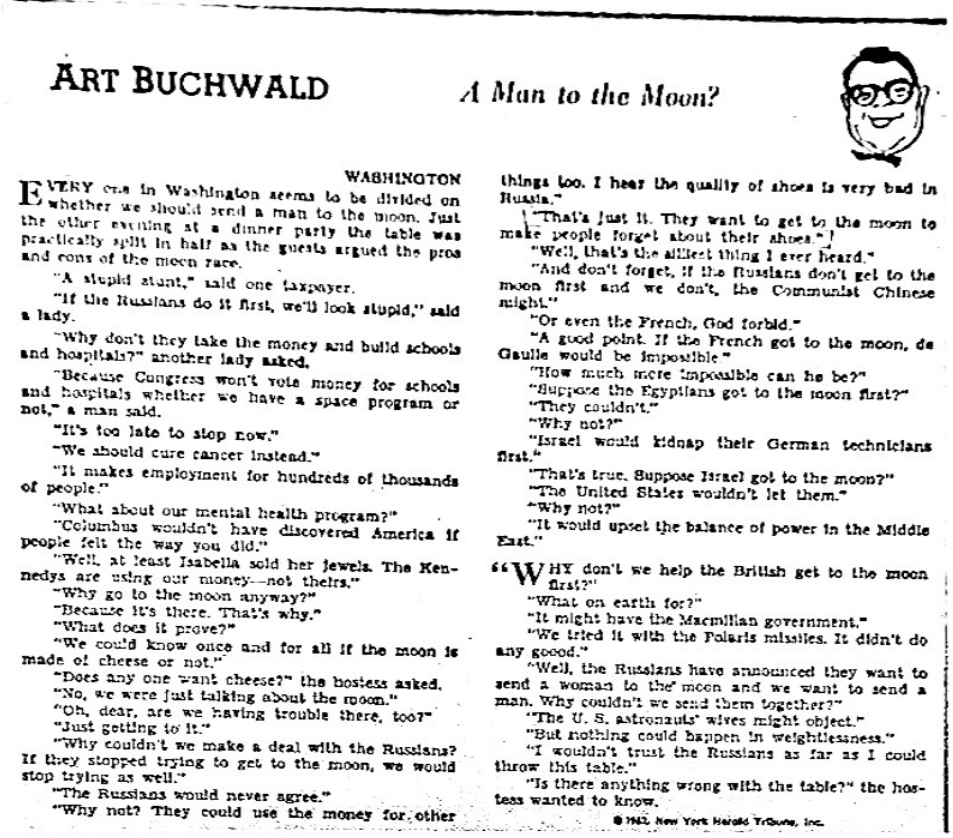
Introduction



ART BUCHWALD

A Man to the Moon?

WASHINGTON

EVERY one in Washington seems to be divided on whether we should send a man to the moon. Just the other evening at a dinner party the table was practically split in half as the guests argued the pros and cons of the moon race.

"A stupid stunt," said one taxpayer.

"If the Russians do it first, we'll look stupid," said a lady.

"Why don't they take the money and build schools and hospitals?" another lady asked.

"Because Congress won't vote money for schools and hospitals whether we have a space program or not," a man said.

"It's too late to stop now."

"We should cure cancer instead."

"It makes employment for hundreds of thousands of people."

"What about our mental health program?"

"Columbus wouldn't have discovered America if people felt the way you did."

"Well, at least Isabella sold her jewels. The Kennedys are using our money—not theirs."

"Why go to the moon anyway?"

"Because it's there. That's why."

"What does it prove?"

"We could know once and for all if the moon is made of cheese or not."

"Does any one want cheese?" the hostess asked.

"No, we were just talking about the moon."

"Oh, dear, are we having trouble there, too?"

"Just getting to it."

"Why couldn't we make a deal with the Russians? If they stopped trying to get to the moon, we would stop trying as well."

"The Russians would never agree."

"Why not? They could use the money for other things too. I hear the quality of shoes is very bad in Russia."

"That's just it. They want to get to the moon to make people forget about their shoes."

"Well, that's the silliest thing I ever heard."

"And don't forget, if the Russians don't get to the moon first and we don't, the Communist Chinese might."

"Or even the French, God forbid."

"A good point. If the French got to the moon, de Gaulle would be impossible."

"How much more impossible can he be?"

"Suppose the Egyptians got to the moon first?"

"They couldn't."

"Why not?"

"Israel would kidnap their German technicians first."

"That's true. Suppose Israel got to the moon?"

"The United States wouldn't let them."

"Why not?"

"It would upset the balance of power in the Middle East."

"WHY don't we help the British get to the moon first?"

"What on earth for?"

"It might have the Macmillan government."

"We tried it with the Polaris missiles. It didn't do any goood."

"Well, the Russians have announced they want to send a woman to the moon and we want to send a man. Why couldn't we send them together?"

"The U. S. astronauts' wives might object."

"But nothing could happen in weightlessness."

"I wouldn't trust the Russians as far as I could throw this table."

"Is there anything wrong with the table?" the hostess wanted to know.

Fig. 1. Lou Grant, "Booster Rocket," *Times* (Palo Alto), 9 Oct 1962.

This comic (Fig. 1.) accurately portrays the American public's qualms about the manned moon program in 1963. The public argued whether their tax dollars could be better spent, politicians did the same, and scientists seemed to argue whether or not such a crash program would be beneficial to future knowledge. And then there was the issue of prestige, if the Russians had a secret moon program, and got there first, what would that mean for democracy. Would the Russians then hold the upper hand in the Cold War? These are the questions constantly asked of the John F. Kennedy administration regarding their promises of what the moon program would become.

Not only did the Kennedy administration face increasing amounts of criticisms, but they had to make the American public believe a moon landing was even possible. In 1949, the results of a Gallup poll showed that only 15 percent of

Americans polled believed America would reach the moon within 50 years, yet 85 percent believed scientists would find a cure for cancer[1]. Knowing what we know now in 2006, it is hard to believe that the public could foresee a cure for cancer before a lunar landing. The "conquering" of space in today's society is taken for granted. Adults now in their thirties have grown up learning about Neil Armstrong's historic landing and utilizing communications satellites, yet barely any news coverage is given to new ventures into space, such as the recent probe sent to Pluto or even the continued work of the two Mars rovers. Perhaps the only excitement left surrounding the lunar landing and space exploration is the conspiracy theory that it never happened. The question then is how skepticism gave way to support of a massive and expensive space program, and how ultimately support was lost. In just over twenty years, the American public changed their view of space as attainable, rather than a place only dreamed about by science fiction writers. As they changed their view, they lent their support to a massive technological quest to land a man on the moon first, before the Russians, and within ten years.

To address the question of how space policy developed, this paper will focus on the Kennedy administration, the years 1961 to 1963 when the promise to go to the moon was first made, and later, the proposition to cooperate with the Russians in a joint program. It will focus on the circumstances which led Kennedy to decide upon a "crash" space program, his motivations for doing so, the results Kennedy promised the nation, and consequently the loss of support and shift in policy.

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[1] Howard E. McCurdy, *Space and the American Imagination* (Washington, D.C.: Smithsonian Institution Press, 1997), 29.

Ultimately this paper will show that Kennedy promised the moon to the American public as many things: a new frontier open to the national spirit of exploration, an opportunity for scientific innovation to flourish, a program which would provide economic opportunities for the American public, and a place that could be defined by peace and ultimately devoid of the Cold War struggles which defined the age. However, as each promise was made, growing criticism of the program began to leave the administration grasping for the next justification. As scientists began to criticize the real science of the program and economists began to criticize the costs of the program, Kennedy needed to find more ways to promise the moon. Yet, by 1963, it seemed that there were no more promises to be made and in September of 1963, Kennedy went before the U.N. and proposed a joint lunar program between the United States and the Soviet Union. Had Kennedy lived beyond November 1963, this paper will show that the moon program would have been radically different from the present reality. Whether this meant a decelerated program, or a Soviet-United States flag on the moon, Kennedy showed a desire to alter his space policy.

To the public this seemed a retreat from Kennedy's harsh anti-communist policy resulting in such incidents as the Bay of Pigs and Cuban Missile Crisis, while to Kennedy it was in line with his goals to decrease Cold War tensions.[2] Thus, it can be assumed he would have either canceled the mission to land a man on the moon, or he would have more vigorously pursued a joint lunar landing with the Russians. No

[2] Exemplified in his desire for Congress to approve the Limited Test Ban Treaty of 1963, banning nuclear testing in the atmosphere, space, and under water.

matter which course he took, the United States space program of the 1960s would have looked remarkably different from how it is remembered today.

Chapter One:

The Respective Policies of Eisenhower and Kennedy

When Dwight D. Eisenhower entered the White House in 1953, he did so with conservative notions about how the government should function. Walter McDougall explains that Eisenhower's motive was to "usher in the missile age without succumbing to centralized mobilization and planning."[3] As Howard McCurdy draws from Stephen Ambrose's biography, Eisenhower was "more interested in using space for [aerial surveillance] than as a theater for some sort of exploratory opera."[4] As such, the pre-1957 Eisenhower space policy stressed placing scientific satellites into orbit could advance science, rather than a policy which strived to "beat" Soviets. Besides serving scientific goals, Eisenhower's administration asserted that a scientific satellite would create a precedent of free access, thus calming Russian fears about a foreign satellite flying over the Soviet Union.[5] The fear of a foreign satellite flying over native land would be one the American public would face as the U.S.S.R. placed the first satellite into space, rather than the Americans.

On October 4, 1957 the Russian satellite Sputnik was successfully launched. Lyndon B. Johnson, the Senate Majority Leader, was immediately concerned and called for an investigation into the space policy of the United States and whether it resulted in Soviet superiority. Similarly, the media presented Sputnik as something which demanded attention; they claimed that it asserted a Soviet technological

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[3] Walter A. McDougall, *The Heavens and the Earth: A Political History of the Space Age* (New York: Basic Books, 1985), 139.
[4] McCurdy 59.
[5] McDougall 145.

superiority. The public, however, was not as fearful, until the media commanded it to be.[6]

Perhaps least concerned was President Eisenhower himself. For example, in a press conference on October 9th, a mere five days after Sputnik was launched, President Eisenhower not only expressed his lack of concern over Sputnik as a security risk, but also said,

> You will say, 'Well the Soviets gained a great psychological advantage throughout the world,' and I think in a political sense that is true; but in the scientific sense it is not true except for the proof . . . that they have got the propellants and the projectors that will put these things up in the air.[7]

Here he explicitly stated that he knew, in regards to international prestige, the Russians had won a victory, but scientifically all the Russians had was propellants and the projectors. Yet the American public did not see them as simply propellants and projectors to launch satellites but as proof that the Russians probably possessed ICBMs, now had the capability to launch them, and most likely intended to place man into space. And, as McDougall rightly argues, Eisenhower and his administration were blind to the "symbolic technology" Sputnik represented and thus Eisenhower seemed out of touch with the people. Instead of promoting a sense of security through his passiveness, Eisenhower made the American people feel their leader was unaware of the true danger.[8] During the Cold War, many citizens believed security was based on the assumption that the United States was superior, scientifically and

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[6] McDougall 145.
[7] The President's News Conference of October 9, 1957, 25 May 2006 <http://www.presidency.ucsb.edu/ws/index.php?pid=10924&st=&st1=>.
[8] McDougall 146.

technologically, to the Soviets—an assumption challenged by Sputnik I, and, one month later, Sputnik II.[9]

Perhaps most illustrative of Eisenhower's post-Sputnik policy is the pamphlet distributed by the administration to the American public entitled "Introduction to Outer Space". Written by Eisenhower's Presidential Science Advisory Committee, the pamphlet contained suggestions about the future for America's space program with a statement by Eisenhower explaining that the information would, for the non-technical reader, outline the wondrous knowledge and peaceful opportunities space presented. Members on this committee included many prestigious scientists and academics, such as the chair Dr. James R. Killian, President of M.I.T., and Jerome B. Weisner, a future President of M.I.T., group leader at Los Alamos Laboratory after the Second World War, and the future science advisor to President Kennedy. Dr. James H. Doolittle was a pilot in the Air Force as well as completing a Ph. D. in aeronautical engineering from M. I. T. And Dr. Isidor I. Rabi who worked on developing the atomic bomb as well as heralded for his work on the magnetic properties of crystals and his work on studying the magnetic properties of atomic nuclei. These men, among many more, formulated this introduction to the space program utilizing a vague timetable of "early", "later", "still later", and "much later still". In doing so, the committee placed no deadline to the missions, rather putting them into a nondescript order of importance and achievability. While the periods of "early" and "later" contained such feats as further research of astronomy, communications, scientific lunar investigation, and geophysics, human lunar

[9] Ibid.

that Kennedy could exploit to show the difference between the Democrat's concerns for security versus that of Republican's. Perhaps most telling of this desire to showcase the failures of the Eisenhower's space program is a position paper written for the young candidate.

In late August of 1960, a group of science advisors appointed by those in charge of the Kennedy campaign gave a position paper on space research to the future president. It contained critiques of Eisenhower's program in regards to space as well as laying out a future, more escalated approach to the "space race"—a program that Kennedy could choose to speed up the progress made towards a manned flight to outer space and elsewhere. The paper begins with a critique of the Eisenhower administration for letting such a national blow as Sputnik to occur. It continued by proposing several different plans, and later describes what the Kennedy position would entail.

The preliminary "Position Paper on Space Research" was given to Kennedy to criticize the Republican's performance in regards to space. It argued that the Eisenhower administration failed to recognize the fact that besides an ultimate scientific goal to space, there was a psychological aspect to the program—specifically; there was a need to show internationally each country's technological superiority, a goal achieved by firsts in space. Therefore, the paper argues that a downfall of the Eisenhower's administration was its small space budget. Such an approach would have been fine from a scientific research point of view, but it was completely inadequate for achieving the spectacular firsts needed to win a psychological victory.

However, there is an exaggeration in the paper. The committee argued that a main problem of the Eisenhower administration was the inability, or perhaps lack of desire, to decide whether the nation's program would be a program of scientific research, or one of prestige. It strove to show ignorance on the part of the Eisenhower program. Yet as was seen earlier, Eisenhower knew there was a political impact of Sputnik, but chose to focus on a space program which was more scientifically beneficial, rather than propaganda driven. This hyperbole only reinforced the idea that Kennedy had to make a strong stance on space, and the growing Soviet lead in space, or face the same criticisms the Republicans had.

The campaign position paper given to Kennedy further elucidated why and how the Eisenhower program failed. First, the authors argued, as pointed to previously, the Eisenhower program was under-funded and the "psycho-political" impact was underestimated. For example, according to scientist Wernher Von Braun, the United States could have launched a satellite as early as January 1957; the paper therefore implied that the reason for the United States's lag in space was not due to a lag in technology but rather the Eisenhower administration's inability to make a decision. Also argued is that valuable time was wasted downgrading the significance. That is, Eisenhower and his administration decided that to approve a "crash program" would show panic and hysteria over Sputnik. A third critique stated that not enough attention was given to the future need of large rocket boosters. Only until February 1960 was urgency given to Project Saturn, a project designed to produce rockets with the thrust needed to send heavier objects into space.

Further, the authors argued that the Eisenhower administration severely misread the Soviets. Instead of grabbing attention with more spectacular firsts, which seemed to be where the Soviets were heading, the Eisenhower administration focused on placing more and more satellites into space. The Kennedy advisors argued that there needed to be an emphasis placed, not on quantity, but on the advancement of space technology. This point was raised in the fourth Kennedy-Nixon debate. Held in New York on October 20, 1960, Nixon argued that "Senator Kennedy – [states] over and over again that the United States is second in space and the fact of the matter is that the space score today is twenty-eight to eight—we've had twenty-eight successful shots, they've had eight."[13] To this, Kennedy rebutted,

> I believe the Soviet Union is first in outer space. We have—have made more shots but the size of their rocket thrust and all the rest—you yourself said to Khrushchev, 'You may be ahead of us in rocket thrust but we're ahead of you in color television' in your famous discussion in the kitchen. I think that color television is not as important as rocket thrust.[14]

In this debate, the advice of the position paper on space appeared clearly—the criticism of the Republicans for focusing more on numbers than on the technological achievements which would prove to be more spectacular and impressive to the world. The critique of Eisenhower's policy was that the administration had made significant gains as far as scientific research and communications were concerned, yet lacked feats that could be easily understood by the general population. The insinuation was that though there were perhaps more scientifically advanced and important information gained from the Eisenhower administration's program than from the

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[13] Fourth Kennedy-Nixon Presidential Debate, 21 October 1961, American Presidency Project. 25 May 2006 <http://www.presidency.ucsb.edu/ws/index.php?pid=62246&st=&st1=>.
[14] Ibid.

Russians', it did not seem impressive or important to the general public since it could not easily be understood.

The last and final critique of the Eisenhower program was related to the Cold War perceptions of the United State's space program. Eisenhower, by establishing a civilian space agency (NASA), set apart the U.S. space program from the Russians' military space program by making it open to all to see its successes and failures. Yet, the paper argued that NASA failed to capitalize and develop a program which would enable international scientists to benefit from American scientific gains in space.

The paper then offered Kennedy, should he win the presidency, two choices of programs he could pursue. The first program had the angle of pursuing "an imaginative and vigorous program of research in space science and technology and to exploit useful applications of this new technology so that the United States, in collaboration with other nations, will enjoy full value from the peaceful and scientific phases of space activities."[15] That is, this first program was similar to Eisenhower's—a program designed simply to gain the greatest scientific knowledge.

The second program went beyond this objective, by adding a significant budget increase in order to "develop fully the potential of space research and its applications to establish American supremacy in the exploration of space."[16] With the second proposed program, the United States would engage in a more "crash" like program in order to reassert American technological superiority. Though the paper seemed to give Kennedy a choice between two very different programs, the choice was made for him. Had Kennedy chosen the first program, he would have aligned

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[15] Briefing Paper on Space, 1960, "Social Security – Water Supply" folder, Pre-Presidential Papers, Box 993A, John F. Kennedy Library, Boston, Massachussetts.
[16] Ibid 14.

himself with the past Eisenhower program, an obvious political blunder, and not really giving him a choice. Kennedy therefore chose the second program.

By asserting the United States was second due to the lack of scientific advancement in thrust, Kennedy therefore expressed the need for a program based more on necessary advancements than purely scientific research. Kennedy believed he could not let the Soviet's achieve superiority in space. To be able to thrust a space ship through earth's atmosphere and into space, overcoming gravity, meant the Soviet's could easily develop IBM's, a major threat to United State's security. He insinuated that he, as President, would not let the Soviets retain superiority in space—and thus began the Kennedy administration's space policy.

As early as January, the Ad-Hoc Committee on Space, headed by Jerome B. Wiesner, later appointed by Kennedy to the position Presidential Science Advisor, prepared a report for the president-elect on their advice in regards to the national space program. What is interesting is that this committee proposed five reasons why a strong space program was in the national interest—five reasons that are prevalent when Kennedy set about seeking Congressional and popular support for the program. Further, this report is interesting because it is one of the few which portrayed, early on, the desire of scientists to have a prominent place in space exploration. Scientists believed they should decide the missions and the research to be done in space, yet as will later be discussed, this excitement was short-lived, as scientists were pushed further and further outside of the decision processes.

The first reason given for a strong space program was the need to enhance national prestige. The scientists echoed the sentiments earlier expressed by Lyndon B.

Johnson and the advisors who developed the earlier position paper. They argue that "the prestige of the United States will in part be determined by the leadership we demonstrate in space activities."[17] Secondly, Wiesner and the committee emphasized that space was important to the United State's national security. The committee argued that exploring space provided a wealth of important scientific research and communication opportunities that would be beneficial to civilians as well as providing a better understanding of the earth and solar system. Finally, the committee affirmed that space provided a place for international cooperation, an "atmosphere of cooperation as projects of all mankind instead of in the present atmosphere of national competition." [18] The ideas of scientific gain, national security, and international cooperation would be ideas repeated later in Kennedy's speeches and appeals to the American public.

Perhaps most interestingly, the ad-hoc committee asked that scientific objectives received high priority in the planning of the nation's space policy. For example the scientists argued that the space program "must exert the greatest wisdom and foresight in the selection of the scientific missions and of the scientists assigned to carry them out."[19] Those on the committee therefore emphasized their role, as well as their colleagues, in selecting what aspects of space should be explored, and how to go about doing it. As well, those on the committee argued that the scientific benefits available from space exploration were downsized by the press and the previous administrations. They argued that putting national priority on the project MERCURY,

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[17] Report to the President-Elect of the Ad Hoc Committee on Space, January 12, 1961, "Task Force Reports, Space, 1/12/61" folder, White House Staff Files, Papers of Pierre E.G. Salinger—Subject Files, John F. Kennedy Library, Boston, Massachussetts, 2.
[18] Ibid., 3.
[19] Ibid., 14.

a military-based rocket program carried out by NASA, placed too much importance on manned space exploration. Instead, the committee argued, more weight should be given to the scientific worth of the space program and more importance be given to those areas, such as communications and weather satellites, where the United States would continue to excel.

Save a brief invocation for the Russians to cooperate with the United States in "exploring the stars,"[20] the Kennedy administration seemed to shirk away from making any decisions about space. From January to April, there was no hint of a decision from the White House. The urgency for a decision changed on April 12, 1961, when the first Russian cosmonaut, Yury Gagarin, flew into outer space, orbited the earth for an hour and forty-eight minutes and landed back in Russia. Almost immediately, the communist press exploited this stating that "the 'failures' of the United States were declared to stem from the capitalistic system with its 'warmongering and aggressive attitude'"[21] as well as crediting communist scientists with working "for 'glory,' while the American scientists work only for 'money'."[22] Echoing these sentiments was Dr. Edward Teller, University of California physicist and the 'father of the H-bomb'. He attributed the United States' "loss" to the Russians to "lack of imagination, lack of initiative . . . even now we are too materialistic in our planning."[23] Not only was the communist party exploiting capitalism and materialism as being the shortcoming of the United States' space program, but Dr. Teller, an American scientist, was also lamenting the program as being materialistic.

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[20] Kennedy, John F. "Inaugural Address" (Washington, D.C.)
[21] "Cubans Acclaim Soviet 'Triumph'," *New York Times*, 13 Apr. 1961: 15.
[22] Ibid.
[23] "Space Program Scored: Teller Says U.S. is Behind – Cites Materialism," *New York Times*, 13 Apr. 1961: 14.

Besides Teller's critique of the program, pundits began to urge Kennedy to give an answer to the American people as the nation became increasingly weary of a Soviet lead in outer space. Arthur Krock of the *New York Times* urged "The President's great . . . task is to demonstrate the ability of democracy to make the same effective choice and consummation of priorities [as had the Russians] . . . To accomplish it, he must make the choices in time."[24] Hugh Sidey of *Time Magazine* wrote a, at times scathing, letter to Kennedy also reminding him of the need to make a decision, and make it soon. On April 14, 1961, two days after Gagarin's flight, Sidey wrote a letter to Pierre Salinger, press secretary to the President. Sidey recollected that many at NASA felt the President was not making enough decisions, or being properly advised on the space program. He expressed his feeling that, "If we don't [approve a crash space program] then we are going to sit here over the next eight years and watch the Soviets march right on ahead."[25] Sidey acknowledged that perhaps a lack of decision was due to the President's adjustment to the White House, but he still demanded to know when the American public could expect a decision.[26] It is certain the Sidey memorandum reached the president, if only due to the attached "Memorandum for the President", written by Jerome Wiesner. In this memorandum, Weisner argued that a decision had not been made only due to the error it would be "to commit very large sums of money without first establishing clear-cut national goals that go beyond the present plans."[27] Therefore, the President, faced with

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[24] Krock, Arthur, "In the Nation: The Relations of Priorities to National Achievement," *New York Times,* 13 Apr. 1961: 34.
[25] Hugh Sidey to Pierre Salinger, Pierre Salinger Papers, John F. Kennedy Library, Boston, Massachussetts.
[26] Ibid.
[27] Jerome Weisner to President Kennedy, 14 April 1961, Central Office Files, John F. Kennedy Library, Boston, Massachussetts.

criticism from the press, public, scientists, and politicians, needed to make a decision as to the future of the space program, and had to make it quickly.

Faced with the reality of Gagarin's achievement, as well as critiques from Teller and Sidey, on April 20th, 1961 Kennedy grew more concerned over the growing "missile gap". Theodore Sorenson, Kennedy's primary speech writer and advisor recalled,

> Then came the first Soviet to orbit the earth—Gargarin, I believe that was—and the President felt, justifiably so, that the Soviets had scored a tremendous propaganda victory, that it affected not only our prestige around the world, but affected our security as well in the sense that it demonstrated a Soviet rocket thrust which convinced many people that the Soviet Union was ahead of the United States militarily.[28]

Taking action, the president sent a memo asking Vice President Lyndon B. Johnson to relay to him an overall survey of where America stood in space. In it he asked where, in space, could the Americans pull ahead of the Soviets and how much more it would cost. Further, he asked if the United States was making the "maximum effort" possible to pull ahead of the Russians, and if the desired results were being achieved. On April 28th, 1961, Lyndon B. Johnson sent back a reply.

Vice President Johnson's response memo to Kennedy presents one of the most critical views of the Eisenhower administration's wrongdoings, as well as expressing the political necessity of landing a man in the moon. Johnson argued that the Soviets were ahead of the United States in prestige. Even though the United States had greater resources than the Russians, Johnson argued, the previous administration failed to make the decisions to put those resources into use. Further, Johnson asserted that, politically, "other nations . . . will tend to align themselves with the country

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[28] Oral History, Theodore Sorenson, 26 March 1964, JFK Library, 3.

which they believe will be the world leader – the winner in the long run[29]." He also claimed that the United States, if willing to work, would be able to achieve leadership in space. Most importantly, however, Vice President Johnson stated to Kennedy that manned exploration to the moon presented an area in which the United States could be first. Finally, Johnson advised that the public should, "be given the facts as to how we stand in the space race, told of our determination to lead in that race, and advised of the importance of such leadership to our future[30]" Kennedy, a month later, did just what Johnson advised: On May 25th, 1961, Kennedy decided to address Congress in a so-called second State of the Union, where he addressed the United States', "Urgent National Needs".

President Kennedy's "Special Message to Congress on Urgent National Needs" on May 25th, 1961 set forth the goal of the moon. In this speech, Kennedy declared that, "Space is open to us now; and our eagerness to share its meaning is not governed by the efforts of others. We go into space because whatever mankind must undertake, free men must fully share.[31]" In this statement, Kennedy asserted that space was 'open'. Space was open in the sense that the United States had the technological advances necessary to conquer this new frontier. Further, Kennedy gives his own type of manifest destiny, the same type of mission spoken about by O'Sullivan. However, now, instead of a mission to spread Christianity, it was a mission to make the frontier a place where democracy, and not communism, could be established.

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[29] Lyndon B. Johnson, Vice President, to the President, May 13, 1963, with attached report, 2.
[30] Ibid 3.
[31] Kennedy, John F, "Special Message to Congress on Urgent National Needs" (Washington, D.C.) 25 May 1961.

Kennedy not only described a mission to make space safe for all 'free men' to explore, but as well he strove to develop a sense of national mission surrounding the space program. As Howard McCurdy writes in his book Space and the American Imagination, "Politicians understood the degree to which public impressions about the challenges of the space program fostered confidence in government.[32]" This analysis of the political climate of the sixties is no truer than in Kennedy's speech to Congress in 1961 when he said,

> "No single space project in this period will be more impressive to mankind, or more important for the long-range exploration of space; and none will be so difficult or expensive to accomplish. . . it will not be one man going to the moon--if we make this judgment affirmatively, it will be an entire nation. For all of us must work to put him there."

Kennedy here shows the political consciousness which Howard McCurdy wrote about. In today's political culture, if a president explicitly announced that a project would be one of the most difficult and most expensive in American history, he would find it hard to garner support. Yet, as explained by McCurdy, Americans in the 1960s felt a surge of civic responsibility to overcome such a hardship. [Any ideas where I could find something about this, I know that it needs a little more umph to make this section fully complete]

Henry Fairlie more succinctly describes this strategy of creating a sense of national urgency as the "politics of expectation" dominating John F. Kennedy's political career. He writes, in regards to Kennedy's rhetoric that, "There was no real way in which [the American people], as a nation, [could] commit themselves to a task...This experiment was transformed into a national mission, and the national

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[32] McCurdy 96.

mission into a personal commitment on the part of countless individuals."[33] Fairlie later explains that this expectation proved to be damaging to later presidential initiatives as the public expected far too many grandiose solutions to problems. Yet, despite his qualms with the Kennedy administration, Fairlie here demonstrates that Kennedy did in fact produce a level of support by making the American public believe that just by supporting the president could America achieve placing a man on the moon, despite the lag of scientific technology compared to the Soviet's space program.

This feat is even more impressive when one looks at the budget Kennedy put forth. A memo given to the President by Lyndon B. Johnson contained a comparison of the current and projected budget for the NASA program compared to Eisenhower's. The total for the decade, the years 1961 to 1970, under Eisenhower was around 17.9 million. Under Kennedy, that number was projected to jump to 48,086. Kennedy was asking for almost three times as much as Eisenhower had. He was asking a lot financially from the American people, and thus needed their unanimous support.

If the speech to Congress on May 25th, 1961, set the goal of the moon; Kennedy's address to Rice University on September 12,1962, established firmly the rhetorical framework of the space program—space would become the pinnacle of Kennedy's New Frontier. Addressing students at the University, Kennedy referred to the space program as, "[setting] sail on this new sea," and as another wave to be ridden.[34] He thus compared space to the seas that many had to cross in order to explore and colonize the New World. Further, in speaking at Rice University, a

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[33] Henry Fairlie, *The Kennedy Promise: The Politics of Expectation*, (Doubleday, 1973), 3.
[34] Kennedy, John F. "Address to Rice University in Houston on the Nation's Space Effort" (Houston, Texas) 12 Sep. 1962.

a base centered in Texas, he draws direct parallels to the Old West. "What was once the furthest outpost on the old frontier of the West will be the furthest outpost on the new frontier of science and space."[35] This metaphor is one of the most explicit comparing the glamour of the frontier in American history to the new frontier of space. Kennedy directly referenced space as the new frontier, and as a continuous idea from the West of the previous generations.

Kennedy's speech to students at Rice University attempted to tap into American's desire to spread democracy to outer space and reinforced the idea that the American people, with determination, could do anything they put their mind to. Perhaps the most memorable quote from the Rice University speech was Kennedy's statement that: "We choose to go to the moon. We choose to go to the moon in this decade and do the other things, not because they are easy, but because they are hard."[36] Here, Kennedy reiterated the fact that the attempt to land a man on the moon would be difficult, but that is one of the reasons America chose to achieve such a goal. He further said, "that goal will serve to organize and measure the best of our energies and skills, because that challenge is one that we are willing to accept.[37]" In this segment Kennedy was giving a speech that demonstrates McCurdy's assertion that, "The Moon race signaled the willingness of the US government to contest the Soviet Union at all levels of military and technological competition, of which space was merely one."[38] In other words, Kennedy garnered support among the American people by providing a lofty goal, but also reinforcing the confidence in the

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[35] Ibid.
[36] Kennedy, John F., "Address to Rice University in Houston on the Nation's Space Effort".
[37] Ibid.
[38] McCurdy 97.

government to meet the challenge through organizing the American scientific and military arsenals. He, and his advisors, did so in order to prove to the Soviets that American's confidence in government, and thus the government's ability was able to land a man on the moon.

Chapter Two: The Promise of a New Frontier

The Rice University speech was not the only time John F. Kennedy had utilized the imagery of the New Frontier. This term was first used in Kennedy's speech to accept the Democrat Presidential nomination on July 15th, 1960. As Kennedy's primary speech writer, Theodore Sorenson, recalls in his book Kennedy, "Many of the ideas and much of the language in this speech came from drafts of other writers as well as earlier Kennedy speeches. . . .but the basic concept. . . [was] new to this speech. Kennedy liked the idea of a successor to the New Deal and Fair Deal."[39] Therefore, the idea of the New Frontier was not new to Kennedy's political advisors nor his speech writers. Kennedy also compared himself to colonist John Winthrop, stating, he, like the early settlers, "faced the task of building a new government on a perilous frontier.[40]" This ideology of the New Frontier asserted that the 1960s was at the beginning of a new adventurous and changing time, much like the first colonists and frontiersmen of early America. Yet, Kennedy's terminology of the New Frontier is most remembered for garnering support for the space program. Sorenson again remembered, "[Kennedy] was more convinced than any of his advisers that a second-rate, second-place space effort was inconsistent with this country's security, with its role as world leader and with the New Frontier spirit of discovery[41]." It is, therefore, not surprising, that Kennedy and his advisors employed the New Frontier ideology to appeal to the mystique of the frontier in the American consciousness.

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[39] Sorenson 167.
[40] Kennedy, John F. "Address of President-Elect John F. Kennedy Delivered to a Joint Convention of the General Court of the Commonwealth of Massachusetts." (Boston: 9 January 1961).
[41] Sorenson 525.

To understand how the terminology of the New Frontier resonated with the American people, one must first understand the role of the frontier in the American psyche. Ever since John O'Sullivan declared the "manifest destiny" of the United States was to continue the "blessed mission to the nations of the world, which are shut out from the life-giving light of truth,"[42] America had a justification to conquer the frontier. As Frederick Jackson Turner, famed nineteenth century historian, explained the "frontier did indeed furnish a new field of opportunity, a gate of escape from the bondage of the past; and freshness, and confidence, and scorn of older society, impatience of its restraints and its ideas and indifference to its lessons."[43] The frontier, according to Jackson, was a place where new generations of Americans could continuously express new ideas resulting in a distinct American culture. Yet, by the 1960s, there were no new frontiers on the North American continent that could become part of the now illusive frontier myth. An early draft of Kennedy's nomination speech alleged,

> Now we stand on the shores of the Pacific, our last frontier, with no farther West to reach. The old era is ending. We must search for frontiers that are not geographic; but because we keep the Western spirit of daring, endurance, and hopeful experiment we shall know where to find them.

Space gave the American people a new non-geographic frontier—a new place to explore and conquer, and this frontier mystique fit in perfectly, not only with Kennedy's rhetoric, but with the essence of the frontier in the American consciousness addressed by Frederick Jackson Turner.

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[42] O'Sullivan, John, "On Manifest Destiny", 1839, 2 April 2006, <http://www.civics-online.org/library/formatted/texts/manifest_destiny.html>.
[43] Turner, Frederick Jackson. The Frontier in American History. (Washington, D.C.: Smithsonian Institution Press, 1997), 3.

Space was the perfect fit for the terminology of Kennedy's New Frontier. After all, space itself was a new frontier, a new, unsettled place, waiting to be explored. Further, the culture of the early 1960s corresponds with the attitude expanded on by Turner. The idea of a culture exploring to scorn the elder generation's lessons and goals, the recklessness and confidence referenced by Turner, seemed to be written for a textbook on the 1960s. The 1960s was a time when the United States was ready for a change, and ready for a dynamic new outlook—a time when minorities and women were recognizing the need for equal rights.[44] Kennedy recognized this cultural climate, he after all stated, "A torch has been passed to a new generation."[45] He himself was a part of such generation, the generation who had fought World War II and was fully aware of the Soviet communist threat. The 1960s was a decade which, Kennedy, by speaking of a New Frontier and a new time for discovery, utilized for his benefits, especially in regards to the space program.

Along with space being a perfect metaphor for the changes a new frontier would allow, it also represented the thrill Turner explained as, "In short, at the frontier the environment is at first too strong for the man. He must accept the conditions which it furnishes, or perish, and so he fits himself into the Indian clearings and follows the Indian trails.[46]" This is not only a description of the Western frontier, but a description of the circumstances the United States would face in their desire to explore outer space. Scientists would have to study and accept the special circumstances of space, among them the complete lack of gravity and oxygen. At first, this would seem a daunting task, yet with the technological advancements of the

[44] Laura Kalman, Fall 2005, UC Santa Barbara.
[45] Kennedy, "Inaugural Address".
[46] Turner 4.

United States throughout the Cold War, scientists were finding ways to accept and utilize space's unique environment to their benefit. Once again, this demonstrates the hardship of the space frontier, but one American's sense of exploration and will could conquer and tame. This sentiment, this belief that the American people could face whatever extreme environment they were placed in front of, was one that when exposed and exaggerated through Kennedy's speeches, proved a valuable way to promise space.

Kennedy's framework of promising space as a new frontier was rhetorically brilliant, yet it posed certain problems to the astute observer. For example,it left out consideration for minorities such as African Americans, Mexican Americans, and Native Americans. Howard McCurdy wrote, "The vision of space as the final frontier arose at a most inconvenient time for those proclaiming the notion . . . The real frontier, especially from the point of view of American Indians, Mexicans, African Americans, and Chinese, was materially different."[47] In the time of the 'Old West', or the frontier, Mexican Americans and Native Americans were often times killed over control of the rich and vast land of America. African Americans, for example, were enslaved and Chinese immigrants often dynamited hills in order to lay railroad tracks—tracks that would bring white men and women to the frontier. Therefore, the idea of the frontier to these minorities did not have quite the same mythical and fantastical quality as it did to the white Protestant population of America.

Another problem with promising space as the new frontier was the fact that an extremely expensive program to land a man on the moon was being presented during

[47] McCurdy 140.

a time of civil unrest about the rights of minorities. Specifically, African Americans were seeing some, if slow, progress towards equal rights. In 1954 *Brown vs. Board of Education*, segregation was ruled unconstitutional, and it seemed that Kennedy in his inaugural speech was going to make Civil Rights a top priority. Yet, there is no doubt these minorities must have felt that so much effort of resources and an exorbitant amount of money were being spent to send a white man to the moon, while nothing was being pledged by the government for a population who still feared for their life when voting. Somehow, the desire to make space safe for all men and safe for democracy, free of the communist way of life must have seemed inconsistent with a country that, for some people, failed to provide basic rights to all its citizens. Therefore, not only did the New Frontier ideology fail to account for those who perhaps had a negative look on the history of the frontier, but it also placed emphasis on a mission that would no further improve the lives of minorities.

This promising framework of a New Frontier contrasted with the problems of minority and women's struggles is shown throughout letters sent to the White House critiquing Kennedy's program. For example, Richard Montague, a resident of Chevy Chase, Maryland wrote, "Aren't we missing a bet by not training a few Negro astronauts? Think of the impact they'd have on the colored peoples of the earth."[48]. Another letter asked "Wouldn't there be a very real plus in world opinion if, in the next group chosen, the Air Force was able to come up with, let us say, a Negro or Jewish astronaut?"[49]

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[48] Richard Montague to President Kennedy, OS 4-1 folder, White House Central Files, Box 655, Subject Files, John F. Kennedy Library.
[49] Bart Lytton to President Kennedy, OS 4-1 folder, White House Central Files, Box 655, Subject Files, John F. Kennedy Library.

Perhaps the most poignant illustration of the exclusiveness of the space program, is a letter from a young woman named Rose Viega. Identifying herself as being in "9th grade but in special class", Rose responded to hearing an announcement that anyone could volunteer to be an astronaut if they were in good health. Perhaps most emotional about the letter is her description of living in a cramped, shared home because her family "can't find a place to live because of our complexion.[50]" And yet, this letter shows the entire paradox of the space program, at least from the stance of a promise of a New Frontier; Rose represents all the minorities and women who wanted to be part of the space race, but ultimately, the reality of the decade was Rose, whether for her gender, race, or "special schooling" could never be a part of the New Frontier the way a white man would. Kennedy's promise proved true for white men, yet for anyone else, the New Frontier was a distant concept.

Fig. 2. "The Day Dreamer Up to Date," *Newport News Daily Press*, 18 May 1963.

The frontier framework of Kennedy's speeches seeped into public rhetoric as well. For example the cartoon pictured (Fig. 2.), depicts two boys, generations apart. One day dreams of going to the frontier in a covered wagon, while the other day dreams of going to the new frontier in an Apollo capsule. This is the quintessential example of how space was becoming the new West with cowboys now called astronauts and covered wagons now called capsules.

[50] Rose Viega to President Kennedy, OS 4-1 folder, White House Central Files, Box 655, Subject Files, John F. Kennedy Library.

The initial response to Kennedy's first Congressional speech is interesting in that it evoked strong positive feelings among the public. *The New York Times*'s editorial about the speech ended with the following quote: "We recognize the head start obtained by the Soviets with their large rocket engines. But it is in the spirit of free men, and the cherished traditions of our people to accept the challenge and meet it with all our resources, material, intellectual and spiritual."[51] In this opinion peace, the *New York Times* reiterated Kennedy's speech by talking about the advances the Soviets had, while it recognized the idea of the World War II generation that America had always overcome, despite any overwhelming odds. Yet another New York Times opinion piece on the same day and the same page commented on the speech in general, while still obviously referring mostly to the space program. Several questions are rhetorically asked such as, "are we willing to bear the required burden of self-discipline?" The writer then answers that "only affirmative answers to this and similar questions can insure that this country will successfully meet the challenges which our stand for freedom poses before us today."[52] This not only reiterates the sense of hardship, but furthers the idea that it was the nation as a whole, the public's responsibility to help bear this burden with self-sacrifice rather than purely the government's responsibility.

Another interesting response, or rather, scheduling 'coincidence' were the remarks made at the first National Conference on the Peaceful Uses of Space which was held in Tulsa, Oklahoma, from May 26th to May 27th, 1961. On the first day of the conference, the day after Kennedy's speech to Congress, the NASA chief of

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[51] "To the Moon and Beyond," New York Times, 26 May 1961.
[52] "We Stand for Freedom," New York Times, 26 May 1961.

manned space flight George M. Low gave the most detailed description of the Apollo ship and how it would work to send astronauts safely into space and to the moon. Afterwards, Dr. Wernher von Braun, director of the George C. Marshall Space Flight Center in Alabama remarked to the press, that recent technological advances along with Alan Shepherds recent successful flight had landed the United States "back in the solar ball park...We may not be leading the league, but at least we are out of the cellar. We have gleaned a great deal more new scientific information from the universe than anyone else."[53] Dr. Von Braun then repeated themes of Kennedy's speech the previous day. He first asserted that the United States was behind in space, but thanks to careful planning and Alan Shepherd's space flight, the United States had more useful scientific information about the universe than the Russians. This research, he argued, would push the United States to the front of the race. Dr. Von Braun's analysis of the situation, along with the description of Apollo served lend credibility to Kennedy's deadline, a hard deadline but technologically achievable. Further, the Conference was on the peaceful uses of space further emphasizing Kennedy's stated goal that space would be a place for democracy, peace, and freedom to flourish, or in less subtle terms, a place devoid of the communist threat.

Yet another interesting event the day after Kennedy's speech to Congress were remarks that were reportedly said at a private event with three hundred pilots. Reportedly, a Mr. Halaby told these pilots that in a private meeting between Kennedy and Shepherd, and other astronauts, the President asked Shepherd where and what the astronauts wanted to do next. In response, Shepherd apparently said, "Just let us go. We are being protected with too much with equipment...[We want] to be free to

[53] "Experts Outline US Space Plans," New York Times, 27 May 1961.

explore space with less protection and more initiative and daring."[54] Having these men, especially a national hero like Alan Shepherd, say essentially that the United States was spending too much time on logistics, rather than sending the astronauts back up was a boost to Kennedy's program. Here was an example of a man who had not only experienced space, but who urged America to hurry back spending less time on safety and planning. They gave the impression that they would rather mistakenly discover a new aspect of space than carefully plot out the journey. Therefore the American people had justification for speeding up the race to the moon. If the men who would risk their lives to place America ahead in the space competition were willing to proceed more recklessly than cautiously, the public could not raise the astronaut's safety as an objection to an accelerated program.

[54] "Commander Shepherd's Plee," New York Times, 27 May 1961.

Chapter Three: The Promise of Scientific Advancement

Perhaps the most frequent promise by John F. Kennedy about the space program was that it would be a significant increase to the scientific knowledge. In the Rice University Speech Kennedy addressed the students, "The growth of our science and education will be enriched by new knowledge of our universe and environment, by new techniques of learning and mapping and observation.[55]" Logically, one would assume scientists would love space program—it increased funding for a theoretically scientific program. However, scientific opinion shifted from early 1961 to 1963. At first scientists were thrilled, feeling that they would be dictating which aspects to explore. Yet as the years went on, scientists complained that the program was not only more concerned with propaganda than science, but it reduced funding from other important scientific fields.

While Kennedy was still President-Elect, an ad-hoc committee on space was appointed containing many prominent scientists, many of whom would play a significant role in Kennedy's administration later on. Chaired by Jerome B. Weisner of MIT, who would later become Kennedy's presidential science advisor, the committee released a report to the press on January 12, 1961 of their recommendations for the space program. In it they outlined a wealth of exciting scientific discoveries already made by the United States. For example, they cited the discovery of radiation trapped within the earth's magnetic field and the effects of plasma emitted from the sun on earth's communication's systems as being a significant scientific discovery. The report paints a picture of a space program which would enable telescopes attached to satellites to see well beyond the limits of the

[55] Kennedy, "Rice University Speech".

galaxy, as well as enabling the landing of scientific probes and instruments to other planets.

At the end of the Ad Hoc Report of this illustration of what could be accomplished, the committee wrote, "Our present leadership in space science is due to a large extent to the early participating of some of our ablest scientists in our space program – and to the fact that these scientists were in a position to influence this program.[56]" Weisner and his committee thus assert the importance of placing men of science, such as themselves, in a position to influence and advise on space policy. The committee implored Kennedy, "In the planning of our space activities, scientific objectives must be assigned a prominent place.[57]" Therefore scientists looked forward to the growing excitement around a space program and their consequent involvement.

On May 26, 1963 eight scientists, containing three laureates spoke in response of the space program. At a time when many were starting to doubt the space program, these scientists leant credibility to Kennedy's promise of scientific research in the lunar program. Among the eight were Dr. Joshua Lederberg, chairman of the department of genetics at Stanford, Dr. Willard F. Libby, director of the Institute of Geophysics and Planetary Physics at the University of California, Los Angeles, Dr. Harold C. Urey, professor at large in chemistry at University of California, Dr. W. Maurice Ewing, director of Larmont Geological Observatory at Columbia University, Dr. Robert Jastrow, director of the Goddard Institute for Space Studies at NASA, Dr. Gordon J. F. MacDonald, who worked under Libby, Dr. Lyman Spitzer Jr., director of the Princeton University Observatory, and Dr. James A. Van Allen, chairman of the

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[56] Report of the Ad-Hoc Committee on Space to the President-Elect.
[57] Ibid.

department of physics at the State University of Iowa[58]. The multi-disciplinary representation is especially notable as one of the main critiques of the program was that it took away funding from other scientific research areas, yet here are these biologists and chemists giving their support for the program.

As the space program progressed however, scientists started to complain that the program did more to hurt science than to actually help it. An article in *The Washington Post, Times Herald* expressed the scientific criticisms as being three-fold:

> Many scientists would . . . rather see the money that is earmarked for the lunar landing spent for earthbound research and education. Furthermore, many are speptical [*sic*] about the scientific rewards of the manned mission and feel that the scientific objectives can be met more cheaply by unmanned lunar probes . . . some scientists are concerned that manned lunar effort is slowing down research activities of equal or greater significance for mankind by taking away scarce manpower and resources.[59]

The main complaint of the scientists was that the space program was a "crash" program—a program designed solely with the objective of landing a man on the moon first. A crash program, they argued, would not result in any scientific benefits as all resources were devoted to the goal of placing an American flag on the lunar surface. For example, Dr. Barry Commoner, the professor of plant physiology at Washington University in St. Louis objected on the basis that "support of research is becoming oriented too sharply toward a specific mission, particularly the exploration of space and the landing of a man on the moon, rather than being aimed at the broader objective of the pursuit of knowledge.[60]" Lee Du Bridge, President of the California Institute of Technology stated that,

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[58] Sullivan, Walter, "Manned Moon Flight Supported In 8 Scientists' Retort to Critics," New York Times, 27 May 1963: 1

[59] Simons, Howard, "Moon Doubts Spark Conflict," The Washington Post, Times Herald, 9 Apr. 1963.

[60] "Critic Deplores Space Emphasis," The Chattanooga Times, 7 Apr. 1963.

> All scientists probably agree, that space research is the most exciting and challenging new area of scientific endeavor ever opened up to human beings. Yet many also feel the prestige and competitive factors have forced us to move too far too fast, to spend too much money, and devote too much effort to the 'spectacular' as contrasted to the purely scientific ventures.[61]

Even Dr. Frederick L. Whipple, director of the Smithsonian Institution's Astrophysical Observatory, and the man who was the first to explain comets as a "dirty snowball", argued that Weisner's Committee's Report did not address the fact that the United States "maintain[s] a situation where some of this research will eventually be done in space on a crash basis at extremely high cost when it could, in fact, have been done on the ground at a relatively nominal cost.[62]" All these men, as excited as they were about the hopeful benefits of space, where weary of spending so much money on an engineering feat.

Besides the program being focused on propaganda, rather than science, scientists argued that such a program was taking funds and resources away from research in medicine and the earth itself. For example, Linus Pauling, a Nobel Prize chemist, expressed his opposition along with almost all twenty-five of America's living Nobel Prize winners. He stated, "I am opposed to these expenditures . . . I think that while it will contribute something in the way of scientific discovery, the contribution will be very small compared to putting that money into several other fields such as medical research or other basic scientific research.[63]" Perhaps the most adamant critic of the manned moon program was Science editor, Philip Abelson. Abelson claimed in front of the Senate Committee on Aeronautical and Space

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[61] Simons, Howard, "Scientists Divided on Apollo," The Washington Post, Times Herald, 12 May 1963.
[62] Address to the Committee on Science and Astronautics, March 2 1961, "House Committee on Science and Astronautics" Folder, Whipple Papers, Series 1, Box 2, Smithsonian Institution Archives.
[63] "Nobel Winners Criticize Moon Project," The Washington Post, 6 May 1963.

Sciences that the "diversion of talent to the space program is having and will have direct and indirect damaging effects on almost every area of science, technology, and medicine. I believe that the program may delay conquest of cancer and mental illness.[64]" Linus Pauling and other scientists show that although Kennedy promised the moon as important for scientific knowledge, those scientists in other fields grew increasingly concerned that such funding would retard their progress in areas they believed more beneficial to mankind.

Even Weisner and PSAC had their critiques of the moon program, they all agreed that the "man-in-space cannot be justified on purely scientific grounds.[65]" Yet, in expressing those views, as part of the Kennedy administration, they naturally had to assure their evaluation of the program did not harm the President's popularity. For instance, whereas scientists outside the administration's influence could be brazen in their critiques, Weisner's were more subtle. The committee thus did not say that the program was useless, or unjustified, but simply stated that on scientific grounds the program was not useful. Yet this manner of opposition led to harsh scientific clashes between Weisner and other scientists. For example scientist Dr. James Van Allen of the State University of Iowa, and who discovered radiation belts in space (known as the Van Allen Belt), argued that, the Presidential Science Advisory Committee was a "big authoritarian machine that it decidedly intimidates the small man.[66]" Though Van Allen was upset because he felt intimidated by the Committee, the Government had ignored findings that a high-altitude test over

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[64] Howard Simons, "Scientist Calls Project Apollo Drain of Talent," The Washington Post, Times Herald, 11 Jun. 1963: 3

[65] Report of the Ad Hoc Panel on Man-in-Space

[66] Howard Simons, "President's Advisers Intimidating Individual Scientist, Van Allen Says," Washington Post, 31 Dec 1962.

Johnston Island in the Pacific was not as bad as the Government claimed, it still shows the problem individual scientists had with those working for the government. He asserted that perhaps the problem was the Committee had to reach decisions in a hurry due to high political pressure, yet this shows how scientist were increasingly concerned with the relationship between politics and the purity of scientific research. Another critique of Weisner, and subsequently the Committee, was Philip H. Abelson's, claim that Weisner was the "'Czar' of American science.[67]" Abelson stated that "Dr. Weisner has accumulated and exercised more visible and invisible power than any scientist in the peace-time history of this country.[68]" Weisner retorted that Abelson "accused me of being czar...but also said I haven't done much.[69]" Yet despite Weisner's witty backlash, the fact still remained that prominent scientists were speaking out against the promise of scientific benefits from the moon program, as well as those speaking out against PSAC and the President.

[67] Toth, Robert C. "Adviser to President Called 'Science Czar'", Los Angeles Times, 20 Nov. 1963: 6.
[68] Ibid.
[69] "Science Chief for Kennedy Assails Critics," Los Angeles Times 22 Nov. 1963: 3.

Chapter Four: The Promise of Benefits to the Economy

In a June 1961, Gallup Poll, 51.4% of Americans polled believed it was very important for the United States to be ahead of Russia in space exploration. However, in a poll given in the previous month of May, only 21.4% of Americans were willing to sacrifice tax dollars for a space program with the intent of landing a man on the moon. 66.0% however, wanted their tax dollars to go to a program which would train workers that were laid off due to new technology. However, in his address to Rice University in 1962, President Kennedy observed that soon, with budgetary increases, Americans including all men, women, and children, would be paying fifty cents each week to the space program. The American public began to question the economic validity of the space program. Was their money better spent elsewhere? Did the space program actually benefit the country? Or was it simply a waste of money? These were questions that were raised to Kennedy, and ones in which his administration had to counteract, by claiming that space would not only improve the economy through more employment opportunities, but would produce technological improvements that would benefit industrial production.

Kennedy was asking for a large sum from the American people. In his speech to Congress, he asked for an "estimated $7-9 billion additional over the next five years". Not only did he simply ask for the money, but he put a sense of urgency onto the shoulders of the American people by stating,

> "New money cannot solve these problems. They could, in fact, aggravate them further—unless every scientist, every engineer, every serviceman, every technician, contractor, and civil servant involved gives his personal pledge that this nation will move forward, with the full speed of freedom, in the exciting adventure of space.[70]"

[70] John F. Kennedy, "Speech to Congress on Urgent National Needs"

He gave the American people the choice, but in a sense he gave them no choice. He asserted, "If we were only to go halfway...it would be better not to go at all.[71]" Therefore if the American people wanted a national space program in any form, Kennedy stated that all seven to nine billion needed to be afforded.

The critiques of this large expenditure began immediately after Kennedy proposed the plan. For example, Herbert S. Bailey, Jr., director and editor of the Princeton University Press wrote to the New York Times on May 28th, 1961, a mere 3 days after Kennedy gave his speech, in opposition to spending twenty to forty billion on a prestige program. He argued that a space program was not the way to combat communism—the Russians had chosen the competition, and were already ahead. Bailey argued that instead of racing to the moon, rather,

> "Let us encourage cultural development—literature, the arts, music—at home and abroad, as evidence that we do not subscribe to the Communist idea that man is essentially an economic automaton. Let us improve our foreign aid. Let us keep up our defenses. Let us improve our educational system for all citizens.[72]"

Therefore, Herbert S. Bailey is representative on many Americans who found twenty to forty billion an outrageous amount of money that could better be spent elsewhere. According the Gallup poll mentioned previously, while only 21.4% wanted to sacrifice for the moon, a higher percentage at 25.56% wanted to do what Bailey did, to heighten the effort to tell other countries about the United States' democratic policies.

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[71] Ibid.
[72] Bailey, Herbert S. Jr., "Moon Plans Questioned," New York Times, 28 May 1961: 8.

Fig. 3. Lou Grant, "Booster Rocket," *Times* (Palo Alto), 9 Oct 1962.

However, some Americans felt the space program would help the nation, not just by restoring national prestige, but by giving a boost to the economy. The editorial cartoon pictured here (Fig. 3.) shows just that, with a man, labeled the National Economy, climbing into the booster rocket titled space spending. Obviously, *The Palo Alto Times* felt that this booster rocket would literally send the economy soaring. A contrasting article to Herbert S. Bailey's illustrates this idea. A man named Herbert Koshetz wrote in to the New York Times from a merchant's perspective on Kennedy's plan in his May 25th speech. In it, he wrote that, if the President's requests for additional funding were granted, "the economy would be getting a powerful stimulant that should help to bolster the durable goods segments of the economy."[73] He asserted that the increase in spending would give the economy the incentive needed to improve.

Koshetz's argument is one of two the Kennedy administration used to justify the space program from an economic standpoint. Specifically, Kennedy addressed concerns over cost in his speech to Rice University. Once again drawing on frontier imagery, he described Houston as one of the furthest outposts of the West. He then drew a new picture—Houston as being a contemporary outpost, this time the furthest from the pioneers who would explore space. Kennedy explained,

> "During the next 5 years the National Aeronautics and Space Administration expects to double the number of scientists and engineers in this area, to increase its outlays for salaries and expenses to $60 million a year; to invest

[73] Koshetz, Herbert., "The Merchant's View," New York Times 28 May 1961: 9

some $200 million in plant and laboratory facilities; and to direct or contract for new space efforts over $1 billion from this Center in this City."[74]

Hence, Kennedy promised the moon as a program which could be compared to previous federal work programs. The program, specifically in Texas would increase the amount of people in the area, provide new plants and laboratories which would in turn supply more jobs, and provide contracts to already established firms within Houston.

As well, Kennedy argued that the space program would boost the economy by providing 'spin-off' benefits for industry. In the same address to Rice University, Kennedy said, "The growth of our science and education will be enriched by new knowledge of our universe and environment ... by new tools and computers for industry, medicine, the home as well as the school."[75] The public was promised the moon as a project which would not just benefit the nation, but ultimately would benefit their individual lives. Similarly, in an address at San Angelo, Texas, Vice President Lyndon B. Johnson addressed the various benefits he saw stemming from the program. Among these he stated that, "Medical scientists . . . have determined that the kind of space suits worn by our astronauts . . . can be and soon will be used to relieve the discomfort of victims of strokes"[76] as well as the fact that the thermoelectric devices utilized in space satellites were being used to improve refrigeration devices.

Once again, not all of the American public disagreed with Kennedy's claims. In fact not less than a month after his speech to Rice University, the *Palo Alto Times*

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[74] Kennedy, Rice University Speech.
[75] Kennedy, Rice University Speech.
[76] Johnson, Lyndon B, "Many Practical Benefits Stem From Our Space Efforts" The Washington Daily News. 26 May 1963.

published a cartoon which, entitled, "Booster Rocket" showing a rocket with the words space spending on it. A man, labeled the National Economy, is shown into the space spending booster rocket. Obviously, *The Palo Alto Times* felt that this booster rocket would literally send the economy soaring. However, nearing the end of 1962 through 1963, the American public, media, and Congress expressed considerable doubt that space would actually boost the economy.

Perhaps the biggest outcry and longest debate came from Amitai Etzioni, a social scientist at Columbia University, in his book *The Moon-Doggle*. As he explained in the introduction, though the book was not published until 1964, it grew out of two meetings and discussions at the International Affairs Seminars of Washington in June 1963. It was due to the urgings of Senators William J. Fullbright and Edward Kennedy that he decided to publish his concerns and findings so that a wider audience of Americans could read them. In his introduction he offered his first analysis of the space program and the economy and claimed that the space program had dangerous side-effects that, "retard rather than advance [the] economy."[77]

In reference to the argument by the administration that the space program would increase jobs, Etzioni responded that jobs were created in the wrong sector that "NASA does make work, but in the wrong sector; it employs highly scarce professional manpower, which will continue to be in high demand and short supply for years to come." Etzioni called the president on his 'promise', the promise of employment, but for who? Etzioni argued that employment went to highly trained scientists and technicians, rather than the underprivileged that were truly unemployed.

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[77] Etzioni, Amitai. The Moon-Doggle: Domestic and International Implications of the Space Race (Doubleday, 1964) xv.

Etzioni concluded that, "Space and defense might well continue to drain most increases in public income, thus perpetuating the paradox of a landscape of undernourished schools, inadequate medical facilities, and a hungry people in the richest country in the world." Therefore, Etzioni offered a scathing look at a program which he argued did not boost the economy, but was rather detrimental to those who severely needed the so-called boost.

In regards to the claim of the space program producing "spin-off" benefits for industry, Amitai argued that the fallout benefits, as he called them, were nothing but "sale claims."[78] He remarked "Although NASA says that manufacturers are 'now adapting' materials found by space research, it is not certain that they will actually use them. When a drug is 'experimentally used,' this means that its value has not been established."[79] Etzione explained, therefore, that while NASA might claim to have developed new resources for industry, such as new ceramics for kitchenware or new heat-resistant metals that could go into future plane engines, it was just that, a claim. For example, in regards to the claim that NASA had developed ceramics, Etzioni cites a *Wall Street Journal* article on September 12, 1963 which reported, "Corning Glass Works says its glass-ceramics material 'was not developed specifically for [missile] use, although the first practical application was indeed for nose cones.[80]" Hence, Etzioni made an excellent point that the "fallout" benefits from spending twenty to forty billion on a space program, were grossly exaggerated and perhaps not as useful as some might believe.

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[78]Ibid., 77.
[79] Ibid.
[80] Ibid., 78.

Etzioni was by far the first nor last to critique the claim of the space program as a boost to the economy. In fact, by 1963, many politicians and members of the public had gone on record and vocally supported cutting the space budget. Eisenhower, for example, favored cutting ten to twelve billion dollars from the government's budget—money which was designated to make contracts with civilian companies. *The Virginian-Pilot* asked, "What Price First on the Moon?" It answered, "An escalating race to the moon, then, could result in neglect not only of the real reason for the venture into space—man's desire of knowledge and control of his outer environment—but of our very economic lifestream."[81] The editorial argued that despite the need for money in other scientific areas, there were problems with the domestic economy that needed attention.

Politicians and the American people were not the only people debating the economic worth of the program. In August, 1962 Kennedy expressed his concern that, "This program has so much public support that unless there is some restraint there is a possibility of wasting some money."[82] A New York Times editorial on May 12, 1963, reported that, while officials within the administration, such as Johnson, were arguing that the space program was producing a 'second economic boom', other officials including "the President himself, are expressing concern that the space program is having limited economic growth and is hampering the growth of a civilian economy."[83] In fact, on April 9, 1963, Kennedy asked Johnson to carry out a review of the space program in regards to its benefits to the national economy, as well as

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[81] "What Price First on the Moon?," The Virginian-Pilot, 21 Nov. 1965.
[82] Memorandum, To Dave Bell from President Kennedy, August 23, 1962, Box 38, Theodore Sorenson Papers, John F. Kennedy Library.
[83] Finney, John W, "Space Program: Too Expensive," The New York Times, 12 May 1963: 19.

places the program could be reduced beginning in the 1964 fiscal year.[84] Johnson's response seemed unconcerned. In it he argues that, "billions directed into research and development . . . will have a significant effect upon our national economy." Further, Johnson argued that to decrease the program's funding would lesson the benefits to the economy, give the critics of the program additional cause for attack, and as well it would disrupt the goals desired.[85]

[84] Memorandum for the Vice President, April 9, 1963, Source: Exploring the Unknown
[85] Lyndon B. Johnson, Vice President, to the President, May 13, 1963, with attached report.

Chapter Five: The Promise of Peace

In his speech to Congress on Urgent National Needs, Kennedy rhetorically transformed space into, not only the new frontier, but a frontier which would allow democracy and peace to prosper. He said, "Space is open to us now; and our eagerness to share its meaning is not governed by the efforts of others. We go into space because whatever mankind must undertake, free men must fully share."[86] The implied idea being that if the Soviets were allowed to reach the moon first, outer space would become a place dominated by oppression and communism—its secrets and wonders kept from the democratic world. As such, Kennedy promised the moon as a place where peace would be maintained. Later, in his address to Rice University, Kennedy further expressed a sense of urgency surrounding the United States' mission to the moon. He stressed,

> For the eyes of the world now look into space, to the moon and to the planets beyond, and we have vowed that we shall not see it governed by a hostile flag of conquest, but by a banner of freedom and peace. We have vowed that we shall not see space filled with weapons of mass destruction, but with instruments of knowledge and understanding.[87]

Hence, Kennedy utilized a sense of fear, and conveyed an image of space as a war zone, versus space as a place for peaceful research.

Further, the Kennedy administration warned that should the United States fail to be first on the moon; the entire country would fall to communism. In 1962 Vice President Lyndon B. Johnson explained, "If the nation so endowed used its space strength to support freedom, the world would gain. If such a nation were given to

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[86] Kennedy, John F. *Speech to Congress on Urgent National Needs.*
[87] John F. Kennedy, Rice University Speech.

wrote, "Men are not, easily moved to serve so great a purpose as the revolutionary increase of knowledge. So we have to be prodded by the fear of being second and lured by the desire to be first."[91] Lippman tapped into the American psyche, one which is typically against spending unless there is a sense of fear attached. An editorial in the *The Hartford Times* illustrates this, often times, irrational fear. It stated, "We simply cannot afford NOT to make a huge, unstinted, whole-hearted and enthusiastic investment of time, money, manpower and genius in the conquest of space…We simply cannot afford to be a poor second to the Soviet Union."[92] Another editorial in *The Washington Post* by Roscoe Drummond urged the space program ahead stating that space "is the dimension in which the cold war may be won—or lost."[93] These editorials show the American public's belief that at the time, space was the most important battleground of the Cold War.

However, as seen with promises of a better economy, or new scientific knowledge, not all Americans believed the promise of space as a peaceful arena. For example, Etzioni in his book, argued that conquering and asserting control over the moon was simply not an issue. He stated that, "the people of the world respect economic development, social justice, racial equality, political freedoms, and sincere steps toward the elimination of armed aggression. Nothing the Soviet [*sic*] or we can in space can long match, or substitute for, the status to be gained on earth."[94] Others shared Etzioni's sentiments that what was more important to the goal of peace would be to solve the issues on earth. The Republican Party drew up a statement which said,

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[91] Lippman, Walter, "Today and Tomorrow…: Money and the Moon," The Washington Post. 2 Apr 1963.
[92] "Betting on a Good Thing" *The Hartford Times*. 16 May 1963. P22.
[93] "Keep the Space Lanes Open" *The Washington Post* 19 May 1963.
[94] Moondoggle, 162.

"The decision of priorities must be made on the basis of over-all benefit to the free world and not on the adolescent desire to beat the Russians in a space race."[95] Though many Americans supported the moon program on the basis of making space peaceful and safe from communism, there were those such as the Republican Party and Etzioni who realized that perhaps the United States should be devoting its resources to the multitude of problems on earth. Kennedy would start to see this as well, and would in late 1963 propose a joint program to the moon.

[95] "Moon Race and the '64 Election," New York Herald Tribune. 28 May 1963: 19.

Chapter Six: A Joint Program?

On September 20th, 1963, in New York City, President Kennedy prepared to address the 18th assembly of the United Nations. The speech addressed the rising hopes of Kennedy and others in the growing cooperation between the Soviet Union and the United States, between communist and democratic nations. Yet perhaps most controversial, was Kennedy's segment on space which said,

> "Finally, in a field where the United States and the Soviet Union have a special capacity-in the field of space--there is room for new cooperation, for further joint efforts in the regulation and exploration of space. I include among these possibilities a joint expedition to the moon. . . . Why, therefore, should man's first flight to the moon be a matter of national competition? Why should the United States and the Soviet Union, in preparing for such expeditions, become involved in immense duplications of research, construction, and expenditure? Surely we should explore whether the scientists and astronauts of our two countries--indeed of all the world--cannot work together in the conquest of space, sending some day in this decade to the moon not the representatives of a single nation, but the representatives of all of our countries."[96]

This segment offered hints of the administration's growing concern with the cost of the program as well as the logical benefits. For instance, Kennedy pointed to the economic cost if the Soviet Union and United States were going to compete. But further confusing to the American public was Kennedy's argument that the United States and Soviet Union cooperate in sending man to the moon.

Kennedy's decision to propose a joint lunar landing program had two main effects on the American public. The first was to raise questions as to whether or not Kennedy was re-evaluating the program based on its high-cost and growing lack of public support. As has been discussed earlier, Kennedy had been reevaluating the program from a financial cost, however, it was at this moment where he seemed to

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[96] John F. Kennedy, "Address Before the 18th Assembly of the United Nations," 20 Sept 1963.

show growing concern, or at least that is how the media perceived the speech, over the escalating cost to America, and thus, the cost to other government funded programs. In fact, Kennedy had been trying to cut the space budget. Sorenson once again recalled that Kennedy was "wished to find ways to spend less money on the program and to cut out the fat which he was convinced was in the budget. How much that motivated his offer to the Russians, though, I don't know."[97]

The second effect was that the American public was confused why, after such a push to 'beat' the Russians to the moon, Kennedy would propose to go together. Indeed, this would be confusing. Kennedy campaigned on a strict anti-communism foreign policy; the Bay of Pigs Invasion was just one example of his hard-line policy towards communism, albeit a failed one. This, however, was not out of Kennedy's character by fall of 1963. He had diplomatically averted nuclear war in October of 1962 during the Cuban Missile Crisis. Further, he had been developing the Limited Test Ban Treaty between the Soviet Union and United States—a treaty signed on August 5, 1963 and placed into force on October 10, 1963. If anything, it seemed that Kennedy was moving closer and closer to détente than escalation of the Cold War. In fact, the Bulletin of the Atomic Scientists and their "Doomsday Clock" reaffirmed this. The clock was designed to display how imminent nuclear apocalypse was. In 1960, when Kennedy entered office, the clock was at seven minutes to midnight, or seven minutes to destruction. However, by 1963, the clock had moved back to twelve minutes to midnight. Cooperation in the space race was just one more step, Kennedy felt, which could be taken to improve Soviet and United State's relations.

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[97] Oral History, Theodore Sorenson 4.

Yet cooperation with the Soviets was not as new as the American public believed. In fact all along, cooperation, and the possibility of space being a place where the United States and Soviet Union *might* be able to co-exist peacefully, was one of Kennedy's true reasons to go to the moon. When Theodore Sorenson, Kennedy's chief speech writer, was asked weather the United Nations speech represented a change in relations with the Soviet Union or a change in the perceived feasibility of landing a man on the moon, he responded that it represented neither. In fact, as he recalled, the President favored cooperation in 1961, however the Soviets were ahead scientifically and felt there was no need to pursue a joint program with the United States. Sorenson further recounted,

> "By 1963, our effort had accelerated considerably. There was a very real chance that we were even with the Soviets in this effort. In addition, our relations with the Soviets, following the Cuban missile crisis and the test ban treaty, were much improved—so that the President felt that, without diminishing our own space effort . . . we now were in a position to ask the Soviets to join with us and make it more efficient and economical for both countries."[98]

Therefore, though the American public may have perceived that the promise of the moon was one of winning national prestige and so on, Kennedy's belief was that one of the main benefits would be the chance that the space program could improve relations between the United States and the Soviet Union.

In fact, McGeorge Bundy, Kennedy's National Security Advisor, was very adamant about the benefits joint cooperation in space could have. In a memorandum to James Webb as early as February 23, 1962, Bundy asserted that there would be a

> real political advantage for us if we can make it clear that we are forth coming and energetic in plans for peaceful cooperation with the Soviets in space. It is

[98] Sorenson, Oral History 4.

> even conceivable that progress on this front would have an automatic dampening effect on the Berlin crisis.[99]

In 1963, Bundy wrote another memo, this one used by Sorenson as he wrote the U.N. speech, which identified the two methods Kennedy could take. Either, Bundy argued, the administration could continue to utilize the Soviet's effort to provoke the United States' space program, or the United States could emphasize a joint program. Bundy strongly urged the later choice.[100]

The American public continued to debate, however, the trust-worthiness of the Soviets to enter into a joint program. For example, an editorial in *The Indianapolis Star* shows the distrust of the Soviets, it suggested, "A joint moon project would be a fool's venture unless the U.S. firmly and unswervingly requires that the Russian contribution to the project...be equal to the American contribution at every step of the way. Otherwise, we'll do the work and they'll take the credit."[101] In contrast, an editorial in *The Hartford Courant* asserted that perhaps the attitude expressed in *The Indianapolis Star* could prove more destructive than allowing the possibility of Soviet cooperation. It contemplated that,

> "As is shown by fear of the test-ban treaty, many of our citizens are still stuck in the past. They put their trust in the endless search for ever more fearsome weapons, dreaming that somehow our side can achieve a supremacy the other side cannot challenge ... whether or not there is ever any joint journey to the moon ... there is every reason why we should try now to find something that gives us more security than today's constant risk of eternal destruction."[102]

Therefore, like the discussion over ratification of the Limited Test Ban Treaty, Americans were torn whether to place their scientific and technological knowledge in

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[99] Memorandum, For James Webb from McGeorge Bundy, February 23, 1962, Box 334, National Security Files, John F. Kennedy Library and Museum.
[100] Memorandum, For the President from McGeorge Bundy September 18, 1963, Box 77, Theodore Sorenson Files, John F. Kennedy Library.
[101] "Moon Race or Moonshine?," The Indianapolis Star. 21 September 1963.
[102] "Joint Journey to the Moon?," The Hartford Courant. 22 Sept 1963.

the hands of the Soviets, or to safe-guard it, but perhaps further retard the advancement of U.S.-Soviet relations.

Scientists, however, believed a joint-program was ideal. According to Walter Lippman of *The Washington Post*, "The best way to purify the moon project is . . . to work out with the Soviet Union at least a common program with growing exchange of scientific data . . . we should agree to treat our separate efforts as a scientific and not as a cold war operation."[103] Summarizing his article, Lippman argued that a joint program would take the program back to scientific origins—rather than being a crash program gaining only prestige. This idea is echoed in the sentiments of the American Broadcasting company's science editor, Jules Bergman. Previously, before the United Nations speech, Bergman, like Lippman, was critical of the moon project, hesitant about the amount of scientific knowledge to be gained. However, as implied by the article in *The Kansas City Star* it appears that after the United Nations speech, Lippman was more favorable towards the program, as it meant a slower pace, more money to be diverted to other scientific programs, and, as he presumed, a shift of responsibility to the Air Force, allowing scientists to further explore the possibility of life on other planets.[104]

It seemed a joint program would be the answer to the critics of the moon program. As Lippman demonstrates, many felt a joint program would reestablish the importance of science in the program, as well as cut down on costs. Further, it would assure space a place of peaceful cooperation between the Russians and the Americans. The only objections came, as demonstrated, because of a general distrust of the

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[103] Lippmann, Walter, "Purifying the Moon Project," The Washington Post. 24 Sep. 1963.
[104] McCoy, Alvin S, "Joint Moon Project Desirable," The Kansas City Star. 20 Sep 1963.

Soviet's intentions. Yet, before the questions of joint cooperation were answered, before the Presidential Science Advisory Committee and NASA had a chance to present a plan for a joint program, Kennedy was assassinated on November 21, 1963, in Texas, center of the space race.

Conclusion

Historians can only speculate as to what would happen to Kennedy's programs had he have lived. Many argue about Vietnam and the Civil Rights movement. However, not many look at perhaps the different history of the space program. As demonstrated, by September of 1963 Kennedy had announced his interest in a joint program with the Russians. However, this presented technical and political problems. For example, as reported in *The Washington Post*, NASA had already negotiated its twenty to forty billion dollars worth of contracts. How then, would the Soviet Union and NASA combine their budget and their industries? Similarly, how would NASA and the Soviet Union combine their organizational structures, and so on and so forth? It can be assumed that had these questions been worked out, Kennedy would have begun a joint program, or rather would have cut back in funding. Other historians point to the fact that Kennedy was starting to look at other programs, a proposed tax cut as well as a growing concern over Civil Rights. A cut in space spending would have allowed Kennedy to start spending money domestically, especially as he entered the 1964 campaign year.

However, Kennedy did not live and Johnson assumed the presidency. Lyndon B. Johnson had always had a 'soft spot' for space; he had chaired the Subcommittee on Science and Space and, further, he was the former Senator from Texas—a state which received a great deal of government funding from the program. Never the less, the space program continued to receive government funding, and, as is known now, the United States did fulfill its goal of sending a man to the moon before 1970. On July 21, 1969, Neil Armstrong set foot on the moon: America had won the space race.

However, as this paper has shown, this achievement was not, persay, homage to the fallen president. By 1963, the space program had not fulfilled any of Kennedy's promises. Kennedy was still searching for answers to a slowing economy, asking for an eleven million dollar tax cut near the end of 1963. As well, scientifically this paper has shown that scientists were growing weary of the tangible benefits—feeling that the joint project to be more conducive to their goals. As far as peace, the space race did nothing to end the Cold War as incidences such as the Soviet invasion of Czechoslovakia in 1968 and the fall of Saigon in 1975 suggest.

Perhaps most lasting of Kennedy's space program is the framework of the New Frontier. In a speech on January 14, 2004, President Bush laid out his new vision for space exploration. The rhetoric used in the speech contains many of the same strategies as Kennedy's did. For example, Bush draws upon the American desire to explore, "We have undertaken space travel because the desire to explore and understand is part of our character.[105]" Space in popular culture is referred to as the frontier, most everyone has heard the end of Star Trek's opening stating space as the "final frontier." And credit is given to Kennedy for setting America on the path to what is one of its proudest moments.

Ironically, no real memory is given to Kennedy's 1963 United Nation's speech. For example, the National Museum of Air and Space dedicates time to Kennedy's address to Congress where he sets forth the goal of a man landing on the moon. Yet, no thought is truly given to Kennedy's desire, as this paper has shown, to pursue different options surrounding the moon. In a new age where there is a growing

[105] Bush, George W. "Remarks at the National Aeronautics and Space Administration," Washington, D.C., January 14th, 2004.

desire to return to space, perhaps this paper can show that though the landing on the moon was an impressive achievement, perhaps cooperating in a joint, international effort would produce more benefits for all of mankind.

Images

Grant, Lou. "Booster Rocket." *Times* (Palo Alto). 9 Oct 1962.

"The Day Dreamer Up to Date." *Newport News Daily Press*. 18 May 1963.

Buchwald, Art. "A Man to the Moon?" *Herald Tribune* (New York) 23 June 1963.

Books and Essays

Etzioni, Amitai. *The Moon-Doggle: Domestic and International Implications of the Space Program*. Doubleday, 1964.

Fairlie, Henry. *The Kennedy Promise: The Politics of Expectation*. Doubleday, 1973.

McCurdy, Howard E. *Space and the American Imagination*. Washington, D.C.: Smithsonian Institution Press, 1997.

Walter A. McDougall. *The Heavens and the Earth: A Political History of the Space Age*. New York: Basic Books, 1985.

O'Sullivan, John. "On Manifest Destiny." 2 April 2006, <http://www.civics-online.org/library/formatted/texts/manifest_destiny.html>.

Turner, Frederick Jackson. *The Frontier in American History*. Washington, D.C.: Smithsonian Institution Press, 1997.

Newspapers

The Washington Post, Times Herald. 2, 9 Apr. 1963, 6, 12, 19 May 1963, 11 Jun 1963.

Times (Los Angeles). 20-22 Nov. 1963.

Times (New York). 13, Apr. 1961, 26-28 May 1961, 27 May 1963.

Drummond, Roscoe, "There is No Second Prize: Why Do We Race to the Moon?," *Washington Post*. 7 October 1962.

Johnson, Lyndon B, "Many Practical Benefits Stem From Our Space Efforts" The *Washington Daily News*. 26 May 1963.

McCoy, Alvin S, "Joint Moon Project Desirable." *The Kansas City Star*. 20 Sep 1963.

Lippmann, Walter, "Purifying the Moon Project." *The Washington Post*. 24 Sep. 1963.

Simons, Howard. "President's Advisers Intimidating Individual Scientist, Van Allen Says." *Washington Post*, 31 Dec 1962.

"Betting on a Good Thing." *The Hartford Times*. 16 May 1963.

"Critic Deplores Space Emphasis." *The Chattanooga Times*. 7 Apr. 1963.

"Joint Journey to the Moon?." *The Hartford Courant*. 22 Sept 1963.

"Moon Race and the '64 Election." *New York Herald Tribune*. 28 May 1963.

"Moon Race or Moonshine?." *The Indianapolis Star*. 21 September 1963.

"What Price First on the Moon?." *The Virginian-Pilot*. 21 Nov. 1965.

Speeches, News Conferences, and Debates

"News Conference of October 9, 1957." 25 May 2006, <http://www.presidency.ucsb.edu/ws/index.php?pid=10924&st=&st1=>.

"Fourth Kennedy-Nixon Presidential Debate." 21 October 1961, American Presidency Project. 25 May 2006, <http://www.presidency.ucsb.edu/ws/index.php?pid=62246&st=&st1=>.

Bush, George W. "Remarks at the National Aeronautics and Space Administration," Washington, D.C., January 14th, 2004.

Kennedy, John F. "Inaugural Address" (Washington, D.C.)

Kennedy, John F, "Special Message to Congress on Urgent National Needs." Washington, D.C.: 25 May 1961.

Kennedy, John F. "Address to Rice University in Houston on the Nation's Space Effort." Houston, Texas: 12 Sep. 1962.

Kennedy, John F. "Address of President-Elect John F. Kennedy Delivered to a Joint Convention of the General Court of the Commonwealth of Massachusetts." Boston: 9 January 1961.

Whipple, Frederick L, "Address to the Committee on Science and Astronautics." March 2 1961, "House Committee on Science and Astronautics" Folder, Whipple Papers, Series 1, Box 2, Smithsonian Institution Archives.

Primary Sources

"Briefing Paper on Space, 1960". "Social Security – Water Supply" folder, Pre-Presidential Papers, Box 993A, John F. Kennedy Library, Boston, Massachussetts.

"Illustrations and Arguments as to Why the Space Program is Important Based on Both History and Current Events." White House Central Office Files, John F. Kennedy Library.

"Introduction to Outer Space." Washington D.C.: GPO, 1958.

Oral History, Theodore Sorenson, 26 March 1964, Boston, Massachussetts, John F. Kennedy Library.

Bundy, McGeorge, Memorandum to James Webb, February 23, 1962, Box 334, National Security Files, John F. Kennedy Library and Museum.

Bundy, McGeorge, Memorandum to President Kennedy, September 18, 1963, Box 77, Theodore Sorenson Files, John F. Kennedy Library.

Johnson, Lyndon B., Vice President, to the President, May 13, 1963, with attached report, White House Office Files, Boston, Massachussetts, John F. Kennedy Library.

Kennedy, John F. Memorandum to Dave Bell, August 23, 1962, Box 38, Theodore Sorenson Papers, John F. Kennedy Library.

Kennedy, John F. Memorandum for the Vice President, April 9, 1963, White House Central Files, John F. Kennedy Library.

Lytton, Bart. Letter to President Kennedy, OS 4-1 folder, White House Central Files, Box 655, Subject Files, John F. Kennedy Library.

Montague, Richard, Letter to President Kennedy. OS 4-1 folder, White House Central Files, Box 655, Subject Files, John F. Kennedy Library.

Sidey, Hugh, Letter to Pierre Salinger, Pierre Salinger Papers, John F. Kennedy Library, Boston, Massachussetts.

Viega, Rose. Letter to President Kennedy, OS 4-1 folder, White House Central Files, Box 655, Subject Files, John F. Kennedy Library.

Weisner, Jerome, Memorandum to President Kennedy, 14 April 1961, Central Office Files, John F. Kennedy Library, Boston, Massachussetts.