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National Aeronautics
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FOREWORD

This bibliography of scientific and technical papers is the first in a series to be published annually in compliance with the National Aeronautics and Space Act of 1958 which requires "the widest practicable and appropriate dissemination of information about the Agency's programs and the results thereof."

The purpose of the series is to provide to the technical community a compendium of current JSC research and technological developments.

Comments concerning this publication or suggestions for future annual bibliographies should be addressed to the Documentation Management Branch, JM2, Lyndon B. Johnson Space Center, Houston, Texas, 77058; FTS 525-6267 or 713/483-6267.

Carolyn L. Huntoon

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Associate Director

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INTRODUCTION

This listing of the Johnson Space Center's scientific and technical publications and presentations is arranged alphabetically by first author within the organization of that author's affiliation at the time the request for approval was initiated. Organizational groupings are made by directorate or major office, then if number of entries warrants, by division or suboffice. Organizations are listed by 1985 designations. The citations are based primarily on JSC authorship, with contractors, grantees, and independent collaborators included for coauthored papers.

Types of papers included are NASA formal series reports, journal articles, presentations given at professional society meetings and seminars, papers published in conference proceedings and other collective works, and workshop results. Dates are confined largely to calendar year 1985, except those few cases in which a published version of a 1985 presentation had already appeared in early 1986 or in which a 1984 presentation was not published until 1985.

Information presented herein is based chiefly on that supplied by authors first on forms requesting approval and later on review of this listing, copies of which were distributed to all directorates and offices involved. Additional information was obtained from literature searches in the NASA Scientific and Technical Aerospace Reports (STAR), International Aerospace Abstracts (IAA), and available professional publications cited.

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1. Loftus, Joseph P., Jr.: Space: Exploration-Exploitation and the Role of Man. Presented at the Air Force Aerospace Medical Research Laboratory, June 5, 1985, Dayton, Ohio.
2. Loftus, Joseph P., Jr.; Roberts, Barney B.; and Duke, Michael B.: Technology for Manned Mars Flight. Presented at the AIAA Planetary Society "Steps to Mars" Conference, July 16, 1985, Washington, D.C.
3. Loftus, Joseph P., Jr.; and Brasher, Warren L.: Beyond Low Earth Orbit - An Overview of Orbit-to-Orbit Stages. Presented at the 36th International Astronautical Congress, October 7-12, 1985, Stockholm, Sweden.
4. Loftus, Joseph P., Jr.: An Historical Overview of NASA Manned Spacecraft and Their Crew Stations. British Interplanetary Society Journal, Volume 38, August 1985, pp. 354-370.
5. Loftus, Joseph P., Jr.: Evolution of the Astronaut's Role. NASA, Washington Workshop Proceedings: Space Human Factors, Volume 1, 1985, 24 p.

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1. Bluford, Guion S., Jr.: The Space Age: An Ongoing Revolution in Technology. ASF News, 1985.
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3. Henize, Karl G.; and Parker, Robert A. R.: Optical Spectroscopy of the Filamentary Halo That Surrounds AD148937 and NGR6164-65. Publications of the Astronomical Society of the Pacific, Volume 97, September 1985, pp. 780-783.
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2. Deiterich, Charles F.: The Fisher Linear Classifier. Presented at the American Statistical Association & JSC Conference, November 14-15, 1985, Clear Lake City, Texas.
3. Dell'Osso, Renato D., Jr.: Space Shuttle Flight Operations - Training, Planning, Accomplishments. Presented at the Society of Automotive Engineers Aerospace Vehicle Requirements Conference, May 21, 1985, Washington, D.C.
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2. Cusick, Robert J.; Colling, Arthur K; and Reysa, Richard P.: Development Status of Regenerable Solid Amine CO₂ Control Systems. Presented at the ASME/AIAA/SAE/AICHe/ASMA 15th Intersociety Conference on Environmental Systems, July 15-17, 1985, San Francisco, California. SAE Paper No. 851340.
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5. Lance, Nick; and Malin, Jane T.: An Expert Systems Approach to Automated Fault Diagnostics. Presented at the ASME/AIAA/SAE/AICHe/ASMA 15th Intersociety Conference on Environmental Systems, July 15-17, 1985, San Francisco, California. SAE Paper No. 851380.
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11. Rankin, J. Gary: Space Station Thermal Management System Development-Status and Plans. Presented at the ASME/AIAA/SAE/AICHE/ASMA 15th Intersociety Conference on Environmental Systems, July 15-17, 1985, San Francisco, California.
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3. Barton, Richard L.: Aerodynamic Flight Testing of the Space Shuttle Orbiter. Presented at the SAE Aerospace Technology Conference, October 14-17, 1985, Long Beach, California.
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11. Erwin, Harry O.: Laser Docking System. Presented at the Satellite Services Workshop, November 6, 1985, Houston, Texas.
12. Grady, Jane L.: Optical Communications Thru the Shuttle Window. Presented at the AIAA Conference, May 10, 1985, Houston, Texas.
13. Grady, Jane L.: Space Station: Lasers and Electro-Optics. Presented at the Conference on Lasers and Electro-Optics, May 22, 1985, Baltimore, Maryland.
14. Griffin, John W., et al.: Ku-Band - The First Year of Operation. Presented at the IEEE Radar '85 Conference, May 8, 1985, Washington, D.C.
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19. Nitschke, Harold A.: Shuttle Imaging Radar Antenna Technology. Presented at the IEEE Radar '85 Conference, May 9, 1985, Washington, D.C.
20. Sawyer, Ralph S.; Schmidt, Oron L.; and Graham, Olin L.: Communications and Tracking: The Keys to Space Station Utilization. Presented at the Space Tech '85 Conference and Exposition, September 23-25, 1985, Anaheim, California.

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1. Healey, Kathleen Jurica: A Variable Configuration Controller for a Multi-Purpose Articulated End Effector. Presented at the AIAA/NASA Symposium, September 4-6, 1985, Washington, D.C.

Avionics Systems Division

1. Actkinson, Arland L.: The General Perception Problem. Presented at the ISA/85 Conference, October 21-24, 1985, Philadelphia, Pennsylvania.
2. Kubiak, E. T.: A Frequency Domain Stability Analysis of a Phase Plane Control System. Journal of Guidance, Control, and Dynamics, Volume 8, January 1985, pp. 50-55.

Propulsion and Power Division

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3. Griffin, John W.: Orbital Fluid Resupply Tanker Development. Presented at the 1985 SAE Aerospace Technology Conference and Exposition, October 14-17, 1985, Long Beach, California.
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6. Kroll, Kenneth R.: U.S. Gravity Utilization of Tethers Activity. Presented at the Applications of Tethers in Space Workshop, October 13, 1985, Venice, Italy.
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9. Taeuber, Ralph J.: Space Station Propulsion Requirements. Presented at the ASME Winter Annual Meeting, December 12-13, 1985, New Orleans, Louisiana.

10. Taeuber, Ralph J.; Karakulko, W.; Blevins, D.; Homann, C.; and Henderson, J.: Design Evolution of the Orbiter Reaction Control Subsystem. Space Shuttle Technical Conference, NASA CP-2342, Part 2, January 1985, pp. 656-672.

Structures and Mechanics Division

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3. Ehlers, H. K. F.: The Space Shuttle Orbiter Molecular Environment Induced by the Supplemental Flash Evaporator System. AIAA Paper 85-0951. Presented at the AIAA 20th Thermophysics Conference, June 19-21, 1985, Williamsburg, Virginia.
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7. Leger, L. J.: Effects of the Low Earth Orbital Environment on Spacecraft Materials. Presented at the Third European Symposium on Spacecraft Materials in Space Environment, October 1-4, 1985, Noordwijk, The Netherlands.
8. Leger, L. J.; Jacobs, S.; Ehlers, H. K. F.; and Miller, E.: Shuttle On-Orbit Contamination and Environmental Effects. Space Shuttle Technical Conference, NASA CP-2342, Part 2, January 1985, pp. 1082-1094.
9. Leger, L. J.; Visentine, J. T.; and Schliesing, J. A.: A Consideration of Atomic Oxygen Interactions with Space Station. AIAA Paper 85-0476, 23rd AIAA Aerospace Sciences Meeting, January 1985, 9 p.

10. Li, Chien-peng: Computational Methods for Hypersonic Viscous Flow Over Finite Ellipsoid-Cones at Incidence. AIAA Paper 85-0925, 20th AIAA Thermophysics Conference, June 1985, 13 p.
11. Li, Chien-peng: Euler Solutions Using Implicit Multigrid Techniques. Presented to the Second Copper Mountain Conference on Multigrid Methods, April 1-3, 1985.
12. Li, Chien-peng: A Finite Difference Method for Solving Unsteady Viscous Flow Problems. AIAA Journal, Volume 21, May 1985, pp. 659-668.
13. Li, Chien-peng: Numerical Procedure for Three-Dimensional Hypersonic Viscous Flow. Presented at the International Computational Fluid Dynamics Conference, September 9-12, 1985, Tokyo, Japan.
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18. Scott, Carl D.: Effects of Nonequilibrium and Wall Catalysis on Shuttle Heat Transfer. Journal of Spacecraft and Rockets, Volume 22, September-October 1985, pp. 489-499.
19. Scott, Carl D.; Roberts, Barney B.; Nagy, Kornel; Taylor, Peter; Gamble, Joe D.; Ceremeli, Christopher J.; Kroll, Kenneth R.; Li, Chien-peng; and Reid, Robert C.: Design Study of an Integrated Aerobraking Orbital Transfer Vehicle. NASA TM-58264, March 1985, 40 p.

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22. Visentine, J. T.; Leger, L. J.; Kuminecz, J. F.; and Spiker, I. K.: STS-8 Atomic Oxygen Effects Experiment. AIAA Paper 85-0415, 23rd AIAA Aerospace Sciences Meeting, January 1985, 9 p.
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25. West, Walter: Illustration of the Use of Modal Assurance Criterion to Detect Structural Changes in an Orbiter Test Specimen. Presented at the 4th International Modal Analysis Conference, February 3-6, 1985, Schenectady, New York.
26. West, Walter; Haisty, Brett; and Mitchell, Charles: Fault Detection in the Space Shuttle Orbiter Body Flap using the Modal Assurance Criterion. Presented at the American Society for Metals Advanced Composites Conference, December 3-4, 1985, Detroit, Michigan.
27. Williams, S. D.; Curry, Donald M.; and Goodrich, Winston D.: A Sensitivity Analysis of the Shuttle Orbiter Heating. AIAA Paper 85-0901. Presented at the AIAA 20th Thermophysics Conference, June 1985.

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MISSION SUPPORT DIRECTORATE

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2. Nader, Blair A.: Space Station Operations, Operational Control Zones. Presented at the National Technical Association 57th Annual Conference, July 22-27, 1985, Houston, Texas.
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1. Garcia, Frank, Jr.; Jones, Jess H.; and Henderson, Herbert R.: Correlation of Predicted and Measured Sonic Boom Characteristics From the Reentry of STS-1 Orbiter. NASA TP-2475, June 1985, 42 p.
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3. Mancuso, Thomas G.: Initiation of the Next Step: The Acquisition of a Space Station Program. Presented at the 22nd Space Congress, April 23-26, 1985, Cocoa Beach, Florida.
4. Mandell, Humboldt C.: Space Station, The First Step. Presented at Case for Mars 2, July 10, 1984, Boulder, Colorado. (Published January 1985)
5. Mandell, Humboldt C.: Management Lessons Learned from the Space Shuttle Program. NASA JSC, August 1985.
6. Pixley, Paul T.: Space Station Challenges for Navigation. Presented at the Institute of Navigation Meeting, Spring 1985.

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2. Campos, Carlos S.: Evaluating Alternative Manufacturing Flows for the Space Station Common Module Using Simulation. Presented at the 1985 R&D Productivity Conference, September 10, 1985, Houston, Texas.
3. Garriott, Owen K.; and DeBra, Daniel B.: A Simple Microgravity Table for the Orbiter or Space Station. Earth-Orient. Applic. Space Tech, 5 (3), 1985, pp. 161-163.
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2. Benz, Frank J.; Shaw, Randy; and Homa, John: Ignition of Metals by a Strong Promoter. Presented at the ASTM G-4 Committee: Compatibility and Sensitivity of Materials in Oxygen Enriched Atmospheres Conference, April 23-24, 1985, Washington, D.C.
3. Benz, Frank J.; and Stoltzfus, Joel: Ignition of Metals by Frictional Heating. Presented at the ASTM G-4 Committee: Compatibility and Sensitivity of Materials in Oxygen Enriched Atmospheres Conference, April 23-24, 1985, Washington, D.C.
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5. Koontz, Steven L.; and Smith, Irwin D.: The Effect of Metal Cleaning Methods on the Corrosion Rate and Surface Chemistry of Type 304 Stainless Steel in MON-3 Oxidizer. Presented at JANNAF: Propellant Characterization Subcommittee Meeting, October 28-31, 1985, Houston, Texas.
6. Stradling, Jack S.; and Pippen, David L.: Materials Test Laboratory Activities at the NASA - JSC White Sands Test Facility. Presented at the ESA/ESTEC, Third European Symposium on Spacecraft Materials in Space Environment, October 1-4, 1985, Noordwijk, The Netherlands.

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SPACE AND LIFE SCIENCES DIRECTORATE

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