

# Appendix: ILRS Information

## Contributing Organizations

**Table A-1. Organizations Contributing to the ILRS**

Agency	Country
Observatorio Astronómico Félix Aguilar (OAFA) of the Facultad de Ciencias Exactas, Físicas y Naturales (FCEFN) of the Universidad Nacional de San Juan (UNSJ)	Argentina
Geoscience Australia (GA)	Australia
EOS Space Systems Pty. Ltd.	Australia
Austrian Academy of Sciences	Austria
National Institute of Geophysics, Geodesy and Geography (NIGGG, formerly CLG/BAS)	Bulgaria
Observatorio Geodetico TIGO, Universidad de Concepción	Chile
Academia Sinica	China
Changchun observatory of National Astronomical Observatory	China
Chinese Academy of Surveying and Mapping (CASM)	China
Institute of Seismology, China Seismological Bureau	China
Innovation Academy for Precision Measurement Science and Technology, Chinese Academy of Sciences (CAS)	China
National Astronomical Observatories of China (NAOC), Chinese Academy of Sciences (CAS)	China
Shanghai Astronomical Observatory (SHAO), Chinese Academy of Sciences (CAS)	China
State Seismological Bureau	China
Yunnan Observatory, Chinese Academy of Sciences (CAS)	China
Technical University of Prague	Czech Republic
National Research Institute of Astronomy and Geophysics (NRIAG)	Egypt
Finnish Geodetic Institute	Finland
Groupe de Recherche en Geodesie Spatiale (GRGS)	France
Observatoire de la Côte d'Azur/Center d'Etudes et de Recherches Géodynamiques et Astrométrie (OCA/CERGA)	France
Observatoire de Paris	France
Tahiti Geodetic Observatory, University of French Polynesia (UFP)	French Polynesia
Bundesamt für Kartographie und Geodäsie (BKG)	Germany
Deutsches Geodätisches Forschungsinstitut-Technische Universität München (DGFI-TUM)	Germany
European Space Agency/European Space Operation Center (ESA/ESOC)	Germany

**Table A-1. Organizations Contributing to the ILRS, continued**

Agency	Country
German Aerospace Center (DLR) e.V.	Germany
Institut fuer Erdmessung/Forschungseinrichtung SatellitenGeodasie (IFE/FESG)	Germany
Helmholtz Centre Potsdam GeoForschungsZentrum German Research Centre for Geosciences (GFZ)	Germany
Technische Universität München (TUM)	Germany
Agenzia Spaziale Italiana, Centro di Geodesia Spaziale "G. Colombo" (ASI/CGS)	Italy
Institute for Space Astrophysics and Planetology (IAPS)/National Institute for Astrophysics (INAF) and INFN-Roma2	Italy
Istituto Naz. di Fisica Nucleare - Laboratori Naz. di Frascati (INFN-LNF)	Italy
Hitotsubashi University	Japan
Hydrographic and Oceanographic Department, Japan Coast Guard	Japan
Japan Aerospace Exploration Agency (JAXA)	Japan
National Institute of Information and Communications Technology (NICT)	Japan
Tsukuba Space Center/JAXA	Japan
Institute of Astronomy, University of Latvia	Latvia
Delft University of Technology (DUT)	The Netherlands
Norwegian Mapping Authority (Kartverket)	Norway
Universidad Nacional de San Agustín de Arequipa (UNSA)	Peru
Space Research Center of the Polish Academy of Sciences (PAS)	Poland
Wroclaw University of Environmental and Life Sciences	Poland
Information-Analytical Center (IAC)	Russia
Institute of Applied Astronomy (IAA)	Russia
Institute of Astronomy of the Russian Academy of Sciences (INASAN)	Russia
Institute of Metrology for Time and Space (IMVP)	Russia
Pulkovo EOP and Reference Systems Analysis Center (PERSAC)	Russia
Research and Production Corporation "Precision Systems and Instruments"	Russia
Federal State Unitary Enterprise (FSUE), National Research Institute for Physical-Technical and Radio Engineering Measurements (VNIIFTRI)	Russia
Russian Mission Control Centre	Russia
Russian Space Agency (RSA)	Russia
Space Research Institute (SRI) for Precision Instrument Engineering	Russia
King Abdulaziz City for Science and Technology (KACST)	Saudi Arabia
Hartebeesthoek Radio Astronomy Observatory (HartRAO)	South Africa
South African Radio Astronomy Observatory (SARAO)	South Africa
Korea Astronomy and Space Science Institute (KASI)	South Korea
Real Instituto y Observatorio de la Armada	Spain
Instituto Geográfico Nacional, Observatorio de Yebes	Spain
Astronomical Institute, University of Berne (AIUB)	Switzerland

**Table A-1. Organizations Contributing to the ILRS, continued**

Agency	Country
Astronomical Observatory of the Ivan Franko National University of Lviv	Ukraine
Crimean Astrophysical Observatory RAS (CrAO RAS)	Ukraine
Lebedev Physical Institute in the Crimea	Ukraine
Main Astronomical Observatory (MAO) of the National Academy of Sciences (NAS) of Ukraine (GAOUA)	Ukraine
British Geological Survey	United Kingdom
NERC Space Geodesy Facility (NSGF)	United Kingdom
University of Newcastle Upon Tyne	United Kingdom
Center for Space Research (CSR), University of Texas at Austin	USA
Harvard-Smithsonian Center for Astrophysics	USA
Jet Propulsion Laboratory (JPL)	USA
Joint Center for Earth System Technology (JCET), University of Maryland, Baltimore County	USA
National Aeronautics and Space Administration Goddard Space Flight Center (NASA GSFC)	USA
Naval Research Laboratory (NRL)	USA
University of Hawaii Institute for Astronomy	USA
University of Texas at Austin	USA

## Acronyms

AAC	Associate Analysis Center
AAG	Applied Astronomy Group (China)
AC	Analysis Center
ACES	Atomic Clock Ensemble in Space
ACT	Australian Capital Territory
ADEOS	Advanced Earth Observing Satellite
ADS-B	Automatic Dependent Surveillance-Broadcast
AG	Absolute Gravimeter
AGGO	Argentine-German Geodetic Observatory
AGU	American Geophysical Union (USA)
AIUB	Astronomical Institute of Berne (Switzerland)
ALOS	Advanced Land Observing Satellite
ALSEP	Apollo Lunar Surface Experiments Package
ANDE	Atmospheric Neutral Density Experiment (USA)
ANDE-RR	Atmospheric Neutral Density Experiment Risk Reduction (USA)
ANTL	Atmospheric Non-Tidal Loading
AO	Adaptive Optics
AOLC	Altay Optic-Laser Center (Russia)
APD	Avalanche Photodiodes
APOLLO	Apache Point Observatory Lunar Laser-ranging Operation (USA)
AR	Annual Report
ARB	Average Range Bias
ARSU	Amplified Receive Selection Unit
ASC	Analysis Standing Committee
ASI	Agenzia Spaziale Italiana (Italian Space Agency)
ASIMed	ASI Mediterranean (Italy)
AWG	Analysis Working Group
Az-El	Azimuth-Elevation
BE-C	Beacon Explorer C
BGS	British Geological Survey (UK)
BLITS	Ball Lens In The Space
BLITS-M	Ball Lens In The Space Modernized
BKG	Bundesamt für Kartographie und Geodäsie (Germany)
Cal/Val	Calibration/Validation
CAS	Chinese Academy of Sciences
CB	Central Bureau
CBK PAN	Centrum Badań Kosmicznych Polskiej Akademii Nauk (Poland)
CC	Combination Center

CCR	Corner Cube Reflector
CDDIS	Crustal Dynamics Data Information System (USA)
CEAS	Council of European Aerospace Societies
CfA	Center for Astrophysics (USA)
CGS	Centro di Geodesia Spaziale (Italy)
CHAMP	CHALLENGING Mini-Satellite Payload
CHEFSat	Cost-effective High E-Frequency Satellite
CIRA	COSPAR International Reference Atmosphere
CLG	Central Laboratory for Geodesy (Bulgaria)
CMB	Core-Mantle Boundary
CMEMS	Copernicus Marine Environment Monitoring Service
CMONOC	Crustal Movement Observation Network of China
CMP	Conventional Mean Pole
CNES	Centre National d'Etudes Spatiales (France)
CNRS	National Centre for Scientific Research
CODE	Center for Orbit Determination in Europe
COG	Center of Gravity
CoM	Center of Mass
CONGO	Cooperative Network for GIOVE Observation
COOL	Combination On the Observation Level
CORS	Continually Operating Reference Station
COSMIC	Constellation Observing System For Meteorology, Ionosphere, and Climate
COSPAR	Committee on Space Research
COST-G	Combination Service for Time-variable Gravity Fields
COTS	Commercial Off The Shelf
COVID	Corona Virus Disease
CPF	Consolidated Prediction Format
CrAO	Crimean Astrophysical Observatory
CRD	Consolidated Laser Ranging Data format
CSN2	National Scientific Commission II (Italy)
C-SPAD	Compensated Single Photoelectron Avalanche Detector
CSR	Center for Space Research (USA)
CW	Continuous Wave
DEOS	Department of Earth Observation (The Netherlands)
DFPSC	Data Formats and Procedures Standing Committee
DGFI	Deutsches Geodätisches Forschungsinstitut (Germany)
DIRCO	Department International Relations and Cooperation (South Africa)
DLR	Deutsches Zentrum für Luft- und Raumfahrt (German Aerospace Center)
DLT	Debris Laser Tracking
DoD	Department of Defense (USA)
DOGS	DGFI Orbit and Geodetic Software (Germany)

DOR	Differential One-way Ranging
DORIS	Doppler Orbitography and Radiopositioning Integrated by Satellite
DS	Differential Scale
DTM	Drag Temperature Model
DUT	Delft University of Technology (The Netherlands)
EASEP	Early Apollo Scientific Experiment Package/Payload
EC	European Commission
ECOM	Empirical CODE Orbit Model
EDC	EUROLAS Data Center (Germany)
EGSIEM	European Gravity Service for Improved Emergency Management
EGU	European Geophysical Union
ELP	Ephémérides lunaires Parisienne (France)
ELPN	Ephéméride lunaire Parisienne Numérique (France)
ELS	European Lunar Symposium
ELT	European Laser Time Transfer Experiment
ENSO	El Niño-Southern Oscillation
EO	Earth Observation
EOP	Earth Orientation Parameter
EOS	Earth Observing System (USA)
EOS	Electro Optical Systems (USA)
EOSDIS	Earth Observing System Data Information System (USA)
EOST	EOS Technologies, Inc. (Australia)
EPM	Ephemeris of Planets and the Moon
ERP	Earth Rotation Parameter
ERS	European Remote Sensing Satellite
Er:YAG	Erbium Yttrium Aluminum Garnet
ESA	European Space Agency
ESAC	European Space Astronomy Center
ESOC	ESA Space Operations Center
ET	Event Timer
ETC	Event Timer Computer
ETM	Event Timer Module
ETS	Engineering Test Satellite
EU	European Union
EUREF	IAG Reference Frame Sub-Commission for Europe
EUROLAS	European Laser Consortium
FAA	Federal Aviation Administration (USA)
FESG	Forschungseinrichtung Satellitengeodäsie (Research Facility for Space Geodesy, Germany)
FFI	Forsvarets Forskningsinstitutt (Norwegian Defense Research Establishment)
FGI	Finnish Geospatial Research Institute

FOC	Full Operational Capability
FPGA	Field Programmable Gate Array
FR	Full-Rate
FRD	Full-Rate Data
FSUE	Federal State Unitary Enterprise (Russia)
FTLRS	French Transportable Laser Ranging System
FTP	File Transfer Protocol
FWHM	Full width at half maximum
GA	Geoscience Australia
GAOUA	Main Astronomical Observatory of the National Academy of Sciences of Ukraine
GB	Gigabyte
GB	Governing Board
GCC	Geocenter Coordinates
GeoDAF	Geodetical Data Archive Facility (Italy)
GEO	Geosynchronous Earth Orbit
GEO	Group on Earth Observations
GEOS	Geodetic and Earth Orbiting Satellite
GFZ	GeoForschungsZentrum (Germany)
GGAO	Goddard Geophysical and Astronomical Observatory (USA)
GGOS	Global Geodetic Observing System
GIA	Glacial Isostatic Adjustment
GIOVE	Galileo in Orbit Validation Experiment
GIS	Geographic Information System
GLAS	Geoscience Laser Altimeter System (USA)
GLM	Geostationary Lightning Mapper
GLONASS	Global Navigation Satellite System
GLONASS	Global'naya Navigatsionnaya Sputnikovaya Sistema
GM	Gravitational Constant
GMSL	Global Mean Sea Level
GNSS	Global Navigation Satellite System
GOCE	Gravity Field and Steady-state Ocean Circulation Explorer
GOES	Geostationary Operational Environmental Satellite
GOVUS	multi-GNSS Orbit Validation Visualizer Using SLR
GOW	Geodetic Observatory Wettzel (GOW)
GPS	Global Positioning System
GR	General Relativity
GRACE	Gravity Recovery And Climate Experiment
GRACE-FO	Gravity Recovery And Climate Experiment Follow-On
GRAIL	Gravity Recovery and Interior Laboratory
GREAT	Galileo gravitational Redshift test with Eccentric sATEllites
GRGS	Groupe de Recherches de Geodesie Speciale (France)

GSI	Geospatial Information Authority of Japan
GSFC	Goddard Space Flight Center (USA)
GSTP	General Support Technology Programme
HartRAO	Hartebeesthoek Radio Astronomy Observatory (South Africa)
HEO	High Earth Orbiter
HFEOP	High Frequency EOP
Hit-U	Hitotsubatshi University (Japan)
HP	Hewlett-Packard
HQE	high quantum-efficiency
HxET	Herstmonceux Event Timer
Hz	Hertz
IAA	Institute of Applied Astronomy (Russia)
IAAPP	Instituto de Investigación Astronómico y Aeroespacial Pedro Paulet (Peru)
IAC	Information-Analytical Center (Russia)
IAG	International Association of Geodesy
IAPG/TUM	Institute of Astronomical and Physical Geodesy of the Technische Universität München (Germany)
IAPS	Institute for Space Astrophysics and Planetology (Italy)
IBGE	Instituto Brasileiro de Geografia e Estatística (Brazil)
ICG	International Committee on Global Navigation Satellite Systems
ICESat	Ice Cloud and Land Elevation Satellite
ICRF	International Celestial Reference Frame
ICRS	International Celestial Reference System
IDS	International DORIS Service
IEEE	Institute of Electrical and Electronics Engineers
IERS	International Earth Rotation and Reference Systems Service
IFE	Institut für Erdmessung (Germany)
IGFS	International Gravity Field Service
IGG	Institute of Geodesy and Geoinformatics (Poland)
IGLOS	International GLONASS Service
IGN	Institut Geographique National (France)
IGN	National Geographic Institute (Spain)
IGS	International GNSS Service
ILRS	International Laser Ranging Service
ILRSA	ILRS A solution
ILRSB	ILRS B solution
IMCCE	Institut de Mécanique Céleste et de Calcul des Éphémérides (France)
INAF	National Institute for Astrophysics (Italy)
INFN	Istituto Nazionale di Fisica Nucleare (Italy)
INPOP	Integration Numerique Planetaire de l'Observatoire de Paris (France)



INRRI	INstrument for landing-Roving laser Retroreflector Investigations (Italy)
IOV	In Orbit Validation
IR	Infrared
IRV	Inter-Range Vector
ISCEA	Institute of Seismology, China Earthquake Administration
ISI	Institute for Scientific Information
I-SOC	Space Optical Clock on ISS
ISRO	Indian Space Research Organization
ISS	International Space Station
ISTRAC	ISRO Telemetry Tracking and Command Network (India)
ITRF	International Terrestrial Reference Frame
ITRS	International Terrestrial Reference System
IUGG	International Union of Geodesy and Geophysics
IVS	International VLBI Service for Geodesy and Astrometry
IWLR	International Workshop on Laser Ranging
JAXA	Japan Aerospace Exploration Agency
JB	Jacchia-Bowman model
JCET	Joint Center for Earth Systems Technology (USA)
JGM	Joint Gravity Model
JGR	Journal of Geophysical Research
JPL	Jet Propulsion Laboratory (USA)
KASI	Korea Astronomy and Space Science Institute (South Korea)
kHz	Kilohertz
KOMPSAT	Korea Multi-Purpose Satellite
kVA	Kilo Volt Ampere
LAAC	Lunar Associate Analysis Center
LAGEOS	LAser GEodynamics Satellite
LARA	Laser Retroreflector Array
LARASE	LAser RAnged Satellites Experiment
LAREG	Laboratoire de Recherches en Géodésie (France)
LARES	Laser Relativity Satellite
LARGE	LAser Ranging to GNSS s/c Experiment
LARRI	Laser RetroReflector for InSight
LASSOS	LArase Satellites Spin mOdel Solutions
LEO	Low Earth Orbit
LGN	Lunar Geophysical Network
LHRS	Laser Hazard Reduction System
LIDAR	Light Detection and Radar
LLR	Lunar Laser Ranging
LMA	Large Mode Area

LNf	Laboratori Nazionali di Frascati (Italy)
LOD	Length Of Day
LOLA	Lunar Orbiter Laser Altimeter
LR	Laser Ranging
LRA	Laser Retroreflector Array
LRC	Laser Radar Control
LRO	Lunar Reconnaissance Orbiter
LRO-LR	Lunar Reconnaissance Orbiter Laser Ranging
LTT	Laser Time Transfer
MAO	Main Astronomical Observatory (Ukraine)
MCC	Mission Control Center (Russia)
MCP	Micro Channel Plate
MeO	Meteorology and Optics (France)
MEO	Medium Earth Orbit
MGEX	Multi-GNSS Experiment
MGN	Mars Geophysical Network
MGO	McDonald Geodetic Observatory (USA)
MHB	Mathews-Herring-Buffett model
MHz	Megahertz
MJ	Millijoules
MLRO	Matera Laser Ranging Observatory (Italy)
MLRS	McDonald Laser Ranging System (USA)
μm	Micrometer
MOBLAS	MOBile LASer Ranging System
MOMS	Mobile Optical Mount System
MoonLIGHT	Moon Laser Instrumentation for General relativity High- Accuracy Tests
MP	Mean Pole
MPACS	Mount Positioning and Control Subsystem
MPD	Micro Photon Device
mrad	Milliradian
MSC	Missions Standing Committee
MS-LART	Multi-Spectral Large Aperture Receiver Telescope
MSR	Mission Support Request
MSRF	Mission Support Request Form
Mt. FUJI	MuLTiple reFlector Unit from JAXA Investigation (Japan)
MWG	Missions Working Group
NAO	National Astronomical Observatories (China)
NAOC	National Astronomical Observatories of China
NAPEOS	NAVigation Package for Earth Observation Satellites
NAS	National Academy of Sciences (Ukraine)

NASA	National Aeronautics and Space Administration (USA)
Nd:YAG	Neodymium Yttrium Aluminum Garnet
NEOS	National Earth Orientation Service (USA)
NEQ	Normal Equation
NERC	Natural Environment Research Council (UK)
NESC	Networks and Engineering Standing Committee
NICT	National Institute of Information and Communications Technology (Japan)
NISAR	NASA-ISRO SAR
NOAA	National Oceanic and Atmospheric Administration (USA)
NP	Normal Point
NPET	New Pico Event Timer
NPT	Normal Point
NRL	Naval Research Laboratory (USA)
NRLMSISE	NRL Mass Spectrometer and Incoherent Scatter Radar
nm	Nanometer
ns	Nanosecond
NSGF	NERC Space Geodesy Facility (UK)
NSW	New South Wales (Australia)
OC	Operations Center
OCA	Observatoire de la Côte d'Azur (France)
OGT	Observatoire Géodésique de Tahiti (French Polynesia)
OICETS	Optical Inter-orbit Communications Engineering Test Satellite (Japan)
OOOS	Orbital Objects Observation Software
OP-SYRTE	Observatoire de Paris Systèmes de Référence Temps-Espace (France)
OS	Operating System
OST	Operations Support Technician
OSTST	Ocean Surface Topography Science Team
OTA	Optical Tube Assembly
PAS	Polish Academy of Sciences
PCO	Phase Center Offset
PDF	Portable Document Format
PEP	Planetary Ephemeris Program
PERSAC	Pulkovo EOP and Reference Systems Analysis Center (Russia)
PLATO	Performance Simulations and Architectural Trade-Offs
PMF	Potsdam Mapping Function
PMT	Photo Multiplier Tube
POD	Precision Orbit Determination
POE	Precise Orbit Ephemerides
POLAC	Paris Observatory Lunar Analysis Center (France)
PP	Pilot Project

PPB	Part Per Billion
PPET	Portable Pico-Second Event Timer
PPN	Parametrized Post Newtonian
PPS	Part Per Second
ps	Picosecond
PSD	Post-Seismic Deformation
PSMSL	Permanent Service for Mean Sea Level
PSL	Paris Sciences et Lettres, Paris Observatory (France)
QC	Quality Control
Q/C	Quality Control
QCB	Quality Control Board
QKD	Quantum Key Distribution
QLNP	Quick-Look Normal Point
QUEST	Quantum Engineering and Space-Time Research (Germany)
QZS	Quasi-Zenith Satellite (Japan)
QZSS	Quasi-Zenith Satellite System (Japan)
R&D	Research and Development
RANGE	Ranging And Nanosatellite Guidance Experiment (USA)
RAS	Russian Academy of Sciences
RCC	Range Control Card
REGINA	Réseau GNSS pour l'IGS et la Navigation (France)
RG	Range Gate
RINEX	Receiver Independent Exchange format
RMS	Root Mean Square
ROA	Real Instituto y Observatorio de la Armada (Spain)
RPC PSI	Research and Production Corporation "Precision Systems and Instruments" (Russia)
RRA	Retro Reflector Array
RS/PC	Rapid Service/Prediction Center
RT	Radio Telescope
RTS	Riga Event Timing System
SARAL	Satellite with ARgos and ALTiKa
SAO	Shanghai Astronomical Observatory (China)
SAO	Smithsonian Astrophysical Observatory (USA)
SAR	Synthetic Aperture Radar
SARAO	South African Radio Astronomy Observatory
SATRAP	SATellite Reentry Analysis Program
SBAAM	IERS Sub Bureau for Atmospheric Angular Momentum
SC	Standing Committee
SCF	Satellite/lunar laser ranging Characterization Facility (Italy)
SCF	System Configuration File

SCW	Swenson, Chambers and Wahr Model
SDSG	Space Debris Study Group
SERC	Space Environment Research Centre (Australia)
SG	Superconducting Gravimeter
SGF	Space Geodesy Facility (UK)
SGP	Space Geodesy Project (USA)
SGSLR	Space Geodesy Satellite Laser Ranging System (USA)
SHAO	Shanghai Astronomical Observatory (China)
SHO	Shimosato Hydrographic Observatory (Japan)
SINEX	Software Independent Exchange Format
SIRGAS	Sistema de Referencia Geocéntrico para las Américas (Geocentric Reference System for the Americas)
SLR	Satellite Laser Ranging
SME	Standard Model Extension
SNET	S-Band Network for Cooperative Nanosatellites
SNR	Signal-to-Noise Ratio
SNSPD	Superconducting Nano-wire Single Photon Detector
SOD	Site Occupation Designator
SOLT	Space Optical and Laser ranging (South Korea)
SOS-W	Satellite Observing System-Wetzell (Germany)
SP3	Standard Product 3 (satellite orbit format)
SPAD	Single Photoelectron Avalanche Detector
SPIE	International Society for Optical Engineering
SRC PAS	Space Research Centre of the Polish Academy of Sciences (Poland)
SSA	Space Situational Awareness
SSC	Set of Station Coordinates
SSEM	Systematic Station Error Monitoring
SSTF	State Service of Time, Frequency
SSV	Set of Station Velocities
SST	Satellite-to-Satellite Tracking
STAR-C	Surveillance, Tracking And Ranging – Container (Germany)
STR	Stuttgart Airport (Germany)
STSAT	Science and Technology SATellite (South Korea)
SYRTE	Systèmes de Référence Temps-Espace (France)
T2L2	Time Transfer by Laser Link
TanDEM	TerraSAR-X add-on for Digital Elevation Measurement
TD	Total Density model
TDB	Barycentric Dynamical Time
TDEV	Time Deviation
TDM	Tracking Data Message
TIGO	Transportable Integrated Geodetic Observatory

TIRV	Tuned Inter-Range Vector
Ti:Sap	Titanium Sapphire
Ti:Sapphire	Titanium Sapphire
TIU	Time Interval Unit
TLE	Two Line Element
TLRS	Transportable Laser Ranging System
TOF	Time-Of-Flight
TOPEX	Ocean TOPography Experiment
ToR	Terms of Reference
T/P	TOPEX/Poseidon
TPF	Topocentric Prediction Format
T/R	Transmit/Receive
TRF	Terrestrial Reference Frame
TROS	TRansportable Observation Station
TROS	Transportable Range Observation System
TSC	Transponder Standing Committee
TT	Terrestrial Time
TU	Technical University
TUM	Technische Universität München (Germany)
TUS	Tracking Ultraviolet Set-up
UAW	Unified Analysis Workshop
UK	United Kingdom
UMBC	University of Maryland Baltimore County (USA)
UnB	University of Brasilia
UNSA	Universidad Nacional de San Augustin (Peru)
UPF	Université de la Polynésie Française
UPS	Uninterruptible Power Supply
URL	Uniform Resource Locator
UROL	Umlandshöhe Research Observatory (Germany)
USA	United States of America
USNO	U.S. Naval Observatory
USSR	Union of Soviet Socialist Republics
UT	University of Texas
UTC	Universal Coordinated Time
UV	Ultraviolet
VCE	Variance Component Estimation
VGOS	VLBI Global Observing System
VLBI	Very Long Baseline Interferometry
VNA	Vector Network Analyzer
VNIIFTRI	Russian Metrological Institute of Technical Physics and Radio Engineering

WESTPAC	Western Pacific Laser Tracking Network Satellite
WG	Working Group
WLRS	Wetzell Laser Ranging System (Germany)
WPLTN	Western Pacific Laser Tracking Network
WRMS	Weighted Root Mean Square
WUELS	Wroclaw University of Environmental and Life Sciences (Poland)
XAO	Xinjiang Astronomical Observatory (China)
YAG	Yttrium Aluminum Garnet
YLARA	Yebes LAser RAnging (Spain)
Yt:YAG	Ytterbium Yttrium Aluminum Garnet
ZARM	Center of Applied Space Technology and Microgravity (Germany)
ZD	Zenith Delay
ZIMLAT	Zimmerwald Laser and Astronomy Telescope (Switzerland)