1995 Journal of Spacecraft and Rockets Index

How to Use the Index

In the Subject Index, pages 1084–1089, each technical paper is listed under a maximum of three appropriate headings. Note the number in boldface type following each paper title, and use that number to locate the paper in the Chronological Index. The Author Index, pages 1090 and 1091, lists all authors associated with a given technical paper. The locating numbers are identical to those in the Subject Index. The Chronological Index, pages 1091–1096, lists all papers by their unique code numbers. This listing contains titles, authors and their affiliations, and volume, issue number, and page where the paper appeared. It also gives the AIAA paper number, if any, on which the article was based, as well as the "CP" or conference volume number if the paper was published in a bound collection of meetings papers. Comments, Replies, and Errata are listed directly beneath the paper to which they refer. If the paper to which they refer was published prior to 1995, that paper also will appear in the Chronological Index. Authors of Comments also are listed in the Author Index.

Subject Index

Aircraft Technology, Conventional, STOL/VTOL

Aerodynamics

Comment on "Determination of Slender-Body Aerodynamics Using Discrete Vortex Methods" A94-029

Reply by the Author to M. J. Hemsch
Subsonic Drag Reduction of the Space Shuttle
Orbiter

A94-029
A94-029
A95-010

Experimental and Computational Analysis of Shuttle Orbiter Hypersonic Trim Anomaly

A95-111
Simulation and Shuttle Hitchhiker Validation of Passive Satellite Aerostabilization A95-119
Aerodynamics of a Body Immersed in a Supersonic Wake: A Computational Study A95-143
Rotating Nose Tip Effects on Slender Body Aerodynamics at High Angles of Attack

A95-144

A95-132

Aerospace Plane

Integrated Design of Hypersonic Waveriders Including Inlets and Tailfins A95-005

Comparison of Satellite-Derived Wind Measurements with Other Wind Measurement Sensors

Configuration Design

Integrated Design of Hypersonic Waveriders Including Inlets and Tailfins

A95-005
Subsonic Drag Reduction of the Space Shuttle
Orbiter

A95-010
Deployment Mechanism for a Large Reflector:
Thermal-Design Verification Using Flight

Waverider Design for Generalized Shock Geometries A95-146

Flight Mechanics

Analytical Solution and Parameter Estimation of Projectile Dynamics A95-008

Fuels and Fuel Systems

Isotope and Parameter Effects in a Gas Core Nuclear Propulsion Reactor A95-105

Military Missions

Comparison of Satellite-Derived Wind Measurements with Other Wind Measurement Sensors
A95-084

Performance

Isotope and Parameter Effects in a Gas Core Nuclear Propulsion Reactor A95-105

Stealtl

Scattered Electromagnetic Field of a Re-Entry Vehicle A95-041

Structural Materials

Characterization of Polymer Films Retrieved from NASA's Long Duration Exposure Facility A95-074

Weather Hazards

Comparison of Satellite-Derived Wind Measurements with Other Wind Measurement Sensors A95-084

Energy

Batteries

Battery Model for the Extreme Ultraviolet Explorer Spacecraft A95-050

Nuclear Fission

Isotope and Parameter Effects in a Gas Core Nuclear Propulsion Reactor A95-105

Photovoltaic Power

Low Earth Orbit Durability of Protected Silicone for Refractive Photovoltaic Concentrator Arrays A95-013

Solar Power

Material-Property Effects on a Thin-Film Solar Concentrator A95-102

Fluid Dynamics

Aeroacoustics

Leading-Edge Sweepback and Shape Effects on Fin-Induced Fluctuating Pressures A95-040

Boundary Layers and Heat Transfer-Laminar

Dissociative Cooling: Effect on Stagnation Heat
Transfer of Gas Mixture Injection
Coupled Thermodynamic-Fluid-Dynamic Solution for a Liquid-Hydrogen Tank
A95-137
Engineering Interactive Inviscid Boundary-Layer Method for Hypersonic Flow
A95-167

Boundary Layers and Heat Transfer— Turbulent

Transpiration Cooling Effects on Nozzle Heat
Transfer and Performance A95-149

Boundary-Layer Stability and Transition

Shear-Stress-Sensitive Liquid Crystals for Hypersonic Boundary-Layer Transition Detection A95-110

Computational Fluid Dynamics

Nonreactive Viscous Solver for Hypersonic Flows over Recessed Cone with Injection

A 95-002

Numerical Investigation of Supersonic Flows
Around a Spiked Blunt Body A95-003
Direct Simulation Monte Carlo Calculation of a
Jet Interaction Experiment A95-009
Effects of g Jitter on Free-Surface Motion in a
Cavity A95-023
Modeling of Ionizing Hypersonic Flows in Nonequilibrium A95-031

Integrated Aerodynamic and Propulsive Flowfields of a Generic Hypersonic Space Plane

A95-056 Unsteady Flowfield over a Forward-Looking Endoatmospheric Hit-to-Kill Interceptor

A95-065

A95-089

Computed Drag Reduction on a Projectile Using Porous Surfaces A95-067 Predictions of Low Aspect Ratio Missile Aero-

dynamics

Experimental and Computational Analysis of Shuttle Orbiter Hypersonic Trim Anomaly A95-111
Numerical Investigation of Supersonic Vortical
Flow About a Missile Body A95-112 Application of Chimera Technique to Projectiles
in Relative Motion A95-117 Coupled Thermodynamic-Fluid-Dynamic Solu-
tion for a Liquid-Hydrogen Tank A95-137 Waverider Design for Generalized Shock Geom-
etries A95-146 Analysis of Laminar Near-Wake Hypersonic
Flows A95-148
Hydrodynamics
Pitch Analysis of a Space Module After Water
Landing A95-090
Hypersonic Flow
Nonreactive Viscous Solver for Hypersonic
Flows over Recessed Cone with Injection A95-002
Integrated Design of Hypersonic Waveriders In-
cluding Inlets and Tailfins A95-005 Laser Velocimetry Seed-Particle Behavior in
Shear Layers at Mach 12 A95-025
Modeling of Ionizing Hypersonic Flows in Non-
equilibrium A95-031 Mars Pathfinder Trajectory Based Heating and
Ablation Calculations A95-032
Integrated Aerodynamic and Propulsive Flow-
fields of a Generic Hypersonic Space Plane A95-056
Aerodynamic Heating to Spherically Blunted Cones at Angle of Attack A95-082
Flow Quality of Hypersonic Wind-Tunnel Noz-
zles Designed Using Computational Fluid Dy-
namics A95-086 Augmented Burnett-Equation Solutions over Ax-
isymmetric Blunt Bodies in Hypersonic Flow A95-088
Shear-Stress-Sensitive Liquid Crystals for Hy-
personic Boundary-Layer Transition Detec-
tion A95-110 Experimental and Computational Analysis of
Shuttle Orbiter Hypersonic Trim Anomaly
A95-111
Interactions Between Shock Wave and Hyper-
sonic Laminar Boundary Layer Near Convex Corner A95-115
Simultaneous Luminescence Pressure and Tem-
perature Measurement System for Hypersonic

Analysis of Laminar Near-Wake Hypersonic

Wind Tunnels

Flows A95-148 Inlet, Nozzle, Diffuser, and Channel Flows Roe's Solver with Different Turbulence Models for Three-Dimensional High-Speed Inlets A95-004 Laser Velocimetry Seed-Particle Behavior in Shear Layers at Mach 12 A95-025 Flow Quality of Hypersonic Wind-Tunnel Nozzles Designed Using Computational Fluid Dynamics A 95-086 Interactions Between Shock Wave and Hypersonic Laminar Boundary Layer Near Convex Corner A95-115 Transpiration Cooling Effects on Nozzle Heat Transfer and Performance A95-149 Flow Through a Submerged Nozzle A95-150 Jets, Wakes, and Viscid-Inviscid Flow Interactions

Direct Simulation Monte Carlo Calculation of a

Jet Interaction Experiment

Application of Chimera Technique to Projectiles in Relative Motion A95-117 Aerodynamics of a Body Immersed in a Supersonic Wake: A Computational Study A95-143 Engineering Interactive Inviscid Boundary-Layer Method for Hypersonic Flow

Multiphase Flows

Sloshing-Induced Moment Driven by Gravity Gradient Associated with Spacecraft Slew Motion A95-121

Plasmadynamics and MHD

Investigation of Microwave Attenuation Measurements in a Laboratory-Scale Rocket Motor Plume A 95-139 Ionosphere Ionization Effects on Sheath Structure Around a High-Voltage Spacecraft A95-155

Rarefied Flows

Direct Simulation Monte Carlo Calculation of a Jet Interaction Experiment A 95-009 Application of Direct Simulation Monte Carlo to Satellite Contamination Studies A95-058 Simulated Rarefied Entry of the Galileo Probe into the Jovian Atmosphere A95-059 Oxygen Interactions with Materials III--Mission and Induced Environments A95-071 EOIM-III Mass Spectrometry and Polymer Chemistry: STS 46, July-August 1992 A95-072 Augmented Burnett-Equation Solutions over Axisymmetric Blunt Bodies in Hypersonic Flow A 95-088 Effects of General Atmospheric Perturbations on Small Debris Particle Orbits A95-136

Reacting Flows and Combustion

Integrated Aerodynamic and Propulsive Flowfields of a Generic Hypersonic Space Plane A 95-056

Separated Flows

A95-116

A95-009

Review and Development of Base Pressure and Base Heating Correlations in Supersonic Leading-Edge Sweepback and Shape Effects on Fin-Induced Fluctuating Pressures A95-040

Shock Waves and Detonations

Roe's Solver with Different Turbulence Models for Three-Dimensional High-Speed Inlets A95-004

Subsonic Flow

Subsonic Drag Reduction of the Space Shuttle Orbiter

Roe's Solver with Different Turbulence Models

Supersonic Flow

for Three-Dimensional High-Speed Inlets A95-004 Aerodynamic Interference for Supersonic Low-Aspect-Ratio Missiles A95-038 Fin Dihedral Effects on Wing-Body Carryover for Supersonic Noncircular Missiles A95-064 Predictions of Low Aspect Ratio Missile Aerodynamics A95-089 Numerical Investigation of Supersonic Vortical Flow About a Missile Body A95-112 Aerodynamics of a Body Immersed in a Supersonic Wake: A Computational Study A95-143

Waverider Design for Generalized Shock Geometries Transpiration Cooling Effects on Nozzle Heat Transfer and Performance A 95-149 Flow Simulation and Drag Anatomy for Antitank **Projectile Configurations** A95-166

Transonic Flow

Computed Drag Reduction on a Projectile Using Porous Surfaces A 95-067

Unsteady Flows

Effects of g Jitter on Free-Surface Motion in a Cavity A95-023 Leading-Edge Sweepback and Shape Effects on A95-040 Fin-Induced Fluctuating Pressures

Vortices

Numerical Investigation of Supersonic Vortical Flow About a Missile Body Rotating Nose Tip Effects on Slender Body Aerodynamics at High Angles of Attack A95-144

Wave Motion and Sloshing

Nonlinear Forced-Response Characteristics of Contained Fluids in Microgravity Baffle Effect on Sloshing-Modulated Torques Responsed to Orbital Accelerations in Microgravity A95-106 Sloshing-Induced Moment Driven by Gravity Gradient Associated with Spacecraft Slew Motion A95-121

Guidance, Control, and Dynamics **Technology**

Aircraft Guidance

Effect of Payload on Risk of Vehicle Loss Due to Engine Failure A95-085

Astrodynamics

Effect of Departure Delays on Manned Mars Mission Selection Influence of Suboptimal Navigation Filter Design on Lunar Landing Navigation Accuracy A95-049 Selenopotential Field Effects on Lunar Landing Accuracy A95-052 Debris-Cloud Collision Risk Analysis: Polar-Platform Case Study A95-135 Effects of General Atmospheric Perturbations on Small Debris Particle Orbits A95-136 Maximum ΔV in the Aerogravity Assist Maneu-A95-138 Designing Continuous-Thrust Low-Earth-Orbit to Geosynchronous-Earth-Orbit Transfers A95-157

Control System Design

Redesign of the Celestial Pointing Cone Control Gains for the Galileo Spacecraft A95-094 Integrated Controls-Structures Design Methodology for Flexible Spacecraft A95-124 Clementine Attitude Determination and Control A95-161

Control System Effectors

Fast Variable-Amplitude Cold Gas Thruster A95-047

Dynamics

Pitch Analysis of a Space Module After Water Landing A95-090 Gravity Anchoring for Passive Spacecraft Damping A95-140

Engine Control

Near-Optimal Propulsion-System Operation for an Air-Breathing Launch Vehicle A95-145

Flight Mechanics

Mars Pathfinder Six-Degree-of-Freedom Entry Analysis A95-151

Launch Vehicle Guidance and Control

Effect of Atmospheric Processes on Launch De-A95-118 cisions Near-Optimal Propulsion-System Operation for an Air-Breathing Launch Vehicle A95-145

Missile Dynamics

Optimization Techniques

Analytical Solution and Parameter Estimation of Projectile Dynamics A95-008

Navigation

Influence of Suboptimal Navigation Filter Design on Lunar Landing Navigation Accuracy

A 95-049

Comparison of Two Multidisciplinary Optimization Strategies for Launch-Vehicle Design

Minimization of Thermoelastic Deformation in

Space Structures Undergoing Periodic Motion A95-098 Integrated Controls-Structures Design Methodology for Flexible Spacecraft A95-124

Pointing Systems

Fast Variable-Amplitude Cold Gas Thruster

Advanced X-Ray Astrophysics Facility-Spectrometer Spacecraft Pointing Control System: Conceptual Design A95-048 Redesign of the Celestial Pointing Cone Control Gains for the Galileo Spacecraft A95-094 Rotating Unbalanced-Mass Devices for Scanning: Proof-of-Concept Test Results A95-107

Signal Processing

Orbital Acceleration Research Experiment: Calibration Measurements A95-093

Spacecraft Dynamics

Nonlinear Forced-Response Characteristics of Contained Fluids in Microgravity A95-077 Solar-Array-Induced Disturbance of the Hubble Space Telescope Pointing System A95-095 Baffle Effect on Sloshing-Modulated Torques Responsed to Orbital Accelerations in Micro-A95-106 Rotating Unbalanced-Mass Devices for Scanning: Proof-of-Concept Test Results A95-107 Simulation and Shuttle Hitchhiker Validation of Passive Satellite Aerostabilization A95-119 Effects of General Atmospheric Perturbations on Small Debris Particle Orbits A95-136 Gravity Anchoring for Passive Spacecraft Damp-A95-140 ing Estimates of the Clementine Interstage Adapter Satellite Tumble Rate A95-165

Spacecraft Guidance and Control

Fuel-Optimal Bank-Angle Control for Lunar-Re-A95-019 turn Aerocapture Fast Variable-Amplitude Cold Gas Thruster

A95-047

Advanced X-Ray Astrophysics Facility-Spectrometer Spacecraft Pointing Control System: Conceptual Design A 95-048

Redesign of the Celestial Pointing Cone Control Gains for the Galileo Spacecraft A95-094 Rotating Unbalanced-Mass Devices for Scanning: Proof-of-Concept Test Results A95-107

Sloshing-Induced Moment Driven by Gravity Gradient Associated with Spacecraft Slew

Spacecraft Autonomous Operations Experiment Performed During the Clementine Lunar Mis-A95-160

Clementine Attitude Determination and Control System A95-161

State Estimation

Influence of Suboptimal Navigation Filter Design on Lunar Landing Navigation Accuracy

Estimates of the Clementine Interstage Adapter Satellite Tumble Rate A95-165

Structural Control

Static Shape Control of Space Trusses with Partial Measurements A95-127

System Identification

Analytical Solution and Parameter Estimation of Projectile Dynamics

Trajectory Optimization

Vehicle-and-Trajectory Optimization of Nuclear Electric Spacecraft for Lunar Missions

Spacecraft Optimization with Combined Chemi-A95-055 cal-Electric Propulsion Comparison of Two Multidisciplinary Optimization Strategies for Launch-Vehicle Design

Designing Continuous-Thrust Low-Earth-Orbit to Geosynchronous-Earth-Orbit Transfers

A95-165

Interdisciplinary Topics

Aerospace Technology Utilization

Verification Test of Automated Robotic Assembly of Space Truss Structures A95-101

Analytical and Numerical Methods

Scattered Electromagnetic Field of a Re-Entry Vehicle A95-041 New Method for Shuttle Orbiter Thermal Analy-A95-069 sis

Application of Acceleration Iterative Methods for Solution of Thermal Models of Spacecraft A95-091

Effect of Atmospheric Processes on Launch De-A95-118 cisions Estimates of the Clementine Interstage Adapter

Atmospheric and Space Sciences

Satellite Tumble Rate

Low Earth Orbit Durability of Protected Silicone for Refractive Photovoltaic Concentrator Arrays

Identification of an Error in the Distribution of the NASA Model AP-8 MIN A95-027 Metal-Oxide-Silicon Capacitor Detectors for Measuring Micrometeoroid and Space-Debris A95-104 Effect of Atmospheric Processes on Launch Decisions A95-118 Low-Energy Neutral-Atom Imaging Techniques for Remote Observations of the Magneto-A95-134 Charged-Particle Telescope Experiment on Clementine A95-162

CAD/CAM

EOIM-III Mass Spectrometry and Polymer Chemistry: STS 46, July-August 1992 A95-072

Reliability, Maintainability, and Logistics Support

Spacecraft Expected-Cost Analysis with k-outof-n: G Subsystems A95-141

Research Facilities and Instrumentation

Laser Velocimetry Seed-Particle Behavior in Shear Layers at Mach 12 A95-025 Flow Quality of Hypersonic Wind-Tunnel Nozzles Designed Using Computational Fluid Dy-Simultaneous Luminescence Pressure and Temperature Measurement System for Hypersonic Wind Tunnels A95-116 Charged-Particle Telescope Experiment on Clementine A95-162

Sensor Systems

Shear-Stress-Sensitive Liquid Crystals for Hypersonic Boundary-Layer Transition Detec-A 95-110 Low-Energy Neutral-Atom Imaging Techniques for Remote Observations of the Magneto-A95-134

Launch Vehicle and Missile (LV/M) Technology

Review and Development of Base Pressure and Base Heating Correlations in Supersonic Flow A95-001 Numerical Investigation of Supersonic Flows Around a Spiked Blunt Body A95-003 Hammerhead and Nose-Cylinder-Flare Aeroelastic Stability Revisited A95-006 Calculation of Wing-Alone Aerodynamics to High Angles of Attack A 95-026 Missile Aerodynamics at High Angles of Attack: A Prediction Code A95-037 Aerodynamic Interference for Supersonic Low-Aspect-Ratio Missiles A95-038 Wing-Body Carryover for Noncircular Missiles A95-063 Fin Dihedral Effects on Wing-Body Carryover for Supersonic Noncircular Missiles A95-064 Computed Drag Reduction on a Projectile Using

High-Angle-of-Attack Wind-Tunnel Investiga-A95-108 tion of a Multimission Vehicle Application of Chimera Technique to Projectiles in Relative Motion A95-117 Roll Damping for Projectiles Including Wraparound, Offset, and Arbitrary Number of Fins A95-142

Wind Tunnel Simulation of Multibooster Separa-

tion Trajectories of a Launch Vehicle

Porous Surfaces

Rotating Nose Tip Effects on Slender Body Aerodynamics at High Angles of Attack

Flow Simulation and Drag Anatomy for Antitank A95-166

Configuration Design

Projectile Configurations

Hammerhead and Nose-Cylinder-Flare Aeroelastic Stability Revisited A95-006 Design Options for Advanced Manned Launch Systems A95-034 Aerodynamic Interference for Supersonic Low-Aspect-Ratio Missiles A95-038 Reusable Sounding-Rocket Design A95-054 Comparison of Two Multidisciplinary Optimization Strategies for Launch-Vehicle Design A95-060

Dual-Fuel Propulsion in Single-Stage Advanced Manned Launch System Vehicle A95-062 Fin Dihedral Effects on Wing-Body Carryover for Supersonic Noncircular Missiles A95-064 Missile Sizing for Ascent-Phase Intercept

A95-066 Optimization of Hybrid-Rocket-Booster Fuel-Grain Design A95-147

Launch Vehicle and Sounding Rocket Systems

Design Options for Advanced Manned Launch Systems A95-034 Reusable Sounding-Rocket Design A 95-054 Titan IV Motor Failure and Redesign Analyses A95-092

Missile Systems

Unsteady Flowfield over a Forward-Looking Endoatmospheric Hit-to-Kill Interceptor A95-065 Missile Sizing for Ascent-Phase Intercept

A 95-066

Mission Studies and Economics

Design Options for Advanced Manned Launch Systems

Propulsion and Propellant Systems

Microstructural Damage and Fracture Processes in a Composite Solid Rocket Propellant

A95-046

Reusable Sounding-Rocket Design A95-054 Dual-Fuel Propulsion in Single-Stage Advanced Manned Launch System Vehicle A95-062 Titan IV Motor Failure and Redesign Analyses

A95-092 Flow Through a Submerged Nozzle A95-150

Simulation

Unsteady Flowfield over a Forward-Looking Endoatmospheric Hit-to-Kill Interceptor A95-065 Simulation and Shuttle Hitchhiker Validation of Passive Satellite Aerostabilization A95-119

Testing, Flight and Ground

Wind Tunnel Simulation of Multibooster Separation Trajectories of a Launch Vehicle A95-083 High-Angle-of-Attack Wind-Tunnel Investigation of a Multimission Vehicle

Thermal Protection Systems

Application of Integral Methods to Ablation Charring Erosion, A Review A95-029 Enhancements to Integral Solutions to Ablation A95-030 and Charring

Trajectories and Tracking Systems

Missile Sizing for Ascent-Phase Intercept

A95-066

Wind Tunnel Simulation of Multibooster Separation Trajectories of a Launch Vehicle A95-083 Effect of Payload on Risk of Vehicle Loss Due to Engine Failure A95-085

Vibration

Vibration-Test Force Limits Derived from Frequency-Shift Method A95-043

Propulsion

Electric and Advanced Space Propulsion

Vehicle-and-Trajectory Optimization of Nuclear Electric Spacecraft for Lunar Missions

A 95-016

Spacecraft Optimization with Combined Chemical-Electric Propulsion A95-055

Environmental Effects

Active Control of Contaminant Particulates in a Low-Earth-Orbit Near- Spacecraft Environ-A 95-024

Flight Mass-Spectrometer Calibration in a High-Velocity Atomic-Oxygen Beam A95-073

Fuels and Propellants, Properties of

Acousto-Ultrasonic Technique Applied to Filled-Polymer Damage Assessment A95-128 Coupled Thermodynamic-Fluid-Dynamic Solution for a Liquid-Hydrogen Tank A95-137

Hybrid Rocket Engines

Investigation of Microwave Attenuation Measurements in a Laboratory-Scale Rocket Motor A95-139

Optimization of Hybrid-Rocket-Booster Fuel-Grain Design A95-147

Liquid Rocket Motors and Missile Systems

Structurally Compliant Rocket Engine Combustion Chamber-Experimental and Analytical Validation A95-096

Ramjets and Scramjets

Interactions Between Shock Wave and Hypersonic Laminar Boundary Layer Near Convex Corner A95-115 Near-Optimal Propulsion-System Operation for

an Air-Breathing Launch Vehicle A95-145

Solid Rocket Motors and Missile Systems

Titan IV Motor Failure and Redesign Analyses A95-092

Acousto-Ultrasonic Technique Applied to Filled-Polymer Damage Assessment A95-128 Flow Through a Submerged Nozzle A95-150

Space Technology

Aerobraking Configurations/ Aerothermodynamics

Design, Analysis, and Testing of an Aerobrake Test Model A95-036 Simulated Rarefied Entry of the Galileo Probe into the Jovian Atmosphere A95-059 Aerodynamic Heating to Spherically Blunted Cones at Angle of Attack A95-082 Wake Flow About the Mars Pathfinder Entry Vehicle A95-113 Mars Pathfinder Six-Degree-of-Freedom Entry Analysis A95-151

Aerobraking Flight Mechanics

Fuel-Optimal Bank-Angle Control for Lunar-Return Aerocapture Maximum ΔV in the Aerogravity Assist Maneu-A95-138 Mars Pathfinder Six-Degree-of-Freedom Entry A95-151 Analysis

Landers

Mars Ascent-Stage Design Utilizing Nuclear Propulsion Space Vehicle Propulsion Systems: Environmental Hazards of Low Earth Orbit-Lunar Do-A95-152

Mission Design and Analysis

Identification of an Error in the Distribution of the NASA Model AP-8 MIN A95-027 Effect of Departure Delays on Manned Mars Mission Selection Spacecraft Low-Frequency Residual Acceleration A95-045 Selenopotential Field Effects on Lunar Landing Accuracy A95-052 Simulation of Chemically Reacting Flowfields Around a 70-deg Spherically Blunted Cone A95-087 Joint Operations Planning for the Midcourse Space Experiment Satellite A95-120 Spacecraft Expected-Cost Analysis with k-outof-n: G Subsystems A95-141 In-Orbit Mission Reconfiguration for Italsat Sys-A95-156

Mission Trajectories (Earth and Interplanetary)

Vehicle-and-Trajectory Optimization of Nuclear Electric Spacecraft for Lunar Missions

A95-016

Effect of Departure Delays on Manned Mars Mission Selection A95-035 Spacecraft Optimization with Combined Chemical-Electric Propulsion A95-055 Suborbital Launch Trajectories for Satellite De-Mars Ascent-Stage Design Utilizing Nuclear Propulsion A95-081

Space Vehicle Propulsion Systems: Environmental Hazards of Low Earth Orbit-Lunar Do-A95-152

Designing Continuous-Thrust Low-Earth-Orbit to Geosynchronous-Earth-Orbit Transfers

A95-157

Space Experiments

Thin Film Materials Exposure to Low Earth Orbit Aboard Space Shuttle A95-012 Effects of g Jitter on Free-Surface Motion in a Cavity A95-023 Toughened Graphite-Epoxy Composites Exposed in Near-Earth Orbit for 5.8 Years

Oxygen Interactions with Materials III--Mission and Induced Environments A95-071 EOIM-III Mass Spectrometry and Polymer Chemistry: STS 46, July-August 1992

A95-072

Characterization of Polymer Films Retrieved from NASA's Long Duration Exposure Facil-A95-074

Orbital Acceleration Research Experiment: Cali-
bration Measurements A95-093
VLF Wave Experiments in Space Using a Modu-
lated Electron Beam A95-099
Thermal-Vacuum Response of Polymer Matrix
Composites in Space A95-103
Metal-Oxide-Silicon Capacitor Detectors for
Measuring Micrometeoroid and Space-Debris
Flux A95-104
Joint Operations Diaming for the Mideourse
Joint Operations Planning for the Midcourse
Space Experiment Satellite A95-120
Space Experiment on Plasma Interaction Caused
by High-Voltage Photovoltaic Power Genera-
tion A95-133
Low-Energy Neutral-Atom Imaging Techniques
for Remote Observations of the Magneto-
sphere A95-134
·
Low-Earth-Orbit Exposure of Carbon-Based
Materials Aboard Shuttle Flight STS-46
A95-154
Spacecraft Autonomous Operations Experiment
Performed During the Clementine Lunar Mis-
sion A95-160
Charged-Particle Telescope Experiment on

Clementine Space Processing

Thin Film Materials Exposure to Low Earth Orbit Aboard Space Shuttle

Spacecraft Low-Frequency Residual Acceleration

A95-045

Verification Test of Automated Robotic Assembly of Space Truss Structures

A95-101

A95-162

Space Systems

turn Aerocapture

Active Control of Contaminant Particulates in a
Low-Earth-Orbit Nearment

Spacecraft EnvironMays-024

Spacecraft Low-Frequency Residual Acceleration

A95-045

Conclusive Evidence for Internal Dielectric
Charging Anomalies on Geosynchronous
Communications Spacecraft

A95-076

Pitch Analysis of a Space Module After Water

Fuel-Optimal Bank-Angle Control for Lunar-Re-

Landing A95-090
Stellar Alignment of the High Resolution Doppler Imager A95-158

Spacecraft Attitude Determination

Advanced X-Ray Astrophysics Facility-Spectrometer Spacecraft Pointing Control System: Conceptual Design A95-048 Gravity Anchoring for Passive Spacecraft Damp-A95-140 ing In-Orbit Mission Reconfiguration for Italsat System A95-156 Stellar Alignment of the High Resolution Doppler Imager A95-158 Clementine Attitude Determination and Control System A95-161

Spacecraft Communication

Conclusive Evidence for Internal Dielectric Charging Anomalies on Geosynchronous Communications Spacecraft A95-076 In-Orbit Mission Reconfiguration for Italsat System A95-156

Spacecraft Contamination/Sterilization

Thin Film Materials Exposure to Low Earth Orbit Aboard Space Shuttle

A95-012

Active Control of Contaminant Particulates in a Low-Earth-Orbit Near-Spacecraft Environment

A95-024

Application of Direct Simulation Monte Carlo to Satellite Contamination Studies A95-058
Flight Mass-Spectrometer Calibration in a High-Velocity Atomic-Oxygen Beam A95-073
Analysis of STS-39 Space Shuttle Glow Measurements A95-075
Contamination and Space Environmental Effects on Solar Cells and Thermal Control Surfaces

A95-126

Spacecraft Power

Low Earth Orbit Durability of Protected Silicone for Refractive Photovoltaic Concentrator Arrays A95-013

Space Experiment on Plasma Interaction Caused by High-Voltage Photovoltaic Power Generation A95-133

Spacecraft Propulsion System Integration

Mars Ascent-Stage Design Utilizing Nuclear
Propulsion A95-081

Material-Property Effects on a Thin-Film Solar
Concentrator A95-102

Baffle Effect on Sloshing-Modulated Torques
Responsed to Orbital Accelerations in Microgravity A95-106

Spacecraft Radiation Protection

Identification of an Error in the Distribution of the NASA Model AP-8 MIN

A95-027

Analysis of STS-39 Space Shuttle Glow Measurements

Conclusive Evidence for Internal Dielectric Charging Anomalies on Geosynchronous Communications Spacecraft

A95-076

Spacecraft Sensor Systems

Analysis of STS-39 Space Shuttle Glow Measurements

Metal-Oxide-Silicon Capacitor Detectors for Measuring Micrometeoroid and Space-Debris Flux

A95-104
Stellar Alignment of the High Resolution Doppler Imager

A95-158

Spacecraft Structural Configuration, Design, and Analysis

Generation of Simplified Spacecraft Mathematical Models with Equivalent Dynamic Characteristics

A95-015
Thermally Induced Vibrations of a Self-Shadowed Split-Blanket Solar Array

A95-042
Evaluation of Passive and Active Vibration Control Mechanisms in a Microgravity Environment

A95-053
Dynamic Effects of Member Failure on Response of Truss-Type Space Structures

A95-080

Optimal Placement of Damped Struts Using Simulated Annealing A95-097
Minimization of Thermoelastic Deformation in Space Structures Undergoing Periodic Motion A95-098
Robotic Assembly of Truss Beams for Large Space Strucures A95-100
Static Shape Control of Space Trusses with Par-

tial Measurements

A95-127

Probabilistic Response of Truss-Type Space
Structure with Joint and Member Imperfections

A95-129

Spacecraft Test and Evaluation

Whipple Shields Characterized by a Nondimensional Geometry Parameter A95-021

Vibration-Test Force Limits Derived from Frequency-Shift Method

New Gravity Compensation Method by Dither for Low-g Simulation

Contamination and Space Environmental Effects on Solar Cells and Thermal Control Surfaces

495-126

Space Vehicle Propulsion Systems: Environmental Hazards of Low Earth Orbit-Lunar Domain A95-152

Large Retractable Appendages in Spacecraft
A95-153

Spacecraft Thermal Management

New Method for Shuttle Orbiter Thermal Analysis A95-069
Application of Acceleration Iterative Methods for Solution of Thermal Models of Spacecraft
A95-091

Analysis of Closed-Packed Brush-Fiber Interfaces for Spacecraft Thermal Management

A95-125

On-Orbit Temperature Distribution of a Submillimeter-Telescope Primary-Reflector Panel A95-131

Structural Mechanics and Materials

Aeroelasticity and Control

Hammerhead and Nose-Cylinder-Flare Aeroelastic Stability Revisited A95-006

Dynamic Model Analysis

Evaluation of Passive and Active Vibration Control Mechanisms in a Microgravity Environment A95-053

Flexible and Active Structures

Evaluation of Passive and Active Vibration Control Mechanisms in a Microgravity Environment A95-053

Large Retractable Appendages in Spacecraft A95-153

Materials Structural Properties

Microstructural Damage and Fracture Processes in a Composite Solid Rocket Propellant

A95-046

Oxygen Interactions with Materials III—Mission and Induced Environments

A95-071
Characterization of Polymer Films Retrieved from NASA's Long Duration Exposure Facility

A95-074

Effect of Predamage on Crack Growth Behavior in a Particulate Composite Material A95-078

Material-Property Effects on a Thin-Film Solar Concentrator A95-102

Thermal-Vacuum Response of Polymer Matrix Composites in Space A95-103

Fiber Contribution to Modal Damping of Polymer Matrix Composite Panels A95-122

Structural Composite Materials

Minimum-Mass Design of Sandwich Aerobrakes for a Lunar Transfer Vehicle

Design, Analysis, and Testing of an Aerobrake Test Model

A95-036

Toughened Graphite-Epoxy Composites Exposed in Near-Earth Orbit for 5.8 Years

Thermal-Vacuum Response of Polymer Matrix
Composites in Space A95-103
Fiber Contribution to Modal Damping of Polymer Matrix Composite Panels A95-122

Structural Design

Generation of Simplified Spacecraft Mathematical Models with Equivalent Dynamic Characteristics A95-015

Minimum-Mass Design of Sandwich Aerobrakes for a Lunar Transfer Vehicle A95-020

Design, Analysis, and Testing of an Aerobrake
Test Model A95-036
Review of Fracture in Adhesive Joints Consider-

ing Rocket Motor Application A95-079 Structurally Compliant Rocket Engine Combustion Chamber—Experimental and Analytical

Validation A95-096
Optimal Placement of Damped Struts Using Simulated Annealing A95-097

Verification Test of Automated Robotic Assembly of Space Truss Structures A95-101

Probabilistic Response of Truss-Type Space Structure with Joint and Member Imperfections A95-129

Structural Durability (Including Fatigue, Fracture, and Environmental Degradation)

Toughened Graphite-Epoxy Composites Exposed in Near-Earth Orbit for 5.8 Years

A95-044

Structural Durability (Including Fatigue, Fracture, and Environmental Degradation)

Microstructural Damage and Fracture Processes in a Composite Solid Rocket Propellant

A95-046

Effect of Predamage on Crack Growth Behavior in a Particulate Composite Material A95-078 Review of Fracture in Adhesive Joints Considering Rocket Motor Application A95-079 Dynamic Effects of Member Failure on Response of Truss-Type Space Structures

A95-08

Structurally Compliant Rocket Engine Combustion Chamber—Experimental and Analytical Validation A95-096

Large Retractable Appendages in Spacecraft
A95-153

Structural Dynamics and Characterization

Generation of Simplified Spacecraft Mathematical Models with Equivalent Dynamic Characteristics A95-015

Vibration-Test Force Limits Derived from Frequency-Shift Method A95-043

Dynamic Effects of Member Failure on Response of Truss-Type Space Structures

A95-080

A95-129

Solar-Array-Induced Disturbance of the Hubble
Space Telescope Pointing System
A95-095
Fiber Contribution to Modal Damping of Polymer Matrix Composite Panels
A95-122
Probabilistic Response of Truss-Type Space
Structure with Joint and Member Imperfec-

Structural Finite Elements

tions

Minimum-Mass Design of Sandwich Aerobrakes for a Lunar Transfer Vehicle A95-020

Structural Modeling

Review of Fracture in Adhesive Joints Considering Rocket Motor Application A95-079

Structural Optimization

Optimal Placement of Damped Struts Using Simulated Annealing A95-097
Integrated Controls-Structures Design Methodology for Flexible Spacecraft A95-124
Static Shape Control of Space Trusses with Partial Measurements A95-127

Thermal Effects

Determination of the Recombination Efficiency of Thermal Control Coatings for Hypersonic Vehicles

A95-011
Thermally Induced Vibrations of a Self-Shadowed Split-Blanket Solar Array
A95-042
Solar-Array-Induced Disturbance of the Hubble Space Telescope Pointing System
A95-095
Minimization of Thermoelastic Deformation in Space Structures Undergoing Periodic Motion

Thermophysics and Heat Transfer

Ablation, Pyrolysis, Thermal Decomposition and Degradation

Application of Integral Methods to Ablation Charring Erosion, A Review A95-029

Enhancements to Integral Solutions to Ablation and Charring A95-030

Mars Pathfinder Trajectory Based Heating and Ablation Calculations A95-032

Simulated Rarefied Entry of the Galileo Probe into the Jovian Atmosphere A95-059

Dissociative Cooling: Effect on Stagnation Heat Transfer of Gas Mixture Injection A95-114

Aerothermodynamics/Thermal Protection

Review and Development of Base Pressure and Base Heating Correlations in Supersonic Flow A95-001

Application of Integral Methods to Ablation Charring Erosion, A Review A95-029

Enhancements to Integral Solutions to Ablation and Charring A95-030

Mars Pathfinder Trajectory Based Heating and Ablation Calculations A95-032

Thermal Protection System Design Studies for Lunar Crew Module A95-068

Simulation of Chemically Reacting Flowfields Around a 70-deg Spherically Blunted Cone

Dissociative Cooling: Effect on Stagnation Heat
Transfer of Gas Mixture Injection A95-114
Simultaneous Luminescence Pressure and Temperature Measurement System for Hypersonic
Wind Tunnels A95-116

Engineering Interactive Inviscid Boundary-Layer Method for Hypersonic Flow A95-167

Computational Hea Transfer

Nonreactive Viscous Solver for Hypersonic Flows over Recessed Cone with Injection

A 95-002

Electronics Cooling

Predicting Thermal Contact Resistance at Cryogenic Temperatures for Spacecraft Applications A95-070

Heat Conduction

Predicting Thermal Contact Resistance at Cryogenic Temperatures for Spacecraft Applications A95-070

Analysis of Closed-Packed Brush-Fiber Interfaces for Spacecraft Thermal Management

A95-125

Nonintrusive Diagnostics

Investigation of Microwave Attenuation Measurements in a Laboratory-Scale Rocket Motor Plume A95-139

Radiation Interchange Between Surfaces

Analysis of Closed-Packed Brush-Fiber Interfaces for Spacecraft Thermal Management

A95-125

Thermal Control

Determination of the Recombination Efficiency of Thermal Control Coatings for Hypersonic Vehicles A95-011

Thermo-Optical Property Degradation of Irradiated Spacecraft Surfaces A95-123

On-Orbit Temperature Distribution of a Submillimeter-Telescope Primary-Reflector Panel
A95-131

Thermal Modeling and Analysis

Thermally Induced Vibrations of a Self-Shadowed Split-Blanket Solar Array A95-042 New Method for Shuttle Orbiter Thermal Analysis A95-069

Application of Acceleration Iterative Methods for Solution of Thermal Models of Spacecraft A95-091

Thermo-Optical Property Degradation of Irradiated Spacecraft Surfaces A95-123

Thermochemistry and Chemical Kinetics

Flight Mass-Spectrometer Calibration in a High-Velocity Atomic- Oxygen Beam A95-073 Simulation of Chemically Reacting Flowfields Around a 70-deg Spherically Blunted Cone A95-087

Thermophysical Properties

Thermo-Optical Property Degradation of Irradiated Spacecraft Surfaces A95-123