COMPOSITE LIST OF PROJECTS

1983 to 1989

NASA Small Business Innovation Research Program

NASA

August 1990

WASHINGTON, DC
20546

INTRODUCTION

Description of this document

The *NASA SBIR Composite List of Projects, 1983 to 1989,* includes all projects that have been selected for support by the Small Business Innovation Research (SBIR) program of the National Aeronautics and Space Administration (NASA) since the program's inception in 1983. The list describes 1232 Phase I and 510 Phase II contracts that had been awarded or were in negotiation for award in August 1990. The main body of the document is organized alphabetically by name of the small businesses. Four indexes cross-reference the document. The Index of Subjects lists projects by the technical areas covered by the program. The Index of States and Cities locates the firms geographically. The Index of Principal Investigators links the names of these key individuals to the firm or firms with which they have been associated. The Index of Contract Numbers relates the NASA contract identifier to the company performing the contract and serves as a cross-reference for the NASA center responsible for managing the project.

The objective of this listing is to provide information about the SBIR program to anyone concerned with NASA research and development activities. This includes researchers and managers of NASA projects and prime contractors who could benefit from the research conducted through SBIR. Industrial concerns and investors who may support further development and marketing of the results of SBIR projects are also part ofthe potential readership, as are small business firms that may wish to submit SBIR proposals and need information on the types of projects of interest to NASA. The information included has been issued by NASA solely for the purpose of information dissemination. While it is the best available at the date of preparation, August 1990, NASA does not guarantee its accuracy. As the comments in the listing demonstrate, participating firms occasionally change names and/or addresses.

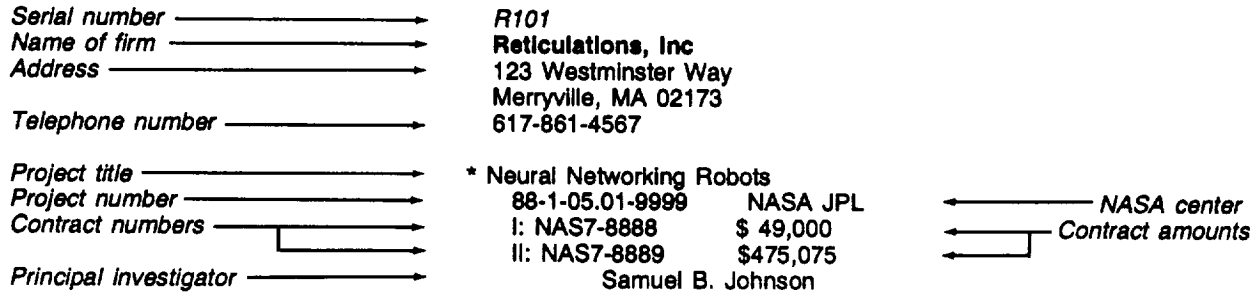
NASA has also published compendiums of project abstracts for most program years. These and additional copies of this listing can be obtained by writing to the Director, SBIR Program, Code CR, NASA HQ, Washington, DC 20546 or to the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22161. Readers are also encouraged to contact the small businesses for additional information.

The NASA Small Business Innovation Research program

Initiated in 1983, the NASA SBIR program supports innovative R&D projects of interest to the agency and the aerospace community with funds set aside from the agency's research and development budget. Since fiscal year 1986, as required by law, that funding set-aside has been 1.25 percent of NASA's annual budget for extramural R&D. For FY1989, $52 millions were provided to the NASA SBIR program resulting in a total of $207 millions for the seven years of the program to date. Since the NASA budget supports, in large part, the accomplishment of dedicated mission and R&D goals and has limited flexibility in the optional use of these specifically budgeted funds, the SBIR program constitutes a significant portion of the agency's discretionary research effort.

Program management is provided by the SBIR Office in the NASA Headquarters Office of Commercial Programs. Nine NASA Field Centers participate by sponsoring technical subtopics, evaluating proposals, letting contracts, and managing SBIR projects.

Presentation of Information



Serial Number: For this listing, each firm has been assigned a sequential identifying number, from A001 to Z001, in ascending order.

Name of firm: The name of the small business to which the listed contracts were issued. All firms which have participated in the program are included, even if they are known to have gone out of business or been taken over by another company. Known changes are noted in italics.

Address and telephone number: The information shown is the most current available. When a firm has branches in different states, the branches are shown as separate entries. Where the telephone number is replaced by the comment "Last known address," NASA is no longer able to contact the firm. When NASA has received specific information that a company has dissolved, the comment is "No longer in business."

The **Index of States and Cities** lists participating firms by their location.

Project title: When a project has proceeded to Phase II, the Phase II title is used and an asterisk is placed in the margin. If a Phase II project was carried out under a different company name, the Phase I project is described under the name of the company that received the Phase I contract. The project title has an asterisk, and there is a note after the company name referring to where the Phase II contract is listed.

Project number: The project listing for each company is organized by project number. The first two digits indicate the **program year,** which encompasses all Phase I projects that result from an annual Program Solicitation and those projects subsequently selected for continuation into Phase II. The fourth through seventh digits indicate the **technical topic** and **subtopic** for that program year, as described in the Program Solicitation. While subtopics change annually, depending on the interests of the agency, the topic number references have remained the same. They are listed below.

To aid readers interested in locating projects in particular technical areas or disciplines, an **Index of Subjects** is included. Project titles and the serial number of the responsible small businesses are listed according to the technical subject of each project. These subjects were consolidated from the subtopics presented in all the Program Solicitations issued by NASA SBIR. Each projects relates to a technical subject through the subtopic selected by the proposer.

Technical topics

01 Aeronautical Propulsion and Power
02 Aerodynamics and Acoustics
03 Aircraft Systems, Subsystems, and Operations
04 Materials and Structures
05 Teleoperators and Robotics
06 Computer Sciences and Applications
07 Information Systems and Data Handling
08 Instrumentation and Sensors
09 Spacecraft Systems and Subsystems
10 Space Power
11 Space Propulsion
12 Human Habitability and Biology in Space
13 Quality Assurance, Safety, and Check-out for Ground and Space Operations
14 Satellite and Space Systems Communications
15 Materials Processing, Microgravity, and Commercial Applications in Space.

NASA center:

The following NASA field centers are responsible for implementing the NASA SBIR program:

ARC Ames Research Center, Moffett Field, CA 94035
GSFC Goddard Space Fight Center, Greenbelt, MD 20771
JPL Jet Propulsion Laboratory, Pasadena, CA 91109
JSC Johnson Space Center, Houston, TX 77058
KSC Kennedy Space Center, FL 32899
LaRC Langley Research Center, Hampton, VA 23665
LeRC Lewis Research Center, Cleveland, OH 44135
MSFC Marshall Space Flight Center, AL 35812
SSC Stennis Space Center, MS 39529

The **Index of Contract Numbers** is organized by center since each center has a unique prefix for numbering its contracts: 1 = LaRC; 2= ARC; 3 = LeRC; 5 = GSFC; 7 = JPL; 8 = MSFC; 9 = JSC; 10 = KSC; and 13 = SSC.

Contract numbers:

The number of the contract issued by the NASA center is preceded by I or II to indicate the relevant phase. Where an award has been announced but a contract has not yet been issued, "TBD" replaces the number.

For **Phase I** of a NASA SBIR project, the objectives are to establish the feasibility and merit of an innovative scientific or technical concept proposed by a small business responding to a need or opportunity delineated in the annual program solicitation. Contracts for Phase I are awarded through a competitive selection process.

Phase II of a project is the principal research and development effort, having as its purpose the further development of the proposed ideas to meet the particular program needs. Only Phase I contractors can submit proposals to continue into Phase II. The selection of Phase II awards considers the scientific and technical merit and feasibility evidenced by the first phase, the expected value of the research to the agency, and the competence of the firm.

In **Phase III**, a small business pursues commercial applications of the results of its SBIR-funded project or obtain follow-on R&D or production contracts with NASA or other federal agencies. However, Phase III activities are not supported by SBIR program funding.

Contract amounts:

Phase I contracts are generally limited to six months in duration and $50,000, while contracts for Phase II, the major R&D effort, are normally limited to two years' duration and funding of not more than $500,000. NASA may make justifiable exceptions.

Principal Investigator:

When a project has proceeded to Phase II, the Phase II principal investigator is named. All principal investigators who have participated in the program are listed in the **Index of Principal Investigators**.

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NASA SBIR
COMPOSITE LIST OF PROJECTS
1983 to 1989

A

A001
ACA Industries, Inc.
28603 Trailriders Drive
Rancho Palos Verdes, CA 90274
213-539-7121

* Joined Wing Aircraft
83-1-02.07-9224 NASA ARC
I: NAS2-11725 $ 49,793
II: NAS2-12242 $679,912
Julian Wolkovitch

Joined-Wing Tiltrotor Aircraft Study
88-1-02.09-7121 NASA ARC
I: NAS2-12988 $ 49,827
Julian Wolkovitch

Very-High-Altitude Aircraft with Joined Wings
89-1-03.08-7121 NASA ARC
I: NAS2-13156 $ 49,995
Julian Wolkovitch

A002
AETA Corporation
117 Silver Street
Dover, NH 03820
Last Known Address

Piezoelectric Sensor and Microprocessor Array to Measure B/P in Astronauts
85-1-12.02-3686A NASA KSC
I: NAS10-11287 $ 49,376
Fred K. Manasse

A003
AKM Associates, Inc.
635 Mariner's Island Boulevard, #205
San Mateo, CA 94404
415-571-7901

Reusable Software Base Development - Source Code Tailoring
88-1-06.02-7910 NASA GSFC
I: NAS5-30488 $ 49,000
Carl Ponder

A004
AMS Corporation
4706 Papermill Road
Knoxville, TN 37919
615-588-9709

A Low-Power Fourier Transform Processor
84-1-07.06-9709 NASA GSFC
I: NAS5-28635 $ 49,368
T. W. Kerlin

A005
ANCO Engineers, Inc.
9937 Jefferson Boulevard
Culver City, CA 90232-3591
213-204-5050

* Providing Structural Modules with Self-Integrity Monitoring
84-1-04.09-5050 NASA JPL
I: NAS7-937 $ 49,922
II: NAS7-961 $439,000
Paul Ibanez

* Tether Deployment Monitoring System
85-1-09.02-5050 NASA MSFC
I: NAS8-36268 $ 49,940
II: NAS8-37336 $464,000
Paul Ibanez

* Instrumented Torque Wrench Systems
86-1-13.08-5050 NASA KSC
I: NAS10-11372 $ 49,997
II: NAS10-11501 $493,250
Paul Ibanez

Damage Inspection and Verification of Tethers
87-1-09.08-5050A NASA MSFC
I: NAS8-37618 $ 48,864
George E. Howard

A006
AOTF Technology, Inc.
540 Weddell Drive #6
Sunnyvale, CA 94089
408-734-5435

* AOTF Enhancements for a Space-Based Spectropolarimeter
88-1-08.11-5435A NASA JPL
I: NAS7-1052 $ 49,227
II: NAS7-T B D $ T B D
Patrick Katzka

Adaptive, Rapid-Scanning Imaging Spectropolarimeter
89-1-08.11-5435 NASA JPL
I: NAS7-1078 $ 50,000
Patrick Katzka

A007
APA Optics, Inc.
2950 N.E. 84th Lane
Blaine, MN 55434
612-784-4995

* Integrated Optic Device for Laser Beam Scanning
85-1-06.14-4995 NASA JSC
I: NAS9-17579 $ 47,885
II: NAS9-17813 $496,995
W. T. Boord

* Extravehicular-Mobility-Unit, Helmet-Mounted Display
87-1-12.01-4995 NASA JSC
I: NAS9-17929 $ 48,970
II: NAS9-18163 $495,000
David E. Stoltzman

High-Speed Optoelectronic Switch
87-1-14.01-4995B NASA LeRC
I: NAS3-25424 $ 49,776
Lynn D. Hutcheson

Surface-Acoustic-Wave Device for Wide-Angle Laser Scanning
88-1-09.09-4995 NASA JSC
I: NAS9-18084 $ 49,996
Steven M. Arnold

Atomic-Layer CVD of Yttrium-Barium-Cuprate over a Low-Dielectric Substrate
89-1-04.16-4995 NASA JPL
I: NAS7-1094 $ 49,940
M. Asif Khan

Flat-Panel, Multicolor Display Based on Integrated Optic Scanner
89-1-09.09-4995 NASA JSC
I: NAS9-18303 $ 49,945
William Phillips

A008

APD Cryogenics, Inc.

1833 Vultee Street
Allentown, PA 18103
215-791-6700

* Three-Stage, Linear, Split-Stirling Cryocooler with a 1K to 2K Magnetic Cold Stage
87-1-08.12-3708A NASA ARC
I: NAS2-12643 $ 46,780
II: NAS2-13180 $430,177
Ralph C. Longsworth

A009

ARD Corporation

9151 Rumsey Road
Columbia, MD 21045
301-596-5845

* Brain Wave Measures of Workload in the Advanced Cockpit
83-1-03.09-5845 NASA LaRC
I: NAS1-17576 $ 49,669
II: NAS1-18019 $486,651
Richard L. Horst

Three-Dimensional Viewing in Teleoperated Systems
83-1-05.01-5845 NASA JPL
I: NAS7-921 $ 50,000
Andrew D. Lecocq

Polar Graphics for Rapid Assessment of Multivariate Information
84-1-03.09-5845 NASA ARC
I: NAS2-12095 $ 49,966
Robert C. Munson

A010

ATAC

P.O. Box 370
301 East Evelyn Street, Suite B
415-965-8801

An Expert System for Particle Analysis
86-1-08.28-8801 NASA ARC
I: NAS2-12561 $ 48,000
Daniel E. Wolf

A011

Accel Catalysis, Inc.

Technology Innovation Center
Iowa City, IA 52242
319-335-1359

A Catalytic, Thermal Management System for Hydrogen-Fueled Injection Vehicles
89-1-11.01-4577 NASA LeRC
I: NAS3-25887 $ 50,000
Katherine B. Gloer

A012

Accelerated Processors, Inc.

2685 Marine Way, Suite 1401
Mountain View, CA 94043
415-961-4900

* Accelerate an Existing IBM 3084 Object Code from Fortran 77
86-1-06.03-4900 NASA MSFC
I: NAS8-37310 $ 49,998
II: NAS8-37404 $439,894
Hal Nissley

A013

Accurate Automation Corporation

409 Chestnut Street, Suite A-180
Chattanooga, TN 37402
615-267-5959

Advanced Telerobotic Concepts Using Neural Networks
89-1-05.09-5959A NASA MSFC
I: NAS8-38443 $ 49,998
Craig T. Harston

A014

Acton Research Corporation

P.O. Box 215
Acton, MA 01720
617-263-3584

* Automatic Contamination Evaluator for Optical Surfaces
83-1-08.16-3584 NASA MSFC
I: NAS8-35845 $ 49,000
II: NAS8-35257 $429,000
Robert D. Fancy

A015

Ada Technologies, Inc.

304 Inverness Way South, Suite 480
Englewood, CO 80112
303-792-5615

Incipient Combustion Monitor for Zero-Gravity Environments
89-1-12.02-5615 NASA MSFC
I: NAS8-38439 $ 49,263
James A Armstrong

A016

Adaptive Machine Technologies

1224 Kinnear Road #130
Columbus, OH 43212
614-486-7741

Large-Scale, Space-Based Compliant Manipulator
86-1-05.01-7741 NASA LaRC
I: NAS1-18406 $ 49,891
Eric Ribble

A017

Adiabatics, Inc.

630 South Mapleton
Columbus, IN 47201
812-372-5052

* Adiabatic, Wankel-Type Rotary Engines
84-1-01.03-5052 NASA LeRC
I: NAS3-24535 $ 49,965
II: NAS3-24880 $437,000
Roy Kamo

A018

Advanced Communications Technology

1209 Goth Lane
Silver Spring, MD 20904
301-384-3759

* Viewcache: an Incremental Pointer-Based Access Method for Distributed Databases
87-1-07.06-3759 NASA GSFC
I: NAS5-30265 $ 49,980
II: NAS5-30628 $498,775
Stephen Kelly

A019

Advanced Control Technologies

182 Edgewater Circle
Gallatin, TN 37060
615-256-5272

Three-Dimensional Vision Algorithm for Direct Transformation from Image Space to Robot Joint Space
86-1-05.01-0520 NASA MSFC
I: NAS8-37307 $ 49,997
Mary S. Waggener

New Solution Method for Robot Kinematic Equations
87-1-05.02-5272 NASA MSFC
I: NAS8-37616 $ 49,988
Mary S. Waggener

A020

Advanced Decision Systems

1500 Plymouth Street
Mountain View, CA 94043-1230
415-960-7300

Adjustable Autonomy for Hazardous Robotic Operations
87-1-05.02-3912 NASA JSC
I: NAS9-17926 $ 48,200
Marcel Schoppers

* Architectures for Semi-Autonomous Planning
87-1-05.02-3912A NASA JSC
I: NAS9-17927 $ 49,575
II: NAS9-18162 $500,000
Daniel Shapiro

Multilevel Motion Processing for Autonomous Helicopters
88-1-03.04-7300 NASA ARC
I: NAS2-12967 $ 49,237
Daryi T. Lawton

The Space Station as Robot: A Reactive Planning Approach to OMS Problems
88-1-05.05-7300 NASA JSC
I: NAS9-18083 $ 49,964
Daniel Shapiro

A021

Advanced Dimensional Displays

16742 Stagg Street, Suite 102
Van Nuys, CA 91406
818-785-6563

Real-Time Autostereoscopic Display
85-1-06.02-6563 NASA ARC
I: NAS2-12350 $ 49,789
Craig Neuswanger

A022

Advanced Diversfied Technology, Inc.

5965 Pacific Center Boulevard, Suite 715
San Diego, CA 92121
619-925-5266

Protective Coatings for Components Used in Space
89-1-04.15-5301 NASA JSC
I: NAS9-18301 $ 50,000
Charles Y. Lin

A023

Advanced Energy Dynamics

14 Tech Circle
Natick, MA 01760
617-653-8112

Electrostatic Fractionation of Natural and Processed Lunar Solids in Space
87-1-04.12-8112 NASA JSC
I: NAS9-17928 $ 50,000
Donald E. Heyburn

A024

Advanced Energy Technology, Inc.

16966 Cloudcroft Drive
Poway, CA 92064
619-455-4310

New Thermionic Converter for Out-of-Core Space Power System
89-1-10.01-4310 NASA LeRC
I: NAS3-25875 $ 50,000
Gary O. Fitzpatrick

A025

Advanced Fuel Research, Inc.

P.O. Box 18343
East Hartford, CT 06118
203-528-9806

In-Situ Characterization of the Size and Composition of Atmospheric Aerosols
85-1-08.12-9806 NASA LaRC
I: NAS1-18206 $ 49,956
Peter R. Solomon

A026

Advanced Material Corporation

c/o Mellon Inst 4400 Fifth Ave
Pittsburgh, PA 15213-2639
412-268-5651

Lightweight, Permanent-Magent Actuators and Manipulators
88-1-05.03-5649 NASA MSFC
I: NAS8-38044 $ 49,257
E. B. Boltich

A027

Advanced Materials Design, Inc.

1291 E Cumberland Avenue
West Lafayette, IN 47906
317-497-1049

Software System for Predicting Engineering Properties of Polymer Matrix Resins
88-1-04.01-1049 NASA LeRC
I: NAS3-25567 $ 49,900
Alok K. Kulshreshtha

A028

Advanced Projects Research, Inc.

5301 N Commerce Avenue, Suite A
Moorpark, CA 93021
805-529-8848

* An Oblique-Detonation-Wave, Ram-Accelerator-Driven Hypersonic Test Facility
88-1-02.05-8848 NASA LaRC
I: NAS1-18802 $ 48,300
II: NAS1-19098 $499,954
J. W. Humphrey

A029

Advanced Research and Applications Corp.

425 Lakeside Drive
Sunnyvale, CA 94086-4701
408-733-7780

* Quantitative Experimental Stress Tomography Laboratory System
85-1-04.10-7780 NASA LaRC
I: NAS1-18201 $ 49,679
II: NAS1-18480 $499,870
James H. Stanley

* Dual-Energy Detector Package for Advanced Structures
88-1-04.09-7780 NASA LaRC
I: NAS1-18830 $ 42,360
II: NAS1-19093 $496,000
Robert N. Yancey

Miniature, Biogenic-Element Analyzer
89-1-08.10-7780 NASA ARC
I: NAS2-13169 $ 49,913
Russell E. Stachowski

Automated Assessment of VLSI Circuits for Radiation Hardness and Reliability
89-1-13.07-7780 NASA JPL
I: NAS7-1083 $ 49,994
Leslie J. Palkuti

A030

Advanced System Technologies

12200 E Briarwood Avenue, Suite 260
Englewood, CO 80112
303-790-4242

* Integrated Modeling Tool for Performance Engineering of Complex Computer Systems
85-1-06.06-4242 NASA JPL
I: NAS7-959 $ 49,244
II: NAS7-995 $475,000
Gary J. Wright

* Expert Assistant for Integrated Timing and Reliability Design Analysis
88-1-06.02-4242A NASA GSFC
I: NAS5-30502 $ 49,554
II: NAS5-T B D $ T B D
Robert T. Goettge

A031

Advanced System Technologies

5113 Leesburg Pike, Suite 514
Falls Church, VA 22041
703-845-0040

An Interactive, Algorithm Design Tool for Embedded Multiprocessor Systems
88-1-07.06-0040 NASA LaRC
I: NAS1-18809 $ 45,432
Duane R. Ball

A032

Advanced Technologies, Inc.

812 Middle Ground Blvd
Newport News, VA 23606
804-873-3017

Soft Hub for Bearingless Rotors
89-1-02.07-3017A NASA ARC
I: NAS2-13157 $ 49,329
Peter G. Dixon

A033

Advanced Technology Laboratories

8027 Leesburg Pike, Suite 700
Vienna, VA 22180
703-442-8214

A 10 to the 15th Bit Random Access Optical Memory for Spacecraft
83-1-07.02-8214 NASA JPL
I: NAS7-928 $ 48,310
Marc A. Friedlander

A034

Advanced Technology Materials, Inc.

520-B Danbury Road
New Milford, CT 06776
203-355-2681

Improved CVD for SiC Fibers
88-1-04.01-2681 NASA LeRC
I: NAS3-25569 $ 49,974
Ward C. Stevens

* Composite High-Tc Superconductive Bolometer
88-1-08.13-2681 NASA GSFC
I: NAS5-30598 $ 50,000
II: NAS5-T B D $ T B D
Charles P. Beetz

* Fabrication of Multifilament Conductors: CVD Processing of High-Tc Superconducting Composite Fibers
88-1-10.06-2681 NASA MSFC
I: NAS8-38023 $ 49,750
II: NAS8-38485 $499,380
Peter S. Kirlin

Novel Process for Thin-Film Growth of Yttrium-Barium-Cuprate
89-1-04.17-2681 NASA LeRC
I: NAS3-25868 $ 50,000
Peter S. Kirlin

Novel Mercury-Cadmium-Telluride Growth Process
89-1-08.01-2681 NASA JPL
I: NAS7-1075 $ 49,988
James D. Parsons

A035

Aerochem Research Laboratories, Inc.

P.O. Box 12
Princeton, NJ 08542
609-921-7070

Turbulent Mixing of Gases in a Simulated Combustor
84-1-01.02-7070 NASA LeRC
I: NAS3-24534 $ 49,925
Charles H. Berman

Supersonic Combustion Enhancement by a Nonequilibrium Plasma Jet
86-1-03.09-7070 NASA LaRC
I: NAS1-18404 $ 50,000
Hartwell F. Calcote

* Direct Computation of Turbulence Noise
87-1-02.12-7070 NASA LaRC
I: NAS1-18622 $ 50,000
II: NAS1-18849 $349,798
Charles H. Berman

Computer Simulation and Design of Jet-Noise Suppressors
89-1-02.10-7070 NASA LeRC
I: NAS3-25829 $ 46,033
Charles H. Berman

A036

Aerodyne Products Corporation

76 Treble Cove Road
North Billerica, MA 01862
508-663-7411

A Microgravtiy Film Processor
86-1-12.04-9500 NASA JSC
I: NAS9-17734 $ 50,000
David E. Willoughby

A037

Aerodyne Research, Inc.

45 Manning Road
Billerica, MA 01821
508-663-9500

Holographic Detection of Combustion Stream Droplets
83-1-01.02-9500 NASA LeRC
I: NAS3-24094 $ 49,950
H. John Caulfield

* Rayleigh Scattering as a High-Temperature Combustion Diagnostic Method
83-1-01.02-9500 NASA LeRC
I: NAS3-24093 $ 49,952
II: NAS3-24613 $433,393
Kurt D. Annen

Automated Object-Scan System for a Three-Dimensional CRT
84-1-06.02-9500 NASA ARC
I: NAS2-12084 $ 49,926
Edwin S. Gaynor

* Optimal Silicon-Carbide Production
84-1-08.09-6500 NASA LeRC
I: NAS3-24531 $ 49,897
II: NAS3-23891 $500,000
Joda C. Wormhoudt

* An Open-Path-Diode-Laser Flux Meter for Trace Gases of Biogenic Origin
84-1-12.06-9500 NASA ARC
I: NAS2-12117 $ 49,858
II: NAS2-12433 $373,000
Alan C. Stanton

On-Line Nutrient Analysis
85-1-12.10-9500 NASA ARC
I: NAS2-12358 $ 49,940
Donald Frankel

Ruby Crystal, Chlorophyll Fluorometer for Measurements of Photosynthesis Rates
87-1-08.04-9500 NASA ARC
I: NAS2-12776 $ 49,300
Paul Kebabian

Temperature and Shock-Position Sensor for High-Pressure, Oxygen Systems
89-1-13.06-9500 NASA JSC
I: NAS9-18302 $ 49,840
Kurt D. Annen

A038

Aerometrics, Inc.

894 Ross Drive, Unit #105
Sunnyvale, CA 94089
408-745-0321

* Fuel Atomization and Air-Fuel Interactions in a Turbulent Environment
85-1-01.01-8887 NASA LeRC
I: NAS3-24844 $ 49,990
II: NAS3-25204 $379,000
William D. Bachalo

* Diagnostics Development for the Characterization of Liquid Fuel Rocket Engine Injector Atomization
86-1-11.08-8887 NASA MSFC
I: NAS8-37323 $ 49,990
II: NAS8-37403 $478,581
William D. Bachalo

* Advanced Instrumentation for Aircraft Icing Research
87-1-03.01-8887 NASA LeRC
I: NAS3-25348 $ 49,900
II: NAS3-25635 $487,519
William D. Bachalo

Diagnostics for Rocket Engine Spray Characterizations
87-1-11.03-8887 NASA MSFC
I: NAS8-37617 $ 49,990
William D. Bachalo

Simultaneous Measurement of Temperature, Size, and Velocity of Drops in Sprays
89-1-11.01-0321A NASA LeRC
I: NAS3-25830 $ 49,922
W. D. Bachalo

A039

Aerospace Design & Development, Inc.

P.O. Box 672
Niwot, CO 80544
303-530-2888

Supercritical, Cryogenic, Self-Contained Breathing Apparatus
89-1-13.04-2888 NASA KSC
I: NAS10-11653 $ 49,692
H. L. Gier

A040

Agave Analytics

8726D S Sepulveda Boulevard, #B71
Los Angeles, CA 90045
213-840-4569

* Remote Monitoring Indicators of Plant Stress
88-1-12.10-4569 NASA KSC
I: NAS10-11560 $ 50,000
II: NAS10-11668 $499,693
Robert Woodhouse

A041

Aker Industries - *Was Energy Research & Generation*
952 57th Street
Oakland, CA 94068
415-658-7248

Controlled-Density, Composite Carbide Structural Ceramics
87-1-04.01-9785 NASA LeRC
I: NAS3-25406 $ 50,000
Glendon M. Benson

A042

Alabama Cryogenic Engineering, Inc.
P.O. Box 2470
Huntsville, AL 35804
205-536-8629

* Long-Lifetime, Spaceborne Closed-Cycle Cryocooler
83-1-09.19-6276 NASA MSFC
I: NAS8-35850 $ 45,442
II: NAS8-35254 $499,975
John B. Hendricks

* Adiabatic Demagnetization Refrigerator for Use in Zero Gravity
84-1-08.07-8629 NASA GSFC
I: NAS5-28641 $ 49,878
II: NAS5-29418 $495,000
John B. Hendricks

* A Helium-3/Helium-4 Dilution Cryocooler Operation in Zero Gravity
84-1-09.19-8629 NASA MSFC
I: NAS8-35273 $ 49,987
II: NAS8-37260 $496,000
John B. Hendricks

* A Small, Single-Stage Orifice, Pulse-Tube Cryocooler
86-1-08.03-8629A NASA JPL
I: NAS7-983 $ 49,998
II: NAS7-1031 $471,707
John B. Hendricks

Current Leads for Superconducting Magnets
88-1-10.06-8629 NASA JPL
I: NAS7-1059 $ 48,771
John B. Hendricks

Ortho-Para Conversion in Space-Based Hydrogen Dewar Systems
89-1-11.03-8629C NASA MSFC
I: NAS8-38449 $ 49,979
John B. Hendricks

A043

Allotech, Inc.
715 West Johnson Street
Raleigh, NC 27603
919-828-9446

Display Technology
86-1-03.03-9446 NASA ARC
I: NAS2-12559 $ 49,985
Thomas D. Wason

A044

Altex Technologies Corporation
650 Nutman Road, #114
Santa Clara, CA 95054
408-986-8610

Pulse-Combustor-Driven, Recuperated or Regenerated Gas Turbine
87-1-01.02-7300 NASA LeRC
I: NAS3-25404 $ 49,830
John T. Kelly

A045

Amerasia Technology, Inc.
620-1 Hampshire Road
Westlake Village, CA 91361
805-495-9388

* Monolithic GaAs Digitizer for Space-Based, Laser-Altimeter, Pulse-Spreading Effect
87-1-08.02-9388 NASA GSFC
I: NAS5-30266 $ 49,967
II: NAS5-30626 $495,225
Edward J. Staples

* Multi-User, Receiver-Demodulator Satellite Communication System
88-1-14.05-9388 NASA LeRC
I: NAS3-25617 $ 49,977
II: NAS3-25862 $499,967
Edward J. Staples

A046

Amercom, Inc.
8948 Fullbright Avenue
Chatsworth, CA 91311
Last Known Address

* Composite Thermal Protection Material
83-1-04.05-4821 NASA ARC
I: NAS2-11734 $ 50,000
II: NAS2-12158 $406,000
Curtis V. Burkland

A047

American Holographic, Inc.
80 Harris Street
Acton, MA 01720
Last Known Address

Concave Grating Optical Demultiplexers-Wavelength Division Multiplexer
83-1-06.14-2538 NASA LaRC
I: NAS1-17581 $ 48,400
Thomas Mikes

A048

American Innovision, Inc.
9581 Ridgehaven Court
San Diego, CA 92123-1624
619-560-9355

Identifying, Locating, and Tracking Objects by Detecting Pre-Affixed Colored Targets
89-1-05.01-9355 NASA LaRC
I: NAS1-19005 $ 50,000
Jose R. Torre-Bueno

A049

American Research Corp. of Virginia
P.O. Box 3406
Radford, VA 24143-3406
703-731-0655

Cross-Correlation, Optical Strain Sensor for Wind Tunnel Test Instrumentation
89-1-02.08-0655 NASA LaRC
I: NAS1-19022 $ 50,000
Adel Sarrafzadeh

Laser-Speckle Interferometer for Surface-Acoustic-Displacement Measurements
89-1-03.06-0655 NASA ARC
I: NAS2-13129 $ 50,000
Adel Sarrafzadeh

A050

Amtec Engineering, Inc.
3055 112th Avenue NE #208
Bellevue, WA 98004
206-827-3304

* Three-Dimensional Navier-Stokes Analysis for Evaluation of Hypersonic Vehicles
86-1-02.01-8060 NASA MSFC
I: NAS8-37303 $ 49,950
II: NAS8-37406 $391,421
Scott T. Imlay

Zonal Method for Modeling Powered-Lift Aircraft Flow Fields
87-1-02.11-8060 NASA ARC
I: NAS2-12801 $ 50,000
Donald W. Roberts

Coupling Grid Adaption to an Implicit Navier-Stokes Solution Procedure
89-1-02.01-3304 NASA MSFC
I: NAS8-38471 $ 59,999
Scott T. Imlay

A051

Analytical Mechanics Associates - *Phase III being pursued by:*
Seagull Technology, Inc.
1310 Hollenbeck Ave.
Sunnyvale, CA 94087
408-732-9620

* Advanced Flight Planning System
83-1-03.04-1844 NASA LaRC
I: NAS1-17575 $ 49,996
II: NAS1-18017 $493,000
John A. Sorensen

A052

Analytical Methods, Inc.
2133 152nd Avenue, N.E.
Redmond, WA 98052
206-643-9090

* Prediction Methods for Powered-Lift Vehicle Aerodynamics
83-1-02.07-9090 NASA ARC
I: NAS2-11727 $ 49,757
II: NAS2-12166 $272,000
Brian Maskew

* Improved Algorithms for Analysis of Circulation-Control Rotors
83-1-03.07-9090 NASA ARC
I: NAS2-11729 $ 48,000
II: NAS2-12135 $251,611
Frank A. Dvorak

* A Novel, Potential-Viscous Flow Coupling Technique for Computing Helicopter Flow Fields
88-1-02.09-9090 NASA ARC
I: NAS2-12962 $ 49,605
II: NAS2-13194 $499.998
J. Michael Summa

A053

Analytical Services & Materials, Inc.
107 Research Drive
Hampton, VA 23666
804-865-7093

Flight Instrumentation for Simultaneous Detection of Flow Separation and Transition
89-1-03.05-7093 NASA ARC
I: NAS2-13023 $ 49,900
Siva M. Mangalam

A054

Analytics, Inc.
2500 Maryland Road
Willow Grove, PA 19090
215-657-4100

* Oculometer and Automated Speech Interface System
83-1-06.05-4100 NASA JPL
I: NAS7-922 $ 49,543
II: NAS7-932 $442,000
Floyd A. Glenn

* Prototype Cockpit Ocular Recording System
85-1-03.04-4100 NASA LaRC
I: NAS1-18211 $ 49,899
II: NAS1-18473 $484,000
James E. Deimler

* An Eye-Brain-Task Testbed
85-1-06.04-4100 NASA JSC
I: NAS9-17564 $ 49,982
II: NAS9-17803 $494,000
Nora Harrington

* Prototype Holographic-Enhanced Remote Sensing System
86-1-05.01-4100 NASA JPL
I: NAS7-974 $ 49,951
II: NAS7-1036 $499,951
Helene P. Iavecchia

Application of Expert Systems in Project Management Decision Aiding
86-1-07.06-4100 NASA GSFC
I: NAS5-30040 $ 49,918
David Jochman

A055

Analytix Corporation
P.O. Box 4044
Timonium, MD 21093
301-321-5710

Thermal Design of a Precollimator
85-1-09.08-5710 NASA GSFC
I: NAS5-29267 $ 43,213
Heros Noravian

A056

Anamet Laboratories, Inc.
3400 Investment Boulevard
Hayward, CA 94545
Last Known Address

Prediction of Ultimate Strength of Composite, Curved, Frame Members
83-1-04.07-2125 NASA LaRC
I: NAS1-17569 $ 38,380
Rocky Richard Arnold

A057

Anatole J. Sipin Company, Inc.
505 Eighth Avenue
New York, NY 10018
212-695-5706

Two-Phase Flowmeter
85-1-13.01-5706 NASA KSC
I: NAS10-11289 $ 50,000
A. J. Sipin

A058

Apeiron

P.O. Box 1006, Mail Station 220
McKinney, TX 75069
214-542-2423

* Wireless Headset Network
87-1-13.02-2423A NASA KSC
I: NAS10-11462 $ 45,000
II: NAS10-11607 $242,374
Kurt K. Christensen

A059

Applications Research Corporation

428 Louisiana SE Suite A5
Albuquerque, NM 87108
Last Known Address

A Generic, Artificial-Intelligence, Expert System for Space Station Applications
86-1-05.04-8361 NASA MSFC
I: NAS8-37309 $ 49,864
Kathleen Joyce

A060

Applied Cryogenics and Materials

Hampton, VA 23670
Last Known Address

* Technology for Pressure-Instrumented Thin Airfoil Models
83-1-02.03-5411 NASA LaRC
I: NAS1-17571 $ 48,000
II: NAS1-18066 $492,000
David A. Wigley

A061

Applied Logic Systems, Inc.

P.O. Box 90 University Station
Syracuse, NY 13210-0090
315-471-3900

Structured Analysis and Generation of Requirements
87-1-06.02-3900 NASA KSC
I: NAS10-11465 $ 49,961
Kenneth A. Bowen

A062

Applied Research Associates, Inc.

6404 Falls Of Neuse Road Suite 200
Raleigh, NC 27615
919-876-0018

Probabilistic Structural Mechanics Research for Parallel Processing Computers
89-1-04.02-0018 NASA LeRC
I: NAS3-25824 $ 49,967
Robert H. Sues

A063

Applied Research Consortium

7137 Stetson Drive Suite A
Scottsdale, AZ 85251
Last Known Address

Expert Systems for Accident Investigations
84-1-03.03-8293 NASA ARC
I: NAS2-12124 $ 49,684
Peter D. Bates

A064

Applied Research Corporation

8201 Corporate Drive, Suite 920
Landover, MD 20785
301-459-8442

* Holographic Diffraction Gratings
83-1-08.01-8442 NASA GSFC
I: NAS5-27992 $ 49,989
II: NAS5-28652 $496,813
Joseph B. Gurman

* Logistic Regression Model for Satellite Rainfall Retrieval
85-1-08.04-8442 NASA GSFC
I: NAS5-29271 $ 49,972
II: NAS5-30083 $473,000
Long S. Chiu

* Radar and Microwave Link Techniques for Satellite Rainfall Algorithm Development
86-1-08.02-8442 NASA GSFC
I: NAS5-30041 $ 49,999
II: NAS5-30303 $480,505
Arthur R. Jameson

Rapid Readout System for Solar Pointing Sensors
87-1-07.03-8442 NASA GSFC
I: NAS5-30267 $ 49,315
Andrew S. Endal

* A Low-Cost CCD Solid-State Star Tracker
88-1-09.12-8442 NASA GSFC
I: NAS5-30490 $ 48,208
II: NAS5-T B D $ T B D
Siegfried Auer

Highly Transparent and Rugged Sensor for Meteoroids and Space Debris
89-1-08.21-8442 NASA JSC
I: NAS9-18304 $ 48,700
Siegfried Auer

A065

Applied Research, Inc.

P.O. Box 11220
Huntsville, AL 35814-1220
205-837-8600

Manuever Automation Sensor
84-1-05.04-8600A NASA JSC
I: NAS9-17294 $ 49,828
John Morris

* Laser Orientation Transceiver System
87-1-09.07-8600A NASA JSC
I: NAS9-17930 $ 49,997
II: NAS9-18164 $367,600
John Morris

Tethered Satellite Video Monitoring System
88-1-09.11-8600 NASA MSFC
I: NAS8-38051 $ 49,264
Scott Davis

A066

Applied Sciences Consultants

621 River Oaks Parkway
San Jose, CA 95134
408-434-6780

* A Diet Expert Subsystem Program for the Controlled Ecological Life Support System
88-1-12.04-6780 NASA ARC
I: NAS2-12991 $ 48,910
II: NAS2-T B D $ T B D
Ahmad Waleh

A067

Applied Sciences Laboratories
335 Bear Hill Road
Waltham, MA 02154
617-890-5100

Improved Visual Display of Three-Dimensional Information
84-1-06.02-5100 NASA ARC
I: NAS2-12083 $ 49,496
Sol Aisenberg

A068

Applied Technology Associates, Inc.
P.O. Box 149434
Orlando, FL 32814
407-894-6577

Thermal Transport System Using Conformal Heat Exchanger
84-1-09.02-1753A NASA MSFC
I: NAS8-35266 $ 49,800
William E. Clark

* Thrust Vector Control Using Moveable Struts
86-1-11.07-1753 NASA MSFC
I: NAS8-37322 $ 49,970
II: NAS8-37411 $486,538
Robert Cavalleri

A069

Applied Technology Associates, Inc.
1320 Villa Street
Mountain View, CA 94041
415-965-7190

* Simultaneous Orbit Determination with Physical Connectedness
84-1-08.05-1590 NASA GSFC
I: NAS5-28637 $ 49,750
II: NAS5-29417 $498,000
James R. Wright

A070

Applied Technology Associates, Inc.
1900 Randolph S.E.
Albuquerque, NM 87106
505-247-8371

* Digital Active Materials Processing Platform Effort
87-1-15.01-8371 NASA LeRC
I: NAS3-25352 $ 49,998
II: NAS3-25806 $498,284
John Gniady

A071

Applied and Theoretical Mechanics, Inc.
4501 Sequoyah Road
Oakland, CA 94605
415-635-1427

Computations of Separated Flows with an Improved K-Epsilon Model
87-1-02.05-1427 NASA ARC
I: NAS2-12778 $ 49,997
Joelle M. Champney

Two-Equation Turbulence Modeling of Hypersonic Transitional Flows with the UPS Code
89-1-02.01-1427 NASA ARC
I: NAS2-13176 $ 49,995
Joelle M. Champney

A072

Aptech Imaging, Inc.
795 San Antonio Road
Palo Alto, CA 94303
415-858-2863

Computer Software for Signal Processing for Multiple Mixed Transducers
84-1-13.02-2863 NASA KSC
I: NAS10-11145 $ 49,636
Scott D. Fouse

A073

Aptek, Inc.
1257 Lake Plaza Drive
Colorado Springs, CO 80906
719-576-8100

Automation of Stowage
89-1-12.06-8100 NASA JSC
I: NAS9-18305 $ 49,987
Jerry L. Udy

A074

Aquanautics Corporation
980 Atlantic Ave., Suite 101
Alameda, CA 94501
415-521-4331

Oxygen Extraction from Mars for Advanced Mission Life-Support and Power
87-1-12.01-8553 NASA JSC
I: NAS9-17931 $ 50,000
Bruce D. Zenner

A075

Arbus, Inc.
P.O. Box 80388
Las Vegas, NV 89103
702-736-9334

Self-Aligning Electrical Connector
84-1-05.02-6585 NASA MSFC
I: NAS8-35265 $ 34,826
Danny B. Stokes

A076

Artelligence, Inc.
14902 Preston Road, Suite 212-252
Dallas, TX 75240
214-437-0361

C-Based Expert System Shell for Real-Time Applications
85-1-06.04-0361 NASA JSC
I: NAS9-17562 $ 49,980
Lee Blaine

A077

Associated Dynamics International
139 South Beverly Dr Suite 220
Beverly Hills, CA 90212
213-273-5190

Knowledge Networks for Mission Planning and Flight Control
89-1-06.05-9896 NASA JSC
I: NAS9-18306 $ 50,000
Cleveland W. Donnelly

A078

Astro International Corporation

100 Park Avenue
League City, TX 77573
713-332-2484

* Reagentless Water Quality Monitor (Organic Content)

84-1-12.01-2484	NASA JSC
I: NAS9-17282	$ 50,000
II: NAS9-17612	$274,000

T. J. Adams

A079

Astron Research & Engineering

130 Kifer Court
Mountain View, CA 94086
408-245-3200

Diagnostic Technique to Identify Airborne and Structureborne Noise Components

86-1-02.13-8165	NASA LaRC
I: NAS1-18407	$ 50,000

John F. Wilby

A080

Athena Labs, Inc.

2121 Nela Avenue
Orlando, FL 32809
305-855-7886

High-Speed Pneumatic Valve

84-1-13.12-7886	NASA JSC
I: NAS9-17279	$ 35,620

Harvey Readey

A081

Atlantic Applied Research Corp.

4 A Street
Burlington, MA 01803
617-273-2400

Wind Tunnel Noise Reduction

89-1-02.02-0559	NASA LaRC
I: NAS1-19031	$ 49,620

John Wilby

A082

Atmospheric & Environment Research

840 Memorial Drive
Cambridge, MA 02139
Last Known Address

Determination of Cloud Properties from Satellites

84-1-07.06-6207	NASA GSFC
I: NAS5-28633	$ 47,707

R. G. Isaacs

A083

Atom Sciences, Inc.

355 Paint Branch Drive, Washington Ctr.
College Park, MD 20742
301-454-7751

* Red Blood Cell Measurements Using Resonance Ionization Spectroscopy

87-1-12.03-1113	NASA JSC
I: NAS9-17932	$ 49,957
II: NAS9-18165	$485,710

Larry J. Moore

A084

Aurora Associates

3350 Scott Blvd., Bldg 33
Santa Clara, CA 90501
415-967-0827

Wideband, Acousto-Optic, Spectra Analyzer

89-1-08.16-0827	NASA JPL
I: NAS7-1082	$ 49,280

I. C. Chang

Acousto-Optic Tunable Filter

89-1-08.18-0827	NASA JPL
I: NAS7-1093	$ 47,245

I. C. Chang

A085

Aurora Flight Sciences Corporation

Box 11998
Alexandria, VA 22312
703-845-5694

Fuel-Cell Propulsion System for a High-Altitude Research Platform

89-1-03.08-5694	NASA ARC
I: NAS2-13158	$ 47,697

John S. Langford

A086

Aurora Optics, Inc.

1777 Walton Road #408 Dublin
Blue Bell, PA 19422
215-646-0690

Fiber-Optic Fluid Flow Sensor

88-1-01.03-0690	NASA LeRC
I: NAS3-25619	$ 50,000

Laurence N. Wesson

A087

Austin Biological Laboratories

6620-A Manor Road
Austin, TX 78723
512-928-1304

Medical Microbiology Test Station for Microgravity

87-1-12.03-1304	NASA JSC
I: NAS9-17933	$ 42,000

Dennis Ray Schneider

A088

Autodesk, Inc. - *Was Cadetron, Inc.*

1303 Hightower Trail, Suite 170
Atlanta, GA 30350
404-998-8095

* An Expert System for Finite-Element Modeling

85-1-04.02-8095A	NASA LeRC
I: NAS3-24869	$ 50,000
II: NAS3-25150	$475,419

N. V. L. Narayana

A089

Automated Dynamics Corporation

105 Jordan Road
Troy, NY 12180
518-283-8822

Robotic Winding in a Plasma-Spray, High-Temperature, Vacuum Environment

86-1-04.01-8822	NASA LeRC
I: NAS3-25202	$ 50,000

Kenneth B. Bubeck

* Universal End-Effector with Torque Feedback for Hand Valves
86-1-13.13-8822 NASA KSC
I: NAS10-11373 $ 37,500
II: NAS10-11502 $332,750
Lawrence E. Ruff

Cableless Power and Signal Transfer for Robot End Effector with Integrated Sensor System
88-1-05.03-8822 NASA LaRC
I: NAS1-18808 $ 46,126
David Hauber

A090
Automatix, Inc.
755 Middlesex Turnpike
Billerica, MA 01821
508-667-7900

Macro- and Task-Level Programming of Arc Welding Robots for Aerospace Applications
89-1-04.10-7900 NASA MSFC
I: NAS8-38448 $ 49,996
John E. Agapakis

A091
Autometric, Inc.
5301 Shawnee Road
Alexandria, VA 22312-2312
703-658-4000

* The Large Format Camera: Novel Analyses of Sensor Applications
84-1-15.05-7606 NASA MSFC
I: NAS8-35280 $ 49,357
II: NAS8-37263 $499,555
Carroll Lucas

Improved Accessing of Digital Data Bases by Geographic Information Systems
89-1-07.04-4000 NASA SSC
I: NAS13-409 $ 49,678
Daniel K. Gordon

A092
Autonomous Technologies Corporation
520 N Semoran Boulevard, Suite 180
Orlando, FL 32807
407-282-1262

* Hierarchical, Three-Dimensional and Doppler Imaging CO2 Ladar with Programmable Fovea and Peripheral Vision
87-1-09.07-1262 NASA JSC
I: NAS9-17934 $ 50,000
II: NAS9-18166 $499,000
Randy W. Frey

A093
Axiomatics Corporation
60 Rogers Street
Cambridge, MA 02142
617-497-6700

Remote Moisture Sensor to Control Irrigation of Plants in Space
89-1-12.12-6700 NASA KSC
I: NAS10-11657 $ 43,690
James F. Bredt

B

B001
B&D Instruments and Avionics
209 W. Main
Valley Center, KS 67147
316-755-1223

Evaluation of PVDF Film as a Pressure Sensor
89-1-03.06-1223 NASA ARC
I: NAS2-13024 $ 49,779
Richard Kreeger

B002
BC Associates - *Now Femtometrics*
1721 Whittier Avenue, Suite A
Costa Mesa, CA 92627
714-722-6239

* High-Sensitivity Particle and Gas Instrument Using the Acoustic-Wave Piezoelectric Crystal
86-1-08.07-6239 NASA LaRC
I: NAS1-18412 $ 47,980
Raymond L. Chuan

B003
BGB, Inc.
4321 University Drive, Suite 300
Huntsville, AL 35816
Last Known Address

* High Spatial Resolution, Large Field-of-View Detector and Data Handling System
86-1-08.04-0341 NASA MSFC
I: NAS8-37312 $ 48,350
II: NAS8-37405 $485,053
Gary M. Arnett

B004
Barr Associates, Inc.
2 Lyberty Way
Westford, MA 01886
508-692-7513

* Space-Qualified, Image-Quality Ultraviolet Interference Filters
87-1-08.01-7513 NASA JPL
I: NAS7-1021 $ 49,862
II: NAS7-1067 $476,160
Thomas A. Mooney

Ion Beam Deposition of Large-Area, Low-Scattering Metal Coatings
89-1-08.18-7513B NASA JPL
I: NAS7-1095 $ 45,000
Ghanim Al-Jumaily

B005
Barrett Design, Inc.
230 Western Avenue
Boston, MA 02134
617-787-3909

A Robot Wrist Using New Mechanism Technology Invented for Whole-Arm Manipulation
89-1-05.04-3909 NASA JSC
I: NAS9-18307 $ 46,905
William T. Townsend

B006

Bauer Associates, Inc.

177 Worcester Road, #101
Wellesley, MA 02181
617-235-8775

* Measurement of Upper-Mid-Frequency Errors on Arbitrary Grazing Incidence Optics

86-1-08.01-8775	NASA GSFC
I: NAS5-30042	$ 49,966
II: NAS5-30311	$273,753

Paul Glenn

* Non-Contact, Self-Referencing, Full-Aperture Metrology for Large Aspheric Mirrors

87-1-08.19-8775	NASA GSFC
I: NAS5-30268	$ 44,264
II: NAS5-30638	$497,918

Paul Glenn

B007

Begej Corporation

5 Claret Ash Road
Littleton, CO 80127
303-973-5042

Fingertip-Shaped Touch Sensor for Teleoperator and Robotic Applications

85-1-05.01-8182	NASA JPL
I: NAS7-968	$ 40,500

Stefan Begej

Tactile Telepresence System for Dexterous Telerobotics

87-1-05.01-5042B	NASA JPL
I: NAS7-1015	$ 49,556

Stefan Begej

Glove Controller with Force and Tactile Feedback for Dexterous Robotic Hands

89-1-05.04-5042	NASA JSC
I: NAS9-18308	$ 49,509

Stefan Begej

B008

Behavioral Research Associates

693 North 400 West
West Lafayette, IN 47906
Last Known Address

An Optimal Interface for Expert Monitoring Systems

85-1-03.06-0703	NASA ARC
I: NAS2-12360	$ 49,995

Robert D. Sorkin

B009

Beltran Associates, Inc.

1133 E 35th Street
Brooklyn, NY 11210
Last Known Address

Heat Pipe Applications in Aircraft Propulsion Systems

83-1-01.04-7900	NASA LaRC
I: NAS3-24095	$ 50,000

Angelo A. Ferrara

B010

Bend Research, Inc.

64550 Research Road
Bend, OR 97701-8599
503-382-4100

* Novel Reverse-Osmosis Module for Spacecraft Washwater Recycle

83-1-12.01-4100	NASA JSC
I: NAS9-17031	$ 49,793
II: NAS9-17306	$260,000

Walter C. Babcock

* A Novel Membrane-Based Water Reclamation Post-Treatment Unit

84-1-12.01-4100	NASA JSC
I: NAS9-17286	$ 49,469
II: NAS9-17611	$405,000

Roderick J. Ray

Energy-Efficient Subsystems for Treating Urine and Concentrated Wastewater

85-1-12.01-4100	NASA JSC
I: NAS9-17581	$ 49,828

Roderick J. Ray

* Liquid-Sorbent/Membrane-Contactor Subsystem for CO2 Removal

88-1-12.03-4100	NASA JSC
I: NAS9-18085	$ 49,953
II: NAS9-T B D	$ T B D

Scott B. McCray

Membrane-Based, High-Pressure Gas-Dehydration Module

89-1-12.07-4100A	NASA JSC
I: NAS9-18309	$ 49.445

Rod Ray

B011

Bio-Imaging Research, Inc.

425 Barclay Boulevard
Lincolnshire, IL 60069
312-634-6425

Portable, Digital, Imaging-Detector System

86-1-13.11-6425	NASA KSC
I: NAS10-11374	$ 46,475

Thomes P. O'Brien

* Differential-Phase, Acoustic Microscopy for Micro-NDE

88-1-04.09-6425A	NASA LaRC
I: NAS1-18824	$ 49,890
II: NAS1-19099	$487,150

M. Nikoonahadd

Slit Digital Radiography for Analysis of Bond Defects in Rocket Motors

89-1-11.04-6425	NASA MSFC
I: NAS8-38459	$ 41,895

Bruce G. Isaacson

B012

Bio-Metric Systems, Inc.

9932 West 74Th Street
Eden Prairie, MN 55344
Last Known Address

Rapid Paper Test for Microbial Pathogen Determination

83-1-12.02-0080	NASA JSC
I: NAS9-17034	$ 49,498

Patrick E. Guire

B013

Biochem Technology, Inc.

66 Great Valley Parkway
Malvern, PA 19355
215-647-8610

* Liquid Carriers in Tissue Culture for Aeration

85-1-15.02-8610	NASA JSC
I: NAS9-17569	$ 49,000
II: NAS9-17812	$500,000

John R. Forro

* Liquid Membrane Emulsions in Cell Culture

88-1-12.01-8610	NASA JSC
I: NAS9-18086	$ 50,000
II: NAS9-T B D	$ T B D

Lu Kwang Ju

B014

Biospherical Instruments, Inc.

4901 Morena Boulevard, Suite 1003
San Diego, CA 92117
619-270-1315

* Moored Oceanographic Spectroradiometer

83-1-08.15-1315	NASA JPL
I: NAS7-923	$ 49,526
II: NAS7-934	$500,000

Jeffrey L. Star

* Measurement of Chlorophyll Related Pigments and Productivity in the Sea

84-1-08.15-1315	NASA JPL
I: NAS7-942	$ 50,000
II: NAS7-969	$453,000

Charles R. Booth

Towable, Advanced, Bio-Optical Sensor System

88-1-08.09-1315	NASA JPL
I: NAS7-1044	$ 49,876

Charles R. Booth

B015

Biotronics Technologies, Inc.

12020 West Ripley Avenue
Wauwatosa, WI 53226
414-475-7653

Fiber Fluorometry for On-Line Chemical Analysis of Nutrient Solutions

89-1-12.12-7653	NASA KSC
I: NAS10-11656	$ 49,546

Kenneth J. Schlager

B016

Bomed Medical Manufacturing

15 Musick
Irvine, CA 92718
714-770-5322

* Continuous Non-Invasive Determination of Ventricular Parameters

85-1-12.02-5322	NASA JSC
I: NAS9-17578	$ 47,974
II: NAS9-17809	$492,560

V. Pat Vysin

B017

Bonneville Scientific, Inc.

918 E 900 South
Salt Lake City, UT 84105
801-359-0402

* Six-Component, Robotic, Force-Torque Sensor

83-1-05.03-7981	NASA LaRC
I: NAS1-17586	$ 50,000
II: NAS1-17997	$380,031

Allen R. Grahn

A VLSI Digital Tester Using a Single Custom Chip per Individual Pin

86-1-06.13-0402	NASA JPL
I: NAS7-979	$ 50,000

Allen R. Grahn

B018

Boundary Technologies, Inc.

366 Lexington Drive
Buffalo Grove, IL 60089
312-537-9399

* Fabrication and Thermal Cycle Testing of Long-Life Radiator Coatings

88-1-04.07-9399	NASA JSC
I: NAS9-18087	$ 44,832
II: NAS9-T B D	$ T B D

Robert S. Alwitt

B019

Breault Research Organization, Inc.

4601 E First Street
Tucson, AZ 85711
602-795-7885

Three-Axis, All-Rotary-Motion, Numerically-Controlled Optical Generator

88-1-08.17-7885	NASA GSFC
I: NAS5-30498	$ 49,425

Robert Parks

B020

Brimrose Corporation of America

5020 Campbell Boulevard, Bldg 1
Baltimore, MD 21236
301-529-5800

An Analog-Digital, Electro-Optical System for Real-Time X-Ray Imaging

84-1-08.07-5800B	NASA GSFC
I: NAS5-28640	$ 50,000

Ronald G. Rosemeier

Failure Prediction by a Novel Non-Destructive X-Ray Technique

86-1-04.11-5800	NASA LaRC
I: NAS1-18425	$ 49,868

Ronald G. Rosemeier

Physical Vapor Transport and Crystal Growth of Tellurium: a Novel Acousto-Optic Material

88-1-15.01-5800	NASA LeRC
I: NAS3-25613	$ 50,000

S. B. Trivedi

Novel in Situ Technique to Visualize Convection on Solid-Liquid Interfaces

89-1-15.02-5800	NASA LeRC
I: NAS3-25874	$ 50,000

S. B. Trivedi

B021

Bruce G. Jackson and Associates

17629 El Camino Real, Suite 207
Houston, TX 77058
713-486-7817

Automation of Requirements Development Utilizing a Desk Top Computer

86-1-07.11-7817	NASA JPL
I: NAS7-982	$ 49,653

David L. Hottman

B022

Business and Technological Systems - *Now Coleman Research Corp.*

14504 Greenview Dr., Suite 500
Laurel, MD 20708
301-470-3839

Spacecraft Sensor Alignment Estimation

85-1-07.07-8800	NASA GSFC
I: NAS5-29268	$ 49,300

Malcolm D. Shuster

C

C001

CCE - Robotics

P.O. Box 9315
Berkeley, CA 94709
415-652-4420

Cellulose Conversion for CELSS

84-1-12.05-0298	NASA ARC
I: NAS2-12096	$ 47,683

Mark J. Malachowski

* Positioning Beam Rider Module for Articulated Robot Manipulator

85-1-05.02-0298	NASA LeRC
I: NAS3-24866	$ 50,000
II: NAS3-25197	$500,000

Mark J. Malachowski

High-Resolution Electronic Photography

87-1-12.05-0298B	NASA JSC
I: NAS9-17935	$ 50,000

Mark J. Malachowski

C002

CCS Associates

P.O. Box 563
Bethel Park, PA 15102
412-221-0999

Intercooling and Reheat with Heat Pipes

85-1-01.06-0999	NASA LeRC
I: NAS3-24850	$ 52,576

Calvin C. Silverstein

Capillary-Pumped Thermal Conditioning System

85-1-09.11-0999	NASA MSFC
I: NAS8-36265	$ 52,411

Calvin C. Silverstein

Conceptual Design of Ramfan Hypersonic Engine

88-1-01.05-0999	NASA LeRC
I: NAS3-25616	$ 49,920

Calvin C. Silverstein

C003

CFD Research Corporation

3325 - D Triana Boulevard
Huntsville, AL 35805
205-536-6576

Turbulent Spray Combustion in Liquid Rocket Engine Components

87-1-11.03-6576	NASA MSFC
I: NAS8-37619	$ 50,000

Ashok K. Singhal

* A Computer Model for Liquid Jet Atomization in Rocket Thrust Chambers

87-1-11.04-6576	NASA MSFC
I: NAS8-37620	$ 50,000
II: NAS8-38425	$497,977

Andrzej J. Przekwas

Vented Nozzle Concept for Optimum Performance of Launch Vehicles

88-1-09.06-6576A	NASA MSFC
I: NAS8-38041	$ 50,000

Andrzej J. Przekwas

* Advanced CFD Methodology for Fast Flow-Transients Encountered in Non-Linear Combustion Instability

88-1-11.04-6576A	NASA MSFC
I: NAS8-38034	$ 50,000
II: NAS8-38489	$497,723

Andrzej J. Przekwas

Rapid-Mix Concepts for Low-Emission Combustors in Gas Turbine Engines

89-1-01.02-6576	NASA LeRC
I: NAS3-25834	$ 50,000

Clifford E. Smith

A Mathematical Model to Investigate Undercutting and to Optimize Weld Quality

89-1-04.10-6576	NASA MSFC
I: NAS8-38447	$ 50,000

H. Q. Yang

C004

CLS Laser Systems, Inc.

P.O. Box 767
South Windsor, CT 06074
203-528-7171

Improved Heterodyne Receiver for Coherent Lidar Applications

83-1-08.08-7171	NASA LaRC
I: NAS1-17582	$ 49,624

Robert J. Mongeon

C005

CPS Superconductor Corp.

155 Fortune Boulevard
Milford, MA 01757
508-634-3422

Ultra-Rapid Textured Growth of Yttrium-Barium-Cuprate Filaments for Composite HTSC Wire

89-1-04.17-3422A	NASA LeRC
I: NAS3-25876	$ 49,928

John W. Halloran

C006

CSA Engineering, Inc.
560 San Antonio Road, Suite 101
Palo Alto, CA 94306-4682
415-494-7351

Advanced Finite-Elements for Structural Analysis
89-1-04.05-7351 NASA LeRC
I: NAS3-25879 $ 49,860
Warren C. Gibson

C007

CSI, Inc.
1280 Clearmont Street, N.E.
Palm Bay, FL 32905
Last Known Address

Multiple-Band, Near-Field, Antenna Feed System
85-1-14.07-2923 NASA JPL
I: NAS7-948 $ 49,314
H. E. Bartlett

C008

CTK Enterprises
P.O. Box 17879
Anaheim, CA 92817-7879
714-693-9266

Magnetically-Controlled Power Distribution and Control System
87-1-08.15-2960 NASA GSFC
I: NAS5-30274 $ 49,220
Charles T. Kleiner

C009

CVC Products, Inc.
P.O. Box 1886
Rochester, NY 14603-1886
716-458-2550

* High-Temperature, Superconducting Thin-Films for Passive Microwave Devices
88-1-14.09-2550 NASA JPL
I: NAS7-1045 $ 50,000
II: NAS7-T B D $ T B D
Paul H. Ballentine

C010

CVD, Inc.
185 New Boston Street
Woburn, MA 01801
617-933-9243

* Light-Weight Si-SiC Lidar Mirrors
85-1-08.08-9243 NASA LaRC
I: NAS1-18222 $ 49,976
II: NAS1-18476 $457,397
Jitendra Singh Goela

High-Temperature SiC Continuous Fibers
86-1-04.01-9243 NASA LeRC
I: NAS3-25130 $ 45,000
Jitendra Singh Goela

C011

Cadetron, Inc. - *See Autodesk, Inc.*

C012

Cadic, Inc.
7874 SW Nimbus Avenue
Beaverton, OR 97005
Last Known Address

VLSI-State Test Machine
85-1-06.16-7902 NASA JPL
I: NAS7-964 $ 50,000
Mark Acuff

C013

Cambridge Acoustical Associates
54 Rindge Avenue Extension
Cambridge, MA 02140
617-491-1421

* Analytical Model of the Structureborne Interior Noise Induced by a Propeller Wake
83-1-02.08-1421 NASA LaRC
I: NAS1-17570 $ 49,882
II: NAS1-18020 $317,884
Miguel C. Junger

C014

Cambridge Hydrodynamics, Inc.
P.O. Box 1403
Princeton, NJ 08542
609-683-1515

* Numerical Modelling of Turbulence and Combustion Processes
88-1-01.01-1515 NASA LeRC
I: NAS3-25604 $ 49,857
II: NAS3-25942 $395,000
A. Yakhot

C015

Cambridge Research Company
21 Erie Street
Cambridge, MA 02139
617-491-2627

* A Cryogenic, Absolute Radiometer for Earth Radiation Sensing
85-1-08.04-2627 NASA LaRC
I: NAS1-18223 $ 50,000
II: NAS1-18475 $242,023
Peter V. Foukal

* Automated Characterization and Calibration of Ultraviolet Spectrophotometers Using Intensity-Stabilized Lasers
87-1-08.07-2627 NASA GSFC
I: NAS5-30269 $ 50,000
II: NAS5-30631 $499,970
Peter V. Foukal

C016

Candela Laser Corporation
19 Strathmore Road
Natick, MA 01760
Last Known Address

Laser for a Time-Averaged Holographic Interferometer
86-1-01.03-7373 NASA LeRC
I: NAS3-25120 $ 50,000
Harry Ceccon

C017

Cape Cod Research, Inc.
P.O. Box 600
Buzzards Bay, MA 02532
508-759-5911

Hydrogen-Oxygen Monitoring Device
84-1-13.03-5911 NASA KSC
I: NAS10-11146 $ 49,999
Myles Walsh

Solid-State Modulation of Conductive Heat Transfer
86-1-09.07-5911 NASA MSFC
I: NAS8-37315 $ 50,000
Myles Walsh

Improved Electro-Rheological Fluids for Lubricant Viscosity Control
89-1-04.11-5911 NASA GSFC
I: NAS5-30858 $ 50,000
Francis Keohan

C018

Carbotek, Inc.
16223 Park Row, #100
Houston, TX 77084
713-578-8899

* Lunar Oxygen Production from Ilmenite
84-1-15.04-7840 NASA JSC
I: NAS9-17287 $ 50,000
II: NAS9-17605 $592,500
Michael A. Gibson

Aspen Simulations--Lunar Production Facility
84-1-15.04-7840A NASA JSC
I: NAS9-17288 $ 50,000
Michael A. Gibson

C019

Carlow Associates, Inc.
8315 Lee Highway, Suite 410
Fairfax, VA 22031-2269
703-698-6225

Function Allocation Decision Aid
86-1-12.03-6225 NASA JSC
I: NAS9-17725 $ 49,994
Thomas B. Malone

C020

Carnegie Group, Inc.
Five PPG Place
Pittsburgh, PA 15222
412-642-6900

An Expert Advisor for Failure Mode and Effects Analysis
89-1-05.05-6900 NASA JSC
I: NAS9-18310 $ 49,670
David A Hornig

C021

Cascade Microtech, Inc.
P.O. Box 2015
Beaverton, OR 97075-2015
503-626-8245

High-Accuracy Characterization of Monolithic Millimeter-Wave Devices
86-1-14.01-8245 NASA LeRC
I: NAS3-25122 $ 49,737
Eric W. Strid

C022

Castle Technology Corp.
262 West Cummings Park
Woburn, MA 01801
617-933-5634

Increasing Critical Current Densities in High-Tc Superconductors
89-1-04.17-5634 NASA MSFC
I: NAS8-38464 $ 50,000
J. Paul Pemsler

C023

Center for Neurodiagnostic Study
275 Hospital Parkway #530
San Jose, CA 95119
408-225-2979

* Electroencephalographic Monitoring of Complex Mental Tasks
87-1-03.03-2975 NASA LaRC
I: NAS1-18625 $ 49,020
II: NAS1-18847 $413,334
Raul Guisado

C024

Center for Remote Sensing
P.O. Box 9244
McLean, VA 22102
703-848-0800

Improved Antenna for Synthetic Aperture Radar Calibrator
89-1-08.14-0800 NASA JPL
I: NAS7-1084D $ 49,997
Suman Ganguly

C025

Cham of North America, Inc.
1525-A Sparkman Drive
Huntsville, AL 35816
205-830-2620

Computer Model of Thermal Conditioning System for Long-Life Space Craft
85-1-09.11-2620 NASA MSFC
I: NAS8-36270 $ 49,731
Alok K. Majumdar

Improvements in Three-Dimensional, Navier-Stokes, Two-Phase, Combustion Computer Models
86-1-11.03-2620 NASA LeRC
I: NAS3-25123 $ 50,000
Andrzej J. Przekwas

A Coupled Jet-Embedding and Eulerian-Lagrangian Approach to Simulate Reactive Fluid Mechanics
86-1-11.06-2620 NASA MSFC
I: NAS8-37321 $ 50,000
Andrzej J. Przekwas

Computational Methodologies for Convection-Diffusion Phase-Change Problems
87-1-15.03-2620 NASA LeRC
I: NAS3-25331 $ 50,000
C. Prakash

C026

Charles Evans & Associates
301 Chesapeake Drive
Redwood City, CA 94063
415-369-4567

* Microanalytical Characterization of Biogenic Components in Interplanetary Dust
87-1-08.13-4567 NASA ARC
I: NAS2-12818 $ 49,520
II: NAS2-13178 $472,572
Filippo Radicati Di Brozolo

C027
Charles River Analytics, Inc.
55 Wheeler Street
Cambridge, MA 02138
617-491-3474

Three-Dimensional, Dynamic Robot Vision System
85-1-05.04-3474 NASA JSC
I: NAS9-17576 $ 49,927
Greg L. Zacharias

* Expert Systems for Real-Time Monitoring and Fault Diagnosis
87-1-03.07-3474 NASA ARC
I: NAS2-12725 $ 49,458
II: NAS2-13014 $500,000
Alper K. Caglayan

EEG-Based Metric for Flight Deck Workload Assessment
88-1-03.11-3474 NASA LaRC
I: NAS1-18806 $ 48,208
Greg L. Zacharias

A Neural-Net Approach to Space Vehicle Guidance
89-1-09.02-3474 NASA LaRC
I: NAS1-19004 $ 49,600
Alper K. Caglayan

C028
Charles Systems Corp.
820 Heatherway
Ann Arbor, MI 48104
313-668-2567

* Compact, Six Degree-of-Freedom, Force-Reflecting Hand Controller with Cueing of Modes
88-1-09.03-2567A NASA JSC
I: NAS9-18094 $ 49,374
II: NAS9-T B D $ T B D
Heidi N. Jacobus

C029
Chase Consulting, Inc.
3543 Caminito Carmel Landing
San Diego, CA 92130
Last Known Address

Pattern Recognition of Satellite Cloud Imagery for Improved Weather Prediction
85-1-07.06-4539 NASA GSFC
I: NAS5-29269 $ 50,000
Catherine Gautier

C030
Chemical Dynamics Corporation
9560 Pennsylvania Ave.
Upper Marlboro, MD 20772
301-599-1050

Formation and Quenching of Electronically Excited Molecules on Surfaces
85-1-02.01-2145 NASA ARC
I: NAS2-12356 $ 50,000
P. K. Swaminathan

Mechanisms of Energy Accommodation on Catalytic Surfaces
88-1-02.05-1050A NASA ARC
I: NAS2-12969 $ 49,955
B. C. Garrett

Temperature-Dependent, Energy Transfer Recombination on Surfaces
88-1-02.05-1050B NASA JSC
I: NAS9-18088 $ 49,989
P. K. Swaminathan

C031
Chemical Testing & Consulting Corporation

64 Pinckney Street, Unit #3
Boston, MA 02114
617-720-0966

Chemical Sensor System for the Identification of Organic Compounds in Water
89-1-12.09-0966 NASA MSFC
I: NAS8-38446 $ 49,750
Edward Sinofsky

C032
Chemtech Systems
P.O. Box 1067
Burlington, MA 01803
617-273-4170

Super-Sensitive Atmospheric Sensors
86-1-12.01-4170 NASA MSFC
I: NAS8-37324 $ 50,000
M. L. Gopikanth

C033
Chi Systems, Inc.
Gwynedd Plaza III
Spring House, PA 19477
215-542-1400

Capturing Space Crew Representations of Control Systems with Multidimensional Scaling
89-1-12.05-1400 NASA JSC
I: NAS9-18311 $ 50,000
Wayne W. Zachary

C034
Chronometrics, Inc.
11931 Tech Road
Silver Spring, MD 20904
Last Known Address

Orbital Debris Monitor
83-1-08.16-3507 NASA JSC
I: NAS9-17028 $ 50,000
Siegfried Auer

C035
Chronos Research Labs, Inc.
41866 Sorrento Valley Boulevard #H
San Diego, CA 92121
619-455-8200

Polarization Stability of a Pyroelectric Conversion Material
84-1-09.10-1447 NASA JPL
I: NAS7-936 $ 49,953
Randall B. Olsen

* Pyroelectric Belt Radiator
85-1-09.09-1447 NASA JPL
I: NAS7-946 $ 49,329
II: NAS7-998 $467,000
Randall B. Olsen

Polymer with Biaxial Strength for Pyroelectric Applications
87-1-04.06-8200B NASA GSFC
I: NAS5-30270 $ 49,974
Randall B. Olsen

Low-Cost Space Power Generation
88-1-15.04-8200 NASA LeRC
I: NAS3-25611 $ 50,000
Randall B. Olsen

C036

Cleveland Crystals, Inc.

19306 Redwood Avenue
Cleveland, OH 44110
216-486-6100

Tunable, BBO-AgGaSe2, Optical Parametric Oscillator System
88-1-08.08-6100 NASA JPL
I: NAS7-1061 $ 50,000
Gary C. Catella

C037

Coherent Research, Inc.

100 E Washington Streeet
Syracuse, NY 13202
315-426-0929

* A Knowledge-Based Expert System to Coordinate CAD/CAE with Integration and Test
87-1-06.06-0929 NASA JPL
I: NAS7-1014 $ 50,000
II: NAS7-1068 $498,482
Charles D. Stormon

C038

Colorado Research Development Corp.

621 17th Street, Suite 1620
Denver, CO 80293-1601
303-293-8633

* Narrow-Bandgap, Semiconducting Silicides: Intrinsic Infrared Detectors on a Silicon Chip
85-1-08.06-4131 NASA JPL
I: NAS7-950 $ 49,415
II: NAS7-994 $445,000
John E. Mahan

Asynchronous, Multilevel, Adaptive Methods for Partial Differential Equations on the Navier-Stokes Computer
87-1-06.01-4131 NASA LaRC
I: NAS1-18606 $ 44,334
Daniel J. Quinlan

Parallel, Multilevel, Adaptive Methods for Flows in Transition
89-1-06.01-8633 NASA LaRC
I: NAS1-19016 $ 47,500
Chaoqun Liu

C039

Complere, Inc.

P.O. Box 1697
Palo Alto, CA 94302
415-321-5620

Scanning Laser Velocimeter for Turbulence Research
83-1-02.03-5631 NASA LaRC
I: NAS1-17572 $ 44,861
F. K. Owen

* Laser Velocimeter Potential in Hypersonic Flows
86-1-02.07-5630 NASA ARC
I: NAS2-12556 $ 49,258
II: NAS2-12853 $494,200
F. K. Owen

* Measurements of Vortex Flow Fields
86-1-02.09-5630 NASA ARC
I: NAS2-12555 $ 48,116
II: NAS1-18667 $499,552
F. K. Owen

A Laser-Based Transition Detector
87-1-02.06-5630 NASA ARC
I: NAS2-12781 $ 49,389
F. K. Owen

* An Optical Angle-of-Attack Sensor
87-1-08.20-5630 NASA ARC
I: NAS2-12854 $ 47,070
II: NAS2-13202 $495,550
F. K. Owen

C040

Computational Mechanics Company

7701 N. Lamar Street, Suite 200
Austin, TX 78752-1022
512-467-0618

* Adaptive Computational Methods for Fluid-Structure Interaction in Internal Flow
85-1-01.01-0618 NASA LeRC
I: NAS3-24849 $ 50,000
II: NAS3-25196 $455,000
Jon M. Bass

* Adaptive Schemes for Complex, Subsonic, Three-Dimensional Flow Problems in Arbitrary Domains
87-1-02.01-0618 NASA MSFC
I: NAS8-37621 $ 47,387
II: NAS8-38404 $489,099
Jon M. Bass

* Pre- and Post-Processing Techniques for Determing Goodness of Computational Meshes
88-1-02.01-0618 NASA MSFC
I: NAS8-38046 $ 49,968
II: NAS8-T B D $ T B D
Jon M. Bass

* A New Approach for Solving Navier-Stokes Equations on Unstructured Grids Based on Adaptive Methods
88-1-02.08-0618 NASA ARC
I: NAS2-13000 $ 50,000
II: NAS2-T B D $ T B D
Jon M. Bass

C041

Computational Mechanics Corporation

601 Concord St., Suite LLC
Knoxville, TN 37919
615-546-3664

* An Arbitrary-Grid, CFD Multi-Tasking Code for Configuration Aerodynamics Analysis
85-1-02.07-5494 NASA ARC
I: NAS2-12347 $ 49,932
II: NAS2-12568 $482,173
P. D. Manhardt

C042

Computer Algorithm Development

2806 A Nueces
Austin, TX 78705
512-474-6511

Active Detection and Tracking Sensor for Passive Targets
89-1-05.09-6511 NASA MSFC
I: NAS8-38458 $ 50,000
Richard E. Shultz

C043

Computer Resource Consultants

87 Elsie Street
San Francisco, CA 94110
415-821-3771

Intelligent Interface System
85-1-03.03-8221A NASA ARC
I: NAS2-12361 $ 49,781
Morgan P. Caffrey

C044

Computer Science Innovations

1280 Clearmont Street, N.E.
Palm Bay, FL 32905
Last Known Address

Electronically Controllable Reflective Lens
85-1-14.04-2923 NASA LeRC
I: NAS3-24739 $ 49,314
Robert J. White

C045

Computer Technology Associates - *Now named CTA, Inc.*

5670 Greenwood Plaza, Suite 200
Englewood, CO 80111
303-889-1200

* Ada Packages for Computer Access to Coordinate-Referenced Data
83-1-07.02-9800 NASA GSFC
I: NAS5-27993 $ 49,022
II: NAS5-28653 $448,000
Paul L. Baker

Expert Systems for Extraction of Data System Requirements
84-1-07.08-5300 NASA JPL
I: NAS7-940 $ 49,919
Robert W. Hobbs

Applicability of Expert System Techniques to Space Research
85-1-07.05-1200 NASA GSFC
I: NAS5-29266 $ 50,000
Robert W. Hobbs

Knowledge Base Dictionary for Integration of Engineering and Operations Systems
86-1-06.07-1200 NASA JPL
I: NAS7-977 $ 49,934
Anthony J. Winkler

C046

Computer Technology, Inc. - *Subsidiary of SPS, Inc. of New York City*

328 Avenida De Diego, Suite 301
Santurce, PR 00910
212-686-3790

Reverse Engineering for Information Systems
86-1-07.08-3790A NASA JPL
I: NAS7-980 $ 46,918
Peter Goehner

C047

Conax Buffalo Corporation

2300 Walden Avenue
Buffalo, NY 14225
716-684-4500

* Durable, Fast-Response, Optical-Fiber Temperature Sensor Usable from 200 to 1700C
86-1-01.03-4500 NASA LeRC
I: NAS3-25128 $ 49,872
II: NAS3-25451 $498,564
George W. Tregay

C048

Construction Technology Laboratories

5420 Old Orchard Road
Skokie, IL 60077
312-965-7500

Feasibility Study for Lunar Cement Production
89-1-04.18-7500 NASA JSC
I: NAS9-18312 $ 50,000
T. D. Lin

C049

Consultants Choice, Inc.

8800 Roswell Road, Suite 130
Atlanta, GA 30350
404-992-8340

Symbolic Imagery Management System
87-1-07.08-8430 NASA GSFC
I: NAS5-30271 $ 47,035
Michael D. Condon

C050

Continuum Dynamics, Inc.

P.O. Box 3073
Princeton, NJ 08543
609-734-9282

* Rotary Wing Hover Performance Prediction
83-1-03.07 9282 NASA ARC
I: NAS2-11730 $ 48,539
II: NAS2-12148 $497,143
Donald B. Bliss

* Advanced Free-Wake Analysis for Unsteady Airloads on Rotors
86-1-02.10-9282 NASA ARC
I: NAS2-12554 $ 49,645
II: NAS2-12838 $495,416
Todd R. Quackenbush

* Optimization of Rotor Performance Using a Free Wake Analysis
87-1-02.10-9282 NASA ARC
I: NAS2-12789 $ 48,885
II: NAS2-13092 $494,378
Todd R. Quackenbush

Main-Rotor-Wake and Tail-Rotor Interaction Noise
87-1-02.12-9282 NASA LaRC
I: NAS1-18607 $ 47,727
Alan J. Bilanin

* New Computational Method for Aeroelastic Problems in Turbomachines
88-1-01.06-9282 NASA LeRC
I: NAS3-25574 $ 49,909
II: NAS3-T B D $ T B D
Alan J. Bilanin

* An Aircraft-Mounted, Rainfall-Rate Instrument
88-1-03.02-9282 NASA LaRC
I: NAS1-18819 $ 48,240
II: NAS1-19100 $471,505
Alan J. Bilanin

General Flow-Field Analysis Methods for Helicopter Rotor Aeroacoustics
89-1-02.09-9282 NASA LaRC
I: NAS1-19023 $ 47,959
Alan J. Bilanin

C051

Continuum, Inc.

4715 University Drive #118
Huntsville, AL 35805
Last Known Address

* Transient and Three-Dimensional Rocket Engine Analysis
83-1-11.06-9310 NASA MSFC
I: NAS8-35846 $ 49,450
II: NAS8-35260 $499,804
Richard C. Farmer

C052

Cordec Corporation

8270-B Cinder Bed Road -- P.O. Box 188
Lorton, VA 22079-0188
703-550-8044

Fabrication of Precision Wires from Ion-Plated, Aluminum-Graphite Composite Tape
84-1-04.07-7227 NASA JSC
I: NAS9-17284 $ 48,926
Raymond J. Weimer

Microstructurally Toughened, Intermetallic Matrix Composites
89-1-04.04-8044 NASA LeRC
I: NAS3-25838 $ 49,880
Raymond J. Weimer

New Fabrication Methods for Dimensionally Stable, Graphite-Magnesium Space Structures
89-1-04.13-8044 NASA JSC
I: NAS9-18313 $ 49,950
Raymond J. Weimer

C053

Covalent Associates, Inc.

52 Dragon Court
Woburn, MA 01801
617-938-1140

* Thermally Stable Electrolytes for Chargeable Lithium Batteries
84-1-10.08-1140 NASA JPL
I: NAS7-944 $ 74,690
II: NAS7-967 $464,000
Victor R. Koch

High-Cycle-Life, Rechargeable, Aluminum Batteries Employing Novel Organic Cathodes
87-1-10.02-1140 NASA JPL
I: NAS7-1023 $ 50,000
Victor R. Koch

C054

Creare, Inc.

P.O. Box 71
Hanover, NH 03755
603-643-3800

* A Reliable, Long-Lifetime, Closed-Cycle Cyrocooler for Space
84-1-09.12-3800B NASA GSFC
I: NAS5-28642 $ 47,147
II: NAS5-29436 $490,000
Herbert Sixsmith

* An All-Metal, Compact, Heat Exchanger for Spaceborne Cryocoolers
85-1-09.07-3800 NASA GSFC
I: NAS5-29277 $ 49,300
II: NAS5-30172 $499,992
Herbert Sixsmith

* High-Heat-Flux, Evaporating Heat Exchanger for Zero Gravity
85-1-09.14-3800 NASA JSC
I: NAS9-17574 $ 49,128
II: NAS9-17810 $499,342
Javier A. Valenzuela

* A Long-Life Centrifugal Pump for Helium II Transfer
86-1-08.06-3800 NASA ARC
I: NAS2-12560 $ 49,766
II: NAS2-12950 $499,810
Herbert Sixsmith

* Low-Film-Resistance Condenser for Operation in a Gravity-Free Environment
86-1-09.13-3800 NASA JSC
I: NAS9-17742 $ 49,300
II: NAS9-17989 $498,900
Javier A. Valenzuela

* Numerical Modeling Tools for Chemical Vapor Deposition
86-1-15.06-3800 NASA LaRC
I: NAS1-18413 $ 48,970
II: NAS1-18648 $497,587
Thomas Jasinski

* Multigrid Solution of Internal Flows Using Unstructured, Solution-Adaptive Meshes
87-1-01.01-3800 NASA LeRC
I: NAS3-25405 $ 49,998
II: NAS3-25785 $500,000
Wayne Smith

* Compact, High-Performance Heat Exchangers for Space Station Thermal Control
87-1-09.04-3800 NASA JSC
I: NAS9-17936 $ 49,880
II: NAS9-18167 $499,823
Javier A. Valenzuela

* Three-Phase Inverter for Ultra-High-Speed Motor Drive
87-1-09.05-3800 NASA GSFC
I: NAS5-30272 $ 49,784
II: NAS5-30630 $491,293
Javier A. Valenzuela

* A 4K Stirling Cryocooler Demonstration
88-1-08.12-3800 NASA JPL
I: NAS7-1041 $ 49,268
II: NAS7-T B D $ T B D
W. Dodd Stacy

Advanced Modeling of Combustion Systems
89-1-02.01-3800 NASA LaRC
I: NAS1-19024 $ 48,945
Jayathi Y. Murthy

Magnetic Bearings for Miniature, High-Speed Turbomachines
89-1-09.12-3800A NASA GSFC
I: NAS5-30854 $ 48,968
Herbert Sixsmith

Condenser Design for Alkali-Metal Thermoelectric Conversion Systems
89-1-09.13-3800 NASA MSFC
I: NAS8-38436 $ 49,901
Christopher J. Crowley

Numerical Modeling of Particle Formation and Growth During Chemical Vapor Deposition
89-1-15.03-3800 NASA LaRC
I: NAS1-19029 $ 49,919
Thomas J. Jasinski

C055

Creative Enterprises
10323 Rue Finistere
San Diego, CA 92131
Last Known Address

An Expert System for Space Power Design
84-1-10.07-5030 NASA LeRC
I: NAS3-23900 $ 49,293
Ralph S. Cooper

C056

Cree Research, Inc.
2810 Meridian Parkway #176
Durham, NC 27713
919-361-5709

* High-Temperature, Silicon Carbide, Power MOSFET
88-1-01.03-5709A NASA LeRC
I: NAS3-25607 $ 49,529
II: NAS3-25956 $483,000
John W. Palmour

C057

Cryolab, Inc.
4175 Santa Fe Road
San Luis Obispo, CA 93401
805-541-2796

* Cost-Effective Use of Liquid Nitrogen in Cryogenic Wind Tunnels
85-1-02.02-2796A NASA LaRC
I: NAS1-18216 $ 49,489
II: NAS1-18481 $486,425
Glen E. Mcintosh

C058

Crystal Research
1441 Sunnyside Terrace
San Pedro, CA 90732
213-831-0760

Miniaturized Fiber-Pulling Apparatus for Producing Single-Crystal-Core Glass Fibers in Microgravity
87-1-15.01-0760 NASA LeRC
I: NAS3-25400 $ 49,316
Paul J. Shilchta

C059

Crystallume
3180 Porter Drive, Suite 2
Palo Alto, CA 94304
415-494-0660

Diamond Thin-Films for Detectors
87-1-08.16-0660 NASA GSFC
I: NAS5-30273 $ 50,000
Michael Pinner

D

D001

DCW Industries, Inc.
5354 Palm Drive
La Canada, CA 91011
818-790-3844

Wiener-Hermite Simulation of Turbulence
84-1-02.01-3844 NASA ARC
I: NAS2-12103 $ 50,000
David C. Wilcox

D002

DSET Laboratories, Inc.
Box 1850 Black Canyon Stage I
Phoenix, AZ 85029
602-465-7356

Thermal Control Coatings for Composite Structures
88-1-04.03-7356R NASA LaRC
I: NAS1-18825 $ 50,000
John E. Brzuskiewicz

D003

DWA Composite Specialties, Inc.
21119 Superior Street
Chatsworth, CA 91311-4393
818-998-1504

High-Temperature, Aluminum-Bronze Matrix Composites
84-1-04.01-1504 NASA LeRC
I: NAS3-23897 $ 48,480
Edward C. Supan

* Space Structures Concepts and Materials
84-1-04.13-1504 NASA MSFC
I: NAS8-35264 $ 47,837
II: NAS8-37257 $498,000
Edward C. Supan

* Electronic Component Temperature Control Using Metal-Matrix Composites
84-1-09.05-1504 NASA LeRC
I: NAS3-24245 $ 49,818
II: NAS3-24896 $472,000
Edward C. Supan

* Composite Structural Elements with Integral End Fittings
85-1-04.04-1504 NASA MSFC
I: NAS8-36264 $ 49,887
II: NAS8-37346 $497,983
Timothy A. Loftin

* End Fittings for Hinged and Rigid Joints between Graphite-Aluminum Tubular Elements
85-1-04.11-1504 NASA JSC
I: NAS9-17570 $ 49,745
II: NAS9-17805 $497,462
Timothy A. Loftin

* Composite Heat-Pipe Concepts Using Pitch-Graphite/Metal Composites
85-1-09.10-1504 NASA JSC
I: NAS9-17571 $ 49,959
II: NAS9-17806 $498,256
Timothy A. Loftin

Body-Mounted Radiators on Space Structures
85-1-09.19-1504 NASA MSFC
I: NAS8-36261 $ 49,854
Timothy A. Loftin

* Ultra-Low-CTE, Discontinuous, Metal Matrix Composite Space Truss
87-1-04.05-1504 NASA JSC
I: NAS9-17938 $ 49,954
II: NAS9-18168 $500,000
Olin Hudson

D004
Daedalus Enterprises, Inc.
P.O. Box 1869
Ann Arbor, MI 48106
313-769-5649

* Airborne Multispectral Scanner to Measure Ocean Biomass
83-1-08.15-5649 NASA ARC
I: NAS2-11737 $ 49,951
II: NAS2-12116 $476,799
Frederick G. Osterwisch

* Portable Infrared Emission Spectrometer
86-1-08.26-5649 NASA JPL
I: NAS7-988 $ 49,436
II: NAS7-1030 $486,000
James P. Lehotsky

* Airborne Multispectral Scanner to Measure Characteristics of Fires
86-1-08.29-5649 NASA ARC
I: NAS2-12562 $ 49,457
II: NAS2-13036 $539,000
Frederick G. Osterwisch

Three-Dimensional Laser Imager
87-1-05.01-5649 NASA GSFC
I: NAS5-30275 $ 49,487
Scott L. Strodtman

* Portable, Multispectral, Thermal Infrared Camera
87-1-08.06-5649 NASA JPL
I: NAS7-1010 $ 49,260
II: NAS7-1063 $466,031
Frederick G. Osterwisch

* Interferometric Imaging and Frequency Estimation of Surface Vibration Patterns
88-1-03.06-5649 NASA ARC
I: NAS2-12889 $ 49,970
II: NAS2-T B D $ T B D
Karl G. Wesolowicz

Feasibility of Modifying a Thermal Scanner to Measure Lava Flow Characteristics
88-1-08.08-5649A NASA JPL
I: NAS7-1054 $ 49,958
James P. Lehotsky

D005
Dataflow Computer Corp.
85 East India Row
Boston, MA 02110
617-484-8932

Program Mapping Strategies for Multiprocessor Computers
89-1-06.06-2748A NASA ARC
I: NAS2-13165 $ 49,150
Jack B. Dennis

D006
Datawise, Inc.
1915 E Colonial Drive, Suite 22
Orlando, FL 32803
305-894-7701

Automated Database Design Methodology
87-1-06.02-7701 NASA LaRC
I: NAS1-18621 $ 50,000
Kathryn C. Kinsley

D007
David Hall Consulting
752 Peakskill Drive
Sunnyvale, CA 94087
408-773-1355

Integrated Design System for High-Altitude, Long-Endurance Aircraft for Micro-Computers
87-1-03.04-9024 NASA ARC
I: NAS2-12773 $ 50,000
David W. Hall

D008
Deacon Research
2440 Embarcadero Way
Palo Alto, CA 94303
415-493-6100

Simultaneous Temperature, Density, and Flow Diagnostics for Aeropropulsion Systems
87-1-01.03-1520 NASA LeRC
I: NAS3-25401 $ 47,768
Anthony O'Keefe

Stimulated Brillouin Diagnostics of Hypersonic Flow
87-1-02.06-1520 NASA JSC
I: NAS9-17937 $ 49,933
Anthony O'Keefe

* Technique to Evaluate UV-Induced Degradation of Space Optics
88-1-08.17-1520 NASA GSFC
I: NAS5-30457 $ 49,979
II: NAS5-30881 $480,675
M. H. Bakshi

Remote Measurement System for Arc-Jet Temperature and Density
89-1-02.04-1520 NASA ARC
I: NAS2-13172 $ 49,773
Douglas Bamford

D009
Decision Science Consortium
1895 Preston White Drive, Suite 300
Reston, VA 22091
703-620-0660

* Aeronautical Human Factors Research
87-1-03.03-0660 NASA ARC
I: NAS2-12795 $ 47,913
II: NAS2-13056 $486,959
Marvin S. Cohen

D010

Defense Research Technologies

3454 Hungerford Drive
Rockville, MD 20850
301-762-3077

Acousto-Fluidic Noise Generator for Aircraft Component Structure Testing

88-1-02.12-3077	NASA LaRC
I: NAS1-18820	$ 49,062

Allen B. Holmes

D011

Defense Systems, Inc.

7903 Westpark Drive
McLean, VA 22102
703-883-1497

* Low-Power Spectrum Analysis and Real-Time Data Compression

84-1-07.06-1000	NASA GSFC
I: NAS5-28674	$ 49,809
II: NAS5-29432	$207,000

Donald L. Starkey

* Standard Gas Satellite

87-1-09.09-1000	NASA GSFC
I: NAS5-30276	$ 49,998
II: NAS5-30618	$485,714

Richard Fleeter

D012

Del-Tech, Inc.

703 Middle Ground Boulevard
Newport News, VA 23606
Last Known Address

Application of Parameter Extraction at Extreme Angles of Attack

84-1-03.05-8747	NASA LaRC
I: NAS1-17933	$ 29,992

Robert T. Taylor

D013

Delta G Corporation

9960-A Glenoaks Blvd
Sun Valley, CA 91352
818-767-4000

High-Temperature, Hostile-Environment Instruments Manufactured by CVD

89-1-01.03-4888	NASA LeRC
I: NAS3-25826	$ 49,984

Robert A. Holzl

D014

Demografx

10720 Hepburn Circle
Culver City, CA 90232
213-837-2985

Application of High-Performance Digital Video to Computer Storage

89-1-06.06-2985	NASA ARC
I: NAS2-13164	$ 47,895

Gary Demos

D015

Detector Technology, Inc.

P.O. Box K-300
Brookfield, MA 01506
508-867-5411

* Large-Area Microchannel Plate Manufacture

85-1-08.07-4030	NASA GSFC
I: NAS5-29274	$ 50,000
II: NAS5-30084	$499,950

Peter W. Graves

Manufacturing Large Area, High-Gain Microchannel Plates

88-1-08.13-5411	NASA GSFC
I: NAS5-30456	$ 45,576

Thomas J. Loretz

D016

Dieseldyne Corporation

3044 Middleboro Road
Morrow, OH 45152
513-899-3226

An Advanced Heat Rejection System for an AVCD Engine in a High-Altitude Research Platform

89-1-03.08-3226B	NASA ARC
I: NAS2-13131	$ 42,650

Richard P. Johnston

D017

Digital Analysis Corporation

1889 Preston White Drive
Reston, VA 22091
703-476-5900

* Communications for Distributed and Concurrent Processing on Microcomputers

85-1-07.10-0396	NASA GSFC
I: NAS5-29273	$ 49,588
II: NAS5-30085	$500,000

John Roy Tole

D018

Digital Signal Corporation

8003 Forbes Place
Springfield, VA 22151
703-321-9200

* Improvement of Range of Coherent Laser Radar

87-1-05.01-4910	NASA LaRC
I: NAS1-18640	$ 49,986
II: NAS1-18890	$484,000

Steve Kenyon

Integrated, Fiber-Optic-Coupled, Proximity Sensor for Robotic End Effectors and Tools

87-1-05.01-4910A	NASA JPL
I: NAS7-1004	$ 49,995

Anthony R. Slotwinski

A Multiple-Read, SAW-Tag Inventory System

88-1-12.06-9200	NASA JSC
I: NAS9-18089	$ 49,935

John Cater

Wavelength Diplexed, Fiber-Coupled, Coherent Laser Radar Measurement System

89-1-05.01-9200	NASA LaRC
I: NAS1-19020	$ 49,560

Anthony R. Slotwinski

D019
Dimension Technologies, Inc.
176 Anderson Avenue
Rochester, NY 14607
716-442-7450

A High-Resolution Autostereoscopic Display
89-1-06.06-7450 NASA ARC
I: NAS2-13177 $ 47,060
Jesse B. Eichenlaub

D020
Direct Current Light
15116 Gerkin
Lawndale, CA 90260
213-973-5801

Applications of an Automatic Inventory and Personnel Tracking System
88-1-12.05-5801 NASA JSC
I: NAS9-18090 $ 49,530
Stephen Dale Smith

D021
Displaytech, Inc.
2200 Central Avenue
Boulder, CO 80301
303-449-8933

Multicolor Flat-Panel Display Using Tunable Birefringence Filters
88-1-09.03-8933 NASA JSC
I: NAS9-18091 $ 49,743
Mark A. Handschy

D022
Down To Earth
2039 Shattuck Avenue #402
Berkeley, CA 94704
415-548-1262

Modular ECLSS for a Mid-Deck Animal Habitat Testbed
87-1-12.06-1262 NASA ARC
I: NAS2-12820 $ 49,820
Richard C. Mains

D023
Dr. Murray S. Cohen and Associates
103 Washington Street, Suite 305
Morristown, NJ 07960
Last Known Address

Protecting Steel Structures with Polymers That Expand When Cured
84-1-04.12-4495 NASA KSC
I: NAS10-11141 $ 50,000
Murray S. Cohen

D024
Dynacom Company
1417 Coffeyville Tr.
Plano, TX 75023
214-272-0515

Multiple Access Communication with Noise Cancellation
83-1-14.03-0515 NASA JSC
I: NAS9-17027 $ 45,170
Timothy R. Minor

D025
Dynamic Analysis & Testing
2231 Faraday Avenue, Suite 103
Carlsbad, CA 92008
619-931-9511

Propeller-Wake-Induced, Structure-Borne Interior Noise
87-1-01.02-9511 NASA LeRC
I: NAS3-25338 $ 49,915
C. Thomas Savell

D026
Dynamic Microsystems
475E Cannon Green Drive
Goleta, CA 93117
805-961-4974

A VLSI Three-Dimensional Processor for Advanced Robotic Manipulation
89-1-05.06-3729 NASA JPL
I: NAS7-1096 $ 49,886
Yulan Wang

A Precise, Force-Controlled Robotic System
89-1-05.06-3729A NASA JPL
I: NAS7-1086 $ 49,976
Yulan Wang

D027
Dynamics Technology, Inc.
21311 Hawthorne Boulevard, Suite 300
Torrance, CA 90503
213-543-5433

* Fiber-Optic Magnetometer for Spacecraft Applications
85-1-08.10-5433 NASA JPL
I: NAS7-960 $ 50,000
II: NAS7-1001 $457,000
C. Michael Dube

E

E001
E-Tek Dynamics, Inc.
1885 Lundy Avenue
San Jose, CA 95131
408-532-6300

Robot Vision Using Multiaperture Optics
83-1-05.01-1820 NASA JSC
I: NAS9-17026 $ 49,414
M. L. Kao

Fiber-Optic Links for 30/20 GHz Satellite Communication Terminal
83-1-14.03-1820 NASA LeRC
I: NAS3-23786 $ 49,660
J. J. Pan

* Tunable Laser Diode and Optical Phase-Locked Loop for Lidar Tracking and Sensors
86-1-09.16-3226A NASA JSC
I: NAS9-17739 $ 49,767
II: NAS9-17992 $488,950
J. J. Pan

* Microminiature Electro-Optic Switching Matrix Module
86-1-13.04-3226 NASA KSC
I: NAS10-11375 $ 49,801
II: NAS10-11515 $482,141
J. J. Pan

* High-Performance, Millimeter-Wave Microstrip Circulators and Isolators
86-1-14.07-3226A NASA JPL
I: NAS7-991 $ 49,704
II: NAS7-1035 $225,612
J. J. Pan

Microwave Fiber-Optic Link for Satellite Communications and Antenna Remoting
87-1-13.02-3226 NASA KSC
I: NAS10-11460 $ 49,854
J. J. Pan

E002
ECO - *See Tracer Technologies*
20 Assembly Square Drive
Somerville, MA 02145
617-776-6610

* Small, High-Rate Battery for Distress Transmitters
83-1-10.08-7010 NASA GSFC
I: NAS5-27994 $ 49,765
Fraser Walsh

A New Class of High-Performance Lithium Batteries
85-1-10.06-7010 NASA JPL
I: NAS7-958 $ 49,135
Fraser Walsh

E003
ECON, Inc.
4020 Moorpark Avenue Suite 216
San Jose, CA 95117
408-249-6364

Knowledge-Based-Systems Technologies for Advanced Decision Support System
88-1-06.04-6364 NASA ARC
I: NAS2-12963 $ 49,352
John P. Skratt

E004
EIC Laboratories, Inc.
111 Downey Street
Norwood, MA 02062
617-769-9450

* Electronchromic Panels for Control of Radiant Energy Transfer
84-1-09.04-9450 NASA MSFC
I: NAS8-35267 $ 49,595
II: NAS8-37259 $495,000
R. David Rauh

* Photoelectrochemical Fabrication of Spectroscopic Diffraction Gratings
85-1-08.01-9450 NASA GSFC
I: NAS5-29279 $ 50,000
II: NAS5-30086 $498,548
R. David Rauh

Integrated MOS Chemical Sensors Utilizing Inorganic Insertion Compounds
86-1-08.15-9450 NASA JPL
I: NAS7-986 $ 50,000
R. David Rauh

Photoelectrochemical Fabrication of Spectroscopic Diffraction Gratings in Silicon Carbide
87-1-08.19-9450 NASA GSFC
I: NAS5-30277 $ 50,000
Michael M. Carrabba

* A Variable-Transmittance, Electrochromic Space Suit Visor
87-1-12.01-9450 NASA JSC
I: NAS9-17939 $ 50,000
II: NAS9-18169 $495,000
Stuart F. Cogan

* Long-Cycle-Life, Rechargeable Lithium Batteries
88-1-10.02-9450 NASA JPL
I: NAS7-1042 $ 50,000
II: NAS7-T B D $ T B D
K. M. Abraham

High-Temperature Superconducting Composites
88-1-10.06-9450 NASA GSFC
I: NAS5-30494 $ 50,000
Stuart F. Cogan

* Real-Time Hydrazine Monitoring with Surface-Enhanced Raman Spectroscopy
88-1-13.01-9450A NASA KSC
I: NAS10-11557 $ 50,000
II: NAS10-11669 $311,771
M. W. Rupich

Efficient, Far-Infrared, Inductive Mesh Filters by Photoelectrochemical Etching
89-1-08.12-9450 NASA ARC
I: NAS2-13166 $ 49,605
Michael M. Carrabba

Photoetched Echelle Gratings in Silicon
89-1-08.18-9450 NASA GSFC
I: NAS5-30844 $ 49,165
Michael M. Carrabba

Robust High-Tc Ribbon for Power Transmission
89-1-10.07-9450 NASA JPL
I: NAS7-1092 $ 50,000
James D. Klein

E005
EMEC Consultants
R.D. 3, Roundtop Road
Export, PA 15632
412-325-3260

* Dry Extraction of Silicon and Aluminum from Lunar Ores
85-1-04.13-3260 NASA JSC
I: NAS9-17575 $ 50,000
II: NAS9-17811 $483,125
Rudolf Keller

Production of Oxygen by Electrolysis of Lunar Soil in Molten Salt
89-1-04.18-3260A NASA JSC
I: NAS9-18325 $ 50,000
Rudolf Keller

E006
ENSCO, Inc.
445 Pineda Court
Melbourne, FL 32940
703-321-9000

* Kennedy Space Center Atmospheric Boundary Layer Experiment
87-1-13.08-4122 NASA KSC
I: NAS10-11466 $ 49,890
II: NAS10-11544 $473,663
Gregory E. Taylor

Meterological Monitoring System
89-1-13.03-4122 NASA KSC
I: NAS10-11660 $ 48,066
Gregory E. Taylor

E007
ETC - *Now the RJ Lee Group*
350 Hochberg Road
Monroeville, PA 15146
412-325-1776

Using CCCSEM Cluster and Fractal Analysis Techniques to Characterize Atmospheric Aerosols
86-1-08.07-1776 NASA MSFC
I: NAS8-37313 $ 42,784
Gary S. Casuccio

E008
Earth Space Research, Inc.
3840 Sequoia St.
San Diego, CA 92109
619-273-5049

Software Package to Compute the Incoming and Net Solar Irradiance at the Surface from GOES VISSR Data
87-1-08.05-5049C NASA JPL
I: NAS7-1005 $ 49,720
Frederick C. Mertz

E009
Eastern Analytical, Inc.
335 Paint Branch Drive
College Park, MD 20742
301-454-7751

Selective Enrichment of Stable Calcium Isotopes Using Laser Techniques
89-1-12.01-7751I NASA JSC
I: NAS9-18314 $ 49,928
Larry J. Moore

E010
Eldetics International, Inc.
3415 Lomita Boulevard
Torrance, CA 90505
213-373-9316

* Cockpit Displays and Cueing Systems Concepts for Operation in an Extended Flight Envelope
86-1-03.08-9316 NASA ARC
I: NAS2-12587 $ 49,939
II: NAS2-12728 $488,875
Robert W. Foltyn

Flow Visualization Study of Delta Wings in Wing-Rock Motion
87-1-02.09-9316 NASA ARC
I: NAS2-12787 $ 49,461
Gerald N. Malcolm

* A Gravity-Induced Loss-of-Consciousness Detection and Recovery System - *Air Force Phase I*
87-1-03.03-8228 NASA ARC
II: NAS2-12985 $498,384
Robert W. Parker

* Aerodynamic Control of NASP-Type Vehicles Through Vortex Manipulation
88-1-02.08-9316B NASA ARC
I: NAS2-12989 $ 49,544
II: NAS2-13196 $460,234
Gerald N. Malcolm

Management System for High-Performance Aircraft
88-1-03.03-9316A NASA LaRC
I: NAS1-18805 $ 49,989
John Hodgkinson

Aerodynamic Control of the F/A-18 Using Forebody Vortex Blowing
89-1-02.06-8228A NASA ARC
I: NAS2-13155 $ 49,420
Gerald N. Malcolm

An Improved Methodology to Assess Departure Susceptibility Versus Agility
89-1-03.03-8228A NASA LaRC
I: NAS1-19009 $ 49,500
Joseph R. Chody

E011
Electrasol Laboratories, Inc.
2326 Fieldingwood Road
Maitland, FL 32751
Last Known Address

Robotic Interface for Vernier Positioning
83-1-05.06-0511 NASA JSC
I: NAS9-17032 $ 50,000
Harold R. Dessau

E012
Electro Design Manufacturing
P.O. Box 2569
Decatur, AL 35602
205-353-3855

Temperature Measurement by Noncontact Method for Czochralski-Type Crystal Growth
87-1-15.01-3855 NASA MSFC
I: NAS8-37622 $ 49,154
Robert D. Young

E013
Electro Magnetic Applications
P.O. Box 260263
Denver, CO 80226-0263
303-980-0070

Triggering of Lightning by Launch Vehicles During Ascent
88-1-13.03-0070A NASA KSC
I: NAS10-11564 $ 49,685
Rodney A. Perala

E014
Electro-Optek Corporation
3152 Kashiwa Street
Torrance, CA 90505
213-534-3666

Molecular Beam Epitaxy of HgCdTe in Space
85-1-15.01-8779 NASA MSFC
I: NAS8-36255 $ 50,060
William S. Chan

* Cryogenically-Cooled InSb JFET
88-1-08.13-3666 NASA GSFC
I: NAS5-30496 $ 48,567
II: NAS5-30909 $495,369
William S. Chan

* Fabrication of Photovoltaic, Laser-Energy Converter by MBE
88-1-10.04-3666 NASA LaRC
I: NAS1-18813 $ 49,300
II: NAS1-19090 $481,150
William S. Chan

E015

Electro-Optics Technology, Inc.

4057 Clipper Court
Fremont, CA 94538
415-651-4022

Multiple-Diode-Pumped Ho:Tm:YAG Planar Ring Laser
89-1-08.08-4022 NASA MSFC
I: NAS8-38441 $ 50,000
David G. Scerbak

E016

Electroformed Nickel, Inc.

283 Winfield Circle
Corona, CA 91720
714-371-4704

High-Temperature, Oxidation-Barrier Coatings for Refractory Metals
89-1-11.01-4707 NASA LeRC
I: NAS3-25837 $ 48,761
Glenn A. Malone

E017

ElectroImpact, Inc.

2721 N.E. Blakeley Street
Seattle, WA 98105
206-525-2403

Eddy Current Repulsion De-Icing Strip
89-1-03.01-2403 NASA LeRC
I: NAS3-25836 $ 49,998
Peter Zieve

E018

Electronic Associates, Inc.

185 Monmouth Parkway
West Long Branch, NJ 07764
201-229-1100

* A Parallel Processor for Simulating Manipulators and Mechanical Systems
88-1-05.03-1100 NASA GSFC
I: NAS5-30497 $ 46,651
II: NAS5-30905 $443,756
George Hannauer

E019

Eltron Research, Inc.

4260 Westbrook Drive
Aurora, IL 60505
312-898-1583

* Electrochemical Generation of Useful Chemical Species from Lunar Materials
86-1-04.12-1583B NASA JSC
I: NAS9-17743 $ 49,969
II: NAS9-17991 $495,000
Anthony F. Sammells

E020

Emerson & Stern Associates, Inc.

10150 Sorrento Valley Rd #210
San Diego, CA 92121
619-457-2526

Voice Input-Output for Flight Management Systems
88-1-03.11-2526 NASA ARC
I: NAS2-12972 $ 49,649
S. E. Hutchins

E021

Energy Optics, Inc.

224 North Campo Street
Las Cruces, NM 88001
505-523-4561

* Dead-Reckoning, Optoelectronic, Intelligent Docking System
84-1-05.04-4561 NASA JSC
I: NAS9-17283 $ 50,000
II: NAS9-17603 $500,000
Steven M. Ward

* Miniature Infrared Data Acquisition and Telemetry System
84-1-08.13-4561 NASA LaRC
I: NAS1-17944 $ 50,000
II: NAS1-18285 $451,000
Steven M. Ward

Non-Flight Equipment Removal Verification Employing IR
86-1-13.08-4561 NASA KSC
I: NAS10-11376 $ 50,000
Charles Maxwell

E022

Energy Research & Generation - *Now Aker Industries*

952 - 57th Street
Oakland, CA 94608
415-658-7248

Light-Weight Linear Alternators for Free-Piston Stirling Power Systems
83-1-10.04-9786 NASA LeRC
I: NAS3-23870 $ 49,995
Glendon M. Benson

Active Refrigeration and Heat-Pump Thermal Control of Spacecraft
84-1-09.11-9785 NASA MSFC
I: NAS8-35271 $ 49,992
Glendon M. Benson

E023

Energy Science Laboratories, Inc.

P.O. Box 85608
San Diego, CA 92138-5608
619-455-4688

* Disposable-Tether Payload Deployment System
83-1-09.06-7039 NASA MSFC
I: NAS8-35843 $ 49,630
II: NAS8-35256 $497,422
Joseph A. Carroll

* A Deployable, 1 MW, Solar Concentrator with Receiver with Heat Storage
84-1-10.04-7039 NASA LeRC
I: NAS3-24397 $ 49,881
II: NAS3-24882 $480,000
Joseph A. Carroll

* Ultrafine Particle and Fiber Production in Micro-Gravity
84-1-15.03-7039 NASA MSFC
I: NAS8-35279 $ 49,623
II: NAS8-37253 $469,000
George W. Webb

Controllable Emittance Coating
86-1-09.07-7039 NASA MSFC
I: NAS8-37316 $ 49,917
James R. Clinton

Composite Regenerator for Stirling Engine
89-1-10.01-4688 NASA LeRC
I: NAS3-25888 $ 49,960
Timothy R. Knowles

E024

Energy and Science Consultants

101 Henry Lee Lane
Grafton, VA 23692
Last Known Address

Laminar Flow Control, Supercritical LFC, and Hybrid (NLF/LFC) Airfoils
84-1-02.02-8218 NASA LaRC
I: NAS1-17950 $ 52,470
Werner Pfenninger

Design of Multi-Element, Natural Laminar Flow Airfoils
84-1-02.02-8218A NASA LaRC
I: NAS1-17949 $ 35,226
Jeffrey K. Viken

E025

Engineering Analysis, Inc.

715 Arcadia Circle
Huntsville, AL 35801-5909
205-533-9391

Calculation of Surface Pressure Fluctuations Based on Time-Averaged, Turbulent Flow Computations
89-1-02.03-9391 NASA MSFC
I: NAS8-38466 $ 49,964
Frank B. Tatom

The Applications of Fractional Calculus to Noise Simulation
89-1-02.09-9391 NASA MSFC
I: NAS8-38452 $ 49,752
Frank B. Tatom

E026

Engineering Analysis, Inc.

Box 1197 Welch Avenue Station
Ames, IA 50010
515-232-3694

* A Robust, Nonequilibrium, Parabolized Navier-Stokes Code
86-1-02.01-4766 NASA ARC
I: NAS2-12552 $ 49,906
II: NAS2-12861 $208,007
Philip E. Buelow

E027

Engineering Development Laboratory

11840 Canon Boulevard, Suite 500
Newport News, VA 23606
804-873-0905

Smart Angle-of-Attack and Angle-of-Sideslip Sensor
87-1-03.07-0905 NASA LaRC
I: NAS1-18662 $ 47,161
Richard E. Campbell

E028

Engineering Mechanics Associates

3820 Del Amo Boulevard, Suite 318
Torrance, CA 90503
213-370-2551

* Methods for Evaluating the Predictive Accuracy of Structural Dynamic Models
87-1-04.10-2551 NASA JPL
I: NAS7-1020 $ 49,896
II: NAS7-1064 $494,478
Timothy K. Hasselman

E029

Engineering Research & Consulting, Inc.

P.O. Box 417
Tullahoma, TN 37388
615-455-9915

* Intelligent Hypertext Systems for Aerospace Knowledge Representation
88-1-03.09-9915 NASA ARC
I: NAS2-12965 $ 48,763
II: NAS2-T B D $ T B D
Z. George Shi

E030

Entech, Inc.

P.O. Box 612246
Dallas-Ft. Worth Airport, TX 75261
214-456-0900

* A Fresnel Lens, Gallium-Arsenide, Photovoltaic Concentrator for Space Applications
85-1-10.02-0900 NASA LeRC
I: NAS3-24871 $ 49,955
II: NAS3-25192 $445,000
Mark J. O'Neill

E031

Epitaxx, Inc.

3490 US Route One
Princeton, NJ 08540
609-452-1188

* A Laboratory-Standard, Indium-Gallium-Arsenide Detector for the 0.5 - 1.7 Micron Spectral Range
86-1-08.04-1188 NASA GSFC
I: NAS5-30043 $ 49,223
II: NAS5-30312 $500,000
Gregory H. Olsen

* High-Performance, Indium-Gallium-Arsenide Detector Arrays for 1.0 - 2.5 Micron Imaging Devices At 300 K
87-1-08.16-1188 NASA GSFC
I: NAS5-30278 $ 49,959
II: NAS5-30627 $497,211
Vladimir S. Ban

High-Gain, Avalanche Photodiode Arrays for Long-Wavelength Applications
88-1-08.01-1188 NASA JPL
I: NAS7-1043 $ 49,909
Gregory H. Olsen

Visible Semiconductor Diode Lasers Grown by Hydride Vapor-Phase Epitaxy
89-1-07.06-1188 NASA LaRC
I: NAS1-19030 $ 49,030
Donald E. Ackley

A 128 X 128 Element Indium-Gallium-Arsenide, IR Detector Array at 300K
89-1-08.01-1188 NASA JPL
I: NAS7-1087 $ 49,949
Gregory H. Olsen

E032

Ergo-Tech Systems, Inc.

6937 Estepa Drive
Tujunga, CA 91042
818-352-1759

Direct Simulation Monte Carlo of Vacuum Plumes
87-1-02.08-1759 NASA MSFC
I: NAS8-37623 $ 49,917
Jose E. Chirivella

Computer Simulation of Transient Operation of Small Bipropellant Engines
89-1-11.06-1759 NASA JPL
I: NAS7-1080 $ 49,966
Jose E. Chirivella

E033

Essex Corporation

1040 Woodcock Road, Suite 227
Orlando, FL 32803
407-894-5090

* Refinements for Eddy Current Techniques
83-1-13.02-4500 NASA MSFC
I: NAS8-35847 $ 49,995
II: NAS8-35261 $436,000
Ronald J. Reiner

Space Adaptation
84-1-12.02-5090A NASA JSC
I: NAS9-17278 $ 50,773
Robert S. Kennedy

Relevance of Visual Accommodation for Performance in Spacecraft
86-1-12.02-5090 NASA JSC
I: NAS9-17745 $ 54,667
Robert S. Kennedy

E034

Excel Technology, Inc.

140-20 Keyland Court
Bohemia, NY 11716
516-563-7067

Tunable Solid-State Cr:ZnWO4 Laser at 1.083 Microns
86-1-08.10-4016 NASA JPL
I: NAS7-984 $ 52,700
Triveni Srinivasan

SIS Detector for 100-Microns Using Thin Films of Bi-Ca-Sr-Cu-O Superconductors
88-1-08.07-7067D NASA LaRC
I: NAS1-18803 $ 49,929
Ramo Rao

E035

Exfluor Research Corporation

P.O. Box 7807
Austin, TX 78713-7807
512-471-1032

* New Perfluoroether Fluids with Excellent Oxidative and Thermal Stabilities
84-1-01.05-3812 NASA LeRC
I: NAS3-23896 $ 50,000
II: NAS3-24856 $449,000
Thomas R. Bierschenk

Evaluation of Several New Perfluoropolyether Copolymers Containing Tetrafluoroethylene Oxide
88-1-04.07-3812 NASA LeRC
I: NAS3-25564 $ 50,000
Timothy J. Juhlke

New Perfluoropolyether Elastomers for Low- and High-Temperatures
89-1-04.11-3812 NASA GSFC
I: NAS5-30809 $ 49,878
Hajimu Kawa

E036

Exotech, Inc.

3935 Beacon Avenue, Suite D
Fremont, CA 94538
415-790-2983

High-Temperature and High-Response Skin Friction Sensor
87-1-08.20-2870 NASA LaRC
I: NAS1-18611 $ 49,914
Ian N. Moyle

E037

Expert-Ease Systems, Inc.

1301 Shoreway Road, Suite 420
Belmont, CA 94002
415-593-3200

* An Expert Flight System Monitor
86-1-03.03-3200 NASA ARC
I: NAS2-12548 $ 49,957
II: NAS2-12822 $481,431
Bjorn Frogner

An Expert System to Troubleshoot Data Management Systems
86-1-05.04-3200 NASA JSC
I: NAS9-17723 $ 49,982
Bjorn Frogner

* Architectures for Dense Multi-Microprocessor Computers
86-1-06.01-3200 NASA LaRC
I: NAS1-18430 $ 49,742
II: NAS1-18674 $469,000
Robert E. Larson

Expert-System-Assisted, Logic-Flowgraph Method for Hardware-Software Interaction Analysis
86-1-13.02-3200 NASA GSFC
I: NAS5-30044 $ 49,871
Joseph M. Holzer

A System Library Facility for Parallel Computers
88-1-06.07-3200 NASA ARC
I: NAS2-12968 $ 48,629
John O'Reilly

E038

Exportech Company, Inc.

P.O. Box 588
New Kensington, PA 15068
412-337-4415

Magnetic Beneficiation of Lunar Soil
88-1-04.11-4415 NASA JSC
I: NAS9-18092 $ 50,000
Robin R. Oder

E039

Extrude Hone Corporation

P.O. Box 527
Irwin, PA 15642
412-863-5900

* Robotic Adaptive Grasping with a Capacitance-Array Tactile Sensor System
88-1-05.04-5900 NASA JSC
I: NAS9-18093 $ 50,000
II: NAS9-T B D $ T B D
Donald G. Risko

F

F001
FTP Software, Inc.
33 Richdale Avenue
Cambridge, MA 02140
Last Known Address

High-Level, Protocol-Oriented Network Monitoring
86-1-07.06-4878 NASA GSFC
I: NAS5-30046 $ 34,117
John L. Romkey

F002
FWG Associates, Inc.
217 Lakewood Drive
Tullahoma, TN 37388
615-455-1982

* Rain-Rate Instrument for Deployment at Sea
88-1-08.02-1982 NASA MSFC
I: NAS8-38040 $ 49,892
II: NAS8-38481 $489,002
Shad Arman

Instrumented-Rocket Wind Profiler
89-1-13.03-1982 NASA MSFC
I: NAS8-38465 $ 49,775
S. Leon Felkins

F003
Failure Analysis Associates
8411 154th Avenue N.E.
Redmond, WA 98052
206-881-1807

* Nonequilibrium Phase Chemistry in High-Temperature Structural Alloys - *(see Flow Systems for Phase I)*
86-1-04.03-8500 NASA LaRC
II: NAS1-18693 $496,300
Rong Wang

F004
Fare, Inc.
7210 Windsor Lane
Hyattsville, MD 20782
301-277-7412

A Composite Material Flywheel for Energy Storage
89-1-04.11-7412 NASA GSFC
I: NAS5-30855 $ 49,410
Douglas M. Ries

F005
Femtometrics - *Originally BC Associates*
1721 Whittier Avenue, Suite A
Costa Mesa, CA 92627
714-722-6239

* High-Sensitivity Particle and Gas Instrument Using the Acoustic-Wave Piezoelectric Crystal
86-1-08.07-6239 NASA LaRC
II: NAS1-18653 $339,289
Raymond L. Chuan

Continuous Detection of Toxic Vapors Using a Field-Domain Ion-Mobility Spectrometer
87-1-13.01-6239 NASA KSC
I: NAS10-11456 $ 49,591
Raymond L. Chuan

A Real-Time, Particle Fall-Out Monitor
89-1-13.01-6239 NASA KSC
I: NAS10-11651 $ 49,928
W. D. Bowers

F006
Fiber Materials, Inc.
Biddeford Industrial Park
Biddeford, ME 04005
207-282-5911

Oxidation-Resistant Coatings for High-Strength Carbon/Carbon Composites
83-1-04.01-5911 NASA LaRC
I: NAS1-17577 $ 49,965
James E. Sheehan

Four-Dimensional, Impact Resistant, and Damage Tolerant Composites
84-1-04.03-5911 NASA LaRC
I: NAS1-17935 $ 49,986
John W. Herrick

* Ceramic-Fiber and Ceramic-Matrix Composites
84-1-04.05-5911 NASA ARC
I: NAS2-12104 $ 49,826
II: NAS2-12449 $471,000
M. K. Cox

F007
Fibre Optics Development Systems, Inc.
125 South Quarantina Street
Santa Barbara, CA 93103
805-965-2589

* Scintillating Optical Fiber Arrays
83-1-08.07-2589 NASA GSFC
I: NAS5-27996 $ 50,000
II: NAS5-28657 $316,568
Harry L. Watts

Scintillating Optical Fiber Trajectory Detectors
87-1-08.16-2589 NASA GSFC
I: NAS5-30279 $ 49,999
Harry L. Watts

F008
Fleck Aerospace - *See L. W. Fleckenstein for Phase I*
4740 N. Old Ranch Road
Tucson, AZ 85743-9744
602-884-0393

* An Investigation of the Properties of Cooled Supersonic Flows
86-1-01.06-4490 NASA LeRC
II: NAS3-25461 $464,940
Neil W. Hartman

F009
Fleet Tech, Inc.
150 Coolidge Avenue
Watertown, MA 02172
Last Known Address

Flight Recorder with Hazard Detection Capability
83-1-03.04-1300 NASA GSFC
I: NAS5-27977 $ 54,730
Heinz Wartski

F010

Flexible Computer Corporation

1801 Royal Lane, Suite 810
Dallas, TX 75229
214-869-1234

* Floating-Point Computer Module for Array Processing on a Flex/32 Multicomputer

84-1-06.03-1234	NASA LaRC
I: NAS1-17939	$ 50,000
II: NAS1-18241	$500,000

Nicholas Matelan

F011

Florida Maxima Corporation

2180 Forrest Road
Winter Park, FL 32789
407-644-9275

Performance of Groups in Extreme Environments: A Meta-Analytic Integration

89-1-12.05-9275	NASA ARC
I: NAS2-13159	$ 48,617

James E. Driskell

F012

Flow Industries, Inc.

21414 68th Avenue South
Kent, WA 98032
206-872-8500

* Transonic Wall Interference Assessment and Correction

83-1-04.03-8500	NASA ARC
I: NAS2-11738	$ 47,704
II: NAS2-12157	$261,000

Magdi H. Rizk

* Optimization Procedure for Aerodynamic Design for Advanced Turboprop

84-1-01.01-8500	NASA LeRC
I: NAS3-24533	$ 49,750
II: NAS3-24855	$255,000

Wen-Huei Jou

* Generating an Artificial Burst in a Turbulent Boundary Layer

84-1-02.02-8500A	NASA LaRC
I: NAS1-17930	$ 50,000
II: NAS1-18292	$294,000

Mohamed Gad-El-Hak

Optical Slip-Ring for High-Density-Data Communication Links

84-1-02.08-8676	NASA LaRC
I: NAS1-17951	$ 49,741

Frederich R. Reich

Turbulence Control on an Airborne Laser Platform

85-1-02.04-8500B	NASA LaRC
I: NAS1-18213	$ 50,000

Mohamed Gad-El-Hak

Numerical Simulation of Impinging Jets

85-1-02.10-8500	NASA ARC
I: NAS2-12359	$ 49,143

Magdi H. Rizk

F013

Flow Research Company

21414 68th Avenue South
Kent, WA 98032
206-872-8500

* Nonequilibrium Phase Chemistry in High-Temperature Structural Alloys - *See Failure Analysis Assoc. for Phase II*

86-1-04.03-8500	NASA LaRC
I: NAS1-18415	$ 49,932

Rong Wang

The Synthetic Production of Large Single Crystals

86-1-15.04-8500	NASA LeRC
I: NAS3-25136	$ 45,000

Ralph W. Metcalfe

Shock Waves for Enhanced Mixing in Scramjet Combustors

87-1-01.05-8500	NASA LeRC
I: NAS3-25332	$ 48,733

G. Stuart Knoke

F014

Fluid Dynamics International

1600 Orrington Avenue #400
Evanston, IL 60201
312-491-0200

* Numerical Simulation of Crystal Growth Processes

88-1-15.02-0200	NASA LeRC
I: NAS3-25612	$ 49,200
II: NAS3-25946	$468,000

Simon Rosenbalt

F015

Foa Engineering

3404 Thornapple St.
Chevy Chase, MD 20815
301-656-2685

High-Efficiency Flow Induction

89-1-01.04-2685	NASA LeRC
I: NAS3-25941	$ 50,000

Joseph V. Foa

F016

Food and Agrosystems, Inc.

P.O. Box 62185
Sunnyvale, CA 94088
408-245-8450

Methodologies for Processing Plant Materials into Acceptable Food on a Small Scale

89-1-12.04-8450B	NASA ARC
I: NAS2-13168	$ 49,646

Thomas R. Parks

F017

Foster-Miller, Inc.

350 Second Avenue
Waltham, MA 02254
617-890-3200

Ordered-Polymer-Film Composites Applied to Fluid Deicing Systems for Aircraft

85-1-03.01-3200	NASA LeRC
I: NAS3-24846	$ 49,971

Richard W. Lusignea

* High-Performance LaRC-TPI Film

85-1-04.03-3200	NASA LaRC
I: NAS1-18215	$ 49,941
II: NAS1-18527	$499,280

Richard W. Lusignea

* Enhancement of Contact Heat Transfer Coefficients at Spacecraft Thermal and Structural Joints
  85-1-09.12-3200 NASA MSFC
  I: NAS8-36262 $ 49,971
  II: NAS8-37341 $499,225
  Roger L. Demler

Centrifugal Separating Pump for the Control of Two-Phase Heat Transport Circuit
  85-1-09.15-3200 NASA JSC
  I: NAS9-17561 $ 49,957
  Andrew C. Harvey

* In-Situ Fiber-Optic Sensor for FTIR Monitoring of Composite-Cure Cycles
  86-1-04.02-3200 NASA LaRC
  I: NAS1-18420 $ 49,951
  II: NAS1-18659 $495,150
  Mark Druy

* Continuous Fiber Graphite-Aluminum MMCs for Complex-Shaped Space Structures Joints
  86-1-04.06-3200B NASA JSC
  I: NAS9-17731 $ 49,980
  II: NAS9-17997 $499,500
  Uday Kashalikar

Ordered Polymer Films for Scientific Research Balloons
  86-1-04.13-3200 NASA GSFC
  I: NAS5-30045 $ 49,581
  Richard W. Lusignea

Structural Velcro for Space Applications
  86-1-09.14-3200 NASA JSC
  I: NAS9-17732 $ 49,981
  Paul J. Marinaccio

* Semicrystalline Thermoplastic Films for Aerospace Structures
  87-1-04.02-3200 NASA LaRC
  I: NAS1-18636 $ 49,940
  II: NAS1-18846 $479,758
  Richard W. Lusignea

Ultra-High-Stiffness, Net-Shape, Tubular Space Structures
  87-1-04.05-3200A NASA JSC
  I: NAS9-17940 $ 50,000
  Ted E. Kirchner

Reduced-Weight Gondolas for Stratospheric Balloons
  87-1-04.11-3200 NASA JPL
  I: NAS7-1007 $ 50,000
  Joseph Boyce

* Non-Azeotropic Heat Pump for Heating Crew Hygiene Water
  87-1-09.04-3200 NASA MSFC
  I: NAS8-37624 $ 50,000
  II: NAS8-38407 $497,087
  David H. Walker

Hybrid Measurement of Two-Phase Flows
  87-1-09.04-3200A NASA JSC
  I: NAS9-17941 $ 50,000
  Wayne S. Hill

* High-Shear, Rotary Die for Thermoplastics Prepregging
  88-1-04.03-3200A NASA LaRC
  I: NAS1-18817 $ 50,000
  II: NAS1-19095 $491,860
  Richard W. Lusignea

A Lightweight, Non-Metallic, Heat-Pipe Radiator
  88-1-09.05-3200 NASA JSC
  I: NAS9-18098 $ 50,000
  John McCoy

* Binary Mixtures for Spacecraft Heat Transport
  88-1-09.06-3200 NASA MSFC
  I: NAS8-38050 $ 50,000
  II: NAS8-T B D $ T B D
  Glen I. Deming

Improved Thermal Energy Storage System for Advanced Solar-Dynamic, Space Power Generation
  88-1-10.01-3200A NASA LeRC
  I: NAS3-25558 $ 50,000
  Philip Stark

High-Temperature-Film-Based Polybenzoxazole/Polymide Microcomposite for Turbine Engines
  89-1-04.01-3200 NASA LeRC
  I: NAS3-25871 $ 50,000
  Ted Kirchner

LaRC-TPI and Liquid Crystal Polymer Blends
  89-1-04.03-3200 NASA LaRC
  I: NAS1-19025 $ 50,000
  Richard W. Lusignea

Self-Contained, Deployable, Serpentine Truss for Prelaunch Access of Orbiter Payloads
  89-1-05.08-3200 NASA KSC
  I: NAS10-11659 $ 50,000
  Ken Pasch

Novel Composites for Protection Against Orbital Debris
  89-1-09.05-3200 NASA MSFC
  I: NAS8-38440 $ 50,000
  J. J. Gassner

Heat Pump for Space Thermal Bus
  89-1-09.12-3200 NASA GSFC
  I: NAS5-30867 $ 50,000
  Andrew C. Harvey

F018

Frasca-International

906 East Illini Airport Road
Urbana, IL 61801
217-344-9200

Computer-Interactive Flight Simulator
  83-1-03.04-3951 NASA ARC
  I: NAS2-11733 $ 49,710
  John Frasca

F019

Fred C. Hart Associates, Inc.

1110 Vermont Avenue N.W., Suite 410
Washington, DC 20005
202-223-5621

Spectral Methods in the Solution of Multi-Dimensional Diffusion Problems
  83-1-15.02-5621 NASA MSFC
  I: NAS8-35838 $ 49,433
  Bennett Miller

F020

Frederick A. Costello, Inc.

12864 Tewksbury Drive
Herndon, VA 22071
703-620-4942

* Pumped, Two-Phase, Non-Azeotropic Spacecraft Cooling Systems

84-1-09.14-4942	NASA GSFC
I: NAS5-28643	$ 48,926
II: NAS5-29439	$497,750

Frederick A. Costello

Novel Cryocooler Regenerator Designs

88-1-09.07-4942B	NASA GSFC
I: NAS5-30595	$ 49,760

Frederick A. Costello

* Computing Radiant Interchange Among Real Surfaces

88-1-09.07-4942C	NASA GSFC
I: NAS5-30495	$ 49,289
II: NAS5-T B D	$ T B D

Frederick A. Costello

G

G001

G & C Systems, Inc.

25176 Danapepper
Dana Point, CA 92629
714-661-0753

A Knowledge-Based Simulation Design, Development, and Coding Environment

89-1-03.10-0753	NASA ARC
I: NAS2-13130	$ 49,914

David M. Tartt

G002

GMAF, Inc.

P.O. Box 184
Freeport, NY 11520
516-378-8450

* Unsteady Compressible Flows in Intakes and Nozzles

83-1-01.01-8450	NASA LeRC
I: NAS3-24096	$ 49,272
II: NAS3-24540	$361,000

Gino Moretti

Fast, Two-Dimensional Euler Solver

85-1-02.01-8450	NASA ARC
I: NAS2-12355	$ 49,925

Gino Moretti

Three-Dimensional Euler Solver

87-1-02.04-8450	NASA LaRC
I: NAS1-18618	$ 49,760

Gino Moretti

G003

GMD Systems, Inc.

Old Route 519
Hendersonville, PA 15339
412-746-3600

* Colorimetric Personnel Monitoring Badge for Hydrazines

85-1-13.01-3600A	NASA KSC
I: NAS10-11291	$ 49,961
II: NAS10-11411	$216,281

Gerald Moore

G004

GMS Technology

7211 La Entrada Drive
Houston, TX 77083
No Longer In Business

* K-Base: a Hybrid Analogical-Semantic Modeler for Computer-Aided Design

85-1-12.03-5297	NASA JSC
I: NAS9-17582	$ 49,029
II: NAS9-17808	$492,303

Robert A. Gallaway

G005

GT-Devices

5705 General Washington Drive
Alexandria, VA 22312
703-642-8150

Numerical Modeling of Fully Viscous, Rocket Plume Flows

87-1-02.08-8150	NASA LeRC
I: NAS3-25407	$ 49,950

Rodney L. Burton

G006

Galaxy Microsystems, Inc.

10711 Burnet Rd Suite 325
Austin, TX 78758
512-836-7606

High-Speed, Digital Data Transmission

89-1-14.02-7606	NASA GSFC
I: NAS5-30858	$ 49,529

Robert E. Fosdick

G007

Galileo Electro-Optics Corporation

Galileo Park
Sturbridge, MA 01518
508-347-9191

* Microchannel Plates in Advanced Wind Tunnel Instrumentation

85-1-08.13-9191	NASA LaRC
I: NAS1-18220	$ 48,000
II: NAS1-18482	$441,000

W. Bruce Feller

Curved Channel MCP Improvement

86-1-08.04-9191E	NASA GSFC
I: NAS5-30047	$ 47,212

Bruce N. Laprade

G008

Galloway Research

795 Beaver Creek Way
San Jose, CA 95133
408-259-2490

The LAFS Kernel File System

89-1-06.01-2490	NASA LaRC
I: NAS1-19034	$ 50,000

John R. Galloway, Jr.

G009

Gamma Research, Inc.

904 Bob Wallace Avenue #124
Huntsville, AL 35801
205-533-7103

* Control of Manual Entry Accuracy in Management and Engineering Information Systems

86-1-07.06-7103	NASA MSFC
I: NAS8-37311	$ 50,000
II: NAS8-37407	$470,852

John Woo Jr.

G010

General Digital Industries

6705 Odyssey Drive
Huntsville, AL 35806
205-837-2200

* A Variable-Polarity, Plasma-Arc Welding Control System
  85-1-04.08-8305 NASA MSFC
  I: NAS8-36267 $ 49,474
  II: NAS8-37344 $499,400
  Richard E. Reeves

* An Automated Wire-Guide for Robotic Welding Applications
  88-1-05.05-2200 NASA MSFC
  I: NAS8-38024 $ 49,353
  II: NAS8-38477 $494,836
  Troy D. Manley

G011

General Optronics Corporation

2 Olsen Avenue
Edison, NJ 08820
201-549-9000

Intersatellite, Optical-Communications, High-Power-Laser Transmitter
  84-1-14.04-9000 NASA GSFC
  I: NAS5-28644 $ 50,000
  Chen-Show Wang

* Continuous Wave, Tunable, Semiconductor 1.08 Micron Laser
  86-1-08.10-9000 NASA JPL
  I: NAS7-985 $ 50,000
  II: NAS7-1034 $491,368
  Chen-Show Wang

G012

General Pneumatics Corporation

7662 East Gray Road, Suite 107
Scottsdale, AZ 85260
602-998-1856

* Temperature Sensitive, Variable-Area Joule-Thomson Expansion Nozzles
  84-1-11.03-1856A NASA KSC
  I: NAS10-11144 $ 50,000
  II: NAS10-11322 $381,000
  Graham Walker

Spacecraft Stirling Refrigerator
  85-1-09.06-1856 NASA MSFC
  I: NAS8-36266 $ 50,000
  Graham Walker

Joule-Thomson Cryorefrigerator for Spaceborne Sensors and Stored Cryogens
  88-1-08.12-1856 NASA ARC
  I: NAS2-12990 $ 49,556
  Ernest E. Atkins

G013

General Purpose Machines Laboratory

16 Dickens Court
Irvine, CA 92715
715-856-3327

A Neural-Network, Dynamic Sequencer for Distributed Mission Planning and Control
  89-1-07.07-3327 NASA GSFC
  I: NAS5-30845 $ 46,076
  Jurn Sun Leung

G014

Geo Centers, Inc.

7 Wells Avenue
Newton Centre, MA 02159
617-964-7070

* Embedded Fiber-Optic Sensors for Polymer-Matrix-Composite Process Monitoring
  87-1-04.01-7070 NASA LeRC
  I: NAS3-25337 $ 49,866
  II: NAS3-25817 $385,932
  Ian Aeby

* Fast Optical Switch for Multimode Fiber-Optic-Based Control Systems
  88-1-01.03-7070 NASA LeRC
  I: NAS3-25615 $ 49,905
  II: NAS3-25947 $481,641
  Bruce N. Nelson

Composite, Six-Axis Force Sensor with Embedded Optical Sensors
  88-1-05.03-7070 NASA GSFC
  I: NAS5-30455 $ 49,844
  Bruce N. Nelson

Fiber-Optic Sensor Technology for High-Altitude Balloons
  88-1-09.13-7070 NASA GSFC
  I: NAS5-30491 $ 46,385
  Ian Aeby

* Optrode Development for Environmental Ph Monitoring
  88-1-12.10-7070 NASA KSC
  I: NAS10-11559 $ 49,732
  II: NAS10-11671 $494,292
  Mary Elizabeth Tabacco

Trace Contaminant Vapor Monitors
  89-1-12.12-7070 NASA KSC
  I: NAS10-11652 $ 49,306
  Mary Elizabeth Tabacco

G015

Geoscience Limited

410 South Cedros Avenue
Solana Beach, CA 92075
619-755-9396

* A Direct, Metabolic Calorimetry System for Orbital Laboratories
  85-1-12.08-9396 NASA ARC
  I: NAS2-12348 $ 48,360
  II: NAS2-12638 $435,707
  Heinz F. Poppendiek

A Whole-Body Calorimeter for Space Station Astronauts
  88-1-12.01-9396 NASA JSC
  I: NAS9-18095 $ 46,538
  Heinz F. Poppendiek

G016

Gerardi-Dahl Engineering - *Now Innovative Dynamics*

1607 West Fifth Street
Oxnard, CA 93030
607-257-0533

* Icing Sensor and Ice-Protection System
  85-1-03.01-4846 NASA LeRC
  I: NAS3-24852 $ 30,000
  Joseph J. Gerardi

G017

Giner, Inc.

14 Spring Street
Waltham, MA 02254-9147
617-899-7270

Positive Electrode for Bipolar Ni-H2 Batteries
83-1-10.01-7271 NASA LeRC
I: NAS3-23871 $ 49,904
Jose Giner

* Novel Electrodes for a Hydrogen-Bromine Battery
84-1-10.01-7270 NASA LeRC
I: NAS3-24394 $ 49,979
II: NAS3-24878 $500,000
Vinod Jalan

Cathode-Catalyst Support Materials for High-Temperature, Alkaline Fuel Cells
88-1-10.01-7270A NASA LeRC
I: NAS3-25621 $ 50,000
S. Sarangapani

Nickel-Cadmium Battery Separator Design and Development
89-1-10.03-7270 NASA GSFC
I: NAS5-30843 $ 49,254
Larry Swette

G018

Global Information Systems Technology

1800 Woodfield Drive
Savoy, IL 61874-9505
217-352-1165

* Intelligent Evaluation System for Simulator Training
87-1-06.05-1165 NASA JSC
I: NAS9-17942 $ 50,000
II: NAS9-18170 $500,000
Thomas T. Chen

G019

Growth Systems, Inc.

P.O. Box 2214
Glenview, IL 60025
312-446-3053

Accelerating Seed Germination and Plant Growth Through Manipulating of Atmospheric Pressure
87-1-12.06-3053 NASA KSC
I: NAS10-11467 $ 50,000
R. Louis Ware

G020

Gull Engineering, Inc.

78 Mitchell Road
Oak Ridge, TN 37830
Last Known Address

Radon Property Detection System for Global Biologic Studies
84-1-12.06-4787 NASA ARC
I: NAS2-12097 $ 50,000
Graham V. Walford

G021

Gumbs Associates, Inc.

11 Harts Lane
East Brunswick, NJ 08816
201-257-9049

Silicone and Silicone-Imide Copolymers for Solar Cell Encapsulation
84-1-10.02-5110 NASA JPL
I: NAS7-930 $ 49,400
Ronald Gumbs

Soluble, Conducting Polymer-Based Conductive Coatings
89-1-04.01-9049 NASA LeRC
I: NAS3-25889 $ 49,922
Prasanna C. Sekhar

H

H001

H & N Instruments, Inc.

P.O. Box 955
Newark, OH 43055
614-927-0156

Effect of Gravity on Foam Decay
87-1-15.01-0156 NASA MSFC
I: NAS8-37625 $ 49,653
Gary M. Nishioka

* A New Method for the Measurement of Surface Tension
87-1-15.01-0156A NASA MSFC
I: NAS8-37626 $ 49,937
II: NAS8-38408 $345,428
Gary M. Nishioka

H002

HITC Superconco, Inc.

140 Tullytown Road
Bordentown, PA 19007-6302
215-943-9023

High-Temperature Superconductor for Passive Magnetic Bearings
89-1-09.07-9722 NASA GSFC
I: NAS5-30852 $ 49,528
Robert D. DeLuca

H003

HITEC Products, Inc.

P.O. Box 790
Ayer, MA 01432
508-772-6963

* High-Temperature, Capacitive Strain Gauge
86-1-08.08-6963 NASA LaRC
I: NAS1-18411 $ 49,940
II: NAS1-18668 $91,155
Stephen P. Wnuk Jr.

H004

HSA, Inc.

3806 Springhill Lane
Sugar Land, TX 77479
713-980-4651

* An Extensible Shell for Information Access in Heterogeneous Environments
88-1-07.10-4651 NASA GSFC
I: NAS5-30483 $ 49,850
II: NAS5-T B D $ T B D
Poonam Salona

H005

Hansen Research Associates

P.O. Box 30133
Eugene, OR 97403
503-344-4007

Transport Properties in Non-Equilibrium Air Mixtures
89-1-02.04-4007 NASA LaRC
I: NAS1-19018 $ 49,766
C. Frederick Hansen

H006

High Technology Services, Inc.

250 Jordan Rd Suite 210
Troy, NY 12180
518-283-8072

Methods for Producing Fine-Particle, Thermoplastic Polyimide Sulfone Powder

89-1-04.03-8072	NASA LaRC
I: NAS1-19013	$ 50,000

Milton L. Evans

H007

Holometrix, Inc.

99 Erie Street
Cambridge, MA 02139
617-868-8050

A High-Precision, Sun-Tolerant Lidar

88-1-09.09-8050	NASA JSC
I: NAS9-18096	$ 49,853

P. G. Debaryshe

H008

Holz Industries, Inc.

4393 Viewridge Avenue
San Diego, CA 92123
619-268-4114

* Quartz and Fused Silica Chip Carriers

88-1-14.05-4114	NASA LeRC
I: NAS3-25565	$ 43,525
II: NAS3-25870	$432,960

Gary L. Holz

H009

Howlett & Associates, Inc.

800 J Cedar Valley
Radford, VA 24141
Last Known Address

Low Weight-to-Horsepower Ratio Electric Drive

84-1-01.06-0252	NASA LeRC
I: NAS3-23899	$ 47,186

James F. Howlett

H010

Huntsville Sciences Corporation

3313 Bob Wallace Avenue #201
Huntsville, AL 35805
205-536-8122

Finite-Element Code for Combustion Analysis of Advanced Propulsion Systems

88-1-11.03-8122	NASA MSFC
I: NAS8-38022	$ 45,987

Lawrence W. Spradley

Finite-Element and Adaptive-Grid Thermal Analyzer with Enhanced Graphics Capability

89-1-09.13-8122	NASA MSFC
I: NAS8-38453	$ 49,956

James V. McAnally

H011

Hydrogen Consultants, Inc.

12420 N Dumont Way
Littleton, CO 80125
303-791-7972

* Metal Hydrides for Integration of Spacecraft Hydrogen Resources

84-1-09.09-0546	NASA MSFC
I: NAS8-35270	$ 50,000
II: NAS8-37262	$500,000

Gregory J. Egan

Thermal Storage in Plastic Crystal Slurries

85-1-09.17-0546	NASA MSFC
I: NAS8-36257	$ 49,980

Franklin E. Lynch

* Capture and Reliquefaction of Hydrogen Boiloff At Shuttle Launch Site

85-1-13.06-0546	NASA KSC
I: NAS10-11290	$ 49,977
II: NAS10-11401	$487,000

Gregory J. Egan

Metal-Hydride Thermal Management Techniques for Future Spacecraft and Planetary Bases

86-1-09.13-0546	NASA JSC
I: NAS9-17740	$ 49,795

Franklin E. Lynch

Reversible, Oxide Chemical Compressor for Sensor Cryocooling

88-1-08.14-7972	NASA JPL
I: NAS7-1047	$ 48,552

John R. Riter

Constant-Temperature Heat Storage in Metal Hydrides

89-1-10.01-7972	NASA LeRC
I: NAS3-25885	$ 48,803

Franklin E. Lynch

H012

Hyperfine, Inc.

4946 North 63rd Street
Boulder, CO 80301
303-530-0709

* Echelle Grating-Ruling

83-1-08.01-6882	NASA GSFC
I: NAS5-27998	$ 49,623
II: NAS5-28658	$218,000

Bernhard W. Bach

* Radial Concentric-Grating Ruling Engine

84-1-08.01-6882	NASA GSFC
I: NAS5-28636	$ 49,610
II: NAS5-29415	$472,000

Bernhard W. Bach

I

I001
ISM Technologies, Inc.
9965 Carroll Canyon Road
San Diego, CA 92131
619-539-2332

Miniature, Thin-Film Deposition System
89-1-04.12-2332 NASA JPL
I: NAS7-1079 $ 49,759
James R. Treglio

I002
ISX Corporation
501 Marin Street, Suite 214
Thousand Oaks, CA 91360
805-495-8265

* Fault-Tolerant, Distributed Intelligent Systems
87-1-06.03-8265 NASA ARC
I: NAS2-12777 $ 49,967
II: NAS2-13027 $499,953
Scott Fouse

Knowledge-Based, Aerospace Program-Management Decision-Support System
89-1-06.04-8265 NASA ARC
I: NAS2-13161 $ 49,929
David Rosenberg

I003
Imatron, Inc.
389 Oyster Point Boulevard
South San Francisco, CA 94080
415-583-9964

Assessment of Materials in Solid Rocket Motors by Real-Time Computer Tomography
89-1-11.04-9964 NASA MSFC
I: NAS8-38445 $ 49,169
Elan Scheinman

I004
Incubator Technologies, Inc.
800 West 14th Street, #111
Rolla, MO 65401
314-364-7747

Micromechanic Model for Prediction of Failure Modes in Ceramic Matrix Composites
87-1-04.01-7747 NASA LeRC
I: NAS3-25333 $ 48,300
Li Chai

I005
Industrial Quality, Inc.
P.O. Box 2519
Gaithersburg, MD 20879-2519
301-948-2460

* Ultrasonic Correlator for Nondestructive Characterization of Materials
84-1-04.10-0332 NASA LaRC
I: NAS1-17937 $ 49,980
II: NAS1-18258 $498,000
Harold Berger

I006
Information & Control Systems, Inc.
28 Research Drive
Hampton, VA 23666
804-865-0371

Optimal-Output, Feedback-Regulator Design for Systems with Variable Dynamics
85-1-03.05-0371 NASA LaRC
I: NAS1-18212 $ 49,998
Daniel D. Moerder

* A Stochastic, Optimal Feedforward and Feedback Control Methodology for Superagility
88-1-03.03-0371 NASA LaRC
I: NAS1-18812 $ 49,692
II: NAS1-19091 $490,092
Nesim Halyo

A High-Temperature, Directional, Spectral Emissivity Measurement System
89-1-02.08-0371 NASA LaRC
I: NAS1-19026 $ 50,000
Nesim Halyo

I007
Infrared Fiber Systems, Inc.
2301-A Broadbirch Drive
Silver Spring, MD 20904
301-622-9546

* High-Speed, Infrared Fiber-Optic Thermometer and Spectrometer
86-1-13.01-9546 NASA JSC
I: NAS9-17724 $ 47,200
II: NAS9-17993 $499,690
Kenneth Levin

Infrared Fiber Arrays for Low Background Infrared Astronomy
89-1-08.13-9546 NASA GSFC
I: NAS5-30850 $ 49,952
Danh Tran

I008
Infrared Laboratories, Inc.
1808 East 17th Street
Tucson, AZ 85719
602-622-7074

* Advanced Components for Spaceborne Infrared Astronomy
83-1-08.10-7074 NASA ARC
I: NAS2-11739 $ 50,000
II: NAS2-12154 $495,625
Arnold W. Davidson

* Silicon Bolometer Arrays for Helium-3 Detector Systems
88-1-08.01-7074 NASA JPL
I: NAS7-1039 $ 49,225
II: NAS7-T B D $ T B D
W. M. Poteet

I009
Innovative Dynamics - *Was Gerardi-Dahl Engineering*
244 Langmuir Lab, Cornell Research Park
Ithaca, NY 14850-1296
607-257-0533

* Icing Sensor and Ice-Protection System
85-1-03.01-4846 NASA LeRC
II: NAS3-25200 $495,515
Joseph J. Gerardi

Boundary Layer Transition Detection System
86-1-08.08-4846 NASA LaRC
I: NAS1-18421 $ 50,000
Philip R. Dahl

* Smart-Skin Measurement of Aircraft Performance for Ice-Accretion, Stall, and High Angle-of-Attack
88-1-03.01-0533 NASA LeRC
I: NAS3-25618 $ 47,463
II: NAS3-25966 $486,984
Gail A. Hickman

* Boundary-Layer-Flow Analysis System for High-Performance Aircraft
88-1-03.05-0533 NASA ARC
I: NAS2-12890 $ 48,750
II: NAS2-T B D $ T B D
Joseph J. Gerardi

Low-Cost, Angle-of-Attack Sensor for Subsonic Aircraft
89-1-03.06-0533 NASA LaRC
I: NAS1-19006 $ 27,993
Joseph J. Gerardi

Aircraft Health Monitoring System
89-1-04.06-0533 NASA LaRC
I: NAS1-19014 $ 49,695
Gail A. Hickman

I010
Innovative Research, Inc.
6735 East 6th Avenue
Denver, CO 80220
303-321-4917

An Automatic Scheduling Assistant for the NASA Space Station
88-1-05.05-4917 NASA JSC
I: NAS9-18114 $ 46,267
Mohsen Pazirandeh

I011
Instrumech
302 Cheadle Road
Yorktown, VA 23692
Last Known Address

Demonstration of the Relog Computer Concept Using Potential Flow
85-1-06.03-6398 NASA LaRC
I: NAS1-18202 $ 49,888
Albert C. Kyser

I012
Integrated Parallel Technology
P.O. Box 908
Campbell, CA 95008
408-866-4448

* VME Rollback Hardware Modules for Time Warp Multiprocessor Systems
88-1-06.08-4448 NASA JPL
I: NAS7-1046 $ 50,000
II: NAS7-1102 $499,889
Calvin Buzzell

I013
Integrated Systems, Inc.
2500 Mission College Boulevard
Santa Clara, CA 95054-1215
408-980-1500

Engineering Workstations for Distributed Parameter Systems
83-1-06.03-9773 NASA LaRC
I: NAS1-17580 $ 50,000
Robert A. Walker

Real-Time Flutter Prediction and General Modal Parameter Identification
85-1-02.05-8400 NASA LaRC
I: NAS1-18203 $ 50,000
Robert A. Walker

* Automation Tools for Demonstration of Goal-Directed and Self-Repairing Flight Control
86-1-03.04-8400 NASA ARC
I: NAS2-12588 $ 50,000
II: NAS2-12738 $495,233
Naren K. Gupta

Numerical Optimization of Single-Stage-To-Orbit Configuation with Inequality Constraints
88-1-03.07-1500 NASA LaRC
I: NAS1-18801 $ 49,688
M. Michael Briggs

* Optimization Algorithms for Controls-Structures Interactions Design Problems
88-1-09.01-1500 NASA LaRC
I: NAS1-18818 $ 49,963
II: NAS1-19096 $485,240
Robert L. Kosut

Control Structure Interaction: Optimization-Based Design Tools
89-1-09.01-1500 NASA LaRC
I: NAS1-19015 $ 45,000
Robert L. Kosut

I014
Intellicorp, Inc.
1975 El Camino Real W
Mountain View, CA 94040-2216
415-965-5784

* Compiling Knowledge-Based Systems Specified in KEE to Ada
88-1-05.05-5500 NASA MSFC
I: NAS8-38036 $ 50,000
II: NAS8-T B D $ T B D
Robert E. Filman

I015
Intelligent Automation Systems
300 Bent Street, Suite 200
Cambridge, MA 02141
617-322-8622

* Robotic Testbed for Adaptive Grasping of Objects in Space
88-1-05.04-8622 NASA JSC
I: NAS9-18097 $ 49,910
II: NAS9-T B D $ T B D
Steven J. Gordon

I016
Intelligent Automation, Inc.
1715 Glastonberry Road
Rockville, MD 20854
301-424-4007

Telerobot Control Interface Based on Constraints
89-1-05.03-40071 NASA GSFC
I: NAS5-30807 $ 49,960
Leonard S. Haynes

I017

Intelligent Recognition System

6925 Canoga Avenue, Suite 102
Canoga Park, CA 91303
818-992-8024

A Perception System for Object Recognition, Acquisition, and Tracking in Cluttered Environments

88-1-05.01-8024	NASA MSFC
I: NAS8-38047	$ 47,224

Jerry A. Burman

I018

Intellitek, Inc.

9653 Reach Road
Potomac, MD 20854-2857
301-340-6543

* Expert Project Management System Generator

85-1-07.11-3317	NASA JPL
I: NAS7-949	$ 45,517
II: NAS5-30087	$491,332

Barry G. Silverman

I019

Interdisciplinary Science Applications

613 Muriel Street
Rockville, MD 20852
301-770-7518

A Stochastic Rain Model and Its Application in Rain-Rate Estimation

89-1-08.02-7518A	NASA GSFC
I: NAS5-30849	$ 48,140

Z. H. Karni

I020

Interferometrics, Inc.

8150 Leesburg Pike, Suite 1400
Vienna, VA 22182
703-790-8500

* Interferometric Tracking System for the Tracking and Data Relay Satellite

86-1-07.03-8500	NASA GSFC
I: NAS5-30048	$ 49,882
II: NAS5-30313	$504,710

Robert I. Potash

Determination of Orbiting-Spacecraft-Antenna Distortion by Ground-Based Measurements

86-1-14.04-8500	NASA LeRC
I: NAS3-25131	$ 49,790

David B. Shaffer

Dual K and C Band Transponder for Satellite Altimetric Calibration

89-1-08.17-8500	NASA JPL
I: NAS7-T B D	$ T B D

David B. Shaffer

I021

International Technical Associates

2281 Calle De Luna
Santa Clara, CA 95054
408-748-9955

* Adaptive Vision for Welding Guidance System

87-1-04.08-9955	NASA MSFC
I: NAS8-37627	$ 48,814
II: NAS8-38409	$496,571

Paul Lovoi

I022

Intersonics, Inc.

3453 Commercial Avenue
Northbrook, IL 60062
312-272-1772

Stabilized Electromagnetic Levitator

89-1-15.01-1772	NASA MSFC
I: NAS8-38468	$ 49,977

Robert Schiffman

I023

Iomed, Inc.

2320 S. 1290 W., Suite A
Salt Lake City, UT 84108
801-975-1191

Transdermal Drug Delivery System for Application in Space Flight

89-1-12.01-1191	NASA JSC
I: NAS9-18316	$ 49,895

Thomas J. Petelenz

I024

Ionwerks

2215 Addison
Houston, TX 77030
713-529-9040

Atomic Oxygen Source for Superconductor Thin-Film Fabrication

88-1-04.10-1691	NASA JPL
I: NAS7-1050	$ 49,000

J. Albert Schultz

I025

Iowa Thin Film Technologies, Inc.

237 Wildflower Drive
Ames, IA 50010
515-294-7732

Flexible, Lightweight, Amorphous-Silicon Solar Cells Tuned for AM0 Spectrum

89-1-10.01-3203	NASA LeRC
I: NAS3-25825	$ 49,087

Frank Jeffrey

I026

Irvine Sensors Corporation

3001 Redhill Avenue, Bldg 3 #203
Costa Mesa, CA 92626
714-549-8211

Two-Band IR Detector Array

83-1-08.01-8211	NASA GSFC
I: NAS5-27999	$ 49,945

S. A. Clark

* HYMOSS™ Signal Processing for Pushbroom Spectral Imaging

87-1-08.01-8211	NASA JPL
I: NAS7-1008	$ 49,977
II: NAS7-1065	$496,151

Martin M. Spanish

* On-Focal-Plane Signal Processing for Atmospheric Measurements

87-1-08.10-8211	NASA MSFC
I: NAS8-37628	$ 47,727
II: NAS8-38410	$498,819

Martin M. Spanish

Three-Dimensional, Solid-State, Multi-Port Memory System
89-1-06.02-8211 NASA GSFC
I: NAS5-30871 $ 49,416
David E. Ludwig

Space-Sensor, Common-Module Electronics
89-1-08.09-8211A NASA MSFC
I: NAS8-38451 $ 49,379
David E. Ludwig

I027
Istar, Inc.
406 Alta Avenue
Santa Monica, CA 90402
213-394-7332

Detonation-Wave Augmentation of Gas Turbines
83-1-01.04-7332 NASA LeRC
I: NAS3-24098 $ 48,771
A. Wortman

Detonation-Wave Compression in Gas Turbines
85-1-01.06-7332 NASA LeRC
I: NAS3-24854 $ 49,985
A. Wortman

* Detonation-Duct Gas Generator
86-1-01.06-7332A NASA LeRC
I: NAS3-25143 $ 50,000
II: NAS3-25453 $500,000
A. Wortman

I028
Ithaco, Inc.
735 West Clinton Street, Box 6437
Ithaca, NY 14851-6437
607-272-7640

* Autonomous Attitude Sensing System
83-1-08.05-7640 NASA GSFC
I: NAS5-28001 $ 49,793
II: NAS5-28654 $500,000
Vaughn H. Selby

* A Full-Sky Scanner
85-1-09.20-7640 NASA GSFC
I: NAS5-29276 $ 50,000
II: NAS5-30088 $500,000
Vaughn H. Selby

* Low-Cost, Attitude Control System
86-1-09.20-7640 NASA GSFC
I: NAS5-30049 $ 49,983
II: NAS5-30307 $500,000
Vaughn H. Selby

J

J001
JAI Associates, Inc.
P.O. Box 293
Mountain View, CA 94042
415-962-3922

* Computational Fluid Dynamics of Store Separation
87-1-02.01-3922 NASA ARC
I: NAS2-12779 $ 49,993
II: NAS2-13186 $445,781
Samuel P. Shanks

J002
JRS Research Laboratories, Inc.
1036 West Taft Avenue
Orange, CA 92665
714-974-2201

Concurrency and Processing Distribution in Horizontally Microprogrammed Processors
83-1-06.07-2201 NASA ARC
I: NAS2-11726 $ 45,366
Erwin H. Warshawsky

J003
James G. Boyko
20 West Winkley Street
Amesbury, MA 01913
Last Known Address

A Design Concept for Reducing Dynamic Loads on Spur Gear Teeth
84-1-01.05-1753 NASA LeRC
I: NAS3-24536 $ 47,065
James G. Boyko

J004
John M. Cockerham & Associates, Inc.
301 Randolph Avenue SE
Huntsville, AL 35801
205-536-6381

Portable Spectroreflectometer
89-1-04.08-6381 NASA MSFC
I: NAS8-38463 $ 49,121
Donald R. Wilkes

J005
Johnson Aeronautics
P.O. Box 1253
Palo Alto, CA 94302
415-325-3944

General Time-Domain Unsteady Aerodynamics of Rotors
89-1-02.07-3944 NASA ARC
I: NAS2-13125 $ 34,899
Wayne Johnson

J006
Johnson Engineering Corporation
3055 Center Green Drive
Boulder, CO 80301-5406
Last Known Address

Trash Compactor Development: Space Station
85-1-12.05-8152 NASA JSC
I: NAS9-17563 $ 49,993
John A. Ciciora

K

K001
KMS Fusion, Inc.
P.O. Box 1567
Ann Arbor, MI 48106-1567
313-769-8500

* Singlet-Oxygen Generator for a Solar-Powered, Chemically Pumped Iodine Laser
  83-1-10.05-8500 — NASA LaRC
  I: NAS1-17584 — $ 49,940
  II: NAS1-17988 — $500,000
  George E. Busch

* Modular, Digital, Holographic Fringe Data Processing System
  84-1-08.13-8500 — NASA LaRC
  I: NAS1-17945 — $ 49,990
  II: NAS2-12531 — $498,000
  James G. Downward

Touch Panels and Flat Panel Displays for Space Station System Monitoring
  86-1-09.17-8500 — NASA JSC
  I: NAS9-17737 — $ 49,934
  Ryan P. Miller

* High-Performance, View-Generated Database for World Model Definition and Update
  87-1-05.01-8500 — NASA JPL
  I: NAS7-1009 — $ 50,000
  II: NAS7-1066 — $493,450
  Jerry L. Turney

A Single-View, Three-Dimensional-Object Recognition System
  88-1-05.01-8500 — NASA LaRC
  I: NAS1-18814 — $ 48,000
  Theodore B. Ladewski

Global-Local Environment Telerobotic Simulator
  89-1-05.06-8500 — NASA JPL
  I: NAS7-1074 — $ 49,980
  Frederick S. Schebor

K002
Ken Wanderman & Associates, Inc.
240 Drake Street
San Francisco, CA 94112
415-584-6211

* A Generalized Strategy for Building Resident Database Interfaces
  86-1-07.09-6211 — NASA GSFC
  I: NAS5-30062 — $ 49,750
  II: NAS5-30304 — $499,699
  Ken Wanderman

K003
Kestrel Development Corporation
3260 Hillview Avenue
Palo Alto, CA 94304
415-493-6871

Semi-Automatic Data Structure Selection
  89-1-06.04-6871 — NASA ARC
  I: NAS2-13174 — $ 49,982
  Lee Blaine

K004
Kopin Corporation
695 Myles Standish Boulevard
Taunton, MA 02780
508-824-6696

* GaAs/AlGaAs Heterostructure Point-Contact Concentrator Cells
  86-1-10.02-6696 — NASA LeRC
  I: NAS3-25135 — $ 50,000
  II: NAS3-25449 — $487,417
  Ronald P. Gale

* Low-Cost, Epitaxial, Indium-Phosphide Solar Cells
  88-1-10.01-6696 — NASA LeRC
  I: NAS3-25610 — $ 50,000
  II: NAS3-25948 — $493,140
  M. B. Spitzer

K005
Kuck & Associates
1906 Fox Drive
Champaign, IL 61820
217-356-2288

Software Package for Solving Large Systems of Nonlinear Equations
  87-1-02.01-3600 — NASA MSFC
  I: NAS8-37633 — $ 48,949
  Ahmed Sameh

L

L001
L. W. Fleckenstein, Inc. - *Now Fleck Aerospace*
20580 Enterprise Avenue
Brookfield, WI 53008
414-784-4490

* Unified-Cycle Engine, Continuously Operable from Static to Hypersonic Conditions
  86-1-01.06-4490 — NASA LeRC
  I: NAS3-25124 — $ 49,862
  Neil W. Hartman

L002
LNK Corporation
6811 Kenilworth Avenue #306
Riverdale, MD 20737-1333
301-927-3223

Intelligent Data Abstraction and Analysis
  87-1-07.05-3223 — NASA GSFC
  I: NAS5-30280 — $ 50,000
  Barbara A. Lambird

L003
LNR Communications, Inc.
180 Marcus Boulevard
Hauppauge, NY 11788
516-273-7111

* High-Frequency (30 GHz) Gallium-Arsenide Materials and Devices
  83-1-14.01-7112 — NASA LeRC
  I: NAS3-23787 — $ 48,911
  II: NAS3-24251 — $453,000
  Yung L. Cho

* EHF (30 GHz), Reflection-Mode-FET, Solid-State Power Amplifier
87-1-14.01-7111 NASA LeRC
I: NAS3-25339 $ 49,348
II: NAS3-25637 $534,080
Eric Ng

Pulsed Solid-State Power Amplifiers for 30/20 GHz Satcom Terminal Uplink Transmitters
88-1-14.08-7111 NASA LeRC
I: NAS3-25606 $ 49,761
Johannes Degruyl

L004
Laser Data Technology
1244 Dielman Industrial Park
St Louis, MO 63132
314-997-2250

* Multi-Access, Free-Space Laser Communication
88-1-14.02-2250 NASA GSFC
I: NAS5-30599 $ 48,087
II: NAS5-31170 $494,595
Monte Ross

L005
Laser Power Corporation
12777 High Bluff Drive
San Diego, CA 92130
619-755-0700

* Digital Image Profilers for Detecting Faint Sources which Have Bright Companions
88-1-08.18-0700 NASA JPL
I: NAS7-1040 $ 49,508
II: NAS7-T B D $ T B D
Graham Flint

L006
Lasergenics Corporation
P.O. Box 611330
San Jose, CA 95161-1330
408-433-0161

* An All-Solid-State Tunable Laser for Remote Sensing Applications
84-1-08.08-0537 NASA LaRC
I: NAS1-17941 $ 49,161
II: NAS1-18303 $489,000
Richard Schlecht

High-Brightness Laser for Deep-Space Optical Communication
85-1-14.11-6790 NASA JPL
I: NAS7-955 $ 49,514
Richard Schlecht

Fiber Sensors for High Temperatures and Pressures
87-1-13.01-0161 NASA JSC
I: NAS9-17943 $ 48,899
Richard Schlecht

Very-High-Temperature Fiber Sensors
88-1-02.11-0161 NASA LaRC
I: NAS1-18815 $ 49,286
Richard Schlecht

Superconducting Fibers of Bi(Pb)-Ca-Sr-Cu-O
88-1-04.10-0161 NASA LeRC
I: NAS3-25568 $ 49,893
Richard Schlecht

L007
Lasertechnics - *Was Rothe Technical Research*
5500 Wilshire Ave., N.E.
Albuquerque, NM 87113
505-822-1123

* Widely Tunable Gas Laser for Remote Sensing of Stratosphere
84-1-08.11-2227 NASA JPL
I: NAS7-935 $ 49,826
II: NAS7-970 $575,500
Dietmar E. Rothe

L008
Light Age, Inc.
6 Powder Horn Dr
Warren, NJ 07060
201-563-0600

Single, Longitudinal-Mode, Alexandrite Lidar Transmitter
89-1-08.06-0600 NASA GSFC
I: NAS5-30851 $ 50,000
Donald F. Heller

L009
Lightwave Electronics Corporation
1161 San Antonio Road
Mountain View, CA 94043
415-962-0755

* Multichannel Infrared Filters
85-1-08.09-0755 NASA ARC
I: NAS2-12352 $ 49,450
II: NAS2-12639 $451,795
Verne R. Costich

* Prototype Laser-Diode-Pumped, Solid-State Laser Transmitters
85-1-14.11-0755 NASA JPL
I: NAS7-951 $ 49,470
II: NAS7-999 $479,101
Thomas J. Kane

* Short-Pulse, High-Power Infrared Laser
86-1-08.02-0755 NASA GSFC
I: NAS5-30050 $ 49,428
II: NAS5-30305 $458,771
David S. Gerstenberger

* Tunable, Single-Frequency, Solid-State Laser Transmitter
88-1-08.07-0755 NASA LaRC
I: NAS1-18827 $ 48,500
II: NAS1-19103 $499,961
Richard W. Wallace

Coherent Communication Link Using Diode-Pumped Lasers
88-1-14.02-0755 NASA GSFC
I: NAS5-30487 $ 48,203
Thomas J. Kane

Efficient and Low-Timing-Jitter Pulsed Lasers for Space Communications
89-1-14.06-0755 NASA JPL
I: NAS7-1076 $ 49,607
William M. Grossman

L010

Lincom Corporation

1020 Bay Area Boulevard, Suite 200
Houston, TX 77058
713-488-5700

* Advanced Simulation Graphics System

84-1-06.04-1625	NASA JSC
I: NAS9-17277	$ 50,000
II: NAS9-17606	$500,000

John Mark Voss

* An Integrated Graphics and On-Orbit Vehicle Dynamics Simulation

88-1-06.06-1625B	NASA JSC
I: NAS9-18099	$ 50,000
II: NAS9-T B D	$ T B D

Randall D. Barnette

L011

Lynntech, Inc.

111 E. 27th Street, #204
Bryan, TX 77803
409-846-4131

Solid-Polymer, Electrolyte-Based Electrolyzers for Water Reclamation Post-Treatment

89-1-12.03-4131	NASA JSC
I: NAS9-18317	$ 50,000

Ramesh C. Kainthla

M

M001

M. W. Aerospace - *Now Maris Worden Aerospace*

M002

MCR Technology, Inc.

55 Depot Road
Goleta, CA 93117
805-964-0671

* An Expert-System-Based Software Sizing Tool

86-1-07.10-0671	NASA JPL
I: NAS7-981	$ 50,000
II: NAS7-1033	$487,813

David Friedlander

M003

MESO, Inc. - *Was Mesoscale, Inc.*

28 Research Drive
Hampton, VA 23666-1325
804-865-7800

A Mesoscale, Numerical, Weather Forecast System for Use in Shuttle Operations

86-1-13.07-7800	NASA KSC
I: NAS10-11377	$ 49,614

John W. Zack

* A Mesoscale, Statistical Thunderstorm Prediction System

88-1-13.03-7800	NASA KSC
I: NAS10-11562	$ 49,951
II: NAS10-T B D	$ T B D

Michael L. Kaplan

M004

MIMD Systems, Inc.

1301 Shoreway Road, Suite 430
Belmont, CA 94002
415-595-7303

A Distributed, Object-Oriented, Data Facility for Local-Memory, Parallel Computers

89-1-06.07-7505	NASA JPL
I: NAS7-1085	$ 49.0860

Robert Larson

M005

MJR, Inc.

10400 Eaton Place, Suite 300
Fairfax, VA 22030
Last Known Address

High-Thermal-Capacity Cold Plates and Hot Plates

83-1-09.05-0700	NASA JSC
I: NAS9-17029	$ 50,000

Han Hwangbo

M006

ML Energia, Inc.

P.O. Box 1468
Princeton, NJ 08542
609-799-7970

* Photochemical Ignition and Enhancement of Supersonic Combustion

87-1-02.06-7970	NASA ARC
I: NAS2-12782	$ 50,000
II: NAS2-13187	$499,980

Moshe Lavid

M007

MOCO, Inc.

P.O. Box A
Scituate, MA 02055-0974
617-545-2040

Optimal Workspace Design

89-1-12.05-2040	NASA JSC
I: NAS9-18320	$ 49,655

Ruth A. Maulucci

M008

MSNW, Inc.

P.O. Box 865
San Marcos, CA 92069
619-744-7648

* Improved Fracture Toughness in Metal-Matrix Composites

85-1-04.03-7648	NASA LaRC
I: NAS1-18219	$ 48,768
II: NAS1-18479	$393,000

George H. Reynolds

Chemical Vapor Deposition of TiAl Foils

87-1-04.03-7648	NASA LaRC
I: NAS1-18615	$ 49,966

George H. Reynolds

Synthesis of High-Purity, Refractory Beryllides

88-1-04.04-7648	NASA LaRC
I: NAS1-18821	$ 49,700

George H. Reynolds

M009

Machine Vision International Sternberg
301 North First Street
Ann Arbor, MI 48103
313-662-3537

* Integrated Computer Vision for Space Construction
85-1-05.04-8033 NASA JSC
I: NAS9-17580 $ 50,000
II: NAS9-17814 $496,000
Stanley R. Sternberg

M010

Macrodyne, Inc.
P.O. Box 1079
Schenectady, NY 12301
518-356-3500

* Frequency Domain Laser-Velocimeter Signal Processor
86-1-08.08-3500 NASA LaRC
I: NAS1-18405 $ 50,000
II: NAS1-18661 $500,000
R. Jay Murphy

M011

Madison Magnetics, Inc.
216 Walnut Street
Madison, WI 53705
608-238-5903

* Magnetic Suspension and Balance System for Wind Tunnels
84-1-02.03-5903 NASA LaRC
I: NAS1-17931 $ 50,000
II: NAS1-18279 $550,000
Roger W. Boom

M012

Magnetic Concepts
10313 Ridgemoor Drive
Silver Spring, MD 20901
301-593-7241

Electromagnetic Insulators
88-1-10.06-7241 NASA LeRC
I: NAS3-25614 $ 49,700
Philip A. Studer

M013

Mainstream Engineering Corporation
200 Yellow Place
Rockledge, FL 32955
407-242-7003

* Modular Chemical-Mechanical Heat Pump for Spacecraft Thermal-Bus Applications
88-1-09.07-7003 NASA GSFC
I: NAS5-30519 $ 49,997
II: NAS5-T B D $ T B D
Robert P. Scaringe

* Improved System for SCAPE Suit Heating
88-1-13.02-7003B NASA KSC
I: NAS10-11565 $ 49,959
II: NAS10-T B D $ T B D
Robert P. Scaringe

M014

Management Project Marketing Consultants - *Was ISG Associates*
5902 East Hadrians Court
Anaheim, CA 92807-3919
714-779-9888

Influence of Tooth-Profile Modification on the Lubrication of Involute Gearing
89-1-01.02-9888 NASA LeRC
I: NAS3-25881 $ 50,000
Lotfi E. El-Bayoumy

M015

Maris Worden Aerospace, Inc. - *Was MW Aerospace*
9301 North A-1-A, Suite 2
Vero Beach, FL 32963
407-388-2998

* Airflow Monitor and Stall Warning Device
86-1-03.08-2413 NASA ARC
I: NAS2-12592 $ 49,596
II: NAS2-12885 $492,660
Alfred M. Worden

M016

Mark J. Hommel
11631 Idlebrook
Houston, TX 77070
713-370-2749

Mixed-Convection Heat Transfer from a Sphere
83-1-15.02-2749 NASA MSFC
I: NAS8-35821 $ 50,000
Mark J. Hommel

M017

Marko Materials, Inc.
P.O. Box 3
North Billerica, MA 01862
617-663-2210

* Advanced, Powder-Metallurgy, Aluminum Alloys via Rapid Solidification Technology
83-1-04.13-2210 NASA LaRC
I: NAS1-17578 $ 50,000
II: NAS1-18001 $236,820
Ranjan Ray

Refractory-Metal Fibers Directly Cast from Melt
85-1-04.01-2210 NASA LeRC
I: NAS3-24867 $ 50,000
Ranjan Ray

* Fine-Grained, Nickel-Aluminide Alloy with Improved Formability Made via Rapid Solidification
86-1-15.02-2210 NASA LeRC
I: NAS3-25132 $ 50,000
II: NAS3-25448 $304,424
Sunil C. Jha

M018

Martingale Research Corporation
100 Allentown Parkway #211
Allen, TX 75002
214-422-4570

* The Parametric-Avalanche, Control-Module Prototype Cognitive Neurocomputer
88-1-06.06-4570 NASA JSC
I: NAS9-18100 $ 50,000
II: NAS9-T B D $ T B D
Robert L. Dawes

M019

Martini Associates
2303 Harris
Richland, WA 99352
Last Known Address

Free-Piston, Three-Phase Stirling Electric Generator
85-1-10.03-0115 NASA LeRC
I: NAS3-24874 $ 50,000
W. R. Martini

M020

Material Concepts, Inc. - *Now Fiber Materials, Inc.*
666 North Hague Avenue
Columbus, OH 43204-1492
614-272-5785

* Magnesium Composite Material for Advanced Rotary Aircraft Engines
83-1-04.01-5785 NASA LeRC
I: NAS3-24099 $ 49,108
II: NAS3-24546 $497,000
David M. Goddard

* Low-Thermal-Expansion Metal Composite Joints for Space Structures
83-1-04.13-5786 NASA MSFC
I: NAS8-35844 $ 49,840
II: NAS8-35255 $498,204
David M. Goddard

Hot-Die-Formed Graphite-Aluminum Wire
83-1-04.13-5786 NASA JSC
I: NAS9-17030 $ 49,661
Joseph A. Moore

Hot-Pressed, Gr-Al Composites for Low-CTE Fittings
84-1-04.07-5785A NASA JSC
I: NAS9-17293 $ 47,958
Patrick D. Burke

* Metallized-Kevlar Space Tether System
84-1-09.06-5785 NASA MSFC
I: NAS8-35268 $ 46,410
II: NAS8-37256 $471,000
Ralph F. Orban

M021

Materials and Electrochemical Research
7960 S Kolb Road
Tucson, AZ 85706
602-574-1980

* A ZrO2-Toughened, SiC-Whisker-Reinforced, Alumina Composite
85-1-04.01-3257A NASA LeRC
I: NAS3-24872 $ 50,000
II: NAS3-25206 $500,000
J. C. Withers

A Coated, Titanium Boride, Whisker-Toughened, Silicon-Carbide Matrix Composite
89-1-04.01-1980A NASA LeRC
I: NAS3-25630 $ 50,000
J. C. Withers

A Whisker-Reinforced High-Temperature Structural Insulation
89-1-04.15-1980 NASA JSC
I: NAS9-18318 $ 50,000
J. C. Withers

M022

Materials Sciences Corporation
930 Harvest Dr., Union Meeting Corp. Ctr., #3
Blue Bell, PA 19422
215-542-8400

* Predicting Thermo-Mechanical Responses of Metal Matrix Composites
83-1-04.03-8400 NASA GSFC
I: NAS5-28002 $ 47,428
II: NAS5-28651 $274,925
E. A. Humphreys

Woven-Reinforcement Constructions for Composites
84-1-04.03-5400 NASA LaRC
I: NAS1-17934 $ 48,685
Norris F. Dow

M023

Mathematical Research, Inc.
1120 NASA Road One, Suite 210
Houston, TX 77058
713-333-3912

System to Create Models of Fluid Flow Phenomena
87-1-06.07-2555 NASA ARC
I: NAS2-12796 $ 49,981
C. Lamar Wiginton

M024

Maxdem, Inc.
267 S Fair Oaks Avenue
Pasadena, CA 91105
818-793-5224

Thermally Stable, Low-Dielectric Films for Aerospace Applications
88-1-04.03-5224 NASA LaRC
I: NAS1-18832 $ 48,300
Neil H. Hendricks

* Nonlinear Optical Properties of Polyphenylenes
88-1-04.08-5224 NASA JPL
I: NAS7-1053 $ 49,274
II: NAS7-1104 $500,000
Neil H. Hendricks

M025

Mayflower Communications Company
80 Main Street
Reading, MA 01867
617-942-2666

* Autonomous, Integrated GPS/INS Navigation Experiment for OMV and STV
88-1-09.10-8100 NASA MSFC
I: NAS8-38031 $ 49,879
II: NAS8-T B D $ T B D
Triveni N. Upadhyay

M026

McMahan Electro-Optics, Inc.
2160 Park Avenue N
Winter Park, FL 32789
407-645-1000

* Double-Pulsed CCD, Phase-Sampled, Laser-Speckle Interferometric Metrology for NDT/E
87-1-13.07-0463 NASA LaRC
I: NAS1-18643 $ 43,110
II: NAS1-18848 $495,759
Robert K. McMahan, Jr.

M027

Mega Engineering

10800 Lockwood Drive
Silver Spring, MD 20901
301-681-6903

Reinforced, Inorganic Cement Material for Spark-Wire and Drift-Chamber Wire Frames

86-1-08.04-6803	NASA GSFC
I: NAS5-30051	$ 45,668

Richard E. Dame

M028

Membrane Technology & Research

1360 Willow Road, Suite 103
Menlo Park, CA 94025
415-328-2228

Removal of Carbon Dioxide from Spacecraft Atmosphere by Selective Membranes

85-1-12.01-2228	NASA JSC
I: NAS9-17572	$ 49,996

Hans Wijmans

* A Membrane Process for Scrubbing Propellant Vapors

85-1-13.06-2228	NASA KSC
I: NAS10-11285	$ 49,996
II: NAS10-11405	$357,908

Hans Wijmans

Novel Heat Pipe Systems

87-1-09.05-2228	NASA GSFC
I: NAS5-30281	$ 49,596

Richard W. Baker

M029

Memory Metals, Inc.

84 West Park Place
Stamford, CT 06901
Last Known Address

* Shape-Memory-Alloy Joints and Couplings for Advanced Composite Materials

85-1-04.04-9777	NASA MSFC
I: NAS8-36272	$ 44,775
II: NAS8-37343	$495,700

L. McDonald Schetky

M030

Mercor, Inc - *Now Thoratec Laboratories*

2023 Eighth Street
Berkeley, CA 94710
415-841-1213

Synthesis and Characterization of Protective Coatings for Aerospace Materials

85-1-04.06-0452	NASA JPL
I: NAS7-957	$ 49,684

Judy S. Riffle

M031

Meridian Corporation

4300 King Street, Suite 400
Alexandria, VA 22302
703-998-3600

* Force-Reflecting Hand Controller for Manipulator Teleoperation

87-1-05.01-3600	NASA JPL
I: NAS7-1024	$ 49,880
II: NAS7-1069	$499,553

Mark D. Bryfogle

M032

Merix Corporation

77 Charles Street
Needham Heights, MA 02194
617-455-8877

* Light-Weight Alumina-Aluminosilicate Thermal Protection Materials

85-1-04.05-6630	NASA ARC
I: NAS2-12354	$ 50,000
II: NAS2-12629	$472,758

Thomas W. Mix

M033

Metadyne, Inc.

P.O. Box 242
Elmira, NY 14902
607-732-1300

* High-Strength, Refractory-Metal Fibers by Advanced Powder Metallurgy

85-1-04.01-1300	NASA LeRC
I: NAS3-24865	$ 49,926
II: NAS3-25149	$496,741

Raman L. Daga

M034

Metriwave, Inc.

4040 Spencer Street, #H
Torrance, CA 90503-2440
818-795-0669

* Microwave Network Analyzer for Superconductor-Insulator-Superconductor Mixer Research

87-1-08.18-0669	NASA JPL
I: NAS7-1025	$ 50,000
II: NAS7-1071	$524,997

Wyman L. Williams

M035

Metrolaser

18006 Skypark Circle #108
Irvine, CA 92714-6428
714-553-0688

Liquid Rocket Atomization: an Innovative Numerical and Experimental Simulation

88-1-11.03-0688	NASA MSFC
I: NAS8-38043	$ 49,967

Cecil F. Hess

A Holographic Interferometer Spectrometer for Hypersonic Flow

89-1-02.04-0686A	NASA ARC
I: NAS2-13171	$ 49,950

James D. Trolinger

M036

Micon Engineering

One Graham Road
College Station, TX 77840
409-690-8911

Intelligent Protection System for Space Power Applications

89-1-10.06-8911	NASA MSFC
I: NAS8-38442	$ 47,706

R. Page Heller

M037

Micro Concepts, Inc.
11713 Palmer Drive
Tampa, FL 33624
813-974-2392

Rapid Diagnosis of Bacterial Infectious Diseases Under Microgravity Conditions
86-1-12.02-2392 NASA JSC
I: NAS9-17729 $ 49,988
Hilary P. Stecklein

M038

Micro Craft, Inc.
P.O. Box 370
Tullahoma, TN 37388
615-455-2664

An Improved Quick-Disconnect for Aerospace Fluid Systems
88-1-13.02-2664 NASA KSC
I: NAS10-11556 $ 49,968
Glenn Hardin

M039

Micro-G Research, Inc.
3401 Market Street, Room 345
Philadelphia, PA 19014-3323
215-387-9339

* Variable-Speed, Mid-Deck Centrifuge
85-1-12.09-4908 NASA KSC
I: NAS10-11288 $ 49,989
II: NAS10-11404 $499,352
David K. Chapman

Variable-G Facility for LIFESAT
88-1-12.08-9339 NASA ARC
I: NAS2-12999 $ 49,761
David G. Heathcote

M040

MicroImages, Inc.
932 North Lakeshore Drive
Lincoln, NE 68528
402-435-3864

Portable, Low-Cost, Image Processing Prototype for Use by Individual Scientists
86-1-07.07-3864 NASA SSC
I: NAS13-300 $ 49,596
Michael J. Unverferth

M041

Microcosm, Inc.
2601 Airport Drive, Suite 230
Torrance, CA 90505
213-539-9444

Spacecraft Attitude Determination Using AI and Attitude Measurement Information Theory
89-1-09.08-9444 NASA GSFC
I: NAS5-30874 $ 50,000
James R. Wertz

M042

Microexpert Systems, Inc.
24007 Ventura Boulevard, Suite 210
Calabasas, CA 91302
818-712-9934

* The Laser Docking Sensor Intelligent Controller
85-1-05.07-5506 NASA JSC
I: NAS9-17567 $ 49,950
II: NAS9-17807 $498,734
Phillip Borden

M043

Microgravity Research Associates
P.O. Box 10505
Midland, TX 79702
915-684-5544

* Growth of InGaAs, Bulk Ternary Crystals by Liquid-Phase Electroepitaxy
88-1-15.01-5544 NASA LeRC
I: NAS3-25627 $ 49,765
II: NAS3-T B D $ T B D
Tadeusz Bryskiewicz

M044

Microgravity Systems, Inc.
4215 Al 72E
Brownsboro, AL 35741
205-776-2043

Permanent Magnet Flight Furnace
89-1-15.01-2043 NASA MSFC
I: NAS8-38450 $ 48,408
Billy R. Aldrich

M045

Microtronics Associates, Inc.
4516 Henry Street, Suite 403
Pittsburgh, PA 15213-3728
412-681-0888

* Hardware for Parallel, Asynchronous, Focal-Plane Image Processing
87-1-07.01-0888 NASA LaRC
I: NAS1-18645 $ 49,022
II: NAS1-18850 $485,498
Darryl D. Coon

Infrared Detector Systems for High-Dynamic-Range Radiometry and Imaging
87-1-08.16-0888 NASA GSFC
I: NAS5-30282 $ 49,660
Darryl D. Coon

* Heterostructure Infrared Detectors for Use at Wavelengths Longer than 14 Microns
88-1-08.01-0888 NASA JPL
I: NAS7-1051 $ 50,000
II: NAS7-T B D $ T B D
Darryl D. Coon

M046

Microwave Monolithics, Inc.
465 East Easy Street, Unit F
Simi Valley, CA 93065
805-584-6642

* Advanced Monolithic Gallium-Arsenide Switch Matrix
83-1-14.02-6642 NASA LeRC
I: NAS3-23788 $ 50,000
II: NAS3-24252 $444,000
Daniel R. Ch'en

* Advanced, Low-Cost, Universal, 20 GHz Monolithic Receiver Front-End
84-1-14.01-6642 NASA LeRC
I: NAS3-24246 $ 50,000
II: NAS3-24894 $500,000
Wendell C. Petersen

* Advanced, GaAs, Monolithic, 20 GHz, RF Switch Matrix
84-1-14.02-6642 NASA LeRC
I: NAS3-24248 $ 50,000
II: NAS3-24895 $497,000
Daniel R. Ch'en

* Advanced On-Chip Divider for Monolithic, Microwave, Voltage-Controlled Oscillators

85-1-14.06-6642A	NASA JPL
I: NAS7-947	$ 50,000
II: NAS7-1000	$462,000

Wendell C. Petersen

* Advanced Low-Cost, High-Performance Optical Components for CD-ROM Applications

86-1-06.12-6642	NASA ARC
I: NAS2-12564	$ 50,000
II: NAS2-12909	$498,911

Daniel R. Ch'en

High-Temperature Superconductors in Monolithic Microwave and Millimeter-Wave Integrated Circuits

87-1-08.18-6642	NASA JPL
I: NAS7-1011	$ 49,712

Daniel P. Siu

* High-Efficiency, Low-Cost, GaAs Monolithic RF Module SARSAT Distress Beacons

87-1-14.03-6642	NASA LeRC
I: NAS3-25403	$ 50,000
II: NAS3-25712	$488,721

Wendell C. Petersen

Advanced Optical Head Technology

89-1-06.06-6642	NASA ARC
I: NAS2-13163	$ 49,405

Daniel R. Ch'en

Monolithic, Gallium-Arsenide, UHF-IF, Switch Matrix for Space Station Applications

89-1-14.01-6642	NASA JSC
I: NAS9-18319	$ 50,000

Daniel R. Ch'en

Advanced Monolithic, Gallium Arsenide Receiver Front-End for Spacecraft Transponders

89-1-14.04-6642	NASA JPL
I: NAS7-1098	$ 50,000

Wendell C. Petersen

M047

Mid-South Engineering, Inc.

2131 Bellcourt Avenue
Nashville, TN 37212
615-383-8877

* Intelligent, Gas-Tungsten-Arc Welding Control

86-1-04.08-0960	NASA MSFC
I: NAS8-37306	$ 50,000
II: NAS8-37401	$469,985

Kristinn Andersen

Robotic Weld Path Programming

86-1-04.08-0960	NASA MSFC
I: NAS8-37629	$ 49,715

Kristinn Andersen

M048

Midwest Research Microscopy

5510 West Florist Avenue
Milwaukee, WI 53218
414-527-2260

Erosion- and Oxidation-Resistant Protective Coating for Polyimide Sheeting

88-1-04.07-2260	NASA JSC
I: NAS9-18101	$ 49,940

Norman A. Draeger

M049

Millitech Corporation

P.O. Box 109
South Deerfield, MA 01373
413-665-8551

* Space-Qualified Submillimeter Radiometer

83-1-08.02-8591	NASA JPL
I: NAS7-926	$ 49,928
II: NAS7-933	$500,000

G. Richard Huguenin

* Submillimeter Sources for Radiometry Using High-Power Indium-Phosphide Gunn Oscillators

85-1-08.02-8551A	NASA JPL
I: NAS7-952	$ 49,997
II: NAS7-996	$439,116

Naresh C. Deo

A Broadband, Multichannel, Precipitation Sensor

89-1-08.09-8551	NASA MSFC
I: NAS8-38467	$ 49,544

Ellen L. Moore

M050

Miranda Laboratories

1 De Angelo Drive
Bedford, MA 01730
617-275-1150

* Single-Particle Contaminant-Sizing Spectrometer for Space Application

86-1-08.09-1150	NASA GSFC
I: NAS5-30052	$ 49,962
II: NAS5-30306	$492,610

Henry A. Miranda Jr.

M051

Modus, Inc.

515 North Melton Drive
Jonesboro, AR 72401
Last Known Address

Remote, Teleoperator, Manual-Feedback Device with Gyrostatic Force Translation

84-1-05.01-5915	NASA JPL
I: NAS7-939	$ 49,625

Keith A. Jones

M052

Moller International, Inc.

1222 Research Park Drive
Davis, CA 95616
916-756-5086

Evaluation of PS200 Coating as a Thermal Barrier in an Air-Cooled Rotary Engine

89-1-01.02-5086	NASA LeRC
I: NAS3-25873	$ 48,319

Mike Griffith

M053

Monat Associates
4 Hollis Court
Centerport, NY 11721-1108
516-261-5449

A Real-Time Ice Detection System
86-1-03.01-5449 NASA LeRC
I: NAS3-25133 $ 49,972
Uriel Vogel

M054

Monolithic Superconductors, Inc.
P.O. Box 1654
Lake Oswego, OR 97035-9998
503-684-2974

Novel Fabrication of Superconducting Antenna Structures for Space Applications
88-1-09.14-2974 NASA GSFC
I: NAS5-30504 $ 48,986
Lawrence E. Murr

M055

Mosaic Industries, Inc
1260 L'Avenida, Suite B
Mountain View, CA 94043
415-961-9054

Automated Atmospheric Analysis for Manned Space Missions
87-1-08.10-9054 NASA MSFC
I: NAS8-37630 $ 49,991
Paul K. Clifford

M056

Multipoint Communications Corporation
1284 Geneva Drive
Sunnyvale, CA 94089
408-734-3900

Programmable-Rate, Digital Modem Utilizing Digital Signal Processing Techniques Support Burst Modes
87-1-14.01-3900A NASA LeRC
I: NAS3-25336 $ 49,692
Robert Wallace

M057

Multisignal Technology Corporation
4662 Katella Avenue, Suite J
Los Alamitos, CA 90720
213-431-3503

Computing Range and Three-Dimensional Structure of Rigid Objects Using Stereo and Motion
86-1-05.03-3503 NASA MSFC
I: NAS8-37308 $ 47,482
Thinh V. Nguyen

A Neural Network Approach for Unsupervised Image Classification
88-1-07.02-3503 NASA SSC
I: NAS13-381 $ 49,807
Thinh V. Nguyen

N

N001

NDE Technology, Inc.
2909 Oregon Court C8
Torrance, CA 90503
213-320-5782

Acoustic Failure Prevention System for Thermal Control Systems
85-1-09.13-5782A NASA JSC
I: NAS9-17566 $ 49,712
John R. Mastandrea

N002

NDT Technologies, Inc.
P.O. Box 637
South Windsor, CT 06074
203-644-5655

A DC-to-400Hz Inverter
87-1-09.06-7958 NASA JSC
I: NAS9-17944 $ 49,997
Herbert R. Weischedel

N003

Natural Language Products
180 Precora Way
Portola Valley, CA 94025
Last Known Address

Robust Natural Language Processor Transactional Dialogues
84-1-07.09-7511 NASA ARC
I: NAS2-12087 $ 49,970
Jerrold Ginsparg

N004

Nektonics, Inc.
875 Main Street
Cambridge, MA 01239
617-868-0101

* Chemical-Vapor-Deposition, Fluid-Flow-Simulation Modelling Tool
88-1-15.03-5777 NASA LaRC
I: NAS1-18831 $ 44,820
II: NAS1-19102 $440,000
Edward T. Bullister

Transition to Turbulence in Complex Aerodynamic Flows
89-1-02.03-5750 NASA LaRC
I: NAS1-19017 $ 48,700
Edward T. Bullister

N005

Neocera Associates, Inc.
P.O. Box 815
Piscataway, NJ 08855
201-647-2694

Microwave-Compatible, High-Tc Superconducting Films on Sapphire Substrates
89-1-04.17-2694 NASA LeRC
I: NAS3-25869 $ 49,863
Roger Edwards

N006

Netrologic

5080 Shoreham Place, Suite 201
San Diego, CA 92122
619-587-0970

* Space Transportation Analysis and Intelligent Space Systems
86-1-06.06-5550 NASA JSC
I: NAS9-17727 $ 49,939
II: NAS9-17995 $473,200
Daniel R. Greenwood

* Neural-Network Path-Planning and Digital Adaptive Control of Redundant Robots
88-1-05.01-1225 NASA JPL
I: NAS7-1058 $ 49,959
II: NAS7-T B D $ T B D
Daniel R. Greenwood

Adaptive Image Encoding and Classification Using Neural Networks
88-1-07.02-1225 NASA GSFC
I: NAS5-30481 $ 49,629
Richard S. Cigledy

* A Natural Language Interface to a Geographical Information System
88-1-07.04-1225 NASA SSC
I: NAS13-384 $ 49,054
II: NAS13-T B D $ T B D
Rachel Adar

N007

Neurogen

40 Longwood Avenue
Brookline, MA 02146
617-739-2215

Neural Network Controller for Adaptive Movements in Robots
87-1-05.01-2215 NASA LaRC
I: NAS1-18630 $ 29,000
Michael Kuperstein

N008

New Horizons Diagnostics

9110 Red Branch Rd
Columbia, MD 21045
301-992-9357

Device for Sample Collection and Rapid Immunological Identification of Biological Specimens
89-1-12.08-9357 NASA JSC
I: NAS9-18321 $ 50,000
David Bernstein

N009

Newport Electro-Optics Systems, Inc.

4551-B Enterprise Court
Melbourne, FL 32934
407-254-0300

* A Multichannel, Acousto-Optic, Bragg Cell, Spectrum Analyzer System
88-1-07.05-0300 NASA GSFC
I: NAS5-30486 $ 49,763
II: NAS5-30885 $473,035
Eddie Young

N010

Niagara Scientific, Inc.

4004 New Court Avenue
Syracuse, NY 13206
315-437-0821

Miniature Airborne Dew Point Sensor
87-1-03.07-0821 NASA LaRC
I: NAS1-18623 $ 49,997
Sylvan Z. Beer

N011

Nichols Research Corporation

4040 South Memorial Parkway
Huntsville, AL 35802
205-883-1140

* Satellite Microwave-Sounder-Based Atlantic Cyclone Forecasts
83-1-08.04-1140 NASA GSFC
I: NAS5-28003 $ 50,000
II: NAS5-28656 $499,000
Herbert E. Hunter

Deductively Augmented, Management Decision Support System
85-1-07.01-1140 NASA KSC
I: NAS10-11286 $ 49,999
Anne-Marie Gnacek

N012

Nielsen Engineering & Research, Inc.

510 Clyde Avenue
Mountain View, CA 94043-2287
415-968-9457

* Increasing the Convergence Rate Euler Equation Solutions
83-1-02.01-9458 NASA ARC
I: NAS2-11740 $ 49,678
II: NAS2-12129 $338,000
David Nixon

Rapid Computation with Nonlinear Numerical Algorithms
84-1-02.01-9457B NASA ARC
I: NAS2-12088 $ 49,167
Goetz H. Klopfer

* Supersonic, Turbulent, Reacting Flow Modeling and Calculation
87-1-01.04-9457 NASA LeRC
I: NAS3-25285 $ 49,979
II: NAS3-25633 $384,697
Mohammad Farshchi

* Unsteady Triangular-Mesh, Navier-Stokes Method for Aerodynamics of Aircraft with Ice Accretion
88-1-03.01-9457 NASA LeRC
I: NAS3-25601 $ 50,000
II: NAS3-T B D $ T B D
Steven C. Caruso

A Model for Shock Turbulence Interaction
89-1-02.04-9457 NASA LaRC
I: NAS1-19027 $ 50,000
Robert E. Childs

N013

Nonvolatile Electronics, Inc.

5805 Amy Drive
Edina, MN 55436
612-920-8659

Ultra-Dense Magneto-Resistive Mass Memory
89-1-07.09-8659 NASA JPL
I: NAS7-1077 $ 49,919
James M. Daughton

N014

North American Aerospace Corporation

P.O. Box 162284
Austin, TX 78716-2284
512-328-0979

Aircraft Flight Testing Techniques and Instrumentation
87-1-03.07-0979 NASA ARC
I: NAS2-12741 $ 45,000
Larry Bird

N015

Northam Marketing Electronics

303 Williams Street, Suite 1531
Huntsville, AL 35801
205-881-3820

Space Power and Distribution Systems: Remote Power Controller
83-1-10.06-3820 NASA LeRC
I: NAS3-23872 $ 50,000
Brahm Segal

N016

Northeast Semiconductor, Inc.

95 Brown Road, #141
Ithaca, NY 14850
716-275-4867

* Diode Arrays for Pumping Rare-Earth-Doped, Solid-State Lasers
88-1-08.06-3409 NASA GSFC
I: NAS5-30493 $ 48,000
II: NAS1-T B D $ T B D
A. A. Karpinski

N017

Northwest Research Associates

P.O. Box 3027
Bellevue, WA 98009
206-453-8141

A New Method for Respiratory Monitoring During Space Flight
88-1-12.08-8141 NASA ARC
I: NAS2-12994 $ 49,787
Robert B. Fraser

N018

Novatech, Inc.

1745 East 1350 North
Logan, UT 84321
801-750-2035

Imaging Altimeter Using Imaging Doppler Interferometry
87-1-08.06-2035 NASA JPL
I: NAS7-1016 $ 50,000
Bruce R. Peterson

N019

Nuclear Filter Technology, Inc.

13237 West 8th Avenue
Golden, CO 80401
303-237-4024

Low Density, Activated Carbon-Carbon Composite Cryogen Containment System
86-1-09.19-4024 NASA GSFC
I: NAS5-30053 $ 41,957
Gilbert W. Brassell

N020

Numedloc

430 Hollybush Rd
Bryn Mawr, PA 19010
215-527-4995

Anatomical Image Analysis Techniques
89-1-12.14-5668A NASA KSC
I: NAS10-11650 $ 49,999
Lon Crosby

O

O001

OI Corporation

P.O. Box 2980
College Station, TX 77841
409-690-1711

Water Quality Monitor
87-1-12.01-1711 NASA JSC
I: NAS9-17945 $ 48,136
Bernie B. Bernard

O002

OPCOA, Inc.

12281 Knott Street, Suite 109
Garden Grove, CA 92641-3925
714-558-7377

Holographic-Processor, Optical Wavelength Demodulation in Fiber-Optic Systems
83-1-08.01-4141 NASA JPL
I: NAS7-925 $ 41,120
William H. Quick

* Fiber-Optic Pressure Sensor for Wind Tunnel Applications
87-1-08.20-7377 NASA LaRC
I: NAS1-18626 $ 49,994
II: NAS1-18844 $337,519
William H. Quick

O003

ORD, Inc.

P.O. Box 148
North Salem, NH 03073
603-893-9419

* New Fiber Fluorescence Immunoassay
83-1-12.02-9111 NASA JSC
I: NAS9-17035 $ 48,660
II: NAS9-17304 $451,000
Myron J. Block

O004

Odetics, Inc.

1515 South Manchester Avenue
Anaheim, CA 92802-2907
714-758-0300

* Handheld Optical Radar
84-1-09.13-5000 NASA JSC
I: NAS9-17289 $ 50,000
II: NAS9-17604 $500,000
Robert Drap

* Co-Ordinated Control of a Payload Utilizing Multiple Manipulator Arms
85-1-05.07-0300A NASA JSC
I: NAS9-17577 $ 49,958
II: NAS9-17804 $498,764
Stephen J. Guzowski

* Adaptive, Focal Plane Processor for Image Enhancement
85-1-07.04-0300 NASA LaRC
I: NAS1-18204 $ 49,812
II: NAS1-18468 $483,584
George B. Westrom

Threat Expert Systems Technology Advisor
86-1-03.06-5000 NASA ARC
I: NAS2-12558 $ 49,932
Eleanor Kurrasch

* An Integrated Laser Ranger and Camera System
86-1-07.02-5000 NASA LaRC
I: NAS1-18408 $ 50,000
II: NAS1-18664 $499,699
George B. Westrom

* Advanced Object Color Identifier System
86-1-07.07-5000 NASA SSC
I: NAS13-302 $ 50,000
II: NAS13-339 $499,857
Eleanor Kurrasch

* Control Algorithm for Redundant Degree-of-Freedom Manipulators
87-1-05.01-0300A NASA JPL
I: NAS7-1006 $ 50,000
II: NAS7-1062 $497,669
Steven M. Cohan

Telepresence Sensor and Control Helmet
87-1-05.01-0300C NASA JPL
I: NAS7-1019 $ 50,000
Timothy Larson

* End-Point-Collision-Avoidance Path Planner for Redundant DOF Manipulators
88-1-05.01-0300A NASA JPL
I: NAS7-1055 $ 49,416
II: NAS7-T B D $ T B D
Nigel S. King

Dual-Arm, Collision-Avoidance Algorithm
88-1-05.01-0300B NASA JPL
I: NAS7-1038 $ 49,710
Timothy Larson

* A Knowledge-Based Imaging System
88-1-07.01-5000 NASA LaRC
I: NAS1-18816 $ 49,848
II: NAS1-19092 $492,250
George B. Westrom

O005

Odyssey Research Associates, Inc.

301-A Harris B. Dates Drive
Ithaca, NY 14850
607-277-2020

Formal Verification of Mathematical Software
83-1-06.06-2020 NASA LaRC
I: NAS1-17579 $ 50,000
Richard Platek

Formal Verification of C with Unix
89-1-06.03-2020 NASA LaRC
I: NAS1-19008 $ 49,984
Douglas N. Hoover

O006

Olis Engineering

P.O. Box 408 D
Sedalia, CO 80135
303-688-0718

* Inflatable End Effectors
85-1-05.03-0718 NASA MSFC
I: NAS8-36259 $ 39,579
II: NAS8-37339 $124,602
Carter M. Lord

Centerline Imaging System for End-Effector Tools
88-1-05.03-0718 NASA MSFC
I: NAS8-38029 $ 37,979
Carter M. Lord

O007

Omitron, Inc.

6305 Ivy Lane, Suite 500
Greenbelt, MD 20770
301-474-1700

* Adaptable Data Acquisition System
85-1-07.02-1700 NASA GSFC
I: NAS5-29270 $ 49,181
II: NAS5-30170 $499,998
Frederick J. Hawkins

* Concept-Oriented, Distributed, Expert System for Spacecraft Control
87-1-07.02-1700 NASA GSFC
I: NAS5-30284 $ 49,631
II: NAS5-30637 $488,055
David E. Simm

O008

Ontologic, Inc.

3 Burlington Woods
Burlington, MA 01803-4514
617-272-7110

Clips--Vbase Feasibility Study
87-1-06.05-2383 NASA JSC
I: NAS9-17946 $ 31,467
Michael J. Vilot

O009

Ophir Corporation

3190 S. Wadsworth Boulevard, Suite 100
Lakewood, CO 80227
303-986-1512

* Measurement of the Liquid Water and Ice Water Contents of Snow
84-1-08.15-1512 NASA JPL
I: NAS7-943 $ 47,495
II: NAS7-966 $371,000
Loren D. Nelson

Low-Cost Doppler Micro-Radar Rain Gauge
87-1-08.02-1512 NASA GSFC
I: NAS5-30285 $ 49,930
Loren D. Nelson

Laser-Doppler-Velocimeter Flow-Rate Measurement in Control Fluid Systems
87-1-13.06-1512 NASA MSFC
I: NAS8-37631 $ 49,673
Gregory J. Fetzer

A Novel Laser System for Forecasting and Mitigating Lightning Strikes
89-1-13.03-1512 NASA KSC
I: NAS10-11655 $ 49,960
Gregory J. Fetzer

O010
Optimization Technology, Inc.
P.O. Box 949
Auburn, AL 36830
408-973-1441

Software Engineering Support System
84-1-06.06-6700 NASA LaRC
I: NAS1-17936 $ 50,000
Paul L. McEntire

O011
Optivision, Inc.
744 San Antonio Road
Palo Alto, CA 94303
916-756-4429

* Fiber-Optic Interconnection Networks for Spacecraft
88-1-07.05-4429 NASA GSFC
I: NAS5-30501 $ 49,999
II: NAS5-T B D $ T B D
Antonio R. Dias

A Programmable, Image-Data Compression Subsystem for Workstations
89-1-07.01-4429 NASA LaRC
I: NAS1-19116 $ 50,000
Paul Farrelle

A Hybrid Simulation System for Image Data Compression
89-1-07.02-4429 NASA GSFC
I: NAS5-30890 $ 50,000
Paul Farrelle

O012
Optra, Inc.
66 Cherry Hill Drive
Beverly, MA 01915
508-535-7670

Non-Contact, High-Temperature Strain Gage
85-1-01.03-7670 NASA LeRC
I: NAS3-24848 $ 49,147
Michael Hercher

Cell Culture in Microgravity
87-1-12.07-7670 NASA KSC
I: NAS10-11457 $ 49,000
Bruce Crary

* Auto-Aligned, Fourier Transform, Ultraviolet Spectrometer
88-1-08.05-7670 NASA JPL
I: NAS7-1060 $ 49,762
II: NAS7-T B D $ T B D
Geert Wyntjes

* Fiber-Optic Loop for the Measurement of Electric Currents in Space
88-1-08.13-7670 NASA GSFC
I: NAS5-30499 $ 49,0918
II: NAS5-30883 $472,754
Geert Wyntjes

O013
Optron Systems, Inc.
3 Preston Court
Bedford, MA 01730
617-275-3100

Low-Cost, Imaging, Electron Multiplier Device
89-1-08.13-3100 NASA GSFC
I: NAS5-30866 $ 49,782
Anthony Nicoli

Low-Voltage, Thin-Film Electroluminescent Phosphor
89-1-09.09-3100 NASA JSC
I: NAS9-18323 $ 49,835
Camille F. Fuleihan

An Electro-Optic Modulator for Laser Wavefront Correction and Positioning in Space
89-1-14.01-3100 NASA JSC
I: NAS9-18322 $ 49,935
Ira Farber

O014
Orbital Technologies Corporation
402 Gammon Place, #10
Madison, WI 53719
608-836-6684

* Microgravity Sonic Pump Levitator Furnace
88-1-15.01-6684 NASA MSFC
I: NAS8-38042 $ 49,696
II: NAS8-38483 $500,000
Eric E. Rice

P

P001
P. C. Krause & Associates, Inc.
1414 Ravinia Road
West Lafayette, IN 47906
317-463-9685

Simulation and Control of Future Spacecraft Power Systems
86-1-10.04-9685 NASA LeRC
I: NAS3-25119 $ 50,000
Paul C. Krause

* Advanced Power Sources and Actuator Systems for Future Aerospace Vehicles
88-1-10.05-9685 NASA MSFC
I: NAS8-38035 $ 50,000
II: NAS3-T B D $ T B D
George E. Gareis

P002
PCP, Inc.
2155 Indian Road
West Palm Beach, FL 33409
407-683-0507

* Ion-Mobility Sensing of Extraterrestrial Volatiles from a Gas Chromatograph
88-1-08.10-0507 NASA ARC
I: NAS2-12997 $ 50,000
II: NAS2-T B D $ T B D
R.F. Wernlund

P003

PDA Engineering

2975 Redhill Avenue
Costa Mesa, CA 92626
714-540-8900

* Cast SiC-Al Technology with Direct Application to Rotary Engines

85-1-01.02-8402 NASA LeRC
I: NAS3-24847 $ 50,000
II: NAS3-25201 $499,972
James R. Carluccio

A Controlled-Interfacial-Bond-Strength Process for Carbon-Phenolic and Carbon-Carbon Composites

86-1-04.02-2800 NASA LaRC
I: NAS1-18416 $ 49,997
H. M. Stoller

Filament Winding Process for Thermoplastic Matrix Composites

87-1-04.05-8900 NASA MSFC
I: NAS8-37632 $ 49,587
Ronald E. Allred

Lightweight, Advanced Composite Gondola for Stratospheric Balloons

87-1-04.11-8900 NASA GSFC
I: NAS5-30286 $ 49,920
Donald C. Guichard

* Generalized Failure Criteria for Two-Dimensional Carbon-Carbon

88-1-11.01-8900B NASA MSFC
I: NAS8-38025 $ 49,980
II: NAS8-T B D $ T B D
Douglas A. Marx

Physically Based, Failure Criteria for Carbon-Phenolic Materials

89-1-11.04-8900A NASA MSFC
I: NAS8-38444 $ 50,000
John P. Norman

P004

PDA Engineering, Albuquerque Div. - *Was Santech*

3754 Hawkins NE
Albuquerque, NM 87109
505-344-4967

* Surface Chemical Modification of Graphite Filaments to Improve Graphite-Thermoplastic Composites

85-1-04.03-8402A NASA LaRC
I: NAS1-18208 $ 50,000
II: NAS1-18469 $479,100
Ronald E. Allred

P005

PEDA Corporation

4151 Middlefield Road, Suite 7
Palo Alto, CA 94303
415-493-5123

Improved Turbulence Model for Aerodynamic Flows with Massive Separation and Wakes

86-1-02.06-5123 NASA ARC
I: NAS2-12550 $ 49,840
Jorge Badina

P006

PI, Inc..

P.O. Box 442
Redondo Beach, CA 90277
213-370-9961

Mobile Radios for the Mobile Satellite Service

86-1-14.06-9961 NASA JPL
I: NAS7-990 $ 49,870
Tai Kao

Collision-Resolution Algorithm for Request Channel Demand Assigned Network Protocols

86-1-14.08-9961 NASA JPL
I: NAS7-992 $ 49,870
Raymond Cheung

P007

PSI Technology Company

P.O. Box 3100
Andover, MA 01810
508-475-9030

* Production of Oxygen and Other Products by Pyrolysis of Lunar Materials

88-1-04.11-9030 NASA JSC
I: NAS9-18102 $ 49,983
II: NAS9-T B D $ T B D
Constance L. Senior

P008

Pacific Monolithics, Inc.

245 Santa Ana Court
Sunnyvale, CA 94086
408-732-8000

* Linear and Bi-Phase Modulator for Integrated Circuits

88-1-14.04-8000 NASA JPL
I: NAS7-1056 $ 47,787
II: NAS7-T B D $ T B D
Fazal Ali

P009

Panametrics, Inc.

221 Crescent Street
Waltham, MA 02254
617-899-2719

Ultrasonic Transducers: Deployment and Signal Processing Means for Cryofluids

88-1-08.15-2719 NASA LeRC
I: NAS3-25371 $ 50,000
Lawrence C. Lynnworth

Cryogenic, Ultrasonic, Mass Flowmeter and Quality Meter

89-1-08.22-2719 NASA LeRC
I: NAS3-25814 $ 50,000
Lawrence C. Lynnworth

P010

Partnerships Limited

P.O. Box 6503
Lawrenceville, NJ 08648
609-896-2193

High-Altitude, RPV Flight Test Vehicle

83-1-02.09-2193 NASA ARC
I: NAS2-11735 $ 49,976
Paul H. Kydd

P011

Payload Systems, Inc.

276 Third Street
Cambridge, MA 02142-1112
617-235-2465

Microgravity Accelerometer Package for Spaceflight Applications
86-1-15.08-2465 NASA LeRC
I: NAS3-25125 $ 50,000
Byron K. Lichtenberg

P012

Penn Laboratories, Inc.

83 Mountain Ridge Road
Cartersville, GA 30120
404-974-8476

* Laser Float-Zone Process Improvements
88-1-04.12-8476 NASA LeRC
I: NAS3-25605 $ 50,000
II: NAS3-25944 $500,000
Wayne Penn

P013

Perceptics Corporation

725 Pellissippi Parkway
Knoxville, TN 37933-0991
615-966-9200

Parallel Implementation of Algorithms for Robotic Sensory Fusion
88-1-05.03-9200 NASA GSFC
I: NAS5-30459 $ 49,280
R. C. Gonzales

P014

Phoenix Engineering & Computing, Inc.

2923 Osmundsen Road
Madison, WI 53711
608-274-1987

Kinematic Data Gathering System for Determining Human Motion in Zero Gravity
87-1-12.04-1987 NASA JSC
I: NAS9-17947 $ 45,491
Rimantas Buinevicius

P015

Phonon Corporation

7 Herman Drive, P.O. Box 549
Simsbury, CT 06070
203-651-0211

Surface-Acoustic-Wave, Spectral Limiter for Narrow-Band Interference Suppression
89-1-14.02-0211 NASA GSFC
I: NAS5-30842 $ 49,300
Clement Valerio

P016

Photo-Catalytics, Inc.

2905 Center Green Court South
Boulder, CO 80301
303-444-0052

* Photocatalytic Purification and Sterilization of Water Derived from Recycled Distillates
86-1-12.01-4406 NASA JSC
I: NAS9-17733 $ 50,000
II: NAS9-17987 $498,500
Gerald Cooper

P017

Photometrics Limited

3440 E. Britannia Drive, #200
Tucson, AZ 85706-5006
602-623-8961

* Advanced Electronic Imaging System
85-1-08.01-8961 NASA GSFC
I: NAS5-29284 $ 48,650
II: NAS5-30171 $472,000
Gary R. Sims

High-Resolution, Multi- CCD TDI Camera System
87-1-08.17-8961 NASA JPL
I: NAS7-1022 $ 49,885
T. W. Mccurnin

Backside-Illuminated, Large-Format, Charge-Coupled Devices and Mosaics
89-1-08.13-8961 NASA GSFC
I: NAS5-30870 $ 49,233
Gary R. Sims

Charge-Coupled Device Sensors for Electronic Still Photography
89-1-12.06-8961 NASA JSC
I: NAS9-18234 $ 49,196
Gary R. Sims

P018

Photon Research Associates, Inc.

9393 Towne Centre Drive, Suite 200
San Diego, CA 92121
619-455-9741

Integrated Ergonomic System for Software Development
89-1-05.03-1522 NASA GSFC
I: NAS5-30872 $ 49,984
James D. Turner

P019

Photon Research Associates, Inc.

1033 Massachusetts Avenue
Cambridge, MA 02138
617-354-1522

Multispectral, Remote Sensing Using Sprite Technology
89-1-08.03-1522 NASA SSC
I: NAS13-406 $ 49,990
James C. Fraser

P020

Photonic Systems, Inc.

1900 S Harbor City Boulevard
Melbourne, FL 32901
407-984-8181

Wideband Acousto-Optic Spectrometer
88-1-08.16-8181 NASA JPL
I: NAS7-1048 $ 49,817
Dennis R. Pape

Wideband, Multi-Channel, Acousto-Optic Spectrometer for Radio Astronomy Applications
89-1-07.05-8181 NASA GSFC
I: NAS5-30847 $ 48,846
Dennis R. Pape

P021

Photonics Technology, Inc.

6967 Wales Road
Northwood, OH 43619
419-666-0762

* Full-Color, AC-Plasma, Flat-Panel Display for Space Station Applications
  87-1-09.03-0762 NASA JSC
  I: NAS9-17948 $ 50,000
  II: NAS9-18171 $500,000
  Peter S. Friedman

P022

Phrasor Scientific, Inc.

1536 Highland Avenue
Duarte, CA 91010
Last Known Address

Electrohydrodynamic Synthesis of Silicon-Nitride, Ultrafine Powders and Coatings
  83-1-04.01-3201 NASA LeRC
  I: NAS3-23935 $ 49,375
  John F. Mahoney

P023

Physical Optics Corporation

2545 W. 237th Street, Suite B
Torrance, CA 90505
213-530-1416

Dynamic, Coherently Coupled, Holographic Optical Elements Using Liquid Crystals
  89-1-09.04-1416B NASA JSC
  I: NAS9-18325 $ 49,433
  Behzad Moslehi

P024

Physical Research, Inc.

25500 Hawthorne Boulevard, #2300
Torrance, CA 90505-6828
213-378-0056

* Laser Velocimetry Processor for Hypersonic Flows
  88-1-02.05-0056 NASA ARC
  I: NAS2-12970 $ 49,935
  II: NAS2-T B D $ T B D
  Dariush Modarress

P025

Physical Sciences, Inc.

20 New England Business Center
Andover, MA 01810
508-689-0003

Solar-Pumped, Alkali-Vapor Laser
  83-1-10.05-9030 NASA LaRC
  I: NAS1-17585 $ 49,908
  David Ham

* Novel Oxygen-Atom Source for Material Degradation Studies
  84-1-04.14-9030 NASA JPL
  I: NAS7-938 $ 49,971
  II: NAS7-963 $449,000
  George E. Caledonia

* Laser Spectrometer and Wavemeter
  84-1-08.08-9030 NASA LaRC
  I: NAS1-17942 $ 49,986
  II: NAS1-18243 $459,000
  Peter E. Nebolsine

* Spacecraft Thermal-Energy-Accommodation from Atomic Recombination
  85-1-02.03-9030 NASA JSC
  I: NAS9-17565 $ 49,920
  II: NAS9-17815 $469,000
  William J. Marinelli

* Dual-Function, Perovskite Catalysts and Supports for Alkaline, Regenerative, and Pressurized Fuel Cells
  85-1-10.01-9030 NASA LeRC
  I: NAS3-24870 $ 49,995
  II: NAS3-25199 $499,795
  E. Jennings Taylor

* Multicolor, Imaging Pyrometer for Materials Processing in Space
  85-1-15.03-9030 NASA JPL
  I: NAS7-954 $ 49,955
  II: NAS7-1002 $452,000
  Michael Frish

Chemically Grown, Gold-Carbon Electrocatalyst Materials for Alkaline Fuel Cell Cathodes
  86-1-10.01-9030 NASA LeRC
  I: NAS3-25121 $ 45,000
  E. Jennings Taylor

High-Temperature, Seed-Particle Development for Laser Doppler Velocimeters
  87-1-01.03-9030 NASA LeRC
  I: NAS3-25284 $ 49,265
  Michael Frish

* Propulsion Simulation for Magnetically Suspended Wind Tunnel Models
  87-1-02.02-9030 NASA LaRC
  I: NAS1-18616 $ 49,605
  II: NAS1-18845 $493,000
  Prakash B. Joshi

* Aerothermodynamic Radiation Studies
  87-1-02.06-9030 NASA JSC
  I: NAS9-17949 $ 49,969
  II: NAS9-18172 $496,000
  George E. Caledonia

Wind Tunnel Remote Turbulence Characterization
  87-1-08.20-9030 NASA LaRC
  I: NAS1-18617 $ 49,716
  Lawrence G. Piper

* Arcing on Space Structures in Low Earth Orbit
  87-1-10.01-9030 NASA LeRC
  I: NAS3-25402 $ 49,948
  II: NAS3-25797 $491,438
  Guy Weyl

* Three-Body Reaction Rates for H2-O2 at High Temperatures
  88-1-01.04-9030 NASA LeRC
  I: NAS3-25566 $ 49,948
  II: NAS3-T B D $ T B D
  William J. Marinelli

Hypersonic Thermophysics Code
  88-1-02.05-9030A NASA LaRC
  I: NAS1-18807 $ 49,400
  Hartmut H. Legner

Laser Technique in Superconducting Film Deposition
  88-1-04.10-9030 NASA JPL
  I: NAS7-1057 $ 49,535
  Christopher J. Rollins

Reaction Mechanics and Kinetic Rates for Soot Formation
89-1-01.01-9030A NASA LeRC
I: NAS3-25839 $ 49,996
W. Terry Rawlins

Laser-Induced Fluorescence Measurements of Velocity in Supersonic Reacting Flowfields
89-1-01.03-9030 NASA LeRC
I: NAS3-25840 $ 49,981
Mark G. Allen

High-Velocity Gas-Surface Accommodation
89-1-02.04-9030 NASA JSC
I: NAS9-18326 $ 49,860
George E. Caledonia

P026

Physical Sciences, Inc.

635 Slaters Lane, Suite G101
Alexandria, VA 22314
703-548-6410

The Stability of High-Temperature Superconducting Materials in Low Earth Orbits
88-1-04.10-6410A NASA LeRC
I: NAS3-25562 $ 49,903
J. T. Schriempf

P027

Phytoresource Research, Inc.

707 Texas Avenue, Suite 101-E
College Station, TX 77840
409-693-8606

* Tissue Fixation Apparatus for Flight Experimentation
84-1-12.02-8606 NASA JSC
I: NAS9-17291 $ 50,000
II: NAS9-17608 $484,000
H. W. Scheld

* In-Flight Acquisition of Engineering Data for Plant Growth
84-1-12.04-8606 NASA JSC
I: NAS9-17292 $ 50,000
II: NAS9-17609 $482,000
H. W. Scheld

* Optimizing Atmospheres for Space Life Support Systems
85-1-12.07-8606 NASA ARC
I: NAS2-12353 $ 50,000
II: NAS2-12636 $464,000
John D. Goeschl

A Bioreactor for Screening and Production of High-Value, Secondary Plant Metabolites
86-1-15.01-8606 NASA ARC
I: NAS2-12565 $ 50,077
H. W. Scheld

* Space-Rated Nutrient Delivery and Root Support System
87-1-12.07-8606 NASA KSC
I: NAS10-11461 $ 50,000
II: NAS10-11601 $499,910
H. W. Scheld

P028

Planar Systems, Inc.

1400 NW Compton Drive
Beaverton, OR 97006
503-690-1100

Metallo-Organic CVD of Electroluminescent Films for Multicolor, Flat-Panel Displays
86-1-09.15-1100 NASA JSC
I: NAS9-17726 $ 49,940
Richard Tuenge

P029

PlessCor Optronics, Inc. - *Now PCO, Inc.*

20200 Sunburst Street
Chatsworth, CA 91311-6289
818-700-1233

Extremely Sensitive Receiver for Laser Communications
85-1-14.10-1233 NASA GSFC
I: NAS5-29283 $ 50,512
Tran Van Muoi

P030

Polatomic, Inc.

2201 Waterview Parkway, Suite 1.712
Richardson, TX 75080
214-690-2292

* Advanced Helium Magnetometers for Space Applications
85-1-08.10-2753 NASA JPL
I: NAS7-956 $ 45,450
II: NAS7-993 $465,000
Robert E. Slocum

* Metal Thin-Film Optical Polarizers for Space Application
86-1-08.24-2727 NASA JPL
I: NAS7-987 $ 49,961
II: NAS7-1037 $497,485
Robert E. Slocum

P031

Power Silicon & Monolithic Technologies

750 Braddock Avenue
East Pittsburgh, PA 15112
412-829-1205

Ultra-High-Temperature 20kHz Induction Generator for VSCF Operating Mode
87-1-10.01-2520 NASA LeRC
I: NAS3-25350 $ 46,739
Stephen Kuznetsov

P032

Precision Combustion, Inc. - *See Wm. Pfefferle Assoc.*

25 Science Park
New Haven, CT 06511
203-786-5216

* Catalytic-Ignition, Rotary, Combustion Engine
86-1-01.02-0664 NASA LeRC
II: NAS3-25784 $496,759
William C. Pfefferle

P033

Princeton Scientific Enterprises, Inc.

1108 Kingston Road
Princeton, NJ 08540
609-924-0714

An Extreme-Temperature, Ultraclean, Radiant Furnace
86-1-15.01-0714 NASA MSFC
I: NAS8-37325 $ 50,000
David W. Blair

P034

Pritsker & Associates, Inc.

P.O. Box 2413
West Lafayette, IN 47906
317-463-5557

Generalized Communications Models by Composition from Modules
86-1-14.03-5557 NASA JSC
I: NAS9-17744 $ 49,918
Charles R. Standridge

P035

Program Development Corp. of Scarsdale

300 Hamilton Avenue Suite 409
White Plains, NY 10601
914-761-1732

Goodness-Of-Grid Measures
88-1-02.01-4456 NASA ARC
I: NAS2-12959 $ 50,000
Peter R. Eiseman

Computer-Aided Grid Design
88-1-11.04-4456 NASA MSFC
I: NAS8-38037 $ 50,000
Bharat K. Soni

Grid-Generation Code with Automatic Zoning
89-1-01.01-1732A NASA LeRC
I: NAS3-25880 $ 50,000
Peter R. Eiseman

P036

Propulsion Research Associates

904 East Colorado Avenue
Urbana, IL 61801-6305
312-654-1708

Efficient Computation of Viscous Internal Flows
88-1-01.01-1708A NASA LeRC
I: NAS3-25573 $ 46,269
S. P. Vanka

P037

Prospective Computer Analysts

1800 Northern Boulevard
Roslyn, NY 11576
516-484-4610

* CAD/CAE Knowledge-Base Development Tool
87-1-06.06-4610 NASA KSC
I: NAS10-11458 $ 50,000
II: NAS10-11602 $487,625
R. Glenn Wright

P038

Protein Technologies, Inc.

1700 E 18th Street, Suite 102
Tucson, AZ 85719
602-629-9626

Supercritical Fluid Solvent System for Solid-Phase Peptide Synthesis
86-1-15.01-9626 NASA ARC
I: NAS2-12563 $ 50,000
Leon E. Barstow

P039

Proteon, Inc.

Two Technology Drive
Westborough, MA 01581
508-898-2800

* High-Speed Packet Switching
87-1-07.04-2800 NASA GSFC
I: NAS5-30287 $ 50,000
II: NAS5-30629 $500,000
Nathan K. Salwen

P040

Pulse Systems, Inc.

140 Meadow Lane
Los Alamos, NM 87544
505-672-1926

* A Pulsed, CO2 Laser for Remote Atmospheric Sensing from Space
84-1-08.06-1920 NASA GSFC
I: NAS5-28639 $ 50,000
II: NAS5-29419 $500,000
Edward J. Mclellan

Q

Q001

Q-Dot, Inc.

1069 Elkton Drive
Colorado Springs, CO 80907-3579
719-590-1112

* Focal-Plane Processing of Visual Information
84-1-07.04-1112 NASA LaRC
I: NAS1-17940 $ 49,993
II: NAS1-18287 $448,000
Peter C. T. Roberts

Multiple-Access Communication Hybrid Simulation
88-1-14.01-1112 NASA JSC
I: NAS9-18103 $ 49,993
David E. Reed

High-Instantaneous-Data-Rate, Burst-Signal Receiver
89-1-14.05-1112 NASA LeRC
I: NAS3-25717 $ 49,954
David E. Reed

Q002

QCI, Inc.

P.O. Box 1067
Oak Ridge, TN 37831
615-483-6498

* Thermoelectric Instrumentation for Characterization of Precipitation-Hardening Alloys
87-1-13.07-6498 NASA LaRC
I: NAS1-18641 $ 18,796
II: NAS1-18852 $132,685
Roger W. Derby

Q003

QSource

151 Deercliff Road
Avon, CT 06001
203-677-2206

* Improved Pulsed-Discharge TE Laser
88-1-08.04-2206 NASA MSFC
I: NAS8-38033 $ 49,920
II: NAS8-T B D $ T B D
Peter P. Chenausky

Q004

Quanta, Inc.

2778 Hargrove Road, Suite 345
Smyrna, GA 30080
404-955-5811

Universal, Bilaterial, Robotic Controller
89-1-09.09-9511 NASA JSC
I: NAS9-18327 $ 49,500
Gary V. McMurray

Q005

Quantel International

3150 Central Expressway
Santa Clara, CA 95051
408-727-3240

Diode-Pumped, Short-Pulse Laser for Ranging and Altimetry
89-1-08.02-3240 NASA GSFC
I: NAS5-30868 $ 46,563
Jean-Marc Heritier

Q006

Quantex Corporation

2 Research Court
Rockville, MD 20850
301-258-2701

* Large-Area Nuclear Particle Detectors Using Electron-Trapping Materials
86-1-08.04-2701 NASA GSFC
I: NAS5-30054 $ 49,997
II: NAS5-30310 $499,502
Charles Y. Wrigley

Q007

Quantic Industries, Inc.

990 Commercial Street
San Carlos, CA 94070
415-595-1100

Long-Life, Three-Axis Satellite Attitude Sensing
86-1-09.03-1100 NASA GSFC
I: NAS5-30055 $ 53,090
Oliver J. Edwards

Q008

Quantum Composites, Inc.

4702 James Savage Road
Midland, MI 48640
517-546-7789

* Low-Cost Tooling Material and Process for Graphite and Kevlar Composites
83-1-04.03-7789 NASA ARC
I: NAS2-11736 $ 29,916
II: NAS2-12016 $490,000
Norman S. Strand

Q009

Quintus Computer Systems, Inc.

1310 Villa Street
Mountain View, CA 94041
415-965-7700

Knowledge-Based Process Control
86-1-06.05-3612 NASA ARC
I: NAS2-12549 $ 48,056
Edward P. Stabler Jr.

R

R001

R Scan Corporation

1200 Washington Avenue South
Minneapolis, MN 55415
612-333-1424

* Forecasting Sea Breeze Thunderstorms Using a Mesoscale Numerical Model
84-1-13.05-1424 NASA KSC
I: NAS10-11142 $ 49,146
II: NAS10-11321 $476,000
Walter A. Lyons

R002

RAI Associates

432 Stonehenge
Arlington, TX 76014
Last Known Address

High Energy Tribo-Elements
84-1-01.05-8279A NASA LeRC
I: NAS3-24537 $ 41,532
Roger Iverson

R003

REI Systems

P.O. Box 9183
McLean, VA 22102-0183
703-281-1745

A Distributed, Object-Type Management System for Heterogeneous Environments
89-1-07.08-1745 NASA GSFC
I: NAS5-30840 $ 49,101
Veer V. Bhartiya

R004

RISC Associates

3112 Devon Road
Durham, NC 27707
919-493-7978

* Parallel Image Compression
86-1-07.04-3673 NASA GSFC
I: NAS5-30056 $ 49,932
II: NAS5-30308 $496,780
John H. Reif

R005

Radiation Monitoring Devices, Inc.

44 Hunt Street
Watertown, MA 02172
617-926-1167

* Soft X-Ray Window Encapsulant for Mercuric Iodide Detectors
83-1-08.07-1167 NASA JPL
I: NAS7-927 $ 50,000
II: NAS7-931 $358,000
Gerald Entine

* Portable Nuclear Cardiology Ejection Fraction Monitor
83-1-12.02-1167 NASA JSC
I: NAS9-17033 $ 50,000
II: NAS9-17303 $459,000
Gerald Entine

* Proportional Proximity Sensor for Autonomous Space Based Robots
86-1-05.01-1167 NASA JPL
I: NAS7-975 $ 50,000
II: NAS7-1032 $500,000
Michael R. Squillante

High-Resolution, Avalanche-Diode, X-Ray Spectrometer for Planetary Exploration
87-1-05.05-1167 NASA JPL
I: NAS7-1018 $ 50,000
Gerald Entine

High-Field, High-Tc Superconducting Magnets
89-1-04.17-1167 NASA LaRC
I: NAS1-19012 $ 47,796
Micheal Squillante

Solid-State Neutron Dosimeter for Space Applications
89-1-12.01-1167 NASA JSC
I: NAS9-18328 $ 50,000
Gerald Entine

R006

Radiometrics Corporation

P.O. Box 215
Altadena, CA 91001
818-798-0071

High-Sensitivity, Active, Cavity Radiometer
87-1-08.02-0071 NASA GSFC
I: NAS5-30288 $ 49,578
Richard C. Willson

R007

Raman Aeronautics, Inc.

734 Melville Avenue
Palo Alto, CA 94301
415-327-4037

* Shear-Stress Sensor Development Using Surface Acoustic Waves
84-1-02.06-4037 NASA ARC
I: NAS2-12121 $ 49,941
II: NAS2-12481 $221,000
K. R. Raman

R008

Refractory Composites, Inc.

12220-A Rivera Road
Whittier, CA 90606
213-698-8061

Ceramic-Matrix-Composite for Hypersonic Engine Structures
89-1-03.07-8061 NASA LaRC
I: NAS1-19011 $ 49,851
Edward L. Paquette

R009

Remote Sensing Systems

1101 College Avenue, #220
Santa Rosa, CA 95404
707-545-2904

* West Coast Storm Forecasting with Satellite Data
84-1-07.06-8911 NASA GSFC
I: NAS5-28634 $ 50,000
II: NAS5-29438 $491,000
Frank J. Wentz

R010

Remtech, Inc.

3304 Westmill Drive
Huntsville, AL 35805
205-536-8581

Nonadiabatic Compartment Venting Heating
84-1-13.08-8581 NASA MSFC
I: NAS8-35277 $ 50,000
Carl D. Engel

* Space Flight Gas Temperature Probe
84-1-13.08-8581C NASA MSFC
I: NAS8-35276 $ 50,000
II: NAS8-37258 $482,000
Robert L. Bender

* Space-Based Solar Water Heater
85-1-09.19-8581 NASA MSFC
I: NAS8-36256 $ 50,000
II: NAS8-37338 $499,933
Richard E. Somers

Induced Contamination Environment of the Space Station
85-1-13.07-8581B NASA MSFC
I: NAS8-36258 $ 50,000
Carl D. Engel

* Aerodynamic Heating Upgrade of the Parabolized Navier-Stokes Code
85-1-13.08-8581A NASA MSFC
I: NAS8-36271 $ 50,000
II: NAS8-37345 $498,399
Sarat C. Praharaj

* Navier-Stokes Computations of the Near-Wake, Hypersonic, Rarefied Flow on a Blunt AOTV Body
86-1-02.08-8581 NASA MSFC
I: NAS8-37305 $ 50,000
II: NAS8-37400 $495,187
A. C. Jain

* Aeroheating Flight Instrumentation
86-1-08.20-8581 NASA MSFC
I: NAS8-37314 $ 50,000
II: NAS8-37409 $493,644
S. A. Bancroft

* Rarefied-Gas, Aerodynamic Bridging Procedures
87-1-02.07-8581 NASA MSFC
I: NAS8-37635 $ 49,979
II: NAS8-38416 $490,710
E. C. Knox

* Vacuum Plume Impingement Evaluator
87-1-02.08-8581A NASA MSFC
I: NAS8-37636 $ 49,921
II: NAS8-38423 $490,724
Robert L. Bender

Viscous Flow Field Calculations in Regeneratively Cooled Nozzles
87-1-11.04-8581 NASA MSFC
I: NAS8-37637 $ 49,947
Sarat C. Praharaj

Effects of Charge Separation in Hypersonic, Ionized Flows
88-1-02.07-8581 NASA MSFC
I: NAS8-38032 $ 50,000
Peter A. Liver

Coupling of Unsteady Fluid Dynamics and Structures in Low-Density, High-Speed Flows
89-1-02.05-8581 NASA MSFC
I: NAS8-38456 $ 50,000
Sarat C. Praharaj

Integrated CAD Venting Analysis Package
89-1-09.14-8561 NASA MSFC
I: NAS8-38457 $ 50,000
G. Hamilton Woods

R011

Research Innovation Implementation

8222 Bent Tree, #148
Austin, TX 78759
512-346-0533

Sensors for Flight Research
88-1-03.06-5287 NASA ARC
I: NAS2-12886 $ 47,802
Jon M. Schroeder

R012

Resoft, Inc.

9837 Gene Street
Cypress, CA 90630
714-952-8307

Artificial Intelligence System Applying Reusable Software Components
86-1-06.04-8307A NASA GSFC
I: NAS5-30057 $ 49,871
Richard Cooper

R013

Resource Technologies Group, Inc.

400 Mississippi Street
Morgantown, WV 26505-6751
304-291-6706

Thin Membrane Sensors
89-1-12.02-6706 NASA MSFC
I: NAS8-38470 $ 50,000
George D. Case

R014

Ressler Associates, Inc.

14440 Cherry Lane Court Suite 212
Laurel, MD 20707
301-206-3232

An Airborne, Laser-Depolarization, Imaging Sensor for Terrestrial Measurements
89-1-08.05-3232 NASA GSFC
I: NAS5-30863 $ 49,958
Gerald M. Ressler

R015

Ribbon Technology Corporation

P.O. Box 30758
Gahanna, OH 43230
614-864-5444

* Rapidly Solidified Titanium Alloys by Melt Overflow
84-1-01.03-5444 NASA LaRC
I: NAS1-17978 $ 48,662
II: NAS1-18288 $460,000
James Dickson

Rapidly Solidified, Narrow, Titanium-Aluminide Strip
89-1-04.04-5444A NASA LeRC
I: NAS3-25872 $ 31,583
Mark Farrell

Process Control for Melt-Overflow, Rapid Solidification Technology
89-1-04.09-5444 NASA LaRC
I: NAS1-19019 $ 49,790
Thomas Lease

R016

Roberts Associates, Inc.

1726 Pine Valley Drive
Vienna, VA 22180
703-938-1757

* Three-Dimensional Electrophoresis Code
85-1-15.02-1757 NASA MSFC
I: NAS8-36263 $ 50,000
II: NAS8-37342 $480,292
Glyn O. Roberts

R017

Robo-Tech Systems

5701 North High Street
Worthington, OH 43085
614-431-9418

Control Theory and End-Effector Laws Using an Advanced, Multiple Prehension Grip
85-1-05.06-9418 NASA LaRC
I: NAS1-18217 $ 50,000
Frank R. Skinner

R018

Robotics Research Corporation

5400 Dupont Circle
Milford, OH 45150
513-831-9570

Telerobot Collision and Obstacle Avoidance Based on Real-Time Proximity Sensors
87-1-05.01-9570 NASA LaRC
I: NAS1-18629 $ 47,961
Jack M. Thompson

R019

Rochelle Crystal Corporation

2004 Randolph Avenue
St. Paul, MN 55105
Last Known Address

Spontaneous Resolution of Organic Compounds in Space
85-1-15.01-1161 NASA MSFC
I: NAS8-36269 $ 48,667
Ruth B. Kress

R020

Rocky Research

P.O. Box 1086
Boulder City, NV 89005
702-293-0851

High-Density, Chemical-Thermal Storage System for Low Gravity Environments
89-1-09.11-0851A NASA JSC
I: NAS9-18329 $ 50,000
Uwe Rockenfeller

High-Lift, Heat-Actuated, Solid-Vapor Heat Pump for Simultaneous Refrigeration and Water Heating
89-1-09.13-0851A NASA MSFC
I: NAS8-38469 $ 49,848
Uwe Rockenfeller

R021

Rose Engineering & Research

P.O. Box 5146
Incline Village, NV 89450
702-831-5094

* Boundary Layer Control Methods in High-Speed Inlet Systems
87-1-01.01-5094 NASA LeRC
I: NAS3-25408 $ 49,949
II: NAS3-25783 $490,591
William C. Rose

Innovative Shear-Layer Control Methods for Large Scale Airborne Telescopes.
88-1-08.19-5094 NASA ARC
I: NAS2-13034 $ 49,301
William C. Rose

R022
Ross-Hime Designs, Inc.
1313 5th Street, S.E., #221
Minneapolis, MN 55414
612-379-3808

* Computer-Controlled Telerobot Wrist Module
86-1-05.01-5860 NASA LaRC
I: NAS1-18422 $ 50,000
II: NAS1-18673 $498,834
Mark Elling Rosheim

* Telerobot Hand Joint
87-1-05.01-3808 NASA MSFC
I: NAS8-37638 $ 50,000
II: NAS8-38417 $500,000
Mark Elling Rosheim

R023
Rupprecht & Patashnick Company, Inc.
17 Maple Road, Drawer H
Voorheesville, NY 12186
518-765-4520

* Particulate Monitor for Comet and Planetary Atmospheres
84-1-08.03-4520 NASA JPL
I: NAS7-941 $ 49,898
II: NAS7-962 $456,000
George Rupprecht

S

S001
S. R. Taylor & Associates
516 South Kaw
Bartlesville, OK 74003
918-337-0264

* Zero-Gravity Phase Separation
87-1-12.01-0264 NASA JSC
I: NAS9-17950 $ 48,904
II: NAS9-18173 $311,000
Scott R. Taylor

S002
SCS Telecom, Inc.
107 Haven Avenue
Port Washington, NY 11050
516-883-0760

Hybrid Projection Coding for the CCSDS Standard
88-1-14.01-0760B NASA JSC
I: NAS9-18105 $ 49,990
Gary Lomp

Novel Direction-Finding for Robotic Tracking in the Space Station
89-1-09.04-0760 NASA JSC
I: NAS9-18333 $ 49,843
Tuvia Apelewicz

Power- and Bandwidth-Efficient Digital Communications
89-1-14.01-0760A NASA JSC
I: NAS9-18322 $ 49,847
Gary Lomp

S003
SEES, Inc.
11020 Solway School Road
Knoxville, TN 37931
Last Known Address

Human Envelope Manipulator
87-1-13.04-2060 NASA KSC
I: NAS10-11463 $ 49,910
R. L. Andrew

S004
SKW Corporation
1815 N. Fort Meyer Drive, #1100
Arlington, VA 22209
703-243-3888

* Free-Space Particulate Contamination Sizing and Counting System
87-1-08.11-3888A NASA GSFC
I: NAS5-30290 $ 49,339
II: NAS5-30636 $481,626
Scott J. Bartel

S005
SRS Technologies - *Was Spectra Research System*
990 Explorer Boulevard NW
Huntsville, AL 35806
205-895-7000

* Automatic Fire Detection Systems for Large Facilities
83-1-13.12-0375 NASA KSC
I: NAS10-10917 $ 48,946
II: NAS10-11127 $416,922
Rodney Bradford

An In Situ Particle Sizing System
85-1-08.13-0375 NASA LaRC
I: NAS1-18218 $ 49,999
Ashoke Ghosh

* Portable, Low-Temperature Cooler for Space Station
86-1-09.07-7000A NASA MSFC
I: NAS8-37317 $ 49,999
II: NAS8-37402 $479,602
Joseph C. Cody

Air-Mass Measurement Indicator for Portable, Liquid-Air Dewar
88-1-13.06-7000 NASA KSC
I: NAS10-11563 $ 50,000
Joe C. Cody

S006
SSG, Inc.
150 Bear Hill Road
Waltham, MA 02154
617-890-0204

* Multi-Spectral, High-Resolution Remote Sensor
88-1-08.03-0204 NASA SSC
I: NAS13-385 $ 50,000
II: NAS13-414 $459,167
Harold A. Graham

Diagnostic Contamination Measurements in Space
88-1-08.23-0204 NASA GSFC
I: NAS5-30489 $ 48,334
Andrew A. Mastandrea

S007

ST&E, Inc.

1214 Concannon Boulevard
Livermore, CA 94550
415-829-7847

* Analysis of Atmospheric Aerosols with -0.3 Micrometer Spacial Resolution

84-1-08.12-7847 NASA LaRC
I: NAS1-17943 $ 48,293
II: NAS1-18253 $486,000
Stanley M. Klainer

S008

San Diego Semiconductors, Inc.

9030 Carroll Way, Suite 8
San Diego, CA 92121
619-549-4645

Position-Sensitive CdTe Detector Using Improved Crystal Growth Method

87-1-08.16-4645 NASA GSFC
I: NAS5-30289 $ 49,911
E. Raiskin

S009

Santech, Inc. - *Santech acquired by PDA Engineering*

S010

Sarcos Research Corporation

261 E. 300 S. Suite 150
Salt Lake City, UT 84111
801-531-0560

High-Performance, Multiaxis Strain Sensing

89-1-05.03-0559B NASA GSFC
I: NAS5-30853 $ 50,000
Ian D. McCammon

Using Robots in the Testing of NASA EVA Space Suits

89-1-12.07-0559A NASA JSC
I: NAS9-18330 $ 49,980
Fraser M. Smith

S011

Satcon Technology Corporation

12 Emily Street
Cambridge, MA 02139-4507
617-661-0540

* Magnetic Bearings a High-Performance Optical Disk Buffer

86-1-08.01-0540A NASA GSFC
I: NAS5-30058 $ 48,900
II: NAS5-30309 $497,628
Richard L. Hockney

Advanced Actuators for the Control of Large Space Structures

86-1-09.01-0540 NASA LaRC
I: NAS1-18426 $ 48,900
Bruce G. Johnson

* A Superconducting, Large-Angle, Magnetic Suspension

87-1-09.01-0540A NASA LaRC
I: NAS1-18632 $ 49,746
II: NAS1-18853 $488,400
James R. Downer

* Active Magnetic Micro-Gravity Isolator for Space Station

87-1-15.01-0540 NASA MSFC
I: NAS8-37639 $ 49,780
II: NAS8-38418 $499,974
Bruce G. Johnson

Magnetic Spindle Bearing for an Optical-Disk Buffer

88-1-07.06-0540 NASA LaRC
I: NAS1-18822 $ 46,332
Richard L. Hockney

Magnetostrictive, Active-Member Control of Space Structures

89-1-04.14-0540 NASA JPL
I: NAS7-1091 $ 49,973
Bruce G. Johnson

Direct Measurment of Bolt Tension Utilizing Magnetostriction

89-1-04.15-0540 NASA JSC
I: NAS9-18331 $ 49,940
James H. Goldie

Integrated Power and Attitude Control System for the Space Station and Other Applications

89-1-10.01-0540 NASA MSFC
I: NAS8-38461 $ 49,919
Richard L. Hockney

S012

Schmidt Instruments, Inc.

2476 Bolsover Suite 234
Houston, TX 77005
713-660-8414

* Autonomous Leak Detector for Orbiting Spacecraft

88-1-08.24-9040 NASA LeRC
I: NAS3-25372 $ 50,000
II: NAS3-25971 $499,228
Howard K. Schmidt

Very-Large-Scale-Integration Time Interval Units

89-1-08.02-9040 NASA GSFC
I: NAS5-30864 $ 50,000
Howard K. Schmidt

Time-of-Flight Mass Spectrometry Instruments for Monitoring Contaminants in Space

89-1-08.20-9040 NASA GSFC
I: NAS5-30865 $ 50,000
Howard K. Schmidt

S013

Schmitt Technology Associates

25 Science Park
New Haven, CT 06511
203-786-5130

Gas-Jet Deposition of Optical Thin-Films for Extreme Ultra-Violet and Soft X-Ray Applications

89-1-08.18-5130 NASA GSFC
I: NAS5-30873 $ 50,000
Bret L. Halpern

S014

Schwartz Electro-Optics, Inc.

3404 N. Orange Blossom Trail
Orlando, FL 32804
407-298-1802

* Cobalt-Doped, Magnesium Fluoride Laser for Remote Sensing

85-1-08.08-1802 NASA LaRC
I: NAS1-18210 $ 49,433
II: NAS1-18442 $499,258
Peter F. Moulton

Novel Cobalt-Doped, Magnesium-Fluoride Lidar Aerosol Profiler

89-1-08.04-1802 NASA LaRC
I: NAS1-19007 $ 49,983
M. Acharekar

S015

Schwartz Electro-Optics, Inc.

45 Winthrop Street
Concord, MA 01742
508-371-2299

A Microsecond-Pulse Neodymium Laser
86-1-08.05-2299 NASA LaRC
I: NAS1-18429 $ 49,656
Peter F. Moulton

* Diode-Pumped Laser Altimeter
88-1-08.02-2299 NASA GSFC
I: NAS5-30482 $ 48,978
II: NAS5-T B D $ T B D
Peter F. Moulton

Lasers Optimized for Pumping Titanium-Alumina Lasers
89-1-08.07-2299 NASA LaRC
I: NAS1-19003 $ 49,310
Glen A. Rines

Space-Qualified Laser for Microgravity Experiments
89-1-15.02-2299 NASA LeRC
I: NAS3-25813 $ 49,800
Peter F. Moulton

S016

Science & Engineering Associates

P.O. Box 3722
Albuquerque, NM 87190
505-884-2300

* Contamination Return Flux
85-1-08.16-1572 NASA GSFC
I: NAS5-29278 $ 49,680
II: NAS5-30089 $375,186
Raymond O. Rantanen

* Space Station Contamination Modeling
85-1-13.07-1572 NASA MSFC
I: NAS8-36273 $ 49,945
II: NAS8-37337 $426,215
Raymond O. Rantanen

S017

Science & Engineering Services, Inc.

17 Serpentine Ct.
Silver Spring, MD 20904
301-236-4161

Systems for Continuous Tuning and Single-Mode Operation of Solid-State Lasers
89-1-08.06-4161 NASA GSFC
I: NAS5-30857 $ 49,009
Hyo Sang Lee

S018

Science and Technology Corporation

101 Research Drive
Hampton, VA 23666-1340
804-865-1894

Multibeam Lidar System for Tropospheric Measurements
83-1-08.08-1834 NASA MSFC
I: NAS8-35839 $ 21,904
Geoffrey S. Kent

* Automatic Scanning Lidar System to Map Upper Tropospheric Aerosols and Cloud
87-1-08.09-1894 NASA LaRC
I: NAS1-18631 $ 46,087
II: NAS1-18851 $485,288
Geoffrey S. Kent

S019

Science Research Laboratory, Inc.

15 Ward Street
Somerville, MA 02143
617-547-1122

Compact, Lightweight, Expanding-Beam CO2 Laser Amplifiers for Spaceborne Applications
89-1-08.08-1122A NASA MSFC
I: NAS8-38462 $ 49,848
Jonah Jacob

S020

Scientific Materials Corporation - *Replaces Solidstate Lasers, Inc., of Oregon*

P.O. Box 786
Bozeman, MT 59715
406-585-3772

* A Method to Provide Lower Cost Crystal Properties Study Samples
87-1-08.08-0438A NASA LaRC
I: NAS1-18639 $ 50,000
II: NAS1-18857 $436,140
Ralph L. Hutcheson

S021

Scientific Research Associates, Inc.

P.O. Box 1058
Glastonbury, CT 06033
203-659-0333

Improved Accuracy and Efficiency of Three-Dimensional Flow Algorithms
83-1-02.01-0511 NASA ARC
I: NAS2-11741 $ 49,816
W. Roger Briley

Three-Dimensional, Unsteady, Viscous-Flow Analysis Over Airfoil Sections
83-1-02.02-0511 NASA LaRC
I: NAS1-17573 $ 49,478
Bernard C. Weinberg

* Computation of the Tip-Vortex Flow Field Advanced Propellers
84-1-01.01-0511A NASA LeRC
I: NAS3-24532 $ 49,763
II: NAS3-24881 $476,000
Ralph Levy

* Internal Fluid Mechanics of Liquid-Propellant Rocket Thrust Chambers
84-1-11.06-0511 NASA MSFC
I: NAS8-35274 $ 49,985
II: NAS8-37255 $494,000
Howard J. Gibeling

Optimum Ducts Using an Efficient, Three-Dimensional, Viscous Computation
85-1-01.01-0333 NASA LeRC
I: NAS3-24853 $ 49,856
Ralph Levy

Solution of the Inlet Buzz Problem by the Navier-Stokes Equations
85-1-01.01-0333B NASA LeRC
I: NAS3-24851 $ 49,879
Richard C. Buggeln

* Calculation of Helicopter Rotor Blade and Vortex Interactions by Navier-Stokes Procedures
85-1-03.07-0333 NASA ARC
I: NAS2-12363 $ 49,879
II: NAS2-12635 $568,522
Young-Nam Kim

Transient Radiation Effects in Silicon CCDs
85-1-08.05-0333 NASA GSFC
I: NAS5-29281 $ 50,000
Bernard C. Weinberg

* Efficient Navier-Stokes Flow-Prediction Algorithms
85-1-11.05-0333 NASA MSFC
I: NAS8-36260 $ 49,955
II: NAS8-37340 $493,143
W. Roger Briley

Solution Adaptive Mesh
86-1-01.01-0333C NASA LeRC
I: NAS3-25138 $ 50,000
Ralph Levy

* Velocimetry with Refractive Index Matching for Complex Flow Configurations
86-1-11.04-0333A NASA MSFC
I: NAS8-37320 $ 50,000
II: NAS8-37410 $488,096
Brian E. Thompson

* Intelligent Manipulation Technique for Mobile, Multi-Branch Robotic Systems
87-1-05.01-0333 NASA JPL
I: NAS7-1012 $ 49,979
II: NAS7-1072 $496,247
Alexander Y. K. Chen

Automated Application of Navier-Stokes Solutions to Mechanical Design
88-1-02.01-0333A NASA MSFC
I: NAS8-38020 $ 50,000
Ralph Levy

Fluorescence Spectroscopy and Thermometry for Hypersonic Flight Research
88-1-03.06-0333 NASA LaRC
I: NAS1-18804 $ 49,500
Brian E. Thompson

* Autonomous, Magnetic Float-Zone, Microgravity Crystal Growth for TiC and GaAs
88-1-15.01-0333 NASA MSFC
I: NAS8-38030 $ 50,000
II: NAS8-38487 $491,226
Y. T. Chan

Flow in Turbine Blade Passages
89-1-01.01-0333B NASA LeRC
I: NAS3-25835 $ 49,866
Brian E. Thompson

An Eulerian-Lagrangian Analysis for Liquid Flows with Vapor Bubbles
89-1-11.02-0333 NASA MSFC
I: NAS8-38438 $ 50,000
Jayant S. Sabins

S022
Scientific Systems, Inc.
500 West Cummings Park Suite 3950
Woburn, MA 01801
617-933-5355

Control of Large Space Structures Using Stable Factorization
84-1-09.01-6364 NASA LaRC
I: NAS1-17946 $ 49,999
Hamid Razavi

Nonlinear Control Design for Turbofan Jet Engines
85-1-01.03-6364 NASA LeRC
I: NAS3-24845 $ 49,991
Hamid Razavi

Real-Time Adaptive Identification and Prediction of Flutter
89-1-03.05-5355 NASA ARC
I: NAS2-13132 $ 49,870
Shahjahan Mahmood

S023
Scientific Technology, Inc.
2 Research Place
Rockville, MD 20850
301-948-6070

Microstrip, Multiple-Function Antenna Feed
87-1-14.05-6070 NASA JPL
I: NAS7-1017 $ 50,000
Ting I Wang

A Compact, Optical, Rain Droplet Distrometer for Unattended Field Operation
88-1-08.02-6070 NASA GSFC
I: NAS5-30484 $ 48,242
Ting I Wang

S024
Scott Science and Technology
17625 El Camino Real, Suite 401
Houston, TX 77058
Last Known Address

Application of a Handheld Force Analyzer to Human Factor Measurements in Space
85-1-12.03-7335 NASA JSC
I: NAS9-17573 $ 49,796
Gary L. Doerre

S025
Sea Data Corporation
One Bridge Street
Newton, MA 02158
617-244-3216

Towed Sensor for Sea Water Nutrient Analysis
83-1-08.15-3216 NASA JPL
I: NAS7-924 $ 49,951
Dennis N. Crouse

S026
Search Technology, Inc.
4725 Peachtree Corners Circle, Suite 200
Norcross, GA 30092
404-441-1457

Methods and Tools for Assessing Limits of System Intelligence
89-1-03.09-1457B NASA LaRC
I: NAS1-19021 $ 49,859
William B. Rouse

S027
Seca, Inc.
3311 Bob Wallace Avenue #203
Huntsville, AL 35805
205-534-2008

* The Use of Variational Principles in Improving CFD Methodology
86-1-02.01-2008 NASA MSFC
I: NAS8-37304 $ 49,875
II: NAS8-37408 $493,210
Richard C. Farmer

* Model Development for Exhaust-Plume Effects on Launch-Stand Design
88-1-02.06-2008A NASA MSFC
I: NAS8-38028 $ 49,801
II: NAS8-38472 $499,860
S.D. Smith

Heat Transfer in Rocket Engine Combustion Chambers and Regeneratively Cooled Nozzles
89-1-11.02-2008 NASA MSFC
I: NAS8-38454 $ 49,932
Yen-Sen Chen

S028
Seer Systems, Inc.
119 Cardiff Road
Pittsburgh, PA 15237
412-366-4502

* An Artificial Intelligence System Process for Monitoring, Situation Assessment, and Response Planning
88-1-05.05-4502 NASA JSC
I: NAS9-18104 $ 49,364
II: NAS9-T B D $ T B D
Harry E. Pople Jr.

S029
Sensor Frame, Inc.
4516 Henry Street, Suite 308
Pittsburgh, PA 15213-3729
412-683-9500

* Sensor Frame Graphic Manipulator
86-1-12.03-3770 NASA JSC
I: NAS9-17741 $ 50,000
II: NAS9-17986 $500,000
Paul McAvinney

S030
Sets, Inc.
300 Kahelu Avenue
Mililani, HI 96789
808-625-5262

* Imaging IR Spectrometer
86-1-08.27-8712 NASA JPL
I: NAS7-989 $ 50,000
II: NAS7-1029 $483,551
Thomas Lundeen

Multichannel Occultation Photometer
89-1-08.15-5262 NASA JPL
I: NAS7-1106 $ 50,000
Jonathan Gradie

Atmospheric Opacity Monitor
89-1-08.15-5262B NASA JPL
I: NAS7-1088 $ 49,951
Jonathan Gradie

S031
Shason Microwave Corporation
1730 NASA Road 1, Suite 101
Houston, TX 77058
409-948-4241

* Integrated, Active-Antenna Module for Space Station Multiple-Access Communication
88-1-14.01-4341 NASA JSC
I: NAS9-18106 $ 48,091
II: NAS9-T B D $ T B D
Roland Shaw

S032
Sierra Nevada Corporation
P. O. Box 6900
Reno, NV 89503
702-345-2722

Airborne Weather Radar for Windshear Warning
86-1-03.02-7064 NASA LaRC
I: NAS1-18417 $ 49,874
John P. Chisholm

S033
Sievers Research, Inc.
1930 Central Avenue, Suite C
Boulder, CO 80301
303-444-2009

Organic Removal Module for Ultra-Pure Water Recycle Systems
88-1-12.02-2009 NASA MSFC
I: NAS8-38045 $ 50,000
Richard Godec

S034
Silicon Engines
955 Commercial Street
Palo Alto, CA 94303
415-967-5544

* SETI Signal Detector
86-1-07.14-2140 NASA ARC
I: NAS2-12566 $ 50,000
II: NAS2-12936 $500,000
Jerome F. Duluk

SETI CW Signal Detector
87-1-07.09-2140 NASA ARC
I: NAS2-12808 $ 50,000
Jerome F. Duluk

S035
Software & Engineering Associates
1000 E William Street #200
Carson City, NV 89701
702-882-1966

* The Chemical Kinetics of LOX-Hydrocarbon Combustion
88-1-11.03-1966 NASA MSFC
I: NAS8-38052 $ 49,989
II: NAS8-T B D $ T B D
Gary R. Nickerson

S036
Software Productivity Solutions, Inc.
P.O. Box 361697
Melbourne, FL 32936-1697
407-984-3370

* Knowledge-Based, Reusable, Software Synthesis System
86-1-06.04-6510 NASA LaRC
I: NAS1-18418 $ 45,862
II: NAS1-18663 $496,320
J. Kaye Grau

* Reliable Specification and Execution Tool for Ada Software
88-1-06.03-3370 NASA LaRC
I: NAS1-18826 $ 47,500
II: NAS1-19101 $498,840
Andres Rudmik

Design Knowledge Capture
88-1-06.05-3370 NASA MSFC
I: NAS8-38027 $ 49,093
Vincent Kovarik

CASE Visualization System
89-1-06.02-3370 NASA GSFC
I: NAS5-30848 $ 48,567
Andres Rudmik

Passive Knowledge Acquisition System
89-1-06.05-3370 NASA JSC
I: NAS9-18334 $ 49,475
Vincent Kovarik

S037
Sohar, Inc.
8500 Wilshire Boulevard #1027
Beverly Hills, CA 90211
213-855-2595

Enhanced Condition Tables for Verification of Fault-Tolerant Software
88-1-06.03-2595 NASA LaRC
I: NAS1-18811 $ 49,600
Herbert Hecht

S038
Sol-3 Resources, Inc.
76 Beaver Road
Reading, MA 01867
617-942-0731

* Gas Turbine Combustor for Low Pattern Factor and Low NOx Emission
88-1-01.02-0731 NASA LeRC
I: NAS3-25563 $ 50,000
II: NAS3-T B D $ T B D
Jerry O. Melconian

S039
Solar Kinetics, Inc.
10635 King William Drive
Dallas, TX 75220
214-556-2376

* Improved Mirror Facet for Space Applications
87-1-10.01-2376 NASA LeRC
I: NAS3-25335 $ 49,662
II: NAS3-25632 $494,227
David L. White

S040
Solidstate Lasers, Inc. - *See Scientific Materials Corp.*

S041
Solidlite Corporation
16150 NE 85th Street #217 V
Redmond, WA 98052
206-882-7528

Four-Level All-Solid-State Laser Source within the 1.5 - 4 Micron Range
87-1-08.08-7528 NASA LaRC
I: NAS1-18619 $ 50,000
Larry G. Deshazer

S042
Source Technical Appl. Metallurgical
885 Waterman Avenue
East Providence, RI 02914
Last Known Address

High-Energy-Product Permanent Magnets
83-1-11.02-6784 NASA LeRC
I: NAS3-23873 $ 50,000
Mandayam C. Narasimhan

S043
Southwest Sciences, Inc.
1570 Pacheco Street #E-11
Santa Fe, NM 87501
505-984-1322

* Nonintrusive, Fast-Response, Oxygen Monitoring System for High-Temperature Flows
88-1-02.11-1322 NASA LaRC
I: NAS1-18829 $ 46,035
II: NAS1-19097 $496,718
Alan C. Stanton

Combustion Diagnostics for Microgravity Research Using Near-Infrared Diode Lasers
89-1-15.02-1322 NASA LeRC
I: NAS3-25815 $ 49,991
Joel A. Silver

S044
Space Computer Corporation
2800 Olympic Boulevard, Suite 104
Santa Monica, CA 90404-4119
213-829-7733

* Passive, Electro-Optical Sensor for Processing Helicopter Obstacle Avoidance
87-1-03.06-8740 NASA ARC
I: NAS2-12774 $ 50,000
II: NAS2-13060 $497,713
William B. Kendall

S045
Space Instruments, Inc.
4403 Manchester Avenue, Suite 203
Encinitas, CA 92024
619-944-7001

* Nonscanning Climate Sensor
85-1-08.04-6745 NASA GSFC
I: NAS5-29275 $ 49,963
II: NAS5-30090 $498,600
James W. Hoffman

Cloud Top Radiometer
89-1-08.02-7001 NASA GSFC
I: NAS5-30846 $ 49,065
James W. Hoffman

S046
Space Projects Limited
9288 Prince William Street, #106
Manassas, VA 22110
703-368-0707

* Enhanced Bidirectional Communication with Low-Cost Payloads
83-1-14.03-0707 NASA GSFC
I: NAS5-28004 $ 50,000
II: NAS5-28649 $248,393
Donald A. Bass

S047
Space Tech Corporation
125 Crestridge Drive
Ft. Collins, CO 80525
303-223-8166

Optimizing Compiler for Massively Parallel Processors
85-1-06.15-9903 NASA GSFC
I: NAS5-29282 $ 49,778
Michael Andrews

S048

Spaceborne, Inc.
742 Foothill Boulevard, Suite 2B
La Canada, CA 91011
818-952-0126

* High-Speed, Self-Testing Microprocessor for Spacecraft Applications
  83-1-06.09-3770 NASA LaRC
  I: NAS1-17583 $ 47,078
  II: NAS1-18005 $497,000
  Constantin C. Timoc

* Error Detection and Correction Unit with Built-in, Self-Test Capability for VLSI Circuits
  86-1-06.11-0126 NASA JPL
  I: NAS7-978 $ 50,000
  II: NAS7-1028 $499,886
  Constantin C. Timoc

A High-Speed, Fault-Tolerant Microprocessor for Space Applications
  89-1-09.02-0126 NASA LaRC
  I: NAS1-19033 $ 50,000
  Constantin C. Timoc

S049

Sparta Technology, Inc.
258 East Altamonte Drive
Altamonte Springs, FL 32701
Last Known Address

Innovative Rotary Power System Recharger Subsystem
  84-1-13.10-0900A NASA KSC
  I: NAS10-11143 $ 50,000
  Lester J. Owens

S050

Sparta, Inc.
4901 Corporate Drive
Huntsville, AL 35805-6201
205-837-5200

* Distributed, Finite-Element Analysis Using a Transputer Network
  86-1-04.04-5200 NASA LeRC
  I: NAS3-25126 $ 50,000
  II: NAS3-25422 $493,977
  James A. Favenesi

Reaction Compensation System for Microgravity Tele-Robots
  88-1-05.01-5200 NASA MSFC
  I: NAS8-38021 $ 49,997
  William Teoh

S051

Sparta, Inc.
23041 Avenida de la Carlotta, #400
Laguna Hills, CA 92653-1507
714-768-8161

* Applications of Transputers in Aircraft Flight Research
  88-1-03.05-8161A NASA ARC
  I: NAS2-12887 $ 49,581
  II: NAS2-T B D $ T B D
  Marie D. Hewett

Expert Systems for Flight Control Systems Verification
  88-1-03.10-8161 NASA ARC
  I: NAS2-12888 $ 49,468
  P. De Feo

S052

Sparta, Inc.
3440 Carson Street, #300
Torrance, CA 90503
213-542-6090

* Thrust Vector Control
  87-1-11.01-3350 NASA MSFC
  I: NAS8-37640 $ 50,000
  II: NAS8-38419 $495,204
  Irving B. Osofsky

S053

Sparta, Inc.
24 Hartwell Avenue
Lexington, MA 02173
617-863-1060

Solid-State, Laser-Scanning Device
  83-1-14.03-1060 NASA JSC
  I: NAS9-17037 $ 50,000
  Philip D. Henshaw

S054

Spatial Information Sciences, Inc.
Mississippi Tech Transfer Office
Stennis Space Center, MS 34529
703-430-6685

Raster and Vector Data Integration, Interactive Edit and Analysis
  89-1-07.04-6685 NASA SSC
  I: NAS13-410 $ 49,963
  Gregory T. Reinecke

S055

Spectra Research Systems - *Name changed to SRS Technologies*

S056

Spectral Sciences, Inc.
99 South Bedford Street, #7
Burlington, MA 01803-5169
617-273-4770

Hydrogen-Oxygen Concentration Monitor
  83-1-13.01-4770 NASA KSC
  I: NAS10-10916 $ 50,000
  Michael Gersh

* Hydrogen Laser Monitoring System
  86-1-13.06-4770 NASA KSC
  I: NAS10-11379 $ 50,000
  II: NAS10-11514 $483,495
  Steven M. Adler-Golden

Surface Organic Contamination Sensor
  87-1-13.01-4770 NASA KSC
  I: NAS10-11459 $ 50,000
  Steven M. Adler-Golden

* Trace, Atmospheric, Carbon-Monoxide Sensor
  88-1-08.22-4770 NASA MSFC
  I: NAS8-38048 $ 48,828
  II: NAS8-T B D $ T B D
  Steven Richtsmeier

* Conducting Organic Polymer Environmental Sensor
  88-1-13.08-4770 NASA JSC
  I: NAS9-18107 $ 50,000
  II: NAS9-T B D $ T B D
  Mitchell Zakin

S057

Spectrex Corporation

P.O. Box 707
Gloucester, VA 23061
804-693-9778

Modelling of Massively Separated Flows - Renormalization Group Formulation
87-1-02.03-9778 NASA LaRC
I: NAS1-18610 $ 49,460
R. Balasubramanian

S058

Spectron Development Laboratories, Inc.

3535 Highland Avenue, #102
Costa Mesa, CA 92626
714-549-8477

* Dual Thermoplastic Holography Recording System for Flow Diagnostics
83-1-02.03-8477 NASA ARC
I: NAS2-11732 $ 49,953
II: NAS2-12150 $250,084
James D. Trolinger

* Non-Destructive Inspection Techniques for Multi-Layer and Foam Insulations
83-1-13.02-8477 NASA MSFC
I: NAS8-35849 $ 49,997
II: NAS8-35258 $389,000
Dennis R. Krause

Pulsed Laser Holocamera for Wind Tunnel Testing
84-1-02.06-8477 NASA ARC
I: NAS2-12120 $ 49,982
James D. Trolinger

* Optical Method to Determine the Impact of Heavy Rain on Aircraft Performance
84-1-03.02-8477 NASA LaRC
I: NAS1-17932 $ 49,924
II: NAS1-18242 $497,825
Cecil F. Hess

An Optical Detector for High-Sensitivity Density Measurements
85-1-02.02-8477A NASA LaRC
I: NAS1-18207 $ 49,896
Dariush Modarress

Improved Signal Processor Enhancement of Laser Doppler Velocimeters
85-1-03.07-8477 NASA ARC
I: NAS2-12362 $ 49,988
Dariush Modarress

High-Efficiency Laser for Spaceborne Lidar Applications
85-1-08.08-8477 NASA LaRC
I: NAS1-18205 $ 49,951
James D. Trolinger

S059

Spectron Development Laboratories, Inc.

1010 Industry Drive
Seattle, WA 98188
Last Known Address

Quantitative Holographic Imaging
83-1-04.10-9324 NASA MSFC
I: NAS8-35842 $ 49,937
T. J. Davis

S060

Spectrum Management Group, Inc.

7330 San Pedro Avenue #104
San Antonio, TX 78216-6236
512-496-3221

Intelligent Information Management with Xy Imaging
88-1-07.09-3221 NASA JPL
I: NAS7-1049 $ 49,846
Michael R. Thomas

S061

Speech Systems, Inc.

18356 Oxnard Street
Tarzana, CA 91356
818-881-0885

* Phoneme-Based, Speech-Recognition System for Mission Planning and Control
86-1-06.06-0881 NASA JSC
I: NAS9-17736 $ 46,723
II: NAS9-17994 $475,470
Philip Shinn

Site-Specific, Air-Traffic-Control, Training Simulator with Speech Input and Output
89-1-06.04-0885 NASA ARC
I: NAS2-13175 $ 44,888
Philip Shinn

S062

Spire Corporation

Patriots Park
Bedford, MA 01730
617-275-6000

* Dry-Film Lubricant for Bearings Using Ion Implantation
83-1-11.07-6000 NASA MSFC
I: NAS8-35848 $ 49,903
II: NAS8-35262 $195,995
Bing Whey Shen

* High-Efficiency, Radiation-Resistant, Indium-Phosphide Solar Cells
84-1-10.03-6000 NASA LeRC
I: NAS3-24395 $ 49,501
II: NAS3-24857 $500,000
Mark B. Spitzer

Dry-Film Lubrication of Cryogenic Turbopump Bearings Using Cubic Boron-Nitride
84-1-11.07-6000 NASA MSFC
I: NAS8-35275 $ 49,980
Piran Sioshansi

Advanced Seal Materials by Ion Beam Enhanced Deposition
86-1-01.02-6000 NASA LeRC
I: NAS3-25146 $ 49,831
James K. Hirvonen

* Low-Cost AlGaAs Laser Arrays for Solid-State Laser Pumps
86-1-08.05-6000 NASA LaRC
I: NAS1-18428 $ 49,841
II: NAS1-18660 $484,441
Kurt J. Linden

Oxidation Resistant Ti-6Al-4V-SiC Composite Materials
87-1-04.01-6000 NASA LeRC
I: NAS3-25326 $ 49,826
James K. Hirvonen

* Indium-Phosphide Solar Cells on Silicon Substrates
87-1-10.01-6000A NASA LeRC
I: NAS3-25283 $ 49,867
II: NAS3-25798 $499,994
Christopher J. Keavney

A 2.1 Micron Lidar Detector
88-1-08.07-6000 NASA LaRC
I: NAS1-18828 $ 48,090
Kurt J. Linden

Preparation of Superconducting Wire
88-1-10.06-6000 NASA MSFC
I: NAS8-38039 $ 49,480
Anton C. Greenwald

Thermal-Tile-Bond Inspection by Gamma Ray Scattering
88-1-13.04-6000 NASA KSC
I: NAS10-11558 $ 50,000
Charles C. Blatchley

Development of 780 and 792 Nanometer Diode Laser Pumps for Solid-State Lasers
89-1-08.07-6000A NASA LaRC
I: NAS1-19035 $ 49,934
Kurt J. Linden

Vertical, Multijunction, Photovoltaic Cells with Buried Silicide Interconnections
89-1-10.04-6000 NASA LaRC
I: NAS1-19028 $ 49,941
Fereydoon Namavar

High-Indium-Content High Electron Mobility Transistors for RF Communications Devices
89-1-14.05-6000A NASA LeRC
I: NAS3-25867 $ 49,942
Patricia Sekula-Moise

S063
Springborn Laboratories, Inc.
10 Springborn Center
Enfield, CT 06082
203-749-8371

Anti-Bacterial Agent for Water Post-Treatment Sorbent Beds
84-1-12.01-8371 NASA JSC
I: NAS9-17285 $ 49,945
Bernard Baum

* Specialized Floor Coverings for Launch Site Facilities
87-1-04.07-8371 NASA KSC
I: NAS10-11455 $ 49,900
II: NAS10-11552 $315,662
James P. Galica

S064
Stanford Telecommunications, Inc.
2421 Mission College Boulevard
Santa Clara, CA 95054
408-748-1010

Power- and Bandwidth-Efficient, Coded Modulation for Satellite-Based Communications
85-1-14.05-1010 NASA JPL
I: NAS7-945 $ 49,963
D. Thomas Magill

S065
Stanford Telecommunications, Inc.
1761 Business Center Drive
Reston, VA 22090-5337
703-438-8000

* Application of Pseudo-Noise Correlation and Bandwidth Synthesis for Orbit Determination
83-1-07.05-3220 NASA GSFC
I: NAS5-28005 $ 50,307
II: NAS5-28655 $500,000
Aaron Weinberg

* Integrated Receiver Using Programmable Charge Coupled Devices
84-1-08.05-3220 NASA GSFC
I: NAS5-28638 $ 49,990
II: NAS5-29416 $493,000
Aaron Weinberg

* Integrated System Testing for the Space Station Communication and Tracking System
84-1-14.03-3220 NASA JSC
I: NAS9-17281 $ 49,990
II: NAS9-17607 $480,000
Edwin Zakrzewski

Fault Processing Using Axiomatic, and Hypothetical Methods
85-1-06.08-3220 NASA GSFC
I: NAS5-29280 $ 49,993
Steven G. Miksell

A Novel High-Speed Viterbi Decoder Design with Robust Attributes
85-1-14.02-3220A NASA LeRC
I: NAS3-24742 $ 49,981
Robert G. Harkness

S066
Star Enterprises, Inc.
P.O. Box 1748
Bloomington, IN 47402
812-855-3309

* An Animal Development Habitat for Space Biology
84-1-12.05-3309 NASA ARC
I: NAS2-12113 $ 50,370
II: NAS2-12476 $500,000
Jeffrey R. Alberts

* Breeding Facilities for Rodents and Amphibians in Space
85-1-12.08-3309 NASA ARC
I: NAS2-12357 $ 63,689
II: NAS2-12641 $521,052
Jeffrey R. Alberts

Automated Food Delivery to Rodents in Space
89-1-12.11-3309 NASA ARC
I: NAS2-13167 $ 50,000
Jeffrey R. Alberts

S067
Star Microwave - *Now M-Square Microtech*
2525 Barrington Court
Hayward, CA 94545-1134
415-732-1122

* Textured-Oxide Cathode Substrates
86-1-14.01-6868A NASA LeRC
I: NAS3-25116 $ 49,563
II: NAS3-25452 $290,000
Robert M. Phillips

S068

Statistical Sciences, Inc.

P.O. Box 85625
Seattle, WA 98145-1625
206-322-8707

Statistical Tools for Spatial Processes
88-1-07.03-8707 NASA SSC
I: NAS13-383 $ 49,835
Stephen Kaluzny

S069

Stirling Technology Company

2952 George Washington Way
Richland, WA 99352
509-375-4000

* Advanced Stirling Engine Heater Head
87-1-10.01-4000 NASA LeRC
I: NAS3-25334 $ 50,000
II: NAS3-25819 $497,467
Peter Riggle

* Stirling Cryocooler with Extremely Low Vibration
88-1-09.07-4000 NASA GSFC
I: NAS5-30458 $ 49,880
II: NAS5-31176 $498,224
Peter Riggle

A High-Efficiency, Low-Vibration, Long-Life, Stirling Cryogenic Pre-Cooler
89-1-09.12-4000 NASA GSFC
I: NAS5-30860 $ 49,960
Peter Riggle

S070

Stoddard-Hamilton Aircraft, Inc.

18701 58th Avenue, N.E.
Arlington, WA 98223
206-435-8533

Lightning Protection Technology for Smaller General Aviation Aircraft
89-1-03.02-8533 NASA LaRC
I: NAS1-19010 $ 49,422
J. A. Plumer

S071

Strainoptic Technologies, Inc.

21 Terrace Road
Norristown, PA 19401
215-279-3383

* Spectral Contents Readout of Birefringent Sensors
85-1-03.09-3383 NASA ARC
I: NAS2-12351 $ 50,000
II: NAS2-12666 $447,700
Alex S. Redner

* Fiber-Optic, Photoelastic, Pressure Sensor for High-Temperature Gases
86-1-01.03-3383A NASA LeRC
I: NAS3-25134 $ 50,000
II: NAS3-25419 $423,001
Alex S. Redner

S072

Structural Analysis Technology, Inc.

4677 Old Ironside Drive, Suite 250
Santa Clara, CA 95054
408-496-1120

* An Expert System for Integrated Analysis and Optimization of Aerospace Structures
87-1-04.04-1319 NASA LeRC
I: NAS3-25327 $ 47,534
II: NAS3-25642 $491,545
Hasan Kamil

S073

Sunpower, Inc.

6 Byard Street
Athens, OH 45701
614-594-2221

* Measurement of Reversing-Flow Pressure Drop in Stirling Engine Heat Exchangers
84-1-10.04-2221A NASA LeRC
I: NAS3-24396 $ 50,000
II: NAS3-24879 $468,000
Gary Wood

A Test Rig for Measuring Thermal Performance of Stirling Cycle Regenerators
88-1-10.01-2221 NASA LeRC
I: NAS3-25620 $ 49,481
Gary Koester

S074

Superconductor Technologies, Inc.

460 Ward Drive, Suite F
Santa Barbara, CA 93111-2310
805-683-7646

In Situ Thallium Films by Laser Ablation
89-1-04.16-7646A NASA JPL
I: NAS7-1090 $ 49,989
J. L. Nilsson

S075

Surface Alloys Corporation

35 Cherry Hill Drive
Danvers, MA 01923
617-777-5110

Fracture-Toughened Ceramics for Rolling Element Bearings
86-1-04.01-5110 NASA LeRC
I: NAS3-25127 $ 49,812
Anthony J. Armini

S076

Symbiotics, Inc.

875 Main Street
Cambridge, MA 02139
617-876-3635

* A Development Framework for Distributed Artificial Intelligence
87-1-06.03-3635 NASA KSC
I: NAS10-11464 $ 50,000
II: NAS10-11606 $495,508
Bruce H. Cottman

S077

Synetics Corporation

540 Edgewater Drive
Wakefield, MA 01880
617-245-9090

Highly Survivable Orthogonal Mesh Network
86-1-07.01-1203 NASA LaRC
I: NAS1-18410 $ 49,842
Richard A. Fastring

S078

System Specialists

3125 E 47th Street
Tucson, AZ 85713
602-622-7513

* Color Schlieren System for Large-Scale, Low-Gravity MPS Fluids Experiments
84-1-15.01-7307 NASA MSFC
I: NAS8-35278 $ 47,858
II: NAS8-37254 $402,000
Wade M. Poteet

Detailed Visualization of Protein Crystal Growth
88-1-08.25-7513 NASA MSFC
I: NAS8-38026 $ 49,763
Wade M. Poteet

S079

Systematix, Inc.

5029 Edmondson Pike
Nashville, TN 37211
615-834-1319

Implementation of Fault-Tolerant Control Algorithms Using Neural Networks
88-1-10.05-1319 NASA MSFC
I: NAS8-38049 $ 49,990
Steven W. Welch

S080

Systems & Processes Engineering Corp.

1406 Smith Road Suite A
Austin, TX 78721
512-385-0318

* GaAs RISC Array Processor
87-1-07.03-0081 NASA GSFC
I: NAS5-30291 $ 49,940
II: NAS5-30619 $497,972
Gary B McMillian

Digital, Optical Phase-Lock-Loop for Non-Destructive Evaluation
89-1-04.06-0318 NASA LaRC
I: NAS1-19032 $ 50,000
Gary B. Mcmillian

S081

Systems Engineering, Inc.

7833 Walker Drive, Suite 308
Greenbelt, MD 20770
Last Known Address

Frequency Domain Design of Robust Controllers for Large Space Structures
85-1-09.01-1692 NASA LaRC
I: NAS1-18209 $ 49,985
William Bennett

S082

Systems Technology, Inc.

13766 S.Hawthorne Boulevard
Hawthorne, CA 90250-7083
213-679-2281

* Advanced Aircraft Flight Control System
83-1-03.05-2281 NASA LaRC
I: NAS1-17574 $ 50,000
II: NAS1-17987 $263,000
Thomas T. Myers

Improved Outside Visual Cues for Aeronautical Simulators
83-1-03.09-2281 NASA ARC
I: NAS2-11731 $ 50,000
Roger H. Hoh

* Decision-Making Modeling Theory of Human Error
84-1-03.09-2281 NASA ARC
I: NAS2-12094 $ 50,000
II: NAS2-12540 $250,000
R. Wade Allen

* Fully Automatic Guidance for Rotorcraft Nap-of-the-Earth Flight
85-1-03.08-4675 NASA ARC
I: NAS2-12364 $ 49,971
II: NAS2-12640 $488,347
Warren F. Clement

A Quantitative and Qualitative Data Base Display of Content, Format, and Arrangement Factors
86-1-03.03-4675B NASA LaRC
I: NAS1-18414 $ 49,995
Warren F. Clement

* Task-Tailored Flight Control and Flying Qualities
86-1-03.05-2281B NASA LaRC
I: NAS1-18427 $ 49,954
II: NAS1-18669 $494,500
Roger Hoh

Practical Application of Multivariable Robustness Methods to Advanced Aircraft Flight Control
87-1-03.05-2281 NASA LaRC
I: NAS1-18634 $ 49,925
Peter M. Thompson

Real-Time Identification of Structural Modes
87-1-03.07-4674 NASA ARC
I: NAS2-12726 $ 49,996
Wayne F. Jewell

S083

Systolic Technology, Inc. - *See ZeroOne*

883 A North Shoreline Boulevard
Mountain View, CA 94043-1940
415-962-1467

Optical Drum for Space and Ground Applications
88-1-06.07-1467 NASA ARC
I: NAS2-12964 $ 49,610
John R. Wilson

T

T001
TNA Technologies, Inc.
P.O. Box 3118
Bozeman, MT 59715
406-586-7684

Broadband Source for a Three-Dimensional Reflectometer
89-1-08.19-5976 NASA GSFC
I: NAS5-30841 $ 49,975
John C. Stover

T002
TPI, Inc.
100 Via Florence
Newport Beach, CA 92663
714-675-4256

A Repair Coating for Cryogenic Transfer Lines
89-1-13.02-4256 NASA KSC
I: NAS10-11654 $ 50,000
Larry A. Harrah

T003
TPI, Inc.
105 N. Virginia Avenue, #305
Falls Church, VA 22046
703-237-1830

* Magnetically Suspended, Composite Flywheels for Inertial Energy Storage
85-1-10.08-7115 NASA GSFC
I: NAS5-29272 $ 49,954
II: NAS5-30091 $492,408
D. K. Anand

T004
TS Infosystems, Inc.
10905 Fort Washington Road, #201
Fort Washington, MD 20744
301-292-0100

High-Resolution Remote Sensing for Earth Observation
87-1-08.03-4080 NASA ARC
I: NAS2-12815 $ 46,809
Warren A. Hovis

T005
Talandic Research Corporation
P. O. Box 9503
Azusa, CA 91702
818-793-4161

Advanced Torque Converters for Robotics and Space Applications
84-1-05.06-4161 NASA LaRC
I: NAS1-17938 $ 49,983
John Tracy

T006
Tau Corporation
485 Alberto Way, Bldg. D
Los Gatos, CA 95032-5405
408-395-9191

* Optimal Guidance with Obstacle Avoidance for NOE Flight
84-1-03.08-9191 NASA ARC
I: NAS2-12092 $ 50,000
II: NAS2-12402 $487,000
Richard V. Denton

* Worldwide, Differential GPS, Space Shuttle Landing Opertions
88-1-09.09-9191 NASA JSC
I: NAS9-18108 $ 49,826
II: NAS9-T B D $ T B D
Peter V. W. Loomis

T007
Technical & Administrative Service
600 Maryland Avenue, S.W.
Washington, DC 20024
202-554-8677

Improvements in Man-Machine Allocation and Effectiveness for Control Centers
84-1-06.05-8677 NASA GSFC
I: NAS5-28632 $ 49,270
Manfred Von Ehrenfried

T008
Technical Measurements, Inc.
P.O. Box 838
La Canada, CA 91011
818-24810350

Cavity Radiometer for Earth Albedo Measurements
86-1-08.02-1035 NASA GSFC
I: NAS5-30059 $ 50,000
James M. Kendall

T009
Technical Research Associates, Inc.
410 Chipeta Way, Suite 222
Salt Lake City, UT 84108
801-582-8080

New Titanium Alloy
83-1-04.01-3742 NASA LeRC
I: NAS3-23936 $ 46,457
Guy B. Alexander

RS ODS Titanium-Molybdenum Alloy
86-1-04.03-8080A NASA LaRC
I: NAS1-18424 $ 50,000
Joseph K. Weeks

ODS Solder
86-1-04.07-8080 NASA GSFC
I: NAS5-30060 $ 50,000
Joseph K. Weeks

Switched Hemispherical Antenna
87-1-14.04-8080 NASA JSC
I: NAS9-17951 $ 50,000
Stephen C. Peterson

T010
Techno-Sciences, Inc.
1011-114 M L King Jr Highway
Bowie, MD 20715
301-731-4288

CDMA System Capacity
87-1-14.02-4288A NASA JPL
I: NAS7-1027 $ 49,901
Lee D. Davisson

T011

Technology Development of California -

See ZeroOne Systems, Inc., for project information.

T012

Technology Group

3231 Ocean Park Boulevard, Suite 110
Santa Monica, CA 90405
213-552-1000

* Trellis Coding with Continuous-Phase Modulation for Satellite-Based, Land-Mobile Communications

85-1-14.05-6455	NASA JPL
I: NAS7-965	$ 49,225
II: NAS7-1003	$467,000

Farrokh Abrishamkar

T013

Technology Integration & Dev. Group

One Progress Road
Billerica, MA 01821
508-667-3779

* Active Control of Interior and Exterior Propeller Noise with Exterior Acoustic Sources

85-1-02.08-3779	NASA LaRC
I: NAS1-18214	$ 49,500
II: NAS1-18477	$500,000

Nathan B. Higbie

Continuous On-Board Non-Destructive Monitoring of Degradation of Fiber Composites

88-1-04.02-3779	NASA LeRC
I: NAS3-25575	$ 50,000

Gino A. Pinto

Automatic Fault-Detection and Failure-Prediction for Spacecraft Systems

89-1-15.05-3779	NASA MSFC
I: NAS8-38455	$ 49,000

Nathan B. Higbie

T014

Technology International, Inc.

429 West Airline Highway, Suite S
Laplace, LA 70068
504-652-1127

Application of Fractals to Smoothing over the Parameter Space

89-1-07.03-1127	NASA SSC
I: NAS13-411	$ 50,000

Abdo A. Husseiny

T015

Tekmat Corporation - *Now Mattek Corp.*

200 Homer Avenue
Ashland, MA 01721
508-881-6772

Surface Fluorination of Polymers for Use in Space

85-1-04.06-6315	NASA JPL
I: NAS7-953	$ 49,650

Ih-Houng Loh

T016

Teknowlogica, Inc.

P.O. Box 145
Princeton Junction, NJ 08550
609-799-9654

Non-Intrusive, Single-Point Pressure and Temperature Sensor for Aeronautical Propulsion Applications

89-1-01.03-9654A	NASA LeRC
I: NAS3-25828	$ 49,948

Robert W. McCullough

T017

Telecomm Science Associates, Inc.

591 Camino de la Reina, #1100
San Diego, CA 92108-3113
Last Known Address

Multi-User Programmable Modem

84-1-14.02-2913	NASA LeRC
I: NAS3-24247	$ 49,769

B. R. Eisenberg

T018

Telerobotics International, Inc.

7325 Oak Ridge Highway
Knoxville, TN 37921
615-690-5600

Dual-Arm Robotic Manipulator Control Based on Teleoperated Manipulation Methods

86-1-05.01-5600B	NASA LaRC
I: NAS1-18423	$ 47,275

H. Lee Martin

* Electro-Optical Pan, Tilt, and Zoom: A Miniature Viewing System

87-1-07.01-5600	NASA LaRC
I: NAS1-18627	$ 49,755
II: NAS1-18855	$482,960

Paul E. Satterlee Jr.

* A Visual-Language, Telerobotic Operator Interface for Rapid Implementation of Autonomous Tasks

88-1-05.01-5600	NASA LaRC
I: NAS1-18823	$ 48,000
II: NAS1-19094	$488,348

H. Lee Martin

T019

Tennessee Space Laboratories, Inc.

UTSI Research Park #2
Tullahoma, TN 37388
615-455-7211

Sensor Computer Aided Design

86-1-08.22-7211	NASA GSFC
I: NAS5-30061	$ 48,672

Charles W. Pender

T020

Textile Technologies, Inc.

2800 Turnpike Drive
Hatboro, PA 19040
215-443-5325

Composite Structures with Enhanced Damage Tolerance

87-1-04.02-5325	NASA LaRC
I: NAS1-18628	$ 46,782

Janice R. Maiden

Multi-Angular Weaving Composite Preforms
89-1-04.03-5325 NASA LaRC
I: NAS1-19002 $ 42,733
Steve Walker

T021

The Eppley Laboratory, Inc.

12 Sheffield Avenue
Newport, RI 02840
401-847-1020

* Improved Cavity Radiometer for Radiance Measurement
88-1-08.02-1020 NASA GSFC
I: NAS5-30597 $ 50,000
II: NAS5-T B D $ T B D
John R. Hickey

T022

The Holotronics Corporation

424 North Main Street
Findlay, OH 45840
Last Known Address

Spatial Light Modulator: Optical Tunnel Array
83-1-08.01-4270 NASA LeRC
I: NAS3-24097 $ 49,981
Ronald L. Kirk

T023

The Navtrol Company, Inc.

9204 Markville Drive
Dallas, TX 75243
214-234-3319

* Low-Power, Digital Controller for Laser Communications
84-1-14.07-3319 NASA GSFC
I: NAS5-28645 $ 50,000
II: NAS5-29437 $500,000
Richard J. Brown

* Telerobotic, Digital Controller System
87-1-35.01-3319 NASA GSFC
I: NAS5-30283 $ 50,000
II: NAS5-30633 $492,388
Richard J. Brown

T024

Thermacore, Inc.

780 Eden Road
Lancaster, PA 17601
717-569-6551

* Heat Transport Across Structural Boundaries
83-1-09.02-6885 NASA MSFC
I: NAS8-35841 $ 49,900
II: NAS8-35263 $499,000
Robert M. Shaubach

* High-Performance, Flexible, Heat Pipes
83-1-09.08-0376 NASA JSC
I: NAS9-17036 $ 49,744
II: NAS9-17305 $454,000
G. Yale Eastman

* Heat-Pipe Cooling of Thrust Chambers
83-1-11.04-6551 NASA LeRC
I: NAS3-23874 $ 48,685
II: NAS3-24634 $500,000
Donald M. Ernst

* High-Performance, Ambient-Temperature Heat Pipes
84-1-09.08-6551 NASA MSFC
I: NAS8-35269 $ 49,997
II: NAS8-37261 $500,000
Robert M. Shaubach

T024 **Thermacore, Inc., continued**

Self-Maintaining Thermal Surfaces
84-1-09.15-12300 NASA MSFC
I: NAS8-35272 $ 49,994
Donald M. Ernst

* Modular Cold Plates for High Heat Fluxes
84-1-09.16-1227 NASA JSC
I: NAS9-17280 $ 49,998
II: NAS9-17610 $500,000
Donald M. Ernst

Titanium-Water, Capillary-Pumped Loop for Manned Environments
86-1-09.07-1342A NASA MSFC
I: NAS8-37319 $ 49,907
Peter M. Dussinger

Advanced Heat-Pipe, Body-Mounted Radiators
86-1-09.07-1343B NASA MSFC
I: NAS8-37318 $ 49,907
Jerome E. Toth

Sintered Powder, Artery-Free Wicks for Low-Temperature Heat Pipes
89-1-09.12-6551 NASA GSFC
I: NAS5-30861 $ 49,996
John H. Rosenfeld

Composite Material Heat Pipes
89-1-09.13-6551 NASA MSFC
I: NAS8-38437 $ 49,995
Nelson J. Gernert

T025

TiNi Alloy Company

1144 65th Street, Suite A
Oakland, CA 94608
415-658-3172

* Digital Storage Device Using Thin-Film Shape-Memory Alloy
87-1-06.07-4109 NASA ARC
I: NAS2-12797 $ 49,780
II: NAS2-13113 $496,461
A. David Johnson

T026

Time & Space Processing, Inc.

705 East Evelyn Avenue
Sunnyvale, CA 94086
408-730-0200

Low-Overhead, Error Protection for LPC+ Digitized Speech
84-1-14.06-0200 NASA JPL
I: NAS7-929 $ 49,680
Lon Radin

T027

Togai Infralogic, Inc.

30 Corporate Park, Suite 107
Irvine, CA 92714
714-975-8522

Fuzzy-Clips Expert System
89-1-06.05-8522 NASA JSC
I: NAS9-18335 $ 47,220
Masaki Togai

T028

Top Vu Technology

2650 14th Street NW
New Brighton, MN 55112
512-633-5952

* GaAs Readout and Preprocessing Electronics for Two-Dimensional, Focal-Plane-Array, IR Astronomy

88-1-08.12-5925	NASA ARC
I: NAS2-12987	$ 49,890
II: NAS2-T B D	$ T B D

Ngoc-Chi N Vu

T029

Tracer Technologies, Inc. - *See also ECO*

20 Assembly Square Drive
Somerville, MA 02145
617-776-6410

* Small, High-Rate Battery for Distress Transmitters

83-1-10.08-7010	NASA GSFC
II: NAS5-28650	$256,000

Fraser Walsh

Titanium-Carbide Used to Protect Carbon Composites

88-1-04.07-6410	NASA JSC
I: NAS9-18109	$ 48,967

Fraser Walsh

A Low-Thermal-Conductivity Connector

89-1-09.07-6410	NASA GSFC
I: NAS5-30862	$ 50,000

Fraser Walsh

T030

Transducer Research, Inc.

1228 Olympus Drive
Naperville, IL 60540
312-369-1336

An Improved Toxic-Vapor Detector for Hydrazine, Monomethylhydrazine, and Hydrochloride

86-1-13.06-1336	NASA KSC
I: NAS10-11380	$ 49,893

Joseph R. Stetter

Energy-Modulated Toxic Vapor Detector

88-1-13.01-1336A	NASA KSC
I: NAS10-11561	$ 50,000

Joseph R. Stetter

T031

Transitions Research Corporation

15 Great Pasture Road
Danbury, CT 06810
203-798-8988

* Tracking System Applications of an Exponential Sensor Array System

86-1-09.16-8988	NASA JSC
I: NAS9-17728	$ 51,107
II: NAS9-17990	$493,800

Carl Weiman

Tortuous-Path Robot Transport

89-1-05.08-8988	NASA KSC
I: NAS10-11658	$ 41,461

J. F. Engelberger

T032

Transmission Research, Div. of NASTEC

10823 Magnolia Drive
Cleveland, OH 44106
216-231-1391

* Roller-Gear Drive Robotic Manipulators

87-1-05.03-1391A	NASA LeRC
I: NAS3-25282	$ 48,760
II: NAS3-25803	$455,000

William J. Anderson

Torque Balanced Drives for Space Station Applications

88-1-05.03-1391	NASA LeRC
I: NAS3-25576	$ 49,550

William J. Anderson

T033

Transmission Technology Company, Inc.

216 Horseneck Road
Fairfield, NJ 07006
201-575-0418

* High-Speed, Helical-Gear Power Transmissions

83-1-01.05-0418	NASA LeRC
I: NAS3-23937	$ 49,702
II: NAS3-24539	$478,000

D. J. Folenta

T034

Triangle R&D Corporation

P.O. Box 12696
Research Triangle Park, NC 27709
919-781-8148

* Energy Storage System Using Microencapsulated Phase-Change Material

83-1-09.14-2878	NASA MSFC
I: NAS8-35840	$ 47,903
II: NAS8-35259	$495,000

David P. Colvin

System Constitution and Intravenous Administration of Fluids in Microgravity

85-1-12.02-2878	NASA JSC
I: NAS9-17568	$ 49,157

David P. Colvin

* Telerobotic Rendezvous and Docking Vision System Architecture

87-1-05.01-2878	NASA GSFC
I: NAS5-30292	$ 48,491
II: NAS5-30709	$500,000

Benjamin T. Gravely

Space Suit Thermal Control Using Non-Toxic, Microencapsulated-PCM, Two-Phase Fluids

87-1-12.01-2878	NASA JSC
I: NAS9-17952	$ 49,993

David P. Colvin

Vibration Isolation of Exercise Treadmill in Microgravity

88-1-12.05-8148	NASA JSC
I: NAS9-18111	$ 49,995

Amit L. Patra

Spacesuit Glove-Liner with Enhanced Thermal Properties for Improved Comfort

88-1-12.07-8148	NASA JSC
I: NAS9-18110	$ 49,996

Yvonne G. Bryant

T035
Turbulence Prediction Systems
3131 Indian Road
Boulder, CO 80301
303-443-2150

* Airborne Advance Warning of Air Turbulence
87-1-03.02-2150 NASA LaRC
I: NAS1-18637 $ 50,000
II: NAS1-18854 $500,000
H. Patrick Adamson

U

U001
UFA, Inc.
335 Boylston Street
Newton, MA 02159
617-964-5172

Telerobotics and Artificial Intelligence: System Design Architecture
86-1-05.01-5172 NASA JPL
I: NAS7-976 $ 49,702
Arthur Gerstenfeld

* Integration of Task-Level Plannining and Diagnosis for an Intelligent Robot
87-1-05.02-5172A NASA MSFC
I: NAS8-37641 $ 48,394
II: NAS8-38420 $454,056
Arthur Gerstenfeld

U002
Ultramet
12173 Montague Street
Pacoima, CA 91331
818-899-0236

* High-Temperature, Oxidation-Resistant Thruster Materials
85-1-11.04-0236C NASA LeRC
I: NAS3-24868 $ 49,954
II: NAS3-25203 $499,975
John T. Harding

* Lightweight Mirror Structures
86-1-10.03-0236B NASA LeRC
I: NAS3-25145 $ 49,994
II: NAS3-25418 $493,891
Richard B. Kaplan

Advanced Thermal Protection Materials
87-1-01.02-0236 NASA LeRC
I: NAS3-25411 $ 50,000
Richard B. Kaplan

High-Performance, High-Temperature Heat Pipes
87-1-03.08-0236 NASA LaRC
I: NAS1-18644 $ 49,553
J. Grady Sheek

* High-Temperature Turbine Blades
87-1-04.03-0236A NASA LeRC
I: NAS3-25349 $ 49,513
II: NAS3-25650 $496,050
John T. Harding

Hydrogen Collectors for Space Flight Applications
88-1-04.06-0236 NASA GSFC
I: NAS5-30485 $ 49,589
Richard B. Kaplan

CVD Chromium-Diboride Fibers for Metal Matrix Composites
89-1-04.04-0236 NASA LeRC
I: NAS3-25886 $ 50,000
Andrew J. Sherman

U003
Ultrasystems, Inc.
2400 Michelson Drive
Irvine, CA 92715
714-833-2670

* Improved Perfluoroalkylether Fluid Development
83-1-01.05-2670 NASA LeRC
I: NAS3-23938 $ 49,940
II: NAS3-24632 $240,543
K. L. Paciorek

U004
Umpqua Research Company
P.O. Box 791
Myrtle Creek, OR 97457
503-863-5201

* Space Station, Hygiene Water, Prefilter Device
86-1-12.01-5201 NASA JSC
I: NAS9-17730 $ 49,662
II: NAS9-17996 $440,000
Gerald V. Colombo

* Bio-Catalytic Reactors for Removal of Volatile Contaminants
87-1-12.02-5202B NASA MSFC
I: NAS8-37642 $ 47,105
II: NAS8-38421 $499,976
Gerald V. Colombo

Space Laundry Cleansing Agent and Filter Development
87-1-12.05-5201 NASA JSC
I: NAS9-17953 $ 49,939
Gerald V. Colombo

* Regenerable Biocide Delivery Unit
88-1-12.01-5201A NASA JSC
I: NAS9-18113 $ 49,990
II: NAS9-T B D $ T B D
Gerald V. Colombo

* Catalytic Methods Using Molecular Oxygen Treatment of PMMS and ECLSS Waste Streams
88-1-12.02-5201 NASA MSFC
I: NAS8-38038 $ 49,990
II: NAS8-38490 $499,928
Gerald V. Colombo

* Single-Phase Space Laundry
88-1-12.06-5201B NASA JSC
I: NAS9-18112 $ 49,990
II: NAS9-T B D $ T B D
Gerald V. Colombo

A Reagentless Separator for Removal of Inorganic Carbon from Solution
89-1-12.02-5201B NASA MSFC
I: NAS8-38460 $ 50,000
Clifford D. Jolly

Electrochemical Water Recovery Process for Direct Removal of Impurities
89-1-12.03-5201 NASA JSC
I: NAS9-T B D $ T B D
David F. Putnam

Thermally Desorbable Toxin and Odor Control Cartridge
89-1-12.08-5201 NASA JSC
I: NAS9-18337 $ 50,000
Gerald V. Colombo

U005

Unique Mobility, Inc.

3700 South Jason Street
Englewood, CO 80110
303-761-2137

Robotic Actuator Optimization
89-1-05.07-2137 NASA LeRC
I: NAS3-25833 $ 49,586
David W. Parish

U006

Universal Analytics, Inc.

7740 West Manchester Boulevard, #208
Playa Del Rey, CA 90293
213-822-4422

A Fully Automated Structural Design Software System
85-1-06.03-4422 NASA LaRC
I: NAS1-18221 $ 49,981
David L. Herendeen

U007

Universal Energy Systems, Inc.

4401 Dayton-Xenia Road
Dayton, OH 45432
513-426-6900

Response of Rapidly Solidified Titanium Alloys to Thermochemical Treatment
87-1-04.03-6900B NASA LaRC
I: NAS1-18620 $ 49,437
Rabi S. Bhattacharya

V

V001

VRA, Inc.

P.O. Box 60
Blacksburg, VA 24060
703-552-0769

Aerothermondynamic Performance of Lifting AOTVs at High Altitudes
84-1-02.01-0769 NASA ARC
I: NAS2-12102 $ 49,946
Clark H. Lewis

Nonequilibrium Flows and Catalytic Surfaces on Spacecraft Reentry
84-1-02.04-0769 NASA JSC
I: NAS9-17290 $ 49,993
Clark H. Lewis

* Prediction of Hypersonic External and Internal Flows for NASP Applications
86-1-01.05-2036 NASA LeRC
I: NAS3-25137 $ 49,221
II: NAS3-25450 $485,006
Clark H. Lewis

V002

Verac - *See Netrologic, Inc.*

V003

Vexcel Corporation

2477 55th Street, #201
Boulder, CO 80301-5703
303-444-0094

* EOS Workstation
87-1-07.07-0094 NASA JPL
I: NAS7-1026 $ 49,502
II: NAS7-1070 $499,385
Franz W. Leberl

Polarimetry-Based SAR-Shape from Shading Terrain Reconstruction
88-1-07.02-0094 NASA GSFC
I: NAS5-30596 $ 49,998
Franz W. Leberl

HIRIS-Oriented Visualization Software System
89-1-07.02-0094 NASA GSFC
I: NAS5-30869 $ 49,855
Wolfgang Kober

V004

Vigyan Research Associates, Inc.

30 Research Drive
Hampton, VA 23666-1325
804-865-0794

Design of Fuselage Shapes for Natural Laminar Flow
84-1-02.02-0794 NASA LaRC
I: NAS1-17926 $ 48,866
Cornelis P. Van Dam

Application of the Weis-Fogh Principle of High Lift to Turbomachinery Flows
86-1-01.01-0794 NASA LeRC
I: NAS3-25139 $ 48,807
P. Sundaram

* Generation of Unstructured Grids in Three Dimensions
86-1-02.04-0794 NASA LaRC
I: NAS1-18419 $ 49,986
II: NAS1-18670 $498,332
Paresh C. Parikh

Flow Fields around Hypervelocity Vehicles in a Low-To-High Density Flight Regime
86-1-02.07-0794 NASA ARC
I: NAS2-12551 $ 48,854
Roop N. Gupta

* Low-Speed Visualization Studies of Coupled and Uncoupled Vortex Systems on Chine-Forebody/Delta Wing
87-1-02.09-0794A NASA ARC
I: NAS2-12780 $ 49,962
II: NAS1-18856 $497,700
Dhanvada M. Rao

* Control of Large Cryogenic Wind Tunnel: Study of NTF Controls
88-1-02.02-0794 NASA LaRC
I: NAS1-18810 $ 49,400
II: NAS1-19125 $448,410
W. Allen Kilgore

V005

Viking Instruments Corporation
103B Carpenter Drive
Sterling, VA 22170
703-689-2214

* An Advanced, Tandem Mass Spectrometer for Spacecraft
87-1-08.10-2214A NASA MSFC
I: NAS8-37643 $ 49,061
II: NAS8-38422 $496,990
Russell C. Drew

V006

Visual Computing, Inc.
883 N Shoreline Boulevard, #B-210
Mountain View, CA 94043
415-961-5682

* Three-Dimensional, Interactive, Grid-Generation Project
88-1-02.01-5682 NASA ARC
I: NAS2-12960 $ 47,600
II: NAS2-T B D $ T B D
Jeffrey Q. Cordova

W

W001

Waddan Systems
6585 Neddy Avenue
Canoga Park, CA 91307
818-704-9783

Integrated Computer-Aided Optical Instrument Design
86-1-08.22-9783 NASA SSC
I: NAS13-301 $ 49,973
Mahendra Singh

W002

Wavemat, Inc.
44780 Helm Street
Plymouth, MI 48170
313-971-2010

Sintering of Advanced Ceramic Materials with a Tuneable Microwave Cavity
88-1-04.12-2010 NASA LeRC
I: NAS3-25608 $ 48,300
Raymond F. Decker

W003

Weather Corporation
46 Kendal Common Road
Weston, MA 02193
617-899-1834

* Solid-State Instrumentation for Electric Field Detection of Lightning Potential
85-1-13.05-1834 NASA KSC
I: NAS10-11292 $ 50,000
II: NAS10-11412 $493,544
Ralph J. Markson

W004

William Pfefferle Associates - *See Precision Combustion*
51 Woodland Drive
Middletown, NJ 07748
201-671-0664

Catalytic-Ignition, Rotary, Combustion Engine
86-1-01.02-0664 NASA LeRC
I: NAS3-25129 $ 50,000
William C. Pfefferle

W005

Wilson Greatbatch Ltd.
10000 Wehrle Drive
Clarence, NY 14031
716-759-6901

* Battery Using Low-Temperature Electrolytes for the Emergency Locator Transmitter
88-1-14.07-6901 NASA GSFC
I: NAS5-30492 $ 46,978
II: NAS5-T B D $ T B D
Esther S. Takeuchi

Rechargeable Lithium/Titanium-Disulfide Cells with Long Cycle-Life
89-1-10.02-6901 NASA JPL
I: NAS7-1081 $ 48,290
Esther S. Takeuchi

W006

Wilton Industries, Inc.
66 Sugar Hollow Road
Danbury, CT 06810
203-743-6544

* Multi-User, Multi-Access, Wireless, IR Communication System
86-1-14.03-6544A NASA JSC
I: NAS9-17738 $ 44,582
II: NAS9-17988 $419,000
James W. Crimmins

W007

Winzen International, Inc.
12001 Network Blvd Suite 200
San Antonio, TX 78249
512-692-7062

Stress Analysis of an Ascending Balloon
86-1-04.13-6366 NASA JPL
I: NAS7-973 $ 49,790
James L. Rand

Automated Seal-Flaw Detection
89-1-09.06-7062 NASA GSFC
I: NAS5-30856 $ 49,987
Thomas M. Lew

X

X001

X2Y2 Corporation
5765 Uplander Way
Culver City, CA 90230
Last Known Address

Conversion of Carbon Monoxide and Carbon Dioxide to Methane in a Gravity-Free Environment
86-1-15.07-8492A NASA JSC
I: NAS9-17735 $ 50,000
Walter W. Yuen

Z

Z001

ZeroOne Systems, Inc. - *Contact Systolic Technology for information about these projects.*

* Optimal Systolic Architectures for Numerical Linear Algebra

83-1-02.01-3030	NASA ARC
I: NAS2-11728	$ 49,999
II: NAS2-12091	$500,000

Simon K. Fok

* Optimal Systolic Architectures for the Navier-Stokes Equations

84-1-06.01-3030K	NASA ARC
I: NAS2-12082	$ 50,000
II: NAS2-12444	$331,000

Simon K. Fok

* Systolic Ray Tracing Processor

85-1-06.11-3030A	NASA ARC
I: NAS2-12349	$ 50,000
II: NAS2-12637	$480,000

Simon K. Fok

INDEX OF SUBJECTS

Introduction

The Index of Subjects for NASA SBIR projects is provided to assist the reader in locating projects of interest in various technical areas or disciplines. This index is not based on key words; rather the subjects for this index were chosen by consolidating similar subtopics contained in all of the annual Program Solicitations issued by NASA through 1989. The projects are related to these subjects through the subtopics chosen by the proposers.

The key lists all the subject titles used. These are shown in normal type. It also contains cross-references to variants of the headings used or other potential locations of the desired information. Cross-references are in italic type.

The index itself is arranged alphabetically by subject titles. For each subject, projects are listed by title in order of the program year and topic and subtopic numbers. After a particular SBIR project has been located in this subject index, the user who wishes additional information can refer to the main Composite List via the firm's index number.

Key to subject titles

Aerodynamics: Configurations and Theory

83-1-02.07
* A001 Joined Wing Aircraft
* A052 Prediction Methods for Powered-Lift Vehicle Aerodynamics

85-1-02.07
* C041 An Arbitrary-Grid, CFD Multi-Tasking Code for Configuration Aerodynamics Analysis

86-1-02.04
* V004 Generation of Unstructured Grids in Three Dimensions

86-1-02.09
* C039 Measurements of Vortex Flow Fields

87-1-02.04
G002 Three-Dimensional Euler Solver

87-1-02.09
E010 Flow Visualization Study of Delta Wings in Wing-Rock Motion
* V004 Low-Speed Visualization Studies of Coupled and Uncoupled Vortex Systems on Chine-Forebody/Delta Wing

88-1-02.08
* C040 A New Approach for Solving Navier-Stokes Equations on Unstructured Grids Based on Adaptive Methods
* E010 Aerodynamic Control of NASP-Type Vehicles Through Vortex Manipulation

89-1-02.06
E010 Aerodynamic Control of the F/A-18 Using Forebody Vortex Blowing

Aerodynamics: Unsteady Flows and Flutter

85-1-02.05
I013 Real-Time Flutter Prediction and General Modal Parameter Identification

Aerodynamics: Viscous Flows

83-1-02.02
S021 Three-Dimensional, Unsteady, Viscous-Flow Analysis Over Airfoil Sections

84-1-02.02
* F012 Generating an Artificial Burst in a Turbulent Boundary Layer
E024 Design of Multi-Element, Natural Laminar Flow Airfoils
E024 Laminar Flow Control, Supercritical LFC, and Hybrid (NLF/LFC) Airfoils
V004 Design of Fuselage Shapes for Natural Laminar Flow

85-1-02.04
F012 Turbulence Control on an Airborne Laser Platform

86-1-02.06
P005 Improved Turbulence Model for Aerodynamic Flows with Massive Separation and Wakes

87-1-02.03
S057 Modelling of Massively Separated Flows - Renormalization Group Formulation

87-1-02.05
A071 Computations of Separated Flows with an Improved K-Epsilon Model

89-1-02.03
N004 Transition to Turbulence in Complex Aerodynamic Flows
E025 Calculation of Surface Pressure Fluctuations Based on Time-Averaged, Turbulent Flow Computations

Aeronautics: Applications of Expert Systems

84-1-03.03
A063 Expert Systems for Accident Investigations

85-1-03.03
C043 Intelligent Interface System

86-1-03.04
* I013 Automation Tools for Demonstration of Goal-Directed and Self-Repairing Flight Control

87-1-03.04
D007 Integrated Design System for High-Altitude, Long-Endurance Aircraft for Micro Computers

88-1-03.09
* E029 Intelligent Hypertext Systems for Aerospace Knowledge Representation

88-1-03.10
S051 Expert Systems for Flight Control Systems Verification

89-1-03.10
G001 A Knowledge-Based Simulation Design, Development, and Coding Environment

Aeronautics: Computational Fluid Dynamics

83-1-02.01
* T011 Optimal Systolic Architectures for Numerical Linear Algebra
* N012 Increasing the Convergence Rate Euler Equation Solutions
S021 Improved Accuracy and Efficiency of Three-Dimensional Flow Algorithms

84-1-02.01
V001 Aerothermondynamic Performance of Lifting AOTVs at High Altitudes
N012 Rapid Computation with Nonlinear Numerical Algorithms
D001 Wiener-Hermite Simulation of Turbulence

84-1-06.01
* Z001 Optimal Systolic Architectures for the Navier-Stokes Equations

85-1-02.01
G002 Fast, Two-Dimensional Euler Solver
C030 Formation and Quenching of Electronically Excited Molecules on Surfaces

86-1-02.01
* S027 The Use of Variational Principles in Improving CFD Methodology
* E026 A Robust, Nonequilibrium, Parabolized Navier-Stokes Code
* A050 Three-Dimensional Navier-Stokes Analysis for Evaluation of Hypersonic Vehicles

87-1-02.01
* C040 Adaptive Schemes for Complex, Subsonic, Three-Dimensional Flow Problems in Arbitrary Domains
* J001 Computational Fluid Dynamics of Store Separation
K005 Software Package for Solving Large Systems of Nonlinear Equations

88-1-02.01
S021 Automated Application of Navier-Stokes Solutions to Mechanical Design
P035 Goodness-Of-Grid Measures
* C040 Pre- and Post-Processing Techniques for Determining Goodness of Computational Meshes
* V006 Three-Dimensional, Interactive, Grid-Generation Project

89-1-02.01
A071 Two-Equation Turbulence Modeling of Hypersonic Transitional Flows with the UPS Code
C054 Advanced Modeling of Combustion Systems
A050 Coupling Grid Adaption to an Implicit Navier-Stokes Solution Procedure

Aeronautics: Experimental Fluid Dynamics & Wind Tunnel Tests

83-1-02.03
* S058 Dual Thermoplastic Holography Recording System for Flow Diagnostics
* A060 Technology for Pressure-Instrumented Thin Airfoil Models
* F012 Transonic Wall Interference Assessment and Correction
C039 Scanning Laser Velocimeter for Turbulence Research

84-1-02.03
* M011 Magnetic Suspension and Balance System for Wind Tunnels

84-1-02.06
* R007 Shear-Stress Sensor Development Using Surface Acoustic Waves
S058 Pulsed Laser Holocamera for Wind Tunnel Testing

84-1-08.13
* K001 Modular, Digital, Holographic Fringe Data Processing System
* E021 Miniature Infrared Data Acquisition and Telemetry System

85-1-02.02
* C057 Cost-Effective Use of Liquid Nitrogen in Cryogenic Wind Tunnels
S058 An Optical Detector for High-Sensitivity Density Measurements

85-1-08.13
* G007 Microchannel Plates in Advanced Wind Tunnel Instrumentation
S005 An In Situ Particle Sizing System

86-1-08.08
* H003 High-Temperature Capacitive Strain Gauge
I009 Boundary Layer Transition Detection System
* M010 Frequency Domain Laser-Velocimeter Signal Processor

86-1-08.20
* R011 Aeroheating Flight Instrumentation

87-1-02.02
* P025 Propulsion Simulation for Magnetically Suspended Wind Tunnel Models

87-1-08.20
P025 Wind Tunnel Remote Turbulence Characterization
* C039 An Optical Angle-of-Attack Sensor
E036 High-Temperature and High-Response Skin Friction Sensor
* O002 Fiber-Optic Pressure Sensor for Wind Tunnel Applications

88-1-02.02
* V004 Control of Large Cryogenic Wind Tunnel: Study of NTF Controls

88-1-02.11
* S043 Nonintrusive, Oxygen Monitoring System for Supersonic Combustion
L006 Very-High-Temperature Fiber Sensors

89-1-02.02
A081 Wind Tunnel Noise Reduction

89-1-02.08
I006 A High-Temperature, Directional, Spectral Emissivity Measurement System
A049 Cross-Correlation, Optical Strain Sensor for Wind Tunnel Test Instrumentation

Aeronautics: Human Factors

83-1-03.09
S082 Improved Outside Visual Cues for Aeronautical Simulators
* A009 Brain Wave Measures of Workload in the Advanced Cockpit

84-1-03.09
* S082 Decision-Making Modeling Theory of Human Error
A009 Polar Graphics for Rapid Assessment of Multivariate Information

85-1-03.06
B008 An Optimal Interface for Expert Monitoring Systems

87-1-03.03
* E010 A Gravity-Induced Loss-of-Consciousness Detection and Recovery System - AF Phase I
* C023 Electroencephalographic Monitoring of Complex Mental Tasks
* D009 Aeronautical Human Factors Research - Pilot Descision-Making Support System

88-1-03.11
C027 EEG-Based Metric for Flight Deck Workload Assessment
E020 Voice Input-Output for Flight Management Systems

89-1-03.09
S026 Methods and Tools for Assessing Limits of System Intelligence

Aeronautics: Rotorcraft Aerodynamics and Dynamics

83-1-03.07
* A052 Improved Algorithms for Analysis of Circulation-Control Rotors
* C050 Rotary Wing Hover Performance Prediction

85-1-03.07
* S021 Calculation of Helicopter Rotor Blade and Vortex Interactions by Navier-Stokes Procedures
S058 Improved Signal Processor Enhancement of Laser Doppler Velocimeters

86-1-02.10
* C050 Advanced Free-Wake Analysis for Unsteady Airloads on Rotors

87-1-02.10
* C050 Optimization of Rotor Performance Using a Free Wake Analysis

88-1-02.09
* A052 A Novel, Potential-Viscous Flow Coupling Technique for Computing Helicopter Flow Fields
A001 Joined-Wing Tiltrotor Aircraft Study

89-1-02.07
J005 General Time-Domain Unsteady Aerodynamics of Rotors
A032 Soft Hub for Bearingless Rotors

Aeropropulsion: Computational & Experimental Fluid Dynamics

83-1-01.01
* G002 Unsteady Compressible Flows in Intakes and Nozzles

83-1-01.02
A037 Holographic Detection of Combustion Stream Droplets

84-1-01.01
* S021 Computation of the Tip-Vortex Flow Field in Advanced Propellers
* F012 Optimization Procedure for Aerodynamic Design for Advanced Turboprop

84-1-01.02
A035 Turbulent Mixing of Gases in a Simulated Combustor

85-1-01.01
S021 Solution of the Inlet Buzz Problem by the Navier-Stokes Equations
* A038 Fuel Atomization and Air-Fuel Interactions in a Turbulent Environment
S021 Optimum Ducts Using an Efficient, Three-Dimensional, Viscous Computation
* C040 Adaptive Computational Methods for Fluid-Structure Interaction in Internal Flow

86-1-01.01
S021 Solution Adaptive Mesh
V004 Application of the Weis-Fogh Principle of High Lift to Turbomachinery Flows

87-1-01.01
* R021 Boundary Layer Control Methods in High-Speed Inlet Systems
* C054 Multigrid Solution of Internal Flows Using Unstructured, Solution-Adaptive Meshes

88-1-01.01
* C014 Numerical Modelling of Turbulence and Combustion Processes
P036 Efficient Computation of Viscous Internal Flows
89-1-01.01
S021 Flow in Turbine Blade Passages
P025 Reaction Mechanics and Kinetic Rates for Soot Formation
P035 Grid-Generation Code with Automatic Zoning

Aeropropulsion: Drive Trains, Transmissions, and Lubrication

83-1-01.05
* U003 Improved Perfluoroalkylether Fluid Development
* T033 High-Speed, Helical-Gear Power Transmissions
84-1-01.05
J003 A Design Concept for Reducing Dynamic Loads on Spur Gear Teeth
* E035 New Perfluoroether Fluids with Excellent Oxidative and Thermal Stabilities
R002 High Energy Tribo-Elements

Aeropropulsion: Gas Turbine and Rotary Engine Components

84-1-01.03
* A017 Adiabatic, Wankel-Type Rotary Engines
* R015 Rapidly Solidified Titanium Alloys by Melt Overflow
85-1-01.02
* P003 Cast SiC-Al Technology with Direct Application to Rotary Engines
86-1-01.02
* P032 Catalytic-Ignition, Rotary, Combustion Engine
S062 Advanced Seal Materials by Ion Beam Enhanced Deposition
87-1-01.02
U002 Advanced Thermal Protection Materials
D025 Propeller-Wake-Induced, Structure-Borne Interior Noise
A044 Pulse-Combustor-Driven, Recuperated or Regenerated Gas Turbine
88-1-01.02
* S038 Gas Turbine Combustor for Low Pattern Factor and Low NOx Emission
89-1-01.02
M052 Evaluation of PS200 Coating as a Thermal Barrier in an Air-Cooled Rotary Engine
C003 Rapid-Mix Concepts for Low-Emission Combustors in Gas Turbine Engines
M014 Influence of Tooth-Profile Modification on the Lubrication of Involute Gearing

Aeropropulsion: Hypersonic Flight

86-1-01.05
* V001 Prediction of Hypersonic External and Internal Flows for NASP Applications
87-1-01.04
* N012 Supersonic, Turbulent, Reacting Flow Modeling and Calculation
88-1-01.04
* P025 Three-Body Reaction Rates for H2-O2 at High Temperatures

Aeropropulsion: Instrumentation and Control

84-1-02.08
F012 Optical Slip-Ring for High-Density-Data Communication Links
84-1-08.09
* A037 Optimization of Silicon-Carbide Production
85-1-01.03
S022 Nonlinear Control Design for Turbofan Jet Engines
O012 Non-Contact, High-Temperature Strain Gage
86-1-01.03
C016 Laser for a Time-Averaged Holographic Interferometer
* C047 Durable, Fast-Response, Optical-Fiber Temperature Sensor Usable from 600 to 1900C
* S071 Fiber Optic, Photoelastic, Pressure Sensor for High-Temperature Gases
87-1-01.03
P025 High-Temperature, Seed-Particle Development for Laser Doppler Velocimeters
D008 Simultaneous Temperature, Density, and Flow Diagnostics for Aeropropulsion Systems
88-1-01.03
* G014 Fast Optical Switch for Multimode Fiber-Optic-Based Control Systems
A086 Fiber-Optic Fluid Flow Sensor
* C056 High-Temperature, Silicon Carbide, Power MOSFET
89-1-01.03
T016 Non-Intrusive, Single-Point Pressure and Temperature Sensor for Aeronautical Propulsion Applications
D013 High-Temperature, Hostile-Environment Instruments Manufactured by CVD
P025 Laser-Induced Fluorescence Measurements of Velocity in Supersonic Reacting Flowfields

Aeropropulsion: Novel Concepts

83-1-01.04
I027 Detonation-Wave Augmentation of Gas Turbines
* A037 Rayleigh Scattering as a High-Temperature Combustion Diagnostic Method
B009 Heat Pipe Applications in Aircraft Propulsion Systems
85-1-01.06
C002 Intercooling and Reheat with Heat Pipes
I027 Detonation-Wave Compression in Gas Turbines
86-1-01.06
* I027 Detonation-Duct Gas Generator
* F008 An Investigation of the Properties of Cooled Supersonic Flows
87-1-01.05
F013 Shock Waves for Enhanced Mixing in Scramjet Combustors
88-1-01.05
C002 Conceptual Design of Ramfan Hypersonic Engine
89-1-01.04
F015 High-Efficiency Flow Induction

Aerothermodynamics: Hypersonic Flight

86-1-02.07
V004 Flow Fields around Hypervelocity Vehicles in a Low-To-High Density Flight Regime
* C039 Laser Velocimeter Potential in Hypersonic Flows
86-1-03.09
A035 Supersonic Combustion Enhancement by a Nonequilibrium Plasma Jet
87-1-02.06
* M006 Photochemical Ignition and Enhancement of Supersonic Combustion
D008 Stimulated Brillouin Diagnostics of Hypersonic Flow
* P025 Aerothermodynamic Radiation Studies
C039 A Laser-Based Transition Detector
87-1-03.08
U002 High-Performance, High-Temperature Heat Pipes
88-1-02.05
* A028 An Oblique-Detonation-Wave, Ram-Accelerator-Driven Hypersonic Test Facility
C030 Temperature-Dependent, Energy Transfer Recombination on Surfaces
C030 Mechanisms of Energy Accommodation on Catalytic Surfaces
P025 Hypersonic Thermophysics Code
* P024 Laser Velocimetry Processor for Hypersonic Flows
88-1-03.07
I013 Numerical Optimization of Single-Stage-To-Orbit Configuation with Inequality Constraints

89-1-02.04
D008 Remote Measurement System for Arc-Jet Temperature and Density
H005 Transport Properties in Non-Equilibrium Air Mixtures
N012 A Model for Shock Turbulence Interaction
P025 High-Velocity Gas-Surface Accommodation
M035 A Holographic Interferometer Spectrometer for Hypersonic Flow
89-1-03.07
R009 Ceramic-Matrix-Composite for Hypersonic Engine Structures

Airborne Observations Technology

87-1-08.03
T004 High-Resolution Remote Sensing for Earth Observation
88-1-08.03
* S006 Multi-Spectral, High-Resolution Remote Sensor
88-1-08.19
R021 Innovative Shear-Layer Control Methods for Large Scale Airborne Telescopes.
89-1-08.03
P019 Multispectral, Remote Sensing Using Sprite Technology
89-1-08.05
R014 An Airborne, Laser-Depolarization, Imaging Sensor for Terrestrial Measurements

Aircraft Control: Fixed Wing

83-1-03.05
* S082 Advanced Aircraft Flight Control System
84-1-03.05
D012 Application of Parameter Extraction at Extreme Angles of Attack
85-1-03.05
I006 Optimal-Output, Feedback-Regulator Design for Systems with Variable Dynamics
86-1-03.05
* S082 Task-Tailored Flight Control and Flying Qualities
87-1-03.05
S082 Practical Application of Multivariable Robustness Methods to Advanced Aircraft Flight Control
88-1-03.03
* I006 A Stochastic, Optimal Feedforward and Feedback Control Methodology for Superagility
E010 Management System for High-Performance Aircraft
89-1-03.03
E010 An Improved Methodology to Assess Departure Susceptibility Versus Agility

Aircraft Control: Rotorcraft

84-1-03.08
* T006 Optimal Guidance with Obstacle Avoidance for NOE Flight
85-1-03.08
* S082 Fully Automatic Guidance for Rotorcraft Nap-of-the-Earth Flight
86-1-03.06
O004 Threat Expert Systems Technology Advisor
87-1-03.06
* S044 Passive, Electro-Optical Sensor for Processing Helicopter Obstacle Avoidance
88-1-03.04
A020 Multilevel Motion Processing for Autonomous Helicopters

Aircraft Distress Beacons

83-1-10.08
* T029 Small, High-Rate Battery for Distress Transmitters
87-1-14.03
* M046 High-Efficiency, Low-Cost, GaAs Monolithic RF Module SARSAT Distress Beacons
88-1-14.07
* W005 Battery using Low-Temperature Electrolytes for the Emergency Locator Transmitter

Aircraft Electric Power Systems

84-1-01.06
H009 Low Weight-to-Horsepower Ratio Electric Drive

Aircraft Flight Environment Sensing and Analysis

84-1-03.02
* S058 Optical Method to Determine the Impact of Heavy Rain on Aircraft Performance
86-1-03.02
S032 Airborne Weather Radar for Windshear Warning
87-1-03.02
* T035 Airborne Advance Warning of Air Turbulence
88-1-03.02
* C050 An Aircraft-Mounted, Rainfall-Rate Instrument
89-1-03.02
S070 Lightning Protection Technology for Smaller General Aviation Aircraft

Aircraft Flight Management

83-1-03.04
* A051 Advanced Flight Planning System
F009 Flight Recorder with Hazard Detection Capability
F018 Computer-Interactive Flight Simulator
85-1-03.04
* A054 Prototype Cockpit Ocular Recording System
86-1-03.03
* E037 An Expert Flight System Monitor
A043 Display Technology
S082 A Quantitative and Qualitative Data Base Display of Content, Format, and Arrangement Factors

Aircraft Flight Test Techniques and Instruments

85-1-03.09
* S071 Spectral Contents Readout of Birefringent Sensors
86-1-03.08
* E010 Cockpit Displays and Cueing Systems Concepts for Operation in an Extended Flight Envelope
* M015 Airflow Monitor and Stall Warning Device
87-1-03.07
N014 Aircraft Flight Testing Techniques and Instrumentation
* C027 Expert Systems for Real-Time Monitoring and Fault Diagnosis
S082 Real-Time Identification of Structural Modes
E027 Smart Angle-of-Attack and Angle-of-Sideslip Sensor
N010 Miniature Airborne Dew Point Sensor
88-1-03.05
* S051 Applications of Transputers to Aircraft Flight Research
* I009 Boundary-Layer-Flow Analysis System for High-Performance Aircraft
88-1-03.06
S021 Fluorescence Spectroscopy and Thermometry for Hypersonic Flight Research
* D004 Interferometric Imaging and Frequency Estimation of Surface Vibration Patterns
R012 Sensors for Flight Research
89-1-03.05
A053 Flight Instrumentation for Simultaneous Detection of Flow Separation and Transition
S022 Real-Time Adaptive Identification and Prediction of Flutter
89-1-03.06
I009 Low-Cost, Angle-of-Attack Sensor for Subsonic Aircraft
A049 Laser-Speckle Interferometer for Surface-Acoustic-Displacement Measurements
B001 Evaluation of PVDF Film as a Pressure Sensor

Aircraft Icing Phenomena and Instruments

85-1-03.01
F017 Ordered-Polymer-Film Composites Applied to Fluid Deicing Systems for Aircraft
* I009 Icing Sensor and Ice-Protection System

86-1-03.01
M053 A Real-Time Ice Detection System

87-1-03.01
* A038 Advanced Instrumentation for Aircraft Icing Research

88-1-03.01
* N012 Unsteady Triangular-Mesh, Navier-Stokes Method for Aerodynamics of Aircraft with Ice Accretion
* I009 Smart-Skin Measurement of Aircraft Performance for Ice-Accretion, Stall, and High Angle-of-Attack

89-1-03.01
E017 Eddy Current Repulsion De-Icing Strip

Aircraft Propulsion Noise and Acoustics

83-1-02.08
* C013 Analytical Model of the Structureborne Interior Noise Induced by a Propeller Wake

85-1-02.08
* T013 Active Control of Interior and Exterior Propeller Noise with Exterior Acoustic Sources

86-1-02.13
A079 Diagnostic Technique to Identify Airborne and Structureborne Noise Components

87-1-02.12
C050 Main-Rotor-Wake and Tail-Rotor Interaction Noise
* A035 Direct Computation of Turbulence Noise

88-1-02.12
D010 Acousto-Fluidic Noise Generator for Aircraft Component Structure Testing

89-1-02.09
C050 General Flow-Field Analysis Methods for Helicopter Rotor Aeroacoustics
E025 The Applications of Fractional Calculus to Noise Simulation

89-1-02.10
A035 Computer Simulation and Design of Jet-Noise Suppressors

Aircraft: High-Altitude, Remotely Piloted Vehicles

83-1-02.09
P010 High-Altitude, RPV Flight Test Vehicle

89-1-03.08
A001 Very-High-Altitude Aircraft with Joined Wings
D016 An Advanced Heat Rejection System for an AVCD Engine in a High-Altitude Research Platform
A085 Fuel-Cell Propulsion System for a High-Altitude Research Platform

Aircraft: Powered-Lift

85-1-02.10
F012 Numerical Simulation of Impinging Jets

87-1-02.11
A050 Zonal Method for Modeling Powered-Lift Aircraft Flow Fields

Antennas

85-1-14.04
C044 Electronically Controllable Reflective Lens

85-1-14.07
C007 Multiple-Band, Near-Field, Antenna Feed System

86-1-14.04
I020 Determination of Orbiting-Spacecraft-Antenna Distortion by Ground-Based Measurements

87-1-14.05
S023 Microstrip, Multiple-Function Antenna Feed

Artificial Intelligence for Space Station Applications

85-1-05.07
* M042 The Laser Docking Sensor Intelligent Controller
* O004 Co-Ordinated Control of a Payload Utilizing Multiple Manipulator Arms

86-1-05.04
A059 A Generic, Artificial-Intelligence, Expert System for Space Station Applications
E037 An Expert System to Troubleshoot Data Management Systems

87-1-05.02
* U001 Integration of Task-Level Plannining and Diagnosis for an Intelligent Robot
A019 New Solution Method for Robot Kinematic Equations
A020 Adjustable Autonomy for Hazardous Robotic Operations
* A020 Architectures for Semi-Autonomous Planning

88-1-05.05
I010 An Automatic Scheduling Assistant for the NASA Space Station
* S028 An Artificial Intelligence System Process for Monitoring, Situation Assessment, and Response Planning
A020 The Space Station as Robot: A Reactive Planning Approach to OMS Problems
* I014 Compiling Knowledge-Based Systems Specified in KEE to Ada
* G010 An Automated Wire-Guide for Robotic Welding Applications

89-1-05.05
C020 An Expert Advisor for Failure Mode and Effects Analysis

Astronomy, Infrared, Ultraviolet, Xray

83-1-08.10
* I008 Advanced Components for Spaceborne Infrared Astronomy

85-1-08.09
* L009 Multichannel Infrared Filters

85-1-09.08
A055 Thermal Design of a Precollimator

86-1-08.06
* C054 High-Efficiency Pump for Space Helium Transfer

87-1-08.07
* C015 Automated Characterization and Calibration of Ultraviolet Spectrophotometers Using Intensity-Stabilized Lasers

88-1-08.05
* O012 Auto-Aligned, Fourier Transform, Ultraviolet Spectrometer

88-1-08.12
* T028 GaAs Readout and Preprocessing Electronics for Two-Dimensional, Focal-Plane-Array, IR Astronomy
G012 Joule-Thomson Cryorefrigerator for Spaceborne Sensors and Stored Cryogens
* C054 A 4K Stirling Cryocooler Demonstration

89-1-08.12
E004 Efficient, Far-Infrared, Inductive Mesh Filters by Photoelectrochemical Etching

Automation and Robotics: End Effectors and Actuators

83-1-05.03
* B017 Six-Component, Robotic, Force-Torque Sensor

83-1-05.06
E011 Robotic Interface for Vernier Positioning

84-1-05.02
A075 Self-Aligning Electrical Connector

84-1-05.06
T005 Advanced Torque Converters for Robotics and Space Applications

85-1-05.02
* C001 Positioning Beam Rider Module for Articulated Robot Manipulator

85-1-05.03
* O006 Inflatable End Effectors

85-1-05.06
R017 Control Theory and End-Effector Laws Using an Advanced, Multiple Prehension Grip

86-1-13.13
* A089 Universal End-Effector with Torque Feedback for Hand Valves

87-1-05.03
* T032 Roller-Gear Drive Robotic Manipulators

87-1-13.04
S003 Human Envelope Manipulator

88-1-05.03
T032 Torque Balanced Drives for Space Station Applications
O006 Centerline Imaging System for End-Effector Tools
P013 Parallel Implementation of Algorithms for Robotic Sensory Fusion
* E018 A Parallel Processor for Simulating Manipulators and Mechanical Systems
G014 Composite, Six-Axis Force Sensor with Embedded Optical Sensors
A089 Cableless Power and Signal Transfer for Robot End Effector with Integrated Sensor System
A026 Lightweight, Permanent-Magent Actuators and Manipulators

88-1-05.04
* I015 Robotic Testbed for Adaptive Grasping of Objects in Space
* E039 Robotic Adaptive Grasping with a Capacitance-Array Tactile Sensor System

89-1-05.03
I016 Telerobot Control Interface Based on Constraints
S010 High-Performance, Multiaxis Strain Sensing
P018 Integrated Ergonomic System for Software Development

89-1-05.04
B007 Glove Controller with Force and Tactile Feedback for Dexterous Robotic Hands
B005 A Robot Wrist Using New Mechanism Technology Invented for Whole-Arm Manipulation

89-1-05.07
U005 Robotic Actuator Optimization

Automation and Robotics: Telepresence

83-1-05.01
E001 Robot Vision Using Multiaperture Optics
A009 Three-Dimensional Viewing in Teleoperated Systems

84-1-05.01
M051 Remote, Teleoperator, Manual-Feedback Device with Gyrostatic Force Translation

85-1-05.01
B007 Fingertip-Shaped Touch Sensor for Teleoperator and Robotic Applications

86-1-05.03
M057 Computing Range and Three-Dimensional Structure of Rigid Objects Using Stereo and Motion

Automation and Robotics: Telerobotic System Concepts

86-1-05.01
T018 Dual-Arm Robotic Manipulator Control Based on Teleoperated Manipulation Methods
U001 Telerobotics and Artificial Intelligence: System Design Architecture
* A054 Prototype Holographic-Enhanced Remote Sensing System
A019 Three-Dimensional Vision Algorithm for Direct Transformation from Image Space to Robot Joint Space
A016 Large-Scale, Space-Based Compliant Manipulator
* R005 Proportional Proximity Sensor for Autonomous Space Based Robots
* R022 Computer-Controlled Telerobot Wrist Module

87-1-05.01
N007 Neural Network Controller for Adaptive Movements in Robots
* S021 Intelligent Manipulation Technique for Mobile, Multi-Branch Robotic Systems
B007 Tactile Telepresence System for Dexterous Telerobotics
D004 Three-Dimensional Laser Imager
R018 Telerobot Collision and Obstacle Avoidance Based on Real-Time Proximity Sensors
O004 Telepresence Sensor and Control Helmet
* R022 Telerobot Hand
* D018 Improvement of Range of Coherent Laser Radar
D018 Integrated, Fiber-Optic-Coupled, Proximity Sensor for Robotic End Effectors and Tools
* M031 Force Reflecting Hand Controller for Manipulator Teleoperation
* T023 Telerobotic, Digital Controller System
* O004 Control Algorithm for Redundant Degree-Of-Freedom Manipulators
* T034 Telerobotic Rendezvous and Docking Vision System Architecture
* K001 High-Performance, View-Generated Database for World Model Definition and Update

88-1-05.01
* N006 Neural-Network Path-Planning and Digital Adaptive Control of Redundant Robots
I017 A Perception System for Object Recognition, Acquisition, and Tracking in Cluttered Environments
S050 Reaction Compensation System for Microgravity Tele-Robots
* O004 End-Point-Collision-Avoidance Path Planner for Redundant DOF Manipulators
O004 Dual-Arm, Collision-Avoidance Algorithm
K001 A Single-View, Three-Dimensional-Object Recognition System
* T018 A Visual-Language, Telerobotic Operator Interface for Rapid Implementation of Autonomous Tasks

89-1-05.01
D018 Wavelength Diplexed, Fiber-Coupled, Coherent Laser Radar Measurement System
A048 Identifying, Locating, and Tracking Objects by Detecting Pre-Affixed Colored Targets

89-1-05.06
D026 A VLSI Three-Dimensional Processor for Advanced Robotic Manipulation
D026 A Precise, Force-Controlled Robotic System
K001 Global-Local Environment Telerobotic Simulator

89-1-05.08
T031 Tortuous-Path Robot Transport
F017 Self-Contained, Deployable, Serpentine Truss for Prelaunch Access of Orbiter Payloads

89-1-05.09
C042 Active Detection and Tracking Sensor for Passive Targets
A013 Advanced Telerobotic Concepts Using Neural Networks

Biological Science Experiment Operations

85-1-12.09
* M039 Variable-Speed, Mid-Deck Centrifuge

85-1-12.10
A037 On-Line Nutrient Analysis

87-1-12.07
* P027 Space-Rated Nutrient Delivery and Root Support System
O012 Cell Culture in Microgravity

88-1-08.25
S078 Detailed Visualization of Protein Crystal Growth

88-1-12.10
* A040 Remote Monitoring Indicators of Plant Stress
* G014 Optrode Development for Environmental Ph Monitoring

89-1-12.12
B015 Fiber Fluorometry for On-Line Chemical Analysis of Nutrient Solutions
G014 Trace Contaminant Vapor Monitors
A093 Remote Moisture Sensor to Control Irrigation of Plants in Space

Biota Life Support System Development

84-1-12.05
* S066 An Animal Development Habitat for Space Biology
C001 Cellulose Conversion for CELSS

85-1-12.08
* G015 A Direct, Metabolic Calorimetry System for Orbital Laboratories
* S066 Breeding Facilities for Rodents and Amphibians in Space

87-1-12.06
G019 Accelerating Seed Germination and Plant Growth Through Manipulating of Atmospheric Pressure
D022 Modular ECLSS for a Mid-Deck Animal Habitat Testbed

88-1-12.08
M039 Variable-G Facility for LIFESAT
N017 A New Method for Respiratory Monitoring During Space Flight

89-1-12.11
S066 Automated Food Delivery to Rodents in Space

Chemical Vapor Deposition Process Modelling

86-1-15.06
* C054 Numerical Modeling Tools for Chemical Vapor Deposition

88-1-15.03
* N004 Chemical-Vapor-Deposition, Fluid-Flow-Simulation Modelling Tool

89-1-15.03
C054 Numerical Modeling of Particle Formation and Growth During Chemical Vapor Deposition

Cometary Particle Sensing and Analysis

84-1-08.03
* R023 Particulate Monitor for Comet and Planetary Atmospheres

86-1-08.15
E004 Integrated MOS Chemical Sensors Utilizing Inorganic Insertion Compounds

89-1-04.12
I001 Miniature, Thin-Film Deposition System

Commercial Space: Supporting Technology

84-1-15.05
* A091 The Large Format Camera: Novel Analyses of Sensor Applications

85-1-15.02
* R016 Three-Dimensional Electrophoresis Code
* B013 Liquid Carriers in Tissue Culture for Aeration

88-1-15.04
C035 Low-Cost Space Power Generation

Communications: Advanced Satellite Technology

87-1-14.01
A007 High-Speed Optoelectronic Switch
* L003 EHF (30 GHz), Reflection-Mode-FET, Solid-State Power Amplifier
M056 Programmable-Rate, Digital Modem Utilizing Digital Signal Processing Techniques Support Burst Modes

88-1-14.05
* A045 Multi-User, Receiver-Demodulator Satellite Communication System
* H008 Quartz and Fused Silica Chip Carriers

88-1-14.08
L003 Pulsed Solid-State Power Amplifiers for 30/20 GHz Satcom Terminal Uplink Transmitters

89-1-14.05
S062 High-Indium-Content High Electron Mobility Transistors for RF Communications Devices
Q001 High-Instantaneous-Data-Rate, Burst-Signal Receiver

Communications: Deep Space

85-1-14.06
* M046 Advanced On-Chip Divider for Monolithic, Microwave, Voltage-Controlled Oscillators

86-1-14.07
* E001 High-Performance, Millimeter-Wave Microstrip Circulators and Isolators

88-1-14.04
* P008 Linear and Bi-Phase Modulator for Integrated Circuits

89-1-14.04
M046 Advanced Monolithic, Gallium Arsenide Receiver Front-End for Spacecraft Transponders

Communications: Ground Mobile Service

84-1-14.06
T026 Low-Overhead, Error Protection for LPC+ Digitized Speech

85-1-14.05
S064 Power- and Bandwidth-Efficient, Coded Modulation for Satellite-Based Communications
* T012 Trellis Coding with Continuous-Phase Modulation for Satellite-Based, Land-Mobile Communications

86-1-14.06
P006 Mobile Radios for the Mobile Satellite Service

86-1-14.08
P006 Collision-Resolution Algorithm for Request Channel Demand Assigned Network Protocols

87-1-14.02
T010 CDMA System Capacity

Communications: Laser

84-1-14.04
G011 Intersatellite, Optical-Communications, High-Power-Laser Transmitter

84-1-14.07
* T023 Low-Power, Digital Controller for Laser Communications

85-1-14.10
P029 Extremely Sensitive Receiver for Laser Communications

85-1-14.11
* L009 Prototype Laser-Diode-Pumped, Solid-State Laser Transmitters
L006 High-Brightness Laser for Deep-Space Optical Communication

88-1-14.02
* L004 Multi-Access, Free-Space Laser Communication
L009 Coherent Communication Link Using Diode-Pumped Lasers

89-1-14.02
G006 High-Speed, Digital Data Transmission
P015 Surface-Acoustic-Wave, Spectral Limiter for Narrow-Band Interference Suppression

89-1-14.06
L009 Efficient and Low-Timing-Jitter Pulsed Lasers for Space Communications

Communications: Manned Space Flight

83-1-14.03
* S046 Enhanced Bidirectional Communication with Low-Cost Payloads
D024 Multiple Access Communication with Noise Cancellation
E001 Fiber-Optic Links for 30/20 GHz Satellite Communication Terminal
S053 Solid-State, Laser-Scanning Device

84-1-14.03
* S065 Integrated System Testing for the Space Station Communication and Tracking System

86-1-14.03
P034 Generalized Communications Models by Composition from Modules
* W006 Multi-User, Multi-Access, Wireless, IR Communication System

87-1-14.04
T009 Switched Hemispherical Antenna
88-1-14.01
S002 Hybrid Projection Coding for the CCSDS Standard
* S031 Integrated, Active-Antenna Module for Space Station Multiple-Access Communication
Q001 Multiple-Access Communication Hybrid Simulation
89-1-14.01
S002 Power- and Bandwidth-Efficient Digital Communications
O013 An Electro-Optic Modulator for Laser Wavefront Correction and Positioning in Space
M046 Monolithic, Gallium-Arsenide, UHF-IF, Switch Matrix for Space Station Applications

Communications: RF Components, Processing, and Switching

83-1-14.01
* L003 High-Frequency (30 GHz) Gallium-Arsenide Materials and Devices
83-1-14.02
* M046 Advanced Monolithic Gallium-Arsenide Switch Matrix
84-1-14.01
* M046 Advanced, Low-Cost, Universal, 20 GHz Monolithic Receiver Front-End
84-1-14.02
* M046 Advanced, GaAs, Monolithic, 20 GHz, RF Switch Matrix
T017 Multi-User Programmable Modem
85-1-14.02
S065 A Novel High-Speed Viterbi Decoder Design with Robust Attributes
86-1-14.01
C021 High-Accuracy Characterization of Monolithic Millimeter-Wave Devices
* S067 Textured-Oxide Cathode Substrates

Computer Science Advances in Computational Physics

85-1-06.11
* Z001 Systolic Ray Tracing Processor
86-1-06.12
* M046 Advanced Low-Cost, High-Performance Optical Components for CD-ROM Applications
87-1-06.07
M023 System to Create Models of Fluid Flow Phenomena
* T025 Digital Storage Medium Using Thin-Film Shape-Memory Alloy
88-1-06.07
S083 Optical Drum for Space and Ground Applications
E037 A System Library Facility for Parallel Computers
89-1-06.06
D014 Application of High-Performance Digital Video to Computer Storage
D019 A High-Resolution Autostereoscopic Display
D005 Program Mapping Strategies for Multiprocessor Computers
M046 Advanced Optical Head Technology
89-1-06.07
M004 A Distributed, Object-Oriented, Data Facility for Local-Memory, Parallel Computers

Computer Science: Automation of Technical Documentation

86-1-07.11
B021 Automation of Requirements Development Utilizing a Desk Top Computer

Computer Science: CAD, Knowledge Systems, & CAD Integration

86-1-06.05
Q009 Knowledge-Based Process Control
86-1-06.07
C045 Knowledge Base Dictionary for Integration of Engineering and Operations Systems
86-1-08.22
W001 Integrated Computer-Aided Optical Instrument Design
T019 Sensor Computer Aided Design
87-1-06.03
* I002 Fault-Tolerant, Distributed Intelligent Systems
* S076 A Development Framework for Distributed Artificial Intelligence
87-1-06.06
* P037 CAD/CAE Knowledge-Base Development Tool
* C037 A Knowledge-Based Expert System to Coordinate CAD/CAE with Integration and Test
88-1-06.04
E003 Knowledge-Based-Systems Technologies for Advanced Decision Support System
88-1-06.05
S036 Design Knowledge Capture
89-1-06.04
K003 Semi-Automatic Data Structure Selection
I002 Knowledge-Based, Aerospace Program-Management Decision-Support System
S061 Site-Specific, Air-Traffic-Control, Training Simulator with Speech Input and Output

Computer Science: Data Base Storage and Networks

83-1-06.07
J002 Concurrency and Processing Distribution in Horizontally Microprogrammed Processors
83-1-07.02
* C045 Ada Packages for Computer Access to Coordinate-Referenced Data
A033 A 10 to the 15th Bit Random Access Optical Memory for Spacecraft
85-1-07.10
* D017 Communications for Distributed and Concurrent Processing on Microcomputers
86-1-07.01
S077 Highly Survivable Orthogonal Mesh Network
86-1-07.06
* G009 Control of Manual Entry Accuracy in Management and Engineering Information Systems
A054 Application of Expert Systems in Project Management Decision Aiding
F001 High-Level, Protocol-Oriented Network Monitoring
87-1-07.04
* P039 High-Speed Packet Switching
87-1-07.06
* A018 Viewcache: an Incremental Pointer-Based Access Method for Distributed Databases
88-1-07.06
A031 An Interactive, Algorithm Design Tool for Embedded Multiprocessor Systems
S011 Magnetic Spindle Bearing for an Optical-Disk Buffer
88-1-07.10
* H004 An Extensible Shell for Information Access in Heterogeneous Environments
89-1-07.04
A091 Improved Accessing of Digital Data Bases by Geographic Information Systems
S054 Raster and Vector Data Integration, Interactive Edit and Analysis
89-1-07.08
R003 A Distributed, Object-Type Management System for Heterogeneous Environments

Computer Science: Engineering

83-1-06.03
I013 Engineering Workstations for Distributed Parameter Systems
84-1-06.03
* F010 Floating-Point Computer Module for Array Processing on a Flex/32 Multicomputer
85-1-06.03

U006 A Fully Automated Structural Design Software System
I011 Demonstration of the Relog Computer Concept Using Potential Flow

86-1-06.01
* E037 Architectures for Dense Multi-Microprocessor Computers

86-1-06.03
* A012 Accelerate an Existing IBM 3084 Object Code from Fortran 77

87-1-06.01
C038 Asynchronous, Multilevel, Adaptive Methods for Partial Differential Equations on the Navier-Stokes Computer

89-1-06.01
G008 The LAFS Kernel File System
C038 Parallel, Multilevel, Adaptive Methods for Flows in Transition

Computer Science: Expert Information Systems

84-1-07.09
N003 Robust Natural Language Processor Transactional Dialogues

86-1-07.09
* K002 A Generalized Strategy for Building Resident Database Interfaces

Computer Science: Expert Project Management

85-1-07.01
N011 Deductively Augmented, Management Decision Support System

85-1-07.11
* I018 Expert Project Management System Generator

Computer Science: Fault Tolerant Systems

83-1-06.09
* S048 High-Speed, Self-Testing Microprocessor for Spacecraft Applications

85-1-06.08
S065 Fault Processing Using Axiomatic, and Hypothetical Methods

86-1-06.11
* S046 Error Detection and Correction Unit with Built-in, Self-Test Capability

86-1-13.02
E037 Expert-System-Assisted, Logic-Flowgraph Method for Hardware-Software Interaction Analysis

Computer Science: Graphics and Displays

84-1-06.02
A037 Automated Object-Scan System for a Three-Dimensional CRT
A067 Improved Visual Display of Three-Dimensional Information

84-1-06.04
* L010 Advanced Simulation Graphics System

85-1-06.02
A021 Real-Time Autostereoscopic Display

86-1-09.15
P028 Metallo-Organic, CVD of Electroluminescent Films for Multicolor, Flat-Panel Displays

Computer Science: Multiprocessors

85-1-06.15
S047 Optimizing Compiler for Massively Parallel Processors

88-1-06.08
* I012 VME Rollback Hardware Modules for Time Warp Multiprocessor Systems

Computer Science: Software Engineering

83-1-06.06
O005 Formal Verification of Mathematical Software

84-1-06.06
O010 Software Engineering Support System

85-1-06.06
* A030 Integrated Modeling Tool for Performance Engineering of Complex Computer Systems

86-1-06.04
R008 Artificial Intelligence System Applying Reusable Software Components
* S036 Knowledge-Based, Reusable, Software Synthesis System

86-1-07.08
C046 Reverse Engineering for Information Systems

86-1-07.10
* M002 An Expert-System-Based Software Sizing Tool

87-1-06.02
D006 Automated Database Design Methodology
A061 Structured Analysis and Generation of Requirements

88-1-06.02
A003 Reusable Software Base Development - Source Code Tailoring
* A030 Expert Assistant for Integrated Timing and Reliability Design Analysis

88-1-06.03
* S036 Reliable Specification and Execution Tool for Ada Software
S037 Enhanced Condition Tables for Verification of Fault-Tolerant Software

89-1-06.02
I026 Three-Dimensional, Solid-State, Multi-Port Memory System
S036 CASE Visualization System

89-1-06.03
O005 Formal Verification of C with Unix

Contamination Effects and Venting

83-1-08.16
* A014 Automatic Contamination Evaluator for Optical Surfaces
C034 Orbital Debris Monitor

85-1-08.16
* S016 Contamination Return Flux

85-1-13.07
R011 Induced Contamination Environment of the Space Station
* S016 Space Station Contamination Modeling

86-1-08.09
* M050 Single-Particle Contaminant-Sizing Spectrometer for Space Application

87-1-08.11
* S004 Free-Space Particulate Contamination Sizing and Counting System

88-1-08.23
S006 Diagnostic Contamination Measurements in Space

89-1-08.20
S012 Time-of-Flight Mass Spectrometry Instruments for Monitoring Contaminants in Space

89-1-09.14
R011 Integrated CAD Venting Analysis Package

89-1-11.06
E032 Computer Simulation of Transient Operation of Small Bipropellant Engines

Control Center Human Factors

83-1-06.05
* A054 Oculometer and Automated Speech Interface System

84-1-06.05
T007 Improvements in Man-Machine Allocation and Effectiveness for Control Centers

Cryocoolers for Spaceborne and Ground-Based Sensors

83-1-09.19
* A042 Long-Lifetime, Spaceborne Closed-Cycle Cryocooler

84-1-09.12
* C054 A Reliable, Long-Lifetime, Closed-Cycle Cyrocooler for Space

84-1-09.19
* A042 A Helium-3/Helium-4 Dilution Cryocooler Operation in Zero Gravity

85-1-09.07
* C054 An All-Metal, Compact, Heat Exchanger for Spaceborne Cryocoolers

86-1-08.03
* A042 A Small, Single-Stage Orifice, Pulse-Tube Cryocooler Demonstration

86-1-09.19
N019 Low Density, Activated Carbon-Carbon Composite Cryogen Containment System

87-1-08.12
* A008 Three-Stage, Linear, Split-Stirling Cryocooler with a 1K to 2K Magnetic Cold Stage

88-1-08.14
H011 Reversible, Oxide Chemical Compressor for Sensor Cryocooling

89-1-09.12
T024 Sintered Powder, Artery-Free Wicks for Low-Temperature Heat Pipes
F017 Heat Pump for Space Thermal Bus
S069 A High-Efficiency, Low-Vibration, Long-Life, Stirling Cryogenic Pre-Cooler
C054 Magnetic Bearings for Miniature, High-Speed Turbomachines

Cryogenic Fluid Systems Tehnology for Spacecraft

84-1-11.03
* G012 Temperature Sensitive, Variable-Area Joule-Thomson Expansion Nozzles

88-1-08.15
P009 Ultrasonic Transducers: Deployment and Signal Processing Means for Cryofluids

88-1-08.24
* S012 Autonomous Leak Detector for Orbiting Spacecraft

89-1-08.22
P009 Cryogenic, Ultrasonic, Mass Flowmeter and Quality Meter

89-1-11.03
A042 Ortho-Para Conversion in Space-Based Hydrogen Dewar Systems

Earth Atmosphere Sensors: Aerosols and Clouds

84-1-08.12
* S007 Analysis of Atmospheric Aerosols with -0.3 Micrometer Spacial Resolution

85-1-08.12
A025 In-Situ Characterization of the Size and Composition of Atmospheric Aerosols

86-1-08.07
* F005 High-Sensitivity Particle and Gas Instrument Using the Acoustic-Wave Piezoelectric Crystal
E007 Using CCCSEM Cluster and Fractal Analysis Techniques to Characterize Atmospheric Aerosols

87-1-08.09
* S019 Automatic Scanning Lidar System to Map Upper Tropospheric Aerosols and Cloud

88-1-08.04
* Q003 Improved Pulsed-Discharge TE Laser

89-1-08.04
S014 Novel Cobalt-Doped, Magnesium-Fluoride Lidar Aerosol Profiler

Earth Sensing: Climate

85-1-08.04
* C015 A Cryogenic, Absolute Radiometer for Earth Radiation Sensing
* A064 Logistic Regression Model for Satellite Rainfall Retrieval
* S045 Nonscanning Climate Sensor

86-1-08.02
* L009 Short-Pulse, High-Power Infrared Laser
T008 Cavity Radiometer for Earth Albedo Measurements
* A064 Radar and Microwave Link Techniques for Satellite Rainfall Algorithm Development

87-1-08.02
* A045 Monolithic GaAs Digitizer for Space-Based, Laser-Altimeter, Pulse-Spreading Effect
O009 Low-Cost Doppler Micro-Radar Rain Gauge
R006 High-Sensitivity, Active, Cavity Radiometer

88-1-08.02
S023 A Compact, Optical, Rain Droplet Distrometer for Unattended Field Operation
* S015 Diode-Pumped Laser Altimeter
* F002 Rain-Rate Instrument for Deployment at Sea
* T021 Improved Cavity Radiometer for Radiance Measurement

89-1-08.02
S045 Cloud Top Radiometer
S012 Very-Large-Scale-Integration Time Interval Units
I019 A Stochastic Rain Model and Its Application in Rain-Rate Estimation
Q005 Diode-Pumped, Short-Pulse Laser for Ranging and Altimetry

Earth Sensing: Environmental Sciences

83-1-08.04
* N011 Satellite Microwave-Sounder-Based Atlantic Cyclone Forecasts

84-1-08.06
* P040 Space-Qualifiable, Carbon-Dioxide Laser System

84-1-08.11
* L007 Widely Tunable Gas Laser for Remote Sensing of Stratosphere

86-1-08.28
A010 An Expert System for Particle Analysis

89-1-08.09
M049 A Broadband, Multichannel, Precipitation Sensor
I026 Space-Sensor, Common-Module Electronics

Earth Sensing: Geology

86-1-08.26
* D004 Portable Infrared Emission Spectrometer

87-1-08.06
* D004 Portable, Multispectral, Thermal Infrared Camera
N018 Imaging Altimeter Using Imaging Doppler Interferometry

88-1-08.08
D004 Feasibility of Modifying a Thermal Scanner to Measure Lava Flow Characteristics
C036 Tunable, BBO-AgGaSe2, Optical Parametric Oscillator System

89-1-08.17
I020 Dual K and C Band Transponder for Satellite Altimetric Calibration

Earth Sensing: Global Biology

84-1-12.06
G020 Radon Property Detection System for Global Biologic Studies
* A037 An Open-Path-Diode-Laser Flux Meter for Trace Gases of Biogenic Origin

86-1-08.29
* D004 Airborne Multispectral Scanner to Measure Characteristics of Fires

87-1-08.04
A037 Ruby Crystal, Chlorophyll Fluorometer for Measurements of Photosynthesis Rates

Earth Sensing: Oceanographic Instruments

83-1-08.15
S025 Towed Sensor for Sea Water Nutrient Analysis
* D004 Airborne Multispectral Scanner to Measure Ocean Biomass
* B014 Moored Oceanographic Spectroradiometer

84-1-08.15
* B014 Measurement of Chlorophyll Related Pigments and Productivity in the Sea
* O009 Measurement of the Liquid Water and Ice Water Contents of Snow

87-1-08.05

E008 Software Package to Compute the Incoming and Net Solar Irradiance at the Surface from GOES VISSR Data

88-1-08.09
B014 Towable, Advanced, Bio-Optical Sensor System

Exobiology Flight Experiment Instrumentation

87-1-08.13
* C026 Microanalytical Characterization of Biogenic Components in Interplanetary Dust

88-1-08.10
* P002 Ion-Mobility Sensing of Extraterrestrial Volatiles from a Gas Chromatograph

89-1-08.10
A029 Miniature, Biogenic-Element Analyzer

Extraterrestrial Intelligence: Search for

86-1-07.14
* S034 SETI Signal Detector

87-1-07.09
S034 SETI CW Signal Detector

High-Altitude Balloon Technology

86-1-04.13
W007 Stress Analysis of an Ascending Balloon
F017 Ordered Polymer Films for Scientific Research Balloons

87-1-04.11
F017 Reduced-Weight Gondolas for Stratospheric Balloons
P003 Lightweight, Advanced Composite Gondola for Stratospheric Balloons

88-1-09.13
G014 Fiber-Optic Sensor Technology for High-Altitude Balloons

89-1-09.06
W007 Automated Seal-Flaw Detection

Imaging Systems: Data Compression and Analysis

84-1-07.04
* Q001 Focal-Plane Processing of Visual Information

85-1-07.04
* O004 Adaptive, Focal Plane Processor for Image Enhancement

86-1-07.02
* O004 An Integrated Laser Ranger and Camera System

86-1-07.04
* R004 Parallel Image Compression

86-1-07.07
M040 Portable, Low-Cost, Image Processing Prototype for Use by Individual Scientists
* O004 Advanced Object Color Identifier System

87-1-07.01
* T018 Electro-Optical Pan, Tilt, and Zoom: A Miniature Viewing System
* M045 Hardware for Parallel, Asynchronous, Focal-Plane Image Processing

87-1-07.08
C049 Symbolic Imagery Management System

87-1-08.17
P017 High-Resolution, Multi- CCD TDI Camera System

88-1-07.01
* O004 A Knowledge-Based Imaging System

88-1-07.02
V003 Polarimetry-Based SAR-Shape from Shading Terrain Reconstruction
N006 Adaptive Image Encoding and Classification Using Neural Networks
M057 A Neural Network Approach for Unsupervised Image Classification

89-1-07.01
O011 A Programmable, Image-Data Compression Subsystem for Workstations

89-1-07.02
O011 A Hybrid Simulation System for Image Data Compression
V003 HIRIS-Oriented Visualization Software System

Instrumentation: Ground Test Facilities

83-1-13.12
* S055 Automatic Fire Detection Systems for Large Facilities

84-1-13.12
A080 High-Speed Pneumatic Valve

86-1-13.01
* I007 High-Speed, Infrared Fiber-Optic Thermometer and Spectrometer

88-1-13.08
* S056 Conducting Organic Polymer Environmental Sensor

89-1-13.06
A037 Temperature and Shock-Position Sensor for High-Pressure, Oxygen Systems

Launch Vehicle Ground Operations and Flight Environment

83-1-13.01
S056 Hydrogen-Oxygen Concentration Monitor

84-1-13.03
C017 Hydrogen-Oxygen Monitoring Device

84-1-13.05
* R001 Forecasting Sea Breeze Thunderstorms Using a Mesoscale Numerical Model

84-1-13.08
* R011 Space Flight Gas Temperature Probe
R011 Nonadiabatic Compartment Venting Heating

85-1-13.01
A057 Two-Phase Flowmeter
* G003 Colorimetric Personnel Monitoring Badge for Hydrazines

85-1-13.05
* W003 Solid-State Instrumentation for Electric Field Detection of Lightning Potential

85-1-13.06
* M028 A Membrane Process for Scrubbing Propellant Vapors
* H011 Capture and Reliquefaction of Hydrogen Boiloff At Shuttle Launch Site

85-1-13.08
* R011 Aerodynamic Heating Upgrade of the Parabolized Navier-Stokes Code

86-1-13.04
* E001 Microminiature Electro-Optic Switching Matrix Module

86-1-13.06
T030 An Improved Toxic-Vapor Detector for Hydrazine, Monomethylhydrazine, and Hydrochloride
* S056 Hydrogen Laser Monitoring System

86-1-13.07
M003 A Mesoscale, Numerical, Weather Forecast System for Use in Shuttle Operations

87-1-13.01
L006 Fiber Sensors for High Temperatures and Pressures
F005 Continuous Detection of Toxic Vapors Using a Field-Domain Ion-Mobility Spectrometer
S056 Surface Organic Contamination Sensor

87-1-13.02
E001 Microwave Fiber-Optic Link for Satellite Communications and Antenna Remoting
* A058 Wireless Headset Network

87-1-13.08
* E006 Kennedy Space Center Atmospheric Boundary Layer Experiment

88-1-02.06
* S027 Model Development for Exhaust-Plume Effects on Launch-Stand Design

88-1-13.01
T030 Energy-Modulated Toxic Vapor Detector

* E004 Real-Time Hydrazine Monitoring with Surface-Enhanced Raman Spectroscopy

88-1-13.02
* M013 Improved System for SCAPE Suit Heating
M038 An Improved Quick-Disconnect for Aerospace Fluid Systems

88-1-13.03
* M003 A Mesoscale, Statistical Thunderstorm Prediction System
E013 Triggering of Lightning by Launch Vehicles During Ascent

88-1-13.06
S005 Air-Mass Measurement Indicator for Portable, Liquid-Air Dewar

89-1-13.01
F005 A Real-Time, Particle Fall-Out Monitor

89-1-13.02
T002 A Repair Coating for Cryogenic Transfer Lines

89-1-13.03
E006 Meterological Monitoring System
O009 A Novel Laser System for Forecasting and Mitigating Lightning Strikes
F002 Instrumented-Rocket Wind Profiler

89-1-13.04
A039 Supercritical, Cryogenic, Self-Contained Breathing Apparatus

Lunar Materials Utilization

84-1-15.04
C018 Aspen Simulations--Lunar Production Facility
* C018 Lunar Oxygen Production from Ilieminite

85-1-04.13
* E005 Dry Extraction of Silicon and Aluminum from Lunar Ores

86-1-04.12
* E019 Electrochemical Generation of Useful Chemical Species from Lunar Materials

87-1-04.12
A023 Electrostatic Fractionation of Natural and Processed Lunar Solids in Space

88-1-04.11
E038 Magnetic Beneficiation of Lunar Soil
* P007 Production of Oxygen and Other Products by Pyrolysis of Lunar Materials

89-1-04.18
C048 Feasibility Study for Lunar Cement Production
E005 Production of Oxygen by Electrolysis of Lunar Soil in Molten Salt

Manned Space Flight: EVA Systems

88-1-12.07
T034 Spacesuit Glove-Liner with Enhanced Thermal Properties for Improved Comfort

89-1-12.07
S010 Using Robots in the Testing of NASA EVA Space Suits
B010 Membrane-Based, High-Pressure Gas-Dehydration Module

Manned Space Flight: Environmental Control and Life Support

83-1-12.01
* B010 Novel Reverse-Osmosis Module for Spacecraft Washwater Recycle

84-1-12.01
S063 Anti-Bacterial Agent for Water Post-Treatment Sorbent Beds
* B010 A Novel Membrane-Based Water Reclamation Post-Treatment Unit
* A078 Reagentless Water Quality Monitor (Organic Content)

85-1-12.01
B010 Energy-Efficient Subsystems for Treating Urine and Concentrated Wastewater
M028 Removal of Carbon Dioxide from Spacecraft Atmosphere by Selective Membranes

85-1-12.07
* P027 Optimizing Atmospheres for Space Life Support Systems

86-1-12.01
* U004 Space Station, Hygiene Water, Prefilter Device
* P016 Photocatalytic Purification and Sterilization of Water Derived from Recycled Distillates
C032 Super-Sensitive Atmospheric Sensors

87-1-08.10
* I026 On-Focal-Plane Signal Processing for Atmospheric Measurements
* V005 An Advanced, Tandem Mass Spectrometer for Spacecraft
M055 Automated Atmospheric Analysis for Manned Space Missions

87-1-12.01
A074 Oxygen Extraction from Mars for Advanced Mission Life-Support and Power
* A007 Extravehicular-Mobility-Unit, Helmet-Mounted Display
* E004 A Variable-Transmittance, Electrochromic Space Suit Visor
* S001 Zero-Gravity Phase Separation
O001 Water Quality Monitor
T034 Space Suit Thermal Control Using Non-Toxic, Microencapsulated-PCM, Two-Phase Fluids

87-1-12.02
* U004 Bio-Catalytic Reactors for Removal of Volatile Contaminants

88-1-08.22
* S056 Trace, Atmospheric, Carbon-Monoxide Sensor

88-1-12.02
* U004 Catalytic Methods Using Molecular Oxygen Treatment of PMMS and ECLSS Waste Streams
S033 Organic Removal Module for Ultra-Pure Water Recycle Systems

88-1-12.03
* B010 Liquid-Sorbent/Membrane-Contactor Subsystem for CO2 Removal

88-1-12.04
* A066 A Diet Expert Subsystem Program for the Controlled Ecological Life Support System

89-1-12.02
U004 A Reagentless Separator for Removal of Inorganic Carbon from Solution
R013 Thin Membrane Sensors
A015 Incipient Combustion Monitor for Zero-Gravity Environments

89-1-12.03
U004 Electrochemical Water Recovery Process for Direct Removal of Impurities
L011 Solid-Polymer, Electrolyte-Based Electrolyzers for Water Reclamation Post-Treatment

89-1-12.09
C031 Chemical Sensor System for the Identification of Organic Compounds in Water

Manned Space Flight: Food Systems

84-1-12.04
* P027 In-Flight Acquisition of Engineering Data for Plant Growth

89-1-12.04
F016 Methodologies for Processing Plant Materials into Acceptable Food on a Small Scale

Manned Space Flight: Human Factors

85-1-12.03
S024 Application of a Handheld Force Analyzer to Human Factor Measurements in Space
* G004 K-Base: a Hybrid Analogical-Semantic Modeler for Computer-Aided Design

86-1-12.03
* S029 Sensor Frame Graphic Manipulator
C019 Function Allocation Decision Aid

87-1-12.04
P014 Kinematic Data Gathering System for Determining Human Motion in Zero Gravity

88-1-12.05
T034 Vibration Isolation of Exercise Treadmill in Microgravity
D020 Applications of an Automatic Inventory and Personnel Tracking System

89-1-12.05
F011 Performance of Groups in Extreme Environments: a Meta-Analytic Integration
C033 Capturing Space Crew Representations of Control Systems with Multidimensional Scaling
M007 Optimal Workspace Design

Manned Space Flight: Intra-Vehicular Equipment

85-1-12.05
J006 Trash Compactor Development: Space Station

86-1-12.04
A036 A Microgravtiy Film Processor

87-1-12.05
C001 High-Resolution Electronic Photography
U004 Space Laundry Cleansing Agent and Filter Development

88-1-12.06
* U004 Single-Phase Space Laundry
D018 A Multiple-Read, SAW-Tag Inventory System

89-1-12.06
A073 Automation of Stowage
P017 Charge-Coupled Device Sensors for Electronic Still Photography

Manned Space Flight: Medical Sciences

83-1-12.02
* R005 Portable Nuclear Cardiology Ejection Fraction Monitor
* O003 New Fiber Fluorescence Immunoassay
B012 Rapid Paper Test for Microbial Pathogen Determination

84-1-12.02
E033 Space Adaptation
* P027 Tissue Fixation Apparatus for Flight Experimentation

85-1-12.02
A002 Piezoelectric Sensor and Microprocessor Array to Measure B/P in Astronauts
T034 System Constitution and Intravenous Administration of Fluids in Microgravity
* B016 Continuous Noninvasive Determination of Ventricular Parameters

86-1-12.02
E033 Relevance of Visual Accommodation for Performance in Spacecraft
M037 Rapid Diagnosis of Bacterial Infectious Diseases Under Microgravity Conditions

87-1-12.03
A087 Medical Microbiology Test Station for Microgravity
* A083 Red Blood Cell Measurements Using Resonance Ionization Spectroscopy

88-1-12.01
G015 A Whole-Body Calorimeter for Space Station Astronauts
* U004 Regenerable Biocide Delivery Unit
* B013 Liquid Membrane Emulsions in Cell Culture

89-1-12.01
R005 Solid-State Neutron Dosimeter for Space Applications
E009 Selective Enrichment of Stable Calcium Isotopes Using Laser Techniques
I023 Transdermal Drug Delivery System for Application in Space Flight

89-1-12.08
U004 Thermally Desorbable Toxin and Odor Control Cartridge
N008 Device for Sample Collection and Rapid Immunological Identification of Biological Specimens

89-1-12.14
N020 Anatomical Image Analysis Techniques

Manned Space Flight: Refrigeration Systems

84-1-09.11
E022 Active Refrigeration and Heat-Pump Thermal Control of Spacecraft

85-1-09.06
G012 Spacecraft Stirling Refrigerator

Manned Space Systems: Mission Planning and Control Software

85-1-06.04
* A054 An Eye-Brain-Task Testbed
A076 C-Based Expert System Shell for Real-Time Applications

86-1-06.06
* N006 Space Transportation Analysis and Intelligent Space Systems
* S061 Phoneme-Based, Speech-Recognition System for High-Stress, Moderate-Noise Environments

87-1-06.05
O008 Clips--Vbase Feasibility Study
* G018 Intelligent Evaluation System for Simulator Training

88-1-06.06
* L010 An Integrated Graphics and On-Orbit Vehicle Dynamics Simulation
* M018 The Parametric-Avalanche, Control-Module Prototype Cognitive Neurocomputer

89-1-06.05
T027 Fuzzy-Clips Expert System
S036 Passive Knowledge Acquisition System
A077 Knowledge Networks for Mission Planning and Flight Control

Materials Processing in Microgravity

84-1-15.01
* S078 Color Schlieren System for Large-Scale, Low-Gravity MPS Fluids Experiments

84-1-15.03
* E023 Ultrafine Particle and Fiber Production in Micro-Gravity

85-1-15.01
E014 Molecular Beam Epitaxy of HgCdTe in Space
R019 Spontaneous Resolution of Organic Compounds in Space

85-1-15.03
* P025 Multicolor, Imaging Pyrometer for Materials Processing in Space

86-1-15.01
P033 An Extreme-Temperature, Ultraclean, Radiant Furnace
P027 A Bioreactor for Screening and Production of High-Value, Secondary Plant Metabolites
P038 Supercritical Fluid Solvent System for Solid-Phase Peptide Synthesis

86-1-15.02
* M017 Fine-Grained, Nickel-Aluminide Alloy with Improved Formability Made via Rapid Solidification

87-1-15.01
H001 Effect of Gravity on Foam Decay
* H001 A New Method for the Measurement of Surface Tension
C058 Miniaturized Fiber-Pulling Apparatus for Producing Single-Crystal-Core Glass Fibers in Microgravity
E012 Temperature Measurement by Noncontact Method for Czochralski-Type Crystal Growth
* S011 Active Magnetic Micro-Gravity Isolator for Space Station
* A070 Digital Active Materials Processing Platform Effort

88-1-15.01
B020 Physical Vapor Transport and Crystal Growth of Tellurium: a Novel Acousto-Optic Material
* M043 Growth of InGaAs, Bulk Ternary Crystals by Liquid-Phase Electroepitaxy
* S021 Autonomous, Magnetic Float-Zone, Microgravity Crystal Growth for TiC and GaAs
* O014 Microgravity Sonic Pump Levitator Furnace

89-1-15.01
M044 Permanent Magnet Flight Furnace
I022 Stabilized Electromagnetic Levitator

Materials: Composites for Aerospace Propulsion and Power

83-1-04.01
T009 New Titanium Alloy
F006 Oxidation-Resistant Coatings for High-Strength Carbon/Carbon Composites
* M020 Magnesium Composite Material for Advanced Rotary Aircraft Engines
P022 Electrohydrodynamic Synthesis of Silicon-Nitride, Ultrafine Powders and Coatings

84-1-04.01
D003 High-Temperature, Aluminum-Bronze Matrix Composites

84-1-04.05
* F006 Ceramic-Fiber and Ceramic-Matrix Composites

85-1-04.01
M017 Refractory-Metal Fibers Directly Cast from Melt
* M033 High-Strength, Refractory-Metal Fibers
* M022 A ZrO2-Toughened, SiC-Whisker-Reinforced, Alumina Composite

86-1-04.01
C010 High-Temperature SiC Continuous Fibers
S075 Fracture-Toughened Ceramics for Rolling Element Bearings
A089 Robotic Winding in a Plasma-Spray, High-Temperature, Vacuum Environment

87-1-04.01
* G014 Embedded Fiber-Optic Sensors for Polymer-Matrix-Composite Process Monitoring
I004 Micromechanic Model for Prediction of Failure Modes in Ceramic Matrix Composites
S062 Oxidation Resistant Ti-6Al-4V-SiC Composite Materials

88-1-04.01
A034 Improved CVD for SiC Fibers
A027 Software System for Predicting Engineering Properties of Polymer Matrix Resins

88-1-04.02
T013 Continuous On-Board Non-Destructive Monitoring of Degradation of Fiber Composites

89-1-04.01
G021 Soluble, Conducting Polymer-Based Conductive Coatings
M022 A Coated, Titanium Boride, Whisker-Toughened, Silicon-Carbide Matrix Composite
F017 High-Temperature-Film-Based Polybenzoxazole/Polymide Microcomposite for Turbine Engines

Materials: High-Temperature Alloys & Metal Matrix Composites

88-1-04.12
* P012 Laser Float-Zone Process Improvements
W002 Sintering of Advanced Ceramic Materials with a Tuneable Microwave Cavity

89-1-04.04
U002 CVD Chromium-Diboride Fibers for Metal Matrix Composites
C052 Microstructurally Toughened, Intermetallic Matrix Composites
R015 Rapidly Solidified, Narrow, Titanium-Aluminide Strip

Materials: Launch Site Facilities

84-1-04.12
D023 Protecting Steel Structures with Polymers that Expand when Cured

87-1-04.07
* S063 Specialized Floor Coverings for Launch Site Facilities

Materials: Special Purpose for Spacecraft

86-1-04.07
T009 ODS Solder

87-1-04.06
C035 Polymer with Biaxial Strength for Pyroelectric Applications

88-1-04.06
U002 Hydrogen Collectors for Space Flight Applications

88-1-04.07
* B018 Fabrication and Thermal Cycle Testing of Long-Life Radiator Coatings
T029 Titanium-Carbide Used to Protect Carbon Composites
E035 Evaluation of Several New Perfluoropolyether Copolymers Containing Tetrafluoroethylene Oxide
M048 Erosion- and Oxidation-Resistant Protective Coating for Polyimide Sheeting

89-1-04.11
F004 A Composite Material Flywheel for Energy Storage
C017 Improved Electro-Rheological Fluids for Lubricant Viscosity Control
E035 New Perfluoropolyether Elastomers for Low- and High-Temperatures

Materials: Structural Composites

83-1-04.03
* M021 Predicting Thermo-Mechanical Responses of Metal Matrix Composites
* Q008 Low-Cost Tooling Material and Process for Graphite and Kevlar Composites

83-1-04.07
A056 Prediction of Ultimate Strength of Composite, Curved, Frame Members

84-1-04.03
F006 Four-Dimensional, Impact Resistant, and Damage Tolerant Composites
M021 Woven-Reinforcement Constructions for Composites

84-1-04.07
M020 Hot-Pressed, Gr-Al Composites for Low-CTE Fittings
C052 Fabrication of Precision Wires from Ion-Plated, Aluminum-Graphite Composite Tape

85-1-04.03
* M008 Improved Fracture Toughness in Metal-Matrix Composites
* F017 High Performance LaRC-TPI Film
* P004 Surface Chemical Modification of Graphite Filaments to Improve Graphite-Thermoplastic Composites

86-1-04.02
P003 A Controlled-Interfacial-Bond-Strength Process for Carbon-Phenolic and Carbon-Carbon Composites
* F017 In-Situ Fiber-Optic Sensor for FTIR Monitoring of Composite-Cure Cycles

87-1-04.02
* F017 Semicrystalline Thermoplastic Films for Aerospace Structures
A041 Controlled-Density, Composite Carbide Structural Ceramics
T020 Composite Structures with Enhanced Damage Tolerance

88-1-04.03
D002 Thermal Control Coatings for Composite Structures
M024 Thermally Stable, Low-Dielectric Films for Aerospace Applications
* F017 High-Shear, Rotary Die for Thermoplastics Prepregging

89-1-04.03
F017 LaRC-TPI and Liquid Crystal Polymer Blends
T020 Multi-Angular Weaving Composite Preforms
H006 Methods for Producing Fine-Particle, Thermoplastic Polyimide Sulfone Powder

Materials: Structural Metals for Aerospace Applications

86-1-04.03
* F003 Nonequilibrium Phase Chemistry in High-Temperature Structural Alloys
T009 RS ODS Titanium-Molybdenum Alloy

87-1-04.03
* U002 High-Temperature Turbine Blades
M008 Chemical Vapor Deposition of TiAl Foils
U007 Response of Rapidly Solidified Titanium Alloys to Thermochemical Treatment

88-1-04.04
M008 Synthesis of High-Purity, Refractory Beryllides

89-1-04.09
R015 Process Control for Melt-Overflow, Rapid Solidification Technology

89-1-04.15
M022 A Whisker-Reinforced High-Temperature Structural Insulation
S011 Direct Measurment of Bolt Tension Utilizing Magnetostriction
A022 Protective Coatings for Components Used in Space

Materials: Thermal Protection Insulation

83-1-04.05
* A046 Composite Thermal Protection Material

85-1-04.05
* M032 Light-Weight Alumina-Aluminosilicate Thermal Protection Materials

Microgravity Science and Engineering

83-1-15.02
M016 Mixed-Convection Heat Transfer from a Sphere
F019 Spectral Methods in the Solution of Multi-Dimensional Diffusion Problems

86-1-15.04
F013 The Synthetic Production of Large Single Crystals

86-1-15.07
X001 Conversion of Carbon Monoxide and Carbon Dioxide to Methane in a Gravity-Free Environment

86-1-15.08
P011 Microgravity Accelerometer Package for Spaceflight Applications

87-1-15.03
C025 Computational Methodologies for Convection-Diffusion Phase-Change Problems

88-1-15.02
* F014 Numerical Simulation of Crystal Growth Processes

89-1-15.02
S043 Combustion Diagnostics for Microgravity Research Using Near-Infrared Diode Lasers
S015 Space-Qualified Laser for Microgravity Experiments
B020 Novel in Situ Technique to Visualize Convection on Solid-Liquid Interfaces

NDE: Launch Readiness Verification

83-1-13.02
* S058 Non-Destructive Inspection Techniques for Multi-Layer and Foam Insulations
* E033 Refinements for Eddy Current Techniques

84-1-13.02
A072 Computer Software for Signal Processing for Multiple Mixed Transducers

86-1-13.08
E021 Non-Flight Equipment Removal Verification Employing IR
* A005 Instrumented Torque Wrench Systems

86-1-13.11
B011 Portable, Digital, Imaging-Detector System

NDE: Techniques for Characterization of Aerospace Materials

83-1-04.10
S059 Quantitative Holographic Imaging

84-1-04.10
* I005 Ultrasonic Correlator for Nondestructive Characterization of Materials

85-1-04.10
* A029 Quantitative Experimental Stress Tomography Laboratory System

86-1-04.11
B020 Failure Prediction by a Novel Non-Destructive X-Ray Technique

87-1-13.07
* M026 Double-Pulsed CCD, Phase-Sampled, Laser-Speckle Interferometric Metrology for NDT/E
* Q002 Thermoelectric Instrumentation for Characterization of Precipitation-Hardening Alloys

88-1-04.09
* B011 Differential-Phase, Acoustic Microscopy for Micro-NDE
* A029 Dual-Energy Detector Package for Advanced Structures

88-1-13.04
S062 Thermal-Tile-Bond Inspection by Gamma Ray Scattering

89-1-04.06
S080 Digital, Optical Phase-Lock-Loop for Non-Destructive Evaluation
I009 Aircraft Health Monitoring System

89-1-15.05
T013 Automatic Fault-Detection and Failure-Prediction for Spacecraft Systems

NDE: VLSI Testing and Evaluation

85-1-06.16
C012 VLSI-State Test Machine

86-1-06.13
B017 A VLSI Digital Tester Using a Single Custom Chip per Individual Pin

89-1-13.07
A029 Automated Assessment of VLSI Circuits for Radiation Hardness and Reliability

Rarified Gas Dynamics and Vacuum Plumes

84-1-02.04
V001 Nonequilibrium Flows and Catalytic Surfaces on Spacecraft Reentry

85-1-02.03
* P025 Spacecraft Thermal-Energy-Accommodation from Atomic Recombination

86-1-02.08
* R011 Navier-Stokes Computations of the Near-Wake, Hypersonic, Rarefied Flow on a Blunt AOTV Body

87-1-02.07
* R011 Rarefied-Gas, Aerodynamic Bridging Procedures

87-1-02.08
G005 Numerical Modeling of Fully Viscous, Rocket Plume Flows
* R011 Vacuum Plume Impingement Evaluator
E032 Direct Simulation Monte Carlo of Vacuum Plumes

88-1-02.07
R011 Effects of Charge Separation in Hypersonic, Ionized Flows

89-1-02.05
R011 Coupling of Unsteady Fluid Dynamics and Structures in Low-Density, High-Speed Flows

STS Tracking Systems: Station-Keeping, Rendezvous, & Docking

84-1-09.13
* O004 Handheld Optical Radar

86-1-09.16
* E001 Tunable Laser Diode and Optical Phase-Locked Loop
* T031 Tracking System Applications of an Exponential Sensor Array System

87-1-09.07
* A092 Hierarchical, Three-Dimensional and Doppler Imaging CO2 Ladar with Programmable Fovea and Peripheral Vision
* A065 Laser Orientation Transceiver System

88-1-09.09
* T006 Worldwide, Differential GPS, Space Shuttle Landing Operations
A007 Surface-Acoustic-Wave Device for Wide-Angle Laser Scanning
H007 A High-Precision, Sun-Tolerant Lidar

89-1-09.04
S002 Novel Direction-Finding for Robotic Tracking in the Space Station
P023 Dynamic, Coherently Coupled, Holographic Optical Elements Using Liquid Crystals

STS: GAS and Spartan Spacecraft Systems and Operations

86-1-09.03
Q007 Long-Life, Three-Axis Satellite Attitude Sensing

86-1-09.20
* I028 Low-Cost, Attitude Control System

87-1-09.09
* D011 Standard Gas Satellite

88-1-09.12
* A064 A Low-Cost CCD Solid-State Star Tracker

STS: Guidance, Navigation, and Control

84-1-05.04
A065 Manuever Automation Sensor
* E021 Dead-Reckoning, Optoelectronic, Intelligent Docking System

88-1-09.10
* M025 Autonomous, Integrated GPS/INS Navigation Experiment for OMV and STV

89-1-09.02
C027 A Neural-Net Approach to Space Vehicle Guidance
S048A High-Speed, Fault-Tolerant Microprocessor for Space Applications

Sensing: LIDAR Systems and Laser Technology

83-1-08.08
C004 Improved Heterodyne Receiver for Coherent Lidar Applications
S019 Multibeam Lidar System for Tropospheric Measurements

84-1-08.08
* L006 An All-Solid-State Tunable Laser for Remote Sensing Applications
* P025 Laser Spectrometer and Wavemeter

85-1-08.08
* C010 Light-Weight Si-SiC Lidar Mirrors
S058 High-Efficiency Laser for Spaceborne Lidar Applications
* S014 Cobalt-Doped, Magnesium Fluoride Laser for Remote Sensing

86-1-08.05
* S062 Low-Cost AlGaAs Laser Arrays for Solid-State Laser Pumps
S015 A Microsecond-Pulse Neodymium Laser

87-1-08.08
* S020 A Method to Provide Lower Cost Crystal Properties Study Samples
S040 Four-Level All-Solid-State Laser Source within the 1.5 - 4 Micron Range

88-1-08.06
* N016 Diode Arrays for Pumping Rare-Earth-Doped, Solid-State Lasers

88-1-08.07
* L009 Tunable, Single-Frequency, Solid-State Laser Transmitter
S062 A 2.1 Micron Lidar Detector
E034 SIS Detector for 100-Microns Using Thin Films of Bi-Ca-Sr-Cu-O Superconductors

89-1-08.06
S017 Systems for Continuous Tuning and Single-Mode Operation of Solid-State Lasers
L008 Single, Longitudinal-Mode, Alexandrite Lidar Transmitter

89-1-08.07
S062 Development of 780 and 792 Nanometer Diode Laser Pumps for Solid-State Lasers
S015 Lasers Optimized for Pumping Titanium-Alumina Lasers

89-1-08.08
S018 Compact, Lightweight, Expanding-Beam CO2 Laser Amplifiers for Spaceborne Applications
E015 Multiple-Diode-Pumped Ho:Tm:YAG Planar Ring Laser

Sensors: Detectors and Detector Arrays

83-1-08.07
* R005 Soft X-Ray Window Encapsulant for Mercuric Iodide Detectors
* F007 Scintillating Optical Fiber Arrays

84-1-08.07
* A042 Adiabatic Demagnetization Refrigerator for Use in Zero Gravity
B020 An Analog-Digital, Electro-Optical System for Real-Time X-Ray Imaging

85-1-08.07
* D015 Large-Area Microchannel Plate Manufacture

86-1-08.04
* B003 High Spatial Resolution, Large Field-of-View Detector and Data Handling System
* Q006 Large-Area Nuclear Particle Detectors Using Electron-Trapping Materials
M027 Reinforced, Inorganic Cement Material for Spark-Wire and Drift-Chamber Wire Frames
G007 Curved Channel MCP Improvement
* E031 A Laboratory-Standard, Indium-Gallium-Arsenide Detector for the 0.5 - 1.7 Micron Spectral Range

87-1-08.16
S008 Position-Sensitive CdTe Detector Using Improved Crystal Growth Method
F007 Scintillating Optical Fiber Trajectory Detectors
M045 Infrared Detector Systems for High-Dynamic-Range Radiometry and Imaging
* E031 High Performance Indium-Gallium-Arsenide Detector Arrays for 1.0 - 2.5 Micron Imaging Devices At 300 K
C059 Diamond Thin-Films for Detectors

88-1-08.13
* O012 Fiber-Optic Loop for the Measurement of Electric Currents in Space
* E014 Cryogenically-Cooled InSb JFET
D015 Manufacturing Large Area, High-Gain Microchannel Plates
* A034 Composite High-Tc Superconductive Bolometer

89-1-08.13
I007 Infrared Fiber Arrays for Low Background Infrared Astronomy
O013 Low-Cost, Imaging, Electron Multiplier Device
P017 Backside-Illuminated, Large-Format, Charge-Coupled Devices and Mosaics

Sensors: Electromagnetic Radiation

87-1-08.01
* I026 HYMOSS Signal Processing for Pushbroom Spectral Imaging
* B004 Image-Quality, Space-Qualified Ultraviolet Interference Filters

88-1-08.01
E031 High-Gain, Avalanche Photodiode Arrays for Long-Wavelength Applications
* I008 Silicon Bolometer Arrays for Helium-3 Detector Systems
* M045 Heterostructure Infrared Detectors for Use at Wavelengths Longer than 14 Microns

89-1-08.01
A034 Novel Mercury-Cadmium-Telluride Growth Process
E031 A 128 X 128 Element Indium-Gallium-Arsenide, IR Detector Array at 300K

Sensors: Magnetometers

85-1-08.10
* D027 Fiber-Optic Magnetometer for Spacecraft Applications
* P030 Advanced Helium Magnetometers for Space Applications

86-1-08.10
E034 Tunable Solid-State Cr:ZnWO4 Laser at 1.083 Microns
* G011 Continuous Wave, Tunable, Semiconductor 1.08 Micron Laser

Sensors: Millimeter and Submillimeter Radiometry

83-1-08.02
* M049 Space-Qualified Submillimeter Radiometer

85-1-08.02
* M049 Submillimeter Sources for Radiometry Using High-Power Indium-Phosphide Gunn Oscillators

87-1-08.18
M046 High-Temperature Superconductors in Monolithic Microwave and Millimeter-Wave Integrated Circuits
* M034 Microwave Network Analyzer for Superconductor-Insulator-Superconductor Mixer Research

88-1-08.16
P020 Wideband Acousto-Optic Spectrometer

89-1-08.16
A084 Wideband Acousto-Optic Spectra Analyzer

Sensors: Optical Materials, Components, and Systems

83-1-06.14
A047 Concave Grating Optical Demultiplexers-Wavelength Division Multiplexer

83-1-08.01
I026 Two-Band IR Detector Array
T022 Spatial Light Modulator: Optical Tunnel Array
* H012 Echelle Grating-Ruling
O002 Holographic-Processor, Optical Wavelength Demodulation in Fiber-Optic Systems
* A064 Holographic Diffraction Gratings

84-1-08.01
* H012 Radial Concentric-Grating Ruling Engine

85-1-08.01
* E004 Photoelectrochemical Fabrication of Spectroscopic Diffraction Gratings
* P017 Advanced Electronic Imaging System

86-1-08.01
* S011 Magnetic Bearings a High-Performance Optical Disk Buffer
* B006 Measurement of Upper-Mid-Frequency Errors on Arbitrary Grazing Incidence Optics

86-1-08.24
* P030 Metal Thin-Film Optical Polarizers for Space Application

87-1-08.19
* B006 Non-Contact, Self-Referencing, Full-Aperture Metrology for Large Aspheric Mirrors
E004 Photoelectrochemical Fabrication of Spectroscopic Diffraction Gratings in Silicon Carbide

88-1-04.08
* M024 Nonlinear Optical Properties of Rigid-Rod Polymers

88-1-08.17
* D008 Technique to Evaluate UV-Induced Degradation of Space Optics
B019 Three-Axis, All-Rotary-Motion, Numerically-Controlled Optical Generator

88-1-08.18
* L005 Digital Image Profilers for Detecting Faint Sources which Have Bright Companions

89-1-08.18
B004 Ion Beam Deposition of Large-Area, Low-Scattering Metal Coatings
A084 Acousto-Optic Tunable Filter
E004 Photoetched Echelle Gratings in Silicon
S013 Gas-Jet Deposition of Optical Thin-Films for Extreme Ultra-Violet and Soft X-Ray Applications

89-1-08.19
T001 Broadband Source for a Three-Dimensional Reflectometer

Signal and Information Processing

84-1-07.06
A004 A Low-Power Fourier Transform Processor
A082 Determination of Cloud Properties from Satellites
* R010 West Coast Storm Forecasting with Satellite Data
* D011 Low-Power Spectrum Analysis and Real-Time Data Compression

85-1-07.06
C029 Pattern Recognition of Satellite Cloud Imagery for Improved Weather Prediction

87-1-07.03
A064 Rapid Readout System for Solar Pointing Sensors
* S080 GaAs RISC Array Processor

88-1-07.04
* N006 A Natural Language Interface to a Geographical Information System

88-1-07.05
* N009 A Multichannel, Acousto-Optic, Bragg Cell, Spectrum Analyzer System
* O011 Fiber-Optic Interconnection Networks for Spacecraft

89-1-07.05
P020 Wideband, Multi-Channel, Acousto-Optic Spectrometer for Radio Astronomy Applications

89-1-07.06
E031 Visible Semiconductor Diode Lasers Grown by Hydride Vapor-Phase Epitaxy

Solar System Exploration

85-1-08.06
* C038 Narrow-Bandgap, Semiconducting Silicides: Intrinsic Infrared Detectors on a Silicon Chip

86-1-08.27
* S030 Imaging IR Spectrometer

87-1-05.05
R005 High-Resolution, Avalanche-Diode, X-Ray Spectrometer for Planetary Exploration

88-1-08.11
* A006 AOTF Enhancements for a Space-Based Spectropolarimeter

89-1-08.11
A006 Adaptive, Rapid-Scanning Imaging Spectropolarimeter

89-1-08.14
C024 Improved Antenna for Synthetic Aperture Radar Calibrator

89-1-08.15
S030 Multichannel Occultation Photometer
S030 Atmospheric Opacity Monitor

Space Environmental Effects

84-1-04.14
* P025 Novel Oxygen-Atom Source for Material Degradation Studies

85-1-04.06
T015 Surface Fluorination of Polymers for Use in Space
M030 Synthesis and Characterization of Protective Coatings for Aerospace Materials

85-1-08.05
S021 Transient Radiation Effects in Silicon CCDs

89-1-04.08
J004 Portable Spectroreflectometer

89-1-08.21
A064 Highly Transparent and Rugged Sensor for Meteoroids and Space Debris

89-1-09.05
F017 Novel Composites for Protection Against Orbital Debris

Space Power Management and Distribution

83-1-10.06
N015 Space Power and Distribution Systems: Remote Power Controller

86-1-10.04
P001 Simulation and Control of Future Spacecraft Power Systems

87-1-08.15
C008 Magnetically-Controlled Power Distribution and Control System

87-1-09.06
N002 A DC-to-400Hz Inverter

Space Power Transmission: Laser Photovoltaic Converter

88-1-10.04
* E014 Fabrication of Photovoltaic, Laser-Energy Converter by MBE

89-1-10.04
S062 Vertical, Multijunction, Photovoltaic Cells with Buried Silicide Interconnections

Space Power: Advanced Systems Technology

87-1-10.01
P031 Ultra-High-Temperature 20 kHz Induction Generator for VSCF Operating Mode
* S069 Advanced Stirling Engine Heater Head
* S062 Indium-Phosphide Solar Cells on Silicon Substrates
* P025 Arcing on Space Structures in Low Earth Orbit
* S039 Improved Mirror Facet for Space Applications

88-1-10.01
S073 A Test Rig for Measuring Thermal Performance of Stirling Cycle Regenerators
G017 Cathode-Catalyst Support Materials for High-Temperature, Alkaline Fuel Cells
F017 Improved Thermal Energy Storage System for Advanced Solar-Dynamic, Space Power Generation
* K004 Low-Cost, Epitaxial, Indium-Phosphide Solar Cells

89-1-10.01
I025 Flexible, Lightweight, Amorphous-Silicon Solar Cells Tuned for AM0 Spectrum
H011 Constant-Temperature Heat Storage in Metal Hydrides
A024 New Thermionic Converter for Out-of-Core Space Power System
E023 Composite Regenerator for Stirling Engine
S011 Integrated Power and Attitude Control System for the Space Station and Other Applications

Space Power: Automation and Artificial Intelligence

84-1-10.07
C055 An Expert System for Space Power Design

88-1-10.05
S079 Implementation of Fault-Tolerant Control Algorithms Using Neural Networks
* P001 Advanced Power Sources and Actuator Systems for Future Aerospace Vehicles

89-1-10.06
M036 Intelligent Protection System for Space Power Applications

Space Power: Batteries for Spacecraft

84-1-10.08
* C053 Thermally Stable Electrolytes for Chargeable Lithium Batteries

85-1-10.06
E002 A New Class of High-Performance Lithium Batteries

87-1-10.02
C053 High-Cycle-Life, Rechargeable, Aluminum Batteries Employing Novel Organic Cathodes

88-1-10.02
* E004 Long-Cycle-Life, Rechargeable Lithium Batteries

89-1-10.02
W005 Rechargeable Lithium/Titanium-Disulfide Cells with Long Cycle-Life

89-1-10.03
G017 Nickel-Cadmium Battery Separator Design and Development

Space Power: Dynamic Conversion Systems

83-1-10.04
E022 Light-Weight Linear Alternators for Free-Piston Stirling Power Systems

84-1-10.04
* E023 A Large, Deployable, Solar Concentrator with Receiver and Heat Storage
* S073 Measurement of Reversing-Flow Pressure Drop in Stirling Engine Heat Exchangers

85-1-10.03
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NAS 5-30305: L009

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NAS 8-35278: S078
NAS 8-35279: E023
NAS 8-35280: A091
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NAS 8-35838: F019
NAS 8-35839: S019
NAS 8-35840: T034
NAS 8-35841: T024
NAS 8-35842: S059
NAS 8-35843: E023
NAS 8-35844: M020
NAS 8-35845: A014
NAS 8-35846: C051
NAS 8-35847: E033
NAS 8-35848: S062
NAS 8-35849: S058
NAS 8-35850: A042
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NAS 8-36256: R011
NAS 8-36257: H011
NAS 8-36258: R011
NAS 8-36259: O006
NAS 8-36260: S021
NAS 8-36261: D003
NAS 8-36262: F017
NAS 8-36263: R016
NAS 8-36264: D003
NAS 8-36265: C002
NAS 8-36266: G012
NAS 8-36267: G010
NAS 8-36268: A005
NAS 8-36269: R019
NAS 8-36270: C025
NAS 8-36271: R011
NAS 8-36272: M029
NAS 8-36273: S016
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NAS 8-37254: S078
NAS 8-37255: S021
NAS 8-37256: M020
NAS 8-37257: D003
NAS 8-37258: R011
NAS 8-37259: E004
NAS 8-37260: A042
NAS 8-37261: T024
NAS 8-37262: H011
NAS 8-37263: A091
NAS 8-37303: A050
NAS 8-37304: S027
NAS 8-37305: R011
NAS 8-37306: M047
NAS 8-37307: A019
NAS 8-37308: M057
NAS 8-37309: A059
NAS 8-37310: A012
NAS 8-37311: G009
NAS 8-37312: B003
NAS 8-37313: E007
NAS 8-37314: R011
NAS 8-37315: C017
NAS 8-37316: E023
NAS 8-37317: S005
NAS 8-37318: T024
NAS 8-37319: T024
NAS 8-37320: S021
NAS 8-37321: C025
NAS 8-37322: A069
NAS 8-37323: A038
NAS 8-37324: C032
NAS 8-37325: P033
NAS 8-37336: A005
NAS 8-37337: S016
NAS 8-37338: R011
NAS 8-37339: O006
NAS 8-37340: S021
NAS 8-37341: F017
NAS 8-37342: R016
NAS 8-37343: M029
NAS 8-37344: G010
NAS 8-37345: R011
NAS 8-37346: D003
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NAS 8-37401: M047
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NAS 8-37403: A038
NAS 8-37404: A012
NAS 8-37405: B003
NAS 8-37406: A050
NAS 8-37407: G009
NAS 8-37408: S027
NAS 8-37409: R011
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NAS 8-37411: A069
NAS 8-37616: A019
NAS 8-37617: A038
NAS 8-37618: A005
NAS 8-37619: C003
NAS 8-37620: C003
NAS 8-37621: C040
NAS 8-37622: E012
NAS 8-37623: E032
NAS 8-37624: F017
NAS 8-37625: H001
NAS 8-37626: H001
NAS 8-37627: I021
NAS 8-37628: I026
NAS 8-37629: M047
NAS 8-37630: M055
NAS 8-37631: O009
NAS 8-37632: P003
NAS 8-37633: K005
NAS 8-37635: R011
NAS 8-37636: R011
NAS 8-37637: R011
NAS 8-37638: R022
NAS 8-37639: S011
NAS 8-37640: S052
NAS 8-37641: U001
NAS 8-37642: U004
NAS 8-37643: V005
NAS 8-38020: S021
NAS 8-38021: S050
NAS 8-38022: H010
NAS 8-38023: A034
NAS 8-38024: G010
NAS 8-38025: P003
NAS 8-38026: S078
NAS 8-38027: S036
NAS 8-38028: S027
NAS 8-38029: O006
NAS 8-38030: S021
NAS 8-38031: M025
NAS 8-38032: R011
NAS 8-38033: Q003
NAS 8-38034: C003
NAS 8-38035: P001
NAS 8-38036: I014
NAS 8-38037: P035
NAS 8-38038: U004
NAS 8-38039: S062
NAS 8-38040: F002
NAS 8-38041: C003
NAS 8-38042: O014
NAS 8-38043: M035
NAS 8-38044: A026
NAS 8-38045: S033
NAS 8-38046: C040
NAS 8-38047: I017
NAS 8-38048: S056
NAS 8-38049: S079
NAS 8-38050: F017
NAS 8-38051: A065
NAS 8-38052: S035
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NAS 8-38407: F017
NAS 8-38408: H001
NAS 8-38409: I021
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NAS 8-38417: R022
NAS 8-38418: S011
NAS 8-38419: S052
NAS 8-38420: U001
NAS 8-38421: U004
NAS 8-38422: V005
NAS 8-38423: R011
NAS 8-38425: C003
NAS 8-38436: C054
NAS 8-38437: T024
NAS 8-38438: S021
NAS 8-38439: A015
NAS 8-38440: F017
NAS 8-38441: E015
NAS 8-38442: M036
NAS 8-38443: A013
NAS 8-38444: P003
NAS 8-38445: I003
NAS 8-38446: C031
NAS 8-38447: C003
NAS 8-38448: A090
NAS 8-38449: A042
NAS 8-38450: M044
NAS 8-38451: I026
NAS 8-38452: E025
NAS 8-38453: H010
NAS 8-38454: S027
NAS 8-38455: T013
NAS 8-38456: R011
NAS 8-38457: R011
NAS 8-38458: C042
NAS 8-38459: B011
NAS 8-38460: U004
NAS 8-38461: S011
NAS 8-38462: S018
NAS 8-38463: J004
NAS 8-38464: C022
NAS 8-38465: F002
NAS 8-38466: E025
NAS 8-38467: M049
NAS 8-38468: I022
NAS 8-38469: R020
NAS 8-38470: R013
NAS 8-38471: A050
NAS 8-38472: S027
NAS 8-38477: G010
NAS 8-38481: F002
NAS 8-38483: O014
NAS 8-38485: A034
NAS 8-38487: S021
NAS 8-38489: C003
NAS 8-38490: U004

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NAS 9-17026: E001
NAS 9-17027: D024
NAS 9-17028: C034
NAS 9-17029: M005
NAS 9-17030: M020
NAS 9-17031: B010
NAS 9-17032: E011
NAS 9-17033: R005
NAS 9-17034: B012
NAS 9-17035: O003
NAS 9-17036: T024
NAS 9-17037: S053
NAS 9-17277: L010
NAS 9-17278: E033
NAS 9-17279: A080
NAS 9-17280: T024
NAS 9-17281: S065
NAS 9-17282: A078
NAS 9-17283: E021
NAS 9-17284: C052
NAS 9-17285: S063
NAS 9-17286: B010
NAS 9-17287: C018
NAS 9-17288: C018
NAS 9-17289: O004
NAS 9-17290: V001
NAS 9-17291: P027
NAS 9-17292: P027
NAS 9-17293: M020
NAS 9-17294: A065
NAS 9-17303: R005
NAS 9-17304: O003
NAS 9-17305: T024
NAS 9-17306: B010
NAS 9-17561: F017
NAS 9-17562: A076
NAS 9-17563: J006
NAS 9-17564: A054
NAS 9-17565: P025
NAS 9-17566: N001
NAS 9-17567: M042
NAS 9-17568: T034
NAS 9-17569: B013
NAS 9-17570: D003
NAS 9-17571: D003
NAS 9-17572: M028
NAS 9-17573: S024
NAS 9-17574: C054
NAS 9-17575: E005
NAS 9-17576: C027
NAS 9-17577: O004
NAS 9-17578: B016
NAS 9-17579: A007
NAS 9-17580: M009
NAS 9-17581: B010
NAS 9-17582: G004
NAS 9-17603: E021
NAS 9-17604: O004
NAS 9-17605: C018
NAS 9-17606: L010

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NAS 9-17607: S065
NAS 9-17608: P027
NAS 9-17609: P027
NAS 9-17610: T024
NAS 9-17611: B010
NAS 9-17612: A078
NAS 9-17723: E037
NAS 9-17724: I007
NAS 9-17725: C019
NAS 9-17726: P028
NAS 9-17727: V002
NAS 9-17728: T031
NAS 9-17729: M037
NAS 9-17730: U004
NAS 9-17731: F017
NAS 9-17732: F017
NAS 9-17733: P016
NAS 9-17734: A036
NAS 9-17735: X001
NAS 9-17736: S061
NAS 9-17737: K001
NAS 9-17738: W006
NAS 9-17739: E001
NAS 9-17740: H011
NAS 9-17741: S029
NAS 9-17742: C054
NAS 9-17743: E019
NAS 9-17744: P034
NAS 9-17745: E033
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NAS 9-17805: D003
NAS 9-17806: D003
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NAS 9-17808: G004
NAS 9-17809: B016
NAS 9-17810: C054
NAS 9-17811: E005
NAS 9-17812: B013
NAS 9-17813: A007
NAS 9-17814: M009
NAS 9-17815: P025
NAS 9-17926: A020
NAS 9-17927: A020
NAS 9-17928: A023
NAS 9-17929: A007
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NAS 9-17931: A074
NAS 9-17932: A083
NAS 9-17933: A087
NAS 9-17934: A092
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NAS 9-17936: C054
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NAS 9-17939: E004
NAS 9-17940: F017
NAS 9-17941: F017
NAS 9-17942: G018
NAS 9-17943: L006
NAS 9-17944: N002
NAS 9-17945: O001
NAS 9-17946: O008
NAS 9-17947: P014
NAS 9-17948: P021
NAS 9-17949: P025
NAS 9-17950: S001
NAS 9-17951: T009
NAS 9-17952: T034
NAS 9-17953: U004
NAS 9-17986: S029
NAS 9-17987: P016
NAS 9-17988: W006
NAS 9-17989: C054
NAS 9-17990: T031
NAS 9-17991: E019
NAS 9-17992: E001
NAS 9-17993: I007
NAS 9-17994: S061
NAS 9-17995: N006
NAS 9-17996: U004
NAS 9-17997: F017
NAS 9-18083: A020
NAS 9-18084: A007
NAS 9-18085: B010
NAS 9-18086: B013
NAS 9-18087: B018
NAS 9-18088: C030
NAS 9-18089: D018
NAS 9-18090: D020
NAS 9-18091: D021
NAS 9-18092: E038
NAS 9-18093: E039
NAS 9-18094: C028
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NAS 9-18096: H007
NAS 9-18097: I015
NAS 9-18098: F017
NAS 9-18099: L010
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NAS 9-18101: M048
NAS 9-18102: P007
NAS 9-18103: Q001
NAS 9-18104: S028
NAS 9-18105: S002
NAS 9-18106: S031
NAS 9-18107: S056
NAS 9-18108: T006
NAS 9-18109: T029
NAS 9-18110: T034
NAS 9-18111: T034
NAS 9-18112: U004
NAS 9-18113: U004
NAS 9-18114: I010
NAS 9-18162: A020
NAS 9-18163: A007
NAS 9-18164: A065
NAS 9-18165: A083
NAS 9-18166: A092
NAS 9-18167: C054
NAS 9-18168: D003
NAS 9-18169: E004
NAS 9-18170: G018
NAS 9-18171: P021
NAS 9-18172: P025
NAS 9-18173: S001
NAS 9-18301: A022
NAS 9-18302: A037
NAS 9-18303: A007
NAS 9-18304: A064
NAS 9-18305: A073
NAS 9-18306: A077
NAS 9-18307: B005
NAS 9-18308: B007
NAS 9-18309: B010
NAS 9-18310: C020
NAS 9-18311: C033
NAS 9-18312: C048
NAS 9-18313: C052
NAS 9-18314: E009
NAS 9-18315: E005
NAS 9-18316: I023
NAS 9-18317: L011
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NAS 9-18319: M046
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NAS 9-18321: N008
NAS 9-18322: O013
NAS 9-18323: O013
NAS 9-18324: P017
NAS 9-18325: P023
NAS 9-18326: P025
NAS 9-18327: Q004
NAS 9-18328: R005
NAS 9-18329: R020
NAS 9-18330: S010
NAS 9-18331: S011
NAS 9-18332: S002
NAS 9-18333: S002
NAS 9-18334: S036
NAS 9-18335: T027
NAS 9-18336: U004
NAS 9-18337: U004

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NAS 10-10916: S056
NAS 10-10917: S055
NAS 10-11127: S055
NAS 10-11141: D023
NAS 10-11142: R001
NAS 10-11143: S049
NAS 10-11144: G012
NAS 10-11145: A072
NAS 10-11146: C017
NAS 10-11285: M028
NAS 10-11286: N011
NAS 10-11287: A002
NAS 10-11288: M039
NAS 10-11289: A057
NAS 10-11290: H011
NAS 10-11291: G003
NAS 10-11292: W003
NAS 10-11321: R001
NAS 10-11322: G012
NAS 10-11372: A005
NAS 10-11373: A089
NAS 10-11374: B011
NAS 10-11375: E001
NAS 10-11376: E021
NAS 10-11377: M003
NAS 10-11379: S056
NAS 10-11380: T030
NAS 10-11401: H011
NAS 10-11404: M039
NAS 10-11405: M028
NAS 10-11411: G003
NAS 10-11412: W003
NAS 10-11455: S063
NAS 10-11456: F005
NAS 10-11457: O012
NAS 10-11458: P037
NAS 10-11459: S056
NAS 10-11460: E001
NAS 10-11461: P027
NAS 10-11462: A058
NAS 10-11463: S003
NAS 10-11464: S076
NAS 10-11465: A061
NAS 10-11466: E006
NAS 10-11467: G019
NAS 10-11501: A005
NAS 10-11502: A089
NAS 10-11514: S056
NAS 10-11515: E001
NAS 10-11544: E006
NAS 10-11552: S063
NAS 10-11556: M038
NAS 10-11557: E004
NAS 10-11558: S062
NAS 10-11559: G014
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NAS 10-11561: T030
NAS 10-11562: M003
NAS 10-11563: S005
NAS 10-11564: E013
NAS 10-11565: M013
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NAS 10-11602: P037
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NAS 10-11652: G014
NAS 10-11653: A039
NAS 10-11654: T002
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NAS 10-11656: B015
NAS 10-11657: A093
NAS 10-11658: T031
NAS 10-11659: F017
NAS 10-11660: E006
NAS 10-11668: A040
NAS 10-11669: E004
NAS 10-11671: G014

13: Stennis Space Center

NAS 13-300: M040
NAS 13-301: W001
NAS 13-302: O004
NAS 13-339: O004
NAS 13-381: M057
NAS 13-383: S068
NAS 13-384: N006
NAS 13-385: S006
NAS 13-406: P019
NAS 13-409: A091
NAS 13-410: S054
NAS 13-411: T014
NAS 13-414: S006