

# HOUSTON HISTORY

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# The Right Place—Houston Makes History

by Jennifer Ross-Nazzal

## Notes

<sup>1</sup> Robert Gilruth, interview by Martin Collins and David DeVorkin, 2 October 1986, The Glennan-Webb-Seamans Project for Research in Space History, National Air and Space Museum, <http://www.nasm.si.edu/research/dsh/TRANSCPT/GILRUTH4.HTM>.

<sup>2</sup> Alan B. Kehlet, interview by author, San Jose, California, 30 September 2005, NASA Headquarters NACA Oral History Project, JSC History Collection at UHCL.

<sup>3</sup> Jack A. Kinzler, interview by Robert Merrifield, 31 October 1967, Merrifield Interviews, JSC History Collection at UHCL.

<sup>4</sup> *Space News Roundup*, 11 July 1962.

<sup>5</sup> William A. Parker, interview by Robert Merrifield, 16 May 1967, Merrifield Interviews, JSC History Collection, University of Houston-Clear Lake, Houston, Texas.

<sup>6</sup> Joseph P. Allen, interview by author, Houston, Texas, 28 January 2003, JSC Oral History Project, JSC History Collection, University of Houston-Clear Lake, Houston, Texas.

<sup>7</sup> *Roundup*, 31 August 1973.

<sup>8</sup> Quoted in Edward C. Ezell and Linda N. Ezell, *The Partnership: A History of the Apollo-Soyuz Test Project*, The NASA History Series (Washington, DC: NASA, 1978), 330.

<sup>9</sup> Ivy Hooks, interview by Lauren Kata, 9 April 2003, Transcript, Society of Women Engineers Oral History Project, <http://archives.swe.org/swewomen/profiles/hooks.aspx>.

# The First Days in Houston

by Burton Chapman

<sup>1</sup>“Man on the moon: Kennedy speech ignited the dream”, 25 May 2001

<http://archives.cnn.com/2001/TECH/space/05/25/kennedy.moon/>.

<sup>2</sup> Hershel Rich, personal interview, 10 June 2005.

<sup>3</sup> Felton West, “JFK Tours 2 Space Facilities,” *The Houston Post* 12 Sept. 1962

A1.

<sup>4</sup> Henry Dethloff, *Suddenly Tomorrow Came... A History of the Johnson Space*

*Center* (Houston: The NASA History Series Lyndon B. Johnson Space Center, 1993) 46-

47.

<sup>5</sup> Warren Burket “Kennedy Pleased With Houston Space Briefing,” *The Houston*

*Chronicle* 13 Sept. 1962. A1

<sup>6</sup> Dethloff 74

<sup>7</sup> Hershel Rich, personal interview, 10 June 2005

<sup>8</sup> “The Gragg Building” 18 June 2007

<http://www.houstontx.gov/parks/graggflash.html>

<sup>9</sup> Sam Roberts, phone interview with the author, 9 April 2008.

<sup>10</sup> “About Us” [www.houstonpbs.org](http://www.houstonpbs.org) 2 April 2008

# Owls in Space: Rice University's Connections to NASA Johnson Space Center

by Jessica A. Cannon

<sup>1</sup> See the text of Kennedy's speech available online at the Kennedy Presidential Library website: <http://www.jfklibrary.org/Historical+Resources/Archives/Reference+Desk/Speeches/JFK/003POF03SpaceEffort09121962.htm> (accessed April 30, 2008). Kennedy first announced the United States should aim to land a man on the Moon and return him safely at a speech before Congress on May 25, 1961.

<sup>2</sup> Francelle Pruitt has written an article detailing the role of Congressman Albert Thomas in bringing the Manned Spacecraft Center to Houston, as well as highlighting some of his connections to Rice and Vice President Lyndon Johnson that aided Thomas in seeing his plan through to completion. See Francelle Pruitt, "Congressman Albert Thomas and NASA's Coming to Houston: A Study in Legislative Effectiveness, 1936-1966," in *Southwestern Historical Quarterly* 55 (April 2002), 583-614. Melissa Kean also details this story in her dissertation "'At a Most Uncomfortable Speed': The Desegregation of the South's Private Universities, 1945-1964" (Ph.D. diss., Rice University, 2000). See also: Interview with Malcolm Lovett (January 21, 1971), Center History Discussions- Site Acquisition, Box 3, Merrifield Transcripts, Johnson Space Center History Collection at University of Houston-Clear Lake (hereinafter noted as JSCHC); Letter from James Webb to George R. Brown dated February 23, 1962, Apollo Chronological Files, Box 062-62, JSCHC; and copy of a letter from George R. Brown and Rice Universities attorneys to James Webb, January 23, 1962, in Box 9 Folder 3, Rice University Carey Croneis Office Records (Provost, Acting President, Chancellor), 1950-1972, Woodson Research Center, Fondren Library, Rice University (hereinafter cited as WRC). Also see Henry C. Dethloff, *Suddenly Tomorrow Came...A History of the Johnson Space Center* (Houston, 1993), 32-33, 37-51, also available online at: [http://www.jsc.nasa.gov/history/suddenly\\_tomorrow/suddenly.htm](http://www.jsc.nasa.gov/history/suddenly_tomorrow/suddenly.htm) (accessed April 30, 2008).

<sup>3</sup> NASA Release #61-207 dated September 19, 1961, in Box 9 folder 3, Rice University Carey Croneis Office Records (Provost, Acting President, Chancellor), 1950-1972, WRC. See also "NASA To Build Space Center On Clear Lake," section 1 page 1, and "Space Center Here Means New Era In Science and Progress for Area," section 3 page 2 both in the September 20, 1961, edition of the *Houston Post*. The *Post* ran articles about the MSC for several days, including a special profile on Albert Thomas (section 2 page 1, September 24, 1961) and a write-up on the new center director Robert Gilruth (section 1 page 1, September 24, 1961).

<sup>4</sup> Interview with Martin A. Byrnes, Center History Discussions-Center Operations Management, Box 1, Merrifield Transcripts, JSCHC, especially pages 5-7 and 18-26. For information on the football game see: "Record Crowd Sees Rice beat LSU, 16-3," section 3 page 1, *Houston Post*, September 24, 1961.

<sup>5</sup> Memo regarding the Manned Space Flight Center from Croneis to Members of the Board of Governors dated August 31, 1961; Letter from George R. Brown to James E. Webb dated June 20, 1961; Letter from Croneis to James Webb dated October 16, 1961; Notes and Agenda for Homer Newell's visit to Rice in a Memo to Croneis dated December 15, 1961, all found in Box 9 folder 3, Rice University Carey Croneis Office Records (Provost, Acting President, Chancellor), 1950-1972, WRC. See also letter from Pitzer to Homer Newell dated December 28, 1962, Box 11 folder 1, Rice University President Kenneth Pitzer Office Records, WRC.

<sup>6</sup> "Our Interest in Rice University," a memo "for the Administrator" written by Homer Newell dated November 14, 1961, Apollo Chronological Files, Box 062-52, JSCHC. See also "Conference Report: Visit to Rice University" by Newell dated December 19, 1961, Apollo Chronological Files, Box 062-54, JSCHC.

## Owls in Space: Rice University's Connections to NASA Johnson Space Center (cont.)

<sup>7</sup> "Rice University and Houston in the Space Age," Box 49 folder 9, Rice University President Kenneth Pitzer Office Records, WRC.

<sup>8</sup> It should be noted that although it was the first Department of Space Science, several other universities across the nation had coursework in what were aspects of space science; they simply taught them in the Physics Department. Quotations are from Rice University News Release, January 4, 1963, Box 11 folder 1, Rice University President Kenneth Pitzer Office Records, WRC. See also: Memo from Pitzer to J. Newton Rayzor dated December 14, 1962; Memo from Pitzer to Deans and Department Chairs dated January 2, 1963; and a letter written by A. J. Dessler dated January 1963, all found in Box 11 folder 1, Rice University President Kenneth Pitzer Office Records, WRC.

<sup>9</sup> Memo from Franz Brotzen to Pitzer, December 28, 1962, Box 11 folder 2; "Ground-Breaking for the Space Science and Technology Building, February 12, 1965," "Opening Remarks by Dr. Pitzer," and Note on Albert Thomas's announcement of NASA support for the building, all in Box 11 folder 6, Rice University President Kenneth Pitzer Office Records, WRC. "Support of Facilities Grant at Rice Institute, 4 February 1964," and "Review of Proposal #44-06-(014) Support of an Institute for Space Technology and Science at Rice University, 11 May 1964," both in Box 075-12, Apollo Lunar Science Chronological Files, JSCHC. John B. Boles, *A University So Conceived: A Brief History of Rice University*, third revised and expanded edition (Houston, 2006), 40.

<sup>10</sup> Rice University News Release, June 19, 1963, Box 11 folder 2, Rice University President Kenneth Pitzer Office Records, WRC. The news release lists O'Brien's and Laughlin's institutional affiliation as the "State University of Iowa," where they worked with James Van Allen. It is now referred to as the University of Iowa in Iowa City (as opposed to Iowa State University in Ames, Iowa). Interview with Brian J. O'Brien, May 3, 2008, by the author (hereinafter noted as Brian O'Brien Interview).

<sup>11</sup> One such student, James L. Burch (Rice Ph.D. 1968), is currently Vice President of the Southwest Research Institute and continues to study the magnetosphere, and one of his students, Dr. Patricia Reiff (Rice Ph.D. 1975) is now Professor in the Physics and Astronomy Department as well as head of the Rice Space Institute. Rice University News Release, January 6, 1964, Box 11 folder 2; Quarterly Report by B. J. O'Brien on the Satellite Techniques Laboratory, dated September 15, 1964, Box 11 folder 3; Memo from A. J. Dessler to K. S. Pitzer dated March 23, 1964, Box 11 folder 2; Report on Sammy 5 dated March 23, 1964, Box 11 folder 2 (quotation); and Memo from B. J. O'Brien to K. S. Pitzer on the "Flight of Sammy 1" dated January 24, 1964, Box 11 folder 2, all in the Rice University President Kenneth Pitzer Office Records, WRC. Information on Rice alumni is based on the author's interview with Brian O'Brien, as well as the following sources: James Leo Burch, "High-Latitude Satellite Observations of Electrons and Protons at 4000 KM" (Ph.D. diss., Rice University, 1968), and the Rice Space Institute website, <http://rsi.rice.edu/> (accessed May 5, 2008). Another alumnus from this era who has since returned to work at the RSI is Arthur Few.

<sup>12</sup> "2 Rice Satellites OKd: Owls I and II, Naturally" from the *Houston Post*, February 6, 1965; "New NASA Program Would Fund University Satellite Development," *Aviation Week and Space Technology*, October 19, 1964; "Rice is Given OK to Build Own Satellite," *Houston Chronicle*, February 4, 1965; and "Students do most of the work on Rice contract with NASA," *Product Engineering*, October 10, 1966. All news clippings can be found in the Owl Satellite Information File, WRC. See also: "The Rice University/NASA Owl Satellites," a summary by B. J. O'Brien dated February 1966, in the Owl Satellite Information File, WRC; "Proposal to the National Aeronautics and Space Administration from Rice University, Houston, Texas, for the Design, Construction and Use of Two Research Satellites Code-Named OWLs," Owl Satellite Information File, WRC; and Memo "Owl PERT chart" dated June 16, 1967, Box 11 folder 5, Rice University President Kenneth Pitzer Office Records, WRC. Also confirmed by Brian O'Brien Interview.

## Owls in Space: Rice University's Connections to NASA Johnson Space Center (cont.)

<sup>13</sup> An "Owl Spacecraft Schedule" dated August 9, 1967 shows the scheduled launch dates for Owl 1 as August of 1968 and September of 1968 for Owl 2. The schedule can be found in the Owl Satellite Information File, WRC. Independent inquiry by the author with Professor Patricia Reiff of the Rice Department of Physics and Astronomy, and with Brian J. O'Brien, confirmed that the Owls were never launched, but that the technology was quite advanced for the time and was later utilized on other projects.

<sup>14</sup> "Rice bio-satellite recently orbited," *Rice Thresher*, October 12, 1967, page 4 (available in the WRC).

<sup>15</sup> Information on the Aurora 1 is from Brian O'Brien Interview. O'Brien plans to publish his memoirs, "Cave, Moon, and Saving Spaceship Earth," in the future. See also: Vincent Beauchamp Wickwar, "Photometers on the Satellite Aurora 1" (Ph.D. diss., Rice University, 1968).

<sup>16</sup> Brian O'Brien Interview; "Apollo Lunar Experiments Package (ALSEP) Press Backgrounder, published by Bendix Aerospace Systems Division (Ann Arbor, Mich., 1969), pages 17–22; and "Apollo Lunar Surface Experiments Package (ALSEP) Familiarization Package Handout, May 1970 (Prepared for MSC by Bendix), page 2. Both ALSEP documents are available in electronic format from the Johnson Space Center History Office. Additional information on the specific Apollo missions and their ALSEP packages can be found at (accessed May 5, 2008): <http://nssdc.gsfc.nasa.gov/nmc/experimentDisplay.do?id=1969-099C-05> (SIDE); <http://nssdc.gsfc.nasa.gov/nmc/experimentDisplay.do?id=1969-059C-05> (DDE); <http://nssdc.gsfc.nasa.gov/nmc/experimentDisplay.do?id=1971-008C-08> (CPLEE).

<sup>17</sup> Brian O'Brien Interview. Curt Michel, a professor at Rice in 1963 and again after 1969, was a scientist-astronaut at the MSC from 1964 to 1969.

<sup>18</sup> "MSC News Release," stamped March 4, 1968, in Box 47 folder 12, Rice University President Kenneth Pitzer Office Records, WRC; and "Planetary institute to end mansion stay," a clipping from the Webster (TX) *Citizen*, March 20, 1990, located in the Lunar Science Institute Information File, WRC.

<sup>19</sup> Letter Exchange between Shelby Thompson (NASA) and Pitzer, July–August 1964, Box 47 folder 11, Rice University President Kenneth Pitzer Office Records, WRC; Interview with Charles M. Grant, Jr., Center History Discussions- Technical Information, Box 2, Merrifield Transcripts, JSCHC.

<sup>20</sup> "Voyager I focus of space lecture," Houston *Chronicle*, January 15, 1981, "Weekend Preview" section page 5, and "Rice chairman, graduate on hand to study data, results from probe," Houston *Post*, August 23, 1989, page 1; both clippings are found in the Dessler Information File, WRC.

<sup>21</sup> The Collection is currently located at the University of Houston-Clear Lake. *Guide to the Johnson Space Center History Archive (1952–1980) in the Woodson Research Center, Rice University*, page 1, and copy of the announcement on the Woodson Research Center homepage detailing the closure of the collection beginning March 31, 2000, both in the Non-accessioned manuscript collections of the Johnson Space Center History Archive, WRC.

<sup>22</sup> "Rice, NASA Team Up to Advance Nanotech Frontier," Rice University Press Release, October 15, 1998, available at: <http://www.media.rice.edu/media/NewsBot.asp?MODE=VIEW&ID=356&SnID=2> (accessed April 30, 2008).

<sup>23</sup> "Rice alumna sets record in space," Rice University News, April 17, 2008, available at: <http://www.media.rice.edu/media/NewsBot.asp?MODE=VIEW&ID=10891&SnID=692238672> (accessed April 30, 2008).

# Mutually Beneficial: University of Houston – Clear Lake and NASA Johnson Space Center

by Shelly Henley Kelly

<sup>1</sup> UHCL Oral History Project. Interview with Philip G. Hoffman, July 3, 2005. JSC Oral History Project. Interview with Paul Purser, February 3, 1999.

<sup>2</sup> MSC Announcement 64-104. General Reference Box 1012, Center Series, JSC History Collection at UHCL.

<sup>3</sup> UH Archives. Letter of September 10, 1965 from Robert Gilruth to Philip Hoffman. Hoffman Papers, Box 9, Folder 6.

<sup>4</sup> Ibid, Hoffman to Gilruth, Sep 27, 1965.

<sup>5</sup> Ibid, Charles Jones to Philip Hoffman, October 26, 1965. For a more detailed examination of the founding of UHCL, please see *Building a University: A History of the University of Houston Clear Lake 1974 to the Present*, by Dr. Jonathan W. Zophy. Houston: Seascope Press, 2005.

<sup>6</sup> UHCL Archives. #1990-0002 UHCL. Chancellor (Neumann) Records, Box 1, Folder 4.

<sup>7</sup> UHCL Archives. “Purpose and Philosophy,” UH/CLC Bulletin 1974-1975.

<sup>8</sup> UHCL Oral History Project. Charles McKay interview, May 16, 2006.

<sup>9</sup> UHCL Archives. #1990-0002 UHCL. Chancellor (Neumann) Records, Box 73, Folder 33 and Box 74, Folders 1-2.

<sup>10</sup> UHCL Archives. Memo to Alfred R. Neumann from James C. Coomer, May 5, 1982. Vertical File “Johnson (Lyndon B.) Space Center.”

<sup>11</sup> UHCL Archives. #1990-0002 UHCL. Chancellor (Neumann) Records, Box 52, Folder 15.

<sup>12</sup> UHCL Archives. #1990-0002 UHCL. Chancellor (Neumann) Records, Box 20, Folder 11.

<sup>13</sup> UHCL Oral History Project, Louis Rodriguez interview, May 2, 2005.

<sup>14</sup> UHCL Archives, #1990-0002 UHCL. Chancellor (Neumann) Records, Box 52.

<sup>15</sup> UHCL Archives, Vertical File, “Developmental Arts Building.”

<sup>16</sup> UHCL Oral History Project. Thomas Stauffer interview, April 29, 2005.

<sup>17</sup> UHCL Archives. #1999-0013 UHCL. Chancellor (Stauffer) Records, Box 7, Folder 20.

<sup>18</sup> UHCL Archives. Vertical File, “The Artist and the Space Shuttle.” Dr. Stauffer’s title of Chancellor was changed to President in 1986.

<sup>19</sup> UHCL Archives. #1999-0013 UHCL. Chancellor (Stauffer) Records, Box 7, Folder 19.

<sup>20</sup> UHCL Archives. #2001-0003 UHCL. Chancellor (Stauffer) Records, Box 3, Folder 1. Also see Justification for Non-Competitive Procurement, FA 83-87. Loftus Papers Box 34, Center Series, JSC History Collection at UHCL.

<sup>21</sup> UHCL Oral History Project. Charles McKay interview, May 16, 2006.

<sup>22</sup> “Research Institute links UH-CL with NASA.” *UHCLidian*, October 15, 1986.

<sup>23</sup> “UH-CL, NASA create SERC here.” *UHCLidian*, March 4, 1987.

<sup>24</sup> UHCL Oral History Project. Thomas Stauffer interview, April 29, 2005. UHCL Archives. #1999-0007 UHCL. Chancellor (Stauffer) Records, Box 14.

# **The Moon Rocket**

by Jennifer Ross-Nazzal

## **Notes**

<sup>1</sup> Christopher C. Kraft to John Yardley, Telegraphic Message, 20 May 1976, Saturn V at JSC – Part I, JSC Digital Collections, JSC History Collection at UHCL.

<sup>2</sup> John E. Naugle to Kraft, 17 June 1977, Disposition of Residual Apollo Hardware, Saturn V at JSC – Part I, JSC Digital Collections, JSC History Collection at UHCL.

<sup>3</sup> *Roundup*, 16 September 1977.

<sup>4</sup> *Roundup*, 30 September 1977.

# Landmarks at Johnson Space Center

by Jennifer Ross-Nazzal

## Notes

<sup>1</sup> These are the dimensions of Chamber A. Aleck C. Bond, interview by Summer Chick Bergen, Houston, Texas, 25 August 1998, JSC Oral History Project, JSC History Collection at UHCL.

# A Home for Heroes—Timber Cove

by Rebecca Wright

## Notes

<sup>1</sup> Jack and Sylvia Kinzler and Art and Smitty Hinnners, interview by Rebecca Wright and Jennifer Ross-Nazzal, Houston, Texas, 7 August 2003, JSC History Office, Houston, Texas.

<sup>2</sup> Scott Carpenter and Kris Stoeber, *For Spacious Skies: The Uncommon Journey of a Mercury Astronaut* (New York: Harcourt, Inc., 2002), 309.

<sup>3</sup> James and Kim Kinzler and Doug Shows, 12 August 2003, interview by Jennifer Ross-Nazzal and Sandra Johnson, Houston, Texas, 12 August 2003, JSC History Office, Houston, Texas.

<sup>4</sup> Aleck and Tassie Bond and Bernie Goodwin, interview by Rebecca Wright and Jennifer Ross-Nazzal, Houston, Texas, 21 September 2003, JSC History Office, Houston, TX.

<sup>5</sup> Deborah Griffin, e-mail to author, 1 May 2008.

<sup>6</sup> Bond and Goodwin, interview.

<sup>7</sup> Kinzler and Shows, interview.

<sup>8</sup> Kinzler and Hinnners, interview.

<sup>9</sup> Cindy Evans and Deborah Griffin, conversation with author, Houston, Texas, 14 March 2008.

<sup>10</sup> Ibid.

<sup>11</sup> Deborah Griffin, e-mail to author, 2 May 2008.

# **Red, White, & Blue— U.S. Flag at Home on the Moon**

by Sandra L. Johnson

<sup>1</sup> Jack Kinzler, interview by Paul Rollins, January 16, 1998, CD, transcript, JSC Oral History Project, JSC History Collection, University of Houston-Clear Lake, University Archives, Houston, TX.

<sup>2</sup> Jack Kinzler, interview by Roy Neal, April 27, 1999, CD, transcript, JSC Oral History Project, JSC History Collection, University of Houston-Clear Lake, University Archives, Houston, TX.

<sup>3</sup> Jack Kinzler interview by Robert Merrifield, October 31, 1967, Oral History, CD, transcript, Merrifield MSC History Interviews, JSC History Collection, University of Houston-Clear Lake, University Archives, Houston, TX.

<sup>4</sup> Jack Kinzler interview, January 16, 1998.

<sup>5</sup> Ibid.

<sup>6</sup> Jack Kinzler interview, April 27, 1999.

<sup>7</sup> Anne M. Platoff, “Where No Flag Has Gone Before: Political and Technical Aspects of Placing a Flag on the Moon,” Johnson Space Center History Portal, NASA Johnson Space Center, <http://www.jsc.nasa.gov/history/flag/flag.htm>.

<sup>8</sup> Jack Kinzler, interview by Rebecca Wright, March 26, 2008, WAV, JSC History Office, Houston, TX.

<sup>9</sup> Ibid.

<sup>10</sup> Jack Kinzler interview, April 27, 1999.

# Legacy of the 35 New Guys

By Jennifer Ross-Nazzal

## Notes

<sup>1</sup> In fact, he received a telegram from his mother on January 18<sup>th</sup> that said, “Well done,” and then received the official nod from the space agency. *The Houston Post*, 1 February 1978.

<sup>2</sup> Richard O. Covey, interview by author, Houston, Texas, 1 November 2006, JSC Oral History Project, JSC History Collection at UHCL.

<sup>3</sup> Sally K. Ride, interview by Rebecca Wright, San Diego, California, 22 October 2002, JSC Oral History Project, JSC History Collection at UHCL.

<sup>4</sup> NASA Johnson Space Center News Release, JSC 78-03, 16 January 1978, Public Affairs Office, NASA Lyndon B. Johnson Space Center, Houston, TX.

<sup>5</sup> Ride, interview.

<sup>6</sup> “NASA Picks Six Women Astronauts with the Message; You’re Going a Long Way Baby,” *People*, 6 February 1978, 28-30, 35.

<sup>7</sup> *Roundup*, 3 February 1978.

<sup>8</sup> Mike Mullane, *Riding Rockets: The Outrageous Tales of a Space Shuttle Astronaut* (New York: Scribner, 2006), 28.

<sup>9</sup> Covey, interview.

<sup>10</sup> Frederick H. Hauck, interview by author, Bethesda, Maryland, 20 November 2003, JSC Oral History Project, JSC History Collection at UHCL.

<sup>11</sup> Kathryn D. Sullivan, interview by author, Columbus, Ohio, 10 May 2007, JSC Oral History Project, forthcoming.

<sup>12</sup> *The Houston Post*, 1 February 1978.

<sup>13</sup> Hauck, interview.

<sup>14</sup> John M. Fabian, interview by author, Houston, Texas, 10 February 2006, JSC Oral History Project, JSC History Collection at UHCL.

<sup>15</sup> Daniel C. Brandenstein, interview by Carol Butler, Kirkland, Washington, 19 January 1999, JSC Oral History Project, JSC History Collection at UHCL.

<sup>16</sup> Terry J. Hart, interview by author, Houston, Texas, 10 April 2003, JSC Oral History Project, JSC History Collection at UHCL.

<sup>17</sup> *Frederick (MD) News*, 20 May 1981.

<sup>18</sup> Fabian, interview.

<sup>19</sup> NASA Johnson Space Center News Release, JSC 82-023, 19 April 1982, Public Affairs Office, NASA Lyndon B. Johnson Space Center, Houston, TX.

<sup>20</sup> Ride, interview.

<sup>21</sup> *Ibid.*

## **Legacy of the 35 New Guys (cont.)**

<sup>22</sup> Guion S. Bluford, video interview, Washington, D.C., 31 July 2003, JSC History Office, Houston, Texas.

<sup>23</sup> Terry Hart left the agency in 1984, to return to AT&T.

<sup>24</sup> Hauck, interview.

<sup>25</sup> Kathryn D. Sullivan, interview by author, Columbus, Ohio, 12 March 2008, JSC Oral History Project, forthcoming.