Table 1. A table of stable isotopes of titanium and their activation cross sections when exposed to thermal neutrons.

Isotope	**Abundance (%)**	**Cross Section (barns)**	**Product**	**Half-life (min)**
^{46}Ti	8.0	0.59	^{47}Ti	stable
^{47}Ti	7.3	1.7	^{48}Ti	stable
^{48}Ti	73.8	7.84	^{49}Ti	stable
^{49}Ti	5.5	2.2	^{50}Ti	stable
^{50}Ti	5.4	0.179	^{51}Ti	5.77

Table 2. A table of stable isotopes of titanium and their activation cross sections via (n,p) reactions at a neutron energy of 5 MeV.

Isotope	**Abundance (%)**	**Cross Section at 5 MeV (mb)**	**Product**	**Half-life (hrs)**
^{46}Ti	8.0	90.47	^{46}Sc	2010.72
^{47}Ti	7.3	61.40	^{47}Sc	80.38
^{48}Ti	73.8	0.14	^{48}Sc	43.67
^{49}Ti	5.5	5.11	^{49}Sc	0.95

Table 3. Descriptions of all Ti samples used in the radio-assay for this work. Sample IDs are matched to counting results given in the tables below.

ID	**Grade**	**Type**	**Dimensions (inches)**	**Quantity**	**Total Mass (kg)**
Ti1	CP1	Plate	2.5×6×0.375	4	1.873
Ti2	CP2	Plate	4×6×0.188	20	7.55
Ti3	CP2	Plate	1.25×6×0.358	8	1.546
Ti4	CP1	Plate	4×6×0.188	18	7.34
Ti5	CP1	Plate	4×6×0.188	16	6.51
Ti6	CP1	Plate	4×6×0.188	20	7.978
Ti6-A	CP1	Plate	4×6×0.188	9	3.586
Ti7	CP1	Plate	1.875×6×1	8	7.201
Ti8	CP1	Sheet	4×6×0.0625	40	4.399
Ti9	CP1	Wire	0.0625 dia. x 6 long	780	4.189

Table 4. Radioactivity assay results for 7 different CP1 Ti samples. All reported errors are at $\pm 1\sigma$; all upper limits are at 90% CL. The samples Ti6 and Ti7 were used as the bulk materials for the construction of LUX cryostats. Samples Ti8 and Ti9 were used in small quantities for fabricating peripheral parts and for welding, respectively.

ID	Facility	Counting Period	^{238}U (mBq/kg)	^{232}Th (mBq/kg)	^{40}K (mBq/kg)	^{46}Sc (mBq/kg)
Ti1	Oroville	Feb 2008	<2.5	<1.6	<6.2	4.8
Ti4	LBF	Jun 2008	<3.8	<2.8	<9.3	3.0
	LBF	Oct 2010	<6.3 (e) <1.3 (l)	<1.2	<9.3	
Ti5	SOLO	2008	<2.5 (l)	<0.8 (l)		<0.35
Ti6	Oroville	Sep 2008	6.2±1.2 (e) <0.19 (l)	<0.24	<0.93	23±1
Ti6-A	LBF	Aug 2011	<11.3 (e) <0.25 (l)	<1.6	<9.3	
Ti7	Oroville	Jan 2009	<0.25	<0.2	<1.2	2.5
Ti8	Oroville	Sep 2009	10±3.8 (e) 2.4±0.5 (l)	<0.8 (e) 2.8±0.4 (l)	<1.9	6±1
Ti9	Oroville	Sep 2009	15±3.8 (e) 1.9±0.4 (l)	8.1±1.2 (e) 5.7±0.8 (l)	7.4±1.9	

Table 5. Radioactivity assay results for two different CP2 Ti samples. All reported errors are at $\pm 1\sigma$; all upper limits are at 90% CL.

ID	Facility	Counting Period	^{238}U (mBq/kg)	^{232}Th (mBq/kg)	^{40}K (mBq/kg)	^{46}Sc (mBq/kg)
Ti2	SOLO	2008	<140 (l)	70±5 (l)	<9.3	
Ti3	SOLO	2008	<27	<22		<23
	Oroville	Nov 2010	37±12 (e) 7.4±1.2 (l)	5.7±2 (e) 16±2 (l)	<5	