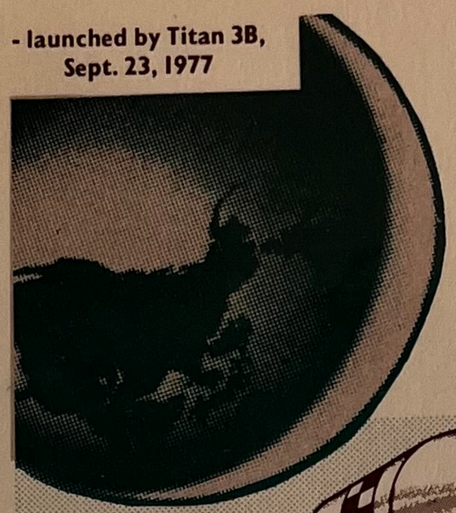
Seite 6a

- launched by Titan 3B,
Sept. 23, 1977



VANDENBERG AFB, CA
AM 1
SEP 23
1977
93437

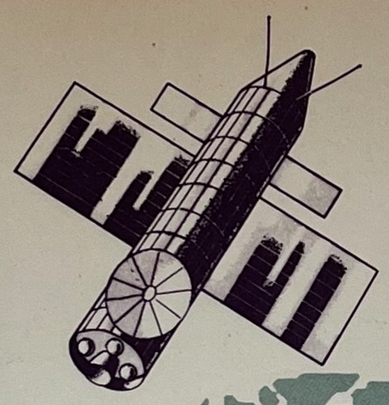
USA 13c
ONE NATION INDIVISIBLE • E PLURIBUS UNUM

- Detailed Examination Of
Objects Of Interest

SAMOS-
112

- CLOSE LOOKS AT
SOVIET ICBM SILOs TO
ASSIST Big Bird SURVEILLANCE

USAF



BIG
BIRD
15

VANDENBERG AFB, CA
PM
MAR 16
1978
93437

ENERGY DEVELOPMENT
USA 13c

DOD

249 x 158 km.

-USAF

- launched
by
Titan 3D
Mar. 16, 1978

SAMOS
RECON
SATELLITE
TO LOCATE
SOVIET
MISSILE
SITES

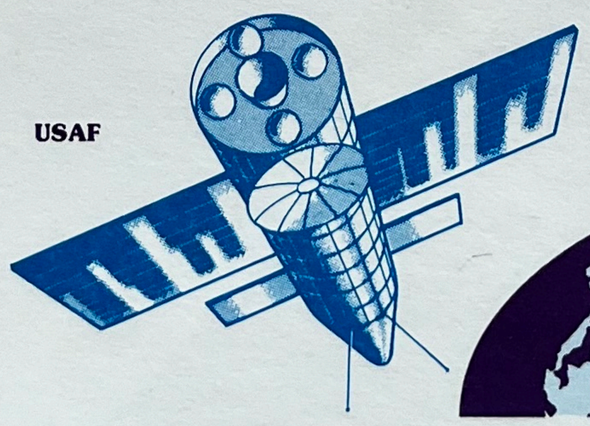
- Launched by Titan 3D,
June 14, 1978

"NATIONAL TECHNICAL MEANS OF VERIFICATION"

Reconnaissance - Surveillance
Over Sino - Soviet Missile Sites

VANDENBERG AFB, CA
AM
JUN 14
1978
93437

USAF



BIG BIRD-16

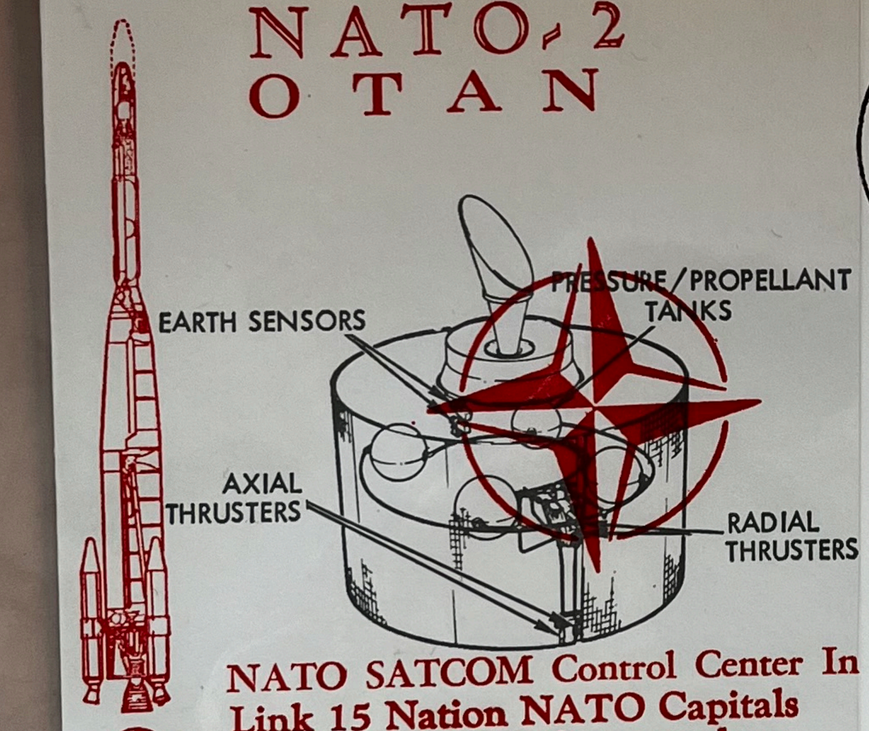
LEITZ 4781

NATO-2
O T A N

NATO SATCOM Control Center In Belgium
Link 15 Nation NATO Capitals
w/Major NATO Commanders.

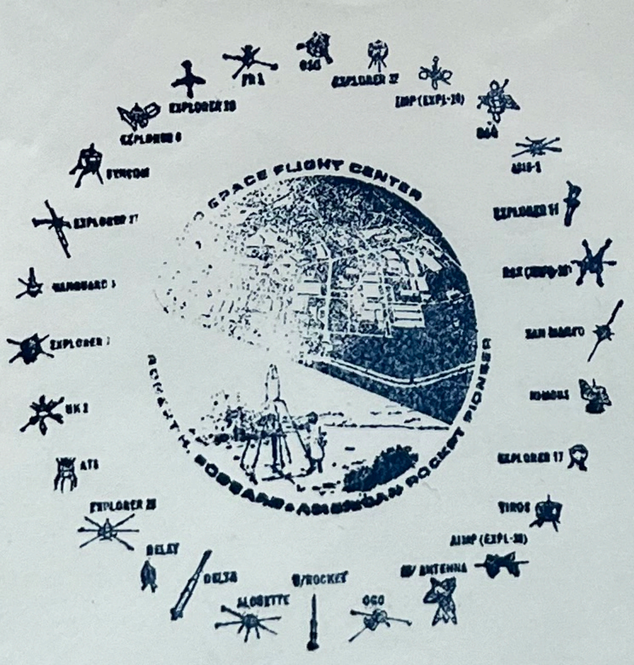
CAPE CANAVERAL, FL
FEB 3 AM
1971
32920

NATO-2
O T A N



NATO SATCOM Control Center In Belgium
Link 15 Nation NATO Capitals
w/Major NATO Commanders.

CAPE CANAVERAL, FL
FEB 3 AM
1971
32920



NATO-3C

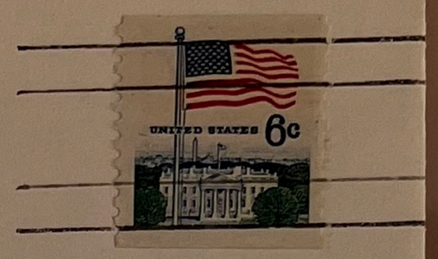
GODDARD SP FLT CTR, MD
NOV 18
1978
PM
20771

Peter Wilhelm
8035 GAUTING
Julius-Haerlin-Str. 2
GERMANY - ALLEMAGNE

NORTH ATLANTIC TREATY ORGANIZATION

COMMUNICATIONS SATELLITE
placed into orbit from
CAPE KENNEDY, FLORIDA
February 2, 1971

CAPE CANAVERAL, FL
FEB 3
AM
1971
32920

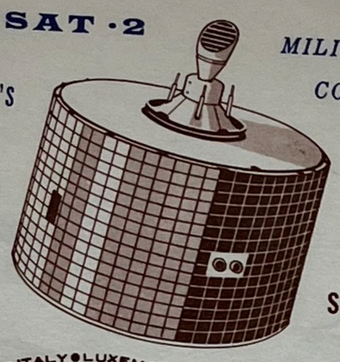


CANCEL DELAYED
Launching after P. O. closed.

NATOSAT-2

Launched by Delta; 8:41 p.m. EST

·links Nato's National capitals and commands



MILITARY COMSAT

KENNEDY SPACE CENTER, FL
FEB 2
PM
1971

Synchronous at 26 deg. W. long.

N A T O·B

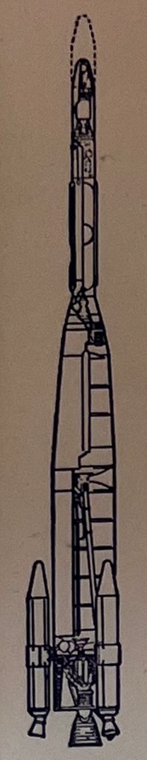
·handles 100s of communications of various types simultaneously for Nato nations

NATO B SATELLITE

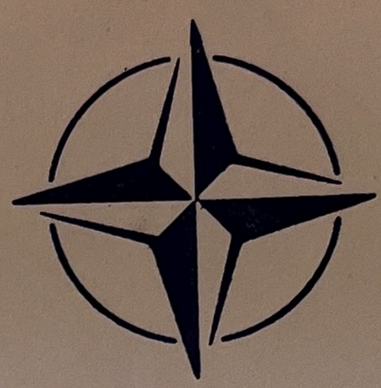
KENNEDY SPACE CENTER, FL
FEB 3
PM
1971

MFS

NATO-1
OTAN



CAPE CANAVERAL, FL
MAR 21
AM
1970
32920

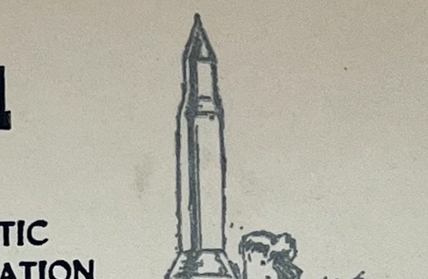


22,000 Mile Equatorial Orbit Between Africa & S. America
Link 15 Nation NATO Capitals w/Major NATO Commanders.
Geo-Stationary, Hat Box, 285 Lb. Satellite

ORBIT COVERS

NATO-1

THE FIRST NORTH ATLANTIC TREATY ORGANIZATION COMMUNICATION SATELLITE launched from CAPE KENNEDY, FLA. March 20, 1970



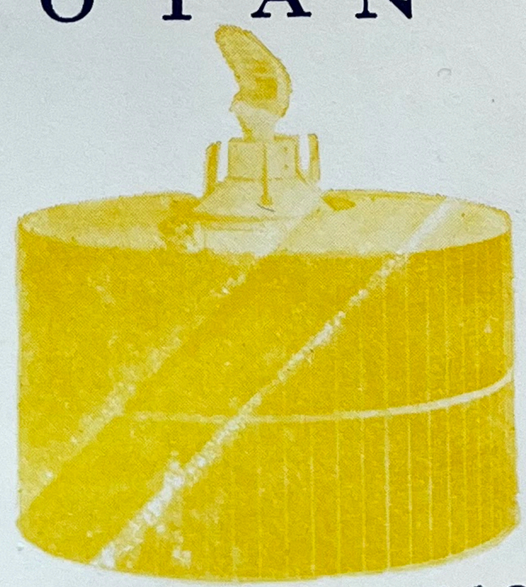
CAPE CANAVERAL, FL
MAR 21
AM
1970
32920

U.S. POSTAGE
6c

CANCEL DELAYED
Launching after P. O. closed.

The satellite will remain in a permanent orbit 23,000 miles above the Atlantic to form a communication link between NATO members.

NATO-1
OTAN



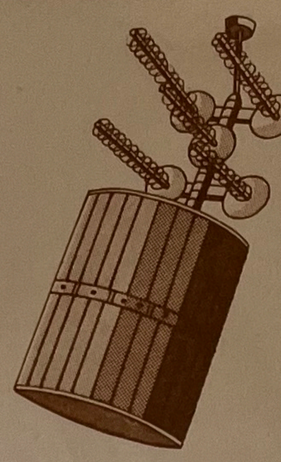
CAPE CANAVERAL, FL
MAR
21
A M
1970
32920

22,000 Mile Equatorial Orbit Between Africa & S. America
Link 15 Nation NATO Capitals w/Major NATO Commanders.
Geo-Stationary, Hat Box, 285 Lb. Satellite

ORBIT COVERS

TACOMSAT

World's largest Communications Satellite 1



Designed to test the feasibility of using satellites so mobile military units can communicate over great distances.....

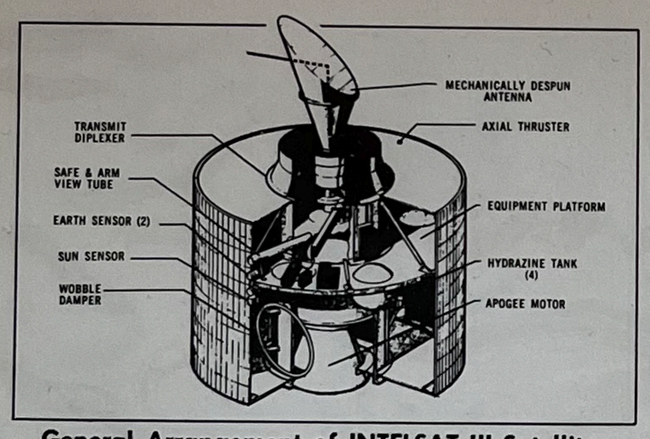
Launched by TITAN 3C
USAF - 4:09 P.M. EST
9 Feb.

Swanson

CAPE CANAVERAL, FL
FEB 9 PM 1969
32920

U.S. POSTAGE
6c

BOX 2296, HUNTINGTON, W. VA.



General Arrangement of INTELSAT III Satellites

CAPE CANAVERAL, FL
FEB 9 PM 1969
32920

UNITED STATES 6c

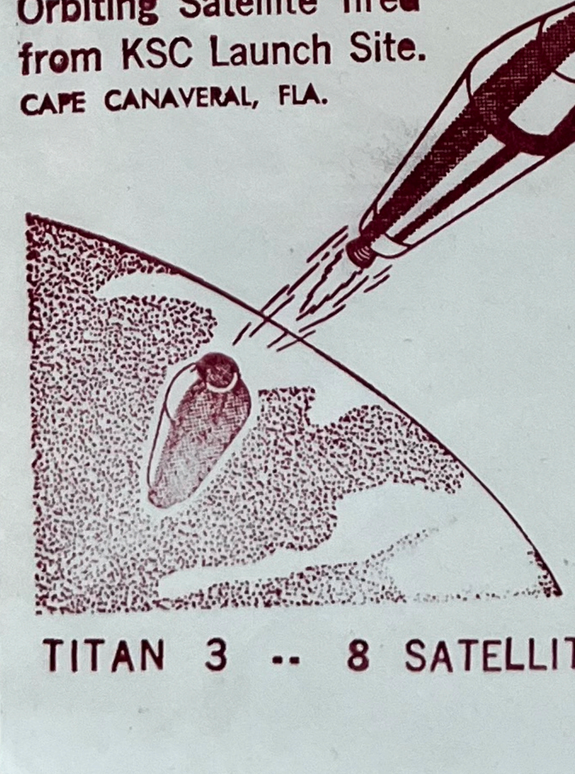
TACOMSAT-1

SUCCESSFUL LAUNCHING OF ~~INTELSAT III~~
in synchronous orbit over the Pacific Ocean.
World's most powerful communication satellite.
Heralds a new era when small combat units on
the front lines can speed messages via satellite.

CLYDE J. SARZIN
PORT WASHINGTON, L. I.
NEW YORK, U.S.A.

US IDCSP = Fernmeldesatellit

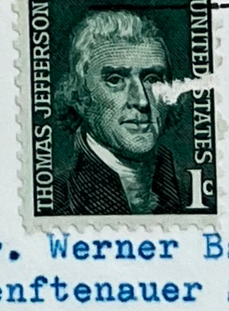
Orbiting Satellite fired from KSC Launch Site.
CAPE CANAVERAL, FLA.



TITAN 3 -- 8 SATELLITES

CAPE CANAVERAL, FL
JUN 13 AM 1968
32920

5c



PRINTED MATTER

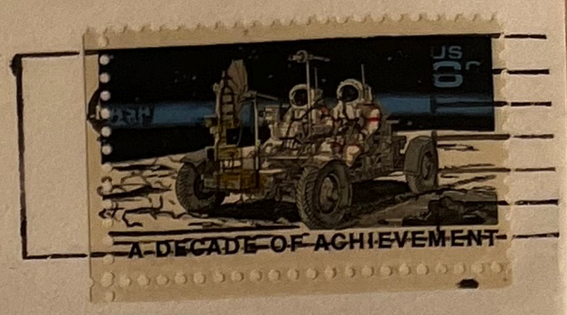
Mr. Werner Baier
Senftenauer Str. 24
D.8000 München 21
West Germany

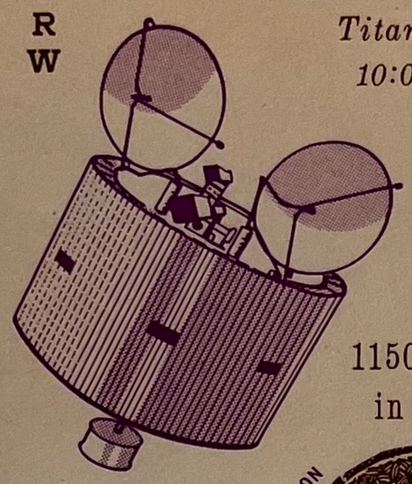
2.-

TRW

Launched by-
Titan 3C
10:09 p.m.EST,
Nov.2

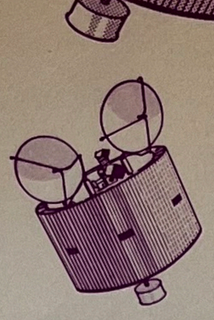
KENNEDY SPACE CENTER FL
NOV 2
PM
1971

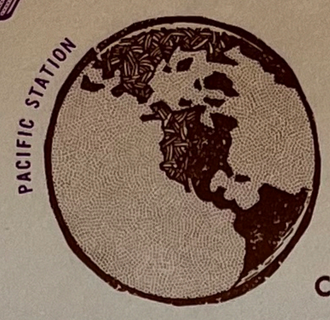




(Phase 2)

1150 lb., 40 watt Payloads,
in Synchronous Orbit



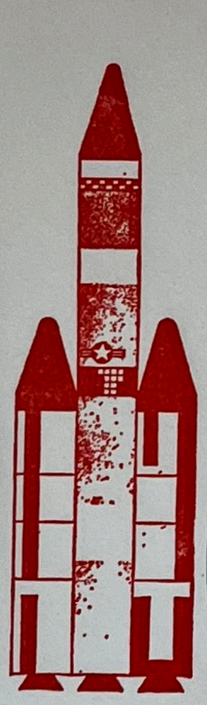


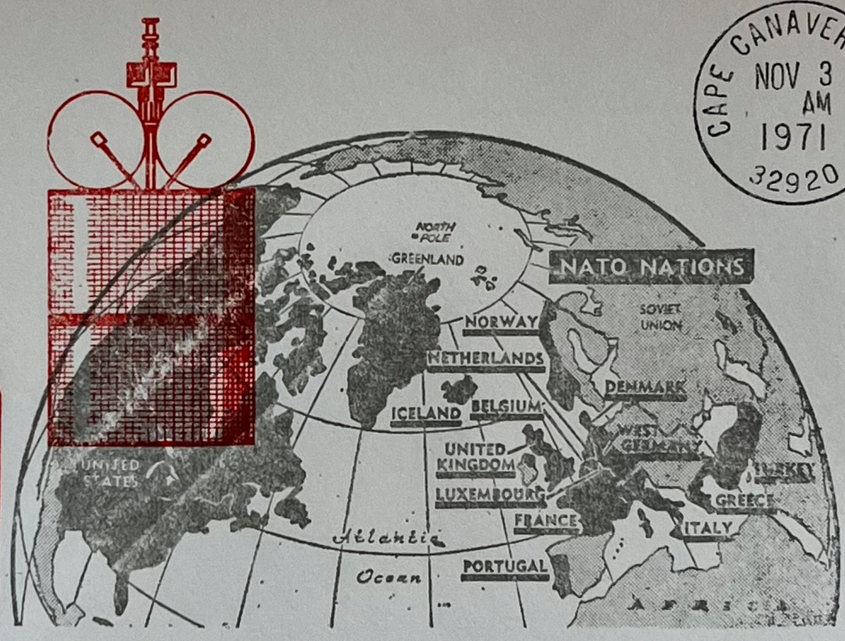
DSCS II
1&2

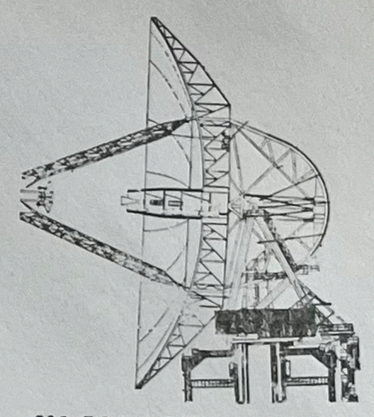
DEFENSE SATELLITE
COMMUNICATIONS SYSTEM

DSCS - Phase II

CAPE CANAVERAL, FL
NOV 3
AM
1971
32920







210 FOOT DISH ANTENNA

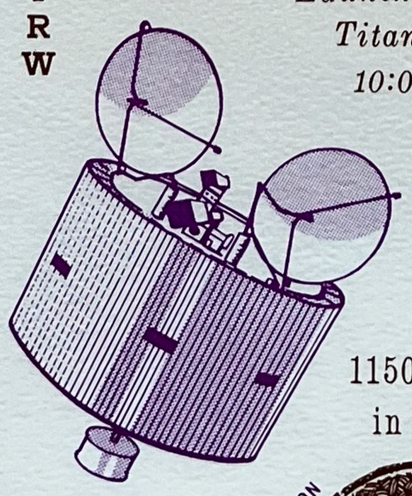
2nd Generation Defense Communication System
Can Be Relocated To Any Position Above Equator
Relay Capability Over One-Third Of The Globe
Two 1500 Lb. Satellites Orbited 22,000 Mi. High

ORBIT COVERS

TRW

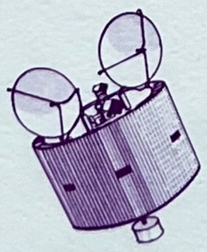
Launched by-
Titan 3C
10:09 p.m.EST,
Nov.2

CAPE CANAVERAL, FL
NOV 3
AM
1971
32920



(Phase 2)

1150 lb., 40 watt Payloads,
in Synchronous Orbit



DSCS II
1&2

DEFENSE SATELLITE
COMMUNICATIONS SYSTEM

-launched by Delta,
Jan. 27, 1977

ATLANTIC EQUATORIAL STATION

— planned synchronous stationary orbit at 22,300 miles

-BUILT BY AERONUTRONIC FORD

-2nd OF THREE NATO PHASE III SPACECRAFT DESIGNED TO REPLACE NATO-2 SATELLITES IN THE NATO INTEGRATED COMMUNICATIONS SYSTEM (NICS)

CAPE CANAVERAL, FL JAN 27 PM 1977 32920

ONE NATION INDIVISIBLE • E PLURIBUS UNUM USA 13c

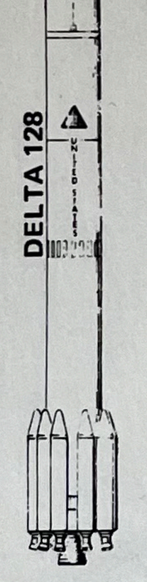
-2 continuous transmitters one each for European and Atlantic coverage

Nato 3B

-operates in conjunction with 12 existing and several planned additional satellite stations

NATO III B

KENNEDY SPACE CENTER, FL JAN 27 PM 1977



AFETR TEST NO. J4499

SECOND PHASE III SPACECRAFT FOR THE NATO INTEGRATED COMMUNICATIONS SYSTEM

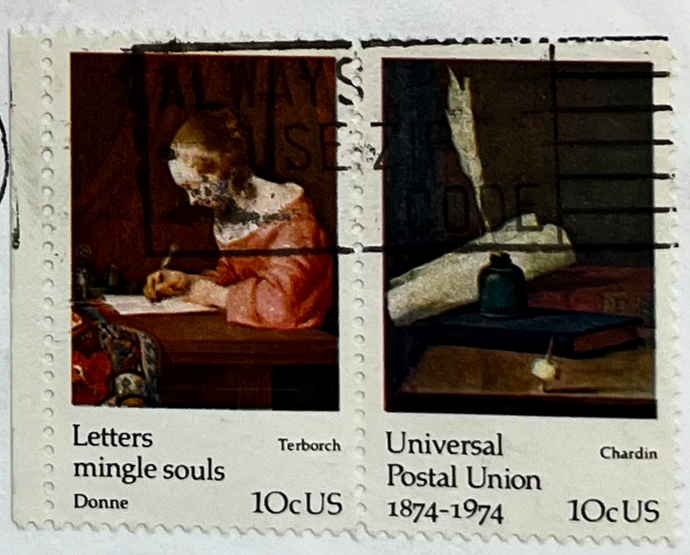
GEOSYNCHRONOUS ORBIT

Launched from Complex 17, CCAFS
Jan. 27, 1977 - 7:50 P.M. EST

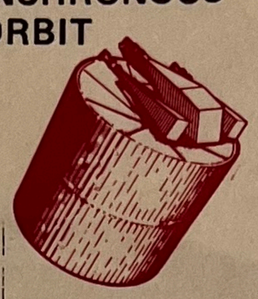
GREENBELT, MD PM JAN27 1977 20770

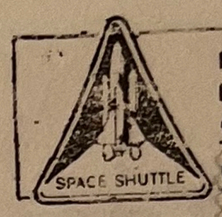
NATO-3B

SPACEFLIGHT TRACKING AND DATA NETWORK
GODDARD SPACE FLIGHT CENTER



Fritz Adolf
D 4156 Willich 1
Bahnstraße 106
Germany





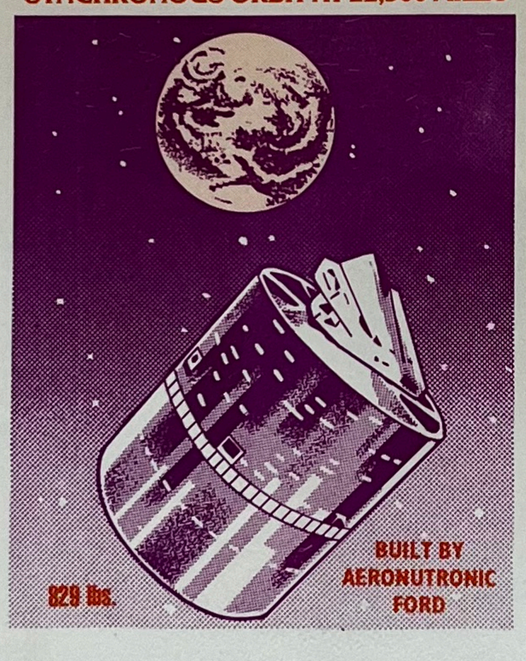
NATO III-C

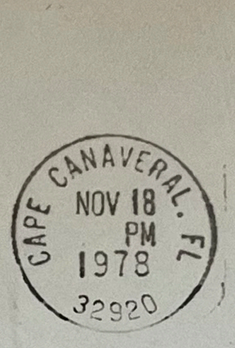
- THIRD AND LAST IN A SERIES OF NATO SPACECRAFT DESIGNED TO IMPROVE COMMUNICATIONS AMONG NATO MEMBER NATIONS IN NORTH AMERICA AND EUROPE.

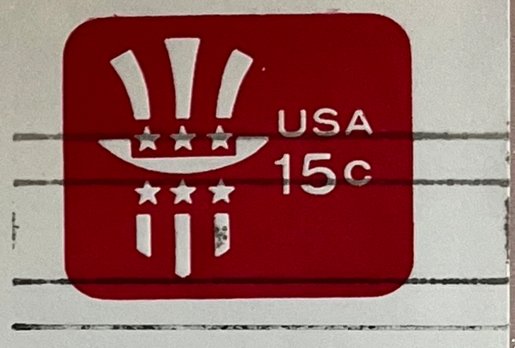
Launched by Delta 145
Complex 17 - CCAFS
November 18, 1978 - 7:46 P.M. EST*
*[*Saturday/KSC P.O. Closed]*

- launched by Delta
November 18 , 1978

SYNCHRONOUS ORBIT AT 22,300 MILES





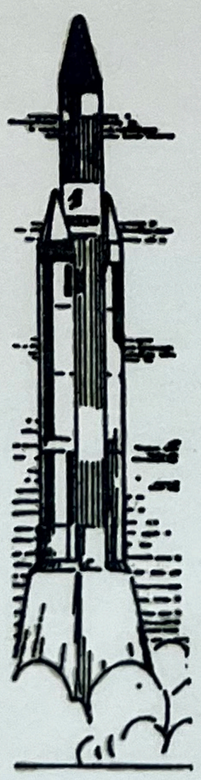


- 3RD OF 3 NATO PHASE III SPACECRAFT FOR THE NATO INTEGRATED COMSATS (NICS)

NATO-THREE

- to provide rapid and secure communications among NATO member nations

NATO FLAG OF FREEDOM



TWO MILITARY COMMUNICATION SATELLITES

LAUNCHED BY A

TITAN 3C ROCKET

CAPE KENNEDY, FLA.
November 2, 1971

CANCEL DELAYED
Launching after P. O. closed.

MF6
DSCS 1 & 2

Rocket Fired

from...:.

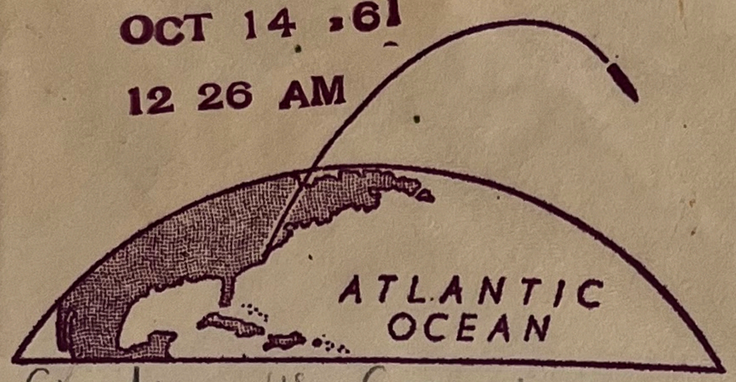
WALLOPS ISLAND

VIRGINIA

ARGO D-4

OCT 14 '61

12 26 AM

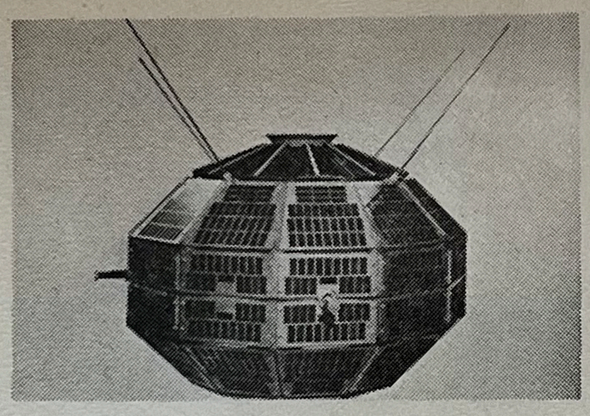


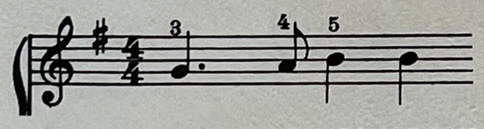
Canadian-US- Cooperation

WALLOPS ISLAND OCT 14 7-AM 1961 VA.

ALOUETTE

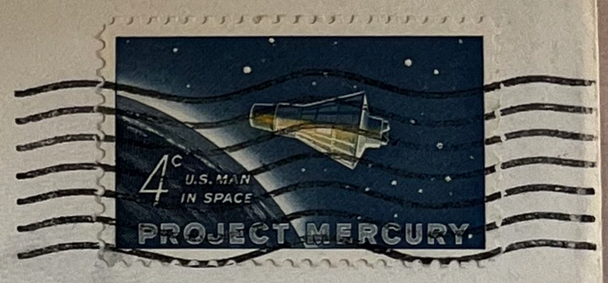
THE LARK





FIRST JOINT U.S.A. NASA-CANADIAN SATELLITE firing. Topside Sounder program to record Galactic emmissions and other investigations of communications data.

VANDENBERG A.F.B. CALIF. SEP 28 12-PM 1962

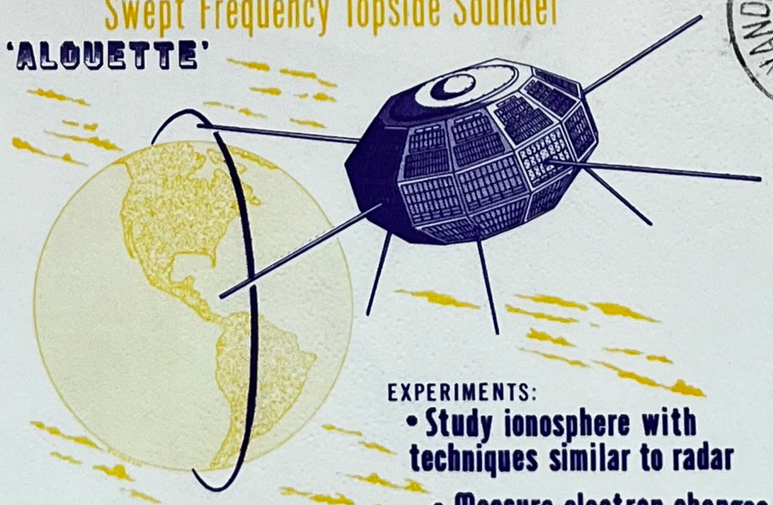


JACK BRANDNER
572 Carlton Street
St. Catharines, Ont., Canada

U.S.-CANADIAN SPACE PROJECT

Swept Frequency Topside Sounder

'ALOUETTE'



- First international spacecraft designed and built by Canada
- First NASA polar orbital attempt from Pacific Missile Range

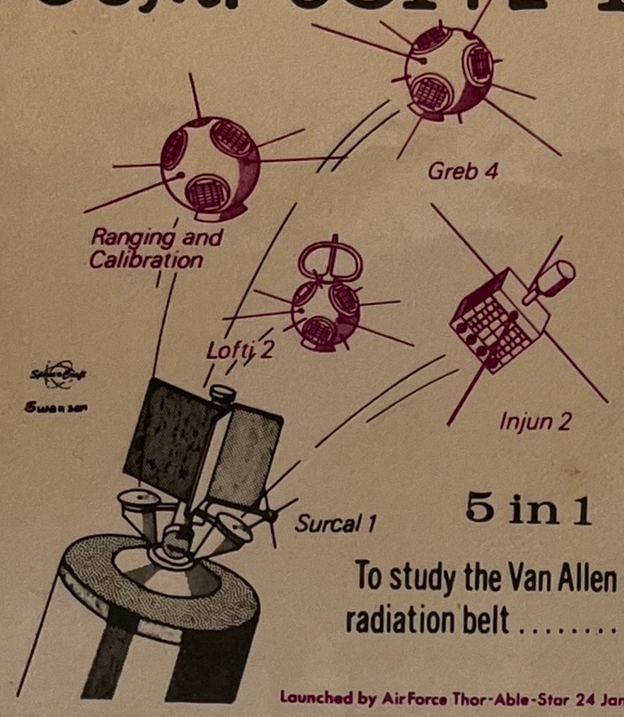
EXPERIMENTS:

- Study ionosphere with techniques similar to radar
- Measure electron changes daily with the time of day and latitude

VANDENBERG A.F.B. CALIF. SEP 28 12-PM 1962

Carl A Swanson

COMPOSITE I



5 in 1

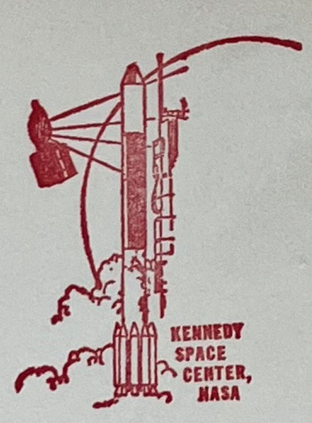
To study the Van Allen radiation belt .....

Launched by Air Force Thor-Able-Star 24 Jan 1962

PATRICK AIR FORCE BASE JAN 24 10:00 AM 1962 FLA.

Hs 25.—

NATO 3-C
Delta 146



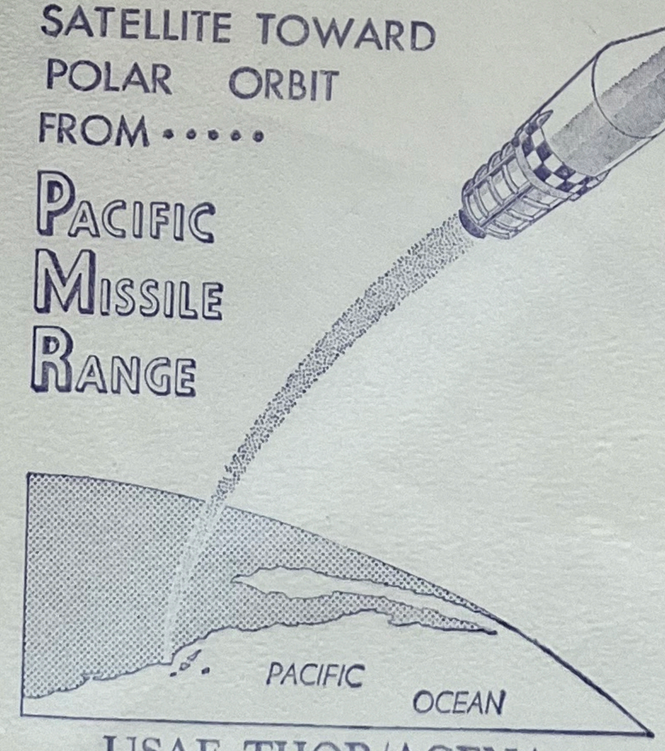
ORLANDO, FLKEN.EDY SPACE CENTER BR. USPS NOV 20 1978

A US Postage

SECRET

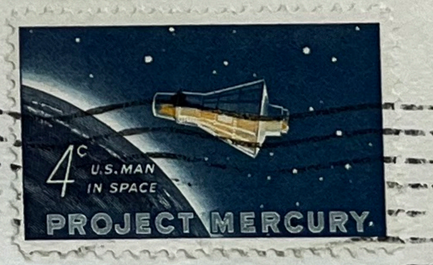
SATELLITE TOWARD POLAR ORBIT FROM.....

PACIFIC MISSILE RANGE

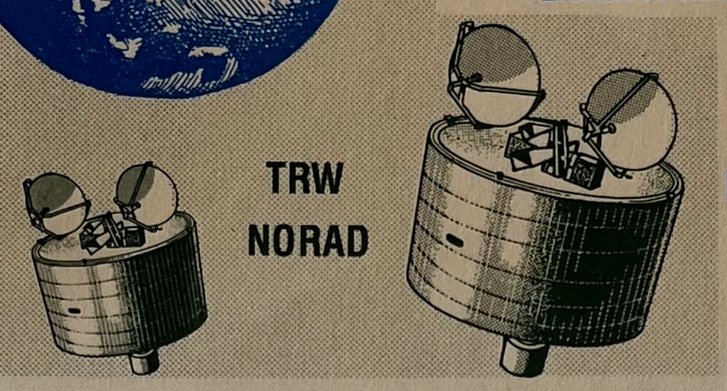


USAF THOR/AGENA

VANDENBERG A.F.B. CALIF. JUN 15 5-PM 1963



HARRY GRAETZ
5808 E. 97th Terrace
Kansas City 34, Missouri



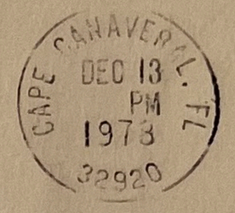
—LAUNCH BY TITAN 3C, Dec. 13, 1978

EQUATORIAL ORBIT

—provide wideband data relay for the global US defense system

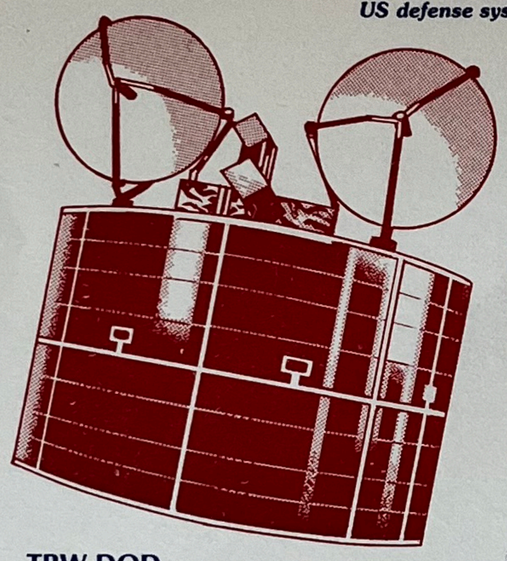
DSCS II (#11 & 12)

DEFENSE SATELLITE COMMUNICATIONS SYSTEM

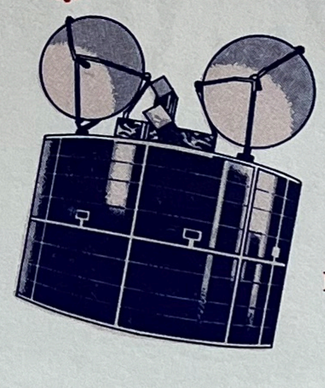


Launched by Titan 3C, November 20, 1979

—provide wideband data relay for the global US defense system



MILITARY COMMUNICATIONS

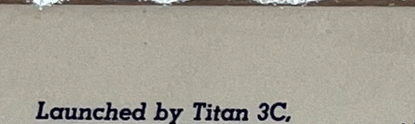


—High Capacity, High Data Rate, Long Haul, Point To Point, Communications For Fixed Users

DSCS-2

(13 & 14)

DEFENSE SATELLITE COMMUNICATIONS SYSTEM



TRW-DOD

(10) TITAN 4 RESEARCH SATELLITES

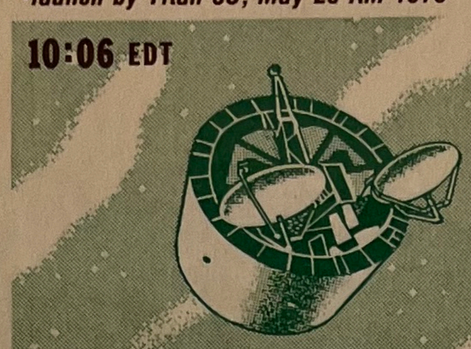
Mr. Werner Baier
Senftenauerstr. 24

D-8000 München 21
West Germany

2.-

-launch by Titan 3C, May 20 AM 1975

10:06 EDT



DOD-TRW

CAPE CANAVERAL, FL
MAY 20
AM
1975
32920

PIONEER ★ JUPITER
US 10c

-TWIN COMSATS

Defense Satellite Communication System —(DSCS II)- 5th and 6th

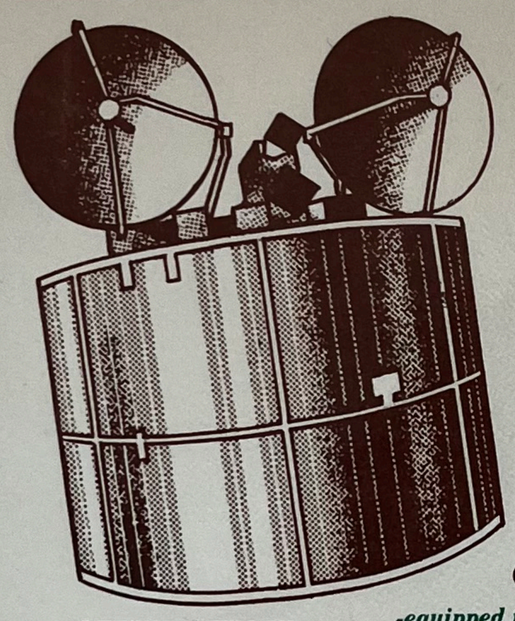
(FAILED TO ORBIT)

SPIN STABILIZED SYNCHRONOUS PAIR REENTER ATMOSPHERE MAY 26, 1975 DUE TO MALFUNCTION

-to provide the Department of Defense with worldwide voice, teletype, computerized digital data and video transmission

-SAMSO

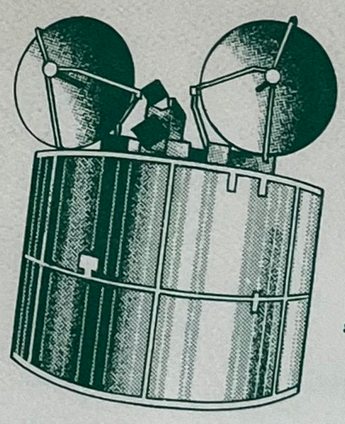
Launched by Titan 3C, May 12, 1977



CAPE CANAVERAL, FL
MAY 12
AM
1977
32920

JAM PROOF TWIN COMSATS

-equipped to block electronic eavesdropping

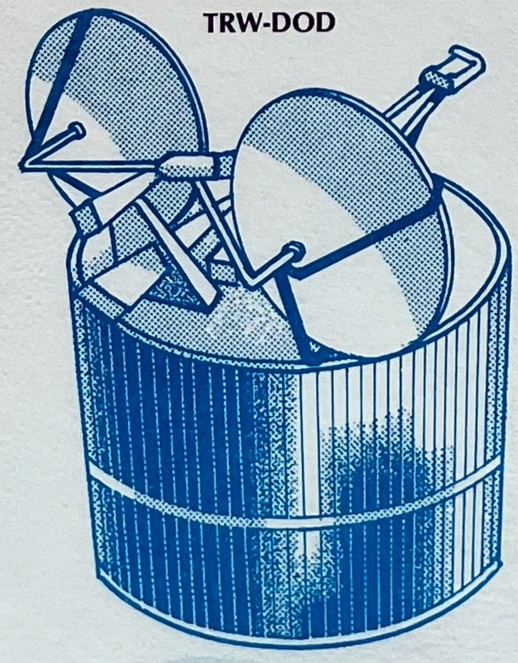


22,300 mile synchronous orbit

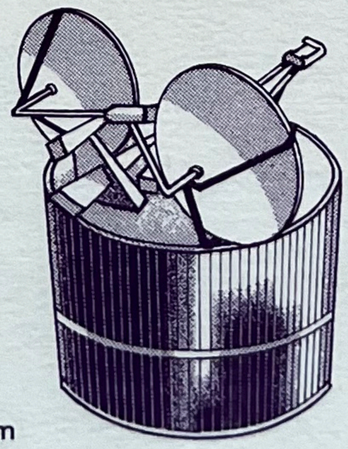
DEFENSE SATELLITE COMMUNICATIONS SYSTEM

DSCS-2

TRW-DOD



CAPE CANAVERAL, FL
MAR 25
PM
1978
32920



MARCH 25, 1978

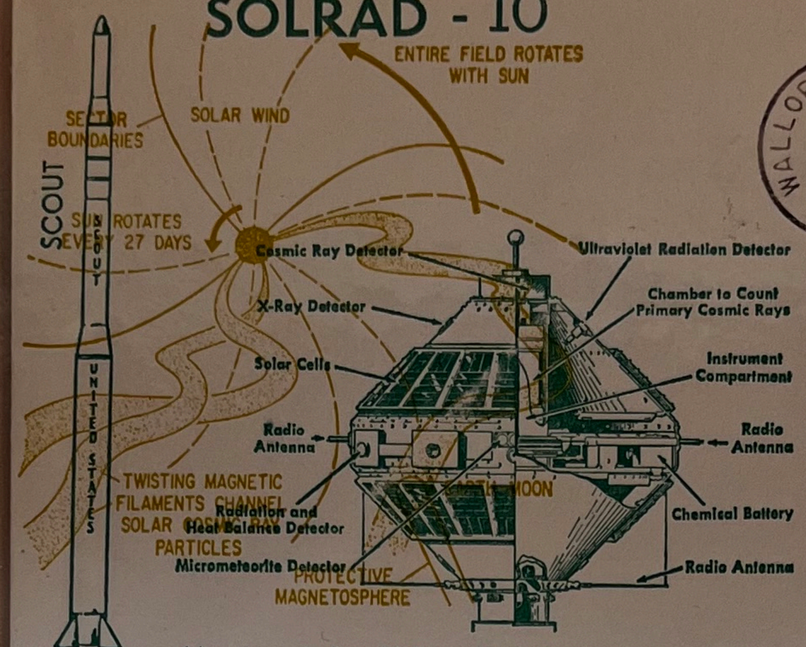
— launch by Titan 3C fails after 7 minutes

DSCS-2

TWIN COMSATS DEFENSE SATELLITE COMMUNICATIONS SYSTEM-PHASE 2

-provides the necessary long-haul communications for the Worldwide Military Command System

SOLRAD - 10

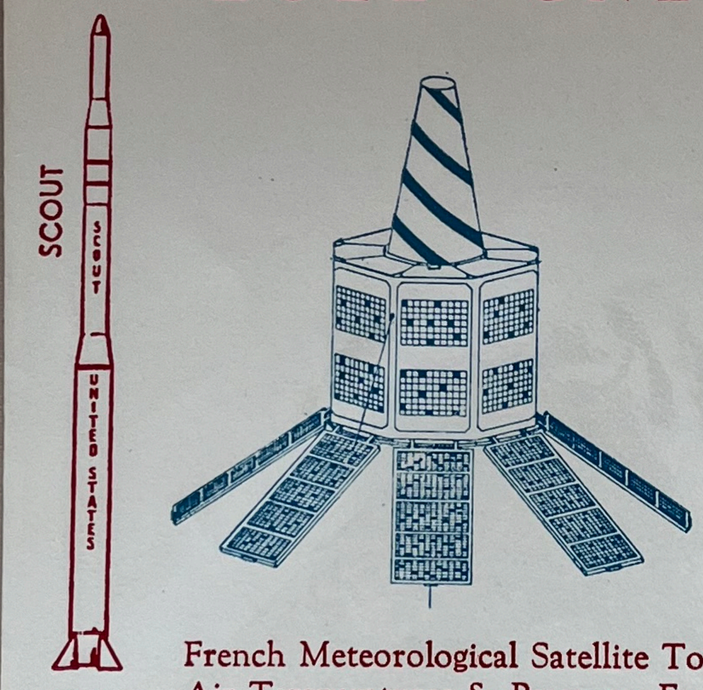


WALLOPS ISLAND, VA JUL 9 1 AM 1971 23337

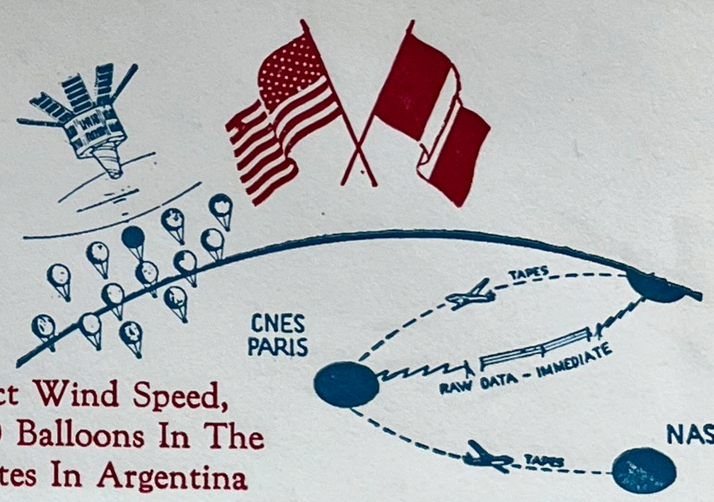
Monitor Solar X-Ray Emissions
Study Relationship of Sun to Earth
Solar Flare Tests For Manned Flight

ORBIT COVERS

EOLE - CNES



WALLOPS ISLAND, VA AUG 16 PM 1971 23337

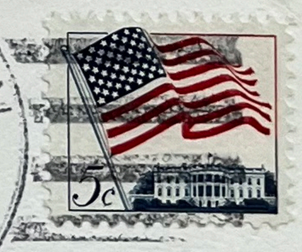


French Meteorological Satellite To Collect Wind Speed, Air Temperatures & Pressures From 500 Balloons In The Southern Hemisphere Launched From Sites In Argentina

ORBIT COVERS

TITAN 3A

CAPE CANAVERAL FLA. SEP 1 A.M. 1964



TO ACHIEVE MILITARY SUPERIORITY IN SPACE

The rocket is to form the heart of the future powerful TITAN 3C

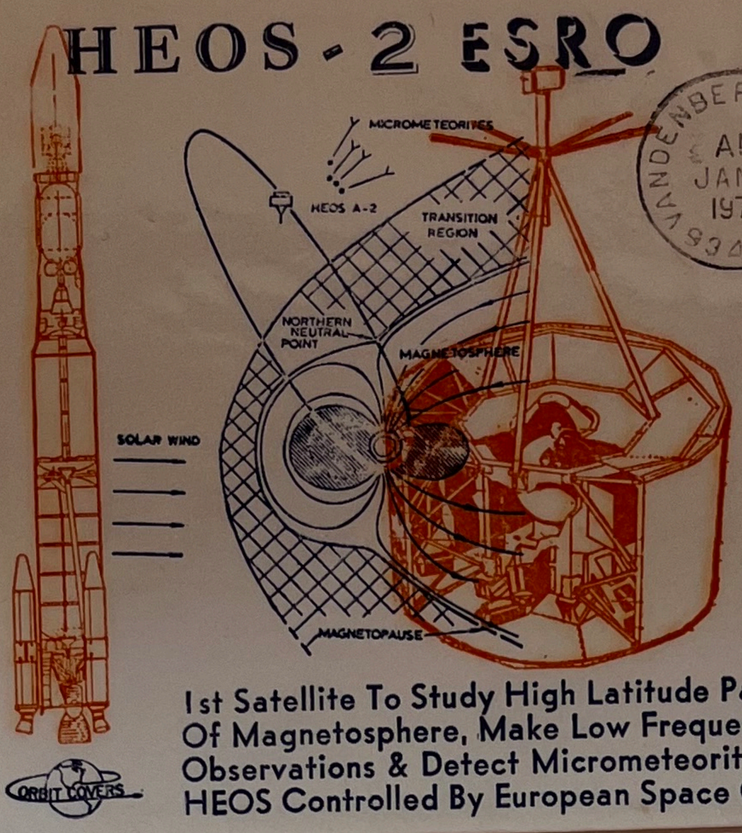
LAUNCHED 10:00 A.M. EDT SEPT. 1 Cape Kennedy

Space Craft Swanson

BOX 2296, HUNTINGTON, W. VA.

8.-

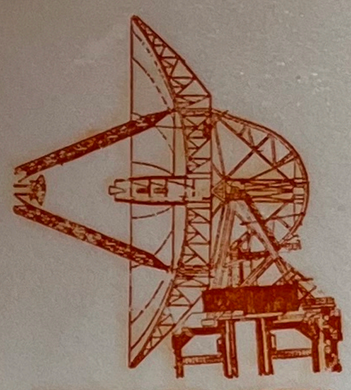
HEOS-2 ESRO



VANDENBERG AFB, CA
AM
JAN 31
1972
93437

US 8c
UNITED STATES IN SPACE...

1st Satellite To Study High Latitude Part
Of Magnetosphere, Make Low Frequency Solar
Observations & Detect Micrometeorites.
HEOS Controlled By European Space Operations Centre


210 FOOT DISH ANTENNA

ORBIT COVERS

NASA/GODDARD SPACE FLIGHT CENTER STAMP CLUB

GREENBELT, MD
FEB 18
1 AM
1974
20770

UNITED STATES 8c

To obtain density, composition and temperature at altitudes of 200 km and above of the equitorial neutral-particle atmosphere.

SAN MARCO C-2

SAN MARCO RANGE - KENYA, AFRICA

OFFICIAL COVER

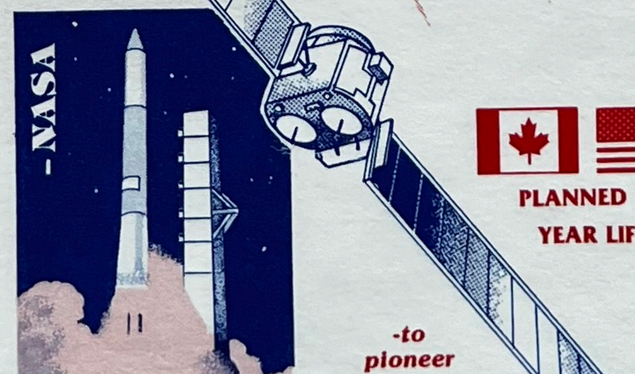
SAN MARCO

UNITED STATES - ITALIA
COOPERATIVE SPACE PROGRAM
PROGRAMMA DI COLLABORAZIONE SPAZIALE

-LAUNCHED BY
DELTA
JAN. 17, 1976

CAPE CANAVERAL, FL
JAN 17
PM
1976
32920

USA 13c
ONE NATION INDIVISIBLE



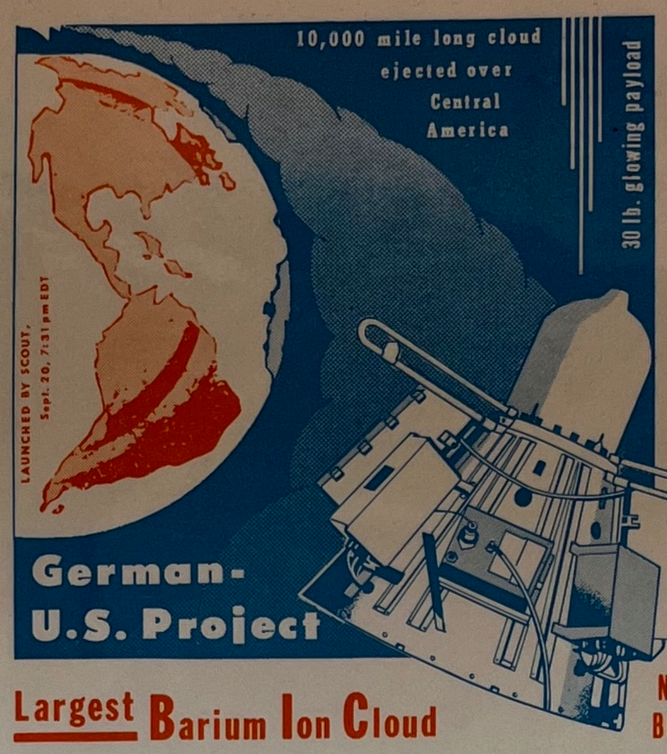
PLANNED 22
YEAR LIFE

-to pioneer new methods of communications services

CTS

COMMUNICATIONS TECHNOLOGY SATELLITE

-5 year US-CANADA CO-OPERATIVE EXPERIMENT



WALLOPS ISLAND, VA
SEP 21
AM
1971
23337

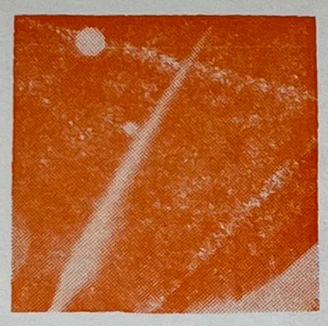
• to measure Magnetic
& Electric fields
in space

MPE

MAX
PLANCK
INSTITUT/ FÜR
EXTRATERRESTRISCHE
PHYSIK

BARIUM-ION

Experiment



MPE

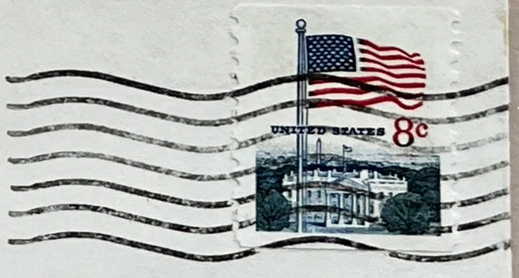
WALLOPS ISLAND, VA
SEP 21
AM
1971
23337

Bic (BRD-USA) Scout

MAX PLANCK INSTITUT
FÜR EXTRATERRESTRISCHE PHYSIK

- Max-Planck Institute Payload Forms Cloud Over Central America At 20,000 Mile Altitude.
- Sun's Radiation Ionizes Barium Atoms & Particles When Drawn To Earth Permit Tracing Of Magnetic Lines Of Force In Space.
- Electric Field Measurements in Canada & Antarctica

WALLOPS ISLAND, VA
SEP 21
AM
1971
23337



WALLOPS ISLAND, VIRGINIA
PROJECT BIC UNITED STATES-GERMAN
ROCKET EXPERIMENT BARIUM VAPOR CLOUD.

C. SARZIN
PORT WASHINGTON
L.I., NEW YORK 11050

Orbiting Satellite fired
from KSC Launch Site.
CAPE CANAVERAL, FLA.

HIGHLY ECCENTRIC ORBIT SATELLITE

CAPE CANAVERAL, FL
DEC 5
PM
1968
32920

Printed matter

GÜNTHER WRANIK
8 MÜNCHEN 83
PLETTSTRASSE 37/II

West-Germany

Rocket Fired

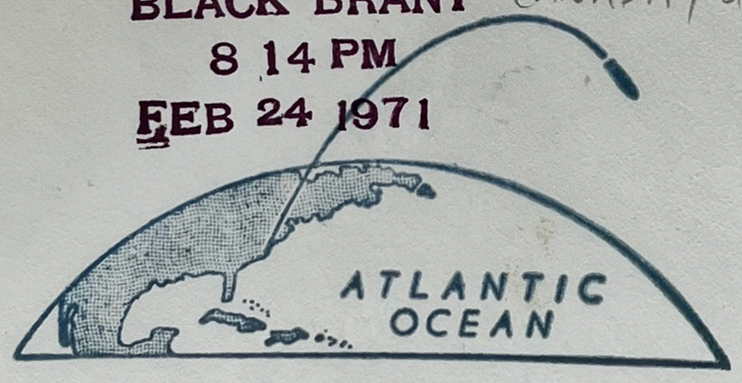
from....

WALLOPS ISLAND

VIRGINIA

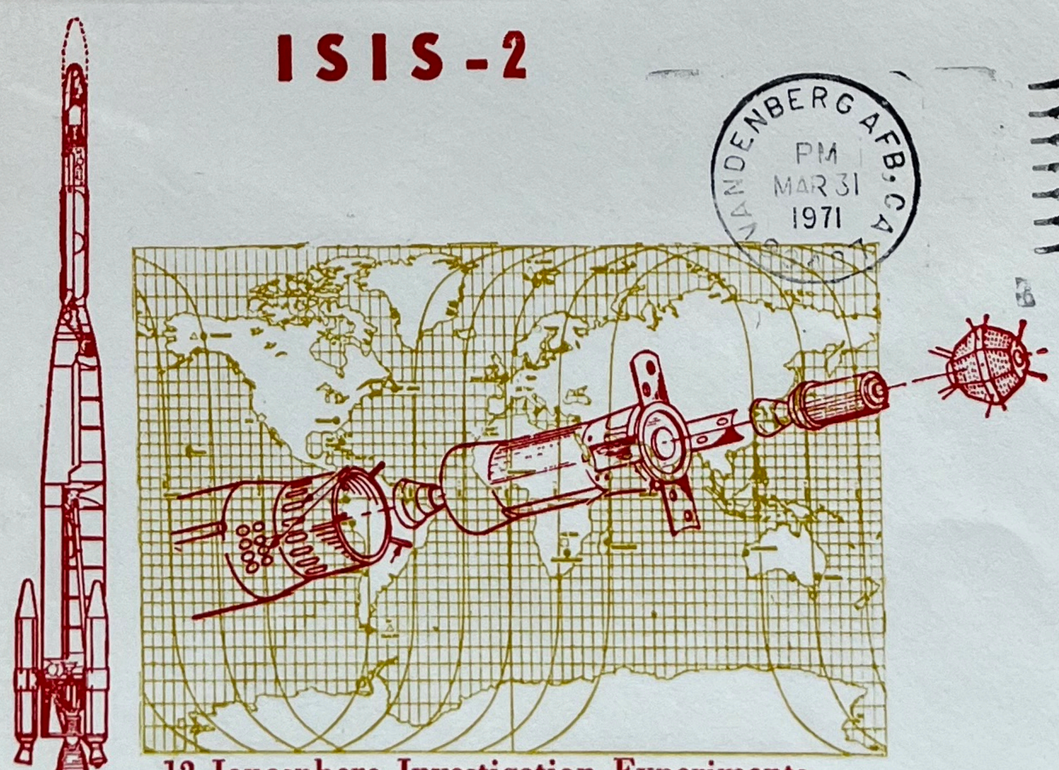
WALLOPS ISLAND, VA
FEB 25
AM
1971
23337

BLACK BRANT CANADA/USA
8 14 PM
FEB 24 1971



P. Wittmaack
D-2000 Hamburg 26
Borgfelder Str. 16/320
West Germany

ISIS-2



VANDENBERG AFB, CA
PM
MAR 31
1971

12 Ionosphere Investigation Experiments
Radio Frequency Selection Depends On Ionosphere
Measure Electron Density of Upper Ionosphere

ORBIT COVERS

Minuteman

INSTANT ICBM

Rocket launched from
Vandenberg AFB California

VANDENBERG AFB, CA 90437
APR 23
PM
1969

'S A C'

MINUTEMAN 1

Booster

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

Minuteman

INSTANT ICBM

Rocket launched from
Vandenberg AFB California

VANDENBERG AFB, CA 90437
APR 25
AM
1969

'S A C'

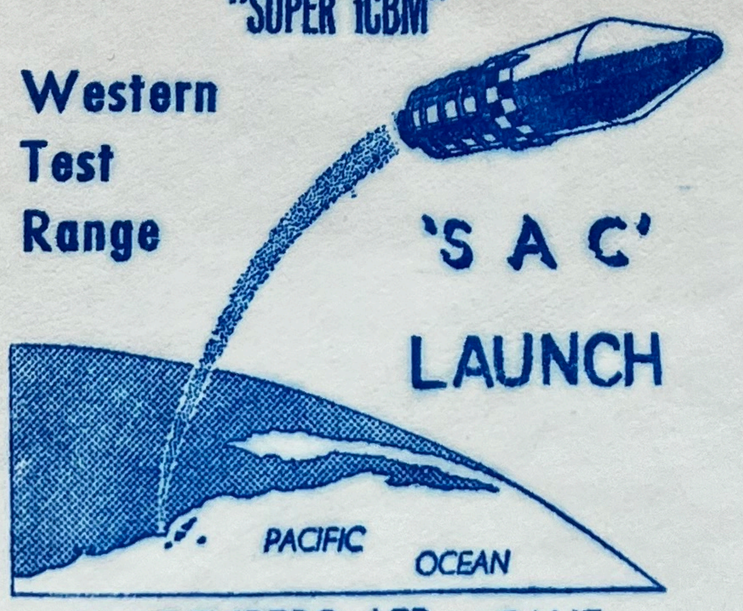
MINUTEMAN II Booster

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

USAF TITAN 2

"SUPER ICBM"

Western
Test
Range

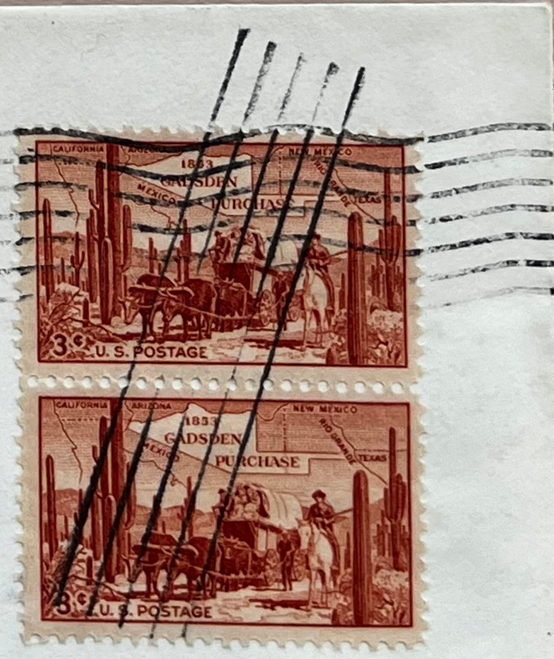


'S A C'

LAUNCH

VANDENBERG AFB, CALIF.

VANDENBERG AFB, CA 90437
MAY 20
PM
1969



ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

Minuteman

INSTANT ICBM

Rocket launched from
Vandenberg AFB California

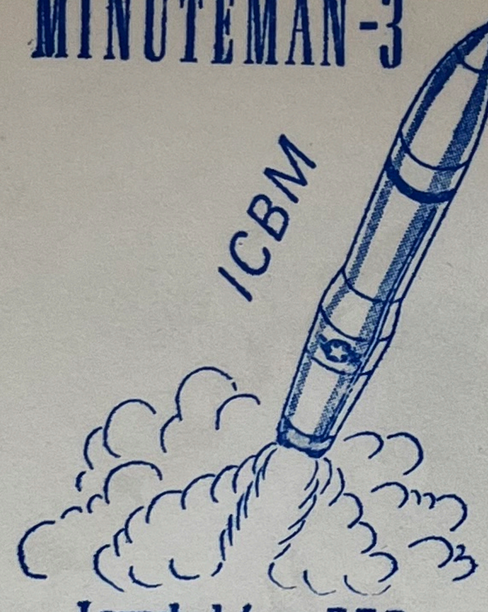
VANDENBERG AFB, CA 93437
MAY 20
PM
1969

'S A C'

MINUTEMAN II Booster

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

MINUTEMAN-3



ICBM

Launched from E.T.R.

MAY 27 '69 - 4·55 PM

CAPE CANAVERAL, FL
MAY 27
PM
1969
32920

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

Minuteman

INSTANT ICBM

Rocket launched from
Vandenberg AFB California

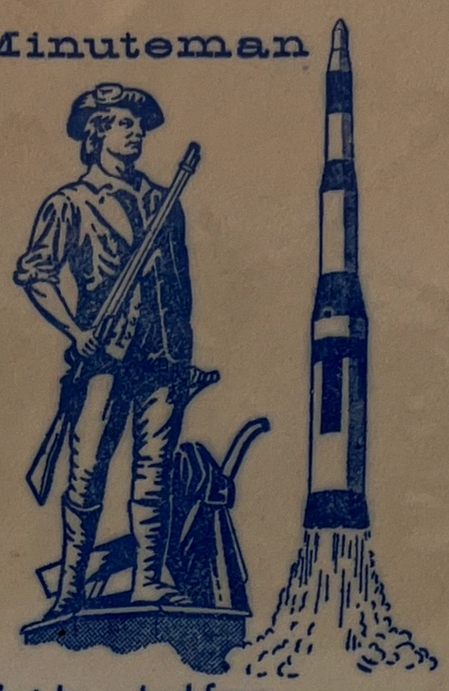
VANDENBERG AFB, CA 93437
MAY 28
PM
1969

'S A C'

MINUTEMAN II Booster

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

Minuteman
INSTANT ICBM



Rocket launched from
Vandenberg AFB California

VANDENBERG AFB, CA 93437
APR 16
AM
1969

'S A C'
MINUTEMAN II
Research Booster

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

VANDENBERG MISSILE LAUNCH
VANDENBERG AFB, CALIF.

First MINUTEMAN 3
Second Generation
"SUPER ICBM"

VANDENBERG AFB, CA 93437
APR 19
AM
1969

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

Minuteman
INSTANT ICBM

Rocket launched from
Vandenberg AFB California

VANDENBERG AIR FORCE BR. CA
APR
18
1969
USPO
COMPOS

US AIR FORCE MINUTEMAN II
Destroyed In Flight

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

Rocket
fired from
Wallops
Island
15 ARCAS & HASP SHOTS
ENDED AM SEP 10 1965
EXAMETN.T

WALLOPS ISLAND
SEP 10
AM
1965
VA.

ROBERT H. GODDARD
U.S. AIR MAIL 8c

US/BRASIL

Rocket
fired from
Wallops
Island
ARCAS MET ROCKET
MAR 31 1967
1 44 PM

WALLOPS ISLAND
MAR 31
PM
1967
VA.

Mary Cassatt
American Artist
5c
U.S. POSTAGE

Wayne Jones
141 Olean St.
Bolivar, N.Y.
14715

Rocket Fired
from....
WALLOPS ISLAND
VIRGINIA
ARCAS - WHITE RAT
11 40 AM
AUG 4 1970

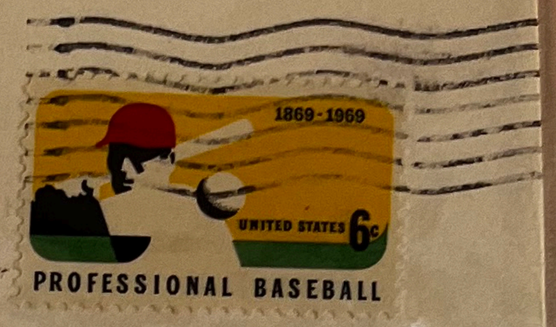
WALLOPS ISLAND, VA.
AUG 4
AM
1970
23337

U.S. 6c POSTAGE
DWIGHT D.
EISENHOWER

ATLANTIC
OCEAN

Rocket launched from
Vandenberg AFB California

VANDENBERG AFB, CA
NOV 6
PM
1969



US AIR FORCE MINUTEMAN 1

Research Booster

RE-ENTRY TESTING

1119 HARKER AVE
WOODBURY, N. J. 08096

MINUTEMAN-3

Launched from E.T.R.

NOV 6 '69 - 3·00 PM

CAPE CANAVERAL, FL
NOV 6
PM
1969
32920

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

Minuteman
INSTANT ICBM

Rocket launched from
Vandenberg AFB California

VANDENBERG AFB, CA
NOV 19
AM
1969

US AIR FORCE MINUTEMAN II

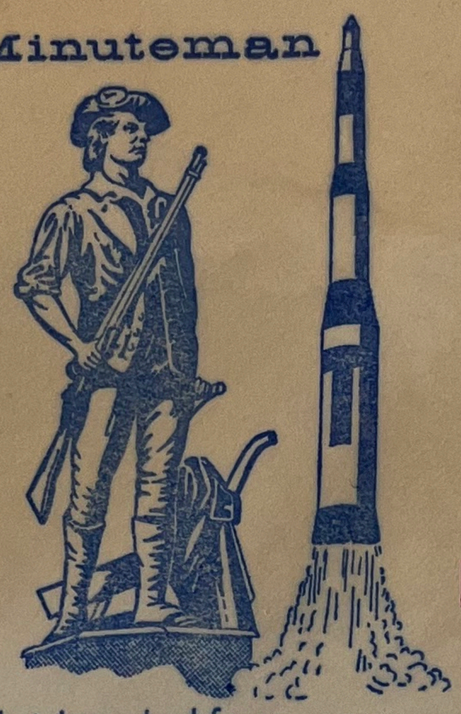
Investigating

S-BAND TELEMETRY

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

Minuteman

INSTANT ICBM



Rocket launched from
Vandenberg AFB California

VANDENBERG AFB, CA 93437
NOV 25
PM
1969

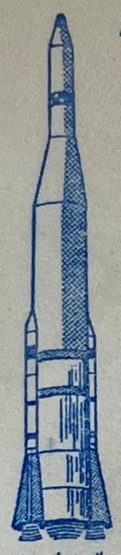
'S A C'

MINUTEMAN 1 Booster

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

ROCKET FIRED FROM

VANDENBERG AIR FORCE BASE



Advanced Ballistic

Re-Entry System

(ABRES)

Test Using

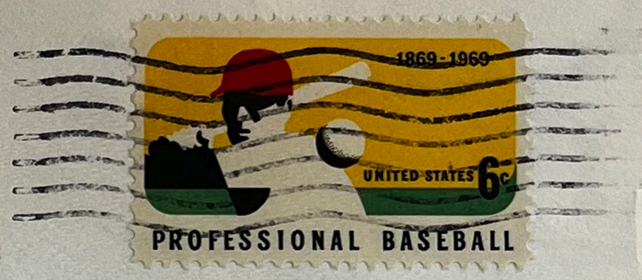
USAF

ATLAS F

BOOSTER

SECRET PAYLOAD

VANDENBERG AFB, CA 93437
DEC 3
AM
1969



ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

Minuteman

INSTANT ICBM

Rocket launched from
Vandenberg AFB California

VANDENBERG AFB, CA 93437
DEC 5
PM
1969

'S A C'

MINUTEMAN 1 Booster

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

ROCKET
FIRED
FROM

Western
Test
Range

Advanced Ballistic
Re-Entry System
(ABRES)
Test Using

ATLAS F

ICBM

SECRET

TESTING

VANDENBERG AFB, CA 93437
OCT 10
AM
1969

ROBERT DOUGLAS
1106 HARKER AVE.
WOODBURY, N. J. 08096

Minuteman

INSTANT ICBM

Rocket launched from
Vandenberg AFB California

VANDENBERG AFB, CA 93437
OCT 13
PM
1969

'S A C'

MINUTEMAN II ICBM

WILFRED FOURNIER
2009 S. WHITE HORSE PIKE
APT. D22
LINDENWOLD, N. J. 08021

Minuteman

INSTANT ICBM

Rocket launched from
Vandenberg AFB California

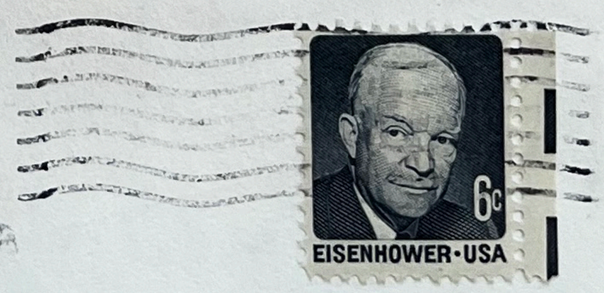
The
83rd

VANDENBERG AFB, CA
PM
OCT 26
1970

'S A C'

MINUTEMAN B

ICBM



ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

LETTER SIZE 4781

MISSILE LAUNCH
VANDENBERG AFB. CALIF.
the Second
MINUTEMAN -3 ICBM
Precision Maneuvering Entry

VANDENBERG AFB, CA 93437
MAY 29
AM
1969

3¢ U.S. POSTAGE
THE PENNSYLVANIA ACADEMY
OF THE FINE ARTS

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

Minuteman
INSTANT ICBM

Rocket launched from
Vandenberg AFB California

VANDENBERG AFB, CA 93437
JUN 10
AM
1969

'SAC'
MINUTEMAN II Booster

APOLLO 8
SIX CENTS · UNITED STATES

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

Minuteman
INSTANT ICBM

Rocket launched from
Vandenberg AFB California

VANDENBERG AFB, CA 93437
JUL 2
AM
1969

US AIR FORCE MINUTEMAN 1
Research Booster
Investigating
Re-Entry System

VIA AIR MAIL
CORREO AEREO
PAR AVION

Lloyd Hamilton
6001 Parkhurst Ave.
Balto 15, Md

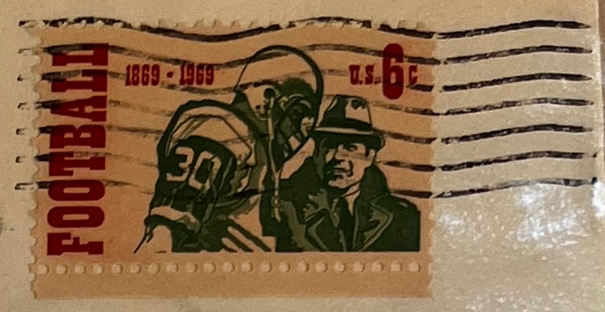
ROCKET
FIRED
FROM

VANDENBERG
AIR FORCE
BASE

Advanced Ballistic
Re-Entry System
(ABRES)
Test Using
USAF
ATLAS F
BOOSTER

SECRET PAYLOAD

VANDENBERG AFB, CA 93437
DEC 12
AM
1969

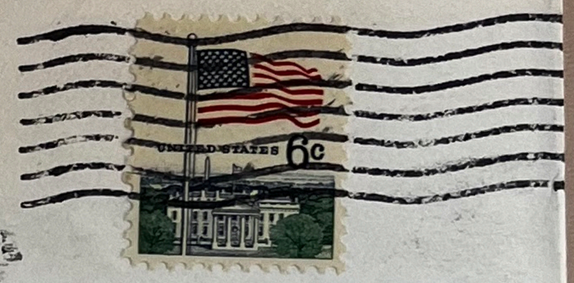


ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

Minuteman
INSTANT ICBM

Rocket launched from
Vandenberg AFB California

VANDENBERG AFB, CA
PM
JUN 25
1970
93437



'SAC'

MINUTEMAN B Booster

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

Minuteman
INSTANT ICBM

Rocket launched from
Vandenberg AFB California

VANDENBERG AFB, CA
PM
JUN 26
1970
93437

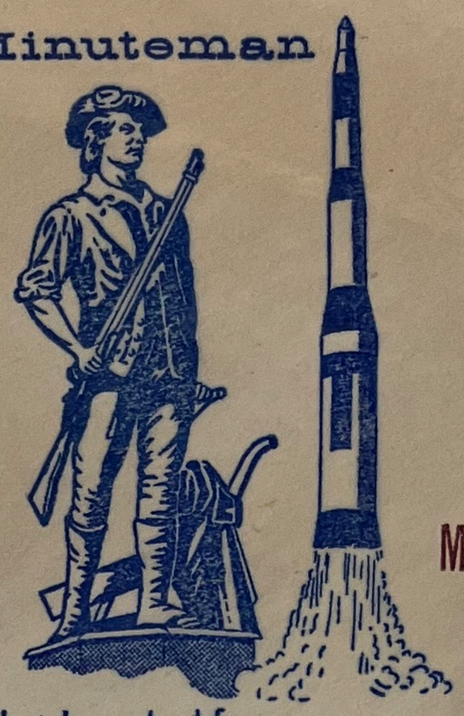
'SAC'

MINUTEMAN F Booster

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

Minuteman

INSTANT ICBM



Rocket launched from
Vandenberg AFB California

VANDENBERG AFB, CA
AM
JUL 10
1970
93437

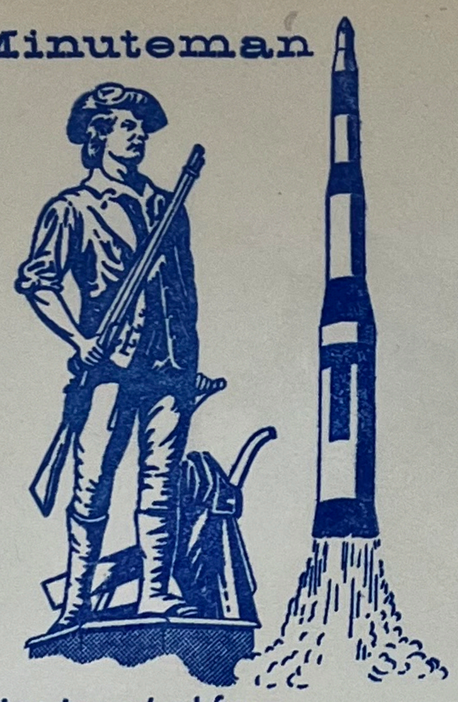
'S A C'

MINUTEMAN F Booster

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

Minuteman

INSTANT ICBM



Rocket launched from
Vandenberg AFB California

VANDENBERG AFB, CA
PM
JUL 14
1970
93437

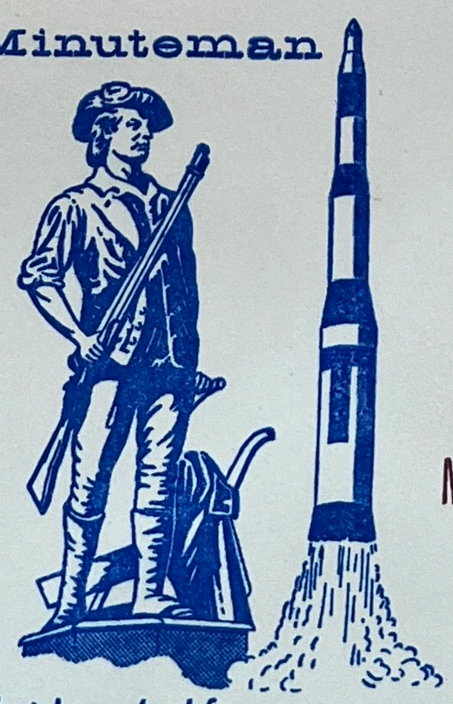
'S A C'

MINUTEMAN B Booster

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

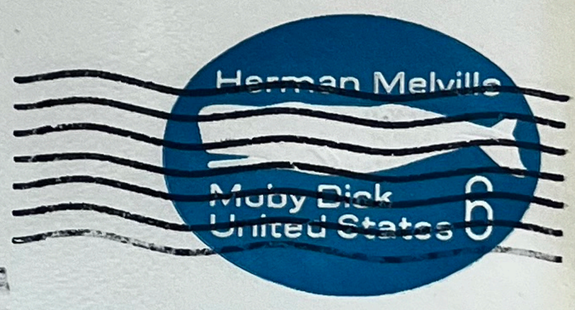
Minuteman

INSTANT ICBM



Rocket launched from
Vandenberg AFB California

VANDENBERG AFB, CA
AM
JUL 18
1970



5th 'S A C'

MINUTEMAN II M Booster

RE-ENTRY TESTING

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

Minuteman

INSTANT ICBM

Rocket launched from
Vandenberg AFB California

VANDENBERG AFB, CA
PM
AUG 4
1970

'S A C'

Test Using Low Frequency Radio

Destroyed In Flight

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

Minuteman

INSTANT ICBM

Rocket launched from
Vandenberg AFB California

VANDENBERG AFB, CA
PM
AUG 11
1970

'S A C'

MINUTEMAN II F Booster

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

VANDENBERG AFB, CA
AM
AUG 13
1971

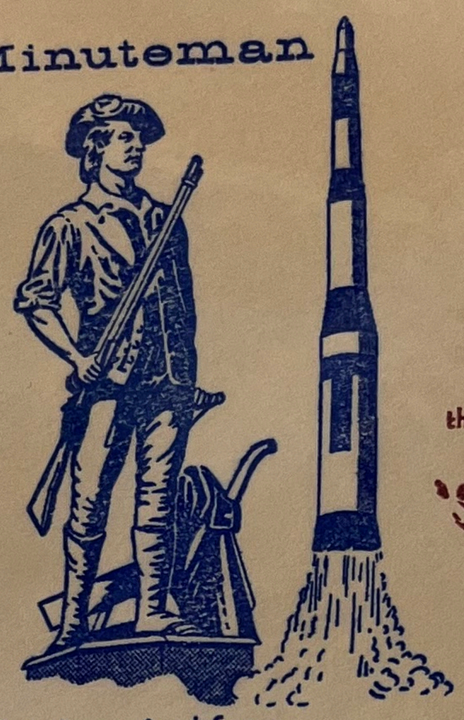
'S A C'

MINUTEMAN II F Booster

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

Minuteman

INSTANT ICBM



Rocket launched from
Vandenberg AFB California

VANDENBERG AFB, CA
AM
AUG 21
1970
93437

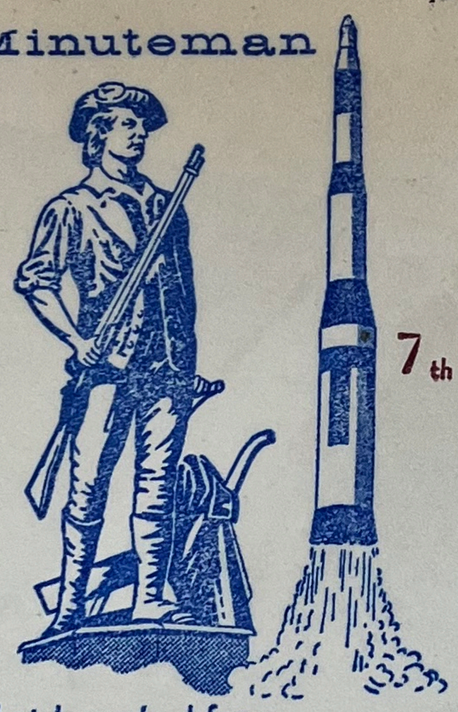
the 79th MINUTEMAN B

'S A C' Booster

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

Minuteman

INSTANT ICBM



Rocket launched from
Vandenberg AFB California

VANDENBERG AFB, CA
AM
AUG 26
1970
93437

7th MINUTEMAN II M Booster

'S A C'

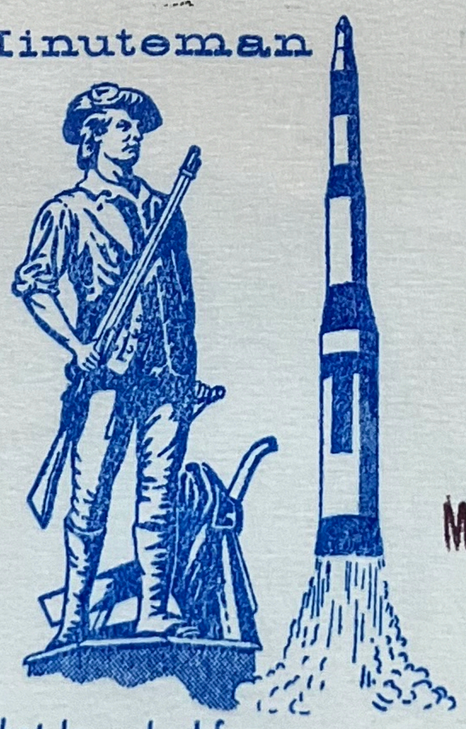
SUCCESSFUL

Test Using S-BAND TELEMETRY

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

Minuteman

INSTANT ICBM



Rocket launched from
Vandenberg AFB California

VANDENBERG AFB, CA
PM
AUG 27
1970
93437

First

'S A C'

MINUTEMAN -3 Booster

"SUPER ICBM"

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

Rocket launched from
Vandenberg AFB California

VANDENBERG AFB, CA
AM
SEP 17
1970

23 rd
'S A C'
MINUTEMAN II F Booster

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

Rocket launched from
Vandenberg AFB California

VANDENBERG AFB, CA
PM
SEP 25
1970

The 81st
'S A C'
MINUTEMAN — B Booster

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

Rocket launched from
Vandenberg AFB California

VANDENBERG AFB, CA
PM
SEP 25
1970

Second
'S A C'
Precision Maneuvering Entry
"SUPER ICBM"
MINUTEMAN-3 Booster

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

Rocket launched from
Vandenberg AFB California

VANDENBERG AFB, CA
AM
OCT 3
1970

8th
'S A C'

MINUTEMAN II M Booster

Test Using S-BAND TELEMETRY

WILLIAM PATTERSON
1046 N. 19th ST.
CAMDEN, N. J. 08105

Rocket launched from
Vandenberg AFB California

VANDENBERG AFB, CA
PM
OCT 3
1970

MINUTEMAN B Booster

NIKE ZEUS TARGET

ERNEST HARTER
20 MIDWAY LANE
BELLMAWR, N. J. 08030

Rocket launched from
Vandenberg AFB California

VANDENBERG AFB, CA
PM
OCT 5
1970

the
82 nd
'S A C'

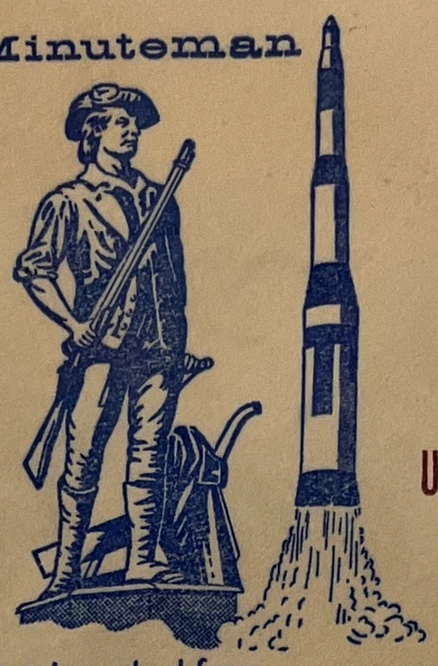
MINUTEMAN B Booster

EISENHOWER·USA

GEORGE BONAWITZ
3973 ELSER ST.
PHILADELPHIA, PA. 19140

Minuteman

INSTANT ICBM



Rocket launched from
Vandenberg AFB California

VANDENBERG AFB, CA
AM
JUL 23
1970
93437

-300th

US AIR FORCE MINUTEMAN

From Vandenberg AFB

MINUTEMAN B

NIKE ZEUS TARGET

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

VANDENBERG AFB MISSILE LAUNCH

VANDENBERG AFB, CALIF.

11th MINUTEMAN -3

LAST OF THE

R & D

VANDENBERG AFB, CA
PM
JUL 28
1970
93437

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

Minuteman

INSTANT ICBM

Rocket launched from
Vandenberg AFB California

VANDENBERG AFB, CA
PM
AUG 3
1970
93437

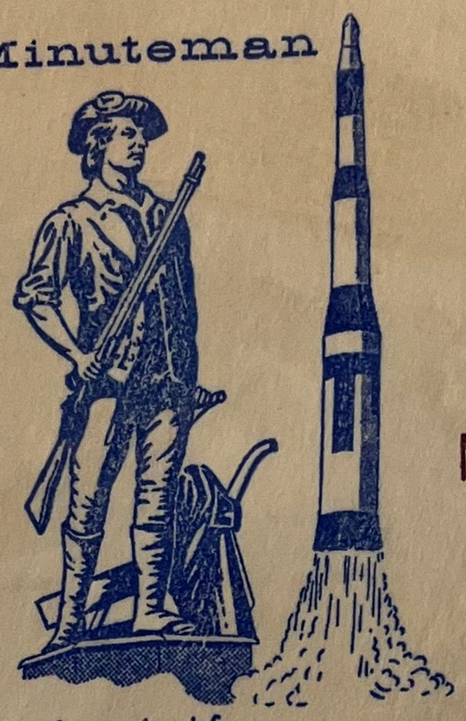
'S A C'

MINUTEMAN II F Booster

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

Minuteman

INSTANT ICBM



Rocket launched from
Vandenberg AFB California

VANDENBERG AFB, CA
PM
AUG 28
1970

MINUTEMAN B Booster

NIKE ZEUS TARGET

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

Minuteman

INSTANT ICBM

Rocket launched from
Vandenberg AFB California

VANDENBERG AFB, CA
PM
SEP 2
1970

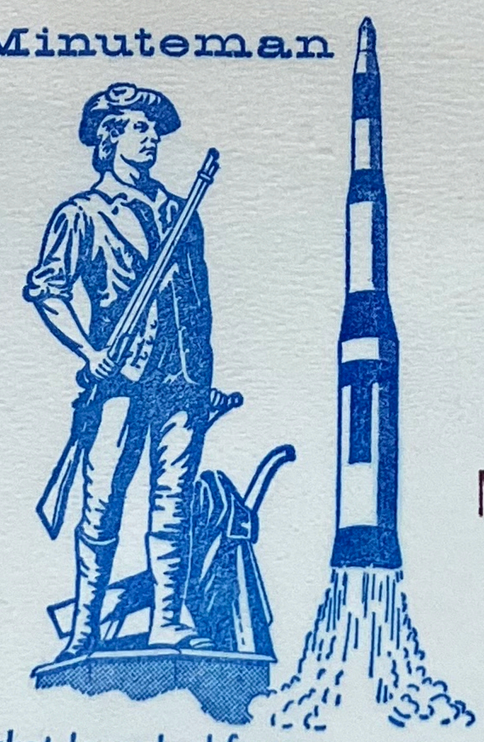
80th 'S A C'

MINUTEMAN B Booster

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

Minuteman

INSTANT ICBM



Rocket launched from
Vandenberg AFB California

VANDENBERG AFB, CA
PM
SEP 14
1970

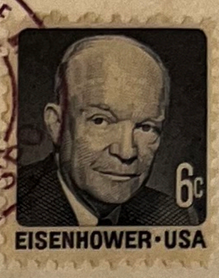
22nd 'S A C'

MINUTEMAN II F Booster

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

Rocket launched from
Vandenberg AFB California

VANDENBERG AIR FORCE CA
NOV 2 1970
USA



10th
'S A C'
MINUTEMAN II M BOOSTER

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

Rocket launched from
Vandenberg AFB California

VANDENBERG AFB, CA
AM
NOV 4
1970
93437

US AIR FORCE
RE-ENTRY TESTING
Test Using
the
14th
MINUTEMAN 3
"SUPER ICBM"

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

Rocket launched from
Vandenberg AFB California

VANDENBERG AFB, CA
PM
NOV 5
1970
93437

11th
'S A C'
MINUTEMAN II M Booster

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

Minuteman

INSTANT ICBM

Rocket launched from
Vandenberg AFB California

VANDENBERG AFB CA
PM
NOV 8
1970

84th
'S A C'
MINUTEMAN B Booster

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

Minuteman

INSTANT ICBM

Rocket launched from
Vandenberg AFB California

VANDENBERG AFB CA
3rd NOV 13 1970

'S A C'

MINUTEMAN-3

"SUPER ICBM"

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

Minuteman

INSTANT ICBM

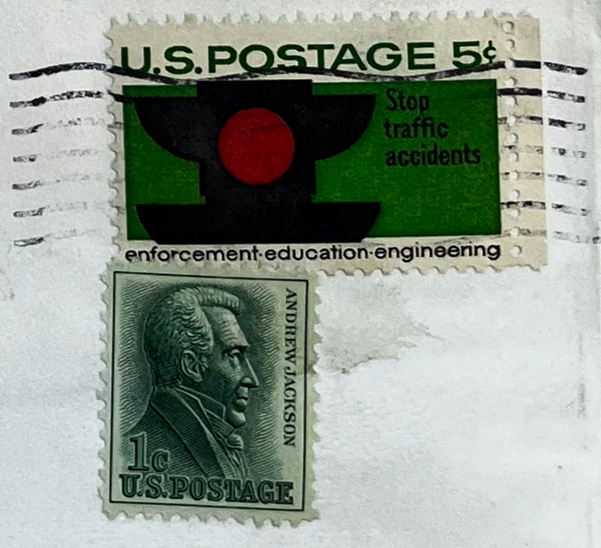
Rocket launched from
Vandenberg AFB California

VANDENBERG AFB CA
PM
NOV 13
1970

'S A C'

MINUTEMAN-3

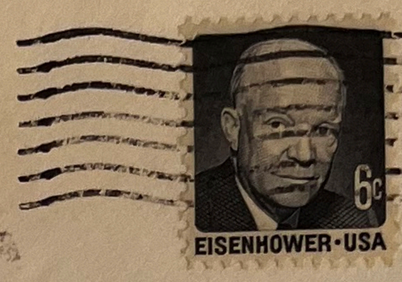
"SUPER ICBM"



ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

Rocket launched from
Vandenberg AFB California

VANDENBERG AFB, CA
AM
OCT 7
1970
93437



9th 'S A C'
MINUTEMAN II M Booster

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

Rocket launched from
Vandenberg AFB California

VANDENBERG AFB, CA
AM
OCT 7
1970
93437

9th 'S A C'
MINUTEMAN II M Booster

VANDENBERG
AIR FORCE
BASE

Second
'S A C'
MINUTEMAN II
SALVO
LAUNCH

VANDENBERG AFB, CA
PM
OCT 22
1970

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

Minuteman

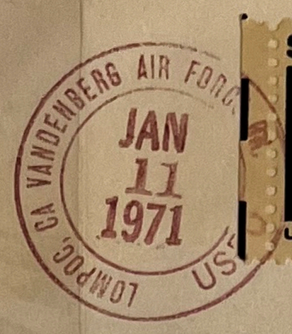
INSTANT ICBM

Rocket launched from
Vandenberg AFB California

MINUTEMAN B

TARGET

Booster



ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

Minuteman

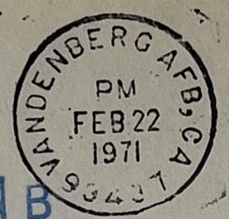
INSTANT ICBM

Rocket launched from
Vandenberg AFB California

MINUTEMAN B

TARGET

BOOSTER



Minuteman

INSTANT ICBM

Rocket launched from
Vandenberg AFB California

25th

'SAC'

MINUTEMAN II F

BOOSTER

Minuteman

INSTANT ICBM

Rocket launched from
Vandenberg AFB California

VANDENBERG AFB, CA
PM
MAR 23
1971

6th

'SAC'

MINUTEMAN-3

"SUPER ICBM"

Test Using

S-BAND

TELEMETRY

PETER PILLA
DEER ROAD
DEER PARK
CHERRY HILL, N. J. 08034

Minuteman

INSTANT ICBM

Rocket launched from
Vandenberg AFB California

VANDENBERG AFB, CA
AM
MAR 31
1971

16th

'SAC'

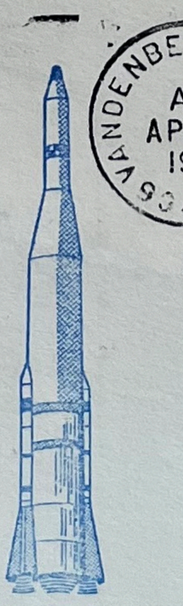
MINUTEMAN II M

Booster

Advanced Ballistic

Re-Entry System

(ABRES) TESTING



VANDENBERG AFB, CA
AM
APR 5
1971

ATLAS F

BOOSTER

From.....

VANDENBERG AFB,

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

INSTANT ICBM

Minuteman

Rocket launched from
Vandenberg AFB California

US AIR FORCE

MINUTEMAN -3

RE-ENTRY TESTING

S-BAND TELEMETRY

VANDENBERG AFB, CA
AM
APR 8
1971

THE AGE OF REPTILES

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

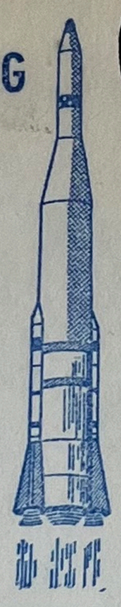
7th VANDENBERG AIR FORCE BASE

'S A C'

MINUTEMAN -3

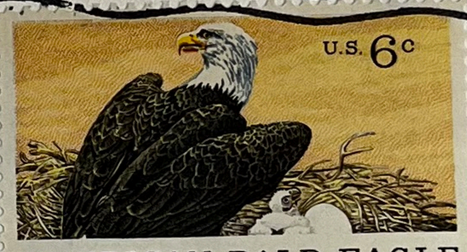
"SUPER ICBM"

LAUNCH



"INSTANT ICBM"

VANDENBERG AFB, CA
AM
APR 23
1971



AMERICAN BALD EAGLE

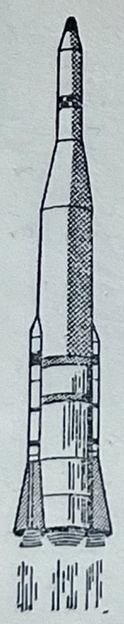
ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

the 88th 'S A C'

MINUTEMAN B

LAUNCHED FROM

VANDENBERG AIR FORCE BASE



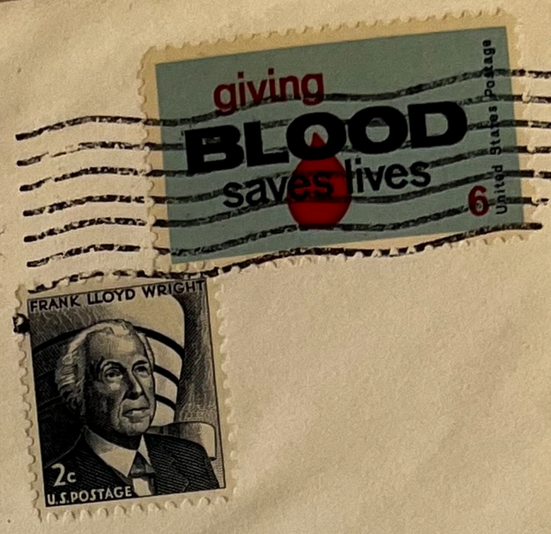
VANDENBERG AFB, CA
PM
APR 26
1971

Minuteman

INSTANT ICBM

Rocket launched from
Vandenberg AFB California

VANDENBERG AFB, CA
PM
MAY 18
1971
S3437



'S A C'

MINUTEMAN II F Booster

S-BAND TELEMETRY

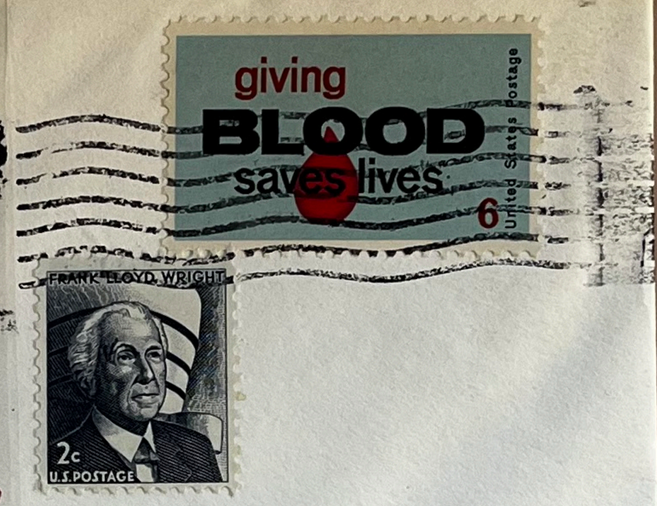
ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

Minuteman

INSTANT ICBM

Rocket launched from
Vandenberg AFB California

VANDENBERG AFB, CA
AM
MAY 21
1971



'S A C'

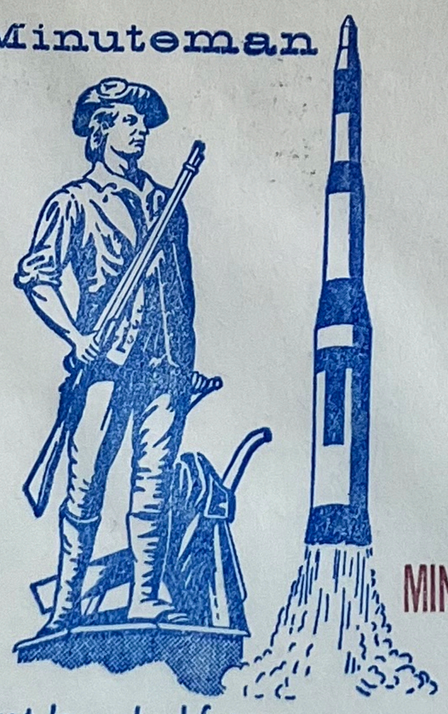
MINUTEMAN II F Booster

RE-ENTRY TESTING

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

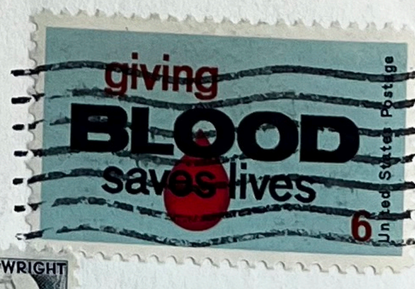
Minuteman

INSTANT ICBM



Rocket launched from
Vandenberg AFB California

VANDENBERG AFB, CA
PM
MAY 24
1971



'S A C'

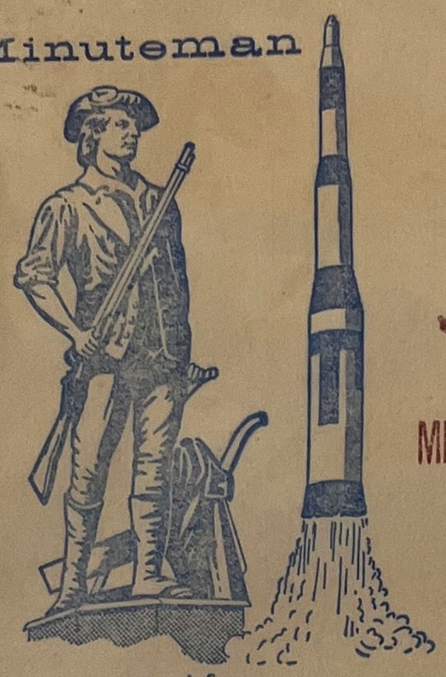
SECRET PAYLOAD
RESEARCH

MINUTEMAN II F Booster

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

Minuteman

INSTANT ICBM



Rocket launched from
Vandenberg AFB California

VANDENBERG AFB, CA
PM
FEB 27
1971

15th

'SAC'

MINUTEMAN II M

BOOSTER

Minuteman

INSTANT ICBM

Rocket launched from
Vandenberg AFB California

VANDENBERG AFB, CA
PM
MAR 2
1971

87

'SAC'

MINUTEMAN B

Booster

Minuteman

INSTANT ICBM

Rocket launched from
Vandenberg AFB California

VANDENBERG AFB, CA
PM
MAR 16
1971

MINUTEMAN B

TARGET

Booster

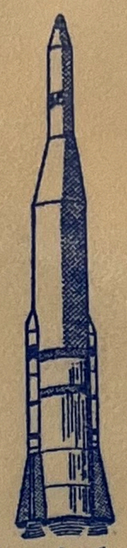
US AIR FORCE

ATLAS F

Booster

Advanced Ballistic
Re-Entry System
(ABRES) TESTING

SATELLITE



VANDENBERG AFB, CA
AM
JUN29
1971

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

Minuteman

INSHANH ICBM

Rocket launched from
Vandenberg AFB California

VANDENBERG AFB, CA
AM
AUG 3
1971

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

30 th

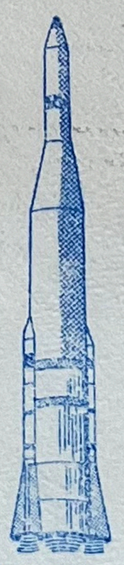
'S A C'

MINUTEMAN II F

Booster

.....

PACIFIC
MISSILE
RANGE

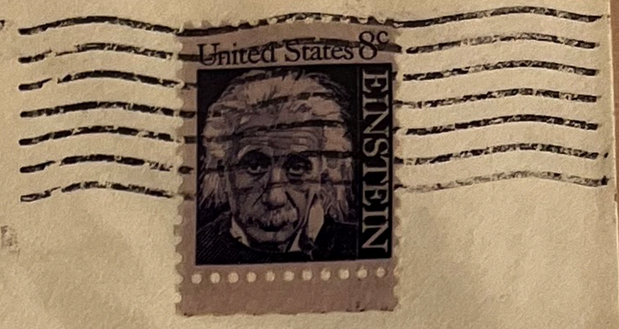


VANDENBERG AFB, CA
PM
AUG 4
1971

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

Rocket launched from
Vandenberg AFB California

VANDENBERG AFB, CA
PM
MAY 27
1971

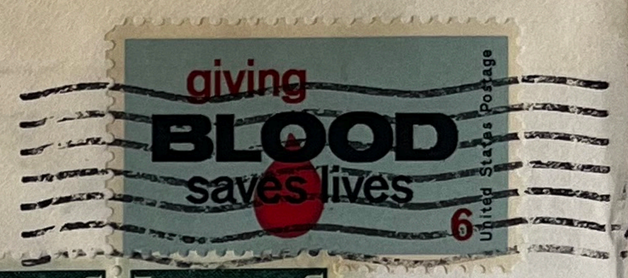


2 MINUTEMAN -3
"SUPER ICBM"
RESEARCH

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

Rocket launched from
Vandenberg AFB California

VANDENBERG AFB, CA
AM
JUN 4
1971



'S A C'
RESEARCH
MINUTEMAN II Booster

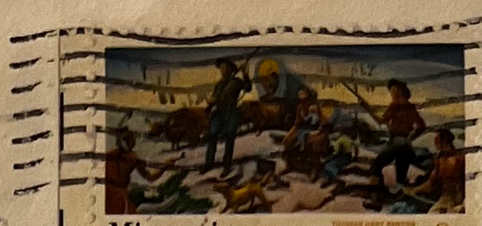
Rocket launched from
Vandenberg AFB California

VANDENBERG AFB, CA
AM
JUN 11
1971

RESEARCH
Booster
MINUTEMAN II

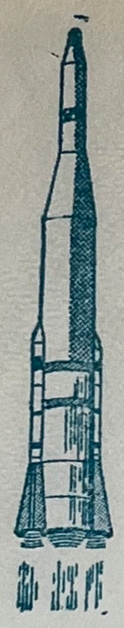
ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

VANDENBERG AFB, CA
AM
JUN 18
1971



'S A C' MINUTEMAN 1
"INSTANT ICBM"

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096



17 th
'S A C'
MINUTEMAN II M
BOOSTER

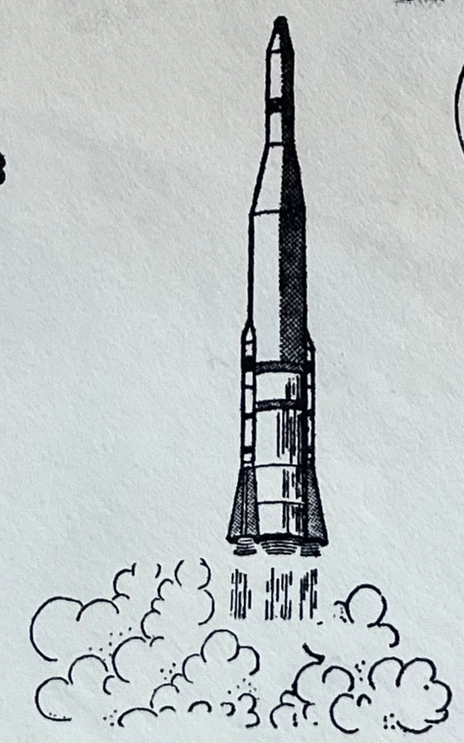
From.....
VANDENBERG
AIR FORCE
BASE

VANDENBERG AFB, CA
AM
JUN 23
1971

US AIR FORCE
MINUTEMAN B
TARGET
BOOSTER

.....

PACIFIC
MISSILE
RANGE



VANDENBERG AFB, CA
AM
JUN 26
1971

MISSILE LAUNCH
VANDENBERG AFB. CALIF.

VANDENBERG AFB, CA
AM
SEP 8
1971

US 8c
UNITED STATES IN SPACE···

'S A C'
MINUTEMAN B

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

Minuteman
I STAND ICBM

'S A C'
20th MINUTEMAN II M Booster

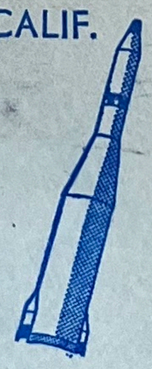
Rocket launched from
Vandenberg AFB California

VANDENBERG AFB, CA
AM
SEP 10
1971

US 8c
A DECADE OF ACHIEVEMENT

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

VANDENBERG AFB, CALIF.
US AIR FORCE
MINUTEMAN -3
"SUPER ICBM"
RESEARCH
LAUNCH



VANDENBERG AFB, CA
AM
OCT 20
1971

FRANK LLOYD WRIGHT
2c U.S. POSTAGE
9c U.S. AIR MAIL

VIA AIR MAIL

Shumlain
6001 Park Hts ave
Balto 15, Md

22nd SAC

MISSILE LAUNCH

VANDENBERG AFB, CALIF.

MINUTEMAN II M

ICBM

VANDENBERG AFB, CA
PM
MAR 21
1972

8 U.S. CENTS
SIDNEY LANIER
American Poet

Minuteman -3

INSTANT ICBM

USAF

Rocket launched from
Vandenberg AFB California

VANDENBERG AFB, CA
PM
JAN30
1973
93437

USAF

MISSILE LAUNCH

VANDENBERG AFB, CALIF.

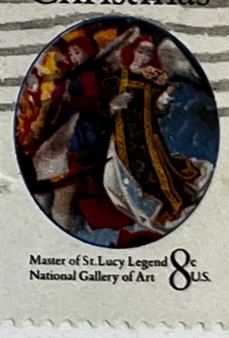
MINUTEMAN B

Re-Entry System

TESTING

VANDENBERG AFB, CA
AM
MAR 9
1973
93437

Christmas



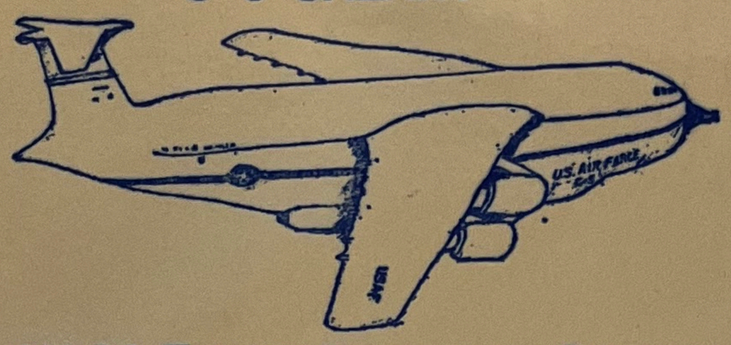
Master of St. Lucy Legend
National Gallery of Art
8c U.S.

ROBERT DOUGLAS
1106 HARKER AVE.
WOODBURY, N. J. 08096

VANDENBERG AFB, CA
AM
OCT 24
1974
93437

13c USAirmail

LOCKHEED
C-5 GALAXY



FIRST
INTERCONTINENTAL BALLISTIC
LIVE 86,000 LB MINUTEMAN
DROPPED FROM A LOCKHEED
C-5A TRANSPORT.
PILOT - JESSIE ALLEN
20,000 FT ALTITUDE
AIRSPEED - 160 KNOTS
TIME - 3 - 00 HOURS

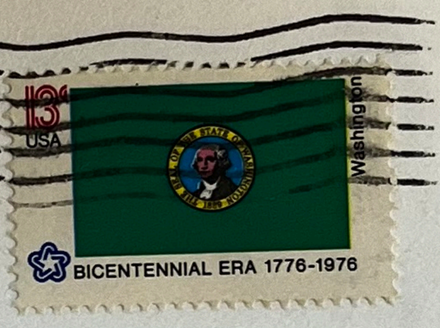
NASA FLIGHT RESEARCH CENTER
EDWARDS A.F.B. CALIFORNIA

PRINTED MATTER

VANDENBERG AFB, CA
AM
APR 27
1977

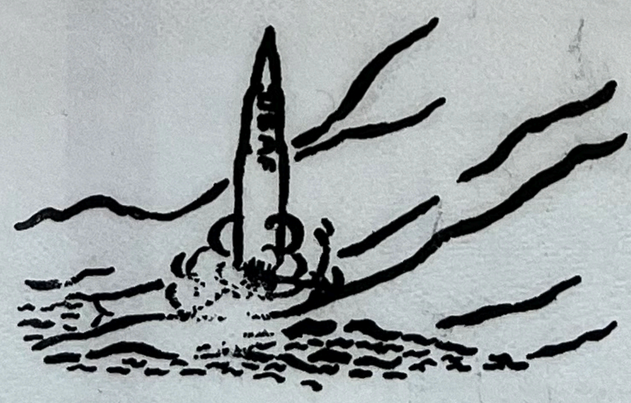
10TH OLYMPIC ARENA
'S A C'
ICBM COMBAT COMPETITION

Vandenberg A.F.B.
California



Rita Engelsberg
Püsselbürener D. 9
4530 Ibbenbüren
West Germany

Printed Matter



1st Strategic Aerospace Division
Strategic Air Command
Operational Test Launch
Glory Trip 75-GM-2
Minuteman III ICBM
1 April 1981
Vandenberg AFB, Calif

Surface Mail

Josef Stelzhammer
Keltenstraße 24
4053 Jüchen 1
Germany

VANDENBERG AFB, CA
AM
AUG 14
1970
93437

6th MINUTEMAN II M Booster
First
'S A C'
Test Using S-BAND TELEMETRY

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

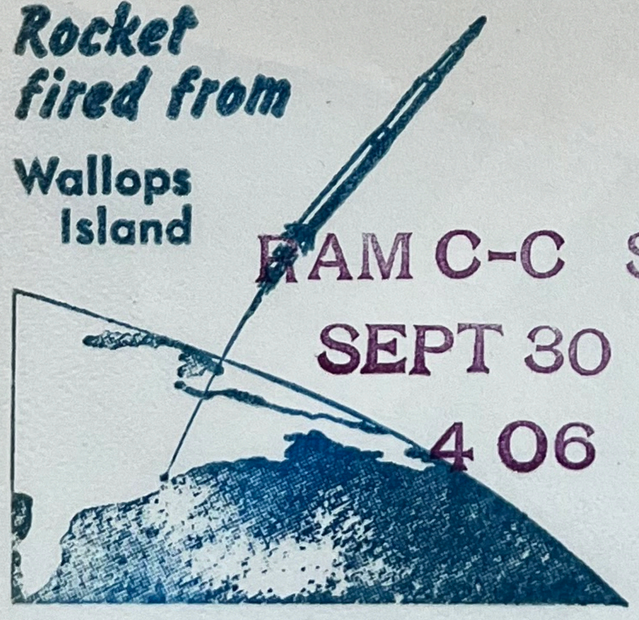
First
'S A C'
USAF TITAN
IN SUPPORT OF
NIKE ZEUS

VANDENBERG
AIR FORCE
BASE

VANDENBERG AFB, CA
PM
JUN 20
1971

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

Rocket
fired from
Wallops
Island

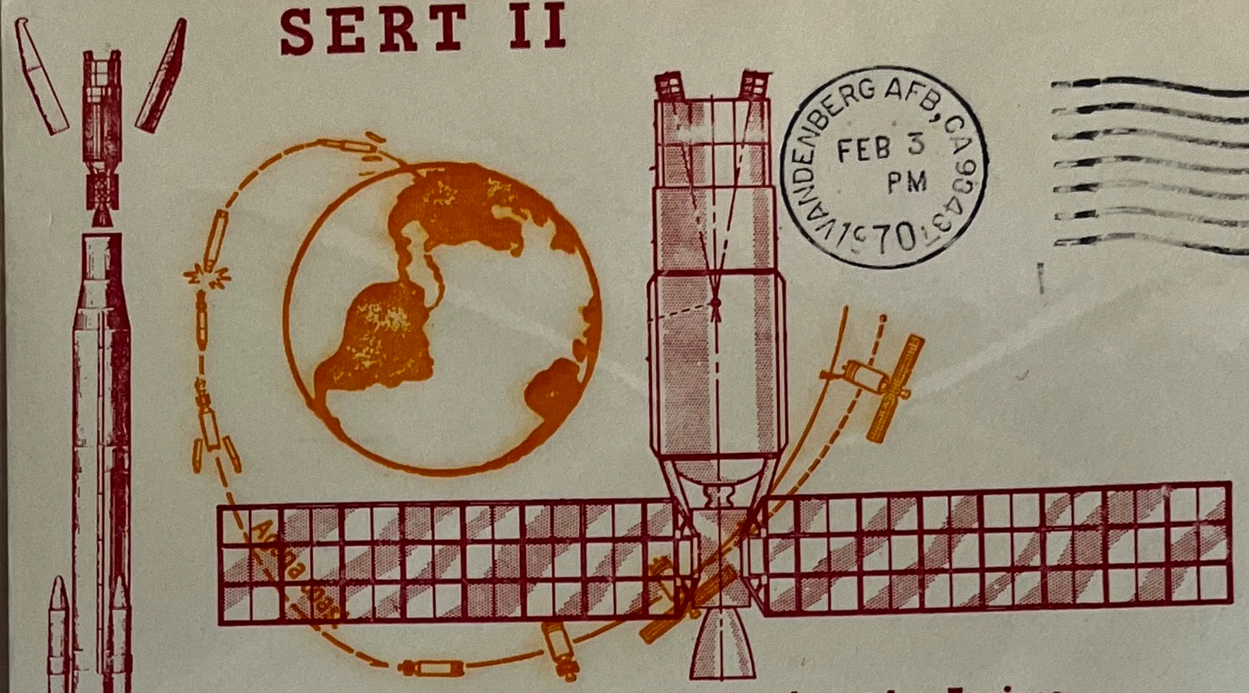


WALLOPS ISLAND, VA
SEP 30
PM
1970
23337

RAM C-C SCOUT
SEPT 30 1970
4 06 PM

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

SERT II

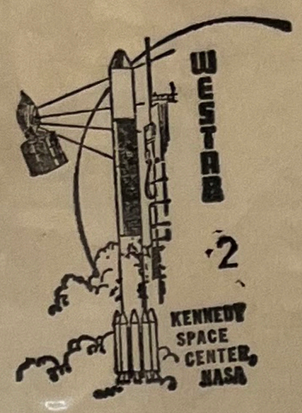


1st Test Of Two Electron Bombardment Ion Engines
Thrust Generated By Vaporizing Mercury (Hg)
To Confirm Ground Tests In Vacuum Chambers
SERT Engine For Manned Flight To Planets

SPECIAL PHILATELIC CANCELLATION
IS-DOC-M N.A.S.A.
KENNEDY SPACE CENTER, FLA. 32899

KENNEDY SPACE CENTER FL
OCT 10
PM
1974

13c USAirmail



WESTAR-B
2nd U. S. DOMESTIC
COMMUNICATION SATELLITE
FOR WESTERN UNION

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

N.A.S.A. Tracking Station
Merritt Island, Fla. 32952

U.S. POSTAL SERVICE FL 32927
PM
OCT 11
1974

MERRITT ISLA FL
OCT
10
1974
USPO

13c USAirmail

WESTAR-B
2nd U. S. DOMESTIC
COMMUNICATION SATELLITE
FOR WESTERN UNION

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

Westar Earth Station
Vernon Crossing Rd.
Vernon, N. J. 07462

VERNON, NJ
OCT
10
P.M.
1974
07462

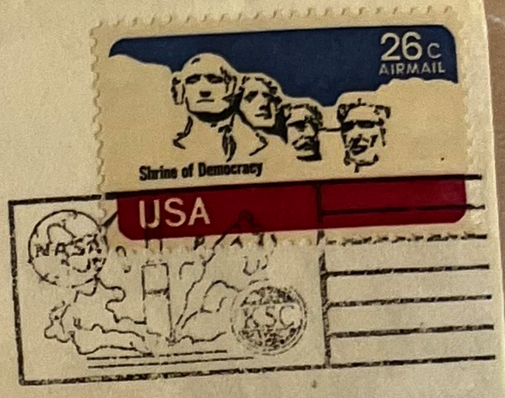
13c USAirmail

WESTAR-B
2nd U. S. DOMESTIC
COMMUNICATION SATELLITE
FOR WESTERN UNION

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

WESTAR Launched April, 1974
MAILGRAM Transmission via Satellite
Postal Progress Series

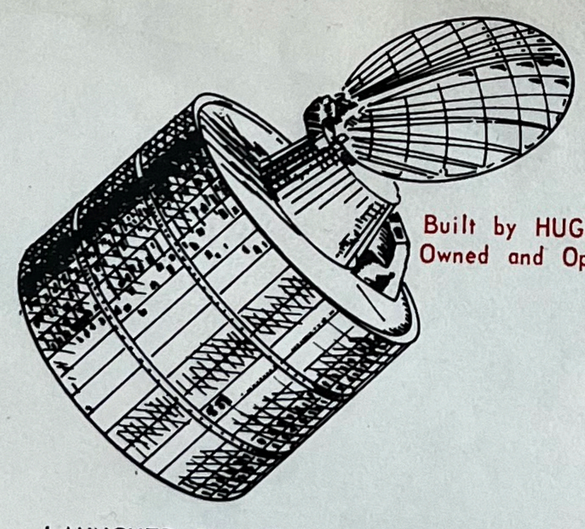
KENNEDY SPACE CENTER, FL
APR 13
PM
1974



WESTAR 2

KSC TEST NO. J – 4957

KENNEDY SPACE CENTER
OCT 10
PM
1974
FL



Built by HUGHES AIRCRAFT CO.
Owned and Operated by

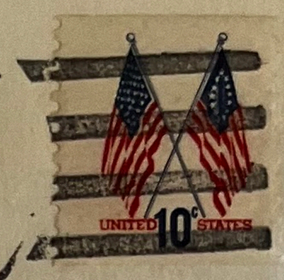
LAUNCHED BY DELTA 103
FROM LAUNCH COMPLEX 17
OCT. 10, 1974 6:53 P.M. EDT

SCPS
Ser. 77 No.

- PLACED IN PERMANENT SYNCHRONOUS ORBIT SOUTH OF NEW ORLEANS, AT 91 DEGREES WEST LONGITUDE.
- WILL FUNCTION AS A BACKUP FOR ITS TWIN SISTER, WESTAR I.
- WESTAR I AND 2 COMPLETE THE WESTERN UNION CONTINENTAL COMMUNICATIONS SYSTEM.

Westar Earth Station
Vernon Crossing Rd.
Vernon, N. J. 07462

VERNON, NJ
APR
13
PM
1974
07462



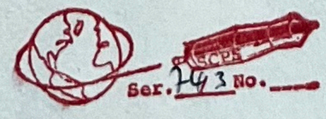
ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

WESTAR I

LAUNCHED BY DELTA 101
APRIL 13, , 7 33 P.M. EDT

KSC TEST No. J - 4417

PLACED IN SYNCHRONOUS ORBIT
ABOVE EQUATOR, WEST OF
GALAPAGOS ISLANDS



CAPE CANAVERAL, FL KENNEDY SPACE CENTER PO
APR
13
1974

FIRST U.S. DOMESTIC COMMUNICATIONS SATELLITE

Built by HUGHES AIRCRAFT CO. 7 YR LIFE EXPECTANCY
Owned and Operated by

FOUR DIRECTIONAL BEAMS AND 12 TRANSPONDERS WILL PROVIDE COMMUNICATIONS COVERAGE FOR HAWAII, ALASKA, ENTIRE CONTINENTAL U.S., AND PUERTO RICO. CAN TRANSMIT 12 COLOR T V CHANNELS OR UP TO 11,400 ONE WAY TELEPHONE CIRCUITS THROUGH 5 EARTH STATIONS LOCATED NEAR NEW YORK, ATLANTA, CHICAGO, DALLAS, AND LOS ANGELES.

MIDWEST POSTAGE STAMP & COIN SHOW

100th Anniversary UNIVERSAL POSTAL UNION

1874

1974

American Topical Association

MIDWEST POSTAGE STAMP & COIN SHOW STA.
SEP
20
1974
CHICAGO, IL 60602

US 10c
Skylab

WESTAR Communications Satellite

VIA AIR MAIL

NASA-STDN STATION
P. O. Box 538
Waimea, Kauai, Hawaii
96796

WAIMEA, HI
OCT
10
PM
1974
96796

UNITED 10c STATES

Marconi Spark Coil
Marconi Spark Gap
U.S. 6c
Progress in Electronics

FRANK LLOYD WRIGHT
2c U.S. POSTAGE

Westar

ASTRO COURIER E. CÖLLE
P. O. Box 81 01 05
D-7 STUTTGART 81 / GERMANY

LEITZ 4781

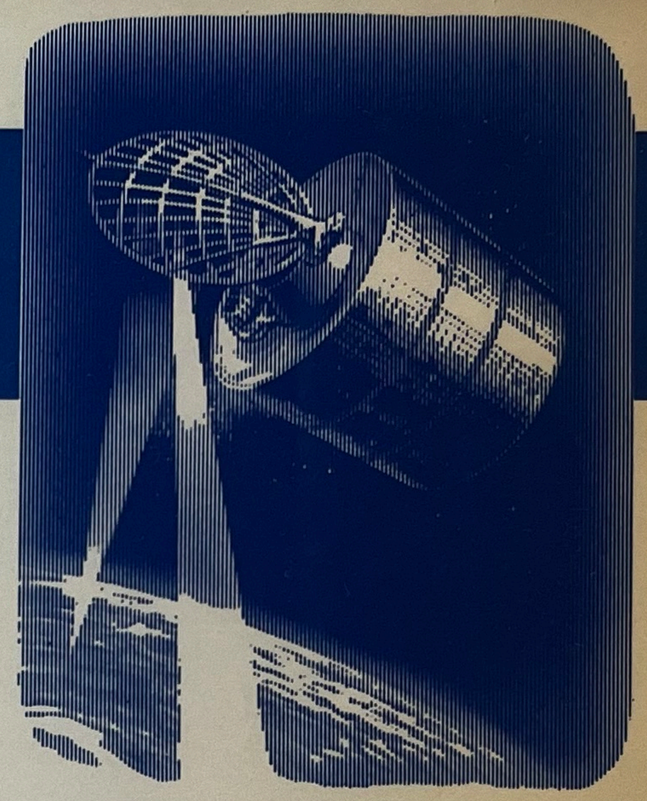
MAILGRAM SERVICE CENTER
MIDDLETOWN, VA. 22645

POSTAGE PAID BY SENDER

western union **Mailgram**

UNITED STATES POSTAL SERVICE U.S.MAIL

THIS MAILGRAM WAS TRANSMITTED ELECTRONICALLY BY WESTERN UNION SATELLITE



FIRST MAILGRAM TRANSMISSION VIA WESTAR,
FIRST DOMESTIC U.S. COMMUNICATIONS SATELLITE,
SEPTEMBER 6. 1974

MGMSAT USA
2-130030U249515 09/06/74
ICS MGMNCSA XBIZ
JKNGP USPS WU

THIS MAILGRAM WAS TRANSMITTED ELECTRONICALLY BY WESTERN UNION SATELLITE

western union **Mailgram**

UNITED STATES POSTAL SERVICE U.S.MAIL

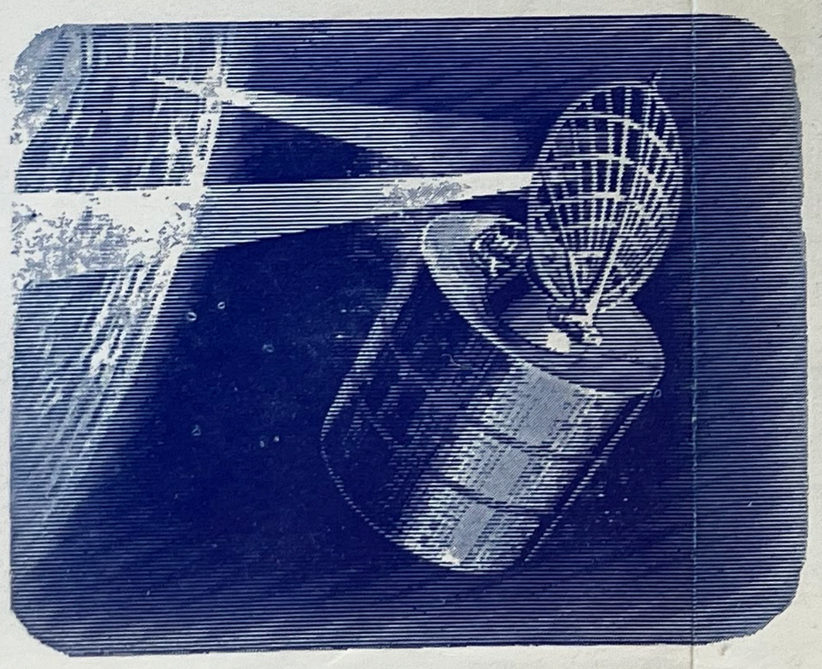
ST IN AMERICAN HISTORY,
SAGE SENT VIA SATELLITE,
ER IN COMMUNICATIONS.

ALLY FROM NEW YORK TO
T DOMESTIC COMMUNICA-
ES AT THE SPEED OF LIGHT.

S THE FIRST OFFICIAL
TAL SERVICE.

EP IN ELECTRONIC TRANS-
OF THE POSTAL PROGRESS
ICATIONS AND MAIL SERVICE.

LL, CHAIRMAN AND PRESIDENT
NION CORPORATION



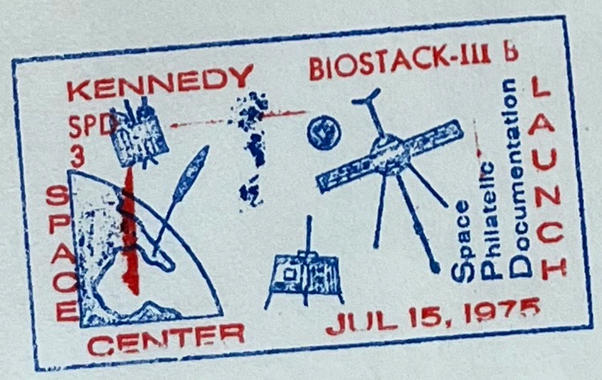
FIRST MAILGRAM TRANSMISSION VIA WESTAR
FIRST DOMESTIC U.S. COMMUNICATIONS SATELLITE
SEPTEMBER 6. 1974

N UNION'S TOLL-FREE PHONE NUMBERS

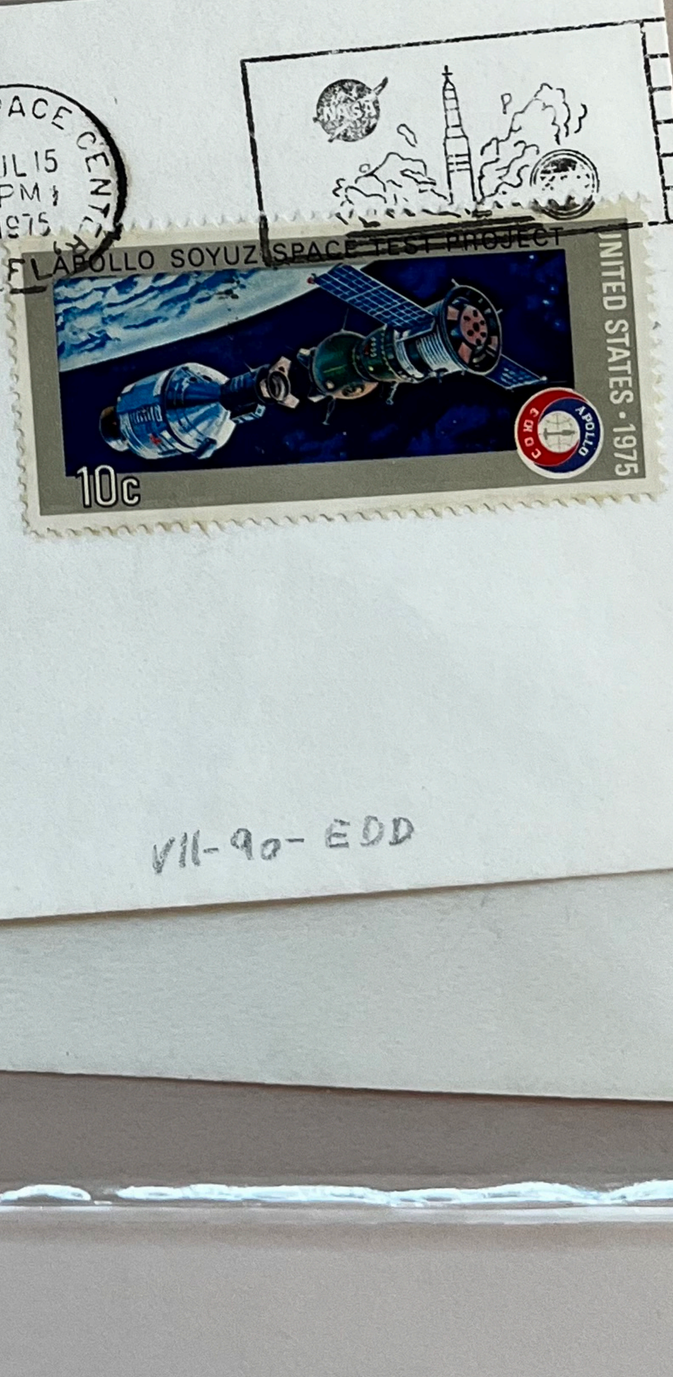
VANDENBERG A.F.B. CALIF.
APR 3
-PM
1965

ATOMIC POWER REACTOR IN SPACE NUCLEAR SPACE REACTOR SNAP 10A. LAUNCHED FROM VANDENBERG AIRFORCE BASE APRIL 3, 1965.

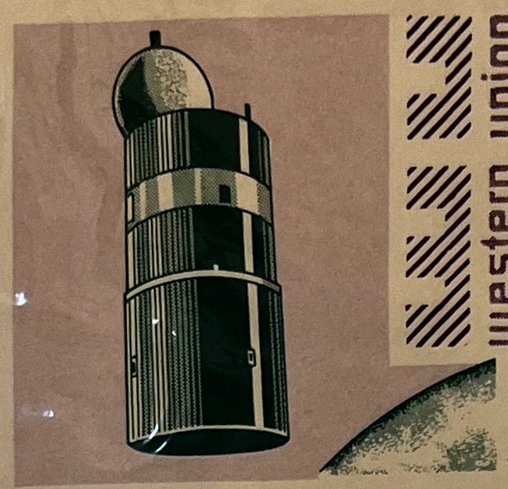
Snapshot 1, Secor 4
Atlas-Agena D



KENNEDY SPACE CENTER
JUL 15
PM
1975



VII-90-EDD



western union

—Launched by Delta, Feb. 25, 1982

—ON 7th ORBIT WESTAR IV's KICK MOTOR FIRES TO SEND IT INTO 22,300 MI. SYNCHRONOUS ORBIT

Westar IV Joins Westar I, II & III In Geosynchronous Orbit And Is Twice Their Size With Four Times Their Capacity

WESTAR 4

—WILL RELAY VOICE, DATA, VIDEO, AND FACSIMILE COMMUNICATIONS TO CONTINENTAL U.S., HAWAII, ALASKA & P.R.

CAPE CANAVERAL FL FEB 25 PM 1982 32920

DEPLOYMENT · FEB, 3rd 1984 PM

WESTAR-VI

Improper Orbit

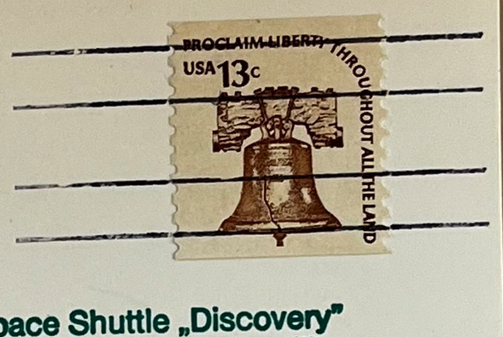
760 x 190 Miles

CHALLENGER

LAUNCH STS-11 · FEB, 3rd 1984 AM

HOUSTON, TX FEB 3 PM 1984

HOUSTON, TX NOV 14 AM 1984 77201



Space Shuttle „Discovery"
Retrieving Westar Satellite
Mission Control Houston
November 14th, 1984 · AM

KENNEDY SPACE CENTER, FL FEB 3 1984 32815

DEPLOYMENT · FEB, 6th 1984 AM

PALAPA B-2

Improper Orbit

650 x 150 Miles

CHALLENGER

LAUNCH STS-11 · FEB, 3rd 1984 AM

HOUSTON, TX FEB 6 AM 1984

HOUSTON, TX NOV 12 AM 1984 77201

Space Shuttle "Discovery"
Retrieving Palapa Satellite
Mission Control Houston
November 12th, 1984 · AM

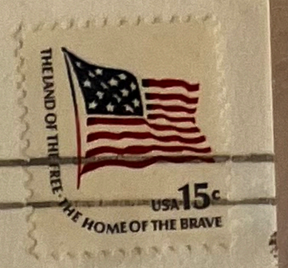
KENNEDY SPACE CENTER, FL FEB 3 1984 32815

LAUNCHED
BY DELTA
AUG. 9, 1979

HUGHES

western union

CAPE CANAVERAL, FL
AUG 9
PM
1979
32920

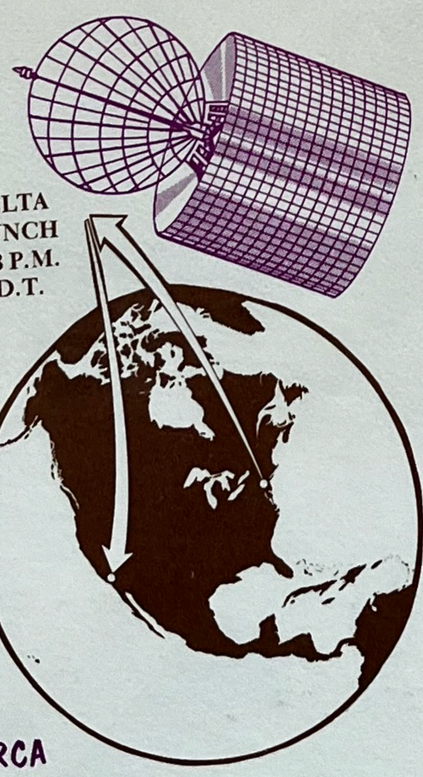


Placed In Geosynchronous Orbit
Over The Equator At 91 Degrees
West Longitude Above Galapagos Islands

Westar 3

12 CHANNEL SATELLITE WILL TRANSMIT COLOR TV, 200 2-WAY TELEPHONE CALLS OR MILLIONS OF BITS OF HIGH SPEED DATA

WU



DELTA
LAUNCH
7:33 P.M.
E.D.T.

RCA

KENNEDY SPACE CENTER
APR 15
AM
1974
FL

- Synchronous orbit west of Galapagos Islands

WESTAR

FIRST DOMESTIC COMMUNICATIONS SATELLITE

Provides point to point transmission
in all 50 states and Puerto Rico

western union

WESTAR 5

Has Design Life Of Ten Years
And Will Relay Voice, Data,
Video And Facsimile Communications
To USA, Hawaii, Alaska and P. R.

NASA-STDN STATION
P. O. Box 538
Waimea, Kauai, Hawaii
96796

WAIMEA, HI
OCT
10
PM
1974
96796

13c USAirmail

WESTAR-B
2nd U. S. DOMESTIC
COMMUNICATION SATELLITE
FOR WESTERN UNION

TRACKING
STATION

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

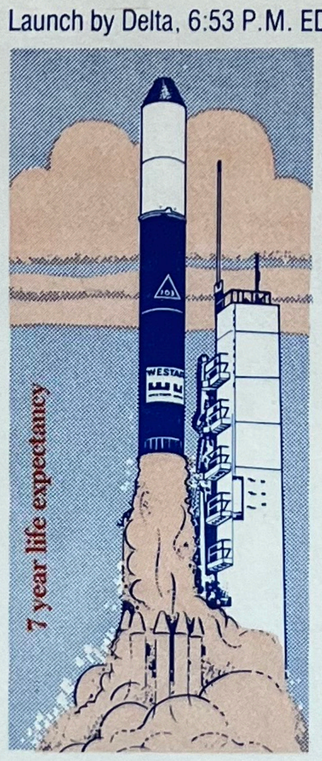
WESTAR-C

SPACEFLIGHT TRACKING AND DATA NETWORK
GODDARD SPACE FLIGHT CENTER

GREENBELT MD
AUG
9
1979
PM
20770

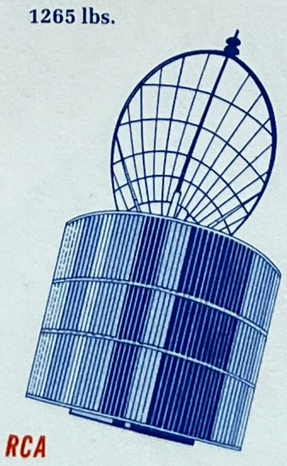
Herrn K.Gentner
792-Heidenheim
Scheidemannstr. 36
[redacted]
W-Germany

Launch by Delta, 6:53 P.M. EDT - *Oct. 10, 1974*



Synchronous Orbit South of Los Angeles

1265 lbs.



RCA

KENNEDY SPACE CENTER FL
OCT 10
PM
1974

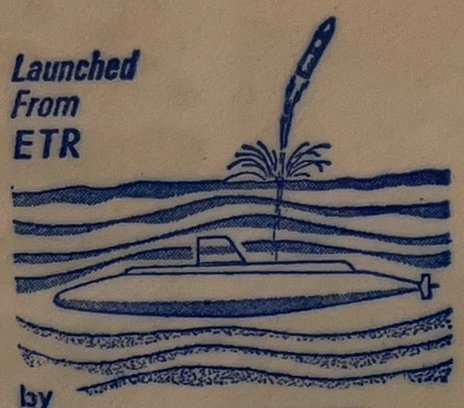
western union

Westar 2

Can relay more than 8 million words per second or transmit 12 color TV signals simultaneously.

POSEIDON

Launched From ETR



by
U.S.S. JAMES MADISON
SSBN-627

AUG 17 '70 - 12 · 15 PM

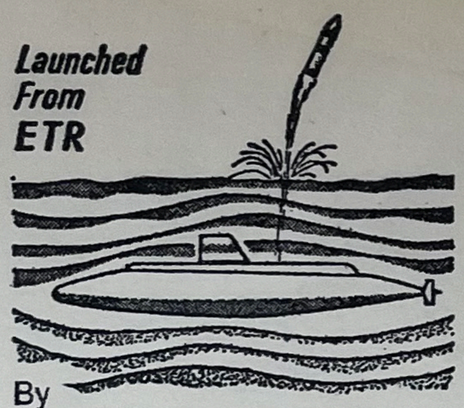
CAPE CANAVERAL, FL
AUG 17 PM
1970
32920

UNITED STATES 6c

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

POSEIDON

Launched From ETR



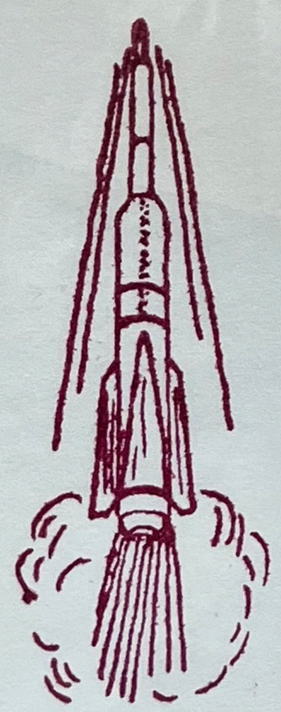
By
USS DANIEL BOONE
SSBN 629

SEP 21 '70 - 11 · 00 AM

CAPE CANAVERAL, FL
SEP 21 AM
1970
32920

UNITED STATES 6c

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096



SUB DAN BOONE FIRES POSEIDON

CAPE CANAVERAL, FL
SEP 8 PM
1970
32920

UNITED STATES 6c

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

POSEIDON
SUBMERGED
Launch
From
ETR

By
USS DANIEL BOONE
SSBN 629

OCT 6 '70 - 11 '15 AM

CAPE CANAVERAL, FL
OCT
19
32920

ROBERT BOUDWIN
1112 HARKER AVE.
WOODBURY, N. J. 08096

POSEIDON
SUBMERGED
Launch
From
ETR

by
U.S.S. JAMES MADISON
SSBN-627

CAPE CANAVERAL, FL
OCT 23
PM
1970
32920

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

POSEIDON

Launched
From
ETR

By
USS DANIEL BOONE
SSBN 629

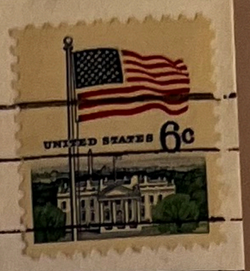
NOV 2 7 '70 - 5 '1 7 PM

CAPE CANAVERAL, FL
NOV 27
PM
1970
32920

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

JAN 21 '69 - 11 · 00 AM

CAPE CANAVERAL, FL
JAN 21
AM
1969
32920

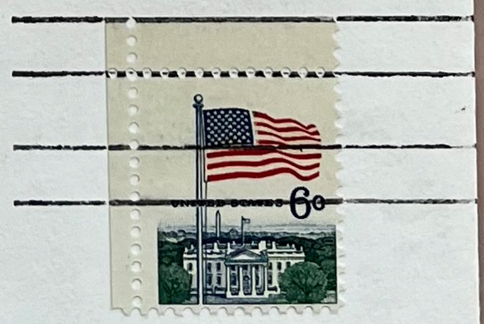


FEB 19 '69 - 11 · 05 AM

CAPE CANAVERAL, FL
FEB 19
AM
1969
32920

APR 9 '69 - 5 · 02 PM

CAPE CANAVERAL, FL
APR 9
PM
1969
32920



ROBERT BOODMAN
1119 HARKER AVE.
WOODBURY, N. J. 08096