

Subject Index

Aircraft Technology, Conventional, STOL/VTOL

Aerodynamics

- Experimental Study of Tail-Span Effects on a Canard-Controlled Missile A93-082
Aerodynamic Characteristics of the HL-20 A93-068
Aerodynamic Effects of Body Roughness A93-035
Görtler Instability and Hypersonic Quiet Nozzle Design A93-021

Aerospace Plane

- Analysis of Inviscid and Viscous Hypersonic Flows past a Two-Stage Spacecraft A93-001

Configuration Design

- Design for Effective Development and Prototyping of the HL-20 A93-075

Ground Support

- HL-20 Operations and Support Requirements for the Personnel Launch System Mission A93-077

Landing Dynamics

- Effect of Lift-to-Drag Ratio in Pilot Rating of the HL-20 Landing Task A93-070

Simulation

- Effect of Lift-to-Drag Ratio in Pilot Rating of the HL-20 Landing Task A93-070

Testing, Flight and Ground

- Aerodynamic Characteristics of the HL-20 A93-068

Weather Hazards

- High Temporal Resolution Velocity Estimates from a Wind Profiler A93-043

Energy

Hydrogen and Unique Fuels

- Drag Reduction of a Noncircular Missile by Base Burning A93-107

Solar Power

- Solar Furnace Satellite for Large Diameter Crystal Growth in Space A93-010

Fluid Dynamics

Boundary Layers and Heat Transfer— Laminar

- Flat Surface Heat-Transfer Correlations for Martian Entry A93-020

Boundary Layers and Heat Transfer— Turbulent

- Flat Surface Heat-Transfer Correlations for Martian Entry A93-020

Boundary-Layer Stability and Transition

- Görtler Instability and Hypersonic Quiet Nozzle Design A93-021

Computational Fluid Dynamics

- Supersonic/Hypersonic Flowfield Predictions over Typical Finned Missile Configurations A93-087
Thermo-Chemical Nonequilibrium Effects on the Aerothermodynamics of Aerobraking Vehicles A93-084
HL-20 Computational Fluid Dynamics Analysis A93-072
Window Cooling Technology Program A93-058
Enhancements to Viscous-Shock-Layer Technique A93-051
Solution Strategy for Three-Dimensional Configurations at Hypersonic Speeds A93-049
Aerodynamic Computations for a Transonic Projectile at Angle of Attack by Total Variation Diminishing Schemes A93-036
Numerical Study of the Flow Establishment Time in Hypersonic Shock Tunnels A93-019

Hydrodynamics

- Shaped Discharge Ports for Draining Liquids A93-110

Hypersonic Flow

- Interaction of Rocket Plumes with the Outer Hypersonic Flowfield During the Re-Entry Maneuvers A93-101
Nonequilibrium Infrared Emission Model for the Wake Flow of Re-Entry Vehicles A93-094
Supersonic/Hypersonic Flowfield Predictions over Typical Finned Missile Configurations A93-087
HL-20 Computational Fluid Dynamics Analysis A93-072
Enhancements to Viscous-Shock-Layer Technique A93-051
Low-To-High Altitude Predictions of Three-Dimensional Ablative Re-Entry Flowfields A93-050
Solution Strategy for Three-Dimensional Configurations at Hypersonic Speeds A93-049
Measurements in the Wake of Blunt Aerobrake Models at 1.8 and 4.9 km/s A93-047
Extension of Unsteady Embedded Newtonian Theory A93-037
Mach 10 Bow-Shock Behavior of a Forward-Facing Nose Cavity A93-034
Görtler Instability and Hypersonic Quiet Nozzle Design A93-021
Numerical Study of the Flow Establishment Time in Hypersonic Shock Tunnels A93-019
Effect of Nose Shape on Three-Dimensional Streamlines and Heating Rates A93-008
Vibrational Relaxation of Anharmonic Oscillators in Expanding Flows A93-007
Navier-Stokes Solutions with Surface Catalysis for Martian Atmospheric Entry A93-004

New Approximate Method for Calculating Real Gas Effects on Missile Configurations

A93-003

Stagnation Flowfield Analysis for an Aeroassisted Vehicle

A93-002

Analysis of Inviscid and Viscous Hypersonic Flows past a Two-Stage Spacecraft

A93-001

Jets, Wakes, and Viscid-Inviscid Flow Interactions

Leeside Shock-Layer Transition and the Space Shuttle Orbiter

A93-104

Nonequilibrium Infrared Emission Model for the Wake Flow of Re-Entry Vehicles

A93-094

Measurements in the Wake of Blunt Aerobrake Models at 1.8 and 4.9 km/s

A93-047

Plasmadynamics and MHD

Plasma Current Collection of Z-93 Thermal Paint

A93-100

Solar Array Module Plasma Interactions Experiment (SAMPIE): Science and Technology Objectives

A93-061

Rarefied Flows

High Velocity Atomic Oxygen/Surface Accommodation Studies

A93-064

Reacting Flows and Combustion

New Approximate Method for Calculating Real Gas Effects on Missile Configurations

A93-003

Separated Flows

Leeside Shock-Layer Transition and the Space Shuttle Orbiter

A93-104

Unsteady Flow Separation on Slender Bodies at High Angles of Attack

A93-089

Shock Waves and Detonations

Numerical Study of the Flow Establishment Time in Hypersonic Shock Tunnels

A93-019

Subsonic Flow

New Semiempirical Method for Computing Nonlinear Missile Aerodynamics

A93-090

Supersonic Flow

Drag Reduction of a Noncircular Missile by Base Burning

A93-107

Large-Field Laser Holographic Focusing Schlieren System

A93-095

Fin-Planform Effects on Lift and Center of Pressure for Supersonic Missiles

A93-091

New Semiempirical Method for Computing Nonlinear Missile Aerodynamics

A93-090

Experimental Study of Tail-Span Effects on a Canard-Controlled Missile

A93-082

Transonic Flow

Aerodynamic Computations for a Transonic Projectile at Angle of Attack by Total Variation Diminishing Schemes

A93-036

Unsteady Flows

- Unsteady Flow Separation on Slender Bodies at High Angles of Attack A93-089
- Startup Hydraulic Transients in Liquid-Propellant-Delivery Systems A93-048
- Measurements in the Wake of Blunt Aerobrace Models at 1.8 and 4.9 km/s A93-047
- Extension of Unsteady Embedded Newtonian Theory A93-037

Viscous Non-Boundary-Layer Flows

- Supersonic/Hypersonic Flowfield Predictions over Typical Finned Missile Configurations A93-087
- Enhancements to Viscous-Shock-Layer Technique A93-051
- Low-To-High Altitude Predictions of Three-Dimensional Ablative Re-Entry Flowfields A93-050

Vortices

- Shaped Discharge Ports for Draining Liquids A93-110
- Unsteady Flow Separation on Slender Bodies at High Angles of Attack A93-089

Guidance, Control, and Dynamics Technology**Astrodynamics**

- Solar Sail Trajectories at the Lunar L_2 Lagrange Point A93-108
- Cycler Orbit Between Earth and Mars A93-040
- Interception of Comets and Asteroids on Collision Course with Earth A93-027

Control System Design

- Six-Degree-of-Freedom Guidance and Control-Entry Analysis of the HL-20 A93-069

Dynamics

- Six-Degree-of-Freedom Guidance and Control-Entry Analysis of the HL-20 A93-069
- Transfer Matrix Vibration Analysis of Cable-Supported Hoop Platforms: Additional Results A93-016

Flight Mechanics

- New Semiempirical Method for Computing Nonlinear Missile Aerodynamics A93-090

Handling Qualities

- Effect of Lift-to-Drag Ratio in Pilot Rating of the HL-20 Landing Task A93-070

Launch Vehicle Dynamics

- Advanced Pogo Stability Analysis for Liquid Rockets A93-045

Launch Vehicle Guidance and Control

- New Design Formulas for a Flex-Bearing Joint A93-106
- High Temporal Resolution Velocity Estimates from a Wind Profiler A93-043

Missile Dynamics

- Determination of a Missile Polar Mass Moment of Inertia A93-105
- Extension of Unsteady Embedded Newtonian Theory A93-037

Missile Guidance and Control

- Diamond Technology for Infrared Seeker Windows A93-009

Optimization Techniques

- Calculations and Comparisons of the Flowfield About an Ogive Cylinder at $M = 3.5$ A93-086
- Significance of Logistics in Spacecraft Docking (Berthing) Maneuvers A93-066

Signal Processing

- Rapid Generation of Site/Satellite Timetables A93-098

State Estimation

- Dynamic Response Spectra for an Aerospace Payload and its Attachments A93-109

Structural Control

- Adaptive Truss Manipulator Space Crane Concept A93-013

Trajectory Optimization

- Interactive Displays for Trajectory Planning and Proximity Operations A93-065
- Cycler Orbit Between Earth and Mars A93-040
- Interception of Comets and Asteroids on Collision Course with Earth A93-027

Interdisciplinary Topics**Aerospace Management**

- Design for Effective Development and Prototyping of the HL-20 A93-075

Aerospace Technology Utilization

- Development of an Automated Film-Reading System for Ballistic Ranges A93-031

Analytical and Numerical Methods

- Rapid Generation of Site/Satellite Timetables A93-098
- Visible Spectra of Thruster Plumes from the Space Shuttle Primary Reaction Control System A93-093
- Complete Method of Ratios A93-046

Atmospheric and Space Sciences

- Turbulence Indicators for Space Shuttle Launches A93-039
- Electrodynamic Interactions Between a Space Station and the Ionospheric Plasma Environment A93-022

Human Factors

- Human Factors Evaluation of the HL-20 Full-Scale Model A93-078
- Significance of Logistics in Spacecraft Docking (Berthing) Maneuvers A93-066

- Interactive Displays for Trajectory Planning and Proximity Operations A93-065
- Turbulence Indicators for Space Shuttle Launches A93-039

Lasers and Laser Applications

- Large-Field Laser Holographic Focusing Schlieren System A93-095

Reliability, Maintainability, and Logistics Support

- HL-20 Operations and Support Requirements for the Personnel Launch System Mission A93-077

Safety

- Ascent Abort Capability for the HL-20 A93-081
- Human Factors Evaluation of the HL-20 Full-Scale Model A93-078
- Aerostructural Safety Factor Criteria Using Deterministic Reliability A93-030
- Interception of Comets and Asteroids on Collision Course with Earth A93-027

Sensor Systems

- Turbulence Indicators for Space Shuttle Launches A93-039
- Diamond Technology for Infrared Seeker Windows A93-009

Launch Vehicle and Missile (LV/M) Technology**Aerodynamics**

- Interaction of Rocket Plumes with the Outer Hypersonic Flowfield During the Re-Entry Maneuvers A93-101
- Fin-Planform Effects on Lift and Center of Pressure for Supersonic Missiles A93-091
- Comparison of Missile Flight-Test Drag with Aerodynamic Predictions A93-088

Configurational Design

- Fin-Planform Effects on Lift and Center of Pressure for Supersonic Missiles A93-091
- Evaluation of the National Launch System as a Booster for the HL-20 A93-080
- HL-20 Concept: Design Rationale and Approach A93-074
- 21st Century Space Transportation System Design Approach: HL-20 Personnel Launch System A93-067
- Mach 10 Bow-Shock Behavior of a Forward-Facing Nose Cavity A93-034

Missile Systems

- Experimental Study of Tail-Span Effects on a Canard-Controlled Missile A93-082

Mission Studies and Economics

- Titan III Feasibility for HL-20 Prototype Missions A93-079

Propulsion and Propellant Systems

- Shaped Discharge Ports for Draining Liquids A93-110
- Pressurant Effects on Cryogenic Liquid Acquisition Devices A93-029

Structural Design (Including Loads)

- New Design Formulas for a Flex-Bearing Joint
A93-106
- HL-20 Concept: Design Rationale and Approach
A93-074
- High Temporal Resolution Velocity Estimates from a Wind Profiler
A93-043
- Aerostructural Safety Factor Criteria Using Deterministic Reliability
A93-030

Subsystem Design and Ground Support

- Dynamic Response Spectra for an Aerospace Payload and its Attachments
A93-109
- HL-20 Operations and Support Requirements for the Personnel Launch System Mission
A93-077
- HL-20 Subsystem Design
A93-076
- HL-20 Concept: Design Rationale and Approach
A93-074

Testing, Flight and Ground

- Determination of a Missile Polar Mass Moment of Inertia
A93-105
- Comparison of Missile Flight-Test Drag with Aerodynamic Predictions
A93-088
- Shuttle Entry Aerothermodynamic Flight Research: The Orbiter Experiments Program
A93-057

Thermal Protection Systems

- Spacecraft Thermal Blanket Cleaning: Vacuum Baking or Gaseous Flow Purging
A93-025

Trajectories and Tracking Systems

- Ascent Abort Capability for the HL-20
A93-081
- Evaluation of the National Launch System as a Booster for the HL-20
A93-080

Vibration

- Dynamic Response Spectra for an Aerospace Payload and its Attachments
A93-109
- Determination of a Missile Polar Mass Moment of Inertia
A93-105
- Mechanical Design and Simulation of a Micro-gravity Isolation Mount for Columbus
A93-063
- Advanced Pogo Stability Analysis for Liquid Rockets
A93-045

Propulsion**Airbreathing Propulsion**

- Winged Booster Performance with Combined Rocket and Airbreathing Propulsion
A93-083

Electric and Advanced Space Propulsion

- Mass Savings Domain of Plasma Propulsion for LEO to GEO Transfer
A93-096
- Development and Flight History of the SERT II Spacecraft
A93-033

Engine Performance

- Winged Booster Performance with Combined Rocket and Airbreathing Propulsion
A93-083

Environmental Effects

- Computer Particle Simulation of High-Voltage Solar Array Arcing Onset
A93-023

- Electrodynamic Interactions Between a Space Station and the Ionospheric Plasma Environment
A93-022

Fuels and Propellants, Properties of

- Visible Spectra of Thruster Plumes from the Space Shuttle Primary Reaction Control System
A93-093

Hybrid Rocket Engines

- Winged Booster Performance with Combined Rocket and Airbreathing Propulsion
A93-083

Liquid Rocket Motors and Missile Systems

- Visible Spectra of Thruster Plumes from the Space Shuttle Primary Reaction Control System
A93-093
- Startup Hydraulic Transients in Liquid-Propellant-Delivery Systems
A93-048
- Advanced Pogo Stability Analysis for Liquid Rockets
A93-045

Solid Rocket Motors and Missile Systems

- New Design Formulas for a Flex-Bearing Joint
A93-106

Supersonic Combustion

- Drag Reduction of a Noncircular Missile by Base Burning
A93-107

Space Technology**Aerobraking Configuration/
Aerothermodynamics**

- Hypervelocity Stagnation-Point Heating Rate Discrepancies
A93-103
- Aerobrake Design Studies for Manned Mars Missions
A93-085
- Thermo-Chemical Nonequilibrium Effects on the Aerothermodynamics of Aerobraking Vehicles
A93-084
- High Velocity Atomic Oxygen/Surface Accommodation Studies
A93-064
- Effect of Parking Orbit Period on Aerocapture for Manned Mars Mission
A93-060
- Mars Environmental Survey Probe Aerobrake Preliminary Design Study
A93-055
- Heatshield Erosion in a Dusty Martian Atmosphere
A93-018
- Analysis and Sizing of Mars Aerobrake Structure
A93-012
- Effect of Nose Shape on Three-Dimensional Streamlines and Heating Rates
A93-008
- Stagnation Flowfield Analysis for an Aeroassisted Vehicle
A93-002

Aerobraking Flight Mechanics

- Aerobrake Design Studies for Manned Mars Missions
A93-085
- Effect of Parking Orbit Period on Aerocapture for Manned Mars Mission
A93-060
- Mars Environmental Survey Probe Aerobrake Preliminary Design Study
A93-055
- Influence of Interplanetary Trajectory Selection on Mars Atmospheric Entry Velocity
A93-054
- Influence of Interplanetary Trajectory Selection on Earth Atmospheric Entry Velocity of Mars Missions
A93-053

Landers

- Mars Environmental Survey Probe Aerobrake Preliminary Design Study
A93-055

Mission Design and Analysis

- Rapid Generation of Site/Satellite Timetables
A93-098
- Mass Savings Domain of Plasma Propulsion for LEO to GEO Transfer
A93-096
- Magellan Special Radar Flight Experiments
A93-092
- Aerobrake Design Studies for Manned Mars Missions
A93-085
- Significance of Logistics in Spacecraft Docking (Berthing) Maneuvers
A93-066
- Effect of Parking Orbit Period on Aerocapture for Manned Mars Mission
A93-060
- Influence of Interplanetary Trajectory Selection on Mars Atmospheric Entry Velocity
A93-054
- Influence of Interplanetary Trajectory Selection on Earth Atmospheric Entry Velocity of Mars Missions
A93-053
- Determining Mars Parking Orbits that Ensure Tangential Periapsis Burns at Arrival and Departure
A93-052
- Complete Method of Ratios
A93-046
- How Shall We Go To Mars? A Review of Mission Scenarios
A93-017
- Historical Growth of Quantities Affecting On-Orbit Collision Hazard
A93-015

Mission Trajectories (Earth and Interplanetary)

- Six-Degree-of-Freedom Guidance and Control-Entry Analysis of the HL-20
A93-069
- Interactive Displays for Trajectory Planning and Proximity Operations
A93-065
- Influence of Interplanetary Trajectory Selection on Mars Atmospheric Entry Velocity
A93-054
- Influence of Interplanetary Trajectory Selection on Earth Atmospheric Entry Velocity of Mars Missions
A93-053
- Determining Mars Parking Orbits that Ensure Tangential Periapsis Burns at Arrival and Departure
A93-052
- Cycler Orbit Between Earth and Mars
A93-040
- How Shall We Go To Mars? A Review of Mission Scenarios
A93-017
- Historical Growth of Quantities Affecting On-Orbit Collision Hazard
A93-015

Space Experiments

- Analysis of HAVE SLED II Flight Test Water Outgassing
A93-097
- Magellan Special Radar Flight Experiments
A93-092
- Mechanical Design and Simulation of a Micro-gravity Isolation Mount for Columbus
A93-063
- Surface Analyses of Composites Exposed to the Space Environment on the Long Duration Exposure Facility Satellite
A93-062
- Solar Array Module Plasma Interactions Experiment (SAMPIE): Science and Technology Objectives
A93-061
- Experimental Technique to Investigate the Interstellar Gas: Preliminary Analysis
A93-041
- Particle Sightings by the Infrared Telescope on Spacelab 2
A93-026
- Low Earth Orbit Simulation and Materials Characterization
A93-014

Space Processing

- Dust Contamination of the Spacecraft Environment by Exposure to Plasma A93-099
 Solar Furnace Satellite for Large Diameter Crystal Growth in Space A93-010

Space Systems

- Solar Sail Trajectories at the Lunar L_2 Lagrange Point A93-108
 HL-20 Subsystem Design A93-076
 Design for Effective Development and Prototyping of the HL-20 A93-075
 Aerodynamic Characteristics of the HL-20 A93-068
 21st Century Space Transportation System Design Approach: HL-20 Personnel Launch System A93-067
 Vehicles Knowledge-Based Design Environment A93-042
 Spacecraft Thermal Blanket Cleaning: Vacuum Baking or Gaseous Flow Purging A93-025
 Historical Growth of Quantities Affecting On-Orbit Collision Hazard A93-015
 Adaptive Truss Manipulator Space Crane Concept A93-013

Spacecraft Communication

- Monolithic V-Band High-Electron Mobility Transistor Downconverter Component Development for Satellite Communication Links A93-044
 Land Mobile Satellite Communication System Using the Geostationary Platform A93-028

Spacecraft Contamination/Sterilization

- Dust Contamination of the Spacecraft Environment by Exposure to Plasma A93-099
 Analysis of HAVE SLED II Flight Test Water Outgassing A93-097
 Particle Sightings by the Infrared Telescope on Spacelab 2 A93-026
 Spacecraft Thermal Blanket Cleaning: Vacuum Baking or Gaseous Flow Purging A93-025
 Computer Particle Simulation of High-Voltage Solar Array Arcing Onset A93-023

Spacecraft Data Sensing, Processing, and Transmission

- Magellan Special Radar Flight Experiments A93-092

Spacecraft Power

- Experimental Studies on Spacecraft Arcing A93-038
 Computer Particle Simulation of High-Voltage Solar Array Arcing Onset A93-023
 Electrodynamics Interactions Between a Space Station and the Ionospheric Plasma Environment A93-022

Spacecraft Propulsion System Intergration

- Development and Flight History of the SERT II Spacecraft A93-033
 Pressurant Effects on Cryogenic Liquid Acquisition Devices A93-029
 Low-Gravity Propellant Gauging System for Accurate Predictions of Spacecraft End-of-Life A93-011

Spacecraft Structural Configuration, Design, and Analysis

- Preliminary Structural Evaluation and Design of the HL-20 A93-073
 Thermally Induced Bending Vibrations of a Flexible Rolled-Up Solar Array A93-056
 Land Mobile Satellite Communication System Using the Geostationary Platform A93-028
 Transfer Matrix Vibration Analysis of Cable-Supported Hoop Platforms: Additional Results A93-016

Spacecraft Test and Evaluation

- Infrared Thermographic Techniques for Arc-Jet Testing A93-059
 Development and Flight History of the SERT II Spacecraft A93-033

Spacecraft Thermal Management

- Experimental Studies on Spacecraft Arcing A93-038
 Effects of Payload Heat Flux on Space Radiator Area A93-032

Structural Mechanics and Materials**Dynamic Model Analysis**

- Thermally Induced Bending Vibrations of a Flexible Rolled-Up Solar Array A93-056

Materials Structural Properties

- Low Earth Orbit Simulation and Materials Characterization A93-014

Structural Composite Materials

- Surface Analyses of Composites Exposed to the Space Environment on the Long Duration Exposure Facility Satellite A93-062

Structural Design

- Aerostructural Safety Factor Criteria Using Deterministic Reliability A93-030
 Analysis and Sizing of Mars Aerobrake Structure A93-012

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

- Low Earth Orbit Simulation and Materials Characterization A93-014

Structural Dynamics and Characterization

- Transfer Matrix Vibration Analysis of Cable-Supported Hoop Platforms: Additional Results A93-016

Structural Finite Elements

- Thermoviscoplastic Response of Engine-Cowl Leading Edge Subjected to an Oscillating Shock-Shock Interaction A93-102

Structural Modeling

- Adaptive Truss Manipulator Space Crane Concept A93-013

Structural Optimization

- Analysis and Sizing of Mars Aerobrake Structure A93-012

Thermal Effects

- Thermoviscoplastic Response of Engine-Cowl Leading Edge Subjected to an Oscillating Shock-Shock Interaction A93-102
 Thermally Induced Bending Vibrations of a Flexible Rolled-Up Solar Array A93-056
 Diamond Technology for Infrared Seeker Windows A93-009

Thermophysics and Heat Transfer**Aerothermodynamics/Thermal Protection**

- Leeside Shock-Layer Transition and the Space Shuttle Orbiter A93-104
 Hypervelocity Stagnation-Point Heating Rate Discrepancies A93-103
 Thermo-Chemical Nonequilibrium Effects on the Aerothermodynamics of Aerobraking Vehicles A93-084
 Aerodynamic Heating Environment Definition/Thermal Protection System Selection for the HL-20 A93-071
 Infrared Thermographic Techniques for Arc-Jet Testing A93-059
 Window Cooling Technology Program A93-058
 Shuttle Entry Aerothermodynamic Flight Research: The Orbiter Experiments Program A93-057
 Flat Surface Heat-Transfer Correlations for Martian Entry A93-020
 Heatshield Erosion in a Dusty Martian Atmosphere A93-018
 Vibrational Relaxation of Anharmonic Oscillators in Expanding Flows A93-007
 Adaptive, Unstructured, Finite Element, Multi-material, Thermal Analysis A93-005
 Navier-Stokes Solutions with Surface Catalysis for Martian Atmospheric Entry A93-004

Computational Heat Transfer

- Hypervelocity Stagnation-Point Heating Rate Discrepancies A93-103
 Low-To-High Altitude Predictions of Three-Dimensional Ablative Re-Entry Flowfields A93-050
 Effect of Nose Shape on Three-Dimensional Streamlines and Heating Rates A93-008
 Parametric Analysis of Radiative Structure in Aerobrake Shock Layers A93-006

Cryogenics

- Pressurant Effects on Cryogenic Liquid Acquisition Devices A93-029

Electronics Cooling

- Effects of Payload Heat Flux on Space Radiator Area A93-032

Heat Conduction

- Adaptive, Unstructured, Finite Element, Multi-material, Thermal Analysis A93-005

Melting/Solidification

- Influence of Gravity on the Directional Solidification of Indium Antimonide A93-024
 Solar Furnace Satellite for Large Diameter Crystal Growth in Space A93-010

Nonintrusive Diagnostics

Large-Field Laser Holographic Focusing
Schlieren System A93-095
Infrared Thermographic Techniques for Arc-Jet
Testing A93-059

Radiation in Participating Media

Parametric Analysis of Radiative Structure in
Aerobreak Shock Layers A93-006

Thermal Control

Effects of Payload Heat Flux on Space Radiator
Area A93-032

Thermal Modeling and Analysis

Thermoviscoplastic Response of Engine-Cowl
Leading Edge Subjected to an Oscillating
Shock-Shock Interaction A93-102
Adaptive, Unstructured, Finite Element, Multi-
material, Thermal Analysis A93-005

Thermochemistry and Chemical Kinetics

Window Cooling Technology Program A93-058
Vibrational Relaxation of Anharmonic Oscilla-
tors in Expanding Flows A93-007
Parametric Analysis of Radiative Structure in
Aerobreak Shock Layers A93-006

Stagnation Flowfield Analysis for an Aeroassist-
ed Vehicle A93-002

Thermophysical Properties

High Velocity Atomic Oxygen/Surface Accom-
modation Studies A93-064

AIAA Short Course**Pyrotechnic Design, Development, & Qualification****March 15-16, 1994 Washington, DC**

Pyrotechnic (explosive and propellant-actuated) devices perform many of the mechanical functions critical for successful aerospace operations such as spacecraft stage separation and antennae deployment, as well as emergency escape devices on military aircraft such as seat ejection and harness release. This course will provide a comprehensive understanding of the engineering logic needed to design, develop and qualify aerospace pyrotechnic mechanisms and systems with an emphasis on functional margins or "how well" these devices perform.



American Institute of
Aeronautics and Astronautics

For additional information, contact Johnnie White, Continuing
Education Coordinator, Telephone 202/646-7447
FAX 202/646-7508