



Guide to the
Roger D. Arno Papers
PP14.01

NASA Ames History Archives
NASA Ames Research Center

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April D. Gage, April 2014

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Descriptive Summary

Title:

Roger D. Arno Papers

Collection Number:

PP14.01

Creator:

Arno, Roger D.

Dates:

Inclusive: 1966-2009

Extent:

Volume: .75 cubic feet, 1.49 GB (214 files)

Repository:

NASA Ames History Archives
Moffett Field, California 94035

Abstract:

This collection contains personal papers of Roger D. Arno, a retired NASA Ames Research Center engineer and artist, including portfolios, sketches, drawings, posters, artifacts, and optical media. The bulk of the collection comprises digital and paper copies of Arno's artwork, in the form of technical and astronomical illustrations representing engineering concepts, as well as editorial cartoons about NASA people and projects. Also present are Arno's memoirs about his career with NASA.

Administrative Information

Access:

Collection is open for research.

Languages and Scripts:

All records are in English.

Publication Rights:

Copyright does not apply to United States government records. For non-governmental material, researcher must contact the original creator.

Preferred Citation:

Expanded:

NASA Ames History Archives, NASA Ames Research Center. Moffett Field, California.

PP14.01, Roger D. Arno Papers, [Container number] : [Folder number]. [Identification of item]. [Date, if available].

Abbreviated:

NASA ARC. Roger D. Arno Papers, [Container number] : [Folder number]. [Identification of item]. [Date, if available].

Acquisition Information:

Donated by Roger D. Arno on January 30, February 13, and April 8, 2014.

Accrual of original watercolor of Martin A. "Marty" Knutson added to the collection (donated by Sarah Filsuf in January 2019; Accession 2019-003).

Accrual of materials produced by Arno (donated by Catherine Johnson in May 2019; Accession 2019-015)

Biographical History

Roger Arno's civil service career at NASA Ames Research Center spanned from 1966 to his retirement in 2000, after which he continued to work as a consultant for another decade. Unusually, Arno worked as both engineer and artist, dual roles that proved to be complementary. As an engineer, Arno supported many research and design projects (proposed and actual) that were related to manned, unmanned, and biological research missions. As an artist, he illustrated numerous engineering and design concepts and created outreach materials. His artwork ranged from precise computer-aided designs and detailed illustrations of elaborate scenes, to logo art and animations. In the 1960s and 1970s, Arno's designs were rendered by hand, mainly in the form of pencil or pen and ink drawings. Later, the majority were executed by computer, with increasing sophistication as design software matured. Ever the commentator, Arno combined his artistic ability with a healthy sense of humor to provide amusing sketches of colleagues and projects, as well as frank, sometimes acerbic, editorial commentary about NASA.

In January 1966, Clarence "Sy" Syvertson hired Arno to join NASA's Mission Analysis Division (MAD) created by Alfred Eggers. In this role, Arno's efforts included advanced mission planning and researching space power systems. He used his skill as an artist to illustrate aspects of his research and poke some fun at what he saw as misguided activities or questionable decisions. He also was tasked with putting together special occasion cartoons and roasts. In this first year with the MAD, Arno also pursued advanced coursework at Santa Clara University, earning a Master of Science in Mechanical Engineering by 1967. He worked in the MAD until it was dissolved in the 1970s (circa 1975).

In the next decade, his work focused on Earth resource research and applications, mainly remote sensing land resource surveys in which data were collected by aircraft and satellite, and analyzed with computers, rather than the traditional process of reviewing photographs by hand. He also created outreach materials, such as an unofficial comic-book-type booklet to educate forestry service units about remote sensing and a sketch of an earth resources (ER-2) aircraft. By mid decade in 1976, Arno was honored with an assignment to visually document the Apollo Soyuz Recovery Mission for NASA's art program.

Arno spent the 1980s supporting NASA's Space Station Biological Research Program (SSBRP) development activities, by planning out how to design and implement an animal research facility on an international space station. Guiding the development of specifications, hardware, and systems for this ambitious effort proved both rewarding and challenging, but ended in disappointment when the program was ultimately cancelled. Arno produced a great deal of artwork at this time presenting, among other things, various life sciences accommodation hardware scenarios. He used traditional and electronic media to create visual representations ranging from painterly colored pencil drawings to precise schematics. Throughout the process, Arno provided a running commentary with editorial cartoons. He used these to vent his frustrations over complicated reporting structures, reorganizations, and astronaut objections to perceived smells and vibration of onboard animal research facilities. He also produced comical sketches, such as personifications of research animals as suburbanites going about their daily routines, sometimes complaining about the astronauts.

In the 1990s, Arno supported mission concept development and associated proposals for a wide variety of subjects, from planetary landers and micro satellites to sample handling facilities. Notably, Arno supported the proposal effort for Lunar Prospector, which won the honor of being the first of NASA's Discovery Missions. Arno's computer graphic designs evolved and matured during this decade, as he continued to master a procession of increasingly sophisticated design and animation software tools.

Arno retired in 2000 but was soon asked to return and assist with various efforts as a consultant, most recently contributing to the successful proposal for another mission to the Moon, the Lunar Crater Observation and Sensing Satellite (LCROSS). After the mission was selected, Arno remained on the LCROSS team and supported the mission's outreach efforts by producing logos, posters, illustrations, and computer animations.

Sources Consulted

NASA Ames History Archives, NASA Ames Research Center. Moffett Field, California.
PP14.01, Roger D. Arno Papers, 1 : 1. Arno, Roger, n.d., ca. 2014. *NASA -- Ames Research Center: Excellence in Pursuit of Identity, A Personal Perspective.*

Scope and Content

The bulk of this collection comprises nearly forty years of Roger Arno's artwork, primarily in the form of computer graphic designs and copies of hand drawn editorial cartoons. Optical media in the collection contain an assemblage of his born digital graphic designs including mission concept and astronomical illustrations of scenes involving manned planetary exploration, space vehicles, satellites, hardware systems, and proposal cover art, as well as animations of a "Free Flyer" heavy spacecraft and LCROSS mission visualizations, showing launch, spacecraft separation, orbit, reentry (FFH), and lunar impact (LCROSS). The disks also contain digital copies of his cartoons, hand drawn illustrations, and a few photographs of Arno and others, such as astronaut Alfred Worden and Hollywood film producer and director James Cameron. The born digital contents show a wide range of works that were created from the 1980s to the 2000s with a progression of design software tools.

Also present are portfolios compiled by Arno, containing his memoirs and printed copies of selected artwork and cartoons. Though most were assembled to present his work products and perspectives over the decades, one is as an example of the many retirement booklets Arno gave to friends and colleagues when they left Ames. These portfolios roughly follow the stages of Arno's career, with duplication of some material across them.

In addition to the portfolios are a few sets of original drawings along with photographic reproductions of them. From these, one can see a sequence of methods Arno used to illustrate concepts by hand. For example, there are two drawings of a female astronaut working in a life sciences module. One is a draft pencil sketch and the other is a brightly-colored version of the composition in watercolor, pen, and ink. Another set includes a pen and ink drawing of a scene, a reproduction of the drawing with printed text labels pasted on it, and a reproduction of the drawing and paste-up, colored in cool tones.

The collection also includes objects Arno designed, such as mission memorabilia, and three publications, including a children's book entitled "The Story of Space & Rockets," a book about the ER-2 flight and observation capabilities created for pilot Marty Knutson, and a selection of Arno's pencil sketches of non-NASA subjects with a personal introduction. Finally, colleague Catherine "Caye" Johnson's copies of retirement booklets and other printed compilations of Arno's cartoons and commentary that he distributed over the years were added to the collection. Some of these include Johnson's comments about individuals and topics covered in some of the cartoons.

The main body of Arno's sketches and graphic designs in this collection provides a glimpse into how artwork was produced for NASA Ames for nearly half a century. The works embody a historical progression of techniques from hand illustrations to computer-aided drawings, created using increasingly sophisticated software tools. Arno's memoirs provide a summary of his career as engineer and artist at Ames in his own words. From these and his editorial cartoons, one can see the frankness and frivolity of the man as he reveals perspectives not so easily found in official records.

Formats: Joint Photographic Experts Group (JPEG), Portable Document Format (PDF), QuickTime Movie (MOV).

System of Arrangement

These records are arranged by format, with paper records first, followed by original artwork, optical media, posters, and artifacts. The contents of the optical media are in their original order.

Processing Information

Digital files were retrieved from the "Arno Space Art" and "LCROSS and Free Flyer Highlights..." CD-R disks during processing, and access copies were created. Among these, for accessibility and stability, images were converted to JPEG format, documents and presentations were converted to PDF format, missing file extensions were appended, and nonconforming operating system control characters were removed from filenames. Content on the "LCROSS" DVD was locked, so a disk image could not be created, but this is not a unique disk. Additional information is filed under collection number pp1401.

Other Finding Aids

File structures for the optical media are detailed in a supplemental finding aid filed under collection number pp1401.

Metadata for all digital material is filed under collection number pp1401.

Indexing Terms

The following terms may be used to index this collection.

Corporate Name

Ames Research Center

National Aeronautics and Space Administration. Mission Analysis Division

Personal Name

Arno, Roger D.

Bauer, Ethel H.

Beggs, James M.

Givens, John J.

Goldin, Daniel Saul, 1940-

Hubbard, G. Scott, 1948-

Klein, Harold P.

Knudson, Martin A.

Mark, Hans M.

Souza, Kenneth Allen

Worden, Al, 1932-2020

Subjects

Ames Research Center--Art collections

Animals in space

Apollo Soyuz Test Project

Astronomy in art

Biological Facility Research Project

Centrifuges

Exobiology

International Space Station

Lunar CRater Observation and Sensing Satellite (Spacecraft)

Lunar Prospector (Spacecraft)

Outer space in art

Remote sensing

Space Station Biological Research Project

Space vehicles in art

Separated Material

None.

Related Collections

PP14.01 Roger D. Arno Papers supplemental finding aid: File directory structure
ART1387: Artifacts Collection, Artwork Series
AFS8000.5-LCROSS: LCROSS Project Collection, 2007-2010

Container List

Box Folder Folder Title

- | Box | Folder | Folder Title |
|-----|--------|---|
| 1 | 1 | "NASA Ames Research Center: Excellence in Pursuit of Identity, A Personal Perspective." Portfolio of Arno's memoirs and work, with reproductions of his editorial cartoons (subjects include centers competing with each other, project development, NASA management, Daniel S. Goldin, and G. Scott Hubbard), artwork, and graphic designs (e.g., proposal cover art and hardware systems). |
| | 2 | "Career Memories." Portfolio with Arno's personal observations about NASA, editorial cartoons (subjects include Mission Analysis Division, Harold "Chuck" Klein, Hans Mark, centrifuge facility, project funding, space station life science program planning, faster/better/cheaper, Biological Facility Research Project, and project development), reproductions of work samples, artwork, and graphic designs (e.g., hardware and sample NASA logos). |
| | 3 | "Auxiliary Power." Digital copy of a notebook of Arno's work analyzing characteristics of power systems as applied to space missions when he worked in NASA's Mission Analysis Division. (Reformatted original. Selected pages scanned, not entire notebook.) |
| | 4 | "Pixel Man Meets the Forest Ranger." Digital copy of a cartoon booklet created by Arno to educate forestry service units about remote sensing. (Reformatted photocopy.) |
| | 5 | "Space Station Life Sciences (The First Decade), Astrobiology, Apollo-Soyuz." Portfolio that includes originals and reproductions of editorial cartoons (subjects include space station life science program planning, centrifuge facility, Albert A. Gore, Kenneth A. Souza), organizational and functional charts, and draft Astrobiology Laboratory logos. |
| | 6 | "Retirement Memories for Ethel Bauer." Contains reproductions of Arno's editorial cartoons and commentary mainly revolving around space station life science project planning (subjects include Centrifuge Facility Project, animal research, rats, project requirements/planning/funding, Biological Facility Research Project, and James M. Beggs), news clippings, and space station and hardware artwork. |

- 7 "Mars Mission Proposals, Advanced Mission Proposals." Portfolio with reproductions of Arno's proposal graphic designs (e.g., proposal covers and hardware in Martian landscapes).
- 8 "Mars Attracts." Handmade booklet, mainly of Arno's graphic designs of Mars mission hardware.
- 9 "Lunar Base Analysis for Movie Plan by an Industrial Light and Magic Person." Includes a discussion of operational concepts and energy challenges, example staffing levels, space exploration terms, and graphics depicting various lunar mission scenarios.
- 10 "LCROSS, Lunar Prospector, Polar Night, Management Mish-Mash." Portfolio with material designed by Arno, including reproductions of LCROSS mission posters, graphics, brochure, and designs for hats and t-shirts. Miscellaneous editorial cartoons (subjects include Martin A. "Marty" Knutson, Landsat, ER-2 aircraft, remote sensing, Mission Analysis Division, Mayflower Society).
- 11 "High Altitude Perspective" NASA SP-427. Booklet about the ER-2 flight and observation capabilities that was primarily designed by Arno.
- 12 "Roger Arno Draws." Soft cover booklet containing a selection of reproductions of Arno's pencil sketches of non-NASA subjects. Includes a personal introduction.
- 13 "The Story of Space & Rockets." Softcover children's book by Arno, created circa 1978.
- 14 Artwork depicting scenes of astronauts working in a space station life science module. Originals and reproductions.
- 14a "Marty Knudson Released to the Wild." Watercolor on board. 1997. Signed and dated by the artist.
- 15 "Arno Space Art" CD-R. Contains Arno's graphic designs, animations, and digital copies of his hand drawn cartoons.
- 16 "LCROSS and Free Flyer Highlights (Life Science) Animations; Mission Illustrations" CD-R. Contains Arno's "Free Flyer" heavy spacecraft and LCROSS mission animations.
- 17 "Lunar Crater Observation and Sensing Satellite (LCROSS)" DVD. Includes "Water on the Moon" music video by John Marmie and Jeff Petro and "A First Step in the Return to the Moon" by the NASA Ames Video Production Group.
- 18 Posters. Subjects include the Ames Christmas Party, Interface Region Imaging Spectrograph (IRIS), and LCROSS.
- 1A 1 "Retirement Memories for Ethel Bauer." Catherine (Caye) Johnson's annotated copy.
- 2 Retirement book for John Givens. Caye Johnson's copy.
- 3 "Career Memories (It Takes A Vision)." Caye Johnson's copy.
- 4 "NASA Schizophrenic Management Handbook." Caye Johnson's copy.

- 5 "Rodent Review, Friday, March 30, 1990 (Journal of Rattus Incarceratus)."
Caye Johnson's copy.
- 2 LCROSS View-Master Reel and Viewer. The reel contains three-dimensional
LCROSS spacecraft graphics designed by Arno.
- 2 NASA Pins. Includes six NASA project pins and an Ames anniversary pin
designed by Arno.