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ACS Without an Attitude Harold L. Hallock 2017-05-03 This book de-emphasizes the formal mathematical description of spacecraft on-board attitude and orbit applications in favor of a more qualitative, concept-oriented presentation of these topics. The information presented in this book was originally given as a set of lectures in 1999 and 2000 instigated by a NASA Flight Software Branch Chief at Goddard Space Flight Center. The Branch Chief later suggested this book. It provides an approachable insight into the area and is not intended as an essential reference work. ACS Without an Attitude is intended for programmers and testers new to the field who are seeking a commonsense understanding of the subject matter they are coding and testing in the hope that they will reduce their risk of introducing or missing the key software bug that causes an abrupt termination in their spacecraft's mission. In addition, the book will provide managers and others working with spacecraft with a basic understanding of this subject.

A Vision of Future Space Transportation Tim McElyea 2003 The glorious Space Age has come and gone. So what's next now? This book is a guide of future space transportation concepts. From Earth-to-Orbit to in-space transportation, you will sample what is being considered and get an easy-to-understand explanation of what spacecraft will do and how it will work.

Marswalk One Shayler David 2007-07-05 MARSWALK ONE: First Steps on a New Planet addresses the question of why we should embark on a journey to Mars, documenting what the first human crew will do when they place their feet in the red dust of the planet. The book also addresses why we need to carry out these tasks and, more importantly, what a human crew could achieve that an automated mission could not. Understanding the clear benefits of sending a human crew to the surface of Mars, and how these benefits can be seen back on Earth, is the key to sustained long-term public and political support for the programme in terms of cash and commitment. The book accepts that the journey will be made,

but does not specify precisely when. Flight time, and how to get to and from the planet are discussed briefly, to understand why the suggested duration spent at Mars is reasonable. The main objective of the work is to look at what science will be done on the surface – supported by orbital operations – and what hardware and technology will be employed to achieve the mission objectives. This analysis is drawn from previous experiences in manned and unmanned space programmes, including Apollo, Skylab, Salyut/Mir, Shuttle and ISS, Viking, Luna/Lunokhod, and recent Mars missions such as Pathfinder and Global Surveyor. In addition, new interviews with key personalities involved in planning Martian exploration, and discussions about current thoughts on what we need to accomplish on Mars when we get there, will provide a lively and thought provoking account that could generate fresh debate. When the decision is finally made to go to Mars, it will be made in the knowledge that most of the world knows why we are going and what benefits mankind will see for the effort. The authors' primary objective is to begin this understanding.

Mars Robert Godwin 2004 The oldest questions in mankind's history. Is there life out there? In this sequel to the best-selling first volume, the reader is brought up to date with the most recent results from our nearest neighbour. Filled with a wealth of facts about the latest fleet of Martian explorers as well as a look at what may be coming next in mankind's most ambitious quest for knowledge. Book jacket.

Beyond Earth Asif A. Siddiqi 2018 This is a completely updated and revised version of a monograph published in 2002 by the NASA History Office under the original title Deep Space Chronicle: A Chronology of Deep Space and Planetary Probes, 1958-2000. This new edition not only adds all events in robotic deep space exploration after 2000 and up to the end of 2016, but it also completely corrects and updates all accounts of missions from 1958 to 2000--Provided by publisher.

Virtual Apollo Scott P. Sullivan 2002 With this book readers can become acquainted with the Apollo spacecraft in detail and learn the story of its design and construction.

Kids to Space Lonnie Jones Schorer 2006 Experts answer questions posed by elementary school children regarding space travel and exploration.

The War of the Worlds H. G. Wells 2017-01-01 When a meteorite lands in Surrey, the locals don't know what to make of it. But as Martians emerge and begin killing bystanders, it quickly becomes clear—England is under attack. Armed soldiers converge on the scene to ward off the invaders, but meanwhile, more Martian cylinders land on Earth, bringing reinforcements. As war breaks out across England, the locals must fight for their lives, but life on Earth will never be the same. This is an unabridged version of one of the first fictional accounts of extraterrestrial invasion. H. G. Wells's military science fiction novel was first published in book form in 1898, and is considered a classic of English literature.

Creating Space Mat Irvine 2002 Foreword by Sir Arthur C Clarke. Space exploration began with model and toy rockets. History shows that the greatest Rocketeers began their careers flying model rockets. Now in this book the story of the space race is told in dazzling colour. From the birth of models to the present day the toy rockets have often inspired the real rockets of the future. In fact model manufacturers like Revell and Aurora were frequently in trouble with the defence department for revealing military secrets! This is the Story of the Space Age, and uses the models to illustrate the way history twisted and turned to put us where we are today -- and maybe how space travel will develop in the future.

Apollo 16 Robert Godwin 2002 The landing site selected for the crew of Apollo 16 was in the lunar highland area of Descartes. NASA chose to send John Young to command the fifth lunar landing mission. Young had as much or more flight experience than any other member of the astronaut corps. He had circumnavigated the moon on Apollo 10 and he had flown two Gemini missions. Young would later go on to be the first commander of the Space Shuttle. The Descartes landing site was chosen because it appeared to be of volcanic origin. If it was, it might reveal secrets about the origins of the Earth. For three days Young and Duke embarked on their rover, away from the Lunar Module 'Orion', through rugged landscapes, in search of the origins of our world. Meanwhile Ken Mattingly shot hundreds of photographs and probed the moon's magnetic field from the Command Module 'Casper'. Back on Earth the political climate was beginning to turn against NASA and the remarkable risks and exploits undertaken by the crew of Apollo 16 went almost unnoticed. The three intrepid explorers and their spacecraft harvested a wealth of new data about the Earth-Moon system in an almost flawless performance of skills and bravado. Compiled here are many important documents about the mission including the complete debriefing in the crew's own words. The CD-ROM features an exclusive interview with Commander John Young and the complete footage shot at Descartes, over 2500 still pictures and 18 interactive panoramas. Running time: over 10 hours.

Beyond Earth Bob Krone 2006 Providing a foundation for space planners and anyone interested in human settlement in the solar system, this book theorizes about the near future, when the heretofore significant steps of humankind—traveling to the moon and building space stations—will be dwarfed by new progress. Scholars and scientists raise and answer such questions as Why does space matter to us? What will ordinary life be like in space? and What will our homes be like on Mars or the Moon? This collection of findings by professionals documents important research, laying the bricks for space-faring civilizations and even consults future space-dwellers—kids—for their visions. Working from the assumption that humankind has a biological need to explore and improve the quality of life, the wide variety of contributors successfully argue that space as a future human habitat is not simply possible, but manifest.

Chariots for Apollo Courtney G. Brooks 2009-03-26 Written by a trio of experts, this is the definitive reference on the Apollo spacecraft and lunar modules. It

traces the design of the vehicles, their development, and their operation in space. More than 100 photographs and illustrations highlight the text, which begins with NASA's origins and concludes with the triumphant Apollo 11 moon mission.

Space Shuttle Missions Summary (NASA/TM-2011-216142) Robert D. Legler
2011-09-01 Full color publication. This document has been produced and updated over a 21-year period. It is intended to be a handy reference document, basically one page per flight, and care has been exercised to make it as error-free as possible. This document is basically "as flown" data and has been compiled from many sources including flight logs, flight rules, flight anomaly logs, mod flight descent summary, post flight analysis of mps propellants, FDRD, FRD, SODB, and the MER shuttle flight data and inflight anomaly list. Orbit distance traveled is taken from the PAO mission statistics.

Mars Robert Godwin 2006-02-01 If you always thought that it was Giovanni Schiaparelli who first coined the phrase 'Canali' pertaining to the straight lines he appeared to observe on Mars youd be wrong. In 1858 an astronomer working at the Vatican observatory named father Pietro Angelo Secchi took it upon himself to create his own drawings of Mars. The red planet was now nearing a close approach to earth and the powerful Vatican telescope was capable of resolving detail previously invisible to most astronomers. Secchi thought he saw a series of straight lines on the Martian surface so he made an innocuous notation in his notes. His sketches and articles were published in 1859 in which he referred several times to 'Canale Atlantico' or 'Canale Ceruleo'. His regrettable choice of words would not have an impact for another eight years. This volume tells not only of people and places that have influenced mankind's relationship with the enigmatic red planet, but it also shows you the colour drawings that Secchi made, which were provided to us directly by the Vatican itself. Along with many other interesting stories, drawings and photographs this book will be a prize for both the novice or ardent student of Mars.

Manned Lunar Landing and Return Robert Godwin 2019-05 Even fifty years later there are still important stories waiting to be told about how humans first walked on another world; such as the one in this book. Take a trip back to the 1950s when the Chance Vought Company, builders of some of America's top fighter aircraft, were quietly figuring out how to get men to the moon using something they called Project MALLAR. It is the story of a team of engineers who built some of the most sophisticated space simulators in the world, where almost all of the Mercury and Gemini astronauts learned the art of spaceflight. This same team produced the first serious plan to use modular spacecraft and a technique called Lunar Orbit Rendezvous to make it possible to get to the moon. This book also reveals how for several years rocket genius Wernher von Braun overlooked his own ideas, before having them reintroduced back to him because of Project MALLAR, and how Vought's fighter aircraft weaved in and out of the Apollo story and then contributed to almost every major airliner in the sky today. Included are rare illustrations, some from recently declassified reports, of the earliest designs for the rockets and spacecraft that led to the greatest

technological achievement in human history. In *Manned Lunar Landing And Return*, Robert Godwin takes the reader back to the time long before President Kennedy made his famous proclamation to reach for the moon and reveals one critical thread in the trail of genius which ended in the Sea of Tranquility.

Project Orion George Dyson 2003-04 A brilliant combination of history and personal recollections documents the incredible story of a wild idea--a spacecraft powered by hydrogen bombs--and brings to life an episode in U.S. scientific research that brought together a vast array of brilliant physicists, including the author's father, who participated in the vision of a renowned theoretician, during the political and cultural backdrop of the Cold War. Reprint. 12,500 first printing.

New Moon Rising Frank Sietzen 2004 DVD includes President Bush's Space Initiative -- Vice President Cheney at JPL, NASA Administrator's press conference, January 14th 2004 -- The latest NASA animations for future space exploration.

Project Mars Wernher Von Braun 2006 This never-before-printed science fiction novel by the original 'rocket man', Dr Wernher von Braun, combines technical fact with a human story line in the way that only a true dreamer can realise. Written more than half a century ago, this enthusiastic tale of human space exploration, based on detailed and accurate science, has lingered unpublished in von Brauns personal files until now, nearly 30 years after his death and 57 years after it was written. This exclusive von Braun treasure comes complete with an appendix of his original calculations and technical drawings, made in the late 1940s, on which the story's journey is based. This novel takes the reader through the entire adventure -- the planning for a Mars mission, the building of the mighty space ships, the long journey, the amazing discoveries made on Mars, and the return home. Gary Holt, former Chief Instructor of Rocket Pilots for the US Space Force, leads a 10-ship multinational team to Mars -- a Mars with one surprising difference from our Mars! -- and after spending months exploring the red planet, brings his mission home a complete success. The author's detailed attention to the actions and feelings of the characters -- both those who went and those who stayed behind -- makes this an adventure of human proportions, rather than merely another fanciful tale.

Taming Liquid Hydrogen Virginia Parker Dawson 2004

The Unbroken Chain Guenter Wendt 2001 Guenter Wendt's autobiography is a ground shaking document of the glory days of manned spaceflight, told from the perspective of the launch pad.

Reflections from Earth Orbit Winston E. Scott 2005 The author describes his life and experiences aboard two space shuttle missions.

A Fire to Be Lighted Tyler Peterson 2017-12 From the selection of the Mercury astronauts in 1959 to the International Space Station missions of the 21st

century, the training sequence has met the challenges of preparing astronauts for flight far more often than it has failed. This book draws on interviews with 19 astronauts and Johnson Space Center instructors, as well as sources ranging from books, to articles, to technical reports and archival documents, and explains in detail why this statement is true. Any objective observer cannot help but feel impressed with the consistency by which astronauts have praised their training and the successful mission performances that resulted from that training. This book also explains the training inadequacies, and the lessons learned from them. As the 21st century begins new programs will take humans beyond low Earth orbit for the first time since the Apollo era. Whether operated by a government or a company like SpaceX, Boeing, Blue Origins, or Sierra Nevada, instructors and astronauts will have a largely successful training model to emulate along with a vital list of lessons learned. We live in what scholars call a "knowledge society." Astronaut training is relevant because it reflects a widespread development throughout modern society: teaching complex tasks to workers whose jobs require knowledge and not simply physical labor. Organizations, including the visionaries in the public and private sector who seek to place human bootprints on Mars, must continue to adapt to that challenge through creative approaches to training and carry on the legacy of the seven young men selected as Mercury astronauts nearly sixty years ago.

Apollo 14 Manned Spacecraft Center (U.S.) 1971 "Apollo 14, the third mission during which men have worked on the surface of the Moon, was highly successful. This mission to the Fra Mauro Formation provided geophysical data from a new set of instruments... Because of improved equipment, such as the modularized equipment transporter, and because of the extended time spent on the lunar surface, a large quantity and variety of lunar samples were returned to Earth for detailed examination. New information concerning the mechanics of the lunar soil was also obtained during this mission. In addition, five lunar-orbital experiments were conducted during the Apollo 14 mission, needing no new equipment other than a camera. The experiments were executed by the command module pilot in the command and service module while the commander and the lunar module pilot were on the surface of the Moon. This report is preliminary in nature; however, it is meant to acquaint the reader with the actual conduct of the Apollo 14 scientific mission and to record the facts as they appear in the early stages of the scientific mission evaluation. As far as possible, data trends are reported, and preliminary results and conclusions are included."--p. xi.

Mars Markus Hotakainen 2010-03-11 This absorbing book tells the story of Mars since the dawn of mankind's curiosity for celestial wonders. It covers everything, right from our ancient beliefs, through the revolution in our concepts of the cosmos around us in the 1600s, to the present day knowledge and beyond. It takes the reader on a journey all the way to the futuristic visions of science fiction and terraformed Mars with conditions suitable to Earth life. The story is told in a readable form with an absence of technical jargon. The text is supported by informative imagery and a simple, but inspiring layout

with some special features such as a "flip movie" of the rotation of Mars.

Guidelines and Metrics for Assessing Space System Cost Estimates Bernard Fox 2008 This handbook, designed to help analysts assess cost estimates of space systems, covers planning an estimate and identifying the key data needed. It also provides typical cost ranges for components of relevant historical space programs. It supplements the Air Force Cost Analysis Agency's spacecraft training course by focusing on the cost analysis implications of the systems and processes covered in the course.

WHEN KIDS TAKE OVER NASA Carole Marsh 2011-10-15 WHEN KIDS TAKE OVER NASA was a finalist in ForeWord Reviews' 2011 Book of the Year Awards. WHEN KIDS TAKE OVER NASA follows five bright students on what begins as a school assignment and turns into an all-out mission to get America back into space! Grant, Christina, Kendall, Tica, and Jeremy visit the Johnson Space Center only to find it "mothballed and cocooned." When an ex-employee gives them a key, they enter the building and take control of the center! When some unexpected helpers show up, the kids discover a new kind of physics, NASA secrets, the possibility of a real rocket launch on their watch, and that one of them has gone missing in a true "Houston, we have a problem!" scenario. Are they in over their heads? Absolutely. Sound out-of-this-world? Just wait to read about what happens after the kids take charge! Written by award-winning author Carole Marsh, WHEN KIDS TAKE OVER NASA has been called "lively, well-written and educational" by Forrest Schultz of Southside Book Reviews, and Marsh has been praised for integrating real science and the history of the space program into a breathtaking and imaginative story. As a finalist for ForeWord Reviews' 2011 Book of the Year, WHEN KIDS TAKE OVER NASA will be on display at the Book Expo of America in May 2012, the American Library Association Annual Conference and Exhibition in June 2012, and at the international book shows in Beijing and Moscow later in the year. Look What's Inside This Mystery - people, places, history and more! People: Lyndon Johnson ¥ John F. Kennedy ¥ Ronald Reagan Place: Houston, TX (Johnson Space Center) Educational Items: Space physics: propulsion, velocity, momentum, combustion ¥ Newton's Third Law ¥ "The Astronaut Says" feature - history of space exploration ¥ Johnson Space Center ¥ Space flight training: Neutral Buoyancy Lab, Flight Simulation Lab ¥ Dark matter ¥ Dark energy ¥ Mars ¥ Vocabulary: apogee, perigee Like all of Carole Marsh's Mysteries, this mystery incorporates history, geography, culture and cliffhanger chapters that will keep kids begging for more! This mystery includes SAT words, educational facts, fun and humor. Below is the Reading Levels Guide for this book: Grade Levels: 3-9 Accelerated Reader Reading Level: 5.6 Accelerated Reader Points: 6 Accelerated Reader Quiz Number: 216736 Lexile Measure: 800 Fountas & Pinnell Guided Reading Level: S Developmental Assessment Level: 40

Report of the Presidential Commission on the Space Shuttle Challenger Accident DIANE Publishing Company 1995-07 Reviews the circumstances surrounding the Challenger accident to establish the probable cause or causes of the accident. Develops recommendations for corrective or other action based upon the

Commission's findings and determinations. Color photos, charts and tables.

Humans to Mars David S. F. Portree 2001

License to Orbit Joseph N. Pelton 2009 An up-to-date investigation of the emerging commercial space business. It explores who are the players, the celebrities and technical innovators that are making this important new industry a reality. It is the most comprehensive look at the industry in terms of covering the companies, the role of NASA and other space agencies, as well as the strategic implications of private space systems. It examines the business risks and other possible show-stoppers that might inhibit the growth of commercial spaceflight systems. Space tourism is seen as more than a fad but a crucial next step in the evolution of humankind. The book is unique in terms of exploring new technologies of the future, and reviewing the regulatory and legal ramifications of private space now and into the next decade.

Mars Robert Godwin 1999-11 The exploration of Mars is brought up to date with this collection of the latest results from the Mars Exploration Rovers, and the Mars Global Surveyor and Mars Odyssey missions.

Orbital Mechanics for Engineering Students Howard D Curtis 2009-10-26 *Orbital Mechanics for Engineering Students, Second Edition*, provides an introduction to the basic concepts of space mechanics. These include vector kinematics in three dimensions; Newton's laws of motion and gravitation; relative motion; the vector-based solution of the classical two-body problem; derivation of Kepler's equations; orbits in three dimensions; preliminary orbit determination; and orbital maneuvers. The book also covers relative motion and the two-impulse rendezvous problem; interplanetary mission design using patched conics; rigid-body dynamics used to characterize the attitude of a space vehicle; satellite attitude dynamics; and the characteristics and design of multi-stage launch vehicles. Each chapter begins with an outline of key concepts and concludes with problems that are based on the material covered. This text is written for undergraduates who are studying orbital mechanics for the first time and have completed courses in physics, dynamics, and mathematics, including differential equations and applied linear algebra. Graduate students, researchers, and experienced practitioners will also find useful review materials in the book. NEW: Reorganized and improved discussions of coordinate systems, new discussion on perturbations and quaternions NEW: Increased coverage of attitude dynamics, including new Matlab algorithms and examples in chapter 10 New examples and homework problems

Lunar Sourcebook Grant Heiken 1991-04-26 The only work to date to collect data gathered during the American and Soviet missions in an accessible and complete reference of current scientific and technical information about the Moon.

Challenge to Apollo Asif A. Siddiqi 2000 The book received the Emme Award for Astronautical Literature at the March 20 2000 luncheon of the Goddard Memorial Symposium, sponsored by the American Astronautical Society. Named in honor of

the first NASA Historian, Eugene Emme, the Emme award was created in 1982 to annually recognize an outstanding book that increases public understanding of the past and potential impact of the field of astronautics.

Planetary Landers and Entry Probes Andrew Ball 2007-05-10 This book provides a concise but broad overview of the engineering, science and flight history of planetary landers and atmospheric entry probes designed to explore the atmospheres and surfaces of other planets. It covers engineering aspects specific to such vehicles which are not usually treated in traditional spacecraft engineering texts. Examples are drawn from over thirty different lander and entry probe designs that have been used for lunar and planetary missions since the early 1960s. The authors provide detailed illustrations of many vehicle designs from different international space programs, and give basic information on their missions and payloads, irrespective of the mission's success or failure. Several missions are discussed in more detail to demonstrate the broad range of the challenges involved and the solutions implemented. This will form an important reference for professionals, academic researchers and graduate students involved in planetary science, aerospace engineering and space mission development.

Rocket Science Alfred J. Zaehring 2004 In this book, rocket scientist Alfred Zaehring calls upon his lifetime of experience to take the mystery out of this intimidating field.

Deep Space Propulsion K. F. Long 2011-11-25 The technology of the next few decades could possibly allow us to explore with robotic probes the closest stars outside our Solar System, and maybe even observe some of the recently discovered planets circling these stars. This book looks at the reasons for exploring our stellar neighbors and at the technologies we are developing to build space probes that can traverse the enormous distances between the stars. In order to reach the nearest stars, we must first develop a propulsion technology that would take our robotic probes there in a reasonable time. Such propulsion technology has radically different requirements from conventional chemical rockets, because of the enormous distances that must be crossed. Surprisingly, many propulsion schemes for interstellar travel have been suggested and await only practical engineering solutions and the political will to make them a reality. This is a result of the tremendous advances in astrophysics that have been made in recent decades and the perseverance and imagination of tenacious theoretical physicists. This book explores these different propulsion schemes – all based on current physics – and the challenges they present to physicists, engineers, and space exploration entrepreneurs. This book will be helpful to anyone who really wants to understand the principles behind and likely future course of interstellar travel and who wants to recognize the distinctions between pure fantasy (such as Star Trek's 'warp drive') and methods that are grounded in real physics and offer practical technological solutions for exploring the stars in the decades to come.

Space Flight Dynamics Craig A. Kluever 2018-03-12 Thorough coverage of space flight topics with self-contained chapters serving a variety of courses in orbital mechanics, spacecraft dynamics, and astronautics This concise yet comprehensive book on space flight dynamics addresses all phases of a space mission: getting to space (launch trajectories), satellite motion in space (orbital motion, orbit transfers, attitude dynamics), and returning from space (entry flight mechanics). It focuses on orbital mechanics with emphasis on two-body motion, orbit determination, and orbital maneuvers with applications in Earth-centered missions and interplanetary missions. Space Flight Dynamics presents wide-ranging information on a host of topics not always covered in competing books. It discusses relative motion, entry flight mechanics, low-thrust transfers, rocket propulsion fundamentals, attitude dynamics, and attitude control. The book is filled with illustrated concepts and real-world examples drawn from the space industry. Additionally, the book includes a "computational toolbox" composed of MATLAB M-files for performing space mission analysis. Key features: Provides practical, real-world examples illustrating key concepts throughout the book Accompanied by a website containing MATLAB M-files for conducting space mission analysis Presents numerous space flight topics absent in competing titles Space Flight Dynamics is a welcome addition to the field, ideally suited for upper-level undergraduate and graduate students studying aerospace engineering.

Deep Space Robert Godwin 2005 From Voyager to Stardust, this complete guide to NASA's deep space probes features a DVD containing thousands of pictures and videos captured by the journeying probes. 250 photos, 100 in full color.

Apollo 11 Robert Godwin 2002 Contains the entire crew of Apollo 11's personal observations upon returning to earth.

Proposal for Man-In-Space Robert Godwin 2019-05-19 On October 4th 1957 the Soviet Union launched Sputnik, inaugurating the Space Age. To the general public and many politicians in the West the small satellite racing overhead was a shocking and frightening display of communist technological advance. But in the back rooms of the Pentagon and the headquarters of the United States' Air Force, work had been underway since the end of World War II on the inevitability of space flight. The shock of Sputnik created an opportunity to bring this work into the light of day. During the 12 months between October 1957 and September 1958 engineers, doctors and a host of Air Force Colonels and Generals began a concerted effort to persuade President Eisenhower to allow them to take control of the United States' future space efforts, and to place humans into space no later than 1960 and then send them to the surface of the moon by 1964. In February 1958, without going through the usual gauntlet of hearings the Air Force brass were informed that they were in charge of the country's space program. Emboldened by this unexpected surprise a team of more than 60 Air Force staff quickly put together a long-range plan for the exploration of space. This new plan included the evolution of Air Force missiles from the Thor, through the Titan, to the Super-Titan and ultimately to the 2,200,000 lb thrust "Big B" booster. The proposed spacecraft carried acronym

names like MISS, MISSOPH, LUREC and finally LUMAN, for the manned lunar lander. This book includes the official Air Force history of these events, for many years classified as "SECRET." It explains how many of these ideas ended up being adopted by NASA and led to the Space Race of the 1960s.