

NERC SERVICES & FACILITIES

NERC SPACE GEODESY FACILITY

MISSION STATEMENT

To make laser range measurements to the special satellites that carry retro-reflectors, according to priorities assigned by the NERC Space Geodesy Steering Committee, and in accordance with international projects and priorities;

To ensure that the range measurements are of the highest possible accuracy;

To contribute the data promptly to the international SLR data centres;

To operate geodetic GPS and GLONASS receivers on the site and contribute the data regularly to the international GPS/GLONASS data centres;

To maintain and develop the software and hardware of the systems in order to give high reliability and to keep the precision of the systems at the current state of the art;

To achieve a high productivity level of numbers of satellite passes tracked;

To assist and collaborate with UK analysts in their use of satellite tracking and related data

In order to fulfil its mission the Space Geodesy Facility will:

maintain an up-to-date knowledge of international developments of hardware and software in satellite tracking technology;

contribute to the international advancement of the technology, particularly in the areas of orbital predictions, software data processing, and the use of photo-diode detectors;

maintain a constant vigilance for sources of measurement error;

participate fully in UK and international co-ordination of SLR and GPS/GLONASS activities;

carry out data analysis and research, in order to maintain a real awareness of what the users require from the data

User Communities:

The observations from the facility are contributed to international data centres, together with data from other geodetic facilities around the World. The data are used in combination with data from all precise space geodetic techniques by analysis groups world-wide and within the UK for a variety of studies, including oceanography, glaciology, the gravity field of the Earth, tides in the Earth and oceans, a global reference frame, and crustal motion. These data products are used widely by the oceanographic and solid earth science groups within the UK and world-wide.

Membership of the NERC Space Geodesy Facilities Steering Committee, 2011

Dr M. King (Chairman)

School of Civil Engineering and Geosciences
University of Newcastle-upon-Tyne
Newcastle-upon-Tyne
NE1 7RU

Dr Zuheir Altamimi

Institut Geographique National
ENSG/LAREG
6-8 Avenue Blaise Pascal
77455 Champs-sur-Marne
FRANCE

Dr Zhenhong Li

Department of Geographical & Earth Sciences
University Avenue
University of Glasgow
Glasgow G12 8QQ

Dr S Groom

Plymouth Marine Laboratory
Prospect Place
The Hoe
Plymouth PL1 3DH

Dr M Tamisiea

National Oceanography Centre
Joseph Proudman Building
6 Brownlow Street
Liverpool L3 5DA

Dr H Snaith

National Oceanography Centre Southampton
University of Southampton
Empress Dock, Southampton
SO14 3ZH

Mr Matthew Wilkinson (Secretary)

Space Geodesy Facility
Herstmonceux Castle
Hailsham
East Sussex BN27 1RN

Ex-officio members:

Dr L Kay, Head NERC S&F Management Team
Dr Adele Gardner, NERC S&F Management Team
Dr G Appleby, Head, SGF
Dr R Bingley, Deputy Director, BIGF
Dr D Baker, Manager, BIGF
Mr M Stock, MoD

SGF Inventory 2010/11

Annex to Annual Report 2010/11

Range Finding Ny:YAG Laser System (JK Lasers)
KHz Laser system (Hi-Q Lasers)
2xControlled Atmosphere Tents
Laser Emitting & Receiving Telescope (Contraves)
Telescope Control Unit (Heasons)
Tip/Tilt Mirror Mounting And Controller
Compensated SPAD Detector (PESO)
Spare SPAD (PESO)
CCD TV Camera + Frame Grabber
ISIT Camera

S Band Radar System
Oscilloscope For Radar
4x Oscilloscopes

FG5 Absolute Gravimeter (Micro-G)

GRX GG Pro GPS/GLONASS Receiver (Leica)
Z12 GPS Receiver (Ashtech)
Z18 GPS/GLONASS Receiver (Ashtech)
Septentrio GPS/GLONASS Receiver
Leica AR25 GNSS antenna

3x Timing Modules (Stanford)
2x Four Channel Digital Time Interval Generator
Event Timer (Thales, SGF)
Disciplined Frequency Standard
2x Universal Time Interval Counters (Stanford)

1x Operational 40cm Cassegrain Telescope in Dome
Starlight Express CCD imaging colour camera
3x 40cm Cassegrain telescopes, non-operational; one on-loan to Hx Science Centre.

2xLINUX PC servers
2xLaptops
Digital Projector

Workshop lathe

CCTV recording Security System
New ITSS-provided video-conference equipment

Finance 2010/11

The staff profile at SGF at April 2011 is 1xB5, 4xB6 and 1xB7. Staff costs include out-of-hours payments for laser/MoD observing sessions. A recruitment exercise for a B7 scientist is underway as of May 2011.

Local overheads are estimates of the costs at Herstmonceux of electricity and oil (£10,000 per year), local Council Rates (£4,000), telephone/fax line and call charges (£1,000), computer equipment licensing and servicing plus site rent to Bader International Study Centre, Herstmonceux (£1,300).

Recurrent charges include engineering R&D, lasers, radar and gravimeter maintenance.

Travel and subsistence includes involvement at national (CU, UCL, SO) and international meetings and conferences: 1 to EGU2010 in Vienna, 1 to AGU2010 in San Francisco and actual accommodation (B&B) costs of HoS attendance at SGF.

Capital expenditure is separately detailed below. The only cost was the Leica AR25 GNSS antenna for the primary, maser-driven HERS GNSS.

Item	£k
Staff Costs	300
Local Overheads	20
Recurrent	20
T&S	10
Sub-total	350
Capital:	
Leica AR25 GNSS antenna	14
Total	364
Income (MoD)	100