Appendix B.4

Phase 2 HGB Mid Course Review

Comparison of Aircraft Data to Model Output

Prepared by the

Technical Support Section

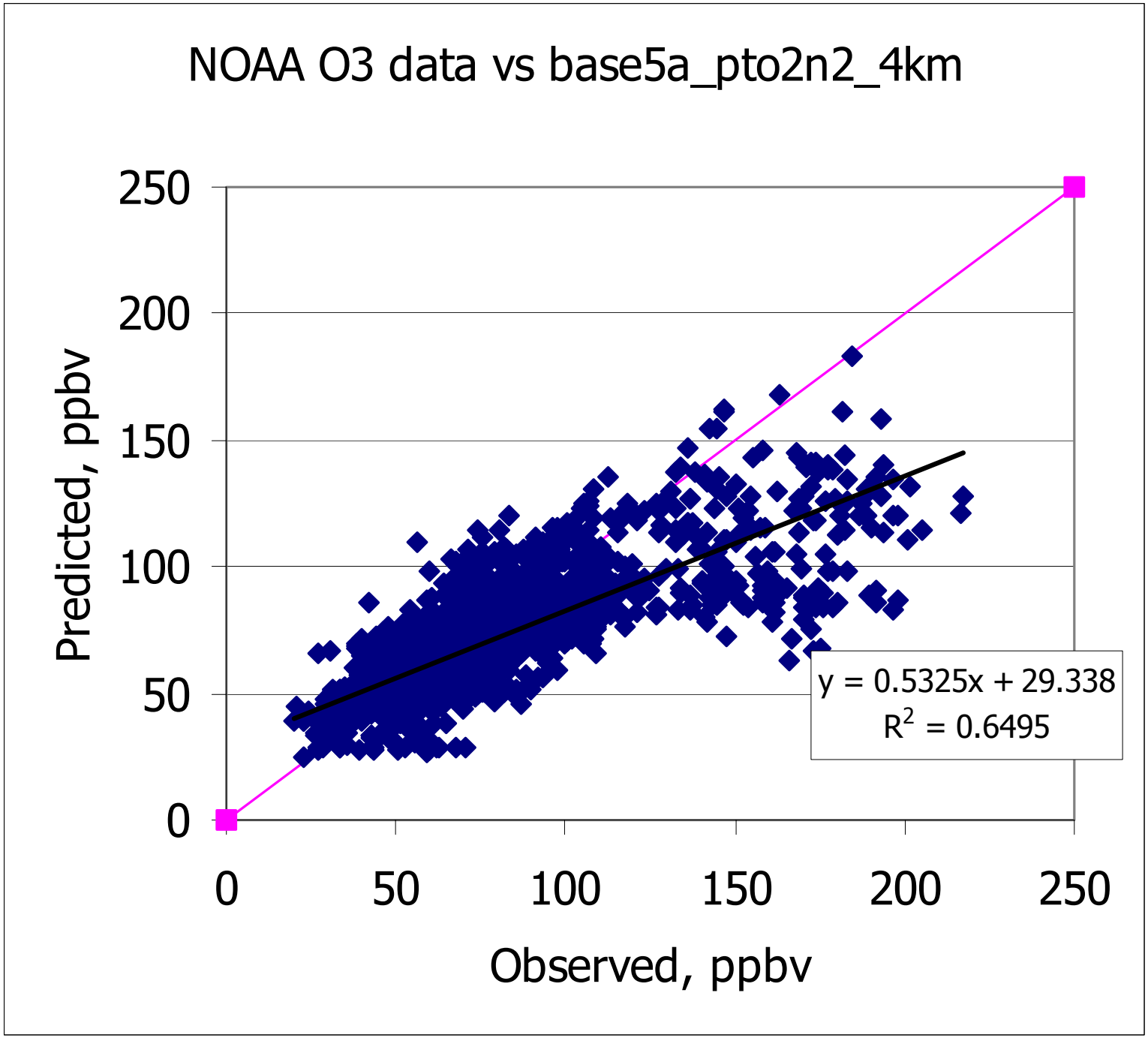
Technical Analysis Division

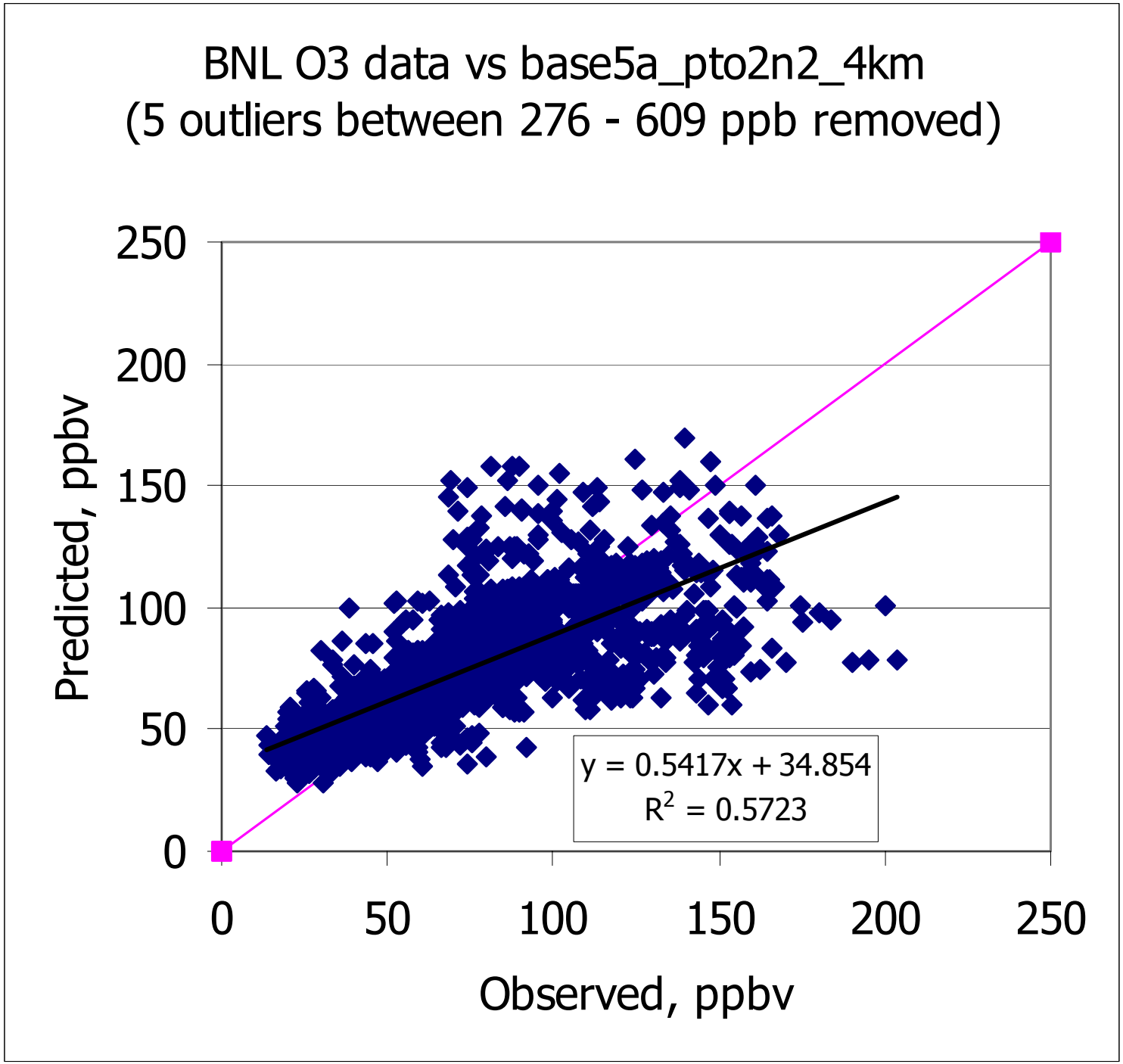
TCEQ

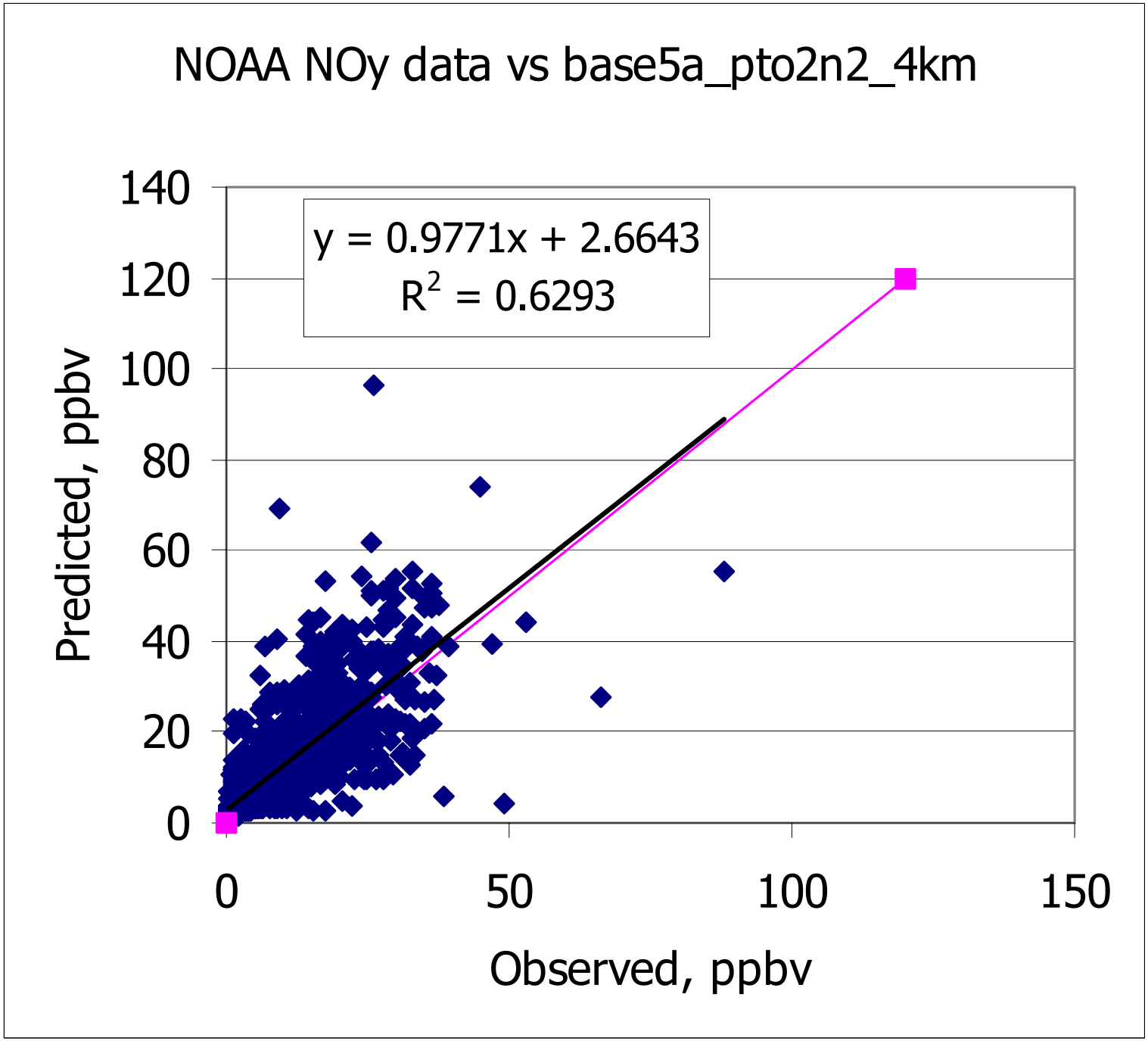
April, 2004

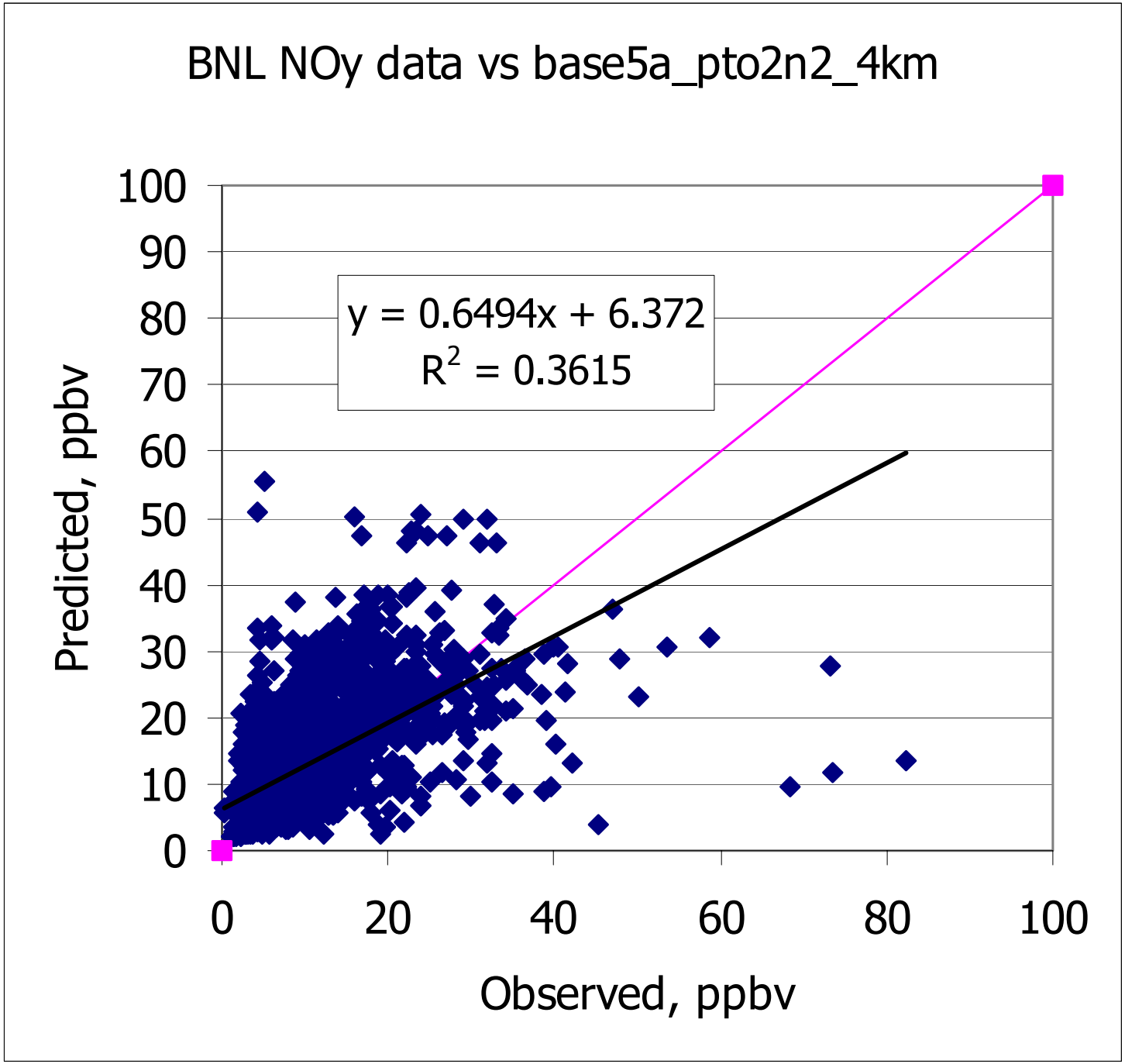
Comparisons of aircraft observations to CAMx modeling run base4a_pto2n2_4km

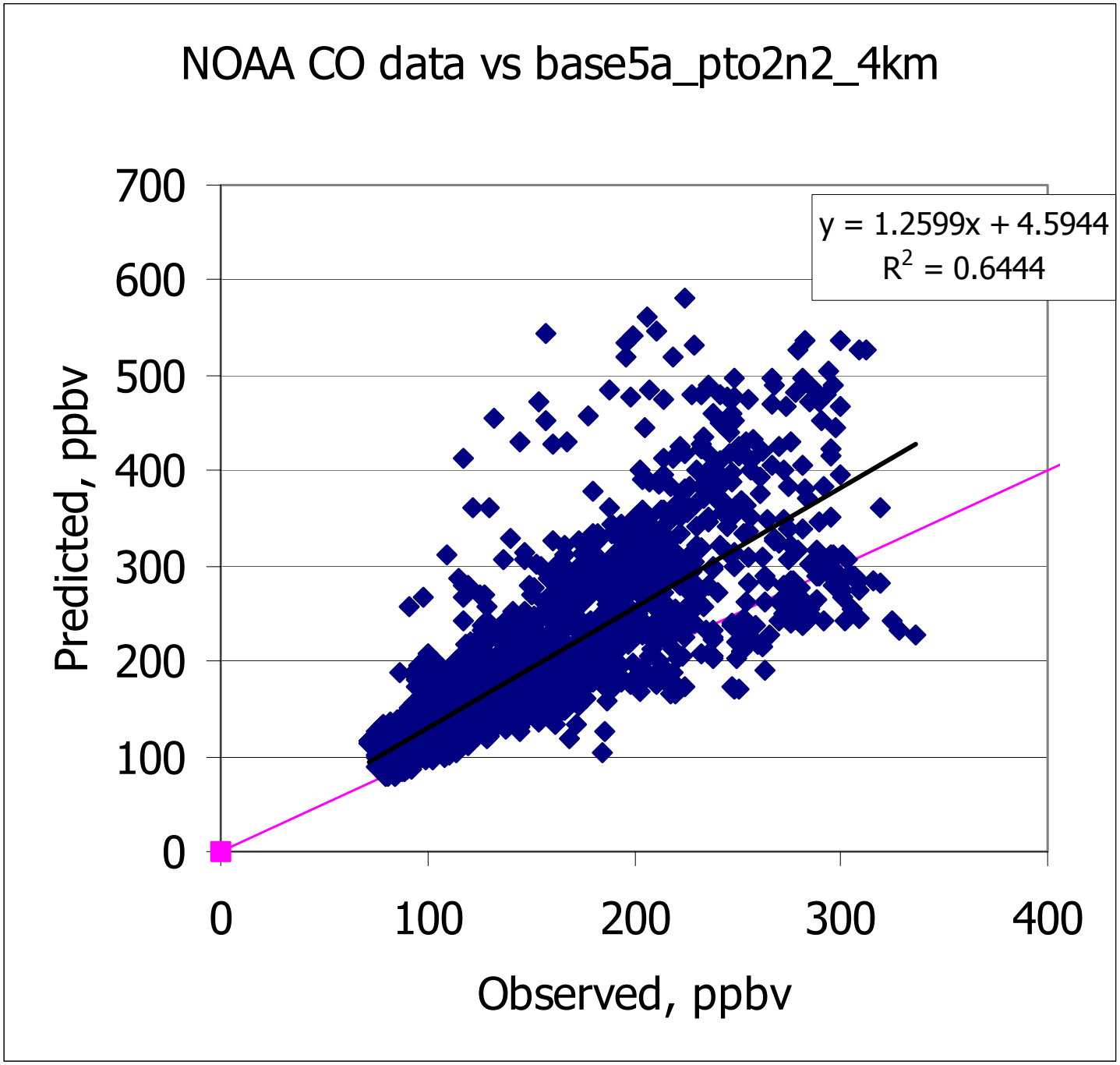
Derived from H. Jeffries analysis with the “Flying Data Grabber”

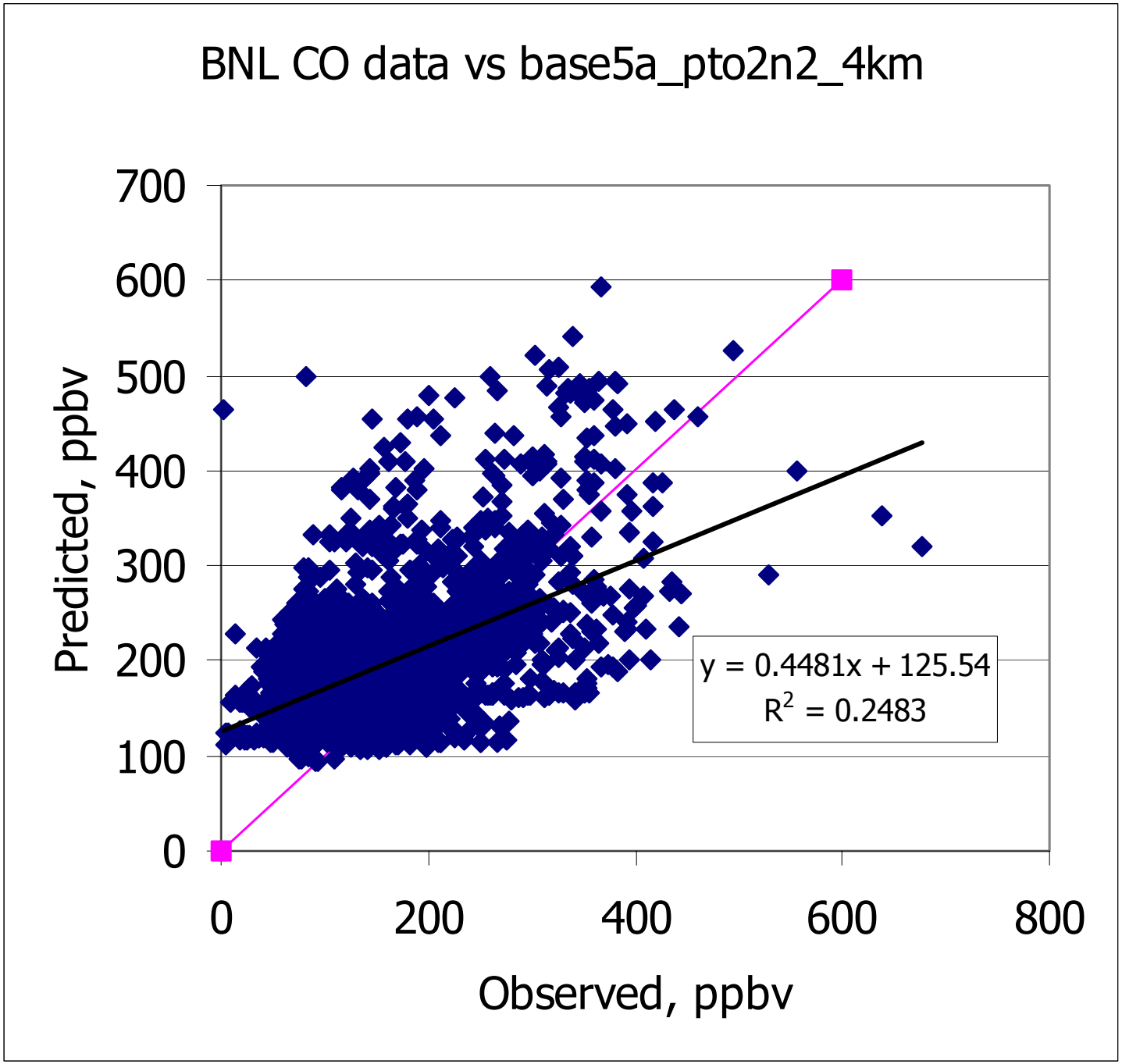

NOAA O3 data vs base5a_pto2n2_4km
Predicted, ppbv
Observed, ppbv
0
50
100
150
200
250
y = 0.5325x + 29.338
R2 = 0.6495

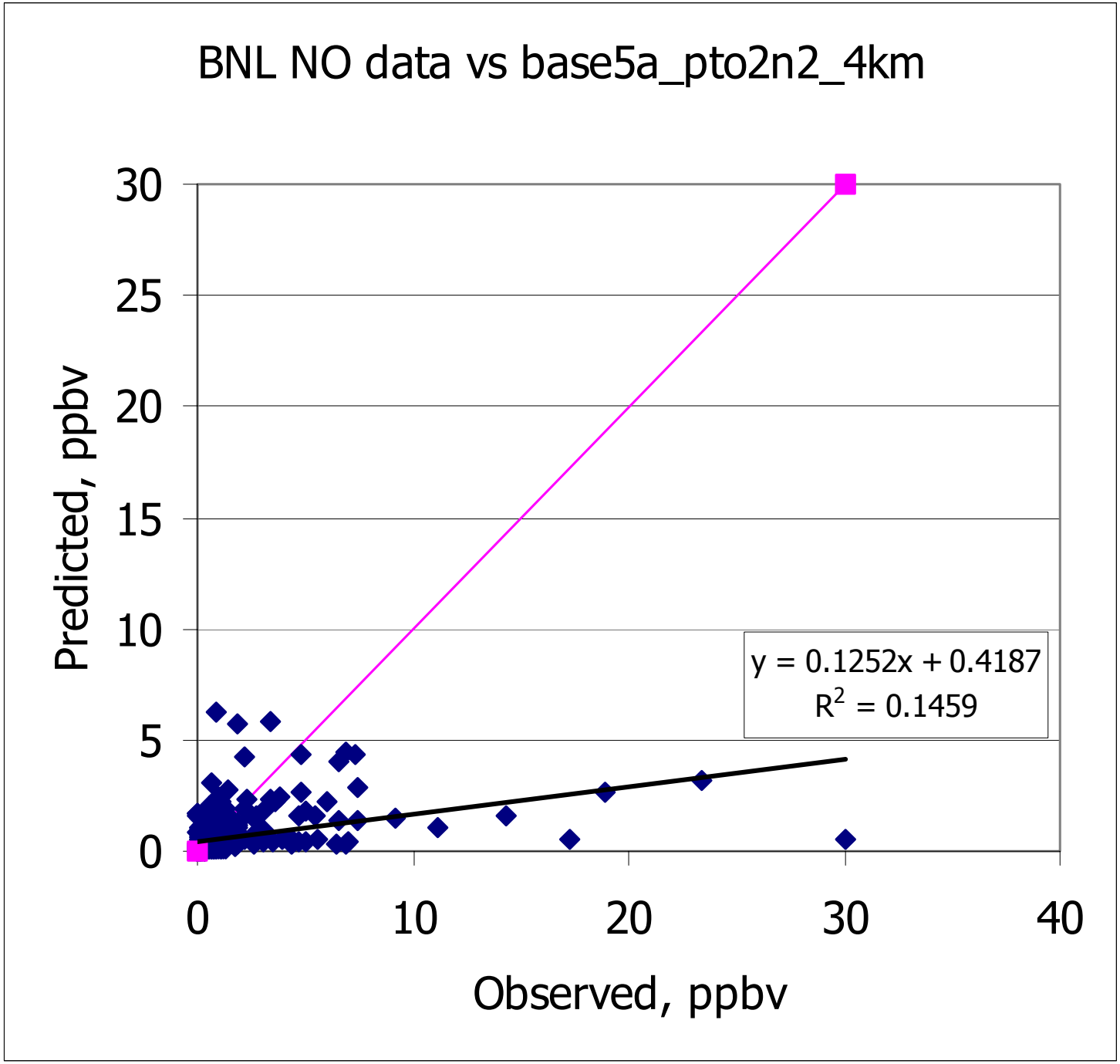

BNL O3 data vs base5a_pto2n2_4km
(5 outliers between 276 - 609 ppb removed)
Predicted, ppbv
Observed, ppbv
0
50
100
150
200
250
y = 0.5417x + 34.854
R2 = 0.5723

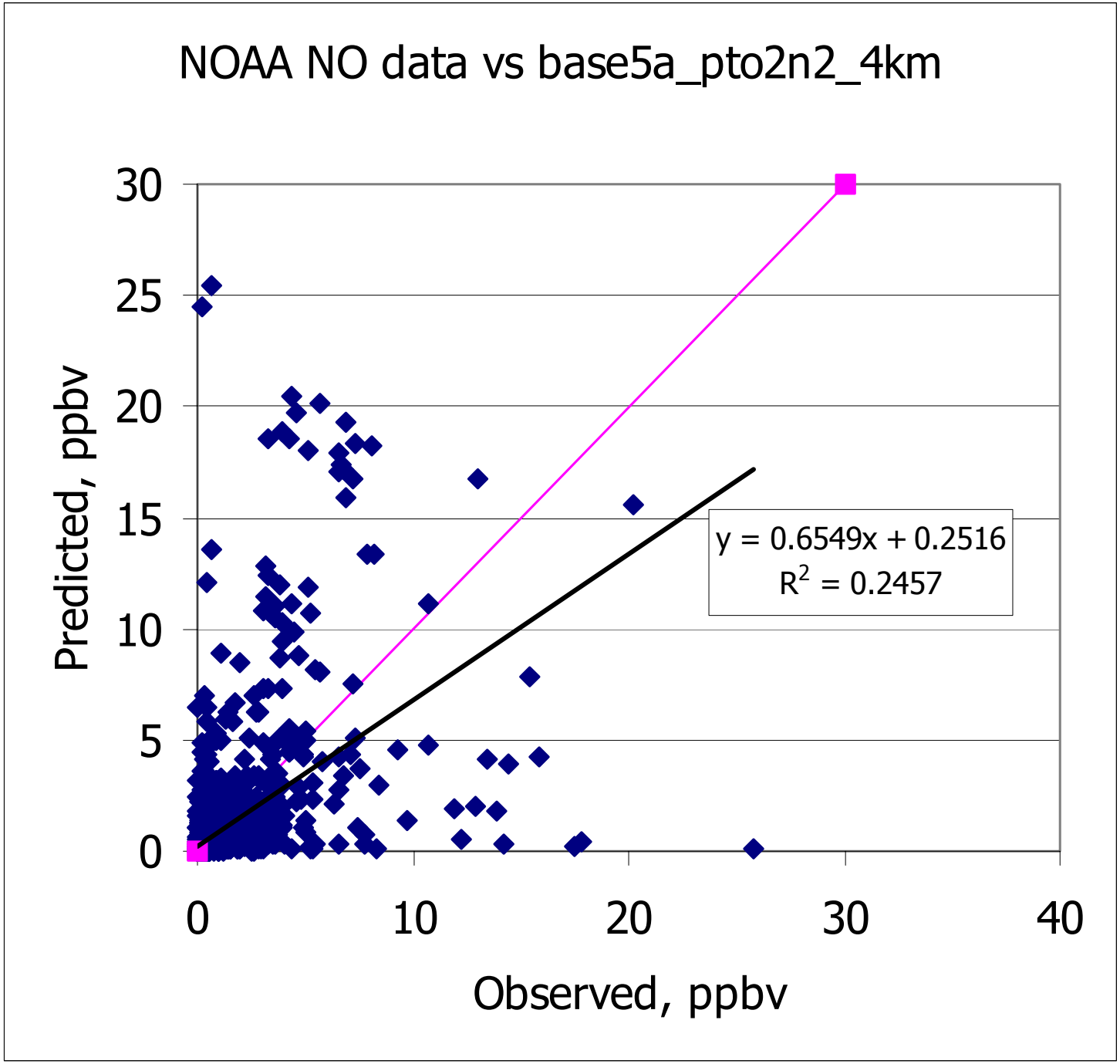

NOAA NOy data vs base5a_pto2n2_4km
y = 0.9771x + 2.6643
R2 = 0.6293
Predicted, ppbv
Observed, ppbv
0
20
40
60
80
100
120
140
0
50
100
150

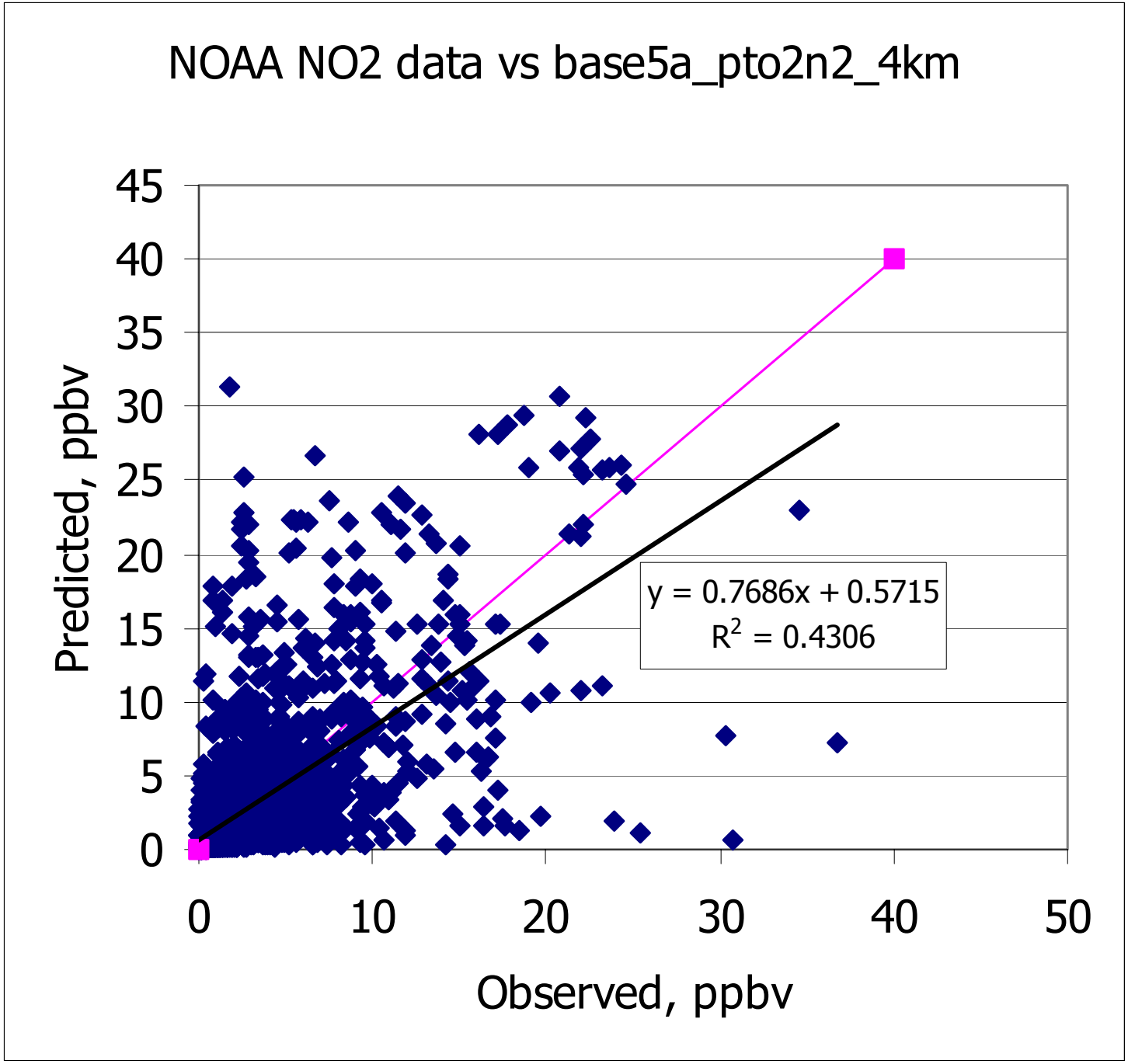

BNL NOy data vs base5a_pto2n2_4km
y = 0.6494x + 6.372
R2 = 0.3615
Predicted, ppbv
Observed, ppbv
0
10
20
30
40
50
60
70
80
90
100
0
20
40
60
80
100

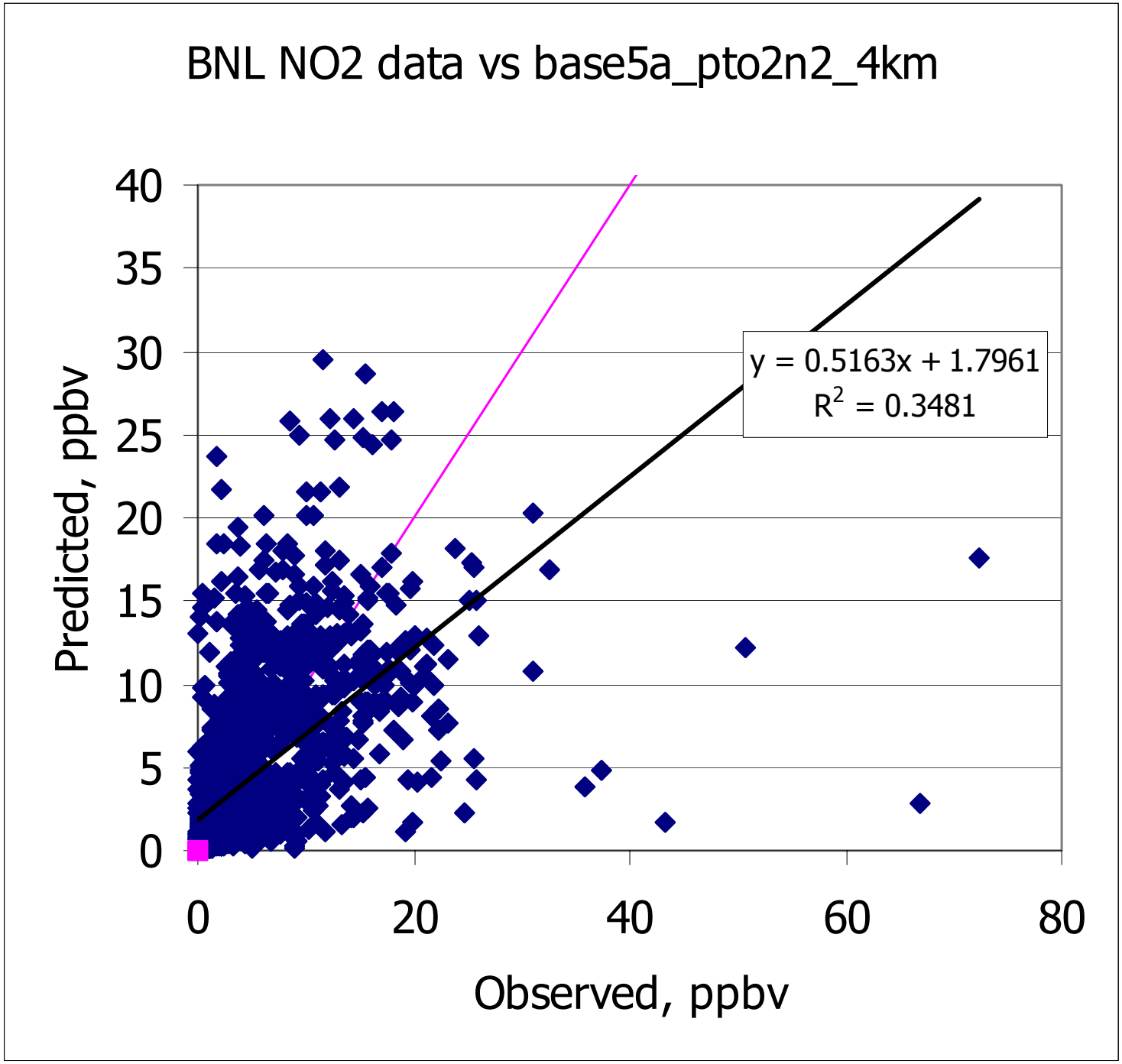

NOAA CO data vs base5a_pto2n2_4km
y = 1.2599x + 4.5944
R2 = 0.6444
Predicted, ppbv
Observed, ppbv
0
100
200
300
400
500
600
700
0
100
200
300
400

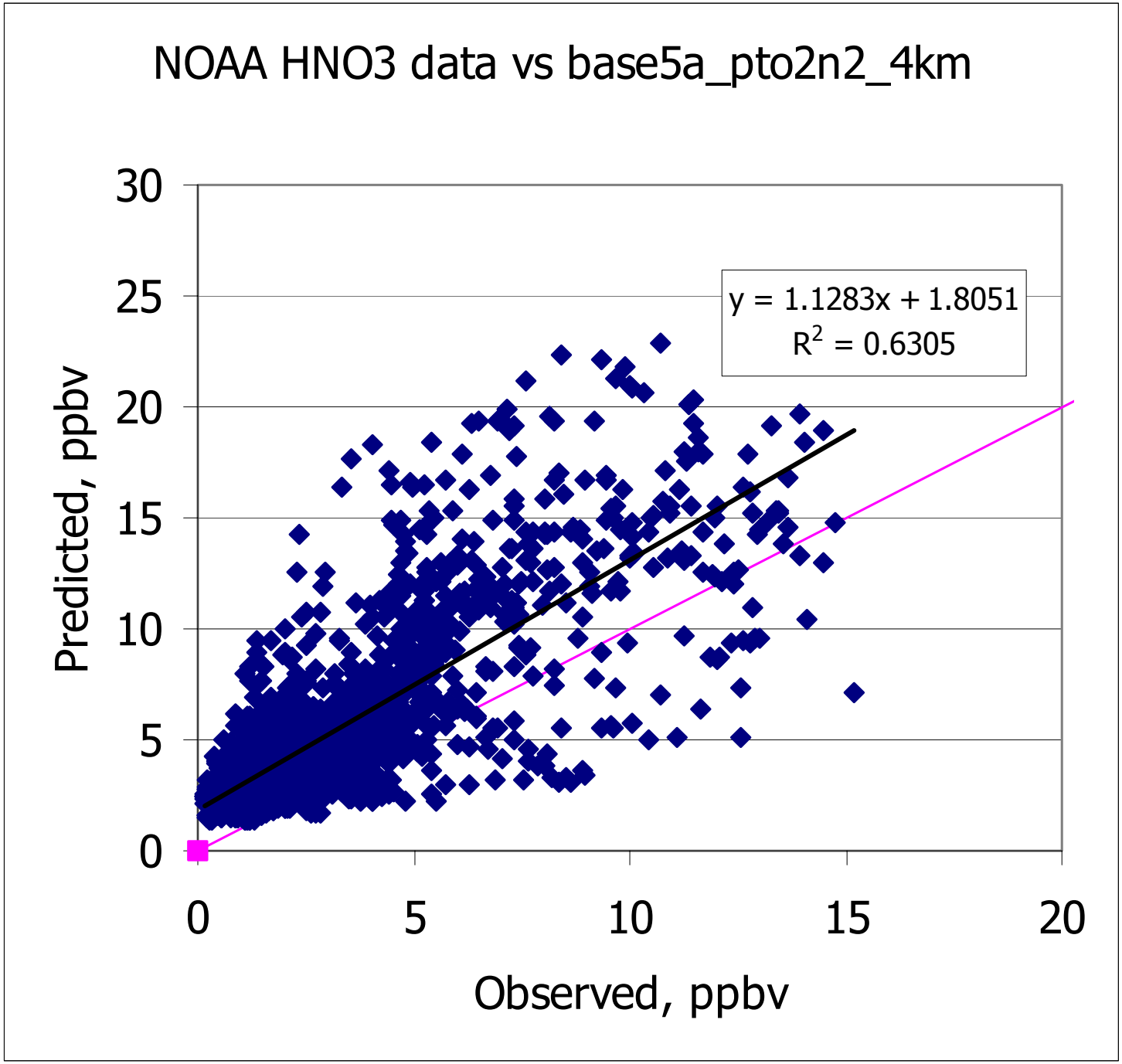

BNL CO data vs base5a_pto2n2_4km
Predicted, ppbv
Observed, ppbv
0
100
200
300
400
500
600
700
0
200
400
600
800
y = 0.4481x + 125.54
R2 = 0.2483

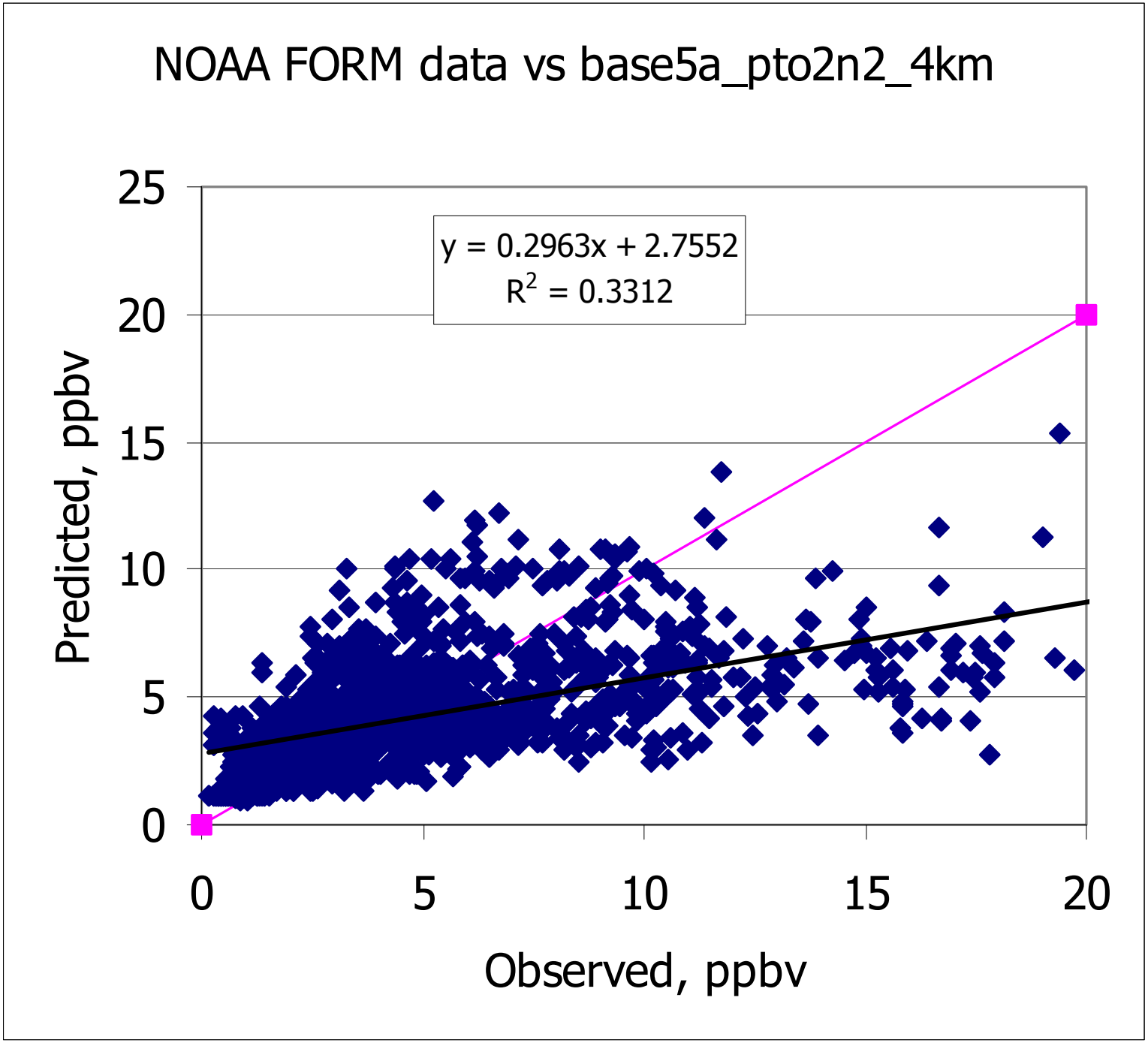

BNL NO data vs base5a_pto2n2_4km
Predicted, ppbv
Observed, ppbv
0
5
10
15
20
25
30
0
10
20
30
40
y = 0.1252x + 0.4187
R2 = 0.1459

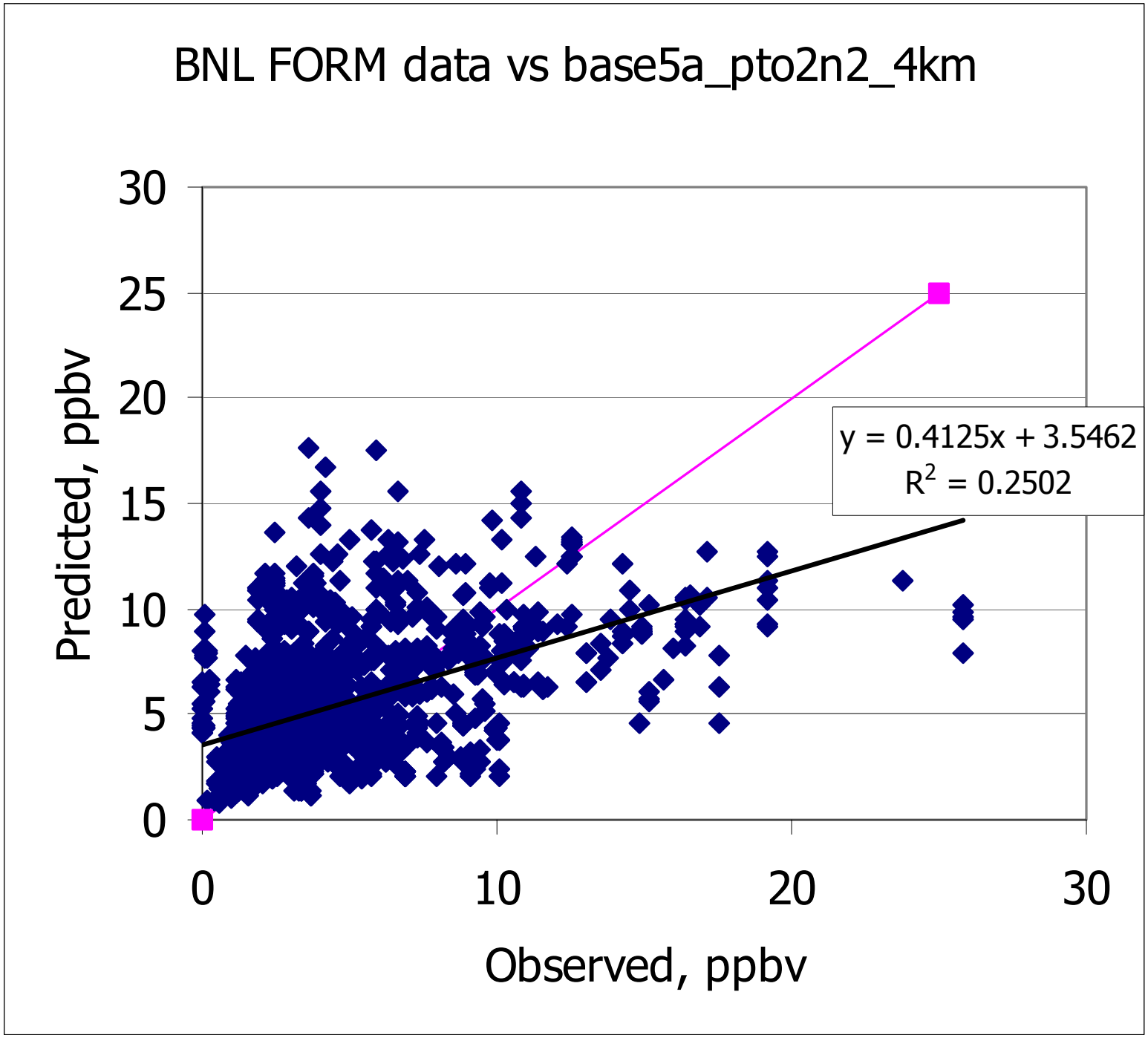

NOAA NO data vs base5a_pto2n2_4km
Predicted, ppbv
Observed, ppbv
0
5
10
15
20
25
30
0
10
20
30
40
y = 0.6549x + 0.2516
R2 = 0.2457

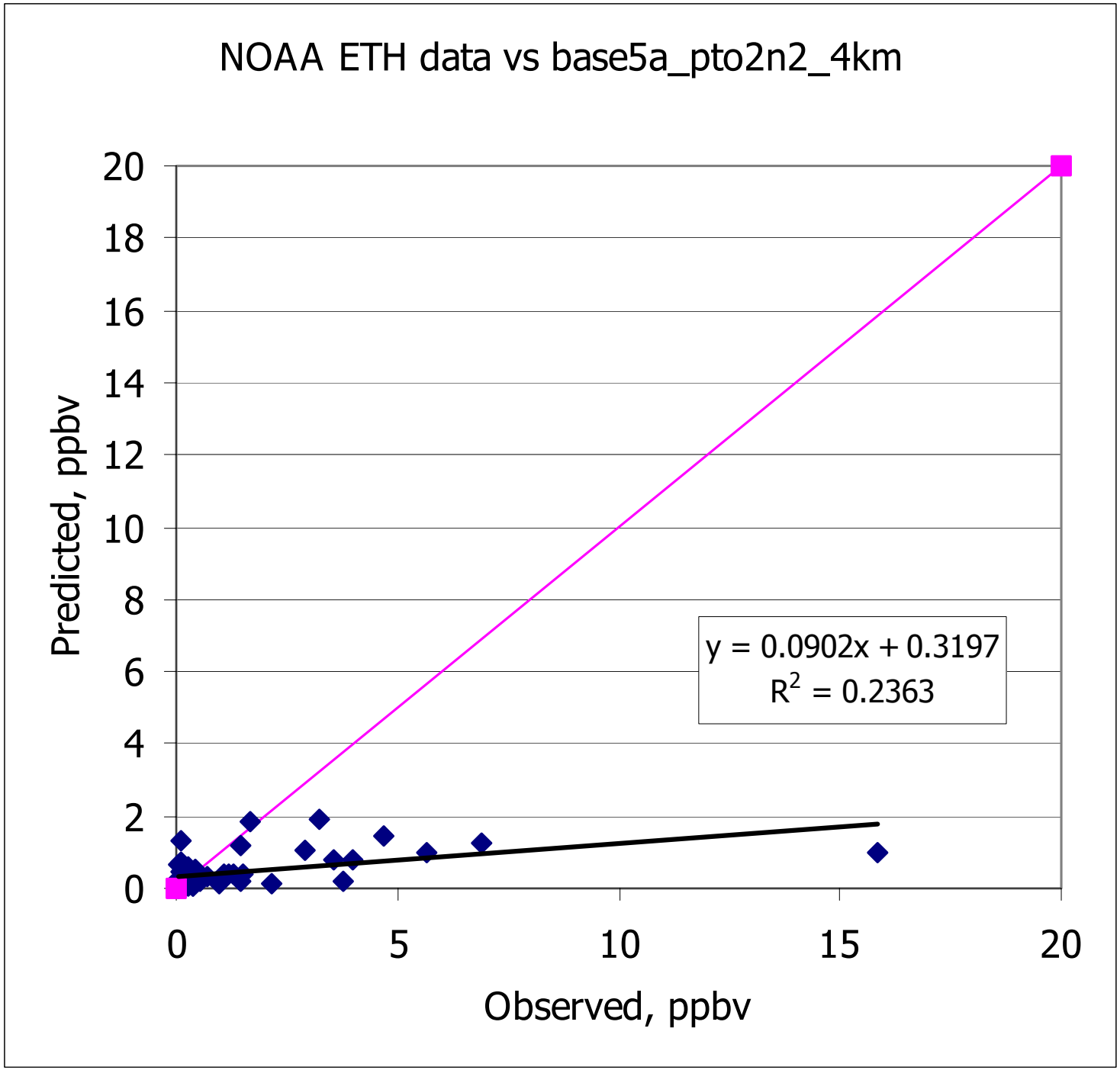

NOAA NO2 data vs base5a_pto2n2_4km
Predicted, ppbv
Observed, ppbv
0
5
10
15
20
25
30
35
40
45
0
10
20
30
40
50
y = 0.7686x + 0.5715
R2 = 0.4306

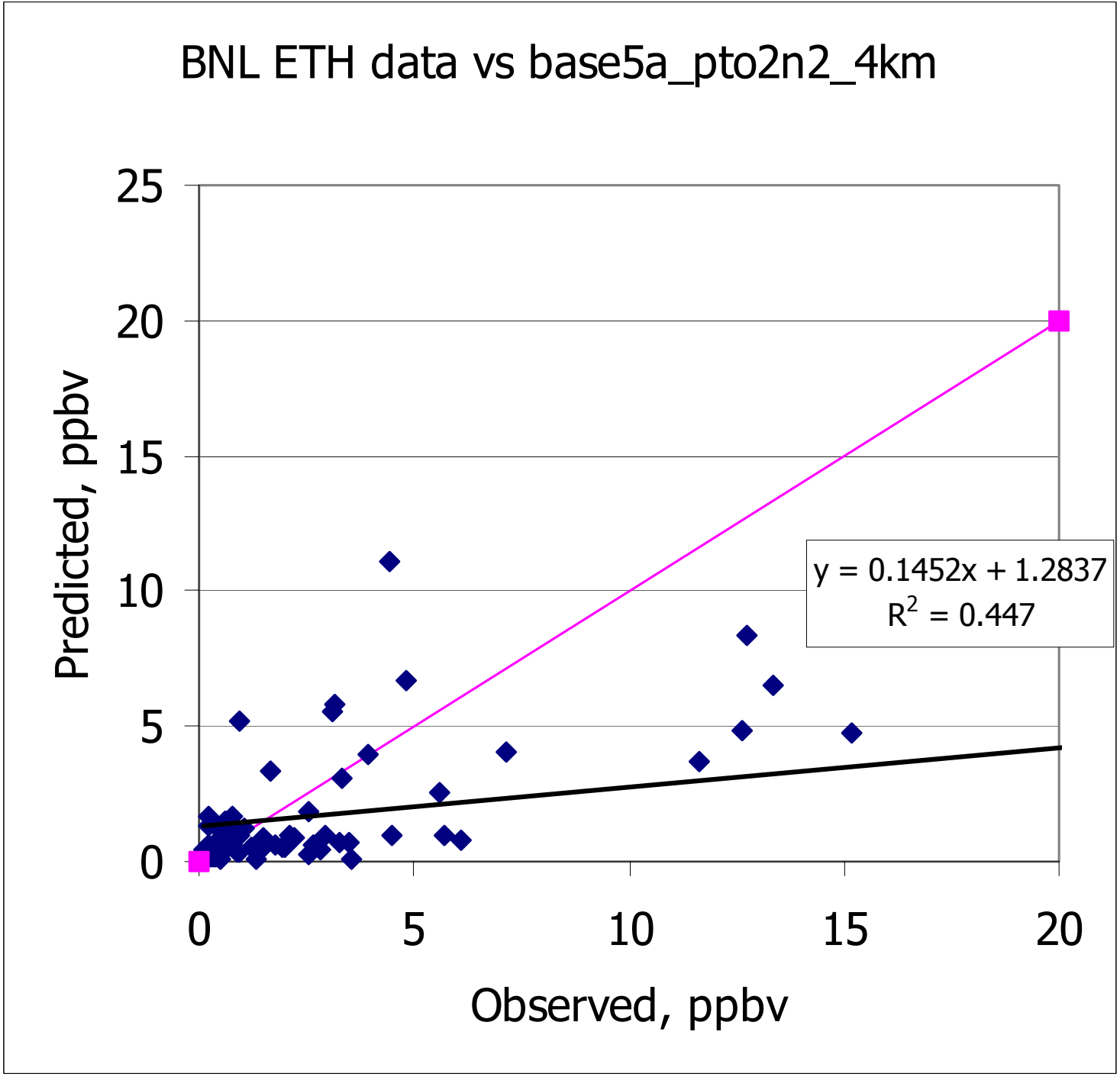

BNL NO2 data vs base5a_pto2n2_4km
y = 0.5163x + 1.7961
R2 = 0.3481
Predicted, ppbv
Observed, ppbv
0
5
10
15
20
25
30
35
40
0
20
40
60
80

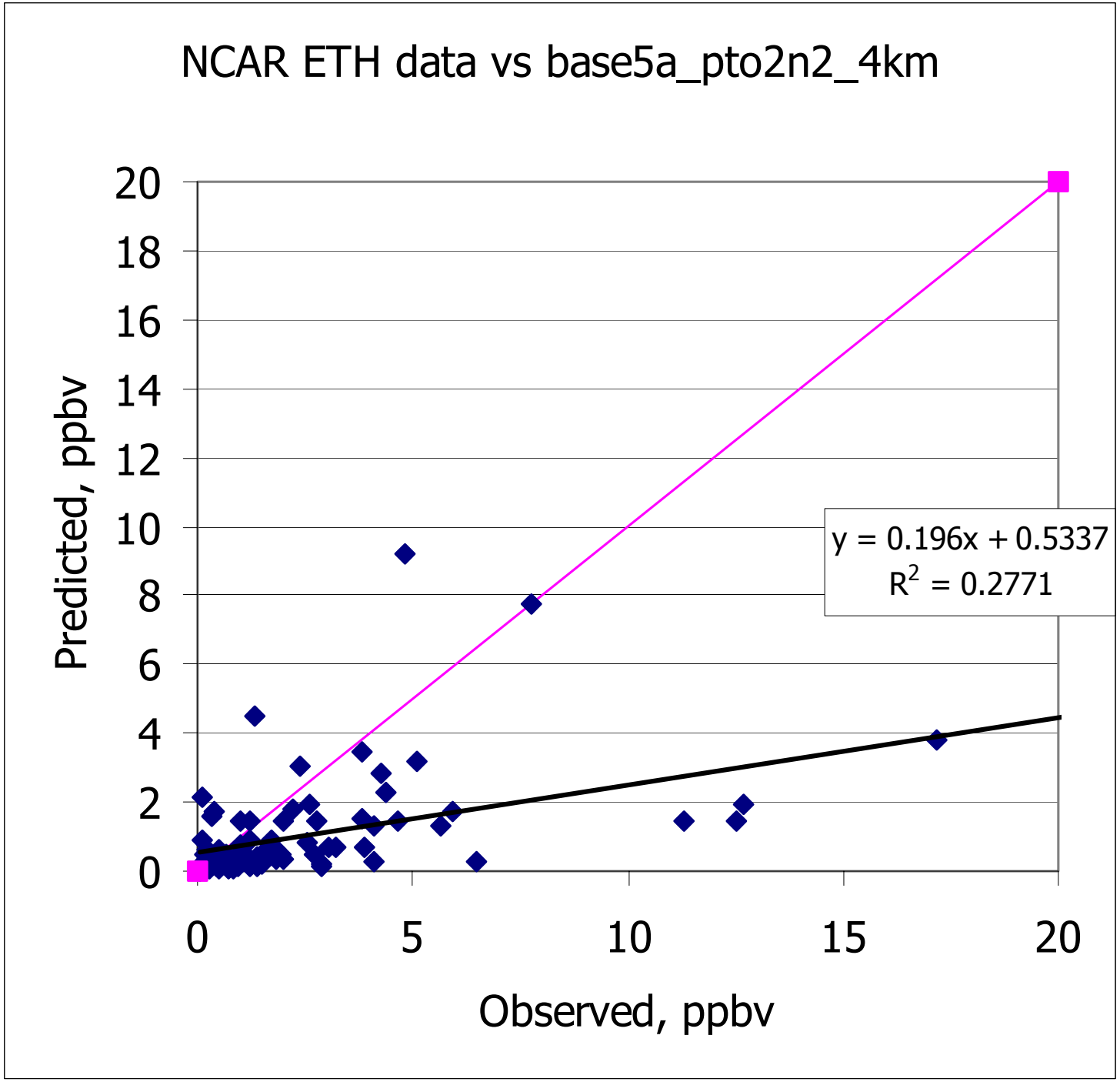

NOAA HNO3 data vs base5a_pto2n2_4km
y = 1.1283x + 1.8051
R2 = 0.6305
Predicted, ppbv
Observed, ppbv
0
5
10
15
20
25
30
0
5
10
15
20

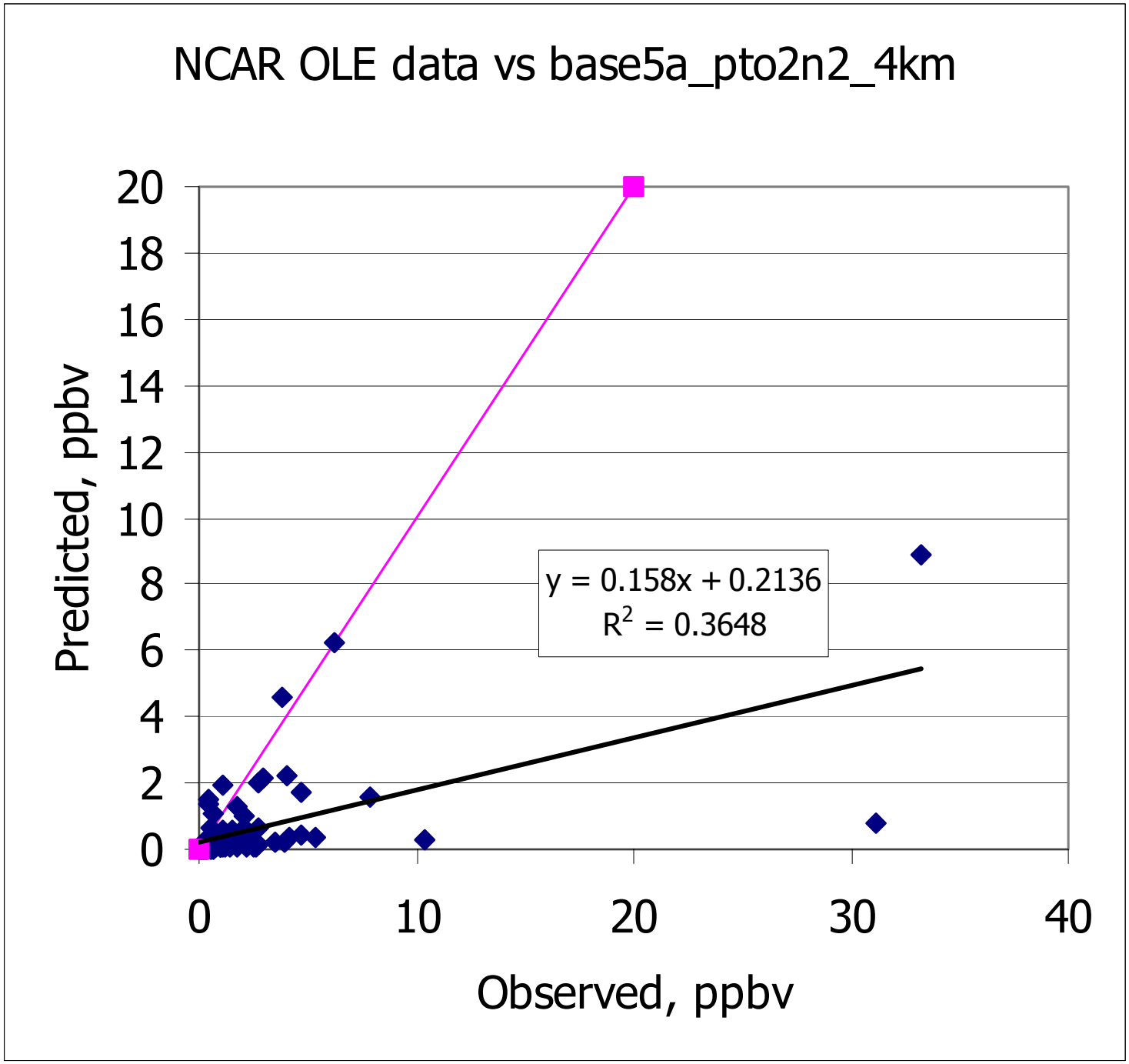

NOAA FORM data vs base5a_pto2n2_4km
y = 0.2963x + 2.7552
R2 = 0.3312
Predicted, ppbv
Observed, ppbv
0
5
10
15
20
25
0
5
10
15
20

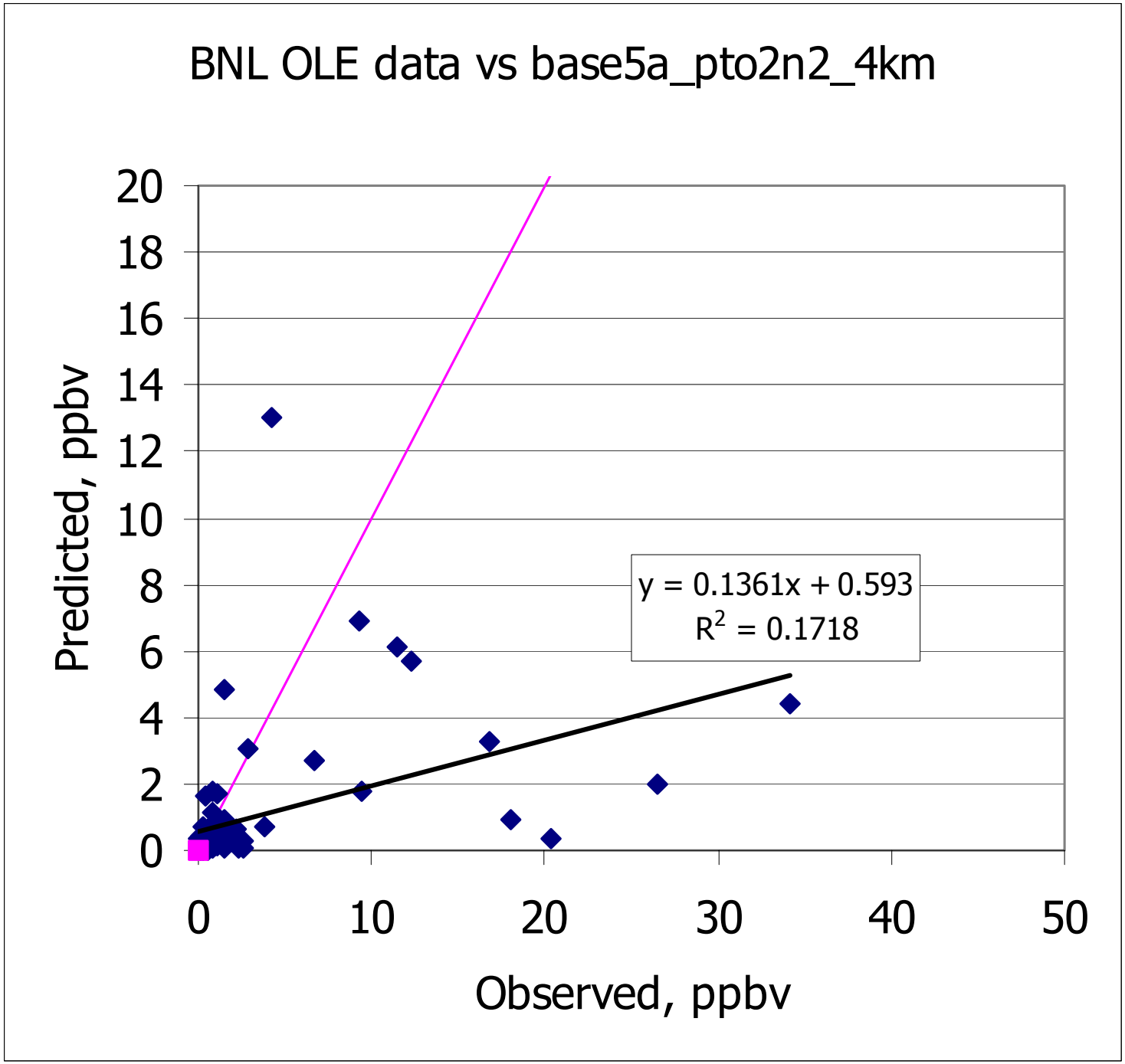

BNL FORM data vs base5a_pto2n2_4km
Predicted, ppbv
Observed, ppbv
0
5
10
15
20
25
30
0
10
20
30
y = 0.4125x + 3.5462
R2 = 0.2502

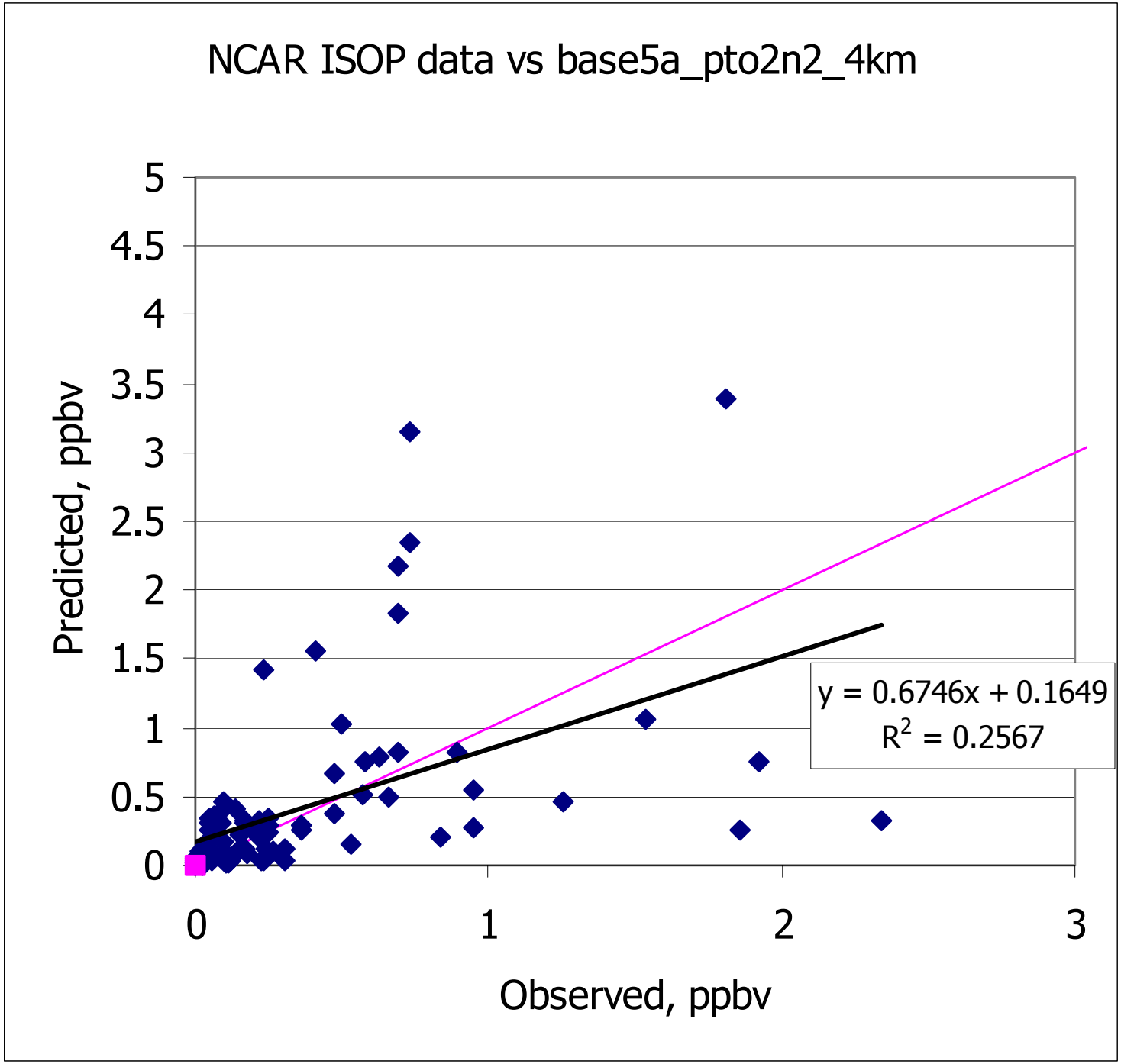

NOAA ETH data vs base5a_pto2n2_4km
Predicted, ppbv
Observed, ppbv
0
2
4
6
8
10
12
14
16
18
20
0
5
10
15
20
y = 0.0902x + 0.3197
R2 = 0.2363

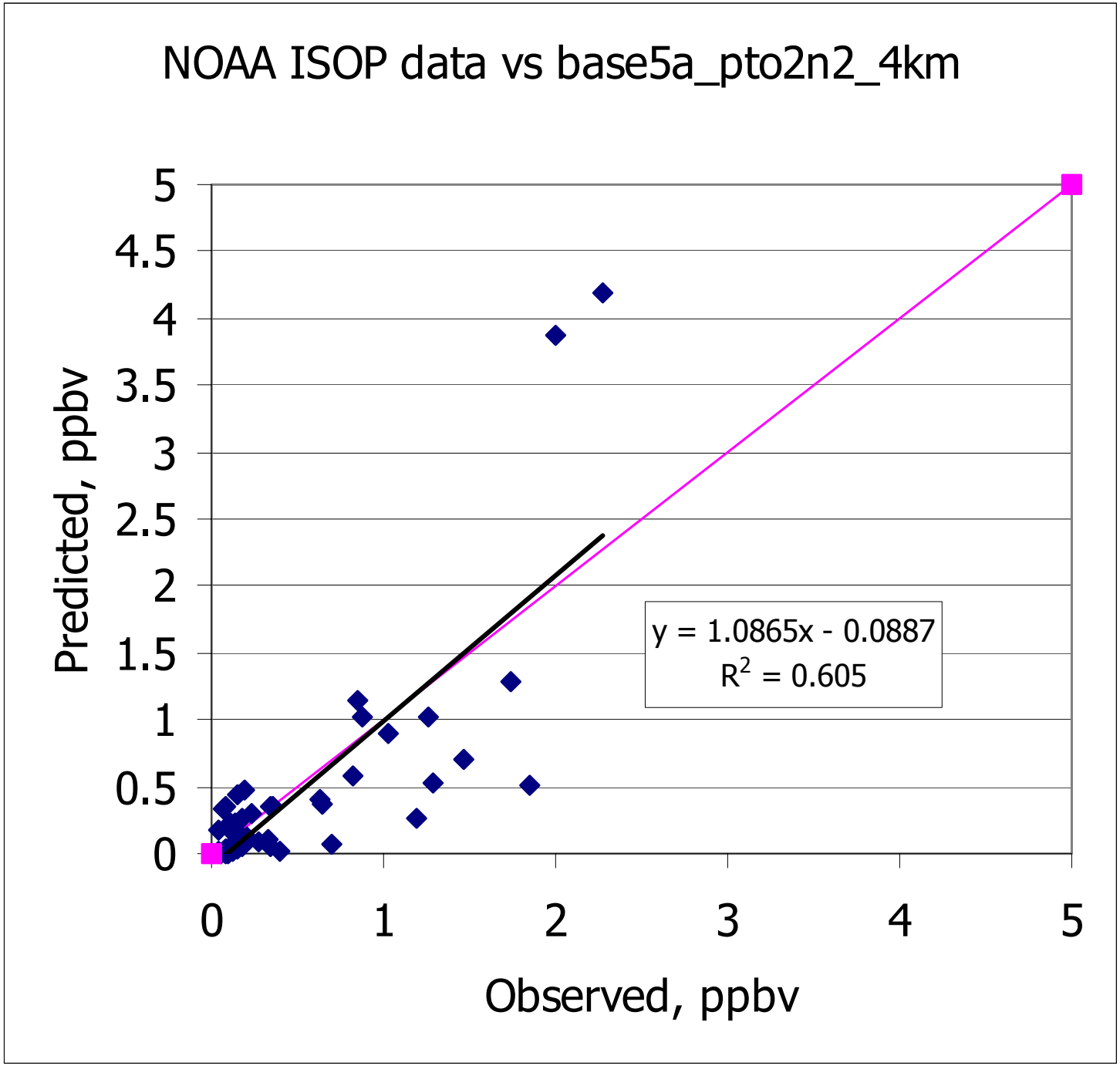

BNL ETH data vs base5a_pto2n2_4km
Predicted, ppbv
Observed, ppbv
0
5
10
15
20
25
y = 0.1452x + 1.2837
R2 = 0.447

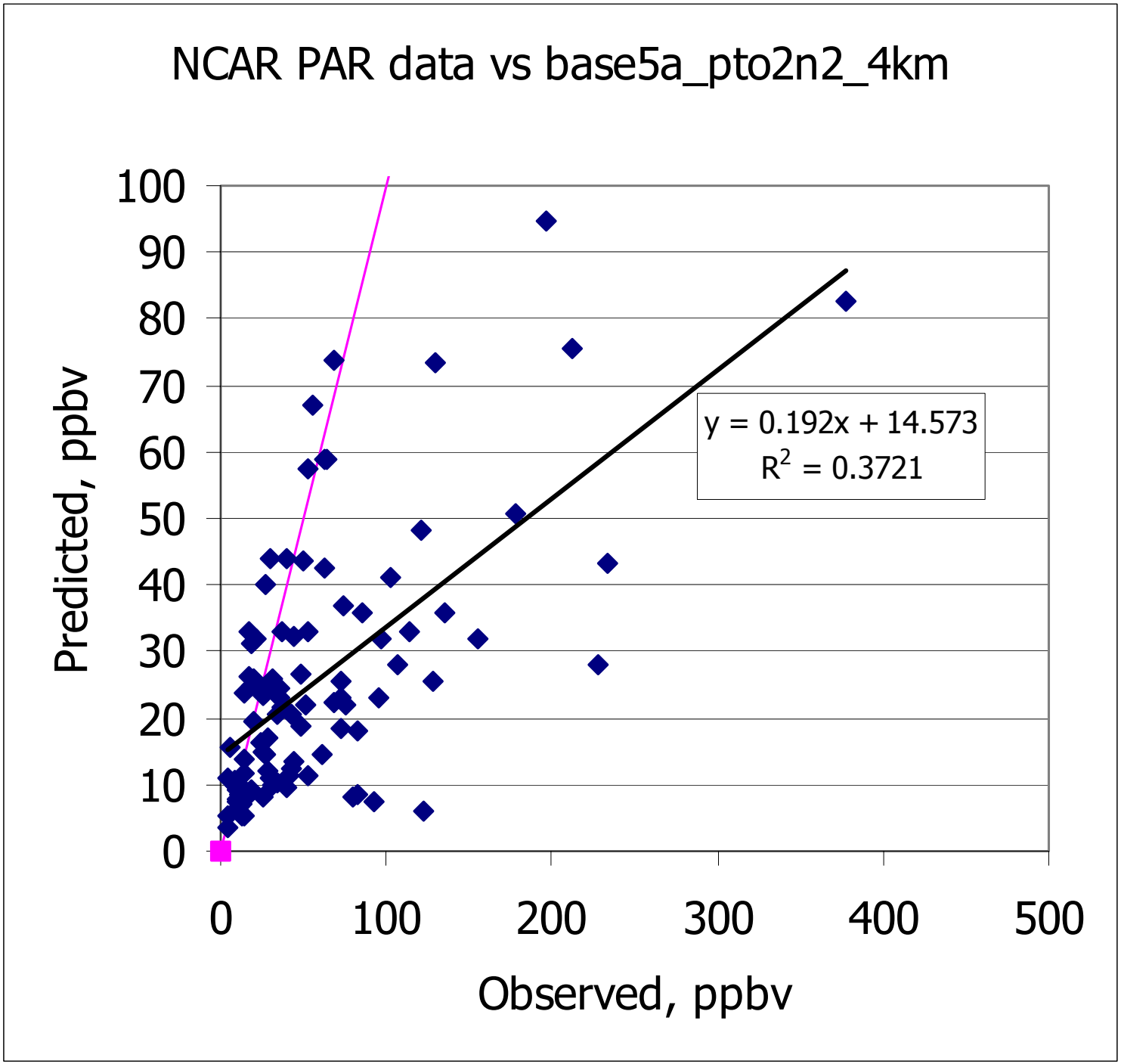

NCAR ETH data vs base5a_pto2n2_4km
Predicted, ppbv
Observed, ppbv
0
2
4
6
8
10
12
14
16
18
20
0
5
10
15
20
y = 0.196x + 0.5337
R2 = 0.2771

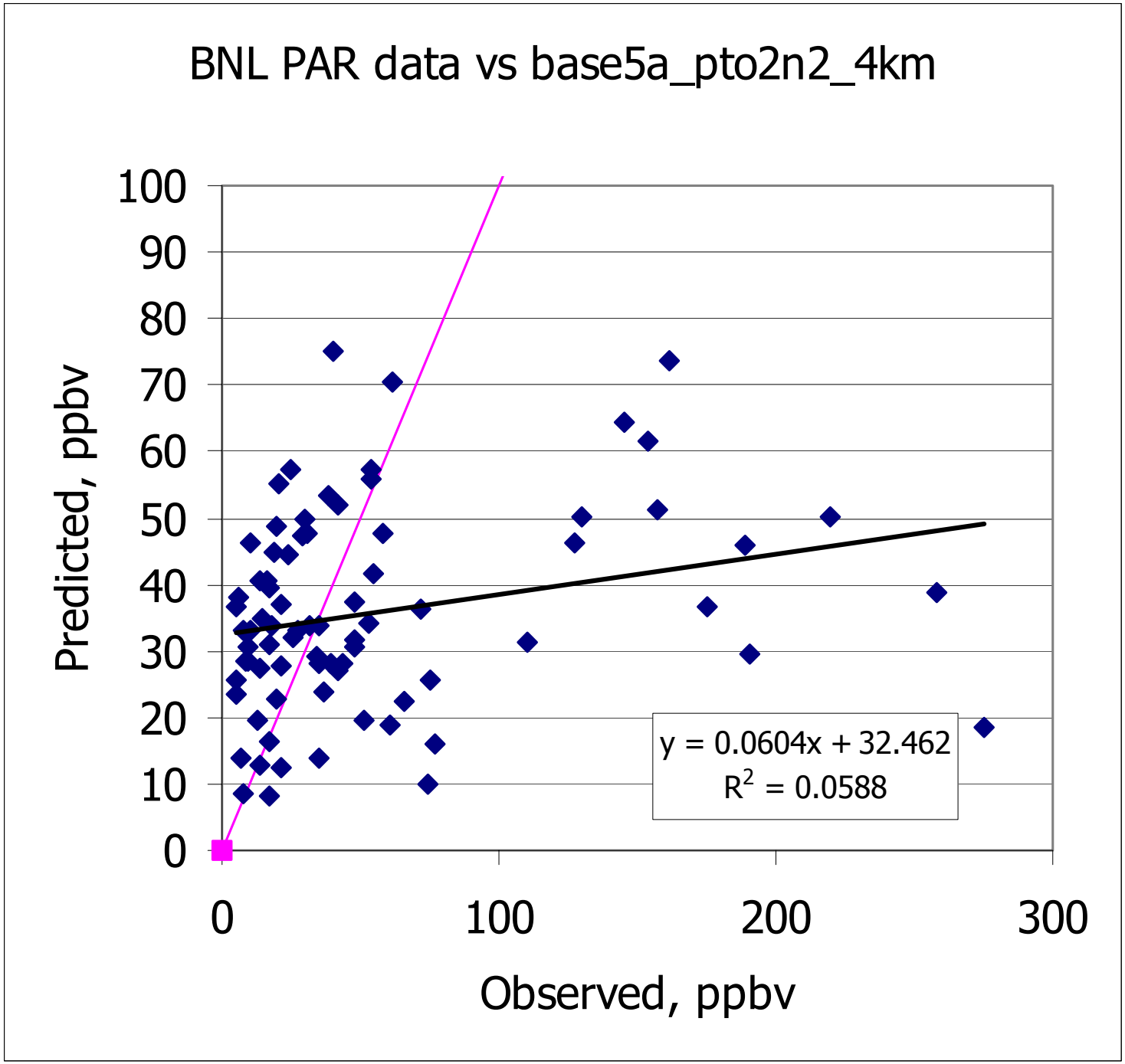

NCAR OLE data vs base5a_pto2n2_4km
Predicted, ppbv
Observed, ppbv
0
2
4
6
8
10
12
14
16
18
20
0
10
20
30
40
y = 0.158x + 0.2136
R2 = 0.3648

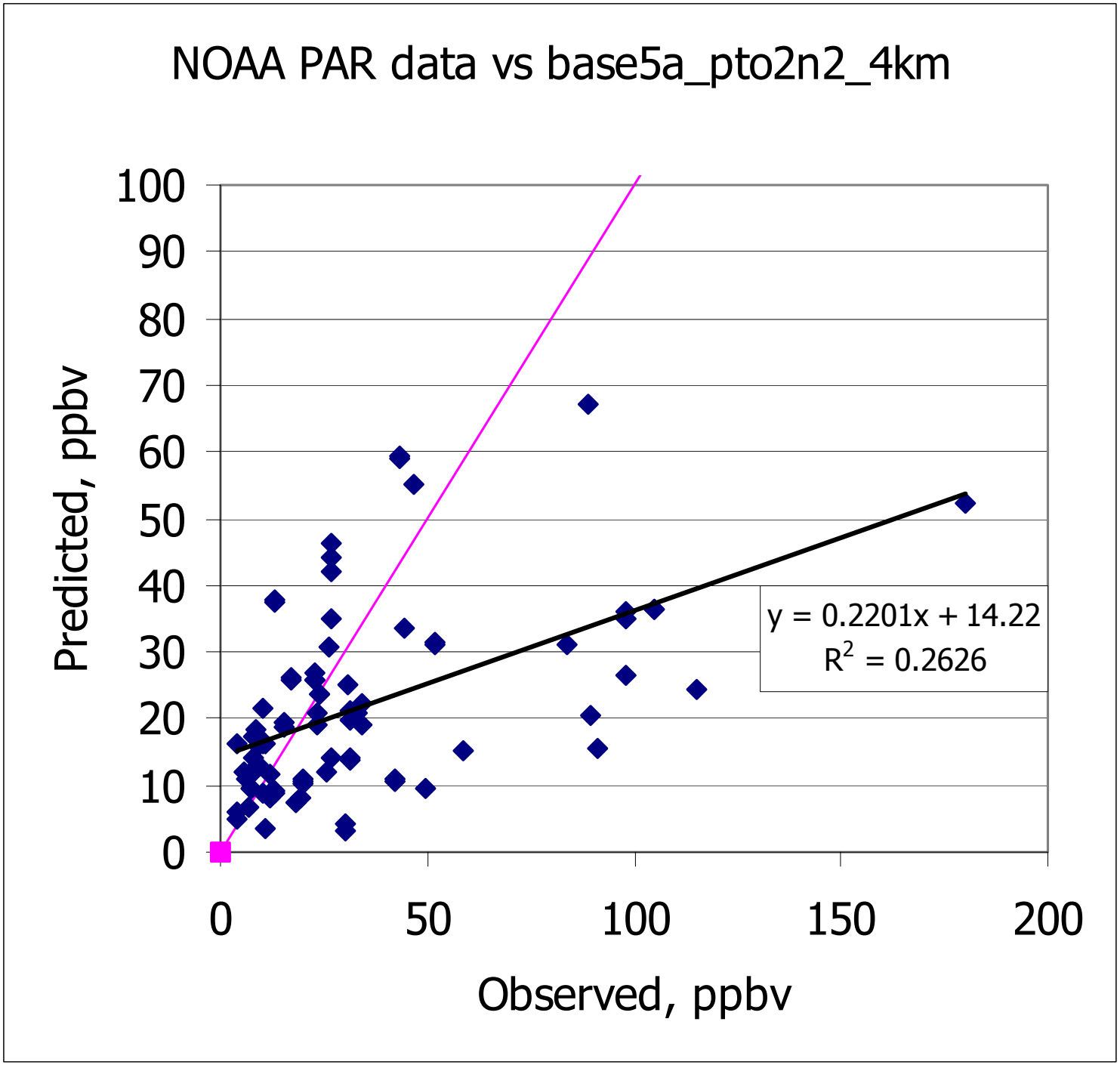

BNL OLE data vs base5a_pto2n2_4km
Predicted, ppbv
Observed, ppbv
0
2
4
6
8
10
12
14
16
18
20
0
10
20
30
40
50
y = 0.1361x + 0.593
R2 = 0.1718

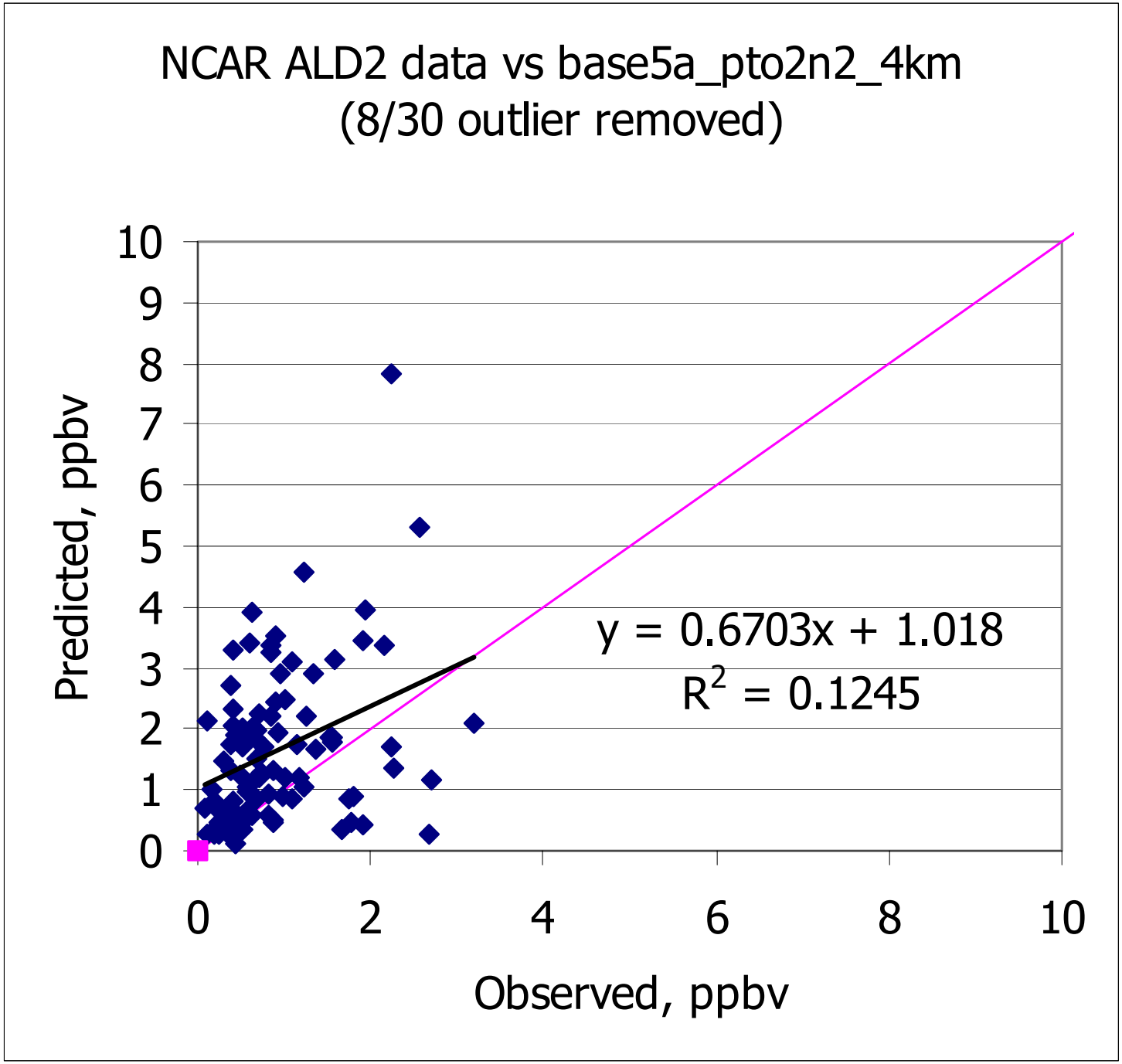

NCAR ISOP data vs base5a_pto2n2_4km
Predicted, ppbv
Observed, ppbv
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
0
1
2
3
y = 0.6746x + 0.1649
R2 = 0.2567

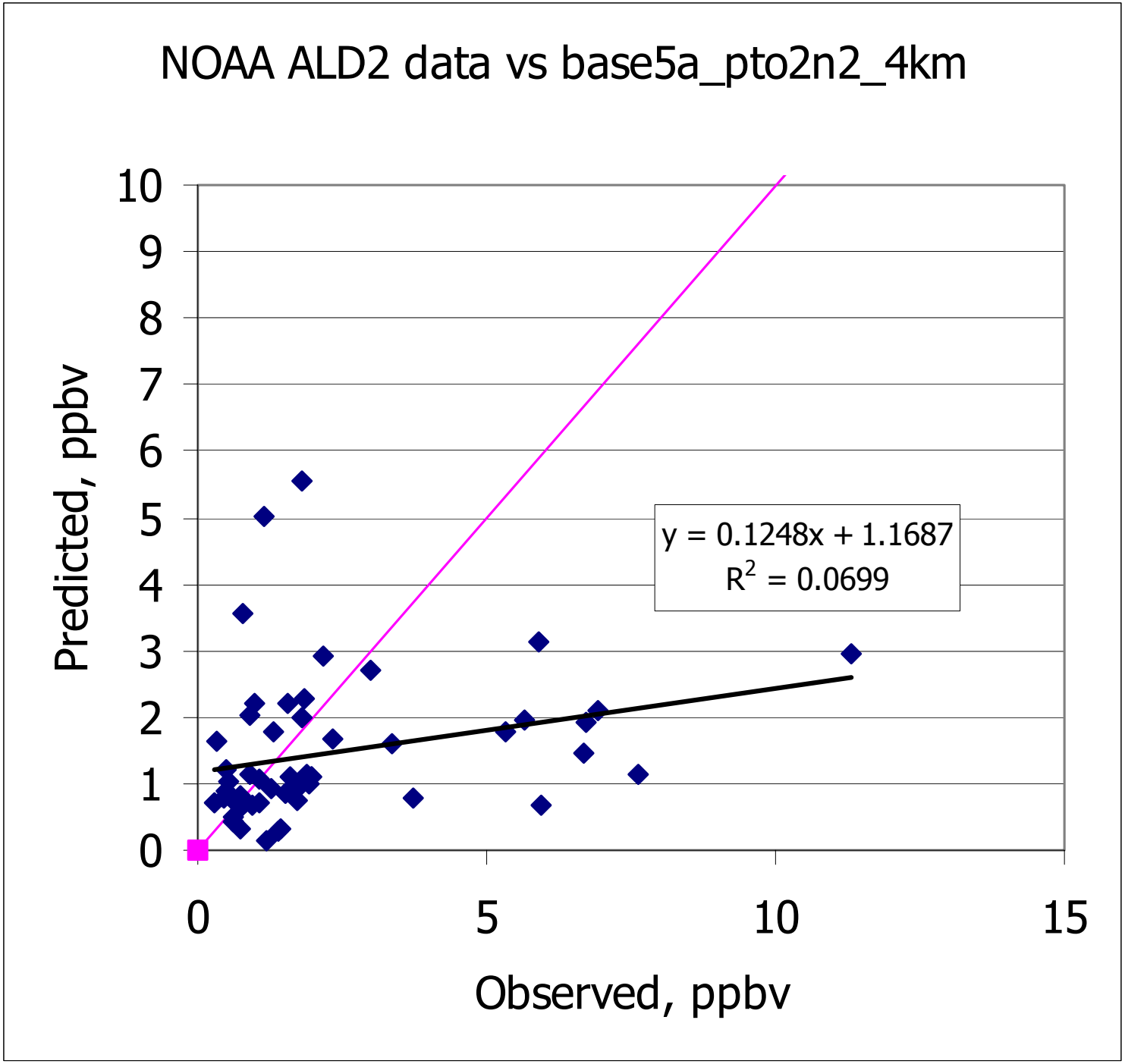

NOAA ISOP data vs base5a_pto2n2_4km
Predicted, ppbv
Observed, ppbv
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5
0
1
2
3
4
5
y = 1.0865x - 0.0887
R2 = 0.605

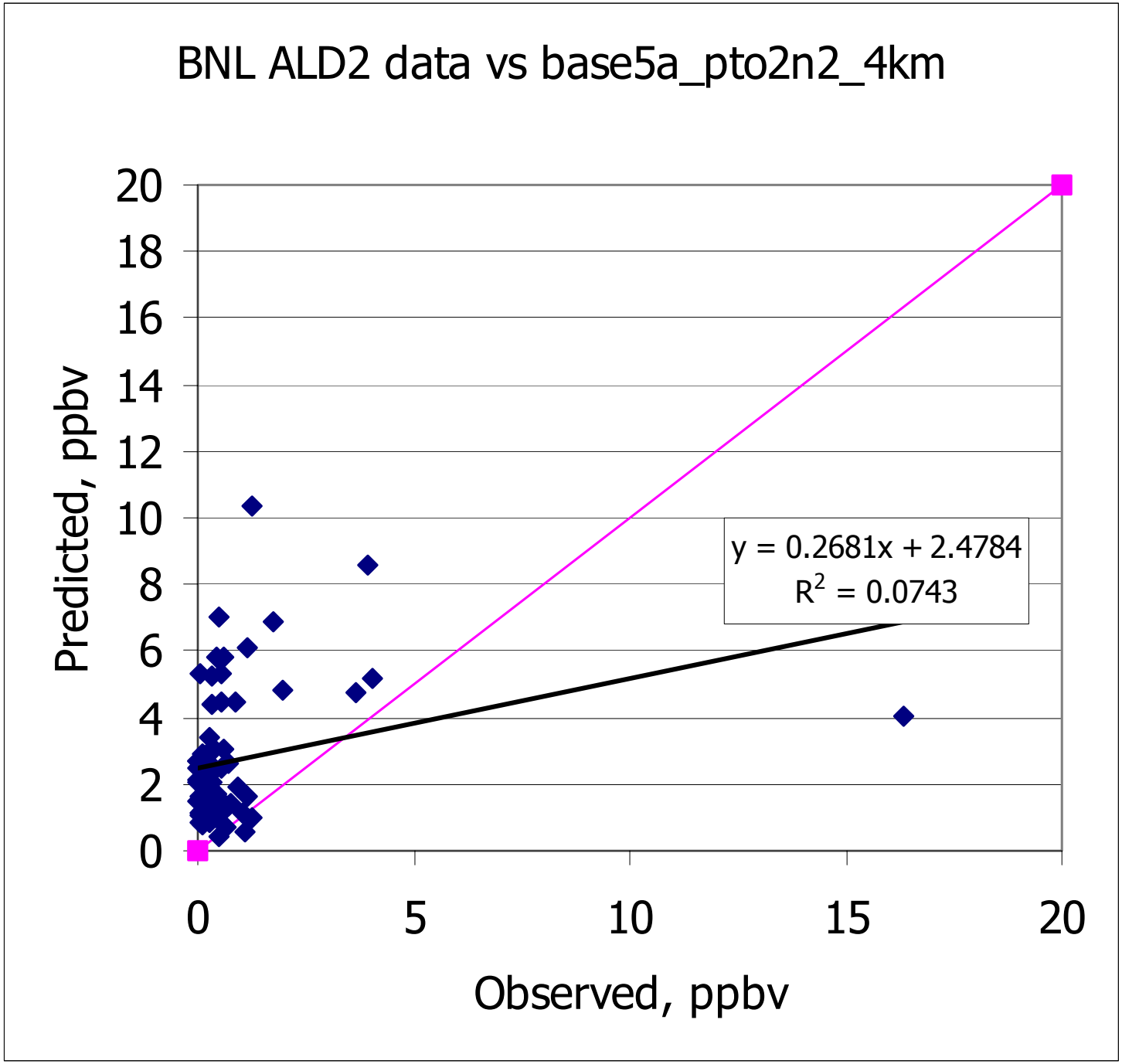

NCAR PAR data vs base5a_pto2n2_4km
Predicted, ppbv
Observed, ppbv
0
10
20
30
40
50
60
70
80
90
100
0
100
200
300
400
500
y = 0.192x + 14.573
R2 = 0.3721


BNL PAR data vs base5a_pto2n2_4km
Predicted, ppbv
Observed, ppbv
0
10
20
30
40
50
60
70
80
90
100
0
100
200
300
y = 0.0604x + 32.462
R2 = 0.0588


NOAA PAR data vs base5a_pto2n2_4km
Predicted, ppbv
Observed, ppbv
0
10
20
30
40
50
60
70
80
90
100
0
50
100
150
200
y = 0.2201x + 14.22
R2 = 0.2626


NCAR ALD2 data vs base5a_pto2n2_4km
(8/30 outlier removed)
Predicted, ppbv
Observed, ppbv
0
1
2
3
4
5
6
7
8
9
10
0
2
4
6
8
10
y = 0.6703x + 1.018
R2 = 0.1245


NOAA ALD2 data vs base5a_pto2n2_4km
Predicted, ppbv
Observed, ppbv
0
1
2
3
4
5
6
7
8
9
10
0
5
10
15
y = 0.1248x + 1.1687
R2 = 0.0699


BNL ALD2 data vs base5a_pto2n2_4km
Predicted, ppbv
Observed, ppbv
0
2
4
6
8
10
12
14
16
18
20
0
5
10
15
20
y = 0.2681x + 2.4784
R2 = 0.0743