



*Gretina Detector Workshop*

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*Special Detectors Expert*

**ORNL - MARCH 19 - 20, 2004**

# GRETINA detector workshop

∪ **GRETA** detector : *in manufacturing*



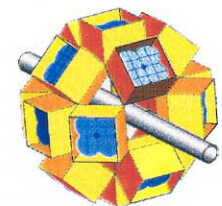
∪ **AGATA** detector : *in manufacturing*



∪ **TRIUMF** : Tigress detector : *in qualification*



∪ **EXOGAM** detector : *summary of delivery*



# *GRETA detector before segmentation*



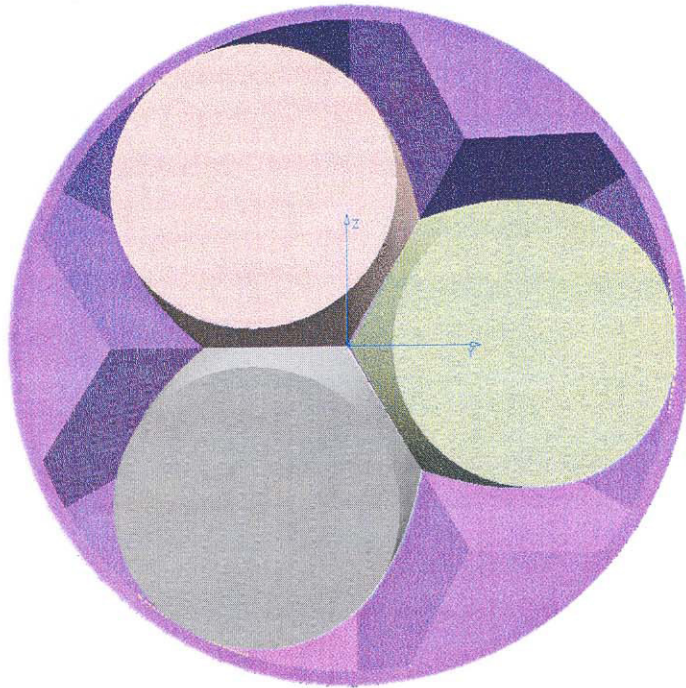
> GRETA - MARCH 16th, 2004

# GRETA Detector (versus 6 segments Euroball)

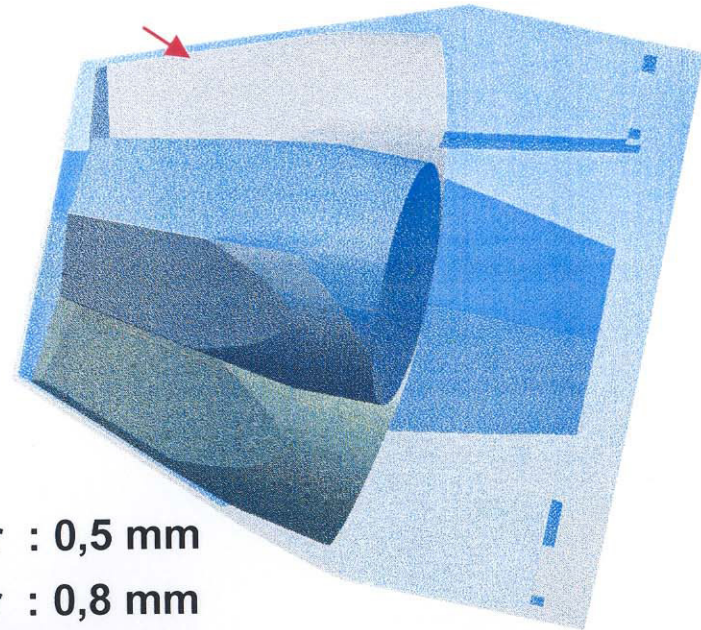


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# Schematic view of the three GRETA canister within the cap



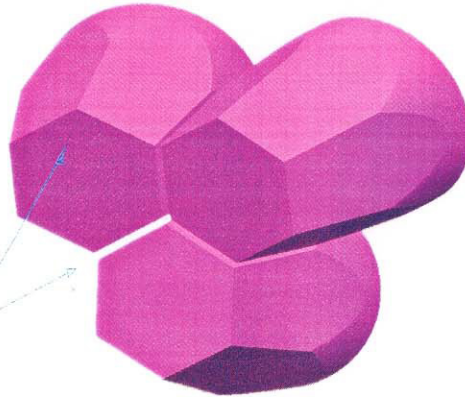
Distance Ge to external : 4,6 mm



Ge to canister : 0,5 mm  
canister : 0,8 mm  
canister to cap : 1,3 mm  
cap : 2,0 mm  
**total D : 4,6mm**

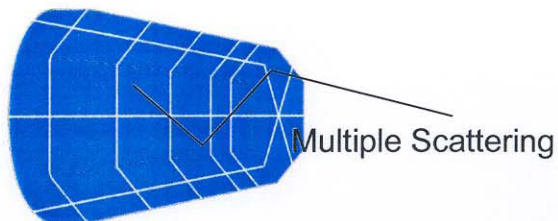
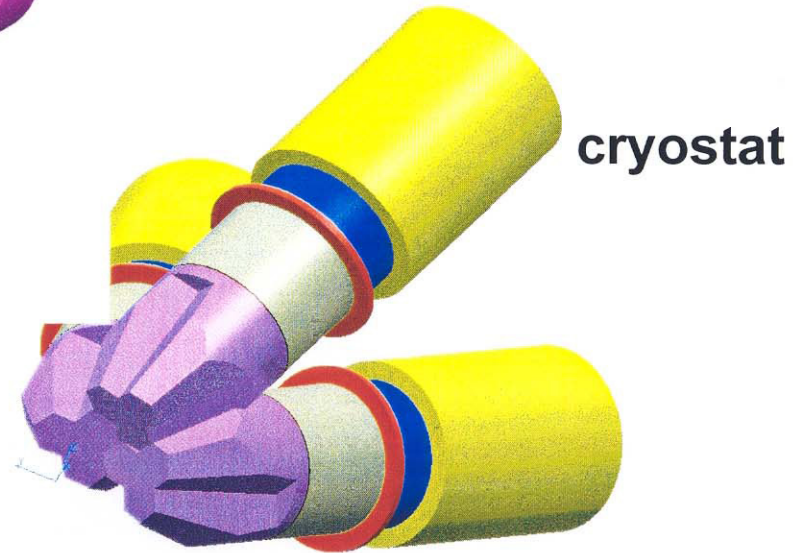
# *GRETA triplet*

**Array of  
3 encapsulated  
Crystals**



**Ge gap : 2,6mm**

**Each detector :**  
- diameter 80 mm  
- length 90 mm



**36 segments**

**SPECIFICATIONS SHEET OF SEGMENTED GRETA DETECTOR :**

**CRYSTAL C N° .....**

**Refroidissement N° 3.....**

Operating high-voltage (Positive)	/	5000 V			
Shaping time	/	6 μs			
	Guaranted values	J32 / J33			
Fwhm 1,17 Mev at ... μs ( <sup>60</sup> Co)	/	2.12			
Fwhm 122 keV at ... μs ( <sup>241</sup> Am)	< 1.35				
Fwtm/Fwhm at <sup>60</sup> Co	< 2	1.89			
Fwhm 1,33 Mev at ... μs ( <sup>60</sup> Co)	< 2.35	2.28			

OUTER CONTACT < 1.15 et < 2.1													
<b>POSITIONS</b> At 4 μs		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>						
<b>α</b>	60 keV	J28	1.08	V30	1.03	V33	1.09	B34	1.05	B36	1.05	J38	1.01
	1.17 / 1.33 MeV												
<b>β</b>	60 keV	V28	1.07	J29	1.02	V32	1.12	B33	0.99	B35	1.02	B38	0.96
	1.17 / 1.33 MeV												
<b>γ</b>	60 keV	V27	1.15	V29	1.04	V31	1.27	J35	1.03	J37	1.05	V39	1.02
	1.17 / 1.33 MeV												
<b>δ</b>	60 keV	B28	1.18	J30	1.13	B32	1.04	V35	1.02	J36	1.01	V38	0.96
	1.17 / 1.33 MeV												
<b>ε</b>	60 keV	J27	1.16	B30	1.18	J31	1.08	V34	1.08	V36	1.09	V37	1.10
	1.17 / 1.33 MeV												
<b>φ</b>	60 keV	B27	1.10	B29	1.00	B31	1.03	B37	1.03	B39	1.01	B2	1.22
	1.17 / 1.33 MeV												

Mesures 60 keV positions tête en **B**

Mesures 1.33 MeV full volume tête en **B**

Mesures 1.33 MeV positions tête en

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**SPECIFICATIONS SHEET OF SEGMENTED GRETA DETECTOR :**

**CRYSTAL B N° .....**

**Refroidissement N° 3 .....**

Operating high-voltage (Positive)	/	5000 V		
Shaping time	/	6 $\mu$ s		
	Guaranted values	V21 / V22		
Fwhm 1,17 Mev at ... $\mu$ s ( <sup>60</sup> Co)	/	2.18		
Fwhm 122 keV at ... $\mu$ s ( <sup>241</sup> Am)	< 1.35	1.35		
Fwtn/Fwhm at <sup>60</sup> Co	< 2	1.94		
Fwhm 1,33 Mev at ... $\mu$ s ( <sup>60</sup> Co)	< 2.35	2.28		

OUTER CONTACT < 1.15 et < 2.1													
<b>POSITIONS</b> At 4 $\mu$ s		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>						
$\alpha$	60 keV	B16	1.13	B18	1.06	J20	1.12	V20	0.97	V24	1.06	V26	1.14
	1.17 / 1.33 MeV												
$\beta$	60 keV	J15	1.20	J17	1.10	B20	1.05	J19	1.00	J23	1.05	J25	1.05
	1.17 / 1.33 MeV												
$\gamma$	60 keV	B15	1.10	B17	1.00	B19	1.11	V19	1.14	J21	1.10	V25	1.07
	1.17 / 1.33 MeV												
$\delta$	60 keV	V14	1.18	J16	1.10	J18	1.08	J22	1.12	J24	1.14	J26	1.11
	1.17 / 1.33 MeV												
$\epsilon$	60 keV	J13	1.22	V16	1.10	V18	1.17	B22	0.99	B24	1.06	B26	1.11
	1.17 / 1.33 MeV												
$\phi$	60 keV	V13	1.08	V15	1.00	V17	1.17	B21	1.06	B23	0.97	B25	0.91
	1.17 / 1.33 MeV												

Mesures 60 keV positions tête en H

Mesures 1.33 MeV full volume tête en H

Mesures 1.33 MeV positions tête en

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# Regular GRETA Cryostat



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## *AGATA canister (versus Euroball)*



# Regular AGATA canister

