

## The Trouble with Space Auctions

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On July 20, 2021, Sotheby's, the storied centuries-old auction house, promised collectors the Moon—or at least the chance to bid on items involved in getting there. Among the eighty-seven lots up for sale was an Apollo Guidance Computer. This metallic box, designed by MIT's Instrument Laboratory and produced by Raytheon starting in 1966, was an essential tool for navigating the lunar surface and an important forerunner of modern computing. Sotheby's estimated that this celebrated artifact—frequently studied not only in space history but also in the history of technology—would fetch between \$200,000 and \$300,000 USD. But when the auctioneer's hammer hit the lectern, the price had skyrocketed to \$746,000 USD. Other items on the block that day included a lunar surface checklist used by Neil Armstrong (sold for \$63,000 USD) and Richard Feynman's personal notes from the Challenger disaster investigation (sold for \$44,100 USD). In case there was any doubt, Sotheby's sale affirmed the value of almost anything to do with space.

But here the public record for these items stops. Who purchased these artifacts and where they now reside is a mystery. How should we attend to this systematic and accelerating flow of space artifacts into unknown private collections of the fantastically wealthy? How does the commodification of and marketplace for space-flown items affect and implicate historians and curators and their contributions to space history? And finally, how do these processes shape public and expert understandings of outer space and its uses? Critical

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reflection on space auction catalogs reveals the politics undergirding these everyday practices. Space auctions enact a kind of for-profit public history of science that commodifies space and frames it within concerning colonialist, gendered, and racialized notions of the (final) frontier.

The 2021 summer sale at Sotheby's was not the first space auction—far from it. Since the beginning of the space age, pieces of these vast public projects have been up for purchase. Starting as a small-scale informal practice in the 1960s, NASA astronauts would sometimes smuggle small souvenirs and keepsakes like coins and stamps aboard spaceflights and then sell them as a way to supplement their government salaries. These infrequent and low-key transactions introduced some in the public to the allure of the “space-flown item,” which collectors consider to have a special aura acquired from crossing the Kármán line, the invisible border of space at 100 kilometers in altitude. In the United States, the practice was kept in check by NASA regulations. After all, vehicles, hardware, tools, and other items were public property—not owned by the astronauts or employees who used them—and the Smithsonian Institution claimed right of first refusal on any NASA artifacts. Still, the practice of selling space-flown ephemera continued to grow well into the Shuttle-era of the 1980s. Here, the odd astronaut-linked item would appear next to lots of sports, Hollywood, and military memorabilia, as well as rare coins and stamps.

The fall of the Soviet Union in 1991 and the end of the Cold War precipitated the first large auction, organized by Sotheby's, devoted entirely to space-flight hardware. The previously highly secretive Russian space program, with different laws and governance regulating space hardware, was now open for global business with the West. The 1993 auction of Soviet space hardware attracted significant media attention in the United States. By focusing on Soviet items, Sotheby's was able to sidestep the NASA laws and regulations that had prevented any sort of similar auction of American space heritage up until that point. As it happens, most of the lots at the 1993 auction were purchased by the personal foundation of Ross Perot (fresh off his third-party run for the US presidency) and loaned to the Smithsonian National Air and Space Museum, where they remain on display today.<sup>1</sup> Around the same time, a Beverly Hills-based company called Superior Stamp and Coin began hosting

1. Douglas Martin, “Space Artifacts of Soviets Soar at a \$7 Million Auction” in *The New York Times* (December 12, 1993), 47. While the most expensive space heritage item ever sold at auction (Vostok 3KA Space Capsule, \$2.9 million) comes from the Soviet program, NASA items have tended to fetch higher prices, especially in recent years.

biannual sales of space-related items.<sup>2</sup> They mostly sold autographs from famous NASA personalities, and models of spacecraft, but some artifacts obtained from astronauts' personal collections began to surface here too. In 1999, Christie's, the British auction house, organized the first high-profile sale of US space artifacts in New York City.<sup>3</sup> Items sold here for ten to twenty times as much as at previous lower-profile auctions, suggesting a new class of wealthy, tech-fetishizing buyers flush with dot-com cash had arrived on the scene.

Who is allowed to sell space? By 2012, the buying and selling of objects from the American space program had reached such heights that the US Congress felt compelled to step in to answer this question. Disputes over the true ownership of items appearing for sale had come to a head the previous year, when Apollo 14 astronaut Edgar Mitchell consigned a NASA camera he had used during his lunar mission in 1971 to Bonham's (where it was estimated to fetch between \$60,000 to \$80,000 USD). To stop the sale, the US government filed a lawsuit that Mitchell settled out of court by agreeing to relinquish the artifact. Soon after, Congress passed a bill attempting to clarify what astronauts could own and sell. The bill "confirm[ed] full ownership rights for certain United States astronauts to artifacts from the astronauts' space missions" (H.R. 4158, 2012) for those up to the 1975 Apollo-Soyuz project. The bill resolved the rights to sell articles—designated as anything that was expendable, disposable, or for personal use, including materials that NASA astronauts kept as mementos—to astronauts. But crucially, in extending this right only to those who had served before 1976, it excluded those who came after NASA's efforts to diversify the astronaut corps, which began in that year. The 2012 bill therefore had the effect of allowing only white male astronauts to legally profit from selling space-flown equipment and souvenirs, while excluding the women and minority astronauts NASA selected beginning in 1978.

The complex ethics of buying and selling space has tended to surface only in moments of controversy. In June 1971, for example, the crew of Apollo 15 carried around 400 postal covers (stamped commemorative envelopes) on their journey to the Moon, which they did not clear ahead of time with NASA. The astronauts had agreed in advance to sell them to West German stamp

2. "Memories of Outer Space" in *The New York Times* (February 19, 1995) Section 6, 17. "Superior's first all-space auction (the first anywhere) was in January 1993 and brought about \$400,000."

3. "Space memorabilia: One giant sale for Christie's," CNN.com, published online on 31 Aug 1999. [www.cnn.com/TECH/space/9908/31/space.auction](http://www.cnn.com/TECH/space/9908/31/space.auction)

dealer Hermann Sieger for around \$7,000 USD, split three ways. NASA learned of the sale, confiscated the postal covers, and censured the crew—none of whom ever flew in space again. In 2004, another incident transformed astronauts' *bodies* into space-flown items with potential value. That year, Marx Sizemore, a barber in Lebanon, Ohio, gave his long-time customer Neil Armstrong a haircut—and then sold the trimmings for \$3,000 USD to John Reznikoff, a Connecticut-based collector best known for amassing a record-breaking number of hair samples from famous historical figures including Napoleon, Abraham Lincoln, and Albert Einstein. Through a lawyer, Armstrong took legal action against Sizemore but was unsuccessful in retrieving his hair. Both of these incidents lay bare conflicts over the value conferred by space flight—and who is eligible to realize that value on the market.<sup>4</sup>

Space-related things are seen to be intrinsically valuable, a fact confirmed by several attempts to auction debris recovered from the 1986 Space Shuttle *Challenger* disaster, which killed seven NASA astronauts.<sup>5</sup> At best, regulations and legal action have barely limited what has become the regular flow of space for sale. The items that regularly come to market have a wide range of origins, uses, and interested parties. A curator at the National Air and Space Museum noted that most of the items are “harmless” things like signed photographs and “Robbins medallions” (minted silver medallions that were available for purchase by NASA astronauts from Apollo 7 in 1968 onward).<sup>6</sup> Some of these items from early missions were flown with the intention of simply being mementos, curios, or gifts—their subsequent sale never intended. Virgil Ivan “Gus” Grissom, for instance, took dimes on his 1961 flight in Liberty Bell 7: some in his suit—believed to be for himself—and some stowed elsewhere in

4. Even today, Paul Fraser Collectibles in Bristol, UK (a company known for selling historical memorabilia and advising Discovery Channel productions) is selling what they bill as “Neil Armstrong Authentic Strand of Hair” for £399 (\$530 USD). The listing includes a testimonial from Sizemore: “This is to inform you that I have been the barber of record of Neil Armstrong since October 1999 . . . I do attest that the hair clippings submitted to you are his hairs that I cut from his head.” A Paul Fraser Collectibles staff writer then confirms “this is a highly sought after piece of history with impeccable provenance.” “Neil Armstrong Authentic Strand of Hair for Sale,” Paul Fraser Collectibles. [www.paulfrasercollectibles.com/products/neil-armstrong-authentic-strand-of-hair-for-sale](http://www.paulfrasercollectibles.com/products/neil-armstrong-authentic-strand-of-hair-for-sale)

5. “Challenger Debris Auction Repeats History,” CollectSPACE, July 2001. [www.collectspace.com/news/news-070501a.html](http://www.collectspace.com/news/news-070501a.html); Chris Ciaccia, “Artifacts from 1986 Challenger Disaster up for Auction.” Fox News, 26 Aug 2019. [www.foxnews.com/science/challenger-artifacts-up-for-auction](http://www.foxnews.com/science/challenger-artifacts-up-for-auction)

6. Margaret A. Weitekamp, *Space Craze: America's Enduring Fascination with Real and Imagined Spaceflight* (Washington, DC: Smithsonian Institution, 2022), 108.

the capsule's cabin, thought to be for others. After the infamously sunk spacecraft was recovered from the Atlantic Ocean in 1999, fifty-two of the dimes from the cabin were discovered and auctioned at Christie's, one of which sold for \$4,600 USD—over twice the upper estimate of the lot. Recent private spaceflights have seen billionaires fly items with the specific purpose of auctioning them on return. For instance, Virgin Galactic founder Richard Branson flew photographs and a Pride flag; and SpaceX's Inspiration 4 crew flew fifty non-fungible tokens (NFTs), including a song by rock band Kings of Leon and a set of Space Racers Mission to Mars plushie plane toys. While less valuable than original hardware, incidental keepsakes are a sign of participants' recognition of the value of space as a kind of market aura.

The wider public—beyond high-roller collectors, sellers, and scholars—have taken an interest in space auctions too. The drama of the sale is one focal point, best evidenced by the short-lived 2019 reality TV show *Space Dealers*, loosely modeled after the hit History Channel series *Pawn Stars*. But space enthusiasts have also discovered that auction catalogs, with their detailed descriptions of items listed for sale, are a place to find fascinating tidbits of space history writing. Recently, a member of the popular space enthusiast Facebook group “Space Hipsters,” with a membership of over 26,000, alerted others to the existence and off-label use of these auction catalogs: “I always make it a point to download and save the free PDFs of the auction catalogs because browsing through them often feels like visiting a great museum.” Specifically, the user notes that “you can learn a great deal of useful information from reading the in-depth descriptions that accompany many of the items.” Although this user considers themselves “unable to bid for high-end items,” they find value in the incidental information auctions produce.<sup>7</sup> Space auctions are thus a kind of public history. While they may not conform to traditional or conventional historical practice, they do represent a genre of historical writing—not least because these are often the last look we get at objects soon to disappear from public view.

The items for sale and the way the sales are framed demonstrate the entanglement of scientific and colonial practices. This is particularly apparent in comparison with another auction framed around notions of exploration, this time at Bonham's (London) in 2021.<sup>8</sup> Under the sanitized theme of “Travel

7. Facebook post to Space Hipsters group, Facebook, 11 Nov 2021. [www.facebook.com/groups/spacehipsters/permalink/4762557887122390](https://www.facebook.com/groups/spacehipsters/permalink/4762557887122390)

8. “Bonhams: Travel & Exploration,” Bonhams. [www.bonhams.com/auction/26404/travel-and-exploration](https://www.bonhams.com/auction/26404/travel-and-exploration)

and Exploration,” the sale brought to market a collection of ephemera, paintings, and photographs that reflect an Orientalist view of colonial “frontiers” that marks an intriguing comparison with the rhetoric of space auctions. Items for sale included a manuscript by Christopher Palmer Rigby (Lot 82)—trumpeted by Bonhams as a “journal of [an] anti-slave trader” in Zanzibar—and the collected archives of Victor Berry (Lot 182)—a seaman on the 1907–1909 British Nimrod Expedition to Antarctica. Grouping together disparate places (as varied as Turkey, Bermuda, Malaysia, Ecuador, Japan, and Antarctica) under the shared umbrella of frontiers makes the colonial history of such auctions clear; for space enthusiasts, it should raise questions about how such logics operate in subtler ways at space auctions.<sup>9</sup>

The obvious gendered dimensions of these colonial auctions should also raise questions about the gendered dimensions of space sales. While photographs, paintings, handcrafted globes, and manuscripts are attributed directly to named, individual men, a nineteenth-century pair of stitched samplers of a world map (Lot 3 in the “Travel and Exploration” sale), which are typically created by young women, are presented without a creator listed, with no mention of the absence of an attribution.<sup>10</sup> In space auctions, we see such asymmetries play out in valuations: a Seiko watch twice flown on the wrist of NASA astronaut Kathryn D. Sullivan (Lot 82) sold for \$21,410 USD in 2021, but watches worn by male astronauts consistently sell for far more.<sup>11</sup> For example, Ronald Evans’s Speedmaster watch—which spent thirteen days in space on Apollo 17—sold for \$131,450 USD in 2009 and again in 2015 for \$245,000 USD.<sup>12</sup> In the same year, Apollo 15 astronaut Dave Scott’s Bulova watch sold for a staggering \$1,592,500 USD in 2015.<sup>13</sup> These sales are just one example of how the auras of space flight

9. “Bonhams: Journal of Anti-Slave Trade Campaigner Sells at Bonhams Travel and Exploration Sale,” Bonhams. [www.bonhams.com/press\\_release/31614](http://www.bonhams.com/press_release/31614)

10. “Bonhams: World Maps—Embroidered,” Bonhams. [www.bonhams.com/auction/26404/lot/3/world-maps-embroidered-a-pair-of-embroidered-oval-maps-of-the-west-and-east-hemispheres-nineteenth-century-2](http://www.bonhams.com/auction/26404/lot/3/world-maps-embroidered-a-pair-of-embroidered-oval-maps-of-the-west-and-east-hemispheres-nineteenth-century-2)

11. “[STS-41-G and STS-31] Kathy Sullivan’s Twice Flown Seiko—The ‘Most Vertical Watch,’” Sotheby’s. [www.sothebys.com/en/buy/auction/2021/space-exploration/sts-41-g-and-sts-31-kathy-sullivans-twice-flown](http://www.sothebys.com/en/buy/auction/2021/space-exploration/sts-41-g-and-sts-31-kathy-sullivans-twice-flown)

12. “Apollo 17 Lunar Module Flown Rolex GMT-Master Chronometer . . .” Heritage Auctions. <https://historical.ha.com/itm/space-exploration/flight-related-memorabilia/apollo-17-lunar-module-flown-rolex-gmt-master-chronometer-directly-from-the-personal-collection-of-mission-command-module-pilo/a/6033-41170.s>

13. “Apollo 15 Lunar Surface Chronograph,” RR Auction, 22 Oct 2015. [www.rrauction.com/auctions/lot-detail/334805004639001](http://www.rrauction.com/auctions/lot-detail/334805004639001)

and masculinity go hand in hand to alter the value of objects worn by male and female astronauts on comparable voyages.

The field of space history is deeply connected to the market for space heritage. An in-depth analysis of the Schøyen Collection (a Norwegian-based collection of Buddhist Manuscripts) drew attention to the interplay of auctions with academic systems, highlighting how academic researchers can smooth the commercialization of collections, even in cases of illicit trafficking: “They authenticate, date and determine origin, study content, publish and exhibit objects, and counsel collectors . . . These contributions are crucial to the working of the market, especially for endeavors to move objects from a criminal sector to an open market, as well as for creating monetary appreciation on investments.”<sup>14</sup> Historians directly influence how valuable such items are perceived to be by the work that is prioritized in our field. Meanwhile, where space artifacts are acquired shapes the scholarship that can be done. Military archives, for example, are not only structurally gendered but also racialized, classed, and ableist in their relations between researchers, archivists, and local peoples.<sup>15</sup> And in private collections, which are invaluable for space historians seeking to tell the history of public programs anew, the same issues of access and privilege play out on an even greater scale, with no oversight whatsoever.

At the auction house, space creates value and generates profit. The history of buying and selling space-flown items turns space into a commodity to be consumed under capitalism. So too does the piecemeal development of regulations by the United States, Russia, and other spacefaring nations and organizations, which treat outer space as a place where land and property rights are contested and flexible, and where capital accumulation and political negotiation are “at the center of social and economic life.”<sup>16</sup> These ongoing practices deliberately chip away at conventions designed to ensure communal access and use such as the 1967 Outer Space Treaty, which bans governments from claiming extraterrestrial territory such as the Moon or Mars, and the 1979

14. Christopher Prescott and Josephine M. Rasmussen, “Exploring the ‘Cozy Cabal of Academics, Dealers and Collectors’ through the Schøyen Collection,” *Heritage* 3, no. 1 (2020): 68–97.

15. Ashley D. Farmer, Gretchen Heefner, Rebecca Herman, Lien-Hang T. Nguyen, and Kirsten Weld. “How Gender Affects the Experience of Archival Research and Field Work,” *Modern American History* 2, no. 2 (2019): 193–200.

16. Silvio Beretta and John Markoff, “Civilization and Barbarism,” in *States of Violence*, ed. Fernando Coronil and Julie Skurski (Ann Arbor: University of Michigan Press, 2006), 36.

Moon Treaty, which states in Article II that activities there “shall not create a right of ownership.” An auction house selling one of Gus Grissom’s dimes may seem a small, harmless transaction unrelated to the risk that someone will later claim or sell property rights to the Moon. But the insidious culture of commodification is difficult to contain, and carries global impacts.

Space auctions legitimate the claiming of objects and the objectification of places and spaces as central to any expansionist enterprise. In short, they frame space as an extension of frontier narratives. We should attend not only to questions of access, control, and property accumulation but also to the inverse acts of making the frontier that are encouraged under such regimes—including dispossession, violence, and displacement. The neoliberalization of space—a move away from state actors and toward private ventures around the world—means that space history and its telling are increasingly part of a broader movement toward reduced regulations, limited oversight, and the commodification of experience that defines the modern economy. The cavalier selling of space, and the vision of space it supports, are thus connected to real-life issues of violence and harassment, imposing the same lines and injustices many have experienced on Earth “out there” in space. Already we see this occurring in the billionaire space race—Blue Origin employees push back on safety concerns in rocket development, and sexual harassment claims are widespread at both Blue Origin and SpaceX.<sup>17</sup> These issues have always plagued places billed as “frontiers” that host scientific fieldwork. Research on fieldwork at Antarctica stations documents the deep misogyny that existed prior to women joining the British Antarctic Survey’s program in the 1980s, and ongoing harassment by senior professors of graduate students in remote locales that is suppressed and covered up.<sup>18</sup>

The recent past has seen not just the stuff of space on sale, but the trips themselves. As Marina Koren notes, “we’re entering an unprecedented time of

17. Aria Alamalhodaei, “Chief Blue Origin Complaint Author Disputes Cause of Termination, while the Space Company’s CEO Does Damage Control,” *TechCrunch*, 1 Oct 2021. <https://techcrunch.com/2021/10/01/chief-blue-origin-complaint-author-disputes-cause-of-termination-while-the-space-companys-ceo-does-damage-control/>; David Dawkins, “SpaceX Intern Claims Sexual Harassment Complaint Ruined Her Job Prospects,” *Forbes*, 27 Aug 2020. [www.forbes.com/sites/daviddawkins/2020/08/27/spacex-intern-claims-sexual-harassment-complaint-ruined-her-job-prospects](http://www.forbes.com/sites/daviddawkins/2020/08/27/spacex-intern-claims-sexual-harassment-complaint-ruined-her-job-prospects)

18. Morgan Seag, “Women Need Not Apply: Gendered Institutional Change in Antarctica and Outer Space,” *The Polar Journal* 7, no. 2 (2017): 319–335; Meredith Nash, “National Antarctic Program Responses to Fieldwork Sexual Harassment,” *Antarctic Science* 33, no. 5 (2021): 560–571.



space superlatives” through purchasing access to space travel.<sup>19</sup> The process of putting things up for sale—seats on trips, spacesuits, watches, or signed photographs—make space a frontier by exerting extralocal power.<sup>20</sup> Once we have normalized buying and selling token articles from space, we are not far from buying and selling other materials or resources from space. As Julie Michelle Klinger argues, the (un)making of the frontier is always tied in with the political economy and political ecology of materials. Discourses that support and practices that enact such processes of frontiering need not be precise or coherent to get results, “especially where there is money to be made and territory to be claimed.”<sup>21</sup>

So, what is the trouble with space auctions? They restrict the work of professional historians, sending artifacts of historical significance out of public view and into private hands. Yet they also, unquestioned, perform a kind of historical work in public domains, telling us what, and who, space has been for. They frame space itself (not just space-related objects) as a commodity: to be produced for profit, purchased, and consumed. Following the sanitized tropes of “travel and exploration” narratives, they continue to frame space as an extension of the frontier, a place where property rights are established and contested and where damaging inequities are perpetuated.

19. Marina Koren, “The Cost of William Shatner’s ‘Most Profound Experience,’” *The Atlantic*, 13 Oct 2021. [www.theatlantic.com/science/archive/2021/10/william-shatner-blue-origin/620370](http://www.theatlantic.com/science/archive/2021/10/william-shatner-blue-origin/620370)

20. Anna Lowenhaupt Tsing, *The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins* (Princeton, NJ: Princeton University Press, 2015).

21. Julie Michelle Klinger, *Rare Earth Frontiers: From Terrestrial Subsoils to Lunar Landscapes* (Ithaca, NY: Cornell University Press, 2017), 37.