NASA THESAURUS SUPPLEMENT

A three-part cumulative update of the 1998 edition of the NASA Thesaurus

July 2000
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NASA THESAURUS SUPPLEMENT

A three-part cumulative update of the 1998 edition of the NASA Thesaurus

National Aeronautics and Space Administration

July 2000
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Introduction


**Part 1 (Hierarchical Listing)** contains the full hierarchical structure for each new term along with all new cross references and term definitions.

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For a fuller explanation, see the Introduction (pages viii–xi) in the printed version of the 1998 NASA Thesaurus, Volume 1.

**Part 2 (Rotated Term Display)** is a ready reference tool which provides additional ‘access points’ to the thesaurus terminology. It contains the postable terms and nonpostable cross references found in the Hierarchical Listing (Part 1) arranged in a KWIC (key-word-in-context) index.

**Part 3 (Changes)** is a listing of deletions or changes to postable terms or USE references made since the 1998 edition of the NASA Thesaurus. To control the size of the Supplement, only significant changes in term hierarchies and related term lists are presented.

NOTE: Other resources and products related to the NASA Thesaurus can be found at the following URL: [http://www.sti.nasa.gov/thesfrm1.htm](http://www.sti.nasa.gov/thesfrm1.htm).

In addition to the above mentioned resources, a thesaurus listserv has been set up for submitting candidate terms and discussion of related lexicographical issues. A listing of candidate and accepted new terms is posted monthly. To subscribe to this listserv, send an e-mail message to listserv@sti.nasa.gov. Leave the subject line blank and in the message section, type **SUBSCRIBE THESAURUS–L <Your name>**. (Should you wish to cancel your subscription, send a message to the same address with **UNSUBSCRIBE** in the message section.)

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E–mail: help@sti.nasa.gov
Fax: (301) 621–0134
Telephone: (301) 621–0114
ACE satellite
USE Advanced Composition Explorer

Advanced Composition Explorer (added December 1999)
DEF Explorer spacecraft (launched August 25, 1997) carrying six high-resolution sensors and three monitoring instruments for sampling low-energy particles of solar origin and high-energy galactic particles. From a vantage point approximately 1/100 of the distance from the Earth to the Sun, the Advanced Composition Explorer (ACE) can perform measurements over a wide range of energy and nuclear mass, under all solar wind flow conditions and during both large and small particle events including solar flares. When reporting space weather ACE can provide an advance warning of geomagnetic storms.

UF ACE satellite
GS artificial satellites
  - scientific satellites
    - Explorer satellites
    . Advanced Composition Explorer
RT energetic particles
galactic cosmic rays
interplanetary medium
solar corpuscular radiation
cosmic rays
solar wind
space weather

aeroshells (added May 1999)
DEF Aerodynamic structural shells that attach to, or comprise a portion of, the exterior of an aerospace vehicle or space probe, especially such structures that support atmospheric entry, aerobraking, aeroaist, or hypersonic flight.

GS aerodynamic configurations
  - aeroshells
RT aeromanuevering
nose cones
reentry vehicles
spacecraft design
spacecraft shielding
spacecraft structures

Alpha Magnetic Spectrometer (added June 1998)

UF AMS (spectrometer)
GS measuring instruments
  - spectrometers
    - Alpha Magnetic Spectrometer
RT antimatter
Gerasinov counters
cosmic rays
dark matter
International Space Station
interstellar matter
magnetic spectroscopy
space station payloads
spaceborne astronomy

AM-1 (EOS) spacecraft
USE Terra spacecraft

AMS (spectrometer)
USE Alpha Magnetic Spectrometer

anisoplanatism (added May 1999)
DEF In adaptive optics (AO) systems, a performance-degrading effect that arises whenever light from the wave-front sensor beacon and light from the target object sample different volumes of optical turbulence. This effect results in an increased value of the aperture-averaged residual phase variance after AO compensation, which causes an exponential decrease in system performance.

RT aberration
  - adaptive optics
  - atmospheric correction
  - atmospheric optics
RT antennas
  - automatic gain control
  - directional antennas
RT effectiveness
  - high gain
  - signal reception

antenna gain (added June 1998)

GS amplification
  - antenna gain
RT antennas
  - automatic gain control
  - directional antennas

antiphase boundaries (added March 1998)

UF antiphase domains
  - APB (materials)
GS boundaries
  - antiphase boundaries
RT binary alloys
  - crystal dislocations
  - crystal lattices
  - crystal structure
  - grain boundaries
  - interfacial energy
  - intermetallics
  - microstructure
  - order-disorder transformations
  - solid solutions
  - solid-solid interfaces
  - superlattices
  - ternary alloys

antiphase domains
USE antiphase boundaries

APB (materials)
USE antiphase boundaries

archaeomagnetism
USE paleomagnetism

associative memory (added December 1999)
DEF A method or device for data storage in which data is identified by a part or properties of its content, rather than by an address or relative position.

UF associative storage

broadband antennas
USE antennas

Bi-Maxwell equation
USE Maxwell equation

Boeing 717 aircraft (added October 1998)
DEF Boeing 717 aircraft

GS Boeing aircraft
  - Boeing 717 aircraft
    - commercial aircraft
    - Boeing 717 aircraft
    - jet aircraft
    - turbofan aircraft
    - Boeing 717 aircraft
    - monoplane
    - Boeing 717 aircraft
    - passenger aircraft
    - Boeing 717 aircraft
    - transport aircraft
chain reactions (nuclear physics)
(added May 1999)
GS nuclear reactions
. nuclear fission
. chain reactions (nuclear physics)
RT fission products
neutrons

Bond number
(added December 1999)
DEF Dimensionless number representing the ratio between gravitational force and the surface tension of a bubble, drop, or meniscus
GS dimensionless numbers
RT drops (liquids)
gravitational effects
interfacial tension
menisci

carrier sense multiple access
(added April 2000)
DEF A data transmission protocol for multi-access networks where each node in the network senses traffic and waits for it to clear before transmitting; if two or more nodes transmit simultaneously, they wait a random interval before attempting to re-transmit.
GS protocol (computers)
carrier sense multiple access
telecommunication
. multiple access
carrier sense multiple access
transmission
. signal transmission
data transmission
. multiple access
carrier sense multiple access
RT communication networks
computer networks
Ethernet
local area networks
packet transmission

chain reactions (chemistry)
(added May 1999)
GS chemical reactions
chain reactions (chemistry)
RT chemical lasers
combustion chemistry

Cooper–Harper ratings
(added August 1999)
GS flight characteristics
. pilot ratings
Cooper–Harper ratings
RT aircraft performance
helicopter performance

corrugated waveguides
(added February 1998)
GS waveguides
corrugated waveguides
RT gratings (spectra)
optical waveguides
waveguide antennas

cosmions
USE weakly interacting massive particles

cost benefit analysis
USE cost analysis
cost effectiveness

critical current
(added December 1999)
DEF A current value in a superconductive material, at a particular constant temperature and in the absence of a magnetic field, below which the material is superconducting and above which the material behaves normally.
copper compounds
cuprates
RT BSCCO superconductors
copper oxides
YBCO superconductors

cycloaddition
(added June 1998)
DEF Pericyclic chemical reaction in which unsaturated molecules combine to form a cyclic compound under the influence of heat or light.
cooperative learning
USE pilotless aircraft
reconnaissance aircraft

data mining
(added April 2000)
DEF The extraction of patterns from large data sets in order to discover previously unknown and potentially useful information.
knowledge extraction
USE data mining
information analysis
data mining
RT cluster analysis
data retrieval
Deep Space 1 Mission
(added October 1998)
DEF First of several technology demonstration missions supporting the NASA New Millennium Program. Advanced technologies include an ion propulsion system, solar concentrator arrays, autonomous navigation and control systems, an integrated camera and imaging spectrometer, and several telecommunications and microelectronics devices. The mission plan includes a flyby of Asteroid 1992 KD.

Delta 3 launch vehicle
(added October 1998)
GS launch vehicles . Delta launch vehicle . Delta 3 launch vehicle

Delta 4 launch vehicle
(added October 1998)
GS launch vehicles . Delta launch vehicle . Delta 4 launch vehicle
dielectric loss
(added April 2000)
DEF The electric energy that is converted into heat in a dielectric material subjected to a changing electric field.
dielectric waveguides
(added February 1998)
GS waveguides . dielectric waveguides

differential games
(added October 1998)
GS games . differential games . minimax technique . optimal control . pursuit-evasion games . stochastic processes
digital cameras
(added July 1998)
GS optical equipment . cameras . digital cameras . photographic equipment . cameras . digital cameras
RT CCD cameras . digital systems . digital techniques . photogrammetry . television cameras . video equipment
document indexing
USE indexing (Information science)

DS1 (space mission)
USE Deep Space 1 Mission
dubium
(added May 1998)
GS chemical elements . dubium
RT rutherfordium . seaborgium
EAM (physical chemistry)
USE embedded atom method
EAP (polymers)
USE electroactive polymers
e-commerce
USE electronic commerce
ekranoplanes
USE wing-in-ground effect vehicles
electroactive polymers
(added June 2000)
UF EAP (polymers)
RT actuators . conducting polymers . electromechanical devices . electrophotographic fluids . electrostriction . microelectromechanical systems . polymers . robot arms
electrochemical synthesis
(added January 2000)
DEF A chemical synthesis reaction that is induced by an electric current.
electronic commerce
(added April 2000)
DEF The buying and selling of goods and services via the Internet or other computer communications network.

enantiomers
enantiomeric compounds
USE enantiomers

enantiomers
(added August 1998)
DEF Isomeric pairs whose crystaline forms or molecular structures are non-superimposable mirror images.

enantiomorphs
USE enantiomers
e-mail
USE electronic mail
embedded atom method
(added February 1998)
DEF A semiempirical calculation method developed by Daw and Baskes for determining the energetics of atoms in a bulk environment. The original form of the method was based on density functional theory and was intended primarily for tight-packed transition metals. More recent modifications have extended the applicability of the method to a large number of elements in the periodic table.
enzymes
USE enantiomers

elves
(added January 2000)
DEF Transient air glow events observed near 90 km, nearly simultaneously with a strong cloud-to-ground lightning stroke. They often precede sprites, which may occur at lower altitudes a few milliseconds later. It is believed that elves are the result of wave heating by very low frequency (VLF) radio pulses emitted by the lightning discharge current.

electrochemical synthesis
USE electroactive polymers

elvish
electrochemical synthesis
USE electroactive polymers

eltroactive polymers
USE electroactive polymers

electron structure
(added April 1999)
SN (THE TERM 'ATOMIC STRUCTURE' WAS USED FOR THIS CONCEPT PRIOR TO MAY 1999)
RT atomic structure . band structure of solids . electron energy . electron orbitals . electron states . energy bands . energy gaps (solid state) . energy levels . Fermi liquids
electromagnetic radiation
USE elves

e-commerce
USE electronic commerce

embedded atom method
USE embedded atom method

(e-commerce)
USE embedded atom method

embedded atom method
USE embedded atom method
environmental cleanup

enantiomers
RT chirality
GS crystal structure
GS isomorphism
GS molecular structure
GS stereochirality
GS symmetry

enantiomorphs
USE enantiomers

environmental cleanup
(added February 1998)
GS cleaning
GS environmental cleanup
RT decontamination
RT environment management
RT environment protection
GS hazardous wastes
GS oil pollution
GS oil slicks
GS pollution control
GS reclamation
GS soil pollution
GS waste disposal
GS waste treatment
GS water pollution
GS water treatment

EOS AM-1 spacecraft
USE Terra spacecraft

Ethernet
(added January 2000)
DEF Computer network protocol originally developed in the 1970s for local area network technology; uses carrier sense multiple access with collision detection (CSMA/CD), coaxial cable, and broadcast transmission.
GS protocol (computers)
RT Ethernet

Euler–Bernoulli beam theory
USE Euler–Bernoulli beams

Euler–Bernoulli beams
(added April 1998)
UF Euler–Bernoulli beam theory
GS structural members
GS beams (supports)
RT Euler–Bernoulli beams

RT axial strain
RT bending
RT bending vibration
RT dynamic structural analysis
RT elastic properties
RT mathematical models
RT partial differential equations
RT structural analysis
RT Timoshenko beams

evanescent waves
(added March 1998)
GS surface waves
GS evanescent waves
RT acoustic impedance
RT evanesence
RT fiber optics
RT internal waves
RT plane waves
RT propagation modes
RT reflected waves
RT wave propagation
RT waves

FDTD (mathematics)
USE finite difference time domain method

ferroelectric materials
(added June 1998)
GS ferroelectric materials
RT ceramics
RT ferroelasticity
RT ferroelectric materials

ferroelectricity
(added June 1998)
GS mechanical properties
GS elastic properties
GS ferroelectricity
RT crystal structure
RT domain wall
RT ferroelastic materials
RT ferroelectricity
RT phase transformations
RT shape memory alloys
RT smart materials

fiber pushout
(added September 1999)
GS releasing
RT fiber pushout

field tests
(added November 1998)
GS Sn (EXCLUDES TESTS OF ELECTRIC, MAGNETIC, OR ELECTROMAGNETIC FIELDS)
DEF Tests carried out in the actual setting in which the subject device is intended to operate.
GS environmental tests
GS performance tests

field–programmable gate arrays
(added April 2000)
GS circuits
GS field–programmable gate arrays
GS integrated circuits
GS field–programmable gate arrays
GS programmable logic devices
GS field–programmable gate arrays

finite difference time domain method
(added April 1999)
GS analysis (mathematics)
GS finite difference time domain method

flow noise
(added March 2000)
DEF Noise produced by the flow of fluids around or through a body; the pressure variations associated with a turbulent flow field.
GS elastic waves
GS sound waves
GS noise (sound)
GS flow noise
GS aerodynamic noise
GS blade slap noise
GS propeller noise
GS siren noise

free–space optical communication
(added June 1998)
GS telecommunication
GS communication
GS optical communication
GS free–space optical communication

free–space optical interconnects
(added June 1998)
GS optical interconnects
GS free–space optical interconnects

fullerides
(added February 1998)
GS carbon compounds
GS fullerides
GS alkali metal compounds
GS chemical compounds
GS doped crystals
GS fullerenes
GS superconductors (materials)

fuselage-wing stores
USE wing–fuselage stores

fusion propulsion
(added September 1999)
GS propulsion
GS nuclear propulsion
GS fusion propulsion
GS inertial confinement fusion
GS nuclear electric propulsion
GS nuclear fusion
nuclear rocket engines
plasma propulsion
spacecraft propulsion

Gabor filters
(added February 1998)
GS image filters
Gabor filters
RT computer vision
\( \infty \) filters
Gabor transformation
image analysis
image processing
low pass filters
neural nets
spatial filtering
textures

Gabor transformation
(added February 1998)
GS transformations (mathematics)
Gabor transformation
RT Fourier transformation
Gabor filters
holography
image processing
signal analysis
wavelet analysis
games
(added October 1998)
GS games
. differential games
. pursuit-evasion games
. war games
. zero sum games
RT control theory
game theory
optimization

Genesis mission
(added February 1999)
DEF A space mission to collect solar wind
samples from a halo orbit about the sun–Earth L1
point for two years, returning those samples to
Earth in 2003 for analysis and examination.
Analysis of the samples collected by the mission
will contribute to an understanding of the origins
of the solar system.
GS space missions
Genesis mission
RT solar system evolution
solar wind
gluocorticoids
(added December 1998)
DEF Adrenocortical steroid hormones that are
involved in the metabolism of fats, proteins, and
carbohydrates, and have anti-inflammatory
properties.
GS organic compounds
. lipids
. steroids
. . corticosteroids
. . . gluocorticoids
secretions
. endocrine secretions
. . hormones
. . . corticosteroids
. . . . gluocorticoids
RT adrenal gland
atrophy
carbohydrate metabolism
hormone metabolism
hypokinesia
lipid metabolism
muscles
protein metabolism

Godunov method
(added February 1998)
DEF Non-oscillatory finite-volume scheme
that incorporates the exact or approximate solution
to the Riemann initial-value problem, or a
generalization of it.
GS analysis (mathematics)
. numerical analysis
. . finite volume method
. . . Godunov method
procedures
RT approximation
Cauchy problem
Cauchy–Riemann equations
computational fluid dynamics
Euler equations of motion
finite difference theory
shock wave interaction
supersonic flow

GOES 10
(added March 2000)
GS artificial satellites
. meteorological satellites
. . GOES satellites
. . . GOES 10
. synchronous satellites
. . GOES satellites
. . . . GOES 10

greedy algorithms
(added March 2000)
DEF Any algorithm characterized by a
procedure that selects the most extreme element
from a set to satisfy a given goal. A recursive
procedure for constructing a set of objects from
the smallest possible elements.
GS mathematical logic
. algorithms
. . greedy algorithms
RT graph theory
heuristic methods
minimax technique
optimization

group technology (manufacturing)
(added April 2000)
DEF A manufacturing methodology where
production processes are organized into groups or
cells based on similarities in the manufacturing
requirements of product parts or production
equipment capabilities.
UF cellular manufacturing
. group technology (manufacturing)
. production engineering
. . group technology (manufacturing)
RT computer aided manufacturing
industrial management
operations research
process control (industry)
production management

H-2 control
(added February 1998)
GS automatic control
. optimal control
. . H-2 control
optimization
. . . H-2 control
RT control systems design
control theory
controllers
feedback control

Hale–Bopp comet
(added July 1998)
DEF Long-period comet discovered July 23,
1995, designated C/1995 C1
GS celestial bodies
. comets
. . Hale–Bopp comet
RT comet cloud

Hall thrusters
(added June 2000)
GS engines
. . rocket engines
. . . electric rocket engines
. . . . electrostatic engines
. . . . . Hall thrusters
RT electric propulsion
Hall accelerators
ion engines
plasma engines
spacecraft propulsion

halon
(added January 2000)
DEF A bromofluorocarbon compound that
was widely used as an agent for fire suppression
and explosion protection. After being recognized
as an ozone-depleting substance, the U.S.
production and import of halons was banned in
1994.
GS carbon compounds
. halocarbons
. . halon
halogen compounds
. bromine compounds
. . halon
. . . halocarbons
. . . . halon
RT fire extinguishers
flame retardants
fluorocarbons

hardware-in-the-loop simulation
(added February 1999)
UF hardware-in-the-loop tests
GS simulation
. . hardware-in-the-loop simulation
RT computerized simulation
control simulation
performance tests
systems simulation

hardware-in-the-loop tests
USE hardware-in-the-loop simulation

hassium
(added May 1998)
GS chemical elements
. hassium
RT bohrium
meitnerium

head up tilt
(added March 1998)
DEF Body posture while lying on a tilt table
with the head higher than the rest of the body
UF HUT (physiology)
GS posture
. . head up tilt
RT aerospace medicine
bed rest
bioastronautics
cardiovascular system
gravitational physiology
head down tilt
through an analysis of historical data, a phenomenon that has occurred in the past, and space
hindcasting

DEF The degree to which a substance is insoluble in water, or resists wetting or hydration.
DEF Metals or alloys having a high specific gravity; usually ones with a density greater than 5 grams per cubic centimeter.
DEF Metals or alloys having a high specific gravity; usually ones with a density greater than 5 grams per cubic centimeter.

heavy fermion superconductors
(added April 1999)
GS conductors

RT fermions

GS metals

RT cadmium

GS intermetallics

RT chromium

RT contamination

RT industrial wastes

RT lead (metal)

RT mercury (metal)

RT soil pollution

RT toxic hazards

RT zinc

hindcasting
(added July 1999)
DEF The process of reconstructing the time and space evolution of an atmospheric or oceanic phenomenon that has occurred in the past, through an analysis of historical data, a mathematical–model simulation of the processes involved, or a combination of data analysis and modelling.
DEF Calibration between two or more data sources, including (1) the comparison of data sets from different measurement systems through the comparison of the data with model calculations; (2) the mutual calibration of data from different measurement systems through the comparison of the data with model calculations; and (3) the calibration of multiple detectors on a single instrument through the comparison of data from each detector.
DEF An early exterior framework for the International Space Station to allow the first U.S. solar arrays to be temporarily installed on the Unity module for early power.
DEF The use of a specialized test aircraft to simulate the flight characteristics of another vehicle. The test aircraft is typically capable of duplicating the computed responses of the simulated vehicle through special aerodynamic and control system features.
DEF The representation of document content in a systematic, organized form to support information location, retrieval, or analysis.
DEF The use of a specialized test aircraft to simulate the flight characteristics of another vehicle. The test aircraft is typically capable of duplicating the computed responses of the simulated vehicle through special aerodynamic and control system features.
DEF The process of reconstructing the time and space evolution of an atmospheric or oceanic phenomenon that has occurred in the past, through an analysis of historical data, a mathematical–model simulation of the processes involved, or a combination of data analysis and modelling.
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DEF The process of reconstructing the time and space evolution of an atmospheric or oceanic phenomenon that has occurred in the past, through an analysis of historical data, a mathematical–model simulation of the processes involved, or a combination of data analysis and modelling.
DEF The representation of document content in a systematic, organized form to support information location, retrieval, or analysis.
Iridium network

DEF A 66-satellite wireless personal telecommunications network designed to provide worldwide telephone, paging, facsimile and data services to handheld or mobile equipment.

Java

(added December 1998)

GS languages

. . . scripting languages

. . . Java (programming language)

RT C++ (programming language)

Java (programming language)

(added December 1998)

GS programming languages

. . . high level languages

. . . Java (programming language)

RT C++ (programming language)

cloud waveguides

. . . beam waveguides

electron optics

Josephson tunneling

USE Josephson effect

kinking

(added April 1998)

RT bending

buckling

compression loads

cracking (fracturing)

deflection

displacement

fiber composites

folding

heating

twisting

wrinkling

knowledge discovery

USE data mining

knowledge extraction

USE data mining

Laves phases

(added August 1998)

GS solid phases

. . . Laves phases

RT alloys

crystal lattices

crystal structure

cubic lattices

interstitials

microstructure

phase transformations

leaders (meteorology)

(added August 1999)

GS electric current

. . . electric discharges

. . . lightning

. . . leaders (meteorology)

. . . stepped leaders

Lithium batteries

(added December 1999)

GS electrochemical cells

. . . electric batteries

. . . lithium batteries

. . . lithium sulfur batteries

RT storage batteries

Long March launch vehicles

(added January 1999)

GS launch vehicles

. . . Long March launch vehicles

RT Chinese space program

Chinese spacecraft

heavy lift launch vehicles

Mars Climate Orbiter

(added March 1998)

DEF One of two spacecraft comprising the Mars Surveyor 98 program, launched December 1998. After obtaining a polar, nearly circular orbit around Mars, the Orbiter will serve as a radio relay during the Lander surface mission, then begin monitoring the atmosphere, surface, and polar caps for a complete Martian year. The Orbiter carries two science instruments: the Pressure Modulated Infrared Radiometer and the Mars Color Imager.

Josephson effect

(added April 1999)

USE Josephson tunneling

kink bands

(added March 1998)

RT buckling

compression loads

edge dislocations

failure modes

fiber composites

microstructure

plastic deformation

reinforcing fibers

single crystals

MACHOs (astronomy)

USE massive compact halo objects

magnets

(added January 2000)

DEF Highly magnetized neutron stars believed to emit quasi-steady x-rays along with bursts of soft gamma rays—emissions powered by their magnetic energy. According to the magnetar theory, these stars form in some fraction of all supernovae. When they are young (with ages less than about 10,000 years) magnetars may be observed as soft gamma repeaters (SGRs) or anomalous X-ray pulsars.

magnetostratigraphy

(added September 1999)

DEF Nozzle devices used in some nuclear and plasma propulsion systems that utilize magnetic fields to direct and accelerate plasma flows, thereby providing thrust for propulsion.

magnetostratigraphy

(added September 1999)

DEF Nozzle devices used in some nuclear and plasma propulsion systems that utilize magnetic fields to direct and accelerate plasma flows, thereby providing thrust for propulsion.

magnetars

(added January 2000)

DEF Highly magnetized neutron stars believed to emit quasi-steady x-rays along with bursts of soft gamma rays—emissions powered by their magnetic energy. According to the magnetar theory, these stars form in some fraction of all supernovae. When they are young (with ages less than about 10,000 years) magnetars may be observed as soft gamma repeaters (SGRs) or anomalous X-ray pulsars.
Mars Global Surveyor

(added March 1999)

DEF Spacecraft and related mission designed to orbit Mars over a two year period and collect data on the surface morphology, topography, composition, gravity, atmospheric dynamics, and magnetic field. Launched November 1996.

UF MGS (spacecraft)

GS interplanetary spacecraft

Mars probes

Mars Global Surveyor

unmanned spacecraft

space probes

Mars probes

Mars Global Surveyor

RT Mars atmosphere

Mars missions

Mars Observer

Mars surface

Mars missions

Mars Polar Lander

Mars surface

Mars Surveyor 98 Orbiter

Mars global surveyor

Mars Surveyor 2001 Mission

(added July 1999)

GS space missions

Mars missions

Mars Surveyor 2001 Mission

RT Mars environment

Mars surface

Mars surface samples

Nasa space programs

Martian meteorites

USE SNC meteorites

Mars Surveyor 98 Program

(added March 1999)

DEF Mars exploration program consisting of two mission spacecraft—the Mars Climate Orbiter and the Mars Polar Lander. Two surface penetrating microprobes (part of the associated Deep Space 2 mission) for detecting water ice are also piggybacking on the Lander.

GS programs

Nasa programs

Nasa space programs

Mars Surveyor 98 Program

space programs

Nasa space programs

Mars Surveyor 98 Program

RT Mars atmosphere

Mars Climate Orbiter

Mars missions

Mars Polar Lander

Mindlin plate theory

USE Mindlin plates

Mars Polar Lander

(added March 1999)

DEF One of two spacecraft comprising the Mars Surveyor 98 program, launched January 1999. After a soft landing near the Martian south pole, the Lander will search for near-surface ice and possible surface records of cyclic climate change, and characterize physical processes key to the seasonal cycles of water, carbon dioxide and dust on Mars. Prior to landing, the Deep Space 2 microprobes will be released as part of a technology-validation mission related to multiple-lander spacecraft.

UF Mars Surveyor 98 Lander

GS interplanetary spacecraft

Mars probes

Mars Polar Lander

unmanned spacecraft

space probes

Mars probes

Mars Polar Lander

Mars atmosphere

Mars Climate Orbiter

Mars missions

Mars surface

Mars Surveyor 98 Program

Mindlin plates

(added April 1998)

UF Mindlin plate theory

Reissner–Mindlin plates

GS structural members

plates (structural members)

Mindlin plates

RT dynamic structural analysis

finite element method

free vibration

plate theory

Reissner theory

shear strain

structural analysis

structural vibration

thick plates

Mischmetal

(added June 1998)

DEF An alloy consisting of a natural mixture of rare-earth metals, used in electrode materials and hydrogen-storage alloys, as a general alloy addition, and in the production of some aluminum alloys and steels.

GS alloys

rare earth alloys

Mischmetal

RT alloying

aluminum alloys

cathodic coatings

cerium

desorption

electrode materials

intermetallics

steels

modified embedded atom method

USE embedded atom method

Mutsagenesis

(added June 2000)

DEF Induction or development of a genetic mutation via a natural environmental mutagen or through the methods of genetic engineering.

RT deoxyribonucleic acid

gene expression

genes

mutagens

mutations

radiation effects

Mindlin plates

(added April 1998)

Mindlin plate theory

USE Mindlin plates

Mischmetal

(added June 1998)

Mischmetal

Mindlin plate theory

USE Mindlin plates

Mischmetal

(added June 1998)

Mischmetal

Mindlin plates

(added April 1998)

Mindlin plate theory

Reissner–Mindlin plates

GS structural members

plates (structural members)

Mindlin plates

RT dynamic structural analysis

finite element method

free vibration

plate theory

Reissner theory

shear strain

structural analysis

structural vibration

thick plates

Mischmetal

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Mindlin plate theory

USE Mindlin plates

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Mindlin plate theory

USE Mindlin plates

Mischmetal

(added June 1998)

Mischmetal

Mindlin plate theory

USE Mindlin plates

Mischmetal

(added June 1998)

Mischmetal

Mindlin plate theory

USE Mindlin plates

Mischmetal

(added June 1998)

Mischmetal

Mindlin plate theory

USE Mindlin plates

Mischmetal

(added June 1998)

Mischmetal
nacelle wing configurations

USE wing nacelle configurations

nanosatellites

(added October 1998)

DEF Satellites with a total mass smaller than 13 kg incorporating miniaturized electronic and mechanical systems.

UF nanosats
GS nanosat
RT nanosatellites

noseatellite

(added June 2000)

DEF The creation of functional materials, devices, and systems through control of matter on the nanometer–length scale, exploitation of novel phenomena and properties at the nanometer scale.

GS technologies
RT nanotechnology

nanotubes

(added June 2000)

DEF Nanostructures having a closed, tubular morphology that can be single-walled or multi-walled. The structures are believed to be defect free, leading to high strength despite their low density; and can be either electrically conductive or semiconductive, depending on their helicity.

UF nanotubes
GS nanostructure (characteristics)
RT nanotubes

Next Generation Space Telescope project

(added December 1998)

DEF Project in the NASA Origins program with the goal of developing a spaceborne observatory to succeed the Hubble Space Telescope after 2005. The telescope is foreseen to have an aperture of 8 meters and be optimized to have an aperture of 8 meters and be optimized for near infrared wavelengths (0.6–10.6 microns) in order to enable the exploration of the most remote high redshift universe.

UF NGST project
GS programs

Next Generation Space Telescope project

RT astronomical observatories
infrared telescopes
NASA space programs
spaceborne telescopes

NGST project

USE Next Generation Space Telescope project

Nozomi Mars Orbiter

(added August 1998)

DEF A Japanese Mars mission spacecraft designed to study the Martian upper atmosphere and its interaction with the solar wind, and to develop technologies for use in future planetary missions. Specifically, instruments on the spacecraft enable the measurement of the structure, composition and dynamics of the ionosphere; aeronomy effects of the solar wind; the escape of atmospheric constituents, the intrinsic magnetic field, and dust in the upper atmosphere and in–orbit around Mars.

UF Planet-B spacecraft
GS interplanetary spacecraft
RT aeronomy

Nozomi Mars Orbiter

(added August 1998)

DEF Two Soviet spacecraft (Phobos 1 and 2, both launched in July 1988) designed to study the plasma environment in the Martian vicinity, the surface and atmosphere of Mars, and the surface composition of the Martian satellite Phobos. Other mission objectives included the study of the interplanetary environment and solar observations.

GS interplanetary spacecraft
RT Mars probes

optical interconnects

(added June 1998)

GS optical interconnects
RT connectors

orbit determination

(added December 1998)

GS orbit determination
RT Global Positioning System

PDS (spectroscopy)

USE photothermal deflection spectroscopy

perfectly matched layers

(added July 1998)

DEF In the area of computational electromagnetism, an absorbing boundary condition used for terminating infinite domain calculations in the finite-difference time-domain (FDTD) or finite element methods. The approach has also been extended to the analysis of some problems in acoustics.

UF PML (electromagnetism)
GS conditions
RT perfectly matched layers

photomasks

(added June 2000)

DEF Photopatterned masks, either rendered soluble or insoluble to chemical etchants when exposed to light, and are used in transferring circuit patterns in the production of integrated circuits.

RT photomasks

pilot ratings

(added August 1999)

DEF Subjective assessment of the handling and stability characteristics of an aircraft or other flight vehicle.

UF pilot opinion ratings
GS flight characteristics
...
Population III stars

quantum communication
  (added March 2000)
  DEF: Any form of communication that depends on coherent quantum-mechanical effects (quantum interference or quantum entanglement) to transmit, protect or authenticate information, or to perform distributed computational tasks.
  GS: telecommunication
    . communication
    . quantum communication
  RT: communication theory

quantum cryptography
  (added March 2000)
  DEF: Any form of cryptography that depends on coherent quantum-mechanical effects (quantum interference or quantum entanglement) to perform computational tasks.
  GS: cryptography
  RT: quantum cryptography

quantum computers
  (added March 2000)
  DEF: Devices capable of performing quantum computations. There are many proposals for the physical basis of quantum computers. The 0 and 1 of a quantum bit (i.e., qubit) could be the ground and excited states of an atom in a linear ion trap; the polarizations of photons interacting in an optical cavity; or the excess of one nuclear spin state over another in a liquid sample in an NMR machine.
  GS: data processing equipment
  . computers
  . quantum computers
  RT: quantum computation

quantum cryptography
  (added March 2000)
  DEF: Any form of cryptography that depends for its security on coherent quantum-mechanical effects (quantum interference or quantum entanglement).
  GS: cryptography
  RT: quantum cryptography

Rayleigh fading
  (added June 2000)
  DEF: Rapid-fluctuation, small-scale fading resulting from multipath effects, and typically occurring in non-line-of-sight (NLOS) environments.
  GS: fading
  . signal fading
  . Rayleigh fading
  RT: channels (data transmission)

RXTE (satellite)
USE: Rossi X Ray Timing Explorer

Rosen—Mindlin plates
USE: Mindlin plates

RTE channels (data transmission)

rocket-based combined-cycle engines
  (added August 1999)
  DEF: Launch vehicle engines that integrate a high specific impulse, low thrust-to-weight, airbreathing engine with a low-impulse, high thrust-to-weight rocket. The engines are often defined by four modes of operation in a single-stage-to-orbit configuration. In the first mode, the engine functions as a rocket-driven ejector. When the rocket engine is switched off, subsonic combustion (mode 2) is present in the ramjet mode. As the vehicle continues to accelerate, supersonic combustion (mode 3) occurs in the ramjet mode. Finally, as the edge of the atmosphere is approached and the engine inlet is closed off, the rocket is reignited and the final ascent to orbit is undertaken in an all-rocket mode (mode 4).
  UF: RBCC engines
  GS: engines
    . rocket engines
    . rocket-based combined-cycle engines
  RT: air breathing boosters
    air breathing engines
    hybrid propulsion
    integral rocket ramjets
    ramjet engines
    single stage to orbit vehicles
    spacecraft propulsion
    supersonic combustion ramjet engines

Rossi—X Ray Timing Explorer
USE: X Ray Timing Explorer

RTE machines
USE: X Ray Timing Explorer
Service Module (ISS) (added March 1999)
DEF Primary Russian component of the International Space Station providing an early station living quarters and life support system functions to all early elements. Also provides propulsive attitude control and reboot capability for the early station.

- UF Zvezda Service Module
- GS modules
  - space station modules
  - Service Module (ISS)
- RT International Space Station life support systems

SGR (astronomy) USE soft gamma repeaters
Shergotty Nakhlah Chassigny meteorites USE SNC meteorites
Shuttle Superlightweight Tank USE external tanks propellant tanks

Smart materials (added March 1998)
DEF Engineered materials capable of responding to their environment to a significant degree, by virtue of intrinsic properties and/or built-in sensor/actuator elements. Applications of these materials include vibration suppression/isolation, precision positioning, damage detection, and tunable devices.

- UF intelligent materials
- RT actuators
  - composite materials
  - electrochemical fluids
  - electrostriction
  - ferroelastic materials
  - ferroelastically
  - ferromagnetic materials
  - ferromagnetic materials
  - materials
  - piezoelectric ceramics
  - sensors
  - shape memory alloys
  - smart structures
  - vibration damping

SeaWFS
USE Sea-viewing Wide Field-of-view Sensor

Sea-facing Wide Field-of-view Sensor (added December 1998)

- UF SeaWFS
- GS scanners
  - ocean color scanner
  - Sea-viewing Wide Field-of-view Sensor
- RT chlorophylls
  - Coastal Zone Color Scanner
  - ocean surface
  - phytoplankton
  - remote sensors
  - satellite-borne instruments
  - water color

SeaWFS
USE Sea-viewing Wide Field-of-view Sensor

Sea-borglum (added May 1998)
GS chemical elements seaborglum
RT bohrum
dubium


- GS imaging techniques
  - scene generation simulation
  - scene generation
- RT computer graphics
  - flight simulation
  - image reconstruction
  - scientific visualization
  - target simulators

Screech tones (added March 1998)
DEF Discrete acoustic tones produced by imperfectly expanded supersonic jets. The phenomenon is a result of a resonant feedback condition involving downstream traveling shear-layer disturbances and upstream traveling acoustic waves.

- GS elastic waves
  - sound waves
  - . noise (sound)
  - . flow noise
  - . aerodynamic noise
  - . screech tones
  - frequencies
  - acoustic frequencies
  - . . screech tones
- RT aeracoustics
  - feedback
  - jet aircraft noise
  - jet mixing flow
  - nozzle flow
  - shear layers
  - supersonic jet flow
  - supersonic nozzles

Seaborgium (added May 1998)

- GS chemical elements
  - seaborgium
- RT bohrum
dubium

Sea-borglum (added May 1998)

- GS chemical elements seaborglum
- RT bohrum
dubium


- UF SeaWFS
- GS scanners
  - ocean color scanner
  - Sea-viewing Wide Field-of-view Sensor
- RT chlorophylls
  - Coastal Zone Color Scanner
  - ocean surface
  - phytoplankton
  - remote sensors
  - satellite-borne instruments
  - water color

SeaWFS
USE Sea-viewing Wide Field-of-view Sensor


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- RT bohrum
dubium
in the solar wind, solar flares, and solar mass ejections. Effects of space weather phenomena include performance degradation of communication, navigation, and power systems on both spacecraft and ground-based systems; and potential health hazards during extravehicular activity.

- Advanced Composition Explorer
- Earth ionosphere
- Earth magnetosphere
- Earth orbital environments
- Geomagnetism
- Ionospheric disturbances
- Magnetic disturbances
- Magnetic storms
- Radiation hazards
- Solar activity effects
- Solar terrestrial interactions
- Space plasmas
- Weather

**spiral bevel gears**

- GS bevel gears
- GS . . spiral bevel gears

**SPRITE detectors**

- USE infrared detectors

**sprites (atmospheric physics)**

- added January 2000

**DEF** Short-lived luminosities observed at high altitudes above thunderstorms, apparently associated with upward discharges of thunderstorm electricity. They appear as columnar diffuse reddish globs between 30 km and 80 km above ground, lasting tens of milliseconds, following large positive cloud-to-ground lightning strokes.

- **UF** red sprites
- **GS** atmospheric radiation
  - . sky radiation
  - . sprites (atmospheric physics)
  - . electromagnetic radiation
  - . light (visible radiation)
  - . sky radiation
  - **RT** sprites (atmospheric physics)
- **RT** atmospheric electricity
- atmospheric ionization
- cloud-to-ground discharges
- elves
- lightning
- thunderstorms

**Stardust Mission**

- added March 1999

**DEF** First U.S. mission launched to robotically obtain samples in deep space and return them to Earth. The NASA Discovery-class mission will return dust samples collected from the debris cloud surrounding the nucleus of Comet Wild 2. Interstellar dust will also be collected. The mission spacecraft takes advantage of an Earth orbit to maximize the collection of interstellar dust. The mission spacecraft will also be used to collect dust samples from Comet Wild 2.

**SUPERHUMPS (astronomy)**

- added October 1998

**DEF** Periodic celestial phenomena observed in the sky, characterized by their high rates of rotation and the presence of multiple stars in the same system.

**Terra spacecraft**

- added June 1999

**DEF** First in a series of EOS (Earth Observing System) spacecraft developed to advance the understanding of the ways that the Earth's lands, oceans, air, ice, and life function as a total environmental system. The spacecraft carries five high-resolution instruments: the Advanced Spaceborne Thermal Emission Radiometer (ASTER), the Clouds and the Earth Radiant Energy System (CERES), the Multi-Image Spectroradiometer (MISR), the Moderate Resolution Imaging Spectroradiometer (MODIS), and the Measurements of Pollution in the Troposphere (MOPITT) instrument.

**time domain analysis**

- added April 1999

**DEF** Method for analyzing data by dividing it into discrete intervals and examining the characteristics of each interval.

**time domain analysis**

- added December 1998

**DEF** Time domain analysis

**Titan 4B launch vehicle**

- added October 1999

**DEF** A rocket launch vehicle designed to carry the Cassini spacecraft to Saturn. The launch vehicle is a modified Titan IVB, with additional booster stages to achieve the required orbit.

**thermoacoustic effects**

- added May 2000

**DEF** Phenomena associated with the combination of temperature, pressure, and displacement oscillations caused by acoustic waves interacting with solid boundaries, such as the walls of a tube or a ‘stack’.

**thermoacoustic refrigerators**

- added May 2000

**DEF** Cooling devices in which intense sound waves in pressurized resonant cavities are used to generate temperature gradients in an array of parallel plates in the interior of a tube that serves as a heat exchanger and in which heat is drawn away by a heat sink.
tourism
transition elements (chemistry)
transition metals
Transverse momentum
transverse acceleration
Trefftz method
TRMM satellite
travel
location of the ports determines the thermodynamic cycle of the working fluid.

**wing-in-ground effect vehicles**

**wing-body and tail configurations**

**wing-in-ground effect vehicles**

**X-32 aircraft**

**X-35 aircraft**

**X-37 vehicle**

**X-43 vehicle**

<table>
<thead>
<tr>
<th>Zarya control module</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEF Component of the International Space Station providing propulsion, steering, and communications during the early assembly stages of the station; later serving as a docking port and fuel tank. Zarya was built by Russia under contract to the U.S. and is owned by the U.S.</td>
</tr>
<tr>
<td>GS modules</td>
</tr>
<tr>
<td>. space station modules</td>
</tr>
<tr>
<td>. Zarya control module</td>
</tr>
<tr>
<td>RT International Space Station</td>
</tr>
</tbody>
</table>

<table>
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<th>Zenit launch vehicles</th>
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<tbody>
<tr>
<td>(added January 1999)</td>
</tr>
<tr>
<td>GS launch vehicles</td>
</tr>
<tr>
<td>. Zenit launch vehicles</td>
</tr>
<tr>
<td>RT sea launching</td>
</tr>
<tr>
<td>. Ukrainian space program</td>
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</tbody>
</table>

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<tr>
<th>zero sum games</th>
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<tr>
<td>(added October 1998)</td>
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<tr>
<td>GS games</td>
</tr>
<tr>
<td>. zero sum games</td>
</tr>
<tr>
<td>RT differential games</td>
</tr>
<tr>
<td>. Markov processes</td>
</tr>
<tr>
<td>. optimal control</td>
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<tr>
<td>. pursuit-evasion games</td>
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<td>. saddle points (game theory)</td>
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**X-32 aircraft**

**X-35 aircraft**

**X-37 vehicle**

**X-43 vehicle**

**weakly interacting massive particles**

**wild-in-ground effect vehicles**

**wing-body and tail configurations**

**wing-in-ground effect vehicles**

**wing-body configurations**

**wing-in-ground effect vehicles**

**X-32 aircraft**

**X-35 aircraft**

**X-37 vehicle**

**X-43 vehicle**

**weakly interacting massive particles**

**WIG vehicles**

**Wild 2 comet**

**WIMPs (astronomy)**

**WIMP's (astronomy)**

**WIMPs (astronomy)**

**X-32 aircraft**

**X-35 aircraft**

**X-37 vehicle**

**X-43 vehicle**

**Zarya control module**

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GS modules

. space station modules

. Zarya control module

RT International Space Station

Zenit launch vehicles

(added January 1999)

GS launch vehicles

. Zenit launch vehicles

RT sea launching

. Ukrainian space program

zero sum games

(added October 1998)

GS games

. zero sum games

RT differential games

. Markov processes

. optimal control

. pursuit-evasion games

. saddle points (game theory)

Zvezda Service Module

USE Service Module (ISS)
NASA THESAURUS SUPPLEMENT
PART 2
ROTATED TERM DISPLAY

NUMERALS

AM-1 (EOS) spacecraft
use Terra spacecraft

Deep Space 1 Mission

EOS AM-1 spacecraft
use Terra spacecraft

Wild 2 comet

H-2 control

Delta 3 launch vehicle

Delta 4 launch vehicle

Titan 4B launch vehicle

GOES 10
X-32 aircraft
X-35 aircraft
X-37 vehicle
X-43 vehicle

Mars Surveyor 98 Lander
use Mars Polar Lander

Mars Surveyor 98 Orbiter
use Mars Climate Orbiter

Mars Surveyor 98 Program

Boeing 717 aircraft

Mars Surveyor 2001 Mission

A

carrier sense multiple
access
ACE satellite
use Advanced Composition Explorer
content-addressable memory
use associative memory
Advanced Composition Explorer
Darkstar unmanned aerial vehicle
use piloted aircraft
reconnaissance aircraft
aeroshells
machine aided indexing
use indexing (information science)
Boeing 717 aircraft
very large transport aircraft
V LTA (aircraft)
use very large transport aircraft
X-32 aircraft
X-35 aircraft

D

greedy algorithms

Alpha Magnetic Spectrometer
AM-1 (EOS) spacecraft
use Terra spacecraft

EOS AM-1 spacecraft
use Terra spacecraft

AMS (spectrometer)
use Alpha Magnetic Spectrometer

cost benefit analysis
use cost analysis
cost effectiveness

frequency domain analysis
information analysis

rss

anisoplanatism

antenna gain
antiphase boundaries
antiphase domains
use antiphase boundaries
proton antiproton interactions
APB (materials)
use antiphase boundaries
archaeomagnetism
use paleomagnetism
field-programmable gate arrays
associative memory
associative storage
use associative memory
MACHOs (astronomy)
use massive compact halo objects
SGR (astronomy)
use soft gamma repeaters
superhumps (astronomy)
use weekly interacting massive particles
Chandra X Ray Astrophysics Facility
use X Ray Astrophysics Facility
sprites (atmospheric physics)
atom method
modified embedded atom method
use embedded atom method
automatic indexing
use indexing (information science)

B

Planet-B spacecraft
use Nozomi Mars Orbiter
kink bands
based combined-cycle engines
batteries
Euler-Bernoulli beam theory
use Euler-Bernoulli beams
Euler-Bernoulli beams
cost benefit analysis
use cost analysis
cost effectiveness
Euler-Bernoulli beam theory
use Euler-Bernoulli beams
Euler-Bernoulli beams
bevel gears
spiral bevel gears
biomass burning
Blot-Steart law
wing-body and tail configurations
use body-wing and tail configurations
wing-body configurations
use body-wing configurations
Boeing 717 aircraft
bohrium
Bond number
Hale-Bopp comet
antiphase boundaries
biomass burning
cameras

cameras
camera sense multiple access
cascade devices
cellular manufacturing
use group technology
(manufacturing)
chain reactions (chemistry)
chain reactions (nuclear physics)
Chandra X Ray Astrophysics Facility
use X Ray Astrophysics Facility

Shergotty Nakhla
Chassigny meteorites
use SNC meteorites

chain reactions
(chemistry)
EAM (physical chemistry)
use embedded atom method
MEAM (physical chemistry)
use embedded atom method

transition elements
(chemistry)
use transition metals

VOC (organic chemistry)
use volatile organic compounds

clamped structures

environmental cleanup
Mars Climate Orbiter
cloud-to-cloud discharges
cloud-to-ground discharges
cocohannel interference
combined-cycle engines
comet
comet

Hale-Bopp
Wild 2

Comet Nucleus Tour
e-commerce
use electronic commerce
e-commerce
communication
communication
massive compact halo objects
Advanced Composition Explorer

enantiomeric compounds
use enantiomers

volatile organic compounds
quantum computing
computers
computing
use quantum computation

nacelle wing configurations
use wing nacelle configurations
wing-body configurations
use body-wing configurations
wing-body and tail configurations

Unity connecting module
content-addressable memory
use associative memory

CONTOUR (mission)
use Comet Nucleus Tour

H-2
Zarya

Transition Region and Coronal Explorer
corrugated waveguides

cosmions use weakly interacting massive particles

cost benefit analysis
cost analysis
cost effectiveness
critical current
cryptography
cuprates
current
cycle engines
cycloaddition

Darkstar unmanned aerial vehicle
use pilotless aircraft
reconnaissance aircraft
data mining
Deep Space 1 Mission
deflection spectroscopy
defeatable mirrors
Delta 3 launch vehicle
Delta 4 launch vehicle
detectors
use infrared detectors

determination
cascode

MEMS (electromechanical devices)
use microelectromechanical systems
dielectric loss
dielectric waveguides

difference time domain method
differential games
digital cameras
discharges
discharges
discovery
discovery
use data mining
document indexing
use indexing (information science)
domain analysis
domain analysis
domain method
domains
use antiphase boundaries
DS1 (space mission)
use Deep Space 1 Mission
dubnium

e-commerce
use electronic commerce
e-mail
use electronic mail

EAM (physical chemistry)
use embedded atom method
EAP (polymers)
use electroactive polymers
effect
effect vehicles
effects
ekranoplanes
use wing-in-ground effect vehicles
electroactive polymers
electrochemical synthesis
(electromagnetic)
use perfectly matched layers
MEMS (electromechanical devices)
use microelectromechanical systems
electronic commerce
electronic structure
electrochemistry
use electrochemical synthesis
element detectors
element method
use finite element method
TREfftZ method
elemental (chemistry)
use transition metals
eavored atom method
modified
use embedded atom method
enantiomeric compounds
use enantiomers
enantiomers
enantiomorphs
use enantiomers
renewable energy
use rocket-based combined-cycle engines
AM-1
(EOs) spacecraft
use Terra spacecraft
EOs AM-1 spacecraft
use Terra spacecraft
Ethernet
Euler-Bernoulli beam theory
use Euler-Bernoulli beams
Euler-Bernoulli beams
evanescent waves
pursuit-evasion games
Advanced Composition
Rossi X Ray Timing
Explorer
use X Ray Timing Explorer
Explorer extraction
use data mining

F

Chandra X Ray Astrophysics Facility
use X Ray Astrophysics Facility
Rayleigh fading
FDTD (mathematics)
use finite difference time domain method
heavy fermion superconductors
heavy fermion systems
ferroelastic materials
ferroelasticity
fiber pushout
Sea-viewing Wide Field-of-view Sensor
field-programmable gate arrays
field tests
Gabor filters
finite difference time domain method
hybrid-TREfftZ
finite element method
use finite element method
TREfftZ method
in-flight simulation
flow
flow noise

G

Gabor filters
Gabor transformation
antenna
Gain
games
differential games
zero sum games
soft gamma repeaters
gate arrays
gears
gears generation
Next Generation Space Telescope project
Genesis mission
Mars Global Surveyor
Glucocorticoids
Godunov method
GOES 10
greedy algorithms
ground discharges
ground effect vehicles
group technology (manufacturing)

H

H-2 control
Hale-Bopp comet
Hall thrusters
massive compact halo objects
halon
hardware-in-the-loop simulation
hardware-in-the-loop tests
use hardware-in-the-loop simulation
Harper ratings
Hassium
head up tilt
heavy fermion superconductors
heavy fermion systems
heavy metals
hindcasting
HUT (physiology)
use head up tilt
hybrid-TREfftZ finite element method
use finite element method
TREfftZ method
hypophosphoryl
hypothetical particles
Phaethon
use hypothetical planets
hypothetical planets
Population

III stars

impulse

use indexing (information science)

indexing

use indexing (information science)

machine aided

indexing

use indexing (information science)

indexing

(interaction science)

(indexed optics)

use free-space optical interconnects

Integrated Truss Structure Z1

intelligent materials

use smart materials

weakly

proton-antiproton

free-space optical interconnects

interconnects

intercalibration

interconnects

interference

intracloud discharges

ion optics

iridium network

iridium satellites

use communication satellites

Indium network

Service Module

(ISS)

ISS (space station)

use International Space Station

J

Java (programming language)

scarf

joints

Josephson effect

Josephson tunneling

use Josephson effect

K

kink bands

kinking

knowledge discovery

use data mining

knowledge extraction

use data mining

L

Mars Polar Lander

Mars Surveyor 98 Lander

Java (programming language)

markup languages

very large transport aircraft

Delta 3

Delta 4

Titan 4B

VentureStar

launch vehicles

Launch vehicles

Biot-Savart law

perfectly matched layers

stepped leaders

leaders (meteorology)

thermal lenses

use thermal lensing

thermal sensing

lithium batteries

Long March launch vehicles

loop simulation

loop tests

loss

Lunar Prospector

machine aided indexing

use indexing (information science)

MACHOs (astronomy)

use massive compact halo objects

magnetars

magnetic nozzles

Alpha Magnetic Spectrometer

magnetostatigraphy

e-mail

use electronic mail

preventive maintenance

manufacturing (manufacturing)

use group technology

Long March launch vehicles

mark up languages

use document markup languages

Mars Climate Orbiter

Mars Global Surveyor

Mars missions

Nozomi

Mars Orbiter

Mars Polar Lander

Mars Surveyor 98 Lander

use Mars Polar Lander

Mars Surveyor 98 Orbiter

use Mars Climate Orbiter

Mars Surveyor 98 Program

Mars Surveyor 2001 Mission

Martian meteorites

use SNC meteorites

massive compact halo objects

weekly interacting particles

use antiphase boundaries

flexoelectric materials

use smart materials

smart materials

use embedded atom method

finite difference time domain method

MEAM (physical chemistry)

use embedded atom method

Tropical Rainfall Measuring Mission (TRMM)

use TRMM satellite

meitnerium

memory
content-addressable memory use associative memory
MEMS (electromechanical devices) use microelectromechanical systems
heavy metals
Martian meteorites use SNC meteorites
Shergotty Nakhla Chassigny SNC meteorites use SNC meteorites
leaders
embedded atom finite difference time domain method
Godunov hybrid–Trefitz finite element method
modified embedded atom method
Trefitz method in vitro methods and tests
in vivo methods and tests
MGs (spacecraft) use Mars Global Surveyor
microelectromechanical systems use microelectromechanical systems
microsats use microsats
thermocapillary migration Mindlin plate theory use Mindlin plates
Mindlin plates use Mindlin plates
Reissner–Mindlin plates use Mindlin plates
data mining mirrors mischmetal (mission) use Comet Nucleus Tour
CONTOUR
Deep Space 1 Mission use Deep Space 1 Mission
DS1 (spacecraft) Generation mission
Mars Surveyor 2001 Mission
Stardust Mission
Tropical Rainfall Measuring Mission sat use TRMM satellite
Mars missions modified embedded atom method use embedded atom method
Unity connecting module
Zarya control module
Zvezda Service Module use Service Module (ISS)
Service space station transverse momentum multiple access
mutagenesis

N
nacelle wing configurations use wing nacelle configurations
Shergotty Nakhla Chassigny meteorites use SNC meteorites
nansats use nanosatellites
nanotechnology nanotubes
nanotubes use nanotubes
proportional navigation Indium
network Next Generation Space Telescope project
NGST project use Next Generation Space Telescope project
flow magnetic
noise nozzle comet
N Nucleus Tour number

O
massive compact halo pilot
objects opinion ratings use pilot ratings
free-space optical communication
free-space optical interconnects
FSOI (integrated optics) use free-space optical interconnects
ion optics
orbit determination
Mars Climate Orbiter
Orbiter use Mars Climate Orbiter
Nozomi Mars Orbiter
VOC (organic chemistry) use volatile organic compounds
volatile organic compounds

P
particles
weakly interacting massive particles
PDS (spectroscopy) use photothermal deflection spectroscopy
perfectly matched layers
Phaethon (hypothetical planet) use hypothetical planets
Laves phases Phobos spacecraft
photoresists photothermal deflection spectroscopy
EAM (physical chemistry) use embedded atom method
MEAM (physical chemistry) use embedded atom method
chain reactions (nuclear physics) (atmospheric physics)
HUT (physiology) use head up tilt
pilot opinion ratings use pilot ratings
pilot ratings
Phaethon (hypothetical planet) use hypothetical planets
Planet

Planet-B spacecraft  
use Nozomi Mars Orbiter

planet X  
use hypothetical planets

hypothetical planets  
use hypothetical planets

transplutonic planets  
use hypothetical planets

Mindlin plate theory  
use Mindlin plates

Mindlin plates  
use Mindlin plates

Reissner-Mindlin plates  
use perfectly matched layers

PML (electromagnetism)  
use perfectly matched layers

EAP (polymers)  
use electroactive polymers

electroactive polymers  
use electroactive polymers

Population III stars  
use Population III stars

preventive maintenance  
use Population III stars

primordial stars  
use Population III stars

ultrasonic processing  
use Population III stars

processing-in-the-element detectors  
use Population III stars

Program  
use Population III stars

program  
use Population III stars

Polar Lander  
use Population III stars

EAP (polymers)  
use Population III stars

PML (electromagnetism)  
use Population III stars

EAP (polymers)  
use Population III stars

Yield Point  
use Population III stars

Reissner-Mindlin plates  
use Population III stars

perfectly matched layers  
use Population III stars

Mars Surveyor 98  
use Population III stars

Ukrainian space field-Java  
use Population III stars

Next Generation Space Telescope  
use Population III stars

NGST  
use Population III stars

SLWT (propellant tank)  
use Population III stars

external tanks  
use Population III stars

propellant tanks  
use Population III stars

proportional navigation  
use Population III stars

fusion  
use Population III stars

Prospector  
use Population III stars

proton-antiproton interactions  
use Population III stars

pursuit-evasion games  
use Population III stars

fiber  
use Population III stars

pushout  
use Population III stars

Q

quantum communication  
use Population III stars

quantum computation  
use Population III stars

quantum computers  
use Population III stars

quantum computing  
use Population III stars

quantum cryptography  
use Population III stars

R

Rainfall Measuring Mission sat  
use Population III stars

Cooper-Harper ratings  
use Population III stars

pilot ratings  
use Population III stars

pilot opinion  
use Population III stars

slenderness ratio  
use Population III stars

Chandra X Ray Astrophysics Facility  
use Population III stars

Rossi X Ray Timing Explorer  
use Population III stars

Rayleigh fading  
use Population III stars

RBCC engines  
use Population III stars

rocket-based combined-cycle engines  
use Population III stars

chain reactions (chemistry)  
use Population III stars

red sprites  
use Population III stars

sprites (atmospheric physics)  
use Population III stars

refrigerators  
use Population III stars

Transition Region and Coronal Explorer  
use Population III stars

Reissner-Mindlin plates  
use Population III stars

renewable energy  
use Population III stars

soft gamma repeaters  
use Population III stars

Ringleb flow  
use Population III stars

rocket-based combined-cycle engines  
use Population III stars

Rossi X Ray Timing Explorer  
use Population III stars

wave rotors  
use Population III stars

RXTE (satellite)  
use Population III stars

e X Ray Timing Explorer

S

water sampling  
use Population III stars

sat  
use Population III stars

ACE satellite  
use Population III stars

Advanced Composition Explorer (satellite)  
use Population III stars

RXTE satellite  
use Population III stars

X Ray Timing Explorer  
use Population III stars

TRACE satellite  
use Population III stars

Transition Region and Coronal Explorer  
use Population III stars

TRMM satellite  
use Population III stars

Indium satellites  
use Population III stars

communication satellites  
use Population III stars

Iridium network  
use Population III stars

Biot-Savart law  
use Population III stars

scarf joints  
use Population III stars

scene generation  
use Population III stars

indexing (information science)  
use Population III stars

screech tones  
use Population III stars

Sea-viewing Wide Field-of-view Sensor  
use Population III stars

SeaWiFS satellite  
use Population III stars

Sea-viewing Wide Field-of-view Sensor  
use Population III stars

carrier sense multiple access  
use Population III stars

Sensor Service Module (ISS)  
use Population III stars

Sea-viewing Wide Field-of-view  
use Population III stars

Zvezda Service Module  
use Population III stars

SGR (astronomy)  
use Population III stars

soft gamma repeaters  
use Population III stars

Shergotty Nakhla Chassigny meteorites  
use Population III stars

use SNC meteorites

Shuttle Superlightweight Tank  
use SNC meteorites

external tanks  
use SNC meteorites

propellant tanks  
use SNC meteorites

signal-processing-in-the-element detectors  
use SNC meteorites

hardware-in-the-loop simulation  
use SNC meteorites

in-flight simulation  
use SNC meteorites

20
Trefftz Trefftz finite element method use finite element method
Trefitz method
Trefftz method
TRMM satellite
Tropical Rainfall Measuring Mission satellite
use TRMM satellite
Integrated
Josephson tunneling use Josephson effect

U Ukrainian space program ultrasonic processing ultrasonic treatment use ultrasonic processing uncertain systems undercooling use supercooling

V Darkstar unmanned aerial vehicle use pilotless aircraft reconnaissance aircraft

WIG vehicles use wing-in-ground effect vehicles Wild 2 comet
WIMPs (astronomy) use weakly interacting massive particles wing-body and tail configurations use body-wing and tail configurations wing-body configurations use body-wing configurations
nacelle wing configurations use wing nacelle configurations wing-in-ground effect vehicles wing stores use wing-fuselage stores

X planet X use hypothetical planets X-32 aircraft X-35 aircraft X-37 vehicle X-43 vehicle

Chandra X Ray Astrophysics Facility use X Ray Astrophysics Facility
Rossi X Ray Timing Explorer use X Ray Timing Explorer

Z Integrated Truss Structure

Zarya control module
Zenit launch vehicles zero sum games

Zvezda Service Module use Service Module (ISS)

water sampling wave rotors
corrugated dielectric waveguides
evanescent waves weakly interacting massive particles

weather

Sea-viewing Wide Field-of-view Sensor

VLTA (aircraft) use very large transport aircraft

VOC (organic chemistry) use volatile organic compounds volatile organic compounds

W wave sampling wave rotors
corrugated dielectric waveguides
evanescent waves weakly interacting massive particles

weather

Sea-viewing Wide Field-of-view Sensor
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