STATION REPORTS

STATION REPORT

STATION NAME:	Moblas 5
LOCATION:	Yarragadee, Western Australia
MAILING ADDRESS:	NASA Tracking Station P. O. Box 137 Dongara, 6525 Western Australia
TELEPHONE NO:	GSFC SCAMA TWX NO. GXEE
PERIOD OF OPERATION:	October, 1979 to present
DATA REPORTED TO:	GSFC

APERTURE:	30 inch	MOUNT TYPE:	AZ-EL
TRANSMITTED POWER:	250 MJ	REP. RATE:	1PPS
WAVELENGTH:	532 NM	PULSE WIDTH:	5 - 7 nsec

DETECTOR TYPE:	2233 Amperex
PRIMARY TIME STANDARD:	Caesium
TIME OF FLIGHT EQUIPMENT:	HP 5360
COMPUTER TYPE & CAPACITY:	Modular Computer II - 64K

MAJOR SUBSYSTEMS UNDER COMPUTER CONTROL:	Peripherals, Mount Servo Control Console, Data Measuring System		
CALIBRATION METHOD:	Pre-post ranging of fixed calibration target		
PRINCIPLE TARGETS:	Lageos	Starlette	BE-3
TRACKS IN 1980:	524	108	0
PRECISION ON TARGET:	15 cm	10	
ENVIRONMENTAL MONITORING:	Temperature, Air Pressure, Humidity		
GEODETIC MONITORING:			
READINESS TO TRACK IN '82:			
READINESS TO TRACK IN MERIT '83-'84:			
COMMENTS:			

STATION REPORT

STATION NAME:	7943 - SAO
LOCATION:	Orroral Valley, Australia
MAILING ADDRESS:	Station Director, NASA/STDN Orroral Valley Tracking Station P. O. Box 40, Kingston ACT 2604 Australia
TELEPHONE NO:	TWX No. via NASCOM
PERIOD OF OPERATION:	full time, 2 shifts
DATA REPORTED TO:	SAO

APERTURE:	20"cassegrain	MOUNT TYPE:	Alt/Azi, Stepping
TRANSMITTED POWER:	350 MW	REP. RATE:	8ppm
WAVELENGTH:	694.3 nm	PULSE WIDTH:	6 nsec

DETECTOR TYPE:	RCA 7265
PRIMARY TIME STANDARD:	Caesium UTC (USNO)
TIME OF FLIGHT EQUIPMENT:	0.1 nsec counter, 20 channel digitizer, A/D converters
COMPUTER TYPE & CAPACITY:	D.G. Nova 1200, 32K

MAJOR SUBSYSTEMS UNDER COMPUTER CONTROL:	Mount, data system, paper tape reader and punch, linc tape			
CALIBRATION METHOD:	pre/post pass calibration, weekly start electronics, monthly system calibration			
PRINCIPLE TARGETS:	Lageos	Starlette	Geos 3	Geos 1
TRACKS IN 1980:	378	316	233	254
PRECISION ON TARGET:	10cm	10cm	10cm	10cm
ENVIRONMENTAL MONITORING:	Temperature, Humidity, Pressure			
GEODETIC MONITORING:	Periodic slant			
READINESS TO TRACK IN '82:	201 nights/ 266 days			
READINESS TO TRACK IN MERIT '83-'84:	201 nights/ 201 days			

COMMENTS:

STATION REPORT

STATION NAME:		National Mapping LLR, Orroral Valley	
LOCATION:		Orroral Valley, ACT, Australia	
MAILING ADDRESS:		Division of National Mapping P. O. Box 31 Belconnen, ACT, Australia	
TELEPHONE NO:		062-357215	TWX No. AA 62230
PERIOD OF OPERATION:		continuous	
DATA REPORTED TO:		University of Texas	
APERTURE:	1.5 M	MOUNT TYPE:	Equatorial
TRANSMITTED POWER:	1 J.	REP. RATE:	12 ppm
WAVELENGTH:	694.3 nm	PULSE WIDTH:	6 nsec
DETECTOR TYPE:		RCA 31034	
PRIMARY TIME STANDARD:		Caesium	
TIME OF FLIGHT EQUIPMENT:		HP5370A	
COMPUTER TYPE & CAPACITY:		HP 21MX, 176K	

MAJOR SUBSYSTEMS UNDER COMPUTER CONTROL:	Mount, Timing System, Data Storage
CALIBRATION METHOD:	pre/post pass calibration
PRINCIPLE TARGETS:	Apollo 15
TRACKS IN 1980:	approx. 100
PRECISION ON TARGET:	30 cm
ENVIRONMENTAL MONITORING:	temperature, air pressure, humidity
GEODETIC MONITORING:	1st order horizontal and vertical control net to AGD and AHD respectively
READINESS TO TRACK IN '82:	refurbishment phase
READINESS TO TRACK IN MERIT '83-'84:	300 days, 300 nights

COMMENTS: _____

STATION REPORT

STATION NAME:	Observatory Lustbuhel
LOCATION:	Graz - Austria
MAILING ADDRESS:	Observatory Lustbuhel Lustbuhelstrasse 46 A - 8042 GRAZ AUSTRIA
TELEPHONE NO:	(0)316/41332/21 TWX No. 31078 obslgz a
PERIOD OF OPERATION:	
DATA REPORTED TO:	

APERTURE:	50 cm	MOUNT TYPE:	Azimuth/Elevation
TRANSMITTED POWER:	100 mJ (a) 2.5 J, 4 J (b)	REP. RATE:	up to 10 Hz (a) up to 0.25 Hz (b)
WAVELENGTH:	530 nm (a) 694.3 nm (b)	PULSE WIDTH:	100 pps (a) 3 ns, 6 ns (b)

DETECTOR TYPE:

PRIMARY TIME STANDARD:	B.I.H. Laboratory TUG (Graz), with: 2 Caesium Beam Frequency Standards 4 LORAN - C Receivers; 3 VLF - Receivers
TIME OF FLIGHT EQUIPMENT:	HP 5370A Time Interval Counter
COMPUTER TYPE & CAPACITY:	HP 1000, Model 40, 128kByte

MAJOR SUBSYSTEMS UNDER
COMPUTER CONTROL:

CALIBRATION METHOD:

PRINCIPLE TARGETS:

TRACKS IN 1980:

PRECISION ON TARGET:

ENVIRONMENTAL MONITORING:

GEODETIC MONITORING:

READINESS TO TRACK IN '82:

READINESS TO TRACK IN
MERIT '83-'84:

COMMENTS:

Hardware integration and software development are going on during 1981, test phase is expected to start beginning of 1982.

STATION REPORT

STATION NAME:	7929 - SAO		
LOCATION:	Natal, Brazil		
MAILING ADDRESS:	Smithsonian Astrophysical Observatory US Consulate Recife APO Miami, FL 34030		
TELEPHONE NO:	TWX No. RTTY - via SAO		
PERIOD OF OPERATION:	full time, 3 shifts		
DATA REPORTED TO:	SAO		
APERTURE:	20"cassegrain	MOUNT TYPE:	Alt/Azi, stepping
TRANSMITTED POWER:	350 MW	REP. RATE:	8ppm
WAVELENGTH:	694.3 nm	PULSE WIDTH:	6 nsec
DETECTOR TYPE:	RCA 7265		
PRIMARY TIME STANDARD:	Caesium UTC (USNO)		
TIME OF FLIGHT EQUIPMENT:	0.1 nsec counter, 20 channel digitizer, A/D converters		
COMPUTER TYPE & CAPACITY:	Nova 1200, 32K		

MAJOR SUBSYSTEMS UNDER COMPUTER CONTROL:	mount, data system, paper tape reader and punch Linc tape				
CALIBRATION METHOD:	pre/post pass calibration, daily counter				
PRINCIPLE TARGETS:	Lageos	Starlette	Geos 3	Geos 1	BEC
TRACKS IN 1980:	65	167	262	241	113
PRECISION ON TARGET:	10cm	10cm	10cm	10cm	10cm
ENVIRONMENTAL MONITORING:	temperature, humidity, air pressure				
GEODETIC MONITORING:	periodic slant range				
READINESS TO TRACK IN '82:	0				
READINESS TO TRACK IN MERIT '83-'84:	0				

COMMENTS:

STATION REPORT

STATION NAME:	Shanghai Observatory
LOCATION:	Shanghai, China
MAILING ADDRESS:	Shanghai Observatory Shanghai, China
TELEPHONE NO:	
PERIOD OF OPERATION:	Sept., 1980 to January, 1981
DATA REPORTED TO:	SAO, USA

APERTURE:	300 mm	MOUNT TYPE:	A--h
TRANSMITTED POWER:	20 MW	REP. RATE:	1 Hz
WAVELENGTH:	532 nm	PULSE WIDTH:	5nsec

DETECTOR TYPE:	PMT GDB 49
PRIMARY TIME STANDARD:	Rubidium
TIME OF FLIGHT EQUIPMENT:	Computing Counter with 0.1 ns resolution
COMPUTER TYPE & CAPACITY:	none

MAJOR SUBSYSTEMS UNDER COMPUTER CONTROL:	n/a	
CALIBRATION METHOD:	range to the fixed target on ground	
PRINCIPLE TARGETS:	Geos - 3	Geos - 1
TRACKS IN 1980:	60	30
PRECISION ON TARGET:	60cm	30cm
ENVIRONMENTAL MONITORING:	Air pressure, temperature	
GEODETIC MONITORING:		
READINESS TO TRACK IN '82:	300 nights	
READINESS TO TRACK IN MERIT '83-'84:	300 nights/300 days	

COMMENTS:

A new laser system made in China will be installed at the Shanghai Observatory by the Fall of 1982. The main parameters are:

Telescope: 600mm aperture with Coude optics,

Nd: YAG Laser, 0.25 joules, 5ns, 1Hz

Controlled by a microprocessor (Z--80)

Can track Lageos, maybe by daylight

STATION REPORT

STATION NAME:	Yunnan Observatory, Academia Sinica
LOCATION:	$\lambda = 102^{\circ}47'$ $\phi = 25^{\circ}01'$
MAILING ADDRESS:	Yunnan Observatory P. O. Box 110 Kunming, Yunnan Province China
TELEPHONE NO:	Kunming 2034-75
PERIOD OF OPERATION:	1979 to present
DATA REPORTED TO:	Shanghai Observatory

APERTURE:	430 mm	MOUNT TYPE:	4th axis
TRANSMITTED POWER:	80 MW	REP. RATE:	30/min.
WAVELENGTH:	694.3 nm	PULSE WIDTH:	20 nsec

DETECTOR TYPE:

PRIMARY TIME STANDARD:

TIME OF FLIGHT EQUIPMENT:

COMPUTER TYPE & CAPACITY:

MAJOR SUBSYSTEMS UNDER COMPUTER CONTROL:			
CALIBRATION METHOD:			
PRINCIPLE TARGETS:	65321	65891	75271
TRACKS IN 1980:			
PRECISION ON TARGET:	100 cm	100 cm	100 cm
ENVIRONMENTAL MONITORING:			
GEODETIC MONITORING:			
READINESS TO TRACK IN '82:	200 nights (not including weather)		
READINESS TO TRACK IN MERIT '83-'84:			
COMMENTS:			

STATION REPORT

STATION NAME:	Santiago de Cuba
LOCATION:	Santiago de Cuba
MAILING ADDRESS:	Institute of Geophysics and Astronomy ACC.212 ST. 2906 Havana, Cuba
TELEPHONE NO:	TWX No. 511240 geoastro cu
PERIOD OF OPERATION:	1979
DATA REPORTED TO:	Interkosmos

APERTURE:	32 cm	MOUNT TYPE:	4 axes
TRANSMITTED POWER:	50 MW	REP. RATE:	15 ppm
WAVELENGTH:	694 nm	PULSE WIDTH:	30 ns

DETECTOR TYPE:	RCA 8852
PRIMARY TIME STANDARD:	VLF
TIME OF FLIGHT EQUIPMENT:	
COMPUTER TYPE & CAPACITY:	

MAJOR SUBSYSTEMS UNDER COMPUTER CONTROL:			
CALIBRATION METHOD:	Fixed target		
PRINCIPLE TARGETS:	GEA	GEC	BEC
TRACKS IN 1980:			
PRECISION ON TARGET:	100cm	100cm	100cm
ENVIRONMENTAL MONITORING:			
GEODETIC MONITORING:			
READINESS TO TRACK IN '82:	150 nights		
READINESS TO TRACK IN MERIT '83-'84:	300 nights		

COMMENTS:

STATION REPORT

STATION NAME:	Intercosmos - 1867, Quito		
LOCATION:	ℓ = 0°12'25.5" λ = 281°31'47" h = 2860 m		
MAILING ADDRESS:	Ecuador, R. Oreliana Escuela Politecnica Nacional Apartado 2759 Quito		
TELEPHONE NO:			
PERIOD OF OPERATION:	day time		
DATA REPORTED TO:	Data Center of the A. S.		
APERTURE:	340 mm	MOUNT TYPE:	4-axis
TRANSMITTED POWER:	1 J.	REP. RATE:	0.25 per sec.
WAVELENGTH:	694.3 nm	PULSE WIDTH:	35 nsec
DETECTOR TYPE:	FEU-84		
PRIMARY TIME STANDARD:	Cuarz System AFU-75		
TIME OF FLIGHT EQUIPMENT:	CV-receiver		
COMPUTER TYPE & CAPACITY:			

MAJOR SUBSYSTEMS UNDER COMPUTER CONTROL:	printing device MT-1016	
CALIBRATION METHOD:	stand.target at dist. of 2181.34 m	
PRINCIPLE TARGETS:	Geos A	Geos C
TRACKS IN 1980:	2	9
PRECISION ON TARGET:	135 cm	170 cm
ENVIRONMENTAL MONITORING:	visual control	
GEODETIC MONITORING:		
READINESS TO TRACK IN '82:		
READINESS TO TRACK IN MERIT '83-'84:		

COMMENTS:

STATION REPORT

STATION NAME:	Helwan I		
LOCATION:	Helwan, Egypt		
MAILING ADDRESS:	Helwan Institute of Astronomy and Geophysics Helwan, Egypt		
TELEPHONE NO:	TWX No. 93 070		
PERIOD OF OPERATION:	1974 to present		
DATA REPORTED TO:	Interkosmos, SAO		
APERTURE:	32 cm	MOUNT TYPE:	4 axis
TRANSMITTED POWER:	50 MW	REP. RATE:	15 ppm
WAVELENGTH:	694 nm	PULSE WIDTH:	30 nsec
DETECTOR TYPE:	RCA 8852		
PRIMARY TIME STANDARD:	Loran C, HP Cs clock		
TIME OF FLIGHT EQUIPMENT:			
COMPUTER TYPE & CAPACITY:	HP 9830, 16k		

MAJOR SUBSYSTEMS UNDER COMPUTER CONTROL:	time gate, range counter, epoch counter		
CALIBRATION METHOD:	fixed target		
PRINCIPLE TARGETS:	GEA	GEC	BEC
TRACKS IN 1980:			
PRECISION ON TARGET:	100cm	100cm	100cm
ENVIRONMENTAL MONITORING:			
GEODETIC MONITORING:			
READINESS TO TRACK IN '82:	100 nights		
READINESS TO TRACK IN MERIT '83-'84:	100 nights		

COMMENTS:

STATION REPORT

STATION NAME:	Helwan II
LOCATION:	Helwan, Egypt
MAILING ADDRESS:	Helwan Institute of Astronomy and Geophysics Helwan, Egypt
TELEPHONE NO:	TWX No. 93-070
PERIOD OF OPERATION:	1981 to Present
DATA REPORTED TO:	Interkosmos, SAO

APERTURE:	40 cm	MOUNT TYPE:	AZ/ALT
TRANSMITTED POWER:	200 MW	REP. RATE:	15ppm
WAVELENGTH:	694 nm	PULSE WIDTH:	4 nsec

DETECTOR TYPE:	RCA 8852
PRIMARY TIME STANDARD:	Loran c, H-P Cs clock
TIME OF FLIGHT EQUIPMENT:	
COMPUTER TYPE & CAPACITY:	HP 2100S, 64 KByte

MAJOR SUBSYSTEMS UNDER COMPUTER CONTROL:	range counter, epoch counter, time gate, laser mount			
INPUT/OUTPUT FORMATS:	SAO coded			
CALIBRATION METHOD:	fixed target			
PRINCIPLE TARGETS:	gea	GEC	BEC	Starlette
TRACKS IN 1980:				
PRECISION ON TARGET:	20cm	20cm	20cm	20cm
ENVIRONMENTAL MONITORING:				
GEODETIC MONITORING:				
READINESS TO TRACK IN '82:	150 nights/50 days			
READINESS TO TRACK IN MERIT '83-'84:	200 nights/100 days			

COMMENTS:

STATION REPORT

STATION NAME:	Wettzell
LOCATION:	Germany (F.R)
MAILING ADDRESS:	Institut F. Angew. Geodaesie Sat. Beob. Station Wettzell D-8493 Koetzting Germany (F.R.)
TELEPHONE NO:	09941-8643 TWX No. 069937 WESAT-D
PERIOD OF OPERATION:	1972 to present (3 weeks per month)
DATA REPORTED TO:	SAO, CNES

APERTURE:	60 cm	MOUNT TYPE:	Alt/Azim.
TRANSMITTED POWER:	0.25 J	REP. RATE:	4 pps
WAVELENGTH:	532 nm	PULSE WIDTH:	0.2 nsec

DETECTOR TYPE:	Varian Static Crossed Field 154 (153)
PRIMARY TIME STANDARD:	3 Caesium clocks, sev. Rub.-Cls.
TIME OF FLIGHT EQUIPMENT:	Hewlitt-Packard Computing Counter 5360A
COMPUTER TYPE & CAPACITY:	DEC 11/45, 82K

MAJOR SUBSYSTEMS UNDER COMPUTER CONTROL:	look.angles, mount-control, laser contr., detector, data handling		
CALIBRATION METHOD:	terrestrial target measurement		
PRINCIPLE TARGETS:	Lageos	Starlette	Geos 3
TRACKS IN 1980:	21	39	20
PRECISION ON TARGET:	4-50cm (depending on state of laser eqpt.)	4-50cm	4-50cm
ENVIRONMENTAL MONITORING:	temperature, pressure, humidity		
GEODETIC MONITORING:	geodetic control net (angle, distance, height, gravity) in preparation, earth tides (observations in preparation)		
READINESS TO TRACK IN '82:			
READINESS TO TRACK IN MERIT '83-'84:			
COMMENTS:			

STATION REPORT

STATION NAME:	Mobile Laser Ranging System
LOCATION:	under development
MAILING ADDRESS:	Institut für Angewandte Geodäsie Richard Strauss Allee 11 D-6000 Frankfurt 70
TELEPHONE NO:	0611-638091 Telex 04 13 592 ifag d
PERIOD OF OPERATION:	from mid-year 1983
DATA REPORTED TO:	

APERTURE:	40 cm	MOUNT TYPE:	Az-El, coude
TRANSMITTED POWER:	50 MW	REP. RATE:	10 Hz
WAVELENGTH:	539 nm	PULSE WIDTH:	0.2 nsec

DETECTOR TYPE:	RCA 8850 (preliminary)
PRIMARY TIME STANDARD:	to be decided
TIME OF FLIGHT EQUIPMENT:	HP 5370 A + constant fraction discriminators
COMPUTER TYPE & CAPACITY:	multi-microprocessor system

MAJOR SUBSYSTEMS UNDER COMPUTER CONTROL:	mount, detection system		
CALIBRATION METHOD:	pre/postcalibration + simultaneous internal calibration		
PRINCIPLE TARGETS:	Lageos	Starlette	Ground
TRACKS IN 1980:			
PRECISION ON TARGET:	2 cm	2 cm	1cm
ENVIRONMENTAL MONITORING:	pressure, temperature, relative humidity		
GEODETIC MONITORING:	geodetic locator		
READINESS TO TRACK IN '82:			
READINESS TO TRACK IN MERIT '83-'84:			

COMMENTS:

STATION REPORT

STATION NAME:	Metsahovi (7805)		
LOCATION:	Finland		
MAILING ADDRESS:	Finnish Geodetic Institute Ilmalankatu 1 A SF-00240 Helsinki 24, Finland		
TELEPHONE NO:	410433		
PERIOD OF OPERATION:	March to December		
DATA REPORTED TO:	SAO, University of Texas, NSSDC, CNES, IfAG, Kootwijk		
APERTURE:	630mm	MOUNT TYPE:	Equatorial
TRANSMITTED POWER:	50 MW	REP. RATE:	1/15 Hz
WAVELENGTH:	694.3 nm	PULSE WIDTH:	20 nsec
DETECTOR TYPE:	RCA C 31034, 8852		
PRIMARY TIME STANDARD:	Quartz, phase-locked to LORAN C		
TIME OF FLIGHT EQUIPMENT:	Nanofast 536 B counter+ M/2 half-max plug-in		
COMPUTER TYPE & CAPACITY:	32k Words		

MAJOR SUBSYSTEMS UNDER COMPUTER CONTROL:	tracking, data registration			
CALIBRATION METHOD:	flat target, 333 m distance			
PRINCIPLE TARGETS:	Lageos	Geos 1	Geos 3	Starlette
TRACKS IN 1980:	41	30	25	19
PRECISION ON TARGET:	100cm	50cm	50cm	50cm
ENVIRONMENTAL MONITORING:	air pressure, temperature, humidity			
GEODETIC MONITORING:				
READINESS TO TRACK IN '82:	240 nights			
READINESS TO TRACK IN MERIT '83-'84:	300 nights			

COMMENTS:

STATION REPORT

STATION NAME:	Laser-Lune, C.E.R.G.A.		
LOCATION:	Observatoire de Calern		
MAILING ADDRESS:	06460 St. Vallier de Thiey		
TELEPHONE NO:	42-62-70 (93)	TWX No.	461402
PERIOD OF OPERATION:	all year		
DATA REPORTED TO:	first experiment in June and July, 1981		
APERTURE:	1.5m	MOUNT TYPE:	Azimuthal
TRANSMITTED POWER:	1.5 J	REP. RATE:	6 S
WAVELENGTH:	694.3 nm	PULSE WIDTH:	3 nsec
DETECTOR TYPE:	RCA 31034 A		
PRIMARY TIME STANDARD:	Caesium		
TIME OF FLIGHT EQUIPMENT:			
COMPUTER TYPE & CAPACITY:	Eclipse - Data General		

MAJOR SUBSYSTEMS UNDER COMPUTER CONTROL:	32 K + Nova - Data General		
CALIBRATION METHOD:	internal + external targets at several kms		
PRINCIPLE TARGETS:	Starlette	Geos A	Geos C
TRACKS IN 1980:	2	1	1
PRECISION ON TARGET:	25 cm	25cm	25cm

ENVIRONMENTAL MONITORING:

GEODETIC MONITORING:

READINESS TO TRACK IN '82: 120 nights, 0 days

READINESS TO TRACK IN MERIT '83-'84: 120 nights

COMMENTS:

This station can track also Lageos and geostationary satellite; it will participate to LASSO experiment in 1982 (intercontinental synchronization at 1ns through a geostationary satellite).

STATION REPORT

STATION NAME:	Laser Satellite Grasse (7835)		
LOCATION:	GRASSE		
MAILING ADDRESS:	Station Laser Satellite Observatoire de Calern 06460 St. Vallier de Thiey		
TELEPHONE NO:	(93) 42-62-70 TWX No. 461402		
PERIOD OF OPERATION:			
DATA REPORTED TO:	CNES - Toulouse		
APERTURE:	1.00 m	MOUNT TYPE:	Azimuthal
TRANSMITTED POWER:	3 J.	REP. RATE:	5 S
WAVELENGTH:	694 nm	PULSE WIDTH:	3 nsec
DETECTOR TYPE:	Centroid detection		
PRIMARY TIME STANDARD:	Caesium		
TIME OF FLIGHT EQUIPMENT:			
COMPUTER TYPE & CAPACITY:	T/1600 Telemecanique 48K octets		

MAJOR SUBSYSTEMS UNDER COMPUTER CONTROL:			
INPUT/OUTPUT FORMATS:	SEASAT format		
CALIBRATION METHOD:	external targets at several kms. simple and return way		
PRINCIPLE TARGETS:	7501001	7502701	76303901
TRACKS IN 1980:	111	36	78
PRECISION ON TARGET:	20cm	50 cm	20cm
ENVIRONMENTAL MONITORING:			
GEODETIC MONITORING:			
READINESS TO TRACK IN '82:	100 nights/50 days		
READINESS TO TRACK IN MERIT '83-'84:	20 nights/100 days		

COMMENTS:

This station can be moved (but not very quickly); its accuracy will be improved in the next years at level of a few centimeters.

This station can track geostationary satellite and will participate in LASSO experiment in 1982 (intercontinental synchronization at 1ns through a geostationary satellite).

STATION REPORT

STATION NAME:	Potsdam, Helmertturm; No. 1181
LOCATION:	X=3800596 Y=881989 Z=5028865
MAILING ADDRESS:	Zentralinst.Physik d. Erde Telegrafenberg A 17 DDR-1500 Potsdam G.D.R.
TELEPHONE NO:	4551 TWX No. 15305
PERIOD OF OPERATION:	1974 to present
DATA REPORTED TO:	Astrosoviet, CNES

APERTURE:	40 cm	MOUNT TYPE:	4-ax., SBG
TRANSMITTED POWER:	0.5 to 1 J	REP. RATE:	10/min.
WAVELENGTH:	694.3 nm	PULSE WIDTH:	20 nsec

DETECTOR TYPE:	RCA C 34034A
PRIMARY TIME STANDARD:	Cs-Clock HP 5061 A
TIME OF FLIGHT EQUIPMENT:	HP 5370 A
COMPUTER TYPE & CAPACITY:	HP 9825S, 23 K Byte

MAJOR SUBSYSTEMS UNDER COMPUTER CONTROL:	Mount drive, laser, gate, counter			
CALIBRATION METHOD:	Terrestrial Targets 500 m and 2000 m distance			
PRINCIPLE TARGETS:	Geos A	Geos C	Starlette	Lageos
TRACKS IN 1980:	89	72	47	24
PRECISION ON TARGET:	80 cm	60 cm	60 cm	150 cm
ENVIRONMENTAL MONITORING:	pressure, temperature			
GEODETIC MONITORING:				
READINESS TO TRACK IN '82:	180 nights/180 days			
READINESS TO TRACK IN MERIT '83-'84:	200 nights/200 days			

COMMENTS:

Availability of long term classical astronomical, seismic and gravimetric data from the same observatory.

STATION REPORT

STATION NAME:	DIONYSOS
LOCATION:	Athens, Greece
MAILING ADDRESS:	9 K Zografou Athens 624 GREECE
TELEPHONE NO:	(01) 8131961 TELEX: 215032
PERIOD OF OPERATION:	1969 to Present
DATA REPORTED TO:	EROS and SAO

APERTURE:	40 CM	MOUNT TYPE:	Coude
TRANSMITTED POWER:	4.5 Joule	REP. RATE:	8 PPM
WAVELENGTH:	694.3 NM	PULSE WIDTH:	25 nsec

DETECTOR TYPE:	PMT RCA 7265
PRIMARY TIME STANDARD:	HP Cesium Standard 5061 A
TIME OF FLIGHT EQUIPMENT:	HP Counter 5360 A
COMPUTER TYPE & CAPACITY:	CDC Cyber 171

MAJOR SUBSYSTEMS UNDER COMPUTER CONTROL:	Local Terminal			
CALIBRATION METHOD:	Paper Tape and/or Cassette			
PRINCIPLE TARGETS:	GEOS 1	GEOS 3	LAGEOS	STARLETTE
TRACKS IN 1980:	30	23	22	50
PRECISION ON TARGET:	60 CM	60 CM	60 CM	60 CM
ENVIRONMENTAL MONITORING:	Temperature (±0.1C), Pressure (±1 MBAR), Humidity (5%)			
GEODETIC MONITORING:	Earth Tides and Local Deformations			
READINESS TO TRACK IN '82:	Refurbishment Phase			
READINESS TO TRACK IN MERIT '83-'84:	300 days, 300 nights			

COMMENTS:

A new green laser of 100 mJ, 200 psec at 10 Hz is expected to be delivered in March and go into operation in June.

STATION REPORT

STATION NAME:	Satellite Geodetic Obs.
LOCATION:	Penc, Hungary
MAILING ADDRESS:	H-1373 Budapest, Pf.546 Hungary
TELEPHONE NO:	27-10980 TWX No. 282241
PERIOD OF OPERATION:	10-04-80 to 20-10-80
DATA REPORTED TO:	

APERTURE:	43 cm	MOUNT TYPE:	4 axes
TRANSMITTED POWER:	0.5J	REP. RATE:	0.5 Hz
WAVELENGTH:	694 nm	PULSE WIDTH:	20 nsec

DETECTOR TYPE:	PMT, FEU-84
PRIMARY TIME STANDARD:	Rubidium Atomic
TIME OF FLIGHT EQUIPMENT:	Modified EMG 1646 , 100MHz counter
COMPUTER TYPE & CAPACITY:	HP 9830

MAJOR SUBSYSTEMS UNDER COMPUTER CONTROL:		
CALIBRATION METHOD:	pre/post target measurements	
PRINCIPLE TARGETS:	Geos 3	Geos 1
TRACKS IN 1980:	33	18
PRECISION ON TARGET:	100cm	100cm
ENVIRONMENTAL MONITORING:		
GEODETIC MONITORING:		
READINESS TO TRACK IN '82:	100 nights	
READINESS TO TRACK IN MERIT '83-'84:	150 nights	

COMMENTS:

Photographic and laser measurements are possible from the same SBG telescope mount.

STATION REPORT

STATION NAME:		Kavalur	
LOCATION:		India	
MAILING ADDRESS:		STARS Project 6th Floor, Shastri Bhavan, Haddows Road, Madras 600 006 INDIA	
TELEPHONE NO:		811046	Telex No. 041-394 & 7353
PERIOD OF OPERATION:		January through May; September through October and the month of December	
DATA REPORTED TO:		AS-USSR (Moscow) Co-ordinator, Interkosmos Laser Radar working group (Prague) and ISRO	
APERTURE:	32 cm	MOUNT TYPE:	4 axis
TRANSMITTED POWER:	1 J.	REP. RATE:	1 pps
WAVELENGTH:	694.3 nm	PULSE WIDTH:	20 nsec
DETECTOR TYPE:		RCA 8852 and USSR equivalent (RCA C31034A)	
PRIMARY TIME STANDARD:		Caesium Beam Frequency Standard HP 5061A (with option 004)	
TIME OF FLIGHT EQUIPMENT:		Polish FL 103B + BT2 and Hewlett Packard 5335A with options 010 and 030	
COMPUTER TYPE & CAPACITY:		IBM 370/155	

MAJOR SUBSYSTEMS UNDER COMPUTER CONTROL:	None	
CALIBRATION METHOD:	Fixed target board method	
PRINCIPLE TARGETS:	(1)	(2)
TRACKS IN 1980:	1500	1500
	at the rate of 10 shots per calibration	
PRECISION ON TARGET:	15 cm	15 cm
ENVIRONMENTAL MONITORING:	p mm Hg	T°per C H%
GEODETIC MONITORING:	yes	
READINESS TO TRACK IN '82:	150 nights	
READINESS TO TRACK IN MERIT '83-'84:	150 nights	

COMMENTS:

The station is established in the campus of Indian Institute of Astrophysics, Kavalur (12°34'N, 78°51'E, 800m MSL) as a scientific collaboration between Indian Space Research Organization (ISRO) and the Astronomical Council of the USSR (AC-AS USSR). The station is equipped with A F U-75 tracking camera, laser radar and precise timing equipment.

Highly accurate time service exist at the station. The current epoch accuracy is 10 μ seconds (UTC) with respect to BIH (Paris).

STATION REPORT

STATION NAME:	Dodaira Station
LOCATION:	Long. 139°11' 43".159E Lat. 36°00' 08".606N H. 855.89 m
MAILING ADDRESS:	Dodaira Station, Tokyo Astronomical Observatory Ohno, Tokigawa-Mura, Hiki-Gun, Saitama-Ken 355-05 JAPAN
Main office:	Univ.of Tokyo, Mitaka, Tokyo 181, JAPAN
TELEPHONE NO:	Dodaira (0) 493-67-0224 TWX 02933106 Mitaka (0) 422-32-5111 TWX 02822307 (0) is necessary only in Japan
PERIOD OF OPERATION:	All Year
DATA REPORTED TO:	Smithsonian Astrophysical Observatory

APERTURE:	RX=50cm TX=10cm	MOUNT TYPE:	XY mount
TRANSMITTED POWER:	0.3J	REP. RATE:	0.1 ppm
WAVELENGTH:	694.3 nm	PULSE WIDTH:	15 ns (without slicer) 4 ns (with slicer)

DETECTOR TYPE:	RCA 7265(will be replaced soon by HTV R-1333, similar to RCA-8852)
PRIMARY TIME STANDARD:	Rubidium Frequency Standard which is linked to caesium frequency standards at Mitaka through VHF radio
TIME OF FLIGHT EQUIPMENT:	
COMPUTER TYPE & CAPACITY:	HP-2100 with 64 K

MAJOR SUBSYSTEMS UNDER COMPUTER CONTROL:	telescope driving, ranging system control and data acquisition, disc drive (5MByte) CRT terminal, line printer, TEX tape reader
CALIBRATION METHOD:	Electrical: HP1900 series pulse generator Optical: ground based standard target
PRINCIPLE TARGETS:	GEOS A GEOS C BEACON C STARLETTE
TRACKS IN 1980:	approx. 40 successful passes for above four satellites
PRECISION ON TARGET:	approx. 50 cm for above four targets
ENVIRONMENTAL MONITORING:	temperature, humidity, atmospheric pressure, wind, etc.
GEODETIC MONITORING:	one of the 1st order triangulation points at Mt. Dodaira
READINESS TO TRACK IN '82:	100 nights/20 days (including weather
READINESS TO TRACK IN MERIT '83-'84:	120 nights/50 days (including weather)

COMMENTS:

Our 50 cm receiving telescope was modified to a standard Cassgrain type from off-axis Herschel type in 1979. The telescope is to be used for lunar laser transmitting. The lunar laser receiving is done by a 3.8 meters' metallic reflector on an elevation-azimuth mount. The lunar system is now under adjustments.

STATION REPORT

STATION NAME:	Simosato Hydrographic Observatory
LOCATION:	Simosato, Wakayama Pref.
MAILING ADDRESS:	Simosato, Nachi-Katsu-ura-cho Higasi-Muro-gun, Wakayama 649-51 JAPAN
TELEPHONE NO:	07355-8-0084 TWX No. to be installed
PERIOD OF OPERATION:	December, 1981
DATA REPORTED TO:	

APERTURE:	60 cm	MOUNT TYPE:	Alt-Az
TRANSMITTED POWER:	250 mJ	REP. RATE:	4 pps
WAVELENGTH:	532 nm	PULSE WIDTH:	0.2, 0.4 nsec

DETECTOR TYPE:	Photo-multiplier tube, leading-edge detection
PRIMARY TIME STANDARD:	Rubidium frequency standard
TIME OF FLIGHT EQUIPMENT:	high resolution electronic counter with 20 ps resolution
COMPUTER TYPE & CAPACITY:	PDP 11/60 with 64 kw memory

MAJOR SUBSYSTEMS UNDER COMPUTER CONTROL:	entire system under computer control		
CALIBRATION METHOD:	one ground target for ranging and three ground targets for levelling calibrations		
PRINCIPLE TARGETS:	Lageos	Geos	Starlette
TRACKS IN 1980:			
PRECISION ON TARGET:	10cm	20cm	10cm
ENVIRONMENTAL MONITORING:	temperature, humidity, air pressure		
GEODETIC MONITORING:			
READINESS TO TRACK IN '82:	300 nights		
READINESS TO TRACK IN MERIT '83-'84:	300 nights		

COMMENTS:

This station is scheduled to be in operation on December 1, 1981.
The laser ranging system is almost the same as the Wettzel's.

STATION REPORT

STATION NAME:	Kootwijk Observatory
LOCATION:	Kootwijk (The Netherlands)
MAILING ADDRESS:	P. O. Box 581 7300 AN Apeldoorn The Netherlands
TELEPHONE NO:	5769-341 TWX No. 36442
PERIOD OF OPERATION:	1/9/76 to Present
DATA REPORTED TO:	NSSDC up to 31/ 12- 1980

APERTURE:	50cm	MOUNT TYPE:	Az-El, coude
TRANSMITTED POWER:	700 MW	REP. RATE:	15 ppm
WAVELENGTH:	694.3 nm	PULSE WIDTH:	1.8 nsec

DETECTOR TYPE:	RCA 8852
PRIMARY TIME STANDARD:	Rb standard HP 5065 A
TIME OF FLIGHT EQUIPMENT:	HP 5360 A + constant fraction discriminators
COMPUTER TYPE & CAPACITY:	HP 21 MX-E, 128k

MAJOR SUBSYSTEMS UNDER COMPUTER CONTROL:	none, predictions only		
CALIBRATION METHOD:	pre/postcalibration using internal light path		
PRINCIPLE TARGETS:	Lageos	Starlette	Geos 3
TRACKS IN 1980:	53	157	160
PRECISION ON TARGET:	15 cm	10cm	15cm
ENVIRONMENTAL MONITORING:	pressure, temperature, relative humidity		
GEODETIC MONITORING:			
READINESS TO TRACK IN '82:	240 nights/240 days		
READINESS TO TRACK IN MERIT '83-'84:	300 nights/300 days		

COMMENTS:

STATION REPORT

STATION NAME:	Mobile Laser Ranging System
LOCATION:	under development
MAILING ADDRESS:	Delft University of Technology Kootwijk Observatory P. O. Box 581, 7300 AN Apeldoorn, The Netherlands
TELEPHONE NO:	5769-341 TWX No. 36442
PERIOD OF OPERATION:	September, 1983
DATA REPORTED TO:	

APERTURE:	40 cm	MOUNT TYPE:	Az-El, coude
TRANSMITTED POWER:	50 MW	REP. RATE:	10 Hz
WAVELENGTH:	539 nm	PULSE WIDTH:	0.2 nsec

DETECTOR TYPE:	RCA 8850 (preliminary)
PRIMARY TIME STANDARD:	to be decided
TIME OF FLIGHT EQUIPMENT:	HP 5370 A + constant fraction discriminators
COMPUTER TYPE & CAPACITY:	multi-microprocessor system

MAJOR SUBSYSTEMS UNDER COMPUTER CONTROL:	mount, detection system		
CALIBRATION METHOD:	pre/postcalibration + simultaneous internal calibration		
PRINCIPLE TARGETS:	Lageos	Starlette	Ground
TRACKS IN 1980:			
PRECISION ON TARGET:	2 cm	2 cm	1cm
ENVIRONMENTAL MONITORING:	pressure, temperature, relative humidity		
GEODETIC MONITORING:	geodetic locator		
READINESS TO TRACK IN '82:			
READINESS TO TRACK IN MERIT '83-'84:			

COMMENTS:

STATION REPORT

STATION NAME:	7907 - SAO		
LOCATION:	Arequipa, Peru		
MAILING ADDRESS:	Smithsonian Astrophysical Observatory Casilla 751 Arequipa, Peru 224038		
TELEPHONE NO:	Arequipa 215959	TWX No.	RTTY-via SAO
PERIOD OF OPERATION:	full time, 3 shifts		
DATA REPORTED TO:	SAO		
APERTURE:	20"cassegrain	MOUNT TYPE:	Alt/Azi, Stepping
TRANSMITTED POWER:	350 MW	REP. RATE:	8ppm
WAVELENGTH:	694.3 nm	PULSE WIDTH:	6 nsec
DETECTOR TYPE:	RCA 7265		
PRIMARY TIME STANDARD:	Caesium UTC (USNO)		
TIME OF FLIGHT EQUIPMENT:	0.1 nsec counter, 20 channel digitizer, A/D converters		
COMPUTER TYPE & CAPACITY:	Nova 1200, 32K		

MAJOR SUBSYSTEMS UNDER COMPUTER CONTROL:	Mount, data system, paper tape reader, and punch, Linc tape				
CALIBRATION METHOD:	pre/post pass calibration, weekly start electronics, monthly system calibration, daily counter calibration				
PRINCIPLE TARGETS:	Lageos	Starlette	Geos 3	Geos 1	BEC
TRACKS IN 1980:	340	536	685	590	494
PRECISION ON TARGET:	10cm	10cm	10cm	10cm	10cm
ENVIRONMENTAL MONITORING:	temperature, humidity, pressure				
GEODETIC MONITORING:	periodic slant range				
READINESS TO TRACK IN '82:	261 nights/261 days				
READINESS TO TRACK IN MERIT '83-'84:	261 nights/261 days				

COMMENTS:

STATION REPORT

STATION NAME:	Borowiec		
LOCATION:	lat=52°16'38", long=$1^h08^m18^s$, 80m over sea level		
MAILING ADDRESS:	Astronomical Latitude Observatory Borowiec 62-035 Kornik POLAND		
TELEPHONE NO:	Kornik 188	TWX NO.	0412623
PERIOD OF OPERATION:	1.IV to 31.X		
DATA REPORTED TO:	Interkosmos		
APERTURE:	32 cm	MOUNT TYPE:	4-axis, manual, Interkosmos
TRANSMITTED POWER:	1.5 J	REP. RATE:	7/min
WAVELENGTH:	694 nm	PULSE WIDTH:	25 nsec
DETECTOR TYPE:	RCA 8852 followed by constant fraction discriminator		
PRIMARY TIME STANDARD:	Atom Clock - Rhode and Schwarz/Ces.		
TIME OF FLIGHT EQUIPMENT:	Fl 102, 5 ns resolution		
COMPUTER TYPE & CAPACITY:	not used		

MAJOR SUBSYSTEMS UNDER COMPUTER CONTROL:	n/a
CALIBRATION METHOD:	pre-post ground target calibration 1478.907 m
PRINCIPLE TARGETS:	Geos C Geos A
TRACKS IN 1980:	no observations - damage to the laser
PRECISION ON TARGET:	46 23 (1979)
ENVIRONMENTAL MONITORING:	Temperature, air pressure, humidity
GEODETIC MONITORING:	
READINESS TO TRACK IN '82:	100 nights
READINESS TO TRACK IN MERIT '83-'84:	expecting new laser system

COMMENTS:

STATION REPORT

STATION NAME:	Laser Satellite San-Fernando (7824)
LOCATION:	San-Fernando, Spain
MAILING ADDRESS:	Estacion Laser Observatorio de Marina San-Fernando (Cadiz) ESPANA
TELEPHONE NO:	(56) 883548 Telex: 76108 IOM E
PERIOD OF OPERATION:	1975 to present
DATA REPORTED TO:	CNES - TOULOUSE

APERTURE:	60 cms	MOUNT TYPE:	AZ-EL
TRANSMITTED POWER:	0,7 J	REP. RATE:	6 s
WAVELENGTH:	694 nm	PULSE WIDTH:	27 ns

DETECTOR TYPE:	RCA 31034 A
PRIMARY TIME STANDARD:	Caesium
TIME OF FLIGHT EQUIPMENT:	1 ns counter CGE design
COMPUTER TYPE & CAPACITY:	WANT 2200 - 16 K

MAJOR SUBSYSTEMS UNDER COMPUTER CONTROL:	Peripherals, Mount Servo Control, Data Measuring System
CALIBRATION METHOD:	Pre-Post ranging on fixed calibration target
PRINCIPLE TARGETS:	
TRACKS IN 1980:	No operation from April to December
PRECISION ON TARGET:	100 cms
ENVIRONMENTAL MONITORING:	Temperature, pressure
GEODETIC MONITORING:	
READINESS TO TRACK IN '82:	200 nights
READINESS TO TRACK IN MERIT '83-'84:	200 nights

COMMENTS:

The observations were discontinued on the 10th of April 1980 in order to move the GRGS mobile station to its new location in the observatory's main building.

Following the difficulties experienced with the dome opening, the laser station is now operating. (From December of 1980).

Presently, we are fitting up a new laser which characteristics are: 2-3 J, 6-10 ns.

The ranging accuracy will be 50 cms and the system will be able to get regular ranging on Lageos.

The Event-Timer required for the LASSO experiment is expected soon. The model selected by the Naval Observatory is: Thomson TSN 634 H.

STATION REPORT

STATION NAME:	Zimmerwald Laser Ranging Station
LOCATION:	Zimmerwald near Bern
MAILING ADDRESS:	Astronomisches Institut Universitat Bern Sidlerstrasse 5 3012 Bern, SWITZERLAND
TELEPHONE NO:	+41 31658591 TWX No. 32 320
PERIOD OF OPERATION:	August 1, 1980 to September 30, 1980
DATA REPORTED TO:	C.N.E.S.

APERTURE:	525 mm	MOUNT TYPE:	Alt/AZ
TRANSMITTED POWER:	1.5 J	REP. RATE:	.25 Hz
WAVELENGTH:	694 nm	PULSE WIDTH:	17 nsec

DETECTOR TYPE:	RCA 7265
PRIMARY TIME STANDARD:	Loran-C
TIME OF FLIGHT EQUIPMENT:	Eldorado + Octal TDC's
COMPUTER TYPE & CAPACITY:	PDP-11/40 64 kb

MAJOR SUBSYSTEMS UNDER COMPUTER CONTROL:	Mount and Laser Radar - CAMAC			
CALIBRATION METHOD:	Internal, pre and post track			
PRINCIPLE TARGETS:	Geos 1	Geos 3	Starlette	BE-C
TRACKS IN 1980:	5	2	5	2
PRECISION ON TARGET:	60cm	80cm	80cm	60cm
ENVIRONMENTAL MONITORING:	pressure, temperature, humidity			
GEODETIC MONITORING:	Doppler (visiting)			
READINESS TO TRACK IN '82:	40 nights			
READINESS TO TRACK IN MERIT '83-'84:	60 nights			

COMMENTS:

Video recording and processing for direction measurement

STATION REPORT

STATION NAME:	RGO Herstmonceux		
LOCATION:	Herstmonceux, East Sussex England 50°52'N, 0°20'E		
MAILING ADDRESS:	Royal Greenwich Observatory Hailsham, East Sussex, BN27 1RP United Kingdom		
TELEPHONE NO:	(UK) 032-181-3171 Telex (UK) 87451 RGOBSY G from 1982 032-383-3171		
PERIOD OF OPERATION:	from early 1982		
DATA REPORTED TO:			
APERTURE:	T 100mm/ R 508mm	MOUNT TYPE:	Alt-az
TRANSMITTED POWER:	30 mJ pulse	REP. RATE:	10Hz
WAVELENGTH:	532 nm	PULSE WIDTH:	0.15 ns
DETECTOR TYPE:	Varian VPM 152S, RCA 8850 available		
PRIMARY TIME STANDARD:	Cs ensemble on site, Loran C links		
TIME OF FLIGHT EQUIPMENT:	University of Maryland 4-stop		
COMPUTER TYPE & CAPACITY:	PDP 11/34a, 128K x 16 bit, RSX 11M V3.2; LSI 11/2		

MAJOR SUBSYSTEMS UNDER COMPUTER CONTROL:	Telescope, laser, receiver, timer, data storage
CALIBRATION METHOD:	under consideration
INPUT/OUTPUT FORMATS:	9-track magnetic tape, 1600 bpi phase encoded
PRINCIPLE TARGETS:	Lageos Starlette
TRACKS IN 1980:	none
PRECISION ON TARGET:	better than 100 mm expected
ENVIRONMENTAL MONITORING:	under consideration
GEODETIC MONITORING:	linked to UK geodetic net, 4 Doppler campaigns on site since mid-1979
READINESS TO TRACK IN '82:	100 days or nights
READINESS TO TRACK IN MERIT '83-'84:	200 days or nights

COMMENTS:

The RGO Herstmonceux station will use a short-pulse laser of relatively low power, a telescope steered with unusual accuracy under computer control, single-photon detection and a multi-stop timing system. The option of working in pulse-comb mode will be investigated. The system is expected to be capable of tracking Lageos with sub-decimeter range uncertainty in daylight, but the small divergence of the emitted beam needed to reach the more distant targets may make acquisition difficult unless more accurate predictions can be obtained. The receiver and timing electronics will be controlled by a microcomputer slaved to the main computer, partly to reduce the load on the main computer and partly to simplify development of the system at two centres (RGO and the University of Hull).

The site is close to one of the holding patterns of London-Gatwick airport, and the station will include a radar system, slaved to the telescope drive, which will automatically shut off the laser whenever an aircraft approaches the laser beam.

STATION REPORT

STATION NAME:	McDonald Lunar Ranging
LOCATION:	Fort Davis, Texas USA
MAILING ADDRESS:	McDonald Observatory University of Texas Austin, Texas 78712 USA
TELEPHONE NO:	(512) 471-4471 TWX No. 910 8741351
PERIOD OF OPERATION:	August, 1969 to January, 1982
DATA REPORTED TO:	Goddard Space Flight Center

APERTURE:	2.7M	MOUNT TYPE:	Equatorial
TRANSMITTED POWER:	0.4W	REP. RATE:	20ppm
WAVELENGTH:	694.3 nm	PULSE WIDTH:	3 nsec

DETECTOR TYPE:	RCA 31034A
PRIMARY TIME STANDARD:	X-tal with Loran C
TIME OF FLIGHT EQUIPMENT:	TDC 100 in epoch recording mode
COMPUTER TYPE & CAPACITY:	Varian 620L 12K

MAJOR SUBSYSTEMS UNDER COMPUTER CONTROL:	timing, timekeeping, lunar pointing
CALIBRATION METHOD:	internal target
PRINCIPLE TARGETS:	Moon
TRACKS IN 1980:	
PRECISION ON TARGET:	10cm
ENVIRONMENTAL MONITORING:	pressure, temperature, humidity
GEODETIC MONITORING:	seismometer, accurate local survey
READINESS TO TRACK IN '82:	30 nights/30 days
READINESS TO TRACK IN MERIT '83-'84:	0

COMMENTS:

Station to be discontinued in early 1982, in favor of dual purpose installation at same location

STATION REPORT

STATION NAME:	MLRS
LOCATION:	Fort Davis, Texas, USA
MAILING ADDRESS:	McDonald Observatory University of Texas Austin, Texas 78712 USA
TELEPHONE NO:	(512)471-4471 TWX No. 910-874-1351
PERIOD OF OPERATION:	Nov., 1981 to
DATA REPORTED TO:	Goddard Space Flight Center

APERTURE:	0.76 M	MOUNT TYPE:	X-Y
TRANSMITTED POWER:	~4 W	REP. RATE:	10 Hz
WAVELENGTH:	532 nm	PULSE WIDTH:	0.1 nsec

DETECTOR TYPE:	RCA 8852
PRIMARY TIME STANDARD:	Rubidium + Loran C
TIME OF FLIGHT EQUIPMENT:	EG & G TD811 units in an epoch measuring mode
COMPUTER TYPE & CAPACITY:	Nova IV, 128K

MAJOR SUBSYSTEMS UNDER COMPUTER CONTROL:	timing, pointing, weather, clocks
CALIBRATION METHOD:	internal target returns cross correlated with satellite
PRINCIPLE TARGETS:	Lageos Moon Starlette
TRACKS IN 1980:	
PRECISION ON TARGET:	2cm 5cm 2cm normal point
ENVIRONMENTAL MONITORING:	pressure, temperature, humidity
GEODETIC MONITORING:	accurate local survey, seismometer
READINESS TO TRACK IN '82:	300 nights/300 days
READINESS TO TRACK IN MERIT '83-'84:	350 nights/350 days

COMMENTS:

System uses two lasers, a 3-5 W, 3 nsec unit for lunar work and a 20 mw, 011 nsec mode locked unit for satellites.

Telescope is a yoke mounted X-Y configuration with both cass. and coude focus position. System uses a roller drive with both high accuracy incremental as well as 18 bit absolute encoders.

System is in a transportable carrier about 16 x 3M is size.

STATION REPORT

STATION NAME:	TLRS
LOCATION:	variable
MAILING ADDRESS:	McDonald Observatory University of Texas Austin, Texas 78712 USA
TELEPHONE NO:	(512) 471-4471 TWX No. 910 874 1351
PERIOD OF OPERATION:	August, 1980 to Present
DATA REPORTED TO:	Goddard Space Flight Center

APERTURE:	0.3M	MOUNT TYPE:	Alt-Az
TRANSMITTED POWER:	35 MW	REP. RATE:	10Hz
WAVELENGTH:	532.nm	PULSE WIDTH:	0.1nsec

DETECTOR TYPE:	Varian 152 S
PRIMARY TIME STANDARD:	Caesium + Rubidium
TIME OF FLIGHT EQUIPMENT:	TD811 in epoch recording mode
COMPUTER TYPE & CAPACITY:	Nova III 32K

MAJOR SUBSYSTEMS UNDER COMPUTER CONTROL:	all
CALIBRATION METHOD:	internal target
PRINCIPLE TARGETS:	Lageos
TRACKS IN 1980:	50
PRECISION ON TARGET:	2 cm normal point
ENVIRONMENTAL MONITORING:	pressure, temperature, humidity
GEODETIC MONITORING:	variable
READINESS TO TRACK IN '82:	300 nights/300days
READINESS TO TRACK IN MERIT '83-'84:	300 nights/300days

COMMENTS:

Station is highly mobile and built in a single chassis vehicle.

The system uses a mode-locked laser with no pulse selection, identifying the pulses by cross correlating the single photon returns with the data from an internal target.

Computer intensive system which can perform a mount model prior to every pass if necessary at an unprepared site.

STATION REPORT

STATION NAME:	Moblas 1
LOCATION:	Mt. Haleakala, Hawaii
MAILING ADDRESS:	NASA Tracking Station P. O. Box 521 Puunene, Maui, Hawaii 96784 USA
TELEPHONE NO:	(808) 242-5563 TWX No. GXAA
PERIOD OF OPERATION:	July, 1980 to Present
DATA REPORTED TO:	GSFC

APERTURE:	16 inch	MOUNT TYPE:	AZ-EL
TRANSMITTED POWER:	750 MJ	REP. RATE:	1PPS
WAVELENGTH:	694 NM	PULSE WIDTH:	5 nsec

DETECTOR TYPE:	56 TVP
PRIMARY TIME STANDARD:	Caesium
TIME OF FLIGHT EQUIPMENT:	HP5360
COMPUTER TYPE & CAPACITY:	Honeywell DDP516, 16K

MAJOR SUBSYSTEMS UNDER COMPUTER CONTROL:	Peripherals, Mount Servo Control Console, Data Measuring System		
CALIBRATION METHOD:	Pre-post ranging of fixed calibration target		
PRINCIPLE TARGETS:	Lageos	Starlette	BE-3
TRACKS IN 1980:	216	141	229
PRECISION ON TARGET:	10cm	10cm	10cm
ENVIRONMENTAL MONITORING:	Temperature, Air Pressure, Humidity		
GEODETIC MONITORING:			
READINESS TO TRACK IN '82:			
READINESS TO TRACK IN MERIT '83-'84:			

COMMENTS:

Moblas 1 was operational at Ft. Davis, Texas prior to May, 1980. 1980 data figures include passes obtained at that location.

STATION REPORT

STATION NAME:	Moblas 2
LOCATION:	Platteville, Colorado
MAILING ADDRESS:	NASA Tracking Station P. O. Box 749 Platteville, Co. 80651 USA
TELEPHONE NO:	(303) 785-6366 TWX. No. GXBB
PERIOD OF OPERATION:	February, 1981 to Present
DATA REPORTED TO:	GSFC

APERTURE:	20 inch	MOUNT TYPE:	AZ-EL
TRANSMITTED POWER:	750 MJ	REP. RATE:	1PPS
WAVELENGTH:	694 NM	PULSE WIDTH:	5 nsec

DETECTOR TYPE:	56 TVP
PRIMARY TIME STANDARD:	Caesium
TIME OF FLIGHT EQUIPMENT:	HP 5360
COMPUTER TYPE & CAPACITY:	Honeywell DDP516, 16K

MAJOR SUBSYSTEMS UNDER COMPUTER CONTROL:	Peripherals, Mount Servo Control Console, Data Measuring System		
CALIBRATION METHOD:	Pre-post ranging of fixed calibration target		
PRINCIPLE TARGETS:	Lageos	Starlette	BE-3
TRACKS IN 1980:	184	135	225
PRECISION ON TARGET:	10cm	10cm	10cm
ENVIRONMENTAL MONITORING:	Temperature, Air Pressure, Humidity		
GEODETIC MONITORING:			
READINESS TO TRACK IN '82:			
READINESS TO TRACK IN MERIT '83-'84:			

COMMENTS:

Moblas 2 was operational at Owens Valley, CA. prior to January, 1981. Data figures include passes obtained at that location.

STATION REPORT

STATION NAME:	Moblas 3
LOCATION:	Monument Peak, CA
MAILING ADDRESS:	NASA Tracking Station P. O. Box 130 Mt. Laguna, CA 92048 USA
TELEPHONE NO:	(714) 473-9754 TWX NO. GXCC
PERIOD OF OPERATION:	July, 1981 to Present
DATA REPORTED TO:	GSFC

APERTURE:	20 inch	MOUNT TYPE:	AZ-EL
TRANSMITTED POWER:	750MJ	REP. RATE:	1PPS
WAVELENGTH:	694NM	PULSE WIDTH:	5 nsec

DETECTOR TYPE:	56TVP
PRIMARY TIME STANDARD:	Caesium
TIME OF FLIGHT EQUIPMENT:	HP5360
COMPUTER TYPE & CAPACITY:	Honeywell DDP516, 16K

MAJOR SUBSYSTEMS UNDER COMPUTER CONTROL: Peripherals, Mount Servo Control Console, Data Measuring System

CALIBRATION METHOD: Pre-post ranging of fixed calibration target

PRINCIPLE TARGETS:	Lageos	Starlette	BE-3
TRACKS IN 1980:	213	71	161
PRECISION ON TARGET:	10cm	10cm	10cm

ENVIRONMENTAL MONITORING: Temperature, Air Pressure, Humidity

GEODETIC MONITORING:

READINESS TO TRACK IN '82:

READINESS TO TRACK IN MERIT '83-'84:

COMMENTS:

Moblas 3 was operational at Goldstone, CA during 1980. Data figures reflect passes obtained at that location.

STATION REPORT

STATION NAME:	Moblas 4		
LOCATION:	GORF/GSFC		
MAILING ADDRESS:	Route 2, Box 274 Laurel, Md. 20708 USA		
TELEPHONE NO:	(301) 344-5800	TWX No. GXDD	
PERIOD OF OPERATION:	N/A		
DATA REPORTED TO:	GSFC		
APERTURE:	30 inch	MOUNT TYPE:	AZ-EL
TRANSMITTED POWER:	varied	REP. RATE:	1PPS
WAVELENGTH:	532 NM	PULSE WIDTH:	varied
DETECTOR TYPE:	56 TVP		
PRIMARY TIME STANDARD:	Caesium		
TIME OF FLIGHT EQUIPMENT:	HP 5360		
COMPUTER TYPE & CAPACITY:	Modular Computer II		

MAJOR SUBSYSTEMS UNDER COMPUTER CONTROL:	Peripherals, Mount Servo Control Console, Data Measuring System		
CALIBRATION METHOD:	Pre-post ranging of fixed calibration target		
PRINCIPLE TARGETS:	Lageos	Starlette	BE-3
TRACKS IN 1980:	76	34	68
PRECISION ON TARGET:	test	test	test
ENVIRONMENTAL MONITORING:	Temperature, Air Pressure, Humidity		
GEODETIC MONITORING:			
READINESS TO TRACK IN '82:			
READINESS TO TRACK IN MERIT '83-'84:			

COMMENTS:

Moblas 4 has been used as an engineering test bed. Data from this station, therefore, is subject to change in quality depending upon system configuration.

STATION REPORT

STATION NAME:	Moblas 6		
LOCATION:	GSFC		
MAILING ADDRESS:	Route 2, Box 274 Laurel, MD 20708 USA		
TELEPHONE NO:	(301) 344-6573	TWX NO.	GLSM
PERIOD OF OPERATION:	N/A		
DATA REPORTED TO:	GSFC		
APERTURE:	30 inch	MOUNT TYPE:	AZ-EL
TRANSMITTED POWER:	250 MJ	REP. RATE:	1 PPS
WAVELENGTH:	532 NM	PULSE WIDTH:	5-7 nsec
DETECTOR TYPE:	56TVP Amperex		
PRIMARY TIME STANDARD:	Caesium		
TIME OF FLIGHT EQUIPMENT:	HP 5360		
COMPUTER TYPE & CAPACITY:	Modular Computer II - 64K		

MAJOR SUBSYSTEMS UNDER COMPUTER CONTROL:	Peripherals, Mount Servo Control Console, Data Measuring System		
CALIBRATION METHOD:	Pre-post ranging of fixed calibration target		
PRINCIPLE TARGETS:	Lageos	Starlette	BE-3
TRACKS IN 1980:	103	30	24
PRECISION ON TARGET:	15cm	10cm	10cm
ENVIRONMENTAL MONITORING:	Temperature, air pressure, humidity		
GEODETIC MONITORING:			
READINESS TO TRACK IN '82:			
READINESS TO TRACK IN MERIT '83-'84:			

COMMENTS:

Moblas 6 was operational during 1980 in American Samoa. Presently this system is being held in caretaker status at GSFC.

STATION REPORT

STATION NAME:	Moblas 7		
LOCATION:	GORF/GSFC		
MAILING ADDRESS:	Route 2, Box 274 Laurel, MD 20708 USA		
TELEPHONE NO:	(301)344-5800	TWX NO.	GXGG
PERIOD OF OPERATION:	January, 1981 to Present		
DATA REPORTED TO:	GSFC		
APERTURE:	30 inch	MOUNT TYPE:	AZ-EL
TRANSMITTED POWER:	250 MJ	REP. RATE:	1PPS
WAVELENGTH:	532 NM	PULSE WIDTH:	.2-.4 nsec
DETECTOR TYPE:	56 TVP Amperex		
PRIMARY TIME STANDARD:	Caesium		
TIME OF FLIGHT EQUIPMENT:	HP 5360 Computing Counter		
COMPUTER TYPE & CAPACITY:	Modular Computer II - 64K		

MAJOR SUBSYSTEMS UNDER COMPUTER CONTROL:	Peripherals, Mount Servo Control Console, Data Measuring System		
CALIBRATION METHOD:	Pre-post ranging of fixed calibration target		
PRINCIPLE TARGETS:	Lageos	Starlette	BE-3
TRACKS IN 1980:	198	129	99
PRECISION ON TARGET:	15cm	10cm	10cm
ENVIRONMENTAL MONITORING:	Temperature, Air Pressure, Humidity		
GEODETIC MONITORING:			
READINESS TO TRACK IN '82:			
READINESS TO TRACK IN MERIT '83-'84:			

COMMENTS:

Moblas 7 was operational during 1980 at Haystack, Mass. The data reported was obtained in that location using a 5-7 nsec laser.

STATION REPORT

STATION NAME:	Moblas 8		
LOCATION:	Quincy, CA		
MAILING ADDRESS:	NASA Tracking Station P. O. Box BB Quincy, CA 95971 USA		
TELEPHONE NO:	(916) 283-1396 (temp) TWX NO. GXGG		
PERIOD OF OPERATION:	February, 1981 to Present		
DATA REPORTED TO:	GSFC		
APERTURE:	30 inch	MOUNT TYPE:	AZ-EL
TRANSMITTED POWER:	250 MJ	REP. RATE:	1PPS
WAVELENGTH:	532 NM	PULSE WIDTH:	5-7 nsec
DETECTOR TYPE:	56TVP Amperex		
PRIMARY TIME STANDARD:	Caesium		
TIME OF FLIGHT EQUIPMENT:	HP 5360 Computing Counter		
COMPUTER TYPE & CAPACITY:	Modular Computer II - 64K		

MAJOR SUBSYSTEMS UNDER COMPUTER CONTROL:	Peripherals, Mount Servo Control Console, Data Measuring System		
CALIBRATION METHOD:	Pre-post ranging of fixed calibration target		
PRINCIPLE TARGETS:	Lageos	Starlette	BE-3
TRACKS IN 1980:	65	20	67
PRECISION ON TARGET:	15cm	10cm	10cm
ENVIRONMENTAL MONITORING:	Temperature, air pressure, humidity		
GEODETIC MONITORING:			
READINESS TO TRACK IN '82:			
READINESS TO TRACK IN MERIT '83-'84:			

COMMENTS:

Moblas 8 was operational during 1980 at Kwajelein, M.I. The data reported was obtained in that location.

STATION REPORT

STATION NAME:	Stalas
LOCATION:	GORF/GSFC
MAILING ADDRESS:	Route 2, Box 274 Laurel MD 20708 USA
TELEPHONE NO:	(301) 344-7874 TWX No. GLTF
PERIOD OF OPERATION:	May, 1975 to Sept. 1, 1981
DATA REPORTED TO:	GSFC

APERTURE:	24 inch	MOUNT TYPE:	X-Y
TRANSMITTED POWER:	250 MJ	REP. RATE:	1PPS
WAVELENGTH:	532 nm	PULSE WIDTH:	.2 - .4 nsec

DETECTOR TYPE:	56TVP
PRIMARY TIME STANDARD:	Caesium
TIME OF FLIGHT EQUIPMENT:	HP 5360
COMPUTER TYPE & CAPACITY:	Honeywell DDP516, 16K

MAJOR SUBSYSTEMS UNDER COMPUTER CONTROL:	Peripherals, Mount Servo Control Console, Data Measuring System		
CALIBRATION METHOD:	Pre-post ranging of fixed calibration target		
PRINCIPLE TARGETS:	Lageos	Starlette	BE-3
TRACKS IN 1980:	167	52	56
PRECISION ON TARGET:	10 cm	10cm	10cm
ENVIRONMENTAL MONITORING:	Temperature, Air pressure, Humidity		
GEODETIC MONITORING:			
READINESS TO TRACK IN '82:			
READINESS TO TRACK IN MERIT '83-'84:			

COMMENTS:

Stalas was operational prior to May, 1975, but not in the configuration specified.

STATION REPORT

STATION NAME:	Maui, Lure Observatory
LOCATION:	Haleakala, Maui, Hawaii, U.S.A.
MAILING ADDRESS:	Institute for Astronomy P. O. Box 209 Kula, Maui 96790
TELEPHONE NO:	(808) 244-9108 NASCOM
PERIOD OF OPERATION:	November 81 -
DATA REPORTED TO:	GSFC

APERTURE:	0.4M	MOUNT TYPE:	ACT-A2 Seliostat
TRANSMITTED POWER:	0.6W	REP. RATE:	3Hz
WAVELENGTH:	532 NM	PULSE WIDTH:	500 PS

DETECTOR TYPE:	AMPEREX XP2233
PRIMARY TIME STANDARD:	Caesium Clock
TIME OF FLIGHT EQUIPMENT:	Univ. of Maryland Multistop Timer
COMPUTER TYPE & CAPACITY:	LSI 11/23, 90K

MAJOR SUBSYSTEMS UNDER COMPUTER CONTROL:	Telescope, Timer, Dome		
CALIBRATION METHOD:	Target Board		
PRINCIPLE TARGETS:	LAGEOS	BEC	STARLETTE
TRACKS IN 1980:	-	-	-
PRECISION ON TARGET:	5 CM	5 CM	5 CM
ENVIRONMENTAL MONITORING:	Pressure, Temperature, Humidity, Wind		
GEODETIC MONITORING:	None		
READINESS TO TRACK IN '82:	16 hrs./day, 5 day/week		
READINESS TO TRACK IN MERIT '83-'84:	16 hrs./day, 5 day/week		

COMMENTS:

Expect relocation testing with Moblas 1 to begin 1 October '81 beginning to interface lurescope for lunar operations sometime in '82.

STATION REPORT

STATION NAME:	Intercosmos - 1873 Simeiz
LOCATION:	ℓ=44°24'11".6 λ=34°00'08" h= 346m
MAILING ADDRESS:	USSR, Crimea, Observatory, Simeiz
TELEPHONE NO:	77-13-70
PERIOD OF OPERATION:	
DATA REPORTED TO:	

APERTURE:	320 mm	MOUNT TYPE:	4th axis
TRANSMITTED POWER:	50 mgvt	REP. RATE:	0.7 htz
WAVELENGTH:	694.3 nm	PULSE WIDTH:	20 nsec

DETECTOR TYPE:	FEU-79
PRIMARY TIME STANDARD:	Hewlett Packard
TIME OF FLIGHT EQUIPMENT:	
COMPUTER TYPE & CAPACITY:	M-222

MAJOR SUBSYSTEMS UNDER COMPUTER CONTROL:

CALIBRATION METHOD: stand. target 800 m

PRINCIPLE TARGETS:	Geos A	Geos C	BEC	BEB
TRACKS IN 1980:	970	958	6	17

PRECISION ON TARGET: 100 cm

ENVIRONMENTAL MONITORING:

GEODETIC MONITORING:

READINESS TO TRACK IN '82: 60 nights

READINESS TO TRACK IN MERIT '83-'84: 120 nights

COMMENTS:

STATION REPORT

STATION NAME:	Intercosmos - 1072, Svenigozod
LOCATION:	ℓ= 55°41' 39.2" λ= 2h26m45.9s, h= 134m
MAILING ADDRESS:	109017 Moscow, Pyatnitskaya, 48, The Astronomical Council USSR
TELEPHONE NO:	231-54-61
PERIOD OF OPERATION:	day time
DATA REPORTED TO:	Data Center of the A. S.

APERTURE:	340 mm	MOUNT TYPE:	4th-axis, Crypton
TRANSMITTED POWER:	1 J.	REP. RATE:	0.33 per sec.
WAVELENGTH:	694.3 nm	PULSE WIDTH:	25 nsec

DETECTOR TYPE:	photomultiplier type FEU-84
PRIMARY TIME STANDARD:	Kvarz system
TIME OF FLIGHT EQUIPMENT:	LV-receiver and TV-reciever
COMPUTER TYPE & CAPACITY:	ES-1032, ES-9002.01

MAJOR SUBSYSTEMS UNDER COMPUTER CONTROL:	MT-1016, printing device	
CALIBRATION METHOD:	standard target at distance of 250.887m testing by series to 20 pulse	
PRINCIPLE TARGETS:	Geos A	Geos C
TRACKS IN 1980:	17	22
PRECISION ON TARGET:	100 cm	100 cm
ENVIRONMENTAL MONITORING:	VLS control	
GEODETIC MONITORING:		
READINESS TO TRACK IN '82:	50 nights	
READINESS TO TRACK IN MERIT '83-'84:	100 nights	

COMMENTS:

Automatic system for counter's gate operation

Analog system for receiving energy measurements

Sensitive counting system for calibration of the receiving system