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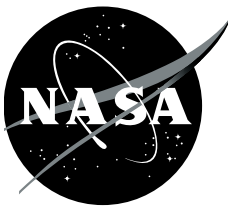
Suddenly, Tomorrow Came…

A History of the Johnson Space Center

Henry C. Dethloff

The NASA History Series



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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

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 space-flight. 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.