-A-

Å	Angstrom
aberration	Property of an optical system that causes an image to have certain easily recognizable flaws. Aberrations are caused by geometrical factors such as the shapes of surfaces, their spacing and alignments. Image problems caused by factors such as scratches or contamination are not called aberrations.
ACE	Actuator Control Electronics
ACS	Advanced Camera for Surveys
acquisition, target	Orienting the HST line of sight to place incoming target light in an instrument's aperture
actuator	Small, high-precision, motor-driven device that can adjust the location and orientation of an optical element in very fine steps, making fine improvements to the focus of the image
Advanced Computer	A 486-based computer that replaced the DF-224 on SM-3A. Performs onboard computations and handles data and command transmissions between HST systems and the ground system
AFM	Adjustable Fold Mirror
aft	Rear of the spacecraft
alignment	Process of mounting optical elements and adjusting their positions and orientations so that light follows exactly the desired path through the instrument and each optical element performs its function as planned
altitude	Height in space
AMA	Actuator Mechanism Assembly
AME	Actuator Mechanism Electronics
APE	Articulating PFR Extender
aperture	Opening that allows light to fall onto an instrument's optics
aplanatic	Image corrected everywhere in the field of view
apodizer	Masking device that blocks stray light
arcsec	A wedge of angle, 1/3600th of 1 degree, in the 360-degree "pie" that makes up the sky. An arcminute is 60 seconds; a degree is 60 minutes.
ASCS	Aft Shroud Cooling System
ASLR	Aft Shroud Latch Repair (kits)
ASIPE	Axial Scientific Instrument Protective Enclosure

astigmatism	Failure of an optical system, such as a lens or a mirror, to image a point as a single point
astrometry	Geometrical relations of the celestial bodies and their real and apparent motions
ATM	Auxiliary Transport Module
attitude	Orientation of the spacecraft's axes relative to Earth
AURA	Association of Universities for Research in Astronomy
axial science instruments	Four instruments—the STIS, NICMOS, FOC and COSTAR—located behind the primary mirror. Their long dimensions run parallel to the optical axis of the HST.

-B-

baffle	Material that extracts stray light from an incoming image
BAPS	Berthing and Positioning System
BPS	BAPS Support Post

-C-

C	Celsius
Cassegrain	Popular design for large, two-mirror reflecting telescopes in which the primary mirror has a concave parabolic shape and the secondary mirror has a convex hyperbolic shape. A hole in the primary allows the image plane to be located behind the large mirror.
CASH	Cross Aft Shroud Harness
CAT	Crew Aids and Tools
CCC	Charge Current Controller
CCD	Charge-coupled device
CCS	Control Center System
CDI	Command data interface
change-out	Exchanging a unit on the satellite
cm	Centimeter
collimate	To straighten or make parallel two light paths
coma	Lens aberration that gives an image a "tail"
concave	Mirror surface that bends outward to expand an image

convex	Mirror surface that bends inward to concentrate on an image
coronograph	Device that allows viewing a light object's corona
COS	Cosmic Origins Spectrograph
COSTAR	Corrective Optics Space Telescope Axial Replacement
CPL	Capillary Pumped Loop
CPM	Central Processor Module
CPU	Central Processing Unit
CSS	Coarse Sun Sensor
CTVC	Color television camera
CU/SDF	Control Unit/Science Data Formatter
CVL	NICMOS Cryo Vent Line

-D-

DBA	Solar array Diode Box Assembly
DBC	Diode Box Controller
diffraction grating	Device that splits light into a spectrum of the component wavelengths
DIU	Data Interface Unit
DMS	Data Management Subsystem
DMU	Data Management Unit
drag, atmospheric	Effect of atmosphere that slows a spacecraft and forces its orbit to decay

-E-

ECA	Electronic Control Assembly
ECU	Electronics Control Unit
electron	Small particle of electricity
ellipsoid	Surface whose intersection with every plane is an ellipse (or circle)
EPDSU	Enhanced Power Distribution and Switching Unit
EPS	Electrical Power Subsystem
EP/TCE	Electrical Power/Thermal Control Electronics

ESA	European Space Agency
ESM	Electronics Support Module
E/STR	engineering/science data recorders
EVA	extravehicular activity
extravehicular	Outside the spacecraft; activity in space conducted by suited astronauts

-F-

F	Fahrenheit
FGE	Fine Guidance Electronics
FGS	Fine Guidance Sensor
FHST	Fixed Head Star Tracker
FOC	Faint Object Camera
focal plane	Axis or geometric plane where incoming light is focused by the telescope
FOSR	Flexible optical solar reflector
FOV	Field of view
FPS	Focal plane structure
FPSA	Focal plane structure assembly
FRB	Fastener retention block
FS	Forward Shell
FSIPE	FGS Scientific Instrument Protective Enclosure
FSS	Flight Support System

-G-

GA	Gallium arsenide
G/E	Graphite-epoxy
GE	General Electric
GGM	Gravity Gradient Mode
GSE	Ground support equipment
GSFC	Goddard Space Flight Center

GSSS	Guide Star Selection System
GSTDN	Ground Spaceflight Tracking and Data Network

-H-

HGA	High Gain Antenna
HRC	ACS High Resolution Channel
HST	Hubble Space Telescope
hyperboloidal	Slightly deeper curve, mathematically, than a parabola; shape of the primary mirror
Hz	Hertz (cycles per second)

-I-

IBM	International Business Machines Corporation
in.	Inch
interstellar	Between celestial objects; often refers to matter in space that is not a star, such as clouds of dust and gas
intravehicular	Inside the spacecraft
IOU	Input/output unit
IR	Infrared
IV	Intravehicular
IVA	Intravehicular activity

-J-

JPL	Jet Propulsion Laboratory
JSC	Johnson Space Center

-K-

k	Kilo (1000)
kB	Kilobytes
kg	Kilogram
km	Kilometer
KSC	Kennedy Space Center

-L-

Latch	Mechanical device that attaches one component, such as a science instrument, to the structure of the telescope and holds it in precisely the right place
LGA	Low Gain Antenna
LGA PC	Low Gain Antenna Protective Cover
Light-year	The distance traveled by light in 1 year, approximately 6 trillion miles
LMSSC	Lockheed Martin Space Systems Company
LOPE	Large ORU Protective Enclosure
LOS	Line of sight
LS	Light Shield
luminosity	Intensity of a star's brightness

-M-

m	Meter; apparent visual magnitude
M	Absolute visual magnitude
μm	Micrometer; 1 millionth of a meter
mm	Millimeter
MA	Multiple access
magnitude, absolute	How bright a star appears without any correction made for its distance
magnitude, apparent	How bright a star would appear if it were viewed at a standard distance
MAMA	Multi-Anode Microchannel Plate Array
MAT	Multiple Access Transponder
MCC	Mission Control Center
MCP	Microchannel plate
metrology	Process of making extremely precise measurements of the relative positions and orientations of the different optical and mechanical components
MFR	Manipulator Foot Restraint
MHz	Megahertz
MLI	Multi-layer insulation

Mpc	Megaparsec (1 million parsecs)
MOPE	Multimission ORU Protective Enclosure
MSFC	Marshall Space Flight Center
MSM	Mode Selection Mechanism
MSS	Magnetic Sensing System
MT	Magnetic torquer
MTA	Metering Truss Assembly
MTS	Metering Truss Structure
MULE	Multi-Use Lightweight Equipment carrier

-N-

NASA	National Aeronautics and Space Administration
NBL	Neutral Buoyancy Laboratory at JSC
NASCOM	NASA Communications Network
NCC	Network Control Center; NICMOS Cryocooler
NCS	NICMOS Cooling System
nebula	Mass of luminous interstellar dust and gas, often produced after a stellar nova
NICMOS	Near Infrared Camera and Multi-Object Spectrometer
nm	Nanometers
nmi	Nautical miles
NOBL	New Outer Blanket Layer
nova	Star that suddenly becomes explosively bright
NPE	NOBL Protective Enclosure
NSSC-I	NASA Standard Spacecraft Computer, Model-I
NT	NOBL Transporter

-O-

occultation	Eclipsing one body with another
OCE	Optical Control Electronics

OCE-EK	OCE Enhancement Kit
OCS	Optical Control Subsystem
Orientation	Position in space relative to Earth
ORU	Orbital Replacement Unit
ORUC	Orbital Replacement Unit Carrier
OSS	Office of Space Science, NASA Headquarters
OTA	Optical Telescope Assembly

-P-

PACOR	Packet Processing Facility
parallax	Change in the apparent relative orientations of objects when viewed from different positions
parsec	A distance equal to 3.26 light-years
PCEA	Pointing Control Electronics Assembly
PCS	Pointing Control Subsystem
PCU	Power Control Unit
PDA	Photon Detector Assembly
PDM	Primary Deployment Mechanism
PDU	Power Distribution Unit
PFR	Portable Foot Restraint
photon	Unit of electromagnetic energy
PIP	Push in-pull out (pin)
pixel	Single picture element of a detection device
POCC	Payload Operations Control Center
polarity	Light magnetized to move along certain planes. Polarimetric observation studies the light moving along a given plane.
primary mirror	Large mirror in a reflecting telescope the size of which determines the light-gathering power of the instrument
prism	Device that breaks light into its composite wavelength spectrum
PSEA	Pointing/Safemode Electronics Assembly
PSO	HST Project Science Office at GSFC

-Q-

quasar	Quasi-stellar object of unknown origin or composition

-R-

RAC	Rigid Array Carrier
RAM	Random-access memory
radial	Perpendicular to a plane (i.e., instruments placed at a 90-degree angle from the optical axis of the HST)
RBM	Radial Bay Module
RDA	Rotary Drive Actuator
reboost	To boost a satellite back into its original orbit after the orbit has decayed because of atmospheric drag
reflecting telescope	Telescope that uses mirrors to collect and focus incoming light
refracting telescope	Telescope that uses lenses to collect and focus light
resolution	Ability to discriminate fine detail in data. In an image, resolution refers to the ability to distinguish two objects very close together in space. In a spectrum, it is the ability to measure closely separated wavelengths.
resolution, spectral	Determines how well closely spaced features in the wavelength spectrum can be detected
resolution, angular	Determines how clearly an instrument forms an image
RF	Radio frequency
RGA	Rate Gyro Assembly
Ritchey-Chretien	A modern optical design for two-mirror reflecting telescopes. It is a derivative of the Cassegrain concept in which the primary mirror has a hyperbolic cross section.
RIU	Remote Interface Unit
RMGA	Retrieval Mode Gyro Assembly
RMS	Remote Manipulator System
ROM	Read-only memory
RS	Reed-Solomon
RSU	Rate Sensor Unit
RWA	Reaction Wheel Assembly

-S-

SA	Solar Array
SAA	South Atlantic Anomaly
SAC	Second Axial Carrier
SADA	Solar Array Drive Assembly
SADE	Solar Array Drive Electronics
SADM	Solar Array Drive Mechanism
SAGA	Solar Array Gain Augmentation
SBA	Secondary Baffle Assembly
SBC	Single-Board Computer; Solar Blind Channel
SCP	Stored Command Processor
SDAS	Science Data Analysis Software
SDM	Secondary Deployment Mechanism
secondary mirror	In a two-mirror reflecting telescope, the secondary mirror sits in front of the larger primary mirror and reflects light to the point at which it will be detected and recorded by an instrument. In simple telescopes, the secondary mirror is flat and bounces the light out the side of the tube to an eyepiece. In more complex and larger telescopes, it is convex and reflects light through a hole in the primary mirror.
Servicing Mission	NASA's plan to have the Space Shuttle retrieve the HST and have astronauts perform repairs and upgrades to equipment in space
SI	Science Instrument
SI C&DH	SI Control and Data Handling (subsystem)
SIPE	Science Instrument Protective Enclosure
SM	Secondary Mirror
SMA	Secondary Mirror Assembly
SM1	First HST Servicing Mission, December 1993
SM2	Second HST Servicing Mission, February 1997
SM3A	HST Servicing Mission 3A, December 1999
SM3B	HST Servicing Mission 3B, February 2002
SM4	HST Servicing Mission 4

SOFA	Selectable Optical Filter Assembly
SOGS	Science Operations Ground System
SOPE	Small ORU Protective Enclosure
spectral devices	These include spectrographs, instruments that photograph the spectrum of light within a wavelength range; spectrometers, which measure the position of spectral lines; and spectrophotometers, which determine energy distribution in a spectrum.
spectrograph	Instrument that breaks light up into its constituent wavelengths and allows quantitative measurements of intensity to be made
spectrum	Wavelength range of light in an image
spherical aberration	Image defect caused by a mismatch in the shapes of the reflecting surfaces of the primary and secondary mirrors. Light from different annular regions on the primary mirror comes to a focus at different distances from the secondary mirror, and there is no one position where all of the light is in focus.
SSAT	S-band Single-Access Transmitter
SSC	Science Support Center
SSE	Space Support Equipment
SSM	Support Systems Module
SSM-ES	SSM Equipment Section
SSR	Solid State Recorder
SSRF	Shell/Shield Repair Fabric
STDN	Space (flight) Tracking and Data Network
STINT	Standard interface
STIS	Space Telescope Imaging Spectrograph
STOCC	Space Telescope Operations Control Center
STS	Space Transportation System
STScI	Space Telescope Science Institute

-T-

TA	Translation Aids
TAG	Two-axis gimbal
TCE	Thermal Control Electronics

TCS	Thermal Control Subsystem
TDRS	Tracking and Data Relay Satellite
TDRSS	TDRS System
TECI	Thermoelectric-cooled inner (shield)
TECO	Thermoelectric-cooled outer (shield)
telemetry	Data and commands sent from the spacecraft to ground stations
TLM	Telemetry

-U-

UDM	Umbilical disconnect mechanism
ULE	Ultralow expansion
USA	United States Army
USAF	United States Air Force
USN	United States Navy
UV	ultraviolet

-V-

V	Volt
V1, V2, V3	HST axes
VCS	Vapor-cooled shield
VIK	Voltage/Temperature Improvement Kit

-W-

W	Watt
Wavelength	Spectral range of light in an image
WFC	ACS Wide Field Channel
WFPC	Wide Field and Planetary Camera. The camera currently in use is the second-generation instrument WFPC2, installed during the First Servicing Mission in December 1993. It replaced WFPC1 and was built with optics to correct for the spherical aberration of the primary mirror.