Abbreviation / Acronym	Meaning / Explanation
1PPS	One Pulse Per Second
40m	R&D Test Facility at LIGO Caltech
40m Lab	R&D Test Facility at LIGO Caltech
AA	Anti-Aliasing
AAAS	American Association for the Advancement of Science
AAPT	American Association of Physics Teachers
AC	Alternating Current
ACB	Arm Cavity Baffle (element of aLIGO AOS)
ACIGA	Australian Consortium for Interferometric Gravitational Wave Astronomy
ACR	Advanced LIGO Change Request
ACWP	Actual Cost of Work Performed
ADC	Analog-to-Digital Converter
ADCU	Analog Data Collection Unit; Analog to Digital Converter Unit (A computer that takes an analog signal and assigns a digital value for computations)
ADE	Advanced Detector Era
AdL	Advanced LIGO (not used after 20091104; use aLIGO instead)
AdLIGO	Advanced LIGO (not used after 20091104; use aLIGO instead)
AdvLIGO	Advanced LIGO (not used after 20091104; use aLIGO instead)
AEI	Albert Einstein - Max Planck Gravitational Wave Institute, partner with LZH
AERA	American Educational Research Association
AERM	Annular End Reaction Mass; a variant of the ERM with a central hole to mitigate squeezed film damping
AI	Anti-Imaging
AIA	American Institute of Architects
AIC	Advanced Interferometer Configurations (USF)
AISES	American Indian Science and Engineering Society
AL	Advanced LIGO (not used after 20091104; use aLIGO instead+B454)
ALH	Alarm Handler (EPICS)
aLIGO	Advanced LIGO (used after 20091104)
ALS	Armlength Stabilization System (aLIGO ISC)
ALUK	Advanced LIGO UK consortium
AM	Amplitude Modulation
AMD	Acoustic Mode Damper
AMO	Atomic, Molecualr & Optical
AMU	Atomic Mass Unit
ANL	Argonne National Laboratory?
ANTARES	Astronomy with a Neutrino Telescope and Abyss environmental RESearch
ANU	Australian National University
AOC	Adaptive Optics Compensation
AOM	Acousto-Optic Modulation
AOS	Auxiliary Optics System (subsystem in aLIGO)
API	Application Programming Interface
APS	American Physical Society; Absentmindedness Prevention System
AR	Anti-Reflection Coating; Anti-Reflective

Abbreviation / Acronym	Meaning / Explanation
AS	Anti-Symmetric
ASC	Alignment Sensing and Control (detector subsystem) - Generally speaking, this controls mirror positions (6 degrees of freedom); Angular Sensing and Control
ASI	Anti-Symmetric Input
ASIC	Application Specific Integrated Circuit
ASPD	Anti-Symmetric Photo Diode (4 of them on ISCT4)
Assy	Assembly
ASTC	Association of Science - Technology Centers
ATM	Asynchronous Transfer Mode (communications protocol)
ATR	Acceptance Test Report
AuxMVC	Multivariate Classifers for Auxiliary Channels
AWG	Arbitrary Waveform Generator
AXP	Anomalous X-ray pulsar
AY	Actual Year
BAC	Budget at Completion
BAE	Biological and Agricultural Engineering
Baudline	A plotting tool
BBH	Binary Black Hole pair
BCS	Beam Centering Servo - Centers beam on beam splitter (visual on SPIRICON)
BCV	Bilinear Coupling Veto
BCWP	Budgeted Cost of Work Performed
BCWS	Budgeted Cost of Work Scheduled
BH	Black Hole
BH-BH	Black Hole - Black Hole (Binary Black Hole pair)
BJT	Bipolar Junction Transistor
BNC	Bayonet Nut Connector
BNS	Binary Neutron Star pair
BOSEM	Birmingham University version of the OSEM, optical sensor - electromagnetic motor unit
BPCU	Beam Pointing Control Unit
BRDF	Bidirectional Reflection Distribution Function
BRS	Beam Rotation Sensor
BRT	Beam Reducing Telescope (AOS TMS element)
BS	Beam Splitter; Obvious academic alternative reluctantly removed
BSC	Basic Symmetric Chamber; Beam Splitter Chamber (large vacuum chamber)
BSC1	LLO - houses ITMY
BSC2	LLO - houses Beam splitter
BSC3	LLO - houses ITMX
BSC4	LLO - houses ETMX
BSC5	LLO - houses ETMY
BSDF	Bidriectional Scatter Distribution Function
BSM	Beam Spot Motion
BT	Beam Tube
BTE	Beam Tube Enclosure

Abbreviation / Acronym	Meaning / Explanation
CA	Clear Aperture; Channel Access (EPICS Control & Monitoring system network protocol)
CACR	Center for Advanced Computer Research (Caltech)
CAD	Computer Aided Design
CaJAGWR	Caltech-JPL Association for Gravitational Wave Research
Caltech	California Institute of Technology
CARM	Common Arm Length - Sum of the arm length (to establish laser frequency) = (Lx + Ly)
CB&I	Chicago Bridge & Iron
CBC	Compact Binary Coalescence; Columbia Basin College
CC	Civil Construction
CCB	Change Control Board; Configuration Control Board
CCD	Charge Coupled Device
CCSNs/CCSNe	Core Collapse Super Novae
CD	Conceptual Design
CDR	Conceptual Design Review
CDRL	Contract Data Requirements List
CDS	Control and Data System (detector subsystem); Cognitive Development Society
CIT	California Institute of Technology
CMB	Cosmic Microwave Background
CMRR	Common Mode Rejection Ratio
CMS	Control and Monitoring System (a part of CDS)
CO	Carbon Monoxide
CO_2	Carbon Dioxide; also CO_2 Laser, used in the Auxiliary Optics Thermal Compensation subsystem
COC	Core Optics Components (detector subsystem)
CompComm	Computing Administration Committee
Conlog	A method of monitoring and storing EPICS channel values
COS	Core Optics Support (detector subsystem)
COTS	Commercial Off-The-Shelf (procured items)
CP	Cryogenics Pump; Compensation Plate (part of TCS); Chiller Pad (part of FAC)
CPx	Compensation Plate (part of TCS), x-arm
CPy	Compensation Plate (part of TCS), y-arm
CPS	Capacitive Position Sensor (element of aLIGO seismic isolation system); or Cycles Per Second
CPU	Central Processing Unit
CR	Control Room
CRC	Cyclic Redundancy Check
CSC	Computer Secuirty Committee
CSIRO	Commonwealth Scientific and Industrial Research Organization (Australia)
CSSR	Cost Schedule Status Report
CTNI	Cryogenic Thermal Noise Interferometer
CVS	Concurrent Versions System - A method for controlling versions
CW	Continuous Wave
cWB	Coherent wave burst
DAC	Digital-to-Analog Converter
DAQ	Data Acquisition (Diagnostics and Contols (aLIGO Subsystem name))

Abbreviation / Acronym	Meaning / Explanation
DAQS	Data Acquisition System
DARM	Differential Arm {Length, Signal} - Difference between the x and y arm lengths; This is the main interferometer output signal for GW detection = (Lx - Ly)
DASWG	Data Analysis Software Working Group
Dataviewer	A data visualization tool
dB	Decibel
DBB	Diagnostic Bread Board
DC	Direct Current (steady state)
DC readout	Direct Current Readout (of the gravitational wave)
DCC	Document Control Center
DCMON	DC Monitor (Voltage or Current Monitor)
DCPD	DC Photodiode
DCS	Data and Computing Systems (aLIGO subsystem name)
DCU	Data Collection Unit
Deg	Degree, Degrees
DET	Detector system
DetChar	Detector Characterization
DFT	Discrete Fourier Transform (as opposed to Fast Fourier Transforms (FFT))
DI	Digital Interferometry, system to allow pre-lock positioning of mirrors
DIA	Data Information Area (of reflected memory)
DIN	Deutsches Institut fur Normung (German Standards Organization)
DMA	Direct Memory Access
DMRO	Differential Mode Read-Out
DMT	Diagnostic Monitoring Tool; Data Monitoring Tool
DOF	Degree Of Freedom
DoS	Denial of service cyber attack
DRD	Design Requirements Document
DRFPM	Dual-Recycled Fabry-Perot Michelson (Interferometer)
DRMI	Dual Recycled Michelson Interferometer
DRR	Design Requirements Review
DSE	Detector Systems Engineering
DSP	Digital Signal Processing
DTT	Diagnostic Test Tool
e2e; E2E	End-To-End Modeling (interferometer simulation)
EAC	Estimate at Completion
ECA	EPICS Channel Access
ECD	Eddy Current Damping
ECM	Eistein's Cosmic Messengers
EDCU	EPICS Data Collection Unit
EDSU	EPICS Data Server Unit
EFT	Effective Field Theory
EGO	European Gravitational Wave Observatory
EH&S	Environmental Health & Safety

Abbreviation / Acronym	Meaning / Explanation
eLIGO	Enhanced LIGO (updated initial LIGO, in use until 20 October 2010)
EM	Electromagnetic
EMA	Experimental Modal Analysis System
EMC	Electro-Magnetic Compatibility
EMI	Electro-Magnetic Interference
En	Engineering Run n (for example, E4 is Engineering Run 4)
EO	Electro-Optical
EOM	Electro-Optic Modulator (optical hardware)
EOS	Equation of State
EPI	External Pre-Isolator
EPICS	Experimental Physics and Industrial Control System
EPO	Education & Public Outreach
ER	Engineering Run
ERC	Electronic Rule Checking (PCB Design)
ERM	End Reaction Mass
ESD	Electro Static Drive / Electro-Static Discharge
ESD/ESD123	WA State Educational School District 123
ET	Einstein Telescope
ETC	Estimate to Complete (estimated cost to complete work)
ETF	Engineering Test Facility (Caltech Lab)
ETM	End Test Mass (mirror) - Partially reflective mirror; second mirror in Fabry Perot Cavity
ETM	End Test Mass
ETMX	End Test Mass - X arm
ETMY	End Test Mass - Y arm
EVO	Enabling Virtual Organizations
EXC	Excitation (channel)
ExtTrig	External Triggers
EZCA	Easy Channel Access(?) EPICS Application(?)
FAC	Facilities (part of CC) - replaced by FMP
FCMS	Facility Control and Monitoring System
FCR	Facility Control Room
FDR	Final Design Review
FE	Front End (computer)
FEA	Finite Element Analysis
FEI	Facilities Engineering Items
FEM	Finite Element Model/Method
FET	Field-effect Transistor
FFT	Fast Fourier Transform (as opposed to Discrete Fourier Transforms (DFT))
FI	Faraday Isolator (optical component)
FIFO	First In First Out
FINESSE	Frequency Domain Interferometer Simulation Software
FIR	Finite Impulse Response (filter)
FIT	Function and Integration Test

Abbreviation / Acronym	Meaning / Explanation
FLOPS	Floating Point Operations Per Second
FM	Folding Mirror; Frequency Modulation
FMEA	Failure Modes and Effects Analysis
FMP	Facilities Management Plan; Facility Modifications and Preparations
FOM	Figure Of Merit
FP	Fabry-Perot cavity
FPGA	Field Programmable Gate Array
FR	Faraday Rotator (optical component)
Framebuilder	A DAQS computer dedicated to building frames
FS	Fused Silica
FSR	Full Scale Reference
FSS	Frequency Stablization Servo
FTE	Full Time Equivalent
FTIR	Fourier Transform Infrared, Frustrated Total Internal Reflection
FY	Fiscal Year
GASF	Geometrical Anti-Spring Filter
GB	Ghost Beam
GC	General Computing
GCN	Gamma Ray Burst Coordination Network
GDS	Global Diagnostics System
GenComp	General Computing
GEO	German-English Observatory; British-German Cooperation for Gravity Wave Experiment
GEO-HF	GEO-High Frequency
GFLOPS	Giga (1000 Million) Floating Point Operations per Second
GPL	Graphics Program Language
GPM	Gallons Per Minute
GPS	Global Positioning System
GRB	General Relativity
GRB	Gamma-Ray Burst
GRD	Gaurdian - aLigo interferometer automation and control software
GS13	Geotech, Inc. Seismometer Model GS-13
gstlal	G-streamer LIGO Analysis Library
gstreamer	GPU data analysis tool
GUI	Graphical User Interface
Guralp, STS2, Trillium	Seismic ground motion sensors manufactured by various vendors
GW	Gravitational Wave (not Gravity Wave, which is a water-wave phenomenon)
GWADW	Gravitational Wave Advanced Detector Workshop
GWB	Gravitational Wave Band (10Hz through 10 kHz for 'Advanced' detectors)
GWD	Gravitational Wave Detector
GWDAW	Gravitational Wave Data Analysis Workshop
GWIC	Gravitational Wave International Committee
GWINC	Gravitational Wave Interferometer Noise Calculator. Originally developed for LIGO, this version has been modified for Advanced Virgo.

Abbreviation / Acronym	Meaning / Explanation
H	Horizontal
H1	Hanford 4K Interferometer
H2	Hanford 2K Interferometer (to be revised to 4K by aLIGO)
HAM	Horizontal Access (Axis) Module; general purpose optics vacuum chamber (input and output optics)
HAM AUX	Input Optics HAM2 3-inch optics/suspensions (SM1, PMMT1, PMMT2, SM2) also known as IM1-4
HAM1	LLO - holds MC1, MC3, MMT1, and MMT3
HAM2	LLO - holds MC2, MMT2
HAM3	LLO - holds recycling mirror
HAM4	LLO - holds telescopes, anti-symmetric port, excess light catcher
HAM5	LLO - currently empty
HAM6	LLO - holds output mode cleaner
HAUX	Input Optics HAM Auxilliary Suspensions
HEASARC	High Energy Astrophysics Science Archive Research Center
HEPA	High-Efficiency Particulate Air filter
HEPI	Hydraulic External Pre-Isolator, an element of the SEI that isolates chambers from seismic activity
HG	Hermite-Gauss (typically refers to a rectangularly symmetric basis)
HHLV	LIGO-Virgo Network
HLTS	HAM Large Triple Suspension
HOM	High Order Mode
HPLF	High Power Laser Facility
HPSS	High Performance Storage System (IBM)
HR	High Reflectance (mirror coating); Highly Reflective; Human Resources
HSTS	HAM Small Triple Suspension
HTM	Higher Transverse Modes (other than TEM00 mode)
HTR	Heater - Heats up a block of aluminum to control the shape of a mirror in the OMC (the mirror is mounted to the aluminum block)
HVAC	Heating Ventilation and Air Conditioning
HWCI	Hardware Configuration Item
HWP	Half-Wave Plate (optical hardware)
HWS	Hartmann Wavefront Sensor (part of aLIGO Thermal Compensation System)
Hz	Hertz (cycles per second)
I/O	Input/Output
I2U2	Interactions in Understanding the Universe
IAS	Initial Alignment System (part of aLIGO AOS); Institut d'Astrophysique Spatiale
IBS	Ion Beam Sputtering
IC	Integrated Circuit
ICD	Interface Control Document
IceCube	South Pole Neutrino Observatory
ICS	Inventory Control System
ICWD	Interface Control Working Group
IDC	Insulation Displacement Contact (Connector)
IDE	Integrated Drive Electronics (disk standard)

Abbreviation / Acronym	Meaning / Explanation
IFO	Interferometer - Device used to measure interference of light
IGWD	Interferometric Gravitational Wave Detectors
IIR	Infinite Impulse Response (filter)
IL	Initial LIGO
ILC	Iterative Learning Control
iLIGO	Initial LIGO
ILMON	In-Loop Monitor (witness sensor for RIN on the laser light)
ILSENS	In-Loop Sensor for PSL's ISS
IM	Input Optics Input Mirror
IMBH	Intermediate Mass Black Hole
IMC	Input Mode Cleaner (iLIGO 'MC')
IMR	inspiral, merger and ringdown
IMS	Input Mode cleaner Suspension (Obsolete in aLIGO)
Ind-IGO	Indian Initiaitive in Gravitational Observations
Infiniband	Point-to-point, bi-directional, high-speed, serial link
InGaAs	Indium-Gallium-Arsenide
INJ	Injected Signal (Injection)
INS	Installation (aLIGO subsytem name)
INSA	French National Institute for Applied Science
IO	Input Optics (detector subsystem, formerly named Input / Output Optics)
IOO	Input / Output Optics (obsolete)
IOT	Input Optics Table - Views mode cleaner transmission and reflection (Obsolete in aLIGO)
IOT(chamber #)L	Input Optics Table (chamber #) Left (as viewed fromt the PSL), for example IOT2L, views input mode cleaner transmission and reflection
IOT(chamber #)R	Input Optics Table (chamber #) Right (as viewed fromt the PSL), for example IOT2R, views HAM2 IM4 transmission
IP	Ion Pump; Inverted Pendulum; Internet Protocol
IPAC	Infrared Processing and Analysis Center
IPR	Institute for Plasma Research (India)
IPS	Inductive Position Sensor
IR	Infrared
ISC	Interferometer Sensing and Control - Sensors to monitor the function of the interferometer; Instrument Sensing and Control
ISCT1	LLO - Views symmetric port (bright fringe) of interferometer
ISCT2	LLO - Views ???
ISCT3	LLO - Views Y-pickoff
ISCT4	LLO - Views Anti-symmetric (AS) (dark fringe) of interferometer/ Views X-pickoff/ Views Beam-Splitter pick off
ISCTn	Interferometer Sensing and Control Table n (n corresponds to the HAM it is closest to)
ISI	Internal Seismic Isolation, an element of the SEI
ISR	Interrupt Service Routine
ISS	Intensity Stabilization Servo
ITM	Input Test Mass (mirror) - Partially reflective mirror; first mirror in Fabry-Perot Cavity
ITMX	Input Test Mass ‘X’ arm
ITMY	Input Test Mass ‘Y’ arm

Abbreviation / Acronym	Meaning / Explanation
IV&V	Integration, Verification, and Validation
IWG	Interface Working Group
IXS	Information eXchange Services
JFET	Junction Field-effect Transistor
JPL	Jet Propulsion Laboratory
KAGRA	Large-scale Cryogenic Graviationai wave Telescope Project (Japan)
KB	KiloByte
KM3NeT	Cubic Kilometre Neutrino Telescope
kpc	Kiloparsec
L1	Livingston 4km Interferometer
L4C	Sercel Seismometer Model L4C
LA	Louisiana
LAAAP	LIGO Astronomy and Astrophysics Advisory Panel
LAI	Lock Acquisition Interferometer
LAL	LIGO Algorithm Library
LAMT	Louisiana Association of Math Teachers
LAN	Local Area Network
LAS	Lock Acquisition System
LASTI	LIGO Advanced Systems Test Interferometer (test facility at LIGO/MIT)
LBA	Lanthanum-β-Aluminate (a form of sapphire)
LCGT	Large Cryogenic Gravitational-wave Telescope (planned Japanese GW detector)
LDAS	LIGO Data Analysis System
LDG	LIGO Data Grid
LDR	Laser Diode Room
LEA	Laser Enclosure Area
LExC	LIGO (LHO) Exploration Center - proposed science center at LHO
LG	Laguerre-Gauss (typically refers to a circularly symmetric basis)
LHAM	Horizontal Access Module at Louisiana Site
LHO	LIGO Hanford Observatory
LIGO	Laser Interferometer Gravitational Wave Observatory
LIGO-A	Study of implementation of an Advanced LIGO detector in Australia
LIGO-SEC	LIGO Science Education Center
LISA	Laser Interferometer Space Antenna
LLO	LIGO Livingston Observatory
LLOID	Low Latency Online Inspiral Detection
LMA	Laboratoire des Matériaux Avancés - vendor for optical coatings in Lyon, France
LMXB	Low-Mass X-Ray Binary
LOE	Level of Effort (costant effort with no deliverables, i.e. Project Management)
LOS	Large Optics Suspension
LOSC	LIGO Open Science Center
LSC	LIGO Scientific Collaboration; or, Length Sensing and Control subsystem
LSO	Laser Safety Officer
LSTA	Louisiana Science Teachers Association

Abbreviation / Acronym	Meaning / Explanation
LTI	Linear, Time-Invariant (systems) have a transfer function that relates input to output.
LVAX	LLO - Kantech definition of VEA-X
LVAY	LLO - Kantech definition of VEA-Y
LVC	LIGO Scientific Collaboration -Virgo Collaboration joint activities
LVDT	Linear Variable Differential Transducer
LVEA	Laser and Vacuum Equipment Area (at observatory corner stations) - This room houses PSL, BS, ITMX, ITMY among other things; Large Vacuum Enclosure Area
LXI	LAN Extension for Instruments
LZH	Laser Zentrum Hannover, partner with AEI for aLIGO lasers
m/rtHz	meter per square root Hertz
M&O	Maintenance and Operations
M&O	Management & Operations
MAP	Memory Allocation Pointer (reflected memory)
MAST	Math and Science Teaching
MATLAB	mathematical programming language
MB	Megabyte
MC	Mode Cleaner Optic (iLIGO - usually MCx, where x = {1,2,3}) - Stabilizes mode of laser
MCL	Mode Cleaner Length (Servo control signal)
MCM	Mode Cleaner Mirror
MCWFS	Mode Cleaner Wave-Front Sensor
MD5	checksum to confirm digital data file integrity
MDC	Mock Data Challenge
mDV	MATLAB Data Viewer
MEDM	Motif Editor and Display Manager (GUI for control screens)
MEPI	Magnetic External Pre-Isolator
MESA	Mathematics, Engineering, Science Achievement
MFLOPS	Mega (Million) Floating Point Operations Per Second
MGASF	Monolithic Geometrical Anti-Spring Filter
MICH	Michelson cavity length = (lx - ly)
MIMO	Multiple Input, Multiple Output
MISE	Modeling Inquiry Science Education Project
MIT	Massachusetts Institute of Technology
MKI	MIT Kavli Institute of Astrophysics & Space Research
mm	millimeter
MMT	Mode Matching Telescope - A beam expander that sets the laser to a particular mode
MOPA	Master Oscillator-Power Amplifier -- low power 'seed' laser source
MOU	Memorandum of Understanding
MP	Mass Position
Mpc	Megaparsec
MPE	Maximum Permissible Exposure (Laser Radiation)
MPI	Message Passing Interface
MRE	Major Research Equipment
MREFC	Major Research Equipment and Facilities Construction (funding mechanism for aLIGO)

Abbreviation / Acronym	Meaning / Explanation
MSP	Math Science Partnership
MSPRC	Marginally Stable Power Recycling Cavity
MSR	Main Storage Room
MSU	Moscow State University
MTBF	Mean Time Between Failures
MTDC	Modified Total Direct Costs
MTS	Master Timing System
MTTR	Mean Time To Repair
MTU	Master Timing Unit (see TMU)
MVSC	multi variate statistical classification
MZ	Mach-Zender Interferometer
M_Θ	Mass of the Sun
NA	Not Applicable; Not Available; Not Allowed
NAT	Network Address Translation
NB	Noise Budget
NBI	Neutron Star Binary Inspiral
Nd:YAG	Neodynium doped Yttrium Aluminum Garnet (laser gain medium)
NDS	Network Data Server
NDS2	Gen-2 Network Data Server-streaming server of LIGO data for near real time analysis
NDSG	NDS Gateway computer
NHZ	Nominal Hazard Zone (Laser Radiation)
NIC	Network Interface Card
NLNM	New Low Noise Model (Peterson, 1993)
NLT	Non-Linear Thermoelastic noise
nm	nanometer
NMR	Nuclear Magnetic Resonance
NN	Newtonian Noise
NPRO	Non-Planar Ring Oscillator
NRSB	Non-Resonant Side Band
NS	Neutron Star
NS-NS	Neutron Star - Neutron Star
NSBH	neutron-star-black-hole binaries
NSBP	National Society of Black Physicists
NSF	National Science Foundation
NSHP	National Society of Hispanic Phyisicists
NSPOB	Normalized Sideband Power On the Beam-Splitter
NSTA	National Science Teachers Association
NTP	Network Time Protocol
OAF	Online Adaptive Filtering
ODE	Ordinary Differential Equation
OFI	Output Faraday Isolator (aLIGO Auxiliary optics element)
OL	Optical Lever
OLMON	Out-of-Loop Monitor (monitor the intensity noise after the mode cleaner - PSL's ISS)

Abbreviation / Acronym	Meaning / Explanation
OMC	Output Mode Cleaner - Stabilizes mode in output laser
OOP	Object-Oriented Programming
OPAMP	Operational Amplifier (from analog computer *operations*)
OPD	Optical Path Difference
OPL	Optical Path Length
OPO	Optical Parametric Oscillator (for use of squeezed light)
Optickle	Frequency Domain IFO Simulator (Matlab)
OpLev	Optical Lever; sometimes OptLev (part of aLIGO AOS)
ORACLE	Computer software used for data management at Caltech
OSA	Optical Spectrum Analyzer
OSB	Operations Support Building
OSEM	Optical Sensor Electromagnetic Motor (suspension sensor/actuator unit) (Optical Shadow Sensor and Magnetic Actuator)
OSG	Open Science Grid
OTAS	OMC Thermal Actuation System
OTF	Optics Test Facility at Caltech
P3F	Payload Polar Positioning Fixture
PAC	Program Advisory Committee
PAP	Program Advisory Panel
PB	PetaByte
PCB	Printed Cirsuit Board
PCIX	Peripheral Component Interconnect Extended (a computer standard for peripheral communication)
PD	Photo Diode; Preliminary Design
PDD	Preliminary Design Document
PDE	Partial Differential Equation
PDH	Pound-Drever-Hall (reflection locking technique)
PDMWorks	Product Data Management Works (SolidWorks CAD file repository and version control system)
PDR	Preliminary Design Review
PDRR	Preliminary Design Requirements Review
PDT	Photo Detector
PEM	Physical and Environmental Monitor - Includes weather stations, accelerometers, seismometers, microphones, temperature sensors
PEP	Project Execution Plan
PGA	Programmable Gate Array
PhCal	Photon Calibrator (part of aLIGO AOS)
PI	Parametric Instability
PIT	Pitch
PLC	Plano-Convex Lens
PLL	Phase Locked Loop
pm	picometer
PM	Phase Modulation; Project Management; Preventitive Maintenance
PMA	Physics, Math & Astronomy (academic division)

Abbreviation / Acronym	Meaning / Explanation
PMC	Pre-Mode Cleaner
PMP	Project Management Plan
PMX	Particle Mobility Experiment
PN	Post-Newtonian
PNRO	Pacific Northwest Regional Observatory
PO	Pick Off (usually in reference to a laser beam)
POB	Pick Off Beam <splitter>
POP	Pick Off Power (from Power Recycling Cavity)
POSIX	Portable Operating System Interface (IEEE Standard 1003.1)
POX	Pick Off X Arm (at ITMX)
PPE	Personal Protection Equipment
ppm	parts per million
PPS	Pulse Per Second - the timing heartbeat
PR	Power Recycling Optic (usually PRx, where x = {M,2,3})
PRC	Power Recycling Cavity
PRCL	Power Recycling Cavity Length = (lp + (lx + ly)/2)
PRM	Power Recycling Mirror - Recycles light within the interferometer; Power Recycled Michelson
PRN	Pseudo-Random Noise
PROM	Pockel's Readout Optical Modulator
PSL	Pre-Stabilized Laser (detector subsystem)
PTF	Palomar Transient Factory
PTX	Power Transmitted X-arm
PTY	Power Transmitted Y-arm
PUM	Pen-Ultimate (3rd level on quad SUS rack)
PZT	Piezoelectric Transducer - Controls the position of one mirror in the OMC (works with HTR to obtain a single mode)
Q	Resonant system Quality factor (inverse of loss)
QA	Quality Assurance
QE	Quantum Efficiency
QND	Quantum Non-Demolition
QPD	Quadrant Photo Diode - Reads transmission of end mirrors and transmission through OMC (for alignment)
QPDX	Quadrant Photo Diode at the X-end station
QPDY	Quadrant Photo Diode at the Y-end station
Quad	Quadruple test mass suspension
R	Reflectivity
R&D	Research and Development
R&RA	Research and Related Activities
RAID	Removable Array of Independent Drives; Redundant Array of Inexpensive Disks
RAM	Random Access Memory
RBS	Reflective Beam Servo; Rutherford BackScatter
RC	Radius of Curvature (of a Reflective Mirror); Recycling Cavity
RCG	Realtime Code Generator
RDRR	A good guffaw

Abbreviation / Acronym	Meaning / Explanation
RDS	Reduced Data Sets
REFL	Reflected Light Port on ISCT1 (REFL1 = 61MHz; REFL2 = 24 MHz … may be backwards)
REO	Research Electro-Optics (Company Name)
RET	Research Experience for Teachers
REU	Research Experience for Undergraduates
RF	Radio Frequency
RFM	Remote File Management
RFP	Request for Proposal
RFPD	RF Photodiode
RFQ	Request for Quote
RGA	Residual gas Analysis
RH	Relative Humidity
RIN	Relative Intensity Noise
RIPPLE	Research and Inquiry-based Physics Project with LIGO and the Exploratorium
RM	Recycling Mirror
RMS	Root mean square
ROC	Radius Of Curvature
RODA	Record Of Decision Agreement
RSB	Resonant Side Band
RSE	Resonant Sideband Extraction
RT	Real Time
rtHz	square root Hertz
s	Second
S-LED	Superluminescent Light Emitting Diodes
s/s	Samples/second
S5	LIGO's 5th Science Run
S6	LIGO's 6th Science Run
SACNAS	Society for the Advancement of Chicanos and Naïve American Scientists
SAH	Sensor Actuator Head
SAP	Sapphire Core Optics
SAS	Seismic Attenuation System
SBX	Sandbox
SCSI	Small Computer Standard Interface
SEI	Seismic Isolation
SEI-GDS	Seismic Isolation - Global Diagnostics System
SEM	Scanning Electron Microscopy
SGR	Soft Gamma Repeaters
SH-GRB	Short Hard Gamma Ray Bursts
SHG	Second Harmonic Generator (used in squeezing of laser light)
SIMMS	Secondary Ion Mass Spectrometry
SiO**2**	Silicon Dioxide, fused silica, fused quartz
SIOM	Shanghai Institute of Optical Materials
SIS	Static Interferometer Simulation (Software)

Abbreviation / Acronym	Meaning / Explanation
SLC	Stray Light Control
SM	Suspended Steering Mirror (~4" diameter, simple sling suspension)
SMI	Simple Michelson Interferometer (aLIGO phase; beamsplitter and ITMs, with/without recycling)
SMO	Systems Mechanics & Optics
Sn	Science Run n (for example, S6 is Science Run 6)
SNL	State Notation Langage (EPICS)
SNR	Signal to Noise Ratio
SOS	Small Optics Suspension - SOS is the support of steering mirrors in aLIGO
SPI	Suspension Point Interferometer; Seismic Platform Interferometer
SPOB	Sideband Pick Off Beam <splitter>
SPRC	Stable Power Recycling Cavity
SQL	Standard Quantum Limit
SR	Signal Recycled
sr	Steradian
SRC	Signal Recycling Cavity
SRCL	Signal Recycling Cavity Length = (ls + (lx + ly)/2)
SRD	Science Requirements Document; also iLIGO planned performance target
SR2, SR3	Optical elements (mirrors), together with the SRM they form the SRC
SRM	Signal Recycling Mirror - makes resonant cavity for GW-induced sidebands to tune interferometer sensitivity
SRS	Software Requirement Specification
SRx	Signal Recycling Optic designator (where x = {M,2,3}) (interferometer configuration)
SSO	Single Sign On
STAMP	Stochastic Transient Analysis Multi Detector Pipeline
STEM	Science, Technology, Enginieering & Mathematics
STFC	Science and Technology Facilities Council (UK funding agency)
StripTool	A strip chart graphs tool
STS	Streckeisen Tri-axial Seismometer (STS-1 leaf-spring, STS-2 inertial pendulum)
STS2, Guralp, Trillium	Seismic ground motion sensors manufactured by various vendors
STU	Slave Timing Unit (see TSU)
SUBR	Southern University of Baton Rouge
SUP	Support Equipment
SURF	Summer Undergraduate Research Foundation
SUS	Suspension Subsystem (sometimes also Suspension assembly) which controls the position of the suspended optics (e.g., ETMs, MCs)
SUS-AUX	Suspension Subsystem (sometimes also Suspension assembly) - Auxilliary Channels
SUS/UK	Suspension - UK
SUS/US	Suspension - US
SVD	Singular Value Decomposition
SW	Solid Works (computer aided design software)
SWE	Society of Women Engineers
SYS	System-wide Information; Detector Systems Engineering
Ta**2**O**5**	Tantalum Pentoxide (the dielectric mirror material used for LIGO High Reflective coatings)

Abbreviation / Acronym	Meaning / Explanation
TAMA	Japanese Interferometric Gravitational-Wave Project (in the Tama region of Tokyo)
TAPIR	Theoretical AstroPhysics Including Relativity
TAR	Travel Authorization Request
TB	Terabytes
TBD	To Be Determined; To Be Done
TC	Tri-Cities area (Washington State)
TCAC	TriCity Astonomy Club
TCP	Transport Control Protocol
TCS	Thermal Compensation System
TDF	Technology Development Facility
TDS	Time Server Acronym? (Tedious)
TEM	Transverse Electromagnetic Mode (frequency); Transimission Electron Microscopy
TEM00	The lowest order Transverse Electromagnetic Mode possible that exhibits a Gaussian distribution of light across the laser beam
TFP	Thin Film Polarizer (optical hardware)
TGG	Terbium-Gallium-Garnet (optical material used in Faraday Isolators)
TIR	Total Internal Reflection
TM	Test Mass (as in input test mass or end test mass)
TMS	Transmission Monitor Suspension (to relay light in/out of ETMs; part of aLIGO AOS)
TMU	Timing Master Unit (see MTU)
TNI	Thermal Noise Interferometer (R&D Test interferometer at LIGO-Caltech)
TOF/SIMMS	Time-of-Flight Secondary Ion Mass Spectrometry
TOP	Top (upper assembly of SUS structure)
TP	Test Point
TPM	Test Point Manager
TPMAN	Test Point Manager
TPT	Technology Planning Team
TRB	Technical Review Board
Trillium, Guralp, STS2	Seismic ground motion sensors manufactured by various vendors
Triple	Triple auxiliary optic suspension
TSU	Timing Slave Unit (see STU)
TT	Tip-Tilt (mirror) - Steering mirrors prior to OMC (2 total)
TTFSS	Table Top Frequency Stabilization Servo
TTL	Transistor–Transistor Logic
TwinCAT	The Windows Control and Automation Technology
UDP	User Datagram Protocol
UF	University of Florida
UGF	Unity Gain Frequency
UHV	Ultra High Vacuum
UIM	Upper Intermediate (2^{nd} level stage on quad SUS rack)
UL	Upper Limits, Underwriters Laboratory
ULPA	Ultra Low Particulate Air (cleanroom vacuum cleaner)
UNC	Unified Coarse (Screw Thread Standard)

Abbreviation / Acronym	Meaning / Explanation
UNEF	Unified Extra Fine (Screw Thread Standard)
UNF	Unified Fine (Screw Thread Standard)
UTC	Coordinated Universal Time
UUG	Universal Unity Gain?
V	Vertical
VCO	Voltage Controlled Oscillator
VCSEL	Vertical-Cavity Surface-Emitting Laser
VE	Vacuum Equipment (LIGO instrument chambers)
VEA	Vacuum Equipment Area (at observatory mid and end stations) Houses ETMX and ETMY (LLO Kantech calls this LVA)
VIRGO	French-Italian Laser Interferometer Collaboration; Italian-French Laser Interferometer Collaboration, now with broader participation in Europe
VME	Versa Modular Eurocard (IEEE 1014)
VMS	Violin Mode Sensor (element of aLIGO quad test mass suspension)
VMware	Virtual Machine software
VNT	eLIGO Vent Plan
VOE	Virtual Observatory Event
VP	View Port (vacuum chamber viewing windows)
VPN	Virtual Private Network
VPW	Vacuum Preparation Warehouse
VRB	Vacuum Review Board
VRB	Vacuum Review Board
VSR3	Virgo's Science Run 3
VSRM	Variable Signal Recycling Mirror
W	Watt
w	Gaussian beam radius parameter
WA	Washington
WAN	Wide Area Network
WBS	Work Breakdown Structure
WD	WatchDogs, software and hardware
WFS	Wave Front Sensors
WMAP	Wilkinson Microwave Anisotropy Probe
WSU TC	Washington State University TriCities
XAS	X-ray Absorphtion Spectroscopy
XLR	Cannon "X" series, Latched, Rubberized connectors
YV	Yakima Valley
YVTC MESA	Yakima Valley TriCities Mathematics Engineering and Science Achievement
ZEMAX	Commercial optic-ray design software
ZnSe	Zinc Selenide (material used in CO**2** laser applications; transmissive at the 10micron wavelength)