

# THE AIR AND SPACE SALE

Wednesday September 27, 2017

New York



# Bonhams

NEW YORK



# THE AIR AND SPACE SALE

Wednesday September 27, 2017 at 1pm

New York

## BONHAMS

580 Madison Avenue  
New York, New York 10022  
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## PREVIEW

Friday, September 22,  
10am to 5pm  
Saturday, September 23,  
12pm to 5pm  
Sunday, September 24,  
12pm to 5pm  
Monday, September 25,  
10am to 5pm  
Tuesday, September 26,  
10am to 5pm  
Wednesday, September 27,  
10am to 12pm

## SALE NUMBER: 24253

Lots 1 - 213

## CATALOG: \$35

## BIDS

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[bids.us@bonhams.com](mailto:bids.us@bonhams.com)

To bid via the internet please visit  
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Please note that bids should be submitted no later than 24hrs prior to the sale. New Bidders must also provide proof of identity when submitting bids. Failure to do this may result in your bid not being processed.

## LIVE ONLINE BIDDING IS AVAILABLE FOR THIS SALE

Please email [bids.us@bonhams.com](mailto:bids.us@bonhams.com) with "Live bidding" in the subject line 48hrs before the auction to register for this service.

Bidding by telephone will only be accepted on a lot with a lower estimate in excess of \$1000.

Please contact client services with any bidding inquiries.

Please see pages 78 to 81 for bidder information including Conditions of Sale, after-sale collection and shipment. All items listed on page 81 and/or noted as W next to the lot number will be transferred to off-site storage, if not removed by 4.30pm September 28 2017.

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## ILLUSTRATIONS

Front cover: Lot 52  
Inside front cover: Lot 74  
Inside back cover: Lot 4  
Back cover: Lot 33

# INTRODUCTION

You may have noticed that we slightly rebranded our sale this year, moving from “The Space History Sale” to “The Air and Space Sale.” The traditional wisdom has always been that space and aviation are completely separate collecting areas. But we have always seen aviation and space as on a continuum, both areas exploring humanity's urge to transcend the boundaries of earth through flight.

Our Aviation section opens with several mid-19th century publications exploring the physics of flight, before moving to the turn of the last century, when aeronautical technology came into its own. We are thrilled to have Alexander Graham Bell's annotated photo album detailing his 1904 experiments with tetrahedral kite cells, followed by an actual example of one of the kite cells! We also have material from some of the earliest air meets as well as a large fragment of Hindenburg wreckage, salvaged from the crash site and fashioned into a table.

A highlight of our Wright Brothers section is a 10 x 12 inch section of the original 1903 Wright Flyer fabric, the largest fragment ever to come to auction. That lot is followed by a vintage model of the Wright Flyer fashioned out of another fragment of the 1903 plane, as well as several examples of vintage photography of the Wright brothers in flight including an impressive Jimmy Hare album of 1908 and 1909 Wright brothers flight demonstrations.

Our Space section opens with material as early as the 1920s with several examples of German publications on rocketry. From there we move to the Soviet space program and the birth of the space race with the offering of a vintage, full scale Sputnik-1 EMC/EMI lab model used in the testing stages, a cosmonaut's “penguin” jumpsuit, and cosmonaut Andrian G. Nicolaev's extensive on-board flight journal from the Soyuz-9 flight. The rest of the sale covers the US Space Program, from projects Mercury, Gemini, Apollo and the Space Shuttles. Highlights include the US Airforce School of Aviation Medicine's rhesus monkey “biopack,” used by either Sam or Miss Sam, the first US rhesus monkeys in space; Neil Armstrong's Apollo-era training glove; Buzz Aldrin's flown Apollo 11 ground module skin fragment; a lunar sample container decontamination bag; and Jim Irwin's mechanical pencil from Apollo XV.

Our sale previews September 22-26 in our New York galleries alongside our Exploration and Travel sale, with the auction taking place on the 27th. It's been both pleasurable and enlightening to put together these two sales of material recording humanity's push to explore outside the boundaries of the familiar. From the earth to the moon and beyond!

## ADAM STACKHOUSE

Senior Specialist

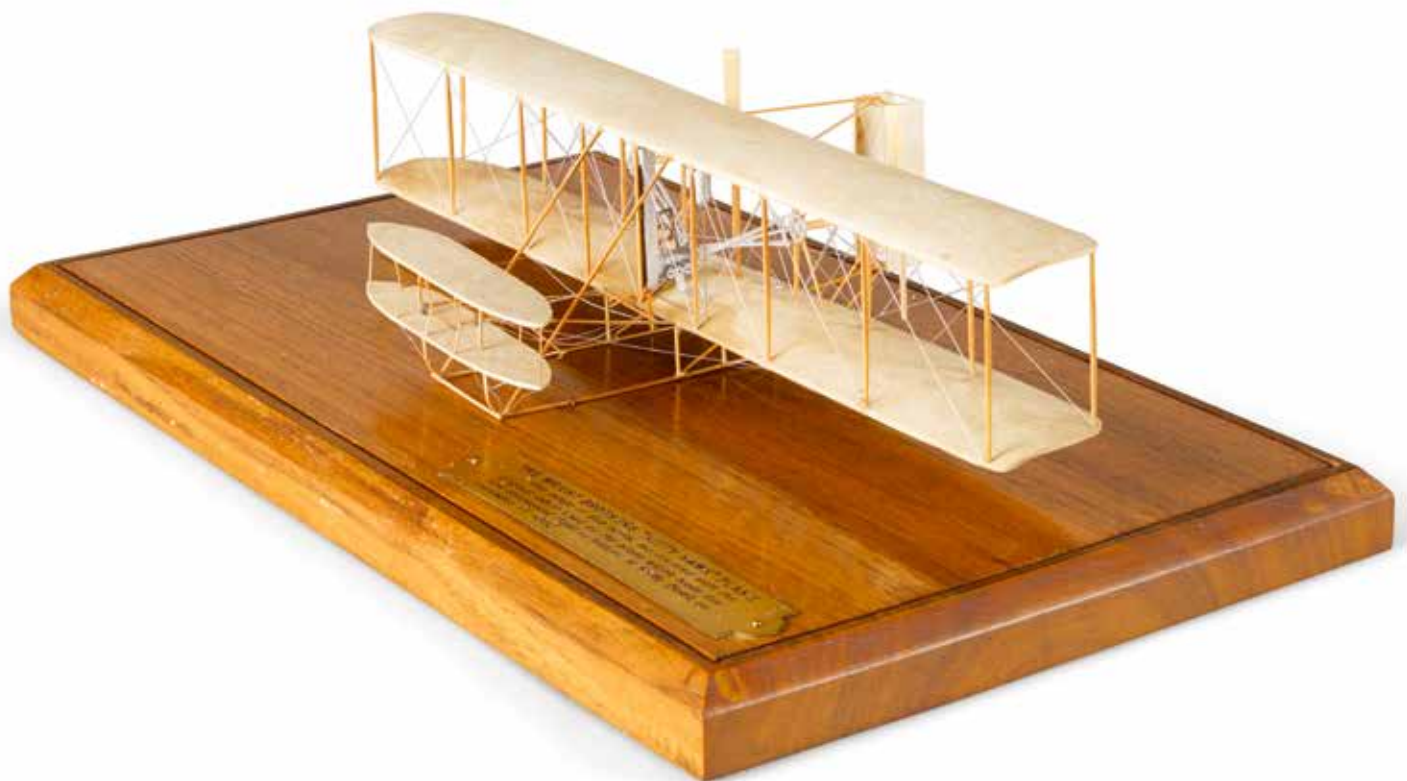
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### ORDER OF SALE:

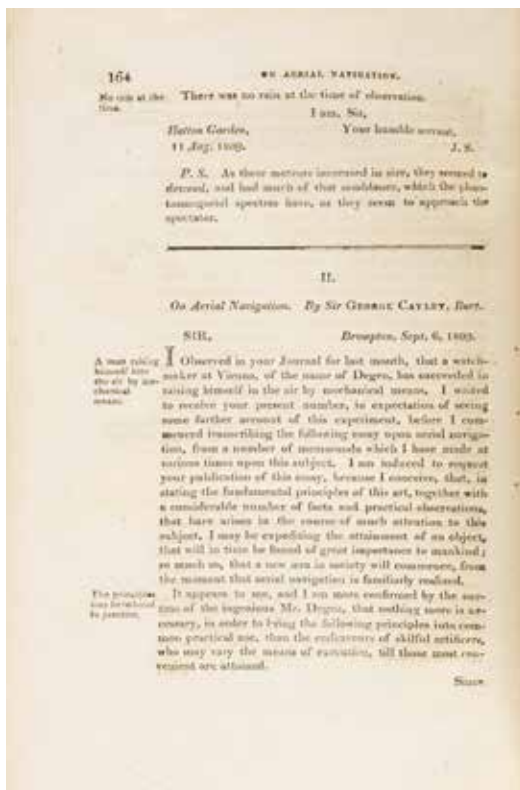
Aviation	1-16
Wright Brothers	17-39
Rocketry & Unmanned Exploration	40-51
Soviet & Russian Hardware, Gear & Models	52-67
American Gear, Hardware & Models	68-81
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Apollo Program through Apollo 10	116-127
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Shuttle Missions	207-213

# AVIATION, INCLUDING THE WRIGHT BROTHERS

Lots 1-39







1

1

#### SIR GEORGE CAYLEY'S 1809 ARTICLE, "ON AERIAL NAVIGATION"

Contained in: NICHOLSON, WILLIAM (compiler). *A Journal of Natural Philosophy, Chemistry and the Arts*. London: William Nicholson, 1809. 2 volumes, 8vo, light blue stiff wrappers with white spines. Cayley's paper on page 164.

SIR GEORGE CAYLEY (1773-1857) was a British engineer and Member of Parliament, who was the first to identify the four opposing forces of aerodynamics: weight, lift, drag and thrust. His carefully recorded experiments with models and gliders led to many of the concepts behind the eventual development of the airplane, including experiments with means of mechanical propulsion. His 1799 aircraft design contained many of the components that would be found in successful airplane designs more than a century later, including a fuselage, wings, a tail with vertical and horizontal control surfaces, and a propeller of revolving vanes.

US\$3,000 - 5,000

2

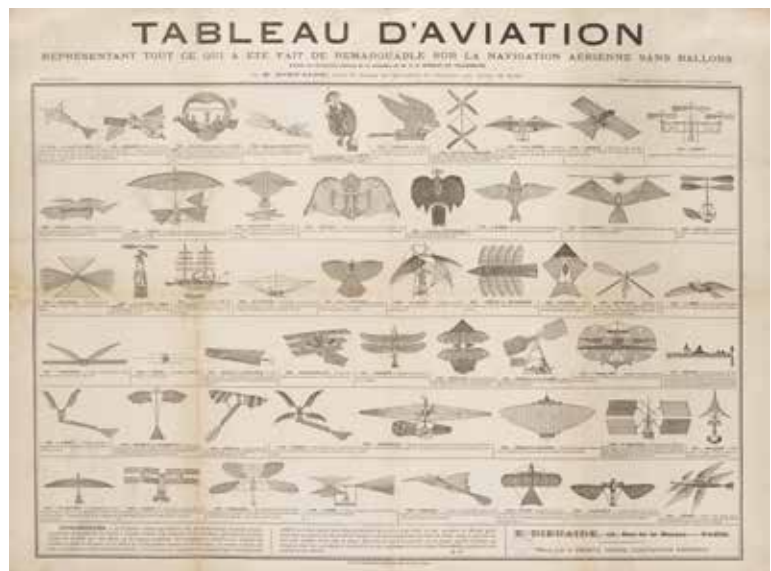
#### 1880 TABLEAU D'AVIATION POSTER

DIEUAIDE, EMMANUEL. Poster, *Tableau d'Aviation - Representant tout ce qui a été fait de remarquable sur la navigation aérienne sans ballons*, 21-3/8 x 28-1/4 inches (543 x 718mm), reproducing 53 line drawings of early flying machine designs, with individual captions, dating from da Vinci's 15th century design to Edison's 1880 machine, and including Dieuaide's own design of 1879. Float mounted on cloth-covered foam board.

DIEUAIDE was a member of the *Société française de navigation aérienne* who is believed to have been an engineer, though little is known about him. Abel Hureau de Villeneuve, publisher of the monthly magazine *Navigation Aérienne* described the poster as an excellent tool of dissemination of information, and Octave Chanute used the diagrams as a resource in his work.

US\$1,200 - 1,800

4 | BONHAMS



2

3

#### OCTAVE CHANUTE'S INFLUENTIAL EARLY WORK ON AVIATION

CHANUTE, OCTAVE. 1832-1910. 5 publications:

1. *Aerial Navigation*. New York: The Railroad and Engineering Journal, 1891. Small 8vo. Being a "lecture delivered to the students of Sibley College, Cornell University." Rebacked in red cloth with quarter morocco, retaining original orange wrappers.
2. *Progress in Flying Machines*. New York: The Railroad and Engineering Journal, 1894. 8vo. A compilation of articles previously published in the journal by Chanute, with vivid line drawings and etchings of various experimental flyers. Publisher's gray cloth.
3. *Gliding Experiments—An Address by Octave Chanute, C.E. Mem. W.S.E.*, from *Journal of the Western Society of Engineers*, Vol.2. Chicago: Published by the Society, n.d. [1898]. 8vo. Quarter calf over marbled boards.
4. *Aerial Navigation*, from *The Crank* (Sibley College journal), Vol. IV, No. 8, May 1890. Ithaca, NY: Cornell University, 1890. 4to. Containing a transcript of an address by Chanute. Blue paper wrappers.
5. *Aviation*, from *The Sibley Journal of Mechanical Engineering*, Vol. XI, No. 7, April 1897. Ithaca, NY: Cornell University, 1897. 8vo. Containing an abstract of an address by Chanute. White paper wrappers.

Chanute was a civil engineer and an aviation pioneer whose early articles on aviation were influential on the work of the Wright Brothers. He was in contact with Wilbur as early as 1900 and visited their camp at Kitty Hawk, North Carolina in 1901, 02 and 03. Chanute and Wilbur Wright had a falling out in January 1910 over the Wrights' suit against Glenn Curtiss that was not fully resolved at the time of Chanute's death.

US\$1,500 - 2,500



4

#### 4 STUNNING, ANNOTATED PHOTOGRAPH ALBUM DETAILING BELL'S EXPERIMENTS WITH TETRAHEDRAL KITES

BELL, ALEXANDER GRAHAM. 1847-1942. Photograph Album, entitled "Photographs taken at Beinn Bhreagh, 1904" (typed paper label on front), comprising approximately 320 gelatin silver prints, nearly all 3 x 4 inches and mounted two to a page (rectos only), dated and signed in initials by Bell ("A.G.B."), Beinn Bhreagh, Nova Scotia, dated June 16, 1904 to December 20, 1904 with the majority being from the summer. In original cloth-bound album.

##### Provenance

Catherine D. MacKenzie (d.1949), Bell's biographer and his secretary in Nova Scotia (according to information supplied by the current owner).

Bell's experiments with kites led to the development of the aileron (wing flap) and solutions for the problem of aircraft stability generally. In this album, Bell is most excited about his "long-tailed Oionos" kite of red silk and several photographs from June 30th bear long annotations by him and diagrams. The "Oionos" form was eventually used in the "Oionos 1" a tetrahedral triplane designed for powered and manned flight. About 19 photographs have annotations by Bell and nearly all are initialed by him. Photographs show tetrahedral kites in construction and in the air in a wide variety of shapes and sizes: horseshoes, rings, towers, etc. He employed local seamstresses and carpenters and even a draft horse, all of whom occasionally appear in the photographs. Just five of the photographs (appearing on one leaf) are slightly smaller and not initialed by Bell, these were taken by Bell's wife Mabel on July 28, 1904 and depict the family tugging on kite ropes. One of these depicts a small child clinging to the lead (not quite manned flight).

There are other of Bell's photograph albums pertaining to kite experimentation in the Gilbert H. Grosvenor Collection at the Library of Congress; but an example such as this in private hands is very rare.

US\$50,000 - 80,000



5

#### 5 ALEXANDER GRAHAM BELL'S TETRAHEDRON KITE CELL

Composed of six wooden spars, each 1/8 inch thick and 9-1/2 inches (241 mm) long, connected at the ends by sheet steel brackets to form equilateral triangles.

ONE OF BELL'S KITE CELL FRAMES used to construct his complex kites. His designs, which came in many shapes and sizes, all constructed of numerous small cells such as this one, led to the development of the aileron (wing flap) and solutions for the problem of aircraft stability generally. Bell had intended his designs to develop into powered, manned aircraft.

US\$4,000 - 6,000



6

6

### 1910 COLUMBUS AVIATION MEET PHOTOGRAPHS

COLLINS, JOHN F. 1888-1990. 11 sepia-toned silver gelatin print photographs, mounted to black paper album leaf, depicting aircraft in flight at a 1910 Columbus, Ohio aviation meet. 10 x 12 inches overall, the images in various sizes and shapes, the album page mounted to a later card, with penciled caption "John F. Collins - Columbus, OH 1910."

A little-known meet held close to the birthplace of aviation. There is scant information available on the Columbus meet, although it was sometime after the Los Angeles Dominguez Hills Air Meet in January of the same year, which was the first of such meets held in the U.S. John F. Collins, born in Marietta, Ohio, had a remarkably long photographic career, being active from 1904 to 1974.

US\$1,000 - 1,500



7

7

### CHICAGO AVIATION ARCHIVE

Extensive archive of material related to early aviation in and around Chicago, including:

1. Approximately 90 photographs, predominantly gelatin silver prints with some collotypes and half-tone prints, various sizes, 2-3/4 x 2 inches to 4-3/4 x 3-1/2 inches, c.1910, with some duplicates, most with captions on verso. Subjects include Illinois aviators as well as those from outside the state, including Glenn Curtiss, A.L Brown, Edwin Ely, J.C. Mars, Jimmy Warde, H.H. Dailey, Whipple S. Hall, and others, as well as images of various participating aircraft.
2. Seven glass plate positives, image size approximately 2 x 3 inches, with images believed to be J.C. Mars and Glenn Curtiss with his Curtiss Pusher, and a Farman airplane in 3 of the slides; all shot at an undetermined location, although possibly Chicago's Hawthorne Race Track during the Air Meet of October 1-8, 1910 or Cicero Flying Field c.1911.
3. Brochures, event lists, and published official rules of the Gordon Bennett meet.
4. Printed Membership Certificate for the Gordon Bennett Trophy, serial number 3340, unnamed, in dark orange and black ink, featuring an image of the trophy, inset portraits of former champions Glenn Curtis, Charles Weyman, and Claude Grahame-White, and the logo of the Aero Club of America on a background of a sky scene filled with a variety of flying machines. 9 1/2 x 13 inches.
5. Commemorate medal in bronze gilt and enamel, on green ribbon, with top bar reading "International Aviation Meet Association," together with 15 "Subscription Member" badges in bronze finished metal, pinback, with suspended red acetate ribbon.

An interesting view of Aviation in Chicago with images of some of the very earliest aviators as well as ephemera from the Gordon Bennett Aviation Cup meet. Photographs include numerous Curtiss aircraft, but also original aircraft built in Chicago and its surrounds such as by J.E. Mair who built a biplane in his backyard, H.H. Dailey who built a center-drop biplane, a biplane by James E. Case, a triplane by F.W. Kreck and Carl Bates who was building an aeroplane; also includes numerous images at Chicago's Hawthorne Field, images of J.C. Mars at the Mid-West Aviation meet, 1910 and in Omaha, Whipple Hall, who was the first man to cross the U.S.-Mexico border in an aeroplane, former bicycle champion turned aviator Charles W. Miller (also billed as one of the heaviest aviators at around 240lbs), etc. Should be seen.

US\$3,000 - 5,000



8

## LOS ANGELES AVIATION: INTERNATIONAL AIR MEET AT DOMINGUEZ HILLS

Archive of items related to the 2nd and 3rd Los Angeles International Air Meets at Dominguez Field, including a vintage photo album attributed to Cleve Shaffer, director of the Pacific Aero Club, containing 115 black and white photos, all approximately 5-1/2 x 3-1/2 inches; 2 modern 3-ring binders containing 50 similar photos of the meets; a binder containing correspondence between Van Griffith of the Aero Club of California, and Geneve Shaffer, totaling 18 typed letters; a group of ephemera related to Cleve Shaffer, with some hand-written notes, two photographs of Shaffer, and numerous press clippings.

The great success of the first Los Angeles International Air Meet at Dominguez Hills was followed by at least two more meets: the second beginning the day after Christmas 1910, the same year as the first, and the third in January of 1912. Images include Archie Hoxsey in a Wright flyer (both meets) and including an image of his bi-plane in a spiral dip, Glenn Curtis (2nd meet), Walter Brookins also in a Wright flyer performing a "spiral dip to death" and setting the altitude record, and other noted aviators including Eugen Ely, Charles Willard, Hubert Latham, Weldon Cooke, Cal Rogers, boy aviator Farnum Fish, Lincoln Beachey, Glen Martin, Clifford Turpin in a Wright aeroplane, English aviator James Radley in a Bleriot, etc. Also includes some images of the crowd in the grandstands and many shot of the aeroplanes.

CLEVE SHAFFER, HIS SISTER GENEVE AND VAN GRIFFITH were among the early luminaries of aviation in California. Cleve Shaffer was an engineer, who—aside from being director of the Pacific Aero Club—was also a member of the American Interplanetary Society and built experimental rocket motors in the 1930s. Geneve Shaffer is credited with being the first American woman to fly a glider. Van Griffith, son of Los Angeles industrialist Griffith J. Griffith, was a founding member of the Aero Club of California, and was responsible for 100 acres of Griffith Park being set aside as an airfield, on land that now houses part of the Griffith Park Zoo and the Gene Autry Western Heritage Museum.

US\$4,000 - 6,000

9

## WORLD WAR I AVIATION: FELIXSTOWE F.2A

Oil on canvas, 510 x 760 mm, signed ("N. Roe"), depicting a Felixstowe F.2A attacking German Zeppelin L.62, framed.

### Provenance

Butterfields, The Norm Flayderman Collection of Vintage Aviation Memorabilia, November 14, 2000, lot 4333, appears as catalog cover image.

The Felixstowe F.2A flying boat came late in the war, but served a crucial role as a long-range anti-submarine, anti-zeppelin weapon. The above painting expertly depicts a noted engagement from May 10, 1918 when N 4291 ("Old Blackeye") from Killingholme, flown by Captains Thomas Cooper Pattinson and Albert H. Munday, took down German Zeppelin L 62 (LZ 107) in flames over the Heligoland minefields. The event is recounted in detail on p 193 of Joseph Morris's *German Air Raids on Britain 1914-1918*.

US\$2,000 - 3,000

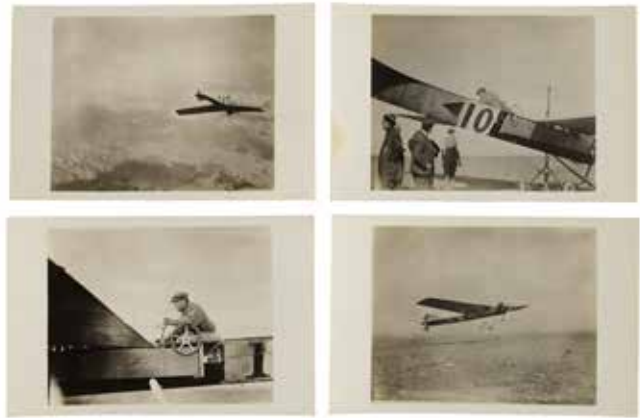
10

## EUROPEAN AVIATION: PHOTOGRAPHY

Collection of 23 gelatin silver print photographs, including a few copyprint photographs, most about 8 x 6 inches, some with retouching, many with press captions on versos.

Interesting collection of 1910s-1920s aviation imagery, most planes identified by type and/or event in the captions. Most notable are the images of the first flight of Poulet and Benoist from France to Melbourne, Australia and also van Ryneveld and Brand with the *Silver Queen* flown from England to South Africa in the first trans-African flight of 1920.

US\$1,000 - 1,500



8



9



10

11

### WING RIB AND FABRIC FROM THE DOUGLAS WORLD CRUISER *NEW ORLEANS*

Section of wooden wing rib, roughly triangular in shape, with segment of lacquered wing fabric. The wing rib consisting of three t-section wooden spars connected at two corners, with two diagonal cross-braces in the middle. The fabric coated in yellow dope, stapled to the wood, and inscribed in blue pen "*Douglas World Cruiser 'New Orleans' 1924 Round the World Apl to Sept.*" Overall length 27-3/4 inches (578 mm); fabric section 13-1/8 x 3-7/8 inches (333 x 98 mm).

11

#### Provenance

Lt. Edwin Hoffman Pitcher, to his son, Col. Edwin Hoffman Pitcher, Jr., to his grandson, Edwin Hoffman Pitcher III.

ARTIFACTS OF THE FIRST ROUND-THE-WORLD FLIGHT. The U.S. Army ordered five of these aircraft, developed from the Douglas DT torpedo bomber that was being supplied to the Navy. The planes were fitted with Liberty L-12 engines, and six fuel tanks carrying 644 gallons of fuel. One of the five planes served as a training aircraft, while the remaining four were readied for the historic expedition, and given the names *Seattle*, *Boston*, *Chicago* and *New Orleans*. The planes took off from Sand Point, Washington on April 6, 1924. *Seattle* and *Boston* crashed and were unable to carry on, but the training aircraft, christened *Boston II*, was sent to join the other two remaining aircraft in Nova Scotia. The planes finished their historic world tour in Seattle on September 28, 1924. *New Orleans* became part of the collection of the Los Angeles County Museum of Art, who loaned it out to the Air Force Museum in Dayton from 1957 to 2005, and the Museum of Flying in Santa Monica from 2012.

US\$3,000 - 5,000

12 <sup>□</sup>

### HUGO ECKENER AND THE AIRSHIP GRAF ZEPPELIN

Mounted display of memorabilia related to Dr. Hugo Eckener and the airship *Graf Zeppelin*, including a piece of the exterior cotton-canvas fabric of the airship, 2 x 8 inches, from its first transatlantic flight in 1928; a printed flight schedule for *Graf Zeppelin*; a 2-3/8 x 4-1/4 inch photograph of the zeppelin and another of Clara Adams, Dr. Hugo Eckener and others; and a descriptive note in an unknown hand: "This is a sample of the outer covering of the *Graf Zeppelin*. It was presented to Clara Adams from Dr. Hugo Eckener—1928. The *Graf Zeppelin* made the first flight across in 1928. The *Graf Zeppelin* never met with a disaster! The dirigible *Hindenburg* made its first flight in 1936. Clara Adams was a passenger on that great flight." Housed together in a 16 x 20-3/4 inch frame.

#### Provenance

Clara Adams.

DR. HUGO ECKENER (1868-1954) was the manager of the *Luftschiffbau Zeppelin* and the commander of the *Graf Zeppelin*. Working as a journalist before World War I, he wrote critically of the performance of Count von Zeppelin's early airships. After a meeting between the two men, however, he was hired as a publicist for the company. He

learned to operate the machines, obtained an airship license in 1911, and trained most of the German airship pilots during World War I. He took over management of the company after Count von Zeppelin's death in 1917. It was largely through Eckener's efforts that the ban on German airships was lifted in 1926, allowing trans-Atlantic commercial flights. Outspoken about his dislike of the Nazis, Eckener was sidelined during World War II and the commercial zeppelins were scrapped to build airplanes during the war.

US\$700 - 900

13

### WRECK OF THE HINDENBURG: LARGE SALVAGED GIRDER FASHIONED INTO A TABLE

Segment from the airframe of the zeppelin LZ 129 *Hindenburg*, consisting of a length of the triangulated and cross-braced painted aluminum girder measuring 28 inches (711mm) long and 13 inches (330mm) across each side. Mounted to a circular wooden base and top, both 16-1/2 inches (419mm) diameter. Brass plaque embedded in top bears the inscription: *Strut, From Hindenburg Zeppelin Destroyed By Fire May 6/37 Lakehurst, N.J..*

The wreckage of the *Hindenburg* was mostly melted for scrap, but not before a number of pieces were taken as souvenirs. 150,000 pounds of frame metal went to the National Bronze and Aluminum Foundry Co. in Cleveland, Ohio, whose contract forbade the use of the metal for "ash trays, book ends or any similar articles." Nonetheless, some pieces of the airframe were taken and workers used them to produce a small number of tables and other items.

US\$15,000 - 25,000

14

### FRENCH AVIATION ARCHIVE

SABLIER, GEORGES. First half of the 20th century.

Archive of material related to airplane designs. Two blue notebooks, 9-1/2 x 12-5/8 inches (241 x 320.7 mm). Together containing design plans (over 140 various technical drawings and folding copies), manuscript notes (mainly in French with some German), newspaper clippings, and photographs of the Sablier Type 52 [1952], one folder labeled *Biplan Sablier Type 8*.

An impassioned aviation designer, George Sablier is best known for his collaboration on plane designs with the Basque firm Vizcaína Aviación. This archive is an enthusiastic look at the mechanics of early twentieth-century aviation design, including plans for the Biplan Sablier Type 8 and photographs of the Sablier Type 52. Also included are Sablier's manuscript notes, typed pages, and research clippings on important figures in the history of flight, such as Santos Dumont, Samuel Pierpont Langley, and Lawrence Hargrave. Sablier also made sketches of these historical designs, such as Pichancourt's 1889 *L'Oiseau Mécanique* (Mechanical Bird), based on illustrations in Octave Chanute's *Progress in Flying Machines*.

US\$2,000 - 3,000

13



14



15

#### 15 **LOCKHEED SST PROTOTYPE MODEL**

Model of the Lockheed L-2000 7A airplane, 1/50th scale, approximately 49-1/2 x 27-1/2 x 8-1/8 inches (1,257 x 699 x 206 mm). Designed by Richard Hepe (1923-2015), unverified manufacturer but likely a prototype model built by Lockheed in Burbank prior to the June 27, 1966 unveiling of their full-scale L-2000. This design differs slightly from the final model in window configuration. Fiberglass over wood, with a mounting bracket under the fuselage.

Rare 1:50 scale model of the Lockheed L-2000 airplane designed for a US government competition to build a Super Sonic Transport plane. The L-2000 was designed under chief engineer and future Lockheed president, Richard Hepe. In the early-1960s President John F. Kennedy and the Federal Aviation Agency launched a program to design a commercial US-manufactured supersonic passenger plane in hopes of competing with the French Concorde passenger jet. Lockheed and Boeing went head to head, and despite praise for Lockheed's simple and sleek design, the Boeing 2707 was eventually selected for funding December 31, 1966 (although the program was ultimately canceled in 1971).

**US\$3,000 - 5,000**

#### 16<sup>□</sup> **CONCORDE JET PROMOTIONAL MODEL**

1:42 scale painted metal model of the Concorde supersonic jet in Eastern Airlines livery. Mounted on black wire tripod stand. Maker's label of Space Models Ltd., of Feltham, Middlesex, U.K. on bottom of fuselage. Length 24 inches (610 mm); height on stand 8-1/4 inches (210 mm).

NEVER FLOWN IN THIS LIVERY, the Concorde jet was a joint development of the British and French aviation industries. Many airlines took non-binding options on the jet, including six options obtained by Eastern Airlines, but only British Airways and Air France owned any of the planes. Eastern Airlines cancelled its options in February 1973.

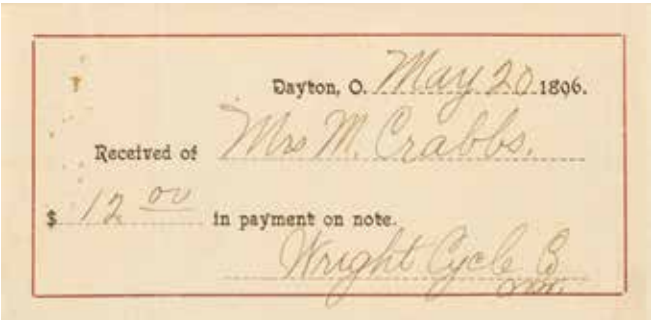
**US\$1,500 - 2,000**



16

WRIGHT BROTHERS

Lots 17-39



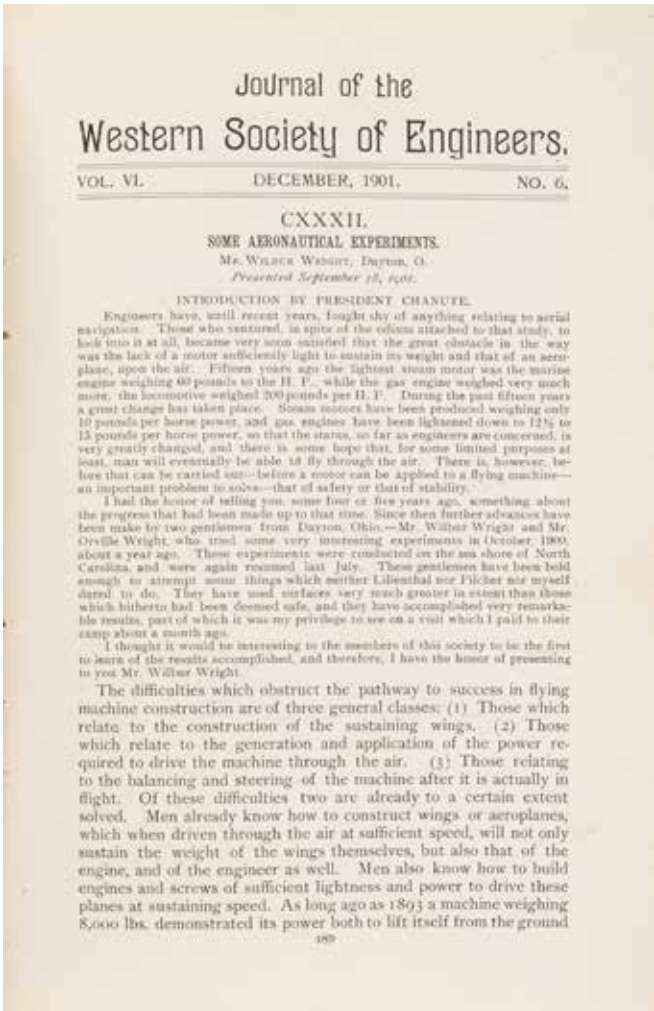
17

17  
WILBUR WRIGHT SIGNED RECEIPT FROM THE CYCLE COMPANY

WRIGHT, WILBUR. Document Signed ("Wright Cycle Co."), partially printed and accomplished in autograph, 2-1/4 x 4-1/2 inches (114 x 57 mm), [Dayton, Ohio], May 20, 1896, reading "Received of Mrs. M. Crabbs - \$12.00 in payment on note - Wright Cycle Co."

The Wright brothers operated a print shop and bicycle shop simultaneously from a rented location at 22 South Williams Street in Dayton, Ohio. It is likely that they printed this receipt upstairs in their own shop, leaving a space for the company name at the lower right so they could write in whether the receipt was for the Wright Cycle Company or the Wright Printing Offices.

US\$2,000 - 3,000



18

18  
FIRST PUBLICATION OF WILBUR WRIGHT'S ADDRESS ON AERONAUTICS

WRIGHT, WILBUR. "Some Aeronautical Experiments," in *Journal of the Western Society of Engineers*, Vol. VI, No. 6, December 1901, p 489. Bound in quarter calf and marbled boards with all of Volume VI (1901) in a single volume.

Wilbur Wright delivered his address before the Western Society of Engineers at the invitation of Octave Chanute, at the Monadnock Building in Chicago, in September 1901. It was first printed here, and then reprinted in a variety of other journals and magazines, including *Scientific American* and the annual report of the Smithsonian Institution.

US\$1,500 - 2,500





19

**19  
LARGEST ORIGINAL FABRIC PIECE FROM THE WRIGHT 1903  
KITTY HAWK FLYER OFFERED AT AUCTION**

Irregularly shaped, unbleached muslin swatch, approximately 12 x 10 inches. Together with a card with typed provenance note: *"This is a piece of the original fabric covering the wings of the Kitty Hawk with which Orville Wright made the first successful flight in history on December 17, 1903. I got it from the estate of Orville Wright."* Signed in ink "Lester D. Gardner" at lower right.

**Provenance**

The Otto Kallir Collection of Aviation History, Sotheby's June 14, 1993.

Lester Gardner was the Editor in Chief of *Aviation and Aeronautical Engineering* from 1916 to 1921, a founder of the Institute of Aeronautical Sciences, and a friend of Orville Wright. He worked with Wright to arrange for the first public display of the original flyer at Massachusetts Institute of Technology in 1916. The above fabric appears to be the largest piece ever offered at auction, many times the size of swatches generally offered.

**US\$15,000 - 25,000**



20

**20  
FABRIC SEGMENT FROM THE KITTY HAWK FLYER**

Triangular segment of fabric from the 1903 Wright Flyer, measuring approximately 2 inches (51 mm) per side, affixed to an 8 x 10 inch card with image of the flyer taking off at Kitty Hawk, printed with a certificate of authenticity reading *"Original Fabric from Kitty Hawk 'Wright Flyer' Certificate for Dr. Otto Kallir.... I certify that this piece was used in the first successful flight in history by Orville Wright on December 17, 1903 at Kitty Hawk, N.C."* bearing the signature of Lester D. Gardner.

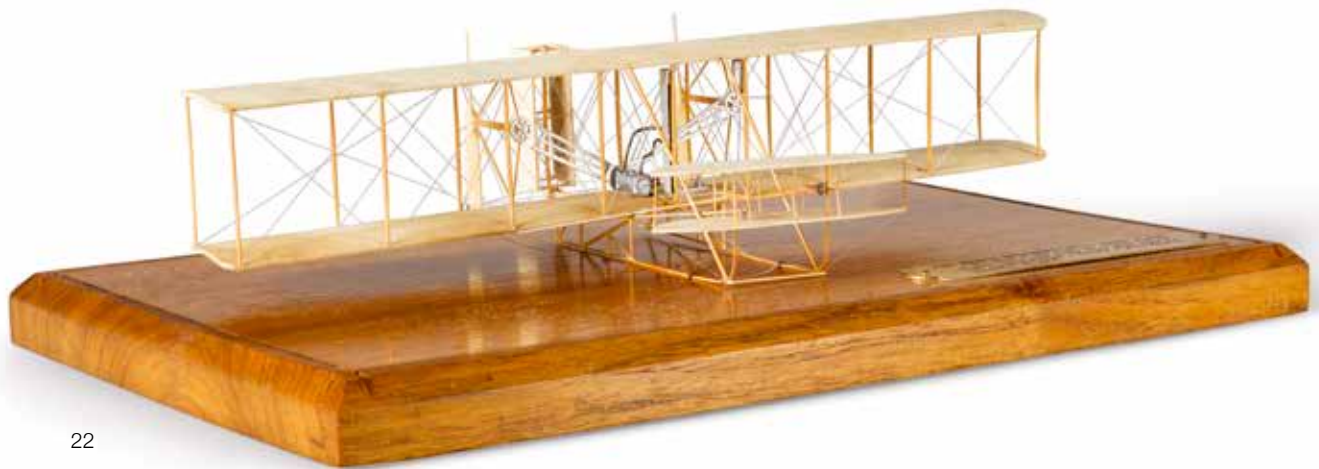
**Provenance**

The Otto Kallir Collection of Aviation History, Sotheby's June 14, 1993.

WITH: Two pieces of wood from the Wright's hangar at Kitty Hawk, on small souvenir cards bearing photos of the hangar, printed *"The First Hangar - Kitty Hawk - A true piece of the First Airplane Hangar in the World."* Each piece of wood approximately 1/2 x 1/4 inches.

**US\$5,000 - 7,000**





22

21

#### 1903 WRIGHT FLYER MODEL IN SILVER

1:32 scale model of the Kitty Hawk flyer of 1903 in silver, partially gilt, with separate wooden base bearing engraved silver plaque, reading "The Kitty Hawk / On the sands of Kitty Hawk, North Carolina / Orville and Wilbur Wright successfully made the / first flight in a powered aircraft."

#### Provenance

Christie's South Kensington, 29 April 1991, lot 285.

US\$1,500 - 2,500

22

#### WRIGHT FLYER MODEL MADE FROM THE ORIGINAL FABRIC OF THE FIRST AIRPLANE

1:42 scale model of the 1903 Wright Flyer flown at Kitty Hawk, in wood, covered with original fabric taken from the Wright airplane itself. 11-1/2 x 5-1/2 x 3-1/2 inches (292 x 140 x 89 mm), mounted to wooden base with Plexiglas cover.

Accompanied by letter of authenticity by Lester Gardner, stating "When Orville Wright, at my suggestion, assembled the Kitty Hawk machine for public exhibition for the first time... he found that the original fabric could not be used and substituted new fabric... When he died, his executors found that he had preserved some of the original coverings of the wings and entrusted them to me for distribution to notable aeronautical friends."

#### Provenance

The Otto Kallir Collection of Aviation History, Sotheby's June 14, 1993.

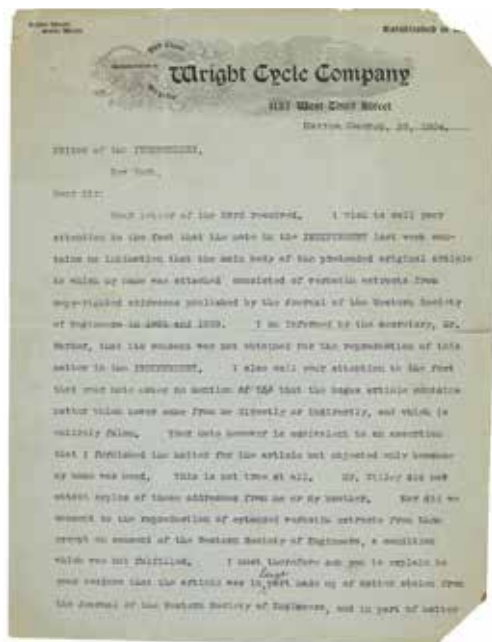
In 1916, Orville Wright partially re-covered the wings of the 1903 flyer prior to its display at Massachusetts Institute of Technology. Later, in late 1926 and early 1927, Orville completely re-covered the original 1903 Flyer in new muslin fabric, in preparation for sending it to be displayed in London. Intended to pressure the Smithsonian Institution into recognizing the accomplishment of the Wright Brothers, the London exhibit ultimately forced the Smithsonian to relent in order to obtain the original flyer for display.

Lester Gardner was the Editor in Chief of *Aviation and Aeronautical Engineering* from 1916 to 1921, a founder of the Institute of Aeronautical Sciences, and a friend of Orville Wright. He worked with Wright to arrange for the first public display of the original flyer at M.I.T. in 1916.

US\$30,000 - 50,000



21



24

23

#### SIGNATURES OF BOTH WRIGHT BROTHERS

Half-tone photographic print signed ("Orville Wright"), depicting the original Wright Flyer taking off with Orville standing alongside, captioned "First Man-Flight, December 17, 1903 - Kitty Hawk, N.C." Together with clipped paper signed ("Wilbur Wright"), both matted and framed together. Image size 5 x 3 inches.

US\$1,200 - 1,800

24

#### WILBUR WRIGHT DEFENDS HIMSELF FROM THE PRESS

Typed Letter Signed ("Wilbur Wright"), 2 pp, 4to, Dayton, Ohio, February 20, 1904. To the editor of the New York *Independent*, typed on blue paper with the letterhead of the Wright Cycle Company. WITH: The article referenced above, "The Experiments of a Flying Man," published in *The Independent* Vol. LVI, No. 2879, February 4, 1904. Bound with all issues for volume LVI, in green cloth library binding, bearing library stamps.

WRIGHT EXCORIATES *THE INDEPENDENT* for plagiarism and misrepresentation of facts, stating "the main body of the pretended original article to which my name was attached consisted of verbatim extracts from copy-righted addresses published by the Journal of the Western Society of Engineers...." He goes on to raise the level of his attack, saying "the bogus article contains matter which never came from me directly or indirectly, and which is entirely false." Here, Wilbur shows that he is not afraid to take on the press to defend his reputation and set the record straight.

US\$5,000 - 7,000



25

25

#### JAMES HARE ALBUM CONTAINING 55 PHOTOGRAPHS OF WRIGHT BROTHERS

Photo album and letter of James Hare, who photographed the Wright Brothers' demonstration flights in 1908 and 1909, comprising:

1. Album, oblong folio, mounted with 55 gelatin silver prints, various sizes ranging from 4-1/4 x 3-1/4 inches to 6 x 4 inches. Captions include "Correspondents crossing sand dune to see if Wright Brothers are actually flying at Kill Devil Hill N.C."; "First [published] picture of airplane actually flying [May 1908]" with the word "published" and the date added later; "Engine started, propellers working" (at Fort Myer); "Last picture of Lieut. Selfridge before the accident" and "Wilbur takes a canoe aloft at Governor's Island." Most of the photographs are placed in sequential order depicting lift off, flight, and landing, with multiple shots of planes in mid-flight. The album also includes crowds gathering to watch the flight, such as Robert Taft's viewing party which included his son Charlie, and the Wright Brothers receiving medals. 9 images have been removed, leaving residue from corners.

2. Autograph manuscript, unsigned, but ostensibly in the hand of Jimmy Hare, 8 pp, 4to, attesting to his experience photographing the Wright Brothers' flights. "For many years I had been assured by admiring friends that I was the first photographer to get a picture of the Wright bros in their aeroplane ... but of late years I have seen a photograph ... taken by the Wright Bros ... I still believe mine was the first published in the *Colliers*...." There are line-outs and notations in the text, indicating it was a draft.

#### Provenance

Christie's, 16 April 1991.

English-born photojournalist James H. (Jimmy) Hare became perhaps the most prolific photographer for *Collier's Weekly* after photographing the events of the Spanish American War. He photographed the Wright brothers flights at Kill Devil Hills in 1908, and again at Fort Myer that year. Hare's photographs were published in *Collier's Weekly* on May 30, 1908, marking the first appearance of the Wright Flyer in print. He also took two of the last photographs of Lieut. Selfridge (included in this album), the first man to die from an aviation accident, moments before his fatal flight. After documenting five wars and numerous historical events in the early 20th century, Hare retired in 1929.

US\$20,000 - 30,000



26

26

#### **WILBUR WRIGHT IN FRANCE**

**FIFTEEN PHOTOGRAPHS OF WRIGHT'S TRIP IN 1908.** Gelatin silver prints of Wilbur Wright and the flyer, along with other subjects, various sizes ranging from 4-1/2 x 6-1/4 inches to 6 x 8 inches, and one 7 x 9 inches on larger paper. Two mounted on board, otherwise unmounted.

Subjects include portraits of Wilbur Wright, images of Wright in the flyer, walking back to the hangar after his first flight, examining a *voiturette* race car, getting an automobile ride with Léon Bollée at the wheel, and four images showing damage to the flyer after a crash on August 13, 1908.

**US\$3,000 - 5,000**



27

27

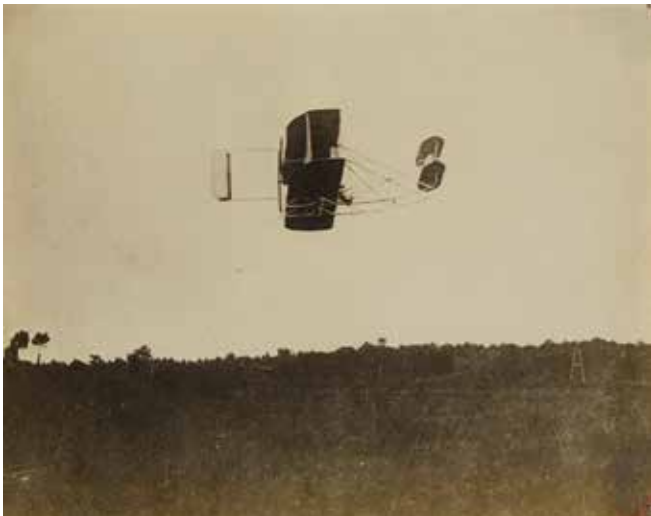
#### **FOUR PHOTOS OF WILBUR WRIGHT AT LE MANS, 1908**

Four photos, gelatin silver prints, approximately 4-1/4 x 6-3/8 inches each. Taken at Le Mans in 1908, probably by Léon Bollée, two of the photos depict Wilbur aloft in the Wright Flyer, while the other two depict the crowds of onlookers at the field. Individually matted.

#### **Provenance**

Christie's New York, April 8, 1993, lot 41.

**US\$1,000 - 2,000**



28

28

#### **JIMMY HARE AND LÉON BOLLÉE PHOTOS OF WRIGHT BROTHERS IN FLIGHT**

Two photographs, gelatin silver prints, of Wright Flyer airborne:

1. HARE, JAMES. Orville Wright, circa 1908/1909, 4 x 6 inches, with *Collier's Weekly* stamp on reverse.

2. BOLLÉE, LÉON. Wilbur Wright at Le Mans, 1908, 4-1/4 x 5-1/4 inches.

Both individually matted.

#### **Provenance**

Sotheby's New York, October 15, 1992, lot 66.

English-born photojournalist James H. (Jimmy) Hare became perhaps the most prolific photographer for *Collier's Weekly* after photographing the events of the Spanish American War. He photographed the Wright brothers flights at Kill Devil Hills in 1908, and again at Fort Myer that year.

Léon Bollée, French car manufacturer, was an aviation enthusiast who encouraged Wilbur Wright to bring his aeroplane to Le Mans, France, where he could put on demonstration flights to a less skeptical public than in the United States. Bollée allowed the use of his factory to repair the plane when it was damaged at French Customs, and took numerous photographs of the aerial demonstrations.

**US\$1,000 - 1,500**

29

**STUDIO PORTRAIT OF WILBUR WRIGHT, TAKEN IN FRANCE**

Portrait photograph, gelatin silver print on card mount, 10/3/4 x 7-3/4 inches (273 x 197 mm) overall, with photographer's name *J. Carpent - Le Mans* printed at lower right. Inscribed in pencil on reverse *Wilbur Wright at Le Mans - 1909 - Property of Léon Bollée*. Mounted under glass with fabric tape edging.

US\$1,500 - 2,500

30

**WILBUR WRIGHT AT LE MANS**

A collection of documents concerning Wilbur Wright and his 1908 flight at Le Mans (France), including:

1. Four collotype postcards signed ("Wilbur Wright,") 5-1/2 x 3-1/2 inches (140 x 89 mm).
2. 12 gelatin silver print photographs, most 9 x 7 inches, largest 15 1/2 x 12 inches, depicting the Léon Bollée factory, automobiles and one image of the Wright flyer engine being serviced at the factory.
3. Two unsigned collotype postcards.
4. Two bound booklets of 25 commemorative "La Conquete de l'Air" collotype postcards, undated, but after 1912 (one lacking covers).

**SOUVENIRS OF WILBUR WRIGHT FROM A WORKER AT THE LÉON BOLLÉE FACTORY.** Wilbur Wright chose the Hunaudières race track near Le Mans, southwest of Paris, as a location for his 1908 flight demonstration at the urging of French auto maker Léon Bollée. Because the flyer suffered extensive damage when inspected by French customs officers, Wright needed the factory to help him repair the plane, although he had to do most of the repair work himself. The postcard booklets included with this lot date from after Wilbur's death, as attested by the illustration in the inside back cover, which is a facsimile of the telegram received by Bollée from Orville Wright in 1912, informing him of Wilbur's death.

US\$10,000 - 15,000

31

**WRIGHT EXHIBITION AT FORT MYER, VA**

ASHTON, HENRY, photographer. Three photos of Wright Airplanes, gelatin silver prints, all individually matted:

1. Wright Flyer airborne at Fort Myer, Virginia, 1908, 4-1/8 x 3-5/8 inches.
2. Pulling Orville from the wreck at Fort Myer, Virginia, September 17, 1908, 4-1/4 x 3-3/4 inches.
3. Archie Hoxsey in Wright Flyer, 1910, 4-3/4 x 3/3/4 inches.

**Provenance**

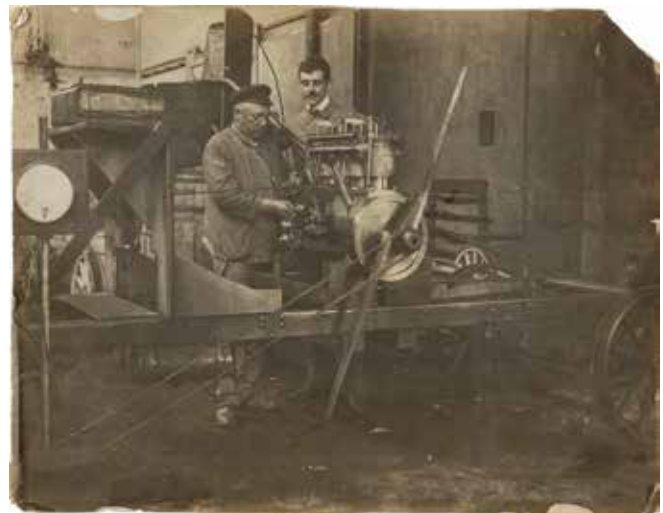
Swann Galleries, April 7, 1993 and April 22, 1994.

Archie Hoxsey was an auto mechanic who became acquainted with the Wright Brothers around the beginning of 1910 and taught flying at their flight school in Montgomery, Alabama. He was the first to fly an airplane at night, took Theodore Roosevelt up for a flight, and set a flight altitude record of 11,474 feet in December 1910. A few days later, he died in a crash while attempting to set a new record.

US\$1,000 - 2,000



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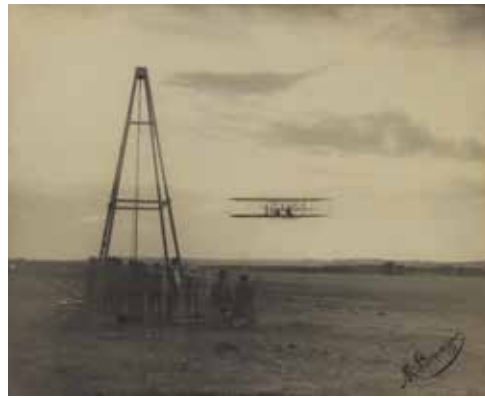


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32

#### **HARE PHOTOS OF ORVILLE'S CRASH AT FORT MYER**

HARE, JAMES H. 1856-1946.

*Two Photos of the Wright trials at Fort Myer in 1908.* Two gelatin silver print photographs, 5 x 7 inches and 4-1/2 x 5 inches, mounted and matted, depicting the Wright flyer airborne at Fort Myer, Virginia in 1908, and the crowd rushing to the scene of Orville's crash.

English-born photojournalist James H. (Jimmy) Hare became perhaps the most prolific photographer for *Collier's Weekly* after photographing the events of the Spanish American War. He photographed the Wright brothers flights at Kill Devil Hills in 1908, and again at Fort Myer that year. After documenting five wars and numerous historical events in the early 20th century, he retired in 1929.

**US\$1,500 - 2,000**

33

#### **LARGE PHOTO OF A WRIGHT FLYER AT CAMP D'AUVOURS**

BRANGER, MAURICE-LOUIS, photographer. Sepia toned gelatin silver print, 16-3/4 x 19-7/8 inches, signed ("M. Branger"), mounted and framed, depicting the Wright flyer over the field at Camp d'Auvours, with the tower of the launching mechanism in view to the left, among a group of onlookers. Framed and glazed.

An unusually large image for the period, this shot shows detail of the tower that was developed by the Wrights to accelerate the plane down its track for takeoff, using a simple weight and pulleys to provide the motive force. Because the plane is moving toward the tower, and not away from it, we can see that the craft has made at least one complete turn, and returned to its starting point, and shows no sign of stopping. This may be the flight made on January 1, 1909, when Wilbur Wright set a duration and distance record in his 1907 Wright flyer, flying approximately 77 miles in 2 hours and 20 minutes. The man on the far right of the group, sitting on a bench, may be Léon Bollée.

**US\$2,000 - 3,000**

34

#### **A 1909 BRONZE BUST OF ORVILLE WRIGHT**

CARVIN, LOUIS-ALBERT. 1875-1951.

Portrait bust in patinated bronze, inscribed on base at front "Orville Wright," signed "Hotel GASSION - 13-2-1909 - L.CARVIN" on left side of base. Height: 9 inches (228 mm).

French sculptor Louis-Albert Carvin was a member of the *Société des Artistes Français*, known primarily for his sculptures of animals. He exhibited at the *Salon des Artistes Français* from 1894 to as late as 1933, and sculpted the trophy presented to the Wright Brothers by the Aéro Club de la Sarthe on May 1, 1909. Entitled *La Muse de l'Aviation*, that trophy still resides at the Wright's family home, Hawthorne Hill, in Dayton Ohio.

**US\$2,000 - 3,000**

35

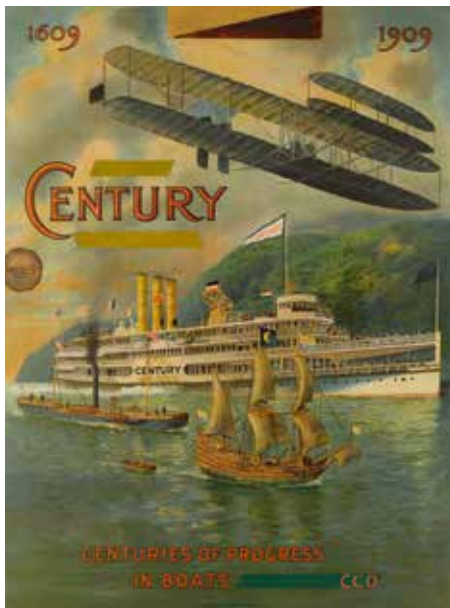
#### **WRIGHT BROTHERS IN FLIGHT**

J. MUNIER. "*L'Exhibition Aérienne.*" Photolithograph print, 11-3/8 x 16-1/4 inches (288 x 414 mm), no date, but c.1908. showing an aviation meet with multiple aircraft in the sky simultaneously while a crowd in the foreground looks on in amazement. The aircraft incorporated in this image, almost certainly drawn from contemporary photographs, include the Wright Flyer featured prominently in the foreground, as well as what appear to be Levavassuer's Gastambide-Mengin machine, and Goupy's triplane, as well as a rigid airship and a blimp.

The arrival of Wilbur Wright in Paris in 1908 created a great deal of excitement among the French public, and a boom in everything related to aviation. This somewhat exaggerated image seems to have been printed to sell to a crowd eager to gather everything related to aviation.

**US\$1,000 - 1,500**





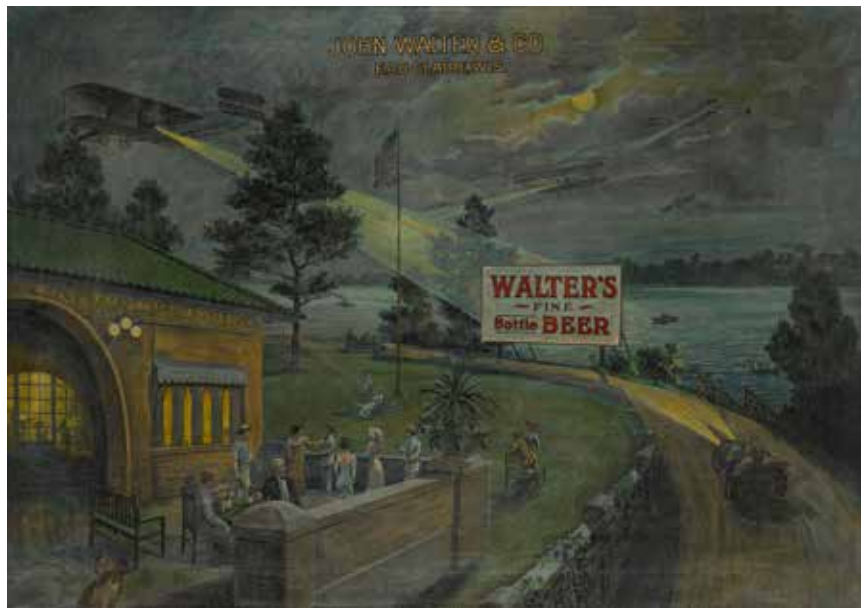
36

36  
**HUDSON-FULTON CELEBRATION POSTER WITH WRIGHT FLYER**

*Centuries of Progress in Boats.* Unknown artist, chromolithograph poster for the 1909 Hudson-Fulton celebration, 35 x 25 inches (889 x 635 mm) depicting three boats on the Hudson river: a large "modern" steamship emblazoned *Century*, Robert Fulton's first paddle steamer, and Henry Hudson's ship *Halve Maen*, with a Wright aeroplane flying over. Text on the poster reads 1609-1909 - *Century* - *Centuries of Progress in Boats*. Some areas overpainted, possibly to change text. Seal of the Hudson-Fulton Celebration affixed to left edge of image, dated October 2-4, 1909.

The Hudson-Fulton Celebration of 1909 commemorated the 300th anniversary of Henry Hudson's journey up the river that now bears his name, and the 100th anniversary of Robert Fulton's introduction of the paddle steambot. Replicas of both Hudson's and Fulton's boats were built for the occasion and showcased alongside modern ships, including the ill-fated ocean liner *Lusitania*. Wilbur Wright made the first public flights of the Wright Flyer in the United States, flying from Governor's Island around the Statue of Liberty, and then up the Hudson River to the General Grant Memorial and back. At the time, New York's population was around 4.75 million people, very few of whom had ever seen an airplane in flight.

US\$1,000 - 2,000



37

37  
**WRIGHT FLYER FEATURED IN ORIGINAL BEER ADVERTISEMENT ART**

Anonymous oil on canvas, 24 x 34 inches (610 x 864mm), c.1909, depicting a dramatic nighttime scene of guests on the patio of a pub, while an automobile and a bi-plane pass by, shining their headlamps on a billboard that reads *Walter's Fine Bottle Beer*. At top center in gold lettering is the brewer's name *John Walter & Co. - Eau Claire, Wis.*

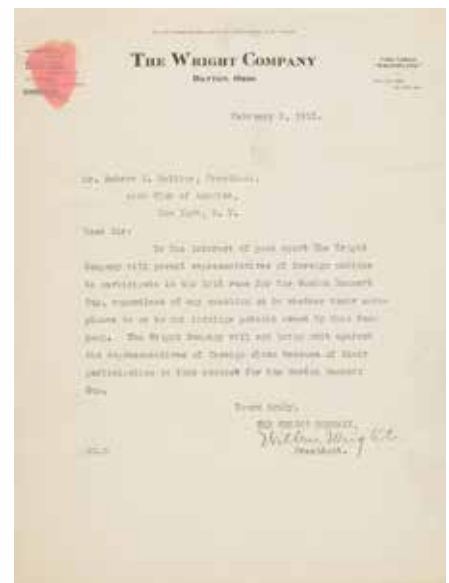
THE EXCITEMENT OF EARLY AVIATION USED FOR MARKETING. Here an old-fashioned product is associated with exciting new technologies at the time: The airplane and the automobile.

John Walter & Co. was founded in Spencer, Wisconsin in 1874. After a fire destroyed the brewery it reopened in Eau Claire in 1889, and reached an output of 50,000 barrels just before Prohibition came into effect. The company survived prohibition and the death of its founder, but eventually succumbed to market changes in the 1980's. The name still exists, revived by a modern brewpub in Eau Claire.

US\$1,000 - 2,000



38



39

38

#### WRIGHT BROTHERS PROMOTIONAL PAMPHLETS

Comprising:

1. *Flugmaschine Wright*, German brochure, 8vo, dark gray wrappers with silver pictorial stamps, staple bound. [1909]. The first sale brochure for the Wright Flyer.
2. *Wright-Aeroplane*, German brochure, oblong 8vo, with die-cut embossed card cover in the form of a fabric-covered airplane wing, punched and bound with twine. Printed in Berlin, with *Flugmaschine Wright-Gesellschaft m.b.h.*, Nollendorfplatz 3 address. [1910].
3. *The Wright Flyer - Advance Announcement*, oblong 8vo, tan paper wrappers with raised embossed eagle with wings spread out. Printed with *The Wright Co. - Dayton, Ohio* at lower right, and additionally stamped in blue ink *New York Office - 527 Fifth Avenue*. [1911].
2. *Wright Flyers*, oblong 8vo, beige wrappers with applied illustration of Wright Flyer in flight, bound with single loop of twine at fold. [1912].

US\$1,500 - 2,000

39

#### WILBUR WRIGHT ASSURES ROBERT COLLIER HE WILL NOT INTERFERE WITH THE GORDON BENNETT RACE

WRIGHT, WILBUR. 1867-1912. Typed letter signed ("Wilbur Wright"), 1p, 4to, on letterhead of The Wright Company, Dayton Ohio, February 3, 1912. To Robert J. Collier, President of the Aero Club of America, New York, NY. "*In the interest of good sport the Wright Company will permit representatives of foreign nations to participate in the 1912 race for the Gordon Bennett Cup, regardless of any question as to whether their aeroplanes do or do not infringe patents owned by this company.*"

Up to this point, the Wright brothers had been fiercely protective of their patents regarding the bi-plane design, often threatening legal action against perceived infringements. In the case of the prestigious Gordon Bennett race, however, the Wrights decided to turn a blind eye. This may have been in deference to Robert J. Collier, the publishing magnate, who had himself created a trophy awarded for achievements in aviation (still awarded to this day). The first Gordon Bennett Trophy race was held in France in 1909. As the nationality of each winner determined the host nation of the following year's race, the 1910 and 1912 races were held in the U.S. Suspended during World War I, the last three races (1912, 1913 and 1920) were won by French pilots. Per the terms of the competition, any nation that won three successive races would claim the trophy permanently. The trophy was thus retired to the Aéro-Club de France.

US\$7,000 - 9,000

# SPACE HISTORY, INCLUDING ROCKETRY & UNMANNED EXPLORATION

Lots 40-51

40

## **OBERTH'S EARLY GERMAN WORK ON ROCKETRY**

OBERTH, HERMANN. 1894-1899. *Die Rakete zu dem Planetenräumen* (By Rockets Into Planetary Space). Munich & Berlin: Verlag R. Oldenbourg, 1923. 8vo, original printed wrappers, first edition. Later paper dust jacket with facsimile of original wrapper applied.

### **Provenance**

Superior Galleries, October 27-28, 2001, lot 239.

Austro-Hungarian born Oberth was a physicist and engineer who built his first model rocket at the age of 14. This book was his doctoral dissertation, which was criticized for being unscientific and utopian. He worked for the German rocket program during World War II, and eventually for his former student, Wernher von Braun, at NASA.

**US\$1,500 - 2,500**

41

## **EARLY GERMAN PUBLICATIONS ON ROCKETRY**

5 items:

1. Gebelein, Hans, ed., *Über den Treibstoffverbrauch geradlinig aufsteigender Raketen* (On the Fuel Consumption of Vertically Ascending Rockets). Braunschweig: Luftfahrtforschungsanstalt Hermann Göring, 1944. Spirit-duplicated typescript, 4to, 55 pp, unbound, but 2-hole punched. Technical document outlining work prepared by Professor Gerhard Braun, including diagrams and charts.
2. Scherschevsky, A.B., *Die Rakete für Fahrt und Flug* (The Rocket for Travel and Flight). Berlin: Verlag C.J.E. Volckmann Nachf., 1929. 8vo, in tan wrappers.
3. Gail, Otto Willi, *Der Schuß ins All* (The Shot Into Space). Breslau: Bergstadtverlag, 1925. 8vo, blue cloth covered boards with 3-color stamping.
4. Gail, Otto Willi, *Mit Raketenkraft ins Weltenall*. Stuttgart: K. Theinemanns Verlag, 1928. 8vo, yellow pictorial cloth with 2-color stamping.
5. Valier, Max, *Raketenfahrt*. Munich & Berlin: Verlag R. Oldenbourg, 1930.

HANS GEBELEIN (1907-1985) was a German mathematician and physicist, specializing in hydrodynamics and aerodynamics. Working with the *Luftfahrtforschungsanstalt Hermann Göring* during the war, he was recruited afterwards into aircraft development for the British RAF and the U.S. Army.

OTTO WILLI GAIL (1896-1956) studied electronics and physics, and then turned his knowledge into a career writing technical books and reporting on science in newspapers and radio broadcasts. He was acquainted with Austrian rocketry pioneer MAX VALIER (1895-1930) as well as Hermann Oberth. His utopian novels reflected his technical knowledge, and were highly detailed.

**US\$700 - 1,000**

42

## **NEBEL, RUDOLF. 1894-1978.**

*Raketenflug*. Berlin: Raketenflugverlag, 1932. 8vo, paper wrappers, staple bound. Rare first edition, with 50 illustrations.

PIONEER OF ROCKET TECHNOLOGY, Nebel was a fighter pilot with *Jasta 5* during the First World War, and an early member of the inter-wars German rocketry club *Verein für Raumschiffahrt*. Although connected with the German militant *Stahlhelm*bund, he failed to earn favor with the German Army during the Third Reich, but continued to push for Germany's rocket research after World War II. This scarce pamphlet has depictions of cars with rocket propulsion, rocket launchers, and other innovations.

**US\$1,000 - 1,500**

43

## **GODDARD'S SEMINAL WORK ON LIQUID-FUELED ROCKETS**

GODDARD, ROBERT H. 1882-1945. *Liquid-propellant Rocket Development*. Washington, DC: Smithsonian Institution, 1936. 8vo, loose in original wrappers, back strip renewed. Smithsonian Miscellaneous Collections Volume 95, Number 3. In folding case.

Often referred to as the father of modern rocket propulsion, Goddard's work laid the groundwork for NASA's space program. He received financial support from the Smithsonian Institution and the Guggenheim Foundation in the 1920's. This publication represents the core of his findings up to the date of its publication.

**US\$1,500 - 2,000**

44

## **BRITISH INTERPLANETARY SOCIETY PUBLICATION**

*Journal of the British Interplanetary Society*, 14 volumes bound in 5, dating from 1934 through 1957 (no issues for 1939 to 1946), lacking volume 2 number 1, volume 14 number 4, and volume 15 number 6. Three bound in card covers with string bindings, two in tan library cloth.

Formed in 1933, the British Interplanetary Society was created to promote the vision of space flight. Arthur C. Clarke was among its most prominent members, and the journals contain many early writings on a subject that was once considered sheer fantasy.

**US\$1,200 - 1,800**

45

## **SEMINAL PUBLICATIONS ON THE EXPLORATION OF SPACE**

3 titles:

1. LASSER, DAVID. *The Exploration of Space*. New York: Penguin Press, 1931. 8vo. Black cloth stamped in gilt. The first publication in English to propose the use of rocketry in space travel.
2. CLARKE, ARTHUR C. *Interplanetary Flight - An Introduction to Astronautics*. London: Temple Press, 1950. 8vo. Blue cloth with red and white d.j. First edition of the first book by Clarke, who became better known later for his fiction, especially *2001: A Space Odyssey*.
3. CLARKE, ARTHUR C. *The Exploration of Space*. New York: Harper & Bros., 1951. 8vo. Publisher's blue cloth, lacking d.j. The second of Clarke's early non-fiction futurist books on space travel.

**US\$1,200 - 1,800**

46

## **TSIOLKOVSKY'S WORKS, WITH NASA TRANSLATIONS**

TSIOLKOVSKY, KONSTANTIN. 1857-1935. *Collected Works*, Moscow: MIR, 1952-1959. 3 Vols, 4to, blue cloth with white stamped titles, Russian language.

WITH: English translation of the same title, published as NASA TT F-236, TT F-237 and TT F-238. 3 vols, 4to, red paper wrappers.

WITH: TSIOLKOVSKY, KONSTANTIN, *Works on Rocket Technology*, NASA TT F-243. 4to, red paper wrappers.

WITH: *Transactions of the First Lectures Dedicated to the Development of the Scientific Heritage of K.E. Tsiolkovsky*, NASA TT F-544. 4to, red paper wrappers, staple bound.

A LIBRARY OF TSIOLKOVSKY, THE VISIONARY RUSSIAN ROCKET SCIENTIST. The three volumes of his *Complete Works* covered Aerodynamics, Reactive Flying Machines, and Dirigibles.

**US\$800 - 1,200**



47

47

#### X-15 BOOK SIGNED BY ARMSTRONG AND OTHERS

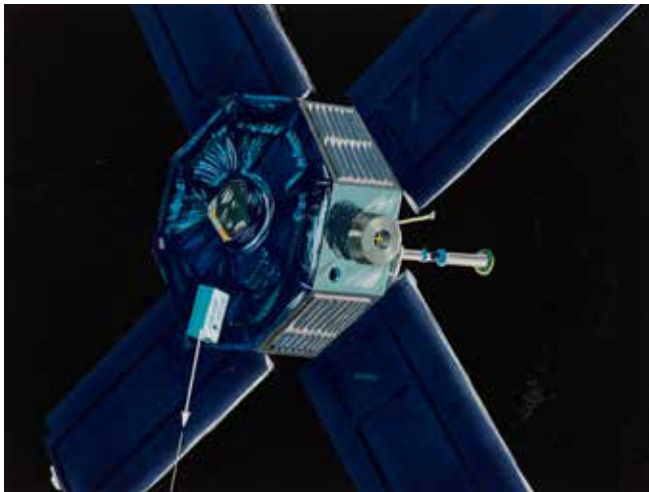
TREGASKIS, RICHARD. 1916-1973. *X-15 Diary: The Story of America's First Space Ship*. New York: E.P. Dutton & Co., 1961. First edition. 8vo, with dust jacket. SIGNED "With best regards Anne, Neil Armstrong" on free front endpaper, and also signed by other test pilots, including Joe Walker, John B. McKay, Joe Engle, Forrest S. Peterson and Major Robert White.

#### Provenance

With an inserted loose note from the recipient of the inscriptions, Anna P. Erickson, stating that she obtained the signatures while working as a travel coordinator for NASA at Edwards Air Force Base from 1961 to 1966.

The North American X-15, powered by a hypersonic rocket was America's first space plane, meeting the criteria for space flight by traveling at an altitude above 50 miles. Three X-15s were built and 12 pilots flew them on a combined 199 flights. Naval aviator and later first man on the moon Neil Armstrong is the most famous among them. Joe Engle is the only living X-15 pilot, having also been one of the first astronauts in the Space Shuttle program.

US\$2,000 - 3,000



48

48

#### JET PROPULSION LAB: MARINER PROJECT, ETC.

Collection of 32 cels and production backgrounds together with three sets of story boards from various promotional and educational films produced by JPL, ranging from 35 x 14-1/2 to 3 x 5-1/2 inches. Watercolor backgrounds with gauche on celluloid. Includes storyboards from the UHF Receiving System (URS), the NASA-JPL Prod.571 "Lunar Bridgehead," and Capsule Simulator Advanced Development (C.S.A.D.).

Fascinating group of animation cels and storyboards depicting the latest aerospace technologies and idealized galactic landscapes. Multiple cels related to the Mariner spacecraft including "lift-off of Atlas-Agena-Mariner" and an "Idealized View of Landscape of Venus" from "A Mission for Mariner," as well cels dedicated to parachute landings. Mariner spacecrafts were designed for interplanetary exploration and data collection, considered some of the "great successes of the early American space program" (NASA). Although the first five Mariner crafts were launched with the Atlas-Agena system, only 2,4, and 5 each successfully completed their missions. Mariner 2 was the first spacecraft to fly to another planet (Venus), while Mariner 4 took the first photographs of Mars in 1965. Storyboards cover other JPL projects, such as "Lunar Bridgehead," a film about the Ranger 7's mission to be the first spacecraft to photograph the moon. Another explains a simplified computer assisted UHF Receiving System used for flight traffic operations. At the time, the UHF (Ultra High Frequency) Receiving System was state-of-the-art communications system using radio frequencies between 300 MHz and 3GHz.

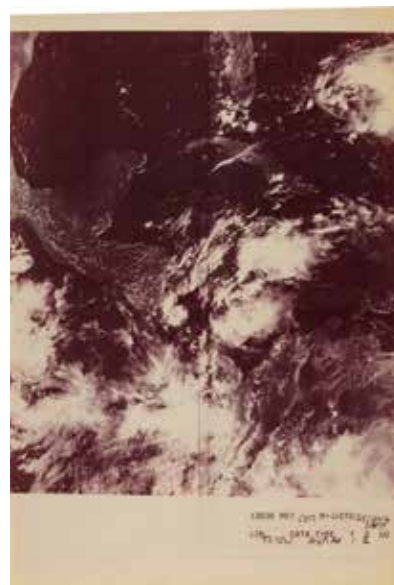
The talented Angelino, Bill Matthews, launched his career at Walt Disney Animation Studios in 1956 during the production of *Sleeping Beauty*. Soon he was acting as the Jet Propulsion Lab's "one man animation department" where he spent 1960s producing films for NASA and the general public.

US\$4,000 - 6,000

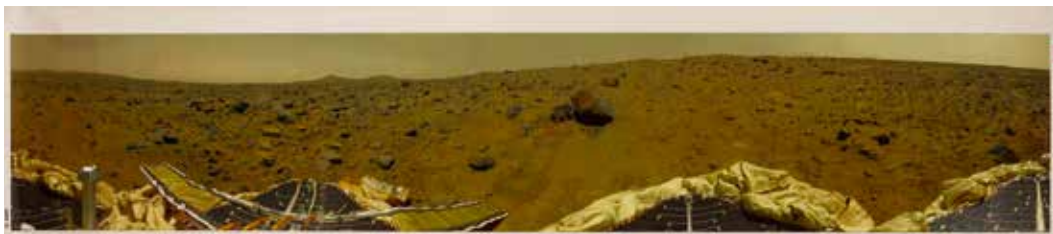




49



50



51

49

#### **LUNAR ORBITER V**

A group of 62 photographs, 24 x 20 inches, gelatin silver prints, from Lunar Orbiter V, August 1967, comprised of 22 medium resolution and 40 high resolution images, including 1 duplicate medium res image.

A large group of images from the final Lunar Orbiter mission, which provided additional Apollo landing site photos and other high-priority scientific sites on both the near and farside. Complete list of images available on request.

See Bowker & Hughes, *Lunar Orbiter Photographic Atlas of the Moon* (Washington D.C.: National Aeronautics and Space Administration, 1971).

**US\$4,000 - 6,000**

50

#### **A GROUP OF PANORAMIC SATELLITE IMAGE PHOTOS**

A group of 17 panoramic monochrome photographic prints of the Earth from an orbital satellite, various sizes, ranging in width from 9-1/2 to 12 inches, and in length from 36 inches to approximately 20 feet. Subjects are mostly cloud cover, but also some land masses, some marked, others identifiable from images. Locations identified include Florida and the Southeast U.S., the Great Lakes, Mexico, South America, Japan, Siberia. Some are dated, between 1975 and 1977.

These photos appear to be from DMSP (Defense Meteorological Satellite Program) 5D1/F1 orbital satellite, operated by the U.S. Air Force, and declassified in March 1973. The images were created using an Operational Line Scan (OLS) system developed by Westinghouse, providing visual spectrum and infrared cloud cover data at a resolution of 1/3 nautical mile for major land masses, and 1-1/2 nautical miles for broader global scanning.

**US\$1,500 - 2,500**

51

#### **PANORAMIC VIEW OF THE SURFACE OF MARS FROM PATHFINDER**

Color print of composite image, 19-1/4 x 90-3/4 inches. Captioned on right margin "Courtesy of Jet Propulsion Laboratory... Printed on Chromepress." Agfa logo on left margin. Sweeping panoramic scene of the surface of Mars, taken by Imager for Mars Pathfinder (IMP) from 1997. Rolled.

PATHFINDER landed on the surface of Mars in 1997 in the *Ares Vallis*, and then separated into its base station and *Sojourner* robotic rover. The lander contained the IMP stereoscopic camera and meteorological equipment. *Sojourner* was equipped to analyze the martian soil and rocks.

**US\$2,000 - 3,000**



# SOVIET & RUSSIAN HARDWARE, GEAR & MODELS

Lots 52-67



52 <sup>W</sup>

#### FULL SCALE SPUTNIK-1 EMC/EMI LAB MODEL

A full scale vintage test model of the *Sputnik-1* satellite, serial number "OK6-1/002/1957", with live transmitter (modern 12 volt power supply included). Polished aluminum sphere with 4 external antennae, approximately 23 inches in diameter on manganese brass stand with anti-static o-ring, stand approximately 57 inches (1,448 mm) tall, stand and model together approximately 78 inches (1,981 mm) tall, weighing approximately 100 lbs. Produced at the OK6-1[OKB-1], the Experimental Design Bureau-1 factory, also known as the S. P. Korolev Rocket and Space Corporation Energia in 1957, sometime prior to the launch of the *Sputnik-1*. Complete with vintage *Tesla* Maj 620A broadcast receiver, approx 24 x 18 x 13 inches (610 x 457 x 330 mm), weighing 42 lbs, made in Prague c. 1955-56.

#### Provenance

From the collection of Heinz Miller, Austria.

Exceptionally rare vintage test model of the *Sputnik-1* satellite, one of only a few made to test ground Electromagnetic Compatibility (EMC) and Electromagnetic Interference (EMI) testing. There are only a handful of known vintage test models of the *Sputnik-1*: three in

private hands (including one sold in these salerooms in 2016), one just outside Moscow at the Energia Corporate Museum, and one at the Museum of Flight in Seattle, Washington which does not have the internal components of that at Energia Corp. An impressive artifact from the dawn of the space age.

The *Sputnik-1* artificial satellite was launched into Earth orbit by a R7 Semiorka rocket on October 4, 1957. The satellite had several scientific objectives: test the method of placing an artificial satellite in Earth orbit; provide information on the density of the upper atmosphere; test radio and optical methods of orbital tracking; determine the effects of radio propagation through the atmosphere; and check principles of pressurization used on satellites. *Sputnik-1* was visible around the globe and anyone with a shortwave receiver could pick up its signal. The American *Sputnik* crisis and the birth of the Space Race were by-products of it's launch.

**US\$100,000 - 150,000**





53

53<sup>W</sup>

#### **VOSTOK-1 ROCKET MODEL BY RSC ENERGIA**

Large 1:25 scale fiberglass and metal model, on black painted wooden base, 60 inches (1,524 mm) high, base measuring 12-1/2 x 12-1/2 inches (318 x 318 mm), by S.P. Korolev Energia Rocket and Space Corporation. Plaque on base reads: *Vostok-1 - 8K72K - Space Rocket Model.*

FIRST MANNED ROCKET INTO SPACE, the Vostok-1 rocket took Yuri Gagarin into space on April 12, 1961—the first man ever to do so. This model was made for an exhibition dedicated to the 40th anniversary of Gagarin's flight.

**US\$5,000 - 7,000**

54

#### **YURI GAGARIN SIGNED PHOTO AND PROGRAM**

Card with photograph of Gagarin, SIGNED at bottom, 7 x 4-1/2 inches (178 x 114 mm) overall. WITH: program for an event honoring Yuri Gagarin and others in 1965, on card stock, bifold, 7-7/8 x 5-1/2 inches (200 x 140 mm), SIGNED by GAGARIN on interior.

Yuri Gagarin, the first man to fly in space, is still regarded as a giant figure in the history of space travel. He was made a Hero of the Soviet Union, the nation's highest award, and became a PR goldmine for the Soviet government. He was kept away from further space flights, but continued to fly fighter planes despite his fame and high rank in the Soviet Air Force. In 1968 he lost his life in a crash during a routine flight in a MiG-15 trainer.

**US\$800 - 1,200**



55

55

#### **FLOWN ON SOYUZ 9: AN EXHAUSTIVE MANUSCRIPT ON LIFE IN SPACE**

*"БОРТОВОЙ ЖУРНАЛ КОСМИЧЕСКОГО КОРАБЛЯ «СОЮЗ-9»* [Trans: On-Board Flight Journal for Spacecraft *Soyuz-9*, 1970]. 9¼ x 7 inch log-book, over 400 pp (3-247, 249-502, 600-639) in black, blue, red, orange, purple, and green ink on graph paper, including 11 unnumbered pp with manuscript annotations, and 9 blanks. Bound with three rings into blue textured-cloth covers with the arms and cipher of the USSR to upper cover.

#### **Provenance**

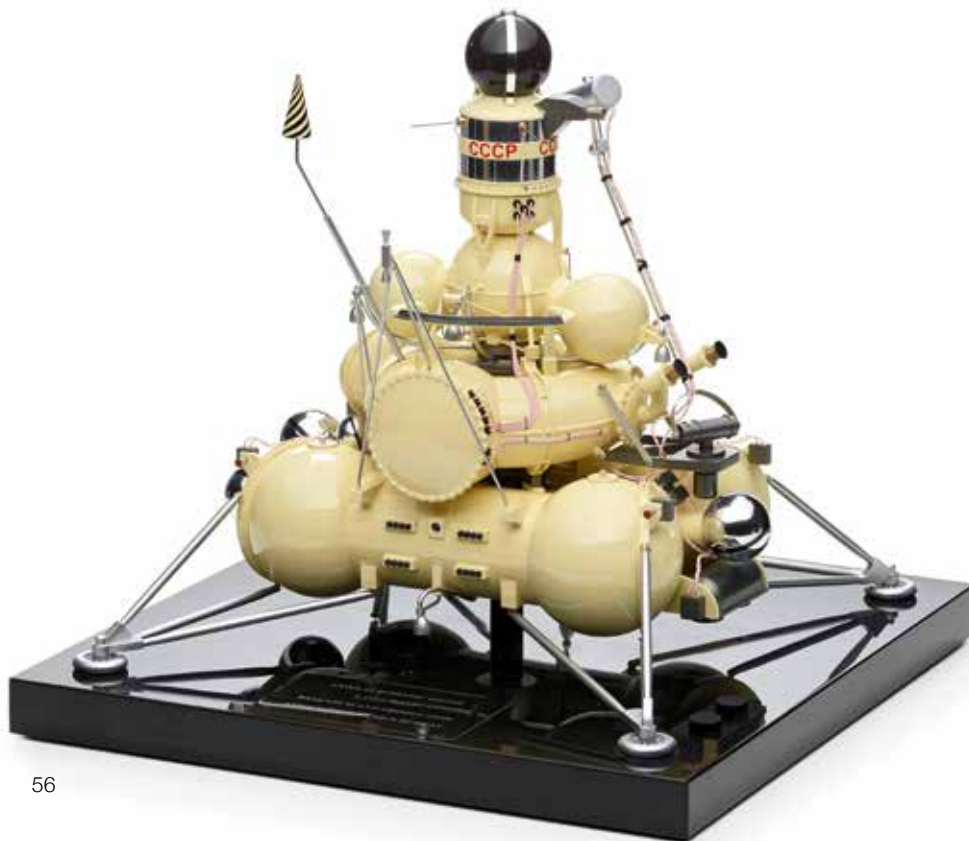
Cosmonaut Andrian G. Nicolaev; Sotheby's *Russian Space History*, 1996, lot 161.

*AN EXHAUSTIVE, HIGHLY DETAILED MANUSCRIPT ON LIFE IN SPACE.*

Written while weightless in orbit on the record setting voyage of the *Soyuz-9*, the log begins with 200 pages giving an orbit by orbit account of activities. Each orbital account begins with a chart divided into 10 minute segments, with shading indicating night and day-time, and provides details on the activities planned. Some of the detailed notes include: A description of the moon (orbit 48); notes on experiments being conducted, including a drawing of a battery showing the results of a mercury experiment (orbit 65); A description of how a floating particle of debris flew into the eye of Nikolaev and "caused a sharp pain" until Sevastyanov wiped it away (orbit 159); The cosmonauts being congratulated on setting a new world record for space flight distance and duration (orbit 252); details on the descent, with a dotted line indicating "separation," "atmospheric entry," "parachute," and "landing" (orbit 287). Following the orbital log are tables completed in space, as well as printed operational instructions. This section is followed by several un-numbered pages which record radio transmissions received while in space, including one from NEIL ARMSTRONG :*"June 2, 1970, 17:30. 'Best wishes to the crew of Soyuz 9. Success to your mission and good landing.' American Cosmonaut Neil Armstrong."* There are also several pages of miscellaneous notes which give a picture of conditions in the spacecraft, including *"Soft urine receptacles are not convenient," "Forks and can openers should be tied by separate strings so they don't get tangled," "Canned meat tastes good and we eat it with gusto," "Cottage cheese paste should be more liquid."* Also included are equipment inventories, control manuals, details on emergency procedures and explanations of medical equipment and the waste system, as well as observations on celestial navigation, optical effects, and a very detailed record of all food and drink consumed while on board. A series of unnumbered pages containing psychological questions, including inquiries on dreams is followed by reports on photographic experiments.

A handwritten provenance letter in Russian by Nicolaev reads [trans]: *"LOG BOOK KK SOYUZ #9. THIS IS THE ORIGINAL LOG BOOK OF THE SHUTTLE SOYUZ 9, PILOTED BY CHIEF OF AIR SHUTTLE COSMONAUT OF THE USSR A.G. NICOLAEV, AND COSMONAUT RESEARCHER, V.E. SEVASTIANOV ... JUNE 1 THROUGH JUNE 19, 1970."*

**US\$4,000 - 6,000**



56

56  
**SOVIET LUNA 16 UNMANNED LUNAR PROBE MODEL**

Model in metal and plastic, on painted wood base with plaque reading "*Luna 16 Robotic Probe - Lavochkin Research and Production Association Design Bureau.*" Height: 14-3/8 inches (365 mm); base 16-3/8 x 16-1/2 inches (416 x 419 mm).

Luna 16 was the first robotic lunar lander to collect a sample of lunar soil and return it to earth. It was launched September 12, 1970, arriving after NASA's Apollo 11 and 12 missions.

**US\$8,000 - 10,000**

57  
**SOVIET LK-3 LUNAR LANDER MODEL**

LK-3 lunar lander model in metal and plastic, with black acrylic base, mounted with plaque reading "*LK-3 LUNAR LANDER - LUNNIY KORABL.*" Height 22-1/2 inches (571 mm); dimensions of base 12-1/4 x 12-1/4 inches (311 x 311 mm).

The LK-3 was the lunar landing module design for a proposed Soviet lunar mission, which would use the N1 launch vehicle and a variant of the Soyuz orbital spacecraft to land a single cosmonaut on the moon. After the U.S. Apollo 11 mission succeeded, and a series of N1 test launches failed, the program was eventually cancelled in May 1974.

**US\$8,000 - 10,000**



57





58

58

#### DOCKED APOLLO-SOYUZ MODEL

*ENERGIA SPACE CORPORATION PRESENTATION MODEL, 1975*  
Aluminum model of docked Apollo CSM and Russian Soyuz 19 spacecraft, 13 inches long, mounted on aluminum support and and black painted wood plinth, 14-3/4 inches overall height. Top plane of plinth has applied American and Soviet Russian flags, and plaque reading "Energia Space Corporation - Soyuz-Apollo - Presentation Model 1975" in four lines.

Energia was, and remains, the primary contractor of the Russian space program. The English inscription on the base of this model indicates that it would have been presented to someone on the Apollo team in recognition of the two countries' mutual cooperation during the ASTP joint mission.

US\$2,000 - 3,000

59

#### SIGNED ASTP STAMP SHEET

*SIGNATURES OF THE U.S. AND RUSSIAN COMMANDERS*  
A full sheet of 10 cent Apollo Soyuz stamps, 10 by 9 inches, featuring two different artist renderings of the space vehicles in earth orbit. These stamps were first issued by the United States Postal Service on the launch date for both Apollo and Soyuz - July 15, 1975.

SIGNED by TOM STAFFORD and ALEXEI LEONOV along the left side white border. Each was the commander of his respective flight vehicle during the first joint manned flight between the United States and Soviet Union.

US\$350 - 500

60

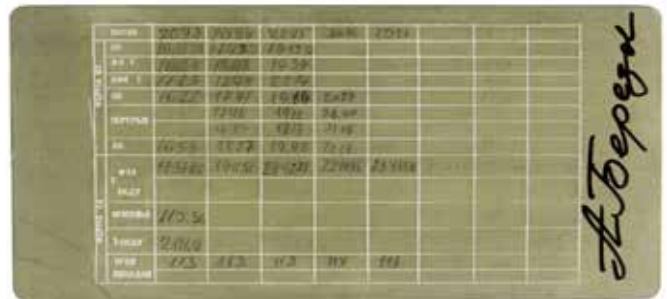
#### THE ASTP RUSSIAN CREW BEFORE LAUNCH

Black and white photograph, 10 x 8 inches.

SIGNED by ALEXEI LEONOV and VALERY KUBASOV.

Soyuz Commander Alexei Leonov and Soyuz flight engineer Valery Kubasov pose in their space suits just prior to their launch from Russia on July 15, 1975. The United States Apollo crew would dock and meet with them in space two days later.

US\$200 - 300



62

61

#### THE ASTP RUSSIAN CREW RETURN TO EARTH

Black and white photograph, 8 x 10 inches.

SIGNED by ALEXEI LEONOV and VALERY KUBASOV.

Soyuz Commander Alexei Leonov and Soyuz flight engineer Valery Kubasov are being interviewed by a Russian news correspondent just after their landing in the Russian Steppes of Kazakhstan on July 21, 1975. Both had just exited their Soyuz spacecraft, still wearing their space suits and communication headsets.

US\$200 - 300

62

#### FLOWN SOYUZ T-5 NAVIGATIONAL LAP PLOTTING BOARD

Brushed aluminum rectangular board with rounded edges, 4 x 8 3/4 inches (602 x 222 mm), 9-column table for plotting navigational parameters incised and lettered in white, two velcro strips to underside. Last three columns rubbed, verso lightly scratched.

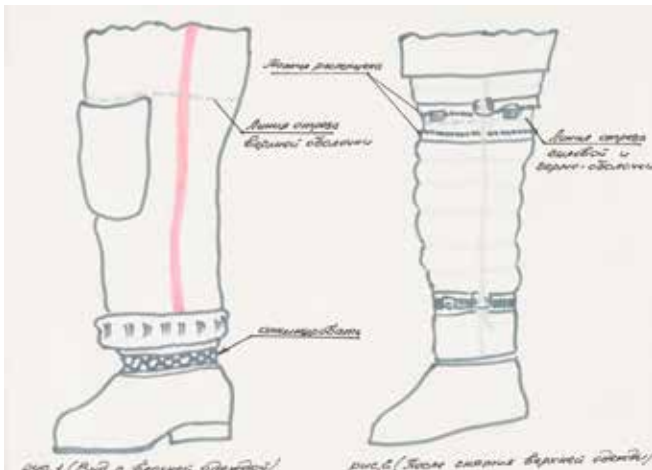
#### Provenance

Cosmonaut Anatoly N. Bereznovoy, with the first five columns filled in by him in pencil, and his signature in black marker; Sotheby's *Russian Space History*, 1996, lot 271.

A plotting board used by Bereznovoy to plot calculations for orbits 2093-2097 while aboard Soyuz T-5. It provides, in Moscow time, the time of the space craft's entry and exit from the earth's shadow, the time of firing and duration of the engine firing during an emergency descent from orbit, prime radio frequency times with earth, and the number of the orbit. A handwritten provenance letter in Russian by Bereznovoy reads in part: [trans] "THIS PLOTTER WAS FLOWN IN SPACE FOR 211 DAYS: FROM THE START OF THE SOYUZ-T5 SS ON MAY 13, 1982 TILL THE LANDING OF THE SOYUZ-T7 SS ON DECEMBER 10, 1982. AT THE EXCHANGE OF THE SPACE SHIPS WITH THE VISITING EXPEDITION (L. POPOV, A. SEREBROV, S. SAVITSKAYA) I BROUGHT THE PLOTTER FROM SOYUZ T-5 ABOARD SOYUZ T-7 AND ADJUSTED IT TO THE CONTROL PANEL... A. BEREZNOVOY."

US\$800 - 1,200





63

63

### NOTES ON IN-FLIGHT SPACESUIT REPAIR

GERASIMENKO, O.I., B. 1939. Manuscript notes with diagrams describing repair procedures for a spacesuit, to be done while in space, 7 pp, most 8-1/2 x 11-3/4 inches (216 x 298 mm), one approximately 23-1/2 x 12 inches (597 x 305 mm), torn at one end. Four pages are signed ("O.I. Герасименко") and dated October 29, 1983.

The author of these documents was O.I. Gerasimenko, an engineer specializing in the durability of spacecraft. The repairs were done after a planned spacewalk aboard Salyut-7 had to be scrapped in October 1983, due to a detected leak in the spacesuit. A procedure was devised to test for the location of the leak, and once it was found in the left foot, these procedures were transmitted to the Cosmonauts, who were able to carry it out on October 29th. This allowed them to install two additional solar batteries on the exterior of Salyut-7, needed to meet their power consumption needs on board the space station.

US\$3,000 - 5,000



64

64

### SOVIET COSMONAUT "PENGUIN" JUMPSUIT

Soviet Penguin zero-gravity exercise jumpsuit attributed to cosmonaut Aleksandr Aleksandrovich Volkov. Medium blue patterned fabric with blue elasticized neck, waist, and cuffs. Embroidered patches include the State Emblem of the Soviet Union on the left breast above the pocket, Salyut program insignia on right pocket, and Soviet Russian flag with letters СССР on left shoulder. WITH communication headset, as used in the Sokol-K space suits, of grey leather and white synthetic fabric mesh with suede lining, mounted with two extending microphones, with braided metal covered cable terminated in aluminum connector.

The Penguin jumpsuits were fitted with elastic tensioners and straps to supply resistance in order to combat muscle atrophy and loss of bone in zero gravity conditions during long missions in orbit.

Cosmonaut Aleksandr Volkov served three missions, to the Salyut 7 on a 64-day trip, and twice to the Mir Space station for a combined 326 days. Certainly a good candidate for the Penguin suit!

US\$6,000 - 8,000



65

65

## TWO EXPERIMENTAL RUSSIAN ROCKET MODELS

1. CIAM/NASA HFL Kholod model, in painted metal, on wooden base with brass plaque reading *CIAM/NASA HFL Kholod*, 12-1/2 inches (318 mm) long.
2. Lavochkin V-751 rocket model, in painted metal, on wooden base with brass plaque reading *Lavochkin V-751*. 10-1/2 inches (267 mm) long.

WITH a watercolor painting of the Kholod rocket by scientist Vyacheslav L. Semenov..

The *Kholod*, or Hypersonic Flying Laboratory (HFL) was created as a joint effort of the Russian Central Institute of Aviation Motors and NASA as an experimental rocket design that may one day be the forerunner of sophisticated rockets for long-range space travel.

The Lovothkin V-751 was an experimental flying laboratory, developed from the S-75 surface to air missile, capable of speeds over Mach 3, and altitudes up to 66,000 feet. It used a two-stage propulsion system of a solid-fuel booster followed by a liquid-fuel engine.

US\$1,000 - 2,000

66<sup>w</sup>

## RUSSIAN KHOLOD 5D67 HFL ROCKET ENGINE

Soviet Scramjet liquid propellant engine model 5D67, 72 inches in height, on wheeled stand, weight approximately 300 lbs crated.

### Provenance

From the air and space collection of Professor Alexander Roudakov.

The *Kholod*, or Hypersonic Flying Laboratory (HFL) was created as a joint effort of the Russian Central Institute of Aviation Motors and NASA. Collectively, the Kholod was an experimental rocket design for testing dual-mode scramjet engines, both air and liquid-cooled, combined with a Russian SA-5 rocket booster, for a total of 6 engines: four solid fuel boosters, the main 5D67 engine, and another scramjet in the forward part of the rocket. In 1991 the Kholod reached a maximum speed of Mach 6.47 - at the time the fastest powered flight in history (not including spacecraft operating outside the Earth's atmosphere).

US\$25,000 - 40,000



66

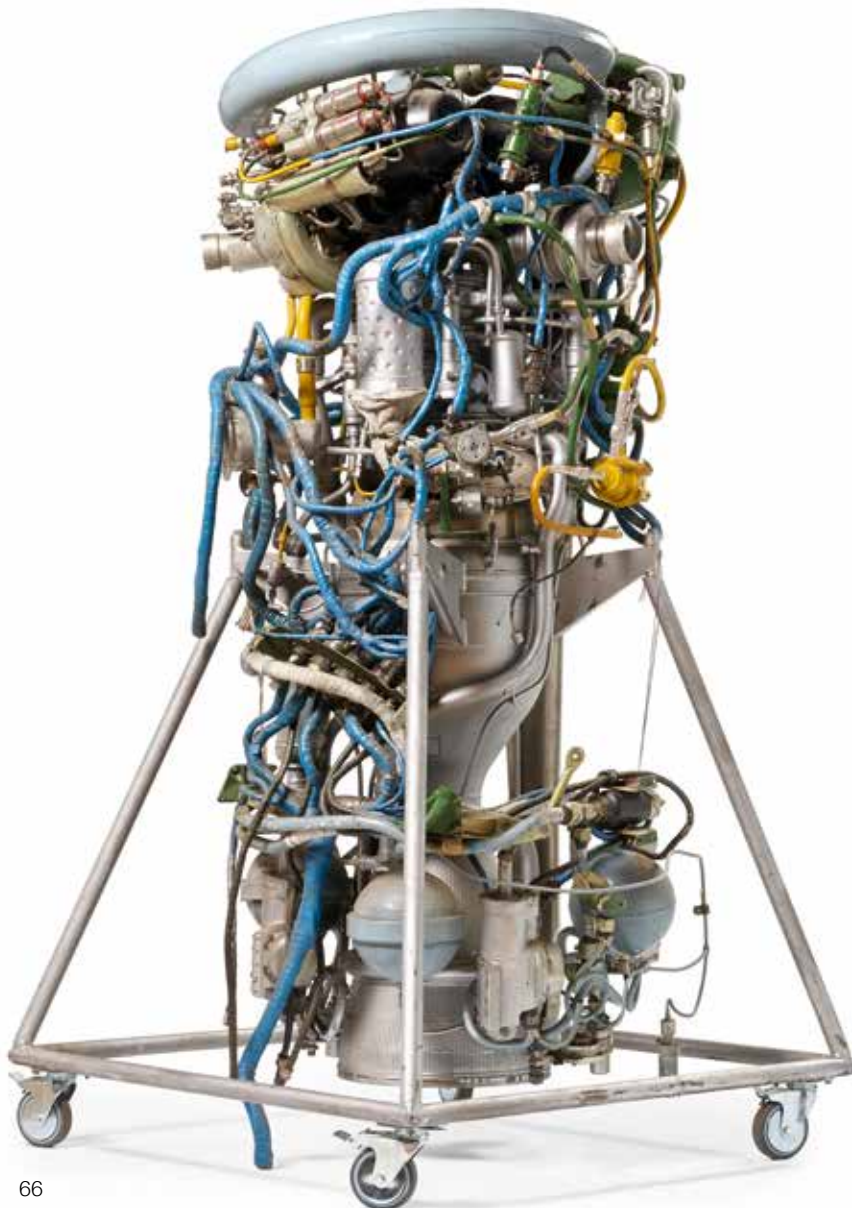
67 <sup>W</sup>

### RUSSIAN SOYUZ TMA-21 SPACECRAFT MODEL

Fiberglass and metal model of a Soyuz-TMA spacecraft with Soyuz-FG rocket, 64-1/2 inches (1,638 mm) high, on 10-1/4 x 10-1/4 inches (260 x 260 mm) black painted base, with plaque reading: *Soyuz TMA-21 Space Rocket Model - RKK Energia, 2011*. Decorated on the upper (spacecraft) portion with Russian Federation and U.S. flags, Roscosmos logos, and a 50th anniversary of Yuri Gagarin's first space flight commemorative paint scheme.

TMA-21, nicknamed "Gagarin," carried the three members of Expedition 27—Aleksandr Samokutyayev, Andrei Borisenko, and NASA Astronaut Ronald J. Garan—to the International Space Station on April 4, 2011. The flight was dedicated to the 50th anniversary of Yuri Gagarin's first manned spaceflight. The livery bears an image of Gagarin on the booster.

US\$5,000 - 7,000



66



67



# AMERICAN GEAR, HARDWARE & MODELS

Lots 68-81



68

68<sup>W</sup>

## U.S. AIRFORCE SCHOOL OF AVIATION MEDICINE RHESUS MONKEY BIOPACK

Aluminum frame with centrally mounted harness/seat for a rhesus monkey in fiberglass and foam rubber with a mesh harness. 33 inches high and 17 inches diameter, with corresponding fiberglass shell, 18 inches in diameter. In front of the harness is an aluminum lever used to activate a camera and two sockets for flash bulbs. Beneath the harness is an oxygen tank in green painted metal, and a battery of five transistor amplifiers by Taber Instrument Corporation.

The Little Joe Rocket was named by Mercury Spacecraft designer Maxime Faget after the slang term for a roll of four in craps, which at first was based on a cross-sectional drawings of the rocket engine which resembled the double deuce configuration of two dice. Later, with the rocket's four large fins, the name stuck. The Little Joe was used as a less expensive way to test the launch escape system and heat shield among other things for Project Mercury as the Atlas Rockets cost \$2.5 million each.

NASA Space Task Group collaborated with the Air Force School of Aviation Medicine in San Antonio, Texas on 2 of the 8 Little Joe missions to include a biological package. The forth mission, Little Joe 2, included the rhesus monkey Sam, an acronym of School of Aviation Medicine. LJ-2 was launched on December 4, 1959 and traveled to an altitude of 53 miles. Sam in his "biopack" experienced weightlessness for three minutes. Mercury astronauts Alan Shepard and Virgil Grissom traveled to Wallops Island, Virginia to view the launch and were particularly interested in how Sam fared. When the capsule was recovered in the Atlantic Ocean, they found Sam to be

in excellent condition, having withstood Mach 6 flight and all of the rigors of rocket travel.

Miss Sam, Sam's female counterpart was launched in LJ 1-B on January 21, 1960. The rocket projected to an altitude of just under 9 miles before the escape rocket fired in order "rescue" the Mercury capsule replica from a simulated booster failure. Miss Sam was recovered and also found to be in excellent condition. Based upon the feedback of Miss Sam pulling a lever every time a light shown, she was thought to be badly shaken when the escape rocket fired, but recovered within 30 seconds. The launch was a success in that the sequence system and capsule landing systems were shown to work perfectly.

The present biological package (biopack), which is an aluminum-framed tubular structure, includes the inner harness suit into which the rhesus monkey was sewn as well as a lever-operated camera, two areas for flash bulbs, an oxygen tank and a battery of 5 transistor amplifiers below. Also included is the fiberglass shell that covered the aluminum structure. Markings on the side of the shell are mostly illegible, but include the insignia of the U.S. Air Force School of Aerospace Medicine, the words *Aerospace Medicine - Medical Division*, and the partly legible *[Brooks] Air Force Base, Texas*. It is uncertain whether this was used by Sam or Miss Sam, or both, and whether or not it was flown, but the unit appears to have been fully functional and to have been used.

US\$15,000 - 20,000





69

69

#### **SOLRAD/GRAB SPY SATELLITE ENGINEERING DUMMY**

Spherical polished aluminum alloy shell with six threaded ports for installation of solar cell arrays, two of which are still in place, 20 inches (508 mm) diameter, lacking antennae. The solar array assemblies are marked on the reverse: one with the letters "NRC," the other with a sticker reading "National Rectifier Corporation Semiconductor Systems Division."

Although officially described by the U.S. Naval Research laboratory and NASA as scientific satellites intended to report on solar radiation, SOLRAD's use as SIGINT (signals intelligence) spy satellites has been widely accepted by the general public. Nonetheless, SOLRAD 1 produced some important scientific data regarding the effects of solar radiation on the Earth's atmosphere. SOLRAD 1 was launched June 22, 1960, and is still in orbit.

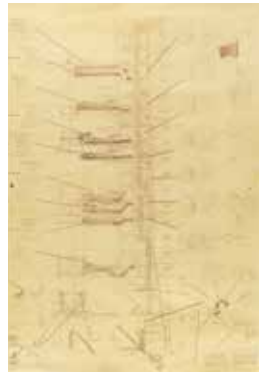
**US\$8,000 - 12,000**



70



71



72



73

70

#### TWO LUNAR CONCEPT DRAWINGS

Opaque watercolors on board, each 20-1/8 x 30 inches (511 x 762 mm), one of a six-wheeled lunar rover concept, the other depicting an orbital space station with a docked rocket spacecraft and a spherical command module shown in cutaway. Lunar rover photo signed *Lois H. Smith* while space station art is marked in lower right corner *MS-6-54-64 - SEPT 28, 64*.

US\$1,200 - 1,800

71

#### GT-IV MCDIVITT FLOWN AND MOUNTED PERSONAL PREFERENCE KIT BAG

Bag: 8-3/4 x 9-1/2 in (29 x 31 cm); frame: 20-1/4 x 24 x 1-1/2 in. Grey rubberized nylon PPK (Personal Preference Kit) bag maintaining drawstring with brown staining from seawater at bottom. Signed in upper right corner green marker "Jim McDivitt PPK Gemini IV Commander" with the initials "JAM" in green pen at left. Mounted and framed with commemorative plaque reading "Mission Commander Lt. Col. James A. McDivitts Personal Reference Kit (PPK) Bag Flown on Gemini IV (GT-IV) 3-7 June 1965 First U.S. Spacewalk-36 minutes by Pilot Lt. Col. Ed White. II on 3 June 1965". Mounted on in green frame.

#### Provenance

Accompanied by signed affidavit from Jim McDivitt from the bag's previous sale at Novaspace Galleries.

*FLOWN GEMINI-IV BAG USED DURING NASA MISSION WITH THE FIRST AMERICAN SPACE WALK FROM THE PERSONAL COLLECTION OF JIM MCDIVITT.* PPK bags were small bags designed for astronauts to store personal mementos, but due to space and weight constraints each Gemini astronaut was only allowed one bag. Few Gemini bags have ever been sold at auction.

Lasting four days from June 3-7 1965, NASA's Gemini IV mission was the second manned spaceflight in the Gemini series and first

American long-duration mission. During this historic flight Edward White became the first American to "walk" in space, with his extra-vehicular activity (EVA) lasting 22 minutes. James Alton "Jim" McDivitt piloted the spacecraft.

US\$3,000 - 5,000

72

#### LARGE NASA WHITEPRINT OF THE SATURN V ROCKET AND SERVICE STRUCTURE

Printed in blue ink on white paper (yellowed), 60-3/4 x 43 inches (1,543 x 1,092 mm), showing side view of Saturn V rocket and Service Structure, with line drawings of major electrical components and assemblies in the Service Structure. Rolled. Developed under the direction of Wernher Von Braun and Arthur Rudolph at the Marshall Space Flight Center in Huntsville, Alabama for the Apollo program, the Saturn V remains the largest, most powerful rocket ever brought to operational status. Boeing, North American Aviation, Douglas Aircraft Company and IBM all served as lead contractors on the project.

US\$1,000 - 2,000

73

#### APOLLO 8: BATTERY PLATE FLOWN ON THE FIRST MANNED EXPEDITION TO ORBIT THE MOON

Approx 1/2 inch in diameter FLOWN battery plate mounted onto approx 2 inch in diameter brass plaque, obverse engraved with "BATTERY PLATE ORBITED THE MOON APOLLO VIII - BORMAN LOVELL ANDERS," and reverse with *EAGLE PICHER IND. ELECTRONICS DIVISION COUPLES DEPT.* Encased in an approx. 3" diameter cut-diamond shaped lucite paperweight.

The Eagle Picher Company was the primary supplier of batteries for the NASA space missions.

US\$800 - 1,200



74

74

**NEIL ARMSTRONG APOLLO-ERA TRAINING GLOVE, ISSUED TO NEIL ARMSTRONG WITH HIS BETA CLOTH TAG**

A7L Intra-Vehicular Glove, International Latex Corporation, late 1960s, rubber/neoprene-compound bladder with articulated fingers with an additional support layer that can be tightened by black nylon strap with light blue velcro closure, cuff in white Beta cloth and with revolving blue anodized aluminum disconnect ring. Printed on Beta cloth: "Part NO. A7L-103000-(315?) 19 / SIZE N. ARMSTRONG / SERIAL NO. 133 / CODE 74897 / ILC INDUSTRIES, INC." and written in pen around cuff: "CLASS III / NOT FOR FLIGHT" and "133" in red pen. With Beta cloth tag sewn along length of cuff reading: "ARMSTRONG."

The International Latex Corporation won NASA's 1965 Apollo Block II competition with their AX5-L for a spacesuit that would be advanced enough to comply with the needs of the Apollo program. Their suit incorporated a BFG rubber pressure sealing zipper for the best gas retention, "father of the space suit" George P. Durney's walking brief

and thigh restraint system, and had an improved glove with steel cable and multi-directional wrist joint (NASA).

The A7L (A for Apollo; 7 for seventh in the series; and L for ILC Industries) was a version of that suit. The suits were sized to each specific astronaut and the gloves were based upon plaster hand casts collected (see lot 25 in our July 20, 2016 Space History auction). The IV Glove was formed from a single-wall restraint and bladder structure fitted the crewman's hand, over which an outer gauntlet and palm restraint provided structural support (NASA). Both this restraint and the section of beta cloth at the wrist increased flexibility and dexterity for astronauts operating controls during flight. Beta cloth was an innovative fire-resistant fabric used by NASA after the tragic Apollo 1 disaster. Neil Armstrong would have worn this glove while participating in Apollo mission training simulations, which replicated the IV glove he would have worn during flight.

**US\$8,000 - 12,000**



*Buzz Aldrin*

Buzz Aldrin

Col. USAF, (Ret.), Gemini XII Pilot and Apollo XI Lunar Module Pilot



The segment placed here was removed from Command Module Columbia after the first lunar landing mission during July 16 to 24, 1969. This flown segment is from my collection.

75

75

#### **ALDRIN'S FLOWN APOLLO 11 COMMAND MODULE SKIN FRAGMENT**

An approximately 1/2 x 3/8 inch FLOWN foil segment mounted on a 3 by 8 inch Typed Note Signed by Buzz Aldrin. This material was used as a thermal protection layer on the very outer surface of Command Module Columbia. It was exposed to the vacuum of space for some 195 hours including almost 60 hours in lunar orbit.

#### **Provenance**

Originally from the collection of Apollo 11 Lunar Module Pilot Buzz Aldrin.

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

US\$2,500 - 3,500

76

#### **GRUMMAN APOLLO LUNAR MODULE CONTRACTOR'S MODEL**

Painted metal and plastic model on circular base, with screen-printed lettering on base reading "One small step for man... - One giant leap for mankind - 10:56 EDT - July 20, 1969 - LUNAR MODULE." Above the inscription are the Grumman logo at left and NASA logo at right. Height 6 inches (152 mm); diameter of base 10 inches (254 mm).

POST-APOLLO 11 VERSION OF THE GRUMMAN MODEL. Grumman built and tested the LM at its Bethpage NY facility. These models were given out as mementos by the company, and sold to employees in the company store. Armstrong's quote on the base dates this example to after the landing of Apollo 11.

US\$3,000 - 5,000

77

#### **DOCKING PROBE BAG**

c.1970. Beta cloth bag, with brass zipper marked "barjo," interior Velcro pocket, approximately 36 x 28 inches, label text on either side heavily worn, but appears to read "docking probe a3 launch offload," two handles approximately 7-1/16 x 1 inches.

Specifically designed for NASA after the tragic Apollo 1 disaster, Beta cloth is a fire-resistant fabric composed of Teflon coated silica. Various designs of these bags were used to store equipment or protect samples against possible contamination.

US\$2,000 - 3,000



76



77





78

**78  
LUNAR SAMPLE CONTAINER, DECONTAMINATION BAG**

c.1970. Beta cloth and polyester bag, approximately 34 x 25-1/2 inches, with rubberized nylon and brass zipper marked "talon" on both sides, four 3-3/4 x 13/16 inch loops, and "SAMPLE CONTAINER STOW ON VOL A2 FOR ENTRY" and "USE SQ NOTES SECURED WITH HALF HITCH KNOTS /R36-601507 HARD M/U 28 112" on either side of the zipper. Lacking original straps and buckles.

NASA took extra precautions against possible "contamination of lunar samples prior to examination by scientists, and to protect the earth from potential lunar pathogens" (Smithsonian, Air and Space Museum). These beta cloth bags were designed specifically to encase and isolate the Apollo Lunar Surface Return Containers (ALSRC) which contained lunar soil and rock samples, before their transfer from the Lunar Module. Specifically designed for NASA after the tragic Apollo 1 disaster, Beta cloth is a fire-resistant fabric composed of Teflon coated silica. Even after the Apollo 14 mission, when decontamination requirements were relaxed, these bags were used to protect samples and limit the lunar dust released into the command module during flight (Smithsonian, Air and Space Museum).

**US\$4,000 - 6,000**

79

**79  
MECHANICAL PENCIL FLOWN TO THE SURFACE OF THE MOON, APOLLO XV**

*BELONGING TO JIM IRWIN.* Mechanical pencil in chrome metal with black plastic ring at center of barrel, with velcro patch glued to the cap. 5 inches (129 mm). Engraved on barrel with part number "SEB 12100081-301" and serial number "S/N 1021."

**Provenance**

James Irwin, his estate, Odyssey Auctions, Corona, CA, February 27, 1994, lot 232.

WITH: Color photographic print SIGNED AND INSCRIBED by Irwin, "Robert—*His Love From The Moon—Jim Irwin.*" 8 x 10 inches with printed caption.

WITH: Group of 21 black and white NASA press photos for Apollo 15 mission, 8 x 10 inches.

Mechanical pencils replaced wooden pencils in the space program in 1961 to eliminate the problem of combustible wood being carried in space. For the Apollo lunar missions, crews were equipped with the Garland 35-P, made by Lew Manufacturing in Coventry, RI. According to Chris Span ([www.spaceflownartifacts.com](http://www.spaceflownartifacts.com)), "despite the worldwide fame of the Fisher Space Pen it is probably the humble Garland mechanical pencil that was the most heavily-used writing instrument on the Apollo missions." It is believed that a total of 33 were carried on these missions, of which 12 were carried to the lunar surface. The serial number of this pencil falls close in sequence to another example known to have been carried by Irwin to the Moon, and would have been one of three carried on the Apollo 15 mission.

**US\$6,000 - 8,000**



79



80

80

#### **APOLLO-SOYUZ TEST PROJECT MODEL**

1:50 scale model of the American Apollo CSM and Russian Soyuz, wood and painted metal, 17 inches (432 mm) long assembled. The two vehicles are connected by a black Docking Module (DM) which provided a functional docking port for each spacecraft. The entire model is mounted above a 7-inch oval wood base, with label to underside of base that reads "Pacific Miniatures, Inc. — Alhambra, Calif."

This would probably have been a contractor's model from North American Aviation, who built the Apollo Command Service Module for NASA.

**US\$1,500 - 2,500**

81

#### **ROCKWELL SPACE SHUTTLE CHALLENGER MODEL**

Painted metal model by Pacific Miniatures of shuttle *Challenger* on black metal stand with brushed aluminum plaque lettered "SPACE SHUTTLE—SCALE 1/200—FIRST FLIGHT APRIL 12-14, 1981—Rockwell International." Length of model 6 inches (152 mm).

CONTRACTOR'S MODEL OF THE ILL-FATED SECOND SHUTTLE. Built by Rockwell in the 1970's as a test frame, which was later refitted for operational flight, *Challenger* did not take its maiden flight until April 4, 1983. The dates on the plaque refer to STS-1, the first flight of *Columbia*.

**US\$1,000 - 2,000**



81

# PROJECT MERCURY

Lots 82-95

82

## SCOTT CARPENTER AUTOGRAPH LETTER AND PAMPHLET SIGNED BY THE MERCURY SEVEN

Autograph Letter Signed ("Scott Carpenter"), 1p, 4to, November 17, 1959, being a response to a class letter composed by grammar school students in St. Petersburg, Florida: *"Thank you for you fine letter which expressed my own feelings very well. I am enclosing some books which I thought you might enjoy..."*

WITH: a NASA pamphlet on Project Mercury, featuring photographs of the astronauts, SIGNED BY MERCURY SEVEN: SCOTT CARPENTER, GORDON COOPER, JOHN GLENN, GUS GRISSOM, WALLY SCHIRRA, ALAN SHEPARD and DEKE SLAYTON.

WITH: facsimile copies of the original class letter, and of Carpenter's letter.

US\$3,000 - 5,000

83

## THE ORIGINAL MERCURY SEVEN IN SPACE SUITS, SIGNED

Large color photograph, 14 x 11 inches.

SIGNED BOLDLY by SCOTT CARPENTER, GORDON COOPER, and WALLY SCHIRRA.

The iconic photograph of the Mercury Astronauts in their silver space suits.

US\$1,200 - 1,800

84

## THE MERCURY SEVEN FLYERS, SIGNED

Large color photograph, 14 x 11 inches.

BOLDLY SIGNED and INSCRIBED : "SCOTT CARPENTER, Aurora 7; GORDON COOPER, Faith 7" and "WALLY SCHIRRA, Σ 7." Cooper has additionally inscribed: "The Mercury Astronauts" next to his signature.

An F-106 jet used for flight training is the backdrop for the seven Mercury astronauts in their military flight suits.

US\$1,000 - 1,500



84



82



83





85



87



89



86



88

85  
**CARPENTER AT THE CAPE, SIGNED**

Color photograph, 10 x 8 inches.

SIGNED and INSCRIBED: "SCOTT CARPENTER, Aurora 7."

Scott Carpenter in his Mercury space suit poses near a large tracking antenna at Cape Canaveral.

US\$150 - 200

87  
**MERCURY ATLAS 7 LAUNCH, SIGNED**

Color photograph, 10 x 8 inches.

SIGNED and INSCRIBED: "SCOTT CARPENTER, Aurora 7 Launch, 24 May 1962."

The Atlas launch vehicle lifts off Pad 14 at Cape Canaveral carrying Scott Carpenter the Aurora 7 spacecraft into orbit.

US\$200 - 300

89  
**SCHIRRA CLOSE-UP, SIGNED**

Color photograph, 10 x 8 inches.

SIGNED by WALLY SCHIRRA.

Schirra smiles for the camera while wearing his space suit and helmet during S7 training.

US\$150 - 200

86  
**CARPENTER'S ENTRY INTO AURORA 7, SIGNED**

Color photograph, 8 x 10 inches.

SIGNED and INSCRIBED: "SCOTT CARPENTER, 24 May 1962."

Carpenter is assisted into his Mercury spacecraft to begin his three orbit flight of May 24, 1962.

US\$200 - 300

88  
**SCHIRRA SPACE SUIT PORTRAIT, SIGNED**

Color photograph, 8 x 10 inches.

SIGNED and INSCRIBED: "WALLY SCHIRRA, S7."

Schirra poses in his Mercury space suit in front of a Mercury spacecraft model and world map in the background.

US\$150 - 200





90



91



92



93



94



95

90  
**SCHIRRA'S ENTRY INTO SIGMA 7, SIGNED**

Color photograph, 8 x 10 inches.

SIGNED by WALLY SCHIRRA.

Schirra is assisted by fellow astronaut Gordon Cooper into his Mercury spacecraft to begin his six-orbit flight of October 1962.

US\$200 - 300

91  
**COOPER SPACE SUIT PORTRAIT, SIGNED**

Color photograph, 10 x 8 inches.

INSCRIBED and SIGNED: "GORDON COOPER, Faith 7."

Cooper poses with a model of the Mercury spacecraft and a United States flag in the background.

US\$150 - 200

92  
**LAUNCH DAY FOR COOPER, SIGNED**

Color photograph, 8 x 10 inches.

INSCRIBED and SIGNED: "Launch Day, GORDON COOPER, 15 May 1963."

Gordon Cooper enters into his Mercury spacecraft to begin the longest flight of the Mercury Program during May 1963.

US\$200 - 300

93  
**COOPER AND FAITH 7 START FOR ORBIT, SIGNED**

Color photograph, 10 x 8 inches.

INSCRIBED and SIGNED: "Faith 7 Launch, 15 May 1963, GORDON COOPER."

Gordon Cooper's Mercury Atlas 9 lifts off from Pad 14 at Cape Canaveral during May 1963.

US\$200 - 300

94  
**SIGNED MERCURY SPACE EXHIBIT POSTAL COVER**

Postal envelope with a New York, NY postmark dated November 17, 1962, from the National Postage Stamp Show held in New York City during November 16-18, 1962. The cancel was made over a 4-cent "US Man in Space Project Mercury."

SIGNED by SCOTT CARPENTER, GORDON COOPER, and WALLY SCHIRRA next to the large red letters which read: "MERCURY SPACE EXHIBIT."

US\$400 - 600

95  
**SIGNED MERCURY ASTRONAUT FLIGHT INFORMATION**

Project Mercury, Launch Chronology. Houston: NASA, MSC. Single sheet, 10-1/2 by 8 inches. Details Mercury flights from August 1959 to May 1963, including Little Joe, Redstone, and Atlas.

SIGNED by SCOTT CARPENTER, GORDON COOPER, and WALLY SCHIRRA on the front page.

US\$400 - 600

# PROJECT GEMINI

Lots 96-115



96



97



98

96

## ED WHITE'S SPACEWALK

SHERRY, ROBERT C. 1920-1987. Oil on canvas, 20 x 30 inches (508 x 762 mm), signed "R. Sherry" lower left. Framed.

ED WHITE'S HISTORIC SPACEWALK, the first for an American Astronaut, was conducted June 3, 1965 as part of Gemini 4. He used a hand-held tubular gas jet to maneuver himself on the end of a 25-foot tether. At the end of his excursion outside the capsule, he seemed reluctant to return to the spacecraft, responding to Jim McDivitt's urging him back in by saying "I'm coming back in... and it's the saddest moment of my life."

Robert Sherry was a New York born artist who painted cover illustrations for science fiction magazines in the early 1940's, before entering the Navy as a transport pilot in WWII. After the war he was a ghost artist for many popular comic strips, but settled into a specialization in aviation art in his later years.

US\$800 - 1,200

97

## GEMINI 5 ASTROS WALK TO THE PAD, CREW SIGNED

Color photograph, 8 by 10 inches.

SIGNED and INSCRIBED: "GORDON COOPER, GT-5 CDR" and "CHARLES CONRAD, GT-5 PLT."

Cooper and Conrad head to the launch pad to begin their record breaking eight day space flight.

US\$300 - 500

98

## THE "EIGHT DAYS OR BUST" FLIGHT, CREW SIGNED

THE UNITED STATES TAKES THE LEAD IN THE SPACE RACE FROM THE SOVIETS  
Large color photograph, 14 x 11 inches.

BOLDLY SIGNED and INSCRIBED:  
"GORDON COOPER, GT 5 Cdr" and  
"CHARLES CONRAD, Plt."

An impressive image of Gemini-Titan 5 rocket rising from Launch Complex 19 at Cape Canaveral with the vehicle's exhaust plume seen in the background. This Gemini 5 flight carried Cooper and Conrad to a record breaking 8 days in space, which marked the beginning of the United States lead in the "Space Race."

US\$1,200 - 1,800

99

## CONRAD REFLECTS ON GEMINI 5'S SUCCESS, SIGNED

Color photograph, 8 x 10 inches.

INSCRIBED and SIGNED: "Gemini V Recovery, CHARLES CONRAD, GT-5 PLT."

Charles Conrad reflects on the Gemini 5 flight while riding in the recovery helicopter after splashdown.

US\$200 - 300



99





100

100

**YOU NEED A SHAVE! CREW SIGNED**

Color photograph, 10 x 8 inches.

INSCRIBED and SIGNED: "You need a shave! CHARLES CONRAD," and "Maybe tomorrow! GORDON COOPER."

The Gemini 5 astronauts have time for a humorous verbal exchange after recovery by the USS *Lake Champlain*.

**US\$1,200 - 1,800**

101

**GEMINI 6 CREW PORTRAIT SIGNED**

Color photograph, 10 x 8 inches.

SIGNED by WALLY SCHIRRA and TOM STAFFORD.

The Gemini 6 crew poses in their white space suits against a background of circles symbolizing their historic first space rendezvous flight.

**US\$400 - 600**



101

102

**GEMINI LAUNCH DATE "ORBIT COVERS" SET**

EACH SIGNED BY ITS RESPECTIVE CREW.

A set of two postal envelopes or "covers" designed and issued by "Orbit Covers" for Gemini 5 and 6. Each bears a Cape Canaveral hand-cancelled postmark made on the respective Gemini launch date. Each cover is illustrated with the Gemini flight crew and planned mission events. Both are 4 x 6-1/2 inches.

The Gemini 5 cover is SIGNED by GORDON COOPER and CHARLES CONRAD.

The Gemini 6 cover is SIGNED by WALLY SCHIRRA and TOM STAFFORD.

**US\$400 - 600**

103

**GEMINI SPLASHDOWN US RECOVERY SHIP SET**

EACH SIGNED BY ITS RESPECTIVE CREW.

A set of two postal envelopes or "covers" with a red rubber stamp cachet for the splashdowns of Gemini 5 and 6. Each bears a postmark made on the prime recover ship (U.S.S. *LAKE CHAMPLAIN* and *WASP*) on their respective splashdown date. Both are 4 x 6 1/2 inches.

The Gemini 5 cover is SIGNED by GORDON COOPER and CHARLES CONRAD.

The Gemini 6 cover is SIGNED by WALLY SCHIRRA and TOM STAFFORD.

**US\$400 - 600**



102



103



104



105



106



107

104

# **SPACE RENDEZVOUS PHOTOGRAPH CREW SIGNED**

Large color photograph, 14 x 11 inches.

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

An orbital view of the Gemini 7 spacecraft as seen and photographed by Tom Stafford while onboard Gemini 6.

**US\$1,500 - 2,000**

105

# **RENDEZVOUS WITH GEMINI 7 SIGNED**

Color photograph, 8 x 10 inches.

SIGNED by WALLY SCHIRRA and TOM STAFFORD.

Tom Stafford photographs a side view of the Gemini 7 spacecraft minutes after their historic first space rendezvous on December 15, 1965.

**US\$400 - 600**

106

# **GLENN AND ARMSTRONG SIGNED TRAINING PHOTO**

Color photograph, 8 x 10 inches, of Glenn and Armstrong seated casually, SIGNED "John Glenn" and "Neil Armstrong."

An unusual double-signed photo featuring just these two men who would go on to be long time friends besides one being the first American to orbit the Earth, and the other the first man to walk on the Moon. Likely photographed during tropical survival training held for several of the current astronauts at Albrook Air Force Base, Canal Zone, June 3-6, 1963.

**US\$1,500 - 2,000**

107

# **GEMINI 8 CREW PORTRAIT SIGNED**

NEIL ARMSTRONG'S FIRST SPACE FLIGHT. Color photograph, 8 by 10 inches.

SIGNED by DAVE SCOTT.

The Gemini 8 crew of Neil Armstrong and Dave Scott pose in their aircraft flight suits with a model of the Gemini spacecraft.

**US\$200 - 300**





108



109



110



111

108

#### **GEMINI IX LAUNCH COMMANDER SIGNED**

*RENDEZVOUS WITH AN ANGRY ALLIGATOR.* Color photograph, 10 x 8 inches.

INSCRIBED and SIGNED: "Gemini IX Launch, TOM STAFFORD, CDR."

The Gemini 9 launch Titan rocket lifts off the pad and heads toward a orbital rendezvous with a docking target vehicle. That target vehicle aerodynamic shroud failed to completely release making it look like "an angry alligator" as described by Tom Stafford from earth orbit.

**US\$200 - 300**

109

#### **GEMINI 10 LIFTS OFF AT NIGHT**

Color photograph, 16 x 20 inches, of Gemini 10 lift-off, with large half-moon visible in the night sky.

SIGNED by MICHAEL COLLINS: "Micheal Collins—PLT Gemini X—July 1966."

**US\$600 - 800**

110

#### **GEMINI 11 CREW PORTRAIT SIGNED**

Color photograph, 8 x 10 inches.

SIGNED and INSCRIBED: "CHARLES CONRAD, Gemini XI CDR" and "RICHARD GORDON, GEMINI XI PLT."

The Gemini 11 crew of Charles Conrad and Richard Gordon pose in their aircraft flight suits while holding a model of the Gemini spacecraft.

**US\$300 - 500**

111

#### **GEMINI 11 CREW ON RECOVERY SHIP SIGNED**

Color photograph, 8 x 10 inches.

INSCRIBED and SIGNED: "Gemini XI Recovery, CHARLES CONRAD, Gemini XI CDR." Also SIGNED and INSCRIBED: "RICHARD GORDON, Gemini XI PLT."

Charles Conrad and Richard Gordon pause for a photograph on the recovery ship after their record altitude flight of Gemini 11.

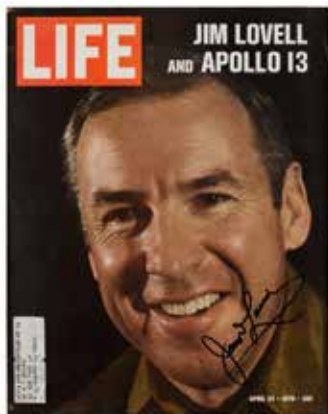
**US\$300 - 500**



115



113



114



114

#### ALDRIN AND LOVELL SIGNED PHOTOS

1. Color photo, signed ("Buzz Aldrin") and inscribed "Gemini XII EVA, Nov '66," depicting Aldrin on a spacewalk with earth horizon in the background. 8-1/2 x 11 inches, matted and framed.
  2. LIFE Magazine cover, signed ("Jim Lovell"), featuring Lovell's portrait and headline *Jim Lovell and Apollo 13*. 10-1/2 x 14 inches, matted and framed.
- SIGNED PHOTOS OF TWO OF NASA'S BEST, WHO FLEW TOGETHER IN GEMINI 12. Both astronauts continued from the Gemini program into the Apollo program, but only Aldrin would ultimately walk on the moon, due to the malfunction on Apollo 13 that cost Lovell his chance at a moonwalk.

US\$800 - 1,200



112

115

#### A NAVY PHOTOGRAPHER'S FIRSTHAND VIEW OF THE GEMINI MISSIONS

Archive of photographs, motion picture film, and other material from Photographer 2nd Class David Greenberg, U.S. Navy, who was stationed aboard USS *Wasp* during the retrieval of Gemini 4, 6, 7, 9 and 12. Comprising approximately 200 prints of photos taken from the *Wasp*, mostly black and white, together with approximately 35 official press photos. One photo is SIGNED by astronauts Lovell & Borman. Other astronauts pictured include Ed White, James McDivitt, Wally Schirra, Tom Stafford, Gene Cernan and Buzz Aldrin. Sizes mostly 8 x 10 inches, with a few 5 x 7 inches.

WITH: 16 mm film reel in canister marked "GEMINI / 7 JUNE 1965 / COLOR / GT4."

WITH: "Stinger" magazine of the USS *Wasp*, special edition of June 1965 covering the retrieval of Gemini 4.

WITH: Various other newspaper clipping, photos of Greenberg and other photographers, a set of embroidered Apollo mission patches, pamphlets, stickers and pins.

US\$3,000 - 4,000

112

#### GEMINI 12 CREW PORTRAIT SIGNED

APOLLO 11 MOON WALKER BUZZ ALDRIN'S FIRST SPACE FLIGHT. Color photograph, 10 x 8 inches.

SIGNED by BUZZ ALDRIN.

The Gemini 12 crew of Buzz Aldrin and James Lovell pose in their aircraft flight suits while standing in a full scale model of the Gemini spacecraft.

US\$500 - 700

113

#### GEMINI 12 EVA SELF PORTRAIT SIGNED

THE SECOND MAN ON THE MOON MAKES THE FIRST SPACEWALK SELFIE. Color photograph, 10 x 8 inches.

SIGNED by BUZZ ALDRIN.

The Gemini 12 Astronaut Buzz Aldrin lifts his space helmet sun visor to allow his face to clearly be seen in the first spacewalk "selfie".

US\$800 - 1,200

# APOLLO PROGRAM THROUGH APOLLO 10

Lots 116-127



116

## 116 TRAINING IN THE APOLLO 1 SPACECRAFT SIGNED

Color photograph, 10 x 8 inches.

INSCRIBED and SIGNED: "Checking out Apollo 1, WALT CUNNINGHAM."

Back-up flight astronaut Walt Cunningham is seen through the Apollo 1 left-side window during training procedures inside the spacecraft. The interior of this vehicle was consumed in a launch pad fire on January 27, 1967; killing the primary crew of Virgil "Gus" Grissom, Roger Chaffee, and Ed White.

US\$125 - 175

## 117 APOLLO 7 LIFTOFF SIGNED BY CUNNINGHAM

Color photograph, 20 x 16 inches, of Apollo 7 liftoff.

INSCRIBED and SIGNED by WALT CUNNINGHAM: "Liftoff of the first manned Apollo mission at 10:05 AM on Friday October 11, 1968. Our Saturn 1B was very smooth compared to the very rough Titan II used to launch the Gemini spacecraft. Walt Cunningham—Apollo 7 Lunar Module Pilot."

US\$500 - 700



117

## 118 WALLY SCHIRRA SIGNED FLOWN BETA PATCH

Apollo 7 logo on beta cloth, 9 x 9 inches (229 x 229 mm), INSCRIBED and SIGNED "Flown on Apollo 7 - Wally Schirra."

One of the original Mercury Seven, Schirra was Gus Grissom's backup as commander of Apollo 1, but after the disaster that killed Grissom, White and Chaffee, the program's numbering system was changed, and the next mission became Apollo 7. Schirra, along with Donn Eisele and Walt Cunningham, orbited the Earth for 11 days in October 1968 to test the Apollo CSM. He famously developed a head cold, which Eisele also caught, leading to a post-NASA career plugging Actifed cold remedy on television.

US\$1,000 - 2,000

## 119 FIRST MANNED APOLLO LAUNCHED TO ORBIT SIGNED

THE FIRST FLIGHT AFTER THE FATAL APOLLO 1 FIRE

Color photograph, 10 x 8 inches.

SIGNED by Apollo 7 Commander WALLY SCHIRRA. SIGNED and INSCRIBED: "WALT CUNNINGHAM, 11 OCT 1968, Apollo 7," which was mission launch date.

The Saturn IB rocket carrying Apollo 7 is seen rising behind the heavy concrete blockhouse of Cape Canaveral's Complex 34 launch site.

US\$400 - 600



118



119





121



122



123



120

120

**COMMANDER SCHIRRA IN ORBIT DURING APOLLO 7 SIGNED**  
*THE ONLY ASTRONAUT TO FLY ALL THREE U.S. SPACE VEHICLES - MERCURY, GEMINI, AND APOLLO*  
 Color photograph, 10 x 8 inches.

SIGNED and INSCRIBED: "WALLY SCHIRRA, Apollo 7."

Apollo 7 Commander Wally Schirra is photographed inside the Apollo 7 spacecraft during the eleven day flight which he called a "101 percent success!" The number 101 was also the spacecraft's actual serial number.

US\$200 - 300

121

**APOLLO 8 EARTHRISE SIGNED BY BORMAN AND LOVELL**

Color photograph, 16 x 20 inches, of Earth visible over the surface of the Moon from lunar orbit. Matted.

INSCRIBED AND SIGNED: *Earthrise—Apollo 8—Frank Borman and SIGNED James Lovell.*

US\$1,500 - 2,000

122

**APOLLO 8 EARTHRISE SIGNED BY BORMAN AND LOVELL WITH CHRISTMAS GREETING**

Color photograph, 16 x 20 inches, of Earthrise over the Moon's surface, taken from lunar orbit.

INSCRIBED AND SIGNED BY BOTH BORMAN AND LOVELL: "*And from the crew of Apollo 8, we close with good night, good luck, a merry Christmas and God bless all of you, all of you on the good Earth! Frank Borman—CDR Apollo 8.*" and "*And God called the light day, and the darkness he called night... James Lovell—CMP Apollo 8.*"

US\$800 - 1,200

123

**APOLLO 8 PHOTOGRAPHS SIGNED BY BORMAN**

Two color photographs, each 16 x 20 inches, both moonscapes with Earth in the background, both INSCRIBED AND SIGNED: One "*In the beginning God created the heavens and the Earth - Frank Borman - Apollo 8 Commander - December 24, 1968,*" and the other "*And from the crew of Apollo 8 we close with good luck, merry Christmas, and God bless all of you on the good Earth - Frank Borman - Apollo 8 Commander - First lunar mission - December 24, 1968.*" Rolled.

US\$1,000 - 1,500





124

124

#### SIGNED APOLLO 8 LUNAR ORBIT CHART

Panoramic NASA chart, 12 x 41 inches, entitled *Apollo lunar orbit chart—Apollo 8 Mission—1st and 10th revolutions, and dated 26 December 1968 launch date*. SIGNED BY BOTH CREW MEMBERS: “Frank Borman—Apollo 8 CDR” and “Jim Lovell—Apollo 8 CMP.” Rolled.

US\$1,500 - 2,000

125

#### APOLLO 8 FILMS

Five 16 mm films in canisters, with identifying labels on the canister lids, comprising:

1. NASA film with sticker labeled “C.G. Marshall Space Flight Center, Huntsville, Ala.” numbered “MSFC 69-301” and titled “Apollo 8 Quick Look.”
2. Labeled “The Boeing Company - Launch Systems Branch” and titled “Monthly Film Report, August 1967.”
3. Labeled by hand “Saturn V Quarterly Film No. 9, Dec 1, 64 - Feb 28, 65.”
4. Labeled by hand “JM-LRF 9/1/67” and “KA1801 - A01 - 07A, B, C, D, 128 f.p.s.”
5. Labeled by hand “J-4 Test.”

US\$1,500 - 2,500



125



127



126

# **BLAZING THE TRAIL FOR A LUNAR LANDING COMMANDER SIGNED**

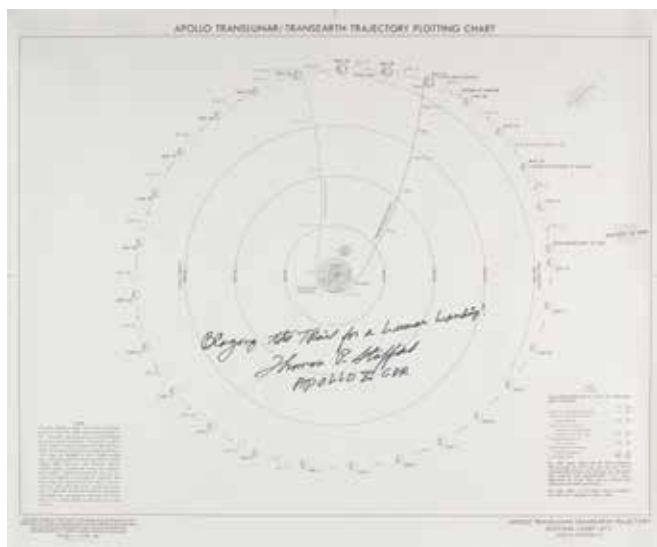
*THE FLIGHT EVENTS THAT ENABLED THE FIRST LUNAR LANDING JUST TWO MONTHS LATER DURING JULY 1969*

*Apollo Translunar / Transearth Trajectory Plotting Chart (ATT), Apollo Mission 10, 1969, 24 x 20 inches. A flight time summary based on the May 1969 launch date and detailed notes section that are located in opposite lower corners.*

**BOLDLY INSCRIBED and SIGNED:** “*Blazing the Trail for a Lunar Landing, THOMAS P. STAFFORD, Apollo X CDR.*” The Apollo X Commander has completed his name in the rare form of his signature: “*THOMAS P. STAFFORD.*”

The chart is centered on a north polar view of the Earth and displays the May 1969 orbital path of the moon around the Earth. The Apollo 10 flight profile is plotted and events such as earth launch, translunar injection, lunar and earth coast phases, lunar orbit insertion, lunar landing - liftoff, and transearth injection are included.

**US\$1,200 - 1,800**



126

127

# **SIGNED SNOOPY MASCOT OF THE APOLLO X LM CREW**

*Snoopy Astronaut doll, plastic and textile, 10 inches tall, of the Peanuts comic strip character Snoopy in a spacesuit and helmet, produced in China by Determined Distributions of San Francisco for United Feature Syndicate, 1969. With original red and blue display box.*

**INSCRIBED and SIGNED by TOM STAFFORD:** “*Snoopy, LM-4 Call Sign, TOM STAFFORD, Apollo X Cdr, May 69*” on the back of Snoopy’s helmet.

*Snoopy* was adopted by NASA with the full blessing of creator Charles Schulz as the Manned Flight Awareness (MFA) Program mascot. The program used *Snoopy* as a “spokesperson” to emphasize such topics as flight safety and good quality control during spacecraft manufacturing.

The Apollo X LM crew of Stafford and Cernan named their Lunar Module *Snoopy* partly to bring greater recognition to the MFA program. Apollo X Command Module Pilot John Young named his spacecraft *Charlie Brown*.

**US\$6,000 - 9,000**

# APOLLO 11

Lots 128-146



128

128

**BUZZ ALDRIN'S APOLLO 11 CREW SIGNED POSTAL COVER LIFE INSURANCE FOR THE FAMILIES**  
 An Apollo 11 Life Insurance Cover measuring approximately 4 x 6 inches with a cachet featuring two astronauts exploring the lunar surface. Postmarked at Houston, Texas on the date of the Apollo 11 lunar landing and moon walk, July 20, 1969. Numbered on the verso by Aldrin with his identifier number "BA28." The envelope is displayed between paragraphs of a Typed Signed Letter by BUZZ ALDRIN.

**Provenance**

Originally from the collection of Apollo 11 Lunar Module Pilot 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 history 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 BA28 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."

US\$8,000 - 12,000



129

129

**LAUNCH EMERGENCY CHECKLIST SHEET FIRE DANGERS**  
 CREW PROCEDURES AND REFLECTIONS ON THE FATAL APOLLO 1 FIRE  
 Apollo 11 Launch Operations Checklist, page 5-5 / 5-6, a single sheet in red tint to assist quick location during emergencies. Printed recto and verso. NASA/MSC, April 15, 1969, revised June 1, 1969. 8 x 5-1/2 inches. With a Typed Letter Signed by BUZZ ALDRIN and copy of the checklist front cover.

INSCRIBED and SIGNED by BUZZ ALDRIN: "Used in training for Apollo XI, BUZZ ALDRIN" on page 5-5.

**Provenance**

Originally from the collection of Apollo 11 Lunar Module Pilot Buzz Aldrin.

BUZZ ALDRIN'S provenance letter reads in part: "Accompanying this letter is a page numbered 5-5 and 5-6 from the CSM 107 (Apollo 11) Launch Operations Checklist, SKB32100080-306. The pages are part of the complete manual that was used in the Command Module simulator ... The sheet is from Section 5 titled: Launch Emergency Procedures.

"Side 5-5 has the remaining steps to follow in case a spacecraft fire occurs in space if we were not wearing our space suits. Side 5-6 has the procedures to deal with a fire during spacecraft re-entry into earth's atmosphere. The last steps on this side are how to begin an emergency power down of our spacecraft. A fire in the spacecraft is an extremely dangerous occurrence because Neil, Mike, and I clearly remember the tragic loss of fellow astronauts Gus Grissom, Ed White, and Roger Chaffee due to such an event while on the launch pad back in January 1967...."

US\$1,200 - 1,800





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#### THE APOLLO 11 CREW PORTRAIT SIGNED

HISTORY'S MOST WELL-KNOWN APOLLO CREW- ARMSTRONG, COLLINS AND ALDRIN

Color photolithograph, 8 x 10 inches with NASA descriptive text along the lower border and on verso.

BOLDLY SIGNED and INSCRIBED: "BUZZ ALDRIN, Apollo XI LMP."

The Apollo 11 crew of Commander Neil Armstrong, Command Module Pilot Michael Collins, and Lunar Module Pilot Edwin "Buzz" Aldrin pose in their white space suits prior to the first lunar landing mission of July 1969.

US\$500 - 700

131

#### THE APOLLO 11 ON THE LAUNCH PAD SIGNED

THE SATURN V ROCKET STANDS READY TO TRAVEL TO THE MOON

Color photolithograph, 10 x 8 inches with NASA descriptive text along the lower border and on verso.

BOLDLY SIGNED by BUZZ ALDRIN.

The Apollo Saturn V rocket combination stands ready on Launch Pad 39A at the Kennedy Space Center to carry the Apollo 11 astronauts to the moon. This rocket and dual spacecraft enabled the United States to make history's first manned lunar landing and exploration during July 1969.

US\$500 - 700

132

#### MASSIVE SIGNED PHOTO PORTRAIT OF MICHAEL COLLINS

Poster sized color photograph, 36 x 54 inches, of Apollo 11 Command Module Pilot Michael Collins' official NASA portrait, wearing his spacesuit, his hand resting on his helmet.

SIGNED AND INSCRIBED: "MICHAEL COLLINS. APOLLO XI CMP. JULY 16-24, 1969."

US\$1,200 - 1,800

133

#### APOLLO 11 PRINT BY DAN WITKOFF SIGNED BY ALDRIN AND COLLINS

WITKOFF, DAN. B.1947. *The Eagle's Last Flight* lithograph, numbered 42 of 1,969. 32 x 26 inches (813 x 660 mm). Pencil signature of artist ("Witkoff") at lower right. Framed.

SIGNED by MICHAEL COLLINS and BUZZ ALDRIN.

US\$1,000 - 1,500



134

**ARMSTRONG SNAPS ALDRIN INSIDE THE LUNAR MODULE  
SIGNED**

Color photograph, 10 x 8 inches.

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

Neil Armstrong photographs Buzz Aldrin during lunar module checks prior to the first lunar landing.

US\$600 - 800

135

**CAPCOM CHARLIE DUKE'S MESSAGE TO EAGLE AFTER  
LANDING ON THE LUNAR SURFACE**

Color photograph, 20 x 20 inches, of Lunar Module on the Lunar surface, shooting up from the landing strut with Earth in the background.

SIGNED and INSCRIBED BY CHARLIE DUKE: "We copy you down, eagle ... Roger tranquility. We copy you on the ground. You've got a bunch of guys about to turn blue. We're breathing again. Thanks a lot!" and signed "Charlie Duke—Apollo 11 CAPCOM." The quote here was Duke's response to Neil Armstrong's announcement "The Eagle has landed," the first words spoken by a person on Earth to someone on the surface of another celestial body. Duke would himself walk on the moon on the Apollo 16 mission.

US\$800 - 1,200

136

**BUZZ ALDRIN POSES FOR NEIL ARMSTRONG  
ALDRIN RECORDS THE JULY LANDING DATE**

Color photograph, 8 x 10 inches.

SIGNED and INSCRIBED: "BUZZ ALDRIN, JULY 20, 1969."

The iconic image from the Apollo 11 flight, Buzz Aldrin pauses for Neil Armstrong's photograph during mankind's first exploration of the lunar surface.

US\$1,000 - 1,500



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**ALDRIN SIGNED PHOTO: ON THE MOON AT TRANQUILITY BASE**

Color photograph, 16 x 20 inches, of Aldrin on lunar surface.

INSCRIBED AND SIGNED: *Tranquility Base—Buzz Aldrin—Apollo XI.*

US\$2,500 - 3,500

138

**ALDRIN WITH THE STARS AND STRIPES ON THE LUNAR SURFACE**

Color photolithograph, 8 x 10 inches, with descriptive text along the border.

BOLDLY SIGNED by BUZZ ALDRIN.

Aldrin stands with the United States flag on the moon. The most significant image from the lunar landing that symbolizes the accomplishment of John F. Kennedy's goal of landing a man on the moon.

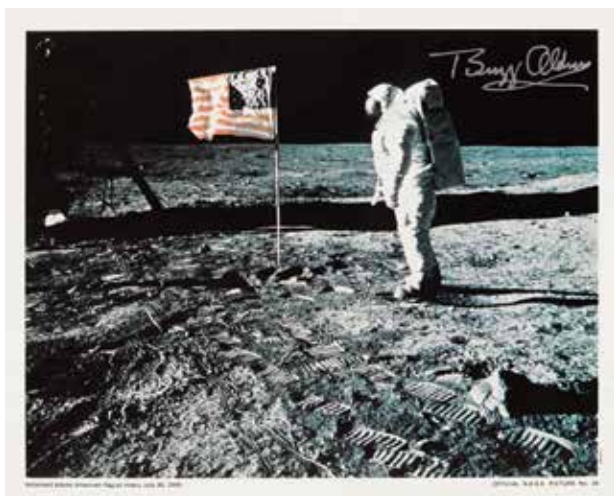
US\$800 - 1,200

139

**ARMSTRONG AND ALDRIN RAISING THE FLAG**

Print SIGNED AND INSCRIBED BY ARMSTRONG at the lower right: "*To Sue—Neil Armstrong,*" 20 x 16 inches, taken from Lunar Module while Armstrong and Aldrin planted the flag, colorized from original monochromatic image, captioned on lower margin AP 1107—ARMSTRONG & ALDRIN PLANTING OLD GLORY ON THE MOON.

US\$2,000 - 3,000



138



139

140

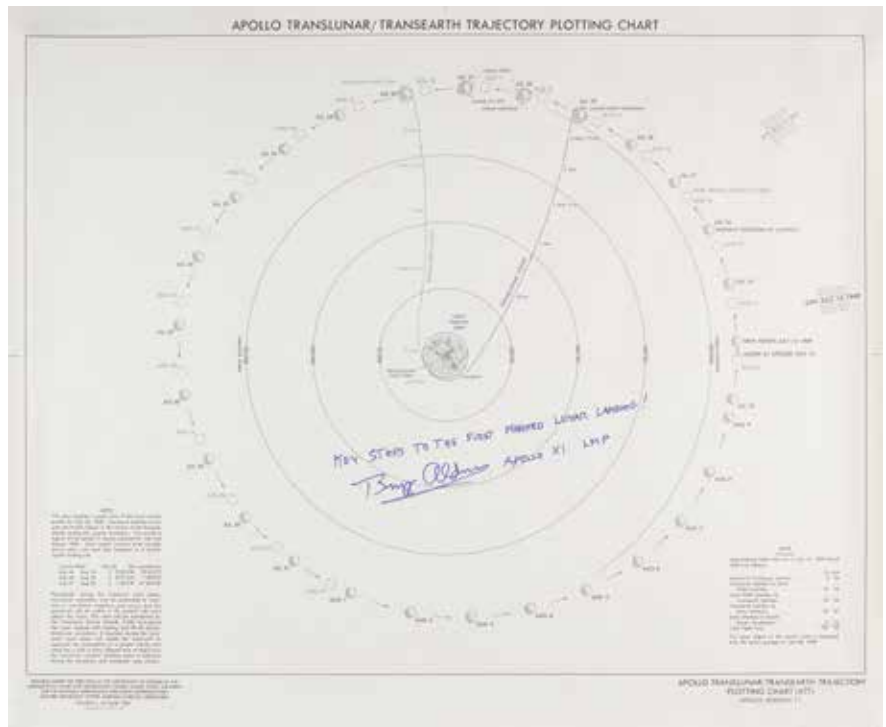
**KEY STEPS FOR A LUNAR LANDING  
SIGNED APOLLO 11 TRAJECTORY  
CHART**

*A MAGNIFICENT ILLUSTRATION OF THE STEPS REQUIRED TO LAND ON THE MOON AND RETURN*

*Apollo Translunar / Transearth Trajectory Plotting Chart (ATT), Apollo Mission 11. June 23, 1969, 24 x 20 inches.*

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

The chart is centered on a north polar view of the Earth and displays the July/August 1969 orbital path of the moon around the Earth. The Apollo 11 flight profile is plotted and events such as earth launch, translunar injection, lunar and earth coast phases, lunar orbit insertion, lunar landing - liftoff, and transearth injection are included.



US\$6,000 - 9,000

140

141

**APOLLO 11 LANDING SITE CHART  
SIGNED**

*Julius Caesar, Lunar Shaded Relief - LSR 60. Defense Mapping Agency for NASA. Includes a detailed legend and a gridded lunar sphere near side locator map image. First edition, September 1978. 22 x 29 inches, scale 1:1,000,000.*

**BOLDLY INSCRIBED and SIGNED:** "Tranquillity Base, July 20 - 21, 1969, BUZZ ALDRIN." He has marked the Apollo 11 landing site with a large "X."

A chart which perhaps best illustrates the single most important accomplishment of the 1960's space effort, the United States manned lunar landing. The chart is number 60 of the LSR series and features approximately half of the Mare Tranquillitatis with all surrounding craters, wrinkled ridges, and highland areas. The Apollo 11 landing site near the bottom center.



US\$4,000 - 6,000

142

**NO LOT**

141





143

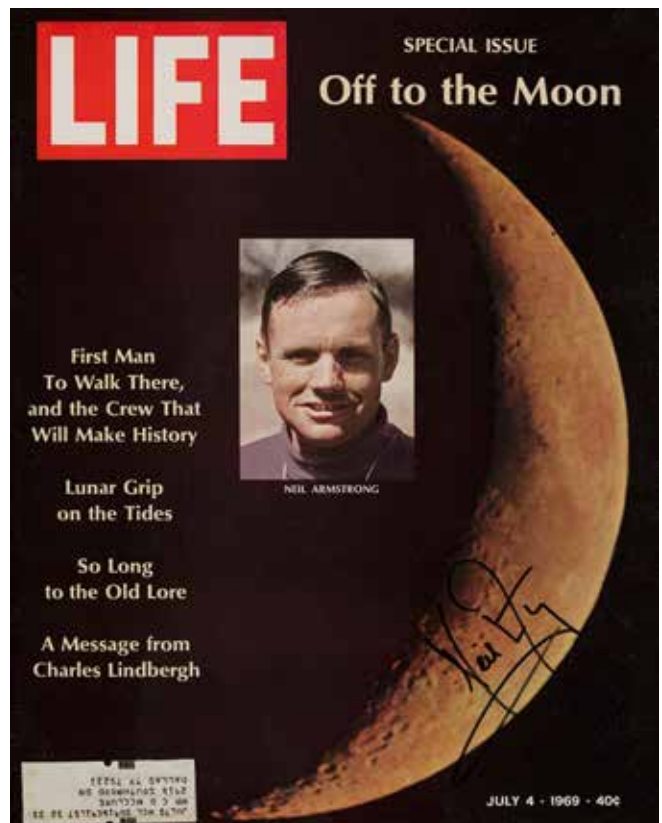
143

#### SIGNED NEIL ARMSTRONG PRINT BY PAUL CALLE

CALLE, PAUL. 1928-2010. *Neil Armstrong*. Lithograph, 29 x 19 inches (737 x 483 mm), of Armstrong in his Apollo 11 spacesuit and cap with headset, his head turned to a right profile. Numbered 861 of 1000. SIGNED "Neil Armstrong" and double signed by Calle "July 16, 1969, Paul Calle" with a later signature "Paul Calle." Together with 19 x 10 inch informational insert featuring a photo of Calle with Armstrong, signing the prints at the National Air and Space Museum, December 23, 1976. In fitted paper folder, titled "Neil Armstrong by Paul Calle - National Air and Space Museum for the Charles A. Lindbergh Memorial Fund."

SIGNED BY THE FIRST MAN TO WALK ON THE MOON AND THE ARTIST WHO DESIGNED THE POSTAGE STAMP COMMEMORATING THAT MOMENT. Paul Calle was a New York born artist who served as an illustrator for the Army during the Korean War. After designing cover art for science fiction magazines, he was chosen in 1962 to be part of the NASA Art Program. He designed a pair of 5-cent Gemini postage stamps, and was the only artist allowed access to the Apollo 11 crew as they prepared to enter the spacecraft for their historic mission. He designed the iconic "First Man on the Moon" 10-cent stamp, and in his long career he would design over 40 stamps for the U.S. Postal Service.

US\$2,000 - 3,000



144

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#### NEIL ARMSTRONG SIGNED LIFE MAGAZINE COVER

Cover only from *Life* magazine, July 4, 1969, with moon image overlaid with portrait of Neil Armstrong, 13-1/2 x 10-3/4 inches (343 x 273 mm). SIGNED BY NEIL ARMSTRONG, lower right. Matted and framed.

US\$1,500 - 2,500





145

145

# **APOLLO 11 ASTRONAUTS SIGNED PROGRAM FOR HUBBARD MEDAL AWARD CEREMONY**

Program for the award ceremony of the National Geographic Society's Hubbard Medal, SIGNED BY ARMSTRONG, ALDRIN and COLLINS. Color bifold, 10 x 10 inches (254 x 254 mm).

The Hubbard Medal of the National Geographic Society is awarded every year for distinction in scientific exploration and research. Named for the founder of the Society, Gardiner G. Hubbard, the list of recipients includes some of America's most notable explorers, including Robert Peary, Roald Amundsen, Richard E. Byrd, Charles Lindbergh, and Astronauts including John Glenn, Frank Borman, Jim Lovell, William Anders, John Young, and Robert Crippen, in addition to the Apollo 11 crew. The ceremony for Armstrong, Aldrin and Collins was held at Constitution Hall, Washington, D.C., February 16, 1970.

US\$2,000 - 3,000



146

146

# **ARMSTRONG INSCRIBED MOONSHOT**

SHEPARD, ALAN, and DEKE SLAYTON, *Moon Shot: The Inside Story of America's Race to the Moon*. Atlanta: Turner Publishing, 1994. 8vo, with pictorial dust jacket. INSCRIBED and SIGNED by NEIL ARMSTRONG: "All the best—To Tom Weilbacher—Neil Armstrong."

## **Provenance**

With letter from the recipient's son stating that his father delivered mail to Armstrong for ten years.

US\$1,000 - 2,000

# APOLLO 12-17

Lots 147-206



147



148



149



150

147

## TRAINING FOR MAN'S SECOND LUNAR LANDING CREW SIGNED

*RARELY SEEN APOLLO 12 CREW PHOTOGRAPH*

Black and white NASA press release photograph, 8 x 10 inches.

SIGNED by the entire Apollo 12 crew of CHARLES CONRAD, DICK GORDON, and ALAN BEAN.

The Apollo 12 crew poses next to an Apollo spacecraft during training exercises for their November 1969 lunar landing mission.

US\$500 - 700

148

## CONRAD AND BEAN IN THE LM SIMULATOR SIGNED

*THE LM CREW PRACTICES THEIR APPROACH TO THE LUNAR SURFACE*

Color photograph, 8 x 10 inches.

SIGNED and INSCRIBED: "CHARLES CONRAD, Cdr Apollo XII" and "ALAN BEAN, LMP Apollo XII."

Conrad and Bean pause for a photograph during their intense training of Lunar Module procedures required to make the second lunar landing.

US\$500 - 700

149

## OFF TO THE MOON! CREW SIGNED

*THE BEGINNING OF MAN'S SECOND LUNAR LANDING*

Color photograph, 8 x 10 inches.

INSCRIBED and SIGNED: "Off to the Moon! RICHARD GORDON, Cmp," and "CHARLES CONRAD, Cdr. Apollo XII." SIGNED by ALAN BEAN.

The Apollo XII crew walks to the transfer van on the morning of November 14, 1969. They would lift-off during a heavy rain storm which caused lightning discharges through the Saturn V rocket. Fortunately, the launch was not aborted and the flight continued to make the second manned lunar landing.

US\$800 - 1,200

150

## JUST A DAYS WORK ON THE MOON SIGNED

*CONRAD READIES EQUIPMENT FOR LUNAR SURFACE EXPLORATION*

Color photolithograph, 8 x 10 inches with NASA descriptive text along the lower border and on verso.

BOLDLY SIGNED and INSCRIBED: "CHARLES CONRAD, Apollo XII Cdr."

Apollo 12 Commander Charles Conrad prepares to remove lunar surface sampling equipment from the Lunar Module's descent stage prior to extensive exploration of the lunar surface. A large communication antenna previously deployed by the lunar crew is seen in the foreground.

US\$500 - 700



151

# 151 **APOLLO 12 LAUNCH AND SPLASHDOWN POSTAL ENVELOPES**

EACH SIGNED BY THE COMPLETE APOLLO 12 CREW  
 First envelope is an "Orbit Covers" cachet postmarked on the Apollo 12 launch date of November 14, 1969 at Cape Canaveral. The second is a "Swanson" envelope with a cachet of an Apollo spacecraft splashdown with a Patrick Air Force Base postmark of November 21, 1969.

BOTH envelopes are SIGNED by CHARLES CONRAD, RICHARD (or DICK) GORDON, and ALAN BEAN.

US\$600 - 800

152

# 152 **APOLLO 12'S BACK UP SITE FOR A LUNAR LANDING SIGNED**

*Apollo Lunar Orbit Chart (ALO), Apollo Mission 12. Revolutions 1, 18, 19, 38, 39 and 45. 16 November 1969 Launch Date.*  
 Color lunar map, First Edition, 8 October 1969. 12 x 41 inches.

BOLDLY SIGNED and INSCRIBED: "ALAN BEAN, *Apollo XII LMP, Back Up Site 5.*"

Preparing for a lunar flight required almost as many contingency plans as actual flight steps. With hundreds of thousands of launch vehicle and spacecraft parts required for a mission, there was a high probability many would fail and require replacement. This could easily delay a planned launch date, thus back-up launch and landing dates were established. This particular chart was printed for a November 16 launch date, reflecting a two day delay of the original planned date of November 14. The lunar landing site was known as Apollo Site 5 and was just west of the original planned (and actual) touchdown site. This westward movement allowed for the same low sun angle the crew trained for to provide maximum shadowing to easily identify rugged lunar features.

US\$500 - 700

153

# 153 **APOLLO 12'S DESCENT TO THE OCEAN OF STORMS SIGNED**

*THE FIRST PIN-POINT LANDING ON THE MOON*  
*LM Descent Monitoring Chart - LMD, (PDI to Landing). 1st Edition, October 8, 1969. 14 November 1969 Launch Date, Landing Site No. 7. Scale 1;1,000,000. 8 by 42 inches.*

BOLDLY SIGNED and INSCRIBED: "ALAN BEAN, *Apollo XII LMP.*"

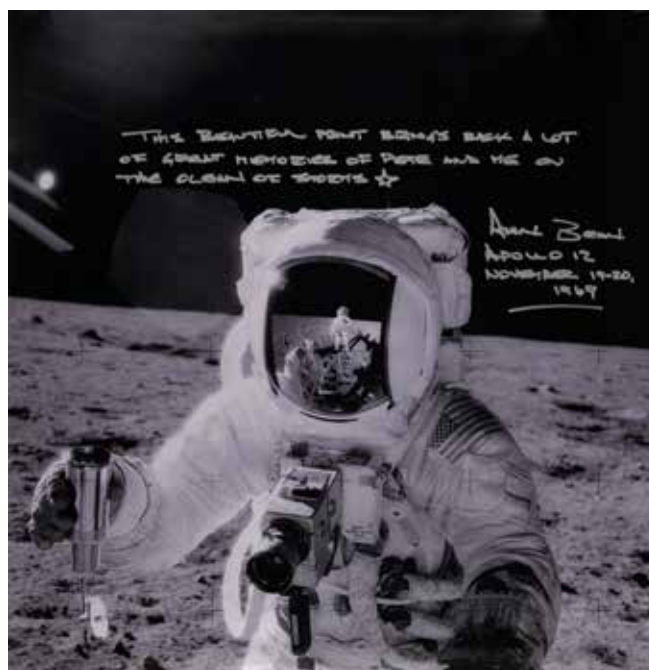
A white line down the center of the chart represents Lunar Module *Intrepid's* flight path to Landing Site 7 in the Ocean of Storms. White numeric time markers list the time before PDI (Power Descent



152



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Initiation). This is when *Intrepid's* descent engine ignited to begin the over 9 minute trip down to the lunar surface. Commander Charles Conrad made a pin-point landing, touching down about 500 to 600 feet from the Surveyor 3 robotic lander. The Apollo 12 astronauts returned parts of the Surveyor for analysis. Many of the craters and lunar regions are clearly identified.

US\$600 - 800

154

# 154 **BEAN AND CONRAD ON THE OCEAN OF STORMS**

Black and white photograph, 20 x 20 inches, of Bean in spacesuit on the lunar surface, with Pete Conrad reflected in his visor. INSCRIBED AND SIGNED: "This beautiful print brings back a lot of great memories of Pete and me on the Ocean of Storms—Alan Bean—Apollo 12—November 19-20, 1969." Rolled.

US\$1,500 - 2,500





155



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157

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#### ALAN BEAN SIGNED PHOTO ON LUNAR SURFACE WITH KIPLING QUOTE

Color photo, 16 x 20 inches, of Bean on the lunar surface, with Landing Module in the background. INSCRIBED AND SIGNED BY ALAN BEAN, "I am not blind to the sun, as my goal is clear. The moon in my soul forever, my memories always near—Alan Bean—Apollo 12 Lunar Module Pilot—November 19, 1969." Rolled.

US\$1,000 - 1,500

156

#### ALAN BEAN INSPECTING THE LUNAR MODULE AFTER LANDING

Color photograph, 16 x 20 inches, depicting Alan Bean walking on the lunar surface.

INSCRIBED AND SIGNED: *Here I am on the Ocean of Storms photographing the engine bell for possible damage. The footprints are Pete's, as he went behind the LM and photographed me—it was a great adventure!—Alan Bean—Apollo XII LMP.*

US\$1,500 - 2,500



158

157

#### ALAN BEAN ON THE LUNAR SURFACE SIGNED

Monochrome photograph, 16 x 20 inches, of Alan Bean on lunar surface, with Pete Conrad reflected in his visor.

SIGNED by ALAN BEAN: "Alan Bean—Apollo 12."

US\$1,500 - 2,500

158

#### ALAN BEAN SIGNED PHOTOS OF LUNAR SURFACE

1. Color photograph of Lunar Module at Oceanus Procellarum, 8 x 10 inches, INSCRIBED AND SIGNED "Alan Bean—Apollo 12—An island of refuge in an ocean of storms."

2. Black and white photograph, 8 x 10 inches, showing Bean in space suit with camera on the moon's surface, INSCRIBED AND SIGNED "First to eat spaghetti on the Moon!—Alan Bean—Apollo 12."

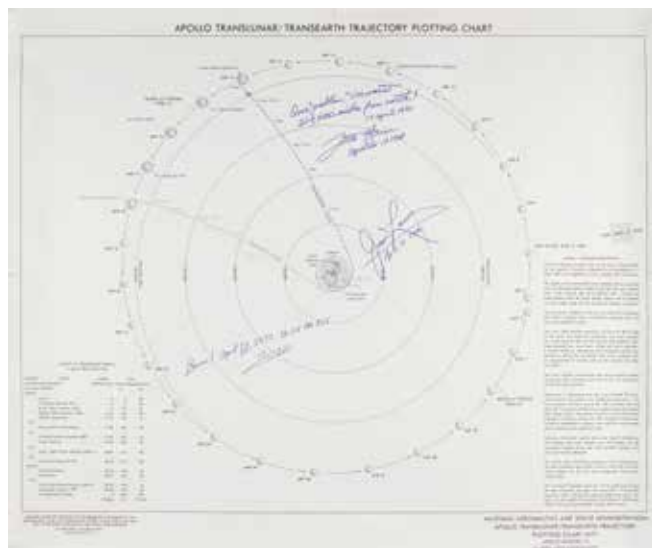
WITH a smaller photo of Bean signing these photographs.

US\$800 - 1,200





159



160



161

#### 159 **APOLLO 12 FILM**

16 mm film in metal canister, labeled on top *B & W Print* in ink stamp, and hand lettering indicating the length of the film at 600 feet, and the subject *Apollo XII Kine—11/14—318-20:41-07—318-20:58-56*.

**US\$1,000 - 1,500**

160

#### **BOOM! APRIL 13, 1970 NOT YOUR TYPICAL DAY IN SPACE**

*Apollo Translunar / Transearth Trajectory Plotting Chart (ATT), Apollo Mission 13.*  
Diagram in color with extensive annotations and astronaut signatures.  
First Edition, March 16, 1970. 24 x 20 inches.

INSCRIBED and SIGNED: "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 and INSCRIBED: "JAMES LOVELL, Apollo 13 CDR."

A striking illustration of how far away from Earth the Apollo 13 spacecraft was when the Service Module's oxygen tank exploded. The complex steps of a lunar mission are illustrated from a north polar view. Earth launch, lunar and earth coast phases, lunar orbit insertion, lunar landing - liftoff, the transearth injection, and earth return are all dimensionally illustrated.

**US\$4,000 - 6,000**

161

#### **APOLLO 13'S LUNAR ORBIT PLANS SIGNED**

*SHOWS THE LANDING SITE KNOWN AS FRA MAURO*

*Apollo Lunar Orbit Chart (ALO), Apollo Mission 13 for 11 April 1970 Launch Date. Color lunar map, First Edition, March 5, 1970. 12 x 41 inches.*

SIGNED and INSCRIBED: "FRED HAISE, Apollo 13 LMP" along the lower white border.

This lunar chart shows the planned orbital paths for CSM *Odyssey* and the landing point for LM *Aquarius*. The oxygen tank explosion forced the crew to correct their flight path so they could safely swing around the moon and return to Earth.

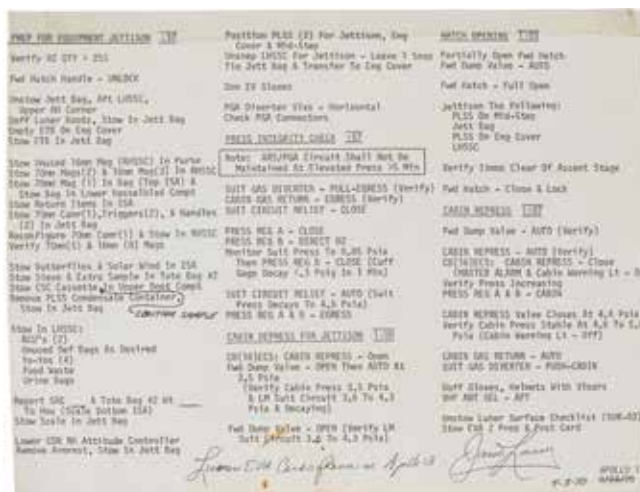
**US\$2,000 - 3,000**



162



163



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162

## FLOWN BETA CLOTH APOLLO 13 MISSION EMBLEM

Featuring the mission insignia of three flying horses flying through the sky, 4 inches in diameter, printed on beta cloth and flown on the mission.

Framed beneath:

Original lithograph, "Steeds of Apollo," 1981, 17 x 24 inches, signed and numbered by the artist (#485/500), one of 100 signed by all three mission astronauts, JAMES LOVELL, JACK SWIGERT, AND FRED HAISE. With certificate of authenticity issued by James Irwin. Framed and matted.

## Provenance

Purchased directly from James Irwin.

*FINE PRESENTATION* from Jim Irwin of a flown beta cloth insignia, and the limited signed issue of the lithograph by Lumen Martin Winter, based on his original mural that served as the inspiration for the insignia's design. The mural was originally painted in 1969 in the St. Regis Hotel in New York, where it was discovered by Lovell and crew while staying there, and they approached the artist to have him create an emblem based on the mural. The original mural now hangs in the lobby of the James A. Lovell Federal Health Care Center. According to Lovell, during the filming of the movie *Apollo 13*, it just happened to surface at an auction in Los Angeles, where unbeknownst to him it was purchased by a grateful Tom Hanks, and sent as a gift to Chicago.

US\$5,000 - 7,000

163

## APOLLO 13 RETURNS SAFELY TO EARTH

Color photograph, 16 x 20 inches, of Apollo 13 Command Module trailing three parachutes as it descends to splashdown.

INSCRIBED and SIGNED by FRED HAISE: "Apollo 13 Command Module near splashdown—Fred Haise, Apollo 13 LMP."

US\$500 - 700

164

## APOLLO 13 LUNAR EVA PRE AND POST CUE CARDS

Two cue cards, joined with clear tape, 8 x 10-1/2 inches, signed on one margin "Lunar EVA cards flown on Apollo 13—James Lovell." With certificate signed by Lovell.

CUE CARDS FOR THE MOONWALK THAT WAS NOT TO BE. Lovell's cue cards would have been used on the lunar surface, had Apollo 13 not been forced to abort the mission and make an emergency return to Earth.

US\$2,000 - 3,000



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#### FLOWN APOLLO 13 ALSEP PIN

Chrome metal lapel pin depicting the use of the ALSEP (Apollo Lunar Surface Experiment Package), 3/4 x 3/4 inches (19 x 19 mm), lacking pin backing, adhered to a mylar sleeve containing a card addressed to Mr. George Franklin, SIGNED BY JAMES LOVELL, JACK SWIGERT AND FRED HAISE: "Please accept this ALSEP pin flown to the moon 11-17 April 1970 on Apollo 13 spacecraft as a token of our appreciation for your efforts before and during the flight." Together with an affidavit from George Franklin.

LUNAR SURFACE EXPERIMENT PACKAGES were used on all of the Apollo lunar landing missions, and consisted of a group of experimental devices deployed on the lunar surface. These included an Active Seismic Experiment, Charged Particle Lunar Environment Experiment, Cold Cathode Ion Gauge, Lunar Atmosphere Composition Experiment, and others. One of these, the Laser Ranging Retroreflector, is still in use today to measure differences in distance between the Earth and the Moon due to irregularities in the Moon's orbit.

US\$1,000 - 2,000

166

#### TWO SIGNED JAMES LOVELL PHOTOS

Black and white gelatin silver prints, comprising:

- 1) Photo, 16 x 20 inches, of CSM showing damage to exterior. INSCRIBED and SIGNED: "Houston, we've had a problem!—James Lovell."
- 2) Photo, 20 x 20 inches, of Moonscape taken from orbit. INSCRIBED and SIGNED: "Lost Moon—James Lovell."

LOVELL'S DISAPPOINTMENT in never having completed Apollo 13's mission and walked on the moon is evident in his inscription here.

US\$1,000 - 1,500

167

#### APOLLO 14 AND THE US FLAG ON THE MOON

INSCRIBED WITH THE LANDING DATE  
Large color photograph, 11 x 14 inches.

SIGNED and INSCRIBED: "EDGAR MITCHELL, Apollo 14 LMP, Feb. 1971."

Astronaut Edgar Mitchell stands next to the United States flag on the lunar surface. Taken during the first lunar moon walk by Alan Shepard.

US\$700 - 900

168

#### MITCHELL DEPLOYS THE TV CAMERA AT FRA MAURO

INSCRIBED WITH LANDING SITE INFORMATION  
Color photograph, 10 x 8 inches.

SIGNED and INSCRIBED: "EDGAR MITCHELL, Apollo 14 LMP, Fra Mauro Base, Feb. 1971."

Astronaut Edgar Mitchell deploying and adjusting the lunar TV camera with boulders seen near the horizon.

US\$200 - 300



169



170

169

#### FLOWN PATCH FROM APOLLO 14

Oval patch, 4 inches in diameter, mounted in silver frame, 10-3/4 x 22-1/4 inches, with two engraved plaques. Embroidered with "Apollo 14" and the last names of the astronauts "Shepard Roosa Mitchell" surrounding image of the earth, moon, and decorative path of the space shuttle.

#### Provenance

Accompanied by signed affidavit from Gene Cernan from the patch's previous sale at Novospace Galleries.

FLOWN APOLLO 14 PATCH FROM THE PERSONAL COLLECTION OF EUGENE ANDREW CERNAN. "This patch was flown to the Moon aboard the Command Service Module "Kitty Hawk" during the mission of Apollo 14, 31 Jan 1971-9 Feb 1971". Apollo 14 was the third manned mission to land on the lunar surface with the goal of exploring the Fra Mauro region.

Astronaut Eugene Andrew Cernan, Commander of Apollo 17, was the last man to walk on the lunar surface. He would have received this patch at the "pin party" held after the Apollo 17 mission. "The "pin parties" were a rite of passage for Apollo astronauts. After every flight they would have a pin party, men only, no spouses or families, just astronauts (and maybe Deke and a few support personnel) where the crew would get their flown astronaut pins, and they would pass out flown souvenirs that the other astronauts had given them to fly."

US\$1,500 - 2,500



171



172

170

#### EDGAR MITCHELL SIGNED "GUIDED TOUR" MOONPAN

Panoramic color photograph, 8 x 40 inches, captioned at bottom edge *Apollo 14 Lunar Module Pilot, Edgar Mitchell works the TV camera, as a brilliant sun glare is reflected from the Lunar Module 'Antares.'* In the background are the slopes of Cone Crater. SIGNED AND INSCRIBED BY MITCHELL, "Fra Mauro landing site, by Edgar Mitchell—Apollo 14 Lunar Module Pilot—Feb 5,6 1971." Further annotated on picture with arrows showing various components of the scene, including "First functional TV camera on the Moon," "Me," "High Gain Antenna," "Cone Crater," "Flag," "Sun," "Antares," "Triplet Craters," and "Solar wind collector." Rolled.

US\$1,000 - 1,500

171

#### APOLLO 14 FLOWN BETA CLOTH PATCH

FLOWN beta cloth patch with printed Apollo 14 emblem on approximately 9 x 9 inch segment of fabric. Carried on the Command Module *Kitty Hawk* in Mitchell's personal preference kit.

SIGNED and INSCRIBED by Edgar Mitchell with inscription "Flown to the Moon on Apollo 14."

US\$1,200 - 1,800

172

#### APOLLO 14 ENGINEERING REPORT FILM

16 mm film in gray metal canister, with NASA C.G. Marshall Space Flight Center label, serial numbered *MSFC 71-328* and titled *Apollo 14 (AS-509) Engineering Report*, and indicating that the running time is 13-1/2 minutes, without sound, in color.

US\$1,000 - 1,500

173

NO LOT





174



175



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174

#### MITCHELL AND SHEPARD TRAINING IN THE LM

Color photograph, 16 x 20 inches, of Mitchell and Shepard training inside the Lunar Module Simulator.

INSCRIBED and SIGNED by EDGAR MITCHELL: *"To see the perfect balance we have here between reward and merit gives joy—for we see each commensurate with each"—'Paradise'—Dante—Edgar Mitchell—Apollo 14—6th man on the Moon."*

US\$600 - 800

175

#### APOLLO 15: MAN MUST EXPLORE

SCOTT SALUTES THE STARS AND STRIPES  
Large color photograph, 11 x 14 inches.

SIGNED and INSCRIBED: *"Dave Scott, Apollo 15."*

Apollo 15 Commander Dave Scott salutes the United States with Lunar Module *Falcon* and Mount Hadley in the background. *"Man must explore"* was part of Scott's initial words on the lunar surface.

US\$500 - 700

176

#### EXPLORING THE WONDERS OF HADLEY RILLE SIGNED

SCOTT WORKS AT THE LUNAR ROVER IN AN UNEARTHLY SETTING

Color photolithograph, 8 x 10 inches with NASA descriptive text along the lower border and on verso.

SIGNED by DAVE SCOTT.

The Apollo 15 lunar astronauts headed toward a large canyon known as Hadley Rille on their first surface exploration. They were the first to use the Lunar Rover which enabled them to travel miles from the landing site and their Lunar Module.

US\$300 - 500

177

#### APOLLO 15 LUNAR SURFACE FRAME A BOULDER SAMPLE

ILLUSTRATES LUNAR SURFACE TOOLS IN USE

Large black and white Hasselblad photograph, 11 x 14 inches. A 1970's print with labeling reading: *"This Paper Manufactured by Kodak"* on verso.

Hasselblad frame AS15-86-11558, taken while obtaining samples from a small boulder at the Station 2 stop on the first lunar EVA (moonwalk) of the Apollo 15 mission. Rock grabbing lunar tongs have temporarily been placed upright into the lunar soil behind the boulder. The "gnomon" is also behind that boulder. This device had color scales on one of the tripod legs and on the center rod. The shadow cast allowed measurement of the sun angle and the device itself allowed determination of the size of nearby objects.

US\$250 - 350



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### APOLLO 15 LUNAR ORBIT FRAME CSM ENDEAVOUR

*THE COMMAND SERVICE MODULE SEEN FROM THE LM PRIOR TO RE-DOCKING*  
Large black and white Hasselblad photograph, 14 x 11 inches. A 1970's print with labeling reading: "This Paper Manufactured by Kodak" on verso.

Hasselblad frame taken from Lunar Module *Falcon* while in lunar orbit nearly 2 hours after lifting off from the lunar surface. The LM crew took this image just prior to docking with CSM *Endeavor* after some 3 days on the moon. *Endeavor's* Scientific Instrument Bay (SIM) is clearly seen on the side of the Service Module. This bay housed an array of photographic and other science equipment that measured numerous parameters of the lunar surface as seen from orbit.

US\$250 - 350

179

### ORBITAL PATHS TO THE HADLEY APENNINE REGION SIGNED

*MISSION INCLUDED EXPLORATION OF DEEP CANYON KNOWN AS HADLEY RILLE*  
*Apollo Lunar Flight Chart (ALF), Apollo Mission 15, July 26, 1971 Launch Date.*  
Color lunar map, First Edition, March 5, 1970. 12 x 36 inches.

SIGNED and INSCRIBED: "DAVE SCOTT, CDR" along the lower white border.

This lunar chart plots the first and last lunar orbits (1 and 74) with dark blue lines. Horizon limits as seen from these orbits are plotted in black dashed lines. The Apollo 15 landing site was the most northerly landing site of all the Apollo landing sites. This site had towering mountains including Hadley and Hadley Delta with the contrasting depths of a large winding canyon known as Hadley Rille.

US\$500 - 700

180

### FLOWN PATCH FROM APOLLO 15

Patch approximately 4 inches in diameter, mounted in silver frame, 10-3/4 x 22-1/4 inches, with two engraved plaques. Embroidered with "Apollo 15" and the last names of the astronauts "Scott Worden Irwin" surrounding three overlapping red, white, and blue stylized birds.

#### Provenance

Accompanied by signed affidavit from Gene Cernan from the patch's previous sale at Novaspaces Galleries.

*FLOWN APOLLO 15 PATCH FROM THE PERSONAL COLLECTION OF EUGENE ANDREW CERNAN.* "This patch was flown to the Moon aboard the Command Service Module "Endeavor" during the mission of Apollo 15, 28 Jul 1971-7 Aug 1971." This was the first of NASA's Apollo "J" missions and the first time a Lunar Roving Vehicle was driven on the moon.

Astronaut Eugene Andrew Cernan, Commander of Apollo 17, was the last man to walk on the lunar surface. He would have received this patch at the "pin party" held after the Apollo 17 mission. "The "pin parties" were a rite of passage for Apollo astronauts. After every flight they would have a pin party, men only, no spouses or families, just astronauts (and maybe Deke and a few support personnel) where the crew would get their flown astronaut pins, and they would pass out flown souvenirs that the other astronauts had given them to fly."

US\$1,500 - 2,500

181

### MOON PHOTO SIGNED BY AL WORDEN

Monochrome photograph, 20 x 16 inches, of the Moon lit across right half of image.

INSCRIBED and SIGNED by AL WORDEN: "About our own planet and all the others, one thing becomes clear when floating 240,000 miles from home—God did it all. Al Worden—Apollo 15 CMP."

US\$600 - 800

182

### APOLLO 16 LEAVES EARTH ORBIT FOR THE MOON SIGNED

*WITH THE FULL CONTINENTAL UNITED STATES CLEARLY SEEN*  
Color photolithograph, 8 x 10 inches with NASA descriptive text along the lower border and on verso.

SIGNED and INSCRIBED: "CHARLES M. DUKE, Jr., Apollo 16 LMP."

Just after TransLunar Injection (TLI) sending Apollo 16 to the moon, the crew looked back to find a truly extraordinary view of the earth. The full continental United States is seen as well as Central and the northern part of South America. The northern polar region is seen in white at the top of the image.

US\$200 - 300



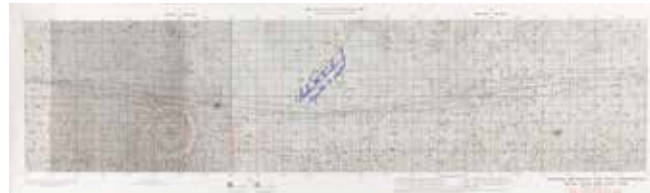
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183

#### **APOLLO 16 LUNAR SURFACE FRAME PLUM CRATER**

*THE PARKED LUNAR ROVER IS SEEN NEAR THE CRATER EDGE*

Large black and white Hasselblad photograph, 11 x 14 inches. A 1970's print with labeling reading: "This Paper Manufactured by Kodak" on verso.

Hasselblad frame AS16-114-18422, taken while the Apollo 16 LM crew began lunar sample collection at Station 1 during the first EVA (moonwalk). The deep crater known as Plum is easily seen throughout the image center. The Lunar Rover is parked along the upper edge of Plum with the lunar horizon seen in the background.

**US\$400 - 600**

184

#### **APOLLO 16 LUNAR SURFACE FRAME SHADOW ROCK**

*PERMANENTLY SHADOWED LUNAR SOIL NEXT TO THIS LARGE BOULDER*

Large black and white Hasselblad photograph, 11 x 14 inches. A 1970's print with labeling reading: "This Paper Manufactured by Kodak" on verso.

Hasselblad frame A16-106-17392, taken at Station 13 during the third and final EVA of the Apollo 16 mission. The large boulder nick-named "Shadow Rock" by the LM crew is seen on the right side of the image. While inspecting and sampling this large boulder, the crew realized that it cast a shadow to the north, thus had been shadowing the lunar soil located just beneath. This lunar soil was collected by the crew which had not been exposed to direct solar radiation for millions or perhaps over a billion years since the boulder was placed there most probably from a nearby impact crater. Part of the lunar rover and Astronaut John Young are seen at the left most edge.

**US\$250 - 350**

185

#### **THE APOLLO 16 ORBITS TO A DESCARTES LANDING SIGNED**

*THE FIRST LANDING IN THE LUNAR HIGHLANDS*

*Apollo Lunar Orbit Chart (ALO), Apollo Mission 16, Trajectory for CSM Revolutions 1, 39, 41, 60, 62 and 75. April 16, 1972 Launch Date. Color lunar map, First Edition, February 16, 1972. 12 x 41 inches.*

SIGNED and INSCRIBED: "CHARLES M. DUKE, Jr. Apollo 16 LMP" near his lunar landing site.

Apollo 16 landed in the rugged south central lunar highlands. Lunar Module *Orion's* descent path is plotted with red dashed lines starting from the lunar far side. *Orion's* PDI point (Power Descent Initiation) is marked with the descent path ending at the landing site marked with a red oval. Due to the large number of lunar orbits during this mission, only 6 orbits are plotted in several colors. Those include the first and last orbits, showing the full extent of ground coverage latitude variations.

**US\$500 - 700**

186

#### **APOLLO 16: WOW! MAN, LOOK AT THAT!**

*ILLUSTRATES THE DIFFICULTY OF LANDING IN THE LUNAR HIGHLANDS*

*Theophilus, Lunar Shaded Relief - 78. Defense Mapping Agency for NASA with detailed legend. First edition, September 1978. 29 x 22 inches. The 78th chart of the LSR series showing the rugged highland region of the Apollo 16 landing site. Latitude and longitude are plotted down to 1/12 degree tick marks.*

INSCRIBED and SIGNED with his first words immediately after landing: "Contact, Stop, Whuump! Wow! Man, look at that! Old Orion is finally here, Houston. Fantastic! CHARLES M. DUKE, JR, Apollo 16 LMP." Additionally, Duke has marked the Apollo 16 landing site

with an "X" and inscribed the lunar stay dates of "April 20 - 23, 1972."

This landing site chart clearly shows the rugged terrain surrounding the Apollo 16 landing site. Hundreds of lunar features are illustrated including large to small craters, ridges, and mountain features.

**US\$600 - 800**

187

#### **FLOWN PATCH FROM APOLLO 16**

Patch approximately 4 inches, mounted in silver frame, 10-3/4 x 22-1/4 inches, with two engraved plaques. Embroidered with "Apollo 65" and the last names of the astronauts "Young Mattingly Duke" under a bald eagle perched atop a red white and blue American shield with surrounded by 16 stars.

#### **Provenance**

Accompanied by signed affidavit from Gene Cernan from the patch's previous sale at Novaspace Galleries.

FLOWN APOLLO 16 PATCH FROM THE PERSONAL COLLECTION OF EUGENE ANDREW CERNAN. This patch was flown to the Moon aboard the Command Service Module "Casper" during the mission of Apollo 16, 16 Apr 1972 -27 Apr 1972." Apollo 16 was the second to last lunar mission flown.

Astronaut Eugene Andrew Cernan, Commander of Apollo 17, was the last man to walk on the lunar surface. He would have received this patch at the "pin party" held after the Apollo 17 mission. "The "pin parties" were a rite of passage for Apollo astronauts. After every flight they would have a pin party, men only, no spouses or families, just astronauts (and maybe Deke and a few support personnel) where the crew would get their flown astronaut pins, and they would pass out flown souvenirs that the other astronauts had given them to fly."

**US\$1,500 - 2,500**



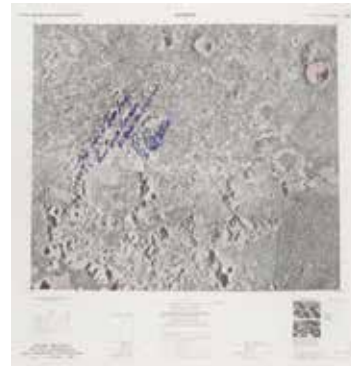
188



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**APOLLO 16 LUNAR SURFACE PROCEDURES SIGNED BY THE LM PILOT**

NASA *Final Lunar Surface Procedures* for Apollo 16, dated March 16, 1972. 4to, paper covers, bound with staples, 3-hole punched. SIGNED "Charlie Duke - Apollo 16 LMP." Cover has 10 8-cent moon stamps affixed parallel to binding, with postal cancellation reading *Houston—Apr 20 PM 1972*—the day the Lunar Module landed on the Moon!

**US\$1,000 - 2,000**

189

**APOLLO 17 LUNAR LANDING SITES TAKEN FROM ORBIT**

*CSM AMERICA IS VISIBLE NEAR THE FRAME CENTER*

Large black and white Hasselblad photograph, 11 x 14 inches. A 1970's print with labeling reading: "This Paper Manufactured by Kodak" on verso.

Hasselblad frame AS17-147-22464 showing the Apollo 17 lunar landing site known as the Taurus - Littrow valley. Taken by the crew inside Lunar Module *Challenger* while in orbit. The landing site is close to the circular crater near the image center point and is surrounded by large mountains along all sides. The dark right side of the image is part of the Lunar Module.

**US\$250 - 350**

190

**APOLLO 17 LUNAR SURFACE FRAME DURING THE LAST MOONWALK**

*VIEWS OF A NEAR HOUSE SIZED GROUP OF COMPLEX BOULDERS*

Large black and white Hasselblad photograph, 11 x 14 inches. A 1970's print with labeling reading: "This Paper Manufactured by Kodak" on verso.

Hasselblad frame AS17-141-21592 taken by Astronaut Harrison "Jack" Schmitt before rock sampling at Station 6 during the last lunar moon walk (EVA 3) of the Apollo Program. This area had a chain of large boulders placed by nearby impact crater or craters millions if not over a billion years ago. Mountains shaping the lunar horizon can be seen in the background.

**US\$300 - 500**

191

**APOLLO 17 LUNAR SURFACE VIEW TAKEN WHILE ON THE LUNAR ROVER TRAVERSING THROUGH THE TAURUS-LITTROW VALLEY**

Large black and white Hasselblad photograph, 11 x 14 inches. A 1970's print with labeling reading: "This Paper Manufactured by Kodak" on verso.

Hasselblad frame AS17-138-21118 taken by Astronaut Harrison "Jack" Schmitt and records the surrounding terrain and mountains during Apollo 17's second surface exploration. The rover's TV camera and part of the transmission antenna can be seen in the foreground as the rover is driven between Station Stop 2 and 3.

**US\$300 - 500**





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**LITTROW, THE FINAL STEPS FOR APOLLO EXTENSIVELY INSCRIBED BY THE MISSION COMMANDER**

*THE LAST LUNAR LANDING SITE BY MAN DURING THE 20TH CENTURY*  
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 x 25-1/2 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."

A large black pennant marks the final landing area of the Apollo Program near the lower left corner of the chart. Contour lines are marked in red every 100 meters partly based on laser altimeter data from both the Apollo 15 and 17 Service Module SIM (Scientific Instrument Module) Bays. A detailed chart description is located along the lower margin.

US\$1,000 - 1,500

193

**NO LOT**

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**LUNAR SURFACE PANORAMA NEGATIVE, APOLLO 17**

Roll of negatives taken by the panoramic camera in the Scientific Instrument Module (SIM) Bay of the Apollo 17 Command Service Module (CSM). Direct negative copied from the original negative, 9 inches wide x many feet long. On metal reel, in original canister with label reading "Apollo 17. Mag ... Film Type: 2422 ... Frames: 1989 to 2026 ... Part: 7B of 41 ... Master [stamped over] ... Remarks: T71-35p Direct Neg...."

Showing the lunar surface as seen from the Command Module. The panoramic camera photographed long sections of the surface, 205 by 13 miles, on 4 foot by 4 1/2 inch strips of film. The film take-up cassette was removed from the panoramic camera by the Command Module Pilot during trans-Earth trajectory, and was returned to Earth in the Command Module. This system was first used on Apollo 15.

US\$1,500 - 2,500

195

**CERNAN WITH THE LUNAR ROVER, SIGNED PHOTO**

Color photograph, 16 x 20 inches, depicting Cernan driving the Lunar Rover.

SIGNED AND INSCRIBED by GENE CERNAN: "Gene Cernan—We leave as we came and God willing as we shall return... with peace an (sic) hope for all mankind—Apollo XVII." Cernan's closing words before he, the last man on the moon, boarded the lunar module to return to Earth.

US\$1,000 - 2,000

196

**APOLLO 17: LAST MAN ON MOON, SIGNED BY GENE CERNAN**

Color photograph, 16 x 20 inches, depicting Cernan on the lunar surface with the rover.

INSCRIBED AND SIGNED: *Last man on the moon—Gene Cernan—Apollo XVII.*

US\$2,500 - 3,500



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# **CERNAN WITH THE FLAG AND LUNAR ROVER**

Color photograph, 16 x 20 inches, of Cernan next to the flag and lunar rover.

INSCRIBED and SIGNED by GENE CERNAN: "Aim High! Impossible dreams do come true. Gene Cernan—Apollo XVII CDR—Last Man on the Moon."

US\$1,500 - 2,500

198

# **NASA TRAINING FILMS**

ORIGINALLY FROM THE COLLECTION OF JIM IRWIN

An excellent collection of 27 NASA 16 mm training films, all in the original canisters, ranging in size from 7 inches to 12½ inches in diameter, with the original labels, some marked NATIONAL AERONAUTICS AND SPACE ADMINISTRATION MANNED SPACECRAFT CENTER, HOUSTON, TEXAS", others "NATIONAL AERONAUTICS AND SPACE ADMINISTRATION, WASHINGTON D.C. 20546", others "NASA HQ'S", SEVERAL WITH "NASA MANNED SPACECRAFT CENTER PTL AUDIOVISUAL BRANCH" labels, and one with a "HIGH FLIGHT FOUNDATION" label. The films have all been digitized for conservation purposes, and the digital copies (on DVD) accompany the lot.

A complete listing of titles is available upon request.

US\$2,000 - 3,000



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

LANDING DATE AND SITE NAME INSCRIPTIONS BY A MEMBER OF EVERY APOLLO LUNAR LANDING CREW

*Lunar Planning Chart (LOC - 2).* Aeronautical Chart and Information Center, Edition 1, July 1969. Color lithographed moon map in Mercator projection. 29 x 49 inches. Scale 1:2,500,000 at the equator. Inscribed in ink, "11 of 12 GHL" lower right.

BOLDLY INSCRIBED and SIGNED with:

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

"Ocean of Storms, ALAN BEAN Apollo XII LMP, Nov '69"

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

"Hadley Rille, DAVE SCOTT, Jul / Aug 1971/ Apollo 15"

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

and

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

A highly detailed lunar chart signed by a member of each Apollo lunar landing crew. In addition to their signatures and inscriptions, each astronaut has marked his landing site with either an "X" or a circle. All mare and large craters are labeled including unusual features such as rilles and ejecta rays. A bright and fresh example of one of the largest lunar maps ever produced for NASA.

**US\$20,000 - 25,000**





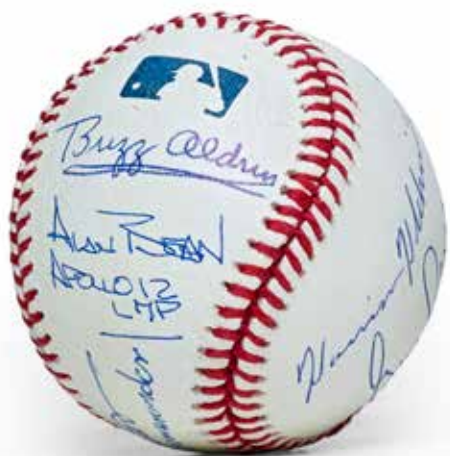
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200  
**SIGNED U.S. ASTRONAUT HALL OF FAME POSTER**

Offset lithograph on paper, 24 x 18 inches (610 x 457 mm), printed for the U.S. Astronaut Hall of Fame. Central image depicts Ed White's EVA during Gemini 4, surrounded by 19 other images from Mercury to the Space Shuttle missions.

SIGNED BY 17 ASTRONAUTS, including signatures of 6 of the original 7 Mercury astronauts, members of each Apollo mission, and one moonwalker from each of the lunar surface missions. The signatures are ALAN SHEPARD, JOHN GLENN, SCOTT CARPENTER, GORDON COOPER, WALLY SCHIRRA, DEKE SLAYTON, FRANK BORMAN, JIM MCDIVITT, TOM STAFFORD, BUZZ ALDRIN, MICHAEL COLLINS, CHARLES CONRAD, RICHARD GORDON, JIM LOVELL, DAVE SCOTT, JOHN YOUNG and GENE CERNAN. Also signed by BETTY GRISSOM (Gus Grissom's widow).

US\$3,000 - 5,000



201

201  
**BASEBALL SIGNED BY EIGHT MOONWALKERS**

Regulation baseball by Rawlings, SIGNED BY BUZZ ALDRIN, ALAN BEAN, EDGAR MITCHELL, DAVID SCOTT, JOHN YOUNG, CHARLES DUKE, GENE CERNAN and HARRISON SCHMITT, all in blue ink.

US\$1,500 - 2,000



202

202  
**THE VIEW FROM SPACE: ASTRONAUT PHOTOGRAPHY BOOK SIGNED BY 11 ASTRONAUTS**

SCHICK, RON and JULIA VAN HAAFTEN. *The View From Space*. New York: Clarkson N. Potter, Inc., 1988. Folio, black cloth cover with pictorial dust jacket.

SIGNED by BUZZ ALDRIN on copyright page, and in the text by WALLY SCHIRRA, GORDON COOPER, JIM MCDIVITT, TOM STAFFORD, JAMES LOVELL, GENE CERNAN, RICHARD GORDON, WALT CUNNINGHAM, ALAN BEAN, AL WORDEN, and CHARLIE DUKE.

US\$1,500 - 2,500



203

# NAVAL AVIATION IN SPACE

SIGNED BY 9 NAVAL ASTRONAUTS, INCLUDING NEIL ARMSTRONG (FIRST MAN ON THE MOON), ALAN B. SHEPARD (FIRST AMERICAN IN SPACE), AND JOHN GLENN (FIRST AMERICAN TO ORBIT THE EARTH). Original lithograph, 22 x 28 inches, signed and numbered lower right in pencil "447/1000. R.L. Rasmussen." Matted and framed. Additionally SIGNED by RICH HAUCK, PETE CONRAD, JACK LOUSMA, GENE CERNAN, JIM LOVELL, and WALLY SCHIRRA.

Large lithograph featuring a vignette history of the space program, signed by nine of the most important Naval astronauts as a fund raiser for the Naval Aviation Museum in 1989.

US\$2,000 - 3,000

204

# PHOTOGRAPHS: VIEWS OF THE EARTH

Collection of 12 vintage NASA photographs, each 8 x 10 inches, chromogenic prints numbered in red in the top margin, on fibre-based Kodak paper, watermarked to the verso, "A Kodak Paper", a few with small bumps along the upper edge from archival storage in a 3-ring binder.

An outstanding collection of primarily views from the Apollo missions of the moon and earth from space, all with red numbering and early watermark to the verso, and including: S-65-63873 James Lovell, Full Moon rising over the Earth, Gemini 7  
AS8-16-2590 Apollo 8 High-altitude view of the earth  
AS8-14-2392 Apollo 8 Earth rising above the moon's surface  
AS8-16-2590 Apollo 8 Earth view  
AS09-26A-3799A Color infrared photograph of the Salton Sea and Imperial Valley area of southern California as seen from the Apollo 9 spacecraft.  
AS-11-44-6598 Michael Collins, Apollo 11 Lunar Module, in a lunar landing configuration S69-40753 Apollo 11 crewmen, wearing biological isolation garments, arrive aboard the USS Hornet during recovery operations in the central Pacific.  
AS11-44-6665 Apollo 11 view of the moon on the homeward journey  
AS11-44-6665 The Earth, Apollo 11, July 1969 - from 98,000 miles away  
AS-12-51-7507 Richard Gordon, The Lunar Module heading for the Ocean of Storms landing site, Apollo 12, November 1969  
AS14-66-9360 Apollo 14 CSM from LM S-71-18398 Apollo 14 Liftoff

US\$1,000 - 1,500

205

# PHOTOGRAPHS: MEN ON THE MOON

Collection of 11 vintage NASA photographs of men on the moon, each 8 x 10 inches, chromogenic prints, numbered in red in the top margin (two numbered in black without watermark), on fibre-based Kodak paper, watermarked to the verso, "A Kodak Paper," a few with small bumps along the upper edge from archival storage in a 3-ring binder.

"As I walked away from the Eagle lunar module, Neil said, 'Hold it, Buzz.'" A wonderful collection of NASA images including two of the most iconic of the moonwalk images, Neil Armstrong's images of Aldrin, one facing the camera with the lunar module and Armstrong reflected in his gold-plated visor (AS11-40-5903), and the other of Aldrin in profile next to the extended American flag (AS11-40-5875). Collected with 9 other vintage images of men on the moon including:

AS11-40-5948 Buzz Aldrin on the Moon with a good view of flag Lunar Module, and recently deployed Early Apollo Scientific Experiments Package (EASEP).  
AS12-47-6897 Alan Bean, Pete Conrad Jr., Apollo 12 commander, stands beside the United States flag after it was unfurled on the lunar surface during the first extravehicular activity (EVA), on Nov. 19, 1969.  
AS12-49-7278 Alan Shepard, Alan Bean holds a container filled with lunar soil collected during the extravehicular activity (numbered in black)  
S-71-19510 Alan Shepard and Edgar Mitchell during their first excursion on the Moon, Apollo 14, February 1971  
AS14-66-9232 Alan Bean, Alan Shepard, commander of the Apollo 14 lunar landing mission, stands by the deployed United States flag on the lunar surface during the early moments of the first extravehicular activity (EVA) of the mission.  
AS14-64-9089 Edgar Mitchell, lunar module pilot, moves across the lunar surface as he looks over a traverse map during an extravehicular activity (numbered in black)  
AS14-66-9230 Edgar Mitchell, Alan Shepard, Apollo 14 commander, shades his eyes from the sun during the Apollo 14 extravehicular activity  
AS14-67-9376 Alan Shepard, Lunar Basecamp, first Apollo 14 EVA, displaying components of the Apollo lunar surface experiments package (ASLEP)  
AS14-66-9325 The third U.S. flag to be deployed on the lunar surface, footprints, wheel tracks and Rickshaw-type portable workbench, as seen by the Apollo 14 crewmen from inside the Lunar Module

US\$1,200 - 1,800

206

# MOONWALKERS PRINT BY RON LEWIS, WITH SIGNATURES OF ELEVEN OF TWELVE MOONWALKERS

Offset lithograph on paper, 26 x 32 inches, signed by the artist in the image "Ron Lewis 86" and again in ink "Ron Lewis 434/1000." Framed, with certificate of authenticity by Novaspace Galleries mounted on reverse.

SIGNED by 11 of 12 Apollo astronauts who walked on the moon: BUZZ ALDRIN, ALAN BEAN, CHARLES (PETE) CONRAD, ALAN SHEPARD, EDGAR MITCHELL, JIM IRWIN, DAVE SCOTT, CHARLIE DUKE, JOHN YOUNG, GENE CERNAN and JACK SCHMITT.

US\$2,000 - 3,000



203



204



205



206

# SHUTTLE MISSIONS

Lots 207-213



207

207

## FIVE SHUTTLE MISSIONS THAT FOLLOWED THE CHALLENGER DISASTER: SILVER ROBBINS MEDALLIONS FOR STS 26 TO STS 30

FROM THE PERSONAL COLLECTION OF ASTRONAUT JOHN FABIAN. 5 unflown sterling silver Robbins Medallions, approximately 1-1/2 inches in diameter or equivalent, various shapes. Mission emblem and crew names on obverse, mission dates and crew names on reverse, each engraved on edge with serial numbers 146 (of 182), 178 (of 192), 71 (of 123), 106 (of 154) and 45 (of 113) respectively. In the original cases.

Accompanying this lot is a typed provenance letter from Astronaut John Fabian which reads: "This collection of Space Shuttle Robbins Medallions represents 5 missions following the disastrous Space Shuttle Challenger explosion that resulted in the loss of 7 astronaut lives. STS-26 was the "Return to Flight" mission. It was flown on Discovery, under the command of Rick Hauck. STS-27 and ST-28 carried classified Department of Defense payloads on Atlantis and Columbia. STS-29 carried a NASA tracking and communications satellite on Discovery. STA-30 carried the Magellan space probe targeted to Venus. At one time, I was assigned to this mission, but had retired before it flew. Missions were not flown in numerical order. The face of the medallions features the crew-designed mission patch, including the names of the crew members. The obverse side is engraved with the launch and landing dates and the rim of medallions is engraved with its serial number. The Astronaut Office at the NASA Johnson Space Center in Houston, Texas manages the ordering and sale of these medallions. They are only available to current and former astronauts. As such, they are more than rare. I hereby certify that as a retired astronaut, I purchased these 5 medallions and that they have been a part of my personal collection since that time. John Fabian, Astronaut."

US\$3,000 - 4,000



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## SHUTTLE MISSIONS THAT INCLUDED HUBBLE TELESCOPE AND GALILEO SPACE PROBE: SILVER ROBBINS MEDALLIONS FOR STS 31 THROUGH STS 35

FROM THE PERSONAL COLLECTION OF ASTRONAUT JOHN FABIAN. 5 unflown sterling silver Robbins Medallions, approximately 1-1/2 inches in diameter or equivalent, various shapes. Mission emblem and crew names on obverse, mission dates and crew names on reverse, each engraved on edge with serial numbers 86 (of 133), 88 (of 141), 106 (of 157), 70 (of 129) and 143 (of 188) respectively. In the original cases.

Accompanying this lot is a typed provenance letter from Astronaut John Fabian which reads: "This collection of Space Shuttle Robbins Medallions represents some of the highest profile missions in the early history of the shuttle program. STS-31 delivered the Hubble Space Telescope to low Earth orbit. It was flown on Discovery under the command of Loren Shriver. STS-32 and ST-33 carried classified Department of Defense payloads on Columbia and Discovery. Columbia also carried the Long Duration Exposure Facility to low Earth orbit. STS-34 carried the NASA Galileo space probe, targeted to Jupiter on Atlantis. STA-35 carried the ASTROLAB, with 4 telescopes on Columbia. Missions were not flown in numerical order. The face of the medallions features the crew-designed mission patch, including the names of the crew members. The obverse side is engraved with the launch and landing dates and the rim of medallions is engraved with its serial number. They are only available to current and former astronauts. As such, they are more than rare. I hereby certify that as a retired astronaut, I purchased these 5 medallions and that they have been a part of my personal collection since that time. John Fabian, Astronaut."

US\$3,000 - 4,000



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## SHUTTLE MISSION MEDALLIONS FOR ATLANTIS AND COLUMBIA: SILVER ROBBINS MEDALLIONS FOR STS 36 THROUGH STS 40

FROM THE PERSONAL COLLECTION OF ASTRONAUT JOHN FABIAN. 5 unflown sterling silver Robbins Medallions, approximately 1-1/2 inches in diameter or equivalent, various shapes. Mission emblem and crew names on obverse, mission dates and crew names on reverse, each engraved on edge with serial numbers 81 (of 131), 96 (of 141), 79 (of 123), 98 (of 148) and 89 (of 144) respectively. In the original cases.

Accompanying this lot is a typed provenance letter from Astronaut John Fabian which reads: "This collection of Space Shuttle Robbins Medallions represents important Department of Defense and science missions. STS-36 was a classified DOD mission. It was flown on the Atlantis, under the command of J. O. Creighton. STS-37 carried the NASA Gamma Ray Observatory telescope on Atlantis. STS-38 Carried a classified DOD payload on Atlantis and STS-39 carried an unclassified experimental payload on Discovery. STA-40 was a Space Life Sciences mission on Columbia. Before my retirement, I was assigned to this mission, but it did not fly until 5 years after I left NASA. Missions were not flown in numerical order. The face of the medallions features the crew-designed mission patch, including the names of the crew members. The obverse side is engraved with the launch and landing dates and the rim of medallions is engraved with its serial number. They are only available to current and former astronauts. As such, they are more than rare. I hereby certify that as a retired astronaut, I purchased these 5 medallions and that they have been a part of my personal collection since that time. John Fabian, Astronaut."

US\$3,000 - 4,000



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#### INTERNATIONAL COOPERATION IN SPACE: SILVER ROBBINS MEDALLIONS FOR STS 41 THROUGH 45

FROM THE PERSONAL COLLECTION OF ASTRONAUT JOHN FABIAN. 5 unflown sterling silver Robbins Medallions, approximately 1-1/2 inches in diameter or equivalent, various shapes. Mission emblem and crew names on obverse, mission dates and crew names on reverse, each engraved on edge with serial numbers 76 (of 124), 143 (of 195), 81 (of 129), 82 (of 131) and 59 (of 114) respectively. In the original cases.

Accompanying this lot is a typed provenance letter from Astronaut John Fabian which reads: "This collection of Space Shuttle Robbins Medallions represents 5 missions dominated by science and international cooperation. STS-41 carried the European Space Agency Ulysses space probe. It was flown on Discovery, under the command of Dick Richards. STS-42 carried the International Microgravity Laboratory on Discovery. STS-43 carried a NASA communications and tracking satellite on Atlantis. STS-44 carried a DOD Defense Support Program early warning satellite on Atlantis. STS-45 was an international atmospheric science mission, flown on Atlantis. Missions were not flown in numerical order. The face of the medallions features the crew-designed mission patch, including the names of the crew members. The obverse side is engraved with the launch and landing dates and the rim of medallions is engraved with its serial number. The Astronaut Office at the NASA Johnson Space Center in Houston, Texas manages the ordering and sale of these medallions. They are only available to current and former astronauts. As such, they are more than rare. I hereby certify that as a retired astronaut, I purchased these 5 medallions and that they have been a part of my personal collection since that time. John Fabian, Astronaut."

US\$3,000 - 4,000



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#### ORBITAL SATELLITE REPAIR AND DEPLOYMENT FROM THE SHUTTLES: SILVER ROBBINS MEDALLIONS FOR STS 46 THROUGH 50

FROM THE PERSONAL COLLECTION OF ASTRONAUT JOHN FABIAN. 5 unflown sterling silver Robbins Medallions, approximately 1-1/2 inches in diameter or equivalent, various shapes. Mission emblem and crew names on obverse, mission dates and crew names on reverse, each engraved on edge with serial numbers 93 (of 187), 82 (of 144), 88 (of 131), 83 (of 142) and 76 (of 133) respectively. In the original cases.

Accompanying this lot is a typed provenance letter from Astronaut John Fabian which reads: "This collection of Space Shuttle Robbins Medallions represents space science missions and a daring on-orbit satellite retrieval, repair, and re-deployment. STS-46 deployed a European Space Agency satellite and operated a NASA/Italian space tether system from Atlantis. STS-47 was a Japanese laboratory mission, studying materials and life sciences on Endeavour. STS-48 was an upper atmospheric research mission on Discovery. STS-49 retrieved a disabled international telecommunications satellite, repaired it and successfully deployed it. This mission was on Endeavour and commanded by Dan Brandenstein. STS-50 was a microgravity science mission on Columbia. The face of the medallions features the crew-designed mission patch, including the names of the crew members. The obverse side is engraved with the launch and landing dates and the rim of medallions is engraved with its serial number. Missions were not flown in numerical order. The Astronaut Office at the NASA Johnson Space Center in Houston, Texas manages the ordering and sale of these medallions. They are only available to current and former astronauts. As such, they are more than rare. I hereby certify that as a retired astronaut, I purchased these 5 medallions and that they have been a part of my personal collection since that time. John Fabian, Astronaut."

US\$3,000 - 4,000





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### **"FOR SALE"**

Dye transfer photograph, 19 x 19 inches, of Mission Specialists Dale A. Gardner and Joseph P. Allen IV holding up a "For Sale" sign while suspended from the Remote Manipulator System after recapture of the Westar VI geosynchronous communications satellite. The tail of the Space Shuttle Discovery is visible in the lower section of the photo, with the Earth in the background.

Taken during Mission STS-51-A, November 8-15, 1984. STS-51-A was the 14th flight of NASA's Space Shuttle program, and the second flight of Space Shuttle Discovery. The mission saw the first instance where two communications satellites were deployed and two others retrieved from orbit for repairs. Following the recovery of the Western Union owned Westar VI, astronauts Gardner and Allen humorously held up a "For Sale" sign as if trying to find someone willing to purchase the malfunctioning satellite.

**US\$1,000 - 1,500**

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### **FISHER ON EVA**

Dye transfer photograph, 19 x 19 inches, of Mission Specialist Dr. William F. Fisher on EVA. The Earth is visible in the background. Mislabelled on verso as "Ross on EVA." Framed.

Taken during Mission STS 51-I, on September 1, 1985, the photo shows mission specialist Dr. William F. Fisher on the first of two EVAs to repair the malfunctioning Syncom IV-3/Leasat-3. STS 51-I was the 20th mission of NASA's Space Shuttle Program, and the sixth flight of the Space Shuttle *Discovery*.

**US\$1,000 - 1,500**



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The following Conditions of Sale, as amended by any published or posted notices or verbal announcements during the sale, constitute the entire terms and conditions on which property listed in the catalog shall be offered for sale or sold by Bonhams & Butterfields Auctioneers Corp. and any consignor of such property for whom we act as agent. If live online bidding is available for the subject auction, additional terms and conditions of sale relating to online bidding will apply; see [www.bonhams.com/WebTerms](http://www.bonhams.com/WebTerms) for the supplemental terms. As used herein, "Bonhams," "we" and "us" refer to Bonhams & Butterfields Auctioneers Corp.

1. As used herein, the term "bid price" means the price at which a lot is successfully knocked down to the purchaser. The term "purchase price" means the aggregate of (a) the bid price, (b) a PREMIUM retained by us and payable by the purchaser EQUAL TO 25% OF THE FIRST \$150,000 OF THE BID PRICE, 20% OF THE AMOUNT OF THE BID PRICE ABOVE \$150,000 UP TO AND INCLUDING \$3,000,000, AND 12% OF THE AMOUNT OF THE BID PRICE OVER \$3,000,000, and (c) unless the purchaser is exempt by law from the payment thereof, any Arizona, California, Colorado, Connecticut, Florida, Georgia, Illinois, Massachusetts, Nevada, New Jersey, New York, Pennsylvania, Texas, Virginia, Washington, D.C., Washington state, or other state or local sales tax (or compensating use tax) and other applicable taxes. With regard to New York sales tax, please refer to the "Sales and Use Tax" section of these Conditions of Sale.

2. On the fall of the auctioneer's hammer, the highest bidder shall have purchased the offered lot in accordance and subject to compliance with all of the conditions set forth herein and (a) assumes full risk and responsibility therefor, (b) if requested will sign a confirmation of purchase, and (c) will pay the purchase price in full or such part as we may require for all lots purchased. No lot may be transferred. Any person placing a bid as agent on behalf of another (whether or not such person has disclosed that fact or the identity of the principal) may be jointly and severally liable with the principal under any contract resulting from the acceptance of a bid.

Unless otherwise agreed, payment in good funds is due and payable within five (5) business days following the auction sale. Whenever the purchaser pays only a part of the total purchase price for one or more lots purchased, we may apply such payments, in our sole discretion, to the lot or lots we choose. Payment will not be deemed made in full until we have collected good funds for all amounts due.

Payment for purchases may be made in or by (a) cash, (b) cashier's check or money order, (c) personal check with approved credit drawn on a U.S. bank, (d) wire transfer or other immediate bank transfer, or (e) Visa, MasterCard, American Express or Discover credit, charge or debit card. A processing fee will be assessed on any returned checks. Please note that the amount of cash notes and cash equivalents that can be accepted from a given purchaser may be limited.

To the fullest extent permitted by applicable law: The purchaser grants us a security interest in the property, and we may retain as collateral security for the purchaser's obligations to us, any property and all monies held or received by us for the account of the purchaser, in our possession. We also retain all rights of a secured party under the California Commercial Code. If the foregoing conditions or any other applicable conditions herein are not complied with, in addition to all other remedies available to us and the consignor by law, we may at our election: (a) hold the purchaser liable for the full purchase price and any late charges, collection costs, attorneys' fees and costs, expenses and incidental damages incurred by us or the consignor arising out of the purchaser's breach; (b) cancel the sale, retaining as liquidated damages all payments made by the purchaser; and/or (c) cancel the sale and/or resell the purchased property, at public auction and/or by private

sale, and in such event the purchaser shall be liable for the payment of all consequential damages, including any deficiencies or monetary losses, and all costs and expenses of such sale or sales, our commissions at our standard rates, all other charges due hereunder, all late charges, collection costs, attorneys' fees and costs, expenses and incidental damages. In addition, where two or more amounts are owed in respect of different transactions by the purchaser to us, to Bonhams 1793 Limited and/or to any of our other affiliates, subsidiaries or parent companies worldwide within the Bonhams Group, we reserve the right to apply any monies paid in respect of a transaction to discharge any amount owed by the purchaser. If all fees, commissions, premiums, bid prices and other sums due to us from the purchaser are not paid promptly as provided in these Conditions of Sale, we reserve the right to impose a finance charge equal to 1.5% per month (or, if lower, the maximum nonusurious rate of interest permitted by applicable law), on all amounts due to us beginning on the 31st day following the sale until payment is received, in addition to other remedies available to us by law.

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5. If we are prevented by fire, theft or any other reason whatsoever from delivering any property to the purchaser or a sale otherwise cannot be completed, our liability shall be limited to the sum actually paid therefor by the purchaser and shall in no event include any compensatory, incidental or consequential damages.

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7. All statements contained in the catalog or in any bill of sale, condition report, invoice or elsewhere as to authorship, period, culture, source, origin, measurement, quality, rarity, provenance, importance, exhibition and literature of historical relevance, or physical condition ARE QUALIFIED STATEMENTS OF OPINION AND NOT REPRESENTATIONS OR WARRANTIES. No employee or agent of Bonhams is authorized to make on our behalf or on that of the consignor any representation or warranty, oral or written, with respect to any property.

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(a) Within 30 days of written notice that there is a dispute, the parties or their authorized and empowered representatives shall meet by telephone and/or in person to mediate their differences. If the parties agree, a mutually acceptable mediator shall be selected and the parties will equally share such mediator's fees. The mediator shall be a retired judge or an attorney familiar with commercial law and trained in or qualified by experience in handling mediations. Any communications made during the mediation process shall not be admissible in any subsequent arbitration, mediation or judicial proceeding. All proceedings and any resolutions thereof shall be confidential, and the terms governing arbitration set forth in paragraph (c) below shall govern.

(b) If mediation does not resolve all disputes between the parties, or in any event no longer than 60 days after receipt of the written notice of dispute referred to above, the parties shall submit the dispute for binding arbitration before a single neutral arbitrator. Such arbitrator shall be a retired judge or an attorney familiar with commercial law and trained in or qualified by experience in handling arbitrations. Such arbitrator shall make all appropriate disclosures required by law. The arbitrator shall be drawn from a panel of a national arbitration service agreed to by the parties, and shall be selected as follows: (i) If the national arbitration service has specific rules or procedures, those rules or procedures shall be followed; (ii) If the national arbitration service does not



have rules or procedures for the selection of an arbitrator, the arbitrator shall be an individual jointly agreed to by the parties. If the parties cannot agree on a national arbitration service, the arbitration shall be conducted by the American Arbitration Association, and the arbitrator shall be selected in accordance with the Rules of the American Arbitration Association. The arbitrator's award shall be in writing and shall set forth findings of fact and legal conclusions.

(c) Unless otherwise agreed to by the parties or provided by the published rules of the national arbitration service:

(i) the arbitration shall occur within 60 days following the selection of the arbitrator;

(ii) the arbitration shall be conducted in the designated location, as follows: (A) in any case in which the subject auction by Bonhams took place or was scheduled to take place in the State of New York or Connecticut or the Commonwealth of Massachusetts, the arbitration shall take place in New York City, New York; (B) in all other cases, the arbitration shall take place in the city of San Francisco, California; and

(iii) discovery and the procedure for the arbitration shall be as follows:

(A) All arbitration proceedings shall be confidential;

(B) The parties shall submit written briefs to the arbitrator no later than 15 days before the arbitration commences;

(C) Discovery, if any, shall be limited as follows: (I) Requests for no more than 10 categories of documents, to be provided to the requesting party within 14 days of written request therefor; (II) No more than two (2) depositions per party, provided however, the deposition(s) are to be completed within one (1) day; (III) Compliance with the above shall be enforced by the arbitrator in accordance with California law;

(D) Each party shall have no longer than eight (8) hours to present its position. The entire hearing before the arbitrator shall not take longer than three (3) consecutive days;

(E) The award shall be made in writing no more than 30 days following the end of the proceeding. Judgment upon the award rendered by the arbitrator may be entered by any court having jurisdiction thereof.

To the fullest extent permitted by law, and except as

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If within one (1) year from the date of sale, the original purchaser (a) gives written notice to us alleging that the identification of Authorship (as defined below) of such lot as set forth in the **BOLD TYPE** heading of the catalog description of such lot (as amended by any saleroom notices or verbal announcements during the sale) is not substantially correct based on a fair reading of the catalog (including the terms of any glossary contained therein), and (b) within 10 days after such notice returns the lot to us in the same condition as at the time of sale, and (c) establishes the allegation in the notice to our satisfaction (including by providing one or more written opinions by recognized experts in the field, as we may reasonably require), then the sale of such lot will be rescinded and, unless we have already paid to the consignor monies owed him in connection with the sale, the original purchase price will be refunded.

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### AUCTION ESTIMATES

The first step in the auction process is to determine the auction value of your property. Bonhams' world-renowned specialists will evaluate your special items at no charge and in complete confidence. You can obtain an auction estimate in many ways:

- Attend one of our Auction Appraisal Events held regularly at our galleries and in other major metropolitan areas. The updated schedule for Bonhams Auction Appraisal Events is available at [www.bonhams.com/us](http://www.bonhams.com/us).
- Call our Client Services Department to schedule a private appointment at one of our galleries. If you have a large collection, our specialists can travel, by appointment, to evaluate your property on site.
- Send clear photographs to us of each individual item, including item dimensions and other pertinent information with each picture. Photos should be sent to Bonhams' address in envelopes marked

as "photo auction estimate". Alternatively, you can submit your request using our online form at [www.bonhams.com/us](http://www.bonhams.com/us). Digital images may be attached to the form. Please limit your images to no more than five (5) per item.

### CONSIGNING YOUR PROPERTY

After you receive an estimate, you may consign your property to us for sale in the next appropriate auction. Our staff assists you throughout the process, arranging transportation of your items to our galleries (at the consignor's expense), providing a detailed inventory of your consignment, and reporting the prices realized for each lot. We provide secure storage for your property in our warehouses and all items are insured throughout the auction process. You will receive payment for your property approximately 35 days after completion of sale.

Sales commissions vary with the potential auction value of the property and the particular auction in which the property is offered. Please call us for commission rates.

### PROFESSIONAL APPRAISAL SERVICES

Bonhams' specialists conduct insurance and fair market value appraisals for private collectors, corporations, museums, fiduciaries and government entities on a daily basis. Insurance appraisals, used for insurance purposes, reflect the cost of replacing property in today's retail market. Fair market value appraisals are used for estate,

tax and family division purposes and reflect prices paid by a willing buyer to a willing seller.

When we conduct a private appraisal, our specialists will prepare a thorough inventory listing of all your appraised property by category. Valuations, complete descriptions and locations of items are included in the documentation.

Appraisal fees vary according to the nature of the collection, the amount of work involved, the travel distance, and whether the property is subsequently consigned for auction.

Our appraisers are available to help you anywhere and at any time. Please call our Client Services Department to schedule an appraisal.

### ESTATE SERVICES

Since 1865, Bonhams has been serving the needs of fiduciaries – lawyers, trust officers, accountants and executors – in the disposition of large and small estates. Our services are specially designed to aid in the efficient appraisal and disposition of fine art, antiques, jewelry, and collectibles. We offer a full range of estate services, ranging from flexible financial terms to tailored accounting for heirs and their agents to world-class marketing and sales support.

For more information or to obtain a detailed Trust and Estates package, please visit our website at [www.bonhams.com/us](http://www.bonhams.com/us) or contact our Client Services Department.

BUYER’S GUIDE

BIDDING & BUYING AT AUCTION

Whether you are an experienced bidder or an enthusiastic novice, auctions provide a stimulating atmosphere unlike any other. Bonhams previews and sales are free and open to the public. As you will find in these directions, bidding and buying at auction is easy and exciting. Should you have any further questions, please visit our website at [www.bonhams.com](http://www.bonhams.com) or call our Client Services Department at +1 (212) 644 9001.

Catalogs

Before each auction we publish illustrated catalogs. Our catalogs provide descriptions and estimated values for each “lot.” A lot may refer to a single item or to a group of items auctioned together. The catalogs also include the dates and the times for the previews and auctions. We offer our catalogs by subscription or by single copy. For information on subscribing to our catalogs, you may refer to the subscription form in this catalog, call our Client Services Department, or visit our website at [www.bonhams.com/us](http://www.bonhams.com/us).

Previews

Auction previews are your chance to inspect each lot prior to the auction. We encourage you to look closely and examine each object on which you may want to bid so that you will know as much as possible about it. Except as expressly set forth in the Conditions of Sale, items are sold “as is” and with all faults; illustrations in our catalogs, website and other materials are provided for identification only. At the previews, our staff is always available to answer your questions and guide you through the auction process. Condition reports may be available upon request.

Estimates

Bonhams catalogs include low and high value estimates for each lot, exclusive of the buyer’s premium and tax. The estimates are provided as an approximate guide to current market value based primarily on previous auction results for comparable pieces, and should not be interpreted as a representation or prediction of actual selling prices. They are determined well in advance of a sale and are subject to revision. Please contact us should you have any questions about value estimates.

Reserves

Unless indicated by the  $\rho$  symbol next to the lot number, which denotes no reserve, all lots in the catalog are subject to a reserve. The reserve is the minimum auction price that the consignor is willing to accept for a lot. This amount is confidential and does not exceed the low estimate value.

Auction House’s Interest in Property Offered at Auction

On occasion, Bonhams may offer property in which it has an ownership interest in whole or in part or otherwise has an economic interest. Such property, if any, is identified in the catalog with a  $\blacktriangle$  symbol next to the lot number(s).

Bonhams may also offer property for a consignor that has been guaranteed a minimum price for its property by Bonhams or jointly by Bonhams and a third party. Bonhams and any third parties providing a guarantee may benefit financially if the guaranteed property is sold successfully and may incur a financial loss if its sale is not successful. Such property, if any, is identified in the catalog with a  $\circ$  symbol next to the lot number(s).

Bidding at Auction

At Bonhams, you can bid in many ways: in person, via absentee bid, over the phone, or via Bonhams’ live online bidding facility. Absentee bids can be submitted in person, online, via fax or via email.

Valid Bonhams client accounts are required to participate in bidding activity. You can obtain registration information online, at the reception desk or by calling our Client Services Department.

By bidding at auction, whether in person or by agent, by absentee bid, telephone, online or other means, the buyer or bidder agrees to be bound by the Conditions of Sale.

Lots are auctioned in consecutive numerical order as they appear in the catalog. Bidding normally begins below the low estimate. The auctioneer will accept bids from interested parties present in the saleroom, from telephone bidders, and from absentee bidders who have left written bids in advance of the sale. The auctioneer may also execute bids on behalf of the consignor by placing responsive or consecutive bids for a lot up to the amount of the reserve, but never above it.

We assume no responsibility for failure to execute bids for any reason whatsoever.

In Person

If you are planning to bid at auction for the first time, you will need to register at the reception desk in order to receive a numbered bid card. To place a bid, hold up your card so that the auctioneer can clearly see it. Decide on the maximum auction price that you wish to pay, exclusive of buyer’s premium and tax, and continue bidding until your bid prevails or you reach your limit. If you are the successful bidder on a lot, the auctioneer will acknowledge your paddle number and bid amount.

Absentee Bids

As a service to those wishing to place bids, we may at our discretion accept bids without charge in advance of auction online or in writing on bidding forms available from us. “Buy” bids will not be accepted; all bids must state the highest bid price the bidder is willing to pay. Our auction staff will try to bid just as you would, with the goal of obtaining the item at the lowest bid price possible. In the event identical bids are submitted, the earliest bid submitted will take precedence. Absentee bids shall be executed in competition with other absentee bids, any applicable reserve, and bids from other auction participants. A friend or agent may place bids on your behalf, provided that we have received your written authorization prior to the sale. Absentee bid forms are available in our catalogs, online at [www.bonhams.com/us](http://www.bonhams.com/us), at offsite auction locations, and at our San Francisco, Los Angeles and New York galleries.

By Telephone

Under special circumstances, we can arrange for you to bid by telephone. To arrange for a telephone bid, please contact our Client Services Department a minimum of 24 hours prior to the sale.

Online

We offer live online bidding for most auctions and accept absentee bids online for all our auctions. Please visit [www.bonhams.com/us](http://www.bonhams.com/us) for details.

Bid Increments

Bonhams generally uses the following increment multiples as bidding progresses:

\$50-200 .....	by \$10s
\$200-500 .....	by \$20/50/80s
\$500-1,000 .....	by \$50s
\$1,000-2,000 .....	by \$100s
\$2,000-5,000 .....	by \$200/500/800s
\$5,000-10,000 .....	by \$500s
\$10,000-20,000 .....	by \$1,000s
\$20,000-50,000 .....	by \$2,000/5,000/8,000s
\$50,000-100,000 .....	by \$5,000s
\$100,000-200,000 .....	by \$10,000s
above \$200,000 .....	at auctioneer’s discretion

**The auctioneer may split or reject any bid at any time at his or her discretion as outlined in the Conditions of Sale.**

Currency Converter

Solely for the convenience of bidders, a currency converter may be provided at Bonhams’ auctions. The rates quoted for conversion of other currencies to U.S. Dollars are indications only and should not be relied upon by a bidder, and neither Bonhams nor its agents shall be responsible for any errors or omissions in the operation or accuracy of the currency converter.

Buyer’s Premium

A buyer’s premium is added to the winning bid price of each individual lot purchased, at the rates set forth in the Conditions of Sale. The winning bid price plus the premium constitute the purchase price for the lot. Applicable sales taxes are computed based on this figure, and the total becomes your final purchase price.

Unless specifically illustrated and noted, fine art frames are not included in the estimate or purchase price. Bonhams accepts no liability for damage or loss to frames during storage or shipment.

All sales are final and subject to the Conditions of Sale found in our catalogs, on our website, and available at the reception desk.

Payment

All buyers are asked to pay and pick up by 3pm on the business day following the auction. Payment may be made to Bonhams by cash, checks drawn on a U.S. bank, money order, wire transfer, or by Visa, MasterCard, American Express or Discover credit or charge card or debit card. All items must be paid for within 5 business days of the sale. Please note that payment by personal or business check may result in property not being released until purchase funds clear our bank. For payments sent by mail, please remit to Cashier Department, 220 San Bruno Avenue, San Francisco, CA 94103.

Sales Tax

Residents of states listed in Paragraph 1 of the Conditions of Sale must pay applicable sales tax. Other state or local taxes (or compensation use taxes) may apply. Sales tax will be automatically added to the invoice unless a valid resale number has been furnished or the property is shipped via common carrier to destinations outside the states listed in the Conditions of Sale. If you wish to use your resale license please contact Cashiers for our form.

Shipping & Removal

Bonhams can accommodate shipping for certain items. Please contact our Cashiers Department for more information or to obtain a quote. Carriers are not permitted to deliver to PO boxes.

International buyers are responsible for all import/export customs duties and taxes. An invoice stating the actual purchase price will accompany all international purchases.

Collection of Purchases

Please arrange for the packing and transport of your purchases prior to collection at our office. If you are sending a third party shipper, please request a release form from us and return it to +1 (212) 644 9009 prior to your scheduled pickup. To schedule collection of purchases, please call +1 (212) 644 9001.

Handling and Storage Charges

Please note that our offices have requirements for freight elevator usage. Please contact us to schedule an elevator appointment for pickup of any large or awkward items. Bonhams will hold all purchased lots in our gallery until Thursday September 28 2017 without penalty. After Thursday September 28 2017 oversized lots (noted as W next to the lot number and/or listed on page 81) will be sent to Cadogan Tate where transfer, storage and full value protection fees will be immediately applicable.

All other sold lots will be retained in Bonhams gallery until October 12 2017 without penalty. After the October 12 2017 collection of lots will be by appointment only. Please call +1 (212) 644 9001 at least 24 hours in advance to make an appointment.

**Storage charges of \$5 per lot, per day will begin accruing for any lots not collected by October 12 2017.**

Bonhams reserves the right to remove uncollected sold lots to the warehouse of our choice at the buyer’s risk and expense. Further transfer, handling, storage and full value protection fees will apply if moved to a warehouse of our choice.



IMPORTANT NOTICE TO BUYERS

COLLECTION & STORAGE AFTER SALE

Please note that all oversized sold lots noted with a “W” next to the lot number and/or listed below that are not collected by 4.30pm ET on Thursday September 28 2017 will be removed to the warehouse of Cadogan Tate New York Limited and will be available for collection from 9.30am Monday October 2 2017. Collections are by appointment only. Collection appointments must be booked 24 hrs in advance (subject to full payment of all outstanding amounts due to Bonhams and Cadogan Tate) by contacting Cadogan Tate at +1 (917) 464 4346.

All other sold lots not listed as oversized or noted with a “W” next to the lot number will remain at Bonhams until October 12 2017 without penalties. Lots not collected by this time will be returned to the department storages charges may apply.

LOTS WILL BE AVAILABLE FOR COLLECTION FROM CADOGAN TATE ON MONDAY OCTOBER 2 2017.

**Address**  
Cadogan Tate Fine Art  
301 Norman Ave  
Brooklyn, NY 11222

Lots will be available for collection 24 hrs. following transfer to Cadogan Tate every business day from 9.30am-4.30pm ET.

Collection appointments must be booked 24 hrs. in advance (subject to full payment of all outstanding amounts due to Bonhams and Cadogan Tate) by contacting Cadogan Tate at +1 (917) 464 4346.

HANDLING & STORAGE CHARGES

For sold lots that remain at Bonhams there will be no penalty for lots collected by and including October 12 2017.

For sold lots removed to Cadogan Tate there will be transfer & full value protection charges due immediately upon transfer however, storage charges will not apply for lots collected within 7 calendar days.

After 7 days at Cadogan Tate additional storage charges will be due per lot, as follows (plus any applicable sales tax).

FURNITURE/LARGE OBJECTS

Transfer .....	\$75
Daily storage.....	\$10
Full Value Protection	
(on Hammer + Premium + tax).....	0.3%

SMALL OBJECTS

Transfer .....	\$37.50
Daily storage.....	\$5
Full Value Protection	
(on Hammer + Premium + tax).....	0.3%

For more information on the Cadogan Tate rates applicable to Bonhams purchases or for estimates for domestic or International shipping through Cadogan Tate, please contact: Catherine More +1 (917) 464 4346 c.more@cadogantate.com

PAYMENT

All amounts due to Bonhams and all charges due to Cadogan Tate must be paid at the time of collection and before release from Cadogan Tate's warehouse.

TO MAKE PAYMENT IN ADVANCE

Telephone +1 (917) 464 4346 to ascertain the amount due – payable by cash, check or credit card.

PAYMENT AT TIME OF COLLECTION

May be made by cash, check, or credit card.

Lots will only be released from Cadogan Tate's warehouse upon production of the “Collection Slip” obtained from the Cashier's office at Bonhams.

All services provided by Cadogan Tate will be subject to its standard Conditions of Business, copies of which are available at Bonhams.

PLEASE NOTE

Cadogan Tate does not accept liability for damage or loss due to negligence or otherwise, exceeding the stated value of such goods, or at its option the cost of repairing or replacing the damaged or missing goods.

Cadogan Tate reserves a lien over all goods in its possession for payment of storage and other charges due it.

OVERSIZED LOTS

- 52
- 53
- 66
- 67
- 68

# Catalog Order Form

# Bonhams

Please check the Auction Catalog(s) you would like to receive, complete the address and payment information below and send the completed form via email to [catalogs.us@bonhams.com](mailto:catalogs.us@bonhams.com), or via fax at (415) 861 8951, or mail to:

## Bonhams

220 San Bruno Avenue  
San Francisco, California 94103

If you have any questions please  
contact us at +1 (800) 223 2854

Category Name	Internal	Domestic Address*	International Address*	Issues per year**
19th CENTURY PAINTINGS (Including Russian and Dogs in Art)	PIC41	<input type="checkbox"/> \$200	<input type="checkbox"/> \$280	5
20TH CENTURY FURNITURE & DECORATIVE ARTS	FRN21	<input type="checkbox"/> \$160	<input type="checkbox"/> \$200	4
AFRICAN, OCEANIC & PRE-COLUMBIAN ART	TRI12	<input type="checkbox"/> \$120	<input type="checkbox"/> \$150	3
AMERICAN & CALIFORNIA WESTERN PAINTINGS & SCULPTURE	PIC40	<input type="checkbox"/> \$200	<input type="checkbox"/> \$250	5
ARMS, ARMOR AND MODERN SPORTING GUNS	ARM10	<input type="checkbox"/> \$80	<input type="checkbox"/> \$100	2
ASIAN WORKS OF ART	ASN10	<input type="checkbox"/> \$360	<input type="checkbox"/> \$430	9
BONHAMS QUARTERLY MAGAZINE	MAGB	<input type="checkbox"/> \$30		4
BOOKS, MANUSCRIPTS & RELATED CATEGORIES	BKS10	<input type="checkbox"/> \$320	<input type="checkbox"/> \$400	8
COINS AND BANKNOTES	CNS10	<input type="checkbox"/> \$160	<input type="checkbox"/> \$200	4
CONTEMPORARY ART (Including Made in California)	PIC50 & PIC52	<input type="checkbox"/> \$200	<input type="checkbox"/> \$250	5
ENTERTAINMENT MEMORABILIA & COLLECTABLES	COL10	<input type="checkbox"/> \$160	<input type="checkbox"/> \$200	4
EUROPEAN & AMERICAN FURNITURE & DECORATIVE ARTS	FRN20	<input type="checkbox"/> \$320	<input type="checkbox"/> \$400	7
IMPRESSIONIST AND MODERN ART	PIC55	<input type="checkbox"/> \$100	<input type="checkbox"/> \$120	2
INDIAN, HIMALAYAN & SOUTHEAST ASIAN ART	ASN12	<input type="checkbox"/> \$80	<input type="checkbox"/> \$100	2
JAPANESE WORKS OF ART	ASN11	<input type="checkbox"/> \$120	<input type="checkbox"/> \$140	3
JEWELRY	JWL10	<input type="checkbox"/> \$320	<input type="checkbox"/> \$400	8
MADE IN CALIFORNIA CONTEMPORARY ART	PIC52	<input type="checkbox"/> \$80	<input type="checkbox"/> \$100	2
MARITIME PAINTINGS AND DECORATIVE ARTS	COL11	<input type="checkbox"/> \$80	<input type="checkbox"/> \$100	2
MOTOR CARS, MOTORCYCLES & AUTOMOBILIA	MOT10 & MOT20	<input type="checkbox"/> \$330	<input type="checkbox"/> \$390	6
MOTORCYCLES	MOT20	<input type="checkbox"/> \$40	<input type="checkbox"/> \$50	1
NATIVE AMERICAN ART	NTV10	<input type="checkbox"/> \$120	<input type="checkbox"/> \$150	3
NATURAL HISTORY, GEMS, MINERALS & LAPIDARY	NAT10	<input type="checkbox"/> \$120	<input type="checkbox"/> \$150	3
PHOTOGRAPHS	PIC44	<input type="checkbox"/> \$120	<input type="checkbox"/> \$150	3
PRINTS	PIC43	<input type="checkbox"/> \$120	<input type="checkbox"/> \$150	3
SPACE MEMORABILIA	BKS11	<input type="checkbox"/> \$40	<input type="checkbox"/> \$50	1
WATCHES	JWL11	<input type="checkbox"/> \$120	<input type="checkbox"/> \$150	3
WINES	WIN10	<input type="checkbox"/> \$280	<input type="checkbox"/> \$350	5
WRITING INSTRUMENTS	COL20	<input type="checkbox"/> \$50	<input type="checkbox"/> \$70	2
ALL CATEGORIES	ALLCAT	<input type="checkbox"/> \$4,500	<input type="checkbox"/> \$5,600	109

\*\* The number of auction catalogs and sales listed for a subscription are strictly estimates. We are not responsible for refunds or credits if the number of sales alters from the estimate. Some of the above categories may include our auctions in other locations.

## Method of Payment

☐ Check/Money Order enclosed for \$ \_\_\_\_\_  
Payable to Bonhams and Butterfields

☐ Visa ☐ Mastercard ☐ American Express

Card number \_ \_ \_ \_ \_

Expiration Date \_ \_ / \_ \_ CW \_ \_

Cardholder Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_ \_ Zip \_\_\_\_\_ Country \_\_\_\_\_

Signature \_\_\_\_\_ Date \_\_\_\_\_

## Send Catalogs to:

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City \_\_\_\_\_ State \_ \_ Zip \_\_\_\_\_ Country \_\_\_\_\_

Telephone \_\_\_\_\_ Date \_\_\_\_\_

Email \_\_\_\_\_

Client Number (internal use only) \_\_\_\_\_



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## BONHAMS \*

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**580 Madison Avenue**  
**New York, New York 10022**  
**(212) 644 9001**

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### San Francisco

(415) 861 7500  
(415) 861 8951 fax

Monday - Friday, 9am to 5pm

### Los Angeles

(323) 850 7500  
(323) 850 6090 fax

Monday - Friday, 9am to 5pm

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\* Indicates saleroom

• Indicates independent contractor

The following information is recorded  
and available 24 hours a day, 7 days a  
week, through our telephone system:

- Auction and Preview Information
- Directions to Bonhams's salesrooms
- Automated Auction Results

# Auction Registration Form

(Attendee / Absentee / Online / Telephone Bidding)

Please circle your bidding method above.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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**Paddle number (for office use only)**

**General Notice:** This sale will be conducted in accordance with Bonhams Conditions of Sale, and your bidding and buying at the sale will be governed by such terms and conditions. Please read the Conditions of Sale in conjunction with the Buyer's Guide relating to this sale and other published notices and terms relating to bidding. Payment by personal or business check may result in your property not being released until purchase funds clear our bank. Checks must be drawn on a U.S. bank.

**Notice to Absentee Bidders:** In the table below, please provide details of the lots on which you wish to place bids at least 24 hours prior to the sale. Bids will be rounded down to the nearest increment. Please refer to the Buyer's Guide in the catalog for further information relating to instructions to Bonhams to execute absentee bids on your behalf. Bonhams will endeavor to execute bids on your behalf but will not be liable for any errors or non-executed bids.

**Notice to First Time Bidders:** New clients are requested to provide photographic proof of ID - passport, driving license, ID card, together with proof of address - utility bill, bank or credit card statement etc. Corporate clients should also provide a copy of their articles of association / company registration documents, together with a letter authorizing the individual to bid on the company's behalf. Failure to provide this may result in your bids not being processed. For higher value lots you may also be asked to provide a bankers reference.

**Notice to online bidders:** If you have forgotten your username and password for [www.bonhams.com](http://www.bonhams.com), please contact Client Services.

## If successful

I will collect the purchases myself ☐  
Please contact me with a shipping quote (if applicable) ☐  
I will arrange a third party to collect my purchase(s) ☐

## Please email or fax the completed Registration Form and requested information to:

Bonhams Client Services Department  
580 Madison Avenue  
New York, New York 10022  
Tel +1 (212) 644 9001  
Fax +1 (212) 644 9009  
[bids.us@bonhams.com](mailto:bids.us@bonhams.com)

# Bonhams

Sale title:	Sale date:
Sale no.	Sale venue:
<b>General Bid Increments:</b> \$10 - 200 .....by 10s \$200 - 500 .....by 20 / 50 / 80s \$500 - 1,000 .....by 50s \$1,000 - 2,000 .....by 100s \$2,000 - 5,000 .....by 200 / 500 / 800s \$5,000 - 10,000 .....by 500s \$10,000 - 20,000 .....by 1,000s \$20,000 - 50,000 .....by 2,000 / 5,000 / 8,000s \$50,000 - 100,000 .....by 5,000s \$100,000 - 200,000 .....by 10,000s above \$200,000 .....at the auctioneer's discretion The auctioneer has discretion to split any bid at any time.	
Customer Number	Title
First Name	Last Name
Company name (to be invoiced if applicable)	
Address	
City	County / State
Post / Zip code	Country
Telephone mobile	Telephone daytime
Telephone evening	Fax
Telephone bidders: indicate primary and secondary contact numbers by writing ① or ② next to the telephone number.	
E-mail (in capitals) _____ By providing your email address above, you authorize Bonhams to send you marketing materials and news concerning Bonhams and partner organizations. Bonhams does not sell or trade email addresses.	
I am registering to bid as a private client <input type="checkbox"/>	I am registering to bid as a trade client <input type="checkbox"/>
Resale: please enter your resale license number here _____ We may contact you for additional information.	

SHIPPING	
Shipping Address (if different than above):	
Address: _____	Country: _____
City: _____	Post/ZIP code: _____

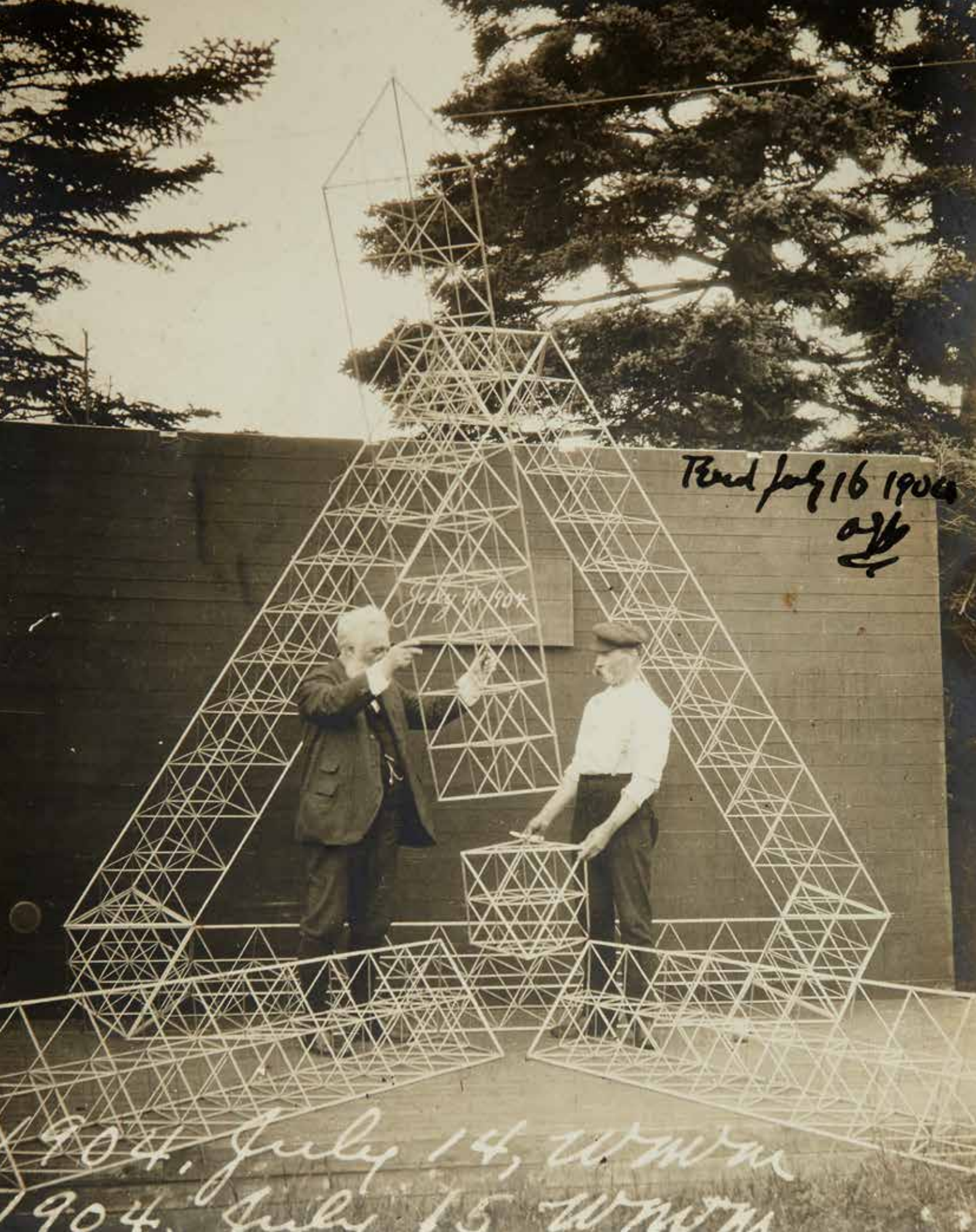
**Please note that all telephone calls are recorded.**

Type of bid (A-Absentee, T-Telephone)	Lot no.	Brief description (In the event of any discrepancy, lot number and not lot description will govern.) If you are bidding online there is no need to complete this section.	MAX bid in US\$ (excluding premium and applicable tax) Emergency bid for telephone bidders only*

**You instruct us to execute each absentee bid up to the corresponding bid amount indicated above.**

\* Emergency Bid: A maximum bid (exclusive of Buyer's Premium and tax) to be executed by Bonhams only if we are unable to contact you by telephone or should the connection be lost during bidding.

BY SIGNING THIS FORM YOU AGREE THAT YOU HAVE READ AND UNDERSTAND OUR CONDITIONS OF SALE AND SHALL BE LEGALLY BOUND BY THEM, AND YOU AGREE TO PAY THE BUYER'S PREMIUM, ANY APPLICABLE TAXES, AND ANY OTHER CHARGES MENTIONED IN THE BUYER'S GUIDE OR CONDITIONS OF SALE. THIS AFFECTS YOUR LEGAL RIGHTS.	
Your signature:	Date:



Read July 16 1904  
ajb

July 14 1904

1904. July 14, W W W W  
1904. July 15 W W W W



**Bonhams**

580 Madison Avenue  
New York, NY 10022

+1 212 644 9001

+1 212 644 9009 fax

