A four part cumulative supplement to the 1988 edition of the NASA Thesaurus.
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INTRODUCTION

Contents of the Supplement
The NASA Thesaurus Supplement is a cumulative update of the 1988 edition of the NASA Thesaurus, NASA SP-7064. Supplements are normally published every six months. Users should consult the online thesaurus for complete and up-to-date information.

Part 1 of the Supplement updates Volume 1 of the 1988 NASA Thesaurus, the Hierarchical Listing. Complete hierarchies of all new terms are given. Changes in the hierarchies of terms are not included in order to control the size of the Supplement. New terms to this supplement are indicated by a bullet.

Part 2 updates Volume 2 of the 1988 NASA Thesaurus, the Access Vocabulary. All new terms are listed in alphabetical order along with USE references (permuted forms of posting terms and other cross-references).

Part 3 is a list of supplemental definitions of NASA Thesaurus posting terms, updating Volume 3 of the NASA Thesaurus. New terms are indicated by a bullet.

Part 4 is a list of changes. Users requiring additional information should consult the 1988 NASA Thesaurus. Comments about the NASA Thesaurus and the Supplement should be addressed to: Lexicographer, NASA Scientific and Technical Information Facility, P.O. Box 8757, BWI Airport, MD 21240.

Thesaurus Term Definitions
Publication of NASA Thesaurus definitions began with Supplement 1 to the 1985 NASA Thesaurus. Beginning with the 1988 edition, definitions were published as Volume 3 of the NASA Thesaurus. Succeeding Supplements will contain only new definitions added after the publication of the 1988 edition.

Definitions are given for most terms added since 1976 as well as for many earlier terms. Definitions of more common or general scientific terms are given a NASA slant if one exists. Certain terms are not defined as a matter of policy: common place names, chemical elements, specific models of computers, and non-technical terms. Other terms lack definitions because the NASA Thesaurus predates by a number of years the systematic effort to define terms. Nevertheless, definitions of older terms are continually being added.

The following data are provided for each definition: term in uppercase-lowercase form, definition per se, source, and year the term (not the definition) was added to the NASA Thesaurus. The NASA History Office is the authority for capitalization in satellite and spacecraft names.

Sources of Definitions
Definitions with no source given were constructed by lexicographers at the NASA Scientific and Technical Information (STI) Facility, who rely on the following sources for their information: experts in the field, literature searches from the NASA STI Database, and specialized references.

Definitions come from the following sources:


ASTM. Compilation of ASTM Standard Definitions, 6th edition. Philadelphia, PA, ASTM, 1986. Copyright, the American Society for Testing and Materials (ASTM). All rights reserved. Used with the permission of ASTM. Two ASTM sources are distinguished: standards are identified by an alphanumeric designation with no hyphen; committees are identified by an alphanumeric designation with a hyphen. The original definitions appeared in the Annual Book of ASTM Standards.


In some cases, definitions from these sources have been subjected to minor editorial alterations, for example, to make a definition agree in number with the NASA form of the term.

**Retrospective Indexing**

Since 1984 all new terms are retrospectively assigned to past database records using a method which combines automated search strategies and manual review.

Record updating usually takes place within three months following the addition of a new term to the *NASA Thesaurus* and covers the period from 1968 to date.

**Boldfaced Terms in Definitions**

With the third *NASA Thesaurus Supplement*, *NASA Thesaurus* terms that appear in the main text of a definition and are also defined separately are boldfaced. Such boldfaced terms, including previously defined terms will appear for the most part in the definitions part of the *Supplement*. A new program for computer aided editing of boldfacing uses NASA's existing Machine Aided Indexing (MAI) programs to identify variant forms of terms that can be regularized with NASA Thesaurus terminology and thus provide more extensive cross-referencing through boldfacing. This system of linkages facilitates the use of definitions as they are added and intertwines new definitions with previous material.

**Standardized Geology Definitions Included**

As noted earlier, *NASA Thesaurus* terms that have been defined in the third edition of the American Geological Institute’s “Glossary of Geology” are now being added to *NASA Thesaurus Supplements*. The “Glossary of Geology” is a standardized and widely accepted authority in the field of geology terminology. As with previous sources such as ASTM, DOE, IEEE, and SP-7, editorial alterations are sometimes made primarily for plurality and now, with the aid of MAI, of term form for boldfacing.
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NASA THESAURUS SUPPLEMENT

PART 1

HIERARCHICAL LISTING

A

ACOUSTIC COUPLING
  GS COUPLING
  . ACOUSTIC COUPLING
  . GS COUPLING
  . RT ACOUSTIC ATTENUATION
  . ACOUSTIC EXCITATION
  ACOUSTICS
  ENERGY TRANSFER
  SOUND WAVES
  WAVE INTERACTION

• ADVANCED LAUNCH SYSTEM (STS)
  UF ALS (LAUNCH SYSTEM)
  GS TRANSPORTATION
    . SPACE TRANSPORTATION
      . SPACE TRANSPORTATION SYSTEM
  ADVANCED LAUNCH SYSTEM (STS)
  RT HEAVY-LIFT LAUNCH VEHICLES
    LAUNCH VEHICLE CONFIGURATIONS
    LAUNCH VEHICLES
    NASA PROGRAMS
    NASA SPACE PROGRAMS
    PAYLOAD DELIVERY (STS)
    REUSABLE LAUNCH VEHICLES
    SHUTTLE DERIVED VEHICLES
    SPACE SHUTTLES
    SPACECRAFT DESIGN

• ADVANCED SOLID ROCKET MOTOR (STS)
  UF ASRM (STS)
  GS ENGINES
    . ROCKET ENGINES
    . BOOSTER ROCKET ENGINES
    . SPACE SHUTTLE boosters
      . ADVANCED SOLID ROCKET MOTOR (STS)
    . SOLID PROPELLANT ROCKET ENGINES
      . SPACE SHUTTLE boosters
      . ADVANCED SOLID ROCKET MOTOR (STS)
  RT SPACE SHUTTLE ASCENT STAGE
    SPACE TRANSPORTATION SYSTEM

ADVANCED VERY HIGH RESOLUTION RADIOMETER
  UF AVHRR
  GS MEASURING INSTRUMENTS
    . SATELLITE-BORNE INSTRUMENTS
      . ADVANCED VERY HIGH RESOLUTION RADIOMETER
  RT NOAA 6 SATELLITE
    NOAA 7 SATELLITE
    NOAA 8 SATELLITE
    REMOTE SENSORS
    TIROS N SERIES SATELLITES

• ALS (LAUNCH SYSTEM)
  USE ADVANCED LAUNCH SYSTEM (STS)

ANTIGUA AND BARBUDA
  GS LANDFORMS
    . WEST INDIES
  ANTIGUA AND BARBUDA
    NATIVE TERRITORY
    . ANTIGUA AND BARBUDA
  RT CARIBBEAN REGION

APPLICATION SPECIFIC INTEGRATED CIRCUITS
  UF ASIC
    . CUSTOM INTEGRATED CIRCUITS
    . GS CIRCUITS
    . INTEGRATED CIRCUITS
    . APPLICATION SPECIFIC INTEGRATED CIRCUITS

APPLICATION SPECIFIC INTEGRATED-(CONT.)
  RT CHIPS (ELECTRONICS)
    . LARGE SCALE INTEGRATION
      . VERY LARGE SCALE INTEGRATION

ARGENTINE SPACE PROGRAM
  GS PROGRAMS
    . SPACE PROGRAMS
    . ARGENTINE SPACE PROGRAM
  RT ARGENTINA

• ARMS (ROBOTICS)
  USE ROBOT ARMS
  ASIC
    USE APPLICATION SPECIFIC INTEGRATED CIRCUITS

• ASRM (STS)
  USE ADVANCED SOLID ROCKET MOTOR (STS)

ATMOSPHERIC GENERAL CIRCULATION MODELS
  UF GENERAL CIRCULATION MODELS
    . ATMOSPHERIC
  GS MODELS
    . ATMOSPHERIC MODELS
      . ATMOSPHERIC GENERAL CIRCULATION MODELS
  RT ATMOSPHERIC CIRCULATION
    ATMOSPHERIC GENERAL CIRCULATION EXPERIMENT
    CLIMATOLOGY
    LONG RANGE WEATHER FORECASTING
    NUMERICAL WEATHER FORECASTING

ATMOSPHERIC SEEING
  USE SEEING (ASTRONOMY)

AUSTRALIAN SPACE PROGRAM
  GS PROGRAMS
    . SPACE PROGRAMS
    . AUSTRALIAN SPACE PROGRAM
  RT AUSTRALIA

AVHRR
  USE ADVANCED VERY HIGH RESOLUTION RADIOMETER

• BEAMED POWER
  USE POWER BEAMING

BIRKELAND CURRENTS
  GS ELECTRIC CURRENT
    . FIELD ALIGNED CURRENTS
      . BIRKELAND CURRENTS
      . IONOSPHERIC CURRENTS
        . BIRKELAND CURRENTS ELECTRICITY
          . ATMOSPHERIC ELECTRICITY
            . IONOSPHERIC CURRENTS
              . BIRKELAND CURRENTS
    . SPACE SHUTTLE boosters
      . ADVANCED SOLID ROCKET MOTOR (STS)
  RT AURORAL ELECTROJETS
    AURORAL ZONES
    ELECTROJETS
    GEOMAGNETISM
    IONOSPHERIC DISTURBANCES
    MAGNETIC DISTURBANCES
    MAGNETIC STORMS

BLAZARS
  GS CELESTIAL BODIES
  BT BLACERTAE OBJECTS
  RT ACCRETION DISKS
  ACTIVE GALACTIC NUCLEI
  ACTIVE GALAXIES
  EXTRAGALACTIC RADIO SOURCES
  INFRARED ASTRONOMY
  QUASARS
  RADIO GALAXIES
  RADIO SOURCES (ASTRONOMY)
  SEYFERT GALAXIES

• BLOCK COPOLYMERS
  USE COPOLYMERS
    GS COPOLYMERS
    . BLOCK COPOLYMERS
  RT COPOLYMERIZATION
    POLYBUTADIENE
    POLYMERS
    POLYSTYRENE

• BOUNDARY DETECTION (IMAGERY)
  USE EDGE DETECTION

BRAGG CELLS
  GS MODULATORS
  . BRAGG CELLS
  RT ACCUSTO-OPTICS
    AMPLITUDE MODULATION
    CRYSTAL OPTICS
    LIGHT BEAMS
    LIGHT MODULATION
    PHASE DEMODULATORS
    PHASE MODULATION
    ULTRASONIC LIGHT MODULATION

• BREAKUP (SPACECRAFT)
  USE SPACECRAFT BREAKUP

BROWN DWARF STARS
  GS CELESTIAL BODIES
  . STARS
  RT BROWN DWARF STARS
    COMPANION STARS
    COOL STARS
    DWARF STARS
    PROTOTARS
    STELLAR EVOLUTION

• BURAN SPACE SHUTTLE
  USE MANNED SPACECRAFT
    SPACE SHUTTLES
    BURAN SPACE SHUTTLE REENTRY VEHICLES
    RECOVERABLE SPACECRAFT
    REUSABLE SPACECRAFT
    SPACE SHUTTLES
    BURAN SPACE SHUTTLE SOVIET SPACECRAFT
    BURAN SPACE SHUTTLE U.S.S.R. SPACE PROGRAM
  RT SPACECRAFT

C

C (PROGRAMMING LANGUAGE)
  GS LANGUAGES
    . PROGRAMMING LANGUAGES
      . HIGH LEVEL LANGUAGES
    . C (PROGRAMMING LANGUAGE)
  RT COMPILERS
    COMPUTER PROGRAMMING EXPERT SYSTEMS
• CONDUCTING POLYMERS
  GS CONDUCTORS - ELECTRIC CONDUCTORS
  RT CONDUCTING POLYMERS
  RT ORGANIC SEMICONDUCTORS POLYACETYLENE
  POLYMERIC FILMS
  GS POLYMERS SEMICONDUCTORS (MATERIALS)
  CRACK OPENING DISPLACEMENT
  USE COD (CRACKS)
  GS DISPLACEMENT
  RT CRACK PROPAGATION CRACKING (FRACTURING)
  CHAOS
  RT BRANCHING (MATHEMATICS)
  NONLINEAR SYSTEMS PERIOD DOUBLING
  STOCHASTIC PROCESSES STRANGE ATTRACTIONS
  • CLUSTER MISSION
  GS SPACE MISSIONS - CLUSTER MISSION
  RT EARTH MAGNETOSPHERE EUROPEAN SPACE PROGRAMS
  INTERNATIONAL COOPERATION
  GS SPACE MISSIONS
  RT MARINER MARK 2 SPACECRAFT
  USE APPLICATION SPECIFIC INTEGRATED
  CIRCUITS
  USE COMET RENDEZVOUS ASTEROID FLYBY MISSION

• CYTOMETRY
  USE CYTOMETRY
  USE CZECHOSLOVAKIAN SPACE PROGRAM

• DISK OPERATING SYSTEM (DOS)
  GS COMPUTER PROGRAMS
  GS SPACE PROGRAMS
  GS EUROPEAN SPACE PROGRAMS
  GS CELESTIAL BODIES

• ELLIPSOMETRY
  RT DIMENSIONAL MEASUREMENT ELLIPSOMETRY
  FILM THICKNESS MEASUREMENT OPTICAL MEASUREMENT
  POLARIZED LIGHT

• ENDEAVOUR (ORBITER)
  GS MARKED SPACECRAFT SPACE SHUTTLE ORBITERS
  ENDEAVOUR (ORBITER) ENTRY VEHICLES
  RECOVERABLE SPACECRAFT

• EDGE DETECTION
  USE BOUNDARY DETECTION (IMAGERY)
  USE COMET RENDEZVOUS ASTEROID FLYBY MISSION

• ELECTRON-POSITRON PAIRS
  GS PARTICLES
  RT ANNIHILATION REACTIONS CHARGED PARTICLES
  ELECTRON-POSITRON PLASMAS ELECTRONS
  PAIR PRODUCTION POSITRON ANNIHILATION POSITRONS

• ELECTRON-POSITRON PLASMAS
  GS PARTICLES
  RT ELECTRON-POSITRON PLASMAS

• ELECTRON-POSITRON PAIRS
  GS PARTICLES
  RT ELECTRON-POSITRON PLASMAS

• ELECTROMAGNETIC COUPLING
  USE ELECTROMAGNETIC COUPLING
  USE ELECTRON-POSITRON PAIRS

• ELECTRON-POSITRON PAIRS
  RT ELECTRON-POSITRON PLASMAS
LASER RADIATION

LASER POWER BEAMING-(CONT.)
Laser Power Beaming
RS Energy Conversion
Laser Propulsion
Microwave Power Beaming
Microwave Transmission
Satellite Power Transmission
Spacecraft Power Supplies

LASER RADIATION
Use Laser Beams

LDR (Telescope)
Use Large Deployable Reflector

LEARNING MACHINES
Use Machine Learning

LIGHT HELICOPTERS
GS Light Aircraft
Light Helicopters
-OH-4 Helicopter
-OH-5 Helicopter
OH-58 Helicopter
VSTOL Aircraft
Rotary Wing Aircraft
Helicopters

MG MARS SAMPLE RETURN MISSIONS
UF Mars Rover Sample Return Mission

MG SPACE MISSIONS
RT MARS SAMPLE RETURN MISSIONS
GS MARS PROGRAMS
RT Mars Landing
RT MARS PHOBES
RT MARS SURFACE SAMPLES
RT NASA Space Programs
RT Roving Vehicles
RT Samples
RT Space Exploration

MG MASER MATERIALS
RT Laser Materials
RT Maser Materials

MG MASER MAPPING
RT Laser Mapping
RT Maser Outputs
RT Maser Pumping

MG MASS DRIVERS
RT Accelerators
RT Electromagnetic Acceleration
RT Electromagnetic Propulsion
RT Launchers
RT Magnetic Levitation Vehicles
RT Moon-Earth Trajectories
RT Propulsion
RT Railgun Accelerators
RT Spacecraft Propulsion

MG MASSIVELY PARALLEL PROCESSORS
UF MPP (Computers)
GS Data Processing Equipment
RT Digital Computers
RT Parallel Computers
RT Massively Parallel Processors
RT Architecture (Computers)
RT Parallel Processing (Computers)

MG MATTER-ANTIMATTER PROPULSION
GS Propulsion
GS Spacecraft Propulsion
RT Matter-Antimatter Propulsion
RT Annihilation Reactions
RT Interplanetary Flight
RT Interplanetary Spacecraft
RT Interstellar Travel
RT Nuclear Propulsion
RT Position Annihilation
RT Rocket Engines

MG MAURITIUS
GS Landforms
GS Islands
GS Mauritius
RT Africa
RT Indian Ocean

MG MESH GENERATION (MATHEMATICS)
Use Grid Generation (Mathematics)

MG MESOZOIC ERA
GS Mesozoic Era
RT Cretaceous Period
RT Cretaceous-Tertiary Boundary
RT Geochronology
RT Paleontology
RT Paleozoic Era

MG MEXICAN SPACE PROGRAM
GS Programs
RT Space Programs
RT Mexican Space Program
RT Mexico

MG MICROPHONE POWER BEAMING
UF Power Transmission (Microphone)
GS Power Beaming
MG Microwave Power Beaming
RT Laser Power Beaming
RT Microwave Transmission
RT Satellite Power Transmission

MG METEOROLOGY
GS Atmosphere
RT Atmospheric Sciences
RT Meteorological Water Cycle

NASA THESAURUS SUPPLEMENT (PART 1)

MICROWAVE POWER BEAMING-(CONT.)
Spacecraft Power Supplies

MICROWAVE SIGNATURES
GS Signatures
RT Spectral Signatures
RT Microwave Signatures

RT Backscattering
RT Microwave Emission
RT Microwave Scattering
RT Microwaves
RT Radar Signatures
RT Signature Analysis

RT Mixing Layers (Fluids)
RT Advection
RT Atmospheric Boundary Layer
RT Atmospheric Stratification
RT Boundary Layers
RT Convection
RT Energy Layer
RT Jet Mixing Flow
RT Laminar Mixing
RT Mixing
RT Mixing Length Flow Theory
RT Shear Layers
RT Turbulent Boundary Layer
RT Turbulent Mixing
RT Two Fluid Models

MG MOONLITHE
GS Celestial Bodies
RT Moonlets

RT Jupiter Rings
RT Natural Satellites
RT Planetary Rings
RT Saturn Rings
RT Uranus Rings

MTFF (Space Station)
Use Man Tended Free Flyers

MG NEPTUNE SATELLITES
GS Celestial Bodies
RT Neptune (Planet)
RT Neptune (Satellite)

RT Natural Satellites
RT Neptune Satellites
RT Nereid
RT Triton

MG NEREID
GS Celestial Bodies
RT Natural Satellites
RT Neptune Satellites
RT Nereid
RT Triton

RT Netherlands Space Program
RT Astronomical Netherlands
RT Satellite Netherlands

RT New Zealand Space Program
RT Space Programs
RT New Zealand Space Program
RT New Zealand

MG NORTHERN IRELAND
GS Nations
RT United Kingdom
RT Northern Ireland
RT Europe

MG NUCLEAR ASTROPHYSICS
GS Astrophysics
RT Nuclear Astrophysics
RT Nuclear Physics
RT Nuclear Astrophysics
RT Nuclei
RT Nuclear Particles
NASA THESAURUS SUPPLEMENT (PART 1)

NUCLEAR ASTROPHYSICS-(CONT.)
STELLAR PHYSICS

NUCLEAR BULGE (GALAXIES)
USE GALACTIC BULGE

O

• OLIGOMERS
RT MONOMERS
POLYMERIZATION
∞ POLYMERS

OPTICAL MATERIALS
RT GLASS
INFRARED WINDOWS
LENSSES
∞ MATERIALS
MIRRORS
OPTICAL FIBERS
WINDOWS (APERTURES)

• ORBITAL BREAKUP
USE SPACECRAFT BREAKUP

OXYGEN-HYDROCARBON ROCKET ENGINES
UF LIQUID OXYGEN HYDROCARBON
ROCKET ENGINES
LOX-HYDROCARBON ROCKET ENGINES
GS ENGINES
. . . LIQUID PROPELLANT ROCKET ENGINES
. . . OXYGEN-HYDROCARBON ROCKET ENGINES
RT BOOSTER ROCKET ENGINES
LIQUID OXYGEN
REUSABLE ROCKET ENGINES
SPACECRAFT PROPULSION

POLYMER BLENDS-(CONT.)
POLYMER PHYSICS
∞ POLYMERS
THERMOPLASTIC RESINS

• POWER BEAMING
UF BEAMED POWER
GS POWER BEAMING
Laser POWER BEAMING
MICROWAVE POWER BEAMING
SATTELITE POWER TRANSMISSION
RT ENERGY CONVERSION
LASER PROPULSION
MICROWAVE TRANSMISSION
POWER TRANSMISSION
SOLAR POWER SATELLITES
SPACECRAFT POWER SUPPLIES

• POWER TRANSMISSION (LASERS)
USE LASER POWER BEAMING

• POWER TRANSMISSION (MICROWAVE)
USE MICROWAVE POWER BEAMING

PROPELLER NOISE
GS ELASTIC WAVES
. . . SOUND WAVES
. . . NOISE (SOUND)
. . . . AERODYNAMIC NOISE
. . . . PROPELLER NOISE
. . . . AIRCRAFT NOISE
. . . . PROPELLER NOISE
RT ACOUSTIC RETROFITTING
AERAOACOUSTICS
BLADE SLAP NOISE
ENGINE NOISE
MUFFLERS
NOISE INTENSITY
NOISE MEASUREMENT
NOISE PREDICTION (AIRCRAFT)
NOISE REDUCTION
SOUND FIELDS
SOUND TRANSMISSION

PROTEIN CRYSTAL GROWTH
GS GROWTH
. . . PROTEIN CRYSTAL GROWTH
RT PROTEIN SYNTHESIS
PROTEINS
SPACE PROCESSING

PULSAR MAGNETOSPHERES
GS STELLAR MAGNETOSPHERES
PULSAR MAGNETOSPHERES
RT MAGNETIC FIELDS
∞ MAGNETOSPHERES
PULSARS
STELLAR ATMOSPHERES
STELLAR MAGNETIC FIELDS

Q

QATAR
GS NATIONS
. . . QATAR
RT ASIA

R

• RECORDS MANAGEMENT
GS MANAGEMENT
. . . INFORMATION MANAGEMENT
. . . RECORDS MANAGEMENT
RT DATA MANAGEMENT
INFORMATION SYSTEMS
MANAGEMENT INFORMATION SYSTEMS
RECORDS

• REENTRY BREAKUP
USE SPACECRAFT BREAKUP

RESONANT TUNNELING
UF BARRIER LAYERS
ELECTRON TUNNELING

• ROTORDYNAMICS
USE ROTOR DYNAMICS

RESONANT TUNNELING-(CONT.)
NEGATIVE RESISTANCE DEVICES
QUANTUM ELECTRONICS
QUANTUM Wells
TRANSISTORS
TUNNEL DIODES
∞ TUNNELING

RIBLOTS
GS GROOVES
. . . V GROOVES
RT . . . RIBLOTS
BARRIER LAYERS
DYNAMIC CHARACTERISTICS
DYNAMIC RESPONSE
DYNAMIC STABILITY
DYNAMICS
ROTARY STABILITY
ROTARY WINGS
ROTOR AERODYNAMICS
ROTOR DYNAMICS
ROTOR SENSORS
STRUCTURAL VIBRATION
TURBOMACHINERY

ROBOT ARMS
UF ARMS (ROBOTICS)
RT END EFFECTORS
MANIPULATORS
ROBOT DYNAMICS
ROBOTICS
ROBOTS

• ROBOT DYNAMICS
USE ROBOT DYNAMICS

• ROBOT SENSORS
RT COMPUTER VISION
ROBOTICS
SENSORS

ROTATIONAL SPECTRA
GS SPECTRA
. . . MOLECULAR SPECTRA
. . . ROTATIONAL SPECTRA
RT ABOSRPTION SPECTRA
LINE SPECTRA
MOLECULAR EXCITATION
MOLECULAR ROTATION
MOLECULAR SPECTROSCOPY
VIBRATIONAL SPECTRA

ROTOR DYNAMICS
UF ROTORDYNAMICS
RT DYNAMIC CHARACTERISTICS
DYNAMIC RESPONSE
DYNAMIC STABILITY
DYNAMICS
ROTARY STABILITY
ROTARY WINGS
ROTOR AERODYNAMICS
ROTOR DYNAMICS

QATAR
GS NATIONS
. . . QATAR
RT ASIA

RECORDS MANAGEMENT
GS MANAGEMENT
. . . INFORMATION MANAGEMENT
. . . RECORDS MANAGEMENT
RT DATA MANAGEMENT
INFORMATION SYSTEMS
MANAGEMENT INFORMATION SYSTEMS
RECORDS

• REENTRY BREAKUP
USE SPACECRAFT BREAKUP

RESONANT TUNNE
SATELLITE BREAKUP

- SATELLITE BREAKUP
  USE SPACECRAFT BREAKUP

- SATELLITE FRAGMENTATION
  USE SPACECRAFT BREAKUP

- SATELLITE POWER TRANSMISSION
  GS POWER BEAMING
  SATELLITE POWER TRANSMISSION
  RT LASER POWER BEAMING
  MICROWAVE POWER BEAMING
  RECTENNAS
  SOLAR ARRAYS
  SOLAR CELLS
  SOLAR POWER SATELLITES

SCANNING TUNNELING MICROSCOPY
GS MICROSCOPY
- ELECTRON MICROSCOPY
- SCANNING TUNNELING MICROSCOPY
RT ELECTROEN MICROSCOPES
- ELECTRON TUNNELING

SEEING (ASTRONOMY)
UF ATMOSPHERIC SEEING
RT ASTRONOMICAL OBSERVATORIES
- ATMOSPHERIC OPTICS
- ATMOSPHERIC EFFECTS
- ASTRONOMY
- ELECTRON MICROSCOPES

SH WAVES
GS LANDFORMS
- ISLANDS
SEYCHELLES
RT AFRICA
INDIAN OCEAN

SKY WAVES
UF HORIZONTAL POLARIZED SHEAR WAVES
- HORIZONTALLY POLARIZED SHEAR WAVES
GS ELASTIC WAVES
- S WAVES
RT NONDESTRUCTIVE TESTS
- SEISMIC WAVES
- TRANSVERSE WAVES
- ULTRASONIC TESTS
- WAVES

SHELL STARS
GS CELESTIAL BODIES
- STARS
- PECULIAR STARS
- SHELL STARS
RT G STARS
- STELLAR ENVELOPES

SINGLE INPUT SINGLE OUTPUT SYSTEMS
USE SISO (CONTROL SYSTEMS)

SISO (SUPERCONDUCTORS)
UF SUPERCONDUCTOR INSULATOR
RT SUPERCONDUCTORS
GS ELECTRONIC EQUIPMENT
- SOLID STATE DEVICES
SIS (SUPERCONDUCTORS)
RT HIGH TEMPERATURE SUPERCONDUCTORS
- JOSEPHSON JUNCTIONS
- SQUID (DETECTORS)

SISO (CONTROL SYSTEMS)
UF SINGLE INPUT SINGLE OUTPUT SYSTEMS
RT 00 CONTROL
- CONTROL STABILITY
- CONTROL SYSTEMS DESIGN
- CONTROL THEORY
- FEEDBACK CONTROL
- SYSTEMS STABILITY

- SOHO MISSION
  USE SPACECRAFT BREAKUP
  GS SPACE MISSIONS
  SATELLITE BREAKUP
  USE SPACECRAFT BREAKUP
  GS POWER BEAMING
  SATELLITE POWER TRANSMISSION
  RT LASER POWER BEAMING
  MICROWAVE POWER BEAMING
  RECTENNAS
  SOLAR ARRAYS
  SOLAR CELLS
  SOLAR POWER SATELLITES

- SOLAR AND HELIOSPHERIC OBSERVATORY
  USE SOHO MISSION

- SPACECRAFT BREAKUP
  USE SOHO MISSION

SPACECRAFT ENVIRONMENTS
SN (LIMITED TO SPACECRAFT INTERNAL COMPARTMENTS AND CABINS; FOR SPACECRAFT EXTERNAL ENVIRONMENTS REFER TO EXTRATERRESTRIAL ENVIRONMENTS)
GS ENVIRONMENTS
SPACECRAFT ENVIRONMENTS
RT AEROSPACE MEDICINE
- ASTRONAUTS
- BIOASTRONAUTICS
- CLOSED ECOSYSTEMS
- CONTROLLED ATMOSPHERES
- COSMONAUTS
- COUCHES
- ENVIRONMENTAL CONTROL
- EXTRATERRESTRIAL ENVIRONMENTS
- INTRAVEHICULAR ACTIVITY
- LIFE SUPPORT SYSTEMS
- ORBITAL BREAKUP
- REENTRY BREAKUP
- SATELLITE BREAKUP
- SATELLITE FRAGMENTATION
- SPACECRAFT ENVIRONMENTAL CONTROL
- SPACECRAFT ENTRY
- SPACECRAFT SURVIVABILITY
- SPACECRAFT TEMPERATURE
- SPACECRAFT WRECKAGE

SPACECRAFT TEMPERATURE
GS SPACECRAFT EXTERNAL ENVIRONMENTS
- SPACECRAFT HEAT BUDGET
- SPACECRAFT TEMPERATURE
- SPACECRAFT THERMAL ENVIRONMENTS
- SPACECRAFT THERMAL ENVIRONMENTS
- SPACECRAFT THERMAL ENVIRONMENTS

SPANISH SPACE PROGRAM
GS SPACE PROGRAMS
- SPACE PROGRAMS
- SPANISH SPACE PROGRAM
RT SPAIN

STARQUAKES
RT GAMMA RAY BURSTS
- NEUTRON STARS
- PULSARS
- STARS
- STELLAR ACTIVITY
- STELLAR PHYSICS
- STELLAR ROTATION
- STELLAR STRUCTURE

STELLAR MAGNETOSPHERES
GS STELLAR MAGNETOSPHERES
RT MAGNETIC FIELDS
- MAGNETOSPHERES
- STELLAR MAGNETOSPHERES
- STELLAR MAGNETIC FIELDS

STONY-IRON METEORITES
GS CELESTIAL BODIES
- METEORITES

NASA THESAURUS SUPPLEMENT (PART 1)

STONY-IRON METEORITES
- Iron METEORITES
- STONY METEORES

STRENGTHENING WARMING
GS HEATING
- ATMOSPHERIC HEATING
- STRATOSPHERIC WARMING
RT ANOMALOUS TEMPERATURE ZONES
- ATMOSPHERIC TEMPERATURE CLIMATE
- STRATOSPHERIC WARMING

SUPERCONDUCTING FILMS
RT FILMS
- SEMICONDUCTING FILMS
- SUPERCONDUCTORS
- THICK FILMS
- THIN FILMS

SUPERCONDUCTOR INSULATOR
SUPERCONDUCTORS
USE SIS (SUPERCONDUCTORS)

TERTIARY PERIOD
GS CENOZOIC ERA
- CRETACEOUS PERIOD
- CRETACEOUS-TERTIARY BOUNDARY
- GEOCHRONOLOGY
- PALEONTOLOGY

THREE DIMENSIONAL MODELS
GS MODELS
RT THREE DIMENSIONAL MODELS
- COMPUTATIONAL GRIDS
- COMPUTER-AIDED DESIGN
- COMPUTERIZED SIMULATION
- MATHEMATICAL MODELS

TOLMIEN-SCHLICHTING WAVES
GS ELASTIC WAVES
- TOLMIEN-SCHLICHTING WAVES
RT BLASIS US FLOW
- BOUNDARY LAYER FLOW
- BOUNDARY LAYER TRANSITION
- LAMINAR FLOW
- TURBULENT FLOW

TOMS
USE TOTAL OZONE MAPPING SPECTROMETER

TOTAL OZONE MAPPING SPECTROMETER
UF TOMS
GS MEASURING INSTRUMENTS
- OPTICAL MEASURING INSTRUMENTS
- PHOTOMETERS
- ULTRAVIOLET SPECTROMETERS
- TOTAL OZONE MAPPING SPECTROMETER
- RADIATION MEASURING INSTRUMENTS
- ACTINOMETERS
- ULTRAVIOLET DETECTORS
- ULTRAVIOLET SPECTROMETERS

TOTAL OZONE MAPPING SPECTROMETER
- PHOTOMETERS
- ULTRAVIOLET SPECTROMETERS
- TOTAL OZONE MAPPING SPECTROMETER
- SPECTROMETERS
- ULTRAVIOLET SPECTROMETERS
NASA THESAURUS SUPPLEMENT (PART 1)

TOTAL OZONE MAPPING-(CONT.)
- TOTAL OZONE MAPPING
  - SPECTROMETER
    - OPTICAL EQUIPMENT
      - OPTICAL MEASURING INSTRUMENTS
        - PHOTOMETERS
      - ULTRAVIOLET SPECTROMETERS
    - TOTAL OZONE MAPPING
      - SPECTROMETER
  - ANTARCTIC REGIONS
    - NIMBUS 7 SATELLITE
      - OZONE DEPLETION
        - OZONOMETRY
  - TOTAL VARIATION DIMINISHING SCHEMES
    - USE: TVD SCHEMES
  - TRANSITION FLIGHT
    - RT: AIRCRAFT MANEUVERS
      - HORIZONTAL FLIGHT
      - HOVERING
      - VERTICAL FLIGHT
  - TRANSPUTERS
    - GS: DATA PROCESSING EQUIPMENT
      - COMPUTERS
        - TRANSPUTERS
      - ARCHITECTURE (COMPUTERS)
        - DISTRIBUTED PROCESSING
          - INTERPROCESSOR COMMUNICATION
            - MICROPROCESSORS
          - PARALLEL PROCESSING (COMPUTERS)
    - RT: COMPUTERIZED SIMULATION
      - MATHEMATICAL MODELS
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      - THREE DIMENSIONAL MODELS
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  - USE: UPPER ATMOSPHERE RESEARCH
    - SATELLITE (UARS)
      - UNIX (OPERATING SYSTEM)
        - COMPUTER SYSTEMS PROGRAMS
          - OPERATING SYSTEMS (COMPUTERS)
            - UNIX (OPERATING SYSTEM)
  - UPPER ATMOSPHERE RESEARCH
    - SATELLITE (UARS)
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        - SCIENTIFIC SATELLITES
          - UPPER ATMOSPHERE RESEARCH
            - SATELLITE (UARS)
      - RT: UPPER ATMOSPHERE
        - UREILITES
          - GS: CELESTIAL BODIES
            - METEORITES
              - STONY METEORITES
                - ACHONDRITES
              - UREILITES
                - CARBONACEOUS METEORITES
          - RT: METEORITIC DIAMONDS

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    - VECTOR PROCESSING (COMPUTERS)
      - MULTIPROCESSING (COMPUTERS)
        - PARALLEL PROCESSING (COMPUTERS)
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  - VECTOR QUANTIZATION
    - RT: CODING
      - DATA COMPRESSION
        - DIGITAL TECHNIQUES
          - IMAGE PROCESSING
            - VECTORS (MATHEMATICS)
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    - VIDEO TAPE RECORDER(S)
      - TAPE RECORDERS
        - VIDEO TAPE RECORDERS
          - VIDEO TAPE RECORDER(S)
  - RT: VIDEO TAPES
    - VIDEO TAPES
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        - FILMS
          - INFORMATION
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              - MOTION PICTURES
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                    - VISUAL AIDS
  - VORTEX TRAPS
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        - WALES (CONT.)
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  - WALES
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- WALES (CONT.)
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  - WATER SPLITTING
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      - HYDROGEN PRODUCTION
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  - WHISPERING GALLERY MODES
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      - PROPAGATION MODES
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USE Comet Rendezvous Asteroid Flyby Mission

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USE Cretaceous-Tertiary boundary

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Mars sample return missions

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USE oxygen-hydrocarbon rocket engines

oxygen-hydrocarbon rocket engines

USE oxygen-hydrocarbon rocket engines

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USE SIS (semiconductors)

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station, MTF
USE man tended free flyers

stellar magnetospheres

stony-iron meteorites

stratospheric warming

structured programming

(STATS), Advanced Launch System
USE Advanced Launch System (STS)

(STATS), Advanced Solid Rocket Motor
USE Advanced Solid Rocket Motor (STS)

(STATS), ASRM
USE Advanced Solid Rocket Motor (STS)

superconducting films

superconductor insulator superconductors
USE SIS (semiconductors)

superconductors, superconductor insulator
USE SIS (semiconductors)

system), ALS (launch
USE Advanced Launch System (STS)

system (DOS), disk operating
USE disk operating system (DOS)

system), MS DOS (operating
USE disk operating system (DOS)

system (STS), Advanced Launch
USE Advanced Launch System (STS)

system), UNIX (operating
USE UNIX (operating system)

systems, single input single output
USE SISO (control systems)

systems), SISO (control
USE SISO (control systems)

T

T boundary, K-
USE Cretaceous-Tertiary boundary

tape recorders, video
USE video tape recorders

tapes, video
USE video tapes

(telescope), LDR
USE Large Deployable Reflector

tended free flyers, man
USE man tended free flyers

Tertiary boundary, Cretaceous-
USE Cretaceous-Tertiary boundary

Tertiary Period

three dimensional models

Tollmien-Schlichting waves

TOMS
USE Total Ozone Mapping Spectrometer

Total Ozone Mapping Spectrometer

total variation diminishing schemes
USE TVD schemes

transfer events, flux
USE flux transfer events

transition flight
USE transition flight

transition flight

transmission (lasers), power
USE laser power beaming

transmission (microwave), power
USE microwave power beaming

transmission, satellite power
USE satellite power transmission

transputers

trapped vortices

traps, vortex
USE trapped vortices

trend analysis

triple stars

tunneling microscopy, scanning
USE scanning tunneling microscopy

tunneling, resonance
USE resonant tunneling

tunneling, resonant
USE resonant tunneling

turbulence model, k-epsilon
USE k-epsilon turbulence model

turbulence model, kappa-epsilon
USE k-epsilon turbulence model

turbulence models

TVD schemes

two dimensional models

U

UARS (satellite)
USE Upper Atmosphere Research Satellite (UARS)
**V**

- variation diminishing schemes, total
  - USE TVD schemes
- vector processing (computers)
- vector quantization
- Very High Resolution Radiometer, Advanced
  - USE Advanced Very High Resolution Radiometer
- video tape recorders
- video tapes
- viruses, computer
  - USE computer viruses
- vortex traps
  - USE trapped vortices
- vortices, hairpin
  - USE horseshoe vortices
- vortices, horseshoe
  - USE horseshoe vortices
- vortices, trapped
  - USE trapped vortices

**W**

- Wales
- warming, global
  - USE global warming
- warming, stratospheric
  - USE stratospheric warming
- water splitting
- waves, horizontal shear
  - USE SH waves
- waves, horizontally polarized shear
  - USE SH waves
- waves, SH
  - USE SH waves
- waves, Tollmien-Schlichting
  - USE Tollmien-Schlichting waves
- whispering gallery modes

**Z**

- Zealand space program, New
  - USE New Zealand space program
A

• **abundance**
The mean concentration of an element in a geochemical reservoir, e.g., the abundance of Ni in meteorites or the crustal abundance of oxygen. Also used for the relative average content, e.g., the order of abundance of elements in the earth's crust is O, Si, Al, Fe, Ca, etc. Used for element abundance.

**AGI 1968**

**AC generators**
Generators for the production of alternating-current power. Used for alternating current generators and alternators (generators).

**IEEE 1968**

**access control**
Hardware or software features, operating procedures, or management procedures designed to permit authorized access to a computer system.

**IEEE 1980**

• **adobe flats**
Use flats (landforms)

• **advancing shorelines**
Use beaches

**air data systems**
Sets of aerodynamic and thermodynamic sensors, and a computer which provide flight parameters such as airspeed, static pressure, air temperature and Mach number.

**IEEE 1975**

• **air masses**
Large widespread volumes of air having particular characteristics of temperature and moisture content that were acquired at its source region and are modified as they move away from their source.

**AGI 1968**

• **air pollution**
The presence of unwanted material in the air. The term 'unwanted material' here refers to material in sufficient concentrations, present for a sufficient time, and under circumstances to interfere significantly with comfort, health, or welfare of persons, or with the full use and enjoyment of property. Used for atmospheric impurities.

**ASTM (D 1356, D-22) 1968**

**Alfven waves**
Use magneto-hydrodynamic waves

• **algae**
Any plants of a group of unicellular and multicellular primitive organisms that include the *Chlorella*, *Scenedesmus*, and other genera. Used for algal bloom.

**SP-7 1968**

• **algal bloom**
Use algae

• **alloys**
Substances having metallic properties and being composed of two or more chemical elements of which at least one is an elemental metal.

**SP-7 1968**

**alphabetic characters**
Characters in a set that contain both letters and digits, but they usually also contain other characters such as punctuation symbols.

**IEEE 1968**

**alternating current generators**
Use AC generators

**alternators (generators)**
Use AC generators

**anechoic chambers**
Enclosures especially designed with boundaries that absorb sufficiently well the sound incident thereon to create an essentially field-free condition in the frequency ranges of interest.

**IEEE 1968**

**angels (radar)**
Echos of false radar targets caused by atmospheric inhomogeneity, atmospheric refraction, insects, birds, or unknown phenomena.

**IEEE 1968**

• **anodes**
The positive poles or electrodes of electron emitters, such as electron tubes or electric cells.

**SP-7 1968**

• **Antarctic regions**
The areas surrounding and including the continent of Antarctica. Used for Antarctica.

**1968**

• **Antarctica**
Use Antarctic regions

• **anthracite**
Coal of the highest metamorphic rank, in which fixed-carbon content is between 92% and 98% (on a dry, mineral-matter-free basis). It is hard and black, and has a semimetallic luster and semiconchoidal fracture. Anthracite ignites with difficulty and burns with a short blue flame, without smoke. Used for hard coal.

**AGI 1973**

**antireflection coatings**
Thin dielectric or metallic films applied to an optical surface to reduce the reflectance and thereby increase the transmittance. Note: The ideal value of the reactive index of a single layered film is the square root of the product of the refractive indices on either side of the film, the ideal optical thickness being one quarter of a wavelength.

**IEEE 1973**

• **apatites**
Use minerals
apogees
Those orbital points farthest from the earth, when the earth is the center of attraction.  
IEEE 1968

• aquatic plants
Plants growing in or on water.  
1981

• archipelagoes
Seas or areas in seas that contain numerous islands; also the island groups themselves.  
AGI 1973

• aspiration
Use vacuum

• astrophysics
A branch of astronomy that treats of the physical properties of celestial bodies, such as luminosity, size, mass, density, temperature, and chemical composition. Used for geoastronomy.  
SP-7 1968

• atmospheric electricity
Electrical phenomena, regarded collectively, which occur in the earth's atmosphere. Also the study of electrical processes occurring within the atmosphere.  
SP-7 1968

• atmospheric impurities
Use air pollution

• atmospheric refraction
Refraction resulting when a ray of radiant energy passes obliquely through an atmosphere.  
SP-7 1968

• atmospheric windows
Wavelength intervals at which the atmosphere transmits the most electromagnetic radiation.  
AGI 1972

• atolls
Coral reefs appearing in plan view as roughly circular (though sometimes elliptical or horseshoe-shaped), and surmounted by a chain or ring of closely spaced low coral inlets that encircle a shallow lagoon in which there is no pre-existing land or islands of non coral origin; the reefs are surrounded by deep water of the open sea, either oceanic or continental shelves. Atolls range in diameter from 1 km to more than 130 km, and are especially common today in the western and central Pacific Ocean. Atoll is derived from the native name in the Maldives Islands (Indian Ocean) which are typical examples of this structure.  
AGI 1973

audiometry
The testing and measurement of hearing at various levels.  
1968

automatic pattern recognition
Use pattern recognition

• azimuth
Horizontal direction or bearing. Used for solar azimuth.  
SP-7 1968

backfires
Radiation lobes whose axes make angles of approximately 180 degrees with respect to the axes of the major lobes of the antennas. By extension radiation lobes in the half-space opposed to the direction of peak activity.  
IEEE 1968

• backshores
Use beaches

• badlands
Intricately stream-dissected topography, characterized by a very fine drainage network with high drainage densities (77 to 747 miles per square mile) and short steep slopes with narrow interflues. Badlands develop on the surface with little or no vegetative cover, overlying unconsolidated or poorly cemented clays or silts, sometimes with soluble minerals such as gypsum or halite. They may also be induced in humid areas by removal of the vegetative cover through overgrazing, or by air pollution from sulfide smelting. The term was first applied to an area in western South Dakota, which was called 'mauvaises terres' by the early French fur traders.  
AGI 1979

• bajadas
Use fans (landforms)

• barriers (landforms)
Elongated offshore ridges or masses, usually of sand, rising above the high-tide level, generally extending parallel to, and at some distance from, the shore, and separated from it by some kind of coastal bay. They are built up by the action of waves and currents.  
AGI 1972

• bars (landforms)
A generic term for any of various elongate offshore ridges, banks, or mounds of sand, gravel, or other unconsolidated material, submerged at least at high tides, and built up by the action of waves or currents on the water bottom, especially at the mouth of a river or estuary, or at a slight distance from the beach. Bars commonly form obstructions to water navigation.  
AGI 1973

• bayous
A term variously applied to many local water features in the lower Mississippi River basin and in the Gulf Coast region of the U.S., especially in Louisiana. Its general meaning is a creek of a secondary watercourse that is tributary to another body of water; especially through alluvial lowlands, coastal swamps or river deltas. The origin of the term is from the American French 'boyau', 'gut'; from the Choctaw 'bayuk', 'small stream'.  
AGI 1974

• bays (topographic features)
Wide, curving open indentations, recesses, or arms of seas or lakes into the land or between two capes or headlands; larger than coves, and usually smaller than, but of the same general character as gulfs. Used for bights and coves.  
AGI 1968

• beaches
Stretches of unconsolidated material that constitute gently sloping zones, typically with concave profiles, extending landward from the low-water line to the place where there is a definite change in material or physiographic form. Used for advancing shorelines, backshores, and inshore zones.  
AGI 1968

• beacons
Lights, groups of lights, electronic apparatus, or other devices that guide, orient, or warn aircraft, spacecraft, etc. in flight.  
SP-7 1968

B
NASA THESAURUS SUPPLEMENT (PART 3)

- **bights**
  Use bays (topographic features)

- **bioregenerative life support systems**
  Use closed ecological systems

- **blazars**
  Strongly optical polarized active galactic nuclei objects exhibiting BL Lacertae-like and quasar-like characteristics.

- **bonding**
  Specifically, a system of connections between all metal parts of an aircraft or other structure forming a continuous electrical unit and preventing jumping or arching of static electricity. Glueing or cementing together for structural strength.

- **breakwaters**
  Offshore structures (such as moles, walls, or jetties) that by breaking the force of waves, protect harbors, anchorages, beaches, or shore areas. Used for jetties and sea walls.

- **cathodes**
  In _electron tubes, electrodes_ through which a primary stream of electrons enters the interelectrode space.

- **celestial bodies**
  Any aggregations of matter in space constituting a unit for astronomical study, as the _sun, moon, a planet, comet, star, or nebula_. Also called heavenly bodies.

- **central processing units**
  The units of computing systems that include the _circuits_ controlling the interpretation of instructions and their execution. Used for processors (computers).

- **ceramics**
  Inorganic compounds or mixtures requiring _heat treatment_ to fuse them into homogeneous masses usually possessing high temperature strength but low ductility. Types and uses range from china for dishes to refractory liners for nozzles.

- **Chlorella**
  A genus of unicellular green algae to be adapted to converting carbon dioxide into oxygen in a closed ecological system.

- **circuits**
  Networks providing one or more closed paths. Used for electric circuits, exploding conductor circuits, shunts, and subcircuits.

- **closed ecological systems**
  Systems that provide for the maintenance of life in an isolated living chamber through complete reutilization of the material available, in particular, by means of a cycle wherein exhaled carbon dioxide, urine, and other waste matter are converted chemically or by _photosynthesis_ into oxygen, _water_, and food. Used for bioregenerative life support systems.

- **coal**
  A brown to black combustable sedimentary rock (in the geological sense) composed principally of consolidated and chemically altered plant remains.

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**DITCHING (EXCAVATION)**

- **COD (cracks)**
  Use crack opening displacement

- **cold cathode tubes**
  Electron tubes containing _cold cathodes_.

- **cold cathodes**
  _Cathodes_ that function without the application of _heat_.

- **colds**
  Use gaps (geology)

- **communication satellites**
  Satellites designed to reflect or relay electromagnetic signals used for communication.

- **compasses**
  Instruments for indicating a horizontal reference direction, specifically magnetic compasses.

- **continental margins**
  Use continental shelves

- **continental shelves**
  The ocean floor that is between the shoreline and the abyssal ocean floor, including various provinces; the continental shelf; continental borderland; continental slope; and the continental rise. Used for continental margins.

- **coves**
  Use bays (topographic features)

**crack opening displacement**

- **critical mach number**
  Use Mach number

- **discharge tubes**
  Use gas discharge tubes

- **discovering**
  Use exploration

- **discontinuity**
  A break in sequence or continuity of anything.

- **disk operating system (DOS)**
  A program with which the computer performs such mundane but useful tasks as storing, locating, and retrieving files on disk, reading the keyboard, and issuing display and print _information_.

- **displacement**
  A vector quantity that specifies the change of position of a body the change of position of a body or particle usually measured from the mean position or position of rest.

- **ditching (excavation)**
  Use excavation
DOPPLER EFFECT

- Doppler effect
  The change in frequency with which energy reaches a receiver when the receiver and the energy source are in motion relative to each other. Used for DOVAP and stellar Doppler shift.  
  SP-7 1968

Doppler radar
Radar which utilizes the Doppler effect to determine the radial component of velocities of relative radar targets or to select targets having particular radial velocities.  
IEEE 1968

- DOVAP
  Use Doppler effect

- drag
  A retarding force acting upon the direction of motion of the body. It is a component of the total fluid forces acting on the body. Used for drag effect.  
  SP-7 1968

- drag effect
  Use drag

- dullness
  Use luster


E

- earth figure
  Use geodesy

- earth shape
  Use geodesy

- eddies
  Use vortices

- electric circuits
  Use circuits

electrical conductivity
Use electrical resistivity

electrical resistivity
A factor such that the conduction-current density is equal to the electric field in the material divided by resistivity.  
IEEE 1968

- electroacoustic transducers
  Transducers for receiving waves from an electric system and delivering waves to an acoustic system, or vice versa. Microphones and earphones are electroacoustic transducers.  
  SP-7 1968

- electroconductivity
  Use electrical resistivity

- electrodes
  Terminals at which electricity passes from one medium into another. The positive electrodes are called the anodes; the negative electrodes are called the cathodes.  
  SP-7 1968

- electromagnetic radiation
  Energy propagated through space or through material media in the form of an advancing disturbance in electric and magnetic fields existing in space or in media. The term radiation, alone, is used commonly for this type of energy, although it actually has a broader meaning. Used for electromagnetic waves and wave radiation.  
  SP-7 1968

- electromagnetic waves
  Use electromagnetic radiation

- electron tubes
  Devices in which conduction by electrons takes place through a vacuum of gaseous medium within a gastight envelope.  
  SP-7 1968

- element abundance
  Use abundance

energy dissipation
The difference between energy input and output as a result of transfer of energy between two points. Used for energy loss.  
IEEE 1968

energy loss
Use energy dissipation

equatorial orbits
Inclined orbits with an inclination of zero degrees. The plane of an equatorial orbit contains the equator of the primary body.  
IEEE 1968

- erosion
  Progressive loss of original material from a solid surface due to mechanical interaction between that surface and a fluid, a multicomponent fluid, or impinging liquid or solid particles. Used for scars (geology).  
  ASTM (G 76, G-2) 1968

error correcting codes
Codes in which each telegraph or data signal conforms to specific rules of construction so that departures from this construction in the received signals can be automatically detected, and permits the automatic correction, at the received terminal, of some or all of the errors. Note: Such codes require more signal elements than are necessary to convey the basic information.  
IEEE 1974

error detection codes
Codes in which each expression conforms to specific rules of construction, so that if certain errors occur in an expression the resulting expression will not conform to the rules of construction and thus the presence of errors is detected. Note: Such codes require more signal elements than are necessary to convey the fundamental information.  
IEEE 1968

- escarpments
  Long more or less continuous cliffs or relatively steep slopes facing in one general direction, breaking the continuity of the land by separating two level or gently sloping surfaces, and produced by erosion or by faulting. Used for scarp.s.  
  AGI 1972

- eutrophication
  The process by which waters become more eutrophic; especially the artificial or natural enrichment of a lake by an influx of nutrients required for the growth of aquatic plants such as algae that are vital for fish and animal life.  
  AGI 1973

- evaporation
The physical process by which a liquid or solid is transformed into the gaseous state; the opposite of condensation. SP.7 1968

**evapotranspiration**
Loss of water from a land area through transpiration of plants and evaporation from the soil and surface-water bodies. Also, the volume of water lost through evapotranspiration. AGI 1973

**excavation**
The act or process of removing soil and/or rock materials from one location and transporting them to another. It includes digging, blasting, breaking, loading, and hauling, either at the surface or underground. Also, a pit, cavity, hole, or other uncovered cutting produced by excavation or the material dug out in making a channel or cavity. Used for ditching (excavation) AGI 1968

**expert systems**
Computer programs that manipulate symbolic information to produce the same results as human experts would. They deal with uncertain data and make decisions on that data. Input and design relies on human experts. Used for knowledge based systems. 1983

**exploding conductor circuits**
Use circuits

**exploration**
The search for deposits of useful minerals or fossil fuels; prospecting, including under the oceans. It may include geologic reconnaissance, e.g. remote sensing, photogeology, geophysical and geochemical methods, and both surface and underground investigations. Used for discovering and prospecting. AGI 1968

**FDMA**
Use frequency division multiple access

**feature extraction**
Use pattern recognition

**field aligned currents**
Electric currents aligned along magnetic fields. 1988

**finite-state machines**
Use Turing machines

**flats (landforms)**
A general term for level or nearly level surfaces or small areas of land marked by little or no relief such as plains. Also, nearly level regions that visibly display lower relief than their surroundings. Used for adobe flats and salt flats. AGI 1974

**flood control**
The prevention or reduction of damage caused by flooding, as by containing water in reservoirs removed from areas where it would do damage, improving channel capacity to convey water past or through critical areas with the least amount of damage, and diverting excess water into bypasses or floodways. AGI 1976

**flood plains**
The surfaces or strips of relatively smooth land adjacent to river channels, constructed by the present rivers in their existing regimens and covered with water when the rivers overflows. AGI 1973

**floods**
Rising bodies of water (as in streams, lakes, or seas, or behind dams) that overtop their natural or artificial confines and that cover land not normally underwater. Especially, any relatively high streamflows that overflow their banks in any reach of the stream, or that are measured by gage height of discharge quantity. AGI 1968

**fluid transpiration**
Use transpiration

**folds (geology)**
Curves or bends of a planar structure such as rock strata, bedding planes, foliation, or cleavage. Folds are usually a product of deformation, although their definition is descriptive and not genetic and may include primary structures. Used for nappes. AGI 1973

**fossil fuels**
A general term for any hydrocarbons that may be used for fuel; chiefly petroleum, natural gas, and coal. AGI 1974

**free electrons**
Electrons which are not bound to an atom. SP.7 1968

**frequency division multiple access**
A method of providing multiple access to communication satellites in which the transmissions from a particular earth station occupy a particular assigned frequency band. In the satellite the signals are simultaneously amplified and transposed to a different frequency band and retransmitted. The earth station identifies its receiving channel according to its assigned frequency band in the satellite signal. Used for FDMA. IEEE 1979

**frequency ranges**
Specifically designated parts of the frequency spectrum. IEEE 1968

**frontal areas (meteorology)**
Use fronts (meteorology)

**fronts (meteorology)**
The contacts at the Earth's surface between two different air masses commonly cold and warm, that generally move in an easterly direction. Used for frontal areas (meteorology) and weather fronts. AGI 1968

**G**

**gaps (geology)**
Ravines or gorges cut deeply through a mountain ridge, or between hills or mountains. Used for cols and passes. AGI 1975

**gas discharge counters**
Use gas discharge tubes
GAS DISCHARGE TUBES

gas discharge tubes
Evacuated enclosures containing a gas at low pressure that permits the passage of electricity through the gas upon application of sufficient voltage. Note: The tubes are usually provided with metal electrodes, but one form permits an electrodeless discharge with induced voltage. Used for discharge tubes and gas discharge counters. IEEE 1968

- geoastrophysics
  Use astrophysics

- geoastrophysics
  Use geophysics

- geochemistry
  The study of the distribution of the amounts of the chemical elements in minerals, ores, rocks, soils, water, and the atmosphere. Also, the study of the circulation of the elements in nature, on the basis of the properties of the atom and ions. A major concern of geochemistry is the synoptic evaluation of the abundance of the elements of the Earth's crust and in major classes of rocks and minerals. AGI 1968

- geochronology
  The study of time in relationship to the history of the Earth, especially by the absolute age determination and relative dating systems developed for this purpose. AGI 1968

- geodesy
  The science which deals mathematically with the size and shape of the earth, and the earth's external gravity field, and with surveys of such precision that overall size and shape of the earth must be taken into consideration. Used for earth figure, earth shape, and Izsak ellipsoid. SP-7 1968

- Geodimeters
  Trade name of electronic-optical devices that measure ground distances precisely by electronic timing and phase comparison of modulated light waves that travel from a master unit to a reflector and return to a light-sensitive tube where an electric current is set up. They are normally used at night and are effective with first-order accuracy up to distances of 5-40 km (3-25 miles). The term is derived from GEO detic DI stance METER. AGI 1968

- geoelectricity
  The Earth's natural electric fields and phenomena. It is closely related to geomagnetism. AGI 1968

- geomagnetic field
  Use geomagnetism

- geomagnetism
  The magnetic phenomena, collectively considered, exhibited by the earth and its atmosphere and by extension the magnetic phenomena in interplanetary space. The study of the magnetic field of the earth. Used for geomagnetic field and terrestrial magnetism. SP-7 1968

- geophysics
  The physics of the earth and its environment, i.e., earth, air, and (by extension) space. Classically, geophysics is concerned with the nature of and physical occurrences at and below the surface of the earth including, therefore, geology, oceanography, geodesy, seismology, and hydrology. The trend is to extend the scope of geophysics to include meteorology, geomagnetism, astrophysics, and other sciences concerned with the physical nature of the universe. Used for geoastronomy. SP-7 1968

NASA THESAURUS SUPPLEMENT (PART 3)

- Glauber coefficient
  Use Mach number

- gypsum
  The mineral consisting primarily of fully hydrated calcium sulfate (calcium sulfate dihydrate). ASTM (C 11, C-11) 1968

- gyrocompasses
  Compasses consisting of a continuously driven Foucault gyroscope whose supporting ring normally confines the spinning axis to a horizontal plane, so that the earth's rotation causes the spinning axis to assume a position in a plane passing through the earth's axis, and thus to point to true north. IEEE 1968

- hard coal
  Use anthracite

- heat treatment
  Heating and cooling a solid metal or alloy in such a way as to obtain desired conditions or properties. SP-7 1968

- hinge moments
  Use torque

- hydromagnetic waves
  Use magnetohydrodynamic waves

- impulse generators

- incoherent scattering
  The phenomena of generating waves with random variations in phase, amplitude, polarization, and direction of propagation when an incident wave encounters matter. IEEE 1968

- indexes (documentation)
  Ordered reference lists of contents of a file or document, together with keys or reference notations for identification or location of those contents. IEEE 1968

- induction heating
  The generation of heat in any conducting material by means of magnetic flux-induced currents. IEEE 1968

- induction motors
  AC motors in which the primary winding on one member (usually the stator) is connected to the power source and a polyphase secondary winding or a squirrel-cage secondary winding on the other member (usually the rotor) carries induced current. IEEE 1971

- inliers (landforms)
  Areas or groups of rocks surrounded by rocks of younger age. AGI 1981

- inshore zones
  Use beaches
**ions**
Charged atoms or molecularly bound groups of atoms; sometimes also free electrons or other charged subatomic particles. In atmospheric electricity, any of several types of electrically charged submicroscopic particles normally found in the atmosphere. Atmospheric ions are of two principal types, small ions and large ions, although a class of intermediate ions has occasionally been reported. In chemistry, atoms or specific groupings of atoms which have gained or lost one or more electrons, as the chloride ion or ammonium ion. Such ions exist in aqueous solutions and in certain crystal structures.

SP-7 1968

**islands**
Tracts of land smaller than a continent, surrounded by the water of oceans, seas, lakes, or streams. The term has been loosely applied to land-locked and submerged areas, and to land cut off on two or more sides by water, such as peninsulas.

AGI 1968

**Izsak ellipsoid**
Use geodesy

J

**jetties**
Use breakwaters

K

**klippen**
Use outliers (landforms)

**knowledge based systems**
Use expert systems

L

**lakes**
Inland bodies of standing water occupying depressions in the Earth's surface, generally of appreciable size (larger than a pond) and too deep to permit vegetation (excluding sub aqueous vegetation) to take root completely across the expanse of water; the water may be fresh or saline. The term includes expanded parts of rivers, reservoirs behind dams, or lake basins intermittently or formerly covered by water.

AGI 1968

**laminated materials**
Use laminates

**laminates**
Products made by bonding together two or more layers of material or materials. Used for laminated materials, laminations, and multilayer structures.

ASTM (C 582, C-3) 1968

**laminations**
Use laminates

**lava**
A general term for a molten extrusive; also, for the rock that is solidified from it.

DOE 1968

**LED (diodes)**
Use light emitting diodes

light emitting diodes
Pn junction semiconductor devices that emit incoherent optical radiation when biased in the forward direction. Used for LED (diodes).

IEEE 1971

**luster**
The appearance characteristic of a specimen due to pronounced changes in intensity of light reflected from elemental areas of the specimen when the angle of illumination or view is changed. Used for dullness.

ASTM (E 284, E-12) 1968

M

**Mach number**
A number expressing the ratio of the speed of a body or a point on a body with respect to the surrounding air or other fluid, or the speed of a flow, to the speed of sound in the medium; the speed represented by this number. Used for critical Mach number and Glauert coefficient.

SP-7 1968

**macromolecules**
Use molecules

**magnetic field intensity**
Use magnetic flux

**magnetic fields**
Regions of space wherein magnetic dipoles would experience a magnetic force or torque; often represented as the geometric array of the imaginary magnetic lines of force that exist in relation to magnetic poles.

SP-7 1968

**magnetic flux**
The magnetic force exerted on an imaginary unit magnetic pole placed at any specified point of space. It is a vector quantity. Its direction is taken as the direction toward which a north magnetic pole would tend to move under the influence of the field. If the force is measured in dynes and the unit pole is a cg unit pole, the field intensity is given in oersteds. Used for magnetic field intensity.

SP-7 1968

**magnetic poles**
Either of the two places on the surface of the earth where the magnetic dip is 90 deg., that in the Northern Hemisphere (at, approximately, latitude 73 deg. 8 N, longitude 101 deg. W in 1955) being designated north magnetic pole, and that in the Southern Hemisphere (at, approximately, latitude, 68 deg. S, longitude 144 deg. E in 1955) being designated south magnetic pole. Either of those two points of a magnet where the magnetic force is the greatest. In magnetic theory, a fictitious entity analogous to a unit charge of electrostatic theory, in nature only dipoles, not isolate magnetic poles exist.

SP-7 1968

magnetohydrodynamic waves
Low frequency waves in an electrically highly conducting fluid (such as a plasma) permeated by static magnetic fields. The restoring forces of the waves are, in general, the combination of a magnetic tensile stress along the magnetic field lines and the comprehensive stress between the field lines and the fluid pressure. Used for Alfven waves, hydromagnetic waves, and plasma sound waves.

IEEE 1968

**man tended free flyers**
Intermittently manned spacecraft or platforms designed primarily to carry out experiments in reduced gravity and life science.

NASA THESAURUS SUPPLEMENT (PART 3)

**used geodesy**

**used expert systems**

**used breakwaters**

**used luminous**

**used laminated**

**used luminates**

**used luster**

**used lasers**

**used laminations**

**used lava**

**used LED (diodes)**

**used light emitting diodes**

**used luster**

**light emitting diodes**

**magnetic fields**

**magnetic flux**

**magnetic poles**

**magnetohydrodynamic waves**

**man tended free flyers**

**LED (diodes)**

**light emitting diodes**
MASS DRIVERS

research. They also serve as annexes or components of space stations. Used for MTTF (space station).

mass drivers
Electromagnetic devices for the linear acceleration of projectiles or payloads. Applications include orbital insertion and transfer, propulsion systems, and hypervelocity accelerators.

matter-antimatter propulsion
Spacecraft propulsion by use of matter-antimatter annihilation reactions.

• microphones
Electroacoustic transducers which receive acoustic signals and deliver corresponding electric signals. SP-7 1968

• minerals
Naturally occurring inorganic elements or compounds having an orderly internal structure and characteristic chemical compositions, crystal forms, and physical properties. AGI 1968

minimization
Use optimization

mixing layers (fluids)
Fluid layers in which multicomponent mixing occurs. 1988

• molecular flow
The flow of gas through a duct under conditions such that the mean free path is greater than the largest dimension of a transverse section of the duct. SP-7 1988

• molecular weight
The weight of a given molecule expressed in atomic weight units. SP-7 1988

• molecules
Aggregates of two or more atoms of a substance that exists as a unit. Used for macromolecules. SP-7 1988

MS DOS (operating system)
Use disk operating system (DOS)

• MTFF (space station)
Use man tended free flyers

• multilayer structures
Use laminates

• multiple access
The allocation of communication system resources (output) among multiple users by means of power, bandwidth, and power assignment singly or in combination. 1979

N

• nappes
Use folds (geology)

• navigation
The practice or art of directing the movement of a craft from one point to another. Navigation usually implies the presence of a human, a navigator, aboard the craft. SP-7 1968

NASA THESAURUS SUPPLEMENT (PART 3)

• optical depth
Use optical thickness

• optical thickness
Specifically, in calculations of the transfer of radiant energy, the mass of a given absorbing or emitting material lying in a vertical column of unit cross sectional area and extending between two specific levels. Used for optical depth. SP-7 1968

optimization
The procedure used in the design of a system to maximize or minimize some performance index. May entail the selection of a component, a principle of operation, or a technique. IEEE 1968

optoelectronic devices
Electronic devices combining optic and electric ports. IEEE 1968

• ores
Use minerals

• outliers (landforms)
Areas or groups of rocks surrounded by rocks of older age. Used for klippen. AGI 1977

P

parametric amplifiers
Inverting parametric devices used to amplify a signal without frequency translation from input to output. Used for parametric oscillators and reactance amplifiers. IEEE 1968

parametric oscillations
Use parametric amplifiers

• passes
Use gaps (geology)

pattern recognition
The identification of shapes, forms and configurations by automatic means. IEEE 1968

payload stations
The locations in the Space Shuttles' flight decks and cargo bay at which payloads are mounted. 1977

• payloads
Originally, the revenue producing portions of an aircraft's load, e.g., passengers, cargo, and mail. By extension, that which an aircraft, rocket, or spacecraft carries over and above which is necessary for the operation of the vehicle for its flight. SP-7 1968

• peninsulas
Elongated bodies or stretches of land nearly surrounded by water and connected with a larger land area, usually by a neck or an isthmus. The term is derived from the Latin 'paeninsula' 'almost island'. AGI 1968

• pervance
The quotient of the space-charge-limited cathode current by the three-halves power of the anode voltage in a diode. Note: Pervance is the constant G appearing in the Child-Langmuir-Schottky equation. IEEE 1968


Petri nets
Abstract, formal models of the information flow in systems with discrete sequential or parallel events. The major use has been the modeling of hardware systems and software concepts of computers.

- phase modulation
Angle modulation in which the angle of a sine wave carrier is caused to depart from the carrier angle by an amount proportional to the instantaneous value of the modulation wave. Combinations of phase and frequency modulation are commonly referred to as frequency modulation.

- phase shift keying
The form of phase modulation in which the modulating function shifts the instantaneous phase of the modulated wave among predetermined discrete values.

- photocathodes
Electrodes used for obtaining a photoelectric emission when irradiated. Used for photoelectric cathodes.

- photoconductivity
The conductivity increase exhibited by some nonmetallic materials, resulting from the free carriers generated when photon energy is absorbed in electronic transitions. The rate at which free carriers are generated, the mobility of the carriers, and the length of time they persist in conducting states (their lifetime) are some of the factors that determine the amount of conductivity change. Used for photoresistivity

- photodiodes
Diodes designed to produce photocurrent by absorbing light. Photodiodes are used for the conversion of optical power to electrical power.

- photoelectric cathodes
Use photocathodes

- photoelectric emission
The emission of electrons from atoms or molecules. Used for photocurrents, photoemission, and photoemissivity.

- photemission
Use photoelectric emission

- photomissivity
Use photoelectric emission

- photographic emulsions
The light-sensitive coatings on photographic film consisting usually of silver halide.

- photoresistivity
Use photoconductivity

- photovoltaic effect
The production of a voltage difference across a pn junction resulting from the absorption of photon energy. The voltage difference is caused by the internal drift of holes and electrons.

- piezoelectric transducers
Transducers that depend for their operation on the interaction between electric charge and the deformation of certain materials having piezoelectric properties. Note: Some crystals and specially processed ceramics have piezoelectric properties.

- piezoelectricity
The property exhibited by some asymmetrical crystalline materials which when subjected to strain in suitable directions develop polarization proportional to the strain.

- plan position indicators
Display devices on which target blips are shown in plan position, thus forming a map-like display, with radial distance from the center representing range and with the angle of the radius vector representing azimuth angle. Used for PPI (position indicators)

- plasma sound waves
Use magnetohydrodynamic waves

- plastics
Materials that contain as an essential ingredient one or more organic polymeric substances of large molecular weight, are solid in their finished state, and at some stage in their manufacture or processing into finished articles can be shaped by flow.

- PPI (position indicators)
Use plan position indicators

- processors (computers)
Use central processing units

- prospecting
Use exploration

- radar targets
Objects which reflect a sufficient amount of a radar signal to produce an echo signal on the radar screen.

- radio frequency radiation
Use radio waves

- radio propagation
Use radio transmission

- radio sources (astronomy)
Celestial objects that emit radio waves.

- radio transmission
The transmission of signals by means of radiated electromagnetic waves other than light or heat waves. Used for radio propagation and radio signal propagation.

- radio transmitters
Devices for producing radio-frequency power, for purposes of radio transmission.

- radio waves
Waves produced by oscillation of an electric charge at a frequency useful for radio communication. Used for radio frequency radiation.

- reactance amplifiers
Use parametric amplifiers
receivers
Initial components or sensing elements of measuring systems. For example, the receiver of a thermoelectric thermometer is the measuring thermocouple. Instruments used to detect the presence and to determine the information carried by electromagnetic radiation. Receivers include circuits designed to detect, amplify, rectify, and shape the incoming radio frequency signals received at the antenna in such a manner that the information containing component of the received energy can be delivered to the desired indicating of recording equipment. Used for receiving systems.  

SP-7 1968

receiving systems
Use receivers

reduction (mathematics)
Use optimization

reefs
Chains of rocks, sand ridges, or coral at or near the surface of water.  

DOE 1973

reflectance
The ratio of the radiant flux reflected by a body to that incident upon it. Used for reflection coefficient and reflectivity.  

SP-7 1968

reflection
The process whereby a surface of discontinuity turns back a portion of the incident radiation into the medium through which the radiation approached.  

SP-7 1968

reflection coefficient
Use reflectance

reflectivity
Use reflectance

reinforced plastics
Plastics with some strength properties greatly superior to those of the base resin, resulting from the presence of high-strength fillers imbedded in the composition. Note: The reinforcing fillers are usually fibers, fabrics, or mats made of fibers. The plastic laminates are the most common and strongest.  

IEEE 1968

reluctance
The ratio of the magnetomotive force to the magnetic flux through any cross section of the magnetic circuit.  

IEEE 1968

reluctivity
Use reluctance

remote sensing
The collection of information about an object by a recording device that is not in physical contact with it. The term is usually restricted to mean methods that record reflected of radiated electromagnetic energy, rather than methods that involve significant penetration into the Earth. The technique employs such devices as cameras, infrared detectors, microwave frequency receivers, and radar systems.  

AGI 1980

resistivity
Use electrical resistivity

resonators
In radio and radar applications, circuits which will resonate at a given frequency, or over a range of frequencies, when properly excited.  

SP-7 1968

responders
Use transponders

riblets
Longitudinal striations forming V-shaped grooves on aerodynamic and hydrodynamic surfaces. The riblet devices act to reduce large-scale disturbances near the boundary layer. These grooves are dimensional on the order of the wall vortices and turbulent dimensions.  

1988

rocks
Naturally formed aggregates of mineral matter occurring in large masses or fragments. Used for stones (rocks).  

ASTM (D 653, D-18) 1968

rotational flow
Use vortices

salt flats
Use flats (landforms)

scars (geology)
Use erosion

sea walls
Use breakwaters

secondary radar
A radar technique or mode of operation in which the return signals are obtained from beacons, transponders, or repeaters carried by the targets, contrasted with primary radar in which the return signals are obtained by reflection from the targets.  

IEEE 1968

sediments
Solid fragmental materials that originate from weathering of rocks and are transported or deposited by air, water, or ice, or that accumulate by other natural agents, such as chemical precipitation from solution or secretion by organisms, and that form in layers on the Earth's surface at ordinary temperatures in a loose, unconsolidated form; e.g. sand, gravel, silt, mud, till, loess, and alluvium.  

AGI 1988

seismology
The study of earthquakes, by extension, the structure of the interior of the Earth via both natural and artificially generated seismic signals.  

DOE 1968

shunts
Use circuits

sills
Use sediments

SOHO Mission
One of the joint NASA/ESA missions comprising the International Solar Terrestrial Program. The SOHO Mission will investigate the physical processes in the solar corona and solar wind and the structure and dynamics of the solar interior.  

1989

Solar and Heliospheric Observatory
Use SOHO Mission
VORTICES

- transpiration
  The passage of gas or liquid through a porous solid (usually under conditions of molecular flow). Used for fluid transpiration. SP-7 1968

- transponders
  Combined receiver and transmitter whose function is to transmit signals automatically when triggered by an interrogator. Used for responders. SP-7 1968

- trapped vortices
  Air flow in rotary motion but trapped relative to leading edge vortex separation, which increases not only lift but also drag. The trapped vortices result in thrust and reduced drag. Used for vortex traps. 1980

- trend analysis
  A management tool for evaluating variation in data with the ultimate objective of forecasting future events based upon an examination of past results. 1989

- trigger circuits
  Circuits that have two conditions of stability, with means for passing from one to the other when certain conditions are satisfied, either spontaneously or through application of an external stimulus. IEEE 1968

Turing machines
Mathematical models of devices that change their internal states and read from, write on, and move potentially infinite tapes, all in accordance with their present states, thereby constituting models for computerlike behavior. Invented in the 1930's, they are named after their inventor, A.M. Turing. Used for finite-state machines. IEEE 1968

V

- vacuum
  A given space filled with gas at pressures below atmospheric pressure. Used for aspiration. SP-7 1968

- vortex columns
  Use vortices

- vortex disturbances
  Use vortices

- vortex flow
  Use vortices

- vortex traps
  Use trapped vortices

- vortex tubes
  Use vortices

- vortices
  In fluids, circulations drawing their energy from flows of much larger scale and brought about by pressure irregularities. Used for eddies, rotational flow, vortex columns, vortex disturbances, vortex flow, and vortex tubes. SP-7 1968
W

• water
Dihydrogen oxide (molecular formula H2O). The word is used ambiguously to refer to the chemical compound in general and to its liquid phase; when the former is meant, the term water substance is often used.  
SP-7 1968

wattmeters
Instruments for measuring the magnitude of the active power in an electric circuit. They are provided with a scale usually graduated in either watts, kilowatts, or megawatts. If the scale is graduated in kilowatts or megawatts, the instruments are usually designated as kilowattmeters or megawattmeters. IEEE 1968

• wave radiation
Use electromagnetic radiation

• weather fronts
Use fronts (meteorology)

• weathering
The process of disintegration and decomposition as a consequence of exposure to the atmosphere, to chemical action, and to the action of frost water and heat. ASTM (D 653, D-18) 1968

whip antennas
Thin flexible monopole antennas. IEEE 1968

whispering gallery modes
Electromagnetic (or elastic) waves that differ in frequency by more than an order of magnitude. 1988
ACCESS CONTROL
Definition replaced by IEEE definition

CHAOS
Scope note deleted

COMMUTER AIRCRAFT
USE GENERAL AVIATION AIRCRAFT
Deleted, term made postable

COMMUTER AIRCRAFT
USE PASSENGER AIRCRAFT
Deleted, term made postable

DOPPLER RADAR
Definition replaced by IEEE definition

LEARNING MACHINES
Transferred to MACHINE LEARNING

MAGNETOHYDRODYNAMIC WAVES
Definition replaced by IEEE definition

MASS DRIVERS (PAYLOAD DELIVERY)
Transferred to MASS DRIVERS

SATELLITE POWER TRANSMISSION (TO EARTH)
Transferred to SATELLITE POWER TRANSMISSION

TOLMEIN-SCHLICHTING WAVES
Transferred to TOLLMEIN-SCHLICHTING WAVES

TRAPPED VORTEXES
Transferred to TRAPPED VORTICES