

Calibration Report No. 2003-2022/UFE

Laboratory of the National Time and Frequency Standard
(Designated Institute of the Czech Metrology Institute)

Instrument: Name: **GNSS Time Transfer Receiver**
Type: GTR 55
SN: 2202002

Antenna: Type: GNSS-850
SN: NMLK21430018S

Antenna Cable: Type: Belden 50Ω LOW LOSS H155 PVC
Length: 30 m

Reference: Signal: 1 PPS and 10 MHz signals of UTC(TP) generated from
the Cesium clock 5071A SN 2476
Receiver: GPS Time Transfer Receiver GTR 55, SN 1711887,
calibrated by BIPM, Cal. ID 1015-2019

Measurement Date: 8 May 2022, 00:00:00–23:59:59 UTC

Measurement Results:

Internal Receiver Delays:

GPS L1 C/A: (18.7 ± 1.0) ns
GPS L1P: (15.7 ± 1.0) ns
GPS L2P: (9.2 ± 1.0) ns

Measurement performed by: Alexander Kuna, Ph.D.

Attachment: Graphs with measured values.

Prague, 10 May 2022

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Alexander Kuna, Ph.D.
Head of the LNTFS

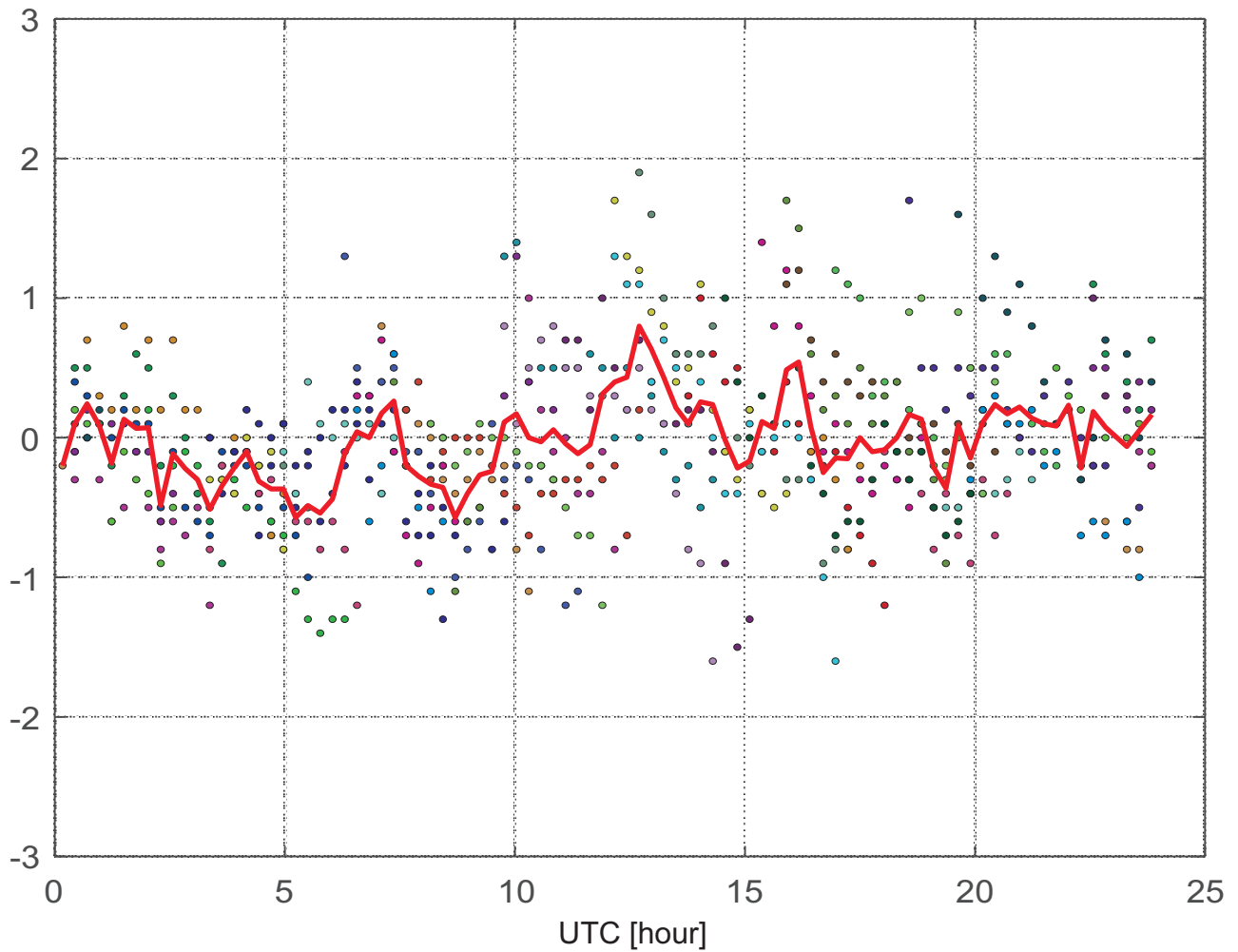
TEST MEASUREMENT

TESTED RECEIVER: GTR55 S/N 2202002
ANTENNA: NOV-850 S/N NMLK21430018S
REFERENCE RECEIVER: GTR55 S/N: 1711887
DATE: 2022-05-08
SITE: PRAGUE
BASELINE: 8 m

OUTPUT DATA: **CGGTTS**
SATELLITES: ALL IN VIEW
SIGNAL: GPS L1C/A

SIGMA = 260 ps

TIME DIFFERENCE [ns]



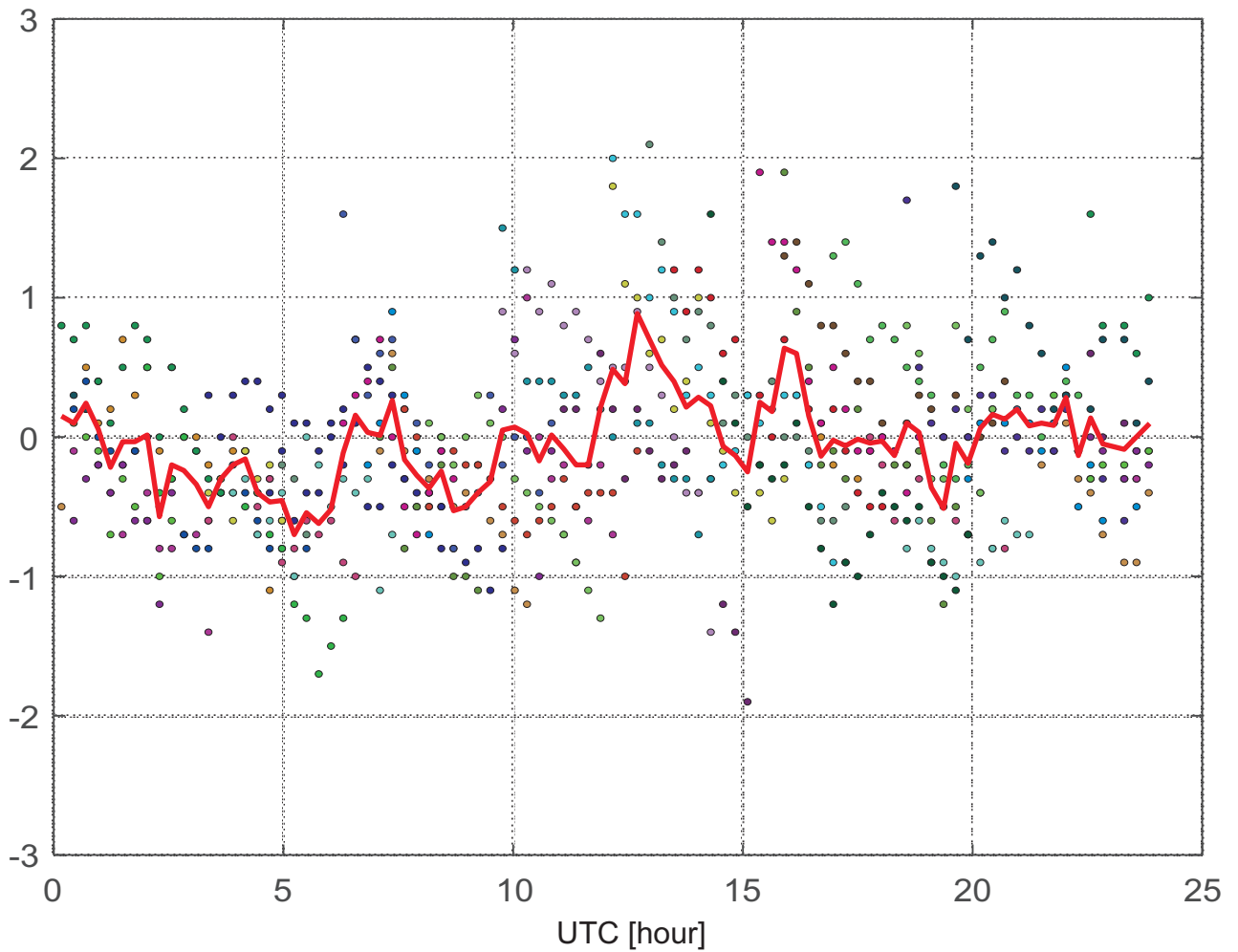
POINTS = TRACKS
COLOR = SATELLITE

RED LINE = AVERAGE OVER ALL SATELLITES IN VIEW

OUTPUT DATA: **CGGTTS**
SATELLITES: ALL IN VIEW
SIGNAL: GPS L1P

SIGMA = 290 ps

TIME DIFFERENCE [ns]



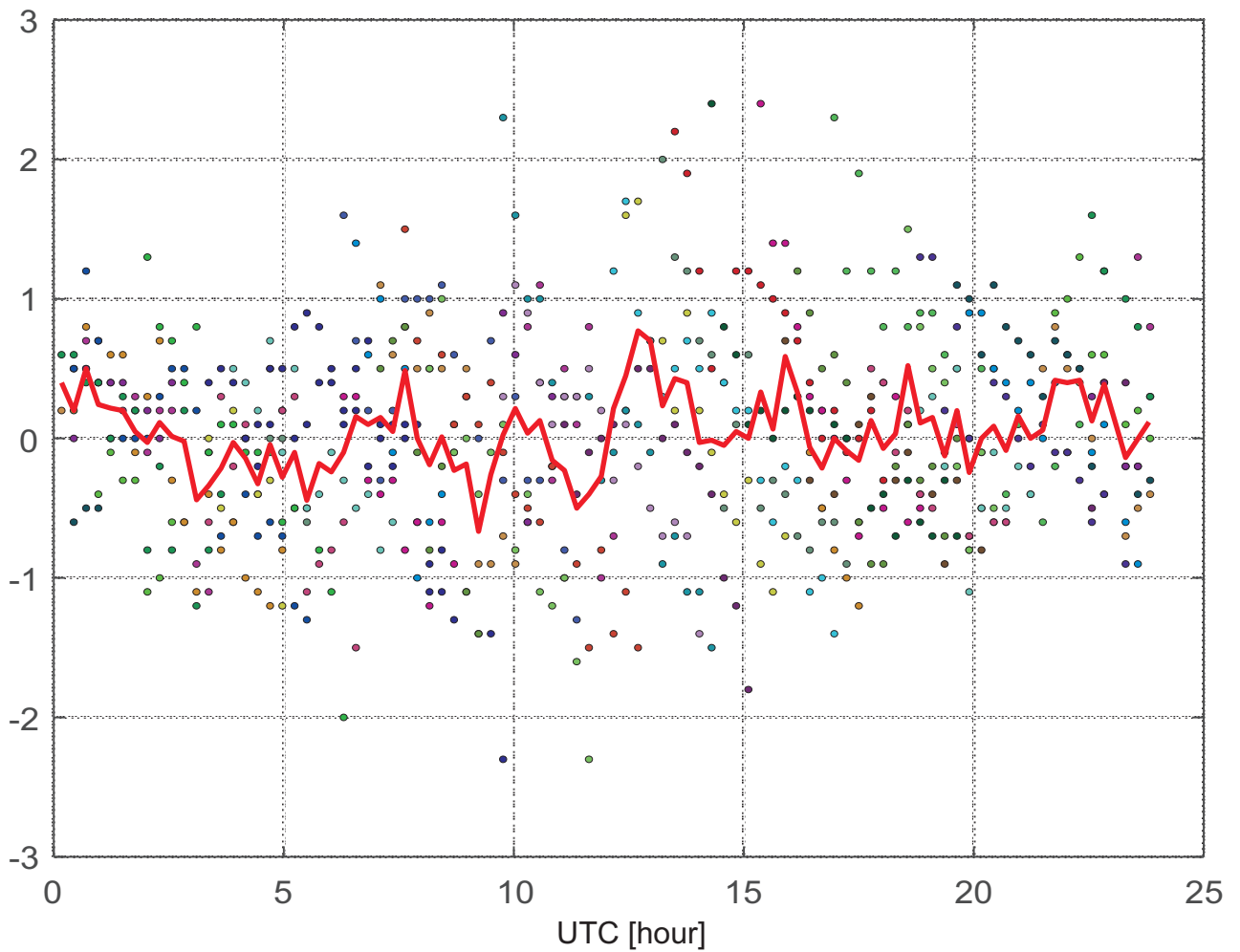
POINTS = TRACKS
COLOR = SATELLITE

RED LINE = AVERAGE OVER ALL SATELLITES IN VIEW

OUTPUT DATA: **CGGTTS**
SATELLITES: ALL IN VIEW
SIGNAL: GPS L2P

SIGMA = 270 ps

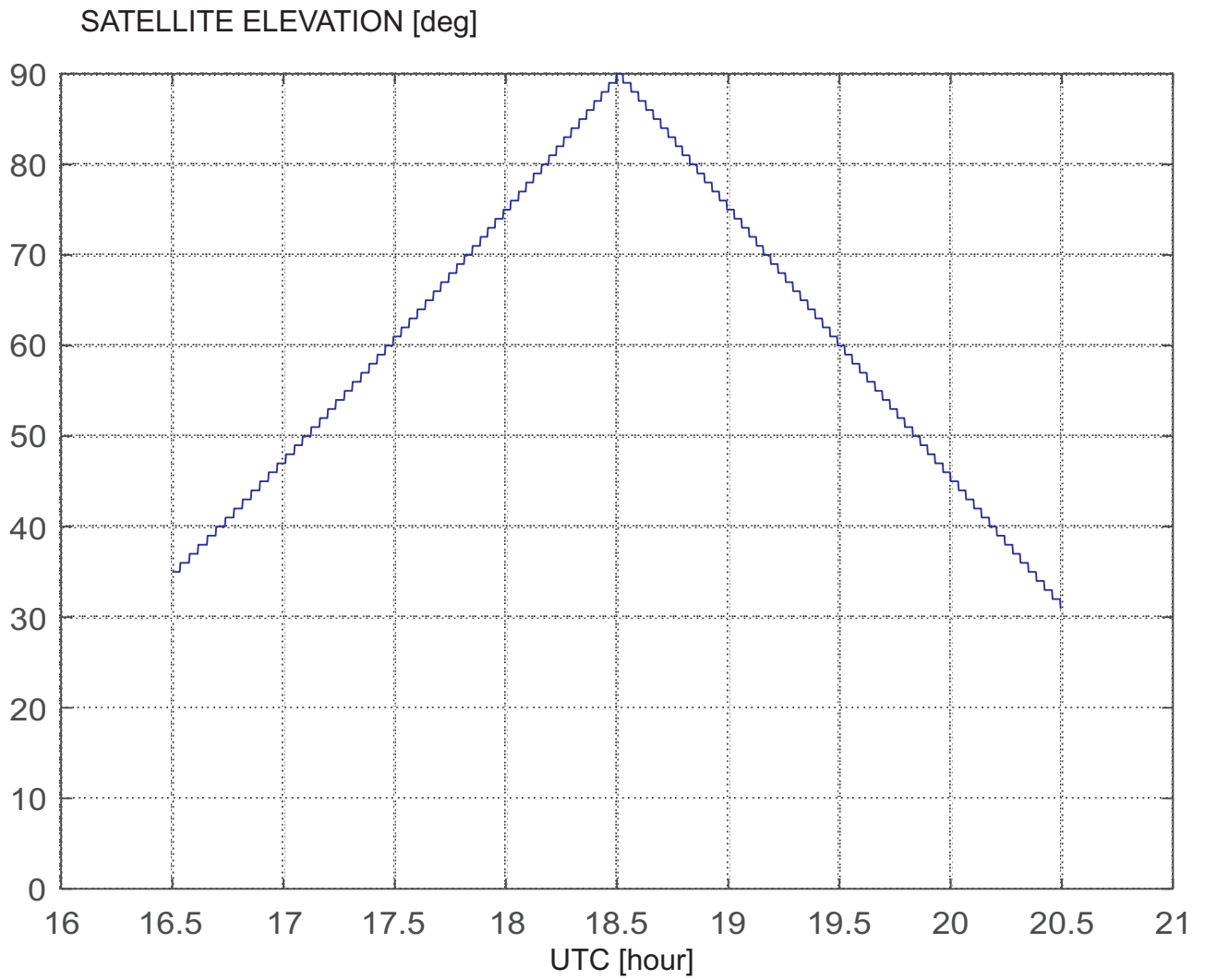
TIME DIFFERENCE [ns]



POINTS = TRACKS
COLOR = SATELLITE

RED LINE = AVERAGE OVER ALL SATELLITES IN VIEW

OUTPUT DATA: **RAW**
SATELLITE: PRN 01
SIGNAL: GPS L1C/A

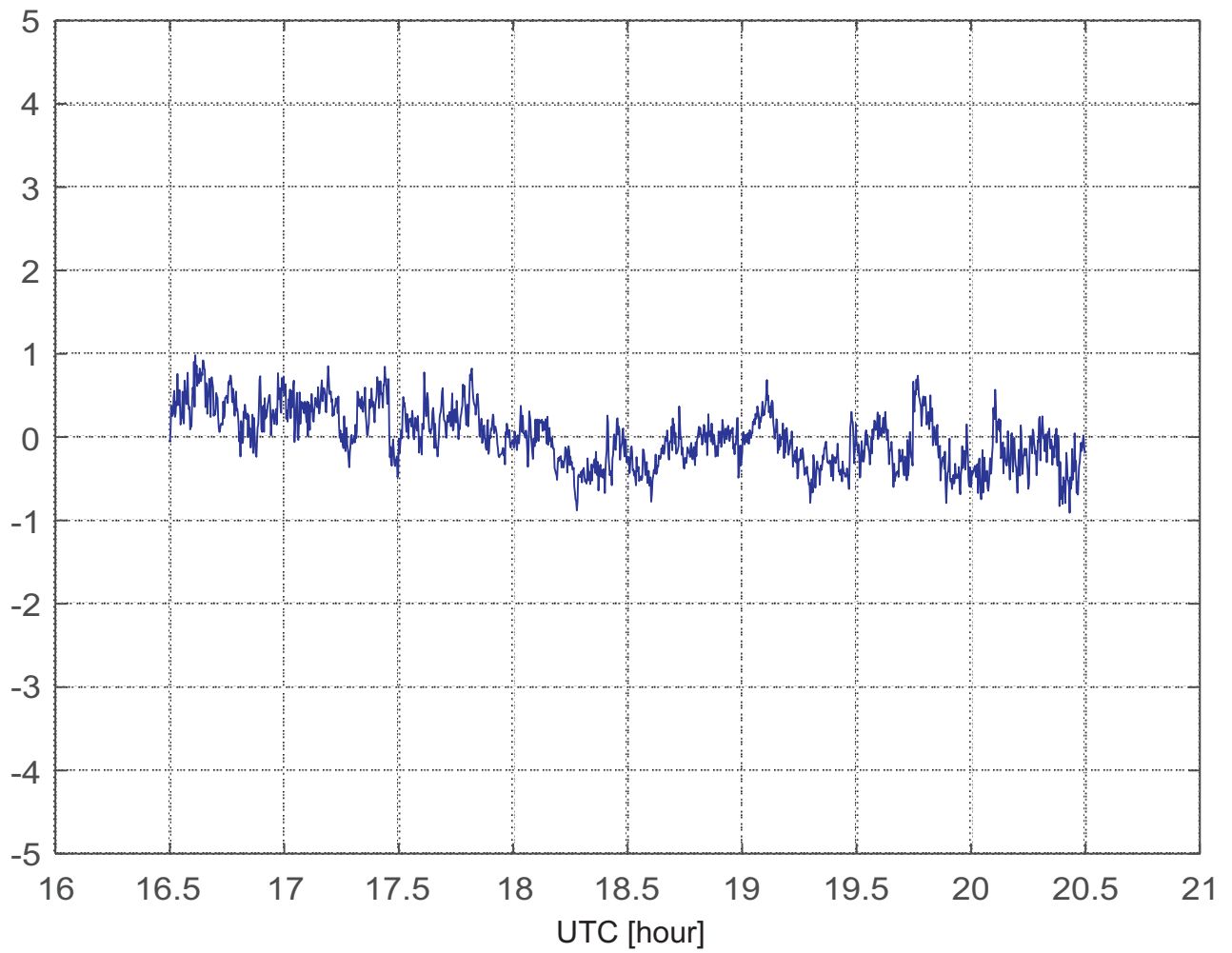


OUTPUT DATA: **RAW**
SATELLITE: PRN 01
SIGNAL: GPS L1C/A

CODE MEASUREMENT

SIGMA = 0.3 ns

TIME DIFFERENCE [ns]



OUTPUT DATA: **RAW**
SATELLITE: PRN 01
SIGNAL: GPS L1C/A

CARRIER PHASE MEASUREMENT

SIGMA = 8 ps

TIME DIFFERENCE [ns]

