Processing Record for this file:
(Make notes here unique for this file)

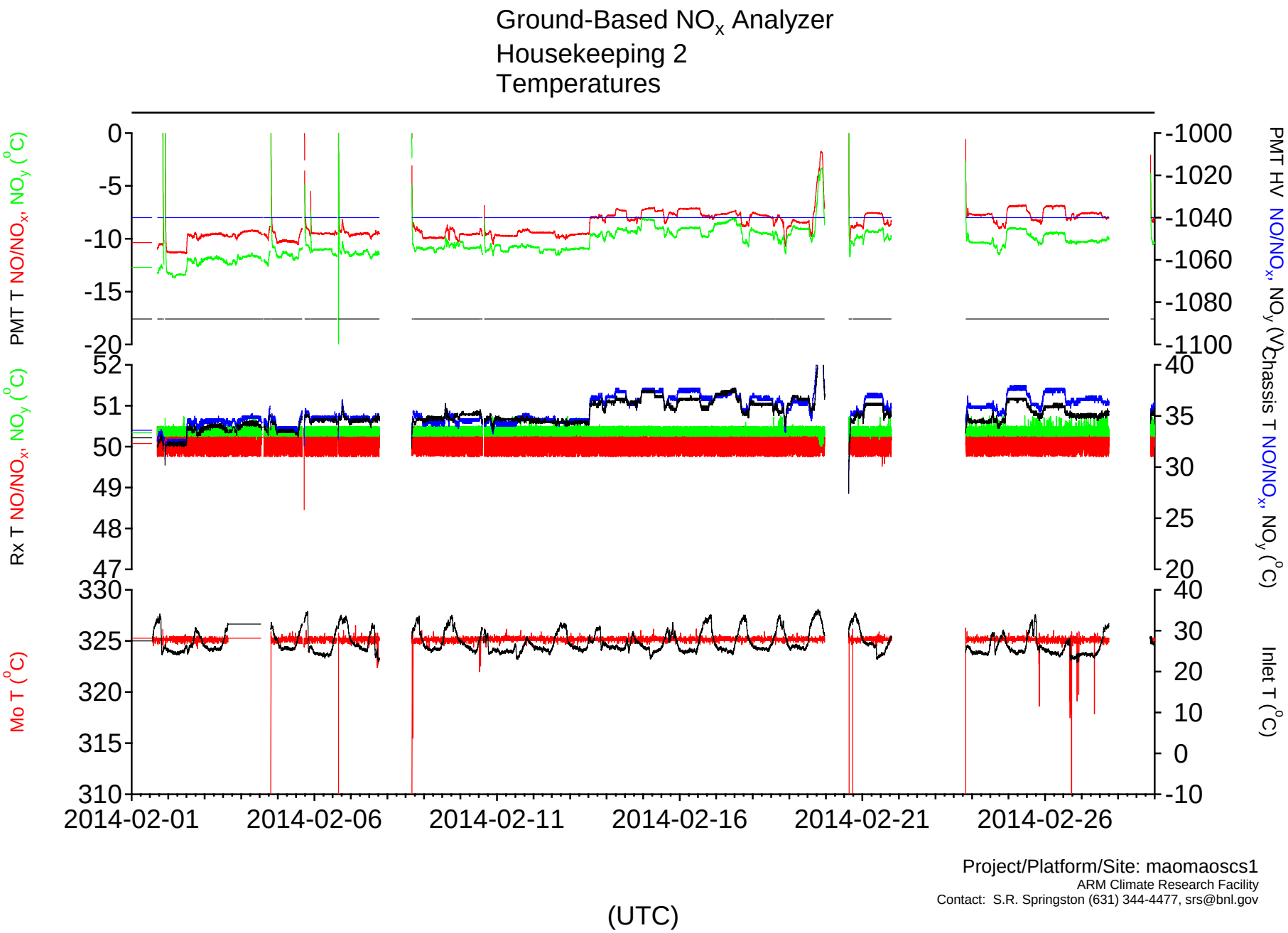
Loading from 2014-02-01 - 2014-03-01
Data taken from DMF, untarred, unzipped and renamed back to orignal file names

It was noted that BOTH TEI 42i's began to lose their internal Mass Flow Meters. This was not consequential as the inlet has much better Mass Flow Controllers. The effect was noted as periodic drop outs and shifts in the internal MFM signals. The same behavior was noted in TCAP. It appears related to ingestion of water, though this is by no means definite.

Data dropouts -

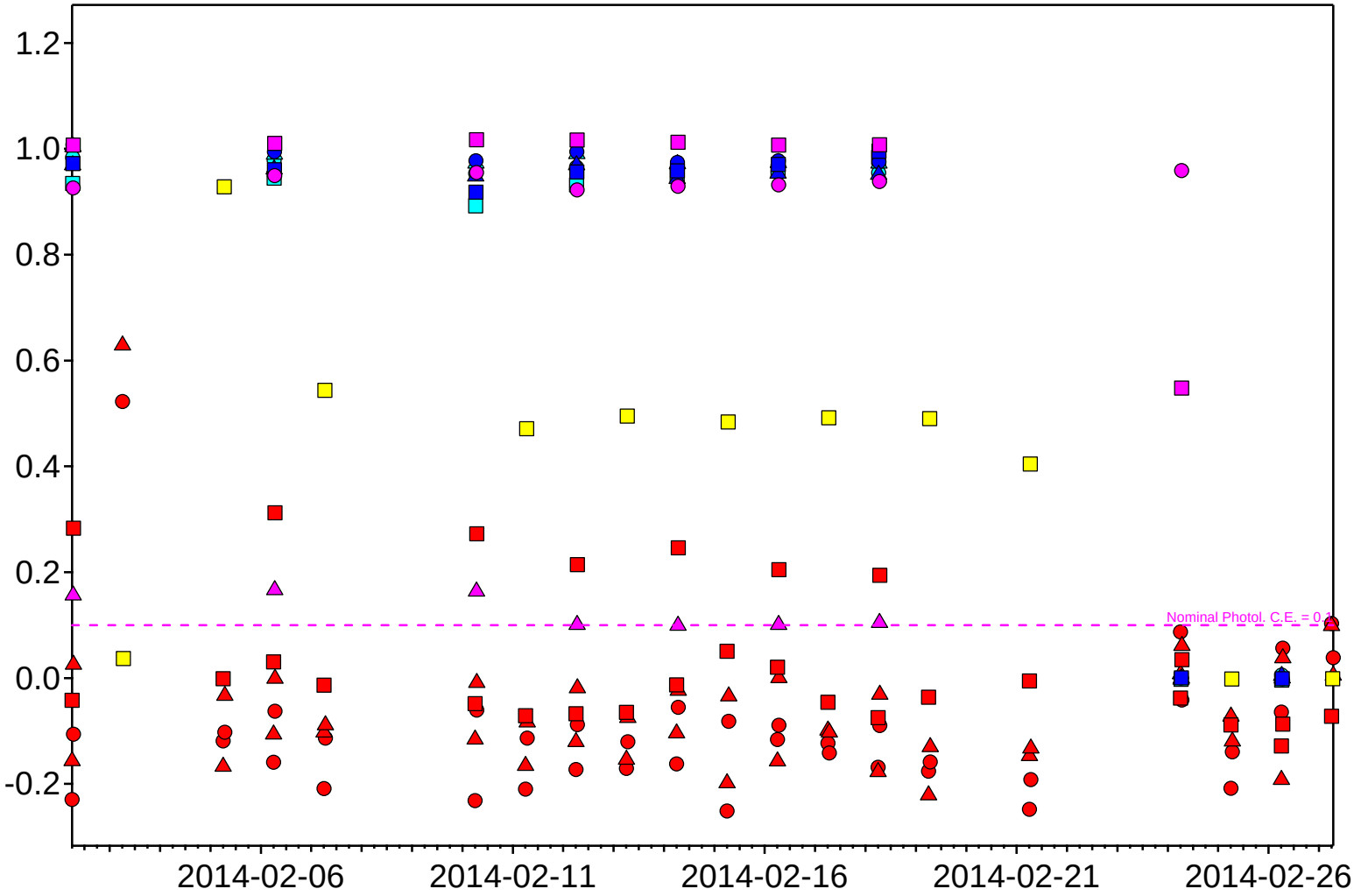
Power at T3 has been most irregular. The NOx box in particular is susceptible to interruptions. After resumption of power, it takes time for the signals to stabilize (the PMT cooler takes some time to reach equilibrium). A log of data dropouts is as follows. Consult the site log for details.

2014-02-01 00:00 - 2014-02-01 14:08 Pumps were off, no data
2014-02-03 15:11 - 2014-02-04 19:25 Inlet box lost communications (Operator error?) Restored after Mentor support, some data here (inlet was operational) NO/NOx box was not restarted by Operator
2014-02-07 18:36 - 2014-02-08 16:10 Pumps off, no data
2014-02-10 13:09 NOy MFM began to report spurious signal. This appears related to water infiltration. The signal appears normal and the standard addition confirms that response is nominal. The MFC is completely normal.
2014-02-10 14:24 - 2014-02-10 15:34 Pumps off, no data
2014-02-19 23:13 - 2014-02-20 15:54 Pumps off, no data
2014-02-21 09:25 - 2014-03-01 00:00 Flows began to oscillate after repeated power failures. Cause unknown. Operators unable to re-establish control. Condition persisted through end of month until Mentor visit to site.


Ground-Based NOx Analyzer
Housekeeping 2
Temperatures
PMT T NO/NOx, NOy (°C)
Rx T NO/NOx, NOy (°C)
Mo T (°C)
PMT HV NO/NOx, NOy (V)
Chassis T NO/NOx, NOy (°C)
Inlet T (°C)
0
-5
-10
-15
-20
52
51
50
49
48
47
330
325
320
315
310
-1000
-1020
-1040
-1060
-1080
-1100
40
35
30
25
20
40
30
20
10
0
-10
2014-02-01
2014-02-06
2014-02-11
2014-02-16
2014-02-21
2014-02-26
(UTC)
Project/Platform/Site: maomaoscs1
ARM Climate Research Facility
Contact: S.R. Springston (631) 344-4477, srs@bnl.gov

○ - NO Channel ; △ - NO_x Channel; □ - NO_y Channel
Zero Air Equivalent Signal (ppbv)
S.A. #1 (calibrated sig/dilution conc: [SA#1] = 20.8 ppbv)
S.A. #2 (calibrated sig/dilution conc: [SA#2] = 82.86 ppbv)
GPT + SA #2 (NO: frac titr., NO_x: Photol. C.E. (nom=0.1), NO_y: Mo C.E. (nom=1.03))
HNO_3 cal. (calibrated sig/perm conc: [HNO_3] = 68.9 ppbv)

Ground NO_x Analyzer Calibration Data



(UTC)

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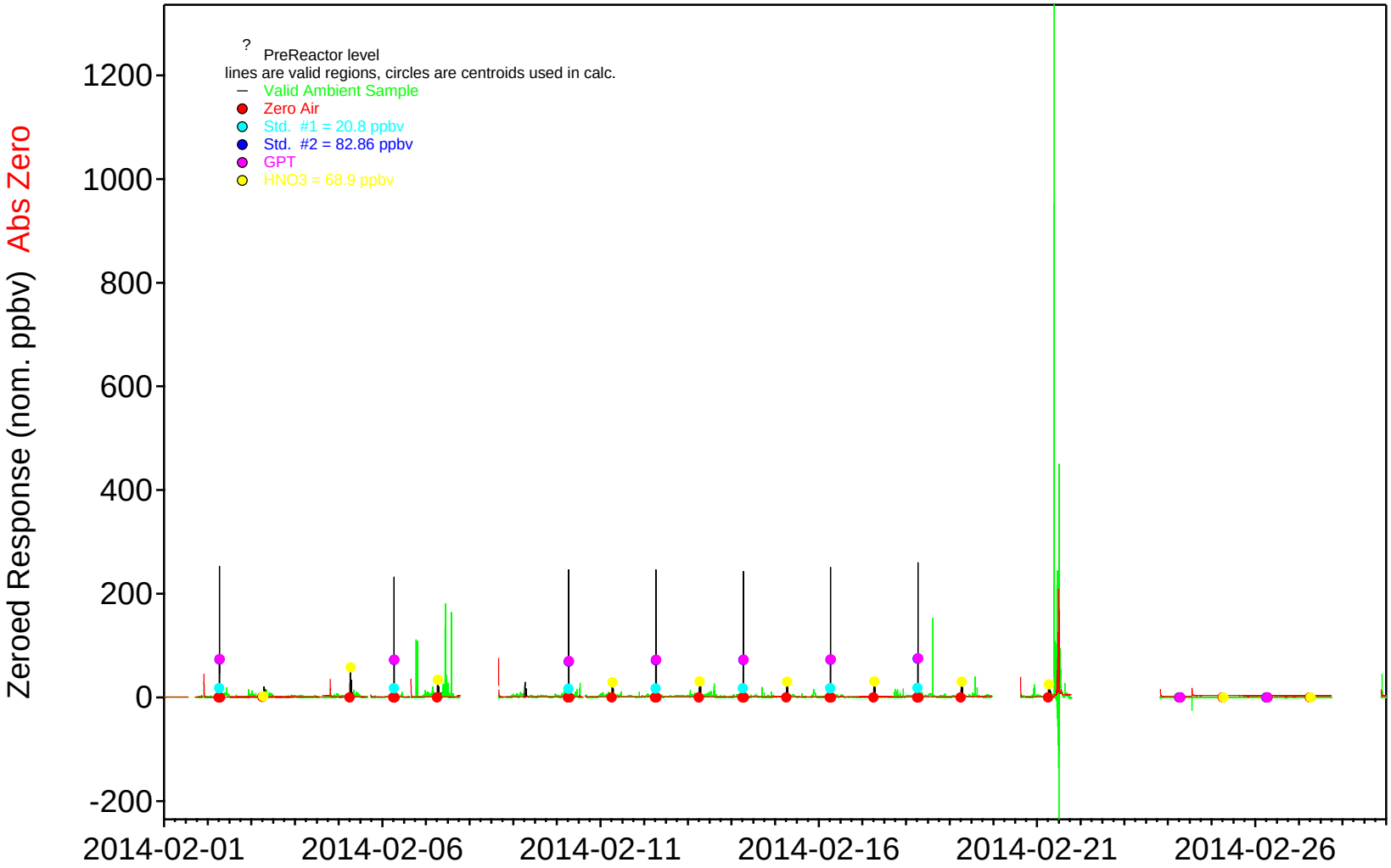
Ground NO_x Analyzer
Parsed NOy Channel Data



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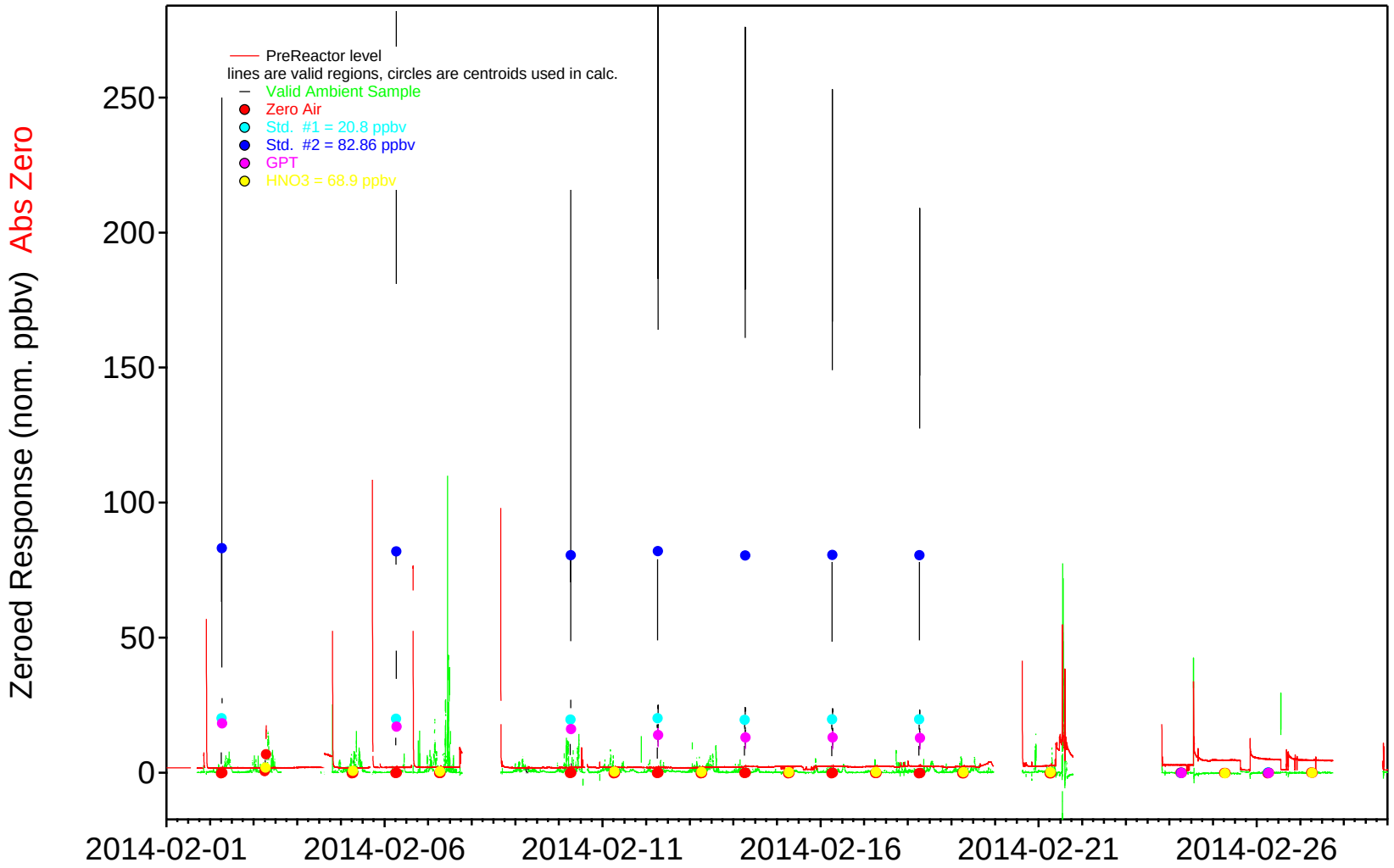
Ground NO_x Analyzer
Parsed NOx Channel Data



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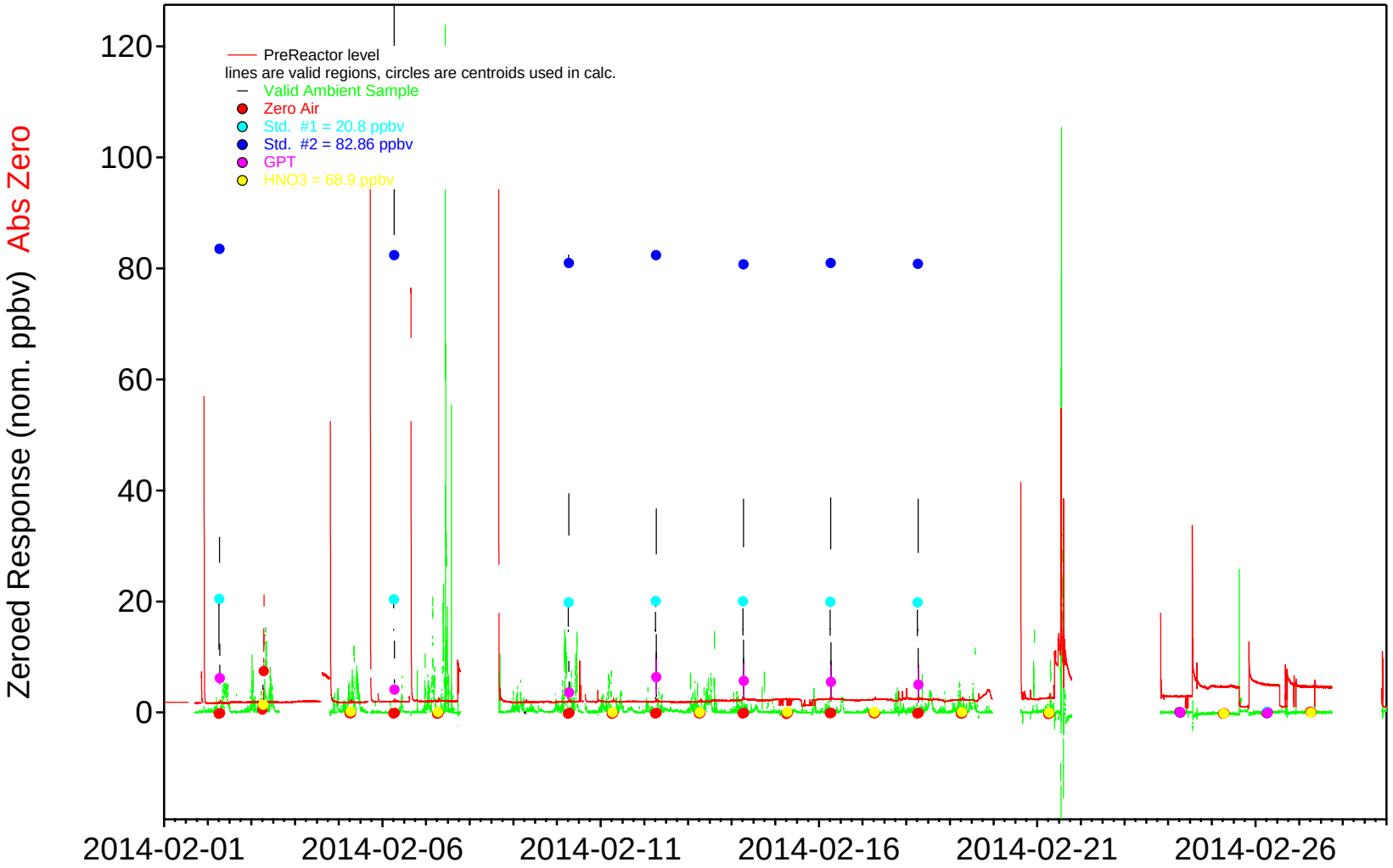
Ground NO_x Analyzer
Parsed NO Channel Data



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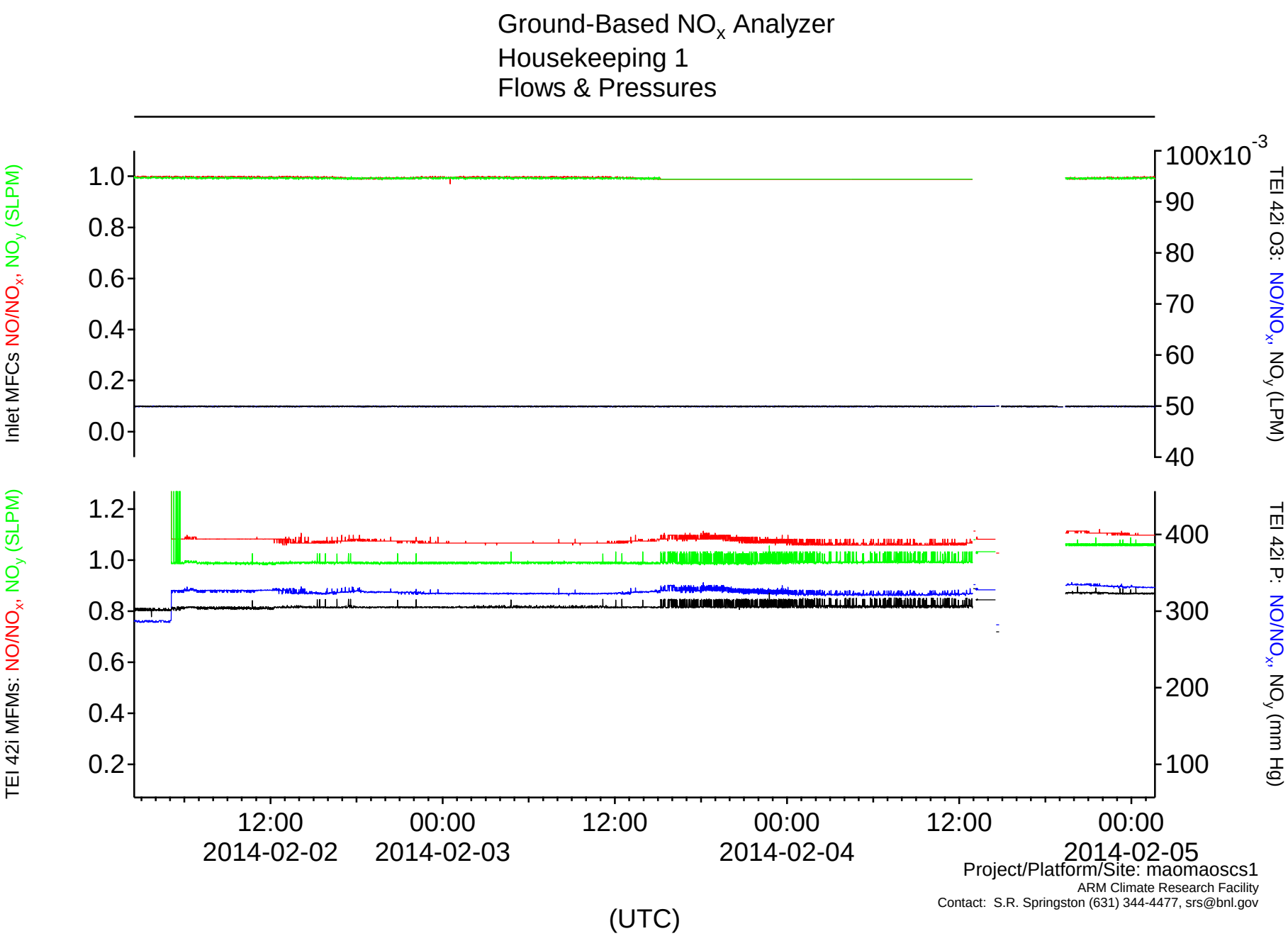
Ground-Based NO_x Analyzer
Housekeeping 1
Flows & Pressures
Inlet MFCs NO/NOx, NOy (SLPM)
TEI 42i MFMs: NO/NOx, NOy (SLPM)
TEI 42i O3: NO/NOx, NOy (LPM)
TEI 42i P: NO/NOx, NOy (mm Hg)
100x10-3
1.0
0.8
0.6
0.4
0.2
0.0
90
80
70
60
50
40
1.2
400
300
200
100
12:00
2014-02-02
00:00
2014-02-03
12:00
00:00
2014-02-04
12:00
00:00
2014-02-05
(UTC)
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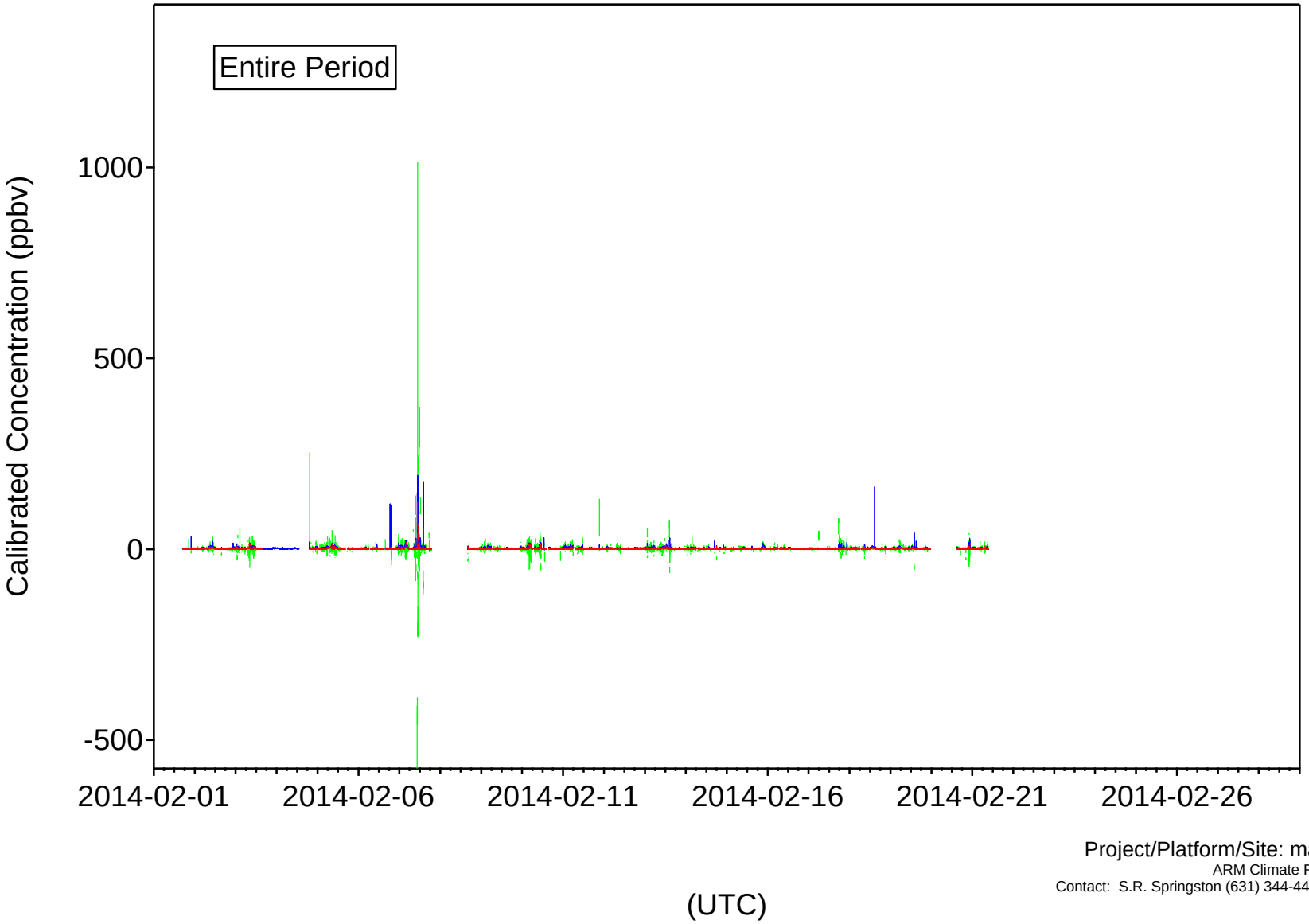
Calibration Factors Used:
NO: 1 ([calibrated]/[inst. reported])
NO_2: 1 ([calibrated]/[inst. reported]), C.E. = 0.1
NO_y: 1.1 ([calibrated]/[inst. reported]), C.E. = 1.03



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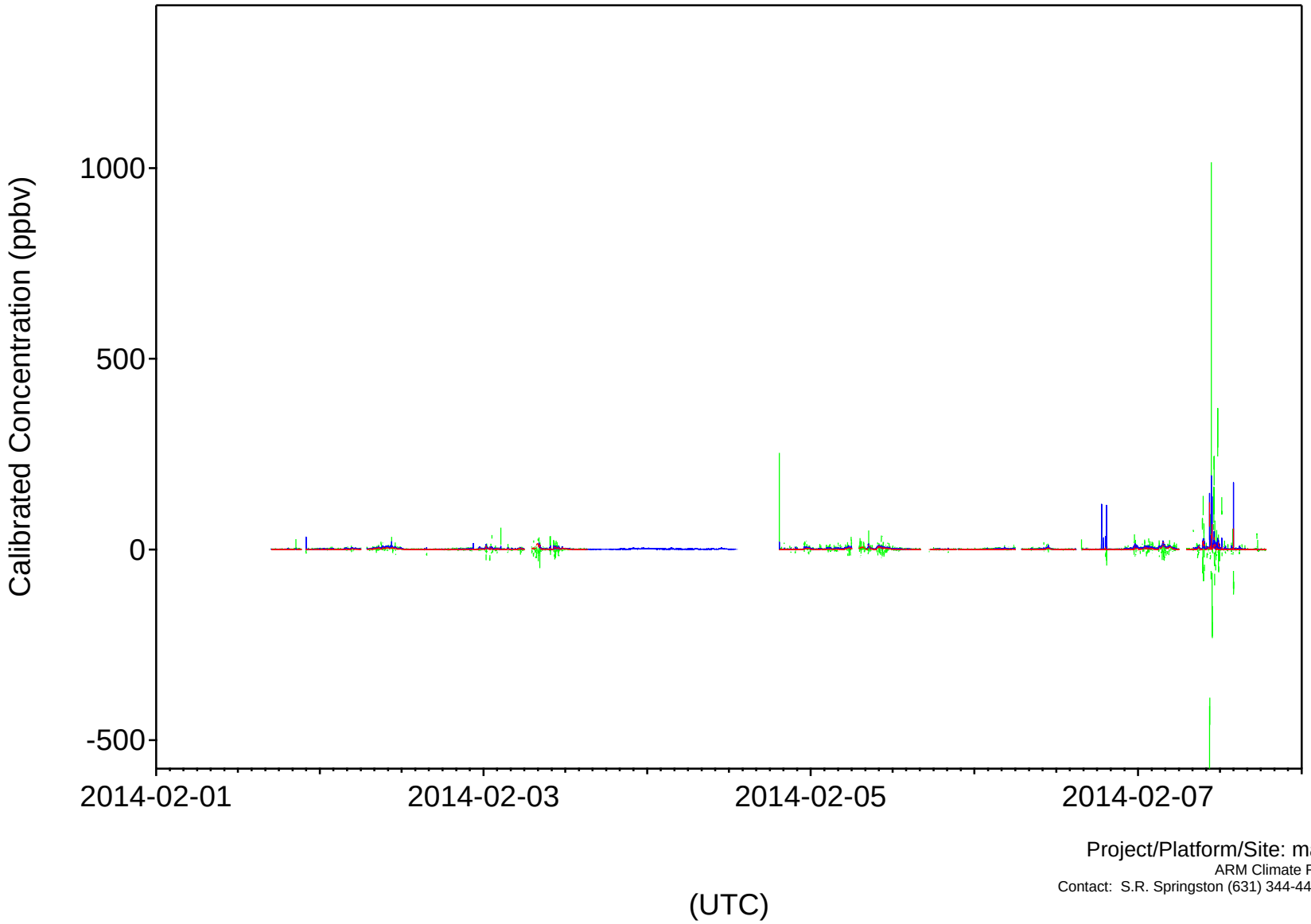
NO_2: 1 ([calibrated]/[inst. reported]), C.E. = 0.1
NO_y: 1.1 ([calibrated]/[inst. reported]), C.E. = 1.03



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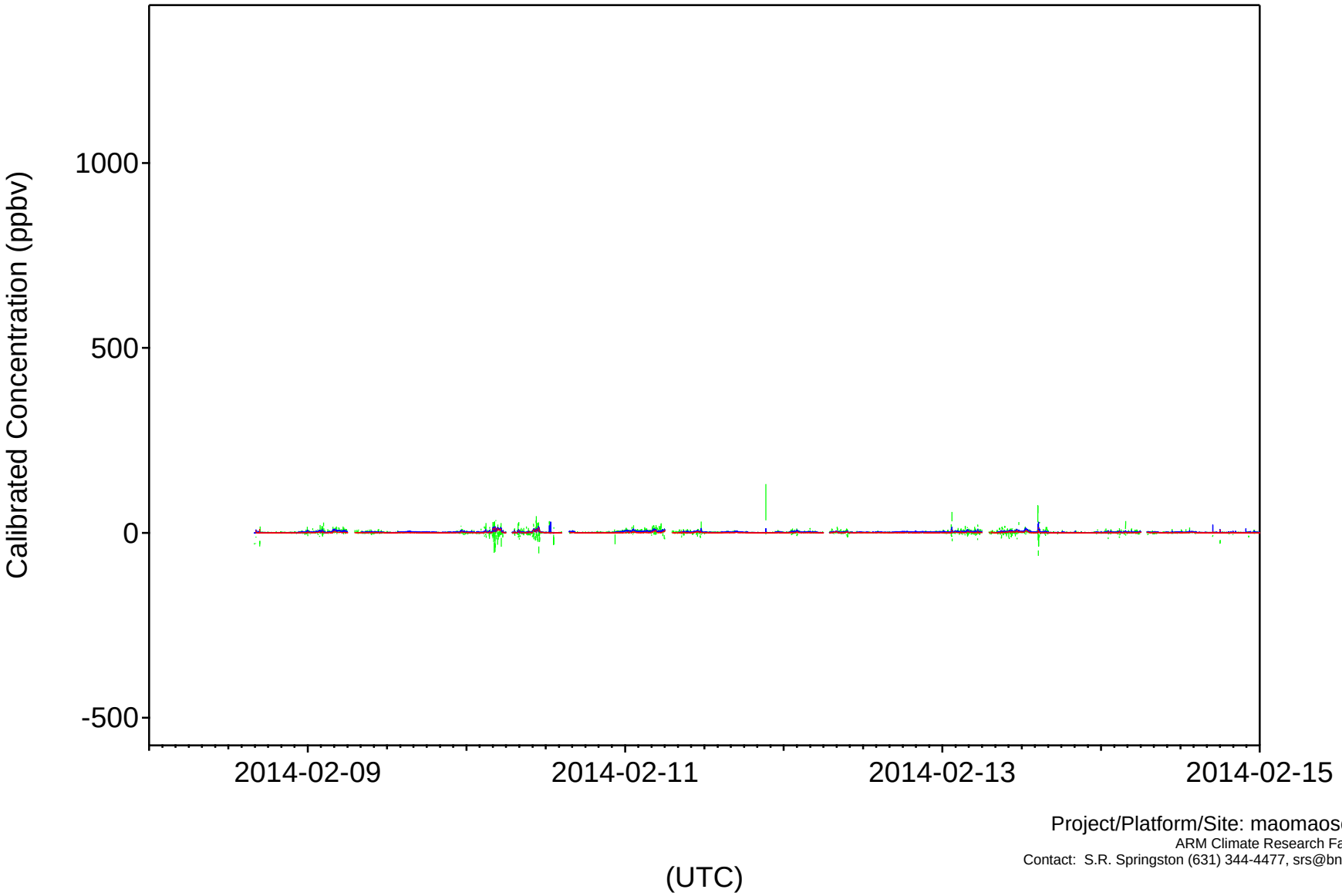
NO_y: 1.1 ([calibrated]/[inst. reported]), C.E. = 1.03



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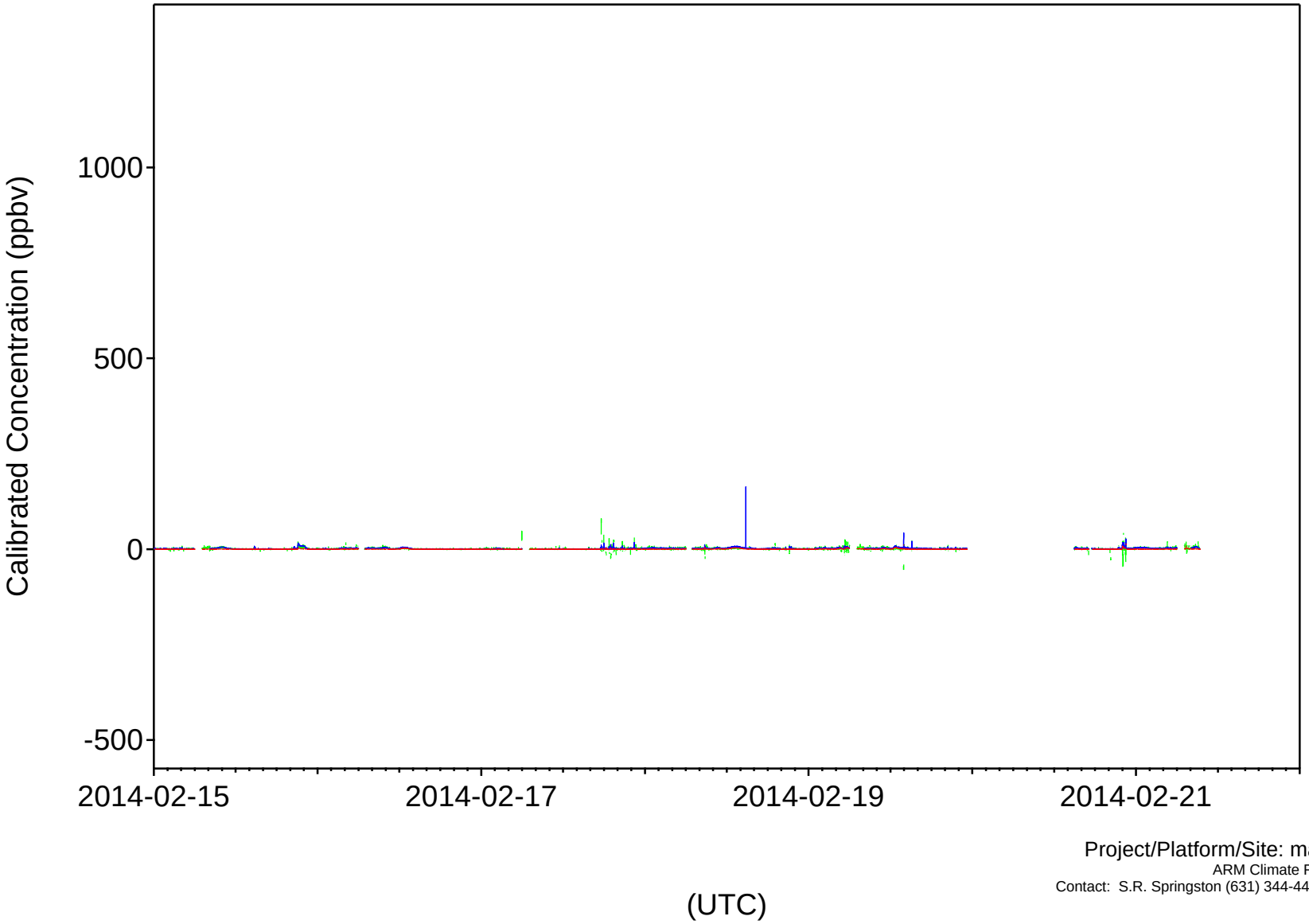
NO_y: 1.1 ([calibrated]/[inst. reported]), C.E. = 1.03



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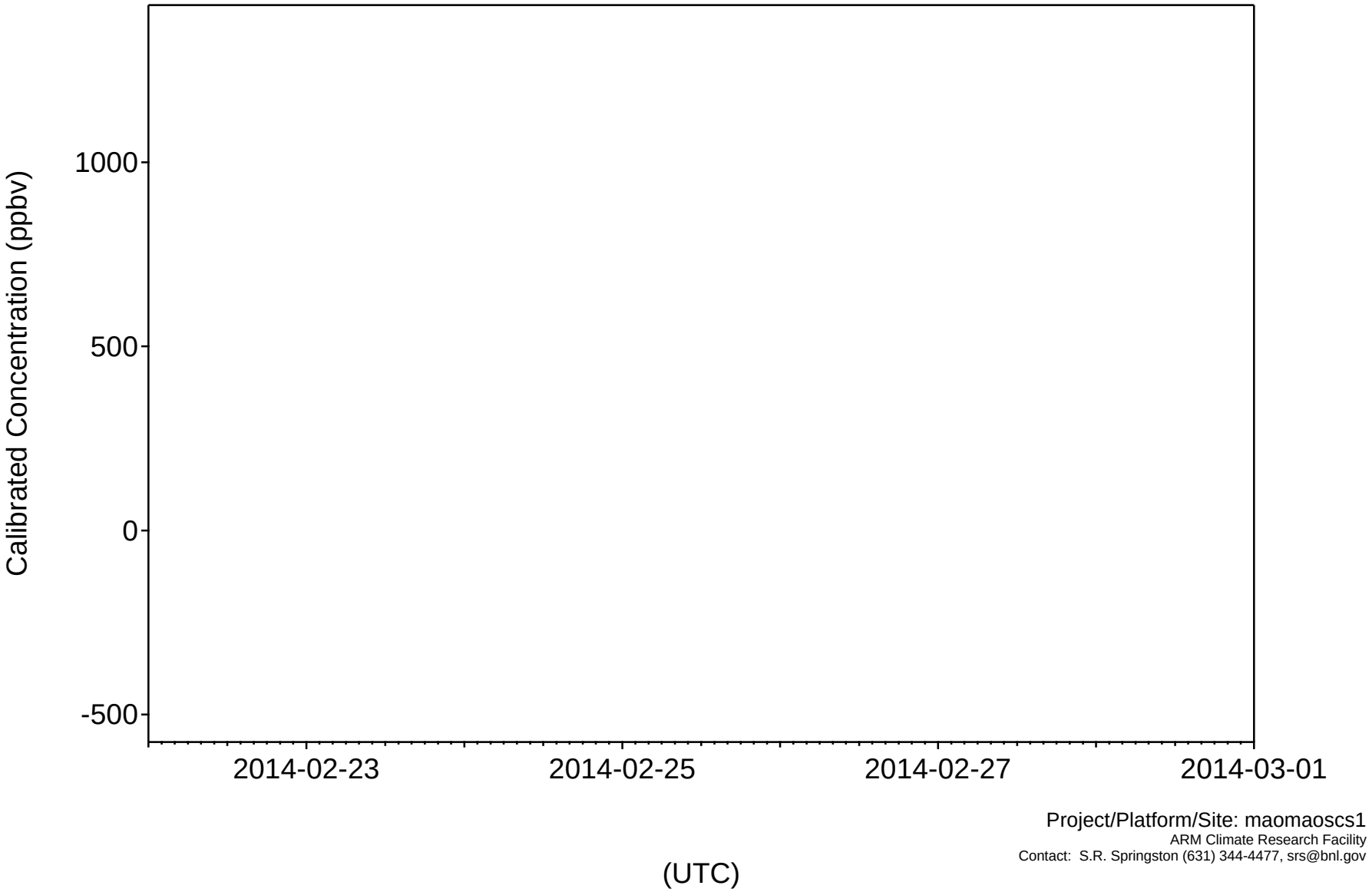
NO: 1 ([calibrated]/[inst. reported])
NO_2: 1 ([calibrated]/[inst. reported]), C.E. = 0.1
NO_y: 1.1 ([calibrated]/[inst. reported]), C.E. = 1.03



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