

GLOSSARY OF ACRONYMS, ABBREVIATIONS AND TERMS

Glossary of Acronyms and Abbreviations

ACC	– Aft Cargo Carrier	GEO	– Geostationary Earth Orbit (sometimes, less precisely, geosynchronous)
AEM	– Applications Explorer Module	GN&C	– Guidance, Navigation, and Control
ASO	– Advanced Solar Observatory	GPS	– Global Positioning [Space] System (see NAVSTAR)
ASTO	– Advanced Solar Terrestrial Observatory	HEO	– High Earth Orbit
ASEB	– Aeronautics and Space Engineering Board (of the NRC)	IMS	– Information Management Subsystem
AXAF	– Advanced X-Ray Astrophysics Facility	INMARSAT	– International Maritime Satellite Corporation
B	– Billion	INTELSAT	– International Telecommunication Satellite Corporation
BOB	– Bureau of the Budget	IOC	– Initial Operational Capability
CDG	– Concept Development Group	ISAS	– Institute of Space and Astronautical Science (Japan)
CNES	– Centre National D’Etudes Spatiales (France)	ISF	– Industrial Space Facility
CNR	– National Research Council (Italy)	ISTO	– Initial Solar Terrestrial Observatory
COM	– Center of Mass	IVA	– Intravehicular Activity
COMM	– Communications	JEA	– Joint Endeavor Agreement
COMSAT	– Communications Satellite Corporation	JSC	– Johnson Space Center
DBS	– Direct Broadcast Satellite	Kbps	– Kilobits per second (of data handling)
DDT&E	– Design, Development, Test, and Evaluation	KSC	– Kennedy Space Center
DMS	– Data Management Subsystem	kg	– kilogram (2.2 pounds)
DOC	– Department of Commerce	kW	– kilowatt
DOD	– Department of Defense	LDEF	– Long Duration Exposure Facility
DOT	– Department of Transportation	LDR	– Large Deployable Reflector
ECLSS	– Environmental Control and Life Support Subsystem	LEO	– Low-Earth-Orbit (usually 200-600 km)
EDO	– Extended Duration Orbiter	LIDAR	– Light Detection and Ranging
ELV	– Expendable Launch Vehicle	LSS	– Large Space System
EOL	– Earth-Orbiting Laboratory	M	– Million
EOS	– Electrophoresis Operations in Space	– meter (3.3 feet)	
EPS	– Electrical Power Subsystem	MAC	– Modular Attitude Control
ESA	– European Space Agency	MAS	– Mission Analysis Study
ET	– External Tank	MBB	– Messerschmitt-Boelkow-Blohm
EUMETSAT	– European Meteorological Satellite Organization	Mbps	– Megabits per second (of data handling)
EURECA	– European Retrievable Carrier	MDA	– Multiple Docking Adaptor
EUTELSAT	– European Telecommunications Satellite Organization	MESA	– Modular Experimental Platform for Science and Applications
EVA	– Extravehicular Activity (“walking in Space”)	MMS	– Multimission Modular Spacecraft
FF	– Free Flyer	MMU	– Manned Maneuvering Unit
g	– Gravity	MOL	– Manned Orbiting Laboratory
		MORL	– Manned Orbital Research Laboratory
		MOSC	– Manned Orbital Systems Concept

MPS — Materials Processing in Space
 MSC — Manned Spacecraft Center
 MSFC — Marshall Space Flight Center
 NAC — NASA Advisory Council
 NAE — National Academy of Engineering
 NAS — National Academy of Sciences
 NASA — National Aeronautics and Space Administration
 NASDA — National Space Development Agency (Japan)
 NAVSTAR — DOD Satellite Navigation System (see GPS)
 NOAA — National Oceanic and Atmospheric Administration (within DOC)
 NRC — **National Research Council (of the NAS-NAE)**
 O&M — **Operations and Maintenance**
 OART — **Office of Advanced Research and Technology (within NASA)**
 OAST — **Office of Aeronautics and Space Technology (within NASA)**
 OMB — **Office of Management and Budget**
 OMS — **Orbital Maneuvering System**
 OMSF — **Office of Manned Space Flight (within NASA)**
 OMV — **Orbital Maneuvering Vehicle (formerly designated TMS)**
 OSM — **Orbital Service Module**
 OTA — **Office of Technology Assessment**
 OTV — **orbital Transfer Vehicle**
 OWS — **Orbital Workshop**
 PEP — **Power Extension Package**
 P/L — **Payload**
 POV — **proximity Operation Vehicle**
 R&D — **Research and Development**
 RCS — **Reaction Control System**
 RD&P — **Research, Development, and Production**
 RDT&E — **Research, Development, Test, and Evaluation (or Engineering)**
 r.f. — **Radio Frequency**
 RMS — **Remote Manipulator System**
 ROTV — **Reusable Orbital Transfer Vehicle**
 RWG — Requirements Working Group
 SAB — Space Applications Board (of the NRC)
 SDV — Shuttle Developed Vehicle
 SOC — Space Operations Center
 SOLARIS — European Space Platform Concept
 SPAS — Space Pallet Satellite
 SPS — Solar Power Satellite
 SPSS — Shuttle Payload Support Structure
 SS — Space Station
 SSB — Space Science Board (of the NRC)

SSEC — Solar System Exploration Committee
 SSSAS — Space Station Systems Analysis Study
 SSTF — Space Station Task Force (within NASA)
 STG — Space Task Group (of the National Security Council)
 STS — Space Transportation System
 TDRS — Tracking and Data Relay Satellite
 TDRSS — Tracking and Data Relay Satellite System
 TMS — Teleoperator Maneuvering System (former designation for OMV)
 TMV — Transport Modular Vehicle
 TRKNG — Tracking
 TRS — Teleoperator Retrieval System
 TSV — Teleoperator Service System
 TUSK — Tethered Upper Stage Knob
 VAFB — Vandenberg Air Force Base
 WBS — Work Breakdown Structure

Glossary of Terms

Base—the central or core set of interrelated, and perhaps interconnected, 28.5° LEO infrastructure (“space station”) modules including facilities for power, docking, control, and human habitation.
Cargo bay—the Space Shuttle’s central fuselage section (openable to space) in which cargo, equipment, and experiment modules are carried.
Core—(see base.)
Cosmos 1443-a Soviet resupply vehicle for Salyut orbiting spacecraft.
Element—any module, platform, free flyer, or vehicle which is an integral part of the in-space infrastructure, and dependent on one or more other element(s) for its long-term operation.
Free flyer—an unattached or free-flying uninhabitable satellite (usually dedicated to one purpose or activity) which is serviced by or otherwise dependent on other infrastructure elements.
Geostationary satellite—a geosynchronous satellite whose circular orbit lies in the plane of the Earth’s equator and which thus remains fixed relative to the Earth; by extension, a satellite whose position remains approximately fixed relative to the Earth; its altitude is necessarily approximately 35,000 km above the Earth’s surface.
Geosynchronous satellite—an Earth satellite whose period of revolution is equal to the period of rotation of the Earth about its axis.
Infrastructure—a generic term referring to all the elements constituting an interdependent space sup-

port system, consisting of surface and in-space elements.

Leasecraft—proposed commercial, long-term, unpressurized platform that could be used for Earth observation, materials processing in space, etc.

Low-Earth-Orbit (LEO)—an orbit around the Earth at altitudes usually ranging from 200 to 600 km and located at any of various inclinations to the Equator.

Megabit—a data communications rate of 1 million bits (or units) per second.

Module—an element of the infrastructure base or core which provides a unique function for infrastructure operations.

Orbiter—the Shuttle vehicle of the NASA Space Transportation System.

Orbit transfer—change of orbit, usually to one of significantly different altitude or inclination.

order of Magnitude—factor of 10.

Pallet—an open structure attached to an element of infrastructure that provides mounting for equipment, vehicles, or experiments.

Platform—an orbiting multi-use structure capable of supplying limited utilities to changeable payloads and dependent on other infrastructure elements; usually uninhabitable except, perhaps for some, for servicing.

Polar orbit—an orbit whose plane intersects the Earth's axis of rotation.

Salyut—a Soviet inhabited “space station” in LEO, the first model of which was launched in 1971.

Satellite—a body that revolves around another body of preponderant mass and that has a motion primarily and permanently determined by the gravitational forces of attraction between them; generally applied here to an object revolving about the Earth.

Shuttle—the reusable passenger- and cargo-carrying surface-LEO vehicle of the NASA Space Transportation System; sometimes referred to as the Space Shuttle Orbiter.

Skylab—an independent orbiting laboratory composed principally of hardware remaining from the Apollo program; inhabited by crews of astronauts during 1973-1974.

Spacelab—a laboratory module, designed and produced by ESA, carried into and out of orbit in the Shuttle cargo bay and supported by the Shuttle power and life support systems.

Space probe—a spacecraft designed to travel out of the gravitational field of the Earth to explore other parts of the solar system.

Space station—a totality of habitable and uninhabitable Earth-orbiting interdependent infrastructure elements constituting a long term in-space support system.

Tracking and Data Relay Satellite System (TDRSS)—a communications system used to relay data directly between orbiting vehicles and a single U.S. ground station at White Sands, NM.