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

Loading from 2014-04-01 - 2014-05-01
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.

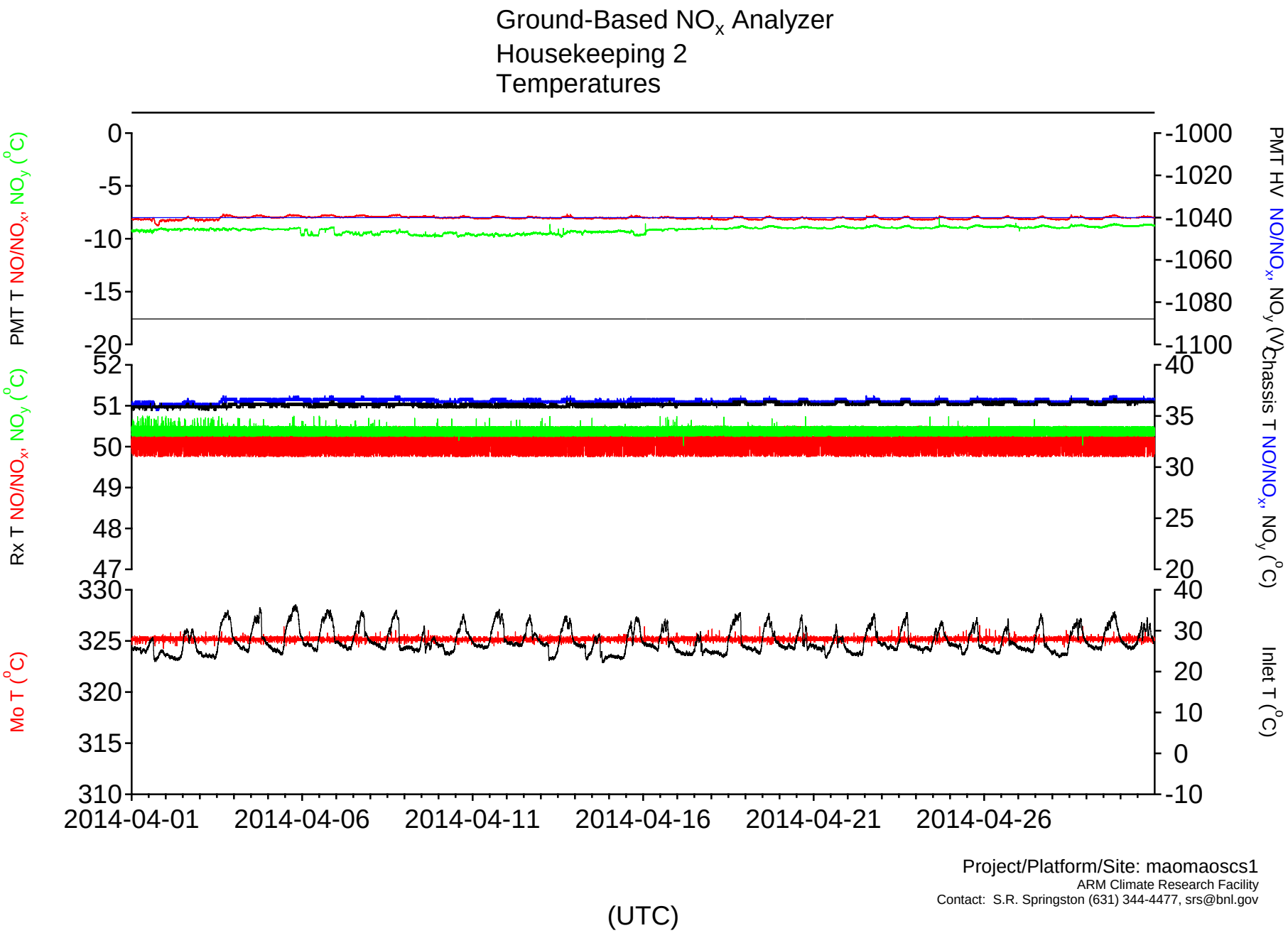
NO2 signal is problematic. The photolysis cell continued to deteriorate and did not even have 5% efficiency. As such, no data is reported.

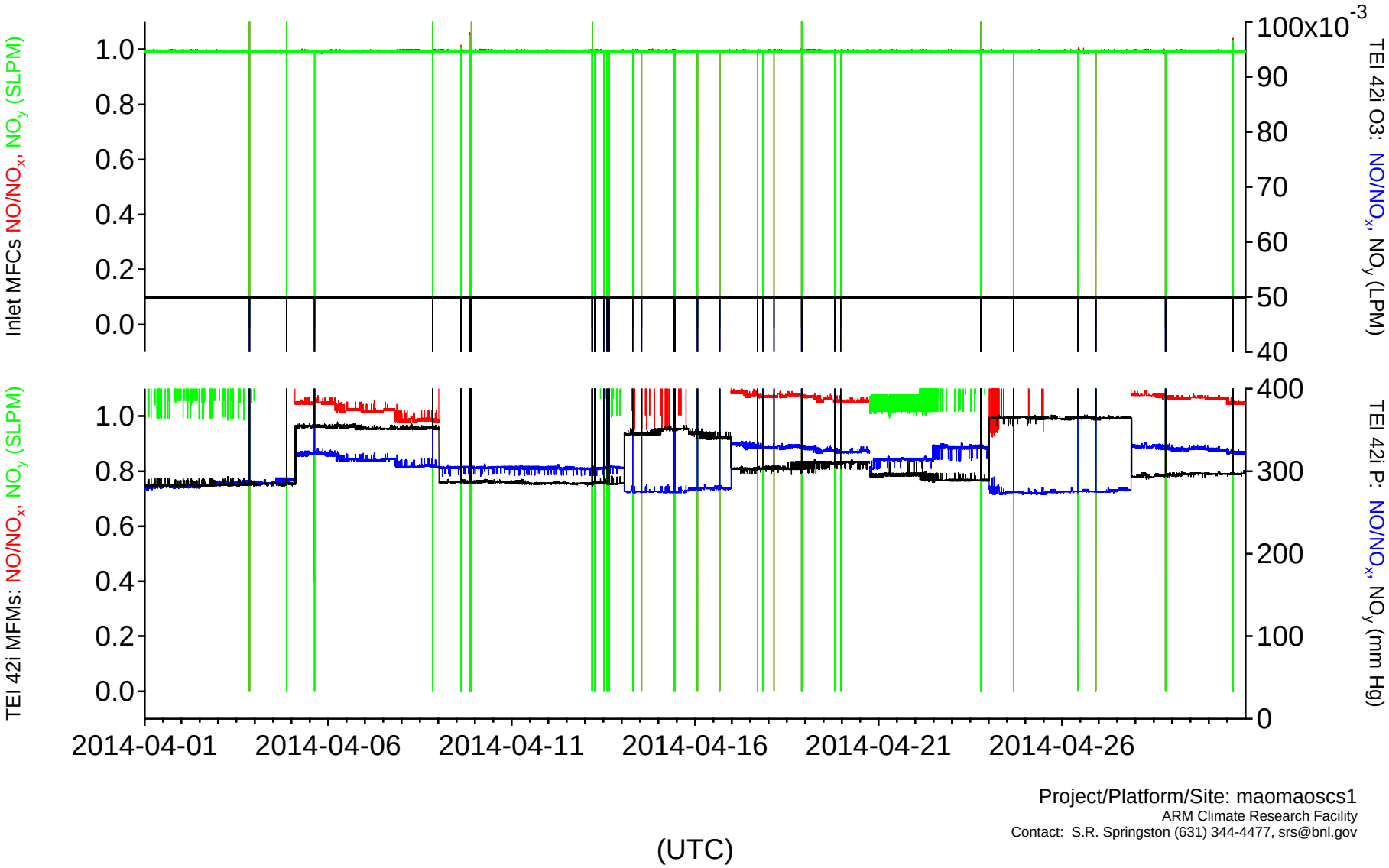
The standard cylinder expired on 2

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). As of April, Operators reconfigured the system for UPS protection of instruments. Pump stoppage was greatly reduced. Data outages were limited to much shorter periods and the data record is nearly complete. A log of data dropouts is as follows. Consult the site log for details.

2014-04-17 06:00 - 2014-05-09 06:00 Calibration cylinder was either turned off or expired.
2014-04-14 08:00 - 2014-04-14 12:00 Several >100 ppbv spikes presumably due to onsite operation of equipment
2014-04-19 19:00 - 2014-04-19 23:00 Multiple large spikes presumably due to generator since they are bracketed by short pump outages.
2014-04-26 22:05 - 2014-04-26 22:10 Power outage on generator transfer


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
2014-04-01
2014-04-06
2014-04-11
2014-04-16
2014-04-21
2014-04-26
(UTC)
Project/Platform/Site: maomaoscs1
ARM Climate Research Facility
Contact: S.R. Springston (631) 344-4477, srs@bnl.gov


Ground-Based NOx 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
400
300
200
100
0
2014-04-01
2014-04-06
2014-04-11
2014-04-16
2014-04-21
2014-04-26
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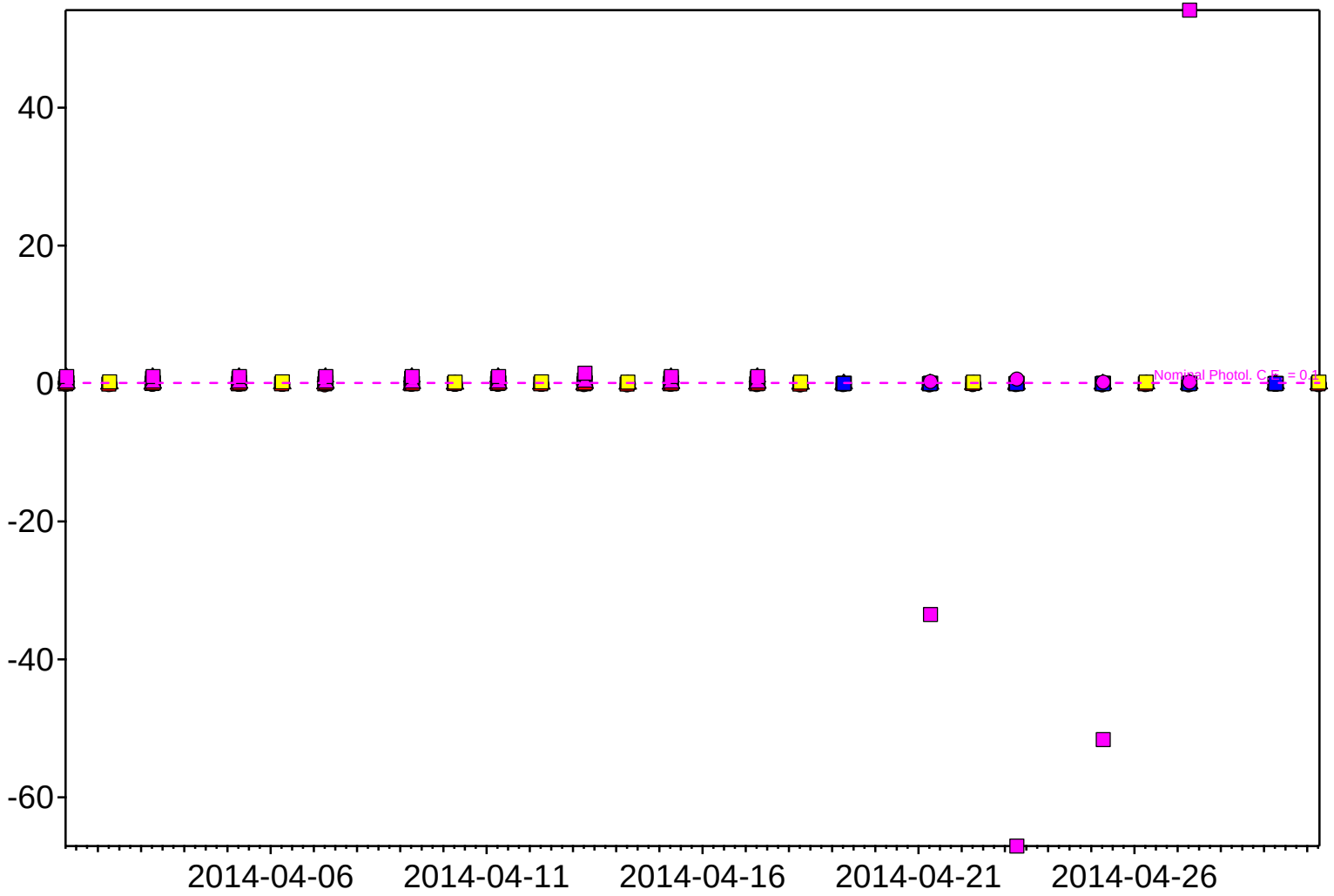
○ - NO Channel ; △ - NO_x Channel; □ - NO_y Channel
Zero Air Equivalent Signal (ppbv)
S.A. #1 (calibrated sig/dilution conc: [SA#1] = 20.8 ppbv)
S.A. #2 (calibrated sig/dilution conc: [SA#2] = 82.86 ppbv)
GPT + SA #2 (NO: frac titr., NO_x: Photol. C.E. (nom=0.1), NO_y: Mo C.E. (nom=1.03))
HNO_3 cal. (calibrated sig/perm conc: [HNO_3] = 68.9 ppbv)

Ground NO_x Analyzer Calibration Data



(UTC)

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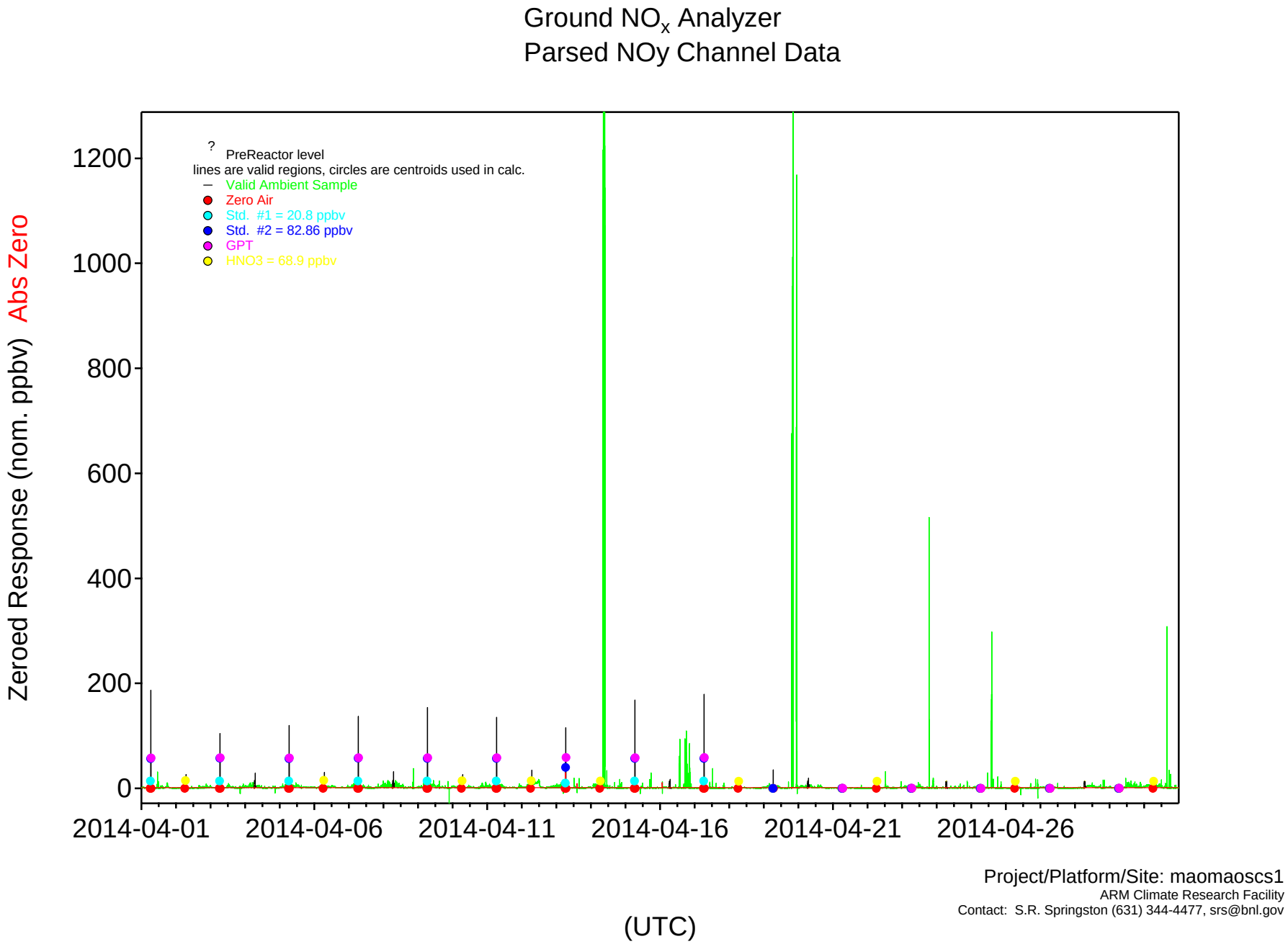
Ground NOx Analyzer
Parsed NOy Channel Data
?
PreReactor level
lines are valid regions, circles are centroids used in calc.
Valid Ambient Sample
Zero Air
Std. #1 = 20.8 ppbv
Std. #2 = 82.86 ppbv
GPT
HNO3 = 68.9 ppbv
Zeroed Response (nom. ppbv) Abs Zero
1200
1000
800
600
400
200
0
2014-04-01
2014-04-06
2014-04-11
2014-04-16
2014-04-21
2014-04-26
(UTC)
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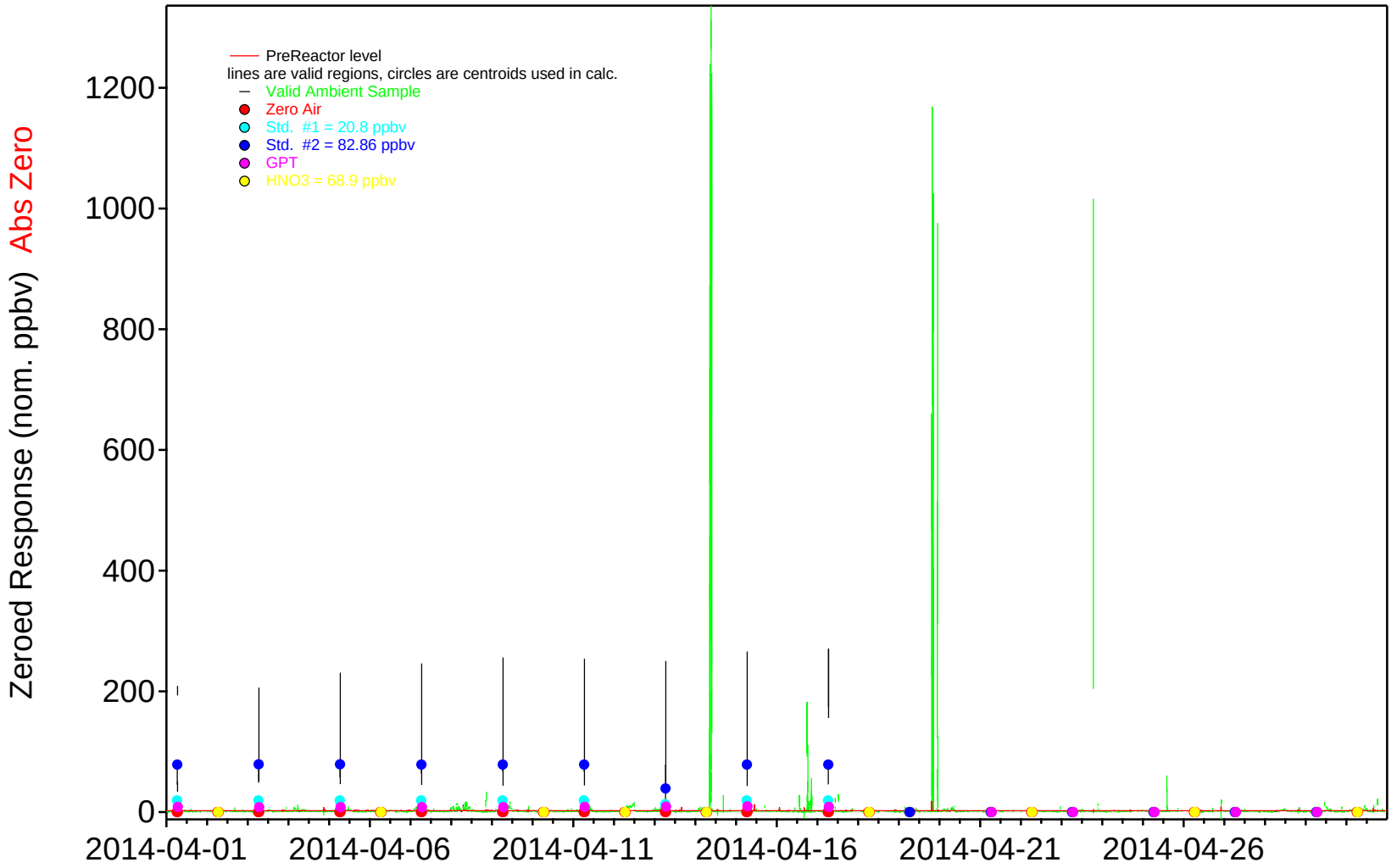
Ground NO_x Analyzer
Parsed NOx Channel Data



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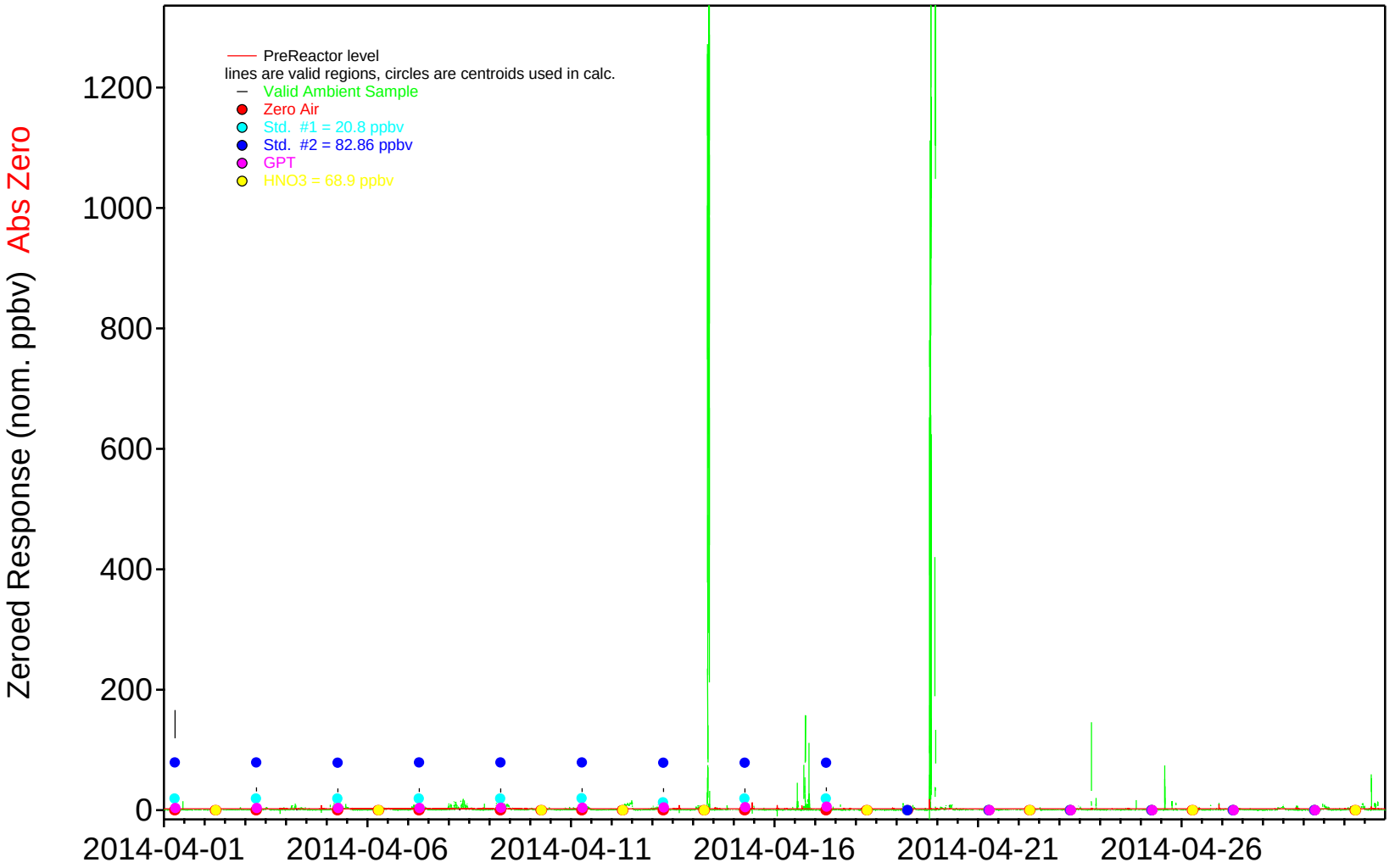
Ground NO_x Analyzer
Parsed NO Channel Data



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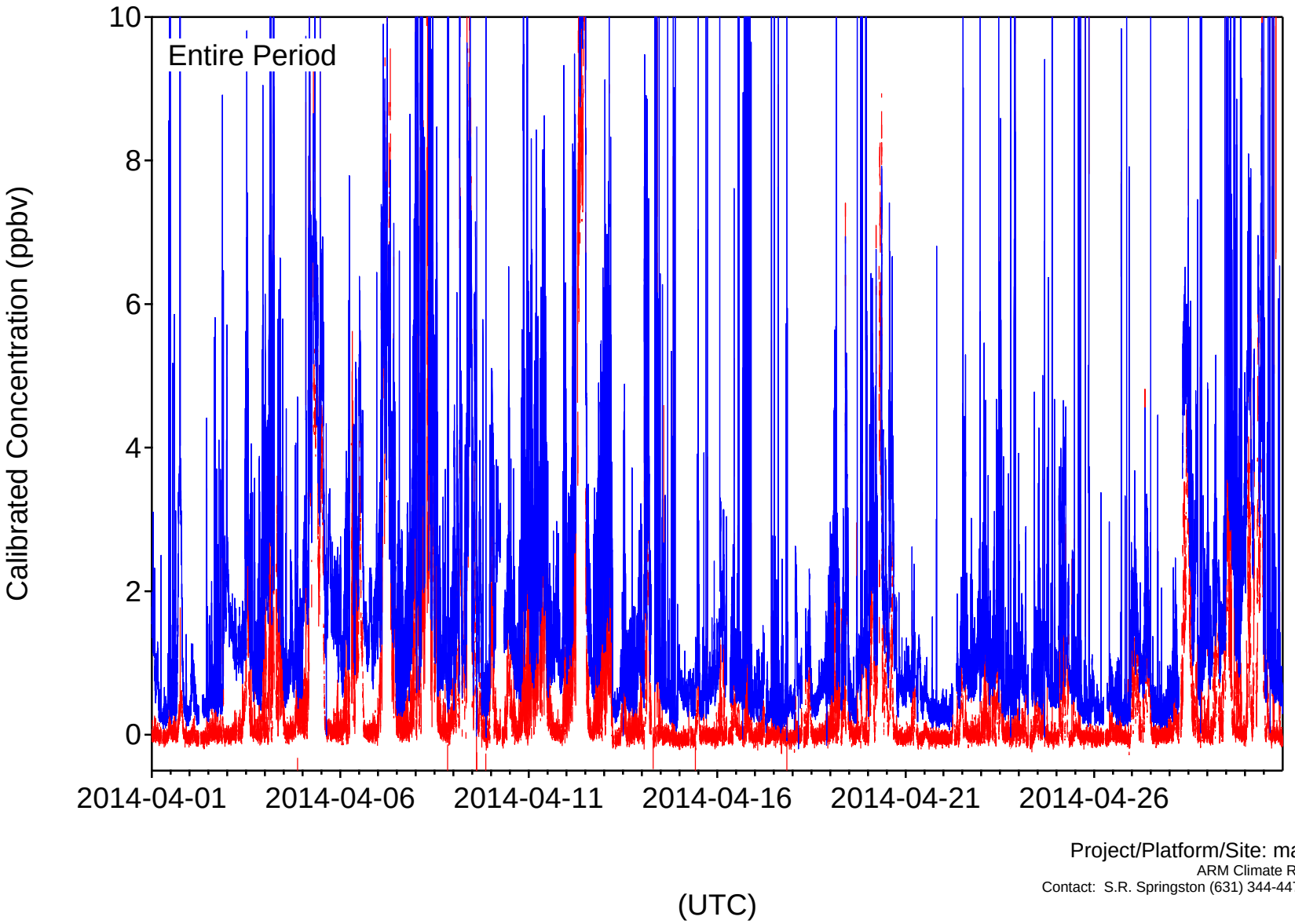
Calibration Factors Used:
NO: 1 ([calibrated]/[inst. reported])
NO_2: 1 ([calibrated]/[inst. reported]), C.E. = 0.1
NO_y: 1.1 ([calibrated]/[inst. reported]), C.E. = 1.03



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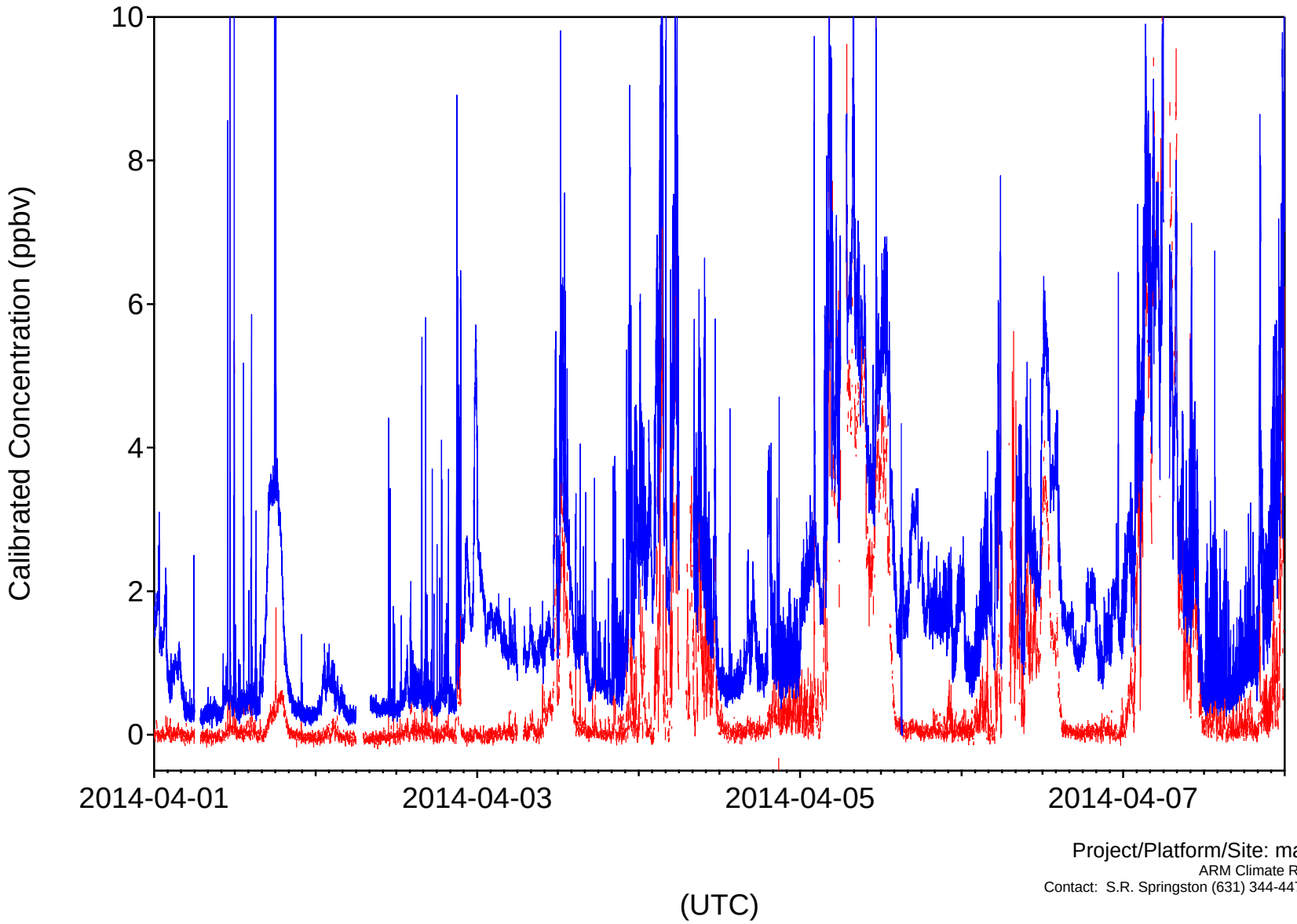

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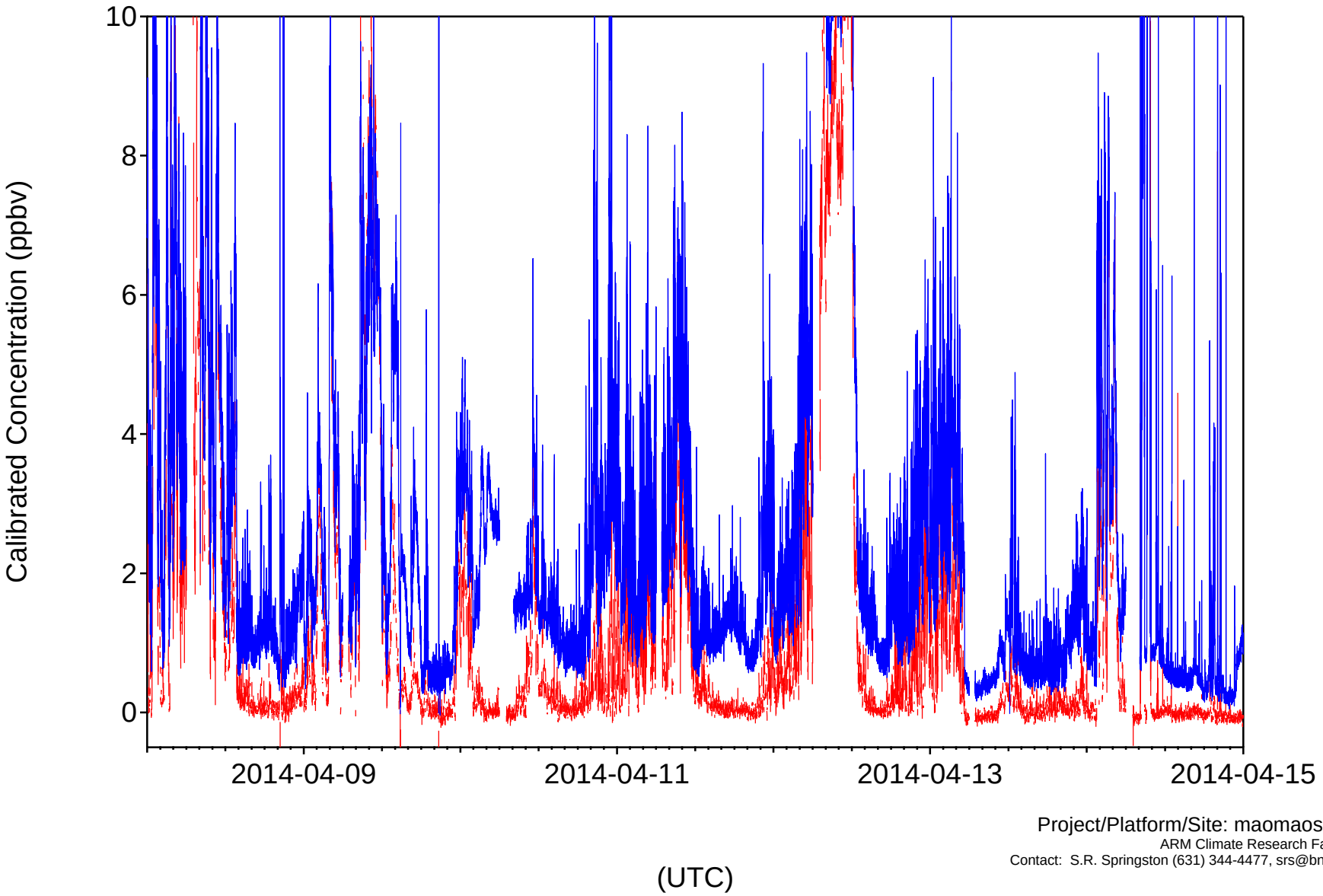

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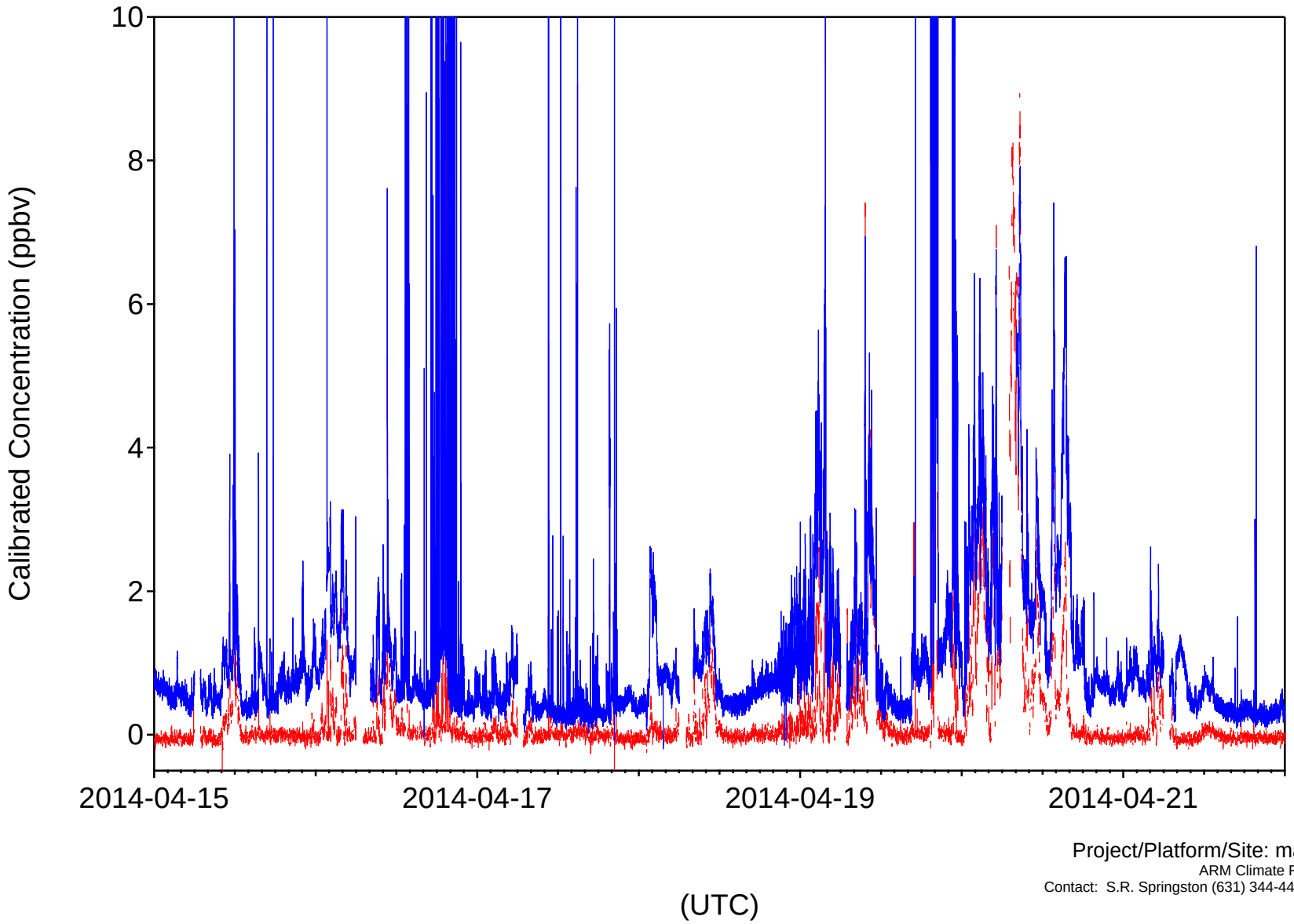

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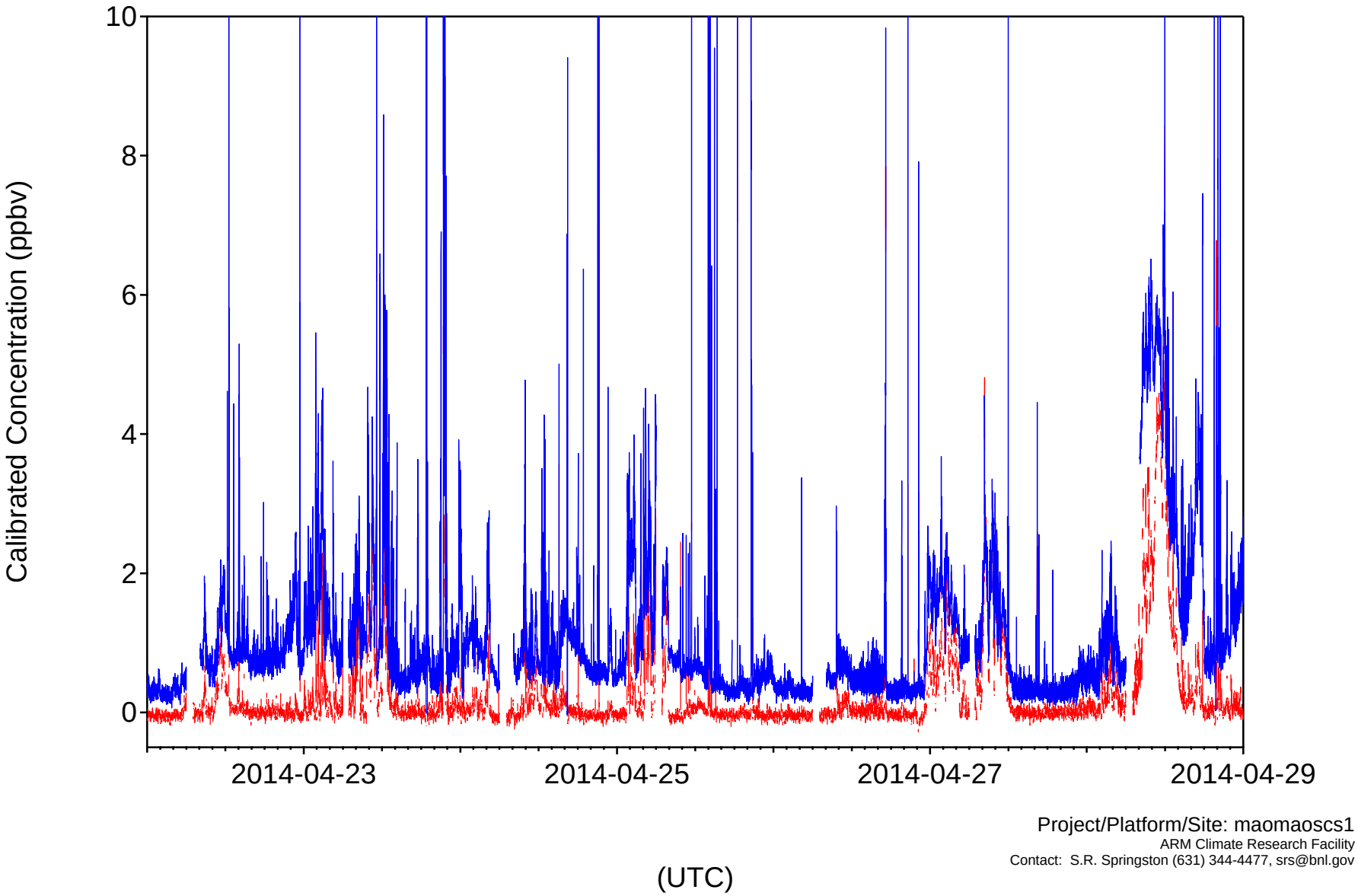

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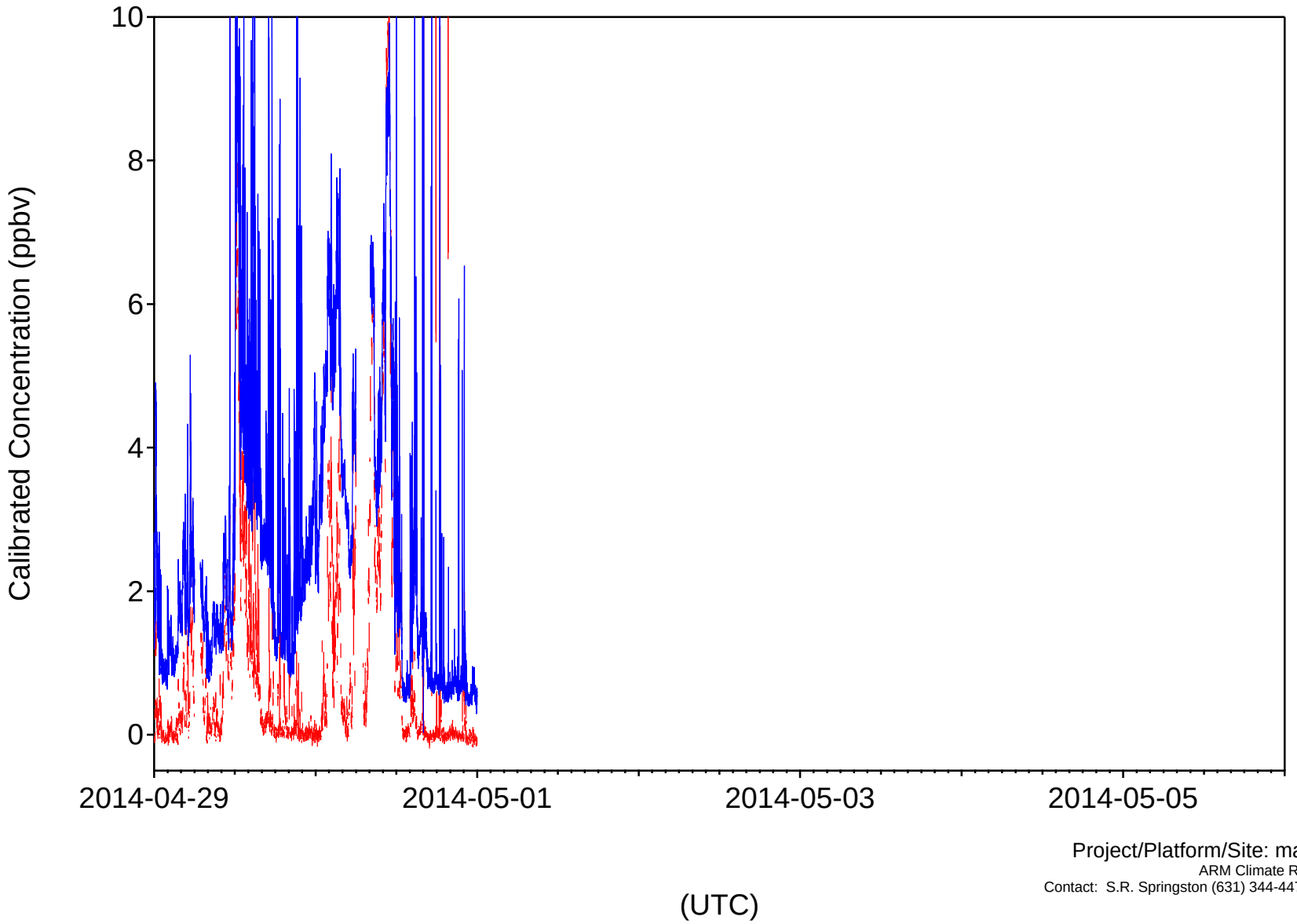

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