

Measures of Network Performance Using On-line ILRS Resources

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Consider Data Quality Measures by Quick-look Analysis Centers for 2009

- Normal Point RMS
- Short-term Stability
- Long-term Stability

From the quick-look analysis centers:

DGFI

HITO

JCET

MCC

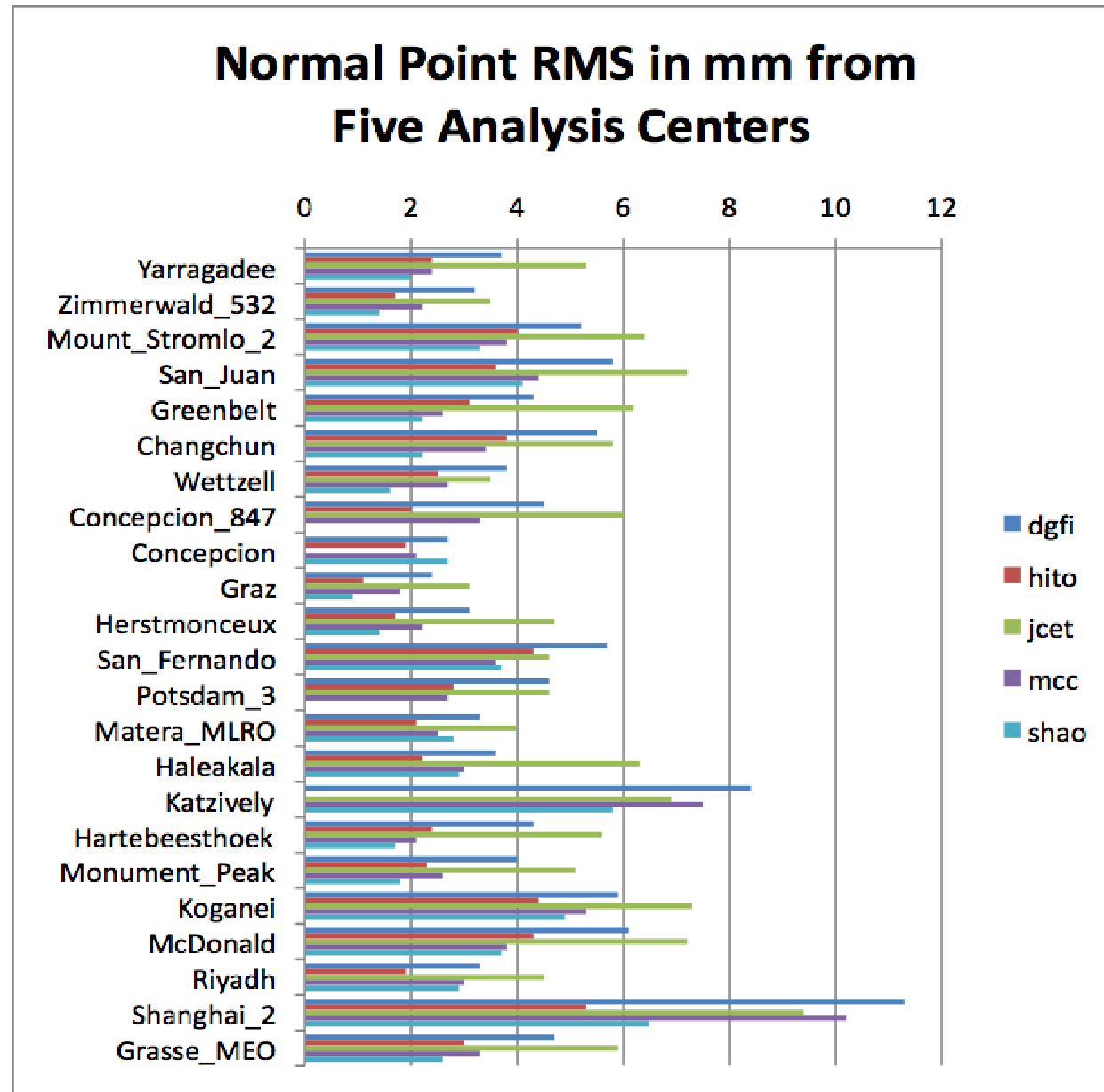
SHAO

Table 2 shows Data Quality by Analysis Center

Site Information		DGFI Orbital Analysis				Hitotsubashi Univ. Orbital Analysis				JCET Orbital Analysis				MCC Orbital Analysis				SHAO Orbital Analysis			
Station Location	Station Number	LAG NP RMS (mm)	short term (mm)	long term (mm)	% good LAG. NP	LAG NP RMS (mm)	short term (mm)	long term (mm)	% good LAG. NP	LAG NP RMS (mm)	short term (mm)	long term (mm)	% good LAG. NP	LAG NP RMS (mm)	short term (mm)	long term (mm)	% good LAG. NP	LAG NP RMS (mm)	short term (mm)	long term (mm)	% good LAG. NP
Baseline		10.0	20.0	20.0	95	10.0	20.0	20.0	95	10.0	20.0	20.0	95	10.0	20.0	20.0	95	10.0	20.0	20.0	95
Yarragadee	7090	3.7	17.1	3.9	99.9	2.4	9.8	1.6	99.9	5.3	20.7	5.8	96.0	2.4	14.0	4.0	97.9	2.0	11.0	2.0	95.2
Zimmerwald_532	7810	3.2	12.7	3.4	100.0	1.7	9.0	3.5	100.0	3.5	17.6	2.7	99.8	2.2	8.1	2.8	98.9	1.4	8.9	2.1	96.6
Mount_Stromlo_2	7825	5.2	16.2	5.4	100.0	4.0	10.9	3.8	100.0	6.4	21.3	5.8	98.8	3.8	11.3	3.4	95.5	3.3	11.0	4.4	94.9
San_Juan	7406	5.8	25.2	9.1	99.9	3.6	23.7	9.2	99.8	7.2	23.0	3.2	95.0	4.4	13.2	5.0	98.0	4.1	18.6	7.9	96.9
Greenbelt	7105	4.3	18.0	4.6	99.8	3.1	11.6	3.4	99.8	6.2	19.1	5.4	96.8	2.6	19.1	2.6	97.2	2.2	13.0	5.6	95.6
Changchun	7237	5.5	26.4	8.2	99.5	3.8	22.1	9.5	99.8	5.8	23.6	8.8	94.3	3.4	17.7	13.0	98.6	2.2	25.9	6.4	95.9
Wetzell	8834	3.8	15.5	9.9	100.0	2.5	12.0	9.6	100.0	3.5	23.2	9.2	100.0	2.7	15.5	9.0	97.0	1.6	15.7	9.7	95.5
Concepcion_847	7405	4.5	20.3	4.6	100.0	2.0	18.1	6.2	100.0	6.0	21.4	4.9	89.0	3.3	31.8	6.8	99.6				
Concepcion	7405	2.7	12.8		100.0	1.9	13.2		100.0					2.1	17.2	5.2	100.0	2.7	27.3	4.4	98.3
Graz	7839	2.4	14.4	3.4	100.0	1.1	8.1	3.0	100.0	3.1	15.4	5.4	99.1	1.8	9.4	5.0	99.5	0.9	10.2	2.0	97.4
Herstmonceux	7840	3.1	13.8	3.7	100.0	1.7	8.2	2.5	100.0	4.7	16.4	4.7	99.9	2.2	7.8	3.8	99.0	1.4	8.9	1.8	95.2
San_Fernando	7824	5.7	27.2	9.1	100.0	4.3	14.3	6.5	100.0	4.6	19.6	4.0	98.0	3.6	16.3	10.9	96.4	3.7	17.9	9.7	94.5
Potsdam_3	7841	4.6	16.2	6.4	100.0	2.8	9.9	7.0	99.9	4.6	15.8	6.6	98.8	2.7	11.7	7.8	95.7				
Matera_MLRO	7941	3.3	16.2	4.0	100.0	2.1	8.2	3.2	100.0	4.0	17.7	7.9	99.5	2.5	15.2	4.8	97.6	2.8	29.5		98.5
Haleakala	7119	3.6	17.8	6.2	99.9	2.2	9.8	4.9	99.8	6.3	22.9	7.4	99.0	3.0	15.3	8.1	99.3	2.9	29.5	10.7	98.0
Katziwely	1893	8.4	28.9	21.0	98.9					6.9	37.0	24.2	81.8	7.5	21.2	19.8	96.1	5.8	23.6	10.7	97.3
Hartebeesthoek	7501	4.3	21.8	7.6	99.9	2.4	13.8	5.5	99.8	5.6	20.2	8.2	99.7	2.1	16.1	4.2	98.5	1.7	19.3	14.1	96.2
Monument_Peak	7110	4.0	15.0	7.4	100.0	2.3	8.4	4.3	100.0	5.1	20.1	5.7	98.6	2.6	14.1	5.6	98.7	1.8	13.9	2.1	94.8
Koganei	7308	5.9	20.1	11.4	99.9	4.4	14.7	8.0	99.7	7.3	22.1	10.7	97.2	5.3	20.8	9.5	97.2	4.9	27.7	11.5	96.6
McDonald	7080	6.1	18.5	6.4	99.6	4.3	8.8	2.7	99.8	7.2	19.1	5.5	98.5	3.8	13.8	3.7	91.3	3.7	15.8	3.1	93.4
Riyadh	7832	3.3	18.4	7.2	100.0	1.9	13.0	5.6	100.0	4.5	21.2	9.3	98.2	3.0	19.5	15.8	95.9	2.9	26.2	13.5	98.5
Shanghai_2	7821	11.3	35.7		99.8	5.3	40.4		99.8	9.4	28.5		88.9	10.2	43.1		100.0	6.5	27.2		98.0
Grasse_MEO	7845	4.7	15.7	5.8	100.0	3.0	13.8	4.9	99.9	5.9	19.3	5.0	99.6	3.3	10.8	3.6	97.1	2.6	14.7	3.8	95.2
Kiev	1824	14.9	49.4	34.4	89.6	17.0	40.3	27.5	93.2	6.1	30.5	19.3	64.7	15.6	39.8	25.7	91.1				
Papeete	7124	2.3	15.7		100.0	1.4	11.5		100.0	14.1	15.8		100.0	2.3	17.8		100.0				
Altay	1879	7.3	25.1	14.2	98.9									4.2	18.7	8.3	95.8				

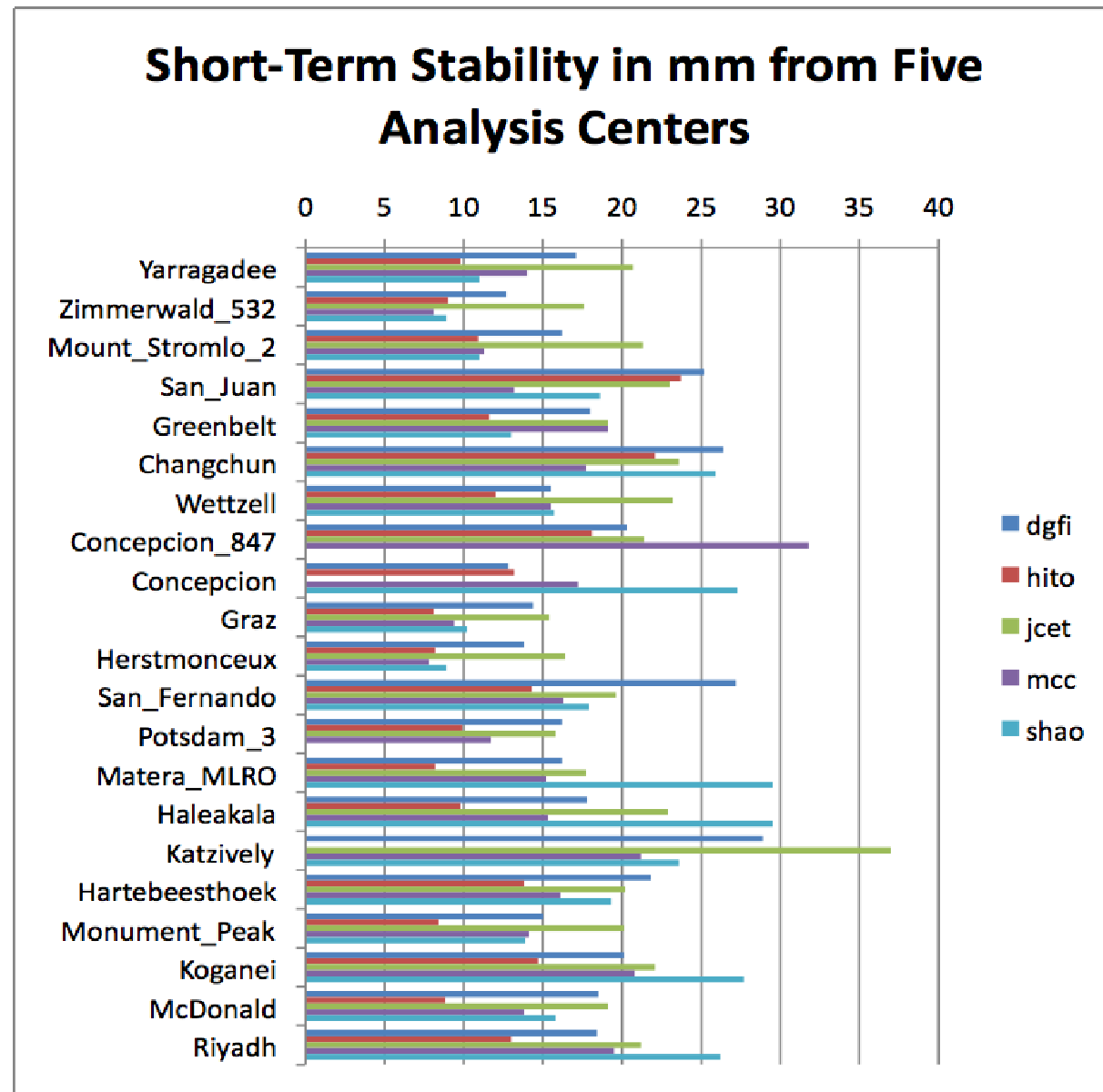
Stations listed by productivity.

Precision not really linked to production



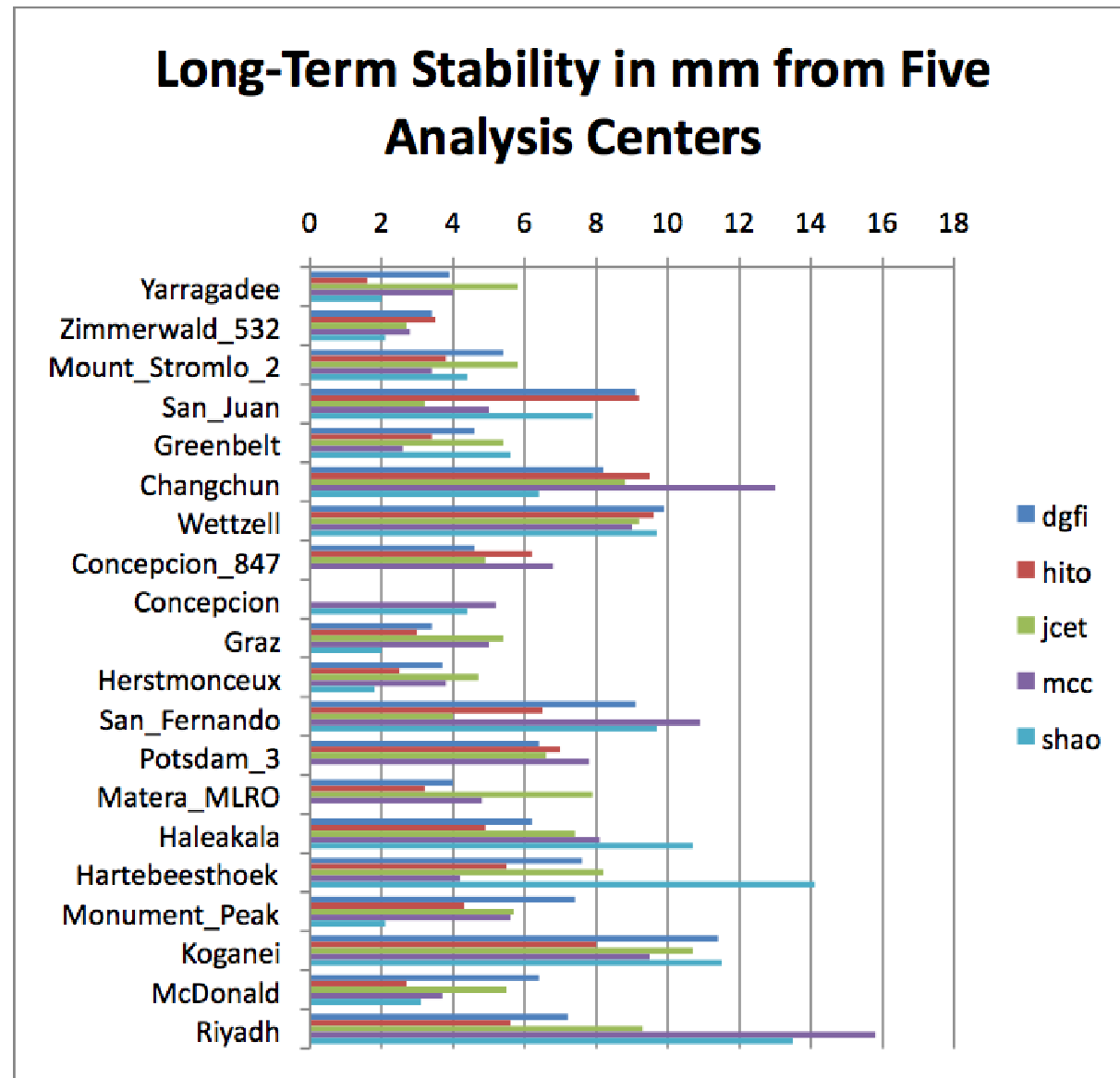
Stations listed by productivity.

Short-term stability slightly linked to production

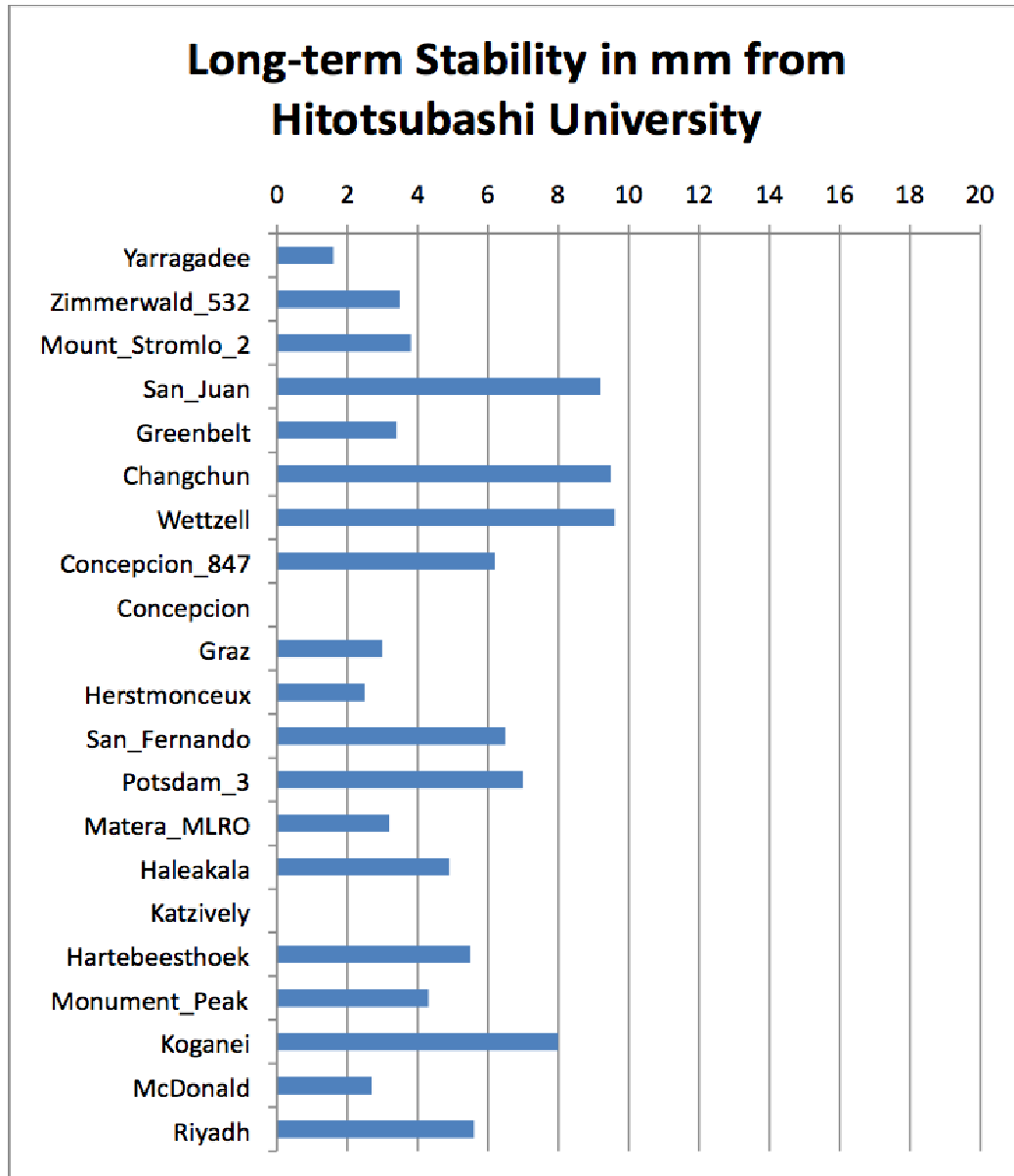


Stations listed by productivity.

Long-term stability slightly linked to production



San_Juan
Changchun
and
Wetzell
stand out

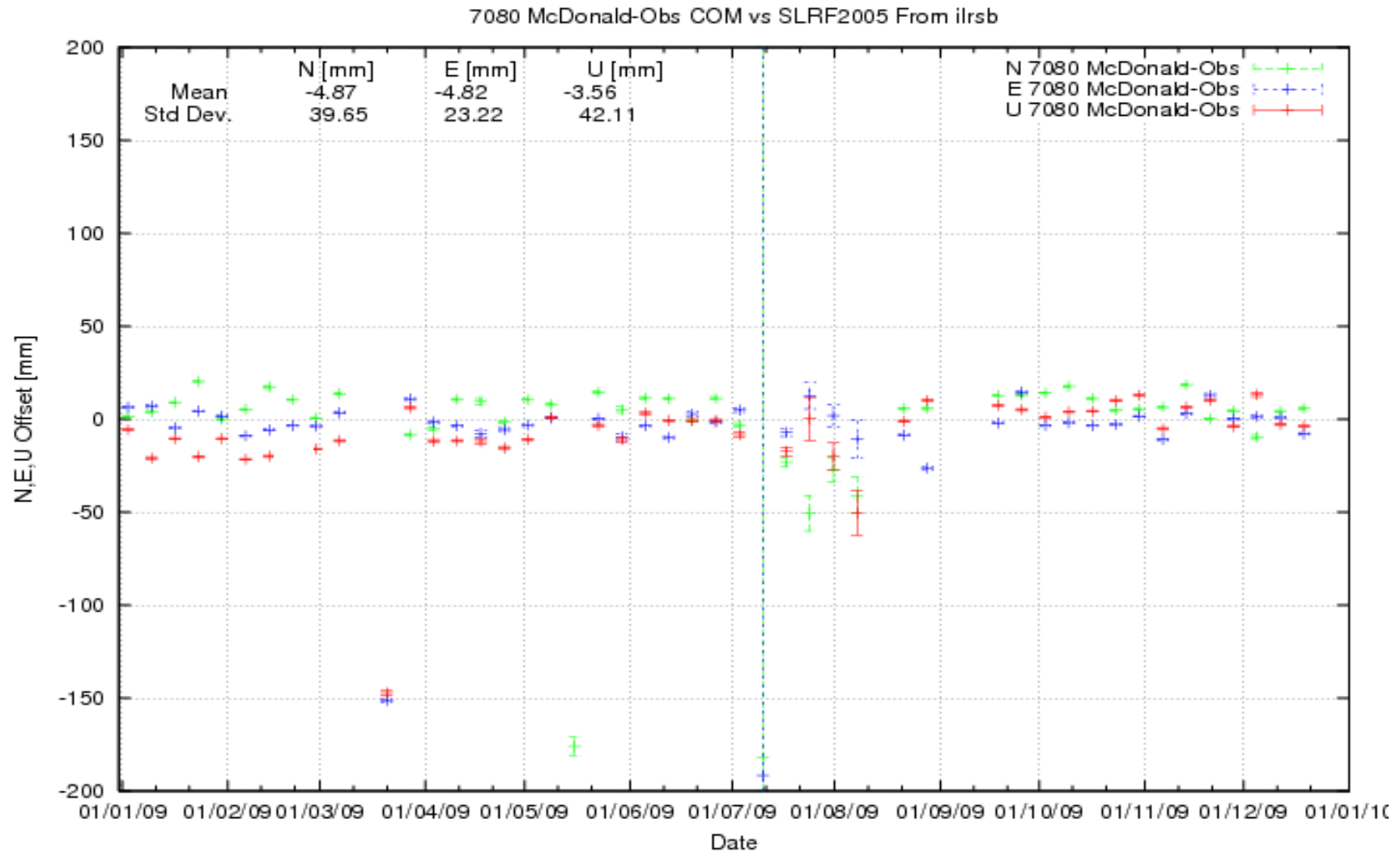


Consider Station Position Variation for each station in 2009.

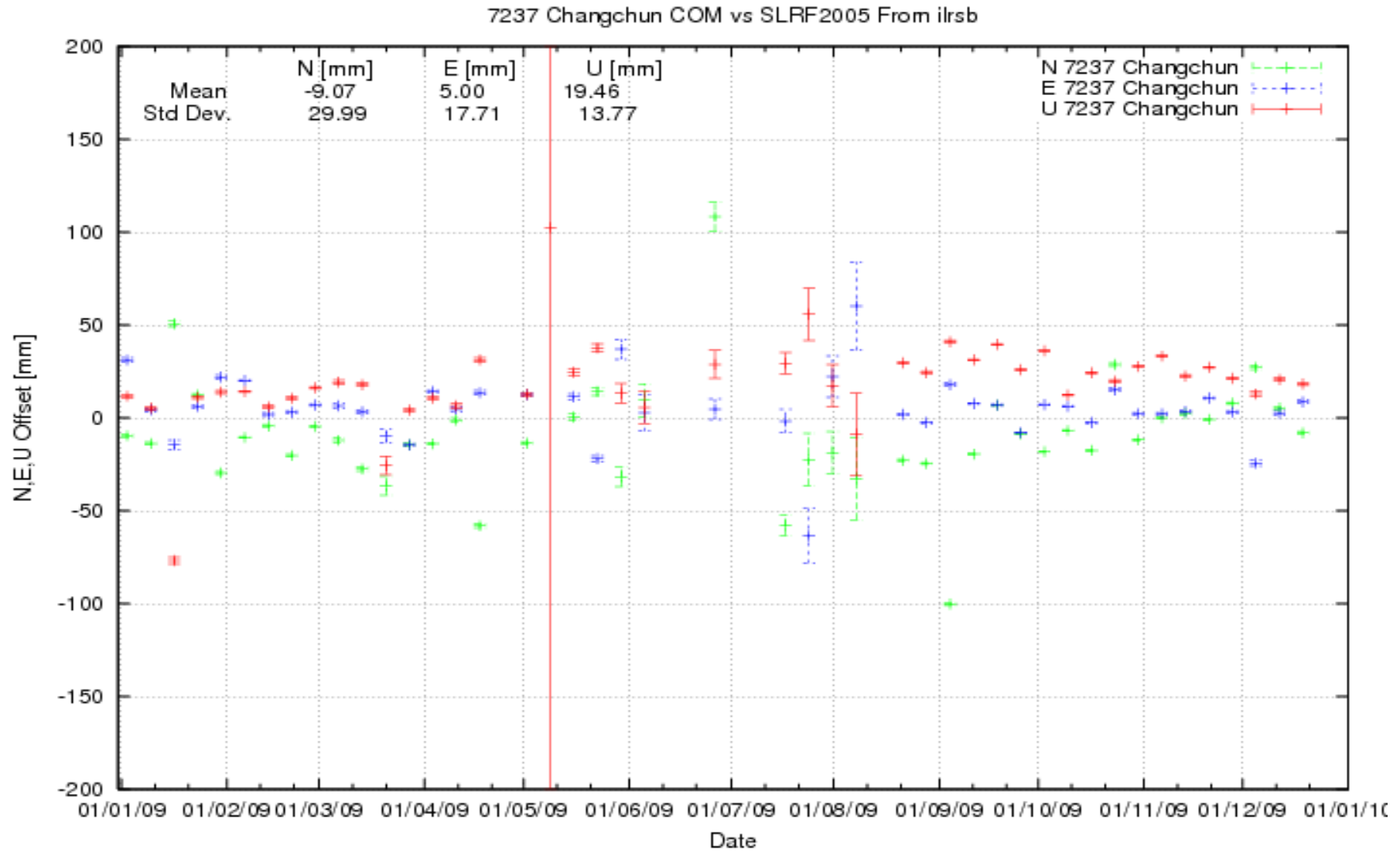
JCET web-site: choose Combination Solution B.

Latitude, longitude and height histories show both
system and geophysical features.

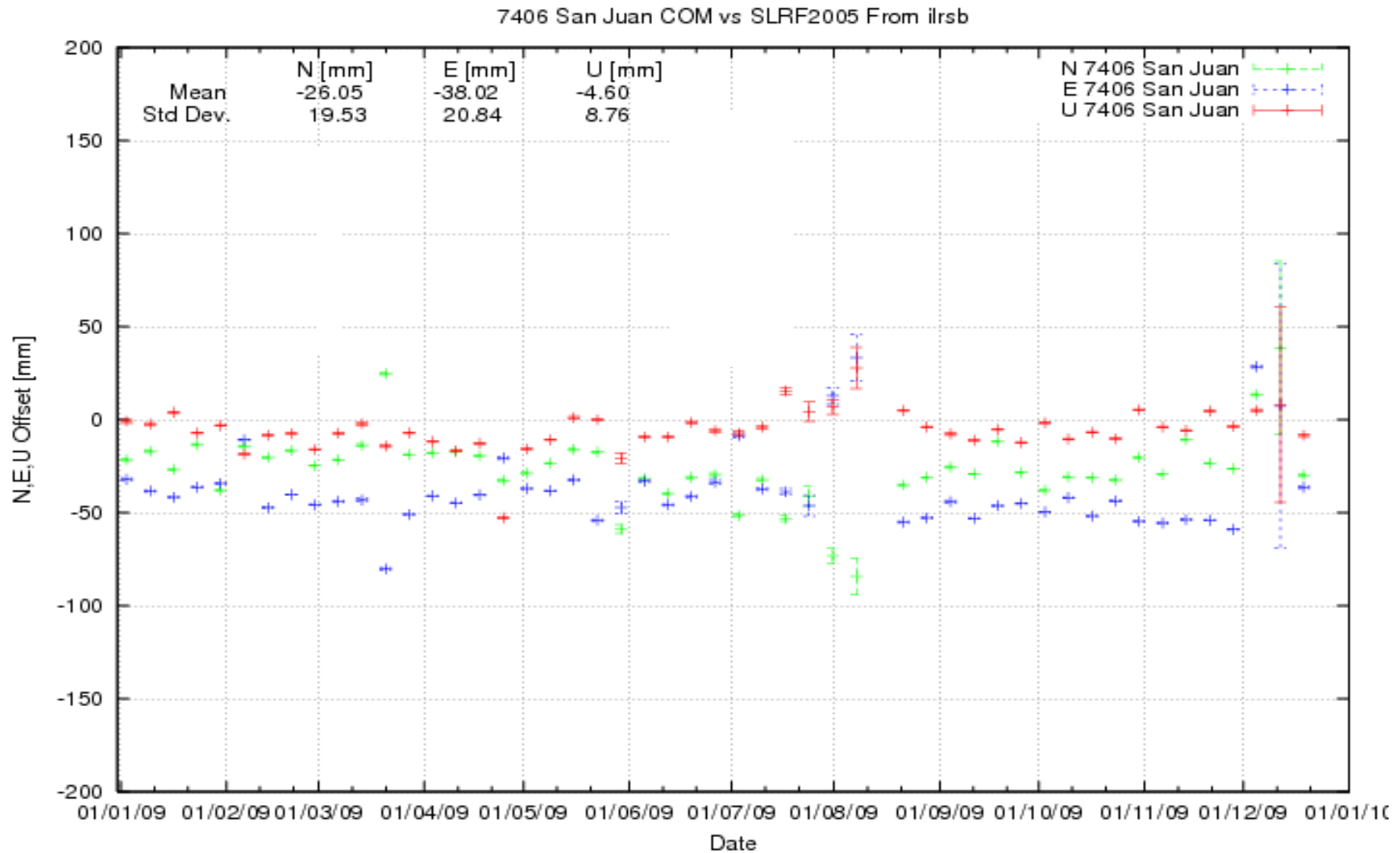
McDonald generally well-behaved



Changchun noisy but random

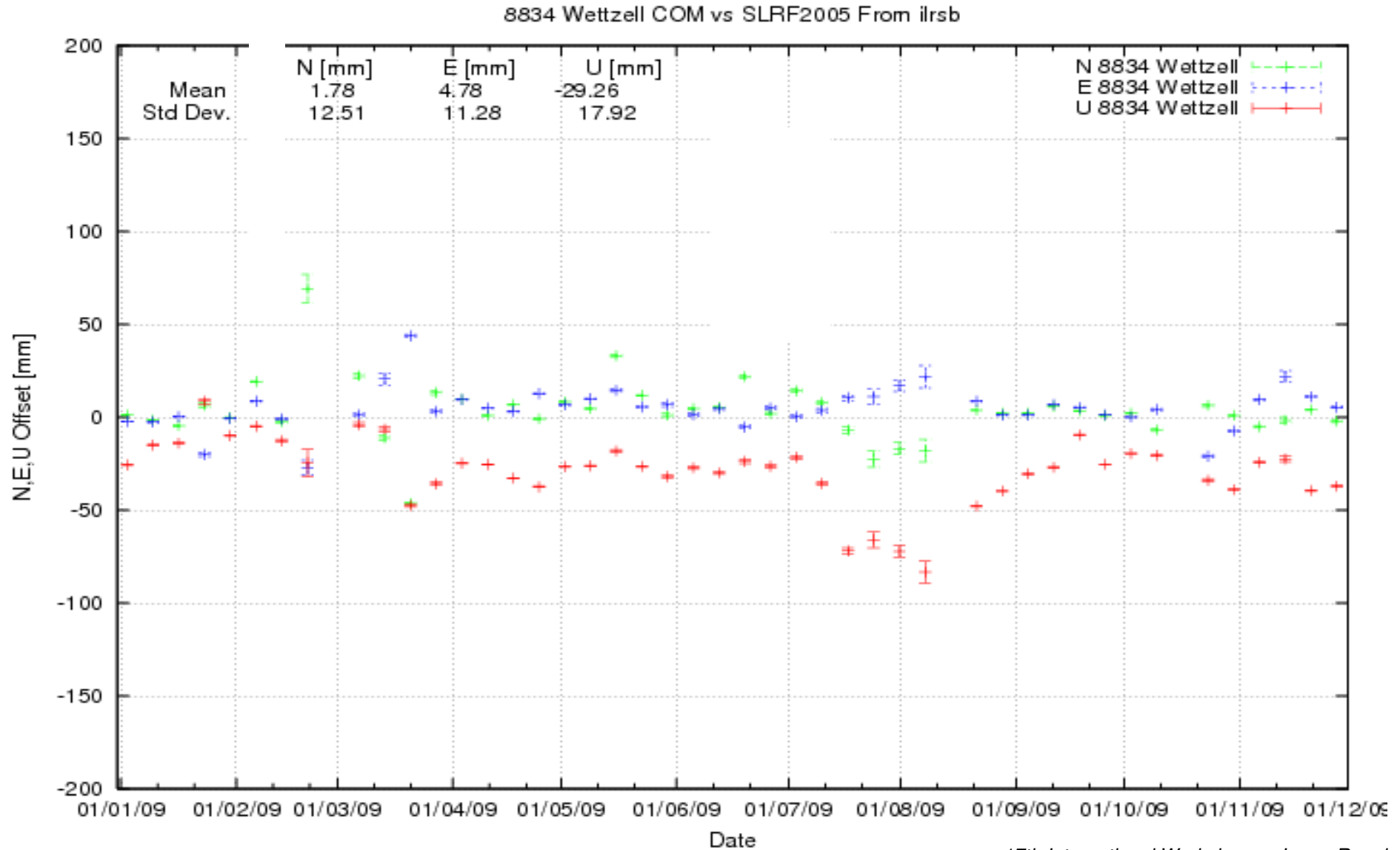


San Juan latitude and longitude differ from SLRF2005

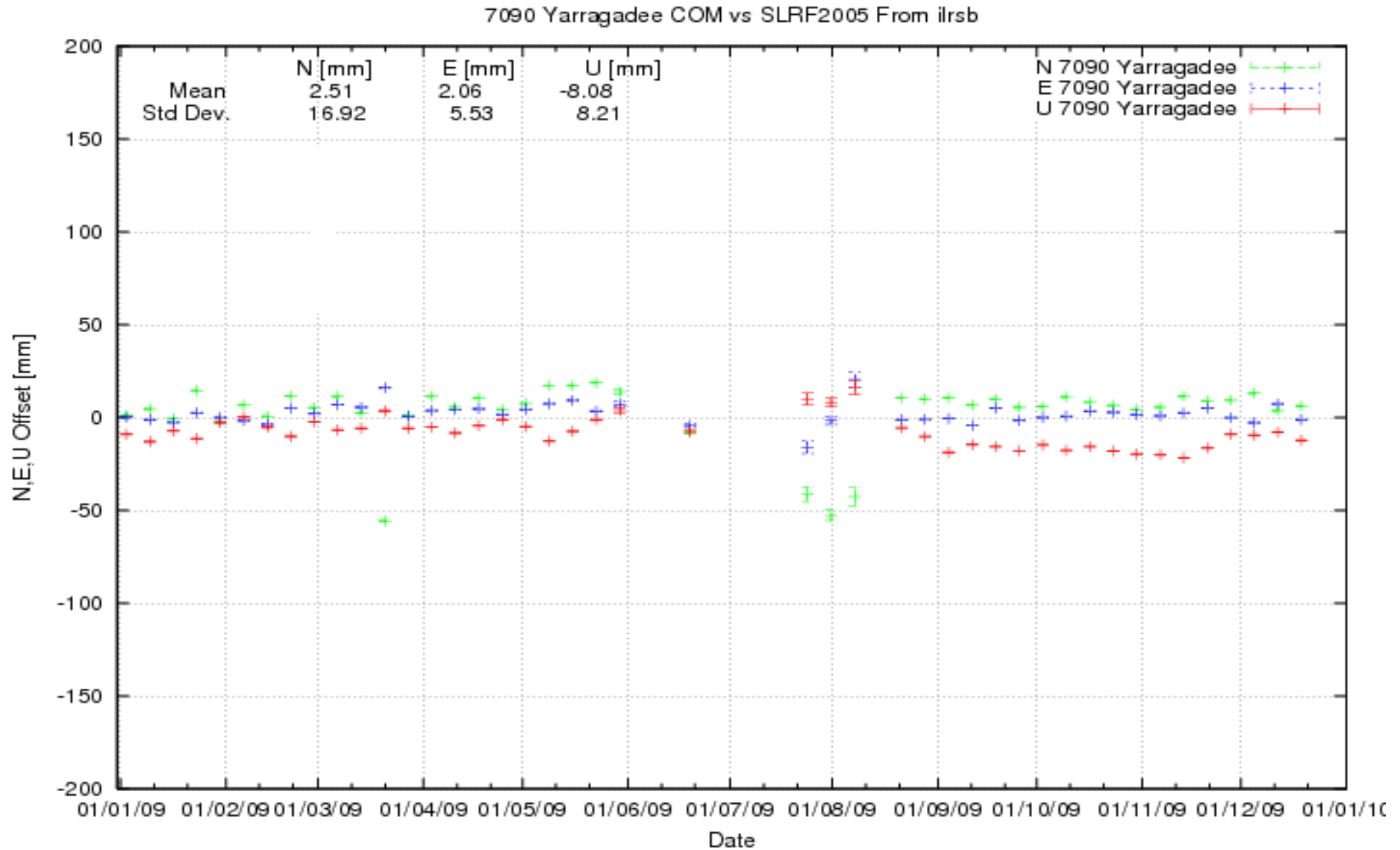


Wetzell apparent height change in March 2009

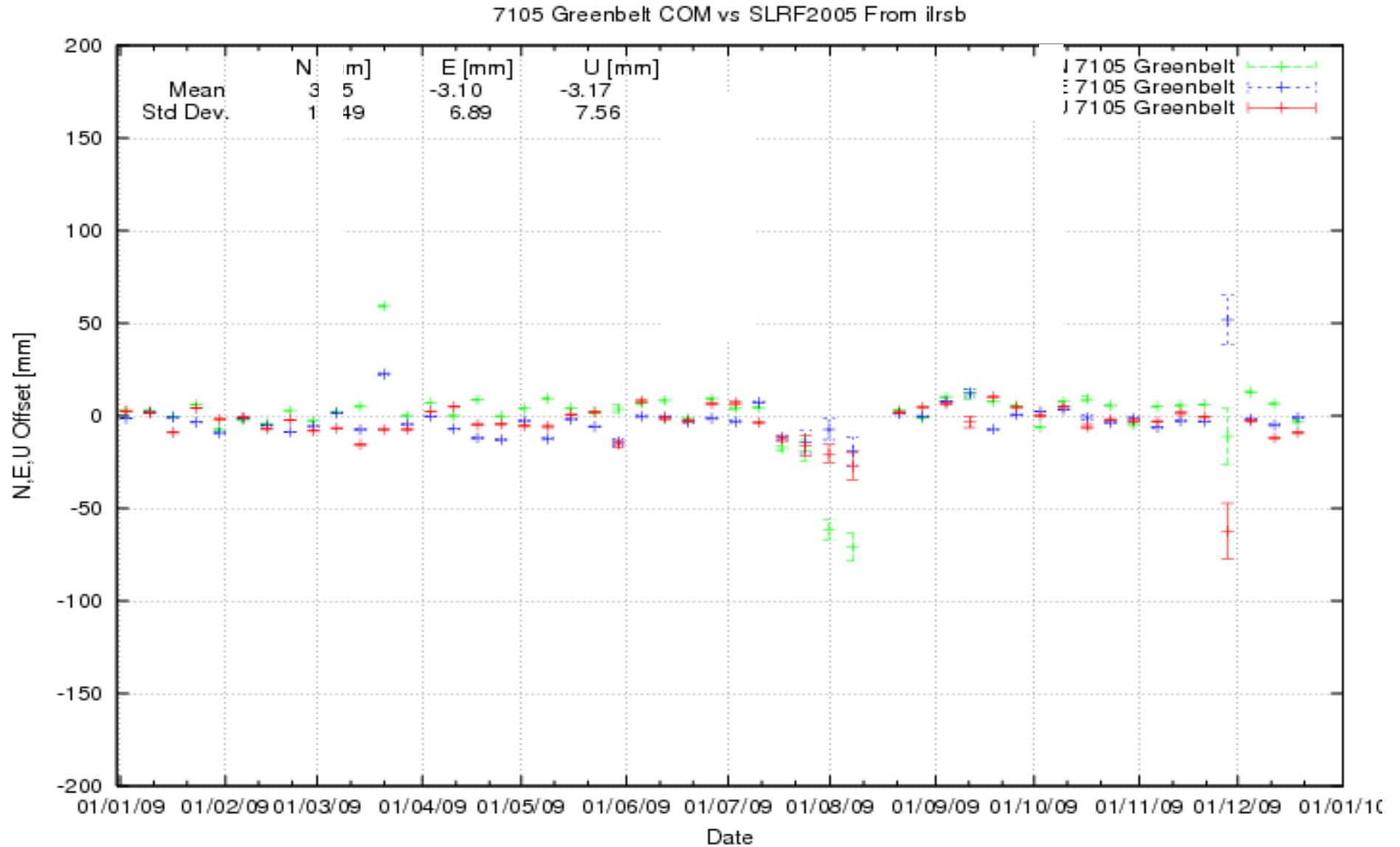
Laser problems: apply recommended bias since day 50, 2009



Yarragadee shows a height signal



Greenbelt is well-behaved



Summary

Data Quality Assessments from the ILRS Global Report Card include features which are both system-related and/or of geophysical origin.

Studies of the behavior of station position can clarify error sources.