

Report from NESC meeting on Thursday 7th July 2022

The NESC held a meeting on Thursday 7th July on Microsoft Teams with **31** participants online.

GuideTech - Precision Time and Frequency Instruments

Ron Sigura, CEO of GuideTech, was invited to speak to NESC about the available timing technologies from GuideTech that can be used in satellite laser ranging. These include a number of PC cards and the GT9000 range. The units can be internally self-calibrated and operated for a long time, with jitter between 1.7-2.5ps. They can record at 4MHz speeds, which can be further divided. The GT668SLR unit has two programmable triggering outputs, relative to the beginning of the measurement or an arming signal, which can be used to control a detector or other sub systems. The timers can be operated in Windows or Linux PCs. <http://www.guidetech.com>

Station Barometric Comparisons using the Vienna Mapping Function (1993 to 2019)

Van Husson presented a comparison between locally recorded pressure readings at SLR stations and those from the Vienna Mapping Function model climate reanalysis dataset. Van showed a series of revealing plots for SLR stations in the ILRS network, showing some slight trends or offsets, particularly in early data in the years of 1993-97. The 'operational' VMF dataset is published daily and might be useful for the years following 2019. This work relates to other presentations and activities within in the NESC on meteorological data recorded at stations.

Geosynchronous LRA performance analysis with NP data

Daniel Kucharski presented some recent work with **David Arnold** to look at the relative SLR performance to high orbiting satellites. This followed from the limited tracking of IRNSS satellites during a recent campaign. The satellites considered were ETS-8, COMPASS, IRNSS and QZSS. Normal point data was plotted with respect to the elongation angle between the satellite and the sun. This showed poor performance from IRNSS at high elongation angles, when the LRA is exposed to solar radiation. This suggests that the LRA optical cross section is being reduced as it is heated, which was suggested in the pre-launch tests in Frascati. Stations should continue to attempt to track these satellites but might find it easier early in the evenings.

CRD v2 - The official ILRS data format

Randy Ricklefs reported that the official date for the switch from CRD v1 to v2 will be 1st August. Stations should continue to send both v1 and v2 for the time being and will be informed later in the year when they may discontinue v1.

The presentation slides from the meeting will be available here
https://ilrs.gsfc.nasa.gov/network/newg/newg_activities.html

The date for the next NESC meeting was set as **Thursday 15th September at 1300 UTC**

The following NESC meeting in **November**, will be in person at the ILRS Workshop in Guadalajara, Spain. Ideally, this will be a hybrid meeting so that colleagues can join online.

If you missed the meeting and would like to catch up, please send me an email

(matwi@nerc.ac.uk) and I can provide the recording.