

Countdown To A Moon Launch Springer Praxis Books

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Space Launch Disaster Peachtree Publishers

A Behind-the-Scenes Look At NASA's incredible Journey to the Moon Space journalist and insider Nancy Atkinson weaves together the riveting story of NASA's mission to complete "the greatest adventure on which humankind ever embarked." This incredible account is a keepsake celebrating some of the most important and dramatic events in modern history. Told through over 60 personal interviews and oral histories, as well as personal photographs, this tribute to the men and women who made the Apollo 11 mission a reality chronicles the highs and lows that accompanied the race to the Moon: the devastating flash fire that killed the crew of Apollo 1; the awe of those who saw their years-in-the-making contributions to space exploration blast off from Cape Canaveral; the knuckle-biting descent of Apollo 11 to the lunar surface; a near-catastrophic event on the crew's flight home; the infectious excitement and jubilation across the world after the astronauts returned safely to Earth. These little-known stories of the dedicated engineers, mathematicians and scientists in the 1960s reveal the "hows" of the Apollo missions and bring to life the wonder and excitement of humanity's first steps on the Moon.

A History of Apollo Launch Facilities and Operations Greenwood Publishing Group

Thousands of workers labored at Kennedy Space Center around the clock, seven days a week, for half a year to prepare a mission for the liftoff of Apollo 11. This is the story of what went on during those hectic six months. Countdown to a Moon Launch provides an in-depth look at the carefully choreographed workflow for an Apollo mission at KSC. Using the Apollo 11 mission as an example, readers will learn what went on day by day to transform partially completed stages and crates of parts into a ready-to-fly Saturn V. Firsthand accounts of launch pad accidents, near misses, suspected sabotage, and last-minute changes to hardware are told by more than 70 NASA employees and its contractors. A companion to Rocket Ranch, it includes many diagrams and photographs, some never before published, to illustrate all aspects of the process. NASA's groundbreaking use of computers for testing and advanced management techniques are also covered in detail. This book will demystify the question of how NASA could build and launch Apollo missions using 1960s technology. You'll discover that there was no magic involved - just an abundance of discipline, willpower, and creativity.

Apollo 12 Technical Crew Debriefing with Unique Observations about the Second Lunar Landing - Astronauts Conrad, Gordon, Bean Countdown to a Moon Launch Preparing Apollo for Its Historic Journey

This official NASA document provides the complete transcription of the historic Apollo 12 post-flight debriefing given by astronauts Pete Conrad, Al Bean, and Dick Gordon. Every aspect of the incredible adventure of the second moon landing, which landed next to the Surveyor 3 spacecraft, is discussed - from moonwalking to personal hygiene issues, launch through landing. This is an invaluable addition to the ebook library of anyone interested in the Apollo moon landings. Surprising facts, comments, and anecdotes are included in this debriefing. Did you know, for example, that Conrad was so hungry on the moon, he ate some of Al Bean's food? Or that Conrad briefly feared that Bean was critically injured during the splashdown: "We really hit flatter than a pancake, and it was a tremendous impact, much greater than anything I'd experienced in Gemini. The 16-mm camera, which was on the bracket - and we may have been remiss in this and I'm not sure, but it wasn't in the checklist - whistled off and clanked Al on the head to the tune of six stitches. It cold-cocked him, which is why we were in stable II. Although he doesn't realize it, he was out to lunch for about 5 seconds. Dick was hollering for him to punch in the breakers, and in the meantime, I'd seen this thing whistle off out of the corner of my eye and he was blankly staring at the instrument panel. I was convinced he was dead over there in the right seat, but he wasn't,

and finally got the breakers in." Contents: Suiting and Ingress * Status Checks and Countdown * Powered Flight * Earth Orbit and Systems Checkout * TLI Through S-IVB Closeout * Translunar Coast * LOI Through Lunar Module Activation * Lunar Module Checkout Through Separation * DPI Through Touchdown * Lunar Surface * CSM Circumlunar Operations * Liftoff, Rendezvous, And Docking * Lunar Module Jettison Through TEI * Transearth Coast * Entry * Landing and Recovery * Geology and Experiments * Command Module Systems Operations * Lunar Module Systems Operations * Miscellaneous Systems, Flight Equipment, And GFE * Visual Sightings * Prepermission Planning * Mission Control * Training * Medical and Food * Miscellaneous The primary mission objectives of the second crewed lunar landing included an extensive series of lunar exploration tasks by the lunar module, or LM, crew, as well as the deployment of the Apollo Lunar Surface Experiments Package, or ALSEP, which was to be left on the moon's surface to gather seismic, scientific and engineering data throughout a long period of time. Other Apollo 12 objectives included a selenological inspection; surveys and samplings in landing areas; development of techniques for precision-landing capabilities; further evaluations of the human capability to work in the lunar environment for a prolonged period of time; deployment and retrieval of other scientific experiments; and photography of candidate exploration sites for future missions. The astronauts also were to retrieve portions of the Surveyor III spacecraft, which had soft-landed on the moon April 20, 1967, a short distance from the selected landing site of Apollo 12. The flight plan for Apollo 12 was similar to that of Apollo 11, except Apollo 12 was to fly a higher inclination to the lunar equator and leave the free-return trajectory after the second translunar midcourse correction. This first non-free-return trajectory on an Apollo mission was designed to allow a daylight launch and a translunar injection above the Pacific Ocean. It also allowed a stretch of the translunar coast to gain the desired landing site lighting at the time of LM descent, conserved fuel and permitted the Goldstone, Calif., tracking antenna to monitor the LM descent and landing. *One Giant Leap* Penguin UK

"Ranger VII returned to Earth the first high-resolution pictures of the Moon's surface; it proved to be the first of three highly successful lunar photographic missions. The Ranger VIII and IX flights brought to more than 17,250 the total of Ranger pictures, extending the close-up coverage both in area and variety of terrain. Subsequent unmanned-spacecraft projects will further extend the coverage and bring the focus even closer. Project Apollo will place observers on the lunar surface. Still, some pride of position, as forerunner, must remain with Ranger VII."--Foreword.

The Flight of Apollo 11 Enslow Pub Incorporated

Three comprehensive official NASA documents chronicle the amazing journey of Apollo 12, which performed the second manned lunar landing in November 1969. It was conducted by astronauts Conrad, Gordon, and Bean. Two technical mission reports, the Manned Spacecraft Center (MSC) Apollo Mission Report and the NASA Headquarters Mission Operation Report (MOR), provide complete details about every aspect of the mission. Apollo 12 MSC Mission Report: Mission description, pilots' report, communications, trajectory, command and service module performance, mission support performance, assessment of mission objectives, launch vehicle summary, anomaly summary (CSM, LM, government furnished equipment), conclusions, vehicle descriptions. Apollo 12 MOR: Mission design and execution, spacecraft performance, flight anomalies, detailed objectives and experiments, launch countdown, detailed flight mission description, back contamination program, contingency operations, configuration differences, mission support, recovery support plan, flight crew, mission management responsibility, program management, abbreviations and acronyms. Apollo 12 Press Kit: Detailed preview from countdown to landing. The Apollo 12 mission provided a wealth of scientific information in this significant step of detailed lunar exploration. The emplaced experiments, with an expected equipment operation time of 1 year, will enable scientific observations of the lunar surface environment and determination of structural perturbations. This mission demonstrated the capability for a precision landing, a requirement for proceeding to more

specific and rougher lunar surface locations having particular scientific interest. The space vehicle, with a crew of Charles Conrad, Jr., Commander; Richard F. Gordon, Command Module Pilot; and Alan L. Bean, Lunar Module Pilot; was launched from Kennedy Space Center, Florida, at 11:22:00 a.m. e.s.t. (16:22:00 G.m.t.) November 14, 1969. The activities during earth-orbit checkout, translunar injection, and translunar coast were similar to those of Apollo 11, except for the special attention given to verifying all spacecraft systems as a result of lightning striking the space vehicle at 36.5 seconds and 52 seconds. A non-free-return translunar trajectory profile was used for the first time in the Apollo 12 mission. The spacecraft was inserted into a 168.8- by 62.6-mile lunar orbit at about 83-1/2 hours. Two revolutions later a second maneuver was performed to achieve a 66.1- by 54.3-mile orbit. The initial checkout of lunar module systems during translunar coast and in lunar orbit was satisfactory. At about 104 hours, the Commander and the Lunar Module Pilot entered the lunar module to prepare for descent to the lunar surface.

Moon Mission Capstone Classroom

Examines the history of NASA's shuttle program, its missions, and its impending demise in a behind-the-scenes view of what was once the cornerstone of the U.S. space program.

Bringing Columbia Home Springer

This official NASA document provides the complete transcription of the Apollo 13 post-flight debriefing given by astronauts Lovell, Haise, and Swigert, with their first-hand description of the harrowing flight. This ebook is an invaluable addition to the library of anyone interested in the Apollo moon landings. Contents include: SUITING AND INGRESS * STATUS CHECKS AND COUNTDOWN * POWERED FLIGHT * EARTH ORBIT AND SYSTEMS CHECKOUT * TLI THROUGH S-IVB CLOSEOUT * TRANSLUNAR COAST * LUNAR MODULE FAMILIARIZATION * SPACECRAFT EMERGENCY * LUNAR FLYBY THROUGH 2-HOUR MANEUVER * TRANSEARTH COAST * ENTRY * LANDING AND RECOVERY * COMMAND AND SERVICE MODULE SYSTEMS OPERATIONS * LUNAR MODULE SYSTEMS OPERATIONS * FLIGHT DATA FILE * FLIGHT EQUIPMENT AND GOVERNMENT-FURNISHED EQUIPMENT * VISUAL SIGHTINGS * PERMISSION PLANNING * MISSION CONTROL * TRAINING * HUMAN FACTORS Apollo 13 was supposed to land in the Fra Mauro area. An explosion on board forced Apollo 13 to circle the moon without landing. The Fra Mauro site was reassigned to Apollo 14. At 5 1/2 minutes after liftoff, John Swigert, Fred Haise and James Lovell felt a little vibration. Then the center engine of the S-II stage shut down two minutes early. This caused the remaining four engines to burn 34 seconds longer than planned, and the S-IVB third stage had to burn nine seconds longer to put Apollo 13 in orbit. Days before the mission, backup lunar module pilot, Charles Duke, inadvertently exposed the crew to German measles. Command Module Pilot Ken Mattingly had no immunity to measles and was replaced by backup command module pilot, John Swigert. Ground tests before launch indicated the possibility of a poorly insulated supercritical helium tank in the lunar module, or LM, descent stage, so the flight plan was modified to enter the LM three hours early in order to obtain an onboard readout of helium tank pressure. The No. 2 oxygen tank, serial number 10024X-TA0009, had been previously installed in the service module of Apollo 10, but was removed for modification and damaged in the process. The tank was fixed, tested at the factory, installed in the Apollo 13 service module and tested again during the Countdown Demonstration Test at NASA's Kennedy Space Center beginning March 16, 1970. The tanks normally are emptied to about half full. No. 1 behaved all right, but No. 2 dropped to only 92 percent of capacity. Gaseous oxygen at 80 pounds per square inch was applied through the vent line to expel the liquid oxygen, but to no avail. An interim discrepancy report was written, and on March 27, two weeks before launch, detanking operations resumed. No. 1 again emptied normally, but No. 2 did not. After a conference with contractor and NASA personnel, the test director decided to "boil off" the remaining oxygen in No. 2 by using the electrical heater within the tank. The technique worked, but it took eight hours of 65-volt DC power from the ground support equipment to dissipate the oxygen. Due to an oversight in replacing an underrated component during a design modification, this turned out to

severely damage the internal heating elements of the tank.

[The Story of the First American Woman to Command a Space Mission](#) Springer

Recounts Borman's flights aboard NASA's Gemini 7 and Apollo 8, and his battle to keep Eastern Airlines financially sound during his tenure as the company's president

Apollo and America's Moon Landing Program Kids Can Press Ltd

The New York Times bestselling, "meticulously researched and absorbingly written" (The Washington Post) story of the trailblazers and the ordinary Americans on the front lines of the epic Apollo 11 moon mission. President John F. Kennedy astonished the world on May 25, 1961, when he announced to Congress that the United States should land a man on the Moon by 1970. No group was more surprised than the scientists and engineers at NASA, who suddenly had less than a decade to invent space travel. When Kennedy announced that goal, no one knew how to navigate to the Moon. No one knew how to build a rocket big enough to reach the Moon, or how to build a computer small enough (and powerful enough) to fly a spaceship there. No one knew what the surface of the Moon was like, or what astronauts could eat as they flew there. On the day of Kennedy's historic speech, America had a total of fifteen minutes of spaceflight experience—with just five of those minutes outside the atmosphere. Russian dogs had more time in space than US astronauts. Over the next decade, more than 400,000 scientists, engineers, and factory workers would send twenty-four astronauts to the Moon. Each hour of space flight would require one million hours of work back on Earth to get America to the Moon on July 20, 1969. "A veteran space reporter with a vibrant touch—nearly every sentence has a fact, an insight, a colorful quote or part of a piquant anecdote" (The Wall Street Journal) and in *One Giant Leap*, Fishman has written the sweeping, definitive behind-the-scenes account of the furious race to complete one of mankind's greatest achievements. It's a story filled with surprises—from the item the astronauts almost forgot to take with them (the American flag), to the extraordinary impact Apollo would have back on Earth, and on the way we live today. From the research labs of MIT, where the eccentric and legendary pioneer Charles Draper created the tools to fly the Apollo spaceships, to the factories where dozens of women sewed spacesuits, parachutes, and even computer hardware by hand, Fishman captures the exceptional feats of these ordinary Americans. "It's been 50 years since Neil Armstrong took that one small step. Fishman explains in dazzling form just how unbelievable it actually was" (Newsweek).

Apollo 16 Technical Crew Debriefing with Unique Observations about the Fifth Lunar Mission by Astronauts Young, Duke and Mattingly Simon and Schuster

Four comprehensive official NASA documents chronicle the historic mission of Apollo 11, which accomplished the first landing of humans on the moon in July 1969. Two technical mission reports, the Manned Spacecraft Center (MSC) Apollo 11 Mission Report and the NASA Headquarters Mission Operation Report (MOR), provide complete details about every aspect of the mission. Apollo 11 MSC Mission Report: Mission description, pilots' report, lunar descent and ascent, communications, trajectory, command and service module performance, lunar module performance, extravehicular mobility unit performance, the lunar surface, biomedical evaluation, mission support performance, assessment of mission objectives, launch vehicle summary, anomaly summary (CSM, LM, government furnished equipment), conclusions, vehicle descriptions, spacecraft histories, postflight testing, data availability, glossary. Apollo 11 MOR: Mission design and execution, spacecraft performance, flight anomalies, detailed objectives and experiments, launch countdown for the Apollo-Saturn AS-506 launch vehicle, detailed flight mission description, back contamination program, contingency operations, configuration differences, mission support, recovery support plan, flight crew, mission management responsibility, program management, abbreviations and acronyms Apollo 11 Press Kit: Countdown, Launch events, mission events, mission trajectory and maneuver description, earth parking orbit (EPO), trans-lunar injection (TLI), translunar coast, lunar orbit insertion, lunar module descent, lunar landing, EVA, lunar sample collection, LM ascent, lunar orbit rendezvous, transearth injection (TEI), transearth coast, entry and landing, recovery operations, quarantine, Lunar Receiving Laboratory, go/no-go decision points, alternate missions, abort modes, deep space aborts, onboard television, photographic tasks, lunar description, lunar landing sites, CSM systems, lunar module structures, Saturn V launch vehicle, Apollo 11 crew, Early Apollo Scientific Experiments Package, ALRH, launch operations, Launch Complex 39, Manned Space Flight Network, ARIA, tracking ships, contamination control program, Apollo program management, Principal Investigators and Sample Investigations, Glossary, acronyms and abbreviations. NASA Mission Report (PAO Release) - At 10:56 P.M. EDT, Sunday, July 20. Astronaut Neil A. Armstrong, spacecraft commander of Apollo 11, set foot on the moon. His descent from the

lowest rung of the ladder which was attached to a leg of the lower stage of the Lunar Module (LM), to the footpad, and then to the surface of earth's only natural satellite constituted the climax of a national effort that began in 1961. It was an effort that involved, at its peak, more than 300,000 people in industry, the universities and in government. As he took his epochal step, Armstrong commented "That's one small step for a man, one giant leap for Mankind." Sharing this electric moment with Armstrong and Edwin "Buzz" Aldrin, the LM pilot, were an estimated half-billion TV watchers in most of the earth's nations. As the astronaut descended the ladder, he pulled a "D" ring that deployed a black and white television camera which was focused to record the event. Framed by parts of the LM's under-carriage, Armstrong's heavily-booted left foot descended across millions of TV tubes until his boot sole made contact.

Moonport John Wiley & Sons Incorporated

Powerful free verse and stunning illustrations tell the true story of the American effort to land the first man on the Moon. In 1961, President John F. Kennedy announced that the United States would try to land a man on the Moon by the end of the decade. During the two thousand, nine hundred and seventy-nine days that followed his speech, eighteen astronauts climbed into spaceships; three of them died before even leaving the ground. Eight rockets soared into space. And four hundred thousand people—engineers, technicians, scientists, mathematicians, and machinists—joined Project Apollo in hopes of making the dream a reality. Award-winning author and former mechanical engineer Suzanne Slade joins up with New York Times best-selling illustrator Thomas Gonzalez to tell the powerful story of the successes, failures, triumphs, tragedies, and lessons learned from Apollos 1 through 10 that led to the first Moon landing. [Apollo 9 Official NASA Mission Reports and Press Kit - 1969 First Manned Flight of the Lunar Module in Earth Orbit by McDivitt, Scott, and Schweickart](#) Simon and Schuster

A unique look at the successful Ñ though nearly disastrous Ñ Apollo 11 moon landing! In a riveting narrative told from the astronauts' points of view, readers get to relive every step of Apollo 11's 1969 mission Ñ from ignition to moon walk to splashdown Ñ including the nail-biting (and relatively unknown) crucial moments when it came close to failure. And, setting this book apart, each step is linked to the innovations and discoveries from the past four centuries that made it possible. It's a fascinating new perspective on an epic journey Ñ and how STEM set it in motion! Readers better fasten their seat belts, they're in for the ride of a lifetime!

Countdown Random House

Three comprehensive official NASA documents chronicle the incredible flight of Apollo 13, which returned safely to Earth after aborting its planned lunar landing in April 1970. (Please note that due to space constraints, the Cortright Apollo 13 Review Board report is available as a separate ebook.) Two technical mission reports, the Manned Spacecraft Center (MSC) Apollo Mission Report and the NASA Headquarters Mission Operation Report (MOR), provide complete details about every aspect of the mission. Apollo 13 MSC Mission Report: Mission description, pilots' report, communications, trajectory, command and service module performance, mission support performance, assessment of mission objectives, launch vehicle summary, anomaly summary (CSM, LM, government furnished equipment), conclusions, vehicle descriptions. Apollo 13 MOR: Mission design and execution, spacecraft performance, flight anomalies, detailed objectives and experiments, launch countdown, detailed flight mission description, back contamination program, contingency operations, configuration differences, mission support, recovery support plan, flight crew, mission management responsibility, program management, abbreviations and acronyms. Apollo 13 Press Kit: Detailed preview from countdown to landing. The Apollo 13 mission, planned as a lunar landing in the Fra Mauro area, was aborted because of an abrupt loss of service module cryogenic oxygen associated with a fire in one of the two tanks at approximately 56 hours. The lunar module provided the necessary support to sustain a minimum operational condition for a safe return to earth. A circumlunar profile was executed as the most efficient means of earth return, with the lunar module providing power and life support until transfer to the command module just prior to entry. Although the mission was unsuccessful as planned, a lunar flyby and several scientific experiments were completed. The space vehicle, with a crew of James A. Lovell, Commander; Fred W. Haise, Jr., Lunar Module Pilot; and John L. Swigert, Jr., Command Module Pilot; was launched from Kennedy Space Center, Florida, at 2:13:00 p.m. e.s.t. (19:13:00 G.m.t.) April 11, 1970. Two days before launch, the Command Module Pilot, as a member of the Apollo 13 backup crew, was substituted for his prime crew counterpart, who was exposed and found susceptible to rubella (German measles). During S-II stage boost, an automatic shutdown of the center engine occurred because of a divergent dynamic structural condition associated with that engine. At

approximately 56 hours, the pressure in cryogenic oxygen tank 2 began to rise at an abnormally high rate and, within about 100 seconds, the tank abruptly lost pressure. The loss of oxygen and primary power in the service module required an immediate abort of the mission. The crew powered up the lunar module, and the first maneuver following the incident was made with the descent propulsion system to place the spacecraft once again on a free-return trajectory. A second maneuver performed with the descent engine 2 hours after passing pericyynthion reduced the transearth transit time and moved the earth landing point from the Indian Ocean to the South Pacific. Two small transearth midcourse corrections were required prior to entry. The lunar module was jettisoned 1 hour before entry, which was performed nominally using the primary guidance and navigation system. Landing occurred at 142:54:41 within sight of the recovery ship. The landing point was reported as 21 degrees 38 minutes 24 seconds south latitude and 165 degrees 21 minutes 42 seconds west longitude. The crew were retrieved and aboard the recovery ship within 45 minutes after landing.

Apollo 11 Technical Crew Debriefing with Unique Observations about the First Lunar Landing - Astronauts Armstrong, Aldrin, Collins Simon and Schuster

Voted the Best Space Book of 2018 by the Space Hipsters The dramatic inside story of the epic search and recovery operation after the Columbia space shuttle disaster. On February 1, 2003, Columbia disintegrated on reentry before the nation's eyes, and all seven astronauts aboard were lost. Author Mike Leinbach, Launch Director of the space shuttle program at NASA's John F. Kennedy Space Center was a key leader in the search and recovery effort as NASA, FEMA, the FBI, the US Forest Service, and dozens more federal, state, and local agencies combed an area of rural east Texas the size of Rhode Island for every piece of the shuttle and her crew they could find. Assisted by hundreds of volunteers, it would become the largest ground search operation in US history. This comprehensive account is told in four parts: Parallel Confusion Courage, Compassion, and Commitment Picking Up the Pieces A Bittersweet Victory For the first time, here is the definitive inside story of the Columbia disaster and recovery and the inspiring message it ultimately holds. In the aftermath of tragedy, people and communities came together to help bring home the remains of the crew and nearly 40 percent of shuttle, an effort that was instrumental in piecing together what happened so the shuttle program could return to flight and complete the International Space Station. Bringing Columbia Home shares the deeply personal stories that emerged as NASA employees looked for lost colleagues and searchers overcame immense physical, logistical, and emotional challenges and worked together to accomplish the impossible. Featuring a foreword and epilogue by astronauts Robert Crippen and Eileen Collins, and dedicated to the astronauts and recovery search persons who lost their lives, this is an incredible, compelling narrative about the best of humanity in the darkest of times and about how a failure at the pinnacle of human achievement became a story of cooperation and hope.

Countdown to a Moon Launch Silver Arrow

Three comprehensive official NASA documents - converted for accurate flowing-text e-book format reproduction - chronicle the incredible journey of Apollo 10, which tested the Lunar Module in lunar orbit for the first time, paving the way for the Apollo 11 landing mission. It was conducted by astronauts Stafford, Cernan, and Young in May 1969. Two technical mission reports, the Manned Spacecraft Center (MSC) Apollo Mission Report and the NASA Headquarters Mission Operation Report (MOR), provide complete details about every aspect of the mission. Apollo 10 MSC Mission Report: Mission description, pilots' report, communications, trajectory, command and service module performance, mission support performance, assessment of mission objectives, launch vehicle summary, anomaly summary (CSM, LM, government furnished equipment), conclusions, vehicle descriptions. Apollo 10 MOR: Mission design and execution, spacecraft performance, flight anomalies, detailed objectives and experiments, launch countdown, detailed flight mission description, back contamination program, contingency operations, configuration differences, mission support, recovery support plan, flight crew, mission management responsibility, program management, abbreviations and acronyms. Apollo 10 Press Kit: Detailed preview from countdown to landing. The Apollo 10 mission encompassed all aspects of an actual crewed lunar landing, except the landing. It was the first flight of a complete, crewed Apollo spacecraft to operate around the moon. Objectives included a scheduled eight-hour lunar orbit of the separated lunar module, or LM, and descent to about nine miles off the moon's surface before ascending for rendezvous and docking with the command and service module, or CSM, in about a 70-mile circular lunar orbit. Pertinent data to be gathered in this landing rehearsal dealt with the lunar potential, or gravitational effect, to refine the Earth-based crewed spaceflight network tracking techniques, and

to check out LM programmed trajectories and radar, and lunar flight control systems. Twelve television transmissions to Earth were planned. All mission objectives were achieved. Apollo 10 launched from Cape Kennedy on May 18, 1969, into a nominal 115-mile circular Earth-parking orbit at an inclination of 32.5 degrees. One-and-a-half orbits later, translunar injection occurred. The S-IVB fired to increase velocity from 25,593 to 36,651 feet per second on a free-return trajectory. Twenty-five minutes later, the CSM separated for transposition and docking with the LM, similar to the maneuver performed on Apollo 9. The orbital vehicle was comprised of the S-IVB stage, and its payload of the CSM, the LM and spacecraft-lunar module adapter, or SLA, shroud. The Apollo 10 crew members were Commander Thomas Stafford, Command Module Pilot John Young and Lunar Module Pilot Eugene Cernan. The first live color TV transmissions to Earth began three hours after launch when Apollo 10 was 3,570 miles from Earth and concluded when the spacecraft was 9,428 miles away. The transmission showed the docking process and the interior of the CSM. About four hours after launch, Apollo 10 separated from the S-IVB stage, which was followed by another telecast from 14,625 miles out. A third TV transmission of pictures of Earth was made from 24,183 miles out, and a fourth telecast of the Earth was made from 140,000 miles. The LM flew over Landing Site 2 in the Sea of Tranquility. During this run, the LM landing radar was tested for altitude functioning, providing both "high gate" and "low gate" data.

2979 Days to the Moon Page Street Publishing

Jonathan Ward takes the reader deep into the facilities at Kennedy Space Center to describe NASA's first computer systems used for spacecraft and rocket checkout and explain how tests and launches proceeded. Descriptions of early operations include a harrowing account of the heroic efforts of pad workers during the Apollo 1 fire. A companion to the author's book *Countdown to a Moon Launch: Preparing Apollo for Its Historic Journey*, this explores every facet of the facilities that served as the base for the Apollo/Saturn missions. Hundreds of illustrations complement the firsthand accounts of more than 70 Apollo program managers and engineers. The era of the Apollo/Saturn missions was perhaps the most exciting period in American space exploration history. Cape Canaveral and Kennedy Space Center were buzzing with activity. Thousands of workers came to town to build the facilities and launch the missions needed to put an American on the Moon before the end of the decade. Work at KSC involved much more than just launching rockets. It was a place like none other on Earth. Technicians performed intricate operations, and hazards abounded everywhere, including lightning, fire, highly-toxic fuels, snakes, heat, explosives, LOX spills, and even plutonium. The reward for months of 7-day workweeks under

intense pressure was witnessing a Saturn V at liftoff. For anyone who ever wished they had worked at Kennedy Space Center during the Apollo era, this book is the next best thing. The only thing missing is the smell of rocket fuel in the morning.

[A History of Space Flight](#) Roaring Brook Press

This official NASA document provides the complete transcription of the Apollo 16 post-flight debriefing given by astronauts, with their first-hand description of the fifth moon landing - featuring the second use of the Lunar Roving Vehicle (LRV). This ebook is an invaluable addition to the library of anyone interested in the Apollo moon landings. Contents include: SUITING AND INGRESS * STATUS CHECKS AND COUNTDOWN * POWERED FLIGHT * EARTH ORBIT AND SYSTEMS CHECKOUT * TLI THROUGH S-IVB CLOSEOUT * TRANSLUNAR COAST * LOI, DPI, LUNAR MODULE CHECKOUT * LUNAR MODULE CHECKOUT THROUGH SEPARATION * SEPARATION THROUGH LM TOUCHDOWN * LUNAR SURFACE * CSM CIRCUMLUNAR OPERATIONS * LIFTOFF, RENDEZVOUS, AND DOCKING * LUNAR MODULE JETTISON THROUGH TEI * TRANSEARTH COAST * ENTRY * LANDING AND RECOVERY * TRAINING * CSM SYSTEMS OPERATIONS * LUNAR MODULE SYSTEMS OPERATIONS * LRV OPERATIONS * EMU SYSTEMS * FLIGHT EQUIPMENT * FLIGHT DATA FILE * VISUAL SIGHTINGS * PREMISSION PLANNING * MISSION CONTROL * HUMAN FACTORS Three primary objectives were (1) to inspect, survey, and sample materials and surface features at a selected landing site in the Descartes region; (2) emplace and activate surface experiments; and (3) conduct in-flight experiments and photographic tasks from lunar orbit. Additional objectives included performance of experiments requiring zero gravity and engineering evaluation of spacecraft and equipment. The Descartes landing site is in a highlands region of the moon's southeast quadrant, characterized by hilly, grooved, furrowed terrain. It was selected as an outstanding location for sampling two volcanic constructional units of the highlands - the Cayley formation and the Kant Plateau. The Apollo Lunar Surface Experiments Package, or ALSEP, was the fourth such station to become operational after Apollos 12, 14 and 15. Orbital science experiments were concentrated in an array of instruments and cameras in the scientific instrument module, or SIM, bay. Handheld Hasselblad 70mm still and Mauer 16mm motion cameras were used by the crew. Minor changes in surface extravehicular activity, or EVA, equipment were evaluated - a stronger clutch spring in the television camera drive mechanism to eliminate aiming problems experienced on Apollo 15, longer seat belts on the Lunar Roving Vehicle for better astronaut retention, continuous fluting of drill bits to eliminate bit binding due to extracta jamming, and the addition of a treadle and jack to aid in drill core removal from the lunar subsurface. A significant addition to surface objectives was an ultraviolet stellar camera to return photography of the Earth and celestial regions in spectral bands

not seen from Earth. Evaluation of the lunar rover through a "Grand Prix" exercise consisting of S-turns, hairpin turns and hard stops also was to be conducted. A final orbital objective was to launch a subsatellite into lunar orbit from the command and service module, or CSM, shortly before transearth injection.

[Rocket Men](#) Simon & Schuster

"Explores various perspectives on the Apollo 11 moon landing. The reader's choices reveal the historical details"--

Apollo 10 Official NASA Mission Reports and Press Kit - 1969 LM Test Flight in Lunar Orbit by Astronauts Stafford, Cernan, and Young Crown Books for Young Readers

Written and illustrated by Chris Gall, *Go for the Moon!* captures the fascinating detail and inspiring adventure of the moon landing. It is a captivating celebration of one of humankind's greatest technical achievements and most extraordinary feats of exploration. The Apollo 11 astronauts have prepared carefully for their attempt to be the first men to land on the moon. The young narrator of this book has prepared carefully, too: he explains the design of the spacecraft, the flight from the earth to the moon, and the drama of touching down--while shadowing the astronaut's voyage with one of his own.

Apollo and America's Moon Landing Program Random House

LONGLISTED FOR THE NATIONAL BOOK AWARD • YALSA EXCELLENCE IN NONFICTION FINALIST • A ROBERT F. SIBERT HONOR BOOK This beautifully illustrated, oversized guide to the people and technology of the moon landing by award-winning author/illustrator John Rocco (illustrator of the Percy Jackson series) is a must-have for space fans, classrooms, and tech geeks. Everyone knows of Neil Armstrong's famous first steps on the moon. But what did it really take to get us there? The Moon landing is one of the most ambitious, thrilling, and dangerous ventures in human history. This exquisitely researched and illustrated book tells the stories of the 400,000 unsung heroes--the engineers, mathematicians, seamstresses, welders, and factory workers--and their innovations and life-changing technological leaps forward that allowed NASA to achieve this unparalleled accomplishment. From the shocking launch of the Russian satellite Sputnik to the triumphant splashdown of Apollo 11, Caldecott Honor winner John Rocco answers every possible question about this world-altering mission. Each challenging step in the space race is revealed, examined, and displayed through stunning diagrams, experiments, moments of crisis, and unforgettable human stories. Explorers of all ages will want to pore over every page in this comprehensive chronicle detailing the grandest human adventure of all time!