

Finding Aid to The HistoryMakers® Video Oral History with George Carruthers

Overview of the Collection

Repository:	The HistoryMakers®1900 S. Michigan Avenue Chicago, Illinois 60616 info@thehistorymakers.com www.thehistorymakers.com
Creator:	Carruthers, George R.
Title:	The HistoryMakers® Video Oral History Interview with George Carruthers,
Dates:	August 27, 2012 and July 27, 2004
Bulk Dates:	2004 and 2012
Physical Description:	8 Betacame SP videocassettes uncompressed MOV digital video files (3:30:49).
Abstract:	Astrophysicist George Carruthers (1939 -) has worked for the Naval Research Laboratory in Washington, D.C., where his work has focused on far ultraviolet astronomy. His numerous inventions include one that was used in the Apollo 16 Mission, another that captured an ultraviolet image of Halley's Comet, and a camera that was used in the Space Shuttle Mission. Carruthers was interviewed by The HistoryMakers® on August 27, 2012 and July 27, 2004, in Washington, District of Columbia. This collection is comprised of the original video footage of the interview.
Identification:	A2004_112
Language:	The interview and records are in English.

Biographical Note by The HistoryMakers®

Astrophysicist George Robert Carruthers was born on October 1, 1939 in Cincinnati, Ohio. His father was a civil engineer and his mother worked for the U.S. Postal Service. The family lived in Milford, Ohio until Carruthers' father died suddenly and his mother moved the family back to her native Chicago. As a child, he enjoyed visiting Chicago museums, libraries, planetariums and was a

member of the Chicago Rocket Society and various science clubs. In 1957, Carruthers earned his high school diploma from Englewood High School in Chicago, also the same year the Russians launched the first Sputnik.

Carruthers attended the University of Illinois, earning his B.S. degree in aeronautical engineering in 1961. He also pursued his graduate work at the University of Illinois, earning his M.S. degree in nuclear engineering in 1962 and his Ph.D. in aeronautical and astronomical engineering in 1964. While conducting his graduate studies, Carruthers worked as a research and teaching assistant studying plasma and gases. In 1964, Carruthers began working for the Naval Research Laboratory in Washington, D.C. where his work focused on far ultraviolet astronomy. In 1969, the United States Patent office gave Carruthers credit for inventing the “Image Converter” – an instrument that detects electromagnetic radiation in short wave lengths – and in 1970 his invention recorded the first observation of molecular hydrogen in outer space. In 1972, Carruthers invented the first moon-based observatory, the far ultraviolet camera / spectrograph, which was used in the Apollo 16 mission.

In the 1980s, Carruthers helped create a program called the Science & Engineers Apprentice Program, which allowed high school students to spend a summer working with scientists at the Naval Research Laboratory. When, in 1986, Halley’s Comet passed Earth for the first time since 1910, one of Carruthers’ inventions captured an ultraviolet image of it. In 1991, he invented a camera that was used in the Space Shuttle Mission. Since 2002, Carruthers has taught a two-semester course in earth and space science at Howard University in Washington, D.C., an education initiative sponsored by a NASA Aerospace Workforce Development Grant.

Carruthers has been recognized by professional and academic organizations for his achievements. The Office of Naval Research honored him as a distinguished Lecturer for his achievements in the field of space science. He is also a recipient of the Arthur S. Flemming Award, the Warner Prize from the American Astronomical Society, and an Exceptional Scientific Achievement Medal from NASA. Carruthers was inducted into the National Inventors Hall of Fame for his contributions to aeronautical engineering.

George Carruthers was interviewed by *The HistoryMakers* on 08/26/2012.

Scope and Content

This life oral history interview with George Carruthers was conducted by Larry

Crowe and Racine Tucker Hamilton on August 27, 2012 and July 27, 2004, in Washington, District of Columbia, and was recorded on 8 Betacame SP videocassettes uncompressed MOV digital video files. Astrophysicist George Carruthers (1939 -) has worked for the Naval Research Laboratory in Washington, D.C., where his work has focused on far ultraviolet astronomy. His numerous inventions include one that was used in the Apollo 16 Mission, another that captured an ultraviolet image of Halley's Comet, and a camera that was used in the Space Shuttle Mission.

Restrictions

Restrictions on Access

Restrictions may be applied on a case-by-case basis at the discretion of The HistoryMakers®.

Restrictions on Use

All use of materials and use credits must be pre-approved by The HistoryMakers®. Appropriate credit must be given. Copyright is held by The HistoryMakers®.

Related Material

Information about the administrative functions involved in scheduling, researching, and producing the interview, as well as correspondence with the interview subject is stored electronically both on The HistoryMakers® server and in two databases maintained by The HistoryMakers®, though this information is not included in this finding aid.

Controlled Access Terms

This interview collection is indexed under the following controlled access subject terms.

Persons:

Carruthers, George R.

Crowe, Larry (Interviewer)

Hamilton, Racine Tucker (Interviewer)

Hickey, Matthew (Videographer)

Lane, Edgar Carey (Videographer)

Subjects:

African Americans--Interviews
Carruthers, George R.--Interviews

African American scientists--United States.

Organizations:

HistoryMakers® (Video oral history collection)

The HistoryMakers® African American Video Oral History Collection

Naval Research Laboratory (U.S.). Space Science Division

Occupations:

Astrophysicist

HistoryMakers® Category:

ScienceMakers

Administrative Information

Custodial History

Interview footage was recorded by The HistoryMakers®. All rights to the interview have been transferred to The HistoryMakers® by the interview subject through a signed interview release form. Signed interview release forms have been deposited with Jenner & Block, LLP, Chicago.

Preferred Citation

The HistoryMakers® Video Oral History Interview with George Carruthers, August 27, 2012 and July 27, 2004. The HistoryMakers® African American Video Oral History Collection, 1900 S. Michigan Avenue, Chicago, Illinois.

Processing Information

This interview collection was processed and encoded on 2/5/2020 by The HistoryMakers® staff. The finding aid was created adhering to the following standards: DACS, AACR2, and the Oral History Cataloging Manual (Matters 1995).

Other Finding Aid

A Microsoft Access contact database and a FileMaker Pro tracking database, both maintained by The HistoryMakers®, keep track of the administrative functions involved in scheduling, researching, and producing the interview.

Detailed Description of the Collection

Series I: Original Interview Footage

Video Oral History Interview with George Carruthers, Section
A2004_112_002_001, TRT: 1:29:57 2012/08/27

In this session of the interview, George Carruthers revisits his family background. He talks about his parents, Sophia Barbara Singley and George Archer Carruthers, and his siblings. His father, who was an engineer, encouraged Carruthers to focus on his mathematics classes in school. His father died when Carruthers was in the eighth grade

and his family moved from Cincinnati, Ohio to Chicago, Illinois, where he spent the remainder of his childhood. He describes his elementary and high school experience. Carruthers developed an early interest in astronomy and space science, and was strongly influenced by Buck Rogers comic books and the German scientist, Wernher von Braun.

African American families--Ohio.

African American engineers.

Education--Parent participation.

Childhood--Chicago (Ill.).

Rogers, Buck (Fictitious character).

Video Oral History Interview with George Carruthers, Section
A2004_112_002_002, TRT: 2:30:11 2012/08/27

George Carruthers describes the influence of German scientist, Wernher von Braun, and Russia's launch of Sputnik, in cementing his resolve to pursue a career in space science. Carruthers earned his Ph.D. degree in aeronautical and astronautical engineering at the University of Illinois in 1964, and then joined the Space Science Division of the U.S. Naval Research Laboratory in Washington, D.C. He talks about his most significant contributions to space science, including the image converter device that he developed for detecting electromagnetic radiation in short wavelengths, and the electrograph ultraviolet camera. He describes the applications of his inventions on the Apollo space mission, the Space Shuttle mission, for imaging cosmic bodies such as comets, and making the first observation of molecular hydrogen outside the Earth's atmosphere. Carruthers also talks about his involvement with NASA's Starlab, his science education and outreach efforts, and his role in the National Technical Association (NTA).

Von Braun, Wernher, 1912-1977.

Sputnik satellites--History.

Naval Research Laboratory (U.S.). Space Science Division.

United States. National Aeronautics and Space Administration. Educational topics.

National Technical Association (U.S.).

Video Oral History Interview with George Carruthers, Section
A2004_112_002_003, TRT: 3:30:43 2012/08/27

George Carruthers spent his career as a space scientist at the U.S. Naval Research Laboratory, where he made significant contributions towards space imaging on the Apollo and Space Shuttle missions. He also served as a part-time faculty member in the physics and astronomy department at Howard University, Center for the Study of Terrestrial and Extra Terrestrial Atmospheres and as an advisory board member of its . Carruthers describes his involvement with the Council of the Smithsonian Institution, the National Technical Association (NTA), and Science, Mathematics, Aerospace, Research and Technology, Inc (SMART). He emphasizes the importance of science education and outreach, explains his work on the Global Imaging Monitor of the Ionosphere (GIMI) and the High Resolution Airglow/Aurora Spectroscopy experiment, and describes the relevance of the International Space Station. Carruthers also reflects upon his career, his family, and his hopes and concerns for the African American community.

Naval Research Laboratory (U.S.). Space Science
Division.

Howard University. Department of Physics.

Smithsonian Institution.

High resolution spectroscopy.

International Space Station.

Video Oral History Interview with George Carruthers, Section
A2004_112_002_004, TRT: 4:14:40 2012/08/27

George Carruthers talks about the annual mathematics contest that is sponsored by the National Technical Association (NTA).

National Technical Association (U.S.).

Mathematics--Competitions--United States.

Video Oral History Interview with George Carruthers, Section
B2004_112_001_001, TRT: 0:30:53 2004/07/27

George R. Carruthers was born in Cincinnati, Ohio on October 1, 1939. His family lived in a community named

Madisonville until they moved to Milford, Ohio where they purchased a farm that included hogs, cows and produce. He attended McCosh Elementary school, which was located in a neighboring town in Mulberry, Ohio, until the beginning of eighth grade when his father died. Carruthers' mother sold the farm and moved the family to Chicago, Illinois to live with her family. Carruthers' parents encouraged his studies in math and astronomy. He was an average student with strong interests in astronomy and space flight. In Chicago, he met professional astrologers at the Adler Planetarium, visited museums such as the Museum of Science and Industry and became a member of the Chicago Rocket Society.

African American families--Ohio.

African American farmers--Milford (Ohio).

Astronomy--Study and teaching.

Chicago Rocket Society.

Video Oral History Interview with George Carruthers, Section B2004_112_001_001E, TRT:

Video Oral History Interview with George Carruthers, Section B2004_112_001_002, TRT: 0:30:10 2004/07/27

George Carruthers' family attended the Christian Science church in Chicago. Carruthers attended Englewood High School, where he conducted experiments in chemistry and physics and participated in science fairs held at the Museum of Science and Industry. In 1957, Carruthers began classes at the University of Illinois at Urbana-Champaign in Champaign, Illinois and graduated in 1961 with his B.S. degree in aeronautical engineering with minors in physics and astronomy. In 1962, he earned a master of science in nuclear engineering. In 1964, Carruthers earned a Ph.D. in aeronautical and astronomical engineering in addition to working as a research and teaching assistant. In 1964, Carruthers began work at the Naval Research Laboratory as an engineer and scientist, where he received the patent for the "Image Converter".

Christian Science churches--Chicago (Ill.).

Science fairs--United States.

University of Illinois at Urbana-Champaign.
Aerospace engineering--Study and teaching (Higher).
Image converters--Patents.

Video Oral History Interview with George Carruthers, Section
B2004_112_001_002E, TRT:

Video Oral History Interview with George Carruthers, Section
B2004_112_001_003, TRT: 0:30:35 2004/07/27

George Carruthers has made several contributions to space flight astronomy. In 1970, Carruthers made the first observation of molecular hydrogen in space utilizing the sounding rocket with one of his astronomical instruments. In 1972, Carruthers' Far Ultraviolet Camera/Spectrograph, the first moon-based observatory, was used in the Apollo XVI mission. In 1986, Carruthers was a co-investigator responsible for the instrument used to capture the ultra violet image of the 1986 Comet Halley. Carruthers trained Guion Stewart "Guy" Bluford on how to operate a space flight astronomy instrument used during the SS-39 mission in 1991. In the mid-1980s, Carruthers began the Science and Engineering Apprentice Program at the Naval Research Laboratory, which allows high school students to participate in an eight week summer program. Carruthers is involved in the National Technical Association, S.M.A.R.T. (Science Mathematical Aerospace Research and Technology) and teaches courses at Howard University.

Astronautics in astronomy--Technological innovations.

Vacuum ultraviolet spectroscopy.

Apollo 16 (Spacecraft).

Halley's comet.

Science and Engineering Apprenticeship Program.

Video Oral History Interview with George Carruthers, Section
B2004_112_001_003E, TRT:

Video Oral History Interview with George Carruthers, Section
B2004_112_001_004, TRT: 0:13:40 2004/07/27

George Carruthers provided insight on the aftermath of the 2003 Space Shuttle Columbia and the 1985 Space Shuttle Challenger crashes. Carruthers believes forming

collaborations is beneficial. Carruthers' two most publicized accomplishments are the first measurement of interstellar molecular hydrogen in 1970 and the Apollo XVI camera in 1972. Carruthers' advice for those interested in a career in astronomy or aeronautical engineering is to have an objective and a broad basis of learning to study math and science. Carruthers would like to be remembered as one of the earliest space scientists in the African American community. He would like his legacy to be his students. He feels that education and public outreach by all scientists and engineers should be a requirement to help others.

Columbia (Spacecraft)--Accidents.

Challenger (Spacecraft)--Accidents.

Interstellar molecules.

African American aerospace engineers.

Aerospace engineering--Vocational guidance.

Video Oral History Interview with George Carruthers, Section B2004_112_001_004E, TRT: