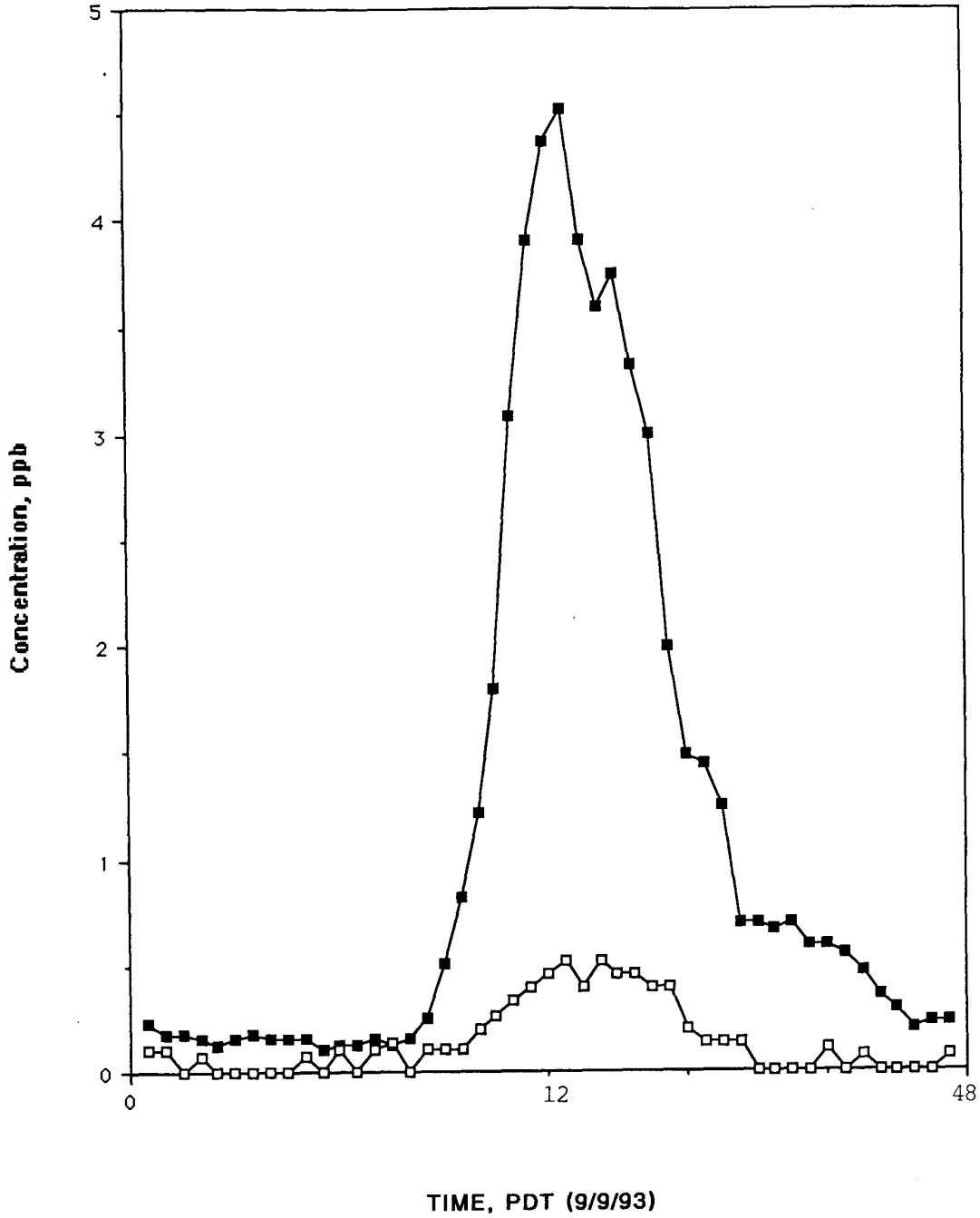


FIGURE 1(a)

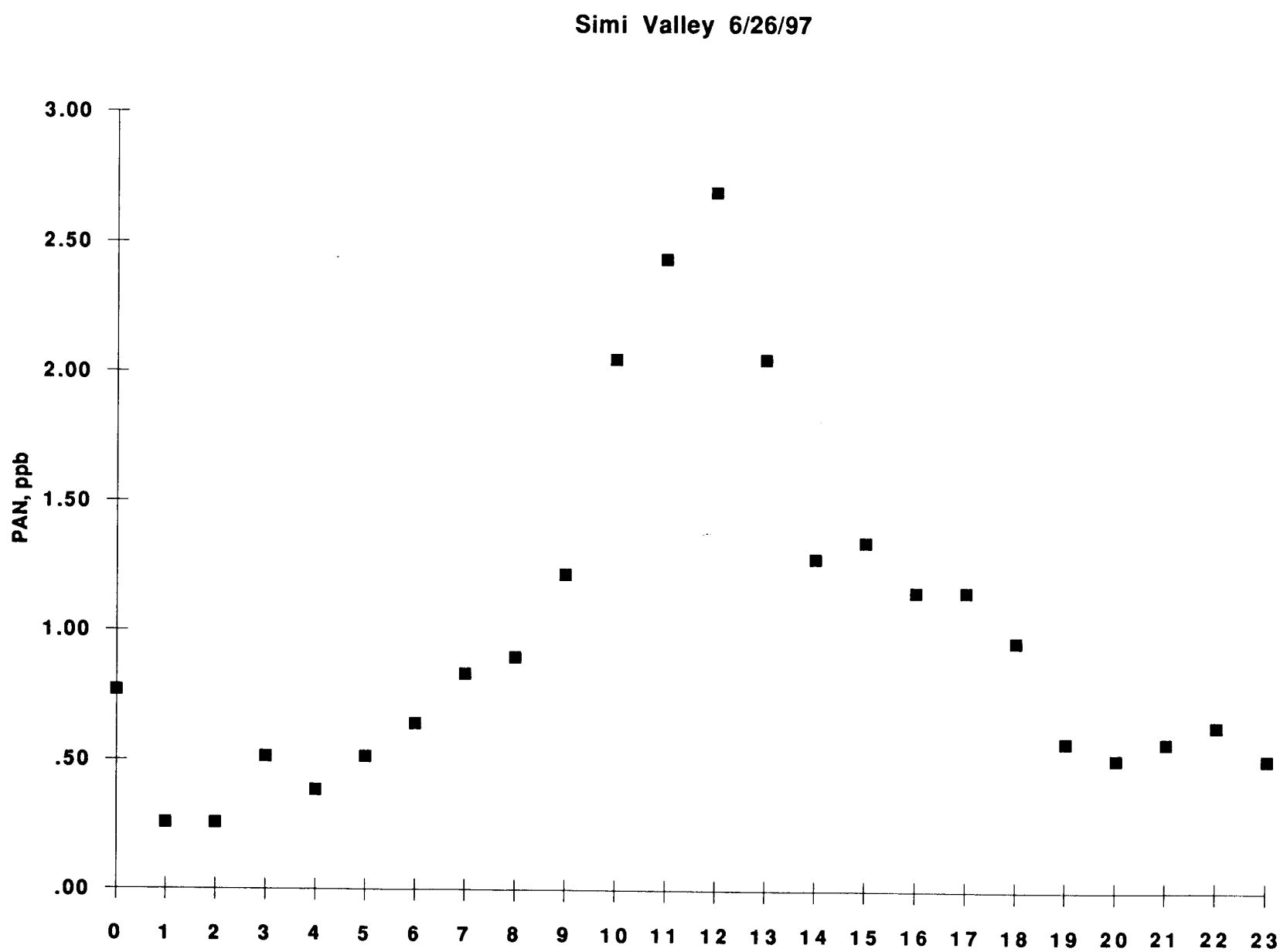

Simi Valley 6/26/97
PAN, ppb
3.00
2.50
2.00
1.50
1.00
.50
.00
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

FIGURE 1 (b)

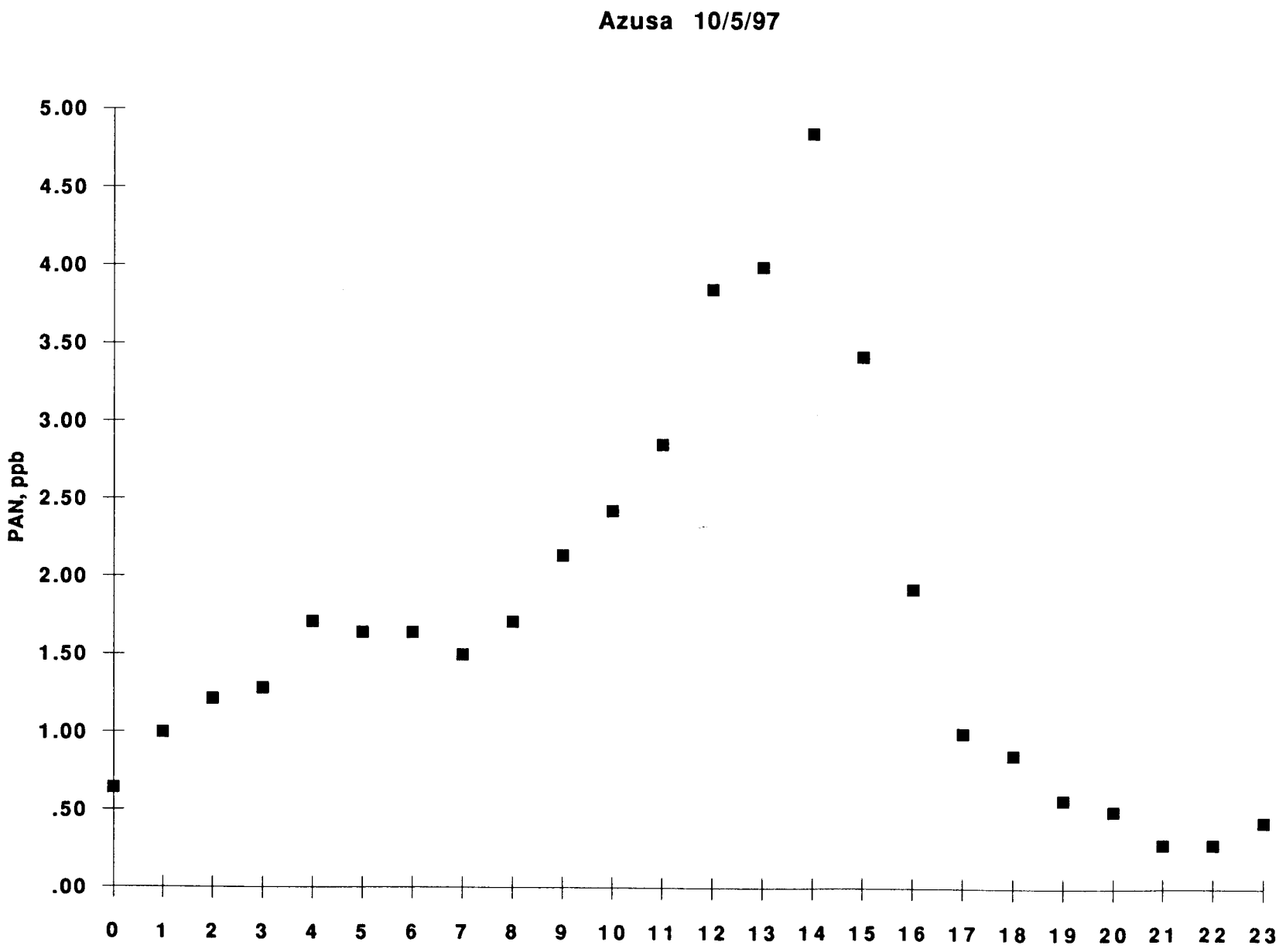
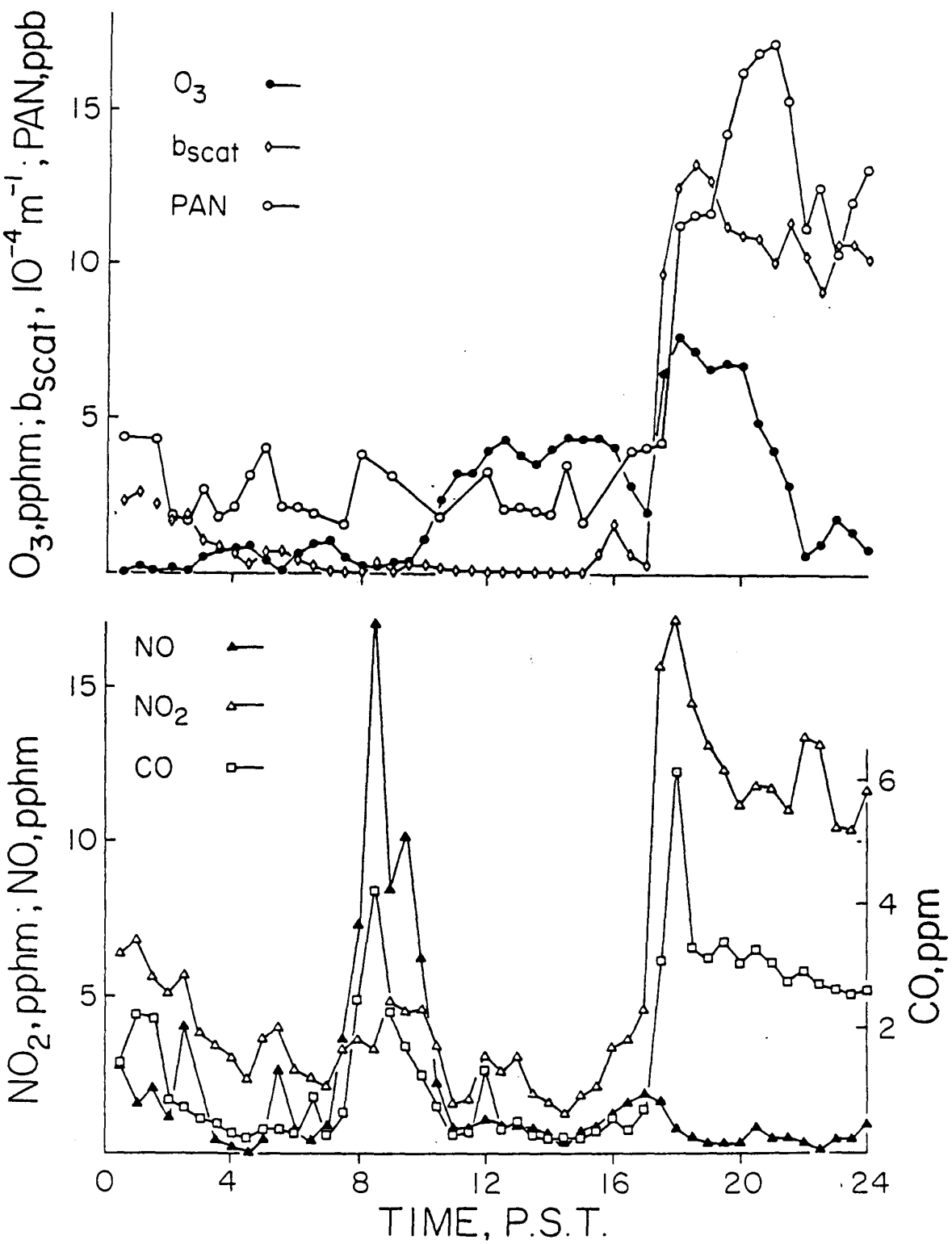

Azusa 10/5/97
PAN, ppb
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
.50
.00
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

FIGURE 1 (C)



Diurnal profile for NO, NO_2, O_3, PAN, b_{scat}, and CO, February 16, 1977, Riverside, CA.

FIGURE 2

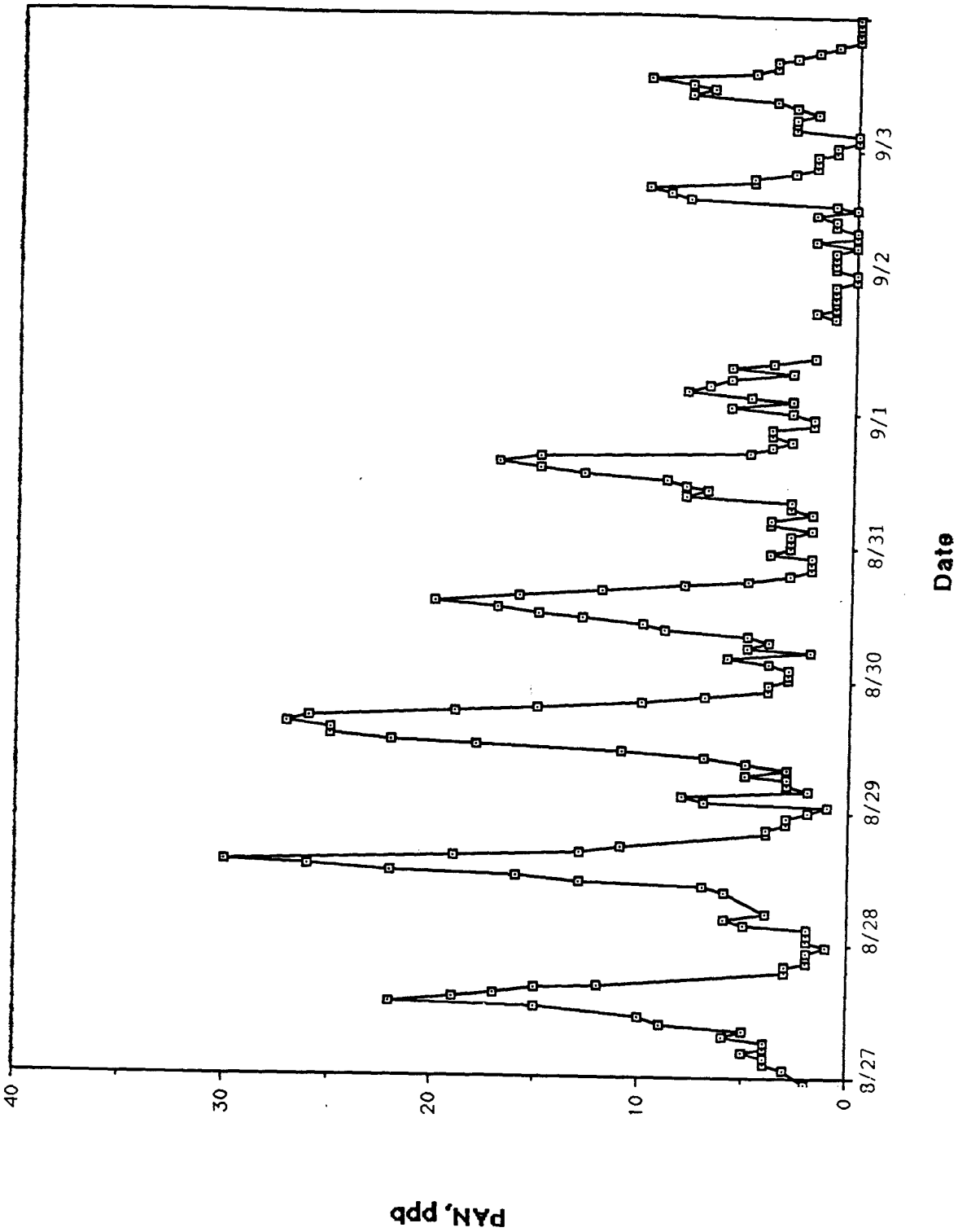


FIGURE 3

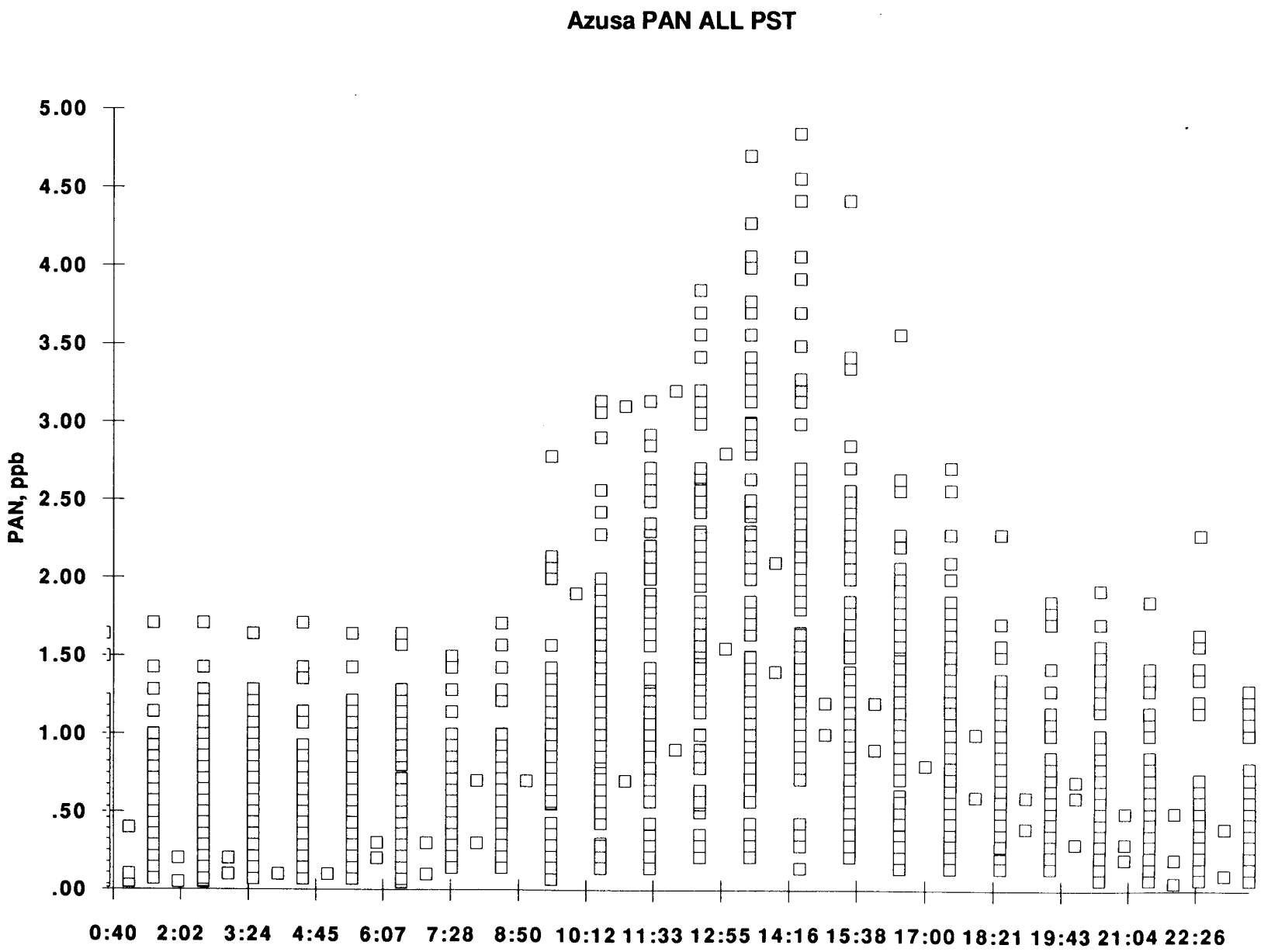

Azusa PAN ALL PST
PAN, ppb
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
.50
.00
0:40
2:02
3:24
4:45
6:07
7:28
8:50
10:12
11:33
12:55
14:16
15:38
17:00
18:21
19:43
21:04
22:26

FIGURE 4

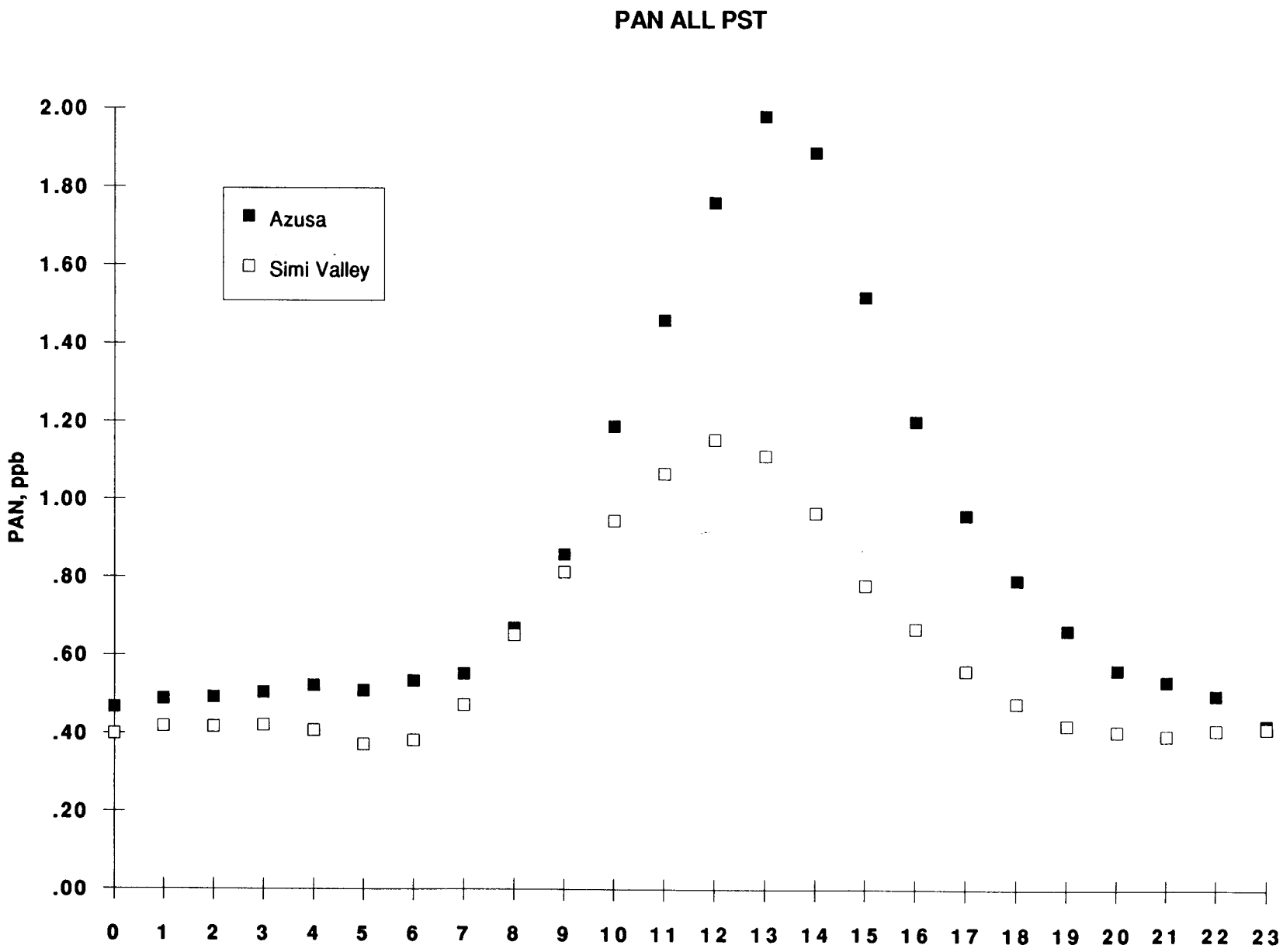

PAN ALL PST
PAN, ppb
2.00
1.80
1.60
1.40
1.20
1.00
.80
.60
.40
.20
.00
Azusa
Simi Valley
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

FIGURE 5

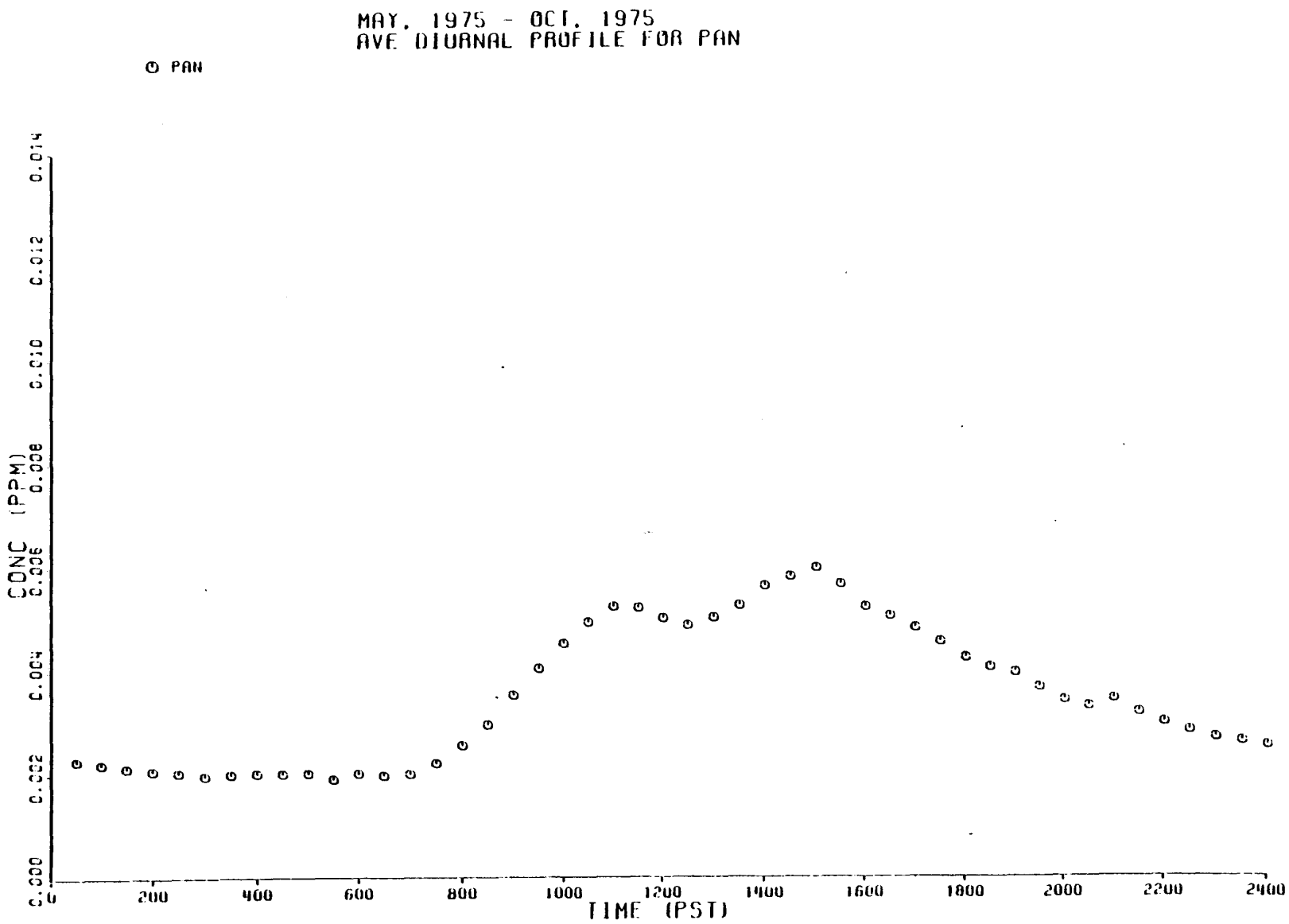

MAY. 1975 - OCT. 1975
AVE DIURNAL PROFILE FOR PAN
PAN
CONC (PPM)
0.000
0.002
0.004
0.006
0.008
0.010
0.012
0.014
0.0
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
2400
TIME (PST)

FIGURE 6(a)

CONC (PPM)
0.000
0.002
0.004
0.006
0.008
0.010
0.012
0.014
TIME (PST)
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
2400

FIGURE 6(b)

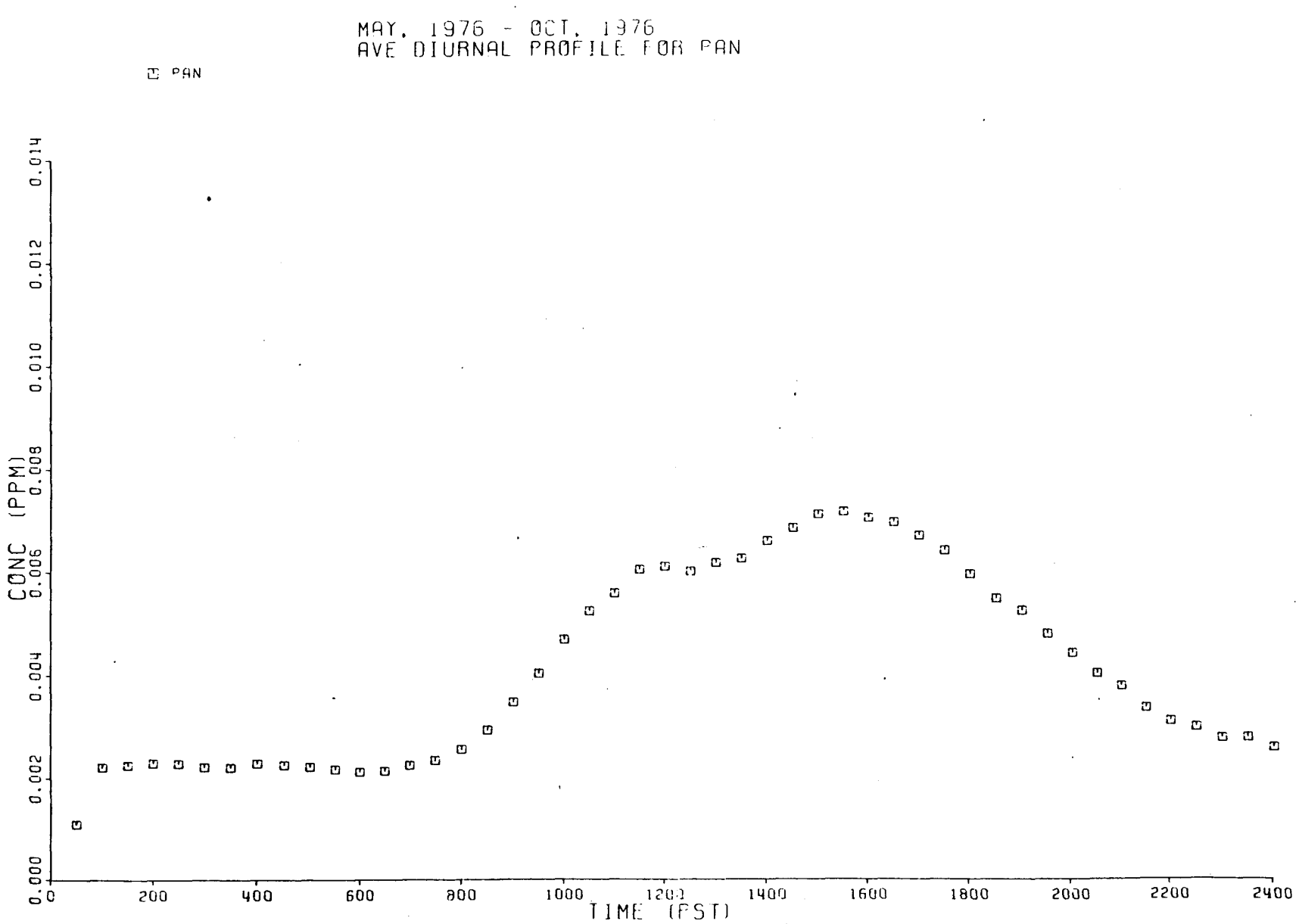

MAY, 1976 - OCT, 1976
AVE DIURNAL PROFILE FOR PAN
PAN
CONC (PPM)
0.000
0.002
0.004
0.006
0.008
0.010
0.012
0.014
0
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
2400
TIME (PST)

FIGURE 6(c)

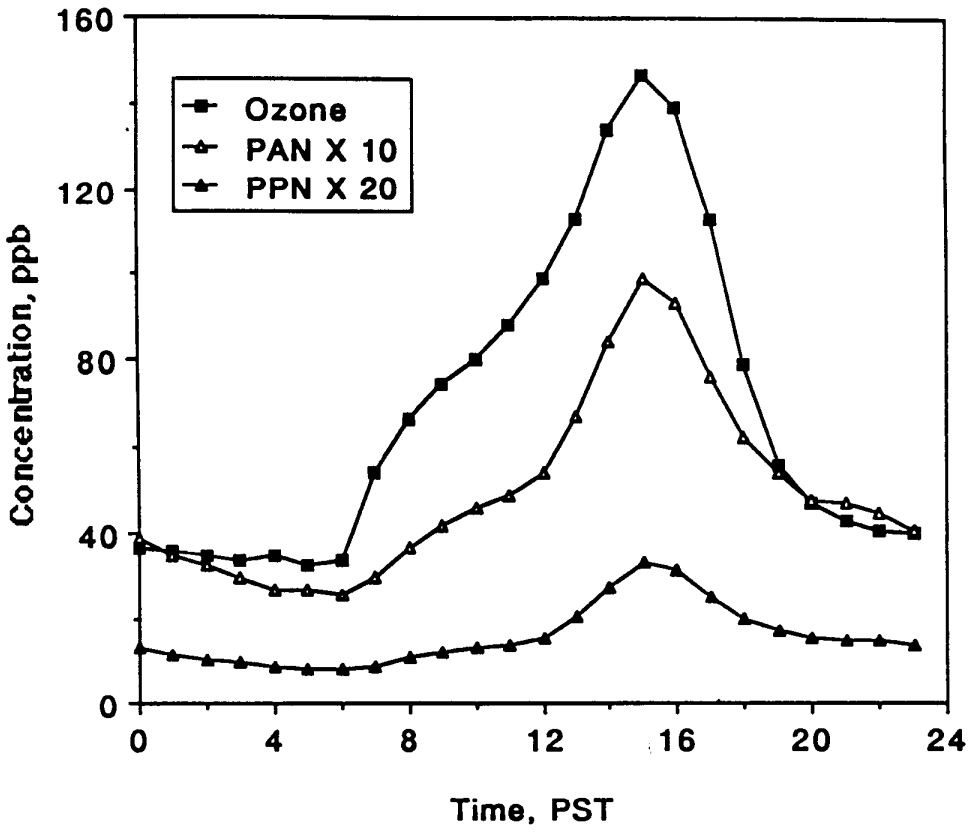

Ozone
PAN X 10
PPN X 20
Concentration, ppb
160
120
80
40
0
0
4
8
12
16
20
24
Time, PST

FIGURE 7(a)

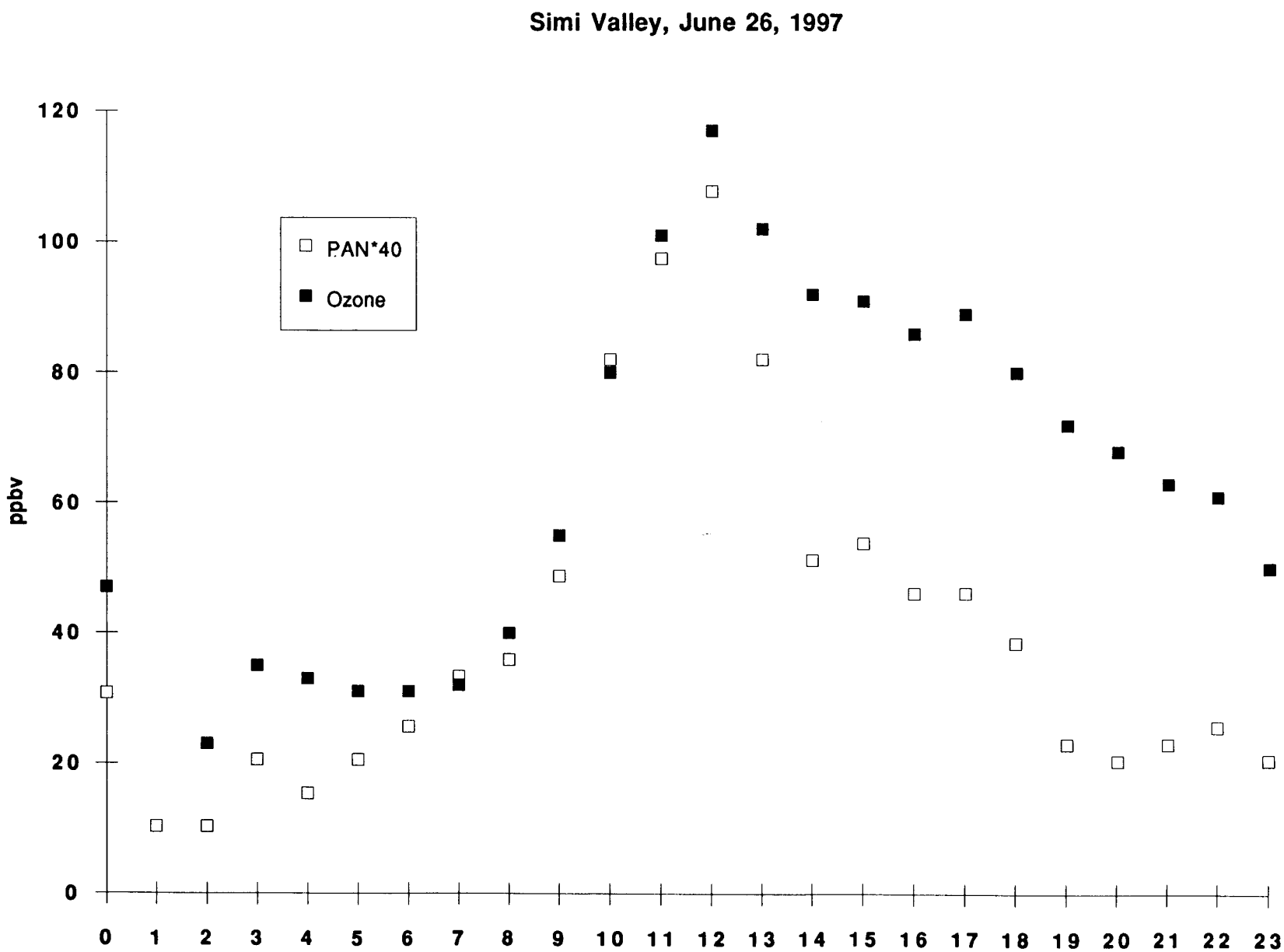

Simi Valley, June 26, 1997
ppbv
120
100
80
60
40
20
0
PAN*40
Ozone
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

FIGURE 7(b)

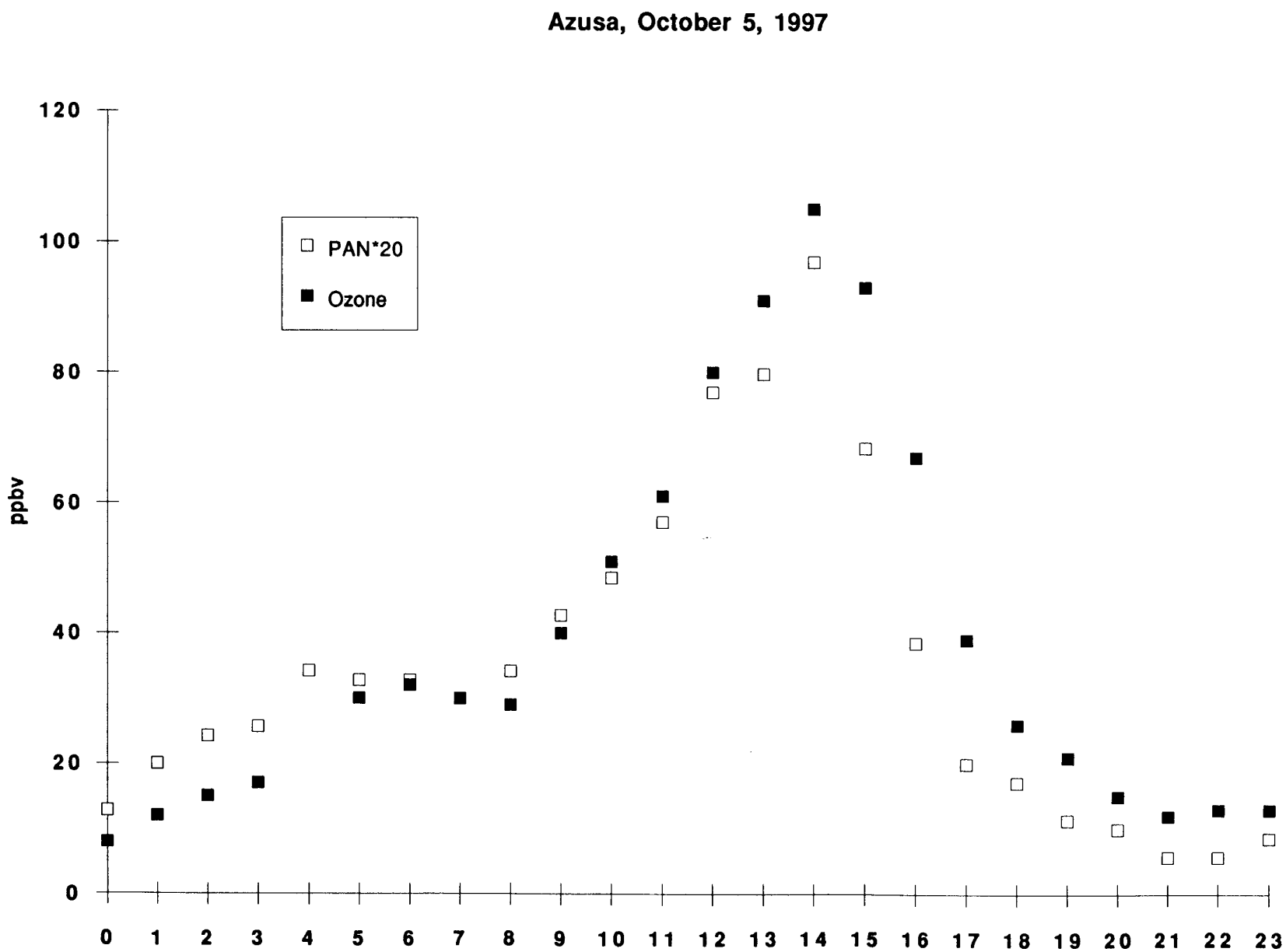

Azusa, October 5, 1997
ppbv
120
100
80
60
40
20
0
PAN*20
Ozone
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

FIGURE 7(c)

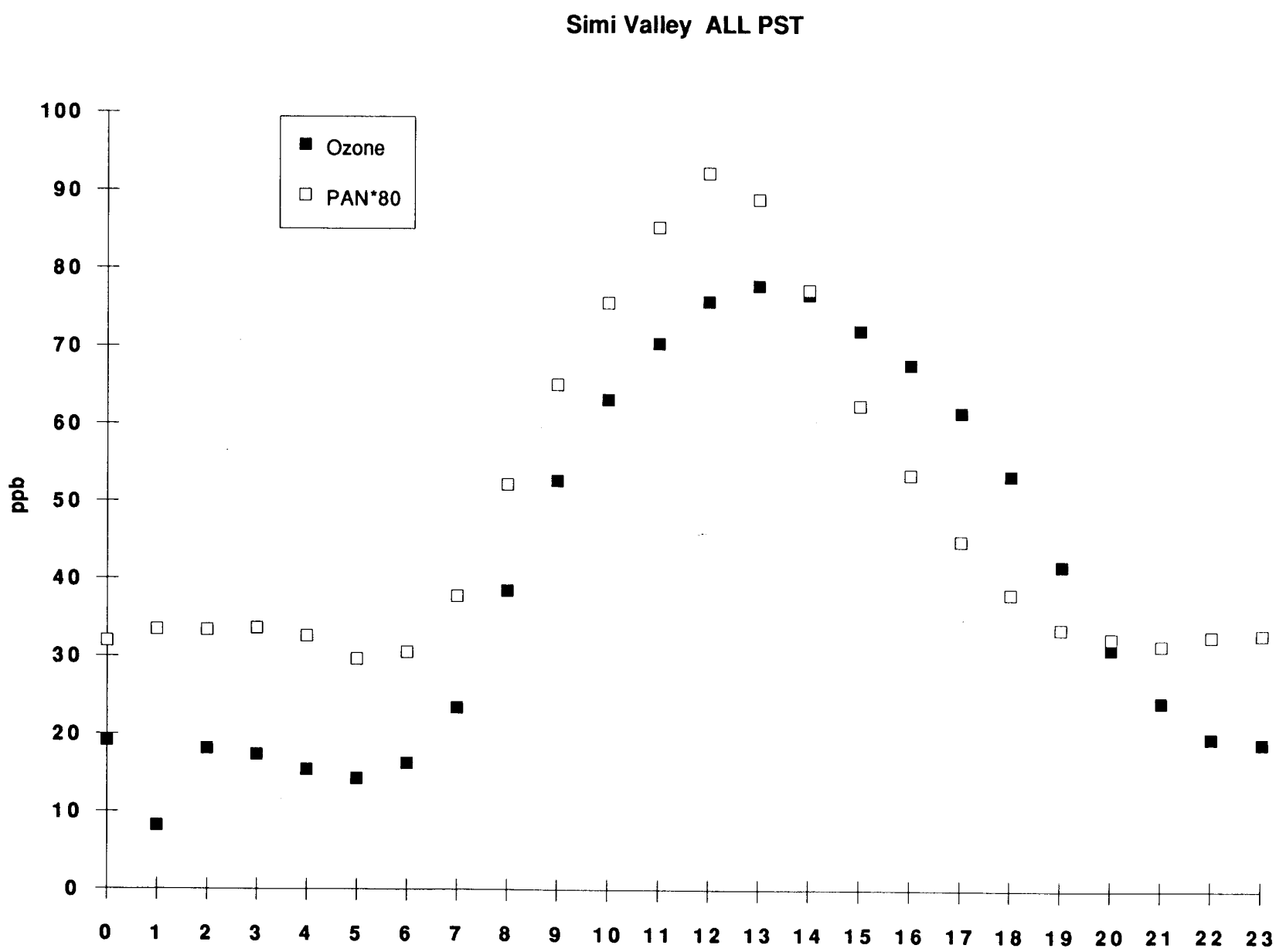

Simi Valley ALL PST
Ozone
PAN*80
ppb
100
90
80
70
60
50
40
30
20
10
0
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

FIGURE 7(d)

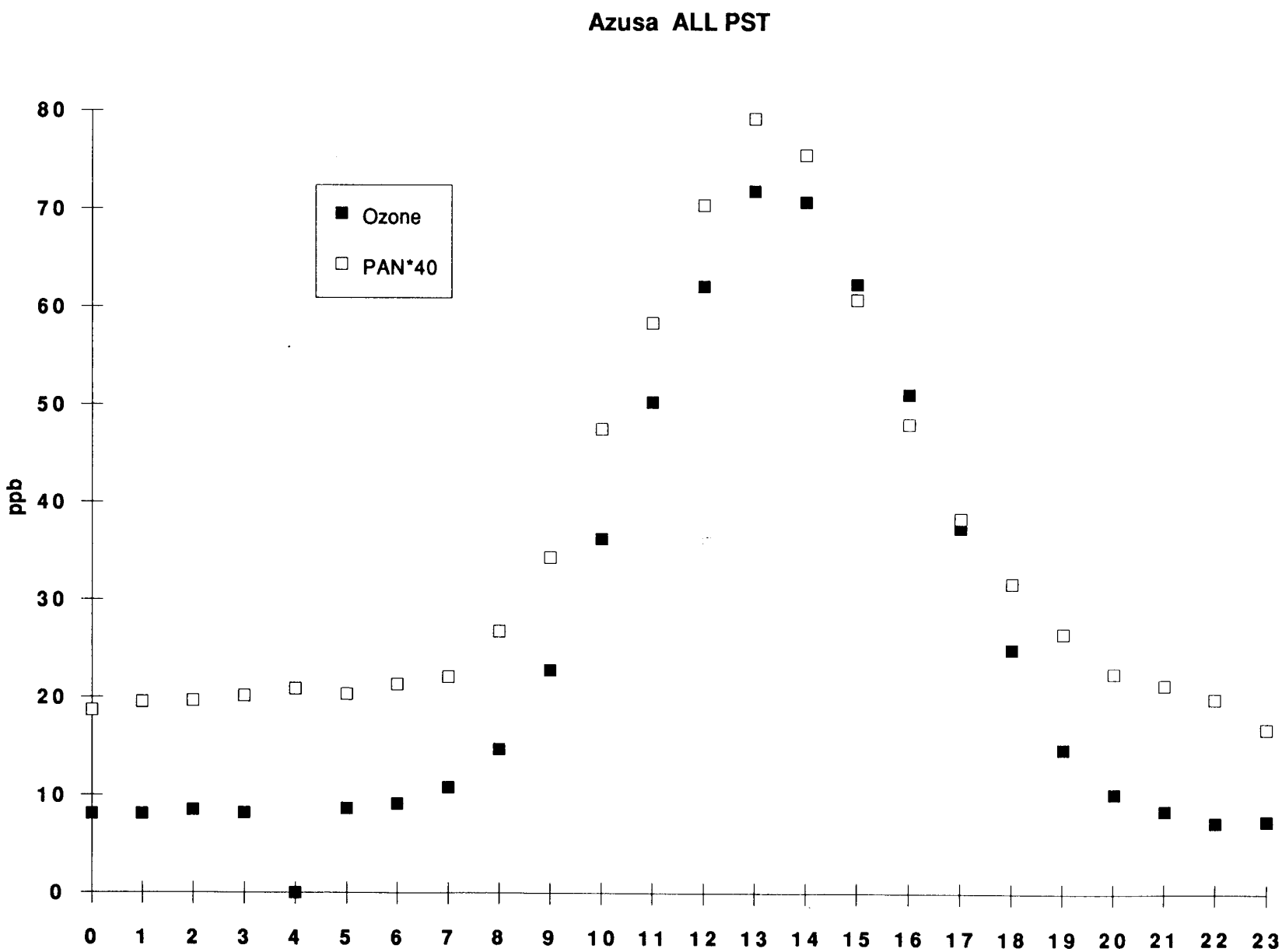
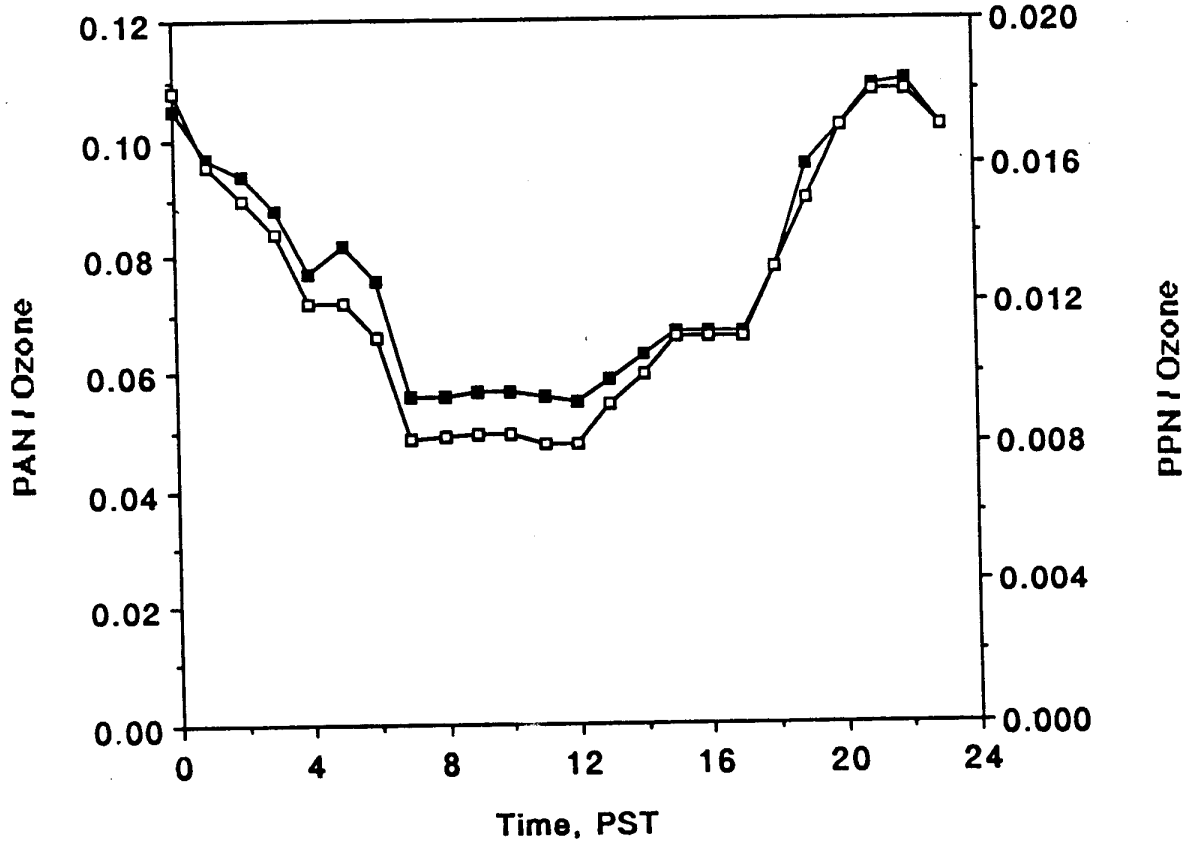

Azusa ALL PST
Ozone
PAN*40
ppb
0
10
20
30
40
50
60
70
80
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

Figure 7(e)

FIGURE 8(a)


0.12
0.10
0.08
0.06
0.04
0.02
0.00
PAN / Ozone
0.020
0.016
0.012
0.008
0.004
0.000
PPN / Ozone
0
4
8
12
16
20
24
Time, PST

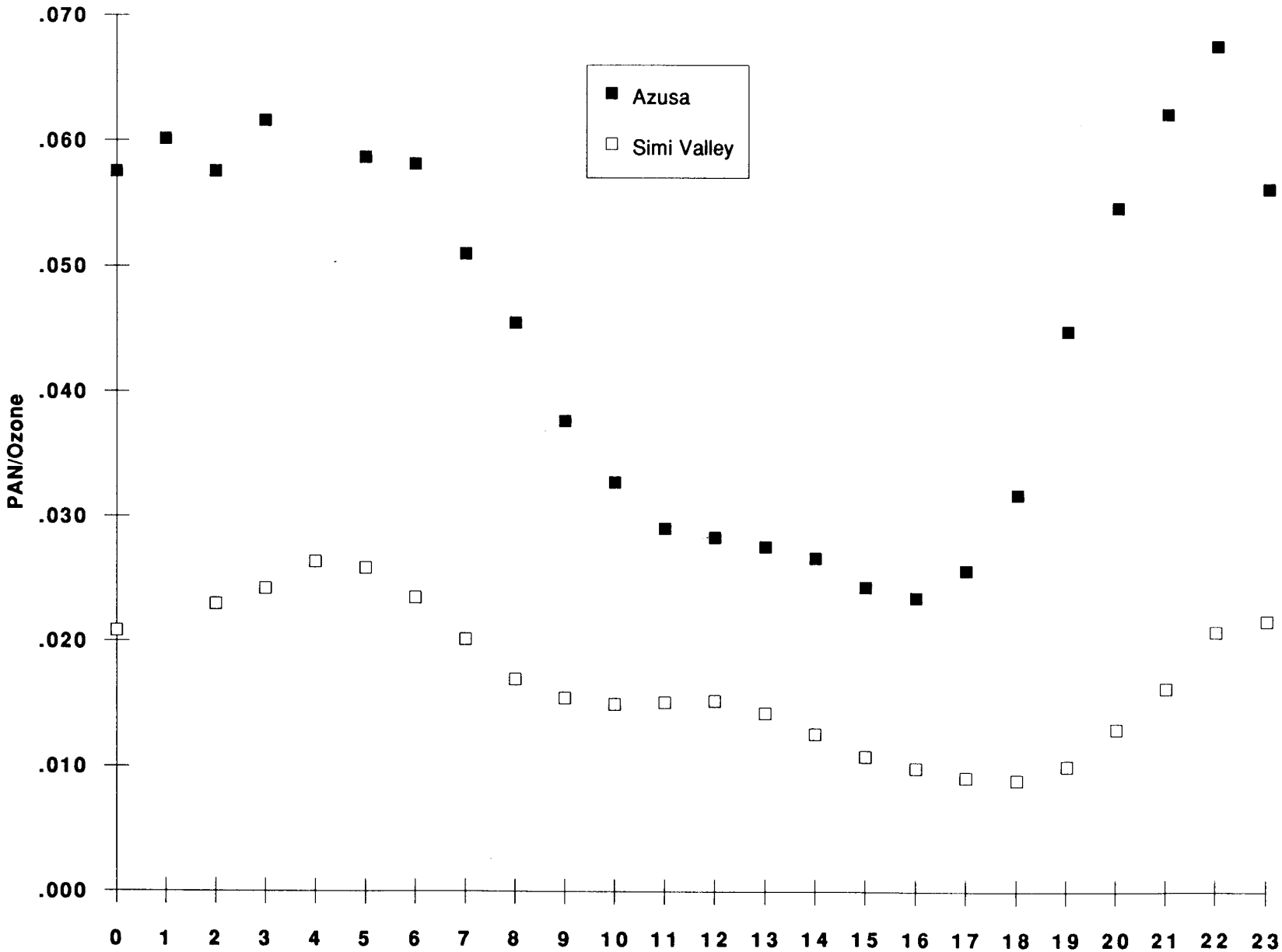

PAN/Ozone
.070
.060
.050
.040
.030
.020
.010
.000
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
Azusa
Simi Valley

FIGURE 8(b)

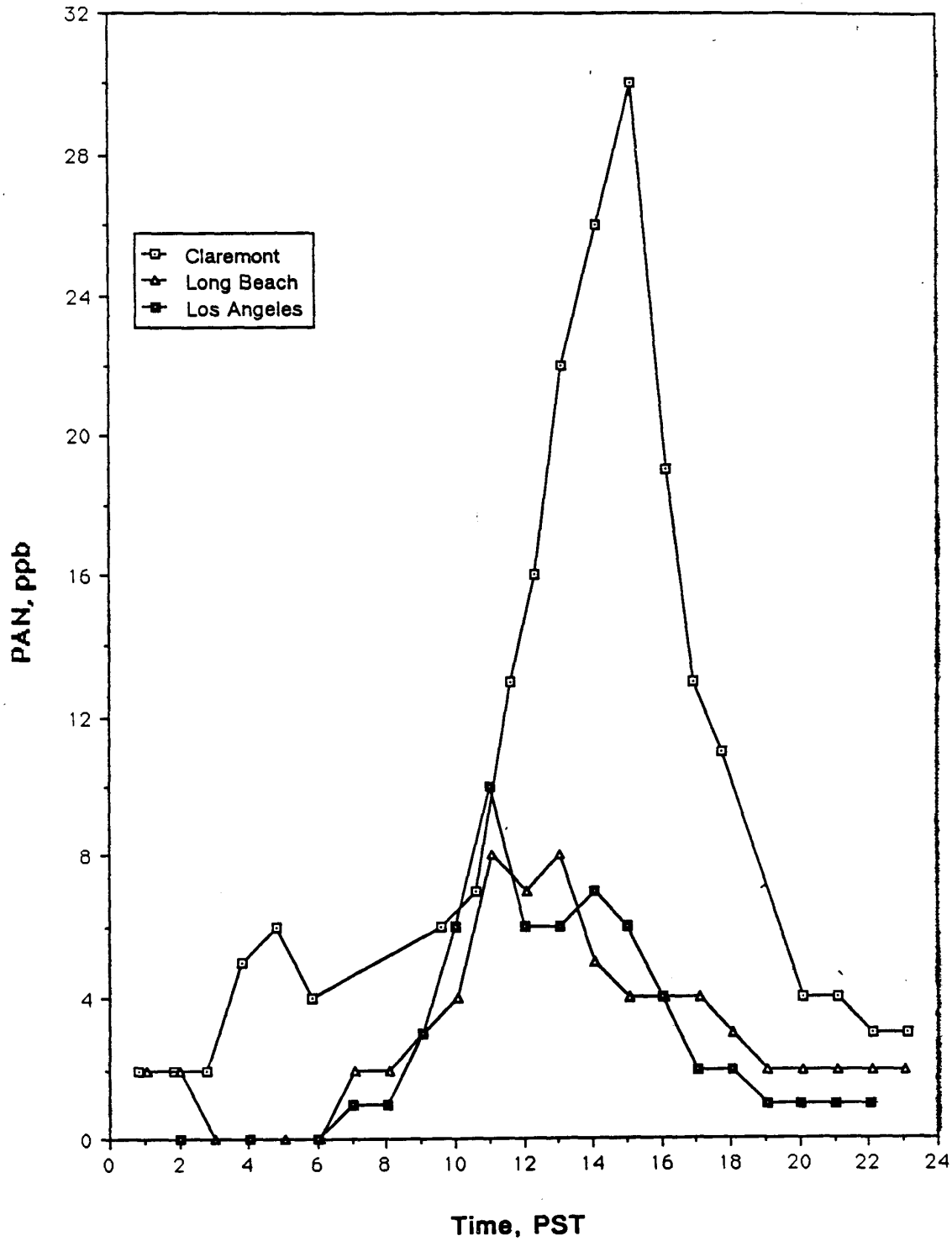
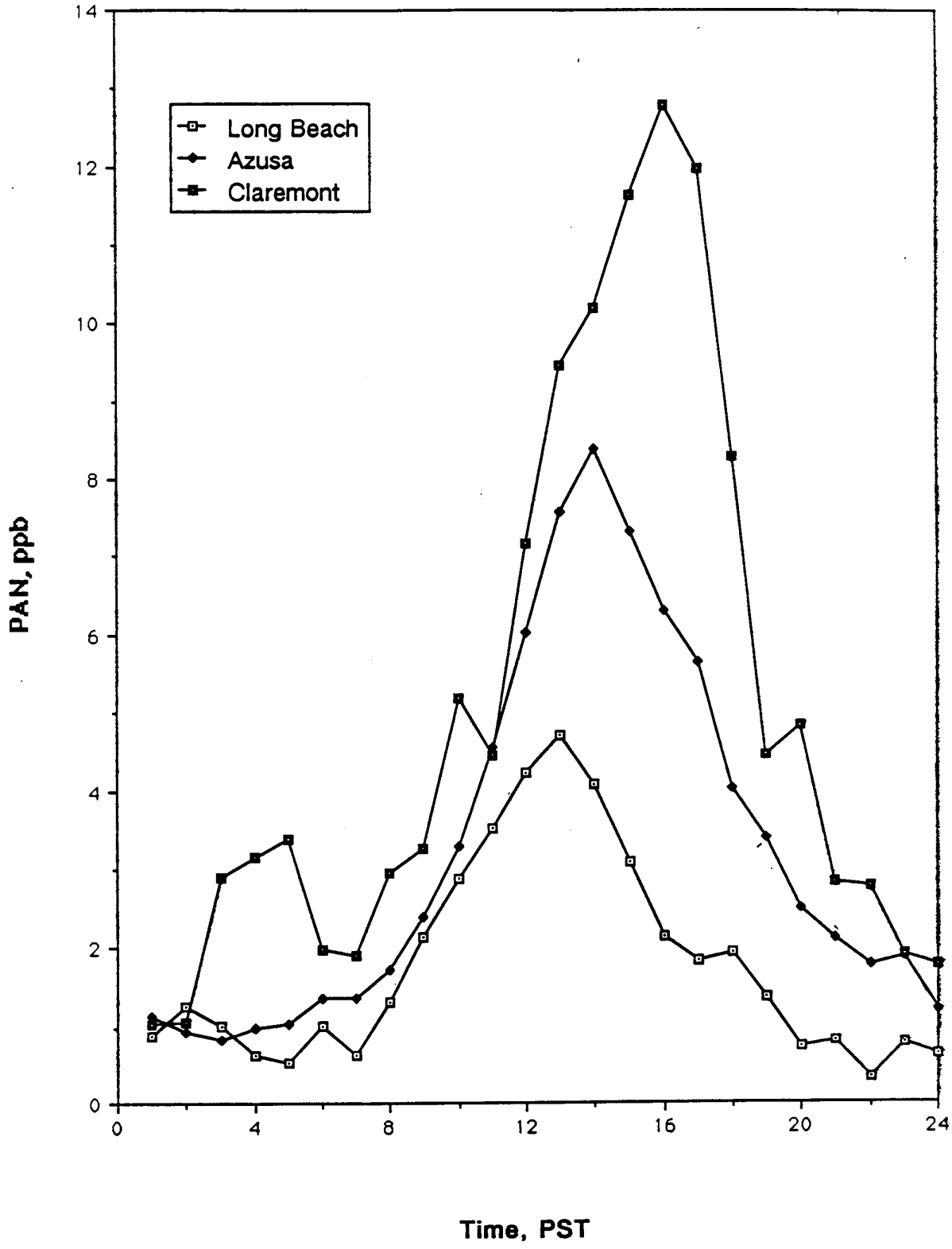

Claremont
Long Beach
Los Angeles
PAN, ppb
Time, PST
0
4
8
12
16
20
24
28
32
0
2
4
6
8
10
12
14
16
18
20
22
24

FIGURE 9

FIGURE 10


Long Beach
Azusa
Claremont
PAN, ppb
Time, PST
0
2
4
6
8
10
12
14
0
4
8
12
16
20
24

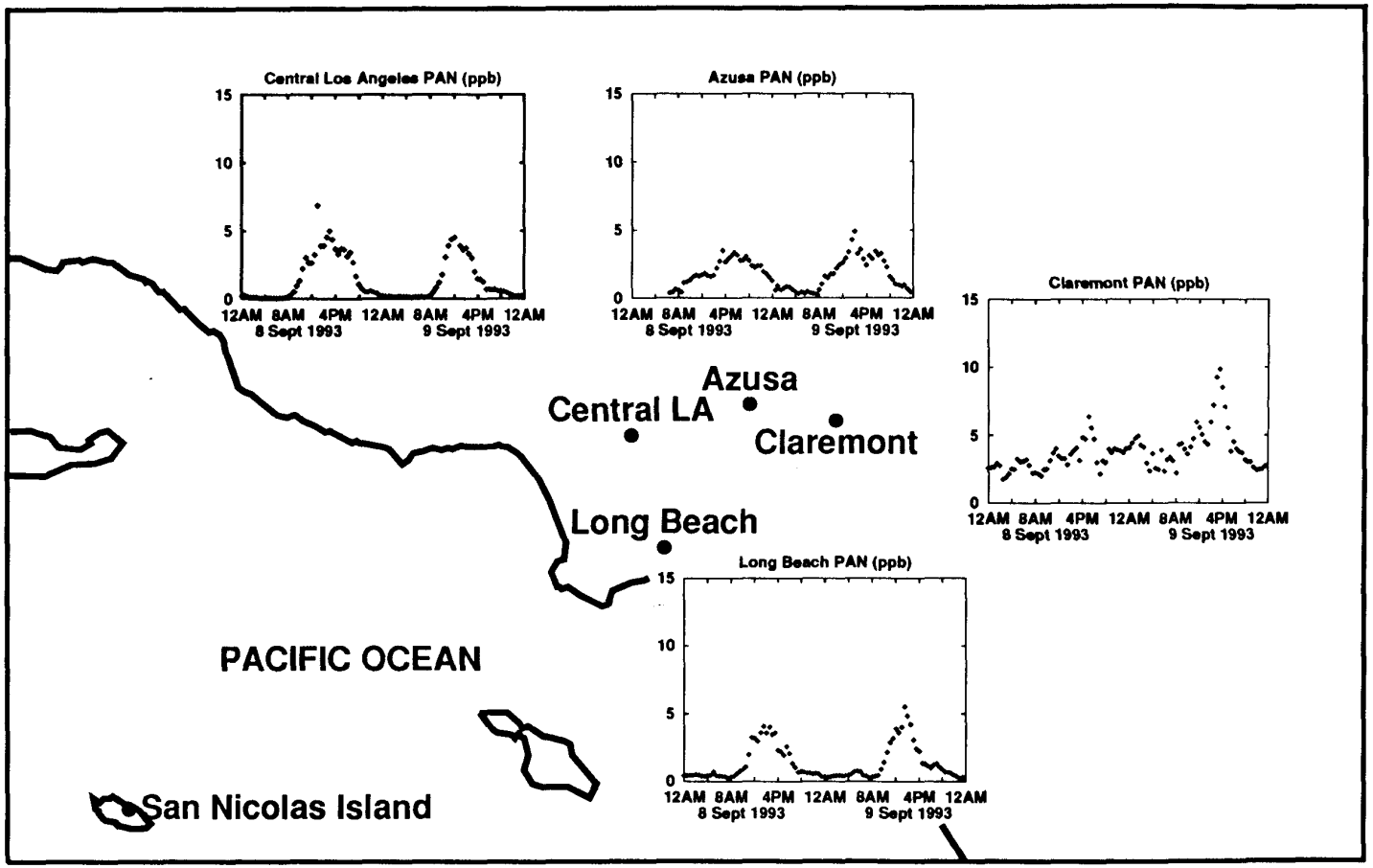

Central Los Angeles PAN (ppb)
Azusa PAN (ppb)
Claremont PAN (ppb)
Long Beach PAN (ppb)
15
10
5
0
12AM 8AM 4PM 12AM 8AM 4PM 12AM
8 Sept 1993
9 Sept 1993
Azusa
Central LA
Claremont
Long Beach
PACIFIC OCEAN
San Nicolas Island

FIGURE 11

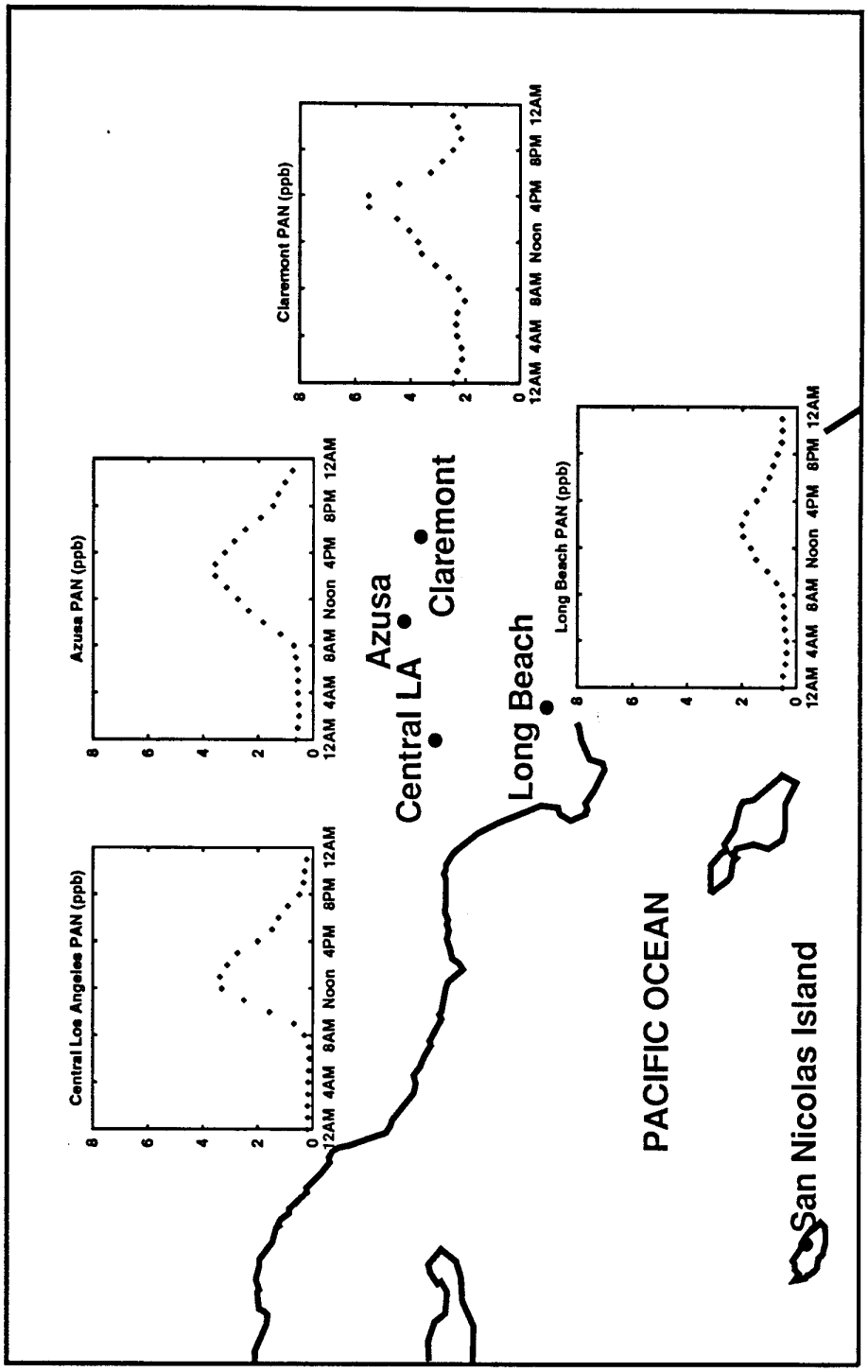

Central Los Angeles PAN (ppb)
Azusa PAN (ppb)
Claremont PAN (ppb)
Long Beach PAN (ppb)
0
2
4
6
8
12AM 4AM 8AM Noon 4PM 8PM 12AM
Central LA
Azusa
Claremont
Long Beach
PACIFIC OCEAN
San Nicolas Island

FIGURE 12

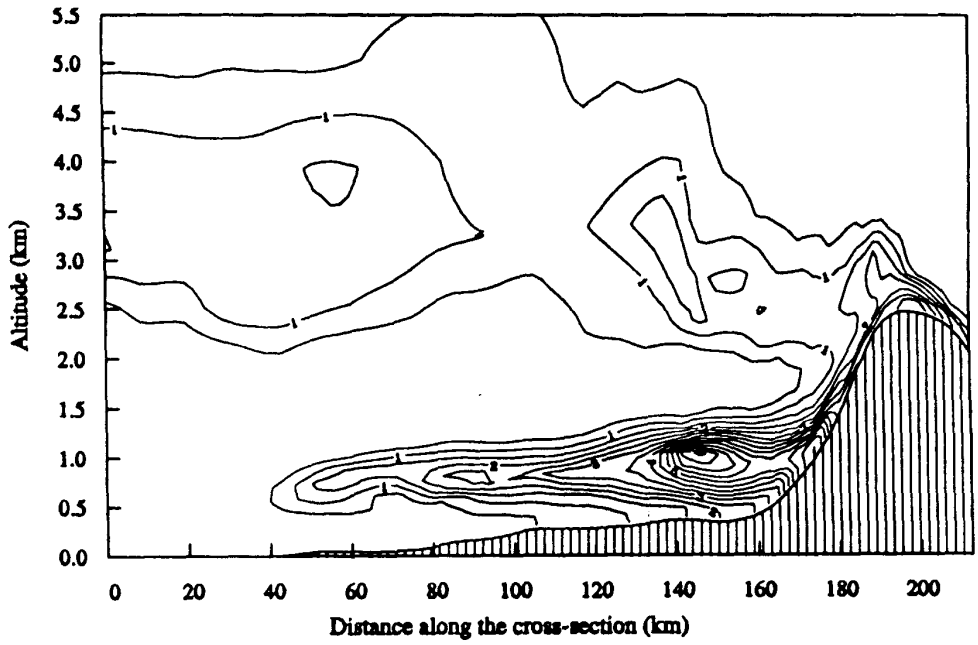

5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Altitude (km)
0
20
40
60
80
100
120
140
160
180
200
Distance along the cross-section (km)

FIGURE 13

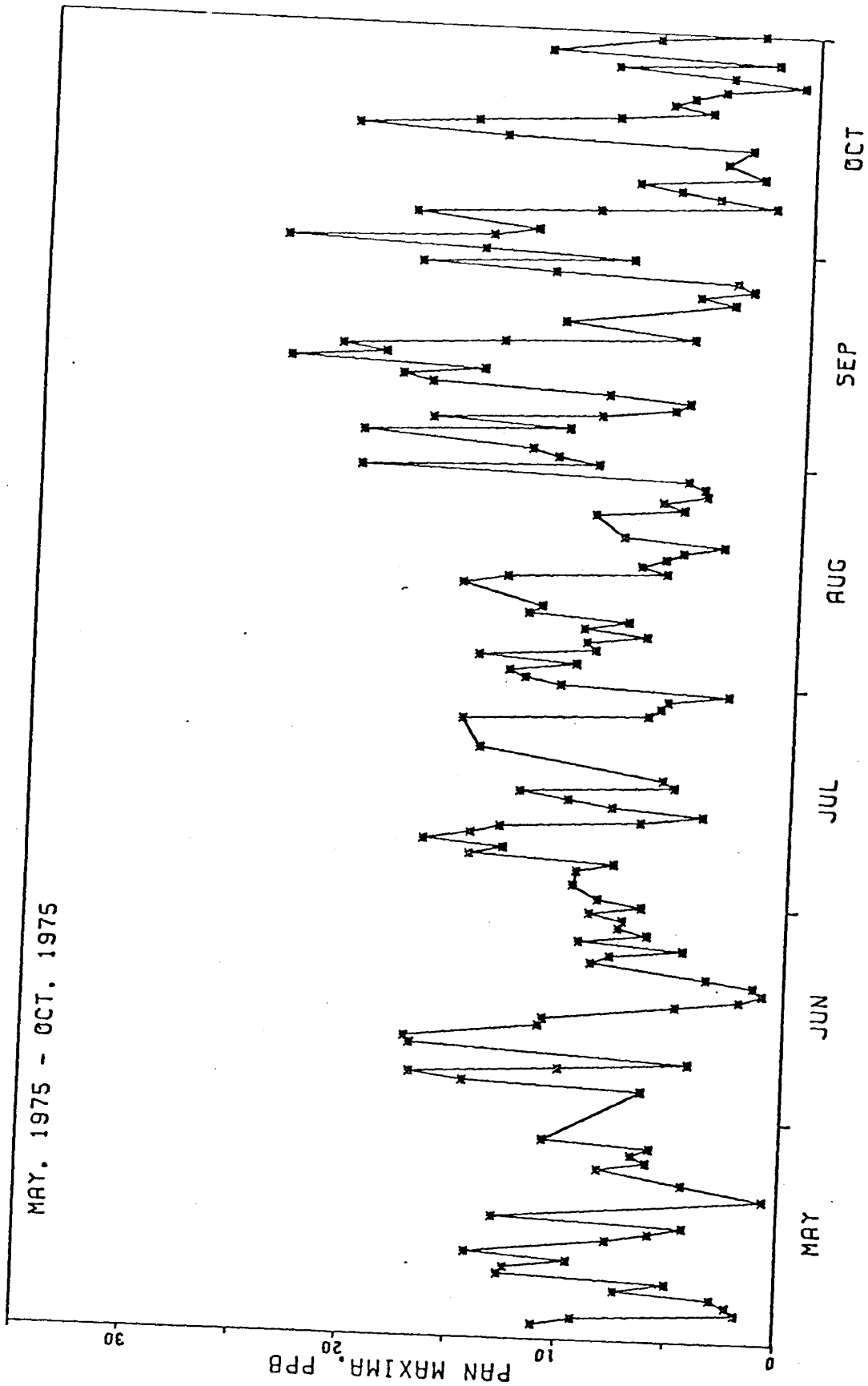

MAY. 1975 - OCT. 1975
PAN MAXIMA, PPB
0
10
20
30
MAY
JUN
JUL
AUG
SEP
OCT

FIGURE 14(a)

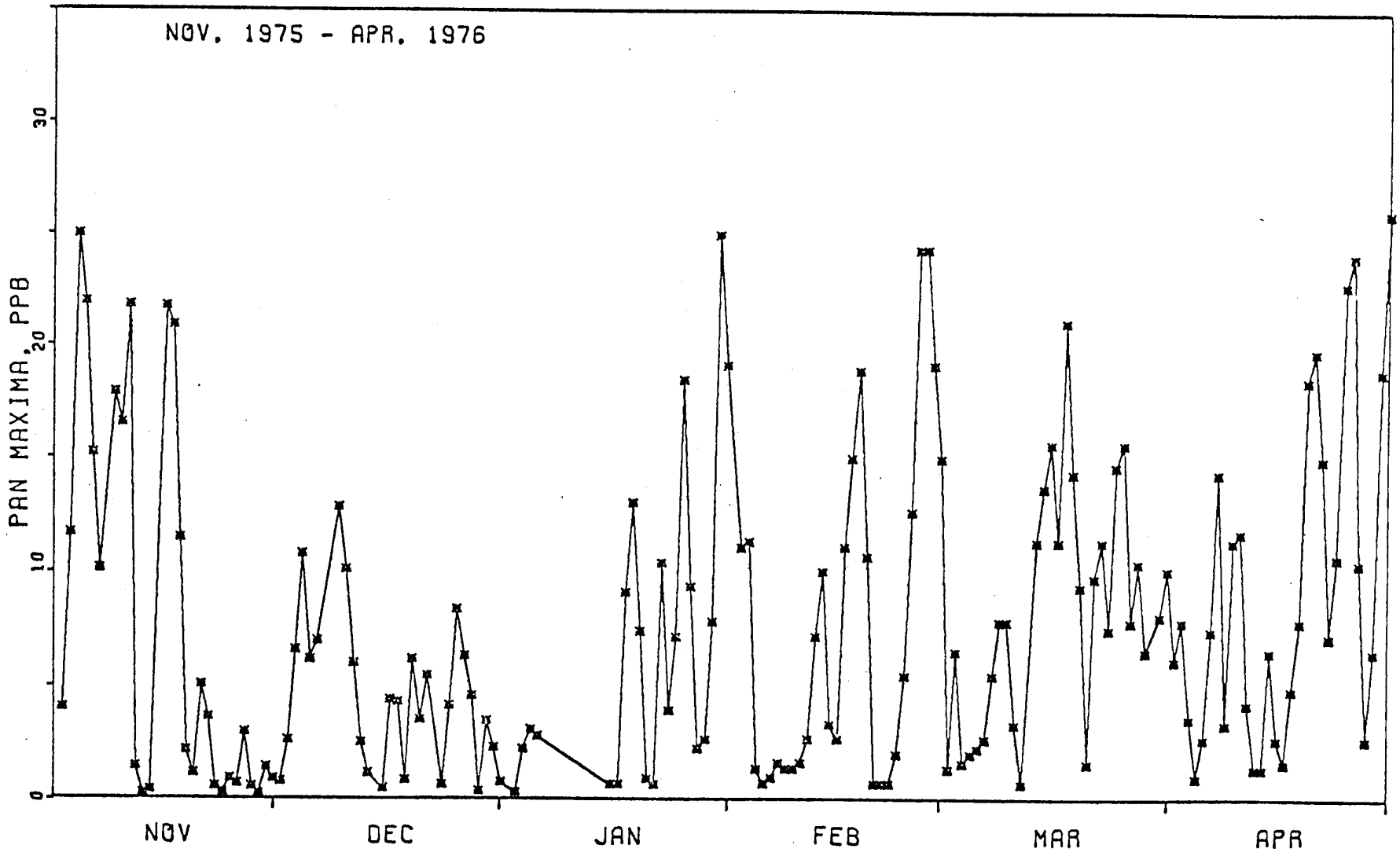

NOV. 1975 - APR. 1976
PAN MAXIMA, PPB
0
10
20
30
NOV
DEC
JAN
FEB
MAR
APR

FIGURE 14 (b)

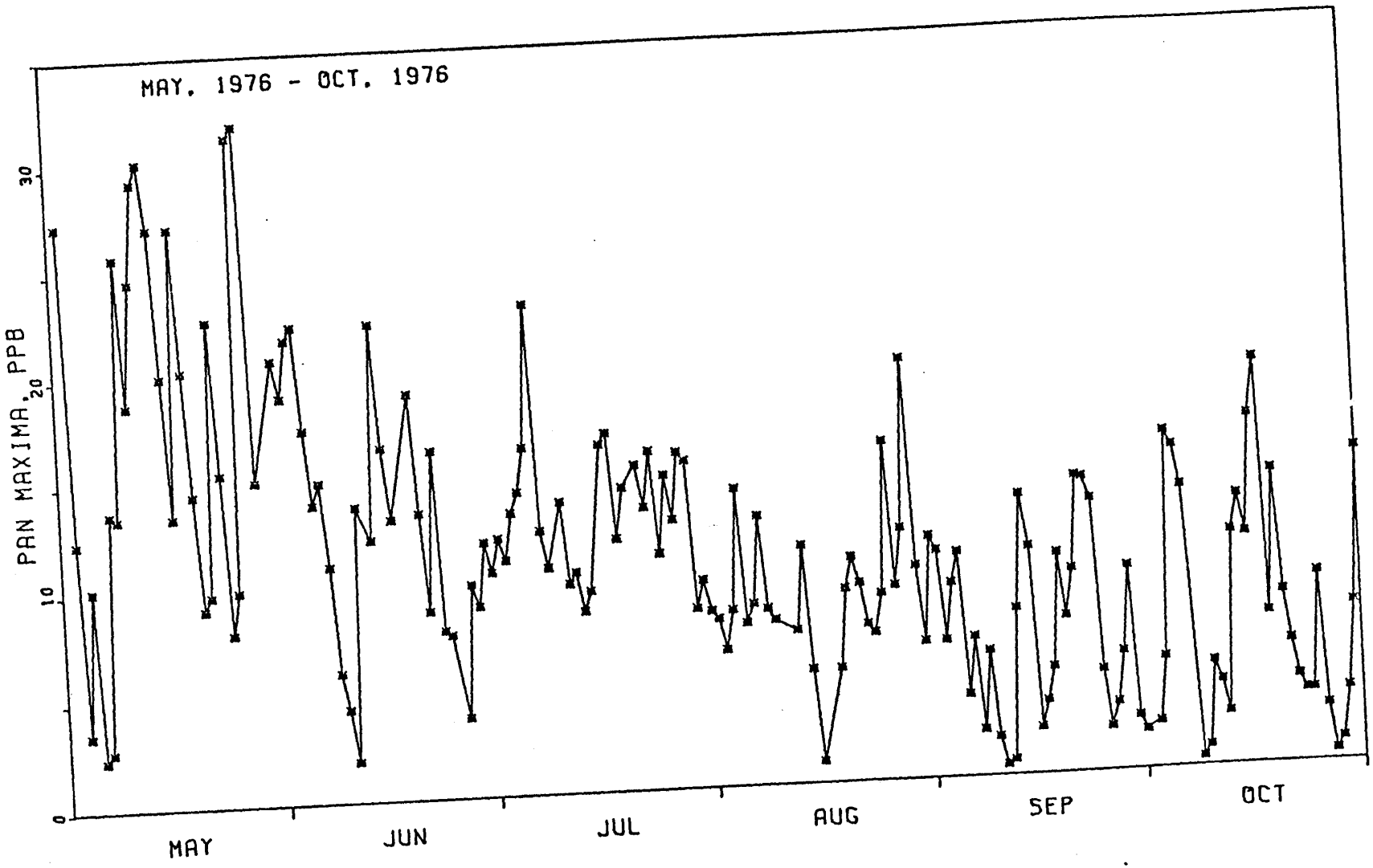

MAY. 1976 - OCT. 1976
PAN MAXIMA, PPB
0
10
20
30
MAY
JUN
JUL
AUG
SEP
OCT

FIGURE 14(c)

FIGURE 15

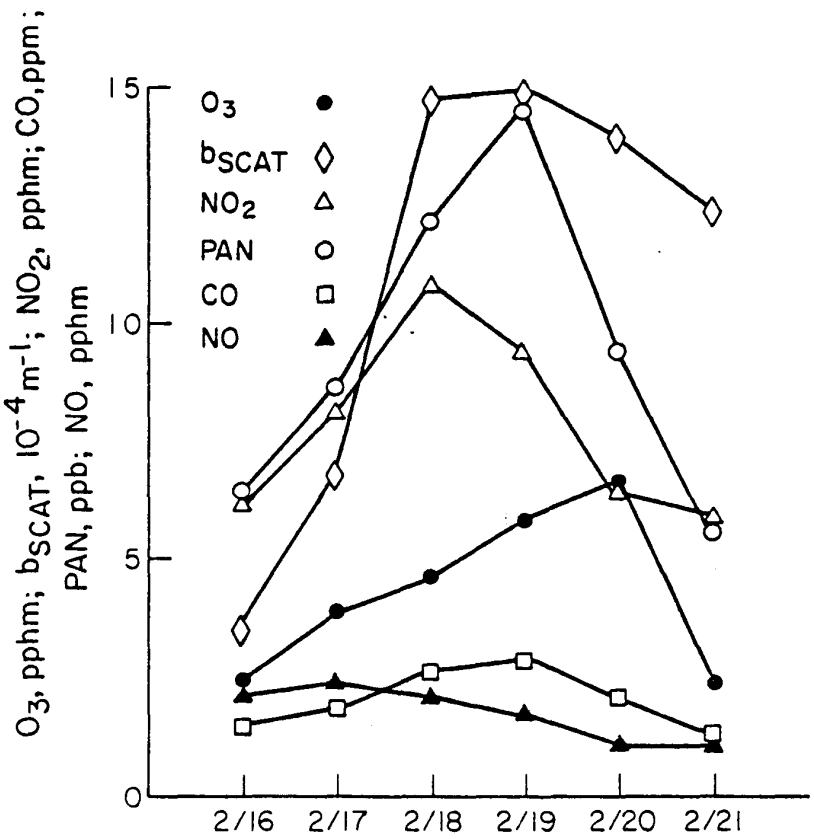
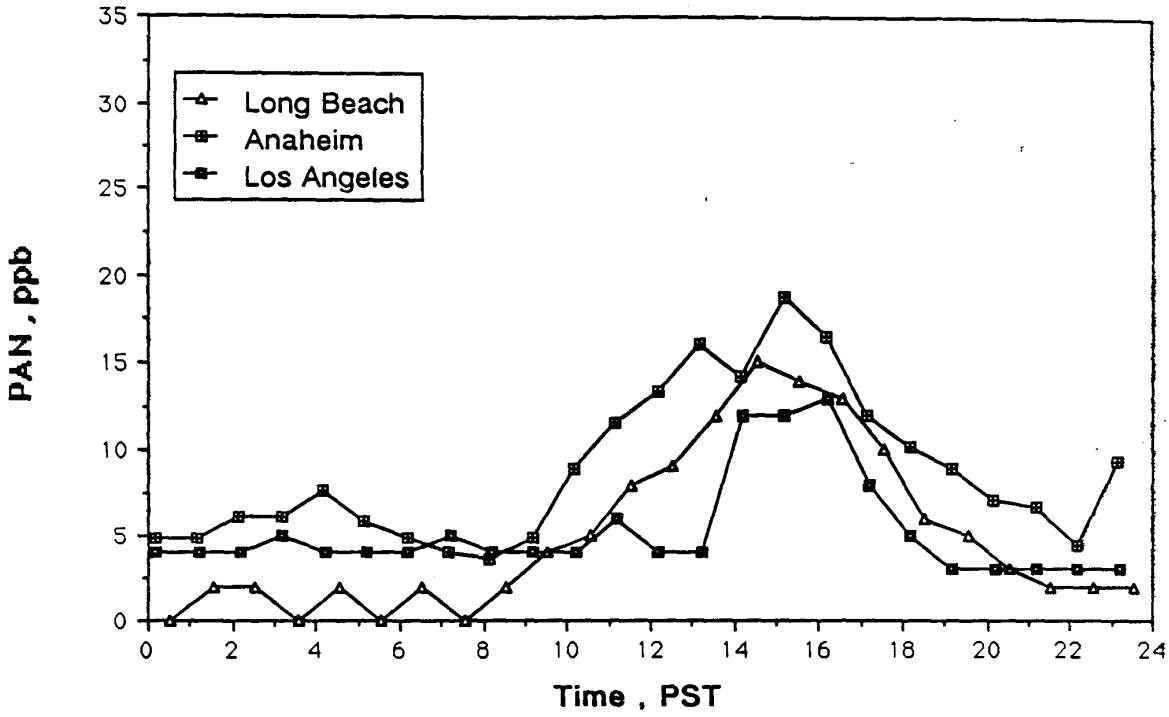

O_3, pphm; b_{SCAT}, $10^{-4}m^{-1}$; NO_2, pphm; CO, ppm; PAN, ppb; NO, pphm
15
10
5
0
O_3
b_{SCAT}
NO_2
PAN
CO
NO
2/16
2/17
2/18
2/19
2/20
2/21

FIGURE 16


Long Beach
Anaheim
Los Angeles
PAN , ppb
Time , PST
0
5
10
15
20
25
30
35
0
2
4
6
8
10
12
14
16
18
20
22
24

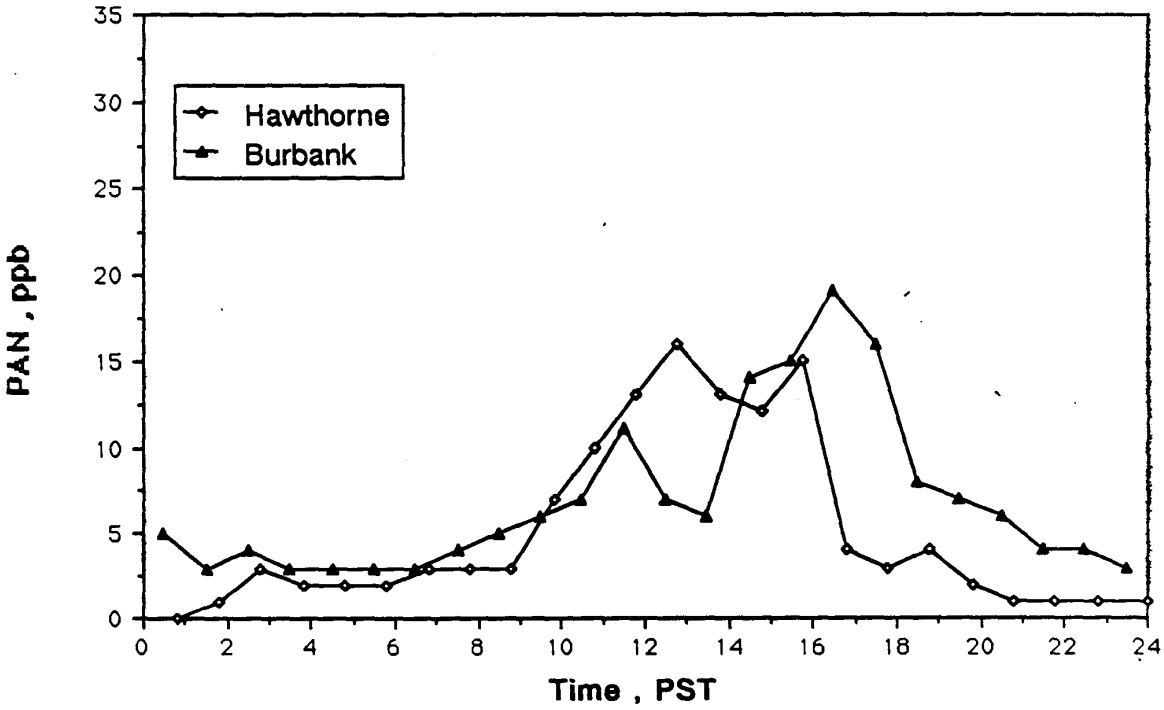

Hawthorne
Burbank
PAN , ppb
Time , PST
0
5
10
15
20
25
30
35
0
2
4
6
8
10
12
14
16
18
20
22
24

FIGURE 17

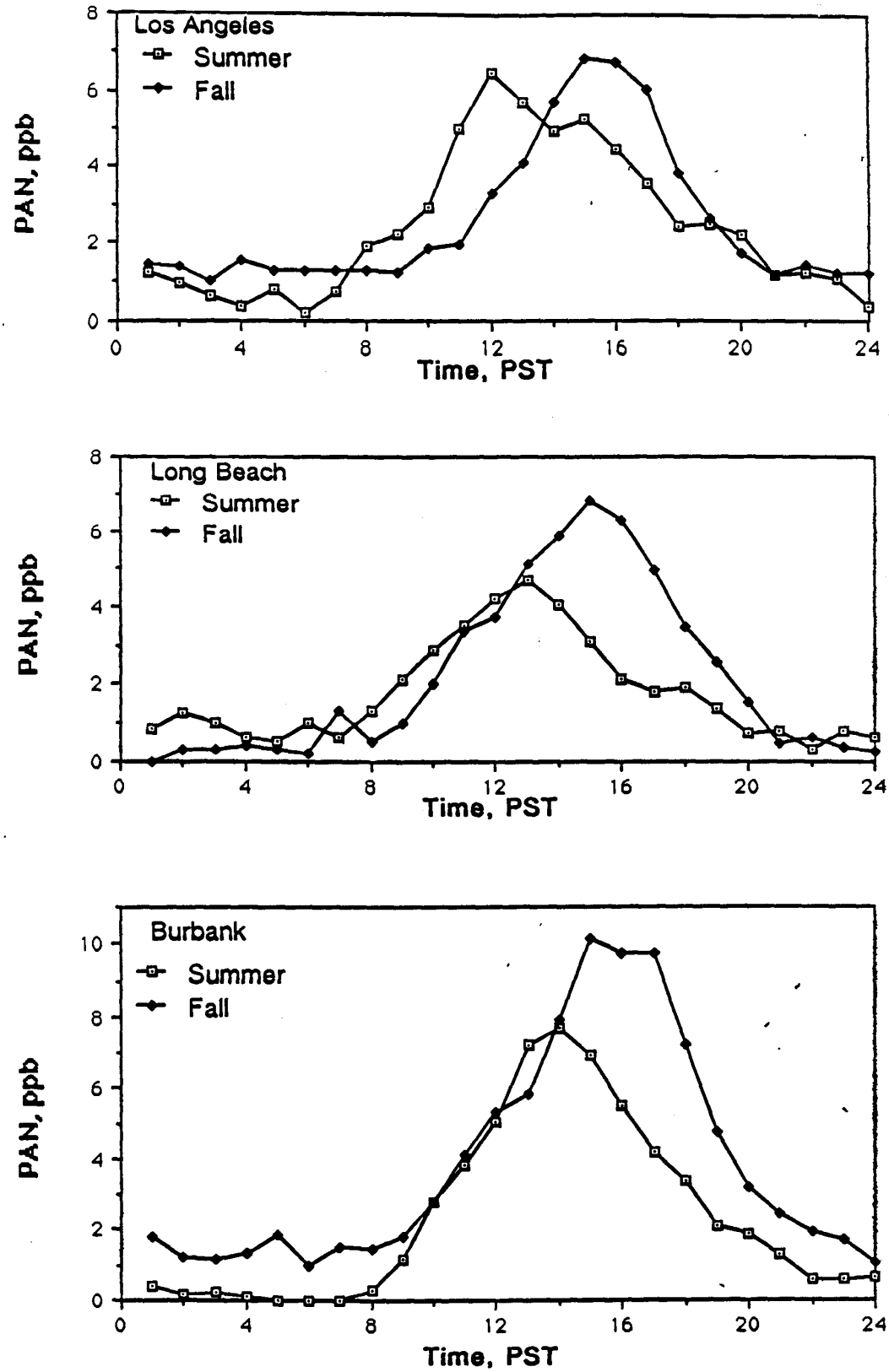
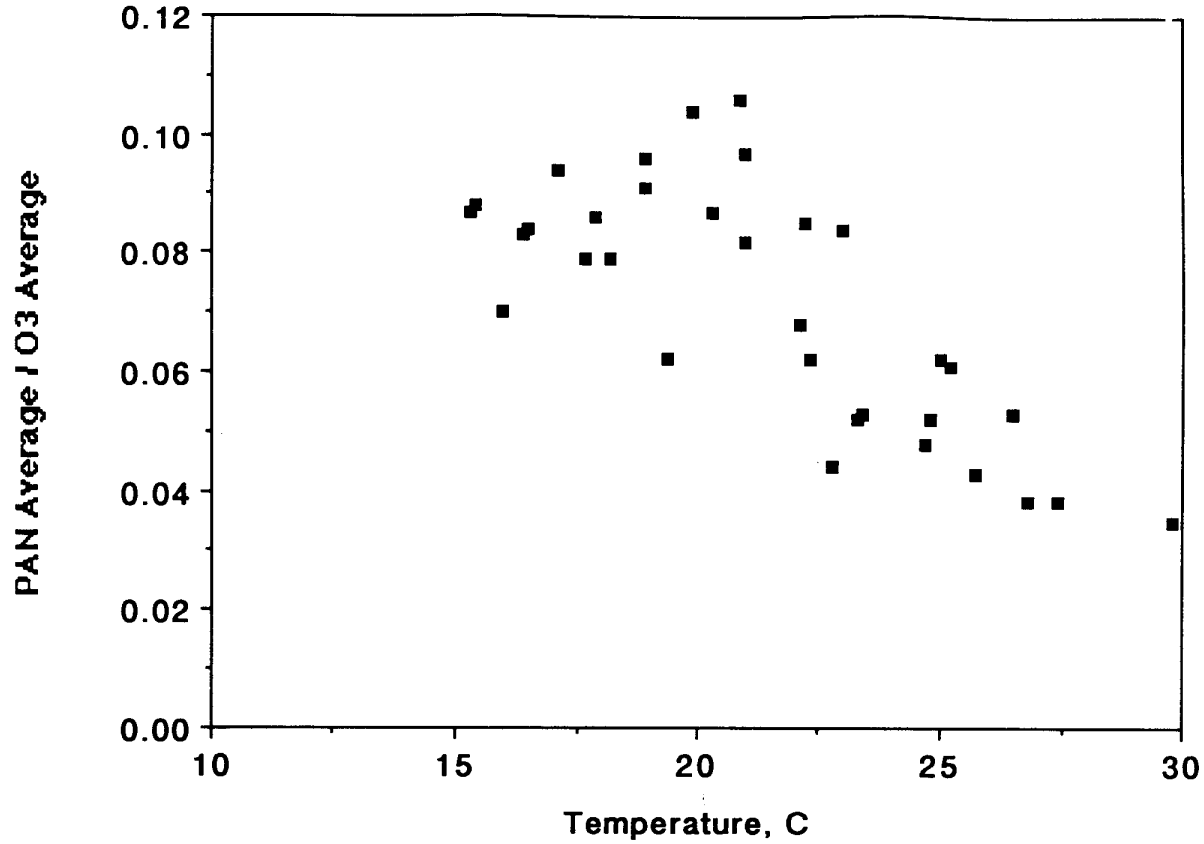
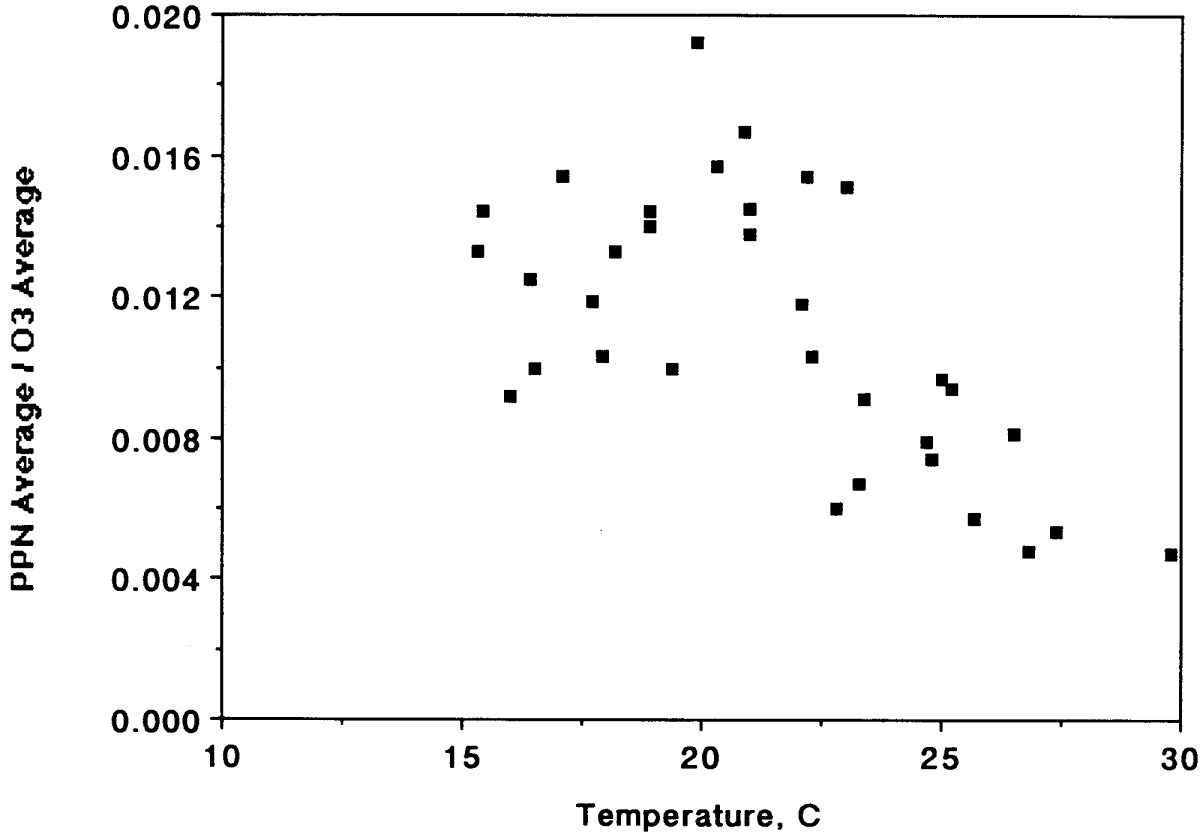

Los Angeles
Summer
Fall
PAN, ppb
Time, PST
Long Beach
Summer
Fall
PAN, ppb
Time, PST
Burbank
Summer
Fall
PAN, ppb
Time, PST

FIGURE 18


0.12
0.10
0.08
0.06
0.04
0.02
0.00
PAN Average / O3 Average
10
15
20
25
30
Temperature, C


0.020
0.016
0.012
0.008
0.004
0.000
PPN Average / O3 Average
10
15
20
25
30
Temperature, C

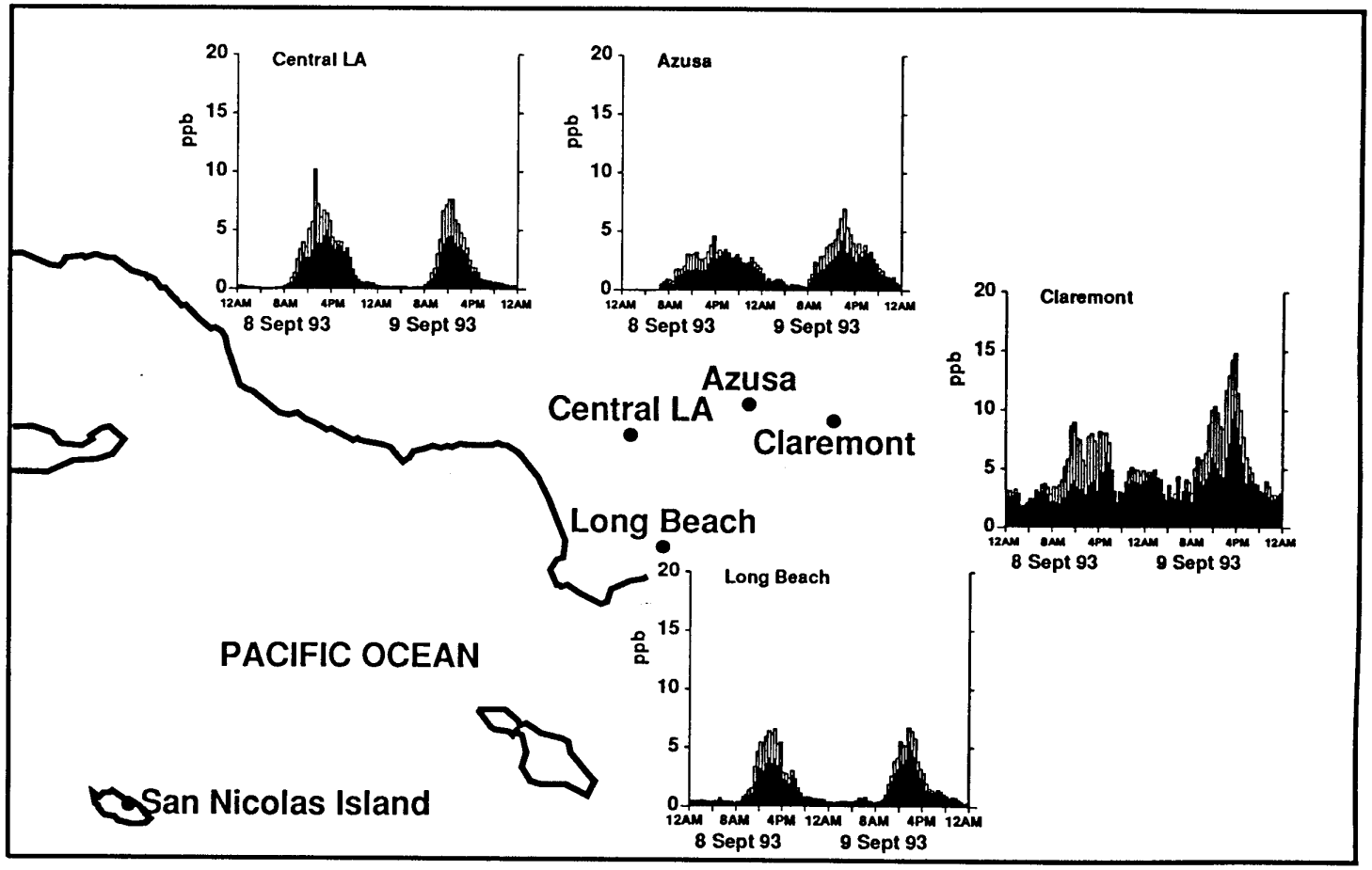

Central LA
Azusa
Claremont
Long Beach
ppb
20
15
10
5
0
12AM 8AM 4PM 12AM 8AM 4PM 12AM
8 Sept 93
9 Sept 93
Azusa
Central LA
Claremont
Long Beach
PACIFIC OCEAN
San Nicolas Island

FIGURE 19 a)

FIGURE 19(b)

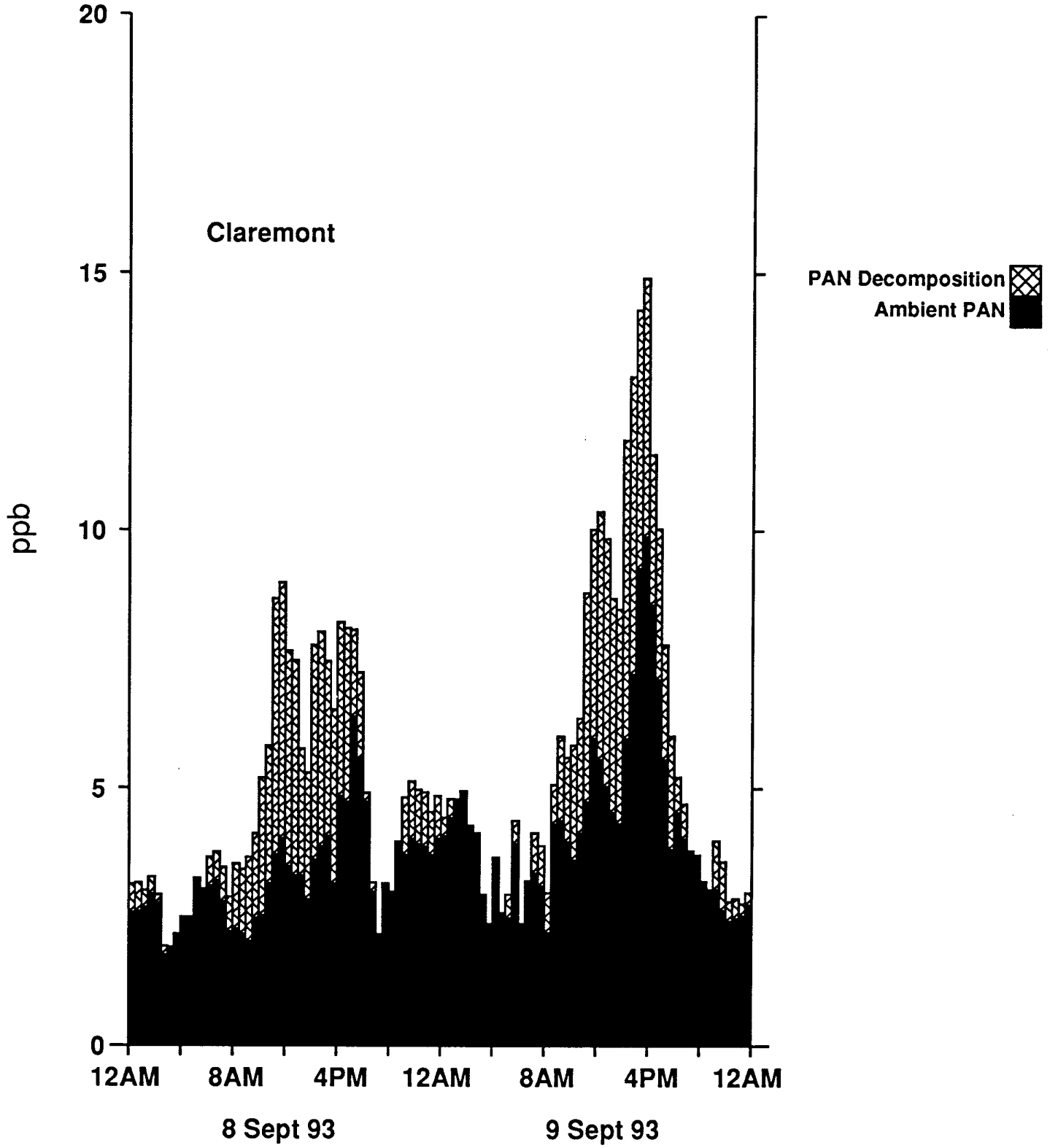

Claremont
PAN Decomposition
Ambient PAN
ppb
20
15
10
5
0
12AM
8AM
4PM
12AM
8AM
4PM
12AM
8 Sept 93
9 Sept 93

FIGURE 19(c)

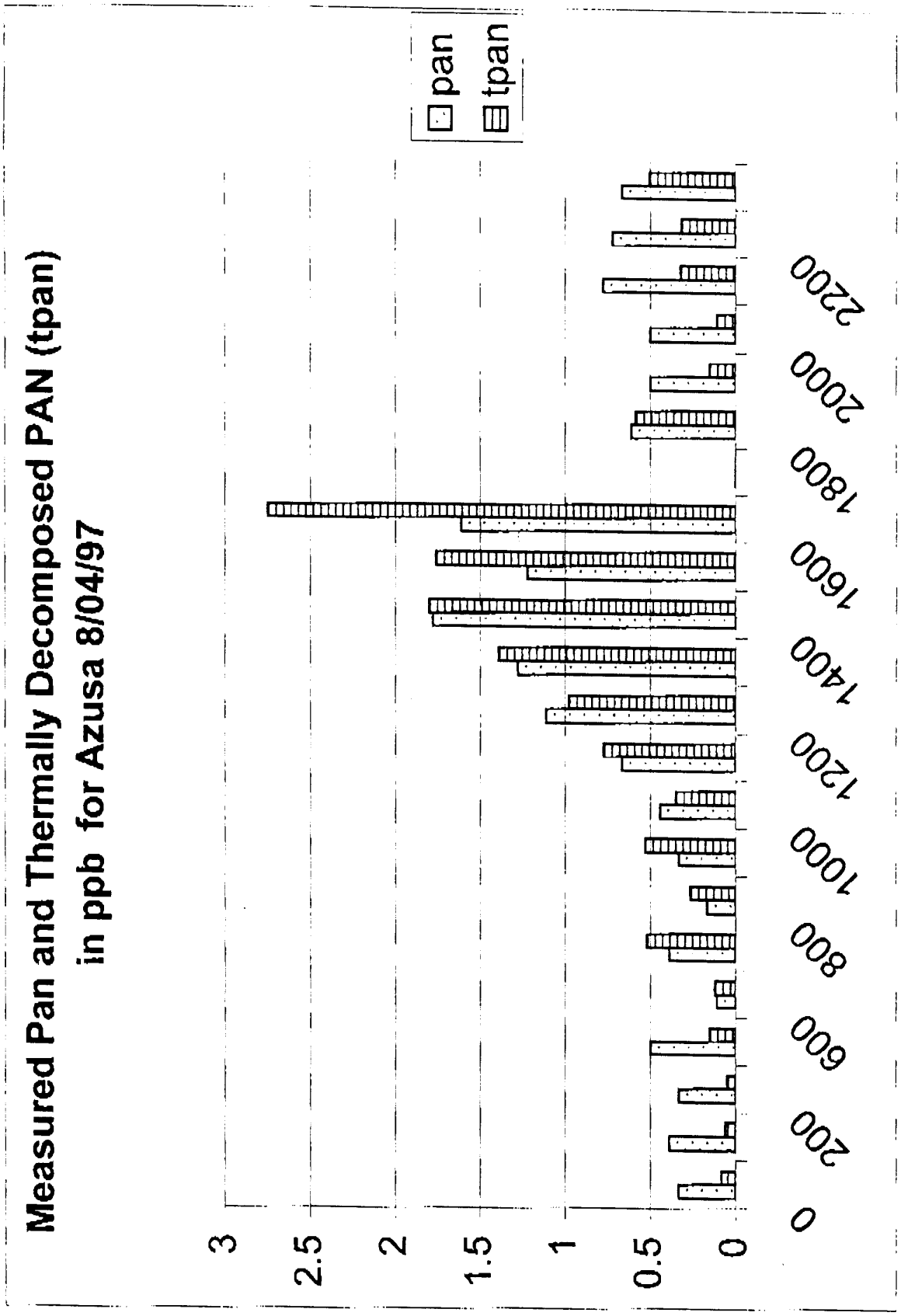

Measured Pan and Thermally Decomposed PAN (tpan)
in ppb for Azusa 8/04/97
pan
tpan
3
2.5
2
1.5
1
0.5
0
0
200
600
800
1000
1200
1400
1600
1800
2000
2200

FIGURE 19(d)

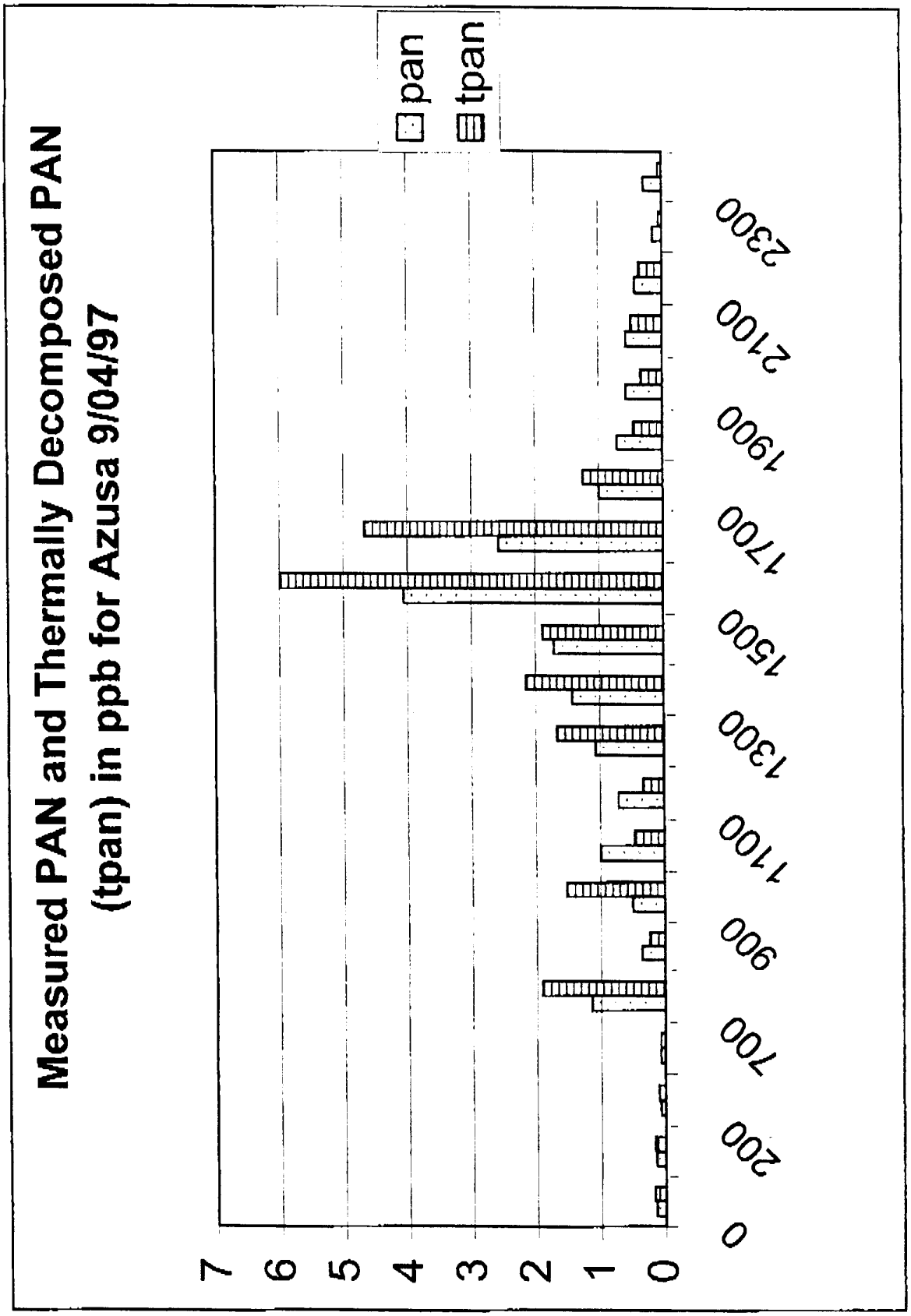

Measured PAN and Thermally Decomposed PAN
(tpan) in ppb for Azusa 9/04/97
pan
tpan
0
1
2
3
4
5
6
7
0
200
700
900
1100
1300
1500
1700
1900
2100
2300

FIGURE 19(e)

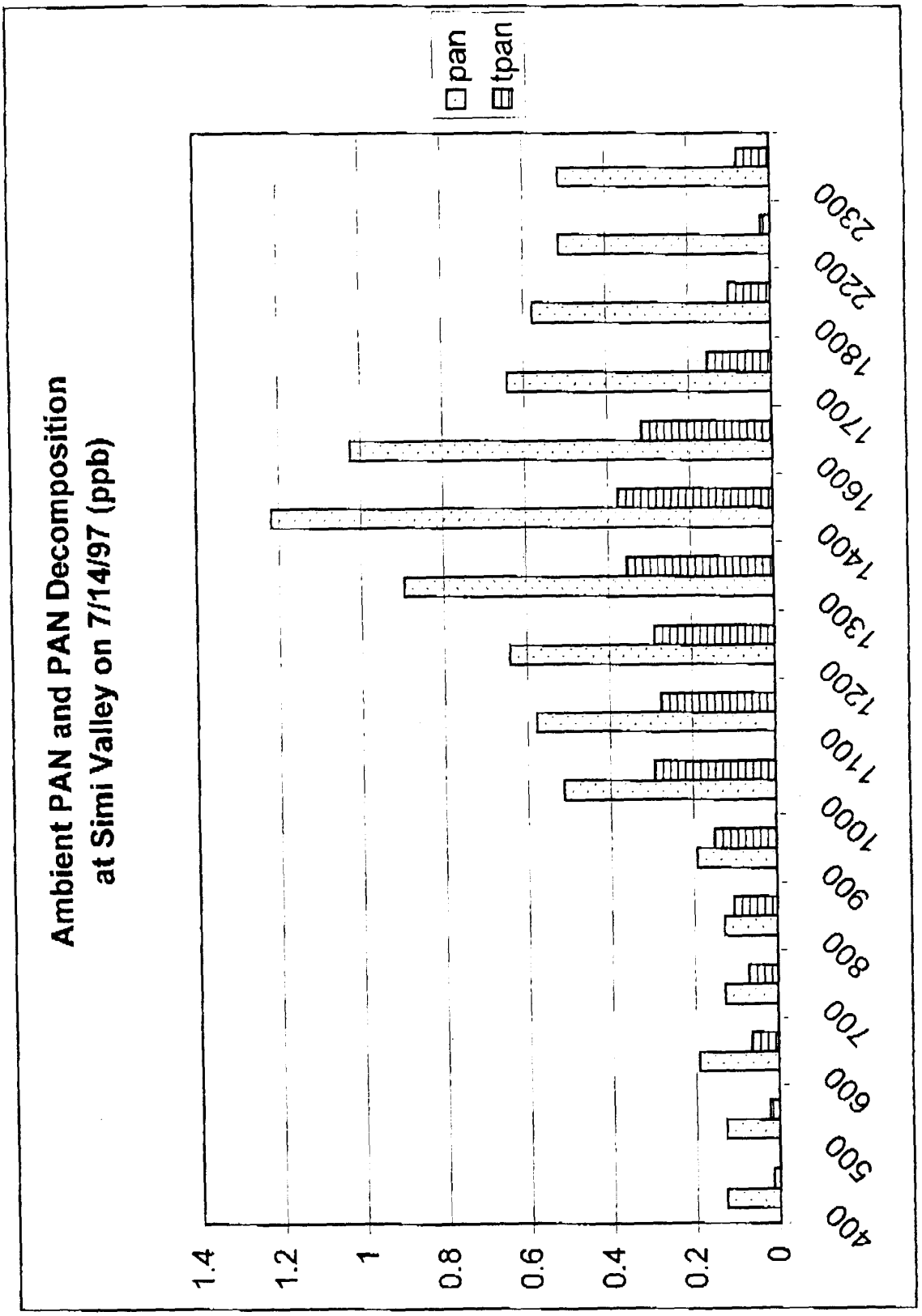

Ambient PAN and PAN Decomposition
at Simi Valley on 7/14/97 (ppb)
pan
tpan
1.4
1.2
1
0.8
0.6
0.4
0.2
0
400
500
600
700
800
900
1000
1100
1200
1300
1400
1600
1700
1800
2200
2300

FIGURE 19 (f)

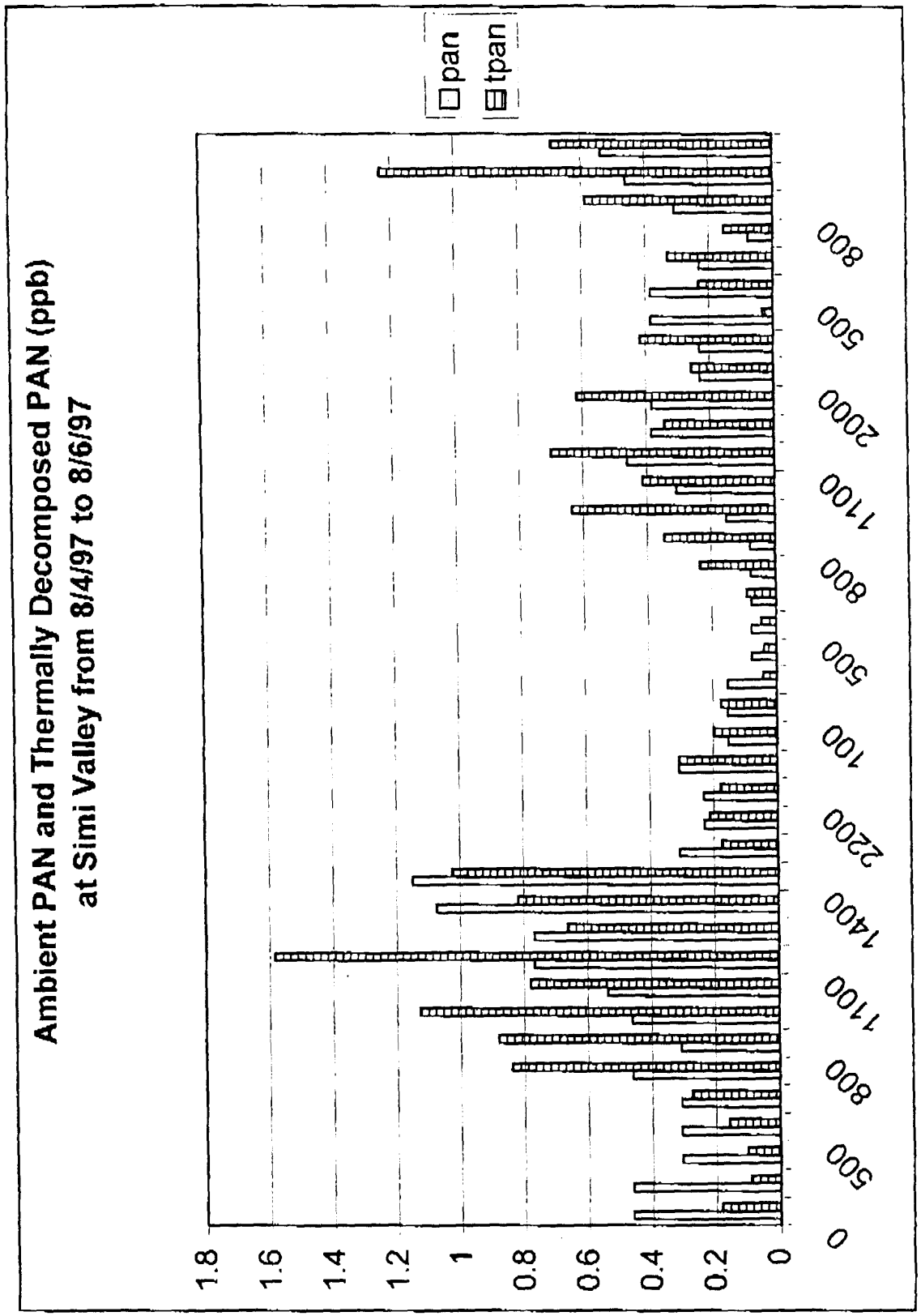

Ambient PAN and Thermally Decomposed PAN (ppb)
at Simi Valley from 8/4/97 to 8/6/97
pan
tpan
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0
500
800
1100
1400
2200
100
500
800
1100
2000
500
800

FIGURE 20

TO BE UPDATED

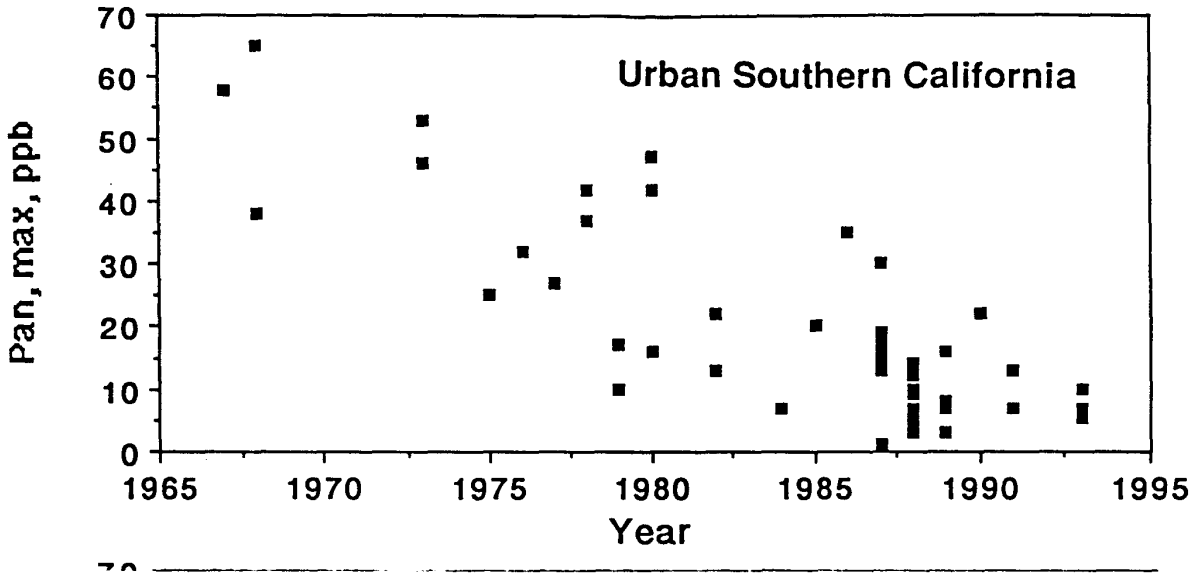


FIGURE 21

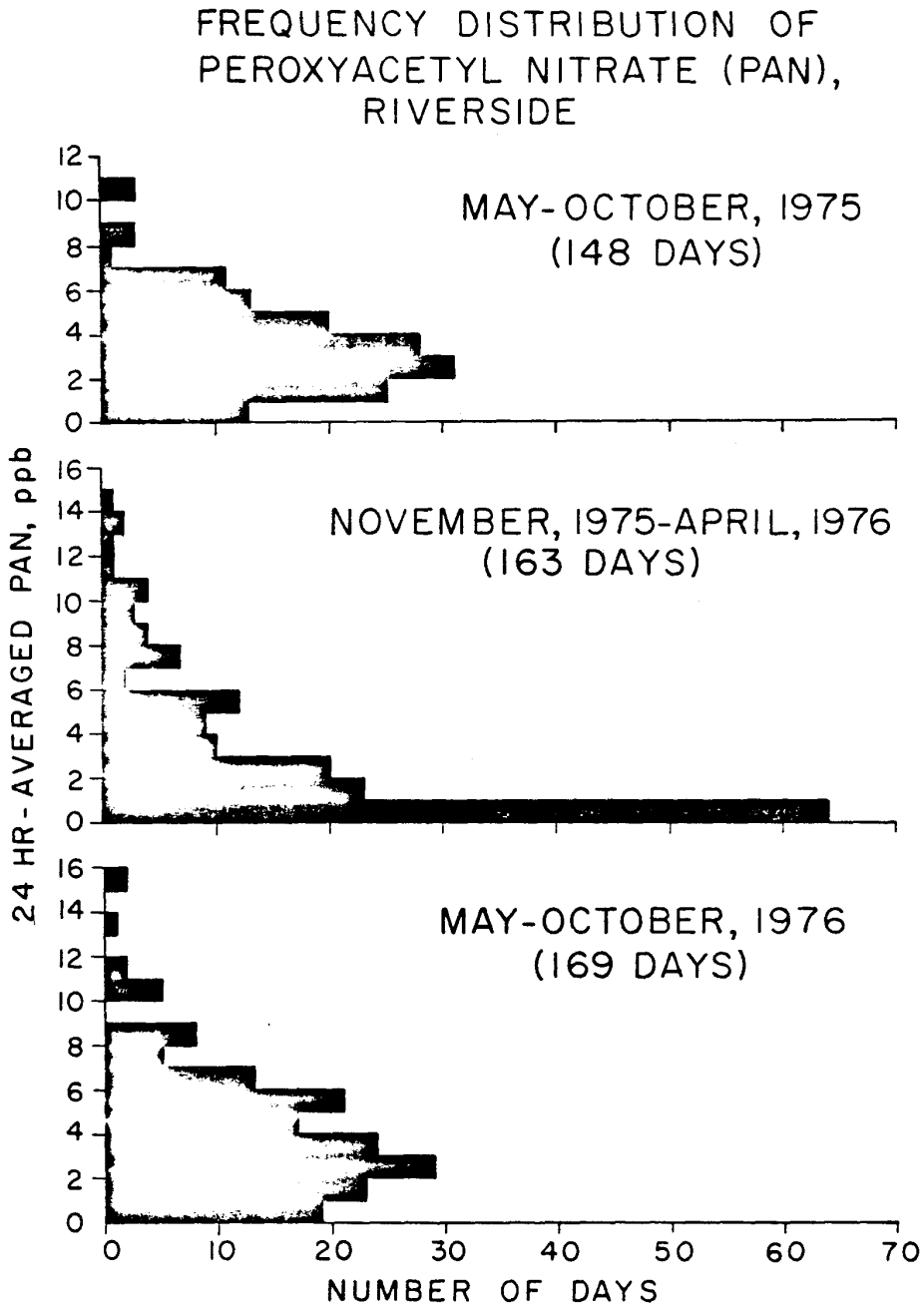
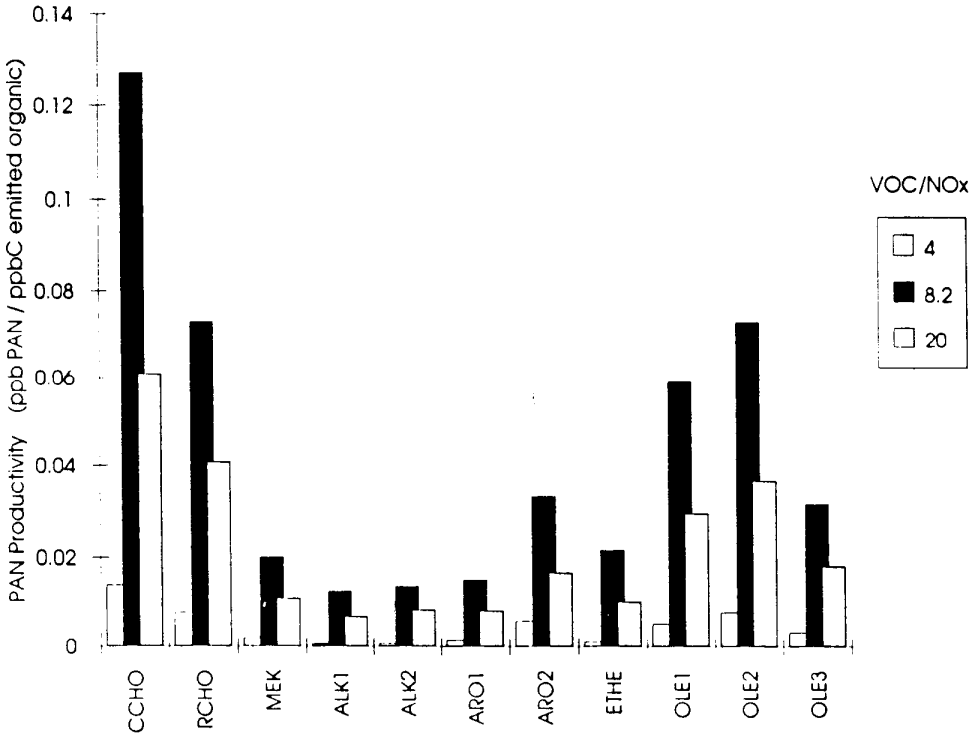
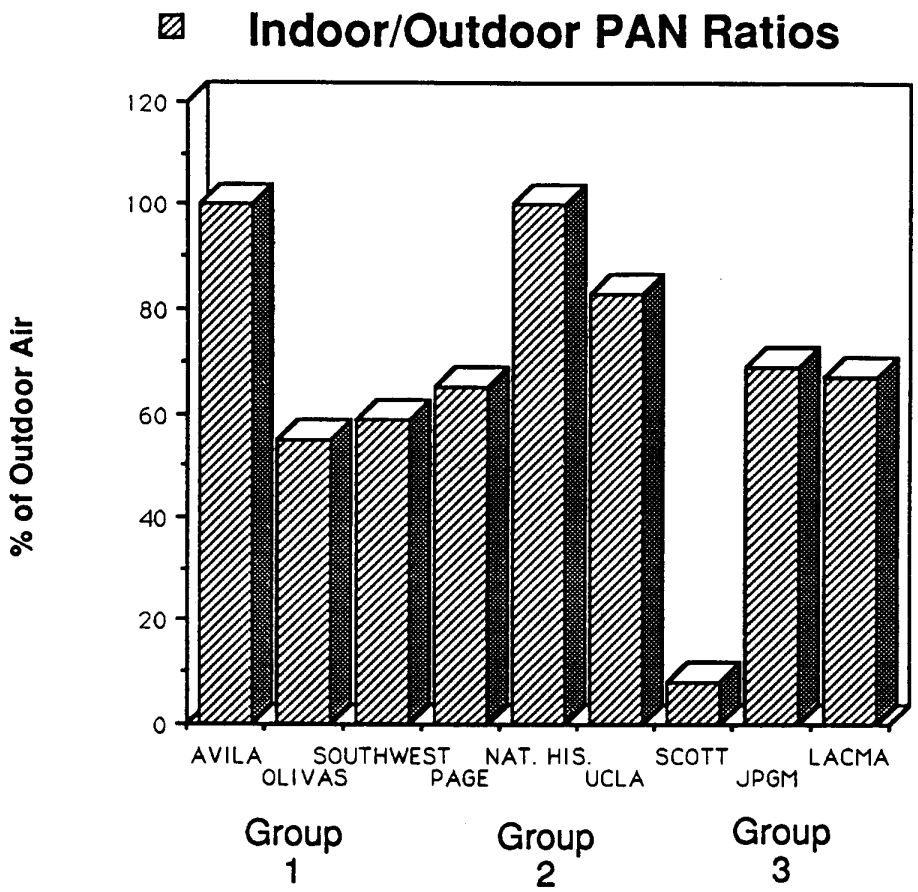

FREQUENCY DISTRIBUTION OF
PEROXYACETYL NITRATE (PAN),
RIVERSIDE
MAY-OCTOBER, 1975
(148 DAYS)
NOVEMBER, 1975-APRIL, 1976
(163 DAYS)
MAY-OCTOBER, 1976
(169 DAYS)
24 HR-AVERAGED PAN, ppb
NUMBER OF DAYS
0
10
20
30
40
50
60
70

FIGURE 22


PAN Productivity (ppb PAN / ppbC emitted organic)
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
CCHO
RCHO
MEK
ALK1
ALK2
ARO1
ARO2
ETHE
OLE1
OLE2
OLE3
VOC/NOx
4
8.2
20

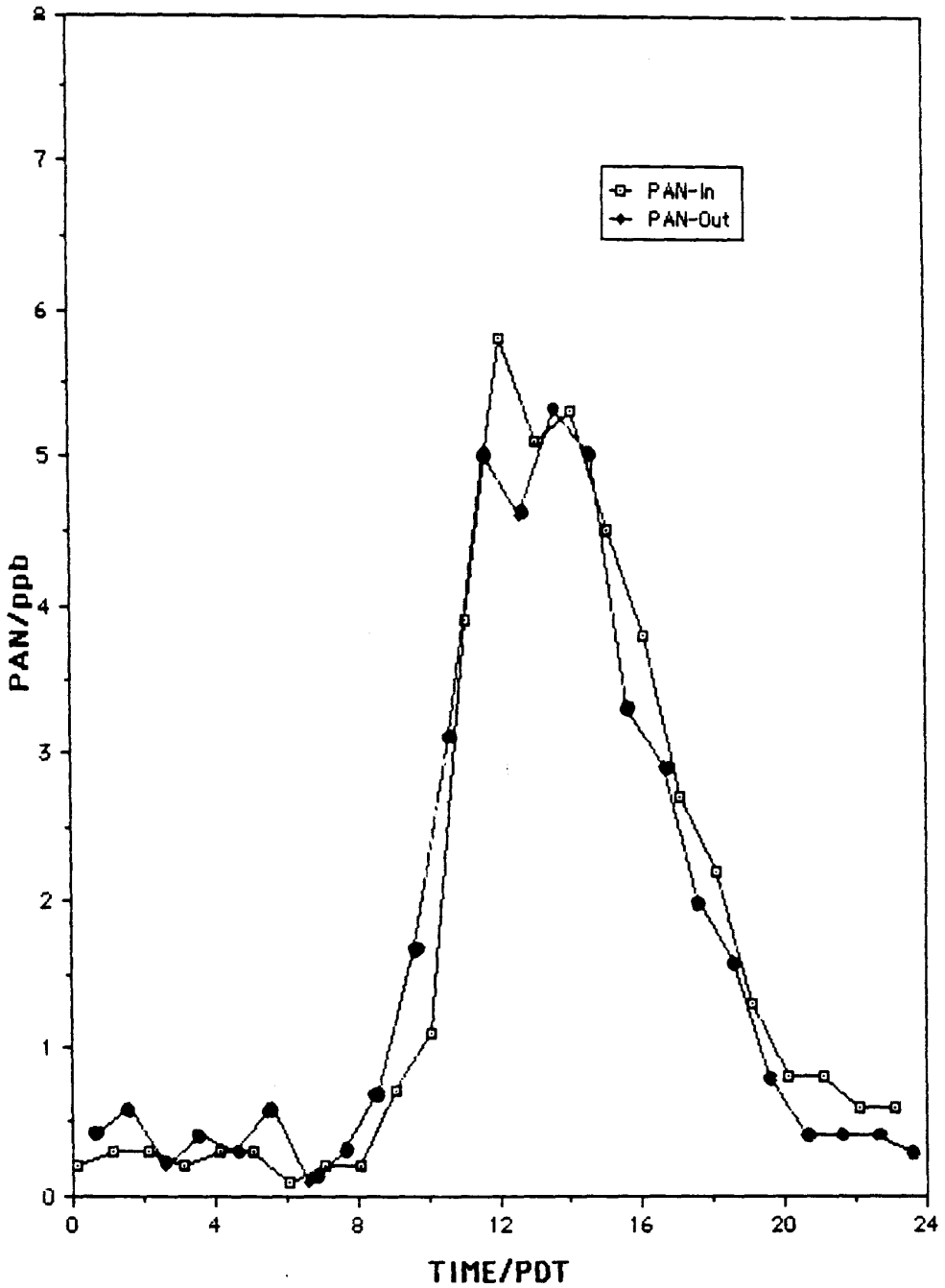


GROUP 1 : No Air Conditioning; High I/O Air Exchanges

GROUP 2 : Air Conditioning; Intermediate I/O Air Exchanges

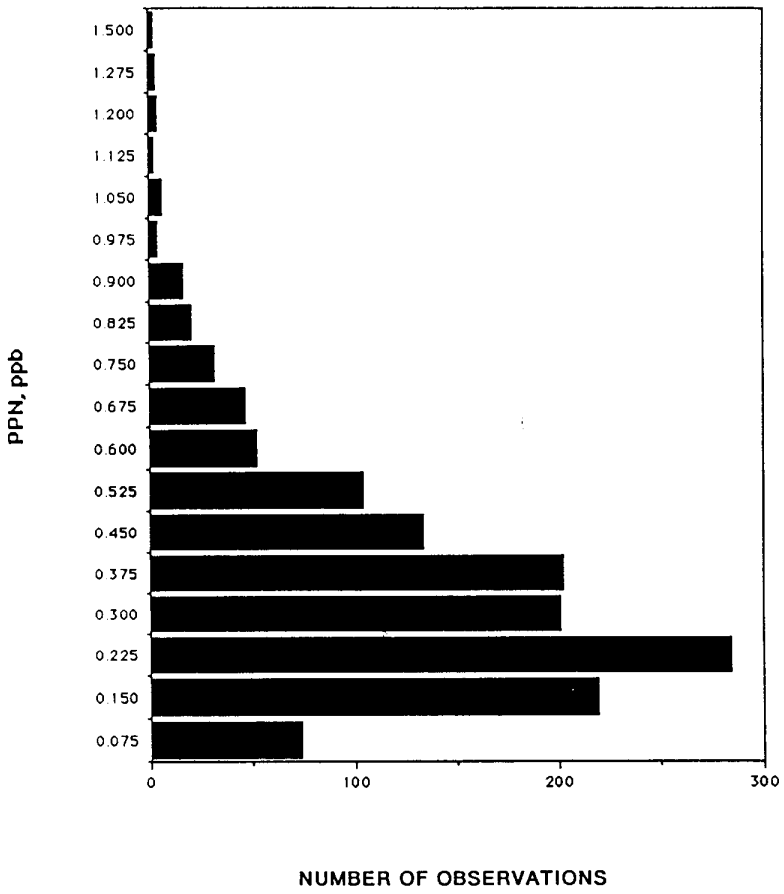
GROUP 3 : Air Conditioning; With Chemical Filtration

FIGURE 24



Composite (two weeks) diurnal profiles for indoor and outdoor PAN

FIGURE 25


1.500
1.275
1.200
1.125
1.050
0.975
0.900
0.825
0.750
0.675
0.600
0.525
0.450
0.375
0.300
0.225
0.150
0.075
PPN, ppb
0
100
200
300
NUMBER OF OBSERVATIONS

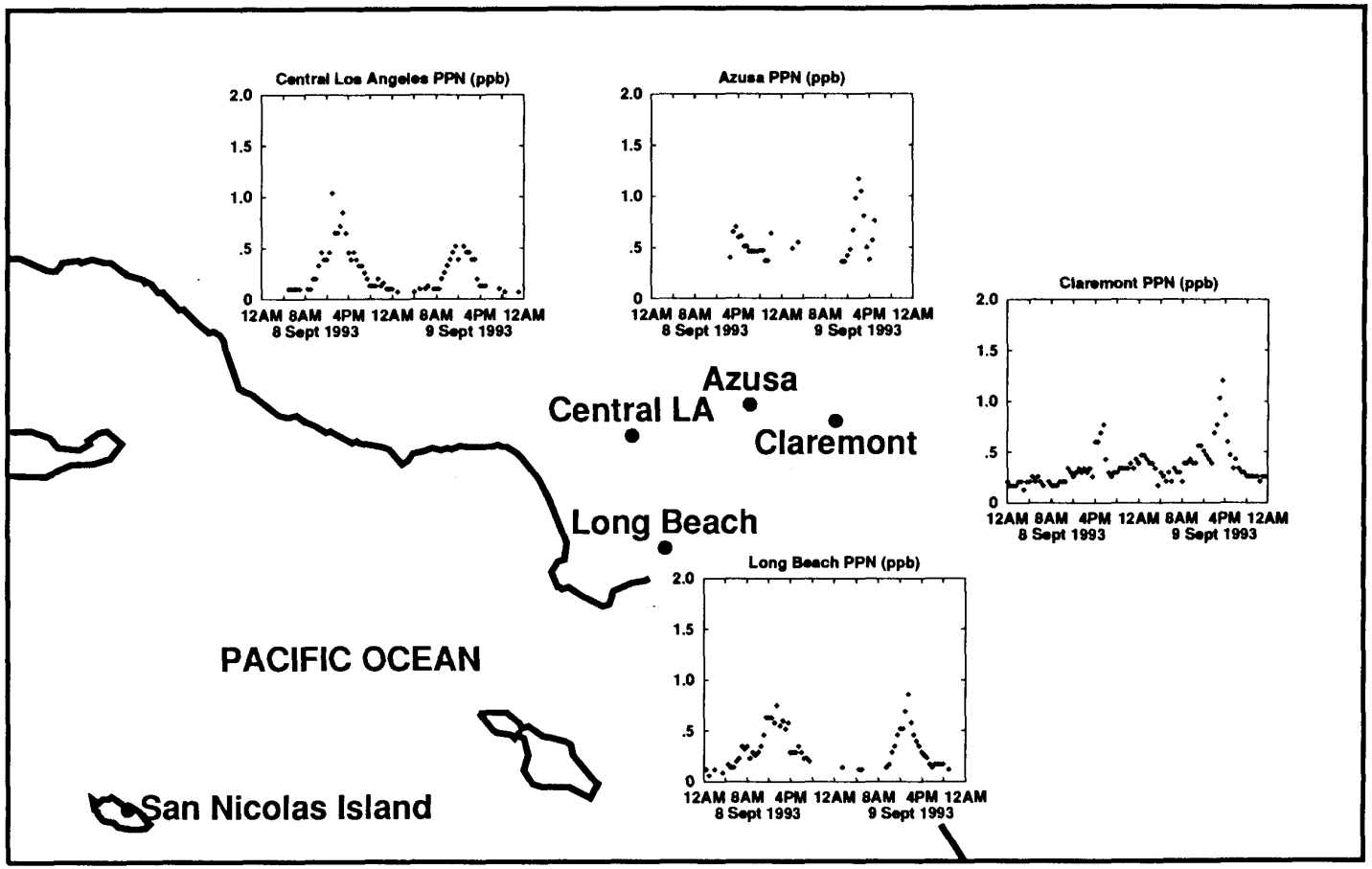

Central Los Angeles PPN (ppb)
2.0
1.5
1.0
.5
0
12AM 8AM 4PM 12AM 8AM 4PM 12AM
8 Sept 1993
9 Sept 1993
Azusa PPN (ppb)
2.0
1.5
1.0
.5
0
12AM 8AM 4PM 12AM 8AM 4PM 12AM
8 Sept 1993
9 Sept 1993
Claremont PPN (ppb)
2.0
1.5
1.0
.5
0
12AM 8AM 4PM 12AM 8AM 4PM 12AM
8 Sept 1993
9 Sept 1993
Azusa
Central LA
Claremont
Long Beach
Long Beach PPN (ppb)
2.0
1.5
1.0
.5
0
12AM 8AM 4PM 12AM 8AM 4PM 12AM
8 Sept 1993
9 Sept 1993
PACIFIC OCEAN
San Nicolas Island

FIGURE 26

FIGURE 27(a)

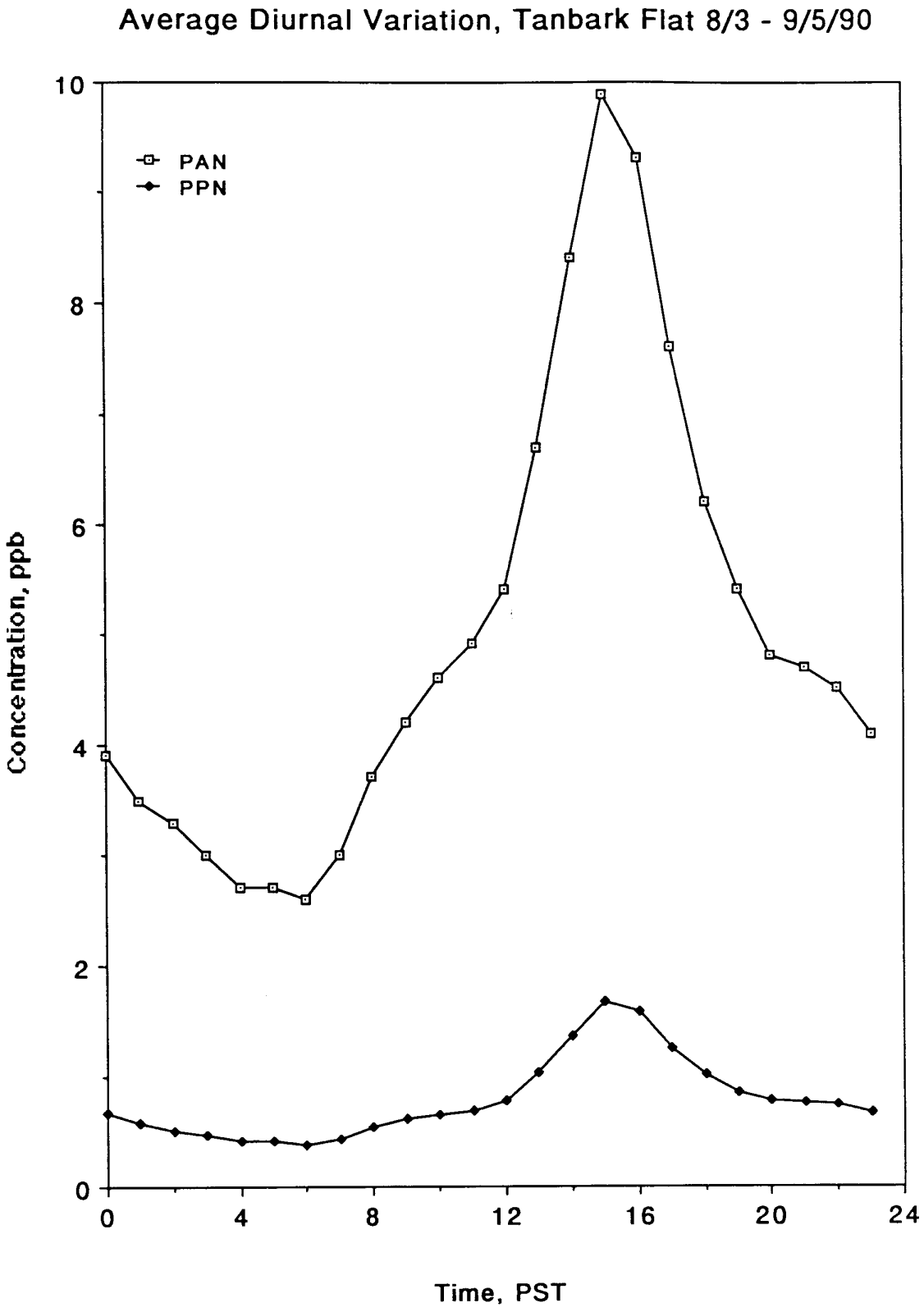

Average Diurnal Variation, Tanbark Flat 8/3 - 9/5/90
PAN
PPN
Concentration, ppb
Time, PST
0
2
4
6
8
10
0
4
8
12
16
20
24

FIGURE 27(b)

Composite Data From Tanbark Flat August 1991

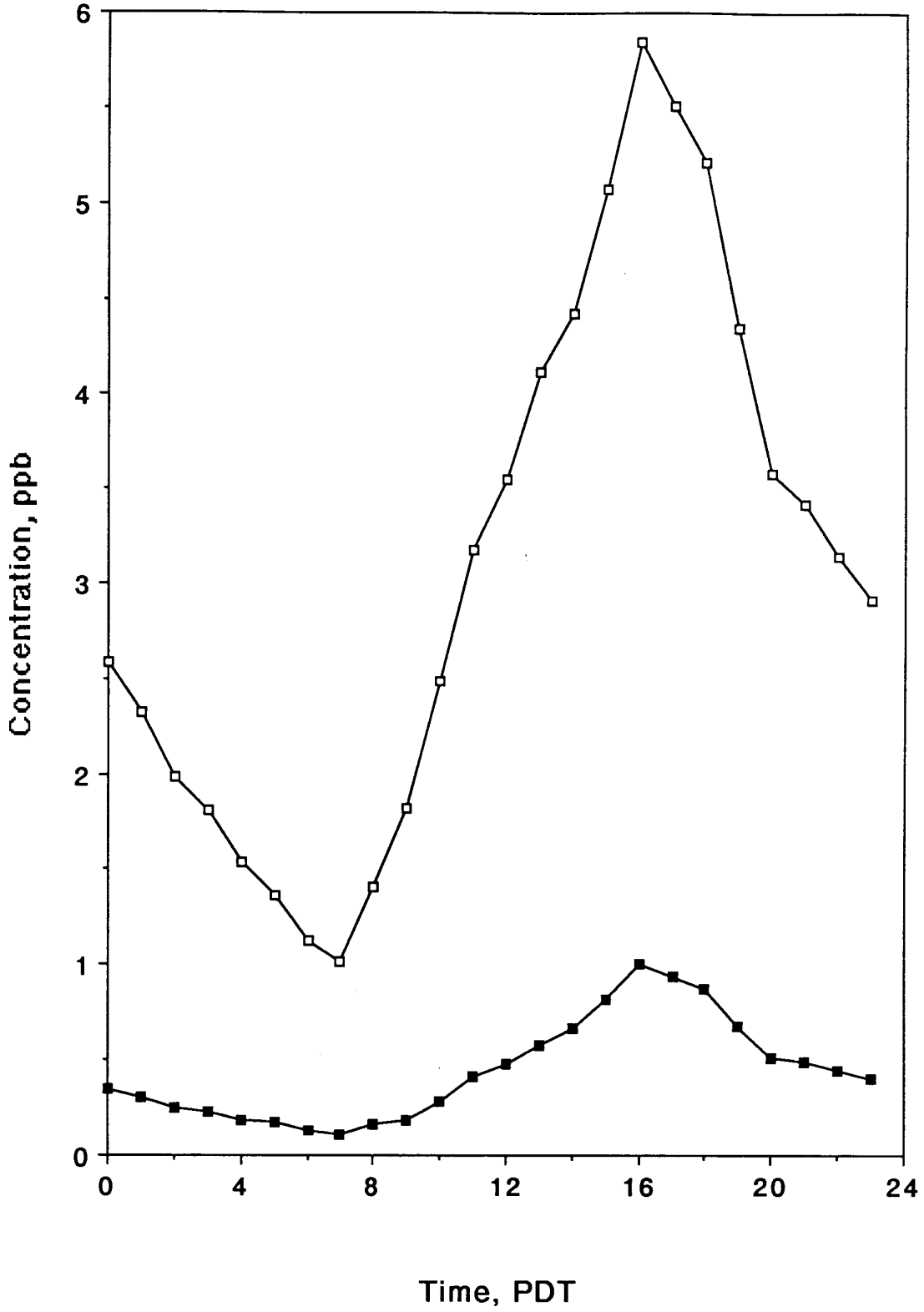


FIGURE 27(c)

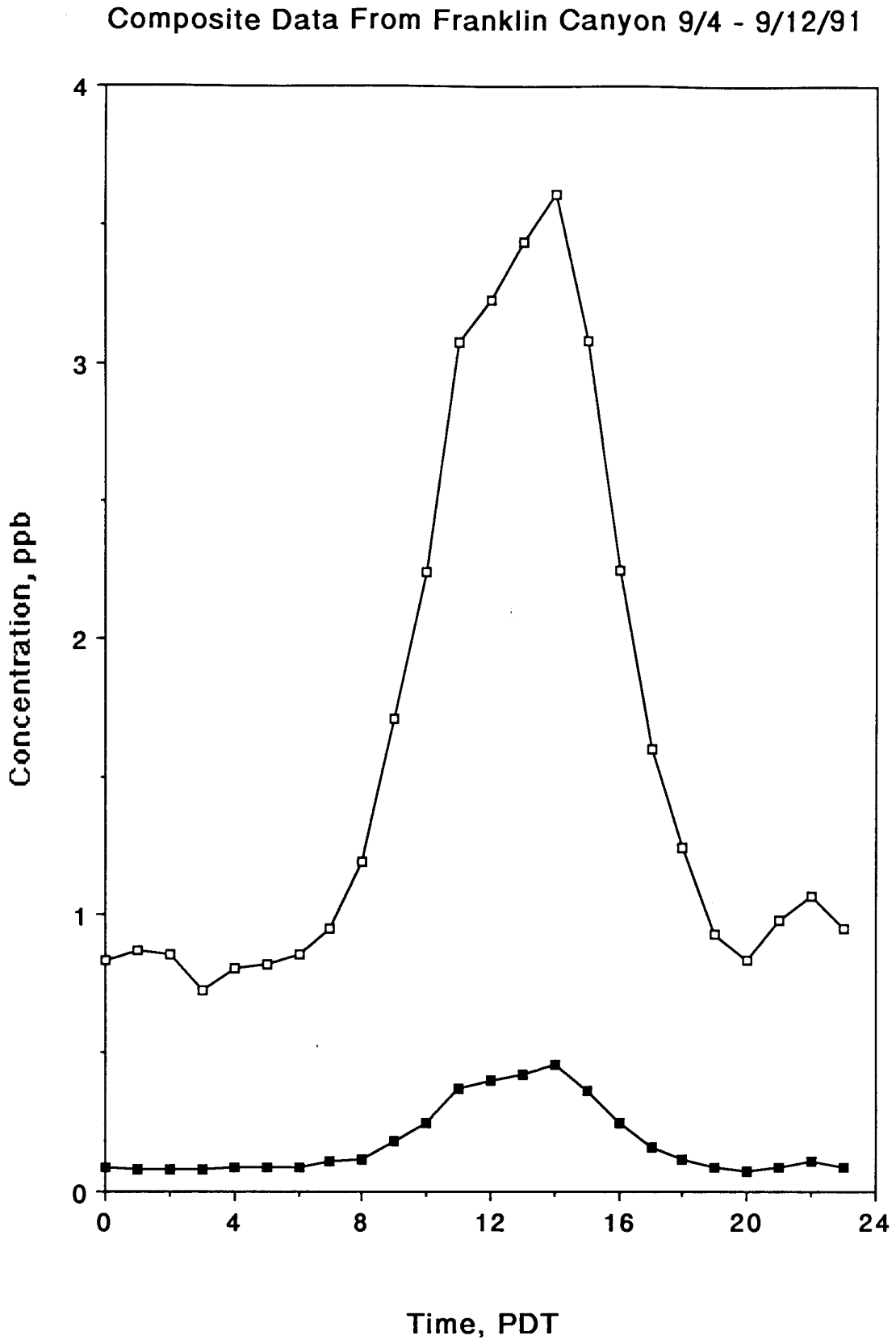

Composite Data From Franklin Canyon 9/4 - 9/12/91
Concentration, ppb
0
1
2
3
4
0
4
8
12
16
20
24
Time, PDT

FIGURE 28

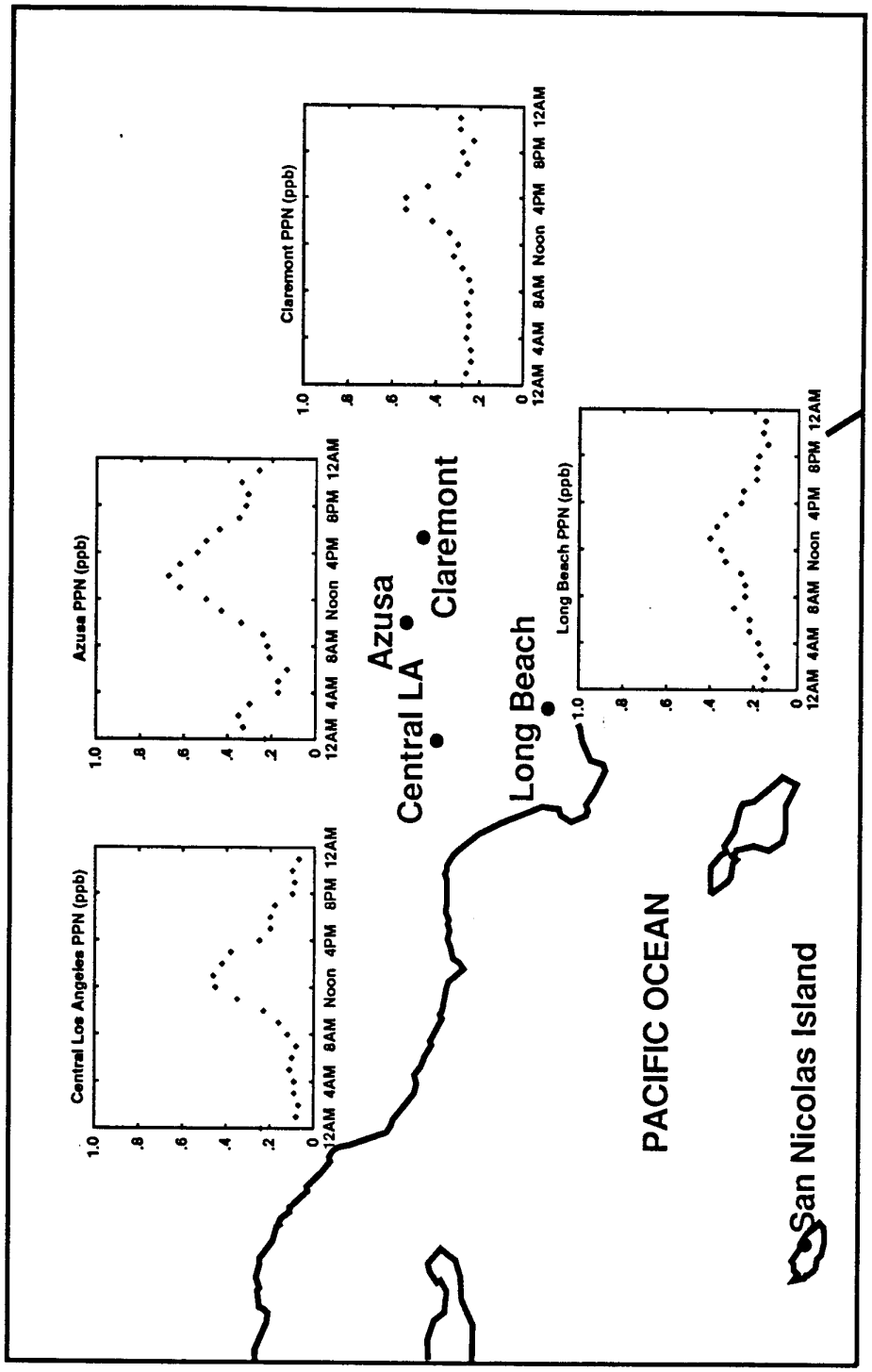

Central Los Angeles PPN (ppb)
Azusa PPN (ppb)
Claremont PPN (ppb)
Long Beach PPN (ppb)
1.0
.8
.6
.4
.2
0
12AM 4AM 8AM Noon 4PM 8PM 12AM
Central LA
Azusa
Claremont
Long Beach
PACIFIC OCEAN
San Nicolas Island

FIGURE 29

DIURNAL VARIATIONS OF PPN / PAN CONCENTRATION RATIO

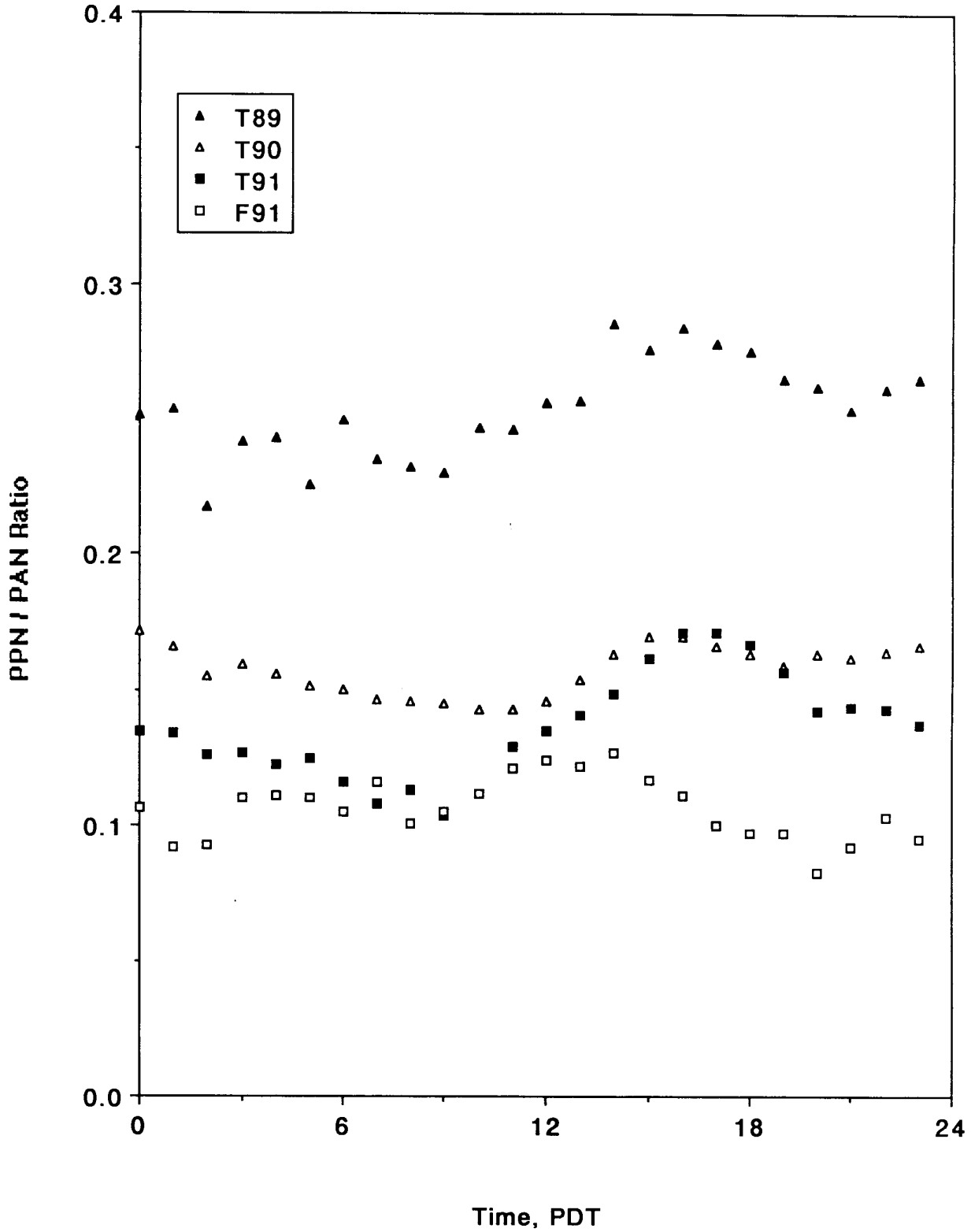


FIGURE 30

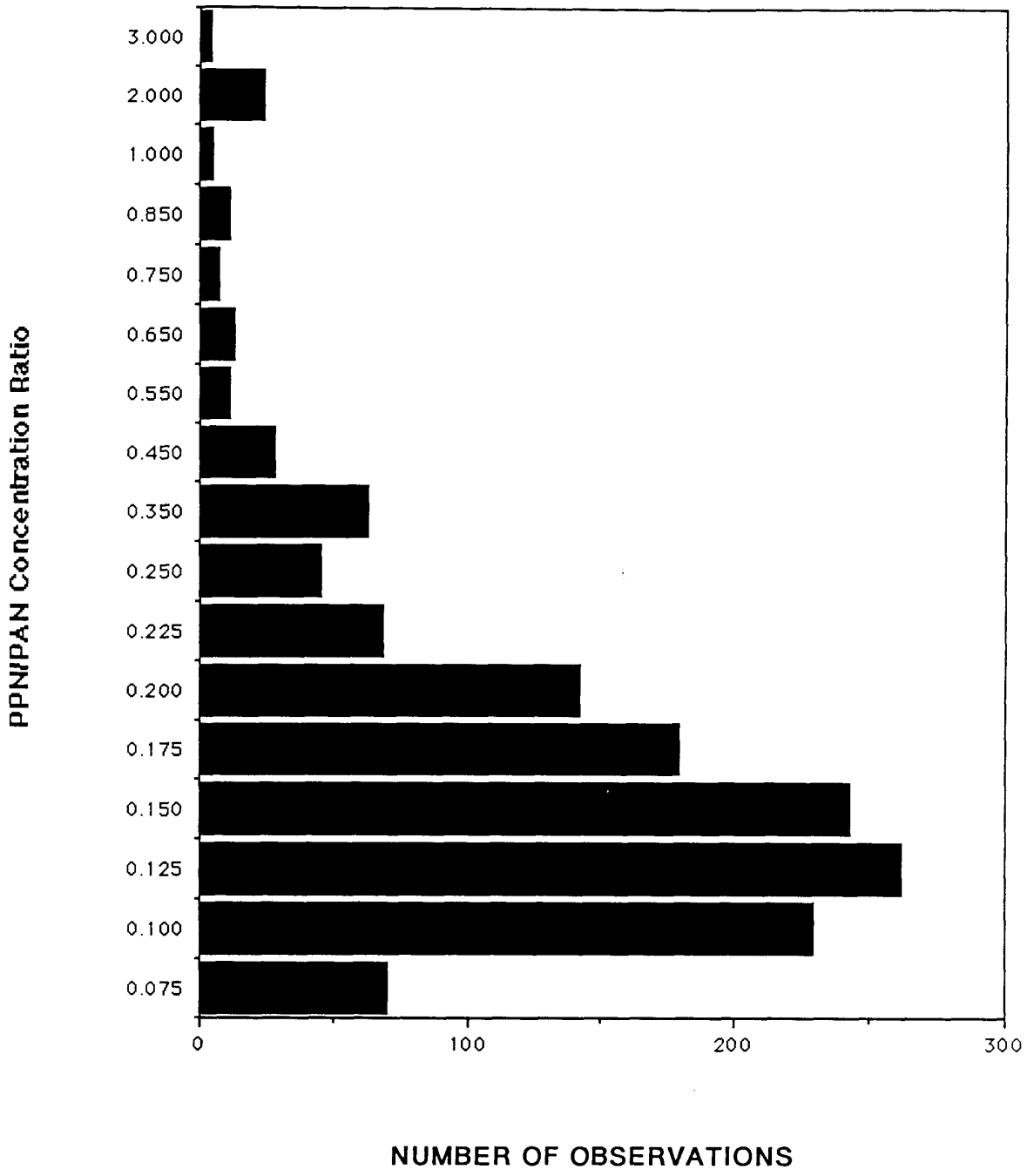

PPN/PAN Concentration Ratio
3.000
2.000
1.000
0.850
0.750
0.650
0.550
0.450
0.350
0.250
0.225
0.200
0.175
0.150
0.125
0.100
0.075
0
100
200
300
NUMBER OF OBSERVATIONS

FIGURE 31(a)

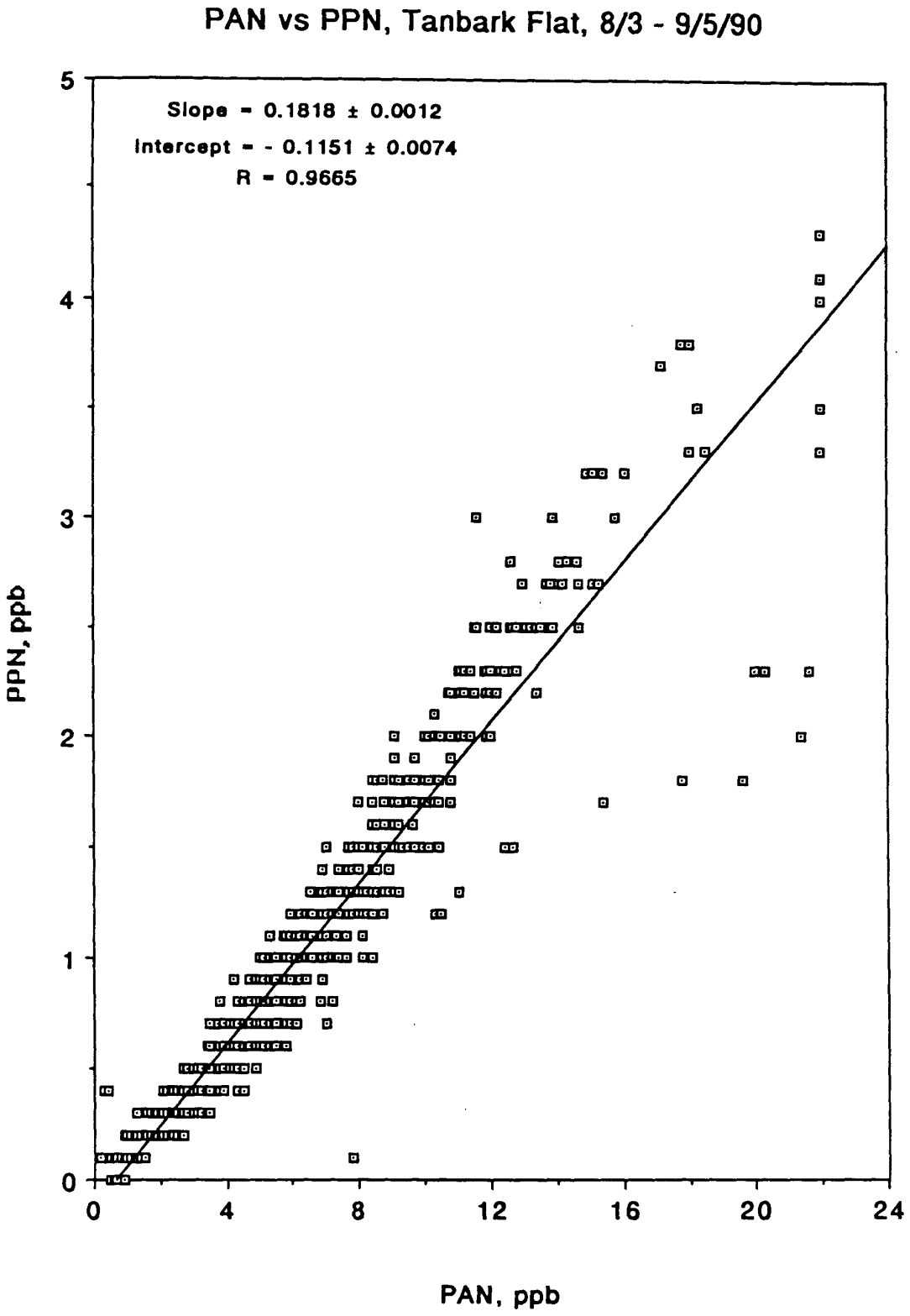
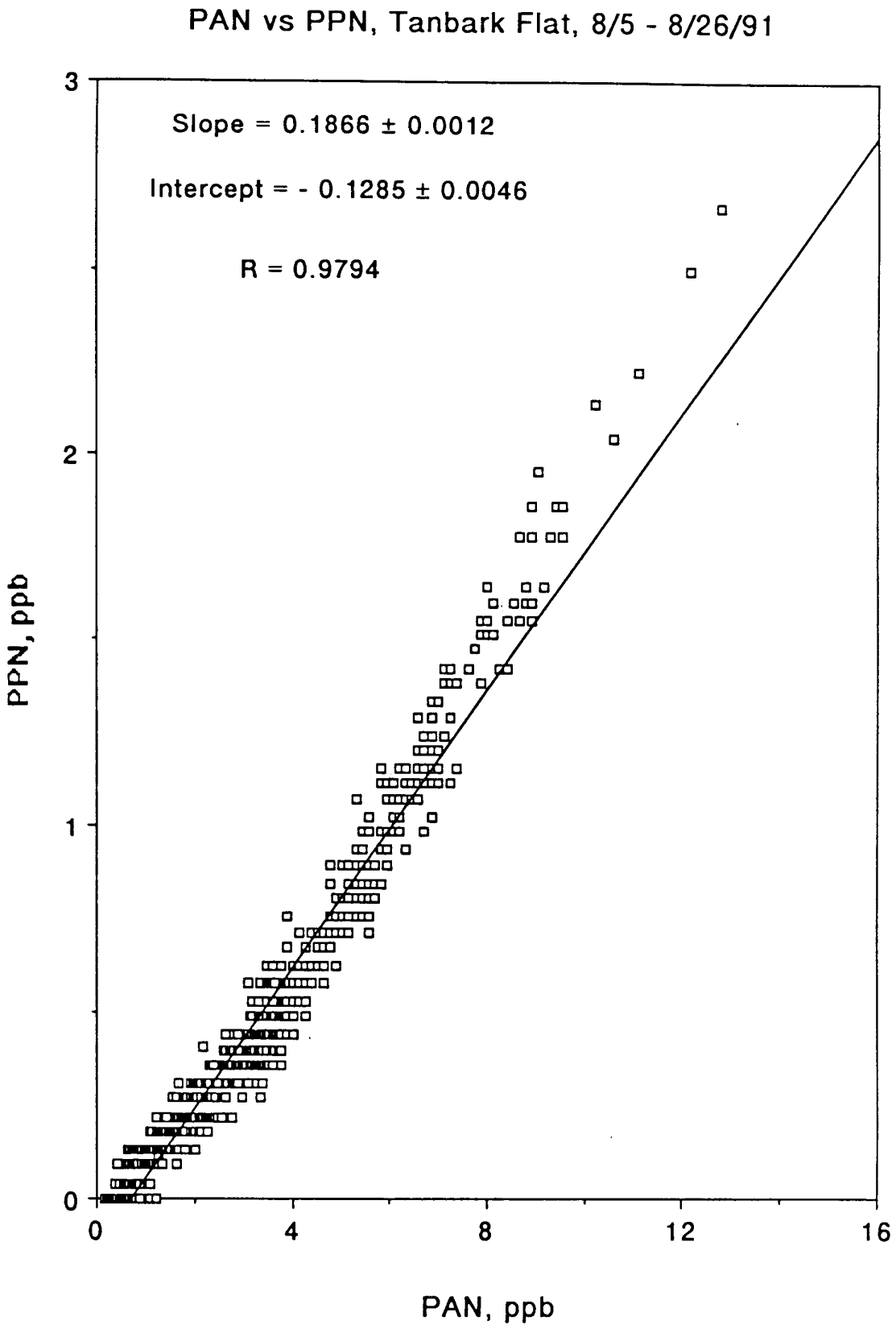
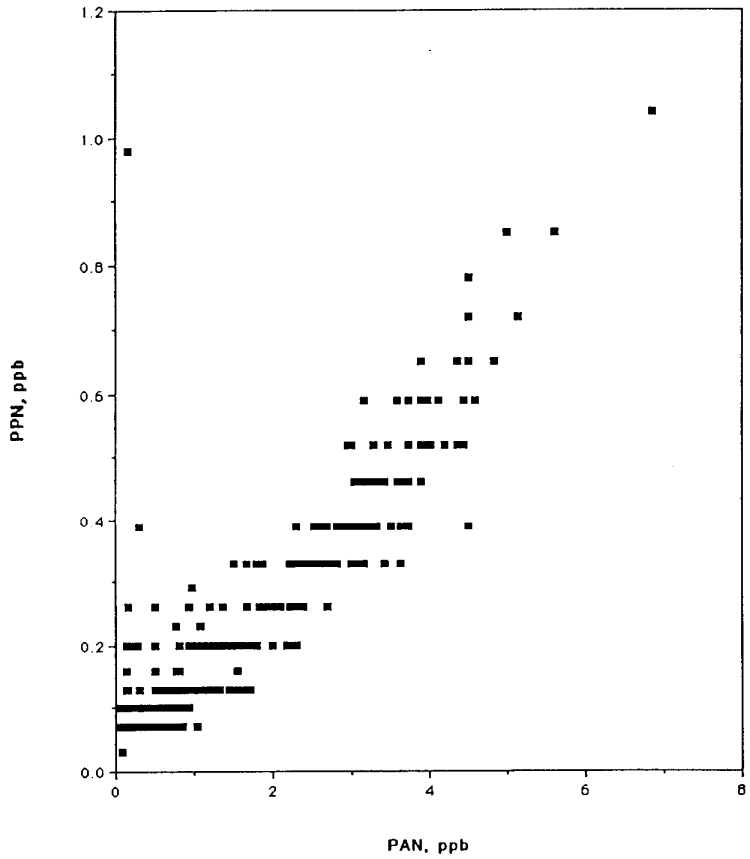
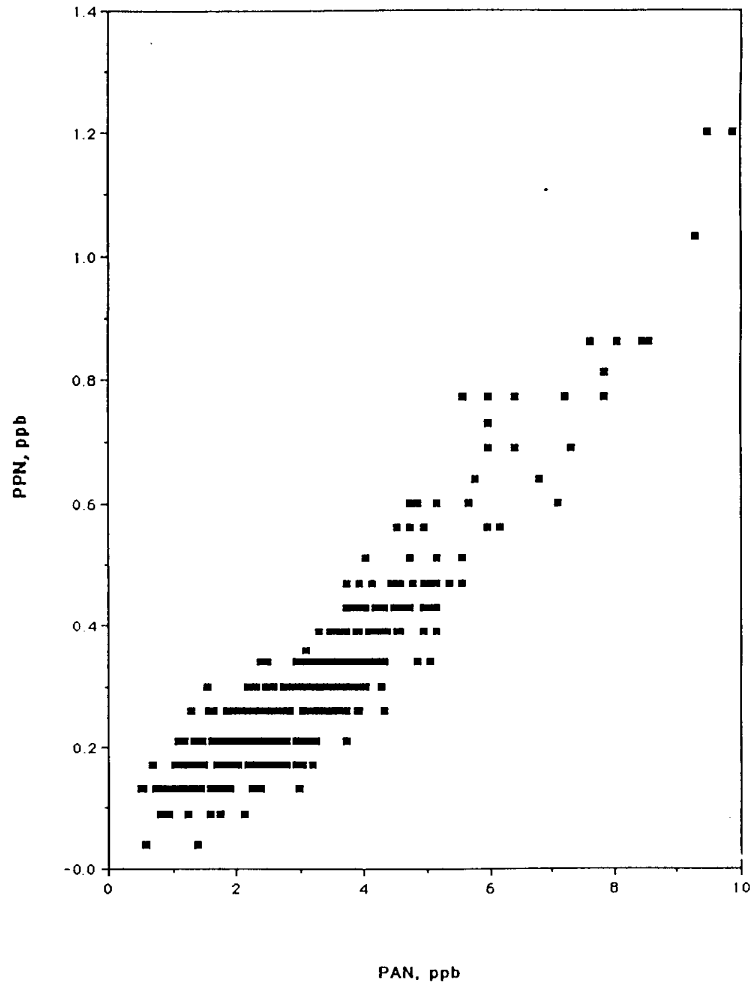

PAN vs PPN, Tanbark Flat, 8/3 - 9/5/90
Slope = 0.1818 ± 0.0012
Intercept = - 0.1151 ± 0.0074
R = 0.9665
PPN, ppb
PAN, ppb
0
1
2
3
4
5
0
4
8
12
16
20
24

FIGURE 31(b)


PAN vs PPN, Tanbark Flat, 8/5 - 8/26/91
Slope = 0.1866 ± 0.0012
Intercept = - 0.1285 ± 0.0046
R = 0.9794
PPN, ppb
PAN, ppb
0
1
2
3
0
4
8
12
16



Los Angeles



Claremont

FIGURE 31(c)

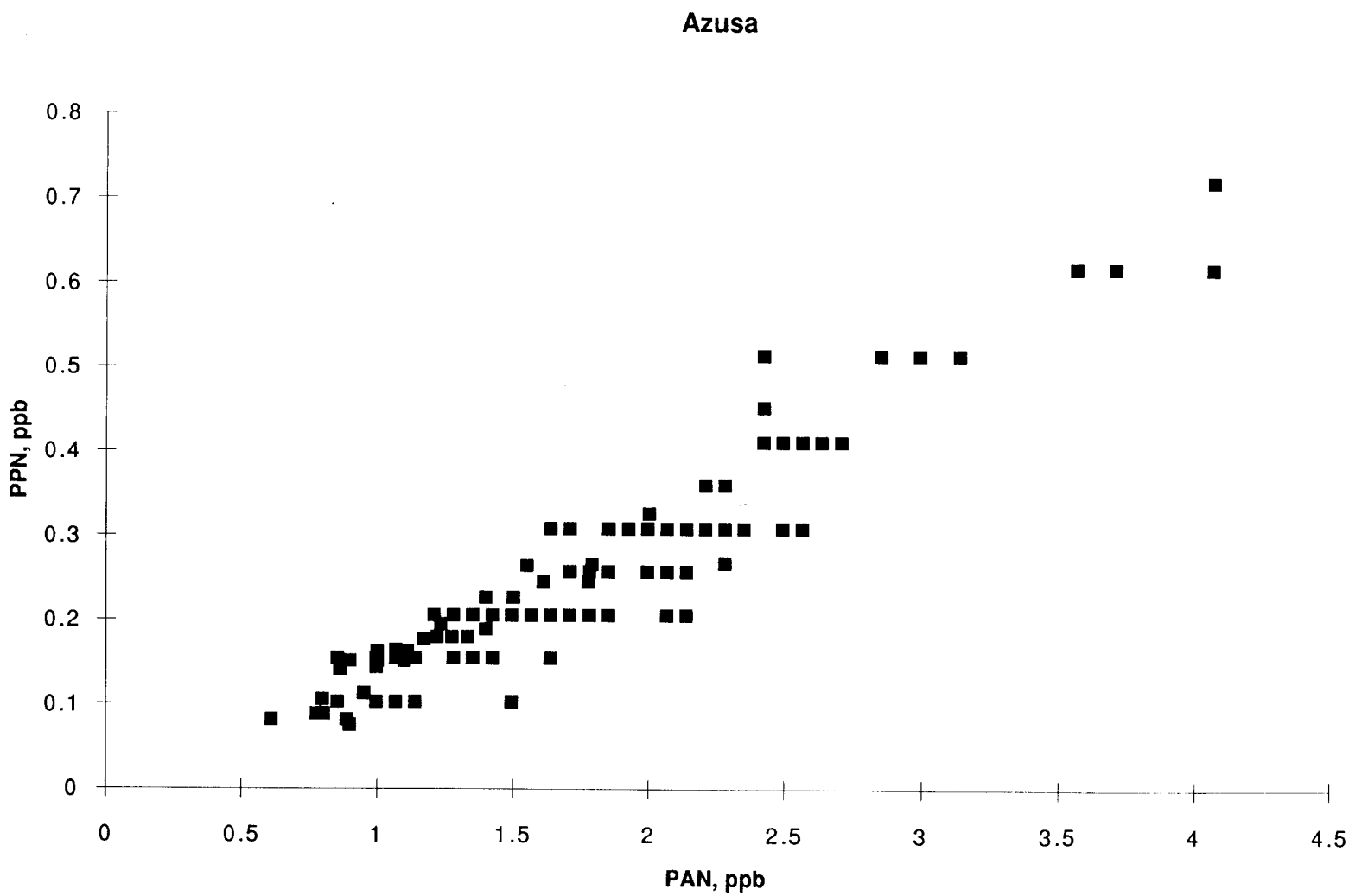


FIGURE 31(d)

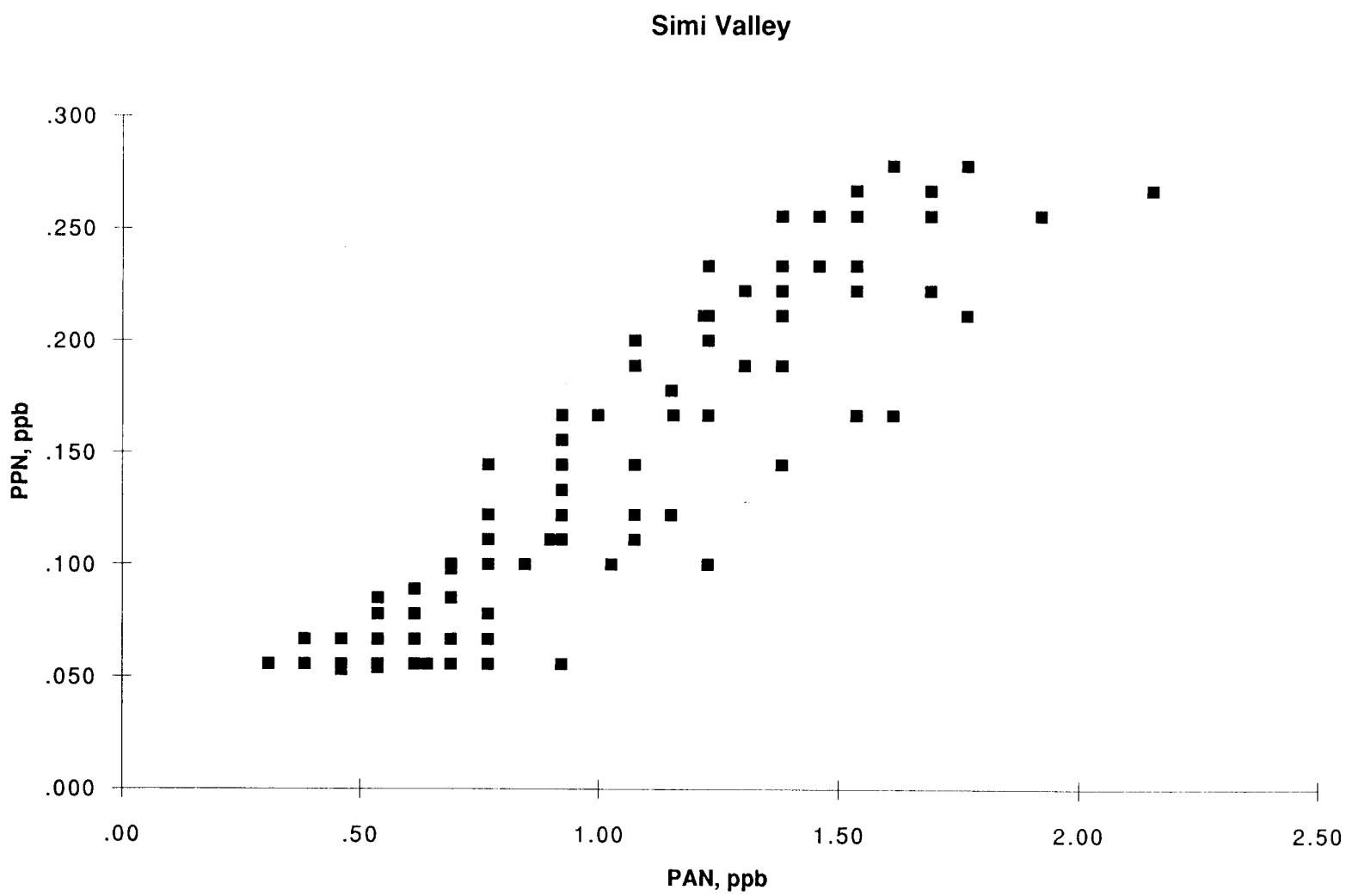

Simi Valley
PPN, ppb
.300
.250
.200
.150
.100
.050
.000
.00
.50
1.00
1.50
2.00
2.50
PAN, ppb

FIGURE 31(e)