

---

## Bookmark File PDF Spacecraft

---

If you are craving such a referred **Spacecraft** ebook that will provide you worth, acquire the unquestionably best seller from us currently from several preferred authors. If you desire to comical books, lots of novels, tale, jokes, and more fictions collections are in addition to launched, from best seller to one of the most current released.

You may not be perplexed to enjoy all books collections Spacecraft that we will entirely offer. It is not nearly the costs. Its approximately what you compulsion currently. This Spacecraft, as one of the most energetic sellers here will categorically be among the best options to review.

---

### **KEY=SPACECRAFT - GLOVER MCCULLOUGH**

---

#### **ELEMENTS OF SPACECRAFT DESIGN**

---

AIAA **Annotation** This text discusses the conceptual stages of mission design, systems engineering, and orbital mechanics, providing a basis for understanding the design process for different components and functions of a spacecraft. Coverage includes propulsion and power systems, structures, attitude control, thermal control, command and data systems, and telecommunications. Worked examples and exercises are included, in addition to appendices on acronyms and abbreviations and spacecraft design data. The book can be used for self-study or for a course in spacecraft design. Brown directed the team that produced the Magellan spacecraft, and has taught spacecraft design at the University of Colorado. **Annotation c. Book News, Inc., Portland, OR (booknews.com).**

---

#### **SPACECRAFT ATTITUDE DYNAMICS**

---

Courier Corporation **Comprehensive coverage includes environmental torques, energy dissipation, motion equations for four archetypical systems, orientation parameters, illustrations of key concepts with on-orbit flight data, and typical engineering hardware. 1986 edition.**

---

#### **SPACECRAFT STRUCTURES**

---

Springer Science & Business Media **Space flight is a comprehensive and innovative part of technology. It encompasses many fields of technology. This monograph presents a cross section of the total field of expertise that is called "space flight". It provides an optimal reference with insight into the design, construction and analysis aspects of spacecraft. The emphasis of this book is put on unmanned space flight, particularly on the construction of spacecraft rather than the construction of launch vehicles.**

---

#### **SPACECRAFT ATTITUDE DETERMINATION AND CONTROL**

---

Springer Science & Business Media **Roger D. Werking Head, Attitude Determination and Control Section National Aeronautics and Space Administration/ Goddard Space Flight Center** Extensive work has been done for many years in the areas of attitude determination, attitude prediction, and attitude control. During this time, it has been difficult to obtain reference material that provided a comprehensive overview of attitude support activities. This lack of reference material has made it difficult for those not intimately involved in attitude functions to become acquainted with the ideas and activities which are essential to understanding the various aspects of spacecraft attitude support. As a result, I felt the need for a document which could be used by a variety of persons to obtain an understanding of the work which has been done in support of spacecraft attitude objectives. It is believed that this book, prepared by the Computer Sciences Corporation under the able direction of Dr. James Wertz, provides this type of reference. This book can serve as a reference for individuals involved in mission planning, attitude determination, and attitude dynamics; an introductory textbook for students and professionals starting in this field; an information source for experimenters or others involved in spacecraft-related work who need information on spacecraft orientation and how it is determined, but who have neither the time nor the resources to pursue the varied literature on this subject; and a tool for encouraging those who could expand this discipline to do so, because much remains to be done to satisfy future needs.

---

## SPACECRAFT SYSTEMS ENGINEERING

---

**Wiley** This fourth edition of the bestselling Spacecraft Systems Engineering title provides the reader with comprehensive coverage of the design of spacecraft and the implementation of space missions, across a wide spectrum of space applications and space science. The text has been thoroughly revised and updated, with each chapter authored by a recognized expert in the field. Three chapters - Ground Segment, Product Assurance and Spacecraft System Engineering - have been rewritten, and the topic of Assembly, Integration and Verification has been introduced as a new chapter, filling a gap in previous editions. This edition addresses 'front-end system-level issues' such as environment, mission analysis and system engineering, but also progresses to a detailed examination of subsystem elements which represents the core of spacecraft design. This includes mechanical, electrical and thermal aspects, as well as propulsion and control. This quantitative treatment is supplemented by an emphasis on the interactions between elements, which deeply influences the process of spacecraft design. Adopted on courses worldwide, Spacecraft Systems Engineering is already widely respected by students, researchers and practising engineers in the space engineering sector. It provides a valuable resource for practitioners in a wide spectrum of disciplines, including system and subsystem engineers, spacecraft equipment designers, spacecraft operators, space scientists and those involved in related sectors such as space insurance. In summary, this is an outstanding resource for aerospace engineering students, and all those involved in the technical aspects of design and engineering in the space sector.

---

## SPACECRAFT

---

### 100 ICONIC ROCKETS, SHUTTLES, AND SATELLITES THAT PUT US IN SPACE

---

**Voyageur Press** Spacecraft takes a long look at humankind's attempts and advances in leaving Earth through incredible illustrations and authoritatively written profiles on Sputnik, the International Space Station, and beyond. In 1957, the world looked on with both uncertainty and amazement as the Soviet Union launched Sputnik 1, the first man-made orbiter. Sputnik 1 would spend three months circling Earth every 98 minutes and covering 71 million miles in the process. The world's space programs have traveled far (literally and figuratively) since then, and the spacecraft they have developed and deployed represent almost unthinkable advances for such a relatively short period. This ambitiously illustrated aerospace history profiles and depicts spacecraft from Sputnik 1 through the International Space Station, and everything in between, including concepts that have yet to actually venture outside the Earth's atmosphere. Illustrator and aerospace professional Giuseppe De Chiara teams up with aerospace historian Michael Gorn to present a huge, profusely illustrated, and authoritatively written collection of profiles depicting and describing the design, development, and deployment of these manned and unmanned spacecraft. Satellites, capsules, spaceplanes, rockets, and space stations are illustrated in multiple-view, sometimes cross-section, and in many cases shown in archival period photography to provide further historical context. Dividing the book by era, De Chiara and Gorn feature spacecraft not only from the United States and Soviet Union/Russia, but also from the European Space Agency and China. The marvels examined in this volume include the rockets Energia, Falcon 9, and VEGA; the Hubble Space Telescope; the Cassini space probe; and the Mars rovers, Opportunity and Curiosity. Authoritatively written and profusely illustrated with more than 200 stunning artworks, Spacecraft: 100 Iconic Rockets, Shuttles, and Satellites That Put Us in Space is sure to become a definitive guide to the history of manned space exploration.

---

## GUIDE TO MITIGATING SPACECRAFT CHARGING EFFECTS

---

**John Wiley & Sons** The definitive guide to the modern body of spacecraft charging knowledge, this book authoritatively blends the theoretical and practical aspects of spacecraft charging. It defines the environment that can have significant effects on spacecraft, such as disruption of science measurements and solar arrays from electrostatic discharge (ESD). Combining the authors' extensive experience in spacecraft charging and in their provision of design support to NASA, JPL, and the commercial satellite market, this incredible book offers practical advice for neophytes in the field as well as experienced plasma physicists and spacecraft engineers.

---

## SIMULATING SPACECRAFT SYSTEMS

---

**Springer** Satellite development worldwide has significantly changed within the last decade and has been accelerated and optimized by modern simulation tools. The classic method of developing and testing several models of a satellite and its subsystems with the aim to build a pre-flight and finally a flight model is being replaced more and more by a considerably faster and more inexpensive method. The new approach no longer includes functional test models on entire spacecraft level but a system simulation. Thus overall project runtimes can be shortened. But also significantly more complex systems can be managed and success oriented tests on integration and software level can be realized before the launch. Applying modern simulation infrastructures already during spacecraft development phase, enables the consistent functionality checking of all systems both in detail and concerning

their interaction. Furthermore, they enable checks of the system's proper functionality, their reliability and safety / redundancy. But also analysis regarding aging and lifetime issues can be performed by simulation. Project-related simulations of operational scenarios, for example with remote sensing satellites, and the checking of different operational modes are of similar importance. On the whole, risk is reduced significantly and the satellite can be produced in a considerably more cost efficient way, with higher quality and in shorter periods of time. Therefore "Simulating Spacecraft Systems" - the title of the present book - is an important domain of modern system engineering, which meanwhile has successfully established a position in many other sectors of industry and research, too.

---

## **SPACECRAFT STRUCTURES AND MECHANISMS**

---

### **FROM CONCEPT TO LAUNCH**

---

Springer **Spacecraft Structures and Mechanisms** describes the integral process of developing cost-effective, reliable structures and mechanical products for space programs. Processes are defined, methods are described and examples are given. It has been written by 24 engineers in the space industry, who cover the themes of (1) ensuring a successful mission, and (2) reducing total cost through good designs and intelligent risk management. Topics include: Introduction and requirements (development process, requirements documentation, requirements definition, space mission environments); Analysis (statics, dynamics and load analysis, fatigue and fracture mechanics, mechanics of materials, strength analysis, heat transfer and thermal effects); Verification and quality assurance (verification planning, structural, mechanical and environmental testing, quality assurance and configuration control, compliance documentation, structural reliability analysis, verification criteria - factors of safety, margins of safety, fracture control, test options); Design (spacecraft configuration development, finite element analysis, mechanism development, designing for producibility, structural design, materials, designing to control loads, load cycles, sensitivity analysis); Final verification (model correlation, risk management, launch readiness reviews). For system engineers, mechanical designers, stress analysts, dynamics and load analysts, technical leads, program managers.

---

### **SPACECRAFT COLLISION PROBABILITY**

---

Aerospace Corporation **The amount of space debris is growing at an alarming rate, raising concern about its collision with operational spacecraft. This book analyzes the probability of such a collision when the orbits of two approaching objects are based on measurements with inherent errors. Many recent papers have dealt with the methodology of computing the collision probability in the encounter region, but they have assumed that the encounter is a flyby and is short-term, with the trajectories of the objects represented by straight lines. By contrast, Spacecraft Collision Probability, the outgrowth of the authors research during the past two decades, deals not only with those cases but also with important long-term cases in which objects spend protracted periods in the vicinity of each other. An extensive chapter is included on the International Space Station (ISS), to demonstrate how one would accurately gauge its probability of collision. The ISS is modeled according to its actual complex shape, component by component enabling the detailed computation of a more realistic collision probability than one would obtain by the routine practice of modeling it as a sphere. In addition, the author developed Excel macros to obtain the numerical tables and graphical plots appearing in the book. That software is available on the Supporting Materials page of the AIAA Web site.**

---

### **SPACECRAFT FORMATION FLYING**

---

#### **DYNAMICS, CONTROL AND NAVIGATION**

---

Butterworth-Heinemann **Spacecraft formation flying (SFF) is of huge importance to the aerospace and space community. Not the stuff of science-fiction, SFF involves flying multiple small satellites together, to deliver benefits which far outweigh a single larger craft or space station. The first autonomous formation flying earth science mission was in 196 and NASA now has 35 SFF mission sets. By networking several smaller and cheaper craft, scientists can make simultaneous measurements that enable higher resolution astronomical imagery, provide robust and fault-tolerant spacecraft system architectures, and enable complex earth science and space science networks dispersed over clusters of satellites in space. This is the first book to introduce and explore SFF. It is a topic of enormous importance to aerospace engineers, astrodynamists, satellite engineers, astronomers, physicists, and applied mathematicians. This book provides a complete introduction to the subject and is supported by graduate level student exercises plus Matlab and Maple code sets for running SFF simulations. \* The first book dedicated to spacecraft formation flying which is the enabling element of distributed spacecraft systems \* Written by the leading researchers and teachers in the field; perfect for research and graduate students \* Accompanied by Matlab and Maple code sets and exercises for graduate level students of aerospace science, astrodynamics and orbital mechanics.**

---

## SPACECRAFT OPERATIONS

---

[Springer](#) The book describes the basic concepts of spaceflight operations, for both, human and unmanned missions. The basic subsystems of a space vehicle are explained in dedicated chapters, the relationship of spacecraft design and the very unique space environment are laid out. Flight dynamics are taught as well as ground segment requirements. Mission operations are divided into preparation including management aspects, execution and planning. Deep space missions and space robotic operations are included as special cases. The book is based on a course held at the German Space Operation Center (GSOC).

---

## SPACECRAFT RELIABILITY AND MULTI-STATE FAILURES

---

### A STATISTICAL APPROACH

---

[John Wiley & Sons](#) The aerospace community has long recognized and repeatedly emphasizes the importance of reliability for space systems. Despite this, little has been published in book form on the topic. Spacecraft Reliability and Multi-state Failures addresses this gap in the literature, offering a unique focus on spacecraft reliability based on extensive statistical analysis of system and subsystem anomalies and failures. The authors provide new results pertaining to spacecraft reliability based on extensive statistical analysis of on-orbit anomaly and failure data that will be particularly useful to spacecraft manufacturers and designers, for example in guiding satellite (and subsystem) test and screening programs and providing an empirical basis for subsystem redundancy and reliability growth plans. The authors develop nonparametric results and parametric models of spacecraft and spacecraft subsystem reliability and multi-state failures, quantify the relative contribution of each subsystem to the failure of the satellites thus identifying the subsystems that drive spacecraft unreliability, and propose advanced stochastic modeling and analysis tools for the reliability and survivability of spacecraft and space-based networks. Spacecraft Reliability and Multi-state Failures provides new nonparametric results pertaining to spacecraft reliability based on extensive statistical analysis of on-orbit anomaly and failure data; develops parametric models of spacecraft and spacecraft subsystem reliability and multi-state failures quantifies the relative contribution of each subsystem to the failure of the satellites proposes advanced stochastic modeling and analysis tools for the reliability and survivability of spacecraft and space-based networks. provides a dedicated treatment of the reliability and subsystem anomalies of communication spacecraft in geostationary orbit.

---

## BIG BOOK OF ROCKETS AND SPACECRAFT

---

A big book full of rockets and spacecraft to discover. Really huge rockets are displayed with extra fold-out pages.

---

## SPACECRAFT SYSTEMS DESIGN AND OPERATIONS

---

[Kendall Hunt Publishing Company](#)

---

## SPACECRAFT MODELING, ATTITUDE DETERMINATION, AND CONTROL

---

### QUATERNION-BASED APPROACH

---

[CRC Press](#) This book discusses all spacecraft attitude control-related topics: spacecraft (including attitude measurements, actuator, and disturbance torques), modeling, spacecraft attitude determination and estimation, and spacecraft attitude controls. Unlike other books addressing these topics, this book focuses on quaternion-based methods because of its many merits. The book lays a brief, but necessary background on rotation sequence representations and frequently used reference frames that form the foundation of spacecraft attitude description. It then discusses the fundamentals of attitude determination using vector measurements, various efficient (including very recently developed) attitude determination algorithms, and the instruments and methods of popular vector measurements. With available attitude measurements, attitude control designs for inertial point and nadir pointing are presented in terms of required torques which are independent of actuators in use. Given the required control torques, some actuators are not able to generate the accurate control torques, therefore, spacecraft attitude control design methods with achievable torques for these actuators (for example, magnetic torque bars and control moment gyros) are provided. Some rigorous controllability results are provided. The book also includes attitude control in some special maneuvers, such as orbital-raising, docking and rendezvous, that are normally not discussed in similar books. Almost all design methods are based on state-spaced modern control approaches, such as linear quadratic optimal control, robust pole assignment control, model predictive control, and gain scheduling control. Applications of these methods to spacecraft attitude control problems are provided.

Appendices are provided for readers who are not familiar with these topics.

---

### **HYPOTHETICAL SPACECRAFT AND INTERSTELLAR TRAVEL**

---

[Lulu.com](#) Hypothetical Spacecraft and Interstellar Travel collects information about the latest and greatest hypothetical spacecraft.

---

### **PLANETARY SPACECRAFT NAVIGATION**

---

[Springer](#) This textbook introduces the theories and practical procedures used in planetary spacecraft navigation. Written by a former member of NASA's Jet Propulsion Laboratory (JPL) navigation team, it delves into the mathematics behind modern digital navigation programs, as well as the numerous technological resources used by JPL as a key player in the field. In addition, the text offers an analysis of navigation theory application in recent missions, with the goal of showing students the relationship between navigation theory and the real-world orchestration of mission operations.

---

### **FUNDAMENTALS OF SPACECRAFT CHARGING**

---

---

### **SPACECRAFT INTERACTIONS WITH SPACE PLASMAS**

---

[Princeton University Press](#) As commercial and military spacecraft become more important to the world's economy and defense, and as new scientific and exploratory missions are launched into space, the need for a single comprehensive resource on spacecraft charging becomes increasingly critical. Fundamentals of Spacecraft Charging is the first and only textbook to bring together all the necessary concepts and equations for a complete understanding of the subject. Written by one of the field's leading authorities, this essential reference enables readers to fully grasp the newest ideas and underlying physical mechanisms related to the electrostatic charging of spacecraft in the space environment. Assuming that readers may have little or no background in this area, this complete textbook covers all aspects of the field. The coverage is detailed and thorough, and topics range from secondary and backscattered electrons, spacecraft charging in Maxwellian plasmas, effective mitigation techniques, and potential wells and barriers to operational anomalies, meteors, and neutral gas release. Significant equations are derived from first principles, and abundant examples, exercises, figures, illustrations, and tables are furnished to facilitate comprehension. Fundamentals of Spacecraft Charging is the definitive reference on the physics of spacecraft charging and is suitable for advanced undergraduates, graduate-level students, and professional space researchers.

---

### **SIMULATION OF THERMOELASTIC BEHAVIOUR OF SPACECRAFT STRUCTURES**

---

---

### **FUNDAMENTALS AND RECOMMENDATIONS**

---

[Springer Nature](#) This book provides recommendations for thermal and structural modelling of spacecraft structures for predicting thermoelastic responses. It touches upon the related aspects of the finite element and thermal lumped parameter method. A mix of theoretical and practical examples supports the modelling guidelines. Starting from the system needs of instruments of spacecraft, the reader is supported with the development of the practical requirements for the joint development of the thermal and structural models. It provides points of attention and suggestions to check the quality of the models. The temperature mapping problem, typical for spacecraft thermoelastic analysis, is addressed. The principles of various temperature mapping methods are presented. The prescribed average temperature method, co-developed by the authors, is discussed in detail together with its spin-off to provide high quality conductors for thermal models. The book concludes with the discussion of the application of uncertainty assessment methods. The thermoelastic analysis chain is computationally expensive. Therefore, the 2k+1 point estimate method of Rosenblueth is presented as an alternative for the Monte Carlo Simulation method, bringing stochastic uncertainty analysis in reach for large thermoelastic problems.

---

### **HOW SPACECRAFT FLY**

---

---

### **SPACEFLIGHT WITHOUT FORMULAE**

---

[Springer Science & Business Media](#) In this popular science book, Graham Swinerd explains, without the use of mathematics and in an informal way, aerodynamic and astrodynamics flight for non-technical readers who are interested in spaceflight and spacecraft.

---

## **FUTURE SPACECRAFT PROPULSION SYSTEMS**

---

### **ENABLING TECHNOLOGIES FOR SPACE EXPLORATION**

---

Springer Science & Business Media **An understandable perspective on the types of space propulsion systems necessary to enable low-cost space flights to Earth orbit and to the Moon and the future developments necessary for exploration of the solar system and beyond to the stars.**

---

### **HOW TO DRAW AMAZING AIRPLANES AND SPACECRAFT**

---

Capstone **"Provides information and step-by-step drawing instructions for 30 air and space craft"--Provided by publisher.**

---

### **SPACECRAFT TRAJECTORY OPTIMIZATION**

---

Cambridge University Press **This is a long-overdue volume dedicated to space trajectory optimization. Interest in the subject has grown, as space missions of increasing levels of sophistication, complexity, and scientific return - hardly imaginable in the 1960s - have been designed and flown. Although the basic tools of optimization theory remain an accepted canon, there has been a revolution in the manner in which they are applied and in the development of numerical optimization. This volume purposely includes a variety of both analytical and numerical approaches to trajectory optimization. The choice of authors has been guided by the editor's intention to assemble the most expert and active researchers in the various specialties presented. The authors were given considerable freedom to choose their subjects, and although this may yield a somewhat eclectic volume, it also yields chapters written with palpable enthusiasm and relevant to contemporary problems.**

---

### **FUNDAMENTALS OF SPACECRAFT ATTITUDE DETERMINATION AND CONTROL**

---

Springer **This book explores topics that are central to the field of spacecraft attitude determination and control. The authors provide rigorous theoretical derivations of significant algorithms accompanied by a generous amount of qualitative discussions of the subject matter. The book documents the development of the important concepts and methods in a manner accessible to practicing engineers, graduate-level engineering students and applied mathematicians. It includes detailed examples from actual mission designs to help ease the transition from theory to practice and also provides prototype algorithms that are readily available on the author's website. Subject matter includes both theoretical derivations and practical implementation of spacecraft attitude determination and control systems. It provides detailed derivations for attitude kinematics and dynamics and provides detailed description of the most widely used attitude parameterization, the quaternion. This title also provides a thorough treatise of attitude dynamics including Jacobian elliptical functions. It is the first known book to provide detailed derivations and explanations of state attitude determination and gives readers real-world examples from actual working spacecraft missions. The subject matter is chosen to fill the void of existing textbooks and treatises, especially in state and dynamics attitude determination. MATLAB code of all examples will be provided through an external website.**

---

### **LITTLE SPACECRAFT THAT COULD THE**

---

Sterling Children's Books **Age range 6+ From the author and illustrator of If You Had Your Birthday Party on the Moon, a new out-of-this-world account of New Horizons-the spacecraft that journeyed to Pluto and changed the way scientists study outer space.Ride along with the New Horizons spacecraft as she rockets three billion miles to Pluto! Watch her take the first close-up photos of Pluto, and then journey another billion miles to mini-world Arrokoth. You'll whiz through space at more than 10 miles per second; learn how giant planet Jupiter helped the little spacecraft reach Pluto; and discover the astonishing surface feature that made the world fall in love with Pluto.**

---

### **THE SPACE ENVIRONMENT**

---

### **IMPLICATIONS FOR SPACECRAFT DESIGN - REVISED AND EXPANDED EDITION**

---

Princeton University Press **The breakup of the Space Shuttle Columbia as it reentered Earth's atmosphere on February 1, 2003, reminded the public--and NASA--of the grave risks posed to spacecraft by everything from insulating foam to space debris. Here, Alan Tribble presents a singular, up-to-date account of a wide range of less conspicuous but no less consequential environmental effects that can damage or cause poor performance of orbiting spacecraft. Conveying a wealth of insight into the nature of the space environment and**

---

how spacecraft interact with it, he covers design modifications aimed at eliminating or reducing such environmental effects as solar absorptance increases caused by self-contamination, materials erosion by atomic oxygen, electrical discharges due to spacecraft charging, degradation of electrical circuits by radiation, and bombardment by micrometeorites. This book is unique in that it bridges the gap between studies of the space environment as performed by space physicists and spacecraft design engineering as practiced by aerospace engineers.

---

### **SPACECRAFT THERMAL CONTROL TECHNOLOGIES**

---

[Springer](#) Dragon V2 is a futuristic vehicle that not only provides a means for NASA to transport its astronauts to the orbiting outpost but also advances SpaceX's core objective of reusability. A direct descendant of Dragon, Dragon V2 can be retrieved, refurbished and re-launched. It is a spacecraft with the potential to completely revolutionize the economics of an industry where equipment costing hundreds of millions of dollars is routinely discarded after a single use. It was presented by SpaceX CEO Elon Musk in May 2014 as the spaceship that will carry NASA astronauts to the International Space Station as soon as 2016. SpaceX's Dragon - America's Next Generation Spacecraft describes the extraordinary feats of engineering and human achievement that have placed this revolutionary spacecraft at the forefront of the launch industry and positioned it as the precursor for ultimately transporting humans to Mars. It describes the design and development of Dragon, provides mission highlights of the first six Commercial Resupply Missions, and explains how Musk hopes to eventually colonize Mars.

---

### **SPACECRAFT SYSTEM FAILURES AND ANOMALIES ATTRIBUTED TO THE NATURAL SPACE ENVIRONMENT**

---

[Springer Nature](#) This book presents fundamental theories, design and testing methodologies, and engineering applications concerning spacecraft thermal control systems, helping readers gain a comprehensive understanding of spacecraft thermal control systems and technologies. With abundant design methods, advanced technologies and typical applications to help them grasp the basic concepts and principles of engineering applications, it is mainly intended for engineering and technical staff engaged in spacecraft thermal control areas. The book discusses the thermal environments commonly used for space flight missions, rules and regulations for system design, thermal analysis and simulation, and thermal testing methods, as well as the design and validation of the thermal control systems for Chinese spacecraft, such as the Shenzhou spacecraft and Chang'e Lunar Lander and Rover. It also introduces them to communication and remote sensing satellites and presents advanced thermal control technologies developed in recent years, including heat transfer, heat insulation, heating, refrigeration and thermal sensor technologies. Addressing the design and validation of thermal control systems for various types of Chinese spacecraft, the book offers a valuable theoretical and practical reference guide for researchers and engineers alike.

---

### **THE ENCyclopedia OF US SPACECRAFT**

---

Provides a brief overview of the natural space environment - definition, related programmatic issues, and effects on various spacecraft subsystems. The primary focus, is to catalog, through representative case histories, spacecraft failures and anomalies attributed to the natural space environment.

---

### **GUIDANCE AND CONTROL TECHNOLOGY OF SPACECRAFT ON ELLIPTICAL ORBIT**

---

[Simon & Schuster](#) Surveys the spacecraft developed for commercial, military, and NASA programs including a description of each craft and the results obtained by scientific missions.

---

### **THE ENCyclopedia OF US SPACECRAFT**

---

[Springer](#) This book introduces readers to the navigation, guidance and control technologies involved in single-spacecraft, double-spacecraft, and multiple-spacecraft tasks in elliptical orbits. It comprehensively covers the key technologies of guidance, navigation and control (GNC) system design for spacecraft in elliptical orbits, including the orbit design, formation configuration design and maintenance, autonomous navigation technology and relative navigation technology, as well as autonomous rendezvous technology. The methods that this book introduces are very close to actual practical engineering applications and presented in an accessible style. The book can serve as reference teaching material for senior undergraduates and postgraduates with space navigation related majors, while also providing essential information and guidance for research personnel and engineering technical personnel engaged in the development of GNC systems for spacecraft.

---

## SPACECRAFT COLLISION AVOIDANCE TECHNOLOGY

---

[Academic Press](#) **Spacecraft Collision Avoidance Technology** presents the theory and practice of space collision avoidance. The title gives models of time and space environment, their impact on high-precision orbit prediction, considers optimal orbit determination methods and models in different warning stages, and establishes basic models for warning and avoidance. Chapters present an outline of spacecraft collision warning strategy, elaborate on the basics of orbital calculation for collision avoidance, consider space object detection technology, detail space environment and object orbit, give a method for spacecraft collision warning orbit calculation, and finally, demonstrate a strategy for spacecraft collision warning and avoidance.

---

## SPACECRAFT

---

[Bloomsbury Publishing USA](#) **Science fiction is filled with spacecraft. On Earth, actual rockets explode over Texas while others make their way to Mars. But what are spacecraft, and just what can they teach us about imagination, ecology, democracy, and the nature of objects? Why do certain spacecraft stand out in popular culture? If ever there were a spacecraft that could be detached from its context, sold as toys, turned into Disney rides, parodied, and flit around in everyone's head-the Millennium Falcon would be it. Springing from this infamous Star Wars vehicle, Spacecraft takes readers on an intergalactic journey through science fiction and speculative philosophy, revealing real-world political and ecological lessons along the way. In this book Timothy Morton shows how spacecraft are never mere flights of fancy.**

---

## SOYUZ

---



---

### A UNIVERSAL SPACECRAFT

---

[Springer Science & Business Media](#) **Rex Hall and Dave Shayler provide a unique history of the Soyuz spacecraft programme from conception, through development to its use, detailed in the only English language book available on this topic. Planned for publication in 2003, it will celebrate 40 years since the original concept of the Soyuz craft.**

---

## SPACECRAFT

---

[The Rosen Publishing Group, Inc](#) **Spacecraft have a very important job-transporting people between Earth and space. Readers explore the history of this mode of transportation, including the spacecraft that brought people to the moon and the Soyuz spacecraft that carry astronauts today. This information is presented to readers through engaging main text and fun fact boxes, which provide additional details about this topic. Readers also learn about the future of space exploration, including spacecraft that could one day take people to Mars. Colorful photographs of spacecraft in action make this an out-of-this-world reading exper.**

---

## SPACECRAFT ELECTROMAGNETIC COMPATIBILITY TECHNOLOGIES

---

[Springer Nature](#) **This book explores key techniques and methods in electromagnetic compatibility management, analysis, design, improvement and test verification for spacecraft. The first part introduces the general EMC technology of spacecraft, the electromagnetic interference control method and management of electromagnetic compatibility. The second part discusses the EMC prediction analysis technique and its application in spacecraft, while the third presents the EMC design of spacecraft modules and typical equipment. The final two parts address spacecraft magnetic design testing technologies and spacecraft testing technologies. The book also covers the program control test process, the special power control unit (PCU), electric propulsion, PIM test and multipaction testing for spacecraft, making it a valuable resource for researchers and engineers alike.**

---

## SPACECRAFT MAXIMUM ALLOWABLE CONCENTRATIONS FOR SELECTED AIRBORNE CONTAMINANTS

---



---

## VOLUME 4

---

[National Academies Press](#) **The National Aeronautics and Space Administration (NASA) is aware of the potential toxicological hazards to crew members that might be associated with prolonged spacecraft missions. Despite major engineering advances in controlling the atmosphere within spacecraft, some contamination of the air appears inevitable. NASA has measured numerous airborne contaminants during space missions. As the missions increase in duration and complexity, ensuring the health and well-being of astronauts traveling and working in this unique environment becomes increasingly difficult. As part of its efforts to promote safe conditions aboard spacecraft, NASA requested the National Research**

Council (NRC) to develop guidelines for establishing spacecraft maximum allowable concentrations (SMACs) for contaminants, and to review SMACs for various spacecraft contaminants to determine whether NASA's recommended exposure limits are consistent with the guidelines recommended by the subcommittee. In response to this request, the NRC first developed criteria and methods for preparing SMACs for spacecraft contaminants, published in its 1992 report Guidelines for Developing Spacecraft Maximum Allowable Concentrations for Space Station Contaminants. Since then, the NRC's Subcommittee on Spacecraft Maximum Allowable Concentrations has been reviewing NASA's documentation of chemical-specific SMACs. This report is the fourth volume in the series Spacecraft Maximum Allowable Concentrations for Space Station Contaminants. The first volume was published in 1994 and the second and third in 1996. Spacecraft Maximum Allowable Concentrations for Selected Airborne Contaminants: Volume 4 has been reviewed in draft form by individuals chosen for their technical expertise and diverse perspectives in accordance with procedures approved by the NRC's Report Review Committee for reviewing NRC and Institute of Medicine reports. The purpose of that Independent review was to provide candid and critical comments to assist the NRC in making the published report as sound as possible and to ensure that the report meets institutional standards for objectivity, evidence, and responsiveness to the study charge. The review comments and draft manuscript remain confidential to protect the integrity of the deliberative process.

---

### **CHARIOTS FOR APOLLO**

---

### **THE NASA HISTORY OF MANNED LUNAR SPACECRAFT TO 1969**

---

Courier Corporation This illustrated history by a trio of experts is the definitive reference on the Apollo spacecraft and lunar modules. It traces the vehicles' design, development, and operation in space. More than 100 photographs and illustrations.

---

### **EFFECT OF THE ACCELERATION DISTURBANCES ENCOUNTERED IN THE MA-7 SPACECRAFT ON THE LIQUID-VAPOR INTERFACE IN A BAFFLED TANK DURING WEIGHTLESSNESS**

---