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Chapter 5

Willy Ley: Rocket Scientist and Book Collector*

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Abstract

Willy Ley was born on 2 October 1906. He was educated in Berlin and immigrated to England in 1935 and then to the United States in 1936. At an early age, he was interested in rocketry and, while still in Germany, helped form a club for rocket enthusiasts, which was called the Verein für Raumschiffahrt or VfR (Society for Space Travel). In 1926 his book, titled *Die Fahrt ins Weltraum* (*Travel in Outer Space*), was published in Germany. Upon arrival in the United States, he continued to write, edit, and serve as advisor for many technical projects. Early adventures in the United States included attempted mail delivery via a rocket glider. Book collecting was important to Ley, and he had amassed a library of over 5,000 books and journals. Upon his death in June 1969, the book collection was bought by the University of Alabama in Huntsville (UAH). The book collection contains many rare and fascinating books. The personal documents of Willy Ley are in the Willy Ley Collection maintained by the Smithsonian Air and Space Museum Archives. Together, these collections tell a story of a man who understood rocket science, popularized the space effort in the United States, and collected a treasure trove of books.

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Early Years and Education

Born in 1906 in Berlin, Germany, Willy Ley was raised by an extended family.¹ His father, Julius Otto Ley, was a wine merchant in Königsberg, and his mother, Frida May, was the daughter of a Lutheran sexton in Berlin. Frida joined husband Julius in London in 1913 to open a German delicatessen, leaving son Willy in the care of her sisters. Willy Ley relates that he spent most of his youthful Sundays at the Museum of Natural History in Berlin.² With such an adventurous family and educational opportunities in Berlin, it is easy to see that exploring and learning were natural occurrences for Willy Ley.

Ley wanted to go to college, but college was not a usual occurrence in the Ley household. Besides being the first in his family to want to go to college, money was scarce. However, Willy Ley found work as a bank clerk and enrolled at the University of Berlin in 1924. He studied paleontology, zoology, botany, anatomy, mathematics, physics, and astronomy.³

Many books in the Willy Ley Collection at the University of Alabama in Huntsville reflect the courses studied when Willy Ley was at college. The subjects of paleontology and zoology especially were lifelong interests for Ley, as evidenced by the number of books relating to these subjects. Books with titles such as *Zoological Mythology, or The Legends of Animals* by Angelo de Gubernatis and published in 1872. It is to be assumed that Willy Ley purchased the books after arriving in New York, since most of the books have a price in United States currency. The sticker inside the *Zoological Mythology* book states the bookseller was Joseph McDonough in Albany, New York, and the price, written in pencil, states two volumes for \$12.00. Another book that reflects early college interests is *Madagascar, Land of Man-Eating Tree*, by Chase Salmon Osborn, LL.D., published in 1924. This sticker states Brentano's Booksellers and Stationers, New York, and the price, in pencil, was \$2.50. And who could not fail to be interested and amused with a book titled *Pheasants, Their Lives and Homes*, written by William Beebe and published in 1936 under the auspices of the New York Zoological Society. The records for the Willy Ley Collection at the University of Alabama in Huntsville do not reveal when Mr. Ley might have purchased the books, but the book titled *Pheasants, Their Lives and Homes*, may well have been purchased new, in that it has no secondhand bookshop sticker inside and no penciled in price. The inside flap of the book announces that the former price was \$15.00, but now it was \$3.50. This book has the Willy Ley bookplate inside. Designed by Olga Ley, wife of Willy Ley, the bookplate has a drawing of dinosaurs and a rocket overhead.



Figure 5–1: Willy Ley bookplate, designed by Olga Ley,
Credit: UAH Archives.

The title of this chapter asserts that Willy Ley was a rocket scientist, as well as a book collector. Mr. Ley was not a traditional rocket scientist with an engineering background, but he did embrace rocket science theory and even experimented with rockets for some years, later becoming a rocket science expert and historian. He told the story in his own words “How It All Began” in an article in *Space World*, published in 1961.⁴ He related in the article written for *Space World* that his fascination with rocket science began, appropriately enough, with a book. He remembered that he was walking along a street in Berlin in 1925 and looked in a bookstore window and saw a book titled (translated from German) *The Advance into Space—A Technological Possibility* by Max Valier.⁵ Valier stated that the ideas in the book were from Professor H. Oberth, so Willy Ley saved enough money to buy Oberth’s book, titled *Die Rakete zu den Planetenräumen* (*The Rocket into Interplanetary Space*). As he was buying Oberth’s book, the clerk showed him another book on rocketry by Dr. Walter Hohmann, *The Attainment of the Celestial Bodies*. So Willy Ley bought that book as well. As he read, he studied until he understood the concepts and realized that he could interpret the subject matter, and translated the concepts into a more easily understood framework. Ley contacted Professor Oberth to gain more insight and offered to create a version of Oberth’s book. Professor Oberth agreed and was very pleased with the outcome, which Ley titled *Die Fahrt ins Weltall*. This book was very popular and sold many copies, allowing Willy Ley to be a rocketry expert before he was even 20 years old!

Verein für Raumschiffahrt

Simultaneously, as these books were being written, there were experiments with rocket propellants to prove what the books promoted. Although reaching outer space was still a dream, there were significant achievements and discoveries being made with rocket testing. Max Valier, for instance, made a rocket fueled car that he would demonstrate at many towns. Valier also wrote an interpretation of Professor Oberth's book. These experiments naturally cost money for fuel and equipment. Looking for ways to raise money and to give the idea of space travel a unified platform, a group was formed to officially promote the idea of space travel.⁶

In 1927, about ten people met in a tavern in Breslau, Germany (today Poland) to form this new organization. This group was called the Verein für Raumschiffahrt, which translates to Society for Space Ship Travel. Johannes Winkler was the president, and Willy Ley, who was not present at the first meeting, was asked to join about a year later.⁷ Ley wrote that his plans for the society were to produce a readable book to convince the public of the possibility of space travel, and also, to collect membership dues for the society. These dues would finance experimental work.

So in 1928, Willy Ley produced a readable book titled *Die Möglichkeit der Weltraumfahrt*. This book has contributions from Dr. Karl Debus, who later would join Dr. Wernher von Braun's team, and from Professor Hermann Oberth and from Dr. Walter Hohmann, both of whom had written the earlier seminal books on rocketry which had so influenced the young Willy Ley.



Figure 5-2: Cover of *Die Rakete*. Credit: UAH Archives.

The dues for membership to the fledgling society came in from all over the world.⁸ The members received a subscription to the publication *Die Rakete*, as

well as book reward incentives for getting more members to join. The German Rocket Society, as the group was called in international circles, now had an audience of over 500 people. The international support of the membership was helpful to provide money for experiments, and the friendships made through the membership would prove to be very beneficial to Willy Ley personally.

As the membership of the Verein für Raumschiffahrt grew, public interest in spaceflight became more popular. Fritz Lang produced a movie titled *Frau im Mond*. Premiering in 1929, the movie was about spaceflight to the Moon. Lang wanted the movie to be scientifically accurate, so he hired Hermann Oberth and Willy Ley to be technical editors. Oberth was to build a rocket, and Willy Ley wrote articles explaining the scientific principles of the production.⁹ Even though Oberth's real life rocket experiment did not work, the audience who saw the movie was convinced that a rocket flew because it was shown as a successful flight in the movie.

The Willy Ley Collection contains a book titled *The Rocket to the Moon*, by Thea von Harbou. It is an English translation of the original German *Frau im Mond*. Published in the United States in 1930, the book is evidence of the popularity of the notion of space travel.

By 1931, the Verein für Raumschiffahrt had established three proving stands, large, small, and a portable one. They were conducting rocket experiments and gaining knowledge about what would work and what didn't. Notebooks were kept about the experiments. Mr. and Mrs. G. Edward Pendray visited Berlin in 1931 and saw the test stand and experiments.¹⁰



Figure 5-3: Willy Ley and G. Edward Pendray at rocket test stand, Berlin, 1931. Credit: UAH Archives.

By 1932, funds for the group were diminishing, since the depression in Germany was getting worse and demands to support Hitler were getting stronger. However, the Rocket Society persevered until the government made it impossible to test any longer. By 1933, the government had seized the papers, journals, books, and probably the test equipment of the group.

Immigration

Fortunately, Willy had many international friendships, because those friendships enabled him to get out of Germany. In 1935 on 7 January, Ley took a



train out of Germany. He had a visitor's visa, and a letter on company stationery that he typed himself, and was very lucky that the border guard inspected the papers only superficially. He made his way to England, where he stayed with P. E. Cleator, who was president of the British Interplanetary Society. From there, Ley had passage on a boat to the United States, and he stayed with the Pendrays when he arrived in New York.

Figure 5-4: Willy Ley on the boat.
Credit: AH Archives.

One book in the Willy Ley Collection at the University of Alabama in Huntsville that reflects these friendships is *Rockets through Space* by P. E. Cleator. The early friendship obviously continued, because this book, published in 1936, is inscribed by the author "To Willy—with the kindest regards of the author—P. E. Cleator, April, 1937." Another book in the collection shows the friendship between Ley and the Pendrays. *Men, Mirrors, and Stars* by G. Edward Pendray, is inscribed "To Willy Ley—With the compliments of the author!—G. Edward Pendray, March 30, 1935."

Willy Ley was in the United States on a visitor's visa, which prevented him from obtaining fulltime employment. He did contract work as the flight operations supervisor for an experimental mail rocket.¹¹ The experiment was not successful. This may have been Ley's last involvement as a "rocket scientist," and he began to publish more and more articles and books.

A book in the Willy Ley Collection that reflects the interest in rocket mail is titled *First International Rocket Mail: USA to Mexico*. Although this book is about the mail-flight experiments performed by the American Legion Post No. 37 of McAllen, Texas, there is mention that "a widely publicized experiment was made by Dr. W. Ley in rocket flight at Greenwood Lake, New York in 1936."¹² Writing became a more secure way of making a living for Willy Ley. Between

1936 and 1940, Ley wrote many articles on the topics of science and science fiction.

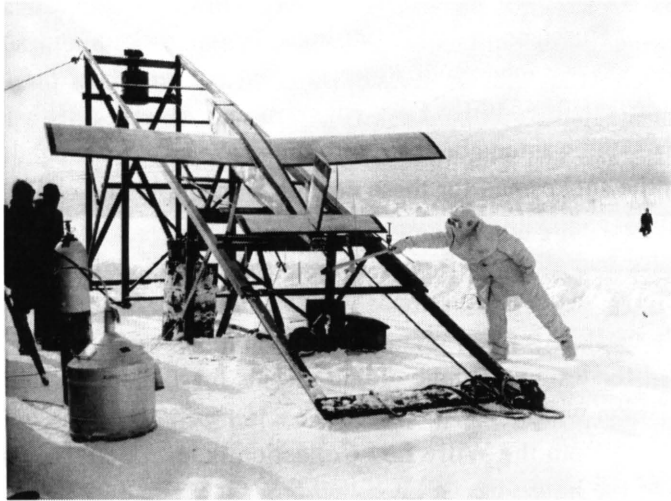


Figure 5-5: Willy Ley with the rocket mail, New York, 1936.
Credit: UAH Archives.

In order to become a United States citizen and be able to obtain fulltime work, Ley established residence in Cuba in February 1937 and then immigrated to Florida in March 1937.¹³ In an interview on *Night Beat* in 1957 with Mike Wallace, Ley told Wallace about his leaving Germany in 1934. On the recording of the *Night Beat* interview, Ley said “I don’t know if you know this, but I never officially left—I disappeared.”¹⁴ So the trip to Cuba was necessary to establish formal immigration to the United States, and later, Ley took the necessary steps to become a legal citizen by 1944.

In 1940, Ley joined the staff of the *PM* newspaper as a science editor. He met Olga Feldman, who wrote a physical fitness column for *PM*, and they married in 1941. He continued to write, and his books titled *The Lungfish and the Unicorn*, 1941; *Bombs and Bombing*, 1941; *Shells and Shooting*, 1942; and *The Days of Creation*, 1941 were published.

Copies of these books are in the collection at the University of Alabama in Huntsville. The recording of *Night Beat* is held in the Willy Ley Collection as well. The recording is on a 33 1/3 rpm Rockhill Recording record by Rockhill Radio in New York City. The original radio interview has been reformatted to a CD, thanks to the efforts of local radio station WLRH.

The Space Race

Books about space were certainly written before the successful launch of Sputnik by the Russians in 1957, but books about rockets and space travel became a topic of great interest in America after that launch of the first successful artificial earth satellite. Willy Ley, who had experimented with rocketry in his younger years and written about rockets and space travel throughout his life, was regarded as the spokesman for these new phenomena.¹⁵ Ley could make the subject matter understandable for every age level.

Ley also had all those friendships made from the early days in the German Rocket Society. One of those friends was Wernher von Braun, who had brought a group of about 125 German men and their families to Huntsville, Alabama, to begin a new life, designing and building rockets for the United States.

Von Braun wrote the book titled *Das Marsprojekt* which was published in 1952. The copy from the Willy Ley Collection is inscribed "To Willy Ley (Another brick to the house we've been building for the last 22 years!)" and signed "Wernher 15 April 1952." The book is written in German, and the inscription is in English.

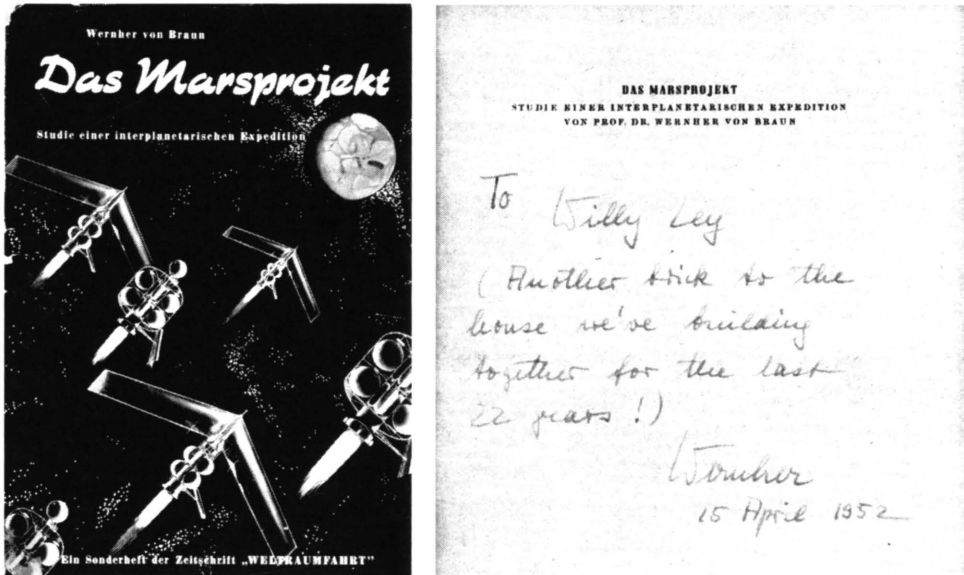


Figure 5-6: Cover and frontispiece of *Das Marsprojekt*.
Credit: UAH Archives.

Wernher von Braun, working for the Army Ballistic Missile Agency (later to become NASA) in Huntsville, Alabama, and Willy Ley, writer and educator living in Jackson Heights, New York City, worked on many projects together.

In 1951, the First Symposium on Space Flight was held at the Hayden Planetarium in New York City. Papers read at that symposium were published in *Collier's Magazine* in 1952. Wernher von Braun and Willy Ley were participants in that meeting, and the publication of their papers in *Collier's* further popularized the idea of space travel. Some of the art for the magazine was done by Chesley Bonestell. Later, Bonestell, von Braun, and Ley would write *Conquest of the Moon* (1953), *The Conquest of Space* (1958), and *The Exploration of Mars* (1960).

In 1959, Willy Ley and Wernher von Braun made a record titled *The Conquest of Space*. It is a conversation between Ley and von Braun about space travel and is a part of the Willy Ley Collection. The conversation was recorded in both New York City and in Huntsville, Alabama. Ward Botsford, producer of the record for Vox Science Series, states on the record album cover introduction, that Willy Ley has a “marvel of a library which is magnificent in its catholicity and disorganization.”¹⁶



Figure 5–7: Cover of record album *The Conquest of Space*, 1959.
Credit: UAH Archives.

The Disney Years

After the articles in *Collier's* were published, there was even more interest in space travel. Willy Ley was a master of promoting the concept of space travel to the public. He was able to explain scientific methods in terms that children could understand. Television programs about space were watched all over America, by children and adults. The programs were designed to be entertaining and informative with technically correct information. Walt Disney produced the television series titled *Man in Space* and *Man and the Moon* in 1955, followed by *Mars and Beyond* in 1957. Willy Ley was employed by Walt Disney as a technical advisor for these programs. During 1953 to 1954, he received \$2,000 per trip

to fly to the Walt Disney studios for one week each month.¹⁷ Others participated in the technical advice for Disney, and Wernher von Braun was together with his old friend from the German Rocket Society days, Willy Ley, once again as consultants for Disney Productions.

After the success of the Disney books and films, Ley created a series of books called “Adventure in Space.” Primarily for children, these books with space travel themes were designed to be used in the classroom. Published by Guild Press and distributed by Simon & Schuster, the series consisted of the three books with the covers depicted below. These books are in the Willy Ley Collection at the University of Alabama in Huntsville.

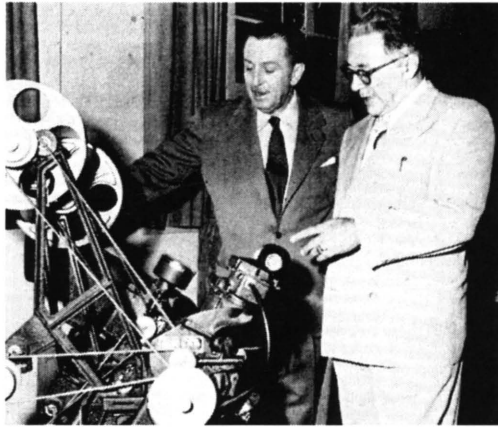


Figure 5-8: Walt Disney and Willy Ley, during filming *Man in Space*, 1955. Photo from *Galaxy Magazine*, October 1955. Credit: Walt Disney Productions.

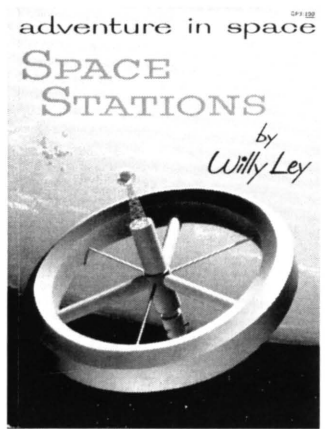
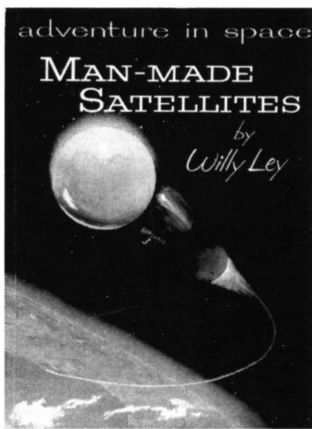
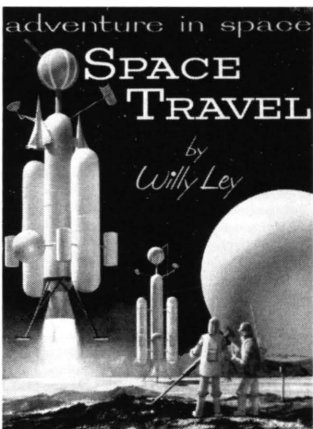


Figure 5-9 (left): Cover of *Space Travel* by Willy Ley. Credit: UAH Archives.

Figure 5-10 (center): Cover of *Man-made Satellites* by Willy Ley. Credit: UAH Archives.

Figure 5-11 (right): Cover of *Space Stations* by Willy Ley. Credit: UAH Archives.

Later Years

Ley continued to write and lecture about space science and rocket research. He was Professor of Science at Fairleigh Dickinson University and was Science Editor for the *World Almanac*.

In 1968 the book titled *Dawn of Zoology* was published. This book by Ley reflects his interest in zoology, paleontology, and the history of ideas. The consulting editor, Joseph Krutch, explains in the introduction that “Mr. Ley’s first professional training was in paleontology and he took up rockets as a hobby. Nowadays, I suppose, he should be called a rocket expert who continues paleontology and zoology as a hobby.”¹⁸ The wonderful thing about Willy Ley is that he researched the background of any idea that he found appealing. In his book *Missiles, Moonprobes, and Megaparsecs*, he states that “the scientist proceeds to the next step, the search of the existing literature (the first step, Ley explains, is the concept of the idea).”¹⁹ Ley searched the existing literature back to the beginning of the idea for the reader and explains the idea in terms that people can understand. He dispels myths and explains their origins. Historian, researcher, teacher, rocket scientist, and book collector, Willy Ley was a genius at not flaunting his genius, but rather, explaining science and the science of ideas to the world.

Willy Ley died of a heart attack at his home in Queens, New York, on 24 June 1969.

The Willy Ley Memorial Collection at the University of Alabama in Huntsville

Dr. Frederick I. Ordway III was contacted by Mrs. Olga Ley after the death of Willy Ley to obtain advice about the huge book collection. Ordway, who had been a neighbor to the Leys in New York, but now lived in Huntsville, Alabama, advised Mrs. Ley to sell the collection as a whole, rather than piecemeal it to book dealers.²⁰ An amount of \$12,000 was agreed upon and the collection of about 5,000 book and journals was shipped to Alabama. The original bill of lading from Allied Van Lines is in the collection, and it lists 175 cartons of books weighing about 8,000 pounds.

The University of Alabama in Huntsville was a fledgling university and needed the books, so this collection was used extensively by students and faculty in the early days. A complete inventory was made and that original inventory is still in the UAH Archives. The books and journals are cataloged and can be found in the UAH Library catalog by searching using the keywords Willy Ley.

An extensive bibliography of the works by Willy Ley was created by Jean Perreault, former library director and archivist. This list is available on the UAH Library website. The works that are owned by UAH are indicated by a system created by Mr. Perreault.

A formal dedication for the Willy Ley Memorial Collection was held in 1970. The dedication was well attended, with Mrs. Ley flying in from New York.



Figure 5-12: Frederick I. Ordway III, Olga Ley, Wernher von Braun, at the dedication of the Willy Ley Memorial Collection, Huntsville, Alabama, 1971. Credit: UAH Archives.



Figure 5-13: The author and Mark Kahn, National Air and Space Archives, 2003. Credit: author's personal collection.

Later, the collection would be moved to the Archives Department of the University of Alabama in Huntsville. The Lease Sale Agreement for the collection states that

the University agrees that it will organize the collection, assure its widest possible and most professional use, and foster energetically the broad dissemination of the information pertaining to its existence and contents to the scientific, engineering, historical, literary, documentary and other communities in the United States and abroad.

The Willy Ley Memorial Collection at the University of Alabama in Huntsville and the Willy Ley Collection at the Archives Division of the National Air and Space Museum are testimonials to Willy Ley—a great pioneer in rocketry and a book collector par excellence!

NATIONAL AIR AND SPACE ARCHIVES

Willy Ley Collection

Accession No. XXXX-0098



National Air and Space Museum
Smithsonian Institution
Washington, DC

Mark Kahn

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Figure 5-14: Finding Guide for Willy Ley Collection by Mark Kahn.
Credit: Smithsonian Institution.

Endnotes

- ¹ Sam Moskowitz, "The Willy Ley Story," *Worlds of Tomorrow*, Vol. 3, No. 7 (May 1966) pp 30–42.
- ² Willy Ley, *Exotic Zoology* (New York: Capricorn Books, 1959).
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- ⁴ Willy Ley, "How It All Began," *Space World* (July 1961), pp 23–25, 48–50, 52.
- ⁵ Willy Ley, 1961.
- ⁶ Willy Ley, "End of the Rocket Society, Part 1," *Astounding Science Fiction* (August 1943), Vol. XXXI, No. 6, pp. 64–78.
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- ¹³ Sam Moskowitz, 1966.
- ¹⁴ Willy Ley, Interview by Mike Wallace on *Night Beat*, 1957.
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- ¹⁶ Ward Botsford, Producer of recording *The Conquest of Space*, 1959.
- ¹⁷ Sam Moskowitz, 1966.
- ¹⁸ Willy Ley, *Dawn of Zoology* (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1968).
- ¹⁹ Willy Ley, 1968.
- ²⁰ Frederick I. Ordway, III, *Anniversary of Dr. Wernher von Braun's 100th Birthday* (UAH Library website, Archives Oral History Collections, 22 March 2012).