TABLE OF ALL RUNS

* = aborted run

** = check logbook for additional notes; probably not a useful run

Note: Unless specified, ^{14}C means the strong ^{14}C source (0.9853 μCi), not the weak one.

TABLE 1. Source list

Source	Activity$_0$	t_0	$t_{1/2}$	Activity$_t$
^{241}Am α	—	—	—	—
^{241}Am γ	10.51 μCi	12 Jan 1970	—	—
^{14}C β (strong)	0.9853 μCi	15 Nov 2012	—	—
^{14}C β (weak)	45.18 nCi	01 Sept 2011	—	—
^{133}Ba γ	2003	—	—	—
^{137}Cs (window)	10 μCi	—	—	—
^{90}Sr	—	—	—	—
^{22}Na	10μCi	2003	—	—

TABLE 2. 6/8/2016

#	Obj.	EM Gain	PreAmp	Exp.	Binning	# Images	Source
001	4X	200	3	100 ms	none	10	^{241}Am α
002	4X	200	3	100 ms	none	2000	^{241}Am α
003	10X	200	3	100 ms	none	2000	^{241}Am α
004	20X	200	3	100 ms	none	2000	^{241}Am α
005	10XS	200	3	100 ms	none	2000	^{241}Am α
006	20XS	200	3	100 ms	none	2000	^{241}Am α
007	20XS	200	3	25 ms	none	500	^{14}C
007.2	20XS	200	3	25 ms	4x4	500	^{14}C
008	10XS	200	3	25 ms	4x4	500	^{14}C
009	10XS	200	3	25 ms	4x4	500	dark
009.2	20XS	200	3	25 ms	4x4	500	dark

Date: 2016.

TABLE 3. 6/9/16

#	Obj.	EM Gain	PreAmp	Exp.	Binning	# Images	Source
010	10XS	200	3	25 ms	4x4	500	^{90}Sr
011	20XS	200	3	25 ms	4x4	500	^{90}Sr
012	10X	200	3	25 ms	4x4	500	^{90}Sr
013	20X	200	3	25 ms	4x4	500	^{90}Sr
014	10XS	200	3	25 ms	4x4	500	dark
015	20XS	200	3	25 ms	4x4	500	dark
016	10X	200	3	25 ms	4x4	500	dark
017	20X	200	3	25 ms	4x4	500	dark
018	10XS	200	3	25 ms	none	5000	^{14}C/mask*
019	10XS	200	3	25 ms	none	5000	^{14}C/mask
020	10XS	200	3	25 ms	none	5000	dark/mask

TABLE 4. 6/10/16

#	Obj.	EM Gain	PreAmp	Exp.	Binning	# Images	Source
021	10XS	200	3	25 ms	4x4	8000	^{90}Sr
022	10XS	200	3	25 ms	4x4	2000	^{14}C/linemask

TABLE 5. 6/13/10

#	Obj.	EM Gain	PreAmp	Exp.	Binning	# Images	Source
023	10XS	200	3	25 ms	4x4	500	dummy
024	10XS	200	3	25 ms	4x4	500	^{241}Am γ
025	10XS	200	3	10 ms	4x4	500	^{241}Am γ
026	10XS	200	3	10 ms	4x4	750	dark
027	10XS	200	3	25 ms	4x4	500	dark
028	10XS	200	3	25 ms	4x4	1000	^{22}Na
029	10XS	200	3	25 ms	4x4	1000	^{133}Ba
030	10XS	200	3	25 ms	4x4	1000	^{14}C weak
031	10XS	200	3	25 ms	4x4	1000	dark

TABLE 6. 6/15/10

#	Obj.	EM Gain	PreAmp	Exp.	Binning	# Images	Source
032	10XS	200	3	25 ms	4x4	5000	^{133}Ba
033	10XS	200	3	25 ms	4x4	5000	dark
034	10XS	200	3	25 ms	4x4	5000	^{241}Am γ
035	10XS	200	3	25 ms	4x4	5000	^{14}C strong
036	10XS	200	3	25 ms	4x4	5000	^{137}Cs $\gamma\beta$

TABLE 7. 6/16/10

#	Obj.	EM Gain	PreAmp	Exp.	Binning	# Images	Source
037	10XS	200	3	10 ms	4x4	10000	^{14}C strong
038	10XS	200	3	10 ms	4x4	10000	^{14}C strong
039	10XS	200	3	10 ms	4x4	10000	dark
040	10XS	200	3	25 ms	4x4	10000	dark
041	10XS	200	3	25 ms	4x4	10000	^{14}C strong
042	10XS	200	3	25 ms	4x4	10000	^{14}C strong
043	—	—	—	—	—	—	—
044	10XS	200	3	25 ms	4x4	10000	^{241}Am α mask

TABLE 8. 6/23/10

#	Obj.	EM Gain	PreAmp	Exp.	Binning	# Images	Source
045	10XS	200	3	10 ms	none	10	cloth
046	10XS	200	3	25 ms	4x4	10000	cloth
047	20XS	200	3	25 ms	4x4	10000	cloth
048	20XS	200	3	25 ms	4x4	10000	dark

TABLE 9. 6/30/16

#	Obj.	EM Gain	PreAmp	Exp.	Binning	# Images	Source
049	10XS	200	3	25 ms	2x2	10000	^{14}C weak
050	10XS	200	3	25 ms	4x4	1000	^{90}Sr
050.2	10XS	200	3	25 ms	4x4	1000	^{90}Sr (cloth)
051	10XS	200	3	25 ms	4x4	1000	^{137}Cs $\gamma\beta$
052	10XS	200	3	25 ms	4x4	1000	^{137}Cs $\gamma\beta$ (cloth)

TABLE 10. 6/30/16: Paper Mask

#	Obj.	EM Gain	PreAmp	Exp.	Binning	# Images	Source
054	10XS	200	3	25 ms	4x4	10000	^{14}C w/ paper
067	10XS	200	3	25 ms	4x4	10000	^{14}C

TABLE 11. 6/30/16: Gain Testing

#	Obj.	EM Gain	PreAmp	Exp.	Binning	# Images	Source
053	10XS	200	3	25 ms	4x4	1000	^{14}C
055	10XS	200	1	25 ms	4x4	1000	^{14}C
056	10XS	200	2	25 ms	4x4	1000	^{14}C
057	10XS	200	3	25 ms	4x4	1000	^{14}C
058	10XS	100	1	25 ms	4x4	1000	^{14}C
059	10XS	100	2	25 ms	4x4	1000	^{14}C
060	10XS	100	3	25 ms	4x4	1000	^{14}C
061	10XS	300	1	25 ms	4x4	1000	^{14}C
062	10XS	300	2	25 ms	4x4	1000	^{14}C
063	10XS	300	3	25 ms	4x4	1000	^{14}C
064	10XS	400	1	25 ms	4x4	1000	^{14}C
065	10XS	400	2	25 ms	4x4	1000	^{14}C
066	10XS	400	3	25 ms	4x4	1000	^{14}C

TABLE 12. 7/1/2016: Very long masked ^{14}C run

#	Obj.	EM Gain	PreAmp	Exp.	Binning	# Images	Source
068	10XS	200	3	25 ms	4x4	49354	^{14}C w/ paper

TABLE 13. 7/1/2016: Gain Testing Dark Runs

#	Obj.	EM Gain	PreAmp	Exp.	Binning	# Images	Source
069	10XS	200	3	25 ms	4x4	1000	dark
070	10XS	200	2	25 ms	4x4	1000	dark
071	10XS	200	1	25 ms	4x4	1000	dark
072	10XS	100	3	25 ms	4x4	1000	dark
073	10XS	100	2	25 ms	4x4	1000	dark
074	10XS	100	1	25 ms	4x4	1000	dark
075	10XS	300	3	25 ms	4x4	1000	dark
076	10XS	300	2	25 ms	4x4	1000	dark
077	10XS	300	1	25 ms	4x4	1000	dark
078	10XS	400	3	25 ms	4x4	1000	dark
079	10XS	400	2	25 ms	4x4	1000	dark
080	10XS	400	1	25 ms	4x4	1000	dark

TABLE 14. 7/11/2016

#	Obj.	EM Gain	PreAmp	Exp.	Binning	# Images	Source
081	10XS	200	3	25 ms	4x4	10000	^{241}Am α
082	10XS	200	3	25 ms	4x4	10000	^{241}Am α w/ paper

TABLE 15. 7/26/2016: Finding minimum detectable activity

#	Obj.	EM Gain	PreAmp	Exp.	Binning	# Images	Source
083	10XS	200	3	25 ms	4x4	8999	^{241}Am α; paper
084	—	—	—	—	—	—	—
085	10XS	200	3	25 ms	4x4	8985	^{241}Am γ; nothing
086	10XS	200	3	25 ms	4x4	8970	^{14}C weak; spacer
087	10XS	200	3	25 ms	4x4	9000	^{14}C; 250 μm mask
088	10XS	200	3	25 ms	4x4	9000	^{14}C; spacer

TABLE 16. 7/28/16: Finding minimum detectable activity correctly

#	Obj.	EM Gain	PreAmp	Exp.	Binning	# Images	Source
089	10XS	200	3	25 ms	4x4	9994	^{14}C; nothing
090	10XS	200	3	25 ms	4x4	9999	^{14}C; spacer
091	10XS	200	3	25 ms	4x4	10000	^{14}C; 250 μm mask
092	10XS	200	3	25 ms	4x4	10000	^{14}C weak; spacer

TABLE 17. 7/29/16: Finding minimum detectable activity with americium

#	Obj.	EM Gain	PreAmp	Exp.	Binning	# Images	Source
093	10XS	200	3	25 ms	4x4	9999	^{14}C; 1 mm mask
094	10XS	200	3	25 ms	4x4	10000	^{241}Am; nothing
095	10XS	200	3	25 ms	4x4	10000	^{241}Am; spacer
096	10XS	200	3	25 ms	4x4	10000	^{241}Am; 250 μm mask
097	10XS	200	3	25 ms	4x4	9998	^{241}Am; 1 mm mask

TABLE 18. 8/2/16: New Cs and Sr runs (old Sr run had readout speed of 17 MHz instead of 5 MHz); Sr run for position resolution

#	Obj.	EM Gain	PreAmp	Exp.	Binning	# Images	Source
098	10XS	200	3	25 ms	4x4	10000	^{137}Cs
099	10XS	200	3	25 ms	4x4	9999	^{90}Sr
100	10XS	200	3	25 ms	4x4	10000	^{90}Sr; 250 μm mask

TABLE 19. 8/3/16: Very long masked runs for position resolution

#	Obj.	EM Gain	PreAmp	Exp.	Binning	# Images	Source
101	10XS	200	3	25 ms	4x4	19999	^{14}C; 250 μm mask
102	—	—	—	—	—	—	—
103	10XS	200	3	25 ms	4x4	20000	^{241}Am; 250 μm mask

TABLE 20. 8/3/16: New C, Cs, and Sr data to see if results from yesterday can be replicated

#	Obj.	EM Gain	PreAmp	Exp.	Binning	# Images	Source
104	10XS	200	3	25 ms	4x4	10000	^{14}C
105	10XS	200	3	25 ms	4x4	10000	^{137}Cs
106	10XS	200	3	25 ms	4x4	10000	^{90}Sr
107	10XS	200	3	25 ms	4x4	10000	^{14}C
108	10XS	200	3	25 ms	4x4	10000	^{137}Cs
109	10XS	200	3	25 ms	4x4	10000	^{90}Sr

TABLE 21. 8/9/16: Dark runs to understand background

#	Obj.	EM Gain	PreAmp	Exp.	Binning	# Images	Source
110	10XS	200	3	25 ms	4x4	10000	dark, no CsI
111	10XS	200	3	25 ms	4x4	10000	dark, CsI
112	10XS	200	3	25 ms	4x4	10000	dark, CsI, 250 μm mask

TABLE 22. 8/9/16: Masked runs for position resolution; used half of the 1 mm mask for both of these.

#	Obj.	EM Gain	PreAmp	Exp.	Binning	# Images	Source
113	10XS	200	3	25 ms	4x4	14997	^{14}C
114	10XS	200	3	25 ms	4x4	15000	^{90}Sr

TABLE 23. 6/13/17: Testing consistency of runs with no apparent changes in test environment

#	Obj.	EM Gain	PreAmp	Exp.	Binning	# Images	Source
115	10XS	200	3	25 ms	4x4	5,000	dark, no CsI
116	10XS	200	3	25 ms	4x4	4,999	^{14}C
117	10XS	200	3	25 ms	4x4	5,000	^{14}C
118	10XS	200	3	25 ms	4x4	5,000	^{14}C
119	10XS	200	3	25 ms	4x4	5,000	^{14}C
120	10XS	200	3	25 ms	4x4	5,000	^{14}C

TABLE 24. 6/13/17: For use in comparing runs with 10XS vs 20XS objectives (compare to runs in Table 23)

#	Obj.	EM Gain	PreAmp	Exp.	Binning	# Images	Source
121	20XS	200	3	25 ms	4x4	5,000	dark, no CsI
122	20XS	200	3	25 ms	4x4	5,000	^{14}C
123	20XS	200	3	25 ms	4x4	5,000	^{14}C
124	20XS	200	3	25 ms	4x4	5,000	^{14}C
125	20XS	200	3	25 ms	4x4	4,999	^{14}C
126	20XS	200	3	25 ms	4x4	5,000	^{14}C

TABLE 25. 6/16/17: For use in comparing runs with 10XS vs 20XS objectives (compare to runs in Table 23)

#	Obj.	EM Gain	PreAmp	Exp.	Binning	# Images	Source
127	20XS	200	3	25 ms	4x4	10,000	dark, no CsI
128	20XS	200	3	25 ms	4x4	10,000	^{14}C
129	20XS	200	3	25 ms	4x4	10,000	^{14}C
130	20XS	200	3	25 ms	4x4	10,000	^{14}C
131	20XS	200	3	25 ms	4x4	15,000	^{14}C
132	20XS	200	3	25 ms	4x4	15,000	^{14}C
133	20XS	200	3	25 ms	4x4	14,997	^{14}C

TABLE 26. 6/20/17: For use in comparing runs with different binning options

- - - With no binning options, ImageJ would not process the images properly

#	Obj.	EM Gain	PreAmp	Exp.	Binning	# Images	Source
134	20XS	200	3	25 ms	none	3,936	dark, no CsI
135	20XS	200	3	25 ms	none	4,000	^{14}C
136	20XS	200	3	25 ms	none	3,999	^{14}C
137	20XS	200	3	25 ms	none	4,000	^{14}C
138	20XS	200	3	25 ms	2x2	4,000	dark, no CsI
139	20XS	200	3	25 ms	2x2	4,000	^{14}C
140	20XS	200	3	25 ms	2x2	4,000	^{14}C
141	20XS	200	3	25 ms	2x2	4,000	^{14}C
142	20XS	200	3	25 ms	4x4	4,000	dark, no CsI
143	20XS	200	3	25 ms	4x4	4,000	^{14}C
144	20XS	200	3	25 ms	4x4	4,000	^{14}C
145	20XS	200	3	25 ms	4x4	4,000	^{14}C
146	20XS	200	3	25 ms	8x8	4,000	dark, no CsI
147	20XS	200	3	25 ms	8x8	4,000	^{14}C
148	20XS	200	3	25 ms	8x8	4,000	^{14}C
149	20XS	200	3	25 ms	8x8	4,000	^{14}C

TABLE 27. 6/23/17: For use in comparing runs with different CsI thicknesses

#	Obj.	EM Gain	PreAmp	Exp.	Binning	# Images	Source	CsI
150	20XS	200	3	25 ms	4x4	10,000	dark	none
151	20XS	200	3	25 ms	4x4	10,000	^{14}C	45 um
152	20XS	200	3	25 ms	4x4	10,000	^{14}C	45 um
153	20XS	200	3	25 ms	4x4	10,000	^{14}C	45 um
154	20XS	200	3	25 ms	4x4	9,989	^{14}C	135 um
155	20XS	200	3	25 ms	4x4	9,988	^{14}C	135 um
156	20XS	200	3	25 ms	4x4	9,997	^{14}C	135 um
157	20XS	200	3	25 ms	4x4	9,998	^{14}C	150 um
158	20XS	200	3	25 ms	4x4	10,000	^{14}C	150 um
159	20XS	200	3	25 ms	4x4	9,999	^{14}C	150 um

TABLE 28. 6/29/17: For use in verifying that CsI thicknesses are labeled correctly

#	Obj.	EM Gain	PreAmp	Exp.	Binning	# Images	Source	CsI
160	20XS	200	3	25 ms	4x4	9,998	dark	none
161	20XS	200	3	25 ms	4x4	10,000	^{137}Cs	45 um
162	20XS	200	3	25 ms	4x4	10,000	^{137}Cs	135 um
163	20XS	200	3	25 ms	4x4	10,000	^{137}Cs	150 um

TABLE 29. 6/29/17: For use in determining Calibration Constants

#	Obj.	EM Gain	PreAmp	Exp.	Binning	# Images	Source	CsI
164	20XS	200	3	25 ms	4x4	10,000	^{137}Cs	150 um
165	20XS	200	3	25 ms	4x4	5,000	^{137}Cs	150 um
166	20XS	200	3	25 ms	4x4	5,000	^{137}Cs	150 um
167	20XS	200	3	25 ms	4x4	9,999	^{90}Sr	150 um
168	20 XS	200	3	25 ms	4x4	10,000	^{90}Sr	150 um
169	20 XS	200	3	25 ms	4x4	5,000	^{90}Sr	150 um
170	20 XS	200	3	25 ms	4x4	5,000	^{90}Sr	150 um

TABLE 30. 7/05/17: For use in determining Calibration Constants

#	Obj.	EM Gain	PreAmp	Exp.	Binning	# Images	Source	CsI
171	20XS	200	3	25 ms	4x4	10,000	dark	none
172	20XS	200	3	25 ms	4x4	49,877	^{90}Sr	150 um
173	20XS	200	3	25 ms	4x4	49,987	^{90}Sr	150 um

TABLE 31. 7/11/17: For use in determining Calibration Constants

#	Obj.	EM Gain	PreAmp	Exp.	Binning	# Images	Source	CsI
174	20XS	200	3	25 ms	4x4	10,000	dark	none
175	20XS	200	3	25 ms	4x4	49,983	^{90}Sr	150 um
176	20XS	200	3	25 ms	4x4	49,409	^{90}Sr	150 um
177	20XS	200	3	25 ms	4x4	49,361	^{90}Sr	150 um
178	20 XS	200	3	25 ms	4x4	49,921	^{90}Sr	150 um

TABLE 32. 7/20/17: For use in verifying Calibration Constants

#	Obj.	EM Gain	PreAmp	Exp.	Binning	# Images	Source	CsI
179	20XS	200	3	25 ms	4x4	9,989	dark	none
180	10XS	200	3	25 ms	4x4	10,000	^{241}Am	150 um
181	10XS	200	3	25 ms	4x4	10,000	^{241}Am	150 um
182	10XS	200	3	25 ms	4x4	10,000	^{241}Am	150 um

TABLE 33. 7/20/17: For use in determining Spacial Resolution

#	Obj.	EM Gain	PreAmp	Exp.	Binning	# Images	Source	CsI
183	10XS	200	3	25 ms	4x4	5,000	Light + ^{137}Cs - L Column	150 um
184	10XS	200	3	25 ms	4x4	25,000	^{137}Cs - L Column	150 um
185	10XS	200	3	25 ms	4x4	24,996	^{137}Cs - L Column	150 um
186	10XS	200	3	25 ms	4x4	5,000	light + ^{137}Cs - S Column	150 um
187	10XS	200	3	25 ms	4x4	24,998	^{137}Cs - S Column	150 um
188	10XS	200	3	25 ms	4x4	24,998	^{137}Cs - S Column	150 um

TABLE 34. 7/24/17: For use in determining Spacial Resolution

#	Obj.	EM Gain	PreAmp	Exp.	Binning	# Images	Source	CsI
189	10XS	200	3	25 ms	4x4	19,000	dark	none
190	10XS	200	3	25 ms	4x4	4,999	Light - L Column	150 um
191	10XS	200	3	25 ms	4x4	49,859	^{14}C - L Column	150 um
192	10XS	200	3	25 ms	4x4	49,855	^{14}C - L Column	150 um
193	10XS	200	3	25 ms	4x4	5,000	light - S Column	150 um
194	10XS	200	3	25 ms	4x4	48,432	^{14}C - S Column	150 um
195	10XS	200	3	25 ms	4x4	48,253	^{14}C - S Column	150 um

TABLE 35. Table Template

#	Obj.	EM Gain	PreAmp	Exp.	Binning	# Images	Source	CsI