

Channel	Ratio of XT to Helios Signal		
	HD	BM	PHA
89Y	1,10	1,06	1,12
102Pd	N/A	N/A	N/A
104Pd	0,76	0,78	0,75
105Pd	0,78	0,79	0,78
106Pd	0,79	0,80	0,86
108Pd	0,80	0,82	0,87
110Pd	0,92	0,93	0,85
111Cd	0,83	0,85	0,86
113Cd	0,78	0,79	0,75
116Cd	0,92	0,86	0,80
141Pr	0,58	0,56	0,62
<b>142Nd</b>	<b>12,26</b>	<b>15,63</b>	<b>1,48</b>
143Nd	0,64	0,63	0,59
144Nd	0,70	0,70	0,70
145Nd	0,73	0,72	0,76
146Nd	0,60	0,70	N/A
147Sm	0,72	0,67	0,74
148Nd	0,73	0,73	N/A
149Sm	0,72	0,74	N/A
150Nd	0,61	0,56	0,73
151Eu	0,70	0,69	0,72
152Sm	0,71	0,69	N/A
153Eu	0,73	0,72	0,78
<b>154Sm</b>	<b>2,88</b>	<b>0,93</b>	<b>0,31</b>
<b>155Gd</b>	<b>0,58</b>	<b>0,54</b>	<b>0,53</b>
<b>156Gd</b>	<b>10,25</b>	<b>9,36</b>	<b>0,83</b>
<b>158Gd</b>	<b>0,32</b>	<b>0,35</b>	<b>0,79</b>
159Tb	0,73	0,73	0,80
160Gd	0,62	0,73	0,65
161Dy	0,77	0,65	0,74
162Dy	0,70	0,69	0,84
163Dy	0,75	0,77	0,69
164Dy	0,74	0,72	0,78
165Ho	0,76	0,76	0,81
166Er	0,48	0,60	1,01
167Er	0,72	0,75	0,88
168Er	0,72	0,74	N/A
169Tm	0,77	0,68	0,77
170Er	0,59	0,61	0,73
171Yb	0,70	0,66	0,63
172Yb	0,64	0,64	0,58
173Yb	0,74	0,80	N/A
174Yb	0,71	0,70	0,75
175Lu	0,78	0,81	0,85
176Yb	0,69	0,86	N/A
191Ir	0,69	0,70	0,69
193Ir	0,70	0,70	0,69
<b>209Bi</b>	<b>0,81</b>	<b>0,95</b>	<b>N/A</b>

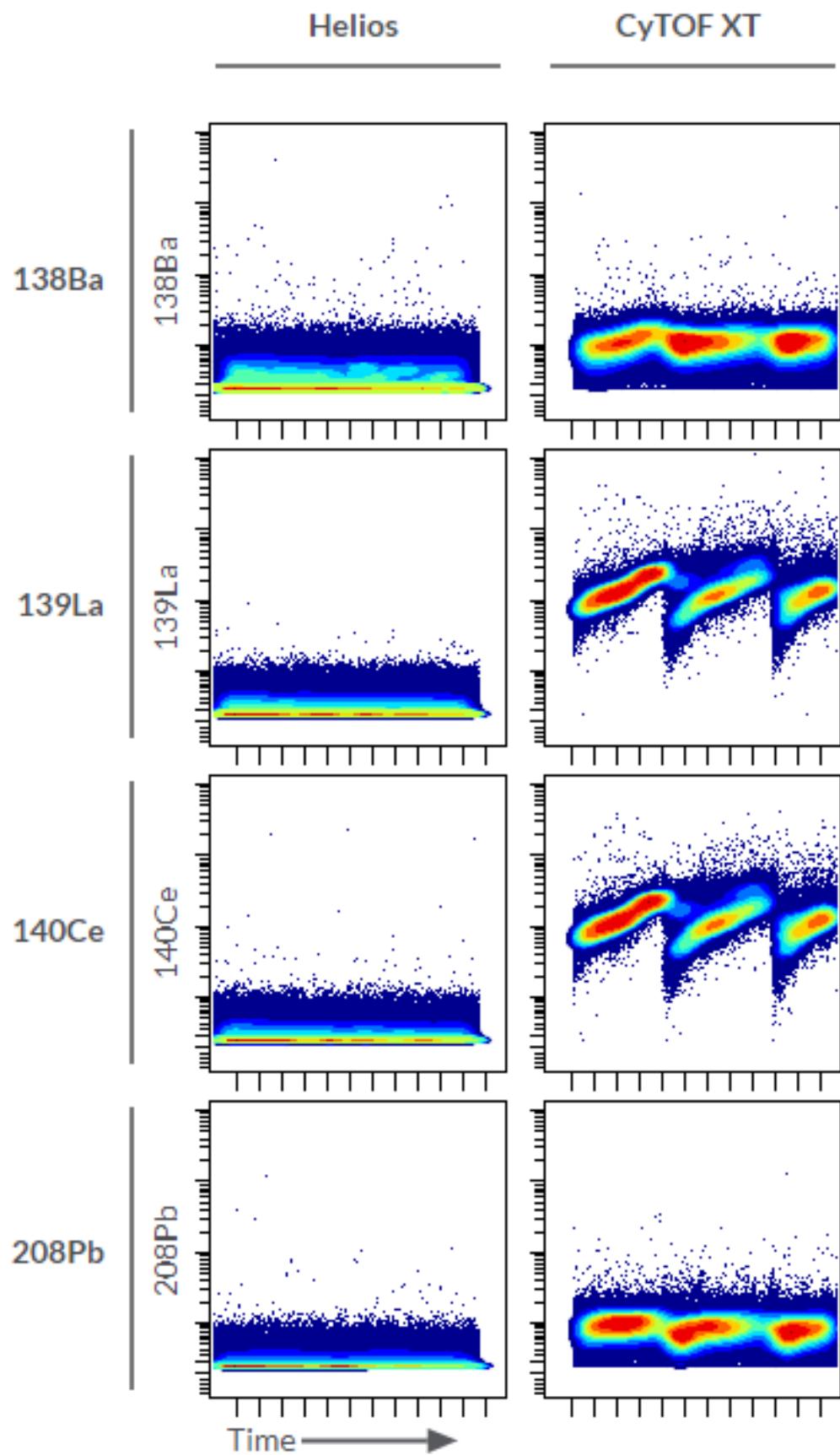
**Table 1:** The rightmost three columns contain the ratios of the signal the XT had produced from its half of the sample, to the signal produced by Helios on the same sample. The bolded rows represent an unusually high or low signal, compared to the rest of the table, which is a result of the high levels of contamination with the metals: 138Ba, 139La, 140Ce, 142Ce and 208Pb.

Parameters	Results																																																								
<input checked="" type="checkbox"/> Masses Mass / Time of Flight (A) 843.55	Mass / Time of Flight (T0) 205.18 Resolution (Mass1) 551.67																																																								
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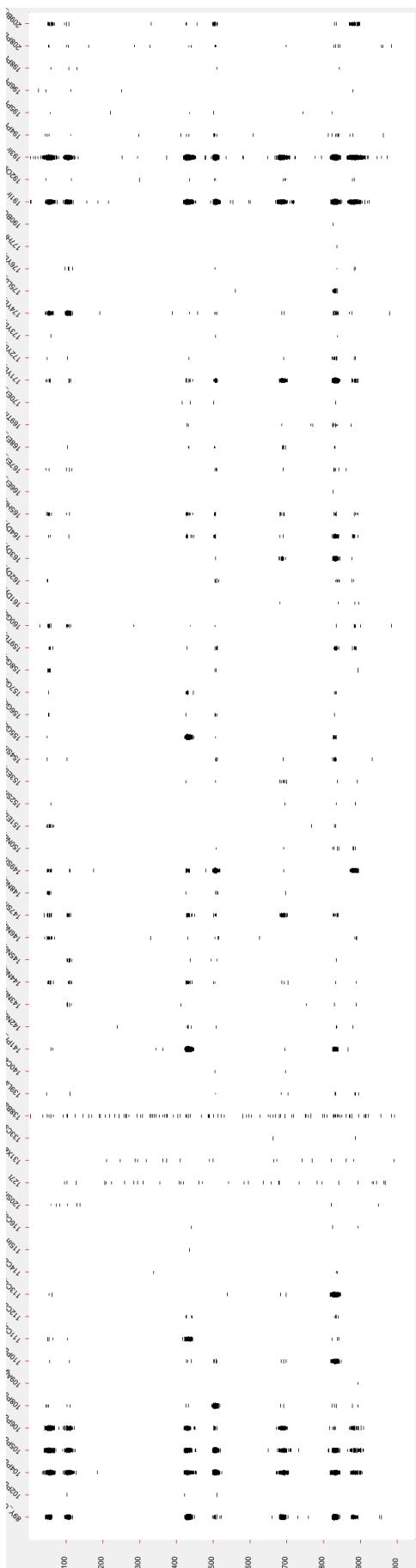
**Figure 1:** Tuning results for the Helios.

Mass Tuning Results				Passed		
Mass / Time of Flight (A)	844.985	Mass / Time of Flight (T0)	-162.186			
Resolution (First Mass)	457.838	Resolution (Second Mass)	544.026			
XY Tuning Results				Passed		
X	11,726.00	Y	56,283.00			
Detector Voltage Tuning Results				Passed		
Detector Voltage	-2,359.2677	Slope	-253.7428			
Intercept	-2,999.4302	Dual Coefficient	0.0030			
Current Tuning Results				Passed		
Current	6.5					
Neb Gas Tuning Results				Passed		
Result Neb	0.16					
MUG Tuning Results				Passed		
Result MUG	0.65	Result Oxide Ratio	1.61			
QC Tuning Results				Passed		
Abundance M+1	0.196	Abundance M-1	0.095	QC Oxide Ratio 1.719		
Calibration Element Results			Monitor Element Results			
Label	Mean Duals	CV, %	RSD, %	Label	Mean Duals	RSD, %
Y(89)	392.477	9.9	1.0	ArAr(80)	517,240.731	1.0
In(115)	757.660	7.9	1.2	Sn(120)	619.452	4.5
Ce(140)	1,621.577	6.2	0.8	I(127)	2,991.861	2.3
Eu(151)	0.000	0.0	0.0	Xe(131)	2,353.808	1.4
Gd(156)	52.584	40.5	8.5	Ba(134)	1,348.696	3.0
Gd(160)	1.240	93.5	8.6	Ba(138)	3,713.326	4.9
Tb(159)	631.255	7.9	1.1	Pb(208)	4,896.235	4.3
Lu(175)	698.815	8.2	0.9			
Hf(174)	0.662	119.9	12.5			
Bi(209)	354.279	8.1	0.9			

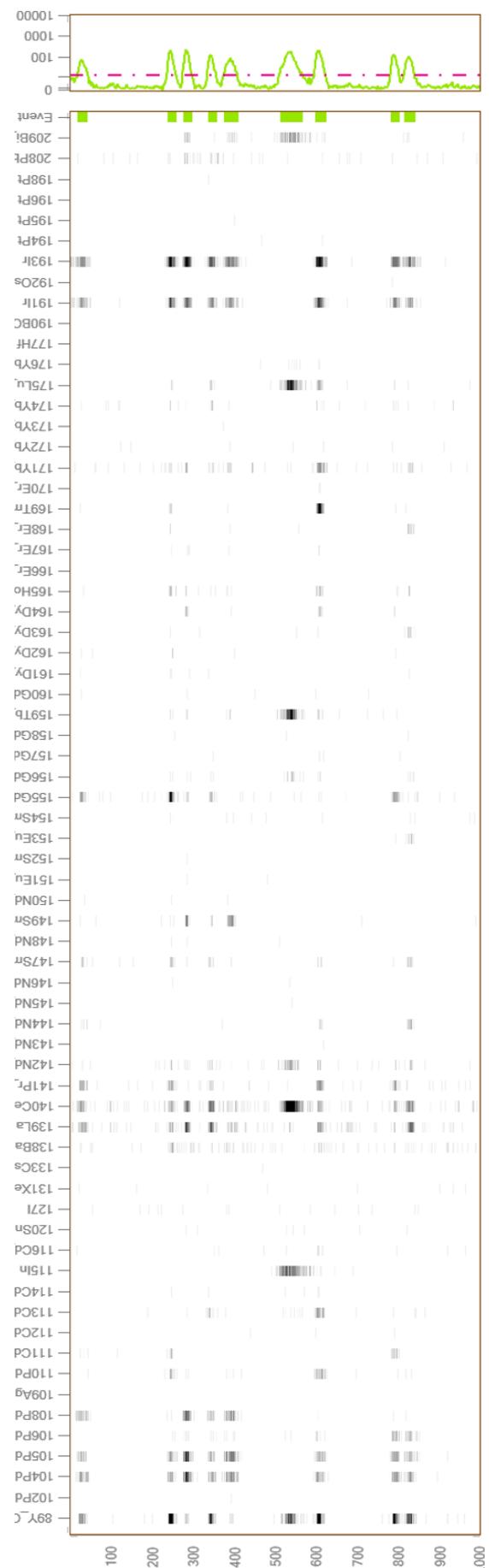
Figure 2: Tuning results from the XT.



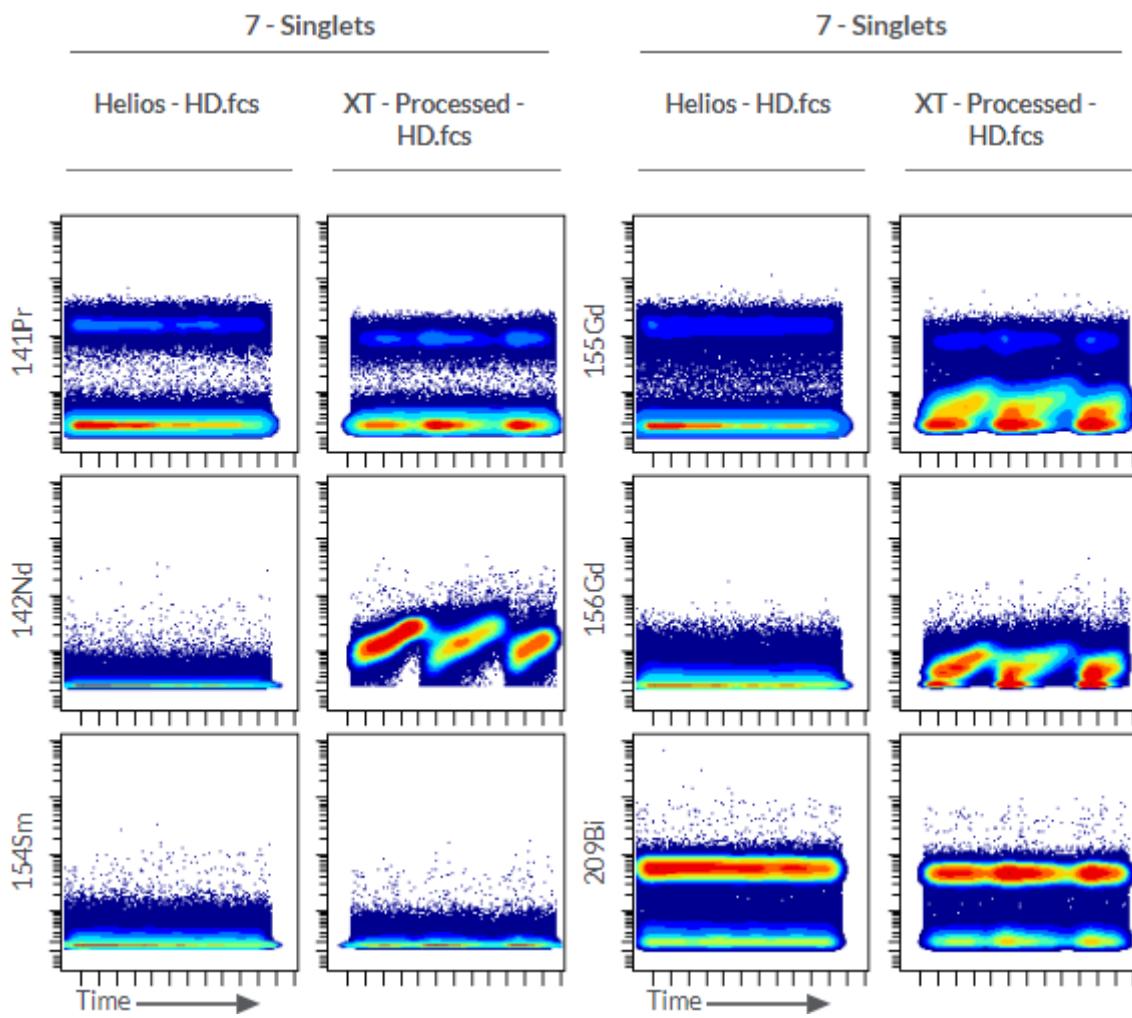
**Figure 3:** A visualization of the high intensity of the signals in the unused (background / contamination) channels  $^{138}\text{Ba}$ ,  $^{139}\text{La}$ ,  $^{140}\text{Ce}$ ,  $^{208}\text{Pb}$  on cleaned-up singles.



**Figure 4:** Rain plot from the Helios.

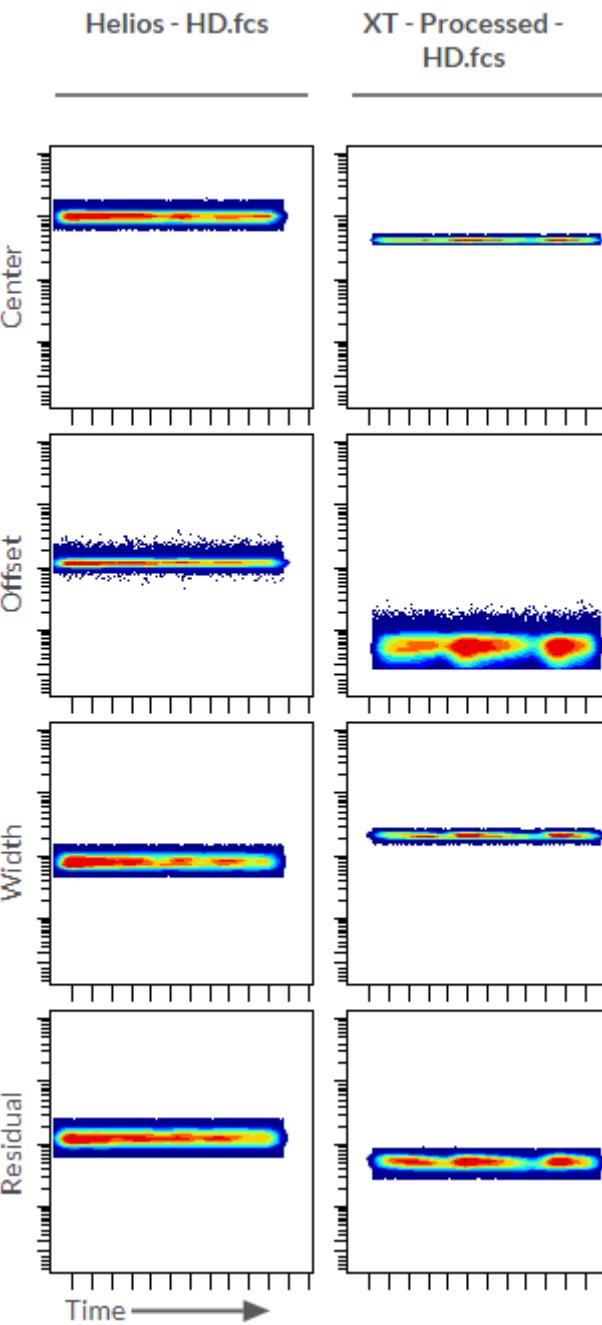


**Figure 5:** Rain plot from the XT.



**Figure 6:** A visualisation of the contaminants' spillover channels. The  $^{142}\text{Nd}$ ,  $^{155}\text{Gd}$  and  $^{156}\text{Gd}$  signals in the XT data are distorted upwards compared to the Helios data, giving a false-positive signal. Events are cleaned-up singlets.

## 7 - Singlets



**Figure 7:** The gaussian gates on cleaned-up singlets.