Americans in Space:
Projects Mercury, Gemini & Apollo

Purpose

Celebrate America's progressively audacious leaps into space from orbiting the Earth to walking on the Moon.

When President Kennedy proffered the goal of *"landing a man on the moon and returning him safely to the earth"*, the nation had flown in space once, for 15 minutes. The exhibit traces our nation's path through three periods of manned space exploration.

Project Mercury (1959-1963) mixed monkeys, robots and America's first space pilots in a Space Race with the Soviets. Project Gemini (1962-1966) introduced computers in orbit, fuel cells to generate electricity, docking two spacecraft and walking in space. The exhibit concludes with the triumphant Project Apollo (1960-1975) which saw a dozen Americans walk on the Moon and program end with orbital *rendezvous* and docking with the Russians.

Plan

Chapter 1 Project Mercury	**2-32**
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Chapter 3 Project Apollo	**76-128**

Astrophilately is the intersection of space and postal history. Each postmark represents a significant time and place in the conquest of the heavens. Cachets, autographs, and texts support a fascinating story of rockets and the astronauts who pilot them.

MA-9 *USS Kearsarge* Machine Cancel 16 May 1963

Postmarked on the Prime Recovery Ship (PRS) and autographed by the astronaut pilot.

Scope encompasses philatelic material between 1959 and 1975. In keeping with *Federation Internationale de Philatelie* (FIP) Regulations for Astrophilately, cancels conform to the principle that the story of the conquest of space is best told postmarked on the date and closest to the entity controlling the event.

Significant items have red border

Personal research

Project Mercury flights
LJ = Little Joe
MA = Mercury Atlas
MR = Mercury Redstone
MS = Mercury Scout
Beach Abort = Capsule escape
Big Joe = MA development flight
MR-BD = MR development flight

Project Gemini flights
GT = Gemini Titan
GTA = Gemini Titan Agena
Numbers 1-3 in Arabic numerals
Numbers 4-12 in Roman numerals
MOL = Manned Orbiting Laboratory

Project Apollo flights
SA = Saturn Apollo
AS = Apollo Saturn
Ap = Apollo
PA = Pad Abort
QTV = Qualification Test Vehicle
A = Little Joe II qualification test
ASTP = Apollo Soyuz Test Project

NASA missions used alphanumeric designators to identify each flight. Project, booster, and occasionally developmental notation are found above the upper left corner of the envelopes.

Project Mercury

"Tossing a man up in the air and letting him come back…is about the same technical value as the circus stunt of shooting a young lady from a cannon…"

Hugh Dryden, NACA 1958

The 1950s was a golden age of aviation in America. Test pilots at Edwards and elsewhere were constantly expanding the limits of aeronautical science, licking the outside of the envelope, in astrophilatelic parlance. The speed of sound, conquered just a few years before, was now routinely exceeded by production line Air Force fighters. Modified F-104 Starfighters were flying zoom profiles that brought them to the highest reaches of the usable atmosphere. And then came the X-15. An aircraft with the performance characteristics of a V-2 missile, it flirted with outer space at a time when space travel was relegated to science fiction.

In 1957 James McDonnell of McDonnell Aircraft gave a commencement address to an engineering school in which he predicted that the first manned Earth satellite would take place between 1990 and 2005. After the Soviets successfully launched an orbiting satellite a few months later it became clear to both the Eisenhower Administration and the Department of Defense that America would put an American into orbit. In less than 2 years McDonnell would sign a contract worth $18.3 million to serve as prime contractor for the Mercury spacecraft.

NASA Project A, announcement no. 1, dated December 22, 1958, sought GS-12 to GS-15 pilots for the position of "Research Astronaut-Candidate". Project Mercury had been announced the previous week. Successful applicants would be college prepared military test pilots with at least 1500 hours of flying time and be qualified in jets. The Pentagon was able to identify more than 100 men who met the criteria.

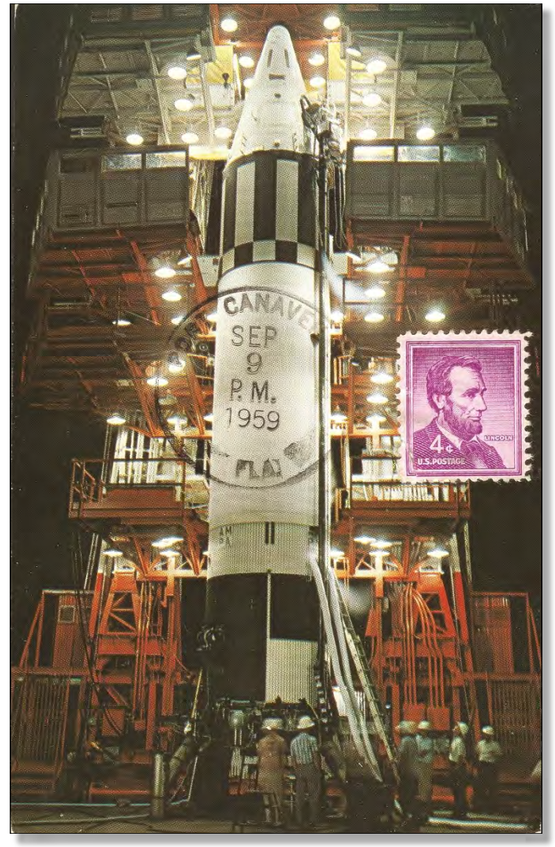
In the end seven men were selected. Shepard would fly first, be grounded for years, and then return to golf on the moon. Grissom would almost drown, command the first manned Gemini mission, and then die while preparing the first Apollo capsule. Glenn would circle the globe, become a Senator and run for President, and then ride the Space Shuttle as the oldest human to orbit at 77. Carpenter would have 4 hours in space, leaving as the only American to fly into space only alone. Schirra would command Mercury, Gemini, and Apollo spacecraft before hanging up his helmet. Cooper would be the last American to venture into space alone. He returned to fly in the follow on program – Project Gemini. Slayton would be grounded before he had a chance to fly. As fate would have it, 13 years later, he got his chance on the final flight of the Apollo program. Ironically, the space race that had been a competition with the Soviet Union ended on his mission with the first joint Soviet/US flight.

When Yuri Gagarin flew in 1961 the flight controls were locked. A code from Mission Control was required if he was needed to pilot the capsule. Similarly, the early Mercury flights could have been successfully flown by autopilot. Robot and astrochimps proved that. By the end of the program, however, not having an astronaut pilot in the loop made mission success impossible. The need for an ape had evolved into the need for a man.

"Man is the deciding element…As long as Man is able to alter the decision of the machine, we will have a spacecraft that can perform under any known conditions."

Chris Kraft, NASA 1963

BJ-1 Port Canaveral Hand Cancel **09 Sep 1959**

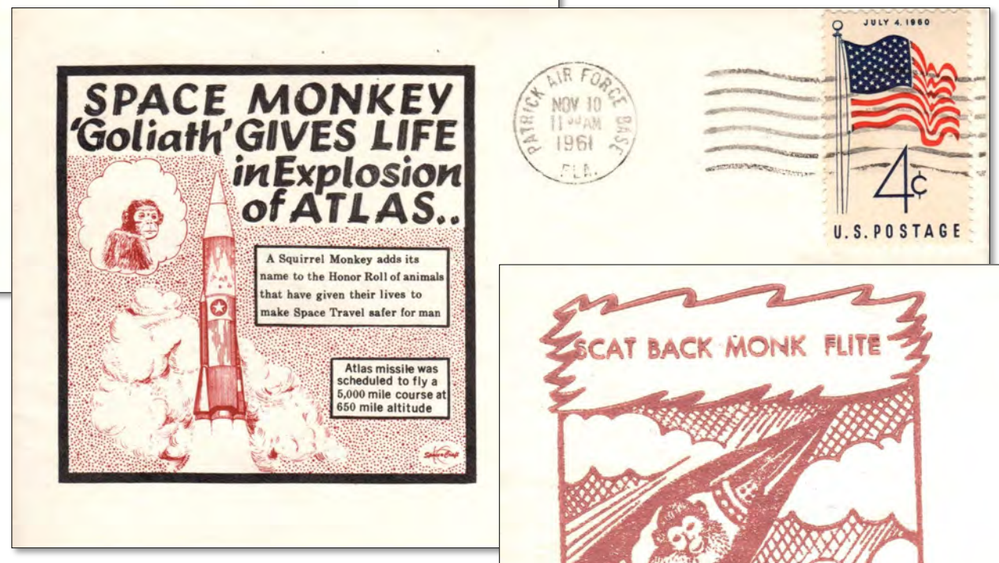


*Little Joe -1 (**LJ-1**) was a failed attempt launched from Wallops Island on 21 Aug 1959. This was followed on 9 Sept 1959, by a boiler plate Atlas test carrying a letter addressed to Robert Gilruth:*

This note comes to you after being transported into space during the successful flight of the "Big Joe" capsule, the first full-scale flight operation associated with Project Mercury.

AM-13 *Saimiri* "Old Reliable (Gordo)"

AM-18 *Macaca mulatta* "Able"
Saimiri "Baker"



AM-18 *Saimiri* "Goliath"

Atlas 32E *Macaca mulatta* "Scatback"

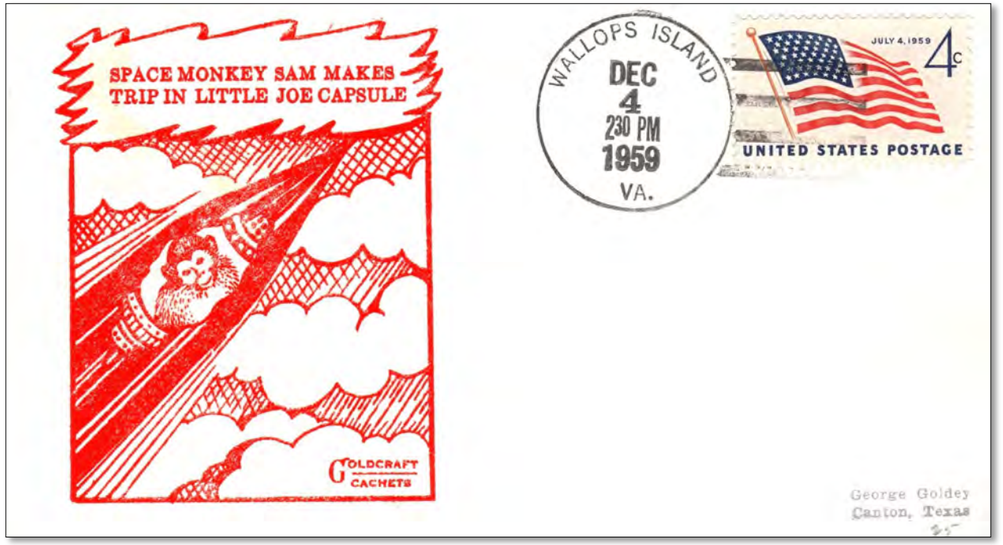
Before Mercury there were monkeys

A Presidential panel was rumored to recommend at least 50 more chimpanzee runs before lofting a man. Gilruth remarked facetiously that if this were true, the Mercury program ought to move to Africa. The report was released April 12, 1961, on the same day the Soviets put Gagarin in orbit.

Saimiri *sai* meaning 'monkey' and *mirím* meaning 'small'. Squirrel monkeys live in the tropical forests of Central and South America in the canopy layer. A New World monkey.

Macaca mulatta, the rhesus monkey, is a species of Old World monkey native to South, Central, and Southeast Asia.

LJ-2 Wallops Island Hand Cancel **4 Dec 1959**



*Capsule aerodynamics (**LJ-6**) and abort at max Q (**LJ-1A**) is followed by launch of "Sam". The name Sam comes from the acronym School of Aerospace Medicine.*

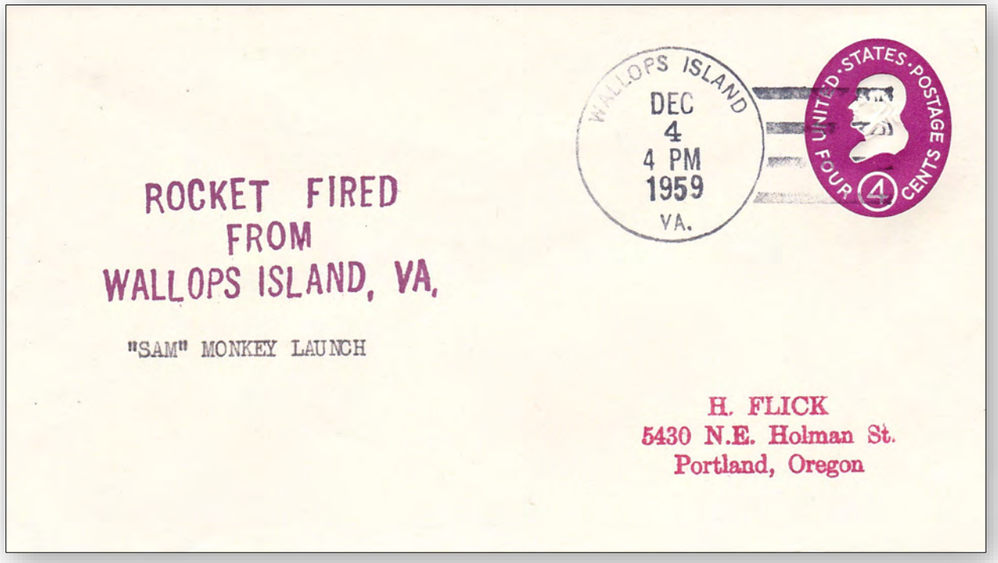
LJ-1B Wallops Island SUSPECT Hand Cancel **21 Jan 1960**

Very dangerous possible forgery sold by Riser using only adhesive postage and photo cachet.

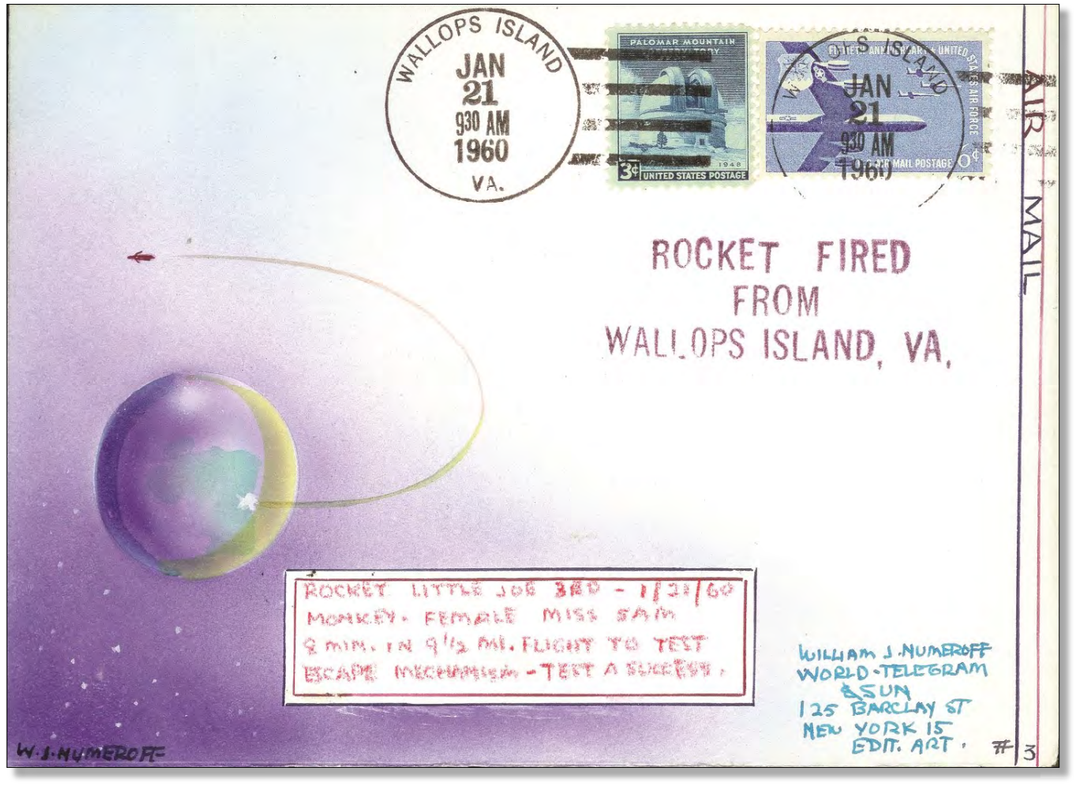
Discovery copy of Riser forgery exclusively franked with adhesives.

Many of the early "classics" were forged by Charles Riser. While some are notoriously difficult to spot virtually all use embossed stamps. All addressed to H. Flick are believed to be fakes.

LJ-2 Wallops Island SUSPECT Hand Cancel **4 Dec 1959**



LJ-1B Wallops Island Hand Cancel **21 Jan 1960**



"Miss Sam" used an escape rocket to simulate booster failure. Capsule returned by helicopter to Wallops Station.

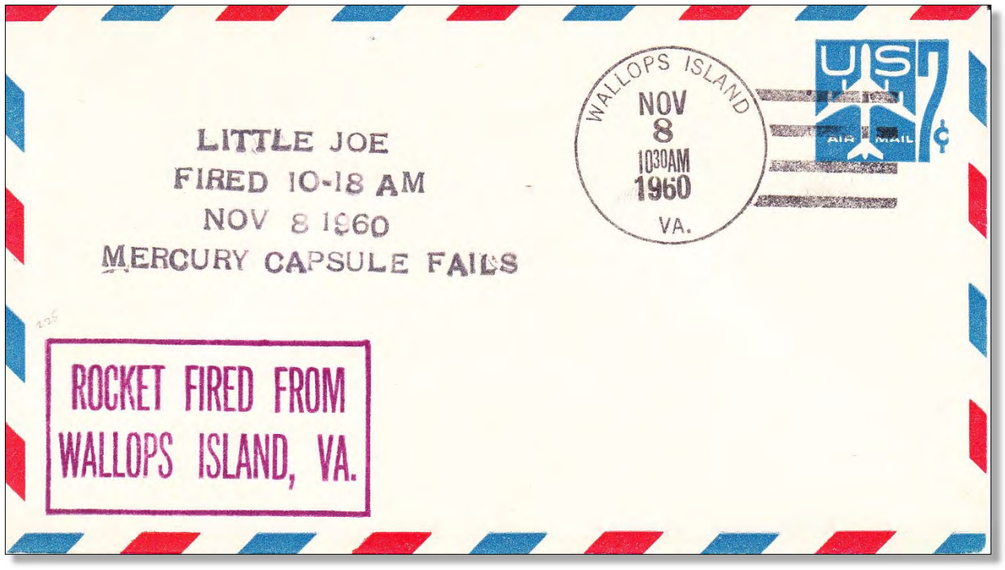
Beach Abort Wallops Island Hand Cancel **9 May 1960**

The carefully weighed and balanced capsule pointed its pylon towards the sea. The ignition switch closed and the escape rocket jerked the capsule from the ground on its short flight, lasting one minute and 16 seconds, covering half a mile in an arc 2465 feet high.

MA-1 Patrick Air Force Base Machine Cancel **29 Jul 1960**

*Following a Beach Abort (**BA**) success at Wallops Island the Atlas' liquid oxygen boil off valve ailed due to vibration induced fatigue. This caused an explosion that destroyed both the booster and Mercury capsule. Ironically, Project Apollo is announced on this day.*

LJ-5 Wallops Island Hand Cancel **8 Nov 1960**



On Election Day, the first production capsule was sent aloft to evaluate flight qualification of abort conditions at maximum dynamic pressure. Escape rocket, tower jettison rocket, and booster all fired at the same time keeping the vehicle mated until impact shattered them into fragments. Only 40 percent of the capsule was found.

MR-1A Patrick Air Force Base Machine Cancel **19 Dec 1960**

*Three weeks later a new embarrassment. Mercury Redstone-1 (**MR-1**) flew four inches before the engine shut down. After altering the booster tail plug **MR-1A** produced an unqualified success.*

MR-2 Patrick Air Force Base Machine Cancel **31 Jan 1961**

Supplied by Holloman Aerospace Medical Center "Ham" experienced 17g, loss of cabin pressure, and took on 800 lbs of sea water following splashdown.

LJ-5A Wallops Island Hand Cancel **18 Mar 1961**

Again the escape rocket fired early causing the capsule to tumble on separation, narrowly missing the booster as it decelerated. The retropack and escape tower were inadvertently jettisoned or torn off.

MR-BD Port Canaveral SUSPECT Hand Cancel **24 Mar 1961**

Dealers dissatisfied with worn out Port Canaveral postmarks used their own. They are more distinct and are PM instead of AM cancels.

Telemetry revealed that the Redstone still vibrated a bit but all the "quick-fixes" had worked. Redstone was now trustworthy enough to be called "man-rated."

MA-3 Port Canaveral Hand Cancel **25 Apr 1961**

Upgraded from suborbital to an orbital mission just days before the flight, the "crewman simulator" experienced a successful abort when a failure to roll and pitch towards the horizon required the Range Safety Officer to destroy the booster only 40 seconds into the flight.

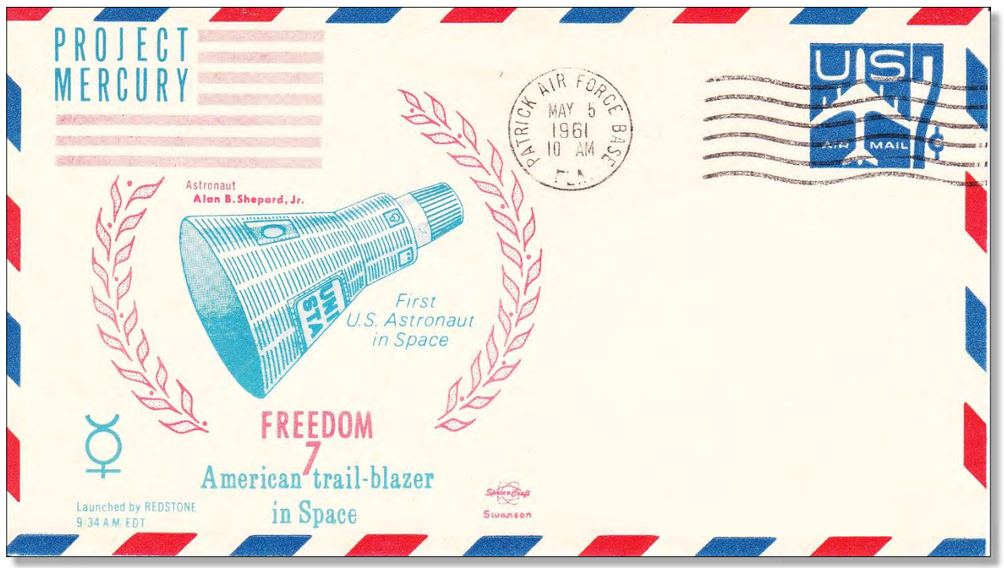
LJ-5B Wallops Island Machine Cancel **28 Apr 1961**

Despite the failure of one of the Castor rocket motors to ignite for the first five seconds the mission was judged a success. Changes in circuitry resolved the premature ignition of the escape rocket motor. With the exception of the Atlas booster and the spacecraft's orbital capacities, all Mercury systems were qualified. It was time for the first American in space!

MR-3 Port Canaveral Hand Cancel **5 May 1961**

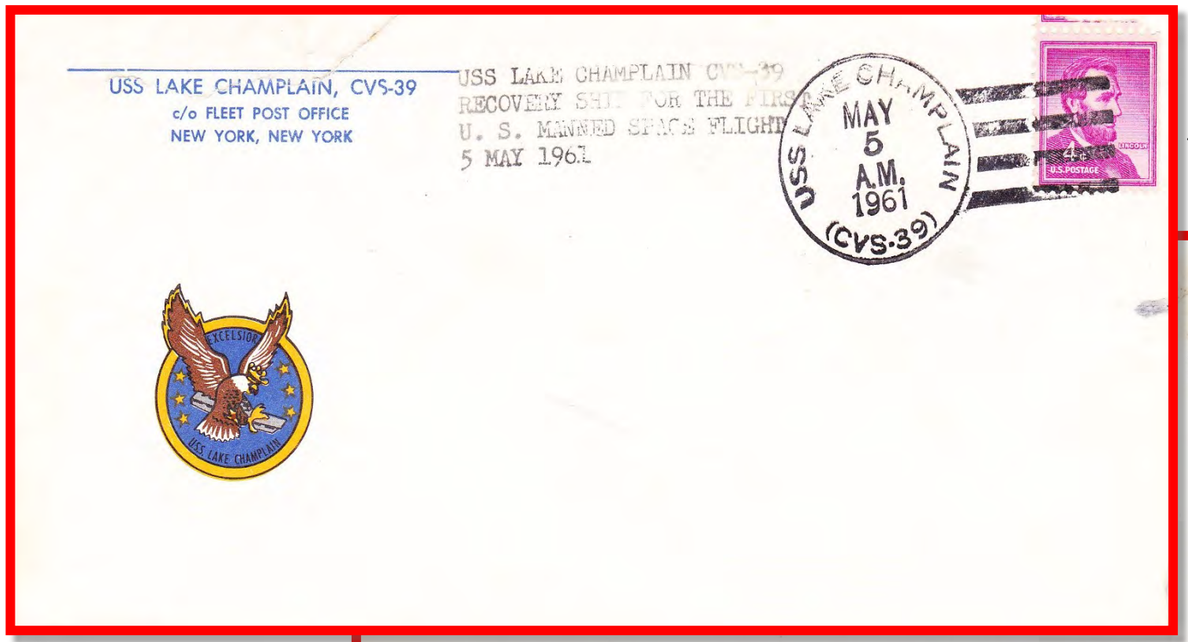
Life magazine referred to Shepard, Glenn and Grissom as the Gold Team. On 22 Feb 1961 they were identified by the Space Task Group (STG) as the first to fly.

MR-3 Patrick Air Force Base Machine Cancel **5 May 1961**



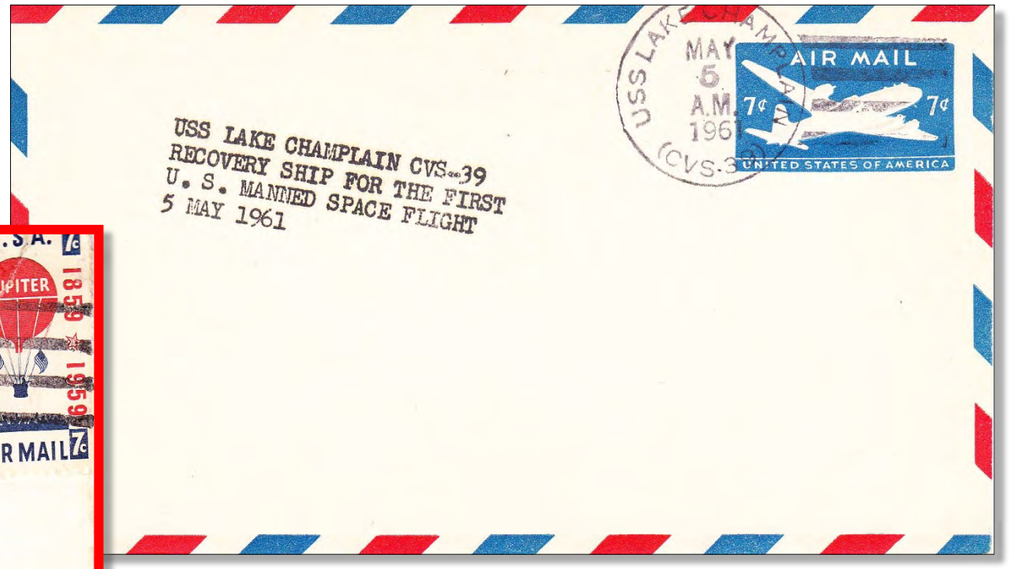
Take off was at 09:34 and splashdown occurred at 09:50. By the time this envelope was postmarked the 15 minute suborbital ride, including a mere five minutes of weightlessness, was over.

MR-3 *USS Lake Champlain* Type II Hand Cancel **5 May 1961**



Only 44 known compared with 250,000 for Apollo 11.

MR-3 *USS Lake Champlain* SUSPECT Hand Cancel **5 May 1961**

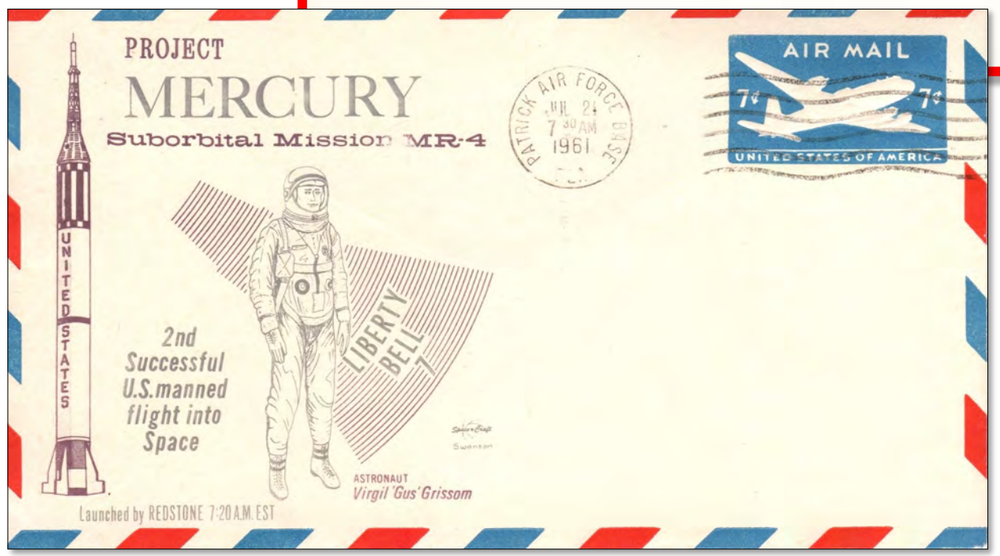


MR-3 *USS Lake Champlain* **5 May 1961**
Type I Hand Cancel

Even scarcer crew mail from the Prime Recovery Ship (PRS). The address has been erased.

MR-4 Port Canaveral Hand Cancel **21 Jul 1961**

Published image census of all known covers.



MR-4 Patrick Air Force Base Machine Cancel
21 Jul 1961

Within three weeks President Kennedy would say, "Now is the time to take longer strides and land a man on the Moon." Of the Mercury astronauts only Shepard would take that step.

Packed in the Mercury capsule awaiting launch Grissom experienced a wide range of feelings. His heart rate ranged from 64 to 162 beats per minute. At the debrief he admitted he was "a bit scared."

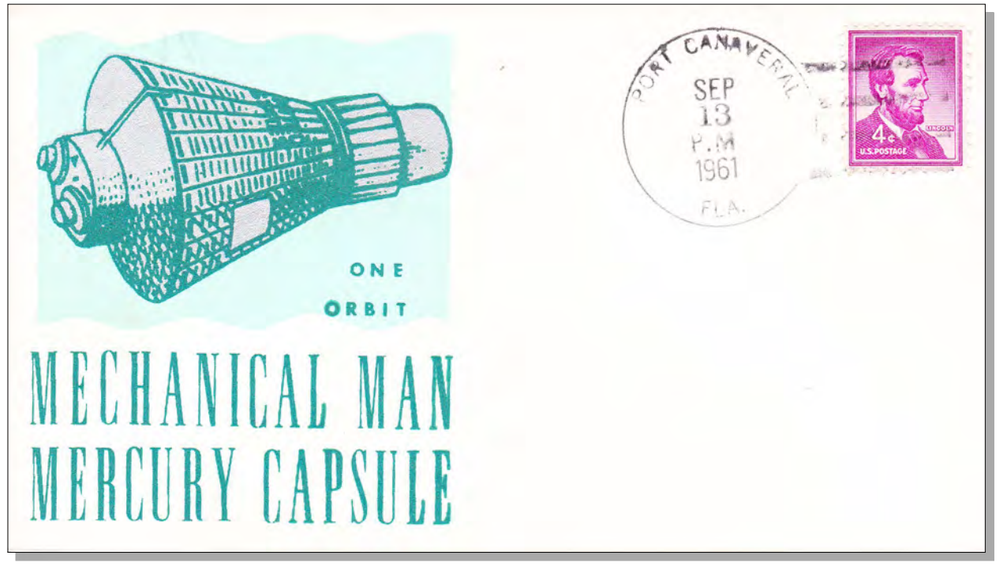
MR-4 *USS Randolph* Type I Hand Cancel **21 Jul 1961**

The Type I Grissom Prime Recovery Ship postmark, seen here with an added Registry cancel, is one of the rarest items in Astrophilately. The signature is a Pattern 1 autopen.

MR-4 *USS Randolph* Type II Hand Cancel **21 Jul 1961**

Following splashdown the hatch "just blew" resulting in loss of the capsule. Bobbing under the waves, Grissom was scared and angry. He was floating or swimming only four or five minutes "although it seemed like an eternity to me."

MA-4 Port Canaveral SUSPECT Hand Cancel **13 Sept 1961**



In an effort to evaluate the capsule as well the booster's ability to orbit the craft and new recovery aids to assist the US Navy, a "mechanical astronaut" was installed to test noise, humidity, and radiation levels. Cameras returned over 30,000 images from panel instrumentation, an Earth-sky camera, and a third affixed to the periscope during the flight that lasted about 90 minutes.

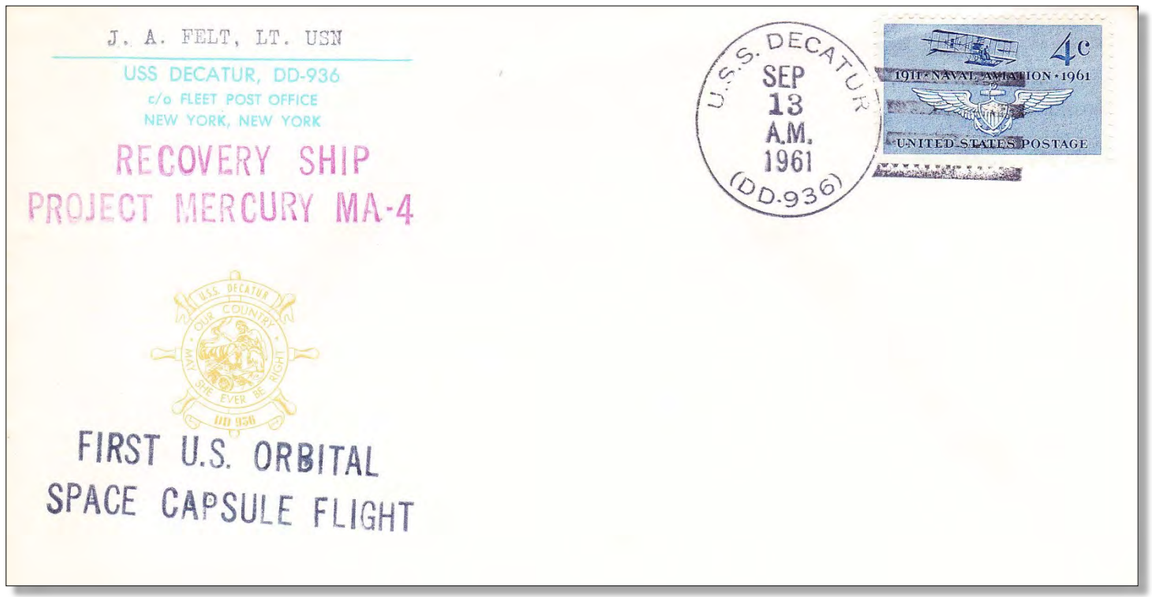
MA-4 Patrick Air Force Base BACKDATED Machine Cancel **13 Sept 1961**

Die II

Die III

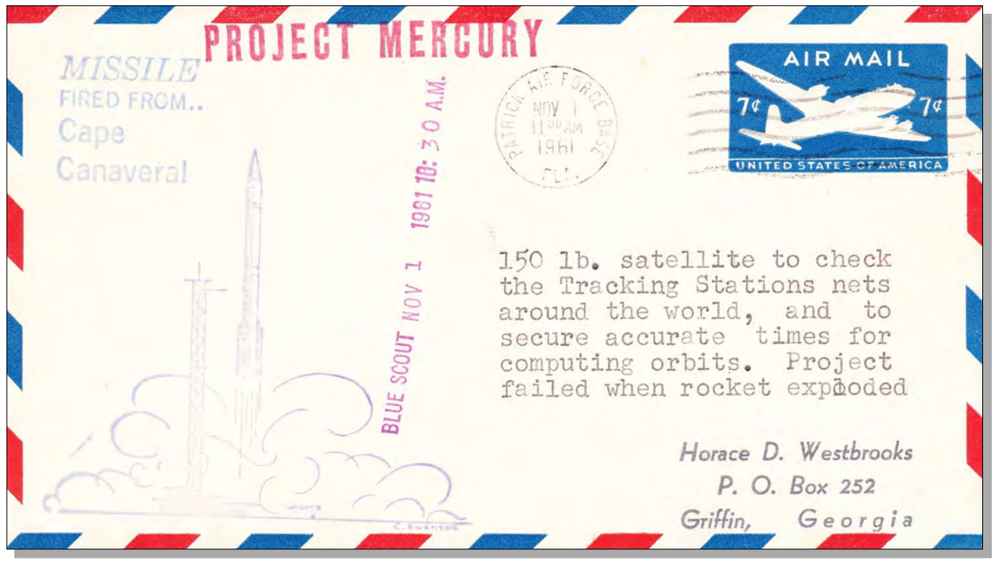
All Patrick Air Force Base covers from Sept 1959 to Sept 1961 with Die III were backdated. These are characterized by a year date that extends below an imaginary line transecting the "P" in Patrick and the "e" in Base. Die III postmarks have legible "FLA." while Die II do not.

MA-4 *USS Decatur* Hand Cancel **13 Sept 1961**



75 Crew envelopes were postmarked for Lt. Felt. Two hurricanes, "Carla" and "Debbie", thrashed the Mercury tracking areas with the latter giving the ships in the prime recovery zone a rough ride the day before. USS Decatur, *34 miles from the impact point, made the recovery.*

MS-1 Patrick Air Force Base Machine Cancel **1 Nov 1961**



Fired from the Project Vanguard launch pad, Mercury-Scout was a four-stage, solid-propellant "poor man's rocket" used to test worldwide tracking. Crossed wiring necessitated destruction by Range Safety Officer after 43 seconds. Also the first official day of the new Manned Spacecraft Center in Houston, TX.

MA-5 Port Canaveral Hand Cancel **29 Nov 1961**

For three hours and two of the three planned orbits Enos (Greek for "Man") pulled levers and flew around the world. The tracking and recovery networks functioned well. Time to orbit a man.

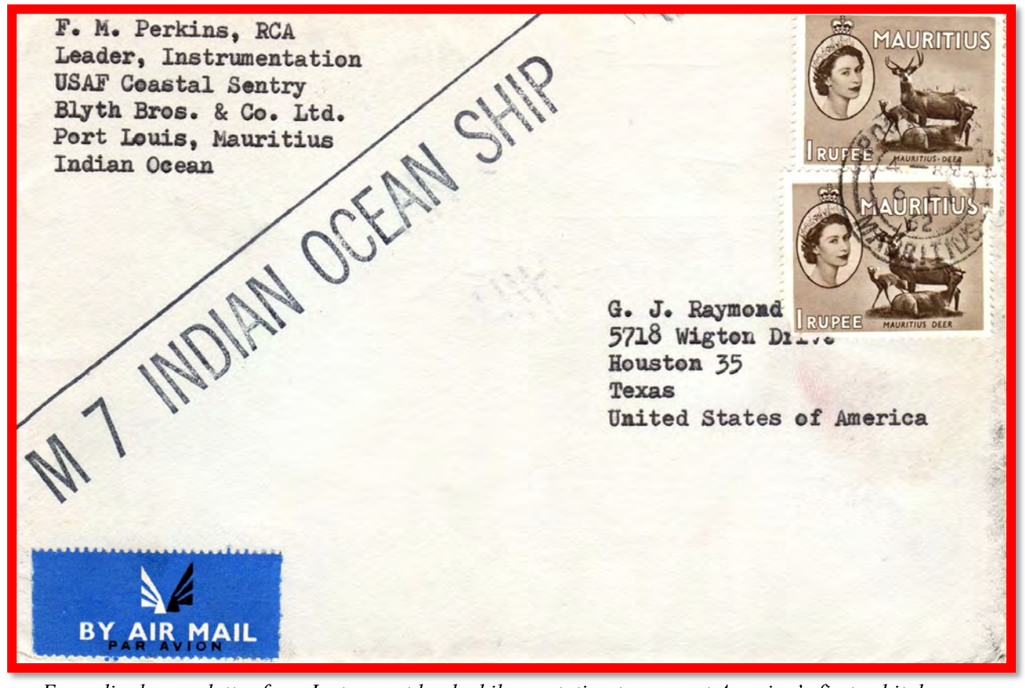
MA-5 Grand Turk Hand Cancel **29 Nov 1961**

Very early Mercury tracking station cover (six in existence) serviced by RCA "Range Rat".

MA-6 Patrick Air Force Base Machine and Hand Cancels **20 Feb 1962**

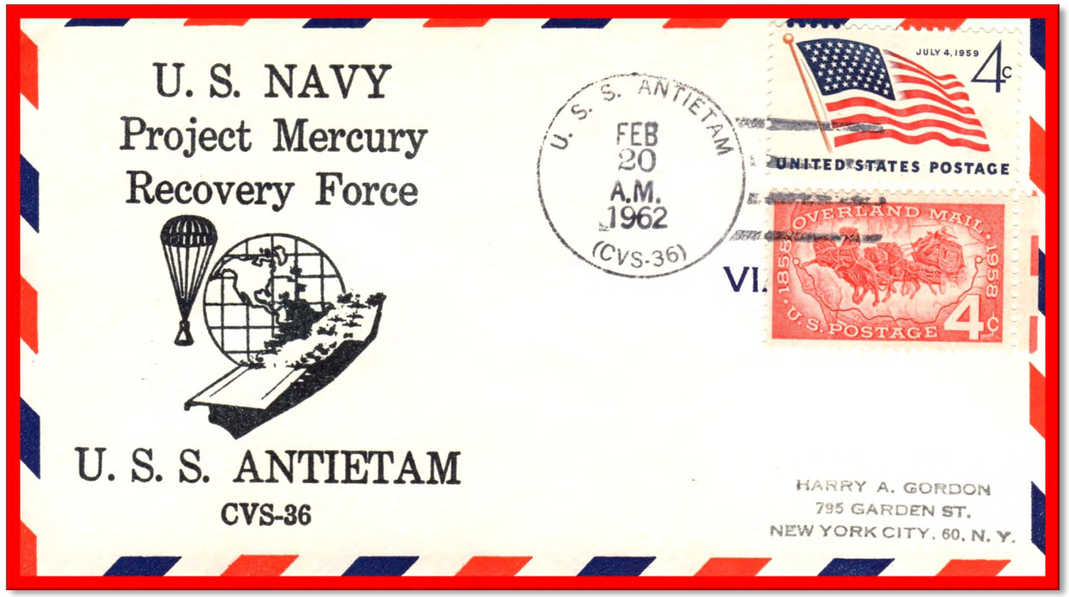
Glenn studied systems until the last possible minute before the flight. Shortly before bed on 19 Feb he reread the flight controller's handbook on the automatic stabilization and control system.

MA-6 *Coastal Sentry* Hand Cancel **6 Feb 1962**



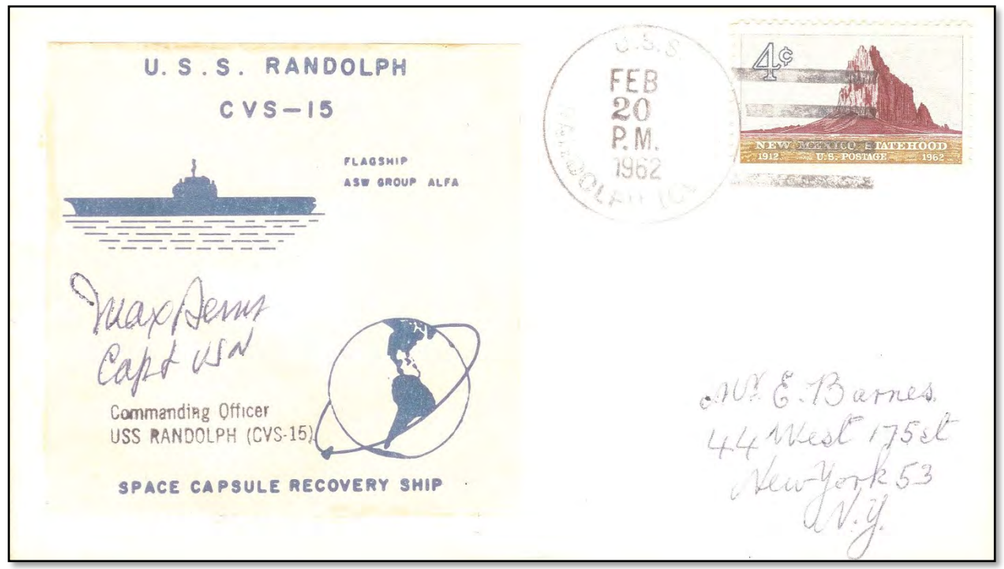
Exceedingly rare letter from Instrument lead while on station to support America's first orbital mission. Following scrubbed attempts on Jan 27th and 30th, Coastal Sentry *stood watch for the Feb 14th attempt. The launch did not succeed until Feb 20th.*

MA-6 *USS Antietam* Hand Cancel **20 Feb 1962**



The carrier was one of 28 ships assigned to rescue America's first orbiting astronaut. Philatelic documentation exists from eleven of the ships. Postmarks from this aircraft carrier stationed in the Atlantic Ocean, designated a Secondary Recovery Ship (SRS), are rare.

MA-6 *USS Randolph* Hand Cancel **20 Feb 1962**



After the excitement of a questionable heat shield Glenn landed 40 miles short of the Prime Recovery Ship (PRS), shown here with a Captain's cover created for VIPs and the crew.

MA-6 *USS Noa* BACKDATED Hand Cancel **20 Feb 1962**

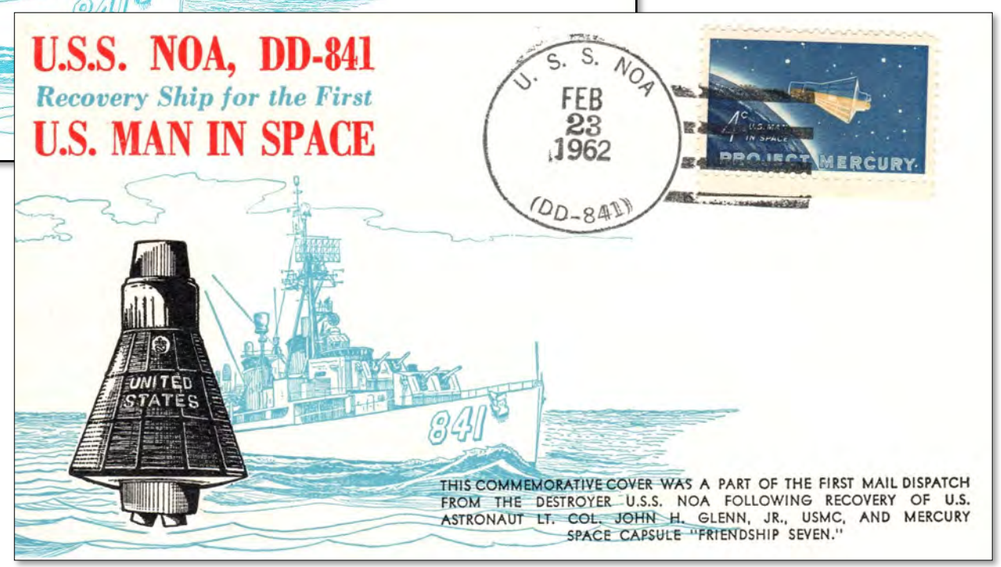
MA-6
USS Noa Backdated (?)
Hand Cancel
20 Feb 1962

Previously believed genuine (with a non-Project Mercury stamp). Perhaps the clerk simply ran out of Mercury stamps. No Project Mercury stamps were on board USS Noa while at sea. Recovery made and 300 backdated covers on return to port.

MA-6 *USS Noa* Hand Cancel **20 Feb P.M. 1962**

The pilot formally requested CAPCOM tell General David Shoup, Commandant of the Marine Corps, that three orbits should suffice for his minimal monthly requirement of four hours flight time.

MA-6
USS Noa
Hand Cancel
23 Feb 1962



MA-7 Port Canaveral Hand Cancel **24 May 1962**

In March NASA announced Deke Slayton had an irregular heart beat and would not fly. Since Carpenter worked as Glenn's back up he got the nod . A 30-inch Mylar balloon on a 100 foot nylon tether was planned to examine reflective properties of sections colored yellow, orange, white, aluminum, and phosphorescent (white by day, blue by night).

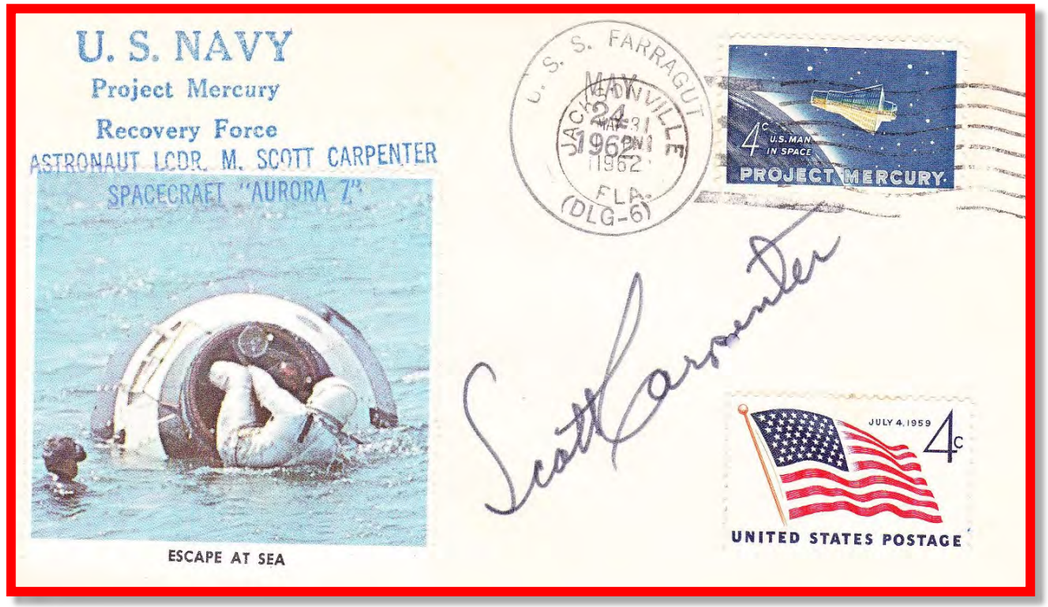
MA-7 *USS Elokomin* Hand Cancel **24 May 1962**

Cimarron-class fleet oiler acquired by the U.S. Navy during World War II. Served primarily in the Atlantic Ocean, Mediterranean Sea, and the North Atlantic providing petroleum products.

MA-7 Kano Hand Cancel **24 May 1962**

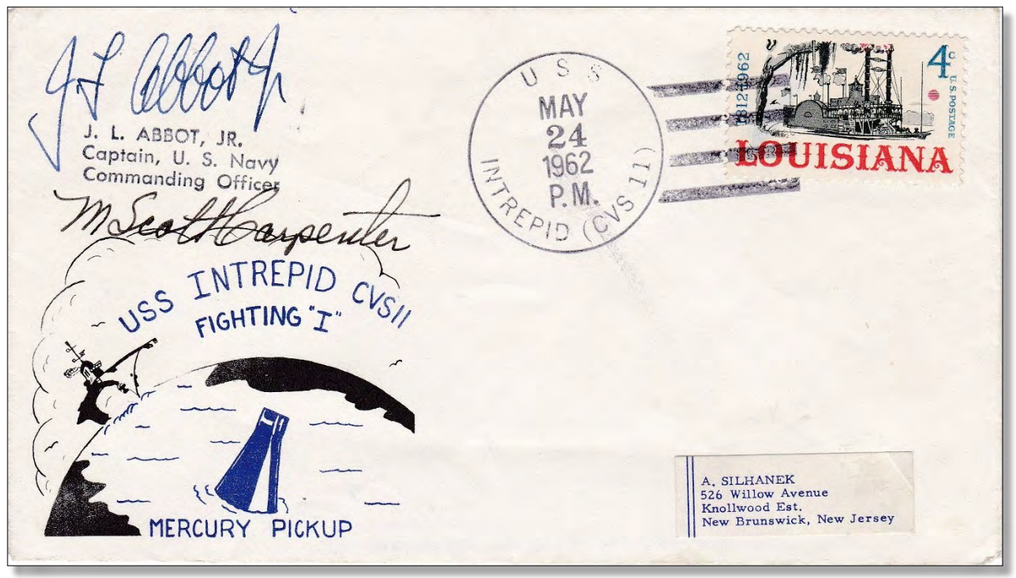
Completed as the last of 18 Project Mercury space stations in Kano, Nigeria, each at an estimated cost of $3 million. The stations were part of a vast global communication network necessary to track spacecraft and relay information back to Mercury Control Center at Cape Canaveral, Florida.

MA-7 *USS Farragut* Hand Cancel **24 May 1962**



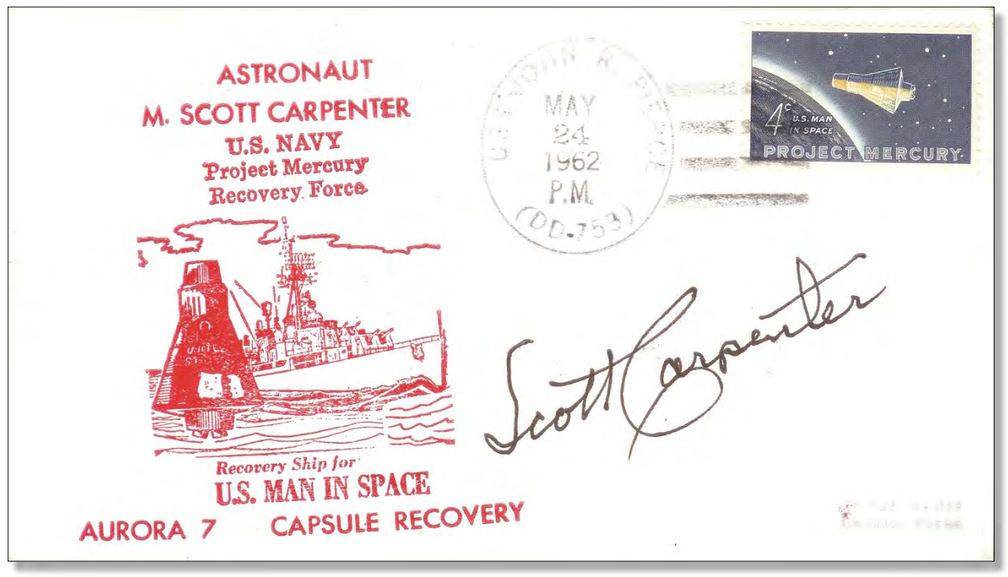
An exceedingly scarce cancel from the navy destroyer first on the scene. An Air Force seaplane could have affected the rescue but was denied permission to land by Mercury Mission Control.

MA-7 *USS Intrepid* Hand Cancel **24 May 1962**



Captain's cover from the designated PRS with vintage autograph of the astronaut (and Navy Commander). A 190 mile overshoot gave Carpenter the chance to exercise his water survival skills.

MA-7 *USS John R. Pierce* Hand Cancel **24 May 1962**

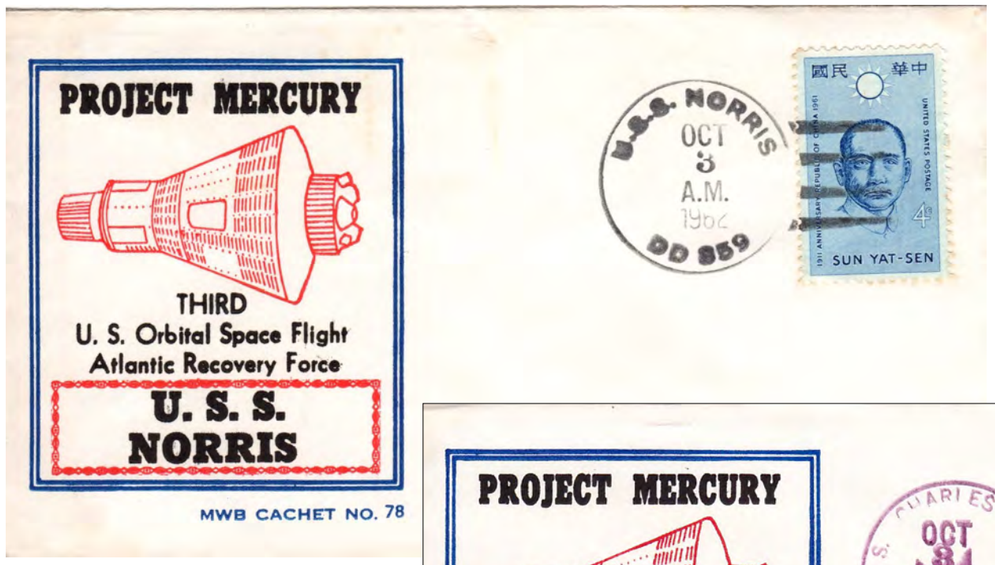


The pilot was rescued after three hours at sea. It would take 6 1/2 hours before spacecraft recovery equipment enabled USS John R. Pierce *could reach the capsule.*

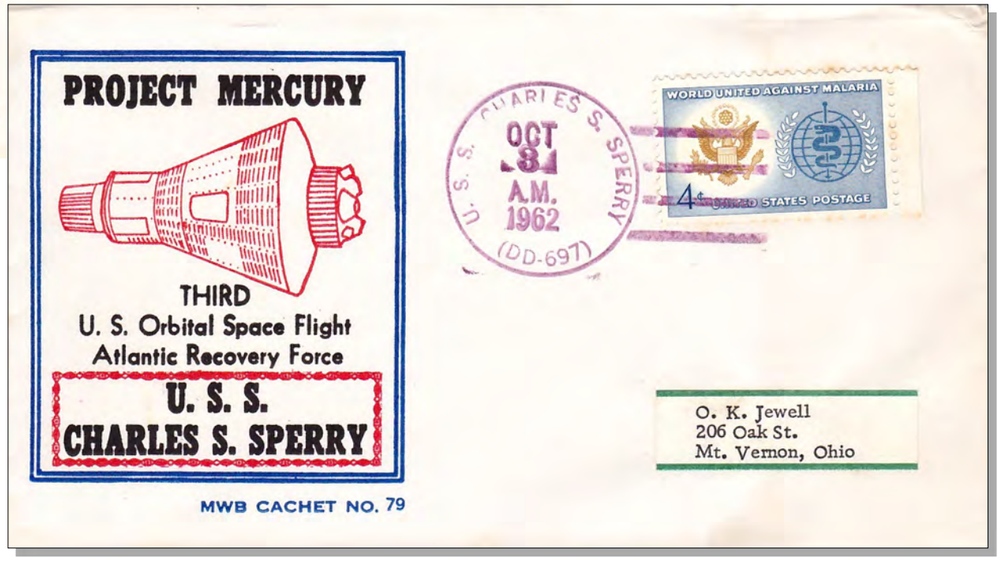
MA-8 Patrick Air Force Base Machine Cancel **3 Oct 1962**

Glenn's flight had been exploratory and Carpenter's scientific. Wally Schirra's was an engineering flight with precise test pilot maneuvers with a goal to conserve fuel and electrical power.

MA-8 *USS Norris* Hand Cancel **3 Oct 1962**



MA-8 *USS Charles S. Sperry* Hand Cancel **3 Oct 1962**



Since World War II Morris W. Beck created multicolored cachets for US Navy ships. Beginning with Carpenter's orbital flight Beck began producing space related artwork for recovery ships. Here two Secondary Recovery Ships (SRS) are shown for Schirra's mission. Beginning with Cooper's flight Beck covers exist for all Prime Recovery Ships (PRS).

MA-8 *USS Kearsarge* Type II Machine Cancel **3 Oct 1962**

Scarce Captain's Cover with only known destination to Hong Kong.

MA-9 Cape Canaveral Machine Cancel **15 May 1963**

A well-known life insurance company subscribed to Cooper's faith by underwriting the first commercial astronaut policies, including one for Cooper. A commonly held belief that astronauts were uninsurable explains the Apollo Insurance envelopes.

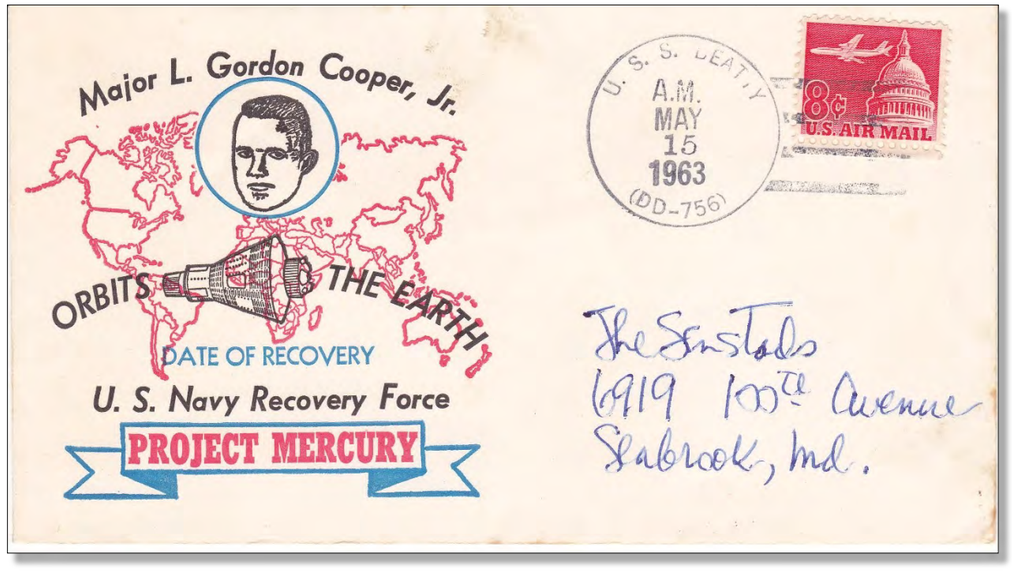
MA-9 Guaymas Hand Cancel **15 May 1963**

An early NASA tradition held that only other astronauts communicate with spacecraft in flight. Gus Grissom was assigned to man a radio at a tracking station in Sonora, Mexico during Cooper's mission.

MA-9 Zanzibar Hand Cancel **16 May 1963**

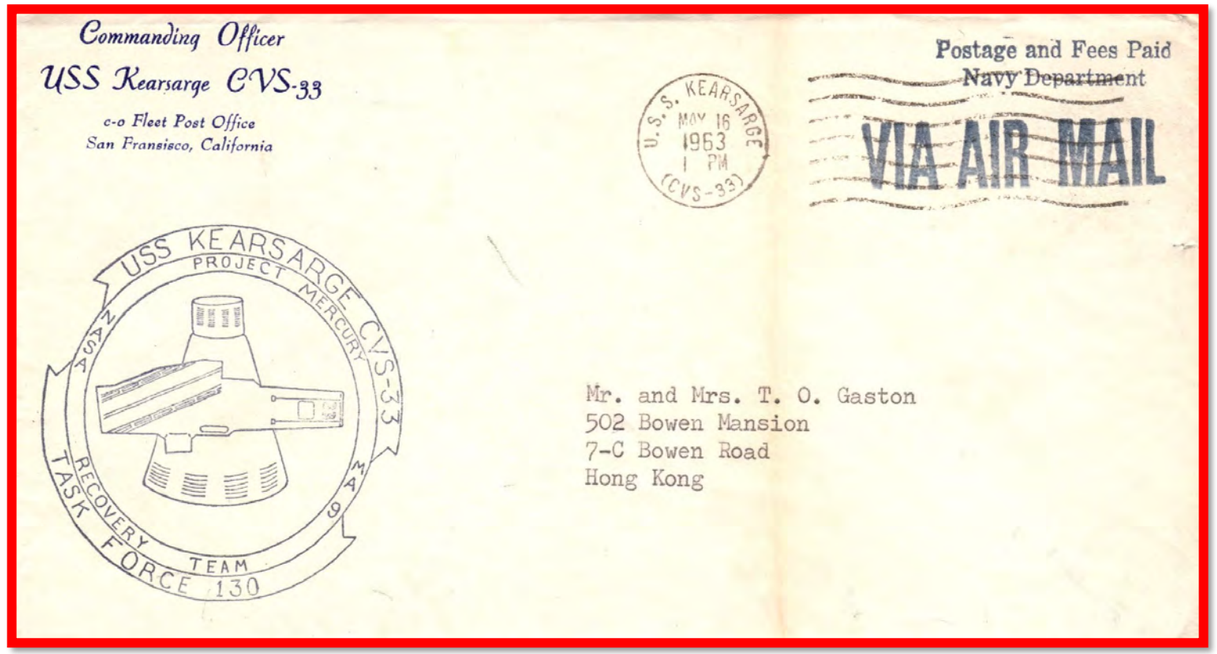
Obviously philatelic envelope posted from East Africa. One of the great challenges (and great achievements) of Project Mercury was the worldwide voice and data network required for line of sight communication.

MA-9 *USS Beatty* Hand Cancel **15 May 1963**



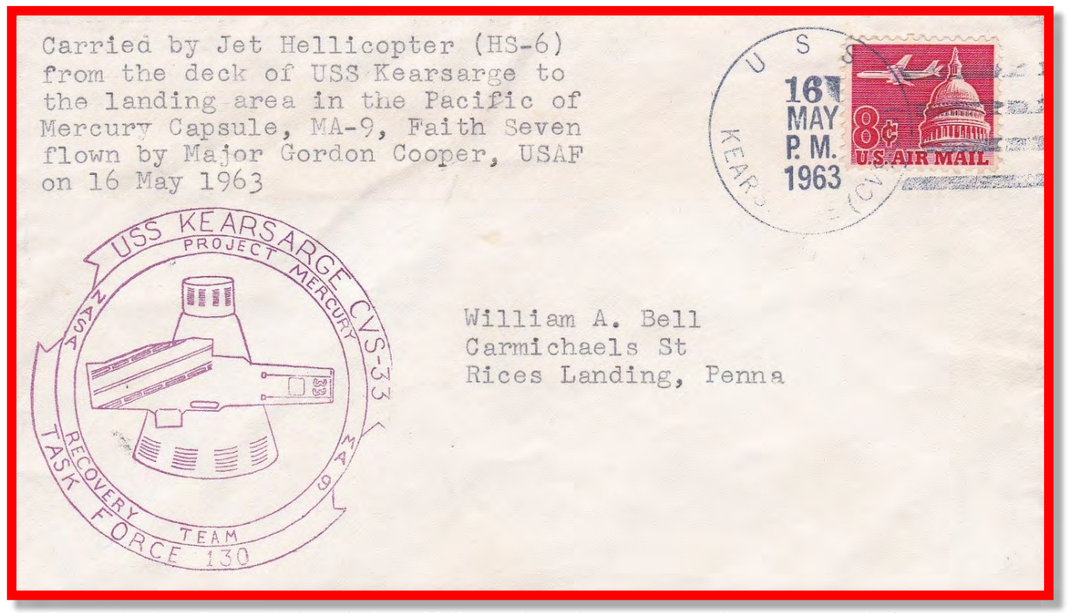
Secondary Recovery Ship on station to recover America's last solo astronaut. Seen here is a rare Beck's CREW (no number) cachet. The cachet says "Date of Recovery" which actually occurred on the 16th.

MA-9 *USS Kearsarge* Machine Cancel **16 May 1963**



Captain's Cover Penalty envelope to Hong Kong.

MA-9 *USS Kearsarge* Hand Cancel **16 May 1963**



Dating back to Grissom's first flight in 1961 envelopes have occasionally been carried of recovery aircraft. While this became fairly common in the Skylab era they remain rare during Mercury.

Project Gemini

"I feel red, white and blue all over."
Edward H. White II, June 1965

Project Gemini was an afterthought. In the late 50s the concept of a man riding a rocket to orbit slowly percolated in both military and civilian aerospace circles. A natural progression from mice to monkeys and on to man can inexorably be traced. These same groups dreamed of flying rings around the moon.

In May 1961, President Kennedy challenged the nation to land a man on the moon and return him safely to the earth. Alan Shepard had strapped on an Army Redstone missile for a 15 minute suborbital ride. He had traveled 302 miles while a trip to the moon would be a quarter of a million miles and take a week.

Moving from the theoretical to reliable hardware would require several important steps. The Russians were way ahead with heavy lift capability. We would need to ramp up booster development. We needed to move from a ballistic capsule to a piloted spacecraft, one that had precise navigation and control features. Another big problem to overcome was consumables – sufficient propellant, oxygen, water, and electricity to last for several days instead of a scant few minutes.

This was an age for new materials, processes and ideas. Real time complex computing, advances in inertial navigation, fuel cells that generate electricity and water all made great leaps. As an alternative to a massive direct ascent moon rocket, NASA created the requirement to control two missions at the same time, conduct extravehicular activities (space walks), and rendezvous and dock in space.

Some technologies would prove premature for the breakneck speed of the Space Race. The Parasail concept of a runway landing using the hang glider designed by Rogallo was shelved in favor of the well-tested and reliable parachute. Ejection seats used at altitude spawned a proposal for a cross between a balloon and a parachute (a ballute). It too would be put aside.

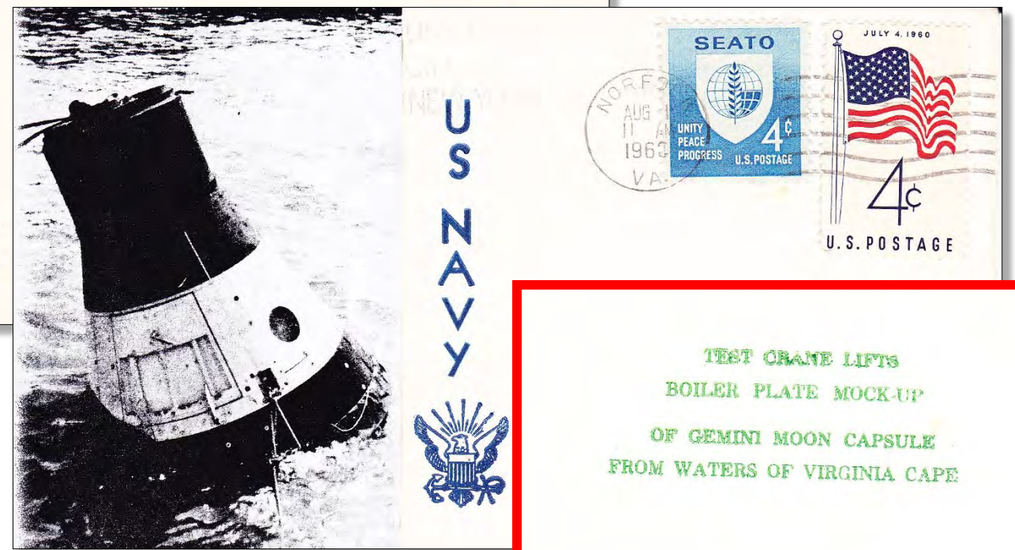
In two productive years Project Gemini flew 10 increasingly demanding manned missions. By its conclusion in 1966, NASA had accomplished long duration flight, deftly handled emergencies on the ground (Gemini VI) and in flight (Gemini VIII), and charted a path for Project Apollo.

Gemini-related St Louis Hand Cancel **24 Jun 1963**

McDonnell Aircraft built the Mercury spacecraft. When the Gemini program commenced they won the subsequent contract as well. A month after the conclusion of the Mercury flights (and 6 months before he resigned from NASA) John Glenn was in the trainer working on rendezvous and docking procedures.

Gemini-related
Galveston
Machine Cancel
28 Jun 1963

As an open sea test facility, Retriever was used for Gemini and Apollo spacecraft drop tests from aircraft, uprighting tests, flotation collar tests, and qualification of shipboard recovery equipment. It was also used to train all flight crews for post splashdown ocean recovery operations and water egress training from their Gemini spacecraft and Apollo command modules until 1972. Here conducted aboard the USS Escape *and postmarked on return to port at Norfolk.*



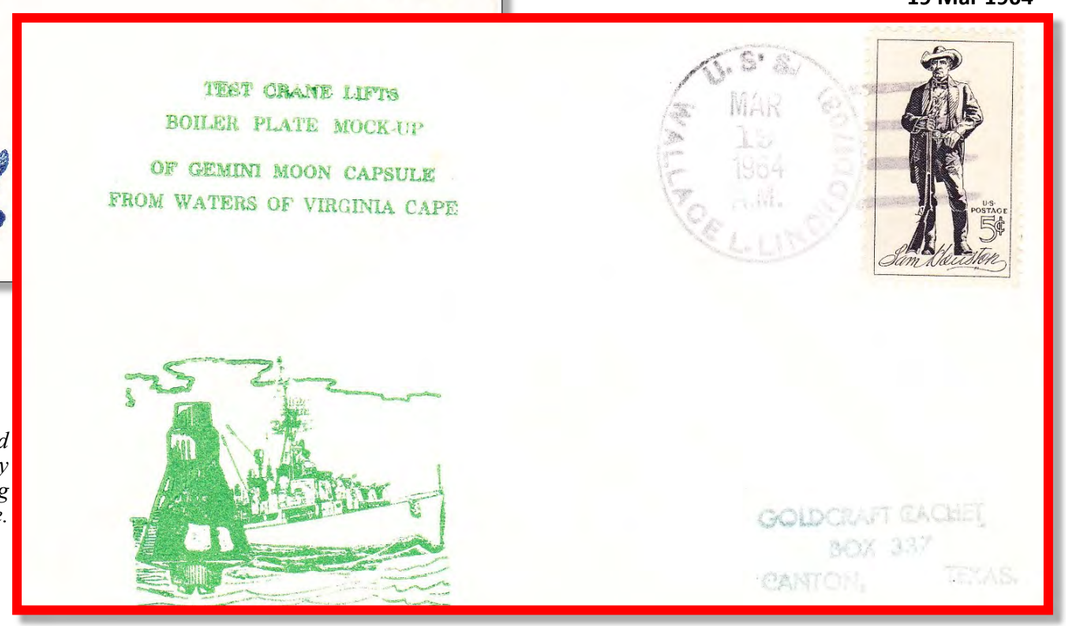
Gemini-related
Norfolk
Machine Cancel
1 Aug 1963

With cancellation of plans to land the Gemini spacecraft using an inflatable wing and skids, the US Navy resumed training to rescue and recover at sea. Here conducted aboard the USS Escape and postmarked on return to port at Norfolk.

Gemini-related
USS Wallace L. Lind
Hand Cancel
19 Mar 1964

NASA Motor Vessel (MV) Retriever was a Landing Craft Utility (LCU) built for the U.S. Army in 1953. After modifications it arrived at its Seabrook, Texas docking facility near the NASA Manned Spacecraft Center (MSC) in June 1963.

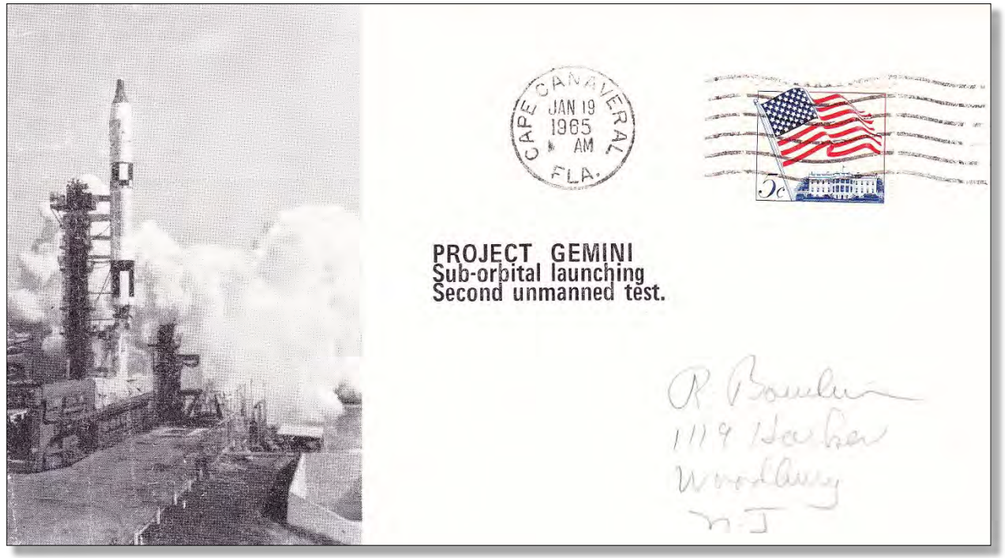
A boilerplate is an object of the same size, weight and center of gravity as the actual spacecraft but without any real components. This makes them perfect for training recovery forces. Here the art shows the older Mercury capsule.



GT-1 Cape Canaveral Hand Cancel **8 Apr 1964**

The launch vehicle provided a bit too much speed and put the spacecraft into orbit with an apogee of 320 km instead of 299 km. Although it was equipped with a heat shield, the capsule had four large holes drilled into it to ensure it would be destroyed during reentry.

GT-2 Cape Canaveral Machine Cancel **19 Jan 1965**



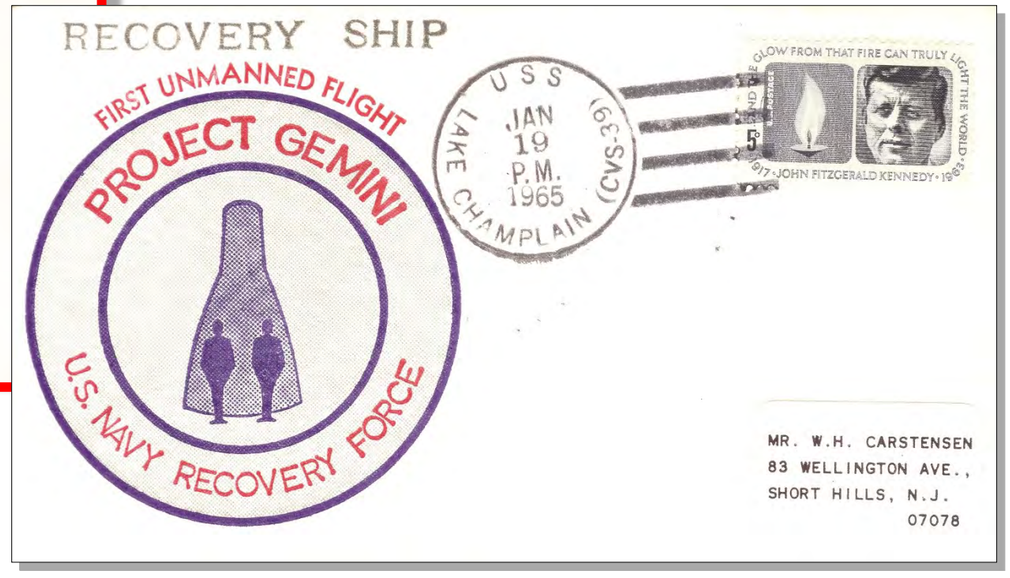
After dodging two hurricanes during the second half of 1964 the launch vehicle was scheduled to lift off 9 Dec. The countdown clock reached zero and the engines ignited. A loss of hydraulic pressure shut them down after one second. Finally, on 19 Jan it roared skyward.

GT-2 *USS Lake Champlain* Machine Cancel **19 Jan 1965**

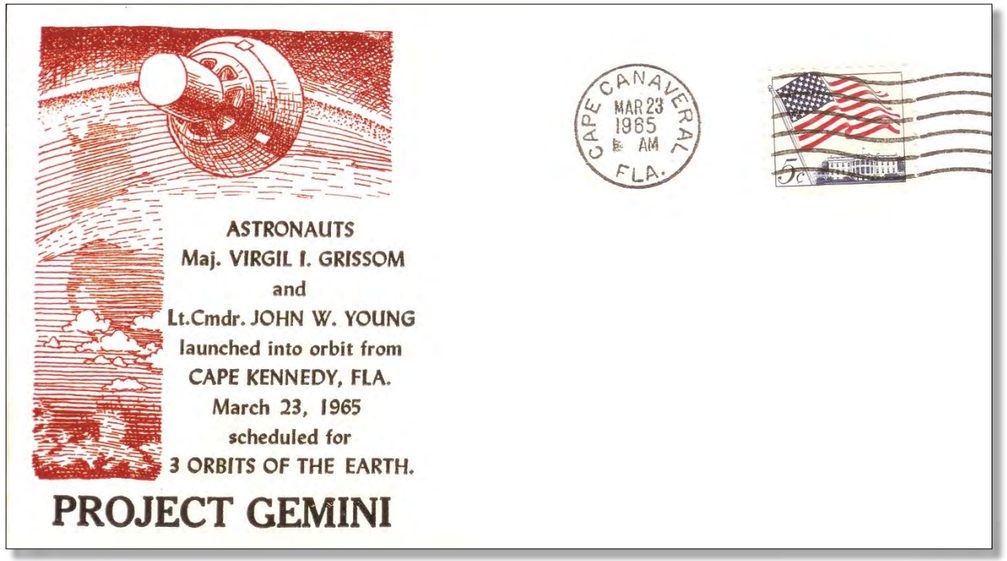
Crew mail from an officer to his girlfriend. In the enclosed letter he refers to recovery of the unmanned Gemini capsule. He also tells her to save the envelope since all the philatelic mail received the Hand Cancel. A very rare Machine Cancel is shown.

Traveling 3,422.4 km downrange on a flight lasting 18 minutes and 16 seconds, the capsule landed 26 km short of the planned impact point and 84 km from the carrier. This is a scarce (25 created) Beck CREW covers (no Beck number) made as a "thank you" to ship personnel.

GT-2 *USS Lake Champlain* Hand Cancel **19 Jan 1965**

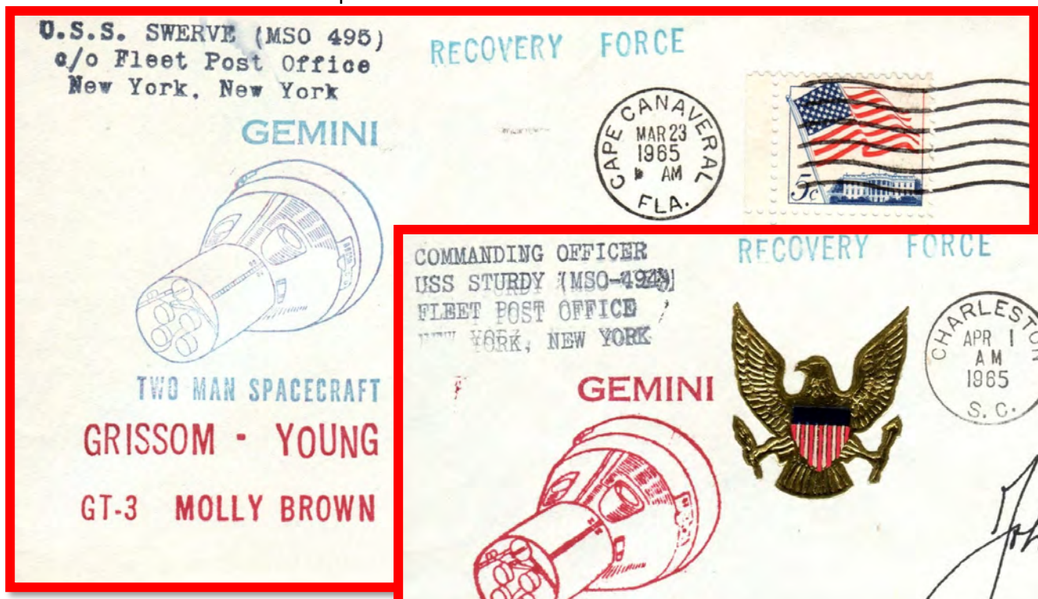


GT-3 Cape Canaveral Machine Cancel **23 Mar 1965**



Over Corpus Christi, Texas, at the end of the first revolution the astronauts fired engines to change the orbit from 161 km x 224 km to an orbit of 158 km x 169 km. The first such maneuver in history.

GT-3 Cape Canaveral Machine Cancel **23 Mar 1965**



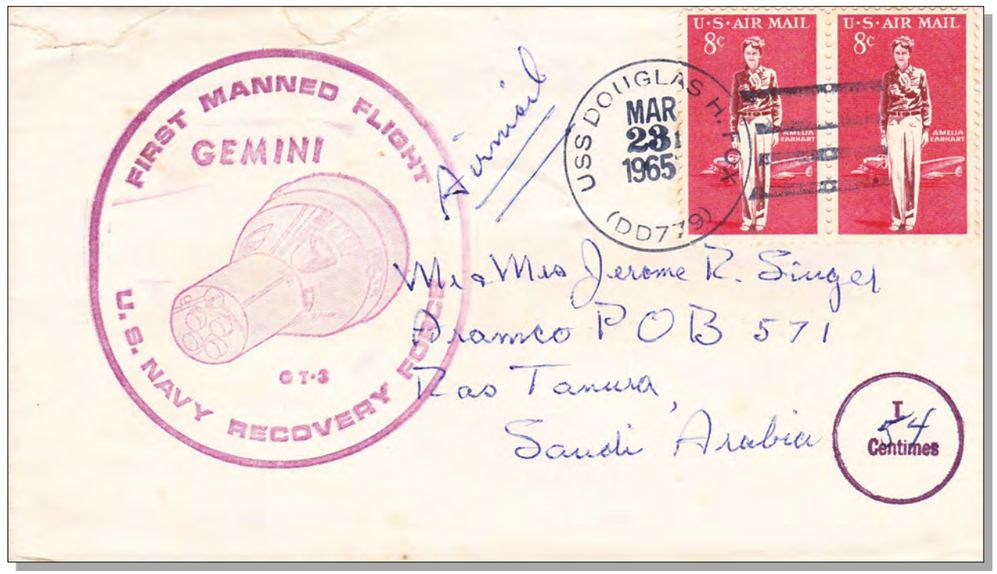
Very scarce Mine Sweeper Ocean (MSO) Secondary Recovery Ships stationed in the Atlantic. Young signature is a mechanical Autopen.

GT-3
Charleston
Machine Cancel
1 Apr 1965

GT-3 *USS Intrepid* Machine Cancel **23 Mar 1965**

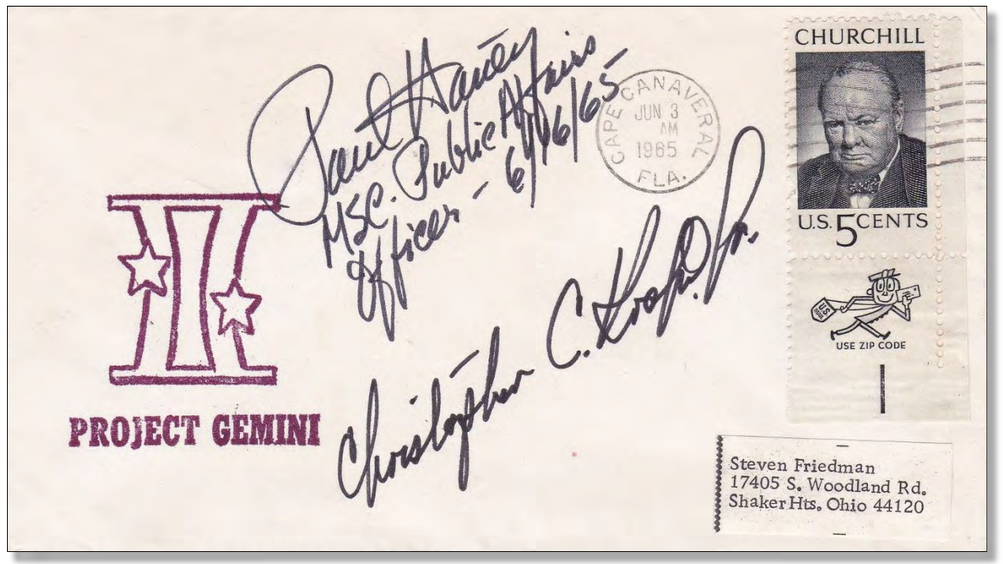
Morris Beck produced accurate and attractive cachets for naval recovery forces from Carpenter's Mercury flight through the Apollo-Soyuz mission in 1975. Here missing the yellow background.

GT-3 *USS Douglas H. Fox* Hand Cancel **23 Mar 1965**



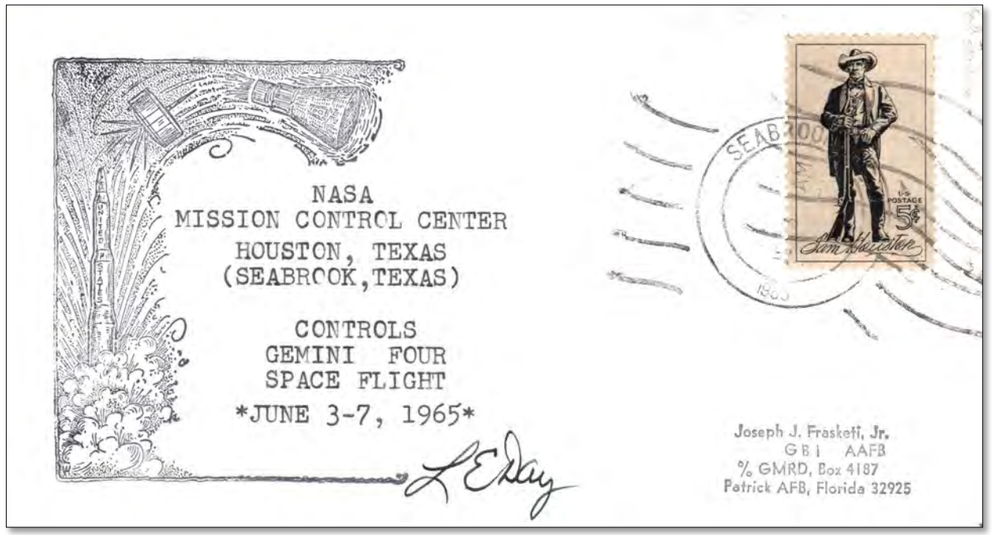
Seldom seen Secondary Recovery Ship (SRS) addressed to Saudi Arabia. Despite using double the current Air Mail rate at the time the envelope was judged to have insufficient postage.

GT-IV Cape Canaveral Machine Cancel **3 Jun 1965**



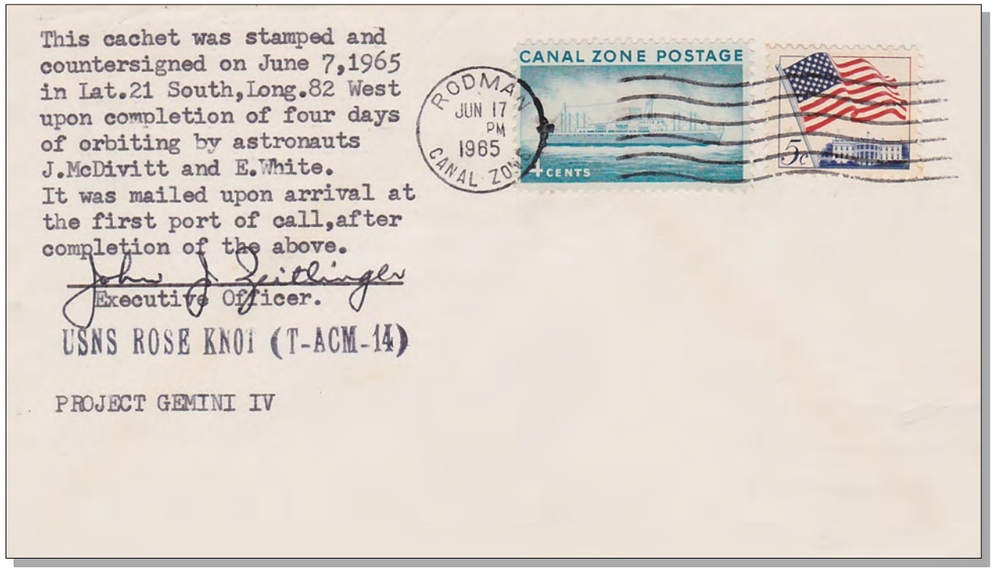
Plan for this four-day, 62-orbit mission was to fly in formation with the spent Titan II second stage. After using up half the fuel thrusting forward only to move farther away, they gave up. The highlight was the first American spacewalk. Tied to a tether and using a handheld "zip gun," Ed White floated for 22 minutes. At its conclusion, White said, "It's the saddest moment of my life."

GT-IV Seabrook Roller Cancel **3 Jun 1965**



Unusual Roller Cancel applied Seabrook. In Astrophilately the acceptable nearby post offices to the Johnson Space Flight Center are Webster, Seabrook, Clear Lake, and Houston.

GT-IV Rodman Machine Cancel **17 Jun 1965**



Often ships that participate in Navy Task Force operations in support of spaceflight missions don't have their own mail facilities. Fédération Internationale de Philatélie (FIP) states, "If not available on the ship, the postmark of the port of landing or of the nearest supply base after arrival of the ship is valid."

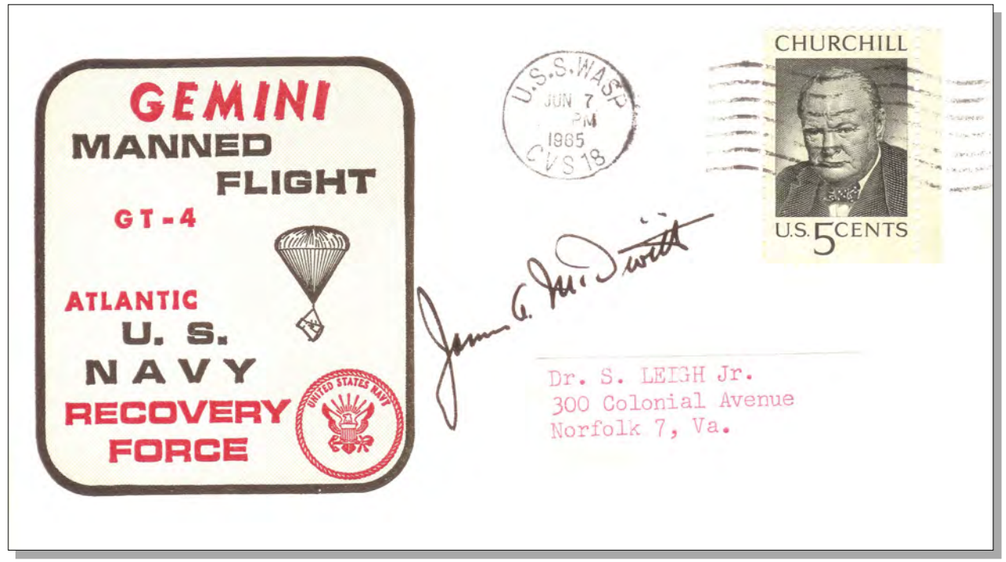
GT-IV Freeport Machine Cancel **3 Jun 1965**

A first was an international audience watching the launch live. It was broadcast on TV to a dozen European nations using the Early Bird satellite. 1,100 journalists requested accreditation to cover the flight.

GT-IV Houston Hand Cancel **3 Jun 1965**

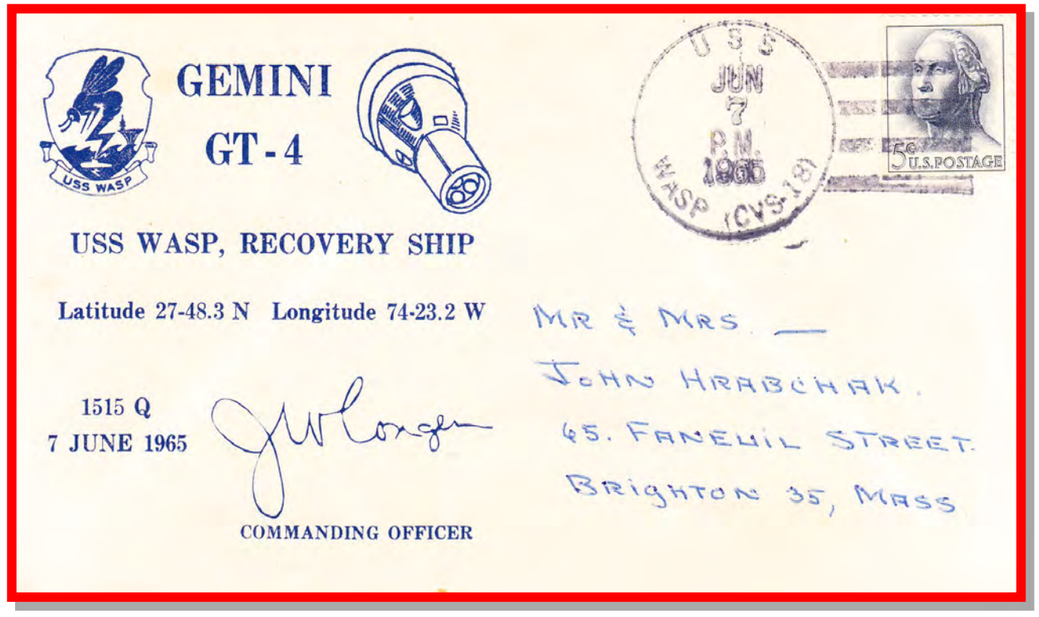
Once the rocket cleared the tower, control of the mission transferred from the Kennedy Space Center in Florida to Mission Control in Houston, Texas.

GT-IV *USS Wasp* Machine Cancel **7 Jun 1965**



A rare Beck CREW cover postmarked on the Prime Recovery Ship. All told the Department of Defense (DoD) contributed 10,249 personnel, 134 aircraft and 26 ships.

GT-IV *USS Wasp* Hand Cancel **7 Jun 1965**

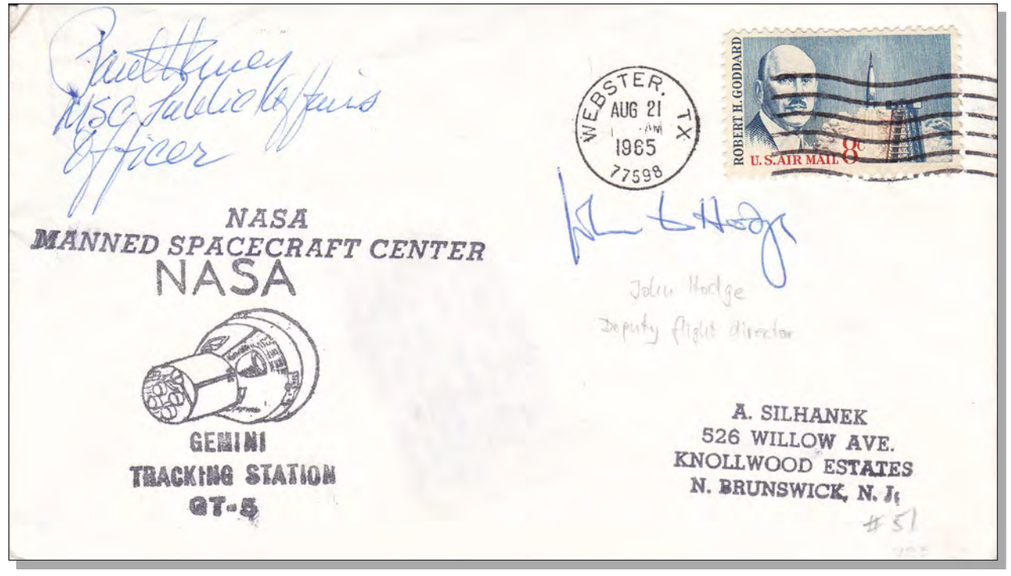


Very scarce Hand Cancel on Captain's cover. The artwork was prepared at direction of the Commanding Officer to celebrate leading the rescue effort, and was available only to Distinguished Visitors and the crew.

GT-V Kennedy Space Center Machine Cancel **21 Aug 1965**

Beginning with Gemini V, the newly minted Kennedy Space Center began providing KSC Official rubber stamp cachets for manned launches and continued through the end of Apollo. Forrest J "Dusty" Rhodes was Chief, Mail & Distribution Unit at the Kennedy Space Center.

GT-V Webster Machine Cancel **21 Aug 1965**

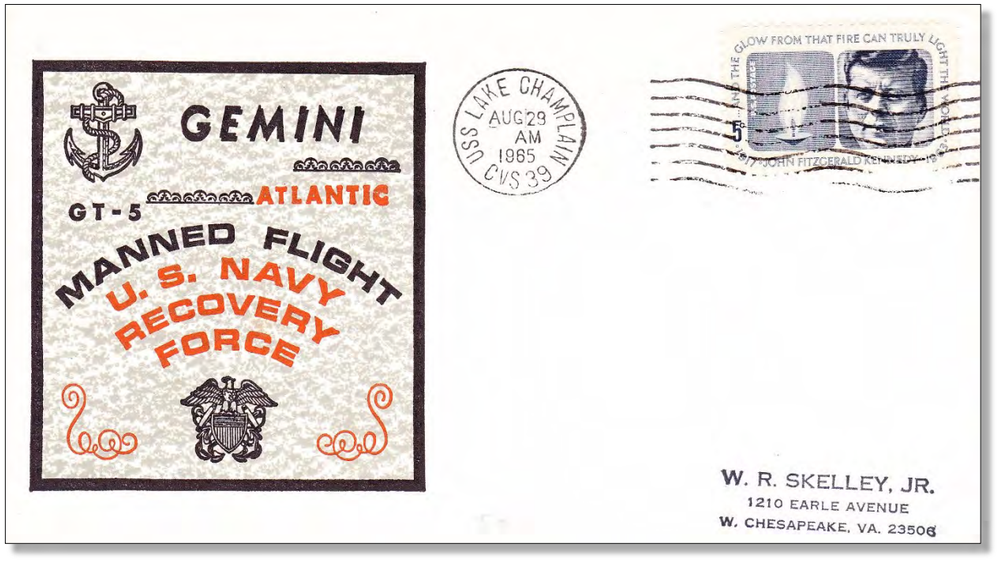


Beginning with GT-IV there were three Flight Director shifts. Chris Kraft 1st as Mission Director, Gene Kranz 2nd focusing on system performance, and John Hodge 3rd on mission planning. Hodge would replace Kraft after GT VIII so that the later could focus on upcoming lunar flights. Paul Haney was known as the "Voice of Gemini".

GT-V *USS George K. Mackenzie* Hand Cancel **29 Aug 1965**

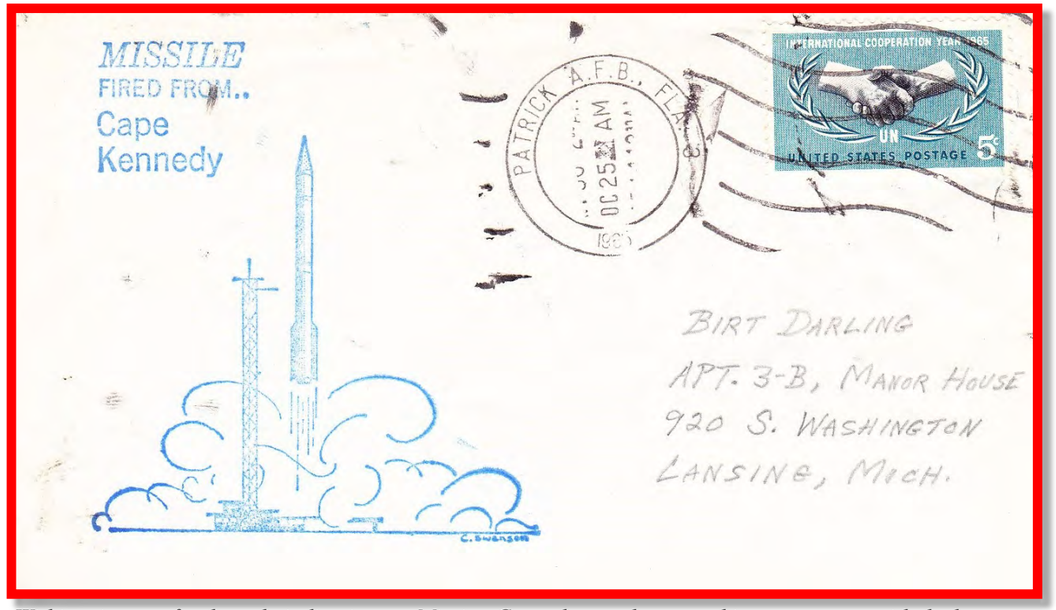
The Earth's rotational rate is 360.98 degrees per day. The programmer rounded the value to 360 resulting in an undershoot of 130 km. The error would have been greater but Cooper recognized the mistake and slew the craft 90 degrees instead of 53 to minimize the problem.

GT-V *USS Lake Champlain* Machine Cancel **29 Aug 1965**



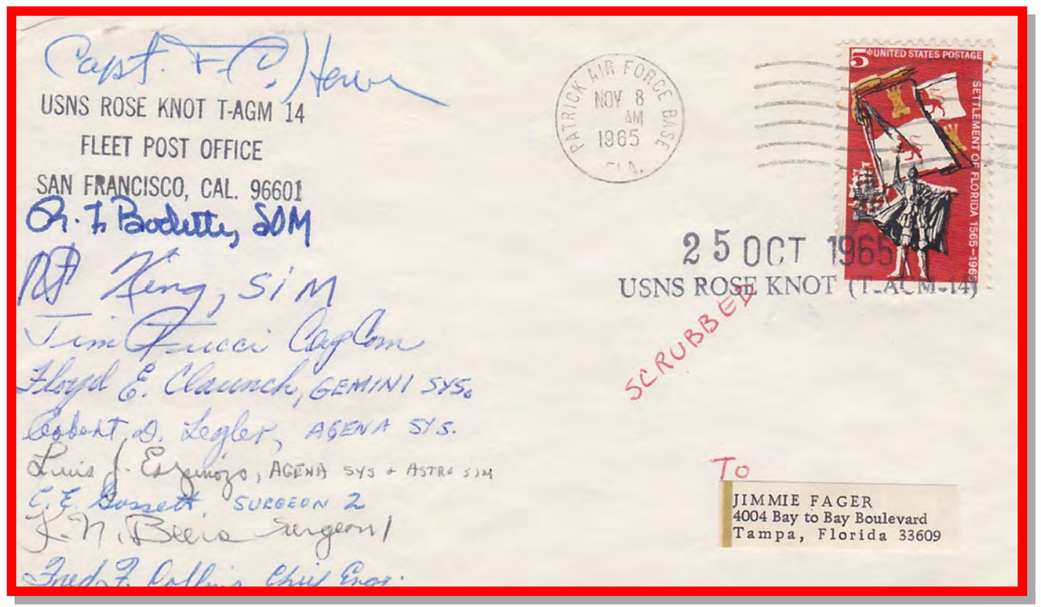
Rare Beck Crew cover (25 produced) from the Prime recovery ship. W.R. Skelley coordinated many of the philatelic details for recovery ships. A large number of the "thank you" CREW covers are addressed to him.

GT-VI Patrick Air Force Base Hand Cancel **25 Oct 1965**



Within minutes after launch, indications at Mission Control were that something was wrong with the booster. The Agena seemed to be wobbling, even as its attitude control system labored to keep it stable. A hasty study of partial telemetry data from the booster revealed no clear indication of the failure.

GT-VI Patrick Air Force Base Machine Cancel **25 Oct 1965**



Nice selection of tracking ship personnel autographs on a seldom seen "scrub " cover. The two line USNS Rose Knot tied to the stamp is not an official Post Office cancel. That would have to wait until the ship returned to port on November 8. Note the CapCom for this unmanned launch is not an astronaut.

GT-VI Port Hueneme Machine Cancel **25 Oct 1965**

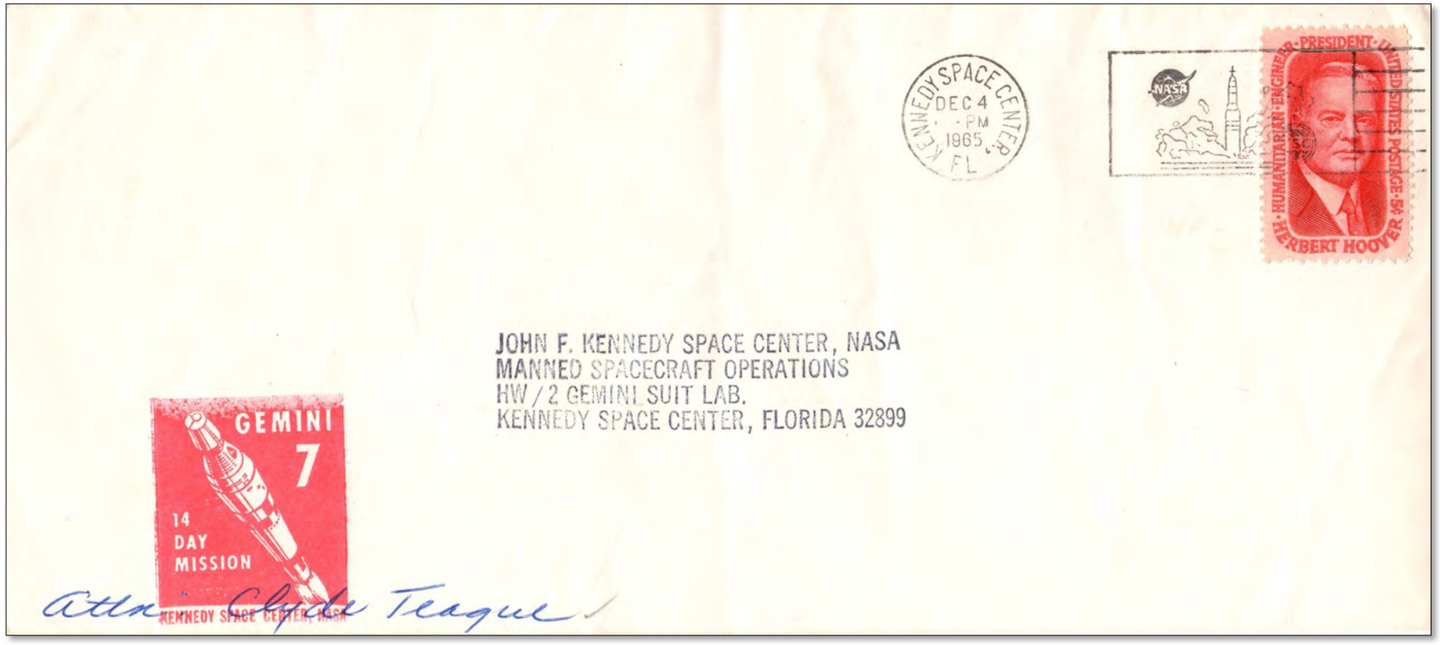
Throughout the US manned space program control centered on ground based facilities and personnel. Onboard computers were nascent (or non-existent) and analysis and decision making so complex that thousands participated. To receive spacecraft data (downlink) and transmit instructions (uplink) a continuous worldwide network of transmitters and receivers were required.

GT-VI *USS Wasp Hand Cancel* **25 Oct 1965**

What appears to be a test impression (no stamp) on what would have been the Prime Recovery Ship. Artwork by Morris Beck is joined by a ship design on aircraft stationary.

GT-VII Kennedy Space Center Machine Cancel **4 Dec 1965**

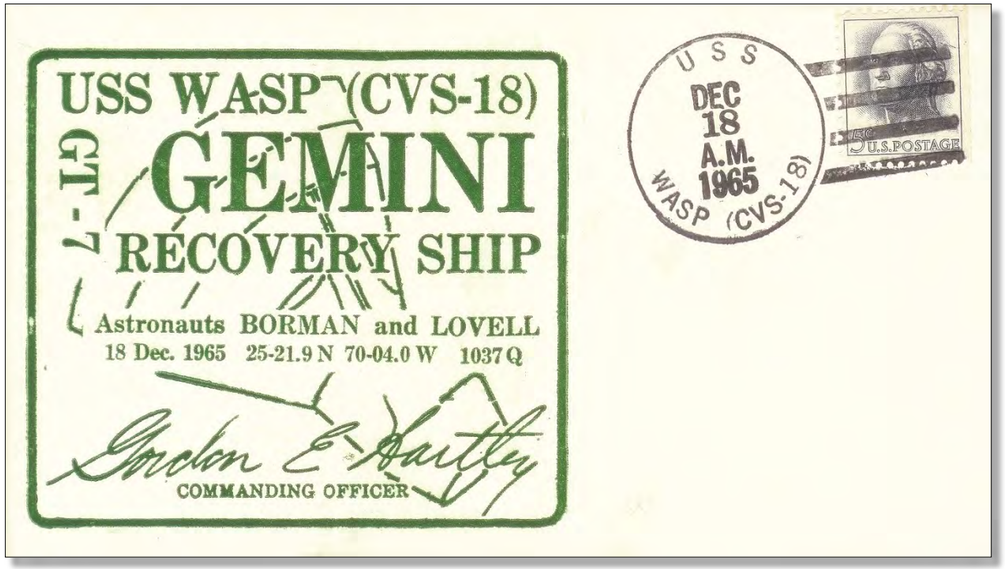
This KSC Official addressed to astronaut suit technician Clyde Teague.. This grueling flight was designed to test whether man and machine could fly for two weeks. A new, lightweight spacesuit proved critical as did taking books for pleasure to pass the time.



GT-VII Freeport Hand Cancel **10 Dec 1965**

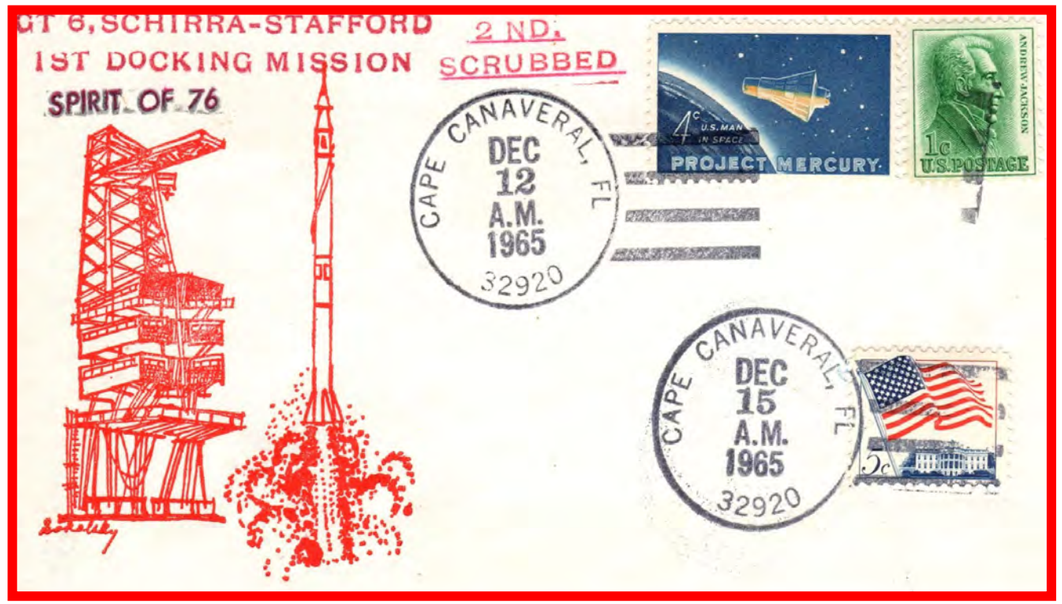
After five days, they had performed four orbital adjustment burns that put them in a circular 300 km orbit. This meant that GT-VII could stay aloft for at least 100 days without the orbit degrading, more than stable enough to serve as the passive rendezvous for GT-VI-A.

GT-VII *USS Wasp* Hand Cancel **18 Dec 1965**



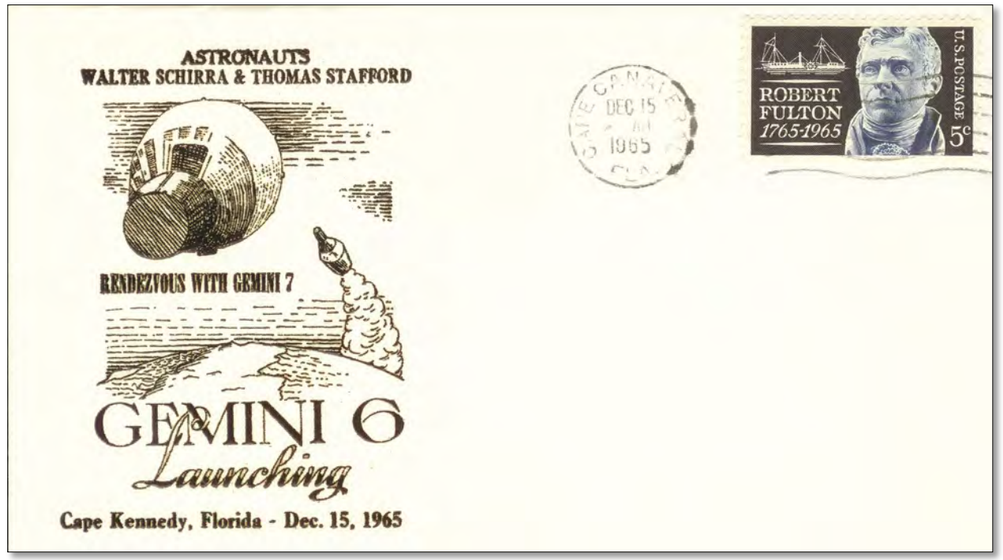
A Captain's cover for GT-VII. On this day Robert Gilruth held a post-recovery press conference in which he declared "A fabulous year for manned space flight." Since March NASA had put 10 men in orbit, performed EVA, conducted eight- and 14-day flights and accomplished a rendezvous.

GT-VI-A Cape Canaveral Machine Cancel **12 Dec 1965**



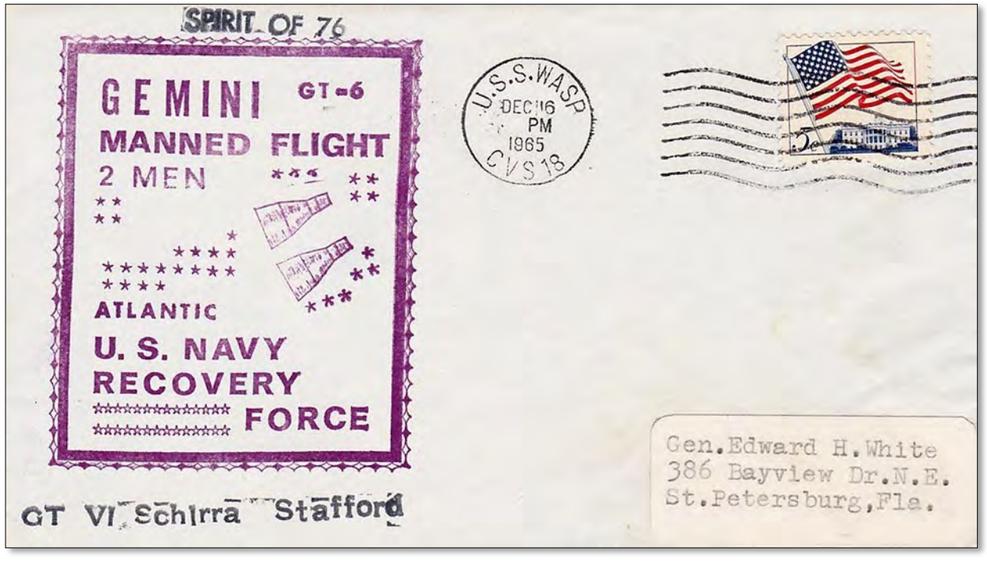
On 12 Dec Schirra and Stafford were loaded on Pad 19 and ready to fire. The countdown clock went to zero, the spacecraft clock started and the rocket roared to life. Just 1.2 seconds later the engines shut down. They felt no movement. Schirra said, "We're just sitting here breathing."

GT-VI-A Kennedy Space Center Machine Cancel **15 Dec 1965**



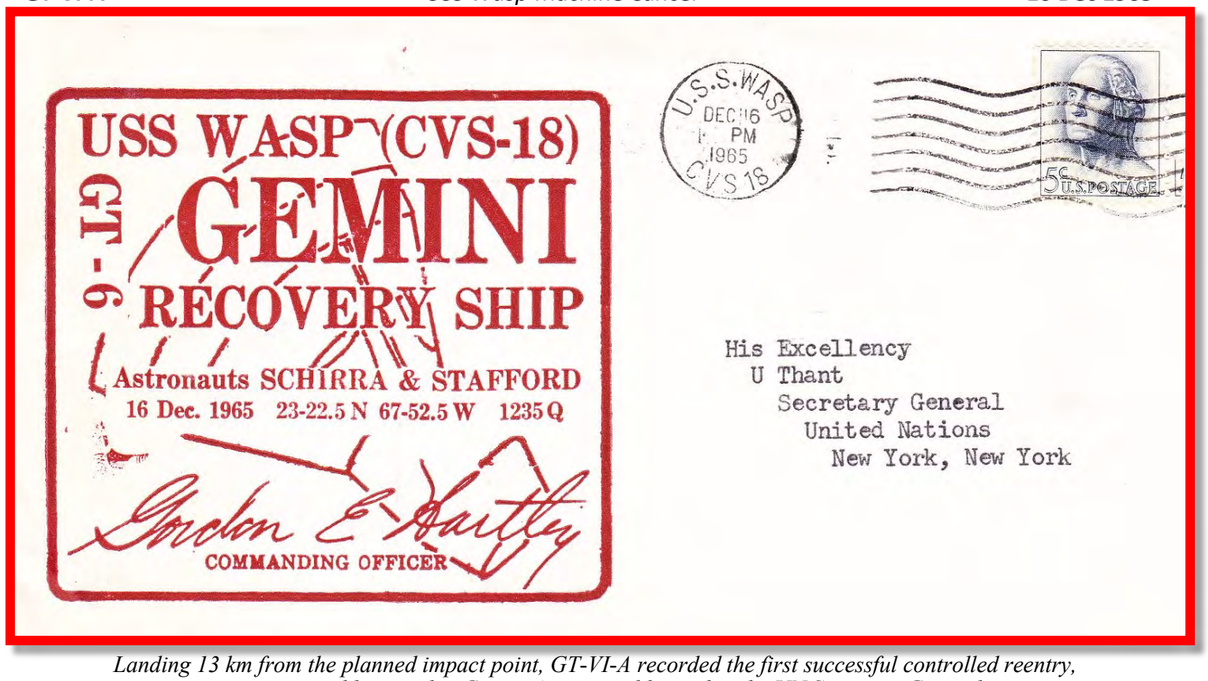
Following the braking and translation maneuver, VI-A coasted until the two vehicles were 40 meters apart, with no relative motion between them. They flew in formation for five hours, at times within 30 cm of each other. For the first time true rendezvous had been achieved.

GT-VI-A *USS Wasp* Machine Cancel **16 Dec 1965**



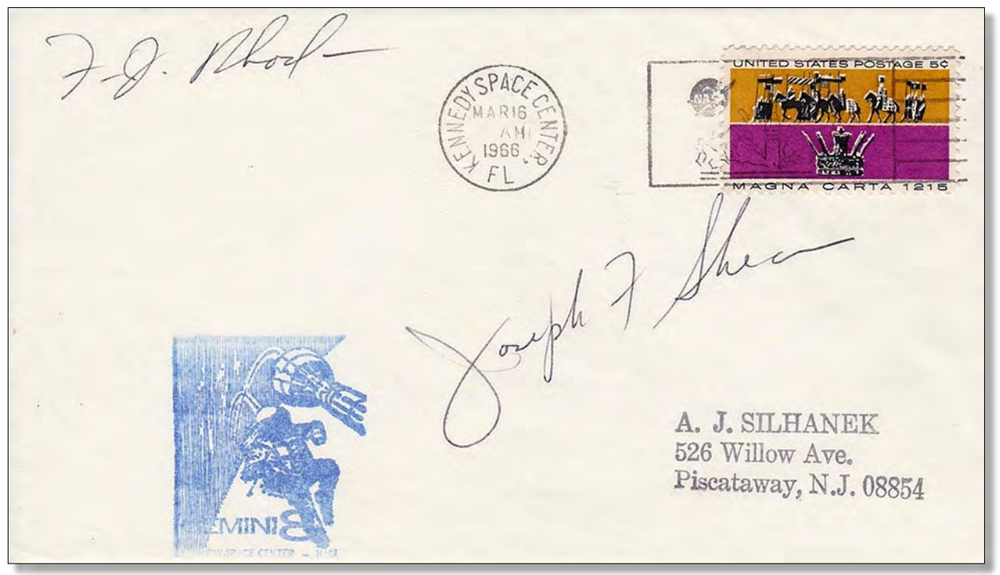
Envelope addressed to Air Force MGEN Edward H. White. His son, Ed White II, had just become the first American to walk in space in June. Note the variation in artwork. Here it shows two capsules while in the next it shows the original GT–VI mission to dock with an Agena.

GT-VI-A *USS Wasp* Machine Cancel **16 Dec 1965**



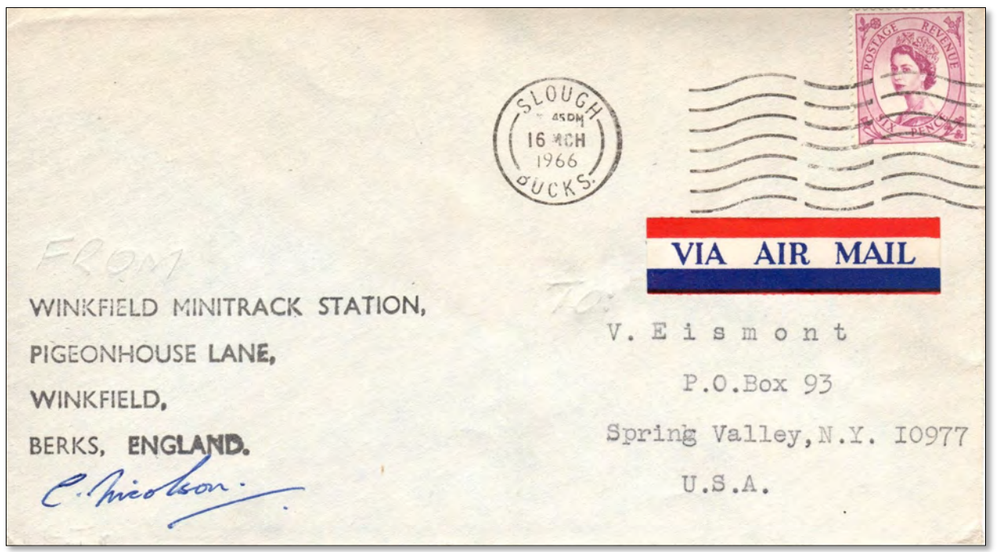
Landing 13 km from the planned impact point, GT-VI-A recorded the first successful controlled reentry, commemorated here with a Captain's cover addressed to the UN Secretary General.

GT-VIII Kennedy Space Center Machine Cancel **16 Mar 1966**



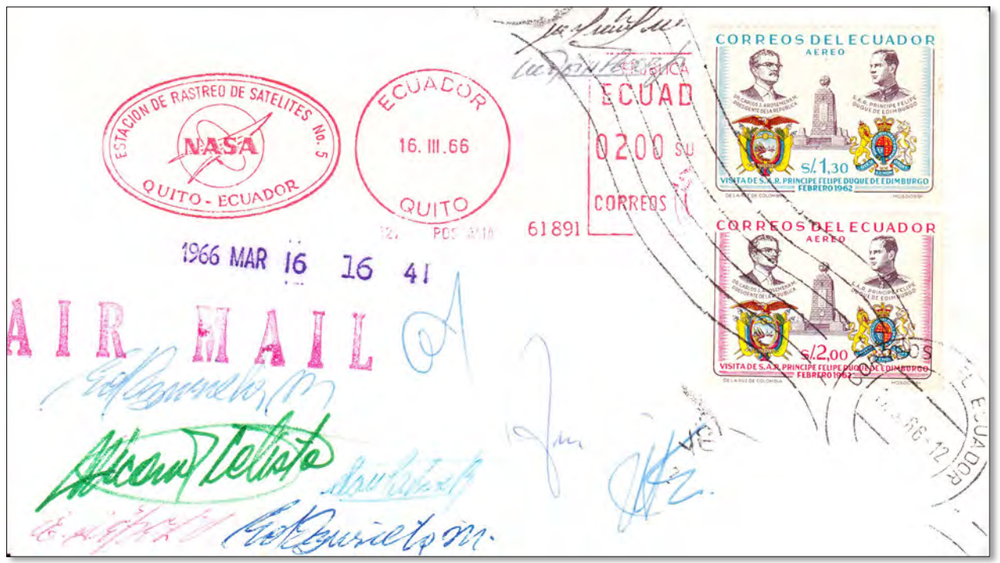
As the KSC Official artwork illustrates, the two objectives were to dock with the Agena and perform a two-hour spacewalk. This was to be the first orbital docking ever. Easing the last few feet at three inches per second, Neil Armstrong reported his progress through Rose Knot Victor to Mission Control. "Flight, we are docked! It's a real ... really a smoothie – no noticeable oscillations at all."

GT-VIII Slough Bucks Machine Cancel **16 Mar 1966**



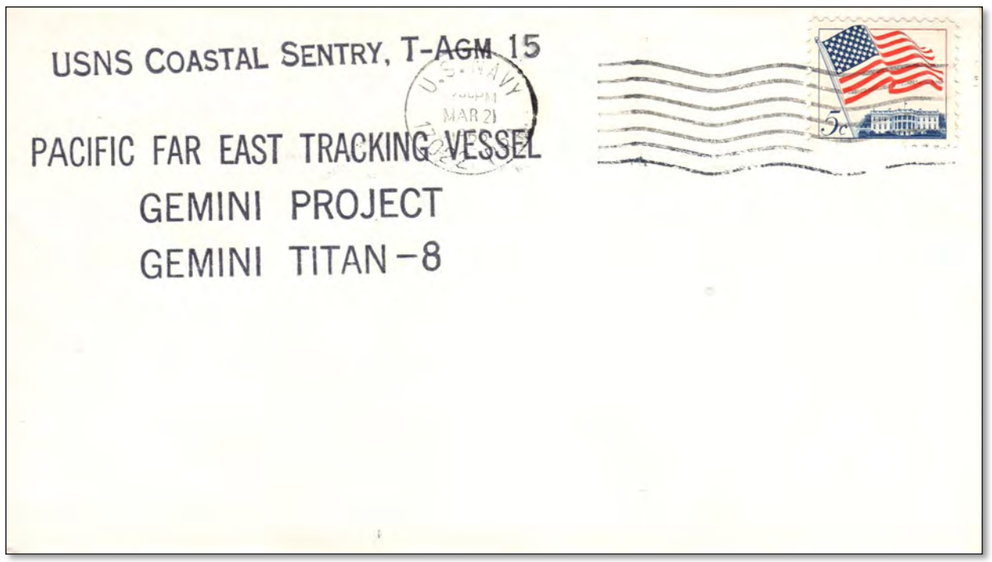
*The **Minitrack** Network became operational in 1957. It was used to track the flights of Sputnik, Vanguard, Explorer, and other early space efforts. Minitrack was the progenitor of Spacecraft Tracking and Data Acquisition Network (STADAN) and the Manned Space Flight Network (MSFN).*

GT-VIII Quito Meter and Roller Cancel **16 Mar 1966**



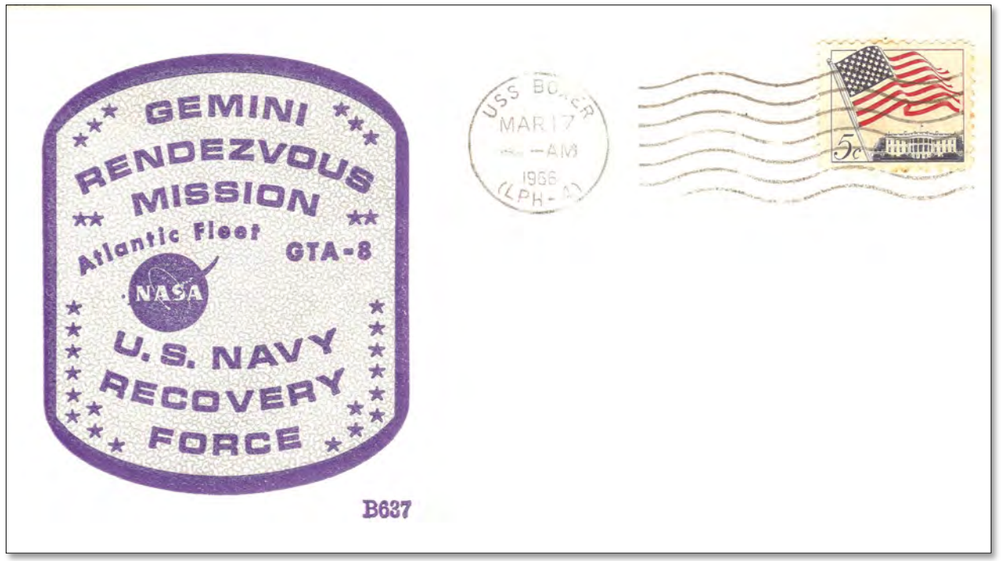
While docked with the Agena, GT-VIII began a gentle left roll. Armstrong cancelled it for four minutes until it became clear their propellant was down to 30 percent. After disconnecting from the Agena, the roll increased to a revolution per second. Thruster number 8 was stuck open.

GT-VIII *USNS Costal Sentry* Machine Cancel **21 Mar 1966**



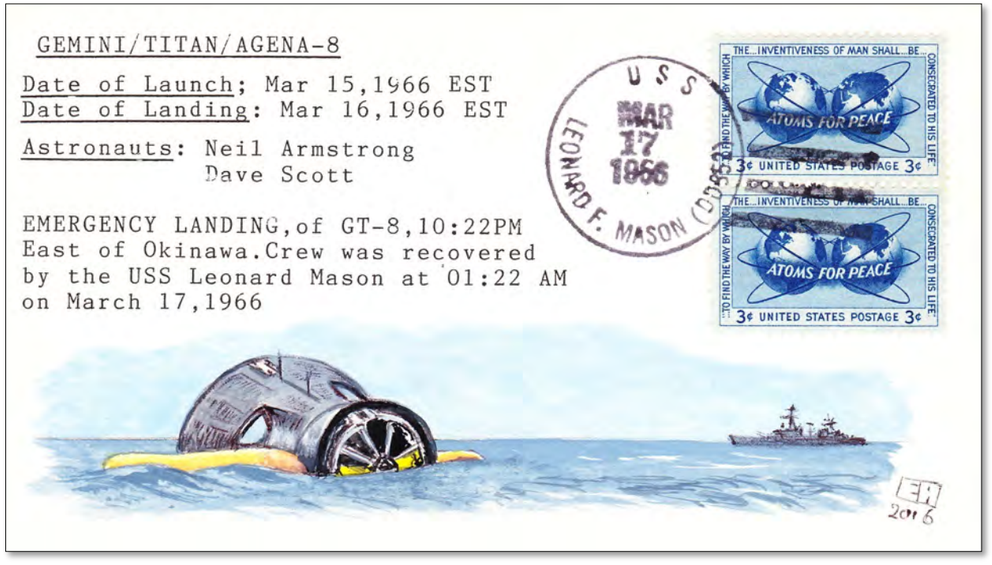
Coastal Sentry initiated the necessary re-entry command signals on the Gemini VIII mission when the capsule had to make an emergency landing in the Pacific on 17 March 1966.[4] For the Gemini Program, she served as a primary tracking station, call sign CSQ, in the western Pacific.

GT-VIII *USS Boxer* Machine Cancel **17 Mar 1966**



Over China, GT-VIII slipped into the fringes of the atmosphere. "Do you see water out there?" Armstrong asked. Concern mounted since the capsule might not survive touchdown on land. "Oh, yes, there's water! It's water! LANDING-SAFE," exclaimed pilot David Scott.

GT-VIII *USS Leonard F. Mason* Hand Cancel **17 Mar 1966**



Following the brief 11-hour flight that aborted the planned spacewalk, the crew ditched 800 km east of Okinawa in the Pacific instead of the planned Atlantic recovery. Original artwork accompanies the hand cancel from the destroyer that made the rescue.

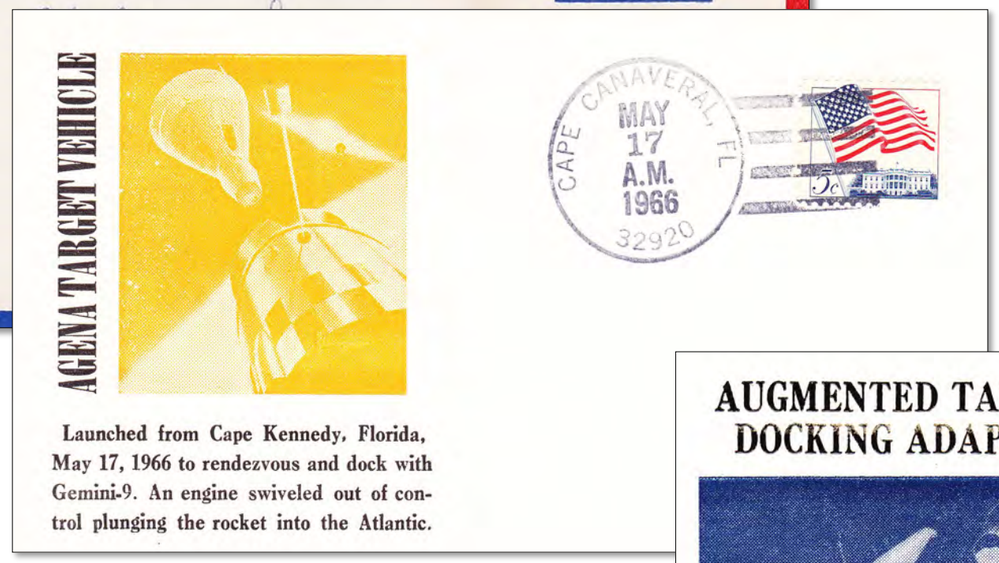
GT-VIII
USS Boxer Hand Cancel
17 Mar 1966

Crew mail with uncommon Hand Cancel and enclosed letter. USS Boxer *was the Designated Prime Recovery Ship (PRS) but a stuck thruster forced Neil Armstrong and David Scott to abort their mission and land in the Pacific Ocean instead. To add insult to injury, the ship returns to Norfolk both empty-handed and in foul weather.*

GT– VIII *USS Boxer* Hand Cancel **17 Mar 1966**

This printed cachet appears to be a Beck CREW (no number) but it is not. Usually a rubber stamp (like on the preceding page) is used. In this case it is suspected that this was printed onboard the ship.

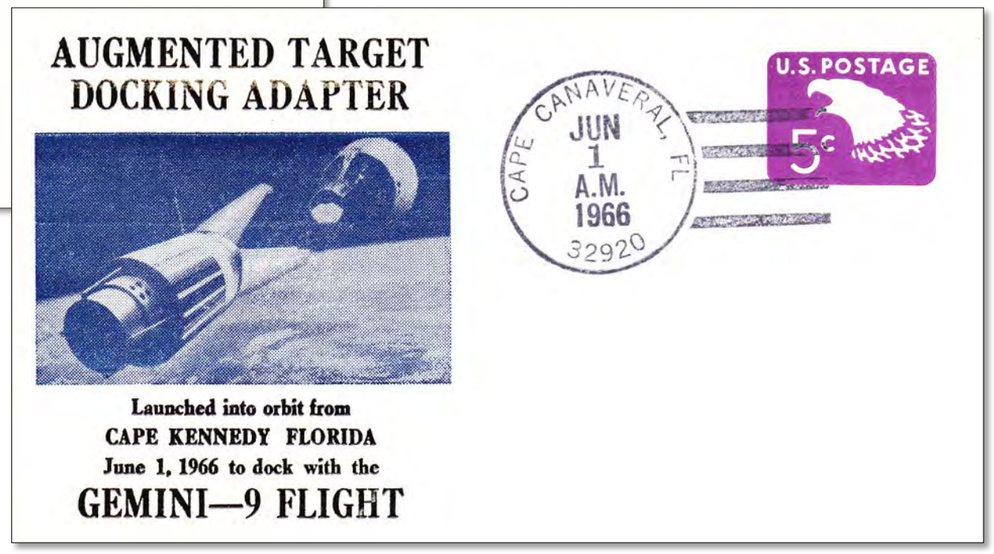
For two minutes everything was normal. Then one engine gimbaled and locked in a hardover pitchdown position. The whole combination – Atlas and Agena – flipped over in a nosedive and headed like a runaway torpedo back to the Cape before plunging into the Atlantic.



Gemini-related
Cape Canaveral Hand Cancel
17 May 1966

GT-IX was eager to meet up with their replacement Agena until they saw the unreleased shroud. "It looks like an angry alligator," Stafford remarked. Lanyards had mistakenly been taped, holding the shroud together after the explosive bolts fired. No docking could occur.

Gemini-related Cape Canaveral Hand Cancel **1 Jun 1966**



GT-IX-A Kennedy Space Center Machine Cancel **3 Jun 1966**

The Prime crew, See and Bassett, died when bad weather caused their jet to crash into the building constructing their spacecraft. The backup crew, Stafford and Cernan, would make the flight.

GT-IX-A Grand Turk Hand Cancel **3 Jun 1966**

Since the "Mark I" eyeball attempts by Gemini IV tremendous strides were made in orbital computational science. Near Grand Turk, just six minutes into the flight, Stafford fired the spacecraft thrusters for phase adjustment. After 49 minutes a second burn to circularize the height was undertaken. A final burn corrected for out-of-plane errors.

GT-IX-A Webster Machine Cancel **3 Jun 1966**

With no docking possible, Cernan performed his EVA to test the Astronaut Maneuvering Unit (AMU), a jet backpack stowed on the adapter module. His faceplate was fogged, his heart rate soared at 195 beats per minute, and doctors feared Cernan would pass out. With this the EVA ended.

GT-IX-A St. John's Machine Cancel **3 Jun 1966**

Although the Agena was in a slight roll and retained the shroud which precluded docking Stafford and Cernan were able to make three rendezvous with the ATDA and station keep at distances down to a few centimeters.

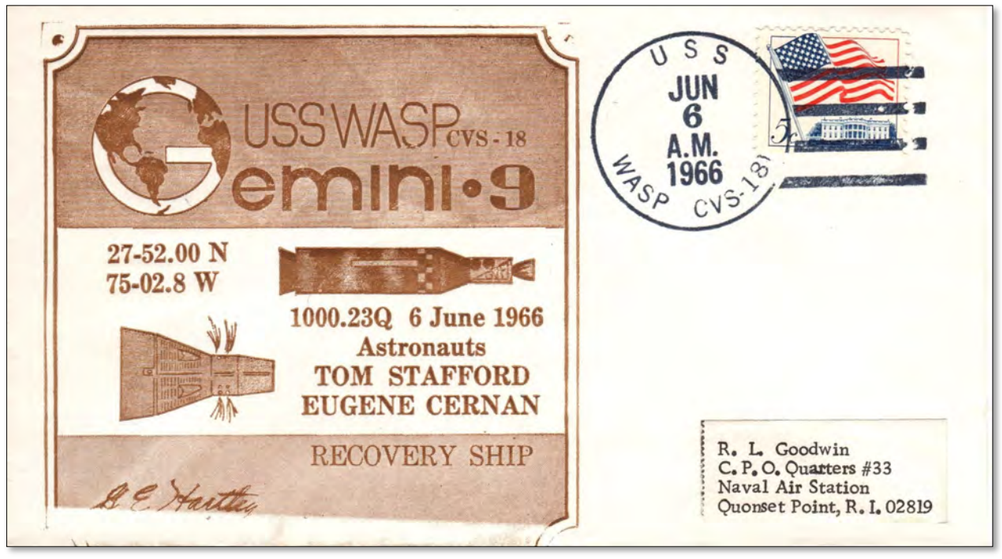
GT-IX-A Kano Hand Cancel **3 Jun 1966**

Minitrack, which tracked the flights of Sputnik, Vanguard, Explorer, and other early space efforts was operational from 1957–1962. It was replaced by the Mercury Space Flight Network (MSFN) in 1962. Kano was used between 1962 and 1967. In 1971 consolidation formed the Spaceflight Tracking and Data Network (STDN).

GT-IX-A Guaymas Hand Cancel **3 Jun 1966**

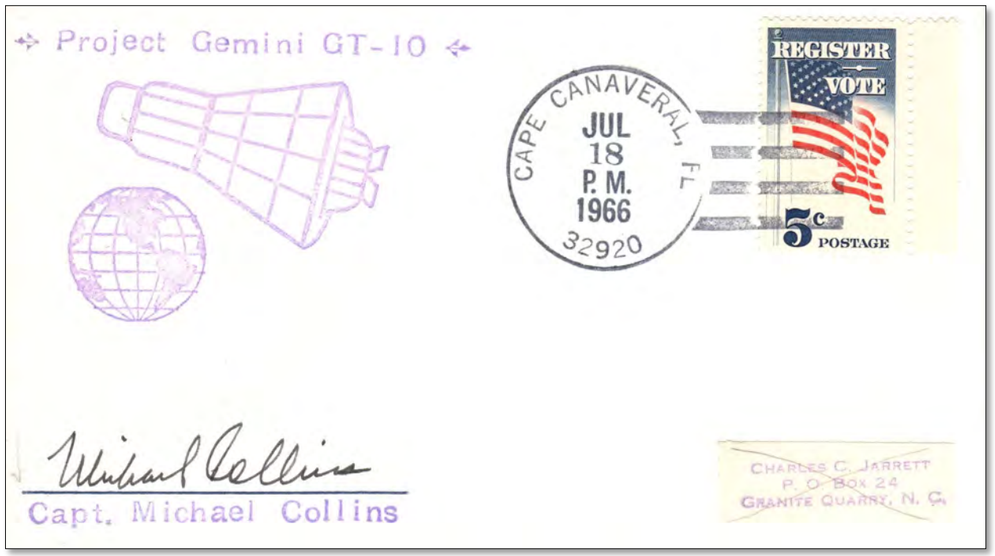
As a major link for NASA's worldwide Manned Space Flight Network, the Guaymas Tracking Station, built in 1961, played a key role in tracking American manned space flights in the Mercury, Gemini, and Apollo programs through Apollo 13. The U.S. discontinued its use on November 30, 1970 due to changes in the Apollo mission profile which no longer required the Guaymas station.

GT-IX-A USS *Wasp* Hand Cancel **6 Jun 1966**



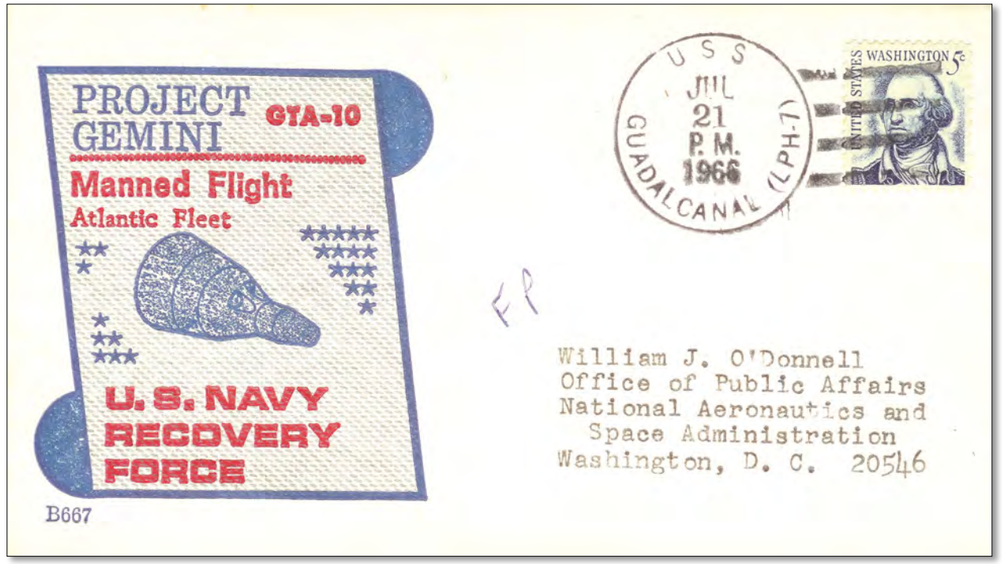
With the carrier in view Stafford and Cernan opened both hatches and enjoyed the gentle rolling sea. Then they stuck out their thumbs to hitch a ride home. This Captain's cover artwork is found on various envelope sizes.

GT-X Cape Canaveral Hand Cancel **18 Jul 1966**



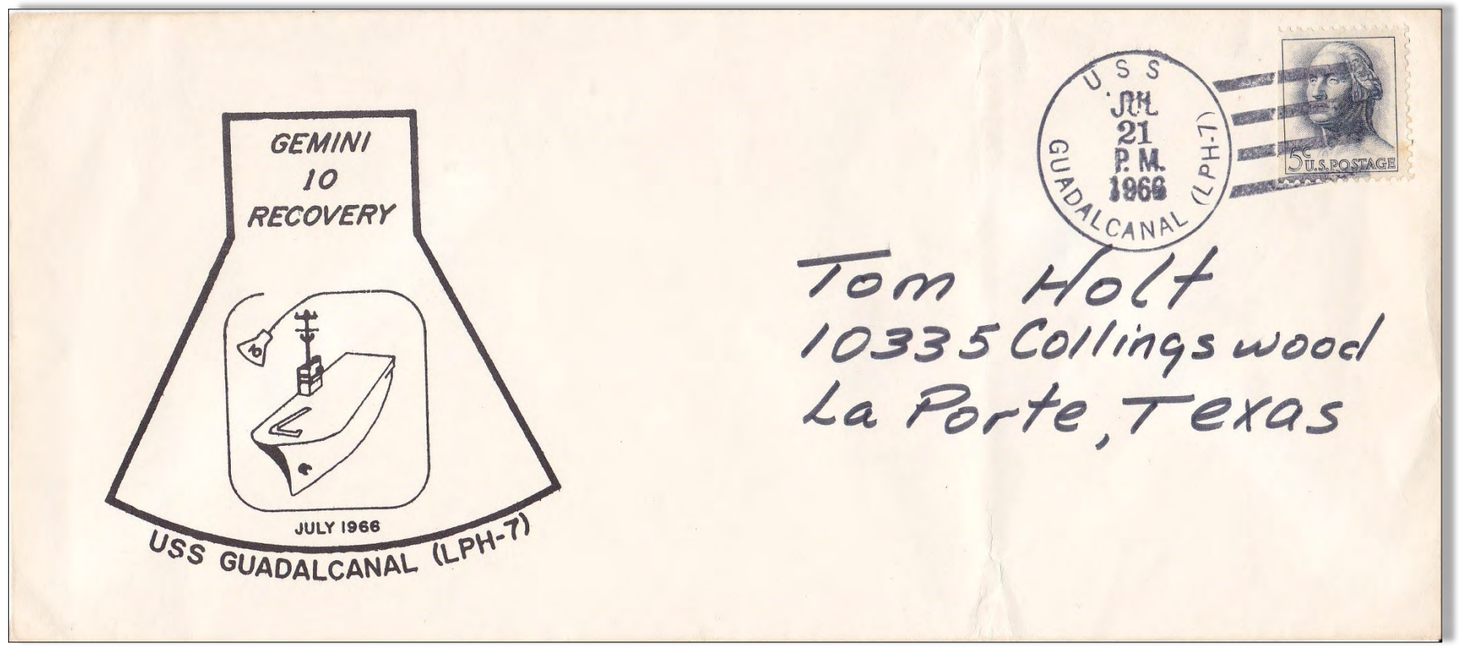
John Young described the Agena ride: "We were thrown forward in our seats. Fire and sparks started coming out the back end of that rascal. The light was something fierce, and the acceleration was pretty good. I never saw anything like that before, sparks and fire and smoke and lights."

GT-X *USS Guadalcanal* Hand Cancel **21 Jul 1966**



Beck Prime Recovery Ship envelope addressed to my father-in-law, William J. O'Donnell. He served NASA as HQ PAO from Schirra's MA-8 flight in 1962 to the return of STS-2 in 1981.

GT-X *U.S.S. Guadalcanal* Hand Cancel **21 Jul 1966**



A Captain's cover generally has artwork specifically created to commemorate the honor of recovering astronauts from space. In this rather simple design, the outline of the aircraft carrier is framed by the spacecraft falling from orbit. This is then framed by a generic capsule shaped somewhere between a Mercury and Gemini spacecraft. This Captain's cover is rarely seen.

GT-XI Kennedy Space Center Hand Cancel **12 Sep 1966**

The postmaster at KSC created a limited number of cachets in alternate colors, perhaps as favors to friends or as a way of generating a little extra income.

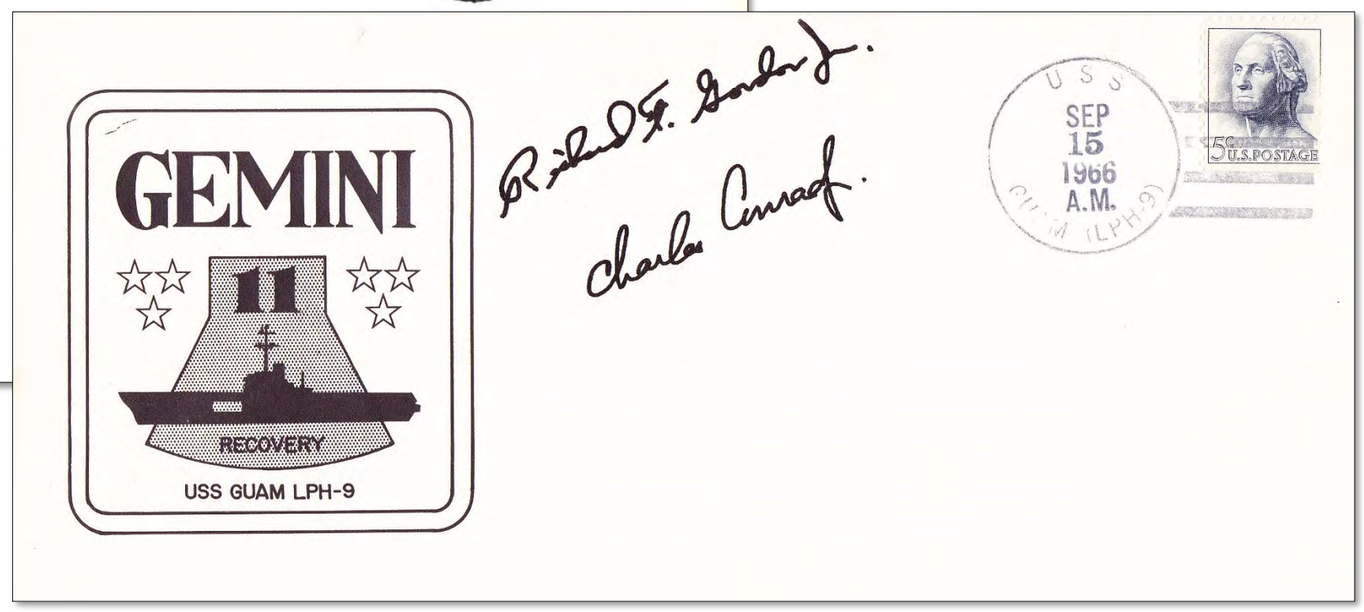
Not only did the crew rendezvous in a single orbit but 56 percent of their fuel still remained. For the spacewalk Conrad pushed Gordon towards the Agena but missed. He pulled on the umbilical to drag him back and pushed again. EVA was exhausting. Gordon lasted only 33 of 107 planned minutes.

GT-XI St. Johns Hand Cancel **12 Sep 1966**

Previous commanders had used the spacecraft's offset center of gravity to generate lift for changes in direction. This enabled corrections of up to 550 km downrange and 50 km crossrange. For GT-XI, the computer controlled automatic reentry, made the corrections and landed less than 5 km from the USS Guam. *The cover shown below has the Captain's artwork.*

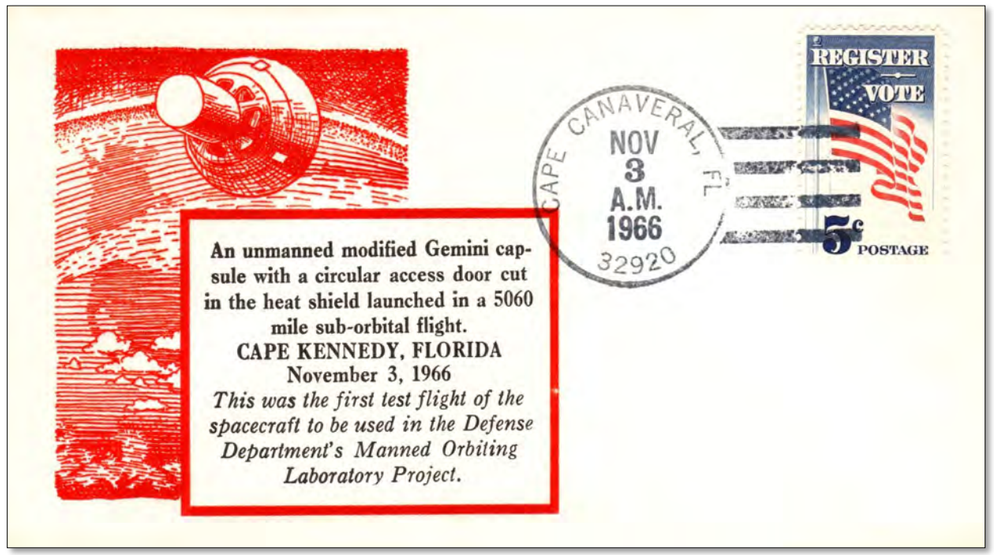
GT-XI
USS Guam
Hand Cancel
15 Sep 1966

Ship stationery from the USS Guam (above), an Iwo Jima-class amphibious assault ship, commissioned 16 Jan 1965 with Beck rubber stamp cachet.



GT-XI
USS Guam
Hand Cancel
15 Sep 1966

MOL Cape Canaveral Hand Cancel **3 Nov 1966**

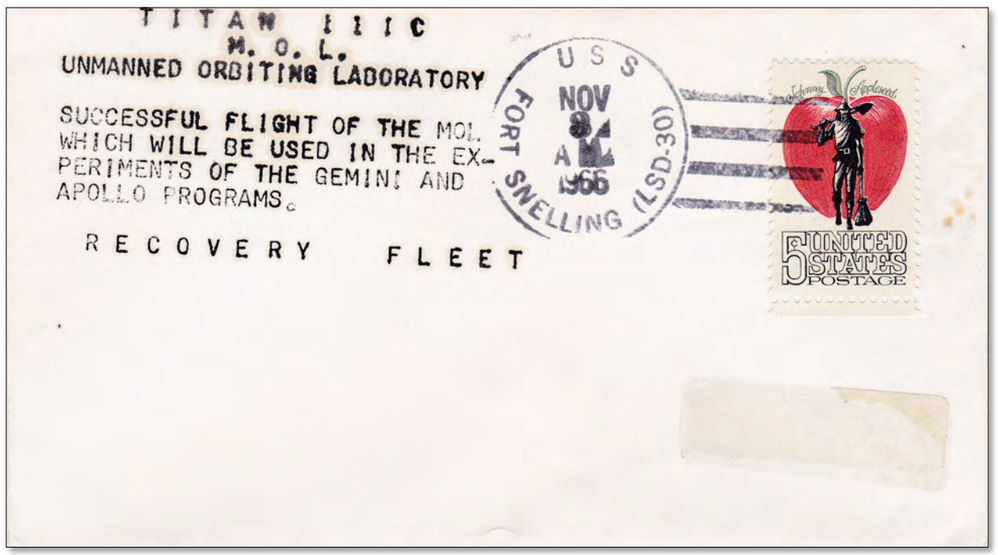


Handback service for this classified mission later had a Gemini generic cachet first used for the first manned mission in 1965. Here the first of three (and the only one to occur) Manned Orbiting Laboratory flights

MOL Cape Canaveral Machine Cancel **3 Nov 1966**

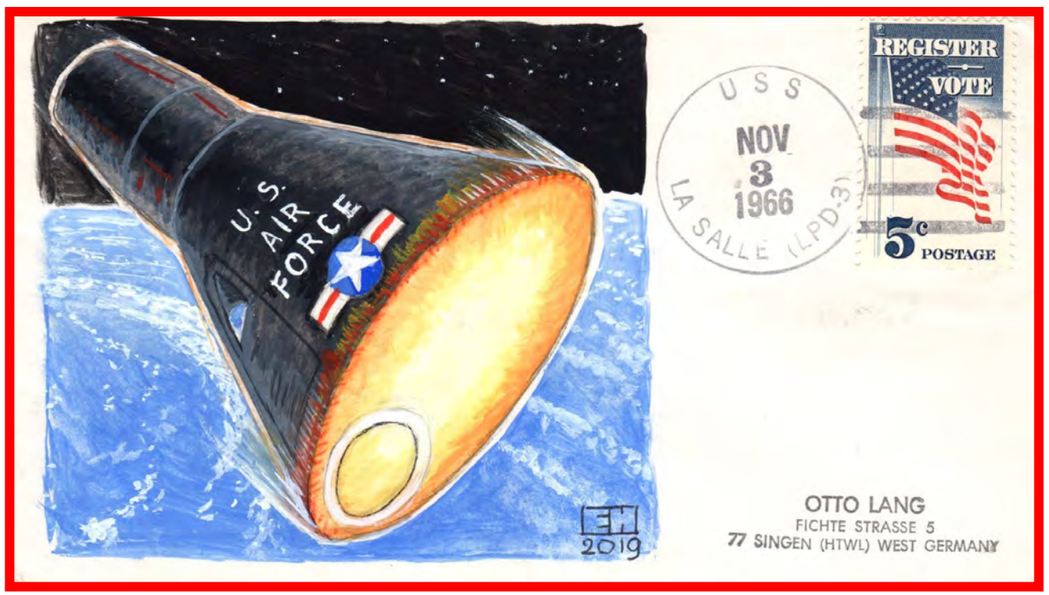
For years the Air Force worked to create a military capability in space. Dyna-Soar morphed into the X-20 which died under Defense Secretary McNamara. In this Blue Gemini plan USAF astronauts would spend 30 days in the attached booster, conducting reconnaissance. Of 17 selected there were 14 at the time the program was cancelled. The half below the age of 35 were absorbed into NASA and all flew on the Space Shuttle.

MOL *USS Fort Snelling* Hand Cancel **3 Nov 1966**



A Dock Landing Ship is a US Navy vessel used to carry and launch amphibious vehicles. The interior ferry-like structure can be flooded and permit landing craft to disembark while the LSD is underway. With a crane and onboard helicopter the USS Fort Snelling *was a very appropriate capsule recovery ship. It was reported that about 50 envelopes were postmarked for the flight.*

MOL *USS La Salle* Hand Cancel **3 Nov 1966**



Prime Recovery Ship cancel with hand painted artwork showing the capsule with the hatch cut in the heat shield where Air Force astronauts would transfer into the observation laboratory. Census fewer than five.

GT-XII Kennedy Space Center Machine Cancel **11 Nov 1966**

Radar communication was poor so Buzz Aldrin, who had a PhD in orbital mechanics from MIT, called the shots using a sextant and rendezvous charts. Docking went well, as did the EVA, but a another docking attempt was misaligned, resulting in a latch getting caught. Thrusters rocked them free.

GT-XII Cape Canaveral Machine Cancel **11 Nov 1966**

Most unrealistic artist views envision spacious interiors of space capsules. With knees to their chests this excessively claustrophobic enclosure perhaps better captured how the astronaut pilots felt.

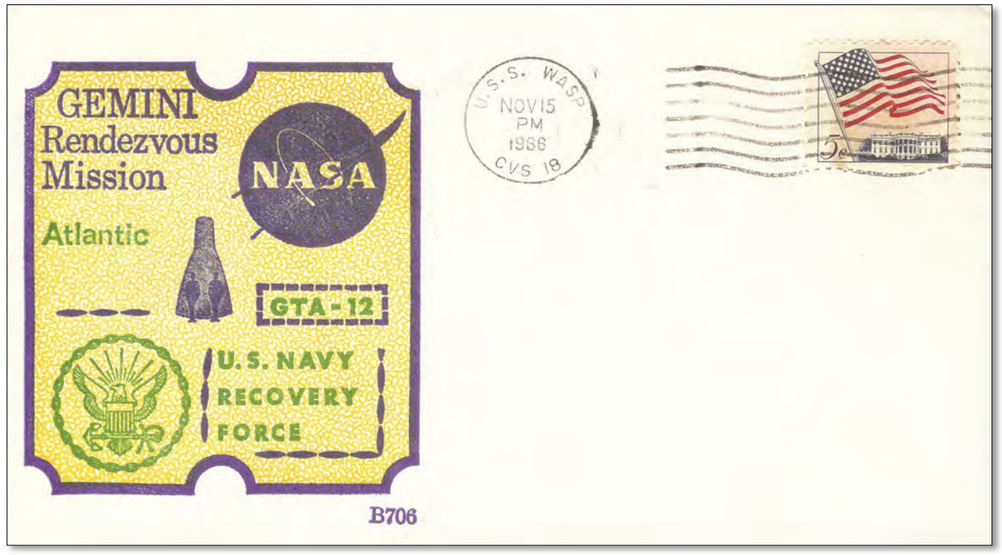
GT-XII Pago Pago Hand Cancel **9 Nov 1966**

Beck CREW covers (no number) were intended to thank Navy crews for servicing space covers for collectors. The vast majority were postmarked shipboard. Here seen at the nearest land based postal facility.

GT-XII Carnarvon Hand Cancel **12 Nov 1966**

Carnarvon – call signal, CRO – was situated in northwestern Australia. Operated by the Weapons Research Establishment (WRE) – Department of Supply, Commonwealth of Australia, it functioned as a primary network station.

GT-XII *USS Wasp* Machine Cancel **15 Nov 1966**



During reentry a pouch containing books, filters, and small pieces of equipment broke free from the Velcro on the sidewall and landed in Lovell's lap. The pilots had unstowed the D-rings that activated the ejection seats and were holding them down between their legs. He squeezed his knees together and hoped the pouch would go no further. It did not.

GT-XII *USS Wasp* Hand Cancel **15 Nov 1966**

Proof Captains cover with typed and rubber stamp pilot and date information.

GT-XII *USS Wasp* Hand Cancel **15 Nov 1966**

This Captains cover celebrates the successful end of Gemini. Landing only 5.5 km from the carrier, the astronauts were on deck aboard the USS Wasp *28 minutes after touchdown.*

Project Apollo

"We choose to go to the moon in this decade and do the other things, not because they are easy, but because they are hard, because that goal will serve to organize and measure the best of our energies and skills, because that challenge is one that we are willing to accept, one we are unwilling to postpone, and one which we intend to win."

President John F. Kennedy September 1962

The author was 10 years old when Neil Armstrong and Buzz Aldrin landed on the moon. I distinctly remember thinking that the rest of my life would be divided in two. Those things that happened before men walked on the moon and things that happened after.

Today, the accomplishment remains as unbelievable as it was before it happened. To leave the planet with two spacecrafts, travel a quarter of a million miles, rendezvous in lunar orbit, land and return home safely is remarkable. The historian Arthur Schlesinger declared, "The 20th Century will be remembered, when all else is forgotten, as the century when man burst his terrestrial bonds."

Apollo represented a departure. It was the first program that had astronauts riding launch vehicles designed for civilian exploration and not military might. Shepard and Grissom rode the Redstone, an Army intermediate range missile. Glenn and other Mercury pilots who followed flew on Atlas missiles. During the Gemini program NASA switched to the Air Force Titan.

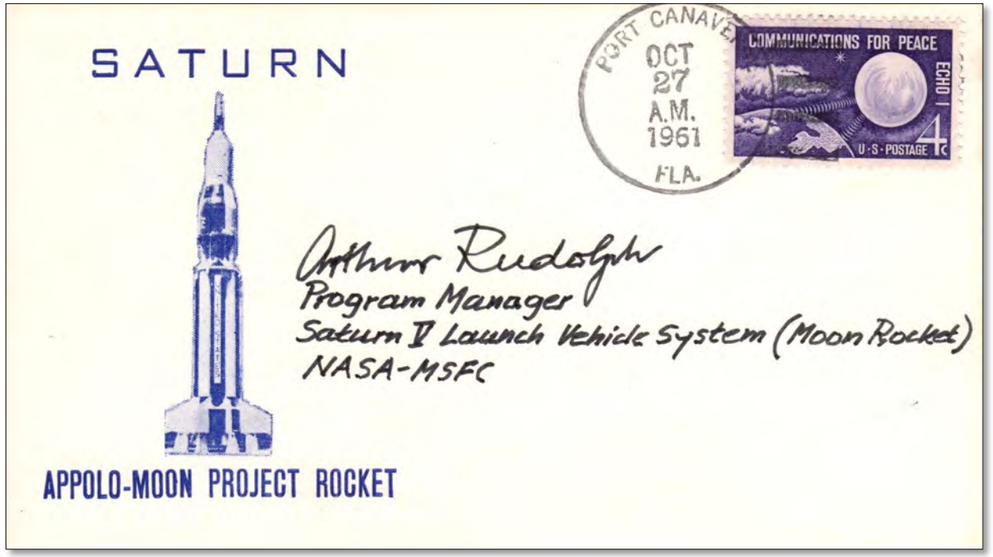
To get to the moon, America required more than Army artillery or Air Force ICBMs. In 10 years the Earth-to-orbit weight lifting capability grew by 10 thousand times. It was an age when a single main engine (and there were five) delivered 1.5 million pounds of thrust. In its twilight years Saturn lifted a Skylab module weighing 100 metric tons into orbit not 15 years after our nation have trouble lifting a satellite the size of a grapefruit.

Landing on the moon would be made in a spider-like spacecraft so flimsy it could not bear its own weight on Earth. The sides of the Lunar Module were paper-thin sheets of gold colored foil. The seats were removed for weight due to a strict diet. It required no aerodynamic considerations at all. It was the world's first true spacecraft.

For all the complexity the Apollo launch vehicles were reliable. The 10 Saturn I, the 9 Saturn IB and the 13 Saturn V rockets all flew successfully. Confidence was so high that after only two unmanned Saturn V missions NASA chose to send Apollo 8 around the moon.

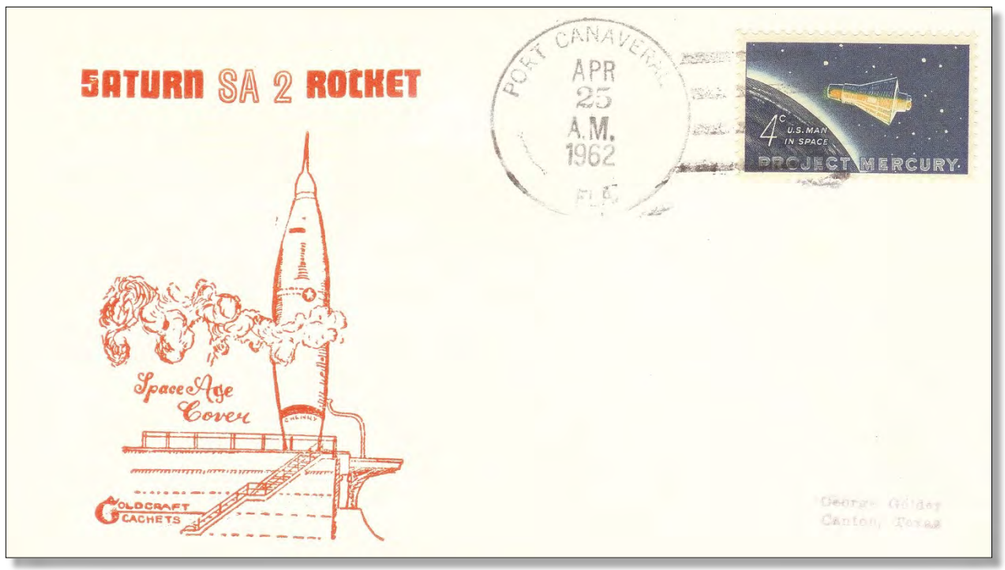
In a scant 70 years America had traveled from Kitty Hawk to the moon. Benjamin Foulois had learned to fly from the Wright Brothers only to pin medals on Mercury astronauts. Edwin Aldrin, Sr., knew the Wrights, Goddard and Lindbergh, and watched his son walk on the moon.

SA-1 Port Canaveral Hand Cancel **27 Oct 1961**



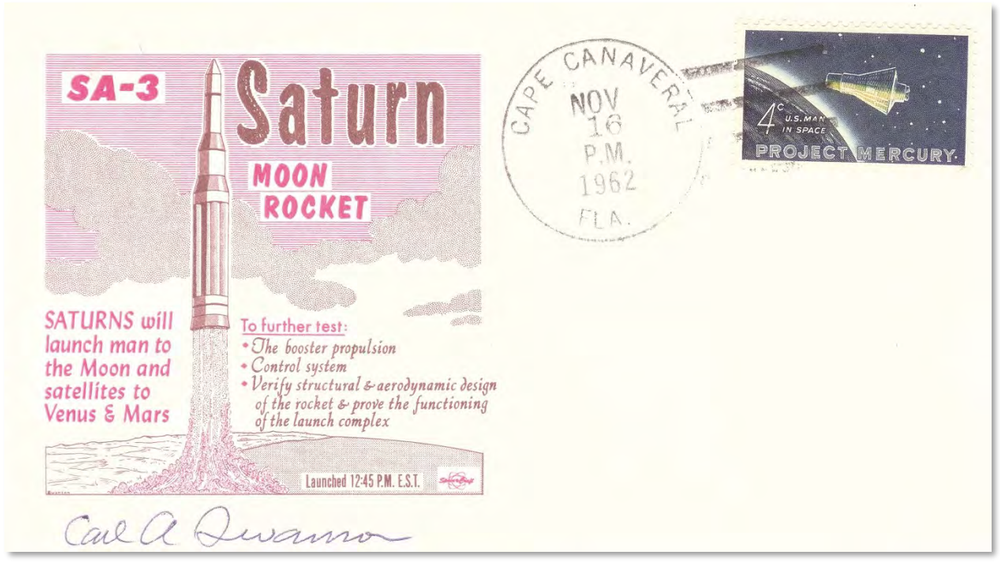
Saturn was three times taller, required six times more fuel and produced ten times more thrust than the Jupiter-C launched just four years before. The first stage and two dummy upper stages flew to a height of 136.5 km and impacted 345.7 km downrange meeting all objectives.

SA-2 Port Canaveral Hand Cancel **25 Apr 1962**



Project High Water was designed to study the effects of radio transmissions with changes in local weather conditions. The rocket would lift 109,000 liters of water and detonate two minutes after launch creating a large artificial cloud.

SA-3 Cape Canaveral Hand Cancel **16 Nov 1962**



Carl Swanson, perhaps the most prolific space event cover artist, was the creative element of Space Craft cachets which combined high quality multi-color printing and accurate mission data.

SA-4 Cape Canaveral Machine Cancel **28 Mar 1963**

This flocked Velvetone cachet celebrates the test to see whether the rocket could reroute fuel and burn longer to compensate for a premature engine shutdown. This came in handy for SA-6 and Ap-13.

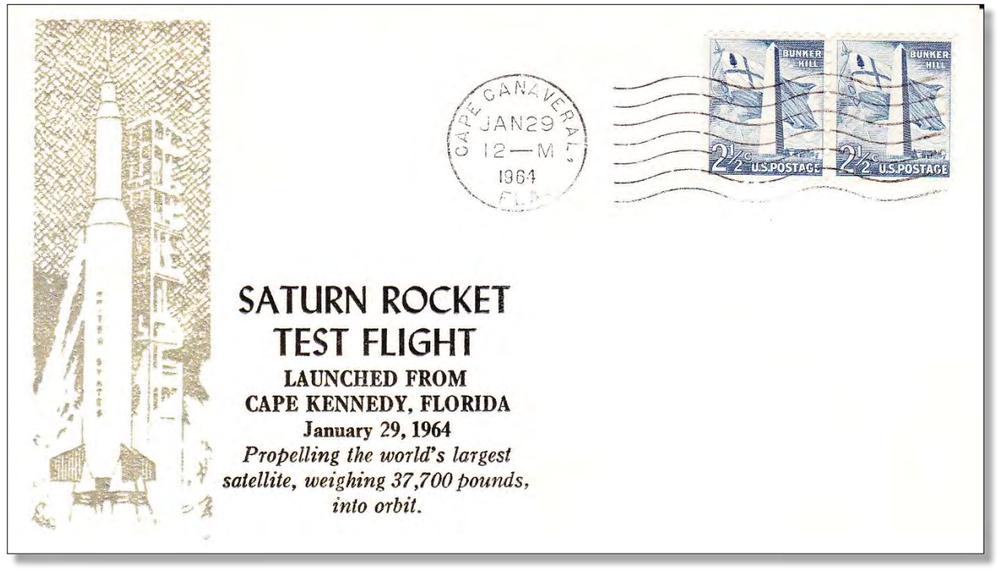
QTV White Sands Missile Range Machine Cancel **28 Aug 1963**

The objective was to prove the Little Joe II rockets capability as an Apollo CSM test vehicle and to determine base pressures and heating on the rocket. Except for the non-functional destruct system it was a success.

PA-1 White Sands Missile Range Machine Cancel **7 Nov 1963**

The launch escape system (LES) needs to be capable of pulling the spacecraft from an exploding rocket while it sat on the pad. It then had to gain sufficient altitude to allow parachutes to open. The flight went beautifully. The only snag was soot on the spacecraft exterior.

SA-5 Cape Canaveral Machine Cancel **29 Jan 1964**



The rocket sent back 1,183 separate measurements while being tracked by six telescopes. For the first 1000 meters the rocket was filmed by 13 cameras that looked for pitch, yaw, and roll movements. Eight cameras that filmed the stage separation were recovered in the Atlantic.

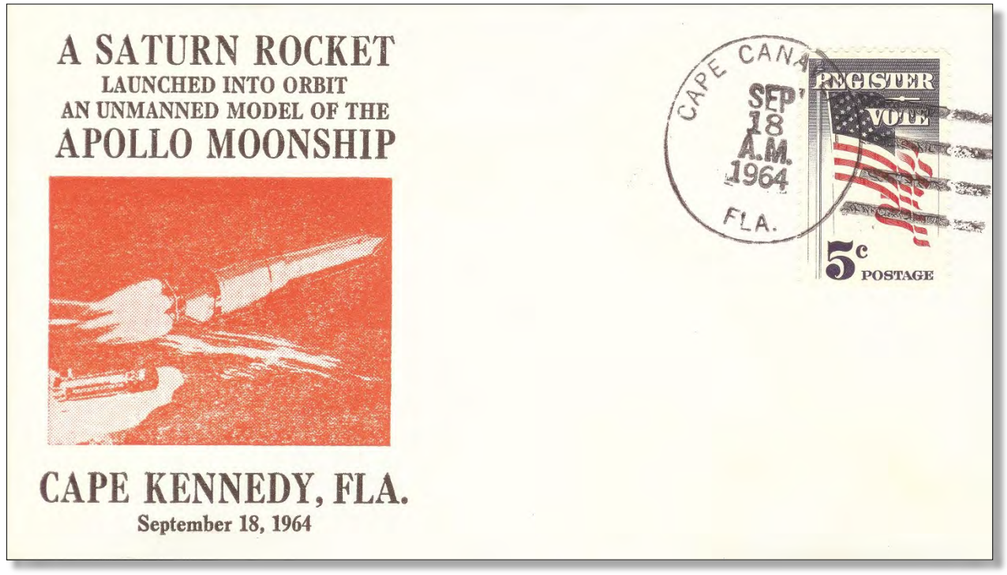
A-001 White Sands Missile Range Machine Cancel **13 May 1964**

Unlike the Pad Abort Test which ignited at ground level, this was flown to show the capability to propel the command module while in a transonic region of flight. Developed to accomplish quick and inexpensive testing of the launch escape system, LJ II was propelled by seven solid-propellant rocket motors – one 42-second Algol sustainer motor, and six 1.5 second Recruit motors.

SA-6 Cape Canaveral Hand Cancel **28 May 1964**

First to fly an Apollo boilerplate capsule. The first stage burned 2.7 seconds longer to compensate for engine number 8 which shut off early. Postflight cause was quickly located with no further delay.

SA-7 Cape Canaveral Hand Cancel **18 Sep 1964**



First Saturn flight with a programmable computer. It sent telemetry for five orbits and was tracked for all 59 revolutions until reentry over the Indian Ocean. The eight film camera pods were not immediately recovered although two washed ashore two months later, covered in barnacles but undamaged.

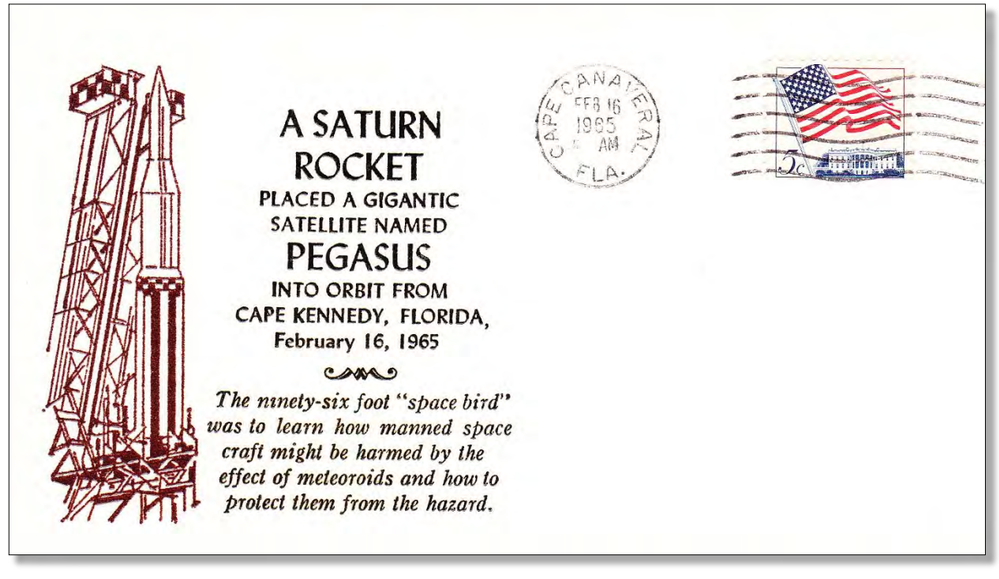
A-002 White Sands Missile Range Machine Cancel **8 Dec 1964**

Testing abort capability of the launch escape vehicle in the maximum dynamic pressure region approximating the altitude limit at which the Saturn emergency detection system would signal an abort was evaluated. Conditions were more than adequate in verifying the abort capability.

A-003 White Sands Missile Range Machine Cancel **19 May 1965**

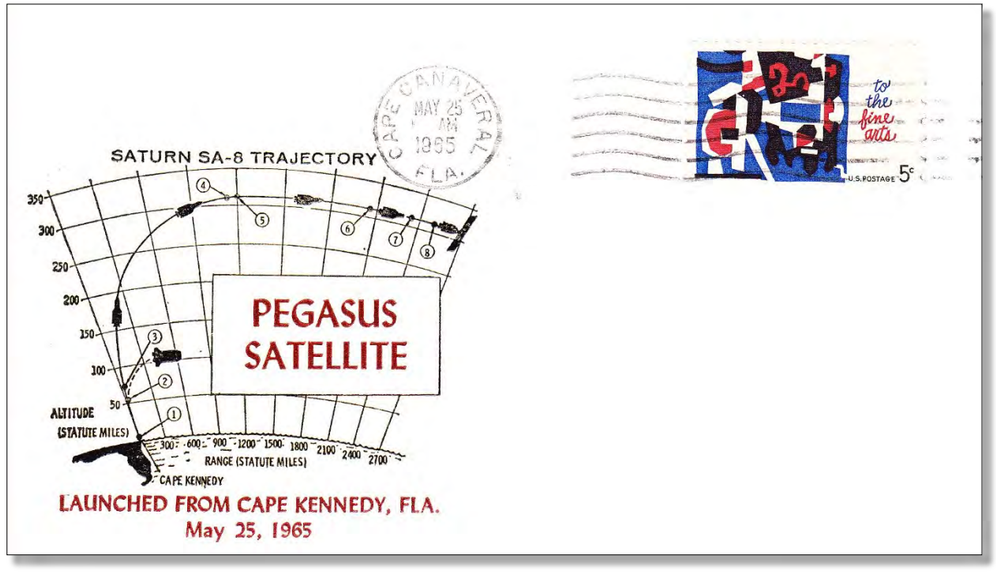
Within 2.5 seconds after lift off a launch malfunction caused the vehicle to go nuts. Excessive roll rate broke up the vehicle before second stage ignition. This became a low altitude abort.

SA-9 Cape Canaveral Machine Cancel **16 Feb 1965**



The eighth unmanned Saturn carried both a boilerplate capsule and a meteoroid technology satellite. All objectives were met and Pegasus A remained in orbit for 1188 days.

SA-8 Cape Canaveral Machine Cancel **25 May 1965**

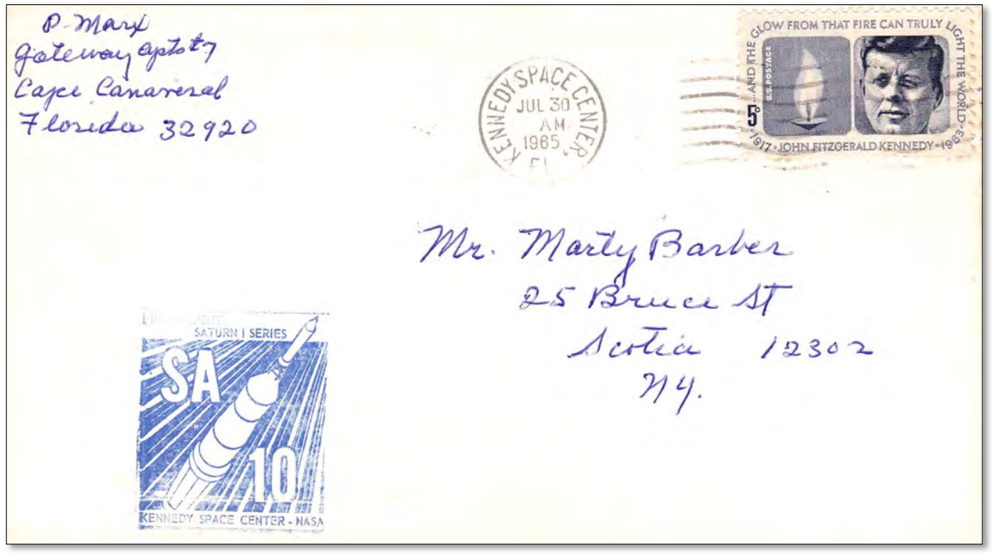


The second operational Saturn I. It too carried a boilerplate as well as Pegasus B. This was also the first night launch of the Saturn rocket.

PA-2 White Sands Missile Range Machine Cancel **29 Jun 1965**

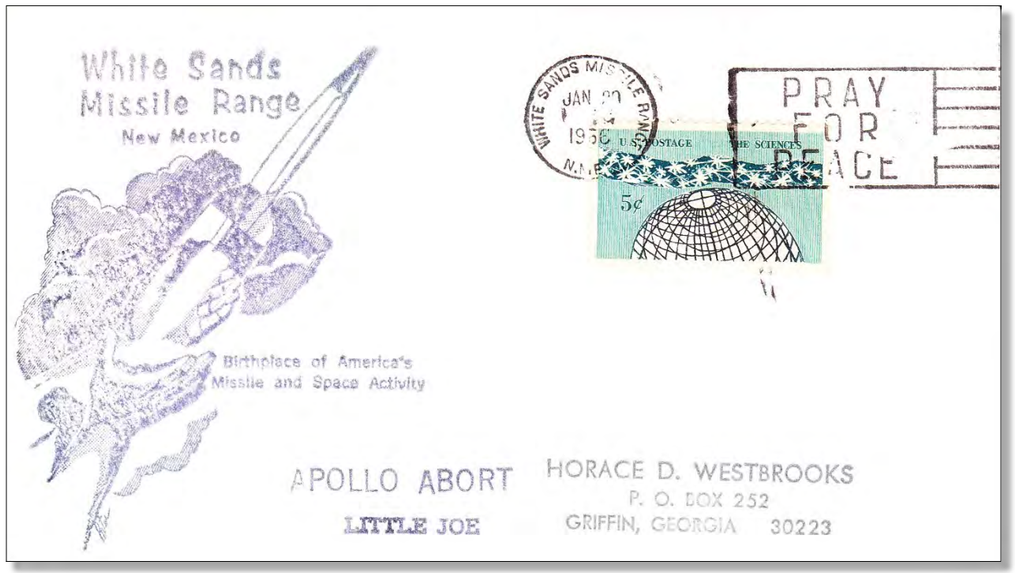
A highly successful second Pad Abort test. The only abnormalities were oily residue on the rendezvous and crew windows and a kinked steel cable parachute riser.

SA-10 Kennedy Space Center Machine Cancel **30 Jun 1965**



The earliest mission-related KSC Official cachet and a difficult one to find. It commemorates the conclusion of a successful 10 flight Saturn I series.

A-004 White Sands Missile Range Machine Cancel **20 Jan 1966**



First flight of a Block I production-type spacecraft, designed to demonstrate that the launch escape vehicle would orient and stabilize itself after being subjected to a high rate of tumbling during the powered phase and would maintain its structural integrity. The fifth and final Little Joe II flown. The propulsion system consisted of four Algol and five Recruit rocket motors. Passed with high marks.

Apollo-related Bay St. Louis Machine Cancel **1 Dec 1966**

A rarely seen envelope marking the static fire testing of the second stage.

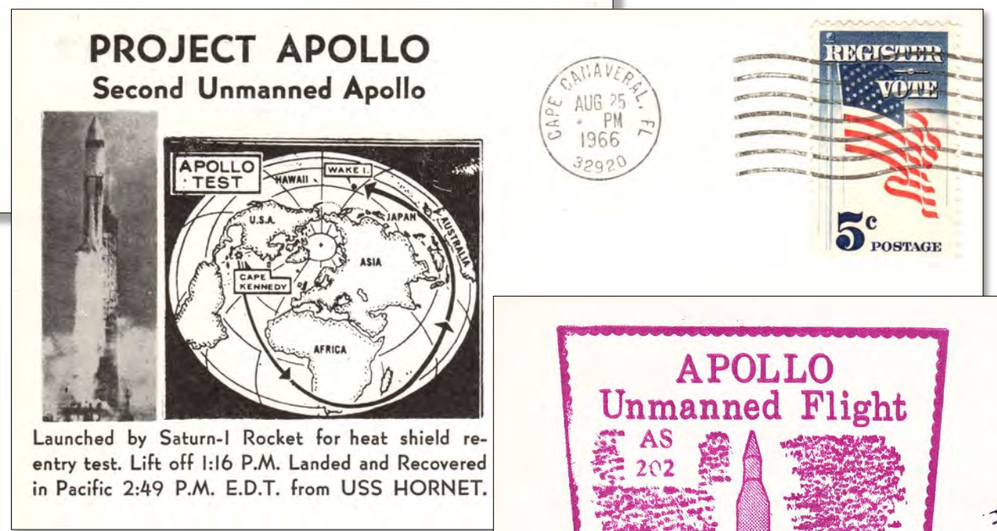
AS-201 Cape Canaveral Machine Cancel **26 Feb 1966**

First real Command Service Module (Block I) to ride atop the first Saturn 1B, an uprated version of the Saturn I. With a more powerful first stage and a second stage (S-IVB) that could restart in space, the flight was a leap forward towards a Moon capable launch vehicle.

AS-201 *USS Boxer* Hand Cancel **26 Feb 1966**

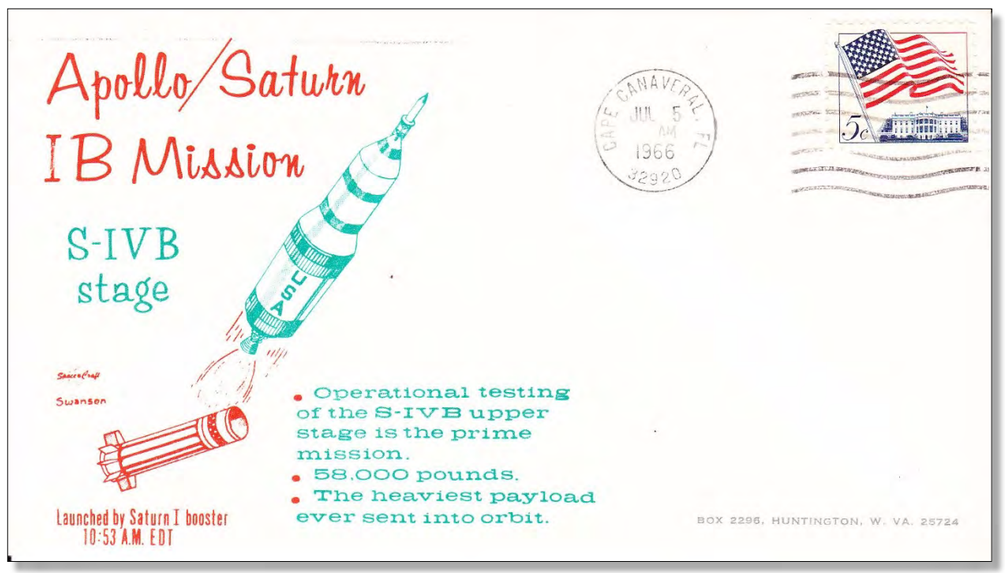
A less common Hand Cancel is seen here on a cover that a member of the crew has addressed to himself.

AS-202 *Cape Canaveral Machine Cancel* ***25 Aug 1966***



AS-202 *USS Hornet*
Hand Cancel **25 Aug 1966**

AS-203 Cape Canaveral Machine Cancel **5 Jul 1966**



The main purpose of the flight was to investigate the effects of eightlessness on the fuel in the S-IVB. To accomplish this the second stage was equipped with 83 sensors and two video cameras to record what the fuel did in the tank.

A hard to find Hand Cancel mailed to a California collector.

Ap-1 Patrick Air Force Base Hand Cancel **27 Jan 1967**

A spark somewhere in 30 miles of wiring killed the Apollo 1 crew during a "plugs out" ground test. The frayed wire ignited glycol vapor fumes from a leak under Gus Grissom's couch. This led to a fire no one could put out.

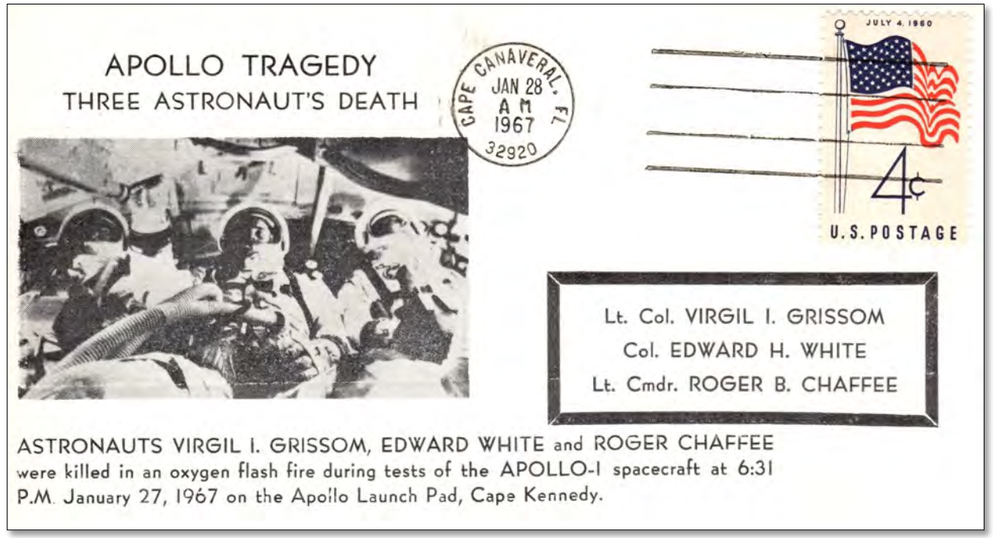
Ap-1 Houston Machine Cancel **27 Jan 1967**

Langley Director Dr. Floyd L. Thompson conducted a comprehensive investigation to pinpoint the cause of the fire. The final report, completed in April 1967 made specific recommendations that led to major design and engineering modifications, and revisions to test planning, test discipline, manufacturing processes and procedures, and quality control.

Ap-1 Patrick Air Force Base Machine Cancel **27 Jan 1967**

Postmarks on the day are scarce since the tragedy unfolded after most post offices had closed.

Ap-1 Cape Canaveral Machine Cancel **28 Jan 1967**



Instances in which events transpire outside of post office hours documentation the next day is permissible. The morning of the 28th would begin an 18 month hiatus in manned spaceflight in which North American Aviation substantially improved the Command Module. Some credit the stand down as the reason the Moon landing was accomplished before the end of the decade.

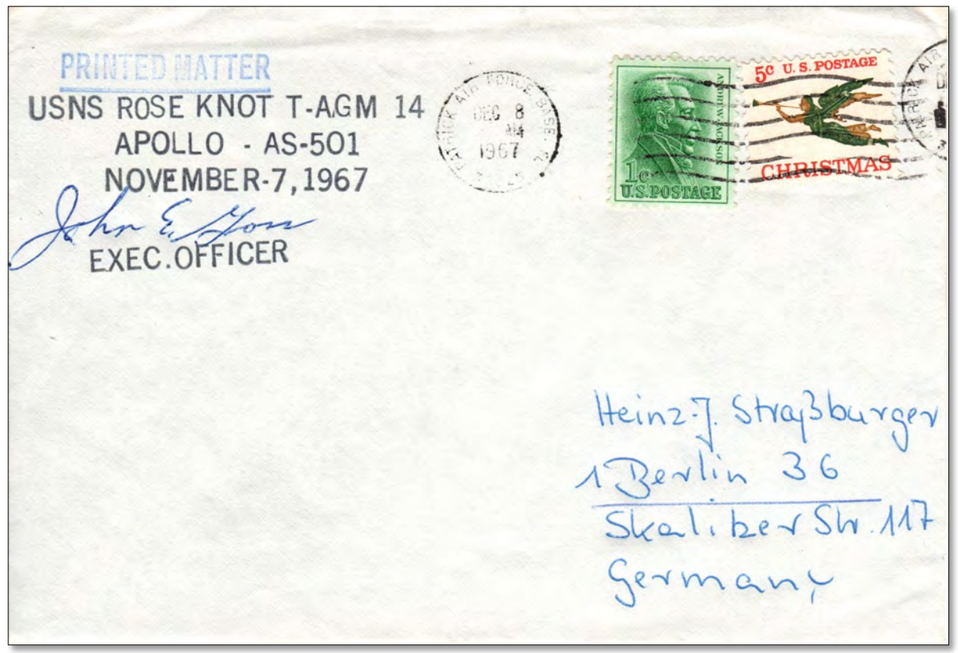
Ap-4 Kennedy Space Center Machine Cancel **9 Nov 1967**

The Saturn V was the largest launch vehicle ever constructed and fired from Launch Complex 39, constructed specifically for it at KSC. 4,098 measuring instruments on board the rocket and spacecraft supported the new "all up" doctrine. Everything had to work, and it did.

Ap-4 *USS Bennington* Hand Cancel **9 Nov 1967**

It was a successful collection of "firsts": The flight of the first and second stages of the Saturn V; The first Block II heatshield test; First flight from Pad 39; and the first flight after the devastating Apollo 1 fire. General Phillips was upbeat, "Apollo was on the way to the Moon".

Ap-4 Patrick Air Force Base Machine Cancel **8 Dec 1967**



Converted into a missile range instrumentation ship on the U.S. Air Force's Eastern Test Range in the late 1950s, Rose Knot operated under Air Force contract with Pan American Airways Guided Missile Range Division.

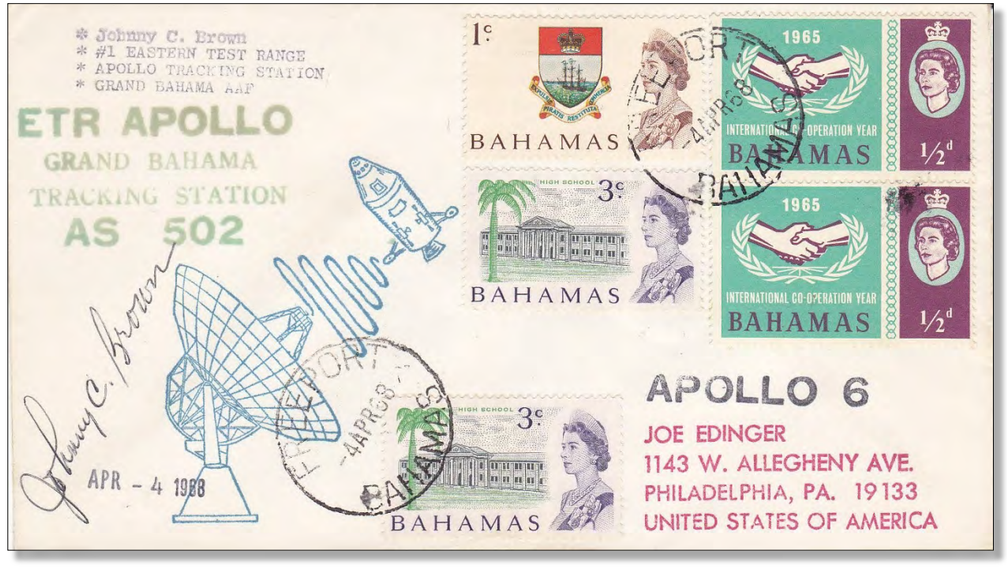
Ap-4 Freeport Hand Cancel **9 Nov 1967**

The Eastern Range began with three tracking sites in operation at Cape Canaveral, Jupiter Auxiliary Air Force Base and Grand Bahama Island in 1954. Range stations were also built on the islands of Eleuthera, San Salvador, Mayaguana and Grand Turk, and two more stations in the Dominican Republic and Puerto Rico. Those nine stations constituted the first 1,000 miles of the Eastern Range.

Ap-5 Kennedy Space Center Machine Cancel **22 Jan 1968**

A legless Lunar Module is put into orbit. After firing the descent engine three times and the ascent engine twice (therefore meeting all test objectives) LM-1 reentered the atmosphere where its fiery remains plunged into the Pacific several hundred kilometers southwest of Guam.

Ap-6 Freeport Hand Cancel **4 Apr 1968**



Launched on the same day Civil Rights leader Martin Luther King, Jr. was gunned down in Memphis, Apollo 6 represented a series of "ends". It was the last Block I CSM to fly and the last unmanned Saturn V to take to the skies. Despite a rough ride to orbit the launch vehicle was ready for Apollo astronauts.

Ap-6 Kennedy Space Center Machine Cancel **4 Apr 1968**

The goal of the final unmanned Saturn V was to evaluate a direct abort lunar reentry scenario to test the Command Service Module under the most extreme conditions. Here a Contractor cover that shows launch support facilities is illustrated.

Ap-6 *USS Okinawa* Hand Cancel **4 Apr 1968**

Although the spacecraft had sufficient altitude it ran out of gas before reaching its planned reentry velocity of 11,270 meters per second missing the intended impact point by 80 km.

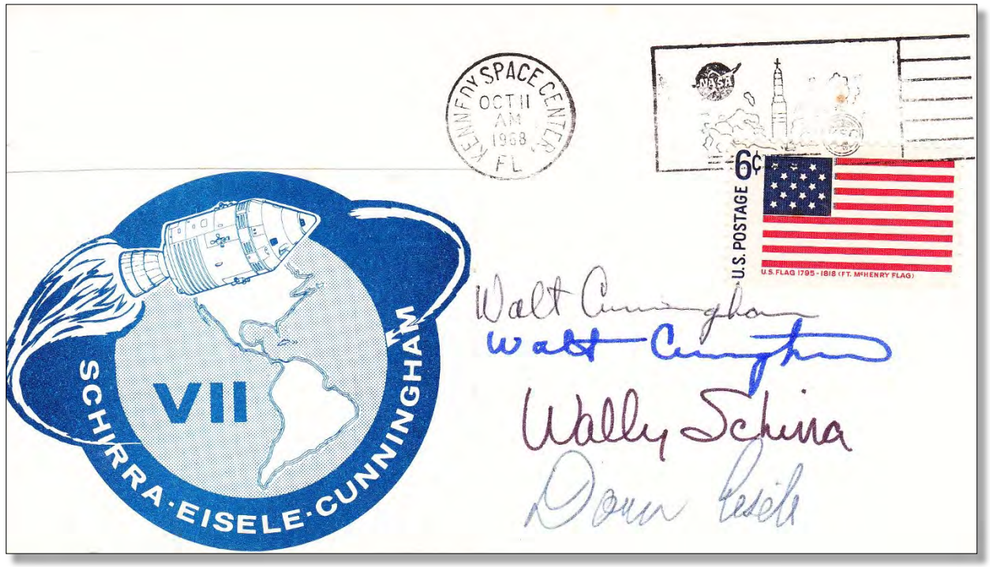
AP-7
Type II essay
Kennedy Space Center
Machine Cancel
11 Oct 1968

AP-7
Type I proof
SUSPECT Cape Canaveral
Hand Cancel
11 Oct 1968

KSC Official cachets first appeared with the opening of the Kennedy Space Center post office in 1965. For the first Apollo manned mission, several essays were created and a design settled on (Type I proof in blue) before the design was abandoned for a gummed label. It was reported that the design was too detailed and would not reproduce well. A gummed label was also used for Apollo 8.

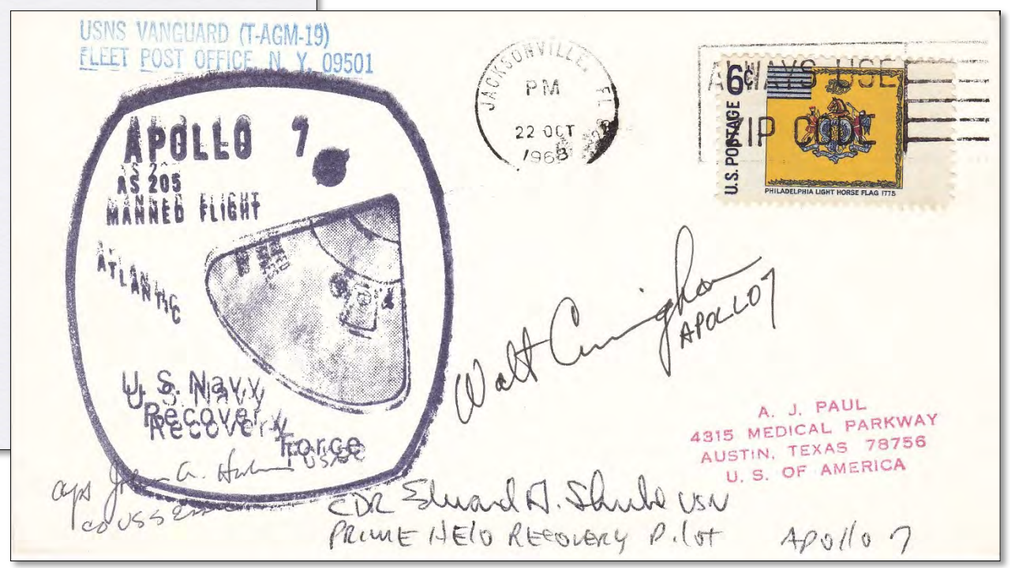
Type I proof with alternate red cachet on cardstock.

Ap-7 Kennedy Space Center Machine Cancel **11 Oct 1968**



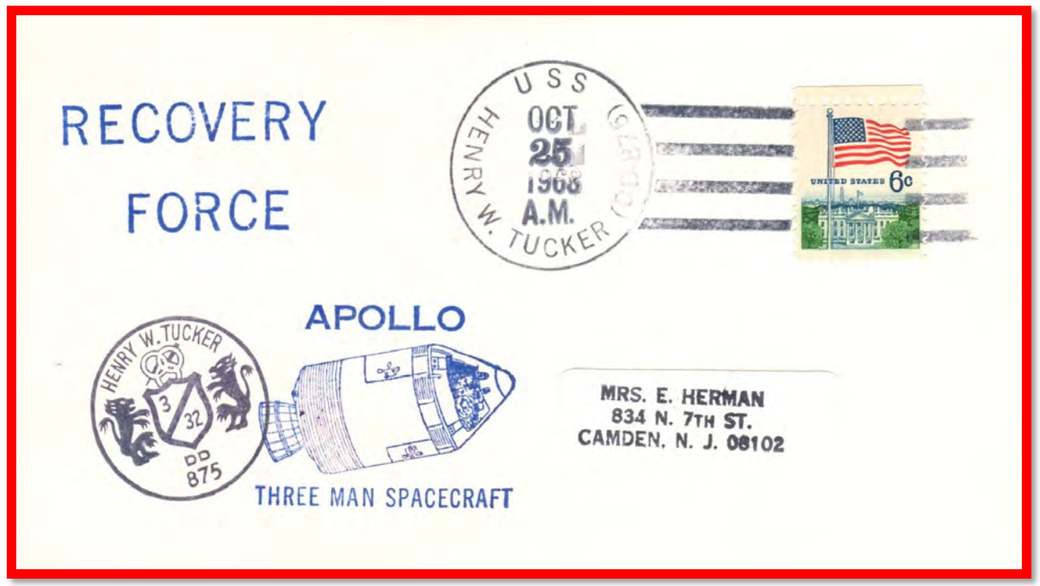
In an attempt to improve image quality, the Ap-7 and Ap-8 KSC Officials were printed as labels instead of rubber stamps. Crew signed with an AUTOPEN of Walter Cunningham in blue.

Ap-7 Jacksonville Machine Cancel **22 Oct 1968**



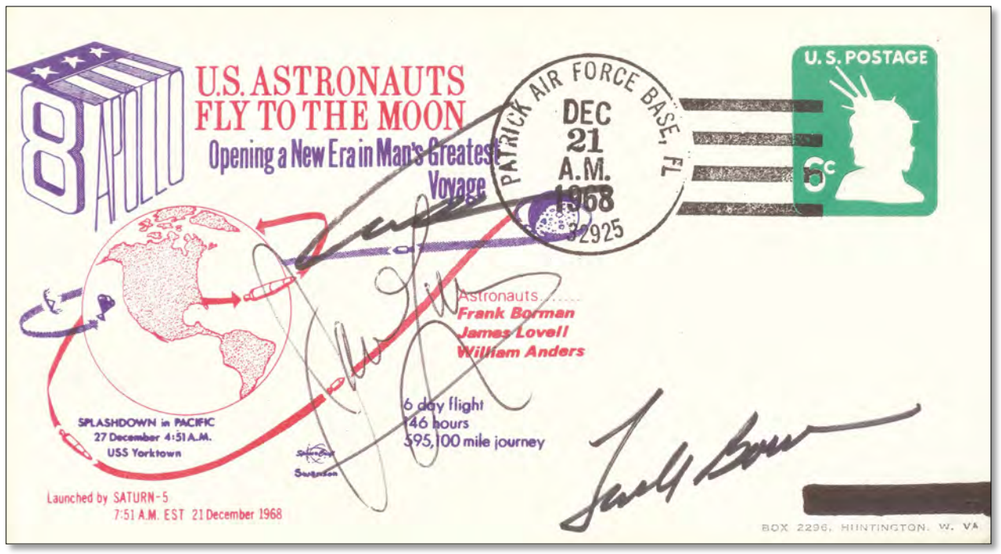
Repurposed in 1964 as a tracking ship Vanguard was used extensively during Apollo and Skylab to maintain telemetry link with spacecraft when out of contact with land-based facilities. With an operating complement of only 66 there was no postal facility onboard.

Ap-8 *USS Henry W Tucker* Hand Cancel **25 Oct 1968**



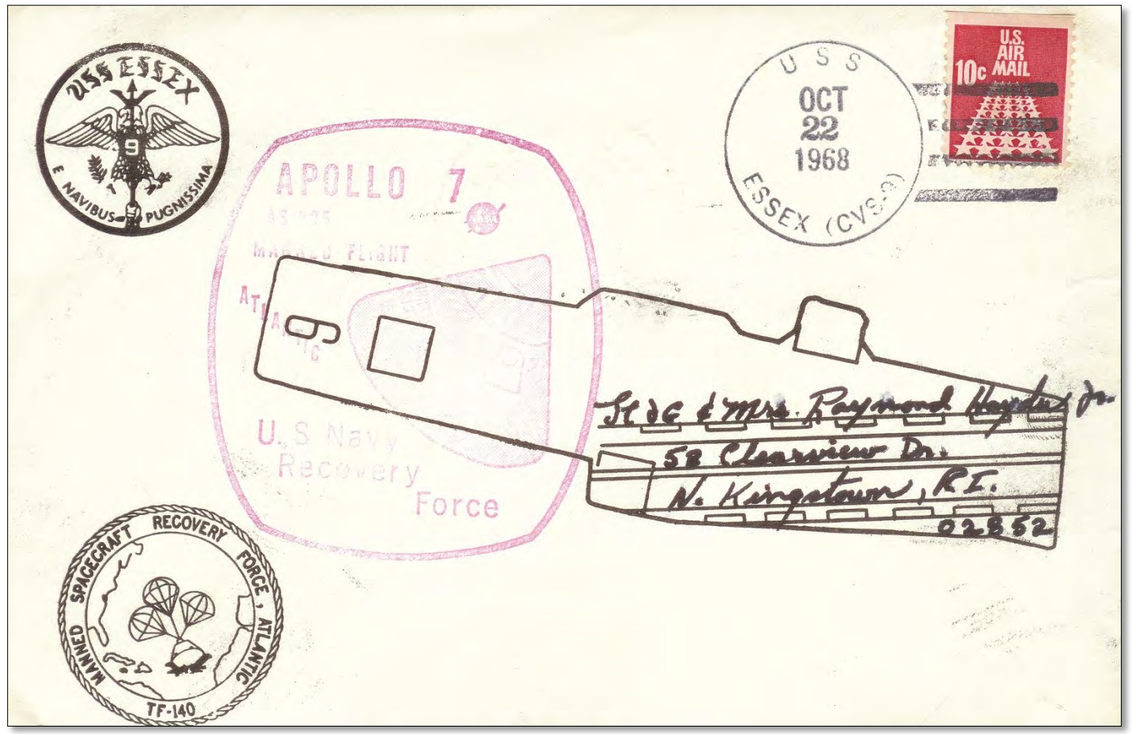
One of 8 known for this destroyer's participation in the Apollo 7 mission.

Ap-8 Patrick Air Force Base Hand Cancel **21 Dec 1968**



The Ap-8 crew received Charles Lindbergh the night before launch. They talked about how, for his 1927 flight, he had used a piece of string to measure the distance from New York to Paris on a globe to calculate fuel needed for the flight. The next day Lindbergh and wife watched the lift off from nearby dunes.

Ap-7 *USS Essex* Hand Cancel **22 Oct 1968**



A member of the crew designed a limited number (18) of embossed Prime Recovery Ship covers for friends and family. Landing southeast of Bermuda, the spacecraft splashed down less than 2 km from its intended spot.

Ap-8 Kennedy Space Center Machine Cancel **21 Dec 1968**

With the Lunar Module nowhere near ready to test, but a Saturn V prepared and fueled, NASA makes the audacious decision to shoot for the Moon.

Ap-8 Houston Machine Cancel **24 Dec 1968**

On Christmas Eve, as the crew made the ninth of 10 orbits around the Moon, they took turns reading the story of Creation from the Book of Genesis.

In the beginning,
God created the heavens
and the earth.

The earth was without form
and void, and darkness was
over the face of the deep.

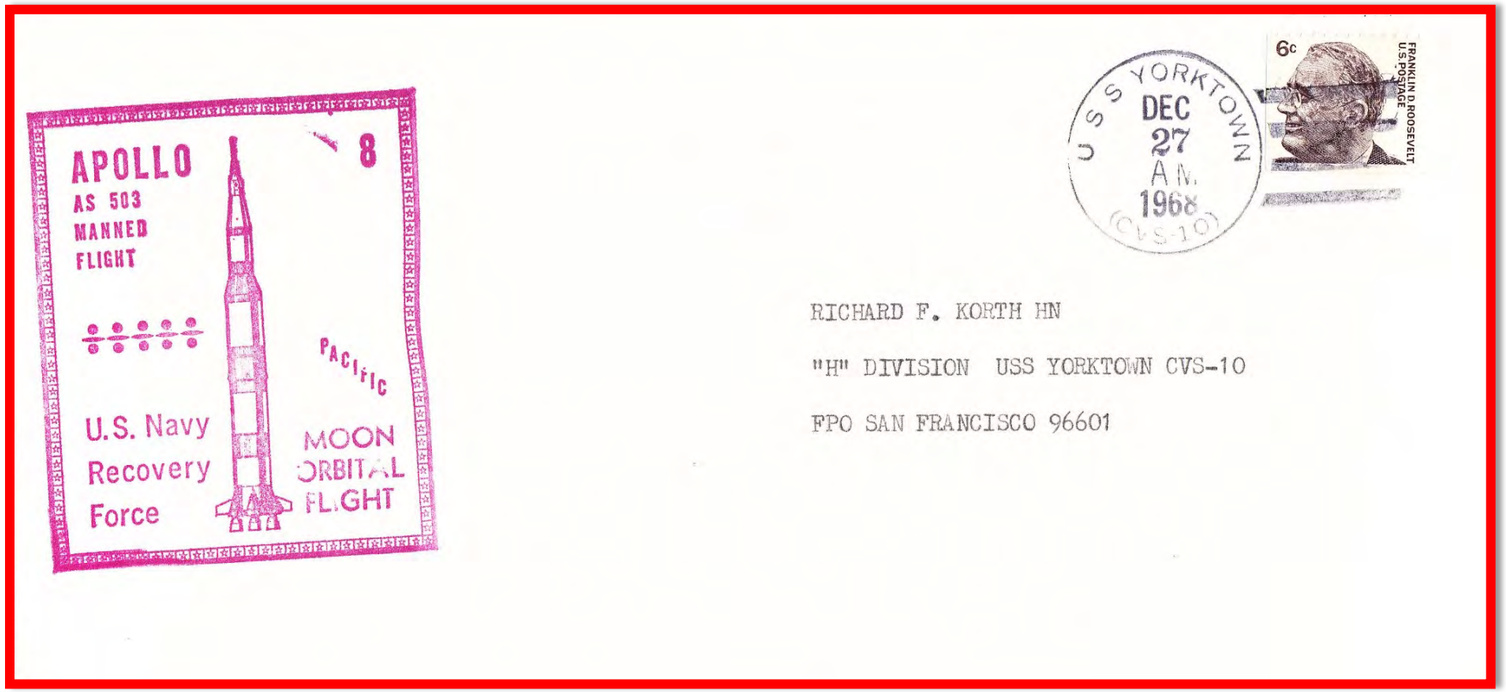
And the Spirit of God
was hovering over the face
of the waters.

Genesis 1:1

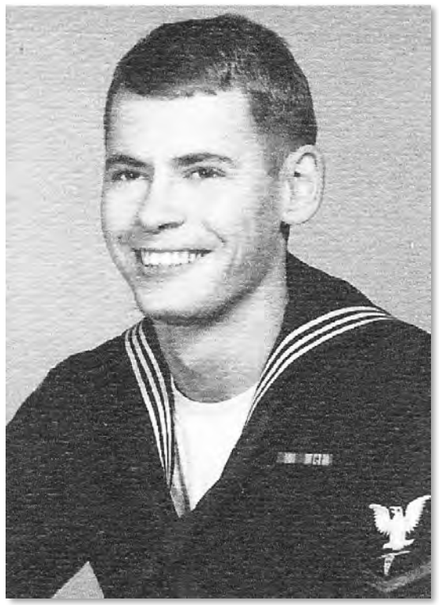
Ap-8 *USS Yorktown* Machine Cancel **27 Dec 1968**

A mission planner wrote, "The C Prime CM came down right over the carrier and drifted to land away. The consequence of hitting the carrier is truly catastrophic. I seriously recommend relocating the recovery force." Apollo 8 returned 2 km from the target.

Ap-8 *USS Yorktown* Hand Cancel **27 Dec 1968**

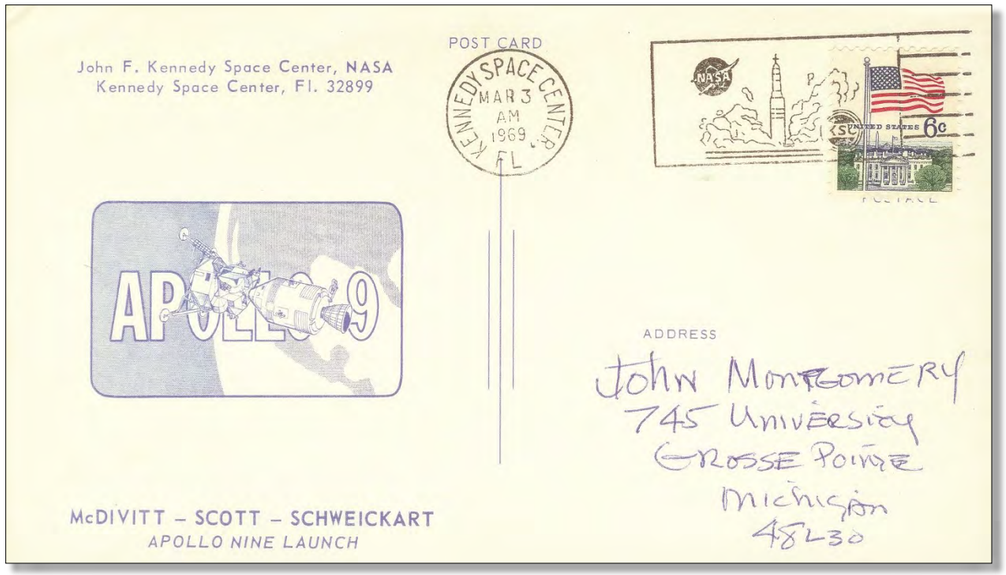


Richard Korth, a 21-year-old seaman, worked as a hospital corpsman on the USS Yorktown *over Christmas in 1968. He had the postal clerk cancel 50 envelopes. Use of the Hand Cancel on this flight is very scarce.*



Hospital corpsman Richard Korth

Ap-9 Kennedy Space Center Machine Cancel **3 Mar 1969**



Postally used VIP postcard distributed at the launch site. Visitors could have up to five cards, buy stamps, and have them mailed at the site.

Ap-9 Houston Machine Cancel **13 Mar 1969**

The biggest concern before Apollo 9 was the docking maneuver. On several occasions capture latches failed to engage. In other tests latches partially caught raising the specter of "jack-knifing" resulting in sharp edges damaging the Lunar Module. After six hours of LM testing, "I have capture."

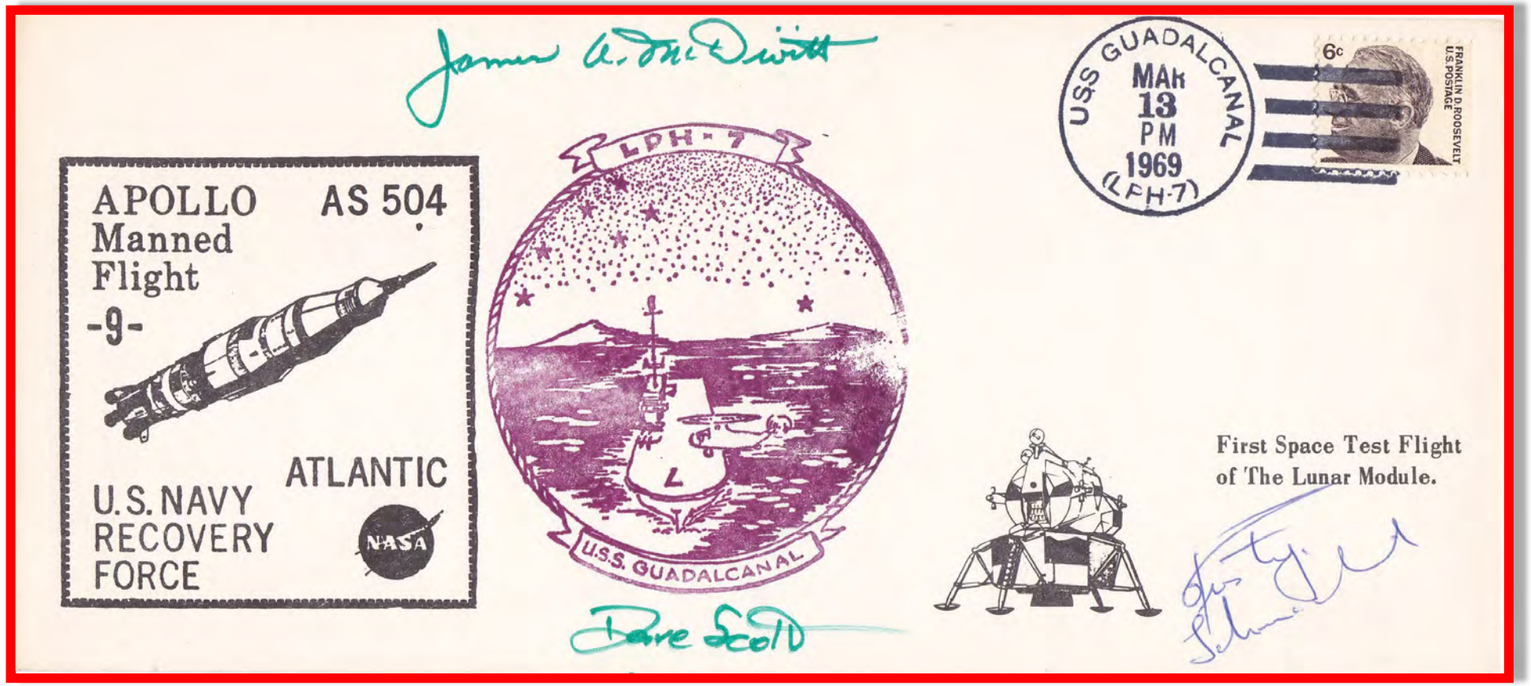
Ap-9 Patrick Air Force Base Hand Cancel **3 Mar 1969**

By the time McDivitt's crew was finally ready for flight, they had spent 7 hours in training for each of the 241 hours they would spend in space. At a news conference, McDivitt quipped that he hoped all this training did not imply that the crewmen were slow learners.

Ap-9 *USS Guadalcanal* Type I Variant 1 Hand Cancel **13 Mar 1969**

After 10 days, 1 hour, and 1 minute, Apollo 9 splashed safely down in the Atlantic, northeast of Puerto Rico. Within an hour the crew was aboard the carrier.

Ap-9 *USS Guadalcanal* Type II Hand Cancel **13 Mar 1969**

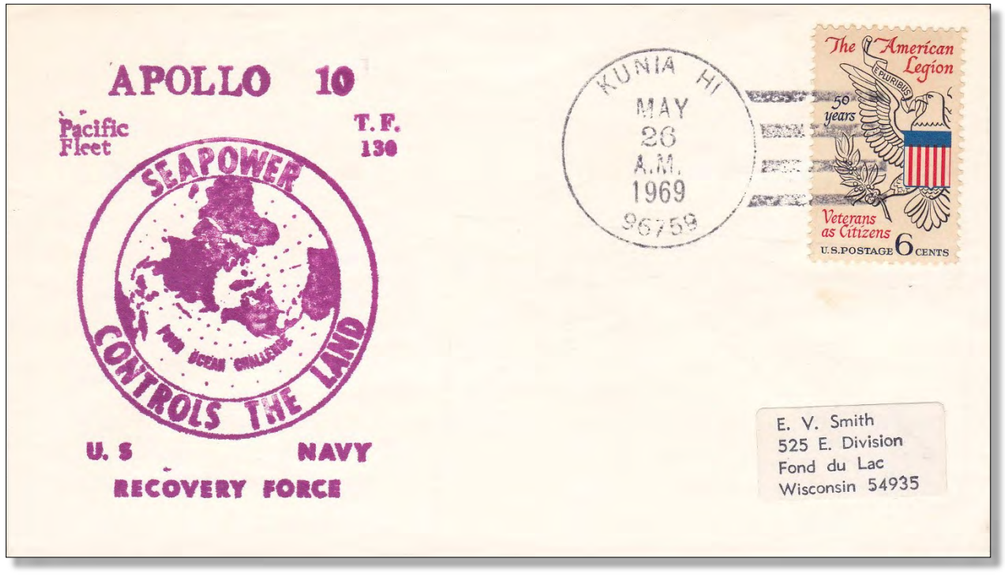


An exceedingly rare Captain's cover that includes crew and Navy rubber stamp art. Sean Marsar bought and resold them from a sailor attending a Tailhook Association gathering in the 1980s. This cover came from an auction sale in 2008.

Ap-10 Patrick Air Force Base Hand Cancel **18 May 1969**

The lunar landing dress rehearsal was needed to check LM guidance and navigation in the Moon's uneven gravitational field. There were also tracking, communications and site selection reconnaissance needed. The all-veteran crew would be busy.

Ap-10 Kunia Hand Cancel **26 May 1969**

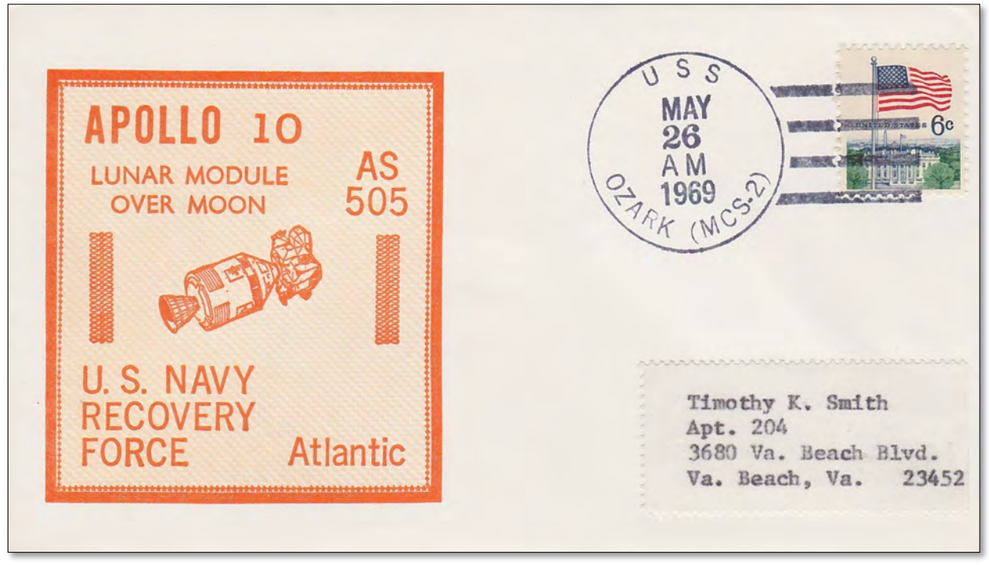


In 1969 Fleet Operations Control Center, Pacific (FOCCPAC) was based at Kunia. With the extreme reentry speeds associated with lunar return, spacecraft recoveries which were usually accomplished in the Atlantic during the Mercury program, were now conducted in the Pacific.

Ap-10 *USS Princeton* Machine Cancel **26 May 1969**

Virtually all Ap-10 PRS postmarks are like this machine cancel.

Ap-10 *USS Ozark* Hand Cancel **26 May 1969**



Beck CREW cover with VIP address label on Secondary Recovery Ship.

Ap-10 *USS Princeton* Hand Cancel **26 May 1969**

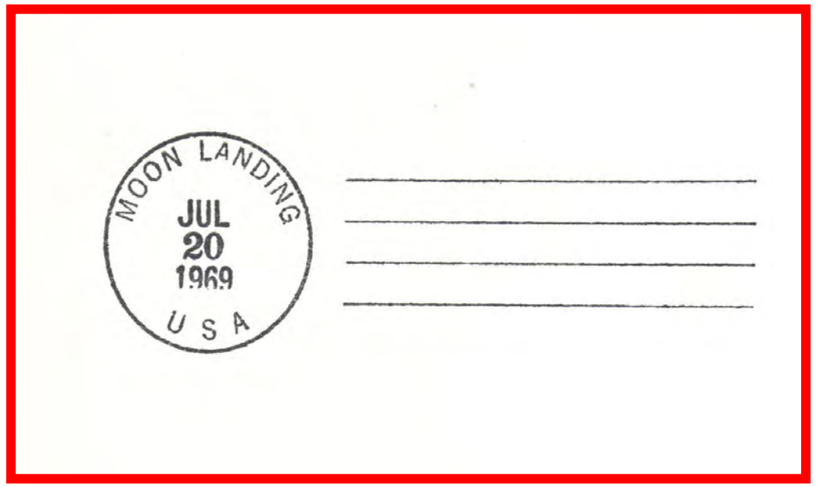
This airmail entire is unusual in several respects. The crew would all be Commanders (Stafford Ap-10, Young Ap-16, and Cernan Ap-17), the rubber stamp is unknown in black, and virtually all postmarks that day used the smaller machine cancel.

Ap-10 *USS Princeton* Machine Cancel **26 May 1969**

A scarce Captain' s cover. On 26 May 1969, Apollo 10 streaked through the early morning darkness like a shooting star, splashing down 690 km from Samoa and 6 km from the carrier.

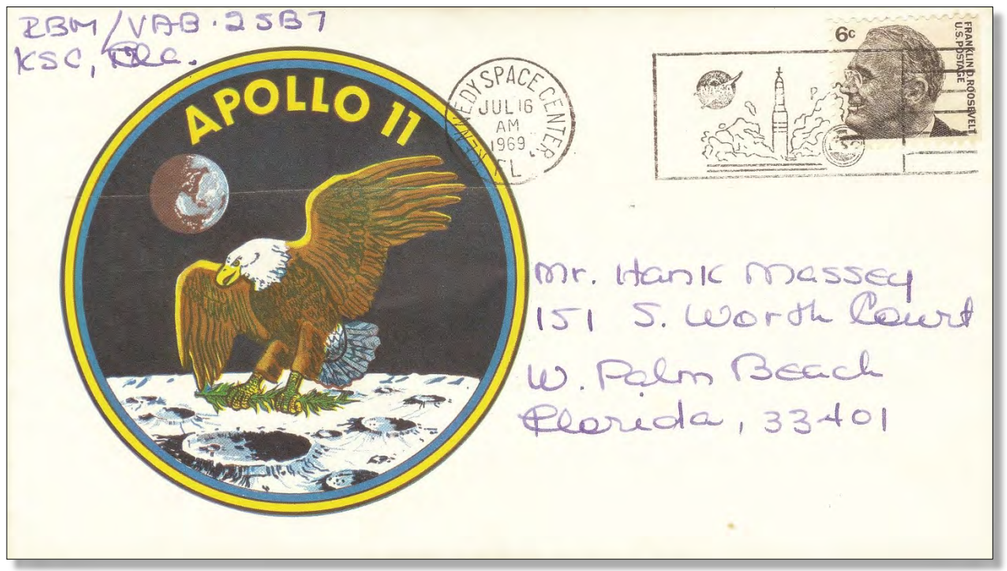
Ap-10 Hand Cancel *USS Princeton* **26 May 1969**

An even scarcer Captain's cover due to a rare Hand Cancel.



Specimen of unique "Moon" cover postmarked by Michael Collins on return flight from first manned lunar landing. Planned for ceremony on the surface of the Moon, the envelope for the Post Office Department, were struck July 22nd.

Ap-11 Kennedy Space Center Machine Cancel **16 Jul 1969**



This NASA Exchange mission emblem cover was probably sent from a family member (initials RBM) who worked in the Vehicle Assembly Building (VAB).

Ap-11 Freeport Hand Cancel **16 Jul 1969**

Grand Bahamas Island was a key part of the Atlantic Missile Range and the early Mercury Mission Flight Network.

Ap-11 Houston Hand Cancel **11 Aug 1969**

The first crews to visit the surface of the Moon were placed in quarantine on their return. Since envelopes taken on the journey were not exempt from the quarantine restrictions, it was not until August 11th that the astronauts (and space covers) were released. In this case, the "Delayed in Quarantine" rubber stamp is a forgery.

Ap-11 Houston Backdated (?) Machine and Hand Cancel **20 Jul 1969**

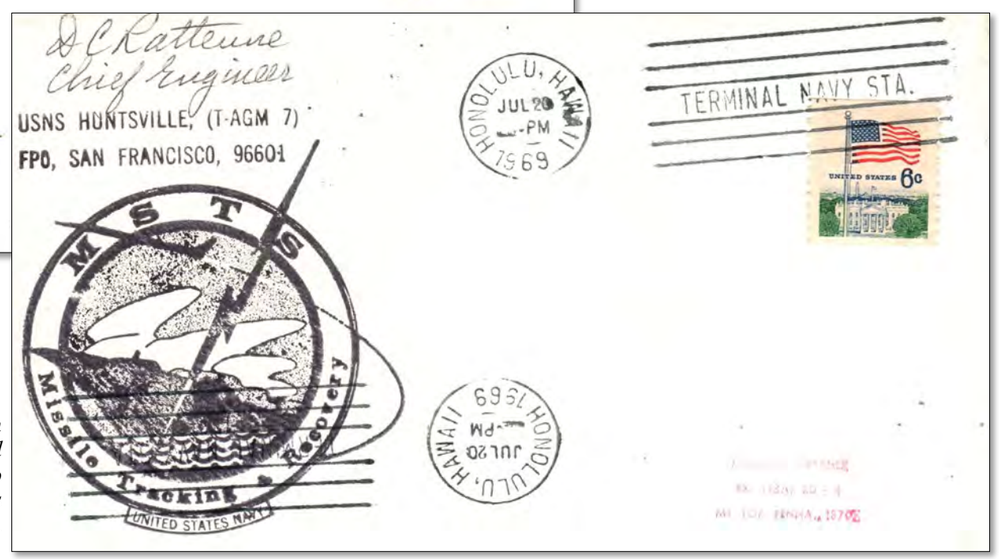
Europeans consider 21 Jul 1969 the moon landing date (GMT) but the controlling time zone was in Houston. This cover has a Machine Cancel (lost in t he black of the stamp) and a Hand Cancel. Were both backdated since the moon landing was on a Sunday?

Ap-11 Honolulu Machine Cancel **5 Aug 1969**

A tanker from 1944 to 1958, the Mission De Pala *was retrofitted in 1964 and later named* USNS Redstone *to serve as a NASA tracking/communications ship.*

A missile range instrumentation ship acquired by the U.S. Navy in 1960 and converted from the **SS Knox Victory** *cargo configuration to a missile tracking ship it was redesignated* USNS Huntsville.

Ap-11 Honolulu Machine Cancel **20 Jul 1969**



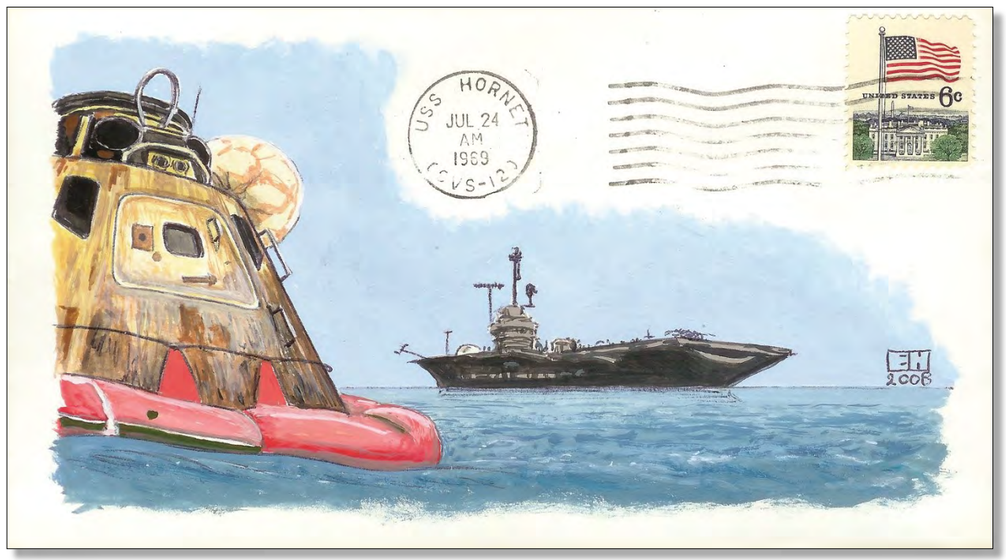
Ap-11 *USS Ozark* Hand Cancel **24 Jul 1969**

VIP label on Beck CREW cover to reward sailors for assisting in canceling the mail. Only 25 color cachets (like the 500 color produced with a Beck number) without the B number.

Ap-11 *USS Hornet* Type I Machine Cancel **24 Jul 1969**

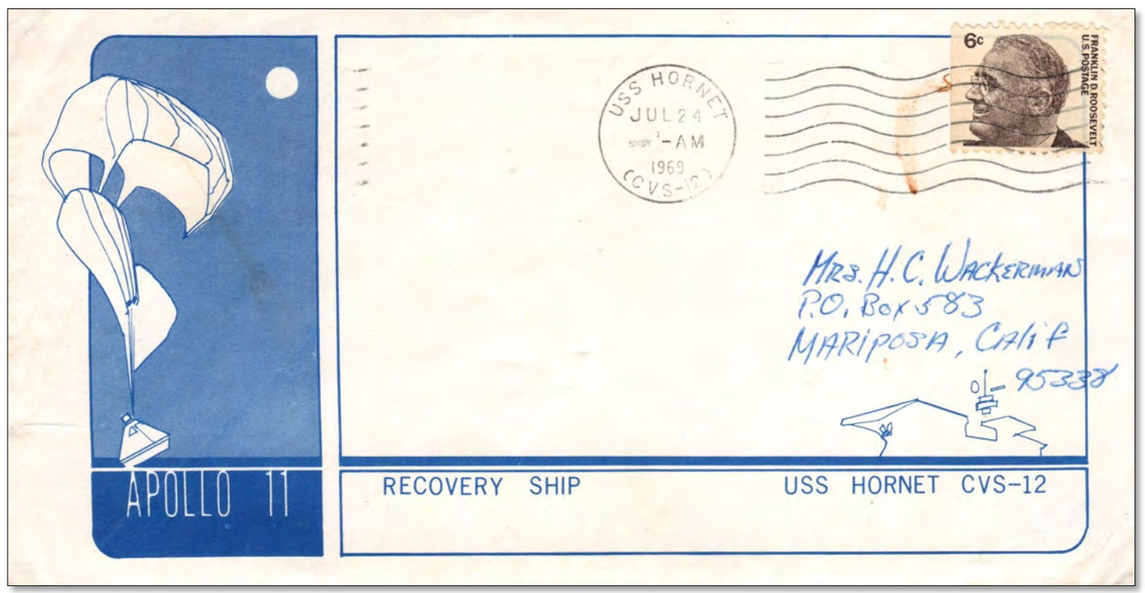
The vehicle dipped down into the atmospheric layer, zipped up in a roller coaster curve out of the layer, and then came screaming back in. The drogue parachutes opened, and the ship steadied. Below they heard recovery forces trying to talk following the communications blackout.

Ap-11 *USS Hornet* Type II Machine Cancel **24 Jul 1969**



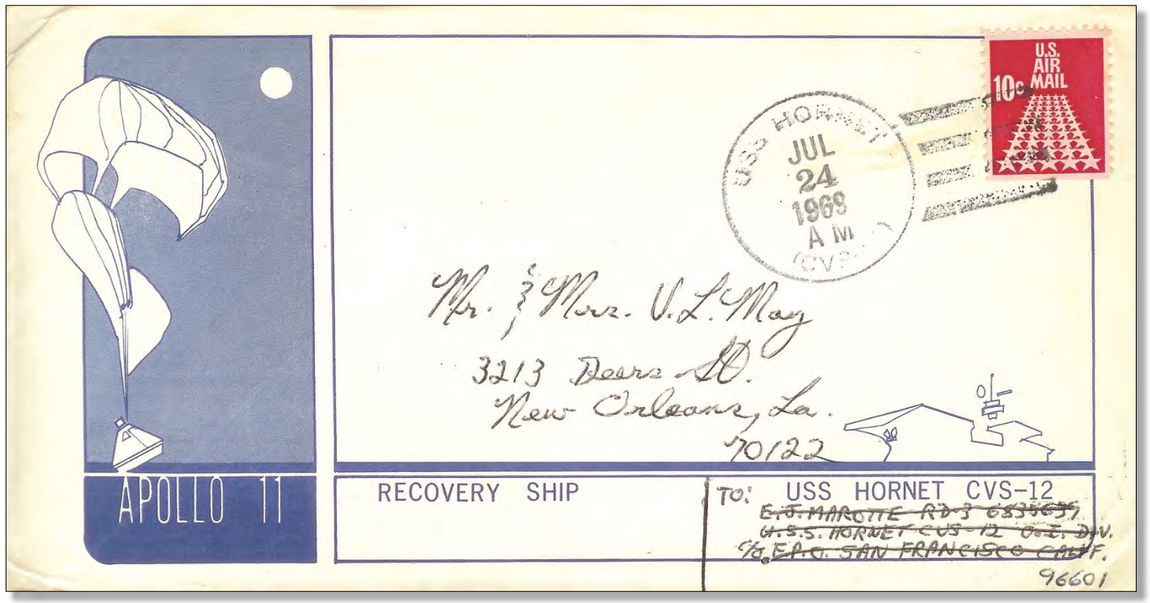
Columbia landed close to its target and flipped over on its nose in the water, but a flick of a switch inflated the air bags and it soon turned upright.

Ap-11 *USS Hornet* Machine Cancel **24 Jul 1969**



In contrast to the 44 philatelic envelopes postmarked aboard the USS Lake Champlain *for Alan Shepard's Mercury flight, the USS Hornet applied 240,000 machine cancels on recovery day, with an additional 10,000 hand cancels.*

Ap-11 *USS Hornet* Hand Cancel **24 Jul 1969**



6000 Captain's covers were created. A few Navy brass and the astronauts received 25 each while members of the crew were given two each. This one entered the mail stream from a crew member.

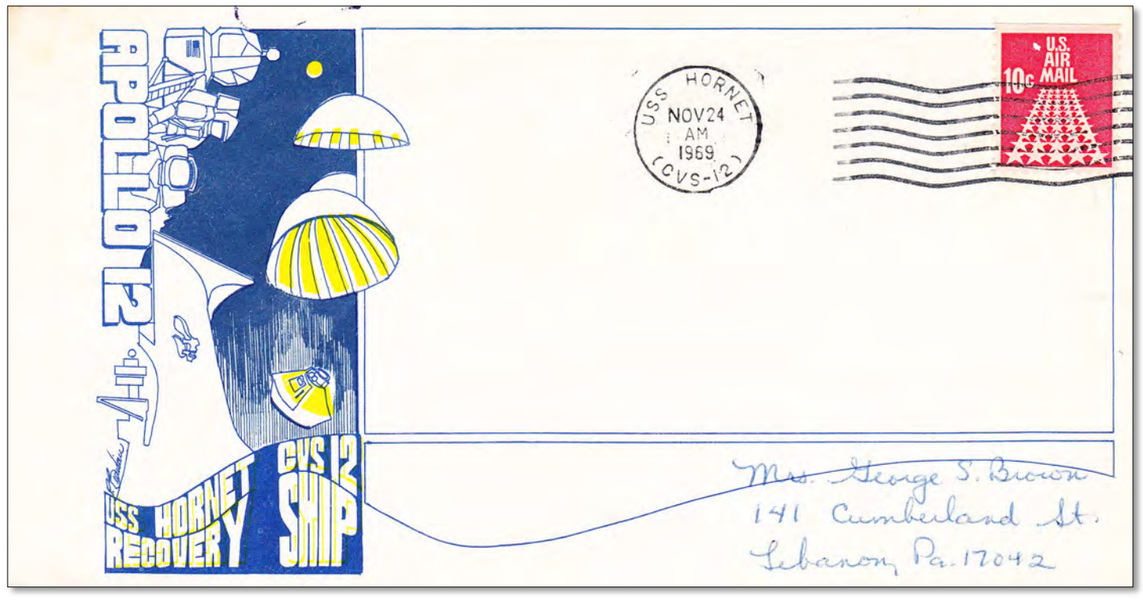
Ap-12 Kennedy Space Center Machine Cancel (Open globe) **14 Nov 1969**

Al Bishop created "Insurance" covers (this one for an all-Navy crew) that astronauts could leave with family in the event that they failed to return. Later these were sold or given as gifts.

Ap-12 Kennedy Space Center Machine Cancel (Closed globe) **14 Nov 1969**

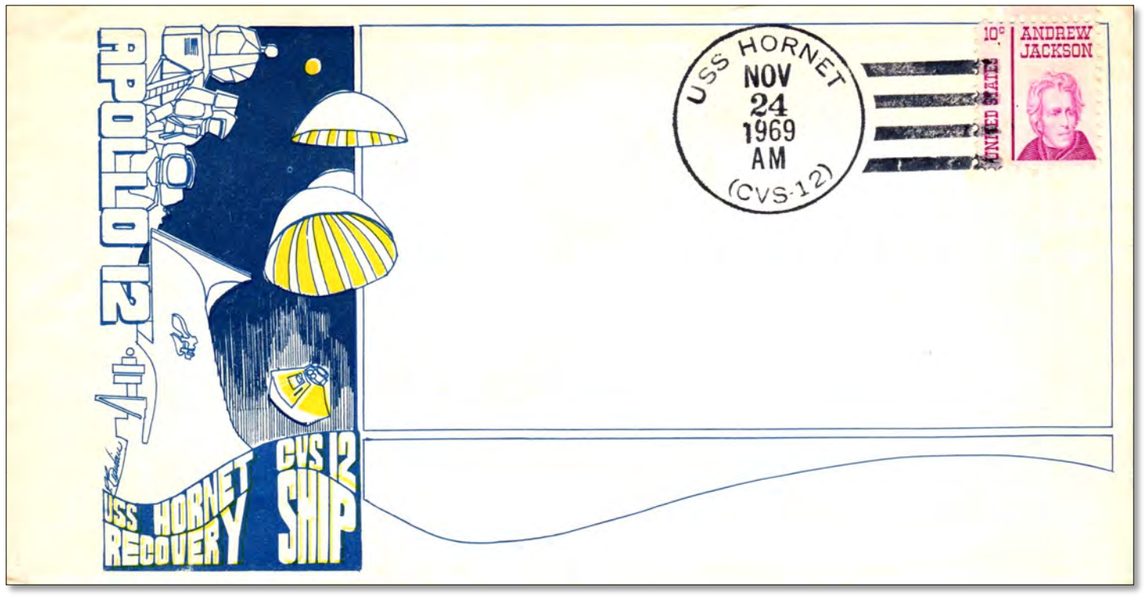
Paul Savko, an employee of Bendix, suggested the contractor publicize the company's participation in the space program. A different cachet was made for each Apollo mission.

Ap-12 *USS Hornet* Machine Cancel **24 Nov 1969**



A Captain's cover postally used by a member of the crew.

Ap-12 *USS Hornet* Type I Variant 2 Hand Cancel **24 Nov 1969**

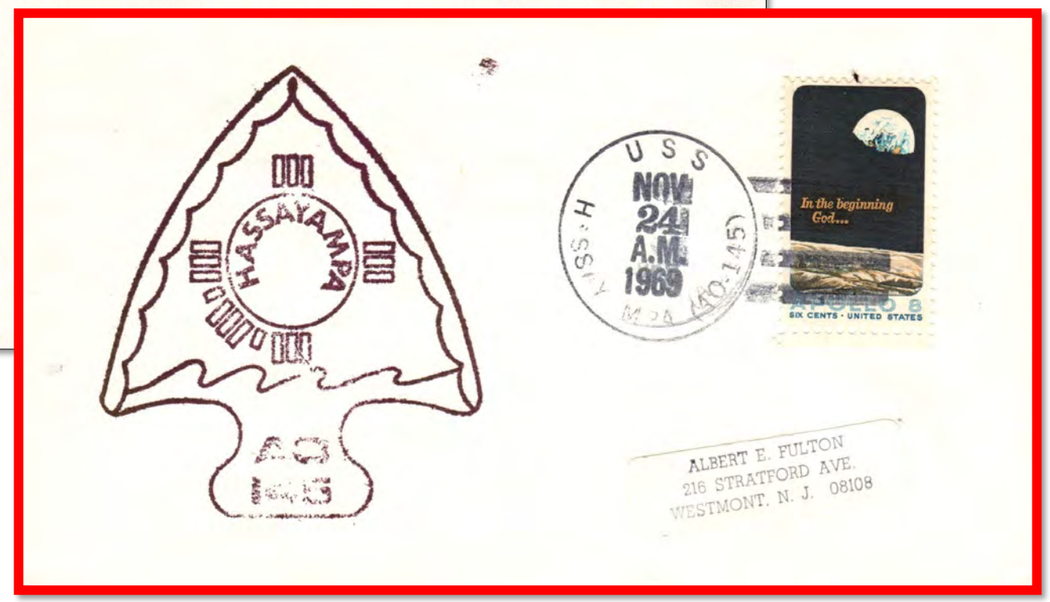


Although not rare, Hand Cancels for Apollo 12 are less common and are found with several variants. This Type I Variant 2 (19691124HT1V2CVS-12) has a widely spaced "AM" below the year.

Ap-12 *USS Hornet* Hand Cancel **24 Nov 1969**

Seldom seen artwork to celebrate the NASA Recovery Team responsible for rescue following splashdown in the Pacific Ocean. All US Manned spaceflight prior to the Shuttle era returned to earth by parachute to a water landing at sea. Considered safer and more reliable than touchdown on land this phase of the mission remaining the responsibility of the US Navy.

Ap-12
USS Hassayampa
Hand Cancel
24 Nov 1969

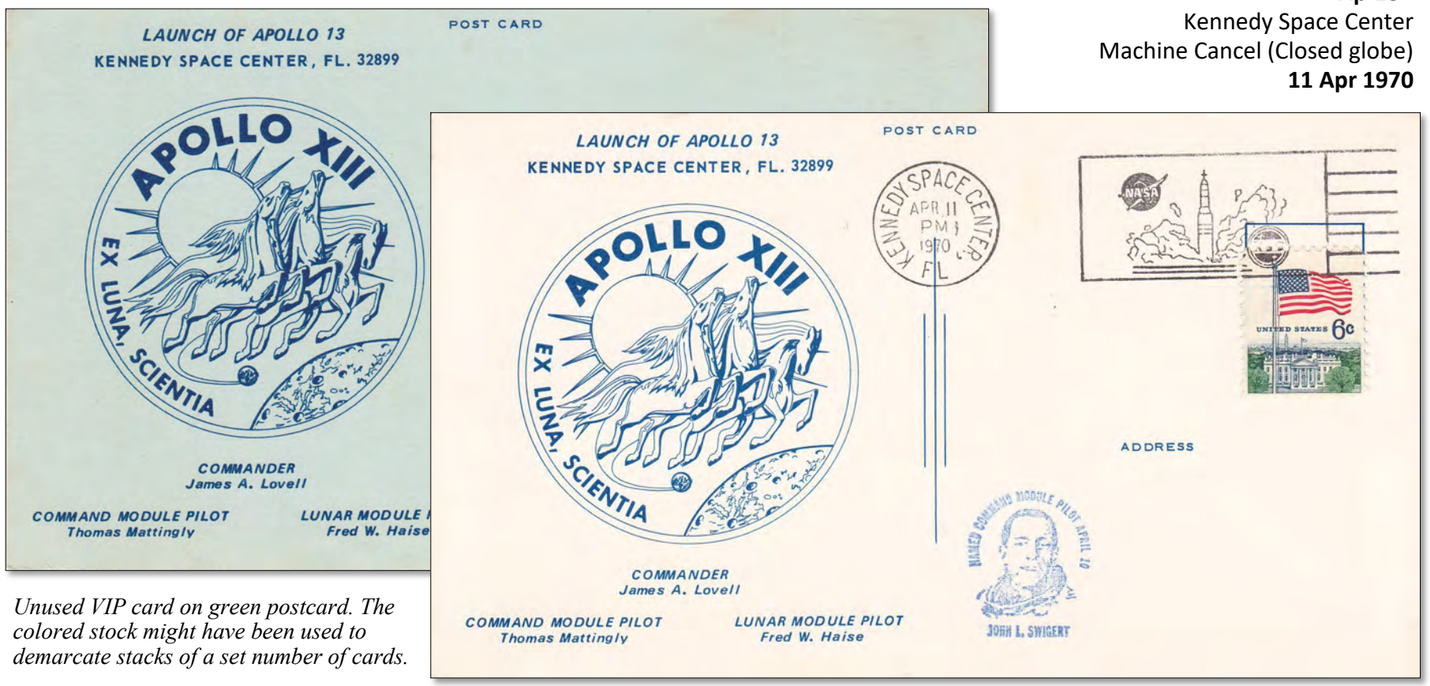


Only 3 known envelopes canceled on AO-145. In the United States Navy, an Oiler is a Combat Logistics ship that replenishes other ships with fuel, food, mail, ammunition and other necessities while at sea.

Chief astronaut Alan Shepard has been scheduled to command the third manned Moon landing. When an ear infection flared up the mission reverted to Jim Lovell, Ken Mattingly, and Fred Haise. Just two days before lift off Mattingly was replaced after exposure to the measles. Lovell, Haise, and now Swigert would travel to the Moon. Even this wasn't without further drama when an explosion enroute nixed the landing. The flight was considered a triumph for both flight and ground crew as the mission was reconfigured to bring the crippled spacecraft home. The crew survived.

Ap-13 Kennedy Space Center Hand Cancel **11 Apr 1970**

KSC "Officials" are found in red or blue. Occasionally, Ap –12 and Ap-13 appear more black than blue. The Helios unmanned mission to the Sun was printed in black. Here an uncommon hand stamp postmarks an envelope sent to a collector in West Germany.



Unused VIP card on green postcard. The colored stock might have been used to demarcate stacks of a set number of cards.

Ap-13
Kennedy Space Center
Machine Cancel (Closed globe)
11 Apr 1970

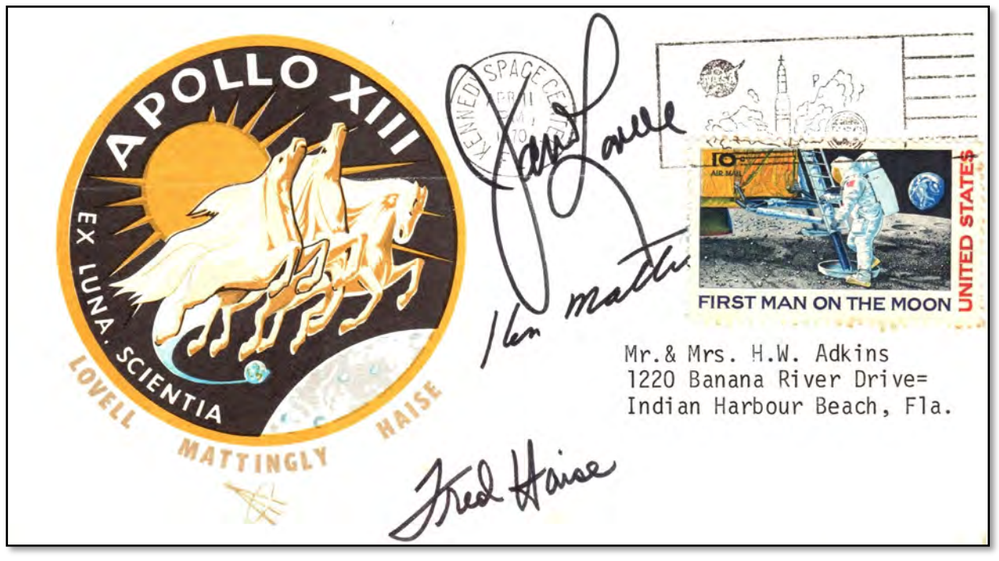
Ap-13 Jacksonville Machine Cancel **11 Apr 1970**

USS Escape (ARS-6) *was a Diver-class rescue and salvage ship commissioned by the U.S. Navy for service in World War II. She was responsible for coming to the aid of stricken vessels. Covers from the Apollo 13 mission are rare.*

When Jack Swigert replaced Tom Mattingly two days before the flight there was insufficient time to reprint the VIP cards to commemorate the flight. A rubber stamp was used.

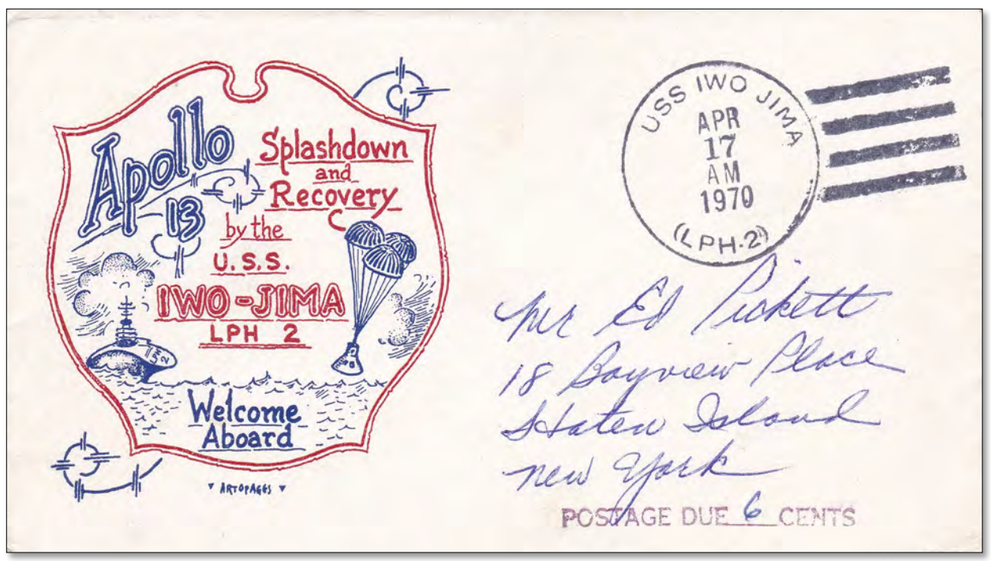
Ap-13 *USS Iwo Jima* Type II Variant 2 Hand Cancel **11 Apr 1970**

Discovery copy reveals that Juanita Adkins (return address on the reverse) was responsible for the Insurance covers. She worked in the Astronaut Support Office.



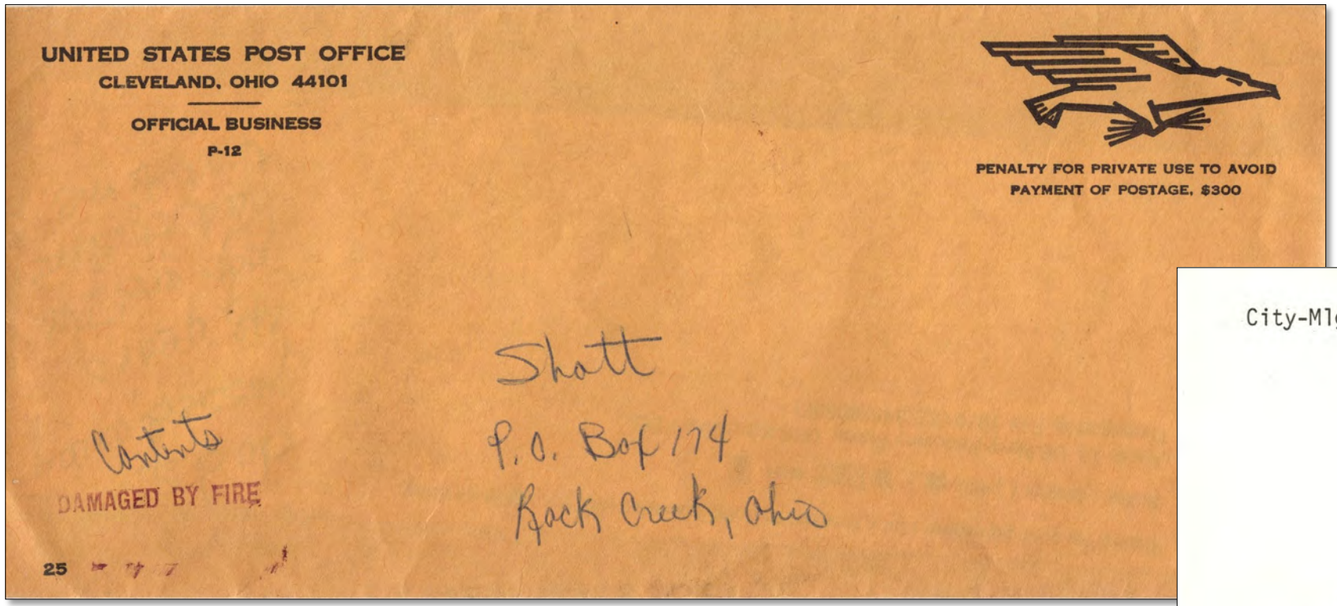
Insurance envelopes clearly signed more than two days before launch as Ken Mattingly was removed from the crew by the Flight Surgeon. He was replaced by back up CSM pilot Jack Swigert.

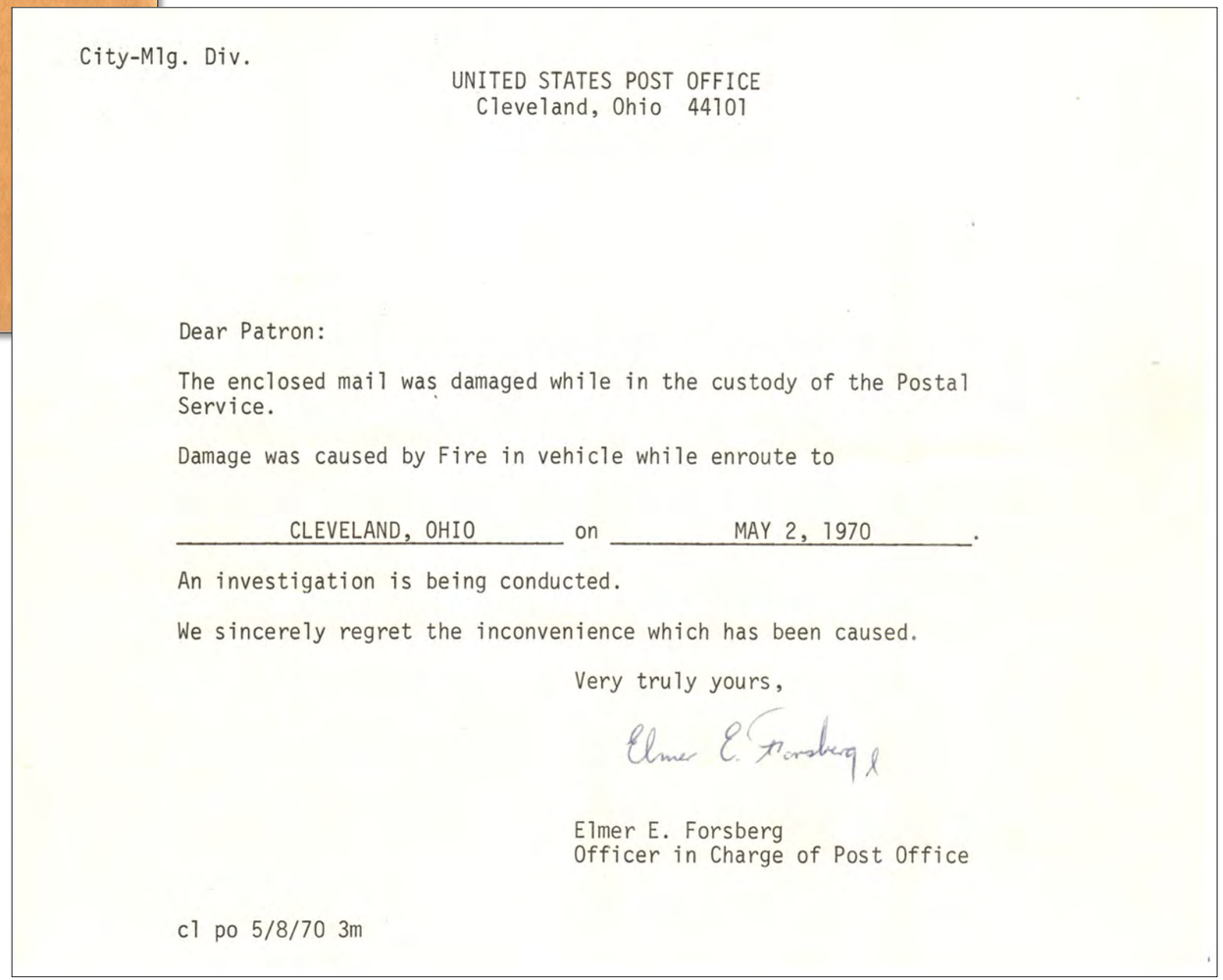
Ap-13 *USS Iwo Jima* Type II Variant 2 Hand Cancel **17 Apr 1970**



The possibility of heat shield damage from the explosion heightened tensions during the blackout period, which took 33 seconds longer than normal. Odyssey regained radio contact and splashed down safely southeast of American Samoa and 6.5 km from the recovery ship.

Ill-fated mail from an ill-fated flight





City-Mlg. Div.

UNITED STATES POST OFFICE
Cleveland, Ohio 44101

Dear Patron:

The enclosed mail was damaged while in the custody of the Postal Service.

Damage was caused by Fire in vehicle while enroute to

CLEVELAND, OHIO on MAY 2, 1970.

An investigation is being conducted.

We sincerely regret the inconvenience which has been caused.

Very truly yours,

Elmer E. Forsberg

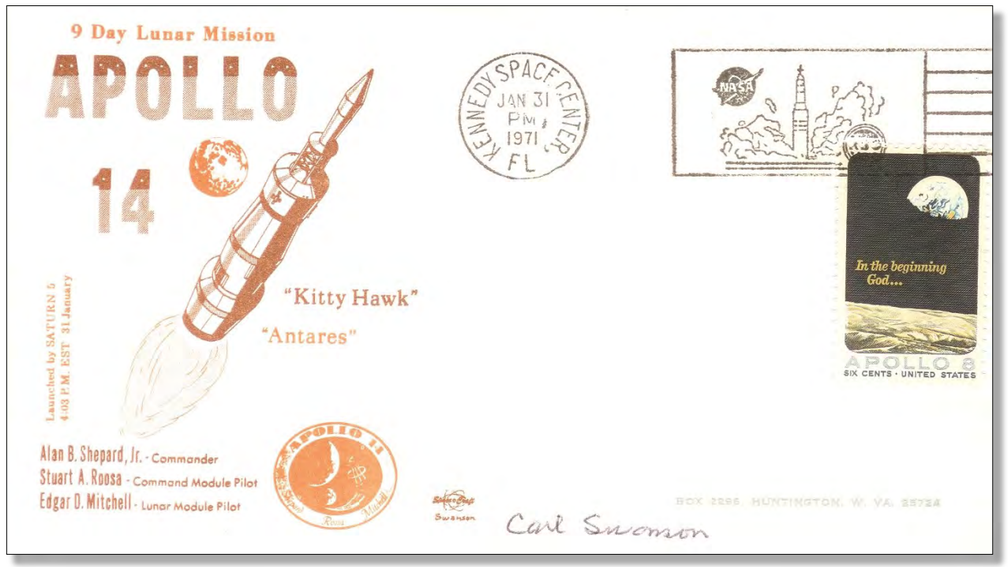
Elmer E. Forsberg
Officer in Charge of Post Office

cl po 5/8/70 3m

Ap-13 *USS Kawishiwi* Hand Cancel **17 Apr 1970**

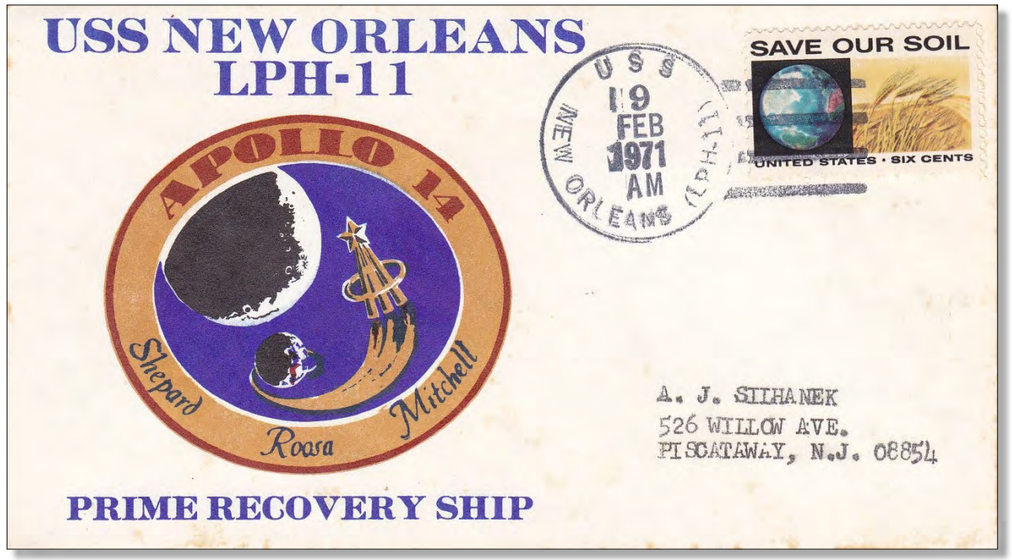
Envelope from Secondary Recovery Ship *USS Kawishiwi* on station for the interrupted Apollo **13** mission which lifted off at **13:13** and entered the Moon's gravity on April **13.** After the nail biting recovery the envelope was in a Post Office truck when it caught fire. Can't catch a break...

Ap-14 Kennedy Space Center Machine Cancel (Closed globe) **31 Jan 1971**



After regaining flight status, Mercury astronaut Alan Shepard (with 15 minutes of flight time under his belt) jumped to the head of the line and took two rookies to the Moon.

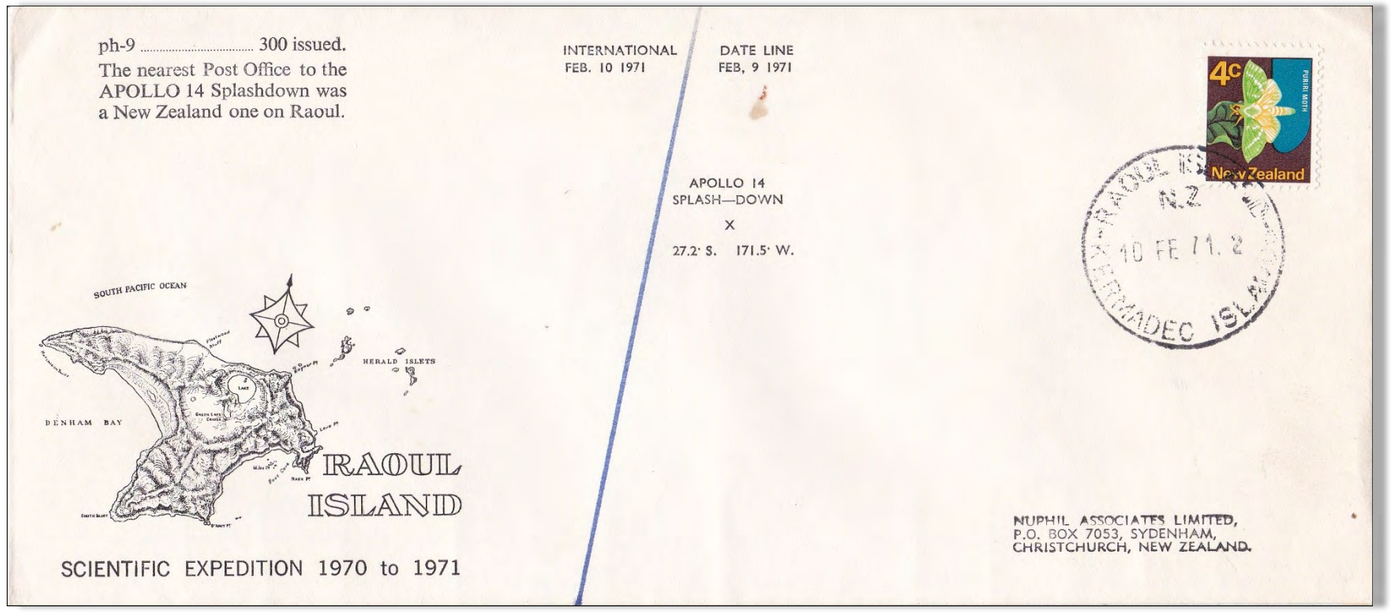
Ap-14 *USS New Orleans* Hand Cancel **9 Feb 1971**



The LM radar altimeter failed to lock onto the moon's surface. After the landing radar breaker was cycled, the unit successfully acquired a signal. Shepard then manually landed the LM. Mitchell believes Shepard would have continued with the landing attempt anyway but a post-flight review of the descent data showed the inertial system alone would have been inadequate, and the astronauts probably would have been forced to abort the landing as they approached the surface.

AP-14 Raoul Island Hand Cancel **10 Feb 1971**

This envelope nicely explains the concept of the nearest post office and current date in order to be astrophilatelically correct. If the US Navy didn't have a post office on board the Prime Recovery Ship (PRS) then the closest would have been Raoul in New Zealand. The postmark would also reflect that, across the International Date Line, it was already February 10th.



The impact point was about 0.6 n mi from the target point and 3.8 n mi from the recovery ship USS New Orleans. *Estimated distance traveled for the mission was 1,000,279 nautical miles.*

Ap-15 Kennedy Space Center Machine Cancel (Closed globe) **26 Jul 1971**

Widely recognized as a Bishop Insurance cover from the all Air Force crew. Recently Col. Worden claimed that these were signed upon their return and are NOT Insurance covers.

Ap-15 Kennedy Space Center Machine Cancel (Closed globe) **26 Jul 1971**

Col Worden emphatically asserts that only envelopes with the Antarctic Treaty stamp and the Manned Spacecraft Stamp Club cachet are true "Insurance" covers.

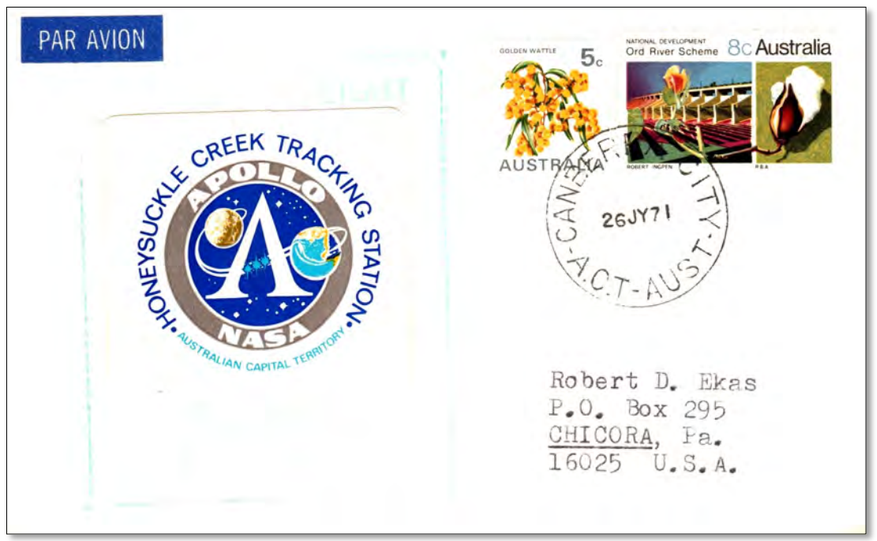
Ap-15 Kennedy Space Center Machine Cancel (Open globe) **26 Jul 1971**

During checkout of the LRV, it was found that the front steering mechanism was inoperative and there were no readouts on the battery #2 ampere/volt meter. Scott intended to contact AAA but left his membership card in his other spacesuit. This unflown example of the Irwin "lucky" clover came from Ray Burton, the collector who provided them to the astronaut.

Ap-15 Kennedy Space Center Machine Cancel (Closed globe) **26 Jul 1971**

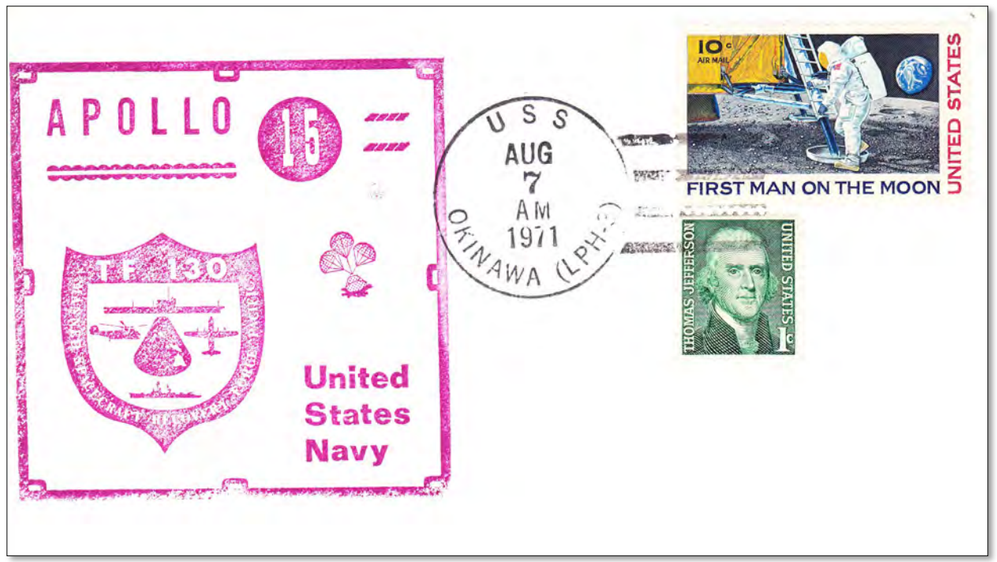
A unflown onion skin light weight envelope. This type was used for the Apollo 15 moon covers including the infamous Seiger covers. Scott had agreed to carry 100 envelopes in exchange of $7,000 college fund accounts for the crew's children. A scandal erupted and none ever flew again.

Ap-15 Canaberra Hand Cancel **26 Jul 1971**



Apollo 15 was Honeysuckle's big mission. It was the first of the 'J' missions. Not only was it technically far more complex – involving support of the Rover and a sub-satellite – but Honeysuckle was prime for much of the mission. Of Apollo 15's 295 hours in space, Honeysuckle Creek tracked the spacecraft for 250 hours.

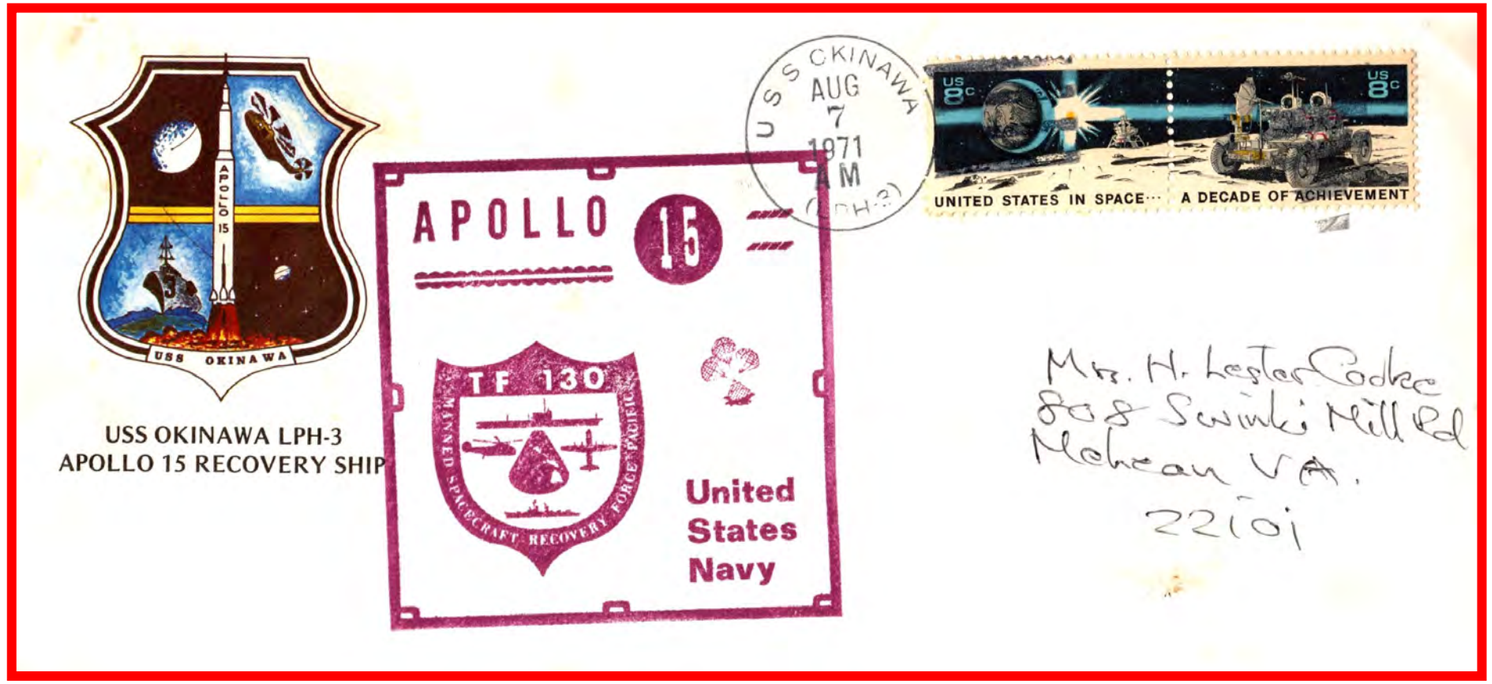
Ap-15 *USS Okinawa* Type I Hand Cancel **7 Aug 1971**



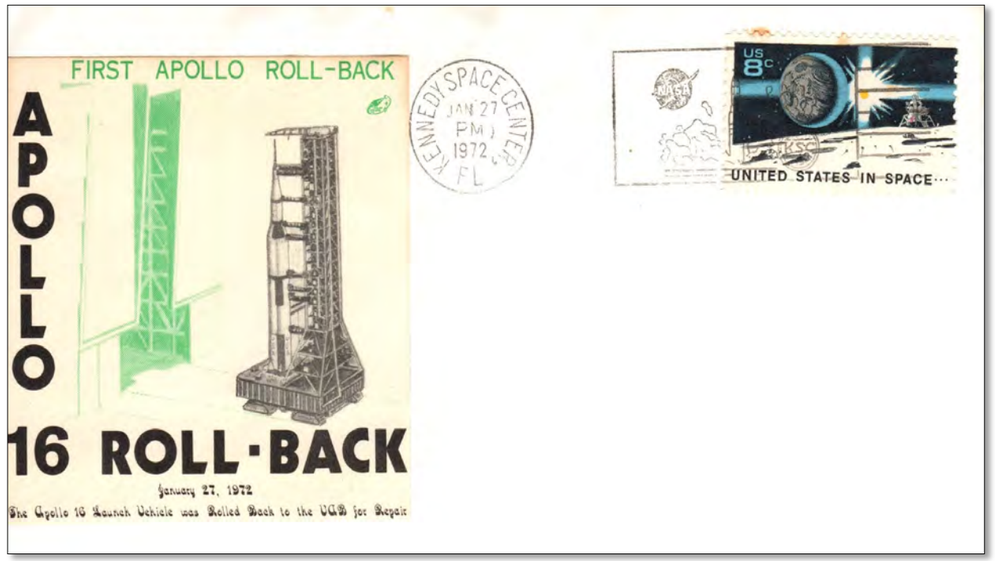
A collapsed parachute contributed to the fastest entry time in the Apollo program, just 778.3 seconds from entry to splashdown. Impact was 1.0 nautical mile from the target point and 5 nautical mile from the recovery ship USS Okinawa.

Ap-15 *USS Okinawa* Type II Hand Cancel **7 Aug 1971**

A Captains Cover different from most in that it has the recently released Decade of Achievement stamps flown out to the USS Okinawa *especially for the astronauts and found on all their Moon covers.*



Ap-16 Kennedy Space Center Machine Cancel (Closed globe) **27 Jan 1972**



On Jan. 25, during a test at KSC's Launch Pad 39A, workers accidentally over-pressurized a fuel tank in the Command Module's reaction control system. The resulting damage required a replacement of the tank, an activity that could not be performed at the pad, and two days later the entire Saturn V rolled back to the Vehicle Assembly Building (VAB). Once in the VAB, workers removed the spacecraft from the rocket and trucked it to the Manned Spacecraft Operations Building (MSOB) where technicians demated the Command Module from the Service Module, removed its heat shield, and replaced the damaged fuel tank.

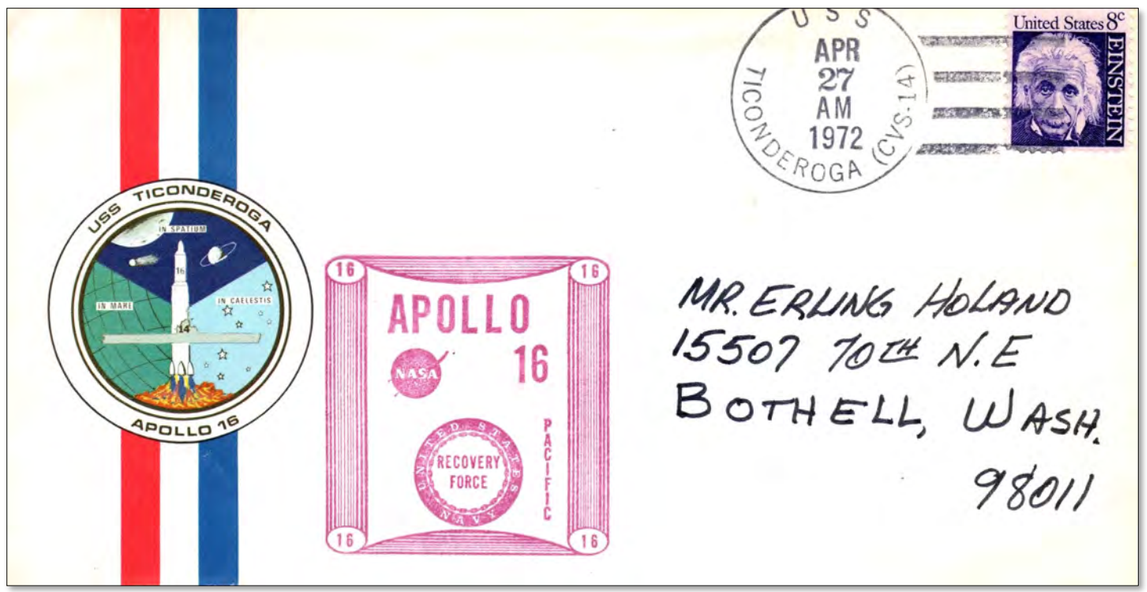
Ap-16 Houston Machine Cancel **16 Apr 1972**

The Space Shuttle was approved while John Young was walking on the Moon. He would go on to command STS-1 and STS-9 before retiring, having flown in space six times.

Ap-16 Kennedy Space Center Machine Cancel (Closed globe) **16 Apr 1972**

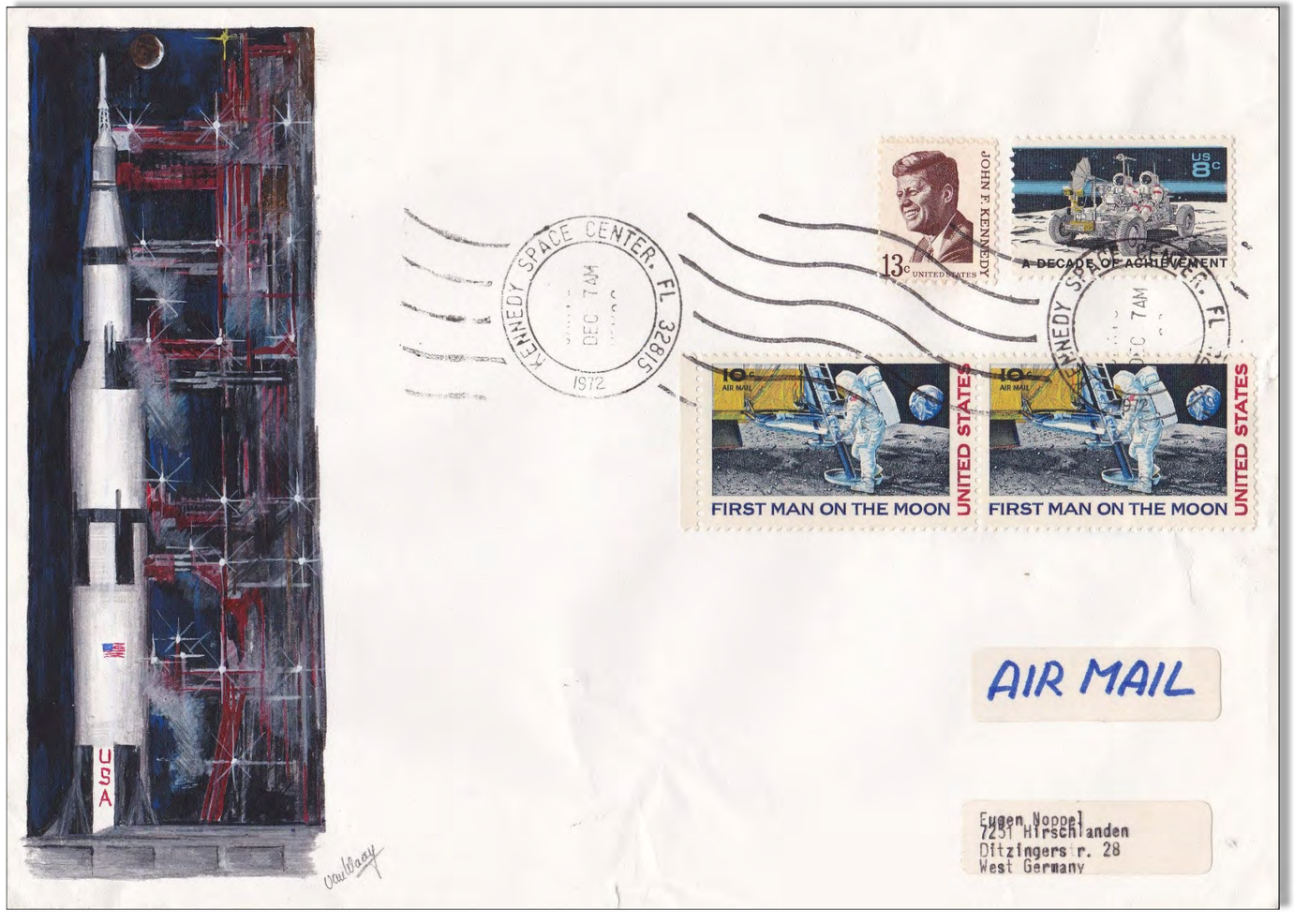
A malfunction in a backup yaw gimbal servo loop of Casper caused concerns about firing the engine to adjust the CSM's lunar orbit, and nearly caused the Moon landing to be aborted.

Ap-16 *USS Ticonderoga* Hand Cancel **27 Apr 1972**



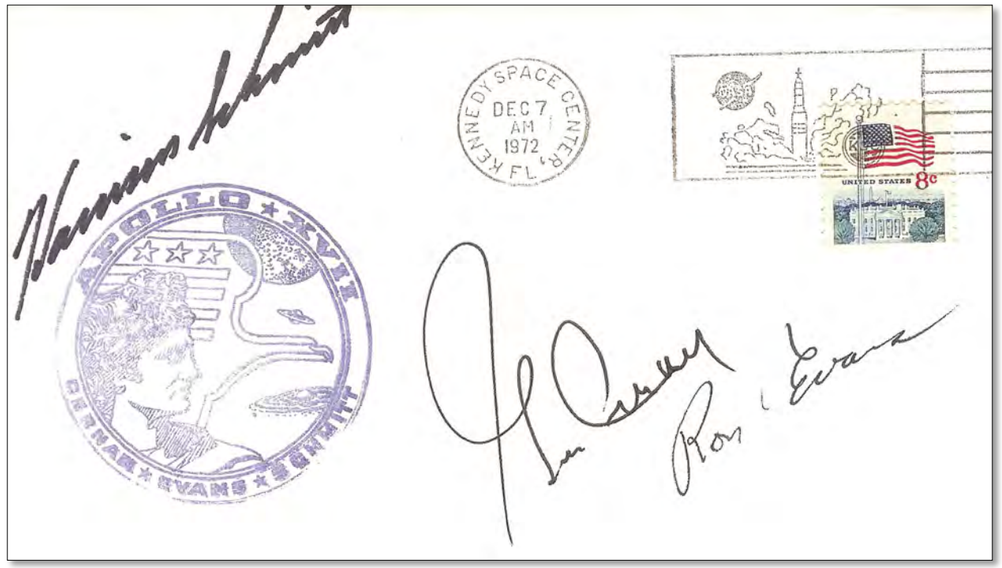
Postally used Captain's cover sent from Crew Mess steward.

Ap-17 Kennedy Space Center Roller Cancel **7 Dec 1972**



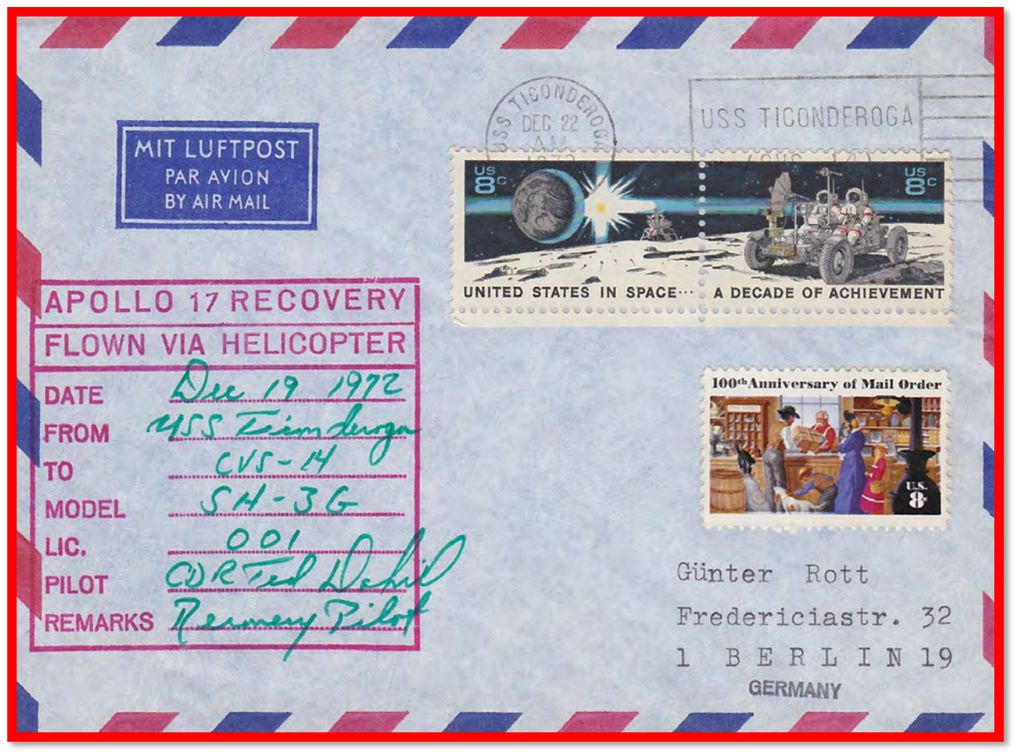
With a spectacular night launch for the last manned lunar flight artist Detlev van Ravenswaay has supplied the hand painted art while a rarely seen roller cancel defaces the stamps.

Ap-17 Kennedy Space Center Machine Cancel (Closed globe) **7 Dec 1972**



A crew-signed KSC Official launch cover. Joe Engle was slated to walk on the Moon with Cernan but the scientific community pressed to have Harrison Schmitt, a geologist, go instead.

Ap-17 *USS Ticonderoga Machine* Cancel **22 Dec 1972**



A number of envelopes (here overpaying the international airmail rate) were flown as a courtesy for collectors. The scarce ship Machine Cancel was used a few days later.

ASTP Kennedy Space Center Machine Cancel (Closed globe) **15 Jul 1975**

The Space Race was over. The Soviets could claim many impressive "firsts," but Americans were proud to have been first to walk on the Moon. Now leftover hardware (Ap-18) would be used to meet our former competitors.

ASTP Patrick Air Force Base Hand Cancel **15 Jul 1975**

Launch was always the most worrisome part of a mission. An off-the-pad abort would require immediate helicopter support. Here supplied by the Rescue Wing at Patrick Air Force Base.

ASTP *USS New Orleans* Hand Cancel **25 Jul 1975**

With philatelic requests excessive for an operational ship at sea some of the later Apollo mission requests were cancelled in Hawaii. This envelope was onboard and postmarked the day after the mission since the postal unit was closed the previous day.

Epilogue

What began with monkeys and capsules on military rockets evolved into astronauts piloting spacecraft to the Moon and back. Deke Slayton, selected in 1959 as one of the Mercury 7 to compete with the Russians, would final fly on the last Apollo mission that docked with the Soviets for a handshake in space.

NASA would turn away from capsules and focus on lifting bodies to create a reuseable winged spaceship capable of carrying a payload the size of a school bus to orbit followed by precision deadstick runway landings in Florida.

After 50 years America is headed back to the future. The shuttle is retired and there is a multinational race to the Moon. Commercial space companies are blossoming and it finally appears that with a decade humans with walk on Mars.