

T2L2 calibration using two SLR stations in Koganei re-commissioning KSP system

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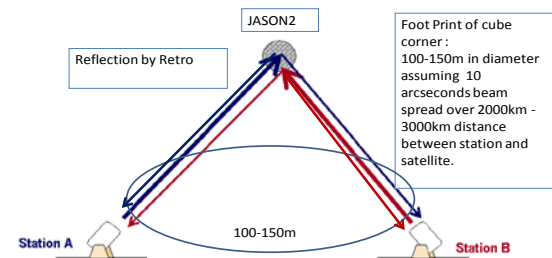
Status of stations

	7308 Tokyo or CRLS	7328 Koganei KOGL
Status	It has participated 1-st T2L2 campaign 2009. In 2010 it had problem on telescope. After ILRS quarantine process was over, system start for the 2 nd campaign with other Japanese stations, however, the data of common passes were rare. The system operation is funded by the project newly launched Japanese GNSS satellite QZS-1.	Since the system ceased observation in 2002, it is gradually set up in 2010 for T2L2 calibration. Re-commission of satellite pass was taken in end of July. System has low power mode only It can get LEO satellite and marginal to get beyond to LAGEOS. ILRS quarantine process was over in January 2011.
Telescope	1.5m diameter	75cm diameter
Laser	50mJ 50ps 20Hz 532nm	10mJ 50ps 20Hz 532nm
Clock	UTC-NICT	UTC-NICT or H-maser

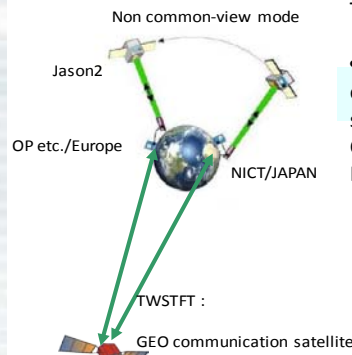
Re-Commissioning Koganei 7328 Dome and Building



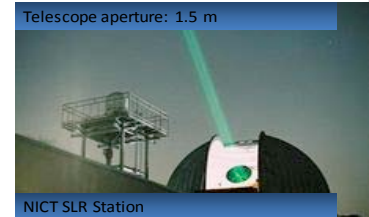
Common-clock Time Transfer using two stations in the same footprint covered by cube corner reflection



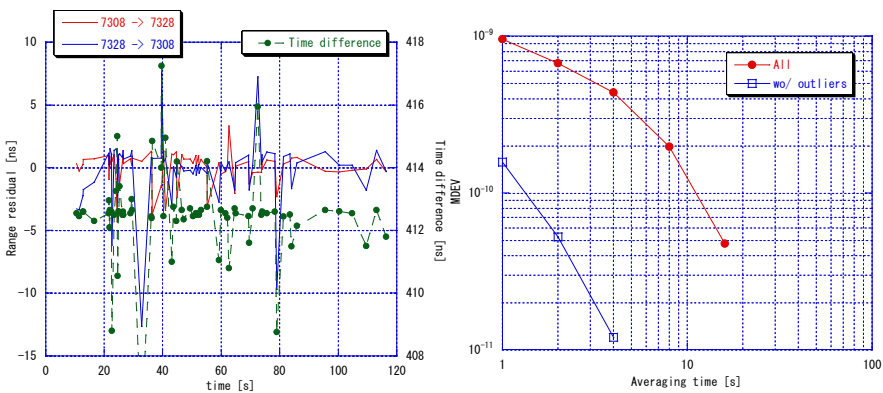
T2L2



- The 1st campaign in 2009
- The results shown left corner below ⇒ Non common view transfer
- The second campaign in 2010 to try common view with Japanese stations.
- Calibration of two stations in Koganei using common clock.

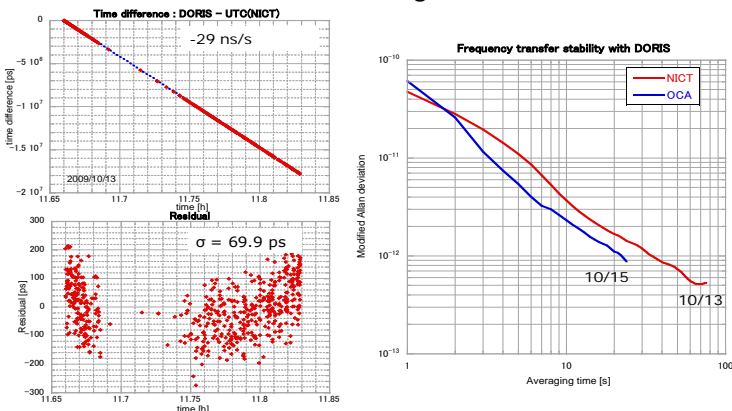


Common-clock time transfer results

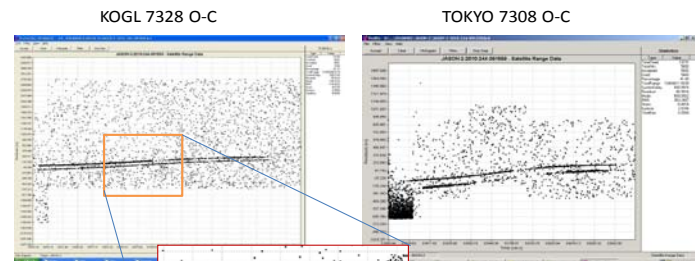


T2L2 first campaign

Between onboard clock DORIS and ground



Self- and Cross Ranging to JASON2



Normal (Self-) Range : rms about 120ps

Cross Range: It has jitter about 8ns rms seen due to asynchronous laser trigger between stations, but this jitter will be canceled by two way technique. The transmit timing control is made so that pulse reach at satellite almost the same time within a gate.

Activities on T&F transfer NICT

- QZSS
- Entry to T2L2-TWSTFT experiment
- RF & optical carrier transfer via optical fibers