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# **Suddenly, Tomorrow Came...**

A History of the Johnson Space Center

Henry C. Dethloff

**The NASA History Series**



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## Contents

Illustrations .....	iv
Foreword.....	viii
Preface and Acknowledgments.....	x
1 October 1957.....	1
2 The Commitment to Space.....	17
3 Houston - Texas - U.S.A. ....	35
4 Human Dimensions.....	53
5 Gemini: On Managing Spaceflight.....	77
6 The NASA Family .....	97
7 Precious Human Cargo .....	117
8 A Contractual Relationship.....	137
9 The Flight of Apollo .....	159
10 “After Apollo, What Next?” .....	187
11 Skylab to Shuttle .....	209
12 Lead Center.....	233
13 Space Business and JSC.....	257
14 Aspects of Shuttle Development.....	273
15 The Shuttle at Work .....	285
16 New Initiatives .....	307
17 Space Station Earth .....	329
Epilogue .....	349
MSC/JSC Directors.....	351
Reference Notes .....	353
Index .....	389
The NASA History Series.....	407

## *Illustrations*

### ***Figures***

1. Interim Facilities Leased as of August 1, 1962.....	47
2. Manned Spacecraft Center as of 1962 .....	66-67
3. A Chronicle of the Last Mercury Flight.....	68
4. Launch Vehicles.....	72
5. Manned Spacecraft Center Organization as of June 1963 .....	89
6. Manned Spacecraft Center Organization as of December 1964 .....	90
7. Apollo Program Government-Industry Functional Matrix.....	100
8. The Apollo Stack .....	145
9. Flight Operations Division Organization as of December 1962 .....	166
10. Flight Operations Directorate Organization as of January 1964 .....	167
11. Flight Control Division Organization as of March 1970 .....	168
12. Operations-oriented Divisions as of June 1968 .....	170
13. Johnson Space Center Organization as of March 1973 .....	212-213
14. Administration and Program Support Directorate Organization as of January 1971 .....	217
15. Shuttle Management Timeline, 1968 to 1982.....	228
16. Orbiter Project Office Organization as of 1973 .....	235
17. Johnson Space Center Organization as of January 1977 .....	244-245
18. Civil Service and Support Contractor Employment History .....	258
19. Shuttle and Space Station Compared .....	310
20. Johnson Space Center Organization as of March 1986 .....	322
21. Johnson Space Center Organization of April 1987 .....	323
22. Johnson Space Center Organization as of May 1988.....	324
23. Lunar Mission Profile.....	340
24. Mars Mission Profile .....	341
25. NASA Budget Trends, 1960 to 1990 .....	346
26. NASA Budget, 1959 to 1989.....	347

**Tables**

1. Johnson Space Center Buildings — Construction Costs and Size.....	50
2. Project Mercury Flight Data Summary .....	69
3. NASA Astronaut Selections, 1959 to 1969 .....	128
4. Major Apollo Subcontractors.....	147
5. NASA Budget and Personnel Status .....	151
6. NASA Budget Requests and Appropriations, FY 1959 to 1971.....	194
7. Science and Applications Directorate .....	219
8. Launch Capability, Launch Vehicle Cost and Performance Comparison.....	236
9. National Launch Vehicles .....	237
10. Requested and Authorized Apollo and Shuttle Budgets.....	240
11. Total NASA Awards to Business and Nonprofit Institutions in Texas .....	259
12. Distribution of JSC Procurements .....	267
13. Small Business and Minority Business Participation in JSC Procurement Activity .....	269
14. Geographical Distribution of JSC Procurement Excluding Intragovernmental Actions.....	270
15. Impact of the NASA Budget on JSC and Houston Area Economy.....	271
16. Comparative Shuttle and Apollo Launch Vehicle Launch Costs .....	286
17. Space Shuttle Missions in Brief, 1985 to 1986.....	290
18. The Shuttle in Flight, 1981 to 1989.....	302-303

**Photographs**

President Lyndon B. Johnson .....	18
The 1000-acre land parcel outside Houston, Texas .....	40
Congressman Olin E. “Tiger” Teague.....	41
Building 1, the Administration Building .....	49
1974 aerial view of Johnson Space Center .....	51
Mercury-Redstone 3 launch .....	54
Mercury-Redstone 4 launch .....	54
Astronaut John Glenn enters the “Friendship” spacecraft during rehearsal exercises...	55
Scott Carpenter’s launch aboard “Aurora 7” .....	56
Dr. Max A. Faget, Assistant Director for Engineering Development.....	62
Mercury-Atlas 9 .....	69
Gemini 3, launched March 23, 1965.....	92

The interior of Gemini 6.....	93
Astronaut Edward H. White in the microgravity of space.....	94
Gemini 10, launched July 18, 1966.....	94
Whitney Darrow, Jr. cartoon.....	95
AS-201 lift-off, Cape Kennedy, Florida, February 26, 1966.....	110
Donald K. “Deke” Slayton and George M. Low relax during the AS-202 unmanned flight in August 1966.....	111
AS-204 astronauts died when an oxygen-enriched fire swept the interior of the spacecraft during preflight tests at Cape Kennedy.....	112
Astronaut Group I, April 1959.....	121
The Space Environment Simulation Laboratory.....	132
Mockup of the command module under construction by North American Aviation at Downey, California.....	139
Apollo 8 lunar flight marked a giant step toward NASA’s lunar landing.....	171
Apollo 9’s Earth-orbital mission of March 1969.....	172
Apollo 11 launch, July 16, 1969.....	175
George M. Low watches a television monitor during the lunar surface EVA.....	175
Flight Director Clifford E. Charlesworth and Eugene Kranz prepare for the change of shifts.....	176
Artist depictions of the lunar surface and a lunar landing.....	176
A view of Mission Control Center during Apollo 11 EVA.....	177
President Richard M. Nixon welcomes the Apollo 11 crew upon the completion of the historic mission.....	177
Apollo 11’s lunar module casts a long shadow upon the Moon and symbolically upon the future of Earth.....	178
A simple human footprint on the lunar surface.....	182
Neil Armstrong and Edwin Aldrin raise the flag.....	183
A gathering of Apollo 14 flight directors at Mission Control Center.....	199
The LM “Falcon” is photographed against the barren landscape during Apollo 15.....	200
David R. Scott photographed James B. Irwin as he worked on the lunar roving vehicle.....	200
Apollo 15 splashdown.....	201
The lunar surface viewed with a 35 mm stereo close-up camera.....	202
The Lunar Receiving Laboratory.....	202
Apollo 16, the fifth lunar landing in the Moon’s Descartes area.....	203
Final Apollo (17) lunar mission, December 13, 1972.....	203

Apollo 17 splashdown marking the end of the Apollo lunar programs .....	204
Apollo 17 view of Earth.....	206
Skylab launch, May 14, 1973 .....	210
Lady Bird Johnson and Center Director Chris Kraft during JSC dedication ceremonies ....	215
The Soviet Soyuz spacecraft photographed from the American Apollo spacecraft .....	221
The Apollo-Saturn hardware is transported by barge for display at JSC.....	222
The anechoic chamber at JSC.....	241
Astronauts trained to work in the weightless environment of space .....	250
An astronaut is tested in Chamber A of the Space Environment Simulation Laboratory ...	251
The Upper Atmosphere Research Satellite in the payload bay of the Earth-orbiting Shuttle <i>Discovery</i> .....	276
The Shuttle made its maiden voyage on April 12, 1981 .....	280
Astronaut George Nelson practices an EVA with a mockup of the MMU .....	292
Space Shuttle <i>Atlantis</i> blasts toward orbit on two powerful SRBs .....	296
January 28, 1986, <i>Challenger</i> lifted off.....	298
Photograph of the flames developing near the O-Ring on the SRB .....	298
The crew of STS 51-L.....	299
The nation deeply mourned the loss of the <i>Challenger</i> astronauts .....	300
Artist conceptions of new ideas: ACRV and Space Station robotics .....	313
STS-43 soars toward space to begin a 9-day mission .....	325
Space Center Houston .....	332
A mockup of the new Space Station .....	333
Earthrise! .....	349

*Foreword*  
by Donald K. Slayton

This history of Johnson Space Center (JSC) is a detailed chronicle of the U.S. space program with emphasis on humans in space and on the ground. It realistically balances the role of the highly visible astronaut with the mammoth supporting team who provide the nuts, bolts, and gas to keep the train on the track. It recognizes the early political and technical geniuses who had the vision and ability to create NASA and JSC and keep them expanding at a rapid pace. People like Jim Webb, who was unsurpassed in his ability to create political support and financing, and Bob Gilruth, his counterpart at the technical and operational level, were the real gems in the right place at the right time. They were the true progenitors of manned spaceflight.

This history progresses from when JSC was the Space Task Group, a small cadre of about 300 talented and dedicated ex-NACA and Canadian personnel, to the peak of the Apollo era, when JSC—then called the Manned Spacecraft Center—had thousands of personnel. Yet despite its explosive growth, it never lost its human touch or the “can-do” attitude of its roots.

NASA and JSC became internationally recognized as symbols of excellence both inside and outside government. The image of infallibility grew as we progressed through Mercury and Gemini with major victories and only minor hiccups. Bob Gilruth and his senior aides always knew space travel was risky, but it took the Apollo 1 fire to shock the rest of the world back to reality. I firmly believe that the ultimate total success of the complex Apollo program can be attributed to a large extent to the way the fire dramatically refocused our attention on our goals.

It was inevitable that the post-Apollo reset to near Earth orbit through Skylab, Apollo-Soyuz, and the Space Shuttle program would be anticlimactic for both the players and the spectators. For almost everyone in Houston, these programs, along with a space station, were high on the list of logical consolidation and expansion steps leading to Mars. Unfortunately, none of these logical steps had Apollo’s public appeal, so they suffered from disinterest both in the political arena and among the general public. The Shuttle remains a remarkable achievement, but throughout its development it suffered from the lack of a sense of urgency, which led to underfunding. Chris Kraft, Max Faget, Bob Thompson, Aaron Cohen, and other NASA and JSC leaders made this answer to a pilot’s prayer a remarkable political achievement when they brought the Shuttle on line with great difficulty.

The Shuttle has brought back some of the public appeal of space travel, primarily because of the size and variety of its crew and the possibility, however remote, that the average citizen might go into space. As usual, the manned aspect has created the catalyst for most forward thinking and planning of future space projects, both national and international. Space officials in what used to be the Soviet Union are enthusiastic about future joint missions to Mars based on the Apollo-Soyuz model. Our many international partners in the next undertaking of NASA and JSC, Space Station Freedom, are enthusiastic about it and dedicated to its success.

World events are catching up with the examples provided by the major manned space programs. Almost every astronaut and cosmonaut who circled planet Earth has observed that

*Suddenly, Tomorrow Came . . .*

from orbit there are no national borders visible on this beautiful globe. All those fortunate enough to view Earth from the Moon were impressed with its similarity to a spacecraft and by its remoteness and insignificance in the Universe. These observations by humans in space have had a profound effect on humans on Earth and provide a strong unifying force for international space exploration. So as tomorrow comes, people of the Earth will inevitably step into the Universe and become true space people—citizens of Mars, the Moon, Venus, and beyond. They will always be building on the achievements of Bob Gilruth and his colleagues at Johnson Space Center.

## *Preface and Acknowledgments*

by Henry C. Dethloff

The history of the Johnson Space Center focuses on an unusual slice of time and human affairs. It has been a time of great changes, the full impact of which are not yet evident. American history and that of humankind has been irrevocably affected by spaceflight. Space has generated new technology, new materials, and a new process of thought about the Earth and the human potential. This book has a beginning and an end, but the story continues, perhaps through all time.

Suddenly, a new tomorrow has come into being. In 1902 H.G. Wells observed that the past, “all that has been and is, is but the twilight of the dawn.” Today, because of the American space program, “the world is heavy with the promise of greater things.” Indeed, perhaps that day predicted by H.G. Wells has come to be: “when beings, beings who are now latent in our thoughts and hidden in our loins, shall stand upon the Earth as one stands upon a footstool, and shall laugh and reach out their hands amidst the stars.”

Each of us have been observers and to some extent participants in the exciting new dimensions of the human experience. As did the African drummers, mentioned in the text, who spread the message that a human was actually walking in space, most of us have heard of or witnessed on television and radio many of the events mentioned. I, for example, then stationed at Jacksonville Naval Air Station, made many flights “downrange” aboard Military Aircraft Transport planes from Cape Canaveral where the Army was testing the new Redstone rocket. I saw Sputnik I, and remember the disbelief, confusion, awe, fear, and wonderment associated with that event. The missile gap, President John F. Kennedy’s challenge to go to the Moon, President Lyndon B. Johnson, the Apollo lunar landing, and then Vietnam, the Shuttle, *Challenger*, and the subsequent uncertainties and ambivalence about spaceflight are a past that somehow persists in clinging to the present. I have admittedly written the narrative with a certain sense of involvement; and I expect that the reader will inevitably read with a similar sense of attachment and participation—and that is as it should be. For the most part we have been spectators rather than participants, and those things we have observed have been the externalities and the end product. What we have not been able to observe or understand is how these things came to be.

The story of manned spaceflight is the story of many diverse individuals, and of the collaboration of persons of many backgrounds and persuasions in what became a peacetime mobilization of American human and capital resources. It is a history of science, of engineering, of sacrifice, failures, and great achievement. Johnson Space Center and its personnel are central to the story of the National Aeronautics and Space Administration and manned spaceflight and to the inception of a new epoch in human history. This story seeks to explain how the space voyages, the lunar landing, Mercury, Gemini, Apollo, the Shuttle, and the Space Station came to be, and the role of Johnson Space Center in those developments.

I wish to particularly recognize Oran Nicks and David J. Norton, who provided special insights, direction, and moral support, and reviewed the manuscript as it progressed. Joey

Kuhlman, archivist at the Johnson Space Center History Office, was indispensable as both research assistant and project coordinator. Janet Kovacevich provided continuing counsel and support. Donald L. Hess, JSC History Coordinator and project director through most of the research and writing phase of the book, provided help, support, and direction in ways that I never fully understood or appreciated in that he did so without seeming to impose any constraints on research or content. His participation and style of supervision is greatly appreciated, as are the contributions and assistances of Carol A. Homan who replaced him as JSC History Coordinator.

The entire writing project was characterized by the lack of direction and control by any NASA authority figures, and by the exercise of my complete artistic freedom and professional integrity. It is also characterized by the very professional and critical support of the National Aeronautics and Space Administration Historians, Dr. Sylvia Fries and her successor, Dr. Roger D. Launius. Their breadth of knowledge and technical expertise prevented many pitfalls. They are strong editors and critics.

The quality and precision of the manuscript, to be sure, draws heavily upon the expertise and advice of the JSC History Advisory Committee, specially created to review the draft chapters and offer explanations and advice. Although we met together intermittently, I relied very heavily upon their insights and experience. Joseph P. Loftus, for example, was always available to unravel a knotty problem or explain a seemingly inscrutable technical situation. Henry O. Pohl, Dennis J. Webb, Douglas K. Ward, and Donald E. Robbins constantly tested the mettle of the prose. Daniel A. Nebrig also served on the Advisory Committee. These Advisory Committee members contributed significantly to sharpening my insights and enhancing the accuracy of the manuscript.

I want to thank each one of the many NASA employees or former employees whom I interviewed. They were invariably unstinting in their effort to cooperate, illuminate and explain. They are included in the reference notes. Many who were interviewed then signed on as readers, critics, and advisors. Among these I would like to recognize and thank particularly Paul Purser, Aleck Bond, Bill Kelly, Rod Rose, Chris Kraft, Max Faget, Bob Piland, and John Hodge.

The final product is necessarily mine, and I recognize that the book does not capture the full spirit of the events as they may be recalled by members of the Johnson Space Center and NASA organization. I regret the errors and omissions. The book is an attempt to explain—not so much to those who were directly involved but to those of us on the distant periphery, that is the general public, who watched and simply by virtue of our observations and being became participants in one of the most remarkable stories of modern times—the story of NASA, Lyndon B. Johnson Space Center, and manned spaceflight.