



Smithsonian Institution Archives

International Ultraviolet Explorer
Videohistory Collection, 1990

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Smithsonian Institution Archives
Washington, D.C.
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Collection Overview

Repository:	Smithsonian Institution Archives, Washington, D.C., osiaref@si.edu
Title:	International Ultraviolet Explorer Videohistory Collection
Identifier:	Record Unit 9543
Date:	1990
Extent:	4 videotapes (Reference copies). 7 digital .wmv files and .rm files (Reference copies).
Creator::	
Language:	English

Administrative Information

Preferred Citation

Smithsonian Institution Archives, Record Unit 9543, International Ultraviolet Explorer Videohistory Collection

Historical Note

The International Ultraviolet Explorer (IUE) geosynchronous satellite, launched in 1978, was the creation of diverse interests in Europe (European Space Agency), the United Kingdom (Scientific & Engineering Research Council), and the National Aeronautics and Space Administration's (NASA) Goddard Space Flight Center. It was, until the launch of the Hubble Space Telescope in April 1990, the only astronomical telescope working in orbit. Many notable discoveries emerged from the IUE, including the detection of sulfur in the nucleus of a comet, the observation of a massive hot halo of gas surrounding our galaxy, and the continuous monitoring of Supernova 1987A.

Key participants were Carol Ambruster, Albert Boggess, Yoji Kondo, and George Sonneborn. Charles Loomis, Lloyd Rawley, and Mario Perez assisted during the observing session. Carol Ambruster, assistant professor of astronomy and astrophysics at Villanova University was visiting IUE astronomer during the videohistory session. She used the IUE to detect activity of 10 million- and 100 million-year old stars. Ambruster received her Ph.D from the University of Pennsylvania in 1984. She held a number of teaching and research positions before arriving at Villanova in 1987, including a pre-doctoral research position at the Naval Research Laboratory in Washington, D.C., and was a post-doctoral research associate at the Joint Institute for Laboratory Astrophysics at the University of Colorado.

Albert Boggess was one of many architects of the IUE. He trained as an astronomer at the University of Michigan, and received his Ph.D in astronomy from there in 1954. He was appointed a fellow at the Applied Physics Laboratory at Johns Hopkins University in 1954 and a year later began work as a physicist at the Naval Research Laboratory. He remained there until 1958. From 1959 through 1973 he held head positions at Goddard Space Flight Center with the Interstellar Medium Section, the Astronomy Systems Branch, and the Advanced Systems Development Branch. He also participated in the Sounding

Rocket Program and the Orbital Astronomical Observatory. In 1983 Boggess was appointed associate director of science for the Space Telescope Sciences Directorate.

Yoji Kondo was appointed project scientist for the IUE in 1982 and in 1988 assumed additional responsibilities as the project scientist for the Extreme Ultraviolet Explorer (EUE) Satellite. He received a B.A. from Tokyo University of Foreign Studies in 1958, and a Ph.D. in astronomy from the University of Pennsylvania in 1965. He was an assistant professor of astronomy at the University of Pennsylvania until 1968, when he joined NASA's Johnson Space Center, Houston, Texas, as an astronomer. He became an astrophysicist for the Goddard Space Flight Center in 1978.

George Sonneborn joined the IUE program in January 1982 as a supervisor for telescope operations and thereafter held a series of technical management positions. He was eventually appointed project scientist for the EUE. Sonneborn received a Ph.D. in astronomy in 1980 from Ohio State University.

Charles Loomis and Lloyd Rawley were technical assistants during the recording of the IUE observing session; Mario Perez was the on-duty resident astronomer. Loomis received a B.S. in physics and astronomy from the University of Nebraska-Lincoln, researched old disk pulsating stars (type II Cepheids), and began as the telescope operator for the IUE in 1989. Rawley was in-training for a resident astronomer position. Perez received a Ph.D. in physics and astronomy from Brigham Young University and an M.S. in electrical engineering from Universidad Santa Maria in Valparaiso, Chile. Before becoming resident astronomer for the IUE in 1988, Perez was a research and teaching assistant at Brigham Young University, and held engineering positions for various Chilean agencies and observatories.

Introduction

The Smithsonian Videohistory Program, funded by the Alfred P. Sloan Foundation from 1986 until 1992, used video in historical research. Additional collections have been added since the grant project ended. Videohistory uses the video camera as a historical research tool to record moving visual information. Video works best in historical research when recording people at work in environments, explaining artifacts, demonstrating process, or in group discussion. The experimental program recorded projects that reflected the Institution's concern with the conduct of contemporary science and technology.

Smithsonian historians participated in the program to document visual aspects of their on-going historical research. Projects covered topics in the physical and biological sciences as well as in technological design and manufacture. To capture site, process, and interaction most effectively, projects were taped in offices, factories, quarries, laboratories, observatories, and museums. Resulting footage was duplicated, transcribed, and deposited in the Smithsonian Institution Archives for scholarship, education, and exhibition. The collection is open to qualified researchers.

Descriptive Entry

David H. DeVorkin, curator at the Smithsonian's National Air and Space Museum (NASM), interviewed scientists about the creation, design, manufacture, administration, and use of the IUE. Interviews took place on March 2 and 5, 1990, at the Goddard Space Flight Center in Greenbelt, Maryland. DeVorkin documented the IUE image processing lab and control center, recorded an observing session with a guest astronomer where data was collected and discussed, and examined specific pieces of equipment that formed the IUE. His general interest was in observational techniques and the effect of new technologies on astronomical data gathering.

This collection consists of two interview sessions, totalling approximately 6:40 hours of recordings and 185 pages of transcript.

Names and Subject Terms

This collection is indexed in the online catalog of the Smithsonian Institution under the following terms:

Subjects:

- Artificial satellites
- Astronomy
- Astrophysics
- Comets
- Interviews
- Oral history
- Science -- History
- Technology -- History
- Telescopes

Types of Materials:

- Transcripts
- Videotapes

Names:

- Armbruster, Carol
- Boggess, Albert
- DeVorkin, David H., 1944- , interviewer
- Goddard Space Flight Center
- IUE (Artificial satellite)
- Kondo, Yoji
- Sonneborn, George
- United States. National Aeronautics and Space Administration

Container Listing

Interviews

Interviews **Session 1: March 2, 1990**

Interviews In Building 21, Goddard Space Flight Center, featured George Sonneborn, Yoji Kondo, and Carol Armbruster, and documented data collection and analysis techniques, c. 1978-1990, including: development of IUE software packs and training manuals; scheduling IUE users; measurement of spectrum and steps in image processing; general telescope operations and calibration; steps in data reduction analysis; scientific research on IUE; selection of guest observers; observing program structure and finances; observing session. Visual documentation included: Cal Comp plots; Computer screen images of IUE data; visual tour of RDAF; control panels and computer screens in observing room.

Interviews Transcript, 1-109 pages, of videotape recording, 4 hours.

Interviews Recording of Interview: Total recording time: 4.0 hours

- Note:
- Original Masters: 12 Beta videotapes
 - Preservation Masters: 12 Motion jpeg 2000 and 12 mpeg digital files
 - Dubbing Masters: 3 U-Matic videotapes
 - Reference Copies: 2 VHS videotapes, 4 Windows Media Video and 4 Real Media digital files

Interviews **Session 2: March 5, 1990**

Interviews In Visitor Center Auditorium and Exhibit Hall, and in Building 14, Telescope Operations Control Center, Goddard Space Flight Center, featuring Albert Boggess, documented the history, administration, and technical aspects of IUE, c. 1945-1990, including: origins of IUE; role of Boggess and others; key people in astronomy group; administrative requirements; work with the Europeans and British; formation of Advisory Committee in 1969; feasibility and design; scientific problems; requirements for accuracy; scientific instrumentation; instrument fabrication; mechanical structure and materials; corporations involved; general operations of telescope and standard of performance. Visual documentation included: IUE model; detector; aperture plate; prisms; columnator mirrors; eschelle spectrograph; mechanism to convert eschelle spectrograph to low dispersion spectrograph; SEC Vidicon, Westinghouse design; SEC Vidicon, Galileo Company design; additional specialized structures; tour of TOCC.

Interviews Transcript, 1-76 pages, of videotape recording, 2 hours, 40 minutes.

Interviews Recording of Interview: Total recording time: 2.6 hours

Note:

- Original Masters: 8 Beta videotapes
- Preservation Masters: 8 Motion jpeg 2000 and 8 mpeg digital files
- Dubbing Masters: 3 U-Matic videotapes
- Reference Masters: 2 VHS videotapes, 3 Windows Media Video and 3 Real Media digital files