THE DISH

Number 2 1977

Voyager 1-2 on the Way

The Voyager 2 spacecraft was launched from Kennedy Space Center on August 20th at 10:29:45 a.m. EDT. After launch a problem of a suspected gyro failure, imcomplete data transmission and uncertainty as to the deployment of the science platform boom. Through further tests it was learned the gyro was working and data transmission good and the science boom appeared to be bearly deployed.

After a two day hold, to check further the Voyager 1 was launched on September 5th at 8:56:01 a.m. EDT. At this time both spacecraft are in good shape and with all systems in good working order.

The launch vehicle for both spacecraft were the Titan III E/Centaur. As you will note the Voyager 2 was launched before Voyager 1. The reason for this being the Voyager 1 will reach the Jupiter-Saturn sooner than Voyager 2. Mission plans call for the Voyager 2 to fly a slower trajectory, allowing the Voyager 1 to overtake it and reach Jupiter about four month earlier. Jupiter's gravity will slingshot them toward the ringed planet Saturn. By the time the spacecraft reach Saturn, the leader will be about nine months ahead.

Photography of Jupiter will begin in December 1978, 80 days before Voyager reaches the planet, along with spectral scans of the hydrogen cloud surrounding Jupiter and the orbits of the four big Galilean satellites. For about two months photography will be continued with the spacecraft's narrow-angle camera, which has a 1,500-mm focal-length telescope. In late February, eight days from Jupiter, Voyager will begin coverage of the entire planet with its wide-angle camera (200-mm focal length),while the narrow-angle instrument provides high-resolution photgraphy of selected features of Jupiter's clouds. At the same time, the infrared and ultraviolet spectrometers and the photpolarimeter will be obtaining data on atmospheric composition, temperature variation in the atmosphere, and the possibility of solid particles in the clouds. Shortly before closest approach to Jupiter--on March 5, 1979--Voyager will fly within 440,000 kilometers (273,000 miles) of Amalthea, giving scientists their first close look at the innermost of Jupiter's satellites.

After passing Jupiter, the first Voyager will examine all four of the big Galilean satellites. Observations of Jupiter will continue for about a month after closest approach, until early April. The second Voyager will begin its observatory phase about two weeks later, again 80 days before closest approach.

Closest approach to Jupiter will occur July 10, 1979. The spacecraft, following a more distant path than its predecessor. The second Jupiter encounter will continue into August.

The first Saturn encounter will begin in August 1980 and will continue through December. On the inbound leg Voyager will pass within 7,000 kilometers (4,000 miles) of the major satellite Titan. It will also scan the moons Rhea, Tethys and Enceladus before passing behind Saturn and its rings.

Closest approach to Saturn--209,300 kilometers (130,000 miles)-- will occur November 12, 1980. Second Saturn encounter will begin in June 1981. Closest approach to Saturn will occur August 27, 1981. The spacecraft will observe the satellites Titan and Tethys on its inbound leg, and Enceladus, Dione and Rhea after closest approach. Encounter will continue through September.

Since the outer planets receive only a small fraction of the sunlight that strikes Earth and Mars, the Voyagers cannot depend on solar energy but must use nuclear power--radioisotope thermoelectric generators.

Project officials have an option to send the second spacecraft on to the planet Uranus, with encounter occuring in January 1986, it could also be targeted to Neptune.

Tracking Station Report

At this time have no reports of stations or facilities closing or address changes. Listed below are several observatories and communication facilities and address is as complete as received, a further or better will be appreciated.

T Synthesis Radio Telescope
Netherlands

T Mullard Radio Astronomy Observatory
Cambridgeshire England

T Univ. of Dever
High Altitude Observatory
Mt Evans, Colo.

T Mount Semirodriki Observatory
Caucasus Mount
Zelenukskaya USSR

T Univ. of Wyoming Observatory
Jelm Mountain, Wyo.

T Inca Solar Observatory
Peru

T Kandilli Observatory
Turkey

T Montevideo Planetarium
Montevideo Uruguay

T Humboldt Planetarium
Venezuela

T Bosscha Observatory
Indonesia

T Kyongju Observatory
Kyongju Korea

C Naval Communications Station
FPO New York NY 09512

C Naval Communications Station
FPO San Francisco CA 09956

T Brahe's Quadrant Observatory
Ascension

T Brussels Planetarium
Brussels Belgiun

T Poczobut Observatory
Lithuania

T National Observatory
Colombia

T Ondrejou Observatory
Czechoslovakia

T Frauentor Observatory
Danzig

T Tartu Observatory
Tarti, Estonia USSR

T Tampere Planetarium
Tampere Finland

T Dresden Observatory
Dem Rep Germany (East)

T National Observatory
Guatemala

T Jaipur Observatory
Jaipur India

T Cerro Las Campanas Observatory

C Naval Communications Station
FPO San Francisco CA 96685

By years end the Madrid STDN will have another 9 meter dish antenna to help in the everyday longer support. This new antenna was removed from Canary Island STDN two years ago.

The German Space Operations Center(GSOC) at Oberpfaffenhofen is part of the DEUTCHE FORSCHUNGS-UND VERSUCHSANSTALT FUR LURTUND RAUMFAHRT.(DFVLR).GSOC undertakes the planning, preparation and operation aspects of spaceflight operations in cooperation with research institutes and industries.Address is; DFVLR GSOC
Zentralabteilung Raumflugbetrieb
8031 Oberpfaffenhofen W Germany

TRADING & SELLING CORNER

ASSESS II ARC Official cachet covers offered in trade for ARC Wind Tunnel covers. Marty Michaelson, Box 171, W. Nyack, NY 10994.

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WARNING-Buying Space Covers before checking my price list may be Hazardous to your wallet. Send $1.00 for my Giant illustrated price list-Project Mercury to Space Shuttle. Foreign send $2.00. Sean Marsar, 6 Helena, Bethpage, NY 11714.

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Covers for SPACEPEX '77 with special station cancel are available at 50¢ each plus a SASE. JSC Stamp Club, P.O. Box 58328, Houston, TX 77058

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Trade-Official NASA Cachet Viking Launch covers-A & B. Want better "Lindbergh" First Day Covers (no Artcraft or Artmaster). Straight trade two for two, up to three covers same cachet o.k., SASE required. Frank J. Dunn, 1352 Marlborough St., Philadelphia, PA 19125.

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A new cover service from Marshall Space Flight Center. Your stamped addressed covers and 25¢ per cover with cachet design or 15¢ without cachet. Inquire for quantity service. Only important event will be covered. Send to; Philatelic Cover Service, NASA Exchange-MSFC Branch, CM21X, Marshall Space Flight Center, AL 35812.

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SPIRIT OF '76/VIKING TO MARS, FDC based on the float depicting the Viking to Mars mission in the 1976 Tournament of Roses parade. Each full color cover contains the complete set of 3 stamps depicting the "Spirit of '76 painting and postmarked in Pasadena, CA 91109, Jan. 1, 1976. 75¢ per cover plus large SASE to- JPL Stamp Club, P.O. Box 771, La Canada, CA 91011.

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PIONEER OF FLIGHT FROM DA VINCI'S HELICOPTER TO SPACE SHUTTLE theme of two-color official cachet of Midwest Postage Stamp & Coin Show September 16-18. Covers with special show cachet and cancel available in sets of three (3) covers for $2.00 or eight (8) covers for $5.00; ATA, 5014-L West Center St., Milwaukee, Wis., 53210

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AEROPEX '77 September 17-18th. Two different cacheted covers available at 65¢ each or two (2) for $1.00. W.T. Bradford, 5426 Sharynne Lane, Torrence, CA 90505.

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VOYAGE A & B LAUNCH COVERS. Cancelled in Pasadena on the date of each launch. Set of two (2) covers (1 for each launch) $1.00 and SASE. Mail to; JPL Stamp Club, P.O. Box 771, LaCanada, CA 91011.

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A two and a half by three inch rubber stamp cachet depicting the Space Shuttle taking off and landing is available from Andrew Dohan, P.O. Box 129, Lima, PA 19037. Please limit to two the number of covers and a SASE must be provided for return of covers. Please use commemorative stamps on the outer envelope. THANK YOU

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List #18 Summer-Fall 1977 is available for 25¢. Icluded are covers of A.TP, Arctic, oceanography, inauguration and many others. Art Silhanek, 526 Willow Ave., Piscataway, NJ 98854

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"A Salute to the Space Shuttle Approach and Landing Tests" is this years theme of the SPACEPEX Exhibition. A cover with special Station cancel is available at 50¢ each from; J.S.C. Stamp Club, P.O. Box 58328, Houston, TX 77058. Enclosed SASE.

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WANTED: VOYAGER 2 cover from the USNS Vanguard. Will trade a Voyager 1 cover dated 16 Sept, Honolulu HI, with autograph. Bob Ekas, P.O. Box 295, Chicora, PA 16025

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If you have any wants or duplicates to trade or sell, send information and this is the page it will appear on, this is FREE. Try to keep ad as short or brief as possible and in this way more space material can come your way.

Space Covers Reported & Received

WHITE SANDS MISSILE RANGE, NM

4-7-77 See Space Shuttle
4-8-77 See Space Shuttle
4-15-77 BLACK BRANT, NASA 21.054 TO 140 MI. TO/MEASURE U/V FR QUASAR
4-21-77 FIN AEROBEE 170 NO. AF-AO 4.410-2 TO 140 MI TO MEASURE SOLAR ULTRA-VIOLET
4-21-77 1ST PATRIOT LAUNCH AGINST TWO F102/JET DRONE FLIGHT USING IBM DEVELOPED
4-22-77 HARSES NIKE-NIKE SMOKE NO. 72101A/MEASURE SMOKE DISPERSION
4-26-77 HARSES NIKE-NIKE SMOKE NO. 721-1A/MEASURE SMOKE DISPERSION
4-26-77 USAF SRAM,NO 105.LAUNCHED/FROM AIR FORCE F111
5-2-77 HARSES NIKE-NIKE SMOKE NO. 72101A/MEASURE SMOKE DISPERSION
5-3-77 See Space Shuttle
5-3-77 PERSHING ARTILLERY MISSILE/A/O 172 FIRED FROM MCGREGOR RANGE
5-3-77 PERSHING ARTILLERY MISSILE/A/O 173 FIRED FROM MCGREGOR RANGE
5-4-77 See Space Shuttle
5-6-77 See Space Shuttle
5-11-77 See Space Shuttle
5-12-77 See Space Shuttle
5-13-77 See Space Shuttle
5-14-77 See Space Shuttle
5-17-77 PERSHING ARTILLERY MISSILE/A/O 174 FIRED FROM MCGREGOR RANGE
5-17-77 PERSHING ARTILLERY MISSILE/A/O 175 FIRED FROM MCGREGOR RANGE
5-18-77 See Space Shuttle
5-19-77 3RD NASA PIONEER VENUS TEST OF MAIN/PROBE 16km ABOVE WSMR VIA 90K CUBIC/METER BALLOON FROM HOLLOMAN AFB
5-19-77 See Space Shuttle
5-20-77 See Space Shuttle
5-20-77 AEROBEE 170 #13.131 TO OBTAIN HIGH/RESOLUTION STELLAR SPECTRA & PHOTO/METRIC
5-21-77 FIRST PATRIOT FIRED IN MULTIPLE,/SIMULTANEOUS ENGAGEMENT AGAINST TWO MQM34D
5-24-77 See Space Shuttle
5-25-77 AEROBEE 200 #26.061. 6TH IN SERIES TO/MAP SOFT X-RAY SKY LONGTITUDE
5-25-77 See Space Shuttle
5-26-77 See Space Shuttle
5-27-77 See Space Shuttle
6-1-77 PERSHING ARTILLERY MISSILE/A/O 176 FIRED FROM MCGREGOR RANGE
6-1-77 PERSHING ARTILLERY MISSILE/A/O 177 FIRED FROM MCGREGOR RANGE
6-2-77 FIRST DUAL AIR DEFENSE MISSILE TEST/PATROIT & HAWK
6-8-77 NIKE-BLACK BRANT NASA 27.008 TO 130 MI/IMAGING X-RAY TELESCOPE & DETECTOR
6-14-77 PERSHING ARTILLERY MISSILE A/O/ 178 FIRED 0807 FROM MCGREGOR RAMGE
6-14-77 PERSHING ARTILLERY MISSILE A/O 179 FIRED/0842 FR MCGREGOR RANGE TO WSMR
6-14-77 See Space Shuttle
6-15-77 See Space Shuttle
6-21-77 BLACK BRANT VC NASA NO.21.045. SPAR/ZERO GRANITY TEST. LAUNCHED BY NAVY
7-11-77 1ST NIKE-ORION, NASA 31.005.TO MEA-/SURE ATOMIC HYDROGEN & OXYGEN
7-14-77 See Space Shuttle
7-15-77 See Space Shuttle
7-21-77 ASTROBEE F, NASA 25.016 TO OBTAIN U/V/MONOCHROMATIC PHOTOS OF HELIX
7-21-77 See Space Shuttle
7-26-77 ASTROBEE F NASA 25.021. STUDY DIFFUSED/BACKGROUND & SEARCH FOR POINT SOURCES
7-26-77 NIKE BLACK BRANT NASA 27.031.OBTAIN HI/ANGULAR RESOLUTION COSMIC X-RAY MEA.
7-28-77 NO. 3 B-1 BOMBER SRAM LAUNCH OVER WSMR/FROM ABOUT 6K FT.
8-9-77 AEROBEE 150 AF 03.509-1. MEASURE/SOLAR U/V AT WAVE LENGTHS 1300 TO/3500
8-10-77 2ND NAVY TRIDENT BALLISTIC MISSILE/DESTRUCT SYSTEM TEST

8-17-77 NASA 18.182 NIKE TOMAHAWK. MEASURE/SOLAR U/V FLUX AT TOP OF EARTH'S
8-17-77 NASA 18.1009 NIKE TOMAHAWK. OBTAIN/MEASURABLE DAYGLOW EXTREME U/V
8-24-77 See Space Shuttle
8-30-77 See Space Shuttle

WALLOPS ISLAND, VA (Wallops Flight Center)

7-19-77 TAURUS-ORION/T2-8818/3 00AM
8-10-77 NIKE-APACHE/T2-8662/1 01AM
8-10-77 US-USSR JOINT EXP/SUPER LOKI & M-100B
8-12-77 US-USSR JOINT EXP/SUPER LOKI & M-100B
8-15-77 US-USSR JOINT EXP/SUPER LOKI & M-100B
8-16-77 US-USSR JOINT EXP/SUPER LOKI & M-100B
8-17-77 US-USSR JOINT EXP/SUPER LOKI & M-100B
8-18-77 US-USSR JOINT EXP/SUPER LOKI & M-100B
8-19-77 US-USSR JOINT EXP/SUPER LOKI & M-100B
8-22-77 US-USSR JOINT EXP/SUPER LOKI & M-100B
8-23-77 US-USSR JOINT EXP/SUPER LOKI & M-100B

CHATANIKA, AK (Poker Flat Rocket Site)
None Reported

VANDENBERG AFB, CA (Western Test Range)

3-31-77 LAUNCH/NAVY/BOMARC
4-27-77 10TH OLYMPIC ARENA/SAC/ICBM COMBAT COMPETITION
5-11-77 BOMARC/MISSILE/DESTROYED IN FLIGHT
5-12-77 LAUNCH/777 COMMUNICATION SATELLITE
5-18-77 MINUTEMAN 1/DELIVERY SYSTEM/SAFEGUARD/ADVANCED DEVELOPMENT
5-23-77 LAUNCH/SKY SPY EARLY WARNING SATELLITE
5-28-77 SAC/LAUNCHES/MINUTEMAN-3/MULTI WARHEAD/MISSILE
6-2-77 STRATEGIC AIR COMMAND/MINUTEMAN-3/MIRV/SYSTEM/UPGRADE/MISSION
6-4-77 CLASSIFIED/SPACECRAFT/USAF THOR/BOOSTER
6-16-77 US AIR FORCE/LAUNCHES/MINUTEMAN-3/TECHNOLOGY/DEVELOPMENT/FLIGHT
6-23-77 NAVIGATIONAL/ORBITING/SPACE STATION/USAF/ATLAS-F/BOOSTER
6-27-77 POLAR ORBITING/SATELLITE/USAF TITAN 2D/CLASSIFIED/MISSION
6-28-77 MINUTEMAN 2/INSTANT ICBM/BY THE/SAC/AIRBORNE LAUNCH CREW
7-13-77 BOMARC TARGET/MISSILE DESTROYED BY AIR TO AIR/OR GROUND TO AIR MISSILE
8-3-77 MINUJEMAN-3/ADVANCED/COMMAND DESTRUCT/SYSTEM/DEVE OPMENT
8-4-77 HAWK/US MARINE CORPS/SHORT RANGE/AIR DEFENSE ROCKET
8-5-77 HAWK/US MARINE CORPS/SHORT RANGE/AIR DEFENSE ROCKET
8-8-77 HAWK/US MARINE CORPS/SHORT RANGE/AIR DEFENSE ROCKET
8-10-77 MINUTEMAN 3/MULT WARHEAD/SUCCESSFUL
9-3-77 MINUTEMAN/INSTANT ICBM
9-14-77 STRATEGIC AIR COMMAND/MINUTEMAN-3/LAUNCHED BY/AIRBORNE LAUNCH CREW

PALESTINE, TX (Balloon Site)

4-6-77 TO MEASURE TRACE/GASES SUCH AS PROPELLENT & S.S. EXHAUST
4-25-77 A 40in TELESCOPE TO MAP THE/FAR-INFARED & THE GALACTIC REGION
4-26-77 A PHOTOIONIZATION MASS SPECTROMETER TO MEASE THE CONCENTRATION
5-11-77 TO DETECT/BURSTING & PERIODIC X-RAY SOURCES
5-23-77 TO MEASURE THE/NEUTRON & GAMMA RAYS FLUXES
6-6-77 INFRARED TELESCOPE/FOR MEASUREMENTS OF THE MILKY WAY
6-10-77 APEX MOUNTED/SOLAR TRAKER WITH SPACE TYPE CELLS/ON THE TRACKER PLATE
9-3-77 TO OBSERVE EXTRASOLAR X-RAY/SOURCES IN THE 15-180 kev ENERGY RANGE

EDWARDS, CA (Dryden Research Center)

1-15-77 See Space Shuttle

(Edwards Cont)

1-17-77 See Space Shuttle
2-2-77 See Space Shuttle
2-8-77 See Space Shuttle
2-12-77 See Space Shuttle
2-15-77 See Space Shuttle
2-16-77 See Space Shuttle
2-18-77 See Space Shuttle
2-22-77 See Space Shuttle
2-25-77 See Space Shuttle
2-25-77 See Space Shuttle
2-28-77 See Space Shuttle
3-2-77 See Space Shuttle
3-2-77 See Space Shuttle
3-3-77 TEST FLIGHT/YF-12 SUPERSONIC #116 A/C 935?F.FULTON, V. HORTON
3-3-77 TEST FLIGHT/YF-12 SUPERSONIC #61 A/C 937/D MALLICK, R. YOUNG
3-4-77 See Space Shuttle
3-18-77 TEST FLIGHT/YF-12 SUPERSONIC
3-18-77 See Space Shuttle
3-19-77 See Space Shuttle
3-21-77 See Space Shuttle
3-22-77 See Space Shuttle
3-22-77 See Space Shuttle
3-22-77 See Space Shuttle
3-22-77 See Space Shuttle
3-23-77 See Space Shuttle
3-28-77 See Space Shuttle
3-30-77 See Space Shuttle
4-1-77 TEST FLIGHT/YF-12 FLIGHT #64/DON MALLICK, VIC HORTON
4-1-77 See Space Shuttle
4-5-77 See Space Shuttle
4-6-77 See Space Shuttle
4-14-77 See Space Shuttle
4-14-77 TEST FLIGHT/YF-16 SUPERSONIC/TOM STAFFORD
4-14-77 TEST FLIGHT/F-8 D-F-B-W #91-54-12/GARY KRIER
4-14-77 TEST FLIGHT/F-8 D-F-B-W #92-55-13/TOM MCMURTRY
4-14-77 See Space Shuttle
4-14-77 See Space Shuttle
4-14-77 See Space Shuttle
4-15-77 See Space Shuttle
4-15-77 See Space Shuttle
4-15-77 See Space Shuttle
4-15-77 TEST FLIGHT/F-8 D-F-B-W #94-57-15/TOM MCMURTRY
4-15-77 TEST FLIGHT/F-8 D-F-B-W #93-56-14/GARY KRIER
4-15-77 See Space Shuttle
4-21-77 See Space Shuttle
4-21-77 See Space Shuttle
4-22-77 See Space Shuttle
4-22-77 TEST FLIGHT/YF-16 SUPERSONIC/TOM STAFFORD
4-22-77 See Space Shuttle
4-25-77 TEST FLIGHT/B-747 DELTA INTEGRATED CHECKOUT
4-26-77 See Space Shuttle
4-29-77 See Space Shuttle
4-2-77 See Space Shuttle
5-3-77 See Space Shuttle
5-4-77 See Space Shuttle
5-4-77 See Space Shuttle
5-11-77 See Space Shuttle
5-16-77 See Space Shuttle
5-19-77 See Space Shuttle

(Edwards Cont)
5-20-77 See Space Shuttle
5-24-77 See Space Shuttle
5-25-77 See Space Shuttle
5-26-77 TEST FLIGHT YF-16
6-7-77 See Space Shuttle
6-10-77 See Space Shuttle
6-10-77 See Space Shuttle
6-15-77 See Space Shuttle
6-16-77 See Space Shuttle
6-28-77 See Space Shuttle
7-26-77 See Space Shuttle
8-12-77 See Space Shuttle

KENNEDY SPACE CENTER, FL (Eastern Test Range)

3-28-77 LAUNCH/3RD TRIDENT/PAD 25C/pmk KSC; Patrick AFB
4-14-77 LAUNCH/SHORT RANGE ATTACK MISSILE/FIED FROM A B-52
4-20-77 LAUNCH/GEOS/ESA/pmk KSC,KSC(MIL),Astronaut Trial Sta Titusville, Patrick AFB FL; Agana GU(GWM);Waimea HI(HAW);Greenbelt MD(GSC);Ascension(ASC); US NAVY FPO 09560,St David's Bermuda(BDA);Quito Ecuador(QUI);Darnstadt West Germany
4-29-77 LAUNCH/4TH TRIDENT/PAD 25/pmk KSC,Patrick AFB FL
5-12-77 LAUNCH/TWIN MILITARY/COMMUNICATION SATELLITES/pmk KSC,Astronaut Trial Station, Patrick AFB FL; Vandenberg AFB, CA
5-23-77 LAUNCH/SECRET SATELLITE/ATLAS-AGENA ROCKET/PAD 13/2:13 PM/pmk KSC; Vandenberg AFB CA
5-26-77 LAUNCH/INTELSAT IV-A (F-4)/pmk KSC,Astronaut Trial Sta Titusville, Patrick AFB FL;US NAVY FPO 09560,St David's Bermuda (BDA
6-16-77 LAUNCH/GOES-B/NOAA/pmk KSC,Astronaut Trial Sta Titusville,Patrick AFB FL; Waimea HI(HAW);Rosman NC(ROS);Greenbelt MD(GSC)
6-17-77 LAUNCH/SIGNE-3/pmk Geeenbelt MD(GSC)
6-27-77 LAUNCH/5TH TRIDENT/PAD 25/pmk KSC,Patrick AFB FL
7-14-77 LAUNCH/GMS/JAPAN/pmk KSC,KSC(MIL),Astronaut Trial Sta Titusville, Patrick AFB FL;Rosman NC(ROS);Ascension (ASC);Santiago Chile(AGO);US NAVY FPO 09560 (BDA);Masuda Japan
8-12-77 LAUNCH/HEAO-A/pmk KSC,KSC(MIL),Astroanut Trial Sta Titusville,Patrick AFB FL:Agana GU(GWM);Waimea HI(HAW);US NAVY FPO 09560,St David's Bermuda (BDA); Greenbelt MD(GSC)
8-18-77 LAUNCH/TRIDENT MISSILE/PAD 25/pmk KSC,Patrick AFB FL
8-20-77 LAUNCH/VOYAGER-2/pmk KSC,KSC(MIL),Patrick AFB,Cape Canaveral,Astronaut Trial Sta Titusville FL;Pasadena CA(JPL);Barstow CA(DSS-14);THARWA ACT AUSTRALIA (DSS-42,DSS-43,DSS-43);Canberra City ACT AUSTRALIA(C-102);Agana GU(GWM); Greenbelt MD(GSC);Vandenberg AFB CA
8-25-77 LAUNCH/SIRIO-A/ITALIAN RESEACH/pmk KSC,Orlando(MIL),Titusville Trial Sta Titusville,Patrick AFB FL;Ascension(ASC);US NAVU FPO 09560,St David's Bermuda(BDA);Agana GU(GWM);Greenbelt MD(GSC);Milano Italy(Bteva Obser)
9-3-77 LAUNCH/7TH TRIDENT/PAD 25/pmk Astronaut Trial Sta Titusville FL
9-5-77 LAUNCH/VOYAGER-1/pmk KSC,KSC(MIL),Astroanut Trial Sta Titsville,Patrick AFB,Cape Canaveral FL;Pasadena CA(JPL);Barstow CA(DSS-11;Tharwa ACT Australia(DSS-42,DSS-43,DSS-44);Canberra City ACT Australia(C-102);Madrid Spain (STDN,DSS-61,DSS-62,DSS-63,C-101);US NAVY FPO 09560,St David's Bermuda(BDA); Agana GU(GWM);Santiago Chile(AGO);Grand Turk Turl Islands(E-101);Greenbelt MD(GSC);Vandenberg AFB CA;Honolulu HI(VAN)
9-13-77 LAUNCH/OTS/pmk KSC,Patrick AFB FL;Agana GU(GWM);Rosman NC(ROS);US NAVY 09560,St David's Bermuda(BDA);Quito Ecuador(QUI);Greenbelt MD(GSC)

KOUROU, FRENCH GUYANE (CNES)
None Reported

KIRUNA, SWEDEN (ESRO)

3-20-77 LAUNCH/ARIES/PORCUPINE

ANDOYA, NORWAY (Andoya Rocket Range)
None Reported

CHURCHILL RESEARCH RANGE CANADA

3-18-77 LAUNCH/ASTROBEE F
3-20-77 LAUNCH/BLACK BRANT V
8-15-77 LAUNCH/DARTSONDE-WEATHER ROCKET
9-2-77 LAUNCH/DARTSONDE-WEATHER ROCKET

WOOMERA AUSTRALIA LAUNCHES
None Reported

HOLLOMAN AFB, NM

3-23-77 B-1 EJECTION SEAT/AT 150 KNOTS
3-30-77 See Space Shuttle
3-31-77 See Space Shuttle
4-6-77 B-1 EJECTION SEAT/150 KNOTS
4-6-77 See Space Shuttle
4-15-77 LANCE ARMA GYRO/AT 1800 FEET PER SEC
4-18-77 SMALL HARDENED INERTIAL PLATFORM/AT 2700 FEET PER SECOND
4-26-77 See Space Shuttle
4-29-77 B-1 EJECTION SEATS/DRAG RUN AT 600 KNOTS
5-3-77 ARMY PLUME STUDY/ON PARACHUTE FOR FUTURE MISSILE/USE,AT MACH 1.5
5-4-77 B-1 EJECTION SEAT/TESTING DUAL EJECTION AT 450 KNOTS
5-5-77 See Space Shuttle
5-6-77 PLUME STUDY ON ARA-/CHUTE FOR FUTURE MISSILE/USE AT MACH 1.5
5-11-77 B-1 EJECTION SEATS/DRAG RUN AT 600 KNOTS
5-12-77 PLUME STUDY ON PARA-/CHUTE FOR FUTURE MISSILE/USE AT MACH 1.5.
5-19-77 B-1 EJECTION SEAT/DUAL SEAT EJECTION AT 450 KNOTS USING DUMMIES
5-19-77 BALLOON LAUNCHED CARRYING A PACK-/AGE,THAT CONTAINED THE PIONEER VENUS ATMOSPHERIC PROBE
5-25-77 B-1 EJECTION SEAT/DUAL SEAT EJECTION AT 600 KNOTS USING DUMMIES
6-21-77 F-16B CREW ESCAPE/TESTING DUAL EJECTION/SEATS WITH DUMMIES
6-30-77 MATERIAL EROSION TESTS
7-6-77 TEST 45E-F1/DUEL EJECTION WITH/DUMMIES AT 450 KNOTS
7-14-77 See Space Shuttle
7-15-77 See Space Shuttle
7-19-77 See Space Shuttle
7-20-77 F-16B CREW ESCAPE/DUEL EJECTION AT 200 KNOTS
7-20-77 See Space Shuttle
8-9-77 TESTING EFFECTS OF SHOCK WAVES AT 879 FPS USING 12.000 LB OF TNT
8-12-77 DUEL EJECTION WITH DUMMIES AT 600 KNOTS
8-25-77 HYPERSONIC TECHNOLOGY TEST/34X-X8B
8-31-77 PROJECT ARROWHEAD/TESTING EXPERIMENTAL RECOVERY PARACHUTE AT MACH 1.
9-12-77 PLUME STUDY ON/PARCHUTE FOR FUTURE MISSILE/USE, AT 157 FEET PER SECOND
9-13-77 PLUME STUDY ON/PARACHUTE FOR FUTURE MISSILE/USE, AT 157 FEET PER SECOND
9-15-77 TESTING SAMPLES OF/MATERIAL FOR POSSIBLE USE/ON SPACE REENTRY VEHICLES
9-20-77 TESTING EROSION OF/MATERIAL FOR ARMY AT MACH 4.

MISCELLANOUS

PROJECT ASHCAN, CANAL ZONE
3-23-77 TEST LAUNCH/1ST LAUNCH 70,000 FT/SCIENTIFIC BALLOON EXPERIENT/FROM ALBROOK AFB, CZ
3-23-77 RECOVERY/PAYLOAD LOST/RECOVERY GEAR FAILED

(Miscellanous Cont)

3-24-77 TEST LAUNCH/2ND LAUNCH/80,000FT
3-24-77 RECOVERY/PAYLOAD LOST/CRASHED IN PANAMA
3-24-77 TEST LAUNCH/3RD LAUNCH/102,000 FEET
3-24-77 RECOVERY GEAR DAMAGED/NEXT LAUNCH POSTPONED
3-31-77 TEST/6TH LAUNCH/120,000 FEET/LARGEST BALLOON LAUNCHED
3-31-77 PAYLOAD RECOVERY IN MID-AIR BY HERCULES HC-130
4-1-77 REPEAT OF 1ST TEST LAUNCH DELAYED
4-2-77 7TH LAUNCH/70,000 FT/1ST LAUNCH REPEATED
4-3-77 RECOVERY PLANE AND CREW DEPART FROM HOWARD AFB
4-3-77 HC-130 FLYS BACK TO HOLLOMAN AFB NM

SPECIAL EVENTS/POSTMARKS/CACHETS

3-24-77 10TH ANNIVERSAY OF US SPACE PROBES/pmk ???
3-26-77 15TH ANNIVERSARY OF ORBITAL FLIGHT FRIENDSHIP 7/pmk COLOPEX '77
3-26-77 SALUTE TO 50 YEARS/OF TRANSATLANTIC AVIATION(picture cancel)/pmk Rockford IL
4-15-77 LOPO FMF/MIDWEST POSTAGE STAMP & COIN SHOW/pmk Chicago IL (Special picture postmark)(ATA had special covers & own covers with picture cancel)
4-17-77 7TH ANNIVERSARY/APOLLO 13/pmk KSC;Astronaut Trial Sta Titusville FL
4-23-77 LOPO FMF/pmk PARFOREX STATION,PARK FOREST IL (Picture cancel)(Space Unit & own covers with picture cancel)
4-23-77 ORBITER 101-PROJECT/pmk PARFOREX PARK FOREST IL(Picture word cancel)
4-27-77 5TH ANNIVERSARY/APOLLO 16/pmk Astronaut Trial Sta Titusville FL
5-5-77 16TH ANNIVERSARY/FREEDOM 7/pmk Kennedy Space Center FL
5-7-77 MICHIGAN SPACE CENTER/JACKSON COMM COLLEGE/pmk Jackson MI
5-7-77 DEDICATION/MICHIGAN SPACE CENTER(picture & word cancel/pmk Jackson MI
5-14-77 HUNTPEX(Space Shuttle cancel)/pmk Huntsville Ala
5-14-77 4TH ANNIVERSARY/SKYLAB I/pmk Astranaut Trial Sta Titusville FL
5-15-77 14TH ANNIVERSARY/FAITH 7/pmk Cape Canaveral FL
5-18-77 8TH ANNIVERSARY/APOLLO 10/pmk Kennedy Space Center FL
5-24-77 15TH ANNIVERSARY/AURORA 7/pmk Kennedy Space Center FL
5-25-77 4TH ANNIVERSARY/SKYLAB II/pmk Kennedy Space Center FL
6-3-77 12TH ANNIVERSARY/GEMINI 4/pmk Kennedy Space Center FL
6-3-77 11TH ANNIVERSARY/GEMINI 9/pmk Kennedy Space Center FL
6-16-77 WERNHER VON BRAUN: MARCH 23, 1912-/JUNE 16, 1977. U.S. GERMAN SPACE/ PIONEER AND EXPERT AT W&MR FROM 1945-1950/pmk White Sands Missile Range NM
7-1-77 Space Shuttle Emblem/FOR BENEFITS/ON EARTH/NASA/(Dates vary in 20 cities)
7-15-77 2ND ANNIVERSARY/APOLLO-SOYUZ/pmk Kennedy Space Center FL
7-16-77 8TH ANNIVERSARY/APOLLO 11/pmk Astronaut Trial Sta Titusville FL
7-18-77 11TH ANNIVERSARY/GEMINI 10/pmk Kennedy Space Center FL
7-20-77 8th ANNIVERSARY/LUNAR LANDING/Whitney & FMF LOPO/pmk C. Canaveral;Patrick AFB
7-21-77 16TH ANNIVERSARY/LIBERTY BELL/pmk Kennedy Space Center FL
7-26-77 6TH ANNIVERSARY/APOLLO 15/pmk Kennedy Space Center FL
8-3-77 POSEIDON MISSILE LAUNCH/USS JAMES MONROE/12:00 NOON/pmk Kennedy Space Center
8-21-77 Special picture cancel of Space Shuttle,HELIOS & Jet)pmk Berlin W. Germany
8-21-77 12TH ANNIVERSARY/GEMINI 5/pmk Cape Canaveral FL
8-29-77 25TH ANNIVERSARY/INITAL LAUNCHING SNARK/FLORIDA MISSILE TEST RANGE/FMF TRAV-EL/FIRST DAY/pmk Patrick AFB FL
9-6-77 POSEIDON C-3 LAUNCH/USS HENRY CLAY/5:00PM/pmk Kennedy Space Center FL
9-12-77 BRITISH POLARIS MISSILE LAUNCHED/pmk Kennedy Space Center FL
9-17-77 Picture Cancel APOLLO 11 eagle/pmk Gerlin W. Germany

SPACE SHUTTLE EVENTS

2-24-76 SHUTTLE ASTRONAUTS NAMED/HAISE,FULLERTON,ENGLE,TRULY/pmk Houston TX
10-7-76 FIRST STA FLIGHT BY ASTRONAUT PILOT LT COL R.F.OVERMYER/pmk Houston TX
1-15-77 TRAINING/APPROACH AND LANDING/F.FULTON & T.MCMURTRY/pmk Edwards CA
1-17-77 TRAINING/APPROACH & LANDING/F,FULTON & T.MCMURTRY/pmk Edwards CA
2-2-77 TRAINING/APPROACH & LANDING/F.FULTON & T.MCMURTRY/pmk Edwards CA

(Space Shuttle Cont)

2-8-77 FIRST MATING/747 and ENTERPRISE/pmk Edwards CA
2-12-77 RAISE THE NOSE GEAR OF THE 747 TO CLEAR THE UPPER HANGER/pmk Edwards CA
2-15-77 ENTERPRISE-747/TAXI TRIALS/THREE TESTS/pmk Edwards CA
2-16-77 F-8 DIGITAL FLY BY WIRE/3-SHUTTLE SYSTEMS/COMPUTERS/G. KRIER/pmk Edwards CA
2-22-77 TRAINING/APPROACH & LANDING TEST/F.FULTON,T.MCMURTRY/pmk Edwards CA
2-25-77 T-38 #920 BRAND 3.9-30K/pmk White Sands Missile Range NM
2-25-77 F-8 DIGITAL FLY BY WIRE/3-SHUTTLE SYSTEMS/COMPUTERS/G.KRIER/pmk Edwards CA
2-25-77 ENTERPRISE-747 ALTITUDE TEST/26,000FT/pmk Edwards CA
2-28-77 ENTERPRISE-747 ALTITUDE TEST/28,500FT/pmk Edwards CA
3-1-77 SHUTTLE WIND TUNNEL TEST/pmk Moffett Field CA
3-2-77 SHUTTLE WIND TUNNEL TEST/pmk Moffett Field CA
3-2-77 ENTERPRISE-747 ALTITUDE TEST/30,000 FT/F. FULTON/pmk Edwards CA
3-2-77 F-8 DIGITAL FLY BY WIRE/#85-48/G. KRIER/pmk Edwards CA
3-2-77 TEST FLIGHT/SHUTTLE ENTERPRISE-747 IC-5/pmk Edwards CA
3-4-77 FIRST DEMATING/SHUTTLE-ENTERPRISE-747/pmk Edwards CA
3-15-77 SHUTTLE WIND TUNNEL TEST/pmk Moffwtt Field CA
3-18-77 F-8 PERFORMS-COMPUTERIZED/SPACE SHUTTLE FREE FLIGHT/SIMULATIONS/pmk Edwards
3-21-77 F-8 PERFORMS-COMPLUTERIZED/SPACE SHUTTLE FREE FLIGHT/SIMULATIONS/pmk Edwards
3-21-77 SHUTTLE WIND TUNNEL TEST/pmk Moffett Field CA
3-22-77 SHUTTLE WIND TUNNEL TEST/pmk Moffett Field CA
3-22-77 SHUTTLE APPROACH TRAINING/pmk Edwards CA
3-22-77 STA #1-GULFSTREAM 947/MAKES FIRST TEST FLIGHT/pmk Edwards CA
3-22-77 F-8 PERFORMS-COMPUTERIZED/SPACE SHUTTLE FREE FLIGHT/SIMULATIONS/pmk Edwards
3-22-77 F-9 PERFORMS-COMPUTERIZED/SPACE SHUTTLE FREE FLIGHT/SIMULATIONS/pmk Edwards
3-23-77 SHUTTLE TRAINING AIRCRAFT/MENDENHALL & GRIGGS/pmk Edwards CA
3-24-77 SHUTTLE WIND TUNNEL TEST/pmk Moffett Field CA
3-28-77 SHUTTLE LANDING TESTS/MALLICK & YOUNG/pmk Edwards CA
3-29-77 SPACE SHUTTLE SIMULATED LANDINGS/JETSTAR/MALLOCK & YOUNG/pmk Edwards CA
3-30-77 SUPERSONIC SLED "ENTERPRISE"(ALT) ESCAPE SYSTEM TESTS/pmk Holloman AFB NM
3-30-77 SHUTTLE WIND TUNNEL TEST/pmk Moffett Field CA
3-31-77 TEST FLIGHT/GRUMMAN GULFSTREAM II/DICK TRULY/pmk Hollman AFB NM
4-1-77 SPACE SHUTTLE WIND TUNNEL TEST/pmk Moffett Field CA
4-4-77 SPACE SHUTTLE SIMULATED LANDINGS/JETSTAR/MALLICK & MCMUTRY/pmk Edwards CA
4-5-77 SHUTTLE LANDING TESTS/JETSTAR/MALLICK & ENEVOLDSEN/pmk Edwards CA
4-6-77 SPACE SHUTTLE SIMULATED LANDINGS/JETSTAR/MALLICK & MCMURTRY/pmk Edwards CA
4-6-77 SPACE SHUTTLE SMD III TEST/pmk Moffett Field CA
4-6-77 ASTRONAUT TRAINING/GUMMAN GULFSTREAM II/pmk Holloman AFB NM
4-7-77 SPACE SHUTTLE WIND TUNNEL TEST/pmk Moffett Field CA
4-7-77 NASA GRUMMAN GULFSTREAM II FLIGHT TRAINING/pmk White Sands Missile Range NM
4-8-77 NASA GRUMMAN GULFSTREAM II FLIGHT TRAINING/pmk White Sands Missile Range NM
4-12-77 SPACE SHUTTLE/T-38/J. YOUNG/pmk White Sands Missile Range NM
4-14-77 TEST FLIGHT/GULFSTREAM II/HAISE & FULLERTON/2 FLIGHTS/pmk Edwards CA
4-14-77 SPACE SHUTTLE/1977 BEDREST STUDT/pmk Moffett Field CA
4-14-77 MAIN ENGINE TEST/INSTALLED ENGINE 004/pmk Bay St Louis MS
4-14-77 SHUTTLE TRAINING AIRCRAFT/HAISE & FULLERTON/pmk Edwards CA
4-14-77 SPACE SHUTTLE FREE FLIGHT SIMULATIONS/TOM MCMURTRY/pmk Edwards CA
4-14-77 F-8 PERFORMS-COMPUTERIZED/GARY KRIER/FREE FLIGHT/SIMULATIONS/pmk Edwards CA
4-15-77 F-8 PERFORMS-COMPLUTERIZED/TOM MCMURTRY/FREE FLIGHT/SIMULATIONS/pmk Edwards
4-15-77 F-8 PERFORMA-COMPUTERIZED/GARY KRIER/FREE FLIGHT/SIMULATIONS/pmk Edwards CA
4-15-77 TEST FLIGHT/GULFSTREAM II/ENGLE & TRULY/2 FLIGHTS/pmk Edwards CA
4-15-77 SHUTTLE WIND TUNNEL TESTS/pmk Moffett Field CA
4-18-77 SHUTTLE WIND TUNNEL TESTS/pmk Moffett Field CA
4-19-77 TEST STAND ACTIVATED/pmk Bay St Louis MS
4-20-77 SPACE SHUTTLE SIMULATED LANDINS/MCMURTRY & YOUNG/pmk Edwards CA
4-21-77 TEST FLIGHT/GULFSTREAM II/STAFFORD,FULLERTON,MENDENHALL/2 FLIGHTS/pmk Edwards
4-21-77 SPACE SHUTTLE/1977 BEDREST STUDY/pmk Moffett Field CA
4-22-77 TEST FLIGHT/GULFSTREAM II/STAFFORD,FULEERTON,MENDENHALL/2 FLIGHTS/pmk Edwards
4-22-77 SPACE SHUTTLE SIMULATION/CHECKOUT/MENDENHALL/pmk Edwards CA
4-25-77 SHUTTLE ENTERPRISE PREPARES/FOR MANNED"ALT" FLIGHTS/pmk Edwards CA

(Space Shuttle Cont)

4-26-77 OBITER(SPACE SHUTTLE)/TESTING DUEL EJECTION/pmk Hollman AFB NM
4-27-77 SPACE SHUTTLE/1977 BEDREST STUDY/pmk Moffett Field CA
4-28-77 SPACE SHUTTLE/1977 BEDREST STUDY/pmk Moffett Field CA
4-28-77 SPACE SHUTTLE WIND TUNNEL TESTS/pmk Moffett Field CA
4-29-77 SPACE SHUTTLE WIND TUNNEL TESTS/pmk Moffett Field CA
4-29-77 SHUTTLE LANDING TESS/JETSTAR/MALLICK & MCMURTRY/pmk Edwards CA
4-29-77 MAIN ENGINE TEST 059 ENGINE 002/pmk Bay St Louis MS
5-2-77 SPACE SHUTTLE SIMULATED LANDINGS/JETSTAR/MALLICK & MCMURTRY/pmk Edwards CA
5-3-77 NASA GRUMMAN GULFSTREAM II SHUTTLE/TRAINING/pmk White Sands Missile Range NM
5-3-77 SPACE SHUTTLE SIMULATED LANDINGS/JETSTAR/MALLICK & YOUNG/pmk Edwards CA
5-4-77 GULFSTREAM TRAINING/GRIGGS,MANSON,BLACKSHEAR,BASSHAM/pmk White Sands Missile
5-4-77 SIMULATED/PROFILES FOR ALT CAPTIVE/ACTIVE FLIGHT/pmk Edwards CA
5-4-77 SHUTTLE TEST/WEIGHTLESS/10 WOMEN/pmk Moffett Field CA
5-4-77 MAIN ENGINE TEST 060 ENGINE 002/pmk Bay St Luois MS
5-4-77 SHUTTLE LANDING TESTS/JETSTAR/MALLICK & SCOBEE/pmk Edwards CA
5-5-77 SUPERSONIC SLED "ENTERPRISE"(ALT)ESCAPE SYSTEM TEST/pmk Hollman AFB CA
5-5-77 SHUTTLE TRAINING AIRCRAFT/pmk White Sands Missile Range NM
5-5-77 MAIN ENGINE TEST 061 ENGINE 002/pmk Bay St Louis MS
5-6-77 SHUTTLE TRAINING AIRCRAFT/pmk White Sands Missile Range NM
5-7-77 MAIN ENGINE TEST 062 ENGINE 002/pmk Bay St Louis MS
5-10-77 SPACE SHUTTLE/1977 BEDREST STUDY/pmk Moffett Field CA
5-11-77 SHUTTLE TRAINING AIRCRAFT/pmk White Sands Missile Range NM
5-11-77 SPACE SHUTTLE SIMULATED LANDING/MALLICK & MCMURTY/pmk Edwards CA
5-12-77 SHUTTLE TRAINING AIRCRAFT/pmk White Sands Missile Range NM
5-13-77 SHUTTLE TRAINING AIRCRAFT/pmk White Sands Missile Range NM
5-13-77 MAIN ENGINE TEST 063 ENGINE 002/pmk Bay St Louis MS
5-14-77 SHUTTLE TRAINING AIRCRAFT/pmk White Sands Missile Range NM
5-14-77 MAIN ENGINE TEST 064 ENGINE 002/pmk Bay St Louis MS
5-16-77 SPACE SHUTTLE SIMULATED LANDING/MALLICK & YOUNG/5-14-77/pmk Edwards CA
5-16-77 TEST/ASSESS 2/pmk Moffett Field CA
5-17-77 MAIN ENGINE TEST 065 ENGINE 002/pmk Bay St Louis MS
5-17-77 TEST/ASSESS 2/pmk Moffett Field CA
5-18-77 SHUTTLE TRAINING AIRCRAFT/pmk White Sands Missile Range CA
5-18-77 TEST/ASSESS 2/pmk Moffett Field CA
5-18-77 EXTERNAL TANK PASSES PRESSURE TEST/pmk Bay St Louis MS
5-19-77 SHUTTLE TRAINING AIRCRAFT/pmk White Sands Missile Range NM
5-19-77 TEST/ASSESS 2/pmk Moffett Field CA
5-19-77 FIRST TEST ENGINE 004/pmk Bay St Louis MS
5-19-77 SHUTTLE ENTERPRISE PREPARES/FOR MANNED "ALT" FLIGHT/pmk Edwards CA
5-20-77 ALL 3 "APUs" AUXILIARY POWER UNITS/FIRED AT THE SAME TIME/pmk Edwards CA
5-20-77 SHUTTLE TRAINING AIRCRAFT/pmk White Sands Missile Range NM
5-20-77 TEST/ASSESS 2/pmk Moffett Field CA
5-20-77 MAIN ENGINE TEST 002 ENGINE 004/pmk Bay St Louis MS
5-21-77 TEST/ASSESS 2/pmk Moffett Field CA
5-22-77 TEST/ASSESS 2/pmk Moffett Field CA
5-23-77 TEST/ASSESS 2/pmk Moffett Field CA
5-24-77 TEST/ASSESS 2/pmk Moffett Field CA
5-24-77 STA GRUMMAN FULFSTREAM II #946/MANSEN,TRULY,BASSHAM/pmk White Sands Missile
5-24-77 MAIN ENGINE TEST 003 ENGINE 004/pmk Bay St Louis MS
5-24-77 SHUTTLE ENTERPRISE PREPARES/FOR MANNED "ALT" FLIGHT/pmk Edwards CA
5-25-77 SIMULATED/PROFILES FOR ALT CAPTIVE/ACTIVE FLIGHT/pmk Edwards CA
5-26-77 GALILEO II/INVESTIGATOR'S FLIGHT/KARL HENIZE/pmk Moffett Field CA
5-25-77 TEST/ASSESS 2/pmk Moffett Field CA
5-25-77 STA GRUMMAN GULFSTREAM #946/MANSON,FULLERTON,WETER/pmk White Sands Missile
5-26-77 GRUMMAN GULFSTREAM #946 FLIGHT/ENGLE,GRIGGS/MEYER/pmk White Sands Missile
5-27-77 GRUMMAN GULFSTREAM #946/pmk White Sands Missile Range NM
5-28-77 MAIN ENGINE TEST 004 ENGINE 004/pmk Bay St Louis MS
6-7-77 GROUND TESTS COMPLETED/MISSION SIMULATION COMPLETED/pmk Edwards CA
6-10-77 DTV1/SOLID BOOSTER PARACHUTE DROP FLIGHT/FULTON & MALLICK/pmk Edwards CA
6-10-77 DTC2/SOLID BOOSTER PARACHUTE DROP FLIGHT/FULTON & MALLICK/pmk Edwards CA

(Space Shuttle Cont)

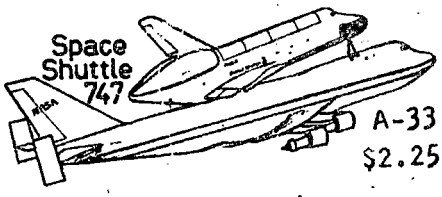
6-14-77 SHUTTLE TRAING AIRCRAFT/pmk White Sands Missile Range NM
6-15-77 NASA GULFSTREAM II STA FLIGHT/pmk White Sands Missile Range NM
6-15-77 B-52/DROP OF SOLID ROCKET BOOSTER/FULTON & MALLICK/pmk Edwards CA
6-15-77 B-52/DROP OF SOLID ROCKET BOOSTER/FULTON & MALLICK?pmk El Centra CA
6-18-77 FIRST STATIC FIRING/SPACE SHUTTLE/SOLID ROCKET BOOSTER/pmk Brigham City UT
6-18-77 FIRST STATIC FIRING/OLID ROCKET BOOSTER/pmk Marshall Space Flight Center AL
6-18-77 SPACE SHUTTLE/FIRST ACTIVE CAPTIVE/pmk Edwards CA
6-22-77 MAIN ENGINE TEST 005 ENGINE 004/100 SECONDS/pmk Bay St Louis MS
6-24-77 MAIN ENGINE TEST 006 ENGINE 004/pmk Bay St Louis MS
6-24-77 ENTERNAL TANK/ORBITER/MPTA ARRIVES/pmk Bay St Louis MS
6-28-77 SPACE SHUTTLE/SECOND ACTIVE CAPTIVE/pmk Edwards CA
6-29-77 EXTERNAL TANK/ORBITER/MPTA INSTALLED/pmk Bay St Louis MS
6-30-77 ENGINE 2001 ARRIVES/pmk Bay St Louis MS
7-1-77 MAIN ENGINE TEST 007 ENGINE 004/pmk Bay St Louis MS
7-6-77 MAIN ENGINE TEST 008 ENGINE 004/pmk Bay St Louis MS
7-8-77 MAIN ENGINE TEST 009 ENGINE 004/pmk Bay St Louis MS
7-8-77 MAIN ENGINE TEST 010 ENGINE 004/pmk Bay St Louis MS
7-11-77 MAIN ENGINE TEST 011 ENGINE 004/pmk Bay St Louis MS
7-12-77 ENGINE 2001 INSTALLED MPTA/pmk Bay St Louis MS
7-13-77 MAIN ENGINE TEST 012 ENGINE 004/pmk Bay St Louis MS
7-14-77 GULFSTREAM TEST FLIGHT/HAYES & GRIGGS/pmk Holloman AFB NM
7-14-77 MAIN ENGINE TEST 013 ENGINE 004/pmk Bay St Louis MS
7-14-77 SPACE SHUTTLE WIND TUNNEL TEST/pmk Moffett Field CA
7-14-77 NASA SHUTTLE TRAINING AIRCRAFT/pmk White Sands Missile Range NM
7-15-77 GULFSTREAM TEST FLIGHT/HAYES & GRIGGS/pmk Holloman AFB NM
7-15-77 SHUTTLE TRAINING AIRCRAFT FLIGHT/pmk White Sands Missile Range NM
7-15-77 MAIN ENGINE TEST 066 ENGINE 002/pmk Bay St Louis MS
7-15-77 ENGINE 2002 ARRIVES/pmk Bay St Louis MS
7-15-77 SPACE SHUTTLE WIND TUNNEL TEST/pmk Moffett Field CA
7-19-77 ENGINE 2002 INSTALLED/pmk Bay St Louis MS
7-19-77 CHARLEY HAYES AND DAVE GRIGGS TRAINING OVER WSMR/pmk Holloman AFB NM
7-19-77 MAIN ENGINE TEST 067 ENGINE 002/pmk Bay St Louis MS
7-20-77 CHARLEY HAYES AND DAVE GRIGGS TRAINING OVER WSMR/pmk Holloman AFB NM
7-20-77 SRACE SHUTTLE WIND TUNNEL TEST/pmk Moffett Field CA
7-21-77 GRUMMAN GULFSTREAM II/FLT OVER NORTHRUP STRIP/pmk White Sands Missile Range
7-21-77 MAIN ENGINE TEST 068 ENGINE 002/pmk Bay St Louis MS
7-22-77 ENGINE 0101 ARRIVES/pmk Bay St Louis MS
7-23-77 MAIN ENGINE TEST 069 ENGINE 002/pmk Bay St Louis MS
7-26-77 THIRD ACTIVE CAPTIVE/pmk Edwards CA
7-26-77 SPACE SHUTTLE WIND TUNNEL TEST/omk Moffett Field CA
7-27-77 MAIN ENGINE TEST 070 ENGINE 002/pmk Bay St Louis MS
7-27-77 WIND TUNNEL TEST/pmk Moffett Field CA
7-28-77 MAIN ENGINE TEST 014 ENGINE 004/pmk Bay St Louis MS
7-29-77 ENGINE 0101 INSTALLED MPTA/pmk Bay St Louis MS
7-30-77 MAIN ENGINE TEST 015 ENGINE 004/425 SECONDS/pmk Bay St Louis MS
8-2-77 MAIN ENGINE TEST 016 ENGINE 004/415 SECONDS/pmk Bay St Louis & Gulfport
8-3-77 MAIN ENGINE TEST 017 ENGINE 004/328 SECONS/pmk Bay St Louis MS
8-5-77 MAIN ENGINE TEST 018 ENGINE 004/425 SECONDS/pmk Bay St Louis MS
8-6-77 MAIN ENGINE TEST 019 ENGINE 004/257 SECONDS/pmk Bay St Louis MS
8-9-77 MAIN ENGINE TEST 020 ENGINE 004/425 SECONDS/pmk Bay St Louis MS
8-10-77 MAIN ENGINE TEST 021 ENGINE 004/425 SECONDS/pmk Bay St Louis MS
8-12-77 APPROACH & LANDING TEST/pmk Edwards CA,Marshall Space Flight Center AL
8-12-77 MAIN ENGINE TEST 071 ENGINE 002/pmk Bay St Louis MS
8-13-77 MAIN ENGINE TEST 072 ENGINE 002/pmk Bay St Louis MS
8-18-77 MAIN ENGINE TEST 073 ENGINE 002/155 SECONDS/pmk Bay St Louis MS
8-20-77 MAIN ENGINE TEST 074 EN INE 002/pmk Bay St Louis MS
8-24-77 MAIN ENGINE TEST 075 ENGINE 002/pmk Bay St Louis MS
8-24-77 GRUMMAN GULFSTREAM II(STA)/FLT OVER NORTHRUP STRIP/pmk White Sands Missile
8-27-77 MAIN ENGINE TEST 076 ENGINE 002/236 SECONDS/pmk Bay St Louis MS

(Space Shuttle Cont)

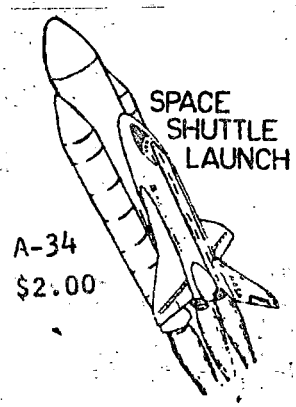
8-29-77 MAIN ENGINE TEST 022 ENGINE 004/pmk Bay St Louis MS
8-30-77 GRUMMAN GULFSTREAM II(STA)/FLT OVER NORTHRUP STRIP/pmk White Sands Missile
8-30-77 MAIN ENGINE TEST 077 ENGINE 002/FIRST 300 SEC. AT RPL/pmk Bay St Louis MS
8-31-77 MAIN ENGINE TEST 023 ENGINE 004/ENGINE DAMAGED BY FIRE/pmk Bay St Louis MS
9-2-77 57 SPACELAB-2/INVESTAGATORS BRIEFED/ON MISSION/REQUIREMENTS/pmk Marshall SFC
9-3-77 MAIN ENGINE TEST 078 ENGINE 002/336 SECONDS/pmk Bay St Louis MS
9-7-77 MAIN ENGINE TEST 024 ENGINE 004/pmk Bay St Louis MS
9-9-77 MAIN ENGINE TEST 025 ENGINE 004/335 SECONDS/pmk Bay St Louis MS
9-9-77 MAF/ROLLOUT MPTA/ET NO. 1/pmk New Orleans LA, Marshall Space Flight Center
9-12-77 MAIN ENGINE TEST 026 ENGINE 004/ENGINE DAMAGED BY FIRE/pmk Bay St Louis MS
9-13-77 ET 1 ARRIVES/INSTALLED/pmk Bay St Louis MS
9-13-77 SECOND FREE FLIGHT/pmk Edwards CA
9-13-77 WIND TUNNEL TEST/pmk Moffett Field CA
9-23-77 MAIN ENGINE TEST 079 ENGINE 002/FIRST TEST SINCE FIRE/pmk Bay St Louis MS

Some of the covers reported have been serviced by serveral individuals or organizations and have reported only the one date, event and postmark.

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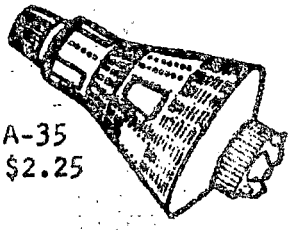


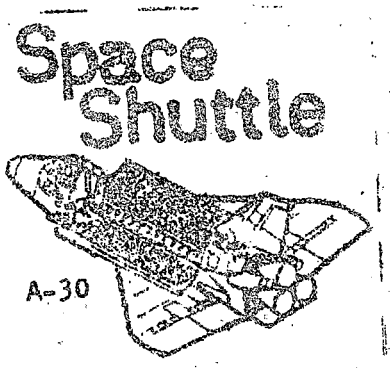
A-33
$2.25



A-34
$2.00

PROJECT
MERCURY


A-35
$2.25



A-30

I have come up with three new rubber stamps(A-33, A-34, A-35) in order to apply cachets to those covers coming back blank. From time to time someone inquires to the rubber stamps available for the Space Shuttle. Shown is A-30 at $1.75 and hope to have others in the future. When ordering please give the number of the rubber stamps and name will not hurt. These are sent by 3rd class mail.

I am sorry it has been so long between issues of The Dish. Another thing am sorry for is not as many articles as I would desire. When making The Dish up the list of covers is the last thing or almost the last pages to be made up. As you will note in this issue the large number of covers reported. Because of this, several pages of articles and other information will be coming your way in the next issue. I hope the next issue cam be around the first of the year, but will not make any promise.

If a red check is on your address label, you owe 50¢ or the amount listed in red. If no check, please do not send payment as you have this issue paid for.

GOOD COLLECTING

Sincerely, Bob

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

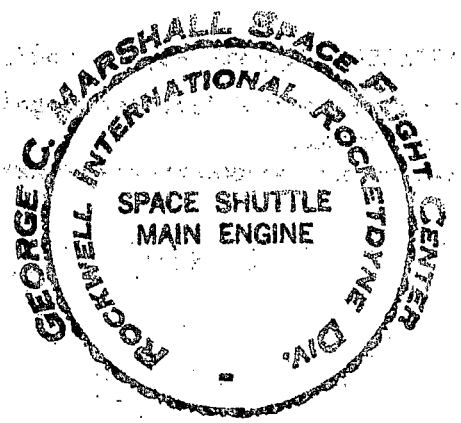
The method used to number the Space Shuttle Main Engine's is as follows: So called Production Engines are numbered with 4 digit numbers starting with 2 and numbered sequentially like 2001, 2002, recently installed in the Orbiter/MPTA. Experimental or R&D engines are simply numbered like 001, 002. Overhauled engines are numbered 0101 which is Engine #1 that has been overhauled, 0102 and so on. The engine recently installed in the MPTA, 0101, was Engine #1 that had been overhauled to a production configuration and delivered for test in the MPTA.

xxxxxxxxxxxxxxxxxxxx

Cachets & Cancels

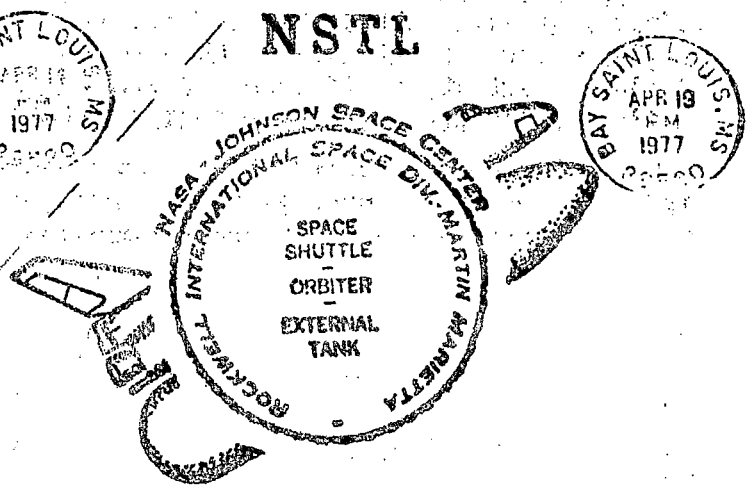
On this and the following pages are cachets and postmarks of covers. Cachet and postmark are in the size received, but arranged in such a way in order to show more. Most if not all of the covers listed are in the "Space Covers Reported & Received". I will not go into detail as to colors and sponsors. If this information is of your importants, please write and enclose a stamped addressed envelope.

NSTL



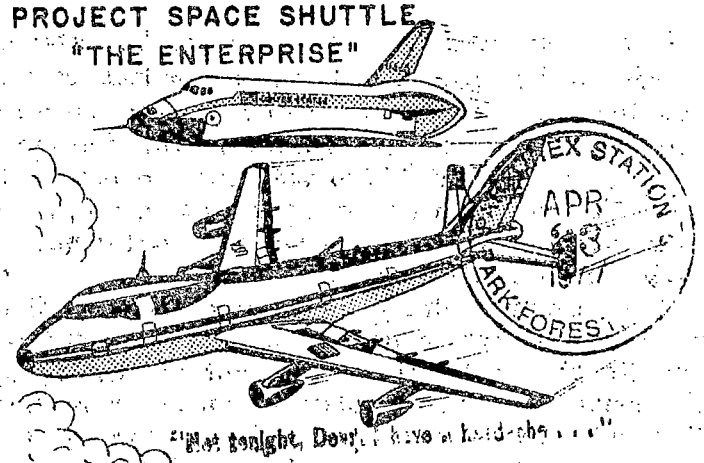
ENGINE 004 INSTALLED

NSTL

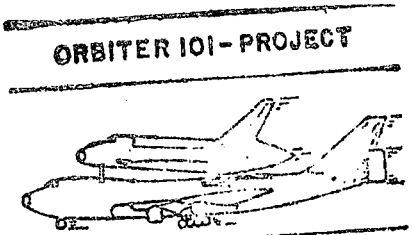


TEST STAND ACTIVATED

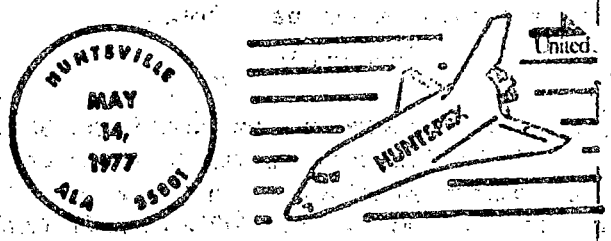
PARFOREX XVII
SALUTES
PROJECT SPACE SHUTTLE
"THE ENTERPRISE"

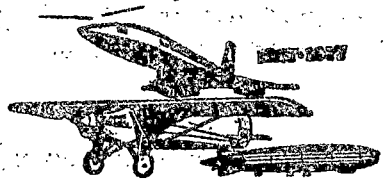


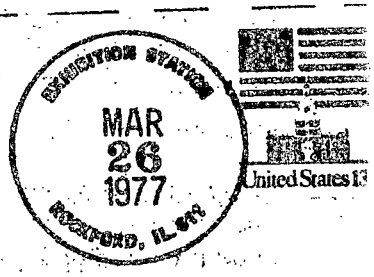
Orbiter 101 - "Flagship of the New Era of Space Transportation"

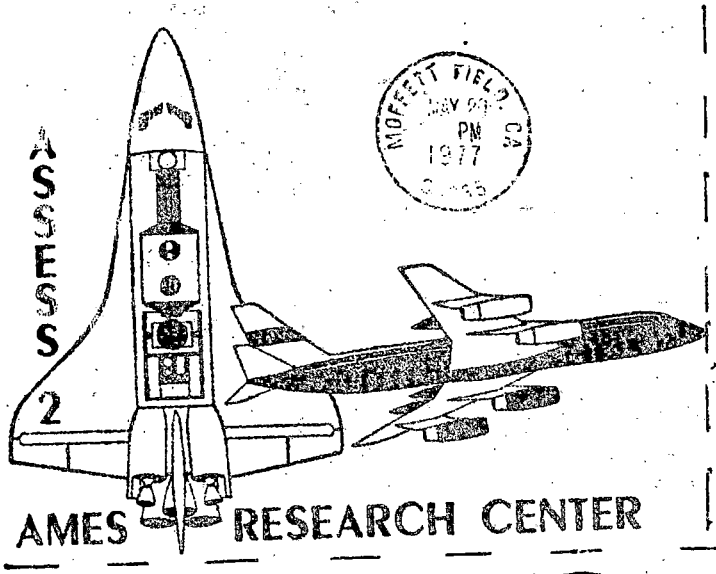


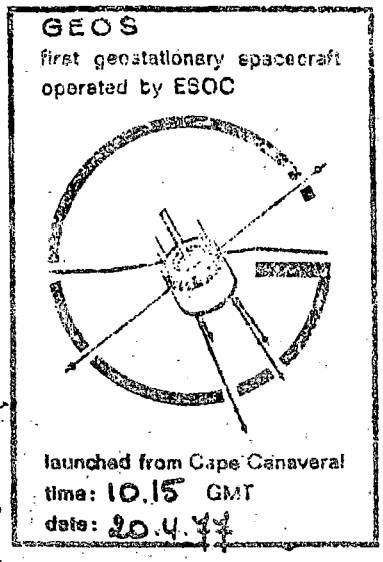
Space Unit
ATA APS





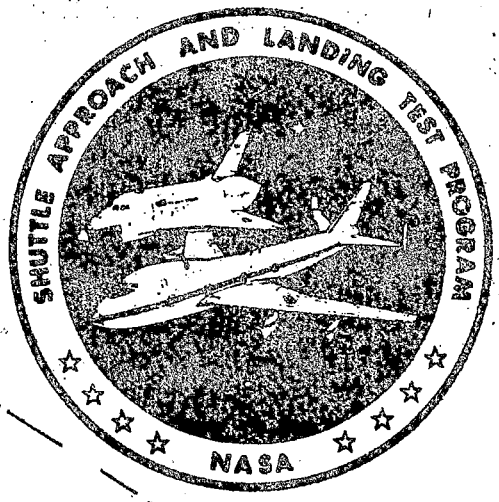


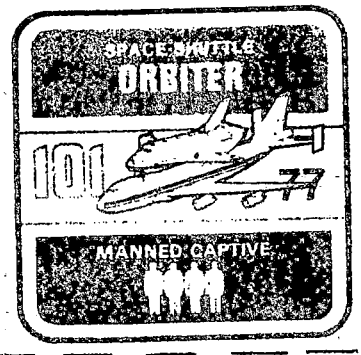




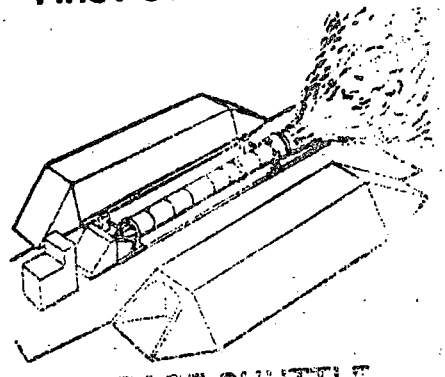


First Active Captive





FIRST STATIC FIRING



SPACE SHUTTLE

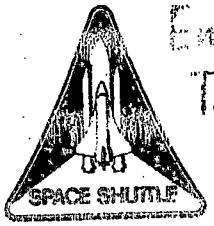


10TH OLYMPIC ARETHA
'S A C'
ICBM COMBAT COMPETITION

Vandenberg A.F.B
California

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

COVER SERVICER: Kennedy Space Center launches: Kenneth L. Havekotte, 1190 Montego Bay Dr. West, Merritt Island, FL 32952. Your covers and 10¢ service fee.
Wallops Island: Mr Kenneth E. Hudson, 118 Maddox Blvd., Chincoteague, VA 23336. Your covers and 10¢ service fee.



Enterprise 747

Taxi Trials

FIRST TEST OF ORBITER ON SCA–747

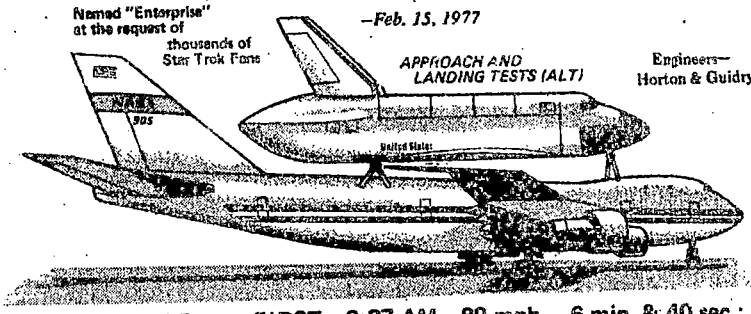
Runs on 04–22 at Edwards AFB

EDWARDS CA FEB 15 AM 1977 93523

PATRICK AIR FORCE BASE FL MAR 28 1977 AM 32925

Named "Enterprise" at the request of thousands of Star Trek Fans

–Feb. 15, 1977



APPROACH AND LANDING TESTS (ALT)

Engineers— Horton & Guidry

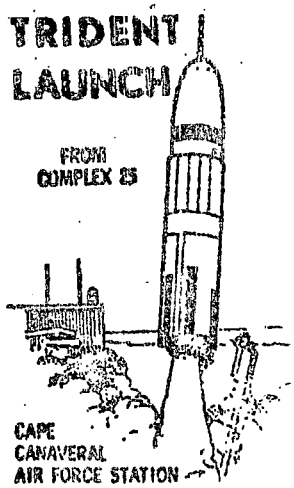




3 Taxi Runs— FIRST– 8:37 AM– 89 mph,– 6 min. & 40 sec.; SECOND– 8:57 AM– 138 mph– 4 min., THIRD– AM– 157 mph, 2 min. & 5 sec.

TRIDENT LAUNCH

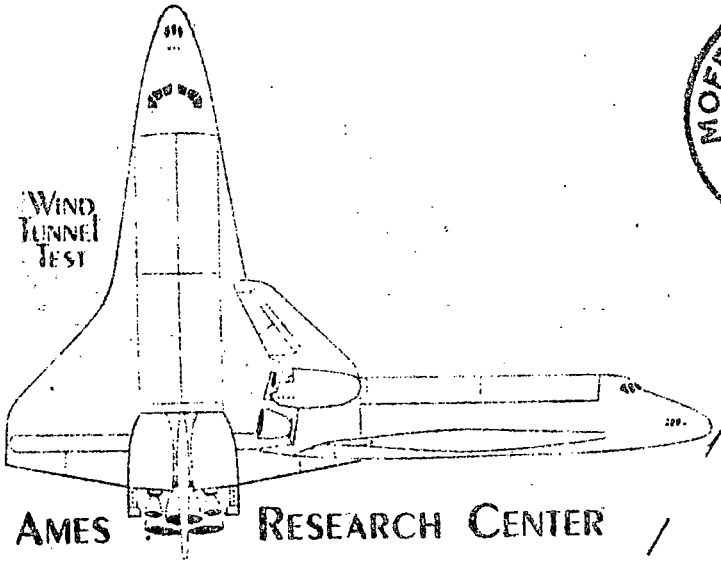
FROM COMPLEX 25



CAPE CANAVERAL AIR FORCE STATION

MAR 2 8 77 1 0·1 7AM

MOFFETT FIELD, CA JUL 27 PM 1977 94035



AMES RESEARCH CENTER

SKY SPY

EARLY WARNING

SATELLITE

KSC - NASA

ATLAS-AGENA BOOSTER

VANDENBERG AFB, TRACKING STA.

White Sands Missile Range New Mexico



Birthplace of America's Missile and Space Activity

WHITE SANDS MISSILE MAY 19 PM 1977 88002

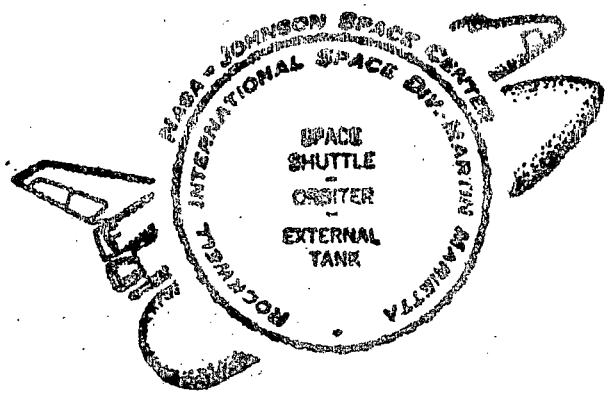
3rd [illegible] Pioneer Venus Test of Main Probe [illegible] above [illegible] via 90% Cubic Meter Balloon from Holloman AFB, NM. Preparatory to 1978 Launch.

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

COVER SERVICER: Holloman AFB: Frederick G. Marsh, 1402 Florida, Alamogordo, NM 88310. No fee, but send a nice THANK YOU and a few stamps would not hurt.

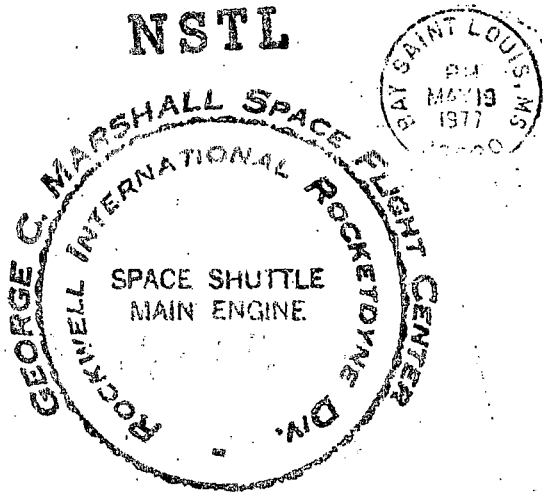
Edwards AFB: NASA Exchange Council, NASA Hugh L. Dryden Flight Research Center, P.O. Box 273, Edwards, CA 93523. Your covers and a 30¢ per cover fee. Bande Covers, P.O. Box 2288, Lancaster, CA 93534. Your covers and 15¢ per cover fee. With each three covers to Bande enclose a #10 or monach envelope for return of covers after three events have taken place.

NSTL



ORBITER/MPTA ARRIVES

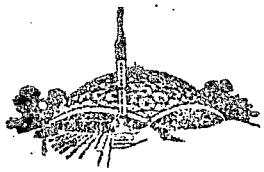
NSTL



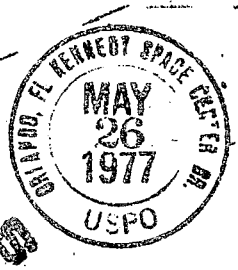
FIRST TEST ENGINE 004



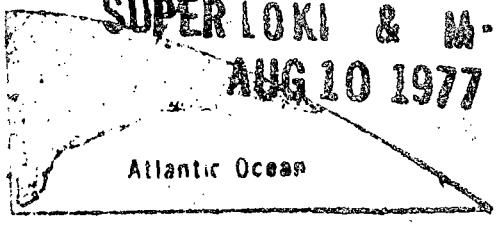








U S - U S S R JOINT EXP
SUPER LOKI & M-100B
AUG 10 1977





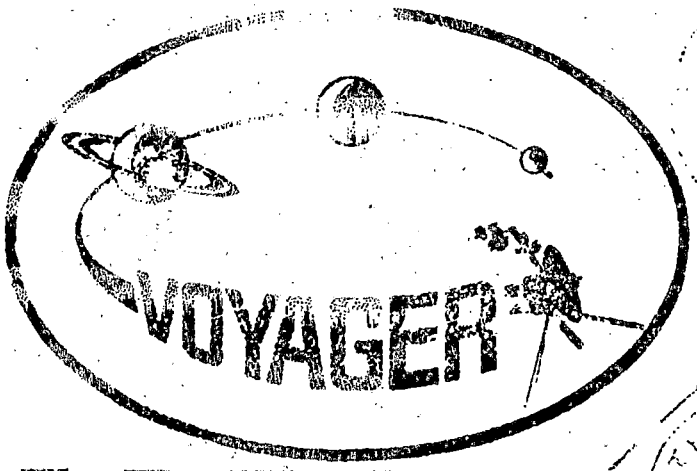
IV-A/F-4 Launch

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

COVER SERVICER: Vandenberg AFB: Vandy Covers, P.O. Box 1593, Vandenberg AFB, CA 93437. Your covers and 15¢ service fee per cover.

Balloon Tests Palestine Texas: Mrs David Ward, 911 W. Lacy, Palestine, TX 75801. Your covers and 10¢ service fee per cover.

White Sands Missile Range: J.T. Lovelady, 10249 Bon Aire Dr., El Paso, TX 79924. Your covers and 10¢ service fee machine cancel and 15¢ for hand cancel.

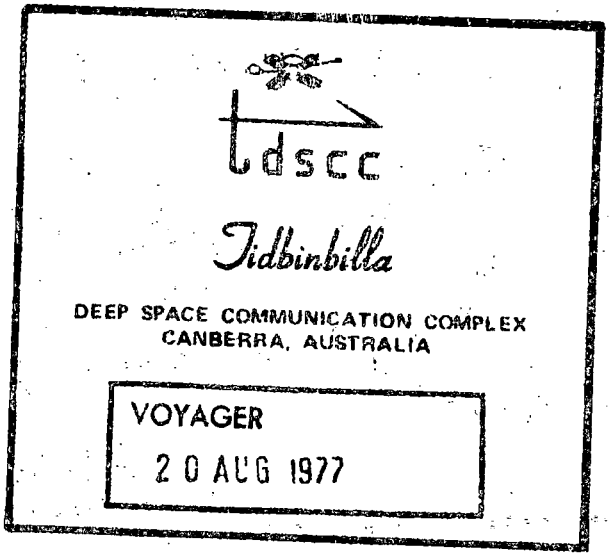






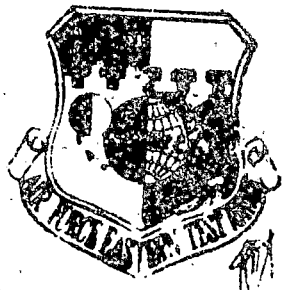






VOYAGER 2
LAUNCH

GRAND TURK



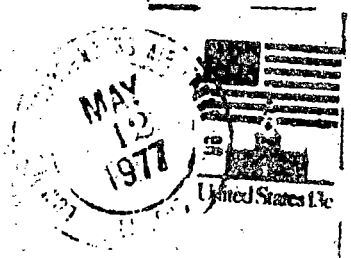


777
COMMUNICATION
SATELLITE



TRACKING STATION

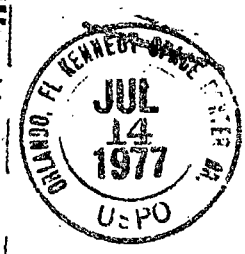
Japan GMS
Delta 132

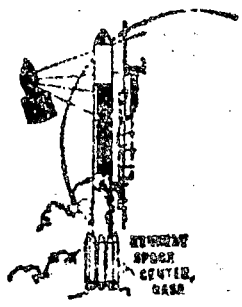


LIFTED INTO EARTH ORBIT
By The
USAF TITAN 3C Booster



VANDENBERG
TRACKING STA.



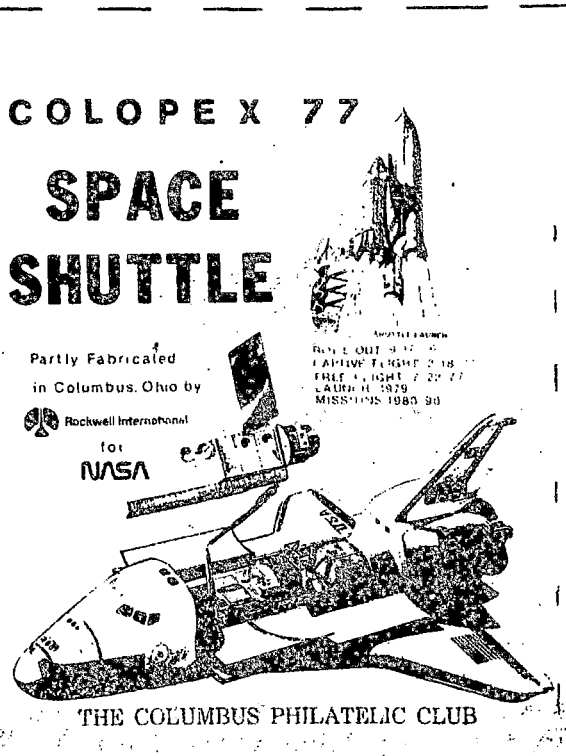


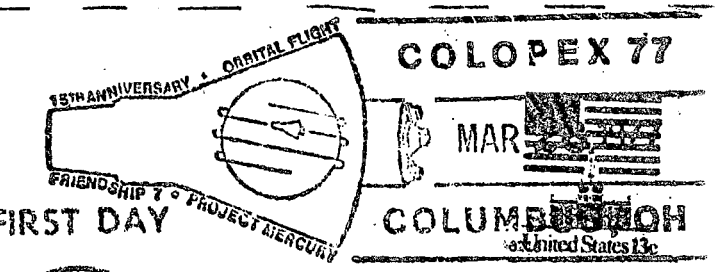
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

COVER SERVICER: Space Shuttle Engine Tests: Carol Noble, P.O. Box 128, Pearlington, MS 39572. Your covers and 15¢ service fee.

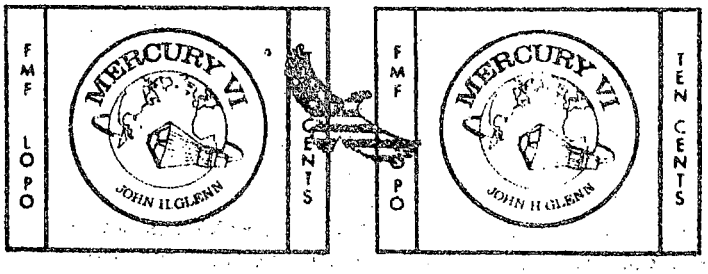
Marshall Space Flight Center tests and other tests connected; Philatelic Cover Service, NASA Exchange-MSFC Branch, Marshall Space Flight Center, AL 35812. Your covers and 25¢ service fee.

All space events: Robert G. Rank, 545-41st Street, Union City, NJ 07087. These are printed covers, usually three colors, write for details.

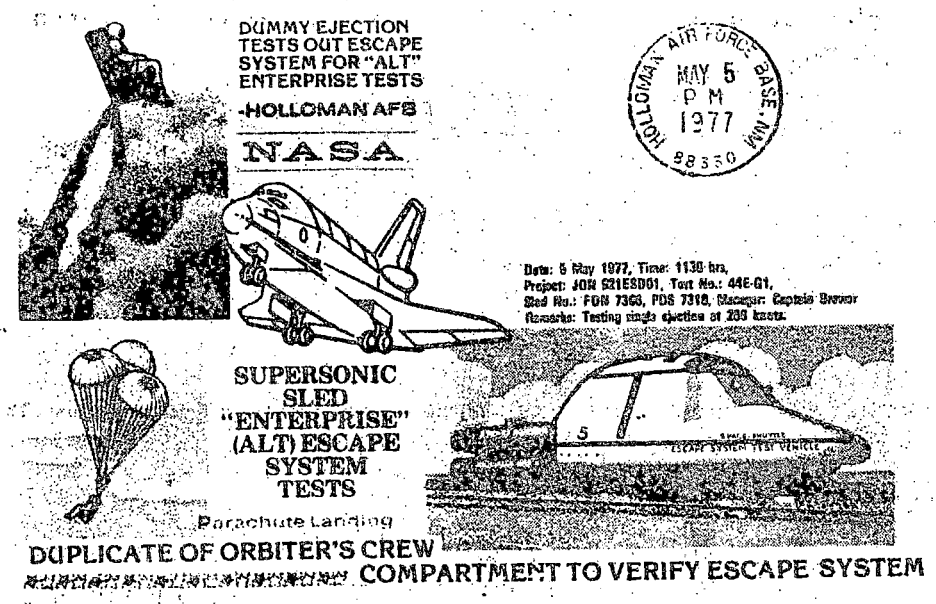








1962 15th ANNIVERSARY 1977





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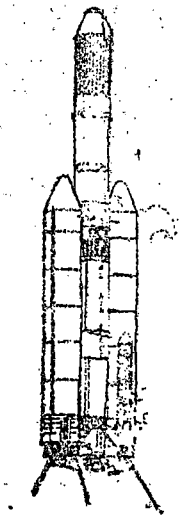
COVER SERVICER: Kennedy Space Center launches: Space Coast Philatelic Society, Astronaut Trail Station, Box 6532, Titusville, FL 32780. Most of these are printed covers, send for details.

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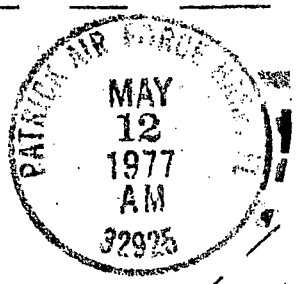
Several other individuals and organizations service cover for space events, these you will notice in the philatelic publications. When writing to anyone about information enclose a stamped addressed envelope (SASE).

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COVER SERVICER: Lopo of space events taking place and past space events: Joseph J. Frasketi, Jr., P.O. Box 2114, Ft Myers, FL 33902. Send for details and ask for price list of covers for past events.



MAY 12 1977 10:27AM



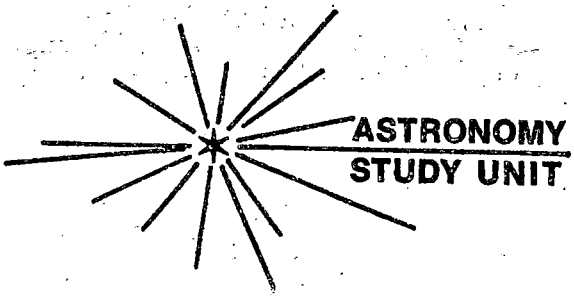


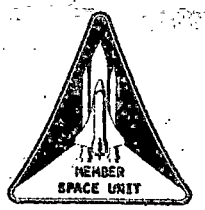
SIGNE-3

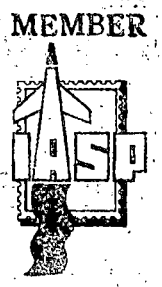
SPACEFLIGHT TRACKING AND DATA NETWORK
GODDARD SPACE FLIGHT CENTER

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The emblems or logos illustrated are for the ATA Astronomy Study Unit, the ATA APS Space Unit and the International Association of Space Philatelists. These are rubber stamps of the size shown. The Astronomy Study Unit and Space Unit emblems or logos are available from Bob Ekas, P.O. Box 295, Chicora, PA 16025 for $1.50 and a address label. The IASP logo rubber stamp is available from Frank Dougher, 141 Lincoln Ave., Pelham, NY 10803 for $2.25.







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LAUNCH SCHEDULE

FLIGHT	DATE	VEHICLE	RANGE	STATIONS
ISSEE-A	Oct 13	Delta	ETR	ACN AGO BDA GDS GWM HAW MAD MIL ORR QUI ROS ULA ARIA ETR GSC
ISEE-B	Oct 13	Delta	ETR	ACN AGO BDA GDA GWM HAW MAD MIL ORR QUI ROS ULA ARIA ETR GSC
METEOSAT-A	Nov 3	Delta	ETR	ACN AGO BDA GWM HAW MIL ORR QUI ROS ARIA ETR GSC
CS	Dec 1		ETR	ACN AGO BDA GWM HAW MIL ORR ROS ARIA ETR GSC
FLTSATCOM-1	Dec 15	Atlas/Cen	ETR	BDA MIL ORR ARIA GSC ETR
INTELSAT IV-A	Jan 12	Atlas/Cen	ETR	ACN BDA MIL ORR ETR GSC
IUE	Jan 12		ETR	ACN AGO BDA ETC GWM HAW MIL ORR QUI ULA ARIA ETR GSC
GOES-C	Jan 12	Delta	ETR	ACN AGO BDA GWM HAW MIL ORR QUI ROS ARIA ETR GSC

You will note several events are scheduled for 1978 and it is possible others may be delayed into 1978. When sending covers to the stations, mention the events and ask them to hold if possible.

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Remember to send a stamped addressed envelope when wanting information from someone.

DELTA LAUNCH SCHEDULE REVISION

by John J. Macco

The launch schedule of NASA's Delta launch vehicle had to be revised because of Flight and checkout problems.

The GEOS/European Space Agency (ESA) meteorlogical satellite launched April 20, 1977 was not injected into the intended transfer orbit due to a malfunction of a second to third stage clamp band assembly that prematurely released the third stage from the second stage while the vehicle was in coast flight. The most probable cause of the premature release was a mechanical failure of one of the two explosive bolts that holds the clamp band together.

The Orbitial Test Satellite (OTS)/ESA mission, a communications satellite scheduled for June 16th was delayed until September because one of the nine thuist augmentations solid propellant motors attached to the first stage vehicle broke loose and dropped to the pad just before work began on May 18th. Nobady was injured in the incident. An investigation by Delta Project Officials pinpointed the pronlem to a defective bolt that held the motor to core vehicle.

Delta launch vehicle is managed by Goddard Space Flight Center, Greenbelt, MD with Charles Gunn, Delta Project Manger and William Russell, Deputy Delta Project Manager.

FOR THE AUTOGRAPH COLLECTOR

NATO-3B launched January 27, 1977 Delta #128 launch vehicle
Goddard Space Flight Center, G eenbelt, MD 20770
Robert Goss-Project Manager
Kennedy Space Center, FL 32899
Hugh Weston Jr-Chief of Delta Operations;Wayne McCall-Chief Engineer, Delta Operation;
John J. Dunn-Spacecraft coodinator

PALAPA-B launched March 10, 1977 Delta #129 launch vehicle
Kennedy Space Center, FL 32899
Hugh Weston Jr-Chief of Delta Operations;Wayne McCall-Chief Enginerr Delta Operation;
Larry Kruse-Spacecraft Coordinator

GEOS/ESA launched April 20, 1977 Delta #130 launch vehicle
Kennedy Space Center, FL 32899
John J. Dunn-Spacecraft Coordinator

INTERSAT IVA-C launched May 26, 1977 Atlas Centaur #39 launch vehicle
Lewis Research Center, Cleveland, OH 44135
Richard Orzechowski-Project Engineer
Kennedy Space Center, FL 32899
John Gossett-Manager Centaur Operations;Creighton Terhune-Chief Engineer

GEOSYNCHRONOUS WEATHER SATELLITE/JAPAN launched July 14, 1977 Delta #132 launch vehicle
Goddard Space Flight Center, Greenbelt, MD 20770
Robert Goss-Project Manager
Kennedy Space Center, FL 32899
Hugh Weston-Chief Delta Operations;Bert Grenville-Complex 17 Operations Manager;
Ed Chaffin-Spacecraft Coordinator

xxxxxxxxxxxxxxxxxxx

Space Shuttle Program Officials
NASA Headquaters, Washington, DC 20546
Dr Myron S. Malkin, Program Director
Johnson Space Center, Houston, TX 77058
Robert F. Thompson-Program Manager;Aaron Cohen-Manager Orbiter Project;Donald K. Slayton-Manager Approach & Landing Tests
Marshall Space Flight Center, Huntsville AL 35801
Robert E. Lindstrom-Project Office Manager;George B. Hardy-Manager Solid Rocket Booster;James B. Oden-Manager External Tank Project;James R. Thompson Jr-Manager Main Engine Project

SPACE SHUTTLE GLOSSARY OF TERMS

ET - External Tank
FPL - Full power level of the SSME 109% thrust level of RRL
MPL - Minimum power level of the SSME 50% thrust level of RRL
MPT - Main Propulsion Test - The title of the program at the NSTL
MPTA- Main Propulsion Test Article - The simulated orbiter to be tested at the NSTL
MSFC- Marshall Space Flight Center - Located in Huntsville, ALA. The Program Directors for the development of the SSME
NSTL- National Space Technology Laboratories - The test site for the SSME and orbiter/ET
RPL - Rated power level of 100% thrust level of the SSME
SRB - Solid rocket booster - built by Thiokol and being tested at Brigham City Utah
SSME- Space Shuttle Main Engine

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Two Pioneer spacecraft passing by the planet Jupiter have discovered high-energy radiation from the planet and traced it far out into the solar system. The radiation consists of electrons moving at nearly the speed of light and therefore carrying very high energies.

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The General Accounting Office said it will cost about $1,400,000,000 to build and operate for 10 to 15 years an orbiting telescope that NASA hopes to launch early in 1980's.

xxxxxxxxxxxxxxxxxxxx

The search for life on Mars by the two Viking spacecraft has ended with scientists somewhat puzzled but generally pessimistic about the results. The automated labs aboard both landers have been switched off. At first, scientists in Houston believed results beamed to earth contained evidence of life. However, later tests failed to indicate signs of life.

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According to a count made at the Johnson Space Center, men in space have traveled a total of 118,077,569 statute miles in the flights of Mercury, Gemini, Apollo, Skylab and ASTP.

xxxxxxxxxxxxxxxxxxxx

A way is being studyed to pluck the so called garbage out of space. The Air Force and NORAD thinks it cheaper to retrieve the objects in space than to track it. It would be a great help to scientists, to study the objects and then more safe to other space objects.

ROBERT D. EKAS
P.O. BOX 295
CHICORA, PA 16025
USA

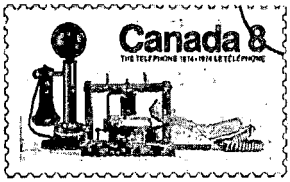


MAILED

THIRD CLASS

TO---

Mark P. Hreben
156 Bacon Street. 3
Rossford, OH 43460







You are invited

to join 10,000 stamp collectors from 90 countries around the world who enjoy and profit from membership in the

AMERICAN TOPICAL ASSOCIATION

TOPICAL TIME, official bi-monthly publication, 100 pages of illustrated and informative topical articles, checklists, sample album pages and their sources plus dealer advertising to keep you up on market values and to obtain needed stamps. Sample copy and "How to Collect Topicals" handbook ($3.25 value) only $1.

MEMBERSHIP DIRECTORY lists all 10,000 members, addresses and collecting interests. Includes 738 topics, 220 countries and specialties collected by members; complete details of all ATA services. Worth $25, available to members at only $3.

INFORMATION BOARD, 687 specialists answer questions on 353 topics for the cost of return postage. This service is limited to members only.

BIOGRAPHY SERVICE for more than 13,000 persons shown on stamps.

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TOPICAL AWARDS, parchment certificates and gold medals for stamp shows.

ANNUAL CONVENTION AND EXHIBITION

CREDIT REFERENCE, your ATA number accepted by reliable dealers.

All of these benefits plus friendship and knowledge can be yours through the ATA.

Please read carefully before filling in application on other side. Dues $6 a year anywhere, plus $1 initiation fee, first year only. All memberships expire July 1. See 'Total to Remit' column below.

When joining in:	Initiation Fee		Topical Time and Dues		Total to Remit	For
January, February	$1.00	Plus	$ 9.00	=	$10.00	18 months
March, April	$1.00	Plus	$ 8.00	=	$ 9.00	16 months
May, June	$1.00	Plus	$ 7.00	=	$ 8.00	14 months
July, August	$1.00	Plus	$ 6.00	=	$ 7.00	12 months
September, October	$1.00	Plus	$ 5.00	=	$ 6.00	10 months
November, December	$1.00	Plus	$10.00	=	$11.00	20 months

SAVE $1- Add $5 to Total to Remit column for this month and we will add a full year to your membership including Topical Time subscription. **Junior Membership** (under age 16) with parental guarantee, deduct $1 from Total to Remit. **Life Membership,** just $100 assures all benefits for life.

AMERICAN TOPICAL ASSOCIATION, INC. ATA FOUNDED 1949

YOUR PASSPORT

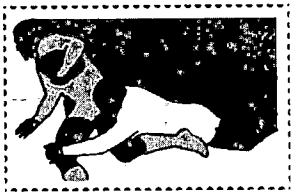
to a world of information, education and friendship as a member of the ATA. Fill out the application blank on the other side & mail with your remittance today. You'll be glad you did!



What is Topical Collecting?

Basically topical collecting stresses the design of the stamp, rather than the country of issue or the postal service the stamp renders. Cancellations, watermarks and varieties have their place, but only if they are essential to the topical story presented.

Topicals can be a relaxing sideline for experienced collectors, an exciting introduction for beginning collectors or a serious study for dedicated topicalists. There are no lengthy lists of do's and don'ts in topical collecting. Individuality and personal interests can be easily expressed. More than 700 different topics are listed in the current ATA membership directory including popular topics such as animals, art, flowers, sports and space plus many unique topics from angels to zodiac.



Why Join ATA?

The American Topical Association is the best source of information, fellowship and inspiration in the topical field. The 1400 living Life Members (more than any other society) are strong testimonial to the satisfaction and faith of ATA members in their society.

Organized in September 1949 by a handful of optimistic collectors, ATA is now the largest philatelic society devoted to a specific phase of stamp collecting. The nominal $6 dues and $1 initiation fee are a real bargain compared to other philatelic societies.

ATA Members Say:

"Topical Time itself is worth the small dues -- certainly a most interesting and informative publication." -- W.E.J.

"ATA is a beautifully run organization. I have made many friends from here to Japan." -- M.C.G.

"The more I get involved with ATA the more I enjoy philately." -- K.T.K.

If you are already an ATA member, why not pass this invitation along to a friend who may be interested in becoming a member.



— — — — — — Read other side carefully before filling in application — — — — — —

membership application

Mail to: **American Topical Association**, 3306 N. 50th Street, Milwaukee WI 53216 USA

Print Name _____ Age _____

Address _____ Occupation _____

City, State _____ Zip (USA only) _____

Enclosed: US $_____ for dues to July 1, 19_____ (see other side for rate this month)
Send check, draft or money order. No stamps or foreign currency please.

Check if: ☐ New Member or ☐ Reinstatement
☐ $1 enclosed for Topical Time sample & introductory booklet (a $3.25 value).
☐ $3 has been added to purchase latest ATA Membership Directory.
☐ Life Membership dues of $100 enclosed or 12 months @ $9 each.

I collect: _____

Please give two bank, department store, or stamp dealer references:

1. _____

2. _____

Proposed by R.D. Ross ATA 18372