
XDS 2000

Health & Safety Issues

- Clark Science Center is covered by the OSHA Lab Standard
- Our Chemical Hygiene Plan is incorporated into the Clark Science Center Safety Handbook
- The Safety Handbook is available
  - from faculty as hard copy
  - Via www.science.smith.edu/resources/safety/table_contents.html

Basic Emergency Response

- If an emergency, call 800 and give
  - Your name, location including room #, and the nature of the emergency (Fire, spill, etc.)
  - If a student requires first aid, they should also seek a medical opinion regarding whether they should consult a physician (for cuts, burns, etc.)
    - Take the MSDS if a chemical accident.

Be Prepared..

- Locate the fire extinguisher, safety shower, eyewash, pull box, phone, and nearest building exit to the lab before leaving today.
- Locate them again the next time you're here...

Hazardous Operations

- Use of open flames
- Use of any controlled radiation source
- Handling of any quantity of reactive or acutely toxic material
- Handling of more than 4L or 1 kg flammable or corrosive chemicals
- Work on electrical installations which could pose a shock hazard (DC > 40 volts, AC > 24 volts)

Working Alone and "After Hours" Policies…

- "Working Alone": Defined as when there is no other person within voice contact or in the lab
  - The second person must be aware they are serving as a 'buddy'
- "After Hours" is defined as when the building is locked
  - Summer open hours 8-5, M-F
  - Academic Year Open Hours: 7AM-11PM M-TH; 7AM-10PM F; 8AM-10PM SAT/SUN
- Students doing research are not allowed to perform any hazardous operations when working alone, and may not work alone after hours, or perform hazardous operations after hours, unless supervised by the faculty member

Where to Go for More H&S Info…

- Aldrich (www.sigma-aldrich.com) and Fisher (www.fishersci.com) provide virtually unlimited free MSDS's
  - Need to register/log in but can ignore request for Smith account #
- www.hazard.com has thousands of MSDS's and you don't need to register
- Safe chemical storage (waste or not) is addressed in CSC Safety Handbook-also handouts
- Compressed gas safe practices: www.uwm.edu/Dept/EHSRM/LAB/labgascyl.html

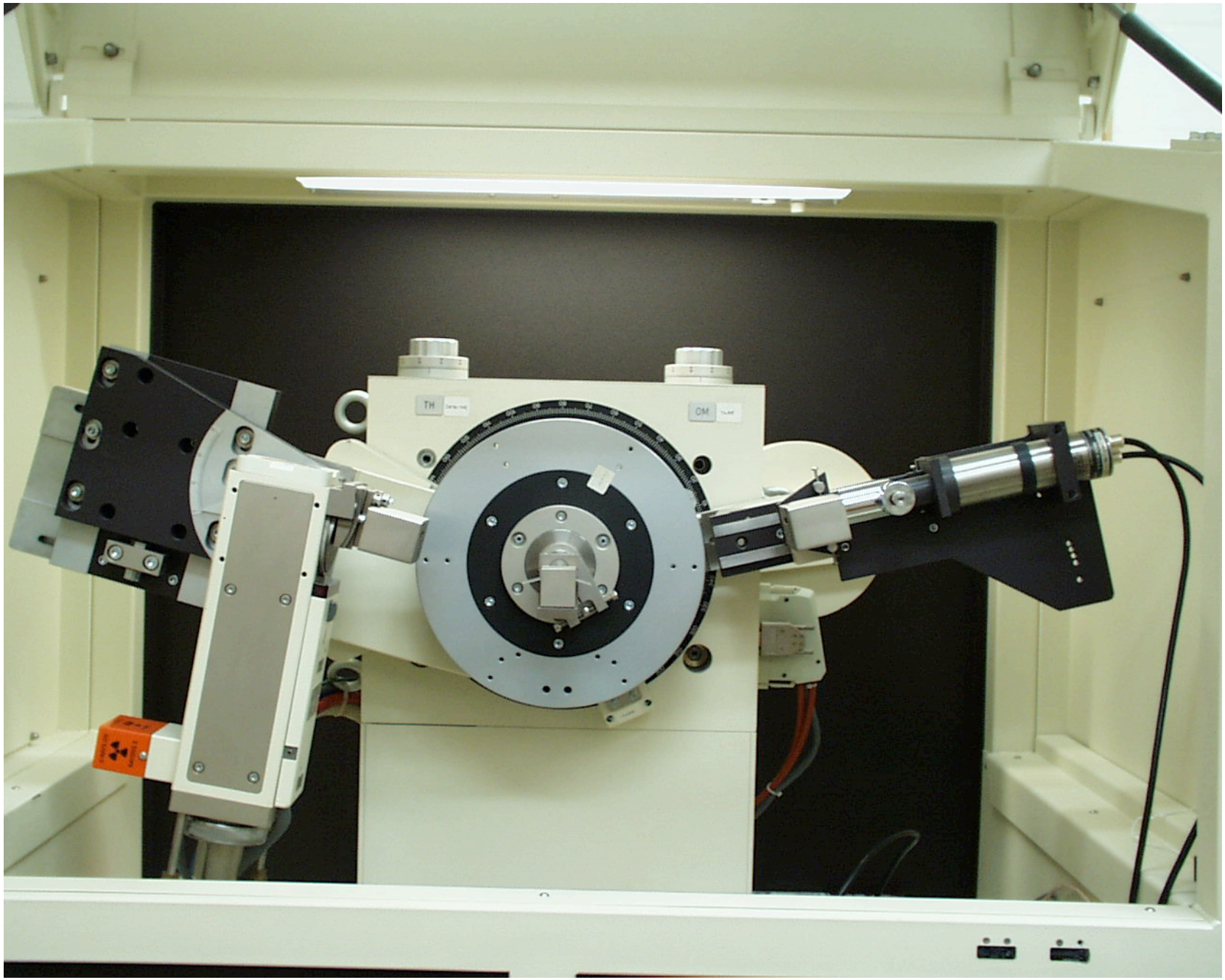
Some Useful URL's for Radiation Safety Information (2004)

http://www.radsafe.pitt.edu/ManualTraining/SectionIII.htm

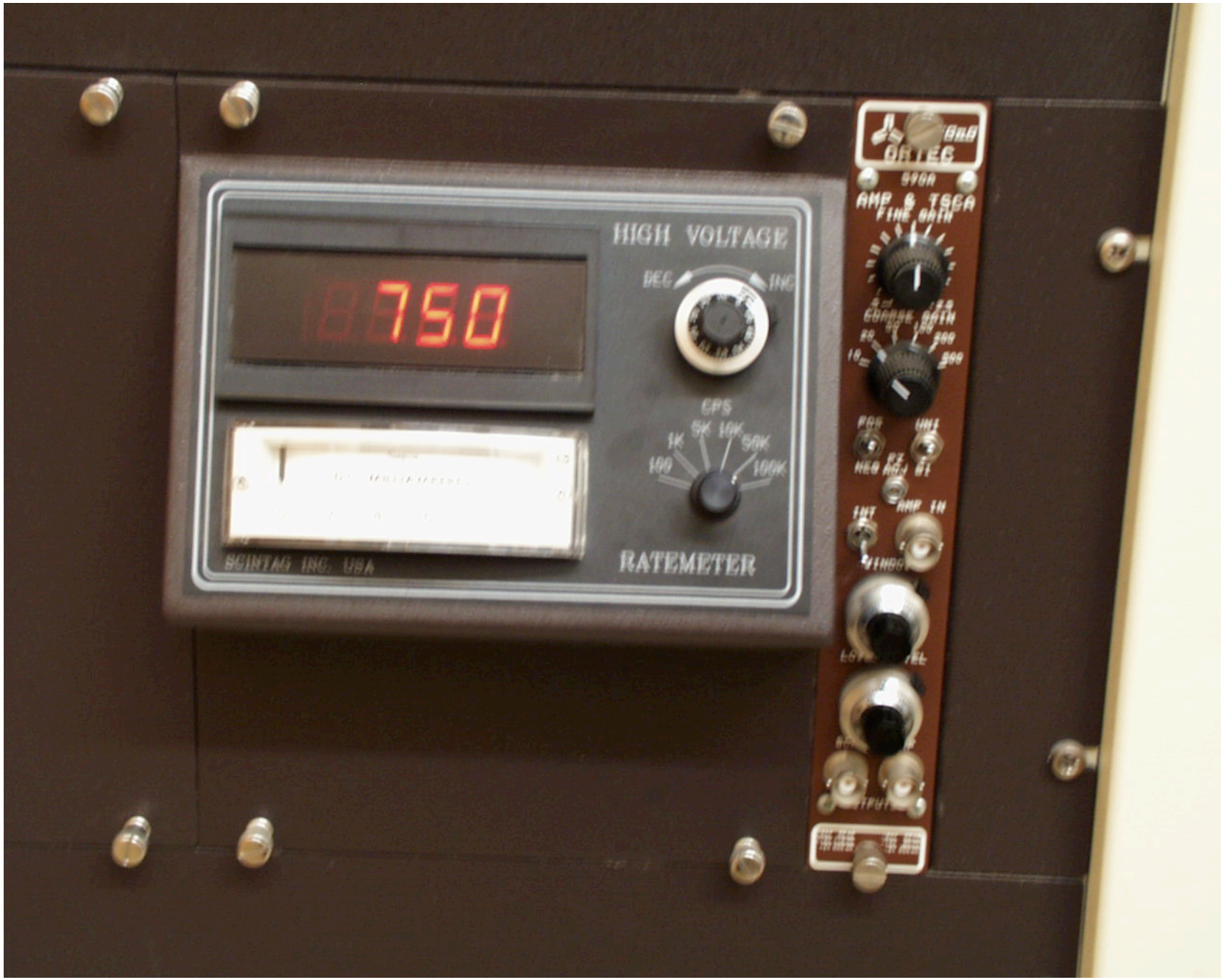
http://www.ndt-ed.org/EducationResources/CommunityCollege/Radiography/Physics/radiationsafety.htm

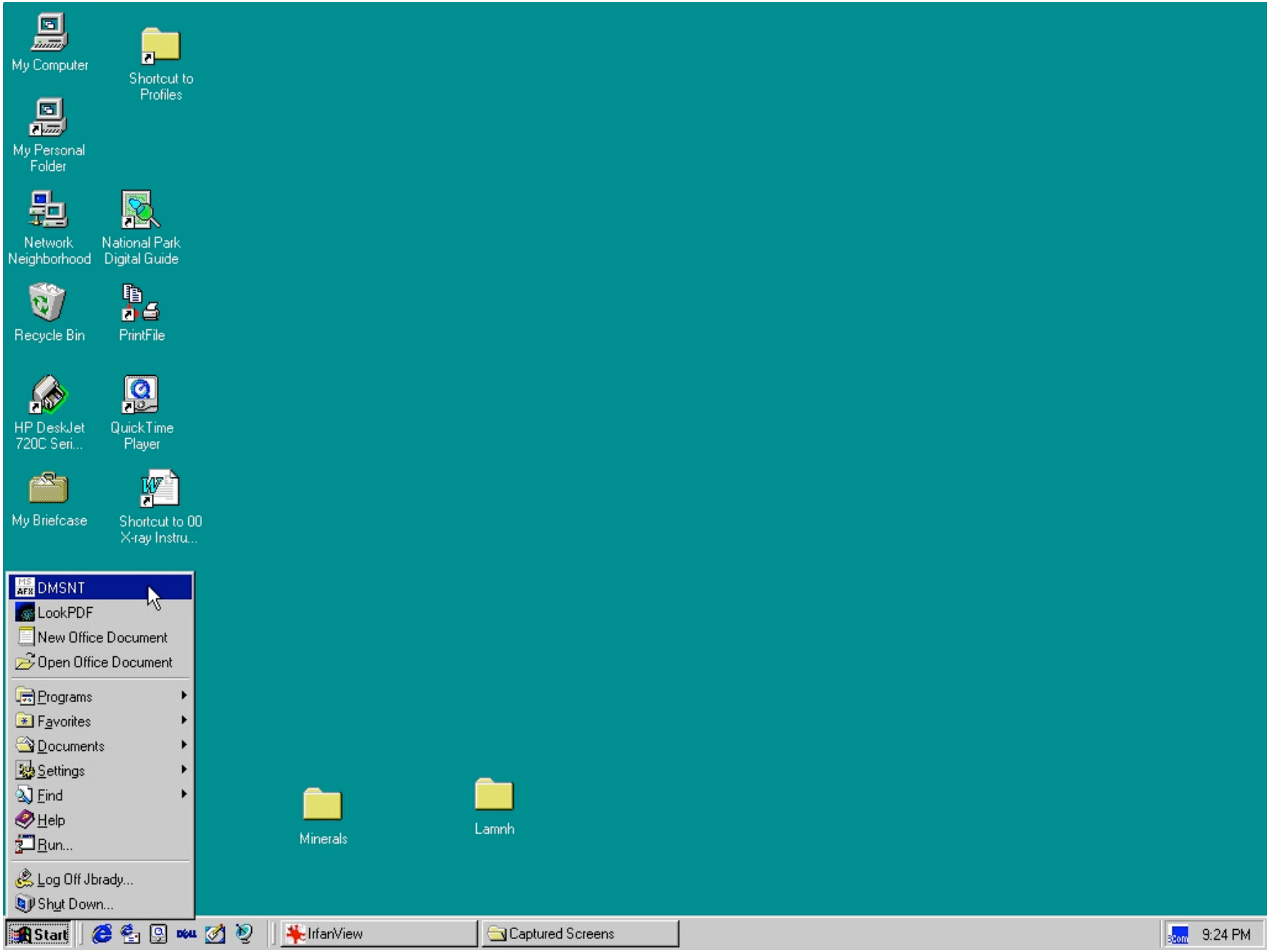
http://www.osha-slc.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10098

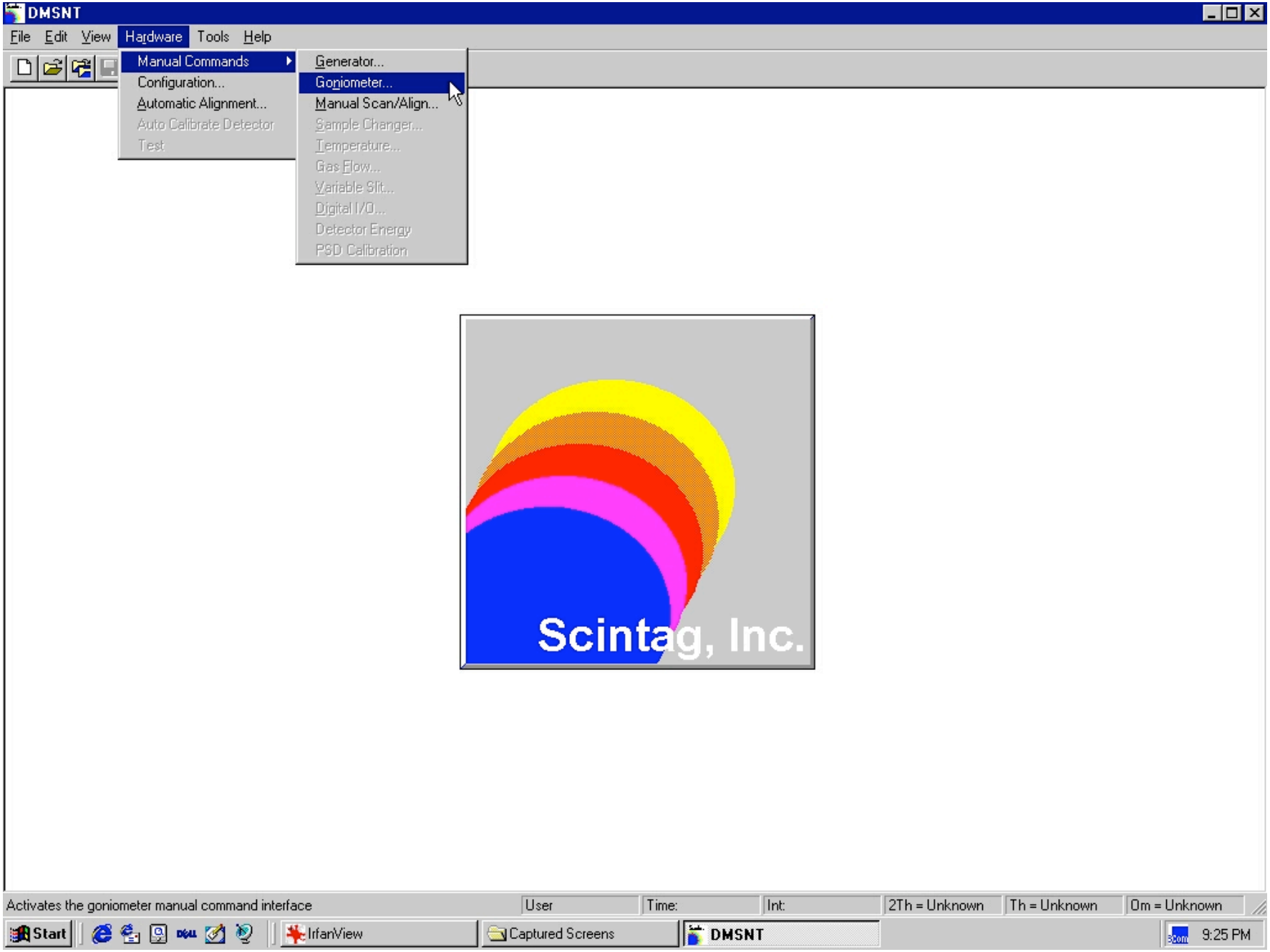

XDS 2000

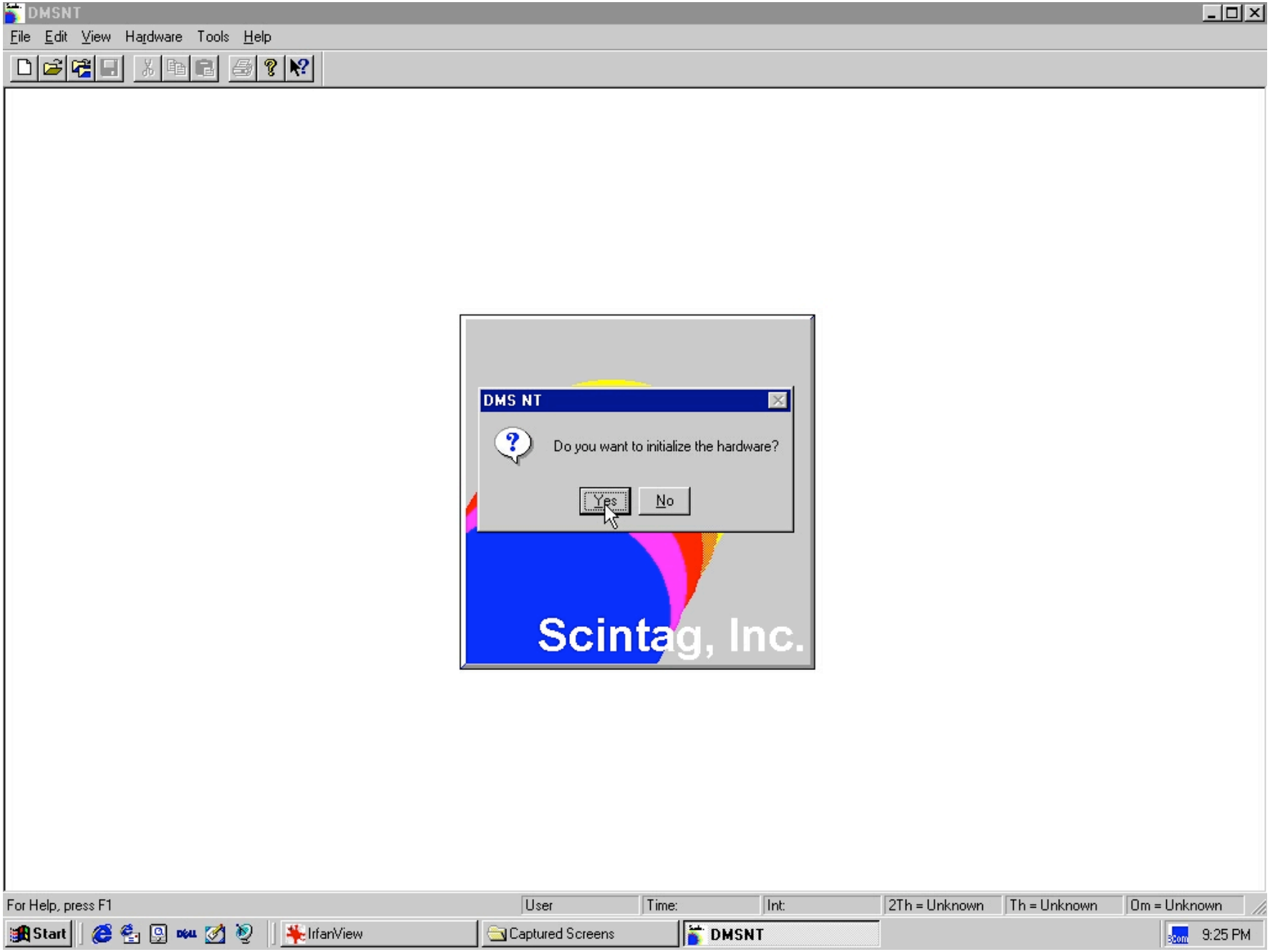

TH
OM

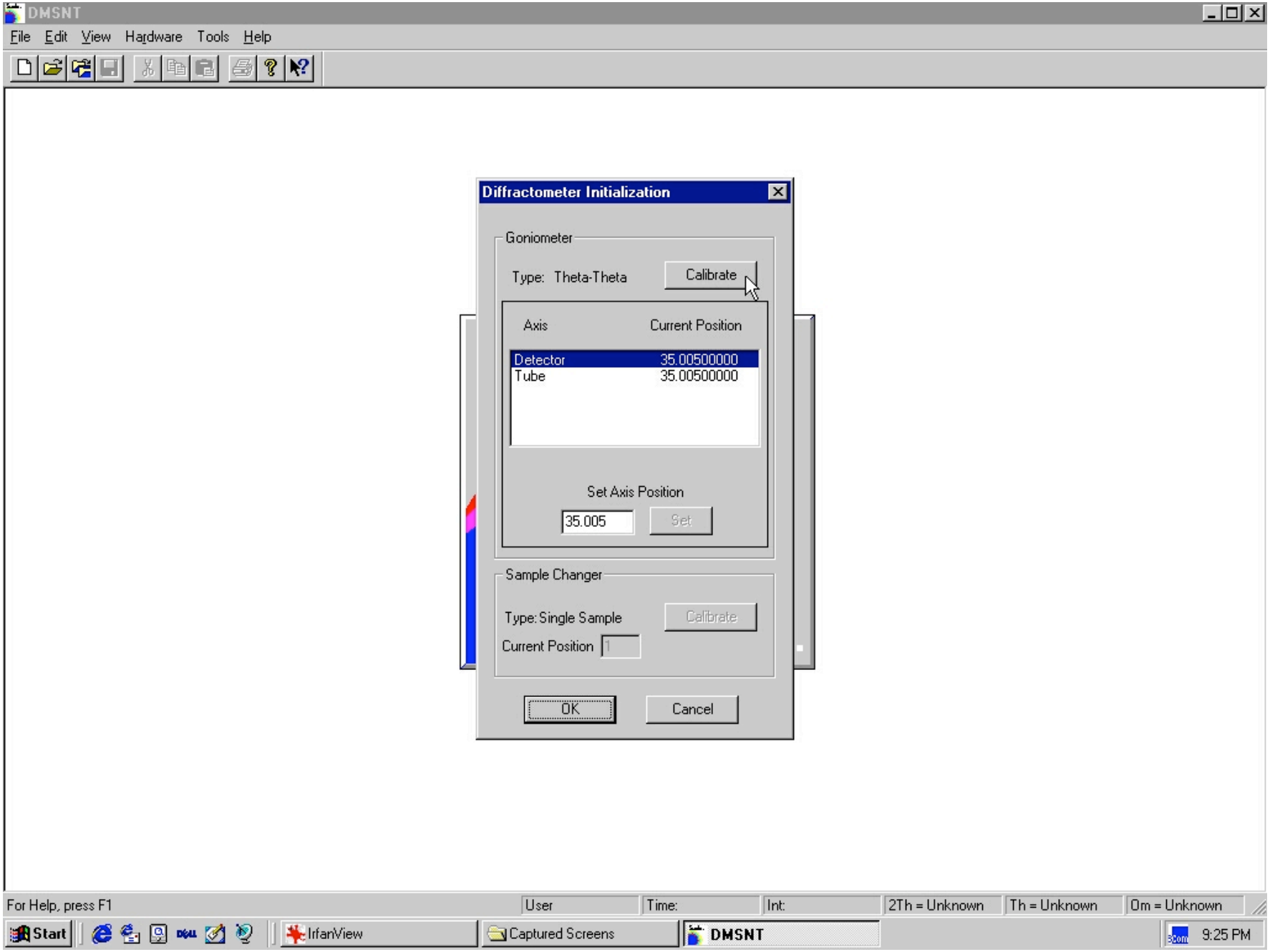

CIRCUIT BREAKER
ON
OFF
HIGH VOLTAGE ON
STANDBY
CAUTION RADIATION
This equipment produces X-Rays when energized.
To be operated only by qualified personnel.
X-RAY ON
HV
MAX 45 KV
KV
MAX 40 MA
mA
XGEN-3100
SCINTAG, INC. USA


750
HIGH VOLTAGE
DEC
INC
CPS
1K
5K
10K
50K
100
100K
SCINTAG INC. USA
RATEMETER
ORTEC
AMP & TSCA
FINE GAIN
COARSE GAIN
AMP IN

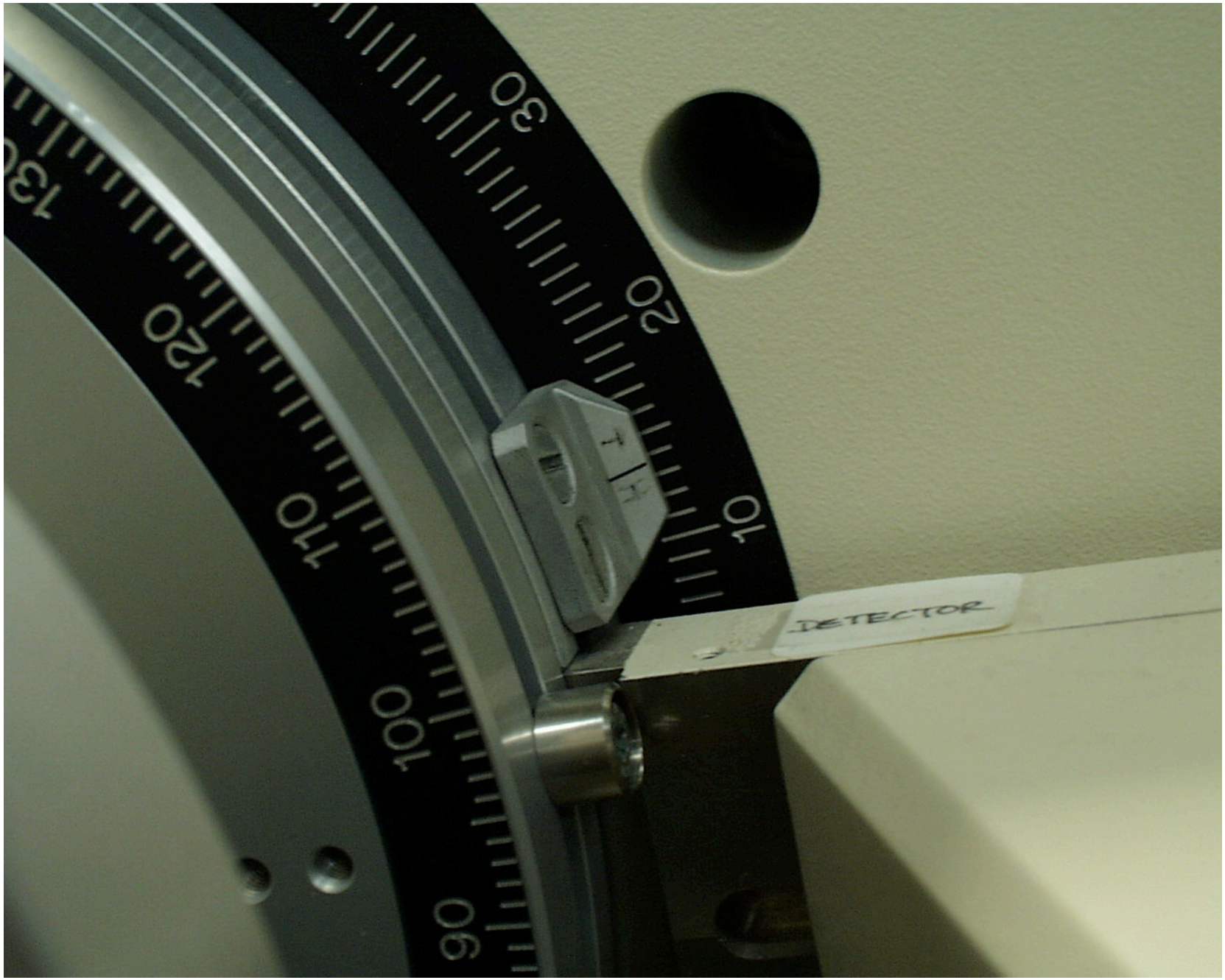

My Computer
Shortcut to Profiles
My Personal Folder
Network Neighborhood
National Park Digital Guide
Recycle Bin
PrintFile
HP DeskJet 720C Seri...
QuickTime Player
My Briefcase
Shortcut to 00 X-ray Instru...
DMSNT
LookPDF
New Office Document
Open Office Document
Programs
Favorites
Documents
Settings
Find
Help
Run...
Log Off Jbrady...
Shut Down...
Minerals
Lamnh
Start
IrfanView
Captured Screens
9:24 PM

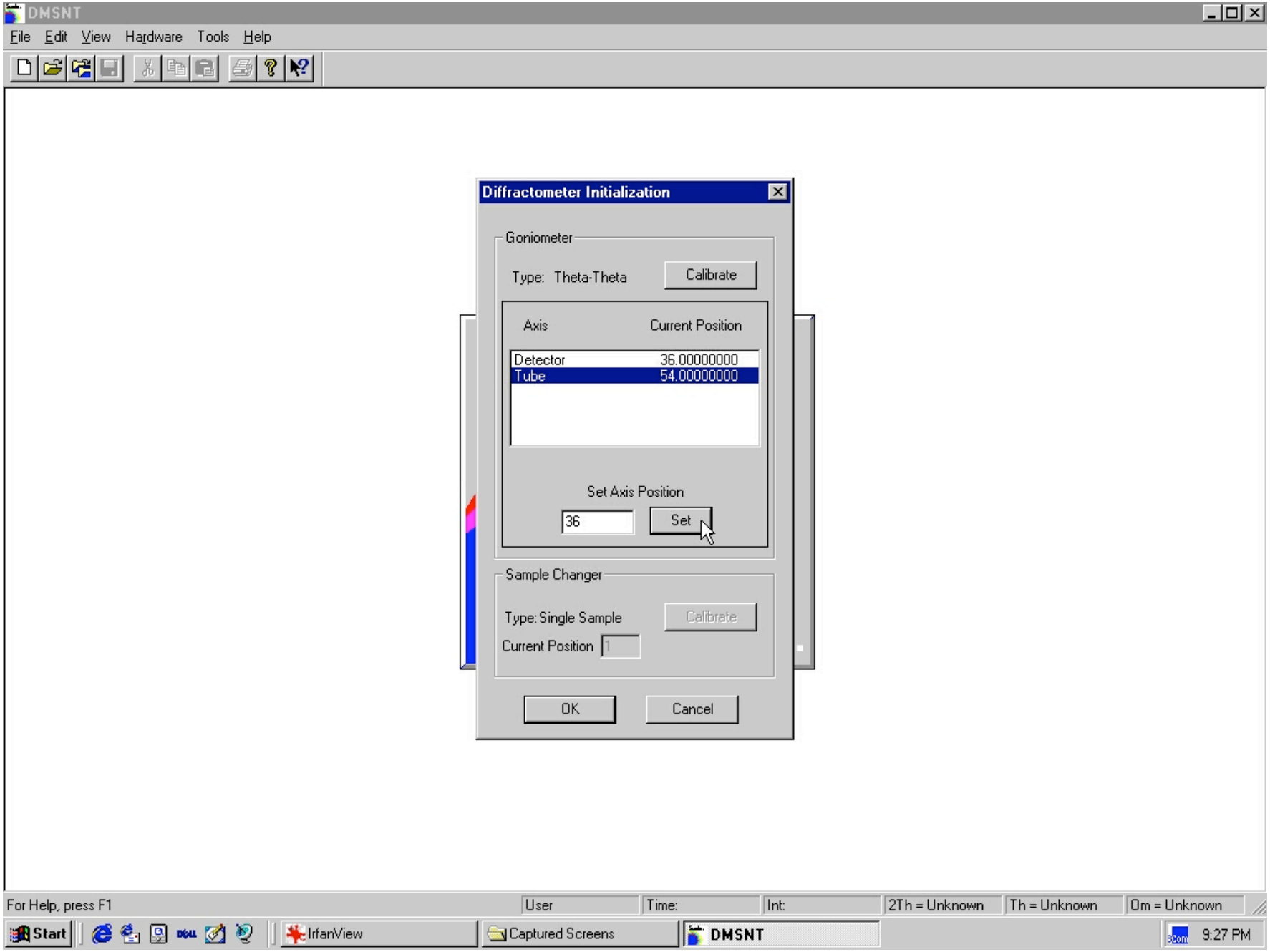

DMSNT
File Edit View Hardware Tools Help
Manual Commands
Configuration...
Automatic Alignment...
Auto Calibrate Detector
Test
Generator...
Goniometer...
Manual Scan/Align...
Sample Changer...
Temperature...
Gas Flow...
Variable Slit...
Digital I/O...
Detector Energy
PSD Calibration
Scintag, Inc.
Activates the goniometer manual command interface
User
Time:
Int:
2Th = Unknown
Th = Unknown
Om = Unknown
Start
IrfanView
Captured Screens
DMSNT
9:25 PM

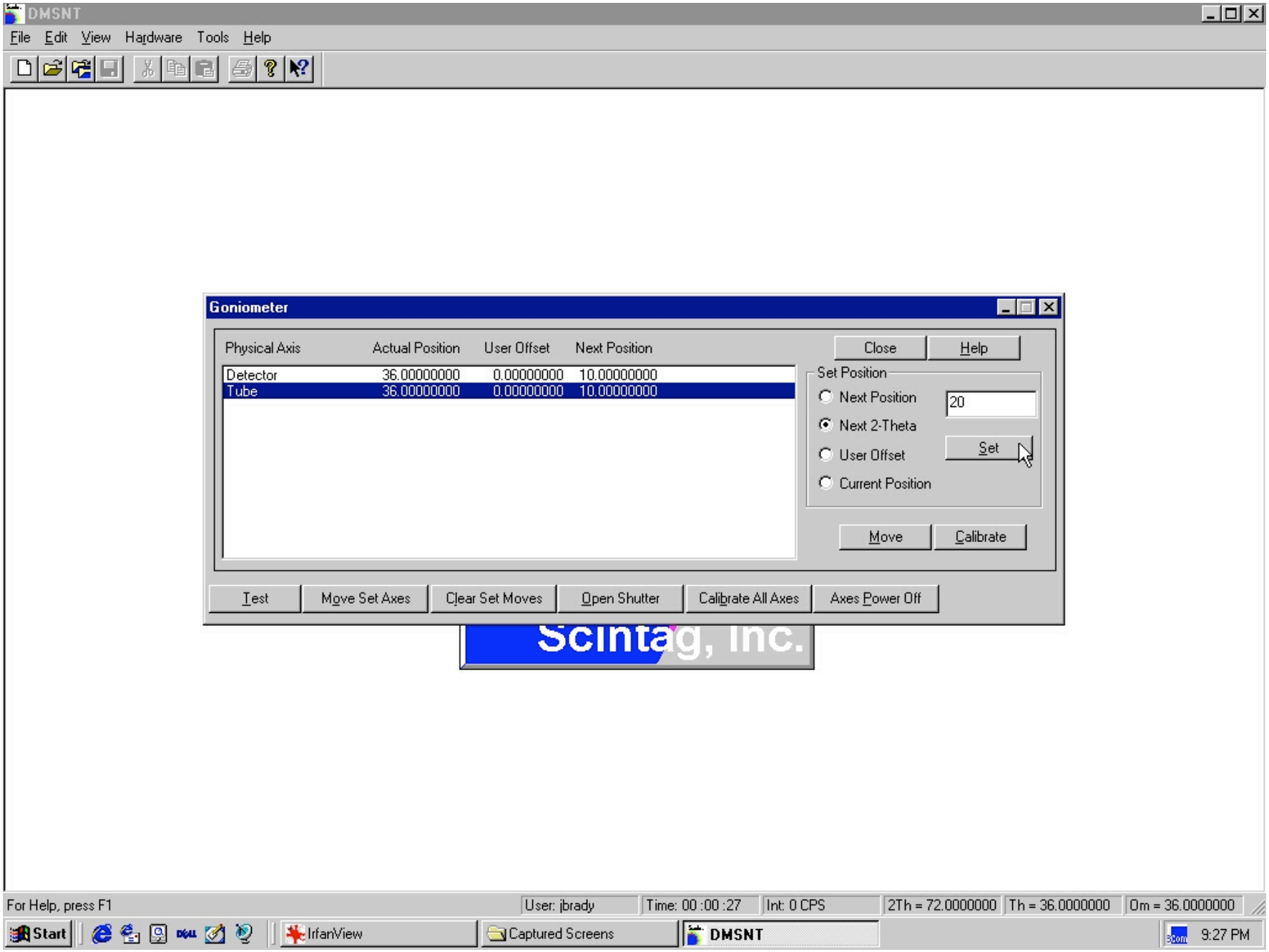

DMSNT
File Edit View Hardware Tools Help
DMS NT
Do you want to initialize the hardware?
Yes
No
Scintag, Inc.
For Help, press F1
User
Time:
Int:
2Th = Unknown
Th = Unknown
Om = Unknown
Start
IrfanView
Captured Screens
DMSNT
9:25 PM

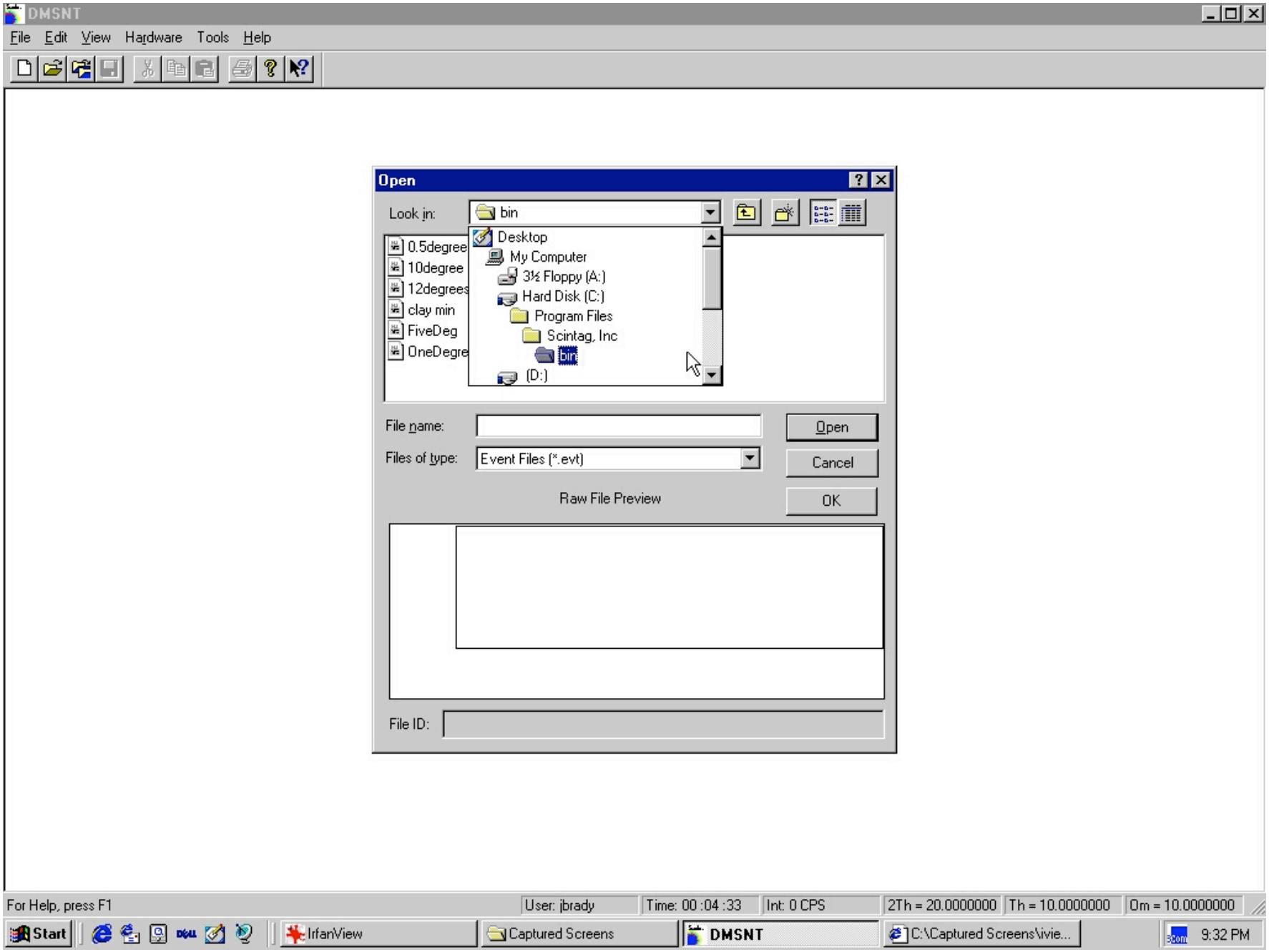

DMSNT
File Edit View Hardware Tools Help
Diffractometer Initialization
Goniometer
Type: Theta-Theta
Calibrate
Axis
Current Position
Detector 35.00500000
Tube 35.00500000
Set Axis Position
35.005
Set
Sample Changer
Type: Single Sample
Calibrate
Current Position 1
OK
Cancel
For Help, press F1
User
Time:
Int:
2Th = Unknown
Th = Unknown
Om = Unknown
Start
IrfanView
Captured Screens
DMSNT
9:25 PM

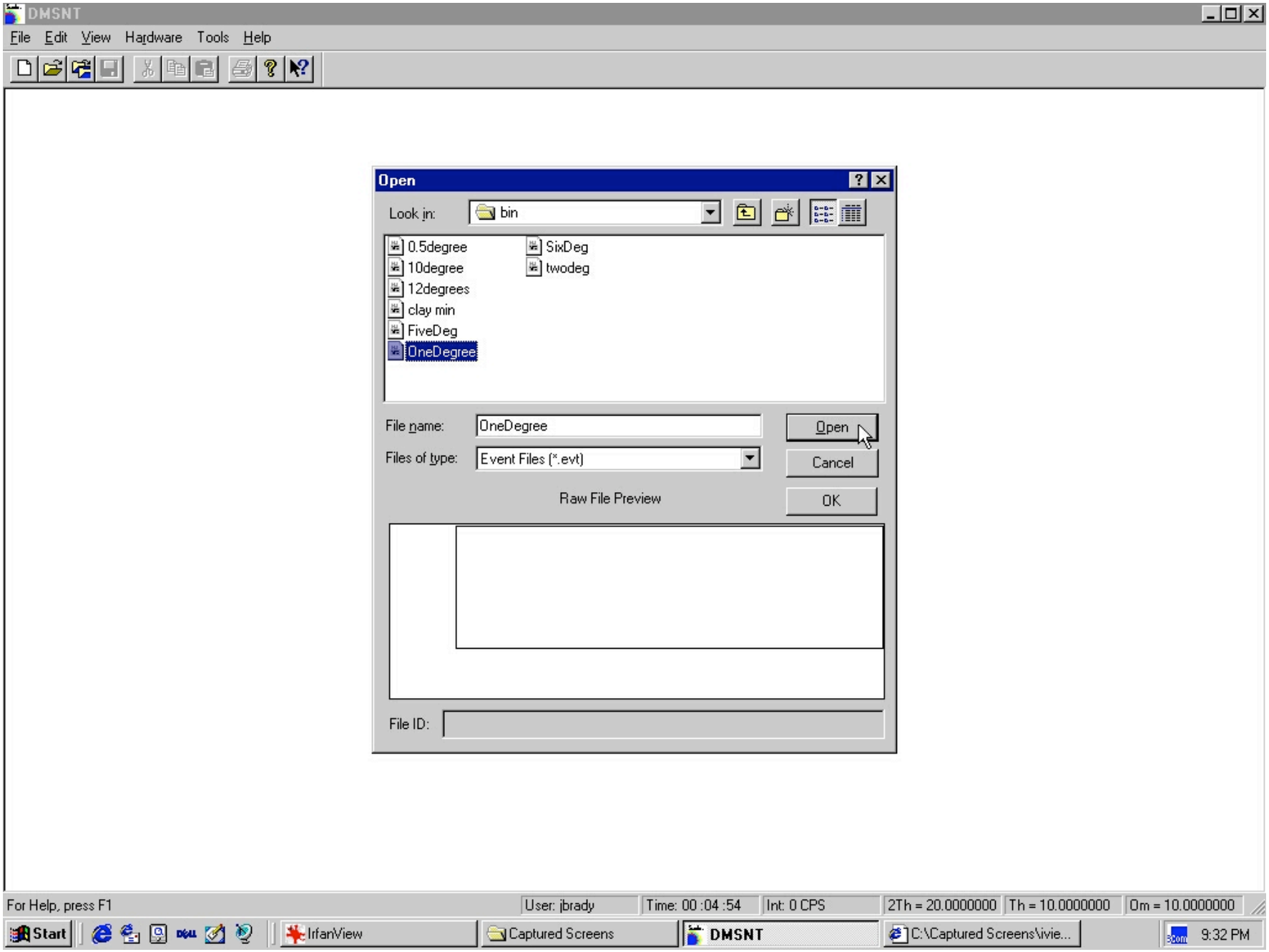
TH
DETECTOR

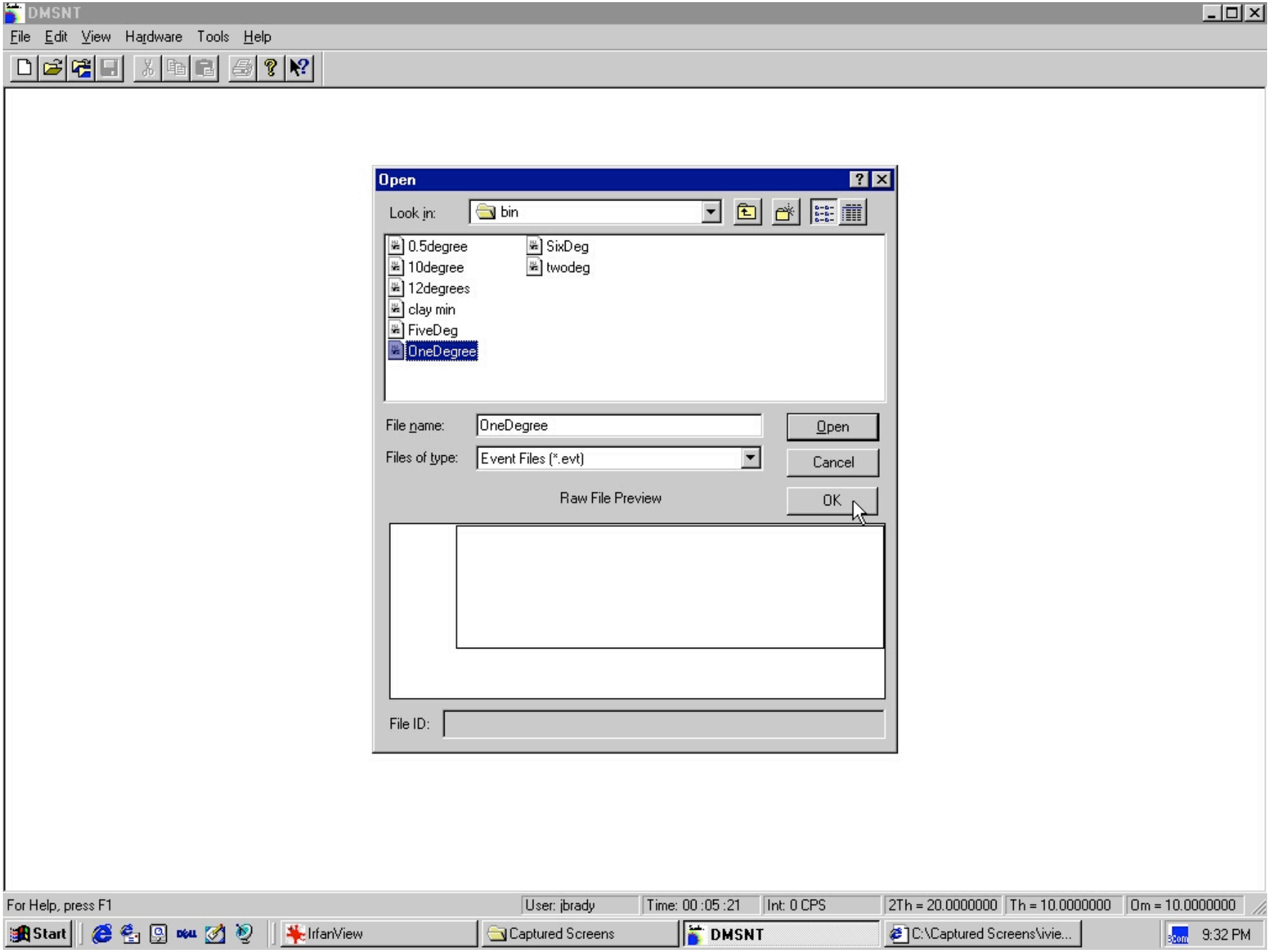

30
20
10
130
120
110
100
90
DETECTOR

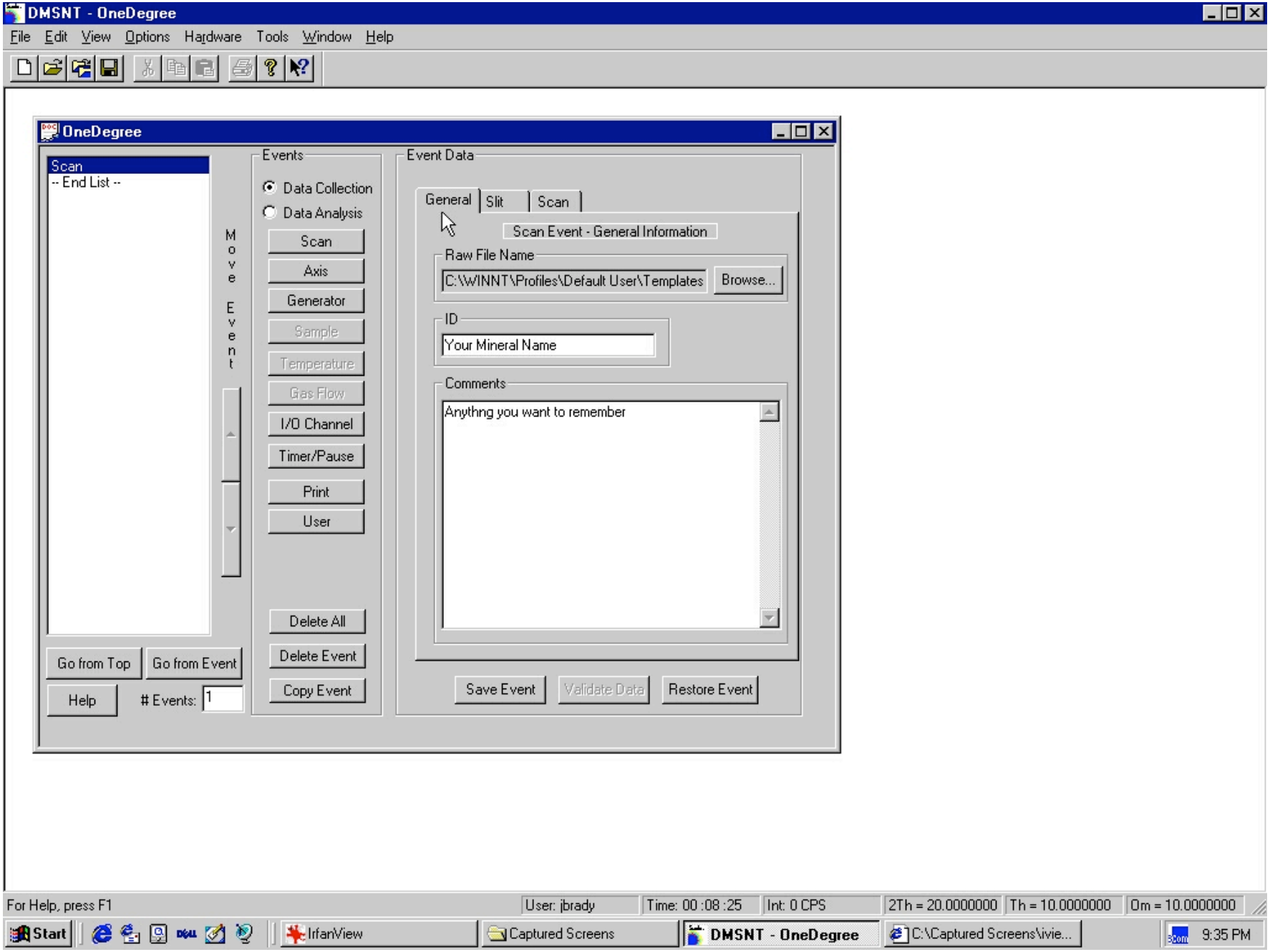

DMSNT
File Edit View Hardware Tools Help
Diffractometer Initialization
Goniometer
Type: Theta-Theta
Calibrate
Axis
Current Position
Detector 36.00000000
Tube 54.00000000
Set Axis Position
36
Set
Sample Changer
Type: Single Sample
Calibrate
Current Position 1
OK
Cancel
For Help, press F1
User
Time:
Int:
2Th = Unknown
Th = Unknown
Om = Unknown
Start
IrfanView
Captured Screens
DMSNT
9:27 PM

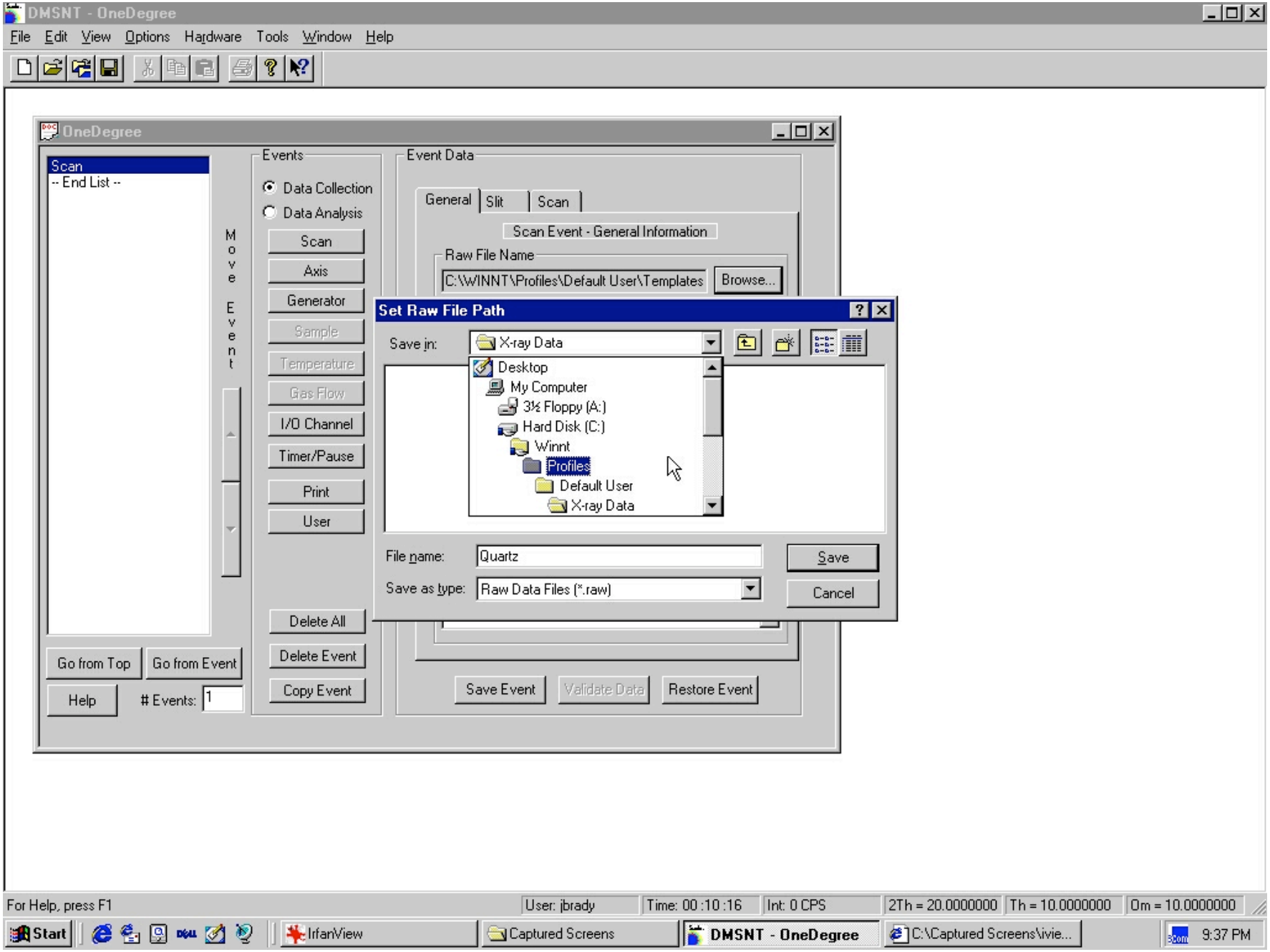

DMSNT
File Edit View Hardware Tools Help
Goniometer
Physical Axis
Actual Position
User Offset
Next Position
Detector 36.00000000 0.00000000 10.00000000
Tube 36.00000000 0.00000000 10.00000000
Close
Help
Set Position
Next Position
20
Next 2-Theta
User Offset
Set
Current Position
Move
Calibrate
Test
Move Set Axes
Clear Set Moves
Open Shutter
Calibrate All Axes
Axes Power Off
Scintag, Inc.
For Help, press F1
User: jbrady
Time: 00 :00 :27
Int: 0 CPS
2Th = 72.0000000
Th = 36.0000000
Om = 36.0000000
Start
IrfanView
Captured Screens
DMSNT
9:27 PM

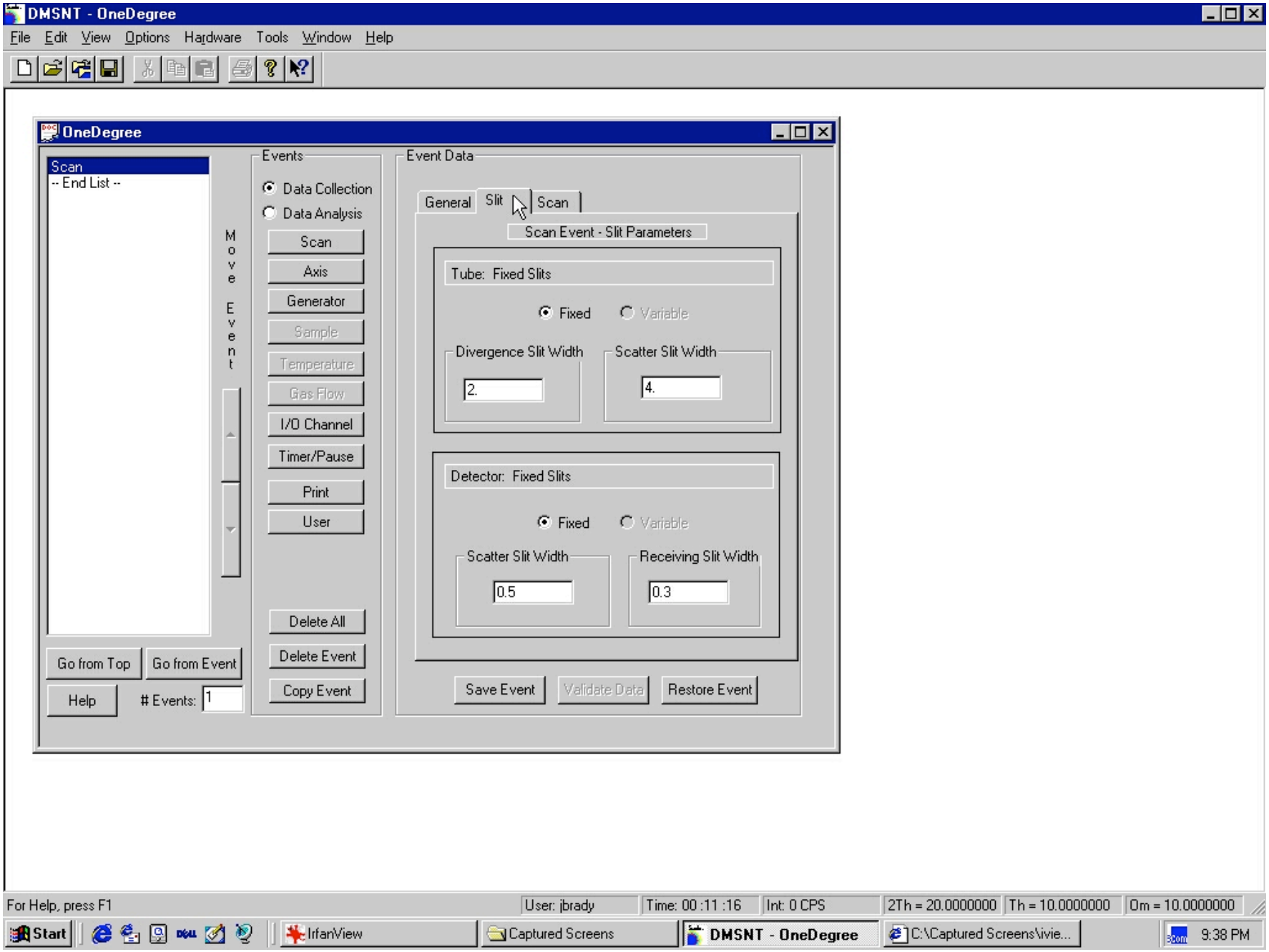

DMSNT
File Edit View Hardware Tools Help
Open
Look in: bin
Desktop
My Computer
3½ Floppy (A:)
Hard Disk (C:)
Program Files
Scintag, Inc
bin
(D:)
0.5degree
10degree
12degrees
clay min
FiveDeg
OneDegre
File name:
Files of type: Event Files (*.evt)
Open
Cancel
OK
Raw File Preview
File ID:
For Help, press F1
User: jbrady
Time: 00 :04 :33
Int: 0 CPS
2Th = 20.0000000
Th = 10.0000000
Om = 10.0000000
Start
IrfanView
Captured Screens
DMSNT
C:\Captured Screens\ivie...
9:32 PM

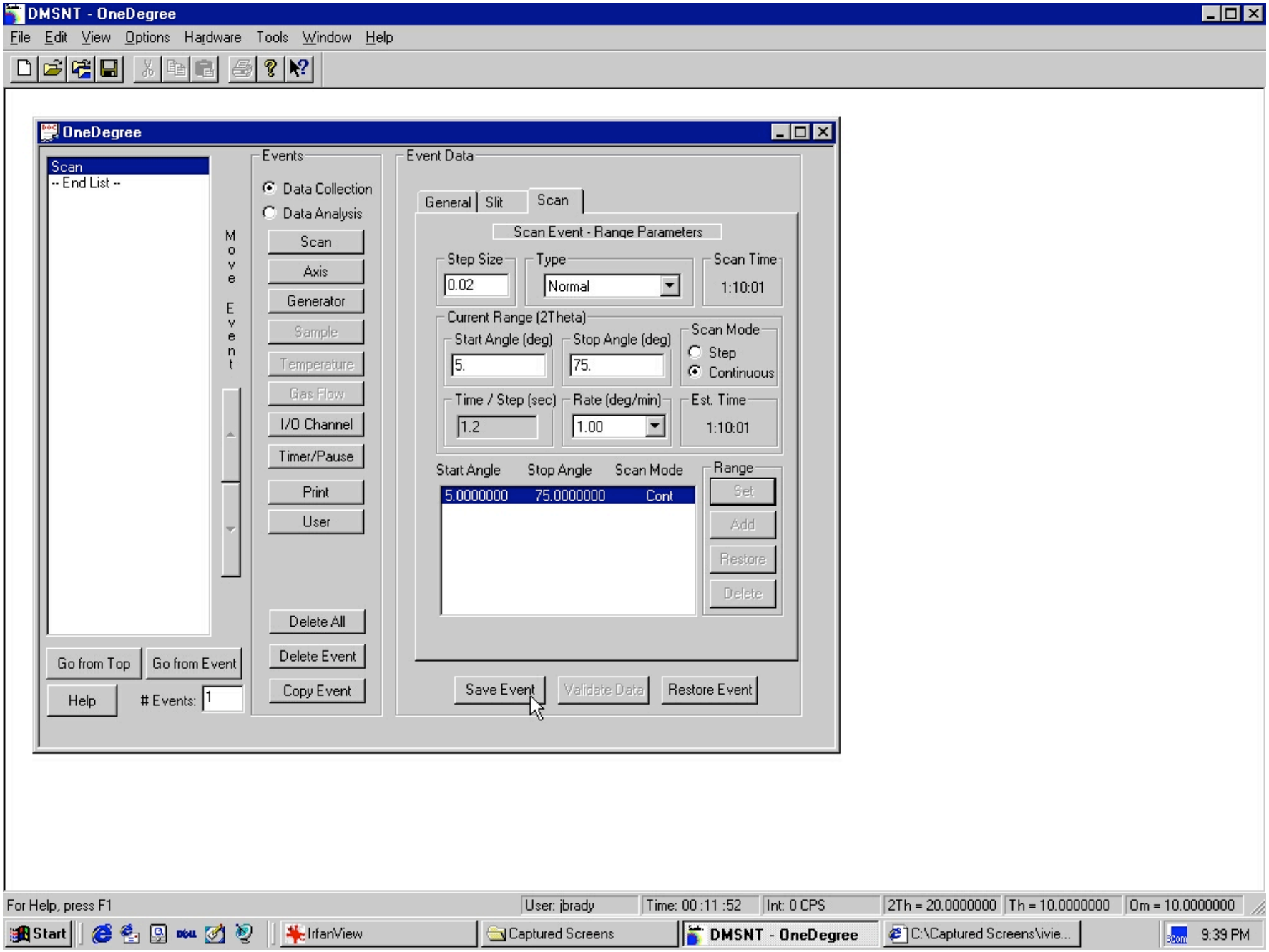

DMSNT
File Edit View Hardware Tools Help
Open
Look in: bin
0.5degree
10degree
12degrees
clay min
FiveDeg
OneDegree
SixDeg
twodeg
File name: OneDegree
Open
Files of type: Event Files (*.evt)
Cancel
Raw File Preview
OK
File ID:
For Help, press F1
User: jbrady
Time: 00 :04 :54
Int: 0 CPS
2Th = 20.0000000
Th = 10.0000000
Om = 10.0000000
Start
IrfanView
Captured Screens
DMSNT
C:\Captured Screens\ivie...
9:32 PM

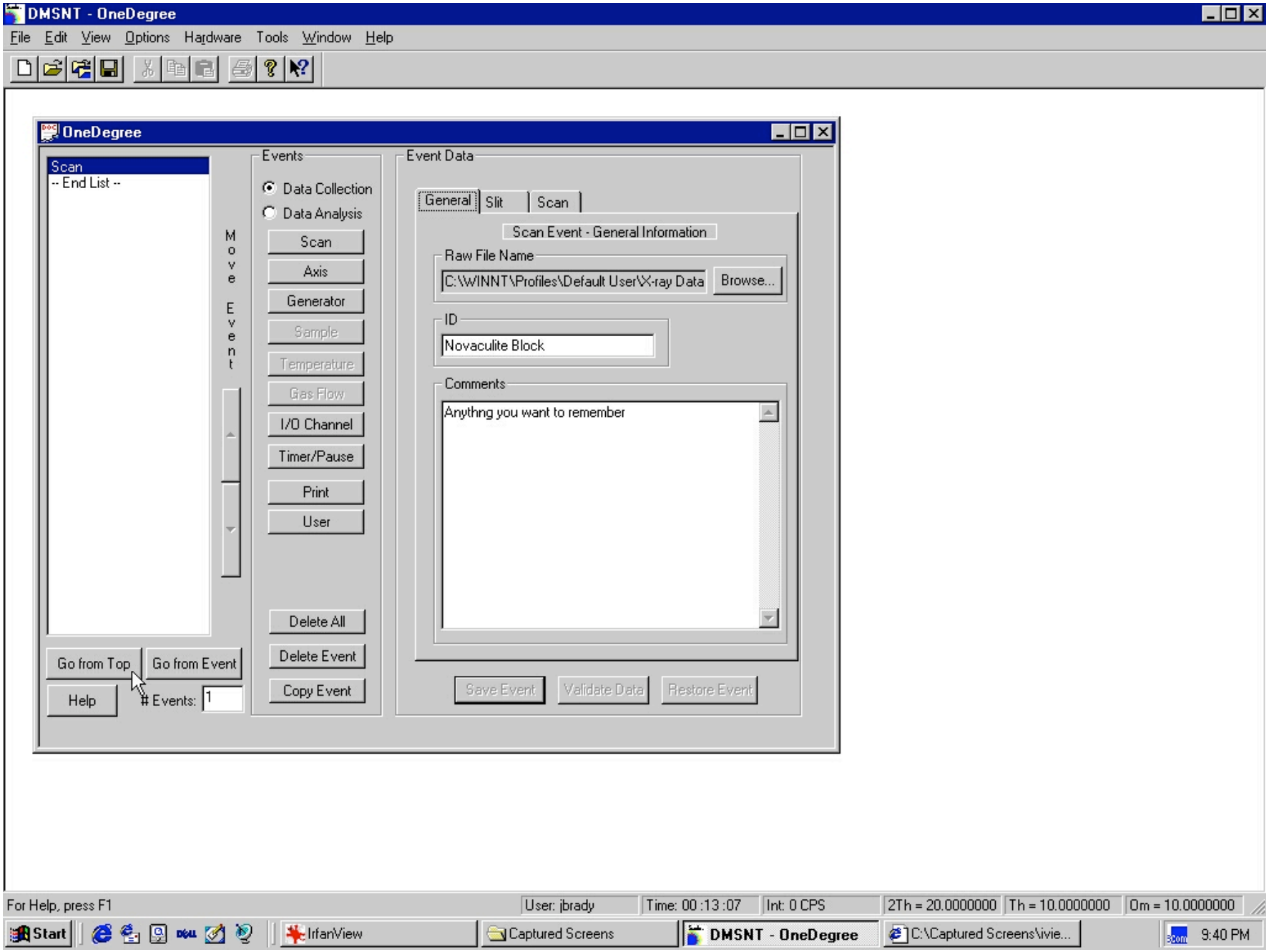

DMSNT
File Edit View Hardware Tools Help
Open
Look in: bin
0.5degree
10degree
12degrees
clay min
FiveDeg
OneDegree
SixDeg
twodeg
File name: OneDegree
Files of type: Event Files (*.evt)
Open
Cancel
Raw File Preview
OK
File ID:
For Help, press F1
User: jbrady
Time: 00 :05 :21
Int: 0 CPS
2Th = 20.0000000
Th = 10.0000000
Om = 10.0000000
Start
IrfanView
Captured Screens
DMSNT
C:\Captured Screens\ivie...
9:32 PM

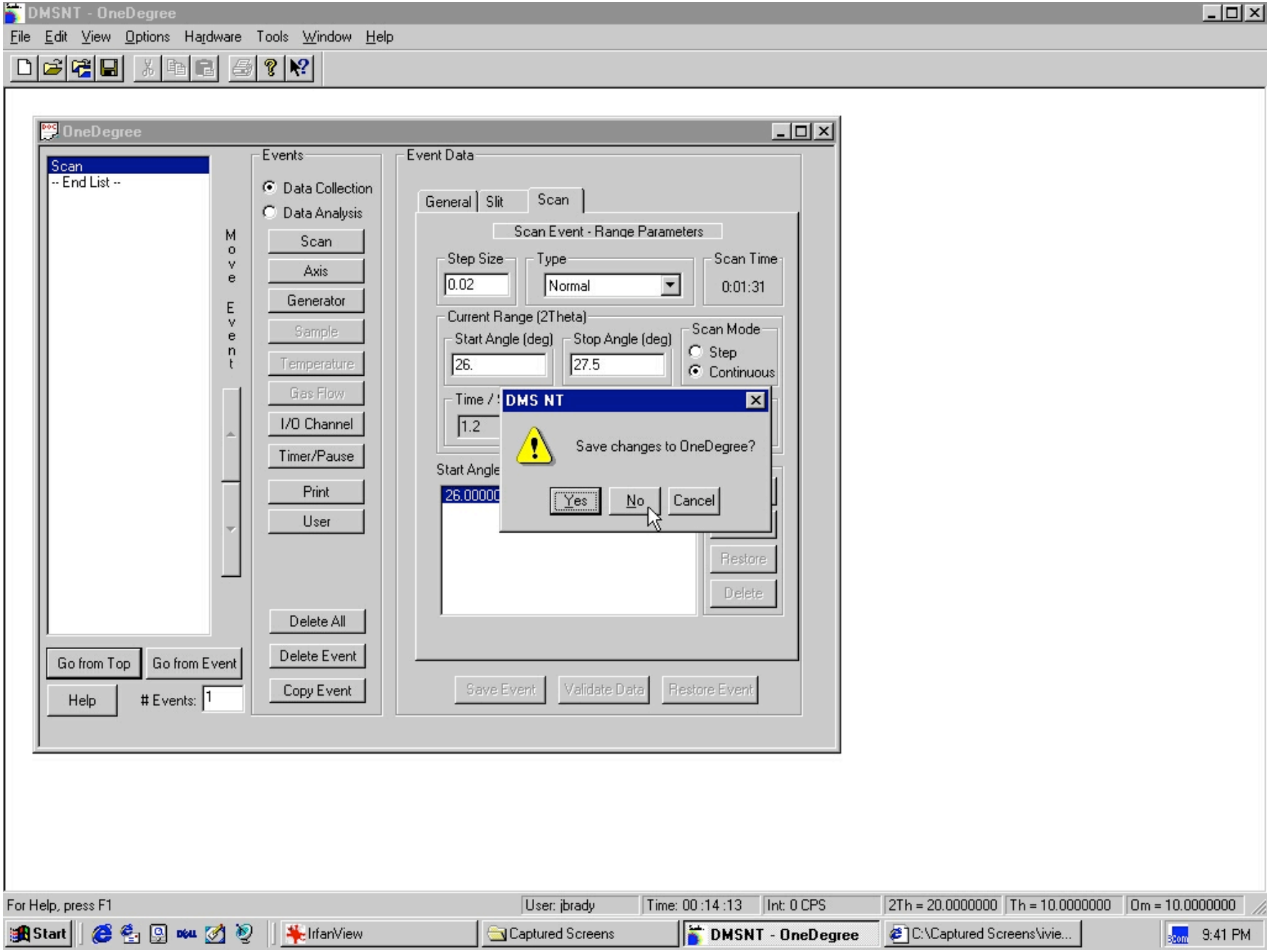

DMSNT - OneDegree
File Edit View Options Hardware Tools Window Help
OneDegree
Scan
-- End List --
Move Event
Events
Data Collection
Data Analysis
Scan
Axis
Generator
Sample
Temperature
Gas Flow
I/O Channel
Timer/Pause
Print
User
Delete All
Delete Event
Copy Event
Go from Top
Go from Event
Help
Events: 1
Event Data
General
Slit
Scan
Scan Event - General Information
Raw File Name
C:\WINNT\Profiles\Default User\Templates
Browse...
ID
Your Mineral Name
Comments
Anythng you want to remember
Save Event
Validate Data
Restore Event
For Help, press F1
User: jbrady
Time: 00 :08 :25
Int: 0 CPS
2Th = 20.0000000
Th = 10.0000000
Om = 10.0000000
Start
IrfanView
Captured Screens
DMSNT - OneDegree
C:\Captured Screens\ivie...
9:35 PM

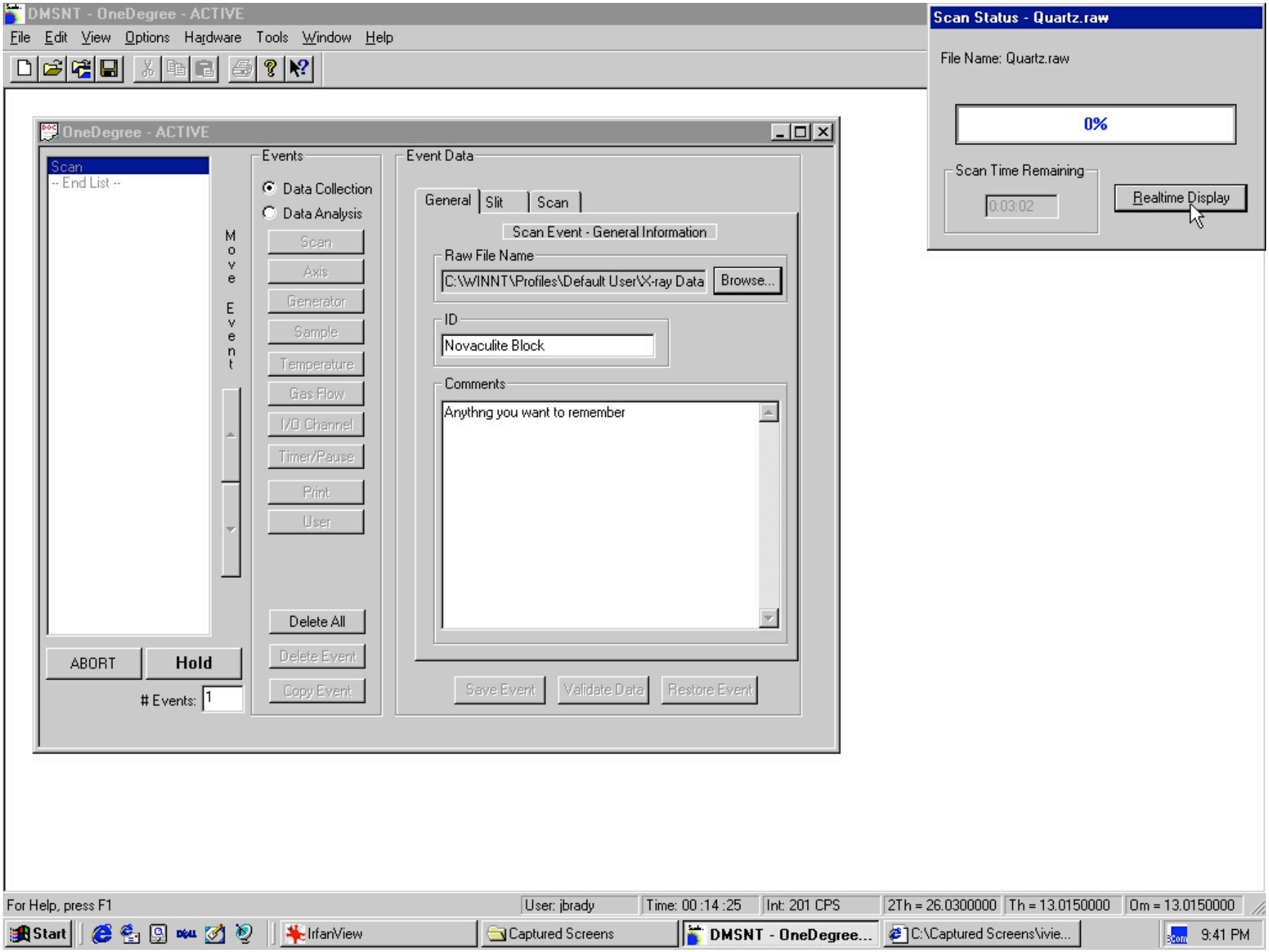

DMSNT - OneDegree
File Edit View Options Hardware Tools Window Help
OneDegree
Scan
-- End List --
Events
Data Collection
Data Analysis
Scan
Axis
Generator
Sample
Temperature
Gas Flow
I/O Channel
Timer/Pause
Print
User
Move Event
Delete All
Delete Event
Copy Event
Go from Top
Go from Event
Help
Events: 1
Event Data
General
Slit
Scan
Scan Event - General Information
Raw File Name
C:\WINNT\Profiles\Default User\Templates
Browse...
Save Event
Validate Data
Restore Event
Set Raw File Path
Save in:
X-ray Data
Desktop
My Computer
3½ Floppy (A:)
Hard Disk (C:)
Winnt
Profiles
Default User
X-ray Data
File name:
Quartz
Save as type:
Raw Data Files (*.raw)
Save
Cancel
For Help, press F1
User: jbrady
Time: 00:10:16
Int: 0 CPS
2Th = 20.0000000
Th = 10.0000000
Om = 10.0000000
Start
IrfanView
Captured Screens
DMSNT - OneDegree
C:\Captured Screens\ivie...
9:37 PM

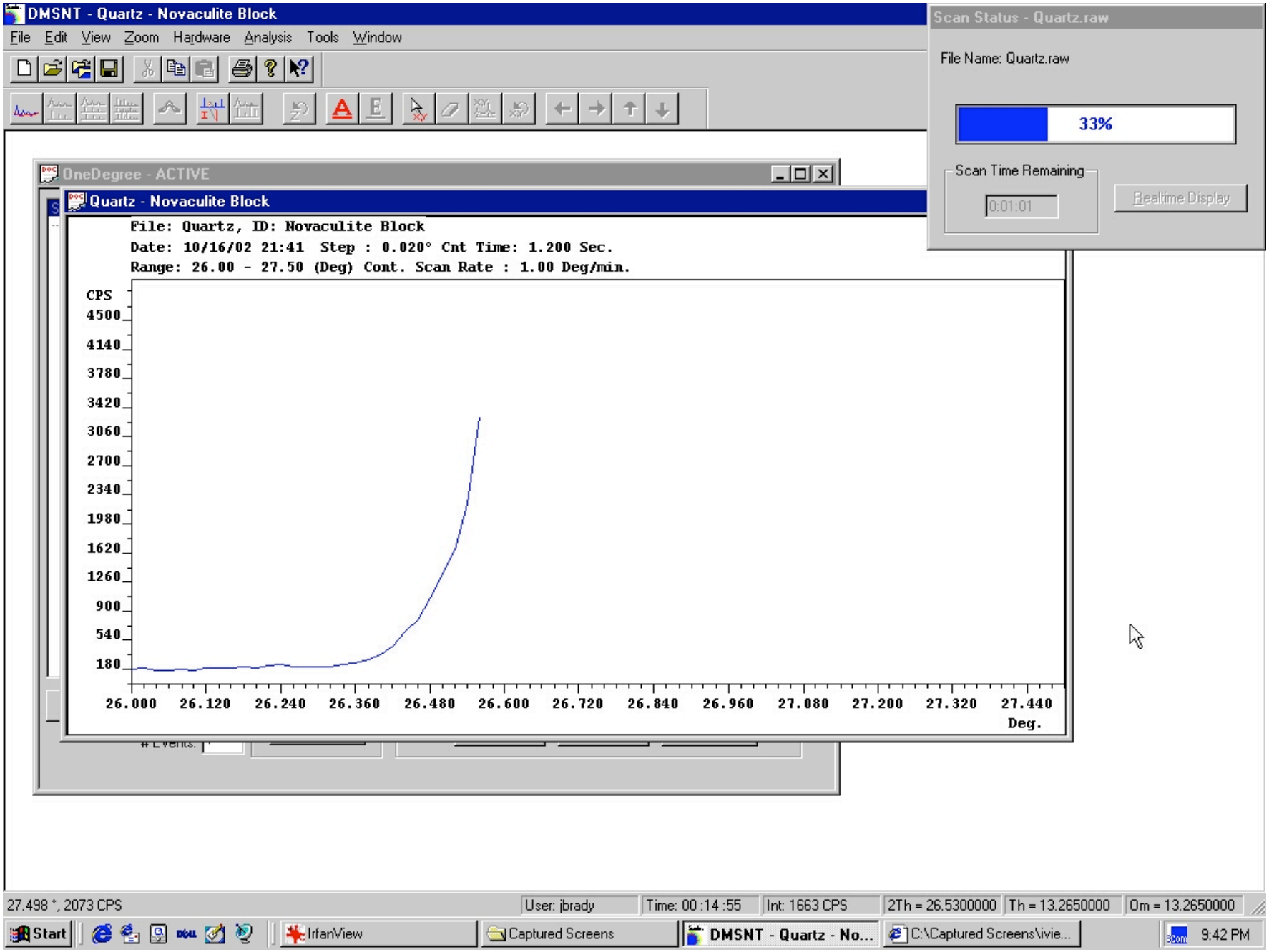

DMSNT - OneDegree
File Edit View Options Hardware Tools Window Help
OneDegree
Scan
-- End List --
Move Event
Events
Data Collection
Data Analysis
Scan
Axis
Generator
Sample
Temperature
Gas Flow
I/O Channel
Timer/Pause
Print
User
Delete All
Delete Event
Copy Event
Go from Top
Go from Event
Help
Events: 1
Event Data
General
Slit
Scan
Scan Event - Slit Parameters
Tube: Fixed Slits
Fixed
Variable
Divergence Slit Width
2.
Scatter Slit Width
4.
Detector: Fixed Slits
Fixed
Variable
Scatter Slit Width
0.5
Receiving Slit Width
0.3
Save Event
Validate Data
Restore Event
For Help, press F1
User: jbrady
Time: 00 :11 :16
Int: 0 CPS
2Th = 20.0000000
Th = 10.0000000
Om = 10.0000000
Start
IrfanView
Captured Screens
DMSNT - OneDegree
C:\Captured Screens\ivie...
9:38 PM

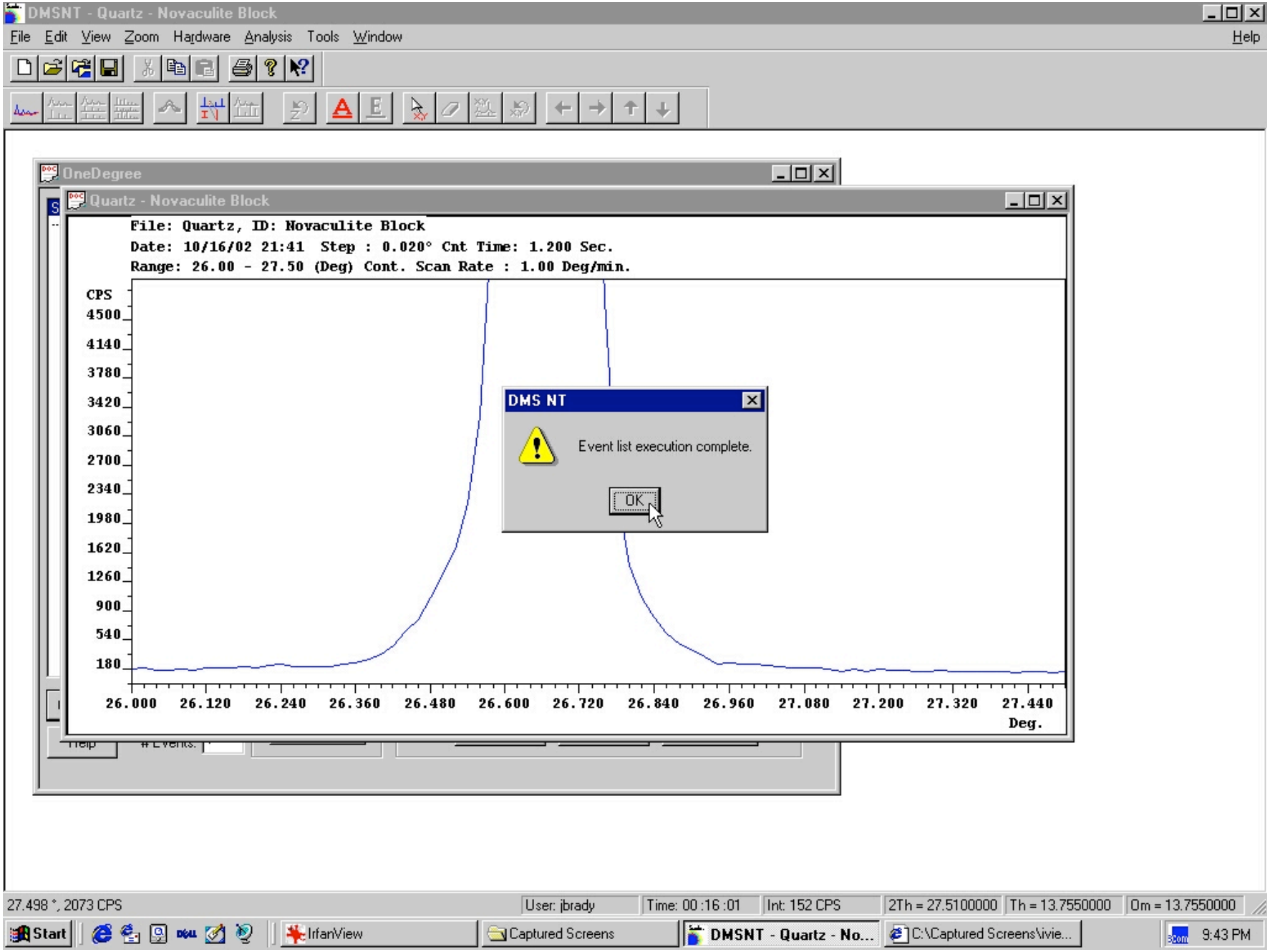

DMSNT - OneDegree
File Edit View Options Hardware Tools Window Help
OneDegree
Scan
-- End List --
Events
Data Collection
Data Analysis
Scan
Axis
Generator
Sample
Temperature
Gas Flow
I/O Channel
Timer/Pause
Print
User
Move Event
Delete All
Delete Event
Copy Event
Go from Top
Go from Event
Help
Events: 1
Event Data
General Slit Scan
Scan Event - Range Parameters
Step Size 0.02
Type Normal
Scan Time 1:10:01
Current Range (2Theta)
Start Angle (deg) 5.
Stop Angle (deg) 75.
Scan Mode Step Continuous
Time / Step (sec) 1.2
Rate (deg/min) 1.00
Est. Time 1:10:01
Start Angle Stop Angle Scan Mode
5.0000000 75.0000000 Cont
Range
Set
Add
Restore
Delete
Save Event
Validate Data
Restore Event
For Help, press F1
User: jbrady
Time: 00 :11 :52
Int: 0 CPS
2Th = 20.0000000
Th = 10.0000000
Om = 10.0000000
Start
IrfanView
Captured Screens
DMSNT - OneDegree
C:\Captured Screens\ivie...
9:39 PM

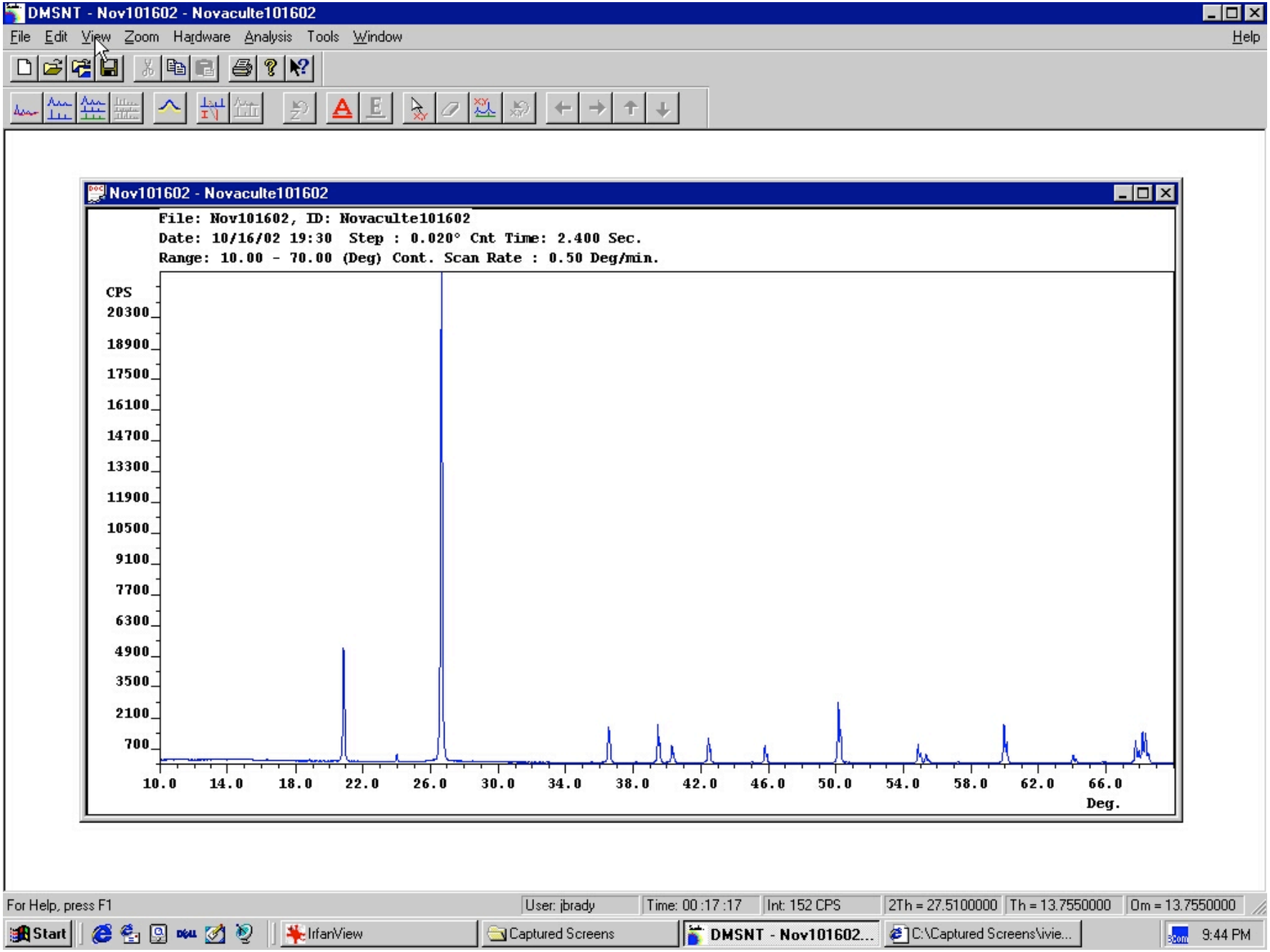

DMSNT - OneDegree
File Edit View Options Hardware Tools Window Help
OneDegree
Scan
-- End List --
Move Event
Events
Data Collection
Data Analysis
Scan
Axis
Generator
Sample
Temperature
Gas Flow
I/O Channel
Timer/Pause
Print
User
Delete All
Delete Event
Copy Event
Go from Top
Go from Event
Help
Events: 1
Event Data
General
Slit
Scan
Scan Event - General Information
Raw File Name
C:\WINNT\Profiles\Default User\X-ray Data
Browse...
ID
Novaculite Block
Comments
Anythng you want to remember
Save Event
Validate Data
Restore Event
For Help, press F1
User: jbrady
Time: 00:13:07
Int: 0 CPS
2Th = 20.0000000
Th = 10.0000000
Om = 10.0000000
Start
IrfanView
Captured Screens
DMSNT - OneDegree
C:\Captured Screens\ivie...
9:40 PM

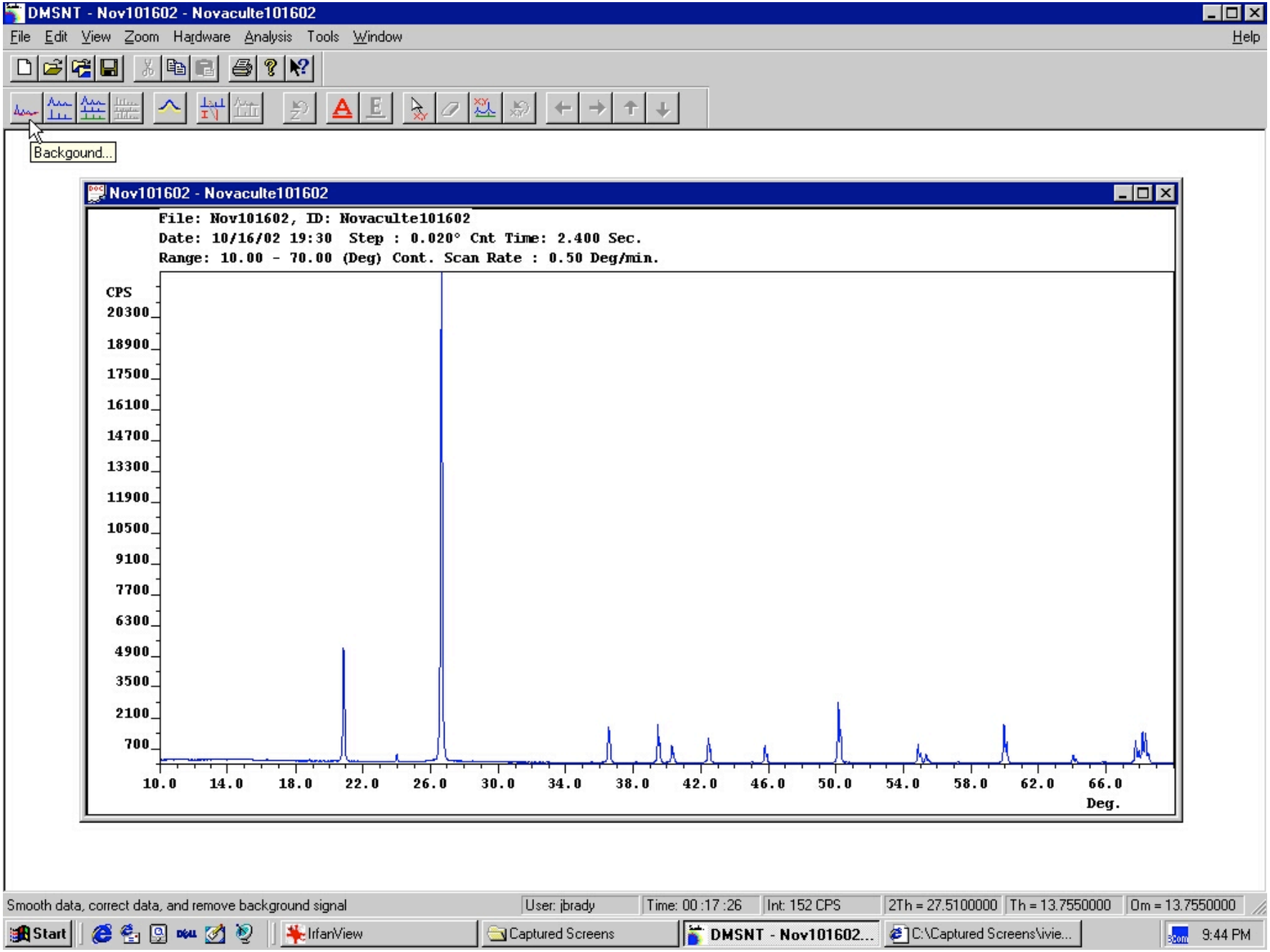

DMSNT - OneDegree
File Edit View Options Hardware Tools Window Help
OneDegree
Scan
-- End List --
Events
Data Collection
Data Analysis
Scan
Axis
Generator
Sample
Temperature
Gas Flow
I/O Channel
Timer/Pause
Print
User
Move Event
Delete All
Delete Event
Copy Event
Go from Top
Go from Event
Help
Events: 1
Event Data
General Slit Scan
Scan Event - Range Parameters
Step Size
0.02
Type
Normal
Scan Time
0:01:31
Current Range (2Theta)
Start Angle (deg)
26.
Stop Angle (deg)
27.5
Scan Mode
Step
Continuous
Time /
1.2
Start Angle
26.00000
Restore
Delete
Save Event
Validate Data
Restore Event
DMS NT
Save changes to OneDegree?
Yes
No
Cancel
For Help, press F1
User: jbrady
Time: 00 :14 :13
Int: 0 CPS
2Th = 20.0000000
Th = 10.0000000
Om = 10.0000000
Start
IrfanView
Captured Screens
DMSNT - OneDegree
C:\Captured Screens\ivie...
9:41 PM

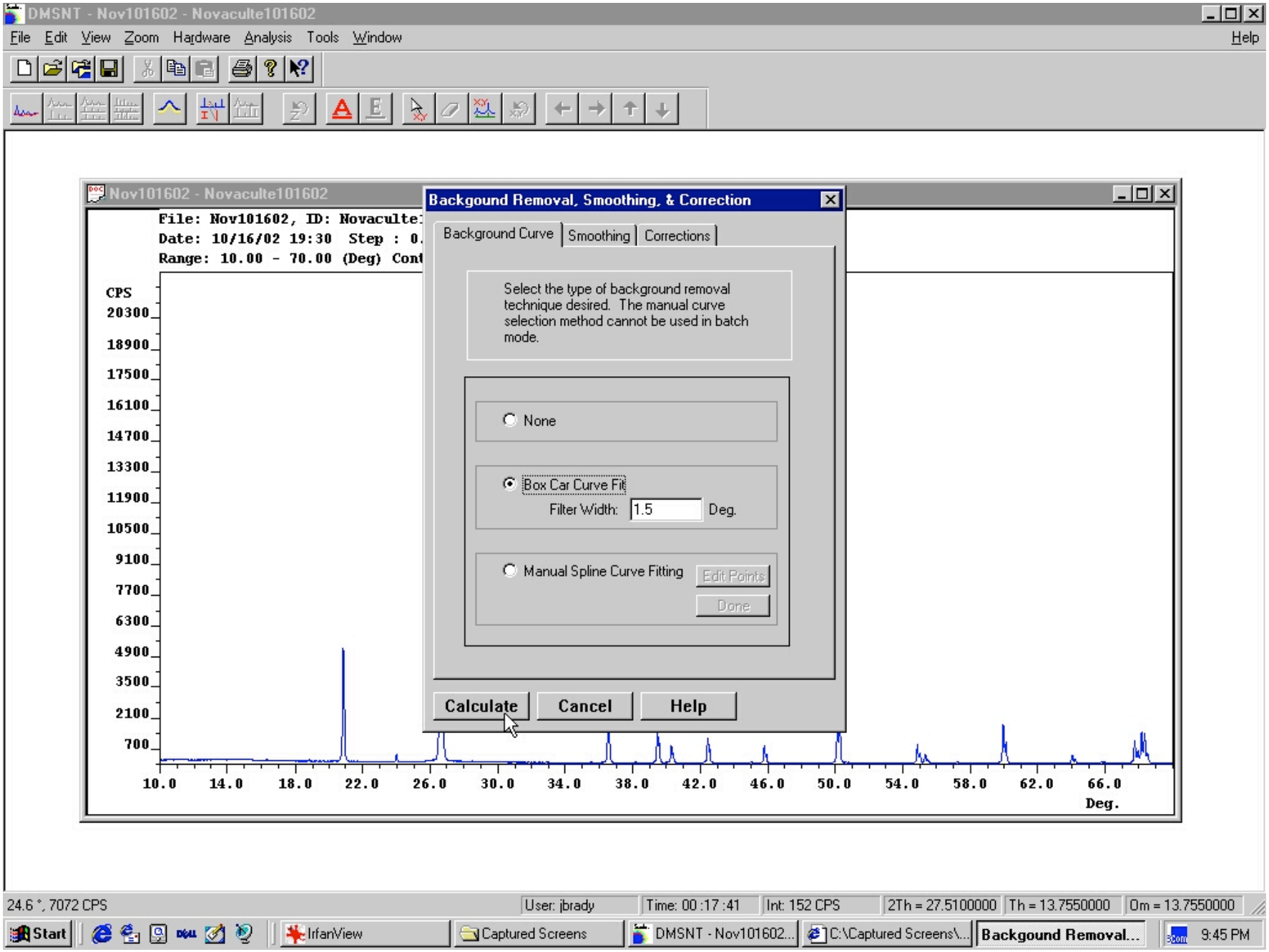

DMSNT - OneDegree - ACTIVE
File Edit View Options Hardware Tools Window Help
OneDegree - ACTIVE
Scan
-- End List --
Move Event
Events
Data Collection
Data Analysis
Scan
Axis
Generator
Sample
Temperature
Gas Flow
I/O Channel
Timer/Pause
Print
User
Delete All
Delete Event
Copy Event
ABORT
Hold
Events: 1
Event Data
General
Slit
Scan
Scan Event - General Information
Raw File Name
C:\WINNT\Profiles\Default User\X-ray Data
Browse...
ID
Novaculite Block
Comments
Anythng you want to remember
Save Event
Validate Data
Restore Event
Scan Status - Quartz.raw
File Name: Quartz.raw
0%
Scan Time Remaining
0:03:02
Realtime Display
For Help, press F1
User: jbrady
Time: 00 :14 :25
Int: 201 CPS
2Th = 26.0300000
Th = 13.0150000
Om = 13.0150000
Start
IrfanView
Captured Screens
DMSNT - OneDegree...
C:\Captured Screens\ivie...
9:41 PM

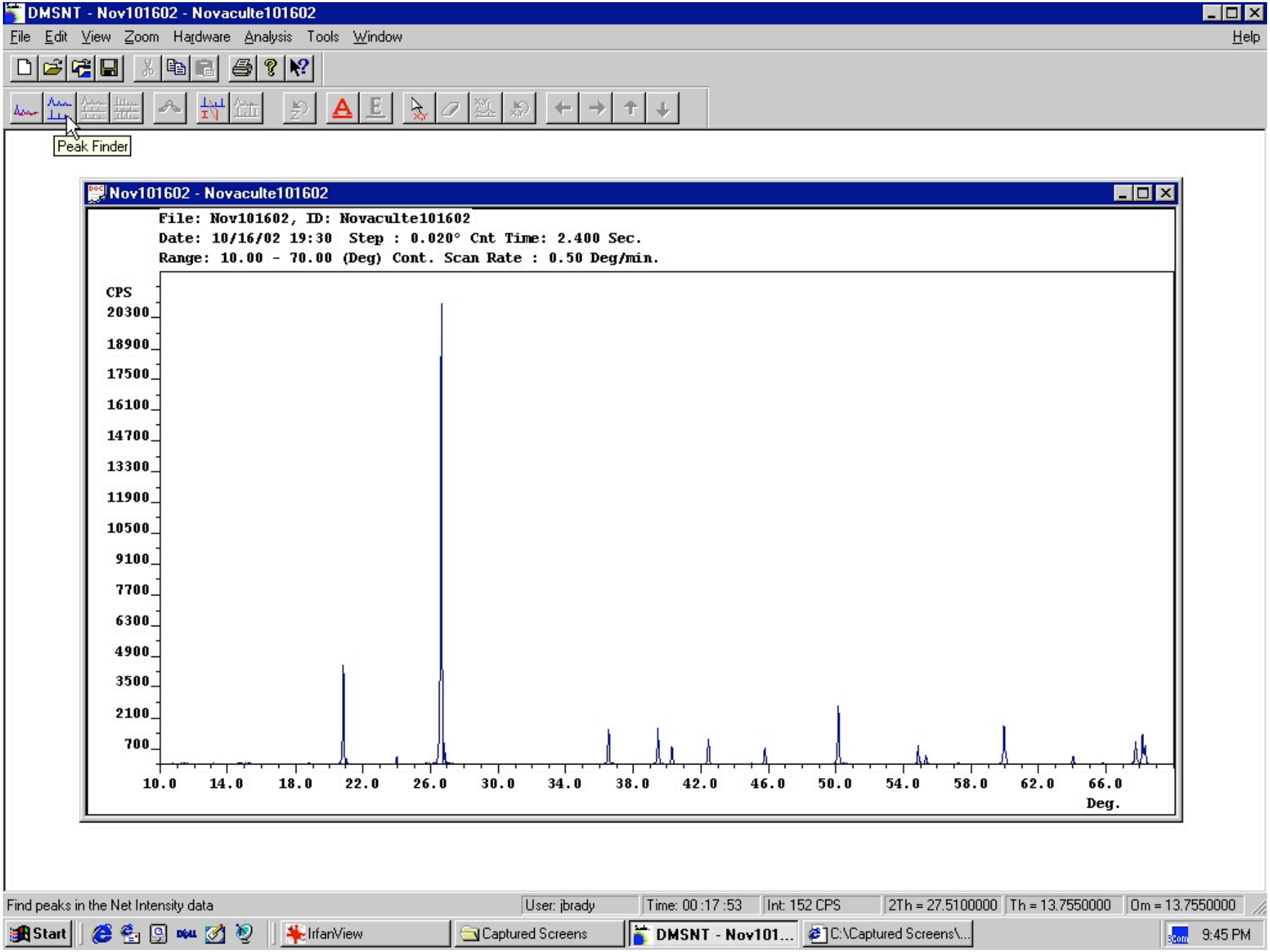

DMSNT - Quartz - Novaculite Block
File Edit View Zoom Hardware Analysis Tools Window
Scan Status - Quartz.raw
File Name: Quartz.raw
33%
Scan Time Remaining
0:01:01
Realtime Display
OneDegree - ACTIVE
Quartz - Novaculite Block
File: Quartz, ID: Novaculite Block
Date: 10/16/02 21:41 Step : 0.020° Cnt Time: 1.200 Sec.
Range: 26.00 - 27.50 (Deg) Cont. Scan Rate : 1.00 Deg/min.
CPS
4500
4140
3780
3420
3060
2700
2340
1980
1620
1260
900
540
180
26.000 26.120 26.240 26.360 26.480 26.600 26.720 26.840 26.960 27.080 27.200 27.320 27.440
Deg.
27.498 °, 2073 CPS
User: jbrady
Time: 00 :14 :55
Int: 1663 CPS
2Th = 26.5300000
Th = 13.2650000
Om = 13.2650000
Start
IrfanView
Captured Screens
DMSNT - Quartz - No...
C:\Captured Screens\ivie...
9:42 PM

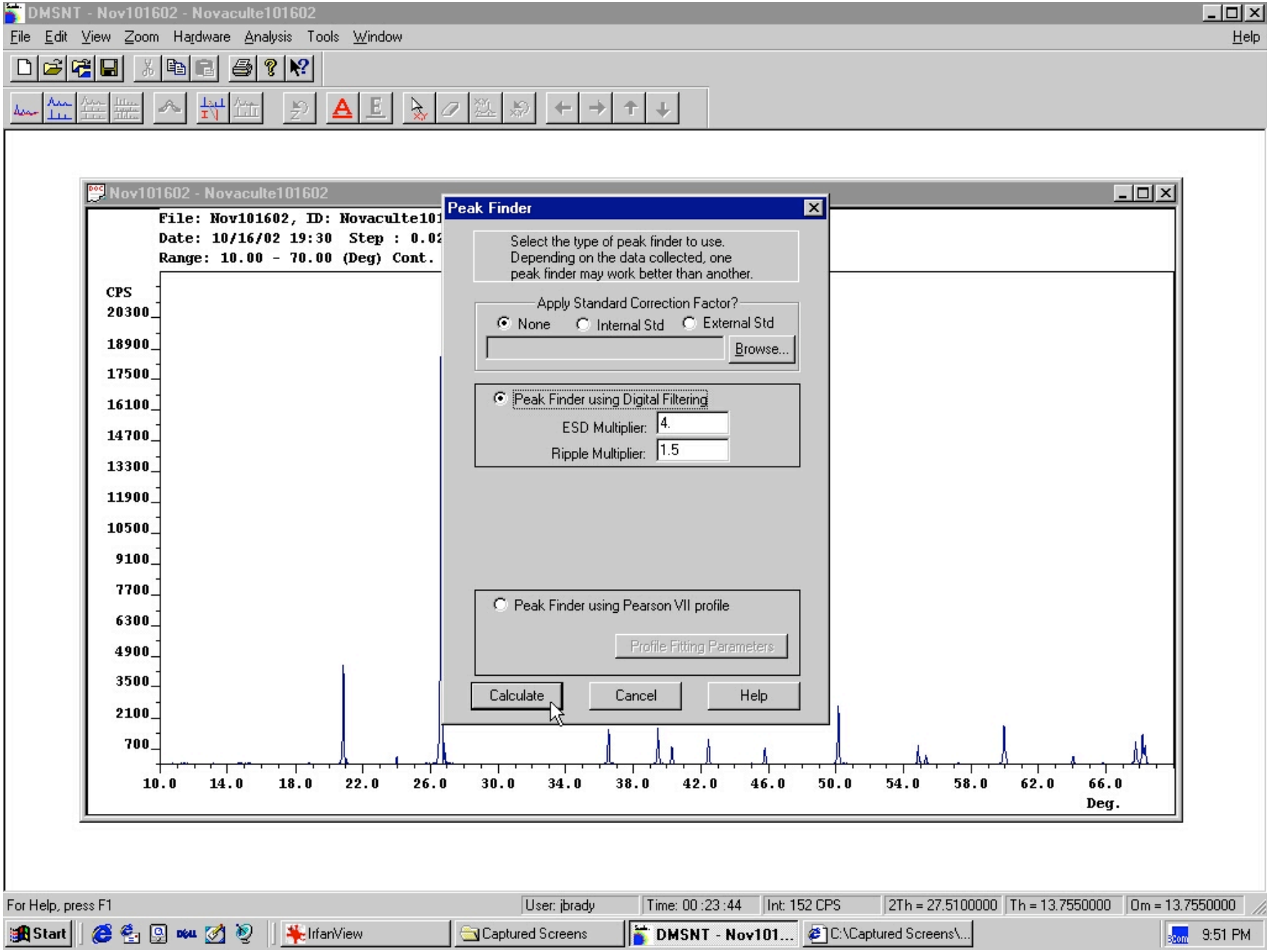

DMSNT - Quartz - Novaculite Block
File Edit View Zoom Hardware Analysis Tools Window Help
OneDegree
Quartz - Novaculite Block
File: Quartz, ID: Novaculite Block
Date: 10/16/02 21:41 Step : 0.020° Cnt Time: 1.200 Sec.
Range: 26.00 - 27.50 (Deg) Cont. Scan Rate : 1.00 Deg/min.
CPS
4500
4140
3780
3420
3060
2700
2340
1980
1620
1260
900
540
180
26.000 26.120 26.240 26.360 26.480 26.600 26.720 26.840 26.960 27.080 27.200 27.320 27.440
Deg.
DMS NT
Event list execution complete.
OK
27.498 °, 2073 CPS
User: jbrady
Time: 00:16:01
Int: 152 CPS
2Th = 27.5100000
Th = 13.7550000
Om = 13.7550000
Start
IrfanView
Captured Screens
DMSNT - Quartz - No...
C:\Captured Screens\ivie...
9:43 PM

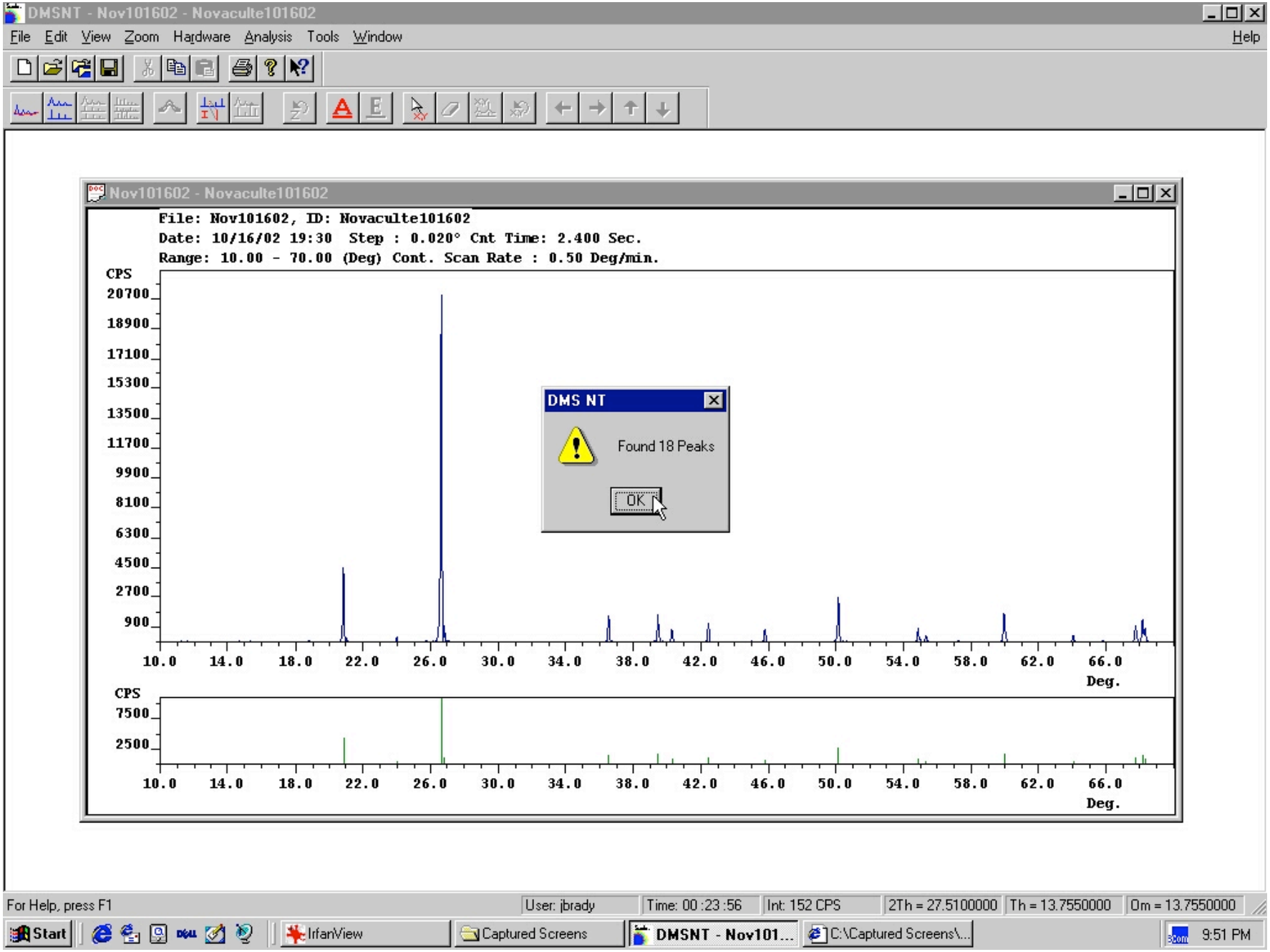

DMSNT - Nov101602 - Novaculte101602
File Edit View Zoom Hardware Analysis Tools Window Help
Nov101602 - Novaculte101602
File: Nov101602, ID: Novaculte101602
Date: 10/16/02 19:30 Step : 0.020° Cnt Time: 2.400 Sec.
Range: 10.00 - 70.00 (Deg) Cont. Scan Rate : 0.50 Deg/min.
CPS
20300
18900
17500
16100
14700
13300
11900
10500
9100
7700
6300
4900
3500
2100
700
10.0 14.0 18.0 22.0 26.0 30.0 34.0 38.0 42.0 46.0 50.0 54.0 58.0 62.0 66.0
Deg.
For Help, press F1
User: jbrady
Time: 00:17:17
Int: 152 CPS
2Th = 27.5100000
Th = 13.7550000
Om = 13.7550000
Start
IrfanView
Captured Screens
DMSNT - Nov101602...
C:\Captured Screens\ivie...
9:44 PM

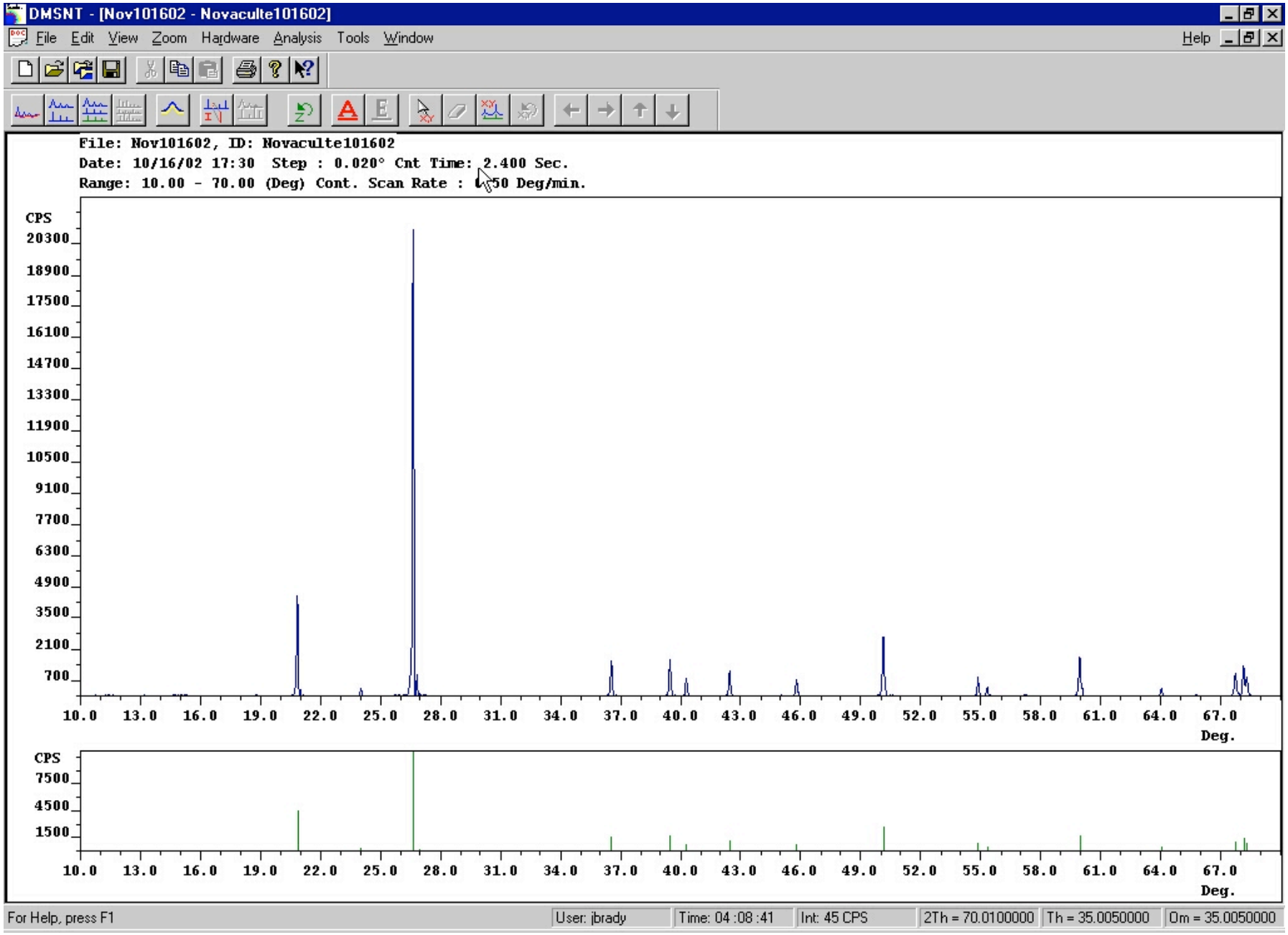

DMSNT - Nov101602 - Novaculte101602
File Edit View Zoom Hardware Analysis Tools Window Help
Backgound...
Nov101602 - Novaculte101602
File: Nov101602, ID: Novaculte101602
Date: 10/16/02 19:30 Step : 0.020° Cnt Time: 2.400 Sec.
Range: 10.00 - 70.00 (Deg) Cont. Scan Rate : 0.50 Deg/min.
CPS
20300
18900
17500
16100
14700
13300
11900
10500
9100
7700
6300
4900
3500
2100
700
10.0 14.0 18.0 22.0 26.0 30.0 34.0 38.0 42.0 46.0 50.0 54.0 58.0 62.0 66.0
Deg.
Smooth data, correct data, and remove background signal
User: jbrady
Time: 00:17:26
Int: 152 CPS
2Th = 27.5100000
Th = 13.7550000
Om = 13.7550000
Start
IrfanView
Captured Screens
DMSNT - Nov101602...
C:\Captured Screens\ivie...
9:44 PM

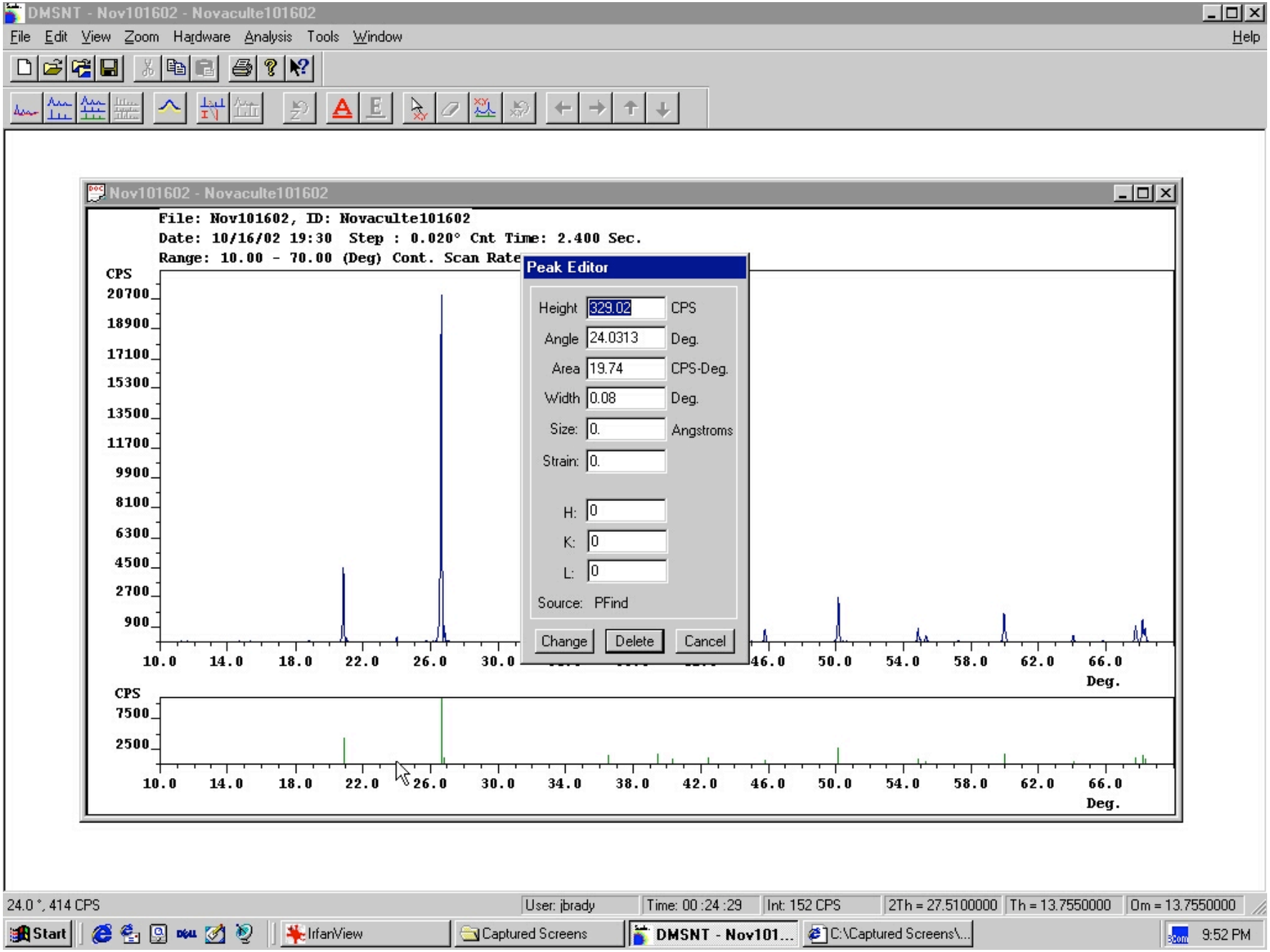

DMSNT - Nov101602 - Novaculte101602
File Edit View Zoom Hardware Analysis Tools Window Help
Nov101602 - Novaculte101602
File: Nov101602, ID: Novaculte
Date: 10/16/02 19:30 Step : 0.
Range: 10.00 - 70.00 (Deg) Cont
CPS
20300
18900
17500
16100
14700
13300
11900
10500
9100
7700
6300
4900
3500
2100
700
10.0 14.0 18.0 22.0 26.0 30.0 34.0 38.0 42.0 46.0 50.0 54.0 58.0 62.0 66.0
Deg.
Backgound Removal, Smoothing, & Correction
Background Curve
Smoothing
Corrections
Select the type of background removal technique desired. The manual curve selection method cannot be used in batch mode.
None
Box Car Curve Fit
Filter Width: 1.5 Deg.
Manual Spline Curve Fitting
Edit Points
Done
Calculate
Cancel
Help
24.6 °, 7072 CPS
User: jbrady
Time: 00:17:41
Int: 152 CPS
2Th = 27.5100000
Th = 13.7550000
Om = 13.7550000
Start
IrfanView
Captured Screens
DMSNT - Nov101602...
C:\Captured Screens\...
Backgound Removal...
9:45 PM

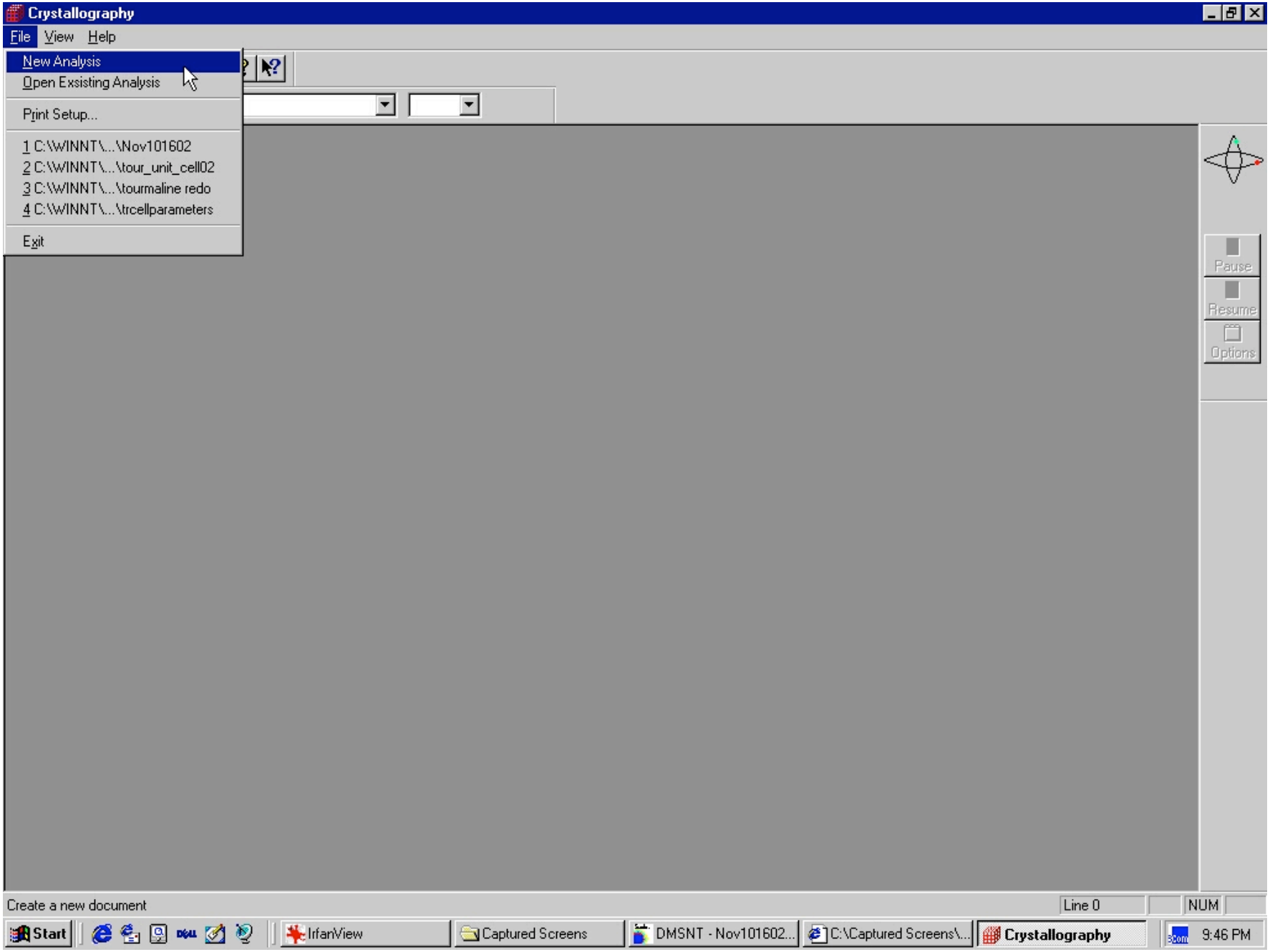

DMSNT - Nov101602 - Novaculte101602
File Edit View Zoom Hardware Analysis Tools Window Help
Peak Finder
Nov101602 - Novaculte101602
File: Nov101602, ID: Novaculte101602
Date: 10/16/02 19:30 Step : 0.020° Cnt Time: 2.400 Sec.
Range: 10.00 - 70.00 (Deg) Cont. Scan Rate : 0.50 Deg/min.
CPS
20300
18900
17500
16100
14700
13300
11900
10500
9100
7700
6300
4900
3500
2100
700
10.0 14.0 18.0 22.0 26.0 30.0 34.0 38.0 42.0 46.0 50.0 54.0 58.0 62.0 66.0
Deg.
Find peaks in the Net Intensity data
User: jbrady
Time: 00:17:53
Int: 152 CPS
2Th = 27.5100000
Th = 13.7550000
Om = 13.7550000
Start
IrfanView
Captured Screens
DMSNT - Nov101...
C:\Captured Screens\...
9:45 PM

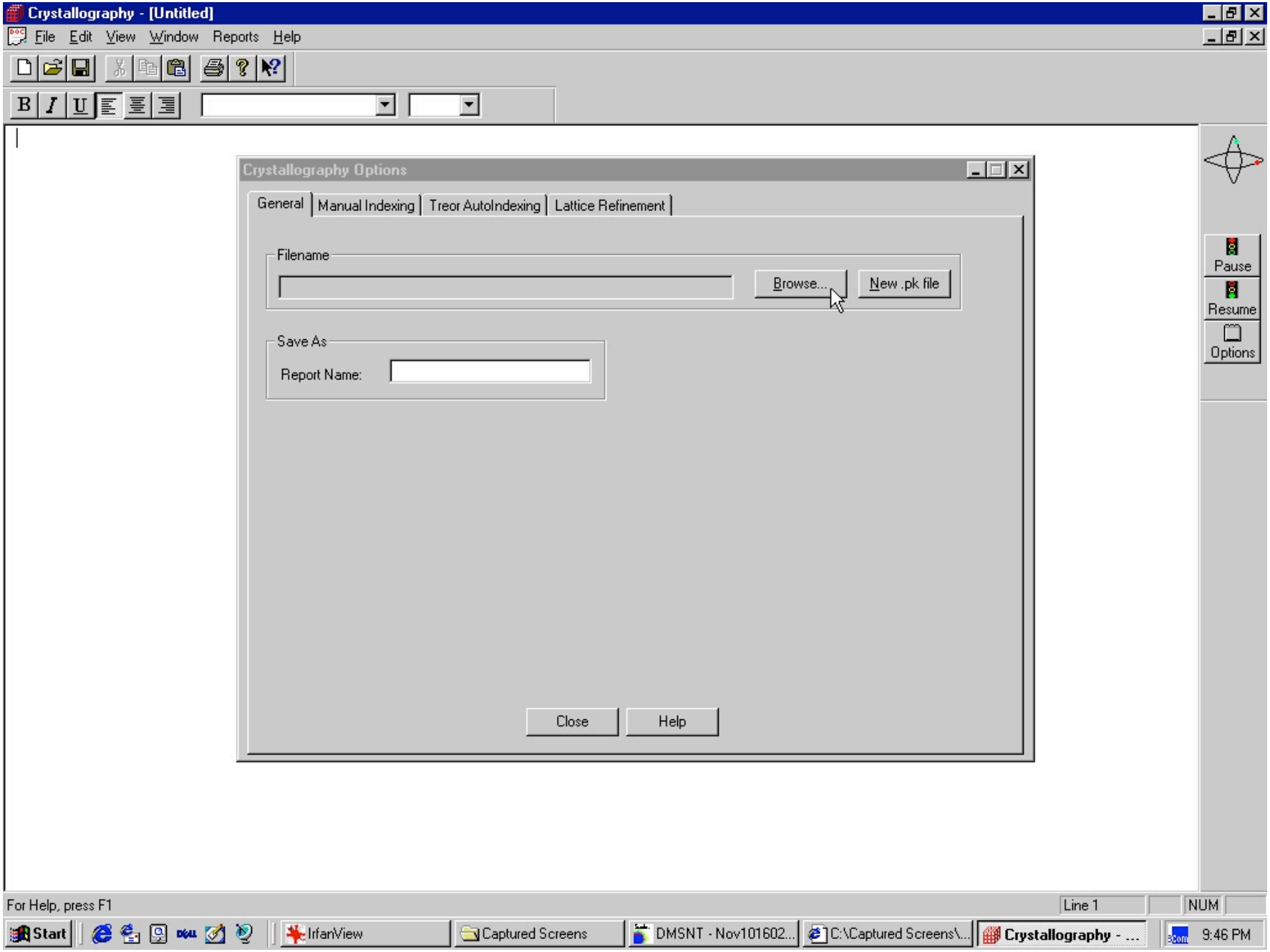

DMSNT - Nov101602 - Novaculte101602
File Edit View Zoom Hardware Analysis Tools Window Help
Nov101602 - Novaculte101602
File: Nov101602, ID: Novaculte101
Date: 10/16/02 19:30 Step : 0.02
Range: 10.00 - 70.00 (Deg) Cont.
CPS
20300
18900
17500
16100
14700
13300
11900
10500
9100
7700
6300
4900
3500
2100
700
10.0 14.0 18.0 22.0 26.0 30.0 34.0 38.0 42.0 46.0 50.0 54.0 58.0 62.0 66.0
Deg.
Peak Finder
Select the type of peak finder to use.
Depending on the data collected, one
peak finder may work better than another.
Apply Standard Correction Factor?
None Internal Std External Std
Browse...
Peak Finder using Digital Filtering
ESD Multiplier: 4.
Ripple Multiplier: 1.5
Peak Finder using Pearson VII profile
Profile Fitting Parameters
Calculate Cancel Help
For Help, press F1
User: jbrady
Time: 00 :23 :44
Int: 152 CPS
2Th = 27.5100000
Th = 13.7550000
Om = 13.7550000
Start
IrfanView
Captured Screens
DMSNT - Nov101...
C:\Captured Screens\...
9:51 PM

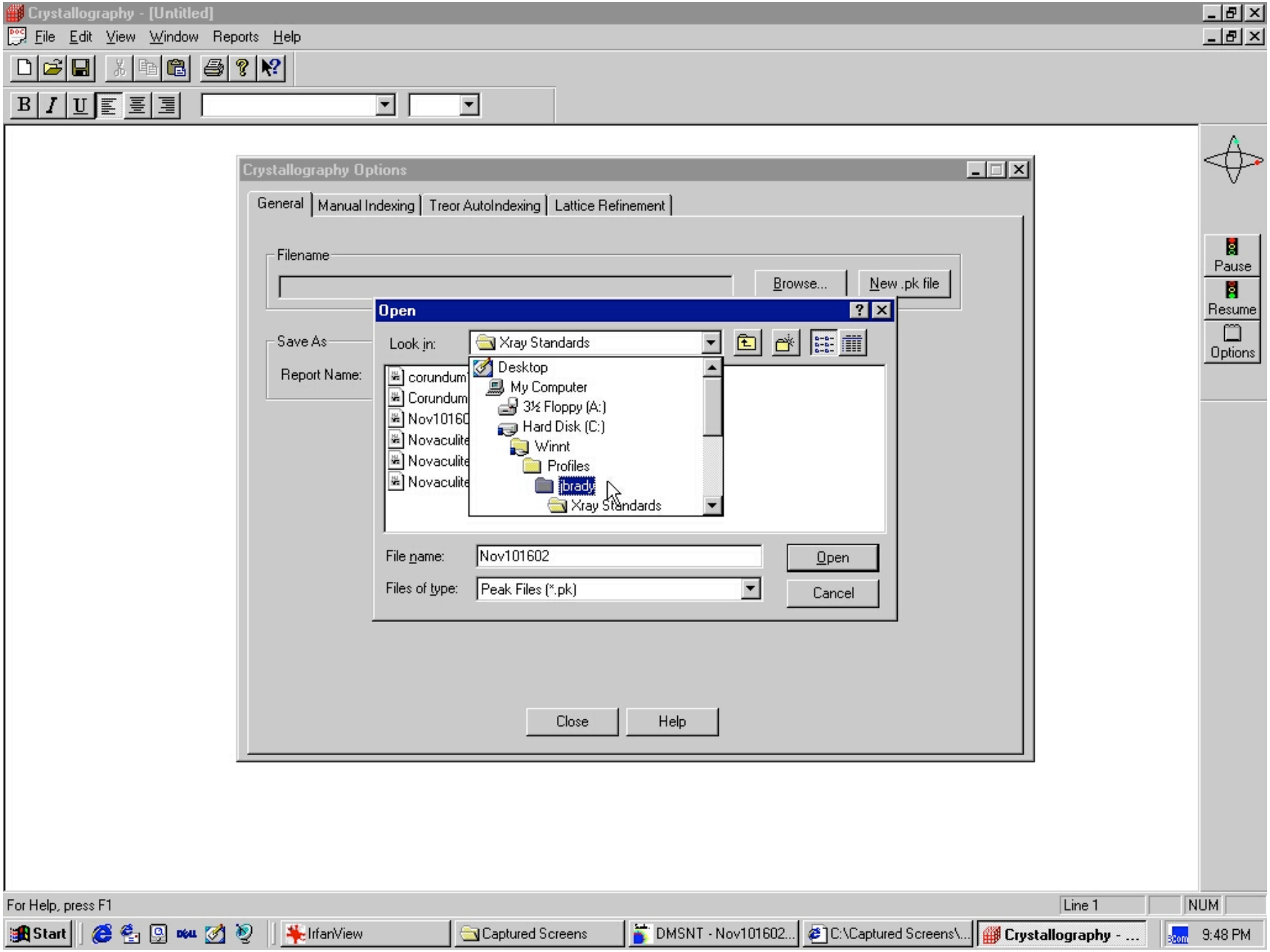

DMSNT - Nov101602 - Novaculte101602
File Edit View Zoom Hardware Analysis Tools Window Help
Nov101602 - Novaculte101602
File: Nov101602, ID: Novaculte101602
Date: 10/16/02 19:30 Step : 0.020° Cnt Time: 2.400 Sec.
Range: 10.00 - 70.00 (Deg) Cont. Scan Rate : 0.50 Deg/min.
CPS
20700
18900
17100
15300
13500
11700
9900
8100
6300
4500
2700
900
10.0 14.0 18.0 22.0 26.0 30.0 34.0 38.0 42.0 46.0 50.0 54.0 58.0 62.0 66.0
Deg.
CPS
7500
2500
10.0 14.0 18.0 22.0 26.0 30.0 34.0 38.0 42.0 46.0 50.0 54.0 58.0 62.0 66.0
Deg.
DMS NT
Found 18 Peaks
OK
For Help, press F1
User: jbrady
Time: 00 :23 :56
Int: 152 CPS
2Th = 27.5100000
Th = 13.7550000
Om = 13.7550000
Start
IrfanView
Captured Screens
DMSNT - Nov101...
C:\Captured Screens\...
9:51 PM

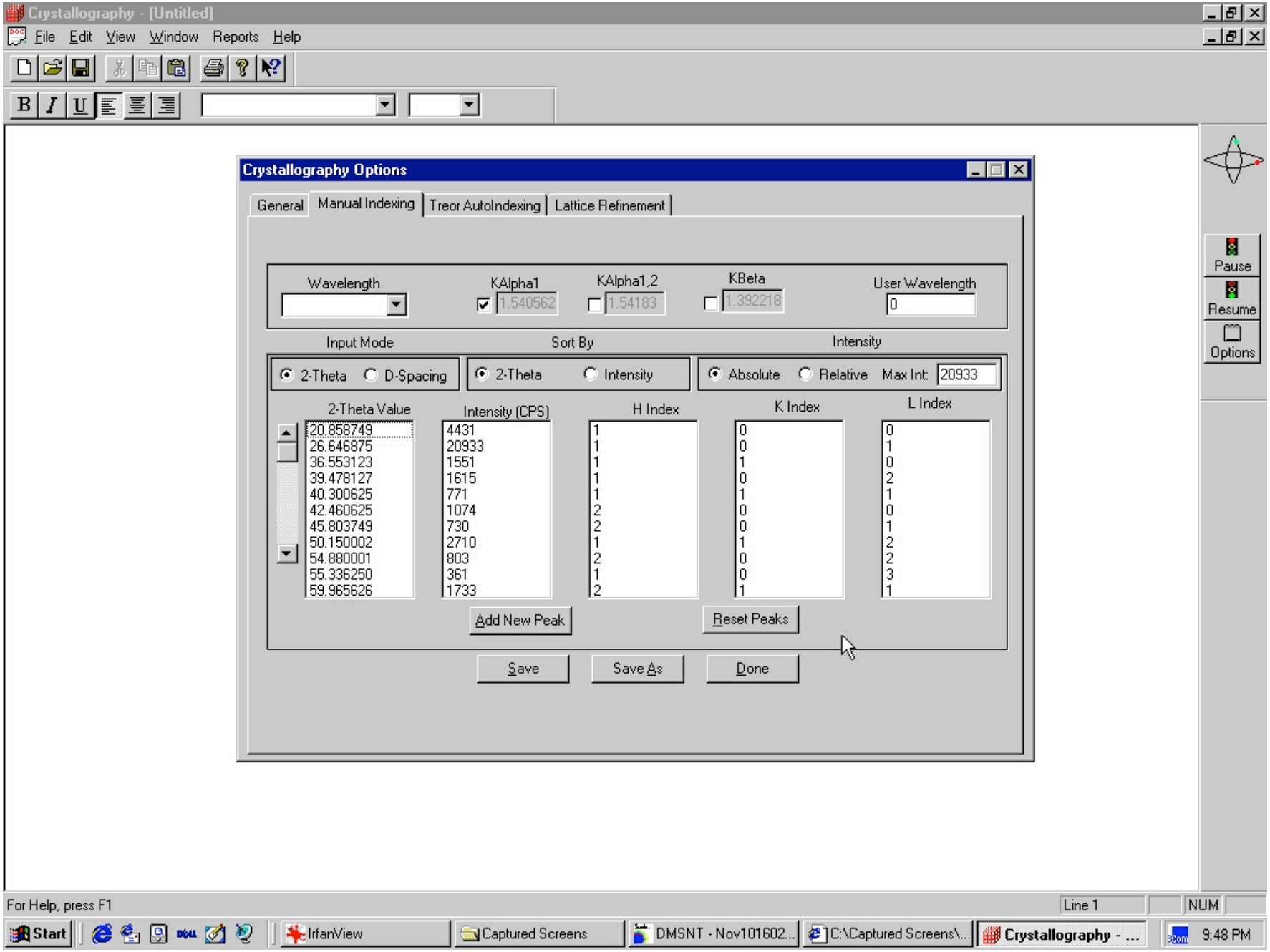

DMSNT - [Nov101602 - Novaculte101602]
File Edit View Zoom Hardware Analysis Tools Window Help
File: Nov101602, ID: Novaculte101602
Date: 10/16/02 17:30 Step : 0.020° Cnt Time: 2.400 Sec.
Range: 10.00 - 70.00 (Deg) Cont. Scan Rate : 1.50 Deg/min.
CPS
20300
18900
17500
16100
14700
13300
11900
10500
9100
7700
6300
4900
3500
2100
700
10.0 13.0 16.0 19.0 22.0 25.0 28.0 31.0 34.0 37.0 40.0 43.0 46.0 49.0 52.0 55.0 58.0 61.0 64.0 67.0
Deg.
CPS
7500
4500
1500
10.0 13.0 16.0 19.0 22.0 25.0 28.0 31.0 34.0 37.0 40.0 43.0 46.0 49.0 52.0 55.0 58.0 61.0 64.0 67.0
Deg.
For Help, press F1
User: jbrady
Time: 04 :08 :41
Int: 45 CPS
2Th = 70.0100000
Th = 35.0050000
Om = 35.0050000

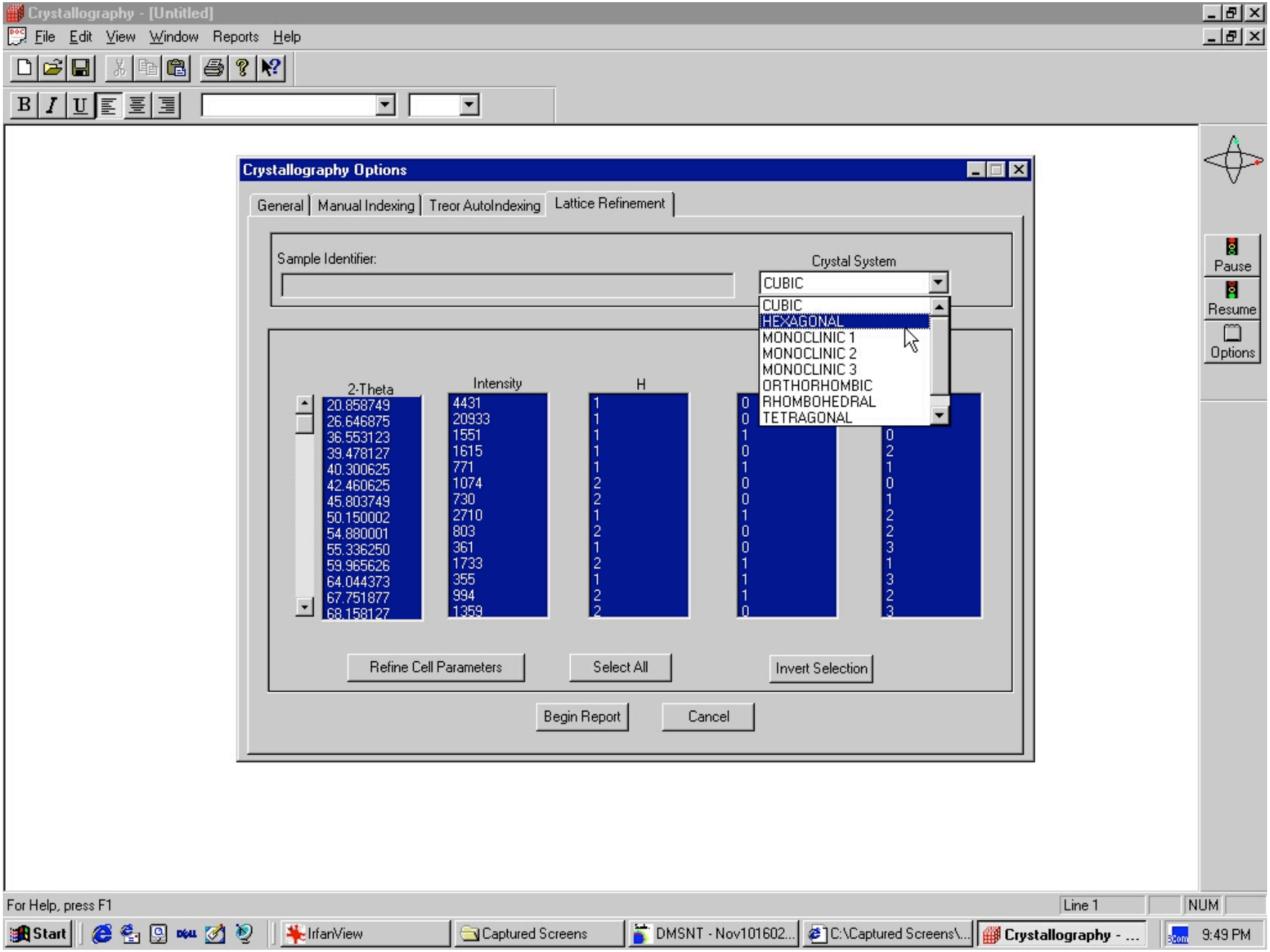

DMSNT - Nov101602 - Novaculte101602
File Edit View Zoom Hardware Analysis Tools Window Help
Nov101602 - Novaculte101602
File: Nov101602, ID: Novaculte101602
Date: 10/16/02 19:30 Step : 0.020° Cnt Time: 2.400 Sec.
Range: 10.00 - 70.00 (Deg) Cont. Scan Rate
CPS
20700
18900
17100
15300
13500
11700
9900
8100
6300
4500
2700
900
10.0 14.0 18.0 22.0 26.0 30.0 46.0 50.0 54.0 58.0 62.0 66.0
Deg.
Peak Editor
Height 329.02 CPS
Angle 24.0313 Deg.
Area 19.74 CPS-Deg.
Width 0.08 Deg.
Size: 0. Angstroms
Strain: 0.
H: 0
K: 0
L: 0
Source: PFind
Change Delete Cancel
CPS
7500
2500
10.0 14.0 18.0 22.0 26.0 30.0 34.0 38.0 42.0 46.0 50.0 54.0 58.0 62.0 66.0
Deg.
24.0 °, 414 CPS
User: jbrady
Time: 00 :24 :29
Int: 152 CPS
2Th = 27.5100000
Th = 13.7550000
Om = 13.7550000
Start
IrfanView
Captured Screens
DMSNT - Nov101...
C:\Captured Screens\...
9:52 PM

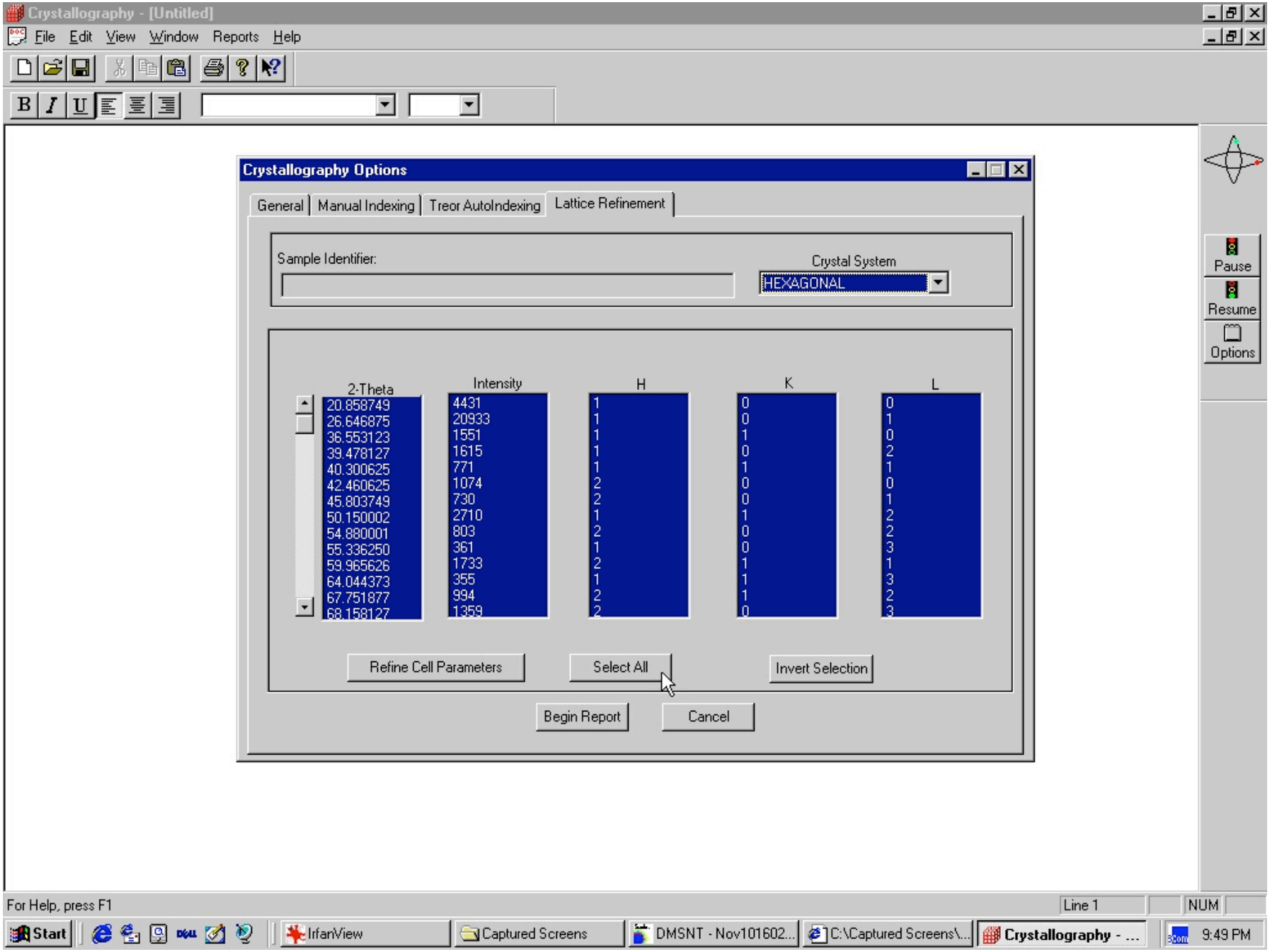

Crystallography
File View Help
New Analysis
Open Exsisting Analysis
Print Setup...
1 C:\WINNT\...\Nov101602
2 C:\WINNT\...\tour_unit_cell02
3 C:\WINNT\...\tourmaline redo
4 C:\WINNT\...\trcellparameters
Exit
Pause
Resume
Options
Create a new document
Line 0
NUM
Start
IrfanView
Captured Screens
DMSNT - Nov101602...
C:\Captured Screens\...
Crystallography
9:46 PM

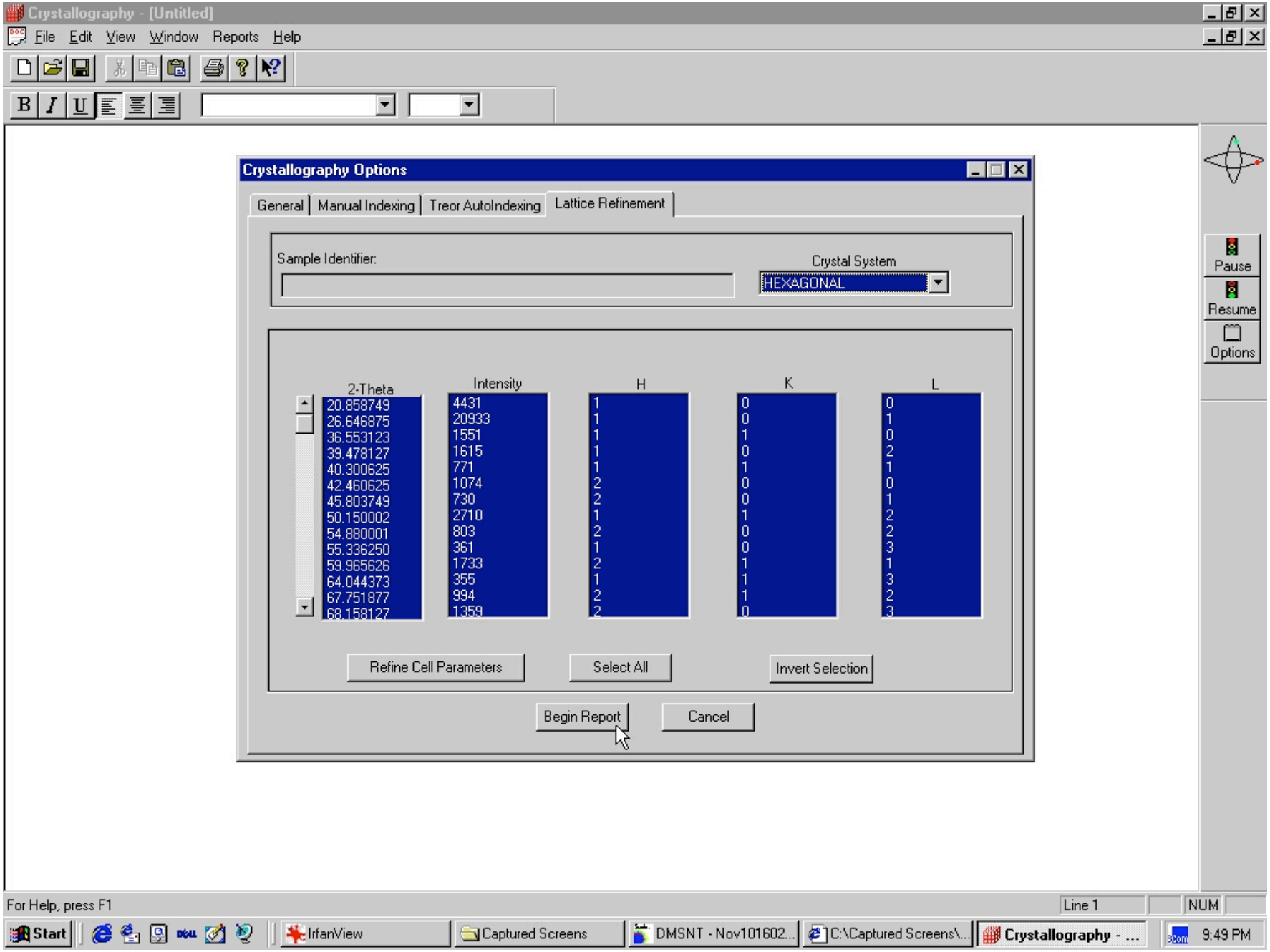

Crystallography - [Untitled]
File Edit View Window Reports Help
Crystallography Options
General
Manual Indexing
Treor AutoIndexing
Lattice Refinement
Filename
Browse...
New .pk file
Save As
Report Name:
Close
Help
Pause
Resume
Options
For Help, press F1
Line 1
NUM
Start
IrfanView
Captured Screens
DMSNT - Nov101602...
C:\Captured Screens\...
Crystallography - ...
9:46 PM

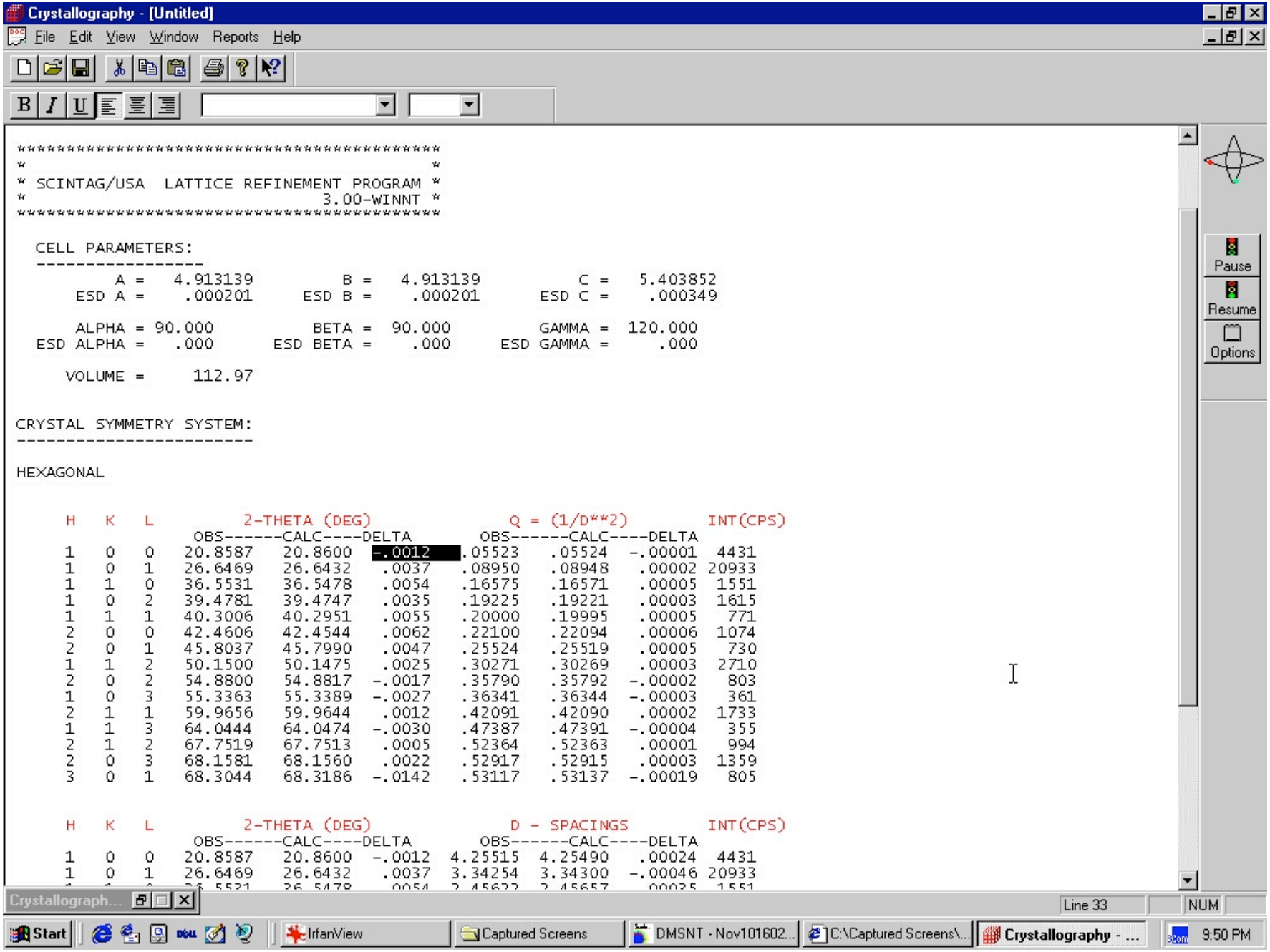

Crystallography - [Untitled]
File Edit View Window Reports Help
Crystallography Options
General
Manual Indexing
Treor AutoIndexing
Lattice Refinement
Filename
Browse...
New .pk file
Save As
Report Name:
Open
Look in:
Xray Standards
Desktop
My Computer
3½ Floppy (A:)
Hard Disk (C:)
Winnt
Profiles
brady
Xray Standards
corundum
Corundum
Nov10160
Novaculite
Novaculite
Novaculite
File name:
Nov101602
Open
Files of type:
Peak Files (*.pk)
Cancel
Close
Help
Pause
Resume
Options
For Help, press F1
Line 1
NUM
Start
IrfanView
Captured Screens
DMSNT - Nov101602...
C:\Captured Screens\...
Crystallography - ...
9:48 PM


Crystallography - [Untitled]
File Edit View Window Reports Help
Crystallography Options
General
Manual Indexing
Treor AutoIndexing
Lattice Refinement
Wavelength
KAlpha1
1.540562
KAlpha1,2
1.54183
KBeta
1.392218
User Wavelength
0
Input Mode
2-Theta
D-Spacing
Sort By
2-Theta
Intensity
Intensity
Absolute
Relative
Max Int:
20933
2-Theta Value
Intensity (CPS)
H Index
K Index
L Index
20.858749 4431 1 0 0
26.646875 20933 1 0 1
36.553123 1551 1 1 0
39.478127 1615 1 0 2
40.300625 771 1 1 1
42.460625 1074 2 0 0
45.803749 730 2 0 1
50.150002 2710 1 1 2
54.880001 803 2 0 2
55.336250 361 1 0 3
59.965626 1733 2 1 1
Add New Peak
Reset Peaks
Save
Save As
Done
Pause
Resume
Options
For Help, press F1
Line 1
NUM
Start
IrfanView
Captured Screens
DMSNT - Nov101602...
C:\Captured Screens\...
Crystallography - ...
9:48 PM


Crystallography - [Untitled]
File Edit View Window Reports Help
Crystallography Options
General
Manual Indexing
Treor AutoIndexing
Lattice Refinement
Sample Identifier:
Crystal System
CUBIC
CUBIC
HEXAGONAL
MONOCLINIC 1
MONOCLINIC 2
MONOCLINIC 3
ORTHORHOMBIC
RHOMBOHEDRAL
TETRAGONAL
2-Theta
Intensity
H
20.858749
26.646875
36.553123
39.478127
40.300625
42.460625
45.803749
50.150002
54.880001
55.336250
59.965626
64.044373
67.751877
68.158127
4431
20933
1551
1615
771
1074
730
2710
803
361
1733
355
994
1359
Refine Cell Parameters
Select All
Invert Selection
Begin Report
Cancel
Pause
Resume
Options
For Help, press F1
Line 1
NUM
Start
IrfanView
Captured Screens
DMSNT - Nov101602...
C:\Captured Screens\...
Crystallography - ...
9:49 PM


Crystallography - [Untitled]
File Edit View Window Reports Help
Crystallography Options
General
Manual Indexing
Treor AutoIndexing
Lattice Refinement
Sample Identifier:
Crystal System
HEXAGONAL
2-Theta
Intensity
H
K
L
20.858749 4431 1 0 0
26.646875 20933 1 0 1
36.553123 1551 1 1 0
39.478127 1615 1 0 2
40.300625 771 1 1 1
42.460625 1074 2 0 0
45.803749 730 2 0 1
50.150002 2710 1 1 2
54.880001 803 2 0 2
55.336250 361 1 0 3
59.965626 1733 2 1 1
64.044373 355 1 1 3
67.751877 994 2 1 2
68.158127 1359 2 0 3
Refine Cell Parameters
Select All
Invert Selection
Begin Report
Cancel
Pause
Resume
Options
For Help, press F1
Line 1
NUM
Start
IrfanView
Captured Screens
DMSNT - Nov101602...
C:\Captured Screens\...
Crystallography - ...
9:49 PM


Crystallography - [Untitled]
File Edit View Window Reports Help
Crystallography Options
General
Manual Indexing
Treor AutoIndexing
Lattice Refinement
Sample Identifier:
Crystal System
HEXAGONAL
2-Theta
Intensity
H
K
L
20.858749 4431 1 0 0
26.646875 20933 1 0 1
36.553123 1551 1 1 0
39.478127 1615 1 0 2
40.300625 771 1 1 1
42.460625 1074 2 0 0
45.803749 730 2 0 1
50.150002 2710 1 1 2
54.880001 803 2 0 2
55.336250 361 1 0 3
59.965626 1733 2 1 1
64.044373 355 1 1 3
67.751877 994 2 1 2
68.158127 1359 2 0 3
Refine Cell Parameters
Select All
Invert Selection
Begin Report
Cancel
Pause
Resume
Options
For Help, press F1
Line 1
NUM
Start
IrfanView
Captured Screens
DMSNT - Nov101602...
C:\Captured Screens\...
Crystallography - ...
9:49 PM




```
*********************************************
*                                           *
* SCINTAG/USA  LATTICE REFINEMENT PROGRAM *
*                              3.00-WINNT *
*********************************************

  CELL PARAMETERS:
  ----------------
          A =   4.913139         B =   4.913139         C =   5.403852
      ESD A =    .000201     ESD B =    .000201     ESD C =    .000349

      ALPHA = 90.000          BETA =  90.000         GAMMA =  120.000
  ESD ALPHA =   .000      ESD BETA =    .000     ESD GAMMA =     .000

     VOLUME =     112.97


CRYSTAL SYMMETRY SYSTEM:
------------------------

HEXAGONAL


     H   K   L         2-THETA (DEG)              Q = (1/D**2)          INT(CPS)
                  OBS------CALC----DELTA       OBS------CALC----DELTA
     1   0   0   20.8587   20.8600  -.0012   .05523   .05524  -.00001  4431
     1   0   1   26.6469   26.6432   .0037   .08950   .08948   .00002 20933
     1   1   0   36.5531   36.5478   .0054   .16575   .16571   .00005  1551
     1   0   2   39.4781   39.4747   .0035   .19225   .19221   .00003  1615
     1   1   1   40.3006   40.2951   .0055   .20000   .19995   .00005   771
     2   0   0   42.4606   42.4544   .0062   .22100   .22094   .00006  1074
     2   0   1   45.8037   45.7990   .0047   .25524   .25519   .00005   730
     1   1   2   50.1500   50.1475   .0025   .30271   .30269   .00003  2710
     2   0   2   54.8800   54.8817  -.0017   .35790   .35792  -.00002   803
     1   0   3   55.3363   55.3389  -.0027   .36341   .36344  -.00003   361
     2   1   1   59.9656   59.9644   .0012   .42091   .42090   .00002  1733
     1   1   3   64.0444   64.0474  -.0030   .47387   .47391  -.00004   355
     2   1   2   67.7519   67.7513   .0005   .52364   .52363   .00001   994
     2   0   3   68.1581   68.1560   .0022   .52917   .52915   .00003  1359
     3   0   1   68.3044   68.3186  -.0142   .53117   .53137  -.00019   805


     H   K   L         2-THETA (DEG)              D - SPACINGS          INT(CPS)
                  OBS------CALC----DELTA       OBS------CALC----DELTA
     1   0   0   20.8587   20.8600  -.0012  4.25515  4.25490   .00024  4431
     1   0   1   26.6469   26.6432   .0037  3.34254  3.34300  -.00046 20933
```