

Soyuz A Universal Spacecraft Springer Praxis Books Space Exploration

This book offers a clearly written, entertaining and comprehensive source of medical information for both writers and readers of science fiction. Science fiction in print, in movies and on television all too often presents dubious or simply incorrect depictions of human biology and medical issues. This book explores the real science behind such topics as how our bodies adapt to being in space, the real-life feasibility of common plot elements such as suspended animation and medical nanotechnology, and future prospects for improving health, prolonging our lives, and enhancing our bodies through technology. Each chapter focuses on a single important science fiction-related subject, combining concise factual information with examples drawn from science fiction in all media. Chapters conclude with a "Bottom Line" section summarizing the most important points discussed in the chapter and giving science fiction writers practical advice on how to incorporate them into their own creations, including a list of references for further reading. The book will appeal to all readers interested in learning about the latest ideas on a variety of science fiction-related medical topics, and offers an invaluable reference source for writers seeking to increase the realism and readability of their works. Henry G. Stratmann, MD, FACC, FACP is a cardiologist with board certifications in internal medicine, cardiology, and nuclear cardiology. Before entering private practice he became Professor of Medicine at St. Louis University School of Medicine and performed clinical medical research. Henry received a BA in chemistry from St. Louis University and his MD at Southern Illinois University School of Medicine. He is currently enrolled at Missouri State University to obtain a BS in physics with a minor in astronomy. His professional publications include being an author or coauthor of many research articles for medical journals, primarily in the field of nuclear cardiology. Henry is also a regular contributor of both stories and science fact articles to Analog Science Fiction and Fact.

The Space Race was a rivalry of the twentieth century between two great Super Powers in the Cold War, the Soviet Union (USSR) and the United States (USA), aimed at achieving the highest positions in space flight capabilities. It derives from the ballistic missile-based nuclear arms race that followed the Second World War. The technological advantage needed to quickly achieve milestones in space flight was considered essential for national security and combined with the symbolism and ideology to time. The Space Race led to pioneering efforts to launch artificial satellites, unmanned space probes to the Moon, Venus and Mars, and human space flights in low Earth orbit and the Moon.

This book constitutes the refereed proceedings of the Third International Conference on Digital Human Modeling, ICDHM 2011, held in Orlando, FL, USA in July 2011. The 58 revised papers presented were carefully reviewed and selected from numerous submissions. The papers accepted for presentation thoroughly cover the thematic area of anthropometry applications, posture and motion modeling, digital human modeling and design, cognitive modeling, and driver modeling.

This unique book presents a historical and philatelic survey of Earth exploration from space. It covers all areas of research in which artificial satellites have contributed in designing a new image of our planet and its environment: the atmosphere and ionosphere, the magnetic field, radiation belts and the magnetosphere, weather, remote sensing, mapping of the surface, observation of the oceans and marine environments, geodesy, and the study of life and ecological systems. Stamping the Earth from Space presents the results obtained with the thousands of satellites launched by the two former superpowers, the Soviet Union and the United States, and also those of the many missions carried out by the ESA, individual European countries, Japan, China, India, and the many emerging space nations. Beautifully illustrated, it contains almost 1100 color reproductions of philatelic items. In addition to topical stamps and thematic postal documents, the book provides an extensive review of astrophilatelic items. The most important space missions are documented through event covers and cards canceled at launch sites, tracking stations, research laboratories, and mission control facilities.

Salyut - The First Space Station

Linking the Space Shuttle and Space Stations

The Twenty-first Century in Space

Soviet and Russian Lunar Exploration

Third International Conference, ICDHM 2011, Held as Part of HCI International 2011, Orlando, FL, USA, July 9-14, 2011, Proceedings

Their Lives and Legacies

Women Spacefarers

The Atomic Space Age has been and continues to be an engine for future wealth creation. Humanity stands on the verge of becoming an interplanetary species. We know we are made of star-stuff precisely because many of the isotopes in our bodies originated in the death throes of dying suns. With the discovery of nuclear fission in 1938, mankind was for the first time able to glimpse both our distant past and our possible future. As with the discovery of fire and agriculture thousands of years ago, wind power hundreds of years ago, and steam power and electricity in the nineteenth century, we must now learn to tame this powerful new force locked within the heart of the atom. Buckminster Fuller once observed that wealth is nothing more than energy compounded by ingenuity. Since (mass-)energy can never decrease, and ingenuity will only increase, there is no limit to the quantity of wealth that our species can and will create using nuclear space propulsion.

Nanosatellites: Space and Ground Technologies, Operations and Economics Rogerio Atem de Carvalho, Instituto Federal Fluminense, Brazil Jaime Estela, Spectrum Aerospace Group, Germany and Peru Martin Langer, Technical University of Munich, Germany Covering the latest research on nanosatellites Nanosatellites: Space and Ground Technologies, Operations and Economics comprehensively presents the latest research on the fast-developing area of nanosatellites. Divided into three distinct sections, the book begins with a brief history of nanosatellites and introduces nanosatellites technologies and payloads, also explaining how these are deployed into space. The second section provides an overview of the ground segment and operations, and the third section focuses on the regulations, policies, economics, and future

trends. Key features: Payloads for nanosatellites Nanosatellites components design Examines the cost of development of nanosatellites. Covers the latest policies and regulations. Considers future trends for nanosatellites. Nanosatellites: Space and Ground Technologies, Operations and Economics is a comprehensive reference for researchers and practitioners working with nanosatellites in the aerospace industry. The story of the famed race to the Moon between the US and the USSR has been told countless times. The strategies of these two superpowers have often been paralleled in a way that highlights their fight for dominance and efforts to develop needed new technologies. This book will show how beneath these surface similarities, the two competing nations employed very different core tactics. It provides a new perspective of the history of the space race by analyzing that history through philately - that is, from the images on postage stamps, post cards, and letters in circulation at that time. Through this fascinating historical visual record, the author shows how the propaganda-heavy approach of the USSR eventually lost out to the more pragmatic approach of the United States.

In this remarkable oral history, Slava Gerovitch presents interviews with the men and women who witnessed Soviet space efforts firsthand. Rather than comprising a "master narrative," these fascinating and varied accounts bring to light the often divergent perspectives, experiences, and institutional cultures that defined the Soviet space program.

The Untold Secrets of the Soviet Space Program

Sixty Different Paths to Space

Soyuz

Digital Human Modeling

The First Soviet Cosmonaut Team

Space Rescue

Using Medicine in Science Fiction

*** This is the only book that provides the full story of the role of women in space exploration. * Previously unpublished photographs of various aspects of training and participation in spaceflights are included. * Personal interviews with female cosmonauts and astronauts. * Traces the history of female aviation milestones from the early part of the 20th Century to the current space programme.**

Looks forward to the completion of the ISS, possibility of return to the moon, manned flights to Mars, and the prospect of safety and rescue far beyond. Describes the role of Mission Control and recovery forces in ensuring the support from the ground to the crew in space. Provides a unique range of historic archive of material on the Russian programme. Presents a review of the Columbia accident, its investigation and various proposed rescue scenarios. Details escape systems devised for rocket research aircraft, early manned spacecraft, abort and recovery options from Earth orbit, and from lunar distance. Demonstrates that crew safety has been a factor in planning and mounting on all manned spaceflights.

Man's exploration of space and its climax in the American moon landings have provided the world with iconic sounds and images of the late twentieth century. Travelling across millions of miles, these sounds and images have become lodged in the public conscious as the most powerful of collective memories. They speak both of breathtaking technological achievement and of the courage of the men, and woman, who risked their lives in striving to be more than human and to be more than just of this Earth. As John F. Kennedy said, "We choose to go to the Moon, not because it is easy but because it is hard." This is the first comprehensive exploration of the role played by film and television systems in enabling these feats of interplanetary exploration to be witnessed by audiences of hundreds of millions of people. Using material from the NASA archives, expert and enthusiast Michael Allen traces the parallel development and interdependency of space and media technologies during the Space Race -- of satellite surveillance and interplanetary probes, early Russian successes and the American missions that landed men on the moon. He also chronicles the part played by film and television in recording what was, and is, man's greatest leap: the exploration of outer space and other planets.

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.

Hope from the East

A Story of Puffery vs. the Pragmatic

Limiting Outer Space

Principles of Clinical Medicine for Space Flight

Soviet Space Mythologies

Inside the Yuri Gagarin Training Center

The Conquest of Space

In March 2005, the NASA History Division and the Division of Space History at the National Air and Space Museum brought together a distinguished group of scholars to consider the state of the discipline of space history. This volume is a collection of essays based on those deliberations. The meeting took place at a time of extraordinary transformation for NASA, stemming from the new Vision of Space Exploration announced by President George W. Bush in January 2004: to go to the Moon, Mars, and beyond. This

Vision, in turn, stemmed from a deep reevaluation of NASA's goals in the wake of the Space Shuttle Columbia accident and the recommendations of the Columbia Accident Investigation Board. The new goals were seen as initiating a "New Age of Exploration" and were placed in the context of the importance of exploration and discovery to the American experiences. (Amazon).

This, fifty years after Sputnik, is the definitive book on the Russian space program. The author covers all the key elements of the current Russian space program, including both manned and unmanned missions. He examines the various types of unmanned applications programs as well as the crucial military program, and even analyzes the infrastructure of production, launch centres and tracking. You'll also find discussion of the commercialization of the program and its relationship with western companies. Russia's current space experiment is also put in a comparative global context. Strong emphasis is placed on Russia's future space intentions and on new programs and missions in prospect.

The updated and expanded third edition of this book focuses on the multi-disciplinary coupling between flight-vehicle hardware alternatives and enabling propulsion systems. It discusses how to match near-term and far-term aerospace vehicles to missions and provides a comprehensive overview of the subject, directly contributing to the next-generation space infrastructure, from space tourism to space exploration. This holistic treatment defines a mission portfolio addressing near-term to long-term space transportation needs covering sub-orbital, orbital and escape flight profiles. In this context, a vehicle configuration classification is introduced covering alternatives starting from the dawn of space access. A best-practice parametric sizing approach is introduced to correctly design the flight vehicle for the mission. This technique balances required mission with the available vehicle solution space and is an essential capability sought after by technology forecasters and strategic planners alike.

There is no competition since this is the first book in the English language on cosmonaut selection and training Offers a unique and original discussion on how Russia prepares its cosmonauts for spaceflight. Contains original interviews and photographs with first-hand information obtained by the authors on visits to Star City Provides an insight to the role of cosmonauts in the global space programme of the future. Reviews the training both of Russian cosmonauts in other countries and of foreign cosmonauts in Star City

Partnership in Space

Voices of the Soviet Space Program

European Missions to the International Space Station

A Universal Spacecraft

Film, Television and the Space Race

The International Handbook of Space Technology

NASA's Scientist-Astronauts

April 12, 2011 was the 50th Anniversary of Yuri Gagarin's pioneering journey into space. To commemorate this momentous achievement, Springer-Praxis has produced a mini-series of books that reveals how humanity's knowledge of flying, working, and living in space has grown in the last half century. "Partners in Space" focuses on the early to late 1990s, a time in the post-Soviet era when relations between East and West steadily - though not without difficulty - thawed and the foundations of real harmony and genuine co-operation were laid for the first time with Shuttle-Mir and the International Space Station. This book explores the events which preceded that new era, including the political demise of Space Station Freedom and the consequences of the fall of the Soviet Union on a once-proud human space program. It traces the history of "the Partnership" through the often traumatic times of Shuttle-Mir and closes on the eve of the launch of Zarya, the first component of today's International Space Station.

"Space Sleuths of the Cold War" relates for the first time the inside story of the amateur spies who monitored the Soviet space program during the Cold War. It is written by many of those "space sleuths" themselves and chronicles the key moments in their discovery of hidden history. This book shows that dedicated observers were often better than professionals at interpreting that information coming out of the USSR during the dark days of the Cold War. This book takes a unique approach to the history of Soviet spaceflight - looking at the personal stories of some of the researchers as well as the space secrets the Soviets tried to keep hidden. The fascinating account often reads like a Cold War espionage novel. "Space Sleuths of the Cold War" includes an impressive list of contributors, such as: Editor Dominic Phelan, giving an overall history of the Cold War hunt for Soviet space secrets. Space writer Brian Harvey reveals his own personal search

through official Soviet radio and magazines to find out what they were (and weren't) revealing to the outside world at the height of the space race. Sven Grahn from Sweden details his own 40 year quest to understand what was happening on the other side of the Iron Curtain. Professional American historian Asif Siddiqi explores his own adventures in the once secret Russian archives – often seeing documents never before read by Westerners. Dutch cosmonaut researcher Bert Vis provides an inside account of the Yuri Gagarin training center in Moscow. Belgian researcher Bart Hendrickx's details his important translation of the 1960s' diaries of cosmonaut team leader General Kamanin. Pioneer space sleuth James Oberg's shares his memories of his own notable 'scoops.' Paris-based writer Christian Lardier recounts the efforts of French space sleuths – whose work was frequently overlooked in the USA and Britain because of the language barrier.

Asteroid mining is the exploitation of raw materials from asteroids and other minor planets, including near-Earth objects. Based on known terrestrial reserves, and growing consumption in both developed and developing countries, key elements needed for modern industry and food production could be exhausted on Earth within 50 to 60 years. In response, it has been suggested that platinum, cobalt and other valuable elements from asteroids may be mined and sent to Earth for profit used to build solar-power satellites and space habitats, and water processed from ice to refuel orbiting propellant depots. Looking beyond the Milky Way, there are at least 2 trillion other galaxies in the observable universe. Space colonization can roughly be said to be possible when the necessary methods of space colonization become cheap enough to meet the cumulative funds that have been gathered for the purpose, in addition to estimated profits from commercial use of space.

Intergalactic travel would either have to involve voyages lasting millions of years, or a possible faster than light propulsion method based on speculative physics, such as the Alcubierre drive. There are, however, no scientific reasons for stating that intergalactic travel is impossible in principle. Uploaded human minds or AI may be transmitted to other galaxies in the hope some intelligence there would receive and activate them.

This final entry in the History of Human Space Exploration mini-series by Ben Evans continues with an in-depth look at the latter part of the 20th century and the start of the new millennium. Picking up where Partnership in Space left off, the story commemorating the evolution of manned space exploration unfolds in further detail. More than fifty years after Yuri Gagarin's pioneering journey into space, Evans extends his overview of how that momentous voyage continued through the decades which followed. The Twenty-first Century in Space, the sixth book in the series, explores how the fledgling partnership between the United States and Russia in the 1990s gradually bore fruit and laid the groundwork for today's International Space Station. The narrative follows the convergence of the Shuttle and Mir programs, together with standalone missions, including servicing the Hubble Space Telescope, many of whose technical and human lessons enabled the first efforts to build the ISS in orbit. The book also looks to the future of developments in the 21st century.

Safety Design for Space Systems

Intergalactic Travel and Asteroid Mining

Japanese Missions to the International Space Station

Critical issues in the history of spaceflight

Astroculture After Apollo

Nanosatellites

Live from the Moon

In its first edition, Principles of Clinical Medicine for Space Flight established itself as the authoritative reference on the contemporary knowledge base of space medicine and standards of care for space flyers. It received excellent notices and is used in the curricula of civilian and military training programs and used as a source of questions for the Aerospace Medicine Certifying Examination under the American Board of Preventive Medicine. In the intervening few years, the continuous manning of the International Space Station has both strengthened existing knowledge and uncovered new and significant phenomena related to the human in space. The Second Edition incorporates this information. Gaps in the first edition will be addressed with the addition new and revised chapters. This edition is extensively peer reviewed and represents the most up to date knowledge.

This comprehensive handbook provides an overview of space technology and a holistic understanding of the system-of-systems that is a modern spacecraft. With a foreword by Elon Musk, CEO and CTO of SpaceX, and contributions from globally leading agency experts from NASA, ESA, JAXA, and CNES, as well as European and North American academics and industrialists, this handbook, as well as giving an interdisciplinary overview, offers, through individual self-contained chapters, more detailed understanding of specific fields, ranging through: · Launch systems, structures, power, thermal, communications, propulsion, and software, to · entry, descent and landing, ground segment, robotics, and data systems, to · technology management, legal and regulatory issues, and project management. This handbook is an equally invaluable asset to those on a career path towards the space industry as it is to those already within the industry.

This book provides unique access to the story of how scientists were accepted into the American Space Programme, and reveals how, after four difficult decades, the role of the heroic test pilot astronaut has been replaced by men and women who are science orientated space explorers.

Progress in space safety lies in the acceptance of safety design and engineering as an integral part of the design and implementation process for new space systems. Safety must be seen as the principle design driver of utmost importance from the outset of the design process, which is only achieved through a culture change that moves all stakeholders toward front-end loaded safety concepts. This approach entails a common understanding and mastering of basic principles of safety design for space systems at all levels of the program organisation. Fully supported by the International Association for the Advancement of Space Safety (IAASS), written by the leading figures in the industry, with frontline experience from projects ranging from the Apollo missions, Skylab, the Space Shuttle and the International Space Station, this book provides a comprehensive reference for aerospace engineers in industry. It addresses each of the key elements that impact on space systems safety, including: the space environment (natural and induced); human physiology in space; human rating factors; emergency capabilities; launch propellants and oxidizer systems; life support systems; battery and fuel cell safety; nuclear power generators (NPG) safety; habitat activities; fire protection; safety-critical software development; collision avoidance systems design; operations and on-orbit maintenance. * The only comprehensive space systems safety reference, its must-have status within space agencies and suppliers, technical and aerospace libraries is practically guaranteed * Written by the leading figures in the industry from NASA, ESA, JAXA, (et cetera), with frontline experience from projects ranging from the Apollo missions, Skylab, the Space Shuttle, small and large satellite systems, and the International Space Station. * Superb quality information for engineers, programme managers, suppliers and aerospace technologists; fully supported by the IAASS (International Association for the Advancement of Space Safety)

The Race to the Moon Chronicled in Stamps, Postcards, and Postmarks

Women in Space - Following Valentina

Early Docking Technologies from Concept to Implementation

Public Images, Private Memories, and the Making of a Cultural Identity

Cosmonauts, Soldiers, and Engineers Who Took the USSR into Space

50 Years After Sputnik, New Frontiers

Future Spacecraft Propulsion Systems and Integration

This book tells the story of the Soviet and Russian lunar programme, from its origins to the present-day federal Russian space programme. Brian Harvey describes the techniques devised by the USSR for lunar landing, from the LK lunar module to the LOK lunar orbiter and versions tested in Earth's orbit. He asks whether these systems would have worked and examines how well they were tested. He concludes that political mismanagement rather than technology prevented the Soviet Union from landing cosmonauts on the moon. The book is well timed for the return to the moon by the United States and the first missions there by China and India.

The European Space Agency has a long history of human spaceflight, flying in space with both NASA and the Soviet/Russian space agencies over the years. This book tells the story of the ESA astronauts who have visited the International Space Station over its first decade and how they have lived on board, helped construct the space laboratory and performed valuable scientific experiments. ESA has contributed the Columbus science laboratory as well as the Copula, the Leonardo PMM and the ATV supply ship to the station's infrastructure but it is the human endeavor that captures the imagination. From brief visits to six month expeditions, from spacewalking to commanding the Earth's only outpost in space, ESA astronauts have played a vital role in the international project. Extensive use of color photographs from NASA and ESA depicting the experiments carried out, the phases of the ISS construction and the personal stories of the astronauts in space highlights the crucial European work on human spaceflight.

Limiting Outer Space propels the historicization of outer space by focusing on the Post-Apollo period. After the moon landings, disillusionment set in. Outer space, no longer considered the inevitable destination of human expansion, lost much of its popular appeal, cultural significance and political urgency. With the rapid waning of the worldwide Apollo frenzy, the optimism of the Space Age gave way to an era of space fatigue and planetized limits. Bringing together the history of European astroculture and American-Soviet spaceflight with scholarship on the 1970s, this cutting-edge volume examines the reconfiguration of space imaginaries from a multiplicity of disciplinary perspectives. Rather than invoking oft-repeated narratives of Cold War rivalry and an escalating Space Race, Limiting Outer Space breaks new ground by exploring a hitherto underrated and understudied decade, the Post-Apollo period.

Japan has a rich history of human spaceflight, flying in space with both NASA and the Soviet/Russian space agencies over the years. This book tells the story of the JAXA astronauts who have visited the International Space Station and how they have lived on board, helped construct the space laboratory and performed valuable scientific experiments. JAXA has contributed the largest single module to the ISS: the Kibō (Hope) science laboratory with its Logistics Module, Exposed Facility and robot arm. JAXA supplies the station with cargo and supplies on its automated cargo spacecraft, the H-II Transfer Vehicle (HTV), but it is the human endeavour that captures the imagination. From brief visits to six-month expeditions, from spacewalking to commanding the Earth's only outpost in space, JAXA astronauts have played a vital role in the international project. Extensive use of colour photographs from NASA and JAXA depicting the experiments carried out and the phases of the ISS construction, together with the personal stories of the astronauts' experiences in space, highlight the crucial part the Japanese have played in human spaceflight.

Russia's Cosmonauts

Triumph and Tragedy

The SF Writer's Guide to Human Biology

The Mid to Late Nineties

A History of the Atomic Space Age and Its Implications for the Future

The Rebirth of the Russian Space Program

Walking in Space

Soyuz A Universal Spacecraft Springer Science & Business Media

*How could the newly authorized space shuttle help in the U.S. quest to build a large research station in Earth orbit? As a means of transporting goods, the shuttle could help supply the parts to the station. But how would the two entities be physically linked? Docking technologies had to constantly evolve as the designs of the early space stations changed. It was hoped the shuttle would make missions to the Russian Salyut and American Skylab stations, but these were postponed until the Mir station became available, while plans for getting a new U.S. space station underway were stalled. In *Linking the Space Shuttle and Space Stations*, the author delves into the rich history of the Space Shuttle and its connection to these early space stations, culminating in the nine missions to dock the shuttle to Mir. By 1998, after nearly three decades of planning and operations, shuttle missions to Mir had resulted in:*

- A proven system to link up the space shuttle to a space station
- Equipment and hands-on experience in handling tons of materials
- An infrastructure to support space station assembly and resupply

Each of these played a pivotal role in developing the skills and procedures crucial to the creation of the later, much larger and far more complex International Space Station, as described in the companion volume *Assembling and Supplying the ISS: The Space Shuttle Fulfills Its Mission*.

Although its roots lie in early rocket technologies and the international tensions that followed World War II, the space race began after the Soviet launch of Sputnik 1 on October 4, 1957. The space race became an important part of the cultural and technological rivalry between the USSR and the United States during the Cold War. Modern space exploration is reaching unbelievable areas. Mars is the focal point of space exploration. In the long term, there are tentative plans for manned orbital and landing missions to the Moon and Mars, establishing scientific outposts that will then give way to permanent and self-sufficient settlements. Additional exploration will potentially involve expeditions and settlements on other planets and their moons, as well as the establishment of mining and fueling outposts, particularly in the asteroid belt. Physical exploration outside the solar system will be robotic in the foreseeable future.

*The European Space Agency has a long history of human spaceflight, working with both NASA and the Soviet/Russian space agencies over the years. This book tells the story of the ESA astronauts who have visited the International Space Station and their contributions to its development and success. For example, ESA built the Columbus science laboratory, as well as the Cupola, the Leonardo PMM and the ATV supply ship. But it is the human endeavor that captures the imagination. From brief visits to six-month expeditions and spacewalking to commanding Earth's only outpost in space and doing experiments, ESA astronauts - whose personal stories are also told - have played a vital role in the international project. Many of their efforts are documented in photographs in the book. In following up on the missions covered in this author's earlier title, *In the Footsteps of Columbus* (2016), this book highlights European missions from the 2013 Volare mission of Luca Parmitano to his 2019 Beyond mission and includes first flights for Alexander Gerst, Samantha Cristoforetti, Andreas Mogensen, Tim Peake, and Thomas Pesquet.*

Enabling Technologies for Space Exploration

In the Footsteps of Columbus

Ensuring the Safety of Manned Spacecraft

Space and Ground Technologies, Operations and Economics

2013 to 2019

The Space Race

Colonization of Near-Earth Space

This book focuses on the Interkosmos program, which was formed in 1967, marking a fundamentally new era of cooperation by socialist countries, led by the Soviet Union, in the study and exploration of space. The chapters shed light on the space program that was at that time a prime outlet for the Soviet Union's aims at becoming a world power. Interkosmos was a highly publicized Russian space program that rapidly became a significant propaganda tool for the Soviet Union in the waning years of communism. Billed as an international "research-cosmonaut" imperative, it was also a high-profile means of displaying solidarity with the nine participating Eastern bloc countries. Those countries contributed pilots who were trained in Moscow for week-long "guest" missions on orbiting Salyut stations. They did a little subsidiary science and were permitted only the most basic mechanical maneuvers. In this enthralling new book, and following extensive international research, the authors fully explore the background, accomplishments and political legacy of the Interkosmos program. Through personal and often highly revealing interviews with many of the participants they relate the very human story behind this extraordinary but controversial space venture..

The First Soviet Cosmonaut Team will relate who these men were and offer far more extensive background stories, in addition to those of the more familiar names of early Soviet space explorers from that group. Many previously-unpublished photographs of these "missing" candidates will also be included for the first time in this book. It will be a detailed, but highly readable and balanced account of the history, training and experiences of

the first group of twenty cosmonauts of the USSR. A covert recruitment and selection process was set in motion throughout the Soviet military in August 1959, just prior to the naming of America's Mercury astronauts. Those selected were ordered to report for training at a special camp outside of Moscow in the spring of 1960. Just a year later, Senior Lieutenant Yuri Gagarin of the Soviet Air Force (promoted in flight to the rank of major) was launched aboard a Vostok spacecraft and became the first person ever to achieve space flight and orbit the Earth.

Several project teams from NASA, ESA and other organizations have investigated the possibility of establishing a colony in orbit. They found that the Moon and near-Earth asteroids have enough materials available, that solar energy is readily available in large quantities. The advantages of this system are its proximity to the Earth and its lower escape velocity, which facilitates the exchange of goods and services.

This book tells the fascinating stories of the valiant women who broke down barriers to join the space program. Beginning with the orbital flight of USSR cosmonaut Valentina Tereshkova in 1963, they became players in the greatest adventure of our time. The author contextualizes their accomplishments in light of the political and cultural climate, from the Cold War in the background to the changing status of women in society at large during the Seventies. The book includes the biographies of, and in some cases interviews with, the sixty women who flew in space in the first half century of space history. It reports their achievements and some little known details. The result is a gallery of pioneering women who reached for the stars: women who, with exceptional skill, hard work, and dedication, reached impressive careers as accomplished pilots, researchers, and engineers; many are now in high level managerial positions both at NASA or in public and private organizations, and all left a legacy of strength.

Modeling and Optimization in Space Engineering

Interkosmos

Critical Issues in the History of Spaceflight

Cold War Space Sleuths

The Eastern Bloc's Early Space Program

Stamping the Earth from Space

This remarkable book gives a comprehensive account of the longest manned space mission of the time. It details for the first time the people involved and the crews assigned to operate the first space station Salyut. The book portrays the selection of the crews, dramatic flights and tragedy of Soyuz 11. Biographies of the Soyuz 11 cosmonauts are published for the first time in English. The book relates discussions between the key personnel, and investigates the causes of the tragedy. The book ends with memories of all those affected by the DOS program and the tragedy of Soyuz 11 and looks forward to a continuation of the historic mission of Salyut.

This volume presents a selection of advanced case studies that address a substantial range of issues and challenges arising in space engineering. The contributing authors are well-recognized researchers and practitioners in space engineering and in applied optimization. The key mathematical modeling and numerical solution aspects of each application case study are presented in sufficient detail. Classic and more recent space engineering problems – including cargo accommodation and object placement, flight control of satellites, integrated design and trajectory optimization, interplanetary transfers with deep space manoeuvres, low energy transfers, magnetic cleanliness modeling, propulsion system design, sensor system placement, systems engineering, space traffic logistics, and trajectory optimization – are discussed. Novel points of view related to computational global optimization and optimal control, and to multidisciplinary design optimization are also given proper emphasis. A particular attention is paid also to scenarios expected in the context of future interplanetary explorations. Modeling and Optimization in Space Engineering will benefit researchers and practitioners working on space engineering applications. Academics, graduate and post-graduate students in the fields of aerospace and other engineering, applied mathematics, operations research and optimal control will also find the book useful, since it discusses a range of advanced model development and solution techniques and tools in the context of real-world applications and new challenges.

Over the past 35 years more than 100 individual astronauts and cosmonauts have performed nearly 200 EVAs, (spacewalks), either singularly or in teams in Earth orbit, deep space or on the Moon. In 'Walking in Space: Development of Space Walking Techniques' the author, Dave Shayler, shows how hardware and crew members are prepared for, protected and supported during every EVA. He demonstrates how past experiences have led to improved training techniques and how this, in turn, has provided many successes and future developments.

From the start, the Soviet human space program had an identity crisis. Were cosmonauts heroic pilots steering their craft through the dangers of space, or were they mere passengers riding safely aboard fully automated machines? Tensions between Soviet cosmonauts and space engineers were reflected not only in the internal development of the space program but also in Soviet propaganda that wavered between praising daring heroes and flawless technologies. Soviet Space Mythologies explores the history of the Soviet human space program within a political and cultural context, giving particular attention to the two professional groups—space engineers and cosmonauts—who secretly built and publicly represented the program. Drawing on recent scholarship on memory and identity formation, this book shows how both the myths of Soviet official history and privately circulating counter-myths have served as instruments of collective memory and professional identity. These practices shaped the evolving cultural image of the space age in popular Soviet imagination. Soviet Space Mythologies provides a valuable resource for scholars and students of space history, history of technology, and Soviet (and post-Soviet) history.