

X	Y	Z	R	NAME	NUMBER	SLENG	STEP	DESTEP	GEKIN	MECHANISMS
-1024.4609	0.8944	91.5523	1024.4613	Q14	14	1952.0723	0.4059	0.0 eV	6.716 MeV	FIEL
-1024.4613	0.8940	91.5040	1024.4617	Q14	14	1952.1206	0.0483	0.0 eV	6.716 MeV	FIEL NEXT
-1024.4613	0.8940	91.5040	1024.4617	WRLD	1	1952.1206	0.0000	0.0 eV	6.716 MeV	NULL
-1026.1208	-0.4909	-96.7754	1026.1210	WRLD	1	2140.4124	188.2917	0.0 eV	6.716 MeV	NEXT
-1026.1208	-0.4909	-96.7754	1026.1210	ICVT	1	2140.4124	0.0000	0.0 eV	6.716 MeV	NULL
-1026.2134	-0.5681	-107.2725	1026.2135	ICVT	1	2150.9131	10.5008	0.0 eV	6.716 MeV	NEXT
-1026.2134	-0.5681	-107.2755	1026.2135	ICDL	1	2150.9131	0.0000	0.0 eV	6.716 MeV	NULL
-1026.2134	-0.5681	-107.2808	1026.2135	ICDL	1	2150.9185	0.0054	1.1 keV	6.715 MeV	LOSS MULS

NOT MOVING ICMW

-1024.4609	0.8944	91.5523	1024.4613	Q14	14	1952.0723	0.4059	0.0 eV	6.716 MeV	FIEL
-1024.4613	0.8940	91.5040	1024.4617	Q14	14	1952.1206	0.0483	0.0 eV	6.716 MeV	FIEL NEXT
-1024.4613	0.8940	91.5040	1024.4617	WRLD	1	1952.1206	0.0000	0.0 eV	6.716 MeV	NULL
-1026.1208	-0.4909	-96.7754	1026.1210	WRLD	1	2140.4124	188.2917	0.0 eV	6.716 MeV	NEXT
-1026.1208	-0.4909	-96.7754	1026.1210	ICVT	1	2140.4124	0.0000	0.0 eV	6.716 MeV	NULL
-1026.1671	-0.5295	-102.0255	1026.1672	ICVT	1	2145.6628	5.2505	0.0 eV	6.716 MeV	NEXT
-1026.1671	-0.5295	-102.0255	1026.1672	ICVT	1	2145.6628	0.0000	0.0 eV	6.716 MeV	NULL
-1026.2134	-0.5681	-107.2756	1026.2135	ICVT	1	2150.9133	5.2504	0.0 eV	6.716 MeV	NEXT
-1026.2134	-0.5681	-107.2756	1026.2135	ICDL	1	2150.9133	0.0000	0.0 eV	6.716 MeV	NULL
-1026.2134	-0.5681	-107.2809	1026.2135	ICDL	1	2150.9187	0.0054	1.1 keV	6.715 MeV	LOSS MULS

MOVE ICMW TO CENTRE OF ICVT

X	Y	Z	R	NAME	NUMBER	SLENG	STEP	DESTEP	GEKIN	MECHANISMS
-1024.4574	0.8974	91.9581	1024.4578	Q14	14	1951.6664	0.4059	0.0 eV	6.716 MeV	FIEL
-1024.4609	0.8944	91.5523	1024.4613	Q14	14	1952.0723	0.4059	0.0 eV	6.716 MeV	FIEL
-1024.4613	0.8940	91.5040	1024.4617	Q14	14	1952.1206	0.0483	0.0 eV	6.716 MeV	FIEL NEXT
-1024.4613	0.8940	91.5040	1024.4617	WRLD	1	1952.1206	0.0000	0.0 eV	6.716 MeV	NULL
-1026.1208	-0.4909	-96.7754	1026.1210	WRLD	1	2140.4124	188.2917	0.0 eV	6.716 MeV	NEXT
-1026.1208	-0.4909	-96.7754	1026.1210	ICVT	1	2140.4124	0.0000	0.0 eV	6.716 MeV	NULL
-1026.2134	-0.5681	-107.2727	1026.2135	ICVT	1	2150.9104	10.4980	0.0 eV	6.716 MeV	NEXT
-1026.2134	-0.5681	-107.2727	1026.2135	ICMW	1	2150.9104	0.0000	0.0 eV	6.716 MeV	NULL
-1026.2144	-0.5681	-107.2756	1026.2145	ICMW	1	2150.9133	0.0028	1.2 MeV	5.508 MeV	SCOR NEXT LOSS MULS
-1026.2144	-0.5681	-107.2756	1026.2145	ICDL	1	2150.9133	0.0000	0.0 eV	5.508 MeV	NULL
-1026.2144	-0.5681	-107.2810	1026.2145	ICDL	1	2150.9187	0.0054	1.7 keV	5.506 MeV	LOSS MULS
-1026.2144	-0.5681	-107.2863	1026.2145	ICDL	1	2150.9241	0.0054	5.0 keV	5.501 MeV	LOSS MULS
-1026.2144	-0.5681	-107.2917	1026.2145	ICDL	1	2150.9294	0.0054	3.7 keV	5.498 MeV	LOSS MULS

NOW SEES MYCAR WINDOW

1.206 MeV loss through ICMW

TRIM Input

**TRIM (Monte Carlo Ranges)** Type of TRIM Calculation

DAMAGE: Ion Distribution and Quick Calculation of Damage

Basic Plots: Ion Distribution with Recoils projected on Y-Plane

ION DATA: Symbol: PT, Name of Element: Nitrogen, Atomic Number: 7, Mass (amu): 14.003, Energy (keV): 6716, Angle of Incidence: 0

TARGET DATA: Input Elements to Layer 1

Layer Name	Width	Density (g/cm <sup>3</sup> )	Compound Corr	Gas	Symbol	Name	Atomic Number	Weight (amu)	Atom Stoich or %	Damage (eV) Disp	Latt	Surf
X Mylar	0.94	1.39	0.9571		X PT H	Hydrogen	1	1.008	8	10	3	2
					X PT C	Carbon	6	12.01	10	28	3	7.4
					X PT O	Oxygen	8	15.99	4	28	3	2

Special Parameters: Name of Calculation: 14N into Mylar, Stopping Power Version: SRIM-2003, AutoSave at Ion #: 100, Total Number of Ions: 5000, Random Number Seed: [blank], Plotting Window Depth: Min 0 A, Max 9400 A

Output Disk Files:  Ion Ranges,  Backscattered Ions,  Transmitted Ions,  Sputtered Atoms,  Collision Details

Buttons: Save Input & Run TRIM, Calculate Quick Range Table, Main Menu, Problem Solving, Clear All, Quit

For current mylar window

TRIM Input

**TRIM (Monte Carlo Ranges)** Type of TRIM Calculation

DAMAGE: Ion Distribution and Quick Calculation of Damage

Basic Plots: Ion Distribution with Recoils projected on Y-Plane

ION DATA: Symbol: PT, Name of Element: Nitrogen, Atomic Number: 7, Mass (amu): 14.003, Energy (keV): 6716, Angle of Incidence: 0

TARGET DATA: Input Elements to Layer 1

Layer Name	Width	Density (g/cm <sup>3</sup> )	Compound Corr	Gas	Symbol	Name	Atomic Number	Weight (amu)	Atom Stoich or %	Damage (eV) Disp	Latt	Surf
X Mylar	0.00282	0.046	0.9571		X PT H	Hydrogen	1	1.008	8	10	3	2
					X PT C	Carbon	6	12.01	10	28	3	7.4
					X PT O	Oxygen	8	15.99	4	28	3	2

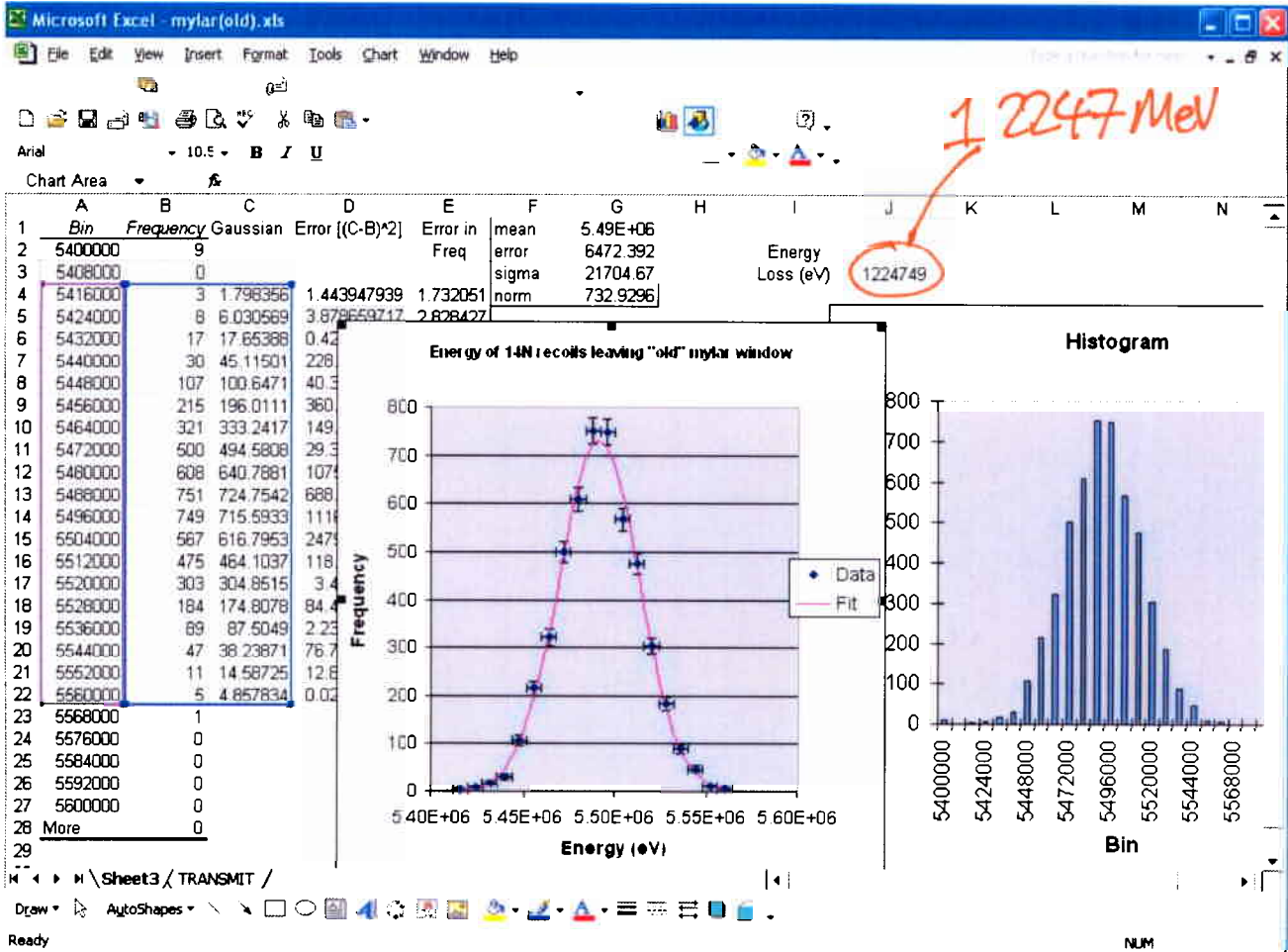
Special Parameters: Name of Calculation: 14N into Mylar (new), Stopping Power Version: SRIM-2003, AutoSave at Ion #: 100, Total Number of Ions: 5000, Random Number Seed: [blank], Plotting Window Depth: Min 0 A, Max 282000 A

Output Disk Files:  Ion Ranges,  Backscattered Ions,  Transmitted Ions,  Sputtered Atoms,  Collision Details

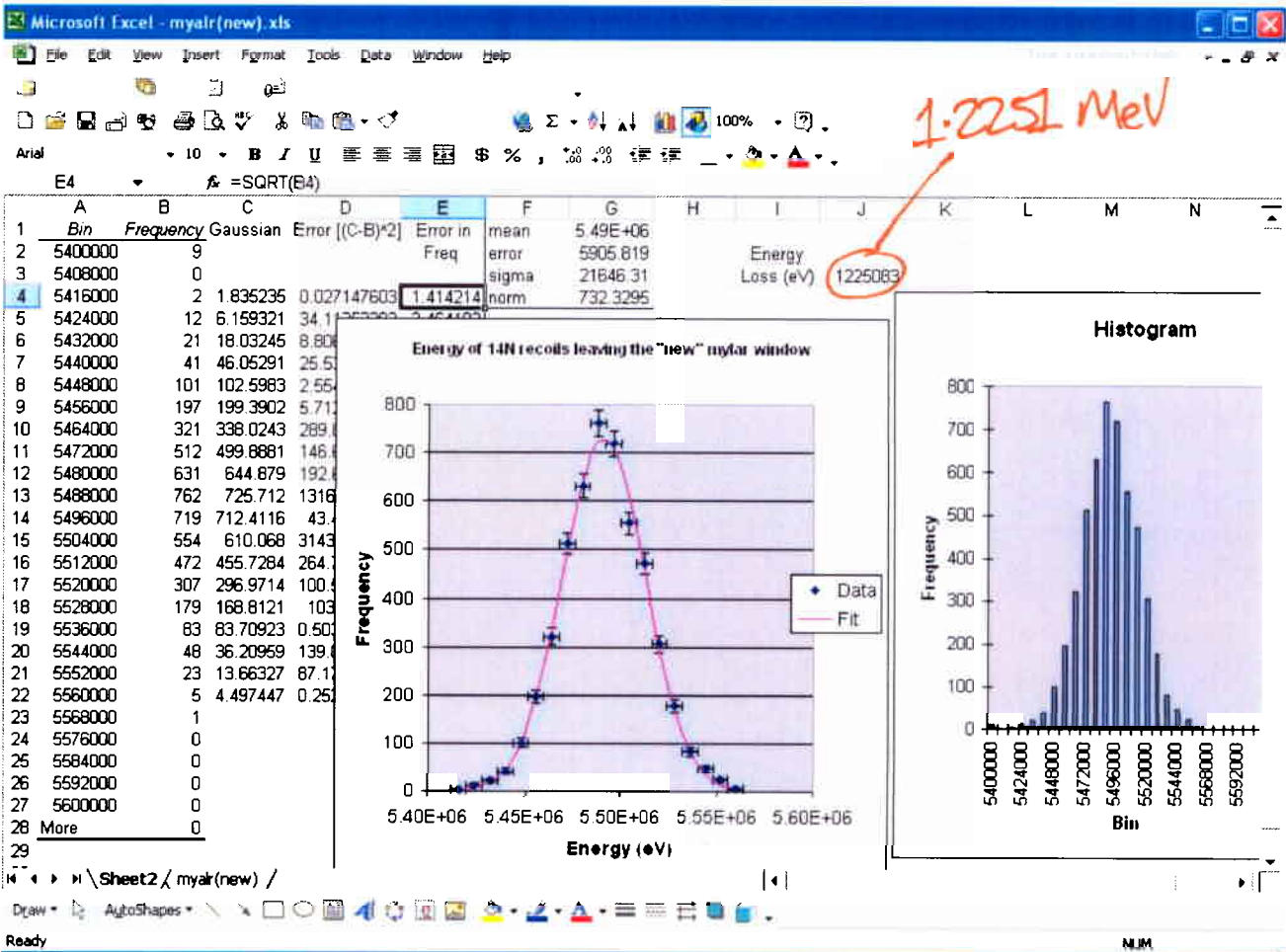
Buttons: Save Input & Run TRIM, Calculate Quick Range Table, Main Menu, Problem Solving, Clear All, Quit

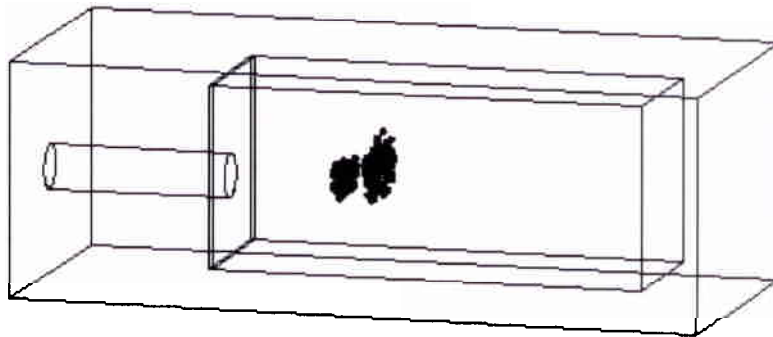
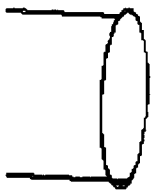
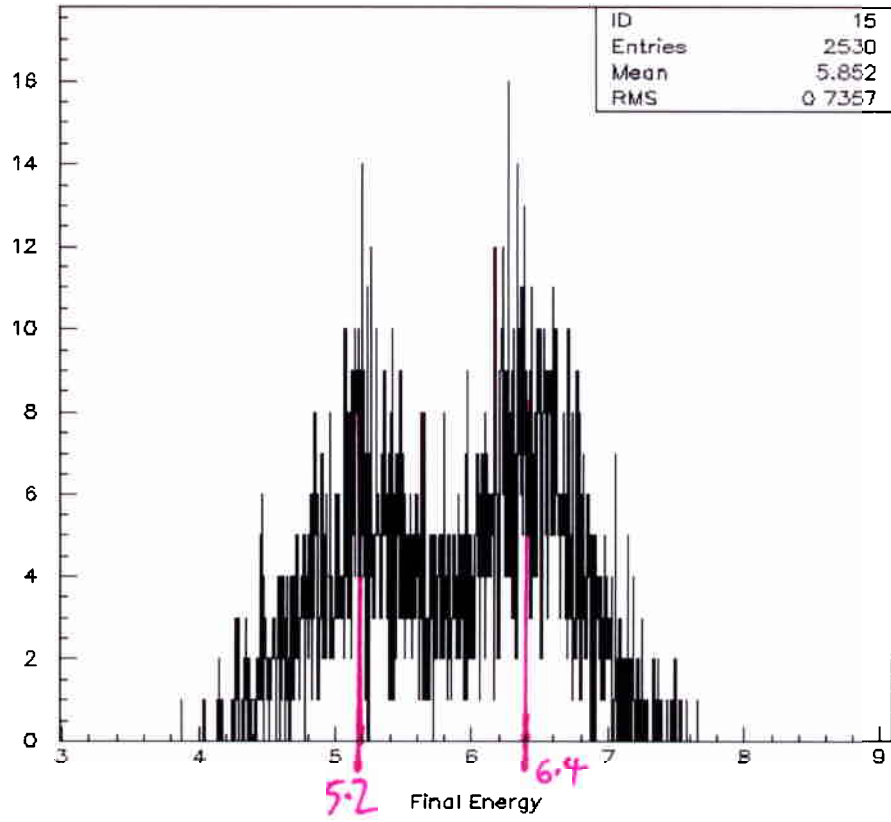
For the simulated mylar window

actual window



simulated window





5.2 MeV

**TARGET DATA**

? 14N low E recoils in isobutane (3 layers, 6 atoms)

Layer Name	Width (Å)	Density	H (1.008)	C (12.011)	H (1.008)	C (12.011)	H (1.008)	C (12.011)	Solid/Gas	Stop Corr.
1 Anode 1	500000000	0.000051	0.71430	0.28570	0.00000	0.00000	0.00000	0.00000	Gas	1
2 Anode 2	500000000	0.000051	0.00000	0.00000	0.71430	0.28570	0.00000	0.00000	Gas	1
3 Anode 3	500000000	0.000051	0.00000	0.00000	0.00000	0.00000	0.71430	0.28570	Gas	1
Lattice Binding Energy			3	3	3	3	3	3		
Surface Binding Energy			2	7.41	2	7.41	2	7.41		
Displacement Energy			10	28	10	28	10	28		

**ION**

Ion Type: N, 14.003 amu  
 Ion Energy: 5.2 MeV  
 Ion Angle: 0 degrees  
 Completed: 500 of 500

**ION RANGE Distribution**

**ION RANGES**

Ion Range = 102. mm    Skewness = -0.5140  
 Straggle = 2.35 mm    Kurtosis = 128.3025

**XY Longitudinal**

**Depth vs. Y-Axis**

0 A - Target Depth - 150 mm

**Calculation Parameters**

Backscattered Ions: 0  
 Transmitted Ions: 0  
 Vacancies/Ion: 1009.5

**ION STATS**

	Range	Straggle
Longitudinal	102 mm	3.35 mm
Lateral Proj.	2.54 mm	3.29 mm
Radial	4.07 mm	2.44 mm

**Type of Damage Calculation**

Quick: Kinchin-Pease

**Stopping Power Version**

SRIM-2003

**% ENERGY LOSS**

	Ions	Recoils
Ionization	90.35	0.04
Vacancies	0.02	0.04
Phonons	0.07	0.68

**SPUTTERING YIELD**

	Atoms/ion	eV/Atom
TOTAL		
H	0.000000	0.00
C	0.000000	0.00
H	0.000000	0.00

Save every 500 ions  
 Random Number: 1732517  
 Counter: HELP

6.4 MeV

**TARGET DATA**

? 14N high E recoils in isobutane (3 layers, 6 atoms)

Layer Name	Width (Å)	Density	H (1.008)	C (12.011)	H (1.008)	C (12.011)	H (1.008)	C (12.011)	Solid/Gas	Stop Corr.
1 Anode 1	500000000	0.000051	0.71430	0.28570	0.00000	0.00000	0.00000	0.00000	Gas	1
2 Anode 2	500000000	0.000051	0.00000	0.00000	0.71430	0.28570	0.00000	0.00000	Gas	1
3 Anode 3	500000000	0.000051	0.00000	0.00000	0.00000	0.00000	0.71430	0.28570	Gas	1
Lattice Binding Energy			3	3	3	3	3	3		
Surface Binding Energy			2	7.41	2	7.41	2	7.41		
Displacement Energy			10	28	10	28	10	28		

**ION**

Ion Type: N, 14.003 amu  
 Ion Energy: 6.4 MeV  
 Ion Angle: 0 degrees  
 Completed: 500 of 500

**ION RANGE Distribution**

**ION RANGES**

Ion Range = 119. mm    Skewness = -4.4105  
 Straggle = 2.60 mm    Kurtosis = 42.6825

**XY Longitudinal**

**Depth vs. Y-Axis**

0 A - Target Depth - 150 mm

**Calculation Parameters**

Backscattered Ions: 0  
 Transmitted Ions: 0  
 Vacancies/Ion: 1025.3

**ION STATS**

	Range	Straggle
Longitudinal	119 mm	2.60 mm
Lateral Proj.	2.79 mm	3.62 mm
Radial	4.28 mm	2.56 mm

**Type of Damage Calculation**

Quick: Kinchin-Pease

**Stopping Power Version**

SRIM-2003

**% ENERGY LOSS**

	Ions	Recoils
Ionization	98.73	0.60
Vacancies	0.01	0.03
Phonons	0.06	0.56

**SPUTTERING YIELD**

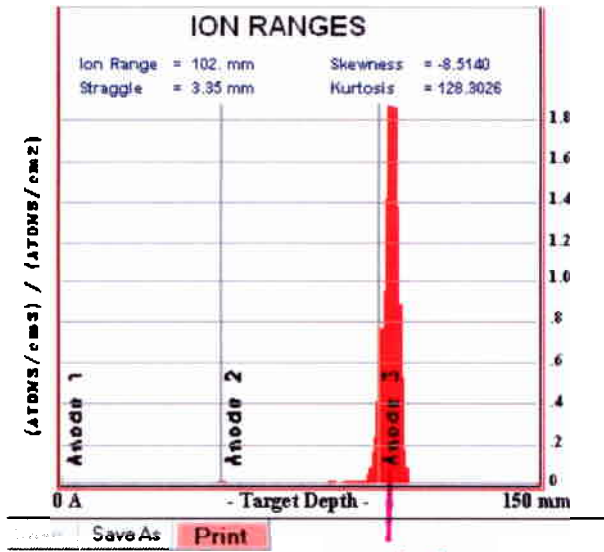
	Atoms/ion	eV/Atom
TOTAL		
H	0.000000	0.00
C	0.000000	0.00
H	0.000000	0.00

Save every 500 ions  
 Random Number: 1871362  
 Counter: HELP

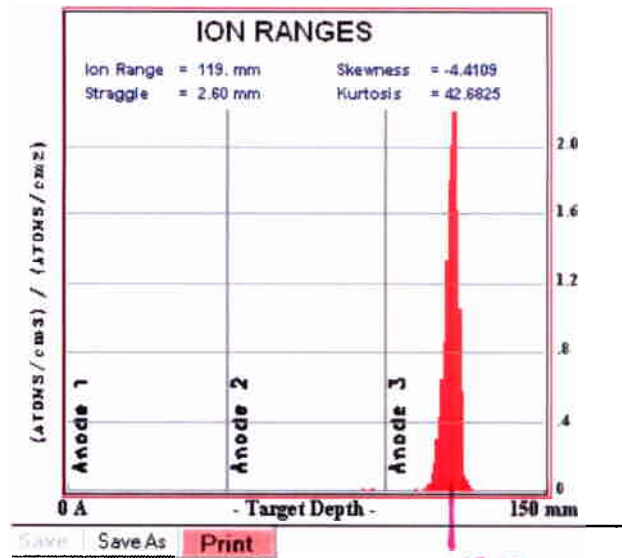
SIRIEM

5.2 MeV

6.4 MeV



~10.4 cm

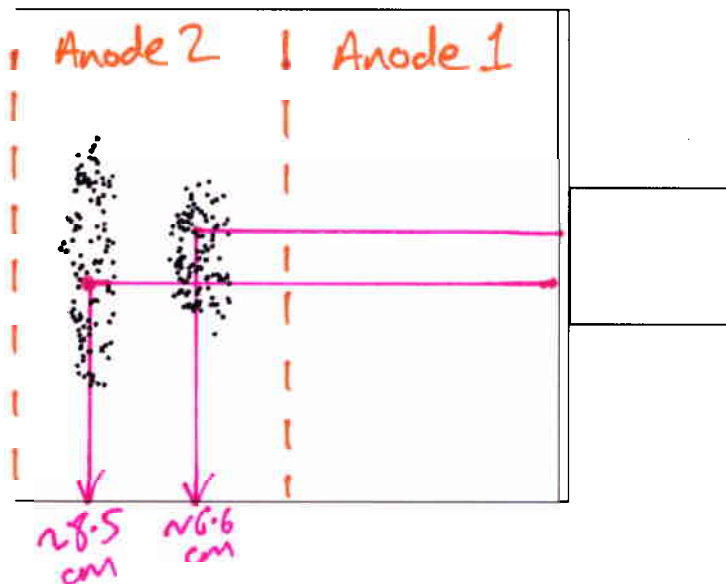


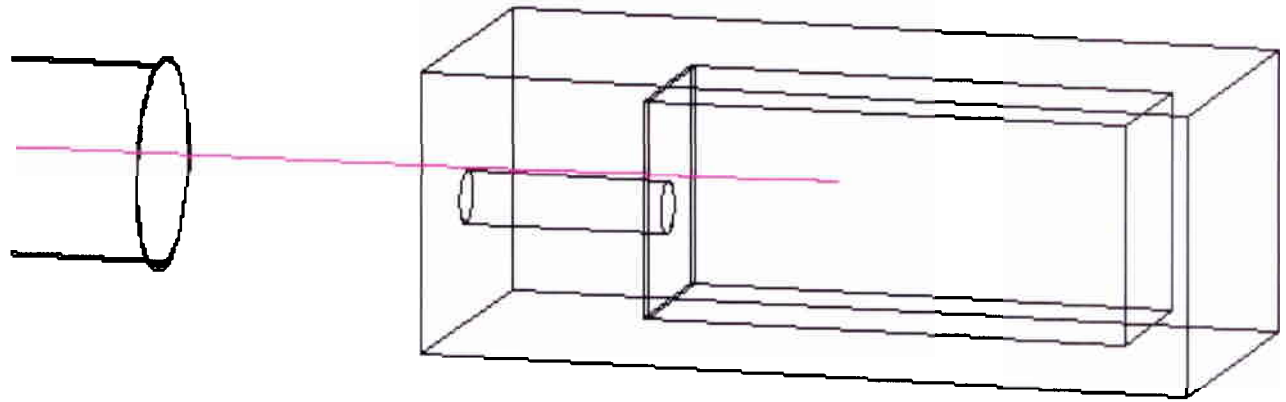
~12.2 cm

TUDA's dE/E program

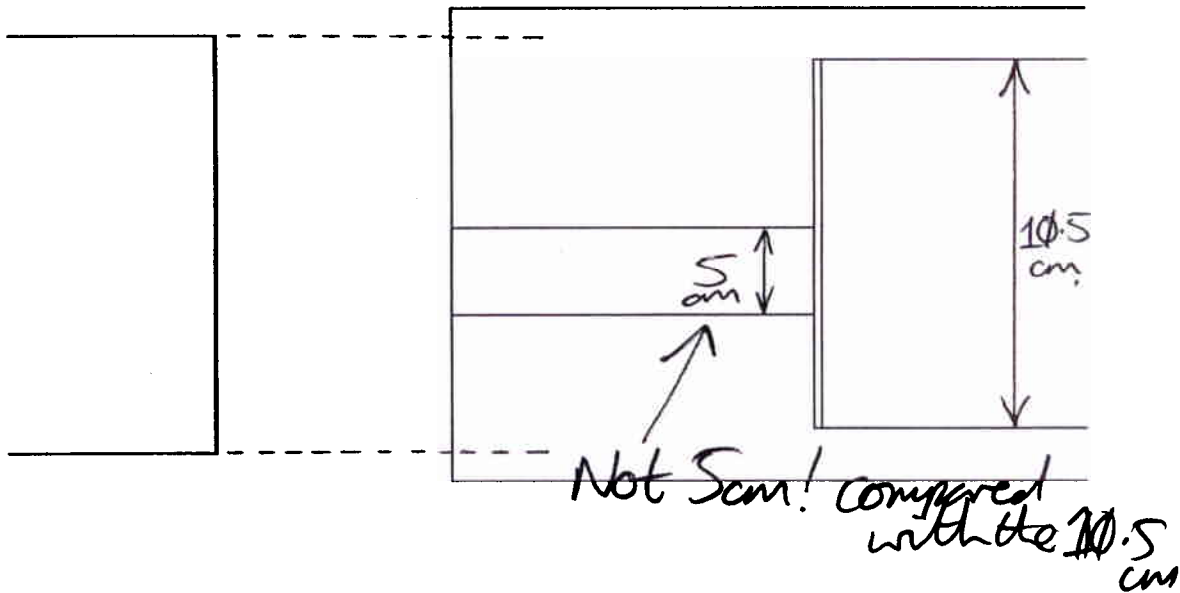
Energy (MeV)	dE/dx (MeV/cm)	dE/dx (MeV.cm**2/mg)	Range (cm)	Range (mg/cm**2)
5.20000	0.626844	12.7381	9.52633	0.468791
6.40000	0.607321	12.3414	12.5439	0.617287

GEANT

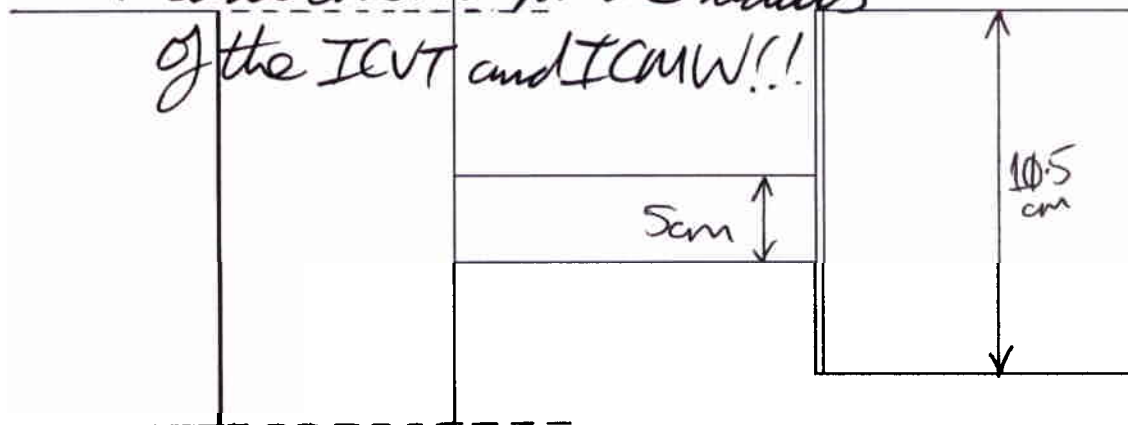




From Page N



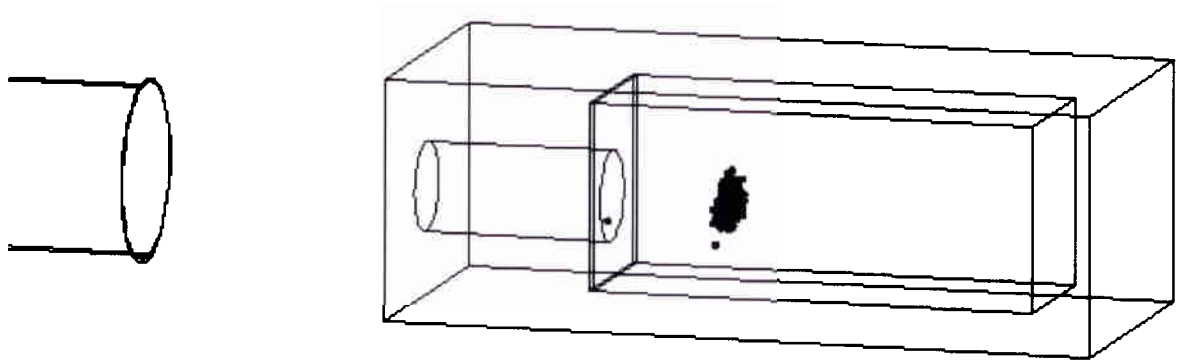
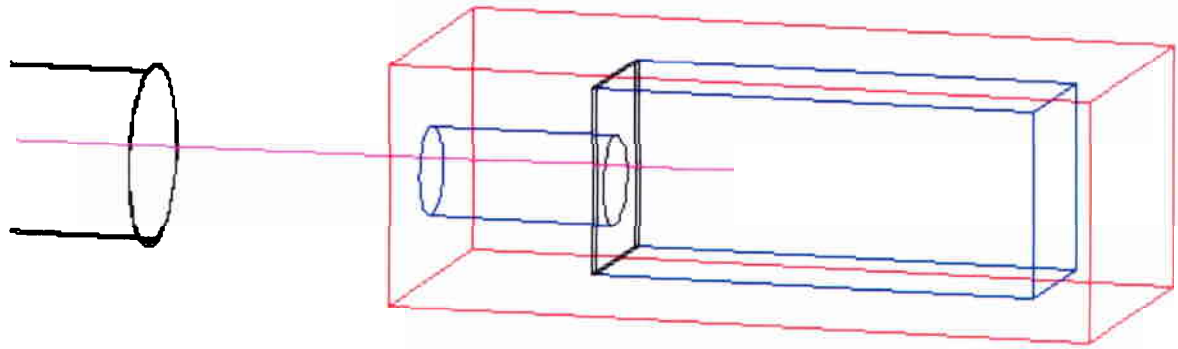
1825: Looking at ~~uposition~~ ions in uposom. m. itray. f.  
 and I'll be using the wrong  
 measurement for the radius  
 of the ICVT and ICMW!!

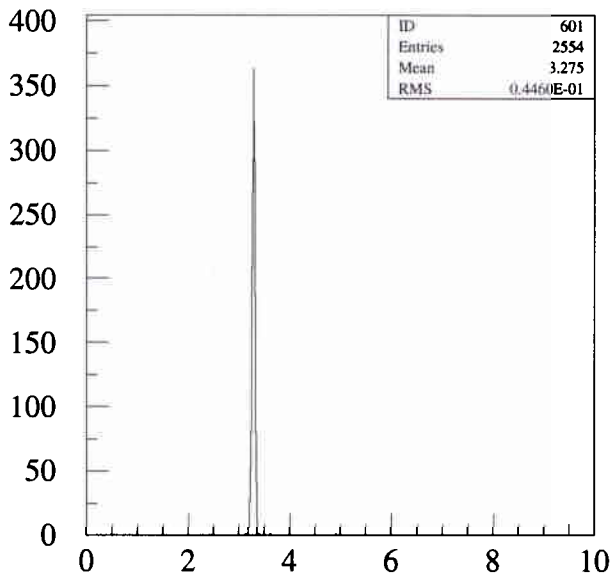


How have I only figured now that the ~~radius~~ radius  
 of the entrance tube was too small!!??!!  
 I'm an idiot!!

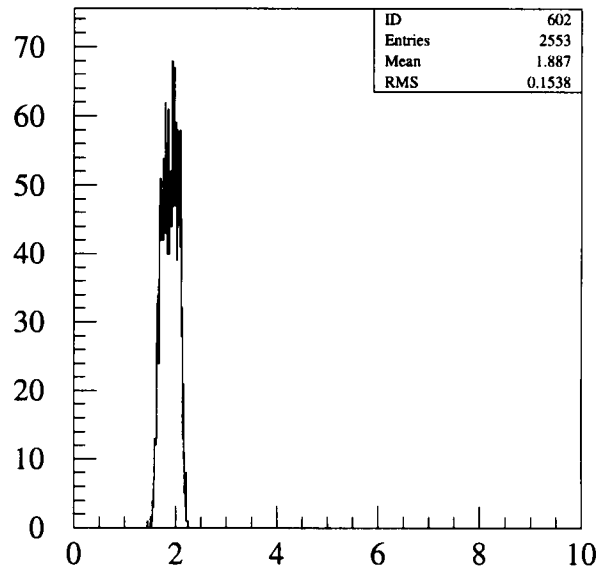
Witnessed & Understood by me,	Date	Invented by	Date
		Recorded by	



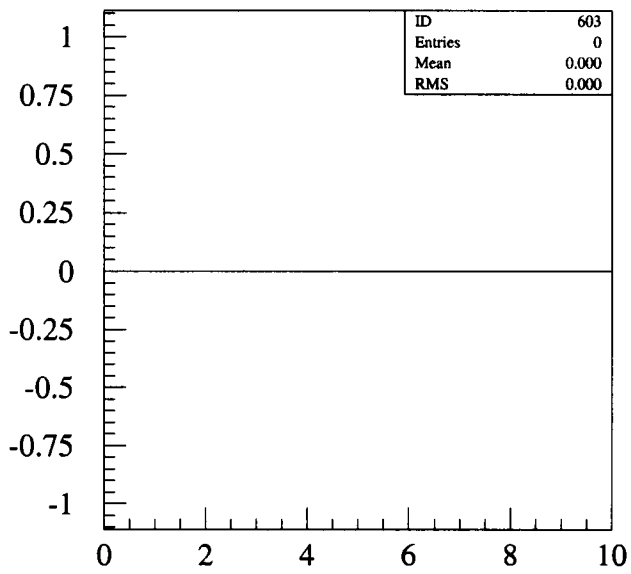




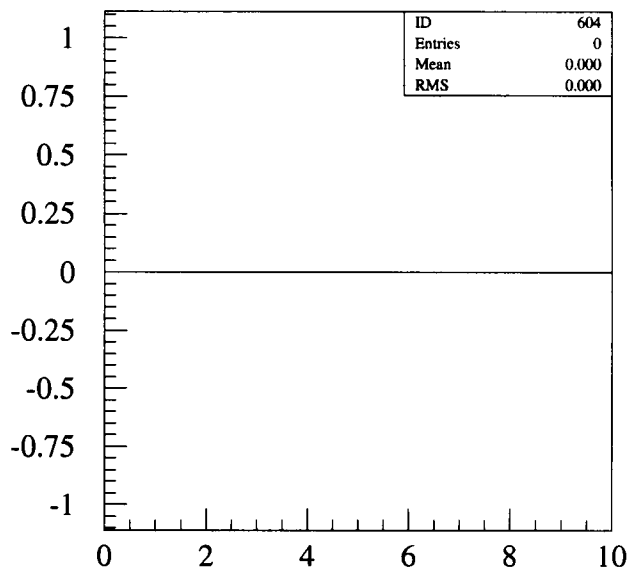
Energy deposited in Anode 1



Energy deposited in Anode 2



Energy deposited in Anode 3



Energy deposited in Anode 4