

TRIUMF ISAC Beam Development Plan

Status as of April 11, 2014

Target	Ion Source	Element	Isotope	min. req. yield	estbl. yield		Exp. Area	Prop./Lol	EEC priority	Dvlpmt Priority	Planned Development		
				(on tgt.)	at yield station	comment on estbl. yield	(LE, ME, HE)				year	what	result
Nb	FEBIAD	Br	70Br	2.00E+03		CSB cntm.	HE	S1207	1	I			
Nb	FEBIAD	Br	82mBr	1.00E+06			LE	S1066	2	II			
Nb	FEBIAD	Br	70Br	1.00E+04			LE	S961	2	II			
Nb	FEBIAD	Se	70Se	2.00E+04		CSB cntm.	HE	S1207	1	I			
Nb	SIS	Rb	76Rb	1.50E+07	8.50E+07	CSB cntm.	HE	S1144	M	II	2012	CSB	~1e4 delivered to TIGRESS
Nb	SIS/RILIS	Mn	60Mn	1.00E+05			LE	S954	2	II	2012	RILIS scheme	05/2012: 1e3
Nb	SIS/RILIS	Y	78Y	1.00E+03			LE	S1326	H	I	2012	RILIS scheme	
SiC	FEBIAD	F	18F	1.00E+07	1.00E+09	only on SiC#16	HE	S1287	H	I	2012	Al(CH3)3 test	04/2012: no increase obsvd.
SiC	FEBIAD	F	17F	1.00E+09	4.80E+06	only on SiC#16	ME	S946	1	I	2012	Al(CH3)3 test	04/2012: no increase obsvd.
SiC	FEBIAD	O	14O	1.00E+05	4.00E+05	only on SiC#16	LE	S1140	1	I	2015	new FEBIAD	
SiC	FEBIAD	O	14O	1.00E+05	4.25E+05	only on SiC#16	ME	S924	1	I	2015	new FEBIAD	
SiC	FEBIAD	O	15O	1.60E+06	8.00E+06	only on SiC#16	HE	S900	1	I	2015	new FEBIAD	
SiC	FEBIAD	F	17F	5.00E+06	4.80E+06	only on SiC#16	HE	S1299	2	II	2012	Al(CH3)3 test	04/2012: no increase obsvd.
SiC	FEBIAD	F	18F	1.00E+08	1.00E+09	only on SiC#16	ME	S1123	M	II	2012	Al(CH3)3 test	04/2012: no increase obsvd.
SiC	FEBIAD-CTL	Ne	18Ne	2.50E+07	7.90E+06	only on SiC#16	HE	S1213	H	I	2015	new FEBIAD	
SiC	FEBIAD-CTL	Ne	18Ne	5.00E+06	2.90E+06	only on SiC#16	ME	S870	1	I	2015	new FEBIAD	
SiC	FEBIAD-CTL	Ne	18Ne	5.00E+06	7.90E+06	only on SiC#16	HE	S1110	2	II	2015	new FEBIAD	
SiC	FEBIAD-CTL	Ne	18Ne	1.00E+07	7.90E+06	only on SiC#16	HE	S874	2	II	2015	new FEBIAD	
SiC	FEBIAD-CTL	Ne	19Ne	1.00E+08	6.90E+07	only on SiC#16	HE	S811	2	II	2015	new FEBIAD	
SiC	IG-LIS	Al	25Al	1.00E+07			ME	S922	1	I	2013	yield	4/2013: 5e3
SiC	IG-LIS	Al	25Al	1.00E+05			ME	S923	1	I	2013	yield	4/2013: 5e3
SiC	IG-LIS	Al	22-25Al	1.00E+03		Na contm.	LE	S1191	2	II	2013	yield	4/2013: 24Al:1.66e2, 25Al: 5e3
SiC	IG-LIS	Mg	20Mg	1.00E+03	5.00E+03	Na contm.	LE	S1329	H	I	2013	yield	5/2013: 5.4e1
SiC	IG-LIS	Mg	23Mg	1.00E+07	1.00E+09	Na contm.	HE	S1210	2	II	2013	yield	5/2013: 2.2e7 w/ IG-LIS
SiC	IG-LIS	Mg	20Mg	1.00E+02	5.00E+03	Na contm.	LE	S1242	M	II	2013	yield	5/2013: 5.4e1
SiC	SIS/RILIS	Mg	20Mg	5.00E+01	5.00E+03	Na contm.	HE	S1449	1	I	2014	yield/separation	
Ta	IG-LIS	Be	7Be	5.00E+07	1.40E+07		ME	S1025	1	I	2015	rot. beam	
Ta	IG-LIS	Be	7Be	1.00E+07	1.40E+07		ME	S1452	1	I	2015	rot. beam	
Ta	IG-LIS	Ag	110Ag	1.00E+06	2.50E+04	250 day isomer	LE	S1550	1	I	2015		
Ta	IG-LIS	Sn	98-104Sn	1.00E+02		lrg. contm.	LE	S1413	1	I	2014		

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				(on tgt.)	at yield station	comment on estbl. yield	(LE, ME, HE)				year	what	result
Ta	IG-LIS	Pr	140-1Pr	1.00E+06		lrg. contm.	LE	S1368	1	I			Pr132,3,5 from surface source
Ta	IG-LIS	Tb	146Tb	1.00E+06	3.00E+06	lrg. contm.	LE	S1142	2	II			
Ta	IG-LIS	Ho,Dy	163Ho, 163Dy	1.00E+05		lrg. contm.	LE	S1366	1	I	2015		Ho151-7 & Dy148-57 laser scheme established
Ta	SIS/RILIS	Be	14Be	1.00E+02			LE	S1158	2	II			
Ta	SIS/RILIS	Be	14Be	1.00E+01			LE	S1054	2	II			
Ta	SIS/RILIS	Be	12Be	1.50E+03	9.40E+03	unusual tgt. oper.	HE	S1506	H	I	2014	yield	
Ta	SIS/RILIS	Sn	108-112Sn	6.00E+03	5.00E+05	CSB cntm.	HE	S1009	2	II			
TaC	SIS/RILIS	In	98-103In	5.00E+02			LE	S1302	H	I			
TiC	FEBIAD	Ar	31Ar	1.00E+02			LE	S1333	2	II		yield	
TiC	FEBIAD	Ar	34Ar	3.00E+05	2.90E+04		LE	S909	2	II		yield	
TiC	IG-LIS	Ca	36Ca	1.00E+02	2.80E+03	lrg. contm.	LE	S1242	M	II		yield	
TiC	IG-LIS	Ca	35-37Ca	1.00E+02	2.80E+03	lrg. contm.	LE	S1430	2	II		yield	
Th	SIS/RILIS	Ca	53Ca	1.00E+02			LE	S1112	H	I		offline devlpmt.	
Th	SIS/RILIS	Ca	53-56Ca	1.00E+03	7.00E+02	52Ca	LE	S1325	H	I		offline devlpmt.	
Th	SIS/RILIS	Ca	50,52Ca	1.00E+03	1e5,7e2	CSB cntm.	HE	S1261	1	I		offline devlpmt.	current yields insufficient for ISAC-II
Th	SIS/RILIS	Ca	50-54Ca	2.00E+03		CSB cntm.	HE	S993	2	II		offline devlpmt.	current yields insufficient for ISAC-II
ThO	FEBIAD	Sc	53Sc	1.00E+02			LE	S1112	H	I	2015	ScO	
ThO	FEBIAD	Lu	184-7Lu	1.00E+01			LE	S921	2	II			
ThO	FEBIAD	C	20,22C	1.00E+02			LE	S1283	1	I			07/2012: no C observed from UO/FEB
ThO	FEBIAD	C	19C	1.00E+03		CSB cntm.	HE	S1187	1	I			07/2012: no C observed from UO/FEB
UC	FEBIAD	O	20O	1.00E+05		CSB cntm.	HE	S1187	1	I		yield	current yields insufficient for ISAC-II
UC	FEBIAD	O	22O	1.00E+03		CSB cntm.	HE	S1187	1	I		yield	current yields insufficient for ISAC-II
UC	FEBIAD	O	21-24O	1.00E+01			LE	S1365	2	II	2014	yield	
UC	FEBIAD	Ar	46-48Ar	1.00E+03			LE	S1290	H	I	2015	yield	UO/FEBIAD not successful
UC	FEBIAD	F	23-29F	1.00E+01			LE	S1553	H	I	2015	yield	
UC	FEBIAD	Ne	26-32Ne	1.00E+01			LE	S1553	H	I	2015	yield	
UC	FEBIAD	Ne	26-30Ne	2.00E+02			LE	S1240	H	I	2015	yield	
UC	FEBIAD	Kr	96-99Kr	3000/500/5			LE	S1548	H	I	2015	yield	
UC	FEBIAD	As	86,88,90As	5.00E+04			LE	S1334	2	II		yield	
UC	FEBIAD	Se	84-88Se	5.00E+04		CSB cntm.	HE	S1334	2	II		yield	
UC	FEBIAD	I	128I	1.00E+06			LE	S1066	2	II			
UC	IG-LIS	Ag	126-130Ag	1.00E+01		Cs contm.	LE	S1542	H	I	2015	yield	
UC	IG-LIS	Tl	211-213Tl	100/10/1			LE	S1549	H	I	2015	yield	
UC	IG-LIS	Hg	208-210Hg	????			LE	S1549	H	I	2015	yield	
UC	IG-LIS	At	198-218At	1.00E+03	2.00E+03	Fr contm.	LE	S1237	H	I	2013	yield	12/2013:UC/IG-LIS: low At yields
UC	IG-LIS	At	221At	1.00E+04		Fr contm.	LE	S929	H	I	2013	yield	12/2013:UC/IG-LIS: low At yields
UC	IG-LIS	At	221-4At	1.00E+03		Fr contm.	LE	S1397	H	I	2013	yield	12/2013:UC/IG-LIS: low At yields

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				(on tgt.)	at yield station						year	what	result
UC	IG-LIS	Ac	217-32Ac	1.00E+03		Fr contm.	LE	S1397	H	I	2015	ThO2	12/2013: IG-LIS 220Ac 6e1
UC	IG-LIS	In	130-135In	1.00E+01		Cs contm.	LE	S1415/ S1519/ S1547	1	I	2015	yield	
UC	IG-LIS	At	221-4At	1.00E+03	3.00E+03	Fr contm.	LE	S1241	2	II	2013	yield	12/2013:UC/IG-LIS: low At yields
UO/UC	SIS	K	49-53K	1.00E+02			LE	S1112	H	I	2012	yield	08/2012: UO/F: 49/50/51K: 1.6e4/2.1e3/2.6e2
UC	SIS	K	53-54K	1.00E+01			LE	S1330	H	I	2014/15	yield	
UC	SIS	Na	30-33Na	2.00E+02	9.00E+00	32Na	LE	S1240	H	I	2014	yield	
UC	SIS	Fr	211Fr	5.00E+08	1.00E+08	2uA UCx	LE	S1324	1	I			2013: 1e9 established
UC	SIS/RILIS	Cd	124-32Cd	2.00E+02		Cs contm.	LE	S1294	1	I	2013	yield	12/2013: IG-LIS: 128/129/130Cd:1e3/160/60
UC	SIS/RILIS	Cd	131,132Cd	1 / 0.1		Cs contm.	LE	S1503/ S1547	1	I	2014	yield	12/2013: IG-LIS: 128/129/130Cd:1e3/160/60
UC	SIS/RILIS	Sn	130-137Sn	1.00E+04		CSB cntm.	HE	S1187	1	I	2015	UCx n- conv.	
UC	SIS/RILIS	Zn	78-80Zn	1.00E+04		CSB cntm.	HE	S1369	1	I		yield	
UC	SIS/RILIS	Ni	70-78Ni	1.00E+01			LE	S1383	1	I	2015	UCx n- conv.	
ZrC	SIS/RILIS	Ga	62Ga	1.00E+02	9.60E+03	CSB cntm.	HE	S1185	2	II			
ZrC	FEBIAD	Ga	62,66Ga	1e4,1e5	9.60E+03	62Ga	LE	S1332	H	I			
ZrC	FEBIAD-CTL	Kr	76Kr	5.00E+04	8.50E+07	CSB cntm.	HE	S1293	H	I			
SiC	ECRIS	N	13N	1.00E+09	8.00E+02		ME	S805	2	III			
SiC	ECRIS	O	14O	5.00E+05	4.00E+05	only SiC#16	HE	S1299	2	III			
NiO	ECRIS	C	11C	1.00E+08			ME	S983	2	III			
?	ECRIS	P	30P	1.00E+07			ME	S1108	2	III			
?	ECRIS	S	31S	7.00E+07			ME	S1364	2	III			
?	ECRIS	O	15O	1.00E+11			ME	S813	1	III			