Record Flight

Mach 1.4

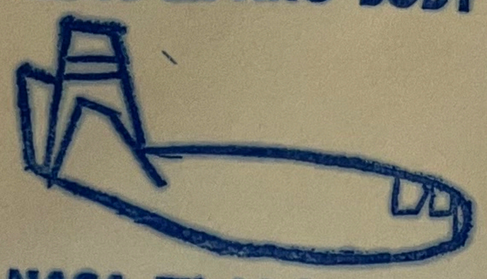
EDWARDS, CA
NOV 3 PM
1969
93523

FIRST MAN ON THE MOON

UNITED STATES

VIA AIR MAIL

HL-10 LIFTING BODY



NASA Flight Research Center
Edwards, Calif.

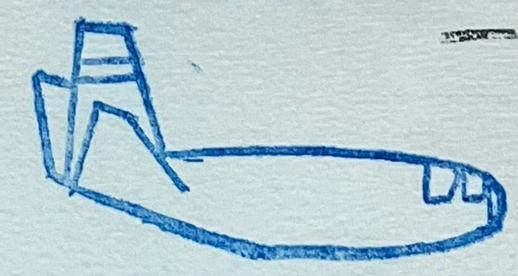
Major Hoag

MRS. E. HERMAN
834 N. 7TH ST.
CAMDEN, N. J. 08102

1969

EDWARDS AIR FORCE BASE, CA 93523
NOV 21 PM

HL-10 LIFTING BODY



NASA Flight Research Center
Edwards, Calif.

Maj Hoag

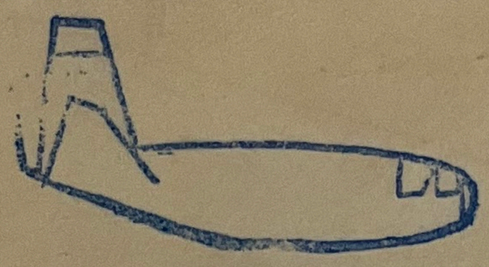
FIRST MAN ON THE MOON

UNITED STATES

VIA AIR MAIL

MRS. E. HERMAN
834 N. 7TH ST.
CAMDEN, N. J. 08102

HL-10 LIFTING BODY



NASA Flight Research Center
Edwards, Calif.

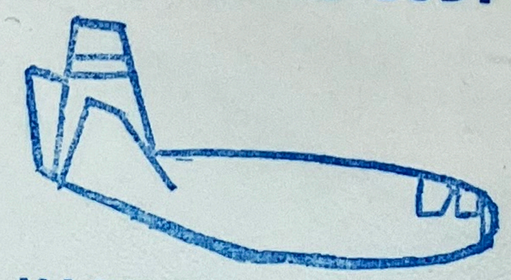
EDWARDS, CA
DEC 12
1969
93523

VIA AIR MAIL

MRS. E. HERMAN
834 N. 7TH ST.
CAMDEN, N. J. 08102

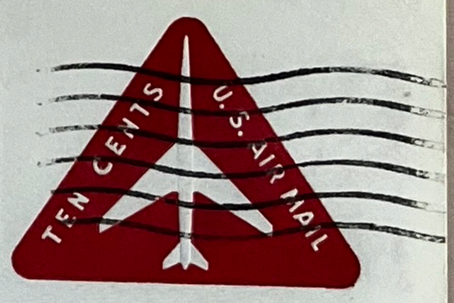
Pilot - Mr Dana

HL-10 LIFTING BODY



NASA Flight Research Center
Edwards, Calif.

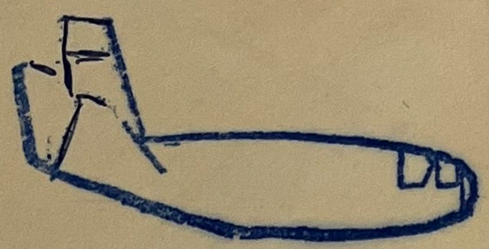
EDWARDS, CA
FEB 18
PM
1970
93523



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

Flight No H-3-1-19
Pilot Maj Hoag

HL-10 LIFTING BODY



NASA Flight Research Center
Edwards, Calif.

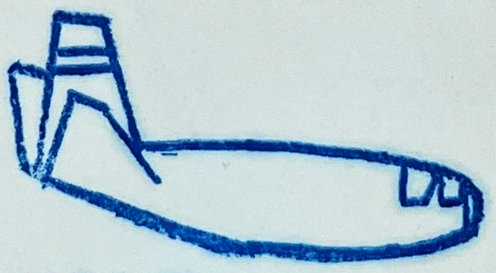
JOHN MANKE

EDWARDS, CA
APR 17
PM
1969
93523

TEN CENTS U.S. AIR MAIL

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

HL-10 LIFTING BODY



NASA Flight Research Center
Edwards, Calif.

BILL DANA

EDWARDS
APR
2?
P.M.
1969
523

TEN CENTS U.S. AIR MAIL

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

X - 24
Rocket Propelled
Lifting Body
Edwards AFB

EDWARDS, CA
AUG 11
P.M.
1970
93523

FIRST MAN ON THE MOON
UNITED STATES

VIA AIR MAIL

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

#X-16-21
John Manke

X - 24
Rocket Propelled
Lifting Body
Edwards AFB

EDWARDS, CA
AUG
26
P.M.
1970

FIRST MAN ON THE MOON
UNITED STATES

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

#X-17-22
Maj Gentry

510 S. Cherry St.,
Lititz, PA. 17543

X-19-24
John Manley

EDWARDS, CA
OCT 28
PM
1970
93523

X-24
Rocket Propelled
Lifting Body
Edwards AFB

VIA AIR MAIL

MRS. E. HERMAN
834 N. 7TH ST.
CAMDEN, N. J. 08102

EDWARDS, CA
JAN 22
PM
1971
93523

X-24
Rocket Propelled
Lifting Body
Edwards AFB

John Manley
X-21-26

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

X - 24
Rocket Propelled
Lifting Body
Edwards AFB

EDWARDS, CA
MAR 29
PM
1971
93523

FIRST MAN ON THE MOON

UNITED STATES

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

John Manke
X-25-30

X - 24
Rocket Propelled
Lifting Body
Edwards AFB

EDWARDS, CA
MAY 12
PM
1971
93523

FIRST MAN ON THE MOON

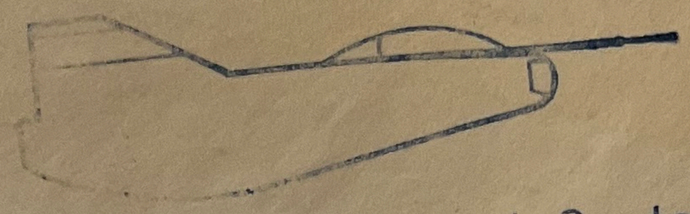
UNITED STATES

VIA AIR MAIL

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

Maj Powell
X-26-32

M-2 LIFTING BODY



EDWARDS, CA
FEB 26
1971
93523

NASA Flight Research Center
Edwards, Calif.

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

M-22-31
Bill Dana

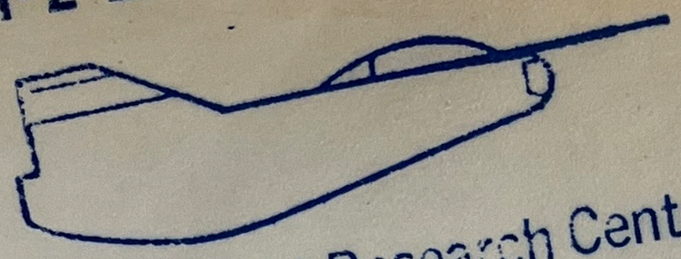
X - 24
Rocket Propelled
Lifting Body
Edwards AFB

EDWARDS, CA
MAR 8
1971
93523

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

X-24-29
Maj Powell

M-2 LIFTING BODY



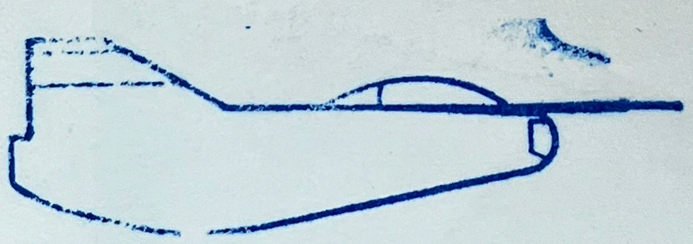
NASA Flight Research Center
Edwards, Calif.

EDWARDS, CA
AUG 9
PM
1971
93523

VIA AIR MAIL

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

M-2 LIFTING BODY



NASA Flight Research Center
Edwards, Calif.

EDWARDS, CA
JUL 23
PM
1971
93523

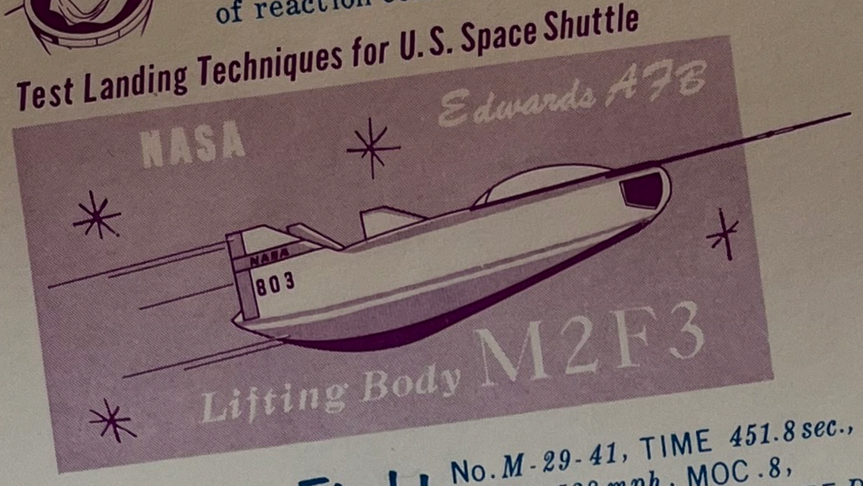
VIA AIR MAIL

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

Bill Dana, pilot
-abnormal shutdown of two rocket engines, -evaluation of reaction control system

Test Landing Techniques for U.S. Space Shuttle

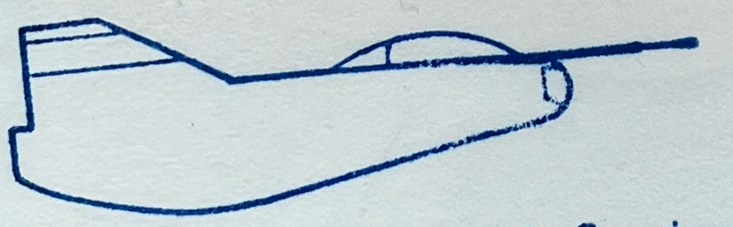
EDWARDS, CA
DEC 16
1971
93523



INTER/SPACE COVER

94th LB Flight No. M-29-41, TIME 451.8 sec., SPEED 528 mph, MOC .8, ALTITUDE 47,000 ft., DATE Dec. 16

M-2 LIFTING BODY



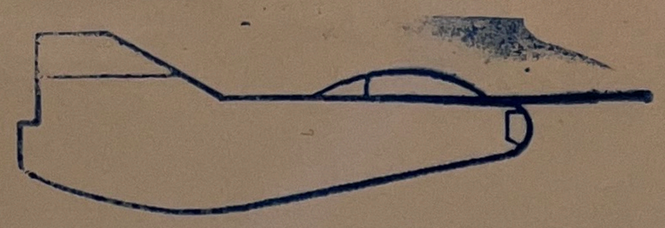
NASA Flight Research Center
Edwards, Calif.

EDWARDS, C
AUG 9
PM
1971
93523

VIA AIR MAIL

ROBERT BOUDWIN
1119 HARKER AVE
WOODBURY, N.

M-2 LIFTING BODY



NASA Flight Research Center
Edwards, Calif.

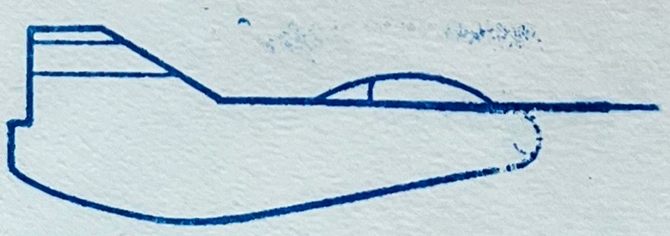
EDWARDS, CA
DEC 2
PM
1971
93523

U S AIR MAIL 11¢

VIA AIR MAIL

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

M-2 LIFTING BODY



NASA Flight Research Center
Edwards, Calif.

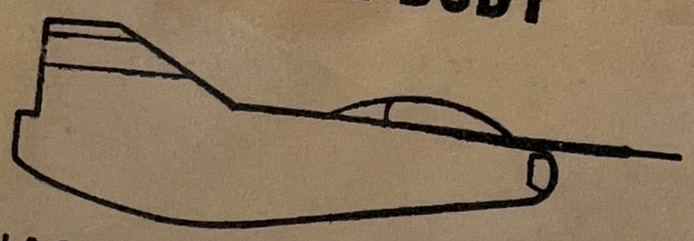
EDWARDS, CA
DEC 2
PM
1971
93523

U S AIR MAIL 11¢

VIA AIR MAIL

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

M-2 LIFTING BODY

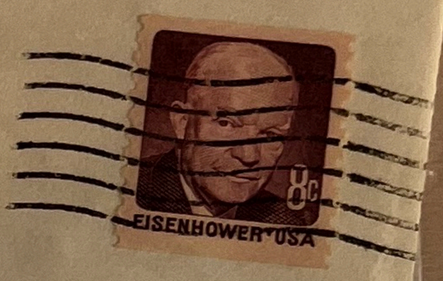


NASA Flight Research Center
Edwards, Calif.

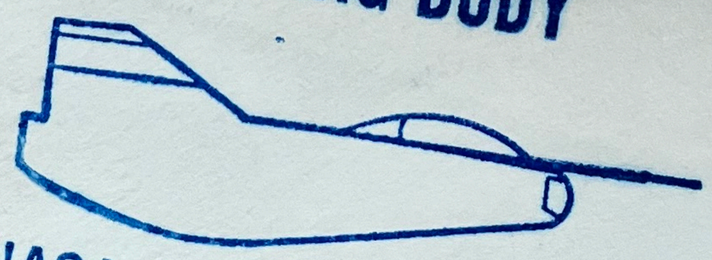
PILOT Bill Dana

FLIGHT NO. 30-45

EDWARDS, CA
JUL 25
PM
1972
93523



M-2 LIFTING BODY



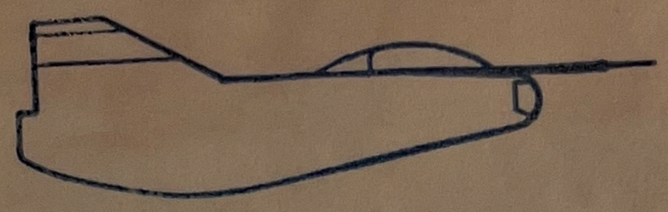
NASA Flight Research Center
Edwards, Calif.

EDWARDS, CA
AUG 25
PM
1971
93523

AIR MAIL

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

M-2 LIFTING BODY



EDWARDS, CA
AUG 11
PM
1972
93523

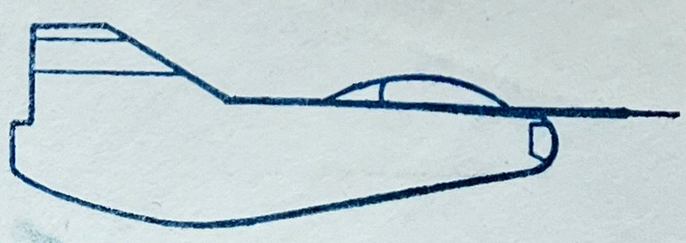
NASA Flight Research Center
Edwards, Calif.

PILOT Bill Dana

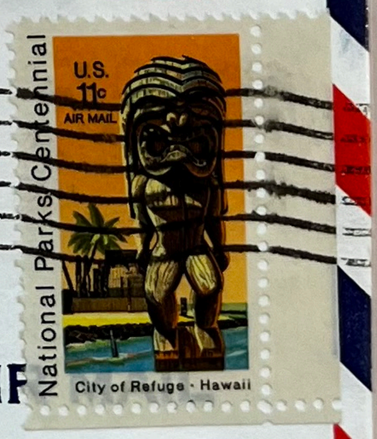
FLIGHT NO. M 31-46

LEITZ 4781

M-2 LIFTING BODY



EDWARDS, CA
AUG 11
PM
1972
93523



VIA AIR

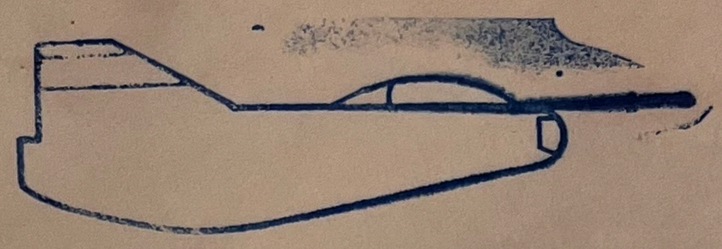
NASA Flight Research Center
Edwards, Calif. Bill Dana

PILOT

FLIGHT NO. M 31-46

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

M-2 LIFTING BODY



NASA Flight Research Center
Edwards, Calif.

EDWARDS, CA
DEC 16
4M
1971
93523

U S AIR MAIL 11¢

VIA AIR MAIL

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

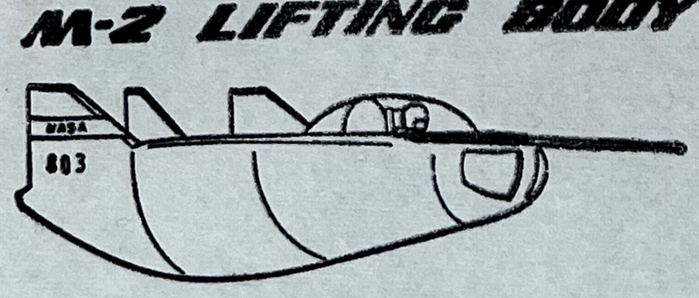
LEITZ 4781

MIT LUFTPOST
PAR AVION

USA 20¢
UNITED STATES AIR MAIL

SOUTH CAROLINA
1670
1970
6¢

M-2 LIFTING BODY



NASA Flight Research Center

CALIFORNIA

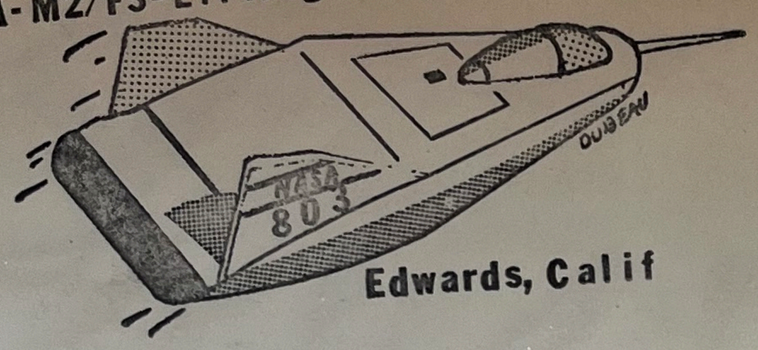
Mr. Josef Baier

6301 Krofdorf

a/Wingert 19

W-Germany

NASA-M2/F3-Lifting Body



Edwards, Calif

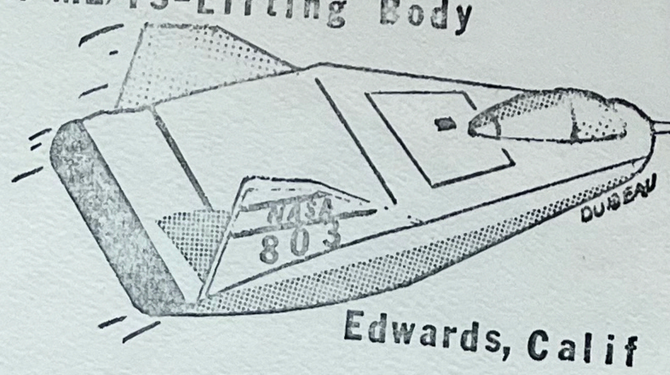
EDWARDS, CA
NOV 1
PM
1972
93523

USA 21¢
UNITED STATES AIR-MAIL

PILOT JOHN MANKE
FLIGHT NO. M 37-52

Herrn Oberstudienrat
Hans Rahn
8501 Feucht
Frühlingstr. 13
West Germany

NASA-M2/F3-Lifting Body



Edwards, Calif

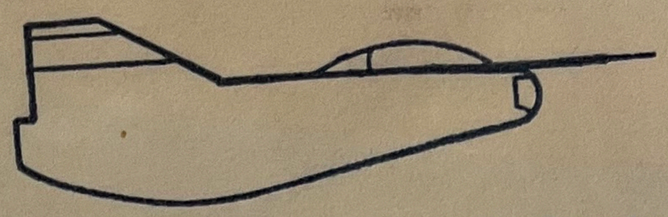
EDWARDS, CA
OCT 5
AM
1972
93523

U.S. AIR MAIL 10c
U.S. AIR MAIL 10c
THOMAS JEFFERSON
UNITED STATES

PILOT ~~Bill Dana~~
FLIGHT NO. ~~M 35-50~~

Herrn Oberstudienrat
Hans Rahn
8501 Feucht
Frühlingstr. 13
West Germany

M-2 LIFTING BODY



NASA Flight Research Center
Edwards, Calif.

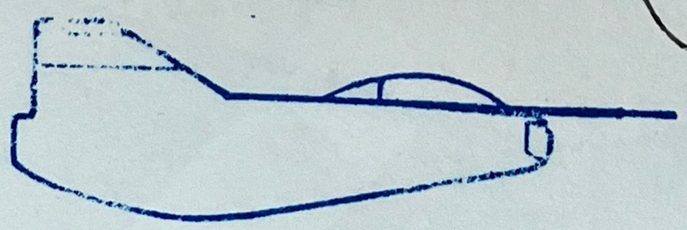
PILOT Bill Dana

FLIGHT NO. M 32-47

EDWARDS, CA
AUG 24
PM
1972
93523

LEITZ 4781

M-2 LIFTING BODY



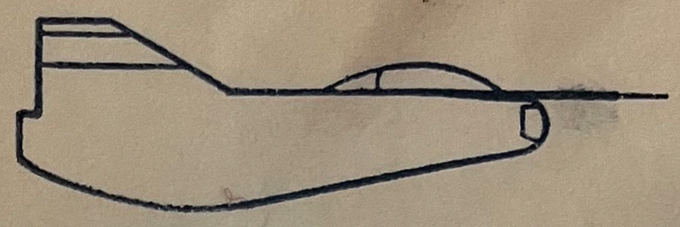
NASA Flight Research Center
Edwards, Calif.

EDWARDS, CA
AUG 25
PM
1971
93523

VIA AIR MAIL

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

M-2 LIFTING BODY



NASA Flight Research Center
Edwards, Calif.

PILOT Bill Dana

FLIGHT NO. M 33-48

EDWARDS, CA
SEP 12
PM
1972
93523

VIA AIR MAIL

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

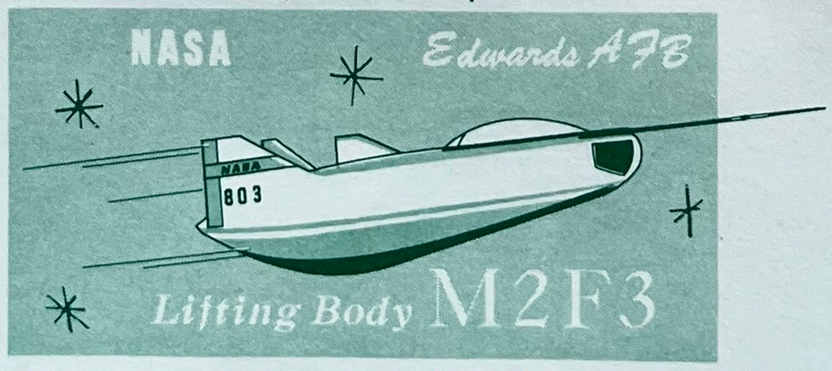
LEUTZ 4781

Bill Dana, pilot

-only 2 of 4 chambers ignite,
objectives not obtained,
follow alternate flight plan

Test Landing Techniques for U.S. Space Shuttle

EDWARDS, CA
SEP 12
PM
1972
93523

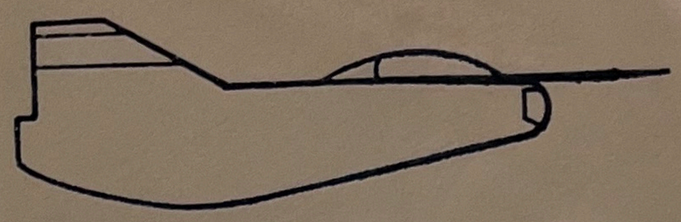


INTER SPACE COVER

98th Flight

No. *M-33-48*, **TIME** *385 sec.*,
SPEED *528 mph*, **MACH** *.80*,
ALTITUDE *46,000 ft.*, **DATE** *Sept. 12*

M-2 LIFTING BODY



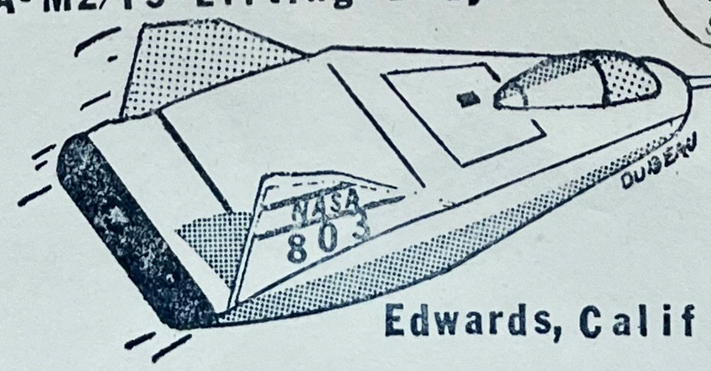
NASA Flight Research Center
Edwards, Calif.

PILOT Bill Dana
FLIGHT NO. M 34-49

EDWARDS, CA
SEP 27
1972
93523

8c
U.S. Postage

NASA-M2/F3-Lifting Body



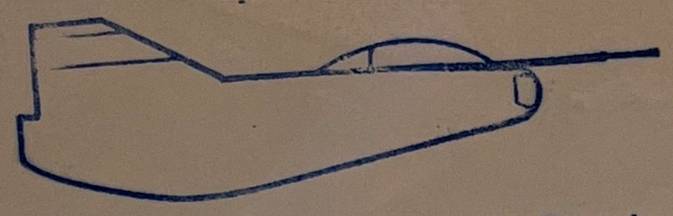
Edwards, Calif

EDWARDS, CA
SEP 27
1972
93523

PILOT Bill Dana
FLIGHT NO. M 34-49

Herrn Oberstudienrat
Hans Rahn
8501 Feucht
Frühlingstr. 13
West Germany

M-2 LIFTING BODY



EDWARDS, CA
SEP 24
PM
1971
93523

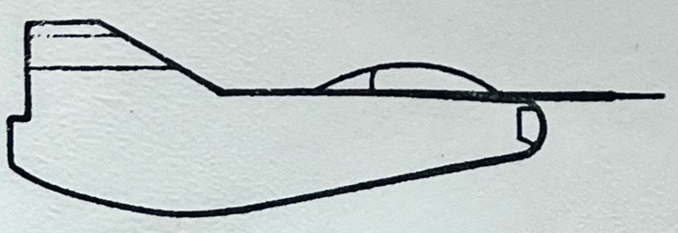
U S AIR MAIL 11¢

VIA AIR MAIL

NASA Flight Research Center
Edwards, Calif.

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

M-2 LIFTING BODY



EDWARDS, CA
OCT 5
AM
1972
93523

8c U.S.Postage

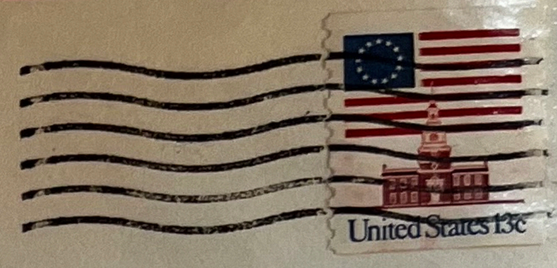
NASA Flight Research Center
Edwards, Calif.

PILOT Bill Dana

FLIGHT NO. M 35-50

GULFSTREAM II
SHUTTLE TRAINING AIRCRAFT (STA)

EDWARDS, CA
SEP 17
AM
1977
93523



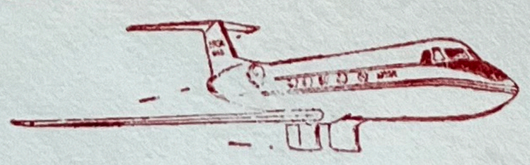
NASA FLIGHT RESEARCH CENTER
EDWARDS A.F.B., CALIFORNIA

T W O F L I G H T S

CREW- ASTRONAUT G. FULLERTON
TED MENDENHALL
CREW- ASTRONAUT FRED HAISE
TED MENDENHALL
PRACTICE SHUTTLE APPROACHES

LEITZ 4781

GULFSTREAM II
SHUTTLE TRAINING AIRCRAFT (STA)



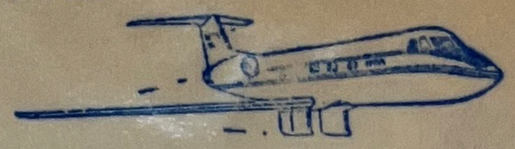
EDWARDS, CA
SEP 22
AM
1977
93523

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

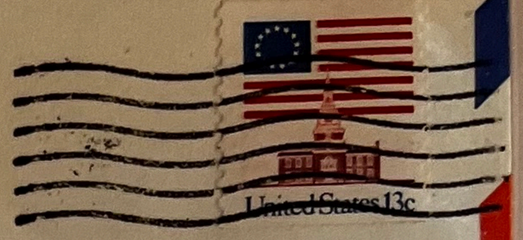
T W O F L I G H T S
CREW- ASTRONAUT FRED HAISE
ASTRONAUT G. FILLERTON
AL MANSON

CREW- ASTRONAUT DICK TRULY
AL MANSON
PRACTICE SHUTTLE APPROACHES

GULFSTREAM II
SHUTTLE TRAINING AIRCRAFT (STA)



EDWARDS, CA
SEP 8
AM
1977
93523



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

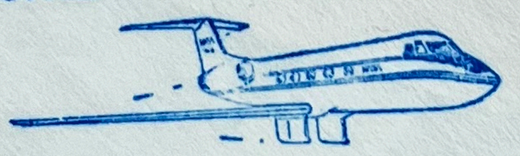
TAIL NO- 947

CREW- TED MENDENHALL
ASTRONAUT G. FULLERTON

PRACTICE SHUTTLE APPROACHES.

LEITZ 47781

GULFSTREAM II
SHUTTLE TRAINING AIRCRAFT (STA)



EDWARDS, CA
SEP 14
AM
1977
93523

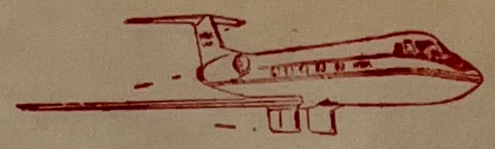
NASA FLIGHT RESEARCH CENTER
EDWARDS A.F.B., CALIFORNIA

TAIL NO.- 947

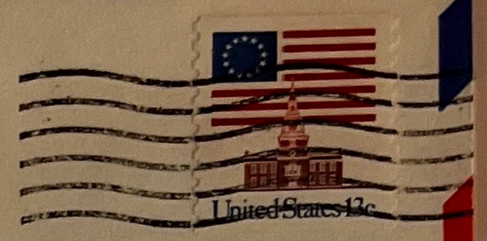
CREW- ASTRONAUT JOE ENGLE
DAVID GRIGGS

PRACTICE SHUTTLE APPROACHES

GULFSTREAM II
SHUTTLE TRAINING AIRCRAFT (STA)



EDWARDS, CA
SEP 1
AM
1977
93523



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

TAIL NO - 947

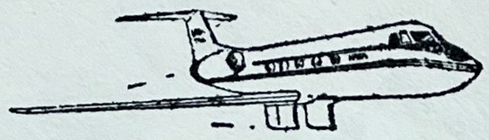
CREW- DAVID GRIGGS
ASTRONAUT JOE ENGLE

PRACTICE SHUTTLE APPROACHES.

LEITZ 4781

EDWARDS, CA
SEP 2
PM
1977
93523

GULFSTREAM II
SHUTTLE TRAINING AIRCRAFT (STA)



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

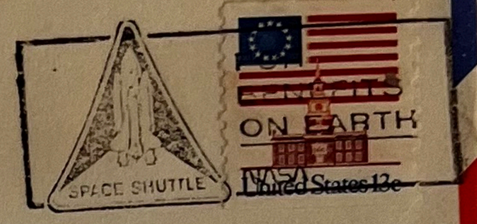
TAIL NO. 947

CREW- ASTRONAUT G. FULLERTON
DAVID GRIGGS
PRACTICE SHUTTLE APPROACHES.

GULFSTREAM II
SHUTTLE TRAINING AIRCRAFT (STA)

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

EDWARDS, CA
AUG 22
PM
1977
93523

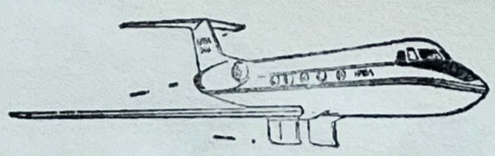


TAIL NO - 947

CREW- CHARLIE HAYES
ASTRONAUT J. ENGLE

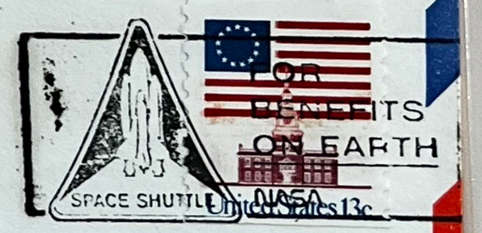
PRACTICE SHUTTLE APPROACHES.

GULFSTREAM II
SHUTTLE TRAINING AIRCRAFT (STA)



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

EDWARDS, CA
AUG 23
PM
1977
93523



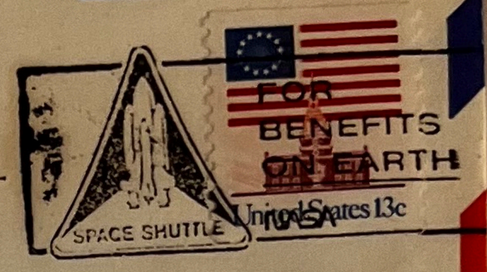
TAIL NO - 947

CREW- CHARLIE HAYES
ASTRONAUT JOE ENGLE

PRACTICE SHUTTLE APPROACHES.

GULFSTREAM II
SHUTTLE TRAINING AIRCRAFT (STA)

EDWARDS, CA.
AUG 11
AM
1977
93523

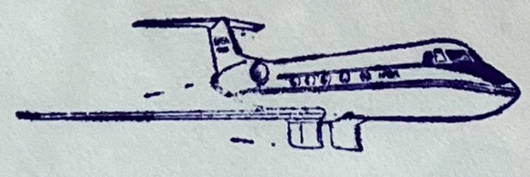


NASA FLIGHT RESEARCH CENTER
EDWARDS A.F.B., CALIFORNIA

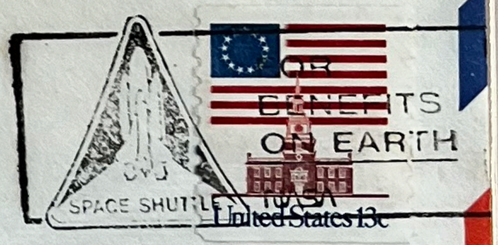
TWO FLIGHTS
CREW- ASTRONAUT FRED HAISE
DAVID GRIGGS
CREW- ASTRONAUT DICK TRULY
TED MENDENHALL
PRACTICE SHUTTLE APPROACHES

LEITZ 4781

GULFSTREAM II
SHUTTLE TRAINING AIRCRAFT (STA)



EDWARDS, CA.
AUG 19
PM
1977
93523



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

TAIL NO - 947

CREW- AL MANSON
ASTRONAUT D. TRULY

SHUTTLE APPROACHES & TRAINING.

GRUMMAN GULFSTREAM II
SHUTTLE TRAINING AIRCRAFT (STA)

WHITE SANDS MISSILE RANGE, N. MEX.
BIRTHPLACE OF AMERICA'S SPACE ACTIVITY

WHITE SANDS MISSILE RANGE, NMEX
NOV 15
PM
1977
88002

ASTRONAUT- HANK HARTSFIELD
INSTR- AL MANSON
FLT ENG- JOHN BASSHAM

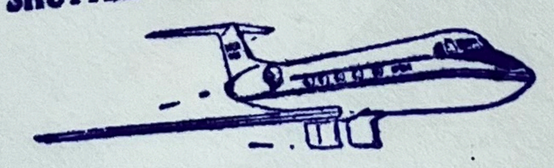
SHUTTLE FLIGHT TRAINING

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

LEITZ 4781

WHITE SANDS MISSILE RANGE, NMEX
NOV 18
PM
1977
88002

GRUMMAN GULFSTREAM II
SHUTTLE TRAINING AIRCRAFT (STA)



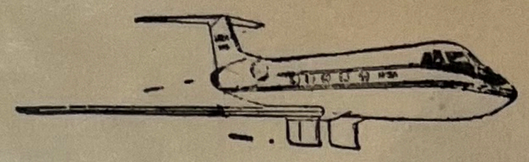
WHITE SANDS MISSILE RANGE, N. MEX.
BIRTHPLACE OF AMERICA'S SPACE ACTIVITY

VIA AIR MAIL

ASTRONAUT- KAROL BOBKO
INSTR.- AL MANSON
FLT. ENG.- JOHN BASSHAM

SHUTTLE TRAINING FLIGHT.

GRUMMAN GULFSTREAM II
SHUTTLE TRAINING AIRCRAFT (STA)



WHITE SANDS MISSILE RANGE, N. MEX.
BIRTHPLACE OF AMERICA'S SPACE ACTIVITY

WHITE SANDS MISSILE RANGE, N. MEX. NOV 1 PM 1977 88002

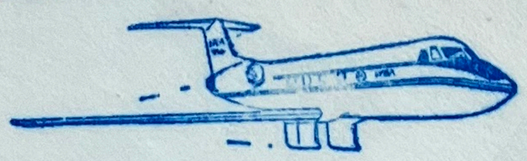
ASTRONAUT- BOB OVERMEYER
INSTR- CHARLIE HAYES
FLT. ENG.- GLENN PINGREY

PRACTICE SIMULATED LANDINGS

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

LEITZ 4781

GRUMMAN GULFSTREAM II
SHUTTLE TRAINING AIRCRAFT (STA)



WHITE SANDS MISSILE RANGE, N. MEX.
BIRTHPLACE OF AMERICA'S SPACE ACTIVITY

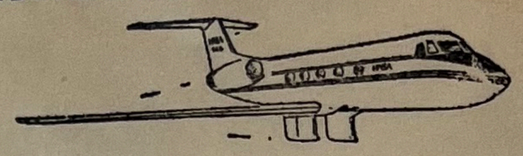
WHITE SANDS MISSILE RANGE, N. MEX. NOV 4 PM 1977 88002

ASTRONAUT- BOB CRIPPEN
INSTR.- CHARLIE HAYES
FLT. ENG.- GLENN PINGRY

PRACTICE SIMULATED LANDINGS.

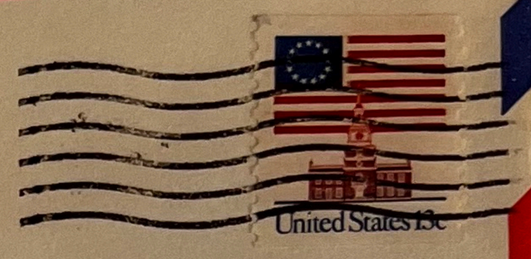
ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

GULFSTREAM II
SHUTTLE TRAINING AIRCRAFT (STA)



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

EDWARDS CA
OCT 25
AM
1977
93523

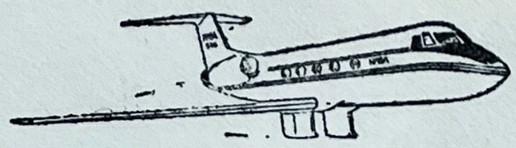


TAIL NO -946
CREW- ASTRONAUTS
GORDEON FULLERTON &
FRED HAISE
& CHARLIE HAYES

PRACTICE SHUTTLE APPROACHES.

LEITZ 4781

GULFSTREAM II
SHUTTLE TRAINING AIRCRAFT (STA)



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

EDWARDS CA
OCT 25
PM
1977
93523

TAIL- 946

CREW- DAVID GRIGGS
TED MENDENHALL

PRACTICE SHUTTLE APPROACHES.

GULFSTREAM II
SHUTTLE TRAINING AIRCRAFT (STA)

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

EDWARDS, CA
OCT 20
PM
1977
93523

United States 13c

TAIL- 947

CREW- ASTRONAUT-JOE ENGLE

FLT. ENG. TED MENDENHALL

PRACTICE SHUTTLE APPROACHES.

LEITZ 4781

GULFSTREAM II
SHUTTLE TRAINING AIRCRAFT (STA)

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

EDWARDS, CA
OCT 21
AM
1977
93523

United States 13c

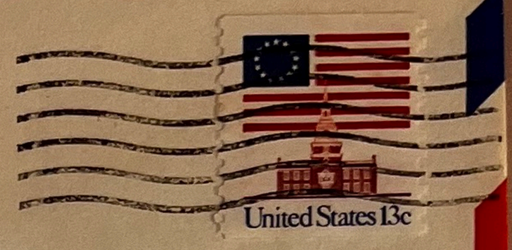
TAIL NO. - 947

CREW- ASTRONAUTS FRED HAISE &
G. FULLERTON
INSTR.- TED MENDENHALL
PRACTICE SHUTTLE APPROACHES.

GULFSTREAM II
SHUTTLE TRAINING AIRCRAFT (STA)

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

EDWARDS, CA
OCT 11
AM
1977
93523



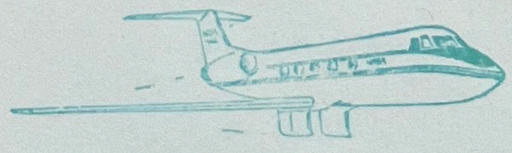
TAIL NO - 947

CREW- ASTRONAUT JOE ENGLE
DAVID GRIGGS

PRACTICE SHUTTLE APPROACHES

LEITZ 4781

GULFSTREAM II
SHUTTLE TRAINING AIRCRAFT (STA)



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

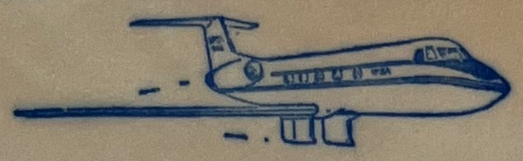
EDWARDS, CA
OCT 17
AM
1977
93523

TAIL NO - 947

CREW- TED MENDENHALL
AL MANSON

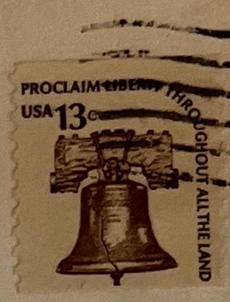
PRACTICE SHUTTLE APPROACH.

GRUMMAN GULFSTREAM II
SHUTTLE TRAINING AIRCRAFT (STA)



WHITE SANDS MISSILE RANGE, N. MEX.
BIRTHPLACE OF AMERICA'S SPACE ACTIVITY

WHITE SANDS MISSILE RANGE, N. MEX.
FEB 2 PM 1978



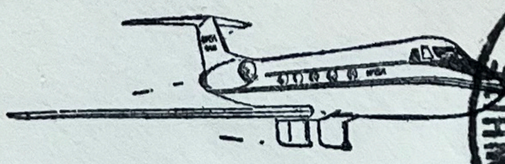
2 SHUTTLE TRAINING FLIGHTS

ASTRONAUT- JOHN YOUNG
INSTR.- ED MENDENHALL
SAME CREW IN ANOTHER FLIGHT
BUT D. GRIGGS. IN T-38

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

LEITZ 4781

GRUMMAN GULFSTREAM II
SHUTTLE TRAINING AIRCRAFT (STA)



WHITE SANDS MISSILE RANGE, N. MEX.
BIRTHPLACE OF AMERICA'S SPACE ACTIVITY

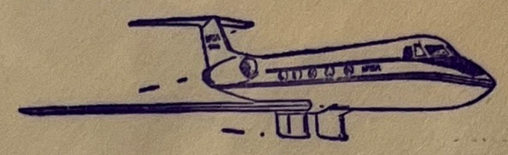
WHITE SANDS MISSILE RANGE, N. MEX.
FEB 28 P.M. 1978

SHUTTLE TRAINING FLIGHT

ASTRONAUT- BRUCE MC CANDLESS
INSTR.- CHARLIE HAYES
FLT. ENG.- HARLEY WEYER

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

GRUMMAN GULFSTREAM II
SHUTTLE TRAINING AIRCRAFT (STA)



WHITE SANDS MISSILE RANGE, N. MEX.
BIRTHPLACE OF AMERICA'S SPACE ACTIVITY

WHITE SANDS MISSILE RANGE DEC 9 PM 1977 88002

United States 13c

VIA AIR MAIL

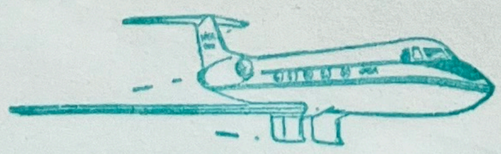
ASTRONAUT- ROBERT CRIPPEN
INSTR.- CHARLIE HAYES
FLT. ENG.- GLENN PINGRY

SHUTTLE TRAINING FLIGHT

[redacted]
1119 HARKER AVE.
WOODBURY, N. J. 08096

LEITZ 4781

GRUMMAN GULFSTREAM II
SHUTTLE TRAINING AIRCRAFT (STA)



WHITE SANDS MISSILE RANGE, N. MEX.
BIRTHPLACE OF AMERICA'S SPACE ACTIVITY

WHITE SANDS MISSILE RANGE FEB 1 PM 1978 88002

PROCLAIM LIBERTY THROUGHOUT ALL THE LAND
USA 13c

VIA AIR MAIL

SHUTTLE TRAINING FLIGHT

ASTRONAUT- TOM MATTINGLY
INSTR.- ED MENDENHALL
FLT. ENG.- JOHN BASSHAM

16 mattingly

GRUMMAN GULFSTREAM II
SHUTTLE TRAINING AIRCRAFT (STA)

WHITE SANDS MISSILE RANGE, N. MEX.
BIRTHPLACE OF AMERICA'S SPACE ACTIVITY

WHITE SANDS MISSILE RANGE, NM
DEC 1
PM
1977
88002

United States 13c

VIA AIR MAIL

ASTRONAUT- ROBERT CRIPPEN
INSTR.- ED MENDENHALL
FLT. ENG.- D. BLACKSHEAR

SHUTTLE TRAINING FLIGHT

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096 U.S.A.

LEITZ 4781

GRUMMAN GULFSTREAM II
SHUTTLE TRAINING AIRCRAFT (STA)

WHITE SANDS MISSILE RANGE, N. MEX.
BIRTHPLACE OF AMERICA'S SPACE ACTIVITY

WHITE SANDS MISSILE RANGE, NM
DEC 7
PM
1977
88002

United States 13c

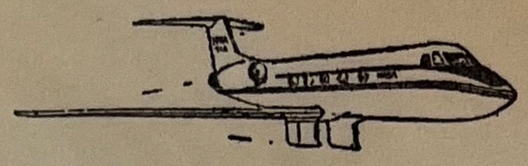
VIA AIR MAIL

ASTRONAUT- KAROL BOBKO
INSTR.- CHARLIE HAYES
FLT. ENG.- GLENN PINGRY

SHUTTLE TRAINING FLIGHT

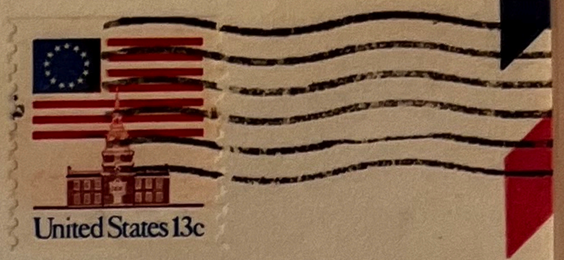
ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

GRUMMAN GULFSTREAM II
SHUTTLE TRAINING AIRCRAFT (STA)



WHITE SANDS MISSILE RANGE, N. MEX.
BIRTHPLACE OF AMERICA'S SPACE ACTIVITY

WHITE SANDS MISSILE RANGE N. MEX. 88002
NOV 29
PM
1977



VIA AIR MAIL

ASTRONAUT-- KAROL BOBKO
INSTR.-- DAVID GRIGGS
FLT. ENG.-- D. BLACKSHEAR

SHUTTLE TRAINING FLIGHT

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096 U.S.A.

LEITZ 4781

GRUMMAN GULFSTREAM II
SHUTTLE TRAINING AIRCRAFT (STA)

WHITE SANDS MISSILE RANGE, N. MEX.
BIRTHPLACE OF AMERICA'S SPACE ACTIVITY

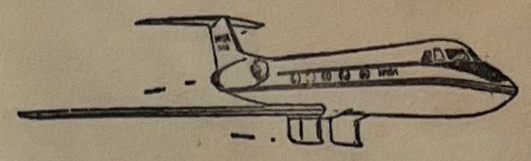
WHITE SANDS MISSILE RANGE N. MEX. 88002
NOV
23
PM
1977

VIA AIR MAIL

ASTRONAUT-- HANK HARTSFIELD
INSTR.- DAVID GRIGGS
FLT. ENG.- HARLEY WEYER
SHUTTLE TRAINING FLIGHT.

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096 U.S.A.

GRUMMAN GULFSTREAM II
SHUTTLE TRAINING AIRCRAFT (STA)



WHITE SANDS MISSILE RANGE, N. MEX.
BIRTHPLACE OF AMERICA'S SPACE ACTIVITY

WHITE SANDS MISSILE RANGE, NM
FEB 16
PM
1978
88002

SHUTTLE TRAINING FLIGHT
ASTRONAUT- JOHN YOUNG
INSTR.- AL MANSON
FLT. ENG.- D. BLACKSHEAR
JOE ENGLE IN T-38

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY. N. J. 0809

LEITZ 4781

GRUMMAN GULFSTREAM II
SHUTTLE TRAINING AIRCRAFT (STA)

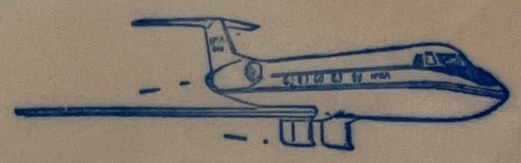
WHITE SANDS MISSILE RANGE, N. MEX.
BIRTHPLACE OF AMERICA'S SPACE ACTIVITY

WHITE SANDS MISSILE RANGE, NM
FEB 24
PM
1978
88002

SHUTTLE TRAINING FLIGHT
ASTRONAUT- TOM MATTINGLY
INSTR.- AL MANSON
FLT. ENG.- JOHN BASSHAM &
P. BOWLUS
ASTRONAUTS WEITZ & BRAND IN
T-38 TRAINERS.

ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY. N. J. 08098

GRUMMAN GULFSTREAM II
SHUTTLE TRAINING AIRCRAFT (STA)



WHITE SANDS MISSILE RANGE, N. MEX.
BIRTHPLACE OF AMERICA'S SPACE ACTIVITY

WHITE SANDS MISSILE RANGE N.MEX. FEB 10 PM 1978 88002

United States 13c

SHUTTLE TRAINING FLIGHT

ASTRONAUT.. ROBERT OVERMEYER
INSTR.. DAVID GRIGGS
FLT. ENG.. HARLEY WEYER

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

LEITZ 4781

GRUMMAN GULFSTREAM II
SHUTTLE TRAINING AIRCRAFT (STA)

WHITE SANDS MISSILE RANGE, N. MEX.
BIRTHPLACE OF AMERICA'S SPACE ACTIVITY

WHITE SANDS MISSILE RANGE N.MEX. FEB 14 PM 1978 88002

United States 13c

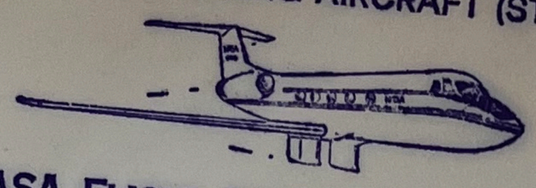
SHUTTLE TRAINING FLIGHT

ASTRONAUT- JACK LOUSMA
INSTR.- CHARLIE HAYES
FLT. ENG.- GLENN PINGREY

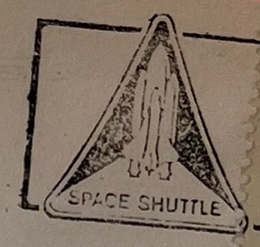
ROBERT BOUDWIN
1119 HARKER AVE.
WOODBURY, N. J. 08096

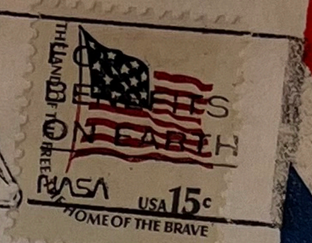
EDWARDS, CA
NOV 10
AM
1980
93523

GULFSTREAM II
SHUTTLE TRAINING AIRCRAFT (STA)



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





ORBITER LANDING EVALUATION
TEST FLIGHTS
(T W O F L I G H T S)
(SATURDAY 11-8 FLIGHT)

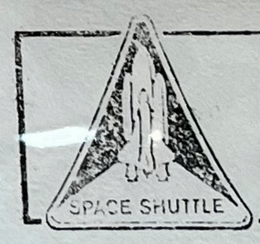
CREW- AST. JOHN YOUNG
TIME- 2 HOURS A/C-947

CREW- AST. BOB CRIPPEN
TIME- 2 HOURS A/C-947

EDWARDS, CA
DEC 8
AM
1980
93523

GULFSTREAM II
SHUTTLE TRAINING AIRCRAFT (STA)

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



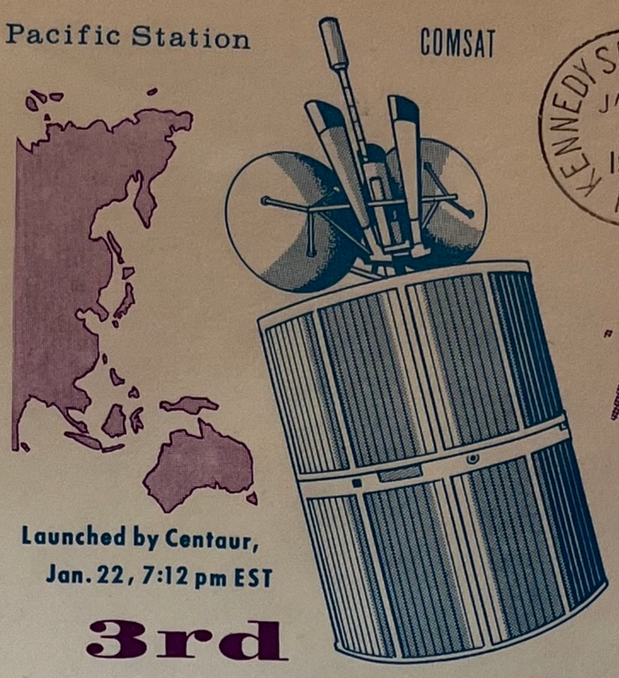
ORBITER LANDING EVALUATION
TEST FLIGHTS.
(T W O F L I G H T S)
(SATURDAY 12-6- FLIGHT)

CREW- AST. R. CRIPPEN
TIME- 2 HOURS A/C-947

CREW- AST. JOHN YOUNG
TIME- 2 HOURS A/C-947

Pacific Station

COMSAT



KENNEDY SPACE CENTER FL JAN 24 AM 1972

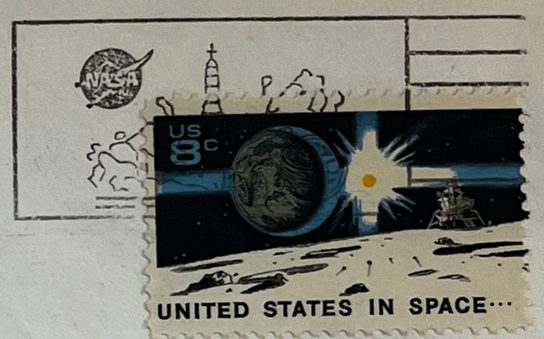
Launched by Centaur,
Jan. 22, 7:12 pm EST

3rd
INTELSAT IV

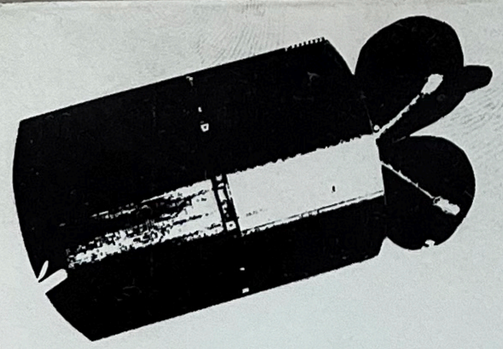
- to transmit President's trip through special 50 ton station in China

INTEL SATELLITE 4

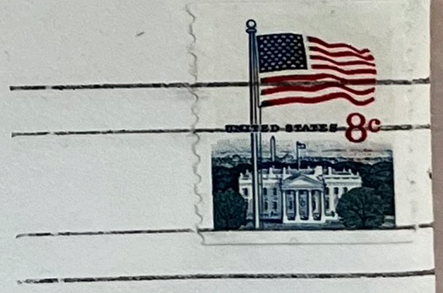
KENNEDY SPACE CENTER FL JAN 24 AM 1972



Dieter Körner
Auf der Bleiche 18
D 4795 Delbrück
West Germany



CAPE CANAVERAL FL JAN 23 AM 1972 32920

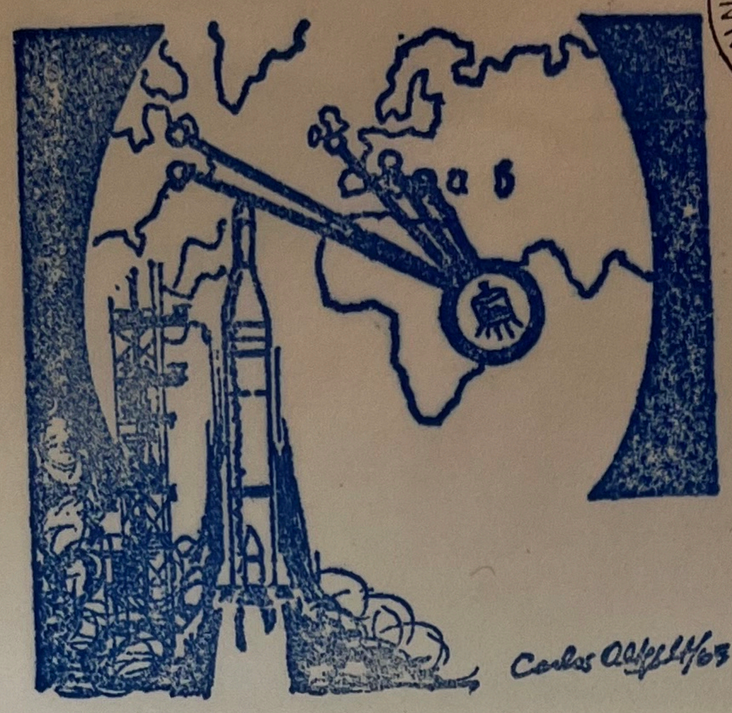


Intelsat 4 can carry 5000
Telephone or 12 Color TV
Circuits simultaneously.
A temporary earth station,
2 moving vans with a giant
antenna on top is already
set up in PEKING. Intelsat
4 links stations from
Australia, Hong Kong, Taiwan,
Korea, Japan, Siam, NZ, Phil.
Isls and USA.

INTELSAT 4 Jan 23 1972
New Communication Satellite
22,300 miles in space. In time
to carry newspaper and TV reports
OF PRESIDENT NIXONS TRIP
TO CHINA

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

INTEL SATELLITE 4



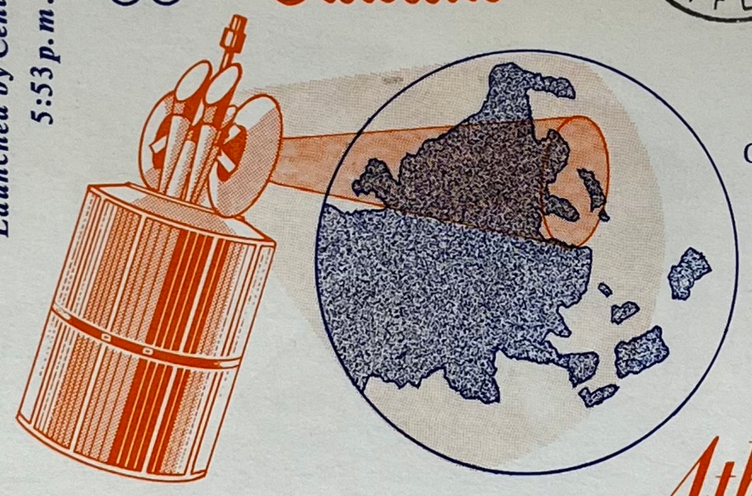
Carlos Alfaro 4/63

KENNEDY SPACE CENTER FL
JUN 13 PM 1972

Dieter Körner
Auf der Bleiche 18
D 4795 Delbrück
West Germany

Olympic Relay Satellite –

Launched by Centaur, 5:53 p.m. EDT



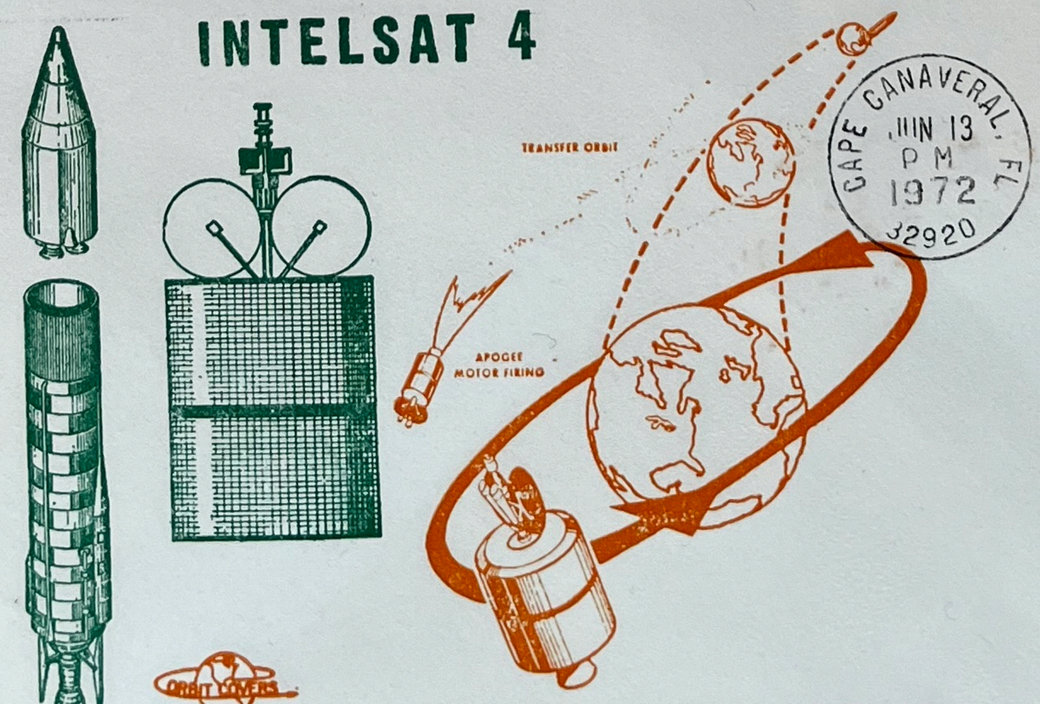
Positioned Over Indian Ocean

KENNEDY SPACE CENTER FL
JUN 13 PM 1972

Completes operational trio of comsats that will transmit Munich Summer Olympics worldwide

4th Intelsat IV

INTELSAT 4



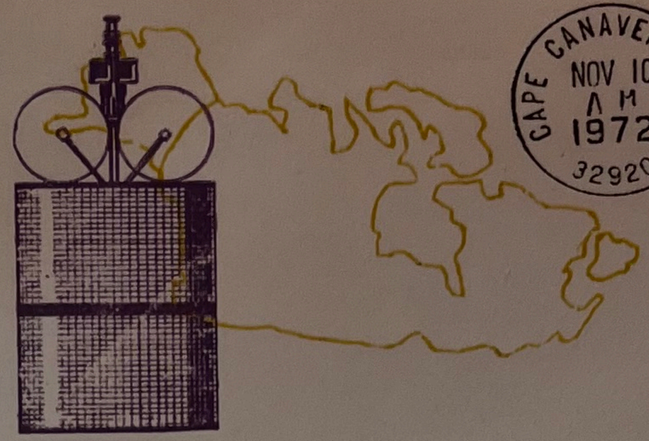
CAPE CANAVERAL, FL
JUN 13 PM 1972
32920

ORBIT COVERS

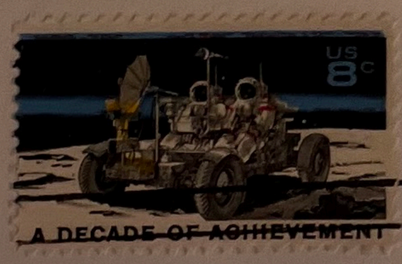
Orbiting Switchboard For One-Third Of World
1½ Ton Spacecraft Placed Over Indian Ocean
Can Carry 6,000 Phone Conversations &
12 Color TV Channels At The Same Time.

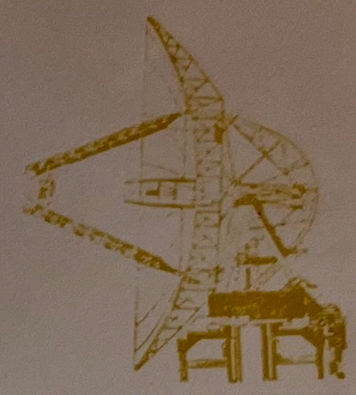
INTELSAT - CANADA

"ANIK - 1"



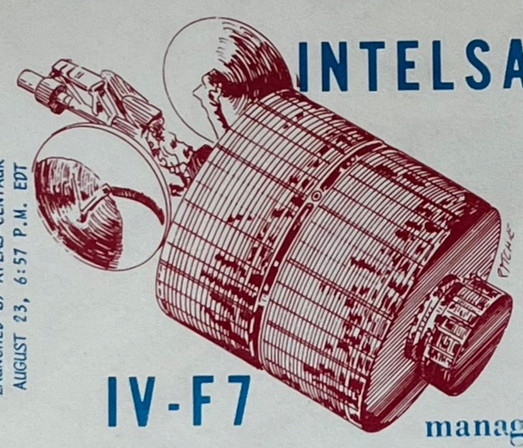
CAPE CANAVERAL, FL
NOV 10
A M
1972
32920





210 FOOT DISH ANTENNA

To Serve All of Canada & Arctic Regions
8600 Phone Call Capacity And 10 Color Channels
In Equatorial Orbit 22,300 Miles Above Earth.



LAUNCHED BY ATLAS-CENTAUR
AUGUST 23, 6:57 P.M. EDT

KENNEDY SPACE CENTER, FL
AUG 23
P M
1973

INTELSAT

POSITIONED IN SYNCHRONOUS ORBIT
22,300 MILES ABOVE THE EQUATOR
OVER THE ATLANTIC OCEAN

IV-F7

managed by COMSAT

5TH IN INTELSAT-4 COMMUNICATION SATELLITE GLOBAL NETWORK

Ser. No. 2386

-Launched by Centaur, 6:57 pm EDT

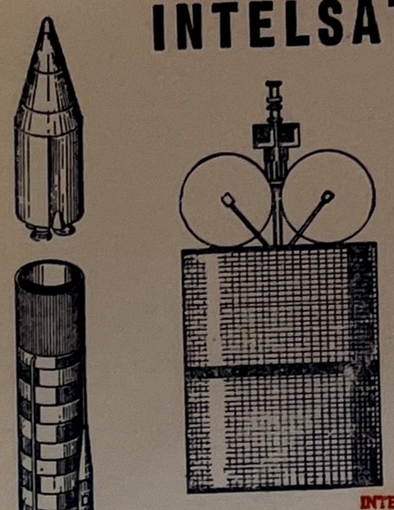
CAPE CANAVERAL, FL
AUG 23
PM
1973
32920

INTER SPACE
COVER

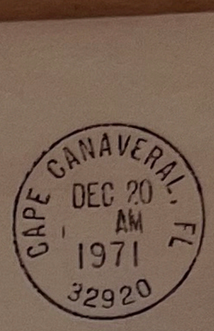
10th Anniv.
First
Satellite
Phone Call
—
Aug. 23,
1963

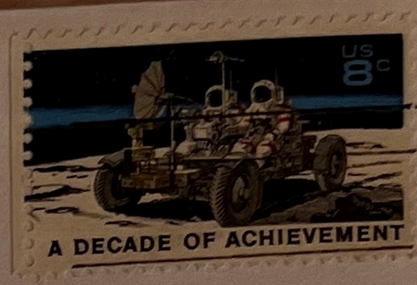
PRESIDENT KENNEDY SPEAKS TO
PRIME MINISTER BALEWA OF NIGERIA

INTELSAT - 4



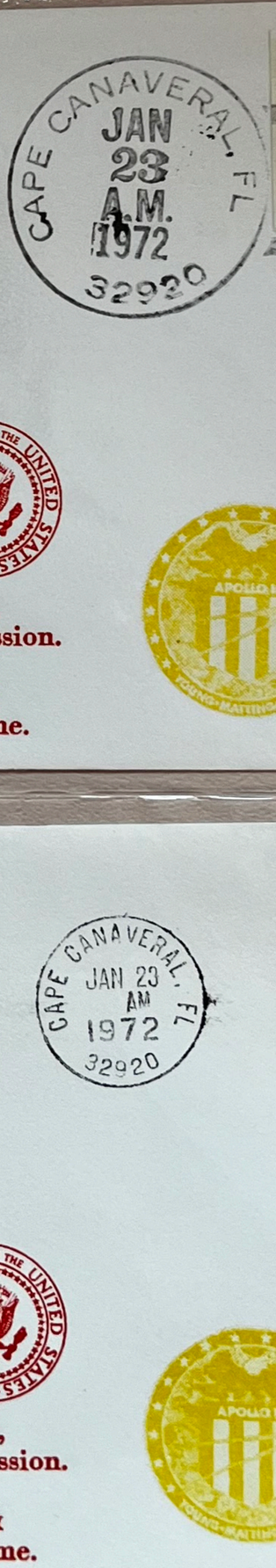
81 Nation Communication Satellite Orbited
22,000 Miles Over Atlantic Ocean Services
North America, Europe and Africa.

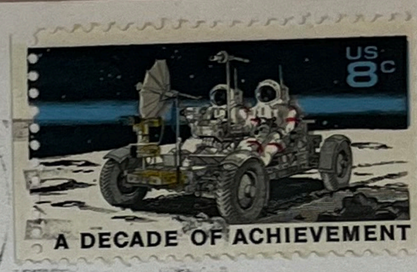


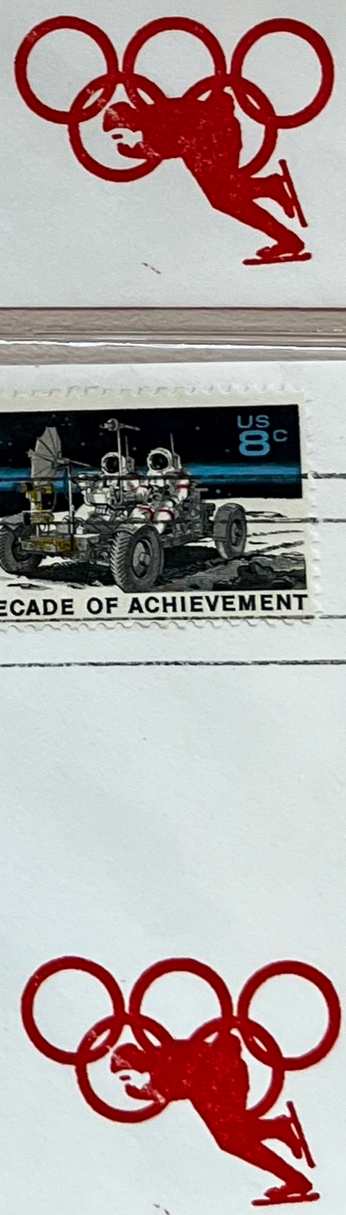


INTELSAT - 4

To Carry President Nixon's China Visit,
1972 Sapporo Olympics & Apollo-16 Mission.
In Circular Orbit Over Pacific Ocean
Can Carry 6,000 Phone Conversations &
12 Color TV Channels At The Same Time.

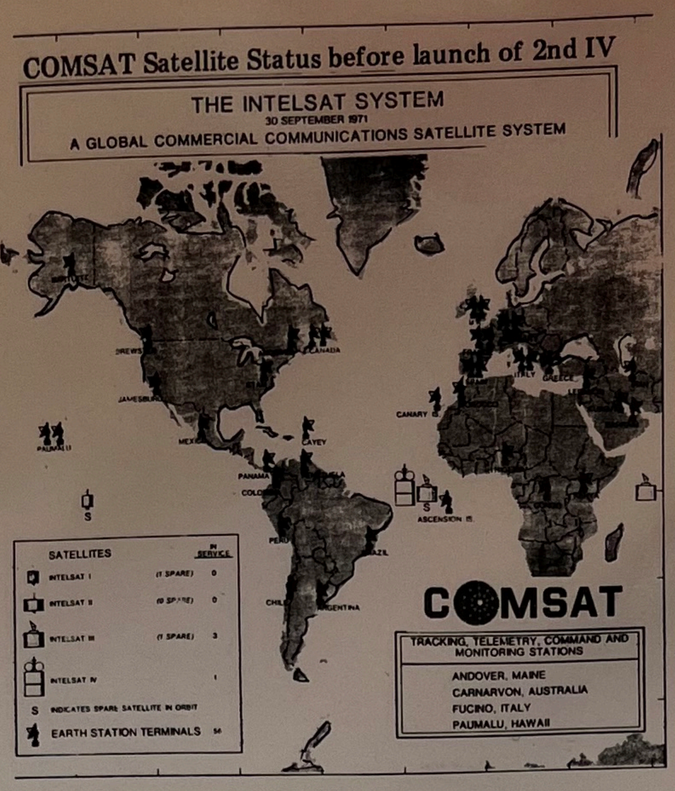


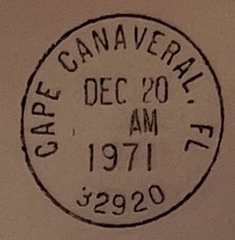




INTELSAT - 4

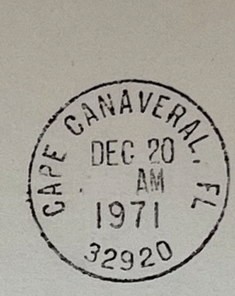
To Carry President Nixon's China Visit,
1972 Sapporo Olympics & Apollo-16 Mission.
In Circular Orbit Over Pacific Ocean
Can Carry 6,000 Phone Conversations &
12 Color TV Channels At The Same Time.





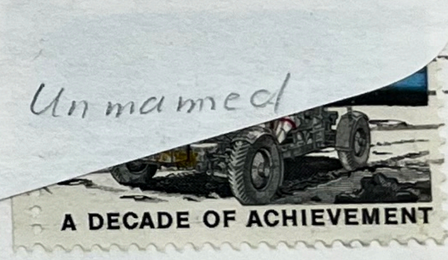
Second Intelsat - IV telecommunication satellite launched. Cachet depicts the Intelsat System before the launch of 2nd Intelsat - IV.

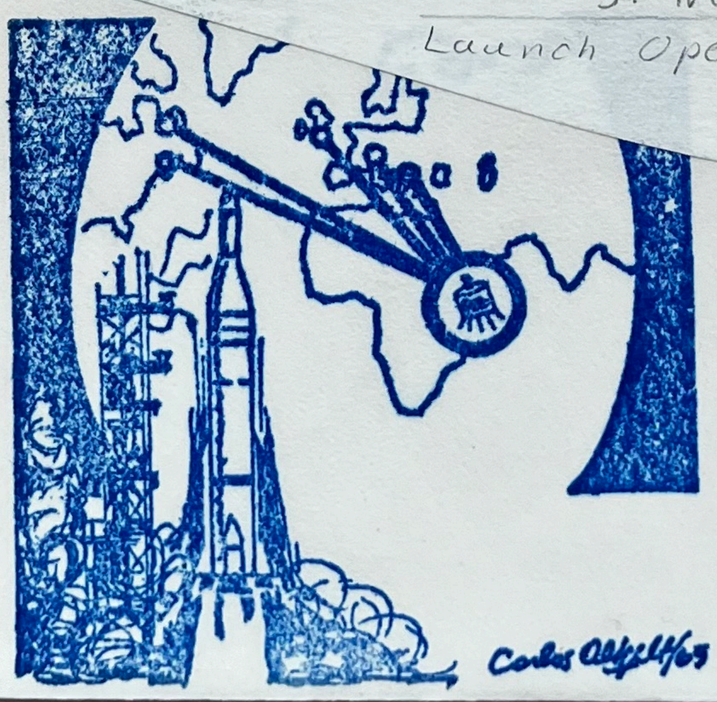
C. SARZIN
PORT WASHINGTON
L.I., NEW YORK 11050



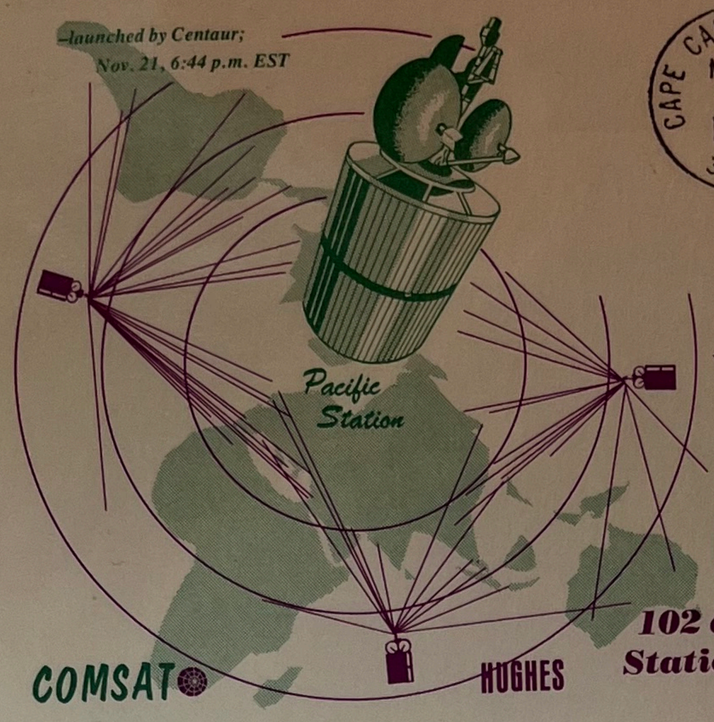
Dr. K. Debus
KSC Director

John J. Neilon Director Unmanned Launch Operations KSC





Dieter Körner
Auf der Bleiche 18
D 4795 Delbrück
West Germany



CAPE CANAVERAL, FL
NOV 21
P M
1974
32920

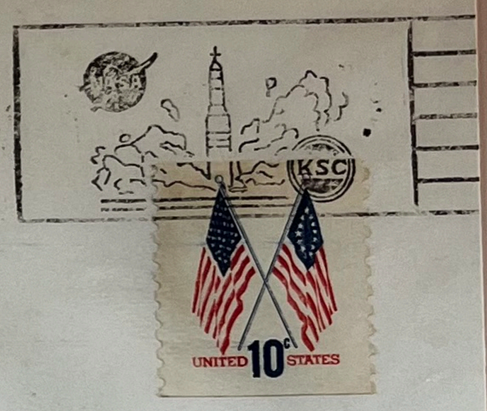
INTER/SPACE COVER

—GLOBAL COMMUNICATIONS NETWORK

SIXTH (F-8) INTELSAT IV

102 antennas at 80 Earth Stations in 58 countries

KENNEDY SPACE CENTER
NOV 21
P M
1974
FL



INTELSAT IV - F8

6000 VOICE CONVERSATIONS

12 SIMULTANEOUS COLOR TV PROGRAMS

- 6TH INTELSAT IV LINK IN GLOBAL COMMUNICATION SATELLITE NETWORK
- STATIONED IN SYNCHRONOUS ORBIT OVER PACIFIC OCEAN.
- OPERATION WILL BE DIRECTED BY THE COMMUNICATIONS SATELLITE CORPORATION (COMSAT), MANAGER OF SPACE OPERATIONS FOR THE 87 NATION INTERNATIONAL TELECOMMUNICATIONS SATELLITE ORGANIZATION (INTELSAT)

LAUNCHED BY ATLAS CENTAUR 32
COMPLEX 36 – 6:44 P.M. EST, 21 NOV. 1974

CAPE CANAVERAL, FL
FEB 20
P M
1975
32920

INTER/SPACE COVER

-30 million dollar satellite planned for Indian Ocean Station in COMSAT commercial communications global network

INTELSAT IV (F-6)

·seventh in series

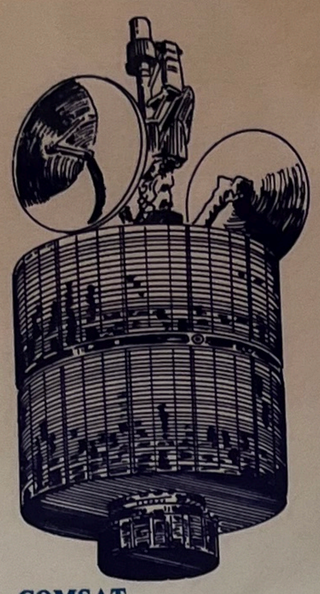
-first Atlas-Centaur failure since 1971

Falls Into Atlantic Ocean

INTELSAT

IV -F6

20th Launch of Intelsat Series



COMSAT

AFETR TEST NO. 3757

KENNEDY SPACE CENTER FL FEB 20 PM 1975

Tumbled out of control 2 minutes and 20 seconds after liftoff.

Plunged into Atlantic Ocean after Destruct Signal was given by Range Safety Officer.

$30 million dollar satellite was to be last of the Intelsat IV missions and was slated for a Pacific station over Indian Ocean.

Atlas Centaur failure investigation at NASA/Lewis Research Center.

Built By
Hughes Aircraft Co.

Launched from Complex 36
By Atlas Centaur 33
February 20, 1975 - 6:35 P.M. EST

7th Intelsat IV

AFETR Test No. 6103

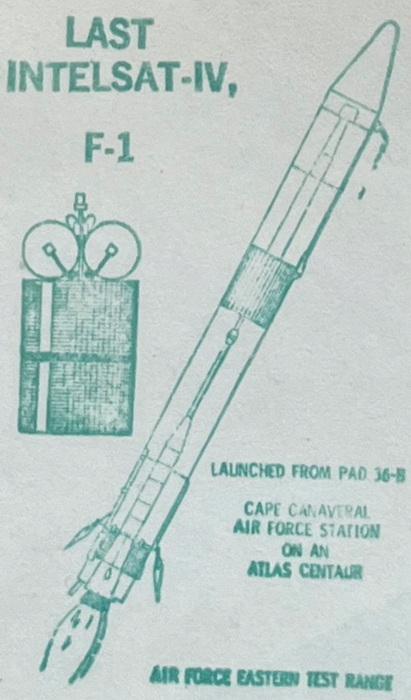
Placed In Synchronous Orbit Over Indian Ocean

- 8th - And Last - Of Intelsat IV Comsat Series
- Will Complete Intelsat IV Worldwide Communications Network
- Managed By COMSAT

KENNEDY SPACE CENTER FL MAY 22 PM 1975

INTELSAT IV F-1

LAST INTELSAT-IV, F-1



LAUNCHED FROM PAD 36-B
CAPE CANAVERAL
AIR FORCE STATION
ON AN
ATLAS CENTAUR

AIR FORCE EASTERN TEST RANGE

CAPE CANAVERAL FL MAY 22 PM 1975 32920

PRINTED MATTER

ROBERT KELLER
453 IBBENBÜREN
Münsterstr.113

W.Germany

KENNEDY SPACE CENTER FL
MAY 22
PM
1975

-7th Intelsat To Go Into Orbit
(of 8 Attempts)

-each satellite can carry 3500 two-way telephone conversations or 12 TV channels and other communications traffic

FINAL INTELSAT IV LAUNCH

-launched by Atlas-Centaur
May 22, 1975

CAPE CANAVERAL, FL
MAY 22
PM
1975
32920

-7th Intelsat To Go Into Orbit
(of 8 Attempts)

-each satellite can carry 3500 two-way telephone conversations or 12 TV channels and other communications traffic

FINAL INTELSAT IV LAUNCH

-launched by Atlas-Centaur
May 22, 1975

CAPE CANAVERAL, FL
SEP 25
PM
1975
32920

-SYNCHRONOUS ON ATLANTIC STATION

GLOBAL COMMUNICATIONS SATELLITE SYSTEM

- *First In A Series Which Has Two-thirds Greater Communications Capability Than The Old Intelsat IV Series*

-One Satellite Provides Capacity For 6250 Two-way Voice Circuits AND Two Television Channels

FIRST INTELSAT IVA (F-1)

LEITZ 4781

NASA
BERMUDA STATION
ON THE OCCASION OF

Intelsat IV-A F-2

M. Crowley

JAN 29 1976

BERMUDA
12 cents
JACARANDA

MRS. EVA KOTSCHEDOFF
HOHESTR. 99
D-7257 DITZINGEN 5
WEST GERMANY

COMSAT
-Launched By Atlas Centaur Sept. 25, 1975

FIRST INTELSAT IVA (F-1)

KENNEDY SPACE CENTER FL
SEP25 PM 1975

PIONEER ★ JUPITER
US 10c

-SYNCHRONOUS ON ATLANTIC STATION

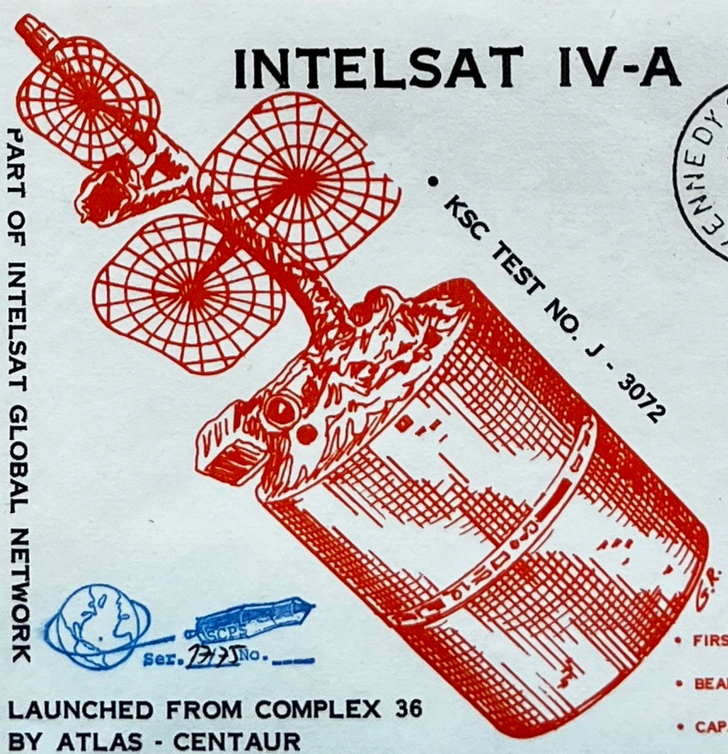
GLOBAL COMMUNICATIONS SATELLITE SYSTEM

- First In A Series Which Has Two-thirds Greater Communications Capability Than The Old Intelsat IV Series

-One Satellite Provides Capacity For 6250 Two-way Voice Circuits AND Two Television Channels

INTELSAT IV-A

PART OF INTELSAT GLOBAL NETWORK



KENNEDY SPACE CENTER FL
SEP25 PM 1975

LAUNCHED FROM COMPLEX 36
BY ATLAS - CENTAUR
8:17 P.M. EDT, 25 SEPTEMBER, 1975

- FIRST IN SERIES OF 4TH GENERATION COMMUNICATION SATELLITES.
- BEAM DEVERSITY TECHNIQUE PERMITS SIMULTANEOUS REUSE OF SAME FREQUENCIES.
- CAPACITY APPROXIMATELY DOUBLE THAT OF INTELSAT IV SERIES SATELLITES.
- POSITIONED IN SYCHRONOUS ORBIT OVER ATLANTIC OCEAN.

LEITZ 4781

INTELSAT - IV A

F-2

LAUNCHED FROM PAD 36-B

CAPE CANAVERAL
AIR FORCE STATION
ON AN
ATLAS CENTAUR

AIR FORCE EASTERN TEST RANGE

CAPE CANAVERAL, FL
JAN
29
PM
1976
32920

R.KELLER
433 Ibbenbüren
Ünsterstr.113

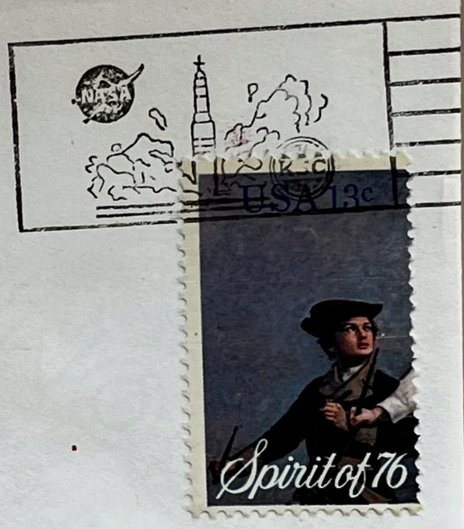
W.Germany

KSC Test No. J-4740

SYNCHRONOUS ORBIT
OVER ATLANTIC

KENNEDY SPACE CENTER FL
JAN 29
PM
1976

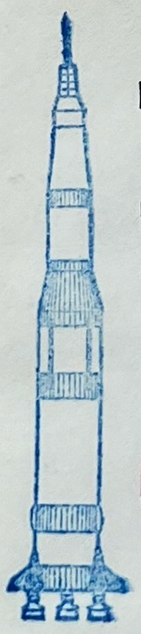
SECOND IN SERIES OF
4TH GENERATION INTELSAT
GLOBAL NETWORK
COMMUNICATION
SATELLITES



INTELSAT IVA-F2

Launched by Atlas-Centaur 37 from Launch Complex 36 Jan. 29, 1976-6:56 P.M. EST.

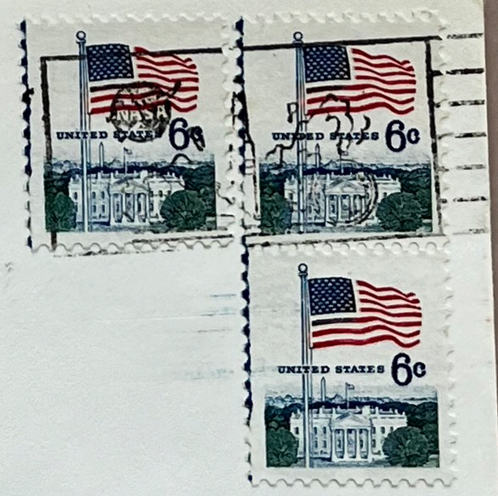
Launch
INTELSAT IVA-F2
by Atlas Centaur 37
from LC-36



NATIONAL AERONAUTICS AND SPACE ADMINISTRATION U.S.A.

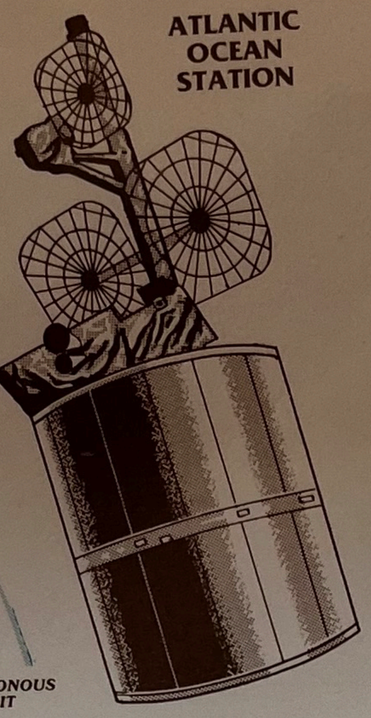
JAN 29 1976

KENNEDY SPACE CENTER FL
JAN 29
PM
1976



Public Affairs Center
P.O. Box 5109
D-7257 Ditzingen 5/Germany

-launched by Atlas-Centaur
6:56 PM. Jan. 29, 1976



CAPE CANAVERAL, FL
JAN 29
PM
1976
32920

intelsat

·Second
Intelsat
IVa (f-2)

-to Supplement the Intelsat IV Worldwide Network
of Seven Operating Communications Satellites

GREENBELT, MD
AM
MAY 27
1977
20770

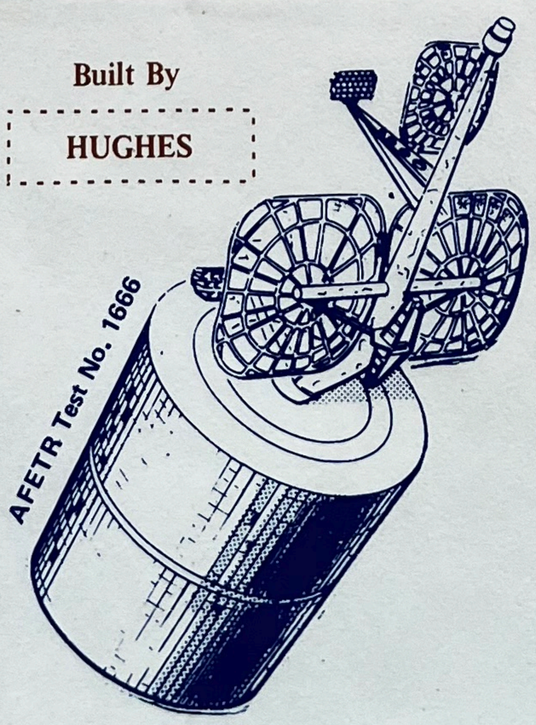
INTELSAT 4A-F4

SPACEFLIGHT TRACKING AND DATA NETWORK
GODDARD SPACE FLIGHT CENTER

Udo Buschmann
Berliner Straße 11
4320 HATTINGEN/RUHR
G e r m a n y

Built By

HUGHES



KENNEDY SPACE CENTER, FL
MAY 26
PM
1977

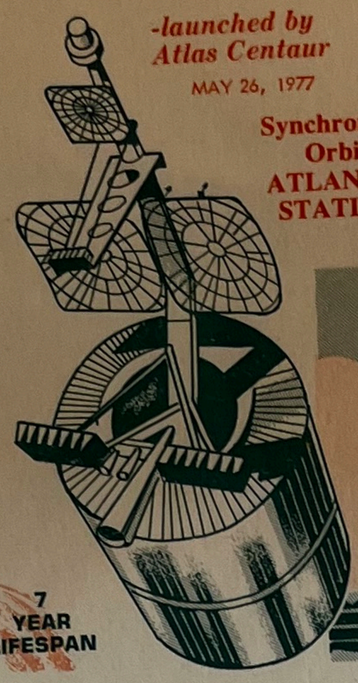
INTELSAT IV-A (F4)

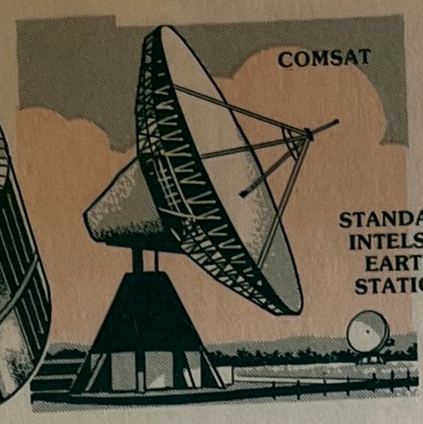
- **Third In Intelsat IV-A Series of Largest International Communications Satellites Built To Date.**
- **24th Spacecraft Launched For Intelsat Consortium's Global Communications Network.**

Launched by Atlas/Agena 39
Complex 36 - CCAFS
May 26, 1977 - 5:47 P.M. EDT.

-launched by
Atlas Centaur
MAY 26, 1977

Synchronous
Orbit
ATLANTIC
STATION





7
YEAR
LIFESPAN

STANDARD
INTELSAT
EARTH
STATION

intelsat

THIRD
INTELSAT
IVA F-4
-commercial
communications
satellite

CAPE CANAVERAL FL
MAY 26
PM
1977
32920

ATLAS
CENTAUR
LAUNCH
RESULTS
IN
DESTRUCT

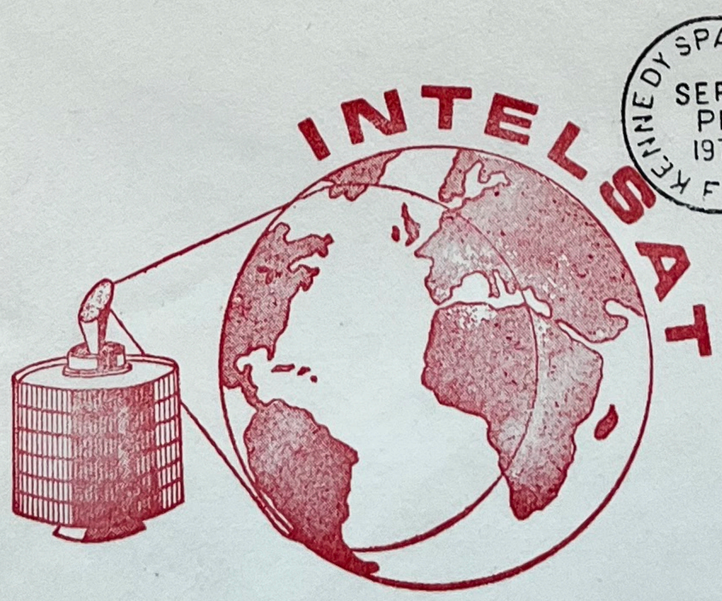
Sept. 29,
1977

– planned for Ocean Station
In Comsat Global Network

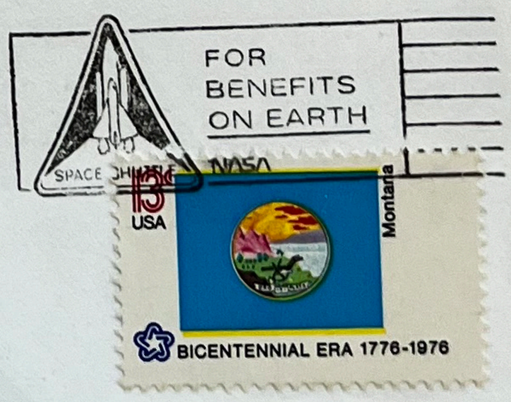
INTELSAT
IV-A
ROCKET EXPLODED
55 SECONDS
INTO FLIGHT

CAPE CANAVERAL FL
SEP 29
PM
1977
32920

PRINTED MATTER



IVA/F-5 Launch



Robert Keller
Münsterstr. 113
4530 Ibbenbüren
West Germany

LEITZ 4781

Spar Aerospace Limited
825 CALEDONIA ROAD
TORONTO, ONTARIO, CANADA
M6B 3X8

CAPE CANAVERAL FL
DEC 6
P M
1980
32920

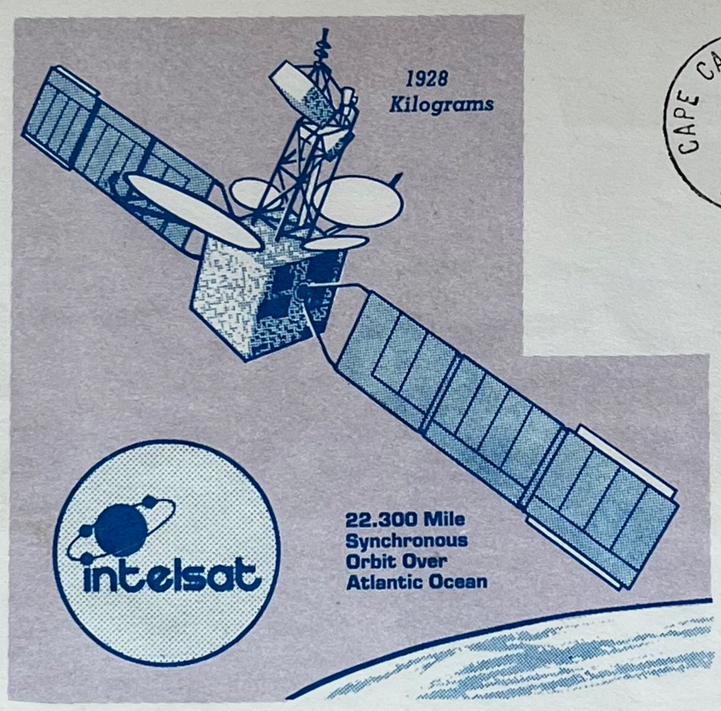
ESTON
3 XI '81
ONT.

CANADA
Postage
METER
COMPTEUR
573/48

THE LAND OF THE FREE THE HOME OF THE BRAVE
USA 15c

Messerschmitt-Bölkow-Blohm GmbH
Abteilung Öffentlichkeitsarbeit
Postfach 80 11 09

8000 München 80



CAPE CANAVERAL, FL
MAR 4
P M
1982
32920

FREEDOM TO SPEAK OUT - A ROOT OF DEMOCRACY
USA 2c

Exploring the Moon
USA 18c

—Launched By Atlas Centaur
March 4, 1982

—Fourth In Series Of
Nine Satellites Launched
By NASA For 106 Nation
Intelsat Organization

FOURTH INTELSAT V SATELLITE (V-F4)

—PROVIDES 12,000 VOICE
CIRCUITS PLUS TWO TV
CHANNELS SIMULTANEOUSLY

—launched by Delta; May 23, 1981

CAPE CANAVERAL, FL
MAY 23
P M
1981
32920

USA 18c

—Systems Components
Developed by Firms In
France, UK, Germany
Japan and Italy

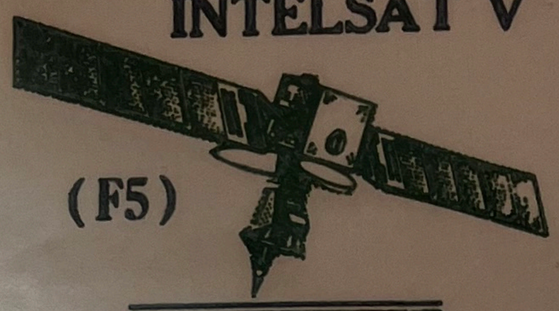
☆ ☆ ☆ ☆ ☆ ☆

SECOND INTELSAT V SATELLITE (V-F1)

—Intelsat V Has Double The
Communications Capacity
Of Earlier Intelsat
Satellite Series

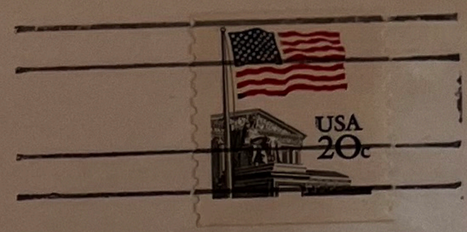
LEITZ 4781

INTELSAT V



(F5)

CAPE CANAVERAL, FL
SEP 28
PM
1982
32920



THE LARGEST AND HIGHEST—CAPACITY COMMERCIAL COMMUNICATIONS SPACECRAFT BUILT TO DATE

LEITZ 4781

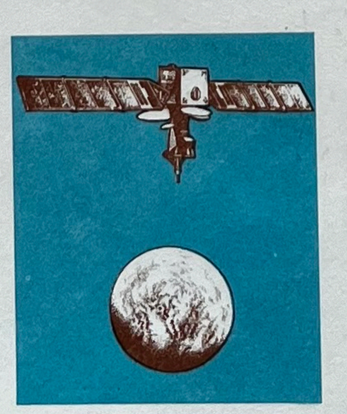
INTELSAT V (F 6)

CAPE CANAVERAL, FL
MAY 19
PM
1983
32920

International Telecommunications Satellite

Launched May 19th, 1983,
by Atlas-Centaur
from Cape Canaveral, Florida

INTELSAT V (F 9)



CAPE CANAVERAL, FL
JUN
9
1984
32920

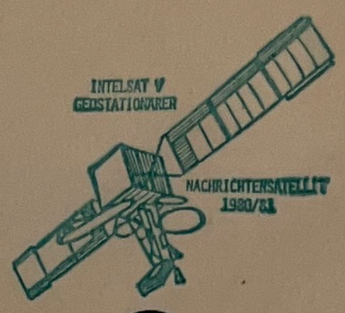
International Telecommunications Satellite

Launched June 9th, 1984,
by Atlas-Centaur
from Cape Canaveral, Florida

Herrn K.Gentner
792-Heidenheim
Scheidemannstr. 36
W-Germany

Intelsat 4A-A

LEITZ 4781



Erdfunkstelle Aflenz.

Ort: Graßnitz bei Aflenz. Kosten: ca. 280 Mio Schilling. Bauherr: Österr. Post- und Telegraphenverwaltung. Grundfläche: 13 ha 40 a — Verbaute Fläche: 48 a. Parabolantennen: 32 m und 16,5 m Durchmesser — System: „SPADE". Übertragungskapazitäten bei INTELSAT V 1980/81: 4 Sendeträger mit 132 Kanälen, 16 Empfangsträger mit 109 Kanälen sowie 12 Leitungen (Kanäle). Frequenzbereich: Empfangen 3,7 bis 4,2 und Senden 5,925 bis 6,425 Gigahertz. Antennengewinn 64 db bei 6 Gigahertz.

AMATEURFUNKSATELLIT

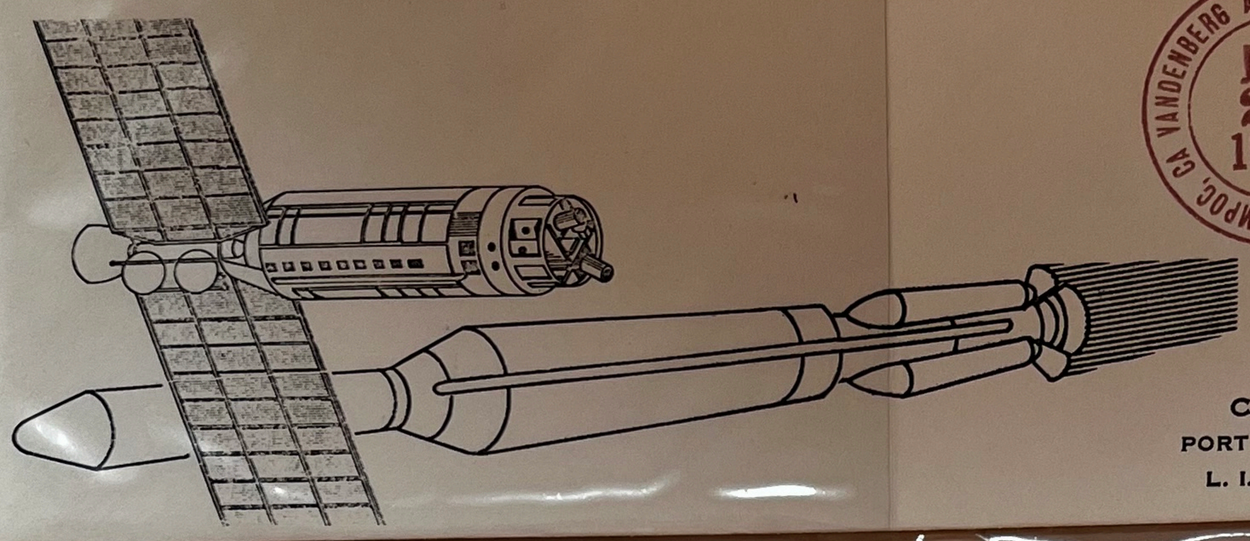
OSCAR I

OSCAR A
PIGGYBACK AUSTRALIAN ORBITING SATELLITE CARRYING RADIOS WITH TWO LOW FREQUENCY CIVILIAN CHANNELS TO LET HAM OPERATORS TRACK SPACECRAFT..

VANDENBERG AFB, CA 93437
JAN 22
AM
1970

UNITED STATES 6c

VANDENBERG AIR FORCE BR. CA
JAN
23
1970
LOMPOC, CA USPO



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

Navy Navigation Satellite

Reduces ocean crossing time by ten percent

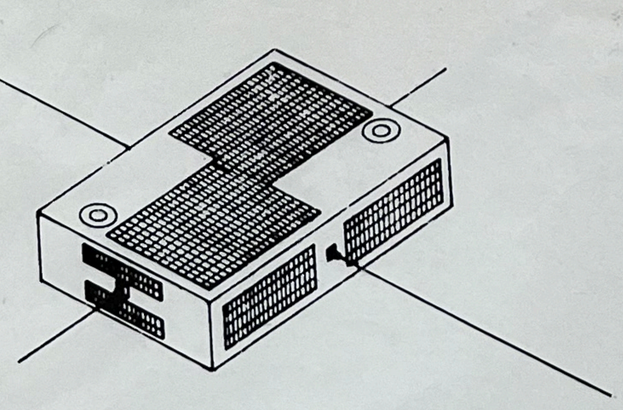
Helps Navy
Ships and Subs
Fix Positions
Within 600 feet

Launched by Scout
6:23 A.M. PDT

Oscar 19

VANDENBERG AIR FORCE BR. CA
AUG
27
1970
LOMPOC, CA USPO

UNITED STATES 6c



VANDENBERG AFB, CA
AM
OCT 15
1972

UNITED STATES 8c

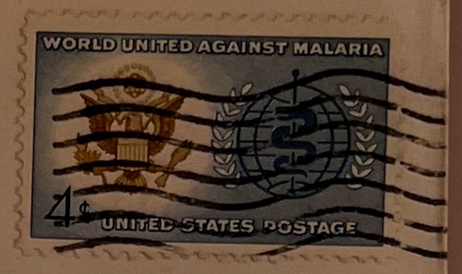
The OSCAR-C spacecraft, designed and built by the Radio Amateur Satellite Corporation (AMSAT), launched by NASA as a secondary payload for the ITOS-D Mission. 35 pound spacecraft carried into a polar orbit aboard a two-stage Delta Space Vehicle 3N-11 (thrust augmented by three-strap-on solid rockets). Life expectancy of the spacecraft will be one year.

OSCAR-C

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

NIMBUS-A 1

VANDENBERG A.F.B. CALIF. AUG 28 1 PM 1964



Bourdeau
1119 Harker
Woodbury
N.J

15,- ~~4,50~~

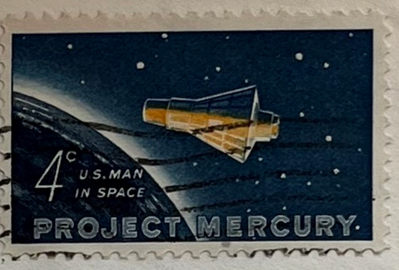
NIMBUS

World's largest Weather Station

Transmitting local cloud-cover pictures of every spot on Earth

by Thrust-Augmented Thor/Agena-B 1:00 A.M. PDT

VANDENBERG A.F.B. CALIF. AUG 28 - PM 1964



NIMBUS

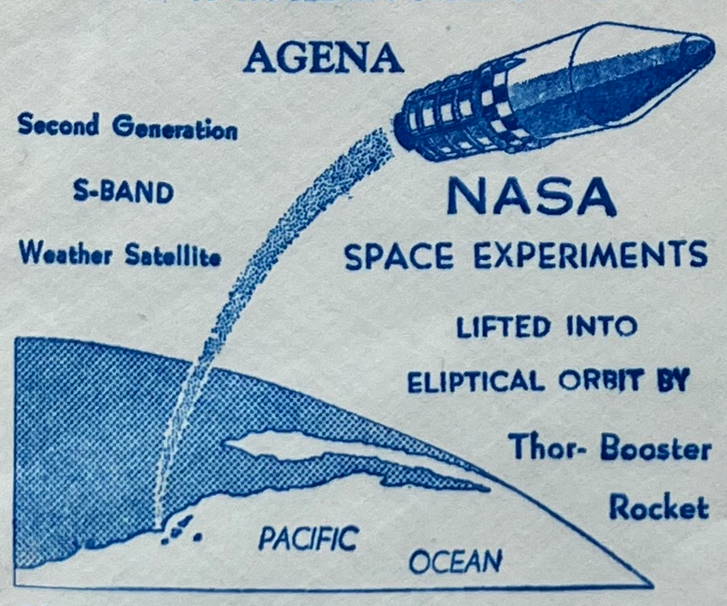
SNAP 19 NUCLEAR POWER SUPPLY

AGENA

Second Generation

S-BAND

Weather Satellite



NASA

SPACE EXPERIMENTS

LIFTED INTO ELIPTICAL ORBIT BY

Thor- Booster Rocket

VANDENBERG AFB, CALIF.

VANDENBERG AFB, CA 9343 APR 13 PM 1969

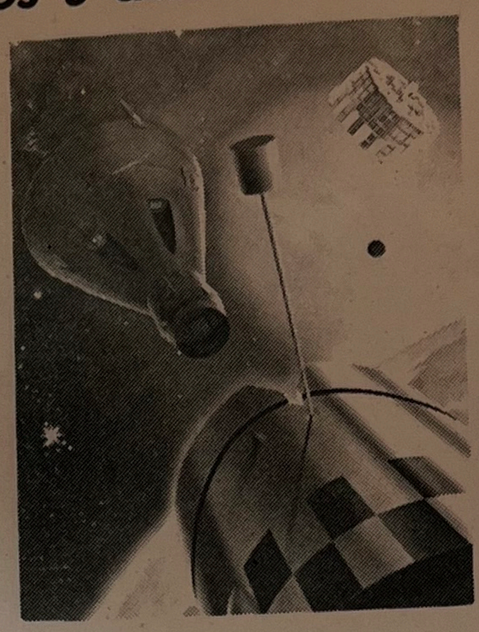
MIT LUFTPOST
PAR AVION

Miss
Siglinde Stritzl
8000 München 60
Georg-Habel-Str. 45/o

West-Germany

51

TIROS 6 SATELLITE IN ORBIT



CACHET SHOWS TIROS satellite in orbit near a proposed rendezvous control between two space vehicles. Tiros satellites bear an important relationship with their weather control in aid to the U.S. man in space program.

CAPE CANAVERAL SEP 18 A.M. 1962 FLA.

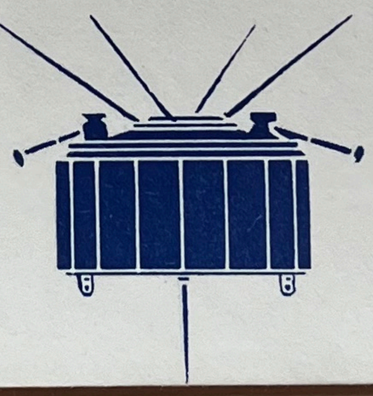
Ruth Smith
2214 Dogwood Lane
Westbury, L.I., N.Y.

10.- 25.-

CAPE KENNEDY - 1st SPACE LAUNCH

CAPE CANAVERAL DEC 21 6-AM 1963 FLA.

TIROS VIII - THE FIRST LAUNCHING UNDER THE NEW NAME OF THE CAPE KENNEDY SPACE CENTER U. S. LATEST AND MOST ADVANCED WEATHER SATELLITE.

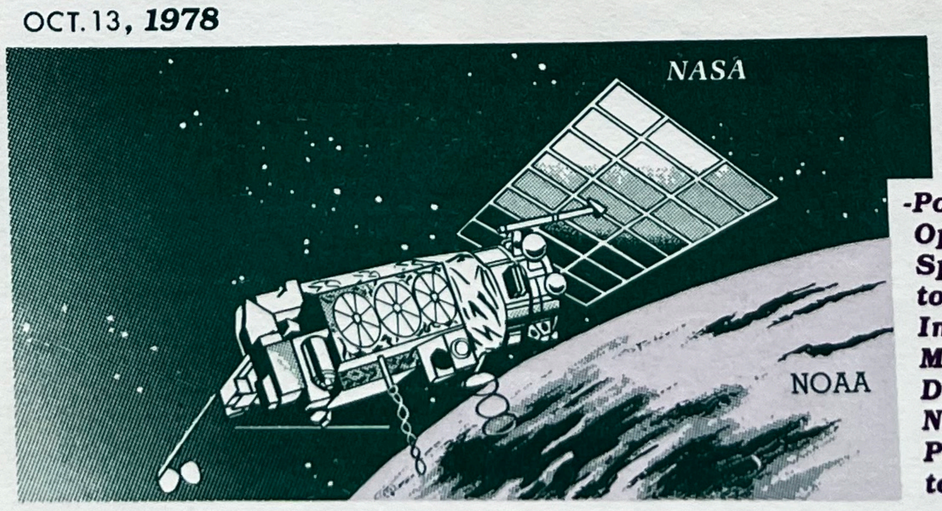


CLYDE J. SARZIN
PORT WASHINGTON, L. I.
NEW YORK, U.S.A.

TIROS "N"

-launched by Atlas-F
OCT. 13, ***1978***

VANDENBERG AFB, CA AM OCT 13 1978



-Polar Operating Operational SpaceCraft to Provide Improved Meteorological Data For NOMSS and Provide Support to GARP

LUFTPOSTLEICHTBRIEF
AEROGRAMME

TIROS-N

VANDENBERG AFB, CA
93437

Alaska 1778
Capt.n JAMES COOK
13c USA

Alaska 1778
Capt.n JAMES COOK
13c USA

0609

MIT LUFTPOST
PAR AVION
BY AIR MAIL

NASA
KSC-WOSO
VANDENBERG AFB, CA.

Udo Buschmann
Berliner Straße 11
4320 HATTINGEN/RUHR
W-Germany

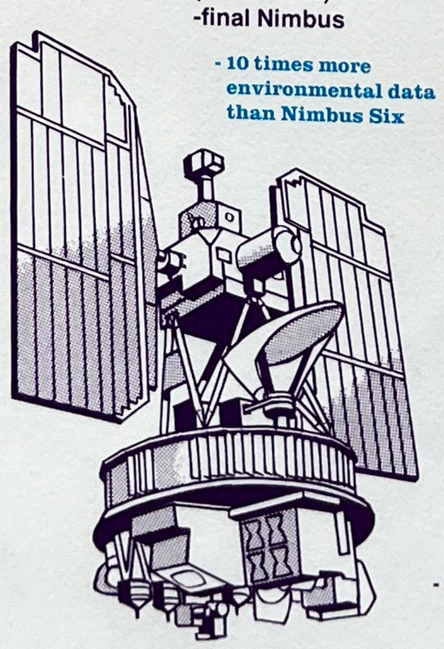
LEITZ 4781

Italien - Griechenland -
Nordafrika –
aus 1100 km Höhe
fotografiert

NIMBUS-7

(NIMBUS-G)
-final Nimbus

- 10 times more environmental data than Nimbus Six



VANDENBERG AFB, CA
AM
OCT 24
1978
93437

USA Postage

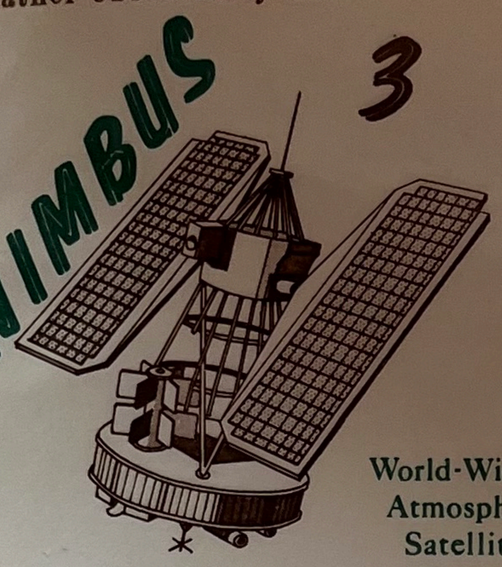
- launched by Delta, October 24, 1978

- Test Satellite to Specifically Develop & Flight Test Advanced Sensors & Technology Basic To Conducting Experiments In The Pollution Monitoring, Oceanographic and Meteorological Disciplines

- International Participants Include ESA, Denmark, Switzerland Italy, Canada, South Africa, West Germany, France, Belgium and the United Kingdom

Weather Observatory.....

NIMBUS 3



World-Wide
Atmospheric
Satellite
Nuclear powered

Piggyback Payload – ARMY SECOR

10th in the series of Geodetic measurement experiments

Launched by THOR-AGENA D
11:54 P.M. PST 13 Apr.

Swanson

VANDENBERG AFB, CA 93437
APR 13
PM
1969

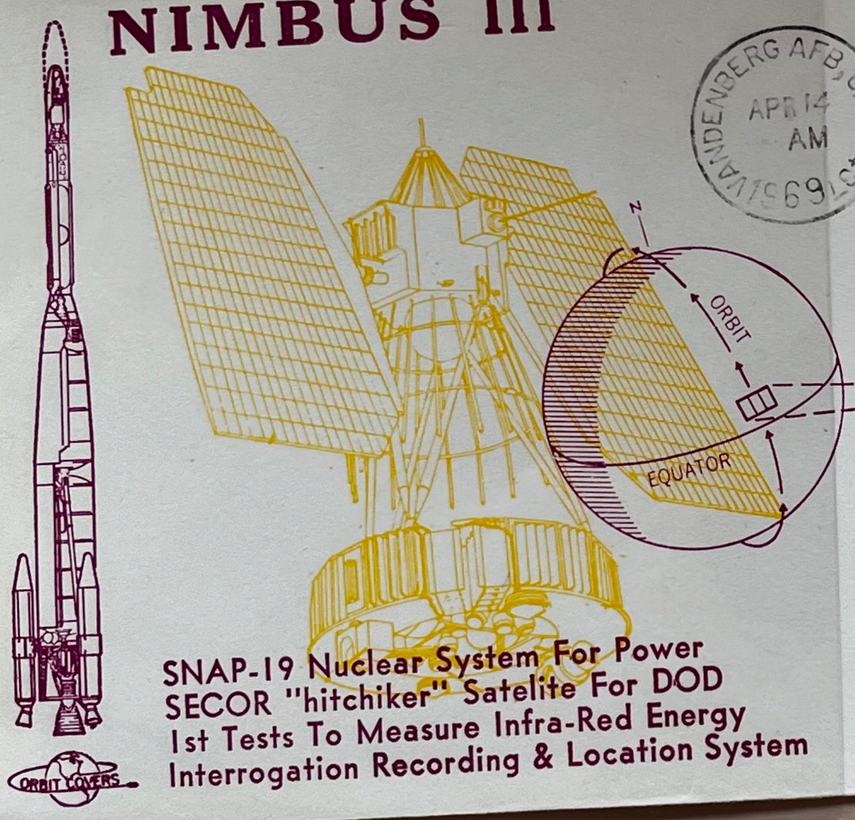
UNITED STATES 6c

Secor 13
LITAT-Agena D

BOX 2296, HUNTINGTON, W. VA. 25724

5,-

NIMBUS III



SUN RAYS

SNAP-19 Nuclear System For Power
SECOR "hitchiker" Satelite For DOD
1st Tests To Measure Infra-Red Energy
Interrogation Recording & Location System

ORBIT COVERS

VANDENBERG AFB, CA 93437
APR 14
AM
1969

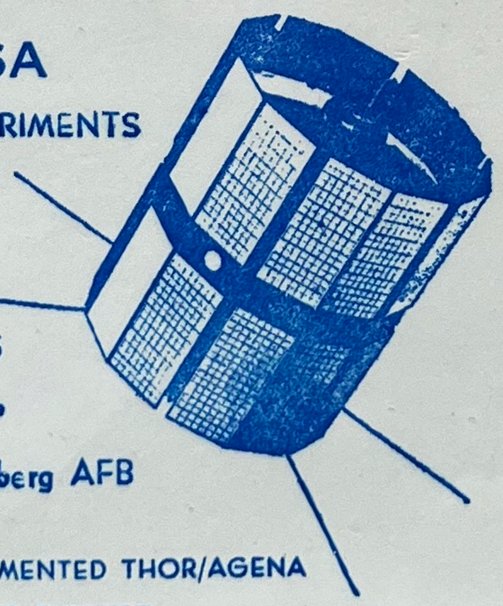
UNITED STATES 6c

5,2-

NIMBUS D

WEATHER

MAPPING SATELLITE



NASA

SPACE EXPERIMENTS

UNMANNED

RESEARCH

5th NIMBUS

Weather Satellite

From Vandenberg AFB

THRUST - AUGMENTED THOR/AGENA

BOOSTER

VANDENBERG AFB, CA 93437
AM
APR 3
1970

ANDREW JACKSON
1c U.S. POSTAGE

UNITED STATES
The Bill of Rights
The rights of the people shall not be violated
175th ANNIVERSARY
5¢

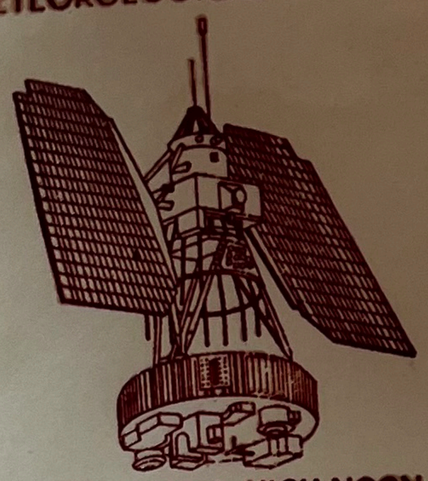
Printed Matter
Drucksache
Imprimé

Miss
Siglinde Stritzl
8000 München 60
Georg-Kabel-Str. 45/0
West Germany

91

NIMBUS—D

METEOROLOGICAL SATELLITE

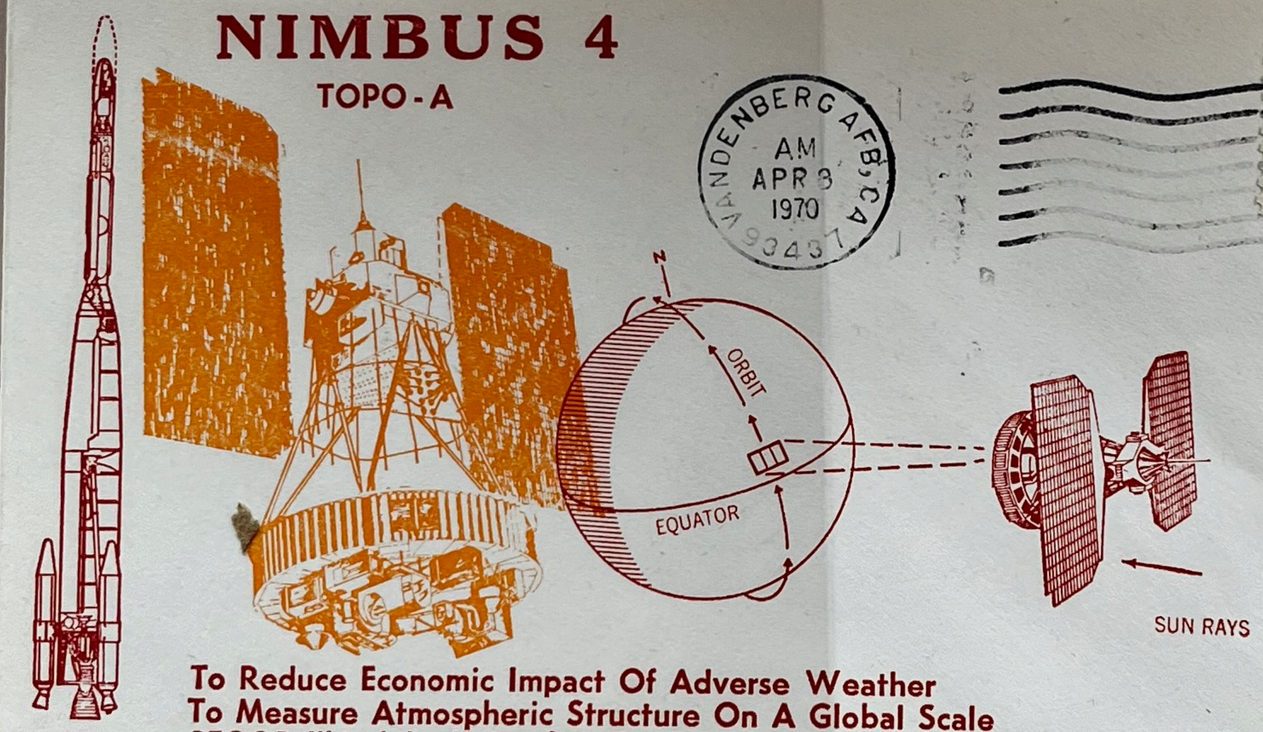


PLACED INTO A HIGH NOON
SUN-SYNCHRONOUS ORBIT FROM
VANDENBERG
AIR FORCE BASE, CALIFORNIA
April 8, 1970

Nimbus 4.

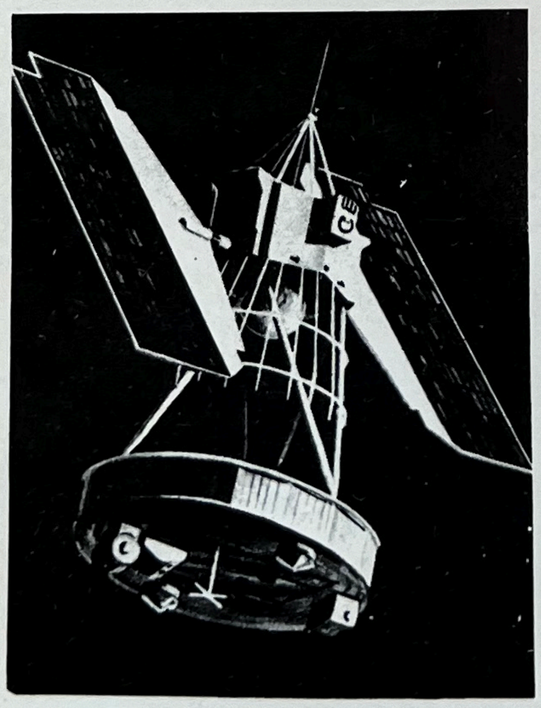
NIMBUS 4

TOPO-A



ORBIT COVERS

To Reduce Economic Impact Of Adverse Weather
To Measure Atmospheric Structure On A Global Scale
SECOR "hitchiker" Satelite For DOD
Interrogation Recording & Location System



NIMBUS E ATMOSPHERE, OCEAN AND SURFACE MONITORING SATELLITE. WILL TAKE THE FIRST VERTICAL TEMPERATURE READINGS FROM SPACE THROUGH CLOUDS, AND THERMALLY MAP THE EARTH'S SURFACE.

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

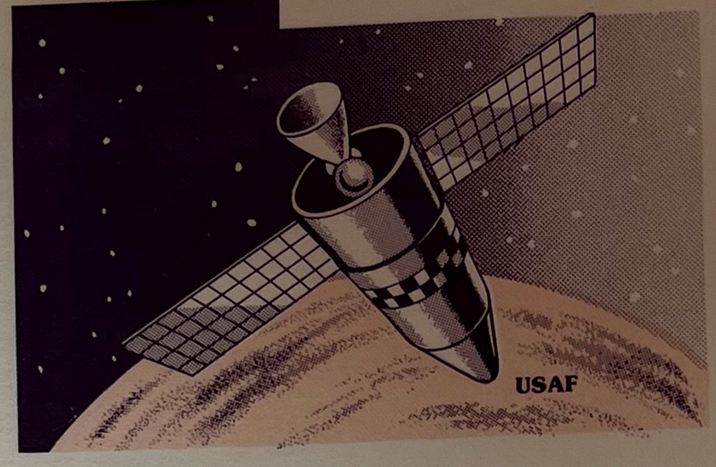
Beobachtungs Satelit

—LAUNCH BY TITAN 3B, MARCH 22, 1976

low "search & find" photo orbit of 76 by 219 miles

VANDENBERG AFB, CA AM MAR 22 1976 93437

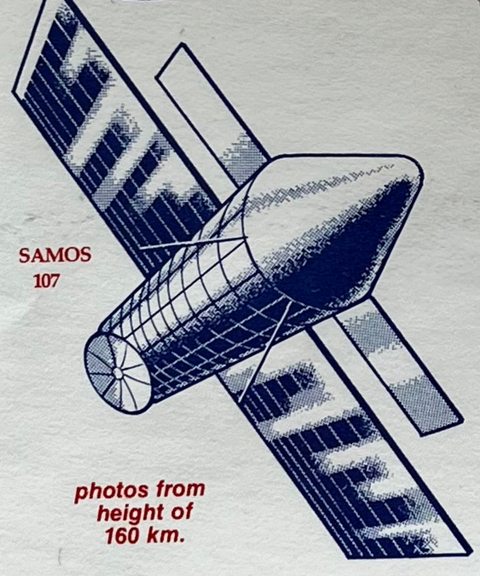
United States 13c



—OCEAN SURVEILLANCE EXPERIMENT

SAMOS 106

—to pinpoint recon areas for Big Bird



SAMOS 107

photos from height of 160 km.

VANDENBERG AFB, CA AM JUL 8 1976 93437

Commercial Aviation

EJECTS PHOTO CANNISTERS PERIODICALLY INTO EARTH'S ATMOSPHERE

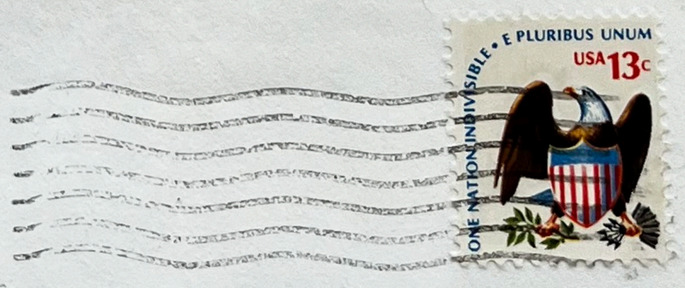
cannisters descend by parachute

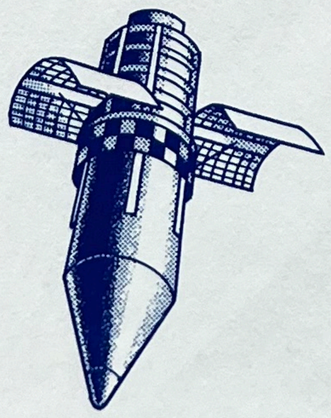
BIG BIRD-12

Launched by Titan 3D
July 8, 1976

LAUNCH BY TITAN 3B SEPT. 15, 1976

VANDENBERG AFB, CA AM SEP 15 1976 93437





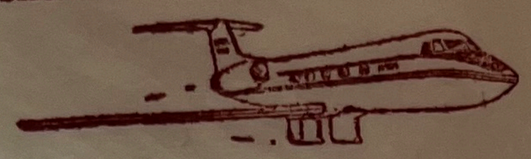
SEARCH & FIND MISSION FOR AREAS THAT BIG BIRD MISSION WILL STUDY IN GREATER DEPTH

Samos 108

197 by 90 mile orbit

LEITZ 4781

GRUMMAN GULFSTREAM II
SHUTTLE TRAINING AIRCRAFT (STA)



WHITE SANDS MISSILE RANGE, N. MEX.
BIRTHPLACE OF AMERICA'S SPACE ACTIVITY

WHITE SANDS MISSILE RANGE, NM
MAR 28
PM
1978
88002

United States 13c

SHUTTLE TRAINING FLIGHT

ASTRONAUT- ALAN BEAN
INSTR.- DAVID GRIGGS
FLT. ENG.- JOHN BASSHAM
TWO FLIGHTS FOR SAME CREW

ROBERT BOUDWIN
1113 HARKER AVE.
WOODBURY, N. J. 08096

GULFSTREAM II
SHUTTLE TRAINING AIRCRAFT (STA)

EDWARDS, CA
OCT 27
AM
1980
93523

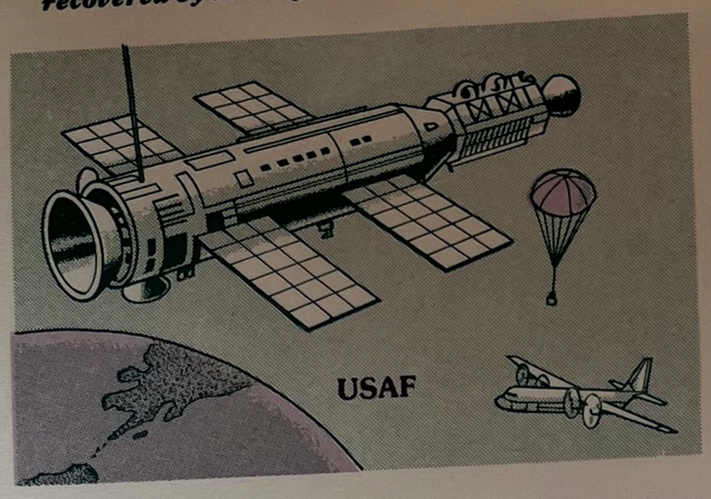
USA 15c
THE LAND OF THE FREE - THE HOME OF THE BRAVE

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

ORBITER LANDING EVALUATION
FLIGHT.
(SATURDAY FLIGHT)
TWO FLIGHTS
CREW- AST. RICHARD TRULY
TIME- 2 HOURS
CREW- AST. JOHN YOUNG
TIME- 2 HOURS

FILM RETURN SATELLITE
FOR SINO-SOVIET
STRATEGIC RECONNAISSANCE

-film pod reentry vehicles recovered by aircraft



-launched by Titan 3D March 16, 1979

BIG BIRD

-High Resolution, Film Return Spacecraft in 152 x 110 Mile Orbit

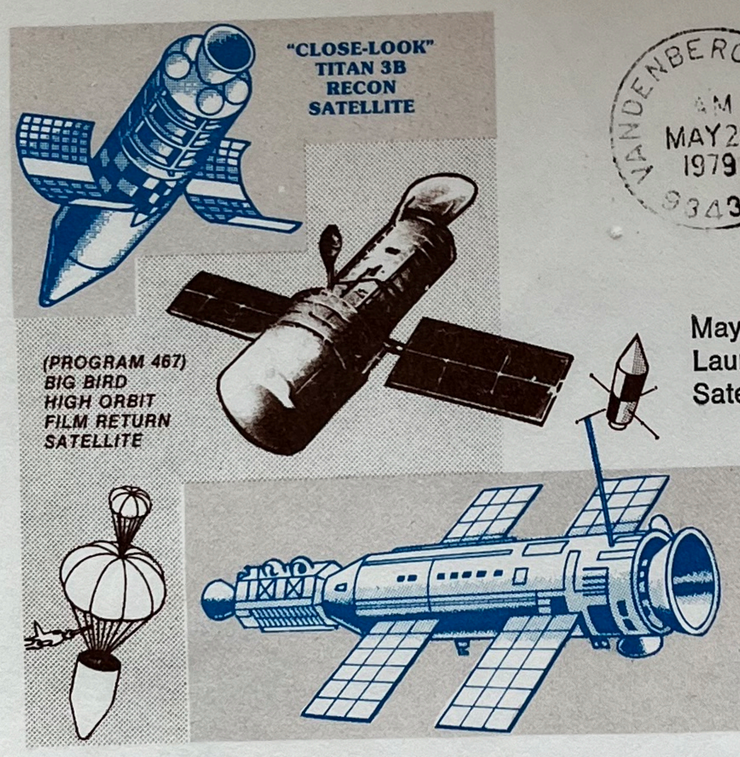
-Reentry Sept. 22, 1979

VANDENBERG AFB, CA
AM
MAR 16
1979
93437

A
US Postage

LEITZ 4781

"CLOSE-LOOK"
TITAN 3B
RECON
SATELLITE



(PROGRAM 467)
BIG BIRD
HIGH ORBIT
FILM RETURN
SATELLITE

May 28, 1979 — Titan 3B Launches "Close-Look" Recon Satellite Into 292 by 144 Km. orbit.

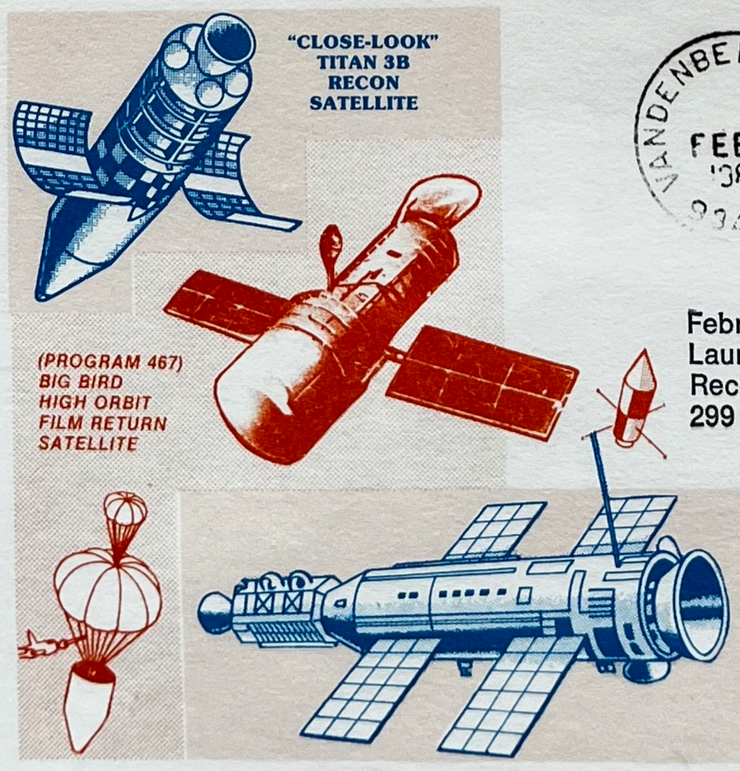
UNITED STATES RECONNAISSANCE SATELLITE PROGRAMS

KH-11 Digital Image Transmission Recon Spacecraft

VANDENBERG AFB, CA
AM
MAY 28
1979
93437

A
US Postage

"CLOSE-LOOK"
TITAN 3B
RECON
SATELLITE



(PROGRAM 467)
BIG BIRD
HIGH ORBIT
FILM RETURN
SATELLITE

February 7, 1980 — TItan 3D Launches KH-11 Digital Image Recon Satellite Into 481 by 299 Km. Orbit.

UNITED STATES RECONNAISSANCE SATELLITE PROGRAMS

KH-11 Digital Image Transmission Recon Spacecraft

VANDENBERG AFB, CA
FEB 7
1980
93437

THE LAND OF THE FREE AND THE HOME OF THE BRAVE
USA 15c

MISSILE
FIRED FROM..
Cape
Canaveral

PATRICK AIR FORCE MISSILE
APR 12
1 PM
1962
FLA.

4c U.S. MAN IN SPACE
PROJECT MERCURY

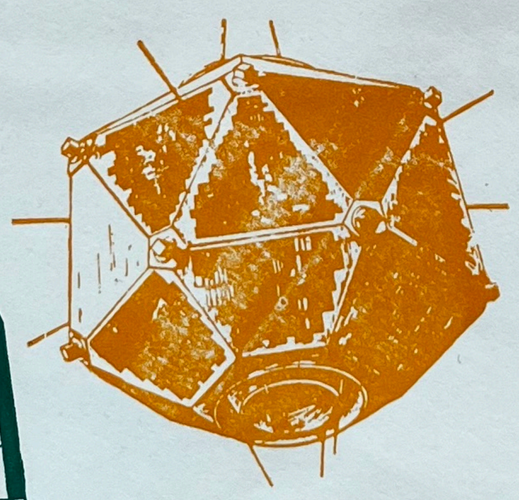
K. MARTIN CARLSON
1028 Third Avenue South
Moorhead, Minnesota

Vela Hotel Twin Satellites
Tucson-Kirtland, Dec 1969
Vela A Vela B

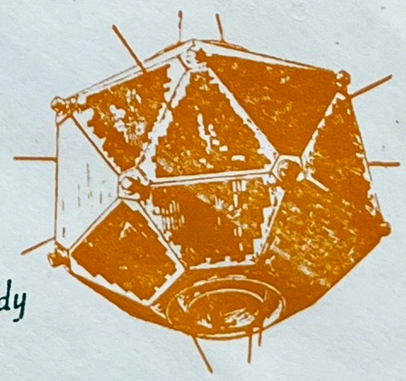
BLUE SCOUT APR 12 1962 11:00 A.M.

RADIATION DETECTOR SATELLITE

CAPE CANAVERAL, FL
APR 8
AM
1970
32920

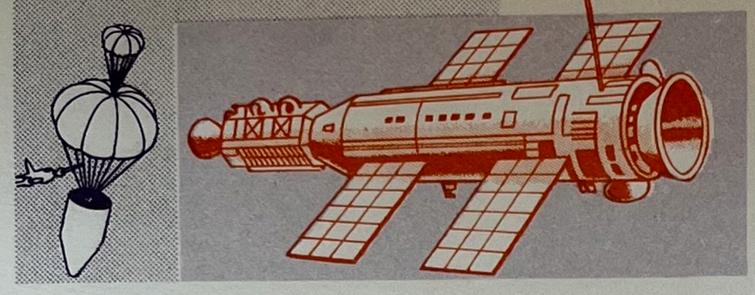


John F. Kennedy



Twin Vela Satellites Orbited
Space Detection Of Test Ban
Treaty Violations

ORBIT COVERS



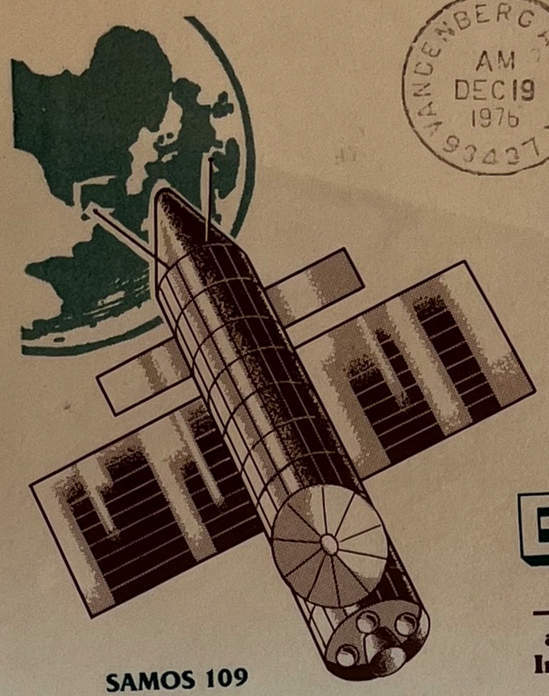
VANDENBERG AFB, CA
JUN 18
'80
93437

June 18, 1980-Titan 3D Launches Big Bird To 169 by 205 Km. Orbit & Electronic Monitor Ferret Into 1331 By 1333 Km. Orbit.

UNITED STATES RECONNAISSANCE SATELLITE PROGRAMS

KH-11 Digital Image Transmission Recon Spacecraft

LEITZ 4781



VANDENBERG AFB, CA 93437
AM
DEC 19
1976

ONE NATION INDIVISIBLE • E PLURIBUS UNUM
USA 13c

launched by Titan 3D,
Dec. 19, 1976

–161 day lifetime

Big Bird 13

—close up photos of Soviet missiles are analysed at the National Photo Interpretation Center In Washington

VANDENBERG AFB, CA
AM
MAR 13
1977
93437

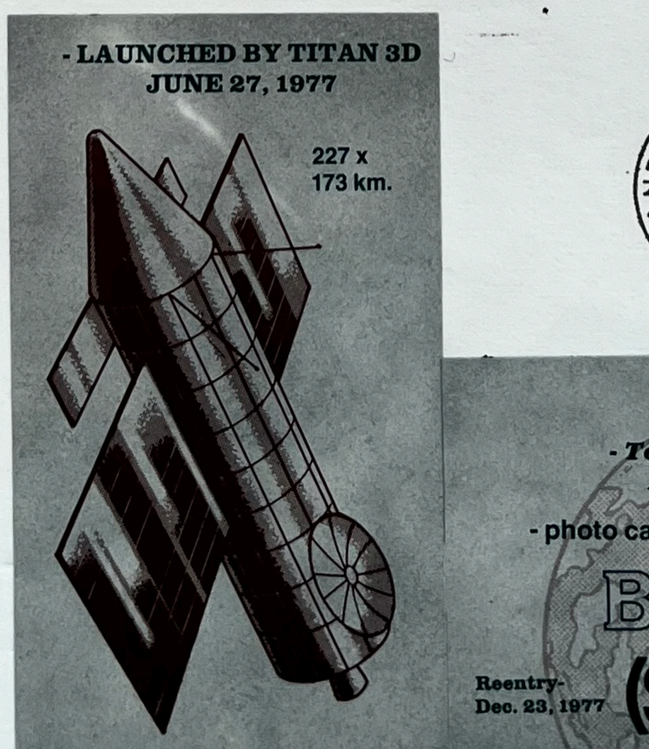
JOHN F. KENNEDY
13c UNITED STATES

Launched
March 13, 1977

- to provide surveillance targets for Big Bird

SAMOS 110

- reenters
May 26, 1977



VANDENBERG AFB, CA
AM
JUN 27
1977
93437

United States 13c

- To Photograph Latest Soviet ICBM Silo Construction

- photo can isters descend by parachute

Big Bird-14 (SAMOS-111)

Reentry-
Dec. 23, 1977