

SPACE EXPLORATION

NEW YORK | 29 NOVEMBER 2018



Sotheby's EST. 1744



Handwritten in black ink:
D. O. MAURO'S
STATION
NOV 12 1969

Handwritten in blue ink:
D
The Mauro Base
Edgar Mitchell
Jan 14
Feb 71

FRONT COVER
LOT 229
BACK COVER
LOT 146
THIS PAGE
LOT 151

MARE HUMORUM



SPACE EXPLORATION

FIRST LUNAR LANDING
TRANQUILITY BASE
J. Edgar Hoover
JULY 20, 1969

X
Descartes / Cayley Place
Charles M. D. ...
Apollo 16
April 1972

Argus
JUL/AUG 1971

VALLEY OF THE MOON



SPACE EXPLORATION

AUCTION IN NEW YORK
29 NOVEMBER 2018
SALE N09897
Session 1: 10:00 AM
Session 2: 2:00 PM

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AND OPEN TO THE PUBLIC**

Sunday 25 November
1 pm-5 pm

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10 am-5 pm

Tuesday 27 November
10 am-5 pm

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LOT 7

NOVI
EASTON

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LMP RCU PTT - MAIN
 PLSS mode sel sw - A
 Verify -
 PLSS warning tone - on (10 sec)
 RCU press window - 0 (OPS act-abort)
 RCU vent window - P (purge-abort)
 Verify PLSS 02 bottle press >85%
 Verify voice comm with CDR

NOTE

Unstow antenna of PLSS
 which transmits Garbled
 and/or loses TM.

NO MSFN Reception when PLSS mode sel in POS B

CDR Audio C/B - open
 Disc LM comm cable fm PGA and secure
 Connect PLSS electrical umbilical to PGA
 CDR audio C/B - close
 CDR audio panel -
 VHF A - off
 VHF B - off
 RCU PTT-MAIN
 PLSS mode sel sw - B
 Verify -
 PLSS warning tone - on (10 sec)
 RCU press window - 0 (OPS act-abort)
 RCU vent window - P (purge-abort)
 Verify PLSS 02 bottle press >85%
 Verify voice comm with LMP

LMP PLSS mode sel sw - B
 PLSS warning tone - on (10 sec)
 CDR PLSS mode sel sw - A
 PLSS warning tone - on (10 sec)
 Verify voice with LMP

FLOWN TO THE LUNAR
 SURFACE ON APOLLO XI

Buzz Aldrin

Basic Date June 16, 1969
 Changed June 30, 1969 B

LM-5

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KEY DATES IN THE HISTORY OF SPACE EXPLORATION

BEGINNING OF THE SPACE RACE

Launch of the first artificial satellite, the *Sputnik-1* (Oct. 1957)

FIRST HUMAN IN SPACE

Vostok-1 (April 1961): Yuri Gagarin†

FIRST WOMAN IN SPACE

Vostok-6 (June 1963): Valentina Tereshkova

FIRST SPACEWALK

Voshkod-2 (March 1965): Alexei Leonov

FIRST MOONLANDING & MOONWALK

Apollo 11 (July, 1969): **Neil Armstrong†** & **Edwin "Buzz" Aldrin, Jr.**

END OF THE SPACE RACE

Apollo-Soyuz Test Project-ASTP (July, 1975):

Apollo Crew: *CDR*: Thomas Stafford; *CMP*: Vance D. Brand; *DMP*: Donald "Deke" Slayton†

Soyuz Crew: *CDR*: Alexei Leonov; *FE*: Valeri Kubasov†

UNITED STATES MANNED MISSIONS & CREWS

PROJECT MERCURY (The "Mercury Seven")

Mercury Redstone-3 (May, 1961): *Pilot*: Alan Bartlett Shepard Jr. †

Mercury Redstone-4: (July, 1961): *Pilot*: Virgil "Gus" Grissom†

Mercury Atlas-6 (Feb. 1962): *Pilot*: John Herschel Glenn Jr. †

Mercury Atlas-7 (May, 1962): *Orig. Pilot*: Deke Slayton†; *Replacement Pilot*: Malcolm "Scott" Carpenter†

Mercury Atlas-8: (Oct. 1962): *Pilot*: Walter "Wally" Schirra, Jr. †

Mercury Atlas-9 (May, 1963): *Pilot*: Leroy Gordon "Gordo" Cooper, Jr. †

PROJECT GEMINI

Gemini 3 (April 1964): *CP*: Virgil "Gus" Grissom†; *Pilot*: **John Young** †

Gemini IV (June 1965): *CP*: James McDivitt; *Pilot*: Ed White†

Gemini V (August 1965): *CP*: Leroy Gordon "Gordo" Cooper, Jr.†; *Pilot*: **Charles "Pete" Conrad†**

Gemini VII (Dec. 1965): *CP*: Frank Borman; *Pilot*: James Lovell

Gemini VI-A (Dec. 1965): *CP*: Walter "Wally" Schirra†; *Pilot*: Thomas Stafford

Gemini VIII (March 1966): *CP*: **Neil Armstrong†**; *Pilot*: **David Scott**

Gemini IX-A (June 1966): *CP*: Thomas Stafford; *Pilot*: **Eugene "Gene" Cernan†**

Gemini X (July 1966): *CP*: **John Young**; *Pilot*: Michael Collins

Gemini XI (Sept. 1966): *CP*: **Charles "Pete" Conrad†**; *Pilot*: Richard F. Gordon, Jr.†

Gemini XII (Nov. 1966): *CP*: James Lovell; *Pilot*: **Edwin "Buzz" Aldrin, Jr.**

APOLLO PROGRAM

Apollo 1 (Jan. 1967): *CDR*: Virgil "Gus" Grissom†; *Sr. Pilot*: Edward White†; *Pilot*: Roger Chaffee†

Apollo 7 (Oct. 1968): *CDR*: "Wally" Schirra†; *LMP*: "Walt" Cunningham; *CMP*: Donn Eisele†

Apollo 8 (Dec. 1968): *CDR*: Frank Borman; *LMP*: James Lovell; *CMP*: William Anders

Apollo 9 (March 1969): *CDR*: James McDivitt; *LMP*: "Rusty" Schweickart; *CMP*: **David Scott**

Apollo 10 (May 1969): *CDR*: Thomas Stafford; *LMP*: **Eugene "Gene" Cernan†**; *CMP*: **John Young** †;

Apollo 11 (July 1969): *CDR*: **Neil Armstrong†**; *LMP*: **Edwin "Buzz" Aldrin, Jr.**; *CMP*: Michael Collins

Apollo 12 (Nov. 1969): *CDR*: **Charles "Pete" Conrad†**; *LMP*: **Alan Bean** †; *CMP*: Richard F. Gordon †

Apollo 13 (April 1970): *CDR*: James Lovell; *LMP*: Fred Haise; *CMP*: John "Jack" Swigert†

Apollo 14 (Feb. 1971): *CDR*: **Alan Shepard†**; *LMP*: **Edgar Mitchell†**; *CMP*: Stuart Roosa†

Apollo 15 (July 1971): *CDR*: **David Scott**; *LMP*: **James B. Irwin†**; *CMP*: Al Worden

Apollo 16 (April 1972): *CDR*: **John Young** †; *LMP*: **Charles M Duke**; *CMP*: Thomas "Ken" Mattingly

Apollo 17 (Dec. 1972): *CDR*: **Eugene "Gene" Cernan†**; *LMP*: **Harrison Schmitt**; *CMP*: Ronald Evans†

Moonwalkers in bold: †: Deceased; *CP*: Command Pilot; *CDR*: Mission Commander; *LMP*: Lunar Module Pilot; *CMP*: Command Module Pilot; *DMP*: Docking Module Pilot; *FE*: Flight Engineer

INTRODUCTION

We are thrilled to be holding Sotheby's second annual Space Exploration sale since our first two groundbreaking Russian Space History sales of 1993 and 1996, this year taking place just a month before the 50th anniversary of Apollo 8, the first mission to orbit the moon.

The top lot in our sale this year was originally sold in the 1993 Russian Space History Sale here at Sotheby's — a sample of lunar rocks returned to Earth by the Russian *Luna-16* unmanned mission (lot 63). It was the first time a piece of another world had ever been offered for sale to the public, and it remains to this day the only known documented sample of moon rocks to be available for private ownership. We look forward to once again offering this tremendously rare and historic artifact to the public.

The *Luna-16* lunar sample isn't the only item to originally come from Sotheby's Russian Space history sales of the 1990s, and we are excited to once again offer the Flown Voice-Recorder box from *Vostok-6*, the flight on which Valentina Tereshkova became the first woman in space (lot 59). The lot comes with audio recordings from the flight, giving us an exciting opportunity to eavesdrop on an important moment in spaceflight history.

Items from the Russian space programs are not the only stars in this sale, as we also have an exceptionally rare, full American space suit from the Gemini program (lot 112). Complete with inner pressure bladder, cover layer, helmet, gloves (made for Pete Conrad) and boots (made for Frank Borman), it is the only truly complete American spacesuit that we are aware of to have ever come to market.

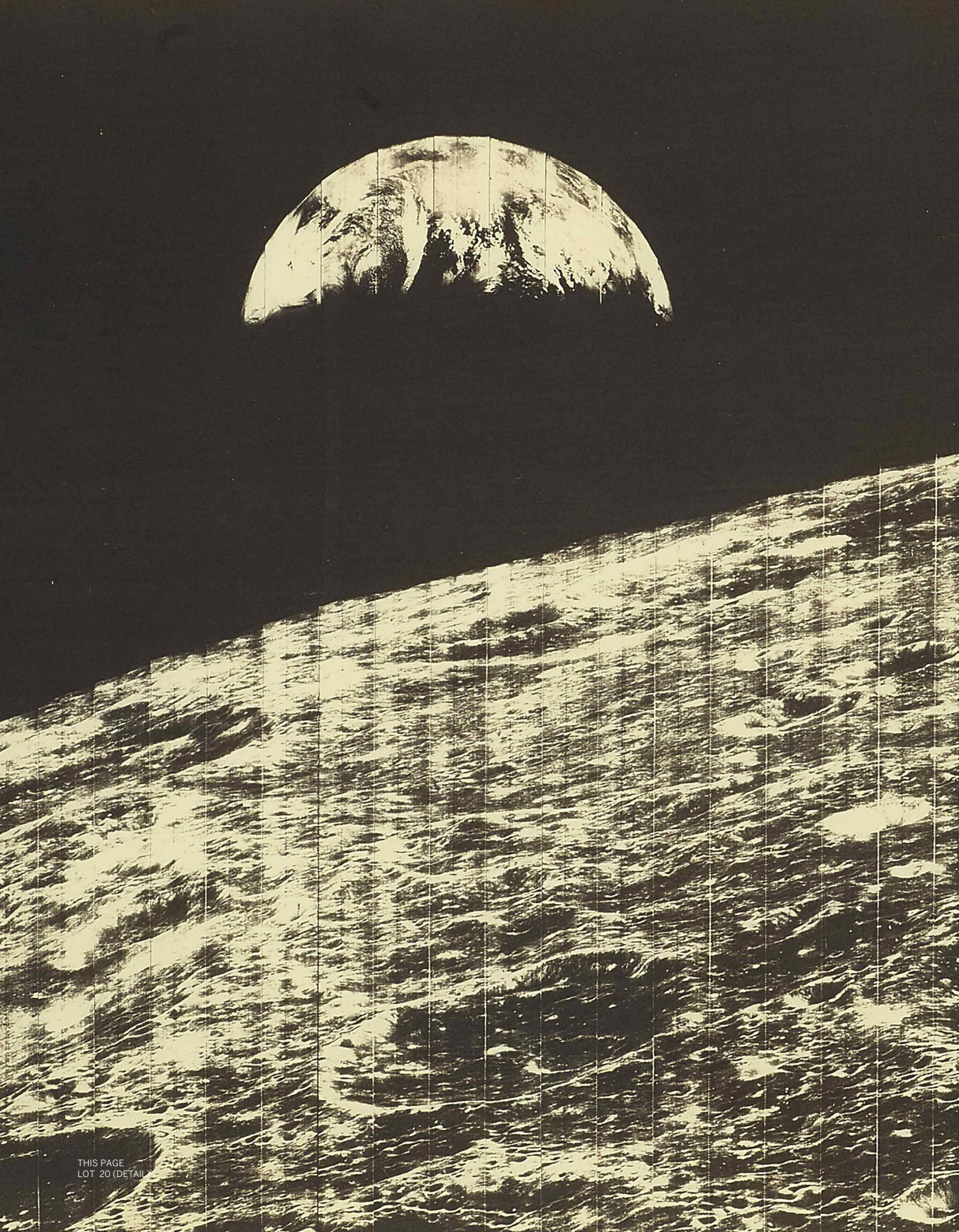
As we did last year, we will offer a number of very important flown artifacts from the Apollo missions, such as a Flown Apollo 11 Lunar Surface Checklist page (lot 180), containing the important steps performed by Armstrong and Aldrin as they prepared to become the first humans to set foot on the moon, and Apollo 16 Lunar Module Pilot Charlie Duke's Lunar Surface Navigation map, flown

by him to the lunar surface during the Apollo 16 mission (lot 260). In 2012, President Obama signed into law an act [H.R. 4158] that grants US astronauts who participated in the Mercury, Gemini, or Apollo programs through the Apollo-Soyuz Test Project “full ownership of and clear title to” artifacts that they received during participation in the space missions. It further “prohibits the federal government from having any claim or right to ownership, control, or use of (1) any artifact in the possession of such an astronaut; or (2) any such artifact that was subsequently transferred, sold, or assigned to a third party by such an astronaut.” Thanks to this legislation, collectors are able to own important historic artifacts such as these.

The sale is full of many other rare and wonderful items, from large size engineering models, to Russian space suits, to Lunar orbiter photography (lot 20 is a spectacular, nearly 8-foot wide print of the famous first photo of the earth from the moon, taken by the Lunar Orbiter I), to original artwork by artists such as Chesley Bonestell (lots 2-6), Andrei Sokolov (lots 8-11), and Apollo 12 Lunar Module Pilot Alan Bean.

It is with sadness that we note the passing of Bean this past May. After retiring from NASA in 1985, Bean devoted himself full time to his art. I had the great fortune to spend a day with him in his wonderful studio just a few years ago, where he shared with me not only his totally original artistic method, but also, wisdom of the kind one can only gain from stepping foot on another world. We are thrilled to be able to offer not one, but two original works by him, his famous “My Brother Jim Irwin” (lot 16), and a more recent discovery, “A Nice Place to Visit”, which appears to be one of the earliest known surviving paintings by Bean, and certainly, the first painting of the moon to be done by someone who was actually there (lot 15). Bean's colleagues, Apollo 12 Command Module Pilot Richard Gordon, Apollo 16 Commander John Young, and Skylab Pilot/STS-6 Commander Paul Weitz also passed in this last year. I regret not having had the good fortune to meet them. *Sic itur ad astra.*

Cassandra Hatton
VP, Senior Specialist
Books & Manuscripts / Science & Technology

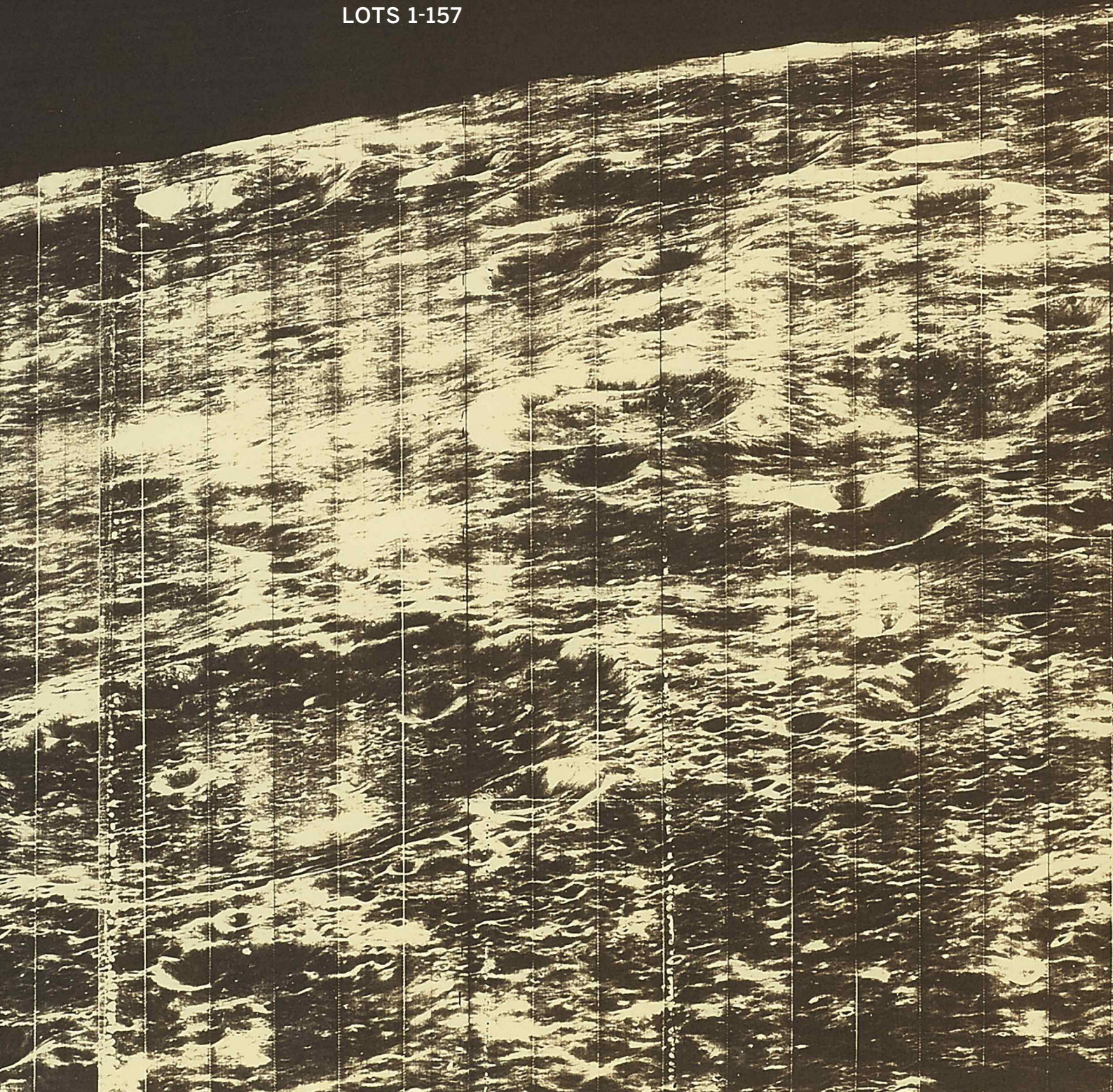


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LOT 20 (DETAIL)

SESSION ONE

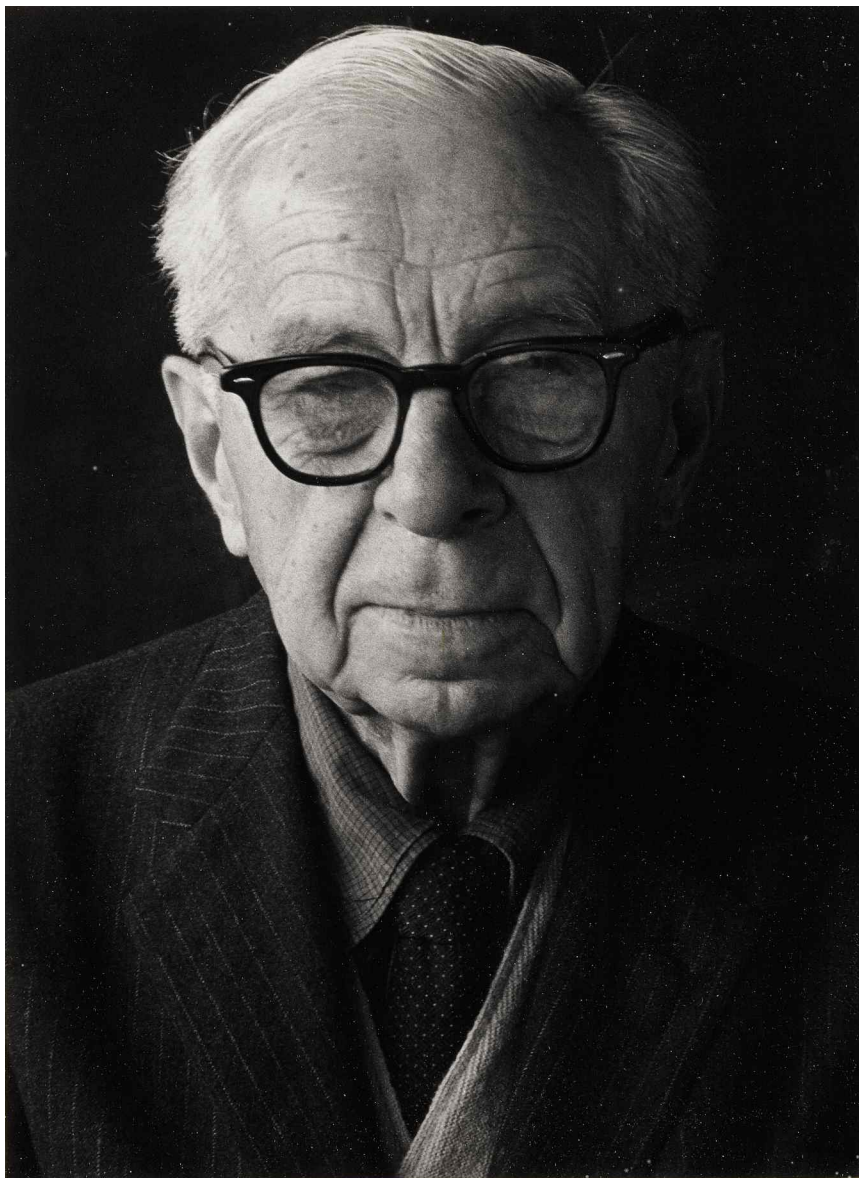
NEW YORK
THURSDAY
29 NOVEMBER 2018
10AM

LOTS 1-157



ARTISTIC REPRESENTATIONS OF SPACE

LOTS 1-17



1

1

BONESTELL, CHESLEY — ADAMS, ANSEL

Photographic portrait of Chesley Bonestell by Ansel Adams, circa 1980, signed by both Bonestell and Adams, with a typed letter signed from Adams to Frederick C. Durant III, 19 December 1983

Large silver gelatin photograph, 10 by 13 ½ inches, mounted, mount signed and inscribed lower left "To Bill Estler... at his suggestion!!!? Chesley" and at lower right "Ansel Adams". Matted, glazed and framed to 17 ½ by 21 ¼ inches [WITH]: ADAMS, ANSEL. Typed letter signed ("Ansel Adams") to Frederick C. Durant III, 19 December, 1983. 1 page, 215 x 280 mm, on Ansel Adams' letterhead with red and black monogram, discussing the publication of this portrait in Durant & Miller's book *The Art of Chesley Bonestell*.

THE ICONIC PORTRAIT OF THE FATHER OF SPACE ART. A classic image, signed by Ansel Adams, and then inscribed and given as a gift by Bonestell to Bill Estler, a close friend and curator of Bonestell's work. The letter from Ansel Adams to Frederick C. Durant III, the conservator of Bonestell's estate, in full:

"Dear Mr. Durant.

I am deeply appreciative of the handsome book on Chesley Bonestell's art which arrived a few days ago. I am proud to have my portrait of Chesley therein! It is a thrilling and timeless work and you and he are to be congratulated!

My best wishes,

Ansel Adams"

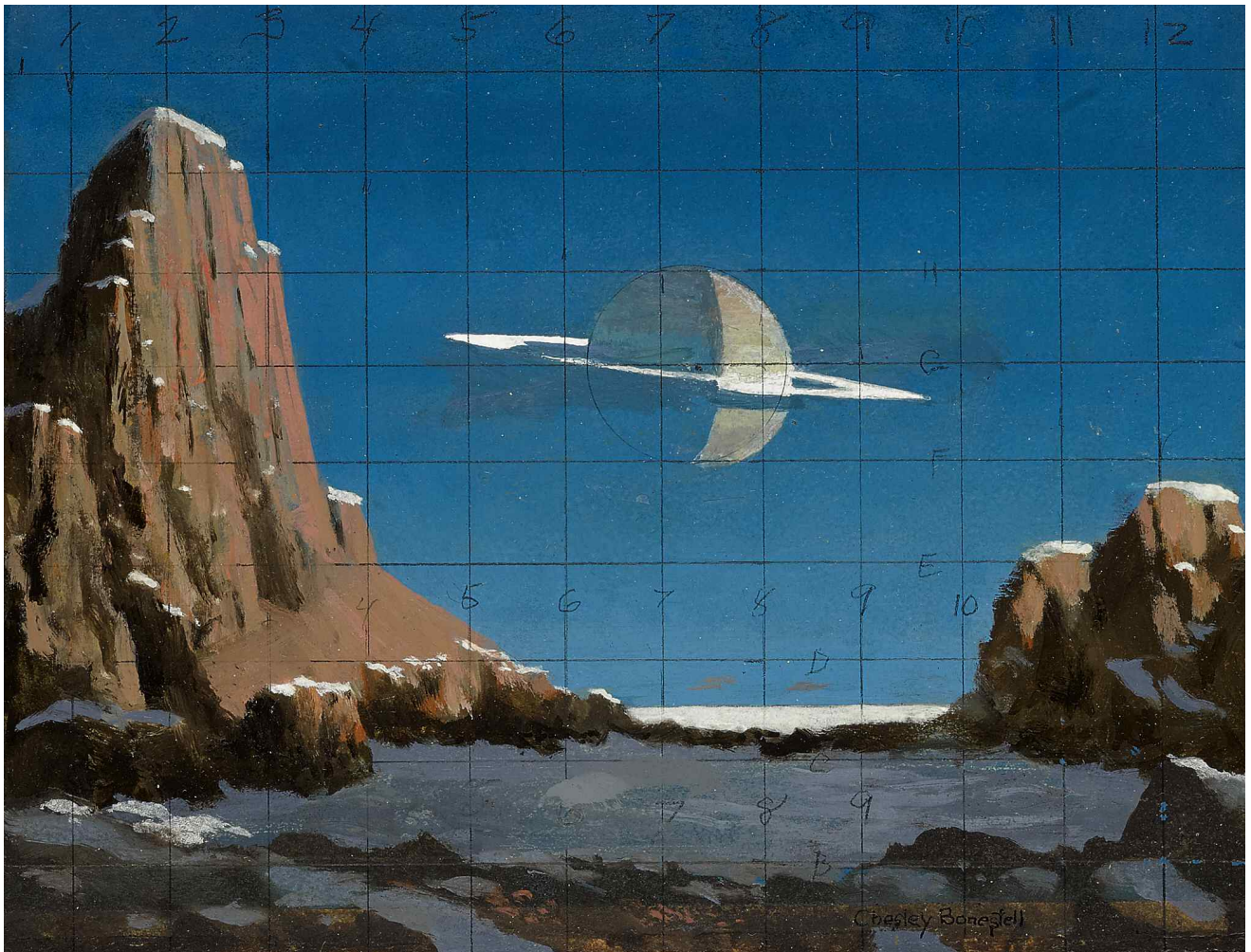
REFERENCES

ILLUSTRATED: Ron Miller & Fredrick C. Durant III. *The Art of Chesley Bonestell*, pp 98-99

PROVENANCE

Ex Collection of Frederick C Durant, III, by descent from Bill Estler. To Bill Estler from Chesley Bonestell.

\$ 5,000-6,000



2

2

BONESTELL, CHESLEY

Study for "Saturn Seen from Titan" circa 1959(?)

Oil and graphite on board, 7 by 9 inches (sight), signed "Chesley Bonestell" lower right in ink, 12 vertical and 9 horizontal graphite grid lines with alphanumeric numbering imposed over the composition, "Chesley Bonestell" stamped twice on verso. Matted and framed to 18 1/4 by 20 inches.

A STUDY FOR BONESTELL'S MOST ICONIC WORK: "SATURN AS SEEN FROM TITAN."

"Bonestell brought the edge of infinity out of the abstract and into the realm of direct experience." (Wachorst) Bonestell's *Saturn as Seen from Titan*, oft referred to as "the painting that launched a thousand careers," is probably the single most famous astronomical painting ever created. While Bonestell created hundreds of astronomical paintings in his lifetime, his 1944 *Saturn as Seen from Titan* was his favorite. It was his first published space painting, running in the May 29, 1944 issue of *Life* magazine, and it would launch an era in which his work would ignite countless imaginations; Bonestell's

fantastic depictions of worlds beyond would grace numerous issues of magazines such as *Life*, *Collier's*, *Scientific American*, *Fantasy & Science Fiction*, *Coronet* and *Pic* as well as Willy Ley's 1949 *The Conquest of Space*, and Von Braun & Ley's *The Exploration of Mars*, amongst many others. Bonestell gave the first version of *Saturn, Viewed from Titan* to Willy Ley, and it is now a part of the Bonestell Collection at the Adler Planetarium in Chicago. He would go on to create six other complete versions of this painting, including a version that he presented as a gift to his daughter, and the 360° panorama created for the planetarium of the Griffith Observatory in Los Angeles (memorialized in the 1955 film *Rebel Without a Cause*, starring James Dean).

Saturn was above all, his favorite subject. "... Bonestell was aesthetically captivated by Saturn, a subject he repeatedly returned to throughout his life. He painted numerous iterations of *Saturn from Titan* and its other moons. In 1949, for instance, he completed paintings of Saturn from Dione, in which the full body of Saturn is glimpsed from the mouth of a cave. His panorama for the Griffith Observatory,

completed in 1959, featured a prescient vision of the frozen landscape of Titan with Saturn low on the horizon. Throughout the 1960s, Bonestell reworked different views of Saturn from Titan, changing the lighting or subtly altering Titan's landscape... Bonestell returned to the subject of Saturn again and again, in various configurations, settings, and lighting." (Impey & Henry)

REFERENCES

Impey, Chris & Holly Henry. *Dreams of Other Worlds: The Amazing Story of Unmanned Space Exploration*, pp. 114-115; see Ley, Willy. *The Conquest of Space*, p 132, plate XXXVI; Miller, Ron & Frederick C. Durant III. *The Art of Chesley Bonestell*, pp 222-223 (final panorama); Miller, Ron. *The Evolution of a Space Icon*, <http://chesleybonestell.tumblr.com/post/90369676094/the-evolution-of-a-space-icon>; Wachorst, W. *The Dream of Space Flight: Essays on the Near Edge of Infinity*, p 58

PROVENANCE

Ex Collection of Frederick C. Durant, III

\$ 7,500-8,500



3

3

BONESTELL, CHESLEY

Study for "Across the Space Frontier" Depicting the Aristillus and Autolycus Craters, circa 1950

Pen, ink, and lithographic pencil on scratch board, 12 by 14 3/4 inches (sight), signed "Chesley Bonestell" lower right. Captioning in pencil to back of frame in Hulda Durant's hand: "Large Crater, Aristillus | Small Crater, Autolycus | Seen from elevation of 5 Miles | Original study for p. 51 'Across the Space Frontier' owned by Brit. Interplanet. Society (1952) + Collier's Mag. March 22, 1952. Also Collier's magazine series 'Man Will Conquer Space Soon' (1951-52 approx)." Matted and framed to 20 3/4 by 23 1/2 inches.

The present drawing is a study for an illustration in "Across the Space Frontier" (New York: Viking Press, 1952). The published illustration featured the addition of a so-called "round-the-moon ship" hovering 50 miles above the lunar surface over the Aristillus and Autolycus craters with the caption: "The first trip to our moon will be without landing, in a ship designed to travel in space online, taking off near the Space Station and returning to it."

REFERENCES

EXHIBITED: Monterey Institute for Research in Astronomy, Monterey, October 1991.

PROVENANCE

Ex Collection of Frederick C. Durant, III

\$ 5,000-7,500

4

BONESTELL, CHESLEY

"Halley's Comet, China 240 BC," 1960

Oil on artist's board, 16 by 15 inches (sight), signed "Chesley Bonestell" lower left in ink. Extended approximately 1 inch along the bottom edge with a joined piece of artist's board, small crease to upper left corner. Multiple labels and extensive captioning to frame's verso, including Chesley Bonestell's address label, with the autograph notations: "Halley's Comet, first recorded by both the Romans, and the Chinese in 240 BC" and "Painted for THE SOLAR SYSTEM by C. B. (Columbia Record Club Inc., New York, 1961) with commentary by Walter Cronkite." Matted and framed to 24 by 23 inches.

PROVENANCE

Ex Collection of Frederick C. Durant, III

\$ 7,500-8,500



4

Chesley Bonestell first encountered Halley's Comet as an undergrad at Columbia University in 1910: "He and friends from Columbia sat up all night on the Palisades overlooking New York, waiting to see the comet rise over the horizon ... When it finally appeared it was a spectacular sight — at least two degrees long, the width of four full moons — and got even brighter and larger as the year progressed." (Miller & Durant, 14-15).

Bonestell's encounter had a lasting impact on the budding artist, who executed a number of paintings depicting Halley's comet over the years. The present painting was produced in 1960 for the children's book "The Solar System" (see also lot 5). "[Bonestell] decided

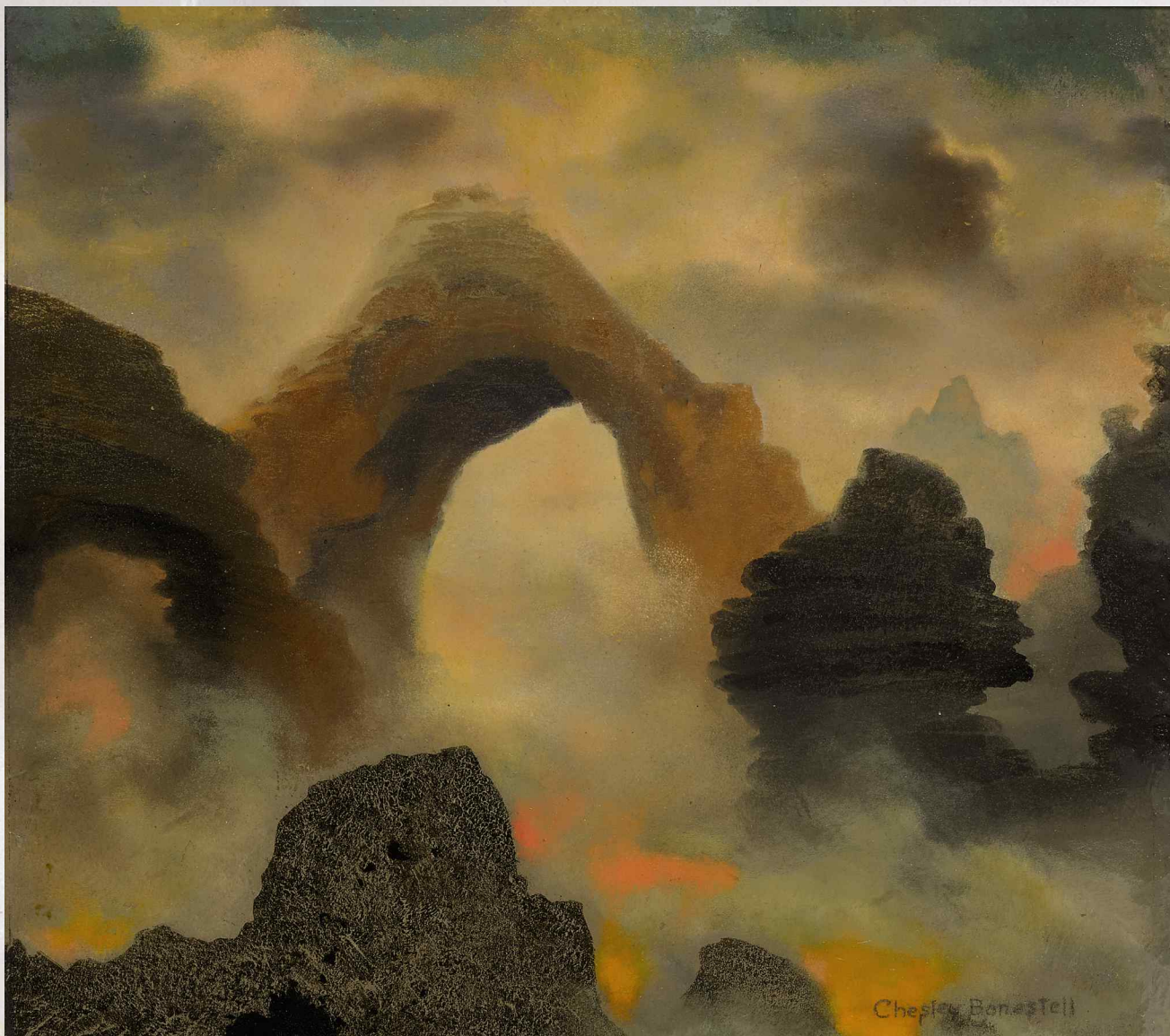
that, since the Chinese had some of the earliest written records of the comet, it would be appropriate to render the illustration in a Chinese style" (85), making this the first of Bonestell's works to be rendered in a Chinese style. He was reportedly working on another rendering of the astronomical phenomena shortly before his death in 1986, as Halley's Comet was once again blazing across the Earth's skies.

The verso of the painting, bears the handwritten note: "Halley's Comet. First recorded by both the Chinese and the Romans in 240 BC. Named for the English astronomer Edmund Halley (1656-1742) who saw it in 1682, studied it, and correctly predicted its return in 1757, this being

the first prediction ever made of a comet's return. Halley's Comet has an orbit bringing it toward Earth every 75-76 years. Chesley saw it in 1910 (April-May), and in 1986 (Jan). It was last seen in 1985-86 and will be visible again in 2061. Its long elliptical orbit takes it out to a point between the orbits of Neptune and Pluto, the two outermost planets of our solar system."

REFERENCES

ILLUSTRATED: Ron Miller & Fredrick C. Durant III. *The Art of Chesley Bonestell*, p 236. EXHIBITED: California Academy of Sciences, San Francisco, Centennial Exhibit, January-May 1988; Monterey Institute for Research in Astronomy, Monterey, November 1990.



5

5

BONESTELL, CHESLEY

"Fantasy of Venus," 1960

Oil on artist's board, 12 by 13 inches (sight), signed "Chesley Bonestell" lower right in pencil, graphite border to extreme edges of painting, captioning in pencil to back of frame in Hulda Durant's hand: "Fantasy of Venus | [Columbia Record Club CBS Panorama Series, 'The Solar System' Slide #12]". Matted and framed to 22 by 23 inches.

BONESTELL'S STRIKING DEPICTION OF THE VENUSIAN LANDSCAPE

As a ten year old, Chesley Bonestell was drawn to the sight of Venus in the morning and evening skies — in fact, it was one of the factors that lead the young artist to pursue his interest in astronomy. "Much later in life he recalled being able to see the planet clearly in the mornings when he woke up: 'I could see everything because there were no skyscrapers ninety years ago. And then I'd see Venus again in the evening, as a brilliant white star. It interested me so much that I got books on astronomy out of the library and read and read and read'" (Miller & Durant, 13).

The present work was created for Bonestell's 1961 publication, *The Solar System* (see also lot 4). Bonestell published two children's books in 1961 in conjunction with the Columbia Record Club: *The Solar System* and *Rocket to the Moon*. Each book was accompanied by a set of thirty-two color transparencies depicting the planets and their moons, as well as a 45-rpm record with a recording of Walter Cronkite acting as a tour guide through the solar system.

REFERENCES

ILLUSTRATED: Ron Miller & Fredrick C. Durant III. *The Art of Chesley Bonestell*, p. 147 as "Venus Fantasy" (ca. 1950) possibly an alternate version.

PROVENANCE

Ex Collection of Frederick C. Durant, III

\$ 6,500-7,500



6

6

BONESTELL, CHESLEY

"Fantasy of Neptune," circa 1960

Oil on artist's board, 11 ¾ by 13 inches (sight), signed "Chesley Bonestell" lower right ink, caption in pencil to back of frame in Hulda Durant's hand: "Fantasy of Neptune | 1961 | Oil on artboard | [Think prob. never published]". Matted and framed to 18 by 19 ½ inches.

Much like his early depictions of the lunar surface, Bonestell here imagines the Neptunian surface as being comprised of dramatic and mountainous peaks and valleys, albeit cast in a purple and green hue. While this depiction of solid land mass is a far cry from the gaseous nature of the planet's surface we understand today, Bonestell nods in the correct direction by painting a diffuse fog which winds throughout the landscape.

PROVENANCE

Ex Collection of Frederick C. Durant, III

\$ 5,000-6,000



7

MILLER, RON

"Saturn as Seen from Titan", 1972

Acrylic on board, 20 by 15 inches, twice signed "Ron Miller" lower right in pencil, inscribed on the verso in Miller's hand: "Saturn as seen from Titan, for Fred and Pip Durant from Ron Miller 1973." Matted and framed to 31 1/2 by 26 3/4 inches.

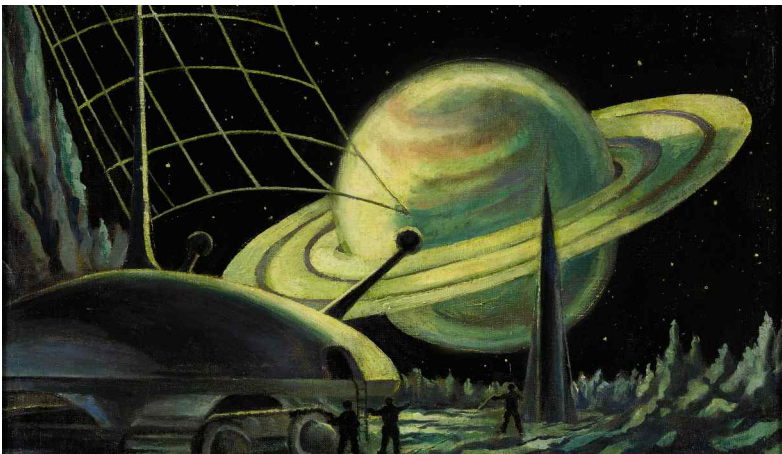
Ron Miller is an author and illustrator specializing in science, astronomy, science fiction and fantasy. Before becoming a freelance illustrator in 1977, Miller was the art director for the National Air and Space Museum's Albert Einstein Planetarium. His works are held in numerous private and public collections, including the Smithsonian Institution and the Pushkin Museum in Moscow.

In this painting, Miller takes his inspiration from the great space artist Chesley Bonestell and his iconic composition, "Saturn, as seen from Titan" (see lot 2). Miller has spoken widely of Bonestell as one of the great influences on his life and career, and is in turn widely regarded as an authority on Bonestell's work. Stylistically the works have much in common, but Miller's is set apart by its striking use of a deep red sky.

PROVENANCE

Ex Collection of Frederick C. Durant, III (gift from the artist, 1973)

\$ 2,000-2,500



8

SOKOLOV, ANDREI

"САТУРН НА ТИТАНЕ" [Saturn on Titan], circa 1959

Acrylic on canvas 27 1/2 by 16 (sight), framed to 33 by 21 1/2 inches.

A piece inspired by Chesley Bonestell's 1944 masterpiece "Saturn, Viewed from Titan." Andrei Sokolov is known as the premier Russian artist documenting space flight history. Born in Leningrad in 1931, Sokolov was originally trained as an architect and attended Moscow State University, where he developed an interest in science fiction. The flight of Sputnik had a profound effect on him, and he began to devote himself to the space genre because of the groundswell of public appeal of the nascent Soviet space age. He went on to become the chosen instrument of the USSR to graphically depict the Soviet space program - especially after forming a long lasting friendship with the Soviet national hero Alexei Leonov.

The present work depicts a mobile space station on Titan, Saturn's largest moon, with cosmonauts preparing to launch a research rocket to study the rings of Saturn.

PROVENANCE

ILLUSTRATED in part of a series of Soviet Space postcards printed by the Калининский полиграфкомбинат Главполиграф [Kalinin Printing House Glavpoligraf], circa 1965.

\$ 5,000-7,000

SOKOLOV, ANDREI

"НА ОРБИТЕ ВОКРУГ ЛУНЫ" [In Orbit around the Moon], circa 1971

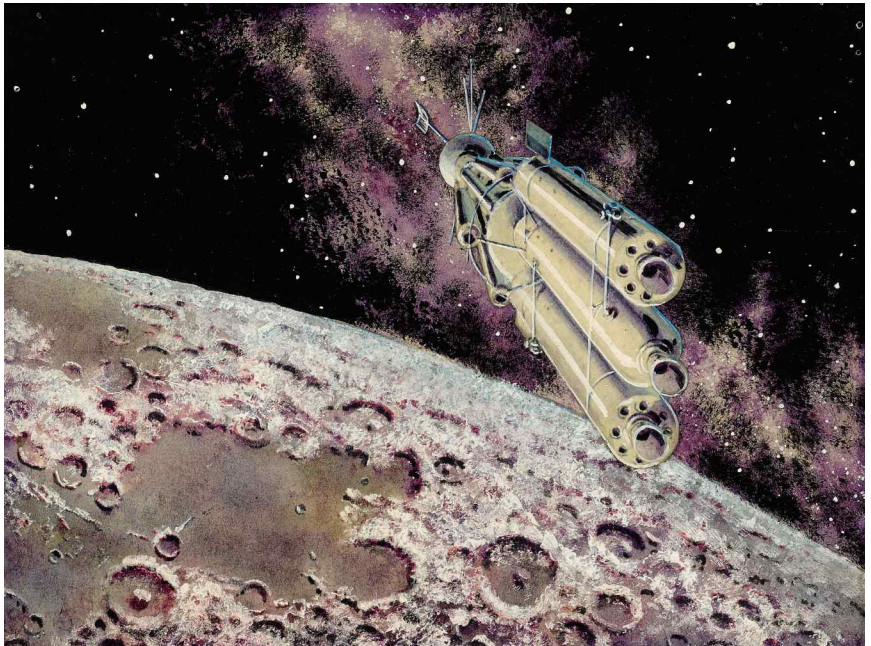
Acrylic on paper over orgalite with spacecraft overlaid onto background and glazed over, 11 by 14 ¼ inches (sight), matted, glazed and framed to 22 ½ by 26 inches. Verso signed in Russian "А К СОКОЛОВ" [A.K. Sokolov], with other notations in Russian, as well as some geometric sketches in pencil.

A conceptual piece, depicting a future spacecraft orbiting the moon.

REFERENCES

ILLUSTRATED: A. Sokolov *Star Ways*, 1971.

\$ 2,500-3,500



9

SOKOLOV, ANDREI

"ЛУННЫЙ МАРАФОНЕЦ" [LUNAR "MARATHON"], circa 1972

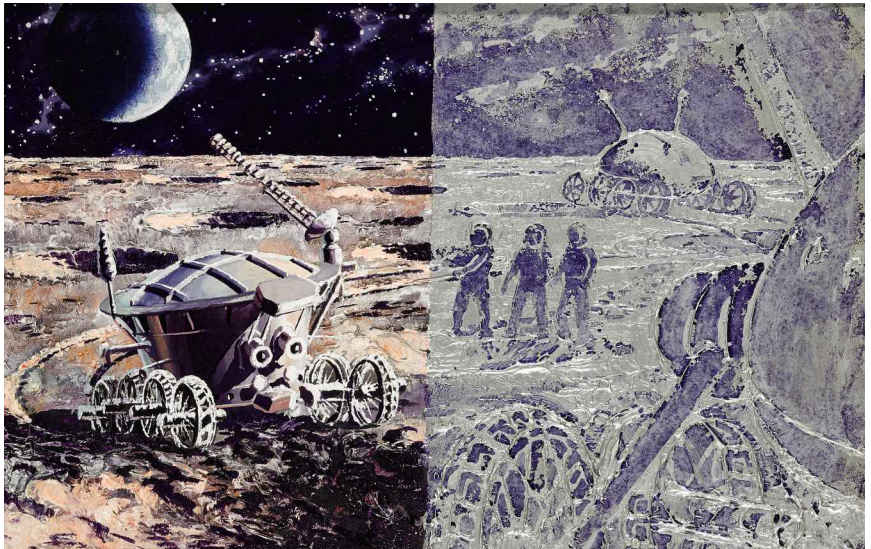
Acrylic on orgalite over board, 16 ¼ by 10 ½ inches (sight), matted, glazed, and framed to 28 ½ by 23 inches.

Reminiscent of the "УТРО ЛУНОХОДА-1" [MORNING OF LUNOKHOD-1] painting done together with cosmonaut Leonov in 1970, the present work juxtaposes past scenes of the Lunokhod-1 lunar rover with a future concept of what the moon could look like once man has set up colonies, and uses lunar rovers for everyday tasks. This painting was used for a stamp design in the USSR in 1972 (Michel No. 4046).

REFERENCES

ILLUSTRATED: Sokolov, *Space Expanses*, 1972

\$ 5,000-6,000



10



11

11

SOKOLOV, ANDREI

“НА СПУТНИКЕ МАРСА” [*On the satellite of Mars*], circa 1967

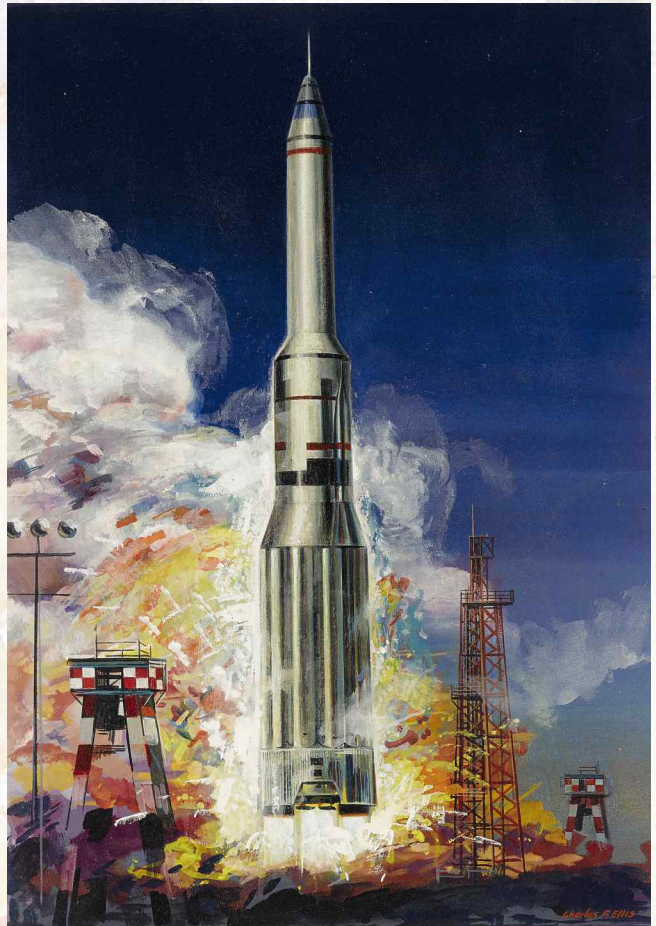
Acrylic on board, 15½ by 24 inches, matted, glazed, and framed to 27 by 35 inches.

A wonderful Soviet-era conceptual piece, painted just two years before the first lunar landing during the Apollo missions. Sokolov depicts two cosmonauts preparing for a rocket launch to the planet Mars, from a Cosmodrome set up on Phobos, the closer of Mars' two satellites.

REFERENCES

ILLUSTRATED: A. Sokolov & A. Leonov, *Ждите нас, звёзды!* [*Stars, wait for us!*], 1981.

\$ 4,500-5,000



12

12

ELLIS, CHARLES F.

Saturn A-1 Rocket, circa 1959

Acrylic and gouache on board, 17½ by 12½ inches (sight), signed “Charles F. Ellis” in ink at lower right. Matted and framed to 29 by 24 inches.

Charles F. Ellis (1925-2004) worked as a commercial artist for advertising agencies in the Philadelphia area, and his work was additionally featured in such publications as the *Saturday Evening Post*, *Jack and Jill Magazine*, and others. The present work is an imagining of an early Saturn A-1 rocket, shown here mid-launch.

The Saturn A-1 was projected to be the first version of Saturn I, and was to be used if necessary before the S-IV liquid hydrogen second stage became available. This rocket never flew, but all stages of the Saturn A-1 were used on successive launch vehicles.

PROVENANCE

Ex Collection of Frederick C. Durant, III

\$ 2,500-3,000

13

MCCALL, ROBERT

“Man’s First Voyage to the Moon.” Original Artwork for Dr. Wernher von Braun’s article “What the Apollo 8 Moon Flight Really Did for Us” in *Popular Science*, March 1969

Acrylic, gouache, and pen on board, 18 by 25½ inches, signed “McCall” on the lower left; some very minor wear to edges. Accompanied by a March 1969 issue of *Popular Science*, which is quite worn.

MCCALL’S DEPICTION OF THE APOLLO 8 MISSION AT A CRITICAL MOMENT — BREAKING FREE OF LUNAR ORBIT

\$ 6,000-9,000



13

Throughout his long career as an artist, Robert McCall was renowned for his work as a space-scene painter — Isaac Asimov once referred to him as “the nearest thing we have to an artist in residence in outer space.” McCall began working for NASA in 1962 when the agency began enlisting artists to promote their mission, and his work can be seen in assorted mission patches, commemorative postage stamps, the promotional artwork for Stanley Kubrick’s *2001: A Space Odyssey*, and on the south lobby wall of the National Air and Space Museum in arresting mural form. His paintings can

additionally be found at the Pentagon, the Air Force Academy, and the Johnson Space Center in Houston.

“Man’s First Voyage to the Moon” was used to illustrate an article by Dr. von Braun, “What the Apollo 8 Moon Flight Really Did for Us” in the March 1969 issue of *Popular Science*. McCall’s image depicts the flight path of Apollo 8 with the CSM manned by Frank Borman, Jim Lovell, and Bill Anders. The CSM is pictured at a critical moment in the mission (Christmas Day, 1968) as the spacecraft emerged from the dark side of the Moon — out of contact with Mission

Control — and began the Trans-Earth-Injection which would allow the spacecraft to exit lunar orbit and begin their journey back to Earth. Upon regaining contact with Mission Control, CMP Lovell exclaimed: “Please be informed, there is a Santa Claus.”

Apollo 8 marked a pivotal escalation in the Space Race, as Dr. von Braun articulates in this article: “*Our first manned expedition to another world, by performing a series of unprecedented space feats, has brought about the possibility of setting foot upon the moon this summer.*”



14

ROCKWELL, NORMAN

"The Final Impossibility: Man's Tracks on the Moon," 1969

Oil on panel, 8 by 12 ¾ inches (20.3 by 32.4 cm), signed "My best wishes to / F.C. Durant III sincerely Norman Rockwell" (lower left).

The present work is a study for *The Final Impossibility: Man's Tracks on the Moon* (1969, Collection of the National Air and Space Museum, Smithsonian Institution, Washington, D.C.), which Norman Rockwell painted as an illustration for the December 30, 1969 edition of *Look* magazine.

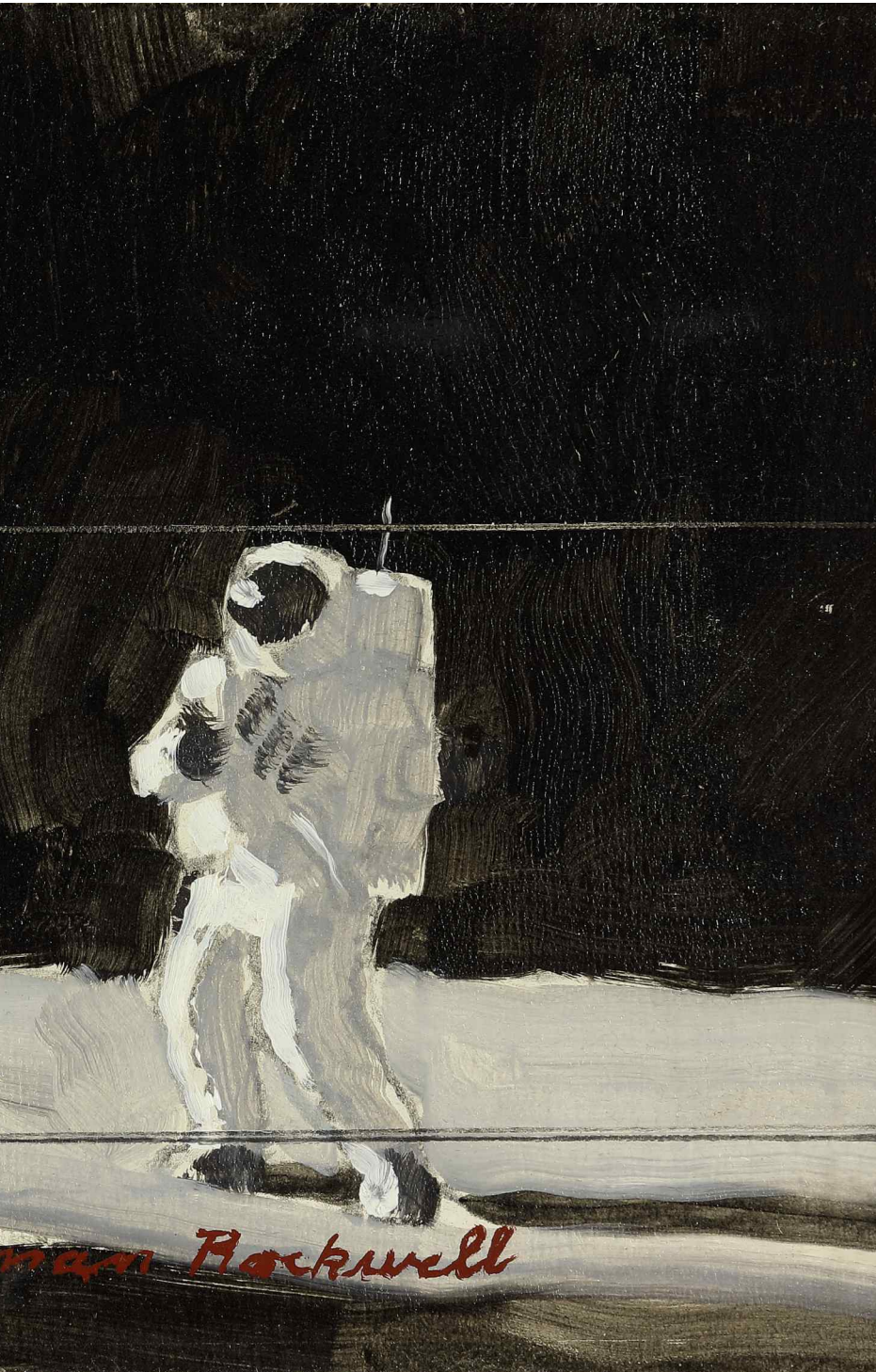
REFERENCES

ILLUSTRATED: Laurie Norton Moffatt, *Norman Rockwell: A Definitive Catalogue*, vol. II, Stockbridge, Massachusetts, 1986, no. S431d, pp. 716-717

PROVENANCE

Ex Collection of Frederick C. Durant, III

\$ 50,000-60,000





15

15

BEAN, ALAN

"A Nice Place to Visit", circa 1972

Acrylic over texturized modeling medium on board, 27½ by 21½ inches, signed "Alan Bean" lower left. Matted and framed to 29½ by 23½ inches.

THE FIRST PAINTING OF THE MOON BY SOMEONE WHO WAS ACTUALLY THERE, AND ONE OF THE EARLIEST KNOWN SURVIVING PAINTINGS FROM APOLLO 12 ASTRONAUT ALAN BEAN

When Alan LaVern Bean (1932-2018) passed away this year at the age of 86, he was remembered primarily for his part in the Apollo 12 mission as the fourth person to set foot on the moon, just four months after Neil Armstrong and Buzz Aldrin became the first moonwalkers. However, when the astronaut left NASA in 1981 he undertook a major life change and began to pursue painting full time (to the surprise of his astronaut peers). When his book, *Apollo. An Eyewitness Account by Astronaut/*

Explorer Artist/Moonwalker Alan Bean was published in 1998, he stated: "I think of myself not as an astronaut who paints, but as an artist who was once an astronaut."

Bean's unique artistic process is a direct reflection of his dual identity as an artist and an astronaut. In his mature period as an artist, Bean would prepare his canvas by covering a piece of aircraft plywood with a thick acrylic modeling medium. Bean would then texturize the surface of his canvas using a replica of the soles of his lunar boots, and the actual FLOWN metal geology hammer that accompanied him to the lunar surface on Apollo 12 ("these tools, which once helped me explore the moon, are now putting the moon's stamp on my paintings.") In his later paintings, he would also incorporate three additional elements into the modeling medium: FLOWN pieces of heatshield and gold kapton foil from the Apollo 12 spacecraft, and a small piece of one of Bean's flown emblems embedded with traces of moon dust (see lot 16).

VERY FEW PAINTINGS PRIOR TO 1981 SURVIVE, AND AS SUCH THIS EARLY WORK OFFERS A RARE GLIMPSE INTO BEAN'S FORMATIVE YEARS AS AN ARTIST. The painting at hand deviates from the process described above in several ways: Bean is not yet incorporating the moon boot texture in his modeling medium, nor does he utilize aircraft plywood, emblems, or spacecraft material. It is, however, an early articulation of his desire to provide his Earthly viewers with a connection to the rough and unpolished lunar world that the Apollo astronauts experienced firsthand.

REFERENCES

Bean, Alan. *Apollo. An Eyewitness Account by Astronaut/Explorer Artist/Moonwalker Alan Bean*, pp. 154-155

PROVENANCE

ACQUISITION: Houston Symphony Orchestra Charity Auction, circa 1972-73

\$ 20,000-30,000



16

16

BEAN, ALAN

“Mr Brother, Jim Irwin”, copyright date 1993, completed 1999

Acrylic over modeling medium on aircraft plywood, 18 by 14 ¼ inches, signed “Alan Bean © ‘93” lower right, modeling medium texturized with a moon boot and Bean’s flown geology hammer, with tiny FLOWN bits of the Apollo 12 spacecraft (heatshield and gold kapton foil) and small piece of one of Bean’s flown emblems embedded with traces of moon dust mixed into the medium. Three labels affixed to frame verso with information and care instructions from the artist. Matted and framed to 26 ¼ x 21½ inches.

A BEAUTIFUL ORIGINAL PAINTING BY THE FOURTH MAN TO WALK ON THE MOON, DEPICTING FELLOW MOONWALKER, JIM IRWIN, OF APOLLO 15

This striking painting by Alan Bean — the only artist to have ever walked on the moon — depicts Apollo 15 LMP and fellow moonwalker

Jim Irwin in soft blue and purple hues with the bright lunar landscape reflected in his helmet. Executed in his characteristically sculptural style, this painting incorporates all of the most important technical characteristics of Bean’s work (see the preceding lot for an in-depth discussion of Bean’s technical process).

Glancing light reveals that the modeling medium has been texturized with a replica of the soles of his lunar boots, while close inspection of the chest of the spacesuit reveals a small FLOWN emblem fragment with traces of moon dust embedded within the modeling medium and acrylic. By incorporating particles from the Apollo 12 spaceship, and moon dust-stained mission patches into his artwork, Bean sought to create a tangible connection between his audience and his extraterrestrial subject matter.

Bean and Irwin had a close working relationship and friendship. In his book Bean speaks poignantly about his relationship with Irwin,

who was the first (and youngest) moonwalker to die at the age of 61: *“We used to see each other at astronaut reunions or accidentally in airports from time to time, and when we parted company, he would put his arm around me and say, “Well, I hope I see you again soon, brother.” It was a surprise the first time as that isn’t the way one astronaut talks to another and I didn’t know what to say. After this happened a few times, I wanted to reply because I felt very close to him but I just couldn’t make myself say those words. Since I left the space program and became an artist, I think differently about myself and life. I miss Jim a lot and I understand how I miss him and respect him as the brother I never had.”* (Bean, p. 152)

REFERENCES

ILLUSTRATED: Bean, Alan. *Apollo. An Eyewitness Account by Astronaut/Explorer Artist/Moonwalker Alan Bean*, pp 152-153

\$ 30,000-50,000



17

17

SAUERWEIN, G.

"UFO Abduction outside Vredenburg S. Africa (one survivor)", May 21, 1951

Acrylic on artist's board, 18 by 15 inches,
captioned to verso in pencil, with comment
"Color & Comp" perhaps meaning color and
composition.

A most unusual piece depicting a UFO
abduction. Vredenburg is a town in the Western
Cape province of South Africa, and the last
name of the artist is an Afrikaans name. While
it is possible that the piece can be taken at
face value, another interpretation is that it
is a commentary on apartheid, as all of the
abductees are black, and Vredenburg would
have indeed begun to undergo apartheid in
1951.

\$ 2,500-3,500

LUNAR, PLANETARY, AND DEEP SPACE PHOTOGRAPHY

LOTS 18-32

18

MAURICE LOEWY AND PIERRE PUISEUX

Photographie Lunaire, Maginus — Orontius — Hell, Observatoire de Paris, 4 March 1895

Large photographic print, 31 by 31 inches (sight), bearing the printed captions in the margins: "Grand Equatorial Coude, Observatoire de Paris, Diamètre Lunaire 2m77, Agrandissement 16, 16 fois, 1895 Mars 4, 6h 6 t.m. Paris." Horizontal tear through center, which appears to be repaired or otherwise reinforced — not examined out of frame. Matted and framed to 43 by 43 inches.

A MAGNIFICENT OVERSIZED PRINT OF A PLATE FROM LOEWY AND PUISEUX'S LUNAR ATLAS

Loewy and Puisseux's "L'Atlas photographique de la Lune" was one of the most ambitious astronomical projects of the 19th century. In 1891 Maurice Loewy, director of the Paris Observatory, oversaw the installation of the large coude equatorial telescope. Together with his colleague Pierre Puisseux, he used it to create a sweeping photographic atlas of the Moon, published in parts from 1896 to 1910. When Loewy died in 1907, Puisseux, assisted by Charles Le Morvan, completed the series of photographs. This body of work would go on to become the definitive basis for lunar geography for over half a century — in fact it was only with NASA's Lunar Orbiter program in the 1960s that substantially better images were obtained.

\$ 5,000-6,000



18

19

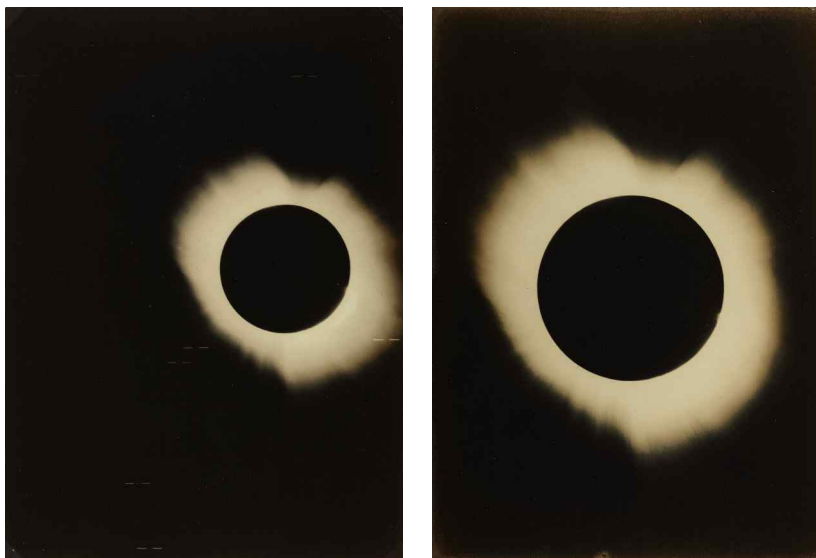
[SOLAR ECLIPSE 29 MAY 1919]

Two photographs after the glass plate positive executed by Sir Arthur Eddington's expedition in Sobral, Brazil during the 29 May 1919 eclipse

Two photographic prints (each 5 by 7 inches) on textured paper. Image lifting at edges of one print with accompanying minor losses.

THE PHENOMENON THAT HELPED PROVE EINSTEIN'S THEORY OF RELATIVITY. The expedition, organized by Sir Arthur Eddington of the Royal Greenwich Observatory, used a series of 8 photographs taken during the eclipse to measure the deflection of star light adjacent to the Sun as predicted by Einstein in his Theory of Relativity.

\$ 2,000-3,000



19



20

20

LUNAR ORBITER I

Man's First Look at the Earth from the Moon, 23 August 1966

Large photographic print, 35½ by 90½ inches, Lunar Orbiter images I-102H-1 & 2, some scattered minor creasing and discoloration, matted and framed to 47 ¾ by 102½ inches.

A MAGNIFICENT OVERSIZED RENDERING OF THE FIRST PHOTOGRAPH OF THE EARTH FROM DEEP SPACE

During August 1966 through August 1967, NASA sent five Lunar Orbiters to systematically image the Moon. Orbiters I-III had the objective of imaging 20 potential landing sites, and were flown at low inclination orbits. Each Orbiter was equipped with a dual-lens Kodak camera (one medium resolution wide angle 80 mm lens and one 610 mm high resolution telephoto lens), a film-processing unit, a readout scanner and a film handling apparatus. Each lens then placed its exposures on a single roll of 70 mm film.

This image, taken by Lunar Orbiter I on 23 August 1966 is perhaps the most famous – our very first view of Earth as seen from the Moon,

taken from a vantage point of 730 miles above the far side. The image bears lines that are characteristic of all Lunar Orbiter images, and are a by-product of the complicated process used to create them.

Beyond the technical importance of the Lunar Orbiter program, these first images of the planet viewed in its totality had a profound impact on the cultural landscape back on Earth. Newspapers heralded the occasion as a landmark, “a sense of wonder touches our access to a phenomenon denied all previous generations” (*The New York Times*, 27 August 1966). Buckminster Fuller had previously observed that people perceived the Earth as flat and infinite, and that the root of their misbehavior could be traced back to this restricted perception of our environment. “Man’s First Look at the Earth from the Moon” was the first in a series of NASA produced images that would create an important shift in how humankind imagined their place in the universe.

\$ 25,000-35,000

21

LUNAR ORBITER I

Triptych Showing Man's First Look at the Earth from the Moon, 23 August 1966

Three large silver gelatin prints, each 16 by 20 inches, bearing the printed text, “*Lunar Orbiter I High-Resolution Frame 102H. Far Side*” and “*Part [A, B, and C]*” respectively. Part C significantly toned in comparison to the other prints, minor handling wear to all three prints.

REFERENCES

See Bowker & Hughes, *Lunar Orbiter Photographic Atlas of the Moon*; Illustrated in: Cortright, *Exploring Space with a Camera*, pp 84-85.

\$ 10,000-15,000

LUNAR ORBITER PROGRAM

A Collection of 13 Vintage Lunar Orbiter Prints, Including "The Picture of the Century" — Oblique View Into the Heart of Crater Copernicus, 24 November 1966

13 silver gelatin photographs, including Lunar Orbiter images I-007-008-Med, II-075-Med, II-162-H2-H3, and others, each approximately 8 by 11 inches, two prints bearing the identifiers: "Lunar Orbiter II - 8. 11-22-66 | 2A239336" and "2A239404" respectively, one verso bearing the stamp: "Photo By The Boeing Company | Notice | The distribution of this photograph outside the Boeing Company is limited to those persons having a need to know as defined under the applicable contract". Some creasing and handling wear to a few prints.

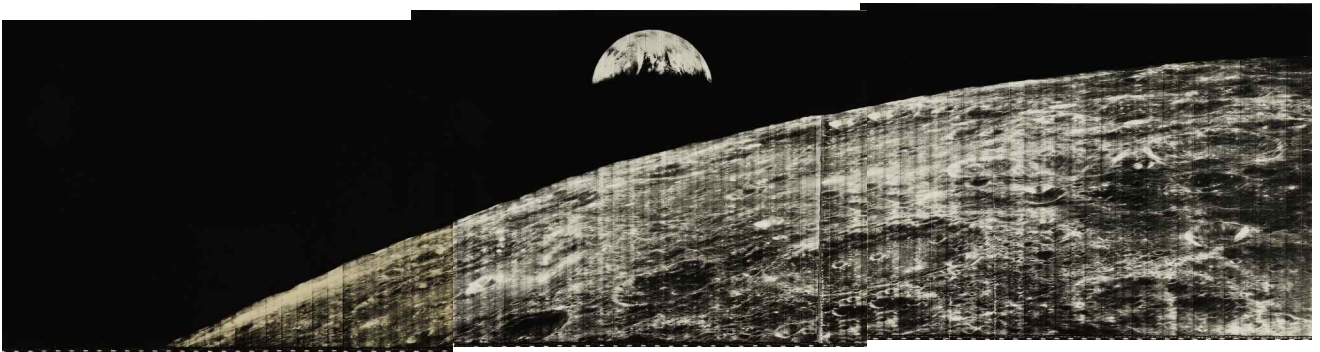
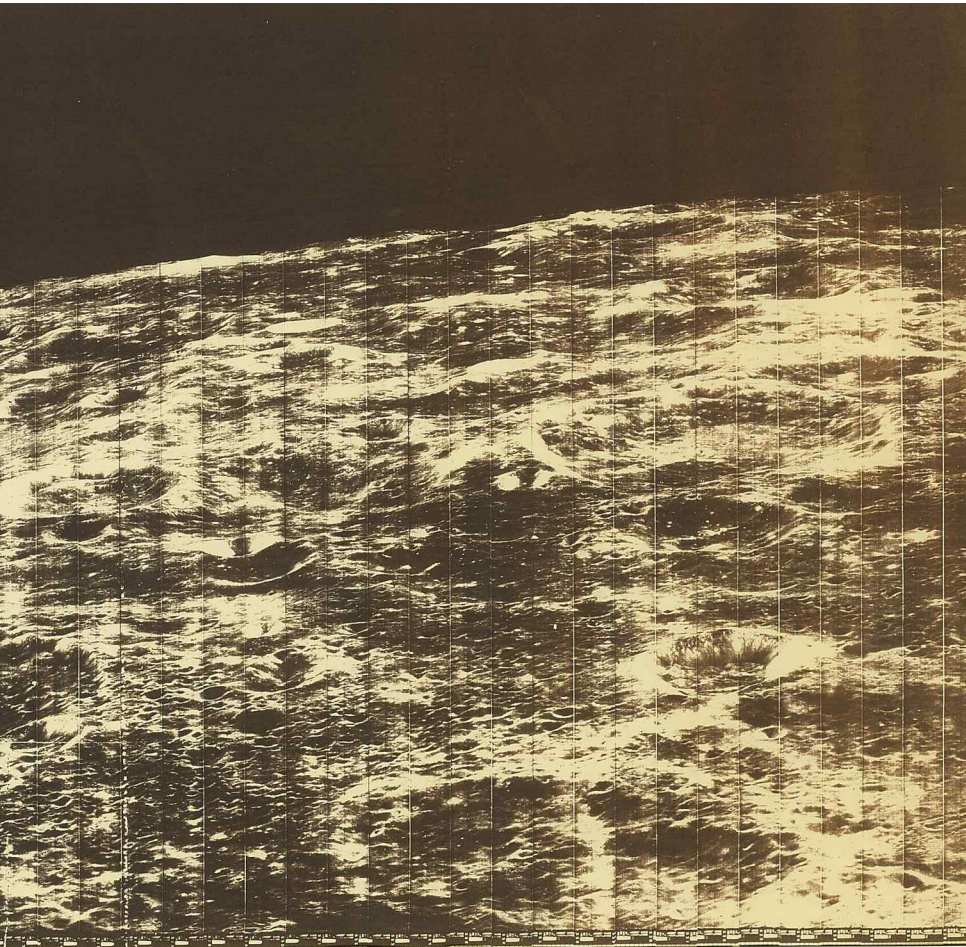
A STRIKING COLLECTION OF VINTAGE LUNAR ORBITER PRINTS SHOWING THE MOON'S TOPOGRAPHY

Included in this lot is the image that was hailed by *Life* magazine as "The Picture of the Century," this image was taken from approximately 28.4 miles above the lunar surface, from a vantage point of 150 miles south of the crater. Until this photo was taken, the few images that had been taken of the lunar surface were from a perpendicular angle - this was the first to be taken from an oblique angle, and thus the first ever view of the rugged surface, with its mountains and valleys.

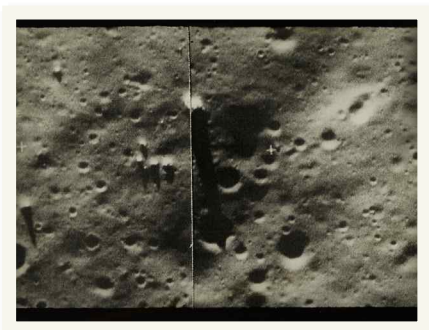
REFERENCES

See Bowker & Hughes, *Lunar Orbiter Photographic Atlas of the Moon*

\$ 4,000-6,000



21 (ASSEMBLED FOR REFERENCE)





23



24 (ASSEMBLED FOR REFERENCE)

23

LUNAR ORBITER IV

THE NEAR SIDE OF THE MOON, 24 MAY, 1967

Telephoto panorama, 66½ by 18½ inches, comprising 10 silver gelatin prints joined of Lunar Orbiter image IV-177H 1-3. Printed on vintage Kodak watermarked paper.

A dramatic view of the lunar surface, with the Moon's curve visible to the right, the Mare Crisium to the left, and craters Bernoullii, Gauss, and Hooke amongst many others.

Lunar Orbiter IV's primary objective was to map the near side of the Moon in high resolution. A 40 by 45 foot mosaic was created at NASA's Langley Research Center using the images taken by the Lunar Orbiter IV, and visitors were allowed to stand or crawl over it. The mosaic was used to determine the sites to be photographed in higher resolution by the Lunar Orbiter V.

REFERENCES

See Bowker & Hughes, *Lunar Orbiter Photographic Atlas of the Moon*; Cortwright, *Exploring Space with a Camera*, pp 108-113

\$ 5,000-7,000

24

LUNAR ORBITER V

THE FAR SIDE OF THE MOON, 6 AUGUST 1967

Telephoto panorama, made up of three silver gelatin contact prints, each 23¾ by 20 inches, of Lunar Orbiter image V-015H 1-3. The total length of the triptych: 181.5 cm (71.5 inches)

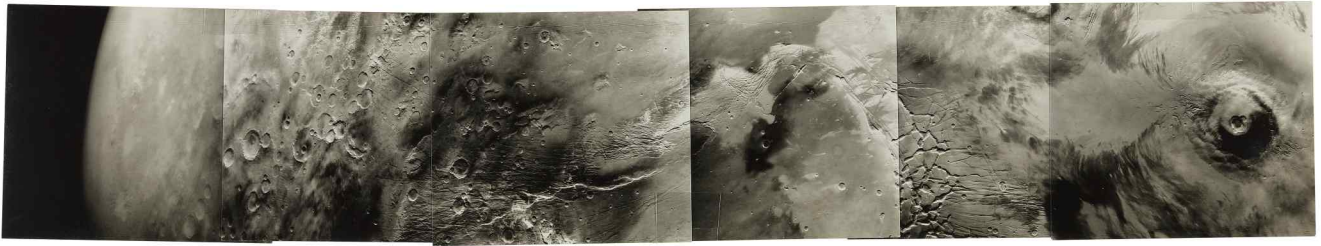
Three Lunar Orbiter prints, together forming a triptych with a dramatic view of the lunar surface, the moon's curve visible on both sides.

Lunar Orbiter V was the final Lunar Orbiter mission. Its primary objective was to provide high-resolution photographs of potential landing sites for the Apollo missions, as well as sites that were high-priorities sites for scientific research. It took both high and medium resolution photographs of 24 sides on the far side of the moon, and 45 sites on the near side.

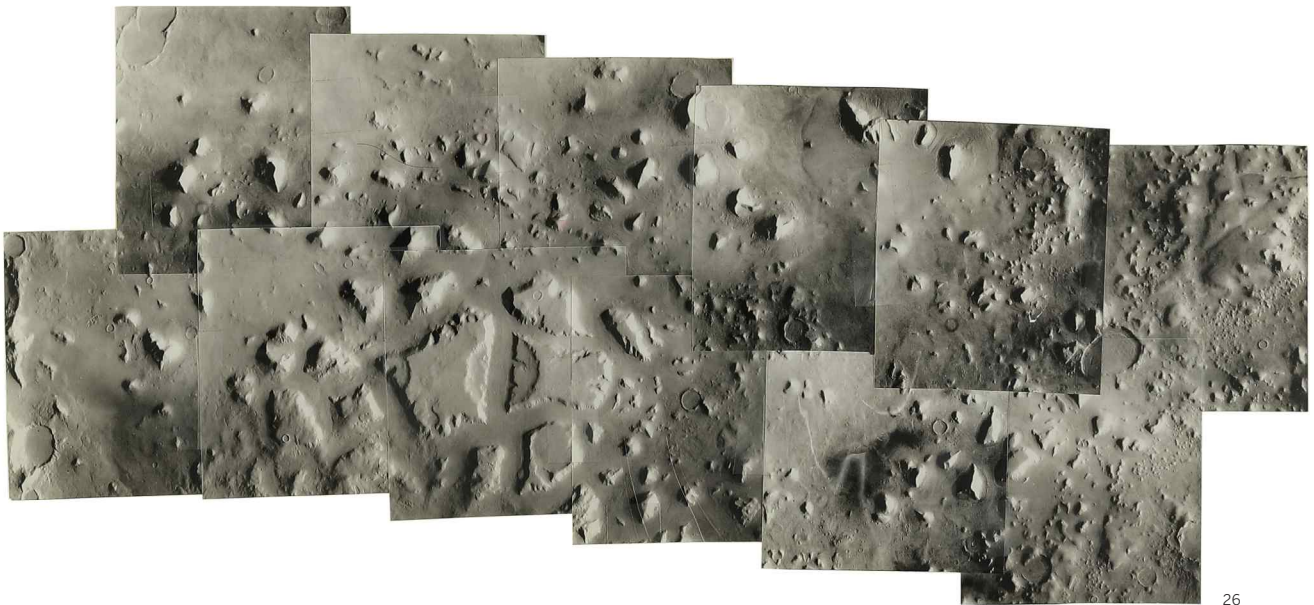
REFERENCES

See Bowker & Hughes, *Lunar Orbiter Photographic Atlas of the Moon*; Cortwright, *Exploring Space with a Camera*, pp 114-125

\$ 5,000-8,000



25



26

25

VIKING ORBITER

Hand Mosaic of Mars, circa 1979

6 silver gelatin prints mounted, PICNOs 204S 52-62 (even only), 3½ by 18¾ inches overall.

Depicts Olympus Mons, the largest volcano in the solar system.

\$ 3,000-3,500

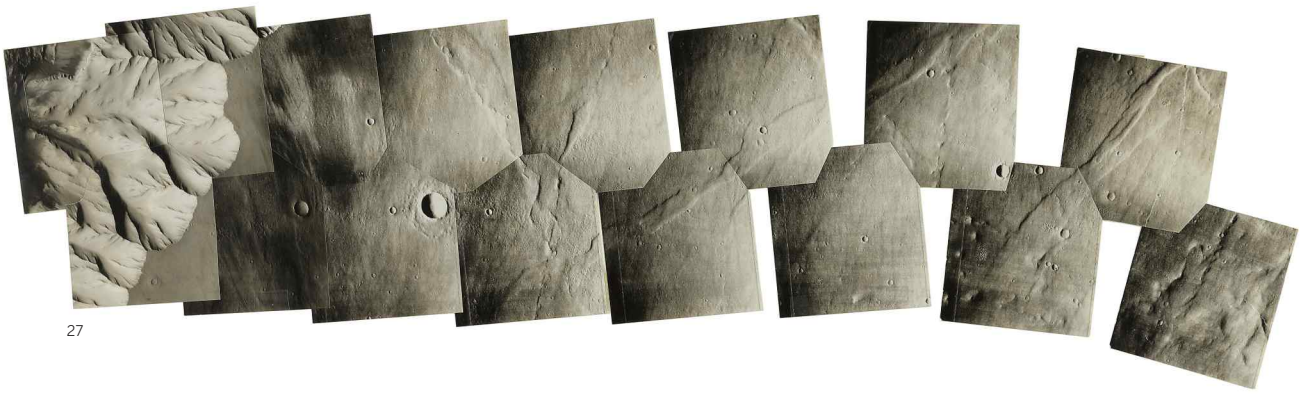
26

VIKING ORBITER

Hand Mosaic of Mars, circa 1979

12 silver gelatin prints mounted, PICNOs 269S 21-32, 8½ by 18½ inches overall. Small piece of surface coating present but lifting from paper of one print, approximately 5 by 10 mm.

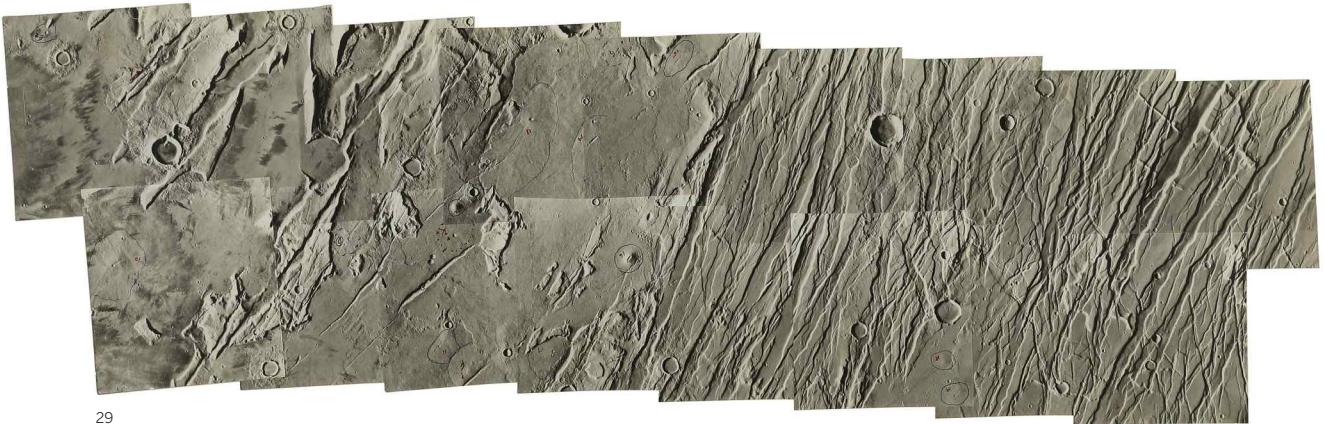
\$ 3,500-4,000



27



28



29

27

VIKING ORBITER

Hand Mosaic of Mars, circa 1979

16 silver gelatin prints mounted, PICNOs 776A 61-76, 8 by 29 inches overall. Some minor creasing and discoloration to a few prints, hairline tear vertically through one.

\$ 4,000-4,500

28

VIKING ORBITER

Hand Mosaic of Mars, circa 1979

35 silver gelatin prints mounted, PICNOs [Unidentified] 2-36, approximately 8 by 48½ inches overall, small loss to one print, sympathetically colored in with graphite.

\$ 6,000-7,500

29

VIKING ORBITER

Hand Mosaic of Mars, circa 1979

17 silver gelatin prints mounted, PICNOs 627A 21-37, 10 by 34 inches overall, with scientific plotting in red and blue ink to 9 prints, some light creasing to a few prints.

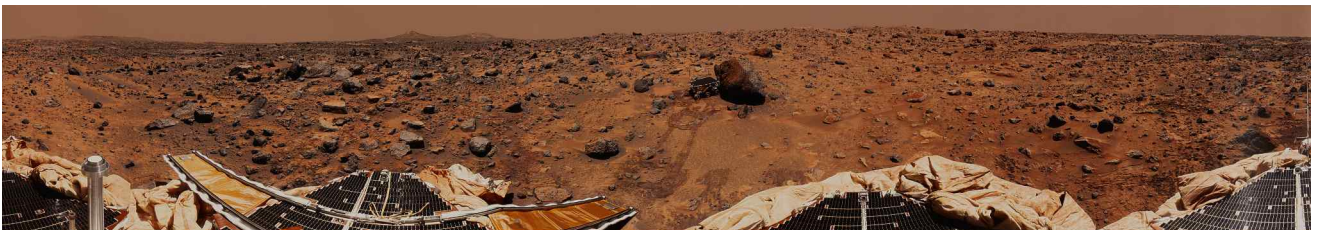
\$ 5,000-6,000



30



31



32

30

VIKING ORBITER S RINGS 35004.22 0026S1+002, AND S RINGS 34996.46 1370S1+001

A mosaic of 124 silver-gelatin prints representing Saturn's rings, photographed by Voyager 1, 1979

124 black and white silver gelatin prints (each: 3½ by 3½ inches, mosaic approximately 36¾ by 30 inches overall), with NASA ID numbers S RINGS 35004.22 0026S1+002, and S RINGS 34996.46 1370S1+001 attached, arranged on board; some rubbing or lifting to a few corners.

A striking mosaic, collectively depicting Saturn's rings, captured by Voyager 1.

\$ 3,000-5,000

31

DAVID MALIN

"The Orion Nebula, M42/M43", 1992
Vintage chromogenic print (14 by 11 inches).
Signed by artist in pen on verso of print.

The Orion Nebula (also known as Messier 42, M42, or NGC 1976) is a diffuse nebula situated south of Orion's Belt. Three five-minute exposures were used to make this picture using the Anglo-Australian Telescope; the color negative was made in January 1992 from three separate black and white plates taken on 1 February 1979.

PROVENANCE

Acquired directly from artist by present owner.

\$ 1,000-1,500

32

MARS PATHFINDER

Panoramic View of the Surface of Mars from Pathfinder

Color photographic print of composite image, 9¼ by 50½ inches, printed caption to lower right margin "Photo NASA/JPL/Caltech©", panoramic scene of the surface of Mars, taken by Imager for Mars Pathfinder (IMP) from 1997, rolled.

Launched on 4 December 1996, Pathfinder arrived at Mars on 4 July 1997. From landing until the final data transmission on 27 September, Pathfinder returned 2.3 billion bits of information, including more than 16,500 images from the lander and 550 from the rover. Pathfinder paved the way for future Mars exploration rovers, including Spirit and Opportunity in January 2004, and Curiosity in August 2012. To date, Opportunity and Curiosity are still in operation on the Martian surface, returning data to Earth.

\$ 2,000-3,000

AMERICAN MODELS AND HARDWARE

LOTS 33-51



33

33

REDSTONE ARSENAL

Collection of blueprints and related design material from the Redstone Arsenal, circa 1959-1985

LOT INCLUDES:

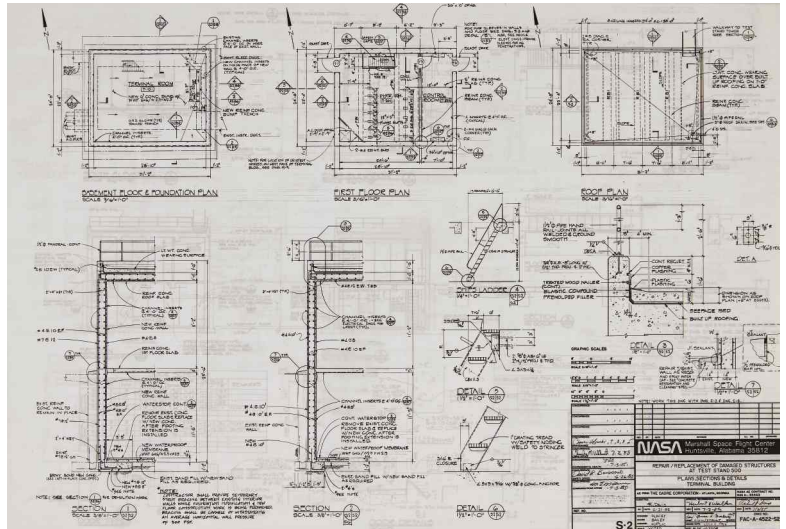
1950s: *Construction Plans for Static Test Tower Modification (East Side) and Support Facilities*. Mobile, Alabama: Corps of Engineers, U.S. Army, 1959. Some toning and creasing, tears to wrapper.

1960s: *Construction Plans for F-1 Engine Test Facility*. Mobile, Alabama: Corps of Engineers, U.S. Army, 1962. Some toning and creasing, tears to wrapper. — 13 sheets of original blueprints, various sizes, from 18 by 12 inches to 35 by 23 inches, various dates, from 1963 to 1969; some toning, a few chips to margins.

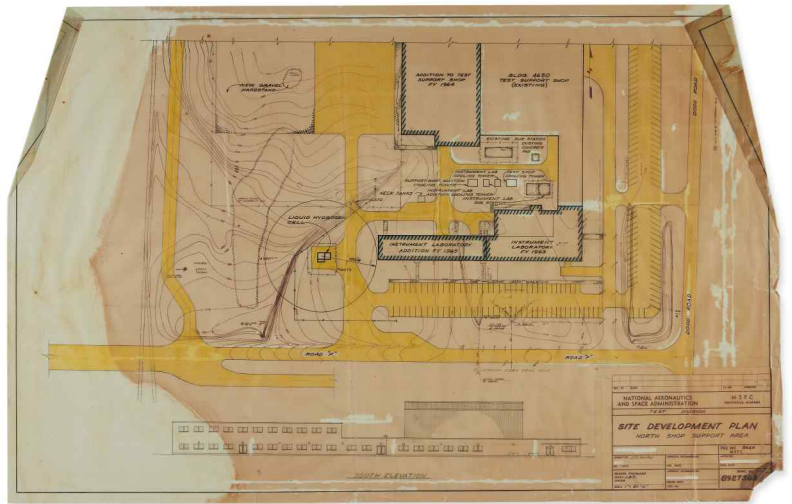
— 6 overhead transparencies, 34 by 22 inches, printed with hand-coloring and pencil annotations, primarily of site plans, circa 1962; toning, wrinkling, some chipping to margins. — 11 sheets of original blueprints, 34 by 22 inches, "CTL 114, Additional Lox Storage & Transfer System," signed by E.W. Howard (submitted) and J.C. Poole (approved), dated 20 July 1968. Possibly used on Gemini. — 10 sheets of original blueprints, 34 by 22 inches, "Saturn I-B Test Stand, Orbital Workshop" (or Skylab), signed by J.C. Poole (submitted) and James Chumley (approved), dated 20 July 1968. NASA plans for different versions of Skylab (wet version). One year after this design, 22 July 1969, NASA went in the dry lab direction. Due to the lunar landing of Apollo 11, a dry workshop became more feasible. — 2 of original blueprints, 34 by 22 inches, "F-1 Turbo Pump

Stand, Fuel (RP-1) Pulsating System," signed by J.C. Poole (submitted) and J.S. Hamilton (approved), dated 29 July 1968; some toning. — 3 sheets of original blueprints, 34 by 22 inches, "F-1 Test Stand, Fuel (RP-1) Pulsating System," signed by Chumley (submitted) and A.E. Marsalis? (approved), dated 29 July 1968. Used as 1st stage in Saturn V and main launch vehicle for Apollo program. Chumley and Ferguson worked in test laboratory. — 3 sheets of original blueprints, "Saturn IV-B LH2," signed J.C. Poole (submitted) and A.E. Marsalis? (approved), dated 1 August 1968.

1970s: 25 sheets of blueprint copies, various sizes, from 20 7/8 by 15 to 24 by 18 1/4 inches, primarily pertaining to site plans, dated variously between 1972 and 1975; toning, wrinkling, dampstaining.



33 (DETAIL)



33 (DETAIL)

1980s: 12 sheets of blueprint copies, 20 ¼ by 16 inches, "Repair/Replacement of Damaged Structures at Test Stand 500," dated 21 June 1985. Primarily pertaining to various building equipment and electrical needs. — 27 sheets of blueprint copies, 20 ¼ by 16 inches, "Repair/Replacement of Damaged Structures at Test Stand 500," 21 June 1985. Primarily pertaining to structural specifications. — 13 sheets of blueprint copies, 36 by 22 inches, "Temperature Monitor System," "New Heater Configuration," "Equipment Control," and "480 K Watt Control System Young & Bertke Oven Control Panel," dates 25 August 1986; some toning, particularly to folds.

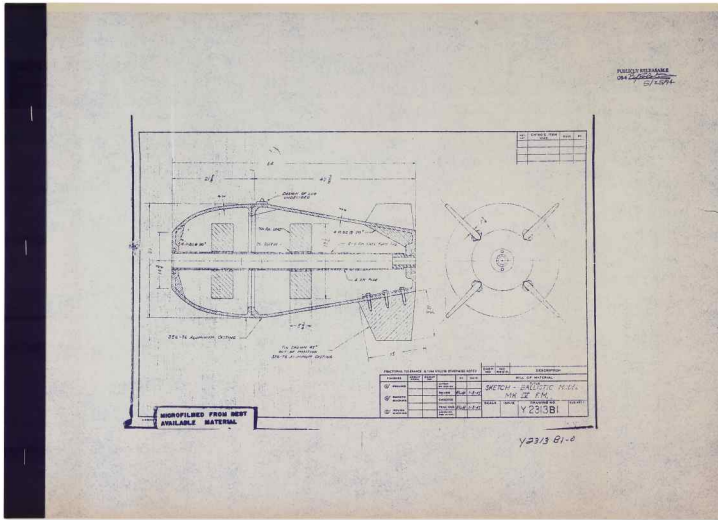
A REMARKABLE ARCHIVE OF BLUEPRINTS — MANY OF WHICH ORIGINAL — AND DESIGN-RELATED MATERIAL FROM THE REDSTONE ARSENAL, HOME OF NASA'S MARSHALL SPACE FLIGHT CENTER

Originally a chemical weapons manufacturing facility for World War II, immediately following the war, Redstone Arsenal became home to the German rocket scientists that were brought to the U.S. as part of Operation Paperclip. In April 1950, the Fort Bliss missile development operation (at that time with 130 German contract employees, 120 civil-service employees, and 500 military personnel), was transferred to Redstone Arsenal. This became the Ordnance Guided Missile Center (OGMC), with Maj. James Hamill as acting commander and Wernher von Braun as technical director.

Von Braun was a German aerospace engineer, had secretly been moved to the U.S. as a part of Project Paperclip. While at Redstone Arsenal, he worked on an intermediate-range ballistic missile program — essentially developing the rockets that launched the United States' first space satellite, Explorer 1. His group was absorbed into NASA, and he became director of the Marshall Space Flight Center, where he continued to work in development, ultimately helping to design the launch vehicle that propelled the Apollo spacecraft to the Moon.

THE MATERIAL PRESENT HERE OFFERS AN INCREDIBLY GLIMPSE INTO THE WORK BEING DONE AT REDSTONE ARSENAL AND THE MARSHALL SPACE FLIGHT CENTER, DURING SOME OF NASA'S MOST EXCITING DECADES

\$ 15,000-20,000



34

34

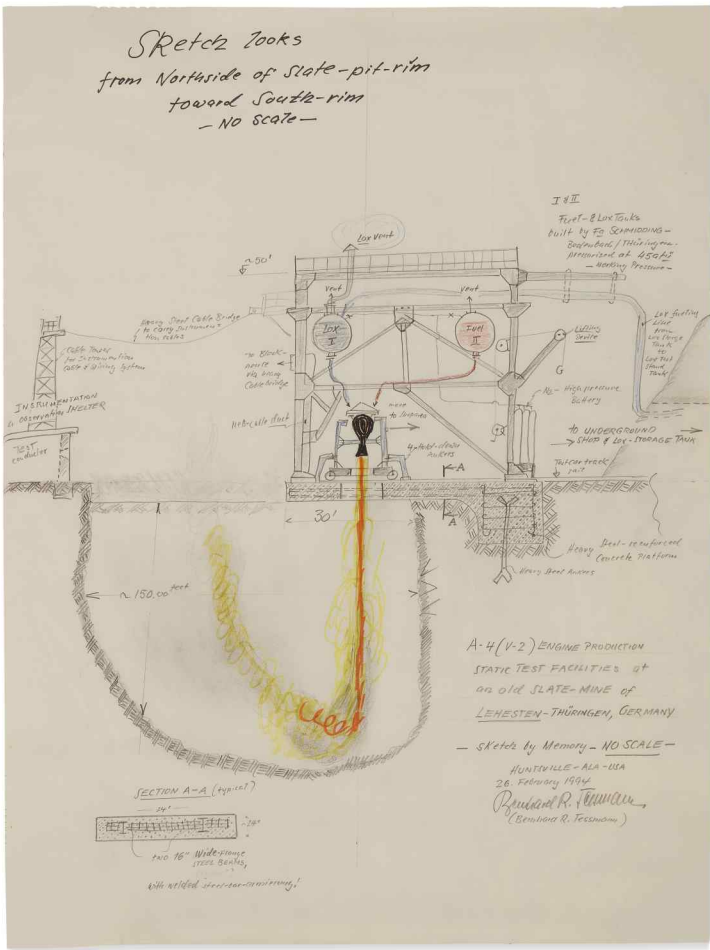
MARK 4 (ATLAS ROCKET FAMILY) REENTRY VEHICLE BLUEPRINTS

A series of "MK IV" ballistic missile unclassified designs, circa 1976
 5 sheets of unclassified vintage blueprint copies, 22 ¼ by 16 inches, stapled; minor toning.

A COMPREHENSIVE SET OF BLUEPRINTS, OFFERING INSIGHT INTO THE DESIGN OF ONE OF NASA'S ROCKETS

The Mark 4 (or MK IV) reentry vehicle (RV) was used on U.S. Air Force Titan I, and was a part of the Atlas rocket family, used in many NASA missions.

\$ 2,000-3,000



35

35

TESSMANN, BERNHARD

"A-4 (V-2) Engine Production, Static Test Facilities at an old Slate-Mine of Lehesten-Thüringen, Germany. Sketch by memory - no scale." Huntsville, Alabama: 26 February 1994

Pencil and marker on paper, 24 by 18 inches, signed "Bernhard R. Tessmann" lower right. Additional notation to upper left in pen: "Sketch looks from Northside of Slate-Pit-Rim toward South-rim. No Scale." Some scattered minor creasing.

Bernhard Tessmann was a German expert in guided missiles during World War II, and was later transferred to the United States as part of Operation Paperclip alongside fellow rocket scientist Werner von Braun. Tessman played an important role in the development of early U.S. military rockets at Redstone Arsenal in Huntsville, Alabama.

The V-2 rocket was developed during WWII in Germany, and was the world's first long-range guided ballistic missile, as well as the first man-made object to travel into space in 1944. Tessmann played a pivotal role in the protection of the V-2 legacy at the end of the war, hiding documents and blueprints pertaining to the V-2 from the SS at the instruction of von Braun.

\$ 2,500-3,500

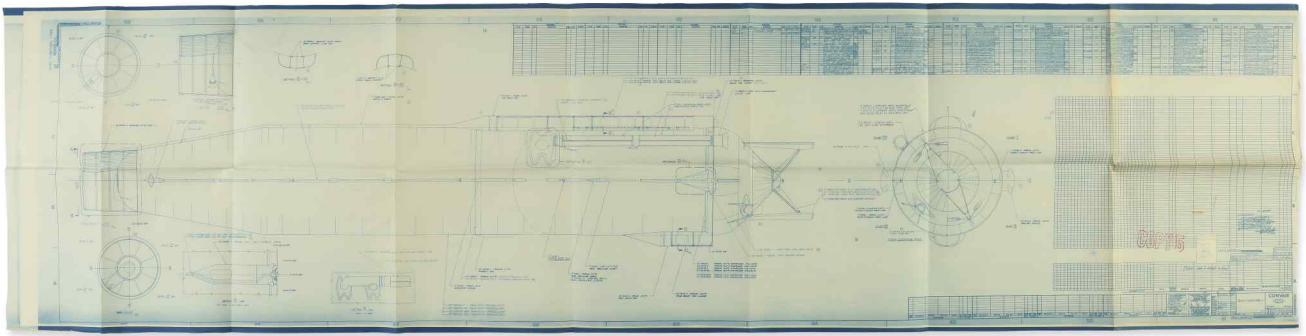
36

CONVAIR ROCKET BLUEPRINT, CIRCA 1960

Unclassified blueprint copy, single sheet, approximately 74½ by 18½ inches, numbered J 27-7009, with "Copy 5" rubber stamp to center; old folds, some minor toning, a few chips to margins.

Convair was an American aircraft manufacturing company that later expanded into rockets and spacecraft. Convair's Atlas rocket was originally developed in 1957, and eventually transitioned into a civilian launch vehicle, which was used for the first orbital manned U.S. space flights during Project Mercury in 1962 and 1963.

\$ 1,500-2,500



36

37

LOFTI-1 SATELLITE SHELL

Satellite shell, approximately 27 inches in diameter, polished and brushed steel, plexi portholes; minor scuffs. [With]: 4 vintage black and white photographs, from 6½ by 9, to 7 x 10 ¾, and 2 vintage color postcards, 3½ by 5½ inches.

A STRIKING LOW FREQUENCY TRANS-IONOSPHERIC (LOFTI) RADIO SATELLITE SHELL

The LOFTI satellites were one of the earliest orbiting spacecraft, which were intended to study the propagation of radio waves through and by the ionosphere. The experiment was also designed to determine whether low frequency radio signals penetrated water reliably enough to be used for communications with submerged submarines. LOFTI-1 was launched on a Thor-Able rocket in 1961, and its scheduled separation from the Transit-3B satellite (to which it was attached), failed. Despite its abbreviated orbit, a great deal of valuable data related to VLF and VHF transionospheric transmission was still obtained.

REFERENCES

"LOFTI-I Satellite." Lofti <https://airandspace.si.edu/collection-objects/satellite-lofti-1-engineering-model>. Accessed 26 October 2018

\$ 5,000-8,000



37

38

S-1C FLYBACK BOOSTER MODEL

"Reusable Saturn V", Boeing Models 922-12 & 922-101

Vintage model, three pieces, when assembled 23 inches high, metal and composite, with plaque mounted on base reading "Reusable Saturn V Boeing Models 922-12 & 922-101"; some toning, minor chips and scuffs to paint, chip to wing component, lacking antenna.

THE FIRST STAGE OF THE ROCKET THAT WOULD LAUNCH APOLLO 11. An early model related to Saturn V.

\$ 2,500-3,500



38

LUNAR GEMINI AND LOR LUNAR MODULE MODELS

Large Size Conceptual Models for a Lunar Gemini and a Prototype LOR Lunar Model, circa 1962

Together two large models, likely contractor's models, perhaps by McDonnell Aircraft Company, in wood, composite materials, and metal. Gemini model 29 inches tall, and in 4 parts (Adapter section with both Retrograde and Equipment sections; Cabin section; and Rendezvous & Recovery/Re-entry Control System). LOR Lunar Module model 22 inches tall, in metal, wood, & composite material, and in 2 sections (Ascent & Descent stages).

LARGE SIZE CONCEPTUAL MODELS
DEMONSTRATING THE DIFFERENCES BETWEEN
RIVAL SYSTEMS FOR LUNAR LANDING; DIRECT
ASCENT & LUNAR ORBIT RENDEZVOUS (LOR).

Full details available online.

\$ 4,000-6,000



39

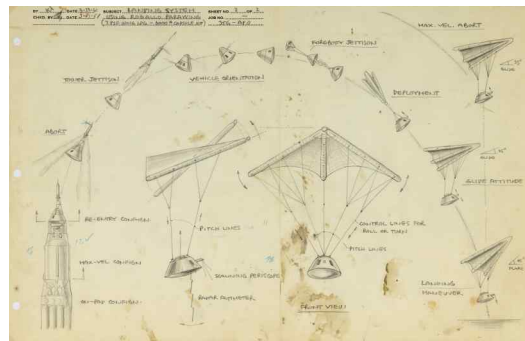
AN ORIGINAL TECHNICAL DRAWING REPRESENTING THE VARIOUS STAGE OF THE DEPLOYMENT OF A ROGALLO WING

"Landing System Unusing Rogallo Parawing"

Pencil on graph paper, 17 by 11 inches, dated 23 March 1961, a few annotations in blue pencil; some soiling and toning.

In the late 1950s and early 1960s, U.S. aerospace manufacturers worked on parachute designs to be used in space capsule recovery. For the Project Mercury capsule, NASA considered the Rogallo wing to replace the traditional round parachute when they were experiencing development problems that would prove to be temporary. Later, the Rogallo wing was the initial choice for the Project Gemini capsule, but development problems ultimately led to it being scrapped.

\$ 1,500-2,500



40

SET OF 8 EARLY WARHEAD MODELS, WITH METAL PLAQUES IDENTIFYING THEIR CORRESPONDING LAUNCH VEHICLES, 1960-61

Eight Wooden warhead models lacquered in white; mounted in custom display case. Each model with accompanying metal plaque. WITH: 5 vintage NASA silver gelatin prints taken in Feb 1960-April 1961, of various rocket launches. AND: 2 inch round paperweight with metal pin of the North American Air Defense Command.

CUSTOM SET OF WARHEAD MODELS,
DEMONSTRATING THE VARIOUS WARHEADS TO BE
SET ATOP DIFFERENT ROCKETS.

Full details available online.

\$ 5,000-8,000



41

HL-10 SPACECRAFT DEVELOPMENT

Very rare set of 10 different pairs of HL-10 wingtips, with 9 pairs in ceramic and 1 pair in wood, in the original wooden NASA hinged carrying case (23¼ x 16 in), with metal NASA tag.

The HL-10 was one of five heavyweight lifting designs by Northrup, and flown at NASA's Flight Research Center in Edwards, California. With "HL" standing for "Horizontal Landing," the HL-10 was used to study how to safely land a low lift-over-drag vehicle designed for re-entry from space. This set of wing-tips attest to the various stages that the aircraft went through in its development.

\$ 4,000-6,000



42

□ 43

OVERSIZE SATURN V ROCKET MODEL

Large engineering model, 60 inches tall, metal and composite, on stand; some chips to paint, primarily at escape tower attachment.

NASA's Saturn V rocket propelled dozens of humans toward the moon. Its first flight was for the Apollo 4 mission, and launched on the 9th of November 1967. It was also the Saturn V rocket that was used in the Apollo 11 mission, which safely landed two people on the moon in 1969.

\$ 6,000-9,000



44

44

NERVA NUCLEAR ROCKET PROPULSION SYSTEM MODEL, WITH THE NASA PAMPHLETS

Vintage model, 10 ¾ inches high, painted metal and composite on wooden base with brass plate engraved "NERVA"; chipping to paint, minor cracks, minor soiling. [With]: 3 pamphlets (from 5½ by 8½ inches to 7 7/8 by 10¼ inches): *Propulsion for Deep Space*. Cleveland: National Aeronautic and Space Administration, June 1966. *Nuclear Propulsion for Space*. U.S. Oak Ridge, Tennessee: Atomic Energy Commission, May 1967. *Nuclear Reactors for Space Power*. Oak Ridge, Tennessee: Atomic Energy Commission, May 1971. Each with pictorially printed wrappers; minor toning and wear to extremities.

The Nuclear Engine for Rocket Vehicle Application—or NERVA, as it came to be known—was a U.S. nuclear thermal rocket engine development program that ran for two decades. The project was a joint effort between the U.S. Atomic Energy Commission and NASA, and managed by the Space Nuclear Propulsion Office.

\$ 1,500-2,500



44



43

**APOLLO SPACECRAFT
CONTRACTORS MODELS**

Two models (CSM and LEM), signed by various astronauts

Vintage model, four pieces, when assembled 20 3/4 inches high, plastic, metal, and composite, produced by North American Aviation, Inc., atop circular base that reads "North American Aviation, Inc. Apollo Spacecraft", SIGNED and INSCRIBED by WALTER CUNNINGHAM (Apollo 7), JAMES LOVELL (Apollo 8), MICHAEL COLLINS (Apollo 11), ALAN BEAN (Apollo 12), and FRED HAISE (Apollo 13); toning, some chips to paint and composite.

Vintage model, two pieces, when assembled 6 1/2 by 10 1/4 inches, plastic, metal, and composite, produced by in Precise Models Inc., with NASA and Grumman logos on base, SIGNED and INSCRIBED by TOM STAFFORD (Apollo 10); toning, some minor chipping to paint.

A PAIR OF EARLY APOLLO MODELS, SIGNED and INSCRIBED by 6 different Apollo astronauts.

\$ 4,000-6,000



45



46



47



48

46

GRUMMAN SPACE STATION CONTRACTORS' MODEL

Space Station Prototype, circa 1980
 A series of three models, labelled 1st, 2nd, and 3rd launch, each 7½ by 2 ¼, by 2 ¾ inches, wood, metal, and composite mounted on wooden base with brass plaque reading "Grumman Initial Space Staton Model 22KW Power - 4 Man Crew", with Grumman Model Design Model Shop label; minor scuffs and chips to model components.

A VINTAGE PROTOTYPE OF GRUMMAN SPACE STATION COMPONENTS

In 1987 NASA chose Grumman Aerospace Corp. for a space station support contract worth \$1.2 billion, at the time the largest contract award in the \$14 billion project. Fred Haise, Apollo 13 LMP, was then Vice President of Grumman, and oversaw the massive project.

\$ 3,000-5,000

□ 47

CONSTELLATION LAUNCH VEHICLE MODELS

Crew Launch Vehicle Ares I, and Cargo Launch Vehicle Ares V

Two large models, 64 ½ and 55 inches high, metal and composite, on composite bases; some minor scrapes and chips to paint.

TWO LARGE MODELS FROM A NOW DEFUNCT NASA PROGRAM

The Constellation Program was a manned spaceflight program—now cancelled—that ran from 2005 to 2009. The goals of the program were completion of the International Space Station and a return to the Moon no later than 2020. It's ultimate aim, however, was to send a crewed flight to Mars. The vehicles were named after the Greek God Ares (the Roman equivalent being Mars).

\$ 2,000-3,000

□ 48

COLLECTION OF LAUNCH VEHICLE MODELS

23 launch vehicle models in metal on metal bases (1 in plastic & composite materials) ranging in size 9 to 25 inches tall.

An impressive set of launch vehicle models from various countries, including the Saturn V, N1, Baikal, Angara, Energia, Ciklon, Kosmos, Zenit, Proton, LM3B, Ariane, and Isro to name but a few.

\$ 10,000-15,000



49

LARGE CELESTIAL GLOBE

Chicago: Denoyer-Geppert Co., 1956

A 16 inch diameter celestial globe comprised of 12 paper gores, with a metal full meridian, which slots into a wooden cradle mount with a horizon band. Some light toning along seams of paper gores, occasional small chips and losses.

PROVENANCE

Ex University of Connecticut (item tag 127576)

\$ 1,000-1,500

50



50

LUNAR GLOBE

[Lunar Relief Globe]. Forest Hills, New York: Educational Frontiers Inc., 1969

A 7 inch diameter lunar globe with the surface of the Moon in raised relief, displayed on Lucite stand bearing two labels: "Nystrom | Man in Space" and "Here men from the planet Earth first set foot upon the Moon | July 1969, A.D. | We came in peace for all mankind." Some minor wear commensurate with age.

\$ 1,000-1,500

51

TWO CELESTIAL GLOBES AND ONE MARS GLOBE

LOT INCLUDES: 1) *Scan-Globe A/S*.

Copenhagen: Hammond Incorporated, 1975. 12 inch diameter illuminated celestial globe comprised of two plastic calottes with cartography by Karl-F. Harig, mounted within an adjustable metal half meridian ring on a wooden stand, with an interior light source controlled by a cord switch, which reveals depictions of the zodiac. Some minor adhesive discoloration along the calotte seam, with occasional spots of water damage.

2) *Celestial Globe*. [Chicago]: Rand McNally, circa 1950s. 12 inch diameter celestial globe comprised of two sets of 12 paper gores, edited by Dr. Oliver J. Lee, mounted within two adjustable chrome full meridian rings on a chrome stand. A few minor scuffs and losses to paper.

3) *Mars by Replogle*. [Chicago]: Meredith Corp., circa 1970. 6 inch diameter Mars globe comprised of two tin halves with cartography by LeRoy M. Tolman, displayed on a plastic stand mimicking extraterrestrial planetary surface. One small dent to globe, one small crack to base.

\$ 1,200-1,800



51

SOVIET SPACE PROGRAMS

LOTS 52-74

52

TSIOLKOVSKY, KONSTANTIN

Autograph letter, signed "К. Циолковский (K. Tsiolkovsky)", in Russian, 4 pp (6 1/2 x 9 1/2 inches), in brown ink on plain unlined paper, to Russian Science Fiction writer Alexander Belyaev, 7 June, 1931.

WITH: ЦИОЛКОВСКИЙ, К[ОНСТАНТИН] (TSIOLKOVSKY, KONSTANTIN). *Воля Вселенной. Неизвестные Разумные силы.* [The Will of the Universe. The Unknown Intelligence]. Kalga: Printed for the author, 1928. Small 4to. 23 pp. Original printed wrappers. FIRST EDITION, PRESENTATION COPY TO VICTOR ALEXANDER SEMENOVY, SIGNED AND INSCRIBED BY TSIOLKOVSKY TO FRONT WRAPPER.

THE FATHER OF ROCKETRY GIVES ADVICE ON HOW TO WRITE GOOD SCIENCE FICTION, STRONGLY SUGGESTING THAT BELYAEV BE SURE TO RELY UPON SCIENTIFIC FACTS.

"[trans]: I am happy that you are interested in my opinion. Not up to me to discuss the literary virtue of your novel, but the idea that science fiction must be based on science I consider VERY IMPORTANT! I devoted all of my life to problems of space flight, and consider that I can give you some advice... Pay attention to the peculiarity of the movements of pilots and subjects in spaceships with weightlessness... Your predecessor Jules Verne was carried away by the beauty of description. I think for writers of the 20th century, it is necessary to lean on science and scientific achievements..."

\$ 5,000-8,000

53

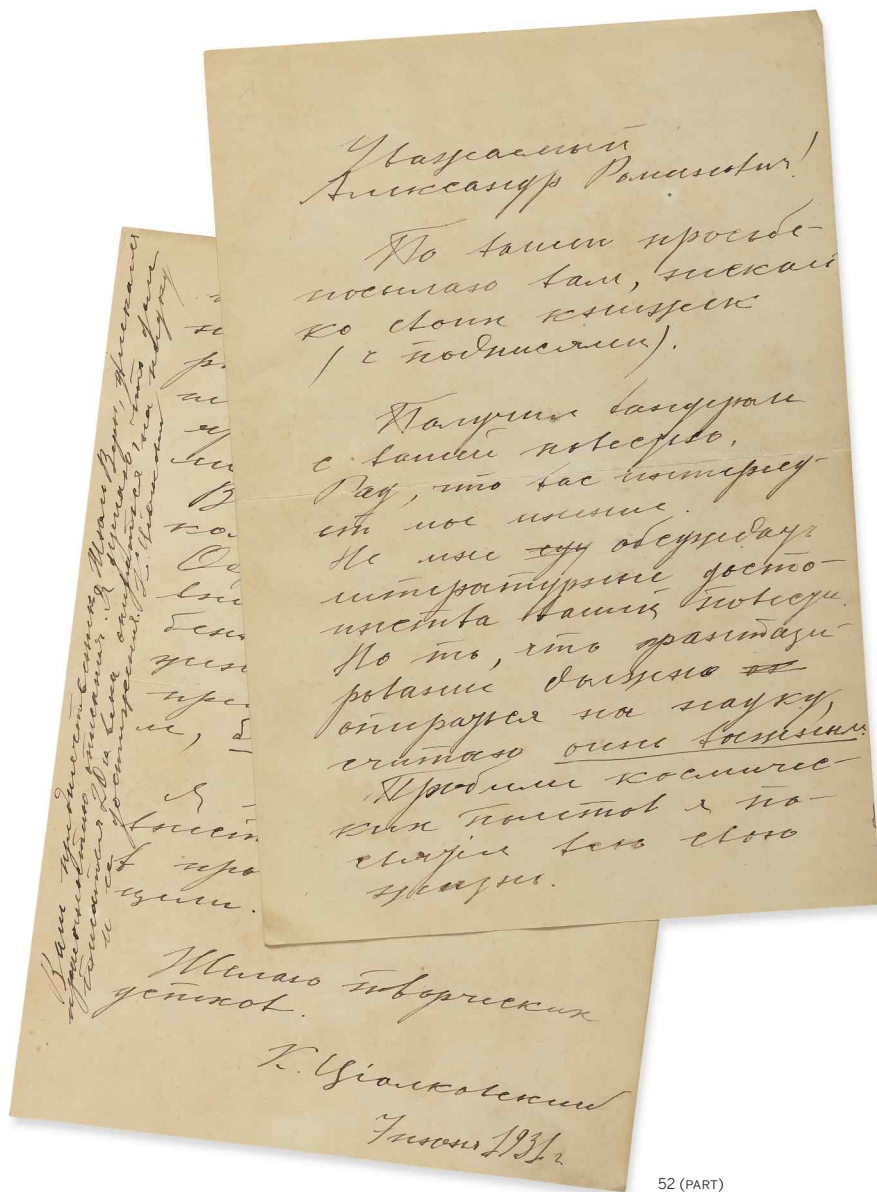
GAGARIN, YURI

дорога в космос [Road to the Stars]. Moscow: Military Publishing House of the Ministry of Defense of the USSR, 196 1 8vo. Black and white plates and in-text illustrations. Publisher's gray cloth-covered boards, upper board pictorially stamped with star or satellite in white and orange, original dust jacket, INSCRIBED BY GAGARIN on the front free endpaper in blue ink; dust jacket with closed tear, loss to head and tail of spine, some rubbing to folds and corners.

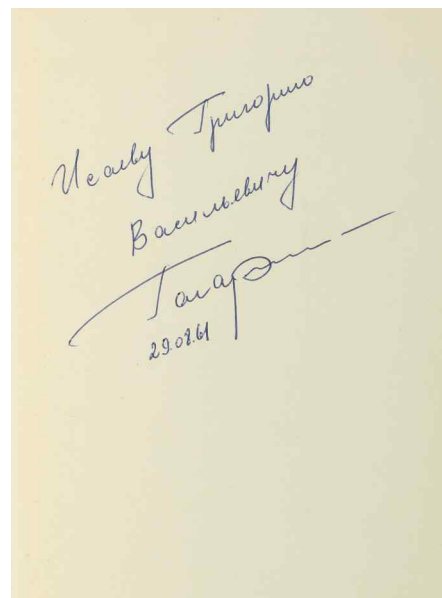
PRESENTATION COPY, INSCRIBED BY GAGARIN

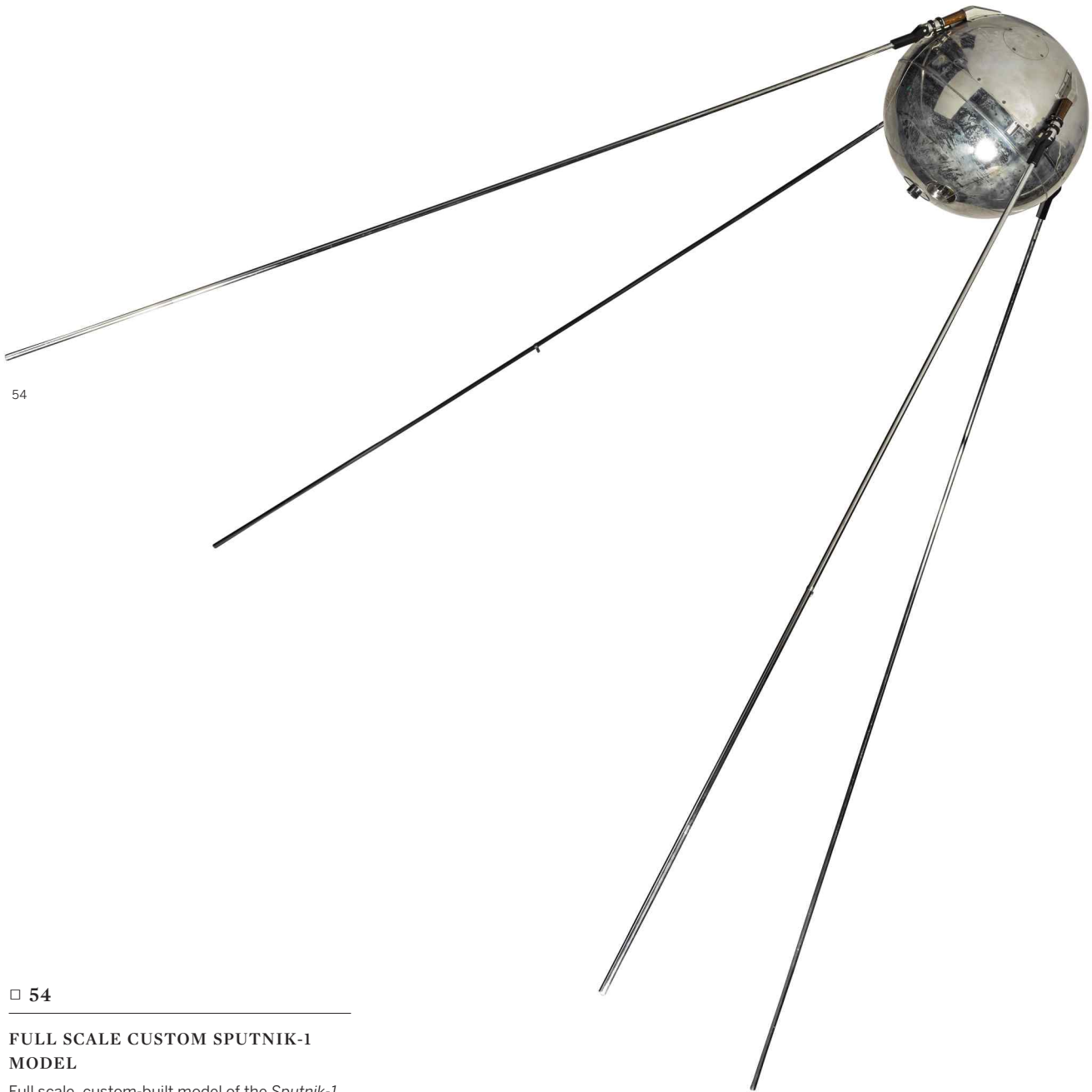
The autobiography of Yuri Gagarin, who became the first human to journey into space on 12 April 1961 when his Vostok spacecraft completed an orbit of the Earth.

\$ 1,000-1,500



52 (PART)





54

□ 54

**FULL SCALE CUSTOM SPUTNIK-1
MODEL**

Full scale, custom-built model of the *Sputnik-1* satellite. Polished metal sphere 23 inches in diameter consisting of two hemispheres joined, with four external antennae, each made from three pieces joined, two antennae measuring 9 feet 7 inches, and two measuring 10 feet long; minor abrasions or discoloration to metal.

An impressive, faithfully produced full-scale model of the *Sputnik-1* satellite. Sputnik-1 first orbited Earth on October 5, 1957 and was visible all around the Earth. Its surprise flight gave birth to the American sputnik crisis, and launched the space race.

\$ 7,000-10,000

55

**OVERSIZE SPUTNIK 1 8K71PS
LAUNCH VEHICLE MODEL**

1:20 scale presentation model, 59 inches tall,
metal and composite; one or two minor scuffs.

PRESENTATION MODEL OF THE ROCKET THAT
LAUNCHED FIRST ARTIFICIAL SATELLITE, THE
SPUTNIK-1

A version of the R-7 rocket, the 8K71PS
launched from Site 1 in Tyuratim (Baikonur)
on October 24th, 1957, marking the beginning
of the Space Race.

\$ 8,000-10,000





56

56

SOVIET LK-3 LUNAR LANDER MODEL

Lunar lander model, 21½ inches tall, 13 by 13 inch base, large scale model, metal and composite.

A REMARKABLE MODEL, EXECUTED IN STUNNING AND COMPLEX DETAIL

The LK-3 Lunar Lander (Лунный корабль or "Lunniy Korabl") was built to compete with the Apollo Lunar Module. The present model was manufactured by the Lavochkine Research and Production Company—the manufacturer of actual LK. The LK-3 was Vladimir Chelomei's preliminary design for a direct-landing alternative to Sergei Korolev's L3 manned lunar landing design.

The LK-3 was intended to be launched using the N-1 rocket. After the U.S. Apollo 11 mission succeeded, and a series of N1 test launches failed, the program was eventually cancelled in May 1974. Several unmanned LK lunar landers were, however, flown in Earth's orbit.

\$ 12,000-14,000



57

57

N-1 ROCKET MODEL

Large 1:72 scale model, 56 inches tall, metal and composite, on composite base with plaque reading "SOVIET N-1 ROCKET MODEL NPO ENERGIA."

VERY LARGE MODEL OF THE SOVIET N1 ROCKET, ONE OF TWO EXAMPLES PRODUCED BY ENERGIA CORPORATION

Development on the N1 rocket began in 1959, under the direction of Sergei Korolev. It was designed to deliver a payload beyond Earth orbit, and ultimately to the Moon. The N1-L3 model would carry the L3 lunar payload, consisting of an Earth departure stage and a lunar landing assist stage, in addition to a single-cosmonaut lunar lander and a two-cosmonaut lunar orbiter. By November of 1967, a mock-up was complete and on the launch pad. The completed N1 was very slightly shorter than the Saturn V, but had a greater lift-off thrust, though as a result of technical difficulties, and a subsequent lack of funding, the N1 never successfully completed a test flight.

\$ 6,000-8,000



58

58

VOSTOK-6 ROCKET MODEL

Large 1:25 scale model. 61 inches tall, in metal and composite, manufactured by S.P. Korolev Energia Rocket and Space Corporation, on a wooden base with a plaque reading "VOSTOK-6 ROCKET COSMONAUT VALENTINA TERESHKOVA JUNE 16, 1963."

Vostok 6 (or Восток-6) was the first human spaceflight to carry a woman, cosmonaut Valentina Tereshkova, into space. During Tereshkova's three-day voyage inside the "Seagull" capsule, she conversed with Russian Premier Nikita Khrushchev over the radio, and orbited the Earth 48 times.

\$ 5,000-7,000



59

59

FLOWN ON VOSTOK 6 WITH THE FIRST WOMAN IN SPACE

The Voice-Recorder flown in space aboard Vostok-6 with Valentina Tereshkova, June 16-19, 1963

Voice-recorder housed within a green-painted aluminum box (8 by 7 by 5 1/8 inches), base cast with 4 mounting flanges; one side of box with 2 10-pin plugs and one 24-pin plug; opposite side with neon indicator lamp; flat lid of box opening to an interior divided partially into two compartments. Larger compartment with a grey metal box containing the voice-recorder, connected by wires to 2 circuit boards mounted within smaller compartment. Lid stenciled with "ГОДЕН ДЛЯ ЗКА" [Approved for Launch] in Russian.

WITH: 8 cassette tapes of audio from the flight, additionally digitized onto 8 dvds.

AND: Typed transcription & translation reproducing Valentina Tereshkova's conversations with Sergei Korolev, Nikita Khrushchev, Yuri Gagarin, and many others.

THE SILENT COMPANION TO VALENTINA TERESHKOVA, THE FIRST WOMAN IN SPACE, ON HER HISTORIC FLIGHT ABOARD VOSTOK-6, FROM JUNE 16-19, 1963, COMPLETE WITH AUDIO RECORDINGS.

Valentina Tereshkova was selected to be the pilot of the Vostok-6 because of her extensive experience as a parachutist, and was the first person to be recruited to the Soviet Space program without experience as a test pilot. Vostok-6 lifted off from the Baikonur Cosmodrome on June 16, 1963, a full 6 years before the first lunar landing. Tereshkova remained in space for nearly three days, orbiting the Earth 48 times, and was allowed to operate the controls manually, unlike Cosmonauts on previous flights. She reentered Earth's atmosphere on June 19, 1963 and parachuted to the ground, landing in a remote region of Kazakhstan—she had become the first woman in space and the first woman in orbit. The feat would not happen again for another 19 years, when Svetlana Savitskaya flew aboard the Soyuz-T7.

Mounted to the wall of her Vostok capsule, Tereshkova's voice-recorder faithfully recorded all of her communication with Earth, as well as her spoken thoughts. It is clear from the accompanying audio recordings that it was not an easy flight: Tereshkova suffered illness and disorientation, and consequently, refused to eat: "I feel sick. I am drinking, I cannot eat sweets... I just want bread and onions." Also documented is the revelation that Korolev ordered her to stop her experiments and return to Earth. Despite her illness and her sudden return, Tereshkova found time to entertain her listeners: "I am Chayka [her codename, meaning Seagull]... Singing a song."

Prior to her return, Tereshkova was toasted by Communist Party Premier Khrushchev: "We are proud of you and your Lenin-inspired ideals! Glorify our people! ... To women! To your health! Complete the flight and land safely!"

\$ 30,000-40,000

TERESHKOVA, VALENTINA

A Series of Early Photographs of the First Woman in Space

Album with 1 color photograph and 13 black and white photographs mounted, each ranging in size from 6 3/4 by 3 3/4 to 7 1/2 by 6 inches, and accompanied by a handwritten caption in Russian.

Thirteen photographs SIGNED by VALENTINA TERESHKOVA, with additional signatures from VALERY BYKOVSKY, GERMAN TITOV, and Tereshkova's husband ANDRIYAN NIKOLAYEV.

Tereshkova made history in 1963 as the pilot of *Vostok 6* by becoming the first woman in space. The photographs contained within this album include a number of portraits of Tereshkova, in addition to photographs of Nikita Khrushchev, Leonid Brezhnev, Fidel Castro, fellow cosmonauts Bykovsky, Titov, and Nikolayev, and photographs documenting her reception back on earth. The handwritten captions accompanying each photograph often emphasize traditional notions of womanhood, for example "A bouquet of flowers is the best gift for a woman!" or "The tenderness of motherhood".

\$ 3,000-5,000



60 (PART)



61

FLOWN VOSTOK PANEL

Black metal instrument panel, 18 by 11 by 3 inches, with numerous toggle switches, dials, and knobs, all labeled in Russian. One side with male/female pin sockets, opposite side with control keyhole, covered by protective lucite cover. Top with small metal flight label, dated 1960, and reading "ИЗД N 5 / ПУ-1-3КА / 1960."

From 1960 to 1960 six Vostok spacecrafts were produced, all of them having flown. The present panel was taken from one of those six produced in 1960. It is interesting to note that the early Cosmonauts had very little control over their spacecraft, and indeed, it wasn't until the flight of Valentina Tereshkova on Vostok 6, that the pilot was actually allowed to control their spacecraft.

\$ 10,000-15,000

LUNOKHOD-1 MODEL

Approximately 1:15 scale model, 2¼ inches tall (not including antenna) by 4½ inches long, metal and painted resin with fully directional antenna, and eight moving wheels. Displayed on 13 by 9 inch painted resin model lunar surface on wood base.

Lunokhod-1 was one of two unmanned lunar rovers successfully sent to the moon by the Soviet Union as part of their *Lunokhod Programme*. *Lunokhod-1* was deposited on the lunar surface by the Luna 17 Spacecraft in November 1970, becoming the first remote controlled rover to operate beyond earth. The rover was about 7 feet long and 4 feet tall, and was comprised of a tub-like compartment with a large convex lid on eight independently powered wheels, and a set of solar-powered scientific instruments.

\$ 2,000-3,000





63 (ACTUAL SIZE)

**THE ONLY KNOWN DOCUMENTED
SAMPLES OF THE MOON AVAILABLE
FOR PRIVATE OWNERSHIP**

ЧАСТИЦЫ ГРУНТА ЛУНЫ-16 [Soil
Samples from Luna-16], collected
September, 1970

Three samples of lunar rock from *Luna-16*, the first automated sample retrieval from the moon, encased under glass within a 2 by 2 inch metal block positioned below an adjustable lens, the whole secured to a 6½ by 3½ inch metal base labeled "ЧАСТИЦЫ ГРУНТА ЛУНЫ-16" [SOIL PARTICLES FROM LUNA-16]. Central fragment consisting of basalt with feldspar crystals visible, adjoining larger fragments consisting of finely structured vesicular agglutinates, showing glass coatings caused by age-old meteorite impact.

Luna 16 Comes Back From
Space In 1970 (Photo by
Keystone-France/Gamma-
Keystone via Getty Images)

PROVENANCE

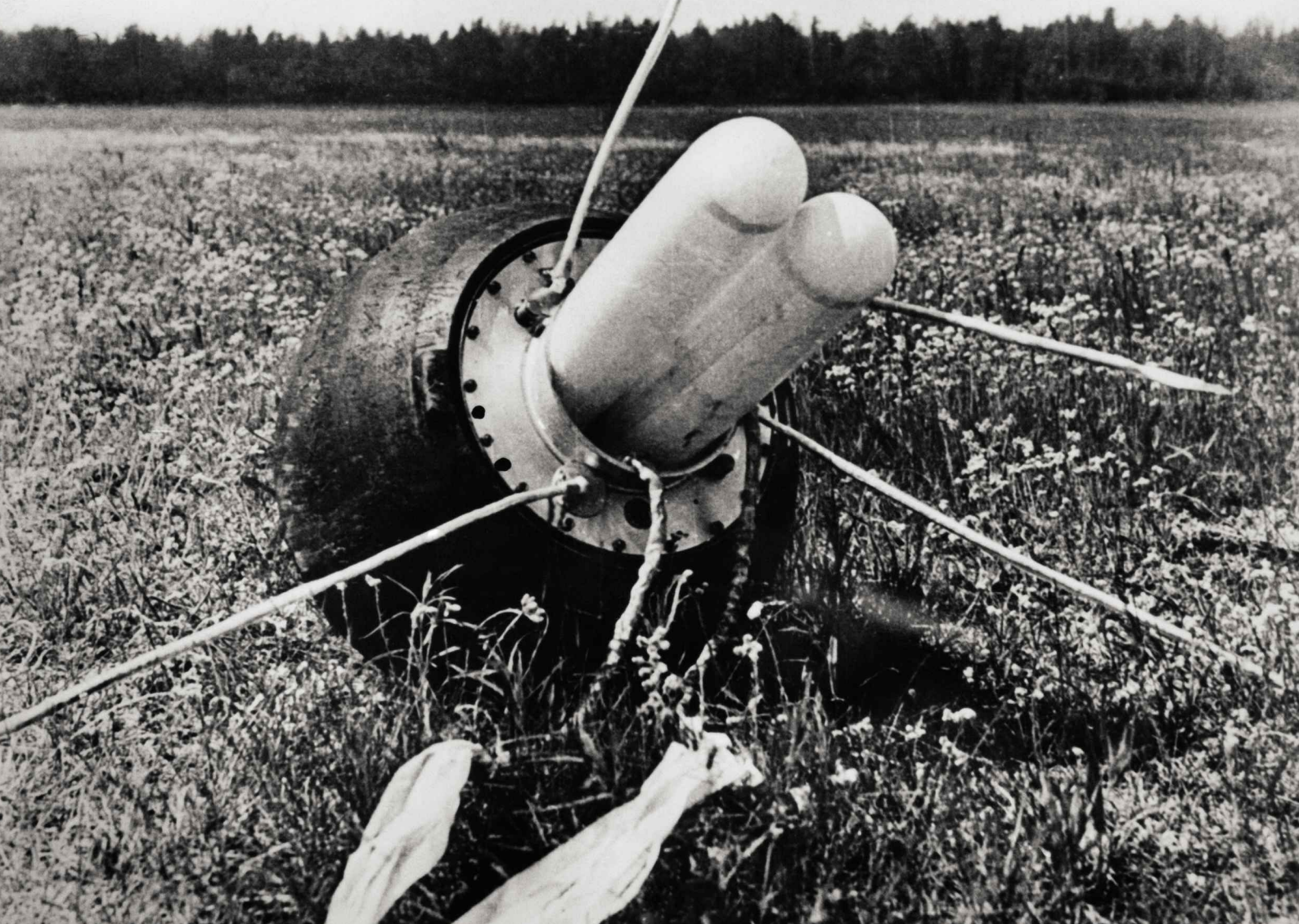
Mme Nina Ivanovna Koroleva, widow of Sergei Pavlovich Korolev, the "Chief Designer" and director of the Soviet space program. Presented to her as a gift on behalf of the USSR in recognition of her late husband's incalculable contributions to the program. Consigned by her and sold in Sotheby's *Russian Space History* sale in 1993 (lot 68).

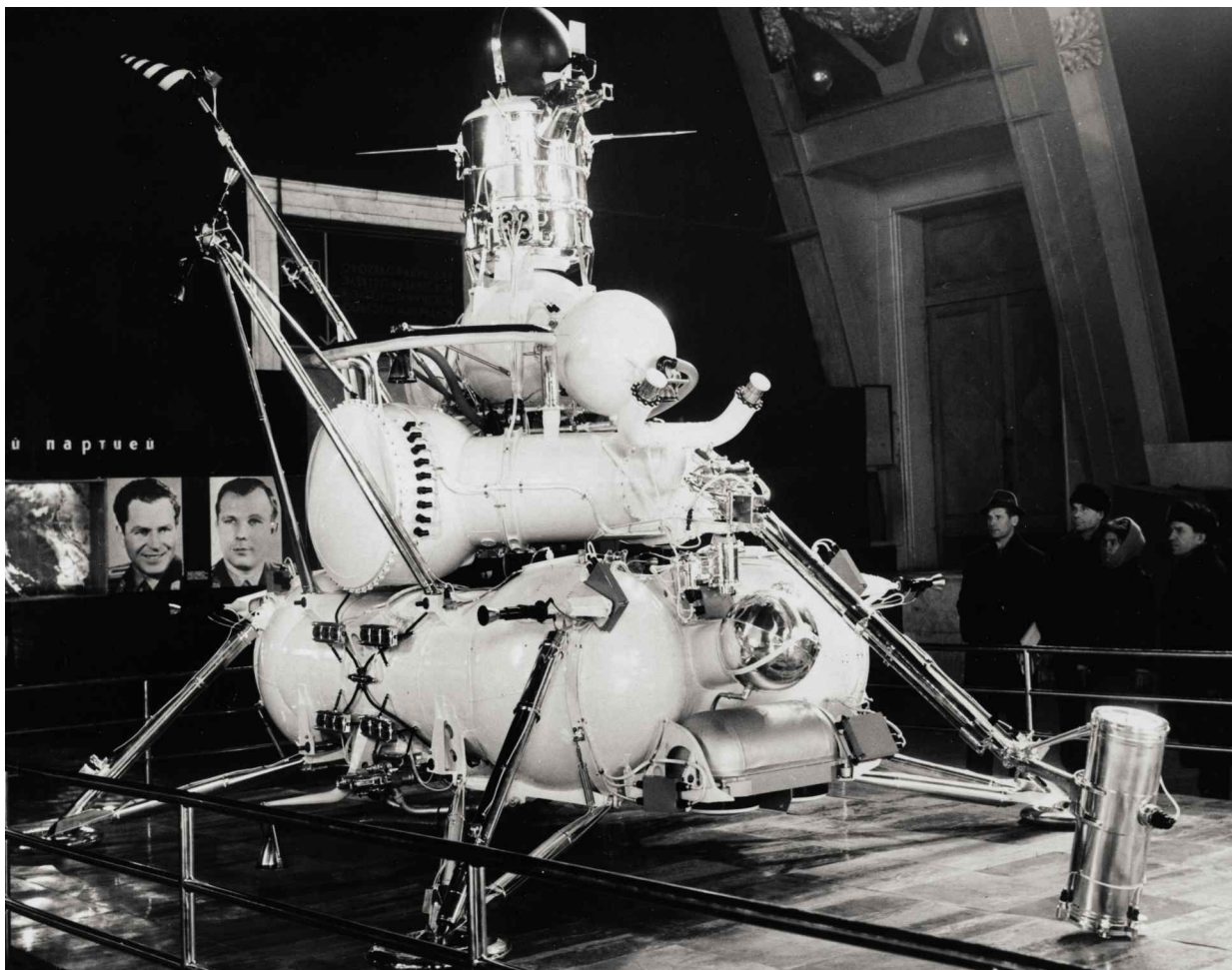
REFERENCES

Bakos L. et al. "Investigation of the composition of the Luna 16 Lunar Sample." *Soviet-American Conference on Cosmochemistry of the Moon and Planets* (1977) pp 277-280; Cimbalnikova A., Palivova M., Frana J. and Mastalka A. "Chemical composition of crystalline rock fragments from Luna 16 and Luna 20 fines." *The Soviet-American Conference on Cosmochemistry of the moon and planets* (1977), pp 263-275; Dickson, Paul. *Sputnik: The Shock of the Century*. Walker & Company

(2001); Harford, James. *Korolev: How One Man Masterminded the Soviet Drive to Beat America to the Moon*. John Wiley & Sons (1997); Kurat G., Kracher A., Keil K., Warner R. and Prinz M. "Composition and origin of Luna 16 aluminous mare basalts." *Proceedings of the 7th Lunar Science Conference* (1976) pp 1301-1321.; McCauley J.F. and Scott D.H. "The Geologic Setting of the Luna 16 landing site." *Earth and Planetary Science Letters*, 13, (1972) pp 223-224; Taylor G.J., Warren P., Ryder G., Delano J., Pieters C. and Lofgren G. "Lunar Rocks". *Lunar Sourcebook: A User's Guide to the Moon*. Cambridge University Press (1991); Vinogradov, A. P. "Preliminary data on the lunar soil brought to earth by automatic probe 'Luna-16'." *Journal of the British Interplanetary Society*, Vol 24, (Aug. 1971) pp 475-495; Wilhelms, Don E., *To a Rocky Moon: A Geologist's History of Lunar Exploration* (1992), pp 243-244 and passim; Zaehring, Alfred. *Soviet Space Technology*. Harper Brothers (1961)

\$ 700,000-1,000,000





Luna 16 Lunar Lander on exhibit at the Cosmos Pavilion of the USSR economic achievements exhibition in Moscow, November 1970. (Photo by: Sovfoto/ UIG via Getty Images)

On Saturday, December 11, 1993 Sotheby's made history by offering what was, and continues to be, the only known documented sample of lunar rock in private hands, collected during the Soviet *Luna-16* mission, and presented as a gift to the widow of the man known during his lifetime only as "главный конструктор" [*Glavny Konstruktor*, or "Chief Designer"] — a man who would emerge from the shroud of anonymity only after his death: the rocket engineer, spacecraft designer, and mastermind of the Soviet space program, Sergei Pavlovich Korolev.

The sale of the *Luna-16* lunar rock sample was a momentous moment, marking the first time that a piece of another world had ever been offered to the public. There have been numerous attempts to sell lunar material since that day, both privately and at auction, with the majority of those offered being either spurious, or having found to have been stolen property. The *Luna-16* sample sold by Sotheby's in 1993 remains to this day the only known documented legal sale of lunar material to have ever occurred.

Authentic lunar samples available for public acquisition may be qualified as extremely rare, as title to all lunar samples remains with the entities that collected them — the United States via the Apollo 11-17 missions, and the USSR (succeeded by the Russian Federation) via the *Luna-16*, -20, and -24 missions — as well as with the countries gifted the Apollo 11 samples and the Apollo 17 Goodwill moon rocks on behalf of the Nixon Administration. These samples are subject to laws governing public gifts, and in most cases, as in the United States, the law does not currently allow for public gifts to be transferred to an individual. As such, this is the only known documented lunar sample to have been gifted to a private individual.

Sergei Pavlovich Korolev (1906-1966) was a Soviet National Treasure, though if his early career is any indication, the true value of his work was not fully appreciated until after his death. In 1938, Korolev was imprisoned in the Gulag for 6 years on false charges of being a member of an Anti-Soviet counter-revolutionary organization, and even spent several months

in a Kolmya labour camp. After his release from prison, Korolev, who had trained as an aircraft designer, turned his attentions to the design of rockets, becoming a key figure in the development of the Soviet Intercontinental ballistic missile program.

Korolev was eventually made director of the Soviet space program, and its entire success would rest on his shoulders. Realizing early on that Korolev could be at risk for assassination during the Cold War by the United States, the decision was made by Stalin and adhered to by his successors, to keep Korolev's true identity secret. Throughout his career working on the program, he went by "Chief Designer," and even the cosmonauts who worked with him were unaware of his true name. The importance and impact of his work cannot be overstated, and some of his early successes included:

- The development of the first intercontinental ballistic missile (*R-7 Semyorka*, August 1957)
- The launch of the world's first artificial satellite (*Sputnik-1*, October 1957)



Serguei Korolev's Funeral in January 1966 (Photo by Keystone-France/Gamma-Keystone via Getty Images)

-The first living creature to orbit the Earth (*Laika* the dog, on board *Sputnik-2*, November 1957)

-The first probe to reach the moon (*Luna 2*, September 1959)

-The first pictures of the dark side of the moon (*Luna 3*, October 1959)

-The first human spaceflight (by Yuri Gagarin, on board *Vostok-1*, April 1961)

-The first woman in space (Valentina Tereshkova, *Vostok 6*, June 1963)

-The first spacewalk (by Alexei Leonov, during *Voshkod 2*, March 1965)

-The first soft or controlled landing on the moon (*Luna 9*, January-February 1966)

-The first craft to orbit the moon (*Luna 10*, March-April 1966)

Korolev's untimely death in 1966 dealt the Soviets a fatal blow, and it soon became clear that the Americans would, barring disaster, be the first to set foot on the moon. Just two days before the July 16 1969 launch of *Apollo*

11, *Luna 15* was launched by the Soviets with the hopes of making an automated acquisition and retrieval of lunar samples; this attempt, however, failed, the probe crashing to the moon's surface the day Neil Armstrong and Buzz Aldrin became the first humans to set foot on the moon. Fourteen months later, in September 1970, the *Luna 16* mission was finally successful. The probe landed safely and upright within the *Mare Fecundatis* south of the Crisium Basin rim, drilled a hole in the lunar surface to a depth of 36 cm, extracted a core sample, moved it upward into the return stage, blasted off, and brought the core and overlying more fragmented soil safely back to earth. *Luna 16* marked one of the finest technological achievements of the Soviet space program, with the spacecraft consisting of an ascent stage mounted on top of a descent stage. The descent stage was outfitted with radiation and temperature monitors, telecommunications equipment, a television monitor, and most importantly, an extendable arm with a drilling rig used for the collection of a lunar sample. *Luna 16* landed in northern *Mare Fecunditatis*

(landing site: 0.7°S, 56.3°E) and collected a 36 centimeter deep core from a mare basalt regolith, with fragments consisting of a moderately-high-Ti, high-Al variety of basalt. The grain size and overall characteristics of the *Luna 16* sample are very similar to mare soils returned by the Apollo missions, and a variety of analyses have revealed minute traces of more than 70 elements in the totality of the *Luna 16* sample. Tests on other basalt fragments from the samples made at the California Institute of Technology using rubidium-strontium isotopes have dated the rock to approximately 3.4 billion years old.

It was not until after his death that Korolev's true identity was revealed. The man who lived in anonymity, and whose staggering accomplishments could never be openly acknowledged during his lifetime, was finally given the public recognition he so richly deserved. His obituary was published in the *Pravda* newspaper on January 16, 1966, featuring a photo of him with all of his medals, and following an official state funeral, his ashes were interred with all state honors in the Kremlin wall.



ORLAN-M [ОРЛАН]

An Orlan-M (“Sea Eagle”) EVA (Extra Vehicular Activity aka Spacewalk) Spacesuit, manufactured by NPP Zvezda, circa 2009

Full semi-rigid one-piece spacesuit with thermal micrometeoroid protection layer, cooling under garment, backpack life support system, and integral helmet with both clear and protective sun visors, manufactured by NPP Zvezda, approx 70 inches tall and 250 lbs.

The primary suit used for spacewalks at both the MIR and the International Space Stations. The Orlan-M can be paired with an MMU (Manned mobility Unit) to allow the astronaut a greater and quicker range of movement.

The suits have a completely rigid metal reinforced torso with flexible arms, and are donned by entering through a hatch in the suit’s backpack life-support system, allowing one to be suited up in as little as five minutes.

The Orlan M is the fourth iteration of the Orlan suit, with the Orlan-D first being used on a spacewalk in 1977 on the Salyut 6 Soviet Space Station; the Orlan-DM from 1985-88 on Salyut-7 and MIR, the Orlan-DMA from 1988-97 on MIR, the Orlan-M from 1997-2009 on MIR and ISS, the Orlan-MK on ISS from 2009-2017, and the Orlan-MKS on ISS from 2017 to the present day.

REFERENCES

Abramov & Skoog, *Russian Spacesuits*, pp. 147-192

\$ 30,000-40,000



64 (DETAIL)

SOKOL KV-2

A Sokol KV-2 ("Falcon") spacesuit, manufactured by Zvezda

Full pressure suit, manufactured by Zvezda, approx. 67 inches tall. White outer restraint later of white nylon canvas with internal pressure bladder. Integral helmet with soft hood and polycarbonate visor labeled "З ДЩИТНОЕ СТЕКЛО" [Protective Glass] locking with blue anodized aluminum flange. Integrated pressure valve on chest reading "ОТВЕРНУТЬ ДО СРЕДНЕГО УПОРА ПЕРЕД ПОЛЕТОМ РДСП ЗМ 01" [unscrew fully to medium before flight RDSP ЗМ 01]. Support sling running from chest to back using webbed belts and metal clips, arms with trussed sleeves with adjustable articulating cables and webbed belt lashings. Pressure gauge on left sleeve; detachable gloves. Lace-up crotch covered with triangular packet, legs with pleated knees, each with utility pockets and integral soled boots. Gloves marked "ГП-7С-2 - 1060099" and "ГП-7С-1 - 0980183" at cuff, soles of boots marked "54-3-43".

The Sokol space suit was, and still is, worn by all who fly on the Soyuz spacecraft. The suit was developed in 1973-1979 with the goal of supporting a suited astronaut for up to 30 hours in a pressurized cabin and two hours in an unpressurized one. Described by manufacturers NPP Zvezda as a rescue suit, the KV-2 is designed to keep the wearer alive in the event of an accidental depressurization rather than being used outside the spacecraft in a spacewalk or EVA. The suit was developed following the disastrous loss of the Soyuz 11 crew in 1971 through sudden depressurization and was first used on the Soyuz T-2 mission, launched on June 5, 1980. By 2003, 220 flight models and 63 test and training suits had been manufactured.

The wearer climbed into the suit through the zippered front opening, sealing the suit by gathering folds of the space suit cloth and wrapping rubber bands around them. Other than the detachable gloves, the suit and helmet were one piece. Internal wiring and lack of ventilation (the wearers had to carry their own ventilator to avoid overheating) made the suit uncomfortable to move around in.

\$ 20,000-30,000

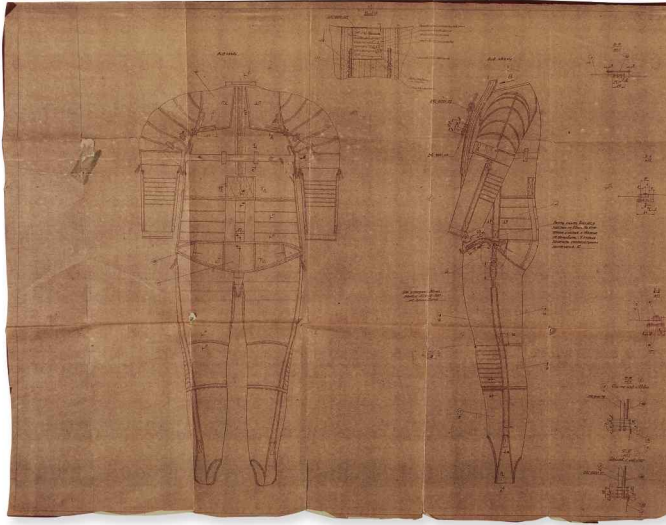


BLUEPRINT FOR THE СОКОЛ-K [SOKOL K –("FALCON")] SPACESUIT COVERLAYER

Blueprint in Russian, 33 by 66 inches, NPP Zvezda, circa 1971. Creases where previously folded, some paper repairs and tears with some loss (image not affected).

OVERSIZED, DETAILED BLUEPRINT OF THE COVERLAYER TO THE RUSSIAN SOKOL K ("FALCON") SPACESUIT. The Sokol K was developed by NPP Zvezda, and was first introduced in 1973 for use on the Soyuz Spacecraft. The newer version, the Sokol KV-2, is still in used today by astronauts on the International Space station.

\$ 2,000-3,000



66 (DETAIL)

SOVIET SPACESUIT GLOVES

Pair of Matching Orlan EVA Gloves

Gloves with beta-cloth outer gauntlet, and rubber-lined inner pressure glove with anodized aluminum wrist coupling, 15½ inches in length overall. Outer layer with pebbled rubber palm and finger pads, rounded blue fingertips, flaps with Velcro closures above the knuckles, and serial number ГП-10K-ГН-2-10480024 at hems, applied patch with printed table of pressure levels and coordinating minutes left in EVA on sleeve of right wrist area; inner gloves with serial numbers ГП-7-111-1280115 (right) and ГП7-11-18 (left). Inner gloves with adhesive residue to fingertips, some overall wear.

The Orlan (Орлан, or sea eagle) spacesuit is a series of spacesuit models built by NPP Zvezda, which was founded in 1952 to develop pressure suits and other hardware for the Soviet space program. Orlan spacesuits were produced for extra-vehicular activity (EVA) on Salyut, Mir, and the International Space Station beginning in 1977. The present example, likely from an Orlan model DM, was in use from 1985-88.

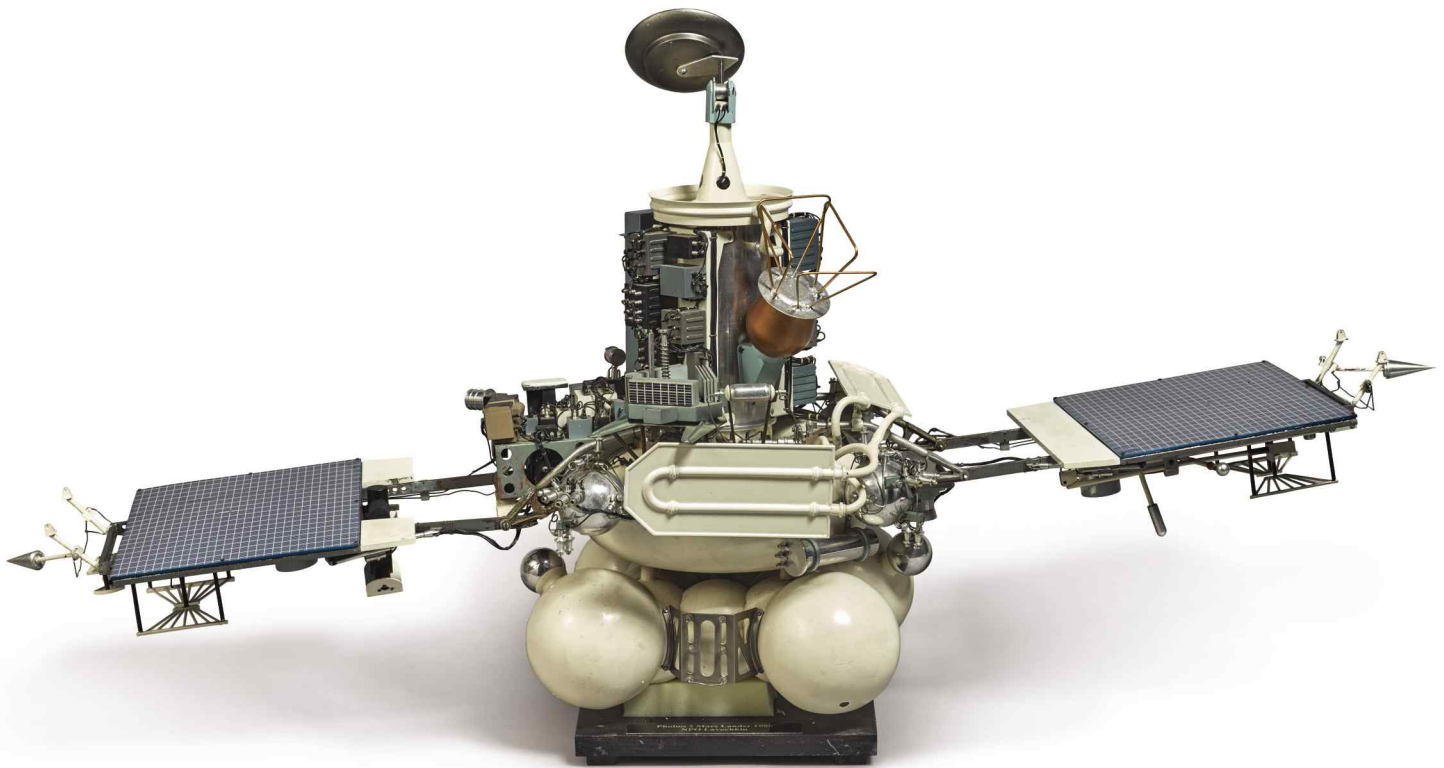
\$ 1,200-1,800



67



68



69

68

SOYUZ TM-6/TM-5 SPACECRAFT MODEL

Model of Soyuz TM presented to Lyakhov in commemoration of his mission of 29 August - 7 September 1988

Approximately 1/40 scale, 8 inches long by 9 1/2 inches (width of solar array), steel and plastic model of the Soyuz TM spaceship with grey, cream, red, green, and blue enamel; on stainless steel base mounted to red velvet board with brass plaque inscribed (in translation): "In memory of the flight of the international crew on the Soyuz TM-6/Mir/Kvant/Progress orbital complex: to the ship's commander Vladimir Afanasyevich Lyakhov, 29 August - 7 September 1988."

In his third space mission, Lyakhov participated in the flights of Soyuz TM-5 and TM-6, which brought to the Mir space station two international crews with Bulgarian and Afghan cosmonauts. Soyuz TM-5 was launched 7 June 1988 with a crew of three. Lyakhov was commander of Soyuz TM-6, launched 29 August, whose crew of three brought the Afghan cosmonaut Abdul Ahad Mohmand to Mir. On 6 September Lyakhov and Mohmand returned in Soyuz TM-5. This was one of the most challenging descents of the Soviet space program. Because of several systems errors, Lyakhov had to override and cancel the automated retrofire commands. After an unplanned 24 hours in the capsule, without water, food, and toilet facilities, the retrofire was completed successfully, and the craft landed very close to its target.

PROVENANCE

Cosmonaut Vladimir Lyakhov (Sotheby's Russian Space History, 11 December 1993, lot 165) — Present owner

\$ 3,000-5,000

69

SOVIET PHOBOS MARS 2 ENGINEERING PROTOTYPE SPACE MODEL, 1988

1:10 scale contractor model, 22 inches tall, 14 1/2 by 14 1/2 inches wide, metal, acrylic, and composite on a composite base; a few minor nicks and scuffs.

RARE. ONE OF ONLY THREE CONTRACTOR MODELS MADE, WITH THE OTHER TWO CURRENTLY IN LEADING RUSSIAN MUSEUMS

The Phobos program was an unmanned space mission consisting of two probes launched by the Soviet Union to study Mars and its moons: Phobos and Deimos. Phobos 2 was launched on July 12, 1988, and entered orbit on January 29, 1989. It operated nominally throughout its cruise and Mars orbital insertion phases on January 29, 1989, gathering data on the Sun, the interplanetary medium, Mars, and Phobos. It investigated Mars's surface and atmosphere, and returned 37 images of Phobos.

Theories trying to explain the mysterious monolith on the Martian satellite had amassed over the years, with scientist Dr. Isaac Asimov even penning a story in which he suggests that Phobos was an abandoned alien ship from the distant past, captured by the gravity of the Red Planet.

\$ 14,000-18,000

FLOWN COSMOS 2089 SPACE PORTHOLE, CIRCA 1990

Porthole, 11 1/2 inch diameter, steel frame with circular double glass pane, velvet-lined edges, "11061 1312-0A N6150008" etched in white along upper rim, mounted on steel stand, 23 inches tall mounted; minor wear to velvet, a few scuffs to steel, new screws to reverse of porthole.



70

FLOWN PORTHOLE FROM THE COSMOS 2089 SURVEILLANCE SATELLITE

Cosmos 2089, a Soviet military surveillance satellite, was launched from the Plesetsk commadore aboard a Soyuz rocket on the 3rd of August 1990. It was launched into 62-degree, 117-by 198-mile orbit, and proceeded to pass over the Middle East once a day during its 59-day mission. Two small film capsules were recovered in flight, and the main reentry capsule with remaining film, camera, and computer systems at end of flight.

\$ 8,000-10,000

71

INTERNATIONAL SPACE STATION ONBOARD CLOCK

From Control Panel POV-2, used for EVA Spacewalk

Onboard clock, 4 by 4 inches, gray-painted metal, chronograph with white face and black hands and numerals, three control knobs, mounted on custom metal stand, 9 1/2 inches tall; minor chips to paint, lacking two screws.

AN ORIGINAL ISS ONBOARD CLOCK WITH AN ELECTROMECHANICAL WINDING

This clock was a part of console POV-2, which provided access to outer space. With the help of this particular clock, a cosmonaut could check the life support parameters of an Orlan EVA spacesuit before going into outer space.

\$ 3,000-5,000

72

SOYUZ 9 — SOVIET ZERO-GRAVITY CHESS SET

Chess set signed by Andrian Nikolayev, Vitaly Sevastyanov, and various chess champions

Folding chess board with 32 pieces, opened 7 1/2 by 9 5/8 inches, with white and blue plastic tiles, trimmed with red tiles, 32 black and white pieces affixed to metal pins, SIGNED BY a number of chess champions, and ANDRIAN NIKOLAYEV and VITALY SEVASTYANOV, the crew members of Soyuz 9, and dated 24 November 1970 on exterior in various colors, in original packaging with pictorial label printed "ШАХМАТЫ КОСМИЧЕСКИЕ" (space chess); some discoloration to pieces, some deterioration to foam, one or two old cracks and repairs to board, box repaired with tape. With various materials related to the set's patent.

THROUGH THIS CLEVER BIT OF DESIGN, THE FIRST GAME OF CHESS WAS PLAYED IN SPACE DURING THE SOYUZ 9 MISSION

Full details available online

\$ 1,500-2,500



71

SOYUZ TMA-13 ROCKET MODEL RKK ENERGIA

Project presentation model, RKK Energia, 2008

Extra-large 1:45 scale, 64 inches tall, custom handmade model in glass, reinforced plastic and metal, on wood and metal stand with plaque reading "SOYUZ TMA-13 SPACE ROCKET MODEL ISS EXPEDITION, October 12, 2008, RKK ENERGIA."

The Soyuz is the most recognizable and frequently used of the Russian Rockets. It was first launched in 1966, and was developed from the earlier Voshkod rocket. The Soyuz TMA-3 was the 7th Soyuz to fly to the International Space Station, carrying Russian Cosmonaut Alexander Kalerim, NASA Astronaut Michael Foale, and Spanish ESA Astronaut Pedro Duque.

\$ 5,000-7,000

USSR FUTURE SPACE VEHICLE MECHANICAL TOY, WITH CHINESE UNIVERSE CAR MECHANICAL TOY

USSR IKAR 7E, and Universe Car ME 089

2 tin plate battery operated space vehicles, approximately 9 by 7 inches and 10 by 5 inches, with lithographed bodies and plastic domes; minor scuffing. Each in original packaging

Each vehicle when operational features "bump-and-go" action with colored light displays.

\$ 1,000-1,500



72



74



73

MERCURY

LOTS 75-88

75

ORIGINALLY FROM THE COLLECTION OF MERCURY AND GEMINI ASTRONAUT GORDON COOPER

DOUGLAS SKY RULE USED BY GORDON COOPER

GIVEN BY DON DOUGLAS OF DOUGLAS AIRCRAFT DURING THE 1950'S

The Douglas Sky Rule, a six inch long slide rule device with leather carrying case and original storage box. Includes a 12 page instruction manual and original guarantee certificate with registration form. Gordon Cooper has printed his last name on both the leather case and manual just after receiving the instrument in the 1950's. With a Typed Letter Signed by Gordon Cooper.

Both the leather carrying case and instruction manual have been SIGNED by GORDON COOPER. Accompanied by GORDON COOPER'S signed provenance letter on this personal stationery which reads: "This Douglas SKY RULE was given to me by Mr. Don Douglas of Douglas Aircraft in the 1950's while I was an Air Force Officer. I used it during many Air Force and NASA jet aircraft flights. It was a convenient tool to compute air speed, mach number, pressure altitude, and other important flight parameters. I found it to be a very advanced and useful instrument for the period it was used."

\$ 2,000-3,000



75

76

ORIGINALLY FROM THE COLLECTION NASA ENGINEER DR. MAX FAGET

DR. MAX FAGET EARLY SPACE COLLECTION

A SET OF TEN BOOKS AND FOURTEEN BOOKLETS FROM DR. FAGET'S DAYS AS A STUDENT AT LOUISIANA STATE UNIVERSITY AND EARLY YEARS AT NASA.

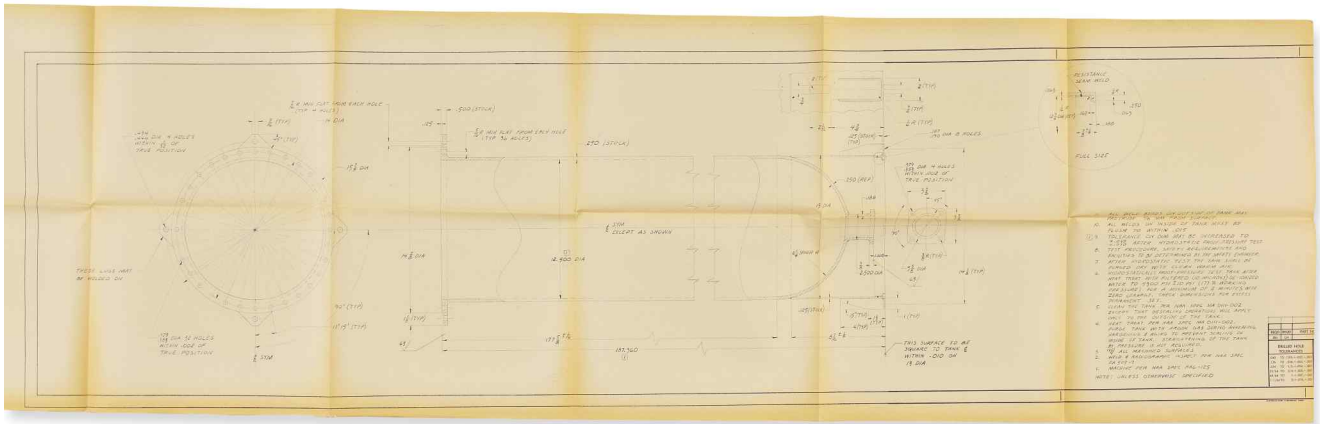
Dr. Maxime "Max" A. Faget (1921-2004) received a bachelor of science degree in mechanical engineering from Louisiana State University in 1943, then served as a U.S. Navy submarine officer in the South Pacific during World War II. After the war, he joined the National Advisory Committee for Aeronautics (NACA) in 1946. When NACA became NASA in 1958, he was heavily involved in Project Mercury as the lead spacecraft designer and developed the concept for the Mercury escape rocket which was later applied during the Apollo Program. His next work was in the development of the Space Shuttle during the very late 1960's and early 1970's. During his career he wrote or co-author dozens of technical papers and books on many topics relating to aircraft, rocketry, spacecraft design and reentry. Dr. Faget retired from NASA in 1981.

Full details available online.

\$ 1,500-2,000



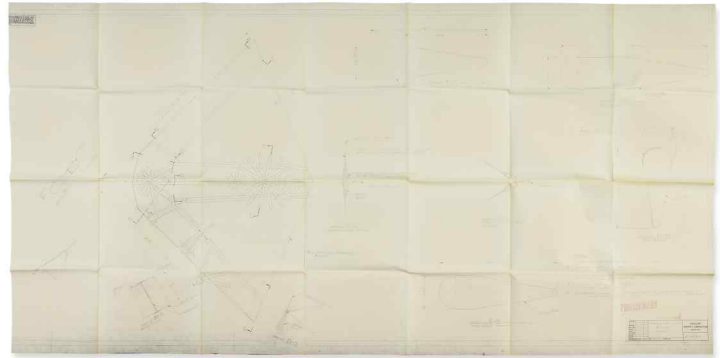
76



77 (PART)



78



79

77

LITTLE JOE MERCURY TEST VEHICLE BLUEPRINTS

LITTLE JOE NAME ATTRIBUTED TO DR. MAX FAGET

Two blueprints. *Layout – Autopilot Installation (Little Joe)*. North American Aviation, Inc., Missile Development Division, Downey, CA. Number 4536-900019-A. June 24, 1959. Model MD-4. 22½ by 41½ inches. Scale ¼. *Tank – Control System Weldment (Little Joe)*. North American Aviation, Inc., Missile Development Division, Downey, CA. Number 4536-900014. May 23, 1959. Model MD-4. 18 by 74 inches. Scale not noted.

The NASA Mercury Little Joe Program was a series of 8 two-stage solid rocket booster flights between 1959 and 1961 to qualify the various systems in Mercury spacecraft, mainly the escape tower system prior to manned flights. Two flights carried Rhesus monkeys Sam and Miss Sam, and all were launched over the Atlantic Ocean from a NASA launch site located at Wallops Island, Virginia. The name "Little Joe" is attributed to Dr. Max Faget because the vehicle's four fins seemed to look like a dice roll of two and two or a "little joe" in slang terms in a craps dice game.

Full details available online.

\$ 1,200-1,800

78

MERCURY SPACECRAFT ESCAPE CONCEPTS

SIGNED BY THREE ASTRONAUTS AND THE MERCURY DESIGNER

Escape Concepts, blueprint. Goodyear Aircraft Corporation, Akron, Ohio, November 3, 1961. 36 by 55 inches, 1/10 scale.

SIGNED BY SCOTT CARPENTER and WALLY SCHIRRA. SIGNED AND INSCRIBED: "GORDON COOPER, Faith 7" and "MAX FAGET, Mercury Designer."

Illustrates a Goodyear proposal for modifications which would enable escape from the Mercury spacecraft. Two profile drawings of the spacecraft show the astronaut having a rocket motor attached to his couch to propel the pilot away from the space vehicle. This method of escape would eliminate the need for the escape rocket tower assembly, thus reducing the overall spacecraft launch weight.

\$ 1,500-2,000

79

MERCURY PARAGLIDER BLUEPRINT PLANNED TO ELIMINATE THE NEED FOR OCEAN LANDINGS

Paraglider Wing ¼ Scale Model blueprint. Goodyear Aircraft Corporation, Akron, Ohio. June 11, 1961. 36 by 76 inches, folded, ¼ scale and as noted. Large rubber stamp in red which reads: "PRELIMINARY."

Illustrated is a top view of the paraglider wing with areas "A" through "H" labeled at important structural or end points of the wing. Subdrawings labeled "AA" through "HH" provide larger to full scale drawings of components including airmats and attachment rings. The airmats were a near tear-drop shaped device to assist maintaining an aerodynamic shape of the leading edge of the wing. Printed notes on this blueprint include: "Make from existing inflatplane (the) ailerons, rudders, and elevators. (Use) 3510 nylon cloth, treat with 1843 C adhesive, hand coat uniformly with 1844 C neoprene cement to coating weight of approx. 1.5 oz/yd."

The Mercury paraglider was a concept for returning the spacecraft to dry land using a triangular shaped inflatable airfoil. This would save the expense of numerous U.S. armed forces ships and aircraft required during an ocean landing. Various engineering problems prevented the paraglider's use in time for the Mercury Program.

\$ 1,000-1,500

NASA MERCURY PRESS RELEASE PHOTOGRAPH COLLECTION

CONTAINS 12 PHOTOS EACH SIGNED BY THE ASSOCIATED ASTRONAUT(S)

All are approximately 8 by 10 inches in black and white with printed NASA text on verso.

A) Six Mercury Atlas 7 photographs, five featuring Scott Carpenter in his space suit and/or helmet during training activities. One close-up of his *Aurora 7* Mercury Atlas 7 launch from Cape Canaveral's Pad 14. Each SIGNED by SCOTT CARPENTER plus one SIGNED by WALLY SCHIRRA as he stands next to Carpenter and John Glenn. Carpenter has INSCRIBED his launch photograph with "MA-7."

B) Two Mercury Atlas 8 photographs, the first being a wide angle view of the *Sigma 7* Mercury Atlas 8 launch with Pad 14 in the background. The second is of Schirra as he exits his *Sigma 7* spacecraft while on the deck of the *USS Kearsarge* after recovery. Each SIGNED by WALLY SCHIRRA.

C) Four Mercury Atlas 9 photographs, two featuring Gordon Cooper in his space suit during training activities and one as he talks to Wally Schirra inside his *Sigma 7* spacecraft just before that launch. One photo of his *Faith 7* Mercury Atlas 9 launch. Each SIGNED by GORDON COOPER with the launch photograph ADDITIONALLY INSCRIBED with: "Faith 7 Launch, 15 May 63."

\$ 1,500-2,000



MERCURY COLOR PHOTOGRAPH COLLECTION

CONTAINS 14 PHOTOS EACH SIGNED BY THE ASSOCIATED ASTRONAUT, SEVERAL WITH SPECIAL INSCRIPTIONS

All are approximately 8 by 10 inches and in color.

A) Three photographs featuring individual portraits of Carpenter, Cooper, and Schirra, each in a business suit. Their respective photos are SIGNED by SCOTT CARPENTER, GORDON COOPER, and WALLY SCHIRRA.

B) Three Mercury Atlas 7 photographs, two of Carpenter in his Mercury space suit and one as he enters his *Aurora 7* spacecraft on launch day. Each SIGNED by SCOTT CARPENTER with the additional INSCRIPTION of "24 May 1962" on the spacecraft entry photo.

C) Three Mercury Atlas 8 photographs. One showing Schirra as the *Sigma 7* logo is painted on his spacecraft. The second is a close-up of Schirra in his Mercury space suit. The third is of his entry into *Sigma 7* spacecraft on launch day. Each SIGNED by WALLY SCHIRRA.

D) Five Mercury Atlas 9 photographs. The first showing Cooper in the Mercury simulator being SIGNED and INSCRIBED: "GORDON COOPER, Mercury Training." The second as Cooper exits the astronaut transfer van the launch pad being INSCRIBED and SIGNED: "Out to Launch, GORDON COOPER, 15 May 63." The third of Cooper as he enters his *Faith 7* spacecraft being INSCRIBED and SIGNED: "Launch Day, GORDON COOPER, 15 May 63." The fourth showing Cooper inside *Faith 7* while on the deck of the *USS Kearsarge* being SIGNED and INSCRIBED: "GORDON COOPER, Faith7 Recovery." The fifth is a close-up of Cooper in his blue NASA flight suit just after recovery being INSCRIBED and SIGNED: "MA9 Debrief, GORDON COOPER."

\$ 1,500-2,000

MERCURY POSTAL COVER COLLECTION

CONTAINS 12 ENVELOPES WITH 18 TOTAL ASTRONAUT SIGNATURES

All envelopes are 3½ by 6½ inches. Includes signatures from: SCOTT CARPENTER, GORDON COOPER, and WALLY SCHIRRA.

Full details available online.

\$ 1,500-2,000

SHEPARD, ALAN

Original class notebook from a Naval Summer Term Cruise Course taken by Alan Shepard in the Summer of 1945

Oblong folio, 9 by 14 inches, with 17 pages containing original technical plans and drawings by Shepard bound into oblong black 2-ring binder, (8 on white unlined paper, 2 on green graph paper, and 7 on orange graph paper) all signed "A.B. SHEPARD/ SECT 11-2/ DESK 623" in pencil. Binder signed "MID'N A. B. SHEPARD, JR. / ROOM 3013/ DESK 623."

WITH: Shepard's Celestial Coordinator, signed "A.B. SHEPARD" by him in black ink.

AND: 2 pp typed class syllabus, along with typed list of students.

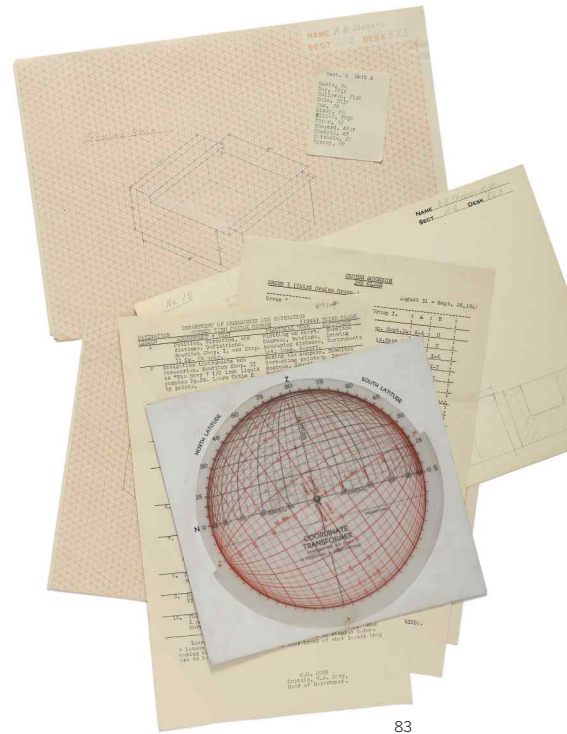
A WONDERFUL EARLY ITEM FROM THE FIRST AMERICAN TO TRAVEL INTO SPACE, AND THE FIFTH PERSON TO WALK ON THE MOON.

Shepard was a graduate of the United States Naval Academy at Annapolis, where he would have taken this course, and became a naval aviator a year later. He was selected as one of the original NASA Mercury 7 astronauts in 1956, and became the first American in space in May of 1961.

\$ 6,000-9,000



82



83

[ALAN SHEPARD] — BOB PEAK

"Sketch of Alan Shepard for the Flight of Freedom 7," 1986

Charcoal and chalk on paper, 35 by 29½ inches (sight), signed "R. Peak 86" lower right, matted and framed to 41½ by 35½ inches.

A STRIKING PORTRAIT OF THE FIRST AMERICAN TO TRAVEL INTO SPACE, ALAN SHEPARD, BY AMERICAN ILLUSTRATOR BOB PEAK.

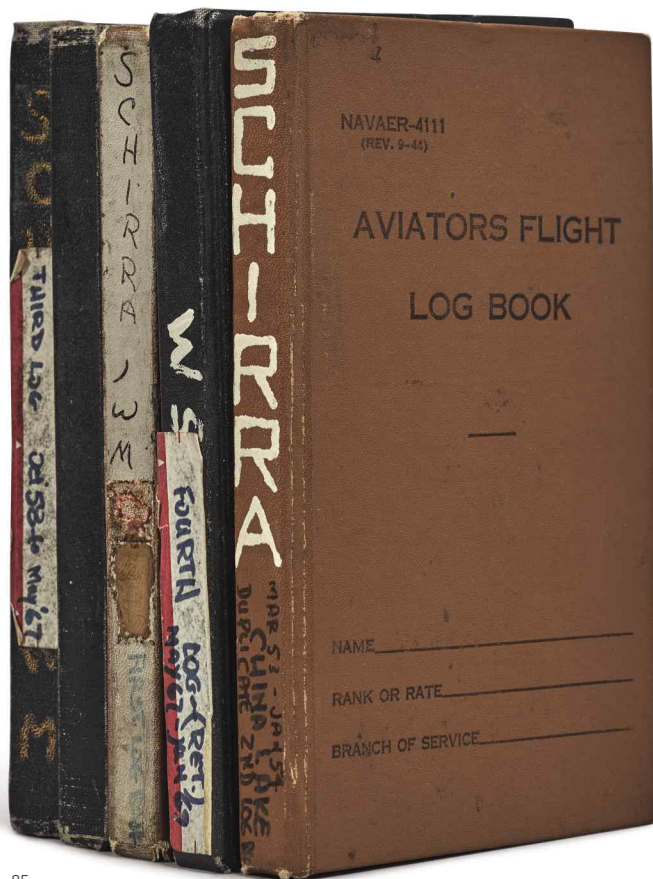
Shepard was selected as one of the original Mercury Seven astronauts in 1959, and would go on to undertake the first manned Project Mercury flight in May of 1961. His spacecraft, which he named Freedom 7, entered space just three weeks after the Soviet Union had put Yuri Gagarin in space, making Shepard the second person — and the first American — to travel into space.

Peak was predominately known for his contributions to modern movie poster design — *Apocalypse Now* (1979) and *The Spy Who Loved Me* (1977) are among his most famous.

\$ 2,000-3,000



84



85

SCHIRRA, WALTER "WALLY"

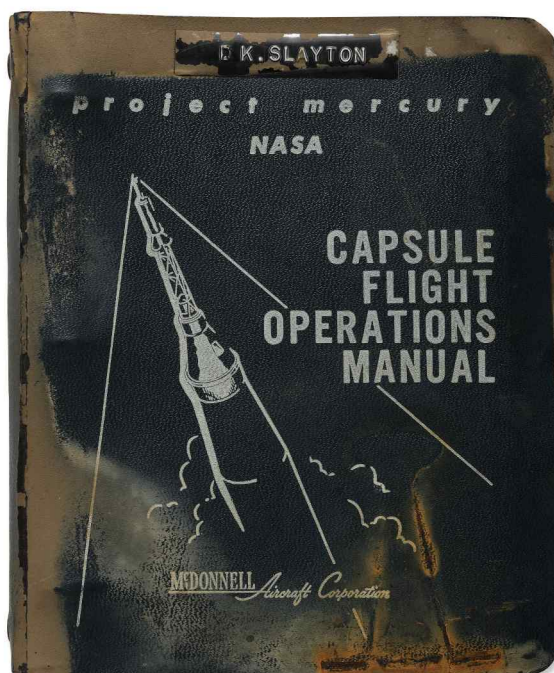
The complete set of Wally Schirra's official flight log books, documenting his full career as a Navy pilot and NASA astronaut. January, 1947- June, 1969

Five volumes, 4½ by 7 inches. January 1947-February 1953; March 1953-January 1954; March 1953-September 1958; October 1958-May 1967 & June 1967-June 1969. Printed log books filled out and signed by Schirra in various colors of ink. Original buckram bindings, each titled "Aviator's Flight Log Book" to upper cover, spines with manuscript titles and label. A variety of ephemeral material and photographs laid and tipped-in.

THE COMPLETE SET OF WALLY SCHIRRA'S OFFICIAL FLIGHT LOG BOOKS, METICULOUSLY MAINTAINED BY HIM OVER THE COURSE OF MORE THAN TWO DECADES, FROM HIS EARLIEST DAYS IN TRAINING THROUGH HIS FABLED CAREER AS A FIGHTER PILOT, A MILITARY TEST PILOT, AND ONE OF THE "ORIGINAL SEVEN" AMERICAN ASTRONAUTS.

Schirra was the only one of the original seven to fly in all three pioneering space programs — Mercury, Gemini, and Apollo. Through the course of his career, he logged an impressive 295 hours and 15 minutes in space, including on Mercury-Atlas 8 (Oct. 1962) in which he became the fifth American in space and the third to orbit Earth; Gemini 6A (Dec. 1965), on which he achieved the first space rendezvous; and Apollo 7 (Oct. 1968), of which he was the commander and which was the first Apollo mission to carry a crew into space.

\$ 15,000-20,000



86

[DEKE SLAYTON]

Project Mercury NASA Capsule Flight Operations Manual. *St. Louis, MO: McDonnell Aircraft Corporation, 1961*

Flight manual, 7½ by 6½ inches, approximately 148 pages in 3-ring binder, printed in black and white, with red, green, and yellow accents, SIGNED "Slayton" on title-page; some toning and staining. Blue leatherette cover, pictorially printed in white, with label reading "DK. Slayton" added to cover; overall wear with loss to leatherette, rust stains.

DEKE SLAYTON'S PERSONAL FLIGHT MANUAL

In 1959, Deke Slayton was one of 110 military test pilots selected as candidates for NASA's Project Mercury, the first U.S. manned space flight program.

\$ 2,000-3,000

**DEKE SLAYTON'S OMEGA
CONSTELLATION WRISTWATCH**

A YELLOW GOLD DAY DATE
WRISTWATCH CIRCA 1975, REF BA
196.0016 MEGAQUARTZ OWNED BY DEKE
SLAYTON.

Dial: gold

Caliber: cal. 1310 quartz movement

Case: 18k yellow gold, case back secured by
four screws

Closure: 18k yellow gold *Omega* bracelet with
folding clasp

Dimensions: 37 mm width

Signed: case, dial and movement

Given to Slayton by Omega to commemorate
his flight on the Apollo-Soyuz Test Project,
case back engraved with: "*Astronaut Donald
K. Slayton, First International Space Flight, July
15, 1975.*"

Slayton was one of the original Mercury 7
astronauts, but was grounded in 1962 due to
an irregular heart rhythm. He went on to serve
as NASA's Director of Flight Crew Operations,
and finally, in 1975 at the age of 51, he was
cleared to fly, and became the docking module
pilot for the Apollo Soyuz Test Project (ASTP),
making him the oldest person to fly in space at
the time.

\$ 10,000-15,000



87

EX PAUL CALLE COLLECTION

CALLE, PAUL

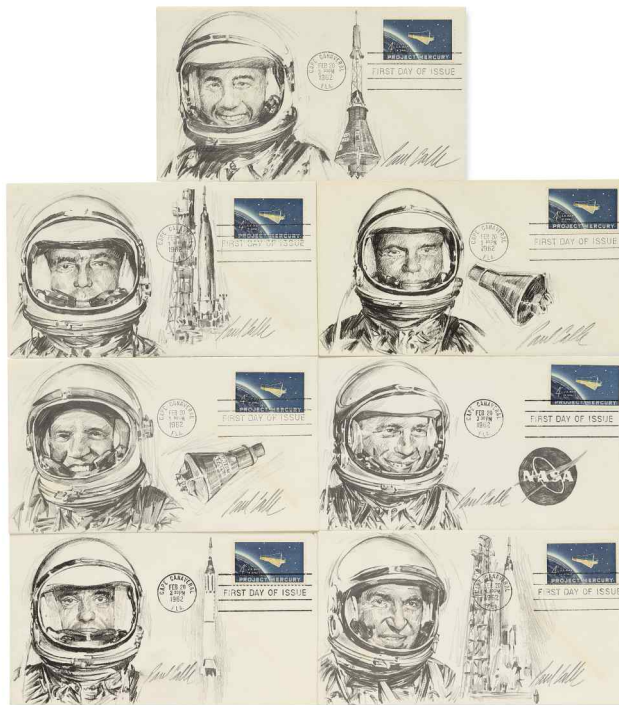
A group of 7 Project Mercury Postal Covers
with original sketches, signed

7 sketches, pencil on paper envelopes, 6½ by
3¾ inches, each signed "Paul Calle" in pencil,
each with "Project Mercury" stamps, and
"First Day of Issue February 20 1962" Cape
Canaveral, Florida postmarks.

A GROUP OF SKETCHES BY PAUL CALLE, EXECUTE
ON POSTAL COVERS, REPRESENTING EACH OF THE
"MERCURY SEVEN" ASTRONAUTS

Project Mercury, which ran from from 1958
through 1963, was the first human spaceflight
program of the United States, with its goal
being to put a man into Earth's orbit and return
him safely—ideally before the Soviet Union was
able to do so. The program took its name from
Roman mythology, and its astronauts were
collectively known as the "Mercury Seven." The
astronauts represented in the present sketches
include: Malcolm Scott Carpenter, Leroy
Gordon "Gordo" Cooper Jr., John Herschel
Glenn Jr., Virgil Ivan "Gus" Grissom, Walter
Marty "Wally" Schirra Jr., Alan Bartlett Shepard
Jr., Donald Kent "Deke" Slayton.

\$ 2,500-3,500



88

GEMINI

LOTS 89-112



89



90

89

THE NEW NINE POSE NEXT TO A MODEL OF THE TITAN II ROCKET

Vintage black and white photograph, 10 by 8 inches, newspaper clipping featuring the photograph taped to verso. Accompanied by a certificate of authenticity from PSA/DNA, #AE02469. Some handling wear to edges, vertical crease along right edge.

SIGNED by NEIL ARMSTRONG, EDWARD H. WHITE, CHARLES CONRAD JR., JOHN YOUNG, FRANK BORMAN, JAMES LOVELL, THOMAS P. STAFFORD, JAMES MCDIVITT, and ELLIOT SEE.

PROVENANCE

Joseph Fricelli (inscription)

\$ 4,000-6,000

90

ORIGINALLY FROM THE COLLECTION OF GEMINI AND APOLLO ASTRONAUT ED WHITE ED WHITE'S USAF EXPERIMENTAL TEST PILOT SCHOOL DIPLOMA

Diploma, 9 by 12 inches, text as follows: "United States Air Force | Air Research and Development Command | Air Force Flight Test Center | USAF Experimental Flight Test Pilot School | Captain Edward H. White, II is hereby awarded this diploma having successfully completed a course in the Flight Techniques and Engineering Principles of Experimental Flight Testing as prescribed by Headquarters United States Air Force. Given at Edwards Air Force Base this twenty-second day of April nineteen hundred sixty." Signed at close by two commanders.

[WITH] Black and white photograph, 8 by 10 inches, class photograph showing the test pilot group at Edwards Air Force Base in 1959 posing in front of a plane. SIGNED by fourteen of the sixteen pictured including JIM MCDIVITT. It is not signed by White, as this was his personal copy of the photo. Both matted and framed to: 19¼ x 25¼ inches.

White was one of the three astronauts whose lives were tragically cut short in the Apollo 1 launch rehearsal test cabin fire.

\$ 2,500-3,500

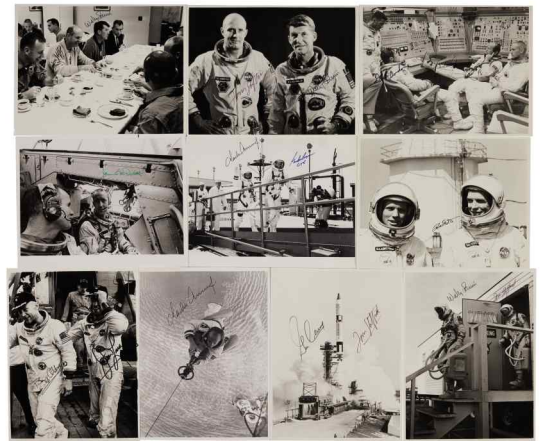
NASA GEMINI PRESS RELEASE PHOTOGRAPH COLLECTION

CONTAINS 10 PHOTOS HAVING 17 TOTAL ASTRONAUT SIGNATURES

All are approximately 8 by 10 inches in black and white with printed NASA text on verso. Includes signatures from: JAMES MCDIVITT, CHARLES CONRAD, GORDON COOPER, TOM STAFFORD, WALLY SCHIRRA, DAVE SCOTT, GENE CERNAN, DICK GORDON, BUZZ ALDRIN and JAMES LOVELL.

Full details available online.

\$ 2,000-3,000



GEMINI COLOR PHOTOGRAPH COLLECTION

CONTAINS 12 PHOTOS HAVING 20 TOTAL ASTRONAUT SIGNATURES

All are approximately 8 by 10 inches and in color. Includes signatures from: CHARLES CONRAD, GORDON COOPER, TOM STAFFORD, WALLY SCHIRRA, DAVE SCOTT, RICHARD GORDON, and BUZZ ALDRIN.

Full details available online.

\$ 2,000-3,000



GEMINI POSTAL COVER COLLECTION

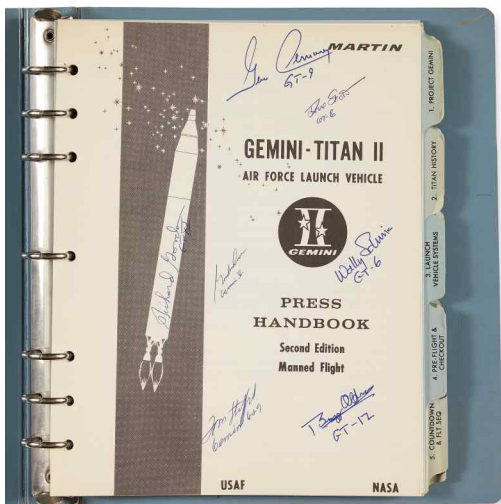
CONTAINS 10 ENVELOPES WITH 18 TOTAL ASTRONAUT SIGNATURES

All envelopes are 3½ by 6½ inches. Includes signatures from: GORDON COOPER, CHARLES CONRAD, WALLY SCHIRRA, TOM STAFFORD, FRANK BORMAN, GENE CERNAN, and RICHARD GORDON.

Full details available online.

\$ 1,500-2,000





94

94

GEMINI-TITAN II PRESS HANDBOOK

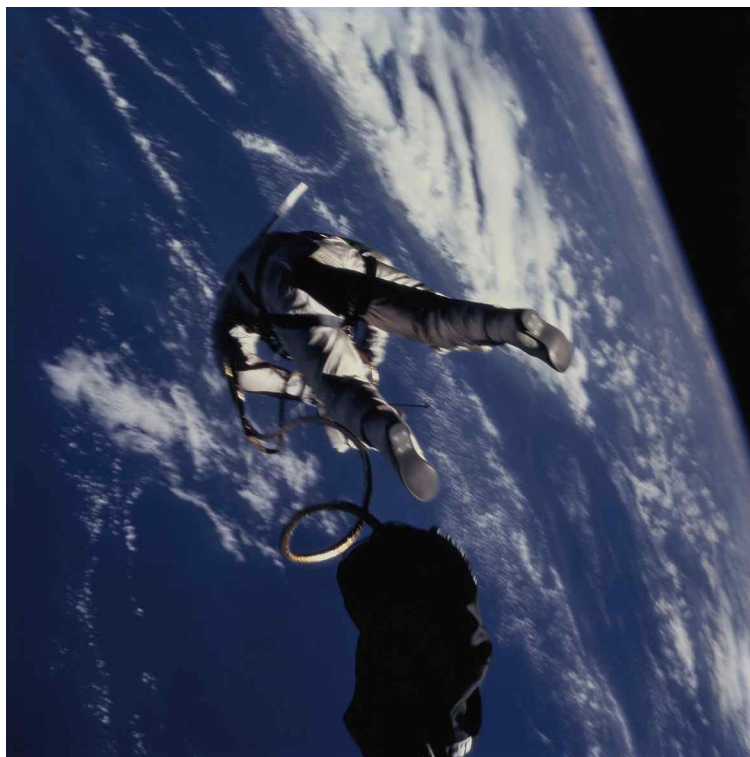
SIGNED BY EIGHT GEMINI ASTRONAUTS

Gemini-Titan II Air Force Launch Vehicle: Press Handbook, Second Edition, Manned Flight. The Martin Company for NASA, 1965. Upwards of 140 pp. Illustrated with diagrams, half-tone images, and charts. 12 by 10 inches. All enclosed with a gray and black 7-ring binder having blue heavy card stock tabbed section dividers.

INSCRIBED with their individual Gemini Titan flight numbers(s) and SIGNED by BUZZ ALDRIN, GENE CERNAN, GORDON COOPER, RICHARD GORDON, WALLY SCHIRRA, DAVE SCOTT, and TOM STAFFORD on the title page. Additionally SIGNED by JAMES LOVELL on the first tabbed divider section card.

Full details available online.

\$ 3,000-5,000



95

95

LIGHT, MICHAEL

"Edward White at 17,500 mph over gulf of Mexico. Photographed by astronaut James McDivitt, Gemini 4, 1965", 1999

Fuji Crystal Archive color-coupler print (24½ by 24½ inches). Negative date, 1969. Print date, 1999. Framed.

Signed, titled, dated, and editioned (12/50) by the artist in pencil on print verso. This print is part of an edition of 50.

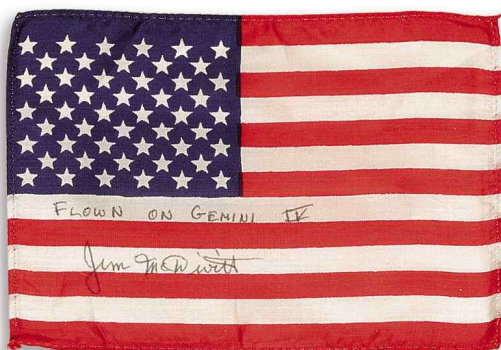
REFERENCES

ILLUSTRATED: Michael Light and Andrew Chalkin, *Full Moon*, Knopf, 1999, plate 10.

PROVENANCE

Purchased directly from the Photographer, Michael Light.

\$ 2,000-3,000



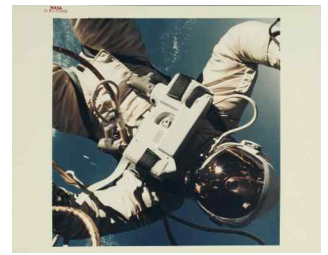
96 (PART)

96

JIM MCDIVITT'S UNITED STATES FLAG CARRIED ON GEMINI IV

FLOWN on Gemini IV, silk stars and stripes flag, 4 by 6 inches, SIGNED and INSCRIBED on two lower white bars: "FLOWN ON GEMINI IV | JIM MCDIVITT" in black pen. Framed with color photograph laid down on mat board, 13¾ x 10¾ inches, SIGNED and INSCRIBED by ED WHITE on the board: "To Nig - Thank you for your help and support for Gemini IV | EDWARD H WHITE II | 3 June '65"; inscription and signature faded and refreshed, possibly in another hand; additionally includes se-tenant pair of 5 cent Gemini 4 "Accomplishments in Space" stamps; matted and framed to 36 by 24 inches.

\$ 4,000-6,000



97



98

97

VINTAGE NASA "RED NUMBER" GEMINI 4 SPACEWALK PHOTOGRAPHS

ALL HAVE THE "A KODAK PAPER" WATERMARK ON VERSO, PRINTED JUST AFTER THE 1965 FLIGHT

All are 8 by 10 inches illustrating a full frame Hasselblad photograph 7½ inches square in size. These are a direct sequence of Extravehicular Activity (EVA) or spacewalk photographs taken by astronaut James McDivitt of Ed White as he performed the United States first spacewalk during the Gemini 4 mission on June 3, 1965. All have red NASA identification numbers being S-65-30427, 30428, 30439, and 30430 at the upper left corner.

Ed White was outside the Gemini 4 spacecraft slightly over 20 minutes and used a hand-held jet maneuvering gun to assist movement. This gun can be seen in three of the photographs as well as the long gold tether to keep White attached to the spacecraft. The earth is in the background of all these photographs.

\$ 1,200-1,800

98

ORIGINALLY FROM THE COLLECTION OF MERCURY AND GEMINI ASTRONAUT GORDON COOPER

COOPER'S FLOWN GEMINI 5 MISSION EMBLEM

THE FIRST EMBLEM DESIGNED BY A FLIGHT CREW AND WORN ON THEIR SPACE SUITS

FLOWN cloth crew mission emblem approximately 4 inches in diameter, featuring a white and brown covered wagon with the crew members last names and flight name in red. Mounted between paragraphs on a Typed Letter Signed by GORDON COOPER on his personal stationery. Displayed with an approximately 10 by 8 inch color photograph of the Gemini 5 crew on the prime recovery ship. All mounted on and removable from a 12½ by 19 inch tan mat board.

The color photograph is INSCRIBED and SIGNED: "You need a shave, CHARLES CONRAD" and "Maybe tomorrow, GORDON COOPER."

WITH GORDON COOPER'S signed provenance letter which reads: "This patch flew on the Gemini 5 mission during August 21 to 29, 1965. I was spacecraft commander with fellow astronaut Charles Conrad as pilot. Gemini 5 was the first flight to have a designed crew mission emblem for the United States space program.

The idea for the cover wagon came from a wooden model a family member had whittled. I felt it was the best way to symbolize the pioneering spirit of this early Gemini flight. The "8 days or bust" wording was not added to this run of patches due to a directive from NASA Administrator James Webb. He indicated that a flight time short of eight days could be viewed as a mission failure. We also had to cover that wording with cloth for the patches already sewn on our flight space suits. We did fly the group of patches with the "8 days or bust" in the spacecraft anyway! Our mission completed all eight days and Gemini 5 marked the beginning of the United States lead in manned space exploration."

\$ 6,000-9,000

69



99



100 (ENLARGED)

99

ORIGINALLY FROM THE COLLECTION OF MERCURY AND GEMINI ASTRONAUT GORDON COOPER

FLOWN GEMINI 5 HEAT SHIELD SEGMENT

EXPOSED TO SPACE FOR A THEN WORLD RECORD OF 8 DAYS

Gemini 5 heat shield segment approximately 3/4 x 3/4 x 2 inches. Encased in a Lucite cylinder 3 inches tall and 3 inches in diameter. The base of the cylinder is engraved: "GEMINI V, AUG. 21-29, 1965." With a Typed Card Signed by L. Gordon Cooper describing the heat shield and Gemini 5 flight.

The display card is SIGNED: L. GORDON COOPER, a rare form of his signature.

L. Gordon Cooper's signed provenance card reads: "This ablative material was taken from the Gemini V spacecraft after the flight. I was commander of the mission. Charles Conrad and I flew a record breaking eight day flight. Our successful completion of Gemini V marked the beginning of the U.S. lead in manned space exploration. I was presented this heat shield segment in a ceremony after the flight."

\$ 3,000-5,000

100

ORIGINALLY FROM THE COLLECTION OF MERCURY AND GEMINI ASTRONAUT GORDON COOPER

MEDALLION CARRIED ON GEMINI 5

THE RECORD SETTING 8 DAYS OR BUST FLIGHT

Flown Medallion, made from sterling silver, 1 inch in diameter. Carried on the Gemini 5 flight by Commander Gordon Cooper. The crew mission emblem featuring a covered wagon is on the obverse with the motto "8 Days or Bust," and the flight dates of "August 21-29, 1965" are engraved on the reverse. Displayed with a 5 1/2 by 8 1/2 inch Typed Card Signed by L. GORDON COOPER describing the medallion and Gemini 5 flight.

The display card is SIGNED: L. GORDON COOPER, a rare form of his signature.

L. Gordon Cooper's signed provenance card reads: "This Gemini 5 medallion flew in space from August 21 to 29, 1965. I was spacecraft commander of the mission with fellow astronaut Charles Conrad as pilot. The covered wagon reflects the pioneering spirit of this early Gemini flight. It was carried onboard in my personal preference kit and became a part of history when we completed the record breaking eight day flight. Our successful completion of Gemini 5 marked the beginning of the U.S. lead in manned space exploration."

\$ 2,500-3,500

ORIGINALLY FROM THE COLLECTION OF GEMINI AND APOLLO ASTRONAUT THOMAS STAFFORD

FLOWN GEMINI 6 CREW MISSION EMBLEM

CARRIED ON THE FIRST MANNED RENDEZVOUS MISSION

FLOWN cloth crew mission emblem approximately 4 by 4 inches, hexagonal, and features two Gemini spacecraft in a rendezvous-type formation. The stitched outline using background stars forms the number "6" to represent their Gemini flight number. Mounted between paragraphs on a Typed Letter Signed by TOM STAFFORD on his business stationery. Displayed with an approximately 10 by 8 inch Gemini 6 crew signed color photograph of the Gemini 6 and 7 rendezvous in space. All mounted on and removable from a 12½ by 19 ½ inch black mat board.

The color photograph is SIGNED and INSCRIBED: "TOM STAFFORD, Gemini 6 Plt" and SIGNED by WALLY SCHIRRA.

TOM STAFFORD'S signed provenance letter reads: "The Gemini 6 crew emblem displayed below is one that I carried into space during December 15, 1965. The emblem became a part of history when the Gemini 6 spacecraft completed the world's first manned space flight rendezvous with Gemini 7 later that day. This flight technique was one of the most significant capabilities demonstrated in the Gemini Program. Spacecraft rendezvous later became the flight method to accomplish a manned lunar landing and return. Commander Wally Schirra and I completed our mission on December 16.

This emblem has been in my private collection since 1965. The star constellations of Gemini and Orion as well as the star Sirius are shown on the patch which represents the celestial background where the rendezvous occurred. We patterned our own constellation of a "6" using that background."

\$ 6,000-9,000



101



102 (ENLARGED)

102

ORIGINALLY FROM THE COLLECTION OF GEMINI AND APOLLO ASTRONAUT THOMAS STAFFORD

FLOWN GEMINI 6 MEDALLION

CARRIED ON TWO LAUNCH ATTEMPTS BEFORE MAKING ORBIT

FLOWN Medallion, made from sterling silver, 1 inch in diameter. Carried on the Gemini 6 flight by Thomas Stafford. The original Gemini 6 mission emblem with the crew's last names is on the front. The flight dates of "December 15-16, 1965" are engraved on the reverse. Displayed with an October 25, 2000 Typed

Letter Signed by THOMAS P. STAFFORD on his business stationery describing the medallion and Gemini 6 flight.

THOMAS P. STAFFORD'S signed provenance letter reads, in part: "The Gemini 6 sterling silver medallion enclosed with this letter is one that I carried into space beginning December 15, 1965. This medallion became a part of history when the Gemini 6 spacecraft completed the world's first manned space flight rendezvous with Gemini 7 later that day. This flight technique was one of the most significant capabilities demonstrated in the Gemini Program.

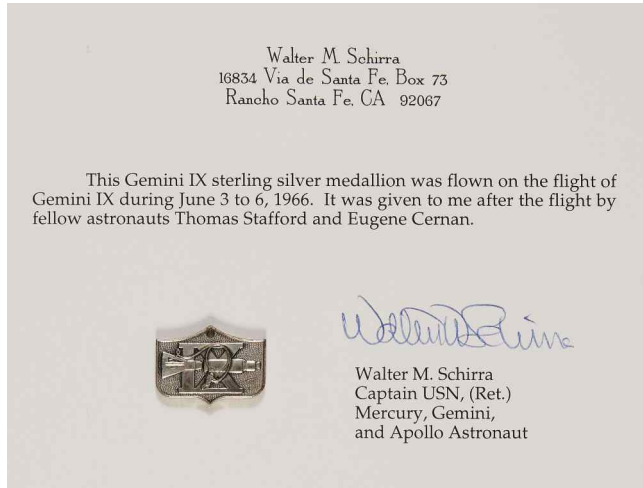
Spacecraft rendezvous later became the flight method to accomplish a manned lunar landing and return. Commander Wally Schirra and I returned to Earth the following day, December 16, 1965."

Full details available online.

\$ 2,500-3,500



103



104 (DETAIL)

103

**SPACE RENDEZVOUS PHOTOGRAPH
CREW SIGNED**

Large color photograph, 14 by 11 inches.

INSCRIBED and SIGNED: "Photo by TOM STAFFORD" and SIGNED by WALLY SCHIRRA.

Tom Stafford takes an orbital photograph of Gemini 7 just minutes after he and Wally Schirra made the historic first rendezvous on December 15, 1965.

\$ 2,500-3,500

104

ORIGINALLY FROM THE COLLECTION OF MERCURY, GEMINI, AND APOLLO ASTRONAUT WALTER M. SCHIRRA

MEDALLION CARRIED ON GEMINI 9

PRESENTED TO SCHIRRA FROM THE GEMINI 9 CREW

Flown medallion, shield-shaped, 1 inch wide, made from sterling silver. The crew mission emblem is on the obverse illustrating the flight objectives. The flight dates of "June 3-6, 1966" are engraved on the reverse. With a Typed Letter Signed by WALTER M. SCHIRRA.

Accompanied by WALTER M. SCHIRRA'S signed provenance letter on this personal stationery which reads: "This Gemini IX sterling silver medallion was flown on the flight of Gemini IX during June 3 to 6, 1966. It was given to me after the flight by fellow astronauts Thomas Stafford and Eugene Cernan."

\$ 2,500-3,500

105

GEMINI IXA PANORAMA

"Space Walk from Hell"

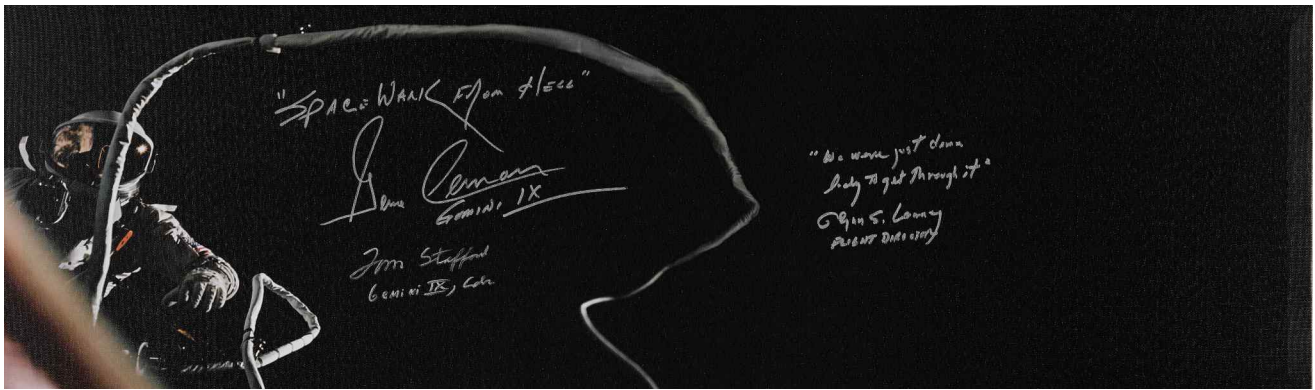
Photographic canvas print, 12 by 40 inches, depicting Eugene Cernan during his grueling EVA.

SIGNED and INSCRIBED by GENE CERNAN: "'SPACE WALK FROM HELL' GENE CERNAN GEMINI IX."

Additionally SIGNED by TOM STAFFORD, and flight director GLYNN LUNNEY, who includes the INSCRIPTION: "We were just damn lucky to get through it."

In this photograph taken by Tom Stafford, Gemini IXA pilot Eugene Cernan is seen outside the spacecraft during his two hour, eight minute spacewalk on June 5, 1966. He was scheduled to demonstrate the Astronaut Maneuvering Unit (a propulsion unit that would allow the pilot controlled flight), but was unable to accomplish this due to stress, fatigue, and overheating. Cernan's experience during showed there was still much to be learned about working in microgravity.

\$ 2,500-3,500



105

106

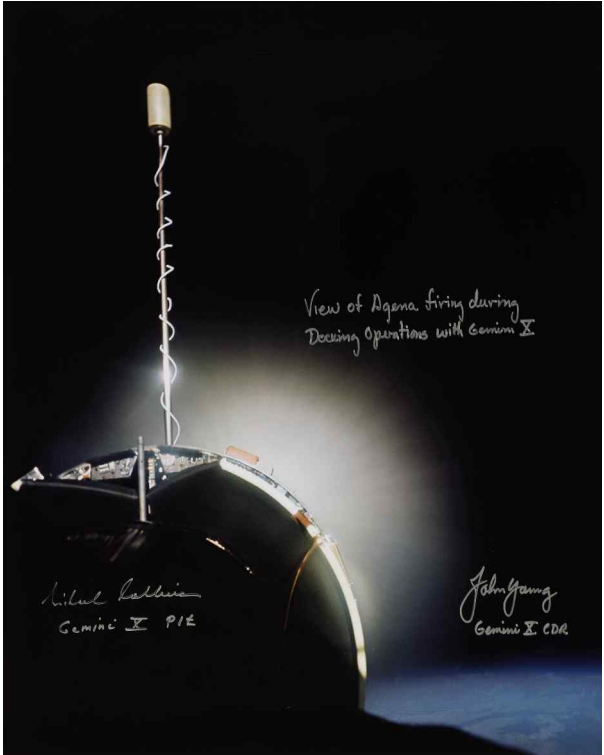
GEMINI 10 — VIEW OF AGENA FIRING DURING DOCKING OPERATIONS

Color photograph, 20 by 16 inches.

SIGNED and INSCRIBED by MICHAEL COLLINS: "GEMINI X PLT" and JOHN YOUNG: "GEMINI X CDR"

A striking view of the Agena Target Vehicle (ATV) firing during docking operations with Gemini 10.

\$ 3,000-5,000



106

107

ORIGINALLY FROM THE COLLECTION OF GEMINI AND APOLLO ASTRONAUT CHARLES CONRAD

GOLD PLATED MEDALLION CARRIED ON GEMINI 11

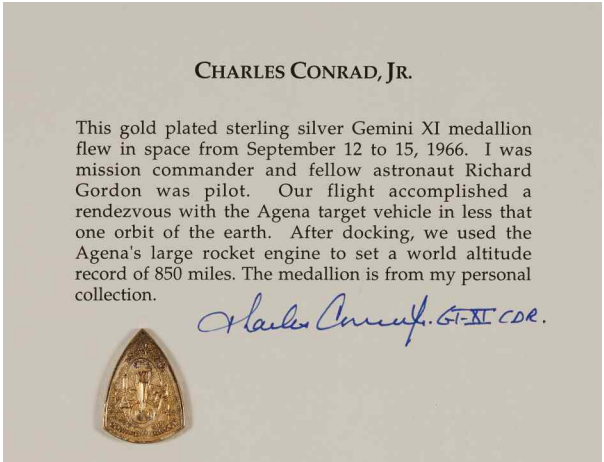
A WORLD ALTITUDE RECORD SET ON THIS FLIGHT OF 850 MILES

Flown medallion, arrow-shaped, 1 1/8 inches tall, made from sterling silver which was gold plated prior to the flight. The crew mission emblem is on the obverse illustrating the flight objectives: docking and the high altitude orbit using the Agena vehicle plus a spacewalk by Richard Gordon. The flight dates of "Sept 12-15 1966" are engraved on the reverse. Displayed with a 6 1/2 by 5 1/2 inch heavy stock display card describing the medallion and Gemini 11 flight.

The display card is SIGNED and INSCRIBED: "CHARLES CONRAD, GT-11 CDR."

Charles Conrad's signed provenance card reads: "This gold plated sterling silver Gemini XI medallion flew in space from September 12 to 15, 1966. I was mission commander and fellow astronaut Richard Gordon was pilot. Our flight accomplished a rendezvous with the Agena target vehicle in less than one orbit of earth. After docking, we used the Agena's large rocket engine to set a world altitude record of 850 miles. The medallion is from my personal collection."

\$ 3,000-5,000



107



108

108

BUZZ ALDRIN'S "SPACE SELFIE"

Photographic canvas print, 19 by 24 inches, depicting a self-portrait by Buzz Aldrin during his 1966 Gemini 12 EVA.

SIGNED and INSCRIBED: "BUZZ ALDRIN | GEMINI XII | NOV. 12 1966 | FIRST EVA SELF PORTRAIT."

\$ 2,000-3,000

109

GEMINI 12 – THE AGENA TARGET VEHICLE DOCKING WITH GEMINI 12

Color photograph, 20 by 16 inches.

SIGNED and INSCRIBED by JIM LOVELL: "A 100 FOOT TETHER LINE CONNECTS THE AGENA TARGET DOCKING VEHICLE WITH THE GEMINI 12 SPACECRAFT DURING ITS 32ND REVOLUTION OF EARTH | GEMINI 12 | JAMES LOVELL | COMMAND PILOT | NOVEMBER 1966"

The Agena Target Vehicle (ATV) was an unmanned spacecraft, which NASA utilized during its Gemini program. The purpose of the ATV was to develop and practice various techniques in preparation for the Apollo program's lunar missions.

\$ 3,000-5,000



109

THE END OF GEMINI

Gemini Summary Conference. NASA SP-138. Washington: 1967. v, 345 pp. Color illustrations. 10 by 8½ inches. Original printed wrappers.

SIGNED and INSCRIBED with their individual GT (Gemini Titan) flight number(s) by BUZZ ALDRIN (Gemini Titan) flight number(s) by BUZZ ALDRIN, GORDON COOPER, RICHARD GORDON, WALLY SCHIRRA, and TOM STAFFORD on the title page.

A summary of Gemini flight results released at the Manned Spacecraft Center in Houston, Texas during a conference held on February 1-2, 1967. Several astronauts reported on their actual flight and simulation experiences (T. Stafford and C. Conrad), rendezvous (B. Aldrin), Extravehicular Activities (EVAs, Ed White), and controlled reentry (N. Armstrong). Other topics covered include launch and target vehicle support, medical issues related to long term exposure to space, operations with tethered vehicles, and how Gemini results will relate to Apollo operations.

\$ 1,500-2,000

A CHRONOLOGY OF EVENTS DURING THE GEMINI PROGRAM

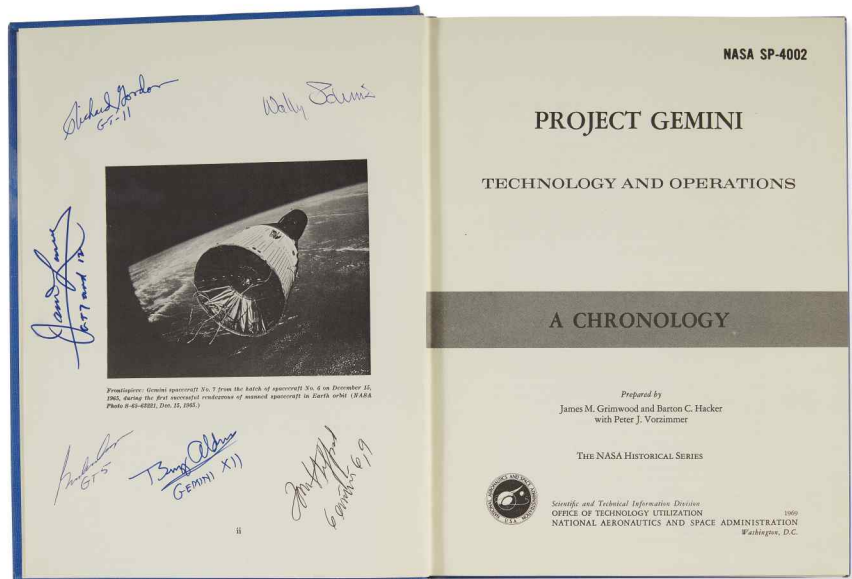
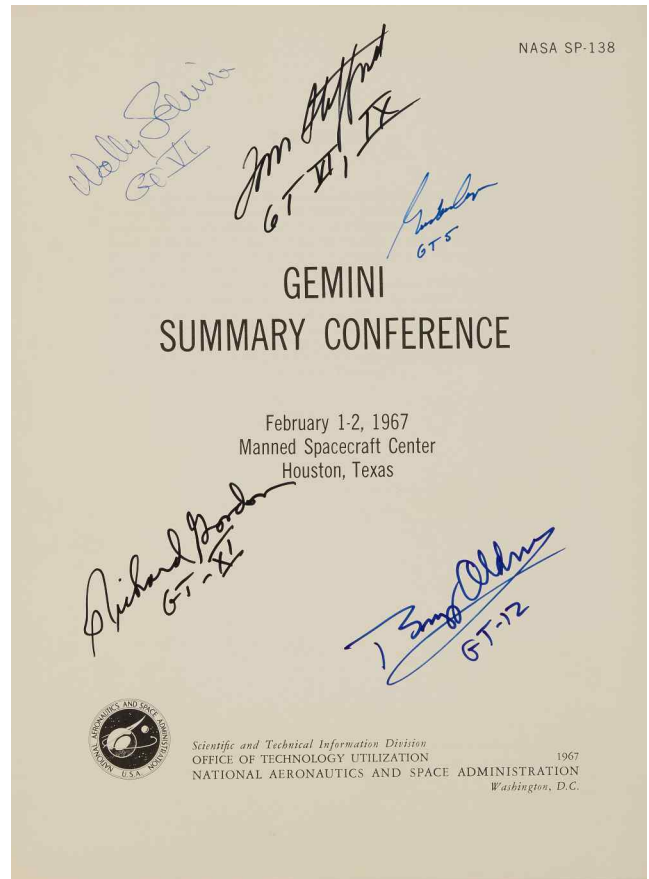
SIGNED BY SIX GEMINI ASTRONAUTS

GRIMWOOD, JAMES M., BARTON HACKER AND PETER VORZIMMER. *Project Gemini, Technology and Operations, A Chronology.* NASA SP-4002. Washington: 1969. XVI, 308 pp. 10½ by 8 inches. Original blue cloth. Library of Congress stamp on half title.

SIGNED and INSCRIBED on the frontispiece photograph of the Gemini 7 spacecraft after rendezvous with Gemini 6 as: "BUZZ ALDRIN, Gemini XII; GORDON COOPER, GT 5; RICHARD GORDON, GT 11; JAMES LOVELL, GT 7 and GT 12; TOM STAFFORD, Gemini 6, 9; and WALLY SCHIRRA."

A month by month and nearly day by day chronology of significant Gemini events from April 1959 to February 1967. Contains dozens of photographs, drawings, and diagrams. Seven appendixes include flight summaries, mission objectives, spacecraft data, program costs, and a listing of contractors, subcontractors, and equipment vendors.

\$ 2,000-3,000





112

COMPLETE GEMINI SPACESUIT WITH HELMET, GLOVES MADE FOR PETE CONRAD, AND BOOTS MADE FOR FRANK BORMAN, 1963-65

A Gemini G-2C-4 full high altitude pressure suit, including inner pressure suit and outer cover layer, complete with GH-2C-7 helmet, GG-2C-16 gloves made to fit Pete Conrad, and GB-5C-9 boots made to fit Frank Borman, all manufactured by the David Clark Company for NASA between 1963-1965

Gemini G-2C-4 full pressure suit, approx. 75 inches tall from boot to helmet; inner pressure layer made of neoprene rubber, outer cover layer of white HT Nylon, with pressure-sealing entry zipper running from back of neck down to just above crotch, original NASA meatball patch at left chest, left shoulder with replaced American flag patch, three anodized aluminum umbilical life support outlets, label at nape reads: "SUIT, HIGH ALTITUDE / FULL PRESSURE / G-2C-4 / SIZE —KANOWSKI / DATE OF MFG. 8-12-63"; Gloves in white and aluminized (silver) HT Nylon with adjustable lacing, attaching to suit with anodized aluminum sealed rings with sealed bearing (left hand blue, right hand red), label inside each glove at wrist reading: "GLOVE, SPACE SUIT / NASA DESIGNATION GG-2C-16 / DAVID CLARK CO. INC. / P/N ACS 1003 SER. NO. 116 / SIZE CONRAD DEC 1963"; Boots in white HT nylon with sturdy rubber soles, closing with laces and zipper, plus two red buckle-straps, label inside each boot reading: "BOOT, RIGHT (BOOT, LEFT) / PRESSURE SUIT ASSEMBLY / NASA DESIGNATION GB-5C-9 / MFG. DAVID CLARK COMPANY INC. / P/N A-2482-2 (A-2482-1) SERIAL NO. 509 / SIZE: BORMAN OCT. 1965"; helmet made of fiberglass and epoxy with movable poly-carbonate visor, sheepskin inner lining, and suede ear-pads, label inside reading: "HELMET, SPACE SUIT / NASA DESIGNATION GH-2C-7 / MFG. DAVID CLARK CO. INC. / P/N ACS 1053 SER.NO.107 / SEAL CURE DATE 10/64 / SIZE [blank] FEB 1964", attaching to helmet with anodized aluminum ring. Mounted onto custom built archival display stand.

AN EXCEPTIONALLY RARE AMERICAN SPACE SUIT, COMPLETE WITH HELMET, GLOVES AND BOOTS

NASA policy has always been to give the Smithsonian right of first refusal on all items flown during the US manned space missions. The items that have been the most prized by the Smithsonian are the flown space suits, making it impossible for a member of the public to own one. While it is possible to own an unflown American space suit (or a flown Russian suit for that matter), finding a NASA that is complete is a near impossible thing —indeed of those few that we are aware of having come to market, all 3 were cover layers only (A Gemini G1C spacesuit thermal cover layer, with no boots, gloves, or helmet, sold in these rooms in 2018; a Phase 2 Mercury era cover layer with gloves, helmet, and mocked-up

boots, sold at Bonhams in 2014; an A5L cover layer with no helmet, gloves, or boots, made for Armstrong, sold at Christie's in 1999). THE PRESENT SUIT IS THE ONLY AMERICAN SPACESUIT THAT WE ARE AWARE OF TO HAVE COME TO MARKET COMPLETE WITH COVER LAYER, INNER PRESSURE BLADDER, HELMET, GLOVES, AND BOOTS.

Project Gemini was critical to the objective of landing a man on the moon, and the US astronauts logged nearly 1000 hours of spaceflight during the course of the program. The astronauts were given a variety of different tasks that were not assigned to the previous project Mercury, including conducting spacewalks, and living in cramped quarters for extended periods of time. As such, their suits needed to be adapted to the new program requirements. They had to provide a high level of versatility as the astronauts would have to wear them for 14 days; the suits had to be functional while pressurized, helped the astronauts to maintain a level body temperature, and at the same time provide a minimum level of micrometeoroid protection—a lot to ask of one garment. The first of these type suits by the David Clark Company was the G1C, which was much closer in look and feel to the iconic silver space suit of the Mercury program. The Gemini G2-C, as here, was the earliest of the white space suits to be developed, and was an important step in the development of the iconic A7L suit used by the Apollo astronauts to walk on the moon.

The gloves for this suit were originally made for Pete Conrad, who flew on Gemini 5 with Gordon Cooper. He also commanded the Gemini 11 mission during which he made the first ever direct-ascent rendezvous with another space vehicle already in orbit, successfully docking with it only 94 minutes after launch. Conrad was the commander of the back-up crew for the first Apollo orbital flight and eventually commanded Apollo 12, during which he became the 3rd man to land on the moon.

The boots for this suit were originally made for Frank Borman, who flew Gemini 7 during which he set a 14 day spaceflight endurance record. He later commanded Apollo 8 which made him, along with his crewmates Jim Lovell and Bill Anders, the first men to ever orbit the moon. Frank Borman is, at 90, the oldest living American astronaut.

The main body of the suit itself was made for one of the 5 "Air Jumpers", Air Force Chief Warrant Officer Mitchell Kanowski, who, along with the Gemini astronauts, traveled to David Clark Company in Massachusetts to be fitted for their suits. In testing the Gemini emergency launch escape system, Mr. Kanowski, an experimental parachute specialist, exited a NASA training aircraft at high altitude wearing the suit to test the survivability of the Gemini Astronauts if the system was needed in the event of a failure of the launch vehicle at takeoff, the most dangerous part of every space mission.

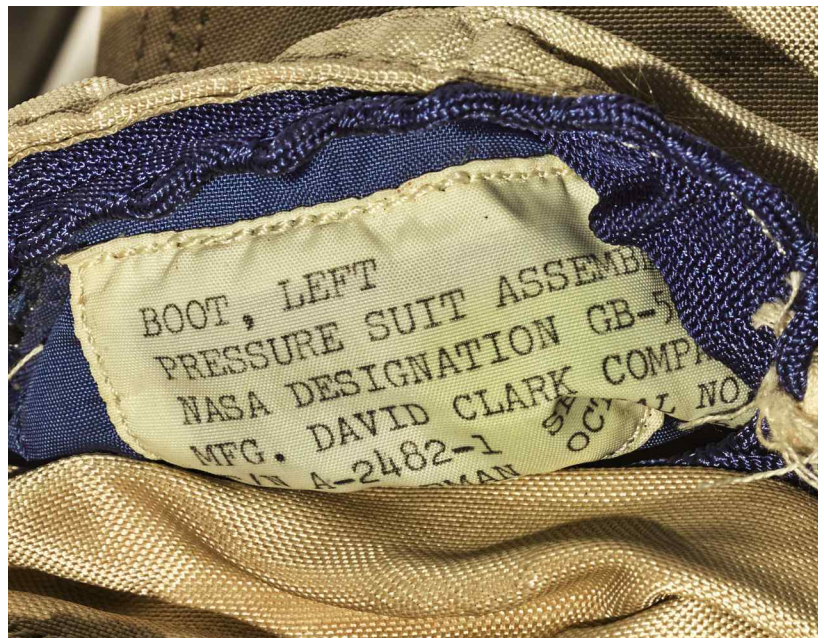
REFERENCES

Young, Amanda. *Spacesuits: The Smithsonian National Air and Space Museum Collection*, pp. 40-53; see Monchaux, *Spacesuit: Fashioning Apollo*

\$ 100,000-150,000



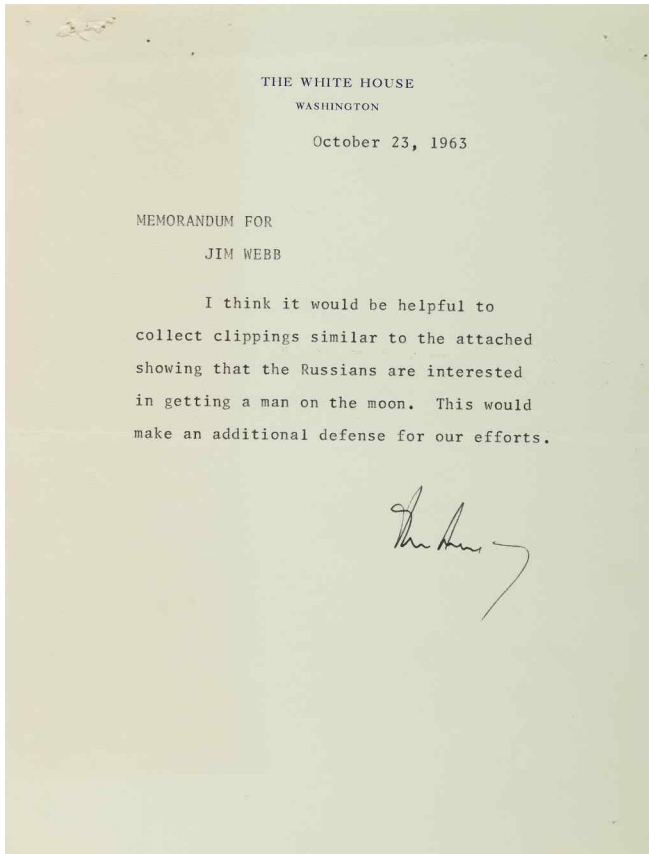
112 (DETAIL)



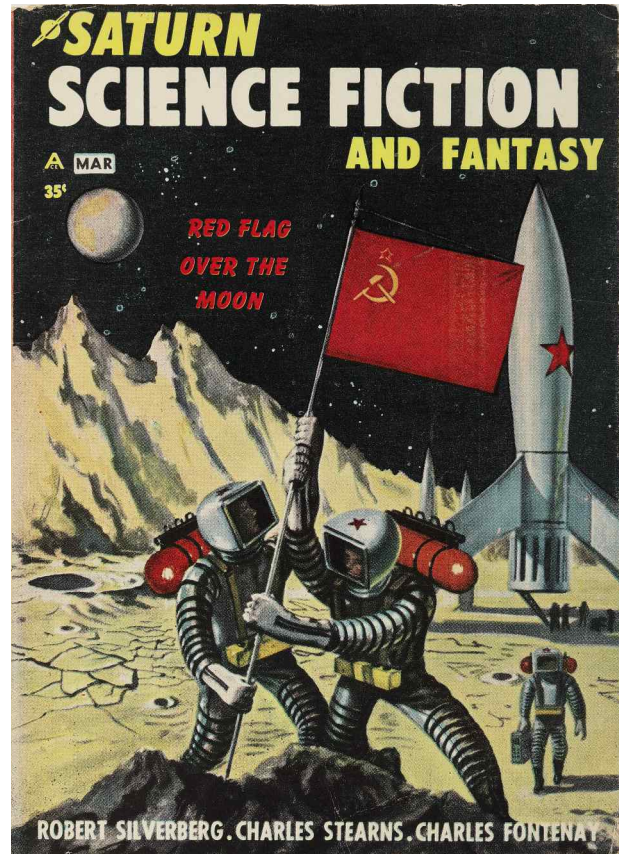
112 (DETAIL)

APOLLO PROGRAM

LOTS 113-134



113



113

113

KENNEDY, JOHN F.

Typed memorandum signed ("John Kennedy") as thirty-fifth President, discussing the Space Race with NASA Administrator James E. Webb

1 page (8⁷/₈ by 6³/₄ in.; 227 by 172 mm) on light blue *The White House* letterhead, Washington, 23 October 1963, directed for Jim Webb; several staple holes at top margin and light discoloration to the left third, both evidently from the news clippings referenced by the memo.

President Kennedy huddles with NASA Administrator Jim Webb about promoting the Soviet Union's objective of putting a man on the moon in order to boost support for America's rival manned lunar program: "I think it would be helpful to collect clippings similar to the attached showing that the Russians are interested in getting a man on the moon. This would make an additional defense for our efforts."

Just three weeks prior to Yuri Gagarin's successful orbit of the earth, John F. Kennedy had told Webb, who had recently been appointed to direct NASA, that he did not plan to further fund the Apollo Project (see Reeves, *President Kennedy: Profile of Power*, p. 139). Gagarin's feat changed his mind, however, and in May 1961 Webb and Secretary of Defense Robert McNamara authored a top-secret memo pointing out that "Major successes such as orbiting a man as the Soviets have just done, lend national prestige even though the scientific, commercial or military value of the undertaking may by ordinary standards be marginal or even economically unjustified" (quoted in Hardesty & Eisman, *Epic Rivalry*, p. 123).

Having been beaten to space, Kennedy was determined that the United States would not be beaten to the moon, and the present memo shows that he was quite willing to use the specter of the Hammer and Sickle flying on the lunar surface to boost the American effort. Three weeks after sending this memo,

16 November, Kennedy visited Cape Canaveral, where he was given a tour of the facilities by astronauts Gus Grissom and Gordon Cooper; a week later, the President was assassinated in Dallas.

The original clippings Kennedy sent with his memo are not present, but they could have come from a myriad of popular or academic sources. By the next year, even Bob Dylan was singing about the Space Race in "I Shall Be Free No. 10." The memo is now accompanied by the front cover from a copy of the March 1958 issue of *Saturn Science Fiction and Fantasy* illustrating the Romney Boyd story "Red Flag Over the Moon."

PROVENANCE

Sold at Bonhams, 5 May 2011, lot 162

\$ 10,000-15,000

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genuine

Any technological progress sophisticated advances and any doubt in my mind that there is also a civilization from all these new concepts and methods. But ~~missile and space programming~~ ^{is} ~~entirely~~ ^{ready to concede that} ~~supporting research and development~~ ^{of novel technologies have always} ~~flourished best in the wake of some~~ ^{high-priority development project.} ~~money-making or some~~ ^{production venture}

hook on here

Experience with a certain type of flex hoses for trade

fancy

They are in the limelight of public interest, always be the ~~pack~~ ^{pack} ~~that~~ ^{that} ~~must~~ ^{must} ~~carry~~ ^{carry} all that load up the bill? In the military area ~~with~~ ^{with} ~~our~~ ^{our} ICBM's and our ~~RTM's~~ ^{RTM's} the country is at stake. ~~the~~ ^{and survival} ~~very~~ ^{the} ~~safety~~ ^{of} ~~of~~ ^{the} ~~the~~ ^{the} ~~field~~ ^{field} ~~of~~ ^{of} ~~space~~ ^{space} ~~exploration~~ ^{exploration}, ~~the~~ ^{the} ~~eighty~~ ^{eighty} ~~per~~ ^{per} ~~cent~~ ^{cent} of the world population ~~is~~ ^{is} ~~in~~ ⁱⁿ ~~the~~ ^{the} ~~audience~~ ^{audience} ~~still~~ ^{still} ~~the~~ ^{the} ~~other~~ ^{other} ~~per~~ ^{per} ~~cent~~ ^{cent} ~~the~~ ^{the} ~~USA~~ ^{USA} ~~and~~ ^{and} ~~the~~ ^{the} ~~USSR~~ ^{USSR}, ~~are~~ ^{are} ~~right~~ ^{right} ~~to~~ ^{to} ~~conclude~~ ^{conclude} ~~as~~ ^{as} ~~to~~ ^{to} ~~who~~ ^{who} ~~is~~ ^{is} ~~superior~~ ^{superior} ~~in~~ ⁱⁿ ~~the~~ ^{the} ~~scientific~~ ^{scientific} ~~field~~ ^{field} ~~of~~ ^{of} ~~measuring~~ ^{measuring} ~~the~~ ^{the} ~~pace~~ ^{pace} ~~of~~ ^{of} ~~nature~~ ^{of} ~~nature~~. ~~is~~ ^{is} ~~that~~ ^{that} ~~this~~ ^{this} ~~contest~~ ^{contest} ~~is~~ ^{is} ~~just~~ ^{just} ~~as~~ ^{as} ~~in~~ ⁱⁿ ~~the~~ ^{the} ~~military~~ ^{military} ~~field~~ ^{field} ~~as~~ ^{as} ~~in~~ ⁱⁿ ~~the~~ ^{the} ~~scientific~~ ^{scientific} ~~arena~~ ^{arena}.

VON BRAUN, WERNHER

"What is an Optimum Program?", 1960 Autograph manuscript, 22 pp (7 3/4 by 10 1/4 inches), in pencil on white lined notebook paper, written on rectos and versos of first 6 leaves, and rectos only of last 10 leaves. With extensive amendments and insertions, most in the hand of Bonnie Holmes, Von Braun's secretary, though with a few in Von Braun's hand.

A SPECTACULAR, HEAVILY ANNOTATED AUTOGRAPH MANUSCRIPT BY WERNHER VON BRAUN, THE ARCHITECT OF THE AMERICAN SPACE PROGRAM. Published in November 1960 in *Astronautics* (vol. 5, no. 11), this working manuscript draft for his visionary article differs slightly from the final published version.

It reads in part: "The purpose of this little treatise is neither to criticize nor to crusade. My objective is simply to clarify some of our semantics...All our missile and space systems are the result of careful optimization studies.... Just what is an optimum program? What is

an optimized missile system?... WITH THE ADVENT OF THE SPUTNIKS AND LUNIKS, THIS COCKSURENESS WAS FOLLOWED BY A PERIOD OF SOUL-SEARCHING AND BREAT-BEATING AND MANY PEOPLE THOUGHT WE'D NEVER CATCH UP WITH THE RUSSIANS. I THINK IT'S ABOUT TIME TO SOBERLY APPRAISE THE OTHER FELLOW AND DEVISE A TECHNOLOGICAL STRATEGY BEST SUITED TO COPE WITH HIM. AFTER ALL, THE SOVIET UNION STILL HAS A LONG WAY TO GO UNTIL SHE WILL HAVE REACHED AMERICA'S—OR THE WESTERN WORLD'S—SCIENTIFIC AND TECHNOLOGICAL PLATEAU. BUT SHE'S COMING UP FAST AND WE MUST NOT FIDDLE AROUND WITH NON-ESSENTIALS AND JEOPARDIZE OUR PRECARIOUS ELEVATED POSITION...."

It is interesting to see the various notes from Von Braun to his secretary Bonnie Holmes, and even more interesting to understand what a crucial role she had, as evidenced by the extensive amount of additions made in her hand. Yet another tangible piece of evidence pointing to the unrecognized role of women in the development of the American space program.

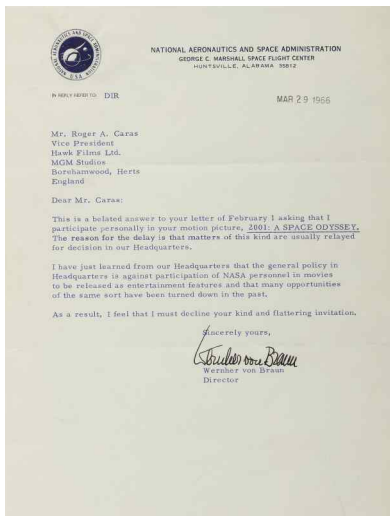
\$ 20,000-30,000

①

What is an optimum program?

The purpose of this little treatise is neither to criticize nor to crusade. My objective is simply to clarify some of our semantics...All our missile and space systems are the result of careful optimization studies... Even our national defense program is the result of optimization studies.

Just what is an optimum program? What is an optimized missile system? What is an optimized rocket engine? What is an optimized design for pipe connection?



115

115

VON BRAUN, WERNHER

Typed letter signed, to Roger Caras regarding his inability to appear in *2001: A Space Odyssey*

1 page, 8 by 10 inches, on National Aeronautics and Space Administration letterhead, dated "29 Mar 1966" and signed "Wernher von Braun" in black ink.

A LETTER FROM THE ARCHITECT OF THE AMERICAN SPACE PROGRAM TO THE VICE PRESIDENT OF STANLEY KUBRICK'S PRODUCTION COMPANY, HAWK FILMS

"This is a belated answer to your letter of February 1," von Braun begins. "I have just learned from our Headquarters that the general policy in Headquarters is against participation of NASA personnel in movies to be released as entertainment features and that many opportunities of the same sort have been turned down in the past."

2001: A Space Odyssey is regarded as one of the greatest and most influential films ever made, and deemed "culturally, historically, or aesthetically significant" by the United States Library of Congress.

\$ 2,000-3,000



116

116

NEWS REFERENCE FOR THE COMMAND SERVICE MODULE

SIGNED AND INSCRIBED BY ASTRONAUTS WHO FLEW THIS SPACECRAFT

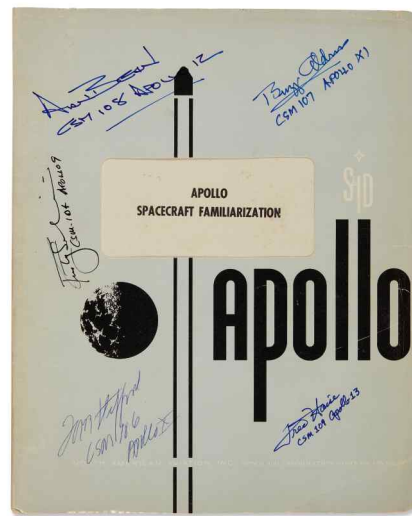
Apollo Spacecraft News Reference. NASA and the Space Division, North American Rockwell. Approximately 300 pp. Illustrated with diagrams, graphs, and half-tone images. 11 by 9 inches. Heavy black paper wraps with over 20 multi-colored tab section dividers.

SIGNED and INSCRIBED with their individual CSM and/or LM vehicle numbers plus their individual Apollo mission number by: BUZZ ALDRIN ALAN BEAN, GORDON COOPER, WALT CUNNINGHAM CHARLES M. DUKE, JR, FRED HAISE, EDGAR MITCHELL, TOM STAFFORD, and WALLY SCHIRRA on the first tabbed section divider.

Created to inform the print, radio, and television news media on details of the Apollo Command and Service Module (CSM) which is easily readable by the general public.

Full details available online.

\$ 5,000-7,000



117

117

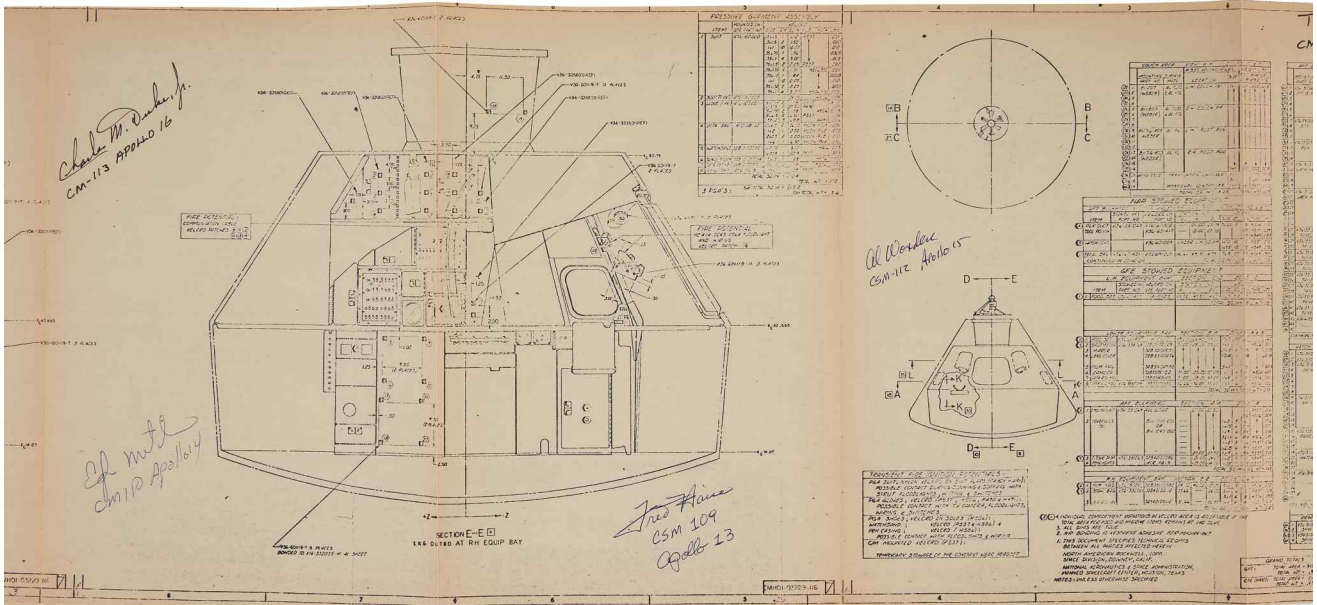
APOLLO SPACECRAFT FAMILIARIZATION FOR SUPPORT PERSONNEL AND ASTRONAUTS

Apollo Spacecraft Familiarization. NASA Support Manual 2A-02. NASA, April 26, 1964. Over 135 pp. with 3 folding diagrams of the crew instrument panel and other systems. 11 by 8½ inches. Punched and held with prong binders with heavy light blue card stock covers. One of the earliest issued manuals providing information on the Apollo mission concepts and spacecraft hardware to be used on a lunar mission.

The front card stock cover is SIGNED and INSCRIBED with their individual Command/Service Module spacecraft numbers: "BUZZ ALDRIN, CSM 107; Apollo XI, ALAN BEAN, CSM 108 Apollo 12; FRED HAISE, CSM 109, Apollo 13; RUSTY SCHWEICKART, CSM 104, Apollo 9; and TOM STAFFORD, CSM 106, Apollo X."

Full details available online.

\$ 3,000-5,000



118 (detail)

118

ORIGINALLY FROM THE COLLECTION OF MERCURY, GEMINI, AND APOLLO ASTRONAUT GORDON COOPER

GORDON COOPER'S COMMAND MODULE BLUEPRINT, MULTI ASTRONAUT SIGNED

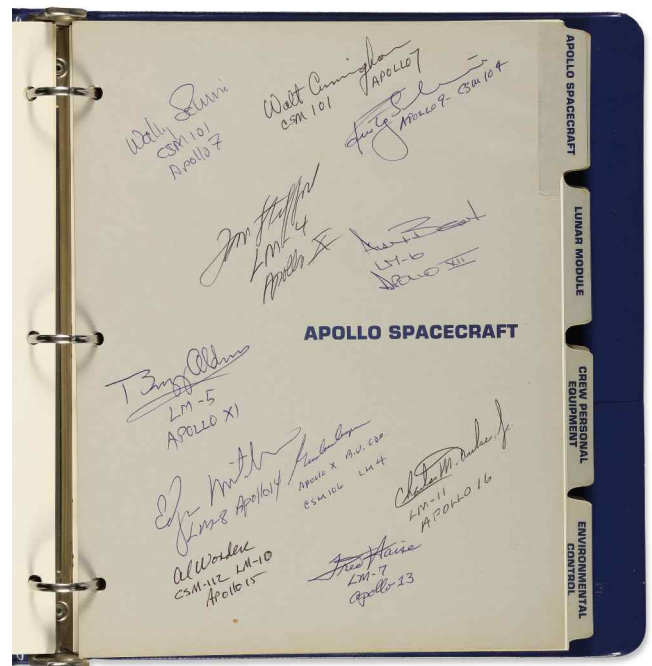
TWO LARGE ILLUSTRATIONS OF EQUIPMENT BAY AREAS AND MORE

Interior Command Module, blueprint. North American Aviation, pre-folded, expanding to 10½ by 49 inches with two large drawings and two smaller drawings. Having 3 binder hole punches at the left edge.

INSCRIBED and SIGNED by GORDON COOPER: "From my Apollo Notebook & files, GORDON COOPER, Apollo X B. U. CDR." Additionally SIGNED and INSCRIBED: "BUZZ ALDRIN, CM107, Apollo XI; ALAN BEAN, CM 108, Apollo 12; WALT CUNNINGHAM, CM 101 Apollo 7; CHARLES M. DUKE, JR., CM 113 Apollo 16; FRED HAISE, CSM 109 Apollo 13; EDGAR MITCHELL, CM110 Apollo 14; TOM STAFFORD, CM 104 Apollo X; and AL WORDEN, CM 112 Apollo 15."

Full details available online.

\$ 2,500-3,500



119

119

NEWS MEDIA GUIDE FOR THE LUNAR MODULE

EXTENSIVELY SIGNED AND INSCRIBED BY ASTRONAUTS

Apollo Spacecraft News Reference. NASA/MSC and Grumman Aircraft Engineering Corp., 1966. Upwards of 150 pp. 11½ by 10 inches, having 14 gray tinted tabbed section dividers. Enclosed within the original three-ring blue vinyl binder illustrating the Lunar Module and a full Moon.

SIGNED and INSCRIBED with their individual CSM and Apollo mission number by WALT CUNNINGHAM and WALLY SCHIRRA. INSCRIBED and SIGNED with their individual LM vehicle number and Apollo flight number by BUZZ ALDRIN, ALAN BEAN, GORDON COOPER, CHARLES M. DUKE, JR., FRED HAISE, EDGAR MITCHELL, RUSTY SCHWEICKART, TOM STAFFORD, and AL WORDEN.

Full details available online.

\$ 7,000-9,000

LUNAR MODULE INTERNAL COMPONENTS BROCHURE

INTERIOR HARDWARE AND COMPONENTS ARE CLEARLY ILLUSTRATED

NASA/Grumman Apollo Lunar Module. Bethpage, NY: Grumman, 1969. Eight acetate sheets having color overlaying drawings of multiple LM structures and components. 10 by 8 inches. Stapled gray and black covers.

The front cover overlay is SIGNED and INSCRIBED: "BUZZ ALDRIN Apollo XI, LM-5; ALAN BEAN, Apollo 12, LM 6; GENE CERNAN, Apollo X - LM 4, Apollo XVII - LM 12; WALT CUNNINGHAM, Apollo 7 LMP; CHARLES M. DUKE, JR., LM-11 Apollo 16; FRED HAISE, LM-7 Apollo 1; EDGAR MITCHELL, LM 8 Apollo 14; RUSTY SCHWIECKART, Apollo 9 LM 3; and TOM STAFFORD, LM 4 Apollo X."

Full details available online.

\$ 3,000-5,000



120

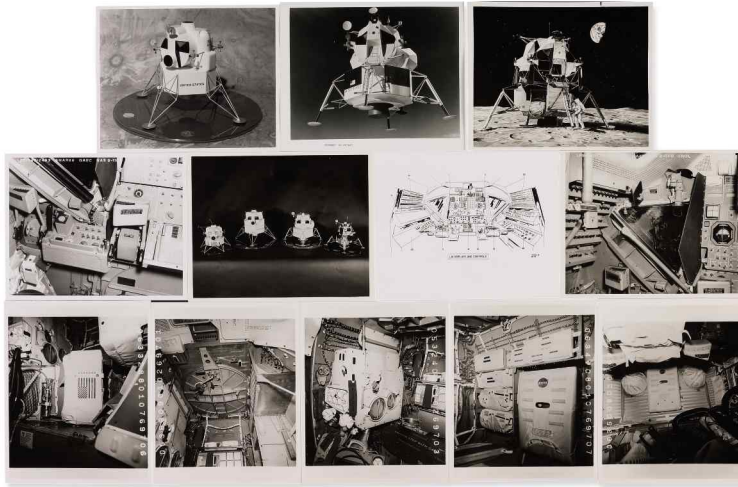
LUNAR MODULE DEVELOPMENT AND INTERIOR PHOTOGRAPHS

LM DESIGNS FROM 1963 TO 1969 AND LM 6 INTERIOR VIEWS

A collection of 12 black and white 8 by 10 inch NASA and Grumman photographs illustrating model and artist designs plus actual interior cabin control panels and equipment.

Full details available online.

\$ 1,200-1,800



121

ORIGINALLY FROM THE COLLECTION OF MERCURY, GEMINI, AND APOLLO ASTRONAUT GORDON COOPER

GORDON COOPER'S LUNAR SAMPLE EQUIPMENT BLUEPRINT - SIGNED

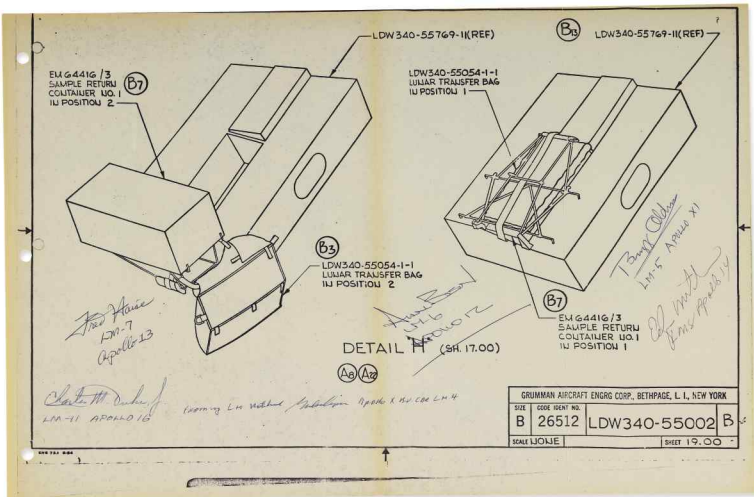
ILLUSTRATES STORAGE AND RETURN OF LUNAR SAMPLES

Blueprint LDW340-55002. Grumman Aircraft Engineering Corp., Bethpage, NY. 10½ by 16 inches. With two folds, scale labeled as "none."

INSCRIBED and SIGNED by GORDON COOPER: "From my LM notebook, GORDON COOPER, Apollo X B.U. CDR, LM 4." Additionally SIGNED and INSCRIBED: "BUZZ ALDRIN, LM-5 Apollo XI; ALAN BEAN, LM-6 Apollo 12; FRED HAISE, LM-7 Apollo 13; EDGAR MITCHELL, LM-8 Apollo 14 and CHARLES M. DUKE, JR., LM-11 Apollo 16."

Full details available online.

\$ 3,000-5,000



122

123

LUNAR MODULE BLUEPRINT

Large diagram, issued by Grumman Aircraft Engineering Corporation, circa 1968

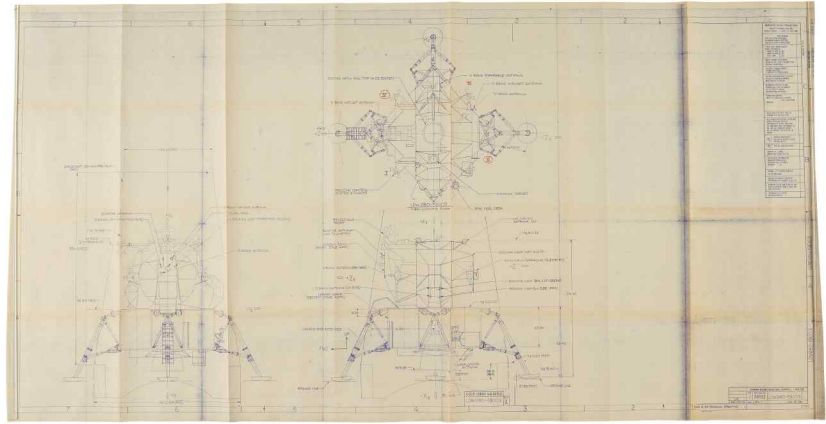
Single blueprint sheet, 60½ by 36½ inches, 1:20 scale, number LSW280-53003, with annotations in red ink; some toning, old folds.

A REMARKABLE DIAGRAM OF THE ONLY CREWED VEHICLE TO LAND ANYWHERE BEYOND EARTH

The Lunar Module was built for the US Apollo program by Grumman, with the aim of carrying a crew of two from lunar orbit to the surface of the moon, and safely back. After completing its mission, the LM was then discarded. Interestingly, the LM was capable of operation only in outer space. Aerodynamically and structurally, it could not fly through Earth's atmosphere. It was also the first manned spacecraft to operate exclusively in the airless vacuum of space.

AN INCREDIBLE PIECE OF DESIGN HISTORY

\$ 3,000-5,000



123

124

SIGNED BY EVERY "IB" MISSION COMMANDER

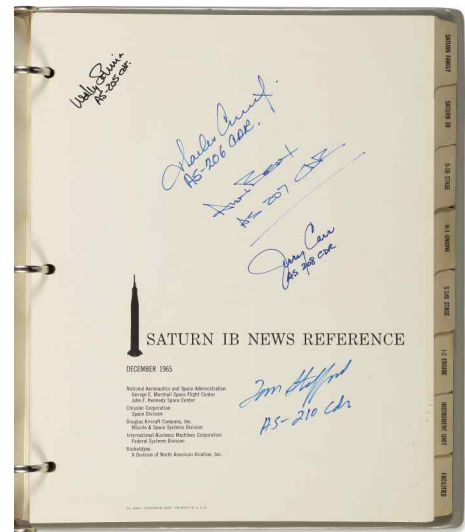
Saturn IB News Reference. NASA MSFC, NASA KSC, Chrysler, Douglas, IBM, and Rocketdyne, December, 1965. Over 110 pages. 11½ by 10 inches, having 15 tabbed section dividers.

Enclosed within the original three-ring gray vinyl binder being marked in red with "NBC Pool Copy" referring to use as the NBC television news copy used during the 1960's.

INSCRIBED with their individual Apollo Saturn (AS) flight number and SIGNED by ALAN BEAN, JERRY CARR, CHARLES CONRAD, TOM STAFFORD, and WALLY SCHIRRA. These astronauts were the only five commanders to pilot the Saturn IB rocket to earth orbit.

Full details available online.

\$ 2,500-3,500



124

125

THE SATURN V MOON ROCKET - SIGNED BY LUNAR VOYAGERS

Saturn V Apollo Flight Configuration. The Boeing Company, Space Division, Launch Systems Branch, Huntsville, AL. January 1966. Large half-tone drawing lithograph, 17 by 11 inches with single fold.

SIGNED and INSCRIBED with their individual Apollo Saturn (AS) flight number: "RUSTY SCHWEICKART, AS-504 Apollo 9; RICHARD GORDON, AS 507 Apollo XII; FRED HAISE, AS 508 Apollo 13;" and "AL WORDEN, AS 510 Apollo 15."

Full details available online.

\$ 800-1,200



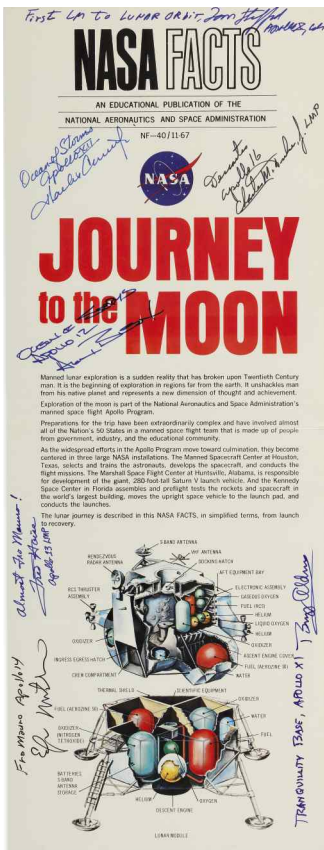
125



126



128



127 (DETAIL)

126

VINTAGE NASA KSC RELEASED SATURN V LAUNCH PHOTOGRAPHS

RARELY SEEN CLOSE-UPS AND MORE FROM APOLLO 13 TO 16

Color photographs all printed on "This Paper Manufactured by KODAK" with NASA Kennedy Space Center text in blue on reverse. Two are close views of the Apollo 13 launch on April 11, 1970, with different angles at approximately the T-Zero and T+ 2 second mark. Two are close views of the Apollo 14 launch on January 31, 1971, with different angles at approximately T+4 and T+ 6 seconds. Photograph five is a wide angle view of the Apollo 15 launch on July 26, 1971, some 8 seconds after lift-off. Photograph six is a wide angle view of the Apollo 16 launch on April 16, 1972, right at T-0, just before the massive 363 foot tall Saturn V rocket begins to lift-off the pad.

\$ 1,000-1,500

127

NASA APOLLO LUNAR POSTER

SIGNED WITH LONG INSCRIPTIONS BY SEVEN WHO JOURNEYED TO THE MOON

Journey to the Moon. NASA Facts (NF-40). Washington: GPO, 1967. 21 by 48 inches, folded.

Boldly INSCRIBED with their individual lunar flight information or landing site and SIGNED: "First LM to Lunar Orbit, TOM STAFFORD, Apollo X CDR; Tranquility Base, Apollo XI, BUZZ ALDRIN; Ocean of Storms, Apollo XII, CHARLES CONRAD; Ocean of Storms, Apollo XII, ALAN BEAN; Almost to Fra Mauro! FRED HAISE, Apollo 13 LMP; Fra Mauro, Apollo 14, EDGAR MITCHELL; and Descartes, Apollo 16, CHARLES M. DUKE, JR., LMP."

Full details available online.

\$ 1,500-2,000

NASA APOLLO PRESS RELEASE PHOTOGRAPH COLLECTION

CONTAINS 12 PHOTOS HAVING 23 TOTAL ASTRONAUT SIGNATURES

All are approximately 8 by 10 inches in black and white with printed NASA text on verso. Includes signatures by: FRANK BORMAN, JAMES LOVELL, DAVE SCOTT, JAMES MCDIVITT, RUSTY SCHWEICKART, BUZZ ALDRIN, CHARLES CONRAD, DICK GORDON, ALAN BEAN, FRED HAISE, EDGAR MITCHELL, and STUART ROOSA.

Full details available online.

\$ 2,500-3,500



APOLLO COLOR PHOTOGRAPH COLLECTION

CONTAINS 12 PHOTOS HAVING 13 TOTAL ASTRONAUT SIGNATURES

All are approximately 8 by 10 inches in color. Includes signatures by: WALT CUNNINGHAM, WALLY SCHIRRA, BUZZ ALDRIN, ALAN BEAN, RICHARD GORDON, CHARLES CONRAD, FRED HAISE, EDGAR MITCHELL, and DAVE SCOTT.

Full details available online.

\$ 2,000-3,000



APOLLO COLOR PHOTOLITHOGRAPH COLLECTION

CONTAINS 15 LITHOS HAVING 19 TOTAL ASTRONAUT SIGNATURES

All are officially NASA released having descriptive text along the lower border and most have extensive NASA released text on verso. All but one are in color and all are 8 by 10 inches in size. Includes signatures by: WALLY SCHIRRA, WALT CUNNINGHAM, FRANK BORMAN, JAMES MCDIVITT, DAVE SCOTT, RUSTY SCHWEICKART, TOM STAFFORD, BUZZ ALDRIN, CHARLES CONRAD, ALAN BEAN, EDGAR MITCHELL, and GENE CERNAN.

Full details available online.

\$ 2,500-3,500



APOLLO POSTAL COVER COLLECTION

CONTAINS 10 ENVELOPES WITH 24 TOTAL ASTRONAUT SIGNATURES

All envelopes are 3½ by 6½ inches. Includes signatures from: SCOTT CARPENTER, GORDON COOPER, D. K. SLAYTON, TOM STAFFORD, JOE ALLEN, CHARLES CONRAD, RICHARD GORDON, ALAN BEAN, CARL A. SWANSON, JIM IRWIN, AL WORDEN, DAVE SCOTT, and KEN MATTINGLY.

Full details available online.

\$ 2,500-3,500

APOLLO MISSION EVALUATION

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APOLLO AND SKYLAB LION BROTHERS CREW MISSION EMBLEMS

Cloth crew mission emblems, 15 total with sizes from 3 1/2 to 5 inches in diameter. Embroidered by Lion Brothers of Owens Mills, Maryland beginning in 1967.

Flight crew emblems for all Apollo and Skylab manned missions. These cloth emblems are noted for their detailed artistry and exceptional quality of the official NASA crew designs. The Apollo 12 through 17 emblems are hallmarked in the form of their respective mission number "hidden" in the embroidery. Hallmarks are located in Apollo 12's Clipper ship dust trail, in a horse mane just below the sun for Apollo 13, upside-down in the white lunar surface for Apollo 14, just above the "D" in Worden on the Apollo 15 emblem, under the gold vector on the right for Apollo 16, and in the shoulder of god Apollo for Apollo 17.

Full details available online.

\$ 3,000-5,000

133

APOLLO MISSION EMBLEM DESIGN ARCHIVE

An archive of documents pertaining to the development of the NASA Apollo Mission Emblems, with several sample emblems included

The present lot includes material pertaining to the design and distribution of emblems for Apollo's manned missions. A series of manila folders, with the corresponding mission marked in pencil, contain: invoices from various companies (to include TRW and RCA) requesting emblems — newspaper clippings pertaining to the design of the Apollo 15 emblem, which was executed by Emilio Pucci — dozens of invoices on Grumman Aerospace Corporation letterhead — various emblem stickers and font samples — letters from various embroidery manufactures, to include A-B Emblem and Lion Brothers Company Inc., specifically regarding the debate over whom would be the "official" emblem supplier — copy of a letter from ALAN BEAN on NASA letterhead giving design specifications — various NASA photographic emblem images — 5 sample Apollo 12 emblems (three versions of Apollo 12 emblem manufactured by the Penn Emblem Company, Apollo 14 Roadrunner and Wile E. Coyote "Beep Beep", Apollo 14 Roadrunner and Wile E. Coyote "Beep Beep You Ass!").

A UNIQUE ARCHIVE OFFERING A GLIMPSE INTO THE RICH AND COMPLEX HISTORY OF NASA'S INSIGNIA AND EMBLEMS

Full details available online.

\$ 3,000-5,000

134

MISSION EVALUATION ROOM

"Apollo Mission Evaluation" Sign, Johnson Space Center(?), circa 1961-1972

3 1/4 by 48 inches, blue and white paint on metal, general wear throughout, 18 punched holes, some paint loss, and rusting.

This sign appears to have been removed from above the Mission Evaluation Room (MER) at the Johnson Space Center in Houston. The staff housed in the MER was primarily composed of spacecraft systems engineers, whose job it was to support the flight controllers in the Mission Operations Control Room.

\$ 1,000-1,500

APOLLO 1-10

LOTS 135-157

135

VINTAGE NASA "RED NUMBER" APOLLO 1 CREW PORTRAIT

Vintage NASA color photograph, 8 by 10 inches, showing the prime Apollo 1 crew seated (White, Grissom, Chafee), and the back-up crew standing (Scott, McDivitt, Schweickart) in their blue jumpsuits, numbered in red in the top margin, with printed NASA press release text to verso, dated 1 April 1966.

SIGNED by GUS GRISSOM and EDWARD H. WHITE.

Apollo 1 was the first mission in the manned lunar landing program, which was scheduled to launch on February 21, 1967. Tragedy struck during a launch rehearsal test on January 27th, with a cabin fire killing all three crew members and destroying the Command Module. Investigations later determined that the cause of the fire was electrical; it spread rapidly due to the high pressure, pure oxygen atmosphere of the cabin. Items signed by the crew are very rare.

\$ 3,000-5,000

136

APOLLO 7 — LIFTOFF

Color photograph, 20¾ by 16½ inches.

SIGNED by WALTER CUNNINGHAM and WALTER "WALLY" SCHIRRA JR.

Apollo 7 (1968) was the first mission in the United States' Apollo program to carry a crew into space. It was also the first U.S. spaceflight to carry astronauts since of Gemini XII (1966).

\$ 2,500-3,500

137

APOLLO 7 — "WHY BLIND YOURSELF?"

Color photograph, 20 by 16 inches.

SIGNED and INSCRIBED by WALTER CUNNINGHAM:
"SO DID I STARE AT THAT LAST BLAZE OF LIGHT
UNTIL I HEARD THE WORDS: 'WHY BLIND YOURSELF
BY LOOKING FOR WHAT HAS NO PLACE UP HERE?'"
DANTE, 'PARADISO' WALK CUNNINGHAM OCT. 1968
APOLLO 7"

The lines were taken from Canto XXV of Dante's *Paradiso* (or "Heaven"), the third and final part of his *Divine Comedy*, following the *Inferno* and the *Purgatorio*.

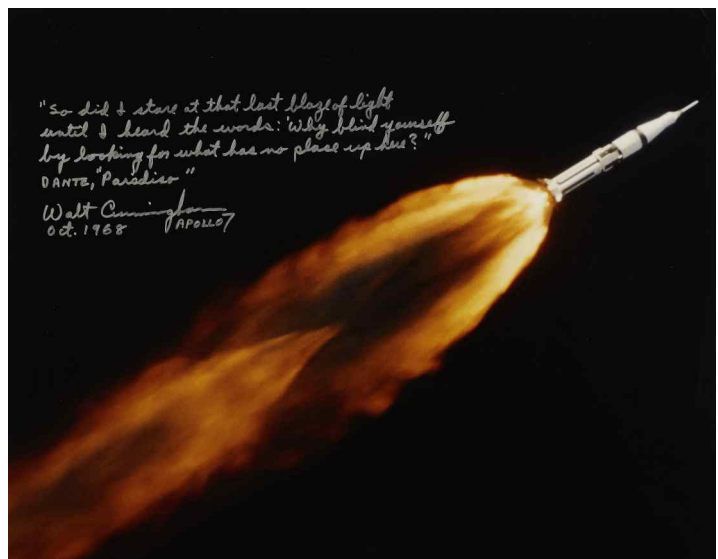
\$ 2,000-3,000



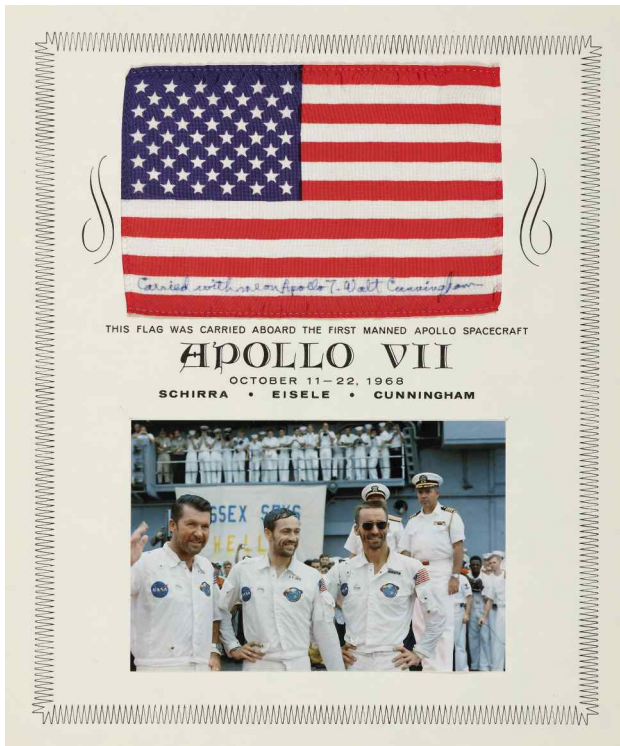
135



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ORIGINALLY FROM THE COLLECTION OF APOLLO 7 LUNAR MODULE PILOT WALTER CUNNINGHAM

WALT CUNNINGHAM'S UNITED STATES FLAG CARRIED ON APOLLO 7

FLOWN on Apollo 7, stars and stripes flag, 4 by 6 inches, SIGNED and INSCRIBED by WALT CUNNINGHAM in blue pen on the lowest horizontal white stripe: "CARRIED WITH ME ON APOLLO 7. WALT CUNNINGHAM." Mounted to NASA designed display certificate with four small pieces of tape above the words: "This flag was carried aboard the first manned Apollo Spacecraft | Apollo VII | October 11-22, 1968 | SCHIRRA | EISELE | CUNNINGHAM." With a 4 by 6 inch color photograph tipped in at the bottom. Some light handling wear to edges of letterhead.

A FLOWN FLAG FROM THE FIRST MANNED APOLLO SPACECRAFT — WALT CUNNINGHAM'S ONLY SPACEFLIGHT.

\$ 2,500-3,500



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ORIGINALLY FROM THE COLLECTION OF GEMINI AND APOLLO ASTRONAUT THOMAS STAFFORD

THE ICONIC IMAGE OF THE EARTH FROM THE MOON DURING CHRISTMAS 1968

PRESENTED TO THOMAS STAFFORD FROM THE APOLLO 8 CREW

Vintage "NASA Red Number" color photograph, 8 by 10 inches with "A Kodak Paper" watermark on verso. The identification number "NASA AS8-14-2383" is printed in red near the upper left corner. This photograph was the basis for a six-cent US postage stamp issued in 1969. With a May 18, 1999 Typed Letter Signed by Thomas P. Stafford on this business stationery.

THOMAS P. STAFFORD'S signed provenance letter reads: "The Apollo 8 photograph that accompanies this letter was presented to me from the Apollo 8 crew. Commander Frank Borman, James Lovell, and William Anders had just completed one of the most important spaceflights of all time, making the first voyage to the Moon and back during December 1968.

This photograph has the first view seen by Man of the Earth rising above the Moon's surface. It was printed by the photographic labs at the Manned Spacecraft Center in Houston, Texas, just after the Apollo 8 flight.

It turned out to be an image our country could be proud of after the extremely turbulent year of 1968 – the assassinations of Martin Luther King, Jr. and presidential candidate Robert F. Kennedy, growing protests with the Vietnam War, and continuing social unrest. The mission to the Moon in 1969 that I made and the success of the Apollo 11 lunar landing in July gave us all hope that mankind could move closer together toward peace.

This photograph and the many others from Apollo 8 were extremely helpful to me and my Apollo 10 crew of astronauts John Young and Gene Cernan. We used their close-up photographs of the Moon to assist our planning of a low altitude pass of less than 50,000 feet above the lunar surface during May of 1969. Our flight procedures proved that Apollo 11 could indeed make the first lunar landing just two months later on July 20, 1969."

\$ 5,000-8,000



140 (PART, ENLARGED)

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APOLLO 8 - FIRST VIEWS OF THE EARTH FROM DEEP SPACE

A LONELY OASIS IN THE VAST EMPTINESS OF SPACE

Three long film strips of Hasselblad color transparencies having a total of 25 frames. NASA frame identification numbers are found along the bottom edge. From Apollo 8 Hasselblad magazine A: frame numbers AS8-16-2600 to 2607 (eight frames) showing the Earth as the Apollo 8 crew heads toward the Moon after the TransLunar Injection (TLI) burn using the Saturn V's third stage. The second film strip has more frames of the Earth while heading to the Moon from magazine A, AS8-16-2624 to 2631 (8 frames). From Hasselblad magazine F, nine frames of the Earth: AS8-15-2350 to 2358, taken just after Apollo 8 made the TransEarth Injection burn using the Service Module's large rocket engine to break free from lunar orbit and return to the Earth. All film strips are stored in clear protective sleeves.

\$ 2,000-3,000

141

APOLLO 8 PHOTOGRAPHY

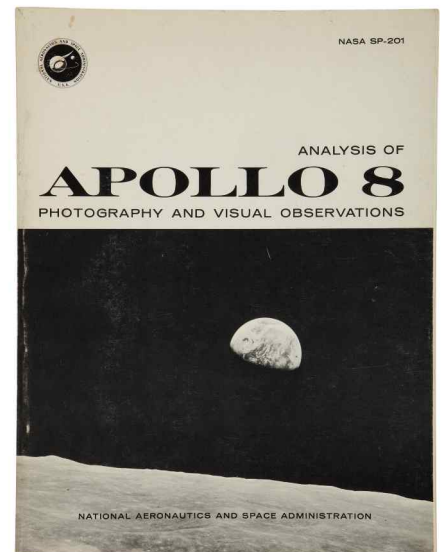
Analysis of Apollo 8 Photography and Visual Observations. NASA SP-201. Compiled by NASA Manned Spacecraft Center. Washington, DC: Office of Technology Utilization, NASA, 1969

8½ by 11 inches, 337 pp. Flexible printed covers, with pochette affixed to inside rear cover. Light soiling to covers. Complete with 4 large Lunar 1: 7 5,000,000 scale Photography Index charts (Chart 1: Stereographic Strip 70mm; Chart 2: Sequence Photography 16 mm; Chart 3: Targets of Opportunity 70 mm; Chart 4: Targets of Opportunity 70 mm), each 58 by 10½ inches, folded and tucked into pochette as issued.

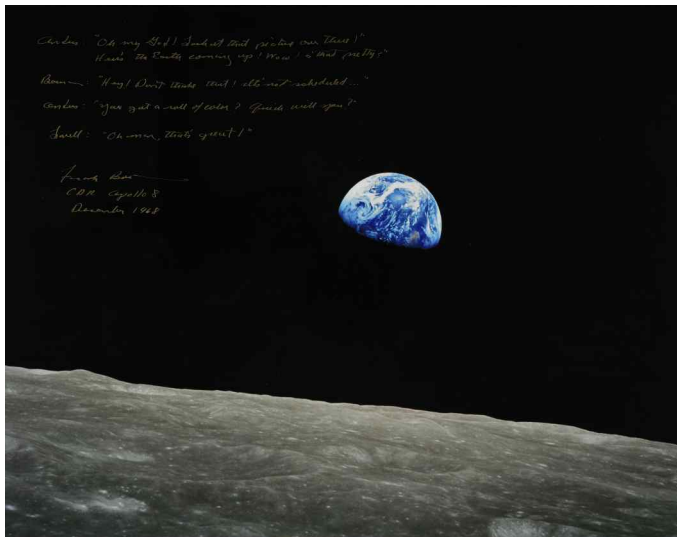
CHART 1 SIGNED "JAMES LOVELL" AND "FRANK BORMAN" [BOTH APOLLO 8], CHART 2 SIGNED "BUZZ ALDRIN APOLLO XI" AND "GENE CERNAN APOLLO XVII", CHART 3 SIGNED "RICHARD GORDON APOLLO XVII", "ALAN BEAN APOLLO XII", "EDGAR MITCHELL APOLLO 14", AND CHART 4 SIGNED "AL WORDEN APOLLO 15 CMP", "DAVE SCOTT APOLLO 15 CDR", CHARLIE DUKE APOLLO 16, LMP, LANDING SITE [ARROW POINTING TO SITE].

See catalogue note at SOTHEBYS.COM

\$ 2,000-3,000



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APOLLO 8 – EARTH COMING UP, INSCRIBED BY FRANK BORMAN

Color photograph, 20 by 16 inches. [With]: Color photo on paper, of Borman inscribing the present lot.

SIGNED and INSCRIBED by FRANK BORMAN:

"ANDERS: "Oh my God! Look at that picture over there!"
 "Here's the Earth coming up! Wow! Is that pretty?"
 BORMAN: "Hey! Don't take that! It's not scheduled..."
 ANDERS: "You got a roll of color? Quick will you?"
 LOVELL: "Oh man, that's great!"

FRANK BORMAN
 CDR Apollo 8
 December 1968"

\$ 2,500-3,500



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APOLLO 8 – EARTHRRISE

Vintage chromogenic photograph, vintage fiber-based paper with "A Kodak Paper" watermark, 15½ by 19 inches.

One of the most iconic of all space images:
 "Earthrise" witnessed for the first time in human history.

\$ 2,000-3,000



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APOLLO 8 CREW SIGNED EARTHRRISE PRINT

Vintage color photographic print, 17 by 22 inches,
 accompanied by its original mailing tube from
 the Executive Office of the President of NASA,
 postmarked December 11 [1969?]. Some handling
 wear to edges of print, and dampstaining to mailing
 tube.

SIGNED and INSCRIBED by JAMES LOVELL ("HOUSTON,
 APOLLO 8 - PLEASE BE INFORMED THERE IS A SANTA
 CLAUS! JAMES LOVELL | APOLLO 8 CMP | CHRISTMAS
 EVE 1968") FRANK BORMAN ("ROGER, WE UNDERSTAND.
 WE ARE GO FOR TLI. FRANK BORMAN | APOLLO 8
 COMMANDER") WILLIAM ANDERS ("TO PETE WITH BEST
 WISHES - BILL ANDERS APOLLO 8) MICHAEL COLLINS
 ("MICHAEL COLLINS APOLLO VIII CAPCOM") GLYNN
 S. LUNNEY ("BLACK' FLIGHT DIRECTOR | APOLLO 8")
 and SEYMOUR LIEBERGOT ("SY LIEBERGOT | APOLLO
 EECOM").

PROVENANCE

Pete Miller (addressee on mailing tube)

\$ 3,000-5,000

APOLLO 8 – EARTHRISE, “OH THAT’S A BEAUTIFUL SHOT!”

Color photograph, 30 by 32 ¾ inches.

SIGNED and INSCRIBED by FRANK BORMAN:

“075: 48: 40 LOVELL: ‘You got it?’

075: 48: 41 ANDERS: ‘Yep!’

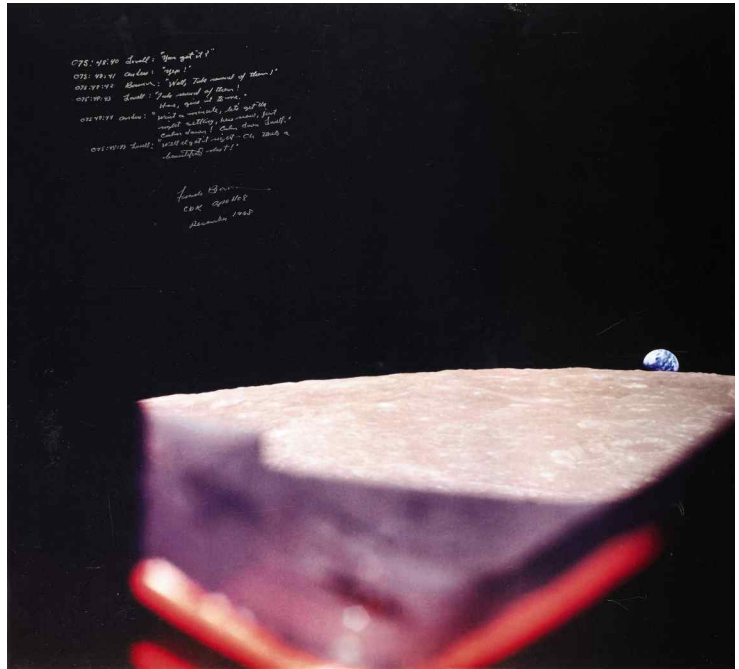
075: 48: 42 BORMAN: ‘Well, take several of them! Here, give it to me.’

075: 48: 44 ANDERS: ‘Wait a minute, let’s get the right setting, here now, just calm down! Calm down Lovell.’

075: 48: 49 LOVELL: ‘Well we got it right—oh that’s a beautiful shot!’

FRANK BORMAN
CDR Apollo 8
December 1968”

\$ 2,000-3,000



145

APOLLO 8 – EARTHRISE, TAKEN FROM APOLLO 8 BY WILLIAM ANDERS

Black and white photograph, 20 by 16 inches.

SIGNED and INSCRIBED by JIM LOVELL:

“02: 21: 51: 16

‘OK Houston:’

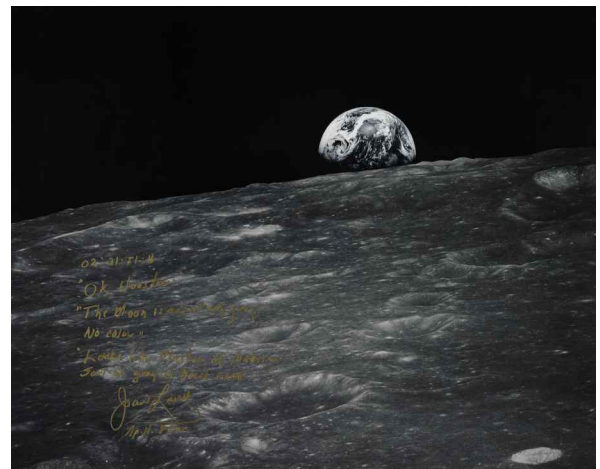
‘The moon is essentially gray, no color’

‘Looks like plaster of Paris on sort of grayish beach sand...’

JAMES LOVELL
Apollo 8 CMP”

When the spacecraft came out from behind the Moon, Frank Borman, Jim Lovell, William Anders witnessed “Earthrise” for the first time in human history. It was Anders who first saw the Earth cresting the lunar horizon. Initially, he took a black and white photo, but then asked Lovell for a color film. It was this second photo that was chosen by *Life* magazine as one of its hundred photos of the century.

\$ 3,000-5,000



146

APOLLO 9 – CSM “GUMDROP” ABOVE EARTH

Color photograph, 20 by 16 inches.

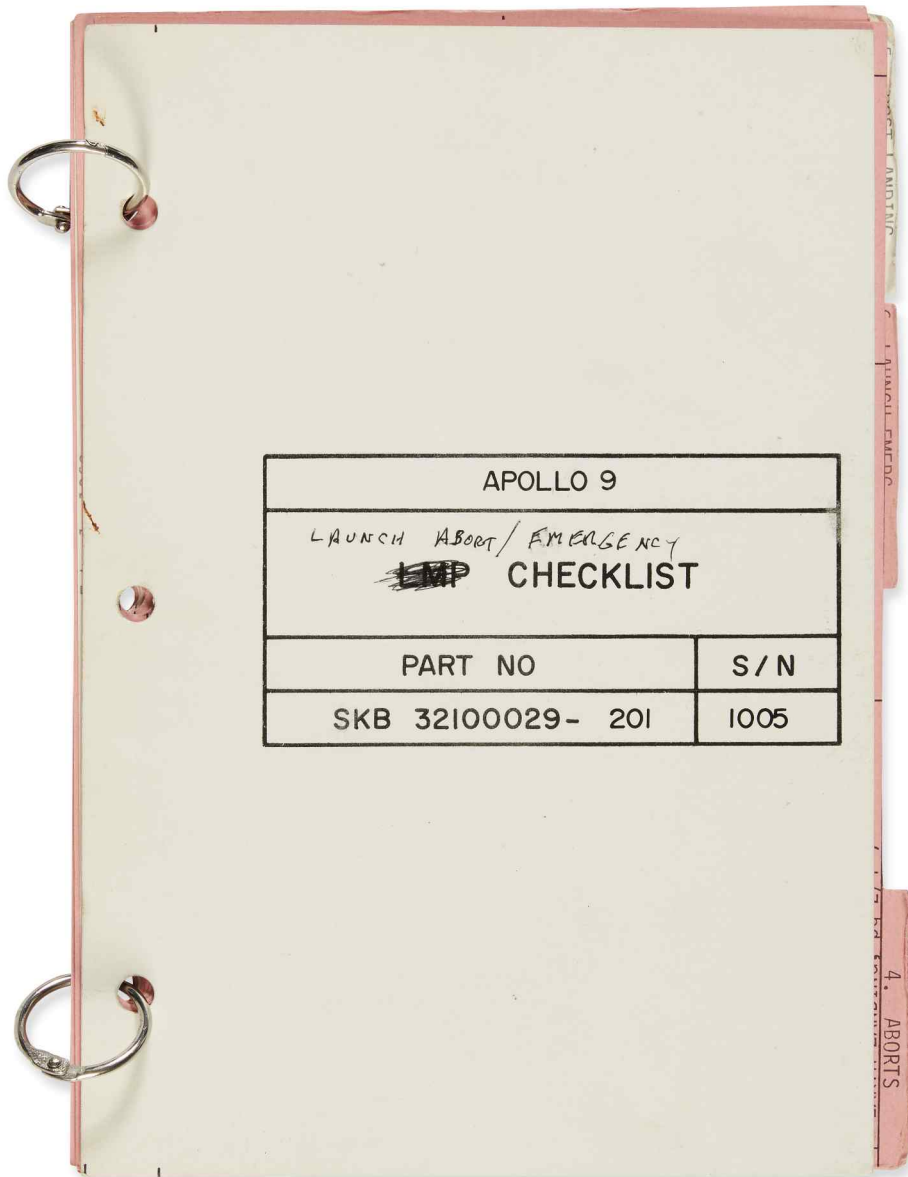
SIGNED and INSCRIBED by RUSTY SCHWEICKART:
“APOLLO 9 LMP”

Apollo 9 was the third manned mission in the Apollo program. It was also the first flight of the Command/Service Module (CSM) with the Lunar Module. SCHWEICKART served as Lunar Module Pilot, and the present image depicts the CSM (nicknamed “Gumdrop”) and Lunar Module (nicknamed “Spider”) docked together. Schweickart took the photograph as he stood on the porch outside the Lunar Module.

\$ 2,000-3,000



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ORIGINALLY FROM THE COLLECTION OF APOLLO 9 COMMANDER JAMES A. MCDIVITT
APOLLO 9 — LAUNCH ABORT CHECKLIST

STORED IN LMP RUSTY SCHWEICKART'S SPACESUIT PRESSURE GARMENT ASSEMBLY POCKET THROUGHOUT THE ENTIRE MISSION — INCLUDING THE EVA

FLOWN Apollo 9 Launch Abort / Emergency Checklist, part number SKB32100029-201, S/N 1005. 8 by 5 3/4 inches, 24 pp divided into 3 tabbed sections ("4. Aborts," "5. Post Landing," and "6. Launch Emerg.") Three-hole punched and bound with two binder rings, original heavy

card stock covers. Front cover verso CREW-SIGNED AND INSCRIBED "FLOWN ON APOLLO 9 | JIM MCDIVITT CDR", "FLOWN ON APOLLO 9 | RUSTY SCHWEICKART LMP", and "FLOWN ON APOLLO 9 | DAVE SCOTT CMP"

Accompanied by two color photographs of Schweickart during his EVA, and a letter of authenticity from JAMES MCDIVITT with a picture of the Commander holding the checklist, which states: "I certify that this launch abort checklist was flown on Apollo 9 on her flight in March 1969. It is from my personal collection."

FLOWN APOLLO 9 CREW-SIGNED AND INSCRIBED LAUNCH ABORT CHECKLIST

The present checklist was stored in Lunar Module Pilot Rusty Schweickart's spacesuit pressure garment assembly pocket on his right leg throughout the duration of the Apollo 9 mission, including his hour and seven minute-long EVA. It was meant to function as a crisis management guide, which would assist the astronauts in the event of a problem during launch or cancellation of the mission.

The front cover originally read "LMP Checklist," but it appears to have been re-purposed prior to launch, with "LMP" scratched out, and "Launch abort / Emergency" written in pen.

\$ 12,000-18,000

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APOLLO 9 – CSM “GUMDROP” FLYING SOLO IN EARTH’S ORBIT

Color photograph, 20 by 16 inches.

SIGNED and INSCRIBED by JAMES A. MCDIVITT:
“‘GUMDROP’ FLYING SOLO IN EARTH ORBIT
DURING APOLLO 9! JAMES A. MCDIVITT APOLLO 9
COMMANDER 1969”

\$ 2,500-3,500



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MICHAEL LIGHT

“Cabin of Command Module Gumdrop, Earth Beyond”. Photograph by David Scott, Apollo 9, March 3 to March 13, 1969

Fuji Crystal Archive color-coupler print (24 ½ x 24½ inches). Framed. Negative date. 1969. Print date, 1999.

Signed, titled, dated, and editioned (2/50) by the artist in pencil on print verso. This print is part of an edition of 50.

REFERENCES

ILLUSTRATED: Michael Light and Andrew Chalkin, *Full Moon*, Knopf, 1999, plate 10.

PROVENANCE

Purchased directly from the Photographer, Michael Light.

\$ 2,000-3,000



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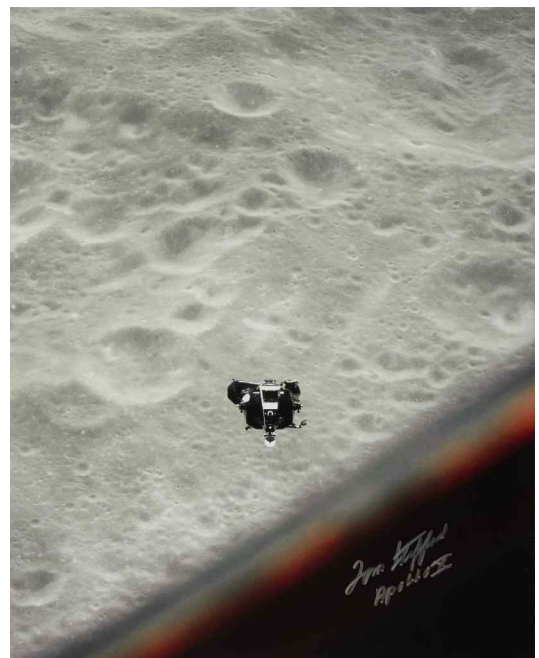
APOLLO 10 – “SNOOPY” IN ORBIT

Color photograph, 20 by 16 inches.

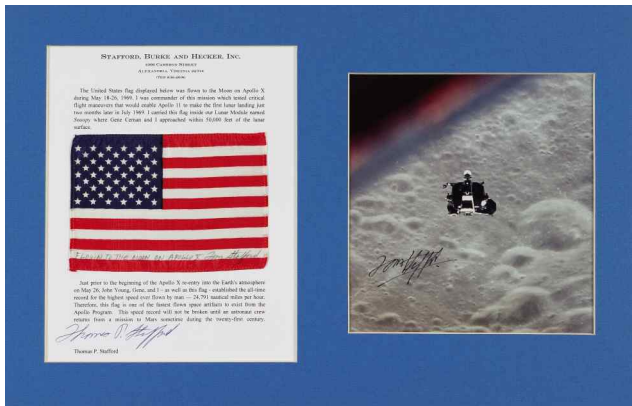
SIGNED and INSCRIBED by TOM STAFFORD: “TOM STAFFORD | APOLLO X”

The present image depicts Apollo 10’s Lunar Module, nicknamed “Snoopy”, as it approaches the Command/Service Module, nicknamed “Charlie Brown”, for redocking. The mission’s call signs were the names of the Peanuts characters, and Snoopy became a NASA mascot.

\$ 2,000-3,000



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ORIGINALLY FROM THE COLLECTION OF GEMINI AND APOLLO ASTRONAUT THOMAS STAFFORD

FASTEST FLOWN UNITED STATES FLAG CARRIED ON APOLLO 10

CARRIED IN LUNAR MODULE SNOOPY TO WITHIN 50,000 FEET OF THE LUNAR SURFACE

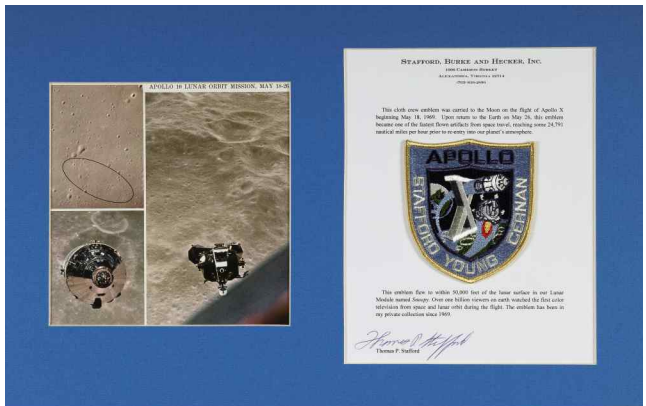
FLOWN United States flag, made of silk, 4 by 6 inches. Displayed between paragraphs of a Typed Signed Letter by THOMAS P. STAFFORD on his business stationery. Displayed with an approximately 8 by 8 inch color photograph of the ascent stage of Lunar Module Snoopy as he returns from a close fly-by of the lunar surface. All mounted on and removable from a 12½ by 19 ½ inch blue mat board.

The flag is INSCRIBED and SIGNED: "Flown to the Moon on Apollo X, TOM STAFFORD," along the lowest red bar. The color photograph of Snoopy is SIGNED by TOM STAFFORD.

THOMAS P. STAFFORD'S signed provenance display letter reads: "The United States flag displayed below was flown to the Moon on Apollo X during May 18-26, 1969. I was commander of this mission which tested critical flight maneuvers that would enable Apollo 11 to make the first lunar landing just two months later in July 1969. I carried this flag inside our Lunar Module named 'Snoopy' where Gene Cernan and I approached within 50,000 feet of the lunar surface.

Just prior to the beginning of the Apollo X re-entry into the Earth's atmosphere on May 26, John Young, Gene, and I - as well as this flag - established the all-time record for the highest speed ever flown by man - 24,791 nautical miles per hour. Therefore, this flag is one of the fastest flown space artifacts to exist from the Apollo Program. This speed record will not be broken until an astronaut crew returns from a mission to Mars sometime during the twenty-first century."

\$ 12,000-18,000



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ORIGINALLY FROM THE COLLECTION OF GEMINI AND APOLLO ASTRONAUT THOMAS STAFFORD

CLOTH APOLLO 10 CREW EMBLEM FLOWN IN LUNAR MODULE SNOOPY

ONE OF FASTEST FLOWN SPACE ARTIFACTS FROM SPACE TRAVEL

FLOWN Apollo 10 cloth crew emblem, shield-shaped, being approximately 4½ inches tall. The emblem features the lunar surface with the Earth in the far background while CSM *Charlie Brown* fly's through the top of a large Roman numeral "X" as LM *Snoopy*'s ascent stage engine powers a return from the close fly-by of the lunar surface. Mounted between paragraphs on a Typed Letter Signed by THOMAS P. STAFFORD on his business stationery. Displayed with an approximately 8 by 8 inch three image color photolithograph showing the lunar landing ellipse for Apollo 11 and descent target to 50,000 feet for Apollo 10, Command Module *Charlie Brown* in lunar orbit, and the ascent stage of Lunar Module *Snoopy* as he returns from a close fly-by of the lunar surface. All mounted on and removable from a 12½ by 19 ½ inch blue mat board.

With THOMAS P. STAFFORD'S signed provenance letter which reads, in part: "This cloth crew emblem was carried to the Moon on the flight of Apollo X beginning May 18, 1969. Upon return to the Earth on May 26, this emblem became one of the fastest flown artifacts from space travel, reaching some 24,791 nautical miles per hour prior to re-entry into our planet's atmosphere."

Full details available online.

\$ 5,000-8,000

154

ORIGINALLY FROM THE COLLECTION OF GEMINI AND APOLLO ASTRONAUT THOMAS STAFFORD

FLOWN APOLLO 10 BETA CLOTH EMBLEM

CARRIED IN SNOOPY TO WITHIN 50,000 FEET OF THE MOON'S SURFACE

FLOWN Beta Cloth crew mission emblem approximately 9 inches square and features the 3 inch shield-shaped Apollo 10 mission emblem having the flight crew's last names. Mission events are symbolized with the CSM *Charlie Brown* passing through a large Roman numeral "X" while the LM *Snoopy* returns from a close fly-by of the lunar surface. Accompanied with a Typed Letter Signed by THOMAS P. STAFFORD on his business stationery describing events from his flight.

THOMAS P. STAFFORD'S signed provenance letter reads, in part: "This Beta emblem was carried in SNOOPY as Gene Cernan and I descended to within 50,000 feet of the lunar surface... The beta emblem has the distinction of one of the fastest flown artifacts from space travel. During the Apollo X reentry, my fellow crew members, Gene Cernan and John Young, and I established the all-time record for the highest speed ever attained by man - 24,790 mile per hour."

Full details available online.

\$ 4,000-6,000

ORIGINALLY FROM THE COLLECTION OF APOLLO 10 LUNAR MODULE PILOT EUGENE CERNAN

APOLLO 10 – FLOWN LUNAR MODULE COMMUNICATIONS OPERATIONAL MODES CUE CARD

A VALUABLE AND QUICK RESOURCE, PROVIDING RAPID REFERENCE FOR THE COMMUNICATIONS OPERATIONAL MODES FOR THE ASTRONAUTS' AUDIO.

Flown Apollo 10 Lunar Module Communications Operational Modes cue card, 2 sheets of paper mounted recto and verso on card, 4¾ by 7¼ inches, Velcro squares to verso used to affix card to module cockpit control panel, SIGNED by EUGENE CERNAN, TOM STAFFORD, and JOHN YOUNG. With a Typed Letter Signed by EUGENE CERNAN.

These cue cards were of great importance during the Apollo 10 mission. Eugene "Gene" Cernan positioned his near the communications console on his side of the spacecraft. This particular cue card remained a treasured part of Cernan's personal space collection for more than 35 years.

Full details available online.

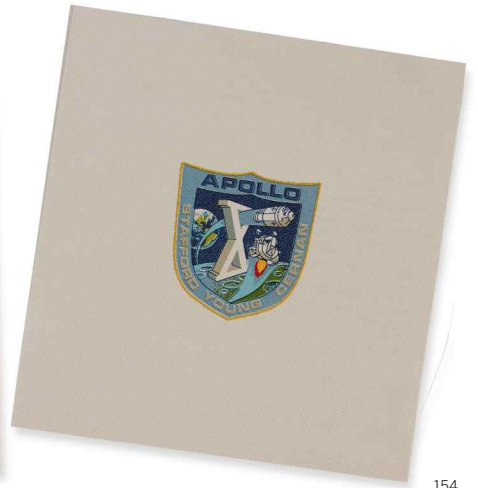
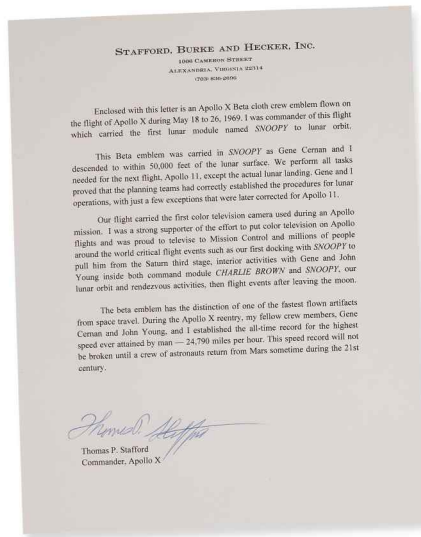
\$ 1,500-2,000

[THOMAS STAFFORD] – RON WOODS
 "Stafford's Spacesuit," 2008

Oil on board, 18 by 22 inches, signed "R. Woods 08" lower right, matted and framed to 25¾ by 30 inches.

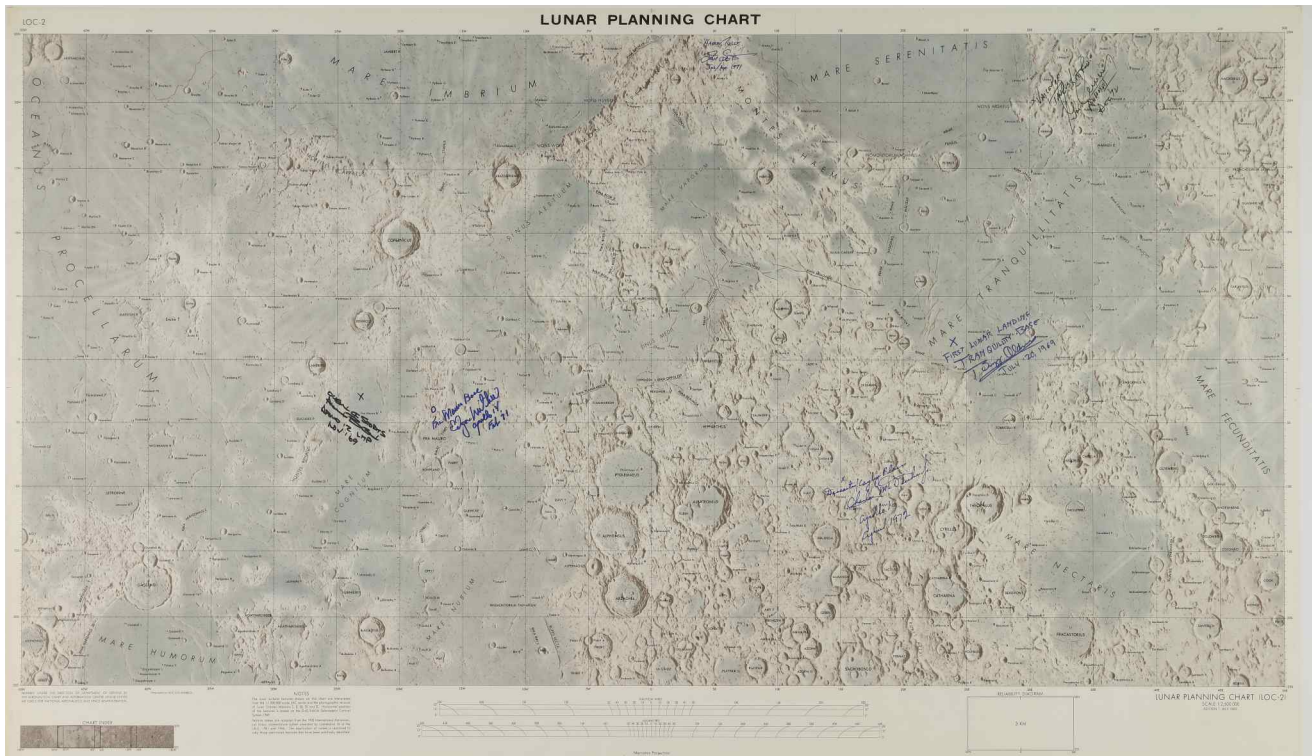
A whimsical rendering of Tom Stafford's spacesuit suspended on a hanger by Ron Woods, the overseer of Flight Crew Equipment Preparation at Kennedy Space Center in Florida. In his capacity as a Spacesuit Technician, Woods dressed Buzz Aldrin for the Apollo 11 mission, and Jim Lovell before Apollo 8. A graduate of the University of Houston with a degree in Fine Arts, Ron has been painting for many years with a specialty in space hardware.

\$ 2,500-3,500



COMMUNICATIONS BASIC	ON VOICE BU WITH OMNI	LM TO CSM RELAY	CSM TO LM RELAY
CONFIGURATION			
OPERATIONAL MODES			
S-BD REULATE-PR			
S-BD RPT R-TR-PRIM			
S-BD PWR-LPS-250LN			
VOICE-VOICE	DN VOICE BU		
FOR-PR			
RANGE-RANGE			
LM BITIME-L/R	OFF		
LM P-III	LO		
VHF A XPR-VOICE			
VHF A RCVR-ON			
VHF B XPR-DATA			
VHF B RCVR-OFF			
SQUELCH VHF A-NORM			
SQUELCH VHF B-NORM			
RECORD-OFF			
TRACK MODE-AUTO	OFF		
VHF ANTENNA-AFT or FWD			
S-BAND ANTENNA-SLEN	AFT or FWD		
CB (16) COMH:			
SE AUTO-CLOSE			
TRP-CLOSE			
TY-OPEN			
AUDIO (COM):			
ICS-BD -T/R			
ICS-T/R			
RELAY-OFF			
MODE-ICS/PPT			OFF
VOX SENS-NORM			VOX
AUDIO CONT-NORM			
VHF A-T/R			RCV/TX to Tail
VHF B-OFF			REV
AUDIO (LMP):			
S-BD -T/R			
ICS-T/R			OFF
RELAY-OFF			ON
AUDIO CONT-NORM			
MODE-ICS/PPT			VOX
VOX SENS-NORM			
VHF A-T/R			
VHF B-OFF			REC
PANEL 14:			
UBDATA LINK-OFF			
PANEL 14:			
UP LINK SOLCH-ENABLE			
RELAY MODES, CSM BASIC EXCEPT	PANEL	S-BD MODE-RLY	S-BD T/R(1)-OFF
	9810	VHF AM B-DUPLEX	VHF B-DUPLEX
	10	MODE-PT - VOX	VHF A - OFF
	10	CONTROL - BU	
	10	S-BD T/R - OFF	
	10	VHF AM - 1/2S	
	9810	VOX SENS-N	
	10	VHF SENS-N	





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**VERY LARGE EARTH SIDE LUNAR CHART,
SIGNED BY 20TH CENTURY SURFACE
EXPLORERS**

LANDING SITE NAME AND TOUCHDOWN DATE INSCRIPTIONS
BY A MEMBER OF EVERY APOLLO LUNAR LANDING CREW
*Lunar Planning Chart (LOC - 2). Aeronautical Chart and
Information Center for NASA, Edition 1, July 1969. Color
lithographed moon map in Mercator projection, 29 by 49
inches. Scale 1:2,500,000 at the equator.*

BOLDLY INSCRIBED and SIGNED:

"First Lunar Landing, Tranquility Base, BUZZ ALDRIN, July 20,
1969"

"Ocean of Storms, ALAN BEAN Apollo XII LMP, Nov 1969"

"Fra Mauro Base, EDGAR MITCHELL Apollo 14, Feb '71"

"Hadley Rille, DAVE SCOTT, Jul / Aug 1971"

"Descartes / Cayley Plains, CHARLES M. DUKE, JR., Apollo 16,
April 1972"

and

"The Valley of Taurus Littrow, GENE CERNAN Apollo XVII, Dec
'72."

One of the largest lunar maps ever produced for NASA during the Apollo Program. Each astronaut listed above has also marked his landing site with either an "X" or a circle. All large craters and mare are labeled including unique features such as rilles and ejecta rays. These features are based on image data from all five Lunar Orbiter spacecraft.

\$ 25,000-35,000

SESSION 2

LOTS 158-289

APOLLO 11

LOTS 158-219

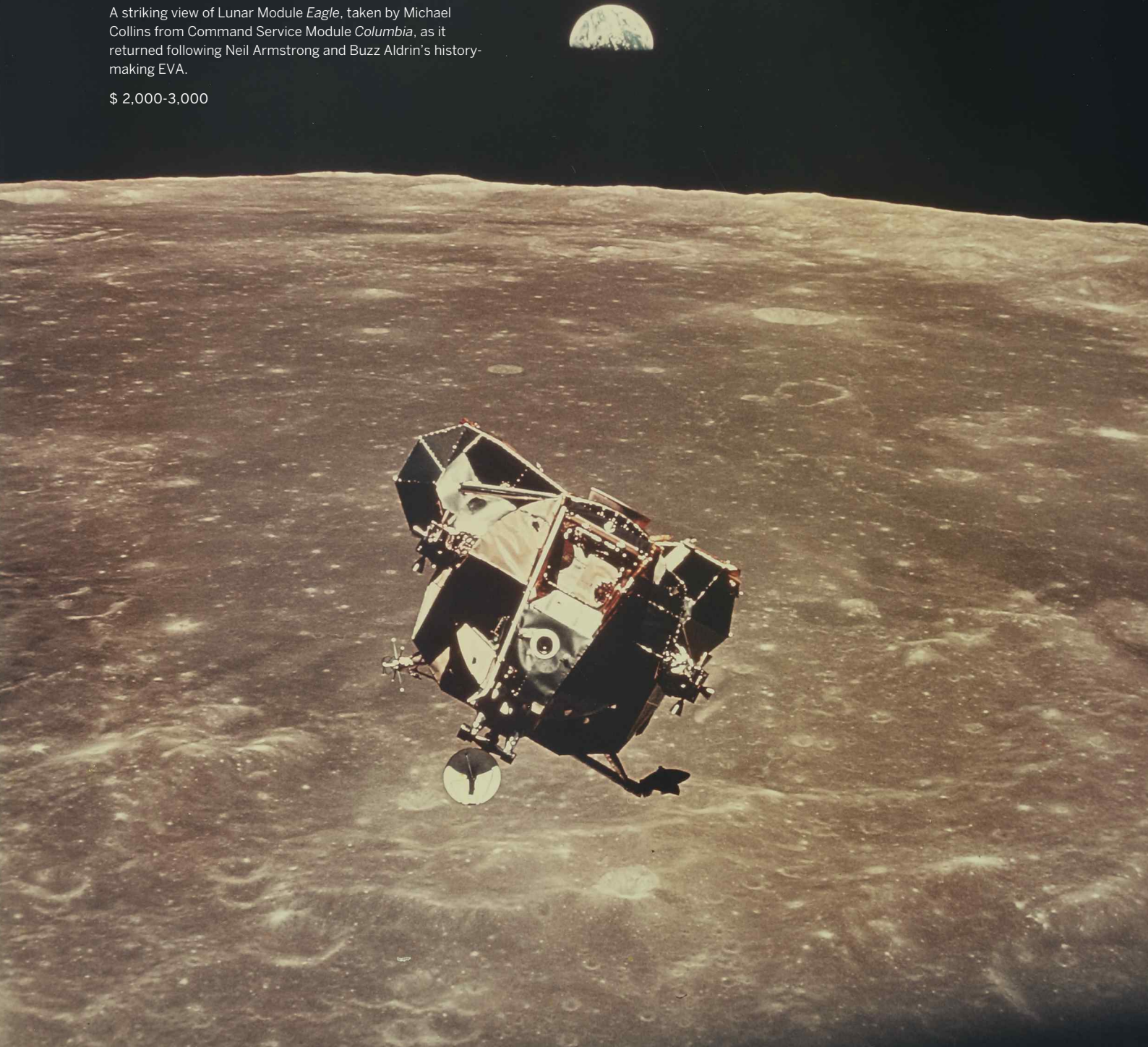
158

APOLLO 11 — “EAGLE’S ASCENT”

Vintage chromogenic photograph, vintage fiber-based paper with “A Kodak Paper” watermark, 15¾ by 19¾ inches.

A striking view of Lunar Module *Eagle*, taken by Michael Collins from Command Service Module *Columbia*, as it returned following Neil Armstrong and Buzz Aldrin’s history-making EVA.

\$ 2,000-3,000





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CALLE, PAUL

[Armstrong suiting up on morning of Apollo 11 launch], July 16, 1969

Pen-and-ink on paper, 9 by 12 inches, signed lower right "Paul Calle" and dated "July 16, 1969".

An original sketch by Calle of Neil Armstrong suiting up before the launch of the Apollo 11 mission. On July 16, 1969, Paul Calle was with the Apollo 11 astronauts as they had breakfast and prepared for their historic expedition to the moon. He was the only artist to document the activities of Armstrong, Collins, and Aldrin as they suited up for their mission. His on the spot pen-and-ink sketches stand as an artistic impression of three men destined to make history for all mankind.

PROVENANCE

Ex Paul Calle Collection

\$ 6,000-9,000



160

160

CALLE, PAUL

A group of 3 Apollo 11 Postal Covers with original mission sketches, signed

3 sketches, pencil on paper envelopes, 9 5/8 by 6 1/4 inches, each signed "Paul Calle" and numbered "1/6" in pencil, with "First Man on the Moon" stamp cancelled "FIRST DAY OF ISSUE", Moon Landing postmark dated July 20, 1969, and Washington, D.C. postmark, dated September 9, 1969.

A GROUP OF THREE SKETCHES ON POSTAL COVERS, EACH NUMBERED 1 OF 6, SIGNED BY PAUL CALLE

Paul Calle famously designed the United States' 1969 "First Man on the Moon" airmail stamp, and the present envelopes feature sketches Neil A. Armstrong, Michael Collins, and Edwin E. "Buzz" Aldrin Jr.—the three astronauts who embarked on the Apollo 11 mission—suiting up before the launch.

PROVENANCE

Ex Paul Calle Collection

\$ 2,000-3,000

161

APOLLO 11 — THREE SIGNED WSS PORTRAITS, WITH NASA AND MISSION EMBLEMS

3 color photographs (8 by 10 inches), SIGNED by BUZZ ALDRIN, NEIL ARMSTRONG, and MICHAEL COLLINS, with NASA "meatball" and Apollo 11 emblems, framed together (29 by 17½ inches). Not examined out of frame.

A REMARKABLE GROUP OF PORTRAITS, REPRESENTING THE ENTIRE APOLLO 11 CREW — SIGNED BY EACH ASTRONAUT

\$ 6,000-9,000



161

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APOLLO 11 — CREW SIGNED WSS LITHOGRAPH

Vintage color lithograph, 10 by 8¼ inches, by Cole Color Prints, New York.

SIGNED by NEIL ARMSTRONG, MICHAEL COLLINS, and BUZZ ALDRIN (twice).

A wonderful vintage WSS (white space suit) lithograph of the Apollo 11 crew with an image of the lunar surface in the background.

\$ 4,000-6,000



162

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BUZZ ALDRIN DESCENDS TO THE LUNAR SURFACE

Vintage color photograph, 8 by 10 inches, bearing the printed caption: "Apollo 11 Astronaut Prepares to Step onto the Moon." With additional printed NASA press release caption on verso.

SIGNED by BUZZ ALDRIN, NEIL ARMSTRONG, and MICHAEL COLLINS.

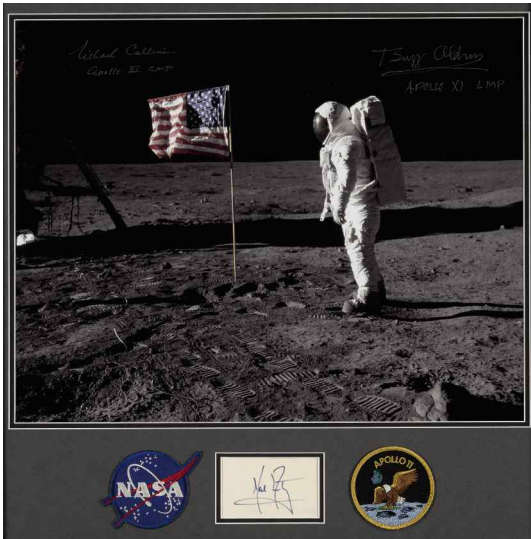
Aldrin prepares to step off the ladder of Lunar Module Eagle to become the second human to set foot upon the Moon.

\$ 3,000-5,000



APOLLO 11 ASTRONAUT PREPARES TO STEP ONTO THE MOON

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BUZZ ALDRIN DESCENDS TO THE LUNAR SURFACE

Color photograph, 9¾ by 8 inches, mounted on mat board to 14 by 11 inches. Corners bumped.

SIGNED and INSCRIBED by BUZZ ALDRIN on the mat board: "TO SANDY FOX WITH BEST WISHES | BUZZ ALDRIN | APOLLO 11."

\$ 1,500-2,500

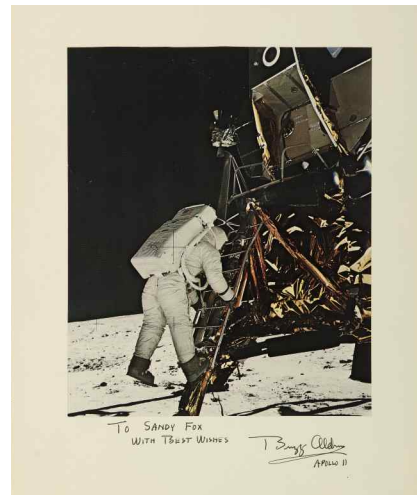
164

APOLLO 11 — ALDRIN WITH OLD GLORY ON THE MOON

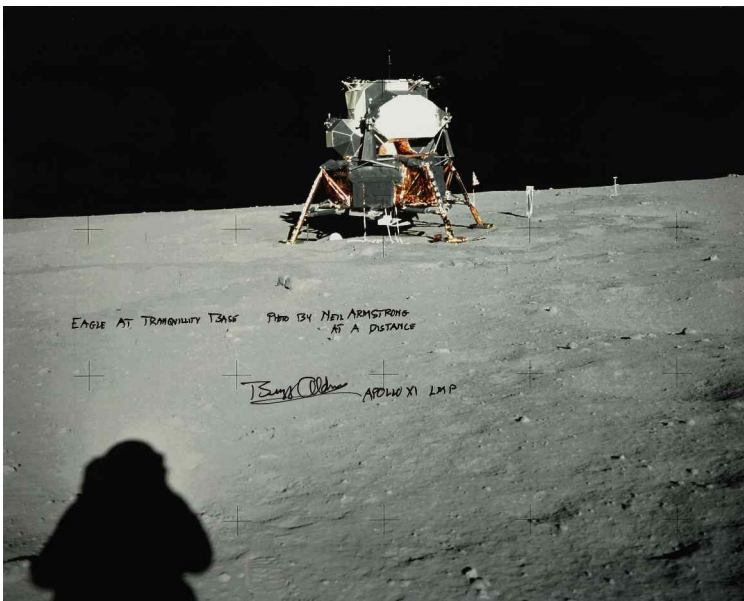
NEIL ARMSTRONG CAPTURES THE IMAGE THAT SYMBOLIZES THE NATIONAL GOAL OF LANDING MEN ON THE MOON — SIGNATURES FROM ENTIRE CREW PRESENT

Color photograph, 15 by 19 inches (sight), SIGNED and INSCRIBED by BUZZ ALDRIN: "BUZZ ALDRIN | Apollo XI LMP" and MICHAEL COLLINS: "MICHAEL COLLINS | Apollo XI CMP" framed together with NEIL ARMSTRONG'S SIGNATURE, NASA "Meatball," and Apollo 11 emblem patches, matted and framed to 23 by 24 inches; not examined out of frame.

\$ 4,000-6,000



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APOLLO 11 — VIEW OF THE LUNAR MODULE "EAGLE" AT TRANQUILITY BASE, INSCRIBED BY BUZZ ALDRIN

Color photograph, 20 by 16 inches.

SIGNED and INSCRIBED by BUZZ ALDRIN: "EAGLE AT TRANQUILITY BASE | PHOTO BY NEIL ARMSTRONG AT A DISTANCE | BUZZ ALDRIN APOLLO XI LMP"

A view of the Lunar Module at Tranquility Base, taken by astronaut Neil A. Armstrong during the Apollo 11 Mission on July 20, 1969. Armstrong's shadow is visible in foreground.

\$ 4,000-6,000

APOLLO 11 — “ENVY THE NATION THAT HAS HEROES”

Color photograph, 25¾ by 20 inches.

SIGNED and INSCRIBED by BUZZ ALDRIN: “ENVY THE NATION THAT HAS HEROES | GOD BLESS AMERICA! | BUZZ ALDRIN | APOLLO XI LM PILOT”

\$ 3,000-5,000



167



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168

ARMSTRONG, NEIL

Vintage color lithograph, 8 by 10 inches, with NASA logo and caption printed on the verso.

SIGNED and INSCRIBED by NEIL ARMSTRONG: “TO MICHAEL LANCASTER | BEST WISHES | NEIL ARMSTRONG”

A NASA portrait of a “reluctant American hero.”

REFERENCES

Agence France-Presse, *The National*, 26 August 2012

\$ 2,000-3,000

169

THE AMERICAN FLAG HERALDS THE FLIGHT OF APOLLO 11

Vintage color photograph, 8 by 10 inches, bearing printed NASA press release captions to the verso. Scattered glossy areas, and minor wear commensurate with age.

SIGNED by NEIL ARMSTRONG

A double exposure featuring the Apollo 11 spacecraft on launch day at 5,000 feet, taken from Cape Kennedy, superimposed over an image of the American flag taken the preceding day.

\$ 2,500-3,500



169

170



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BACK UP FLAG KIT FROM APOLLO 12 AND GEOLOGIC HAMMER HEAD

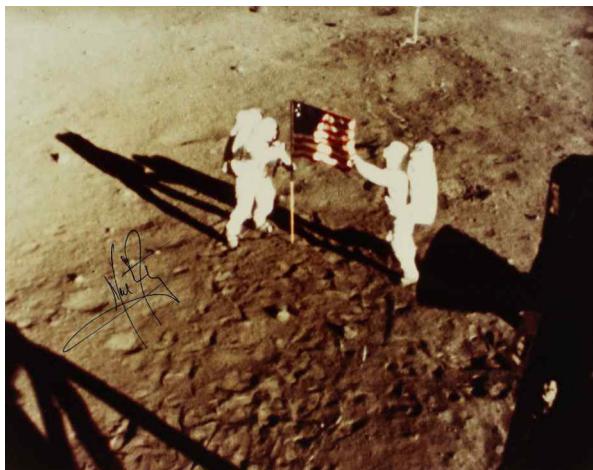
American Flag, still folded in original packaging, item number "SEB 12100067-302, S/N 1002", with original Spacecraft Parts Tags from the NASA Manned Spacecraft Center, with numerous inspection stamps and notations. WITH: Geological hammer head, engraved with part number "SDB39100332-002" and "S/N 1010".

BACK UP FLAG KIT FROM APOLLO 12, WITH A BACK UP GEOLOGICAL HAMMER HEAD OF THE TYPE USED ON THE APOLLO MISSIONS.

The extensive notations and stamps on the accompanying Spacecraft Parts Tag indicate that the flag kit was stored in LM6, being the Lunar Module *Intrepid* of Apollo 12. A notation in red pen to the first page of the Spacecraft parts tag indicates that the flag was "Downgraded to Cl. III", i.e. not flown. The accompanying Geological hammer head was likely also a back-up item. The two were presented as a retirement gift from NASA to a longtime employee who worked in their machine shop, as a thank you for his decades of service.

\$ 3,000-5,000

171



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APOLLO 11 — STARS AND STRIPES ON THE LUNAR SURFACE

Vintage color photograph on Kodak watermarked paper, 8 by 10 inches, showing the deployment of the United States flag on the lunar surface by Buzz Aldrin and Neil Armstrong, with printed NASA press release text to verso, dated 18 December 1964

SIGNED by NEIL ARMSTRONG

\$ 1,000-1,500

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APOLLO 11 — BUZZ ALDRIN AT TRANQUILITY BASE

Color photograph, 10 by 8 inches, on Fujifilm picture paper.

SIGNED and INSCRIBED by NEIL ARMSTRONG: "TO THOMAS | ALL THE BEST | NEIL ARMSTRONG."

\$ 2,000-3,000

CALLE, PAUL

"First Man on the Moon" Cover, with original sketch, signed.

Pencil on paper envelope, 9 $\frac{7}{8}$ by 4 $\frac{1}{8}$ inches, signed "Paul Calle", with "First Man on the Moon" stamp cancelled "FIRST DAY OF ISSUE", Moon Landing postmark dated July 20, 1969, and Washington, D.C. postmark, dated September 9, 1969.

Paul Calle famously designed the United States' 1969 "First Man on the Moon" airmail stamp, and the present envelope features a sketch of the stamp by the artist, along with the stamp itself.

At the time of the Apollo 11 mission, Calle was already a prolific stamp artist, and was one of the first artists chosen by NASA to document the U.S. manned space program. Calle, as the only artist allowed in with the astronauts on the morning of the historic moon landing mission, was able to observe and capture Neil Armstrong, Buzz Aldrin, and Michael Collins as they prepared for the launch on July 16, 1969. As the astronauts left for the moon, they carried with them the master die for the stamp Calle had designed, both anticipating and commemorating that soon to be first step.

Once it had returned to Earth, the plate was used to print what was at that point the largest U.S. stamp ever released. When it was offered to the public on September 9, 1969, Calle's "First Man on the Moon" became an incredibly popular lunar landing souvenir, with over 152 million produced.

\$ 1,000-1,500

174**CALLE, PAUL**

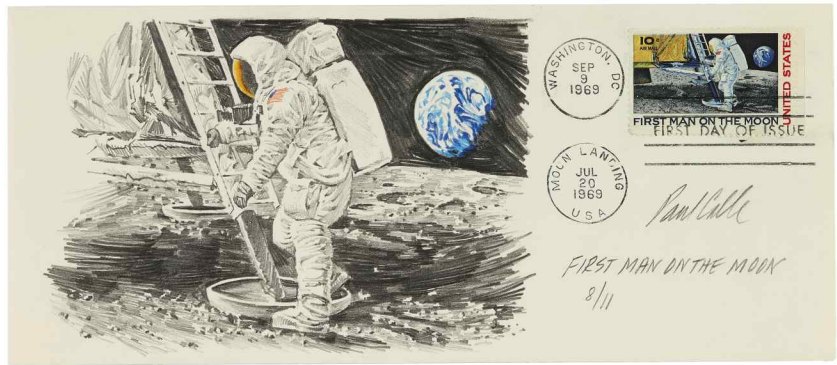
[Armstrong suiting up on the morning of Apollo 11 Launch], July 16, 1969

Lithograph, 19 $\frac{1}{16}$ by 29 inches, SIGNED PAUL CALLE AND NEIL ARMSTRONG, and numbered 754 of 1,000, in pencil in the lower margin, in National Air and Space Museum folder, with embossed planet and spacecraft.

LIMITED EDITION LITHOGRAPH SIGNED BY PAUL CALLE AND NEIL ARMSTRONG

On July 16, 1969, Paul Calle was with the Apollo 11 astronauts as they had breakfast and readied themselves for their historic expedition to the moon. He was the only artist to document the activities of Armstrong, Collins, and Aldrin as they prepared for the launch. Here, Armstrong is depicted in his "Snoopy cap" as he suited up for the mission.

\$ 3,000-5,000



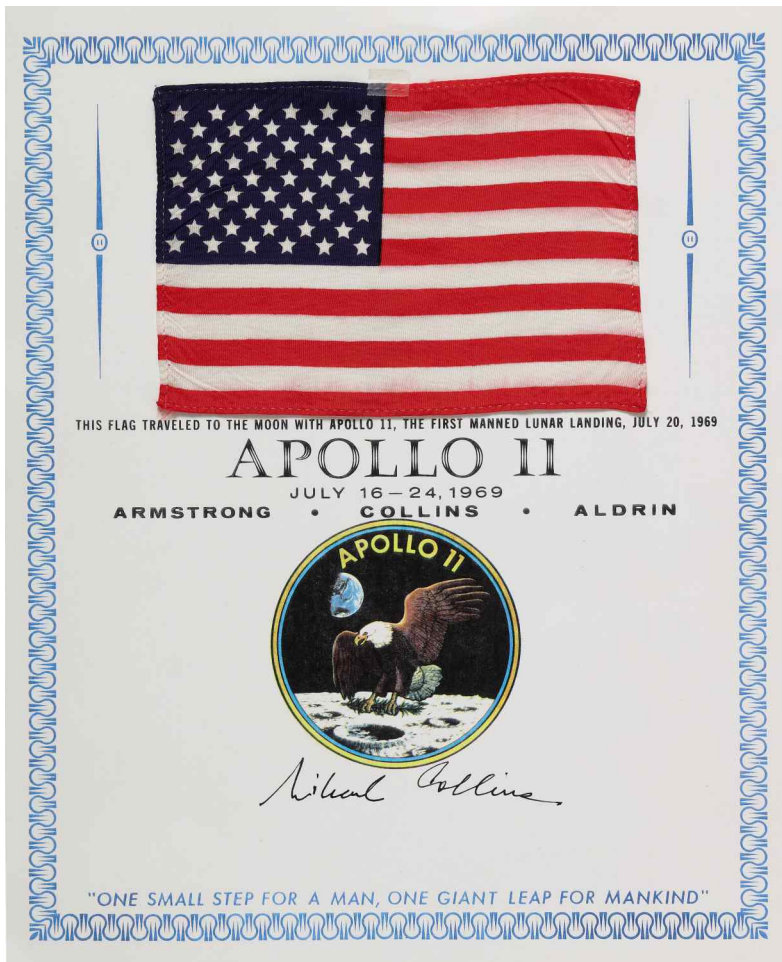
173



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PAUL CALLE — NEIL ARMSTRONG

Artist's Proof of Calle's "First Man on the Moon"

Lithographic print, 12¾ by 8¾ inches, "A/P First Man on the Moon" in pencil to lower right.

SIGNED by NEIL ARMSTRONG and PAUL CALLE.

Lithograph of the famous Calle artwork of Neil Armstrong stepping onto the moon, used on the 1969 10¢ stamp.

\$ 4,000-6,000

176

ORIGINALLY FROM THE COLLECTION OF APOLLO 11 COMMAND MODULE PILOT MICHAEL COLLINS

MIKE COLLINS'S UNITED STATES FLAG CARRIED ON APOLLO 11

FLOWN silk stars and stripes flag, 4 by 6 inches, mounted with a piece of tape to a 9½ by 11 7/8 inch certificate reading: "THIS FLAG TRAVELED TO THE MOON WITH APOLLO 11, THE FIRST MANNED LUNAR LANDING, JULY 20, 1969" followed by the Apollo 11 crew emblem with the added note: "Apollo 11, July 16-24, 1969. ARMSTRONG - COLLINS - ALDRIN." SIGNED at the bottom by MICHAEL COLLINS.

\$ 12,000-18,000



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APOLLO 11 COMMAND MODULE PILOT MICHAEL COLLINS' PERSONAL GOLD ROLEX WRISTWATCH

A YELLOW GOLD DAY DATE WRISTWATCH CIRCA 1970, REF 1803 OWNED BY MICHAEL COLLINS

Dial: silvered

Caliber: cal. 1555 automatic movement, 26 jewels

Case: 18k yellow gold, screw down case back

Case number: 2123405

Closure: 18k yellow gold *Rolex President* bracelet with folding clasp

Dimensions: 36 mm diameter

Signed: case, dial and movement

Accessories: *service receipt, letter of attestation written and signed by Michael Collins*

APOLLO 11 COMMAND MODULE PILOT MICHAEL COLLINS' PERSONAL GOLD ROLEX

Case back engraved with initials "M.C." Collins' provenance letter reads in part: "This gold Rolex watch (with "M.C." on back) has been mine for approx. 34 years. I wore it for a number of years, then decided I liked black watches better... Michael Collins, January, 2004."

\$ 10,000-15,000

178

APOLLO 11 PANORAMA

"We Came in Peace for All Mankind"

Photographic canvas print, 15 by 50 inches, depicting Neil Armstrong working at an equipment storage area on the lunar module alongside the American flag.

SIGNED and INSCRIBED by BUZZ ALDRIN: "WE CAME IN PEACE FOR ALL MANKIND" | BUZZ ALDRIN APOLLO XI LMP | JULY 20, 1969" with an arrow pointing at the figure standing by the LEM

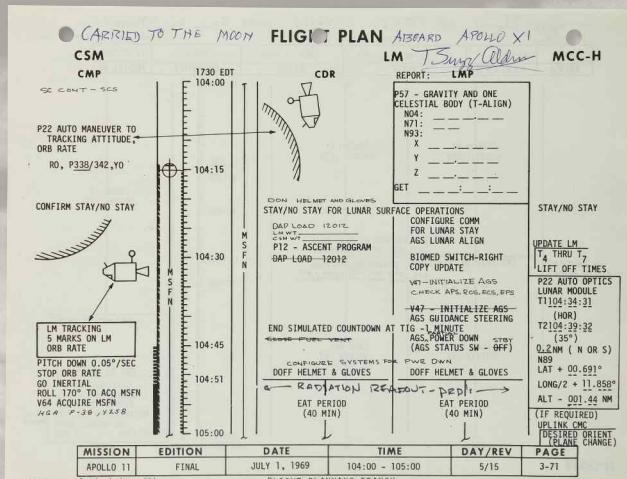
identified in Aldrin's hand as Neil Armstrong. Additionally SIGNED and INSCRIBED "MICHAEL COLLINS | APOLLO XI CMP | JULY 20, 1969" with a drawing of a rocket.

As commander of Apollo 11, Neil Armstrong took most of the photographs from the pair's historic moonwalk — this is one of the few photographs that shows Armstrong during his time on the lunar surface.

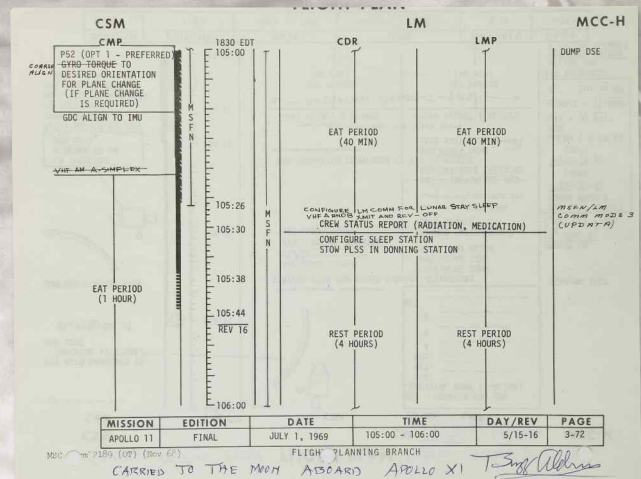
\$ 2,500-3,500



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ORIGINALLY FROM THE COLLECTION OF APOLLO 11 LUNAR MODULE PILOT BUZZ ALDRIN

FLOWN APOLLO 11 FLIGHT PLAN SHEET

DESCRIBES ARMSTRONG AND ALDRIN'S ACTIVITIES JUST 75 MINUTES AFTER THE FIRST MOON LANDING. NEIL ASKS MISSION CONTROL TO START THE MOON WALK EARLY

FLOWN Apollo 11 Flight Plan, pp 3-71/3-72. a single sheet printed recto and verso. NASA/ MSC, July 1, 1969. 8 by 10½ inches. With a Typed Letter Signed by BUZZ ALDRIN using his personal stationery.

Neil Armstrong has just guided Lunar Module Eagle to a safe landing on the Sea of Tranquility after almost 10 minutes of dealing with a flight computer that gave numerous caution and warning alarms during the descent. Mission Control reviewed these alarms and after several tense moments, finally gave the crew a "GO" to continue their landing. But the computer was targeting their landing point directly into a boulder strewn crater. Armstrong took control of the landing and expertly navigated Eagle beyond this crater and was finally able to gently place Eagle onto the lunar surface with only about 30 seconds of rocket fuel remaining.

Armstrong and Aldrin had completed their lunar contact checks and an alignment of their

navigation system using stars seen through their telescope. This was part of a process to make sure they were able to leave the Moon, including putting back on their space helmet and gloves to be ready for an emergency lift-off. They had enabled the P-12 computer program for a possible lunar ascent. All these tasks enable them for the "STAY/NO STAY FOR LUNAR SURFACE OPERATIONS."

Full details are provided with BUZZ ALDRIN'S SIGNED provenance letter, which reads: "Enclosed with this letter is a sheet numbered 3-71 and 3-72 from the Apollo 11 Flight Plan, Part No. SKB32100080-350, S/N 1001. It is part of the entire document that was carried to the Moon in Command Module Columbia on the first lunar landing mission during July 16 to 24, 1969. This sheet is from the detailed timeline section and covers hour 104 through the beginning of hour 106 in the mission.

Page 3-71 lists the steps for the STAY / NO STAY FOR LUNAR SURFACE OPERATIONS. Neil Armstrong had just made history's first manned lunar landing less than 2 hours before these steps. Since that time, we were in a posture to leave the lunar surface if an emergency occurred. By this point in the flight plan, we and Mission Control had verified all our systems were operating properly. We were then given a go to stay on the lunar surface during our 104th hour in the mission.

Needless to say, Neil and I has an abundance of energy after this historic landing and starting a rest period as listed on page 3-72 was the last thing on our minds. At about 104 hours and 30 minutes into the mission, Neil asked and received concurrence from Mission Control to start the EVA or moon walk activities about 5 hours earlier than written in the flight plan. Thus, we were actually doing EVA Prep work during this period on page 3-72. These tasks consisted of configuring our space suits to be able to strap on our PLSS (Portable Life Support Systems) or "back packs," then performing space suit pressure and communication checks.

The flight plan was probably the single most important document related to the success of our mission. It provided a time schedule of crew activities and spacecraft maneuvers to accomplish the first lunar landing. This page in particular from a Ground Elapsed Time (GET) standpoint has some of the most significant events that occurred during the entire Apollo 11 flight.

This page has been in my private collection since 1969. I have written along the top of page 3-71 and along the bottom of page 3-72: "Carried to the Moon aboard Apollo XI" and signed both sides. Additionally, a copy of the flight plan cover is enclosed."

\$ 30,000-50,000



SUR-31

LMP RCU PTT - MAIN
 PLSS mode sel sw - A
 Verify -
 PLSS warning tone - on (10 sec)
 RCU press window - 0 (OPS act-abort)
 RCU vent window - P (purge-abort)
 Verify PLSS O2 bottle press >85%
 Verify voice comm with CDR

NOTE

Unstow antenna of PLSS which transmits Garbled and/or loses TM.

NO MSFN Reception when PLSS mode sel in POS B

CDR Audio C/B - open
 Disc LM comm cable fm PGA and secure
 Connect PLSS electrical umbilical to PGA
 CDR audio C/B - close
 CDR audio panel -
 VHF A - off
 VHF B - off

RCU PTT-MAIN
 PLSS mode sel sw - B
 Verify -
 PLSS warning tone - on (10 sec)
 RCU press window - 0 (OPS act-abort)
 RCU vent window - P (purge-abort)
 Verify PLSS O2 bottle press >85%
 Verify voice comm with LMP

LMP PLSS mode sel sw - B
 PLSS warning tone - on (10 sec)

CDR PLSS mode sel sw - A
 PLSS warning tone - on (10 sec)
 Verify voice with LMP

FLOWN TO THE LUNAR SURFACE ON APOLLO XI
 Buzz Aldrin

LM-5

Basic Date June 16, 1969
 Changed June 30, 1969 B

180

SUR-32

BTH PLSS mode sel sw - AR
 PLSS warning tone - on (10 sec)
 Verify PLSS O2 bottle press >85%
 Verify voice with each other
 Verify voice and TM comm with MSFN

NOTE

If comm with MSFN is "NO GO" -
 S-band Modulate - PM
 Verify voice & TM comm with MSFN

LMP TV C/B - open

FINAL EVA EQUIPMENT PREP FOR EGRESS

BTH Unstow OPS O2 hose and OPS O2 actuator
 Attach O2 actuator to RCU
 Snap OPS O2 hose to side of PLSS with RCU connector flap

FINAL SYSTEMS PREP FOR EGRESS

BTH Confirm "GO" for cabin depress with MSFN

LMP Verify Cabin fan cont C/B - open
 Verify cabin repress C/B - close
 Suit fan Delta-P C/B - open
 Des H2O vlv - close

CDR Verify Cabin fan 1 C/B - open
 Suit fan 1 C/B - open
 Verify suit ckt relief vlv - auto
 Suit gas div vlv - egress (pull)
 Cabin gas return vlv - egress
 Verify master alarm-master alarm pb-lt-Reset
 Verify ECS caut lt & H2O sep comp caut lt on

LM-5

Basic Date June 16, 1969
 Changed June 30, 1969 B

180

180

ORIGINALLY FROM THE COLLECTION OF APOLLO 11 LUNAR MODULE PILOT BUZZ ALDRIN

APOLLO 11 CHECK LIST SHEET USED ON THE LUNAR SURFACE

THE FINAL STEPS TO ENABLE MEN TO WALK ON THE MOON

FLOWN Apollo 11 LM Lunar Surface Checklist, page SUR-31 / SUR-32, a single sheet having crew activities which enabled Neil Armstrong and Buzz Aldrin to step out onto the lunar surface. Printed recto and verso. NASA/MSC, June 16, 1969, revised June 30, 1969. 8 by 5 1/2 inches. With a Typed Letter Signed by BUZZ ALDRIN using his personal stationery.

Steps listed on this sheet were performed just minutes before Neil Armstrong descended the ladder on Lunar Module Eagle's front landing strut and became the first man to set foot upon the Moon immortalized with the words: "That's one small step for man, one giant leap for mankind." These steps involved verifying the space suits were operating properly, testing communication status, setting the needed circuit breakers (C/B) to either open or closed, then turning the television camera power on to enable a viewing audience of some one billion people back on Earth to watch the event live.

Most important were the FINAL EVA EQUIPMENT PREP and FINAL SYSTEMS PREP

FOR EGRESS. These last 15 steps included getting a "GO" to vent Eagle's oxygen from the cabin and a last check to insure the space suit equipment was operating properly.

BUZZ ALDRIN'S SIGNED provenance letter reads: "Accompanying this letter is a sheet numbered SUR-31 and SUR-32 from the Apollo 11 LM Lunar Surface Checklist, Part No. SKB32100074-363, S/N 1001. The checklist was taken to the Moon on the flight of Apollo 11 during July 16 to 24, 1969. Then the entire checklist, including this sheet, was carried to the surface of the Moon in Lunar Module Eagle during the first lunar landing on July 20, 1969. This sheet has the important steps Neil Armstrong and I performed to begin the first Extravehicular Activity (EVA) or moonwalk by men from the planet Earth.

Neil Armstrong made a beautiful lunar landing. The Lunar Module was automatically targeting us into a large boulder-filled crater. He expertly maneuvered Eagle away from that crater and landed with less than 30 seconds of descent engine fuel remaining. After landing, we started the series of procedures as listed in the initial pages of the Lunar Surface Checklist. The pages before page SUR-31 included a series of star sightings to align our navigational equipment to our exact position we now called "Tranquility Base."

The original timeline called for us to have a four hour rest period before we started the

EVA. Needless to say, a rest period was the last thing on our minds. We requested and received concurrence from Mission Control to begin the lunar surface exploration about 6 hours ahead of schedule. Neil and I then started the steps listed on SUR-31 which were part of the checklist section titled: "LM PREP FOR EVA." Those procedures included steps for "BTH" meaning both Neil and I, "CDR" for Neil to do, or "LMP," myself to do. At this time, I was finishing work with my RCU or Remote Control Unit and ran test on my PLSS or Portable Life Support System. Neil was also working with his PLSS and setting audio communication levels.

Side SUR-32 has additional PLSS steps plus the "FINAL EVA EQUIPMENT PREP FOR EGRESS." This part had both Neil and I unstowing and connecting oxygen hose and actuator equipment. Then we had the "FINAL SYSTEMS PREP FOR EGRESS" in which we confirmed a "GO" for cabin depress and verified critical LM and space suit settings. A few minutes from the completion of these steps, Neil Armstrong and I became the first humans to walk on another celestial body.

This sheet has been in my private collection since 1969. I have written on side SUR-31: "Flown to the lunar surface on Apollo XI, Buzz Aldrin" and signed side SUR-31."

\$ 50,000-80,000

FLIGHT PLAN

NOTES

CDR - 11023
CMP - 10025
LMP - 09027

MCC-H 2330 EDT
182:00

CIN -
F11/250
6 FPS
7 FT.
F20/1/60
6 FPS
50 FT
C WITES
F16/1/500
4 FPS
50 FT.

:10
:20
:30
:40
:50
183:00
M
S
F
N
:10
:20
:30
:40
:50
184:00

PRE SLEEP CHECKLIST
 CREW STATUS REPORT
 (RADIATION, MEDICATION)
 CYCLE O₂ & H₂ FANS
 CHLORINATE POTABLE WATER
 SELECT COMM NORMAL CONFIGURATION
 EXCEPT:
 S-BD NORMAL MODE VOICE SW - OFF
 S-BD SQUELCH - ENABLE
 S-BD AUX TAPE - OFF
 S-BD ANT - OMNI
 S-BD ANT OMNI - B
 TAPE RCDR FWD - OFF
 VERIFY:
 WASTE MNGT OVBD DRAIN - OFF
 WASTE STOWAGE VENT VLV - CLOSED
 EMERG CABIN PRESS VLV - BOTH
 SURGE TK O₂ VLV - ON
 REPRESS PACK O₂ VLV - OFF
 POT H₂O HTR' - OFF
 AUTO RCS JET SELECT (16) - OFF

REST PERIOD
(7 HOURS)

Carried to The Moon on APOLLO XI

T Buzz Aldrin

PTC

MISSION	EDITION	DATE	TIME	DAY/REV	PAGE
APOLLO 11	FINAL	JULY 1, 1969	182:00 - 184:00	8/TEC	3-126

MSC Form 29 (May 69) FLIGHT PLANNING BRANCH

181

181

ORIGINALLY FROM THE COLLECTION OF APOLLO 11 LUNAR MODULE PILOT BUZZ ALDRIN

FLOWN APOLLO 11 FLIGHT PLAN SHEET USE BY ARMSTRONG

“ONE OF NEIL ARMSTRONG’S MOST EXTENSIVE SET OF NOTES MADE IN THE ENTIRE FLIGHT PLAN” – BUZZ ALDRIN

FLOWN Apollo 11 Flight Plan, pp 3-126/3-127, a single sheet printed recto and verso. NASA/ MSC, July 1, 1969. 8 by 10½ inches. With a Typed Letter Signed by BUZZ ALDRIN using his personal stationery.

The crew of Apollo 11 had completed Man’s first lunar landing just 3 days earlier and were preparing for their last night in space before re-entry into the Earth’s atmosphere the next day, July 24, 1969. Recording this re-entry using their 16mm Maurer motion picture mounted in a forward looking Command Module window was one of the last important tasks for the crew to complete. Neil Armstrong recorded 12 lines of camera notes to insure that the camera was set to the correct exposure, speed, and focus. Additionally, Armstrong made 12 more notes and checks on this same side, which certainly makes this sheet one of the most extensive set if not the most extensive set of note recorded by Armstrong in the entire flight plan.

BUZZ ALDRIN’S SIGNED provenance letter reads: “Enclosed with this letter is a sheet numbered 3-126 and 3-127 from the Apollo 11 Flight Plan, Part No. SKB32100080-350, S/N 1001. It is part of the entire document that was carried to the Moon in Command Module Columbia on the first lunar landing mission during July 16 to 24, 1969. This sheet is from the detailed timeline section and covers hour 182 through the beginning of hour 186 of the mission.

Page 3-126 has the first two hours of our last rest period of the mission. A few hours before this time, Mission Control radioed instructions for motion picture camera settings. We were to use these settings for proper photography of Columbia’s re-entry the next day, July 24, 1969. Neil Armstrong recorded this information on the left side of 3-126 which reads: “- CIN -F11/250, 6 FTS, 7 FT.” These notes were for us to use an exposure setting of f 11, 1/250 of a second running at 6 frames per second with the focus at 7 feet to view the entry fireball. Neil’s notes of: “F 2.0 /1/60, 6 FPS, 50 FT, CHUTES” were for us to photograph the parachute opening using an exposure of f 2.0, 1/60 of a second at 6 frames per second with the focus at 50 feet.

Neil’s last photography notes were: “INT, F 16 /1/500, 6 FPS, 7 FT., F 28/50.” These were different settings in case the film magazine we ended up using had already been used for interior shots. In that case, we would have an

exposure of f 16, 1/500 of a second at 6 frames per second, and a focus at 50 feet. This was one of Neil Armstrong’s most extensive set of notes made in the entire flight plan.

In the notes column on the right side of 3-126, Neil recorded the radiation readings for each crew member. These notes read “CDR – 11023, CMP – 10025, LMP – 09027.” He also checked off 9 steps of the Pre Sleep Checklist.

Page 3-127 lists hours 184 to the beginning of hour 186 which were hours 3 and 4 of this rest period. We were a bit busy getting ready for re-entry and Neil and myself only got 5.5 hours of sleep. Michael Collins did a bit better and got a total of 7 hours sleep.

The flight plan was probably the single most important document related to the success of our mission. It provided a time schedule of crew activities and spacecraft maneuvers to accomplish the first lunar landing.

This page has been in my private collection since 1969. I have written on page 3-71: “Carried to the Moon on Apollo XI” and signed it near the bottom of that page. I have also signed page 3-127. Additionally, a copy of the flight plan cover is enclosed.”

\$ 40,000-60,000

ORIGINALLY FROM THE COLLECTION OF APOLLO 11 LUNAR MODULE PILOT BUZZ ALDRIN

FLOWN APOLLO 11 COMMAND MODULE SKIN FRAGMENT

An approximately 1/2 by 1/4 inch FLOWN foil segment mounted on a 2 1/2 by 8 inch Typed Note Signed by Buzz Aldrin. The segment was part of the entire outer surface of Command Module *Columbia* and served as a thermal protection layer. It traveled some 500,000 miles during the Apollo 11 flight and was exposed to the vacuum of space for over 195 hours, including almost 60 hours while in lunar orbit.

BUZZ ALDRIN'S provenance note reads: "The segment placed here was removed from Command Module *Columbia* after the first manned lunar landing mission during July 16 to 24, 1969. This flown segment is from my personal collection."

\$ 2,500-3,500

ORIGINALLY FROM THE COLLECTION OF APOLLO 11 LUNAR MODULE PILOT BUZZ ALDRIN

APOLLO 11 – LUNAR LANDING DAY INSURANCE COVER

POSTMARKED ON JULY 20, 1969

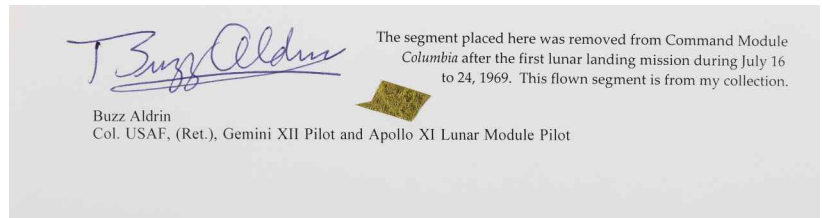
An Apollo 11 Insurance Cover measuring approximately 4 by 6 inches with a color crew emblem cachet. Having a Houston, Texas postmark of July 20, 1969, the lunar landing date of Apollo 11. Numbered on verso by Aldrin with his identifier number "BA10." The envelope is displayed between paragraphs of a Typed Letter Signed by BUZZ ALDRIN.

SIGNED by NEIL ARMSTRONG, MICHAEL COLLINS, and BUZZ ALDRIN prior to their Apollo 11 lunar landing mission.

With BUZZ ALDRIN'S provenance letter which he describes the story of this cover: "This Manned Spacecraft Center Stamp Club postal cover with a lunar exploration scene and a small Apollo 11 emblem is one of the 'insurance covers' signed by the Apollo 11 crew prior to our launch in July 1969. Since we were unable to obtain adequate life insurance due to the high risk nature of being an astronaut, we signed this group of covers and evenly distributed them to our families for safe keeping while we performed our mission. If an unfortunate event prevented our safe return, the covers would have provided a limited financial means of support to our families.

The cover displayed above has been in my private collection since 1969 and has the identifier of BA10 written on the reverse side. It was signed by the Apollo 11 crew- Neil Armstrong, Michael Collins, and myself prior to our launch. The cover was postmarked on the lunar landing day of Apollo 11 at Houston, Texas, on July 20, 1969. Just a few hours after landing, Neil Armstrong and I became the first humans to walk on another celestial body - the Moon."

\$ 10,000-15,000



182



183

ORIGINALLY FROM THE COLLECTION OF APOLLO 11 LUNAR MODULE PILOT BUZZ ALDRIN

APOLLO 11 - LAUNCH CHECKLIST TRAINING SHEET

HAVING MULTIPLE NOTATIONS FROM EACH CREW MEMBER - NEIL ARMSTRONG, MICHAEL COLLINS, AND BUZZ ALDRIN

Apollo 11 Launch Operations Checklist, page 2-21 / 2-22, a single sheet having crew activities to be performed during the Saturn third stage engine burn to send the crew to the Moon. Printed recto and verso. NASA/MSC, April 15, 1969, revised June 27, 1969. 8 by 5 1/2 inches. With a Typed Letter Signed by BUZZ ALDRIN using his personal stationery.

Checklist sheet is SIGNED and INSCRIBED by BUZZ ALDRIN: "Used in training for Apollo XI, BUZZ ALDRIN" on page 2-21. With training notes by Neil Armstrong, Michael Collins, and Buzz Aldrin on page 2-21 and additional notes by Buzz Aldrin on page 2-22.

BUZZ ALDRIN's provenance letter reads, in part: "Accompanying this letter is a page numbered 2-21 and 2-22 from the CSM 107 (Apollo 11) Launch Operations Checklist, SKB32100080-306. The pages are part of the complete manual used in the Command Module Simulator at the Manned Spacecraft Center in Houston, Texas. This page is from Section 2 titled: Boost-Insertions-TLI.

The entire checklist, including this actual page, was used by all three Apollo 11 crew members: Neil Armstrong, Michael Collins, and myself... Neil has the command responsibility to initiate an abort if the launch profile or Translunar Injection deviated from the planned events outlined in this checklist section."

Full details available online.

\$ 5,000-7,000

ORIGINALLY FROM THE COLLECTION OF APOLLO 11 LUNAR MODULE PILOT BUZZ ALDRIN

APOLLO 11 - LAUNCH CHECKLIST TRAINING SHEET

FEATURES TLI ABORT CHARTS PLUS A CREW WINDOW WITH AN EARTH SURFACE VISUAL REFERENCE

Apollo 11 Launch Operations Checklist, page 4-12A / 4-12B, a single sheet having two TransLunar Injection (TLI) abort charts. Printed recto and verso. NASA/MSC, June 13, 1969, revised June 27, 1969. 8 by 5 1/2 inches. With a Typed Letter Signed by BUZZ ALDRIN using his personal stationery.

Checklist sheet is SIGNED and INSCRIBED by BUZZ ALDRIN: "Used in training for Apollo XI, BUZZ ALDRIN" on page 4-12A.

BUZZ ALDRIN's provenance letter reads, in part: "Accompanying this letter is a page numbered 4-12A and 4-12B from the CSM 107 (Apollo 11) Launch Operations Checklist, SKB32100080-306. The pages are part of the complete manual used in the Command Module Simulator at the Manned Spacecraft Center in Houston, Texas. This page is from Section 4 titled: Abort Procedures.

The entire checklist, including this actual page, was used by all three Apollo 11 crew members: Neil Armstrong, Michael Collins, and myself. We referred to this section almost every time we performed a launch abort because the simulator team would often put us in a situation that required us to execute an abort."

Full details available online.

\$ 2,500-3,500

Used in Training for APOLLO XI

L 2-21 *Buzz Aldrin*

58:36 SII SEP 1t - on

TLI Inhibit Signals will not
* be honored after 59:42 *

CRO LOS ³⁷
(02:01:36)

58:38 SIVB ULLAGE Begins
59:00 Slew FDAI to PITCH = 0.0°
59:42 SII SEP 1t - out (TIG - 18 sec)
59:52 SIVB FUEL LEAD
59:55 SIVB ULLAGE discontinues
Insure FDAI 1 PITCH = 5.0°
59:59 LV ENG 1 lt - on
Start ORDEAL torquing
00:00 SIVB IGNITION (: : GETI)
00:02 LV ENG 1 lt - out

MONITOR THRUST & ATTITUDE
MONITOR LV TANK PRESS
SIVB ECO (1t on) (BEGIN TB7)

APRIL 15, 1969
JUNE 27, 1969

Basic Date
Changed

CSM 107 & SUBS

*EMER SIVB CUTOFF AT 6 SEC
* PAST BURN TIME IF VI ATTAINED*
* THC CCW & NEUTRAL in 1 sec *
*If still no ECO,
* LV STAGE sw - SII/SIVB *

X IF LV GUID - CMC, THC CCW, NEUTRAL IN 1 SEC ON VI X

MSFN AOS
(02:03:39)
55

UP TLM IU - ACCEPT
KEY VERB (freeze display)

SIVB ATT HOLD 20 sec & BEGIN VENTING
SIVB MNVR TO ORB RT (HDS DN) (.3°/sec)
Record VI 35583
HDOT 4774
HPAD 1741

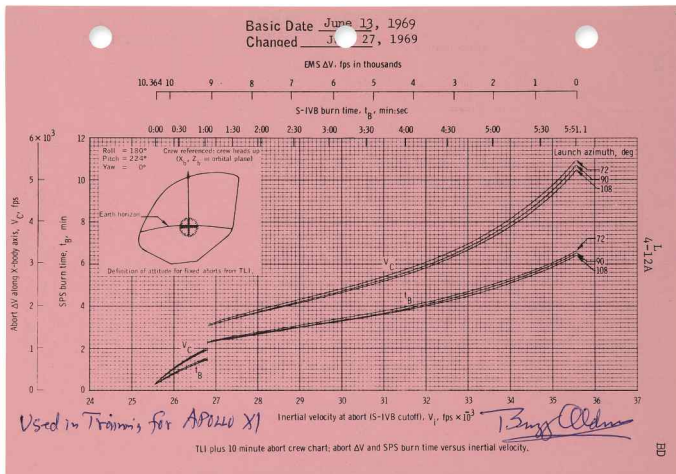
KEY RLSE

F 16 62
F 16 83

KEY RLSE
AVX, Y, Z (.1fps)

SCS TVC SERVO PWR #1 - OFF
PCM BIT RATE - LOW
EMS MODE - STBY

+45°/P, Y
+10°/sec P, Y



THE COMPLETE APOLLO 11 FLIGHT PLAN

CONTAINING THE EXACT STEPS TO ACCOMPLISH MAN'S FIRST LUNAR LANDING

Final Apollo 11 Flight Plan, AS-506/CSM-107/LM-5. Houston, TX: NASA/MSC Flight Planning Branch, Flight Crew Support Division, July 1, 1969. Over 300 pp. 10½ by 8 inches. Orange card stock covers, punched.

The complete hour-by-hour and step-by-step timetable for Man's first lunar landing, with special inscriptions by Buzz Aldrin at historic flight events.

SIGNED and INSCRIBED by BUZZ ALDRIN on the following pages:

On stock front cover sheet: "BUZZ ALDRIN, *Apollo XI LMP.*"

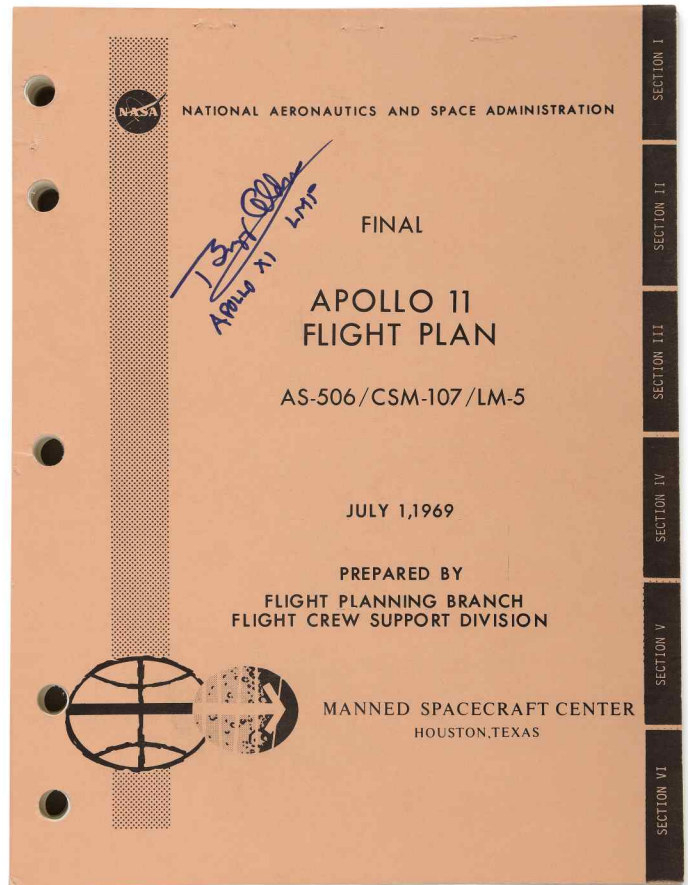
On page 3-69: "Contact Light, BUZZ ALDRIN" with the manual underlining of the TOUCHDOWN time block on this page.

"Contact Light" was the first words transmitted from the lunar surface by Aldrin.

On page 3-76: "My first step on the surface at 109:43 GET, BUZZ ALDRIN." This was the actual mission Ground Elapsed Time of Aldrin stepping onto the Moon. The moonwalk took place a few hours sooner than planned.

The flight plan is divided into 6 sections covering general information, samples of flight maneuver update pads, a detailed timeline, consumables, test objectives, and a summary. The detailed timeline is the most extensive section, over 135 pages, and lists activities in a multiple column format for the astronauts and related Mission Control activities. Each page in this section details one to two hours of flight time.

\$ 12,000-18,000



186

APOLLO 11 – NEIL ARMSTRONG SNAPS THE ICONIC PICTURE OF BUZZ ALDRIN ON THE MOON

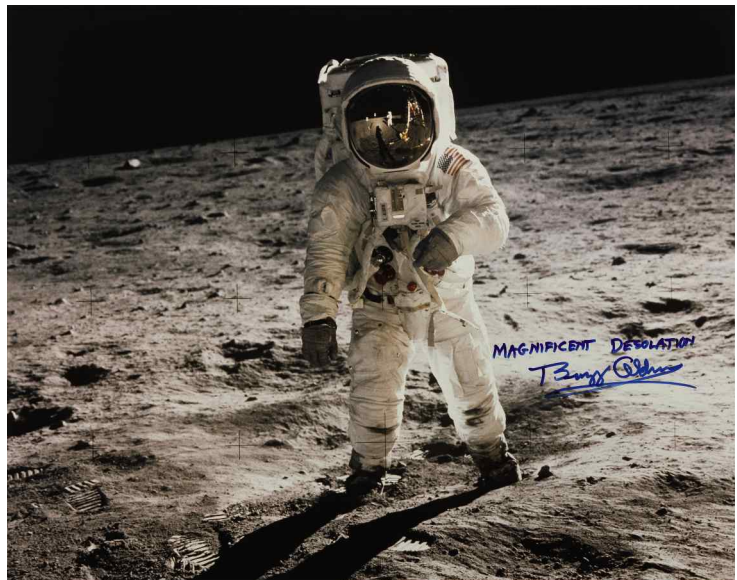
INSCRIBED WITH ALDRIN'S FIRST WORDS ON THE MOON

Large color photograph, 16 by 20 inches.

INSCRIBED and SIGNED: "Magnificent Desolation, BUZZ ALDRIN."

Man on the lunar surface, the iconic image from the Apollo Program. Buzz Aldrin being photographed just after stepping on the Moon's surface.

\$ 8,000-12,000



187



188 (PART)

APOLLO 11 – QUALITY CONTROL

Two Pre-Flight X-Rays of Neil Armstrong's Spacesuit Cover Layer Boots and Extravehicular Gloves, 7 July 1969

Two X-Rays, each 14 by 17 inches, numbered 50 and 73 and bearing the date "7 7 69". Accompanied by a CD copy of an interview conducted with Jack Weakland regarding his career at NASA.

Taken just 11 days before the Apollo 11 launch by Jack Weakland, a member of the Nondestructive Evaluation Group (NDE) at NASA. Weakland worked in the X-Ray Lab from 1968-1979, where he tested equipment for a number of Apollo missions, including Apollo 7 and Apollo 11. In an oral history conducted in 2001, Weakland described the rationale behind this quality control measure: "We x-rayed all of the suits, we x-rayed all those things to verify that there were no sharp objects left in them during the manufacturing process, make sure the zippers, when they zipped them up, the seal would form perfectly into the zippered threads"

The first x-ray shows Armstrong's cover layer boots, an extravehicular overshoe that was designed to be worn over his spacesuit boots while the walking on the Moon. The second shows his extravehicular gloves, which were designed to protect against extreme hot and cold while providing as much handling sensitivity as possible.

PROVENANCE

Jack R. Weakland, NASA X-Ray Technician – Present Owner

\$ 2,500-3,500

189



189

APOLLO 11 – PANORAMA OF THE LUNAR SURFACE, WITH NASA "MEATBALL" AND APOLLO 11 EMBLEM PATCHES

Color panoramic photograph, approximately 22 by 7 1/2, SIGNED and INSCRIBED by MICHAEL COLLINS and BUZZ ALDRIN, framed together with NEIL ARMSTRONG'S SIGNATURE, NASA "Meatball," and Apollo 11 emblem patches; not examined out of frame.

\$ 4,000-6,000

190



190

VINTAGE NASA "RED NUMBER" APOLLO 11 MOON WALK PHOTOGRAPH

WITH THE WATERMARK OF "A KODAK PAPER" ON VERSO
PRINTED JUST AFTER THE 1969 FLIGHT

Vintage color photograph, 8 by 10 inches with "A Kodak Paper" watermark on verso. A full frame Hasselblad photograph 7 inches square in size illustrated below the identification number of "NASA AS11-40-5902" which is printed in red near the upper left corner.

BOLDLY SIGNED by BUZZ ALDRIN.

Buzz Aldrin is familiarizing himself with the 1/6 gravity on the Moon as he steps toward a landing leg of Lunar Module *Eagle*. Neil Armstrong records his movements. This image happens to be the film frame just before Armstrong made the iconic image of Aldrin on the Moon – being frame number AS11-40-5903.

\$ 4,000-6,000

191

VINTAGE NASA "RED NUMBER" OF THE ICONIC IMAGE OF ALDRIN ON THE MOON

*THE MOST RECONIZED LUNAR PHOTOGRAPH IN HISTORY
PRINTED JUST AFTER THE 1969 FLIGHT*

Vintage color photograph, 8 by 10 inches with "A Kodak Paper" watermark on verso. A full frame Hasselblad photograph 7 inches square in size illustrated below the identification number of "NASA AS11-40-5903" which is printed in red near the upper left corner.

BOLDLY SIGNED by BUZZ ALDRIN.

Buzz Aldrin pauses on the lunar landscape known as the Sea of Tranquility while Neil Armstrong takes his photograph. This full frame images shows part of Lunar Module *Eagle's* footpad and bent landing probe which is wrapped in gold thermal protection material. Armstrong's image can be seen in the reflection of Aldrin's helmet visor.

\$ 6,000-9,000



191

192

VINTAGE NASA "RED NUMBER" PHOTOGRAPH OF LUNAR BOOT PRINTS AND EXPERIMENTS

NEIL ARMSTRONG TAKES THIS IMAGE JUST AFTER MAN'S FIRST WALK ON THE MOON

Vintage "NASA Red Number" color photograph, 8 by 10 inches with "A Kodak Paper" watermark on verso. The identification number "NASA AS11-37-5551" is printed in red near the upper left corner. A full frame Hasselblad photograph 7 inches square in size. Blue NASA text describing experiments and the moonwalk is on verso.

INSCRIBED and **SIGNED**: "Post EVA, BUZZ ALDRIN, July 21, 1969."

Neil Armstrong photographs the Moon's surface from his commander station inside Lunar Module *Eagle*. Several small rocks and dozens of boot prints are clearly seen along a path toward the experiments (seismometer and laser reflector) that he and Aldrin had deployed during their moonwalk. Two thrusters from the ascent stage attitude control jets can be seen in the foreground.

\$ 3,000-5,000



192

193

VINTAGE NASA "RED NUMBER" PHOTOGRAPH OF EAGLE'S RETURN FROM THE LUNAR SURFACE

MICHAEL COLLINS TAKES THIS IMAGE WITH EARTHRISE IN THE BACKGROUND

Vintage "NASA Red Number" color photograph, 8 by 10 inches with "A Kodak Paper" watermark on verso. The identification number "NASA AS11-44-6642" is printed in red near the upper left corner. A full frame Hasselblad photograph 7 inches square in size.

SIGNED and **INSCRIBED**: "BUZZ ALDRIN, Apollo XI."

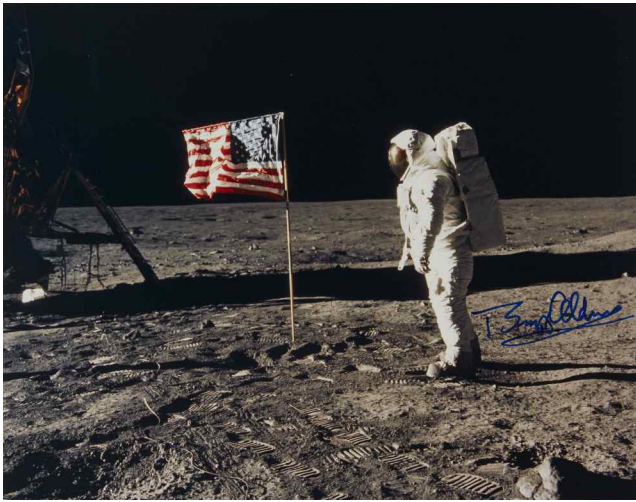
Neil Armstrong and Buzz Aldrin in Lunar Module *Eagle's* ascent stage approach Michael Collins in Command/Service Module *Columbia* for docking some 4 hours after leaving the Moon's surface. Armstrong and Aldrin had just made Man's first landing on the Moon just 26 hours earlier and explored the surface for nearly 2 and 1/2 hours.

\$ 4,000-6,000



193

113



194

194

ALDRIN WITH OLD GLORY ON THE MOON

NEIL ARMSTRONG CAPTURES THE IMAGE THAT SYMBOLIZES THE NATIONAL GOAL OF LANDING MEN ON THE MOON

Color photograph, 8 by 10 inches.

SIGNED by BUZZ ALDRIN.

Aldrin stands next the United States flag after he and Neil Armstrong deployed our national symbol on the lunar surface. This photograph reflects the decade effort of the United States to accomplish of President John F. Kennedy's goal of landing a man on the moon and returning safely to earth.

\$ 7,000-9,000

195

ARMSTRONG AND ALDRIN PLACE THE STARS AND STRIPES ON THE MOON

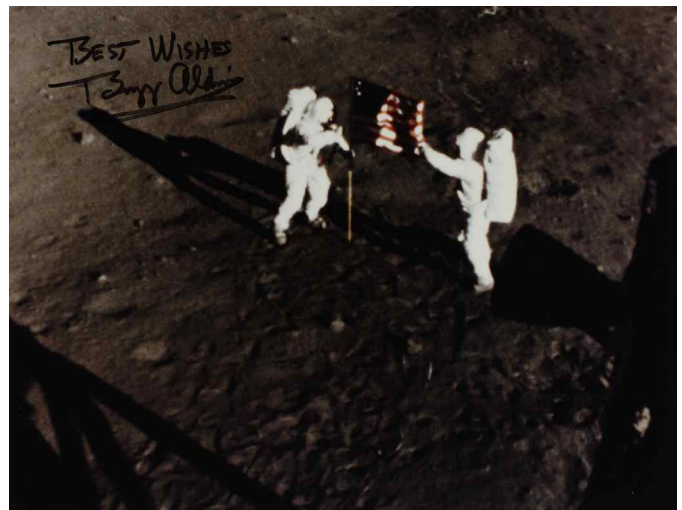
TAKEN FROM THE WINDOW OF EAGLE WHILE THE FIRST MEN EXPLORE THE MOON

Color photograph, approximately 8 by 10 inches.

INSCRIBED and SIGNED: "Best Wishes, BUZZ ALDRIN."

An enlargement from a 16mm motion picture frame taken by a Maurer automated sequence camera mounted at Buzz Aldrin's triangular window inside Lunar Module *Eagle*. The frame shows the moment that Armstrong and Aldrin completely unfurled the United States flag during their nearly 2 and 1/2 hour surface exploration.

\$ 2,500-3,500



195



196

196

APOLLO 11 OFFICIAL NASA RELEASED APOLLO 11 COLOR PHOTOGRAPH COLLECTION

ALL WITH RED NASA IDENTIFICATION AND TEXT AT THE TOP OR SIDE BORDERS

Collection of color photographs, all 8 by 10 inches and all having a watermark of "This Paper Manufactured by Kodak" on verso. All but three have blue NASA descriptive text on verso. All lunar surface photographs were taken by Neil Armstrong.

Full details available online.

\$ 5,000-8,000

197

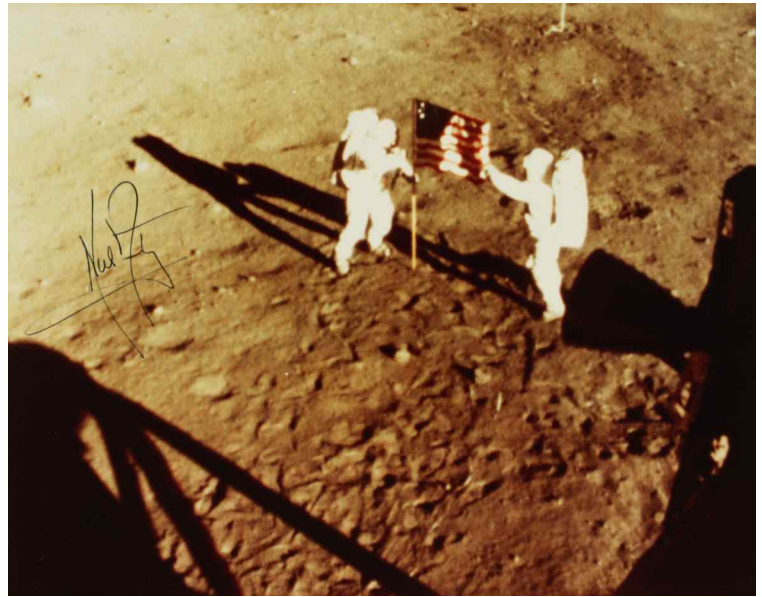
APOLLO 11 — NEIL ARMSTRONG AND BUZZ ALDRIN FLAG PLANT

Color photograph on vintage Kodak watermarked paper, 8 by 10 inches, printed NASA text to verso dated 22 April 1983, "Photo no. 69-H-1256" and "69-H-685."

SIGNED BY NEIL ARMSTRONG

Vintage official NASA photograph of Neil Armstrong and Edwin "Buzz" Aldrin planting the Stars and Stripes on the lunar surface. The present image was taken from the 16mm acquisition camera that was mounted in the Lunar Module. Armstrong is standing at the flag's staff, and Aldrin is on the right, holding the flag taut.

\$ 3,000-5,000



197

198

NEIL ARMSTRONG'S NEARLY FATAL ACCIDENT BEFORE HIS APOLLO 11 FLIGHT

HE EJECTS FROM THE LLRV WITH ONLY SECONDS TO SPARE

A series of three color photographs in sequence enlarged from a 16mm motion picture camera, all 8 by 10 inches with blue NASA text on verso. All having a watermark of: "This Paper Manufactured by Kodak" on verso. The sequence shows Armstrong ejecting from the LLRV moments before impact and floating to the ground via parachute. Any injury from this crash could have cost him from being the commander of Apollo 11 and unable to be the first man to step upon the Moon.

Full details available online.

\$ 2,500-3,500



198

199

APOLLO 11 BOOK COLLECTION

ALL SIGNED BY BUZZ ALDRIN

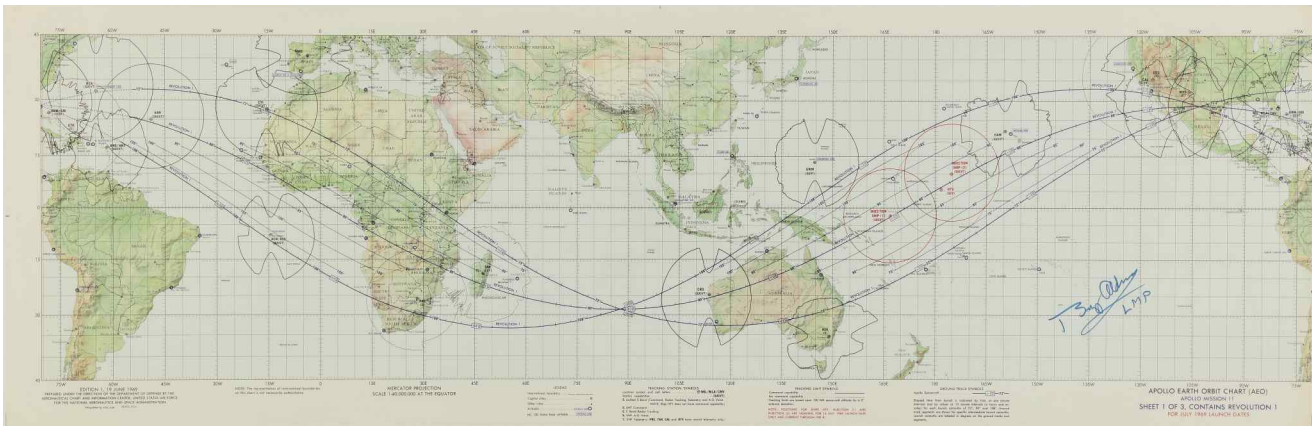
A collection of books and pamphlets all with color photographs and illustrations from the Apollo 11 lunar landing mission. The first three are each SIGNED by BUZZ ALDRIN on the front cover and the last is SIGNED by ALDRIN on the title page.

Full details available online.

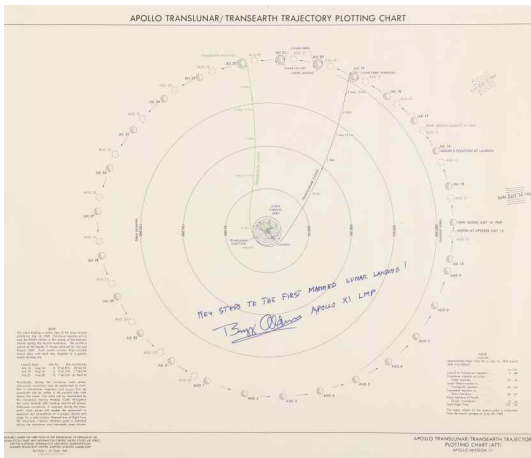
\$ 1,200-1,800



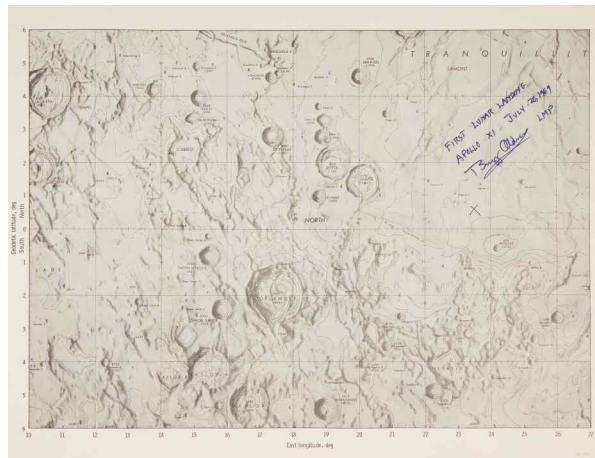
199



200



201



202

200

LAUNCH POINT CAPE KENNEDY AND A JOURNEY TO THE MOON

Apollo Earth Orbit Chart (AEO). Apollo Mission 11 ... For July 1969 Launch Dates. Color Earth maps, 3 sheets. 13½ by 41½ inches each.

Sheet one plots the Saturn V launch from Florida to through the first Earth orbit is signed by BUZZ ALDRIN with LMP (Lunar Module Pilot) added.

Charts two and three of this series plot the second and possible third earth orbit, only needed if the translunar injection burn shown on chart two was delayed until the third orbit. Circular plots in black represent the ground communication coverage areas with the ones in red being ocean stationed tracking ships. Orbital paths on all three sheets show the full launch range azimuths of 72 to 108 degrees.

\$ 2,500-3,500

201

KEY STEPS TO ENABLE A LUNAR LANDING

SIGNED APOLLO 11 TRAJECTORY CHART

Apollo Translunar / Transearth Trajectory Plotting Chart (ATT), Apollo Mission 11. June 23, 1969, 24 by 20 inches. Includes a detailed notes section at opposite lower corners having a flight time summary based on the July 16 launch date.

BOLDLY INSCRIBED and SIGNED: "Key Steps to the First Manned Lunar Landing! BUZZ ALDRIN, Apollo XI LMP."

The Earth is located at the chart center looking down at the north pole with concentric circles plotted every 50,000 miles outward to the Moon's orbit. The lunar position around the Earth is illustrated during the 1969 July and August time frame. Key flight profile events such as earth launch, translunar injection, lunar and earth coast phases, lunar orbit insertion, lunar landing - liftoff, and transearth injection are shown in their relative positions.

\$ 7,000-10,000

202

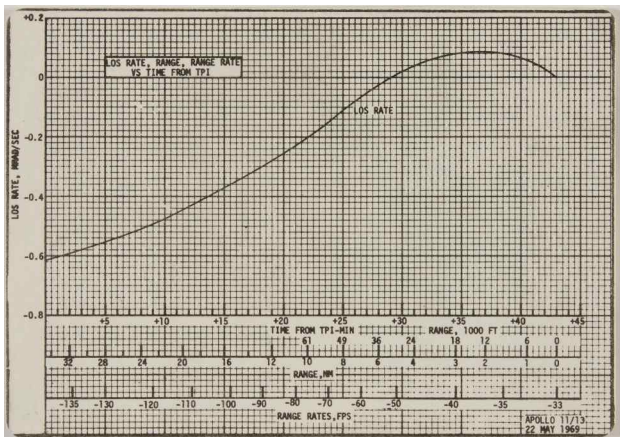
THE APOLLO 11 LUNAR LANDING CHART

WITH AN EXTENSIVE INSCRIPTION BY BUZZ ALDRIN

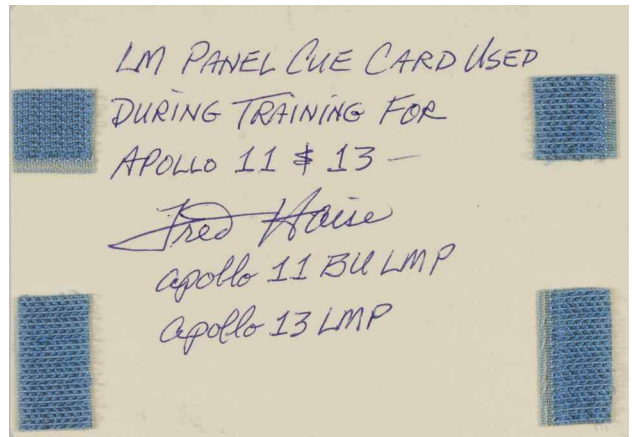
Mare Tranquillitatis lunar chart focused on the area where Neil Armstrong flew Lunar Module Eagle to a safe touchdown. A NASA Manned Spacecraft Center chart identification of "MSC - 6132 - 69" is captioned at the lower right corner. Lunar east longitude is marked in degrees from 10 to 27 along the bottom and latitude is marked from 0 to 6 degrees north and south. This chart was created primarily for Apollo 11 mission planning by the Manned Spacecraft Center (MSC). Elevation contour lines are plotted at 600 foot intervals. 17 by 22 inches.

INSCRIBED and SIGNED: "First Lunar Landing, Apollo XI, July 20, 1969, BUZZ ALDRIN, LMP." He has marked the Apollo 11 landing site with a large "X."

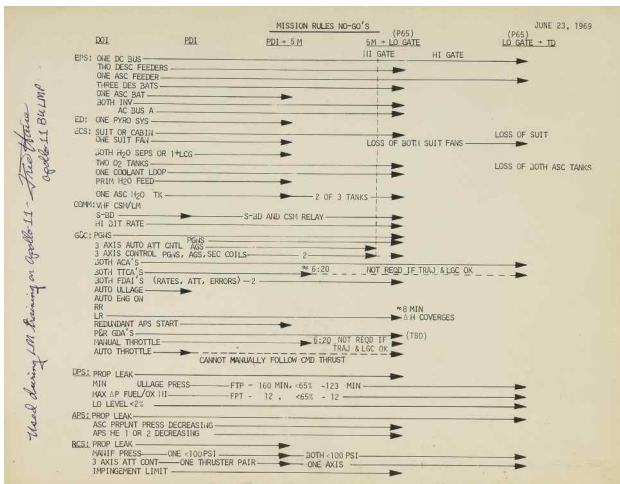
\$ 5,000-7,000



203



203



204



205

203

ORIGINALLY FROM THE COLLECTION OF APOLLO 13 LUNAR MODULE PILOT FRED HAISE

LM CONTROL PANEL CUE CARD USED DURING APOLLO 11 AND 13 TRAINING

ISSUED TO APOLLO 11 BACK-UP LUNAR MODULE PILOT FRED HAISE

LOS Rate, Range, Range Rate vs Time from TPI. Cue card made of heavy stock paper for use inside the Lunar Module simulator during training by Fred Haize. 3 by 4 inches with four blue Velcro hook pads on verso. Identified with "Apollo 11/13, 22 May 1969" in the lower right corner. An LOS (Loss Of Signal - for communications) rate curve and rate tables are plotted on a graph vs times for TPI (Terminal Phase Initiation), being a LM ascent engine burn to intercept the Command/Service Module to allow rendezvous after return from the lunar surface.

INSCRIBED and SIGNED: "LM Panel Cue Card used during training for Apollo 11 & 13, FRED HAIZE, Apollo 11 BU LMP, Apollo 13 LMP" on the Velcro hook side.

Full details available online.

\$ 1,500-2,000

204

ORIGINALLY FROM THE COLLECTION OF APOLLO 13 LUNAR MODULE PILOT FRED HAISE

APOLLO 11 LM CABIN WALL REFERENCE CARD FOR LANDING ABORTS

ISSUED TO APOLLO 11 BACK-UP LUNAR MODULE PILOT FRED HAISE

Mission Rules NO-GO's. June 23, 1969. Lunar Module wall card made of heavy stock paper for use inside the Lunar Module simulator during training by Fred Haize. 8 by 10½ inches with six white Velcro hook pads on verso. The chart type wall card clearly defines the eight LM equipment subsystems when the flight mission rules call for an abort in the lunar landing sequence. The actual Apollo 11 landing had computer alarms that potentially could have cause Armstrong and Aldrin to abort the first lunar landing.

INSCRIBED and SIGNED "Used during LM training on Apollo 11, FRED HAIZE, Apollo 11 BU LMP" along the left side of the card.

Full details available online.

\$ 2,000-3,000

205

APOLLO FILM RETURN BETA CLOTH STOWAGE BAGS

DESIGNED FOR FILM STOWAGE AND SECURE RETURN TO EARTH

Two dense weave Beta Cloth film stowage bags with outer identification tags front and back. Used for astronaut training during the Apollo Program. Both are designed to secure and return exposed 16mm Maurer motion picture film recorded during an Apollo flight. The larger bag is 8½ by 9 inches having dual stainless steel snaps to enable securing the top opening and one snap at the base to secure to the A9 (Aft 9) stowage locker located along the floor of Command Module below the crew couches. Both 1 by 3 inch tags sewn at the near center on each side read: "16 MM FILM, A9 RETURN." The second bag measures 6½ by 5½ inches with a single stainless steel snap to close the top opening. Both 1½ by 3 inch tags sewn at the near center on each side read: "16 MM FILM, B8 LAUNCH & RETURN." B8 is the stowage locker located along the back wall of the Command Module behind the Commander's couch.

\$ 1,200-1,800

APOLLO LUNAR SURFACE SAMPLE COLLECTION BAG

TYPE USED ON THE LAST THREE APOLLO MISSIONS

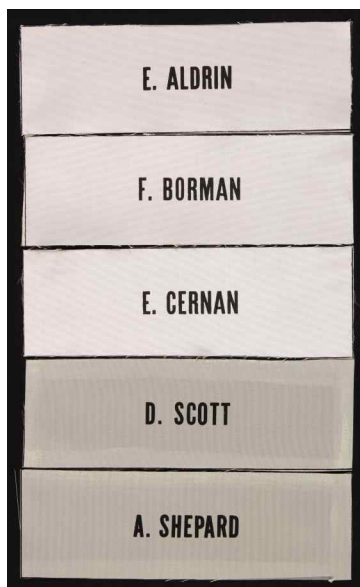
Lunar Sample Collection Bag constructed from plastic and aluminum, approximately 8 inches wide along the top. The dual aluminum tabs at the top assist a pressurized space suit glove with opening and closing the bag once the lunar

sample has been collected. The final three Apollo lunar landing missions all employed the lunar rover which allowed the astronauts to explore a vastly greater area than the first three landings. Bags of this type were employed to gather and secure the greater number of samples collected during the three days of lunar exploration conducted on each of the last missions, Apollo 15, 16, and 17.

\$ 3,000-5,000



206



207

APOLLO BETA CLOTH ASTRONAUT NAME TAGS

A set of five Beta Cloth name tags, each 7½ inches long and 2½ inches tall. Beta Cloth is a fiberglass material coated in Teflon and was used as the fire protection layer of the Apollo space suit. These tags were placed on suit equipment and moon walk support equipment to assist quick identification.

Included are E. ALDRIN, F. BORMAN, E. CERNAN, D. SCOTT, and A. SHEPARD. Their Apollo missions were 11, 8, 10, 9, and 14 respectively, with Cernan and Scott also flying (as commanders) on Apollo 17 and 15 respectively.

\$ 2,000-3,000

ARMSTRONG, NEIL

Typed letter signed to Albert Schuster regarding an invitation to appear at the Star Trek Convention

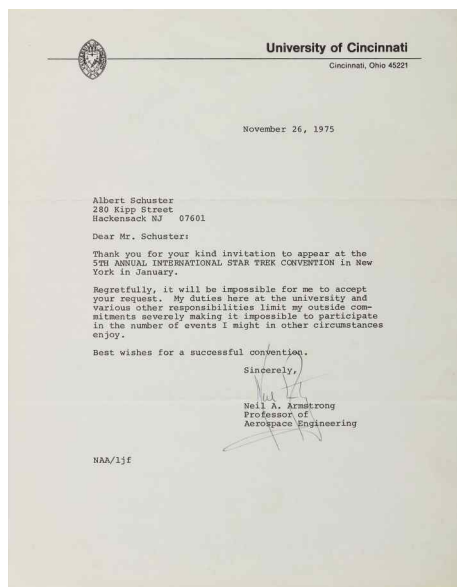
1 page, 8½ by 11 inches, on University of Cincinnati letterhead, dated "November 26, 1975" and SIGNED "NEIL ARMSTRONG" in black ink.

A LETTER FROM THE FIRST MAN ON THE MOON TO THE FOUNDER OF "SCHUSTER'S INTERNATIONAL STAR TREK CONVENTION"

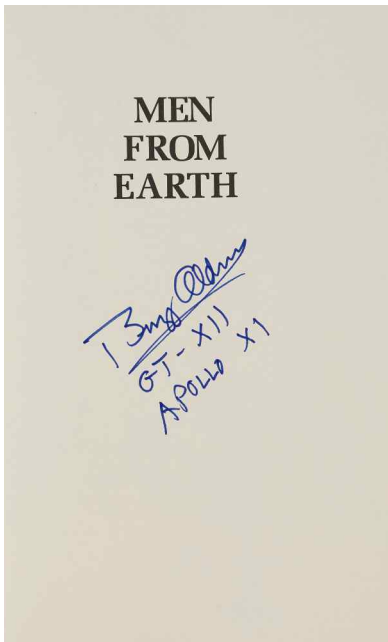
"Thank you for your kind invitation to appear at the 5TH ANNUAL INTERNATIONAL STAR TREK CONVENTION," Armstrong begins. "Regretfully, it will be impossible for me to accept your request. My duties here at the university and various other responsibilities limit my outside commitments severely..."

After resigning from NASA in 1971, Armstrong taught at the University of Cincinnati, in their Department of Aerospace Engineering. Following his distinguished NASA career, Armstrong was increasingly disinclined to give interviews, and in 1993 stopped autographing materiel as well. Schuster was notorious in Star Trek circles, and often accused of being involved in the conventions for purely monetary reasons.

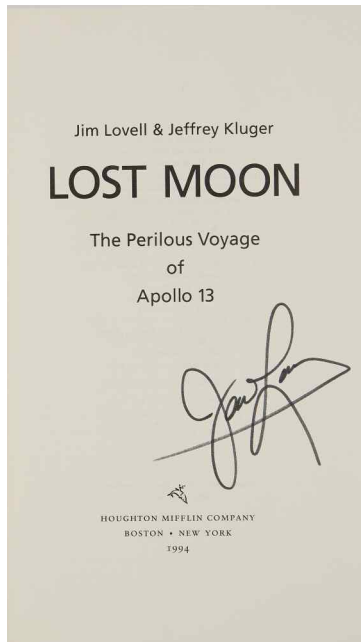
\$ 2,000-3,000



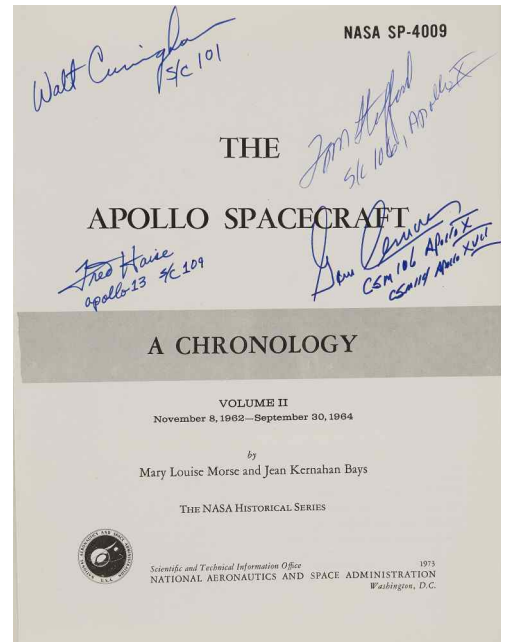
208



209 (PART)



210 (PART)



211 (PART)

209

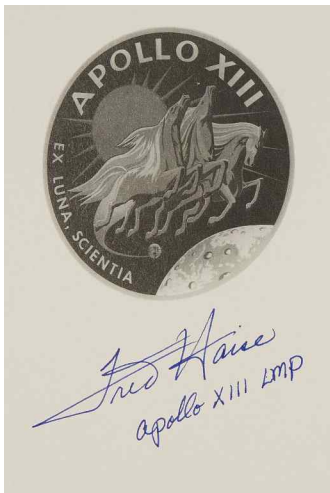
BUZZ ALDRIN AUTHORED BOOK COLLECTION

ALL SIGNED BY ALDRIN

A collection of five books authored by Gemini 12 pilot and Apollo 11 Lunar Module Pilot Edwin E. "Buzz" Aldrin. All SIGNED by BUZZ ALDRIN on the title or half title page.

Full details available online.

\$ 2,000-3,000



210 (DETAIL)

210

ASTRONAUT - AUTHORED AND SIGNED

5 works:

1. COOPER, GORDON and BRUCE HENDERSON. *Leap of Faith: an Astronaut's Journey into the Unknown*. New York: Harper Collins, 2000. INSCRIBED "GORDON COOPER, Faith 7".
2. LOVELL, JIM and JEFFREY KLUGER. *Lost Moon, The Perilous Voyage of Apollo 13*. New York: Houghton Mifflin Company, 1994. SIGNED by JAMES LOVELL on the title page. SIGNED and INSCRIBED: "FRED HAISE, Apollo XIII LMP".
3. SCHIRRA, WALLY. *Schirra's Space*. Annapolis: Bluejacket Books, Naval Institute Press, 1988. First Bluejacket printing, 1995. SIGNED by WALLY SCHIRRA.
4. STAFFORD, THOMAS P. and MICHAEL CASSUTT. *We Have Capture: Tom Stafford and the Space Race*. Washington: Smithsonian Institution, 2002. INSCRIBED "THOMAS P. STAFFORD, Apollo Cdr."
5. WORDEN, ALFRED. M. *Hello Earth, Greetings from Endeavour*. Los Angeles: Nash Publishing, 1974. SIGNED and INSCRIBED: "AL WORDEN, Apollo 15".

Full details available online.

\$ 1,000-1,500

211

SIGNED BY A MEMBER FROM EVERY MANNED APOLLO FLIGHT

ERTEL, IVAN D., et al. *The Apollo Spacecraft: A Chronology*. Washington: GPO/NASA SP-4009. 1969-1978. Four volumes. 269, 277, 268, and 463 pp. 10½ by 8 inches. All original red cloth.

Volume I - SIGNED and INSCRIBED: "BUZZ ALDRIN, Apollo 8 Back Up CMP; FRED HAISE, Apollo 8 Back up LMP, Apollo 11 Back up LMP and JAMES LOVELL, Apollo 8,13" on the title page. INSCRIBED and SIGNED by IVAN ERTEL on the front end paper.

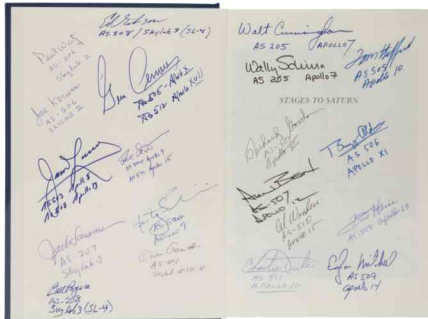
Volume II - SIGNED and INSCRIBED: "WALT CUNNINGHAM, S/C 101; GENE CERNAN, CSM 106 Apollo X, CSM 1114 Apollo XVII; FRED HAISE, Apollo 13 S/C 109 and TOM STAFFORD, S/C 106 Apollo X" on the title page.

Volume III - SIGNED and INSCRIBED: "BUZZ ALDRIN, CSM 107 Apollo XI; RICHARD GORDON, Apollo XII" and "AL WORDEN, S/C-112, Apollo 15" on the title page.

Volume IV - SIGNED and INSCRIBED: "EDGAR MITCHELL, CSM 110, Apollo 14; CHARLIE DUKE, Apollo 16 CSM 113" and "DAVE SCOTT, CSM 104, CSM 112" on the title page.

Full details available online.

\$ 6,000-9,000



212

212

SIGNED BY TWENTY ASTRONAUTS WHO FLEW ON SATURN ROCKETS

SATURN V - THE MOST POWERFUL MANNED ROCKET EVER FLOWN

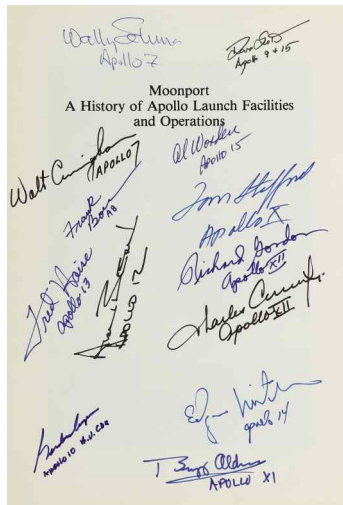
BILSTEIN, ROGER E. *STAGES TO SATURN: A Technological History of the Apollo/Saturn Launch Vehicles*. Washington: GPO/NASA SP-4206, 1980. xx, 511 pp. 10 by 7 inches. Original blue cloth. The twenty astronaut signatures are on front free endpaper verso and half-title page.

SIGNED and INSCRIBED with their Apollo Saturn (AS) vehicle numbers by eight astronauts who flew the Saturn IB rocket: "WALT CUNNINGHAM, AS 205 Apollo 7; OWEN GARRIOTT, AS 207 Skylab II (SL 3); ED GIBSON, AS 208 / Skylab3 (SL 4); JOE KERWIN, AS 206 Skylab 2; JACK LOUSMA AS 207 Skylab 3; BILL POGUE, AS-208 Skylab 3 (SL-4); WALLY SCHIRRA, AS 205 Apollo 7 and PAUL WEITZ, AS 206 Skylab 2."

SIGNED and INSCRIBED with their Apollo Saturn (AS) vehicle numbers by 12 astronauts who flew the Saturn V rocket: "BUZZ ALDRIN, AS 506 Apollo XI; ALAN BEAN, AS 507 Apollo 12; GENE CERNAN, AS 505 Apollo X, AS 512 Apollo XVII, CHARLIE DUKE, AS 511 Apollo 16; RICHARD GORDON, AS 507 Apollo XII; FRED HAISE, AS 508 Apollo 13, JAMES LOVELL, AS 503 Apollo 8, AS 508 Apollo 13; EDGAR MITCHELL, AS 509 Apollo 14; RUSTY SCHWEICKART, AS 504 Apollo 9; DAVE SCOTT, AS 504 Apollo 9, AS 510 Apollo 15, TOM STAFFORD, AS 505 Apollo 10 and AL WORDEN, AS 510, Apollo 15."

Full details available online.

\$ 6,000-9,000



213

213

KENNEDY SPACE CENTER, THE WORLD'S ONLY MOONPORT

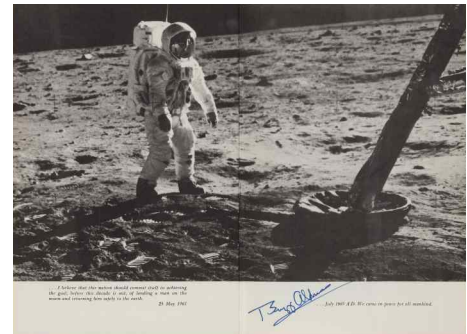
INCLUDES SIGNATURES OF TEN MOON VOYAGERS AND SIGNATURES OF THREE TO EARTH ORBIT

BENSON, CHARLES D. and WILLIAM B. FLAHERTY. *MOONPORT: A History of Apollo Launch Facilities and Operations*. Washington: GPO/NASA SP-4204, 1978. xx, 636 pp. Illustrated. 10 by 7 inches. Original tan printed wrappers.

SIGNED and INSCRIBED with their individual Apollo flight number(s) by: BUZZ ALDRIN, ALAN BEAN, FRANK BORMAN, CHARLES CONRAD, GORDON COOPER, WALT CUNNINGHAM, RICHARD GORDON, FRED HAISE, EDGAR MITCHELL, WALLY SCHIRRA, DAVE SCOTT, TOM STAFFORD, and AL WORDEN on the half-title page.

Chapters include origins of the Moonport and acquiring land for the launch sites. Details of the Saturn I and IB earth orbit rockets, designs of the launch structures, socio-economic issues along the Space Coast are described. Additionally chapters cover the Saturn V Launch Complex 39 design and construction, automating launch operations, the Apollo 1 fire, and the final success of the lunar landing missions. Extensive data and facts are listed in five appendixes.

\$ 5,000-7,000



214

214

THE FOLLOWING LOT WAS ORIGINALLY FROM THE COLLECTION OF FREDRICK C. DURANT, III FRED DURANT ASSISTED VON BRAUN'S EXPLORER I LAUNCH EFFORT

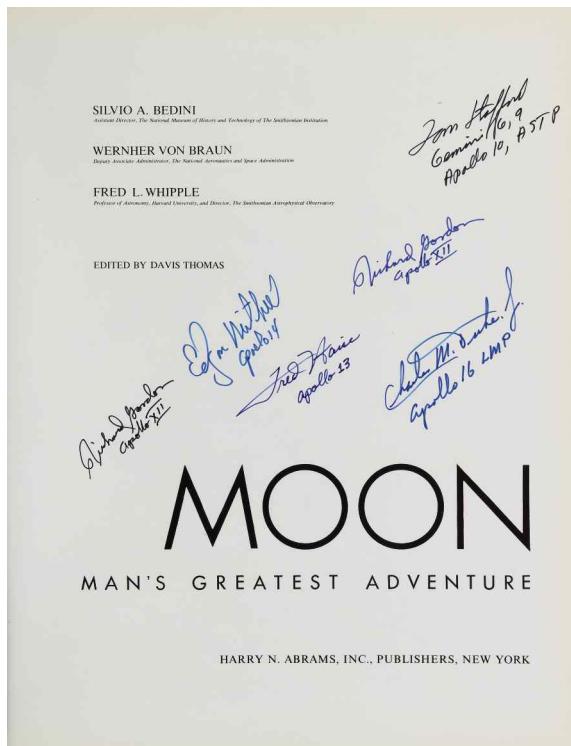
ASTRONAUTICS DEPARTMENT HEAD OF THE SMITHSONIAN INSTITUTION FROM 1964 TO 1980 BROOKS, C.G., J. M. GRIMWOOD and L. S. SWENSON. *Chariots for Apollo: A History of Manned Lunar Spacecraft*. Washington: GPO/NASA SP-4205, 1979. xvii, 538 pp. 10 by 7 inches. Original blue cloth. With Durant's mailing label having his Chevy Chase, Maryland address affixed on the inside front endpaper.

After the Second World War, Fredrick C. Durant, III, performed studies in rocketry and early spaceflight. He provided assistance during the 1958 effort to orbit the first United States satellite, *Explorer I*, which was led by Dr. Wernher von Braun. In 1964, he became assistant director and head of the newly formed Astronautics Department of the Smithsonian Institute. He retired from the Smithsonian in 1980.

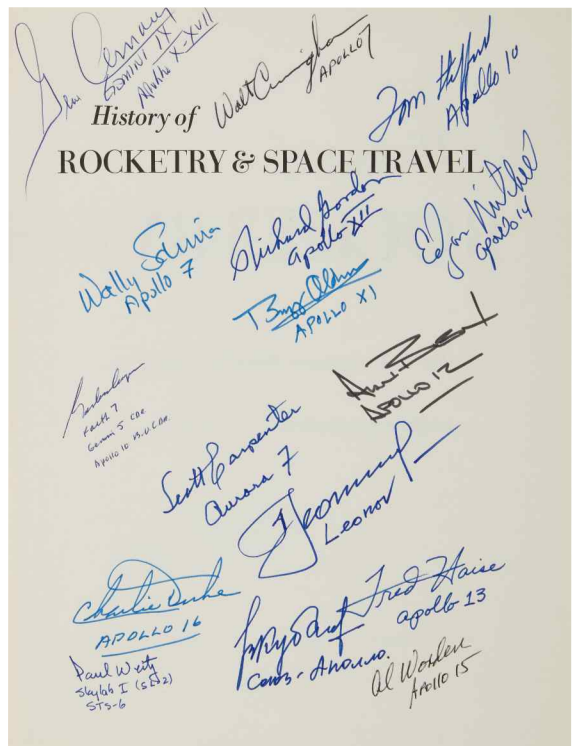
SIGNED and INSCRIBED by TWELVE Apollo Astronauts with their individual Apollo flight number(s), on the frontispiece verso by: ALAN BEAN, WALT CUNNINGHAM, CHARLIE DUKE, GORDON COOPER, RICHARD GORDON, FRED HAISE, EDGAR MITCHELL, TOM STAFFORD, WALLY SCHIRRA and AL WORDEN on the frontispiece verso. SIGNED and INSCRIBED: "GENE CERNAN, Apollo X - XVII" on the half title page. SIGNED by BUZZ ALDRIN on the frontispiece photograph showing him walking on the lunar surface.

Full details available online.

\$ 4,000-6,000



215



216

215

BENDINI, SILVIO, WERNHER VON BRAUN AND FRED WIPPLE

EARLY LARGE FORMAT PUBLICATION SIGNED BY TEN NASA ASTRONAUTS

MOON, *Man's Greatest Adventure*. New York: Abrams, 1973. 267 pp. 15 by 12 inches. Original blue cloth with dust jacket.

The iconic image taken by Neil Armstrong of Buzz Aldrin on the lunar surface is featured on the frontispiece which is BOLDLY SIGNED and INSCRIBED by Aldrin with: "BUZZ ALDRIN, Apollo XI."

SIGNED and INSCRIBED on the title page: "CHARLES M. DUKE, Apollo 16 LMP; RICHARD GORDON, Apollo XII; FRED HAISE, Apollo 13; EDGAR MITCHELL, Apollo 14; and TOM STAFFORD, Gemini 6, 9, Apollo 10, ASTP." ADDITIONALLY SIGNED and INSCRIBED on the preliminary blank: "SCOTT CARPENTER, Aurora 7; GORDON COOPER, Faith 7, GT-5, Apollo 10 B. U. (Back Up) CDR; WALT CUNNINGHAM, Apollo 7 and WALLY SCHIRRA, Σ7, GT 6, Apollo 7."

The centuries of Man's fascination with the Moon is described and illustrated with early stone sculptures, statues, and paintings. Nearly one hundred pages are devoted to the twelve years of the Space Age - Sputnik to Apollo 10 - having both iconic and rare photographs. Extensive details are provided on the Apollo 11 lunar landing flight which includes a large fold-out mission diagram of the flight from the Earth to the Moon and lunar surface photographs from this historic mission. Wernher von Braun authors a chapter titled: "A Step Toward Immortality" describing the significance of this historic mission. There are over 275 illustrations ending with the just released images from the second lunar landing - Apollo 12 - at the end of 1969.

\$ 6,000-9,000

216

SIGNED BY 14 ASTRONAUTS AND TWO COSMONAUTS

INCLUDING THE FIRST MAN TO WALK IN SPACE VON BRAUN, WERNHER and FREDERICK I. ORDWAY III. *History of Rocketry and Space Travel*. New York: Thomas Y. Crowell, 1969. xi, 276 pp. 11 by 9 inches. Cloth with dust jacket. Revised Edition.

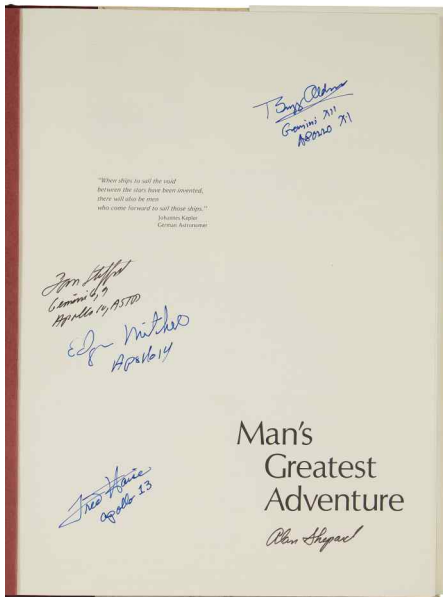
SIGNED and INSCRIBED with their individual space flight(s) on the half title page by: BUZZ ALDRIN, ALAN BEAN, GENE CERNAN, SCOTT CARPENTER, GORDON COOPER, WALT CUNNINGHAM, CHARLIE DUKE, RICHARD GORDON, FRED HAISE, EDGAR MITCHELL, WALLY SCHIRRA, TOM STAFFORD, PAUL WEITZ and AL WORDEN.

Additionally SIGNED by ALEXEI LEONOV (the first man to walk in space and Soviet Commander of ASTP) and VALERY KUBASOV (Soviet Flight Engineer of ASTP).

SIGNED by co-author FREDERICK I. ORDWAY on the title page.

This revised edition of the original 1966 work has details of the just completed Apollo 11 lunar landing. Still included are the thousand years of rocketry and Man's desire to travel to other worlds. The efforts of Tsiolkovsky, Oberth, Goddard and others are described, plus the rapid development of the A4 (V2) rocket by Germany during World War II. The Apollo flights which enabled the first lunar landing complete this extraordinary work.

\$ 6,000-9,000



217

A PHOTOGRAPHIC JOURNEY ON THE FLIGHTS TO THE MOON

FORWARD BY APOLLO 8 AND 13 ASTRONAUT JAMES LOVELL ALLEN, LAWRENCE. *Man's Greatest Adventure*. Selah, Washington: BRM Selah Corporation, 1974. 128 pp. 13.75 by 10.5 inches. Cloth with dust jacket.

SIGNED by ALAN SHEPARD. SIGNED and INSCRIBED: "BUZZ ALDRIN, Gemini XII, Apollo XI; FRED HAISE, Apollo 13; EDGAR MITCHELL, Apollo 14 and TOM STAFFORD, Gemini 6, 9, Apollo 10, ASTP," all on the half-title page.

Numerous photographs are used from NASA archives and North American Rockwell, the Command / Service Module prime contractor. Multiple images and diagrams are used to describe the Apollo flights to the Moon. Particular emphasis is on the Apollo 11 flight of Neil Armstrong, Buzz Aldrin, and Michael Collins, having over 30 pages of photographs on all phases of the flight. The remaining 50 plus pages describe and illustrate the flights of Apollo 12 through 17.

\$ 2,500-3,500



218

APOLLO ON THE MOON

COOPER, HENRY S.F. *Apollo on the Moon*. New York: The Dial Press, Inc., 1969. 144 pp. 8½ by 6 inches. Cloth with dust jacket.

SIGNED and INSCRIBED with their individual Apollo flights by BUZZ ALDRIN, ALAN BEAN, GORDON COOPER, WALT CUNNINGHAM, CHARLIE DUKE, RICHARD GORDON, FRED HAISE, EDGAR MITCHELL, WALLY SCHIRRA, and TOM STAFFORD, all on the half title page.

One of the few books released *before* the Apollo 11 landing that describes the challenges of an actual lunar landing and the work that will be done by the astronauts on the lunar surface. Equipment and experiments are covered in detail. The last section addresses future landings and planned exploration of the Moon on a grander scale.

\$ 3,000-5,000



219

APOLLO 11 — BUZZ ALDRIN'S FOOTPRINT ON THE LUNAR SURFACE

Black and white photograph, 20 by 16 inches.

SIGNED and INSCRIBED by BUZZ ALDRIN: "A POWDERY SURFACE WHEN THE SUN HITS...MY FOOTSTEP! BUZZ ALDRIN APOLLO XI"

About an hour into Neil Armstrong and Buzz Aldrin's lunar surface excursions, Aldrin photographed this bootprint. It formed a part of an investigation into the soil make-up and mechanics of the surface of the moon, and the image itself has now become synonymous with the Apollo XI mission.

\$ 2,500-3,500

APOLLO 12

LOTS 220-229

220

APOLLO 12 — ALAN BEAN DESCENDING THE LADDER OF THE LUNAR MODULE

Color photograph, 20 by 16 inches.

SIGNED and INSCRIBED by ALAN BEAN: "ALAN BEAN |
APOLLO 12"

An image of Alan Bean stepping onto the moon in
1969 during the Apollo 12 mission. He was joined by
the mission commander, Pete Conrad.

\$ 3,000-5,000



ALAN BEAN
APOLLO 12

ORIGINALLY FROM THE COLLECTION OF APOLLO 12 COMMAND MODULE PILOT RICHARD GORDON

FLOWN APOLLO 12 SPOON

FLOWN Community brand 1½ by 7 inch stainless steel spoon, marked "RICHARD F. GORDON | Apollo 12 CMP" with the NASA logo.

Accompanied by a provenance SIGNED by RICHARD GORDON, which states: "I hereby certify that this Flown Spoon is from my personal collection. It was carried to the Moon and used by me during the Apollo 12 mission."

PROVENANCE

Acquired by the present owner from Aurora Galleries International, Fall 2004, lot 396

\$ 2,000-3,000



221

<p>VEL</p> <p>ENTRY</p> <p>HORIZON CK (EI-17:00)</p> <p>GET 244:08:18</p> <p>PITCH 267 (+5°)</p> <p>.05g 0, 151, 0</p> <p>(HORIZON 34°) R P Y</p> <p>CAMERA RRT 244:22:18 (400K)</p> <p>RET .05g .29</p> <p>RET VCIRC 2:11</p> <p>CAMERA RET DROGUE 8:04</p>		<p>P61</p> <p>F 06 61 IMP LAT .01°</p> <p>IMP LONG .01°</p> <p>[PRO] HDS UP/DN ±00001</p> <p>F 06 60 GMAX .01G</p> <p>V400K fps</p> <p>[PRO] Y EI .01°</p> <p>F 16 63 RTOGO .1 nm</p> <p>VIO fps</p> <p>[PRO] TFE min-sec</p>
<p>EI (400K) { Pitch Needle Off Peg Vi Dsky=Vi PAD Event Timer Zero</p> <p>.05g { START EMS (:03) TRANSFER P64 (:05) PITCH NEEDLE 0° PITCH ANGLE 152° } ±5° HORIZON 34° RGO DSKY=RGO PAD</p> <p>BETA 90° UNTIL <6.5g 180° TO 4-5g</p> <p>RETCIRC VS VDSKY VS VEMS EMS 26nm @4000FPS (00DRO)</p> <p>ELS Cbs, LOGIC, AUTO PYROS</p> <p>RRT 244) 22 18</p>		<p>P62</p> <p>F 50 25 00041 REQ SEP</p> <p>[PRO]</p> <p>F 06 61 IMP LAT .01°</p> <p>IMP LONG .01°</p> <p>[PRO] HDS/DN -00001</p> <p>06 22 Poss R .01°</p> <p>P .01°</p> <p>Y .01°</p>
<p>P63</p> <p>06 64 G .01G</p> <p>VI fps</p> <p>RTOGO .1 nm</p>		<p>P64</p> <p>.05 LT, EMS START</p> <p>*No EMS 3 sec: *</p> <p>*EMS-BACKUP/VHF RNG*</p> <p>06 74 BETA .01°</p> <p>VI fps</p> <p>G .01</p>
<p>P65</p> <p>F 16 69 BETA .01°</p> <p>DL .01G</p> <p>[PRO] VL fps</p> <p>06 74 BETA, VI, G</p>		<p>P66</p> <p>06 22 R,P,Y .01°</p>
<p>P67</p> <p>06 66 BETA .01°</p> <p>CR ERR .1 nm</p> <p>VERB DR ERR .1 nm</p> <p>Record DR ERR</p> <p>KEY RLSE</p> <p>F 16 67 RTOGO .1 nm</p> <p>LAT .01°</p> <p>LONG .01°</p>		<p>OCT 20, 1969</p>

222

ORIGINALLY FROM THE COLLECTION OF APOLLO 12 COMMAND MODULE PILOT RICHARD GORDON

FLOWN APOLLO 12 CHECKLIST

FLOWN Apollo 12 instrument panel abbreviated checklist used during lunar return re-entry. card printed recto and verso with with annotations in black marker to recto, and 7 Velcro patches to verso. October 20/29, 1969. 5 ½ x 8 inches, having a rectangular cutout on the upper left corner. With a type certificate SIGNED by RICHARD GORDON, which states: "Apollo XII | Flown with Conrad, Gordon, and Bean aboard Yankee Clipper to the Moon | November 1969."

Full details available online.

\$ 1,500-2,500

ORIGINALLY FROM THE COLLECTION OF APOLLO 12 LUNAR MODULE PILOT ALAN BEAN

FLOWN APOLLO 12 BEEF POT ROAST

SIGNED and INSCRIBED by ALAN BEAN

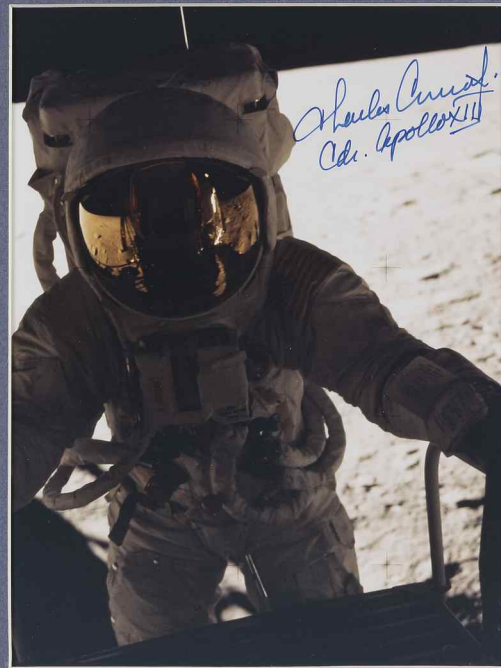
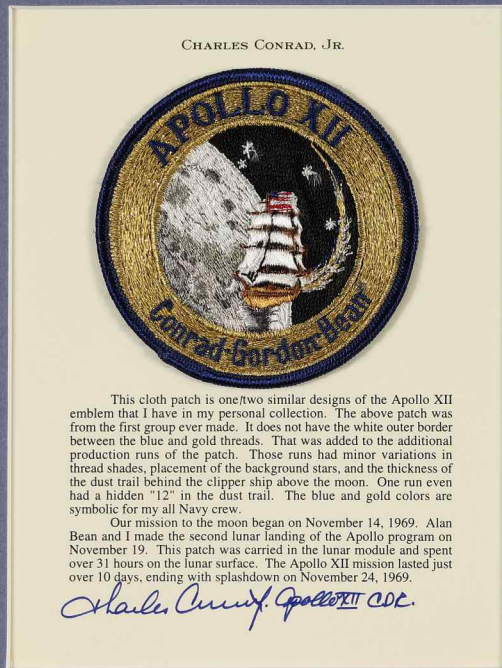
FLOWN dehydrated beef pot roast in 12 ½ x 3 ½ inch translucent pouch, plastic nozzle with black band, paper label reading "9027 BEEF POT ROAST 3 oz. hot water 15-20 minutes" with "WSD 15" stamp and .75 inch red Velcro patch; SIGNED and INSCRIBED by ALAN BEAN on the pouch "FLOWN TO THE MOON IN YANKEE CLIPPER. NOV 1969 | AL BEAN | APOLLO 12 LMP." Framed with Apollo 12 crew emblem, 4 inches in diameter, and bronze plaque stating "FLEW WITH YANKEE CLIPPER AND APOLLO 12 TO THE MOON NOVEMBER 1969 "RED TAG" FOOD ITEM FROM LOCKER OF CHARLES "PETE" CONRAD. COMMANDER".

Full details available online.

\$ 3,000-5,000



223



224

224

ORIGINALLY FROM THE COLLECTION OF
APOLLO 12 COMMANDER CHARLES CONRAD
**CHARLES CONRAD'S FLOWN APOLLO
12 MISSION EMBLEM**

OVER 31 HOURS ON THE LUNAR SURFACE

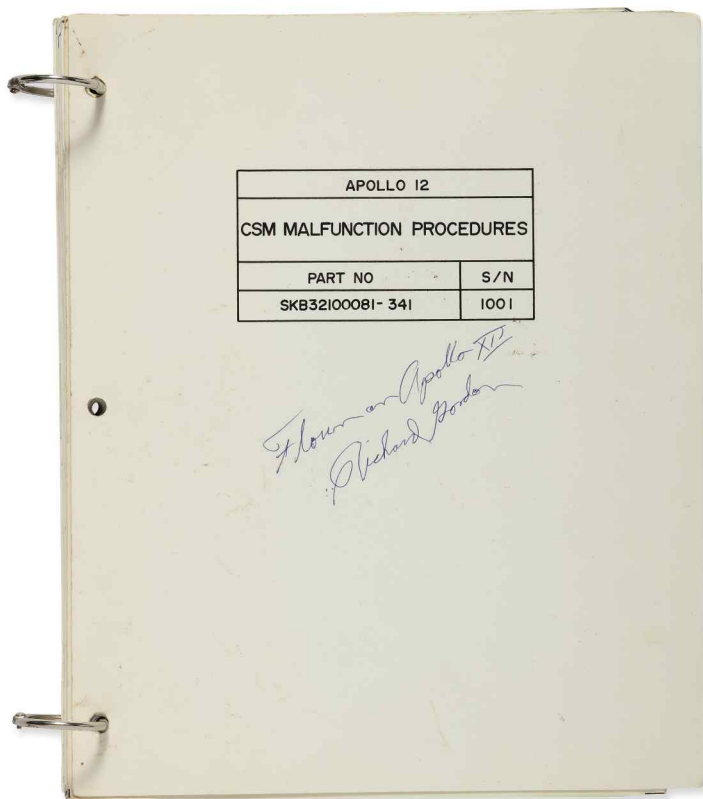
FLOWN Apollo 12 cloth emblem, 4 inches in diameter. Featuring a multi-sailed clipper ship above the lunar surface and four background stars. Three of the stars symbolize the Apollo 12 crew and one for Astronaut Clifton Williams who would have been the flight's Lunar Module Pilot had he not died in a T-38 jet crash in 1967. The emblem is mounted above paragraphs on a Typed Letter Signed by CHARLES CONRAD. All on an 11 by 17 inch blue mat board displaying a color photograph of Charles Conrad as he descends down Lunar Module *Intrepid's* ladder to become the third man to walk on the moon. The photograph is SIGNED and INSCRIBED: "CHARLES CONRAD, Cdr Apollo XII."

This emblem is one of the very few that traveled to the lunar surface from any Apollo mission. Apollo 12 was the United States second manned lunar landing and made a pin-point touchdown within 600 feet of the robotic Surveyor 3 spacecraft, one of the prime objectives of the flight. Conrad and Alan Bean make two 4 hour surface explorations and removed parts of the Surveyor. These returned parts assisted understanding of how long term exposure on the Moon's surface affected hardware in a complete vacuum with intense solar radiation.

With CHARLES CONRAD's signed provenance letter which reads in part: "*The above patch was from the first group ever made... The blue and gold colors are symbolic for my all Navy crew. Our mission to the moon began on November 14, 1969. Alan Bean and I made the second lunar landing of the Apollo program on November 19. This patch was carried in the lunar module and spent over 31 hours on the lunar surface. The Apollo XII mission lasted just over 10 days, ending with splashdown on November 24, 1969. CHARLES CONRAD, Apollo XII CDR.*"

\$ 15,000-20,000

125



225



226

225

FLOWN ON APOLLO 12

Apollo 12 CSM Malfunction Procedures. Part NO SKB32100081-341 S/N 1001. [Houston: Manned Spacecraft Center, October 20, 1969]

8 1/2 x 10 1/2 inches, 112 pp plus 1 large folding "Targets of Opportunity Earth Flight Chart (AET), divided into 13 tabbed sections ("G&C", "SCS", "G&N", "SPS", "RCS", "CYRO", "FUEL CELL", "PWR", "T/C", "ECS", "EMS", "DOCK & HATCH", and "CAMERA"). Three-hole punched and bound with two binder rings as issued, original heavy card stock covers. Front cover signed and inscribed "FLOWN ON APOLLO XII / RICHARD GORDON".

FLOWN ON APOLLO 12 AND SIGNED BY COMMAND MODULE PILOT RICHARD GORDON.

The Apollo 12 mission launched on November 14th, 1969 with Mission Commander Pete

Conrad, Lunar Module Pilot Alan Bean, and Command Module Pilot Richard Gordon on board. The rocket was struck by lightning twice, just 36 1/2 and 52 seconds after lift-off; while most of the CSM instrumentation and all three fuel cells in the Service module were knocked offline, and the attitude indicator was knocked out, the vehicle miraculously continued to fly correctly as the Saturn V instrument unit was not affected.

REFERENCES

NASA, *Apollo 12 Stowage List. Mission AS-507, CM 108/LM-6, November 18, 1969.* Houston: Manned Spacecraft Center, 1969.

PROVENANCE

Aurora lot 539, Spring 2005

\$ 6,000-9,000

226

ALAN BEAN

"In the Beginning", 1993

Print, sheet 26 by 32 inches, number 168 of 1,000 in pencil, SIGNED BY 21 ASTRONAUTS.

LIMITED EDITION PRINT, SIGNED BY ASTRONAUTS REPRESENTING THE APOLLO 7 THROUGH APOLLO 17 MISSIONS

The present print—one of Bean's best known compositions—is signed in pencil by Walter Cunningham and Wally Schirra (Apollo 7); Frank Borman (Apollo 8); Jim McDivitt and Rusty Schweickart (Apollo 9); Tom Stafford (Apollo 10); Buzz Aldrin and Michael Collins (Apollo 11); Alan Bean, Charles Conrad Jr., and Dick Gordon (Apollo 12); Fred W. Haise and Jim Lovell (Apollo 13); Edgar Mitchell, Stuart A. Roosa, and Alan Shephard (Apollo 14); Dave Scott and Al Worden (Apollo 15); Charlie Duke (Apollo 16); and Harrison H. "Jack" Schmitt (Apollo 17).

\$ 2,000-3,000

APOLLO 12 — “RUNNING WAS EASIER THAN WALKING”

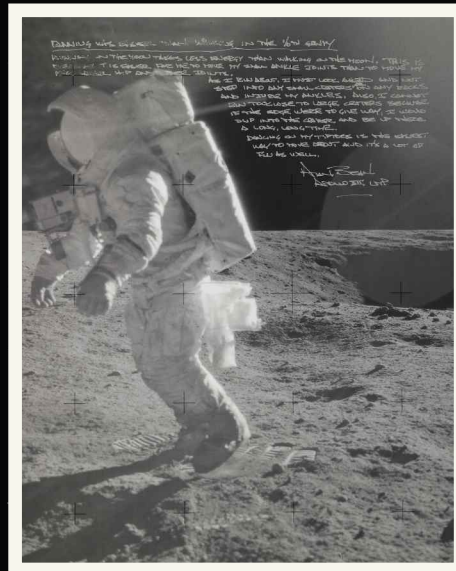
Black and white photograph, 16 by 20 inches.

SIGNED and INSCRIBED by ALAN BEAN: *“Running was earlier than walking in the 1/6th gravity[,] Running on the moon takes less energy than walking on the moon. This is because it is easier for me to move my small ankle joint than to move my much larger hip and knee joints.”*

“As I run about, I must look ahead and not step into any small craters or on any rocks and injure my ankles. Also, I cannot run too close to large craters because if the edge were to give way, I would slip into the crater and be up there a long, long time.”

“Dancing on my tiptoes is the easiest way to move about and it’s a lot of fun as well.”

\$ 3,000-5,000



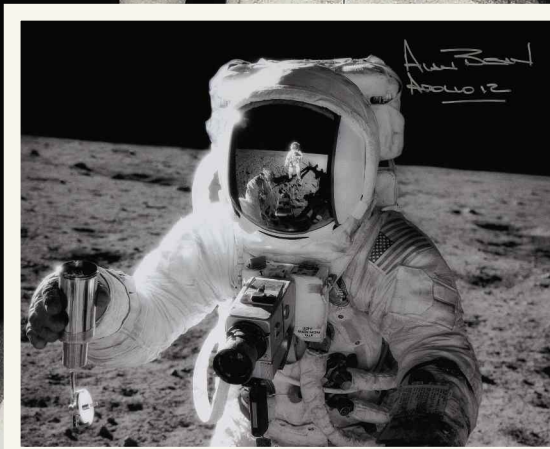
APOLLO 12 — ALAN BEAN COLLECTING LUNAR SOIL SAMPLES

Black and white photograph, 20 by 16 inches.

SIGNED and INSCRIBED by ALAN BEAN: *“ALAN BEAN | APOLLO 12”*

An incredible image of Alan Bean holding a special environmental sample container filled with lunar soil. A Hasselblad camera is mounted on the chest of his spacesuit, and Pete Conrad, who took this image, is clearly reflected in Bean’s helmet visor.

\$ 3,000-5,000



MICHAEL LIGHT

“Alan Bean at Sharp Crater with the Handtool Carrier”. Photographed by Charles Conrad, Apollo 12, November 14-24 1969

Fuji Crystal Archive color-coupler print (24 ½ X 24 ½ in). Negative date, 1969. Print date, 2012.

Signed, titled, dated, and editioned (21/50) by the artist in pencil on print verso. This print is part of an edition of 50.

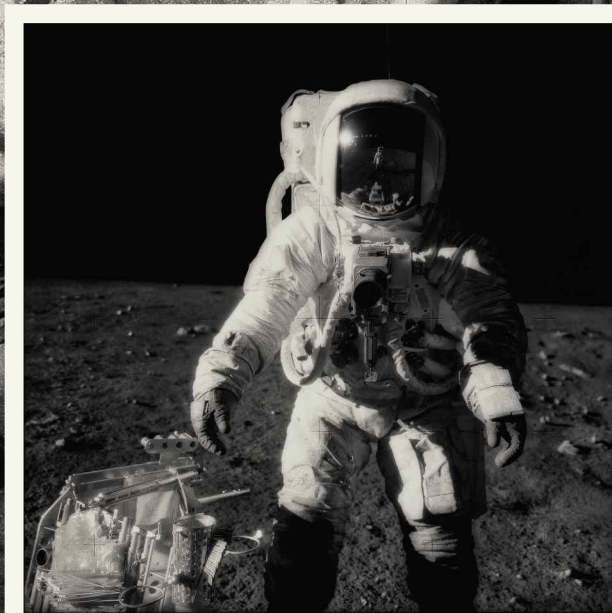
REFERENCES

ILLUSTRATED: Michael Light and Andrew Chalkin, *Full Moon*, Knopf, 1999, plate 49.

PROVENANCE

Purchased directly from the Photographer, Michael Light.

\$ 2,000-3,000



APOLLO 13

LOTS 230-238



230

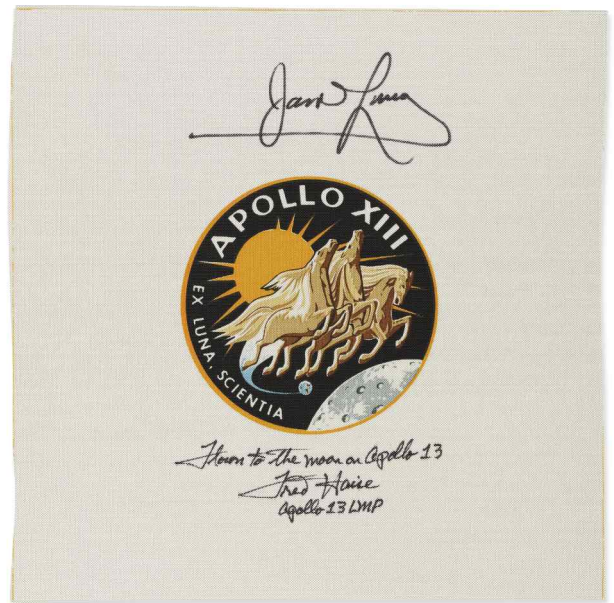
230

**APOLLO 13 – MOONSCAPE VIEW
TAKEN FROM THE LUNAR MODULE**

Color photograph, 20 by 16 inches.

SIGNED and INSCRIBED by JIM LOVELL: "*Apollo 13 launched on April 11 1970 at 13:13 CST and right then I should have known there would be a problem!*" | JAMES LOVELL | CDR Apollo 13 | April 11 1970"

\$ 2,000-3,000



231

231

FROM THE COLLECTION OF APOLLO 13 LUNAR MODULE PILOT FRED HAISE

FLOWN TO THE MOON ON APOLLO 13

FLOWN APOLLO 13 BETA CLOTH EMBLEM — SIGNED

FLOWN Apollo 13 Beta emblem, 4 inches in diameter. Printed on Beta cloth, 8 inches square.

SIGNED by LOVELL above the emblem: "JAMES LOVELL, Apollo 13 CDR". SIGNED and INSCRIBED by HAISE below the emblem: "Flown to the moon on Apollo 13, FRED HAISE, Apollo 13 LMP." Accompanied by a letter SIGNED BY HAISE.

The Apollo 13 astronauts had artist Lumen Winter create an emblem from an idea the crew had of the mythical god Apollo driving a horse drawn chariot across the sky dragging the sun behind him. Winter's design features three horses traveling from the earth to the moon, symbolizing the Apollo crew of three astronauts.

\$ 5,000-7,000



232

232

ORIGINALLY FROM THE COLLECTION OF APOLLO 13 COMMANDER JAMES LOVELL

JAMES LOVELL'S FLOWN APOLLO 13 EMBLEM

SURVIVED WITH THE CREW AFTER THE SPACECRAFT EXPLOSION IN DEEP SPACE

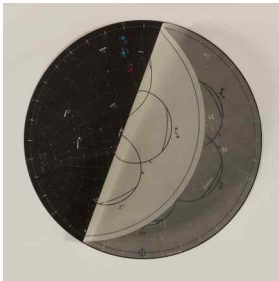
FLOWN Apollo 13 cloth emblem, 4 inches in diameter. Featuring three horses traveling from the Earth to the Moon with the Sun in the background. "Ex Luna, Scientia" is Latin for "From the Moon, Knowledge." The emblem is mounted on a Typed Letter Signed by JAMES LOVELL. All on an 11 by 20 inch light gray mat board displaying a color photograph of the damaged Service Module where an oxygen tank explosion caused a loss of power and breathing oxygen to Command Module *Odyssey*. The Apollo 13 lunar landing mission was cancelled,

and Lunar Module *Aquarius* was used as a 'lifeboat.' During the four days required to fly around the moon and travel back to Earth, the crew had to conserve electrical power and oxygen all the while performing critical LM engine burns to insure their flight path would indeed return them to Earth. Photograph ID is NASA AS13-58-8469.

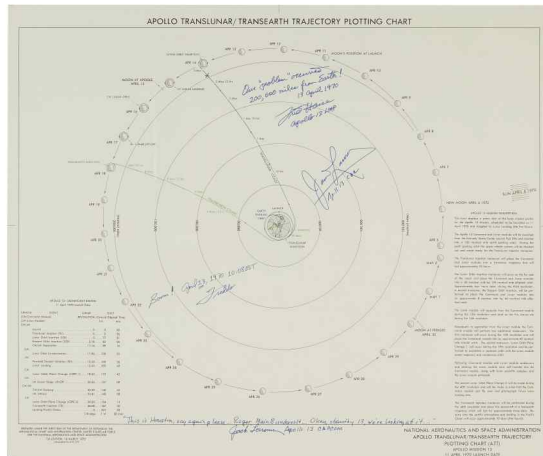
With JAMES LOVELL's signed provenance letter which reads: "*The attached patch was flown aboard the Apollo 13 spacecraft on its flight around the moon April 11-17, 1970. This patch was designed by the artist Luman Winter after a mural he painted for the St. Regis Hotel in New York City.*"

\$ 8,000-12,000

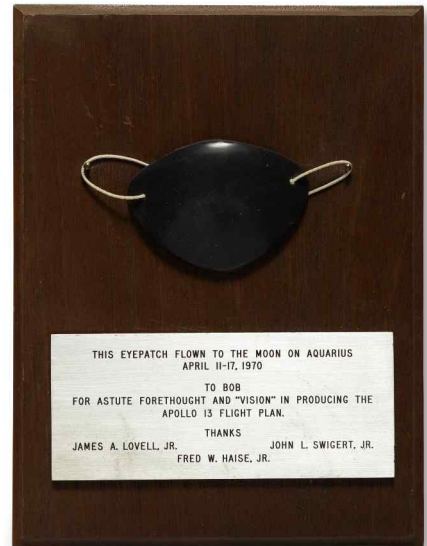
129



233



234



235

233

ORIGINALLY FROM THE COLLECTION OF APOLLO 13 LUNAR MODULE PILOT FRED HAISE

APOLLO 13 LUNAR MODULE STAR CHART TO ENABLE LEAVING THE MOON

USED BY THE LM CREW DURING APOLLO 13 TRAINING

APOLLO 13, LM LO-2 HR, 11 APRIL 70 LAUNCH. Circular Star Chart, 8½ inches in diameter. Consisting of 2 thin plastic discs rotating around a central rivet. The lower disc shows the Earth, sun, planets and star patterns against a black background. All these celestial bodies are plotted in their actual positions based on the Apollo 13 launch date of April 11, 1970, and are positioned either above or below lines defined as the ecliptic and the lunar equator. The upper disc is a semi-transparent overlay with six overlapping circles that correspond to viewing limits of the LM onboard telescope. The back of the chart has a square patch of Velcro at the center and an inscription in ink by Fred Haise. LM LO-2 means Lunar Module Lift Off minus 2 hours.

INSCRIBED and SIGNED: "Used in training for Apollo 13, FRED HAISE, Apollo 13 LMP" on the chart back.

This star chart was used Fred Haise and James Lovell while training in the Lunar Module simulator. The objective was to use this chart within two hours before lift off from the lunar surface to accurately align the LM computer's navigational equipment relative to their landing point. This was important to do because the LM's gyroscopic guidance equipment lost precision over time.

Full details available online.

\$ 2,000-3,000

234

BOOM! - IT COULD RUIN YOU DAY IN SPACE

ILLUSTRATES EXACTLY WHERE THE SURVIVAL STRUGGLE BEGAN AFTER THE APOLLO 13 FLIGHT EXPLOSION

Apollo Translunar / Transearth Trajectory Plotting Chart (ATT), Apollo Mission 13. Mission chart in color with extensive annotations and astronaut signatures. First Edition, March 16, 1970. 20 by 24 inches.

SIGNED by Apollo 13 Commander JIM LOVELL with "Apollo 13 CDR."
SIGNED by FRED HAISE and INSCRIBED: "Our 'problem' occurred 200,000 miles from earth! 13 April 1970, FRED HAISE, Apollo 13 LMP." He has marked an "X" where the explosion occurred along the flight path and added: "Boom! April 13, 1970, 10:08 pm EST, FREDDO" with the number 13 underlined to emphasize the coincidental numbering of the flight and date.

Additionally SIGNED by Astronaut JACK LOUSMA and INSCRIBED: "This is Houston, Say again please ... Roger, Main B under volt ... Okay, standby 13 we're looking at it ... JACK LOUSMA, Apollo 13 CAPCOM." Lousma was the capsule communicator in Mission Control and communicated those exact words just seconds after the explosion.

Full details available online.

\$ 5,000-8,000

235

EYEPATCH FLOWN ON TO THE MOON ON APOLLO 13

FLOWN black rubber eyepatch, 2 x 2 ¾ inches, part number SEB-12100084-301 SN-1012. Mounted to a wooden plaque with two nails, with metal placard stating: "This eyepatch flown to the Moon on Aquarius | April 11-17, 1970 | To Bob | For astute forethought and "vision" in producing the Apollo 13 Flight Plan. Thanks | James A. Lovell, Jr. | John L. Swigert, Jr. | Fred W. Haise, Jr."

As outlined in the 1972 NASA Apollo Experience Report by Fred A. McAllister: "The eye patch serves two purposes: It enables a crewman to maintain night vision in one eye during earth and lunar orbits, and it is used by a crewman to cover one eye while sighting through the navigation eyepiece. The eye patches are made of room temperature-vulcanizing rubber. One eye patch is stowed in the CM and another is kept in the LM. The eye patch has not been changed since it was first used on the Apollo 9 mission."

REFERENCES

NASA, *Apollo 13 Stowage List. Mission AS 508 CM 109/LM-7. Apollo 13.* Houston: Manned Spacecraft Center, April 21, 1970, p. 16.

PROVENANCE

Presented as a gift from the Apollo 13 crew to Turnage Robert "Bob" Lindsey, the Lead Flight Planner for Apollo 13. By descent to the current owner.

\$ 4,000-6,000

FLOWN APOLLO 13 COMMAND MODULE ODYSSEY AND LUNAR MODULE AQUARIUS PIECES

2 pieces of flown material from the Apollo 13 mission, including: 1 by 1 1/8 inches swatch of nylon material, mounted on yellow card certificate (7 by 5 inches), printed in blue with Apollo 13 emblem, stating "A Piece Of "ODYSSEY" CSM 109", presented to Lawrence J. Cervellino, and SIGNED by the crew. — 1 1/8 by 1 1/2 inches of nylon netting, mounted on yellow card certificate (7 by 5 inches), printed in blue with Apollo 13 emblem, stating "A Piece Of "AQUARIUS" LM-7", presented to Lawrence J. Cervellino, and SIGNED by the crew.

Two pieces of FLOWN MATERIAL FROM THE APOLLO 13 MISSION, mounted on certificates SIGNED by JIM LOVELL, JACK SWIGERT, and FRED HAISE

These certificated bearing pieces of flown material from the Apollo 13 mission were presumably issued shortly after its conclusion. It would appear they were created and then presented to those involved in the mission as a mark of gratitude.

\$ 1,000-1,500

237

APOLLO 13 CREW SIGNED NASA PHOTOGRAPH

Vintage color photograph on Kodak watermarked paper, 8 by 10 inches, the official NASA portrait of the Apollo 13 Crew in their white space suits in front a backdrop featuring the Lagoon Nebula, with the mission insignia, and an octant and astrolabe in the foreground. Verso bears a fragment of adhered framing paper.

SIGNED by JAMES LOVELL, KEN MATTINGLY, and FRED "FREDDO" HAISE. Bearing the somewhat prophetic INSCRIPTION: "TO BOB LINDSEY — IF WE DON'T FIND OUR WAY TO FRA MAURO IT WON'T BE YOUR FAULT. THANKS!"

PROVENANCE

Presented as a gift from the Apollo 13 Crew to Turnage Robert "Bob" Lindsey, the Lead Flight Planner for Apollo 13. By descent to current owner

\$ 1,500-2,500

238

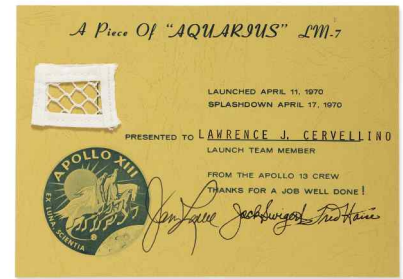
APOLLO 13 — "HOUSTON, WE'VE HAD A PROBLEM"

Black and white photograph, 20 by 16 inches.

SIGNED and INSCRIBED by JIM LOVELL: "HOUSTON, WE'VE HAD A PROBLEM! | JAMES LOVELL | APOLLO 13, A SUCCESSFUL FAILURE"

A view of the severely damaged Apollo 13 service module (SM) as photographed from the lunar module/command module (CM). An entire panel on the SM was blown away by the explosion of an oxygen tank.

\$ 1,500-2,500



236



237



238

APOLLO 14

LOTS 239-245



239

239

APOLLO 14 — ED MITCHELL CONDUCTING A LUNAR SURFACE EXPERIMENT

Black and white photograph, 20 by 16 inches.

SIGNED and INSCRIBED by ED MITCHELL: "ED MITCHELL | APOLLO 14 LMP"

Mitchell, as Lunar Module Pilot of Apollo 14, spent a total of nine hours working on the lunar surface in the Fra Mauro Highlands region. Mitchell was the sixth person to walk on the Moon.

\$ 2,500-3,500



240

240

APOLLO 14 LANDING SITE CHART AND EVA TRAVERSES

MITCHELL SKETCHES THE PATHS OF BOTH
LUNAR SURFACE TRAVERSES

Fra Mauro. Published by the U.S. Army Topographic Command for NASA, based on Lunar Orbiter photography. 17 by 22 inches. Scale 1:10,000.

INSCRIBED and SIGNED: "*Fra Mauro Base, Apollo 14. EDGAR MITCHELL, Feb 1971.*" He has marked the exact landing point with an "X" and drawn

the traverse paths of both moon walks. The first traverse is drawn with a small dotted lines west of the landing point. The much longer second traverse is drawn with a continuous solid line toward Cone Crater and labeled by Mitchell with: "EVA-2."

The Lunar Orbiter photography used to construct this chart clearly shows Cone Crater which was the prime objective of the second EVA or moon walk. The landing site was just west of Triplet Crater.

\$ 1,200-1,800

FLOWN TO THE LUNAR SURFACE ON APOLLO 14 – THE KING JAMES BIBLE

The entire King James version of the Bible on microform, Cleveland and New York: World Publishing Company, circa 1964 and produced in microform by NCR, 1964

Microfilm (1½ by 1½ in.; 40 by 40 mm), etched "14-037" in the left margin. [Together with]: A letter of certification dated and SIGNED by Apollo 14 astronaut EDGAR D. MITCHELL and James W. Stout of the "Apollo Prayer League Governing Committee." [And with]: An affidavit from James W. Stout dated 19 March 2010. Housed in reliquary within a custom crushed red morocco double folding case.

THE FIRST BIBLE CARRIED TO THE SURFACE OF THE MOON

After the tragic fire that killed all three crew members of the Apollo I mission in 1967, Reverend John M. Stout, who had joined NASA in 1962, along with his family established the Apollo Prayer League. The group's primary purpose was to pray for the safety of the astronauts, and membership rapidly grew to embrace over 40,000 NASA employees.

Efforts to take the Bible to the Moon on Apollo 12 and 13 having failed, a third, successful attempt was made with the assistance of Apollo 14 lunar module pilot Edgar D. Mitchell. Given NASA's weight restrictions, rather than a large heavy codex, the Apollo Prayer League adopted the use of a new microform technology known as "PCMI" introduced by the National Cash Register Company in 1964. NCR was able to reproduce an entire King James version of the Bible (a total of 1,245 pages) on a microfilm sheet measuring a mere 1½ by 1½ inches. Mitchell carried 100 of the microform bibles aboard the lunar module *Antares*, as confirmed by NASA's official manifest, and they reached the "Fra Mauro Highlands" of the Moon on 5 February aboard the *Antares*. Once returned to Earth and released from lunar quarantine, Mitchell presented Rev. Stout with the packet of 100 bibles.

\$ 30,000-50,000

242

THE LAUNCH OF APOLLO 14

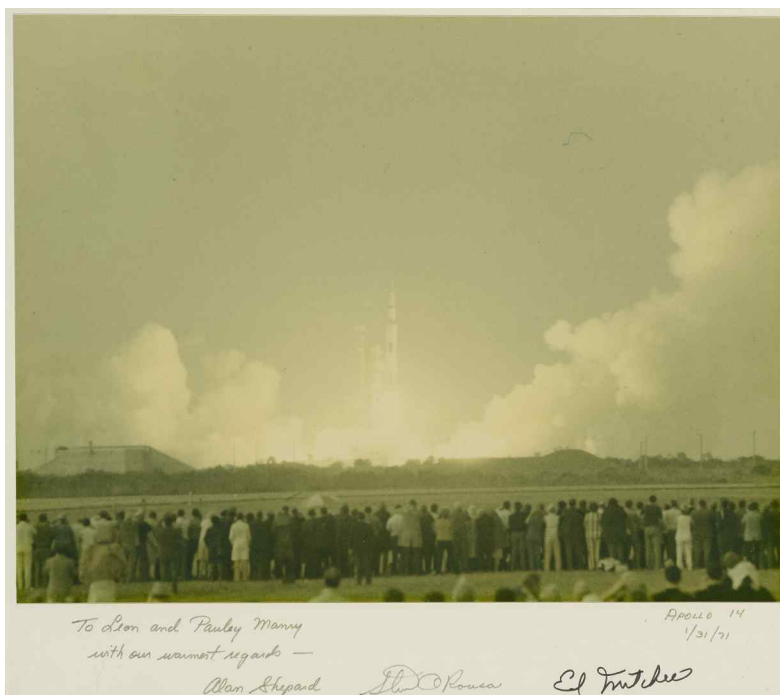
Color photograph, 10 ¼ by 13½ inches; matted, and framed to 17 ¾ x 19¼ inches.

SIGNED on the mat board by STUART A ROOSA and EDGAR MITCHELL, SIGNED and INSCRIBED by ALAN SHEPARD: "TO LEON AND PAULEY MANNY WITH OUR WARMEST REGARDS. APOLLO 14 | 1/31/71."

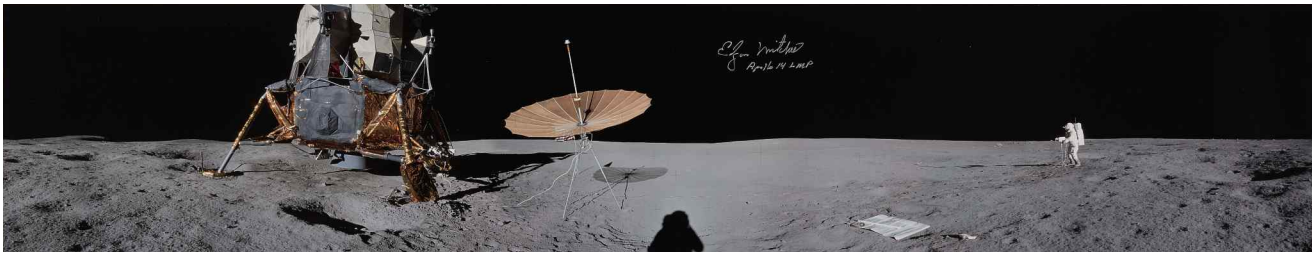
\$ 1,000-1,500



241



242



243



244



245

243

APOLLO 14 — THE LUNAR MODULE ANTARES NEXT TO THE S-BAN ANTENNA, WITH EDGAR MITCHELL OPERATING A TV CAMERA

Color panoramic photograph, 40 by 8 inches.

SIGNED and INSCRIBED by EDGAR MITCHELL: "EDGAR MITCHELL | APOLLO 14 LMP".

Mitchell was the 6th man to walk on the moon, and one of the television broadcasts that he filmed caught Alan Shepard taking a couple of golf swings on the lunar surface.

\$ 1,000-1,500

244

VERY LARGE FORMAT PHOTOGRAPHS OF APOLLO LUNAR SURFACE PANORAMAS

A set of three very large black and white photographs, each 20 by 24 inches, all having the watermark text of: "This Paper Manufactured by Kodak" on verso. All were printed just after the flight by NASA in conjunction with post mission analysis including reconstruction of exact distances and traverses made by the astronauts while on the Moon

Full details available online.

\$ 1,200-1,800

245

A GROUP OF FOUR NASA CREW IMAGES, APOLLO 14-17, SIGNED BY THE ASTRONAUTS

The present lot includes: Apollo 14 Crew beneath mission emblem. Color photograph with "A Kodak Paper" watermark, 8 by 10 inches, NASA image 108-KSC-70PC-625, with technical and rights information printed on verso. SIGNED by ALAN SHEPARD, STUART ROOSA, and ED MITCHELL, and INSCRIBED "To Larry | with our | sincere thanks" — Apollo 15 Crew beneath mission emblem. Color photograph with "A Kodak Paper" watermark, 8 by 10 inches, NASA image 108-KSC-71PC-448, with technical and rights information printed on verso. SIGNED by DAVE SCOTT, AL WORDEN, and JIM IRWIN, and inscribed "To Larry | Best Wishes From Apollo 15" — Apollo 16 Crew with mock lunar backdrop. Color photograph with "A Kodak Paper" watermark, 8 by 10 inches, NASA image 108-KSC-72PC-1, with technical and rights information printed on verso. SIGNED by KEN MATTINGLY, JOHN YOUNG, and CHARLIE DUKE, and inscribed "To Larry Best Regards Apollo 16" — Apollo 17 Crew with Lunar Rover in the foreground, and launchpad in the background. Color photograph with "A Kodak Paper" watermark, 8 by 10 inches, NASA image 108-KSC-72PC-521. SIGNED by Jack Schmitt, GENE CERNAN, and RON EVANS, and inscribed "To Larry—Best wishes & many thanks"

\$ 2,500-3,500

APOLLO 15

LOTS 246-258



246

246

CRESCENT EARTHRISE VIEWED FROM LUNAR ORBIT ON APOLLO 15

THE EARTH SEEN FROM NEARLY ONE QUARTER OF MILLION MILES AWAY

Large color photograph, 16 by 20 inches.

SIGNED and INSCRIBED by AL WORDEN: "CRESCENT EARTHRISE PHOTO TAKEN ON APOLLO 15 "ENDEAVOR" DURING THE 4TH MANNED LUNAR LANDING, AL WORDEN, APOLLO 15, 1971."

The newly crescent Earth is seen rising above the lunar horizon during the 1971 Apollo 15 mission.

\$ 2,500-3,500



247

247

ORIGINALLY FROM THE COLLECTION OF APOLLO 15 COMMAND MODULE PILOT ALFRED WORDEN

AL WORDEN'S NEW YORK STATE FLAG FLOWN ON APOLLO 15

FLOWN on Apollo 15, silk New York state flag, 4 by 6 inches, TWICE SIGNED and INSCRIBED in black marker along the lower edge by AL WORDEN: "Flown to the Moon aboard Apollo 15. Jul 26-Aug 1 1971 | AL WORDEN CMP." With a typed letter SIGNED on Al Worden's personal stationary, which states, in part: "I hereby certify that the New York State flag included with this letter and marked with my signature and flight number went to the moon aboard Apollo 15 in the spacecraft "ENDEAVOUR". It remained in the command module during the lunar orbit phase of the flight. It has been in my personal possession since then."

\$ 2,000-3,000



248

248

ORIGINALLY FROM THE COLLECTION OF APOLLO 15 COMMANDER DAVE SCOTT

DAVE SCOTT'S BOLIVIAN FLAG FLOWN ON APOLLO 15

FLOWN on Apollo 15, silk Bolivian flag, 4 by 6 inches, SIGNED and INSCRIBED by DAVE SCOTT on the horizontal yellow stripe: "Flown around the Moon for 6 days (74 orbits), Apollo 15 | July 26-August 7, 1971 | Dave Scott | Apollo 15 CDR." Encapsulated in PSA/DNA Authentication Services plastic slab, certificate number 83729727. Accompanied by a typed letter SIGNED by DAVE SCOTT on his personal letterhead.

\$ 1,500-2,500



249

249

ORIGINALLY FROM THE COLLECTION OF APOLLO 15 COMMANDER DAVE SCOTT

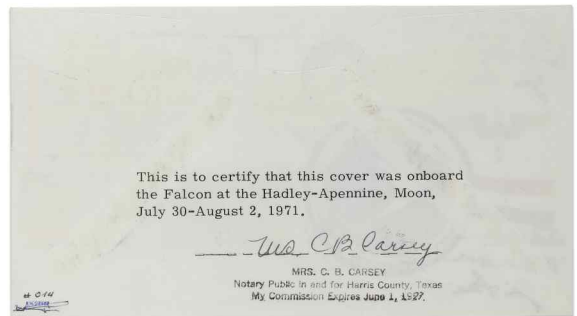
DAVE SCOTT'S MEXICO FLAG FLOWN ON APOLLO 15

FLOWN silk flag, 4 by 5½ inches, inscribed by DAVE SCOTT in the central panel in pen "THIS FLAG CARRIED TO THE MOON ABOARD APOLLO 15, DAVE SCOTT, CDR."

\$ 1,000-1,500



250



250

250

FLOWN ON APOLLO 15

Lunar Module FLOWN "Sieger" Crew-Signed Cover, Carried to the Lunar Surface by the Apollo 15 Crew

FLOWN postal cover with color cachet featuring Apollo 15 mission insignia, 3½ by 6½ inches, with 10 cent "First Man on the Moon" stamp, and se-tenant pair of 8 cent "A Decade of Achievement | United States in Space..." stamps. Postmarked at Kennedy Space Center on launch date July 26, 1971, and aboard recovery ship USS Okinawa on splashdown date August 7, 1971. INSCRIBED and SIGNED on the upper left corner: "Landed at Hadley, Moon | July 30 1971 | DAVE SCOTT | JIM IRWIN"; further SIGNED at lower left by DAVE SCOTT, AL WORDEN, and JIM IRWIN; verso bearing the printed statement: "This is to certify that this cover was onboard the Falcon at the Hadley-Apennine, Moon, July 30-August 2, 1971" and signed by Mrs. C. B. Carsey, Notary Public for Harris County, Texas, with her raised notary seal; "H. W. Sieger" stamped and signed on the lower left corner, serial number #014.

ACCOMPANIED BY: Original sale material from the Sieger firm, including: *Die Mondbrief Story*, Baden-Württemberg: Hermann E. Sieger, n.d., Pamphlet, 54 pages — *Angebot eines mit Apollo-15 Zum Mond Geflogenen Briefes*, 2 pages — Typed letter signed on the letterhead of Hermann E. Sieger, 2 November 1971, 1 page, addressed to Hermann Siegrist — Typed letter signed on the letterhead of Hermann Walter Sieger, 5 November 1971, 1 page, addressed to Hermann Siegrist — additional commemorative philatelic material.

NUMBER 14 OF 100 CREW-SIGNED UNAUTHORIZED SIEGER COVERS CARRIED TO THE LUNAR SURFACE BY THE APOLLO 15 CREW — WITH THE SCARCE ORIGINAL SIEGER SALE MATERIALS.

By the spring of 1971 NASA had executed 8 successful manned missions as part of the Apollo Program, and it had become abundantly clear that there was a strong market for "astrophilately" — commemorative postage stamps or covers depicting space travel, which were canceled on the launch dates for the respective missions. An enterprising European stamp dealer named Hermann Sieger, working alongside astronaut corps acquaintance Horst Eiermann, recognized the commercial potential for flown philatelic souvenirs, and approached the crew of Apollo 15 with a proposal. Dave Scott, Al Worden, and Jim Irwin, agreed to carry an additional 400 covers in their Personal Preference Kits (PPKs) in exchange for \$7,000 scholarship funds for the crew's children. The covers were prepared for flight according to official procedures, but were not listed as being in Scott's PPK due to an oversight by the personnel who packaged and stowed the flight equipment. This arrangement was in opposition to regulations laid down by Director of Flight Crew Operations Deke Slayton, which stipulated that astronauts were forbidden from using their positions for private gain.

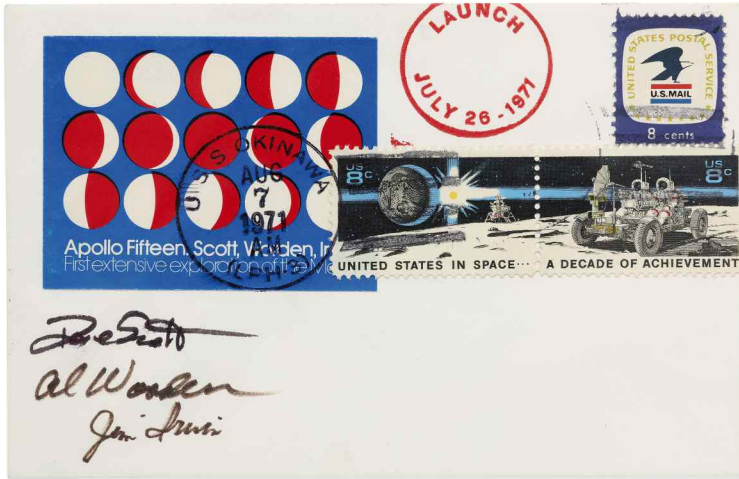
Altogether, the Apollo 15 crew carried 632 covers on their expedition — 232 authorized covers, and 400 unauthorized covers (100 for Eiermann and Sieger, and 100 for each astronaut). However, it was only the 400 unauthorized covers which spent from 30 July to 2 August 1971 on the lunar surface inside the lunar module "Falcon." Upon their return to

Earth, the covers were INSCRIBED and SIGNED by the crew, and the unauthorized covers were notarized to signify that they had landed in the Hadley-Appennine region of the moon. Following the discovery of the subsequent sales of undeclared covers, approximately 300 were recovered and impounded by NASA. Sieger received all of his 100 flown covers in late September or early October, and began to market them for an asking price of DM 4,850. By November, all 100 were spoken for, netting the dealer just over \$150,000. THE PRESENT LOT INCLUDES THE SCARCE ORIGINAL PROSPECTUS AND MARKETING MATERIAL FROM THE SIEGER PHILATELIC FIRM, AND CORRESPONDENCE RELATED TO THE ACQUISITION OF THE COVER BY HERR HERMANN SIEGRIST IN NOVEMBER, 1971.

By June of 1972, the public had become generally aware of the matter through widespread news coverage. Though the astronauts had eventually refused compensation from Sieger and Eiermann in an attempt to rectify their mistake, the philatelic cabal had negative consequences for the crew. They were called upon to appear before a closed meeting of the Senate Committee on Aeronautical and Space Sciences, and were leveled with an official reprimand from NASA, who announced that "their actions will be given due consideration in their selection for future assignments," before pulling Scott, Worden, and Irwin from their assignment as the backup crew for Apollo 17. None of the three Apollo 15 astronauts ever flew in space again. In 1983 the astronauts successfully filed a suit against the government for the return of all of the impounded covers.

\$ 15,000-20,000

137



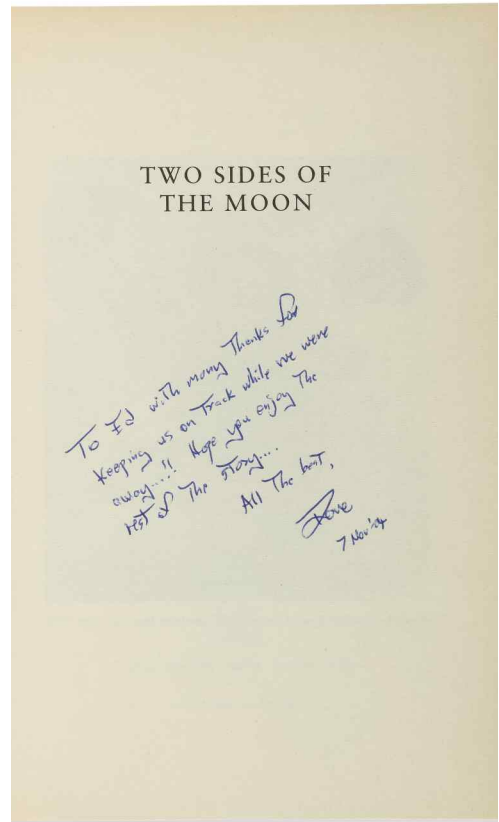
251

251

FLOWN APOLLO 15 CREW SIGNED POSTAL COVER

FLOWN phases of the moon postal cover, 3½ by 5½ inches, with 8 cent USPS stamp with circular launch day postmark dated July 26, 1971, and se-tenant pair of 8 cent "United States in Space... | A Decade of Achievement" stamps with U.S.S. Okinawa cancellation dated August 7, 1971. With red and blue sticker applied to upper left showing fifteen phases of the moon, SIGNED at lower left by DAVE SCOTT, AL WORDEN, and JIM IRWIN; green "Recovery" cancellation to Verso, with "Winnick" stamp to lower right, accompanied by Lester E. Winnick certificate of authenticity number S-122.

\$ 3,000-5,000



252

252

ORIGINALLY FROM THE COLLECTION OF APOLLO 14 LUNAR MODULE PILOT EDGAR MITCHELL

DAVID SCOTT AND ALEXEI LEONOV

Two Sides of the Moon; Our Story of the Cold War Space Race. *London: Simon & Schuster, (2004)*

xv, 415 pp (9½ by 6¼ inches), with decorative endpapers and illustrations; black cloth with gilt lettering to spine, and dust jacket. Text block lightly toned, as usual, dust jacket bears a blue label stating: "As heard on BBC Radio 4." Accompanied by a Certificate of Authenticity from the Edgar Mitchell Estate sale.

PRESENTATION COPY, FIRST UK EDITION, INSCRIBED BY DAVE SCOTT on the half-title to EDGAR MITCHELL: "To Ed with many thanks for keeping us on track while we were away...!! Hope you enjoy the rest of the story... All the best, DAVE | 7 Nov '04."

\$ 1,500-2,500

APOLLO 15 — DAVID SCOTT EXPLORING HADLEY RILLE

Black and white photograph, 20 by 16 inches.

SIGNED and INSCRIBED by DAVE SCOTT: "DAVE SCOTT | APOLLO 15 CDR. HADLEY RILLE, 1971"

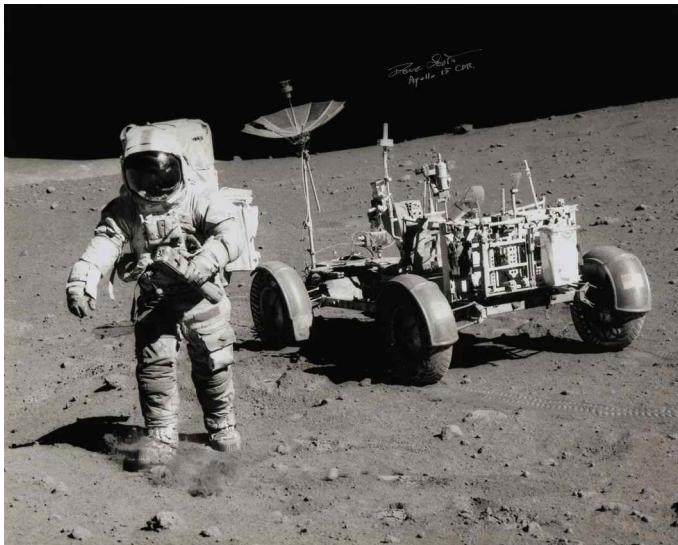
REFERENCES

Apollo 15—on which Scott served as Commander—was the ninth manned mission in the Apollo program, and the fourth to land on the Moon. It was, however, the first of what were termed "J missions" (long stays on the Moon). These J missions had a greater scientific focus than what was previously possible, and Apollo 15 was the first mission to use the Lunar Roving Vehicle.

\$ 2,500-3,500



253



254

254

APOLLO 15 — HADLEY RILLE

Black and white photograph, 20 by 16 inches.

SIGNED and INSCRIBED by DAVE SCOTT: "DAVE SCOTT | APOLLO 15 CDR"

A striking photo of Commander Dave Scott on the lunar surface with the Lunar Rover Vehicle visible in the background.

\$ 2,000-3,000

255

APOLLO 15 — A COLLECTION OF 157 MISSION PHOTOS FROM THE DATA ACQUISITION CAMERA

157 black and white photographs with vintage Kodak watermarked paper, 4 by 5 inches, images AS15-89-12015 to AS15-89-12178 (less 12044, 12076, 12088, and 12100-12105)

A collection of 157 mission photos from Magazine 89 of the Hasselblad Image Catalog.

The *Apollo 15* mission was designed to obtain the most extensive quantity and variety of photography of any mission up to that point. Several different types of photographic equipment were employed, both on the lunar surface and in orbit. The equipment operated on the surface or in the lunar module by astronauts David Scott and James Irwin included three 70-millimeter Hasselblad data cameras, which were used to capture the present images.

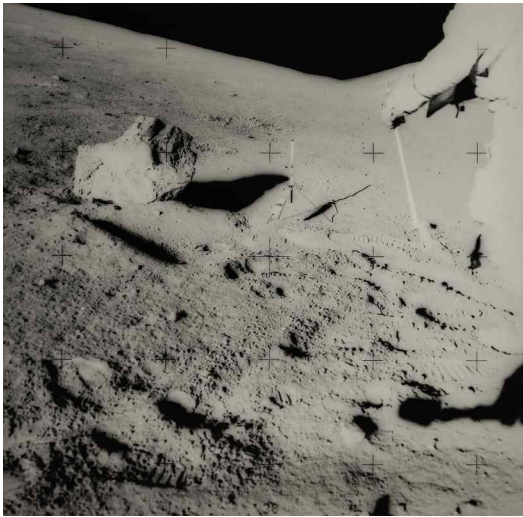
\$ 1,500-2,500



255



256



257 (PART)



258

256

**APOLLO 15 — DAVE SCOTT
EXPLORING THE HADLEY DELTA
WITH THE LUNAR ROVER**

Black and white panoramic photograph, 40 by 8 inches.

SIGNED and INSCRIBED by DAVE SCOTT "DAVE SCOTT | APOLLO 15 CDR".

A stunning panorama of the lunar surface. To the north of this mountain is a valley that served as the landing site for the Apollo 15 expedition.

\$ 1,000-1,500

257

**APOLLO 15 LARGE FORMAT
LUNAR SURFACE AND ORBITAL
FULL FRAME HASSELBLAD
PHOTOGRAPHS**

*ILLUSTRATES LUNAR SURFACE TOOLS IN USE
AND THE LANDING SITE FROM ORBIT*

A set of four large black and white photographs, each 11 by 14 inches, all having the watermark text of: "This Paper Manufactured by Kodak" on verso. All were printed in the 1970's by NASA for geological and mission research.

Full details available online.

\$ 1,200-1,800

258

MICHAEL LIGHT

"A Half Moon Seen From The Command Module On The Way Back to Earth". Photograph taken by Al Worden, during Apollo 15, July 26 to August 7 1971

Fuji Crystal Archive color-coupler print (24½ by 24½ inches). Negative date 1971, print date 2012.

Signed, titled, dated, and editioned (9/50) by the artist in pencil on print verso.

REFERENCES

ILLUSTRATED: Michael Light and Andrew Chalkin, *Full Moon*, Knopf, 1999, plate 23.

PROVENANCE

Purchased directly from the Photographer, Michael Light.

\$ 2,000-3,000

APOLLO 16

LOTS 259-263



259

259

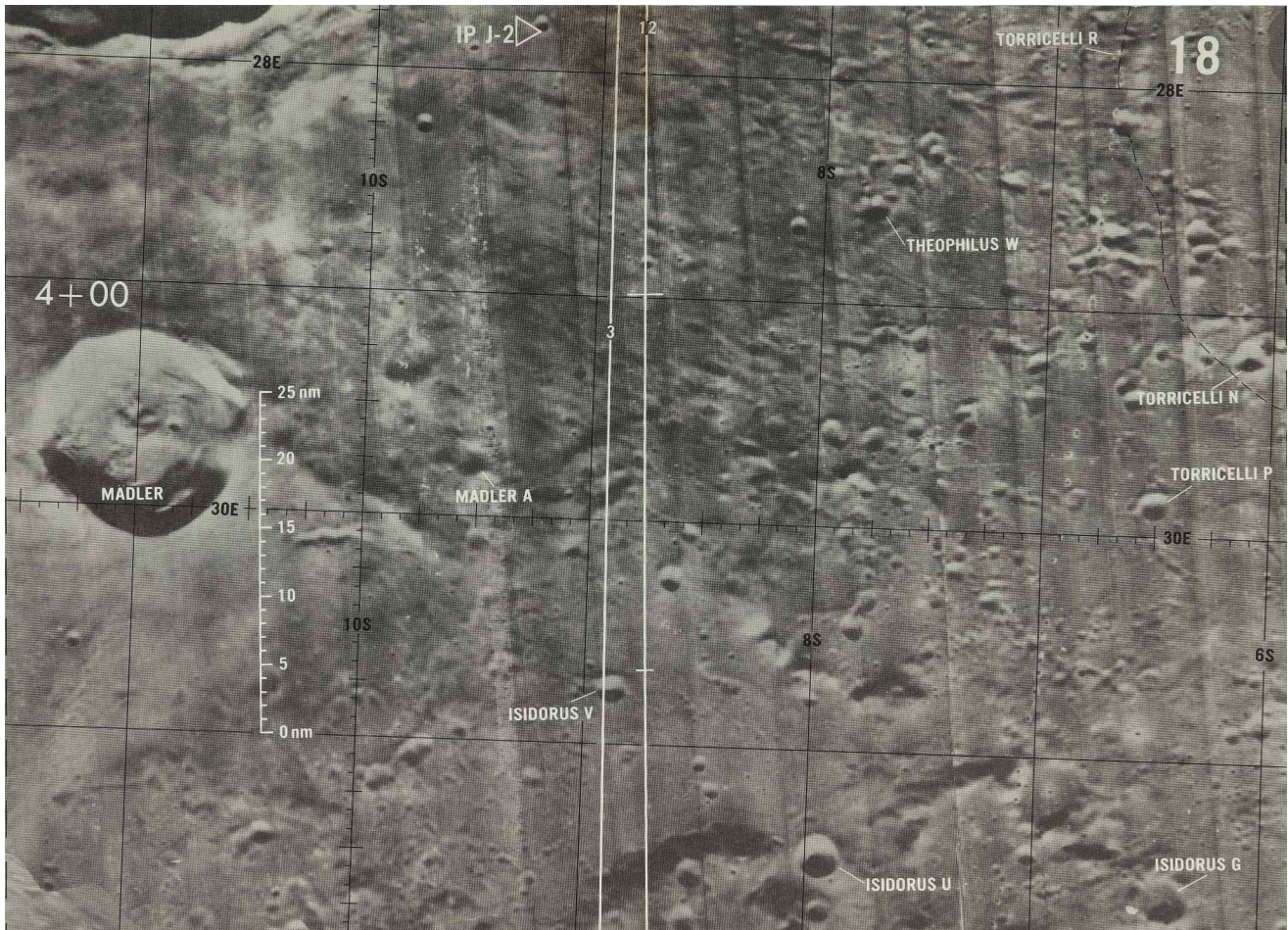
APOLLO 16 —YOUNG SALUTES THE STARS AND STRIPES

Color photograph, 20 by 16 inches.

SIGNED and INSCRIBED by CHARLIE DUKE:
"CHARLIE DUKE | APOLLO 16 LMP"

Originally, Duke was slated to serve as backup Lunar Module Pilot on Apollo 13. Just before the mission, however, he caught German measles from a friend's child, and inadvertently exposed the prime crew to the disease. Duke made his voyage to the moon in 1972 on Apollo 16, and captured the present image after asking John Young to give him a "Navy salute."

\$ 2,000-3,000



260

260

FLOWN TO THE LUNAR SURFACE ON APOLLO 16

Charles "Charlie" Duke's Apollo 16 Navigational Lunar Chart

Black & white photographic printed lunar surface map (10½ by 7¾ inches), number 18 of the 24 maps used aboard the Lunar Module Orion for navigation to the Apollo 16 landing site.

LUNAR NAVIGATIONAL CHART FLOWN ABOARD LUNAR MODULE "ORION" TO THE LUNAR SURFACE ON APOLLO 16.

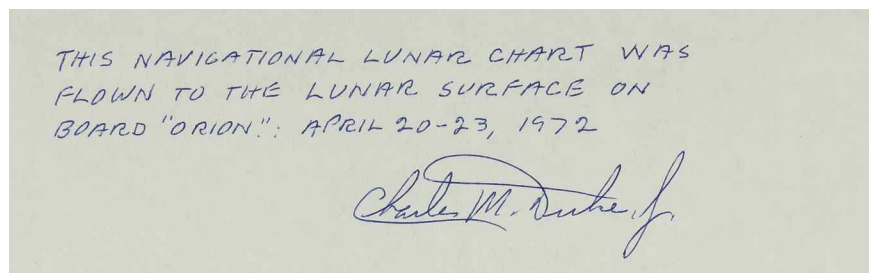
SIGNED AND INSCRIBED BY APOLLO 16 LUNAR MODULE PILOT CHARLES DUKE: "THIS NAVIGATIONAL LUNAR CHART WAS / FLOWN TO THE LUNAR SURFACE ON / BOARD "ORION": APRIL 20-23, 1972. / CHARLES M. DUKE, JR."

Accompanied by Duke's provenance letter, which reads in part: "[This] Apollo 16 navigational chart accompanied me aboard our Lunar Module Orion to the Descartes highlands of the Moon, where it landed on April 20, 1972. The chart then spent the next three days on the surface of the Moon housed in Orion. This chart played a critical role in the success of our mission, as it was used by John Young and me to monitor our flight path across the Moon during our descent to the lunar surface!"

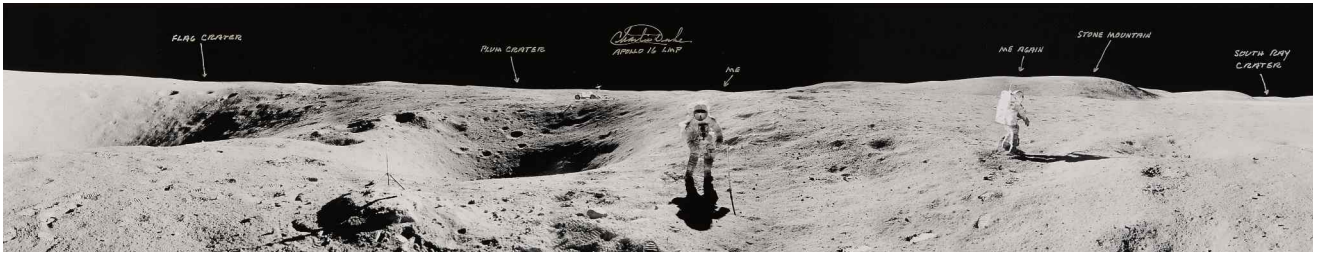
Duke was the tenth and youngest person to walk on the moon. During the Apollo 16 mission,

he and Mission Commander John Young set the then-record for a lunar surface stay at 71 hours, during which they explored the rugged lunar highland of the Descartes region. Duke made three excursions onto the lunar surface during the mission, logging a total of 20 hours and 15 minutes of EVAs, during which he helped to collect nearly 213 lbs of moon rocks and soil samples, deployed a cosmic-ray detector, the activation of several scientific experiments, and the use of the Lunar Rover over the roughest surface on the moon.

\$ 12,000-18,000



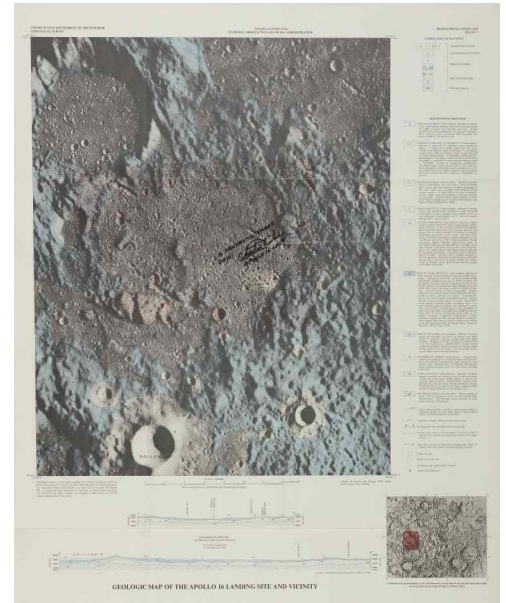
260 (DETAIL)



261



262



263

261

APOLLO 16 – THREE PANORAMAS, SIGNED AND ANNOTATED BY CHARLIE DUKE, OFFERING A GUIDED TOUR OF THE LUNAR SURFACE

2 color and 1 black and white panoramic photos, each 40 by 8 inches.

CHARLIE DUKE’S GUIDED TOUR OF THE MOON

An incredible group of photos SIGNED and ANNOTATED by CHARLIE DUKE, offering (often humorous) commentary related to Duke’s time on the lunar surface. In addition to naming craters and parts of the Lunar Module, he also notes where fellow Apollo 16 John Young is standing, or where he himself is positioned in a given photo.

\$ 1,500-2,500

262

APOLLO 16 – LUNAR MODULE IN THE ASCENT STAGE AS IT RISES ABOVE THE MOON

Color photograph, 20 by 16 inches.

SIGNED and INSCRIBED by CHARLIE DUKE: “CHARLIE DUKE | WHAT A RIDE! APOLLO 16”

\$ 2,000-3,000

263

APOLLO 16 – LARGE COLOR GEOLOGIC MAP SIGNED BY CHARLIE DUKE

Hodges, Carol Ann. “Geologic Map of the Apollo 16 Landing Site and Vicinity. Plate 1” [WITH]: Geology of the Apollo 16 Are, Central Lunar Highlands: Geological Survey Professional Paper, 1048. Washington, D.C.: U.S. Geologic Survey, 1981. Original light mauve-colored boards, cover and spine lettered in brown. In original shrink-wrap.

SIGNED and INSCRIBED by CHARLIE DUKE: “A FANTASTIC THREE DAYS! CHARLIE DUKE APOLLO 16 LMP”

Apollo 16 was the tenth manned mission of the Apollo space program, and the first to land in the lunar highlands.

\$ 1,000-1,500

APOLLO 17

LOTS 264-271



264

264

APOLLO 17 — LIFTOFF PHOTO SIGNED AND INSCRIBED BY GENE CERNAN

Color photograph, 20 by 16 inches.

SIGNED and INSCRIBED by GENE CERNAN: "LAST MAN ON THE MOON" FINAL LUNAR APOLLO MISSION DECEMBER 7, 1972"

At the time of the Apollo 16 mission, Cernan turned down the opportunity to walk on the moon. He took a chance, wanting to command his own mission,

rather than serve as Lunar Module Pilot. In December of 1972, the astronaut's gamble paid off, when Apollo 17 launched with Cernan as its Commander. This closed out the Apollo program's lunar exploration mission, and Cernan became the last man to set foot on the moon.

\$ 2,500-3,500

THE LAST LUNAR LANDING DURING THE 20TH CENTURY

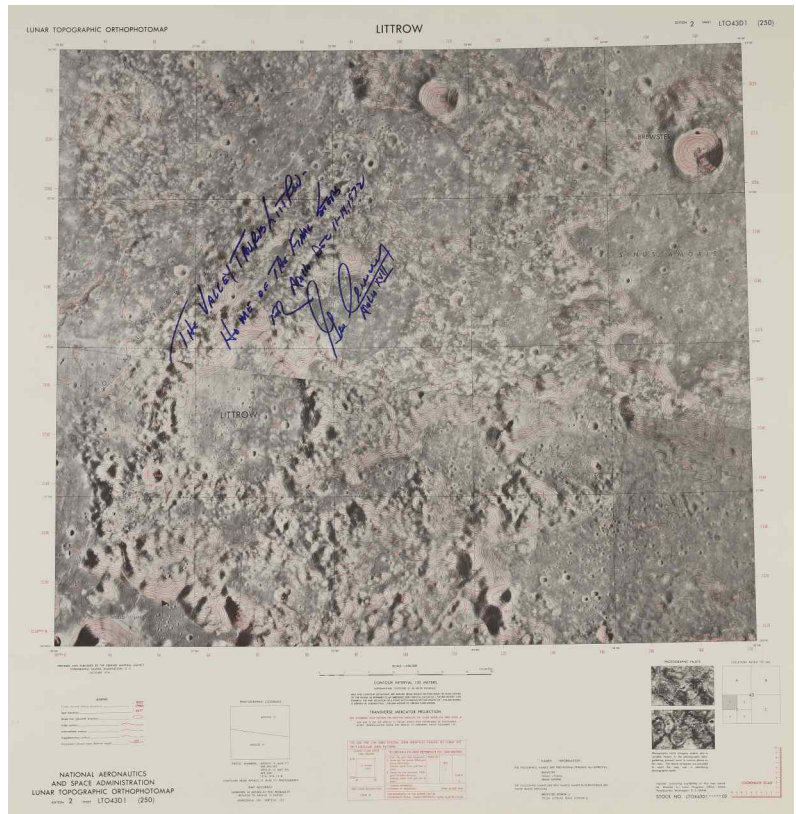
"HOME OF THE FINAL STEPS OF APOLLO" –
COMMANDER GENE CERNAN

Littrow, Lunar Topographic Orthophotomap. Lunar chart based on Apollo 15 and 17 photographic data including ITEK and Fairchild cameras. Published by the Defense Mapping Agency for NASA, October 1974. 27 by 25 inches.

BOLDLY INSCRIBED and SIGNED: "The Valley of Taurus Littrow. Home of the final steps of Apollo, Dec 11 – 14, 1972. GENE CERNAN, Cdr Apollo XVII."

The chart has extensive descriptions found along the lower margin. The Apollo Program's final landing site is marked with a large black pennant at the lower left corner. Elevation contour lines are marked in red at 100 meters intervals from data collected during the Apollo 15 and 17 missions using a laser altimeter located in the Service Module SIM (Scientific Instrument Module) Bays.

\$ 1,200-1,800



265

FLOWN ON APOLLO 17

WATER CONTAINER, Part NO V36-601632-111

White Beta-cloth and polyester with aluminum fittings, 7 by 7 inches, labeled "WATER CONTAINER" in large block letters, part number "V36-601632-111" (original ending number of "211" crossed out in black pen, and replaced with "111" by hand). With original "Temporary Parts Removable" tag still sealed in its plastic bag, indicating that this was inspected on 3-1-73, and that it was in CM 114 (Command Module 114, the *America*, from the Apollo 17 mission) & tag from Rockwell International Corp, the manufacturer of the bag, indicating that it was cleaned and sealed by Garwood Laboratories post-flight.

FLOWN ON APOLLO 17, THE LAST MISSION TO LAND ON THE MOON. A critical piece of hardware used on humanities' last moon landing, by mission commander Eugene Cernan, Lunar Module Pilot Harrison Schmitt, and Command Module Pilot Ron Evans. Cernan and Evans spent 3 days on the moon, spending nearly 22 hours walking and driving the Lunar rover, collected a record 112 kgs of lunar specimens, and with Evans performing a spacewalk during the trip back to Earth to retrieve film and experiment packages from the Service module.

It is interesting to note that the pre-flight Stowage list indicates that the Part number for this item is "V36-601632-211", with the "211" being the number on the bag that has been crossed out by hand and replaced with "111." The Temporary parts removable tag lists the new number ending in "111", as does the Rockwell tag.

REFERENCES

NASA, *Apollo 17 Stowage List. Mission J-3 CM-114/LM-12. December 12, 1972.* Houston: Manned Spacecraft Center, 1972.

PROVENANCE

Aurora, lot 661A, Spring 2006

\$ 8,000-12,000



266

APOLLO 17 — EXPLORING TAURUS LITTROW

Color photograph, 20 by 16 inches.

SIGNED and INSCRIBED by GENE CERNAN: "READY TO EXPLORE... THE TAURUS LITTROW FOR OVER THREE DAYS OF GREAT LUNAR EXPLORATION— GENE CERNAN APOLLO XVII - CRD "11TH MAN ON THE MOON"

The Apollo 17 mission—of which Cernan commander—garnered a number of record-setting achievements. These included three EVAs —Extravehicular activity— totaling about 22 hours of exploration of the Taurus–Littrow valley. Cernan and Schmitt covered more than 22 miles using the Lunar Rover, and collected a record 75 pounds of geologic samples. Cernan piloted the rover on its final run, during which he clocked a maximum speed of 11.2 mph, giving him the (unofficial) lunar land speed record.

\$ 3,000-5,000



267

APOLLO 17 LARGE FORMAT LUNAR SURFACE FULL FRAME HASSELBLAD PHOTOGRAPHS

THE LANDING SITE FROM ORBIT, LUNAR SURFACE CORE DRILLING AND CAMERA EQUIPMENT, PLUS ROVER TRAVERSES

A set of four large black and white photographs, each 11 by 14 inches, all having the watermark text of: "This Paper Manufactured by Kodak" on verso. All were printed in the 1970's by NASA for geological and mission research.

1) APOLLO 17 LUNAR LANDING SITE SEEN FROM ORBIT WITH CSM AMERICA VISIBLE NEAR THE FRAME CENTER. The Apollo 17 Lunar Module crew snaps Hasselblad frame AS17-147-22464 showing landing site known as the Taurus – Littrow. The touchdown point is close to the circular crater near the image center and is surrounded by large mountains along all sides. Part of the Lunar Module is the dark area on the image right side.

2) A DIFFICULT CORE TUBE REMOVAL REQUIRES GENE CERNAN TO KNEEL ON THE LUNAR SURFACE. Astronaut Harrison Schmitt takes Hasselblad frame A17-136-20695 as Commander Gene Cernan extracts a lunar core tube. A "heat flow" probe was placed into the bore hole left after core tube extraction and was part of the ALSEP (Apollo Lunar Surface Experiments Package). The probe was designed to measure lunar internal heat loss. Mountains around the Apollo 17 landing site are visible in the background.

3) LONG RANGE PHOTOS BEING MADE BY SCHMITT IN THE TAURUS-LITTROW VALLEY NEXT TO A LARGE BOULDER. Astronaut Harrison Schmitt is seen using a 500mm lens on his Hasselblad camera recording detailed images of the Taurus-Littrow mountains. This area was known as the Station 6 stop on the third and final Apollo 17 EVA which was an important destination because of the extremely large boulders. Part of the communications antenna and TV camera on the lunar rover can be seen at the left. Hasselblad frame A17-146-22293.

4) SCHMITT SNAPS A VALLEY VIEW WHILE TRAVELING ON THE LUNAR ROVER. Part of the Rover's TV and communications antenna are visible in Hasselblad frame A17-138-2118. This image shows the direction the crew is traveling after leaving Station Stop 2 and heading toward Stop 3 during their second lunar surface exploration (EVA 2). Mountains towering above the valley can be seen in the background.

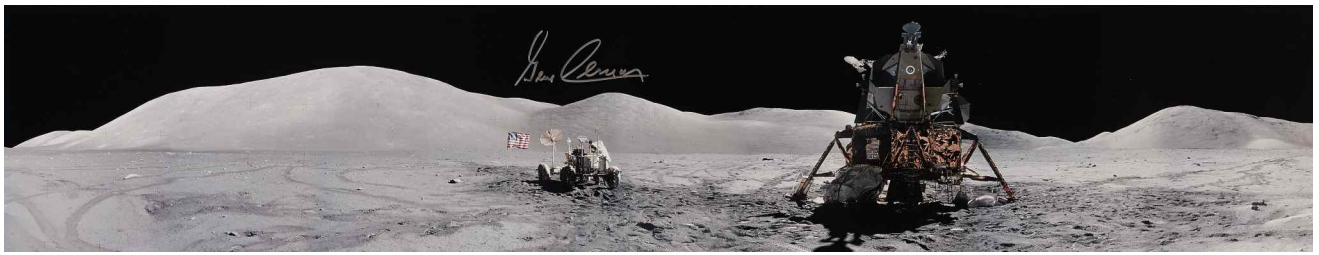
\$ 1,200-1,800



268 (PART)



268 (PART)



269

269

APOLLO 17 — GENE CERNAN WORKING AT THE LUNAR ROVER

Color panoramic photograph, 40 by 8 inches.

SIGNED by GENE CERNAN.

A striking panorama showing Gene Cernan, the eleventh person to walk on the Moon, at the Lunar Rover. That which is pictured here is one of three Rovers that have been left on the lunar surface.

\$ 1,500-2,000

270

APOLLO 17 – LAST LUNAR FLAG

CERNAN SALUTES OLD GLORY FOR THE LAST TIME

Color photograph, 11½ by 14½ inches.

BOLDLY SIGNED and INSCRIBED: "GENE CERNAN, Apollo XVII CDR, Dec 1972."

Apollo 17 Commander Gene Cernan holds and salutes the United States flag during the last lunar landing mission of the Apollo Program. Part of the lunar rover and the large South Massiff mountain are in the background.

\$ 3,000-5,000



270

271

RON WOODS

Two Works Depicting Apollo Spacesuits

LOT COMPRISED OF: "[Evans's Spacesuit]" watercolor on paper, signed "Ron Woods 2010" along the spacesuit arm — "Jack's Boots at the Garber," watercolor on paper, signed "Ron Woods 2008" lower left, additionally inscribed on the frame's verso. Each 6½ by 9 inches (sight), matted and framed to approximately 16 by 19 inches.

Ron Woods is the overseer of Flight Crew Equipment Preparation at Kennedy Space Center in Florida. In his capacity as a Spacesuit Technician, Woods dressed Buzz Aldrin for the Apollo 11 mission, and Jim Lovell before Apollo 8. A graduate of the University of Houston with a degree in Fine Arts, Ron has been painting for many years with a specialty in space hardware.

These works depict Ronald Evans's spacesuit suspended on a hanger foregrounded against an abstract grey environment, and Harrison "Jack" Schmitt's spacesuit boots at the Paul E. Garber Facility, respectively.

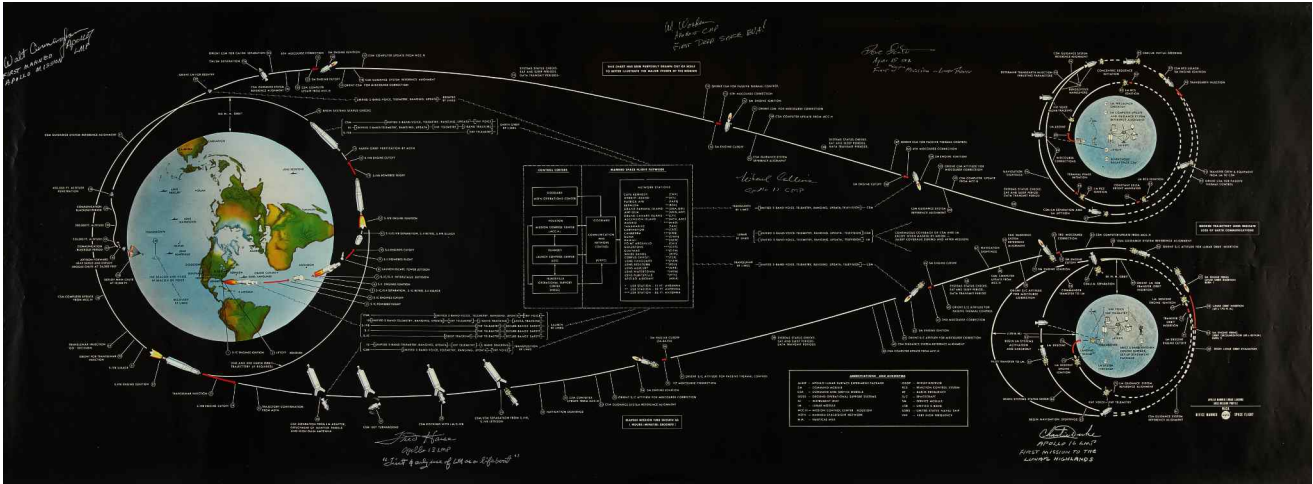
\$ 3,000-5,000



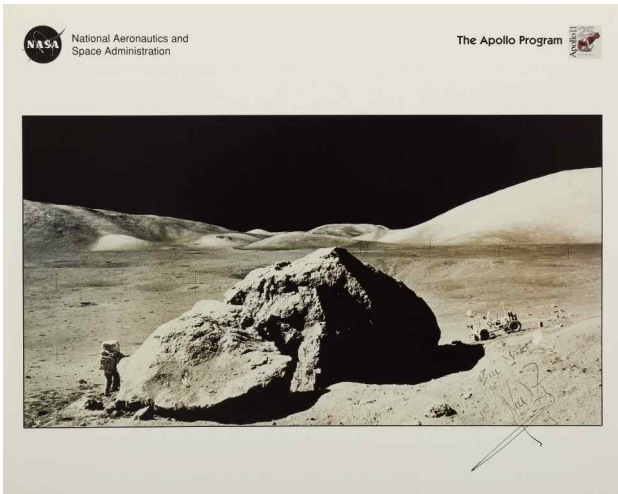
271

MOONWALKERS

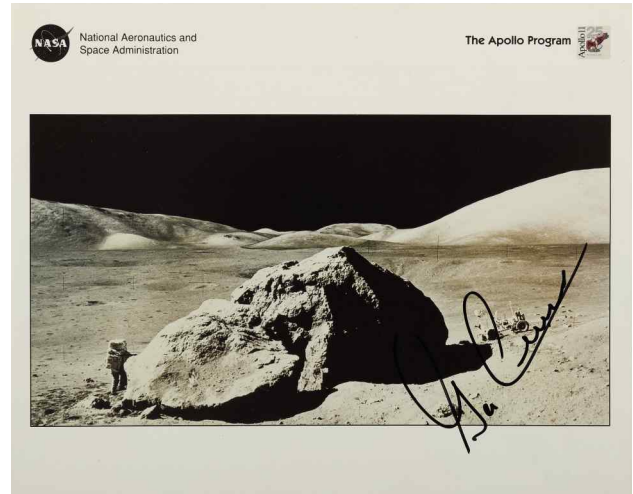
LOTS 272-279



272



273



273

272

APOLLO MANNED LUNAR LANDING CHART

"Apollo Manned Lunar Landing, GOSS-Mission Profile", [Washington D.C.]: National Aeronautical and Space Administration, Office of Manned Space Flight, 1969

Large color lithograph, 22 by 58 inches, small tear to left margin.

SIGNED and INSCRIBED by WALT CUNNINGHAM ("Apollo 7 LMP | First manned Apollo Mission"), MICHAEL COLLINS ("Apollo 11 CMP"), FRED HAISE

("Apollo 13 LMP | First and only use of LM as a lifeboat"), DAVE SCOTT ("Apollo 15 CDR | First 'J' Mission — Lunar Rover"), AL WORDEN ("Apollo 15 CMP | First deep space EVA!"), and CHARLIE DUKE ("Apollo 16 LMP | First Mission to the Lunar Highlands").

An extensive overview of the critical steps required during an Apollo flight to land on the moon. SIGNED by six Apollo Astronauts, two of whom walked on the moon (Dave Scott and Charlie Duke).

\$ 2,000-3,000

273

APOLLO PROGRAM — THE FIRST AND LAST MEN ON THE MOON

Two color photolithographs, each 8 by 10 inches, depicting an Apollo 17 mission photo of Harrison Schmitt in the Taurus-Littrow Valley, the versos printed with the history of the Apollo Program. Produced to commemorate the 25th anniversary of the Apollo 11 moon landing.

One SIGNED by NEIL ARMSTRONG — the first human to walk on the moon — the other by GENE CERNAN — the last Apollo astronaut to walk on the moon.

\$ 3,000-5,000

APOLLO PROGRAM

Color photolithograph, 8 by 10 inches, depicting a photograph taken in December 1972 by the Apollo 17 mission, the verso printed with facts about the Moon.

SIGNED by CHARLIE DUKE, TOM STAFFORD, FRED HAISE, CHARLES CONRAD, JR., EDGAR MITCHELL, ALAN BEAN, RICHARD GORDON, AL WORDEN, ALAN SHEPARD, JIM LOVELL, FRANK BORMAN, and HARRISON SCHMITT. Each astronaut has additionally inscribed his Apollo mission alongside his signature.

\$ 2,000-3,000

275

CALLE, PAUL, AND CHRIS CALLE

A group of 12 "Moonwalker" Postal Covers, with sketches, signed

12 sketches, pencil on paper envelopes, 6½ by 3¾ inches, each SIGNED "PAUL CALLE" and "CHRIS CALLE" in blue ink, each hand-numbered "1/25" in blue ink, with "First Moon Landing, 1969" stamps, and "First Day of Issue July 20 1994" Washington, D.C. postmarks.

A GROUP OF ORIGINAL SKETCHES ON POSTAL COVERS, SIGNED AND NUMBERED BY PAUL AND CHRIS CALLE, REPRESENTING EACH OF THE ASTRONAUTS TO WALK ON THE MOON

In 1994, Paul Calle and his son Chris Calle jointly designed two US stamps commemorating the 25th anniversary of the Apollo XI moon landing event. Father and son produced a 29 cent commemorative stamp as well as an Express Mail stamp.

Famously, Paul Calle designed the iconic First Man on the Moon Stamp in 1969. Chris Calle has designed more than 35 postage stamps for the United States, and hundreds more for various countries as well as the United Nations. The present sketches depict the following astronauts: Gene Cernan, Charlie Duke, Harrison Schmitt, John Young, Dave Scott, James Irwin, Alan Shepard, Edgar Mitchell, Alan Bean, Pete Conrad, Neil Armstrong, and Buzz Aldrin.

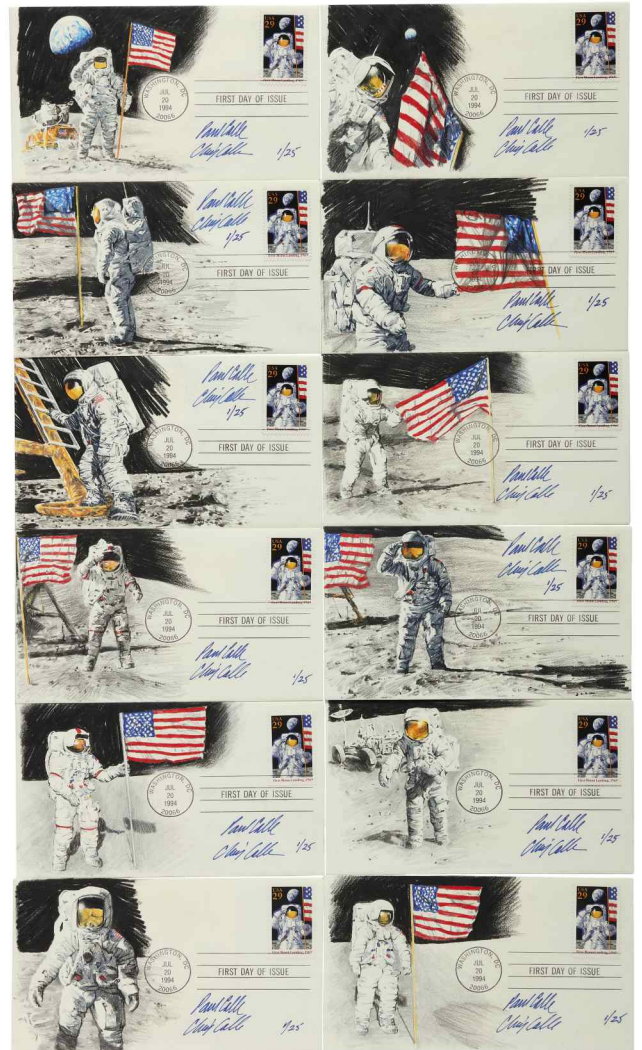
PROVENANCE

Ex Paul Calle Collection

\$ 4,000-6,000



274



275

LARGE COLOR GEOLOGIC MAP OF THE NEARSIDE OF THE MOON, SIGNED BY A MOONWALKER FROM EACH LUNAR LANDING

WILHELMS, DON E., AND JOHN F. MCCAULEY.

"Geologic Map of the Near Side of the Moon. Map I-703" From: *Geologic Atlas of the Moon. Near Side of the Moon*. Washington, D.C.: U.S. Geological Survey, 1971

Color 1:5,000,000 scale geologic map, 53 by 35 inches, folded and housed in original Department of the Interior United States Geological Survey envelope, together with original 7pp. informational pamphlet. Fine.

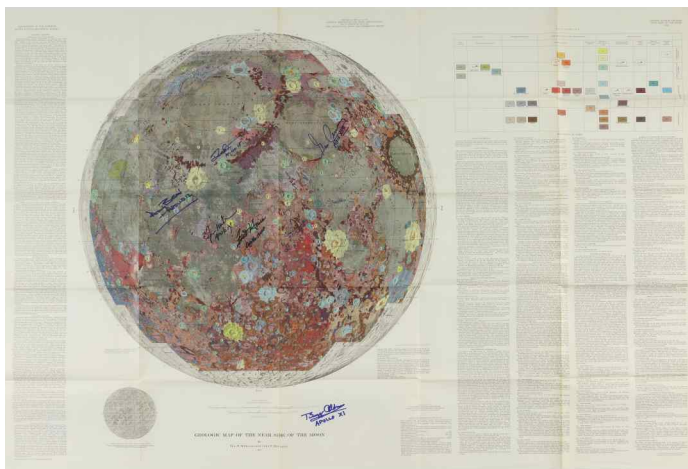
SIGNED AND INSCRIBED BY A MOONWALKER FROM EACH OF THE SIX LUNAR LANDINGS NEXT TO THEIR RESPECTIVE LANDING SITES: APOLLO 11: "BUZZ ALDRIN APOLLO XI" (ALSO SIGNED A SECOND TIME "BUZZ ALDRIN"); APOLLO 12: "ALAN BEAN APOLLO 12"; APOLLO 13: FRED HAISE APOLLO 13 LMP; APOLLO 14: "EDGAR MITCHELL APOLLO 14"; APOLLO 15: "DAVE SCOTT APOLLO 15"; APOLLO 16: "CHARLIE DUKE APOLLO 16" AND APOLLO 17: "GENE CERNAN APOLLO XVII".

A striking and extraordinarily detailed map of the near side of the moon, revealing in vivid color the incredibly varied geological features of the lunar surface. Prepared on behalf of the National Aeronautics and Space Administration (NASA) in cooperation with the USAF Aeronautical Chart and Information Center, and done as part of the Department of the Interior's United States Geological Survey for their Geologic Atlas of the moon, the map was based on the results of the telescopic mapping program as well as on data provided by the unmanned lunar exploration program, in particular the regional coverage of Lunar Orbiter IV.

REFERENCES

Cortwright, *Exploring Space with a Camera*, pp 109-111

\$ 4,000-6,000



LARGE SCALE COLOR MAPS OF THE APOLLO LANDING SITES, SIGNED BY CORRESPONDING ASTRONAUTS

12 MAPS IN TOTAL, RELATING TO THE APOLLO MISSIONS

Apollo 11: "Geologic Map of Apollo Landing Site 2 (Apollo 11). Part of Sabine D Region Southwestern Mare Tranquilitatis. Map I-619" by Maurice J. Grolier, 1970. 40¾ by 24 inches. 4pp. informational pamphlet. Fine. SIGNED and INSCRIBED "BUZZ ALDRIN APOLLO XI" and "'ROGER, TRANQUILITY. WE COPY YOU ON THE GROUND!' CHARLIE DUKE APOLLO 11 CAPCOM"

Apollo 12: "Geologic Maps of the Lansberg P Region of the Moon, Map I-627" by H.A. Pohn, 1971. Sheet (1) 41 by 22 ¾ inches, sheet (2) 41 by 28 ¾ inches. 4pp. informational pamphlet. Sheet 2 SIGNED and INSCRIBED "A WONDERFUL PART OF THE MOON TO EXPLORE... BUT SO MUCH REMAINS FOR FUTURE GENERATIONS. ALAN BEAN APOLLO 12 LMP 19 & 20 NOVEMBER 1969"

Apollo 13: "Geologic Map of the Fra Mauro Landing Site - Apollo 13" by T.W. Offield, 1970. 48 by 36½ inches. 5pp. informational pamphlet; lacking original Department of the Interior United States Geological Survey envelope, minor wear to folds. SIGNED and INSCRIBED "JAMES LOVELL APOLLO 13"

Apollo 14: "Geologic Maps of the Fra Mauro Region of the Moon, Map I-709" by R.E. Eggleton and T.W. Offield, 1970. Sheet (1) 41 by 22 ¾ inches, sheet (2) 46 by 27½ inches. 5pp. informational pamphlet material. Fine. Sheet 2 SIGNED and INSCRIBED "ALL MYSTERIES ARE MAN MADE, A PRODUCT OF OUR DESIRE TO KNOW AND, IN THE LARGER SENSE, THE DESIRE OF NATURE TO KNOW ITSELF. ED MITCHELL APOLLO 14 LMP"

Apollo 15: "Geologic Maps of the Apennin-Hadley Region of the Moon, Map I-723" by M.H. Carr, K.A. Howard, and Farouk El-Baz, 1971. Sheet (1) 48 by 30¾ inches, sheet (2) 46½ by 28 ¾ inches; first sheet with the library stamp of "Russell R. Tobias" in blind. Sheet 2 SIGNED and INSCRIBED "DAVE SCOTT CDR APOLLO 15"

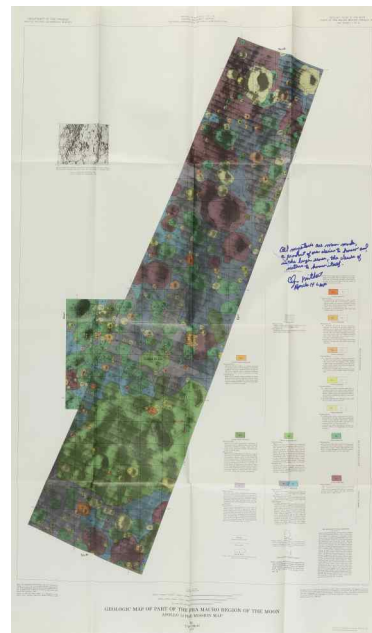
Apollo 16: "Geologic Maps of the Descartes Region of the Moon, Map I-748" by Daniel J. Milton and Carroll Ann Hodges, 1972. Sheet (1) 38 by 21½ inches, sheet (2) 44 by 30½ inches. Sheet 2 SIGNED and INSCRIBED "OUR LANDING SITE AT DESCARTES WAS BREATHTAKINGLY BEAUTIFUL. THE CLIMB UP THE SIDE OF STONE MOUNTAIN AND OUR VISIT TO NORTH RAY CRATER WERE THE HIGHLIGHTS. AIM HIGH, CHARLIE DUKE APOLLO 16 LMP"

Apollo 17: "Geologic Maps of the Taurus-Littrow Region of the Moon, Map I-800" by David H. Scott, Baerbel Koesters Lucchitta, and M.H. Carr, 1972. Sheet (1) 46½ by 26 inches, sheet (2) 46 by 33 ¾ inches. Sheet 1 SIGNED and INSCRIBED "GENE CERNAN APOLLO XVII"

SIGNED and INSCRIBED by BUZZ ALDRIN (Apollo 11); CHARLIE DUKE (Apollo 11, as CapCom); ALAN BEAN (Apollo 12); JAMES LOVELL (Apollo 13); ED MITCHELL (Apollo 14); DAVE SCOTT (Apollo 15); CHARLIE DUKE (Apollo 16); GENE CERNAN (Apollo 17)

A spectacular collection of the extremely detailed geologic maps of the Apollo program landing sites done the United States Geological Survey, prepared in cooperation with the Manned Spacecraft Center and NASA, this set heightened by the signatures and inscriptions of astronauts that flew on the missions.

\$ 5,000-8,000



VINTAGE NASA "RED NUMBER" PHOTOGRAPH OF THE "MEATBALL" INSIGNIA

Signed by Twenty Seven Astronauts, and the First Director of the Manned Spacecraft Center

Vintage NASA "Red Number" color photograph, 8 by 10 inches, with printed identification number "NASA S-63-12359" in upper left corner, and "A Kodak Paper" with printed NASA text to verso; some minor wear to edges of photograph, and tape to upper right corner of verso.

SIGNED by SCOTT CARPENTER, WALLY SCHIRRA, ALAN SHEPARD, ED WHITE, JIM MCDIVITT, FRANK BORMAN, JAMES LOVELL, TOM STAFFORD, JOHN YOUNG, CHARLES CONRAD, DAVE SCOTT, GENE CERNAN, MICHAEL COLLINS, BUZZ ALDRIN, DICK GORDON, WALT CUNNINGHAM, RUSTY SCHWEICKART, AL BEAN, KEN MATTINGLY, FRED HAISE, STUART ROOSA, AL WORDEN, JIM IRWIN, CHARLIE DUKE, HARRISON SCHMITT, GORDON COOPER, and ROBERT R. GILRUTH.

\$ 5,000-7,000



APOLLO MOONWALKERS COLLECTION

A Complete Collection Containing 12 Portraits of the Apollo Moonwalkers, Each SIGNED by its Subject

12 color photolithographs, each 10 by 8, or 8 by 10 inches. All are officially NASA released with printed captions identifying the subject to the lower margins, many with printed NASA biographies to versos. The versos of three prints (Al Bean, Charles Duke, and Harrison Schmitt) with minor discoloration from the astronauts' signatures.

LOT INCLUDES:

- NEIL ARMSTRONG Apollo 11 CDR
- BUZZ ALDRIN Apollo 11 LMP
- CHARLES "PETE" CONRAD Apollo 12 CDR
- AL BEAN Apollo 12 LMP
- ALAN SHEPARD Apollo 14 CDR
- EDGAR MITCHELL Apollo 14 LMP
- DAVID SCOTT Apollo 15 CDR
- JAMES IRWIN Apollo 15 LMP
- JOHN YOUNG Apollo 16 CDR
- CHARLES DUKE Apollo 16 LMP
- EUGENE "GENE" CERNAN Apollo 17 CDR
- HARRISON SCHMITT Apollo 17 LMP

\$ 10,000-15,000



ASTP, SKYLAB, ISS

LOTS 280-289



280

281

COMPLETE SET OF SIGNED SKYLAB BETA CLOTH CREW EMBLEMS

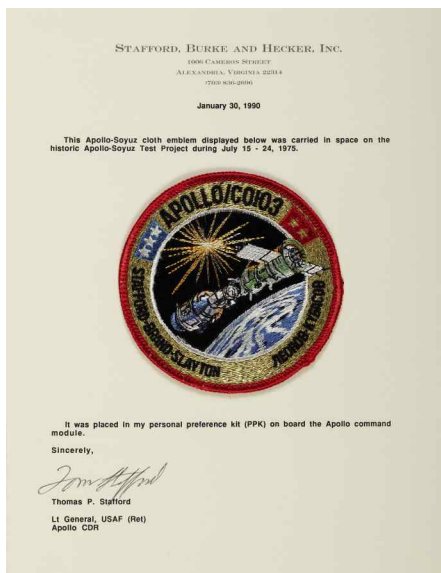
EACH SIGNED BY THE CORRESPONDING CREW MEMBERS

Three Skylab Beta Cloth emblems, all 9 by 9 inches, featuring the individual mission emblem of Skylab I, II and 3 and the corresponding crew members last names. Beta Cloth was the fire protection layer of the Apollo and Skylab space suits. Emblems of this type were sewn onto the space suits, along with name tags, United States flags, and the NASA emblem.

The Skylab I emblem is SIGNED by CHARLES CONRAD, JOE KERWIN, and PAUL WEITZ. The Skylab II emblem is SIGNED by ALAN BEAN, OWEN GARRIOTT, and JACK LOUSMA. The Skylab 3 emblem is SIGNED by JERRY CARR, ED GIBSON, and BILL POGUE.

Full details available online.

\$ 1,000-1,500



282

280

ORIGINALLY FROM THE COLLECTION OF APOLLO 12 AND SKYLAB 1 COMMANDER CHARLES CONRAD

CHARLES CONRAD'S FLOWN SKYLAB I MISSION EMBLEM

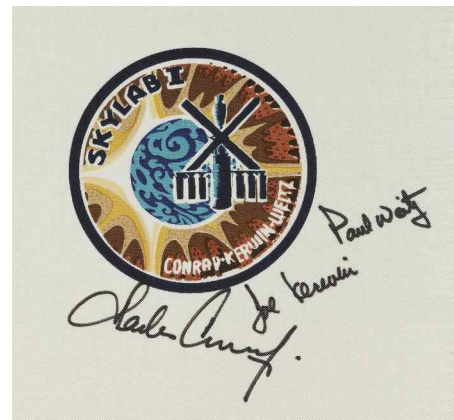
CARRIED ON THE 28 DAY EARTH ORBITAL FLIGHT

FLOWN Skylab cloth emblem, 4 inches in diameter. Featuring the Skylab Space Station in orbit while the Earth eclipses the Sun in the background. The emblem is mounted above paragraphs on a Typed Letter Signed by CHARLES CONRAD. All on an 11 by 17 inch tan mat board displaying a color photograph of Skylab in Earth orbit. The portable sun shield erected by Conrad's crew is clearly visible as well as the missing solar panel that would have been on the left side.

With CHARLES CONRAD's signed provenance letter, which reads in part: "I was commander of the first manned mission to Skylab... This patch was carried with us during the launch of SL-2 Saturn IB vehicle on May 25, 1973, and flew in space for 28 days. My crew and I made repairs to Skylab during that time to enable a full-duration mission. We returned to Earth on June 22, 1973. CHARLES CONRAD, Skylab I CDR."

Full details available online.

\$ 2,500-3,500



281 (part)

282

ORIGINALLY FROM THE COLLECTION OF APOLLO 10 AND ASTP APOLLO COMMANDER TOM STAFFORD

APOLLO-SOYUZ CLOTH MISSION EMBLEM CARRIED ON THE FLIGHT

TAKEN ON THE FIRST US MANNED RENDEZVOUS WITH A RUSSIAN SPACECRAFT

FLOWN cloth crew mission emblem, 4 inches in diameter. The emblem illustrates an Apollo and Soyuz spacecraft prior to docking above the Earth in orbit, with the Sun in the background. All crew members' last names are along the outer edge. Mounted between paragraphs on a Typed Letter Signed by TOM STAFFORD on his business stationery.

TOM STAFFORD's signed provenance letter which reads: "This Apollo-Soyuz cloth emblem displayed below was carried in space on the historic Apollo-Soyuz Test Project during July 15-24, 1975. It was placed in my personal preference kit (PPK) on board the Apollo Command Module."

\$ 1,500-2,000

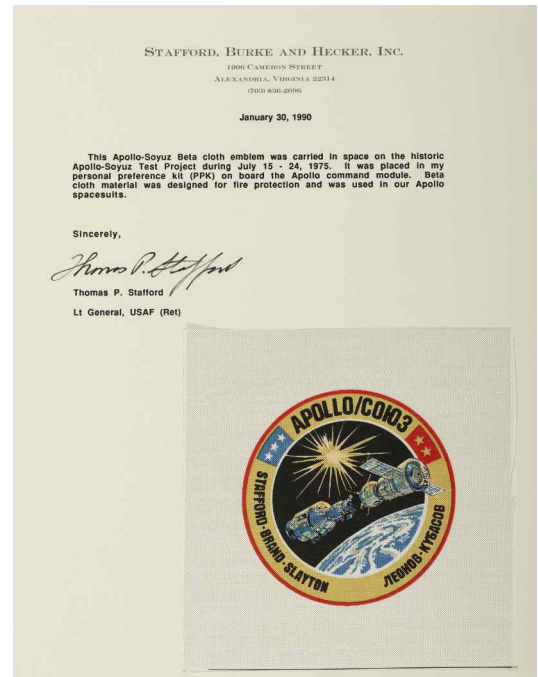
ORIGINALLY FROM THE COLLECTION OF APOLLO 10 AND ASTP APOLLO COMMANDER THOMAS STAFFORD

APOLLO-SOYUZ MISSION BETA CLOTH EMBLEM CARRIED ON THE FLIGHT

FLOWN Apollo Soyuz Beta Cloth crew emblem, 5½ inches square featuring the emblem at the center, 3½ inches in diameter. Beta Cloth was the fire protection layer of the Apollo space suit. Displayed with a Typed Letter Signed by THOMAS P. STAFFORD on his business stationery.

THOMAS P. STAFFORD'S signed provenance letter reads: "This Apollo-Soyuz Beta cloth emblem was carried in space on the historic Apollo-Soyuz Test Project during 15 – 24, 1975. It was placed in my personal preference kit (PPK) on board the Apollo command module. Beta cloth material was designed for fire protection and was used in our Apollo spacesuits."

\$ 1,500-2,000



283



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APOLLO SOYUZ BOOK COLLECTION

ALL SIGNED BY THE APOLLO COMMANDER AND BOTH COSMONAUTS

A collection of two cloth bound books and a card stock cover Manned Spacecraft Recovery Force, Atlantic Press Kit.

Includes signatures from: TOM STAFFORD, VALERY KUBASOV, ALEXEI LEONOV, AND CARL R. HUSS.

Full details available online.

\$ 1,000-1,500

INTERNATIONAL SPACE STATION

A Collection of 6 International Flown Flags

6 Flags Flown to the International Space Station, from 6 by 3 ¾ inched to 8¾ by 5 ¾ images signed by various astronauts, with official International Space Station stamps.

A collection of six flags, four of which signed by the following astronauts:

ANDREAS MOGENSEN, the first Dane in space.

SAMANTHA CRISTOFORETTI, the first Italian woman in space. Cristoforetti also holds the record for the longest uninterrupted spaceflight of a European astronaut, and until June 2017, she also held the record for the longest single space flight by a woman (this was broken by Peggy Whitson). Samantha Cristoforetti is also known as the first person who brewed an espresso in space.

KIMIYA YUI, the first Japanese astronaut with military background. Because of a policy of the Japanese government's, which separates the scientific field from military works, Yui was forced to retire from his military position.

AIDYN AIMBETOV, the first astronaut to fly under the Kazakh flag.

GENNADY IVANOVICH PADALKA, a Russian astronaut who currently holds the world record for the most time spent in space (879 days).

\$ 1,500-2,500



285

**FLOWN OMEGA X-33, WORN BY
GENNADY PADALKA ON ISS MISSION
43/44**

SKYWALKER WORN BY GENNADY
PADALKA ON ISS 43/44, REF
318.90.45.79.01.001 X-33. A TITANIUM
PERPETUAL CALENDAR CHRONOGRAPH
WRISTWATCH WITH MULTIPLE TIME
ZONES ALARM MISSION ELAPSED TIME
AND PHASE ELAPSED TIME INDICATION
CIRCA 2014

Dial: black with digital aperture

Caliber: cal. 5619 quartz

Case: titanium case, four pushers and coaxial
crown, case back secured by eight screws

Case Number: 9211508

Closure: titanium bracelet with folding clasp

Dimensions: 45 mm diameter

Signed: case, dial and movement signed

Accessories: Omega presentation box with
outer packaging, two plastic cards, Certificate
of Authenticity written and signed by Gennady
Padalka

FLOWN IN SPACE ON GENNADY PADALKA'S
WORLD RECORD FLIGHT ON ISS EXPEDITION
43/44

His provenance letter reads: "Watch 'Omega'
X-33 N92-1-15508 was used by me on board ISS
during Expedition 43/44."

Padalka holds the world record for the most
time in space of anyone in history, and set
this record on the ISS Expedition 43/44 while
wearing this very watch.

\$ 15,000-20,000



286

SKYLAB

"Exploring with Skylab." Two 16mm Films:
Zero g and *Conservation Laws in Zero-G*,
1974-1975

LOT INCLUDES: 1) *Conservation Laws in Zero-G*.
16mm film reel in original canister, 10 3/4 inches
in diameter; bearing a circular NASA label
which states: "Prod. No.: JSC 74-644 | Copy
No. 27 | Running time 18 minutes." 2) *Zero g*.
16mm film reel in original canister, 9 inches in
diameter; bearing a circular NASA label which
states: "Prod. No.: JSC 74-547 | Copy No. 127
| Running time 14 1/2 minutes." Both films in
sound and color, and to-be projected at 24
FPS, each accompanied by a teacher's guide
pamphlet for the film.

Two educational films featuring footage from
Skylab 3 & 4, and narrated by Skylab astronaut
Owen Garriott. The first film aims to help
students understand angular momentum
conservation, while the second film uses the
weightless environment of Skylab to illustrate
and discuss Newton's laws of motion and
gravitation.

\$ 1,500-2,500



287



287



288

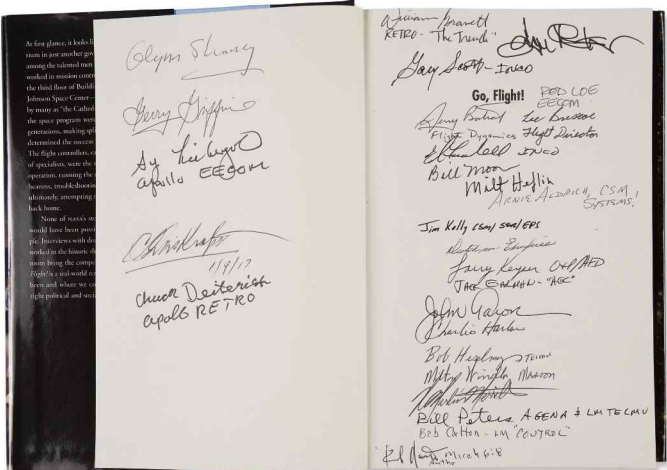
288

MISSION CONTROL

Color photograph, 16 by 20 inches, depicting NASA's Christopher C. Kraft Jr. Mission Control Center.

SIGNED by 26 Apollo-era flight controllers, including GLYNN LUNNEY, SY LIEBERGOT, JOHN AARON, MILT HEFLIN, GERRY GRIFFIN, MILT WINDLER, ARNIE ALDRICH, BILL MOON, ROD LOE, JERRY BOSTICK, BOB CARLTON, CHUCK DEITERICH, ED FENDELL, JIM KELLY, and many others.

\$ 1,500-2,500



289

289

[MISSION CONTROL] – RICK HOUSTON AND MILT HEFLIN

Go, Flight! The Unsung Heroes of Mission Control, 1965-1992. Lincoln: University of Nebraska Press, [2017]. xxiv, 342 pp. Black and white illustrations. 9 ¼ by 6 ½ inches. Quarter black cloth with original dust jacket.

SIGNED by 27 Apollo-era flight controllers, including GLYNN LUNNEY, SY LIEBERGOT, JOHN AARON, MILT HEFLIN, GERRY GRIFFIN, MILT WINDLER, ARNIE ALDRICH, BILL MOON, ROD LOE, JERRY BOSTICK, BOB CARLTON, CHUCK DEITERICH, ED FENDELL, JIM KELLY, and many others.

\$ 1,500-2,500

END OF SALE

Sotheby's EST. 1744

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Apollo-11, 9:32 A.M. 7-16-69
Maiden Voyage to the Moon
Estimate \$15,000-25,000

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AUCTION NEW YORK APRIL 2019

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ANDY WARHOL. \$(4), 1982

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great care to keep such information secure and in accordance with European data protection principles. By agreeing to these Conditions of Sale, the client is agreeing to such disclosure.

Please be aware that Sotheby's may film auctions or other activities on Sotheby's premises and that such recordings may be transmitted over the Internet via Sotheby's website, the eBay website, the Invaluable website and other Online Platforms. Telephone bids may be recorded.

Under European data protection laws, a client may object, by request and free of charge, to the processing of their information for certain purposes, including direct marketing, and may access and rectify personal data relating to them and may obtain more information about Sotheby's data protection policies by writing to Sotheby's, 34-35 New Bond Street, London W1A 2AA, or 1334 York Avenue, New York, NY 10021, Attn: Compliance, or emailing enquiries@sothebys.com. Sotheby's use of information collected about eBay users may differ and is governed by the terms of the eBay Privacy Policy and Sotheby's on eBay Live Auction Platform Privacy Policy, which can be found on the Sotheby's on eBay Live Auction Website. Sotheby's use of information collected about Invaluable users may differ and is governed by the terms of the Invaluable Privacy Policy and Sotheby's on Invaluable Online Platform Privacy Policy, which can be found on the Sotheby's on Invaluable Live Auction Website.

TERMS OF GUARANTEE

As set forth below and in the Conditions of Sale, for all lots Sotheby's guarantees that the authorship, period, culture or origin (collectively, "Authorship") of each lot in this catalogue is as set out in the BOLD or CAPITALIZED type heading in the catalogue description of the lot, as amended by oral or written salesroom notes or announcements. Purchasers should refer to the Glossary of Terms, if any, for an explanation of the terminology used in the Bold or Capitalized type heading and the extent of the Guarantee. Sotheby's makes no warranties whatsoever, whether express or implied, with respect to any material in the catalogue other than that appearing in the Bold or Capitalized heading and subject to the exclusions below.

In the event Sotheby's in its reasonable opinion deems that the conditions of the Guarantee have been satisfied, it shall refund to the original purchaser of record the hammer price and applicable Buyer's Premium paid for the lot by the original purchaser of record.

This Guarantee is provided for a period of five (5) years from the date of the relevant auction, is solely for the benefit of the original purchaser of record at the auction and may not be transferred to any third party. To be able to claim under this Guarantee of Authorship, the original purchaser of record must: (i) notify Sotheby's in writing within three (3) months

of receiving any information that causes the original purchaser of record to question the accuracy of the Bold or Capitalized type heading, specifying the lot number, date of the auction at which it was purchased and the reasons for such question; and (ii) return the Lot to Sotheby's at the original selling location in the same condition as at the date of sale to the original purchaser of record and be able to transfer good title to the Lot, free from any third party claims arising after the date of such sale.

Sotheby's has discretion to waive any of the above requirements. Sotheby's may require the original purchaser of record to obtain at the original purchaser of record's cost the reports of two independent and recognized experts in the field, mutually acceptable to Sotheby's and the original purchaser of record. Sotheby's shall not be bound by any reports produced by the original purchaser of record, and reserves the right to seek additional expert advice at its own expense. It is specifically understood and agreed that the rescission of a sale and the refund of the original purchase price paid (the successful hammer price, plus the buyer's premium) is exclusive and in lieu of any other remedy which might otherwise be available as a matter of law, or in equity. Sotheby's and the Consignor shall not be liable for any incidental or consequential damages incurred or claimed, including without limitation, loss of profits or interest.

ADDITIONAL TERMS AND CONDITIONS FOR LIVE ONLINE BIDDING

The following terms and conditions (the "Online Terms") provide important information related to live online bidding via BIDnow, eBay, Invaluable, and any other Online Platform through which bidding is made available ("Online Platforms").

These Conditions are in addition to and subject to the same law and our standard terms and conditions of sale, including the authenticity guarantee and any other terms and are not intended in any way to replace them. By participating in this sale via any Online Platform, you acknowledge that you are bound by the Conditions of Sale applicable in the relevant sale and by these additional Conditions.

1. The procedure for placing bids via Online Platforms is a one-step process; as soon as the "Bid Now" button is clicked, a bid is submitted. By placing a bid via any Online Platform, you accept and agree that bids submitted in this way are final and that you will not under any circumstances be permitted to amend or retract your bid. If a successful bid is sent to Sotheby's from your computer, phone, tablet, or any other device, you irrevocably agree to pay the full purchase price, including buyer's premium and all applicable taxes and other applicable charges.

2. If you have the leading bid, it will be indicated on the screen with the statement "Bid with you" (on BIDNow) or "You're the highest bidder" (on eBay) or "Bid with

you" (on Invaluable). If a bid is placed online simultaneously with a bid placed by a bidder in the room or on the telephone (a "floor" bid), the "floor" bid generally will take precedence; the auctioneer will have the final discretion to determine the successful bidder or to reopen bidding. The auctioneer's decision is final.

3. The next bidding increment is shown on the screen for your convenience. The auctioneer has discretion to vary bidding increments for bidders in the auction room and on the telephones, but bidders using Online Platforms may not be able to place a bid in an amount other than a whole bidding increment. All bidding for this sale will be in the domestic currency of the sale location, and online bidders will not be able to see the currency conversion board that may be displayed in the auction room.

4. The record of sale kept by Sotheby's will be taken as absolute and final in all disputes. In the event of a discrepancy between any online records or messages provided to you and the record of sale kept by Sotheby's, the record of sale will govern.

5. Online bidders are responsible for making themselves aware of all salesroom notices and announcements. All salesroom notices will be read by the auctioneer at the beginning, where appropriate, or during the sale prior to a relevant lot being offered for sale. Sotheby's recommends that online bidders log on at least ten minutes before the scheduled start of the auction to ensure that you have heard all announcements made by the auctioneer at the beginning of the sale.

6. Sotheby's reserves the right to refuse or revoke permission to bid via Online Platforms and to remove bidding privileges during a sale.

7. Purchase information shown in the "Account Activity" section of BIDnow, the "Purchase History" section of the "My eBay" page on eBay and the "Account Activity" section of the "My Invaluable" page on Invaluable is provided for your convenience only. Successful bidders will be notified and invoiced by Sotheby's after the sale. In the event of any discrepancy between any online purchase information and the invoice sent to you by Sotheby's following the respective sale, the invoice prevails. Terms and conditions for payment and collection of property remain the same regardless of how the winning bid was submitted.

8. Sotheby's offers online bidding as a convenience to our clients. Sotheby's will not be responsible for any errors or failures to execute bids placed via Online Platforms, including, without limitation, errors or failures caused by (i) a loss of connection to the internet or to the BIDnow, eBay, Invaluable or other Online Platform software by either Sotheby's or the client; (ii) a breakdown or problem with the BIDnow, eBay, Invaluable or other Online Platform software; or (iii) a breakdown or problem with a client's internet connection, mobile network or computer. Sotheby's is

not responsible for any failure to execute an online bid or for any errors or omissions in connection therewith.

9. Live online bidding via all Online Platforms will be recorded.

10. In the event of any conflict between these Online Terms and Sotheby's Conditions of Sale and Terms of Guarantee, Sotheby's Conditions of Sale and Terms of Guarantee will control.

11. In the event of any conflict between these Online Terms and any term in any agreement between the User and eBay, these Online Terms will control for purposes of all Sotheby's auctions.

12. In the event of any conflict between these Online Terms and any term in any agreement between the User and Invaluable, these Online Terms will control for purposes of all Sotheby's auctions.

BUYING AT AUCTION

The following will help in understanding the auction buying process as well as some of the terms and symbols commonly used in an auction catalogue. All bidders should read the Conditions of Sale and Terms of Guarantee in this catalogue, as well as the Glossary or any other notices. By bidding at auction, bidders are bound by the Conditions of Sale and Terms of Guarantee, as amended by any oral announcement or posted notices, which together form the sale contract among Sotheby's, the seller (consignor) of the lot and any bidders, including the successful bidder (purchaser).

1. SYMBOL KEY

□ Reserves

Unless indicated by a box (□), all lots in this catalogue are offered subject to a reserve. A reserve is the confidential minimum hammer price at which a lot will be sold. The reserve is generally set at a percentage of the low estimate and will not exceed the low estimate of the lot. If any lots in the catalogue are offered without reserve, such lots will be designated by a box (□). If every lot in a catalogue is offered without a reserve, the Conditions of Sale will so state and this symbol will not be used for each lot.

○ Guaranteed Property

The seller of lots with this symbol has been guaranteed a minimum price from one auction or a series of auctions. This guarantee may be provided by Sotheby's or jointly by Sotheby's and a third party. Sotheby's and any third parties providing a guarantee jointly with Sotheby's benefit financially if a guaranteed lot is sold successfully and may incur a loss if the sale is not successful. If the Guaranteed Property symbol for a lot is not included in the printing of the auction catalogue, a pre-sale or pre-lot announcement will be made indicating that there is a guarantee on the lot.

△ Property in which Sotheby's has an Ownership Interest

Lots with this symbol indicate that Sotheby's owns the lot in whole or in part or has an economic interest in the lot equivalent to an ownership interest.

⇒ Irrevocable Bids

Lots with this symbol indicate that a party has provided Sotheby's with an irrevocable bid on the lot that will be executed during the sale at a value that ensures that the lot will sell. The irrevocable bidder, who may bid in excess of the irrevocable bid, may be compensated for providing the irrevocable bid by receiving a contingent fee, a fixed fee or both. If the irrevocable bidder is the successful bidder, any contingent fee, fixed fee or both (as applicable) for providing the irrevocable bid may be netted against the irrevocable bidder's obligation to pay the full purchase price for the lot and the purchase price reported for the lot shall be net of any such fees. From time to time, Sotheby's may enter into irrevocable bid agreements that cover multiple lots. In such instances, the compensation Sotheby's will pay the irrevocable bidder is allocated to the lots for which the irrevocable bidder is not the successful purchaser. Under such circumstances, the total compensation to the irrevocable bidder will not exceed the total buyer's premium and other amounts paid to Sotheby's in respect of any lots for which the irrevocable bidder is not the successful bidder. If the irrevocable bid is not secured until after the printing of the auction catalogue, Sotheby's will notify bidders that there is an irrevocable bid on the lot by one or more of the following means: a pre-sale or pre-lot announcement, by written notice at the auction or by including an irrevocable bid symbol in the e-catalogue for the sale prior to the auction. From time to time, Sotheby's or any affiliated company may provide the irrevocable bidder with financing related to the irrevocable bid. If the irrevocable bidder is advising anyone with respect to the lot, Sotheby's requires the irrevocable bidder to disclose his or her financial interest in the lot. If an agent is advising you or bidding on your behalf with respect to a lot identified as being subject to an irrevocable bid, you should request that the agent disclose whether or not he or she has a financial interest in the lot.

∨ Interested Parties

Lots with this symbol indicate that parties with a direct or indirect interest in the lot may be bidding on the lot, including (i) the beneficiary of an estate selling the lot, or (ii) the joint owner of a lot. If the interested party is the successful bidder, they will be required to pay the full Buyer's Premium. In certain instances, interested parties may have knowledge of the reserve. In the event the interested party's possible participation in the sale is not known until after the printing of the auction catalogue, a pre-sale or pre-lot announcement will be made indicating that interested parties may be bidding on the lot.

⊙ Restricted Materials

Lots with this symbol have been identified at the time of cataloguing as containing organic material which may be subject to restrictions regarding import or export. The information is made available for the convenience of bidders and the absence of the symbol is not a warranty that there are no restrictions regarding import or export of the Lot; bidders should refer to Condition 12 of the Conditions of Sale. Please also refer to the section on Endangered Species in the information on Buying at Auction.

Π Monumental

Lots with this symbol may, in our opinion, require special handling or shipping services due to size or other physical considerations. Bidders are advised to inspect the lot and to contact Sotheby's prior to the sale to discuss any specific shipping requirements.

📍 Premium Lot

In order to bid on "Premium Lots" (📍 in print catalogue or 📍 in eCatalogue) you must complete the required Premium Lot pre-registration application. You must arrange for Sotheby's to receive your pre-registration application at least three working days before the sale. Please bear in mind that we are unable to obtain financial references over weekends or public holidays. Sotheby's decision whether to accept any pre-registration application shall be final. If your application is accepted, you will be provided with a special paddle number. If all lots in the catalogue are "Premium Lots", a Special Notice will be included to this effect and this symbol will not be used.

2. BEFORE THE AUCTION

The Catalogue A catalogue prepared by Sotheby's is published for every scheduled live auction and is available prior to the sale date. The catalogue will help familiarize you with property being offered at the designated auction. Catalogues may be purchased at Sotheby's or by subscription in any categories. For information, please call +1 212 606 7000 or visit sothebys.com. Prospective bidders should also consult sothebys.com for the most up to date cataloguing of the property in this catalogue.

Estimates Each lot in the catalogue is given a low and high estimate, indicating to a prospective buyer a range in which the lot might sell at auction. When possible, the estimate is based on previous auction records of comparable pieces. The estimates are determined several months before a sale and are therefore subject to change upon further research of the property, or to reflect market conditions or currency fluctuations. Estimates should not be relied upon as a representation or prediction of actual selling prices.

Provenance In certain circumstances, Sotheby's may print in the catalogue the history of ownership of a work of art if such information contributes to scholarship

or is otherwise well known and assists in distinguishing the work of art. However, the identity of the seller or previous owners may not be disclosed for a variety of reasons. For example, such information may be excluded to accommodate a seller's request for confidentiality or because the identity of prior owners is unknown given the age of the work of art.

Specialist Advice Prospective bidders may be interested in specific information not included in the catalogue description of a lot. For additional information, please contact either a Sotheby's specialist in charge of the sale (all of whom are listed in the front of the catalogue), or Sotheby's Client Services Department. You may also request a condition report from the specialist in charge.

The Exhibition An exhibition of the auction property will be held the week prior to the auction on the days listed in the front of the catalogue. There you will have the opportunity to view, inspect and evaluate the property yourself, or with the help of a Sotheby's specialist.

Salesroom Notices Salesroom notices amend the catalogue description of a lot after our catalogue has gone to press. They are posted in the viewing galleries and salesroom or are announced by the auctioneer. Please take note of them.

Registration Sotheby's may require such necessary financial references, guarantees, deposits and/or such other security, in its absolute discretion, as security for your bid. If you are not successful on any lot, Sotheby's will arrange for a refund (subject to any right of set off) of the deposit amount paid by you without interest within 14 working days of the date of the sale. Any exchange losses or fees associated with the refund shall be borne by you. Registration to bid on Premium Lots must be done at least 3 business days prior to the sale.

3. DURING THE AUCTION

The Auction Auctions are open to the public without any admission fee or obligation to bid. The auctioneer introduces the objects for sale — known as "lots" — in numerical order as listed in the catalogue. Unless otherwise noted in the catalogue or by an announcement at the auction, Sotheby's acts as agent on behalf of the seller and does not permit the seller to bid on his or her own property. It is important for all bidders to know that the auctioneer may open the bidding on any lot by placing a bid on behalf of the seller. The auctioneer may further bid on behalf of the seller, up to the amount of the reserve, by placing responsive or consecutive bids for a lot. The auctioneer will not place consecutive bids on behalf of the seller above the reserve.

Bidding in Person If you would like to bid, you must register for a paddle upon entering the salesroom. The paddle is numbered so as to identify you to the auctioneer. To register, you will need a

form of identification such as a driver's license, a passport or some other type of government issued identification. If you are a first-time bidder, you will also be asked for your address, phone number and signature in order to create your account. If you are bidding for someone else, you will need to provide a letter from that person authorizing you to bid on that person's behalf. Issuance of a bid paddle is in Sotheby's sole discretion.

Once the first bid has been placed, the auctioneer asks for higher bids, in increments determined by the auctioneer. To place your bid, simply raise your paddle until the auctioneer acknowledges you. You will know when your bid has been acknowledged; the auctioneer will not mistake a random gesture for a bid.

If you wish to register to bid on a Premium Lot, please see the paragraph above.

All lots sold will be invoiced to the name and address in which the paddle has been registered and cannot be transferred to other names and addresses. Sotheby's reserves the right to refuse to accept payment from a source other than the buyer of record.

Absentee Bidding If it is not possible for you to attend the auction in person, you may place your bid ahead of time. In the back of every catalogue there is an absentee bid form, which you can use to indicate the item you wish to bid on and the maximum bid you are willing to make. Return the completed absentee bid form to Sotheby's either by mail or fax. When the lot that you are interested in comes up for sale, a Sotheby's representative will execute the bid on your behalf, making every effort to purchase the item for as little as possible and never exceeding your limit. This service is free and confidential. For detailed instructions and information, please see the Absentee Bid Form and Guide for Absentee Bidders instructions at the back of this catalogue.

Telephone Bidding In some circumstances, we offer the ability to place bids by telephone live to a Sotheby's representative on the auction floor. Please contact the Bid Department prior to the sale to make arrangements or to answer any questions you may have. Telephone bids are accepted only at Sotheby's discretion and at the caller's risk. Calls may also be recorded at Sotheby's discretion. By bidding on the telephone, prospective buyers consent thereto.

Online Bidding If you cannot attend the auction, it may be possible to bid online via BIDnow, eBay, Invaluable or other Online Platforms for selected sales. This service is free and confidential. For information about registering to bid via BIDnow, please see www.sothebys.com. For information about registering to bid on eBay, please see www.ebay.com/sothebys. For information about registering to bid on Invaluable, please see www.invaluable.com/invaluable/help.cfm. Bidders utilizing any online platform are subject to the Online Terms as well as the relevant Conditions of Sale. Online bidding may not be available for Premium Lots.

Employee Bidding Sotheby's employees may bid in a Sotheby's auction only if the employee does not know the reserve and if the employee fully complies with Sotheby's internal rules governing employee bidding.

US Economic Sanctions The United States maintains economic and trade sanctions against targeted foreign countries, groups and organizations. There may be restrictions on the import into the United States of certain items originating in sanctioned countries, including Burma, Cuba, Iran, North Korea and Sudan. The purchaser's inability to import any item into the US or any other country as a result of these or other restrictions shall not justify cancellation or rescission of the sale or any delay in payment. Please check with the specialist department if you are uncertain as to whether a lot is subject to these import restrictions, or any other restrictions on importation or exportation.

Hammer Price and the Buyer's Premium For lots which are sold, the last price for a lot as announced by the auctioneer is the hammer price. A buyer's premium will be added to the hammer price and is payable by the purchaser as part of the total purchase price. The buyer's premium will be the amount stated in the Conditions of Sale.

Currency Board As a courtesy to bidders, a currency board is operated in many salesrooms. It displays the lot number and current bid in both U.S. dollars and foreign currencies. Exchange rates are approximations based on recent exchange rate information and should not be relied upon as a precise invoice amount. Sotheby's assumes no responsibility for any error or omission in foreign or United States currency amounts shown.

Results Successful absentee bidders will be notified after the sale. Absentee bidders will receive a list of sale results if they enclose a stamped self-addressed envelope with their absentee bid form. Printed lists of auction prices are available at our galleries approximately three weeks following each auction and are sent on request to catalogue purchasers and subscribers. Results may also be obtained online at sothebys.com.

International Auctions If you need assistance placing bids, obtaining condition reports or receiving auction results for a Sotheby's sale outside the United States, please contact our International Client Services Department.

4. AFTER THE AUCTION

Payment If your bid is successful, you can go directly to Post Sale Services to make payment arrangements. Otherwise, your invoice will be mailed to you. The final price is determined by adding the buyer's premium to the hammer price on a per-lot basis. Sales tax, where applicable, will be charged on the entire amount. Payment is due in full immediately after the sale. However, under certain circumstances,

Sotheby's may, in its sole discretion, offer bidders an extended payment plan. Such a payment plan may provide an economic benefit to the bidder. Credit terms should be requested at least one business day before the sale. However, there is no assurance that an extended payment plan will be offered. Please contact Post Sale Services or the specialist in charge of the sale for information on credit arrangements for a particular lot. Please note that Sotheby's will not accept payments for purchased lots from any party other than the purchaser, unless otherwise agreed between the purchaser and Sotheby's prior to the sale.

Payment by Cash It is against Sotheby's general policy to accept single or multiple related payments in the form of cash or cash equivalents in excess of the local currency equivalent of US \$10,000. It is Sotheby's policy to request any new clients or purchasers preferring to make a cash payment to provide: verification of identity (by providing some form of government issued identification containing a photograph, such as a passport, identity card or driver's license), confirmation of permanent address and identification of the source of the funds.

Payment by Credit Cards Sotheby's accepts payment by credit card for Visa, MasterCard, and American Express only. Credit card payments may not exceed \$50,000 per sale. Payment by credit card may be made (a) online at <https://www.sothebys.com/en/invoice-payment.html>, (b) by calling in to Post Sale Services at +1 212 606 7444, or (c) in person at Sotheby's premises at the address noted in the catalogue.

Payment by Check Sotheby's accepts personal, certified, banker's draft and cashier's checks drawn in US Dollars (made payable to Sotheby's). While personal and company checks are accepted, property will not be released until such checks have cleared, unless you have a pre-arranged check acceptance agreement. Application for check clearance can be made through the Post Sale Services.

Certified checks, banker's drafts and cashier's checks are accepted at Sotheby's discretion and provided they are issued by a reputable financial institution governed by anti-money laundering laws. Instruments not meeting these requirements will be treated as "cash equivalents" and subject to the constraints noted in the prior paragraph titled "Payment By Cash".

Payment by Wire Transfer To pay for a purchase by wire transfer, please refer to the payment instructions on the invoice provided by Sotheby's or contact Post Sale Services to request instructions.

Sales and Use Tax New York sales tax is charged on the hammer price, buyer's premium and any other applicable charges on any property picked up or delivered in New York State, regardless of the state or country in which the purchaser resides or does business. Purchasers who wish

to use their own shipper who is not a considered a "common carrier" by the New York Department of Taxation and Finance will be charged New York sales tax on the entire charge regardless of the destination of the property. Please refer to "Information on Sales and Use Tax Related to Purchases at Auction" in the back of the catalogue.

Collection and Delivery

Post Sale Services
+ 1 212 606 7444
FAX: + 1 212 606 7043
uspostsaleservices@sothebys.com

Once your payment has been received and cleared, property may be released. Unless otherwise agreed by Sotheby's, all purchases must be removed by the 30th calendar day following a sale.

Shipping Services Sotheby's offers a comprehensive shipping service to meet all of your requirements. If you received a shipping quotation or have any questions about the services we offer please contact us.

Collecting your Property As a courtesy to purchasers who come to Sotheby's to collect property, Sotheby's will assist in the packing of lots, although Sotheby's may, in the case of fragile articles, choose not to pack or otherwise handle a purchase.

If you are using your own shipper to collect property from Sotheby's, please provide a letter of authorization and kindly instruct your shipper that they must provide a Bill of Lading prior to collection. Both documents must be sent to Post Sale Services prior to collection.

The Bill of Lading must include: the purchaser's full name, the full delivery address including the street name and number, city and state or city and country, the sale and lot number.

Sotheby's will contact your shipper within 24 hours of receipt of the Bill of Lading to confirm the date and time that your property can be collected. Property will not be released without this confirmation and your shipper must bring the same Bill of Lading that was faxed to Sotheby's when collecting. All property releases are subject to the receipt of cleared funds.

Please see the Conditions of Sale for further details.

Endangered Species Certain property sold at auction, for example, items made of or incorporating plant or animal materials such as coral, crocodile, ivory, whalebone, tortoiseshell, rhinoceros horn, rosewood, etc., irrespective of age or value, may require a license or certificate prior to exportation and additional licenses or certificates upon importation to another country. Sotheby's suggests that buyers check on their government wildlife import requirements prior to placing a bid. Please note that the ability to obtain an export license or certificate does not ensure the ability to obtain an import license or certificate in another country, and vice versa. It is the purchaser's responsibility to

obtain any export or import licenses and/or certificates as well as any other required documentation. In the case of denial of any export or import license or of delay in the obtaining of such licenses, the purchaser is still responsible for making on-time payment of the total purchase price for the lot.

Although licenses can be obtained to export some types of endangered species, other types may not be exported at all, and other types may not be resold in the United States. Upon request, Sotheby's is willing to assist the purchaser in attempting to obtain the appropriate licenses and/or certificates. However, there is no assurance that an export license or certificate can be obtained. Please check with the specialist department or the Shipping Department if you are uncertain as to whether a lot is subject to these export/import license and certificate requirements, or any other restrictions on exportation.

The Art Loss Register As part of Sotheby's efforts to support only the legitimate art market and to combat the illegitimate market in stolen property, Sotheby's has retained the Art Loss Register to check all uniquely identifiable items offered for sale in this catalogue that are estimated at more than the equivalent of US\$1,500 against the Art Loss Register's computerized database of objects reported as stolen or lost. The Art Loss Register is pleased to provide purchasers with a certificate confirming that a search has been made. All inquiries regarding search certificates should be directed to The Art Loss Register, First Floor, 63-66 Hatten Garden, London EC1N 8LE or by email at artloss@artloss.com. The Art Loss Register does not guarantee the provenance or title of any catalogued item against which they search, and will not be liable for any direct or consequential losses of any nature howsoever arising. This statement and the ALR's service do not affect your rights and obligations under the Conditions of Sale applicable to the sale.

SELLING AT AUCTION

If you have property you wish to sell, Sotheby's team of specialists and client services representatives will assist you through the entire process. Simply contact the appropriate specialist (specialist departments are listed in the back of this catalogue), General Inquiries Department or a Sotheby's regional office representative for suggestions on how best to arrange for evaluation of your property.

Property Evaluation There are three general ways evaluation of property can be conducted:

(1) In our galleries

You may bring your property directly to our galleries where our specialists will give you auction estimates and advice. There is no charge for this service, but we request that you telephone ahead for an appointment. Inspection hours are 9:30 am to 5 pm, Monday through Friday.

(2) By photograph

If your property is not portable, or if you are not able to visit our galleries, you may bring in or send a clear photograph of each item. If you have a large collection, a representative selection of photographs will do. Please be sure to include the dimensions, artist's signature or maker's mark, medium, physical condition and any other relevant information. Our specialists will provide a free preliminary auction estimate subject to a final estimate upon first-hand inspection.

(3) In your home

Evaluations of property can also be made in your home. The fees for such visits are based on the scope and diversity of property, with travel expenses additional. These fees may be rebated if you consign your property for sale at Sotheby's. If there is considerable property in question, we can arrange for an informal "walkthrough."

Once your property has been evaluated, Sotheby's representatives can then help you determine how to proceed should you wish to continue with the auction process. They will provide information regarding sellers' commission rates and other charges, auction venue, shipping and any further services you may require.

SOTHEBY'S SERVICES

Sotheby's also offers a range of other services to our clients beyond buying and selling at auction. These services are summarized below. Further information on any of the services described below can be found at sothebys.com.

Valuations and Appraisals Sotheby's Valuations and Appraisals Services offers advice regarding personal property assets to trusts, estates, and private clients in order to help fiduciaries, executors, advisors, and collectors meet their goals. We provide efficient and confidential advice and assistance for all appraisal and auction services. Sotheby's can prepare appraisals to suit a variety of needs, including estate tax and planning, insurance, charitable contribution and collateral loan. Our appraisals are widely accepted by the Internal Revenue Service, tax and estate planning professionals, and insurance firms. In the event that a sale is considered, we are pleased to provide auction estimates, sales proposals and marketing plans. When sales are underway, the group works closely with the appropriate specialist departments to ensure that clients' needs are met promptly and efficiently.

Financial Services Sotheby's offers a wide range of financial services including advances on consignments, as well as loans secured by art collections not intended for sale.

Museum Services Tailored to meet the unique needs of museums and nonprofits in the marketplace, Museum Services offers personal, professional assistance and advice in areas including appraisals, deaccessions, acquisitions and special events.

Corporate Art Services Devoted to servicing corporations, Sotheby's Corporate Art Services Department can prepare appraisal reports, advise on acquisitions and deaccessions, manage all aspects of consignment, assist in developing arts-management strategies and create events catering to a corporation's needs.

INFORMATION ON SALES AND USE TAX RELATED TO PURCHASES AT AUCTION

To better assist our clients, we have prepared the following information on Sales and Use Tax related to property purchased at auction.

Why Sotheby's Collects Sales Tax

Virtually all State Sales Tax Laws require a corporation to register with the State's Tax Authorities and collect and remit sales tax if the corporation either establishes or maintains physical or economic presence within the state. In the states that impose sales tax, Tax Laws require an auction house, with such presence in the state, to register as a sales tax collector, and remit sales tax collected to the state. New York sales tax is charged on the hammer price, buyer's premium and any other applicable charges on any property picked up or delivered in New York, regardless of the state or country in which the purchaser resides or does business.

Where Sotheby's Collects Sales Tax

Sotheby's is currently registered to collect sales tax in the following states: Alabama, California, Colorado, Connecticut, Florida, Georgia, Hawaii, Illinois, Indiana, Kentucky, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Nevada, New Jersey, New York, North Carolina, Ohio, Oklahoma, Pennsylvania, Rhode Island, South Carolina, Texas, Vermont, Washington and Wisconsin. For any property collected or received by the purchaser in New York City, such property is subject to sales tax at the existing New York State and City rate of 8.875%.

Sotheby's Arranged Shipping If the property is delivered into any state in which Sotheby's is registered, Sotheby's is required by law to collect and remit the appropriate sales tax in effect in the state where the property is delivered.

Client Arranged Shipping Property collected from Sotheby's New York premises by a common carrier hired by the purchaser for delivery at an address outside of New York is not subject to New York Sales Tax, but if the property is delivered into any state in which Sotheby's is registered, Sotheby's is required by law to collect and remit the appropriate sales tax in effect in the state where the property is delivered. New York State recognizes shippers such as the United States Postal Service, United Parcel Service, FedEx, or the like as "common carriers". If a purchaser hires a shipper other than a common carrier to pick up property, Sotheby's will collect New York sales tax at a rate of 8.875% regardless of the ultimate destination of the goods. If a

purchaser utilizes a freight-forwarder who is registered with the Transportation Security Administration ("TSA") to deliver property outside of the United States, no sales tax would be due on this transaction.

Where Sotheby's is Not Required to Collect Sales Tax Sotheby's is not required to collect sales tax on property delivered to states other than those listed above. If the property is delivered to a state where Sotheby's is not required to collect sales tax, it is the responsibility of the purchaser to self-assess any sales or use tax and remit it to taxing authorities in that state.

Sotheby's is not required to collect sales tax for property delivered to the purchaser outside of the United States.

Restoration and Other Services

Regardless of where the property is subsequently transported, if any framing or restoration services are performed on the property in New York, it is considered to be a delivery of the property to the purchaser in New York, and Sotheby's will be required to collect the 8.875% New York sales tax.

Certain Exemptions Most states that impose sales taxes allow for specified exemptions to the tax. For example, a registered re-seller such as a registered art dealer may purchase without incurring a tax liability, and Sotheby's is not required to collect sales tax from such re-seller. The art dealer, when re-selling the property, may be required to charge sales tax to its client, or the client may be required to self-assess sales or use tax upon acquiring the property.

Local Tax Advisors As sales tax laws vary from state to state, Sotheby's recommends that clients with questions regarding the application of sales or use taxes to property purchased at auction seek tax advice from their local tax advisors.

IMPORTANT NOTICES

Property Collection As of March 19, 2018, property that is sold, has bought in, or is to be returned to the consignor will be moved to our temporary offsite location at Crozier Fine Arts at One Star Ledger Plaza, 69 Court Street, Newark, NJ (SLP Warehouse). Certain items of property, including jewelry, watches, silver, works on panel and items valued \$10 million or more will remain at 1334 York Avenue. All other property will be moved to our temporary offsite location on the day the applicable sale concludes and is available for pickup after two business days. Invoices and statements will indicate your property's location.

Property Payment All property must be paid in full before collection or release from any Sotheby's location. Payment must be made through Sotheby's New York Post Sale Services by way of our acceptable forms of payment methods mentioned on your invoice. To arrange for payment, please contact Post Sale Services at +1 212 606 7444 or USPostSaleServices@sothebys.com. Payment will not be accepted at the offsite facility. Dealers and resale clients

should fill out the appropriate forms where applicable or contact Post Sale Services with any questions.

Loss and Liability Unless otherwise agreed by Sotheby's, all sold property must be removed from any of our premises (including the SLP Warehouse) by the buyer at their expense no later than 30 calendar days following its sale. Buyers are reminded that Sotheby's liability for loss or damage to sold property shall cease no later than 30 calendar days after the date of the auction.

Collection & Shipping The SLP Warehouse requires 24 hours advanced notice for collection of property. Please arrange this through our Post Sale Services team at +1 212 606 7444 or USPostSaleServices@sothebys.com.

For in-person collections at our offsite location, please alert Post Sale Services of your proposed collection date, ensure that all outstanding invoices have been paid for, and that you or your agent have the appropriate photo identification upon arrival.

If you are using your own shipper to collect property, please provide a letter of authorization and instruct your shipper to email their bill of lading to billsolading@sothebys.com and ensure the correct collection location is specified.

Sotheby's can arrange for delivery of your property through one of our contracted vendors or can coordinate pick up at our offsite location with you or your shipper directly. Please contact Post Sale Services at +1 212 606 7444 or USPostSaleServices@sothebys.com to start your collection process.

GLOSSARY OF TERMS

The following are examples of the terminology used in this catalogue. Please note that all statements made in this catalogue are made subject to the provisions of the Conditions of Sale and Terms of Guarantee printed in this catalogue:

GLOSSARY FOR PAINTINGS

Giovanni Bellini

The work is, in our best judgement, by the named artist. When the artist's forename is not known, a series of asterisks followed by the surname of the artist, whether preceded by an initial or not, indicates that the work is, in our best judgement, by the named artist.

Attributed to Giovanni Bellini

In our opinion, probably a work by the artist but less certainty as to authorship is expressed than in the preceding category.

Studio of Giovanni Bellini

In our opinion, a work by an unknown hand in the studio of the artist which may or may not have been executed under the artist's direction.

Circle of Giovanni Bellini

In our opinion, a work by an as yet unidentified but distinct hand closely associated with the named artist but not necessarily his pupil.

Style of...Follower of Giovanni Bellini

In our opinion, a work by a painter working in the artist's style, contemporary or nearly contemporary, but not necessarily his pupil.

Manner of Giovanni Bellini

In our opinion, a work in the style of the artist and of a later date.

After Giovanni Bellini

In our opinion, a copy of a known work of the artist.

The term signed and/or dated and/or inscribed means that, in our opinion, a signature and/or date and/or inscription are from the hand of the artist.

The term bears a signature and/or a date and/or an inscription means that, in our opinion, a signature and/or date and/or inscription have been added by another hand.

Dimensions are given height before width. Pictures are framed unless otherwise stated.

LOUIS XV STYLE ORMOLU-MOUNTED

MARQUETRY COMMUNE The inclusion of the word "style" in the heading indicates that, in our opinion, the piece was made as an intentional reproduction of an earlier style.

Important Notice Regarding Packing

As a courtesy to purchasers who come to Sotheby's to pick up property, Sotheby's will assist in packing framed paintings. Sotheby's is unable to remove canvases off stretchers or to roll works on paper. Purchasers are advised to contact an independent painting restorer to pack works in this manner.

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ONLINE AUCTION**
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**MUSIC, MEDIEVAL AND
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4 December
London

**FINE AUTOGRAPH LETTERS
AND MANUSCRIPTS FROM
A DISTINGUISHED PRIVATE
COLLECTION: PART II MUSIC,
AMERICANA, ENGLISH AND
CONTINENTAL LITERATURE**
13 December
New York

Guide for Absentee and Telephone Bidders

If you are unable to attend an auction in person, you may give Sotheby's Bid Department instructions to bid on your behalf by completing the form overleaf. This service is confidential and available at no additional charge.

General

This service is free and confidential.

Please record accurately the lot numbers, descriptions and the top hammer price you are willing to pay for each lot.

We will try to purchase the lot(s) of your choice for the lowest price possible and never for more than the maximum bid amount you indicate.

"Buy" or unlimited bids will not be accepted.

Alternative bids can be placed by using the word "OR" between lot numbers. Then if your bid on an early lot is successful, we will not continue to bid on other lots for you. Or, if your early bids are unsuccessful, we will continue to execute bids for alternative lots until a bid is successful.

Bids must be placed in the same order as in the catalogue.

The form should be used for one sale only – please indicate the sale number, title and date on the form.

Please place your bids as early as possible, as in the event of identical bids the earliest received will take precedence. Wherever possible bids should be submitted at least twenty-four hours before the auction.

Where appropriate, your bids will be rounded down to the nearest amount consistent with the auctioneer's bidding increments.

Absentee bids, when placed by telephone, are accepted only at the caller's risk and must be confirmed by letter or fax to the Bid Department on +1 212 606 7016.

Please note that the execution of written bids is offered as an additional service for no extra charge at the bidder's risk and is undertaken subject to Sotheby's other commitments at the time of the auction; Sotheby's therefore cannot accept liability for error or failure to place such bids, whether through negligence or otherwise.

Successful bidders will receive an invoice detailing their purchases and giving instructions for payment and clearance of goods. Unsuccessful bidders will be advised.

Please note Sotheby's reserves the right to refuse to accept payment from a source other than the buyer of record.

All bids are subject to the conditions of sale and terms of guarantee applicable to the sale printed in the sale catalogue. Buyer's premium in the amount stated in paragraph 3 of the Conditions of Sale in the back of the sale catalogue will be added to the hammer price as part of the total purchase price, plus any applicable sales tax.

In the event that you are successful, payment is due immediately after the sale unless otherwise agreed in advance. Payment may be made by bank transfer, credit card (which may be subject to a convenience fee), check or cash (up to US\$10,000). You will be sent full details on how to pay with your invoice. It is against Sotheby's general policy to accept single or multiple related payments in the form of cash or cash equivalents in excess of US\$10,000.

It is Sotheby's policy to request any new clients or purchasers preferring to make a cash payment to provide: proof of identity (by providing some form of government issued identification containing a photograph, such as a passport, identity card or driver's license) and confirmation of permanent address.

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Sotheby's will use information provided by its clients (or which Sotheby's otherwise obtains from eBay or other sources relating to its clients) for the provision of auction and other art-related services, loan services, client administration, marketing and otherwise to manage and operate its business, or as required by law, in accordance with Sotheby's Privacy Policy. This will include information such as the client's name and contact details, proof of identity, financial information, records of the client's transactions, and preferences. Some gathering of information about Sotheby's clients will take place using technical means to identify their preferences in order to provide a higher quality of service to them. Sotheby's may also disclose the client information to other Sotheby's Companies and/or third parties acting on their behalf to provide services for these purposes.

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If the client provides Sotheby's with information that is defined by European data protection laws as "sensitive", the client agrees that it may be used for the purposes set out above.

In the course of these disclosures, personal data collected in the European Economic Area may be disclosed to countries outside the European Economic Area. Although such countries may not have legislation that protects a client's personal information, Sotheby's shall take great care to keep such information secure and in accordance with European data protection principles. By agreeing to these Conditions of Business, the client is agreeing to such disclosure.

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Under European data protection laws, a client may object, by request and free of charge, to the processing of their information for certain purposes, including direct marketing, and may access and rectify personal data relating to them and may obtain more information about Sotheby's data protection policies by writing to Sotheby's, 34-35 New Bond Street, London W1A 2AA, or 1334 York Avenue, New York, NY 10021, Attn: Compliance, or emailing enquiries@sothebys.com. Sotheby's use of information collected about eBay users may differ and is governed by the terms of the eBay Privacy Policy and Sotheby's on eBay Live Auction Platform Privacy Policy, which can be found on the Sotheby's on eBay Live Auction Website.

Important

Please note that the execution of written and telephone bids is offered as an additional service for no extra charge, and at the bidder's risk. It is undertaken subject to Sotheby's other commitments at the time of the auction. Sotheby's therefore cannot accept liability for failure to place such bids, whether through negligence or otherwise. All bids will be executed and are accepted subject to the "Conditions of Sale" and "Terms of Guarantee" printed in the catalogue for the sale. Please note that a buyer's premium in the amount stated in paragraph 3 of the "Conditions of Sale" in the back of the sale catalogue will be added to the hammer price as part of the total purchase price, plus any applicable sales tax.

New Clients

Please note that we may contact you to request a bank reference. In addition Sotheby's requires a copy of government issued photo ID in order to generate a new account. If you have opened a new account with Sotheby's since 1 December, 2002, and have not already done so, you will be asked to present appropriate documentation confirming your identity before your lots or sale proceeds can be released to you.

For Written/Fixed Bids

- Bids will be executed for the lowest price as is permitted by other bids or reserves.
- "Buy" or unlimited bids will not be accepted and we do not accept "plus one" bids. Please place bids in the same order as in the catalogue.
- Always indicate a "top limit" — the amount up to which you would bid if you were attending the auction yourself.
- Alternative bids can be placed by using the word "or" between lot numbers.
- Where appropriate your written bids will be rounded down to the nearest amount consistent with the auctioneer's bidding increments.

For Telephone Bids

Please clearly specify the telephone number on which you may be reached at the time of the sale, including the country code. We will call you from the saleroom shortly before your lot is offered.

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Daredevil
No. 15

Autobahn
+ Autobahn 2

Wut
Apollo 14

Fred Kane
08-19-86

MARE HUMORUM

THIS PAGE
LOT 276

PALUS PUTREDINIS

SINUS AESTUUM

SINUS MEDII

40°

20°

10°

40°

Hippalus

MARE

RIPES RECTA

PURBACH

WERNER

COPERNICUS

Apollo 12

Apollo 14

FRA MAURC

PTOLEM

ALPHONSUS

ASZACHER

Bullialdus

NUBIUM

CASSENDI

ANTONNE

Hannibal

Kepler

Kepler

Kepler

Kepler

Kepler

Kepler

Archimedes

Timocharis

Eratosthenes

MARE V

Im

HI

ALBA

It

Ip

Em

Em

Em

Em

Em

Em

Em

Em

Em

Em

Em



MARE SERENITATIS

Mare Serenitatis

Mare Tranquillitatis

Mare Tranquillitatis

Apollo 11

CRATER

MARE NECTARIS

MARE CRISIUM

FECUNDITAS

VENEDIUS

PETAVIUS

10°

20°

50°

60°

POSIDONIUS

MONTES TAURUS

CLEOMEDES

MONTES

EMULUS

PALUS

APORUM

IGNUS

TRANQUILLITATIS

MARE

PPARCHUS

THEOPHILUS

MARE NECTARIS

LANGREN

Abulfeda

CRULLUS

CATHARINA

FRAGASTORIUS

Colombo

VENEDIUS

SICROSCO

Sombeth

PETAVIUS



02:21:51:16

"Ok Houston"

"The Moon is essentially grey.
No color"

"Looks like Plaster of Paris or
Sort of greyish beach sand..."

Paul Lane

Sotheby's EST. 1744

Collectors gather here.