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For the Common Man: An Analysis of the United States Space and Rocket Center

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FOR THE COMMON MAN: AN ANALYSIS OF THE UNITED STATES SPACE AND ROCKET CENTER

by

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ABSTRACT

The United States Space and Rocket Center functions as a case study on the rise of popular science in the 20th century America. The museum cultivated a national cultural identity formed during the International Space Race and fostered a growing narrative of a country focused on progress defined by advancements in science and technology rather than social cohesion. This paper outlines the Space and Rocket Center's establishment, its interpretation of America's space programs, and its role as a vessel for domesticated science. It also acknowledges the intersectional gaps in museum interpretation and discusses how the museum and its programs have become an integral part of the American popular science story.

TABLE OF CONTENTS

INTRODUCTION

Beginning in the late 1950s, America's widely public space programs quickly generated a culture of domesticated science, or science-based activities, professional associations, and amateur clubs and groups. The 60s and 70s led to a growth in spaces created specifically to accommodate the rising interests in space science. Such a space was the aviation museum, accompanied with a new mission to incorporate modern rocketry and propulsion. In 1971, the United States Space and Rocket Center (USSRC) in Huntsville, Alabama opened to the public.

As a museum and cultural center, USSRC created a set of unique opportunities to access and experience popular science. One of those opportunities became one of the largest hallmarks of American popular science – Space Camp. Blending the popular and professional sciences to create an experience outside of the formal classroom allowed citizens to learn about Alabama's role in space. It also allowed patrons to take advantage of Huntsville's growing identity as the Rocket City. This paper outlines USSRC's establishment and the interpretive lenses used to illustrate the American space story.

How then, and why was the Space and Rocket Center created in the first place, and how does it fit into the American popular science story? In 1956, Huntsville community leaders felt that the common man should be informed of America's activities

in space.[1] Included among them was Dr. Wernher von Braun, the proclaimed and sometimes infamous Father of the American Space Program.[2] Von Braun and members of the Madison County legislative delegation wanted the people of Alabama to have a place where they could see what they had produced and how they had served their country, directly and indirectly. USSRC could not exist without two conditions – the Space programs to stimulate interest in aerospace activities, and the desire to pursue informal science, technology, engineering, and math (STEM) related activities.

Therefore, this paper argues that the Space and Rocket Center functioned as a vessel to further cultivate a national cultural identity formed during the early space programs in the United States. It would go on to foster the growing narrative of American scientific authority while capitalizing on a new interest in STEM-based activities, continuously reinforced by what would become Space Camp. One of many museums dedicated to aviation and aerospace, USSRC created a space where scientists, future scientists, and non-scientists could share an experience rooted in Cold War space history.

Changing the conversation on how Americans performed, consumed, and participated in science was necessary to be on par with other nations making progress, however they defined it for themselves. However, Cold War history has the potential to be more interdisciplinary. Authors' perspectives reveal not only issues of representation in science, but often highlight what qualifies as science to amateurs and professionals. The large body of literature surrounding the Cold War further contextualizes the Space

[1] "Plan for the Alabama Space Science Center," *Wernher von Braun Papers*, United States Space and Rocket Center (USSRC) Archives.

[2] Monique Laney, *German Rocketeers in the Heart of Dixie: Making Sense of the Nazi Past during the Civil Rights Era* (New Haven: Yale University Press, 2015), 71.

and Rocket Center as an intended creation for non-scientists. Simultaneously, the museum's interpretation is a direct reflection of American Cold War life and culture.

Analyzing USSRC is a useful way to assess how Americans have talked about science and how we presented ourselves in this particular field to other nations at the time. Cultivating an America that embraced science in the 1960s – rather than fearing it – was little more than difficult, but because of the changing nature of the late 1960s, people paid attention. They listened on the radios in their homes, watched live on television, and debated back and forth with one another over whether the government should be wasting time and resources on the heavens. The United States Space and Rocket Center is a cross section of all of these attitudes and opinions, from using German rocketeers, to civil unrest in the Deep South, and even to transforming a deeply southern town into a rocket manufacturing machine. Small case studies on the different campus components highlight different facets of those attitudes within the Cold War.

This changing nature, coupled with the spectacle of the space programs, led to a mass realization and creation of formal and informal scientific opportunities. People joined clubs and groups and organized around different activities. Different fields in science began to professionalize and standardize, creating a separation of who could do what kind of science and when. That separation began to blur as people gained more access to and understanding of the mysteries of science through its domestication. Understanding that they no longer had to be a full time scientist forever engaged in manipulating ideas, theories, and matter, American citizens began to form their own science culture, building bottle rockets and gazing at the stars. USSRC fosters these

growing narratives of American science and continues to blur that line, incorporating the professional and the popular.

As the 50th anniversary of the moon landing approaches, it is more than appropriate to contribute to scholarly work featuring the projects, programs, institutions, and material culture that resulted from America's space programs. Space Camp, its host institution, and similar stories bring together the professional, popular, and fantastical elements in the history of science and technology. A willingness to unite and embrace those elements rather than separating them has added tremendously to the field in the last twenty years. Looking forward, scholars will have the opportunity to analyze the private and commercial space industry's impact on domesticated science. They will also, I hope, examine how we function culturally during this critical period between the Shuttle Program's end and the Mars Generation's beginning.

CHAPTER 1

CREATING THE UNITED STATES SPACE AND ROCKET CENTER

Huntsville's transformation into the Rocket City began following the arrival of Dr. Wernher von Braun and his team to the United States. The Department of Defense found it necessary to enlist the help of German rocketeers in an endeavor to close the science and technology achievement gap with the Soviets. The constant threat of nuclear war served as a catalyst for Operation Paperclip, a US Army recruitment effort designed to protect the identities of German rocket scientists before they were brought to the United States. Blamed yet again for the entire war – and with good reason - all things German were low on the list of public opinion worldwide.[3] The commemoration of von Braun is not heavily interpreted by the museum, as any justification of Nazis would never have been well received at the time of its founding. Von Braun's legacy, however, is memorialized throughout the entire city, and Huntsville's citizens have found a way to come to terms with owing a huge part of their history to a person who once would have been considered an enemy of the state.[4]

[3] Audra Wolfe, *Competing with the Soviets: Science, Technology, and the State in Cold War America* (Baltimore: Johns Hopkins University Press, 2013), 10.
[4] Laney, *German Rocketeers in the Heart of Dixie,* 72-78.

Transferring the von Braun unit to Madison County, Alabama would lead to 5000 people employed at Redstone Arsenal. "Huntsville's population would triple by the end of the decade, and much of the growth was due to the infusion of federal money for the Arsenal."[5] The Germans then had to deal with social and cultural problems of moving from Texas to Alabama, but they found a more accepting dynamic in the small cotton town than they anticipated. They successfully found new roles in the community, opening bookstores and supporting libraries, joining the local symphony orchestra, and forming a local astronomical society for enthusiasts. Some even became American citizens and found Huntsville as a place that reminded them of their homeland.[6] Huntsville's role in the Space Race centered on the development of rocketry and propulsion as an extension of their first DOD priorities, and local industries responded accordingly.

Amendment 3: Creating the Alabama Space Science Exhibit

On November 30, 1965, the state of Alabama voted in favor to create the Alabama Space Science Exhibit, now known as the United States Space and Rocket Center (USSRC) in Huntsville, Alabama. The Center's purpose was to make available information about Alabama's role in the greater space race. Amendment 3, as it was proposed, would allocate nearly $2,000,000 in bonds to fund the museum at no cost to the taxpayer.[7] Advertisements, flyers, brochures, and the good word of trusted officials spread the message. With support from Governor George Wallace and famed University of Alabama football coach Paul "Bear" Bryant, the amendment passed with flying colors

[5] Andrew Dunar and Stephen Waring, *Power to Explore: A History of Marshall Space Flight Center 1960-1990* (Washington, D.C.: NASA History Office, 1999), 14.
[6] Dunar and Waring, *Power to Explore*, 16.
[7] H.1060 Amendment III, Alabama Legislature. August 26, 1965. USSRC Archives.

in a state not known for its progressive tendencies. Not long after the vote, coordinators moved forward with the project, conducting surveys and feasibility studies for the area to justify the museum's construction.[8] Creating this space led to a broader idea of accessibility to science, its professional and popular activities, and the general information of the field. This essay explores USSRC's role in cultivating a national cultural identity in Alabama as it relates to the international space race. It further examines intersectional gaps in the museum's interpretation of American space history.

The Huntsville City Planning Commission conducted a three part feasibility study for the upcoming Space Science Exhibit to analyze background trends and growth potential in the Huntsville and Madison County area. The purpose was to ensure such a museum would be successful for the long term in the state of Alabama. The first part of this study outlined Huntsville's growing Space Age economy. The George C. Marshall Space Flight Center's (MSFC) new christening brought with it the private and commercial sector, attracting companies that would eventually evolve into what is now Cummings Research Park. Transitioning from strictly defense operations at Redstone Arsenal to include a new phase of celestial endeavors was costly to the National Aeronautics and Space Administration (NASA).[9] Companies represented in Cummings Research Park, such as Lockheed Martin, Teledyne Brown, and Northrop Grumman had always had their own institutional goals, including cyber security, intelligence, and avionics. Their attraction to MSFC, however, developed in hopes of supporting NASA

[8] "*Huntsville, Alabama: Population and Economy" – Background Trends* (report 1) and *Analysis of Growth Potential* (report 2) *Economic Feasibility Study* (Huntsville: Huntsville City Planning Commission). USSRC Archives.

[9] Box 46, *Wernher Von Braun Papers*, Manuscript Division, Library of Congress, Washington, D.C, "Economy in Space," speech given on 21 November 1958 to the Metropolitan Club of New York.

and the U.S. government in projects that would continue to boost their reputations and revenue.

At the time, MSFC was developing the Saturn rocket family, the third and largest of which would take Americans to the moon. MSFC's role was to develop "…the first stage of each vehicle…in addition to integrating all stages into a complete unit," and the Apollo project required "…contractor support far in excess of that used in any other project to date."[10] In August of 1965, Carl Jones, acting spokesperson for the Huntsville Industrial Expansion Committee, announced "industrial expansion in the Research Park [would] skyrocket employment there to at least 10,000 [people] by next July 1, with a payroll far in excess of $65 million."[11] The feasibility studies suggested that work from MSFC would sustain Huntsville through the mid-1970s, falling only slightly short when the Apollo program ended early in 1972. Commercial companies' historical involvement in the aerospace economy, along with ongoing projects at MSFC only served to encourage support for the Space and Rocket Center while continuing to build on Huntsville's reputation and new cultural identity as the Rocket City.

The Campaign

Advocating for the center was an easy task once the right supporters were involved. Those with power and political influence campaigned heavily in favor of the amendment, and public opinion seemed generally and genuinely positive.[12] With Wallace and Bryant on board, anything was possible. Unfortunately for marginalized citizens,

[10] *Feasibility Report* 2 – *Analysis of Growth Potential*, 17.
[11] Jerry Hornsby. "Huge Industrial Jump Near at Research Park." *The Huntsville Times*, August 27, 1965.
[12] "Bryant Names Museum Unit." *The Huntsville Times*, October 8, 1965. USSRC Archives.

involvement in science equated to progress for the state, but nothing else. Evidence of opposition to the museum is rare, but questions often arose in newspaper editorials on whether or not this was truly for the common man. Alabama is described as "diverse," referring to the wide range of blue-collar and agricultural workers in the state and whether or not the museum would be useful to them.[13] This diversity did not imply race, even after the *Brown* decision and the Civil and Voting Rights Acts implemented in 1963 and 1964, respectively.[14] It only emphasized class, and though efforts in popular science encouraged women and young girls to participate in the field, it did not emphasize gender either.[15] Though Governor Wallace would not vote on the constitutional amendment establishing the Space and Rocket Center, he did sign the bill setting up the 18 member Alabama Space Science Exhibit Commission, with both bills passing unanimously in the Senate after some struggle and clearing the House.[16]

Brochures and ads proclaimed "Vote Yes on Amendment 3" and supporters distributed information to anyone who was interested. Advocators were careful to point out that the $1.9 million in bonds needed for the Space Science exhibit would not require any new taxes.[17] A particular trifold pamphlet supplied by the Committee for Passage of the Alabama Space Science Exhibit went into great detail explaining Amendment 3, the museum, missile and space activities in Alabama, how the bill would benefit the state,

[13] "Let's Tell Them," op-ed from *The Huntsville Times*, August 29 (no year). USSRC Archives.
[14] Randall B. Woods. *LBJ: Architect of American Ambition* (Free Press: New York, 2006), 558.
[15] National Association of Rocketry. "History – A NAR Brochure from about 1960." Last modified 2019. https://www.nar.org/about-nar/history/.

[16] Jerry Hornsby. "Space Museum," August 27, 1965. The bill was blocked twice and had to be considered along with 403 other bills at the time. It was approved with 4 hours to spare before the recess.
[17] Committee for Passage of the Alabama Space Science Exhibit. "Vote Yes on Amendment 3." 1965. United States Space and Rocket Center Archives.

and what Alabamians – the largest set of stakeholders – could do to support efforts to pass the amendment. A project this large required a constitutional amendment for Alabama, leaving the Space and Rocket Center up to the citizens.

Advertising literature specifically addressed voters and highlighted the power their voices had in this project. The goal was to make voters care about the museum as if it were their very own project, and reinforcing the cultural capital of the Space Age allowed marketing teams to do so. The "Vote Yes" brochure proclaims the Space Science Exhibit Center as "designed primarily for you and other Alabamians. You can feel proud of Alabama's accomplishments in space and defense."[18] The brochure encouraged Alabama voters to vote yes on the amendment, visit the Center with their families to gain a better understanding of the "latest advancements in science and technology," and experience why and how Alabama was "truly where space begins."[19] By getting Alabamians to buy into the space race, legislators set a new standard for promoting cultural and educational leisure in a state better known for its agriculture and racism.

The Space and Rocket Center's original purpose was to create a space of understanding and reconciliation for people all over the country, especially Alabamians. Emphasis on educating the common man in the U.S. and Alabama's space endeavors encompasses its overall philosophy – for the people of Alabama to know what stake they had in the space race and to realize their significance.[20] In that respect, the museum's mission has only changed to be more inclusive and more in how scholars and amateurs alike understand and perform science. Perhaps the most important part of that vision was

[18] Committee for Passage of the Alabama Space Science Exhibit. "Vote Yes on Amendment 3."
[19] Committee for Passage of the Alabama Space Science Exhibit. "Vote Yes on Amendment 3."
[20] "Plan for the Alabama Science Center," *von Braun Papers*, USSRC Archives.

creating an environment where patrons could experience scale and perspective. Standing next to a moon rocket would indeed prove to be a valuable experience, allowing visitors to appreciate the many feats of engineering it took to be involved in the space race. These experiences would inspire visitors to believe that this kind of work was not out of their reach. They too could be astronauts, scientists, and engineers in the field. Later, the USSRC mission would evolve to include a youth science program that would give young visitors their very own astronaut experience.

CHAPTER 2
THE ORIGINAL CAMPUS AND COLLECTIONS

After von Braun and his team of rocketeers arrived in Alabama, work continued on adapting Huntsville to the space age.[21] MSFC was built as one of NASA's aeronautics and astronautics bases, becoming the lead center for missile and rocket development and testing following efforts at Redstone Arsenal to address the missile gap.[22] After dissolving the Alabama Ordnance Missile Command and consolidating the Army Ballistic Missile Agency, the von Braun team worked strategically on rockets capable of space travel while continuing work for the Department of Defense.[23] Test vehicles, mock-ups, and training modules were left with no use to MSFC as the Mercury, Gemini, and Apollo programs of the 50s and 60s came and went. Those test vehicles, along with aircraft and missiles at the neighboring Redstone Arsenal, were integrated into USSRC's collection. MSFC also contributed artifacts from its Space Orientation Center, an area on the base where some of the first attempts at education and programming were carried out for the public.

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[21] Paul B. Stares, *The Militarization of Space: U.S. Policy, 1945-1984* (Ithaca, N.Y.: Cornell University Press, 1985), 23.

[22] Baker, David. "Fly Me To The Moon." *History Today* 63, no. 12 (December 2013): 2. https://login.pallas2.tcl.sc.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=ahl&AN=96329012&site=ehost-live.

[23] James Walker, Lewis Bernstein, Sharon Long. *Seize the High Ground: The US Army in Space and Missile Defense* (Washington, DC: Historical Office, US Army Space and Missile Defense Command, 2003), 25.

The Space and Rocket Center's original campus consisted of the main museum and Rocket Park, both a testament to the reaches of cultural capital and public history. As with any large project, some elements of the Alabama Space Science Exhibit never came to fruition. For example, the Saturn V Dynamic Test Vehicle situated in Rocket Park was supposed to be an immersive experience. Lying horizontally on its side, patrons would have had the opportunity to physically walk through the structure and see the inner workings of the world's most powerful rocket of their time.[24] The Center did however accomplish its mission in making science accessible to those not engaged professionally in the field with a layout that would encourage informal learning in the subjects of space and military science.

Multiple descriptions of the coming museum exist within the archival collections at USSRC, along with several newspaper accounts and plans from the appointed exhibit commission. One of the most compelling comes from the Vote Yes brochure circulated to Alabama's citizens, briefly detailing what potential patrons would get out of the experience.

> On the 50 acre site, massive space launch vehicles, including the Saturn Rocket, which is being developed in Huntsville by NASA's Marshall Space Flight Center, will be displayed. In addition, actual space capsules, satellites, and futuristic models will indicate our rapid advancement into the Space Age. Colorful and animated displays will describe for the visitor our progress in electronics, rocket propulsion, bio-sciences, and other technical fields.[25]

[24] "Alabama Space Science Center," *Christensen Papers*, United States Space and Rocket Center Archives.
[25] Committee for Passage of the Alabama Space Science Exhibit. "Vote Yes on Amendment 3."

USSRC adapted an element of material culture to cultivate the growing cultural identity in Alabama, leaning on the rapidly developing nostalgia and nationalism inspired by the Space Age. The Center currently observes three major collecting areas, all an integral part of the original plan for the exhibit. The collecting areas are NASA's MSFC, energy generation and other initiatives from the Department of Energy (DOE), and Redstone Arsenal, with respect to a donation to USSRC of 35 acres of land. Exhibit space was dedicated to "Military and Space Sciences," "Military and Space Science Applications," "Space Dimensions," "Military and Space Hardware," and the future of the space program in the United States, particularly Alabama. Presently, additional materials in the collection must be related to USSRC's history or relevant prominent figures in spaceflight or aviation, such as Dr. von Braun.

The Main Museum

Construction on the Main Museum began in 1968 and USSRC opened in March of 1970, slightly behind schedule. The museum was intended to operate as "a living museum in which visitors can not only touch, but can actually sample experiences similar to those of the astronauts."[26] Due to preservation efforts, the constant change of exhibits, the founding of Space Camp, and the onset of space related simulators, those experiences have changed over time. However, as the "best facility of its kind," the museum's structure remains largely unchanged.[27] It still functions as the visitor center of MSFC,

[26] Jon Allen, *Aviation and Space Museums of America* (New York: Acro Publishing Company Inc., 1975), 57.
[27] Allen, *Aviation and Space Museums*, 57.

and bus tours to nearby test facilities and operations sites are available just as they were in 1970.

Upon its opening, the main museum featured a dynamic space with plenty of room for exhibits and patrons. Per the original plan, von Braun and others wanted guests to have a tactile experience, pressing developers to include interactive exhibits and artifacts. Today, exhibits in the main museum have expanded to reflect MSFC projects and Huntsville inventions, NASA's Great Observatories, and a mezzanine on space shuttle history and technology. Military collections are still a large focus in the main museum, but they have been relegated to their own space where patrons can discover technologies specific to Redstone Arsenal and its involvement in US defense operations in Huntsville.

The main museum also features a small lobby that briefly outlines the von Braun story. Resting behind a glass wall is a full sized replica of his office, complete with his original desk, a collection of moon globes, and a host of scale model rockets he helped develop for NASA. The office, however, neglects to address von Braun's problematic origins in Nazi Germany. This space, along with a much smaller permanent exhibit highlighting NASA's Monkeynauts, reveal a greater story to patrons by pulling back the curtain to nonscientists and revealing a glimpse into NASA's overall objectives and projects of the time.

At 50,000 square feet, the original building was to include air conditioning, "…a 200 seat auditorium, snack bar, gift shop, science library, repair shop, an administrative

area, and closed circuit television."[28] The main museum also featured a large atrium big enough to hold more than 5000 square feet of exhibition space, and area later adapted to house traveling exhibits. Factoring in comforts and indulgences not guaranteed in other leisure industries and recreational activities, planners marketed the space as accessible and comfortable enough to spend a significant amount of time in to learn about Alabama's celestial endeavors.

The museum was also promoted as a space for families to learn together, perpetuating an investment in what would become a new generation of space age enthusiasts. Original exhibits allowed patrons to get up close and personal with the material legacy of the earliest American space programs (Mercury and Gemini), along with spacecraft from other unmanned missions. The Space and Rocket Center established a new environment for patrons to focus on their state and country's contribution to a large scale, life altering project, and its original layout highlighted and documented what the Huntsville Chamber of Commerce's Space and Sciences Executive Committee thought was important to Alabamian and national citizens alike.[29]

Rocket Park

Equally important to the interior exhibit space was an outdoor space designated to house USSRC's largest collection items. Leading out of the main museum was Rocket Park, consisting of a walking path where patrons could get up close and personal with rockets and missiles. The park commences with some of the very first rockets used in the United States to launch satellites such as *Explorer I*, responsible for discovering the Van

[28] "Plan for the Alabama Science Center," *von Braun Papers*, USSRC Archives.
[29] "Bryant Names Museum Unit." *The Huntsville Times*, October 8, 1965. USSRC Archives.

Allen Radiation Belts and two of three Monkeynauts. Others were used strictly for US Army defense operations. Mostly unmanned, these smaller rockets set the tone for future proceedings of spaceflight, paving the way for the first manned vehicles in the Mercury and Gemini programs. The purpose of the former was to achieve American manned spaceflight, resulting in Alan Shepard's suborbital flight in 1961. Soviet cosmonaut Yuri Gagarin transcended American efforts by becoming the first person to orbit the Earth, as well as being the first person in space.[30]

Rocket Park's purpose, as the advertising put it, was to educate Alabama's citizens on Huntsville's role in the space race, taking every opportunity to reinforce nationalistic pride by reminding them that American space endeavors were always part of American defense endeavors. Cultivating a national cultural identity is best done by building on an existing and strong set of beliefs, as highlighted by the Committee for Passage of the Alabama Space Science Exhibit:

> "The Army Missile Command and contractors will furnish actual missiles, rockets and weapons developed for the defense of our nation. These include the Honest John, Redstone, Pershing, and Sergeant Missile systems, and the Hawk and Nike family of air defense missiles. This concentration of missile and space science hardware and exhibits will focus public attention on Alabama as a leader in our exciting new age of rocketry."[31]

[30] Loren Graham, *Science and the Soviet Social Order* (Cambridge: Harvard University Press, 1990), 189. Woods, *Quest for Identity*, 168.
[31] Committee for Passage of the Alabama Space Science Exhibit. "Vote Yes on Amendment 3."

The park is separated thematically into Military Park and Rocket Row, outlining the two main objectives for the US space program. From there, the sections are arranged chronologically to aid in storytelling and interpretation.

Military Park houses missiles, roving vehicles, planes, and other flight vehicles. The theme highlights defense initiatives from WWII through the Space Age including two of three rockets – Hercules and Zeus - from the original Nike rocket family incorporated in an "antimissile development program" after the USSR successfully tested and launched their own intercontinental ballistic missiles (ICBMs).[32] Incorporating the defense side of the space program was necessary to credit Redstone Arsenal for their land contributions. However, it also benefitted the Center to include these stories because of the growing number of Americans united against Communism and Socialism from the 1940s through the 1980s.[33]

Military Park situates American values in perspective next to Rocket Row, which represents a more international endeavor. Both parks, however, exemplify some of the most controversial issues in Cold War America, mainly involving the sheer amount of money and resources it took to fund the space program in the 1960s and the unwanted Vietnam conflict in the following decade. Political decisions to pursue those endeavors were contradictory to caring for the American people and their needs. This was especially true in Lyndon B. Johnson's Great Society, an effort to invoke socially and financially beneficial programs for the benefit of Americans.[34] Carving out space to glorify

[32] Walker, Bernstein, Long, *Seize the High Ground*, 39-43.
[33] Stares, *The Militarization of Space*, 203.
[34] Woods, *LBJ: Architect of American Ambition*, 558-561.

American defense alongside a comparatively innocent quest for space – both with materials built by German scientists – somehow remained a safe bet for USSRC.

The largely unchanged Rocket Row is comprised of the largest spacecraft in USSRC's collection, apart from a replica of the Saturn V moon rocket added years later. Patrons experience perspective as they gaze up at the rockets of the early American space programs and the remnants of defense weaponry from the atomic age. The story line in Rocket Row begins at WWII, highlighting the German *vergeltungswaffe*, or "vengeance weapons" (V1 and V2). The V1, better known as the Buzz Bomb ties successive rockets to the missiles and other defense technologies in Military Park. The small plane-like aircraft, used in WWII strategic bombing efforts, serves as the predecessor to a line of rockets that would take American astronauts and Monkeynauts to space for the first time. Its successor, the V2 rocket, looked and behaved more like a standard vertically launching flight vehicle.[35] As one of the first guided missiles, it resembled some of the weapons from Army Ordnance Missile Command, later inspiring the Saturn rocket family.

The Saturn IB, the second tallest model in the Park, complicates the progressive narrative. The second of three Saturn rockets adapted for spaceflight, the 1B represents progress and failure for those with living memory, reminding the public of the delicate balance of curiosity and danger associated with space travel. At the start of the Apollo program, Apollo 1 (AS-204) exploded on the launch pad atop a Saturn 1, killing veterans Gus Grissom and Ed White, along with first time astronaut Roger Chaffee. Manned

[35] David H. DeVorkin, *Science with a Vengeance: How the Military Created the US Space Sciences After World War II* (New York: Springer-Verlag, 1992), 341.

missions did not occur again until Apollo 7 with an improved Saturn 1B, complete with a launch escape system.

Deadlines approached quickly after President John F. Kennedy's famous declaration of making it to the moon before the end of the decade.[36] It finally happened in July of 1969 to the relief of NASA, the presidential administration, and millions of Americans. Neil Armstrong, Buzz Aldrin, and Michael Collins launched atop the Saturn V, the last and most powerful in the Saturn rocket series.[37] 363 feet in length, the three stage rocket was outfitted with its namesake five F1 engines at the base, along with three J2 engines at the second stage, and a lone J2 engine at the third stage to propel the command module.

Its size and propulsion capabilities allowed for a heavier payload than its predecessors, making plenty of room for the Lunar Excursion Module (LEM), and much later, lunar rovers. Apart from the capsule, however, nothing on the Saturn V was reusable. As aforementioned, USSRC's Saturn V was a test vehicle, never launching or entering space. However, it is a testament to science and technology in the 1960s and was designated as a national landmark and a national mechanical engineering landmark.[38] A full scale model of the Saturn V vertically dominates the park and gives patrons a more realistic perspective of the rocket. As of 2008 the restored authentic test vehicle rests horizontally in its own dedicated building on the campus.

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[36] Stephen B. Johnson, *The Secret of Apollo: Systems Management in American and European Space Programs.* (Baltimore: Johns Hopkins University Press, 2006), 120. Johnson elaborates on disasters like the Cuban Missile Crisis and the missile gap in general.

[37] Woods, *Quest for Identity*, 204.

[38] National Park Service. "Saturn V Launch Vehicle." Last modified August 28, 2017. https://www.nps.gov/articles/saturn-v-launch-vehicle.htm.

As visitors move to each rocket, they learn a little more about NASA's intentions and the technology (or lack thereof) they were working with back in the 1960s. The rockets also illustrate how incredibly fast scientists were moving on those projects, especially in the wake of the soviet missile gap.[39] The Army Redstone launched *Explorer 1* into low Earth orbit (LEO) in 1958, and only three years later a Mercury Redstone launched Alan Shepard – America's first astronaut in space - in suborbital flight. Allowing museum goers access to this information, coupled with the experience of gazing up at rockets and the sky beyond centralizes an intellectual and cultural sense of place, especially for those who lived through the space programs. Embracing that material culture and centering the legacies of the space age allowed USSRC to tap into an industry that would provide them with much success in the following years.[40]

[39] McDougall, *The Heavens and the Earth*, 252-253. Some scientists and politicians were not so sure about the Soviets' achievement in missile technology. Others outright assumed the Soviets were bluffing.

[40] Pat Houtz. "Recreation: An Industry that's not to be Underestimated." *The Huntsville Times*, August 29, 1965.

CHAPTER 3
EXPANDING THE CAMPUS

A large initiative to expand the campus began in the early 80s. The expansion was to include an acquisition of land, construction of a man-made lake, a waterpark, and an IMAX theater or planetarium. It was to also include an expansion of Rocket and Military Park, a new space shuttle park, and an additional museum building to house new exhibits, including a space dedicated to the Saturn V story.[41] Though an expansion would create room to explore the ethical side of science and the responsibilities of scientists therein, USSRC fail at this venture. The Space and Rocket Center's objectives are somehow all met without having to wrestle with any intersectional issues of race, gender, class, region, etc. or anything else that may complicate the story with more than a surface interpretation.

The Davidson Center for Space Exploration

The Space and Rocket Center succeeds, however, by giving one of the best overviews of America's journey to space, highlighting whenever possible the triumphs of Alabama's contribution. The Davidson Center for Space Exploration, the newest building to the campus, opened to the public in 2008. Under conditions from a grant from the Save

[41] Alabama Space Science Exhibit Commission. Executive Committee Minutes, 1980-1984, 2007. United States Space and Rocket Center Archives.

America's Treasures Act, the Davidson Center was to house the Space and Rocket Center's Saturn V Dynamic Test Vehicle. One of three remaining Saturn Vs in existence, Conservation Solutions Inc. began work to restore the moon rocket to its original prestige, as it had lay on its side and endured the elements in Rocket Park for over thirty years. Again, the original plan for the Saturn V was to reconfigure it so guests could walk through it.[42] That was not the case, and the Davidson Center was built around the rocket after it was mostly restored. Finishing touches were added after the building was completed.

Adding the Davidson Center expanded the campus as well as its services, camps, and related programs. Patrons now enjoy films in the National Geographic Theater, purchase souvenirs at a satellite gift shop, and visit the full scale Saturn V model that sits upright in launch position right outside of the Davidson Center. The Davidson Center also emphasizes clean and alternative energy, one of the original collecting and teaching areas for the Space and Rocket Center. Additionally, the Davidson Center's Saturn V Hall, where the moon rocket currently rests, completely enhanced the Space Camp experience. Interpreting American space history in front of its relics added an authenticity to the camp that could only be reached partially with simulators and virtual reality (VR) technology.

The Saturn V Hall tells the story of America's journey to space, relying heavily on Alabama's involvement. The floor plan is setup both chronologically and thematically, allowing patrons to explore both a sequence of events and related hands-on activities to

[42] Plan for the Alabama Space Science Center, *von Braun Papers*, USSRC Archives.

further explore those events.[43] A physical timeline dominates one length of the building, beginning like most space histories with *Sputnik I* in 1957 and ending with the *Apollo* missions. Commencing the timeline there works for the specific purpose of USSRC, but it leaves no room to fully interpret nuclear and defense history by part of Redstone Arsenal. Though represented in the Main Museum, Redstone Arsenal's relationship with what would become MSFC is not made entirely clear in the history outlined in the Davidson Center.

The timeline is illustrated with physical exhibits throughout the building, beginning with Mercury and Gemini training capsules all the way around the extremities of the Davidson Center. Trainees and their Crew trainers have the opportunity to learn about these endeavors piece-mill or in sequence. The Saturn V itself provides an additional timeline, interpreting what happens at each stage, along with a documentation of the most important parts of the rocket in relation to the materials surrounding it. This illustration encompasses an entire Apollo launch sequence, allowing guests to walk down a swing arm, visit the "moon" and explore the Lunar Excursion Module (LEM) and moon buggy, and splash down at the conclusion of the mission. Invoking this level of material culture through a sequence of connected materials and events is probably the Space and Rocket Center's best public history achievement.

Post *Apollo* Interpretation

The next few events or scientific achievements interpreted in the Saturn V Hall are treated a little differently. After visitors explore the Mobile Quarantine Facility

[43] Alabama Space Science Exhibit Commission. Executive Committee Minutes, 2007. USSRC Archives.

(MQF) used to house astronauts for a brief time after the moon landings, the exhibits lend more emphasis to a wider, more collective definition of achievement, rather than to individual astronauts, scientists, and other relevant persons. A restored replica of a portion of Skylab, the United States' first space station, leads the way.[44] Patrons can walk inside and see some of the living conditions of people spending extended time in space. Also on display is an actual piece of Skylab that burned up in the atmosphere among decommission, landing in Australia and bringing the United States a littering fine of $200 Australian dollars. The modules do very well in the overall sequence, but more opportunities for astronaut life interpretation were available. The same goes for the next major step in American space history - the Space Transportation System (STS), or space shuttle.

The shuttle and its history are not interpreted in the Davidson Center, creating an awkward gap between Skylab and the rise of the commercial space industry. The space shuttle has its own area in the main museum and in Shuttle Park. In those space, shuttle history absorbs the history of the international space station and tells the stories of tragedy, discovery, and life aboard both entities.[45] This area has the most to gain from interpreting intersections, especially of race and gender. The first American women and people of color to fly in space did so on space shuttles, introducing new questions, new problems, and new opportunities for research. Americans trailed the first woman in

[44] Gold, T. "Skylab: Is It Worth the Risk and the Expense?" *Bulletin of the Atomic Scientists* 30, no. 2 (February 1974): 4–6. doi:10.1080/00963402.1974.11458077.

[45] Diane Vaughan, *The Challenger Launch Decision: Risky Technology, Culture, and Deviance at NASA*. (Chicago: University of Chicago Press, 1996), 238-239

space, Russia's Valentina Tereshkova,[46] by many years, holding on to Cold War era gender roles at the expense of women in science and the social progression that went along with it. As the shuttle years began to wane, something interesting happens in USSRC's interpretation. Everything from *Explorer 1* through shuttle history completely freezes, no longer up for interpretation or to be reevaluated or revisited in any way. Even after the last shuttle mission touched down in 2011, nothing in the actual exhibit or overall American Space timeline exhibits any flexibility.

This interpretive bubble can make it difficult for patrons to learn new things and points of view about events that happened in the past. It can be both encouraging and discouraging for people trying to conduct new scholarship on the space race. It can even limit how Space Camp trainees learn about the history. Though this interpretive bubble is not unique to USSRC or that particular moment in US history, freezing that moment in time essentially turns those objects into a giant, American cabinet of curiosity for visitors foreign and domestic to see and admire, not to be infiltrated intellectually or physically. American museums have long been good at exhibiting the propaganda of nationalistic prestige, and interpreting the space race is no different.

Following Skylab and Shuttle in the sequence is the rise of the commercial space industry. Though companies like Boeing, Lockheed (now Lockheed Martin), and others had been around for ages, interpreting them within the context of our newest celestial endeavor has brought them to the forefront of American attention. Most of that attention is by association. Billionaire moguls such as Jeff Bezos (Blue Origin, Amazon) and Elon

[46] Griswold, Robert L. "'Russian Blonde in Space': Soviet Women in the American Imagination, 1950-1965." *Journal of Social History* 45, no. 4 (Summer 2012): 882. doi:10.1093/jsh/shr147.

Musk (SpaceX, Tesla) are often praised and villainized for their overwhelmingly capitalist-driven successes. Musk is often accused of being a live action Tony Stark, especially after declaring his intention to beat NASA to Mars. But these companies, often working as contractors for NASA, have filled a gap in space station service after the shuttle program ended. NASA currently relies on Roscosmos, Russia's space agency, to get astronauts to and from the space station on Soyuz vehicles out of Kazakhstan. This period between space programs has allowed Americans to reflect on past achievements while preparing for the newest one, defined by the Mars Generation.

Interpreting the Mars Generation and Beyond

The Mars Generation encompasses several ideas, all having to do with the inevitable human invasion of Mars. One idea is that the first person to land on Mars is already being molded and trained to take on such a pivotal moment in history. Other ideas are about what we will do once we get there, whether it's furthering the experiments of rovers like Spirit and the recently deceased Opportunity or establishing colonies envisioned long ago by scientists and science fiction writers like Jules Verne. The commercial space industry also has a hand here, as they are preparing everything from command modules like Lockheed Martin's Orion to expandable living environments like Bigelow Aerospace's Expandable Activity Module (BEAM).

Though some of these companies have goals outside of the current space race, loyalties and legacies factor into the equation, especially with companies in Alabama, such as the United Launch Alliance (ULA). ULA's interpretation in USSRC documents the current momentum of the Mars Generation, using models to illustrate the evolution of it the company's rockets over the last 10 years. Exhibiting the company's evolving

strength, their rockets' purposes, and their significance within the current space climate demonstrates Alabama's loyalty to the cause while reaffirming their contributions to their surrounding communities. As these companies figure out how to establish, support, and sustain life in space and on other planets, their history and methods are unfolding right before Americans' eyes.

Interpreting in the context of the Mars Generation allows for dynamic discourse inside and outside of the museum. Things are constantly in flux; the science is always changing, equipment is always upgrading, and related exhibits and mock ups are under more pressure to keep up with the times. Interpreting such rapid movement is different than reinterpreting old ideas and schools of thought, especially when public perception is involved from the very start. Doubts about sending probes to Mars, much less humans, prevail even as the SLS is under construction.[47] The Space and Rocket Center capitalizes on the commercial space industry to present the essence of the Mars Generation to its public, depending on space age legacy and new space age potential to form a very kinetic set of installations.

They capitalize on legacy with a model of Sierra Nevada Corporation's Dream Chaser, a reusable vehicle intended to deliver materials to and from the international space station with the possibility of being unpiloted. Similar in design and purpose to the space shuttle, the Dream Chaser represents a more efficient version of technology that patrons can relate, compare, and contrast to its NASA predecessor. Legacies factor in as

[47] Gold, T. "Skylab: Is It Worth the Risk and the Expense?" *Bulletin of the Atomic Scientists* 30, no. 2 (February 1974): 4–8. doi:10.1080/00963402.1974.11458077. Gold reprimands Skylab and its possible inability to send people to Mars. NASA did not consider manned Mars missions with the technology they lacked.

well with federal agencies, namely NASA's Space Launch System (SLS), the rocket set to return humans to the moon and on to Mars in the years to come. SLS combines ideas and technologies from America's previous space programs, including several elements from the shuttle (rocket boosters, RS-25 engines) and the Saturn V (launch abort system, command/crew module).

CHAPTER 4
AMERICAN POPULAR SCIENCE

The Space and Rocket Center's main goal was to make Alabama's space science accessible to the public. USSRC was able to do this through exhibits, coupled with a heavy reliance on space age related nostalgia. Its use of material culture was a direct reflection of growing interests in popular science across the country. With the expanding rate of clubs, groups, and activities all surrounding America's space programs, USSRC capitalized on something completely unique – the astronaut experience. Plans for a "youth science camp" appeared in its conceptualization stage, but a full record for plans for the actual program did not manifest until the expansion in the 70s.[48] USSRC's premier program – Space Camp - was part of that expansion.

Clubs, Groups, and Activities

Many of these organizations formed in the late 50s and early-mid 60s, reflecting the growing interest in rocketry and a more intimate connection with science. One of the professional groups was the American Institute of Aeronautics and Astronautics (AIAA), founded in 1963 by merging the American Institute of Aerospace Sciences and the

[48] Alabama Space Science Exhibit Commission. Executive Committee Minutes, 1980-1984, 2007. USSRC Archives.

American Rocket Society.[49] AIAA and related groups catered to professional interests for practitioners and those involved in the aerospace sciences. Other groups, such as the National Association of Rocketry (NAR) and Tripoli Rocketry Association (TRA) dedicated rules, resources, and time to leisure and amateur rocketry, the latter specializing in high-power rocketry. Boy Scouts of America began to cultivate an interest in science and technology as it relates to space and astronomy, and to this day, their ranks receive badges for rocketry. Groups like the NAR promoted itself as a group that welcomed boys and girls to build and launch their rockets.[50] However, young women were well aware that science – either in hobby or profession – was not designed with them in mind, and those who were able to turn their interest into careers are only now being revisited in the literature.[51]

Other restrictions of access to science and science based activities were lifted slowly during America's newest age of prosperity. Those with more money could afford more access through formal education, toys such as Legos, and tools such as microscopes and telescopes. Each of those developments were a direct reflection of NASA achievements, especially with collectible model rockets and telescopes advanced enough to inspire knowledge of NASA's great observatories.[52] African-Americans, among other

[49]American Institute of Aeronautics and Astronautics. "History and Heritage." Last modified 2019. https://www.aiaa.org/HistoryAndHeritage/.

[50] National Association of Rocketry. "History – A NAR Brochure from about 1960." Last modified 2019. https://www.nar.org/about-nar/history/. The National Association of Rocketry used a small brochure to advertise their organization around 1960, encouraging boys and girls to be part of the group. The brochure, however, mostly featured young boys and male adults engaged in model rocketry.

[51] Margot Lee Shetterly, *Hidden Figures: The American Dream and the Untold Story of the Black Women Mathematicians Who Helped Win the Space Race* (New York: HarperCollins, 2016), 213.

[52] Goddard Space Flight Center, *The James Webb Space Telescope Science Guide* (Greenbelt: National Aeronautics and Space Administration, 2011).

people of color, would later find access to new academic spaces not inhibited by the physical or temporal architecture of segregation.[53] Science became more available and understandable, and its transition from unknown to known inspired a need to further educate enthusiasts, manifested now in the world's science museums and science centers.[54] Information institutions like USSRC were able to provide new purpose to old objects, making museums a testament and final resting place to a new wave of material culture in America.

Media and Popular Culture

Media and popular culture played a major role in access to science and science activities. Wernher von Braun considered science education for young people a societal need and a priority for his career, and he was a champion for science in the classroom, in the professional world, and in the home.[55] With a developing American appreciation for science, von Braun began to engage with opportunities that allowed him to increase access to science for the Market Generation – known now as Baby Boomers. An increasing number of families owned televisions in the mid to late 50s, and a partnership with Disney allowed von Braun to take advantage of the rapidly spreading technology. His televised program "The Man and the Moon" reached thousands of children, providing further ammunition for his involvement with youth and science education.[56]

[53] Weyeneth, Robert R. "The Architecture of Racial Segregation: The Challenges of Preserving the Problematical Past." *Public Historian* 27, no. 4 (Fall 2005): 11–44. doi:10.1525/tph.2005.27.4.11.
[54] Rudolph. *Scientists in the Classroom*, 34.
[55] Box 46, *Wernher Von Braun Papers*, Manuscript Division, Library of Congress, Washington, D.C "The Space Age: An Educational Challenge," speech.
[56] Box 46, *Wernher Von Braun Papers*, Manuscript Division, Library of Congress, Washington, D.C.

Von Braun also wrote for popular magazines, giving him an outlet to continue publishing his own work while cultivating the notion that science was not out of anyone's reach.

His most widely read work for younger audiences was published in *Collier's Magazine*, some of the material even including tablets, or small collections of activities that functioned as workbooks.[57] In an attempt to meet children at their own level, he described NASA's activities in terms they would find relatable. At one point he even referred to a small scale satellite as looking like a "30 foot ice cream cone," later referenced in a *Collier's* article.[58] With a history of bringing science to the people under his belt, von Braun turned his attention back to Huntsville, Alabama where he would involve himself in USSRC, local clubs and groups, and later, Space Camp. He was present at the Space and Rocket Center's opening ceremony in 1970 and gave a speech about the Center's hopeful impact. His dedication to the area made him a trustworthy ally in the minds of many Americans who previously showed concern about his association with Nazi Germany, communism, and anything else considered unsavory in Cold War America.[59]

Publications old and new, such as *Popular Science*, *National Geographic*, and *The Scientific American*, also took special interest in Cold War science and technology issues and achievements. Other magazines, such as TIME, covered the Cold War in the

[57] Box 46, *Wernher Von Braun Papers*, Manuscript Division, Library of Congress, Washington, D.C. Those with a subscription to *Collier's* were able to "collect" all the tablets – then attached to the back of a workbook – to form their very own Man and the Moon collection.

[58] Box 42, *Wernher Von Braun Papers*, Manuscript Division, Library of Congress, Washington, D.C. von Braun had an ongoing series of short essays for *Collier's Magazine*. His essay "Baby Space Station" outlined the preliminary plans to create a circular space station by first sending up a small satellite.

[59] Wernher von Braun. "Dedication of Alabama Space and Rocket Center." Speech given on March 17, 1970. *Frederick C. Durant III Papers*, United States Space and Rocket Center Archives.

broader context of news media, garnering a much wider readership and adding even more non-scientists to the discourse. Naturally, not every household could afford to own a television or prioritize a subscription to such a magazine, so his reach even then was limited to those who were able to access those resources. The same applies to the Space and Rocket Center's early years. The admission fee was extremely low by today's standards, but there were those who simply did not have the resources to travel to Huntsville. The feasibility studies still advocated for the Center, as did others who remarked on the growing nature of the amusement industry in the United States.[60] Commodifying leisure and inclusion was an obvious step, regardless of how limited the latter was for participants.

People also involved themselves in popular science through science fiction. Authors, artists, and creators took full advantage of the evolved role fantasy would play in the science community. Others made their creations a direct reflection of society, much like Stan Lee and Jack Kirby's *X-Men* (1963), which explored difficult Cold War situations.[61] Later science fiction phenomena, such as *Star Trek* (1966) and *Star Wars* (1977) highlighted the fantasy, potential adventure, and dangers of science and technology in outer space.[62] Some museums, like USSRC, opted to include an element of science fiction in their institutions through traveling blockbuster exhibits to reach fandoms, or supporters and enthusiasts of specific comics, television shows, and other

[60] *Feasibility Reports I and II*. Pat Houtz. "Recreation: An Industry that's not to be Underestimated." *The Huntsville Times*, August 29, 1965.

[61] Ramzi Fawaz, "'Where No X-Man Has Gone Before!' Mutant Superheroes and the Cultural Politics of Popular Fantasy in Postwar America." *American Literature* 83, no. 2 (June 2011): 357, doi:10.1215/00029831-1266090.

[62] Nicholas E. Sarantakes, "Cold War Pop Culture and the Image of U.S. Foreign Policy: The Perspective of the Original Star Trek Series." *Journal of Cold War Studies* 7, no. 4 (Fall 2005): 90, doi: 10.1162/1520397055012488.

media. Blockbuster exhibits, or exhibits dealing with popular culture and media, can include everything from a model Millennium Falcon to a full scale T.A.R.D.I.S. Science fiction is still one of the driving forces behind science domestication, and museums use its material culture to enhance experiences for their guests. USSRC is no different, and it goes a step further by providing an experience dually rooted in fantasy and reality through its very own cultural phenomenon – Space Camp.

Space Camp

Space Camp was the Space and Rocket Center's first large scale education program and has become an integral narrative in the American popular science story. In many ways, Space Camp mirrors the Space and Rocket Center's interpretation of space history, equating developments in science to progress. As it was first presented, students, or trainees, would spend a week in Huntsville immersed in their very own astronaut or computing experience, complete with a blue flight suit. During the camp, trainees would design their own space suits, build and launch their own rockets, and complete a space shuttle mission. Space Camp counselors, or Crew Trainers, are responsible for leading these activities and for briefing their teams of up to 16 trainees on American space history. These activities are largely unchanged in today's Space Camp, but depth and detail of each challenge is differentiated by grade level.[63]

Space Camp has grown to an assortment of programs and experiences that can accommodate several different types of groups and age ranges. Standard camps are Day

[63] Alabama Space Science Exhibit Commission. Executive Committee Minutes, 1980-1984, 2007. USSRC Archives.

Camp (very young children), Space Camp (ages 9-11), Space Academy (12-14), and Advanced Space Academy (15-18). These camps are usually comprised of students from all over the world, and being placed in teams allows them to make new friends and have different experiences as their own person. However, entire camp teams can come from one school or place. Other camps include Adult Space Camp, educator camps, and corporate camps.

Space Camp also offers group camps in support of STEM and STEAM (science, technology, engineering, art, and math) education and popular science activities. Family Camps, Pathfinders (three day programs), Surveyors (two day programs), and Ultimate Field Trips (one day programs) all cater to different crowds and situations. Groups who have a special interest in Space Camp, such as Boy Scouts of America (scouts of America?) Girl Scouts, and 4-H also take advantage of these programs. Space Camp also offers special programs and accommodations for the Blind and Visually Impaired and the Deaf and Hard of Hearing communities.

USSRC leans into other STEM interests with additional camps, some with sublevels adhering to the aforementioned age ranges. The Aviation Challenge camp focuses more on military, defense, and aviation. The Robotics Camp focuses on robotics and engineering, complete with a lab coat for each trainee. The newest camp, Cyber Camp, is perhaps a throwback to the original computer camp and focuses on coding and cybersecurity. Each program uses the museum different facets of space history to interpret and contextualize their activities. Through Space Camp and its other programs, USSRC provides the physical space and intellectual capacity for learning outside of the

classroom. USSRC also provides its museum guests with an informal learning experience and connects them with a history equally important to the state and the nation.

Space Camp opened in 1982, changing the possibilities of how Americans engage in science. Its impact on popular culture is a continuation of the Space Age's influence on mass culture in the United States and around the world. Driven by the possibility of experiencing the furthest reaches of science, people flocked to Space Camp to become astronauts, if only for a short time in their lives. The program allowed regular people to participate in the mysteries of astronautics, doing everything from spinning in a Multi-Axis Trainer (MAT) to building and creating budgets for a human Mars base. Released unfortunately after the *Challenger* accident in January of 1986, the popular film *Space Camp* still served as a way to popularize the program and show future participants – and future astronauts – that space was not out of their reach.

CONCLUSION
SCIENCE FOR THE PEOPLE

Visiting the Space and Rocket Center and attending Space Camp reinforce a growing history of access to science and knowledge of space activities in Alabama, all as a result of the Alabama Space Science Exhibit. Huntsville has since then fully embraced itself as the Rocket City, and even more companies have established themselves there to further assist MSFC as they did in the 50s and 60s. A similar trend has begun to occur as scientists anticipate the journey to Mars. USSRC and other museums continue to create physical and intellectual spaces to house artifacts and enhance the popular science experience. Future scholars will continue to analyze the private and commercial space industry, public perception, and the material culture the Mars landing will inevitably generate.

Building on that material culture and public perception will encourage future historians to take a closer, more holistic look at how Americans have placed themselves within domesticated science. They will have the opportunity to revisit the science from the Reagan administration to the present, conducting more scholarship on satellites, great observatories, and deep space probes. Others will reexamine popular and educational media analyzing shows like *Bill Nye the Science Guy* and more recent magazines such as the Institute of Electrical and Electronics Engineers' *Spectrum*. Some historians will take

on gatekeeping culture in science fiction, and others will reevaluate rocket launches, science fairs, and the spectacle of space. Scholars will also continue to observe space science preservation practices, intersectional legacies and interpretation, and the global Space Camp.

American popular science is evolving into a more accepted and more interdisciplinary body of scholarship. As the newest rocket launches to once again circle the moon and later head to Mars, we will encounter the same questions about American society, culture, and identity. How should this affect Americans and all of humanity? Should we invest in deep space ventures when there are people without food and shelter? How will we memorialize this stage in our existence? Until then, how we approach such questions will determine if we invoke the same sense of pride and cultural identity once we get there. Regardless, the popular and professional will blend once again, and people from all walks of life will take advantage of domesticated scientific opportunities as they come. The Mars Age will be a comparative one for future scientists and historians, and the whole world undoubtedly will be just as transfixed with this celestial endeavor as it was the last.

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