Preserving history and technical “know-how” - experience at SLR station Riga

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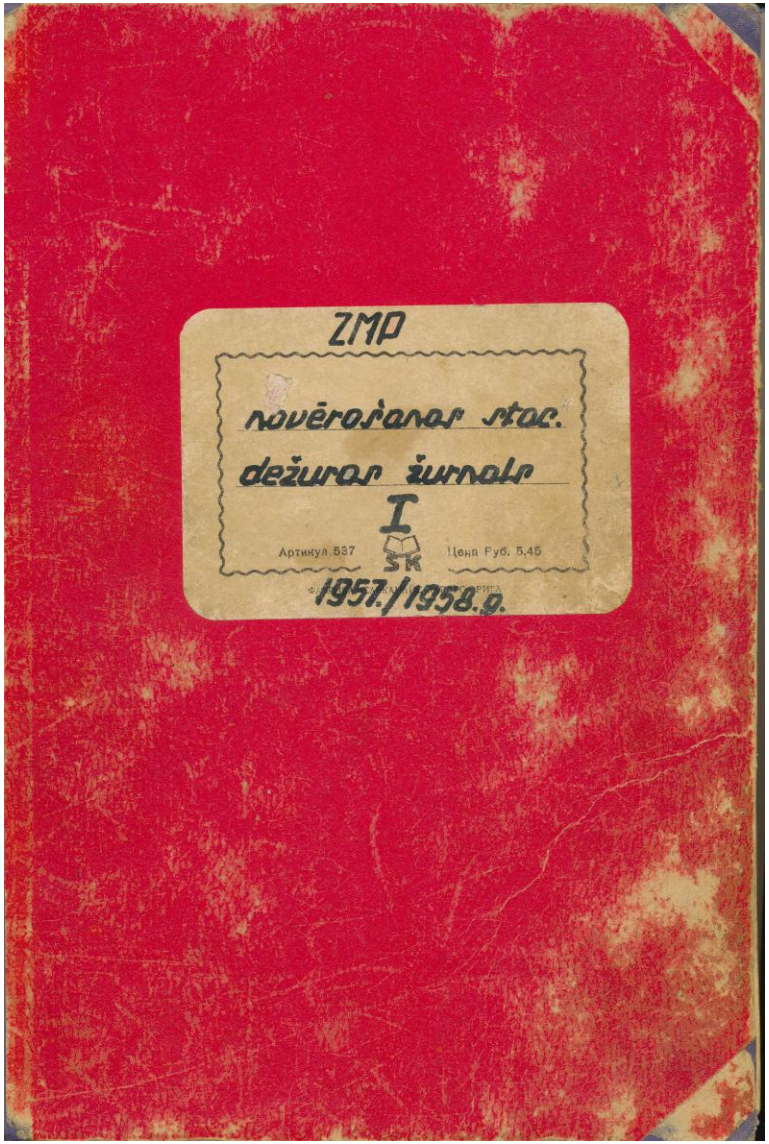
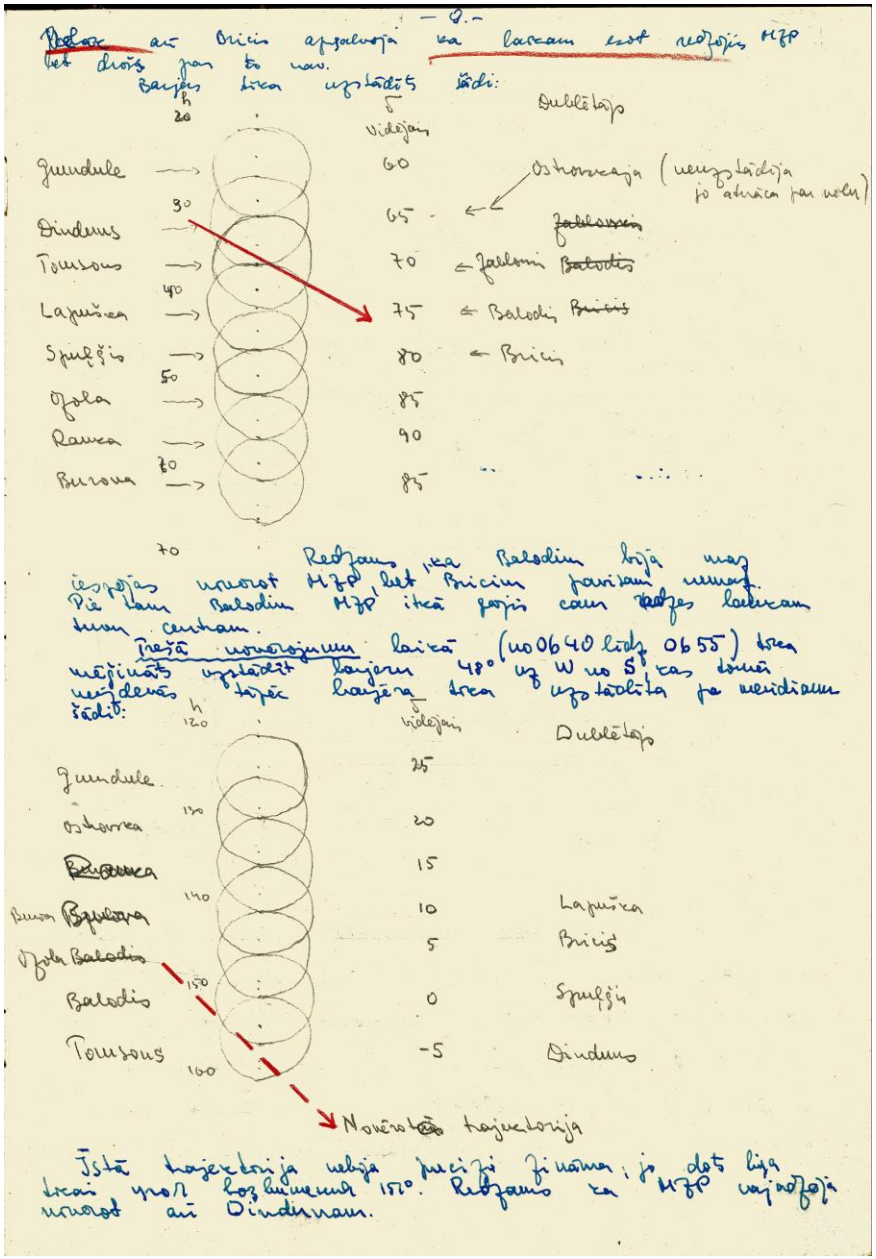
Some Important Milestones

- 1957: visual observations of the first satellite
- 1960: first photographical satellite observations
- 1969: first laser ranging observations
- 1989: regular laser ranging
- 1996: permanent GNSS station, since 2006 IGS station

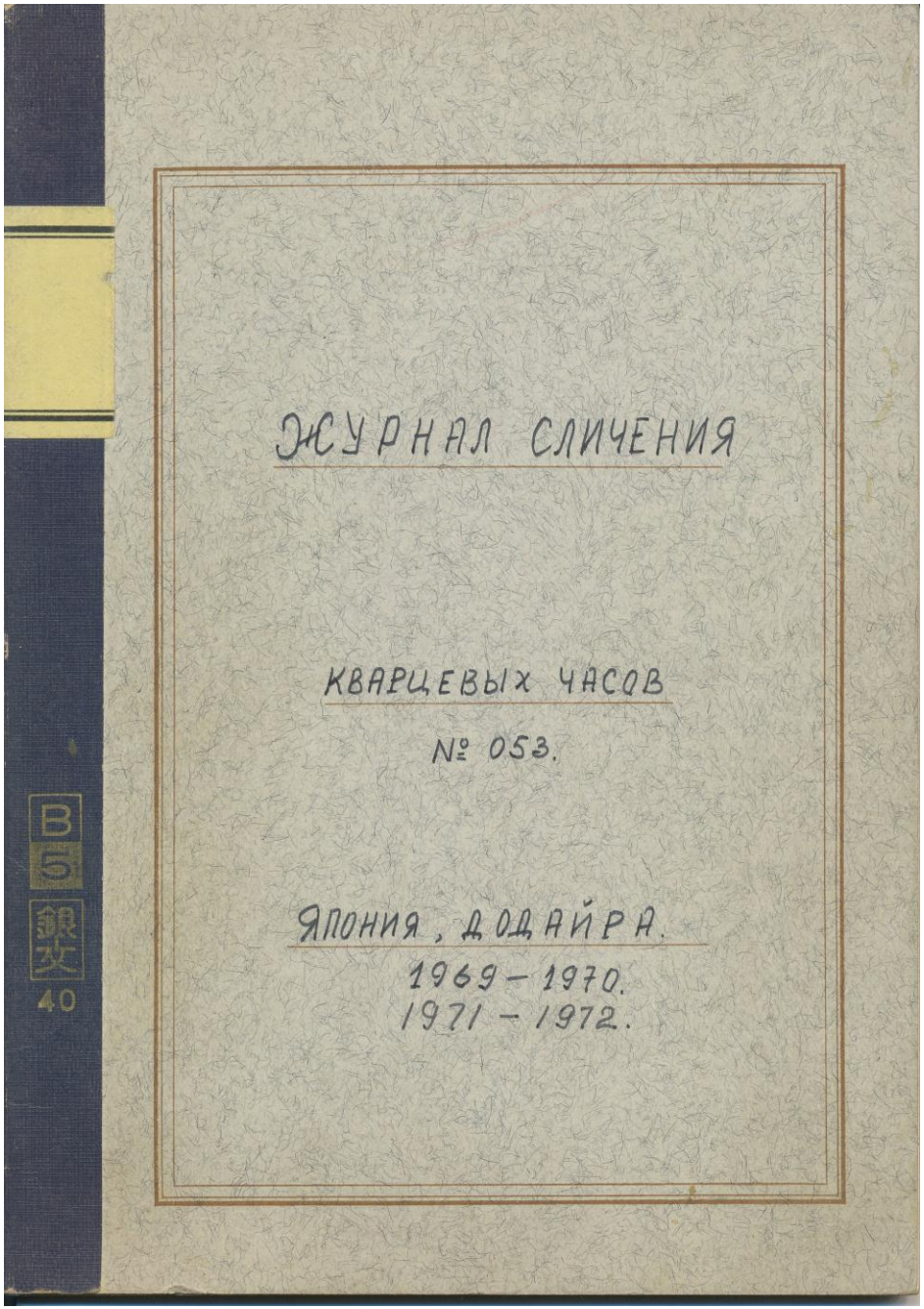
Station Riga journal 1957/1958



1957.11.13 - first observed Sputnik-1 pass in station log



1957: preparing for visual satellite observations


ЖУРНАЛ СЛИЧЕНИЯ
КВАРЦЕВЫХ ЧАСОВ
№ 053.
ЯПОНИЯ, ДОДАЙРА.
1969 – 1970.
1971 – 1972.
B5
銀次
40

Данные об станциях.

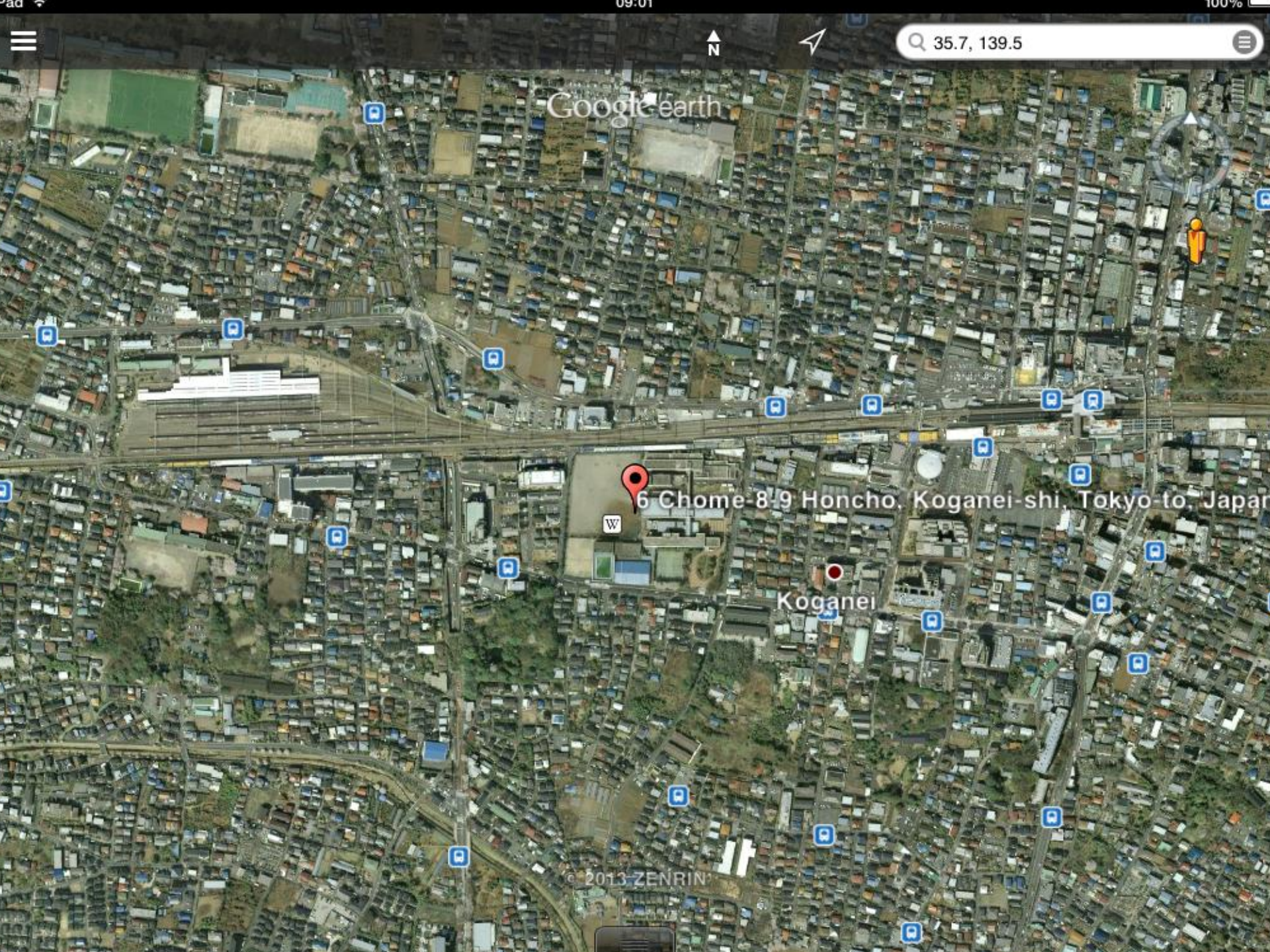
УУУ – $\lambda = 139^\circ\ 31'\ E$ 2.5, 5, 10, 15 MHz.
$\varphi = 35^\circ\ 42'\ N.$

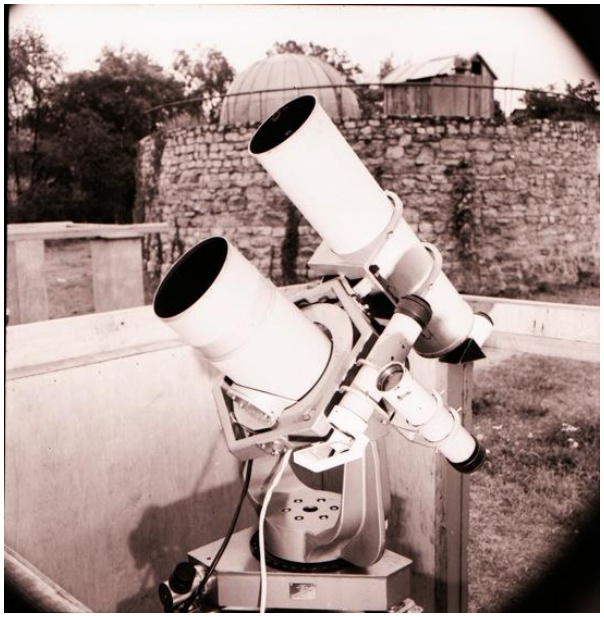
Сигнал 5 ms модулирован 1600 гц.
Передач 0 – 10 и 10 – 25 сек.
25 до 35 перерыв.
35 ÷ 59. передача.

Додайра: $\lambda_1 = -9^h\ 16^m\ 46^s.5.$
$\varphi_1 = +36^\circ\ 0'\ 10''.$
$h = +876\ m.$
$\rho \sin \varphi' = +0.58765$
$\rho \cos \varphi' = 0.81004.$

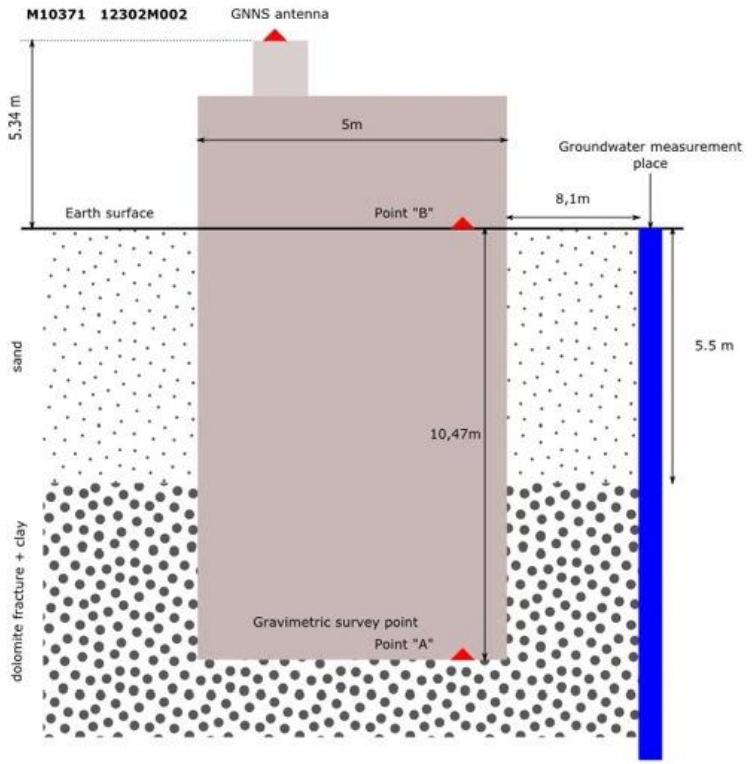
Сигналы УУУ всегда принимались с абсолютной уверенностью!
К. Лапушка.

Прийн RKM – хороший, уверенный!
К. Лапушка.

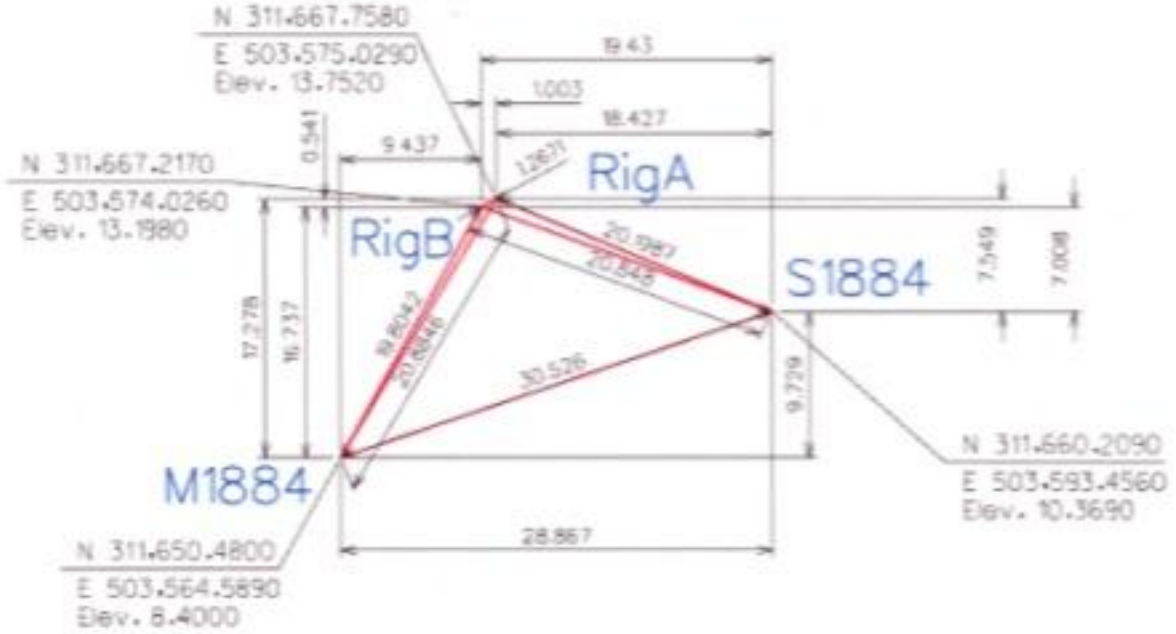

Google earth
35.7, 139.5
N
6 Chome-8-9 Honcho, Koganei-shi, Tokyo-to, Japan
Koganei
© 2013 ZENRIN



Geodetic point 12302M002




4.798
5.352
0.554
RigB
RigA
S1884
M1884
1.968
2.813
3.384


N 311.667.7580
E 503.575.0290
Elev. 13.7520
19.43
1.003
18.427
0.541
9.437
1.2671
RigA
N 311.667.2170
E 503.574.0260
Elev. 13.1980
RigB
20.3987
20.8426
S1884
7.549
7.008
17.278
16.737
19.8042
20.8846
30.526
9.729
N 311.660.2090
E 503.593.4560
Elev. 10.3690
M1884
28.867
N 311.650.4800
E 503.564.5890
Elev. 8.4000

SLR system LS105 at Riga

Built in late 80s, first unit in series, in use since 1989.

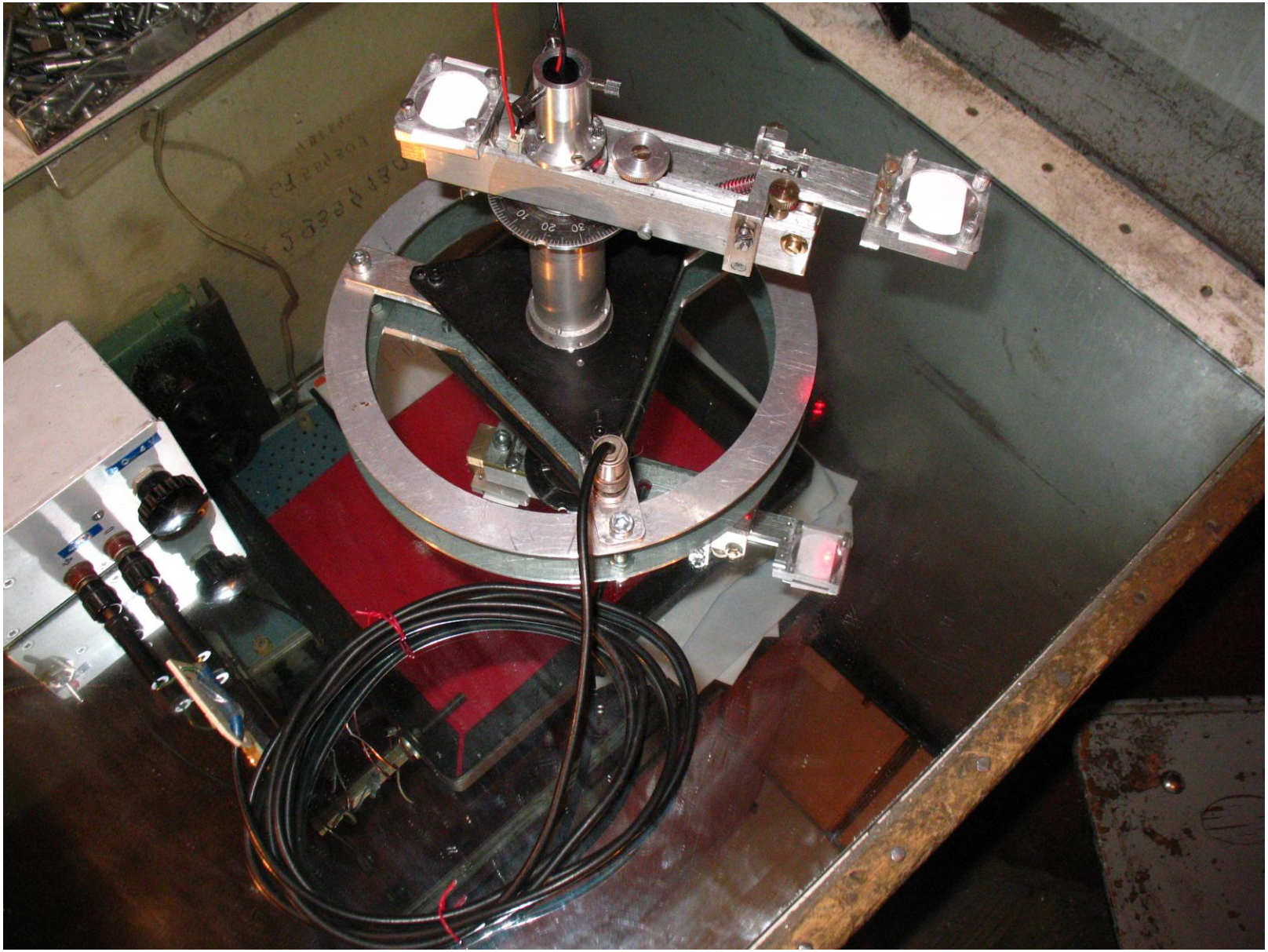
Partially Recovered SLR system documentation

Original telescope operation manual

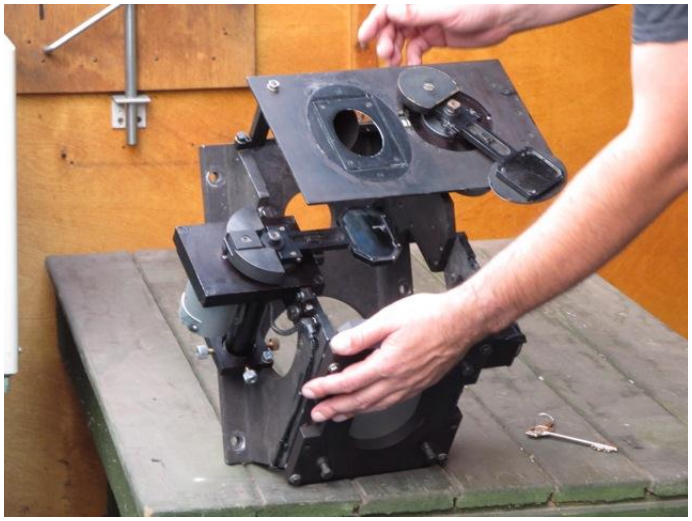
Electronic schematics, technical drawings.

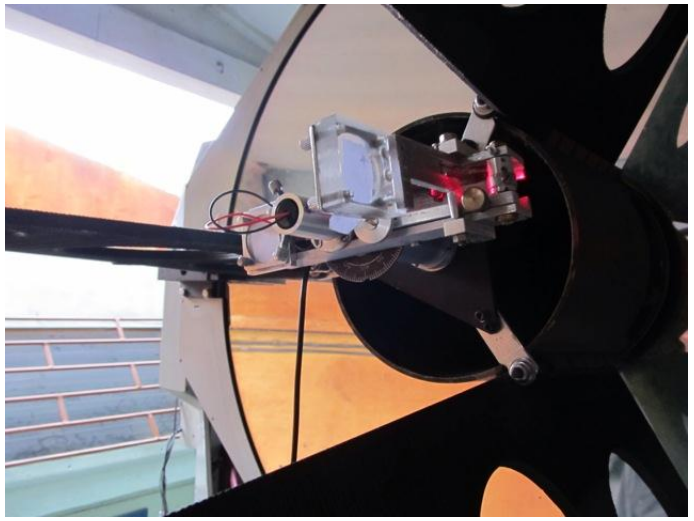
Optical system parameters, including used ray tracing software and associated data

Rebuilded alignment tool for optical system



Optical system alignment





Some useful tools and recommendations

Digital camera, voice recorder

Wiki style documentation tool e.g. Wikidpad

Use plain text files and paper for really important data, if feasible

Implement station data backup procedure

For software source code use version control system, DVCS e.g. Mercurial

Thank you for your attention!

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