Supporting Information

Metal-free metathesis reaction between alkyl halides and *N*-haloimides

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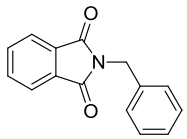
I. General

All reagents were purchased from commercial sources and used without treatment, unless otherwise indicated. The products were purified by column chromatography over silica gel. ^{1}H NMR and ^{13}C NMR spectra were recorded at 25 ℃ on a Varian 500 MHz and 125 MHz, respectively, and TMS as internal standard. Mass spectra were recorded on Agilient 1100 LCMsD mass spectrometer.

II. Synthesis and Analytical Data of 3, 4, 7 and 8

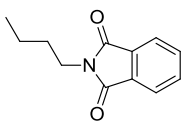
General procedure for the preparation of 3, 4, 7 and 8 (3a as an example**)**: To a solution of NCP (1.2 mmol, 217.8 mg) and DBU (1.2 mmol, 182.4 mg) in dry DMSO (2.0 ml), benzyl chloride**1a** (1.0 mmol, 126.6 mg) was added. The reaction mixture was stirred at room temperature for 10 min. After the starting material **1a** was consumed as indicated by TLC, the reaction mixture was poured into water and then extracted with CH_2Cl_2 (3 × 5 mL). The combined organic phase was washed with water (3 × 10 mL), dried over anhydrous $MgSO_4$, filtered and concentrated under reduced pressure. The crude product was purified by flash chromatography (silica gel, petroleum ether : ethyl acetate = 30 : 1) to give **3a** (215.8 mg, 91%) as a white solid.

2-Benzylisoindoline-1,3-dione (3a)



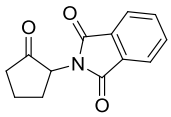
White solid. m.p. 115-116 ℃. ^{1}H NMR (500 MHz, $CDCl_3$) δ 4.85 (s, 2H), 7.27 (d, *J* = 8.5 Hz, 1H), 7.32 (d, *J* = 7.5 Hz, 2H), 7.43 (d, *J* = 7.5 Hz, 2H), 7.70-7.71 (m, 2H), 7.84-7.85 (m, 2H); ^{13}C NMR (125 MHz, $CDCl_3$) δ 41.5, 123.3, 127.8, 128.6, 128.6, 132.0, 133.9, 136.3, 168.0; HRMS (ESI) *m/z* calcd for $C_{15}H_{11}NO_2$ $[M+H]^+$: 238.0868; found: 238.0860.

2-Butylisoindoline-1,3-dione (3b)



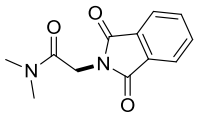
White solid. m.p. 32-33 ℃. ^{1}H NMR (500 MHz, $CDCl_3$) δ 0.95 (t, *J* = 7.5 Hz, 3H), 1.37 (q, *J* = 7.5 Hz, 2H), 1.66 (t, *J* = 7.5 Hz, 2H), 3.69 (t, *J* = 7.5 Hz, 2H), 7.70-7.72 (m, 2H), 7.83-7.85 (m, 2H); ^{13}C NMR (125 MHz, $CDCl_3$) δ 13.6, 20.0, 30.5, 37.7, 123.0, 132.1, 133.7, 168.4; HRMS (ESI) *m/z* calcd for $C_{12}H_{13}NO_2$ $[M+H]^+$: 204.1025; found: 204.1033.

2-(2-Oxocyclopentyl)isoindoline-1,3-dione (3c)



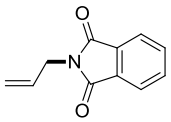
White solid. m.p. 167-168 ℃. ^{1}H NMR (500 MHz, $CDCl_3$) δ 1.91 (m, 1H), 2.25 (m, 1H), 2.37 (m, 2H), 2.50 (m, 2H), 4.58 (t, *J* = 10.5 Hz, 1H), 7.72-7.74 (m, 2H), 7.83-7.85 (m, 2H); ^{13}C NMR (125 MHz, $CDCl_3$) δ 19.0, 27.2, 36.1, 55.4, 123.4, 131.9, 134.1, 167.4, 212.2; HRMS (ESI) *m/z* calcd for $C_{13}H_{11}NO_3$ $[M+H]^+$: 230.0817; found: 230.0811.

2-(1,3-Dioxoisoindolin-2-yl)-*N*,*N*-dimethylacetamide (3d)



White solid. m.p. 177-178 ℃. ^{1}H NMR (500 MHz, $CDCl_3$) δ 2.97 (s, 3H), 3.11 (s, 3H), 4.49 (s, 2H), 7.71-7.73 (m, 2H), 7.86-7.88 (m, 2H); ^{13}C NMR (125 MHz, $CDCl_3$) δ 35.7, 36.1, 39.1, 123.4, 132.2, 133.9, 165.2, 168.0; HRMS (ESI) *m/z* calcd for $C_{12}H_{12}N_2O_3$ $[M+H]^+$: 233.0926; found: 233.0931.

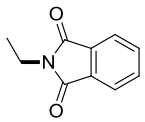
2-Allylisoindoline-1,3-dione (3e)



White solid. m.p. 58-59 ℃. ^{1}H NMR (500 MHz, $CDCl_3$) δ 4.30 (d, *J* = 5.5 Hz, 2H), 5.20 (d, *J* = 10.5 Hz, 1H), 5.25 (d, *J* = 17 Hz, 1H), 5.86-5.93 (m, 1H), 7.72-7.75 (m, 2H), 7.85-7.87 (m, 2H); ^{13}C NMR (125 MHz, $CDCl_3$) δ 39.8, 117.4, 123.0, 131.3,

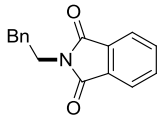
131.8, 133.7, 167.6; HRMS (ESI) *m/z* calcd for $C_{11}H_9NO_2$ $[M+H]^+$: 188.0712; found: 188.0716.

2-Ethylisoindoline-1,3-dione (3f)



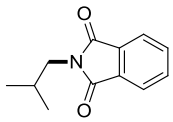
White solid. m.p. 76-77 ℃. ^{1}H NMR (500 MHz, $CDCl_3$) δ 1.28 (t, *J* = 7.5 Hz, 3H), 3.75 (q, *J* = 7.5 Hz, 2H), 7.70-7.72 (m, 2H), 7.83-7.85 (m, 2H); ^{13}C NMR (125 MHz, $CDCl_3$) δ 13.9, 32.9, 123.1, 132.2, 133.8, 168.2; HRMS (ESI) *m/z* calcd for $C_{10}H_9NO_2$ $[M+H]^+$: 176.0712; found: 176.0718.

2-Phenethylisoindoline-1,3-dione (3g)



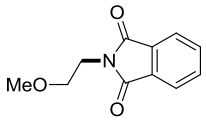
White solid. m.p. 104-105 ℃. ^{1}H NMR (500 MHz, $CDCl_3$) δ 2.99 (t, *J* = 8.0 Hz, 2H), 3.93 (t, *J* = 8.0 Hz, 2H), 7.20-7.25 (m, 1H), 7.26-7.39 (m, 4H), 7.70-7.71 (m, 2H), 7.81-7.84 (m, 2H); ^{13}C NMR (125 MHz, $CDCl_3$) δ 34.6, 39.2, 123.2, 126.6, 128.5, 128.8, 132.0, 133.9, 137.9, 168.1; HRMS (ESI) *m/z* calcd for $C_{16}H_{13}NO_2$ $[M+H]^+$: 252.1025; found: 252.1020.

2-Isobutylisoindoline-1,3-dione (3h)



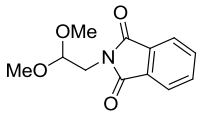
White solid. m.p. 90-91 ℃. ^{1}H NMR (500 MHz, $CDCl_3$) δ 0.95 (d, *J* = 7.0 Hz, 6H), 2.11-2.16 (m, 1H), 3.51 (d, *J* = 7.5 Hz, 2H), 7.70-7.74 (m, 2H), 7.83-7.87 (m, 2H); ^{13}C NMR (125 MHz, $CDCl_3$) δ 20.1, 27.8, 45.2, 123.1, 132.0, 133.8, 168.6; HRMS (ESI) *m/z* calcd for $C_{12}H_{13}NO_2$ $[M+H]^+$: 204.1025; found: 204.1033.

2-(2-Methoxyethyl)isoindoline-1,3-dione (3i)



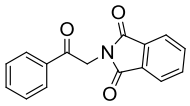
White solid. m.p. 145-146 ℃. ^{1}H NMR (500 MHz, $CDCl_3$) δ 3.36 (s, 3H), 3.64 (t, *J* = 5.5 Hz, 2H), 3.91 (t, *J* = 5.5 Hz, 2H), 7.71-7.73 (m, 2H), 7.85-7.87 (m, 2H); ^{13}C NMR (125 MHz, $CDCl_3$) δ 37.3, 58.6, 69.4, 123.3, 132.1, 133.9, 168.3; HRMS (ESI) *m/z* calcd for $C_{11}H_{11}NO_3$ $[M+H]^+$: 206.0817; found: 206.0811.

2-(2,2-Dimethoxyethyl)isoindoline-1,3-dione (3j)



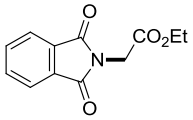
White solid. m.p. 104-105 ℃. ^{1}H NMR (500 MHz, $CDCl_3$) δ 3.37 (s, 6H), 3.81 (d, *J* = 6.0 Hz, 2H), 4.75 (t, *J* = 6.0 Hz, 1H), 7.70-7.72 (m, 2H), 7.83-7.85 (m, 2H); ^{13}C NMR (125 MHz, $CDCl_3$) δ 38.7, 53.1, 99.9, 123.3, 132.0, 134.0, 168.0; HRMS (ESI) *m/z* calcd for $C_{12}H_{13}NO_4$ $[M+H]^+$: 236.0923; found: 236.0916.

2-(2-Oxo-2-phenylethyl)isoindoline-1,3-dione (3k)



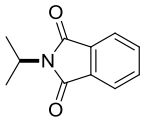
White solid. m.p. 162-163 ℃. ^{1}H NMR (500 MHz, $CDCl_3$) δ 5.13 (s, 2H), 7.50 (t, *J* = 7.5 Hz, 2H), 7.62 (t, *J* = 7.5 Hz, 1H), 7.74 (d, *J* = 3.5 Hz, 2H), 7.88-7.89 (m, 2H), 7.99-8.00 (d, *J* = 7.5 Hz, 2H); ^{13}C NMR (125 MHz, $CDCl_3$) δ 44.1, 123.4, 128.0, 128.8, 132.0, 133.9, 134.0, 134.2, 167.7, 190.9; HRMS (ESI) *m/z* calcd for $C_{16}H_{11}NO_3$ $[M+H]^+$: 266.0817; found: 266.0810.

Ethyl 2-(1,3-dioxoisoindolin-2-yl)acetate (3l)



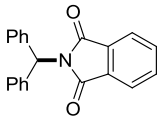
White solid. m.p. 110-111 ℃. ^{1}H NMR (500 MHz, $CDCl_3$) δ 1.19 (t, *J* = 7.0 Hz, 3H), 4.13 (q, *J* = 7.0 Hz, 2H), 4.34 (s, 2H), 7.65 (s, 2H), 7.77 (d, *J* = 2.5 Hz, 2H); ^{13}C NMR (125 MHz, $CDCl_3$) δ 13.9, 38.7, 61.7, 123.4, 131.8, 134.0, 167.1, 167.2; HRMS (ESI) m/z calcd for $C_{12}H_{11}NO_4$ $[M+H]^+$: 234.0766; found: 234.0772.

2-Isopropylisoindoline-1,3-dione (3m)



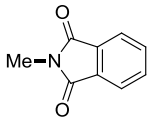
White solid. m.p. 78-79 ℃. ^{1}H NMR (500 MHz, $CDCl_3$) δ 1.49 (d, *J* = 7.0 Hz, 6H), 4.54 (t, *J* = 7.0 Hz, 1H), 7.69-7.71 (m, 2H), 7.81-7.83 (m, 2H); ^{13}C NMR (125 MHz, $CDCl_3$) δ 20.1, 42.9, 122.9, 132.1, 133.7, 168.4; HRMS (ESI) *m/z* calcd for $C_{11}H_{11}NO_2$ $[M+H]^+$: 190.0868; found: 190.0874.

2-Benzhydrylisoindoline-1,3-dione (3n)



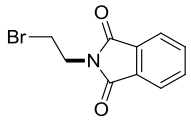
White solid. m.p. 141-142 ℃. ^{1}H NMR (500 MHz, $CDCl_3$) δ 6.72 (s, 1H), 7.28-7.32 (m, 6H), 7.34-7.39 (m, 4H), 7.69-7.72 (m, 2H), 7.81-7.85 (m, 2H); ^{13}C NMR (125 MHz, $CDCl_3$) δ 57.7, 123.4, 127.7, 128.4, 128.7, 131.8, 134.1, 138.1, 167.9; HRMS (ESI) *m/z* calcd for $C_{21}H_{15}NO_2$ $[M+H]^+$: 314.1181; found: 314.1177.

2-Methylisoindoline-1,3-dione (3p)



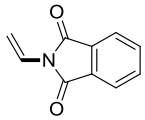
White solid. m.p. 128-129 ℃. ^{1}H NMR (500 MHz, $CDCl_3$) δ 3.18 (s, 3H), 7.70-7.73 (m, 2H), 7.83-7.84 (m, 2H); ^{13}C NMR (125 MHz, $CDCl_3$) δ 23.8, 123.0, 132.1, 133.7, 168.3; HRMS (ESI) *m/z* calcd for $C_9H_7NO_2$ $[M+H]^+$: 162.0555; found: 162.0549.

2-(2-Bromoethyl)isoindoline-1,3-dione (3q)



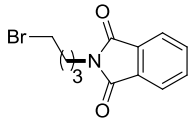
White solid. m.p. 83-84 ℃. ^{1}H NMR (500 MHz, $CDCl_3$) δ 3.62 (t, *J* = 7.0 Hz, 2H), 4.11 (t, *J* = 7.0 Hz, 2H), 7.75 (m, 2H), 7.88 (m, 2H); ^{13}C NMR (125 MHz, $CDCl_3$) δ 28.1, 39.2, 123.4, 131.7, 134.1, 167.7; HRMS (ESI) m/z calcd for $C_{10}H_8BrNO_2$ $[M+H]^+$: 253.9817; found: 253.9810.

2-Vinylisoindoline-1,3-dione (4)



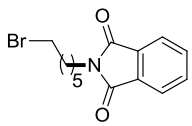
White solid. m.p. 86-87 ℃. ^{1}H NMR (500 MHz, $CDCl_3$) δ 5.05 (d, *J* = 9.5 Hz, 1H), 6.09 (d, *J* = 16.5 Hz, 1H), 6.88 (dd, *J* = 9.5 Hz, 16.5 Hz, 1H), 7.74-7.77 (m, 2H), 7.86-7.89 (m, 2H); ^{13}C NMR (125 MHz, $CDCl_3$) δ 104.4, 123.6, 123.8, 131.6, 134.4, 166.4; HRMS (ESI) *m/z* calcd for $C_{10}H_7NO_2$ $[M+H]^+$: 174.0555; found: 174.0548.

2-(4-Bromobutyl)isoindoline-1,3-dione (3r)



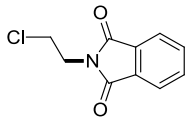
White solid. m.p. 75-76 ℃. ^{1}H NMR (500 MHz, $CDCl_3$) δ 1.84-1.93 (m, 4H), 3.45 (t, *J* = 6.5 Hz, 2H), 3.73 (t, *J* = 6.5 Hz, 2H), 7.72-7.74 (m, 2H), 7.84-7.86 (m, 2H); ^{13}C NMR (125 MHz, $CDCl_3$) δ 27.2, 29.8, 32.8, 36.9, 123.2, 132.0, 134.0, 168.3; HRMS (ESI) m/z calcd for $C_{12}H_{12}BrNO_2$ $[M+H]^+$: 282.0130; found: 282.0125.

2-(6-Bromohexyl)isoindoline-1,3-dione (3s)



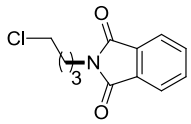
White solid. m.p. 53-54 ℃. ^{1}H NMR (500 MHz, $CDCl_3$) δ 1.38-1.41 (m, 2H), 1.46-1.52 (m, 2H), 1.67-1.73 (m, 2H), 1.83-1.89 (m, 2H), 3.40 (t, *J* = 7.0 Hz, 2H), 3.69 (t, *J* = 7.0 Hz, 2H), 7.71-7.73 (m, 2H), 7.84-7.85 (m, 2H); ^{13}C NMR (125 MHz, $CDCl_3$) δ 26.0, 27.6, 28.4, 32.5, 33.7, 37.8, 123.1, 132.1, 133.8, 168.4; HRMS (ESI) m/z calcd for $C_{14}H_{16}BrNO_2$ $[M+H]^+$: 310.0443; found: 310.0449.

2-(2-Chloroethyl)isoindoline-1,3-dione (3t)



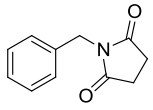
White solid. m.p. 82-83 ℃. ^{1}H NMR (500 MHz, $CDCl_3$) δ 3.78 (t, *J* = 6.5 Hz, 2H), 4.06 (t, *J* = 6.5 Hz, 2H), 7.74-7.76 (m, 2H), 7.87-7.89 (m, 2H); ^{13}C NMR (125 MHz, $CDCl_3$) δ 39.4, 40.8, 123.5, 131.8, 134.2, 167.9; HRMS (ESI) *m/z* calcd for $C_{10}H_8ClNO_2$ $[M+H]^+$: 210.0322; found: 210.0317.

2-(4-Chlorobutyl)isoindoline-1,3-dione (3u)



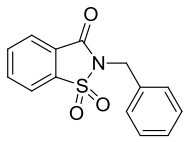
White solid. m.p. 68-69 ℃. ^{1}H NMR (500 MHz, $CDCl_3$) δ 1.84-1.93 (m, 4H), 3.45 (t, *J* = 6.5 Hz, 2H), 3.73 (t, *J* = 6.5 Hz, 2H), 7.72-7.74 (m, 2H), 7.84-7.86 (m, 2H); ^{13}C NMR (125 MHz, $CDCl_3$) δ 27.2, 29.8, 32.8, 36.9, 123.2, 132.0, 134.0, 168.3; HRMS (ESI) m/z calcd for $C_{12}H_{12}ClNO_2$ $[M+H]^+$: 238.0635; found: 238.0631.

1-Benzylpyrrolidine-2,5-dione (7)



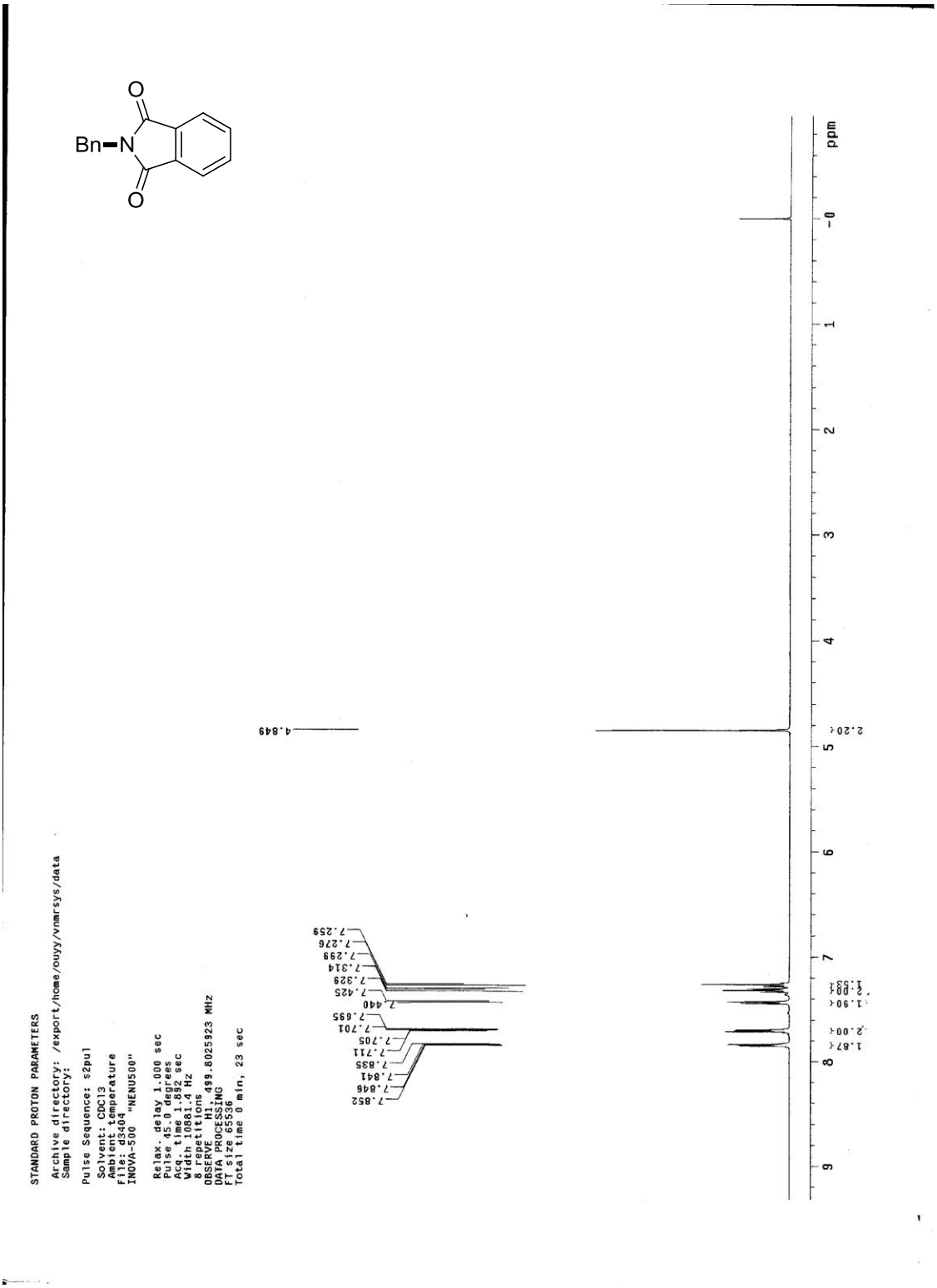
White solid. m.p. 98-99 ℃. ^{1}H NMR (500 MHz, $CDCl_3$) δ 2.69 (s, 4H), 4.65 (s, 2H), 7.27-7.32 (m, 3H), 7.38-7.39 (m, 2H); ^{13}C NMR (125 MHz, $CDCl_3$) δ 28.1, 42.3, 127.9, 128.5, 128.8, 135.7, 176.8; HRMS (ESI) *m/z* calcd for $C_{11}H_{11}NO_2$ $[M+H]^+$: 190.0868; found: 190.0872.

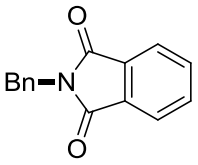
2-Benzylbenzo[*d*]isothiazol-3(2*H*)-one 1,1-dioxide (8)

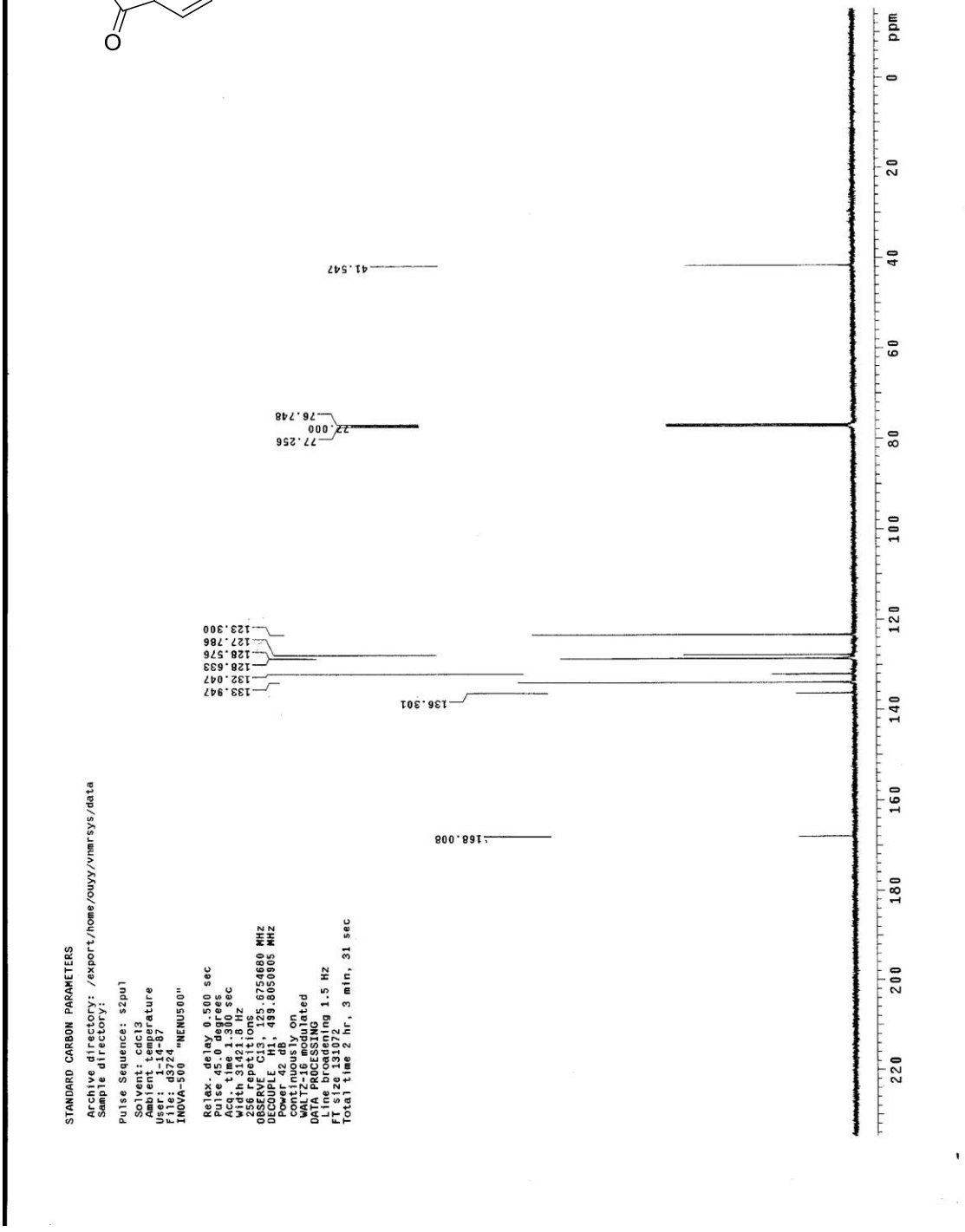


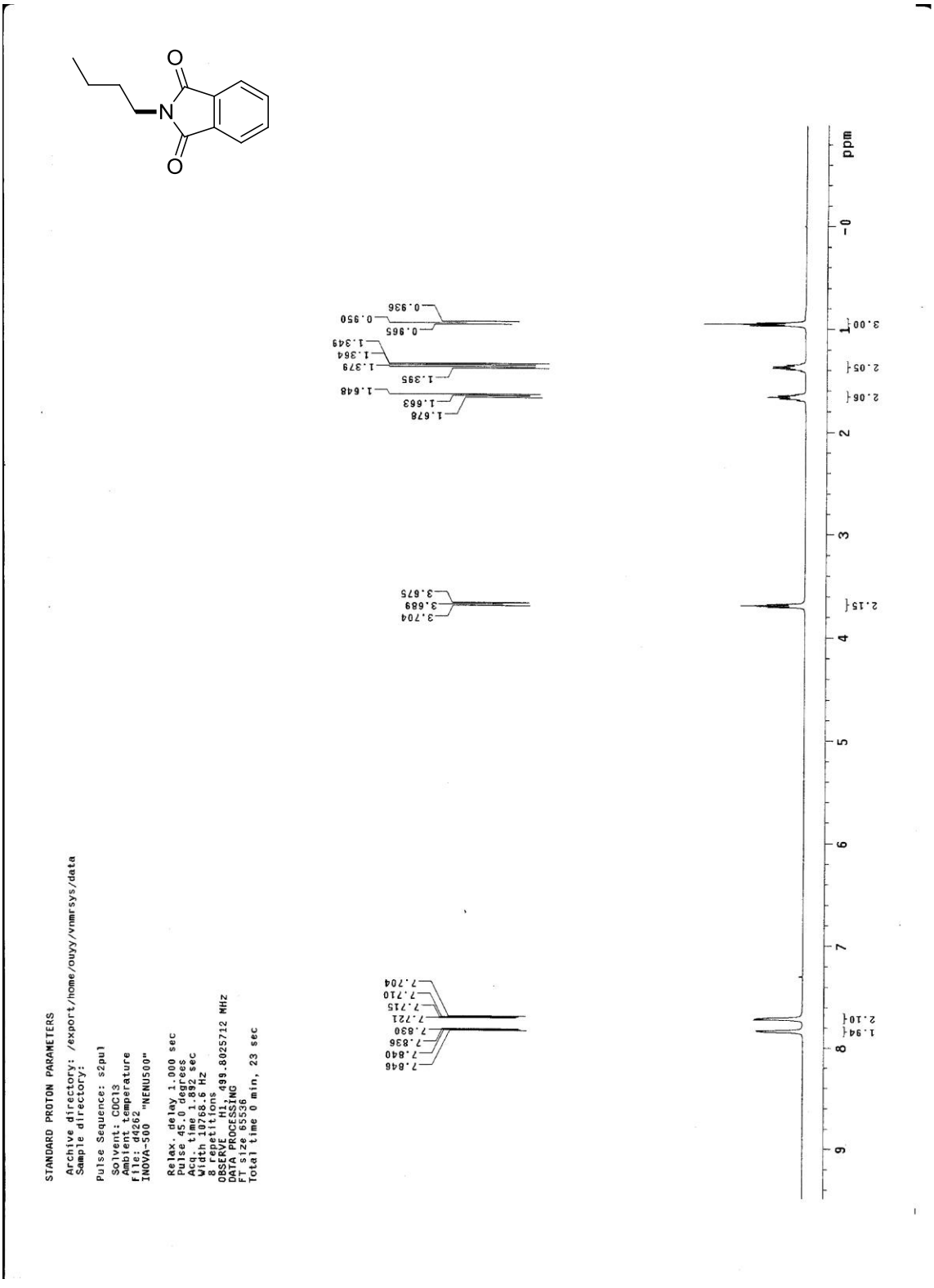
White solid. m.p. 94-95 ℃. ^{1}H NMR (500 MHz, $CDCl_3$) δ 4.91 (s, 2H), 7.30-7.36 (m, 3H), 7.50 (d, *J* = 6.5 Hz, 2H), 7.79-7.84 (m, 2H), 7.91 (d, *J* = 7.0 Hz, 1H), 8.03 (d, *J* = 7.5 Hz, 1H); ^{13}C NMR (125 MHz, $CDCl_3$) δ 42.5, 120.9, 125.0, 125.1, 127.1, 128.2, 128.6, 128.6, 134.3, 134.4, 134.6, 134.7, 137.6, 158.8; HRMS (ESI) *m/z* calcd for $C_{14}H_{11}NO_3S$ $[M+H]^+$: 274.0538; found: 274.0545.

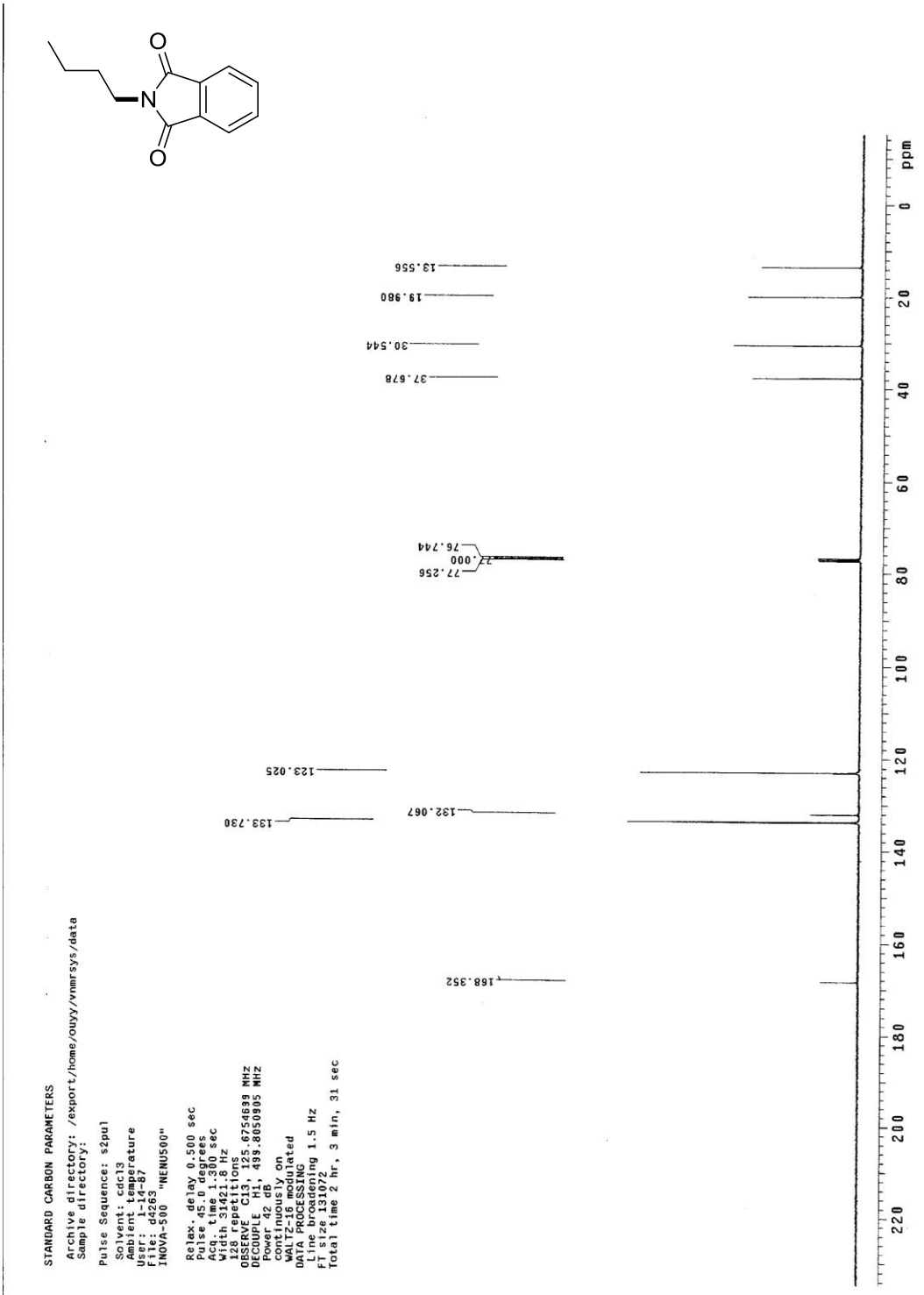
III. Copies of ^{1}H and ^{13}C NMR spectra for compounds 3, 4, 7 and 8

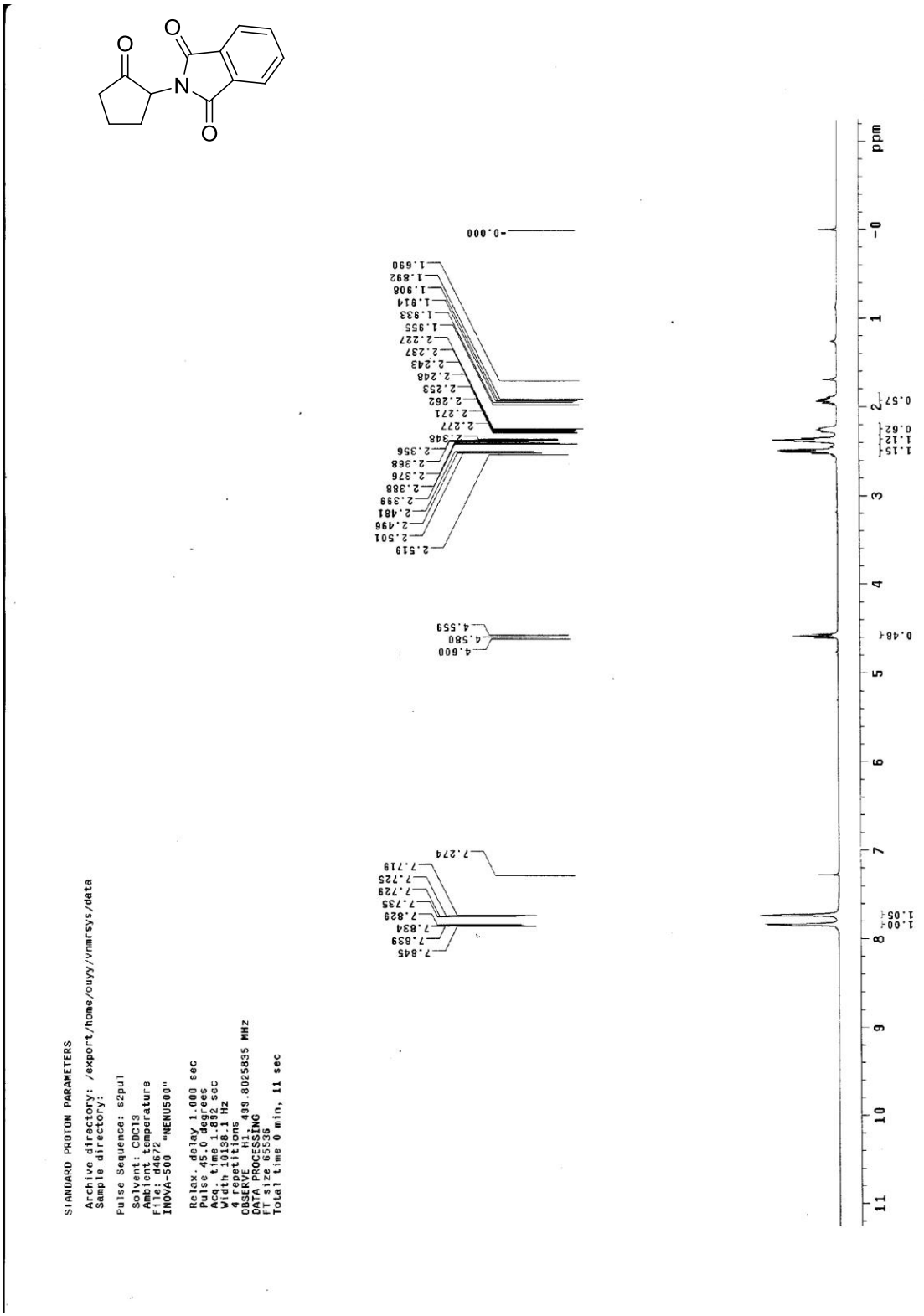


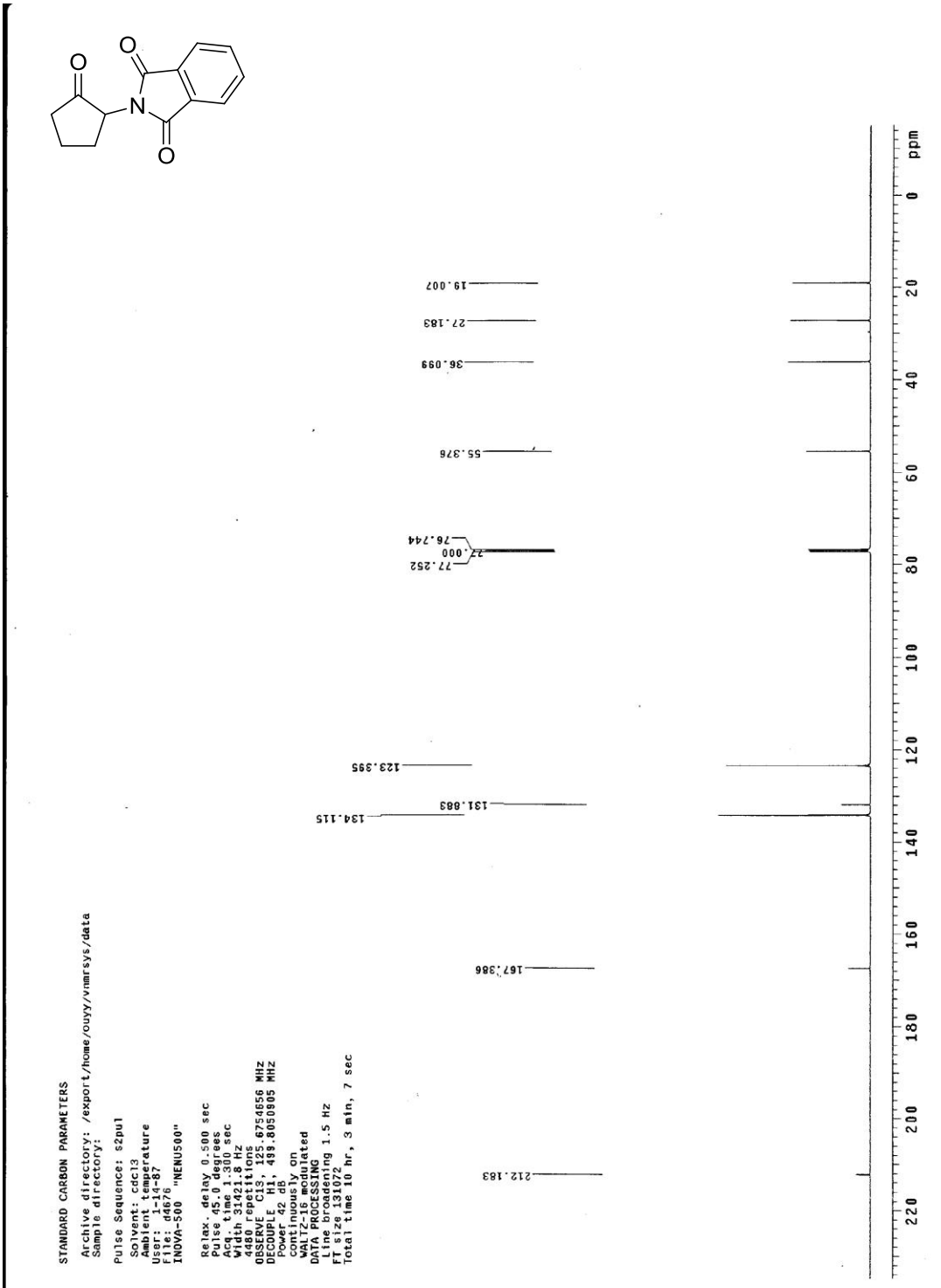

O
Bn
N
O

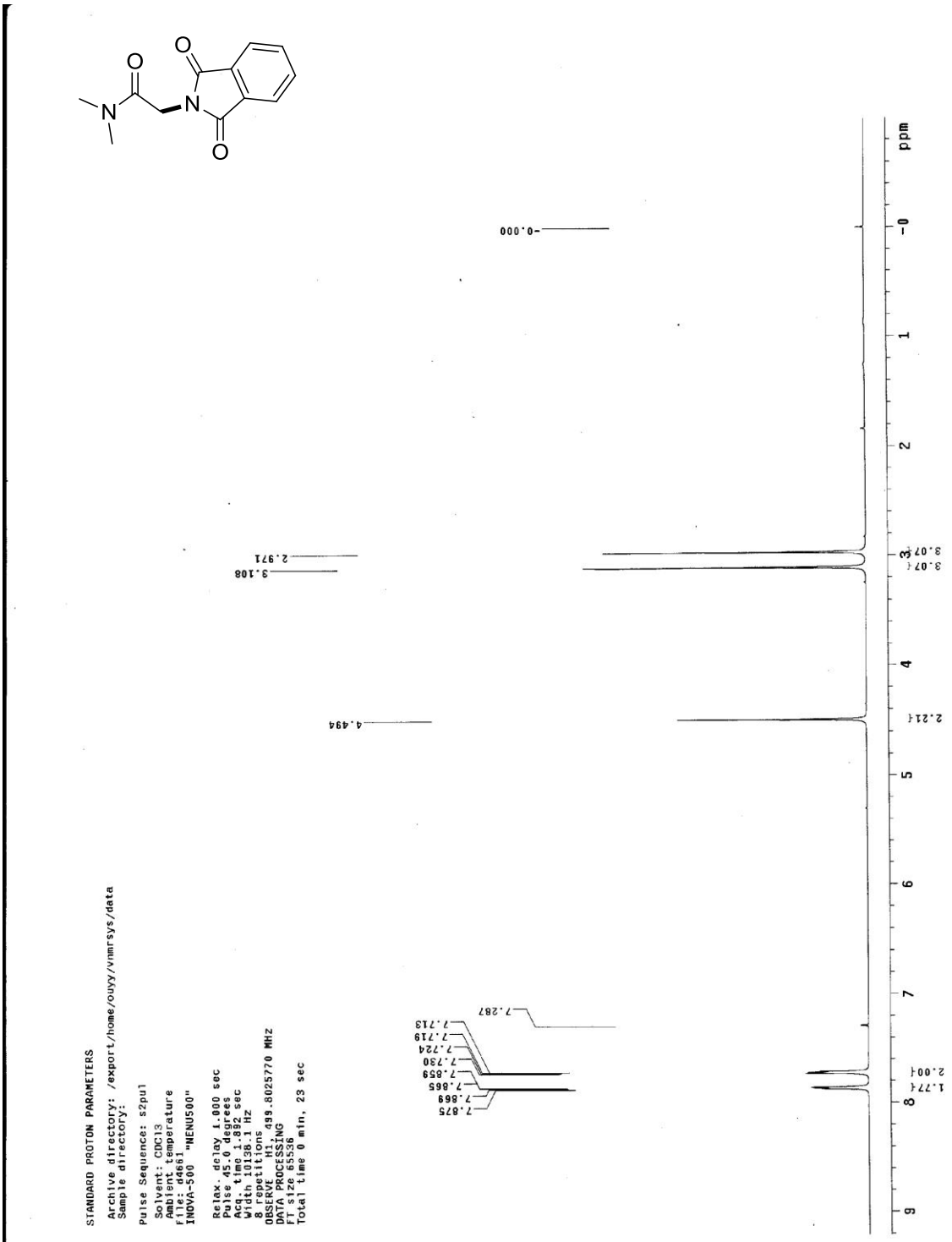

STANDARD CARBON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: cdcl3
Ambient temperature
User: ouyy
File: d3724-87
INOVA-500 "NENU500"
Relax. delay 0.500 sec
Pulse 45.0 degrees
Acq. time 1.380 sec
Width 31421.8 Hz
256 repetitions
OBSERVE C13, 125.6754680 MHz
DECOUPLE H1, 499.8050905 MHz
Power 42 dB
continuously on
WALTZ16 modulated
DATA PROCESSING
Line broadening 1.5 Hz
FT size 131072
Total time 2 hr, 3 min, 31 sec
168.008
136.301
133.947
132.047
128.633
128.576
127.786
123.300
77.256
77.000
76.748
41.547
ppm

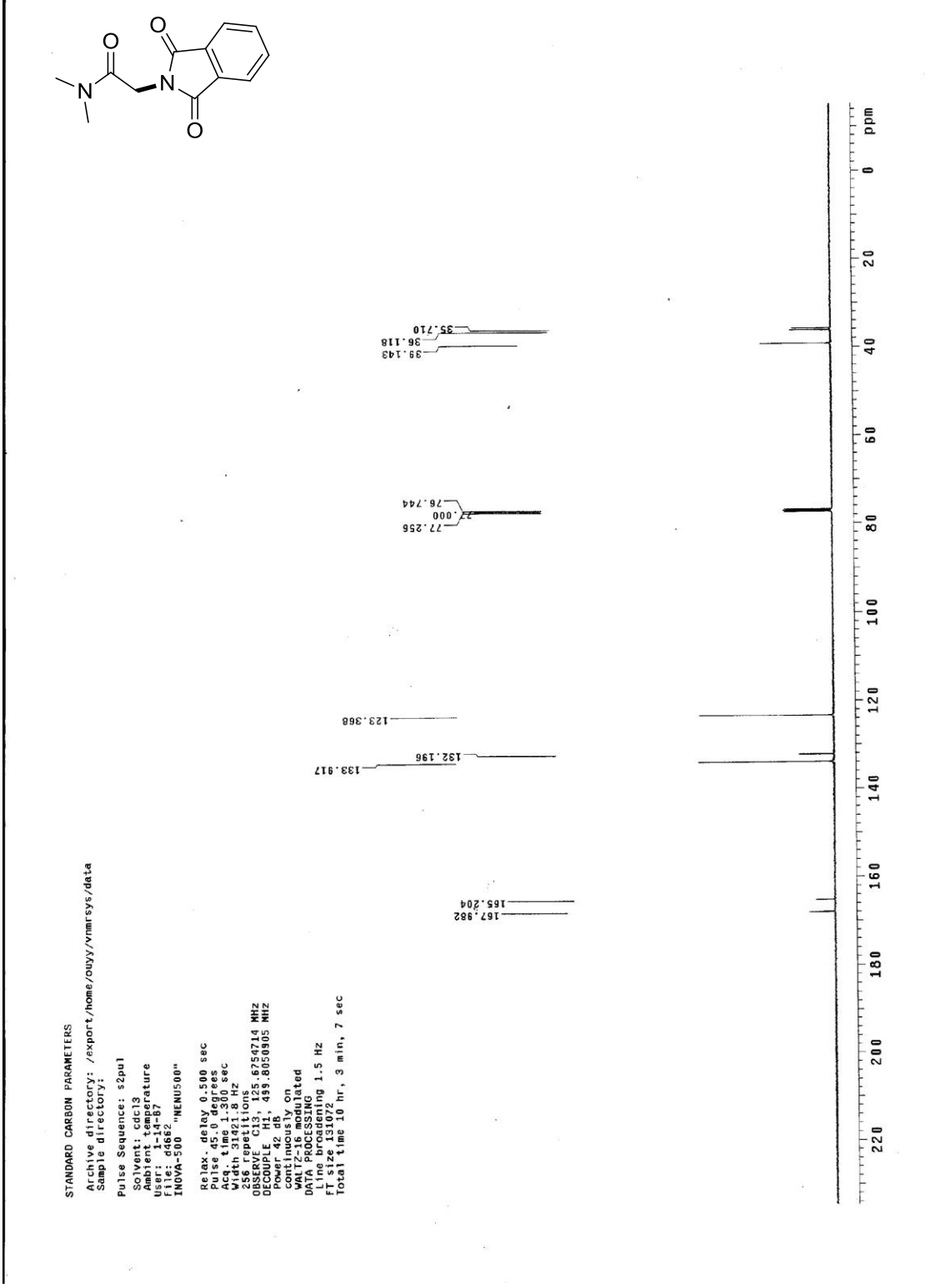

STANDARD PROTON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
File: d4262
INOVA-500 "NENU500"
Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 1.892 sec
Width 10768.6 Hz
8 repetitions
OBSERVE H1, 499.8025712 MHz
DATA PROCESSING
FT size 65536
Total time 0 min, 23 sec
O
N
O
7.846
7.840
7.836
7.830
7.721
7.715
7.710
7.704
3.704
3.689
3.675
1.678
1.663
1.648
1.395
1.379
1.364
1.349
0.965
0.950
0.936
3.00
2.05
2.06
2.15
1.94
2.10
ppm

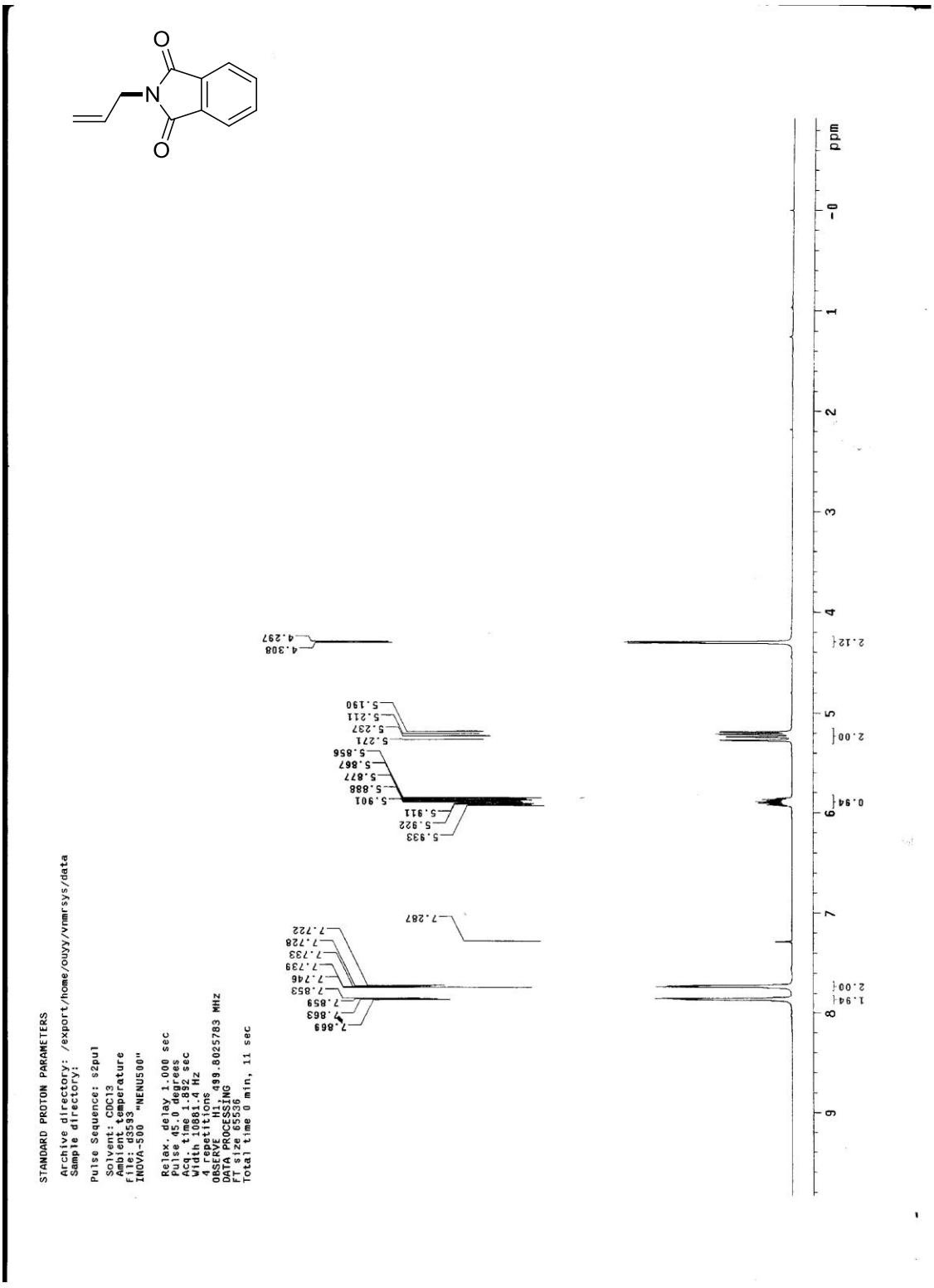

STANDARD CARBON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: cdcl3
Ambient temperature
User: 1-14-87
File: d4263
INOVA-500 "NENUS00"
Relax. delay 0.500 sec
Pulse 45.0 degrees
Acq. time 1.300 sec
Width 31421.8 Hz
128 repetitions
OBSERVE C13, 125.6754689 MHz
DECOUPLE H1, 499.8050905 MHz
Power 42 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 1.5 Hz
FT size 131072
Total time 2 hr, 3 min, 31 sec
168.352
133.730
132.067
123.025
77.256
76.744
37.678
30.544
19.980
13.556
ppm

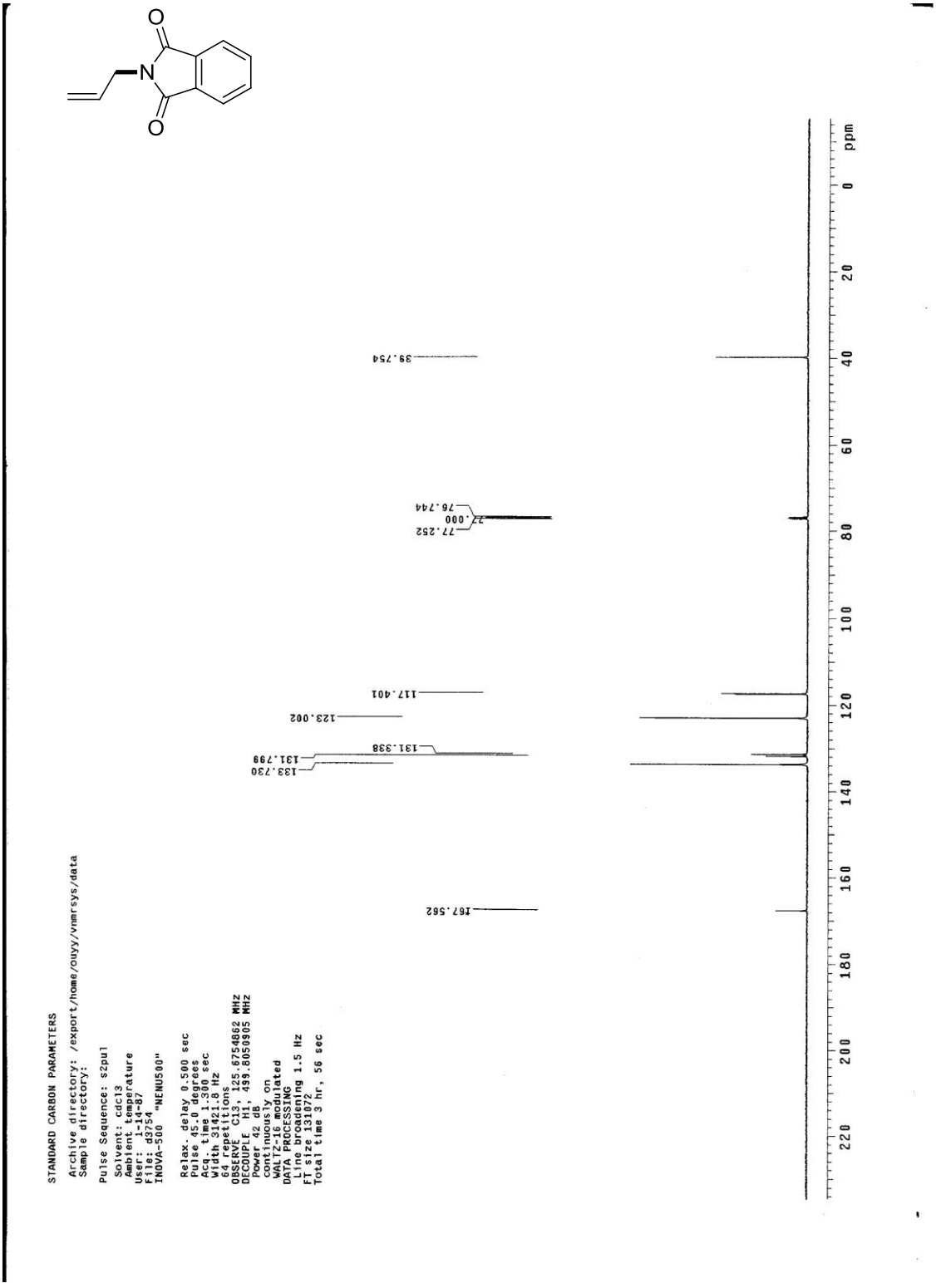

STANDARD PROTON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
File: d4672
INOVA-500 "WENU500"
Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 1.892 sec
Width 10138.1 Hz
4 repetitions
OBSERVE H1, 499.8025835 MHz
DATA PROCESSING
FT size 655536
Total time 0 min, 11 sec
-0.000
1.650
1.892
1.908
1.914
1.933
1.955
2.227
2.237
2.243
2.248
2.259
2.262
2.271
2.277
2.348
2.356
2.368
2.376
2.388
2.399
2.481
2.496
2.501
2.519
4.559
4.580
4.600
7.274
7.719
7.725
7.729
7.735
7.829
7.834
7.839
7.845
0.57
1.12
1.15
0.62
0.484
1.00
1.05
ppm

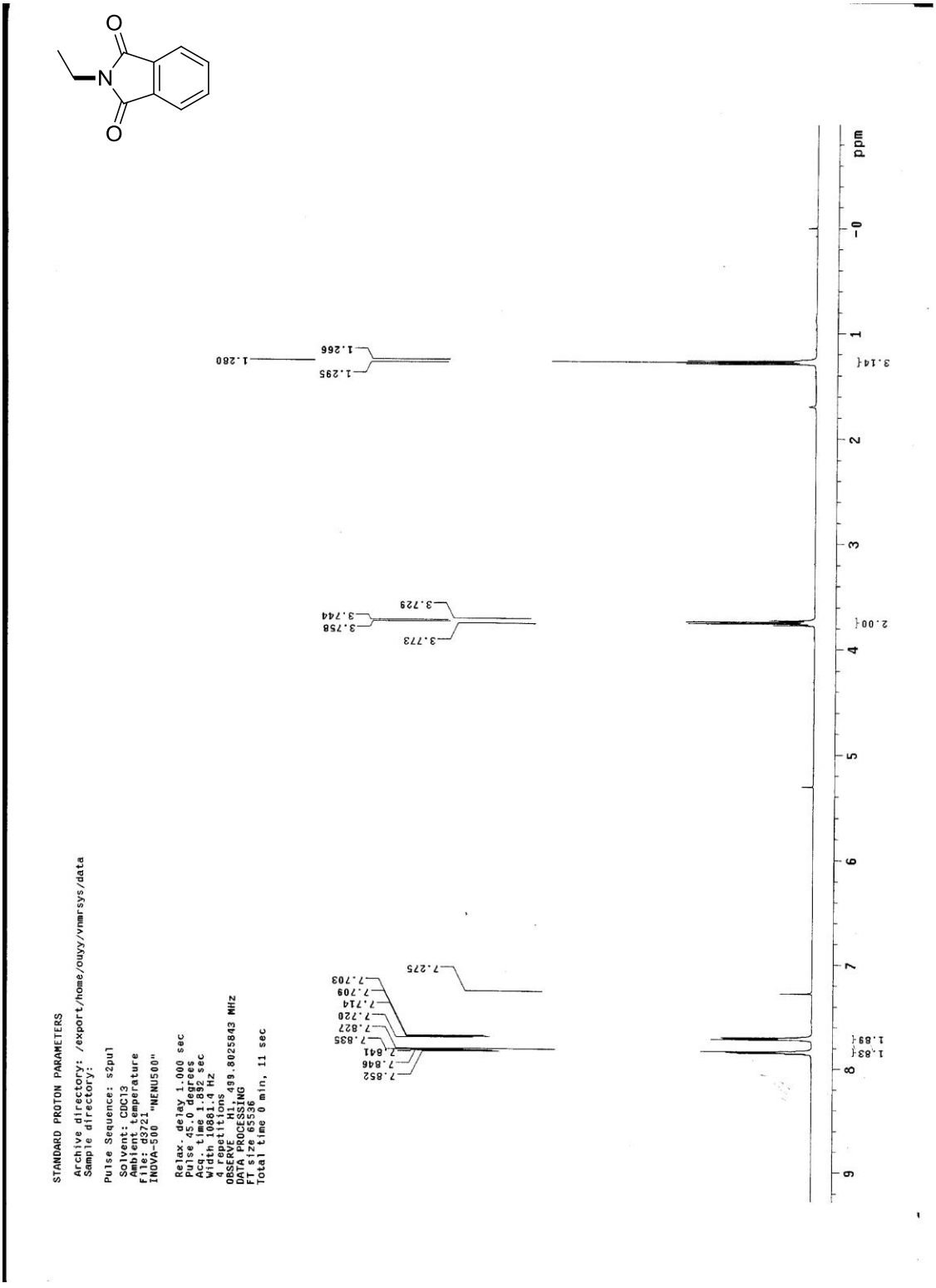

STANDARD CARBON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: cdcl3
Ambient temperature
User: 1-14-87
File: d4676
INOVA-500 "NENU500"
Relax. delay 0.500 sec
Pulse 45.0 degrees
Acq. time 1.300 sec
Width 31421.8 Hz
4480 repetitions
OBSERVE C13, 125.6754656 MHz
DECOUPLE H1, 499.8050905 MHz
Power 42 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 1.5 Hz
FT size 131072
Total time 10 hr, 3 min, 7 sec
212.183
167.386
134.115
131.883
123.395
77.252
77.000
76.744
55.376
36.099
27.183
19.007
ppm

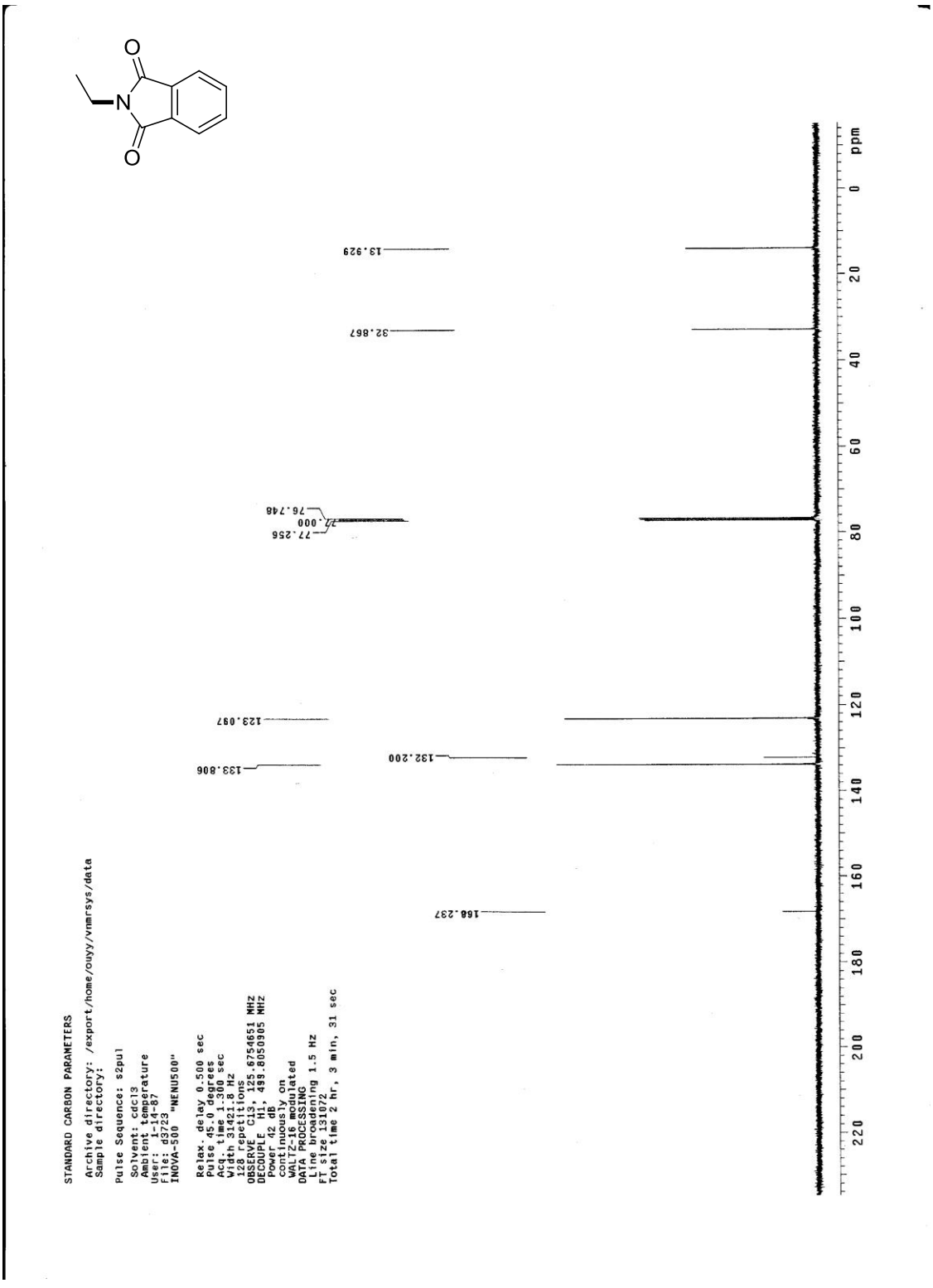

STANDARD PROTON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
File: d461
INOVA-500 "NENU500"
Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 1.892 sec
Width 10138.1 Hz
8 repetitions
OBSERVE H1, 499.8025770 MHz
DATA PROCESSING
FT size 65536
Total time 0 min, 23 sec
0.000
2.971
3.108
4.494
7.287
7.713
7.719
7.724
7.730
7.859
7.865
7.869
7.875
3.074
3.074
2.214
1.774
2.004
ppm

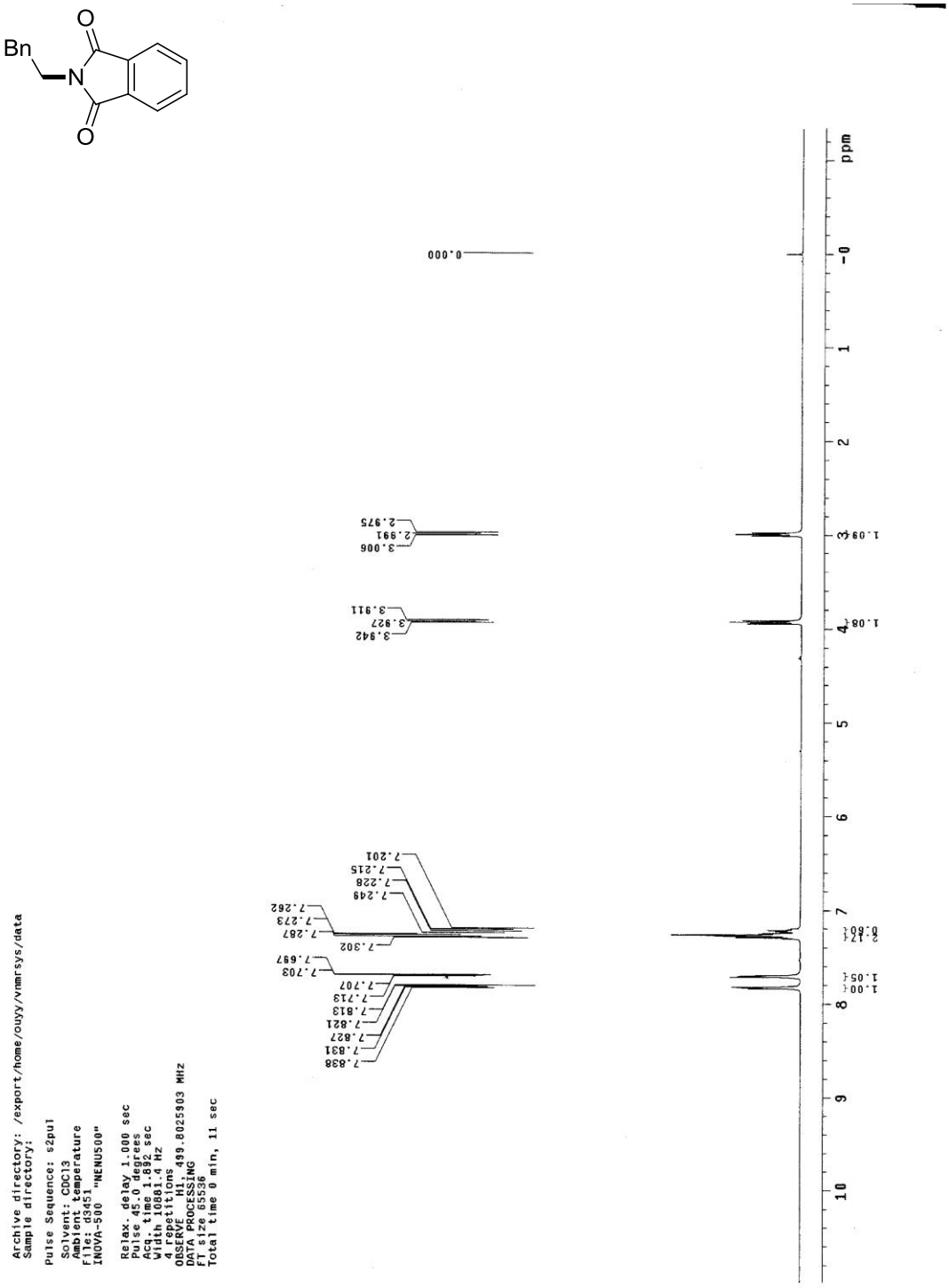

STANDARD CARBON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: cdcl3
Ambient temperature
User: 1-14-87
File: dd62
INOVA-500 "NENU500"
Relax. delay 0.500 sec
Pulse 45.0 degrees
Acq. time 1.300 sec
Width 31421.8 Hz
256 repetitions
OBSERVE C13, 125.6754714 MHz
DECOUPLE H1, 499.8050905 MHz
Power 42 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 1.5 Hz
FT size 131072
Total time 10 hr, 3 min, 7 sec
167.982
165.204
133.917
132.196
123.368
77.256
77.000
76.744
39.143
36.118
35.710
ppm

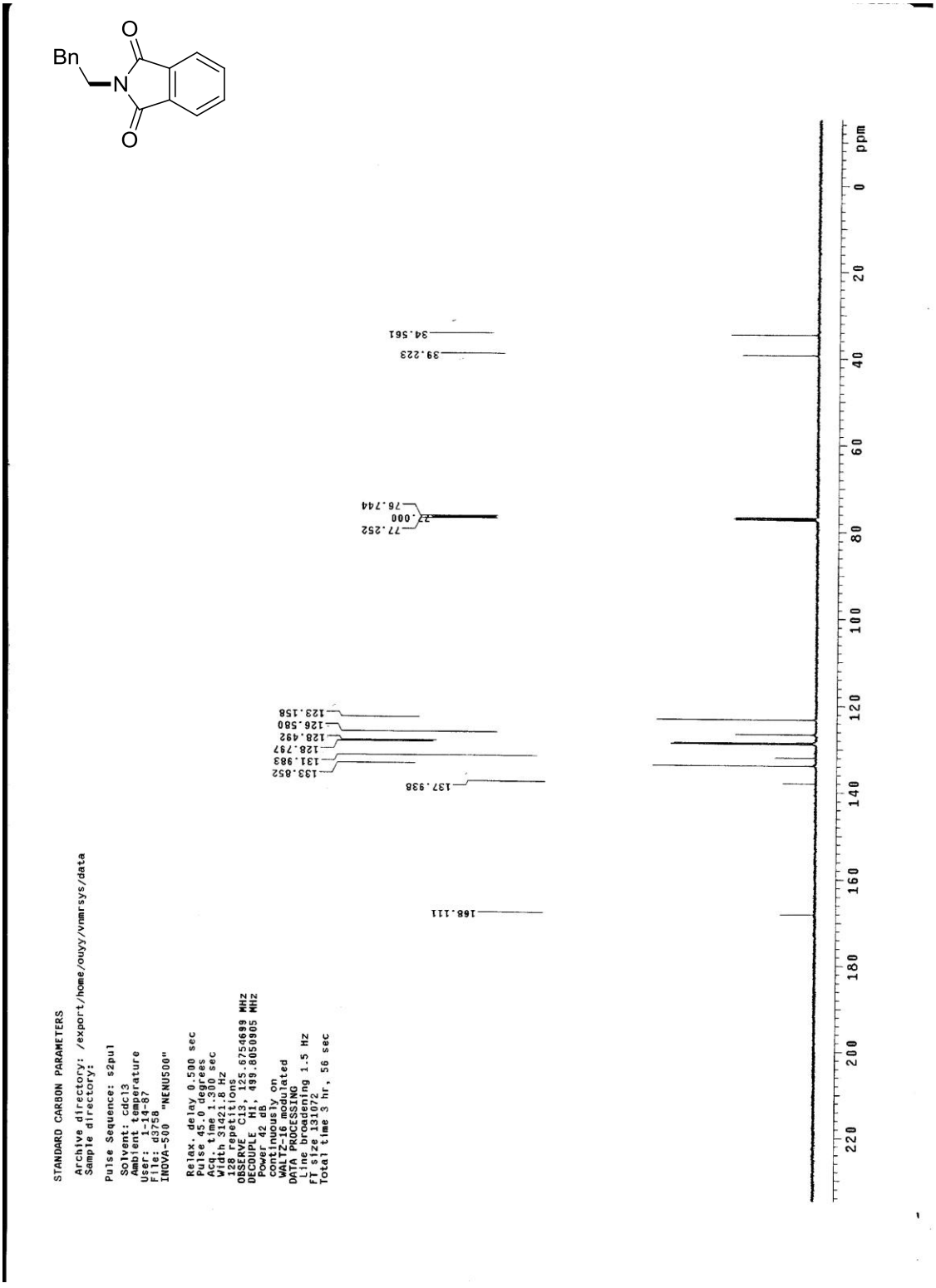

STANDARD PROTON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
File: d3593
INOVA-500 "NENUS00"
Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 1.887 sec
Width 10881.4 Hz
4 repetitions
OBSERVE H1, 499.8025783 MHz
DATA PROCESSING
FT size 65536
Total time 0 min, 11 sec
4.308
4.297
5.190
5.211
5.237
5.271
5.856
5.867
5.877
5.888
5.901
5.911
5.922
5.933
7.287
7.722
7.728
7.733
7.739
7.746
7.853
7.859
7.863
7.869
2.12
2.00
0.94
1.94
2.00
ppm

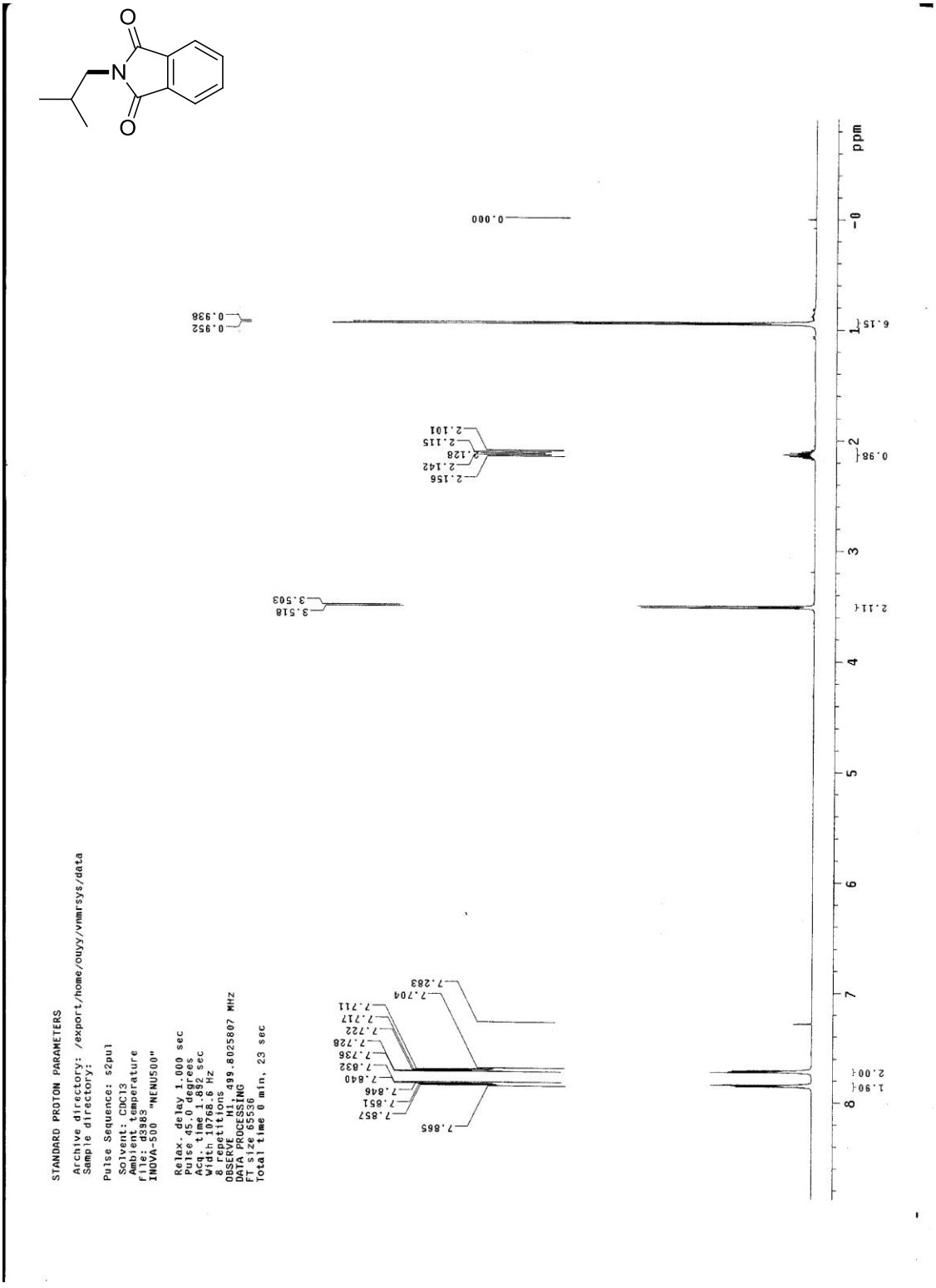

STANDARD CARBON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: cdcl3
Ambient temperature
User: l-14-87
File: d3754
INOVA-500 "NENU500"
Relax. delay 0.500 sec
Pulse 45.0 degrees
Acq. time 1.300 sec
Width 31421.8 Hz
64 repetitions
OBSERVE C13, 125.6754862 MHz
DECOUPLE H1, 499.8050905 MHz
Power 42 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 1.5 Hz
FT size 131072
Total time 3 hr, 56 sec
167.562
133.730
131.799
131.338
123.002
117.401
77.252
77.000
76.744
39.754
ppm

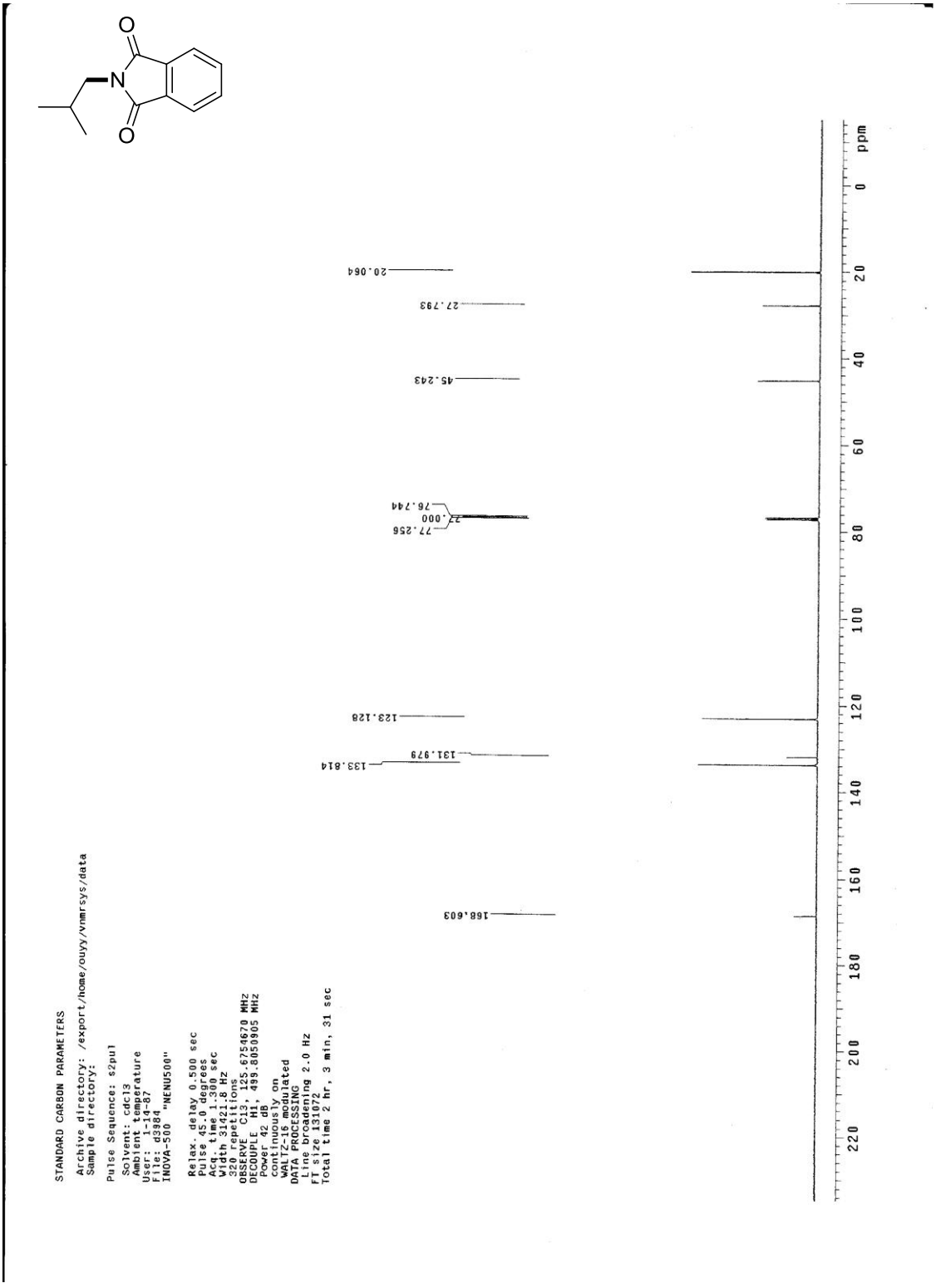

STANDARD PROTON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
File: d3721 "NEMUS60"
INOVA-500 "NEMUS60"
Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 1.892 sec
Width 10081.4 Hz
4 repetitions
OBSERVE H1, 499.8025843 MHz
DATA PROCESSING
FT size 65536
Total time 0 min, 11 sec
1.280
1.266
1.295
3.773
3.758
3.744
3.729
7.852
7.846
7.841
7.835
7.827
7.720
7.714
7.709
7.703
7.275
3.14
2.00
1.89
1.83
ppm

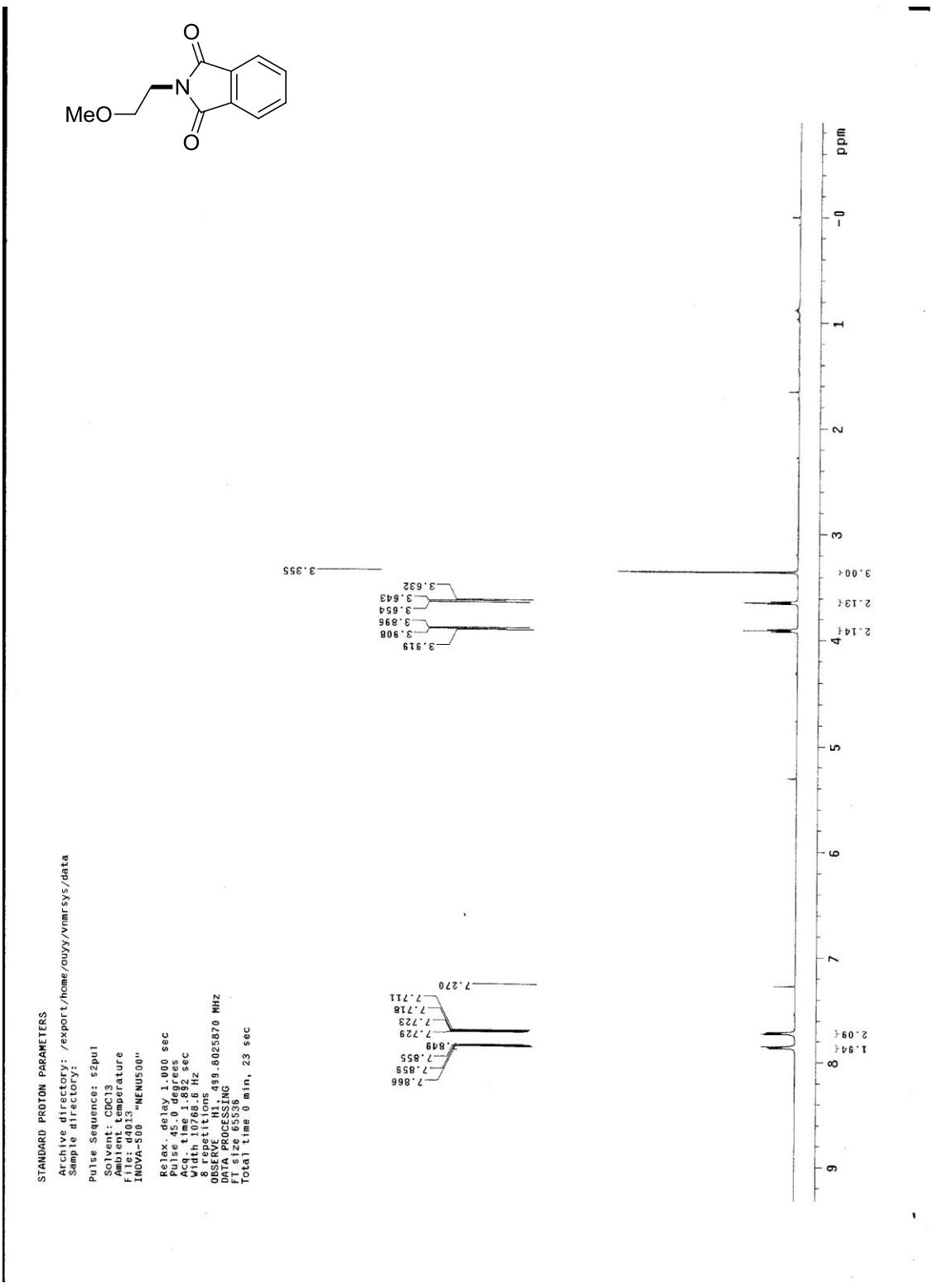

STANDARD CARBON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: cdcl3
Ambient temperature
User: 1-14-87
File: d3723
INOVA-500 "WENU500"
Relax. delay 0.500 sec
Pulse 45.0 degrees
Acq. time 1.000 sec
Width 31421.8 Hz
128 repetitions
OBSERVE C13, 125.6754651 MHz
DECOUPLE H1, 499.8050305 MHz
Power 42 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 1.5 Hz
FT size 131072
Total time 2 hr, 3 min, 31 sec
13.929
32.867
76.748
77.000
77.256
123.097
133.806
132.200
168.237
220
200
180
160
140
120
100
80
60
40
20
0
ppm

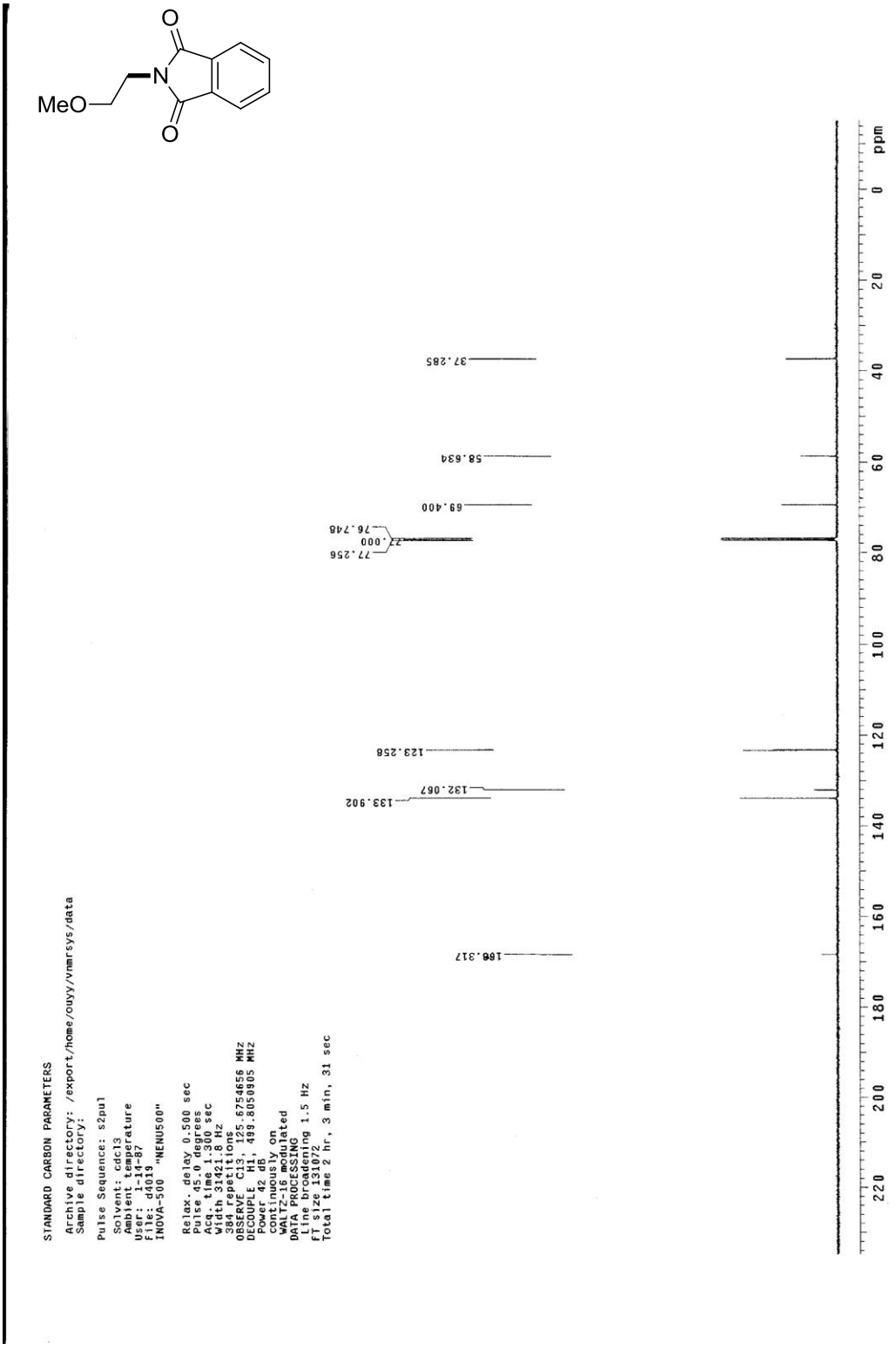

Bn
N
O
O
STANDARD PROTON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
File: dd51
INOVA-500 "NENUS00"
Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 1.682 sec
Width 10881.4 Hz
4 repetitions
OBSERVE H1, 499.8025903 MHz
DATA PROCESSING
FT size 65536
Total time 0 min, 11 sec
0.000
2.975
2.991
3.006
3.911
3.927
3.942
7.201
7.215
7.228
7.249
7.262
7.273
7.287
7.302
7.687
7.703
7.707
7.713
7.813
7.821
7.827
7.831
7.838
1.09
1.08
0.60
1.00
1.05
ppm

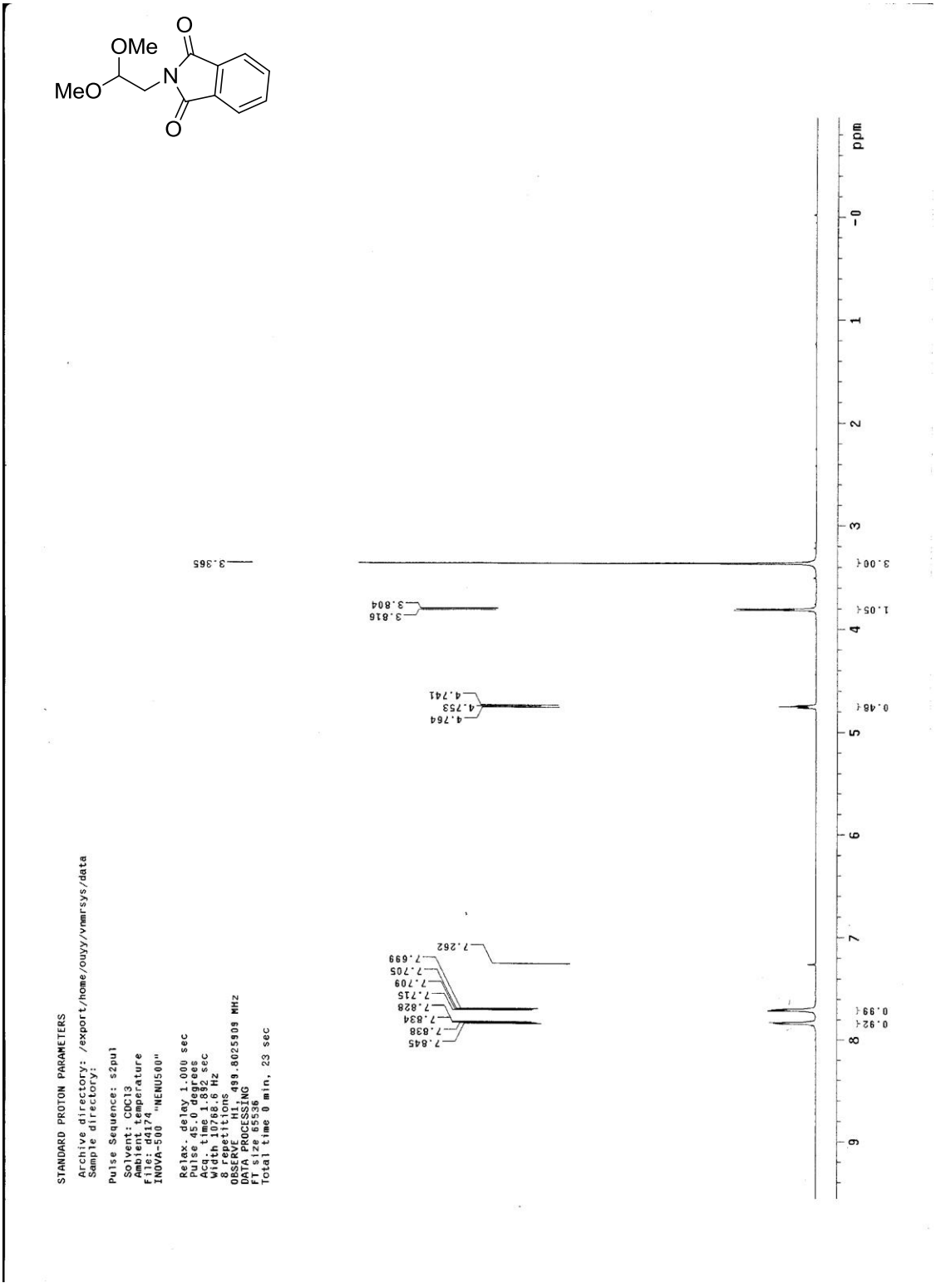

Bn
N
O
O
STANDARD CARBON PARAMETERS
Archive directory: /export1/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: cdcl3
Ambient temperature
User: 1-14-87
File: d3758
INOVA-500 "NEWUS00"
Relax. delay 0.500 sec
Pulse 45.0 degrees
Acq. time 1.300 sec
Width 32121.8 Hz
128 repetitions
OBSERVE C13, 125.6754689 MHz
DECOUPLE H1, 499.8050905 MHz
Power 42 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 1.5 Hz
FT size 131072
Total time 3 hr, 56 sec
168.111
137.938
133.852
131.983
128.797
128.492
126.580
123.158
77.252
77.000
76.744
39.223
34.561
ppm

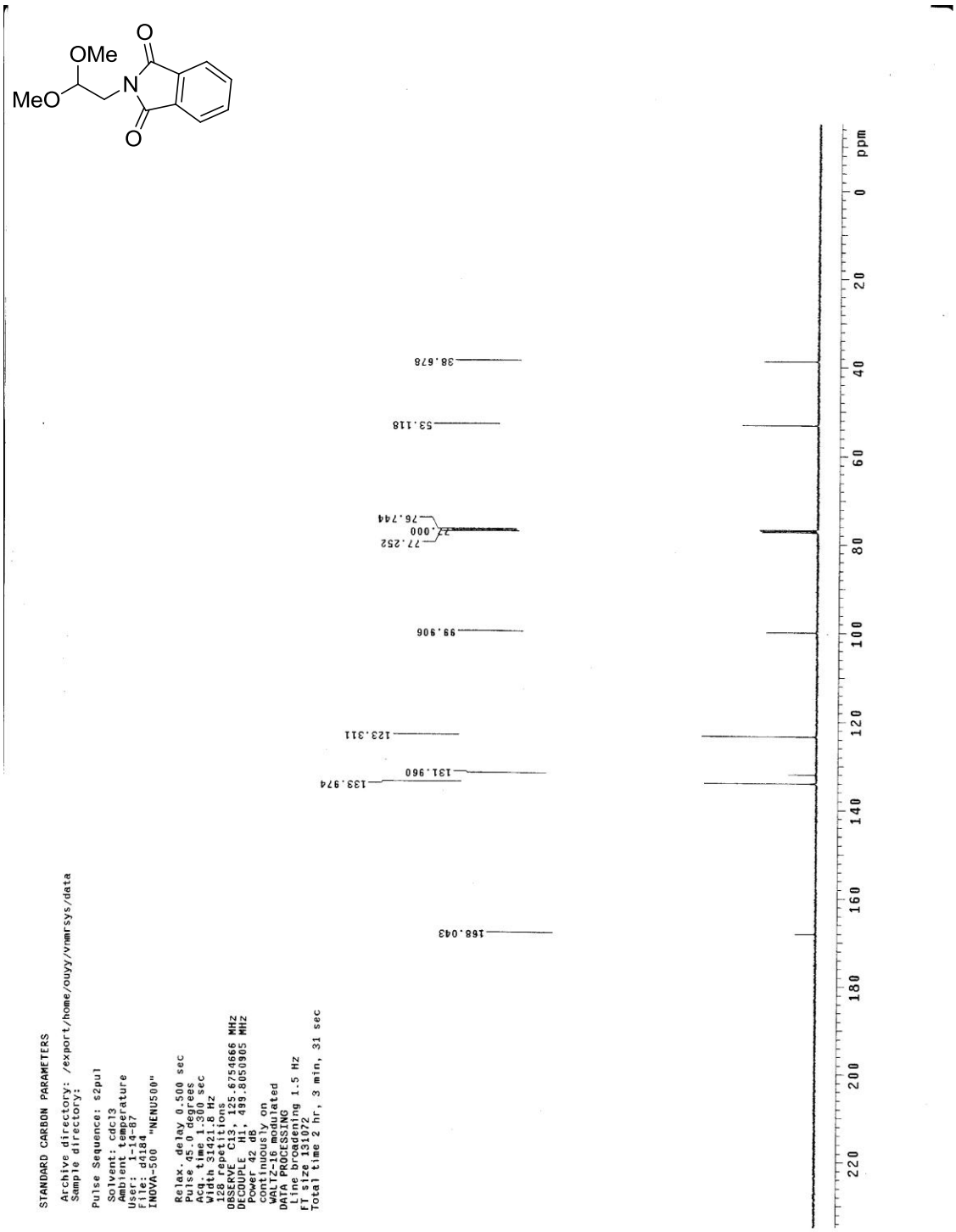

STANDARD PROTON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
File: d3983
INOVA-500 "MENU500"
Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 1.892 sec
Width 10768.5 Hz
8 repetitions
OBSERVE H1, 499.8025807 MHz
DATA PROCESSING
FT size 65536
Total time 0 min, 23 sec
0.000
0.952
0.938
2.101
2.115
2.128
2.142
2.156
3.503
3.518
7.283
7.704
7.711
7.717
7.722
7.728
7.736
7.832
7.840
7.846
7.851
7.857
7.865
6.15
0.98
2.11
2.00
1.90
ppm

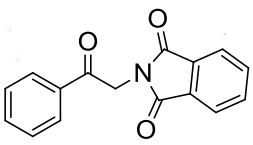

STANDARD CARBON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: cdcl3
Ambient temperature
User: 1-14-87
File: d3984
INOVA-500 "NENU500"
Relax. delay 0.500 sec
Pulse 45.0 degrees
Acq. time 1.300 sec
Width 31421.8 Hz
330 repetitions
OBSERVE C13, 125.6754670 MHz
DECOUPLE H1, 499.8050905 MHz
Power 42 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 2.0 Hz
FT size 131072
Total time 2 hr, 3 min, 31 sec
168.603
133.814
131.979
123.128
77.256
77.000
76.744
45.243
27.793
20.064
220
200
180
160
140
120
100
80
60
40
20
0
ppm

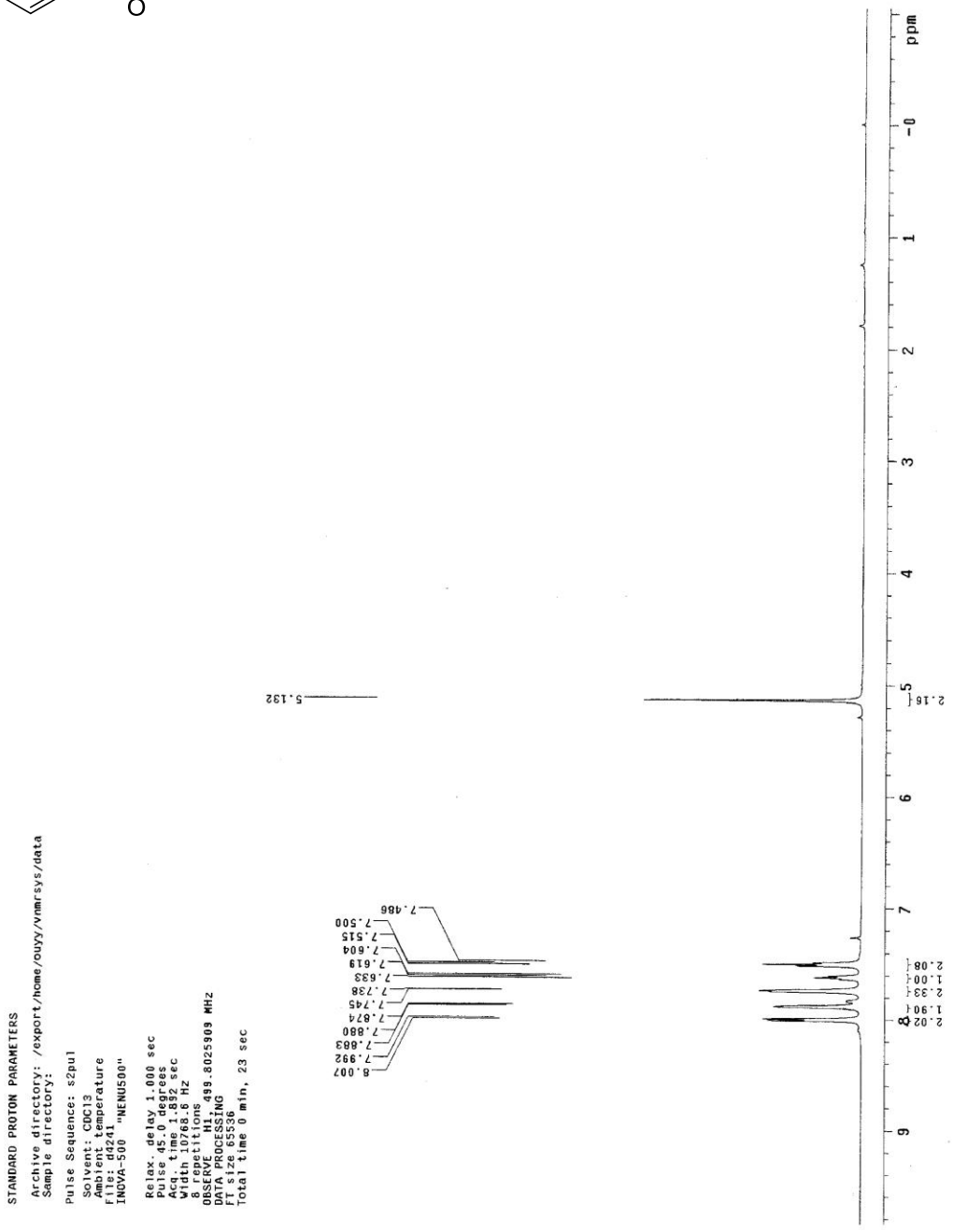

O
N
MeO
O
STANDARD PROTON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
File: ouyy-013
INOVA-500 "NENU500"
Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 1.882 sec
Width 10768.6 Hz
8 repetitions
OBSERVE H1, 499.8025870 MHz
DATA PROCESSING
FT size 65536
Total time 0 min, 23 sec
3.355
3.632
3.643
3.654
3.896
3.908
3.919
7.270
7.711
7.718
7.723
7.729
7.849
7.855
7.859
7.866
3.00
2.13
2.14
1.94
2.09
ppm

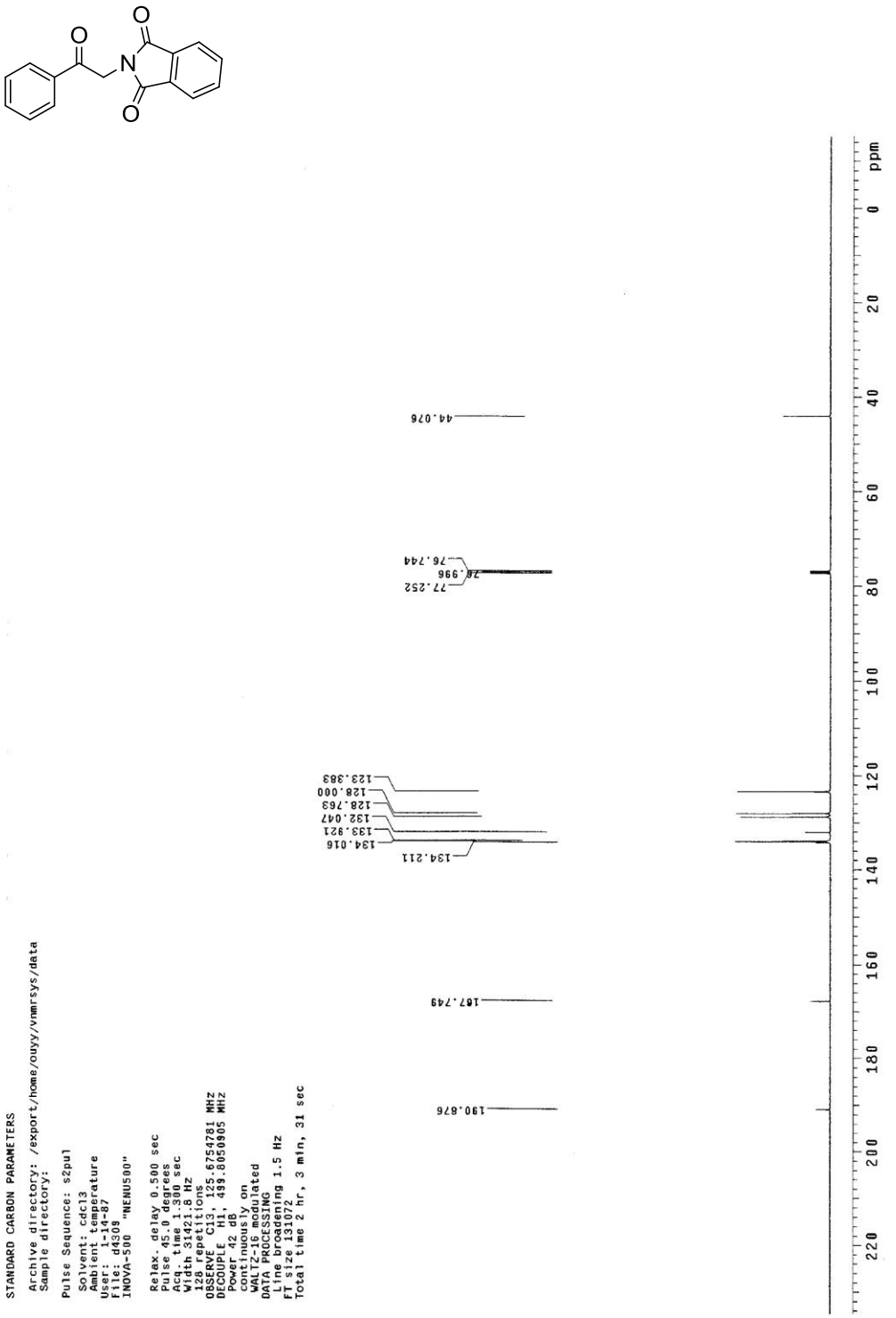

O
N
MeO
O
STANDARD CARBON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: cdcl3
Ambient temperature
User: 1-14-87
File: d4019
INOVA-500 "NEMU500"
Relax. delay 0.500 sec
Pulse 45.0 degrees
Acq. time 1.300 sec
Width 31421.8 Hz
384 repetitions
OBSERVE C13, 125.6754656 MHz
DECOUPLE H1, 499.8050905 MHz
Power 42 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 1.5 Hz
FT size 131072
Total time 2 hr, 3 min, 31 sec
37.285
58.634
69.400
76.748
77.000
77.256
123.258
132.067
133.902
166.317
220
200
180
160
140
120
100
80
60
40
20
0
ppm

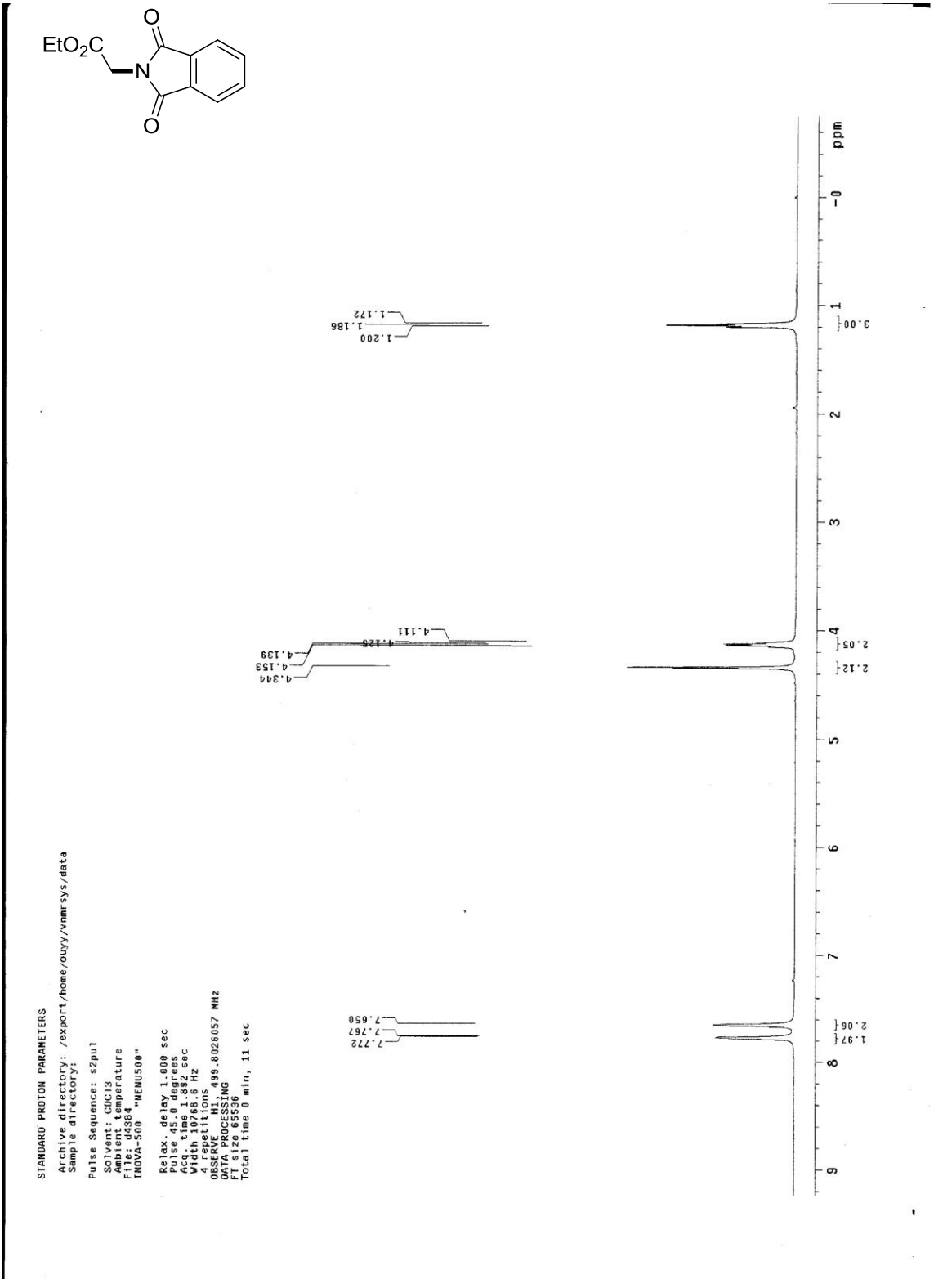

OMe
MeO
N
O
O
STANDARD PROTON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
File: d4174 "NENU500"
INOVA-500 "NENU500"
Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 1.882 sec
Width 10768.6 Hz
8 repetitions
OBSERVE H1, 499.8025909 MHz
DATA PROCESSING
FT size 65536
Total time 0 min, 23 sec
3.365
3.804
3.816
4.741
4.753
4.764
7.262
7.699
7.705
7.709
7.715
7.828
7.834
7.838
7.845
3.00
1.05
0.48
0.92
0.99
ppm

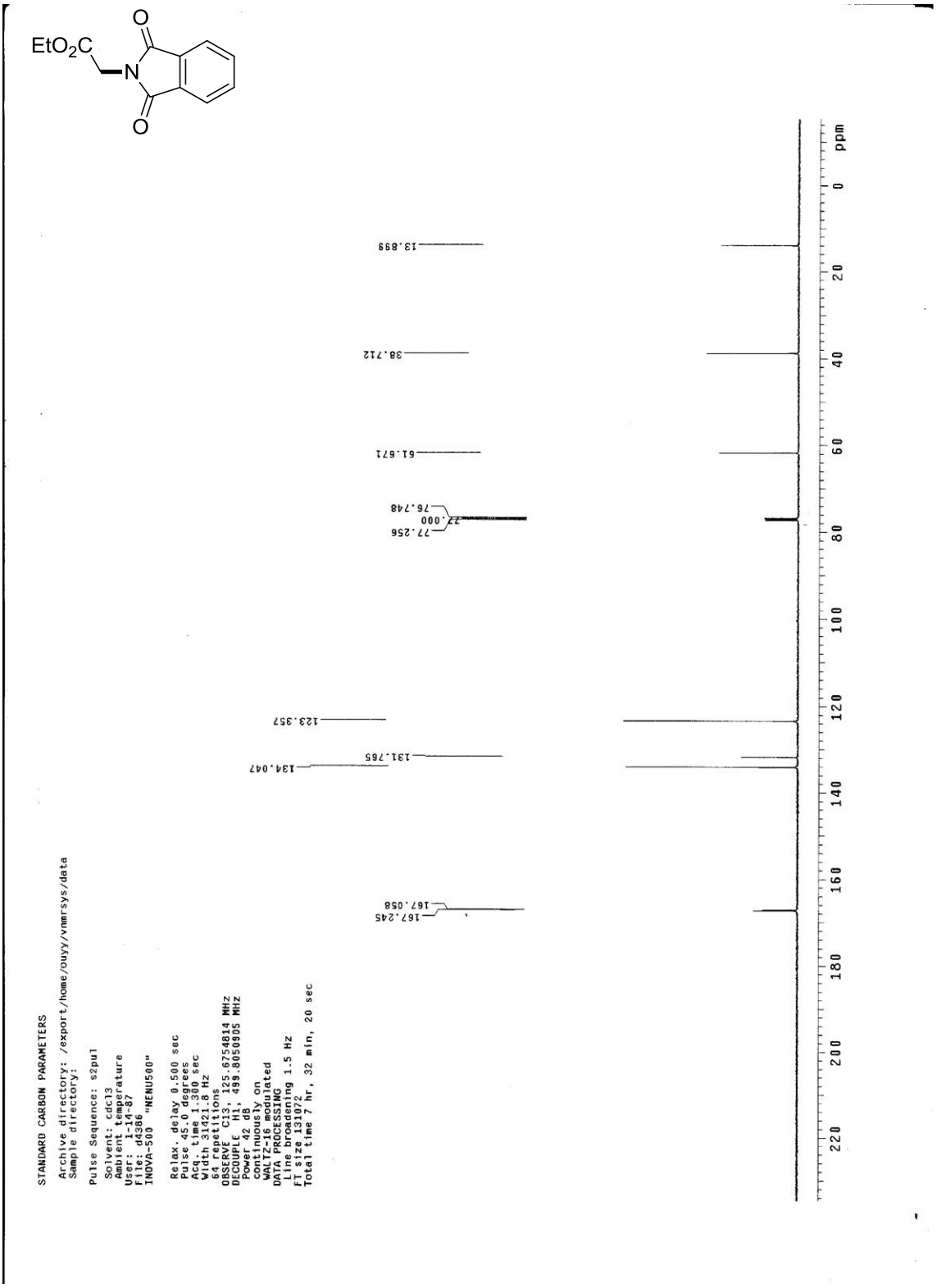

OMe
MeO
N
O
O
STANDARD CARBON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: cdcl3
Ambient temperature
User: lab-07
File: d4184.fid
INOVA-500 "NENU500"
Relax. delay 0.500 sec
Pulse 45.0 degrees
Acq. time 1.380 sec
Width 31421.8 Hz
128 repetitions
OBSERVE C13, 125.6754666 MHz
DECOUPLE H1, 499.8050905 MHz
Power 42 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 1.5 Hz
FT size 131072
Total time 2 hr, 3 min, 31 sec
168.043
133.974
131.960
123.311
99.906
77.252
77.000
76.744
53.118
38.678
220
200
180
160
140
120
100
80
60
40
20
0
ppm

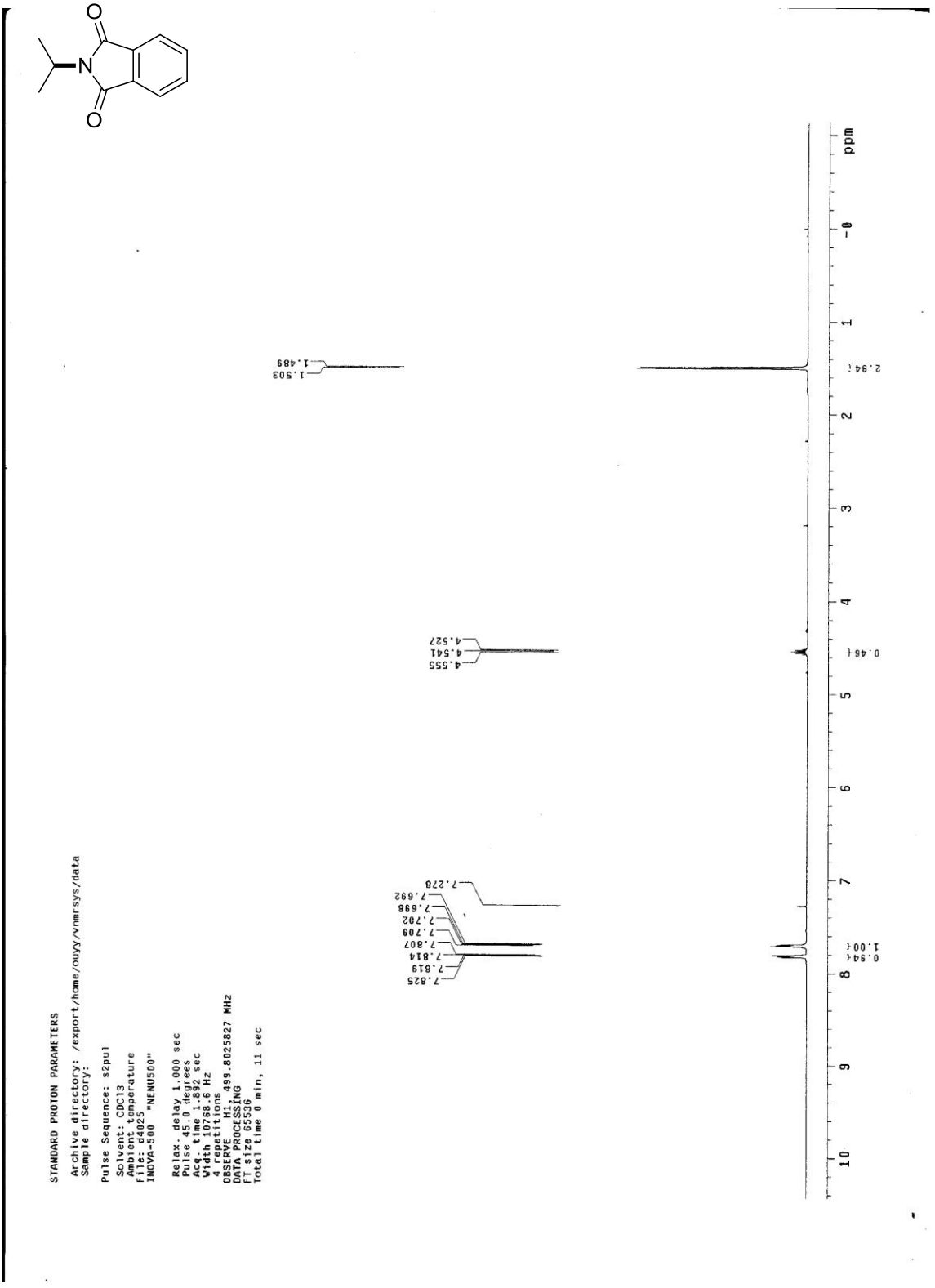


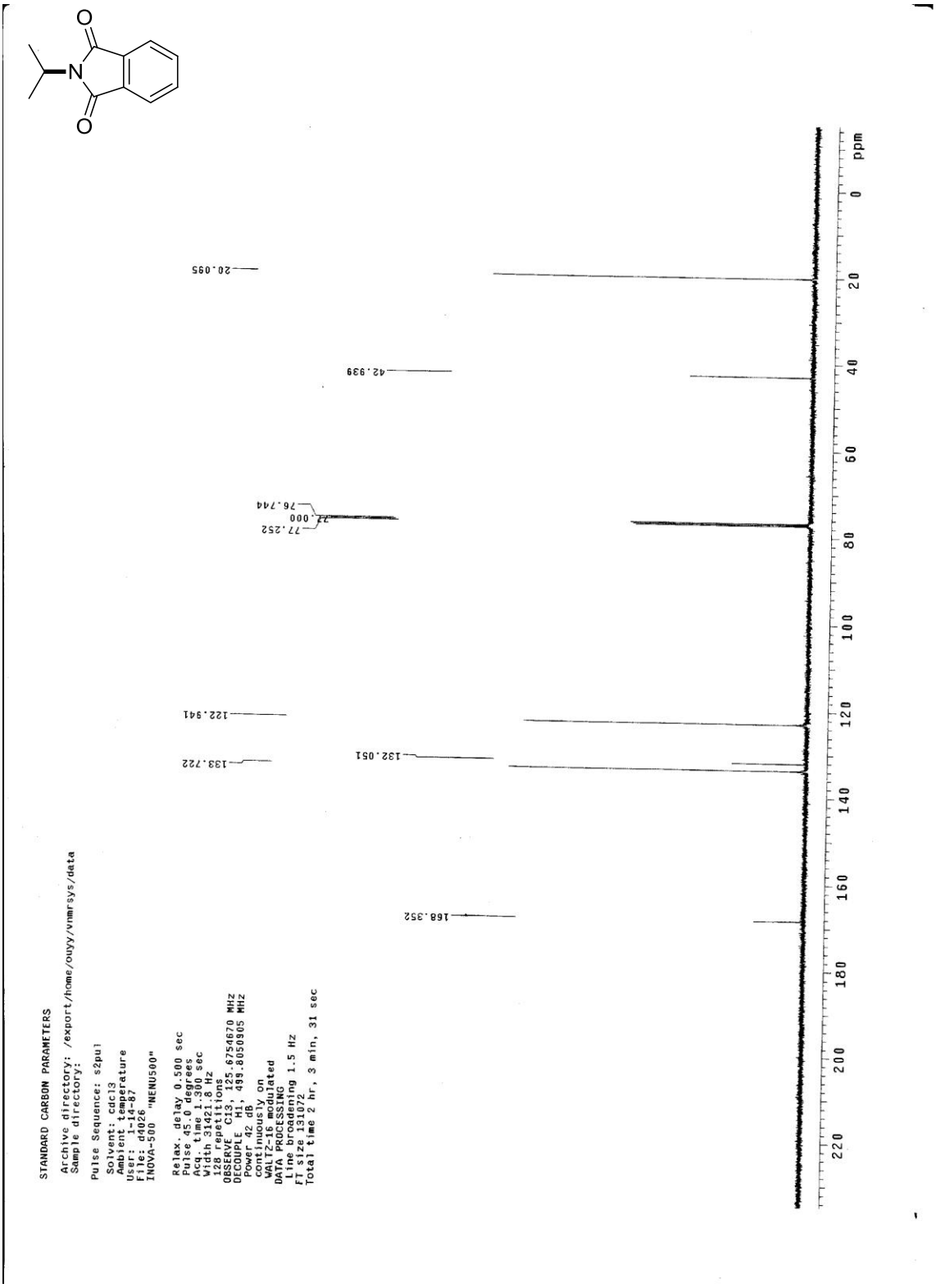

STANDARD PROTON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
File: d4241
INOVA-500 "NENU500"
Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 1.882 sec
Width 10768.6 Hz
8 repetitions
OBSERVE H1, 499.8025909 MHz
DATA PROCESSING
FT size 65536
Total time 0 min, 23 sec
5.132
8.007
7.992
7.883
7.880
7.874
7.745
7.738
7.633
7.619
7.604
7.515
7.500
7.486
2.16
2.08
1.00
2.33
1.90
2.02
ppm

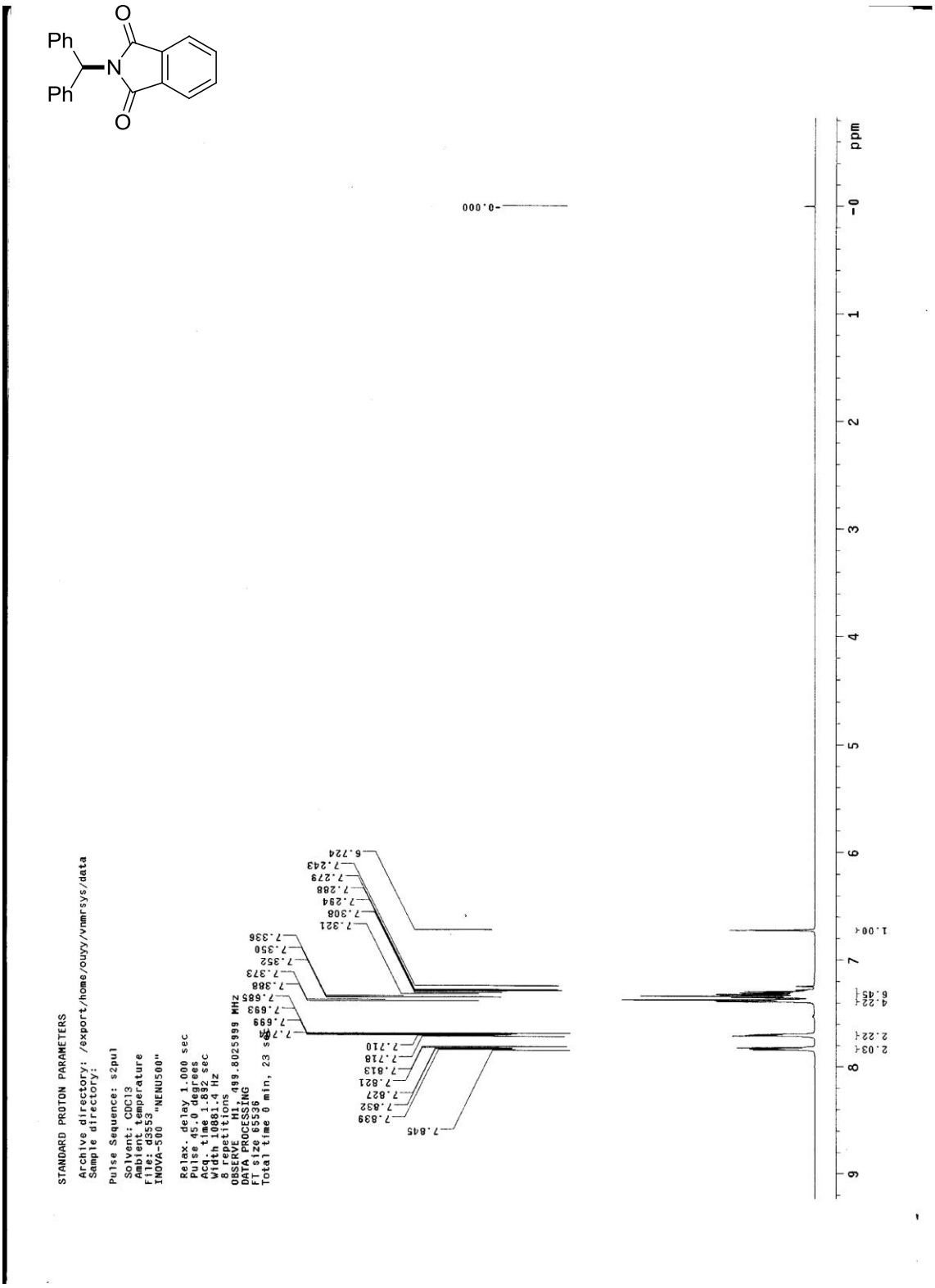

STANDARD CARBON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: cdcl3
Ambient temperature
User: 1-14-87
File: d4309 "NEMUS00"
INOVA-500
Relax. delay 0.500 sec
Pulse 45.0 degrees
Acq. time 1.300 sec
Width 31421.8 Hz
128 repetitions
OBSERVE C13, 125.6754781 MHz
DECOUPLE H1, 499.8050905 MHz
Power 42 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 1.5 Hz
FT size 131072
Total time 2 hr, 3 min, 31 sec
190.876
167.749
134.211
134.016
133.921
132.047
128.763
128.000
123.383
77.252
76.998
76.744
44.076
220
200
180
160
140
120
100
80
60
40
20
0
ppm

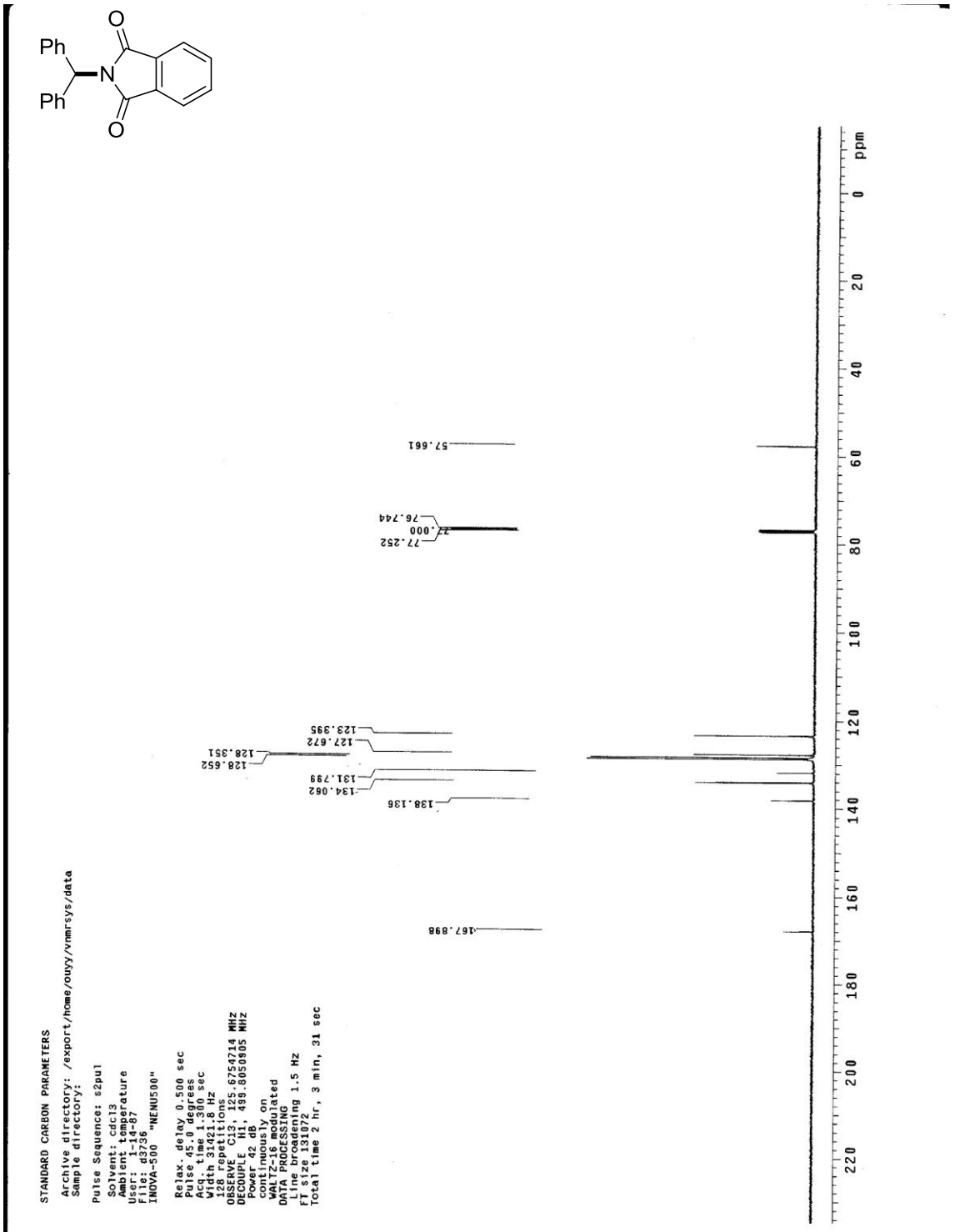

EtO2C
O
N
O
STANDARD PROTON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
File: dd384
INOVA-500 "NEMUS00"
Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 1.892 sec
Width 10768.9 Hz
4 repetitions
OBSERVE H1, 499.8026057 MHz
DATA PROCESSING
FT size 65536
Total time 0 min, 11 sec
7.772
7.767
7.650
4.344
4.153
4.139
4.125
4.111
1.200
1.186
1.172
ppm
9
8
7
6
5
4
3
2
1
0
1.97
2.06
2.12
2.05
3.00

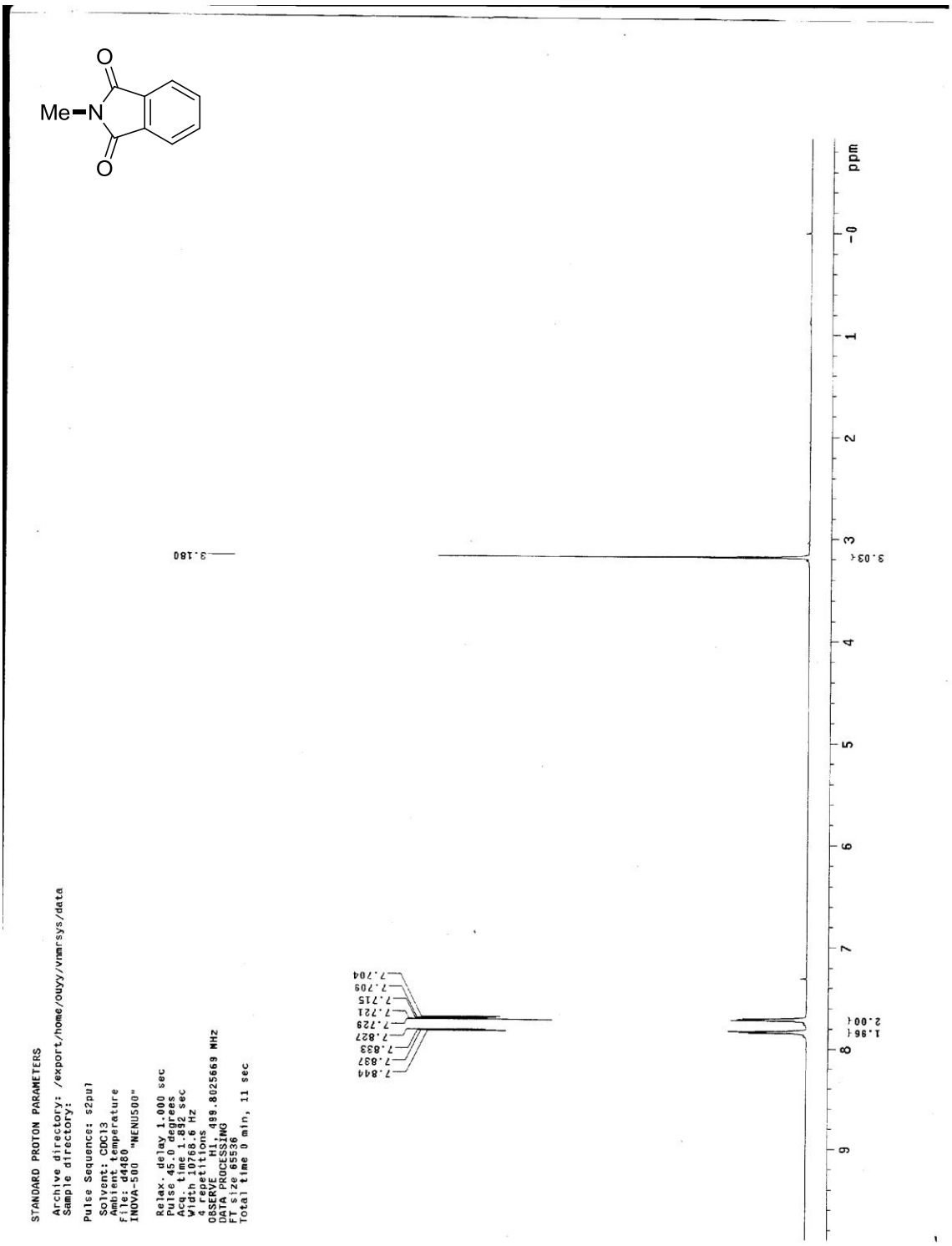

EtO2C
O
N
O
STANDARD CARBON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: cdcl3
Ambient temperature
User: 41-14-87
File: d386
INOVA-500 "NENU500"
Relax. delay 0.500 sec
Pulse 45.0 degrees
Acq. time 1.000 sec
Width 31421.8 Hz
64 repetitions
OBSERVE C13, 125.6754814 MHz
DECOUPLE H1, 499.8050905 MHz
Power 42 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 1.5 Hz
FT size 131072
Total time 7 hr, 32 min, 20 sec
167.245
167.058
134.047
131.765
123.357
77.256
77.000
76.748
61.671
38.712
13.899
ppm

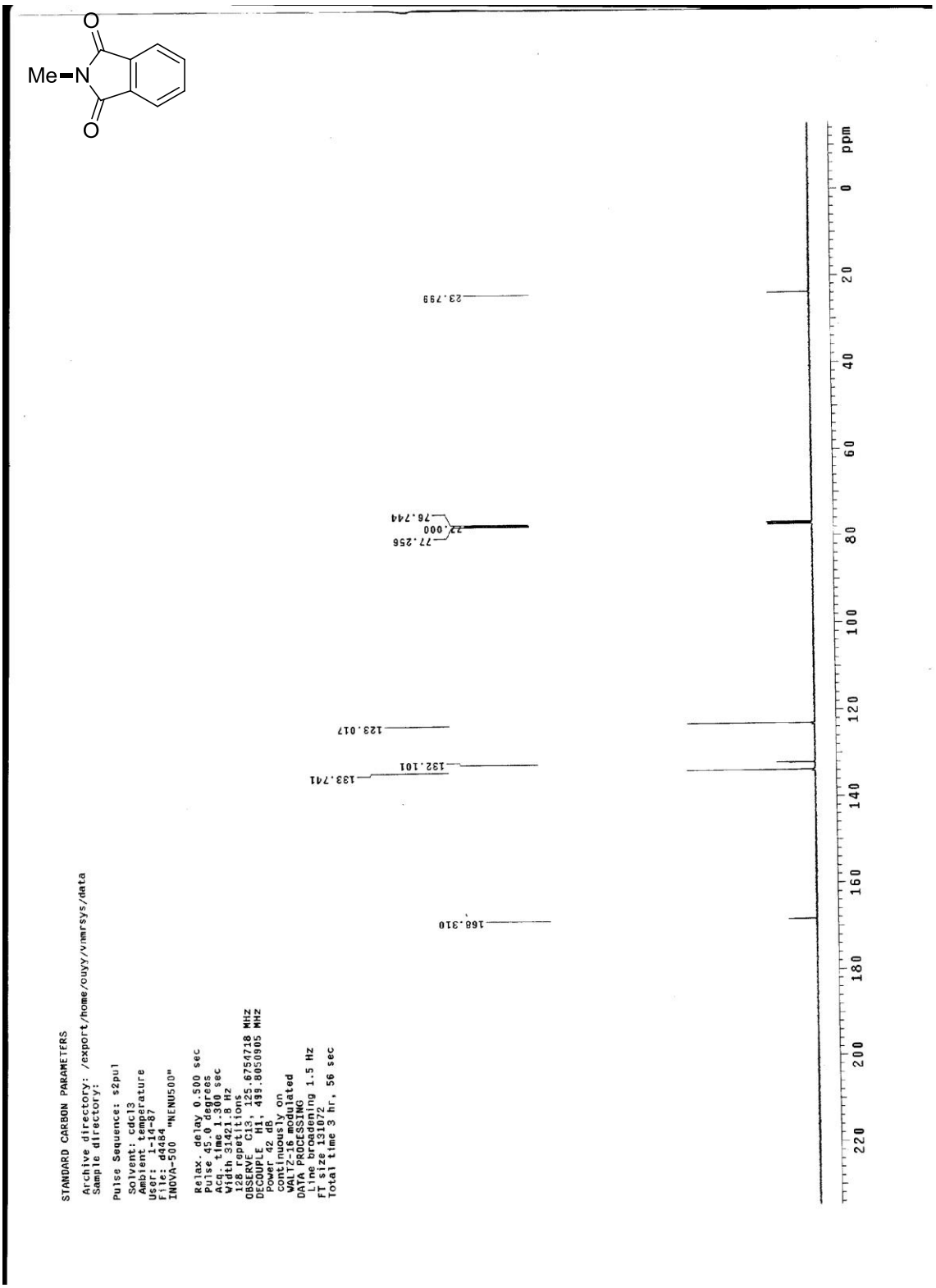

STANDARD PROTON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
File: d4025
INOVA-500 "NENU500"
Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 1.892 sec
Width 10768.6 Hz
4 repetitions
OBSERVE H1, 499.8025827 MHz
DATA PROCESSING
FT size 65536
Total time 0 min, 11 sec
1.503
1.489
4.555
4.541
4.527
7.825
7.819
7.814
7.807
7.709
7.702
7.698
7.692
7.278
2.94
0.46
1.00
0.94
ppm

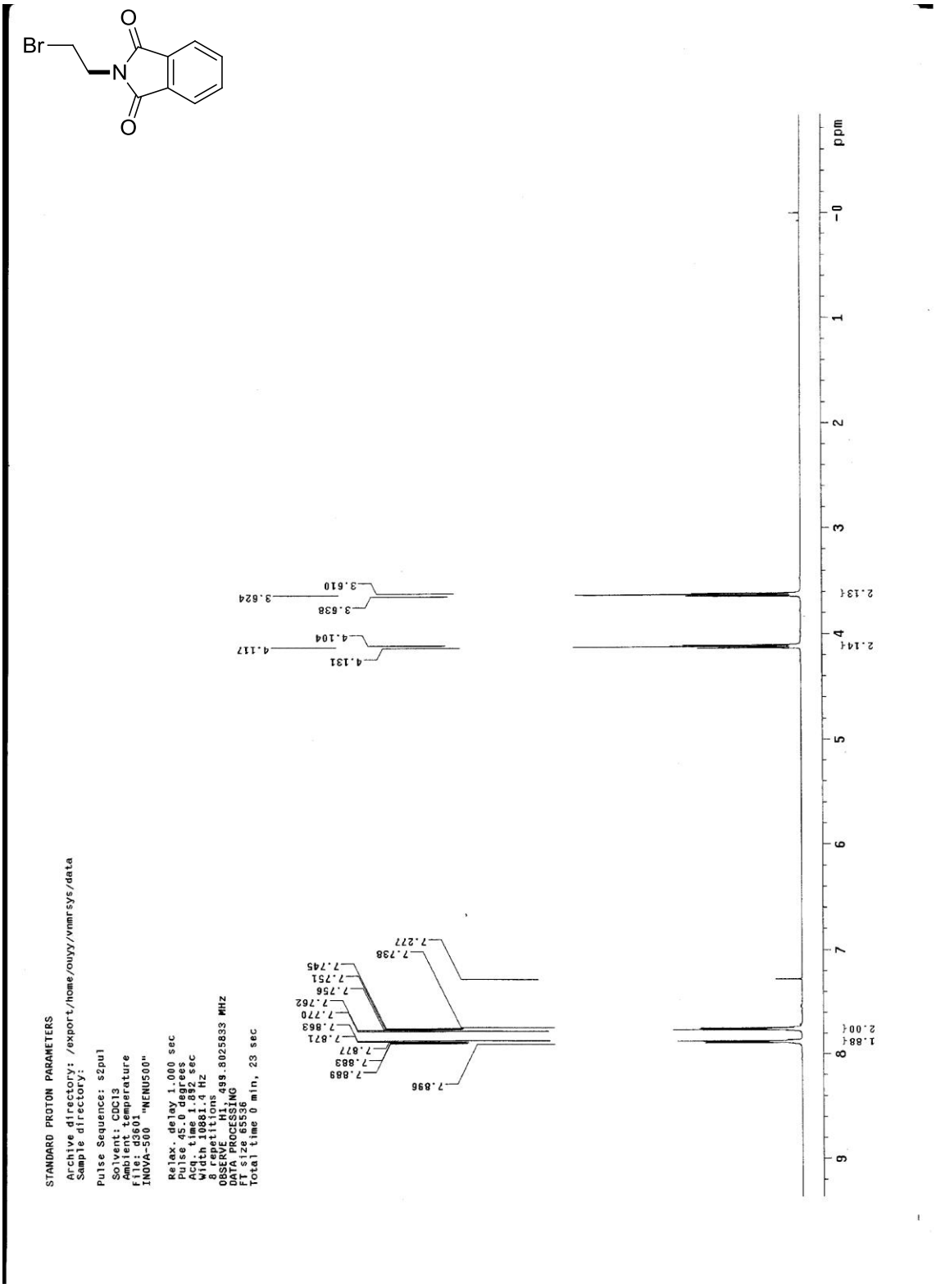

STANDARD CARBON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: cdcl3
Ambient temperature
User: 1-14-87
File: d4026
INOVA-500 "WENU500"
Relax. delay 0.500 sec
Pulse 45.0 degrees
Acq. time 1.300 sec
Width 31421.8 Hz
128 repetitions
OBSERVE C13, 125.6754670 MHz
DECOUPLE H1, 499.8050905 MHz
Power 42 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 1.5 Hz
FT size 131072
Total time 2 hr, 3 min, 31 sec
20.095
42.939
76.744
77.000
77.252
122.941
133.722
132.051
168.352
220
200
180
160
140
120
100
80
60
40
20
0
ppm

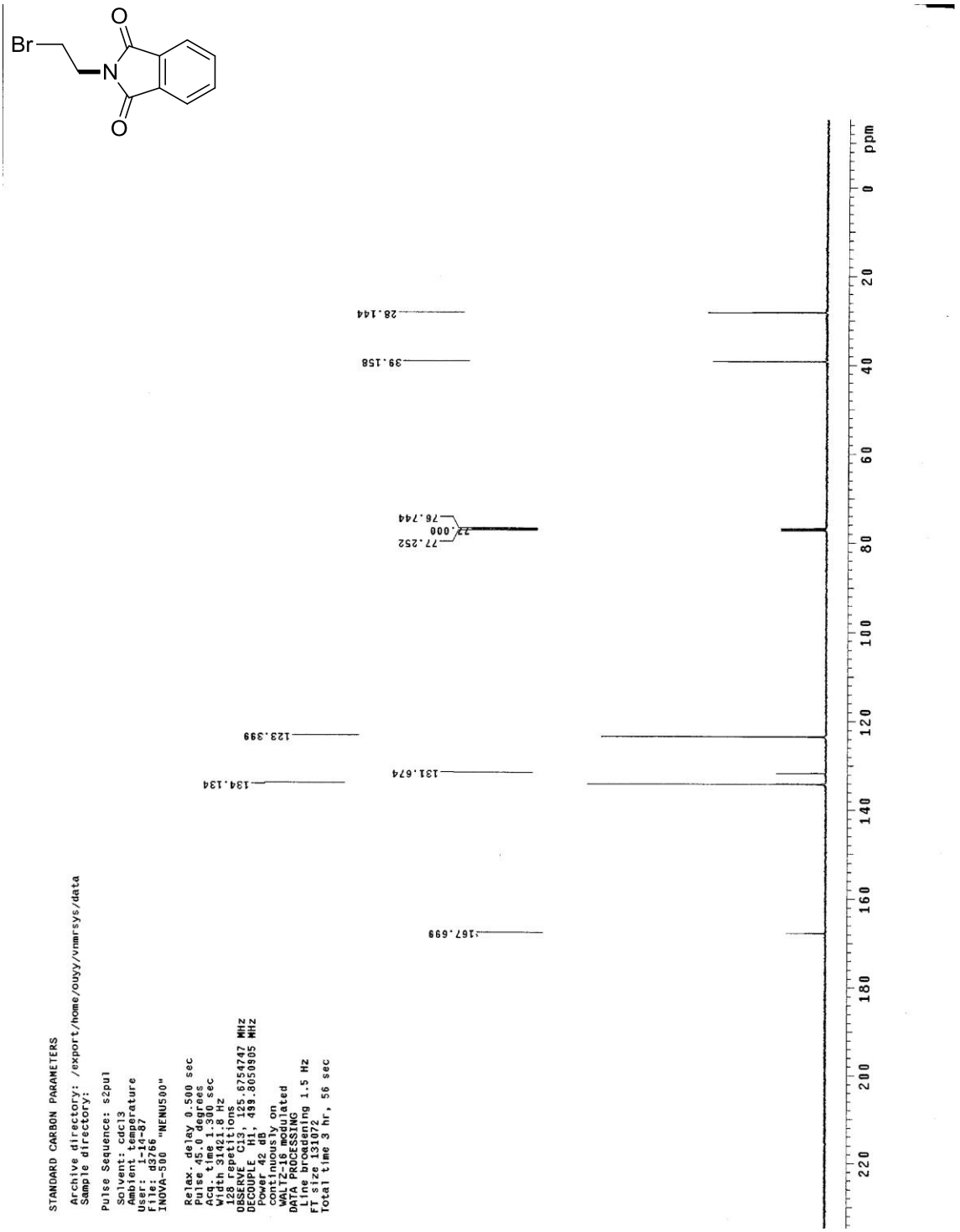

Ph
Ph
N
O
O
STANDARD PROTON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
File: d3553
INOVA-500 "NENU500"
Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 1.832 sec
Width 10881.4 Hz
8 repetitions
OBSERVE H1, 499.8025999 MHz
DATA PROCESSING
FT size 65536
Total time 0 min, 23 sec
7.845
7.839
7.832
7.827
7.821
7.813
7.718
7.710
7.699
7.693
7.685
7.388
7.373
7.352
7.350
7.336
7.321
7.308
7.294
7.288
7.279
7.243
6.724
1.00
6.45
4.22
2.22
2.03
ppm

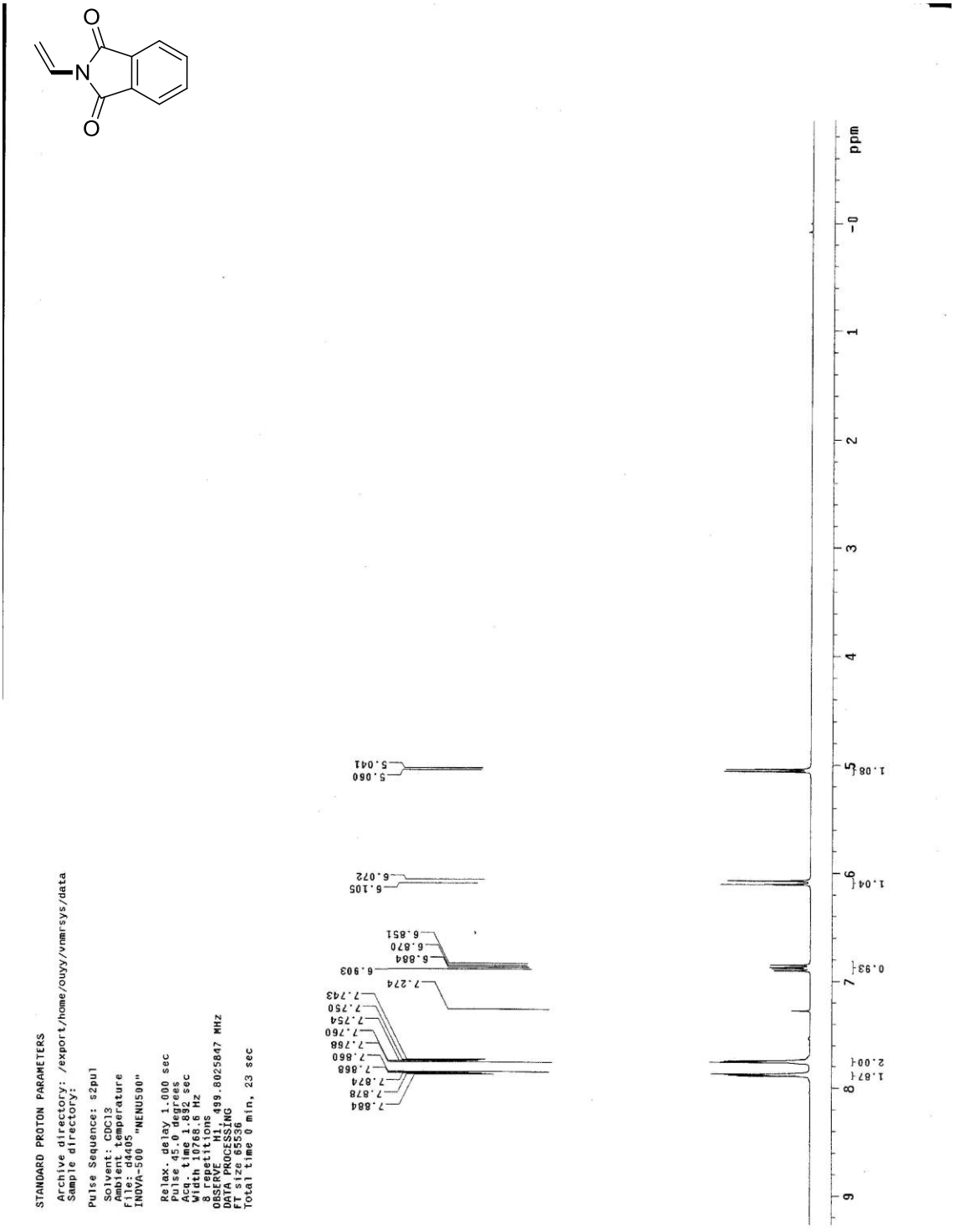

Ph
Ph
N
O
O
STANDARD CARBON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: cdcl3
Ambient temperature
User: 1-14-87
File: d3736
INOVA-500 "NEMUS00"
Relax. delay 0.500 sec
Pulse 45.0 degrees
Acq. time 1.300 sec
Width 31021.8 Hz
128 repetitions
OBSERVE C13, 125.6754714 MHz
DECOUPLE H1, 499.8050905 MHz
Power 42 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 1.5 Hz
FT size 131072
Total time 2 hr, 3 min, 31 sec
167.898
138.136
134.062
131.799
128.652
128.351
127.672
123.395
77.252
77.000
76.744
57.661
220
200
180
160
140
120
100
80
60
40
20
0
ppm

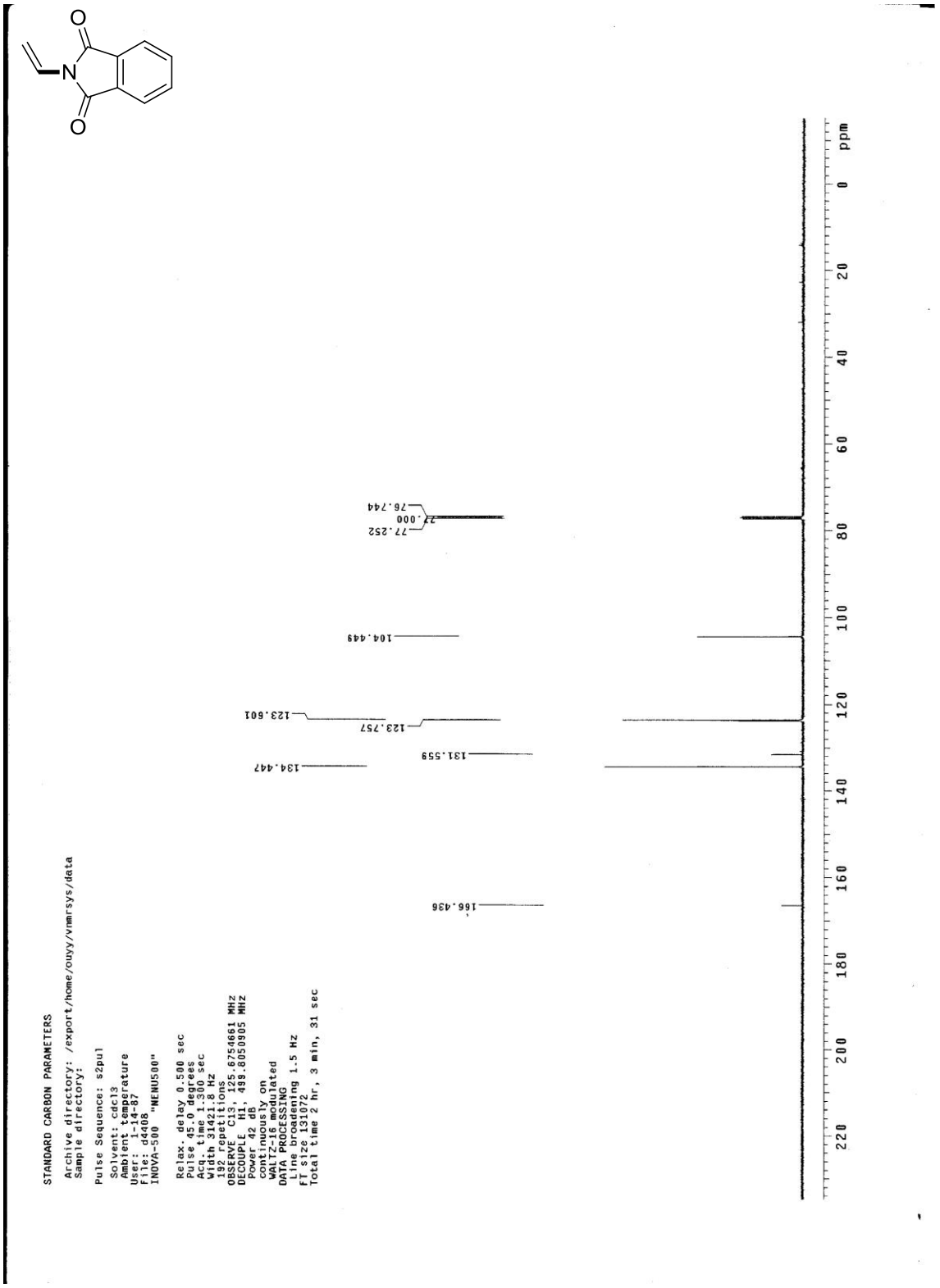

Me
N
O
O
STANDARD PROTON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
File: d4480
INOVA-500 "WENU500"
Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 1.882 sec
Width 10768.6 Hz
4 repetitions
OBSERVE H1, 499.8025669 MHz
DATA PROCESSING
FT Size 65536
Total time 0 min, 11 sec
3.180
7.844
7.837
7.833
7.827
7.729
7.721
7.715
7.709
7.704
3.03
1.96
2.00
ppm

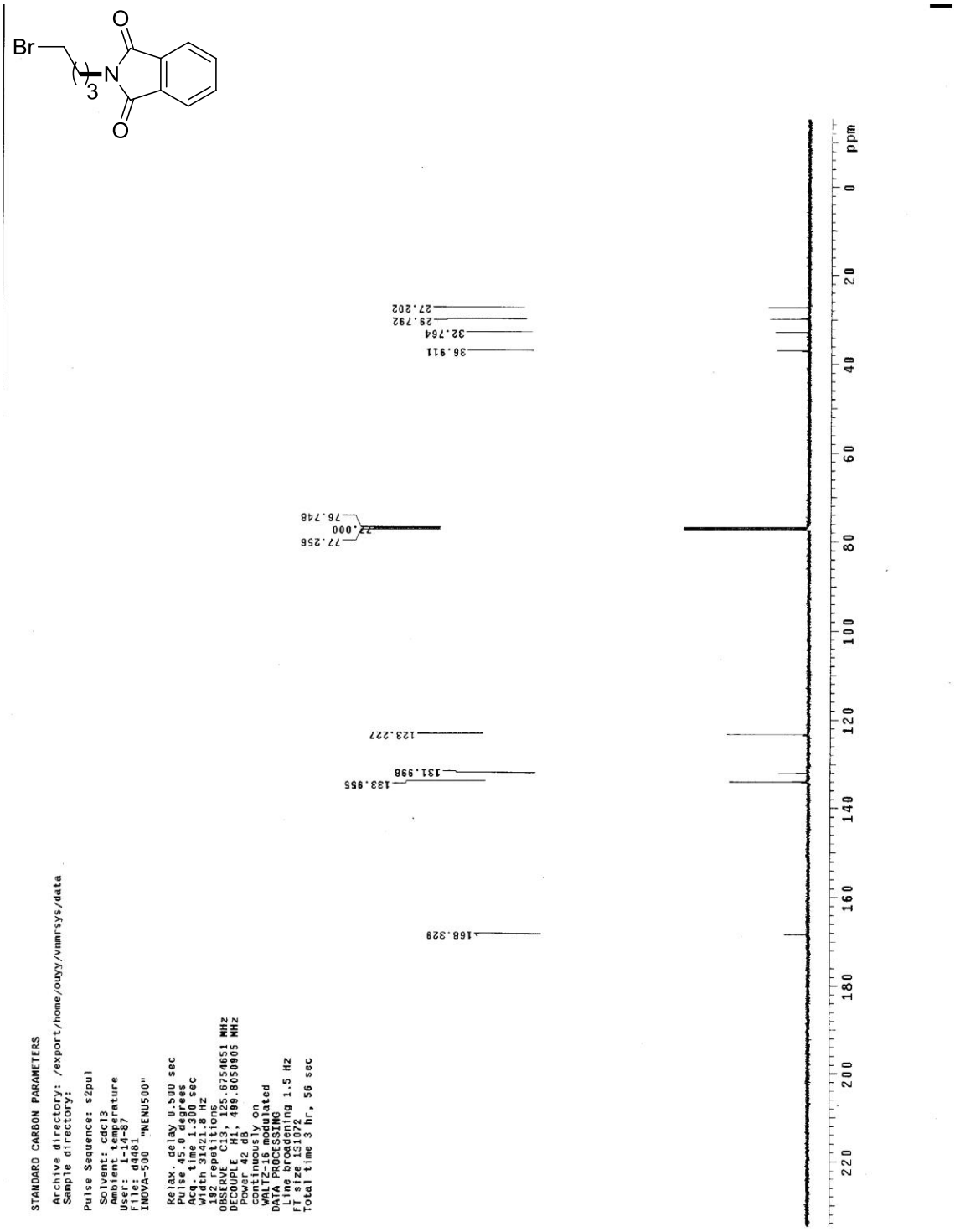

Me
N
O
O
STANDARD CARBON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: cdcl3
Ambient temperature
User: 1-14-87
File: dd8a
INOVA-500 "NENU500"
Relax. delay 0.500 sec
Pulse 45.0 degrees
Acq. time 1.300 sec
Width 31421.8 Hz
128 repetitions
OBSERVE C13, 125.6754718 MHz
DECOUPLE H1, 499.8050905 MHz
Power 42 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 1.5 Hz
FT size 131072
Total time 3 hr, 56 sec
168.310
133.741
132.101
123.017
77.256
77.000
76.744
23.799
220
200
180
160
140
120
100
80
60
40
20
0
ppm

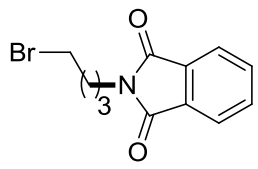

Br
O
N
O
STANDARD PROTON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
File: d3601 "NENU500"
INOVA-500 "NENU500"
Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 1.892 sec
Width 10881.4 Hz
8 repetitions
OBSERVE H1, 499.8025833 MHz
DATA PROCESSING
FT size 65536
Total time 0 min, 23 sec
3.624
3.610
3.638
4.117
4.104
4.131
7.227
7.738
7.745
7.751
7.756
7.762
7.770
7.863
7.871
7.877
7.883
7.889
7.896
2.134
2.144
1.884
2.004
ppm

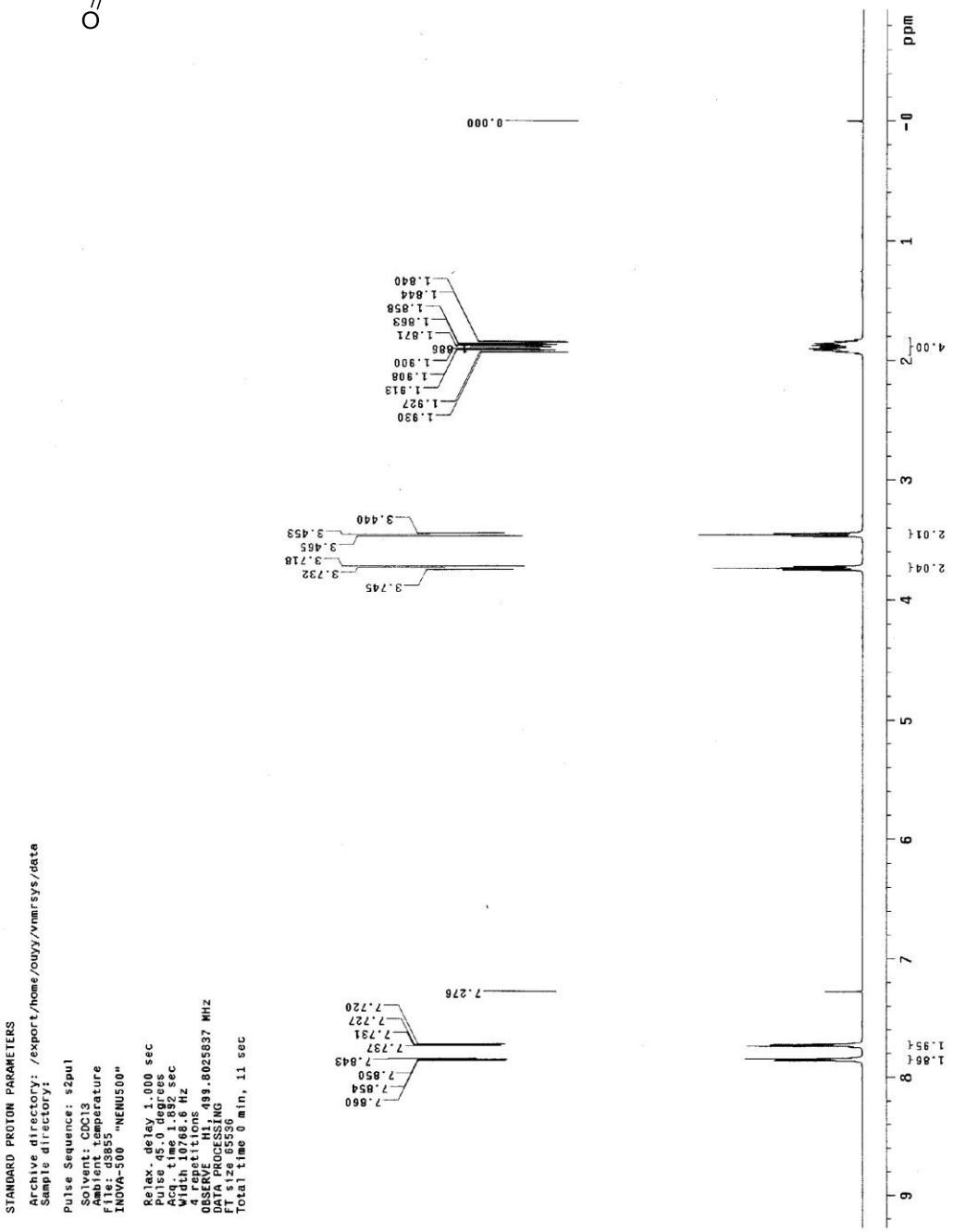

Br
O
N
O
STANDARD CARBON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: cdcl3
Ambient temperature
User: ouyy-87
File: d3766
INOVA-500 "NENUS00"
Relax. delay 0.500 sec
Pulse 45.0 degrees
Acq. time 1.300 sec
Width 31421.8 Hz
128 repetitions
OBSERVE C13, 125.6754747 MHz
DECOUPLE H1, 499.8050905 MHz
Power 42 dB
continuously on
WALTZ16 modulated
DATA PROCESSING
Line broadening 1.5 Hz
FT size 131072
Total time 3 hr, 56 sec
28.144
39.158
76.744
77.000
77.252
123.399
131.674
134.134
167.699
220
200
180
160
140
120
100
80
60
40
20
0
ppm

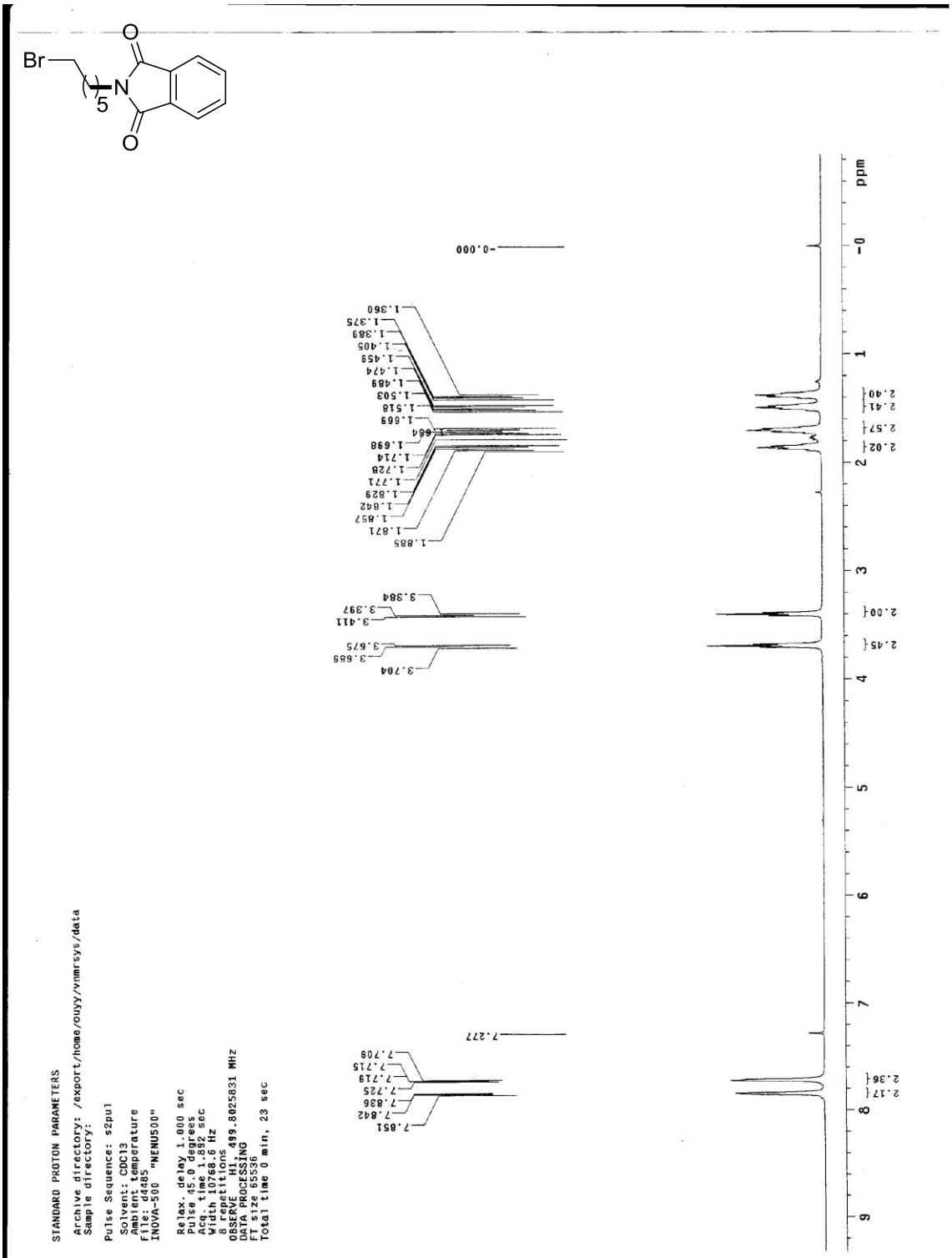

STANDARD PROTON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
File: d405
INOVA-500 "NENU500"
Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 1.882 sec
Width 10768.6 Hz
8 repetitions
OBSERVE H1, 499.8025847 MHz
DATA PROCESSING
FT size 65536
Total time 0 min, 23 sec
5.041
5.060
6.072
6.105
6.851
6.870
6.884
6.903
7.274
7.743
7.750
7.754
7.760
7.766
7.860
7.868
7.874
7.878
7.884
1.08
1.04
0.93
2.00
1.87
ppm

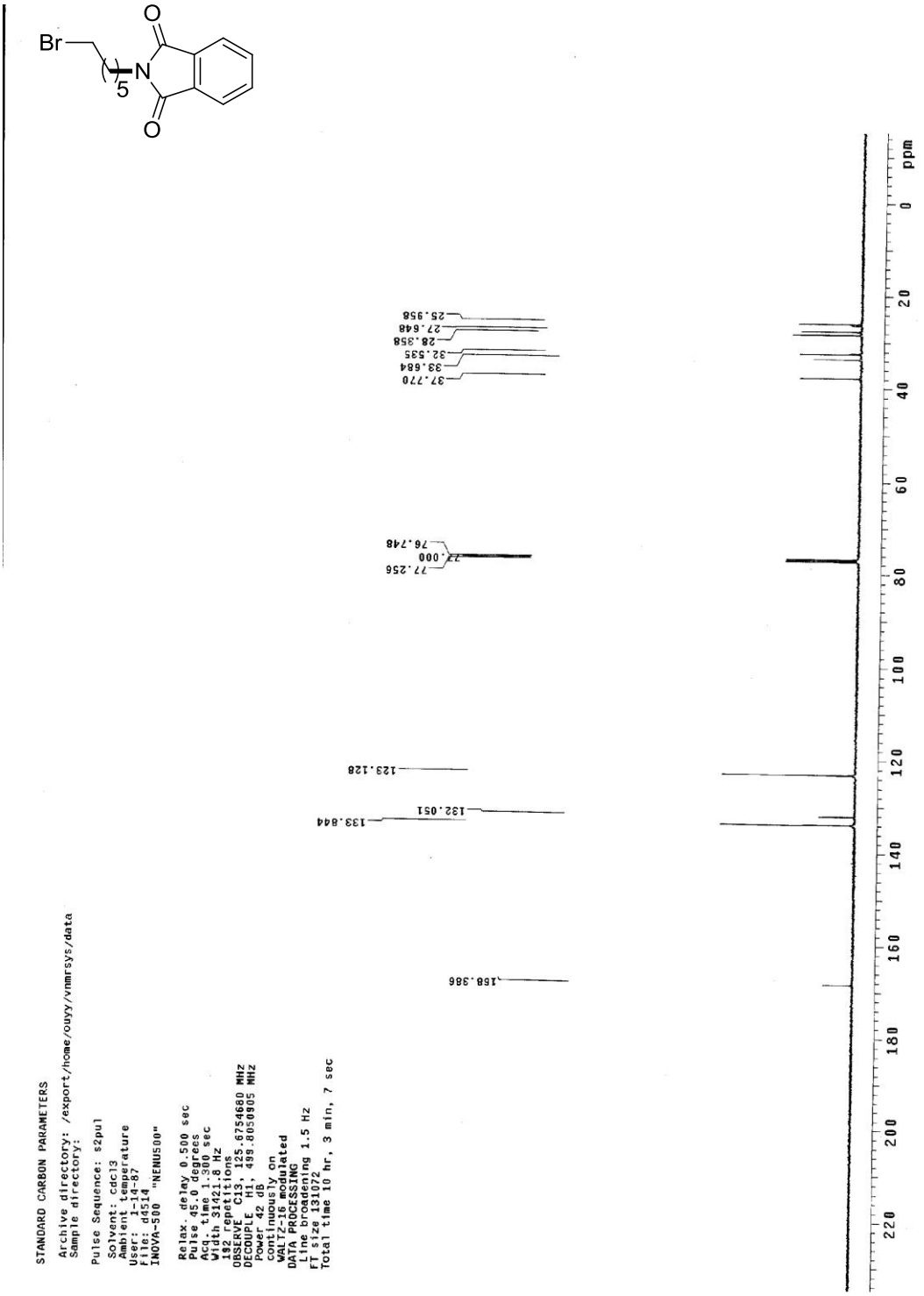

STANDARD CARBON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: cdcl3
Ambient temperature
User: 1-14-87
File: d4408
INOVA-500 "NEMU500"
Relax. delay 0.500 sec
Pulse 45.0 degrees
Acq. time 1.300 sec
Width 31421.8 Hz
192 repetitions
OBSERVE C13, 125.6754661 MHz
DECOUPLE H1, 499.8050905 MHz
Power 42 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 1.5 Hz
FT size 131072
Total time 2 hr, 3 min, 31 sec
166.436
134.447
131.559
123.757
123.601
104.449
77.252
77.000
76.744
220
200
180
160
140
120
100
80
60
40
20
0
ppm

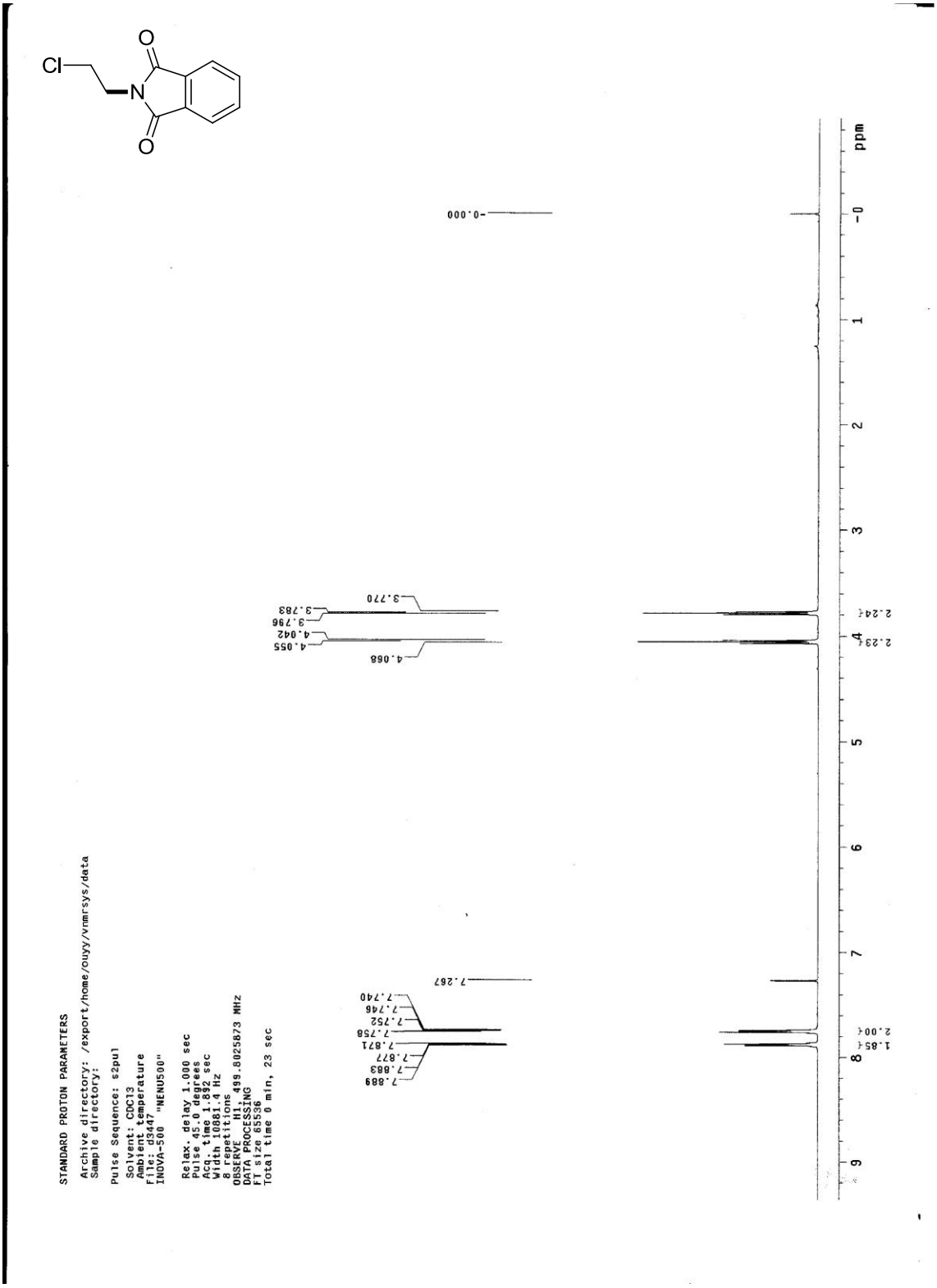

Br
N
3
O
O
STANDARD CARBON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: cdcl3
Ambient temperature
User: 1-14-87
File: d4481
INOVA-500 "NENU500"
Relax. delay 0.500 sec
Pulse 45.0 degrees
Acq. time 1.300 sec
Width 31421.8 Hz
192 repetitions
OBSERVE C13, 125.6754651 MHz
DECOUPLE H1, 499.8050905 MHz
Power 42 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 1.5 Hz
FT size 131072
Total time 3 hr, 56 sec
168.329
133.955
131.998
123.227
77.256
77.000
76.748
36.911
32.764
29.792
27.202
220
200
180
160
140
120
100
80
60
40
20
0
ppm

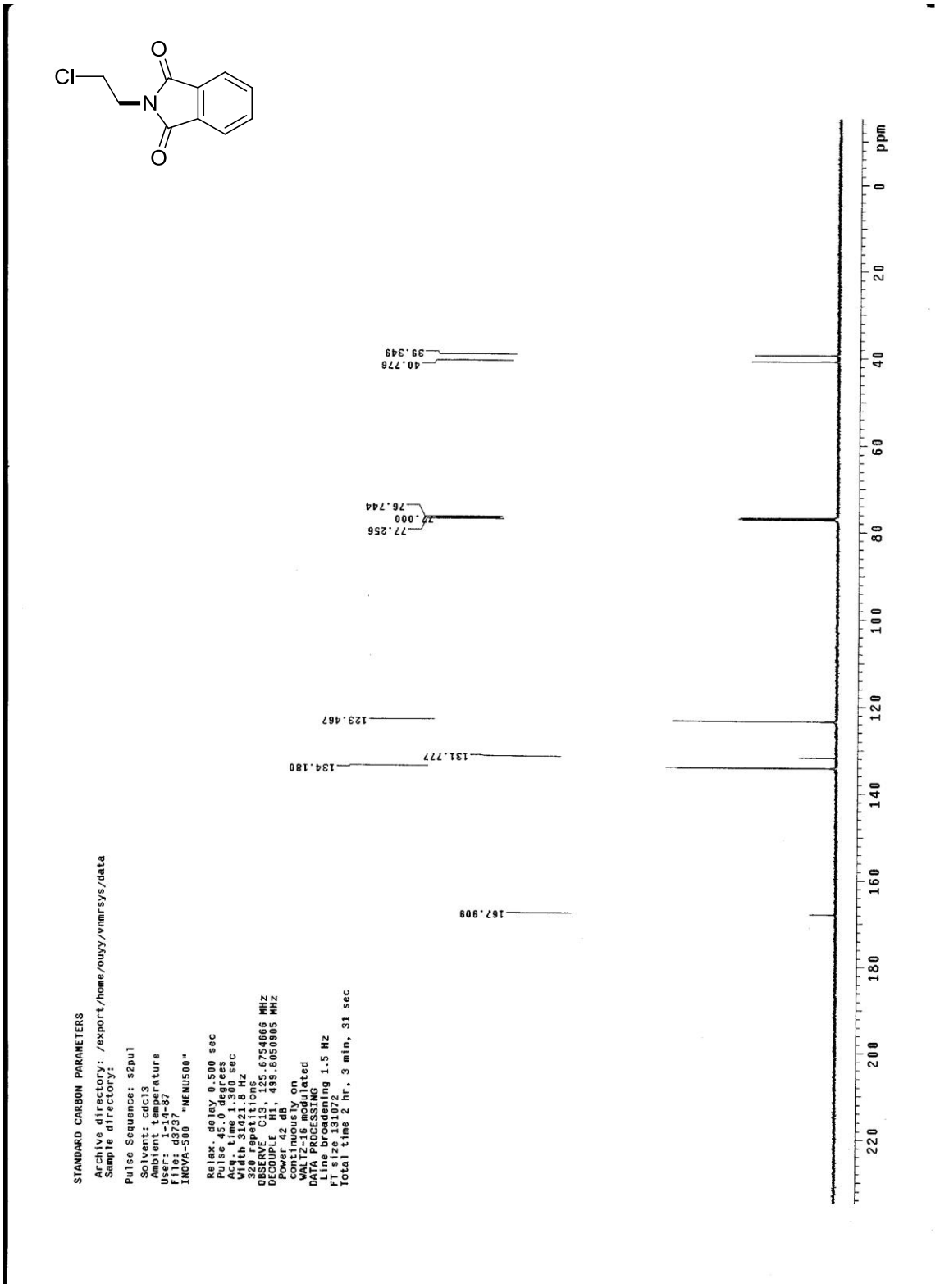

Br
O
N
3
O

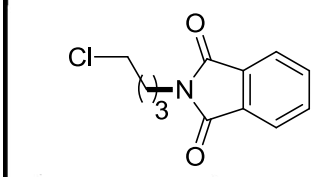

STANDARD PROTON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
File: d3855
INOVA-500 "NENUS00"
Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 1.892 sec
Width 10760.6 Hz
4 repetitions
OBSERVE H1, 499.8025837 MHz
DATA PROCESSING
FT size 65536
Total time 0 min, 11 sec
0.000
1.840
1.844
1.858
1.863
1.871
1.886
1.900
1.908
1.913
1.927
1.930
3.440
3.453
3.465
3.718
3.732
3.745
7.276
7.720
7.727
7.731
7.737
7.843
7.850
7.854
7.860
ppm
4.00
2.01
2.04
1.86
1.95

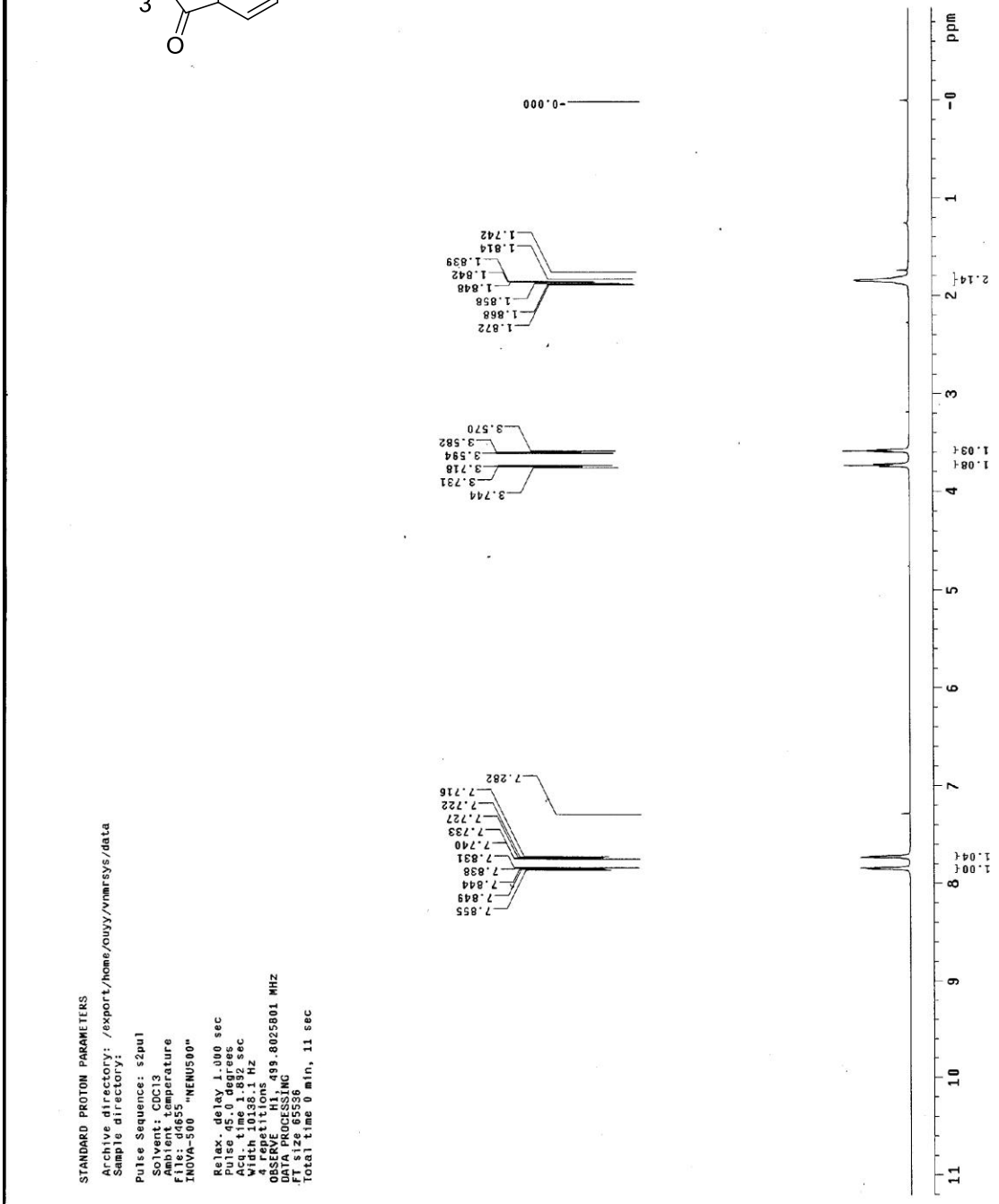

Br
O
N
5
O
STANDARD PROTON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
File: d405
INOVA-500 "NENUS00"
Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 1.892 sec
Width 10768.6 Hz
8 repetitions
OBSERVE H1, 499.8025831 MHz
DATA PROCESSING
FT size 65536
Total time 0 min, 23 sec
7.277
7.851
7.842
7.838
7.725
7.719
7.715
7.708
3.704
3.689
3.675
3.411
3.397
3.384
1.885
1.871
1.857
1.842
1.829
1.771
1.728
1.714
1.698
1.664
1.669
1.518
1.503
1.489
1.474
1.459
1.405
1.389
1.375
1.360
0.000
ppm
2.36
2.17
2.00
2.45
2.00
2.57
2.41
2.40

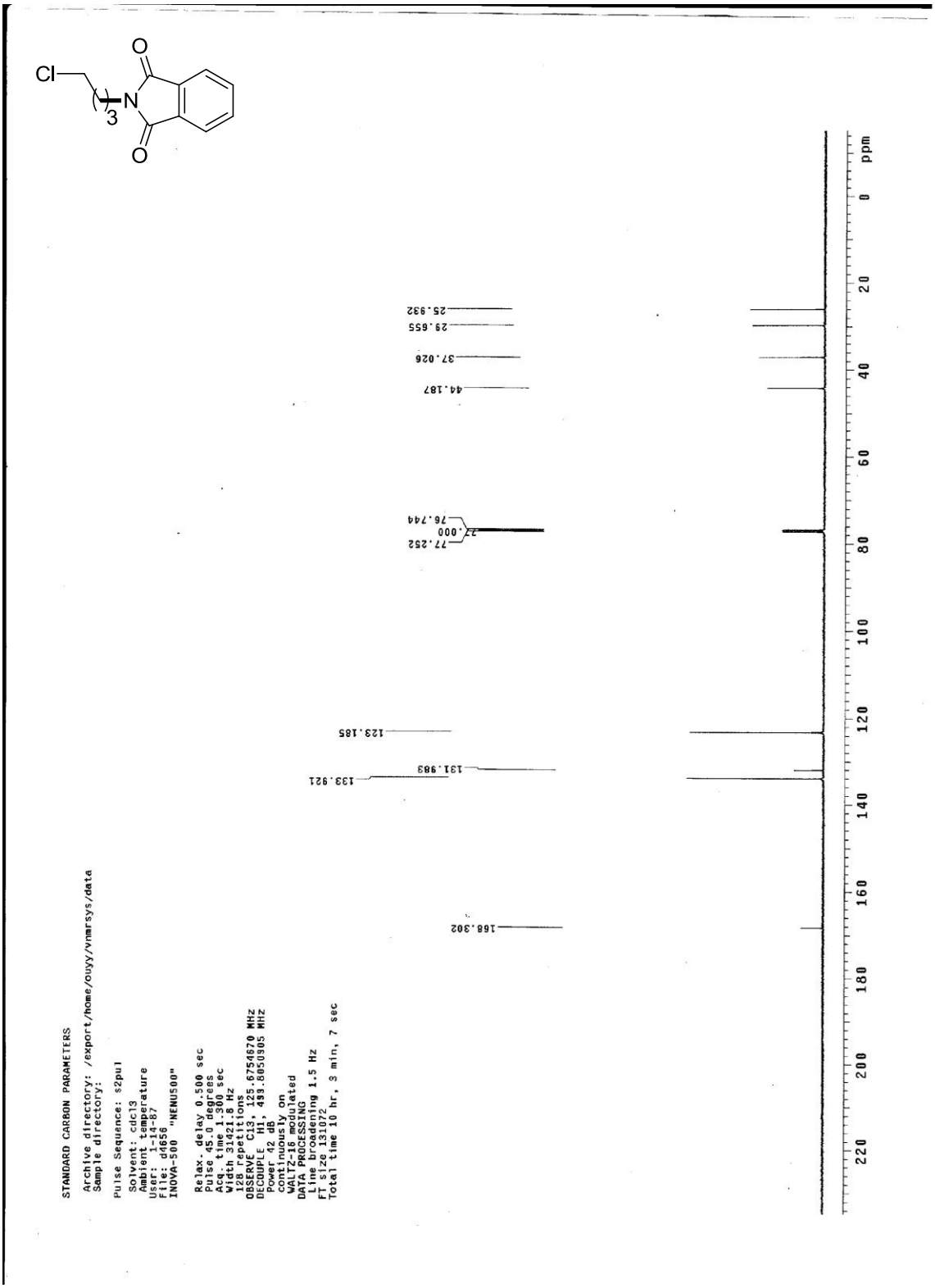

Br
N
5
O
O
STANDARD CARBON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: cdcl3
Ambient temperature
User: 1-14-87
File: d4514
INOVA-500 "NENU500"
Relax. delay 0.500 sec
Pulse 45.0 degrees
Acq. time 1.380 sec
Width 31421.8 Hz
192 repetitions
OBSERVE C13, 125.6754680 MHz
DECOUPLE H1, 499.8050905 MHz
Power 42 dB
continuously on
WALTZ16 modulated
DATA PROCESSING
Line broadening 1.5 Hz
FT size 131072
Total time 10 hr, 3 min, 7 sec
168.386
133.844
132.051
123.128
77.256
77.000
76.748
37.770
33.684
32.535
28.358
27.648
25.958
220
200
180
160
140
120
100
80
60
40
20
0
ppm

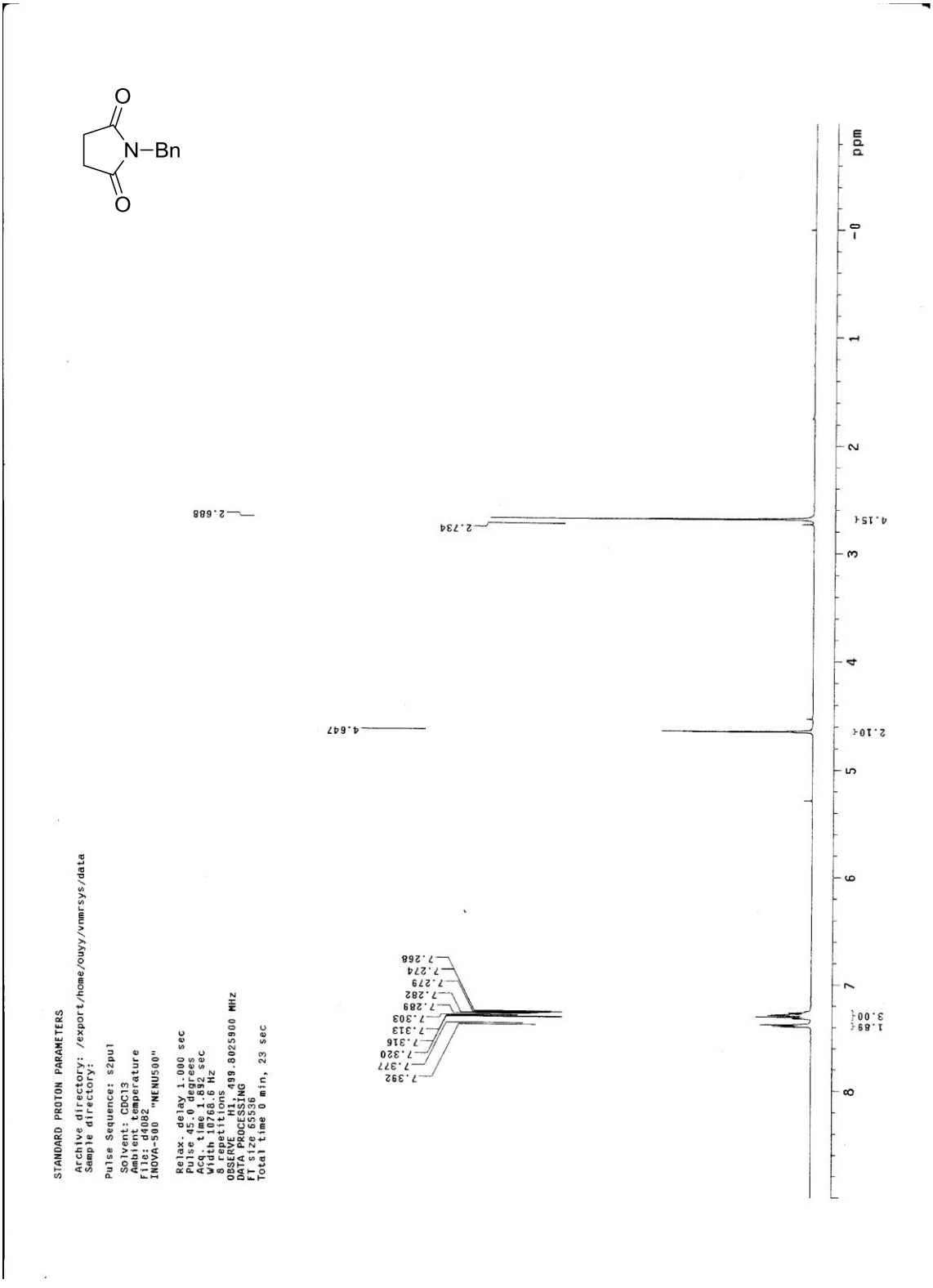

Cl
O
N
O
STANDARD PROTON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
File: cd47 "NENUS00"
INOVA-500 "NENUS00"
Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 1.892 sec
Width 10881.4 Hz
8 repetitions
OBSERVE H1, 499.8025873 MHz
DATA PROCESSING
FT size 65536
Total time 0 min, 23 sec
7.889
7.883
7.877
7.871
7.758
7.752
7.746
7.740
7.267
4.068
4.055
4.042
3.796
3.783
3.770
0.000
2.24
2.23
1.85
2.00
ppm

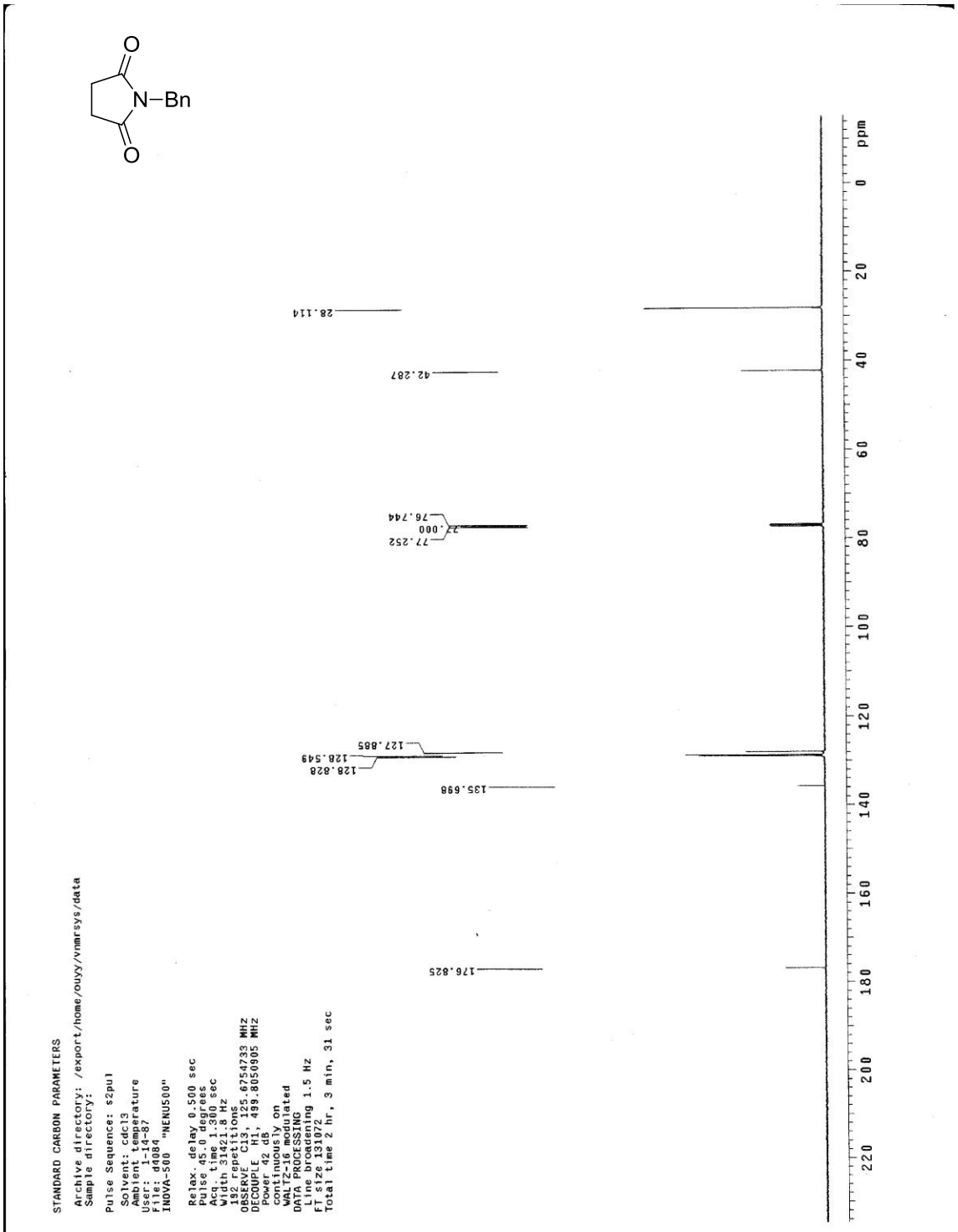

Cl
N
O
O
STANDARD CARBON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: cdcl3
Ambient temperature
User: 1-14-87
File: d3737 "MEMUS00"
INOVA-500 "MEMUS00"
Relax. delay 0.500 sec
Pulse 45.0 degrees
Acq. time 1.300 sec
Width 31421.8 Hz
320 repetitions
OBSERVE C13, 125.6754666 MHz
DECOUPLE H1, 499.8050905 MHz
Power 42 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 1.5 Hz
FT size 131072
Total time 2 hr, 3 min, 31 sec
167.909
134.180
131.777
123.467
77.256
77.000
76.744
40.776
39.349
220
200
180
160
140
120
100
80
60
40
20
0
ppm

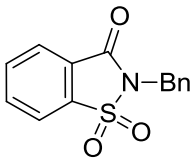

Cl
N
O
O
3


STANDARD PROTON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
File: dd65
INOVA-500 "NENU500"
Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 3.892 sec
Width 10838.1 Hz
4 repetitions
OBSERVE H1, 499.8025801 MHz
DATA PROCESSING
FT size 65536
Total time 0 min, 11 sec
0.000
1.872
1.868
1.858
1.848
1.842
1.839
1.814
1.742
3.570
3.582
3.594
3.718
3.731
3.744
7.282
7.716
7.722
7.727
7.733
7.740
7.831
7.838
7.844
7.849
7.855
2.14
1.08
1.03
1.00
1.04
ppm


Cl
O
N
3
O
STANDARD CARBON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: cdcl3
Ambient temperature
User: 1-14-87
File: d4056
INOVA-500 "WENU500"
Relax. delay 0.500 sec
Pulse 45.0 degrees
Acq. time 1.300 sec
Width 31446.8 Hz
128 repetitions
OBSERVE C13, 125.6754670 MHz
DECOUPLE H1, 499.8050905 MHz
Power 42 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 1.5 Hz
FT size 131072
Total time 10 hr, 3 min, 7 sec
168.302
133.921
131.983
123.185
77.252
77.000
76.744
44.187
37.026
29.855
25.932
220
200
180
160
140
120
100
80
60
40
20
0
ppm


O
N–Bn
O
STANDARD PROTON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
File: d4082
INOVA-500 "NENU500"
Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 1.892 sec
Width 10768.6 Hz
8 repetitions
OBSERVE H1, 499.8025900 MHz
DATA PROCESSING
FT size 65536
Total time 0 min, 23 sec
2.608
2.734
4.647
7.392
7.377
7.320
7.316
7.313
7.303
7.289
7.282
7.279
7.274
7.268
4.15
2.10
1.89
3.00
ppm


O
N–Bn
O
STANDARD CARBON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: cdcl3
Ambient temperature
User: 1-14-87
File: d4084
INOVA-500 "NENU500"
Relax. delay 0.500 sec
Pulse 45.0 degrees
Acq. time 1.800 sec
Width 31141.8 Hz
192 repetitions
OBSERVE C13, 125.6754733 MHz
DECOUPLE H1, 499.8050905 MHz
Power 42 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 1.5 Hz
FT size 131072
Total time 2 hr, 3 min, 31 sec
28.114
42.287
76.744
77.000
77.252
127.885
128.549
128.828
135.698
176.825
220
200
180
160
140
120
100
80
60
40
20
0
ppm

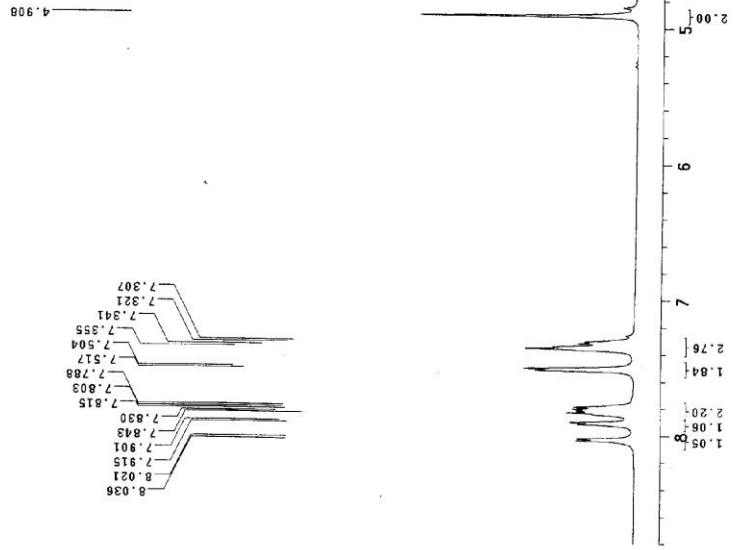


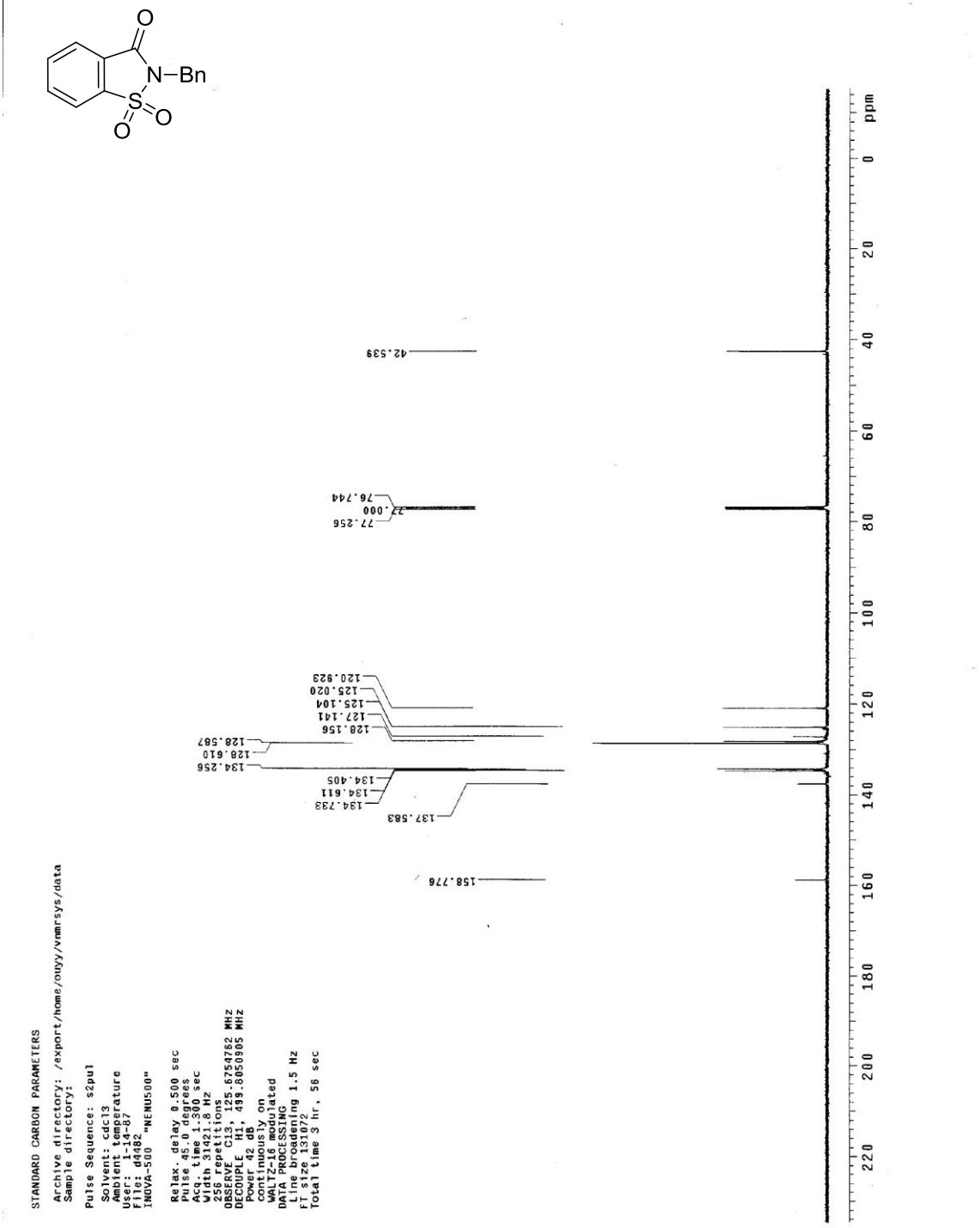
STANDARD PROTON PARAMETERS

Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:

Pulse Sequence: s2pul
Solvent: CDCl3
Ambient temperature
File: d431r2
INOVA-500 "NENU500"

Relax. delay 1.000 sec
Pulse 45.0 degrees
Acq. time 1.882 sec
Width 10768.6 Hz
8 repetitions
OBSERVE H1, 499.8025916 MHz
DATA PROCESSING
FT size 65536
Total time 0 min, 23 sec




O
N–Bn
S
O
O
STANDARD CARBON PARAMETERS
Archive directory: /export/home/ouyy/vnmrsys/data
Sample directory:
Pulse Sequence: s2pul
Solvent: cdcl3
Ambient temperature
User: 1-14-87
File: d4482
INOVA-500 "NEMUS00"
Relax. delay 0.500 sec
Pulse 45.0 degrees
Acq. time 1.300 sec
Width 31421.8 Hz
256 repetitions
OBSERVE C13, 125.6754762 MHz
DECOUPLE H1, 499.8050905 MHz
Power 42 dB
continuously on
WALTZ-16 modulated
DATA PROCESSING
Line broadening 1.5 Hz
FT size 131072
Total time 3 hr, 56 sec
42.539
76.744
77.000
77.256
120.923
125.020
125.104
127.141
128.156
128.587
128.610
134.256
134.405
134.611
134.733
137.583
158.776
220
200
180
160
140
120
100
80
60
40
20
0
ppm