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## American and Soviet Battle for the Stars

Throughout the 1950s and 1960s the Soviets and the Americans battled for the prestige of being the masters of the cosmos. The American space program was headed by the German rocket scientist Werner Von Braun while the Soviet program was headed by Sergey Korolev. Each man, a brilliant scientist, was directed differently by his government. The Americans were concerned with developing science thoroughly. The Soviets, on the other hand, were more concerned with the prestige of being the first in whatever feat was on the table. The media played a significant role in providing motivation for the development of the Soviet and American programs. It, however, affected each program in unique ways. Because the Soviet media was controlled by the politburo and the American media was open, the open American media was able to lay out the U.S.'s program prospects and the Soviets took advantage of this. The American media influenced the Soviet program in such a way that they were more concerned with beating the American Space Program in developmental milestones but not as concerned with fine detail development, leading to the Americans eventually overtaking the Soviets in the technical aspects and long term achievements of the space race.

The race for dominance in space began in July 29, 1955 when the United States announced their plan to put up a scientific earth satellite for the International Geophysical Year (July 1957-December 1958).<sup>1</sup> The American plan was to create a basketball sized satellite that would complete an orbit every 90 minutes at 200-300 miles above the earth.<sup>2</sup> Only one day later, the Soviets announced their intentions to also put up an earth satellite for the International Geophysical Year (IGY) but implied that their payload<sup>3</sup> had the potential to be much greater than that of the United States.<sup>4</sup> However, the Soviets did not issue a mandate for an IGY satellite until January 1956, suggesting that the Soviets were merely attempting to keep up with the American proposal of scientific advances in public pronouncements.<sup>5</sup>

Nonetheless, on October 4, 1957 the Soviets fulfilled their promise of launching an earth satellite with *Sputnik-1*. *Sputnik -1* was the simplest of designs that was, according to one of Korolev's engineers, "made in one month, with only one reason, to be first in space."<sup>6</sup> *Sputnik-1* was "a battery powered beacon and paired harmonic radio signals [that] answered questions about the ionosphere and space temperatures, and its gradual decay told

something about atmospheric density” but because of the shortcoming of battery power it fell silent relatively shortly after its launch.<sup>7</sup> The Soviet *Sputnik-1* weighed in at a staggering 184 pounds, which outweighed the American *Vanguard* satellite by 164 pounds.<sup>8</sup> The American launch of *Vanguard* in November of 1957 was much less successful than the Soviet *Sputnik-1*. The *Vanguard* fell back on the launch pad and exploded, shaking the American confidence in their scientific developments and giving the Soviets tools for media propagandizing against the American capitalists.<sup>9</sup> Following the success of *Sputnik-1*, Soviet Premier Nikita Khrushchev ordered the launch of another satellite to celebrate the anniversary of the end of the communist revolution in November of 1920, and gain prestige through its world-wide media coverage.<sup>10</sup> *Sputnik-2* was launched November 2, 1957, with a payload of 1,119.95 pounds, along with the first animal to be launched into space, a dog named Laika.<sup>11</sup> It was reported that Laika ate food and barked while orbiting in the space craft, but he died upon reentry when “the capsule overheated after failing to separate from its boosters, thereby rendering the thermal control system inoperative.”<sup>12</sup>

The Soviets also used the media to spout the superiority of socialism over capitalism in scientific development and belittle American efforts in this field. A mere four days after the launching of *Sputnik-2*, the Soviets published an article spouting they had “opened a new page in the history of mankind by proving their complete superiority in the field of rocket technology over the scientists of other countries, above all, the United States.”<sup>13</sup> The Soviets were utilizing their mounting achievements to throw doubt onto the space program of the United States.

Early 1958 the Soviet writer, D. Panov, took another stab at American capitalism and stated “The latest major achievements of Soviet science reflect in concentrated form the superiority of our socialist system, our economy, our culture, and our Marxist-Leninist ideology over the capitalist system and its economy, culture and ideology.”<sup>14</sup> Soviet journalists were writing to convince “fence-line” supporters of the superiority of Soviet ideology through the accomplishments of Soviet scientists and therefore further stabilize the communist bloc. Panov wrote that scientific development in a capitalist society only develops projects that would be profitable for the company developing them. Because marginal profit was questionable, companies were leaving projects dormant for years. However, at this juncture in the development of space rockets the American program was largely a military undertaking. In the *New York Times*, American journalist John Finney disputed Panov’s point. He wrote that the Americans were on par with the Soviets in terms of satellites launched, suggesting research and development were being conducted at the same speed as the Soviets, in that both countries had launched three satellites up to this point.<sup>15</sup> Panov further stated that throughout the communist society all scientific development is developed in order to benefit all the people, which is why they have accomplished so much and the United States so little, further glorifying the highly publicized Soviet achievements.<sup>16</sup> These Soviet claims were not well supported in that up to this point

the American space program, NASA, nor any other civilian run program had not been developed.

Shortly after the launch of *Sputnik-2*, American newspapers doubted America's ability to quickly reach the level of the Soviet scientists. They wrote the Soviet launching of two satellites within a month was proof of the Soviet superiority in missile and rocket programs.<sup>17</sup> The Soviets were cognizant of these American concerns and it became a regular event for information about major launches to be leaked in Moscow days before their scheduled launch in order to further cast doubt on the American possibilities of catching up and propagandize Soviet superiority.<sup>18</sup> It is speculated that these leaks were "official leaks of information made deliberately to enhance world press coverage once the launch occurs."<sup>19</sup> *Sputnik-2* pushed the American government administration to acknowledge and announce that even though it was unsure how important space technology was to future national security, prestige, and scientific advancement a solid space program was necessary and yet it would still take two or three years for the United States to catch the momentum of the Soviets.<sup>20</sup> The importance of the American space program was examined because some of the political leaders questioned whether they needed to gain prestige by making it into space or whether they needed to focus on more at-home issues such as cancer and other various health developments. This wavering by the United States may have given the Soviets the confidence to continue their development of space satellites. If the United States was unsure of their involvement, it would give the Soviets more cushion in their lead and added propaganda for the superiority of the Soviet program.

The United States, however, was hard at work while the Soviets were spreading anti-capitalist propaganda and leaking information for media coverage. In September 1959 the *New York Times* published an article in response to the Soviet claims to undisputed superiority. Hanson Baldwin wrote: "we have launched twelve successful earth satellites, (including one last week) of which eight are still circling the earth. The Russians have placed three bodies in orbit (much bigger than our's); only one of them is still in space."<sup>21</sup> Baldwin argued that even though the Soviets were ahead of the United States in aspects of the space program development, they were roughly equal in basic space and missile science.<sup>22</sup> U.S. journalists also pointed out through the press the fact that both the Soviet and American programs had had failures, but the Soviet programs' failures have had "scant publicity" compared to American failures. This challenged the Soviets claim to an undisputed lead. It suggested that the claims of the Soviets may have been presented in a more flattering than accurate light. The Soviet program and media were both controlled by the Soviet politburo which was reluctant to show any weaknesses of their system, whether it be scientifically or politically. Because of this fact, the media was strongly encouraged to print only the successful flights and strongly discouraged from printing anything negative about the Soviet space program.

In light of the hesitant American space program, the Soviet Union launched *Luna-1* on January 2, 1959. The objective for this launch was to be the first earth object to strike the moon. The U.S. believed this because the craft was outfitted with the emblem of the Soviet Union.<sup>23</sup> However, *Luna-1* did not strike the moon, instead it became the first man-made planet. Instead of reporting the original objective and still collecting the glory of first man-made planet, the Soviets reported the objective of the *Luna-1* spacecraft as a man-made planet.<sup>24</sup> The Soviets falsified the original objective in order to save face in the presence of a perceived failure. The fact that the radio started to die due to power failure on January 4 and officially died only 134,268 miles past the moon suggests the radio was not designed for an extended flight but for a short flight.<sup>25</sup> The Soviets used the media to not only announce their milestone victories, but also to skew their milestone failures. The Soviet government was concerned with losing face because of a failed moon strike, so they merely turned one milestone failure into another milestone victory.

On September 13, 1959 the Soviets launched *Luna-2* which turned out to be another well publicized milestone for the Soviet space program. *Luna-2* was successful at striking the moon on September 15, 1959. It was launched with pennants attached that had the emblem of the Soviet Union engraved on them with the date of September 1959.<sup>26</sup> Five days after *Luna-2* found the face of the moon, American newspapers responded to the striking of the moon's surface by Soviet *Luna-2*, and again showed concern for the new notch on the space belts of the Soviets. One newspaper wrote of the psychological and political significance *Luna-2* carried and that "it indicated continued Soviet mastery of psychological warfare but *no unanticipated advance* in what scientists and missile men call the 'state of the art.'"<sup>27</sup> The American newspapers claimed that both countries had attempted moon orbits, man-made planets, and experienced failures.<sup>28</sup> It is only because the American program reported equally the successes and failures, unlike the Soviets who only fully reported the successes, concluded prominent reporters, that the American program appears to be so far behind the Soviets.<sup>29</sup> As evidence of the accuracy of American reports, it was even suggested that "the Russians have a great backlog of experience and are ahead of us in some ways. In basic space and missile science and research there appears to be a general feeling that we are equal to or ahead of the Russians."<sup>30</sup>

By April of 1960 newspapers across the United States were exclaiming that the U.S. was definitely not trailing the Soviet Union in that the Soviets had more powerful engines only because they were needed to lift the heavier rockets and probes.<sup>31</sup> The U.S. did not need the powerful engines the Soviets developed because the Americans had developed smaller missiles which limited their need for the development of larger rocket boosters. A U.S. scientist stated that "from this it will be seen that we are suffering from our own original competence, which is another way of saying we are paying some kind of penalty for being too scientifically good in the first place."<sup>32</sup> American program spokesmen also stated

that America's first man-into-space project would commence in 1961 in which the astronaut would be in orbit for at least four hours and complete three full orbits of the earth.<sup>33</sup>

In August 1960, the Soviets answered the American rejection of Soviet superiority with *Sputnik-5*. *Sputnik-5* contained roughly 30 mice, insects, plants, cancer cells, microbes, and the dogs Belka and Strelka.<sup>34</sup> Both dogs were recovered August 19 and reported to have been behaving normally.<sup>35</sup> On April 12, 1961 the Soviets responded to the previously announced American plans of a manned flight with their own. Soviet Cosmonaut Yuri Gagarin became the first human in space on the Soviet craft *Vostok-1* and completed one orbit in 108 minutes, jumping ahead of the Americans yet again in space flight milestones.<sup>36</sup> Gagarin reported in May of 1961 that he was "happier that [he was] the son of a people who can accomplish wonders, and that [he] belong[ed] to the party that gave [his] country the mighty wings for the flight to glory and grandeur."<sup>37</sup>

Roughly one month after Gagarin made the human debut in space, American Alan Shepard made the second human debut on behalf of the American program. Even so, Shepard's flight lasted only 15 minutes and he traveled a mere 302 miles.<sup>38</sup> Many American newspapers proposed the Shepard flight was Uncle Sam's answer to the Soviet *Vostok-1* flight, while others in America felt it fell short. The Soviets were not impressed with Shepard's flight and downplayed its significance in favor of Gagarin. One Soviet newspaper wrote the day of the Shepard flight that "[t]he launching of a manned rocket into space in the U.S.A. today does not bear comparison with the flight of the space ship-satellite 'Vostock' with the world's first cosmonaut Yuri Gagarin."<sup>39</sup> Soviet newspapers also pointed out the reported simplicity of the American manned flight: "Time Magazine pointed out that the American plan for sending a man into space aimed only at 'placing a man into a short orbit', much less impressive than the complex flight of 'Vostok' around the Earth." These boastings reveal that the primary motives of the Soviet Union in the development of their space program were psychological and prestige.

The American government proclaimed the Shepard flight to be no more than "a basic step toward manned flights," which were planned for the end of the year.<sup>40</sup> The U.S. program proclaimed the plan to put up unmanned *Mercury* capsules in hopes that by the end of the year an American astronaut would be able to orbit the earth three consecutive times.<sup>41</sup> Twenty days later on May 25, 1961 President Kennedy, in a State of the Union address, declared the countries commitment to the Apollo space project because "the U.S. faced extraordinary challenges and needed to respond extraordinarily."<sup>42</sup> In his State of the Union Address, Kennedy proclaimed that the United States was in a battle between freedom and tyranny and if they were to win this battle, scientific achievements need to be made by this country in order to ensure that free men share equally the experience of space.<sup>43</sup> He ended his address with challenging the nation to achieve a single goal: "I believe this Nation should commitment itself to achieving the goal, before this decade is out, of landing a man on the moon and returning him safely to earth. 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."<sup>44</sup>

August 6, 1961 the Soviets responded to the American goal of an extended space flight to the moon with Stepanovich Titov's flight of 17 orbits, or 434960 miles, in 25 hours in *Vostok-2*.<sup>45</sup> Titov gave the Soviets the added glory of the first extended flight through space. During a press conference following Titov's flight it was stated that "[h]e paved a road into space equal to the distance from the earth to the moon and back and safely returned home."<sup>46</sup> During the conference it was further stated that Gagarin's flight could be compared to the expedition of Columbus, yet Titov's flight could be compared to no-one in the history of man and is one of the greatest achievements of Soviet science and technology.<sup>47</sup> This flight had an undertone that showed that even though the American program was planning extended flights through space, the Soviets already had the capabilities.

The United States' answer to the extended flight of Titov was John Glenn. February 20, 1962 John Glenn orbited Earth in the ship *Friendship 7*. Glenn orbited the Earth three times in just shy of five hours and reached an altitude of approximately 162 miles.<sup>48</sup> In an article in the *New York Times* one month before Glenn's flight, it was claimed that the extended flight of John Glenn would at least put the United States on the same terms, psychologically, as the Soviet Union but the failure of the Mercury-Atlas ship, *Friendship 7*, would mean a psychological setback for the United States.<sup>49</sup> The article also admitted that Glenn's flight will not be as advanced or extended as that of the Soviet Cosmonaut G. S. Titov.

One day after the flight of John Glenn, Nikita Khrushchev sent a congratulatory letter to President Kennedy for Glenn's successful flight. At the bottom of this letter, Khrushchev suggested that the United States and the Soviet Union combine scientific, technological and material forces for the betterment of science and mankind.<sup>50</sup> This is the first mention of the Soviet Union and United States combining forces, by either nation. This was a very curious thing to say when it was widely known that the Soviet Union "d[id] not like to disclose their failures, and volunteer nothing they can hide successfully."<sup>51</sup> In an interview between news correspondent A. Romanov and Yury Gagarin, Gagarin declared that the decision by the United States to not share information with the Soviet Union was a mistake because "[t]he most valuable data on space and space flights have been obtained by the Soviet Union."<sup>52</sup>

It is curious as to why the Soviets, all of a sudden, want to combine efforts with the United States. It is possible that the Soviets were having more failures than successes, and their successes were coincidentally the milestone achievements. If this is the case, it only makes sense that the Soviets would want to join with the United States for research purposes. They did not, however, end up joining programs.

After seven years of development and smaller missions, in July of 1969 the American Space Program planned to send three men to the moon to collect moon surface samples on *Apollo-11*. Neil Armstrong said in the New York Times, less than 48 hours before the scheduled launch, that “[a]fter a decade of planning and hard work, we’re willing and ready to attempt to achieve our national goal.”<sup>53</sup> Lieutenant Colonel Michael Collins, another of the astronauts, stated that an 80% chance of success in their tasks on the moon was a fair estimate, but the chances of reaching and returning from the moon were much greater.<sup>54</sup> The American flight to the moon was rivaled, however, by the Soviet *Luna-15*.

Rumors had been spreading from months before the Apollo flight of a possible Soviet launch in the same time frame to steal some of the lime light from the Americans.<sup>55</sup> The *Luna-15* was launched three days before the American *Apollo-11* flight.<sup>56</sup> The mission of *Luna-15* was stated in a London newspaper as “to check the systems on board the automatic station,” and was not thought, by the Americans and the British, to have the capabilities to land and collect moon material before the American flight but the “history of Russian space efforts ha[d] been full of surprises.”<sup>57</sup> The possibility of the Soviets getting to the moon to collect samples before the Americans concerned scientists and citizens of the United States because the Soviets would be stealing this monumental achievement right out from under them. A British newspaper wrote that the achievement by the Soviets would give them something to gloss over the American achievement, and have their own on the front page while putting the American moon landing further back in the paper.<sup>58</sup> The Soviet vehicle *Luna-15* did not land on the moon and on July 20, 1969 the American *Apollo-11* successfully landed on the moon and it successfully returned to earth on July 24, 1969. The *Apollo-11* shuttle that landed on the moon, according to Bernard Lovell a British journalist, is “merely the beginning of an entirely new phase in man’s extraterrestrial activities” and that it “is an exploit whose timescale ha[d] been determined by Soviet-American rivalry.”<sup>59</sup> The Soviets responded to the American Moon landing with an article in their news recapping all their own achievements in the space program, but devoted only one small paragraph to the American feat.

It is easy to see the effect the American media had on the Soviet program. The American media was able to lay out the publicized plans of the space program and the Soviets took this information and worked quickly to ensure they developed and achieved before the Americans had the technology. In scrambling for the advantage and not necessarily taking the time to fully develop the structure and designs of the great space machines, the Soviets fell behind in the fine-tuned aspects of space flight (i.e. soft moon landing). It is also possible that the growing cold war and fight for communism in other parts of the world took attention and resources away from the Soviet space program which hindered the development even further. From the beginning the Soviets had a substantial lead in the race for space but were unable to hold onto it through the end.

- [1] Sheldon, Charles. *Review of the Soviet Space Program*. New York, NY: McGraw Hill, 1968. pp. 47
- [2] Baker, Russell. "Rocket to Start Object Size of a Basketball in 1957 or 1958." *New York Times*, July 30, 1955.  
<http://search.proquest.com/hnpnewyorktimes/docview/113431953/1351087621E776C8975/1?accountid=9783> (accessed February 23, 2012).
- [3] The useful content of a spacecraft
- [4] Sheldon, Charles. *Review of the Soviet Space Program*. New York, NY: McGraw Hill, 1968. pp. 47
- [5] Hartford, James. *Korolev*. Hoboken, New Jersey: John Wiley & Sons, Inc, 1997. pp. 125
- [6] *ibid* pp. 126
- [7] Sheldon, Charles. *Review of the Soviet Space Program*. New York, NY: McGraw Hill, 1968. pp. 47
- [8] *ibid*
- [9] *ibid*
- [10] Hartford, James. *Korolev*. Hoboken, New Jersey: John Wiley & Sons, Inc, 1997. pp. 132
- [11] *ibid*
- [12] *ibid*
- [13] Kuznetsov, G. "A Rocket Flies to the Moon-Interview With Candidate of Technical Sciences Yu. S. Khlebtsevich." *Current Digest of the Russian Press*. 9. no. 39 (1957).
- [14] Panov, D. "Science and Socialism." *Current Digest of the Russian Press*. 10. no. 8 (1958).  
<http://dlib.eastview.com/browse/doc/13822313> (accessed February 15, 2012).
- [15] Finney, John. "The Race in Space Still has a long way to go." *New York Times*, May 7, 1961. <http://search.proquest.com.proxy.lib.ohio-state.edu/hnpnewyorktimes/docview/115413948/fulltextPDF/1350395416034D412A5/3?accountid=9783> (accessed February 16, 2012).
- [16] Panov, D. "Science and Socialism." *Current Digest of the Russian Press*. 10. no. 8 (1958).  
<http://dlib.eastview.com/browse/doc/13822313> (accessed February 15, 2012).
- [17] "U.S. Found to Lag in Race to Space." *New York Times*. (1957).  
<http://search.proquest.com.proxy.lib.ohio-state.edu/hnpnewyorktimes/docview/114322175/134E9B04D821253878A/1?accountid=9783> (accessed February 15, 2012).
- [18] Sheldon, Charles. *Review of the Soviet Space Program*. United States: McGraw Hill, 1968. P.52
- [19] *ibid*
- [20] "U.S. Lags in Space Race 8 Months After Sputnik 1." *New York Times*. (1958).  
<http://search.proquest.com.proxy.lib.ohio-state.edu/hnpnewyorktimes/docview/114467022/134E9A6C5D6552FBED1/1?accountid=9783> (accessed February 15, 2012).



- [21] Baldwin, Hanson. "Russia's Moon Shot Again Demonstrates Its Lead in Space Race." *New York Times*, September 20, 1959. <http://search.proquest.com.proxy.lib.ohio-state.edu/hnpnewyorktimes/docview/114655007/134E9ADE4DA1A0B6376/1?accountid=9783> (accessed February 15, 2012).
- [22] *ibid*
- [23] Sheldon, Charles. *Review of the Soviet Space Program*. New York, NY: McGraw Hill, 1968. pp. 48
- [24] "Tass Statement on Launching of Space Rocket Toward Moon." *Current Digest of the Russian Press*. 11. no. 1 (1959). <http://dlib.eastview.com/browse/doc/13819945>
- [25] Sheldon, Charles. *Review of the Soviet Space Program*. New York, NY: McGraw Hill, 1968. pp. 48
- [26] "On the Launching by the Soviet Union of a Space Rocket to the Moon." *Current Digest of the Russian Press*. 11. no. 37 (1959). <http://dlib.eastview.com.proxy.lib.ohio-state.edu/browse/doc/13820622> (accessed February 15, 2012).
- [27] Baldwin, Hanson. "Russia's Moon Shot Again Demonstrates Its Lead in Space Race." *New York Times*, September 20, 1959. <http://search.proquest.com.proxy.lib.ohio-state.edu/hnpnewyorktimes/docview/114655007/134E9ADE4DA1A0B6376/1?accountid=9783> (accessed February 15, 2012).
- [28] *ibid*
- [29] *ibid*
- [30] *ibid*
- [31] Gibbons, Roy. "How America Fares in Missile Race!" *Chicago Daily Tribune*, April 16, 1960. <http://search.proquest.com/hnpchicagotribune/docview/182509793/134ED0A551A7DE4D559/3?accountid=9783> (accessed February 29, 2012).
- [32] *ibid*
- [33] *ibid*
- [34] "Research Program Successfully Completed." *Current Digest of the Russian Press*. 12. no. 34 (1960). <http://dlib.eastview.com.proxy.lib.ohio-state.edu/browse/doc/13818269> (accessed February 15, 2012).
- [35] Hartford, James. *Korolev*. United States: John Wiley & Sons, Inc, 1997. P 326
- [36] *ibid* p. 327
- [37] Gagarin, Yury. "The World in 100 Minutes." *Current Digest of the Russian Press*. 13. no. 17 (1961). <http://dlib.eastview.com.proxy.lib.ohio-state.edu/browse/doc/13793116> (accessed February 16, 2012)

- [38] Sheldon, Charles. *Review of the Soviet Space Program*. New York, NY: McGraw Hill, 1968. p.50
- [39] "Launching of Manned Rocket in U.S.A.." *Current Digest of the Russian Press*. 13. no. 18 (1961). <http://dlib.eastview.com/browse/doc/13793014> (accessed February 15, 2012).
- [40] Finney, John. "The Race in Space Still has a long way to go." *New York Times*, May 7, 1961. <http://search.proquest.com.proxy.lib.ohio-state.edu/hnpnewyorktimes/docview/115413948/fulltextPDF/1350395416034D412A5/3?accountid=9783>
- [41] *ibid*
- [42] NASA, "Project Apollo: A Retrospective Analysis." Last modified October 22, 2004. Accessed March 2, 2012. <http://history.nasa.gov/Apollomon/Apollo.html>.
- [43] *ibid*
- [44] *ibid*
- [45] "Tass Statement on Launching of Space Rocket Toward Moon." *Current Digest of the Russian Press*. 11. no. 1 (1959). <http://dlib.eastview.com/browse/doc/13819945>
- [46] "DARING DREAMS OF MANKIND ARE BEING REALIZED.-Press Conference on German Titov's Flight." *Current Digest of the Russian Press*, September 6, 1961. <http://dlib.eastview.com/searchresults/article.jsp?art=0&id=13793808> (accessed March 2, 2012).
- [47] *ibid*
- [48] NASA, "Biographical Data-John Herschel Glenn." Last modified JANUARY 1999. Accessed March 2, 2012. <http://www.jsc.nasa.gov/Bios/htmlbios/glenn-j.html>.
- [49] Finney, John. "Glenn Ready for Orbit Wednesday." *New York Times*, January 21, 1962. <http://search.proquest.com/hnpnewyorktimes/docview/115930858/1353A4627671395D9B/1?accountid=9783> (accessed March 2, 2012).
- [50] "To his Excellency Mr. John F. Kennedy, President of the United States of America, Washington." *Current Digest of the Russian Press*. 14. no. 8 (1962). <http://dlib.eastview.com/doc/13788991> (accessed February 15, 2012).
- [51] Sheldon, Charles. *Review of the Soviet Space Program*. New York, NY: McGraw Hill, 1968. p.52
- [52] "MANKIND WILL DISCOVER THE SECRETS OF SPACE.-Meeting With Yu. A. Gagarin." *Current Digest of the Russian Press*, May 9, 1962. <http://dlib.eastview.com/searchresults/article.jsp?art=2&id=13789612> (accessed March 2, 2012).
- [53] WILFORDS, JOHN. "Apollo Astronauts Are 'Willing and Ready': Apollo 11 Astronauts Are 'Willing and Ready.'" *New York Times*, July 19, 1969.

<http://search.proquest.com/hnpnewyorktimes/docview/118663032/1355E94065424D72CC/28?accountid=9783> (accessed March 9, 2012).

<sup>[54]</sup>ibid

<sup>[55]</sup> Bonavia, David. "Moon Shot by Russia Three Days Before Apollo Launch." *The Times*, July 13, 1969. [http://infotrac.galegroup.com.proxy.lib.ohio-state.edu/itw/infomark/867/863/180503352w16/purl=rc1\\_TTDA\\_0\\_CS17527022&dyn=19!xrn\\_1\\_0\\_CS17527022&hst\\_1?sw\\_aep=colu44333](http://infotrac.galegroup.com.proxy.lib.ohio-state.edu/itw/infomark/867/863/180503352w16/purl=rc1_TTDA_0_CS17527022&dyn=19!xrn_1_0_CS17527022&hst_1?sw_aep=colu44333) (accessed March 11, 2012).

<sup>[56]</sup>ibid

<sup>[57]</sup>ibid

<sup>[58]</sup>ibid

<sup>[59]</sup> Lovell, Bernard. "Russian-American Rivalry Governs Space Timetable." *The Times*, July 14, 1969. [http://infotrac.galegroup.com.proxy.lib.ohio-state.edu/itw/infomark/867/863/180503352w16/purl=rc1\\_TTDA\\_0\\_CS152793326&dyn=7!xrn\\_5\\_0\\_CS152793326&hst\\_1?sw\\_aep=colu44333](http://infotrac.galegroup.com.proxy.lib.ohio-state.edu/itw/infomark/867/863/180503352w16/purl=rc1_TTDA_0_CS152793326&dyn=7!xrn_5_0_CS152793326&hst_1?sw_aep=colu44333) (accessed March 11, 2012).

## Bibliography

- Baker, Russell. "Rocket to Start Object Size of a Basketball in 1957 or 1958." *New York Times*, July 30, 1955.  
<http://search.proquest.com/hnpnewyorktimes/docview/113431953/1351087621E776C8975/1?accountid=9783> (accessed February 23, 2012).
- Baldwin, Hanson. "Russia's Moon Shot Again Demonstrates Its Lead in Space Race." *New York Times*, September 20, 1959. <http://search.proquest.com.proxy.lib.ohio-state.edu/hnpnewyorktimes/docview/114655007/134E9ADE4DA1A0B6376/1?accountid=9783> (accessed February 15, 2012).
- Bonavia, David. "Cosmonaut Defied Space Order." *The Times*, July 16, 1969.  
[http://infotrac.galegroup.com.proxy.lib.ohio-state.edu/itw/infomark/867/863/180503352w16/purl=rc1\\_TTDA\\_0\\_CS117666032&dyn=11!xrn\\_11\\_0\\_CS117666032&hst\\_1?sw\\_aep=colu44333](http://infotrac.galegroup.com.proxy.lib.ohio-state.edu/itw/infomark/867/863/180503352w16/purl=rc1_TTDA_0_CS117666032&dyn=11!xrn_11_0_CS117666032&hst_1?sw_aep=colu44333) (accessed March 11, 2012).
- DARING DREAMS OF MANKIND ARE BEING REALIZED.-Press Conference on German Titov's Flight." *Current Digest of the Russian Press*, September 6, 1961.  
<http://dlib.eastview.com/searchresults/article.jsp?art=0&id=13793808> (accessed March 2, 2012).
- Finney, John. "Glenn Ready for Orbit Wednesday." *New York Times*, January 21, 1962.  
<http://search.proquest.com/hnpnewyorktimes/docview/115930858/1353A4627671395D9B/1?accountid=9783> (accessed March 2, 2012).
- Finney, John. "The Race in Space Still has a long way to go." *New York Times*, May 7, 1961.  
<http://search.proquest.com.proxy.lib.ohio-state.edu/hnpnewyorktimes/docview/115413948/fulltextPDF/1350395416034D412A5/3?accountid=9783> (accessed February 16, 2012).
- Gagarin, Yury. "The World in 100 Minutes." *Current Digest of the Russian Press*. 13. no. 17 (1961). <http://dlib.eastview.com.proxy.lib.ohio-state.edu/browse/doc/13793116> (accessed February 16, 2012)
- Gibbons, Roy. "How America Fares in Missile Race!" *Chicago Daily Tribune*, April 16, 1960.  
<http://search.proquest.com/hnpchicagotribune/docview/182509793/134ED0A551A7DE4D559/3?accountid=9783> (accessed February 29, 2012).

- Kuznetsov, G. "A Rocket Flies to the Moon-Interview With Candidate of Technical Sciences Yu. S. Khlebtsevich." *Current Digest of the Russian Press*. 9. no. 39 (1957).
- Hartford, James. *Korolev*. United States: John Wiley & Sons, Inc, 1997.
- "Launching of Manned Rocket in U.S.A.." *Current Digest of the Russian Press*. 13. no. 18 (1961). <http://dlib.eastview.com/browse/doc/13793014> (accessed February 15, 2012).
- Lovell, Bernard. "Russian-American Rivalry Governs Space Timetable." *The Times*, July 14, 1969. [http://infotrac.galegroup.com.proxy.lib.ohio-state.edu/itw/infomark/867/863/180503352w16/purl=rc1\\_TTDA\\_0\\_CS152793326&dyn=7!xrn\\_5\\_0\\_CS152793326&hst\\_1?sw\\_aep=colu44333](http://infotrac.galegroup.com.proxy.lib.ohio-state.edu/itw/infomark/867/863/180503352w16/purl=rc1_TTDA_0_CS152793326&dyn=7!xrn_5_0_CS152793326&hst_1?sw_aep=colu44333) (accessed March 11, 2012).
- "MANKIND WILL DISCOVER THE SECRETS OF SPACE.-Meeting With Yu. A. Gagarin." *Current Digest of the Russian Press*, May 9, 1962. <http://dlib.eastview.com/searchresults/article.jsp?art=2&id=13789612> (accessed March 2, 2012).
- NASA, "Biographical Data-John Herschel Glenn." Last modified JANUARY 1999. Accessed March 2, 2012. <http://www.jsc.nasa.gov/Bios/htmlbios/glenn-j.html>.
- NASA, "Project Apollo: A Retrospective Analysis." Last modified October 22, 2004. Accessed March 2, 2012. <http://history.nasa.gov/Apollomon/Apollo.html>.
- "On the Launching by the Soviet Union of a Space Rocket to the Moon." *Current Digest of the Russian Press*. 11. no. 37 (1959). <http://dlib.eastview.com.proxy.lib.ohio-state.edu/browse/doc/13820622> (accessed February 15, 2012).
- Panov, D. "Science and Socialism." *Current Digest of the Russian Press*. 10. no. 8 (1958). <http://dlib.eastview.com/browse/doc/13822313> (accessed February 15, 2012).
- "Research Program Successfully Completed." *Current Digest of the Russian Press*. 12. no. 34 (1960). <http://dlib.eastview.com.proxy.lib.ohio-state.edu/browse/doc/13818269> (accessed February 15, 2012).
- Sheldon, Charles. *Review of the Soviet Space Program*. United States: McGraw Hill, 1968.
- "Tass Statement on Launching of Space Rocket Toward Moon." *Current Digest of the Russian Press*. 11. no. 1 (1959). <http://dlib.eastview.com/browse/doc/13819945>

"To his Excellency Mr. John F. Kennedy, President of the United States of America, Washington." *Current Digest of the Russian Press*. 14. no. 8 (1962).  
<http://dlib.eastview.com/doc/13788991> (accessed February 15, 2012).

"U.S. Found to Lag in Race to Space." *New York Times*. (1957).  
<http://search.proquest.com.proxy.lib.ohio-state.edu/hnpnewyorktimes/docview/114322175/134E9B04D821253878A/1?accountid=9783> (accessed February 15, 2012).

"U.S. Lags in Space Race 8 Months After Sputnik 1." *New York Times*. (1958).  
<http://search.proquest.com.proxy.lib.ohio-state.edu/hnpnewyorktimes/docview/114467022/134E9A6C5D6552FBED1/1?accountid=9783> (accessed February 15, 2012).

WILFORDS, JOHN. "Apollo Astronauts Are 'Willing and Ready': Apollo 11 Astronauts Are 'Willing and Ready.'" *New York Times*, July 19, 1969.  
<http://search.proquest.com/hnpnewyorktimes/docview/118663032/1355E94065424D72CC/28?accountid=9783> (accessed March 9, 2012).