

NASA SP-7200

NASA Guidelines on Report Literature

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NASA Guidelines on Report Literature

Prepared by

Scientific and Technical Information Branch
NASA Headquarters

NASA GUIDELINES ON REPORT LITERATURE

NASA seeks for inclusion in its Scientific and Technical Information System research reports, conference proceedings, meeting papers, monographs, and doctoral and postgraduate theses which relate to the NASA mission and objectives. Included in the following pages are topics of interest to NASA.

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Scope

Subject Matter In subject scope, the NASA scientific and technical information collection encompasses the basic and applied sciences related to aeronautics and space research. Documents in the collection are indexed by keywords chosen from a controlled vocabulary, the *NASA Thesaurus*, that contains more than 18,000 subject entries.

Document Types The collection includes NASA technical reports, NASA Special Publications, NASA-owned patents and patent applications, journal and periodical articles, books, pamphlets, monographs, conference proceedings, scientific meeting papers, translations, non-NASA reports, dissertations, and theses.

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Scope

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Document Types and Currency All documents announced in *STAR* are unclassified. *STAR* citations cover research reports that, with rare exceptions, have been issued in the past two years.

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IAA is a semimonthly document announcement journal that provides abstracts and indexes of published documents in fields related to aerospace research and technology. STIB sponsors publication of *IAA* by the American Institute of Aeronautics and Astronautics (AIAA).

IAA lists all journal articles, conference papers, books, and other forms of published literature that have been selected and processed by AIAA for incorporation into the data base at STIF. *IAA* complements but, with rare exceptions, does not duplicate *STAR*, which announces aerospace report literature.

Scope

Age and Volume *IAA* has been published since 1961. At the close of 1977, it had presented approximately 500,000 citations of items in the published aerospace literature. Currently, about 35,000 citations are announced each year.

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Document Types *IAA* announces the following types of literature: articles appearing in periodical publications, conference proceedings and meeting papers issued by professional societies and academic organizations, translations of journals and journal articles, monographs, and collected works containing documents written by different authors and relating to a common subject.

In addition, some foreign dissertations and theses are announced in *IAA*.

Document Currency Only current material is accessioned in *IAA*. Most literature is announced within two months of its receipt by AIAA. If a publication is received more than one year past the date when it first became available, it is usually not processed for announcement.

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06 AIRCRAFT INSTRUMENTATION

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07 AIRCRAFT PROPULSION AND POWER

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Radar and radio antennas and applications	
See also topics under Subject Group 32, Communications	
18 SPACECRAFT DESIGN, TESTING AND PERFORMANCE	
SPACECRAFT ATTITUDE CONTROL AND STABILIZATION	18-01
Attitude control system, stability techniques, and instrumentation	
RENDEZVOUS AND DOCKING	18-02
Rendezvous guidance, rendezvous trajectories and docking techniques	
19 SPACECRAFT INSTRUMENTATION	
SPACECRAFT AND AIRCRAFT INSTRUMENTATION	19-01
Spacecraft and aircraft instruments, gauges, indicators, and instrument systems	
SENSORS AND TRANSDUCERS	19-02
Sensing elements used in space vehicles or aerospace services, pressure, temperature, acoustic transducers, etc	
RELATED TOPICS	
Navigation Systems	17-02
Spacecraft and aircraft navigation systems including star trackers, inertial systems, Doppler and stellar navigation, and navigation instruments	
Telemetry	32-04
Data transmission and measuring, biotelemetry, telephotometry, and telepsychometry	
Bioinstrumentation	54-05
Biotelemetry, medical electronics, physiological monitoring, biological measurement, and biological data handling	
See also other topics under Subject Group 32, Communications	
20 SPACECRAFT PROPULSION AND POWER	
ROCKET ENGINES, NOZZLES AND THRUST CHAMBERS	20-01
Specific engines used in rocket propulsion, nozzle and thrust chamber design, materials, and performance	
AUXILIARY PROPULSION	20-02
Spacecraft propulsion systems other than the main propulsion system (i.e., steering jets, retrorockets, and propulsion units for extravehicular operations)	
ELECTRIC PROPULSION	20-03
Propulsion systems by charged electrical particles accelerated by electrical or magnetic fields, includes electromagnetic and electrostatic propulsion	
RELATED TOPIC	
Jet Propulsion	07-01
Turbojet, pulsejet, and ramjet propulsion systems including specific engines	
See also topics under Subject Group 44, Energy Production and Conversion	

CHEMISTRY AND MATERIALS

23 CHEMISTRY AND MATERIALS (GENERAL)

CHEMICAL ANALYSIS	23-01
Qualitative, quantitative, X-ray, chromatography, and other analytical techniques	
CHEMICAL PROCESSES AND ENGINEERING	23-02
Chemical processes and specific chemical reactions such as oxidation, nitration, hydrogenation, etc	
LUMINESCENCE	23-03
Chemiluminescence, fluorescence, phosphorescence, bioluminescence, and related topics	
PHOTOCHEMISTRY	23-04
Photolysis, photosynthesis, and actinometry	
RELATED TOPIC	
Biochemistry	51-02
Chemistry of living organisms and physiochemistry	

24 COMPOSITE MATERIALS

COMPOSITE MATERIALS	24-01
Types of composite materials, including laminates, sandwich materials and cermets, properties and uses	
REINFORCED MATERIALS AND FIBERS	24-02
Materials reinforced by inclusions, fiber reinforcement, whiskers, filament wound vessels	

25 INORGANIC AND PHYSICAL CHEMISTRY

CORROSION	25-01
Metal corrosion, stress corrosion, corrosion prevention, and tests for corrosion	
METAL CRYSTALS	25-02
Structure, defects, and technology of metal crystals	
COATINGS	25-03
Types of coatings, properties and uses, coating techniques	
ELECTROCHEMISTRY	25-04
Electrochemical processes, electrolysis, and electrolytic processes	

26 METALLIC MATERIALS

ALUMINUM	26-01
Aluminum, aluminum alloys, compounds and powdered aluminum, properties and uses	
BERYLLIUM	26-02
Beryllium, beryllium alloys and compounds, properties and uses	
LIQUID METALS	26-03
Characteristics, properties, technology, and uses of liquid metals	
STEEL	26-04
Types of steel and stainless steel alloys, properties and uses	
TITANIUM	26-05
Titanium and titanium alloys, properties and uses	
REFRACTORY METALS	26-06
Refractory metals and alloys, and superalloys, properties and uses	
METALLURGY	26-07
Powder metallurgy, sintering, fractography and metallography	

27 NONMETALLIC MATERIALS

PLASTICS	27-01
Specific plastics, thermoplastics, resins, thermosetting plastics, high temperature plastics, silicones and styrenes, properties and uses	

ADHESIVES	27-02
Types of adhesives, properties and uses	
CERAMICS	27-03
Specific ceramics, properties, and uses	
ELASTOMERS	27-04
Specific elastomers, properties and uses	
GRAPHITE	27-05
Graphite, pyrolytic graphite, pyrographic alloy, properties and uses	
POLYMERS	27-06
Types of polymers, properties and uses, polymer chemistry and polymer physics	
28 PROPELLANTS AND FUELS	
LIQUID PROPELLANTS	28-01
Cryogenic, hydrogenic, and thixotropic propellants, uses, properties, manufacture, storage and handling, oxidizers and igniters used with liquid propellants	
SOLID PROPELLANTS	28-02
Types, uses, properties, manufacture, storage and handling, propellant grain studies, and oxidizers and igniters used with solid propellants	
<u>ENGINEERING</u>	
31 ENGINEERING (GENERAL)	
RELATED TOPICS	
See specific topics under Subject Groups 32-39	
32 COMMUNICATIONS	
COMMUNICATION SATELLITES	32-01
INTELSAT, WESTAR, MARISAT, and other domestic and foreign communications satellites	
COMMUNICATION EQUIPMENT	32-02
Communication equipment, including radio, microwave, infrared, light and television equipment	
COMMUNICATION SYSTEMS	32-03
Types of communication systems, e g, television, digital, etc, and specific systems, e g, Defense Communication Systems, Deep Space Network, etc	
TELEMETRY	32-04
Data transmission and measuring biotelemetry, telephotometry, and telepsychometry	
RADIO NOISE	32-05
Studies of radio noise sources, random noise, signal-to-noise ratio, noise reduction, and noise measurement	
COMMUNICATION THEORY	32-06
Information theory, coding automata theory, signal processing, and decision theory	
RELATED TOPICS	
Radar Equipment	33-01
Radar types, applications and component parts	
Antennas	33-03
Radar and radio antennas and applications	
See also topics under Subject Group 17, Spacecraft Communications, Command and Tracking	
33 ELECTRONICS AND ELECTRICAL ENGINEERING	
RADAR EQUIPMENT	33-01
Radar types, applications, and component parts	

SEMICONDUCTORS AND TRANSISTORS	33-02
Semiconductors and transistors, types, devices, materials, and applications See also Solid State Devices, 76-01	
ANTENNAS	33-03
Radar and radio antennas and applications	
ELECTRONIC COMPONENTS	33-04
Types, design, applications, packaging, and reliability	
CIRCUITRY	33-05
Circuit theory, production techniques, reliability, protection, and applications For microcircuits see 33-10, Microelectronics	
ELECTRICAL EQUIPMENT	33-06
Generators, motors, connectors, and insulation, design and application	
AMPLIFIERS	33-07
Types of electronic amplifiers, design, and application For fluid amplifiers see also 34-03, Fluidics	
FEEDBACK AND CONTROL THEORY	33-08
Systems, techniques, and designs	
ELECTROMAGNETIC RADIATION	33-09
Wave propagation, electromagnetic effects, properties, detection, and application	
MICROELECTRONICS	33-10
Microcircuits, microelectronic devices and components, microminiaturized electronic equipment	
MICROWAVE AND SUBMILLIMETER WAVE TECHNOLOGY	33-11
Microwave research, measurement techniques, generation, modulation, and absorption	
MAGNETISM	33-12
Theory and research, aeromagnetism, ferromagnetism, hydromagnetism, paramagnetism, and thermomagnetism	
RELATED TOPICS	
Auxiliary Electrical Systems	05-02
Electric auxiliary power supply systems, distribution systems, components, and applications	
Communication Equipment	32-02
Communication equipment, including radio, microwave, infrared, light, and television equipment	
 34 FLUID MECHANICS AND HEAT TRANSFER	
BOUNDARY LAYER TECHNOLOGY	34-01
Boundary layer flow and mechanics, including boundary layer control, combustion control, separation, transition, and turbulence	
GAS DYNAMICS	34-02
Applied and theoretical gas dynamics, problem solving, hypersonic and rarefied gas dynamics	
FLUIDICS	34-03
Fluid amplification, fluid logic circuits, and fluid devices	
FLUID FLOW	34-04
Liquid flow, hydromechanics, and cavitation flow, does not include gas or air flow	
COMBUSTION PHYSICS	34-05
Combustion phenomena, kinetics, instability, detonation, theory	
HEAT TRANSFER, BASIC	34-06
Characteristics and studies of various forms of heat transfer, heat dissipation, and heat resistance	
REENTRY HEAT TRANSFER	34-07
Heat transfer problems on reentry and their solution	

THERMAL PROTECTION	34-08
Methods and materials used in thermal insulation and protection and for various types of cooling	
ABLATION	34-09
Ablation studies, ablating materials, and application to reentry vehicles and rocket nozzles	
CRYOGENICS	34-10
Low temperature research For cryogenic propellants see 28-01	
RELATED TOPICS	
Aerodynamic Characteristics	02-01
Lift, drag, and factors affecting pitch, roll and yaw	
Gas Flow Measurement	35-08
Devices, applications and systems for measuring gas flow	
35 INSTRUMENTATION AND PHOTOGRAPHY	
PHOTOGRAPHY	35-01
Cameras and photographic equipment and methods including optical, aerial, and radar photography	
INFRARED TECHNOLOGY	35-02
Infrared devices, including scanners, detectors, filters, cameras, and masers	
INSTRUMENT STANDARDS AND CALIBRATION TECHNIQUES	35-03
Measurement and radiation standards and calibration of instruments	
TEMPERATURE MEASUREMENT	35-04
Heat and temperature measuring devices, applications, and systems	
PRESSURE MEASUREMENT	35-05
Pressure measuring devices, applications, and systems	
DISPLAY SYSTEMS	35-06
Cathode ray tubes and display techniques and principles	
DATA RECORDING	35-07
Data recorders and recording systems and techniques	
GAS FLOW MEASUREMENT	35-08
Devices, applications and systems for measuring gas flow	
RELATED TOPICS	
Navigation Systems	17-02
Spacecraft and aircraft navigation systems including star trackers, inertial systems, Doppler and stellar navigation, and navigation instruments	
Telemetry	32-04
Data transmission and measuring, biotelemetry, telephotometry, and telepsychometry	
Meteorological Instruments	47-05
Types and uses of meteorological instruments	
Bioinstrumentation	54-05
Biotelemetry, medical electronics, physiological monitoring, biological measurement, and biological data handling	
See also topics under Subject Group 19, Spacecraft Instrumentation	
36 LASERS AND MASERS	
LASERS AND MASERS	36-01
References to lasers and masers in general, laser theory, and types of lasers and masers	
LASER APPLICATIONS	36-02
Laser communications, laser photography, and laser ranging	
37 MECHANICAL ENGINEERING	
BEARINGS AND GEARS	37-01
Types of bearings and gears, uses, materials, and applications	

LUBRICATION AND LUBRICANTS	37-02
Lubrication materials, systems, and applications	
MACHINING	37-03
Machining processes and techniques and machine tools	
FRICTION AND WEAR	37-04
Types of friction, friction measurement and effects, frictionless environment, and wear effects	
SEALS	37-05
Sealants, gaskets, packing, leakage, self-sealing materials, and sealing techniques	
WELDING	37-06
Brazing, bonding, soldering, and welding techniques and processes, weldability of various materials, and properties and characteristics of welds	
METAL FORMING	37-07
Theory, techniques, and processes of metal forming other than machining	
PUMPS	37-08
Pumps, pump seals, and pumping in aerospace technology	
VACUUM TECHNOLOGY	37-09
Vacuum systems, techniques and processes, vacuum testing measurement and material fabrication	
NONDESTRUCTIVE TESTING	37-10
Techniques and processes for the nondestructive testing of materials, including infrared, ultrasonic, and X-ray testing	
TURBOMACHINERY	37-11
Axial flow machines, centrifugal compressors and pumps, gas turbines, turbocompressors, turbine pumps, turbofans, turbogenerators	
 38 QUALITY ASSURANCE AND RELIABILITY	
QUALITY CONTROL AND RELIABILITY	38-01
Product development, qualitative testing and analysis of materials and structures, and reliability criteria for components and structures	
 39 STRUCTURAL MECHANICS	
SHELLS	39-01
Shell structures, stresses, loads, buckling and vibration	
STRESSES AND LOADS	39-02
Stresses and loads on launch vehicles, spacecraft, and aerospace structures	
STRUCTURE VIBRATION AND DAMPING	39-03
Vibration and damping in aerospace structures, spacecraft and airframes, panel flutter	
IMPACT PHENOMENA	39-04
Studies of impact phenomena in aerospace structures and components, also micrometeoroid impact damage	
STRUCTURAL FATIGUE	39-05
Fatigue studies and analysis, techniques for aerospace structures and components	
SANDWICH CONSTRUCTION	39-06
Honeycomb, multilayer and laminated fabrication, techniques and structures	
STRESS ANALYSIS	39-07
Stress calculation and analysis of structures	
STRUCTURAL TESTS AND RELIABILITY	39-08
Destructive and nondestructive testing and reliability of aerospace structures	

GEOSCIENCES

42 GEOSCIENCES (GENERAL)

RELATED TOPICS

See specific topics under Subject Groups 43-48

43 EARTH RESOURCES

EARTH RESOURCES

43-01

Earth resources studies, the role of satellites in natural resource development, geology, agriculture, forestry

GEODESY AND CARTOGRAPHY

43-02

Geodetic positions, satellite surveying, geodetic applications, mapping techniques, analyzing methods, and mapping systems

RELATED TOPICS

Water Resources and Oceanography

48-01

Water conservation and development, hydrology, remote sensing of floods, snow cover, ice, oceanography, other hydrosphere studies

Urban Technology and Transportation

85-01

Application of aerospace technology to the problems of cities, urban development, planning, research, and transportation, rail transportation, rapid transit systems, police services, water and sewage treatment, waste utilization, and land use

44 ENERGY PRODUCTION AND CONVERSION

ENERGY RESOURCES

44-01

Production, conversion, transmission, conservation of energy, solar energy conversion, wind power, remote survey of energy resources, hydrogen economy

FUEL CELLS AND CHEMICAL BATTERIES

44-02

Electrochemical, biochemical and regenerative fuel cells, silver-cadmium, nickel-oxide and other batteries

SOLAR SPACE POWER

44-03

Photovoltaic cells, solar cells, solar energy, absorbing films, solar energy converters and solar power systems

NUCLEAR AUXILIARY POWER

44-04

Nuclear auxiliary reactors, isotopic space power, and specific SNAP Systems

45 ENVIRONMENT POLLUTION

ENVIRONMENTAL POLLUTION CONTROL

45-01

Applications of aerospace techniques, including remote sensing, to all aspects of air, water, thermal, and environmental pollution, specific pollutants, noise, noise injuries, noise meters, atmospheric composition, water quality

46 GEOPHYSICS

UPPER EARTH ATMOSPHERE

46-01

Earth atmosphere above the troposphere, ionospheric composition, phenomena, chemical reactions and satellite measurement

GEOLOGY AND SEISMOLOGY

46-02

Earth geology, petrography, and orography, earthquake detection, measuring and recording instruments, and theoretical models

GEOMAGNETISM

46-03

Geomagnetic anomaly, fields, latitudes, pulsations, storms, and measuring and data transmitting instruments

RELATED TOPICS

Sounding Rockets

15-02

Upper atmosphere aerology and meteorology probes, and other small launch vehicles

Meteorological Satellites	47-01
Nimbus, Tiros, meteorological data from satellites	
Gravitation	90-01
Gravitational theory, effect and fields, equations and potential, antigravity, gravitational collapse, and gravity gradient control of satellites	
Radiation Belts	93-03
Inner and outer radiation belts, Van Allen Belt, artificial radiation belts, and trapped radiation	
47 METEOROLOGY AND CLIMATOLOGY	
METEOROLOGICAL SATELLITES	47-01
Nimbus, Tiros, meteorological data from satellites	
WEATHER FORECASTING	47-02
Methods and instruments of weather data acquisition and processing, theory and methods of weather prediction	
MICROMETEOROLOGY	47-03
Smallest scale observation of physical and dynamic occurrences within the surface boundary layer of the atmosphere, includes turbulence, air pollution, launch conditions	
CLOUD RESEARCH	47-04
Types of cloud formation, cloud physics, nephanalysis, and cloud seeding	
METEOROLOGICAL INSTRUMENTS	47-05
Types and uses of meteorological instruments	
<i>RELATED TOPICS</i>	
Upper Earth Atmosphere	46-01
Earth atmosphere above the troposphere, ionospheric composition, phenomena, chemical reactions and satellite measurement	
Sounding Rockets	15-02
Upper atmosphere aerology and meteorology probes and small launch vehicles	
48 OCEANOGRAPHY	
WATER RESOURCES AND OCEANOGRAPHY	48-01
Water conservation and development, hydrology, remote sensing of floods, snow cover, ice, oceanography, other hydrosphere studies	

LIFE SCIENCES

51 LIFE SCIENCES (GENERAL)	
BIOLOGY (GENERAL)	51-01
Microbiology, ecology, botany, genetics and cytology	
BIOCHEMISTRY	51-02
Chemistry of living organisms and physiochemistry	
52 AEROSPACE MEDICINE	
AEROSPACE MEDICINE	52-01
Aerospace medical problems and studies, e.g., toxicity and weightlessness, medical aspects of astronaut performance reaction, and neurophysiology	
CLINICAL MEDICINE	52-02
General medicine, body systems and functions, diseases, and drugs	
PHYSIOLOGICAL FACTORS	52-03
Functions related to body composition, physical performance reaction, and neurophysiology	
BIOLOGICAL RADIATION EFFECTS	52-04
Effects of radiation on the human body and other living organisms	

53 BEHAVIORAL SCIENCES

PSYCHOLOGICAL FACTORS

Factors related to psychology, psychiatry, individual and group behavior, crew training and testing

53-01

54 MAN/SYSTEM TECHNOLOGY AND LIFE SUPPORT

LIFE SUPPORT SYSTEMS

Systems that support life in spacecraft, isolation chambers or uninhabitable environments, including space cabin atmosphere, food, water, and waste disposal

54-01

CREW SAFETY AND PROTECTIVE CLOTHING

Survival techniques, escape, rescue, and protective clothing and equipment, space suits

54-02

HUMAN ENGINEERING

Design and engineering of devices, equipment, and artificial environments to the requirements of man

54-03

MAN-MACHINE SYSTEMS

Systems in which man and machine are interrelated

54-04

BIOINSTRUMENTATION

Biotelemetry, medical electronics, physiological monitors, biological measurement, and biological data handling

54-05

RELATED TOPIC

Cybernetics and Bionics

Methods of control and communications common to living organisms and machines and those systems that function in the manner of or resembling human systems

63-01

55 PLANETARY BIOLOGY

EXTRATERRESTRIAL LIFE

Exobiology and detection, simulation, and genesis of life outside earth

55-01

RELATED TOPIC

Sterilization

Spacecraft sterilization, sterilization methods, clean rooms, and contamination control

14-04

MATHEMATICAL AND COMPUTER SCIENCES

59 MATHEMATICAL AND COMPUTER SCIENCES (GENERAL)

APPLIED MATHEMATICS

Mathematical applications in physical, biological and aerospace sciences

59-01

DATA PROCESSING

Automatic source data processing, data handling, conversion and compression

59-02

60 COMPUTER OPERATIONS AND HARDWARE

DIGITAL AND ANALOG COMPUTERS

Computer hardware, structure, peripheral equipment, and applications, hybrid computers

60-01

AIRBORNE OR SPACEBORNE COMPUTERS

Computer design for onboard spacecraft or aircraft use

60-02

61 COMPUTER PROGRAMMING AND SOFTWARE

COMPUTER SOFTWARE

Programming and computer languages, systems analysis, data management

61-01

62 COMPUTER SYSTEMS

RELATED TOPICS

Computer Software

Programming and computer languages, systems analysis, data management

61-01

Aerospace Management	81-01
Management techniques, cost control, production engineering, personnel management	
63 CYBERNETICS	
CYBERNETICS AND BIONICS	63-01
Methods of control and communications common to living organisms and machines and those systems that function in the manner of or resembling human systems	
64 NUMERICAL ANALYSIS	
NUMERICAL ANALYSIS	64-01
Mathematical models, theoretical studies and applications	
65 STATISTICS AND PROBABILITY	
STATISTICS AND PROBABILITY	65-01
Statistical techniques and applications, probability and reliability theory, probability equations, and problem solving	
66 SYSTEMS ANALYSIS	
<i>RELATED TOPIC</i>	
Computer Software	61-01
Programming and computer languages, systems analysis, data management	
67 THEORETICAL MATHEMATICS	

PHYSICS

70 PHYSICS (GENERAL)	
<i>RELATED TOPICS</i>	
See specific topics on Subject Groups 71-77	
71 ACOUSTICS	
ACOUSTICS	71-01
Acoustic attenuation, simulation, scattering radiation and vibration, hydroacoustics	
ULTRASONICS	71-02
Use in medicine and materials research, absorption properties and effects	
72 ATOMIC AND MOLECULAR PHYSICS	
ATOMIC PHYSICS	72-01
Atomic theory, collision, beams, energy, reactions, and properties	
MOLECULAR PHYSICS	72-02
Molecular theory, energy, structure, collision, beams, properties, molecules, and instrumentation	
73 NUCLEAR AND HIGH-ENERGY PHYSICS	
NUCLEAR PHYSICS	73-01
Nuclear particles, structure, reactions, and force	
RADIOACTIVITY	73-02
Measurement, detection, material, waste, fission products, and radioactive elements	

<i>RELATED TOPIC</i>	
Cosmic Radiation	93-01
Primary and secondary cosmic radiation, galactic and stellar radiation	
74 OPTICS	
OPTICS	74-01
Optical equipment and technology, electron optics, crystal optics, fiber optics, and optical properties	
LIGHT	74-02
Light scattering, measurement effects and transmission	
75 PLASMA PHYSICS	
PLASMA APPLICATIONS	75-01
Plasma arc welding, plasma spraying, plasma power source, plasma jet technology	
PLASMA DYNAMICS	75-02
Plasma theory, conductivity, diagnostics, plasma pinch, plasma sheath, plasma waves, and plasma oscillations	
MAGNETOHYDRODYNAMICS	75-03
Magnetohydrodynamic theory and applications	
<i>RELATED TOPIC</i>	
Astrophysical Plasmas	90-02
Solar, cosmic, and interstellar plasmas, solar atmosphere, and stellar plasma	
76 SOLID-STATE PHYSICS	
SOLID STATE DEVICES	76-01
Devices using solid state components, diodes, and rectifiers	
SUPERCONDUCTIVITY	76-02
Superconductivity, superconducting magnets, superconducting transition temperatures, critical temperatures, and critical field curves of superconducting material	
DIELECTRICS	76-03
Dielectric material including dielectric constant of materials, electric losses and ohmic resistance of compounds, permeability and polarization of dielectric substances and media	
EPITAXIAL DEPOSITION	76-04
Epitaxial film deposition techniques, electrical properties of epitaxial deposited films and applications	
<i>RELATED TOPICS</i>	
Metal Crystals	25-02
Structure, defects, and technology of metal crystals	
Semiconductors and Transistors	33-02
Semiconductor and transistor types, devices, materials and applications	
Magnetism	33-12
Theory and research, aeromagnetism, ferromagnetism, hydromagnetism, paramagnetism, and thermomagnetism	
77 THERMODYNAMICS AND STATISTICAL PHYSICS	
<i>RELATED TOPICS</i>	
Statistics and Probability	65-01
Statistical techniques and applications, probability and reliability theory, probability equations, and problem solving	
Molecular Physics	72-02
Molecular theory, energy, structure, collision, beams, properties, molecules, and instrumentation	

SOCIAL SCIENCES

80 SOCIAL SCIENCES (GENERAL)

RELATED TOPICS

See specific topics in Subject Groups 81-85

81 ADMINISTRATION AND MANAGEMENT

AEROSPACE MANAGEMENT

81-01

Management techniques, cost control, production engineering, personnel management

82 DOCUMENTATION AND INFORMATION SCIENCE

INFORMATION TECHNOLOGY

82-01

Documentation, information processing and retrieval, and information systems

83 ECONOMICS AND COST ANALYSIS

RELATED TOPIC

Aerospace Management

81-01

Management techniques, cost control, production engineering, personnel management

84 LAW AND POLITICAL SCIENCE

WORLD SPACE PROGRAMS AND AEROSPACE LAW

84-01

NASA programs in general, foreign aerospace programs, international cooperation, law related to space and aeronautics, Congressional aerospace hearings

85 URBAN TECHNOLOGY AND TRANSPORTATION

URBAN TECHNOLOGY AND TRANSPORTATION

85-01

Application of aerospace technology to the problems of cities, urban development, planning, research, and transportation, rail transportation, rapid transit systems, police services, water and sewage treatment, waste utilization, and land use

SPACE SCIENCES

88 SPACE SCIENCES (GENERAL)

RELATED TOPICS

See specific topics under Subject Groups 89-93

89 ASTRONOMY

SOLAR ASTRONOMY

89-01

Solar activity, physics, solar telescopes and observatories

STELLAR ASTRONOMY AND COSMOLOGY

89-02

Stellar, galactic astronomy, including radioastronomy, origin and evolution of the universe

METEORS AND METEORITES

89-03

Meteor properties and hazards, micrometeoroids and micrometeorites, comets, interplanetary dust

90 ASTROPHYSICS

GRAVITATION

90-01

Gravitational theory, effect and fields, equations and potential, antigravity, gravitational collapse, gravity gradient control of satellites, geophysical gravitational fields

ASTROPHYSICAL PLASMAS

90-02

Solar, cosmic, and interstellar plasmas, solar atmosphere, and stellar plasma

91 LUNAR AND PLANETARY EXPLORATION

THE MOON

91-01

Studies of the lunar surface and lunar surface data, lunar interior, lunar environment, spacecraft and vehicles used in exploration, specific projects, and lunar landings

PLANETARY SCIENCES AND EXPLORATION

91-02

Planetary composition, surfaces, atmospheres, and environment, spacecraft and vehicles used in planetary exploration

RELATED TOPICS

Space Probes

15-03

Lunar and planetary probes, including Pioneer, Ranger, Mariner, Voyager, and deep space probes

Astrophysical Plasmas

90-02

Solar, cosmic, and interstellar plasmas, solar atmosphere, and stellar plasma

92 SOLAR PHYSICS

RELATED TOPIC

Solar Astronomy

89-01

Solar activity, physics, solar telescopes and observatories

93 SPACE RADIATION

COSMIC RADIATION

93-01

Primary and secondary cosmic radiation, galactic and stellar radiation

SOLAR RADIATION AND ACTIVITY

93-02

Solar radiation, observation, instrumentation, hazards to space flight, protection from solar radiation, solar storms, solar flares, solar winds, and sunspots

RADIATION BELTS

93-03

Inner and outer radiation belts, Van Allen Belt, artificial radiation belts, and trapped radiation

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