37.4 | 05.727 | 08.454 | 273 | 032 | -002 | +032 |
| 3426 | -39.2 | 06.334 | 09.432 | 272 | 029 | -001 | +029 |
| 3383 | -38.3 | 06.739 | 09.996 | 274 | 027 | -002 | +027 |
| 3368 | -35.3 | 06.895 | 10.096 | 275 | 027 | -002 | +027 |
| 3341 | -34.7 | 07.154 | 10.452 | 276 | 026 | -003 | +026 |
| 3295 | -38.2 | 07.639 | 11.327 | 278 | 026 | -004 | +026 |
| 3136 | -41.6 | 09.618 | 14.471 | 277 | 021 | -002 | +021 |
| 3097 | -49.5 | 10.192 | 15.876 | 275 | 021 | -002 | +020 |
| 3018 | -48.7 | 11.482 | 17.822 | 275 | 022 | -002 | +022 |
| 2743 | -53.3 | 17.456 | 27.661 | 269 | 016 | +000 | +016 |
| 2612 | -54.3 | 21.367 | 34.013 | 258 | 013 | +003 | +013 |
| 2548 | -53.3 | 23.585 | 37.374 | 262 | 012 | +002 | +012 |
| 2484 | -58.1 | 26.058 | 42.215 | 265 | 011 | +001 | +011 |
| 2387 | -56.3 | 30.342 | 48.746 | 262 | 009 | +001 | +009 |
| 2356 | -54.1 | 31.848 | 50.640 | 264 | 009 | +001 | +009 |
| 2158 | -56.6 | 43.333 | 69.641 | 266 | 012 | +001 | +012 |
| 2030 | -56.5 | 52.947 | 85.141 | 262 | 011 | +001 | +011 |

CONSTANT PRESSURE SURFACES (GEOPOTENTIAL HEIGHT)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2060 | -56.5 | 50.000 | 80.402 | 262 | 012 | +002 | +012 |
| 2385 | -56.5 | 40.000 | 48.234 | 261 | 009 | +001 | +009 |
| 2644 | -53.9 | 30.000 | 31.780 | 257 | 014 | +003 | +014 |
| 3094 | -46.9 | 20.000 | 15.397 | 276 | 021 | -002 | +020 |
| 3339 | -35.0 | 07.000 | 10.242 | 275 | 027 | -002 | +027 |
| 3571 | -36.0 | 05.000 | 07.344 | 272 | 041 | -002 | +040 |
| 3933 | -22.3 | 03.000 | 04.167 | 281 | 061 | -012 | +060 |
| 4238 | -11.7 | 02.000 | 02.666 | 280 | 062 | -011 | +061 |
| 4777 | -00.6 | 01.000 | 01.278 | 266 | 083 | +006 | +083 |

RAWINSONDE

| PRESSURE MB | ALT IN FEET OF METERS | WIND POLAR DEG | MPS | COMPONENTS MPS N-S | E-W | RH % | TEMP DEG C |
|---|---|---|---|---|---|---|---|
| 1017.0 | 0000 | 336 | 008 | -007 | +004 | 35 | +11.1 |
| 0794.0 | 0200 | 315 | 014 | -010 | +010 | 78 | -06.0 |
| 0611.0 | 0400 | 300 | 026 | -013 | +023 | 26 | -13.3 |
| 0467.0 | 0600 | 295 | 032 | -014 | +030 | 24 | -20.4 |
| 0352.0 | 0800 | 290 | 040 | -014 | +037 | 24 | -28.3 |
| 0263.0 | 1000 | 295 | 034 | -015 | +031 | | -45.2 |
| 0202.0 | 1173 | 290 | 035 | -012 | +033 | | -50.5 |
| 0194.0 | 1200 | 290 | 034 | -012 | +032 | | -50.9 |
| 0143.0 | 1400 | 290 | 028 | -010 | +026 | | -54.1 |
| 0102.5 | 1600 | 290 | 021 | -007 | +020 | | -55.6 |
| 0076.2 | 1800 | 270 | 014 | +000 | +014 | | -54.3 |
| 0055.5 | 2000 | 290 | 014 | -005 | +013 | | -57.6 |
| 0040.4 | 2200 | 270 | 013 | +000 | +013 | | -55.7 |
| 0029.4 | 2400 | 265 | 012 | +001 | +012 | | -55.9 |
| 0021.7 | 2600 | 265 | 013 | +001 | +013 | | -55.8 |
| 0015.8 | 2800 | 260 | 011 | +002 | +011 | | -52.9 |
| 0011.7 | 3000 | 265 | 016 | +001 | +016 | | -50.0 |
| 0010.2 | 3104 | 270 | 016 | +000 | +016 | | -48.8 |
| 0009.4 | 3148 | | | | | | -49.9 |

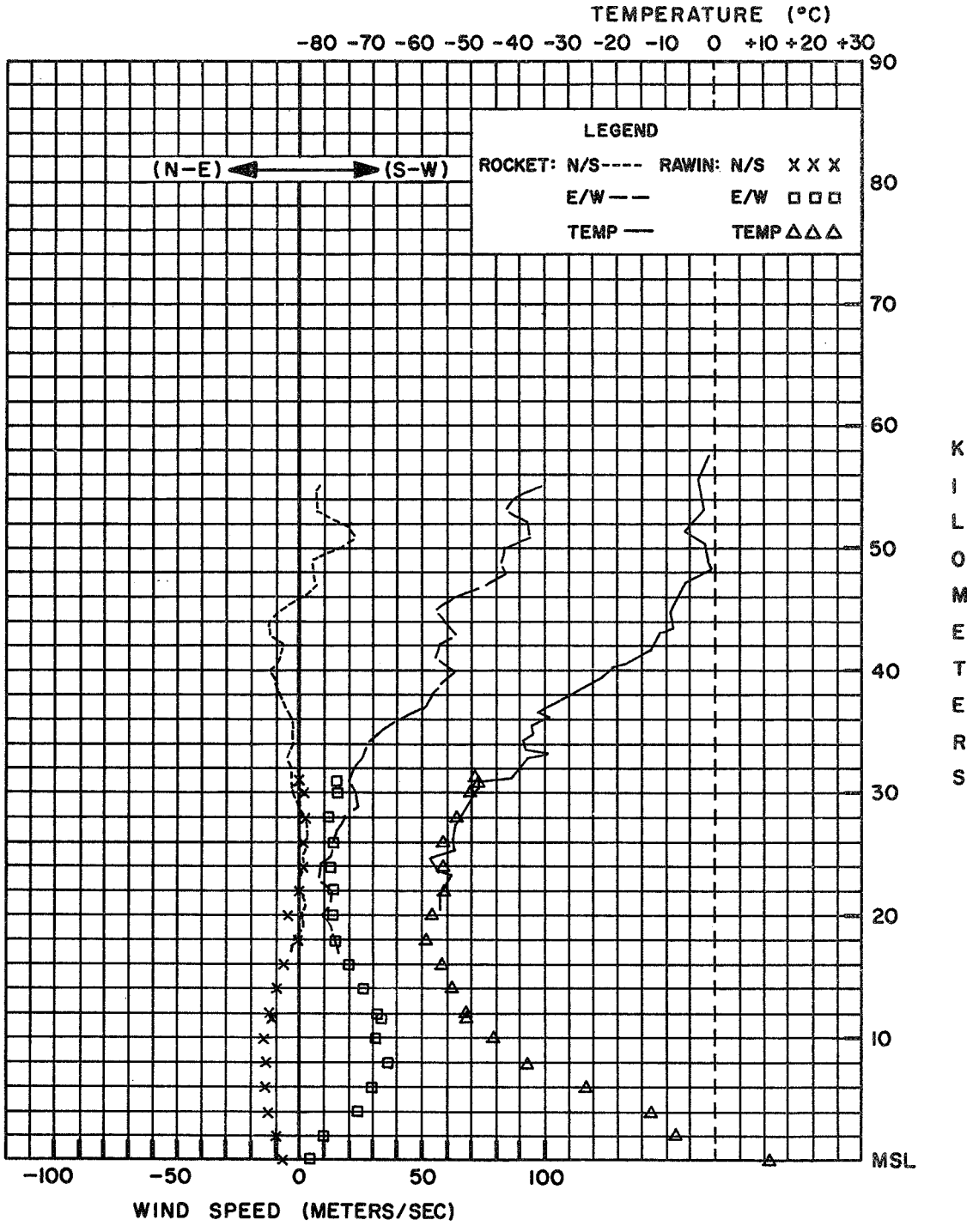
# TECHNICAL DATA

MOTOR TYPE..ARC45
PAYLOAD TYPE..ARCASONDE-1A
FUSE TYPE..GAS GENERATED SEPARATION DEVICE
LAUNCHER SETTING..128° AZIMUTH 74.0° ELEVATION
RADAR TYPE..FPS-16 APOGEE 59.619 METERS
WIND SENSOR TYPE..15 FT. DIAMETER PARACHUTE
TEMPERATURE SENSOR TYPE..0.010 INCH BEAD THERMISTOR
GROUND EQUIPMENT TYPE..GMD-1B
REMARKS..INTERFERING SIGNAL CAUSED LOSS OF T/M BELOW 20,300 METERS.

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..132 SEC

SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..MOLDED INSULATION CO. RADIOSONDE TYPE..1680 MHZ
TEMPERATURE ELEMENT TYPE..BEAD THERMISTOR A LLOON TYPE..NEOPRENE
PRESSURE SENSOR TYPE..AMEROID AND HYPSOMETER BALLOON SIZE..1,200 GRAMS
GROUND EQUIPMENT TYPE..GMD-1B
WIND AT ROCKET LAUNCH..SFC. 347DEG/38MPS 1KM 299DEG/33MPS 3KM 290DEG/12MPS
4KM 295DEG/11MPS 6KM 283DEG/14MPS 7KM 288DEG/13MPS
HALLISTIC WIND.. 303° AZIMUTH 10.3 MPS
THERMODYNAMIC BASE DATA..PRESSURE 55.5 MB
TEMPERATURE -57.6°C
ALTITUDE 20,000 METERS




STATION: (NASA) Wallops Island, Va. ROCKET TIME: 1152 LST 1652 GCT PAYLOAD TYPE: Arcasonde 1A

DATE: 30 October, 1968 ROCKET MOTOR TYPE: Arcas RADIOSONDE TYPE: 1680 MHz

# ROCKET OBSERVATION DATA

WP STATION 3A4A

27432 (WASA) WALLOPS ISLAND, VIRGINIA

LAT. 37° 51' N LONG. 75° 29' W

ROCKET LAUNCH

DATE NOVEMBER 7, 1964 TIME 1551 Z

ROCKET WIND

| FALL VEL | ALT | WIND POLAR | | COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 118 | 51 | 271 | 082 | -002 | +082 |
| 125 | 52 | 269 | 080 | +002 | +079 |
| 125 | 54 | 268 | 073 | +003 | +072 |
| 111 | 57 | 268 | 071 | +003 | +070 |
| 100 | 58 | 270 | 082 | +000 | +082 |
| 093 | 59 | 271 | 093 | -002 | +093 |
| 093 | 59 | 269 | 093 | +002 | +093 |
| 095 | 54 | 265 | 091 | +007 | +090 |
| 090 | 52 | 265 | 084 | +007 | +084 |
| 080 | 51 | 263 | 077 | +009 | +076 |
| 077 | 50 | 260 | 091 | +015 | +090 |
| 069 | 48 | 252 | 091 | +012 | +090 |
| 071 | 44 | 260 | 078 | +013 | +075 |
| 061 | 47 | 259 | 075 | +015 | +074 |
| 062 | 46 | 263 | 078 | +009 | +078 |
| 055 | 45 | 259 | 068 | +013 | +068 |
| 058 | 44 | 252 | 061 | +020 | +060 |
| 054 | 43 | 244 | 055 | +025 | +049 |
| 046 | 42 | 242 | 065 | +021 | +060 |
| 039 | 41 | 251 | 049 | +014 | +047 |
| 034 | 40 | 254 | 053 | +010 | +052 |
| 031 | 39 | 261 | 052 | +008 | +052 |
| 029 | 38 | 262 | 046 | +006 | +045 |
| 027 | 37 | 261 | 038 | +006 | +037 |
| 026 | 36 | 258 | 041 | +009 | +040 |
| 025 | 34 | 260 | 041 | +007 | +041 |
| 021 | 34 | 256 | 038 | +009 | +037 |
| 018 | 33 | 253 | 039 | +011 | +037 |
| 017 | 32 | 252 | 039 | +012 | +037 |
| 017 | 31 | 251 | 036 | +012 | +034 |
| 015 | 30 | 248 | 028 | +010 | +026 |
| 013 | 29 | 250 | 029 | +010 | +027 |
| 012 | 28 | 252 | 023 | +007 | +022 |
| 010 | 27 | 250 | 015 | +005 | +014 |
| 010 | 26 | 256 | 018 | +005 | +017 |
| 010 | 25 | 254 | 014 | +003 | +014 |
| 009 | 24 | 259 | 010 | +002 | +010 |
| 008 | 23 | 260 | 009 | +002 | +009 |
| 007 | 22 | 256 | 008 | +002 | +008 |
| 007 | 21 | 259 | 008 | +002 | +008 |
| 006 | 20 | 264 | 009 | +002 | +009 |
| 006 | 19 | 265 | 012 | +003 | +012 |
| 005 | 18 | 264 | 013 | +004 | +012 |

RAWINSONDE RELEASE

DATE NOVEMBER 7, 1964 TIME 1115 Z

RAWINSONDE

| PRESSURE | ALT IN FEET OR METERS | WIND POLAR | | COMPONENTS MPS | | RH | TEMP |
|---|---|---|---|---|---|---|---|
| MB | | DEG | MPS | N-S | E-W | % | DEG C |
| 1010.0 | 0090 | 270 | 002 | +000 | +002 | 97 | +11.6 |
| 0795.0 | 0230 | 248 | 013 | +005 | +012 | 72 | +05.5 |
| 0619.0 | 0400 | 230 | 023 | +015 | +018 | 92 | -06.2 |
| 0477.0 | 0600 | 246 | 024 | +010 | +022 | 22 | -18.0 |
| 0363.0 | 0800 | 260 | 042 | +007 | +042 | 26 | -32.6 |
| 0271.0 | 1000 | 255 | 054 | +014 | +053 | | -45.1 |
| 0200.5 | 1200 | 256 | 047 | +011 | +046 | | -49.1 |
| 0147.0 | 1400 | 253 | 036 | +011 | +034 | | -62.5 |
| 0116.0 | 1545 | 270 | 029 | +000 | +029 | | -66.7 |
| 0106.0 | 1600 | 260 | 025 | +004 | +025 | | -67.7 |
| 0075.9 | 1800 | 248 | 009 | +003 | +008 | | -65.0 |
| 0055.0 | 2000 | 255 | 012 | +003 | +012 | | -61.9 |
| 0039.9 | 2200 | 268 | 013 | +001 | +013 | | -61.3 |
| 0029.1 | 2400 | 274 | 012 | -001 | +012 | | -57.8 |
| 0021.2 | 2600 | 257 | 015 | +003 | +015 | | -54.5 |
| 0015.6 | 2800 | 262 | 020 | +003 | +020 | | -51.2 |
| 0011.6 | 3000 | 255 | 020 | +005 | +019 | | -48.0 |
| 0009.5 | 3130 | 256 | 030 | +007 | +030 | | -40.6 |

# TECHNICAL DATA

MOTOR TYPE..LOKI

PAYLOAD TYPE..RADIASONDE

FUSE TYPE..ELECTRICALLY ACTIVATED PYROTECHNIC

LAUNCHER SETTING..115° AZIMUTH 80.0° ELEVATION

RADAR TYPE..FPS-16 APOGEE 94434 METERS

WIND SENSOR TYPE..7.0 FT. DIAMETER PARACHUTE

TEMPERATURE SENSOR TYPE..0.010 INCH BEAD THERMISTOR

GROUND EQUIPMENT TYPE..GMD-1B

REMARKS..NO USABLE TELEMETRY DATA. THERMISTOR FAILED AT EJECTION.

MOTOR PERFORMANCE..GOOD

PAYLOAD PERFORMANCE..FAILURE

ACTUAL FUSE DELAY TIME..120 SEC

SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..MOLDED INSULATION CO. RADIOSONDE TYPE..1680 MHZ

TEMPERATURE ELEMENT TYPE..ROD THERMISTOR BALLOON TYPE..NEOPRENE

PRESSURE SENSOR TYPE..ANEROID AND HYPSOMETER BALLOON SIZE..1,200 GRAMS

GROUND EQUIPMENT TYPE..GMD-1B

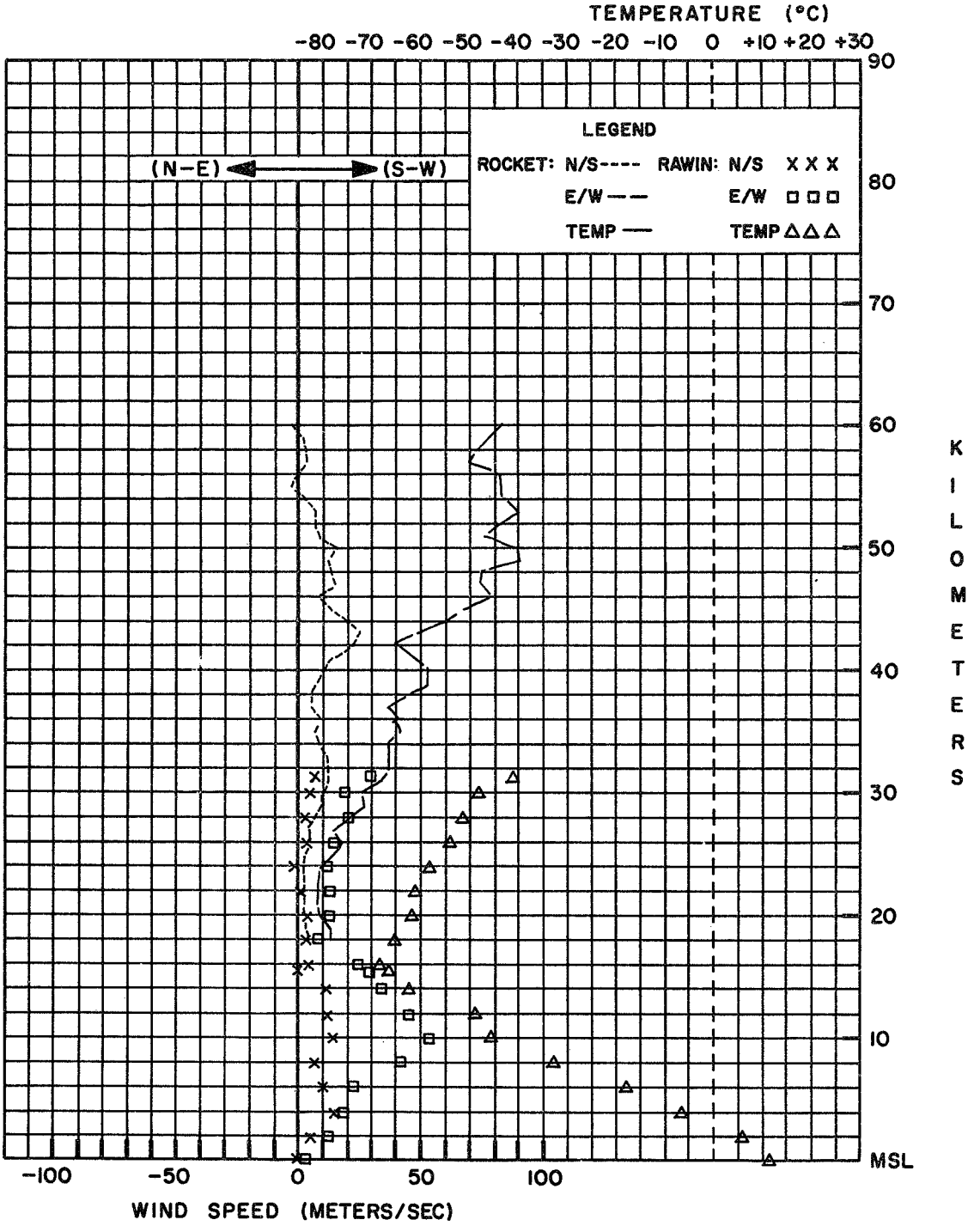
WIND AT ROCKET LAUNCH..SFC. 27ADEG/02MPS 15M 262DEG/03MPS 30M 259DEG/05MPS 46M 248DEG/05MPS 61M 241DEG/05MPS 76M 252DEG/05MPS

BALLISTIC WIND.. N.A. AZIMUTH N.A. MPS

THERMODYNAMIC BASE DATA..PRESSURE N.A. MBS

TEMPERATURE N.A. C

ALTITUDE N.A. METERS




STATION: (NASA) Wallops Island, Va. ROCKET TIME: 1051 LST 1551 GCT PAYLOAD TYPE: Datasonde

DATE: 7 November, 1968 ROCKET MOTOR TYPE: Loki RADIOSONDE TYPE: 1680 MHz

# ROCKET OBSERVATION DATA

NP STATION NAME

42599 (CNAE) NATAL, BRAZIL

LAT. 05°55' S LONG. 35°10' W

ROCKET LAUNCH

DATE NOVEMBER 13, 1968 TIME 1530 Z

RAWINSONDE RELEASE

DATE NOVEMBER 13, 1968 TIME 1215 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | WIND COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 100 | 60 | 273 | 021 | -001 | +021 |
| 111 | 59 | 022 | 008 | -007 | -003 |
| 111 | 58 | 061 | 019 | -009 | -017 |
| 095 | 57 | 058 | 023 | -012 | -019 |
| 095 | 56 | 061 | 017 | -008 | -015 |
| 100 | 55 | 070 | 017 | -006 | -016 |
| 077 | 54 | 078 | 014 | -004 | -014 |
| 074 | 53 | 066 | 011 | -005 | -010 |
| 080 | 52 | 049 | 009 | -006 | -007 |
| 074 | 51 | 029 | 011 | -010 | -005 |
| 069 | 50 | 009 | 013 | -013 | -002 |
| 067 | 49 | 356 | 010 | -010 | +001 |
| 065 | 48 | 004 | 008 | -008 | +000 |
| 059 | 47 | 017 | 010 | -010 | -003 |
| 051 | 46 | 051 | 012 | -008 | -009 |
| 048 | 45 | 059 | 006 | -003 | -005 |
| 048 | 44 | 051 | 007 | -005 | -005 |
| 044 | 43 | 086 | 018 | -002 | -018 |
| 040 | 42 | 087 | 030 | -002 | -030 |
| 038 | 41 | 090 | 033 | +000 | -033 |
| 036 | 40 | 090 | 023 | +000 | -023 |
| 031 | 39 | 092 | 013 | +000 | -013 |
| 029 | 38 | 112 | 003 | +001 | -003 |
| 028 | 37 | 358 | 008 | -008 | +002 |
| 025 | 36 | 305 | 009 | -005 | +007 |
| 024 | 35 | 259 | 009 | +002 | +009 |
| 022 | 34 | 251 | 015 | +005 | +014 |
| 020 | 33 | 253 | 020 | +006 | +019 |
| 020 | 32 | 258 | 025 | +006 | +024 |
| 018 | 31 | 271 | 023 | +000 | +023 |
| 016 | 30 | 281 | 019 | -003 | +019 |
| 014 | 29 | 283 | 015 | -004 | +014 |
| 012 | 28 | 303 | 010 | -005 | +009 |
| 012 | 27 | 299 | 005 | -002 | +004 |
| 011 | 26 | 301 | 005 | -003 | +004 |
| 010 | 25 | 136 | 008 | +006 | -005 |
| 008 | 24 | 049 | 022 | +000 | -022 |
| 007 | 23 | 083 | 028 | -004 | -027 |
| 006 | 22 | 085 | 026 | -002 | -026 |
| 006 | 21 | 089 | 019 | +000 | -019 |
| 005 | 20 | 072 | 011 | -004 | -010 |
| 005 | 19 | 106 | 003 | +001 | -003 |
| 005 | 18 | 178 | 005 | +005 | +000 |

ROCKET THERMODYNAMICS

| ALT TENS OF METERS | TEMP DEG C | PRESSURE MB | DENSITY G M⁻³ | WIND POLAR DEG | MPS | WIND COMPONENTS MPS N-S | E-W |
|---|---|---|---|---|---|---|---|
| 5995 | -09.1 | 09.240 | 00.330 | 280 | 020 | -003 | +020 |
| 5532 | -04.7 | 09.442 | 00.579 | 068 | 017 | -006 | +016 |
| 5340 | -05.5 | 00.529 | 00.695 | 071 | 012 | -004 | +011 |
| 5084 | -02.3 | 00.736 | 00.956 | 026 | 011 | -010 | +005 |
| 4990 | +04.6 | 00.833 | 01.092 | 009 | 013 | -013 | -002 |
| 4621 | +02.6 | 01.374 | 01.788 | 040 | 012 | -009 | +008 |
| 4298 | -02.9 | 02.037 | 02.634 | 086 | 017 | -001 | +017 |
| 4197 | -03.6 | 02.304 | 03.009 | 087 | 030 | -002 | +030 |
| 4026 | -08.1 | 02.863 | 03.203 | 090 | 026 | +000 | +026 |
| 3935 | -13.2 | 03.208 | 04.345 | 092 | 016 | +000 | +016 |
| 3898 | -17.0 | 03.467 | 04.793 | 093 | 013 | +000 | +013 |
| 3679 | -25.2 | 04.595 | 06.527 | 337 | 008 | -007 | +003 |
| 3344 | -28.7 | 07.098 | 10.224 | 252 | 018 | +006 | +017 |
| 3246 | -34.6 | 08.123 | 11.990 | 256 | 023 | +006 | +022 |
| 3054 | -34.0 | 10.911 | 16.065 | 275 | 021 | -002 | +021 |
| 3008 | -39.1 | 11.653 | 17.532 | 281 | 019 | -004 | +019 |
| 2871 | -39.6 | 13.974 | 21.069 | 292 | 013 | -005 | +012 |
| 2774 | -43.7 | 16.015 | 24.578 | 303 | 008 | -004 | +007 |
| 2552 | -42.4 | 22.297 | 34.026 | 240 | 006 | +003 | +005 |
| 2521 | -46.2 | 23.314 | 36.174 | 190 | 007 | +007 | +001 |
| 2448 | -43.0 | 25.087 | 39.914 | 110 | 016 | +005 | +015 |
| 2398 | -49.2 | 24.122 | 44.219 | 089 | 022 | +000 | +022 |
| 2362 | -50.2 | 29.923 | 47.262 | 087 | 024 | -001 | +024 |
| 2310 | -58.2 | 32.677 | 52.550 | 083 | 028 | -004 | +028 |

CONSTANT PRESSURE SURFACES (GEOPOTENTIAL HEIGHT)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2041 | -67.9 | 50.000 | 85.785 | 078 | 014 | -003 | +014 |
| 2372 | -51.5 | 30.000 | 47.661 | 087 | 024 | -001 | +024 |
| 2643 | -42.7 | 20.000 | 30.561 | 300 | 005 | -002 | +004 |
| 3132 | -34.1 | 10.000 | 14.730 | 267 | 023 | +001 | +023 |
| 3386 | -29.8 | 07.000 | 10.129 | 251 | 015 | +005 | +004 |
| 3635 | -25.1 | 05.000 | 07.098 | 317 | 009 | -007 | +006 |
| 3774 | -21.5 | 03.000 | 04.199 | 080 | 004 | +001 | -004 |
| 4313 | -02.5 | 02.000 | 02.602 | 083 | 016 | -002 | -016 |
| 4872 | -02.3 | 01.000 | 01.300 | 358 | 009 | -009 | +001 |

RAWINSONDE

| PRESSURE MB | ALT TENS OF METERS | WIND POLAR DEG | MPS | WIND COMPONENTS MPS N-S | E-W | RH % | TEMP DEG C |
|---|---|---|---|---|---|---|---|
| 1006.2 | 0004 | 110 | 008 | +003 | -008 | 84 | +29.8 |
| 0800.0 | 0200 | 103 | 010 | +002 | -010 | 46 | +14.6 |
| 0629.4 | 0400 | 137 | 004 | +003 | -003 | 44 | +03.5 |
| 0489.8 | 0600 | 325 | 014 | -011 | +008 | 26 | -06.1 |
| 0376.3 | 0800 | 248 | 009 | -002 | +009 | 27 | -22.6 |
| 0274.0 | 1000 | 208 | 009 | +004 | +004 | 23 | -41.4 |
| 0208.0 | 1200 | 170 | 017 | +017 | -003 | 20 | -58.7 |
| 0150.5 | 1400 | 210 | 006 | +005 | +003 | | -66.3 |
| 0107.5 | 1600 | 271 | 016 | +000 | +016 | | -77.4 |
| 0086.0 | 1727 | 155 | 011 | +010 | -005 | | -81.2 |
| 0075.7 | 1800 | 155 | 006 | +005 | -003 | | -80.7 |
| 0053.8 | 2000 | 110 | 013 | +004 | -012 | | -66.8 |
| 0038.4 | 2200 | 047 | 029 | -002 | -029 | | -64.3 |
| 0027.3 | 2400 | 085 | 025 | -002 | -025 | | -52.0 |
| 0020.6 | 2600 | 234 | 008 | +004 | +008 | | -44.3 |
| 0015.3 | 2800 | 306 | 009 | -004 | +004 | | -47.3 |
| 0011.3 | 3000 | 277 | 017 | -002 | +017 | | -43.7 |
| 0008.4 | 3200 | 267 | 027 | +002 | +027 | | -39.0 |
| 0006.3 | 3400 | 259 | 018 | +004 | +014 | | -34.8 |
| 0005.0 | 3563 | 250 | 011 | +004 | +010 | | -34.8 |

# TECHNICAL DATA

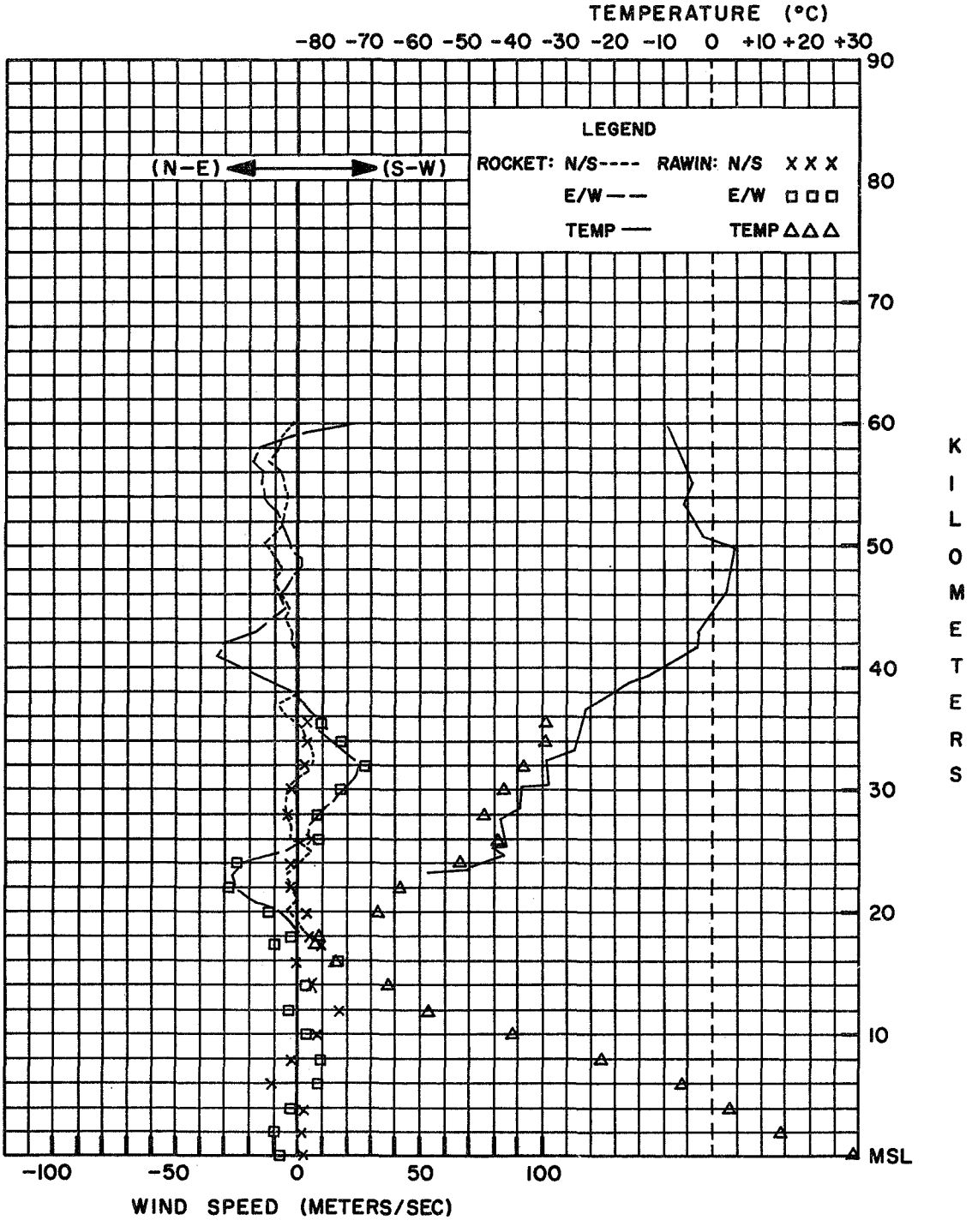
MOTOR TYPE..ARCAS
PAYLOAD TYPE..ARCASONDE-1A
FUSE TYPE..GAS GENERATED SEPARATION DEVICE
LAUNCHER SETTING..035° AZIMUTH 85.0° ELEVATION
RADAR TYPE..MPS-19 APOGEE 61,750 METERS
WIND SENSOR TYPE..15 FT. DIAMETER PARACHUTE
TEMPERATURE SENSOR TYPE..0.010 INCH HEAD THERMISTOR
GROUND EQUIPMENT TYPE..GMD-1A
REMARKS..NONE

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..117 SEC

SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..MOLDED INSULATION CO.
TEMPERATURE ELEMENT TYPE..RUD THERMISTOR
PRESSURE SENSOR TYPE..ANEROID
GROUND EQUIPMENT TYPE..GMD-1A
WIND AT ROCKET LAUNCH..06M 100DEG/08MPS 09M 110DEG/06MPS 16M 110DEG/08MPS
25M 100DEG/10MPS 40M 070DEG/14MPS
BALLISTIC WIND.. 12M AZIMUTH 07.5 MPS
THERMODYNAMIC BASE DATA..PRESSURE 32.9 MBS
TEMPERATURE -59.4° C
ALTITUDE 23,000 METERS

RADIOSONDE TYPE..1680 MHZ
BALLOON TYPE..NEOPRENE
BALLOON SIZE..1,200 GRAMS




STATION: (CNAE) Natal, Brazil
DATE: 13 November, 1968

ROCKET TIME: 1230 LST 1530 GCT
ROCKET MOTOR TYPE: Arcas

PAYLOAD TYPE: Arcasonde 1A
RADIOSONDE TYPE: 1680 MHZ

# ROCKET OBSERVATION DATA

WP STATION NAME

72402 (WASH) WALLOPS ISLAND, VIRGINIA

LAT. 37° 51' N LONG. 75° 29' W

ROCKET LAUNCH

DATE NOVEMBER 13, 1968 TIME 1552 Z

RAWINSONDE RELEASE

DATE NOVEMBER 13, 1968 TIME 1115 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | WIND COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 117 | 58 | 262 | 109 | +015 | +108 |
| 100 | 57 | 260 | 107 | +019 | +106 |
| 100 | 56 | 259 | 100 | +021 | +098 |
| 100 | 55 | 253 | 103 | +030 | +098 |
| 100 | 54 | 254 | 107 | +029 | +101 |
| 100 | 53 | 248 | 103 | +038 | +096 |
| 090 | 52 | 248 | 100 | +039 | +094 |
| 087 | 51 | 250 | 093 | +032 | +085 |
| 077 | 50 | 245 | 084 | +034 | +077 |
| 069 | 49 | 249 | 084 | +029 | +078 |
| 067 | 48 | 256 | 076 | +018 | +074 |
| 064 | 47 | 258 | 075 | +016 | +073 |
| 053 | 46 | 255 | 077 | +020 | +075 |
| 045 | 45 | 256 | 069 | +016 | +068 |
| 042 | 44 | 261 | 061 | +009 | +060 |
| 038 | 43 | 265 | 057 | +004 | +056 |
| 036 | 42 | 264 | 054 | +005 | +054 |
| 033 | 41 | 268 | 053 | +002 | +053 |
| 031 | 40 | 271 | 050 | -001 | +049 |
| 029 | 39 | 270 | 046 | +000 | +046 |
| 026 | 38 | 271 | 043 | -001 | +043 |
| 024 | 37 | 272 | 038 | -001 | +038 |
| 022 | 36 | 275 | 036 | -003 | +035 |
| 020 | 35 | 276 | 037 | -004 | +037 |
| 019 | 34 | 281 | 034 | -007 | +034 |
| 017 | 33 | 286 | 028 | -008 | +026 |
| 016 | 32 | 289 | 025 | -008 | +024 |
| 013 | 31 | 294 | 025 | -010 | +023 |
| 011 | 30 | 299 | 022 | -010 | +019 |
| 011 | 29 | 298 | 017 | -008 | +015 |
| 011 | 28 | 293 | 014 | -005 | +013 |
| 010 | 27 | 281 | 011 | -002 | +011 |
| 009 | 26 | 274 | 007 | -001 | +007 |
| 008 | 25 | 270 | 008 | +000 | +008 |
| 007 | 24 | 259 | 009 | +002 | +009 |
| 007 | 23 | 249 | 009 | +003 | +008 |
| 005 | 22 | 248 | 011 | +004 | +011 |
| 005 | 21 | 244 | 013 | +006 | +012 |
| 005 | 20 | 245 | 014 | +006 | +013 |
| 004 | 19 | 243 | 017 | +008 | +015 |
| 004 | 18 | 233 | 019 | +011 | +015 |

RAWINSONDE

| PRESSURE MB | ALT FTS OR METERS | WIND POLAR DEG | MPS | WIND COMPONENTS MPS N-S | E-W | RH % | TEMP DEG C |
|---|---|---|---|---|---|---|---|
| 1004.3 | 0000 | 310 | 009 | -006 | +007 | 62 | +03.3 |
| 0780.0 | 0200 | 310 | 020 | -013 | +015 | 68 | -10.3 |
| 0599.0 | 0400 | 277 | 021 | -002 | +020 | 50 | -15.6 |
| 0457.5 | 0600 | 304 | 025 | -014 | +021 | 43 | -27.2 |
| 0344.0 | 0800 | 296 | 024 | -011 | +021 | | -40.2 |
| 0291.0 | 0914 | 275 | 019 | -001 | +018 | | -45.8 |
| 0256.0 | 1000 | 280 | 021 | -004 | +020 | | -46.0 |
| 0190.0 | 1200 | 268 | 025 | +002 | +024 | | -46.5 |
| 0140.0 | 1400 | 256 | 025 | +006 | +024 | | -49.6 |
| 0103.5 | 1600 | 247 | 020 | +008 | +018 | | -53.3 |
| 0075.4 | 1800 | 240 | 014 | +007 | +012 | | -59.9 |
| 0054.8 | 2000 | 247 | 015 | +006 | +014 | | -60.7 |
| 0039.8 | 2200 | 250 | 015 | +003 | +015 | | -61.7 |
| 0028.8 | 2400 | 285 | 010 | -002 | +010 | | -60.3 |
| 0021.1 | 2600 | 243 | 007 | +003 | +006 | | -57.6 |
| 0021.0 | 2613 | 245 | 007 | +003 | +006 | | -57.6 |
| 0018.5 | 2684 | | | | | | -56.6 |

# TECHNICAL DATA

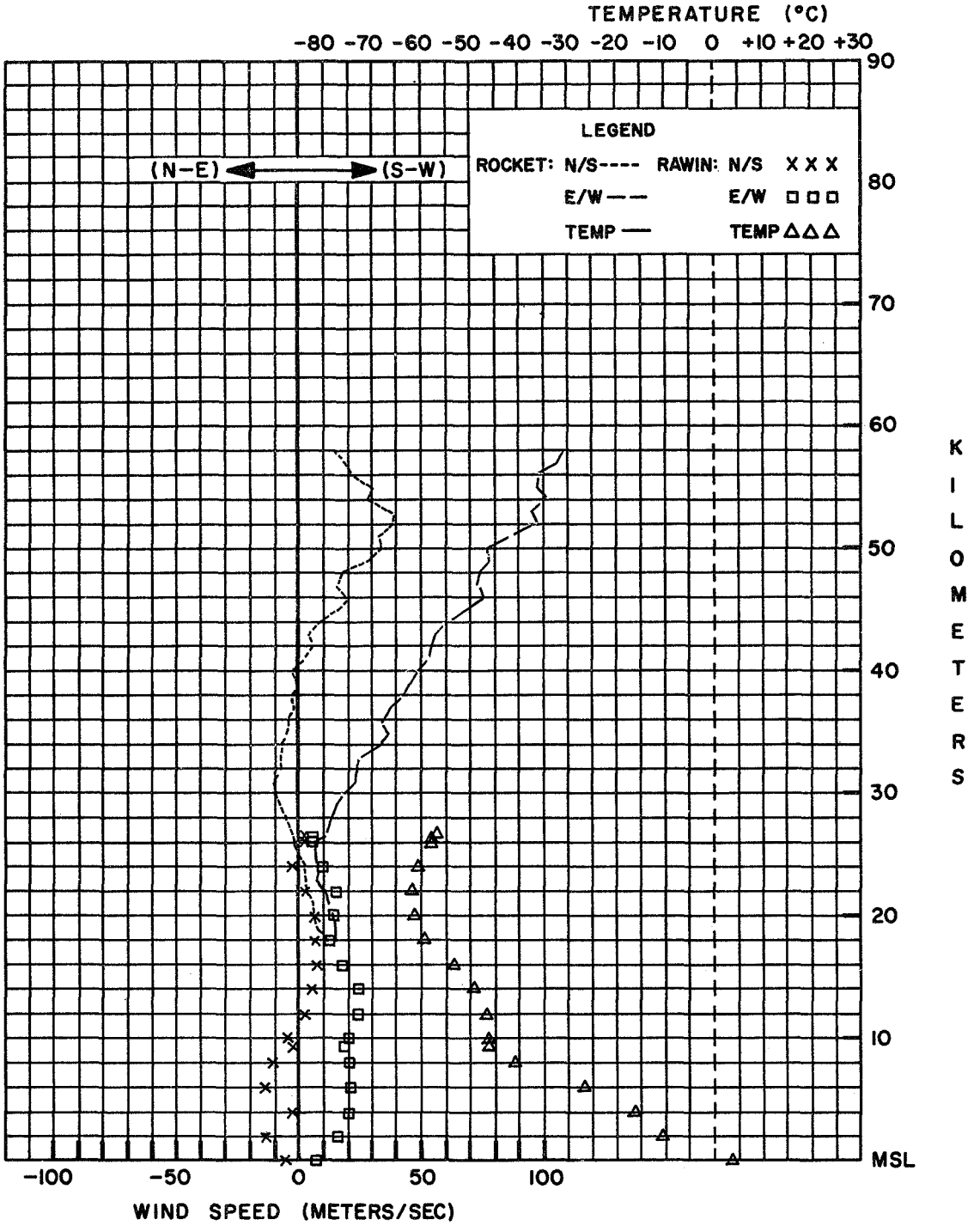
MOTOR TYPE..LOKI
PAYLOAD TYPE..DATASONDE
FUSE TYPE..ELECTRICALLY ACTIVATED PYROTECHNIC
LAUNCHER SETTING..105° AZIMUTH 75+° ELEVATION
RADAR TYPE..FPS-16 APOGEE KM..160 METERS
WIND SENSOR TYPE..7.5 FT. DIAMETER PARACHUTE
TEMPERATURE SENSOR TYPE..0.010 INCH BEAD THERMISTOR
GROUND EQUIPMENT TYPE..GMD-1B
REMARKS..NO USABLE TELEMETRY DATA BECAUSE OF THERMISION FAILURE. TOWER WINDS AT ROCKET LAUNCH NOT AVAILABLE DUE TO INOPERATIVE TOWER.

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..FAILURE
ACTUAL FUSE DELAY TIME..117 SEC

SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..MOLDED INSULATION CO.
TEMPERATURE ELEMENT TYPE..ROD THERMISTOR
PRESSURE SENSOR TYPE..ANEROID AND HYPSOMETER
GROUND EQUIPMENT TYPE..GMD-1A
WIND AT ROCKET LAUNCH..SFC. 291DEG/13MPS
BALLISTIC WIND.. N.A. AZIMUTH N.A. MPS
THERMODYNAMIC BASE DATA..PRESSURE N.A. MB
TEMPERATURE N.A. C
ALTITUDE N.A. METERS

RADIOSONDE TYPE..1680 MHZ
BALLOON TYPE..NEOPRENE
BALLOON SIZE..1,000 GRAMS




STATION: (NASA) Wallops Island, Va. ROCKET TIME: 1052 LST 1552 GCT PAYLOAD TYPE: Datasonde

DATE: 13 November, 1968 ROCKET MOTOR TYPE: Loki RADIOSONDE TYPE: 1680 MHZ

# ROCKET OBSERVATION DATA

WP STATION NAME

87689 (CNIE) MAR CHIQUITA, ARGENTINA

LAT. 37° 45' S LONG. 57° 25' W

ROCKET LAUNCH

DATE NOVEMBER 13, 1968 TIME 1910 Z

RAWINSONDE RELEASE

DATE NOVEMBER 13, 1968 TIME 2030 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 095 | 57 | 088 | 029 | -001 | -029 |
| 095 | 56 | 084 | 030 | -003 | -030 |
| 091 | 55 | 063 | 026 | -012 | -023 |
| 087 | 54 | 070 | 019 | -007 | -018 |
| 087 | 53 | 064 | 020 | -002 | -020 |
| 087 | 52 | 075 | 031 | -008 | -030 |
| 077 | 51 | 075 | 023 | -006 | -022 |
| 059 | 50 | 073 | 022 | -006 | -021 |
| 062 | 49 | 075 | 022 | -006 | -021 |
| 155 | 48 | 080 | 027 | -005 | -026 |
| 049 | 47 | 085 | 032 | -003 | -032 |
| 054 | 46 | 090 | 021 | +000 | -021 |
| 054 | 45 | 100 | 013 | +002 | -013 |
| 049 | 44 | 114 | 012 | +005 | -011 |
| 046 | 43 | 104 | 013 | +003 | -012 |
| 042 | 42 | 075 | 014 | -004 | -013 |
| 038 | 41 | 070 | 030 | -010 | -028 |
| 029 | 40 | 078 | 021 | -004 | -020 |
| 026 | 39 | 090 | 021 | +000 | -021 |
| 027 | 38 | 098 | 022 | +003 | -022 |
| 027 | 37 | 098 | 023 | +003 | -023 |
| 028 | 36 | 100 | 018 | +003 | -018 |
| 024 | 35 | 103 | 018 | +004 | -018 |
| 024 | 34 | 108 | 015 | +005 | -014 |
| 021 | 33 | 116 | 013 | +006 | -012 |
| 016 | 32 | 099 | 012 | +002 | -012 |
| 016 | 31 | 087 | 011 | +000 | -011 |
| 019 | 30 | 063 | 008 | -004 | -007 |
| 019 | 29 | 037 | 008 | -006 | -005 |
| 018 | 28 | 043 | 008 | -006 | -005 |
| 010 | 27 | 127 | 003 | +002 | -002 |
| 010 | 26 | 207 | 003 | +003 | -001 |
| 009 | 25 | 290 | 004 | -001 | +004 |
| 008 | 24 | 316 | 004 | -003 | +003 |
| 008 | 23 | 360 | 001 | -001 | +000 |
| 006 | 22 | 241 | 004 | +000 | +004 |
| 005 | 21 | 253 | 007 | +002 | +007 |
| 005 | 20 | 266 | 008 | +000 | +006 |
| 005 | 19 | 272 | 009 | +000 | +009 |
| 005 | 18 | 265 | 016 | +001 | +016 |

ROCKET THERMODYNAMICS

| ALT | TEMP | PRESSURE | DENSITY | | WIND POLAR | | COMPONENTS MPS | |
|---|---|---|---|---|---|---|---|---|
| OF TENS METERS | DEG C | MB | G M -3 | | DEG | MPS | N-S | E-W |
| 5750 | -00.8 | 00.381 | 00.487 | | 088 | 029 | -001 | -029 |
| 5570 | -04.0 | 00.476 | 00.616 | | 084 | 030 | -003 | -030 |
| 5380 | +02.7 | 00.601 | 00.760 | | 070 | 019 | -007 | -018 |
| 5260 | +01.1 | 00.696 | 00.885 | | 084 | 020 | -002 | -020 |
| 5070 | +03.1 | 00.878 | 01.108 | | 073 | 022 | -006 | -021 |
| 4950 | +02.1 | 01.017 | 01.287 | | 075 | 022 | -006 | -021 |
| 4650 | +06.3 | 01.394 | 01.738 | | 085 | 032 | -003 | -032 |
| 4340 | +00.3 | 02.135 | 02.720 | | 104 | 013 | +003 | -012 |
| 4240 | +00.3 | 02.415 | 03.077 | | 075 | 014 | -004 | -013 |
| 4170 | +03.2 | 02.634 | 03.400 | | 075 | 014 | -004 | -013 |
| 4110 | -02.0 | 02.839 | 03.647 | | 070 | 030 | -010 | -028 |
| 4050 | -05.0 | 03.060 | 03.976 | | 078 | 021 | -004 | -020 |
| 3945 | -06.0 | 03.493 | 04.555 | | 090 | 021 | +000 | -021 |
| 3560 | -24.0 | 05.780 | 08.092 | | 100 | 016 | +003 | -014 |
| 3401 | -24.5 | 07.172 | 10.049 | | 104 | 015 | +005 | -014 |
| 3360 | -23.3 | 07.563 | 10.572 | | 116 | 013 | +006 | -012 |
| 3300 | -26.1 | 08.228 | 11.602 | | 099 | 012 | +002 | -012 |
| 3245 | -33.1 | 08.880 | 12.888 | | 087 | 011 | +000 | -011 |
| 3124 | -37.8 | 10.549 | 15.615 | | 087 | 011 | +000 | -011 |
| 3010 | -41.6 | 12.444 | 18.722 | | 063 | 008 | -004 | -007 |
| 2945 | -37.7 | 13.674 | 20.231 | | 037 | 008 | -006 | -005 |
| 2900 | -38.3 | 14.589 | 21.640 | | 037 | 008 | -006 | -005 |
| 2845 | -36.4 | 15.787 | 23.231 | | 043 | 008 | -006 | -005 |
| 2760 | -42.9 | 17.859 | 27.020 | | 043 | 008 | -006 | -005 |
| 2501 | -51.1 | 24.325 | 41.309 | | 290 | 004 | -001 | +004 |
| 2381 | -50.0 | 31.004 | 49.338 | | 316 | 004 | -003 | +003 |
| 2325 | -52.3 | 34.426 | 54.303 | | 360 | 001 | -001 | +000 |
| 2301 | -53.5 | 35.722 | 56.656 | | 360 | 001 | -001 | +000 |
| 2277 | -55.0 | 37.075 | 59.206 | | 360 | 001 | -001 | +000 |
| 2145 | -61.5 | 45.665 | 75.163 | | 253 | 007 | +002 | +007 |
| 1995 | -59.4 | 58.015 | 94.552 | | 266 | 008 | +000 | +008 |
| 1880 | -60.4 | | | | 272 | 009 | +000 | +009 |

CONSTANT PRESSURE SURFACES (GEOPOTENTIAL HEIGHT)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2085 | -60.8 | 50.000 | 81.969 | | 298 | 007 | +002 | +007 |
| 2406 | -50.3 | 30.000 | 46.896 | | 108 | 004 | +001 | +004 |
| 2708 | -45.0 | 20.000 | 30.631 | | 080 | 007 | -001 | +007 |
| 3148 | -36.3 | 10.000 | 14.928 | | 087 | 011 | -002 | +011 |
| 3506 | -24.4 | 07.000 | 09.806 | | 103 | 017 | +004 | +016 |
| 3670 | -17.9 | 05.000 | 06.879 | | 097 | 019 | +002 | +019 |
| 4040 | -04.2 | 03.000 | 03.846 | | 076 | 023 | -006 | -022 |
| 4374 | +01.4 | 02.000 | 02.541 | | 101 | 016 | +003 | -016 |
| 4927 | +02.2 | 01.000 | 01.265 | | 075 | 022 | -006 | -021 |

RAWINSONDE

| PRESSURE | ALT TENS OF METERS | WIND POLAR DEG | MPS | COMPONENTS MPS N-S | E-W | RH % | TEMP DEG C |
|---|---|---|---|---|---|---|---|
| MB | | | | | | | |
| 1008.3 | 0002 | 320 | 012 | -009 | +008 | 47 | +30.0 |
| 0802.0 | 0200 | 306 | 010 | -006 | +008 | 56 | +12.8 |
| 0630.0 | 0400 | 283 | 015 | -003 | +015 | 33 | -00.4 |
| 0486.5 | 0600 | 270 | 018 | +000 | +018 | 36 | -16.0 |
| 0371.0 | 0800 | 269 | 023 | +000 | +024 | 24 | -29.6 |
| 0277.3 | 1000 | 280 | 028 | -005 | +027 | | -43.8 |
| 0204.0 | 1200 | 274 | 032 | -002 | +032 | | -57.2 |
| 0185.0 | 1240 | 270 | 037 | +000 | +037 | | -60.9 |
| 0148.1 | 1400 | 267 | 029 | +002 | +029 | | -57.9 |
| 0107.5 | 1600 | 276 | 023 | -002 | +023 | | -52.0 |
| 0079.2 | 1800 | 305 | 006 | -004 | +005 | | -41.9 |
| 0057.4 | 2000 | 165 | 008 | +008 | -002 | | -57.2 |
| 0041.8 | 2200 | 320 | 003 | -001 | +001 | | -59.9 |
| 0039.0 | 2224 | 320 | 006 | -003 | +003 | | -60.5 |
| 0030.2 | 2400 | 293 | 002 | +001 | +002 | | -50.8 |
| 0024.9 | 2600 | 304 | 004 | -002 | +003 | | -49.2 |
| 0020.0 | 2669 | | | | | | -48.6 |

# TECHNICAL DATA

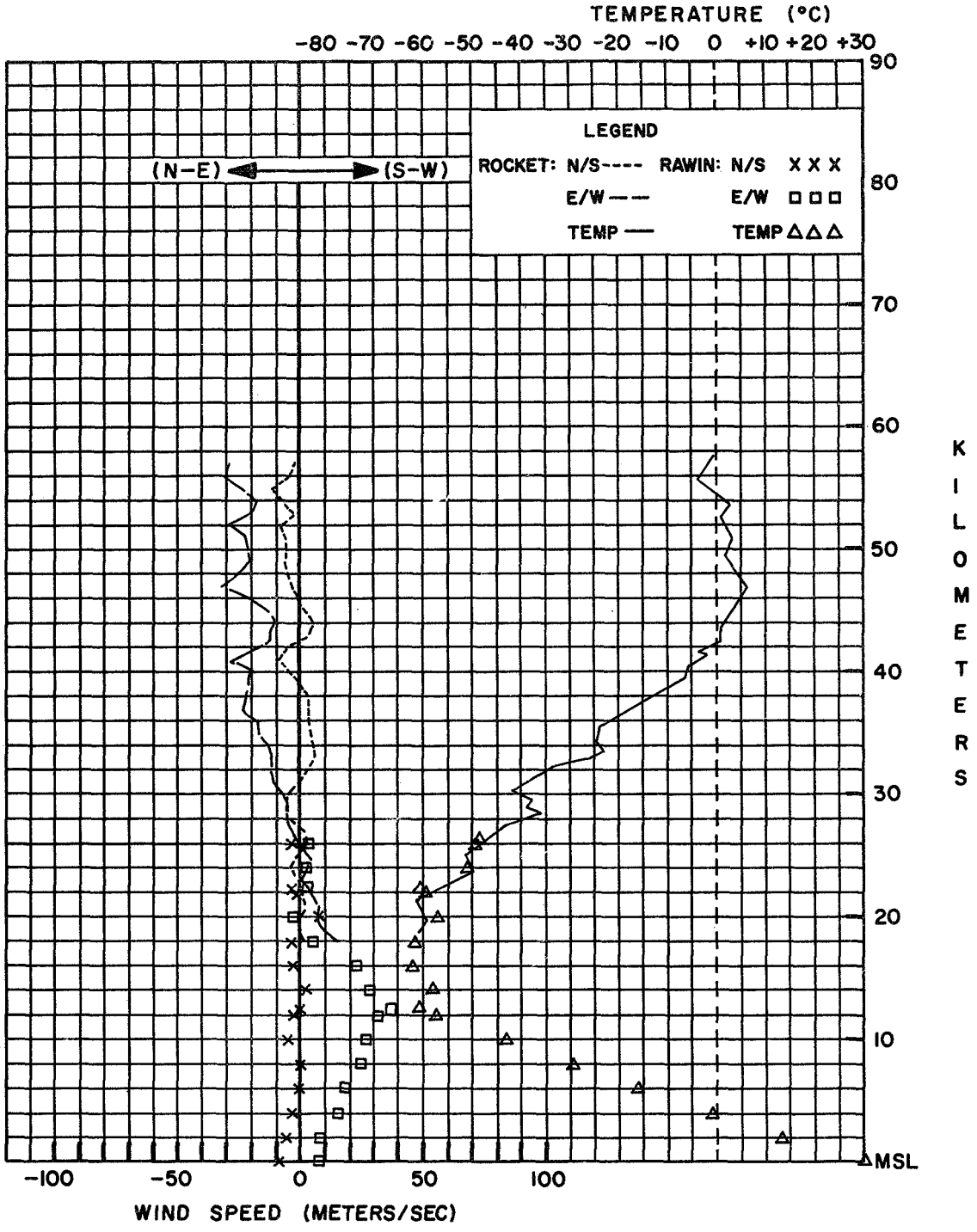
MOTOR TYPE..ARCAS
PAYLOAD TYPE..ARCASONDE-1A
FUSE TYPE..GAS GENERATED SEPERATION DEVICE
LAUNCHER SETTING..115° AZIMUTH 81.5° ELEVATION
RADAR TYPE..MPS-19 APOGEE 76,000 METERS
WIND SENSOR TYPE..18 FT. DIAMETER PARACHUTE
TEMPERATURE SENSOR TYPE..0.010 INCH HEAD THERMISTOR
GROUND EQUIPMENT TYPE..GMD-2B
REMARKS..NONE

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..131 SEC

SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..VAISALA
TEMPERATURE ELEMENT TYPE..RESISTANCE WIRE
PRESSURE SENSOR TYPE..ANEROID
GROUND EQUIPMENT TYPE..VAISALA
WIND AT ROCKET LAUNCH..SFC. 310DEG/0 MPS
BALLISTIC WIND.. 307° AZIMUTH 05.9 MPS
THERMODYNAMIC BASE DATA..PRESSURE 74.2 MBS
TEMPERATURE -61.9° C
ALTITUDE 18,000 METERS

RADIOSONDE TYPE..VAISALA
BALLOON TYPE..NEOPRENE
BALLOON SIZE..1,200 GRAMS




STATION: (CNIE) Mar Chiquita, Arg. ROCKET TIME: 1610 LST 1910 GCT PAYLOAD TYPE: Arcasonde 1A

DATE: 13 November, 1968 ROCKET MOTOR TYPE: Arcas RADIOSONDE TYPE: Vaisala

# ROCKET OBSERVATION DATA

RP STATION NAME

72402 (WAL0) WALLOPS ISLAND, VIRGINIA

LAT. 37° 51' N LONG. 75° 29' W

ROCKET LAUNCH

DATE NOVEMBER 20, 1968 TIME 1556 Z

RAWINSONDE RELEASE

DATE NOVEMBER 20, 1968 TIME 1115 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | WIND COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 040 | 40 | 276 | 050 | -005 | +050 |
| 036 | 39 | 272 | 047 | -002 | +047 |
| 032 | 34 | 274 | 043 | -006 | +042 |
| 028 | 37 | 285 | 038 | -010 | +036 |
| 022 | 36 | 281 | 037 | -007 | +037 |
| 020 | 35 | 274 | 033 | -003 | +033 |
| 020 | 34 | 284 | 029 | +001 | +029 |
| 018 | 33 | 257 | 026 | +006 | +026 |
| 016 | 32 | 265 | 023 | +002 | +023 |
| 016 | 31 | 276 | 023 | -002 | +023 |
| 016 | 30 | 282 | 022 | -005 | +021 |
| 013 | 29 | 280 | 018 | -003 | +017 |
| 011 | 28 | 270 | 012 | +000 | +012 |
| 010 | 27 | 284 | 011 | -003 | +011 |
| 010 | 26 | 283 | 014 | -003 | +014 |
| 011 | 25 | 268 | 013 | +001 | +013 |
| 009 | 24 | 262 | 009 | +001 | +009 |
| 007 | 23 | 255 | 011 | +003 | +011 |
| 007 | 22 | 259 | 012 | +002 | +012 |
| 008 | 21 | 280 | 014 | -002 | +014 |
| 007 | 20 | 259 | 017 | +000 | +017 |
| 005 | 19 | 261 | 020 | +003 | +020 |
| 005 | 18 | 261 | 022 | +003 | +022 |

ROCKET THERMODYNAMICS

| ALT TENS OF METERS | TEMP DEG C | PRESSURE MB | DENSITY G M -3 | WIND POLAR DEG | WIND POLAR MPS | WIND COMPONENTS MPS N-S | WIND COMPONENTS MPS E-W |
|---|---|---|---|---|---|---|---|
| 3983 | -31.6 | 02.599 | 03.748 | 275 | 050 | -004 | +049 |
| 3944 | -33.1 | 02.744 | 03.983 | 273 | 049 | -003 | +048 |
| 3901 | -32.3 | 02.915 | 04.216 | 272 | 047 | -002 | +047 |
| 3856 | -35.1 | 03.106 | 04.543 | 274 | 046 | -004 | +045 |
| 3789 | -32.1 | 03.413 | 04.933 | 279 | 042 | -007 | +042 |
| 3742 | -36.8 | 03.596 | 05.301 | 282 | 040 | -009 | +040 |
| 3722 | -36.1 | 03.753 | 05.516 | 284 | 039 | -009 | +038 |
| 3679 | -40.8 | 03.993 | 05.987 | 285 | 038 | -009 | +036 |
| 3572 | -38.7 | 04.661 | 06.926 | 279 | 036 | -006 | +035 |
| 3542 | -40.4 | 04.867 | 07.285 | 277 | 035 | -004 | +035 |
| 3511 | -37.0 | 05.089 | 07.508 | 275 | 034 | -003 | +034 |
| 3456 | -43.9 | 05.512 | 08.377 | 272 | 031 | -001 | +031 |
| 3335 | -42.0 | 06.584 | 09.923 | 261 | 028 | +004 | +028 |
| 3313 | -43.9 | 06.800 | 10.333 | 258 | 027 | +006 | +026 |
| 3267 | -42.2 | 07.275 | 10.974 | 259 | 025 | +005 | +025 |
| 3240 | -45.7 | 07.570 | 11.595 | 262 | 024 | +003 | +024 |
| 3203 | -45.0 | 07.970 | 11.254 | 265 | 023 | +002 | +023 |
| 3161 | -49.4 | 08.515 | 13.258 | 270 | 023 | +000 | +023 |
| 3118 | -50.1 | 09.088 | 14.194 | 274 | 023 | -002 | +023 |
| 3069 | -56.1 | 09.798 | 15.727 | 278 | 023 | -003 | +022 |
| 3030 | -54.9 | 10.409 | 16.547 | 280 | 022 | -004 | +022 |
| 2947 | -58.9 | 11.849 | 19.267 | 281 | 020 | -004 | +019 |
| 2841 | -55.7 | 13.990 | 22.415 | 274 | 014 | -001 | +014 |
| 2768 | -58.4 | 15.685 | 25.445 | 274 | 012 | -001 | +012 |
| 2688 | -57.4 | 17.788 | 28.723 | 283 | 012 | -003 | +012 |
| 2652 | -61.5 | 18.832 | 30.949 | 283 | 013 | -003 | +013 |
| 2548 | -60.2 | 22.229 | 36.366 | 276 | 014 | -001 | +014 |
| 2259 | -63.8 | 34.342 | 58.814 | 257 | 012 | +003 | +012 |
| 2128 | -59.8 | 43.606 | 71.205 | 273 | 013 | -001 | +013 |
| 2115 | -64.6 | 44.527 | 74.383 | 276 | 013 | -001 | +013 |
| 2060 | -65.9 | 48.708 | 81.876 | 276 | 015 | -001 | +015 |
| 2000 | -64.5 | 53.716 | 89.690 | 269 | 017 | +000 | +017 |
| 1710 | -65.1 | | | | | | |

CONSTANT PRESSURE SURFACE (GEOPOTENTIAL HEIGHT)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2037 | -65.5 | 50.000 | 83.903 | 276 | 016 | -002 | +016 |
| 2352 | -62.4 | 30.000 | 49.604 | 259 | 010 | +002 | +010 |
| 2604 | -61.0 | 20.000 | 32.843 | 283 | 014 | -003 | +014 |
| 3041 | -55.4 | 10.000 | 16.000 | 278 | 023 | -003 | +022 |
| 3276 | -43.2 | 07.000 | 10.607 | 258 | 026 | +006 | +026 |
| 3504 | -38.4 | 05.000 | 07.419 | 275 | 034 | -003 | +034 |
| 3857 | -33.6 | 03.000 | 04.363 | 273 | 046 | -003 | +046 |

RAWINSONDE

| PRESSURE MB | ALT TENS OF METERS | WIND POLAR DEG | WIND POLAR MPS | WIND COMPONENTS MPS N-S | WIND COMPONENTS MPS E-W | RH % | TEMP DEG C |
|---|---|---|---|---|---|---|---|
| 1014.0 | 0000 | 290 | 006 | -002 | +006 | 54 | +02.5 |
| 0786.0 | 0200 | 300 | 007 | -004 | +006 | 42 | -10.2 |
| 0605.0 | 0400 | 283 | 025 | +003 | +025 | 24 | -16.8 |
| 0462.0 | 0600 | 259 | 044 | +009 | +044 | 19 | -24.8 |
| 0348.0 | 0800 | 252 | 036 | +011 | +034 | 21 | -38.6 |
| 0259.0 | 1000 | 250 | 057 | +020 | +053 | | -45.3 |
| 0257.0 | 1006 | 250 | 057 | +020 | +053 | | -46.5 |
| 0192.5 | 1200 | 251 | 051 | +017 | +049 | | -47.1 |
| 0142.0 | 1400 | 249 | 039 | +014 | +036 | | -56.2 |
| 0103.0 | 1600 | | | | | | -62.8 |
| 0074.8 | 1800 | | | | | | -61.6 |
| 0054.2 | 2000 | 265 | 020 | +002 | +020 | | -60.2 |
| 0039.3 | 2200 | 260 | 024 | +004 | +024 | | -63.3 |
| 0028.2 | 2400 | 261 | 012 | +002 | +012 | | -60.8 |
| 0020.8 | 2600 | 274 | 017 | -001 | +017 | | -58.4 |
| 0015.2 | 2800 | 279 | 012 | -002 | +012 | | -56.0 |
| 0011.3 | 2995 | 282 | 022 | -005 | +021 | | -55.7 |
| 0011.1 | 3000 | | | | | | -55.3 |
| 0010.0 | 3068 | | | | | | -52.6 |

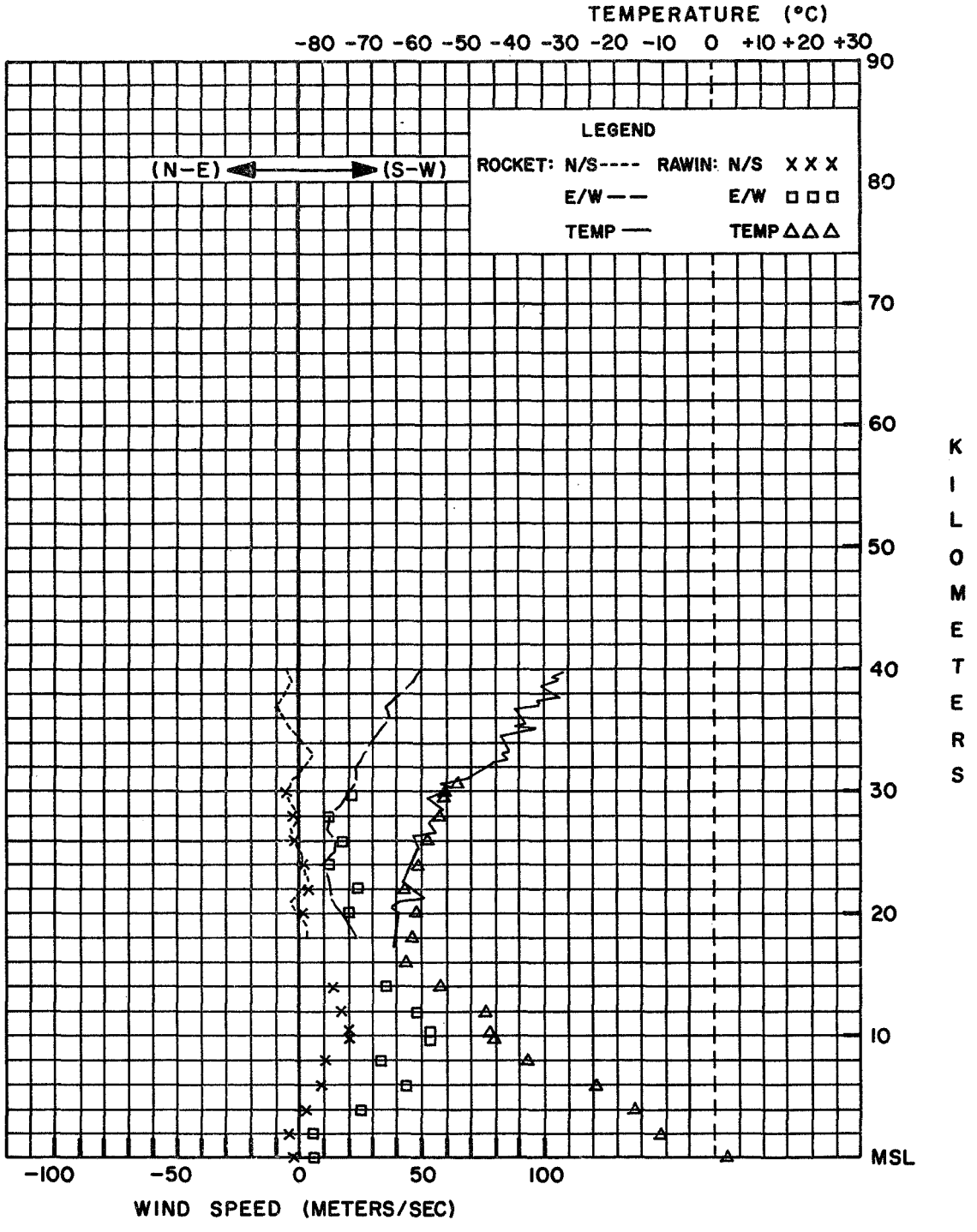
## TECHNICAL DATA

MOTOR TYPE..LOKI
PAYLOAD TYPE..DATASONDE
FUSE TYPE..ELECTRICALLY ACTIVATED PYROTECHNIC
LAUNCHER SETTING..130° AZIMUTH 75.0° ELEVATION
RADAR TYPE..SPANDAR APOGEE 43,525 METERS
WIND SENSOR TYPE..7.6 FT. DIAMETER PARACHUTE
TEMPERATURE SENSOR TYPE..0.010 INCH HEAD THERMISTOR
GROUND EQUIPMENT TYPE..GMD-1,3
REMARKS..UNDERPERFORMANCE OF MOTOR CAUSED LOW APOGEE.
MISSING RAWINSONDE WINDS AT 16,000 METERS AND
14,000 METERS DUE TO LIMITING ANGLES OF GMD.

MOTOR PERFORMANCE..FAIR
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..11.1 SEC

SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..MOLDED INSULATION CO. RADIOSONDE TYPE..1680 MHZ
TEMPERATURE ELEMENT TYPE..BEAD THERMISTOR BALLOON TYPE..NEOPRENE
PRESSURE SENSOR TYPE..ANEROID AND HYPSOMETER BALLOON SIZE..1,200 GRAMS
GROUND EQUIPMENT TYPE..GMD-1,3
WIND AT ROCKET LAUNCH..SFC. 310DEG/08MPS 15M 301DEG/09MPS 31M 288DEG/11MPS
46M 300DEG/09MPS 61M 293DEG/10MPS 76M 294DEG/11MPS
BALLISTIC WIND.. N.A. AZIMUTH N.A. MPS
THERMODYNAMIC BASE DATA..PRESSURE 103.0 MBS
TEMPERATURE -62.8° C
ALTITUDE 16,000 METERS




STATION: (NASA) Wallops Island, Va. ROCKET TIME: 1056 LST 1556 GCT PAYLOAD TYPE: Datasonde

DATE: 20 November, 1968 ROCKET MOTOR TYPE: Loki RADIOSONDE TYPE: 1680 MHz

# ROCKET OBSERVATION DATA

NP STATION NAME

87689 (CNIE) MAR CHIQUITA, ARGENTINA

LAT. 37° 45' S LONG. 57° 25' W

ROCKET LAUNCH

DATE NOVEMBER 27, 1968 TIME 1550 Z

RAWINSONDE RELEASE

DATE NOVEMBER 27, 1968 TIME 1710 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | WIND COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 040 | 49 | 104 | 046 | +011 | -044 |
| 035 | 48 | 104 | 038 | +009 | -037 |
| 033 | 47 | 105 | 036 | +009 | -035 |
| 038 | 46 | 104 | 035 | +008 | -034 |
| 038 | 45 | 090 | 035 | +000 | -035 |
| 032 | 44 | 090 | 032 | +000 | -032 |
| 030 | 43 | 088 | 030 | +000 | -030 |
| 028 | 42 | 077 | 030 | -007 | -029 |
| 027 | 41 | 070 | 031 | -011 | -029 |
| 025 | 40 | 075 | 029 | -008 | -028 |
| 022 | 39 | 076 | 029 | -008 | -028 |
| 025 | 38 | 074 | 030 | -008 | -029 |
| 026 | 37 | 073 | 034 | -010 | -032 |
| 021 | 36 | 087 | 033 | -002 | -033 |
| 022 | 35 | 100 | 032 | +006 | -031 |
| 020 | 34 | 095 | 026 | +002 | -026 |
| 019 | 33 | 092 | 022 | +002 | -022 |
| 017 | 32 | 089 | 021 | +000 | -021 |
| 019 | 31 | 091 | 021 | +000 | -021 |
| 019 | 30 | 097 | 019 | +002 | -019 |
| 016 | 29 | 093 | 015 | +001 | -015 |
| 015 | 28 | 087 | 012 | -001 | -012 |
| 014 | 27 | 076 | 012 | -003 | -012 |
| 013 | 26 | 073 | 012 | -004 | -011 |
| 013 | 25 | 076 | 010 | -002 | -010 |
| 013 | 24 | 089 | 012 | -000 | -012 |
| 013 | 23 | 086 | 011 | -001 | -011 |
| 013 | 22 | 073 | 008 | -002 | -008 |
| 010 | 21 | 080 | 007 | -001 | -007 |
| 010 | 20 | 100 | 004 | +001 | -004 |

RAWINSONDE

| PRESSURE MB | ALT IENS OR METERS | WIND POLAR DEG | MPS | WIND COMPONENTS MPS N-S | E-W | RH % | TEMP DEG C |
|---|---|---|---|---|---|---|---|
| 1007.6 | 0002 | 320 | 004 | -003 | +003 | 75 | +20.4 |
| 0803.2 | 0200 | 297 | 007 | -003 | +006 | 42 | +15.6 |
| 0631.0 | 0400 | 293 | 011 | -004 | +010 | 27 | +04.0 |
| 0487.8 | 0600 | 282 | 014 | -003 | +014 | 17 | -09.8 |
| 0376.5 | 0800 | 259 | 016 | +003 | +016 | 16 | -29.8 |
| 0282.0 | 1000 | 268 | 017 | +000 | +017 | | -40.3 |
| 0210.0 | 1200 | 259 | 025 | +005 | +024 | | -50.1 |
| 0200.0 | 1229 | 259 | 025 | +005 | +024 | | -51.8 |
| 0152.3 | 1400 | 260 | 018 | +003 | +018 | | -54.8 |
| 0112.6 | 1600 | 269 | 015 | +000 | +015 | | -61.5 |
| 0082.0 | 1800 | 257 | 011 | +002 | +011 | | -65.9 |
| 0067.0 | 1914 | 280 | 007 | -001 | +007 | | -68.7 |
| 0058.9 | 2000 | 000 | 000 | +000 | +000 | | -62.3 |
| 0042.9 | 2200 | | | | | | -57.2 |
| 0031.8 | 2400 | | | | | | -51.7 |
| 0026.3 | 2600 | | | | | | -47.3 |

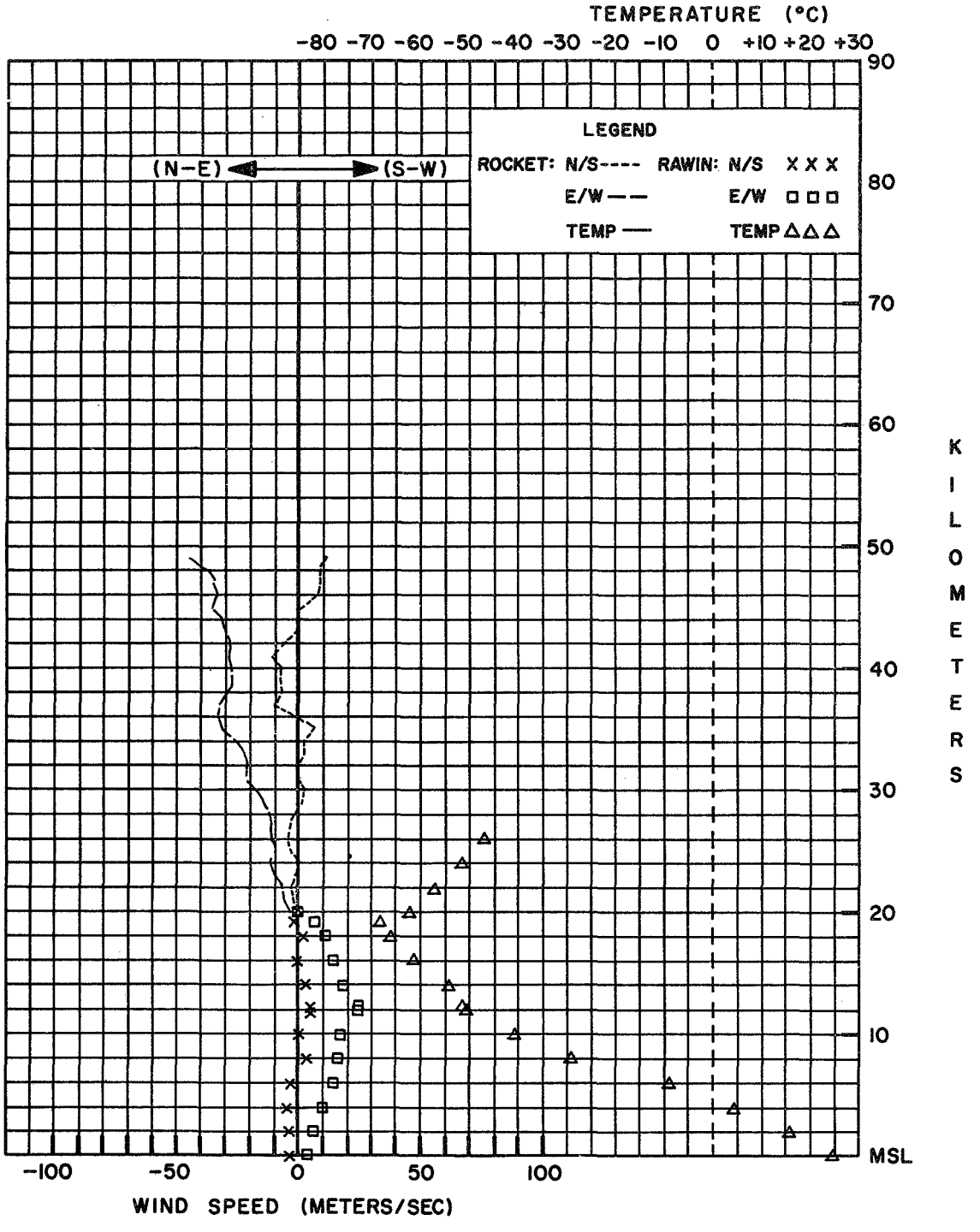
# TECHNICAL DATA

MOTOR TYPE..INTERNAL BURNING
PAYLOAD TYPE..CHAFF
FUSE TYPE..ELECTRICALLY ACTIVATED PYROTECHNIC
LAUNCHER SETTING..100° AZIMUTH 84.5° ELEVATION
RADAR TYPE..MPS-19 APOGEE 58,000 METERS
WIND SENSOR TYPE..0.005 INCH S BAND COPPER CHAFF SENSOR FALL-RATE..NOMINAL
TEMPERATURE SENSOR TYPE..N.A.
GROUND EQUIPMENT TYPE..N.A.
REMARKS..THIS WAS EXPERIMENTAL LAUNCHING OF ARGENTINA'S OWN METEOROLOGICAL ROCKET SYSTEM, DIM. DATA IS CONSIDERED OF EXAMETNET QUALITY.

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..096 SEC

RADIOSONDE MANUFACTUREM..VAISALA
TEMPERATURE ELEMENT TYPE..RESISTANCE WIRE
PRESSURE SENSOR TYPE..ANEROID
GROUND EQUIPMENT TYPE..VAISALA
WIND AT ROCKET LAUNCH..SFC. 000DEG/00MPS
BALLISTIC WIND.. 285° AZIMUTH 03.8 MPS
THERMODYNAMIC BASE DATA..PRESSURE N.A. MB
TEMPERATURE N.A. C
ALTITUDE N.A. METERS

RADIOSONDE TYPE..VAISALA
BALLOON TYPE..NEOPRENE
BALLOON SIZE..1,000 GRAMS




STATION: (CNIE) Mar Chiquita, Arg. ROCKET TIME: 1250 LST 1550 GCT PAYLOAD TYPE: Chaff

DATE: 27 November, 1968 ROCKET MOTOR TYPE: Int. Burning RADIOSONDE TYPE: Vaisala

# ROCKET OBSERVATION DATA

RR STATION NAME

72402 (NASA) WALLOPS ISLAND, VIRGINIA

LAT. 37°51' N LONG. 75° 29' W

ROCKET LAUNCH

DATE NOVEMBER 27, 1968 TIME 1626 Z

RAWINSONDE RELEASE

DATE NOVEMBER 27, 1968 TIME 1115 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 100 | 61 | 280 | 089 | -015 | +088 |
| 111 | 60 | 281 | 088 | -017 | +087 |
| 125 | 59 | 278 | 082 | -011 | +081 |
| 125 | 58 | 277 | 093 | -011 | +092 |
| 118 | 57 | 278 | 102 | +004 | +101 |
| 111 | 56 | 279 | 096 | +019 | +095 |
| 111 | 55 | 287 | 092 | +021 | +089 |
| 111 | 54 | 287 | 081 | +091 | +079 |
| 100 | 53 | 285 | 078 | +006 | +077 |
| 087 | 52 | 271 | 079 | -002 | +079 |
| 074 | 51 | 271 | 079 | -002 | +078 |
| 064 | 50 | 272 | 073 | -003 | +072 |
| 057 | 49 | 274 | 069 | -005 | +069 |
| 050 | 48 | 273 | 069 | -004 | +069 |
| 049 | 47 | 270 | 057 | +000 | +057 |
| 044 | 46 | 271 | 054 | -001 | +054 |
| 044 | 45 | 274 | 049 | -004 | +048 |
| 044 | 44 | 283 | 041 | -010 | +040 |
| 038 | 43 | 287 | 039 | -011 | +037 |
| 036 | 42 | 280 | 032 | -006 | +032 |
| 032 | 41 | 274 | 026 | -002 | +026 |
| 029 | 40 | 283 | 022 | -005 | +022 |
| 030 | 39 | 297 | 022 | -010 | +019 |
| 030 | 38 | 296 | 021 | -009 | +018 |
| 025 | 37 | 291 | 018 | -006 | +016 |
| 022 | 36 | 294 | 016 | -007 | +015 |
| 020 | 35 | 293 | 015 | -006 | +014 |
| 019 | 34 | 273 | 015 | -001 | +015 |
| 018 | 33 | 257 | 016 | +004 | +016 |
| 016 | 32 | 260 | 013 | +002 | +013 |
| 015 | 31 | 285 | 013 | -003 | +013 |
| 014 | 30 | 280 | 017 | -003 | +017 |
| 012 | 29 | 272 | 016 | -001 | +015 |
| 011 | 28 | 274 | 012 | -002 | +012 |
| 010 | 27 | 276 | 010 | -001 | +010 |
| 010 | 26 | 279 | 008 | -001 | +008 |
| 009 | 25 | 262 | 006 | +001 | +006 |
| 008 | 24 | 260 | 005 | +001 | +005 |
| 007 | 23 | 287 | 004 | -001 | +004 |
| 006 | 22 | 273 | 000 | +000 | +000 |
| 006 | 21 | 277 | 007 | -001 | +007 |
| 005 | 20 | 241 | 013 | -003 | +013 |
| 004 | 19 | 276 | 017 | -002 | +017 |
| 004 | 18 | 272 | 017 | -001 | +017 |

ROCKET THERMODYNAMICS

| ALT TENS OF METERS | TEMP DEG C | PRESSURE MB | DENSITY G M -3 | WIND POLAR DEG | MPS | COMPONENTS MPS N-S | E-W |
|---|---|---|---|---|---|---|---|
| 6136 | -05.7 | 00.191 | 00.249 | | | | |
| 6026 | -06.1 | 00.220 | 00.286 | 281 | 088 | -017 | +087 |
| 5913 | -02.8 | 00.253 | 00.326 | 279 | 083 | -013 | +082 |
| 5758 | -00.9 | 00.305 | 00.392 | 274 | 097 | -004 | +096 |
| 5557 | +00.2 | 00.392 | 00.500 | 258 | 094 | +020 | +092 |
| 5316 | -03.0 | 00.528 | 00.681 | 263 | 078 | +009 | +078 |
| 4993 | +01.1 | 00.785 | 00.999 | 272 | 073 | -003 | +072 |
| 4654 | +01.8 | 01.191 | 01.509 | 270 | 056 | +000 | +056 |
| 4432 | -08.1 | 01.571 | 02.064 | 280 | 044 | -008 | +043 |
| 4377 | -05.8 | 01.684 | 02.194 | 284 | 041 | -009 | +040 |
| 4295 | -15.7 | 01.870 | 02.531 | 287 | 039 | -011 | +037 |
| 4252 | -15.3 | 01.979 | 02.673 | 283 | 036 | -008 | +035 |
| 4218 | -19.1 | 02.069 | 02.837 | 281 | 033 | -007 | +033 |
| 4173 | -19.1 | 02.195 | 03.012 | 278 | 031 | -004 | +031 |
| 4084 | -20.7 | 02.472 | 03.412 | 276 | 025 | -002 | +025 |
| 3968 | -21.1 | 02.887 | 03.998 | 287 | 022 | -006 | +021 |
| 3897 | -29.9 | 04.178 | 05.984 | 291 | 018 | -006 | +016 |
| 3845 | -34.8 | 04.998 | 06.569 | 293 | 017 | -007 | +016 |
| 3554 | -36.4 | 05.115 | 07.525 | 294 | 016 | -007 | +015 |
| 3523 | -35.5 | 05.345 | 07.837 | 293 | 015 | -006 | +014 |
| 3496 | -38.9 | 05.556 | 08.262 | 293 | 015 | -006 | +014 |
| 3444 | -37.2 | 05.987 | 08.841 | 281 | 015 | -003 | +015 |
| 3414 | -40.4 | 06.251 | 09.355 | 275 | 015 | -001 | +015 |
| 3386 | -39.3 | 06.510 | 09.700 | 272 | 015 | +000 | +015 |
| 3374 | -42.9 | 06.625 | 10.024 | 269 | 015 | +000 | +015 |
| 3338 | -43.0 | 06.934 | 10.571 | 263 | 015 | +002 | +015 |
| 3271 | -44.5 | 07.715 | 11.964 | 258 | 015 | +003 | +015 |
| 3246 | -48.0 | 08.010 | 12.394 | 259 | 015 | +003 | +015 |
| 3161 | -51.2 | 09.109 | 14.299 | 270 | 013 | +000 | +013 |
| 3139 | -49.6 | 09.419 | 14.679 | 275 | 013 | -001 | +013 |
| 3066 | -49.2 | 10.517 | 16.361 | 283 | 014 | -003 | +014 |
| 2947 | -52.9 | 12.000 | 19.937 | 276 | 017 | -002 | +017 |
| 2890 | -51.2 | 13.755 | 21.592 | 273 | 015 | -001 | +015 |
| 2722 | -55.1 | 17.812 | 28.454 | 276 | 011 | -001 | +011 |
| 2652 | -53.5 | 19.944 | 31.475 | 277 | 009 | -001 | +009 |
| 2597 | -56.6 | 21.616 | 34.676 | 279 | 008 | -001 | +008 |
| 2490 | -54.7 | 25.530 | 40.718 | 272 | 006 | +000 | +006 |
| 2365 | -57.4 | 31.030 | 50.103 | 268 | 005 | +000 | +005 |
| 2213 | -56.6 | 39.383 | 63.371 | 275 | 006 | +000 | +006 |
| 2100 | -59.7 | 47.068 | 76.837 | 277 | 007 | -001 | +007 |
| 2036 | -56.8 | 52.072 | 83.846 | 279 | 010 | -002 | +010 |
| 2000 | -58.3 | 55.176 | 89.343 | 281 | 013 | -003 | +013 |
| 1917 | -60.0 | | | 277 | 016 | -002 | +016 |
| 1856 | -67.9 | | | 274 | 017 | -001 | +017 |
| 1792 | -63.4 | | | | | | |

CONSTANT PRESSURE SURFACES (GEOPOTENTIAL HEIGHT)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2045 | -58.0 | 50.000 | 80.967 | 279 | 010 | -002 | +010 |
| 2378 | -57.0 | 30.000 | 48.344 | 263 | 005 | +001 | +005 |
| 2638 | -53.1 | 20.000 | 31.747 | 278 | 009 | -001 | +009 |
| 3084 | -49.4 | 10.000 | 15.570 | 285 | 013 | -003 | +013 |
| 3319 | -43.1 | 07.000 | 10.601 | 263 | 015 | +002 | +015 |
| 3550 | -36.1 | 05.000 | 07.348 | 294 | 016 | -007 | +015 |
| 3915 | -22.0 | 03.000 | 04.161 | 292 | 022 | -006 | +020 |
| 4215 | -16.2 | 02.000 | 02.711 | 283 | 036 | -008 | +035 |
| 4760 | +01.5 | 01.000 | 01.268 | 273 | 065 | -004 | +065 |

RAWINSONDE

| PRESSURE MB | ALT TENS OF METERS | WIND POLAR DEG | MPS | COMPONENTS MPS N-S | E-W | RH % | TEMP DEG C |
|---|---|---|---|---|---|---|---|
| 1017.0 | 0000 | 270 | 011 | +000 | +011 | 56 | +10.0 |
| 0800.0 | 0200 | 271 | 023 | +000 | +023 | 26 | +05.9 |
| 0625.0 | 0400 | 264 | 031 | +003 | +031 | 18 | -04.6 |
| 0482.0 | 0600 | 273 | 038 | -002 | +037 | 40 | -16.4 |
| 0367.0 | 0800 | 276 | 039 | -004 | +039 | 56 | -29.7 |
| 0275.0 | 1000 | 277 | 045 | -005 | +044 | | -45.8 |
| 0202.0 | 1200 | 284 | 060 | -014 | +059 | | -56.4 |
| 0145.5 | 1400 | 284 | 058 | -014 | +057 | | -67.0 |
| 0134.0 | 1451 | 276 | 058 | -006 | +058 | | -68.5 |
| 0105.4 | 1600 | | | | | | -66.6 |
| 0075.5 | 1800 | | | | | | -65.7 |
| 0054.6 | 2000 | 276 | 008 | -001 | +008 | | -61.5 |
| 0039.6 | 2200 | 299 | 009 | -005 | +008 | | -59.5 |
| 0029.0 | 2400 | 282 | 007 | -002 | +007 | | -57.5 |
| 0021.2 | 2600 | 280 | 005 | -001 | +005 | | -55.4 |
| 0015.6 | 2800 | 287 | 020 | -006 | +019 | | -53.3 |
| 0014.1 | 2878 | 291 | 022 | -006 | +021 | | -53.4 |
| 0013.0 | 2916 | | | | | | -51.8 |

# TECHNICAL DATA

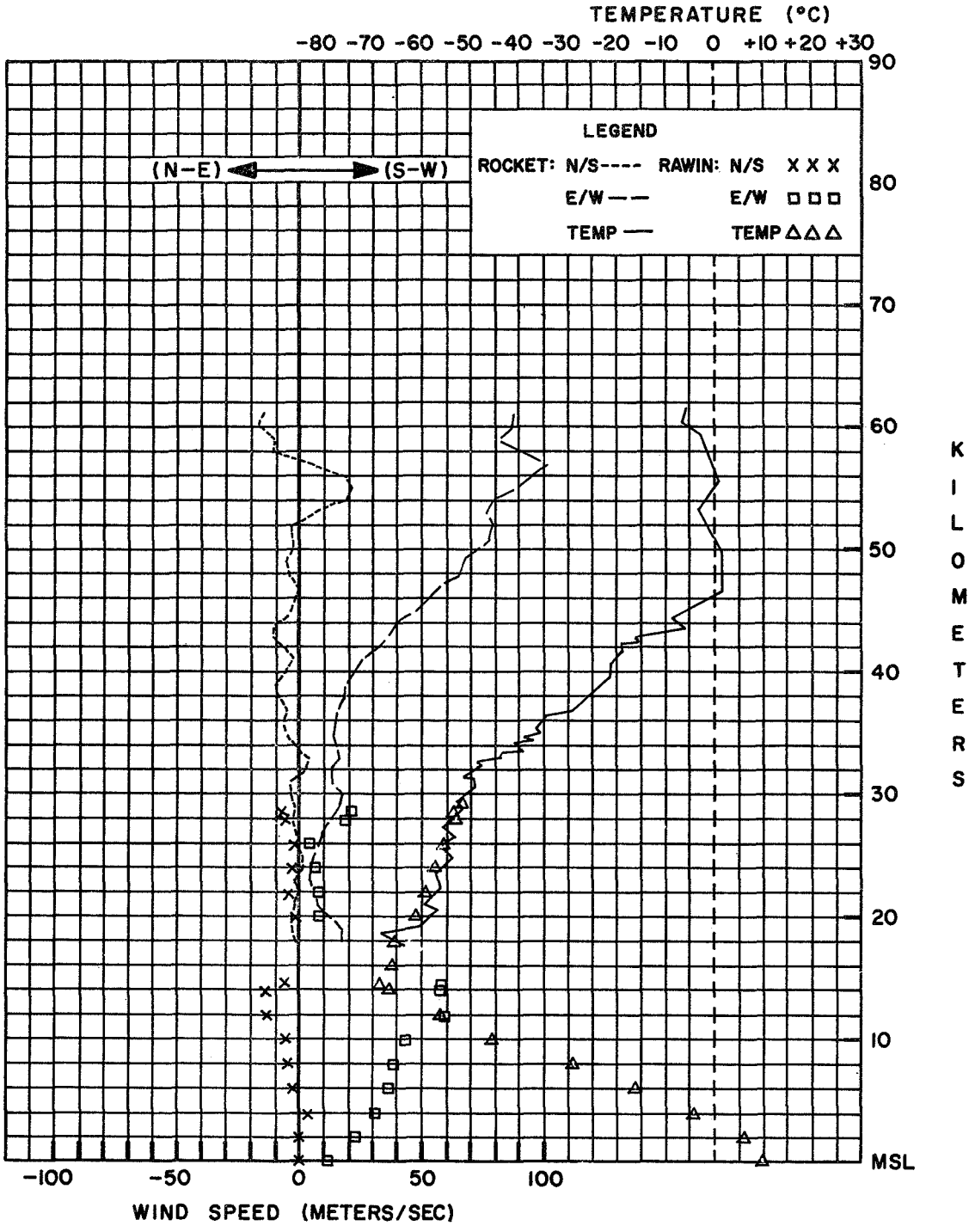
MOTOR TYPE..LOKI
PAYLOAD TYPE..DATASONDE
FUSE TYPE..ELECTRICALLY ACTIVATED PYROTECHIC
LAUNCHER SETTING..138° AZIMUTH 78.0° ELEVATION
RADAR TYPE..FPS-16 APOGEE 63.033 METERS
WIND SENSOR TYPE..7.6 FT. DIAMETER PARACHUTE
TEMPERATURE SENSOR TYPE..0.010 INCH BEAD THERMISTOR
GROUND EQUIPMENT TYPE..GMD-1M
REMARKS..MISSING RAWINSONDE WINDS AT 16,000 METERS AND 18,000 METERS DUE TO LIMITING ANGLES OF GMD. TOWER WINDS AT 61 METERS MISSING DUE TO INOPERATIVE EQUIPMENT.

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..113 SEC

SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..MOLDED INSULATION CO. RADIOSONDE TYPE..1680 MHZ
TEMPERATURE ELEMENT TYPE..ROD THERMISTOR BALLOON TYPE..NEOPRENE
PRESSURE SENSOR TYPE..ANEROID AND HYPSOMETER BALLOON SIZE..1,700 GRAMS
GROUND EQUIPMENT TYPE..GMD-1M
WIND AT ROCKET LAUNCH..SFC. 292DEG/05MPS 1SM 268DEG/06MPS 3SM 272DEG/06MPS 4SM 266DEG/07MPS 6SM MISSING 7SM 274DEG/07MPS

BALLISTIC WIND.. N.A. AZIMUTH N.A. MPS
THERMODYNAMIC BASE DATA..PRESSURE 105.4 MBS
TEMPERATURE -66.6° C
ALTITUDE 16,000 METERS




STATION: (NASA) Wallops Island, Va. ROCKET TIME: 1126 LST 1626 GCT PAYLOAD TYPE: Datasonde

DATE: 27 November, 1968 ROCKET MOTOR TYPE: Loki RADIOSONDE TYPE: 1680 MHz

# ROCKET OBSERVATION DATA

RP STATION NAME

72402 (NASA) WALLOPS ISLAND, VIRGINIA

LAT. 37°51' N LONG. 75°29' W

ROCKET LAUNCH

DATE DECEMBER 5, 1968 TIME 1525 Z

RAWINSONDE RELEASE

DATE DECEMBER 5, 1968 TIME 1234 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | WIND COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 121 | 59 | 279 | 062 | -010 | +061 |
| 125 | 58 | 277 | 061 | -007 | +060 |
| 105 | 57 | 274 | 049 | -004 | +049 |
| 100 | 56 | 272 | 049 | -002 | +048 |
| 111 | 55 | 269 | 050 | +001 | +050 |
| 111 | 54 | 265 | 050 | +004 | +049 |
| 105 | 53 | 254 | 053 | +014 | +050 |
| 095 | 52 | 249 | 055 | +019 | +051 |
| 087 | 51 | 250 | 061 | +021 | +057 |
| 080 | 50 | 249 | 067 | +023 | +062 |
| 074 | 49 | 248 | 067 | +025 | +063 |
| 074 | 48 | 246 | 075 | +030 | +068 |
| 067 | 47 | 250 | 079 | +028 | +073 |
| 061 | 46 | 257 | 083 | +016 | +081 |
| 059 | 45 | 259 | 082 | +016 | +082 |
| 057 | 44 | 264 | 082 | +008 | +081 |
| 043 | 43 | 267 | 085 | +005 | +085 |
| 041 | 42 | 267 | 083 | +005 | +085 |
| 044 | 41 | 263 | 083 | +010 | +083 |
| 038 | 40 | 265 | 084 | +007 | +083 |
| 036 | 39 | 270 | 082 | +000 | +082 |
| 033 | 38 | 267 | 082 | +005 | +082 |
| 029 | 37 | 264 | 080 | +008 | +079 |
| 023 | 36 | 270 | 071 | +000 | +071 |
| 022 | 35 | 271 | 058 | -001 | +057 |
| 021 | 34 | 269 | 042 | +001 | +041 |
| 018 | 33 | 266 | 034 | +003 | +034 |
| 016 | 32 | 264 | 027 | +003 | +027 |
| 016 | 31 | 271 | 021 | +000 | +021 |
| 017 | 30 | 273 | 017 | -001 | +017 |
| 017 | 29 | 271 | 015 | +000 | +015 |
| 015 | 28 | 256 | 013 | +003 | +013 |
| 008 | 27 | 245 | 007 | +003 | +006 |
| 006 | 26 | 290 | 004 | -001 | +004 |
| 007 | 25 | 315 | 002 | -001 | +001 |
| 008 | 24 | 223 | 002 | +002 | +001 |
| 007 | 23 | 251 | 005 | +002 | +005 |
| 007 | 22 | 255 | 007 | +002 | +007 |
| 007 | 21 | 269 | 007 | +000 | +007 |
| 007 | 20 | 247 | 008 | +003 | +008 |
| 004 | 19 | 244 | 012 | +005 | +011 |
| 004 | 18 | 240 | 013 | +007 | +012 |
| 007 | 17 | 231 | 015 | +010 | +012 |

ROCKET THERMODYNAMICS

| ALT IENS OF METERS | TEMP DEG C | PRESSURE MB | DENSITY G M -3 | WIND POLAR DEG | WIND POLAR MPS | WIND COMPONENTS MPS N-S | WIND COMPONENTS MPS E-W |
|---|---|---|---|---|---|---|---|
| 5944 | -06.1 | 00.277 | 00.361 | | | | |
| 5764 | -05.5 | 00.347 | 00.451 | 276 | 056 | -005 | +056 |
| 5657 | -03.3 | 00.397 | 00.524 | 273 | 049 | -003 | +049 |
| 5361 | +04.5 | 00.573 | 00.719 | 261 | 051 | +008 | +050 |
| 4926 | +12.0 | 00.963 | 01.176 | 249 | 067 | +024 | +063 |
| 4715 | +07.8 | 01.237 | 01.534 | 249 | 078 | +027 | +073 |
| 4633 | +02.3 | 01.366 | 01.728 | 255 | 081 | +021 | +079 |
| 4429 | +09.0 | 01.748 | 02.158 | 263 | 082 | +010 | +081 |
| 4298 | +04.5 | 02.051 | 02.660 | 267 | 085 | +005 | +085 |
| 4051 | -01.8 | 02.792 | 03.585 | 264 | 083 | +008 | +083 |
| 3978 | -06.7 | 03.060 | 04.000 | 266 | 083 | +006 | +083 |
| 3828 | -07.8 | 03.701 | 04.858 | 268 | 082 | +003 | +082 |
| 3652 | -13.1 | 04.639 | 06.251 | 267 | 075 | +004 | +074 |
| 3554 | -22.7 | 05.281 | 07.347 | 270 | 064 | +000 | +064 |
| 3423 | -29.4 | 06.317 | 09.029 | 269 | 045 | +001 | +045 |
| 3368 | -29.5 | 06.817 | 09.745 | 268 | 039 | +002 | +039 |
| 3307 | -35.5 | 07.427 | 10.888 | 266 | 034 | +003 | +034 |
| 3243 | -33.9 | 08.132 | 11.841 | 269 | 029 | +002 | +029 |
| 3127 | -42.9 | 09.610 | 14.534 | 269 | 022 | +000 | +022 |
| 3072 | -42.3 | 10.417 | 15.721 | 272 | 019 | -001 | +019 |
| 3027 | -45.8 | 11.132 | 17.059 | 272 | 018 | -001 | +018 |
| 2999 | -44.3 | 11.604 | 17.665 | 273 | 017 | -001 | +017 |
| 2944 | -46.9 | 12.593 | 19.391 | 272 | 016 | -001 | +016 |
| 2816 | -45.0 | 15.237 | 23.267 | 259 | 013 | +003 | +013 |
| 2585 | -56.3 | 21.623 | 34.422 | 293 | 004 | -001 | +003 |
| 2359 | -60.0 | 30.824 | 50.380 | 234 | 004 | +002 | +003 |
| 2316 | -57.6 | 32.992 | 53.324 | 246 | 005 | +002 | +004 |
| 2246 | -61.9 | 36.873 | 60.809 | 253 | 006 | +002 | +005 |
| 2000 | -58.9 | 54.575 | 88.742 | 247 | 008 | +003 | +008 |
| 1884 | -56.8 | | | 243 | 012 | +006 | +011 |
| 1737 | -59.6 | | | 235 | 014 | +008 | +012 |
| 1707 | -56.1 | | | 232 | 015 | +010 | +012 |

CONSTANT PRESSURE SURFACES (GEOPOTENTIAL HEIGHT)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2049 | -59.6 | 40.000 | 81.564 | 281 | 008 | +001 | +008 |
| 2367 | -59.6 | 30.000 | 48.936 | 228 | 003 | +002 | +002 |
| 2625 | -52.3 | 20.000 | 31.549 | 272 | 005 | +000 | +005 |
| 3085 | -42.6 | 10.000 | 15.111 | 271 | 021 | +000 | +021 |
| 3331 | -31.3 | 07.000 | 10.083 | 267 | 038 | +002 | +037 |
| 3575 | -18.8 | 05.000 | 06.848 | 270 | 071 | +000 | +071 |
| 3968 | -05.6 | 03.000 | 03.907 | 265 | 084 | +007 | +083 |
| 4289 | -02.3 | 02.000 | 02.572 | 259 | 082 | +016 | +082 |
| 4856 | +11.3 | 01.000 | 01.225 | 248 | 067 | +025 | +063 |

RAWINSONDE

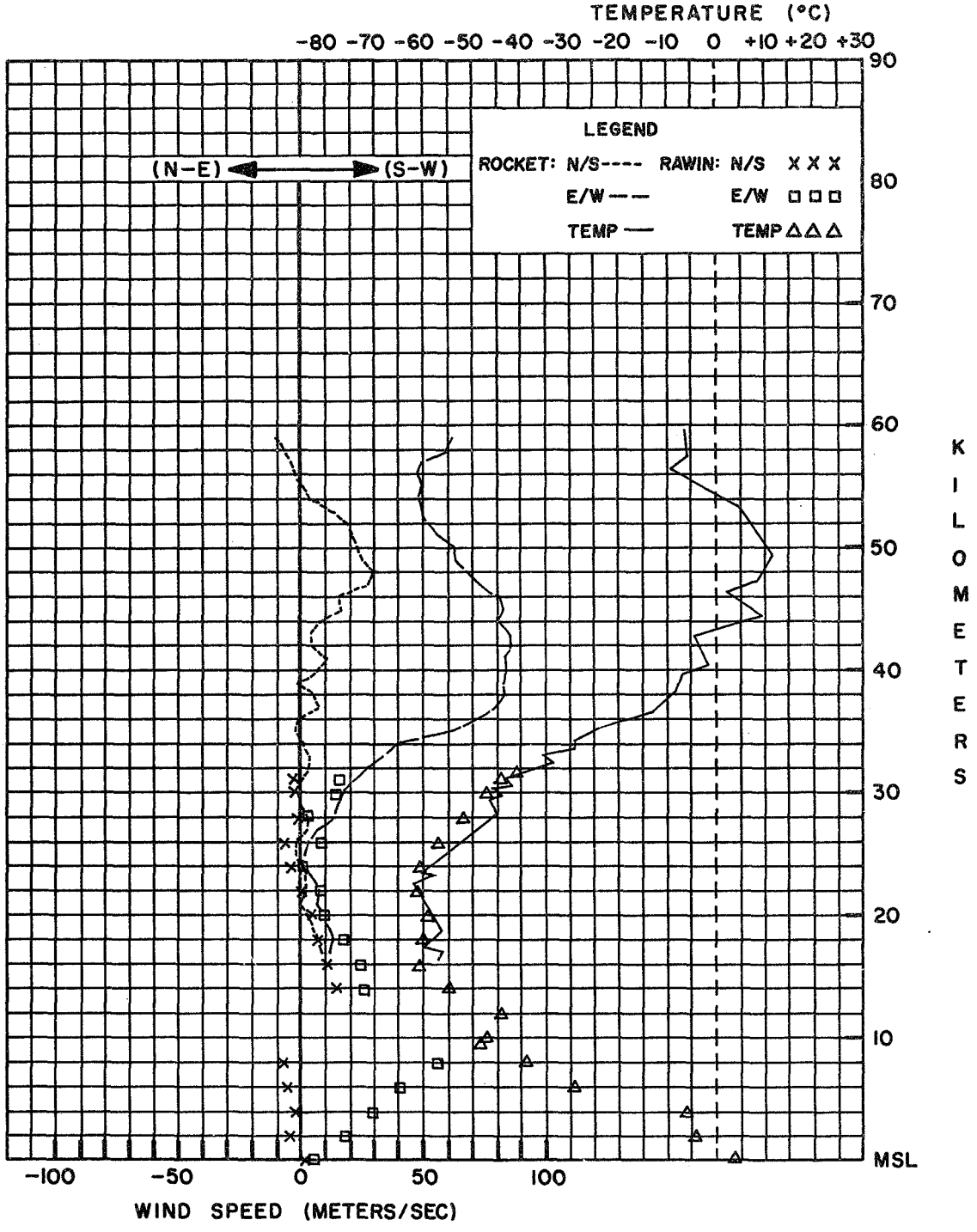
| PRESSURE MB | ALT IENS OF METERS | WIND POLAR DEG | WIND POLAR MPS | WIND COMPONENTS MPS N-S | WIND COMPONENTS MPS E-W | RH % | TEMP DEG C |
|---|---|---|---|---|---|---|---|
| 1002.3 | 0000 | 245 | 006 | +002 | +005 | 70 | +03.3 |
| 0781.0 | 0200 | 282 | 018 | -004 | +018 | 53 | -06.2 |
| 0604.0 | 0400 | 271 | 030 | -001 | +030 | 52 | -05.3 |
| 0460.0 | 0600 | 277 | 042 | -005 | +041 | 45 | -29.7 |
| 0345.0 | 0800 | 277 | 056 | -007 | +056 | | -39.2 |
| 0271.0 | 0964 | | | | | | -48.4 |
| 0256.0 | 1000 | | | | | | -47.4 |
| 0191.0 | 1200 | | | | | | -44.6 |
| 0140.0 | 1400 | 240 | 030 | +015 | +026 | | -55.0 |
| 0102.5 | 1600 | 245 | 026 | +011 | +024 | | -60.1 |
| 0074.5 | 1800 | 240 | 019 | +008 | +017 | | -60.0 |
| 0054.0 | 2000 | 240 | 011 | +005 | +010 | | -57.0 |
| 0039.5 | 2200 | 254 | 008 | +001 | +008 | | -61.1 |
| 0028.5 | 2400 | 335 | 003 | -003 | +001 | | -60.1 |
| 0021.0 | 2600 | 310 | 011 | -007 | +008 | | -57.0 |
| 0015.5 | 2800 | 275 | 003 | +000 | +003 | | -52.3 |
| 0011.5 | 3000 | 276 | 014 | -001 | +014 | | -47.2 |
| 0010.0 | 3117 | 275 | 015 | -001 | +015 | | -44.9 |
| 0008.8 | 3168 | | | | | | -40.2 |

# TECHNICAL DATA

MOTOR TYPE..LOKI
PAYLOAD TYPE..DATASONDE
FUSE TYPE..ELECTRICALLY ACTIVATED PYROTECHNIC
LAUNCHER SETTING..130° AZIMUTH 80.0° ELEVATION
RADAR TYPE..SPANDAR APOGEE 61,570 METERS
WIND SENSOR TYPE..7.5 FT. DIAMETER PARACHUTE
TEMPERATURE SENSOR TYPE..0.010 INCH BEAD THERMISTOR
GROUND EQUIPMENT TYPE..GMD-1B
REMARKS..RAWINSONDE WINDS MISSING AT TROPOPAUSE, 10,000 METERS AND 12,000 METERS DUE TO LIMITING ANGLES OF GMD-1B.

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..115 SEC
SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..MOLDED INSULATION CO.
TEMPERATURE ELEMENT TYPE..ROD THERMISTOR
PRESSURE SENSOR TYPE..ANEROID AND HYPSOMETER
GROUND EQUIPMENT TYPE..GMD-1B
WIND AT ROCKET LAUNCH..SFC. 230DEG/09MPS 15M 219DEG/09MPS 31M 220DEG/10MPS 46M 219DEG/12MPS 61M 223DEG/12MPS 76M 232DEG/13MPS
BALLISTIC WIND.. N.A. AZIMUTH N.A. MPS
THERMODYNAMIC BASE DATA..PRESSURE 102.5 MBS
TEMPERATURE -04.1°C
ALTITUDE 16,000 METERS
RADIOSONDE TYPE..1680 MHZ
BALLOON TYPE..NEOPRENE
BALLOON SIZE..1,200 GRAMS




STATION: (NASA) Wallops Island, Va. ROCKET TIME: 1025 LST 1525 GCT PAYLOAD TYPE: Datasonde

DATE: 5 December, 1968 ROCKET MOTOR TYPE: Loki RADIOSONDE TYPE: 1680 MH

# ROCKET OBSERVATION DATA

NP STATION NAME

WALLOPS ISLAND, VIRGINIA

LAT. 37° 51' N LONG. 75° 29' W

ROCKET LAUNCH

DATE DECEMBER 11, 1968 TIME 2059 Z

RAWINSONDE RELEASE

DATE DECEMBER 11, 1968 TIME 2315 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POL R | | WIND COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 125 | 62 | 271 | 080 | -002 | +080 |
| 125 | 61 | 265 | 073 | +006 | +072 |
| 125 | 60 | 254 | 071 | +018 | +069 |
| 125 | 59 | 245 | 069 | +017 | +067 |
| 118 | 58 | 247 | 068 | +016 | +066 |
| 118 | 57 | 259 | 070 | +014 | +069 |
| 100 | 56 | 259 | 095 | +013 | +065 |
| 095 | 55 | 259 | 093 | +013 | +064 |
| 100 | 54 | 258 | 067 | +014 | +065 |
| 100 | 53 | 256 | 067 | +016 | +065 |
| 090 | 52 | 248 | 071 | +026 | +066 |
| 080 | 51 | 244 | 075 | +034 | +067 |
| 077 | 50 | 252 | 078 | +024 | +074 |
| 071 | 49 | 255 | 080 | +009 | +080 |
| 064 | 48 | 263 | 082 | +010 | +082 |
| 064 | 47 | 259 | 081 | +016 | +080 |
| 057 | 46 | 261 | 088 | +013 | +085 |
| 053 | 45 | 264 | 091 | +009 | +090 |
| 055 | 44 | 266 | 093 | +007 | +092 |
| 048 | 43 | 270 | 085 | +000 | +085 |
| 043 | 42 | 273 | 080 | -005 | +079 |
| 042 | 41 | 269 | 071 | +001 | +071 |
| 038 | 40 | 262 | 059 | +008 | +059 |
| 034 | 39 | 255 | 056 | +010 | +055 |
| 031 | 38 | 259 | 054 | +010 | +053 |
| 027 | 37 | 259 | 049 | +010 | +049 |
| 025 | 36 | 259 | 043 | +001 | +043 |
| 025 | 35 | 275 | 033 | -003 | +033 |
| 022 | 34 | 274 | 027 | -002 | +027 |
| 021 | 33 | 274 | 026 | -004 | +026 |
| 020 | 32 | 292 | 022 | -008 | +021 |
| 018 | 31 | 302 | 019 | -009 | +016 |
| 017 | 30 | 304 | 010 | -006 | +008 |
| 015 | 29 | 296 | 004 | -002 | +004 |
| 013 | 28 | 295 | 004 | -002 | +003 |
| 012 | 27 | 294 | 006 | -002 | +006 |
| 010 | 26 | 249 | 010 | -003 | +009 |
| 009 | 25 | 249 | 007 | -002 | +007 |
| 008 | 24 | 273 | 005 | +000 | +005 |
| 008 | 23 | 262 | 005 | +001 | +005 |
| 008 | 22 | 265 | 004 | +000 | +004 |
| 007 | 21 | 247 | 005 | -002 | +005 |
| 006 | 21 | 248 | 007 | -003 | +006 |
| 005 | 19 | 255 | 011 | +001 | +011 |
| 005 | 18 | 262 | 010 | +001 | +010 |

ROCKET THERMODYNAMICS

| ALTITUDE OF METERS | TEMP DEG C | PRESSURE MB | DENSITY G/M³ | WIND POLAR DEG | WIND POLAR MPS | WIND COMPONENTS MPS N-S | WIND COMPONENTS MPS E-W |
|---|---|---|---|---|---|---|---|
| 6401 | -14.3 | 00.134 | 00.145 | | | | |
| 6059 | -15.4 | 00.214 | 00.290 | 261 | 072 | +011 | +071 |
| 5761 | -12.0 | 00.315 | 00.420 | 258 | 069 | +014 | +067 |
| 5594 | -04.7 | 00.394 | 00.511 | 259 | 065 | +013 | +063 |
| 5496 | -01.3 | 00.442 | 00.592 | 259 | 066 | +013 | +065 |
| 5352 | +03.7 | 00.524 | 00.660 | 257 | 067 | +010 | +065 |
| 5096 | +10.5 | 00.713 | 00.875 | 244 | 075 | +034 | +067 |
| 4596 | -02.5 | 01.307 | 01.693 | 261 | 086 | +013 | +085 |
| 4444 | -03.5 | 01.580 | 02.041 | 265 | 092 | +007 | +091 |
| 4249 | -01.5 | 02.013 | 02.582 | 272 | 082 | -003 | +082 |
| 4090 | -16.9 | 02.467 | 03.354 | 268 | 070 | +003 | +069 |
| 3911 | -25.6 | 03.135 | 04.431 | 260 | 056 | +010 | +056 |
| 3844 | -27.0 | 03.437 | 04.465 | 259 | 055 | +011 | +054 |
| 3761 | -32.4 | 03.856 | 05.581 | 259 | 052 | +010 | +052 |
| 3539 | -32.1 | 04.539 | 07.607 | 273 | 037 | -002 | +036 |
| 3475 | -36.3 | 05.762 | 08.475 | 275 | 031 | -002 | +031 |
| 3344 | -34.9 | 06.453 | 10.341 | 277 | 026 | -003 | +026 |
| 3210 | -38.8 | 08.435 | 12.539 | 290 | 022 | -008 | +021 |
| 3005 | -46.1 | 11.391 | 17.475 | 306 | 010 | -006 | +005 |
| 2813 | -46.0 | 15.161 | 23.254 | 295 | 004 | -002 | +003 |
| 2707 | -52.4 | 17.797 | 28.087 | 289 | 006 | -002 | +005 |
| 2460 | -57.1 | 26.136 | 42.096 | 282 | 006 | -001 | +006 |
| 2000 | -59.9 | 53.983 | 88.192 | 288 | 009 | -003 | +009 |
| 1759 | -64.1 | | | | | | |

CONSTANT PRESSURE SURFACES (GEOPOTENTIAL HEIGHT)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2049 | -59.5 | 50.000 | 81.550 | 293 | 007 | -003 | +007 |
| 2363 | -57.7 | 30.000 | 48.501 | 270 | 005 | +000 | +005 |
| 2620 | -53.9 | 20.000 | 31.781 | 289 | 008 | -003 | +008 |
| 3078 | -43.0 | 10.000 | 15.139 | 303 | 017 | -009 | +014 |
| 3322 | -35.9 | 07.000 | 10.410 | 277 | 026 | -003 | +026 |
| 3596 | -32.2 | 05.000 | 07.228 | 270 | 041 | +000 | +041 |
| 3919 | -24.8 | 03.000 | 04.208 | 261 | 057 | +009 | +057 |
| 4226 | -01.6 | 02.000 | 02.565 | 271 | 083 | -002 | +082 |
| 4777 | +03.2 | 01.000 | 01.261 | 263 | 082 | +010 | +081 |

RAWINSONDE

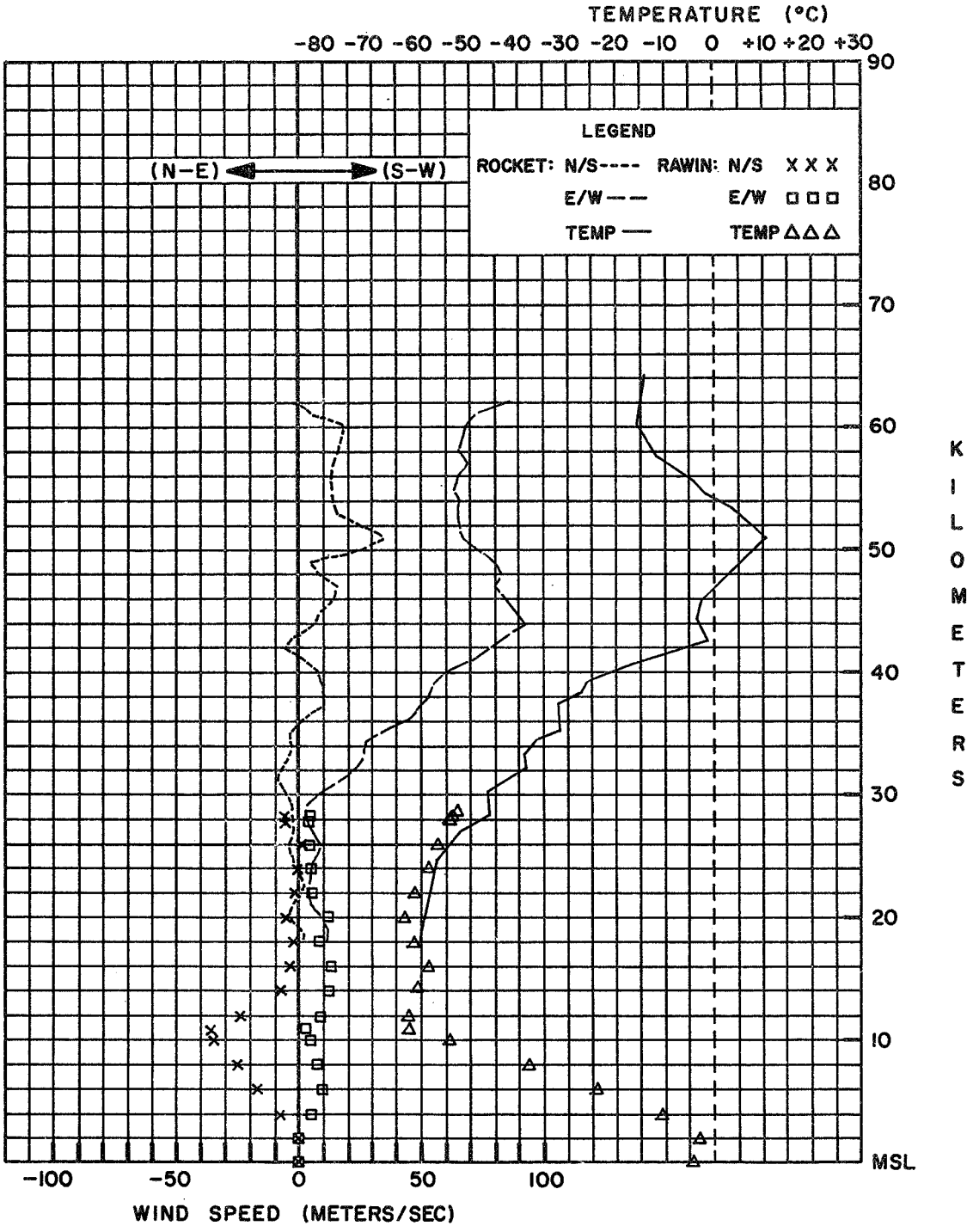
| PRESSURE MB | ALTITUDE OF METERS | WIND POLAR DEG | WIND POLAR MPS | WIND COMPONENTS MPS N-S | WIND COMPONENTS MPS E-W | RH % | TEMP DEG C |
|---|---|---|---|---|---|---|---|
| 1032.0 | 0000 | 000 | 000 | +000 | +000 | 60 | -04.2 |
| 0802.0 | 0200 | 000 | 000 | +000 | +000 | 34 | -02.9 |
| 0622.0 | 0400 | 330 | 009 | -004 | +005 | 36 | -10.6 |
| 0476.0 | 0600 | 331 | 020 | -017 | +010 | 64 | -24.2 |
| 0359.0 | 0800 | 344 | 016 | -025 | +007 | 37 | -37.8 |
| 0265.0 | 1000 | 352 | 036 | -035 | +005 | | -54.7 |
| 0227.0 | 1102 | 355 | 036 | -036 | +003 | | -62.4 |
| 0194.0 | 1200 | 340 | 026 | -024 | +009 | | -62.5 |
| 0141.0 | 1400 | 306 | 014 | -008 | +012 | | -60.1 |
| 0102.0 | 1600 | 288 | 014 | -004 | +013 | | -58.6 |
| 0074.0 | 1800 | 275 | 009 | -001 | +009 | | -61.6 |
| 0054.0 | 2000 | 292 | 013 | -005 | +012 | | -63.5 |
| 0039.0 | 2200 | 287 | 005 | -002 | +005 | | -61.1 |
| 0028.5 | 2400 | 271 | 005 | +000 | +005 | | -58.7 |
| 0020.7 | 2600 | 260 | 004 | +001 | +004 | | -56.4 |
| 0015.3 | 2800 | 321 | 007 | -006 | +004 | | -54.0 |
| 0015.1 | 2804 | 321 | 007 | -006 | +004 | | -53.8 |
| 0015.0 | 2808 | | | | | | -53.7 |

# TECHNICAL DATA

MOTOR TYPE..ARCAS
PAYLOAD TYPE..AMCASONDE-1A
FUSE TYPE..GAS GENERATED SEPARATION DEVICE
LAUNCHER SETTINGS..138° AZIMUTH 79.0° ELEVATION
RADAR TYPE..FPS-16 APOGEE 66,264 METERS
WIND SENSOR TYPE..15 FT. DIAMETER PARACHUTE
TEMPERATURE SENSOR TYPE..0.010 INCH BEAD THERMISTOR
GROUND EQUIPMENT TYPE..GMD-1H
REMARKS..NONE

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..1.45 SEC

RADIOSONDE MANUFACTURER..MOLDED INSULATION CO. RADIOSONDE TYPE..1680 MHZ
TEMPERATURE ELEMENT TYPE..ROD THERMISTOR BALLOON TYPE..NEOPRENE
PRESSURE SENSOR TYPE..ANEROID AND HYPSOMETER BALLOON SIZE..1,200 GRAMS
GROUND EQUIPMENT TYPE..GMD-1H
WIND AT ROCKET LAUNCH..SFC. 294DEG/05MPS 15M 288DEG/04MPS 31M 292DEG/05MPS
46M 285DEG/05MPS 61M 294DEG/05MPS 76M 297DEG/05MPS
BALLISTIC WIND.. 310° AZIMUTH 02.3 MPS
THERMODYNAMIC BASE DATA..PRESSURE 102.0 MBS
TEMPERATURE -58.6° C
ALTITUDE 16,000 METERS




STATION: (NASA) Wallops Island, Va. ROCKET TIME: 1559 LST 2059 GCT PAYLOAD TYPE: Arcasonde 1A

DATE: 11 December, 1968 ROCKET MOTOR TYPE: Arcas RADIOSONDE TYPE: Loki IIZ

# ROCKET OBSERVATION DATA

NP STATION NAME

82599 (CNAE) NATAL, BRAZIL

LAT. 05° 55' S LONG. 35° 10' W

ROCKET LAUNCH

DATE DECEMBER 10, 1968 TIME 1500 Z

RAWINSONDE RELEASE

DATE DECEMBER 10, 1968 TIME 1122 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | WIND COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 100 | 55 | 078 | 046 | -010 | -045 |
| 100 | 54 | 071 | 062 | -020 | -059 |
| 084 | 53 | 083 | 083 | -012 | -082 |
| 077 | 52 | 088 | 105 | -010 | -105 |
| 074 | 51 | 085 | 096 | -010 | -095 |
| 069 | 50 | 079 | 083 | -018 | -082 |
| 069 | 49 | 078 | 088 | -020 | -086 |
| 069 | 48 | 081 | 086 | -015 | -086 |
| 069 | 47 | 080 | 085 | -016 | -084 |
| 059 | 46 | 085 | 084 | -009 | -084 |
| 053 | 45 | 089 | 079 | -003 | -079 |
| 050 | 44 | 093 | 065 | +004 | -065 |
| 047 | 43 | 095 | 051 | +004 | -050 |
| 043 | 42 | 091 | 045 | +001 | -045 |
| 040 | 41 | 093 | 040 | +002 | -040 |
| 036 | 40 | 091 | 033 | +001 | -033 |
| 036 | 39 | 083 | 031 | -004 | -030 |
| 032 | 38 | 074 | 029 | -006 | -029 |
| 027 | 37 | 082 | 023 | -003 | -023 |
| 027 | 36 | 087 | 018 | -001 | -018 |
| 026 | 35 | 092 | 011 | +000 | -011 |
| 023 | 34 | 133 | 006 | +004 | -004 |
| 022 | 33 | 223 | 007 | +005 | +005 |
| 019 | 32 | 266 | 011 | +001 | +011 |
| 019 | 31 | 283 | 016 | +003 | +016 |
| 017 | 30 | 287 | 018 | -005 | +017 |
| 016 | 29 | 290 | 016 | -005 | +015 |
| 013 | 28 | 286 | 008 | -002 | +008 |
| 011 | 27 | 277 | 002 | +000 | +002 |
| 010 | 26 | 052 | 001 | -001 | +001 |
| 009 | 25 | 089 | 002 | +000 | -002 |
| 009 | 24 | 072 | 015 | -005 | -014 |
| 008 | 23 | 079 | 027 | -005 | -026 |
| 008 | 22 | 087 | 028 | -001 | -028 |
| 007 | 21 | 094 | 022 | +002 | -022 |
| 006 | 20 | 091 | 011 | +000 | -011 |
| 005 | 19 | 056 | 004 | -002 | +003 |
| 005 | 18 | 236 | 005 | +003 | +004 |

ROCKET THERMODYNAMICS

| ALT IENS OF METERS | TEMP DEG C | PRESSURE MB | DENSITY G M⁻³ | WIND POLAR DEG | WIND COMPONENTS MPS N-S | WIND COMPONENTS MPS E-W |
|---|---|---|---|---|---|---|
| 5700 | +01.1 | 00.321 | 00.407 | 303 | 030 | -016 | +025 |
| 5596 | +02.6 | 00.484 | 00.460 | 047 | 017 | -012 | -012 |
| 5118 | -05.9 | 00.638 | 00.458 | 085 | 097 | -010 | -096 |
| 4993 | -01.6 | 00.769 | 00.937 | 078 | 084 | -018 | -083 |
| 4813 | -01.3 | 00.951 | 01.231 | 080 | 086 | -017 | -085 |
| MISSING DATA | | | | | | | |
| 3828 | -35.3 | 03.535 | 05.178 | 079 | 030 | -006 | -029 |
| 3423 | -35.7 | 06.287 | 09.223 | 123 | 007 | +004 | -006 |
| 3112 | -46.2 | 09.888 | 15.178 | 283 | 015 | -003 | +014 |
| 3002 | -41.0 | 11.629 | 17.450 | 287 | 018 | -005 | +017 |
| 2853 | -42.2 | 14.439 | 21.410 | 288 | 013 | -006 | +012 |
| 2740 | -49.5 | 17.119 | 26.651 | 280 | 005 | -001 | +005 |
| 2630 | -49.5 | 20.212 | 31.483 | 022 | 001 | -001 | +000 |
| 2576 | -52.5 | 21.947 | 34.650 | 068 | 001 | +000 | -001 |
| 2524 | -49.3 | 23.758 | 36.974 | 088 | 002 | +000 | -002 |
| 2390 | -50.3 | 29.116 | 45.516 | 073 | 010 | -005 | +015 |
| 2371 | -56.1 | 29.982 | 48.121 | 075 | 019 | -005 | +018 |
| 2300 | -54.1 | 33.482 | 53.249 | 079 | 027 | -005 | +026 |
| 2277 | -53.7 | 34.724 | 57.755 | 082 | 027 | -004 | +026 |
| CONSTANT PRESSURE SURFACES (GEOPOTENTIAL HEIGHT) | | | | | | | |
| 2362 | -56.1 | 30.000 | 48.147 | 075 | 019 | -005 | +018 |
| 2638 | -49.5 | 20.000 | 31.153 | 041 | 001 | -001 | +001 |
| 3105 | -46.2 | 10.000 | 15.324 | 283 | 015 | +003 | +014 |
| 3361 | -37.8 | 07.000 | 10.402 | 155 | 009 | +008 | -004 |
| 3612 | -35.5 | 05.000 | 07.331 | 102 | 018 | +004 | -018 |

RAWINSONDE

| PRESSURE MB | ALT IENS OF METERS | WIND POLAR DEG | WIND POLAR MPS | WIND COMPONENTS MPS N-S | WIND COMPONENTS MPS E-W | RH % | TEMP DEG C |
|---|---|---|---|---|---|---|---|
| 1007.8 | 0004 | 120 | 006 | +003 | -005 | 67 | +29.2 |
| 0902.0 | 0200 | 111 | 010 | +003 | -009 | 33 | +14.5 |
| 0829.1 | 0400 | 081 | 004 | -001 | -004 | 18 | +03.8 |
| 0829.7 | 0600 | 254 | 006 | +002 | +005 | 46 | -10.7 |
| 0376.0 | 0800 | 240 | 011 | +005 | +010 | 12 | -21.4 |
| 0285.1 | 1000 | 243 | 010 | +005 | +009 | 13 | -36.8 |
| 0211.7 | 1200 | 236 | 017 | +011 | +013 | 15 | -53.1 |
| 0152.9 | 1400 | 258 | 022 | +005 | +021 | | -69.8 |
| 0108.3 | 1600 | 260 | 029 | +005 | +028 | | -42.2 |
| 0100.0 | 1641 | 249 | 023 | +009 | +021 | | -85.1 |
| 0076.3 | 1800 | 265 | 002 | +000 | +002 | | -77.1 |
| 0054.5 | 2000 | 000 | 010 | -004 | -009 | | -67.2 |
| 0039.3 | 2200 | 008 | 030 | +000 | -030 | | -60.6 |
| 0029.7 | 2400 | 064 | 023 | -010 | -021 | | -50.0 |
| 0021.3 | 2600 | 062 | 005 | -002 | -004 | | -47.8 |
| 0019.0 | 2663 | 330 | 003 | -003 | +001 | | -44.0 |

# TECHNICAL DATA

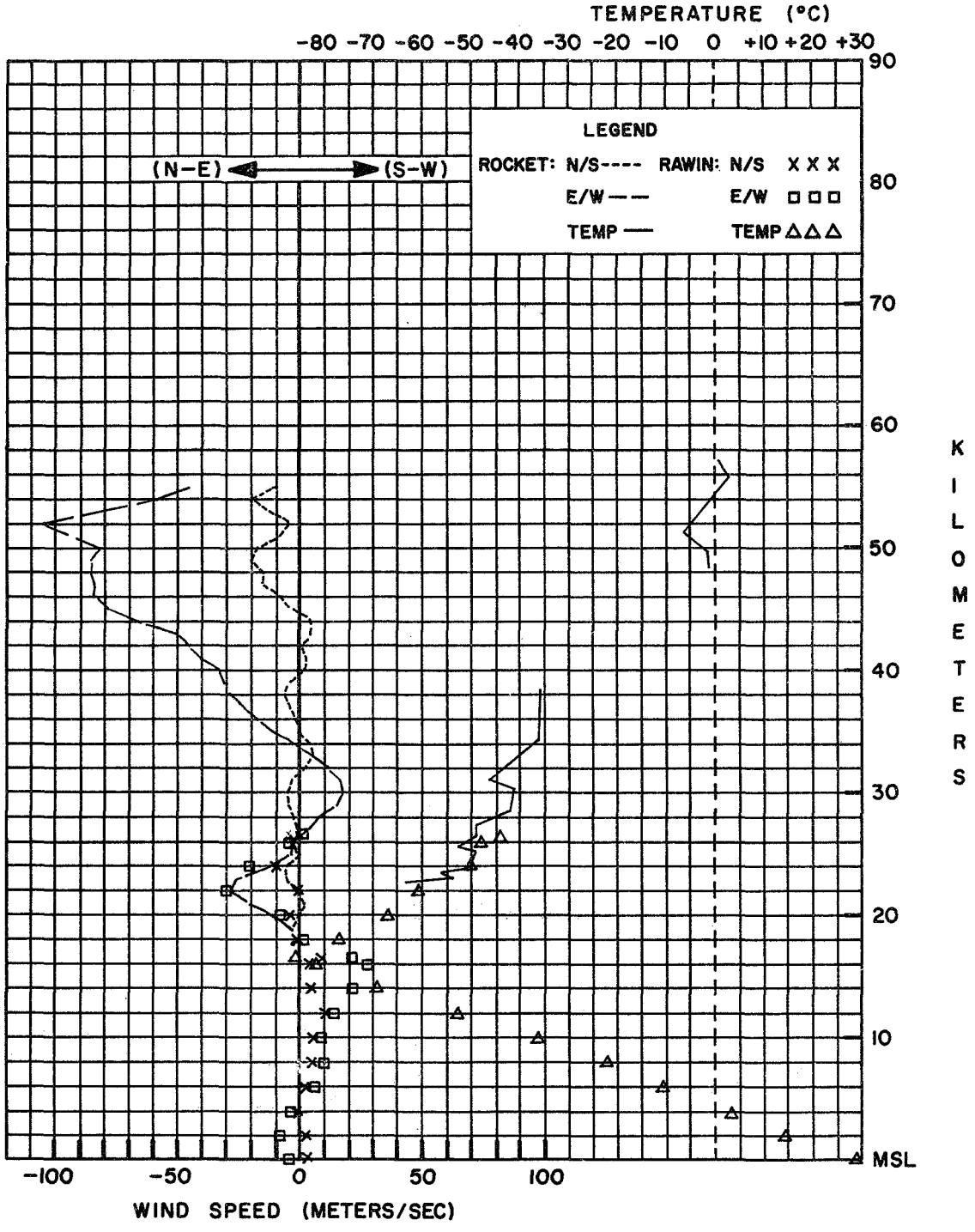
MOTOR TYPE..ARCAS
PAYLOAD TYPE..ARCASONDE-1A
FUSE TYPE..GAS GENERATED SEPARATION DEVICE
LAUNCHER SETTING..030° AZIMUTH 85.0° ELEVATION
RADAR TYPE..MPS-19 APOGEE 57,607 METERS
WIND SENSOR TYPE..15 FT. DIAMETER PARACHUTE
TEMPERATURE SENSOR TYPE..0.010 INCH BEAD THERMISTOR
GROUND EQUIPMENT TYPE..GMD-1A
REMARKS..TEMPERATURE DATA MISSING BETWEEN 48,130 METERS AND 38,208 METERS BECAUSE OF LOW-QUALITY TEMPERATURE TRACE.

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..124 SEC

SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..MOLDED INSULATION CO.
TEMPERATURE ELEMENT TYPE..ROD THERMISTOR
PRESSURE SENSOR TYPE..ANEROID
GROUND EQUIPMENT TYPE..GMD-1A
WIND AT ROCKET LAUNCH..6M 120DEG/10MPS 9M 120DEG/08MPS 16M 120DEG/10MPS 25M 130DEG/12MPS 40M 130DEG/04MPS
BALLISTIC WIND.. 127°AZIMUTH 07.2 MPS
THERMODYNAMIC BASE DATA..PRESSURE 39.3 MB TEMPERATURE -60.6°C ALTITUDE 22,000 METERS

RADIOSONDE TYPE..1680 MHZ
BALLOON TYPE..NEOPRENE
BALLOON SIZE..1,200 GRAMS




STATION: (CNAE) Natal, Brazil
DATE: 18 December, 1968

ROCKET TIME: 1200 LST 1500 GCT
ROCKET MOTOR TYPE: Arcas

PAYLOAD TYPE: Arcasonde 1A
RADIOSONDE TYPE: 1680 MHZ

# ROCKET OBSERVATION DATA

WP STATION NAME

87689 (CHIE) MAR CHIQUITA, ARGENTINA

LAT. 37°45' S LONG. 57°25' W

ROCKET LAUNCH

DATE DECEMBER 1H, 1968 TIME 1802 Z

RAWINSONDE RELEASE

DATE DECEMBER 18, 1968 TIME 1425 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | WIND COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 150 | 66 | 084 | 072 | -008 | -071 |
| 143 | 65 | 076 | 052 | -013 | -050 |
| 166 | 64 | 078 | 046 | -010 | -045 |
| 142 | 63 | 090 | 042 | +000 | -042 |
| 150 | 62 | 085 | 044 | -004 | -044 |
| 166 | 61 | 075 | 068 | -018 | -065 |
| 166 | 60 | 073 | 070 | -021 | -067 |
| 143 | 59 | 069 | 059 | -021 | -055 |
| 134 | 58 | 080 | 075 | -013 | -073 |
| 125 | 57 | 083 | 080 | -010 | -076 |
| 118 | 56 | 083 | 058 | -007 | -057 |
| 111 | 55 | 080 | 054 | -009 | -053 |
| 092 | 54 | 085 | 066 | -006 | -065 |
| 096 | 53 | 088 | 072 | -002 | -072 |
| 096 | 52 | 085 | 053 | -004 | -053 |
| 085 | 51 | 078 | 051 | -011 | -050 |
| 073 | 50 | 071 | 061 | -020 | -057 |
| 068 | 49 | 078 | 059 | -012 | -058 |
| 065 | 48 | 080 | 048 | -008 | -047 |
| 048 | 47 | 082 | 043 | -006 | -042 |
| 048 | 46 | 088 | 042 | -001 | -042 |
| 048 | 45 | 088 | 046 | -002 | -046 |
| 048 | 44 | 078 | 048 | -010 | -046 |
| 047 | 43 | 079 | 052 | -010 | -051 |
| 043 | 42 | 080 | 052 | -009 | -051 |
| 038 | 41 | 084 | 048 | -005 | -047 |
| 033 | 40 | 088 | 047 | -002 | -047 |
| 028 | 39 | 092 | 045 | +002 | -045 |
| 032 | 38 | 095 | 043 | +003 | -043 |
| 033 | 37 | 096 | 035 | +004 | -035 |
| 026 | 36 | 092 | 029 | +001 | -028 |
| 025 | 35 | 087 | 025 | -001 | -025 |
| 022 | 34 | 084 | 025 | -003 | -025 |
| 020 | 33 | 087 | 026 | -001 | -026 |
| 019 | 32 | 092 | 024 | +003 | -024 |
| 018 | 31 | 091 | 022 | +000 | -022 |
| 018 | 30 | 087 | 019 | -001 | -019 |
| 014 | 29 | 082 | 016 | -002 | -016 |
| 012 | 28 | 070 | 017 | -006 | -016 |
| 012 | 27 | 065 | 015 | -007 | -014 |
| 011 | 26 | 072 | 012 | -004 | -011 |
| 010 | 25 | 080 | 010 | -002 | -010 |
| 008 | 24 | 090 | 009 | +000 | -009 |
| 007 | 23 | 108 | 006 | +002 | -006 |
| 006 | 22 | 147 | 002 | +002 | -001 |
| 005 | 21 | 257 | 003 | +001 | +003 |
| 005 | 20 | 287 | 008 | -002 | +009 |
| 005 | 19 | 315 | 010 | -007 | +007 |
| 004 | 18 | 306 | 010 | -006 | +008 |

ROCKET THERMODYNAMICS

| ALTITUDE OF METERS | TEMP DEG C | PRESSURE MB | DENSITY G/M³ | WIND POLAR DEG | WIND POLAR MPS | WIND COMPONENTS MPS N-S | WIND COMPONENTS MPS E-W |
|---|---|---|---|---|---|---|---|
| 6516 | -19.5 | 05.812 | 08.243 | 090 | 027 | +000 | +027 |
| 6117 | -02.9 | 00.245 | 00.316 | 077 | 065 | -015 | -063 |
| 5888 | +01.3 | 00.325 | 00.413 | 070 | 061 | -021 | -060 |
| 5540 | +05.6 | 00.496 | 00.620 | 084 | 056 | -006 | -055 |
| 5376 | +03.6 | 00.605 | 00.761 | 086 | 069 | -005 | -070 |
| 4767 | +06.8 | 01.262 | 01.572 | 081 | 046 | -006 | -046 |
| 4350 | +03.3 | 02.092 | 02.636 | 078 | 050 | -010 | -049 |
| 3560 | -12.0 | 03.808 | 05.160 | 096 | 039 | +004 | -039 |
| 3794 | -18.5 | 04.217 | 05.769 | 095 | 043 | +004 | -042 |
| 3654 | -20.8 | 05.042 | 07.015 | 094 | 032 | +002 | -032 |
| 3555 | -27.5 | 05.812 | 08.243 | 090 | 027 | +000 | +027 |
| 3370 | -28.6 | 07.501 | 10.685 | 085 | 025 | -002 | -025 |
| 3182 | -35.0 | 09.761 | 14.279 | 096 | 024 | +003 | -024 |
| 2910 | -41.9 | 14.444 | 21.766 | 083 | 017 | -002 | -017 |
| 2615 | -47.7 | 22.379 | 34.540 | 071 | 013 | -004 | -012 |
| 2435 | -51.0 | 29.391 | 46.091 | 086 | 009 | -001 | -009 |
| 2220 | -53.3 | 40.880 | 64.776 | 143 | 003 | +002 | -002 |
| 2207 | -52.7 | 41.707 | 65.907 | 144 | 002 | +002 | -001 |
| 2164 | -57.0 | 44.589 | 71.864 | 193 | 002 | -002 | +000 |
| 1870 | -60.2 | | | 312 | 010 | -007 | +007 |
| 1783 | -65.0 | | | 344 | 017 | -017 | +003 |
| 1679 | -64.6 | | | 313 | 014 | -010 | +010 |

CONSTANT PRESSURE SURFACES (GEOPOTENTIAL HEIGHT)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2415 | -51.1 | 30.000 | 47.081 | 089 | 009 | +000 | -009 |
| 2692 | -46.0 | 20.000 | 30.736 | 089 | 016 | -001 | -016 |
| 3152 | -35.3 | 10.000 | 14.661 | 095 | 024 | +002 | -024 |
| 3407 | -28.3 | 07.000 | 09.961 | 086 | 026 | -002 | -026 |
| 3646 | -20.6 | 05.000 | 06.897 | 094 | 033 | +002 | -033 |
| 4073 | -04.5 | 03.000 | 03.926 | 087 | 044 | -004 | -044 |
| 4368 | +03.7 | 02.000 | 02.516 | 078 | 049 | -011 | -049 |
| 4971 | +05.4 | 01.000 | 01.249 | 083 | 055 | -007 | -055 |

RAWINSONDE

| PRESSURE MB | ALTITUDE OF METERS | WIND POLAR DEG | WIND POLAR MPS | WIND COMPONENTS MPS N-S | WIND COMPONENTS MPS E-W | RH % | TEMP DEG C |
|---|---|---|---|---|---|---|---|
| 1011.1 | 0002 | 360 | 008 | -008 | +000 | 72 | +23.6 |
| 0800.4 | 0200 | 340 | 016 | -015 | +005 | 35 | +10.0 |
| 0626.0 | 0400 | 323 | 011 | -009 | +007 | 74 | -03.2 |
| 0484.5 | 0600 | 296 | 028 | -012 | +025 | 76 | -14.3 |
| 0370.7 | 0800 | 285 | 031 | -008 | +030 | 63 | -27.2 |
| 0277.0 | 1000 | 293 | 042 | -016 | +039 | 41 | -39.4 |
| 0204.8 | 1200 | 280 | 040 | -007 | +039 | | -55.4 |
| 0193.0 | 1235 | 281 | 038 | -008 | +039 | | -58.3 |
| 0149.1 | 1400 | 286 | 030 | -008 | +029 | | -54.1 |
| 0109.5 | 1600 | 290 | 035 | -012 | +033 | | -59.5 |
| 0079.4 | 1800 | 349 | 018 | -018 | +003 | | -60.9 |
| 0057.6 | 2000 | 315 | 003 | -002 | +002 | | -56.9 |
| 0042.1 | 2200 | 095 | 003 | +000 | -003 | | -53.1 |
| 0030.9 | 2400 | 093 | 012 | +000 | -012 | | -49.8 |
| 0023.0 | 2600 | | | | | | -46.9 |
| 0017.0 | 2800 | | | | | | -44.1 |
| 0016.3 | 2826 | | | | | | -43.8 |

# TECHNICAL DATA

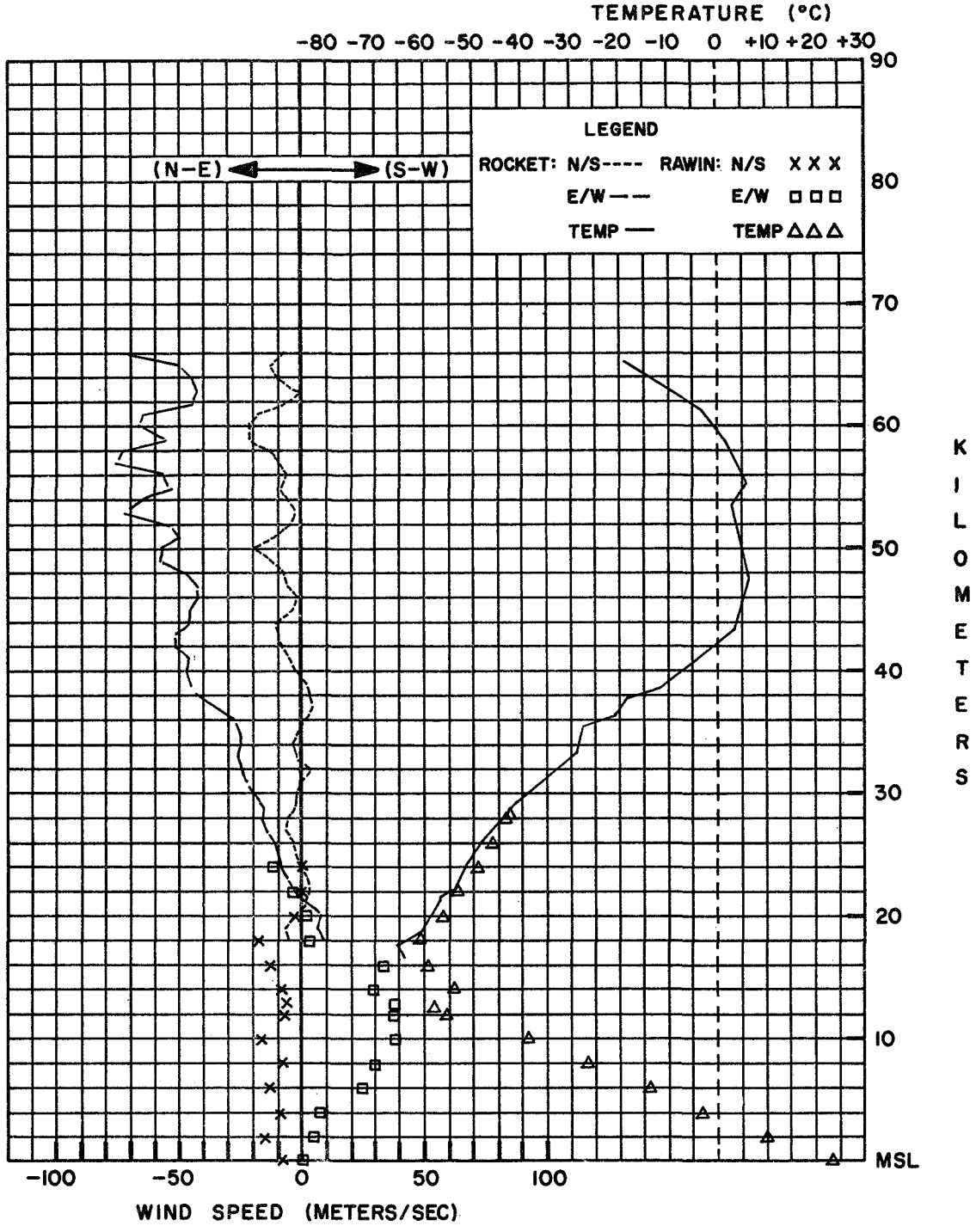
MOTOR TYPE..ARCAS
PAYLOAD TYPE..ARCASONDE-1A
FUSE TYPE..GAS GENERATED SEPARATION DEVICE
LAUNCHER SETTING..125° AZIMUTH 83.3° ELEVATION
RADAR TYPE..MPS-19 APOGEE 72,000 METERS
WIND SENSOR TYPE..15 FT. DIAMETER PARACHUTE
TEMPERATURE SENSOR TYPE..0.010 INCH BEAD THERMISTOR
GROUND EQUIPMENT TYPE..GMD-2B
REMARKS..NONE

MOTOR PERFORMANCE..GOOD
PAYLOAD PERFORMANCE..GOOD
ACTUAL FUSE DELAY TIME..130 SEC

SENSOR FALL-RATE..NOMINAL

RADIOSONDE MANUFACTURER..VAISALA
TEMPERATURE ELEMENT TYPE..RESISTANCE WIRE
PRESSURE SENSOR TYPE..ANEROID
GROUND EQUIPMENT TYPE..VAISALA
WIND AT ROCKET LAUNCH..SFC. 020DEG/04MPS
BALLISTIC WIND.. 315° AZIMUTH 10.2 MPS
THERMODYNAMIC BASE DATA..PRESSURE 79.4 MBS
TEMPERATURE -60.9° C
ALTITUDE 18,000 METERS

RADIOSUNDE TYPE..VAISALA
BALLOON TYPE..LATEX
BALLOON SIZE..1,000 GRAMS




STATION: (CNIE) Mar Chiquita, Arg. ROCKET TIME: 1502 LST 1802 GCT PAYLOAD TYPE: Arcasonde 1A

DATE: 18 December, 1968 ROCKET MOTOR TYPE: Arcas RADIOSONDE TYPE: Vaisala

# ROCKET OBSERVATION DATA

WP STATION NAME

72402 (NASA) WALLOPS ISLAND, VIRGINIA

LAT. 37° 51' N LONG. 75° 29' W

ROCKET LAUNCH

DATE DECEMBER 19, 1968 TIME 1922 Z

RAWINSONDE RELEASE

DATE DECEMBER 19, 1968 TIME 2315 Z

ROCKET WINDS

| FALL VEL | ALT | WIND POLAR | | COMPONENTS MPS | |
|---|---|---|---|---|---|
| M/S | KM | DEG | MPS | N-S | E-W |
| 094 | 53 | 243 | 022 | +010 | +019 |
| 090 | 52 | 230 | 026 | +017 | +020 |
| 080 | 51 | 243 | 030 | +014 | +027 |
| 077 | 50 | 242 | 030 | +014 | +027 |
| 071 | 49 | 233 | 030 | +018 | +024 |
| 062 | 48 | 227 | 029 | +020 | +022 |
| 059 | 47 | 218 | 029 | +023 | +018 |
| 054 | 46 | 216 | 028 | +023 | +016 |
| 050 | 45 | 219 | 031 | +024 | +020 |
| 046 | 44 | 221 | 031 | +024 | +021 |
| 042 | 43 | 217 | 030 | +024 | +018 |
| 037 | 42 | 221 | 031 | +023 | +020 |
| 033 | 41 | 230 | 030 | +019 | +023 |
| 032 | 40 | 239 | 031 | +016 | +027 |
| 029 | 39 | 242 | 037 | +017 | +032 |
| 027 | 38 | 243 | 038 | +017 | +034 |
| 025 | 37 | 258 | 037 | +008 | +036 |
| 024 | 36 | 268 | 042 | +002 | +041 |
| 023 | 35 | 260 | 043 | +008 | +043 |
| 020 | 34 | 250 | 041 | +014 | +038 |
| 018 | 33 | 248 | 036 | +013 | +033 |
| 017 | 32 | 249 | 026 | +009 | +024 |
| 015 | 31 | 250 | 019 | +007 | +018 |
| 013 | 30 | 263 | 017 | +002 | +017 |
| 013 | 29 | 269 | 015 | +000 | +015 |
| 011 | 28 | 267 | 014 | +001 | +014 |
| 011 | 27 | 263 | 013 | +002 | +013 |
| 010 | 26 | 268 | 009 | +003 | +008 |
| 009 | 25 | 250 | 004 | +001 | +004 |
| 007 | 24 | 285 | 006 | -001 | +006 |
| 007 | 23 | 278 | 007 | -001 | +007 |
| 007 | 22 | 284 | 008 | -002 | +008 |
| 006 | 21 | 283 | 011 | -003 | +011 |
| 005 | 20 | 279 | 013 | -002 | +013 |
| 004 | 19 | 284 | 012 | -003 | +012 |
| 004 | 18 | 284 | 017 | -004 | +017 |

ROCKET THERMODYNAMICS

| ALT TENS OF METERS | TEMP DEG C | PRESSURE MB | DENSITY G M -3 | WIND POLAR DEG | MPS | COMPONENTS MPS N-S | E-W |
|---|---|---|---|---|---|---|---|
| 5669 | -12.2 | 00.342 | 00.457 | | | | |
| 5364 | -03.7 | 00.504 | 00.651 | | | | |
| 5252 | -08.2 | 00.580 | 00.762 | 237 | 024 | +013 | +020 |
| 5154 | -08.9 | 00.657 | 00.866 | 237 | 026 | +015 | +024 |
| 5011 | -05.0 | 00.796 | 01.022 | 242 | 030 | +014 | +027 |
| 4953 | -07.9 | 00.880 | 01.111 | 238 | 030 | +016 | +026 |
| 4782 | -00.4 | 01.048 | 01.338 | 225 | 029 | +021 | +021 |
| 4688 | -07.4 | 01.178 | 01.544 | 218 | 029 | +023 | +018 |
| 4563 | -10.4 | 01.341 | 01.831 | 217 | 029 | +023 | +018 |
| 4380 | -08.4 | 01.745 | 02.296 | 220 | 031 | +023 | +020 |
| 4340 | -13.2 | 01.837 | 02.461 | 219 | 030 | +024 | +019 |
| 4048 | -09.2 | 02.674 | 03.529 | 235 | 031 | +018 | +025 |
| 4014 | -13.6 | 02.794 | 03.750 | 238 | 031 | +016 | +027 |
| 3944 | -12.2 | 03.059 | 04.084 | 241 | 034 | +017 | +030 |
| 3880 | -18.1 | 03.326 | 04.543 | 242 | 037 | +017 | +032 |
| 3716 | -13.0 | 04.122 | 05.519 | 256 | 037 | +009 | +036 |
| 3685 | -17.1 | 04.292 | 05.840 | 260 | 038 | +007 | +038 |
| 3566 | -18.6 | 05.029 | 06.874 | 266 | 042 | +003 | +042 |
| 3514 | -23.3 | 05.386 | 07.510 | 261 | 043 | +007 | +043 |
| 3481 | -22.0 | 05.631 | 07.811 | 258 | 043 | +009 | +042 |
| 3447 | -28.1 | 05.898 | 08.386 | 255 | 042 | +011 | +041 |
| 3417 | -27.6 | 06.146 | 08.721 | 252 | 042 | +013 | +040 |
| 3368 | -33.8 | 06.581 | 09.579 | 249 | 040 | +014 | +037 |
| 3322 | -32.8 | 07.021 | 10.177 | 248 | 037 | +013 | +034 |
| 3191 | -44.1 | 08.478 | 12.897 | 249 | 025 | +009 | +024 |
| 3087 | -46.4 | 09.892 | 15.197 | 252 | 019 | +006 | +018 |
| 3018 | -47.5 | 10.967 | 16.934 | 261 | 017 | +003 | +017 |
| 2771 | -55.0 | 15.484 | 25.531 | 266 | 014 | +001 | +014 |
| 2691 | -53.7 | 18.096 | 28.724 | 262 | 012 | +002 | +012 |
| 2621 | -57.6 | 20.173 | 32.598 | 251 | 010 | +003 | +009 |
| 2341 | -57.6 | 31.323 | 50.616 | 281 | 007 | -001 | +007 |
| 2240 | -60.7 | 36.757 | 60.281 | 282 | 008 | -002 | +008 |
| 2164 | -58.8 | 41.476 | 67.398 | 284 | 009 | -002 | +009 |
| 2121 | -62.1 | 44.419 | 73.333 | 283 | 011 | -003 | +011 |
| 2000 | -65.9 | 54.051 | 90.858 | 279 | 013 | -002 | +013 |
| 1719 | -64.8 | | | | | | |

CONSTANT PRESSURE SURFACES (GEOPOTENTIAL HEIGHT)

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2041 | -64.4 | 50.000 | 83.425 | 281 | 012 | -002 | +012 |
| 2360 | -57.6 | 30.000 | 48.443 | 283 | 006 | -001 | +006 |
| 2616 | -57.2 | 20.000 | 32.272 | 252 | 010 | +003 | +009 |
| 3065 | -46.5 | 10.000 | 15.371 | 253 | 019 | +006 | +018 |
| 3307 | -32.8 | 07.000 | 10.148 | 248 | 037 | +013 | +034 |
| 3549 | -14.5 | 05.000 | 06.841 | 266 | 042 | +003 | +042 |
| 3934 | -12.5 | 03.000 | 04.010 | 240 | 033 | +017 | +029 |
| 4245 | -12.3 | 02.000 | 02.471 | 218 | 030 | +024 | +019 |
| 4783 | -02.8 | 01.000 | 01.285 | 228 | 029 | +019 | +022 |

RAWINSONDE

| PRESSURE MB | ALT TENS OF METERS | WIND POLAR DEG | MPS | COMPONENTS MPS N-S | E-W | RH % | TEMP DEG C |
|---|---|---|---|---|---|---|---|
| 1010.8 | 0000 | 210 | 005 | +005 | +003 | 92 | +06.7 |
| 0795.0 | 0200 | 248 | 025 | +009 | +024 | 92 | +04.7 |
| 0621.0 | 0400 | 246 | 024 | +010 | +022 | 94 | -03.8 |
| 0479.0 | 0600 | 256 | 029 | +007 | +029 | 80 | -19.2 |
| 0363.0 | 0800 | 252 | 039 | +012 | +037 | 15 | -33.8 |
| 0272.0 | 1000 | | | | | | -47.7 |
| 0196.0 | 1200 | | | | | | -62.2 |
| 0142.0 | 1253 | | | | | | -66.2 |
| 0143.0 | 1400 | | | | | | -63.2 |
| 0103.8 | 1600 | | | | | | -64.0 |
| 0074.0 | 1800 | | | | | | -66.7 |
| 0055.0 | 2000 | | | | | | -64.8 |
| 0038.8 | 2200 | | | | | | -61.1 |
| 0028.4 | 2400 | | | | | | -58.4 |
| 0020.7 | 2600 | 277 | 003 | +000 | +003 | | -57.1 |
| 0015.2 | 2800 | 269 | 013 | +000 | +013 | | -55.8 |
| 0011.2 | 3000 | 276 | 029 | -003 | +029 | | -54.0 |
| 0010.0 | 3124 | 272 | 015 | -001 | +015 | | -51.9 |
| 0008.4 | 3182 | | | | | | -48.5 |

# TECHNICAL DATA

MOTOR TYPE..LOKI

PAYLOAD TYPE..DATASONDE

FUSE TYPE..ELECTRICALLY ACTIVATED PYROTECHNIC

LAUNCHER SETTING..130° AZIMUTH 75..° ELEVATION

RADAR TYPE..SPANDAR APOGEE 57.764 METERS

WIND SENSOR TYPE..7.5 FT. DIAMETER PARACHUTE SENSOR FALL-RATE..NOMINAL

TEMPERATURE SENSOR TYPE..0.010 INCH HEAD THERMISTOR

GROUND EQUIPMENT TYPE..GMD-1B

REMARKS..RAWINSONDE WINDS MISSING AT TROPOPAUSE AND FROM 18,000 METERS THROUGH 24,000 METERS INCLUSIVE DUE TO LIMITING ANGLES OF GMD-1A.

MOTOR PERFORMANCE..GOOD

PAYLOAD PERFORMANCE..GOOD

ACTUAL FUSE DELAY TIME..111 SEC

RADIOSONDE MANUFACTURER..MOLDED INSULATION CO. RADIOSONDE TYPE..1680 MHZ

TEMPERATURE ELEMENT TYPE..NOD THERMISTOR BALLOON TYPE..NEOPHENE

PRESSURE SENSOR TYPE..ANEROID AND HYPSOMETER BALLOON SIZE..1,200 GRAMS

GROUND EQUIPMENT TYPE..GMD-1B

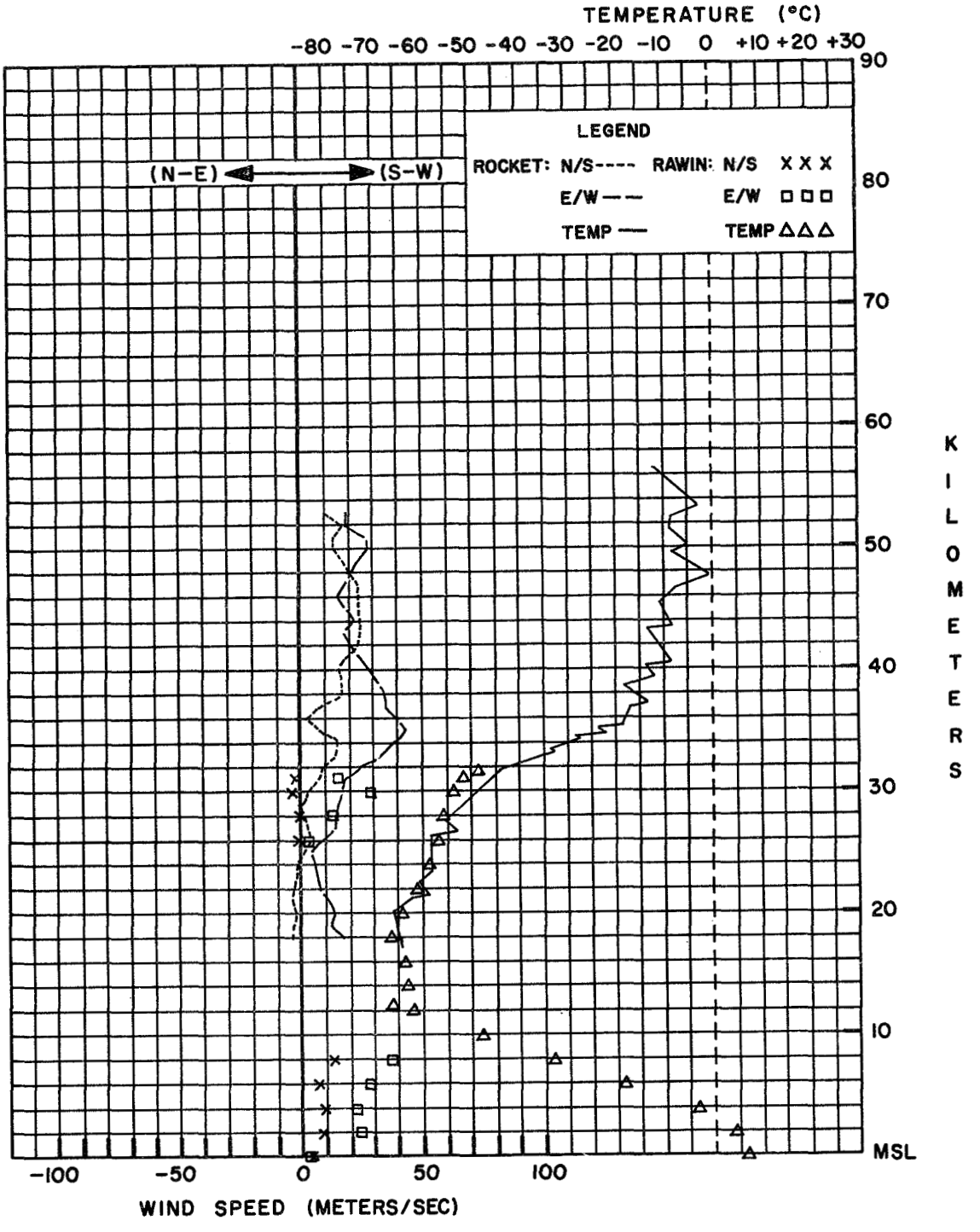
WIND AT ROCKET LAUNCH..SFC. 143DEG/04MPS 1KM 185DEG/05MPS 3KM 194DEG/05MPS 4KM 189DEG/06MPS 6KM 195DEG/05MPS 7KM 194DEG/08MPS

BALLISTIC WIND.. N.A. AZIMUTH N.A. MPS

THERMODYNAMIC BASE DATA..PRESSURE 103.4 MBS

TEMPERATURE -64..° C

ALTITUDE 16,000 METERS




STATION: (NASA) Wallops Island, Va. ROCKET TIME: 1422 LST 1922 GCT PAYLOAD TYPE: Datasonde

DATE: 19 December, 1968 ROCKET MOTOR TYPE: Loki RADIOSONDE TYPE: 1680 MHZ

# APPENDIX A

# APPENDIX A

## DISCUSSION AND DESCRIPTION OF METEOROLOGICAL ROCKET SOUNDING DATA

The data presented in this report have undergone reasonable quality control and verification procedures to assure data which will adequately meet the needs of researchers. The Experimental InterAmerican Meteorological Rocket Network (EXAMETNET) standard data reduction procedures are used to present wind and thermodynamic data in the form shown. These existing data reduction procedures will be published as part of the EXAMETNET publications process.

The meteorological parameters obtained from the rocket observations are those of wind and temperature. Wind data are given in polar and component form for every kilometer, and temperature data are given at points of significant change of the temperature lapse rate; wind data, included for the same altitude with the significant temperature data, will aid the atmospheric researcher performing analysis to construct isotherms and temperature fields. The derived rocket thermodynamic values of pressure, density, and speed of sound are produced through computer processing, as is the constant pressure level data using geopotential altitudes. These derived values are determined using the equation of state and hydrostatic relationships; initial computational data are obtained from a supporting rawinsonde. All supporting rawinsonde observations are made within $\pm 4$ hours of the rocket observation.

Summarized technical data include numerous advantages for the technical qualification of the observation. One of the more obvious advantages, for example, is that a rapid assessment of wind and temperature data representativeness can be made in the vicinity of payload deployment. This can be done by comparison of the launch azimuth, apogee, payload ejection altitude, and the results of the first data level reported.

A simplified graphical presentation was designed which would provide convenient size and acceptable resolution, yet relatively uncluttered of disturbing nonessential detail. Note that separation of the profiles of rocket data from the supporting rawinsonde data was maintained. The distinction that rocketsonde data are primary is obvious; however, the separation of data profiles allows the user to quickly determine the compatibility of the data and thus filter out observations to suit his needs.

No interpolation of missing data in the tabular or graphical data presentation is made, nor are corrections made to wind and temperature data at this time. Satisfactory correction values have not been determined for routine EXAMETNET use. As appropriate correction methods become available, they will be included as addenda or within separate publications. It is expected that these correction schemes and procedures will normally apply to the system used by EXAMETNET participants.

In summary, this publication represents an up-to-date, state-of-the-art data format. This format will be found to complement data obtained elsewhere in the Northern and Southern Hemispheres, and also satisfy recommendations made by the Committee on Space Research (COSPAR), and other special committees of the International Committee of Scientific Unions (ICSU) for data exchange arrangements through the World Data Centers.

A detailed discussion and description of the EXAMETNET reports will be found in the annual publications. If any errors are noted or inquiries concerning the format are to be made, they can be directed to the EXAMETNET Scientific Coordinator, NASA, Wallops Station, Wallops Island, Virginia.

# APPENDIX B

## APPENDIX B

## EXAMETNET AND RELATED PUBLICATIONS, REPORTS, AND HANDBOOKS


1. "EXAMETNET Data Report Series," by EXAMETNET Executive Committee, 1966, 1967, and 1968 Quarter Reports, Numbers 66-101, 66-102, 66-103, 66-104, 67-101, 67-102, 67-103, 67-104, 68-101, 68-102, 68-103, and 68-104; Annual Report, 1966; Annual Report, 1967.

2. "Graphical Method for Determining Atmospheric Pressure from Rocketsonde Observations," by F. J. Schmidlin, published in Monthly Weather Review, Volume 94, No. 8, 529-533, August 1966.

3. "NASA, Wallops Station, Wallops Island, Virginia, EXAMETNET Participant," NASA Wallops Station, September 1966.

4. "An Experiment Designed to Determine the Diurnal Temperature and Wind Variations and to Detect Possible Errors in Rocketsonde Temperature Measurements in the Upper Stratosphere," by F. G. Finger and H. M. Woolf, NASA TM X-1298, November 1966.

5. "Chamical Rocket Range and Summary Information on the Atlantic Range," CNIE, January 1967.

6. "The Reversal of the Stratospheric Circulation over Chamical During the Spring of 1966," by E. R. Lichtenstein, V. R. Barros, and M. W. Vargas, CNIE-PE-12, 1967.

7. "The Establishment of the Experimental Inter-American Meteorological Rocket Network (EXAMETNET)," by J. F. Bettle, J. F. Spurling, and F. J. Schmidlin, presented at American Institute of Aeronautics and Astronautics (AIAA) Sounding Rocket Vehicle Technology Specialist Conference, Williamsburg, Va., February 27-March 1, 1967.

8. "Southern Hemisphere Stratospheric Circulation as Indicated by Shipboard Meteorological Rocket Observations," by F. G. Finger and H. M. Woolf, NASA TM X-1346, March 1967. Also published in Journal of the Atmospheric Sciences, July 1967.

9. "An Extrapolation Procedure for Determining the Height of a Meteorological Rocket Instrument in the Event of Tracking-Radar Failure," by A. J. Miller and H. M. Woolf, published as Appendix in EXAMETNET Data Report Series No. 67-102.

10. "A Note on the Semi-Annual Wind Variation in the Equatorial Stratosphere," by R. S. Quiroz and A. J. Miller, published in the Monthly Weather Review, September 1967.

11. "Argentine Activity Report to EXAMETNET Executive Committee at San Jose dos Campos, Brazil," October 1967.

12. "Meteorological Sounding Rocket Program at Natal," by J. A. M. Salgado, U. Belculfine, C. Girardi, M. Del Tedesco, and F. De Mendonca, CNAE Report LAFE-62, October 1967.

13. "United States Activity Report to EXAMETNET Executive Committee at San Jose dos Campos, Brazil," October 1967.

14. "Meteorological Rocket Facility Handbook," January 1968, published by NASA Wallops Station.

15. "EXAMETNET Data Preparation and Guidance Procedures Manual," January 1969, published by NASA Wallops Station for EXAMETNET.

16. "Synoptic Density Maps for Post-Reentry Altitudes," by Quiroz, presented at Third Conference on Aerospace Meteorology, New Orleans, La., May 1968.

17. "Small-Scale Wind Temperatures as Evidenced by Meteorological Rocket Systems," by Miller, Woolf, and Finger presented at Third Conference on Aerospace Meteorology, New Orleans, La., May 1968. Also published in Journal of Applied Meteorology, June 1968.

18. "On the Computation of Solar Elevation Angles and the Determination of Sunrise and Sunset Times," by H. M. Woolf, NASA TM X-1646, September 1968.

19. "The Japan-United States Meteorological Rocket Project," by J. F. Spurling and N. Arizumi, presented at the Seventh International Symposium on Space Technology and Science, Tokyo, Japan, 1967.

20. "The Japan-United States Meteorological Rocket Project Data Report," by the Japanese Science and Technology Agency, Japanese Meteorological Agency, and the United States National Aeronautics and Space Administration, 1967.

21. "CONIE-NASA Data Report 1966," by the Spanish Comision Nacional de Investigacion del Espacio (CNIE) and the United States National Aeronautics and Space Administration (NASA), May 1968.

22. "A Technical Description of the Japanese MT-135 Meteorological Rocket System Utilized for the Japan-U.S. Meteorological Rocket Project," prepared by NASA with the aid of Japan, 1967.

23. "A Comparison of Data Obtained by the MT-135 and Arcas Meteorological Systems," by Miller, Woolf, and Finger, February 1969.

24. "Weekly Synoptic Analysis, 5-, 2-, and 0.4-mb Surfaces for 1966" (based on observations of EXAMETNET and MRN) by the Staff, Upper Air Branch, ESSA, January 1969.

25. "Response Characteristics of Meteorological Rocket Wind Reduction Techniques," by A. J. Miller, August 1969.

26. "A Note on the Variability of Temperature as Indicated by Rocketsonde Thermistors," by A. J. Miller, February 1969.

27. "Synoptic Analysis of the Southern Hemisphere Stratosphere," by Alvin J. Miller and Frederick G. Finger, 1968.

28. "On the Interaction between the Stratosphere and the Troposphere during the Warming of December 1967-January 1968," by A. J. Miller and K. W. Johnson, 1968.

29. "Meteorological Sounding Rocket Program - Barreira do Inferno - Natal, Brasil," October 1968.

30. "Brazilian Participation in the EXAMETNET Program," EXAMETNET Meeting, October 1968.

31. "Argentina Activity Report to EXAMETNET Executive Committee at Wallops Island, Virginia," October 1968.

32. "United States Activity Report to EXAMETNET Executive Committee at Wallops Island, Virginia," October 1968.

NASA-Langley, 1970 —— 20

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*Details on the availability of these publications may be obtained from:*

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