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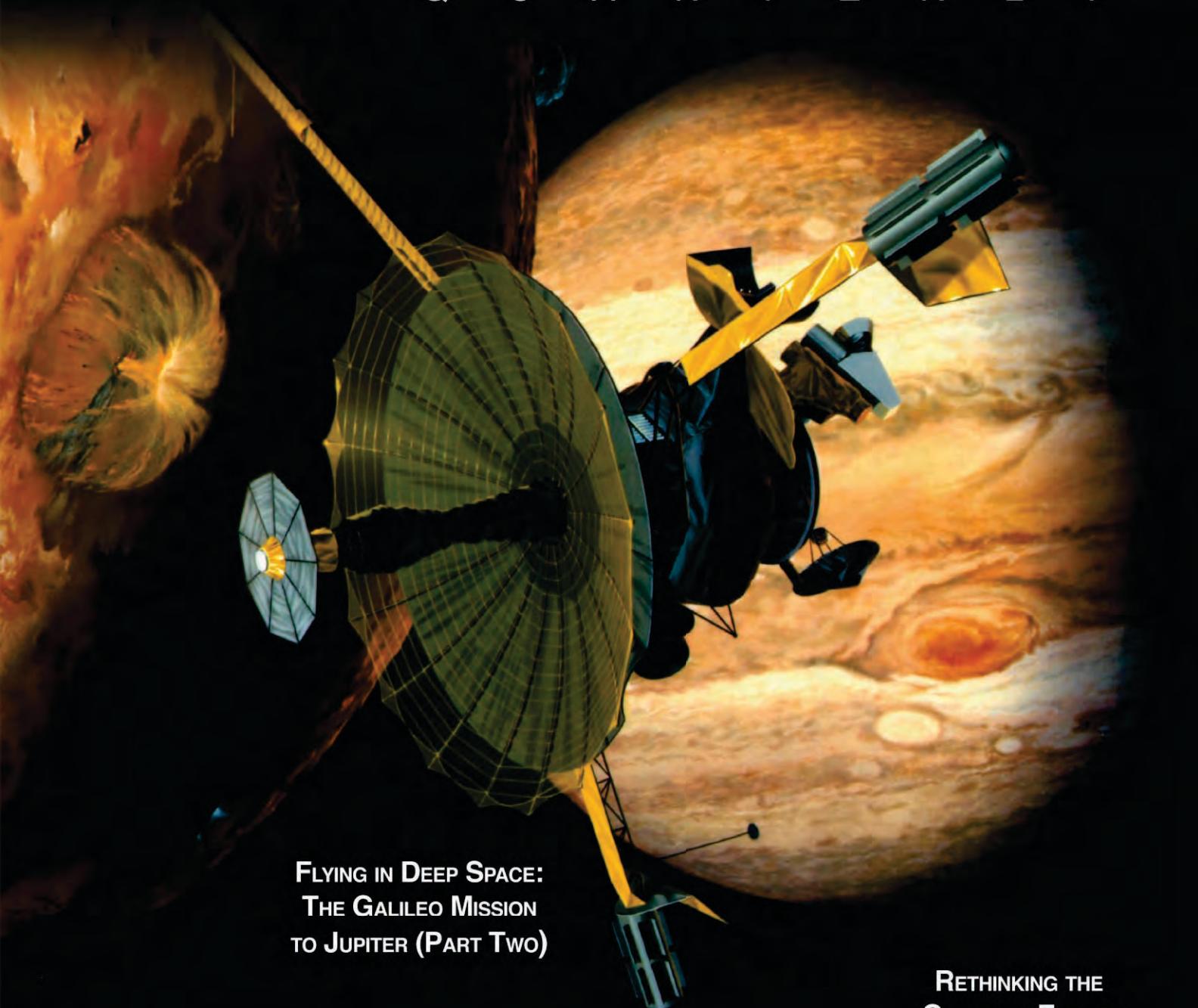
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QUARTERLY



**FLYING IN DEEP SPACE:
THE GALILEO MISSION
TO JUPITER (PART TWO)**

**RETHINKING THE
OVERVIEW EFFECT**

**AN INTERVIEW WITH
CHARLES FRIEDLANDER:
FORMER CHIEF
ASTRONAUT SUPPORT OFFICE
CAPE KENNEDY**

**ATLAS VS. A FORD GALAXIE:
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Artist's view of Galileo flying past Jupiter's volcanic moon Io. The image incorrectly shows the spacecraft's high gain antenna in its fully deployed position.

Credit: NASA

FROM THE ARCHIVES



While searching for high-resolution images to accompany the article on “Primate Lives”, volume 20 #4, we came across this undated, uncredited image.

FROM THE ARCHIVES

Gordon Cooper

Normal Apollo crew rotations from back-up crew to prime flight crew was as follows—the back-up crew would be named the prime crew of the third mission down the line in the Apollo flight program. Based on this rotation, I should have been selected as commander of *Apollo 13*. However, office “politics” in the Astronaut Corps, the return to flight status of Alan Shepard after the correction of an inner ear disorder, and the view points of certain NASA managers allowed for the selection of Shepard ahead of me for command of *Apollo 13*. Shepard fell behind in training and was allowed to switch to commander of *Apollo 14*, moving Jim Lovell and his crew

up to *Apollo 13*. Of course, if I had received command of *Apollo 13*, it would have been my “lost moon.” I would not have been able to walk on the moon because of the flaw in the oxygen tank which caused the explosion...If I had been selected for command on *Apollo 13*, there would not have been a falling behind in training because of my extensive work experience during back-up on *Apollo 10*. Shepard was very fortunate to be pulled from command of “13” and placed on “14.” As it turned out, he was the only one of us Mercury guys to actually fly to and land on the moon.

RR Auction, Lot 540,
21 November 2013

AN INTERVIEW WITH CHARLES "CHUCK" FRIEDLANDER

FORMER CHIEF OF THE ASTRONAUT SUPPORT OFFICE, CAPE KENNEDY

Interview by Donald D. Pealer

It was the third summer at West Point when Third-Year Cadet Charles "Chuck" D. Friedlander had the opportunity to visit Fort Bliss, Texas with the rest of his class of 1950. It was here to the cadets' surprise that they were not only shown a captured German V2 rocket, known as the "Vengeance Weapon," but witnessed its launch. Following the V2's flight, the cadets were brought into a small theater on base that had armed military police standing in the front of the lobby. Chuck Friedlander briefly noticed next door that there were additional armed military police guarding a barracks building with several men in civilian clothing leaving its entrance and heading toward the theater. The red curtains to the theater opened to the audience of cadets, revealing a rather tall man standing next to a large table displaying a series of small white models of rockets and spaceships. This man began speaking in English but with a fairly heavy German accent about the V2 rocket that the cadets had just witnessed in flight and its devastation on the city of London early in World War II. The presentation led by this well-spoken man speculated into the future possibilities of using this technology of war for peace, exploring the Moon and beyond. This German scientist's passionate vision was fascinating and interesting to Chuck Friedlander, although he thought that he would be retired from the military by the time this technology advanced to this level. The charismatic man lecturing to the audience of cadets was Dr. Wernher von Braun, and his colleagues were the German scientists and engineers from "Operation Paperclip." Little did Chuck Friedlander know that in less than 15-years that he would participate in making Dr. von Braun's vision a reality as the chief of the Astronaut Support Office at Kennedy Space Center during the Gemini and early Apollo program in America's reach for the Moon. The following interview with Charles D. Friedlander took place at his residence on the afternoon of 6 August 1996.



Chuck Friedlander being interviewed by "Cocoa Chatter" WRKT Radio Broadcaster Mercer Livermore before the January 1964 launch of SA-5 from Space Launch Complex 37. Ms. Livermore was the first woman in the media to give eyewitness accounts of the launches at Cape Canaveral, beginning with Bumper 8, the first missile launch, in 1950.

Courtesy: Chuck Friedlander

* * *

Friedlander: The tension at the Cape was often relieved by jokes, tricks and humorous moments. While I may go over some of them here, I think you know how serious the bulk of our work was. For example, you saw a photo of a "sign" made of spacesuit cloth that reads "Go Army! Beat Navy!" That was displayed in space during the flight of *Gemini 12*. The story behind it is that the training and preparation for *Gemini 12* took place just prior to the annual Army-Navy football game. Jim Lovell is a Naval Academy graduate and Buzz Aldrin is a West Point graduate from the class of [19]51. Buzz wanted to hold up this sign during his EVA, in front of Jim Lovell's hatch window. Buzz asked me to have our

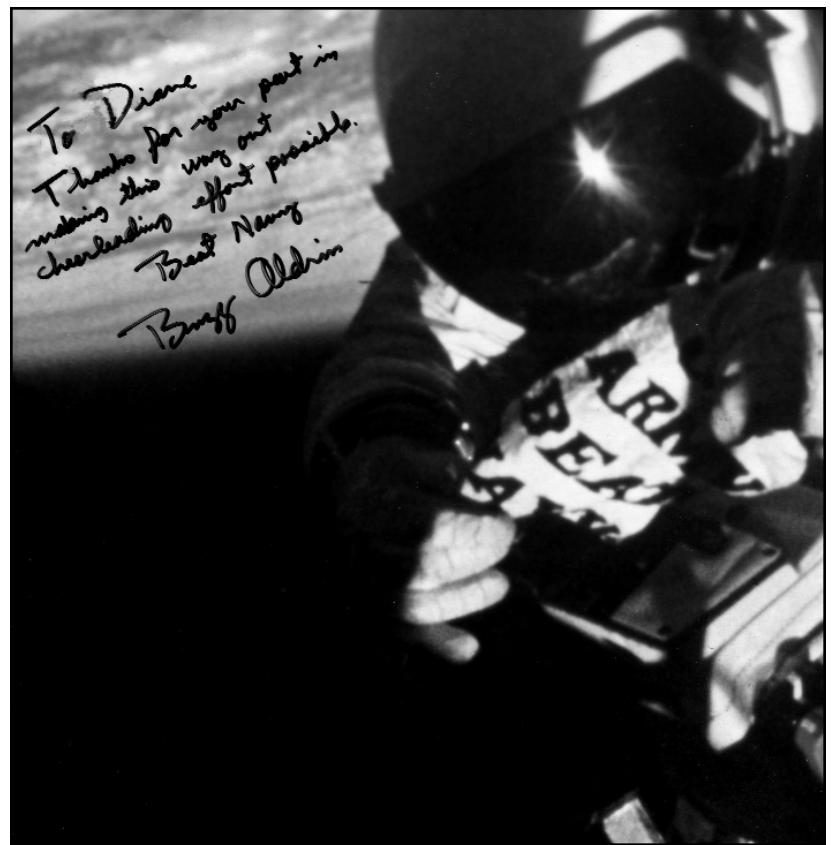
Suit Room make that cloth sign for him. I wasn't too keen to do that (even though I too am a West Point graduate) for two main reasons: First, nothing was supposed to fly on a mission that was not previously cleared, approved and registered; secondly, the chief of the Astronaut Office, and our boss, was Alan Shepard—a Naval Academy graduate. I went along with Buzz's request and my wife cut out some letters to be sewn on the cloth. Buzz rolled up the cloth sign and placed it in his suit pocket on the day of the launch. Sure enough, while in space during his EVA, he pulled it from his pocket and held it against the hatch window in front of Jim Lovell—a captive audience. In fact, there's another photo of the latter event on which Jim Lovell has written—"Everything was fine except for the 'Go Army! Beat Navy! flag'." In the instant that Buzz Aldrin

held up that cloth, ABC, CBS, and NBC had picked it up as a news item. Al Shepard was over in Houston at Mission Control while I was at the Cape. My phone rang in less than a minute. It was Al and he was my boss. All he said was, "Chuck, did you know anything about that?" I replied, "Yes, Sir." He was busy and just hung up the phone. I didn't know what, if any, repercussions there would be. It never came up again and everything was fine. Maybe Navy beat Army that year, or possibly because the EVA mission was such a success? Anyway, it was fun, and it went well—we did lots of crazy things to relieve the tension.

[Ed. note: Army won 20-7]

Pealer: Didn't Buzz Aldrin also take a cloth to wipe off the film that collected on the spacecraft's window?

Friedlander: Yes he did. It too had a funny story. During the Gemini flights, we were getting this strange yellow material on the hatch windows. Nobody could figure out what it was. So in the early days of the preparation of *Gemini 12*, NASA had approved for Buzz to wipe off the windows with a cloth and to bring it back for scientific analysis, my Suit Room was to make the cloth. Then as we got closer to the liftoff date, NASA said, "No Way! It's too dangerous because if he leans over and tears his suit—it's just not worth it." Buzz was still confident and said, "Hey, I'm going to do it anyway. Make me the cloth." I told him, "Promise me that you won't do this unless the rest of the EVA has gone perfectly." Buzz said, "I promise." He got up there and sure enough



Gemini XII EVA of Edwin "Buzz" E. Aldrin Jr. holding the "Army Beat Navy" sign. Aldrin had asked Chuck Friedlander to coordinate with the Suit Room to create the sign. Chuck's wife, Diane, cut out the letters to be sewn on the cloth.

Credit: NASA

Charles Douglas Friedlander

BORN

5 October 1928
Sunnyside, Long Island, New York

EDUCATION

- B.S Engineering, U.S. Military Academy, West Point, New York, 1950
- Executive Program Management, NASA, 1965.
- Command and Staff College Extension, 1965.

CAREER OVERVIEW

Military Career

- 1950—Commissioned as 2nd Lieutenant, U.S. Army
- 1952—Promoted to 1st Lieutenant, U.S. Army Infantry
- 1954—Major, U.S. Army Reserves
- 1966—Lieutenant Colonel, U.S. Air Force Reserves

Military Service

- 1950–1951: Republic of Korea
- 1951–1953: U.S. First Army Headquarters, Governor's Island, New York
- 1953–1954: United Nations Forces Trieste (351st Infantry Regiment), Trieste, Italy
- 1954: U.S. Army in Europe Headquarters, Heidelberg, Germany
- 1954: Resigned U.S. Army commission

Civilian Career

- 1962–1963: NASA VIP Briefer / Tour Guide at Kennedy Space Center, Cape Canaveral, Florida
- 1963–1967: Chief, Astronaut Support Office at Kennedy Space Center, Cape Canaveral, Florida
- 1967–1969: Space Technical Consultant for CBS News, Cape Canaveral, Florida
- 1969–1972: Executive Assistant, GS-17, to the Executive Secretary of the National Aeronautics and Space Council (NASC) at the White House, Washington, DC.
- 1973–1980: Vice President of the Board of Directors for the International Aerospace Hall of Fame, San Diego, California

- 1972–Present: Space Consultant

Author

- "To Bravely Go—West Point Astronauts," *Assembly Magazine* (West Point), 2007
- "Astronaut Space Walker," *Assembly Magazine* (West Point), 1965
- "Last Man at Hungam Beach," *Men*, November 1952

AWARDS AND HONORS OVERVIEW

- 1951, Bronze Star, Valor
- 1951, Combat Infantry Badge
- 1951, New York City Medal of Honor
- Co-recipient, Emmy Award, CBS Television for Apollo Moon Landing

FAMILY

- Wife: Diane M. Hutchins (12 May 1951–Present)
- Children: Karen Diane, Lauren Patrice, Joan Elyse



(left to right) Chuck Friedlander, Charles "Charlie" L. Buckley Jr., unidentified man, Alan B. Shepard Jr., Lola Morrow (astronaut den mother), Edwin E. Aldrin Jr. (wearing fur cap), James A. Lovell Jr. (holding a vodka bottle), Judy (suit room), and Nurse Dolores B. "Dee" O'Hara (kneeling), during a moment of levity with a mock astronauts return celebration following the recovery of the Gemini XII crew on 15 November 1966. This mock celebration was mimicking how the Soviet Union celebrated the return of their cosmonauts from a space mission. Courtesy: Chuck Friedlander

he wiped the window. Al Shepard didn't call to ask if I knew about that one. After the crew returned to the Cape, I met them at the skid strip and brought them back up to the astronaut quarters for the debriefing. There was my office, and next to it was the office that was either occupied by Deke or Al, who were down for the debriefing.

I was sitting with Shepard in his office while he was on the phone with his feet propped up on the desk. Buzz came in and we began discussing the mission. We asked about the cloth because we were getting all of these phone calls from laboratories requesting a piece of the cloth for analysis of the strange yellow material. Shepard asked me, "Where is that cloth, anyway?" I turned to Buzz for an answer. It wasn't listed on the flight plan so it wasn't automatically shipped to Houston. Buzz said, "Oh, yeah. I threw that on the bed." I jumped up and ran to Buzz's bedroom. I had a standing rule in the astronaut quarters that anything that an astronaut placed on his bed was laundry. We had two maids who would take things to the

washing machine. When I got to Buzz's room, there was nothing on the bed. I then ran to the washing machine and there was a pile of clothing on the floor. I frantically went through it all and was quite relieved to find it before it got washed. I brought it back to Al Shepard's office. Shepard said, "Wonderful!" If it had gone through the wash cycle, I can see the lab analysis now—Tide, Ajax, or Rinso. I understood that NASA cut the cloth into little pieces for selected laboratories. It turned out that the strange yellow material was from the propellant exhaust of the Titan II launch vehicle. Somehow it had floated up and collected on the hatch windows. It was fun, scientifically interesting, and Shepard was not upset about Buzz adding something to the mission.

Pealer: Especially since the EVA was very successful.

Friedlander: It was the first really successful EVA that we had. Buzz was so comfortable and self-confident during the EVA

that it almost made some people angry. He gave the impression that he had it all figured out as far as carrying out an EVA was concerned. He was right—he did! Except for the Merritt Island Crab Company—did you hear that one?

Pealer: No. I didn't.

Friedlander: In training for *Gemini 12*, we would go through up to maybe five EVA "walkthroughs" a day. They took place in a hangar, with a Gemini spacecraft, and Buzz in his EVA suit. As he went through the motions, we had dry ice in front of a fan that blew cold air to keep his suit cool. One day, we ran out of dry ice.

The Houston training crew came up to Al Shepard and said, "We have no more dry ice." The ice wasn't my responsibility so I didn't know much about it. Shepard turned to me and said, "Get some dry ice." We broke for lunch in the quarters. Meanwhile, I turned to my assistant Tom Lane. I said, "Tom, take the car, go somewhere—Cocoa



Walter "Walt" E. Disney (right) being escorted by Albert F. Siepert, deputy director of the NASA Launch Operations Center, Kennedy Space Center (center) and Chuck Friedlander (between Disney and Siepert) in 1965. Walt Disney made three visits to the Kennedy Space Center from 1964–1965 as part of his research for developing the Disney World Theme Park and the Experimental Prototype Community of Tomorrow (EPCOT) southwest of Orlando, Florida.

Courtesy: Chuck Friedlander

Beach, Merritt Island, or Titusville and find some dry ice...quick!" So Tom took off in the car to find dry ice. When we finished lunch and were leaving the quarters, we saw Tom returning. He came up to me and said, "I've got the dry ice." I asked, "Where is it?" He replied, "In the trunk of my car." I said, "Great, bring it in." Tom brought in the dry ice and they started the fans blowing the cool air to ease the Florida heat and humidity. Buzz closed the visor to his helmet and the fans were turned on. All of a sudden, Buzz's eyes opened wide and he lifted his visor, taking deep breaths. It turned out that the only place that Tom could find dry ice was the Merritt Island Crab Company and apparently the ice had a real fishy odor.

Pealer: How did you end up working at NASA?

Friedlander: I was the youngest one in

my class at West Point and had entered in 1946, right after WW II. In those days, the name of the game to become a general like Eisenhower or MacArthur was to graduate into the infantry. I chose infantry and the Korean War broke out about two weeks after we graduated. I chose as a duty station, Fort Devens, Massachusetts, to be near my wife, Diane. I was shipped, almost immediately, straight to North Korea. We went to the Chosin Reservoir area where we were surrounded by the Chinese. It was pretty rough and I was in the infantry, in combat where I wanted to be. As a cadet, during 1948 we were given some wonderful summer trips to Fort Benning for infantry, Fort Knox for armor, Fort Sill for artillery, and Operation Camid with the Middies for amphibious landings near Virginia Beach. It was wonderful summer training. One of our summer trips in [19]48 was to Fort Bliss, Texas. There was a plain, old GI barracks with MPs

at each door. I wondered whether the people in there were prisoners, or POWs, or what? We went in for a briefing, there was Dr. Debus and the whole Operation Paperclip German rocket team. Some of whom ended up being my bosses years later. They gave us a "space" briefing. At the time I did not know who was doing the briefing but his English was pretty good. It might have been Werhner von Braun, because his English was the best of the whole group. He gave us a lecture referring to a table that was full of models. He pointed out that some of the models were of satellites, and they would be able to do many things in space. As I said earlier, I was still gung-ho for infantry. And in [19]48 we had nothing in space.

In the briefing it was said that, "One day we will have satellites in orbit, and one day there will be a man up there." They took us to White Sands, New Mexico where they were firing V-2s. I was only 19, but I did

think it was interesting. I was very impressed, (someday I must remember to ask [Frank] Borman what he thought). I felt, "This will all happen, but it will probably take about 35 years and I'll be retired by then." After Korea I went through several assignments. On the day of Alan Shepard's flight with a man on top of the rocket, something just ignited inside me. I was like a kid with a new exciting interest. Even the infantry took a back seat to this "man in space" interest. For a brief moment I wished I had chosen the Air Force at graduation. In those days, Shorty Powers (later a good friend) was known as "The Voice of Mercury." I went to Houston to see Shorty and talked with him about getting a job with NASA. Part of my duties in the latter part of my Army career were as a briefing officer. Shorty said, "I really don't have anything right now but believe me, I'll call you when I get something." I went from there to the Cape. What was then called the "Merrit Island Launch Area" (MILA) was in the early stages of development. NASA had trailer offices all over Cocoa Beach, one of which was for hiring. In those days, in order to be hired above a certain grade you had to have an engineering degree, luckily I had one. I knew that getting one of the really interesting jobs with NASA was remote. I just wanted to get my "foot in the door." They were businesslike when they talked with me. They said, "We'll circulate your resume to see if anyone is interested, where can we reach you?" I had stayed overnight at a motel where I received a call. The voice on the phone said, "Well, we got a job but we don't think you would want it. When we get MILA completed, we're going to need somebody to oversee the refuse collection contract." My heart sank, but I remembered what Shorty had told me, "With something new, get your foot in the door." I said, "Yes."

Well, as it turned out, I never served a day in that job. That same night I got a call from the chief of public affairs. He said, "You've done a lot of briefing as I understand it." I said, "Yes, I have." He continued, "We're getting a tremendous demand for tours of the Cape and MILA. And we need someone to give briefings—that could mean three or more times a day of being driven around all the pads, MILA under construction, the whole thing." I thought, "What better way to learn the program than to give

the actual briefings and tours" to VIPs, government officials, and new groups of astronauts. So I did that, and I really enjoyed it. It was very interesting and educational. I was in that job for a year and a half, when one day it backfired on me. The head of NASA, James Webb, came down for a visit and wanted a tour of the entire area. At KSC they told him, "We got this guy Friedlander who will give you a really good tour." Obviously, I gave him the best tour that I possibly could. We came back to Cocoa Beach from the tour and he said, "Thank you, well done." I went on with my job until one day I received a phone call from Mr. Webb. He said, "You know, here in Washington, we don't have any way of really briefing a lot of high level people that we receive at headquarters. I want to create the position of Chief Briefing Officer." I still have a copy of my response saying, "I'd really rather not leave the Cape."

Then an older hand told me, "Even in a civilian agency, never say no to the head man." I wrote another letter that said, "Yes, Sir, if you really want me." So I went to Washington and gave briefings.

One thing that was fun was that they had allowed me to design a briefing room. They allotted funds to design and create this briefing room. As an Air Force Reserve lieutenant colonel, somebody told me to visit SAC Headquarters, which I did regularly, because they had a super briefing room. When I went in and sat down in their briefing room, there was this big wide screen, the width of the room, with a B-52 parked on the right-hand side. When the briefing began, the still photo turned into a movie with ever louder sound, and the B-52 took off across the screen. It was very impressive. I thought, "Now that's for me." So I went back to our technical people and we built a briefing room using (in those days) an early, unmanned Saturn I lifting off. That was kind of fun, and it drew very favorable comments from visitors.

I would check out certain things with Mr. Webb on what he wanted emphasized and what he wanted downplayed. I did this for a year and a half. I would return regularly to the Cape for the Gemini launches and give the liftoff briefings at the VIP site. One day, while at the Cape, I was asked if Mr. Webb would release me to become executive assistant to the KSC deputy director. I went back to Washington to see Mr. Webb. I

said, "Sir, I've completed the briefing room, and I've written down all my briefings, and all the slides and models are in order, with your permission, I'd like very much to accept this position at KSC." He was nice about it, although he was disappointed. He said, "Well, go ahead but stay in touch with our new briefing officer." So back I went to the Cape and spent time with the deputy director, Al Siepert. He was a fine man. I learned about management from him and I graduated from a NASA management seminar.

After serving my time in that position, I was offered the job as chief of the Astronaut Support Office. I knew all of the guys from briefings, tours, and often went fishing [with them] on Sundays. Some of them I knew from West Point. I knew Deke really well. When I took over the Astronaut Support Office, even though it was located at the Cape, I was no longer with the Kennedy Space Center. It was under the Manned Spacecraft Center and my paycheck came from Houston. It was a little bit of a difficult position, but I'd had long relationships with Dr. Debus, Rocco Petrone, and others. It worked out fine. Other than being an astronaut, in my opinion, that was by far the best job of all at NASA. They were a wonderful bunch of guys. We would often work 20 hours a day. It was very satisfying up until the tragic *Apollo 1* fire when there began a 20-month hiatus in U.S. manned flights.

Pealer: Share with us some of your Gemini anecdotes.

Friedlander: Did I tell you about Pete Conrad swan story?

Pealer: No.

Friedlander: Pete had been to Canarvon, Australia before. In Perth, on the west coast of Australia, they have a really great beer called Swan Lager Beer. The city of Perth is the home of some beautiful black swans. The beer is delicious, and Pete loved it. In those days, they printed, word for word, the complete transcript of what the astronauts said in space every day and night in the *New York Times*. There were whole pages printed of everything they said in space. Even though I had a headset in the office hooked up to the com-loop with the crew, if every-

thing was going right, I wouldn't glue myself to it. If something went wrong then I would pay much more attention to what was being said. Unbeknown to me, when Pete came across Australia, a guy in the com-loop asked him how everything was going. Pete answered, "Fine, but, it sure would be nice to have a couple of Swans about now." I didn't hear it.

A day went by and my phone rang. My secretary answered it and said to me, "Mr. Friedlander. Do you want to talk to this man?" The man was from Darby, Connecticut. He said, "I understand the astronauts would like a couple of swans and my wife and I are filling a pond on our property. So we've crated up two swans and have shipped them down to you." I said, "Is this a joke?" He replied, "Well, it's in the *New York Times* that swans are desired, so we've crated our two up and by now they're in the air." I thought, "What are we going to do?" I decided to talk to my buddy who was the chief of security but he was out of town. I ended up talking with one of his people. The swans were headed for the Melbourne airport. In those days, there was a little pond around the flagpole at the Kennedy Space Center. I thought, "Well, most people don't come to work until after 7:30 AM. If we were at the airport at 6:00 AM with a pickup truck, there would be enough time to drive to Merritt Island and unload them in the pond." The next day they were still there, but the following day they were gone. I have no idea what happened to them.

When Pete and Dick landed at the Cape and they got into my stationwagon, I couldn't resist asking. I said, "What the hell did you guys want with a couple of swans?" Pete asked, "What are you talking about?" I said, "Apparently, in the *New York Times*' transcript, while over Australia, you said, 'We sure would like to have a couple of swans about now.'" Pete answered, "Swan Lager Beer!" I answered, "Do me a favor, if you guys go up again and you go over Africa, please don't inquire about the lions, the tigers, or the giraffes."

Pealer: What were your impressions on the future of the manned spaceflight program before President Kennedy's commitment to go to the Moon?

Friedlander: That's an excellent question, and for several reasons. Had you asked

that at one of my briefings in Washington a good many years ago, the answer would have had to be somewhat different. There were international ramifications involved with the Cold War. In those days I referred to the Cape as "Earth Station #1" and I believe that.

My answer in the NASA briefing room would have included the words "the peaceful use of space" and I would have mentioned "navigation, meteorology and communications." The latter is all true and has all come to pass. I used to say that we are in the phase of "manned flight exploration" and that hopefully we would reach (we have) the phase of "actual utilization of manned flight." Your question refers to the very early days of space exploration. But the truthful answer even extended into Apollo. It was best answered last year by Frank Borman who said, "*Apollo 8* (1968) was but another battle in the Cold War."

At that point in time, I was focused on Shepard, Glenn, and the Mercury program. I really didn't foresee anything past Earth orbital flight, and when President Kennedy made that announcement, I thought it was very ambitious. I didn't know if we were prepared for it or even if we could do it. I harbored a few doubts deep down inside for years. I was probably too young or immature to really understand what might take place. In those early days, we had no idea that there was going to be all this hoopla. It was a little hard to get use to, but a little bit of fun. After Glenn's flight, there was this whole big thing going on. In a way it was getting out of control. We tried to minimize it and control the amount of time it was taking away from their training. All I can say it was strange. I wouldn't give it up, don't get me wrong. We did not expect it or anticipate it.

Pealer: Do you think it was going to be a closed program, once we put a person into orbit?

Friedlander: I thought there would be useful scientific applications of some kind but as far as leaving orbit, I would say no. I didn't think we would go beyond Earth orbit.

Pealer: After Gordon Cooper's flight, there was a plan for another Mercury mission: MA-10.

Friedlander: There was a hope and prayer on our part to have it. We had the hardware but it was canceled rather fast. It was a great disappointment, like Apollo. But look at the Mercury spacecraft today, it is such a Model T. Now I say, "Thank God for scrubbing the mission."

My very first assignment with NASA, day one, was to go to Palm Beach with a makeshift Mercury spacecraft on the back of a NASA truck. It was not completely a model. It had real parts like a heatshield. We set it up, and Shorty Powers was with me. We stood there all day long and thousands of people came up to see it and ask questions. On the way back to Cape Kennedy, I was driving my car and behind was the white NASA truck carrying the Mercury spacecraft. The spacecraft rolled off the truck onto the highway with real parts and we were using those parts as backup. So here's a Mercury spacecraft on the side of the highway. They got it back the next day and NASA fixed everything up. I felt terrible because it was my first day.

Pealer: One day was already spent in Earth orbit under Gordon Cooper's flight. Any consideration of assigning the *Gemini III* mission a one- or two-day flight instead of five hours?

Friedlander: Our concern on Gordo's flight was leakage of liquid in the spacecraft and whether it would short-circuit anything. I was mainly concerned with a short-circuit but whether that prompted them to bring him down, I don't know. A short-circuit was the big fear. And Gordo was sitting there, he was grabbing liquid droplets with his hands.

NASA was very conservative. They were extremely conservative in the early days of manned spaceflight.

Pealer: That's why it kind of surprises me with their extremely conservative attitude that NASA went ahead with assigning the free-floating EVA on *Gemini IV* when originally the first EVA, a standup, was planned for *Gemini V*.

Friedlander: Leonov—the Russians. It was a matter that they did it and let us do it quick.

Pealer: Was the crew of *Gemini IV* concerned about the safety issue?



Chuck Friedlander in the background while Virgil I. "Gus" Grissom is walking out in the A1C pressure suit from the Manned Spacecraft Operations Building (MSOB) at Kennedy Space Center between March–June, 1966. Note: The *Apollo 1* crew didn't receive approval to design a mission patch with the name "Apollo 1" until June 1966. Courtesy: Chuck Friedlander

Friedlander: No. They were anxious about the EVA. Ed White was elated to do the first spacewalk.

Pealer: *Gemini V*—8 days or bust! Cooper and Conrad were known to have a great sense of humor as well as being great stick and rudder pilots. Cooper introduced the patch and wanted to put the phrase on it. Discuss the resistance within NASA management to give the okay for his request.

Friedlander: I'm sure it was NASA that said, "Hey, if something terrible happens, we don't want to emphasize that we couldn't do eight days." In those days, NASA had the final say. Only one guy didn't take well to NASA telling him what do on those things, and that was Gus Grissom.

Pealer: What was Gus Grissom like?

Friedlander: It's so hard to describe. He was an extremely unique individual. He was headstrong and a good guy. I liked him a lot. If he thought that something was

wrong with the spacecraft or the mission, he had no compunction about telling the world or about asking for a change. He just didn't give a damn about who he told or what. It was really such a shame that happened on *Apollo 1*. He was the most unique guy of the whole astronaut community. Just so different. I couldn't help but like him. He was so down to earth. It was very sad for me because two weeks before the flight his mother and father came down and he asked me to give them a tour of the rocket and the spacecraft. For the first time, this was his third flight, his mother for some reason, woman's intuition or what, was very apprehensive and stressed about all the safety features. And I didn't think anything of it so I went out of my way to take them up and stressed all the safety features. At one point when we were at the spacecraft she said, "Can I touch it for luck?" So I held her and she reached over and touched it for luck. Then when it happened I thought I lied to her—I still do. It was a real blow.

The way that happened was the test went just terrible. Around six o'clock Deke was over at the blockhouse and I was in the

astronaut office at the Cape. I had the headset there, listening and monitoring everything was going on. Gus was complaining, "God dammit! We can't talk between here and the blockhouse. How are we going talk from the Moon?" He was right. It was terrible static. Deke said to me, "It looks like maybe we're going to be here a while. Why don't you go home to your wife and kids and have dinner and then come back?" I drove home to Cocoa Beach, and as I pulled into the garage I heard a phone ring. I dreaded that telephone when I heard that phone ringing. Don't ask me why I dreaded the phone ringing. My wife, Diane, came out and said, "Ron Evans is on the phone." I went in and picked up the phone. He said, "Chuck, there has been an accident." I said, "A bad one?" He replied, "Yeah. Get out here—quick!" I jumped back in the car and raced back to the Cape. I got stopped by traffic cops two times. On the second time, I got a police escort to get me there. I took over the office and handled all the telephones. It was terrible. Just about by then we knew they were dead. The long procedure started to getting them out of the spacecraft.

I had to go to Patrick [AFB] for the autopsy and stayed there for that. I got Ed's ring, and I remember bringing it home to Diane. It was all black. We took a toothbrush and scrubbed it with soap and clorox to get back to normal. They suffocated, but they were also burned. They did not die of being burned. They died in 17 seconds of suffocation, but the nylon in the spacesuit melted and burned their flesh. There were exposed parts that did burn. They were not charred or anything of that sort. It was the suffocation in 17 seconds that killed them.

Pealer: It is very sad. The *Apollo 1* crew consisted of two veterans and a rookie named Roger Chaffee. What was Roger Chaffee like?

Friedlander: He was very sincere and honored to be put on that mission. He wanted to do a great job, and he would have. He really listened to everything Gus told him. It was really very sad. I'm sure he would have done a superb job. He was a good pilot. It was just a lousy break.

Afterwards, between the autopsy and the funeral, Deke had me handle the arrangements because he was a wreck. There was the funeral, and I flew with the



Immediately after the return of the *Gemini XII* crew—Jim Lovell and Buzz Aldrin in November 1966—the Astronaut Support Office held a private gag of a cosmonaut-type return celebration. Chuck Friedlander shown on the right pinning a mock "hero" medal on Buzz Aldrin.

Courtesy: Chuck Friedlander

three caskets up to Andrews AFB. At Andrews, we let off Roger and Gus to be buried at Arlington and the whole [White House] Cabinet was there. They drove them in hearses to Arlington. Since Ed was flying on to West Point and I was going with him, the Cabinet came onboard to pay their respects to Ed, which I thought was nice. We took off and went up to West Point and met Borman and Anders. [First Lady] Lady Bird [Johnson] was there. During the flag ceremony, Pat White turned to Ladybird and said, "Today would have been our anniversary." Lady Bird bursted out into tears. It was really sad, and it affected the guys for a while.

Pealer: Can you tell me more about the gotch-ya's between the astronauts?

Friedlander: In the crew quarters, I had two steel doors with a KSC guard at each door to keep anybody from coming in. One day Wally Schirra, Walt Cunningham, and Donn Eisele were having lunch. I was sitting there with them. The female guard outside of the door rang the special buzzer, and I went to the door. She said, "This man has something to install in the Astronaut Office." Here's this KSC technician with this big cardboard box under his arm. He said, "I've got a work order to install this in the Astronaut Office." I looked at this thing and said, "What's in it? Do you know?" He said, "It was a sanitary napkin machine for women." I laughed and said, "Hey, buddy, believe me. You got the wrong place." He turned around and left. I went back into the lunch table and said to the guys, "You'll never believe what that was. Some guy had

a sanitary napkin dispenser to install in this office." Wally said, "What did you do to him?" I replied, "I sent him away." Wally said, "Get him back." So I ran out the door where I saw him way down the hall and got him back.

Gus Grissom was in Houston, and there was always jokes between Gus and Wally. It was a daily occurrence. Wally said, "Have him install it in Gus' bedroom." I had the guy install it on the wall of Gus' bedroom. Unfortunately, Wally left that night with the rest of the backup crew and came Gus with Ed and Roger. Wally told me, "Just keep a straight face and don't say a word. Let's see what Gus does." Gus came in and we sat down and talked about the mission. Then finally Gus went back to his bedroom and we were sitting there, anxiously awaiting his reaction. He was gone

about a good 20 minutes, maybe to shower and change his clothes. Gus came out with an absolute straight face and came over to me. He said, "You got a dime?" So I gave him a dime and he turned around and walked out. He had a great sense of humor.

Pealer: There was discussion within the medical community that the crew of *Gemini VII* wouldn't be able to endure the prolonged effects of weightlessness.

Friedlander: It was rough. Just picture a room no bigger than a telephone booth, and to live there for 14 days. It was not very coeducational inside that thing. It was one of the toughest space missions I remember. I really felt for those two guys, but NASA wanted them to complete the whole 14 days. And they did it, but it was rough. I had often heard that one of the books that Jim Lovell took to read was *Marooned*. I thought, "Oh, my God. What a book to take up on that flight." When Frank came back down, we had him over for dinner one night; we could tell it was a very tough mission. They had the "stick-to-it" attitude, and they got it done. They had fun with Wally. Wally had the easier part, since he had the shorter mission.

I use to get a kick in the quarters with Wally and Tom [Stafford] sitting on the floor with the little harmonica with the announcement to the world of "Today is the crew's last day before the flight. They're resting in the crew quarters." They were sitting on the floor practicing "Jingle Bells."

By the way, I got into trouble the day before. I had a boat and I would take the guys fishing. Tom was there, and the security chief came along just in case anything happened there would be a radio to get instant help. We were out there and Tom with his bald head had no sun lotion and no hat. So Tom got sunburn on his scalp and in his spacesuit he couldn't scratch it. Al [Shepard] was chewing me out because I should have known better. I said, "Al, I'm not bald. What would I know?" But I was worried. But I'm sure they put something on him.

Pealer: Tell us what you know about the precedence of flightcrew selection.

Friedlander: With regards to Apollo crew selection there are many people that say Armstrong, Lovell, and Aldrin were picked

way in advance. Deke Slayton was the guy who was heavily involved in crew selection. One day in 1966, Deke and Al were in their office, and they had a piece of notebook paper with all kinds of crew combinations for each mission through and beyond the lunar landing. Of course, you got to remember that there were changes made to that initial list. This I've never been able to figure out. At one point, I think it was Al that gave the two sheets to me. He told me, "Throw these out." He had a wastebasket right there, and he didn't throw them out. I figured these are too historical to throw out; so I didn't. Years later, I wrote to Al and Deke, and I said, "Look. I've never shown them but I never threw them out. I want your feelings on what you want done with them. If you want me to destroy them right now, I'll destroy them. If not, I'll put them in a safe deposit box for twenty years or more and give these to the Smithsonian." I got a letter back from both. Al said, "You can do it." Deke said, "It's my handwriting, and I really appreciate you not showing anyone and putting them in a safe deposit box. I would appreciate if you not divulge them until the last player is gone." In other words, the last guy had died. So I got them right now in a safe deposit box and I've got notes for my family that when the last astronaut from Apollo has died to give it to the Smithsonian. It's just handwritten notes, no fancy thing. It was changed a number of times since then.

Pealer: Based on Deke's book, at one point in the program they were thinking of recycling Grissom for a lunar landing flight.

Friedlander: Truthfully, I don't remember that. I haven't looked at it for a long time. It has been sealed in the safe deposit box for so many years. I would not be surprised.

Pealer: Based on interviews of several other Apollo astronauts I've been getting a consensus that Frank Borman was offered the first lunar landing flight.

Friedlander: I don't remember, but I would not be at all surprised.

Pealer: It's very interesting. Thank you for sharing that with me.

Friedlander: I've never done that before, but I thought it was time.

Pealer: What do you recall the most about *Gemini VIII*—the first docking in space?

Friedlander: Fear. They were really spinning. Neil's reaction was quick, but it really was a close call. You got to remember I am at the Cape, and Shepard, Slayton, and everybody else are in Houston. They were more knowledgeable people than me. Maybe they were not as afraid, but personally I was scared. When you talk to Dave Scott about his feelings during the reentry, it was scary. They were rotating really fast. I always get a kick out of Dave saying that when they were coming down, he looked out the hatch window and saw the snow-peaked Himalayas—he gulped. I can believe it. It got to be scary.

Pealer: How did the Astronaut Office feel about using the Agena as the docking target vehicle?

Friedlander: There were problems with the Agena, but by the same token it afforded the only real opportunity we had to have some kind of practice and to do a tether experiment. You put aside a bit of concern about the problems, hoping that it would work. Hoping that if worse came to worse, like Neil and Dave did, you could cut loose.

Pealer: It was a close call for Gene Cernan during the EVA on *Gemini IX* as well as the disappointment with the jammed shroud on the Augmented Target Docking Adapter (ATDA). There was a discussion on the ground about freeing the jammed shroud via EVA.

Friedlander: I have a very vague memory about it, but not enough to comment on it really. My feeling of the astronaut's safety was the golden slippers in the back of the spacecraft. When Gene got in them, we had two things going. One, that the public knew about the tremendous fogging up that Gene had experienced with his visor. The other, that's funny (but it's really not funny), is that the brass zipper on the bottom rear of Gene's suit got so hot it actually burned him. Between the fog frozen on his visor and the hot zipper, poor Gene, it must have been a terrible experience.

Pealer: *Gemini X* was the first of the missions that demonstrated the majority of the

charter of the Gemini program. It rendezvoused with two Agena vehicles, docked with one of them before boosting to a higher orbit using the Agena's primary propulsion system (PPS) and finally three EVAs.

Friedlander: From the standpoint of accomplishments, it was a fantastic mission. But by then our minds were really beginning to focus on Apollo and all the things that Apollo would do. Therefore, for some of us, it didn't get as much acclamation as it should have because of Apollo.

Pealer: It's unfortunate the Mike Collins lost his camera during the EVA. I've read he took some very impressive photographs of the Gemini spacecraft.

Friedlander: It was really unfortunate.

Pealer: Before the flight of *Gemini XI*, Pete Conrad was trying to get support of the idea of using a modified Gemini spacecraft with an Agena stage to fly around the Moon in the Large Earth Orbit (LEO) program. How did management and the Astronaut Office react to this proposal?

Friedlander: I don't think that got very far. Pete would come up with some brilliant ideas, but I don't think that got very far. When I heard it I didn't think it would get very far. At the Cape, the closer we got to Apollo the more focused we were on it. The Saturn V was so tremendous and so impressive sitting there out on the pad. We just couldn't wait for all the things that Apollo might do. We didn't know about *Apollo 8* yet.

Pealer: What was the mood at the Cape like at the eve of the launch of *Apollo 4*—the first test flight of the Saturn V booster?

Friedlander: After the *Apollo 1* accident, we had a 20-month hiatus in the Astronaut Office at the Cape. Walter Cronkite had always said to me, "If ever you leave NASA, talk to me." So I left NASA, and I went with him as a technical consultant, not on air like Wally Schirra. I'm very grateful to my friends in the Astronaut Office because even though I only had a CBS badge, I had unlimited access to the Astronaut Office. I was really flattered that they trusted me because there were many things I heard in the



(left to right) Chuck Friedlander, Charles L. Buckley (chief of Security and Fire Operations, Kennedy Space Center), Robert J. "Bobbie" Wussler (executive producer of CBS News Mercury and Apollo coverage) and CBS Evening News anchorman Walter L. Cronkite before the launch of the *Apollo 4* mission on 9 November 1967.

Courtesy: Chuck Friedlander

Astronaut Office that I never told CBS. All of the major networks built their studios not too far from the launch sites. They were fancy double-size trailers and inside they were customized with tile ceilings and stations for the camera crew. Ours was a beauty, and behind Walter Cronkite there was a piece of glass for viewing the liftoff. I talked with a few of my friends in the KSC engineering staff about it. I said, "What do you think that first liftoff is going to do to that piece of glass that's three-and-a-half miles away?" They replied, "Hey, for all we know it's liable to blow it all over the place." So I got a GI blanket and brought it down to the trailer. Walter said, "No. No-No-No. We don't need it. We talked to the engineers and it's going to be all right, Chuck. Don't worry about it." I rolled it up and put it down on the floor. It may have been stupid of me because would he really have time to reach down to grab the blanket. I couldn't stand being indoors at liftoff. But, at liftoff it took a few seconds for the shockwave to reach us. On Saturn V, when it reached our studio, I've never before in my life seen glass make waves or rippling without breaking. Then, ceiling tiles came down, the clock came off the wall and fell down. Cronkite got a little emotionally excited—his voice was on tape. He said, "CBS—next time a blockhouse, not a cottage!" NBC with Brinkley were six feet from us in a studio very much like ours but it must have been built better. About a half hour later, a Western Union attendant came with a telegram, delivering it to the produc-

er. He laughed before showing it to Cronkite. It read, "From: NBC. To: CBS. Congratulations upon your survival!" We got a kick out of it.

Pealer: The liftoff of *Apollo 4* must have been impressive in that early morning sky on 9 November 1967.

Friedlander: It was beautiful. But the only one that is more beautiful than that was the night launch was *Apollo 17*. That was beautiful—it lit up the whole sky. There was anxiety on *Apollo 4*, because if it didn't work the Moon would be out of our reach.

I always get a kick about talking about this—on the flight of *Apollo 8* with Frank, Bill, and Jim. They had these sound recorders on there to make them familiar with what they should expect to feel and hear. They weren't 100 percent accurate.

Pealer: Bill mentioned that.

Friedlander: He mentioned the crack in his helmet?

Pealer: No. He didn't mention that.

Friedlander: I kid him about it, and so does Jim and so does Frank. Eyeballs in and eyeballs out when you're pushed forward, then backward in the seat. Bill went all the way forward and hit his plexiglass on his helmet. He hit the console and cracked it actually. The sounds they were told to hear,

a lot of the little things for them was just a little bit different and more impressive. That's my favorite flight. *Apollo 11* was extremely important but when you think of it, the flight had a few critical firsts. *Apollo 8* was making all firsts. On the one hand, Bill had a little bit of disappointment that there was no Lunar Module (LM). On the other hand, he couldn't have been on a better mission than *Apollo 8*—it was gutsy and during Christmas. That was the mission—a most fantastic voyage. I'm not degrading *Apollo 11* because it was extremely significant but *Apollo 8* was all firsts. And they all worked. You can't beat that.

Pealer: When talking with Bill Anders, he mentioned that they had problem on an SPS firing based on the telemetry data transmitted back to Earth. It didn't function as completely as advertised during the burn.

Friedlander: I vaguely remember that, but I don't remember the details.

Pealer: What do you know about the decision to go to the Moon on *Apollo 8*?

Friedlander: Only what the guys have said. It was Deke and Frank [Borman] mostly involved in that decision. The Russians were going to send one man around the Moon, and that was what triggered NASA asking, "Can we send *Apollo 8* around the Moon?" That was a gutsy decision. The first manned Saturn V flight not to be in Earth orbit but to go around the Moon. What can be more gutsy than that? Such a gutsy mission.

When Bill [Anders] came home to Houston on the first night and he and Valerie were sleeping, the photolab from MSC telephoned and awakened them at around three in the morning. They said, "Bill, I just got to tell you that we just developed them. The pictures are fantastic! That green Moon is unbelievable." Bill said, "What? I'll be right there." He put down the phone, got dressed and went right down. It turns out on that first flight basic Kodak earthtype film was used—made from green, red, and blue. It showed the Moon being green. But the Moon is not green, it's gray—"Dirty gray;" as Bill says. In fact, he said when he was a kid playing volleyball on the beach in La Jolla, that's what the Moon looked like—the ball hitting this dirty sand. Anyway, I already had these ordered and it was too late.

So this is probably the only still picture there is of the green Moon which is not true at all. It was funny at the time, but it's a dirty gray.

When Bill came back to the Cape, he and I stayed up till two in the morning in his room at the Holiday Inn where he was telling me all these stories about the trip. It really was something.

One of the biggest kicks I ever had was when Bill brought over the film they took of the farside of the Moon. He knows, I hope, that I'm not a nut. We were looking at long films of the farside of the Moon. It was very interesting. There must have been a slight flaw in the printing of the film of the farside of the Moon because there was a tiny dot on it. I figured Bill knew me well enough with my years at NASA and the Space Council when I was joking. I said, "Hey, Bill. I see a tiny life." And Bill looked at me as if I were nuts. I knew better than that.

Pealer: The mood of Wally Schirra was different on *Apollo 7* compared to his previous flights on Mercury and Gemini. He had lost a good friend from the *Apollo 1* fire.

Friedlander: His mood on *Apollo 1*, when he realized there were a lot of problems with it, began to approach with what his mood was on *Apollo 7*. There were so many problems with the Apollo spacecraft. If you're the next guy to go up on that dog, you want to make it right. And, of course, he was right. By *Apollo 7*, damn right, he wanted it to be a good spacecraft. Of all changes NASA had in the program, and Frank was the key man on the board, it was damn important to get those changes made.

Pealer: *Apollo 9* had the first manned LM test in Earth orbit. There was a lot riding on that mission. Describe the tension at NASA about the mission.

Friedlander: There was a lot of concern and a great realization of the importance of success. If it had failed, the program would start sliding back on schedule. With the success of *Apollo 8* behind the mission, the thought was, "If we could just get that LM to work properly, we got almost an open road to the Moon." It was a big sigh of relief when the LM work as advertised. Grumman was having their problems with it. The question in everyone's mind was, "Is it going to work or isn't it? And if it isn't—Oh, God!

"What are we going to do?" But it worked.

Pealer: Rusty Schweickart was telling me about the first LM that came off the production line plagued with glitches that it was decided not to man-rate it for flight.

Friedlander: That was the reason why Bill didn't have a LM but it wasn't important on *Apollo 8*, anyway. Bill was very disappointed because he spent a lot of time training in that thing.

Pealer: *Apollo 10*'s full dress rehearsal in lunar orbit and its contributions to the program was overshadowed by the upcoming lunar landing mission.

Friedlander: In a way, that's human nature because there's so much anticipation. It proved out a great many things. Thank God!—it worked. It was extremely important. How can it help but be overshadowed?

Pealer: The crew of *Apollo 10* had personalities from both ends of the spectrum. What do you remember about that crew?

Friedlander: Tom [Stafford] and Gene [Cernan] were very close as buddies. They were going to retire and buy a cattle ranch together.

Pealer: Gene Cernan's reaction of seeing the Moon from its orbit was more philosophical than the other two.

Friedlander: Gene was more philosophical about the Moon and what it all meant.

Pealer: John Young had more of a reserved reaction of seeing the Moon for the first time from its orbit—like a test pilot.

Friedlander: John is a test pilot and an engineer. There's nothing going to shake that. I have never known anything since I've known him that would shake the fact that John is a test pilot and an engineer. He's his own man. He'll say what he thinks if he has to. As far as being philosophical about the Moon or the future—forget it. Not that he may not feel it inside.

Pealer: It's been commented in some of my interviews with NASA personnel that the *Apollo 11* crew had very different personalities. What was your impression of the crew?

Friedlander: I've never thought about that before. Buzz is different not just from Neil and Mike. Buzz was a different kind of guy from everybody in that area. Buzz was an enigma because here we have an Academy graduate, Air Force test pilot and a scientist from MIT that did his thesis on rendezvous and docking—extremely cogent to what we were doing. He was not into gotch-ya's at all, no joking around. He was just plain different. He was obviously extremely confident, but he was different from the other astronauts. With some guys of the Original Seven that difference may have made him be a little bit disliked or not quite as approachable. But when you saw the confidence in him, you couldn't argue with him. Neil Armstrong was very quiet, except when he was angry, and then you only see a red face. He was also very confident in a different kind of way. It was a terrific combination when you think about it. These were two extremely confident individuals but in a different kind of way. Mike Collins was very easygoing, well-rounded, balanced, calm, and serious individual. All he worried about was not screwing them up and getting the job done right. It was not a Stafford-Cernan or Conrad-Gordon combination at all. It was a crew to get the job done. God knows they did it. Whether who was first has long faded.

Pealer: *Apollo 12* was a real tight Navy crew.

Friedlander: To a large extent—I hate to say this being a West Pointer—the Navy guys were quick to tell you that they are naval aviators and because of landing on carriers they are better aviators. I heard this from day one of the program. In a way, I kind of believe it. Their aircraft were built with extra-strength to withstand the impact on the carrier deck. Landing on a carrier at night is a hell of a job. Now whether Al [Shepard] picked Navy guys to be on certain crews like *Apollo 12* for loyalty reasons didn't matter, because they did a good job.

Pealer: I couldn't think of any crew better to perform the first pinpoint lunar landing.

Friedlander: Sure. Pete is a heck of a pilot and a commander. He is cool and calm. You can't beat Pete. He got the job done—to land near *Surveyor* was fantastic.

Pealer: There was talk within NASA management to cancel the Apollo program after the second successful lunar landing. Did you pick up on this viewpoint during your work at the Cape?

Friedlander: We had guys at NASA headquarters that supported unmanned flight. It may have been one of those guys—it probably was. We immediately counted the number of rockets and spacecraft we had left and asked the question, “Don’t we have missions for them? Hell! Let’s do it.” You could always count on guys from Washington that were saying, “Don’t do this. Let’s do it unmanned.” After a while, all you could do was just cross your fingers that they wouldn’t. But, then you to worry about Congress. I learned that later with Bill [Anders] in the White House. If they got enough congressmen behind them, NASA could be overruled.

Pealer: *Apollo 14*—Big Al flies again. He was determined to get a lunar landing mission and walk on the Moon.

Friedlander: He did a great job. I’m glad Al made it because of all the ribbing that he had taken over the years, including from Wally. Things like 15 minutes of experience, banana pellets to eat, and looking like a monkey. He had taken it, and Wally was brutal with his gotch-ya's.

Pealer: I admire him for his perseverance and determination. Depending on his mood he could be known as “Good Old Al” or “The Ice Commander.”

Friedlander: It was just not during the mission. During the day, there was a picture hung on the door. That’s true. I would come in the office every two or three days and he was either “The Ice Commander” or “Good Old Al.” You just accepted it. That was Al. Wally says he has mellowed tremendously.

There was a walkthrough for people to look down at the lunar crews practicing. People would walk up behind this glass upstairs from where they were training. NASA spent \$200,000 to build this thing. It was the second or third day when we were going through the walkthrough with Shepard and Buzz down there that the people shot photographs with flashbulbs. Al said to me, “That’s it. No more!” When Al is in that

mood, that’s it.

Pealer: What was the mood in Washington about the last three Apollo lunar landing missions—*Apollo 15, 16, and 17*?

Friedlander: Washington had two main parts—Congress and the White House. Congress hated the White House, and Bill and I had a White House badge. We were treated like dirt when we walked into Congress with a White House badge. Our frustration when we went to Washington was being unable to influence the policy of space. We needed it badly. I lived in Florida at the time and Bill [Anders] came down (after he was offered the job by President Nixon) and offered me a position. I hated Washington and I said, “No.” Then, he worked on me by saying, “How often do you and I—plain, ordinary guys—have the opportunity to see the president and Congress?” and I went. [Vice President Spiro] Agnew was our immediate boss and we weren’t there more than a couple of weeks—really hardcharging—and the word got to Agnew. One day, Agnew called us over to his office and sat us down. He said, “I want you know that the president and I are really behind you boys but we are political animals.” I could hear it coming. He continued, “I’d like you to look at the eleven objectives of this administration.” He had this yellow pad of paper and written on there were the 11 objectives. Space was number 10. I’d already sold my house and bought one in McLean, Virginia, and so did Bill. I figured he was giving us the word, “Cool it fellas. You’re not on top of the priority list.” And Bill essentially said, “Screw it! We’re going to do what we can, anyway.” We did a few things. We got a few things accomplished. It would have been a lot easier with real support from the president and the vice president. It was tough. By that point in time, we had kind of written off what Congress was going to do. We would be lucky to get the Shuttle and various satellite programs approved. I didn’t enjoy it. I was Bill’s liaison both to the White House and the Congress. Compared to the Cape that was not fun. You know they abolished our office, the National Space Council.

Pealer: I always thought that Agnew was a big supporter from a political perspective for the manned Mars missions for the [19]80s.

Friedlander: We put it up. Getting the funds for it was another matter. You know we could have landed on Mars by [19]83. There was a plan from the NASA Office of Future Studies. It was either using ion or nuclear propulsion. The mission would have only taken a few months. But somehow I knew it would never happen.

Pealer: What were your thoughts on the night launch of *Apollo 17*—the last Apollo mission to the Moon?

Friedlander: I felt just terrible when that rocket lifted off. The thought that we would not see another one was just awful. Despite everything they did on that mission, consciously I was so sad—what is there to do? It really made me sad because in a way I felt like Bill and I had failed. It's not true because there was not much we could have done about getting them fired up to approve more lunar missions. You can't help but have a feeling of personal value—if only I could have got the president, vice president, and Congress fired up. We finally settled with the Shuttle and devoted all of our energies towards it. Of course, it was a big thing at the time. I'm glad we've got it done. But, as far as a follow-on to Apollo, even the Shuttle compared to the Saturn V, there was no comparison.

Pealer: Who were the best astronauts in the Gemini and Apollo programs?

Friedlander: There were a lot of good ones—Pete Conrad, Al Shepard, Frank Borman, and Bill Anders. It's so hard to narrow down a group.

Pealer: In my opinion, there were certain categories of astronauts like the natural leaders, the more flexible ones, great managers, and highly competent.

Friedlander: I never thought of that. Frank was a natural leader, way up on top. That's why they gave him the Apollo Investigation Board because he knew how to lead. In a different way, Shepard was a leader. In another completely different way, Slayton was a leader. We were taught that you have to select your own form of leadership based on your strong suits of personality. MacArthur had one egotistical form of leadership based on his personality. Then, there was Omar Bradley who was a soft-spoken soldier's soldier. Slayton

was like Omar Bradley—soft-spoken and quiet, but a leader. Shepard was somewhere between Omar Bradley and MacArthur. Frank Borman was more of a Matt Ridgway. He got the job done, a real good man. Buzz Aldrin was a leader in his field.

Pealer: He was very competent in his field. I think all the astronauts respected him although they may not have got along well with him.

Friedlander: That's exactly right. Although some of them may not have admitted the respect of the time back then. Buzz was a total enigma. I have never and I'm sure I will never meet somebody like Buzz again. He was so unique. One thing that always bugs me, and I've got to find out, was I'd love to know what his classmates thought of him as a cadet. What was he like? He wasn't in my class. He was class of [19]51, the next year. There was peer voting at West Point twice a year. But I would just love to talk to some of them. I never did, and I wish I had. The one guy in my company who was the First Captain of the class, who would have known Buzz well, just died. I would have loved to talk to him. He is so different.

Pealer: What about Dr. Harrison Schmitt of the *Apollo 17* mission?

Friedlander: He is a fascinating guy, very, very different. Bill and I were talking about him last week. He wouldn't date while he was in the Program but he's married now. He's very knowledgeable. It always fascinated me that the *Apollo 12* crew said they had the odor of gunpowder all the way back from the lunar surface. I couldn't understand why and so I asked Jack Schmitt. Jack answered, "Chemically when you mix moisture like breathing within the spacecraft with the lunar samples, it forms nitrate compounds and it smells like gunpowder." Only Jack Schmitt would know that. A real scientist and a good pilot.

Pealer: I met Joe Engle in Houston over the summer.

Friedlander: That's a sad story. [That he didn't get to fly on *Apollo 17*.]

Pealer: He said, "We had to do it because it was good for the Apollo program." He's a

team player.

Friedlander: I hope he means that.

Pealer: Personally, if it happened to me it would still hurt not walking on the Moon after training for it.

Friedlander: It had to hurt. It's nice of him to say that. I hope he means it. I like Joe and always felt so badly that he didn't get to go.

Pealer: Any additional comments that you would like to add about the Gemini and Apollo programs that wasn't discussed?

Friedlander: Today I'm delighted to see that Apollo is beginning to be remembered and revered to a certain extent. It's basically because we were in an era of exploration. I used to say during a briefing because Mr. Webb approved it that, "We are presently in the era of space exploration but we look forward to getting the era of space exploitation." Now that I look at space exploitation—yes, it's okay—but it's not as exciting or glamorous. I'm ashamed to say that, but it's true. The thing that saddens me is that people today are devoting a little attention to Apollo but they are devoting none to Gemini. People don't seem to even know about Gemini. Gemini was the road to Apollo. Everytime I listen to my tapes of the Gemini liftoffs, which is not often, maybe once every five years, I think, "My God! This was the road to Apollo."

* * *

About the Interviewer

On retiring from the U.S. Navy as a naval aviator with more than 20 years of active duty service, Donald D. Pealer began his second career as a Department of Defense contractor in the National Capitol Region, currently working as a program manager for TASC. He graduated from Boston University with a bachelor of science degree in aerospace engineering. His articles and interviews have appeared in *Quest* and the British Interplanetary Society *Spaceflight* since 1994 and 2003, respectively.

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