

**LEFT-ARM ONLY on this page:  $A_x$ ,  $A_z$  Production Run Sheet**

Date: 13 May 2009	Author: Higinbotham
Beam Energy: 2425 GeV	Using Pol $^3\text{He}$ Cell: Y/N, Long, Tran, or Vertical
LHRS: 2.3	BigBite
Momentum (GeV/c): Polarity: "-"	Current (A): 518 Polarity: Positive
Angle: 17° Not Moved. Sieve Plate: IN or OUT?	Angle: Not Moved. 75°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
2181	13:22	13:46	$^3\text{He}$	7.5A	4M	15%		✓
2182	13:47	14:11	$^3\text{He}$	7.5A	4.5M	15%		
2183 → 2184	14:20	15:00	$^3\text{He}$	7.5A	5M	8%	Deadtime Monitor Fixed	
2185	15:00	15:30	$^3\text{He}$	7.5A	5M	8%		✓
2186	15:30		$^3\text{He}$	"	"	8%		✓
2186								
2187	16:05	16:34	$^3\text{He}$	7.5A	5M	7%		
2188	16:35	16:40	"	"	0.6M	"		
2189	16:40	16:52	"	"	1.8M	"		
2190	16:55	17:29	"	"	5M	"		
2191	17:30	18:00	"	"	5M	8%		
2192	18:00	18:05	"	"	0.7M	"		

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
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Date: 13 May 2009	Author: Higinbotham
Beam Energy: 2425 GeV	Using Pol $^3\text{He}$ Cell: Y/N, Long, Tran, or Vertical
RHRS: 2.25	BigBite
Momentum (GeV/c): Polarity: "-"	Current (A): 518 Polarity: Positive
Angle: 17° Not Moved. Sieve Plate: IN or OUT?	Angle: Not Moved. 75°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
21081	13:22	13:46	$^3\text{He}$	7.5A	2.5M	17%		✓
21082	13:47	14:14	$^3\text{He}$	7.5A	2.8M	12%		
21083 → 21084	14:20	15:00	$^3\text{He}$	7.5A	3M	12%		
21085	15:00	15:30	$^3\text{He}$	"	"	12%	Ontarm Problem?! by start	✓
21086	15:30					17%		
21086								
21087	16:05	16:34	"	"	3M	11%		
21088	16:35	16:40	"	"	0.37M	"		
21089	16:40	16:52	"	"	1.1M	"		
21090	16:55	17:29	"	"	3M	"		
21091	17:30	18:00	"	"	3M	11%		✓
21092	18:00	18:05	"	"	0.7M	"		

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### LEFT-ARM ONLY on this page: Ax, Az Production Run Sheet

Date: 13 May 2009	Author: BLAINE NORUM
Beam Energy: 2425 GeV	Using Pol <sup>3</sup> He Cell: Y/N, Long, Tran, or Vertical
LHRS: 2.3	BigBite
Momentum (GeV/c):	Polarity: "-" Current (A): 518 Polarity: Positive
Angle: 17° Not Moved. Sieve Plate: IN or OUT ?	Angle: Not Moved. 75°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
2193	1818	1841			-	8%		✓
2194	1841	1912			5M	"		✓
2195	1913	1941			5M	"		✓
2196	1942	2010			5M	7%		✓
2197	2010	2039			5M			✓
2198	2040	2109			5M	7%		✓
2199	2110	2138			5M	"		✓
2200	2139	2210			5M	8%		✓
2201	2210	2244			5M	"		✓
2202	2245	2317			5M	8		✓
2203	2317	2345			5M	8		✓
2204	2345	0114			5M	8		✓

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### RIGHT-ARM ONLY on this page: Ax, Az Production Run Sheet

Date: 13 May 2009	Author: BLAINE NORUM
Beam Energy: 2425 GeV	Using Pol <sup>3</sup> He Cell: Y/N, Long, Tran, or Vertical
RHRS: 2.25	BigBite
Momentum (GeV/c):	Polarity: "-" Current (A): 518 Polarity: Positive
Angle: 17° Not Moved. Sieve Plate: IN or OUT ?	Angle: Not Moved. 75°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
21093	1818	1841			-	12%	QA off	✓
21094	1841	1912			3M	"	QA on	✓
21095	1913	1941			3M	"		✓
21096	1942	2010			3M	12%		✓
21097	2010	2039			3M			✓
21098	2040	2109			3M	12%		✓
21099	2110	2138			3M	"		✓
21100	2139	2210			3M	12%		✓
21101	2210	2244			3M	"		✓
21102	2245	2317			3M	12		✓
21103	2317	2345			3M	12		✓
21104	2345	0115			3M	12		✓

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Date:		Author:	
Beam Energy:	GeV	Using Pol $^3\text{He}$ Cell: Y/N, Long, Tran, or Vertical	
LHRS		BigBite	
Momentum (GeV/c):	Polarity: "-"	Current (A): 518	Polarity: Positive
Angle: 17° Not Moved.	Sieve Plate: IN or OUT ?	Angle: Not Moved.	

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
2205	0.16	0.45		8 $\mu$	5M	8		✓
2206	0.46	1.26		8 $\mu$	5M	8		✓
2207	1.30	1.37		8 $\mu$	1.1M	8	<u>Big Bite</u>	✓
2208	1.40	1.48		8 $\mu$	1.04M	8		✓
<del>2209</del>	1.51			8 $\mu$		8	Junk	
2210	1.57	2.05		8 $\mu$	1.07M	8		✓
2211	2.02	2.14		8 $\mu$	1M	8		✓
2212	2.19	2.47		8 $\mu$	5M	8	production	✓
2213	2.48	3.17		8 $\mu$	5M	8		✓
2214	3.18	3.46		8 $\mu$	5M	8		✓
2215	3.47	4.16		8 $\mu$	5M	8		✓
2216	4.17	4.48		8 $\mu$	5M	8		✓

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Date:		Author:	
Beam Energy:	GeV	Using Pol $^3\text{He}$ Cell: Y/N, Long, Tran, or Vertical	
RHRS		BigBite	
Momentum (GeV/c):	Polarity: "-"	Current (A): 518	Polarity: Positive
Angle: 17° Not Moved.	Sieve Plate: IN or OUT ?	Angle: Not Moved.	

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
21105	0.16	0.45		8 $\mu$	3M	12		✓
21106	0.45	1.26		8 $\mu$	3M	12		✓
21107	1.30	1.37		8 $\mu$	0.7M	12		✓
21108	1.40	4.48		8 $\mu$	0.6M	12		✓
<del>21109</del>	1.51			8 $\mu$	0.	12	Junk	✓
21110	1.57	2.05		8 $\mu$	0.67	12		✓
21111	2.02	2.14		8 $\mu$	0.8M	12		✓
21112	2.19	2.47		8 $\mu$	3M	12		✓
21113	2.48	3.17		8 $\mu$	3M	12		✓
21114	3.18	3.46		8 $\mu$	3M	12		✓
21115	3.47	4.16		8 $\mu$	8M	12		✓
21116	4.17	3.1		8 $\mu$	3M	12		✓

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Date: 14 May 2009	Author: Higinbotham
Beam Energy: 24.25 GeV	Using Pol $^3\text{He}$ Cell: Y/N Long, Tran, or Vertical
LHRS Momentum (GeV/c): 2300	BigBite Current (A): 518
Angle: 17° Not Moved. Sieve Plate: IN or OUT?	Angle: Not Moved. 75°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
2217	4:50	5:19		8 $\mu$	5M	8		
2218	5:58	6:27		8 $\mu$	5M	8		
2219	6:27	6:57		8 $\mu$	5M	8		
2220	6:59	8:0		8 $\mu$	0.09	8		
→ Down for Beam Studies ←								
2227			Optics	25 $\mu\text{A}$			} Q1 off	
2228	15:08	15:10	$^3\text{He}$	75 $\mu\text{A}$	200k			
2229	15:10	15:15	$^3\text{He}$	75 $\mu\text{A}$	500k	2% (?)		
→ Down for Moller								
2231	15:58	15:58	None	-			Test / No Target	
2232	16:02		None		(0 or -6%)		Test / No Target	
2233	18:38	18:41	optics	2 $\mu\text{A}$	430k	6	optics run to check raster	

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Date: 14 May 2009	Author: Higinbotham
Beam Energy: 24.25 GeV	Using Pol $^3\text{He}$ Cell: Y/N Long, Tran, or Vertical
RHRS Momentum (GeV/c): 2250	BigBite Current (A): 518A
Angle: 17° Sieve Plate: IN or OUT?	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
21117	4:50	5:18		8 $\mu$	3M	12		
21118	5:58	6:27		8 $\mu$	3M	12		
21119	6:27	6:57		8 $\mu$	3M	12		
21120	6:59	8:0		8 $\mu$	0.09	12		
→ Down for Moller								
21135			Optics	2.5 $\mu\text{A}$	200k		} Q1 off	
21136	15:08	15:10	$^3\text{He}$	7.5 $\mu\text{A}$	200k			
21137	15:10	15:15	$^3\text{He}$	7.5 $\mu\text{A}$	500k	10%		
→ Down for Moller								
21138	15:58	15:58	None	-			Test / No Target	
21139	16:02		None			0%	Test / No Target	
21140	18:38	18:41	optics	2 $\mu\text{A}$	1.7k	2	optics run to check raster	

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Date: 14 May 2007	Author: M. Mezzana
Beam Energy: GeV	Using Pol $^3\text{He}$ Cell: Y/N, Long, Tran, or Vertical
LHRS	BigBite
Momentum (GeV/c): Polarity: "-"	Current (A): Polarity: Positive
Angle: 17 Sieve Plate: IN or OUT?	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
2234	18:42	18:45	optics	2 $\mu\text{A}$	554k	6	Raster check	
2235	18:50	18:54	$^3\text{He}$	2 $\mu\text{A}$	118k	6	Right arm problem = low rates	
2236	18:56	19:04	$^3\text{He}$	2 $\mu\text{A}$	417k	0	Right arm problem = low rates	
2237	19:08	19:09	$^3\text{He}$	2 $\mu\text{A}$	27.2k	0	"	
2238			JUNK					
2239	19:29	19:37	$^3\text{He}$	2 $\mu\text{A}$	524k	0	HV pb fixed during this run	
2240	19:39	20:04	$^3\text{He}$	2 $\mu\text{A}$	5M	9	↳ Back to production	OK
2241	20:07	20:36	$^3\text{He}$	8 $\mu\text{A}$	5M	8		OK
2242	20:38	21:05	$^3\text{He}$	8 $\mu\text{A}$	5M	10		OK
2243	21:07	21:37	$^3\text{He}$	8 $\mu\text{A}$	4.1M	4	PS3 = 3!!	OK
2244	21:39	22:15	$^3\text{He}$	8 $\mu\text{A}$	5M	5		OK
2245	22:18	22:30	$^3\text{He}$	8 $\mu\text{A}$	1.41	5	BPM strange signal	

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Date: 14 May 2007	Author: M. Mezzana
Beam Energy: GeV	Using Pol $^3\text{He}$ Cell: Y/N, Long, Tran, or Vertical
RHRS	BigBite
Momentum (GeV/c): Polarity: "-"	Current (A): Polarity: Positive
Angle: 17° Sieve Plate: IN or OUT?	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
21191	18:42	18:45	optics	2 $\mu\text{A}$	2.2k	2	Raster check -	
21142	18:50	18:54	$^3\text{He}$	2 $\mu\text{A}$	1.8k	0	Very low rates	
21143	18:56	19:04	$^3\text{He}$	2 $\mu\text{A}$	5.8k	0	Very low rates ⇒ still check reboost crates	
21144	19:07	19:08	$^3\text{He}$	2 $\mu\text{A}$	0.3k	0	"	
21145			JUNK					
21146	19:28	19:37	$^3\text{He}$	2 $\mu\text{A}$	24k	2	Problem HV fixed during this run	
21147	19:37	20:04	$^3\text{He}$	2 $\mu\text{A}$	3.1M	13	↳ Back to production	OK
21148	20:07	20:36	$^3\text{He}$	8 $\mu\text{A}$	3.1M	13		OK
21149	20:38	21:05	$^3\text{He}$	8 $\mu\text{A}$	3.1M	13		OK
21150	21:07	21:37	$^3\text{He}$	8 $\mu\text{A}$	3.55M	12		OK
21151	21:39	22:15	$^3\text{He}$	8 $\mu\text{A}$	3.98M	13		OK
21152	22:18	22:30	$^3\text{He}$	8 $\mu\text{A}$		12	BPM strange signal	

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Date: 14 May 2009	Author: M. Mezziane
Beam Energy: GeV	Using Pol $^3\text{He}$ Cell: Y/N, Long, Tran, or Vertical
LHRS	BigBite
Momentum (GeV/c): Polarity: "-"	Current (A): Polarity: Positive
Angle: 17 Sieve Plate: IN or OUT?	Angle: 35

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay OK?
2246	22:31	23:02	$^3\text{He}$	8 $\mu\text{A}$	5M	5		OK
2247	23:10	23:45	$^3\text{He}$	8 $\mu\text{A}$	5M	5		OK
2248	23:48	00:25	$^3\text{He}$	8 $\mu\text{A}$	5M	4-5		OK
2249	00:27	01:02	$^3\text{He}$	8 $\mu\text{A}$	5M	3		OK
2250	01:04	01:32	$^3\text{He}$	10 $\mu\text{A}$	5M	8		OK
2251	01:37	02:16	$^3\text{He}$	10 $\mu\text{A}$	5M	7	Lumi HVs lowered before run	OK
2252	02:17	02:45	$^3\text{He}$	10 $\mu\text{A}$	5M	8	*	OK
2253	02:46	03:17	$^3\text{He}$	10 $\mu\text{A}$	5M	7	New HAPPEX run: 31374	OK
2254	03:18	03:46	$^3\text{He}$	10 $\mu\text{A}$	5M	8	NMR between runs: 62.6%	OK
2255	03:48	04:15	$^3\text{He}$	10 $\mu\text{A}$	5M	7		OK
2256	04:16	04:46	$^3\text{He}$	10 $\mu\text{A}$	5M	7		OK
2257	04:48	05:16	$^3\text{He}$	10 $\mu\text{A}$	5M	7		OK

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Date: 14 May 2009	Author: M. Mezziane
Beam Energy: GeV	Using Pol $^3\text{He}$ Cell: Y/N, Long, Tran, or Vertical
RHRS	BigBite
Momentum (GeV/c): Polarity: "-"	Current (A): Polarity: Positive
Angle: 17 Sieve Plate: IN or OUT?	Angle: 35

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay OK?
21153	22:31	23:02	$^3\text{He}$	8 $\mu\text{A}$	3.98 M	13		OK
21154	23:10	23:45	$^3\text{He}$	8 $\mu\text{A}$	3.96 M	12		OK
21155	23:48	00:25	$^3\text{He}$	8 $\mu\text{A}$	3.98 M	12		OK
21156	00:26	01:02	$^3\text{He}$	8 $\mu\text{A}$	3.98 M	13		OK
21157	01:03	01:33	$^3\text{He}$	10 $\mu\text{A}$	3.95 M	15		OK
21158	01:36	02:16	$^3\text{He}$	10 $\mu\text{A}$	4.1 M	14	Lumi HVs lowered before run	OK
21159	02:16	02:45	$^3\text{He}$	10 $\mu\text{A}$	3.92 M	15		OK
21160	02:46	03:17	$^3\text{He}$	10 $\mu\text{A}$	3.96 M	15	New HAPPEX run: 31374	OK
21161	03:18	03:46	$^3\text{He}$	10 $\mu\text{A}$	3.96 M	15	NMR between runs: 62.6%	OK
21162	03:47	04:15	$^3\text{He}$	10 $\mu\text{A}$	3.96 M	15		OK
21163	04:16	04:47	$^3\text{He}$	10 $\mu\text{A}$	3.96 M	14		OK
21164	04:47	05:16	$^3\text{He}$	10 $\mu\text{A}$	3.96 M	15		OK

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Date: 15 May 2009	Author: D. Parno
Beam Energy: 2.4 GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="radio"/> IN, <input checked="" type="radio"/> Long, Tran, or Vertical
LHRS Momentum (GeV/c): 2.3      Polarity: "-" Angle: 14.5      Sieve Plate: IN or <input checked="" type="radio"/> OUT?	BigBite Current (A):      Polarity: Positive Angle:

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
2258	05:17	05:44	<sup>3</sup> He	10	5.01M	7		✓
2259	05:46	06:18	<sup>3</sup> He	10	5.00M	8	Cerenkov ADC G shape changed.	✓
2260	06:19	06:47	<sup>3</sup> He	10	5.01M	8		✓
2261	06:49	07:18	<sup>3</sup> He	10	5.01M	8	New HAPPEX run: 31375	✓
2262	07:20	07:50	<sup>3</sup> He	10	5.01M	8		✓
2263	07:52	8:20	<sup>3</sup> He	10	5.01M	7	NMR b/c runs: 62.0%	✓
2264	8:20	8:52			5.01M		HALOG ENTRY RE ROC's	✓
2265	8:52	9:23			5.00M			✓
2266	9:24	9:50			3.34M			
2267	9:51	9:52	<del>OPTICS</del>		643			
2268	9:54	9:59	OPTICS				BM Calib	
2269	10:13	10:15	<sup>3</sup> He		X			

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Date: 15 May 2009	Author: D. Parno
Beam Energy: 2.4 GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="radio"/> IN, <input checked="" type="radio"/> Long, Tran, or Vertical
RHRS Momentum (GeV/c): 2.25      Polarity: "-" Angle: 16.0      Sieve Plate: IN or <input checked="" type="radio"/> OUT?	BigBite Current (A):      Polarity: Positive Angle:

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
21165	05:17	05:45	<sup>3</sup> He	10	3.95M	15		✓
21166	05:45	06:18	<sup>3</sup> He	10	3.95M	15		✓
21167	06:19	06:47	<sup>3</sup> He	10	3.96M	15		✓
21168	06:49	07:19	<sup>3</sup> He	10	3.96M	15	New HAPPEX run: 31375	✓
21169	07:19	07:50	<sup>3</sup> He	10	3.96M	15	NMR b/c runs: 62.0%	✓
21170	07:51	8:20	<sup>3</sup> He	10	4.01M	15		✓
21171	8:20	8:52			3.95M			✓
21172	8:52	9:23			3.96M			
21173	9:24	9:50			2.64M			
21174	9:51	9:52			818			
21175	9:54	9:59	OPTICS				BM Calib	
21176	10:13	10:15	<sup>3</sup> He		0.35M			

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Date: 5/15/09	Author: NORUM
Beam Energy: 2.4 GeV	Using Pol <sup>3</sup> He Cell: Y/N, Long, Tran, or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.3	Polarity: "-" Current (A):
Angle: 14.5	Sieve Plate: IN or OUT? Angle: Polarity: Positive

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
2270	1020	1036	<sup>3</sup> He	10	2.45M		Run cannot be replayed!	✗
2271	1037	1052	"	10	2.9M			✓
2272	1054	1124	"	"	5M		1/2 plate in	
2273	1125	1200	"	"	1.7			✓
2274	1200	1229	"	"	5M			✓
2275	1230	1300	"	"	5M			✓
2276	1301	1332	"	"	5M			✓
2277	1333	1404	"	"	5M	8%		✓
2278	1405	1433	"	"	5M	7		✓
2279	1435	1504			5M	7		✓
2280	1505	1532			5M			✗
2281	1533	16:02	"	"	5M			✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

**RIGHT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet**

Date: 5/15/09	Author: NORUM
Beam Energy: 2.4 GeV	Using Pol <sup>3</sup> He Cell: Y/N, Long, Tran, or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.25	Polarity: "-" Current (A):
Angle: 16.0	Sieve Plate: IN or OUT? Angle: Polarity: Positive

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
21177	1020	1036	<sup>3</sup> He	10	1.94M			✓
21178	1037	1052	"	"	2.3M			
21179	1054	1124	"	"	4M		1/2 plate in	
21180	1125	1200	"	"	1.4			
21181	1200	1229	"	"	3.9%			
21182	1230	1300	"	"	3.95M			
21183	1301	1332	"	"	4M	14%		
21184	1333	1404	"	"	4M	15%		
21185	1405	1433	"	"	4M	14		✓
21186	1435	1504			4M	15		✓
21187	1505	1532			4M			✓
21188	1533	16:02	"	"	3.96M			✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:



### LEFT-ARM ONLY on this page: $A_x, A_z$ Production Run Sheet

Date: 5/15/2009	Author: M. Mezziane
Beam Energy: GeV	Using Pol $^3\text{He}$ Cell: Y/N, Long, Tran, or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.3	Polarity: "-"
Current (A):	Polarity: Positive
Angle: 14.5	Sieve Plate: IN or OUT?

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
2282	16:10	16:42	$^3\text{He}$	10 $\mu\text{A}$	5M	7		✓
2283	16:43	17:15	$^3\text{He}$	10 $\mu\text{A}$	5M	7		✓
2284	17:17	17:48	$^3\text{He}$	10 $\mu\text{A}$	5M	8		✓
2285	17:49	18:19	$^3\text{He}$	10 $\mu\text{A}$	5M	7		✓
2286	18:21	18:53	$^3\text{He}$	10 $\mu\text{A}$	5M	8		✓
2287	19:17	19:49	$^3\text{He}$	10 $\mu\text{A}$	5M	7		✓
2288	19:52	20:23	$^3\text{He}$	10 $\mu\text{A}$	5M	7		✓
2289	20:28	20:58	$^3\text{He}$	10 $\mu\text{A}$	5M	7		✓
2290	20:57	21:29	$^3\text{He}$	10 $\mu\text{A}$	5M	7		✓
2291	20:30	22:23	$^3\text{He}$	10 $\mu\text{A}$	5M	8	Longer than usual due to several beam trips	✓
2292	22:25	22:54	$^3\text{He}$	10 $\mu\text{A}$		8		✓
2293	22:55	23:23	$^3\text{He}$	10 $\mu\text{A}$	5M	8		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### RIGHT-ARM ONLY on this page: $A_x, A_z$ Production Run Sheet

Date: 5/15/2009	Author: M. Mezziane
Beam Energy: GeV	Using Pol $^3\text{He}$ Cell: Y/N, Long, Tran, or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.25	Polarity: "-"
Current (A):	Polarity: Positive
Angle:	Sieve Plate: IN or OUT?

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
21189	16:10	16:42	$^3\text{He}$	10 $\mu\text{A}$	4.26M	15		✓
21190	16:43	17:15	$^3\text{He}$	10 $\mu\text{A}$	4.17	14		✓
21191	17:17	17:48	$^3\text{He}$	10 $\mu\text{A}$	4.11	15		✓
21192	17:49	18:20	$^3\text{He}$	10 $\mu\text{A}$	3.97	14		✓
21193	18:20	18:53	$^3\text{He}$	10 $\mu\text{A}$	3.97	15		✓
21194	19:17	19:49	$^3\text{He}$	10 $\mu\text{A}$	4.47	16	momentum = 2.225 GeV/c	✓
21195	19:52	20:23	$^3\text{He}$	10 $\mu\text{A}$	4.59	16		✓
21196	20:28	20:58	$^3\text{He}$	10 $\mu\text{A}$	4.45	18		✓
21197	20:57	21:29	$^3\text{He}$	10 $\mu\text{A}$	4.47	16		✓
21198	21:30	22:23	$^3\text{He}$	10 $\mu\text{A}$	4.47	17	Longer than usual due to several beam trips	✓
21199	22:25	22:54	$^3\text{He}$	10 $\mu\text{A}$	4.46	17		✓
21200	22:55	23:23	$^3\text{He}$	10 $\mu\text{A}$	4.52	15		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### LEFT-ARM ONLY on this page: $A_x$ , $A_z$ Production Run Sheet

Date: 5/15/2009	Author: M. Maguire
Beam Energy: GeV	Using Pol $^3\text{He}$ Cell: Y/N, Long, Tran or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.3	Polarity: "-" Current (A): Polarity: Positive
Angle: 14.5	Sieve Plate: IN or OUT? Angle:

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
2294	23:25	23:55	$^3\text{He}$	10 $\mu\text{A}$	5M	7	BHWP IN	✓
2295	23:56	00:26	$^3\text{He}$	10 $\mu\text{A}$	5M	7		✓
2296	00:28	00:58	$^3\text{He}$	10 $\mu\text{A}$	5M	7		✓
2297	00:59	01:30	$^3\text{He}$	10 $\mu\text{A}$	5M	7		✓
2298	01:32	02:01	$^3\text{He}$	10 $\mu\text{A}$	5M	8		✓
2299	02:02	02:35	$^3\text{He}$	10 $\mu\text{A}$	5M	7		✓
2300	02:37	03:06	$^3\text{He}$	10 $\mu\text{A}$	5M	8		✓
2301	03:07	03:36	$^3\text{He}$	10 $\mu\text{A}$	5M	8		✓
# 2302	03:38	04:09	$^3\text{He}$	10 $\mu\text{A}$	2.54M	8	end-of-run here 5.17 M <sup>2</sup> NMR measurement 61.7%	✓
2303	04:12	04:43	$^3\text{He}$	10 $\mu\text{A}$	5M	8		✓
2304	04:44	05:17	$^3\text{He}$	10 $\mu\text{A}$	5M	8		✓
2305	05:18	05:49	$^3\text{He}$	10 $\mu\text{A}$	5M	7		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

More Comments:

Run 2302 COA showed 2.54M, end-of-run had 5.17M

### RIGHT-ARM ONLY on this page: $A_x$ , $A_z$ Production Run Sheet

Date: 5/14/2009	Author: M. Maguire
Beam Energy: GeV	Using Pol $^3\text{He}$ Cell: Y/N, Long, Tran, or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.225	Polarity: "-" Current (A): Polarity: Positive
Angle: 16	Sieve Plate: IN or OUT? Angle:

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
2120	23:25	23:55	$^3\text{He}$	10 $\mu\text{A}$	4.46M	16	BHWP IN	✓
21202	23:56	00:26	$^3\text{He}$	10 $\mu\text{A}$	4.47M	16		✓
21203	00:27	00:58	$^3\text{He}$	10 $\mu\text{A}$	4.48M	16		✓
21204	00:59	01:31	$^3\text{He}$	10 $\mu\text{A}$	4.54M	16		✓
21205	01:31	02:01	$^3\text{He}$	10 $\mu\text{A}$	4.47M	16		✓
21206	02:02	02:35	$^3\text{He}$	10 $\mu\text{A}$	4.46M	16		✓
21207	02:37	03:06	$^3\text{He}$	10 $\mu\text{A}$	4.47M	16		✓
21208	03:07	03:37	$^3\text{He}$	10 $\mu\text{A}$	4.47M	16		✓
21209	03:37	04:09	$^3\text{He}$	10 $\mu\text{A}$	4.62M	16	NMR measurement 61.7%	✓
21210	04:11	04:43	$^3\text{He}$	10 $\mu\text{A}$	4.47M	17		✓
21211	04:44	05:17	$^3\text{He}$	10 $\mu\text{A}$	4.47M	16		✓
21212	05:17	05:50	$^3\text{He}$	10 $\mu\text{A}$	4.46M	16		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

More Comments:

### LEFT-ARM ONLY on this page: Ax, Az Production Run Sheet

Date: 5-16-2009	Author: V. Sulkosky
Beam Energy: 2.425 GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="radio"/> N, <input checked="" type="radio"/> Long, <input type="radio"/> Tran, or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.300	Polarity: "-"
Angle: 14.5°	Sieve Plate: IN or <input checked="" type="radio"/> OUT?
	Current (A): 515.5
	Polarity: Positive
	Angle: -75°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
2306	05:51	06:22	<sup>3</sup> He	10	5M	8	start HAPPex run 31381	✓
2307	06:24	06:55	<sup>3</sup> He	10	5M	8		✓
2308	06:56	07:25	<sup>3</sup> He	10	5M	8		✓
2309	07:26	08:58	<sup>3</sup> He	10	5M	8	NMR Measurement 6.7%	✓
2310	08:00	8:29	<sup>3</sup> He	10	5M	7		✓
2311	8:30	9:00	<sup>3</sup> He	10	5M	7%		✓
2312	9:01		<sup>3</sup> He	10			JUNK DAQ crash	
2313	9:10	9:45	<sup>3</sup> He	10	5M	7		✓
2314	9:46	10:17	<sup>3</sup> He	10	5M	8%		✓
2315	10:18	10:48	<sup>3</sup> He	10	5M	7		✓
2316	10:49	11:28	<sup>3</sup> He	10	5M	7	I = 0.5 @ start of run	✓
2317	11:35	12:11	<sup>3</sup> He	10	5M	7	start HAPPex 31382	✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### RIGHT-ARM ONLY on this page: Ax, Az Production Run Sheet

Date: 5-16-2009	Author: V. Sulkosky
Beam Energy: 2.425 GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="radio"/> N, <input checked="" type="radio"/> Long, <input type="radio"/> Tran, or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.225	Polarity: "-"
Angle: -16°	Sieve Plate: IN or <input checked="" type="radio"/> OUT?
	Current (A): 56.5
	Polarity: Positive
	Angle: -75°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
21213	05:50	06:22	<sup>3</sup> He	10	4.47M	16	start HAPPex run 31381	✓
21214	06:24	06:55	<sup>3</sup> He	10	4.47M	16		✓
21215	06:56	07:25	<sup>3</sup> He	10	4.47M	16		✓
21216	07:26	07:58	<sup>3</sup> He	10	4.47M	16	NMR Measurement 6.7%	✓
21217	07:59	8:29	<sup>3</sup> He	10	4.47M	16		✓
21218	8:29	9:00	<sup>3</sup> He	10	4.47M	16		✓
21219	9:01			10			JUNK → DAQ crash	
21220	9:09	9:45	<sup>3</sup> He	10	4.47M	16		✓
21221	9:46	10:16	<sup>3</sup> He	10	4.47M	16%		✓
21222	10:17	10:48	<sup>3</sup> He	10	4.47M	16%		✓
21223	10:49	11:28	<sup>3</sup> He	10	4.47M	16	I = 0.5 @ start of run	✓
21224	11:34	12:11	<sup>3</sup> He	10	4.48M	16	start HAPPex 31382	✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### LEFT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet

Date: 5/16/10	Author: A. Puckett
Beam Energy: 2.425 GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="radio"/> N, <input checked="" type="radio"/> Long, <input type="radio"/> Tran, or <input type="radio"/> Vertical
LHRS	BigBite
Momentum (GeV/c): 2.300	Polarity: "-"
Current (A): 515.5	Polarity: Positive
Angle: 14.5	Sieve Plate: IN or <input checked="" type="radio"/> OUT
	Angle: -75°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
2318	12:12	12:41	<sup>3</sup> He	10	5M	8		✓
2319	12:42	13:11	<sup>3</sup> He	10	5M	8		✓
2320	13:12	13:48	<sup>3</sup> He	10	3.9M	7	Right arm was triggered off new condition	✓
2321	13:49	14:22	<sup>3</sup> He	10	5M	8	Potential IOC problem with Q1	✓
2322	14:23		<sup>3</sup> He	10			right HRS DAQ crash	
2324	16:36	16:38	<sup>3</sup> He			0		
2326	16:24	17:12	<sup>3</sup> He	10	5M	7	prod	✓
2327	17:15	17:51	<sup>3</sup> He	10	5M	7		✓
2328	17:51	18:36	<sup>3</sup> He	10	2.4M	7		✓
2329	21:01	21:04	Multic	2	274K	2	spot check	
2330	21:07	21:09	<sup>3</sup> He	2	70K	0	Test	
2331	21:16	21:12	<sup>3</sup> He	2	64K	0		

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### RIGHT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet

Date:	Author: A. Puckett
Beam Energy: 2.425 GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="radio"/> N, <input checked="" type="radio"/> Long, <input type="radio"/> Tran, or <input type="radio"/> Vertical
RHRS	BigBite
Momentum (GeV/c): 2.225	Polarity: "-"
Current (A): 515.5	Polarity: Positive
Angle: 16.0	Sieve Plate: IN or <input checked="" type="radio"/> OUT
	Angle: -75°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
21225	12:12	12:41	<sup>3</sup> He	10	4.16M	16		✓
21226	12:42	13:11	<sup>3</sup> He	10	4.51M	16		✓
21227	13:12	13:48	<sup>3</sup> He	10	3.4M	16	Right arm Q1 tripped lost rest of run	✓
21228	13:49	14:22	<sup>3</sup> He	10	4.52M	17	Potential Right Q1 IOC problem	✓
21229	14:23		<sup>3</sup> He	10			right HRS DAQ crash	
21230	16:36	16:38	<sup>3</sup> He	10		5		
21232	16:43	17:13	<sup>3</sup> He	10	4.5M	17	prod	✓
21233	17:14	17:51	<sup>3</sup> He	10	4.5M	17		
21234	17:51	18:36	<sup>3</sup> He	10	2.2M	16		?
21235	21:01	21:04	Multic	2	289K	13	spot	
21236	21:07	21:09	<sup>3</sup> He	2	68K	5	Test	
21237	21:16	21:12	<sup>3</sup> He	2	61K	5	test	

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

**LEFT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet**

Date: 5/16/09	Author: K. Wang
Beam Energy: 2425 GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="checkbox"/> N, <input checked="" type="checkbox"/> Long, Tran, or Vertical
LHRs	BigBite
Momentum (GeV/c): 2-3.0 Polarity: "-"	Current (A): 515.5 Polarity: Positive
Angle: 14.5 Sieve Plate: IN or OUT?	Angle: 75

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay OK?
2332	21:15	21:50	<sup>3</sup> He	10	5M	8	prod	✓
2333	21:45	22:27	<sup>3</sup> He	10	5M	7		✓
2334	22:52	22:59	<sup>3</sup> He	10	5M	8		✓
2335	23:04	23:29	<sup>3</sup> He	10	5M	8		
2336	23:30	23:33	<sup>3</sup> He	10	319K	8		
2337	23:35	02:47	<sup>3</sup> He	10	216K	-7	No beam	
2338	02:49	<del>3:43</del>	<sup>3</sup> He	0	843K	0	cosmic	
2339	03:37	3:43	BeO	2	335K	3	check out raster 2x2	
2440	3:46	3:48	<sup>3</sup> He	2	88K		check out raster 2x2	
2441	03:51	3:53	<sup>3</sup> He	2	82K	0	check out raster	
2442	03:58	4:06	<sup>3</sup> He	10	1.4M	12	production	✓
2443	04:08	4:38	<sup>3</sup> He	10	5M	8	production	✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

**RIGHT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet**

Date: 5/16/09	Author: K. Wang
Beam Energy: 2425 GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="checkbox"/> N, <input checked="" type="checkbox"/> Long, Tran, or Vertical
RHRs	BigBite
Momentum (GeV/c): 2-2.25 Polarity: "-"	Current (A): 515.5 Polarity: Positive
Angle: 16 Sieve Plate: IN or OUT?	Angle: 75

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay OK?
21238	21:14	21:45	<sup>3</sup> He	10	9.5M	17		✓
21239	21:46	22:27	<sup>3</sup> He	10	4.5M	17		✓
21240	22:31	23:00	<sup>3</sup> He	10	4.5M	17		✓
21241	23:00	23:29	<sup>3</sup> He	10	4.5M	17		
21242	23:29	23:33	<sup>3</sup> He	10	289K	16		
21243	23:34	02:47	<sup>3</sup> He	10	300K	7	No beam <sup>cosmic</sup>	
21244	02:48	03:51	<sup>3</sup> He	0	957K	8	cosmic	
21245	3:50	03:53	<sup>3</sup> He	2	75K		check out raster	
21246	03:57	4:06	<sup>3</sup> He	10		16	production run, neutron detector HV off.	✓
21247	04:07	4:38	<sup>3</sup> He	10	4.26M	16	production run, HV on	✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

21247: ND detector different from golden run.

### LEFT-ARM ONLY on this page: $A_x, A_z$ Production Run Sheet

Date: 4/17	Author: W. Luo
Beam Energy: 2.425 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="radio"/> N, <input checked="" type="radio"/> Long, Tran, or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.30 Polarity: "-"	Current (A): 515.5 Polarity: Positive
Angle: 14.5 Sieve Plate: IN or <input checked="" type="radio"/> OUT?	Angle: -75

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
2344	4:39	5:16	$^3\text{He}$	10	5M	8		✓
2345	5:11	5:42	"	10	5M	7		✓
2346	5:54	6:30	"	10	5M	12	Momentum = 2.277 GeV/c	✓
2347	6:24	6:45	"	10	1.5M	12	Stop Counting at 1.5M	✓
2348	6:47	7:15	"	10	5M	12		✓
2349	7:16	7:44	"	10	5M	11		✓
2350	7:46	8:12	"	10	5M	13		✓
2351	8:13	8:37	"	11	5M	12		✓
2352	8:40	9:05	"	11	5M	12		✓
2353	9:06	9:32	"	11	5M	12		✓
2354	9:34	9:40	"	11		12	TDC left now 21 ADC problem	
2355	9:41	10:10	"	11	5M	12	TDC / ADC now 21 problem	

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### LEFT-ARM ONLY on this page: $A_x, A_z$ Production Run Sheet

Date: 4/17	Author: W. Luo
Beam Energy: 2.425 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="radio"/> N, <input checked="" type="radio"/> Long, Tran, or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.225 Polarity: "-"	Current (A): 515.5 Polarity: Positive
Angle: 16 Sieve Plate: IN or <input checked="" type="radio"/> OUT?	Angle: -75

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
21248	04:39	05:11	$^3\text{He}$	10	4.5M	17	Neutron detector ok	✓
21249	5:11	05:42	$^3\text{He}$	10	4.5M	17		✓
21250	5:53	6:20	"	10	4.1M	17		✓
21251	6:21	6:45	"	10	3.7M	16		✓
21252	6:46	7:15	"	10	4.0M	17		✓
21253	7:16	7:44	"	10	4.0M	17		✓
21254	7:45	8:12	"	10	4.0M	17		✓
21255	8:13	8:39	"	11	4.0M	17		✓
21256	8:40	9:05	"	11	4.0M	17		✓
21257	9:06	9:32	"	11	4.0M	17		✓
21258	9:33	9:40	"	11		12		✓
21259	9:41	10:10	"	11	4.0M	16		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

L

RIGHT-ARM ONLY on this page:  $A_x, A_z$  Production Run Sheet

Date:	4/17	Author:	M. Merziane
Beam Energy:	GeV	Using Pol $^3\text{He}$ Cell:	ON, Long, Tran, or Vertical
RHRS		BigBite	
Momentum (GeV/c):	2.30	Polarity: "-"	Current (A):
Angle:	14.5	Sieve Plate: IN or OUT?	Polarity: Positive

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
2356	10:12	10:38	$^3\text{He}$	10 $\mu\text{A}$	5M	11		✓
2357	10:39	11:06	"	"	5M	12		✓
2358	11:07	11:34	"	"	5M	11		✓
2359	11:35	12:01	"	"	5M	11		✓
2360	12:02	12:29	"	"	5M	12		✓
2361	12:30	13:03	"	"	5M	12		✓
2362	13:04	13:37	"	"	5M	12		✓
2363	13:38	14:07	"	"	5M	12		✓
2364	14:08	14:36	"	"	5M	12		✓
2365	<del>14:37</del>	<del>15:07</del>	<del>"</del>	<del>"</del>	<del>5M</del>	<del>11</del>	JUNK CODA CRASHED	
2366	14:40	15:07	"	"	5M	11		✓
2367	14:08	15:38	"	"	5M	12		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

More Comments:

R

LEFT-ARM ONLY on this page:  $A_x, A_z$  Production Run Sheet

Date:		Author:	M. Merziane
Beam Energy:	GeV	Using Pol $^3\text{He}$ Cell:	Y/N, Long, Tran, or Vertical
LHRS		BigBite	
Momentum (GeV/c):	2.225	Polarity: "-"	Current (A):
Angle:	16	Sieve Plate: IN or OUT?	Polarity: Positive

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
21250	10:12	10:38	$^3\text{He}$	10 $\mu\text{A}$	4.09	16		✓
21251	10:39	11:06	"	"	4.09	17		✓
21252	11:07	11:34	"	"	4.08	17		✓
21253	11:35	12:01	"	"	4.1	16		✓
21254	12:02	12:29	"	"	4.01	17		✓
21255	12:30	13:03	"	"	4.1	18		✓
21256	13:04	13:37	"	"	4.21	17		✓
21257	13:38	14:07	"	"	4.1	17		✓
21258	14:08	14:36	"	"	3.98	17		✓
21259	<del>14:37</del>	<del>15:07</del>	<del>"</del>	<del>"</del>	<del>3.99</del>	<del>17</del>	JUNK CODA Left arm crashed	
21270	14:40	15:07	"	"	3.79	17		✓
21271	14:07	15:38	"	"	3.99	17		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

More Comments:

**RIGHT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet**

Date: 4/17 Author: M. Mezzan  
 Beam Energy: GeV Using Pol <sup>3</sup>He Cell: Y/N, Long, Tran, or Vertical  
 RHRS BigBite  
 Momentum (GeV/c): 2.30 Polarity: "-" Current (A): Polarity: Positive  
 Angle: 14.5 Sieve Plate: IN or OUT? Angle:

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
2308	15:40	16:06	<del>He</del> He	10μA	5M	12		✓
2309	16:08	16:34	<sup>3</sup> He	10	5M	12		✓
2310	16:39	16:42	<sup>3</sup> He	10	<del>555K</del>	12	BB ML thresh	✓
2371	16:45	16:49	<sup>3</sup> He	10	623K	12	"	
2372	16:52	16:55	<sup>3</sup> He	10	532K	12	"	
2373	17:00	17:25	<sup>3</sup> He	10	5M	11	prod	✓
2374	17:26	17:59	<sup>3</sup> He	10	5M	12		✓
2375	18:00	18:31	<sup>3</sup> He	10	5M	11		✓
2376	18:32	19:01	<sup>3</sup> He	10		100% 12	Rock 5 problem end v. full load	✓
2377	19:05	19:30	<sup>3</sup> He	10	5M	12		✓
2378	19:31	19:59	<sup>3</sup> He	10	5M	12		✓
2379	20:00	20:25	<sup>3</sup> He	10	5M	11		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

More Comments:

**LEFT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet**

Date: 4/17 Author: M. Mezzan  
 Beam Energy: GeV Using Pol <sup>3</sup>He Cell: Y/N, Long, Tran, or Vertical  
 LHRS BigBite  
 Momentum (GeV/c): 2.25 Polarity: "-" Current (A): Polarity: Positive  
 Angle: 16 Sieve Plate: IN or OUT? Angle:

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
21232	16:40	16:48	<sup>3</sup> He	10μA	4.1M	17		✓
21273	16:07	16:34	<sup>3</sup> He	10	4.1M	17		✓
21274	16:38	16:42	<sup>3</sup> He	10	452K	16		✓
21275	16:45	16:49	<sup>3</sup> He	10	508K	17		
21276	16:52	16:55	<sup>3</sup> He	10	434K	17		
21277	16:59	17:25	<sup>3</sup> He	10	4.08M	16		✓
21278	16:26	17:59	<sup>3</sup> He	10	4.09M	17		✓
21279	17:59	18:31	<sup>3</sup> He	10	4.09M	16		✓
21280	18:32	19:01	<sup>3</sup> He	10		17	part OK, left problem	✓
21281	19:04	19:30	<sup>3</sup> He	10	4.08	16		✓
21282	19:31	19:59	<sup>3</sup> He	10	4.37M	16		✓
21283	20:00	20:26	He <sup>3</sup>	10	4.07	17		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

More Comments:



**RIGHT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet**

Date: 5/17/09	Author: K. Wang
Beam Energy: 2.4257 GeV	Using Pol <sup>3</sup> He Cell: Y/N, Long, Tran, or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.3	Polarity: "-" Current (A):
Angle: 49.5	Sieve Plate: IN or OUT? Angle: Polarity: Positive

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
2386	20:42	21:08	<sup>3</sup> He	10	5M	11	Hotex started	✓
2387	21:10	21:36	<sup>3</sup> He	10	5m	13		✓
2388	21:38	22:05	<sup>3</sup> He	10	5m	12		✓
2383	22:06	22:33	<sup>3</sup> He	10	5m	11		✓
2384	22:34	23:01	<sup>3</sup> He	10	5m	11		✓
2385	23:02	23:27	<sup>3</sup> He	10	5M	11		✓
2386	23:28	23:54	<sup>3</sup> He	10	5M	11		✓
2387	23:56	0:23	<sup>3</sup> He	10	5M	11		✓
2388	00:25	00:52	"	"	5M	11		✓
2389	01:53	01:20	"	"	5M	12		✓
2390	1:24	1:28	"	"	500K	12	BB DC threshold 7.5V	
2391	1:30	1:33	"	"	500K	11	8.0V	

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

**RIGHT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet**

Date: 5/17/09	Author: K. Wang
Beam Energy: 2.4257 GeV	Using Pol <sup>3</sup> He Cell: Y/N, Long, Tran, or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.225	Polarity: "-" Current (A): 5/5.5
Angle: 10	Sieve Plate: IN or OUT? Angle: -75

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
21284	20:42	21:09	<sup>3</sup> He	10	4.09M	16		✓
21285	21:10	21:37	<sup>3</sup> He	10	4.08M	17		✓
21286	21:37	22:05	<sup>3</sup> He	10	4.08M	16		✓
21287	22:06	22:33	<sup>3</sup> He	10	4.08M	16		✓
21288	22:33	23:01	<sup>3</sup> He	10	4.08M	16		✓
21289	23:01	23:27	<sup>3</sup> He	10	4.08M	16		✓
21290	23:28	23:55	<sup>3</sup> He	10	4.07M	17		✓
21291	23:55	00:23	<sup>3</sup> He	10	4.08M	16		✓
21292	00:25	00:53	"	"	4.08M	17		✓
21293	00:53	01:20	"	"	4.08M	16		✓
21294	1:24	1:28	"	"	414K	17		
21295	1:30	1:33	"	"	418K	16		

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### LEFT-ARM ONLY on this page: $A_x, A_z$ Production Run Sheet

Date:		Author:	
Beam Energy:	GeV	Using Pol $^3\text{He}$ Cell: Y/N, Long, Tran, or Vertical	
LHRS		BigBite	
Momentum (GeV/c):	Polarity: "-"	Current (A):	Polarity: Positive
Angle:	Sieve Plate: IN or OUT ?	Angle:	

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
2392	1:35	1:38	$^3\text{He}$	10	510K	12	BB DC threshold: 8.5V	
2393	1:40	1:44	"	"	511K	11	9.0V	
2394	1:46	1:49	"	"	506K	11	9.5V	
2395	1:51	1:54	"	"	509K	12	10.0V	
2396	1:57	2:01	"	"	508K	10	6.75V	
2397	2:03	2:07	"	"	509K	11	6.25V	
2398	2:10	2:14	"	"	505K	12	5.75V	
2399	2:17	2:44	"	"	5M	11	Balk to production 5.5V	✓
2400						11	Junk	x
2401	2:55	3:23	"	"	5M	12		✓
2402	3:23	3:51	"	"	5M	12		✓
2403	3:51	4:18	"	"	5M	12		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### RIGHT-ARM ONLY on this page: $A_x, A_z$ Production Run Sheet

Date:		Author:	
Beam Energy:	GeV	Using Pol $^3\text{He}$ Cell: Y/N, Long, Tran, or Vertical	
RHRS		BigBite	
Momentum (GeV/c):	Polarity: "-"	Current (A):	Polarity: Positive
Angle:	Sieve Plate: IN or OUT ?	Angle:	

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
20296	1:35	1:38	$^3\text{He}$	10	415K	17		
20297	1:40	1:44	"	"	417K	16		
20298	1:46	1:49	"	"	411K	16		
<del>20299</del>	1:51	1:54	"	"	414K	17		
20300	1:57	2:01	"	"	413K	16		
20301	2:03	2:07	"	"	415K	16		
20302	2:10	2:14	"	"	410K	17		
20303	2:17	2:44	"	"	4.0M	16		✓
20304							does not count.	x
20307	02:35	3:23	"	"	4.09M	17		✓
20308	3:23	3:51	"	"	4.08M	17		✓
20309	3:51	4:18	"	"	4.09M	16		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

**LEFT-ARM ONLY on this page:  $A_x, A_z$  Production Run Sheet**

Date: May 18, 2009	Author: W. Luo
Beam Energy: 2.427 GeV	Using Pol $^3\text{He}$ Cell: Y/N, Long, Tran, or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.277	Polarity: "-" Current (A): 5/6.5
Angle: 14.5	Sieve Plate: IN or OUT? Angle: -7.5

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
2404	4:21	4:48	$^3\text{He}$	10	5M	12		✓
2405	4:49	5:15	"	"	5M	12		✓
2406	5:15	5:44	"	"	5M	12		✓
2407	5:44	6:10	"	"	5M	12		✓
2408	6:11	6:42	"	"	5M	11		✓
2409	6:42	7:11	"	"	5M	13		✓
2410	7:12	7:37	"	"	5M	11		✓
2411	7:38		"	"	5M	12		✓
2412	8:40		$\text{D}_2$	7 $\mu\text{A}$ *	5M	6	115 psia ref. cell	
2413	9:19	10:00	$\text{D}_2$	10 $\mu\text{A}$	5M	6	same	

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

**More Comments:**

\* During run 2412 we slowly increase beam current to 10  $\mu\text{A}$

**RIGHT-ARM ONLY on this page:  $A_x, A_z$  Production Run Sheet**

Date: May 18, 2009	Author: W. Luo
Beam Energy: 2.427 GeV	Using Pol $^3\text{He}$ Cell: <u>Y/N</u> , Long, Tran, or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.225	Polarity: "-" Current (A): 5/5.5
Angle: Sieve Plate: IN or OUT? Angle: -7.5	

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
21310	4:21	4:48	$^3\text{He}$	10	4.09M	17		✓
21311	4:48	5:15	"	"	4.09M	16		✓
21312	5:15	5:44	"	"	4.06M	16		✓
21313	5:44	6:10	"	"	4.09M	16		✓
21314	6:10	6:42	"	"	4.10M	16		✓
21315	6:42	7:11	"	"	4.09M	16		✓
21316	7:11	7:37	"	"	4.08M	16		✓
21317	7:38		"	"	4.09	16		✓
21318	8:40		$\text{D}_2$	7 $\mu\text{A}$ *	3.7M	13	115 psia $\text{D}_2$ ref. cell	✓
21319	9:19	10:00	$\text{D}_2$	10 $\mu\text{A}$	3.7M	13	same	

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

**More Comments:**

\* During 21318, increase  $I_{\text{beam}}$  to 10  $\mu\text{A}$

### LEFT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet

Date: May 18, 2009	Author: R. Michaels
Beam Energy: 2.427 GeV	Using Pol <sup>3</sup> He Cell: Y/N, (Long) Tran, or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.277	Polarity: <sup>+</sup> Current (A): 515.5 * Polarity: Positive
Angle: 14.5	Sieve Plate: IN or (OUT)? Angle: 75

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
2414	10:02	10:44	empty cell	10		4	Empty target cell	✓
2415	10:50		N <sub>2</sub>	10	very short		35 psig N <sub>2</sub>	
2416	10:52		N <sub>2</sub>	10	5M		35 psig N <sub>2</sub> Adjusted ps factors	✓
2417	11:30	12:10	N <sub>2</sub>	10	5M	5	same	✓
2418	12:16		optics	5	5M	12	multi foil carbon (optics)	✓
2419	12:49		<sup>3</sup> He	10	5M	12	Back to <sup>3</sup> He production	✓
2420	13:25		<sup>3</sup> He	10	5M		move half wave plate OUT	✓
2421	13:51	14:22	<sup>3</sup> He	10	5M	11		✓
2422	14:23	14:48	<sup>3</sup> He	10	5M			✓
2423	14:50		<sup>3</sup> He	10	5M			✓
2424	15:17		<sup>3</sup> He	10	5M			✓
2425	15:48		<sup>3</sup> He	10	5M	11		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

**More Comments:**

\* set point 518 (= "output set point") but in "box controls" its zero.  
10:18: So, we re-entered 518 in dialog box.

### RIGHT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet

Date: May 18, 2009	Author: R. Michaels
Beam Energy: 2.427 GeV	Using Pol <sup>3</sup> He Cell: Y/N, (Long) Tran, or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.248	Polarity: <sup>+</sup> Current (A): 515.5 Polarity: Positive
Angle: 16.0	Sieve Plate: IN or (OUT)? Angle: 75

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
21320	10:02	10:44	empty cell	10		5	Empty target cell	✓
21321	10:50		N <sub>2</sub>	10	very short		35 psig N <sub>2</sub>	
21322	10:51		N <sub>2</sub>	10	4.3M		35 psig N <sub>2</sub> Adjusted ps factors	✓
21323	11:30	12:10	N <sub>2</sub>	10	4.3M	5	same	✓
21324	12:16		optics	5	4.6M	6	multi foil carbon (optics)	✓
21325	12:49		<sup>3</sup> He	10		16	Back to <sup>3</sup> He production	✓
21326	13:25		<sup>3</sup> He	10			half wave plate OUT	✓
21327	13:51	14:22	<sup>3</sup> He	10		16		✓
21328	14:23	14:49	<sup>3</sup> He	10	4.1M			✓
21329	14:50		<sup>3</sup> He	10	"			✓
21330	15:17	15:47	<sup>3</sup> He	10	4.1M			✓
21331	15:48	16:14	<sup>3</sup> He	10	4.1M	16		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

**More Comments:**

### LEFT-ARM ONLY on this page: $A_x, A_z$ Production Run Sheet

Date: <i>May 18, 2009</i>	Author: <i>M. Mehi Meziari</i>	
Beam Energy: <i>2.427</i> GeV	Using Pol $^3\text{He}$ Cell: Y/N, Long, Tran, or Vertical	
LHRS	BigBite	
Momentum (GeV/c): <i>2.277</i>	Polarity: "-" Current (A):	Polarity: Positive
Angle: <i>14.5</i>	Sieve Plate: IN or OUT?	Angle: <i>75</i>

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
2426	16:14	16:47	$^3\text{He}$	10 $\mu\text{A}$	5M	12		✓
2427	16:48	17:14	"	"	5M	12		✓
2428	17:18	17:45	"	"	4M	6	ps3=5 Max evt=4M	✓
2429	17:47	18:13	"	"	4M	6		✓
2430	18:14	18:42	"	"	4M	6		✓
2431	18:43	19:10	"	"	4	6		✓
2432	19:12	19:39	"	"	4	6		✓
2433	19:40	20:07	"	"	4	6		✓
2434	20:08	20:36	"	"	4	6		✓
2435	20:37	21:07	"	"	4	6		✓
2436	21:08	21:45	"	"	4	6		✓
2437	21:47	22:15	"	"	4	6		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### RIGHT-ARM ONLY on this page: $A_x, A_z$ Production Run Sheet

Date: <i>May 18, 2009</i>	Author: <i>M. Meziari</i>	
Beam Energy: <i>2.427</i> GeV	Using Pol $^3\text{He}$ Cell: Y/N, Long, Tran, or Vertical	
RHRS	BigBite	
Momentum (GeV/c): <i>2.2248</i>	Polarity: "-" Current (A):	Polarity: Positive
Angle: <i>16</i>	Sieve Plate: IN or OUT?	Angle: <i>75</i>

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
21332	16:15	16:47	$^3\text{He}$	10 $\mu\text{A}$	4.1	16		✓
21333	16:48	17:14	"	"	4.1	16		✓
21334	17:18	17:45	"	"	4.34	16		✓
21335	17:47	18:13	"	"	4.32	16		✓
21336	18:14	18:42	"	"	4.32	16		✓
21337	18:43	19:10	"	"	4.32	16		✓
21338	19:10	19:39	"	"	4.38	16		✓
21339	19:40	20:07	"	"	4.36	16		✓
21340	20:08	20:36	"	"	4.57	16		✓
21341	20:37	21:07	"	"	4.31	16		✓
21342	21:08	21:45	"	"	4.33	16		✓
21343	21:47	22:15	"	"	4.32	16		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### LEFT-ARM ONLY on this page: $A_x, A_z$ Production Run Sheet

Date: <u>May 18, 2009</u>	Author: <u>L. Meijer</u>
Beam Energy: <u>2.427</u> GeV	Using Pol $^3\text{He}$ Cell: Y/N, Long, Tran, or Vertical
LHRS	BigBite
Momentum (GeV/c): <u>2.277</u>	Polarity: "-" Current (A):
Angle: <u>14.5</u>	Sieve Plate: IN or <u>OUT</u> ? Angle: <u>75</u>

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
2438	22:34	23:02	$^3\text{He}$	10 $\mu\text{A}$	4	6		✓
2439	23:03	23:31	$^3\text{He}$	10 $\mu\text{A}$	4	6		✓
2440	23:32	00:02	"	"	4	6		✓
2441	00:04	00:30	"	"	4	6		✓
2442	00:32	01:00	$^3\text{He}$	10 $\mu\text{A}$	4	6		✓
2443							TSO needed to be rebooted	
2444	01:19	01:47	$^3\text{He}$	10 $\mu\text{A}$	4	6		✓
2445	01:51	02:19	$^3\text{He}$	10 $\mu\text{A}$	4	6		✓
2446	02:20	02:47	$^3\text{He}$	10 $\mu\text{A}$	4	7		✓
2447	02:49	03:19	$^3\text{He}$	10 $\mu\text{A}$	4	6		✓
2448	03:20	03:47	$^3\text{He}$	10 $\mu\text{A}$	4	6		✓
2449	03:49	04:15	$^3\text{He}$	10 $\mu\text{A}$	4	6		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### RIGHT-ARM ONLY on this page: $A_x, A_z$ Production Run Sheet

Date: <u>May 18 2009</u>	Author: <u>L. Meijer</u>
Beam Energy: <u>2.487</u> GeV	Using Pol $^3\text{He}$ Cell: Y/N, Long, Tran, or Vertical
RHRS	BigBite
Momentum (GeV/c): <u>2.9248</u>	Polarity: "-" Current (A):
Angle: <u>16</u>	Sieve Plate: IN or <u>OUT</u> ? Angle:

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
21344	22:34	23:02	$^3\text{He}$	10 $\mu\text{A}$	4.3	16		✓
21345	23:03	23:31	$^3\text{He}$	10 $\mu\text{A}$	4.3	16		✓
21346	23:32	00:03	"	"	4	16		✓
21347	00:04	00:31	"	"	4	16		✓
21348	00:31	01:00	$^3\text{He}$	10 $\mu\text{A}$	4.3	16		✓
21349							TSO needed to be rebooted	
21351	01:18	01:48	$^3\text{He}$	10 $\mu\text{A}$	4.3	16		✓
21352	01:50	02:19	$^3\text{He}$	10 $\mu\text{A}$	4.3	16		✓
21353	02:20	02:48	$^3\text{He}$	10 $\mu\text{A}$	4.3	17		✓
21354	02:48	03:19	$^3\text{He}$	10 $\mu\text{A}$	4.3	17		✓
21355	03:20	03:47	$^3\text{He}$	10 $\mu\text{A}$	4.3	17		✓
21356	03:48	04:15	$^3\text{He}$	10 $\mu\text{A}$	4.3	16		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### LEFT-ARM ONLY on this page: Ax, Az Production Run Sheet

Date: 5/19/09 Author: Eric Jensen  
 Beam Energy: 2.427 GeV Using Pol <sup>3</sup>He Cell:  N,  Long Tran, or Vertical  
 LHRS BigBite  
 Momentum (GeV/c): 2.277 Polarity: "-" Current (A): 518 A Polarity: Positive  
 Angle: 14.5° Sieve Plate: IN or  OUT? Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
<del>2450</del> 2450	4:17	4:44	<sup>3</sup> He	10μA	4	6		✓
2451	4:46	5:15	<sup>3</sup> He	10μA	4	6		✓
2452	5:16	5:43	<sup>3</sup> He	10μA	4	6		✓
2453	5:46	6:25	<sup>3</sup> He	10μA	4	6		✓
2454	6:27	6:54	<sup>3</sup> He	10μA	4	6		✓
2470	16:28	16:33	BeO	5	1.4M	99'		
2471	16:42	19:08	"	Cosmics	0.15M	0		
2472	19:12	19:18	"	2	0.9M	2	Checkout, raster off	
2473	19:30	19:32	"	5	0.55M	19	" <del>off</del> on	
2474	19:37	19:38	H <sub>2</sub>	5	0.3		4x4 <del>tab</del>	
2475	19:40	19:50	"	5	0.29M		6x6	
2476	19:52	19:55	"	5	92k	0	Raster 2x2	

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
 More Comments:

### RIGHT-ARM ONLY on this page: Ax, Az Production Run Sheet

Date: 5/19/09 Author: Eric Jensen  
 Beam Energy: 2.427 GeV Using Pol <sup>3</sup>He Cell:  N,  Long Tran, or Vertical  
 RHRS BigBite  
 Momentum (GeV/c): 2.225 Polarity: "-" Current (A): 518 Polarity: Positive  
 Angle: 16° Sieve Plate: IN or  OUT? Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
21357	4:16	4:45	<sup>3</sup> He	10μA	4.3	16		✓
21358	4:45	5:15	<sup>3</sup> He	10μA	4.4	16		✓
21359	5:15	5:44	<sup>3</sup> He	10μA	4.3	16		✓
21360	5:45	6:26	<sup>3</sup> He	10μA	4.3	17		✓
21361	6:26	6:54	<sup>3</sup> He	10μA	4.3	17		✓
21376	16:28	16:33	BeO	5	1.4M	26		
21377	16:42	?	"	Cosmics		0		
21380	2	19:08	"	"	0.14M	"		
21381	19:12	19:18	"	2	1.1M	13	Checkout, raster off	
21382	19:30	19:32	"	5	0.66M	26	" <del>off</del> on	
21383	19:37	19:38	H <sub>2</sub>	5	0.37M		Raster on <del>off</del>	
21384	19:40	19:50	"	5	0.32M		6x6	

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
 More Comments:

21383: L: T<sub>3</sub> = 4.3k, T<sub>5</sub> = 155  $\left\| \begin{matrix} 2 \\ 3 \end{matrix} \right.$  4.7k, 180  $\left\| \begin{matrix} 2 \\ 3 \end{matrix} \right.$  4.36k, 175  $\left\| \begin{matrix} 2 \\ 3 \end{matrix} \right.$   
 R: T<sub>1</sub> = 1.3k, T<sub>2</sub> = 32  $\left\| \begin{matrix} 8 \\ 4 \end{matrix} \right.$  1.4k, 35  $\left\| \begin{matrix} 8 \\ 4 \end{matrix} \right.$  1.3k, 32  $\left\| \begin{matrix} 8 \\ 5 \end{matrix} \right.$

21385 19:52 19:55 H<sub>2</sub> 5 0.11M 8 Raster 2x2

**LEFT-ARM ONLY on this page:  $A_x, A_z$  Production Run Sheet**

Date: 5/19/2009	Author: B. Norum
Beam Energy: 2.427 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="checkbox"/> Long, Tran, or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.277	Polarity: "-" Current (A): 518 Polarity: Positive
Angle: 14.5	Sieve Plate: IN or <input checked="" type="checkbox"/> OUT? Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
2477	1959	2041	H <sub>2</sub>	10	4M	1	Prod H <sub>2</sub> Raster 4x4	✓
2478	2042	2125	"	"	4M	0	"	✓
2479	2132	2134	B <sub>2</sub> O	5	-		PS3 → 7	
2480	2135	2155	"	"	4M			
2481	2202	2229	$^3\text{He}$	10	4M		PS3 → 5	✓
2482	2230	2257	$^3\text{He}$	10 <del>5</del>	4M	6		
2483	2310	2340	"	"	4M	7		✓
2484	2341	00:07	"	"	4	7		✓
2485	00:11	00:44	"	"	4	6		✓
2486	00:46	1:18	"	"	4	7		✓
2487	1:19	1:54	"	"	4	6		✓
2488	1:56	2:26	"	"	4	6	LHRS sync gaps	✓

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More Comments:

**RIGHT-ARM ONLY on this page:  $A_x, A_z$  Production Run Sheet**

Date: 5/19/2009	Author: B. Norum
Beam Energy: 2.427 GeV	Using Pol $^3\text{He}$ Cell: Y/N, Long, Tran, or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.225	Polarity: "-" Current (A): 518 Polarity: Positive
Angle: 16	Sieve Plate: IN or <input checked="" type="checkbox"/> OUT? Angle: 75

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
21386	1959	2041	H <sub>2</sub>	10	4.5M	14	Prod. H <sub>2</sub> Raster 4x4	✓
21387	2042	2125	"	"	4.5M	13	"	✓
21388	2132	2134	B <sub>2</sub> O	5	-	26!		
21389	2135	2155	"	"	3.5	8	PS1 → 2	
21390	2202	2229	$^3\text{He}$	10	4.3		PS1 → 1	✓
21391	2230	2257	$^3\text{He}$	10 <del>5</del>	4.3	17	Problems w/ HAND	
21392	2310	2340	"	"	4.3	17	Left Plane TDC channels	✓
21393	2341	00:08	"	"	4.3	16		✓
21394	00:10	00:45	"	"	4.3	17		✓
21395	00:46	1:18	"	"	4.3	16		✓
21396	1:19	1:55	"	"	4.3	17		✓
21397	1:55	2:26	"	"	4.3	17		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:



**LEFT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet**

Date: 5/20/09	Author: Eric Jensen
Beam Energy: 2.425 GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="radio"/> N (Long) Tran, or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.277 Polarity: "-"	Current (A): 518 Polarity: Positive
Angle: 14.5° Sieve Plate: IN or <input checked="" type="radio"/> OUT?	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
2489	2:27	2:53	<sup>3</sup> He	10μA	4	7		✓
2490	2:55	3:22	<sup>3</sup> He	10μA	4	6		✓
2491	3:24	3:53	<sup>3</sup> He	10μA	4	6		✓
2492	3:55	4:26	<sup>3</sup> He	10μA	4	7		✓
2493	4:28	4:58	<sup>3</sup> He	10μA	4	6		✓
2494	4:59	5:27	<sup>3</sup> He	10μA	4	6		✓
2495	5:28	5:55	<sup>3</sup> He	10μA	4	7		✓
2496	5:56	6:24	<sup>3</sup> He	10μA	4	6		✓
2497	6:26	6:55	<sup>3</sup> He	10μA	4	6	Beam trip @ start of run	✓
2498	6:57	7:23	<sup>3</sup> He	10μA	4	6		✓
2499	7:24	7:54	<sup>3</sup> He	10μA	4	6	ROC sync check had gaps	✓
2500	7:55	8:32	<sup>3</sup> He	10μA	4	6	VDC, BigBite lower than response	✓

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More Comments:

**RIGHT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet**

Date: 5/20/09	Author: Eric Jensen
Beam Energy: 2.425 GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="radio"/> N (Long) Tran, or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.225 Polarity: "-"	Current (A): 518 Polarity: Positive
Angle: 16° Sieve Plate: IN or <input checked="" type="radio"/> OUT?	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
21398	2:27	2:53	<sup>3</sup> He	10μA	4.3	16		✓
21399	2:54	3:23	<sup>3</sup> He	10μA	4.3	17		✓
21400	3:23	3:54	<sup>3</sup> He	10μA	4.3	16	Event type dist- "5" a factor of 10 higher	✓
21401	3:54	4:26	<sup>3</sup> He	10μA	4.3	16		✓
21402	4:28	4:58	<sup>3</sup> He	10μA	4.3	17		✓
21403	4:58	5:27	<sup>3</sup> He	10μA	4.3	17		✓
21404	5:28	5:55	<sup>3</sup> He	10μA	4.3	16		✓
21405	5:55	6:24	<sup>3</sup> He	10μA	4.3	16		✓
21406	6:26	6:55	<sup>3</sup> He	10μA	4.3	16	Beam trip @ start of run	✓
21407	6:56	7:24	<sup>3</sup> He	10μA	4.3	17		✓
21408	7:24	7:54	<sup>3</sup> He	10μA	4.3	17		✓
21409	7:55	8:32	<sup>3</sup> He	10μA	4.3	17		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### LEFT-ARM ONLY on this page: $A_x, A_z$ Production Run Sheet

Date: 05/20/09	Author: Kai Pan
Beam Energy: 2.427 GeV	Using Pol $^3\text{He}$ Cell: Y/N, Long, Tran, or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.277	Polarity: "-" Current (A): 5.8
Angle: 4.5°	Sieve Plate: IN or OUT? Angle: 20°
	Polarity: Positive

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
2501	0835	0907	$^3\text{He}$	10	4	6		✓
2502	0908	0947	$^3\text{He}$	10	4	7		✓
2503	0953	1021	$^3\text{He}$	10	4	6		✓
2509	1608	1643	$^3\text{He}$	10	4M	6		✓
2510	1643	1715	"	"	4M	6		✓
2511	1715	1742	"	"	4M	6		✓
2512	1743	1811	"	"	4M	7		✓
2513	1811	1840	"	"	4M	7		✓
2514	1852	1918	"	"	4M	6	spin dir reversed	✓
2515	1919	1946	"	"	4M	7		✓
2516	1946	2013	"	"	4M	7		✓
2517	2014	2046	"	"	4M	6		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### RIGHT-ARM ONLY on this page: $A_x, A_z$ Production Run Sheet

Date: 05/20/09	Author: Kai Pan
Beam Energy: 2.427 GeV	Using Pol $^3\text{He}$ Cell: Y/N, Long, Tran, or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.224	Polarity: "-" Current (A): 5.5
Angle: 16°	Sieve Plate: IN or OUT? Angle: 75°
	Polarity: Positive

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
21410	0835	0907	$^3\text{He}$	10	4.3	15		✓
21411	0908	0947	$^3\text{He}$	10	4.3	16		✓
21412	0953	1021	$^3\text{He}$	10	4.4	16		✓
21413	1608	1643	$^3\text{He}$	10	4.3	16		✓
21414	1643	1715	"	"	4.3	16		✓
21415	1715	1742	"	"	4.3	16		✓
21416	1743	1811	"	"	4.3M	17		✓
21417	1811	1840	"	"	4.3M	16		✓
21418	1852	1918	"	"	4.3M	17	spin dir reversed	✓
21419	1919	1946	"	"	4.3M	17		✓
21420	1946	2013	"	"	4.3M	17		✓
21421	2014	2046	"	"	4.3	17		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### LEFT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet

Date: 5/20/09	Author: B. Norum
Beam Energy: 2.427 GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="checkbox"/> N, Long, <input checked="" type="checkbox"/> Tran, or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.277 Polarity: "-"	Current (A): 5185 Polarity: Positive
Angle: 14.5 Sieve Plate: IN or <input checked="" type="checkbox"/> OUT?	Angle: 75

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
2518	2047	2115	<sup>3</sup> He	10	4 M	5		✓
2519	2119	2123	"	"	0.5M	6	BB mwdc threshold = 5.247V	
2520	2124	2128	"	"	0.5M	6	= 5.0V	
2521	2129	2132	"	"	0.5M	7	= 4.75	
2522	2134	2138	"	"	0.5M	6	= 4.25	
2523	2139	2143	"	"	0.5M	6	= 4.00	
2524	2143	2212	"	"	4 M	6	= 5.50	
2525	2213	2309	"	"	3.7M	7	Accel problem	
2526	0101	0126	BeO OPTICS	?	670k	0	check run water off	
2527	0126	0130	OPTICS		752k	19	check water on 4x4	
2528	0135	0138	<sup>3</sup> He	5	233k	4	check spot	
2529	0139	0142	<sup>3</sup> He	5	214k		water 6x6	

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### RIGHT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet

Date: 5/20/09	Author: B. Norum
Beam Energy: 2.427 GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="checkbox"/> N, Long, <input checked="" type="checkbox"/> Tran, or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.224 Polarity: "-"	Current (A): 515 Polarity: Positive
Angle: 16° Sieve Plate: IN or <input checked="" type="checkbox"/> OUT?	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
21422	2047	2115	<sup>3</sup> He	10	4.3M	16		✓
21423	2119	2123	"	"	0.54M	16	BB mwdc threshold = 5.247V	
21424	2124	2128	"	"	0.54M	16	= 5.0V	
21425	2129	2132	"	"	0.54M	16	= 4.75V	
21426	2134	2138	"	"	0.54M	16	= 4.25	
21427	2139	2143	"	"	0.54M	17	= 4.0	
21428	2143	2212	"	"	4.3	17	= 5.50	
21429	2213	2309	"	"	4.0	15	Accel problem	
21430	0101	0126	OPTICS TARGET	0.71	826k	6	check run water off	
21431	0126	0130	OPTICS		903k	23	check water on 4x4	
21432	0134	0138	<sup>3</sup> He	5	266k	9	check spot	
21433	0139	0142	<sup>3</sup> He	5	234k		water 6x6	

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### LEFT-ARM ONLY on this page: $A_x, A_z$ Production Run Sheet

Date: 5/21/09	Author: S. Fullam
Beam Energy: 2.425 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="radio"/> N, Long, <input checked="" type="radio"/> Tran or Vertical
LHRS Momentum (GeV/c): 2.277 Polarity: "-" Angle: 14.5 Sieve Plate: IN or <input checked="" type="radio"/> OUT?	BigBite Current (A): 5.15 Polarity: Positive Angle: 75

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
2530	0145	0212	$^3\text{He}$	10	47	6	PRODUCTION	✓
2531	0214	0242	"	"	47	7		
2532	0243	0309	"	"	47	6		✓
2533	0310	0340	"	"	47	7		✓
2534	0341	0408	"	"	47	7		✓
2535	0409	0444	"	"	47	7		✓
2536	0445	0511	"	"	47	7		
2537	0512	0539	"	"	47	6		✓
2538	0541	0606	"	"	47	7		✓
2539	0607	0634	"	"	47	6		✓
2540	0635	0700	"	"	47	7		✓
2541	0637	0638	-	0	23K	0	Pedestal Run	

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### RIGHT-ARM ONLY on this page: $A_x, A_z$ Production Run Sheet

Date: 5/21/09	Author: S. Fullam
Beam Energy: 2.425 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="radio"/> N, Long, <input checked="" type="radio"/> Tran or Vertical
RHRS Momentum (GeV/c): 2.224 Polarity: "-" Angle: 16.0 Sieve Plate: IN or <input checked="" type="radio"/> OUT?	BigBite Current (A): 5.15 Polarity: Positive Angle: 75

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
21434	0145	0213	$^3\text{He}$	10	4.27	17	PRODUCTION	✓
21435	0214	0242	"	"	4.37	17		
21436	0243	0309	"	"	4.277	17		✓
21437	0310	0340	"	"	4.37	16		✓
21438	0341	0408	"	"	4.277	17		✓
21439	0409	0444	"	"	4.277	16		✓
21440	0445	0511	"	"	4.267	17		
21441	0512	0540	"	"	4.257	17		✓
21442	0541	0606	"	"	4.267	17		✓
21443	0607	0634	"	"	4.277	17		✓
21444	0635	0700	"	"	4.267	17		✓
21445	0636	0638	-	0	23K	0	Pedestal Run	

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

**LEFT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet**

Date: 5/2/09	Author: Brad Schoenrock
Beam Energy: 2.425 GeV	Using Pol <sup>3</sup> He Cell: (Y)N, Long, (Tran) or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.277 Polarity: "-"	Current (A): 515 Polarity: Positive
Angle: 14.5 Sieve Plate: IN or (OUT)	Angle: 75

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
2545	16:57	17:01	<sup>3</sup> He	0	80K	20	cosmic	
2546	17:04	17:06	<sup>3</sup> He	0	5K	19	cosmic	
2547	17:08	18:11	<sup>3</sup> He	0	125K	21	cosmic	
2548	18:34	18:37	optics	2	252K	3		
2549	18:38	18:41	optics	2	200K	3		
2550	18:47	18:50	<sup>3</sup> He	2	61K	0	T3=2KHz	
2551	18:52	18:56	<sup>3</sup> He	2	73K	1	T3=2KHz	
2552	19:08	19:10	<sup>3</sup> He	5	110K	0		
2553	19:18	19:48	<sup>3</sup> He	10	4M	7	Production	✓
2554	19:50	20:16	<sup>3</sup> He	10	4M	7		✓
2555	20:17	20:47	<sup>3</sup> He	10	4M	7		✓
2556	20:49	21:08	<sup>3</sup> He	10	4M	7		

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

**RIGHT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet**

Date: 5/2/09	Author: Brad Schoenrock
Beam Energy: 2.425 GeV	Using Pol <sup>3</sup> He Cell: (Y)N, Long, (Tran) or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.224 Polarity: "-"	Current (A): 515 Polarity: Positive
Angle: 16 Sieve Plate: IN or (OUT)	Angle: 75

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
21449	16:56	17:01	<sup>3</sup> He	0	6K	6	cosmic	
21450	17:04	17:06	<sup>3</sup> He	0	2K	7	cosmic	
21451	17:08	18:11	<sup>3</sup> He	0	126K	6	cosmic	
21452	18:34	18:37	optics	2	324K	7		
21453	18:38	18:41	optics	2	335K	6		
21454	18:47	18:50	<sup>3</sup> He	2	102K	6		
21455	18:52	18:56	<sup>3</sup> He	2	114K	7		
21456	19:08	19:10	<sup>3</sup> He	5	167K	10		
21457	19:18	19:48	<sup>3</sup> He	10	4.26M	17	Production	✓
21458	19:50	20:16	<sup>3</sup> He	10	4.27M	18		✓
21459	20:17	20:47	<sup>3</sup> He	10	4.29M	17		✓
21460	20:49	21:08	<sup>3</sup> He	10	2M	17		

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### LEFT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet

Date: 5/21/09	Author: Brad Schoenrock
Beam Energy: 2.425 GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="checkbox"/> N, Long, <input checked="" type="checkbox"/> Tran, or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.277 Polarity: "-"	Current (A): 515 Polarity: Positive
Angle: 14.5 Sieve Plate: IN or <input checked="" type="checkbox"/> OUT?	Angle: 75

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
2557	21:15	21:40	<sup>3</sup> He	10	4M	7		✓
2558	21:42	22:07	<sup>3</sup> He	10	4M	7		✓
2559	22:08	22:43	<sup>3</sup> He	10	3.37M		Bad dead time	
2560	22:48	22:50	<sup>3</sup> He	10	169K		check out	
2561	22:57	22:57	<sup>3</sup> He	10	186K	7	check out	
2562	22:59	23:25	<sup>3</sup> He	10	4M	7	production	✓
2563	23:30	23:56	<sup>3</sup> He	10	4M	7		✓
2564	23:57	00:22	<sup>3</sup> He	10	4M	7		✓
2565	00:24	00:49	<sup>3</sup> He	10	4M	7		✓
2566	00:51	01:18	<sup>3</sup> He	10	4M	6		✓
2567	01:19	01:40	<sup>3</sup> He	10	4M	7		✓
2568	01:46	02:12	<sup>3</sup> He	10	4M	7		

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### RIGHT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet

Date: 5/21/09	Author: Brad Schoenrock
Beam Energy: 2.425 GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="checkbox"/> N, Long, <input checked="" type="checkbox"/> Tran, or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.224 Polarity: "-"	Current (A): 515 Polarity: Positive
Angle: 16 Sieve Plate: IN or <input checked="" type="checkbox"/> OUT?	Angle: 75

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
21461	21:15	21:41	<sup>3</sup> He	10	4.25M	17		✓
21462	21:42	22:07	<sup>3</sup> He	10	4.25M	17		✓
21463	21:08	22:43	<sup>3</sup> He	10	5.53M	17	Bad dead time on Left	
21464	22:59	23:29	<sup>3</sup> He	10	4.28M	17		✓
21465	23:29	23:56	<sup>3</sup> He	10	4.27M	17		✓
21466	23:57	00:23	<sup>3</sup> He	10	4.26M	16		✓
21467	00:23	00:50	<sup>3</sup> He	10	4.27M	17		✓
21468	00:51	01:18	<sup>3</sup> He	10	4.27M	16		✓
21469	01:19	01:46	<sup>3</sup> He	10	4.27M	17		✓
21470	01:46	02:12	<sup>3</sup> He	10	4.27M	17		

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### LEFT-ARM ONLY on this page: $A_x$ , $A_z$ Production Run Sheet

Date: 5-22-2009	Author: Salvatore Frullani
Beam Energy: 2.425 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="checkbox"/> N, Long, <input checked="" type="checkbox"/> Tran, or Vertical
LHRS Momentum (GeV/c): 2.277 Polarity: "-"	BigBite Current (A): 515 Polarity: Positive
Angle: 14.5 Sieve Plate: IN or <input checked="" type="checkbox"/> OUT?	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
2569	0213	0238	$^3\text{He}$	10	4M	7		✓
2570	0240	0306	$^3\text{He}$	10	4M	7	10	
2571	0307	0333	$^3\text{He}$	10	4M	7		✓
2572	0334	0400	$^3\text{He}$	10	4M	7		
2573	0402	0427	$^3\text{He}$	10	4M	7		✓
2574	0429	0456	$^3\text{He}$	10	4M	7		
2575	0513	0544	$^3\text{He}$	10	4M	6		✓
2576	0546	0612	$^3\text{He}$	10	4M	6		✓
2577	0613	0639	$^3\text{He}$	10	4M	6		✓
2578	0641	0708	$^3\text{He}$	10	4M	6		
2579	0708	0739	$^3\text{He}$	10	4M	7		✓
2580	0740	0816	$^3\text{He}$	10	2.9	7	End early due to TSO fail	✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

More Comments:

### RIGHT-ARM ONLY on this page: $A_x$ , $A_z$ Production Run Sheet

Date: 5-22-2009	Author: Salvatore Frullani
Beam Energy: 2.425 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="checkbox"/> N, Long, <input checked="" type="checkbox"/> Tran, or Vertical
RHRS Momentum (GeV/c): 2.224 Polarity: "-"	BigBite Current (A): 515 Polarity: Positive
Angle: 16 Sieve Plate: IN or <input checked="" type="checkbox"/> OUT?	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
21471	0213	0238	$^3\text{He}$	10	4.227	17		✓
21472	0239	0306	$^3\text{He}$	10	4.27M	17		
21473	0307	0333	$^3\text{He}$	10	4.27M	17		✓
21474	0334	0401	$^3\text{He}$	10	4.25M	17		
21475	0402	0428	$^3\text{He}$	10	4.30M	17		✓
21476	0428	0456	$^3\text{He}$	10	4.33M	17		
21477	0512	0545	$^3\text{He}$	10	4.16M	17		✓
21478	0545	0612	$^3\text{He}$	10	4.26M	17		✓
21479	0613	0640	$^3\text{He}$	10	4.28M	16		✓
21480	0641	0708	$^3\text{He}$	10	4.27M	16		
21481	0708	0740	$^3\text{He}$	10	4.5M	17		✓
21482	0740	0818	$^3\text{He}$	10	4.1	16	End early due to L-HRS TSO fail	✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

More Comments:

### LEFT-ARM ONLY on this page: Ax, Az Production Run Sheet

Date: 5/22/2009	Author: William Timman
Beam Energy: 2.425 GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="checkbox"/> N, Long, <input checked="" type="checkbox"/> Tran, or Vertical
LHRS Momentum (GeV/c): 2.277 Polarity: "-" Angle: 14.5° Sieve Plate: IN or <input checked="" type="checkbox"/> OUT	BigBite Current (A): 515 Polarity: Positive Angle: 25°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
→ 2581	<del>0822</del>						Junk	✗
2582	<del>0822</del>	0842	<sup>0826</sup> 3He	10	4.8	6	End Early Due to L-HRS DAQ	✓
2583	0848	0904	3He	10	2.8	6	Early end extended Beam loss	✓
2584	1004	1026	3He	10	4.0	7		✓
2585	1028	1055	3He	10	4.0	7		✓
2586	1057	<del>1126</del>	<sup>1126</sup> 3He	10	4.0	7		✓
2587	1135	1202	3He	10	4.0	7		✓
2588	1203	1232	3He	10	4.0	7		✓
2589	1233	1300	3He	10	4.0	7		✓
2590	1302	1329	3He	10	4.0	7	NMR Run Prior.	✓
2591	1330	1359	3He	10	4.0	7	ROL Sync Issue	✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

#### More Comments:

Run 2582 looks good. - TS died.

### RIGHT-ARM ONLY on this page: Ax, Az Production Run Sheet

Date: 5/22/2009	Author: William Timman
Beam Energy: 2.425 GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="checkbox"/> N, Long, <input checked="" type="checkbox"/> Tran, or Vertical
RHRS Momentum (GeV/c): 2.224 Polarity: "-" Angle: 16.0° Sieve Plate: IN or <input checked="" type="checkbox"/> OUT	BigBite Current (A): 515 Polarity: Positive Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
21483	0822						Junk	✗
21484	0826	0842	3He	10	2.3	17	End Early due to L-HRS DAQ	✓
21485	0848	0904	3He	10	3.1	17	Early end due to extended Beam loss	✓
21486	1004	1026	3He	10	4.3	17		✓
21487	1028	1055	3He	10	4.3	17		✓
21488	1056	1126	3He	10	4.2	17	*	✓
21489							Junk - Reboot ROL, LODA	✗
21490	1135	1202	3He	10	4.3	17		✓
21491	1203	1232	3He	10	4.3	17		✓
21492	1233	1300	3He	10	4.3	17		✓
21493	1302	1329	3He	10	4.3	17	NMR Run just prior	✓
21494	1330		3He	10	4.3	17		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

#### More Comments:

Run 21484 looks good despite TS issue during end  
\* Run 21488 R-HRS TS (EAT) locked up at end.



### LEFT-ARM ONLY on this page: $A_x$ , $A_z$ Production Run Sheet

Date: 5/22/2009	Author: William Tireman
Beam Energy: 2.425 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="radio"/> N, Long, <input checked="" type="radio"/> Tran, or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.277 Polarity: "-"	Current (A): 515 Polarity: Positive
Angle: 14.5° Sieve Plate: IN or <input checked="" type="radio"/> OUT?	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
2592	1400	1429	$^3\text{He}$	10	4.0	7		✓
2593	1430	1458	$^3\text{He}$	10	4.0	6		✓
2594	1459	1530	$^3\text{He}$	10	4.0	7		✓
2595	1532	1601	$^3\text{He}$	10	4.0	7		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### RIGHT-ARM ONLY on this page: $A_x$ , $A_z$ Production Run Sheet

Date: 5/22/2009	Author: William Tireman
Beam Energy: 2.425 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="radio"/> N, Long, <input checked="" type="radio"/> Tran, or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.224 Polarity: "-"	Current (A): 515 Polarity: Positive
Angle: <del>16</del> 16° Sieve Plate: IN or <input checked="" type="radio"/> OUT?	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
21495	1400	1429	$^3\text{He}$	10	4.3	17		✓
21496	1430	1458	$^3\text{He}$	10	4.3	17		✓
21497	1459	1530	$^3\text{He}$	10	4.3	17		✓
21498	1532	1601	$^3\text{He}$	10	4.3	17		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:



### LEFT-ARM ONLY on this page: Ax, Az Production Run Sheet

Date: 5/22/09	Author: Brad Schoenrock
Beam Energy: 2.425 GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="checkbox"/> N, Long, <input checked="" type="checkbox"/> Tran or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.277 Polarity: "-"	Current (A): 515 Polarity: Positive
Angle: 14.5 Sieve Plate: IN or <input checked="" type="checkbox"/> OUT?	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
2596	16:03	16:31	<sup>3</sup> He	10	4M	6		✓
2597	16:32	16:59	<sup>3</sup> He	10	4M	6		✓
2598	17:00	17:30	<sup>3</sup> He	10	4M	6		✓
2599	17:31	17:58	<sup>3</sup> He	10	4M	6		✓
2600	18:15	18:24	<sup>3</sup> He	10	128M	7	stopped short for hall work	
2601	19:45	20:42	<sup>3</sup> He	0	99K		Test run	
2602	20:46	21:48	<sup>3</sup> He	0	65K		cosmic	
2603	22:37	22:45	<sup>3</sup> He	2	273K		check out	
2604	22:58	23:06	<sup>3</sup> He	2	252K		check out 6x6 raster	
2605	23:08	23:14	<sup>3</sup> He	2	198K		check out 2x2 raster	
2606	23:16	23:28	<sup>3</sup> He	2	425K		check out 4x4 raster	
2607	23:33	00:15	optics	2	4M			

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### RIGHT-ARM ONLY on this page: Ax, Az Production Run Sheet

Date: 5/22/09	Author: Brad Schoenrock
Beam Energy: 2.425 GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="checkbox"/> N, Long, <input checked="" type="checkbox"/> Tran or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.224 Polarity: "-"	Current (A): 515 Polarity: Positive
Angle: 16° Sieve Plate: IN or <input checked="" type="checkbox"/> OUT?	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
21499	16:03	16:31	<sup>3</sup> He	10	4.27M	16		✓
21500	16:32	16:59	<sup>3</sup> He	10	4.28M	16		✓
21501	17:00	17:30	<sup>3</sup> He	10	4.28M	16		✓
21502	17:30	17:58	<sup>3</sup> He	10	4.27M	16		✓
21503	18:15	18:24	<sup>3</sup> He	10	1.37M	17	stopped short for hall work	
21504	19:44	20:42	<sup>3</sup> He	0	90K		test run	
21505	20:46	21:48	<sup>3</sup> He	0	97K		cosmic	
21506	22:37	22:45	<sup>3</sup> He	2	330K		check out	
21507	22:58	23:06	<sup>3</sup> He	2	295K		check out 6x6 raster	
21508	23:08	23:14	<sup>3</sup> He	2	246K		check out 2x2 raster	
21509	23:16	23:28	<sup>3</sup> He	2	514K		check out 4x4 raster	
21510	23:33	00:15	optics	2	5M			

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:



### LEFT-ARM ONLY on this page: $A_x, A_z$ Production Run Sheet

Date: 5-23-2009	Author: Salvatore Trullone
Beam Energy: 2.425 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="checkbox"/> N, Long, <input checked="" type="checkbox"/> Tran, or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.277	Polarity: "-" Current (A): 515
Angle: 14.5°	Sieve Plate: IN or <input checked="" type="checkbox"/> OUT? Angle: 75°
	Polarity: Positive

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
2608	00:17	00:40	OPTICS	2.0	45k			
2609	00:44	00:46	H <sub>2</sub>			0		
2610	00:50	01:07	H <sub>2</sub>	5.0	17	0	p = 2.277 GeV	
2611	01:40	01:55	H <sub>2</sub>		17	0	p = 2.250 GeV	
2612	02:00	02:05	OPTICS		17	22		
2613	02:37	02:42			17	38	p = 2.250 GeV	
2614	02:48	03:04	Ref. Cell H <sub>2</sub>	5.0	17	0		
2615	03:35	03:50			17	0	p = 2.200 GeV	
2616	03:53	03:58	OPTICS		17	29		
2617	04:06	04:11			17	29	p = 2.175 GeV	
2618	04:15	04:30	Ref. Cell H <sub>2</sub>		17	0		
2619	04:57	05:03	$^3\text{He}$	10	17	7	p = 2.277 GeV	V

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### RIGHT-ARM ONLY on this page: $A_x, A_z$ Production Run Sheet

Date: 5-23-2009	Author: Salvatore Trullone
Beam Energy: 2.425 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="checkbox"/> N, Long, <input checked="" type="checkbox"/> Tran, or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.224	Polarity: "-" Current (A): 515
Angle: 16.0°	Sieve Plate: IN or <input checked="" type="checkbox"/> OUT? Angle: 75°
	Polarity: Positive

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
21511	00:17	00:40	OPTICS	2.0	63k			
21512	00:43	00:46	H <sub>2</sub>			0		
21513	00:53	01:08	H <sub>2</sub>	5.0	1.27	7	p = 2.224 GeV	
21514	01:39	01:55	H <sub>2</sub>		1.187	8	p = 2.200 GeV	
21515	02:00	02:05	OPTICS		1.2	27		
21516	02:36	02:42	OPTICS		1.22	28	p = 2.175 GeV	
21517	02:47	03:04	Ref. Cell H <sub>2</sub>	5.0	1.15	8		
21518	03:34	03:50			1.14	9	p = 2.150 GeV	
21519	03:53	03:58	OPTICS		1.24	30		
21520	04:04	04:11			1.7	24	junk (recycling) p changing	
21521	04:15	04:30	Ref. Cell H <sub>2</sub>			10	junk to changing recycling	
21522	04:54	05:04	$^3\text{He}$	10	1.7	16	p = 2.224 GeV	

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:



### LEFT-ARM ONLY on this page: $A_x$ , $A_z$ Production Run Sheet

Date: 5-23-2009	Author: Salvatore Frullone / Tireman
Beam Energy: 2.425 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="checkbox"/> N, Long, <input checked="" type="checkbox"/> Tran, or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.277	Polarity: "-" Current (A): 515
Angle: 14.5°	Sieve Plate: IN or <input checked="" type="checkbox"/> OUT? Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
2620	0505	0532	$^3\text{He}$	10	4.17	7		✓
2621	0533	0558	$^3\text{He}$	10	4.11	6		✓
2622	0600	0627	$^3\text{He}$	10	4.11	7		✓
2623	0630	0657	$^3\text{He}$	10	4.17	6		✓
2624	0700	0729	$^3\text{He}$	10	4.11	7		✓
2625	0732	0757	$^3\text{He}$	10	4.11	7		✓
2626	0759	0824	$^3\text{He}$	10	4.0	7		✓
2627	0830	0856	$^3\text{He}$	10	4.0	7	Target GUI Reboot NMR Sweep	✓
2628	0857	0924	$^3\text{He}$	10	4.0	7		✓
<del>2629</del>	0925	—	$^3\text{He}$	10	—	—	Junk Left fail start	
2630	0933	0958	$^3\text{He}$	10	4.0	7		✓
2631	0959	1030	$^3\text{He}$	10	4.0	7		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

#### More Comments:

#2629 Left fail startup... Res just *Coda*.  
 #2631 Long RF Trip downtime ~ 10 mins.

### RIGHT-ARM ONLY on this page: $A_x$ , $A_z$ Production Run Sheet

Date: 5-23-2009	Author: Salvatore Frullone / Tireman
Beam Energy: 2.425 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="checkbox"/> N, Long, <input checked="" type="checkbox"/> Tran, or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.2248	Polarity: "-" Current (A): 515
Angle: 16.0°	Sieve Plate: IN or <input checked="" type="checkbox"/> OUT? Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
21523	0505	0532	$^3\text{He}$	10	4.2511	17		✓
21524	0533	0558	$^3\text{He}$	10	4.2611	17		✓
21525	0559	0628	$^3\text{He}$	10	4.2811	16		✓
21526	0629	0657	$^3\text{He}$	10	4.2711	16		✓
21527	0700	0731	$^3\text{He}$	10	4.2911	16		✓
21528	0732	0757	$^3\text{He}$	10	4.2411	17		✓
21529	0758	0824	$^3\text{He}$	10	4.25	17		✓
21530	0830	0856	$^3\text{He}$	10	4.25	17	Target GUI Reboot NMR Sweep	✓
21531	0857	0924	$^3\text{He}$	10	4.25	17		✓
21532	0925	—	$^3\text{He}$	10	—	—	Junk Left fail	✗
21533	0933	0958	$^3\text{He}$	10	4.26	17		✓
21534	0959	1030	$^3\text{He}$	10	4.27	17		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

#### More Comments:

#21534 Long RF Trip recovery.

### LEFT-ARM ONLY on this page: $A_x$ , $A_z$ Production Run Sheet

Date: 5-23-2009	Author: William Tirenman
Beam Energy: 2.425 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="radio"/> N, Long, <input checked="" type="radio"/> Tran, or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.277	Polarity: "-"
Angle: 14.5°	Sieve Plate: IN or <input checked="" type="radio"/> OUT
	Current (A): 515
	Polarity: Positive
	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
2632	1031	1058	$^3\text{He}$	10	4.0	7		✓
2633	1059	1126	$^3\text{He}$	10	4.0	7		✓
2634	1127	1153	$^3\text{He}$	10	4.0	7		✓
2635	1154	1220	$^3\text{He}$	10	4.0	7		✓
2636	1223	1250	$^3\text{He}$	10	4.0	7		✓
2637	1252	1322	$^3\text{He}$	10	4.0	7		✓
2638	1332	1400	$^3\text{He}$	10	4.0	7	Half-wave plate change (TN) NMR sweep	✓
2639	1401	1429	$^3\text{He}$	10	4.0	7		✓
2640	1430	1458	$^3\text{He}$	10	4.0	7		✓
2641	1469	1533	$^3\text{He}$	10	4.0	7		✓
2642	1533	1559	$^3\text{He}$	10	4.0	7		✓
2643	1559	16:31	$^3\text{He}$	10	4 M	7		

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### RIGHT-ARM ONLY on this page: $A_x$ , $A_z$ Production Run Sheet

Date: 5-23-2009	Author: William Tirenman
Beam Energy: 2.425 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="radio"/> N, Long, <input checked="" type="radio"/> Tran, or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.2248	Polarity: "-"
Angle: 16.0°	Sieve Plate: IN or <input checked="" type="radio"/> OUT
	Current (A): 515
	Polarity: Positive
	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
21535	1031	1058	$^3\text{He}$	10	4.27	17		✓
21536	1059	1126	$^3\text{He}$	10	4.28	17		✓
21537	1127	1153	$^3\text{He}$	10	4.24	17		✓
21538	1154	<del>1220</del> 1222	$^3\text{He}$	10	4.27	17		✓
21539	1223	1250	$^3\text{He}$	10	4.27	17		✓
21540	1251	1322	$^3\text{He}$	10	4.29	17		✓
21541	1332	1400	$^3\text{He}$	10	4.26	16	Half-wave plate change (TN) NMR sweep	✓
21542	1401	1429	$^3\text{He}$	10	4.27	17		✓
21543	1430	1458	$^3\text{He}$	10	4.27	17		✓
21544	1469	1533	$^3\text{He}$	10	4.28	17		✓
21545	1533	1559	$^3\text{He}$	10	4.26	17		✓
21546	1559	16:31	$^3\text{He}$	10	4.29 M	17		

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:



**LEFT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet**

Date: 5-23-09	Author: Brad Schoenrock
Beam Energy: 2.429 GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="checkbox"/> N, Long, <input checked="" type="checkbox"/> Trap, or Vertical
LHRs	BigBite
Momentum (GeV/c): 2.277 Polarity: "-"	Current (A): 515 Polarity: Positive
Angle: 14.5° Sieve Plate: IN or <input checked="" type="checkbox"/> OUT?	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
2644	16:33	16:58	<sup>3</sup> He	10	4M	6		✓
2645	16:59	17:27	<sup>3</sup> He	10	4M	7		✓
2646	17:59	18:26	<sup>3</sup> He	10	4M	7	first run after NMR sweep	✓
2647	18:26	18:54	<sup>3</sup> He	10	4M	7		✓
<del>2648</del>	18:55	19:22	<sup>3</sup> He	10	4M	7		✓
2649	19:22	19:49	<sup>3</sup> He	10	4M	7		✓
2650	19:50	20:17	<sup>3</sup> He	10	4M	7		✓
2651	20:18	20:46	<sup>3</sup> He	10	4M	7		✓
2652	20:47	21:13	<sup>3</sup> He	10	4M	6		✓
2653	21:14	21:43	<sup>3</sup> He	10	4M	7		✓
2654	21:46	21:47	<sup>3</sup> He	10	70K	7	settings up Hippex first run after NMR sweep	✓
2655	21:50	22:17	<sup>3</sup> He	10	4M	7		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

**RIGHT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet**

Date: 5-23-09	Author: Brad Schoenrock
Beam Energy: 2.425 GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="checkbox"/> N, Long, <input checked="" type="checkbox"/> Trap, or Vertical
RHRs	BigBite
Momentum (GeV/c): 2.2248 Polarity: "-"	Current (A): 515 Polarity: Positive
Angle: 16° Sieve Plate: IN or <input checked="" type="checkbox"/> OUT?	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
21547	16:33	16:58	<sup>3</sup> He	10	4.28M	17		✓
21548	16:59	17:28	<sup>3</sup> He	10	4.26M	17		✓
21549	17:59	18:26	<sup>3</sup> He	10	4.27M	16	first run after NMR sweep	✓
21550	18:26	18:54	<sup>3</sup> He	10	4.27M	17		✓
21551	18:55	19:22	<sup>3</sup> He	10	4.28M	17		✓
21552	19:22	19:49	<sup>3</sup> He	10	4.27M	17		✓
21553	19:50	20:17	<sup>3</sup> He	10	4.27M	17		✓
21554	20:18	20:46	<sup>3</sup> He	10	4.26M	17		✓
21555	20:47	21:13	<sup>3</sup> He	10	4.27M	16		✓
21556	21:14	21:43	<sup>3</sup> He	10	4.28M	17		✓
21557	21:46	21:47	<sup>3</sup> He	10	75K	17	settings up Hippex first run after NMR sweep	✓
21558	21:50	22:17	<sup>3</sup> He	10	4.28M	17		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### LEFT-ARM ONLY on this page: Ax, Az Production Run Sheet

Date: 5/23/09	Author: Brad Schoenrock
Beam Energy: 2,425 GeV	Using Pol <sup>3</sup> He Cell: (Y/N, Long, Tran), or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.277 Polarity: "-"	Current (A): 515 Polarity: Positive
Angle: 14.5 Sieve Plate: IN or OUT?	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
2656	22:18	22:45	<sup>3</sup> He	10	4M	7		✓
2657	22:46	23:14	<sup>3</sup> He	10	4M	7		✓
2658	23:15	23:42	<sup>3</sup> He	10	4M	7		✓
2659	23:43	00:11	<sup>3</sup> He	10	4M	7		✓
2660	00:13	00:39	<sup>3</sup> He	10	4M	7		✓
2661	00:14					7	stopped juice	
2662	00:47	01:12	<sup>3</sup> He	10	4M	6		✓
2663	01:14	01:41	<sup>3</sup> He	10	4M	6		✓
2664	01:43	02:13	<sup>3</sup> He	10	4M	7		✓
2665	02:14	02:41	<sup>3</sup> He	10	4M	6		✓
2666	02:42	03:12	<sup>3</sup> He	10	4M	6		✓
2667	03:13	03:43	<sup>3</sup> He	10	4M	6		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### RIGHT-ARM ONLY on this page: Ax, Az Production Run Sheet

Date: 5/23/09	Author: Brad Schoenrock
Beam Energy: 2,425 GeV	Using Pol <sup>3</sup> He Cell: (Y/N, Long, Tran), or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.2248 Polarity: "-"	Current (A): 515 Polarity: Positive
Angle: 16° Sieve Plate: IN or OUT?	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
21559	22:18	22:45	<sup>3</sup> He	10	4.26M	17		✓
21560	22:46	23:15	<sup>3</sup> He	10	4.28M	17		✓
21561	23:15	23:43	<sup>3</sup> He	10	4.27M	17		✓
21562	23:43	00:12	<sup>3</sup> He	10	4.27M	17		✓
21563	00:12	00:40	<sup>3</sup> He	10	4.26M	17		✓
21564	00:40						START STAFF → KILL CODA	
21565	00:46	01:13	<sup>3</sup> He	10	4.25M	16		✓
21566	01:13	01:42	<sup>3</sup> He	10	4.27M	17		✓
21567	01:43	02:13	<sup>3</sup> He	10	4.28M	16		✓
21568	02:13	02:41	<sup>3</sup> He	10	4.26M	17		✓
21569	02:41	03:13	<sup>3</sup> He	10	4.27	16		✓
21570	03:13	03:43	<sup>3</sup> He	10	4.26	17		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### LEFT-ARM ONLY on this page: $A_x$ , $A_z$ Production Run Sheet

Date: 5-24-2009	Author: Salvatore Frullani
Beam Energy: 2.425 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="checkbox"/> N, Long, <input checked="" type="checkbox"/> Trap, or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.277 Polarity: "-"	Current (A): 555 Polarity: Positive
Angle: 14.5° Sieve Plate: IN or <input checked="" type="checkbox"/> OUT?	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
2668	0344	0411	$^3\text{He}$	10	4M	6		✓
2669	0412	0439	$^3\text{He}$	10	4M	6		✓
2670	0440	0507	$^3\text{He}$	10	4M	7		✓
2671	0508	0534	$^3\text{He}$	10	4M	7		✓
2672							2672 2673 UNK	
2674	0546	0614	$^3\text{He}$	10	4M	7		✓
2675	0615	0642	$^3\text{He}$	10	4M	7		✓
2676	0643	0709	$^3\text{He}$	10	4M	6		✓
2677	0711	0737	$^3\text{He}$	10		6		✓
2678	0738	0805	$^3\text{He}$	10	4M	7		✓
2679	0806	0832	$^3\text{He}$	10	4M	6		✓
2680	0833	0901	$^3\text{He}$	10	4M	7		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### RIGHT-ARM ONLY on this page: $A_x$ , $A_z$ Production Run Sheet

Date: 5.24.2009	Author: Salvatore Frullani
Beam Energy: 2.425 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="checkbox"/> N, Long, <input checked="" type="checkbox"/> Trap, or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.2248 Polarity: "-"	Current (A): 555 Polarity: Positive
Angle: 16° Sieve Plate: IN or <input checked="" type="checkbox"/> OUT?	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
21571	0344	0411	$^3\text{He}$	10	4.26M	17		✓
21572	0412	0439	$^3\text{He}$	10	4.26M	17		✓
21573	0439	0507	$^3\text{He}$	10	4.26	17		✓
21574	0507	0534	$^3\text{He}$	10	4.32M	17		✓
21575	0535	0540			1.4M		21575 21576 UNK	
21578	0546	0615	$^3\text{He}$	10	4.27M	17		✓
21579	0615	0642	$^3\text{He}$	10	4.27M	16		✓
21580	0643	0709	$^3\text{He}$	10	4.27M	16		✓
21581	0710	0737	$^3\text{He}$	10	4.26M	17		✓
21582	0738	0805	$^3\text{He}$	10	4.27M	17		✓
21583	0806	0832	$^3\text{He}$	10	4.26M	17		✓
21584	0833	0901	$^3\text{He}$	10	2.28M	17		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

**LEFT-ARM ONLY on this page: Ax, Az Production Run Sheet**

Date: 5/24/09	Author: Brad Schoenrock
Beam Energy: 2.425 GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="checkbox"/> N, Long, <input checked="" type="checkbox"/> Tran, or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.277 Polarity: "-"	Current (A): 515 Polarity: Positive
Angle: 14.5° Sieve Plate: IN or <input checked="" type="checkbox"/> OUT?	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
2681	09:02	09:30	<sup>3</sup> He	10	4M	7		✓
2682	09:34	10:02	<sup>3</sup> He	10	4M	7		✓
2683	10:03	10:30	<sup>3</sup> He	10	4M	7		✓
2684	10:31	10:57	<sup>3</sup> He	10	4M	7		✓
2685	10:58	11:32	<sup>3</sup> He	10	4M	6		✓
2686	11:34	12:03	<sup>3</sup> He	10	4M	7		✓
2687	12:04	12:33	<sup>3</sup> He	10	4M	7		✓
2688	12:34	13:04	<sup>3</sup> He	10	4M	7		✓
2689	13:05	13:35	<sup>3</sup> He	10	4M	7		✓
2690	13:38	14:15	<sup>3</sup> He	10	4M	7		✓
2691	14:16	14:48	<sup>3</sup> He	10	4M	7		✓
2692	14:49	15:19	<sup>3</sup> He	10	4M	7		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

**RIGHT-ARM ONLY on this page: Ax, Az Production Run Sheet**

Date: 5/24/09	Author: Brad Schoenrock
Beam Energy: 2.425 GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="checkbox"/> N, Long, <input checked="" type="checkbox"/> Tran, or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.2248 Polarity: "-"	Current (A): 515 Polarity: Positive
Angle: 16° Sieve Plate: IN or <input checked="" type="checkbox"/> OUT?	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
21585	09:02	09:30	<sup>3</sup> He	10	4.27M	17		✓
21586	09:34	10:03	<sup>3</sup> He	10	4.28M	17		✓
21587	10:03	10:30	<sup>3</sup> He	10	4.26M	17		✓
21588	10:31	10:57	<sup>3</sup> He	10	4.27M	17		✓
21589	10:58	11:32	<sup>3</sup> He	10	4.28M	16		✓
21590	11:34	12:03	<sup>3</sup> He	10	4.28M	17		✓
21591	12:04	12:33	<sup>3</sup> He	10	4.26M	17		✓
21592	12:34	13:04	<sup>3</sup> He	10	4.28M	17		✓
21593	13:05	13:36	<sup>3</sup> He	10	4.29M	16		✓
21594	13:38	14:15	<sup>3</sup> He	10	4.38M	16		✓
21595	14:16	14:48	<sup>3</sup> He	10	4.21M	17		✓
21596	14:49	15:19	<sup>3</sup> He	10	4.28M	17		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### LEFT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet

Date: 5/24/09	Author: Brad Schoenrock
Beam Energy: 2.425 GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="checkbox"/> N, Long, <input checked="" type="checkbox"/> Tran, or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.277	Polarity: "-"
Angle: 14.5°	Sieve Plate: IN or <input checked="" type="checkbox"/> OUT?
	Current (A): 515
	Polarity: Positive
	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
2693	15:19	15:45	<sup>3</sup> He	10	4M	7		✓
2694	15:46	16:14	<sup>3</sup> He	10	4M	7		✓
2695	16:18	16:45	<sup>3</sup> He	10	4M	7		✓
2696	16:47	17:14	<sup>3</sup> He	10	4M	7		✓
2697	17:16	17:41	<sup>3</sup> He	10	4M	7		✓
2698	17:43	18:13	<sup>3</sup> He	10	4M	7		✓
2699	18:14	18:28	<sup>3</sup> He	10	1.9M	7	Early end due Target Spin Flip (+)	
2700	18:38	19:04	<sup>3</sup> He	10	4M			✓
2701	19:05	19:33	<sup>3</sup> He	10	4M	7		✓
2702	19:34	20:00	<sup>3</sup> He	10	4M	7		✓
2703	20:02	20:37	<sup>3</sup> He	10	4M	6		✓
2704	20:38	21:04	<sup>3</sup> He	10	4M	7		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### RIGHT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet

Date: 5/24/09	Author: Brad Schoenrock
Beam Energy: 2.425 GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="checkbox"/> N, Long, <input checked="" type="checkbox"/> Tran, or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.2248	Polarity: "-"
Angle: 16°	Sieve Plate: IN or <input checked="" type="checkbox"/> OUT?
	Current (A): 515
	Polarity: Positive
	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
21597	15:19	15:46	<sup>3</sup> He	10	4.27M	17		✓
21598	15:46	16:14	<sup>3</sup> He	10	4.27M	17		✓
21599	16:18	16:45	<sup>3</sup> He	10	4.27M	17		✓
21600	16:46	17:15	<sup>3</sup> He	10	4.27M	17		✓
21601	17:16	17:42	<sup>3</sup> He	10	4.26M	16		✓
21602	17:43	18:13	<sup>3</sup> He	10	4.27M	16		✓
21603	18:14	18:28	<sup>3</sup> He	10		17	Early end due Target Spin Flip (+)	
21604	18:38	19:04	<sup>3</sup> He	10	4.28M			✓
21605	19:05	19:33	<sup>3</sup> He	10	4.33M	17		✓
21606	19:34	20:00	<sup>3</sup> He	10	4.27M	17		✓
21607	20:02	20:37	<sup>3</sup> He	10	4.28M	17		✓
21608	20:38	21:05	<sup>3</sup> He	10	4.27M	17		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

**LEFT-ARM ONLY on this page: Ax, Az Production Run Sheet**

Date: 5/24/2009	Author: John Watson
Beam Energy: 2.425 GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="radio"/> N, Long <input checked="" type="radio"/> Tran or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.277	Current (A): 515
Angle: 14.5°	Polarity: "-"
Sieve Plate: IN or <input checked="" type="radio"/> OUT	Polarity: Positive
	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
2705	21:06		<sup>3</sup> He	10	4M	7		✓
2706	21:35	22:01	<sup>3</sup> He	10	4M	6		✓
2707	22:03	22:30	<sup>3</sup> He	10	4M	7		✓
2708	22:31	22:58	<sup>3</sup> He	10	4M	7		✓
2709	22:59	23:25	<sup>3</sup> He	10	4M	7		✓
2710	23:27	23:52	<sup>3</sup> He	10	4M	7		✓
2711	23:54	00:19	<sup>3</sup> He	10	4M	7		✓
2712	00:21	00:49	<sup>3</sup> He	10	4M	7		✓
2713	00:49	01:17	<sup>3</sup> He	10	4M	6		✓
2714	01:18	01:44	<sup>3</sup> He	10	4M	7		✓
2715	01:45		<sup>3</sup> He	10			JUNK	
2716	01:49	02:17	<sup>3</sup> He	10	4M	6		

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

**RIGHT-ARM ONLY on this page: Ax, Az Production Run Sheet**

Date: 5/24/2009	Author: John Watson
Beam Energy: 2.425 GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="radio"/> N, Long, <input checked="" type="radio"/> Tran or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.2248	Current (A): 515
Angle: 16°	Polarity: "-"
Sieve Plate: IN or <input checked="" type="radio"/> OUT	Polarity: Positive
	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
21609	21:06		<sup>3</sup> He	10		17		✓
21610	21:34	22:02	<sup>3</sup> He	10	4.28M	16		✓
21611	22:05	22:30	<sup>3</sup> He	10	4.27M	16		✓
21612	22:31	<del>22:58</del>	<sup>3</sup> He	10	4.27M	17		✓
21613	22:59	23:25	<sup>3</sup> He	10	4.28M	17		✓
21614	23:26	23:53	<sup>3</sup> He	10	4.26M	17		✓
21615	23:53	00:20	<sup>3</sup> He	10	4.27M	16		✓
21616	00:20	00:48	<sup>3</sup> He	10	4.28M	17		✓
21617	00:49	01:17	<sup>3</sup> He	10	4.28M	17		✓
21618	01:18	01:44	<sup>3</sup> He	10	4.27M	16		✓
21619	01:45						JUNK	
21620	01:49		<sup>3</sup> He	10		16	JUNK acquisition blocked during run	

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

**LEFT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet**

Date: 5.25.2009	Author: Salvatore Frullani
Beam Energy: 2.425 GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="radio"/> N, Long, <input checked="" type="radio"/> Tran, or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.277 Polarity: "-"	Current (A): 515 Polarity: Positive
Angle: 14.5° Sieve Plate: IN or <input checked="" type="radio"/> OUT?	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
2717	02:24	02:50	<sup>3</sup> He	10	47	6		✓
2718	02:51	03:21	<sup>3</sup> He	10	47	6		✓
2719	03:23	03:50	<sup>3</sup> He	10	47	7		✓
2720	03:51	04:18	<sup>3</sup> He	10	47	6		✓
2721	04:20	04:23	<sup>3</sup> He	10			JUNK (NO BEAM) TARGET PROBLEM	
2722	04:28	04:56	<sup>3</sup> He	10	47	7		✓
2723	04:58	05:14	<sup>3</sup> He	10	1.357	6	RUN STOPPED - NO BEAM	✓
2724	05:26	05:59	<sup>3</sup> He	10	47	6		✓
2725	06:00	06:26	<sup>3</sup> He	10	47	6		✓
2726	06:29	06:55	<sup>3</sup> He	10	3.67	6		✓
2727	07:07	07:38	<sup>3</sup> He	10	4.07	6		✓
2728	07:40	08:09	<sup>3</sup> He	10	4.07	7		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

**RIGHT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet**

Date: 5.25.2009	Author: Salvatore Frullani
Beam Energy: 2.425 GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="radio"/> N, Long, <input checked="" type="radio"/> Tran, or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.2248 Polarity: "-"	Current (A): 515 Polarity: Positive
Angle: 16° Sieve Plate: IN or <input checked="" type="radio"/> OUT?	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
21621	02:23	02:50	<sup>3</sup> He	10	4.277	16		✓
21622	02:51	03:22	<sup>3</sup> He	10	4.287	16		✓
21623	03:22	03:50	<sup>3</sup> He	10	4.287	16		✓
21624	03:51	04:19	<sup>3</sup> He	10	4.277	17		✓
21625	04:19	04:23	<sup>3</sup> He	10			NO BEAM JUNK TARGET PROBLEM	
21626	04:28	04:57	<sup>3</sup> He	10	4.297	17		✓
21627	04:57	05:14	<sup>3</sup> He	10	4.457	16	RUN STOPPED - NO BEAM	✓
21628	05:26	05:59	<sup>3</sup> He	10	4.307	17		✓
21629	05:59	06:27	<sup>3</sup> He	10	4.287	16		✓
21630	06:28	06:56	<sup>3</sup> He	10	3.87	16		✓
21631	07:07	07:38	<sup>3</sup> He	10	4.37	17		✓
21632	07:39	08:09	<sup>3</sup> He	10	4.357	17		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

**LEFT-ARM ONLY on this page: Ax, Az Production Run Sheet**

Date: 5/25/09	Author: Brad Schoenrock
Beam Energy: 2.425 GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="checkbox"/> N, Long, <input checked="" type="checkbox"/> Tran, or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.217	Polarity: "-"
Current (A): 515	Polarity: Positive
Angle: 14.5°	Sieve Plate: IN or <input checked="" type="checkbox"/> OUT?
	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
2729	08:10	08:41	<sup>3</sup> He	10	4M	7		✓
2730	08:42	09:11	<sup>3</sup> He	10	4M	7		✓
2731	09:12	09:52	<sup>3</sup> He	10	4M	7		✓
2732	09:53	10:22	<sup>3</sup> He	10	4M	7		✓
2733	10:23	10:50	<sup>3</sup> He	10	4M	7		✓
2734	10:58	11:29	<sup>3</sup> He	10	4M	7		✓
2735	11:30	11:57	<sup>3</sup> He	10	4M	7		✓
2736	11:58	12:29	<sup>3</sup> He	10	4M	7		✓
2737	12:30	12:59	<sup>3</sup> He	10	4M	7		✓
2738	13:00	13:27	<sup>3</sup> He	10	4M	7		✓
2739	13:28	13:57	<sup>3</sup> He	10	4M	7		✓
2740	13:58	14:27	<sup>3</sup> He	10	4M	7		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

**RIGHT-ARM ONLY on this page: Ax, Az Production Run Sheet**

Date: 5/25/09	Author: Brad Schoenrock
Beam Energy: 2.425 GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="checkbox"/> N, Long, <input checked="" type="checkbox"/> Tran, or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.2278	Polarity: "-"
Current (A): 515	Polarity: Positive
Angle: 16.0°	Sieve Plate: IN or <input checked="" type="checkbox"/> OUT?
	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
21633	08:10	08:41	<sup>3</sup> He	10	4.29M	17		✓
21634	08:42	09:11	<sup>3</sup> He	10	4.29M	17		✓
21635	09:12	09:52	<sup>3</sup> He	10	4.30M	17		✓
21636	09:53	10:22	<sup>3</sup> He	10	4.28M	17		✓
21637	10:23	10:50	<sup>3</sup> He	10	4.28M	17		✓
21638	10:58	11:24	<sup>3</sup> He	10	4.30M	17	first run after AMR Sweep	✓
21639	11:30	11:57	<sup>3</sup> He	10	4.27M	17		✓
21640	11:58	12:29	<sup>3</sup> He	10	4.29M	17		✓
21641	12:30	12:59	<sup>3</sup> He	10	4.29M	17		✓
21642	13:00	13:27	<sup>3</sup> He	10	4.28M	17		✓
21643	13:28	13:57	<sup>3</sup> He	10	4.36M	17		✓
21644	13:58	14:27	<sup>3</sup> He	10	4.29M	17		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:



### LEFT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet

Date: 5/25/09	Author: Brad Schaeferrock / John Watson
Beam Energy: 2.425 GeV	Using Pol <sup>3</sup> He Cell: Y/N, Long, Tran, or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.277	Polarity: "-"
Current (A): 515	Polarity: Positive
Angle: 14.5°	Sieve Plate: IN or OUT?
	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
2740	14:27	14:57	<sup>3</sup> He	10	4M	7		✓
2742	15:01	15:04	<sup>3</sup> He	10	187K		Junk - Hgppx wasn't running properly	
2743	15:11	15:13	<sup>3</sup> He	10	151K		//	
2744	15:16	15:42	<sup>3</sup> He	10	4M	7		✓
2745	15:43	16:11	<sup>3</sup> He	10	4M			
2746	16:13	16:41	<sup>3</sup> He	10	4M	6		✓
2747	16:43	17:12	<sup>3</sup> He	10	4M	6		✓
2748	17:13	17:39	<sup>3</sup> He	10	4M	6		✓
2749	17:41	18:08	<sup>3</sup> He	10	4M	6		✓
2750	18:10	18:38	<sup>3</sup> He	10	4M	6		
2751	18:39	19:05	<sup>3</sup> He	10	4M	6		✓
2752	19:09	19:37	<sup>3</sup> He	10	4M	6		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### RIGHT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet

Date: 5/25/09	Author: Brad Schaeferrock / John Watson
Beam Energy: 2.245 GeV	Using Pol <sup>3</sup> He Cell: Y/N, Long, Tran, or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.2248	Polarity: "-"
Current (A): 515	Polarity: Positive
Angle: 16°	Sieve Plate: IN or OUT?
	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
21645	14:27	14:57	<sup>3</sup> He	10	4.31M	17		✓
21646	15:01	15:04	<sup>3</sup> He	10	192K		Junk - Hgppx wasn't running properly	
21647	15:11	15:13	<sup>3</sup> He	10	160K		//	
21648	15:16	15:42	<sup>3</sup> He	10	4.28M	17		✓
21649	15:43	16:12	<sup>3</sup> He	10	4.28M			
21650	16:13	16:42	<sup>3</sup> He	10	4.31M	16		✓
21651	16:43	17:12	<sup>3</sup> He	10	4.3M	17		✓
21652	17:13	17:40	<sup>3</sup> He	10	4.28M	17		✓
21653	17:40	18:09	<sup>3</sup> He	10	4.28M	16		✓
21654	18:10	18:38	<sup>3</sup> He	10	4.28M	17		
21655	18:39	19:05	<sup>3</sup> He	10	4.27M	16		✓
21656	19:09	19:38	<sup>3</sup> He	10	4.29M	17		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### LEFT-ARM ONLY on this page: $A_x$ , $A_z$ Production Run Sheet

Date: 5/25/2009	Author: John Watson / Salvatore Frullani		
Beam Energy: 2.425 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="checkbox"/> N, Long, <input checked="" type="checkbox"/> Tran, or Vertical		
LHRS	BigBite		
Momentum (GeV/c): 2.277	Polarity: "-"	Current (A): 515	Polarity: Positive
Angle: 14.5°	Sieve Plate: IN or <input checked="" type="checkbox"/> OUT	Angle: 75°	

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
2753	18:46	20:13	$^3\text{He}$	10	4 M	6		
2754	20:14	20:44	$^3\text{He}$	10	4 M	6		✓
2755	20:45	-	$^3\text{He}$	10	-	-	Beam <sup>went</sup> off at start of run	
2756	20:57	21:24	$^3\text{He}$	10	4 M	6		✓
2757	21:28	-	$^3\text{He}$	10	-	-	Beam off at start of run	
2758	21:54	-	$^3\text{He}$	10	-	-	Junk Run (Coda Hung)	
2759	22:24	22:50	$^3\text{He}$	10	4 M			✓
2760	22:52	23:18	$^3\text{He}$	10	4 M	7		✓
2761	23:20	23:49	$^3\text{He}$	10	4 M	6		✓
2762	23:50	00:18	$^3\text{He}$	10	4 M	7		✓
2763	00:20	00:45	$^3\text{He}$	10	4 M	6		✓
2764	00:46	01:14	$^3\text{He}$	10	4 M	7		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### RIGHT-ARM ONLY on this page: $A_x$ , $A_z$ Production Run Sheet

Date: 5/25/2009	Author: John Watson / Salvatore Frullani		
Beam Energy: 2.245 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="checkbox"/> N, Long, <input checked="" type="checkbox"/> Tran, or Vertical		
RHRS	BigBite		
Momentum (GeV/c): 2.2248	Polarity: "-"	Current (A): 515	Polarity: Positive
Angle: 16°	Sieve Plate: IN or <input checked="" type="checkbox"/> OUT	Angle: 75°	

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
21657	19:39	20:14	$^3\text{He}$	10	4.30 M	17		
21658	20:14	20:44	$^3\text{He}$	10	4.25 M	17		✓
21659	20:45	-	$^3\text{He}$	10	-	-	Beam <sup>went</sup> off at start of run	
21660	20:57	21:26	$^3\text{He}$	10	4.22 M	17		✓
21661	21:28	-	$^3\text{He}$	10	-	-	Beam off at start of run	
21662	21:53	-	$^3\text{He}$	10	-	-	Junk Run	
21663	22:24	22:51	$^3\text{He}$	10	4.27 M			✓
21664	22:52	23:18	$^3\text{He}$	10	4.30 M	17		✓
21665	23:20	23:49	$^3\text{He}$	10	4.27 M	16		✓
21666	23:50	00:19	$^3\text{He}$	10	4.28 M	16		✓
21667	00:19	00:45	$^3\text{He}$	10	4.27 M	17		✓
21668	00:46	01:14	$^3\text{He}$	10	4.28 M	17		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

↑  
JW  
SF  
↓

↑  
JW  
SF  
↓

### LEFT-ARM ONLY on this page: $A_x, A_z$ Production Run Sheet

Date: 5.26.2009	Author: Salvatore Frullone
Beam Energy: 2.425 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="checkbox"/> N, Long, <input checked="" type="checkbox"/> Tran or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.277 Polarity: "-"	Current (A): 5.15 Polarity: Positive
Angle: 14.5° Sieve Plate: IN or <input checked="" type="checkbox"/> OUT?	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay OK?
2765	01:15	01:42	$^3\text{He}$	10	4.07	6		✓
2766	01:43	02:09	$^3\text{He}$	10	4.07	6		✓
2767	02:10	02:39	$^3\text{He}$	10	4.07	7		✓
2768	02:40	03:13	$^3\text{He}$	10	4.07	6		✓
2769	03:15	03:42	$^3\text{He}$	10	4.07	7		✓
2770	03:44	04:16	$^3\text{He}$	10	4.07	6		✓
2771	04:12	04:40	$^3\text{He}$	10	4.07	7		✓
2772	04:42	05:07	$^3\text{He}$	10	4.07	7		✓
2773	05:08	05:35	$^3\text{He}$	10	4.07	7		✓
2774	05:36	06:02	$^3\text{He}$	10	4.07	6		✓
2775	06:03	06:30	$^3\text{He}$	10	4.07	6		✓
2776	06:31	07:01	$^3\text{He}$	10		6		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### RIGHT-ARM ONLY on this page: $A_x, A_z$ Production Run Sheet

Date: 5.26.2009	Author: Salvatore Frullone
Beam Energy: 2.425 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="checkbox"/> N, Long, <input checked="" type="checkbox"/> Tran or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.248 Polarity: "-"	Current (A): 5.15 Polarity: Positive
Angle: 16° Sieve Plate: IN or <input checked="" type="checkbox"/> OUT?	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay OK?
21669	01:15	01:43	$^3\text{He}$	10	4.307	17		✓
21670	01:43	02:09	$^3\text{He}$	10	4.287	17		✓
21671	02:10	02:39	$^3\text{He}$	10	4.287	17		✓
21672	02:39	03:13	$^3\text{He}$	10	4.297	16		✓
21673	03:14	03:43	$^3\text{He}$	10	4.287	17	new target tol. 55.9% NMR	✓
21674	03:44	04:11	$^3\text{He}$	10	4.287	16		✓
21675	04:11	04:41	$^3\text{He}$	10	4.297	17		✓
21676	04:41	05:07	$^3\text{He}$	10	4.277	16		✓
21677	05:08	05:35	$^3\text{He}$	10	4.287	17		✓
21678	05:36	06:02	$^3\text{He}$	10	4.287	17		✓
21679	06:03	06:30	$^3\text{He}$	10	4.277	17		✓
21680	06:31	07:01	$^3\text{He}$	10	4.277	17		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

**LEFT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet**

Date: 5.26.2009	Author: Solube Fulmer / <sup>Prad</sup> 5th Oct 09
Beam Energy: 2.425 GeV	Using Pol <sup>3</sup> He Cell: Y/N, Long, Tran, or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.277 Polarity: "-"	Current (A): 515 Polarity: Positive
Angle: 14.5° Sieve Plate: IN or <u>OUT</u> ?	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
2777	07:02	07:29	<sup>3</sup> He	10	4.07	6		✓
2778	07:32	07:57	<sup>3</sup> He	10	4.07	7		✓
2779	07:58	08:26	<sup>3</sup> He	10	4 M	6		✓
2780	08:29	08:35	<sup>3</sup> He	10	771 K	7	Beam went down for Beam studies	✓
2781	08:51	15:48	<sup>3</sup> He	0	2 M	20	cosmic run	

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

**RIGHT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet**

Date: 5.26.2009	Author: Solube Fulmer / <sup>Prad</sup> Schoenrock
Beam Energy: 2.425 GeV	Using Pol <sup>3</sup> He Cell: Y/N, Long, Tran, or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.2248 Polarity: "-"	Current (A): 515 Polarity: Positive
Angle: 16° Sieve Plate: IN or <u>OUT</u> ?	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
21681	07:02	07:30	<sup>3</sup> He	10	4.29 M	17		✓
21682	07:31	07:57	<sup>3</sup> He	10	4.27 M	17	top pl = 55.8	✓
21683	07:58	08:26	<sup>3</sup> He	10	4.28 M	16		✓
21684	08:29	08:35	<sup>3</sup> He	10	796 K	17	Beam down for studies	✓
21685	08:51	18:48	<sup>3</sup> He	0	659 K	7	cosmic / changes were made during run	

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### LEFT-ARM ONLY on this page: $A_x, A_z$ Production Run Sheet

Date: 5/26/2009	Author:
Beam Energy: 2.425 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="radio"/> N, Long, <input checked="" type="radio"/> Tran, or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.277	Polarity: "-" Current (A): 515
Angle: 14.5°	Sieve Plate: IN or <input checked="" type="radio"/> OUT? Angle: 82°
	Polarity: Positive

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
2782	16:03	16:12	$^3\text{He}$				Checkout Run	
2783	18:04	18:08	BeO	2	751k	38	Beam Optics Check	
2784	18:14	18:26	$^3\text{He}$	2	1.27M	12	(2x2 raster) Trigger Check Mode	
2785	18:29	18:30	$^3\text{He}$	2	158k	12	Trigger Check 6x6 raster	
2786	18:35	18:38	$^3\text{He}$	5.5	747k	32	Trigger Check 4x4 raster	
2787*	18:43	19:11	$^3\text{He}$	10		3	Start of Production	
2788	19:17	19:32	$^3\text{He}$	10		3	End Run early in Right HRS TSO	
2789	19:37	20:04	$^3\text{He}$	10	3.3M	3	No beam for first few minutes	
2790	20:06		$^3\text{He}$	10		4	Good left arm data	
2791			$^3\text{He}$	10			Good left Arm Data	
2792	21:14	22:00			No Beam		Test of TSO	
2793	22:02	22:38	$^3\text{He}$	10	4M	3		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

More Comments:

\* Trigger supervisor died during run 2787

Loose T1 cable fixed

### RIGHT-ARM ONLY on this page: $A_x, A_z$ Production Run Sheet

Date: 5/26/2009	Author: John Wilson
Beam Energy: 2.425 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="radio"/> N, Long, <input checked="" type="radio"/> Tran, or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.175	Polarity: "-" Current (A): 515
Angle: 18°	Sieve Plate: IN or <input checked="" type="radio"/> OUT? Angle: 82°
	Polarity: Positive

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
21686	16:03	16:12	$^3\text{He}$				Checkout Run	
21687*	18:43	19:11	$^3\text{He}$	10		4	Start of Production	
21688	19:16	19:32	$^3\text{He}$	10		5	End Run early in Right HRS TSO	
21689	19:37	20:04	$^3\text{He}$	10	701k	4	No beam for first few minutes	
21690	20:06		$^3\text{He}$	10		11		
21691							Junk	
21692	21:13	22:00			No Beam		Test as Best TSO	
21693	22:02	22:39	$^3\text{He}$	10	3.24M	11		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

More Comments:

\* LHRS had problems during this run (21687)

Loose T1 cable fixed

### LEFT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet

Date: 5/26/2009	Author: John Watson
Beam Energy: 2.425 GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="checkbox"/> N, Long, <input checked="" type="checkbox"/> Tran, or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.277	Polarity: "-"
Current (A): 515	Polarity: Positive
Angle: 14.5°	Sieve Plate: IN or <input checked="" type="checkbox"/> OUT
	Angle: 82°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
2794	22:42	23:12	<sup>3</sup> He	10	4 M	3		✓
2795	23:13	23:48	<sup>3</sup> He	10	4 M	3		✓
2796	23:49	00:20	<sup>3</sup> He	10	4 n	3		✓
2797	00:22	00:48	<sup>3</sup> He	10	4 n	3		✓
2798	00:51	01:21	<sup>3</sup> He	10	4 n	2		✓
2799	01:22	01:52	<sup>3</sup> He	10	4 n	3		✓
2800	01:53	02:20	<sup>3</sup> He	10	4 n	3		✓
2801	02:22	02:50	<sup>3</sup> He	10	4 n	4		✓
2802	02:51	03:21	<sup>3</sup> He	10	4 n	3		✓
2803	03:22	03:52	<sup>3</sup> He	10	4 n	3		✓
2804	03:53	04:21	<sup>3</sup> He	10	4 n	3		✓
2805	04:22	04:51	<sup>3</sup> He	10	4 n	4		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### RIGHT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet

Date: 5/26/2009	Author: John Watson
Beam Energy: 2.425 GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="checkbox"/> N, Long, <input checked="" type="checkbox"/> Tran, or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.175	Polarity: "-"
Current (A): 515	Polarity: Positive
Angle: 18°	Sieve Plate: IN or <input checked="" type="checkbox"/> OUT
	Angle: 82°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
21694	22:42	23:12	<sup>3</sup> He	10	3.24 M	12		✓
21695	23:13	23:48	<sup>3</sup> He	10	3.02 M	12		✓
21696	23:49	00:20	<sup>3</sup> He	10	3.0 M	11	ntr = 58.6	✓
21697	00:22	00:50	<sup>3</sup> He	10	3.0 n	11		✓
21698	00:50	01:21	<sup>3</sup> He	10	3.0 n	12		✓
21699	01:22	01:52	<sup>3</sup> He	10	3.0 n	11		✓
21700	01:52	02:21	<sup>3</sup> He	10	3.0 n	11		✓
21701	02:21	02:50	<sup>3</sup> He	10	2.99 n	11		✓
21702	02:51	03:21	<sup>3</sup> He	10	3.0 n	11		✓
21703	03:22	03:52	<sup>3</sup> He	10	3.0 n	11		✓
21704	03:53	04:21	<sup>3</sup> He	10	2.99 n	12		✓
21705	04:22	04:51	<sup>3</sup> He	10	3.0	11		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### LEFT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet

Date: 5.27.2009	Author: <i>Silvestre Fullow / Brad Schoenrock</i>
Beam Energy: 2.425 GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="radio"/> N, Long, <input checked="" type="radio"/> Tran or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.277 Polarity: "-"	Current (A): 515 Polarity: Positive
Angle: 14.5° Sieve Plate: IN or <input checked="" type="radio"/> OUT?	Angle: 82°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
2806	04:52	05:20	<sup>3</sup> He	10	47	3		✓
2807	05:22	05:50	<sup>3</sup> He	10	47	4		✓
2808	05:52	06:25	<sup>3</sup> He	10	47	3		✓
2809	06:28	06:58	<sup>3</sup> He	12	57	5		✓
2810	06:59	07:31	<sup>3</sup> He	12	57	5		✓
2811	07:32	08:07	<sup>3</sup> He	12	57	5		✓
2812	08:09	08:46	<sup>3</sup> He	12	5M	5		✓
2813	08:46	09:26	<sup>3</sup> He	12	5M	5		✓
2814	09:36	10:13	H <sub>2</sub>	12	5M	2	H <sub>2</sub> reference cell	✓
2815	10:21	10:34	N <sub>2</sub>	12	1.7m	2	Left Side Issue 96% deadtime	
2816	10:38	11:18	N <sub>2</sub>	12	5.0m	4		✓
2817	11:25	12:07	<sup>3</sup> He	11	5.0	4		

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

#### More Comments:

N<sub>2</sub> on Run 2815/2816 at 10psig

Run 2815 is suspected... high deadtimes - endearly

### RIGHT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet

Date: 5-27-2009	Author: <i>Silvestre Fullow / Brad Schoenrock</i>
Beam Energy: 2.425 GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="radio"/> N, Long, <input checked="" type="radio"/> Tran or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.175 Polarity: "-"	Current (A): 515 Polarity: Positive
Angle: 18.0° Sieve Plate: IN or <input checked="" type="radio"/> OUT?	Angle: 82.0°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
21706	04:52	05:21	<sup>3</sup> He	10	2.997	12		✓
21707	05:21	05:53	<sup>3</sup> He	10	2.997	12		✓
21708	05:51	06:25	<sup>3</sup> He	10	2.997	11		✓
21709	06:27	06:58	<sup>3</sup> He	12	3.77	13		✓
21710	06:59	07:31	<sup>3</sup> He	12	3.77	13		✓
21711	07:32	08:07	<sup>3</sup> He	12	3.7M	13		✓
21712	08:09	08:46	<sup>3</sup> He	12	3.67M	13		✓
21713	08:46	09:26	<sup>3</sup> He	12	3.7M	13		✓
21714	09:36	10:13	H <sub>2</sub>	12	3.7M	11	H <sub>2</sub> reference cell	✓
21715	10:21	10:34	N <sub>2</sub>	12	1.3m	12	Left Side DAA at 96% deadtime	
21716	10:38	11:18	N <sub>2</sub>	12	4.08M	12		✓
21717	11:25	12:07	<sup>3</sup> He	11	3.99M	12		

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

#### More Comments:

End 21715 early in left HRS DAA Reboot

### LEFT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet

Date: 5/27/09	Author: Brad Schoenrock / John Watson
Beam Energy: 2.425 GeV	Using Pol <sup>3</sup> He Cell: (Y/N, Long, Tran) or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.277	Polarity: "-" Current (A): 515
Angle: 1405	Sieve Plate: IN or OUT? Angle: 82°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
2818	1210	1246	<sup>3</sup> He	11	5M	4		✓
*							Moller Runs	
2819							junk <del>DAQ</del> DAQ failed	
2820	17:38	1741	BeO				Spot +	
2821			<sup>3</sup> He	2	#		2x2 Raster	
2822	17:54	1757	<sup>3</sup> He	2	77K		6x6 Raster	
2823	17:59	18:00	<sup>3</sup> He	2	44K		4x4 Raster	
2824	18:03	18:37	<sup>3</sup> He	16	5M	4	Beginning Production	✓
2825	18:38	19:13	<sup>3</sup> He	11	5M	4		✓
2826	19:14	1949	<sup>3</sup> He	11	5M	4		✓
2827	19:51	2026	<sup>3</sup> He	11	5M	5		✓
2828	20:27	2059	<sup>3</sup> He	11	5M	4		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

More Comments:

\* Moller Runs

### RIGHT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet

Date: 5/27/09	Author: Brad Schoenrock / John Watson
Beam Energy: 2.427 GeV	Using Pol <sup>3</sup> He Cell: (Y/N, Long, Tran) or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.175	Polarity: "-" Current (A): 515
Angle: 18°	Sieve Plate: IN or OUT? Angle: 82°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
21718	1210	1246	<sup>3</sup> He	11	3.98M	12		✓
*							Moller Runs	
21719								
21720								
21721			<sup>3</sup> He				2x2 raster	
21722			<sup>3</sup> He					
21723			<sup>3</sup> He				4x4 raster	
21724	1803	1837	<sup>3</sup> He	11	3.91M	12	Beginning Production	✓
21725	1838	1913	<sup>3</sup> He	11	3.71M	12		✓
21726	1914	1950	<sup>3</sup> He	11	3.71M	12		✓
21727	1951	2027	<sup>3</sup> He	11	3.71M	12		✓
21728	2027	2000	<sup>3</sup> He	11	3.70M	12		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

More Comments:

\* Moller runs

# Noticed that several TDCs on NI-NS have increased by factors of 2-5 or so. Otherwise replay is okay

# NI-NS TDCs fine now



### LEFT-ARM ONLY on this page: $A_x, A_z$ Production Run Sheet

Date: 5/27/2009	Author: John Watson
Beam Energy: 2.425 GeV	Using Pol $^3\text{He}$ Cell: (Y/N, Long, Tran, or Vertical)
LHRS	BigBite
Momentum (GeV/c): 2.277 Polarity: "-"	Current (A): 515 Polarity: Positive
Angle: $14.5^\circ$ Sieve Plate: IN or OUT?	Angle: $82^\circ$

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
2829	21:01	21:38	$^3\text{He}$	11	5M	5		✓
2830	21:39	22:23	$^3\text{He}$	11	5M	4		✓
2831	22:24	22:58	$^3\text{He}$	11	5M	5		✓
2832	22:57	23:39	$^3\text{He}$	11	5M	5		✓
2833	23:40	00:18	$^3\text{He}$	11	5M	4		✓
2834	00:20	01:20	$^3\text{He}$	11	< 1M	5	Roc 5 crashed junk	✓
2835	01:24	2:01	$^3\text{He}$	11	5M	4		✓
2836	2:02	2:36	$^3\text{He}$	11	5M	4		✓
2837	2:38	3:14	$^3\text{He}$	11	5M	5		✓
2838	3:16	3:50	$^3\text{He}$	11	5M	5		✓
2839	3:52	4:25	$^3\text{He}$	11	5M	5		✓
2840	4:26	4:58	$^3\text{He}$	11	5M	4		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### RIGHT-ARM ONLY on this page: $A_x, A_z$ Production Run Sheet

Date: 5/27/2009	Author: John Watson
Beam Energy: 2.427 GeV	Using Pol $^3\text{He}$ Cell: (Y/N, Long, Tran, or Vertical)
RHRS	BigBite
Momentum (GeV/c): 2.175 Polarity: "-"	Current (A): 515 Polarity: Positive
Angle: $18^\circ$ Sieve Plate: IN or OUT?	Angle: $82^\circ$

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
21729	21:01	21:38	$^3\text{He}$	11	5.72M	12		✓
21730	21:38	22:23	$^3\text{He}$	11	3.72M	12		✓
21731	22:24	22:56	$^3\text{He}$	11	3.72M	13		✓
21732	22:57	23:39	$^3\text{He}$	11	3.69M	12		✓
21733	23:40	00:18	$^3\text{He}$	11	3.7M	12		✓
21734	00:19	01:22	$^3\text{He}$	11	6M	12	Roc 5 crashed see left arm	✓
21735	01:24	2:01	$^3\text{He}$	11	3.8M	12		✓
21736	2:02	2:36	$^3\text{He}$	11	3.5M	13		✓
21737	2:37	3:15	$^3\text{He}$	11	3.5M	12		✓
21738	3:16	3:51	$^3\text{He}$	11	3.6M	12		✓
21739	3:51	4:25	$^3\text{He}$	11	3.7M	12		✓
21740	4:26	4:59	$^3\text{He}$	11	3.8M	12		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### LEFT-ARM ONLY on this page: $A_x$ , $A_z$ Production Run Sheet

Date: 5/28/09	Author: Eric Jensen
Beam Energy: 2.427 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="radio"/> N, Long, <input checked="" type="radio"/> Tran, or Vertical
LHRs	BigBite
Momentum (GeV/c): 2.277 Polarity: "-"	Current (A): 515 Polarity: Positive
Angle: $14.5^\circ$ Sieve Plate: IN or <input checked="" type="radio"/> OUT?	Angle: $82^\circ$

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
2841	5:01	5:34	$^3\text{He}$	11	5M	5		✓
2842	5:36	6:21	$^3\text{He}$	11	5M	5		✓
2843	6:23	6:59	$^3\text{He}$	11	5M	4		✓
2844	7:01	7:40	$^3\text{He}$	11	5M	4	Some cerenkov APCs had high counts	✓
2845	7:43	8:29	$^3\text{He}$	11	5M	4		✓
2846	8:31	09:15	$^3\text{He}$	11	3.2M	4%	Run ok but stopped because beam off for a while	n/a
2847	9:46	10:32	$^3\text{He}$	11	5M			✓
2848	10:33	11:15	$^3\text{He}$	11	5M	4%		
2849							Test DAQ	
2850							Test DAQ	
2871			Optics <del>Optics</del>				spot for optics	
2872			$^3\text{He}$				11 $^3\text{He}$	

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### RIGHT-ARM ONLY on this page: $A_x$ , $A_z$ Production Run Sheet

Date: 5/28/09	Author: Eric Jensen
Beam Energy: 2.427 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="radio"/> N, Long, <input checked="" type="radio"/> Tran, or Vertical
RHRs	BigBite
Momentum (GeV/c): 2.175 Polarity: "-"	Current (A): 515 Polarity: Positive
Angle: $18^\circ$ Sieve Plate: IN or <input checked="" type="radio"/> OUT?	Angle: $82^\circ$

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
21741	4:59	5:34	$^3\text{He}$	11	3.6M	13		✓
21742	5:35	6:21	$^3\text{He}$	11	3.7M	12		✓
21743	6:22	6:59	$^3\text{He}$	11	3.7M	12		✓
21744	7:00	7:41	$^3\text{He}$	11	3.7M	12		✓
21745	7:43	8:30	$^3\text{He}$	11	3.8M	12		✓
21746	8:31	8:15	$^3\text{He}$	11	2.4M	12%	Run ok but stopped because beam was off for a while	n/a
21747	9:46	10:32	$^3\text{He}$	11	3.7M			✓
21748	10:33	11:15	$^3\text{He}$	11	3.7M	12%		
21749	11:20						Test DAQ	
21750								
21752							spot for optics	
21753							11 $^3\text{He}$	

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### LEFT-ARM ONLY on this page: $A_x$ , $A_z$ Production Run Sheet

Date: 5/28/2009	Author: Hoyoung Kang
Beam Energy: 2.427 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="radio"/> N, Long, <input checked="" type="radio"/> Tran or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.277 Polarity: "-"	Current (A): 518 Polarity: Positive
Angle: $14.5^\circ$ Sieve Plate: IN or <input checked="" type="radio"/> OUT?	Angle: $82^\circ$

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
2874	16:50	17:28	$^3\text{He}$	11	5M	4		✓
2875	17:32	18:13	$^3\text{He}$	11	5M	4		✓
2876	18:16	18:49	$^3\text{He}$	11	5M	5		✓
2877	18:50	19:34	$^3\text{He}$	11	5M	5		✓
2878	19:34	20:08	$^3\text{He}$	11	5M	4		✓
2879	20:09	20:45	$^3\text{He}$	11	5M	4		✓
2880	20:46	21:17	$^3\text{He}$	11	5M	4		✓
2881	21:19	21:51	$^3\text{He}$	11	5M	4		✓
2882	21:52	22:28	$^3\text{He}$	11	5M	4		✓
2883	22:28	23:03	$^3\text{He}$	11	5M	4		✓
2884	23:04	23:40	$^3\text{He}$	11	5M	4		✓
2885	23:41	00:24	$^3\text{He}$	11		4		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### RIGHT-ARM ONLY on this page: $A_x$ , $A_z$ Production Run Sheet

Date: 5/28/2009	Author: Hoyoung Kang
Beam Energy: 2.427 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="radio"/> N, Long, <input checked="" type="radio"/> Tran or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.175 Polarity: "-"	Current (A): 518 Polarity: Positive
Angle: $18^\circ$ Sieve Plate: IN or <input checked="" type="radio"/> OUT?	Angle: $82^\circ$

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
21755	16:49	17:29	$^3\text{He}$	11	3.7M	12		✓
21756	17:31	18:13	$^3\text{He}$	11	3.7M	12		✓
21757	18:15	18:49	$^3\text{He}$	11	3.7M	12		✓
21758	18:49	19:34	$^3\text{He}$	11	3.7M	13		✓
21759	19:34	20:08	$^3\text{He}$	11	3.7M	12		✓
21760	20:09	20:45	$^3\text{He}$	11	3.7M	12		✓
21761	20:45	21:17	$^3\text{He}$	11	3.7M	13		✓
21762	21:19	21:51	$^3\text{He}$	11	3.7M	13		✓
21763	21:51	22:28	$^3\text{He}$	11	3.7M	13		✓
21764	22:28	23:03	$^3\text{He}$	11	3.8M	12		✓
21765	23:03	23:41	$^3\text{He}$	11	3.7M	13		✓
21766	23:41	00:24	$^3\text{He}$	11	3.8M	12		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

**LEFT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet**

Date: 29 May 2009	Author: EIP
Beam Energy: GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="checkbox"/> N, Long, <input checked="" type="checkbox"/> Tran, or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.277	Polarity: "-"
Current (A): 578 A	Polarity: Positive
Angle: 14.5°	Sieve Plate: IN or OUT?
	Angle: 32°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay OK?
2886	00:24	01:15	<sup>3</sup> He	11μ	5M	4%		✓
2887	01:16	01:50	<sup>3</sup> He	11μ	5M	4%		✓
2888	01:52	02:20	"	"	5M	8%		✓
2889	02:30	03:05	"	"	5M	"		✓
2890	03:05	03:39	"	"	5M	"		
2891	03:39	04:12	"	"		"		✓
2892	05:17	05:36	"	"		"		✓
2893	05:37	06:25	"	"		"	start after magnet cool	✓
2894	06:28	07:07	"	"	3.5M	"	Q1 off	

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
 More Comments:

\* only left arm / right HRS - magnet one not reset yet.

**RIGHT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet**

Date: 29 May 2009	Author: EIP
Beam Energy: GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="checkbox"/> N, Long, <input checked="" type="checkbox"/> Tran, or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.175	Polarity: "-"
Current (A):	Polarity: Positive
Angle: 13°	Sieve Plate: IN or OUT?
	Angle:

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay OK?
21767	00:24	01:15	<sup>3</sup> He	11μ	3.7M	13%		✓
21768	01:15	01:50	<sup>3</sup> He	11μ	3.7M	12%		✓
21769	01:52	02:20	"	"	3.9M	12%		✓
21770	02:29	03:05	"	"	3.7M	"		✓
21771	03:05	03:39	"	"		"		✗
21772	03:39	04:12	"	"	3.7M	"		✓
21773	05:37	06:25	"	"		"	start after magnet cool	✓
21774	06:28	07:07	"	"	2.7M		Q1 off	

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
 More Comments:

### LEFT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet

Date: 5/29	Author: Holmstrom
Beam Energy: GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="radio"/> N, Long, <input checked="" type="radio"/> Tran, or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.277	Polarity: <input checked="" type="radio"/> "-" Current (A): Polarity: Positive
Angle: 14.5	Sieve Plate: IN or <input checked="" type="radio"/> OUT? Angle:

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
2895							cosmics	
2896							Spot check	
2897							Rate Check	
2898 <del>10:29</del>			<sup>3</sup> He	11 μA		29%	Rate check	
<del>2899</del> 10:29	10:41		<sup>3</sup> He	11 μA	1.3M	29%	Bad Dipole	
2900	10:43		<sup>3</sup> He	11 μA			Junk	
2901							Junk	
2902	10:53	11:28	<sup>3</sup> He	11 μA	5M	40%		✓
2903	11:29	11:51	<sup>3</sup> He	11 μA	3M	50%		✓
2904	11:55	12:31	<sup>3</sup> He	11 μA	5M	50%		✓
2905	12:32	12:47	<sup>3</sup> He	11	1.9M			✓
2906							Spot	

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### RIGHT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet

Date: 5/29	Author: Holmstrom
Beam Energy: GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="radio"/> N, Long, <input checked="" type="radio"/> Tran, or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.175	Polarity: <input checked="" type="radio"/> "-" Current (A): 518 Polarity: Positive
Angle: 18	Sieve Plate: IN or <input checked="" type="radio"/> OUT? Angle:

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
21774							Cosmics	
21775							cosmics	
21776							Spot Check	
21777							Rate check	
21778							Rate check	
21779	10:29	10:41	<sup>3</sup> He	11 μA	1.3M	12%		✓
21780	10:42		<sup>3</sup> He	11 μA			Junk	
21781	10:52	11:28	<sup>3</sup> He	11 μA	3.7M	12%		✓
21782	11:29	11:51	<sup>3</sup> He	11 μA	2.2M	12%		✓
21783	11:55	12:31	<sup>3</sup> He	11 μA	3.7M	12%		✓
21784	12:32	12:47	<sup>3</sup> He	11 μA	1.4M			✓
21785							Spot check	

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

**LEFT-ARM ONLY on this page:  $A_x$ ,  $A_z$  Production Run Sheet**

Date: 5/29/09 Author: Holmstrom / Hoyong Kang  
 Beam Energy: 2.425 GeV Using Pol  $^3\text{He}$  Cell: (Y/N, Long, (Tran, or Vertical)  
 LHRS BigBite  
 Momentum (GeV/c): 2.277 Polarity: "-" Current (A): 518 Polarity: Positive  
 Angle: 14.5° Sieve Plate: IN or OUT? Angle: 82.0°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay OK?
2907			$^3\text{He}$	2 $\mu\text{A}$			Junk	
2908	14:02	14:36	$^3\text{He}$	4 $\mu\text{A}$	18M	50%	End of Run Failed	✓
2909	14:40	15:17	$^3\text{He}$	11 $\mu\text{A}$	5M	50%		
2910	15:18	15:53	$^3\text{He}$	11	5M	5		✓
2911	15:54	16:28	$^3\text{He}$	11	5M	4		✓
2912	16:29	17:07	$^3\text{He}$	11	5M	4		✓
2913	17:08	17:47	$^3\text{He}$	11	5M	4		✓
2914	17:48	18:36	$^3\text{He}$	11	5M	4		✓
2915	18:37	18:57	$^3\text{He}$	11	329k	5	HV changed at ND 2bar but no beam	✓
2916	19:01	19:38	$^3\text{He}$	11	5M	4		✓
2917	19:40	20:26	$^3\text{He}$	11	5M	5	New Happex run #31443	✓
2918	20:28	21:10	$^3\text{He}$	11	5M	4		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
 More Comments:

**RIGHT-ARM ONLY on this page:  $A_x$ ,  $A_z$  Production Run Sheet**

Date: 5/29/09 Author: Holmstrom / Hoyong Kang  
 Beam Energy: 2.425 GeV Using Pol  $^3\text{He}$  Cell: (Y/N, Long, (Tran, or Vertical)  
 RHRS BigBite  
 Momentum (GeV/c): 2.175 Polarity: "-" Current (A): 518 Polarity: Positive  
 Angle: 18.0° Sieve Plate: IN or OUT? Angle: 82.0°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay OK?
21786	14:02	14:36	$^3\text{He}$	11 $\mu\text{A}$	3.3M	12%		✓
21787	14:40	15:17	$^3\text{He}$	11 $\mu\text{A}$	3.7M	12%		
21788	15:18	15:53	$^3\text{He}$	11	3.7M	12		✓
To align with left sheet								
21789	15:54	16:28	$^3\text{He}$	11	3.8M	12		✓
21790	16:29	17:07	$^3\text{He}$	11	3.7M	12		✓
21791	17:08	17:47	$^3\text{He}$	11	3.6M	13		✓
21792	17:47	18:37	$^3\text{He}$	11	3.7M	12		✓
21793	18:37	18:57	$^3\text{He}$	11	257k	12		✓
21794	19:01	19:38	$^3\text{He}$	11	3.9M	12		✓
21795	19:40	20:27	$^3\text{He}$	11	4M	12	New Happex run #31443	✓
21796	20:27	21:10	$^3\text{He}$	11	3.8M	12		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
 More Comments:

### LEFT-ARM ONLY on this page: $A_x, A_z$ Production Run Sheet

Date: 5/29/09	Author: Hoyoung Kang
Beam Energy: 2.427 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="checkbox"/> N, <input checked="" type="checkbox"/> Long, <input type="checkbox"/> Tran, or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.277 Polarity: "-"	Current (A): 518 Polarity: Positive
Angle: $14.5^\circ$ Sieve Plate: IN or <input checked="" type="checkbox"/> OUT	Angle: $82.0^\circ$

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
2919	21:11	21:44	$^3\text{He}$	11	5M	5		✓
2920	21:46	22:18	$^3\text{He}$	11	5M	4		✓
2921	22:18	22:56	$^3\text{He}$	11	5M	4		✓
2922	22:57	23:24	$^3\text{He}$	11	1.6M	5	stop for spin direction change Trans $\rightarrow$ Long	✓
2923					465K		Cosmic	
2924	01:32		d		435K			
2925							Junk	
2926			d				water 6x6 mm $x = -0.5$	
2927	01:53		d		99K		" 4x4 mm $x = 0.5$	
2928	01:59		d				BPMB $x = 0.5$	
2929	02:03		d				"	
2930	02:07						BPMB $x = -0.5$	⊗

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

More Comments:

⊗ shd run  $-0.5$   
is wrong shd be  $-1.5$

### RIGHT-ARM ONLY on this page: $A_x, A_z$ Production Run Sheet

Date: 5/29/09	Author: Hoyoung Kang
Beam Energy: 2.427 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="checkbox"/> N, <input checked="" type="checkbox"/> Long, <input type="checkbox"/> Tran, or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.175 Polarity: "-"	Current (A): 518 Polarity: Positive
Angle: $18.0^\circ$ Sieve Plate: IN or <input checked="" type="checkbox"/> OUT	Angle: $82.0^\circ$

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
21797	21:10	21:45	$^3\text{He}$	11	3.8M	12		✓
21798	21:46	22:18	$^3\text{He}$	11	3.7M	12		✓
21799	22:18	22:56	$^3\text{He}$	11	3.9M	12		✓
21800	22:56	22:56	$^3\text{He}$	11	1.2M	12	Stopped for spin direction change Trans $\rightarrow$ Long	✓
21801					69K		Cosmic	
21802	01:32		d		383K			
21803			d				water 6x6 mm $x = 0.5$	
21804	01:53		d		86K		water 4x4 mm $x = -0.5$	
21805	01:59		d				BPMB $x = 0.5$	
21806	02:03						"	
21807	02:07						BPMB $x = 0.5$	⊗

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

More Comments: After run # 21800 (≠ 2922 for L-arm), Target spin direction was changed from transverse into longitudinal.

### LEFT-ARM ONLY on this page: $A_x, A_z$ Production Run Sheet

Date:	30 May 2009	Author:	EIP
Beam Energy:	2.427 GeV	Using Pol $^3\text{He}$ Cell:	Y/N, Long, <u>Tran</u> , or Vertical
LHRS		BigBite	
Momentum (GeV/c):	2.277	Polarity: "-"	Current (A): 578 A
Angle:	14.5°	Sieve Plate: IN or OUT ?	Angle: 82°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
2931	02:11		d				BPM $x = -1.5$	
2932	02:22		d				$x = -1$	
2933	02:29	03:16	d	11 $\mu\text{A}$	5M	3%	Calibration	✓
2934	03:18		d	11 $\mu\text{A}$	4.3M	"	"	
2935	03:54		C	"	4M	58%	optics	
2936	04:14		$\vec{3}\text{He}$	"	4M	0%	Production ↓	✓
2937		↓						
2938	04:45			2 $\mu\text{A}$			rs raster 6x6	
2939	04:50			"	beam		"	$x = -1$
2940	04:57			"	tune		6x6 $x = -0.5$	
2941	05:03			"	↓		4x4 $x = -0.5$	
2942	05:10	06:38	$\vec{3}\text{He}$	11 $\mu\text{A}$	4M	4%		

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### RIGHT-ARM ONLY on this page: $A_x, A_z$ Production Run Sheet

Date:	30 May 2009	Author:	EIP
Beam Energy:	2.427 GeV	Using Pol $^3\text{He}$ Cell:	Y/N, Long, <u>Tran</u> , or Vertical
RHRS		BigBite	
Momentum (GeV/c):	2.275	Polarity: "-"	Current (A): 578 A
Angle:	19.0°	Sieve Plate: IN or OUT ?	Angle: 82°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
2808	02:11		d				BPM $x = -1.5$	
21809	02:22		d				$x = -1$	
21810	02:29	03:16	d	11 $\mu\text{A}$	3.7M	11%	Calibration	✓
21811	03:18		d	4 $\mu\text{A}$	3.2M	11%	"	
21812	03:54		C	"	4.3M	29%	optics	
21813	04:14		$\vec{1}\text{ke}$	"	2.9M	7%	production ↓	✓
21814		↓						
21815	04:45			2 $\mu\text{A}$	beam		raster 6x6 mm	
21816	04:50			"	tune		"	$x = -1$
21817	04:57			"			6x6 $x = -0.5$	
21818	05:03			"	↓		4x4 $x = -0.5$	
21819	05:10	06:38	$\vec{4}\text{ke}$	11 $\mu\text{A}$	2.95M	12%		

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:



### LEFT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet

Date: 30 May 2009	Author: EIP
Beam Energy: GeV	Using Pol <sup>3</sup> He Cell: Y/N, Long (Trap), or Vertical
LHRS	BigBite
Momentum (GeV/c): Polarity: "-"	Current (A): Polarity: Positive
Angle: Sieve Plate: IN or OUT ?	Angle:

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
2943	06:38	06:05	<sup>3</sup> He	11 μA	4M	4%		
2944	06:06	06:30			4M			
2945	06:30	07:03	"	"	4M	N		✓
2946	07:04	07:33	"	"	4M			
2947	07:33	08:01	N	N	4M	3%		✓
2948	08:22	8:52			4M	40%		✓
2949	08:53	9:22			4M			✓
2950	9:23	9:49			4M	40%		✓
2951	9:50	10:17			4M	40%		✓
2952	10:18						Sunk	
2953	10:23	10:51			4M	4%		✓
2954	10:52	11:20			4M			✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### RIGHT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet

Date: 30 May 2009	Author: EIP
Beam Energy: GeV	Using Pol <sup>3</sup> He Cell: Y/N, Long (Trap), or Vertical
RHRS	BigBite
Momentum (GeV/c): Polarity: "-"	Current (A): Polarity: Positive
Angle: Sieve Plate: IN or OUT ?	Angle:

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
21820	05:38	06:05	<sup>3</sup> He	11 μA		12%		
21821	06:05	06:30	N	N	2.95M	N		
21822	06:31	07:03			2.95M	13%		✓
21823	07:04	07:33				12%		
21824	07:33	08:02	N	N	2.96M			✓
21825	08:22	08:53			2.9M	12%		✓
21826	08:53	9:22			2.95M			✓
21827	9:22	9:49			2.95M	12%		✓
21828	9:49	10:17			2.95	12%		✓
21829	10:18	10:23					Sunk	
21830	10:23	10:51			2.95	12%		✓
21831	10:52	11:29			2.97			✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### LEFT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet

Date: 5/30/09	Author: Holmstrom
Beam Energy: 2425 GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="radio"/> Y/N <input checked="" type="radio"/> Long, <input checked="" type="radio"/> Tran, or Vertical
<b>LHRS</b>	
Momentum (GeV/c): 2.277	Current (A): 518
Angle: 14.5	Polarity: "-" <input checked="" type="radio"/> Positive <input type="radio"/>
Sieve Plate: IN or <input checked="" type="radio"/> OUT?	BigBite

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
2955	11:30	11:59	<sup>3</sup> He	11	4M	5%		✓
2956	12:01	12:27	<sup>3</sup> He	11	4M	11		✓
2957	12:28	12:57	<sup>3</sup> He	11	4M	11		
2958	12:59	13:28	<sup>3</sup> He	11	4M	11		✓
2959	13:30	13:57	<sup>3</sup> He	11	4M	4%		✓
2960	13:58	14:24	<sup>3</sup> He	11	4M	4%		✓
2961	14:27	14:42	<sup>3</sup> He	11	2.1M	4%		✓
2962	14:45	15:15	<sup>3</sup> He	11	4M	4%		✓
2963	15:17	15:46	<sup>3</sup> He	11	4M	4%		✓
2964	15:47	16:15	<sup>3</sup> He	11	4M	4%		✓
2965	16:18	16:45	<sup>3</sup> He	11	4M	4%		✓
2966	16:48	17:15	<sup>3</sup> He	11	4M	4%		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### RIGHT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet

Date: 5/30	Author: Holmstrom
Beam Energy: 24255 GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="radio"/> Y/N <input checked="" type="radio"/> Long, Tran, or Vertical
<b>RHRS</b>	
Momentum (GeV/c): 2.175	Current (A): 518
Angle: 18	Polarity: "-" <input checked="" type="radio"/> Positive <input type="radio"/>
Sieve Plate: IN or <input checked="" type="radio"/> OUT?	BigBite

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
21832	11:29	12:00	<sup>3</sup> He	11	2.96M	12%		✓
21833	12:01	12:27	<sup>3</sup> He	11	2.95M	11		✓
21834	12:28	12:58	<sup>3</sup> He	11	2.96M	11		
21835	12:59	13:27	<sup>3</sup> He	11	2.96M	11		✓
21836	13:29	13:57	<sup>3</sup> He	11	2.97M	11		✓
21837	13:58	14:24	<sup>3</sup> He	11	3.12M	12%		✓
21838	14:26	14:42	<sup>3</sup> He	11	1.33M		DAQ Hung	✓
21839	14:45	15:18	<sup>3</sup> He	11	2.95M	12%		✓
21840	15:19	15:46	<sup>3</sup> He	11	2.95M	12%		✓
21841	15:47	16:16	<sup>3</sup> He	11	2.95M	12%		✓
21842	16:17	16:46	<sup>3</sup> He	11	2.95M	12%		✓
21843	16:47	17:15	<sup>3</sup> He	11	2.95M	12%		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### LEFT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet

Date: 5/30/09	Author: Shabestari
Beam Energy: 2.425 GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="radio"/> N, <input checked="" type="radio"/> Long, <input type="radio"/> Tran, or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.277 Polarity: "-"	Current (A): 518 Polarity: Positive
Angle: 14.5° Sieve Plate: IN or <input checked="" type="radio"/> OUT?	Angle: 82°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
2967	17:19	17:51	<sup>3</sup> He	11	3.3M	4%		✓
2968	18:00	18:29	<sup>3</sup> He	11	4M	4%		✓
2969	18:30	18:59	<sup>3</sup> He	11	4M	4%		✓
2970	19:01	19:31	<sup>3</sup> He	11	2.17M	4%		✓
2971	21:09	21:13	BeO	2	778k	40%	check Run	
2972	21:18	21:21	<sup>3</sup> He	2	155k	—	Test to check Triggers	
2973	21:25	21:28	<sup>3</sup> He	11	337k	—	Stopped the Run to check the Polarization (NAME)	
2974	21:30	21:57	<sup>3</sup> He	11	4M	4%		✓
2975	22:01	22:26	<sup>3</sup> He	11	4M	4%		
2976	22:28	22:56	<sup>3</sup> He	11	4M	4%		
2977	22:57	23:23	<sup>3</sup> He	11	4M	5%		
2978	23:24		<sup>3</sup> He	11		4%		

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### RIGHT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet

Date: 5/30/09	Author: Shabestari
Beam Energy: 2.425 GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="radio"/> N, <input checked="" type="radio"/> Long, <input type="radio"/> Tran, or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.175 Polarity: "-"	Current (A): 518 Polarity: Positive
Angle: 18° Sieve Plate: IN or <input checked="" type="radio"/> OUT?	Angle: 82°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
21844	17:18	17:51	<sup>3</sup> He	11	2.5M	12%		✓
21845	17:59	18:29	<sup>3</sup> He	11	2.96M	12%		✓
21846	18:30	19:00	<sup>3</sup> He	11	2.96M	12%		✓
21847	19:00	19:31	<sup>3</sup> He	11	1.61M	12%		✓
21848	21:09	21:13	BeO	2	218k	8%		
21849	21:17	21:22	<sup>3</sup> He	2	127k	—		
21850	21:24	21:28	<sup>3</sup> He	11	264k	—		
21851	21:29	21:57	<sup>3</sup> He	11	3.03M	12%		✓
21852	21:59	22:27	<sup>3</sup> He	11	2.96M	12%		
21853	22:27	22:56	<sup>3</sup> He	11	2.95M	12%		
21854	22:56	23:23	<sup>3</sup> He	11	2.94M	12%		
21855	23:24		<sup>3</sup> He	11		12%		

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### LEFT-ARM ONLY on this page: $A_x, A_z$ Production Run Sheet

Date: 31 May 2009	Author: EIP
Beam Energy: 2.425 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="checkbox"/> N, <input checked="" type="checkbox"/> Long, <input checked="" type="checkbox"/> Tran, or Vertical
LHRs	BigBite
Momentum (GeV/c): 2.277 Polarity: "-"	Current (A): 518A Polarity: Positive
Angle: $14.5^\circ$ Sieve Plate: IN or OUT?	Angle: $82^\circ$

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
2979	23:26	00:24	$^3\text{He}$	11 $\mu$	4M	4%		✓
2980	00:24	00:51	"	"	4M	5%		
2981	00:51	01:19	N	N	4M			✓
2982	01:19	01:50	N	"	4M	4%		
2983	01:50	02:20	N	N	4M	5%		✓
2984	02:20	02:50	N	N	4M	4%		
2985	02:50	03:16	"	N	4M	"		
2986	03:16	03:44	N	"	4M	"		
2987	03:44	04:13	N	N	4M	5%		✓
2988	04:13	04:39	N	N		"		
2989	04:39	05:09	N	N		"		
2990	05:09		N	N		"		

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More Comments:

### RIGHT-ARM ONLY on this page: $A_x, A_z$ Production Run Sheet

Date: 31 May 2009	Author: EIP
Beam Energy: 2.425 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="checkbox"/> N, <input checked="" type="checkbox"/> Long, <input checked="" type="checkbox"/> Tran, or Vertical
RHRs	BigBite
Momentum (GeV/c): 2.175 Polarity: "-"	Current (A): 518A Polarity: Positive
Angle: $18^\circ$ Sieve Plate: IN or OUT?	Angle: $82^\circ$

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
21856	23:56	00:24	$^3\text{He}$	11 $\mu$	2.95M	12%		✓
21857	00:24	00:51	"	"		"		
21858	00:51	01:19	"	"	3.06M			✓
21859	01:19	01:50	"	"	3.12M	12%		
21860	01:50	02:20	"	"	2.95M	"		✓
21861	02:20	02:50	"	"		12%		
21862	02:50	03:16	"	N	2.95M	"		
21863	03:16	03:44	"	"		"		
21864	03:44	04:13	"	"		12%		✓
21865	04:13	04:39		"	2.95M	"		
21866	04:39	05:09	N	"	2.99M	"		
21867	05:09		"	N	2.89M	"		

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### LEFT-ARM ONLY on this page: Ax, Az Production Run Sheet

Date:	31 May 2009	Author:	EIP
Beam Energy:	2.425 GeV	GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="checkbox"/> N, <input checked="" type="checkbox"/> Long, Tran, or Vertical
LHRS	Momentum (GeV/c): 2.237	Polarity: "-"	Current (A): 518
Angle:	14.5°	Sieve Plate: IN or OUT?	Angle: 92°
BigBite		Polarity: Positive	

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
2991	05:39	06:19	<sup>3</sup> He	11 μA	4M	4%		✓
2992	06:20	06:47	"	"	4M			
2993	06:47	07:13	"	"	4M	"		
2994	07:13	07:41	"	"		"		✓
2995	07:41		"	"	Junk			
2996	07:46	8:20	"	"	4M	4%		
2997	8:25		"	"			junk	
2998	8:27	8:55	"	"	4M	5%		✓
2999	8:57	9:30	"	"	4M	7%	beam trip mid run	✓
3000	9:32	10:03	"	"	4M	5%		
3001	10:05	10:30	"	"	4M	5%		

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### RIGHT-ARM ONLY on this page: Ax, Az Production Run Sheet

Date:	31 May 2009	Author:	EIP
Beam Energy:	2.425 GeV	GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="checkbox"/> N, <input checked="" type="checkbox"/> Long, Tran, or Vertical
RHRS	Momentum (GeV/c): 2.135	Polarity: "-"	Current (A): 518
Angle:	18°	Sieve Plate: IN or OUT?	Angle: 82°
BigBite		Polarity: Positive	

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
21868	05:39	06:19	<sup>3</sup> He	11 μA	2.94M	12%		✓
21869	06:20	06:47	"	"				
21870	06:47	07:13	"	"	2.94M	"		
21871	07:13	07:41	"	"		12%		✓
21872	07:41		"	"			Junk	
21873	07:46	8:20	"	"	3.2M	12%		
21874							junk	
21875	8:25						junk	
21876	8:27	8:55	"	"	3.1M	5%		✓
21877	8:57	9:30	"	"	3.1M	7%	beam trip mid run	✓
21878	9:32	10:03	"	"	2.9M	5%		
21879	10:04	10:30	"	"	2.9M	5%		

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### LEFT-ARM ONLY on this page: $A_x$ , $A_z$ Production Run Sheet

Date: 5/31/09	Author: David Flay
Beam Energy: 2.425 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="radio"/> N, <input type="radio"/> Long, Tran, or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.277	Polarity: "-"
Angle: 14.5°	Sieve Plate: IN or <input checked="" type="radio"/> OUT?
	Current (A): 578
	Angle: 82
	Polarity: Positive

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
3002	10:30	11:00	$^3\text{He}$	11 $\mu\text{A}$	4M	5%		✓
3003	11:00	11:30	"	"	4M	5%		✓
3004	11:30	11:55	"	"	4M			✓
3005	11:57	12:25	"	"	4M			✓
3006	12:26	12:55	"	"	4M			✓
3007	12:57	1:30	"	"	4M			✓
3008	1:30	1:55	"	"	4M			✓
3009	1:58	2:30	"	"	4M			✓
3010	2:30	2:55	"	"	4M			✓
3011	2:56	3:25	"	"	4M			✓
3012	3:28	3:55	"	"	4M			✓
3013	3:57	16:27	"	"	4M			✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### RIGHT-ARM ONLY on this page: $A_x$ , $A_z$ Production Run Sheet

Date:	Author: David Flay
Beam Energy: 2.425 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="radio"/> N, <input type="radio"/> Long, Tran, or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.175	Polarity: "-"
Angle: 19°	Sieve Plate: IN or <input checked="" type="radio"/> OUT?
	Current (A): 578
	Angle: 82
	Polarity: Positive

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
21880	10:30	11:00	$^3\text{He}$	11 $\mu\text{A}$	3.1M	5%		✓
21881	11:01	11:30	"	"	2.9M	5%		✓
21882	11:30	11:55	"	"	2.9M			✓
21883	11:57	12:25	"	"	2.9M			✓
21884	12:26	12:55	"	"	2.9M			✓
21885	12:57	1:30	"	"	2.9M			✓
21886	1:30	1:55	"	"	3.0M			✓
21887	1:58	2:30	"	"	3.2M			✓
21888	2:30	2:55	"	"	3.1M			✓
21889	2:56	3:25	"	"	3.0M			✓
21890	3:28	3:55	"	"	2.9M			✓
21891	3:57	16:27	"	"	3.0M			✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### LEFT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet

Date: May 31, 2009	Author: Chunhua chen
Beam Energy: 2.475 GeV	Using Pol <sup>3</sup> He Cell: Y/N, Long, Tran, or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.277 Polarity: "-"	Current (A): 518 Polarity: Positive
Angle: 14.5° Sieve Plate: IN or OUT?	Angle: 82.0°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
3014	16:24	16:52	<sup>3</sup> He	11	4M	4%		✓
3015	16:53	17:21	<sup>3</sup> He	11	4M	4%		✓
3016	17:22	17:49	<sup>3</sup> He	11	4M	4%		✓
3017	17:50	18:18	<sup>3</sup> He	11	4M	4%		✓
3018	18:21	18:47	<sup>3</sup> He	11	4M	4%		✓
3019	18:49	19:16	<sup>3</sup> He	11	4M	4%		✓
3020	19:17	19:42	<sup>3</sup> He	11	4M	4%		✓
3021	19:44	20:12	<sup>3</sup> He	11	4M	4%		✓
3022	20:14	20:42	<sup>3</sup> He	11	4M	4%		✓
3023	20:44	21:24	<sup>3</sup> He	11	4M	4%		✓
3024	21:26	21:54	<sup>3</sup> He	11	4M	4%		✓
3025	21:56	22:27	<sup>3</sup> He	11	4M	4%		✓

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More Comments:

### RIGHT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet

Date: May 31, 2009	Author: Chunhua Chen
Beam Energy: 2.475 GeV	Using Pol <sup>3</sup> He Cell: Y/N, Long, Tran, or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.175 Polarity: "-"	Current (A): 518 Polarity: Positive
Angle: 18.0° Sieve Plate: IN or OUT?	Angle: 82.0°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
21892	16:24	16:57	<sup>3</sup> He	11	2.0M	12%		✓
21893	16:53	17:21	<sup>3</sup> He	11	2.0M	12%		✓
21894	17:21	17:49	<sup>3</sup> He	11	2.96M	12%		✓
21895	17:49	18:19	<sup>3</sup> He	11	2.97M	12%		✓
21896	18:21	18:47	<sup>3</sup> He	11	2.95	11%		✓
21897	18:49	19:16	<sup>3</sup> He	11	2.947	12%		✓
21898	19:17	19:43	<sup>3</sup> He	11	2.954	12%		✓
21899	19:44	20:12	<sup>3</sup> He	11	2.9895	12%		✓
21900	20:13	20:42	<sup>3</sup> He	11	2.956	12%		✓
21901	20:44	21:24	<sup>3</sup> He	11	2.97	12%	start new Happex = 31453	✓
21902	21:25	21:55	<sup>3</sup> He	11	2.957	12%		✓
21903	21:56	22:27	<sup>3</sup> He	11	2.966	12%		✓

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More Comments:

### LEFT-ARM ONLY on this page: $A_x$ , $A_z$ Production Run Sheet

Date: May 31, 2009	Author: Chunhua Chen
Beam Energy: 2.475 GeV	Using Pol $^3\text{He}$ Cell: Y/N, Long, Tran, or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.277	Polarity: "-"
Current (A): 578	Polarity: Positive
Angle: 14.5	Sieve Plate: IN or OUT?
	Angle: 82.0

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
3026	22:25	22:55	$^3\text{He}$	11	4M	4%		✓
3027	22:57	23:26	$^3\text{He}$	11	4M	4%		✓
3028	23:27	23:55	$^3\text{He}$	11	4M	4%		✓
3029	23:56	00:24	$^3\text{He}$	11	4M	4%		
3030	00:22	00:26	$^3\text{He}$	N	503K	4%		
3031	00:29	00:57	N	N	4M	11		
3032	00:57	01:25	N	N	4M	11		✓
3033	01:25	01:52	N	N	4M	11		
3034	02:21	02:40	N	N	4M	11		
3035	02:40	03:19	N	N	4M	5%		
3036	03:19	03:47	N	N	4M	11		✓
3037	03:47		N	N		4%		

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More Comments:

### RIGHT-ARM ONLY on this page: $A_x$ , $A_z$ Production Run Sheet

Date: May 31, 2009	Author: Chunhua Chen
Beam Energy: 2.475 GeV	Using Pol $^3\text{He}$ Cell: Y/N, Long, Tran, or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.175	Polarity: "-"
Current (A):	Polarity: Positive
Angle: 18.0	Sieve Plate: IN or OUT?
	Angle:

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
21904	22:25	22:56	$^3\text{He}$	11	3.05	12%		✓
21905	22:57	23:26	$^3\text{He}$	11	3.04	12%		✓
21906	23:27	23:55	$^3\text{He}$	11	3.035	12%		✓
21907	23:56	00:24	$^3\text{He}$	11	2.94M	12%		
21908	00:22	00:26	$^3\text{He}$	11	417K	12%		
21909	00:29	00:57	N	11	2.95M	11		
21910	00:57	01:25	N	11	2.95M	11	Half plate is in	✓
21911	01:25	01:52	N	11	2.95M	N		
21912	02:21	02:40	N	11		N		
21913	02:40	03:19	N	11	2.95M	11		
21914	03:19	03:47	N	11	2.94M	11		✓
21915	03:47		N	11	2.93M	11		

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:



### LEFT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet

Date:	1 June 2009	Author:	EIP
Beam Energy:	2.475 GeV	Using Pol <sup>3</sup> He Cell:	<input checked="" type="checkbox"/> N, <input checked="" type="checkbox"/> Long, Tran, or Vertical
LHRS		BigBite	
Momentum (GeV/c):	2.297	Polarity: "-"	Current (A): 578 A
Angle:	14.5°	Sieve Plate: IN or OUT?	Angle: 82°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
3038	04:15	04:42	<sup>3</sup> He	11 μA	4M	4%		
3039	04:42	0	"	"	4		JUNK	
3040	04:46	05:15	"	"	4M	5%		✓
3041	05:15	05:45	"	"	4M	4%		
3042	05:45	06:11	"	"	4M	"		
3043	06:11	06:49	"	"	4M	"		✓
3044	06:49	07:22	"	"	4M	5%		
3045	07:22	07:46	"	"	4M	4%		
3046	07:46	8:14	"	"	4M	5%		✓
3047	8:15	8:42	"	"	4M	4%		✓
3048	8:43	9:11	"	"	4M	4%		✓
3049	9:13	9:43	"	"	4M	4%		

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### RIGHT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet

Date:	1 June 2009	Author:	EIP
Beam Energy:	2.475 GeV	Using Pol <sup>3</sup> He Cell:	<input checked="" type="checkbox"/> N, <input checked="" type="checkbox"/> Long, Tran, or Vertical
RHRS		BigBite	
Momentum (GeV/c):	2.175	Polarity: "-"	Current (A): 578 A
Angle:	18°	Sieve Plate: IN or OUT?	Angle: 82°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
21916	04:15	04:42	<sup>3</sup> He	11 μA		12%		
21917	04:42		"	"		"	JUNK	
21918	04:46	05:15	"	"		12%		✓
21919	05:15	05:45	"	"		"		
21920	05:45	06:11	"	"	2.94M	"		
21921	06:11	06:49	"	"		"		✓
21922	06:49	07:22	"	"		"		
21923	07:22	07:48	"	"	2.94M	12%		
21924	07:48	8:14	"	"	2.95M	"		✓
21925	8:15	8:42	"	"	2.94M	12%		✓
21926	8:43	9:12	"	"	2.96	12%		✓
21927	9:12	9:44	"	"	2.96	12%		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### LEFT-ARM ONLY on this page: $A_x$ , $A_z$ Production Run Sheet

Date: June 1	Author: W. Boegliu
Beam Energy: 2.425.48 GeV	Using Pol $^3\text{He}$ Cell: (Y/N, Long, Tran, or Vertical)
LHRS	BigBite
Momentum (GeV/c): 2.277	Polarity: "-"
Current (A): 518	Polarity: Positive
Angle: 14.5	Sieve Plate: IN or (OUT)
	Angle: 82°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
3050	9:45	10:12	$^3\text{He}$	11	4M	4%		✓
3051	10:13	10:24	"	11		43%	DAQ problem → reboot	✓
3052	10:31	11:14	"	11.9	4M	4%	@ 3.7M coast EB not responding message	✓
3053	11:16	11:21	"	"	0.385M	Variable	EB messages fluctuating DAQ dead time	
3054	11:27		"	"			ER problem	
3055-3056							Junk; Test DAQ	
3057	12:08	12:57	"	"	4M	4%		✓
3058	12:59	13:11	"	"	0.51M	4%	lost beam	
3059	13:43	14:10	"	"	4M	4%		
3060	14:11	14:39	"	"	4M	4%		
3061							Test run for DAQ	
3062	14:47						→ reboot all PCs	

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### RIGHT-ARM ONLY on this page: $A_x$ , $A_z$ Production Run Sheet

Date: June 1	Author: W. Boegliu
Beam Energy: 2.42548 GeV	Using Pol $^3\text{He}$ Cell: (Y/N, Long, Tran, or Vertical)
RHRS	BigBite
Momentum (GeV/c): 2.277	Polarity: "-"
Current (A): 518	Polarity: Positive
Angle: 14.518	Sieve Plate: IN or (OUT)
	Angle: 82°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
21928	9:44	10:13	$^3\text{He}$	11	2.49M	12%		✓
21929	10:13	10:24	"	11		12	left DAQ problem	✓
21930	10:30	11:15	"	11.8	3.86M	12		✓
21931	11:16	11:21	"	"	0.43M	12	} Problem left HRS	
21932	11:26		"					
21933 21934							Junk; Test DAQ	
21935	12:08	12:58	"	"	2.97M	12		✓
21936	12:58	13:11	"	"	0.367M	12	lost beam	
21937	13:43	14:10	"	"	2.95	12%		
21938	14:11	14:			2.2M		ER backed up End failed	
21939							Test run DAQ failed	
21940	14:47						reboot all PCs	

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### LEFT-ARM ONLY on this page: $A_x, A_z$ Production Run Sheet

Date: June 1	Author: W. Boegliu
Beam Energy: 2.405 GeV	Using Pol $^3\text{He}$ Cell: $\checkmark$ N, Long, Tran, or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.277/2.400 Polarity: "-"	Current (A): 518 Polarity: Positive
Angle: 14.5/12.5 Sieve Plate: IN or $\checkmark$ OUT?	Angle: 82°/75°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
3063	14:56	17:15		/	38k		Test run	
3065	17:18	17:22	BeO	2	378k		to check raster	
3066							junk	
3067	17:38	17:42	$^3\text{He}$	2	307k		check T3 rates	
3068	17:48	17:57	$^3\text{He}$	11	1.08M		ps3=3, ps4=3	
3069	17:59	18:10	$^3\text{He}$	11			$^3\text{He}$ elastic, DAQ crashed	
3070							Junk, DAQ crashed	
3071	18:30	18:37	$^3\text{He}$	11			Junk	
3072	18:39	18:43	$^3\text{He}$	11			ps3=10, ps4=5, ps6=2	(*)
3073	18:43	18:49	$^3\text{He}$	11			ps3=10, ps4=5, ps6=2	(*)
3074	18:51	19:03	$^3\text{He}$	11			---	
3075	19:05	19:33	$^3\text{He}$	11			← BEST	

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

(\*) run-start log gives wrong prescales (ps3=5, ps4=3) should be ps3=10, ps4=5, ps6=2

(\*) possibly good runs for elastic analysis

### RIGHT-ARM ONLY on this page: $A_x, A_z$ Production Run Sheet

Date: June 1	Author: W. Boegliu
Beam Energy: 2.425 GeV	Using Pol $^3\text{He}$ Cell: $\checkmark$ N, Long, Tran, or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.277 Polarity: "-"	Current (A): 518 Polarity: Positive
Angle: 18° Sieve Plate: IN or OUT?	Angle: 82°/75°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
21941	14:56	17:15		/	55k		test run - same problem	
21942-21944	stabs of runs unknown							
	* BB to 75° here *							
21945	17:39	17:42	$^3\text{He}$	2	62k		check T3 rates	
21946	17:47	17:57	$^3\text{He}$	11	825k			
21947	17:58	18:10	$^3\text{He}$	11			$^3\text{He}$ elastic, stopped due to DAQ crash	
21948	18:29	18:37	---	---			Junk;	
21949			---	---			Junk;	
21950	18:43	18:49	$^3\text{He}$	11				
21951	19:05	19:33	$^3\text{He}$	11				

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### LEFT-ARM ONLY on this page: $A_x, A_z$ Production Run Sheet

Date: June 1, 2009	Author: S. Sirca
Beam Energy: 2,425 GeV	Using Pol $^3\text{He}$ Cell: <u>Y/N</u> , Long, Tran, or Vertical
LHRS	BigBite <small>others too</small>
Momentum (GeV/c): 2,400	Polarity: "-"
Angle: 12.5°	Sieve Plate: <u>IN</u> or OUT?
	Current (A): 518
	Polarity: Positive
	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
3076	20:06	20:11	$\text{D}_2^{\text{ref}}$	2	97k	7%	ps3=10, ps4=5, ps6=2	
3077	20:12	20:14	$\text{D}_2^{\text{ref}}$	12	167k		ps3=1, ps4=1, ps6=2	
* 3078	20:18	20:52	$\text{D}_2^{\text{ref}}$	10	4M	12%	ps3=5, ps4=5, ps6=2	
* 3079	21:00	21:31	$\text{N}_2^{\text{ref}}$	10	4M	8%	ps3=5, ps4=5, ps6=2	
3080	21:52	21:57	$^3\text{He}$	8	0.5M	7%	ps3=100, ps4=5, ps6=ps5=1	
3081	21:59	22:28	$^3\text{He}$	10	4M	11%	← good production runs start here	
3082	22:33	22:05	$^3\text{He}$	10	4M	11%		✓
3083	23:08						junk	
3084	23:07	23:36	$^3\text{He}$	10	4M	11%		
3085	23:37		$^3\text{He}$	10	4M			
3086	00:05	00:32	$^3\text{He}$	10 $\mu\text{A}$	4M	10%		
3087	00:32		N	11	4M	11%		

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

- \* good run with  $\text{D}_2$  ref. cell (195 prtg)
- \* good run with  $\text{N}_2$  ref. cell (20 prtg)

### RIGHT-ARM ONLY on this page: $A_x, A_z$ Production Run Sheet

Date: June 1, 2009	Author: S. Sirca
Beam Energy: 2,425 GeV	Using Pol $^3\text{He}$ Cell: <u>Y/N</u> , Long, Tran, or Vertical
RHRS	BigBite <small>others too</small>
Momentum (GeV/c): 2,400	Polarity: "-"
Angle: 12.5°	Sieve Plate: <u>IN</u> or OUT?
	Current (A): 578A
	Polarity: Positive
	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
21952	20:59	21:31	$\text{N}_2^{\text{ref}}$	10	2.8M	13%		
21953	21:52	21:57	$^3\text{He}$	8	0.35M	10%		
21954	21:59	22:28	$^3\text{He}$	10	2.9M	12%	← good production runs start here	
21955	22:33	23:06	$^3\text{He}$	10	3.1M	5%	junk	✓
21956							junk	
21957	23:07	23:36	$^3\text{He}$	10	2.47M	11%		
21958	23:37		$^3\text{He}$	10	2.6M			
21959	00:05	00:32	$^3\text{He}$	10 $\mu\text{A}$	2.67M	11%		
21960	00:32		"	"	2.67M	"		

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### LEFT-ARM ONLY on this page: Ax, Az Production Run Sheet

Date: 2 June 2009	Author: EIP
Beam Energy: 2.425 GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="radio"/> N, <input checked="" type="radio"/> Long, <input type="radio"/> Tran, or <input type="radio"/> Vertical
LHRS Momentum (GeV/c): 2.4 Polarity: "-"	BigBite Current (A): 578A Polarity: Positive
Angle: 12.5° Sieve Plate: IN or OUT?	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
3088	01:00	01:28	<sup>3</sup> He	10 μA	4M			✓ (x)
3089	01:30	01:59	<sup>3</sup> He	10 μA	4M			
3090	01:59	02:25	"	"	4M	12%		
3091	02:25	02:52	"	"	4M	10%		
3092	02:52	03:21	"	"	4M	11%		✓ (x)
3093	03:21	03:41	"	"	4M	11%		
3094	03:47	04:13	"	"	4M	10%		
3095	04:16	04:45	"	"	4M	11%		✓ (x)
3096	04:45	05:13	"	"	4M	11%		
3097	05:13	05:43	"	"	4M	10%		✓ (x)
3098	05:44	06:13	"	"	4M	12%		✓
3099	06:18	06:55	"	"	4M	11%		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

(x) Gold run need to be updated - PS, Kinematics!

### RIGHT-ARM ONLY on this page: Ax, Az Production Run Sheet

Date: 2 June 2009	Author: EIP
Beam Energy: 2.425 GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="radio"/> N, <input checked="" type="radio"/> Long, <input type="radio"/> Tran, or <input type="radio"/> Vertical
RHRS Momentum (GeV/c): 2.4 Polarity: "-"	BigBite Current (A): 578A Polarity: Positive
Angle: 12.5° Sieve Plate: IN or OUT?	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
21961	01:00	01:28	<sup>3</sup> He	10 μA	2.7M	11%		✓ ← LHR3 did not fire Gold - 1 abs
21962	01:29	01:59	<sup>3</sup> He	10 μA	2.60M			
21963	01:59	02:25	"	"	2.62M	11%		40%
21964	02:25	02:52	"	"	2.61M	N		
21965	02:52	03:21	"	"		N		✓ (x)
21966	03:21	03:47	"	"	2.65M	"		
21967	03:47	04:13	"	"	2.66M	"		
21968	04:16	04:45	"	"	2.70M	11%		✓ (x)
21969	04:45	05:13	"	"	2.69M	"		
21970	05:13	05:43	"	"	2.69M	"		✓ (x)
21971	05:44	06:14	"	"	2.69M	"		✓
21972	06:18	06:55	"	"	2.69M	11%		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

~~61.71~~

### LEFT-ARM ONLY on this page: $A_x$ , $A_z$ Production Run Sheet

Date: 2 June 2009	Author: Kai Pan
Beam Energy: 2.4 GeV	Using Pol $^3\text{He}$ Cell: $\text{N}$ , $\text{Long}$ , Tran, or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.4 Polarity: "-"	Current (A): 1784 Polarity: Positive
Angle: 12.5° Sieve Plate: IN or OUT?	Angle: 250

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
3100	06:56	07:06	$^3\text{He}$	10 $\mu\text{A}$	1.1M	11%	stopped due to beam study	
3103			/				Cosmics	
3104	15:25	15:31	optics	2 $\mu\text{A}$			cosmics + HARP	
3105-3108							test run	
3109	16:20						test run	
3110							calibration run	
3111	16:40	16:54	$^3\text{He}$	9 $\mu\text{A}$	935K	8%	Calibration run.	OK
3112	16:56	17:25	$^3\text{He}$	10 $\mu\text{A}$	4M	7%	calibration, elastic	OK
3113	17:27	17:56	$^3\text{He}$	10 $\mu\text{A}$	4M	7%	calibration	✓
3114	17:57	18:29	$^3\text{He}$	10 $\mu\text{A}$	4M	7%		✓
3115	18:30	18:58	$^3\text{He}$	10 $\mu\text{A}$	4M	8%		✓
3116	18:59	19:36	$^3\text{He}$	10 $\mu\text{A}$	4M	7%		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

More Comments:

### RIGHT-ARM ONLY on this page: $A_x$ , $A_z$ Production Run Sheet

Date: 2 June 2009	Author: Kai Pan
Beam Energy: 2.425 GeV	Using Pol $^3\text{He}$ Cell: $\text{N}$ , $\text{Long}$ , Tran, or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.4 Polarity: "-"	Current (A): 5784 Polarity: Positive
Angle: 12.5 Sieve Plate: IN or OUT?	Angle: 250

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
21973	06:56	07:06	$^3\text{He}$	10 $\mu\text{A}$	721K	11%	stopped due to beam study	
21977			/				cosmics	
21978	15:25	15:31	optics	2 $\mu\text{A}$			check-out.	
21979-21982							test run.	
21983	16:20						test run.	
21984							calibration run	
21985	16:39	16:55	$^3\text{He}$	8 $\mu\text{A}$	710K	12%	production.	✓
21986	16:56	17:26	$^3\text{He}$	10 $\mu\text{A}$	3M	12%	production.	✓
21987	17:26	17:57	$^3\text{He}$	10 $\mu\text{A}$	3M	10%	production	✓
21988	17:57	18:29	$^3\text{He}$	10 $\mu\text{A}$	3M		pro	✓
21989	18:30	18:58	$^3\text{He}$	10 $\mu\text{A}$	3M		production	✓
21990	18:59	19:36	$^3\text{He}$	10 $\mu\text{A}$	3M			✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

More Comments:

**LEFT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet**

Date: 2 June	Author: Haijiang Lu
Beam Energy: 2.425 GeV	Using Pol <sup>3</sup> He Cell: Y/N, Long, Tran, or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.436 Polarity: "-"	Current (A): 528 Polarity: Positive
Angle: 12.5 Sieve Plate: IN or OUT?	Angle: 75

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
3117	19:37	20:07	<sup>3</sup> He	10μA	4M	7%	Calibration run	✓
3118	20:08	21:05	<sup>3</sup> He	10μA	<del>4M</del>		stoppe by hand.	X
3119	21:06	21:34	<sup>3</sup> He	10μA	4M	7%		✓
3120	21:36	22:05	<sup>3</sup> He	10μA	4M	7%		✓
3121	22:07	22:33	<sup>3</sup> He	10μA	4M	7%		✓
3122	22:52	23:18	Ref. N <sub>2</sub>	10μA	4M	9%	6.24% Calibr.	✓
3123	23:19	23:52	Ref. N <sub>2</sub>	10μA	1.9M	8%		✓
3124	00:11	00:16	Ref. D <sub>2</sub>	10μA	414K	4%		✓
3125	00:17	01:05	Ref. D <sub>2</sub>	11μA	4M	5%		✓
3126	01:07	02:08	Ref. D <sub>2</sub>	11μA	4M	5%		✓
3127	02:33	02:37	<sup>3</sup> He	9μA	480K	8%	Test	✓
3128	02:38	03:08	<sup>3</sup> He	9μA	4M	8%	Start Production	✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

**RIGHT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet**

Date: 2 June	Author: Haijiang Lu
Beam Energy: 2.425 GeV	Using Pol <sup>3</sup> He Cell: Y/N, Long, Tran, or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.436 Polarity: "-"	Current (A): 528 Polarity: Positive
Angle: 12.5 Sieve Plate: IN or OUT?	Angle: 75

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
21991	19:37	20:07	<sup>3</sup> He	10μA	3M	11%	production	✓
21992	20:07	21:05	<sup>3</sup> He	10μA	5.5M		stopped by hand because the left arm problem	✓
21993	21:06	21:34	<sup>3</sup> He	10μA	3M	11%		✓
21994	21:35	22:07	<sup>3</sup> He	10μA	3M	11%		✓
21995	22:07	22:38	<sup>3</sup> He	10μA	3M	11%		✓
21996	22:52	23:18	Ref. N <sub>2</sub>	10μA	2.7M	12%	Pol = 6.24% Calibr.	✓
21997	23:18	23:32	Ref. N <sub>2</sub>	10μA	1.3M	12%		✓
21998	00:10	00:16	Ref. D <sub>2</sub>	10μA	232K	7%		✓
21999	00:16	01:05	Ref. D <sub>2</sub>	11μA	2.3M	7%		✓
22000	01:06	02:08	Ref. D <sub>2</sub>	11μA	2.3M	7%		✓
22001	02:32	02:37	<sup>3</sup> He	9μA	336K	11%	Test	✓
22002	02:38	03:08	<sup>3</sup> He	9μA	2.8M	10%	Start Production	✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### LEFT-ARM ONLY on this page: $A_x$ , $A_z$ Production Run Sheet

Date: 6/3/09	Author: Eric Jensen
Beam Energy: 2.4272 GeV	Using Pol $^3\text{He}$ Cell: Y/N, (Long) Tran, or Vertical
LHRS Momentum (GeV/c): 2.320 Polarity: "-" Angle: 12.5° Sieve Plate: IN or (OUT)?	BigBite Current (A): 518 A Polarity: Positive Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
3129	03:10	03:56	$^3\vec{\text{He}}$	9 $\mu\text{A}$	4 M	8%		✓
3130	03:58	04:27	$^3\vec{\text{He}}$	9 $\mu\text{A}$	4 M	8%		✓
3131	04:29	05:01	$^3\vec{\text{He}}$	9 $\mu\text{A}$	4 M	8%		✓
3132	05:03	05:39	$^3\vec{\text{He}}$	9 $\mu\text{A}$	4 M	8%		✓
3134	05:41	06:16	$^3\vec{\text{He}}$	9 $\mu\text{A}$	4 M	8%		✓
3135	06:19	06:48	$^3\vec{\text{He}}$	9 $\mu\text{A}$	4 M	8%		✓
3136	06:50	07:30	$^3\vec{\text{He}}$	9 $\mu\text{A}$	4 M	8%		✓
3137	07:31	08:04	$^3\vec{\text{He}}$	9 $\mu\text{A}$	4 M	8%		✓
3138	08:05	08:38	$^3\vec{\text{He}}$	9 $\mu\text{A}$	4 M	8%		✓
3139	08:41	9:10	$^3\vec{\text{He}}$	9 $\mu\text{A}$	4 M	8%		✓
3140	9:12	9:37	$^3\vec{\text{He}}$	9 $\mu\text{A}$	1.7 M	8%	beam down for short period.	✓
3141	9:42		$^3\vec{\text{He}}$	9 $\mu\text{A}$	0.25 M	8%	Lost beam	

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

More Comments: Accidentally started 3133 before ending 22006

### RIGHT-ARM ONLY on this page: $A_x$ , $A_z$ Production Run Sheet

Date: 6/3/09	Author: Eric Jensen
Beam Energy: 2.4272 GeV	Using Pol $^3\text{He}$ Cell: Y/N, (Long) Tran, or Vertical
RHRS Momentum (GeV/c): 2.175 Polarity: "-" Angle: 18° Sieve Plate: IN or (OUT)?	BigBite Current (A): 518 A Polarity: Positive Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
22003	03:09	03:56	$^3\vec{\text{He}}$	9 $\mu\text{A}$	2.9 M	10%		✓
22004	03:57	04:27	$^3\vec{\text{He}}$	9 $\mu\text{A}$	2.8 M	11%		✓
22005	04:28	05:02	$^3\vec{\text{He}}$	9 $\mu\text{A}$	2.8 M	10%		✓
22006	05:03	05:40	$^3\vec{\text{He}}$	9 $\mu\text{A}$	2.9 M	11%		✓
22007	05:40	06:16	$^3\vec{\text{He}}$	9 $\mu\text{A}$	2.8 M	11%		✓
22008	06:18	06:48	$^3\vec{\text{He}}$	9 $\mu\text{A}$	2.8 M	11%		✓
22009	06:50	07:30	$^3\vec{\text{He}}$	9 $\mu\text{A}$	2.8 M	11%		✓
22010	07:31	08:04	$^3\vec{\text{He}}$	9 $\mu\text{A}$	2.8 M	11%		✓
22011	08:05	08:39	$^3\vec{\text{He}}$	9 $\mu\text{A}$	2.75 M	11%		✓
22012	08:40	9:10	$^3\vec{\text{He}}$	9 $\mu\text{A}$	2.8 M	10%		✓
22013	9:11	9:37	$^3\vec{\text{He}}$	9 $\mu\text{A}$	1.2 M	10%	beam down for short period.	✓
22014	9:41		$^3\vec{\text{He}}$	9 $\mu\text{A}$	0.2 M	10%	Lost beam	

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

More Comments:



### LEFT-ARM ONLY on this page: Ax, Az Production Run Sheet

Date: 6/3/09	Author: JOHN ANNAND.
Beam Energy: 2.427 GeV	Using Pol <sup>3</sup> He Cell: Y/N, Long, Tran, or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.32	Polarity: "-" Current (A): 518A
Angle: 12.5°	Sieve Plate: IN or OUT? Angle: 7.5°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay OK?
3142	11:01	11:49	<sup>3</sup> He	9μA	4M	8%	Restart after beam off	✓
3143	11:51	12:23	<sup>3</sup> He	9μA	4M	8%		OK
3144	12:25	12:58	<sup>3</sup> He	9μA	4M	8%		OK
3145	12:59	13:32	<sup>3</sup> He	9μA	4M	8%		OK
3146	13:33	14:12	<sup>3</sup> He	9μA	4M	8%		OK
3147	14:14	14:49	<sup>3</sup> He	9μA	4M	7%		OK
3148	14:52	14:54	-	0	26K	0%	pedestal run.	
3150	14:58		<sup>24</sup> reference	9μA	207K		<sup>24</sup> Calibration lost beam - end run.	
3151	15:38	16:04	<sup>24</sup> Reference	9μA	1.15M	0%		
3152	16:15	16:16	Empty Ref	9μA		-0%	set prescales	
3154	16:19	16:50	Empty ref	9μA	4M	4%	7X5 MCC raster (4x4mm <sup>2</sup> )	
3155	16:54	17:07	-	9μA	0.7M	4%	3X2 MCC raster (2x2mm <sup>2</sup> )	

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

#### More Comments:

Run 3143 - present & golden runs look pretty close.  
3148 - junk

### RIGHT-ARM ONLY on this page: Ax, Az Production Run Sheet

Date: 6/3/09	Author: JOHN ANNAND
Beam Energy: 2.427 GeV	Using Pol <sup>3</sup> He Cell: Y/N, Long, Tran, or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.175	Polarity: "-" Current (A): 518A
Angle: 18°	Sieve Plate: IN or OUT? Angle: 7.5°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay OK?
22015	11:00	11:49	<sup>3</sup> He	9μA	2.85M	10%	Restart after beam off	✓
22016	11:50	12:23	<sup>3</sup> He	9μA	2.83M	11%		✓
22017	12:24	12:58	<sup>3</sup> He	9μA	2.85M	10%	ps6 = 10	✓
22018	12:59	13:32	<sup>3</sup> He	9μA	2.83M	10%	ps6 = 65535	✓
22019	13:33	14:13	<sup>3</sup> He	9μA	2.85M	10%		✓
22020	14:13	14:49	<sup>3</sup> He	9μA	2.84M	11%	analyser seems to be fixed golden & current agree	OK
22021	<del>14:57</del>		<del><sup>24</sup>reference</del>	0	15.4K	0%	pedestal run	
22022	14:57		<sup>24</sup> Reference	9μA	164K		<sup>24</sup> Calibration. lost beam - end run	
22023	15:37	16:05	<sup>24</sup> Reference	9μA	1.1M	6%		
22024	16:15	16:16	Empty Ref	9μA			set prescales	
22026	16:49	16:50	Empty ref	9μA	0.9M	4%	7X5 MCC raster (4x4mm <sup>2</sup> )	
22027	16:54	17:07	-	9μA	166K	4%	3X2 MCC raster (2x2mm <sup>2</sup> )	

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

#### More Comments:

The "online" analyser golden runs are different to the present.  
ps6 prescale changed 64K → 10. Start Run 22017. (software problem)

### LEFT-ARM ONLY on this page: $A_x$ , $A_z$ Production Run Sheet

Date: June 3, 2009	Author: S. Sirca
Beam Energy: 2.425 GeV	Using Pol $^3\text{He}$ Cell: (Y)N, Long, Tran, or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.320 GeV/c	Polarity: "-"
Current (A): 518	Polarity: Positive
Angle: 12.5°	Sieve Plate: IN or (OUT)?
	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
3156	17:11	17:15	N2	9 $\mu\text{A}$		15%	N2 pressure is 2psig, ps3=5	
3157	17:16	17:24	N2	9 $\mu\text{A}$	JUNK	beam gone	N2 at 2psig, ps3=10	
3158	17:27	18:01	N2	9 $\mu\text{A}$	4M	8%	N2 at 2psig, ps3=10	
3159	18:04	18:41	N2	9 $\mu\text{A}$	4M	5%	N2 at 2psig, ps3=200	
3160	18:48	18:50	$^3\text{He}$	9 $\mu\text{A}$	JUNK	8%	<del>ps3=200</del> ps4=40 ps5=1 ps6=1	
3161	18:56	19:31	$^3\text{He}$	9 $\mu\text{A}$	3.7M	8%	production	✓
3162	20:02	20:34	$^3\text{He}$	9 $\mu\text{A}$	4M	8%	production	✓
3163	20:37	21:17	$^3\text{He}$	9 $\mu\text{A}$	4M	7%	production	✓
3164	21:19	21:36	$^3\text{He}$	9 $\mu\text{A}$	1.9M	7%	production	
3165	23:34	23:37	Optics	2 $\mu\text{A}$	0.20M	1%	check	
3166	23:40	23:43	$^3\text{He}$	2 $\mu\text{A}$	0.079M	1%	check	
3167	23:44	00:17	$^3\text{He}$	8 $\mu\text{A}$	4M	6%	production	✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

More Comments:

### RIGHT-ARM ONLY on this page: $A_x$ , $A_z$ Production Run Sheet

Date: June 3, 2009	Author: S. Sirca
Beam Energy: 2.425 GeV	Using Pol $^3\text{He}$ Cell: (Y)N, Long, Tran, or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.175 GeV/c	Polarity: "-"
Current (A): 518	Polarity: Positive
Angle: 12.5°	Sieve Plate: IN or (OUT)?
	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
22028	17:10	17:15	N2	9 $\mu\text{A}$		8%	N2 pressure is 2psig	
22029	17:16	17:24	N2	9 $\mu\text{A}$	JUNK	beam gone	N2 pressure 2 psig	
22030	17:27	18:01	N2	9 $\mu\text{A}$	1.8M	2%	N2 pressure 2 psig	
22031	18:04	18:41	N2	9 $\mu\text{A}$	3.2M	11%	N2 pressure 20 psig	
22032	18:47	18:50	$^3\text{He}$	9 $\mu\text{A}$	JUNK	10%	<del>ps3=200</del> JUNK	
22033	18:56	19:31	$^3\text{He}$	9 $\mu\text{A}$	0.6M	6%	stopped counting	✓
22034	20:02	20:34	$^3\text{He}$	9 $\mu\text{A}$	2.9M	10%	production	✓
22035	20:37	21:17	$^3\text{He}$	9 $\mu\text{A}$	2.9M	6%	production	✓
22036	21:18	21:36	$^3\text{He}$	9 $\mu\text{A}$	1.4M	6%	production	✓
22037	23:34	23:37	Optics	2 $\mu\text{A}$	0.2M	9%	check	
22038	23:40	23:43	$^3\text{He}$	2 $\mu\text{A}$	71K	3%	check	
22039	23:44	00:17	$^3\text{He}$	8 $\mu\text{A}$	2.85M	10%	production	✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

More Comments:

### LEFT-ARM ONLY on this page: $A_x, A_z$ Production Run Sheet

Date: 6/4/09	Author: Eric Jensen
Beam Energy: 2.4272 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="checkbox"/> Long <input type="checkbox"/> Tran, or Vertical
LHRS Momentum (GeV/c): 2.320 Polarity: "-"	BigBite Current (A): 518 Polarity: Positive
Angle: 12.5° Sieve Plate: IN or <input checked="" type="checkbox"/> OUT?	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
3168	00:19	00:56	$^3\vec{\text{He}}$	9 $\mu\text{A}$	4 M	7.8%		✓
3169	00:57	01:34	$^3\vec{\text{He}}$	9 $\mu\text{A}$	4 M	7.8%		✓
3170	01:36	01:37	$^3\vec{\text{He}}$	9 $\mu\text{A}$	117 k	7.7%	Ended run to do NMR	
3171	01:41	02:11	$^3\vec{\text{He}}$	9 $\mu\text{A}$	4 M	7.8%		✓
3172	02:14	02:47	$^3\vec{\text{He}}$	9 $\mu\text{A}$	4 M	7.6%		✓
3173	02:48	03:21	$^3\vec{\text{He}}$	9 $\mu\text{A}$	4 M	7.7%		✓
3174	03:23	03:53	$^3\vec{\text{He}}$	9 $\mu\text{A}$	4 M	7.8%		✓
3175	03:55	04:27	$^3\vec{\text{He}}$	9 $\mu\text{A}$	4 M	7.7%		✓
3176	04:29	05:01	$^3\vec{\text{He}}$	9 $\mu\text{A}$	4 M	7.8%		✓
3177	05:02	05:34	$^3\vec{\text{He}}$	9 $\mu\text{A}$	4 M	9.2%		✓
3178	05:37	06:16	$^3\vec{\text{He}}$	9 $\mu\text{A}$	4 M	7.9%		✓
3179	06:18	06:25	$^3\vec{\text{He}}$	9 $\mu\text{A}$	226 k	8.0%	Compton HV crash	

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### RIGHT-ARM ONLY on this page: $A_x, A_z$ Production Run Sheet

Date: 6/4/09	Author: Eric Jensen
Beam Energy: 2.4272 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="checkbox"/> Long <input type="checkbox"/> Tran, or Vertical
RHRS Momentum (GeV/c): 2.175 Polarity: "-"	BigBite Current (A): 518 Polarity: Positive
Angle: 18° Sieve Plate: IN or <input checked="" type="checkbox"/> OUT?	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
22040	00:18	00:56	$^3\vec{\text{He}}$	9 $\mu\text{A}$	2.86 M	10.7%		✓
22041	00:57	01:34	$^3\vec{\text{He}}$	9 $\mu\text{A}$	2.86 M	10.7%		✓
22042	01:35	01:37	$^3\vec{\text{He}}$	9 $\mu\text{A}$	80 k	10.7%	Ended run to do NMR	
22043	01:40	02:11	$^3\vec{\text{He}}$	9 $\mu\text{A}$	2.85 M	10.7%		✓
22044	02:14	02:47	$^3\vec{\text{He}}$	9 $\mu\text{A}$	2.87 M	10.6%		✓
22045	02:48	03:22	$^3\vec{\text{He}}$	9 $\mu\text{A}$	2.87 M	10.6%		✓
22046	03:22	03:53	$^3\vec{\text{He}}$	9 $\mu\text{A}$	2.85 M	10.7%		✓
22047	03:55	04:28	$^3\vec{\text{He}}$	9 $\mu\text{A}$	2.86 M	10.6%		✓
22048	04:28	05:01	$^3\vec{\text{He}}$	9 $\mu\text{A}$	2.86 M	10.7%		✓
22049	05:02	05:34	$^3\vec{\text{He}}$	9 $\mu\text{A}$	2.91 M	10.6%		✓
22050	05:36	6:16	$^3\vec{\text{He}}$	9 $\mu\text{A}$	2.86 M	10.7%		✓
22051	06:17	06:25	$^3\vec{\text{He}}$	9 $\mu\text{A}$	165 k	10.5%	Compton HV crash	

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### LEFT-ARM ONLY on this page: $A_x, A_z$ Production Run Sheet

Date: 6/4/09	Author: Eric Jensen
Beam Energy: 2427.20 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="radio"/> YN, <input checked="" type="radio"/> Long, Tran, or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.320 Polarity: "-"	Current (A): 518 Polarity: Positive
Angle: 12.5° Sieve Plate: IN or <input checked="" type="radio"/> OUT?	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
3180	06:28	07:03	$^3\text{He}$	9 $\mu\text{A}$	3.11 M	7.9%	Stopped for beam studies	✓
3181	10:15	17:30	-	0			<del>lost</del> *	
3182	17:32	17:55	BeO	2		0%		
3183	17:43		He-3				10x8 raster	
3184	17:49	17:51	He-3	9 $\mu\text{A}$		8	7x5	
3185	17:52	18:25	He-3		4M			
3186	18:26	18:57	-		4M	8		
3187	18:59	19:29	He-3		4M	6-7		✓
3188	19:30	20:01	He-3		4M	7		
3189	20:02	20:32	He-3		4M	7		
3190	20:34	21:05	He-3		4M	7		
3191	21:08	21:39	He-3		4M	7		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

More Comments:

\* Cosmics until ~ 17:00, later beam was on

### RIGHT-ARM ONLY on this page: $A_x, A_z$ Production Run Sheet

Date: 6/4/09	Author: Eric Jensen
Beam Energy: 2427.20 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="radio"/> YN, <input checked="" type="radio"/> Long, Tran, or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.175 Polarity: "-"	Current (A): 518 Polarity: Positive
Angle: 18° Sieve Plate: IN or <input checked="" type="radio"/> OUT?	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
22052	06:28	07:03	$^3\text{He}$	9 $\mu\text{A}$	2.22 M	10.7%	Stopped for beam studies	✓
22053	10:15	17:30	-	0			<del>lost</del> *	
22054	17:32		BeO	2		8%		
22055	17:42		He-3			4%	10x8 raster	
22056	17:48	17:51	He-3				7x5	
22057	17:52	18:25	He-3	9 $\mu\text{A}$	2.86 M	10%	production	
22058	18:26	18:57	He-3	9 $\mu\text{A}$	2.85	10	, NMR done	
22059	18:59	19:29	He-3	9 $\mu\text{A}$	2.87	10		✓
22060	19:30	20:01	He-3	9 $\mu\text{A}$	2.86	11		
22061	20:02	20:32	He-3	9 $\mu\text{A}$	2.85	10		
22062	20:34	21:06	He-3	9 $\mu\text{A}$	2.88	10		
22063	21:08	21:39	He-3	9 $\mu\text{A}$	2.87	10		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

More Comments:

\* Cosmics until ~ 17:00, later beam was on

### LEFT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet

Date: 6/4/09	Author:
Beam Energy: 2427.20 GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="checkbox"/> N, <input type="checkbox"/> Long, <input type="checkbox"/> Tran, or <input type="checkbox"/> Vertical
LHRS	BigBite
Momentum (GeV/c): 2.320	Polarity: "-"
Current (A): 518	Polarity: Positive
Angle: 12.5°	Sieve Plate: IN or <input checked="" type="checkbox"/> OUT
	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
3192	21:41	22:11	He3	9μA	4M			
3193	22:12	22:41	He3	9	4M	8		✓
3194	22:42	23:11	- -	9	4M	8		✓
3195	23:13	23:43	- -		4M	8		✓
3196	23:44	00:13	"	9μ	4M	7		✓
3197	00:17	00:28	"	9μ	1.4M	7	NHR = 62.4 / Short run, new HARPEX to redo UMR	✓
3198	00:31	01:03	"	9μ	4M	8	NHR = 60.4	✓
3199	01:05	01:38	"	9μ	4M	7		✓
3200	01:39	01:57	"	9μ	1.4M	7	Became off due to RF problems	✓
3201	02:32	03:03	"	9μ	4M	7		✓
3202	03:04	03:34	"	9	4M	7		✓
3203	03:36	04:07	"	9	4M	7		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### RIGHT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet

Date: 6/4/09	Author:
Beam Energy: 2427.20 GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="checkbox"/> N, <input type="checkbox"/> Long, <input type="checkbox"/> Tran, or <input type="checkbox"/> Vertical
RHRS	BigBite
Momentum (GeV/c): 2.320	Polarity: "-"
Current (A): 518	Polarity: Positive
Angle: 12.5°	Sieve Plate: IN or <input checked="" type="checkbox"/> OUT
	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
22064	21:41	22:11	He3	9μA	2.85M			
22065	22:12	22:41	<sup>3</sup> He	9	2.85M	11		✓
22066	22:42	23:12	- -	9	2.86M	11		
22067	23:12	23:43	- -	9	2.85M	11		✓
22068	23:44	00:13	"	9	2.84M	10		✓
22069	00:16	00:28	"	9	1.01M	11	NHR = 62.4 / Short run, new HARPEX = (to redo) NH	✓
22070	00:31	01:03	"	9	2.86M	11	NHR = 60.5	✓
22071	01:04	01:38	"	9μ	2.88M	10		✓
22072	01:39	01:57	"	9μ	0.97M	10		✓
22073	02:31	03:03	"	9	2.86M	10		✓
22074	03:04	03:35	"	9	2.86M	10		✓
22075	03:35	04:06	"	9	2.87	10		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### LEFT-ARM ONLY on this page: $A_x, A_z$ Production Run Sheet

Date: 6/4/09	Author: W. Boeglin
Beam Energy: 2.4255 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="radio"/> N, <input type="radio"/> Long, <input type="radio"/> Tran, or <input type="radio"/> Vertical
LHRS 2	BigBite
Momentum (GeV/c): 2.320 Polarity: "-"	Current (A): 518 Polarity: Positive
Angle: 12.5° Sieve Plate: IN or <input checked="" type="radio"/> OUT	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
3204	04:12	—	$^3\text{He}$	9	0	100	Junk: DAO did did point' hang	
3205	04:21	04:55	"	"	4M	7		✓
3206	04:56	5:26	"	"	4M	7		✓
3207	05:28	06:00	"	"	4M	8		✓
3208	06:00	06:32	"	"	4M	7		✓
3209	06:34	07:05	"	"	4M	7		✓
3210	07:06	07:24	"	0	15k	0	no beam	✗
3211	07:35	08:05	"	9	4M			✓
3212	08:06	8:39	"	9-10	1.77M	8	no beam	✓
3213	09:06	9:36	"	9	4M	8		✓
3214	09:37	10:12	"	9	4M	7-8		✓
3215	10:14	10:44	"	9	4M	8		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### RIGHT-ARM ONLY on this page: $A_x, A_z$ Production Run Sheet

Date: 6/4/09	Author: W. Boeglin
Beam Energy: 2.4255 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="radio"/> N, <input type="radio"/> Long, <input type="radio"/> Tran, or <input type="radio"/> Vertical
RHRS	BigBite
Momentum (GeV/c): 2.320 Polarity: "-"	Current (A): 518 Polarity: Positive
Angle: 18° Sieve Plate: IN or <input checked="" type="radio"/> OUT	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
22076	04:12	04:16	$^3\text{He}$	9	0.3M		Problem in Left arm	
22077	04:20	04:55	"	"	2.67M	10		✓
22078	04:56	05:27	"	"	2.86M	10		✓
22079	05:27	06:00	"	"	2.86M	11		✓
22080	06:01	06:33	"	"	2.86M	10		✓
22081	06:34	07:05	"	"	2.85M	10		✓
22082	07:05	07:24	"	0	29k	0	no beam	—
22083	07:35	08:05	"	9	2.8M			—
22084	08:06	08:40	"	10	1.27M	16	no beam	✓
22085	09:05	09:36	"	9	2.85M	10%		✓
22086	09:37	10:13	"	9	2.87M	10		✓
22087	10:13	10:44	"	9	2.85M	10		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### LEFT-ARM ONLY on this page: $A_x$ , $A_z$ Production Run Sheet

Date: 6/4/09	Author: Ole Hansen
Beam Energy: 2.4255 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="radio"/> N, <input checked="" type="radio"/> Long, Tran, or Vertical
LHRS Momentum (GeV/c): 2.320 Angle: 12.5°	BigBite Polarity: "-" Current (A): 518 Sieve Plate: IN or <input checked="" type="radio"/> OUT? Angle: 75° Polarity: Positive

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
3216	1045	1115	$^3\text{He}$	9	4M	7		✓
3217	1116	1147	"	9	4M	8		✓
3218	1149	1219	"	9	4M	8		✓
3219	1221	1255	"	9	4M	7		✓
3220	1300	1349	"	9	4M	8		✓
3221	1350	1420	$^3\text{He}$	9	4M	7		✓
3222	1421	1453	"	9	4M	7		✓
3223	1454	1525	"	9	4M	8		
3224	1526	1556	"	9	4M	8		
3225	1557	1628	"	9	4M			✓
3226	16:36	17:06	-		4M		no KAPPAEX, DAQ problem	
3227	17:19	17:52			4M		Compton restarted	

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### RIGHT-ARM ONLY on this page: $A_x$ , $A_z$ Production Run Sheet

Date: 6/4/09	Author: Ole Hansen
Beam Energy: 2.4255 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="radio"/> N, <input checked="" type="radio"/> Long, Tran, or Vertical
RHRS Momentum (GeV/c): 2.175 Angle: 18°	BigBite Polarity: "-" Current (A): 518 Sieve Plate: IN or <input checked="" type="radio"/> OUT? Angle: 75° Polarity: Positive

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
22088	1045	1115	$^3\text{He}$	9	2.86M	10		✓
22089	1116	1147	"	9	2.86M	10%		✓
22090	1148	1219	"	9	2.87M	10		✓
22091	1221	1255	"	9	2.87M	10		✓
22092	1300	1350	"	9	2.87M	10	No beam at start	✓
22093	1350	1420	"	9	2.86M	10		✓
22094	1421	1453	"	9	2.85M	10		✓
22095	1454	1525	"	9	2.85M	10		
22096	1526	1556	"	9	2.85M	10		
22097	1557	1629	"	9				✓
22098	16:35	17:07	-				no KAPPAEX, DAQ problem	
22099	17:19	17:52			2.85		Compton restarted, NME done	

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### LEFT-ARM ONLY on this page: $A_x, A_z$ Production Run Sheet

Date: 6/5/09	Author:
Beam Energy: 2.4255 GeV	Using Pol $^3\text{He}$ Cell: <u>Y/N</u> , Long, Tran, or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.320	Polarity: "-" Current (A): 518
Angle: <del>15.0</del> 12.5 Sieve Plate: IN or OUT?	Polarity: Positive
	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
3228	17:53	18:24	$^3\text{He}$	9.9	4M	7		✓
3229	18:25	18:55	-		4M	8		
3230	18:56	19:27	-		4M			
3231	19:32	20:09			4M	7		
3232	20:09	20:22			1.8M			✓
3233	20:23	20:53			4M	6		
3234	20:55	21:25			4M	8		✓
3235	21:27	21:57			4M	7		✓
3236	21:59	22:11			1.79	8		
3237	22:14	22:46			4M	8		✓
3238	22:48	23:22			4M	8		✓
3239	23:23	23:30			0.6M	7	beam OFF: RF problems in linac	

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

More Comments:

### RIGHT-ARM ONLY on this page: $A_x, A_z$ Production Run Sheet

Date: 6/5/09	Author:
Beam Energy: 2.4255 GeV	Using Pol $^3\text{He}$ Cell: Y/N, Long, Tran, or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.175	Polarity: "-" Current (A): 518
Angle: 18.0° Sieve Plate: IN or OUT?	Polarity: Positive
	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
22100	17:52	18:24	$^3\text{He}$	9.9	2.85M	10		✓
22101	18:24	18:55	-		2.86M	10		
22102	18:56	19:28	-		2.87M			
22104	19:32	20:09			2.85M	10	coda <del>loaded</del> restarted	
22105	20:09				1.27M		bad run? no end of run.	
22106	20:23	20:53			2.87M	11		
22107	20:54	21:26			2.86M	10		✓
22108	21:27	21:57			2.85M	10		✓
22109	21:59	22:12			1.27M	10		
22110	22:14	22:47			2.87M	4		✓
22111	22:48	23:22			2.89M	11		✓
22112	23:23	23:30			0.4M	11	beam OFF: RF problems in Southline	

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

More Comments:



### LEFT-ARM ONLY on this page: $A_x$ , $A_z$ Production Run Sheet

Date: 06/06/09	Author: Lamiaa
Beam Energy: 2.425 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="checkbox"/> N, <input checked="" type="checkbox"/> Long, Tran, or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.32 Polarity: "-"	Current (A): 518 Polarity: Positive
Angle: 12.5 Sieve Plate: IN or OUT?	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
3240	01:31	01:35	BeO	24 $\mu\text{A}$		11%	Test run (4x4mm <sup>2</sup> raster)	-
3241	01:37	01:44	"	"	50k	"	"	-
3242	01:48	01:55	$^3\text{He}$	2 $\mu\text{A}$ 65 $\mu\text{A}$	343k	1%	Test rates w/ $^3\text{He}$ target	-
3243	01:58	02:27	$^3\text{He}$	9 $\mu\text{A}$	477	8	$^3\text{He}$ Prod. run. New Happer: 31481	✓
3244	02:30	03:00	$^3\text{He}$	9 $\mu\text{A}$	477	8	"	✓
3245	03:01	03:30	"	"	"	"	"	✓
3246	03:31	04:00	"	"	"	7	"	✓
3247	04:01	-	"	"	"		very High deadtime end run failed Restart coda	Junk
3248	-	-						Junk
3249	04:11	04:41	"	"	"	7	$^3\text{He}$ Prod. run	✓
3250	04:41	05:10	"	"	"	8	"	✓
3251	05:11	05:41	"	"	"	8	"	✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### RIGHT-ARM ONLY on this page: $A_x$ , $A_z$ Production Run Sheet

Date: 06/06/09	Author: Lamiaa
Beam Energy: 2.425 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="checkbox"/> N, <input checked="" type="checkbox"/> Long, Tran, or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.175 Polarity: "-"	Current (A): 518 Polarity: Positive
Angle: (-) 18° Sieve Plate: IN or OUT?	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
22113	01:29	01:35	BeO target	24 $\mu\text{A}$	39k	8%	Test run w/ 4x4 raster	-
22114	01:37	01:44	"	"	425k	8%	"	-
22115	01:48	01:55	$^3\text{He}$	2 $\mu\text{A}$ 65 $\mu\text{A}$	287k	4%	Test rates w/ $^3\text{He}$ target	-
22116	01:58	02:28	$^3\text{He}$	9 $\mu\text{A}$	2877	11	$^3\text{He}$ Prod. run. New Happer run 31481	✓
22117	02:30	03:00	$^3\text{He}$	9 $\mu\text{A}$	"	11	"	✓
22118	03:01	03:30	"	"	"	10	"	✓
22119	03:31	04:00	"	"	"	11	"	✓
22120	04:01	-	"	"	"	11	Pb w/ LHRS deadtime & coda.	Junk
22121	-	-						"
22122	04:11	04:41	"	"	"	10	$^3\text{He}$ Prod. run	✓
22123	04:41	05:11	"	"	"	10	"	✓
22124	05:11	05:41	"	"	"	10	"	✓

Start Happer run

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

**LEFT-ARM ONLY on this page: Ax, Az Production Run Sheet**

Date: 06/06/09	Author: lamiaa
Beam Energy: 2.425 GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="checkbox"/> N, <input checked="" type="checkbox"/> Long, Tran, or Vertical
LHRS Momentum (GeV/c): 2.32 Polarity: "-" Angle: 12.5° Sieve Plate: IN or OUT?	BigBite Current (A): 5.18 Polarity: Positive Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
3252	05:42	06:12	<sup>3</sup> He	9	4M	7	<sup>3</sup> He prod run start New Happex run	✓
3253	06:14	06:45	"	"	"	7	New NDR calib → 61.9%	
3254	06:46	06:54	"	"	13K	"	magnet is down. No beam since the beginning of the run	Junk
3255	07:07	07:26	"	"	1.7M	8	Beam is back, start New Happex & Prod. runs	✓
3256	07:43	07:53	"	"	8K	0-1	NO Beam	Junk
3257	08:02	08:38	"	"	4M	7		✓
3258	08:39	09:10	"	"	4M	8		✓
3259	09:11	09:42	"	"	4M	7		✓
3260	09:43	10:12	"	"	4M	8		✓
3261	10:14	10:44	"	"	4M	7		✓
3262	10:47	11:18	"	"	4M	7		✓
3263	11:19	11:50	"	"	4M	8		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

**RIGHT-ARM ONLY on this page: Ax, Az Production Run Sheet**

Date: 06/06/09	Author: lamiaa / after Sam Ok Hanson
Beam Energy: 2.425 GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="checkbox"/> N, <input checked="" type="checkbox"/> Long, Tran, or Vertical
RHRS Momentum (GeV/c): 2.175 Polarity: "-" Angle: 18° Sieve Plate: IN or OUT?	BigBite Current (A): 5.18 Polarity: Positive Angle: 75°

New Happex run at 05:42

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
22125	05:42	06:12	<sup>3</sup> He	9	2.85M	11	<sup>3</sup> He prod run of k <sub>1</sub> (starting Happex run) 31483	✓
22126	06:14	06:45	"	"	"	10	New NDR calib → 61.9%	✓
22127	06:46	06:54	"	"	18K	"	Beam off for a while. Decided the magnet is down	maybe junk
22128	07:07	07:26	"	"	1.2M	11	New Happex "31483" & Prod. runs after the beam is back	✓
22129	07:43	07:56	"	"	15K	~4	NO Beam	Junk
22130	08:07	08:38	"	"	2.86M	10		✓
22131	08:39	09:10	"	"	2.86M	10		✓
22132	09:11	09:42	"	"	2.85M	10		✓
22133	09:42	10:13	"	"	2.85M	10		✓
22134	10:13	10:44	"	"	2.85M	10		✓
22135	10:47	11:18	"	"	2.86M	10		✓
22136	11:19	11:50	"	"	2.85M	10		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

**LEFT-ARM ONLY on this page:  $A_x, A_z$  Production Run Sheet**

Date: 6/6/09	Author: Ole Hamann
Beam Energy: 2.425 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="checkbox"/> N, <input checked="" type="checkbox"/> Long, Tran, or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.32 Polarity: "-"	Current (A): 518 Polarity: Positive
Angle: $12.5^\circ$ Sieve Plate: IN or OUT?	Angle: $75^\circ$

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
3264	1152	1220	$^3\text{He}$	9	4h	8		✓
3265	1229	1257	Ref. $\text{H}_2$	9	4h	10		✓
— switching target pol. to Transv. $\ominus$								

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
 More Comments:

**RIGHT-ARM ONLY on this page:  $A_x, A_z$  Production Run Sheet**

Date: 6/6/09	Author: Ole Hamann
Beam Energy: 2.425 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="checkbox"/> N, <input checked="" type="checkbox"/> Long, Tran, or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.175 Polarity: "-"	Current (A): 518 Polarity: Positive
Angle: $18^\circ$ Sieve Plate: IN or OUT?	Angle: $75^\circ$

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
22137	1151	1221	$^3\text{He}$	9	2.84h	10		✓
22138	1228	1257	Ref. $\text{H}_2$	9	2.30h	8		✓
— switching Target pol. to Transv. $\ominus$								

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
 More Comments:

### LEFT-ARM ONLY on this page: $A_x, A_z$ Production Run Sheet

Date: 6/6/09	Author: Ole Hamm
Beam Energy: 2.425 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="radio"/> N, Long, <input checked="" type="radio"/> Tran, or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.32 Polarity: "-"	Current (A): 518 Polarity: Positive
Angle: 12-5 Sieve Plate: IN or OUT?	Angle: 75

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
3266	1307	1339	$^3\text{He}$	9	4M	7		✓
3267	1340	1410	"	"	4M	8		✓
3268	1411	1442	"	"	4M	8		✓
3269	1443	1515	"	"	4M	8		✓
<del>3270</del> 3270	1516	1546	"	"	4M	7		
3271	1548	1616	"	"	4M	8		
3272	16:17	16:47	- -	- -	4M	8		✓
3273	16:48	17:18			4M	8		
3274	17:19	18:48	- -	- -	4M	8		
3275	17:52	18:22			4M	8		
3276	18:23	18:55			4M	8		✓
3277	18:56	19:26			4M			

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

More Comments:

### RIGHT-ARM ONLY on this page: $A_x, A_z$ Production Run Sheet

Date: 6/6/09	Author: Ole Hamm
Beam Energy: 2.425 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="radio"/> N, Long, <input checked="" type="radio"/> Tran, or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.175 Polarity: "-"	Current (A): 518 Polarity: Positive
Angle: 18 Sieve Plate: IN or OUT?	Angle: 75

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
22139	1306	1339	$^3\text{He}$	9	2.86M	10		✓
22140	1340	1411	"	"	2.86M	10		✓
22141	<del>1411</del> 1411	1442	"	"	2.86M	10		✓
22142	1442	1515	"	"	2.86M	16		
22143	1516	1546	"	"	2.85	10		
22144	1547	16:16	"	"	2.84	10		
22145	16:17	16:48	- -		2.85	11		✓
22146	16:48	17:19	- -		2.86	10		
22147	17:19	18:49	- -	- -	2.85			
22148	17:52	18:22			2.85	11		
22149	18:23	18:55			2.86	10		✓
22150	18:55	18:56			2.86			

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

More Comments:

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Date: 06/07/09	Author:
Beam Energy: 2.425 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="checkbox"/> N, Long, <input checked="" type="checkbox"/> Tran, or Vertical
LHRS Momentum (GeV/c): 2.32 Polarity: "-" Angle: $12.5^\circ$ Sieve Plate: IN or <input checked="" type="checkbox"/> OUT?	BigBite Current (A): 518 Polarity: Positive Angle: 75

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
3278	19:27	20:01	$^2\text{He}$	9	4M			
3279	20:04	20:37	$^3\text{He}$	9	4M			
3280	20:39	20:08	—  —		4M			
3281	21:09	21:09	—  —		4M	8		
3282	21:40	22:09	—u—		4M	7		✓
3283	22:10	22:40	—u—		4M	7		
3284	22:41	23:11	—u—		4M	8		
3285	23:12	23:41	—u—		4M	7		
3286	23:42	00:12	u	u	4M	7		✓
3287	00:15	00:45	u	5	2M	2	lower the current to 5 $\mu\text{A}$ for this run only!	✓
3288	00:46	00:50	$^3\text{He}$	9	4	8	go back to 9 $\mu\text{A}$ production run problem w/ RAC5 dead time for 100%	✓

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Date: 06/07/09	Author:
Beam Energy: 2.425 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="checkbox"/> N, Long, <input checked="" type="checkbox"/> Tran, or Vertical
RHRS Momentum (GeV/c): 2.175 Polarity: "-" Angle: $18^\circ$ Sieve Plate: IN or <input checked="" type="checkbox"/> OUT?	BigBite Current (A): 518 Polarity: Positive Angle: 75

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
22151	19:26	20:02	$^2\text{He}^3$	9	2.86			
22152	20:03	20:38	$^2\text{He}^3$	9	2.86			
22153	20:38	21:08	$^3\text{He}$	9	2.84			
22154	21:09	21:09	$^3\text{He}$	9	2.85	11		
22155	21:40	22:09	$^3\text{He}$	9	2.85	11		✓
22156	22:10	22:40	$^3\text{He}$	9	2.9	10		
22157	22:41	23:11	$^3\text{He}$	9	2.86	10		
22158	23:11	23:42	$^3\text{He}$	9	2.86	10		
22159	23:42	00:12	u	u	2.86n	10		✓
22160	00:15	00:45	u	5	1.6n	6	change current for this run only to 5 $\mu\text{A}$	✓
22161	00:46	00:49	$^3\text{He}$	9	223k	10/11	go back to 9 $\mu\text{A}$ production run	✓

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**LEFT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet**

Date: 06/09/09	Author: Lamiaa
Beam Energy: 2.425 GeV	Using Pol <sup>3</sup> He Cell: (Y)N, Long, (Tran) or Vertical
LHRS Momentum (GeV/c): 2.32 Polarity: "-" Angle: 18.5 Sieve Plate: IN or (OUT)?	BigBite Current (A): 518 Polarity: Positive Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
3289	00:54	01:23	<sup>3</sup> He	9	4M	7	<sup>3</sup> He Prod. run	✓
3290	01:25	01:56	<sup>3</sup> He	9	4M	8	start New Prod. run after New NDR → 57.5%	✓
3291	01:57	02:26	"	"	4M	7	<sup>3</sup> He Prod. run	✓
3292	02:27	02:57	"	"	4M	7	" "	✓
3293	02:59	03:29	"	"	4M	7	" "	✓
3294	03:30	03:58	"	"	4M	8	" "	✓
3295	04:00	04:31	<sup>3</sup> He	9	4M	8	" "	✓
3296	04:32	05:04	"	"	4M	8	New Happy run: 31490	✓
3297	05:05	05:35	"	"	4M	8	<sup>3</sup> He Prod. runs	✓
3298	05:38	06:12	"	"	4M	7	New NDR gave 57.13%	✓
3299	06:13	06:43	"	"	4M	8	<sup>3</sup> He Prod. run	✓
3300	06:44	07:13	"	"	4M	8	" "	✓

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More Comments:

**RIGHT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet**

Date: 06/07/09	Author: Lamiaa
Beam Energy: 2.425 GeV	Using Pol <sup>3</sup> He Cell: (Y)N, Long, (Tran) or Vertical
RHRS Momentum (GeV/c): 2.175 Polarity: "-" Angle: 18° Sieve Plate: IN or (OUT)?	BigBite Current (A): 518 Polarity: Positive Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
22162	00:53	01:23	<sup>3</sup> He	9	2.84M	11	He Prod. run	✓
22163	01:24	01:56	<sup>3</sup> He	9	2.86M	10	started New Prod. run after NDR meas. → 57.5%	✓
22164	01:56	02:26	"	"	2.84M	10	<sup>3</sup> He Prod. run	✓
22165	02:27	02:57	"	"	2.85M	10	" "	✓
22166	02:58	03:29	"	"	2.86M	10	" "	✓
22167	03:30	03:59	"	"	2.83M	11	" "	✓
22168	04:00	04:31	<sup>3</sup> He	9	2.84M	11	" "	✓
22169	04:32	05:04	"	"	2.85M	11	New Happy run: 31490	✓
22170	05:04	05:35	"	"	2.85M	10	<sup>3</sup> He Prod. runs	✓
22171	05:38	06:13	"	"	2.86M	10	New NDR gave 57.13%	✓
22172	06:13	06:43	"	"	2.84M	11	<sup>3</sup> He Prod. run	✓
22173	06:44	07:13	"	"	2.84M	11	" "	✓

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More Comments:

### LEFT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet

Date: 06/07/09	Author: lamiaa
Beam Energy: 2.425 GeV	Using Pol <sup>3</sup> He Cell: (Y)N, Long, (Tran) or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.32 Polarity: "-"	Current (A): 518 Polarity: Positive
Angle: 12.5° Sieve Plate: IN or OUT?	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
3301	07:16	07:43	<sup>3</sup> He	9	4M	8	<sup>3</sup> He Prod. run	✓
3302	07:44	08:13	"	9	4M	7	" "	✓
3303	08:14	08:45	"	9	4M	7	" "	✓
3304	08:46	09:18	"	"	"	"	not good	
3305	09:19	09:22	"	"	4M	8	3 He	✓
3306	09:23	09:24	"	"	"	7	3 He not good	
3307	09:31	10:08	"	"	4M	7	"	✓
3308	10:09	10:38	"	"	4M	7	"	✓
3309	10:39	11:14	"	"	4M	6	"	✓
3310	11:15	11:41	"	"	4M	7	"	✓
3311	11:42	12:30	"	"	4M	7	"	✓
3312	12:31	13:02	"	"	4M	8	"	✓

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More Comments:

### RIGHT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet

Date: 06/07/09	Author: lamiaa
Beam Energy: 2.425 GeV	Using Pol <sup>3</sup> He Cell: (Y)N, Long, (Tran) or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.175 Polarity: "-"	Current (A): 518 Polarity: Positive
Angle: 18° Sieve Plate: IN or OUT?	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
22174	07:14	07:46	<sup>3</sup> He	9	2.83M	11	<sup>3</sup> He Prod. run	✓
22175	07:44	08:14	"	9	"	10	" "	✓
22176	08:16	08:48	"	9	2.8M	10	" "	✓
22177	08:47	09:21	"	"	2.8M	10	" "	✓
22178	09:23	09:23	"	"	"	"	not good	
22179	9:30	10:01	"	"	2.84M	10	" "	✓
22180	10:02	10:31	"	"	2.86M	10	" "	✓
22181	10:32	11:01	"	"	2.86M	10	" "	✓
22182	11:02	11:22	"	"	2.88M	10	" "	✓
22183	11:23	12:30	"	"	2.88M	10	" "	✓
22184	12:31	13:03	"	"	2.821M	11	" "	✓
<del>22184</del>	<del>13:04</del>							

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### LEFT-ARM ONLY on this page: $A_x, A_z$ Production Run Sheet

Date: 06/07/09	Author: F. GARIBALDI
Beam Energy: 2.425 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="checkbox"/> N, Long, <input checked="" type="checkbox"/> Tran, or Vertical
LHRS Momentum (GeV/c): 2.32 Polarity: "-" Angle: 17.5° Sieve Plate: IN or OUT?	BigBite Current (A): 5.18 Polarity: Positive Angle: 25°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
3313	13:04	13:33	$^3\text{He}$	9	4M	8		
3314	13:38	14:08	$^3\text{He}$	9	4M	8		
3315	14:10	14:38	$^3\text{He}$	9	4M	8		
3316	14:41	15:12	$^3\text{He}$	9	4M	7		
3317	15:13	15:46	$^3\text{He}$	9	4M	8		
3318	15:48	16:19	$^3\text{He}$	9	4M	7		✓
3319	16:20	16:50	$^3\text{He}$	9	4M	9		✓
3320	16:51	17:21	$^3\text{He}$	9	4M	8		✓
3321	17:23	17:53	$^3\text{He}$	9	4M	8		✓
3322	17:54	18:32	$^3\text{He}$	9	4M	8		✓
3323	18:33	19:08	$^3\text{He}$	9	4M	8	$\frac{1}{2}$ plane out	✓
<del>3324</del>								

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### RIGHT-ARM ONLY on this page: $A_x, A_z$ Production Run Sheet

Date: 06/07/09	Author: F. GARIBALDI
Beam Energy: 2.425 GeV	Using Pol $^3\text{He}$ Cell: Y/N, Long, Tran, or Vertical
RHRS Momentum (GeV/c): 2.125 Polarity: "-" Angle: 18° Sieve Plate: IN or OUT?	BigBite Current (A): 5.18 Polarity: Positive Angle: 25°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
22185	13:00	13:34	$^3\text{He}$	9	2.85	8		
22186	13:37	14:08	$^3\text{He}$	9	2.85	10		
22187	14:09	14:39	$^3\text{He}$	9	2.85	13		
22188	14:40	15:12	$^3\text{He}$	9	2.86	10		
22189	15:13	15:47	$^3\text{He}$	9	2.85	10		
22190	15:48	16:19	$^3\text{He}$	9	2.85M	10		✓
22191	16:20	16:50	$^3\text{He}$	9	2.85M	10		✓
22192	16:51	17:21	$^3\text{He}$	9	2.85M	10		✓
22193	17:23	17:53	$^3\text{He}$	9	2.86M	10		✓
22194	17:54	18:32	$^3\text{He}$	9	2.86M	10		✓
22195	18:33	19:08	$^3\text{He}$	9	2.86M	10	$\frac{1}{2}$ plane out	✓
<del>22196</del>								

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:



**LEFT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet**

Date:	06/07/09	Author:	H. Lee
Beam Energy:	2.425 GeV	Using Pol <sup>3</sup> He Cell:	✓/N, Long, Tran, or Vertical
LHRS		BigBite	
Momentum (GeV/c):	2.32	Polarity: "-"	Current (A): 518
Angle:	12	Sieve Plate: IN or OUT?	Angle: 75
			Polarity: Positive

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
3324	19:14	19:43	<sup>3</sup> He	9	4M	8	1/2 plane in	✓
3325	19:44	20:18	<sup>3</sup> He	9	4M	7		✓
3326	20:19	20:49	<sup>3</sup> He	9	4M	7		✓
3327	20:49	21:18	<sup>3</sup> He	9	4M	7		✓
3328	21:20	21:54	<sup>3</sup> He	9	4M	7		
3329	21:54	22:25	<sup>3</sup> He	9	4M	7		
3330	22:26	23:02	<sup>3</sup> He	9	4M	7		
3331	23:03		<sup>3</sup> He	9		7	codacrash, JUNK	
3332	23:07	23:37	<sup>3</sup> He	9	4M	7		✓
3333	23:39	23:40	<sup>3</sup> He	9	0	7	beam off, JUNK	
3334	23:59	00:29	<sup>3</sup> He	9	4M	8		✓
3335	00:30	01:00	<sup>3</sup> He	9	4M	8.1%		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

More Comments:

**RIGHT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet**

Date:	06/07/09	Author:	H. Lee
Beam Energy:	2.425 GeV	Using Pol <sup>3</sup> He Cell:	✓/N, Long, Tran, or Vertical
RHRS		BigBite	
Momentum (GeV/c):	2.125	Polarity: "-"	Current (A): 518
Angle:	18	Sieve Plate: IN or OUT?	Angle: 75
			Polarity: Positive

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
22196	19:14	19:49	<sup>3</sup> He	9	2.85M	10	1/2 plane in	✓
22197	19:49	20:18	<sup>3</sup> He	9	2.86M	10		✓
22198	20:19	20:49	<sup>3</sup> He	9	2.85M	10		✓
22199	20:49	21:19	<sup>3</sup> He	9	2.85M	10		✓
22200	21:20	21:54	<sup>3</sup> He	9	2.86M	10		
22201	21:54	22:25	<sup>3</sup> He	9	2.85M	10		
22202	22:26	23:03	<sup>3</sup> He	9	2.87M	10		
22203	23:03		<sup>3</sup> He	9		10	JUNK, codacrash	✓
22204	23:07	23:37	<sup>3</sup> He	9	2.85M	10		
22205	23:38	23:40	<sup>3</sup> He	9	0	10	beam off, JUNK	
22206	23:58	00:29	<sup>3</sup> He	9	2.86M	11		✓
22207	00:30	01:00	<sup>3</sup> He	9	2.85M	10.9%		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

More Comments:

### LEFT-ARM ONLY on this page: $A_x, A_z$ Production Run Sheet

Date: 6/8/09	Author: Eric Jensen
Beam Energy: 2.4272 GeV	Using Pol $^3\text{He}$ Cell: (Y)N, Long (Tran) or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.320	Polarity: "-"
Current (A): 518	Polarity: Positive
Angle: 12.5°	Sieve Plate: IN or (OUT)?
	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
3336	1:01	01:30	$^3\vec{\text{He}}$	9	4M	8%		✓
3337	1:33	2:03	$^3\vec{\text{He}}$	9	4M	7.9%		✓
3338	2:04	2:33	$^3\vec{\text{He}}$	9	4M	7.8%		✓
3339	2:34	3:04	$^3\vec{\text{He}}$	9	4M	8%	EB unresponsive @ end of run	✓
3340	3:11	3:15	$^3\vec{\text{He}}$	9	465K	7.7%	Right arm 100% deadtime	
3341	3:18	3:46	$^3\vec{\text{He}}$	9	4M	7.9%		✓
3342	3:48	4:21	$^3\vec{\text{He}}$	9	4M	7.6%		✓
3343	4:24	4:54	$^3\vec{\text{He}}$	9	4M	7.7%		✓
3344	4:56	5:24	$^3\vec{\text{He}}$	9	4M	7.8%		✓
3345	5:27	5:57	$^3\vec{\text{He}}$	9	4M	7.7%		✓
3346	5:58	6:29	$^3\vec{\text{He}}$	9	4M	7.6%		✓
3347	6:36	7:06	$^3\vec{\text{He}}$	9	4M	7.7%		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

More Comments:

### RIGHT-ARM ONLY on this page: $A_x, A_z$ Production Run Sheet

Date: 6/8/09	Author: Eric Jensen
Beam Energy: 2.4272 GeV	Using Pol $^3\text{He}$ Cell: (Y)N, Long (Tran) or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.175	Polarity: "-"
Current (A): 518	Polarity: Positive
Angle: 18°	Sieve Plate: IN or (OUT)?
	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
22208	1:01	01:30	$^3\vec{\text{He}}$	9	2.84M	10.9%		✓
22209	1:32	2:03	$^3\vec{\text{He}}$	9	2.85M	10.8%		✓
22210	2:03	2:33	$^3\vec{\text{He}}$	9	2.85M	10.8%		✓
22211	2:34	3:04	$^3\vec{\text{He}}$	9	2.84M	10.9%		✓
22213	3:10	3:15	$^3\vec{\text{He}}$	9	∅	100%	Restarted CODA	
22214	3:17	3:47	$^3\vec{\text{He}}$	9	2.84M	10.9%		✓
22215	3:47	4:21	$^3\vec{\text{He}}$	9	2.87M	10.7%		✓
22216	4:24	4:55	$^3\vec{\text{He}}$	9	2.86M	10.8%		✓
22217	4:55	5:25	$^3\vec{\text{He}}$	9	2.85M	10.8%		✓
22218	5:26	5:57	$^3\vec{\text{He}}$	9	2.86M	10.7%		✓
22219	5:58	6:29	$^3\vec{\text{He}}$	9	2.86M	10.7%		✓
22220	6:36	7:06	$^3\vec{\text{He}}$	9	2.85M	10.8%		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

More Comments:

22212 - Left EBI became unresponsive @ end of run # 3339. Had to restart coda & stewart over.

### LEFT-ARM ONLY on this page: $A_x$ , $A_z$ Production Run Sheet

Date: 6/8/09	Author: Eric Jensen
Beam Energy: 2.4272 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="radio"/> N, Long, <input checked="" type="radio"/> Tran, or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.320 Polarity: "-"	Current (A): 518 Polarity: Positive
Angle: $12.5^\circ$ Sieve Plate: IN or <input checked="" type="radio"/> OUT	Angle: $75^\circ$

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
3348	7:07	7:19	$^3\text{He}$	9			ROC 5 crash	✓
3349	7:23	7:25	$^3\text{He}$	9	$\phi$	100%	Restarted coda	
3350	7:29	8:05	$^3\text{He}$	9	4M	7.6%		✓
3351	8:04	8:44	$^3\text{He}$	9	4M			✓
3352	8:48	9:23	$^3\text{He}$	9	4M	7		✗
3353	9:25	9:55	$^3\text{He}$	9	4M	8		✓
3354	9:57	10:29	$^3\text{He}$	9	4M	7		✓
3355	10:30	11:00	$^3\text{He}$	9	1.6M	7	run stop because beam off	✓
3356	11:05	11:36	$^3\text{He}$	9	4M	7		✓
3357	11:38	12:11	$^3\text{He}$	9	4M	8		✓
3358	12:13	12:50	$^3\text{He}$	9	4M	8		✓
3359	12:56	13:29	$^3\text{He}$	9	4M	7		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

More Comments:

### RIGHT-ARM ONLY on this page: $A_x$ , $A_z$ Production Run Sheet

Date: 6/8/09	Author: Eric Jensen
Beam Energy: 2.4272 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="radio"/> N, Long, <input checked="" type="radio"/> Tran, or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.175 Polarity: "-"	Current (A): 518 Polarity: Positive
Angle: $18^\circ$ Sieve Plate: IN or <input checked="" type="radio"/> OUT	Angle: $75^\circ$

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
22221	7:06	7:19	$^3\text{He}$	9	1.11M	10.8%	Left roc 5 crash	✓
22222	7:22	7:25	$^3\text{He}$	9	189k	10.9%	Restarted left coda	
22223	7:28	8:03	$^3\text{He}$	9	2.86M	10.7%		✓
22224	8:04	8:45	$^3\text{He}$	9	2.86M			✓
22225	8:48	9:23	$^3\text{He}$	9	2.85	10		✓
22226	9:25	9:56	$^3\text{He}$	9	2.86	11		✓
22227	9:57	10:29	$^3\text{He}$	9	2.86	11		✓
22228	10:30	11:00	$^3\text{He}$	9	1.16M	10	run stop because beam off	✓
22229	11:05	11:36	$^3\text{He}$	9	2.85	11		✓
22230	11:38	12:11	$^3\text{He}$	9	2.84	11		✓
22231	12:13	12:50	$^3\text{He}$	9	2.86	11		✓
22232	12:56	13:29	$^3\text{He}$	9	2.86	11		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

More Comments:

**LEFT-ARM ONLY on this page: Ax, Az Production Run Sheet**

Date: 6/8/09	Author: F. GARIBALDI
Beam Energy: 2.272 GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="checkbox"/> N, Long, <input checked="" type="checkbox"/> Tran, or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.320	Polarity: "-" Current (A): 5.18 Polarity: Positive
Angle: 12.5° Sieve Plate: IN or <input checked="" type="checkbox"/> OUT?	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?	
3360	15:34	17:27	<sup>3</sup> He	9	4M	8			
3361	17:33	18:07	<sup>3</sup> He	9	4M	8			
3362	18:08	18:53	<sup>3</sup> He	9	4M	8			
3363	18:55	19:08	<sup>3</sup> He	9	0.3M	7	Coda crashed, junk		
3364	Junk, complete coda restart with ROC reboots								
3365	16:19	16:54	<sup>3</sup> He	9	3.79	8%		✓	
3366	16:55	17:30	<sup>3</sup> He	9	4.00	8		✓	
3367	17:30	18:07	<sup>3</sup> He	9	4.0	8		✓	
3368	18:08	18:38	<sup>3</sup> He	9	4.0M	8	one laser tripped during this run	✓	
(1) 3369	18:44	18:46	Optics	5	0.5M	large	set prescales	u/a	
(1) 3370	18:48	19:03	Optics	5	3.5M	30%	ps1=ps2=2000 (~200-250 Hz of T <sub>1</sub> , T <sub>2</sub> )		
(2) 3371	19:06	19:25	Optics	5	4.0M	29%	ps1=ps2=2000 ( - )		

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

More Comments:

- (1) = Raster ON
- (2) = Raster OFF

**RIGHT-ARM ONLY on this page: Ax, Az Production Run Sheet**

Date: 6/8/09	Author: F. GARIBALDI
Beam Energy: 2.272 GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="checkbox"/> N, Long, <input checked="" type="checkbox"/> Tran, or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.175	Polarity: "-" Current (A): 5.18 Polarity: Positive
Angle: 18° Sieve Plate: IN or <input checked="" type="checkbox"/> OUT?	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
22233	15:31	14:27	<sup>3</sup> He	9	2.87	11		
22234	14:30	15:07	<sup>3</sup> He	9	2.85	11		
22235	15:08	15:10	<sup>3</sup> He	9	2.97	10		
22235	15:54	16:15	<sup>3</sup> He	9	0.8M	11	Coda crashed, junk	
22236	Junk, complete LEFT-HRS coda restart							
22237	16:18	16:54	<sup>3</sup> He	9	2.70	10%		✓
22238	16:55	17:30	<sup>3</sup> He	9	2.86	11		✓
22239	17:31	18:07	<sup>3</sup> He	9	2.9	11		✓
22240	18:08	18:38	<sup>3</sup> He	9	2.8	11	one laser tripped during this run	✓
(1) 22241	18:44	18:46	Optics	5	/	/	set prescales only	u/a
(1) 22242	18:48	19:03	Optics	5	2.4M	16%		u/a
(2) 22243	19:06	19:25	Optics	5	2.7M	16%		u/a

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

More Comments:

- (1) = Raster ON
- (2) = Raster OFF

### LEFT-ARM ONLY on this page: $A_x, A_z$ Production Run Sheet

Date: June 8, 2009	Author: S. Sirca
Beam Energy: 2.425 GeV	Using Pol $^3\text{He}$ Cell: (Y)N, Long, (Tran), or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.320	Polarity: "-"
Current (A): 518	Polarity: Positive
Angle: 12.5°	Sieve Plate: (IN) or OUT?
	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
3372	19:37	19:38	ref. $\text{H}_2$	5	7k	0	raster on, set prescales	n/a
3373	19:40	19:51	ref. $\text{H}_2$	9	1.1M	7%	ps1=ps2=200, others 65535	n/a
3374	19:53	20:16	ref. $\text{H}_2$	9	2.8M	15%	ps5=1, others 65535	n/a
3375	20:17	20:27	ref. $\text{H}_2$	9	0.6M	0%	ps1=200, others 65535	n/a
3376	20:33	20:49	ref. $\text{H}_2$	9	1.1M	7%	ps6=1, others 65535	n/a
3377	21:12	21:23	ref. $\text{N}_2$	9	1.8M	12%	ps1=ps2=200, others 65535	n/a
3378	21:24	21:42	ref. $\text{N}_2$	9	1.0M	1%	ps5=ps6=1, others 65535	n/a
3379	21:51	22:27	$^3\text{He}$	9	4.0M	8%	ps1=29000, ps2=25000 ps3=200, ps4=40, ps5=ps6=1, ps7=65535, ps8=100 et seq.	✓
3380	22:23	22:54	$^3\text{He}$	9	4.0M	8%		✓
3381	22:55	23:25	$^3\text{He}$	9	4.0M	8%		✓
3382	23:26	23:56	$^3\text{He}$	9	4M	8%		✓
3383	23:57	00:26	$^3\text{He}$	9	4M	7	Production run w/ $^3\text{He}$	✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

⊛ Back to production w/ standard prescales

### RIGHT-ARM ONLY on this page: $A_x, A_z$ Production Run Sheet

Date: June 8, 2009	Author: S. Sirca
Beam Energy: 2.425 GeV	Using Pol $^3\text{He}$ Cell: (Y)N, Long, (Tran), or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.375	Polarity: "-"
Current (A): 518	Polarity: Positive
Angle: 12.5°	Sieve Plate: (IN) or OUT?
	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
22244	19:36	19:38	ref. $\text{H}_2$	5	52k	0	raster on	n/a
22245	19:40	19:51	ref. $\text{H}_2$	9	0.8M	9%		n/a
22246	19:53	20:16	ref. $\text{H}_2$	9	1.8M	8%		n/a
22247	20:17	20:27	ref. $\text{H}_2$	9	0.8M	9%		n/a
22248	20:33	20:49	ref. $\text{H}_2$	9	1.1M	8%		n/a
22249	21:11	21:23	ref. $\text{N}_2$	9	1.0M	11%		n/a
22250	21:23	21:42	ref. $\text{N}_2$	9	1.7M	8%		n/a
22251	21:51	22:22	$^3\text{He}$	9	2.9M	11%		✓
22252	22:23	22:54	$^3\text{He}$	9	2.8M	10%		✓
22253	22:55	23:25	$^3\text{He}$	9	2.8M	11%		✓
22254	23:26	23:56	$^3\text{He}$	9	2.84M	10%		✓
22255	23:57	00:26	$^3\text{He}$	9	2.84	11%	Production run w/ $^3\text{He}$	✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### LEFT-ARM ONLY on this page: $A_x$ , $A_z$ Production Run Sheet

Date: 06/09/09	Author: Lamiaa
Beam Energy: 2.425 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="radio"/> N, Long, <input checked="" type="radio"/> Tran or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.32 Polarity: "-"	Current (A): 518 Polarity: Positive
Angle: 12.5 Sieve Plate: <input checked="" type="radio"/> IN or OUT?	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
3384	00:27	00:58	$^3\text{He}$	9	40	7	$^3\text{He}$ Prod. run	✓
3385	00:59	01:30	$^3\text{He}$	9	40	8	" "	✓
3386	01:31	01:59	$^3\text{He}$	9	40	9%	" "	✓
3387	02:02	02:31	$^3\text{He}$	9	40	8%	New NNR gave 58.1% New Happer run, 31501 compton 17268	✓
3388	02:32	03:09	$^3\text{He}$	9	40	8%	$^3\text{He}$ Prod. run	✓
3389	03:09	03:41	"	"	40	8%	" "	✓
3390	03:42	04:12	"	"	40	8%	" "	✓
3391	04:13	04:43	$^3\text{He}$	9	40	8%	" "	✓
3392	04:43	05:20	"	"	40	8%	" "	✓
3393	05:20	05:53	$^3\text{He}$	9	40	8%	" "	✓
3394	05:56	06:26	$^3\text{He}$	9	40	8%	New NNR gave 58.05% $^3\text{He}$ Prod. run	✓
3395	06:27	07:00	$^3\text{He}$	9	3.40	7/8%	$^3\text{He}$ Prod. run	✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

More Comments:

### RIGHT-ARM ONLY on this page: $A_x$ , $A_z$ Production Run Sheet

Date: 06/09/09	Author: Lamiaa
Beam Energy: 2.425 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="radio"/> N, Long, <input checked="" type="radio"/> Tran or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.175 Polarity: "-"	Current (A): 518 Polarity: Positive
Angle: 18° Sieve Plate: <input checked="" type="radio"/> IN or OUT?	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
22256	00:27	00:58	$^3\text{He}$	9	2.850	11%	$^3\text{He}$ Prod. run	✓
22257	00:59	01:30	$^3\text{He}$	9	2.860	10%	" "	✓
22258	01:31	01:59	$^3\text{He}$	9	2.860	11%	" "	✓
22259	02:02	02:32	$^3\text{He}$	9	2.860	11%	New NNR gave 58.5% New Happer run, 31501 compton 17268	✓
22260	02:32	03:09	$^3\text{He}$	9	2.860	11%	$^3\text{He}$ Prod. run	✓
22261	03:09	03:41	"	9	2.860	10%	" "	✓
22262	03:41	04:12	"	"	2.860	11%	" "	✓
22263	04:13	04:43	$^3\text{He}$	9	2.850	11%	" "	✓
22264	04:43	05:20	"	"	2.860	11%	" "	✓
22265	05:20	05:56	$^3\text{He}$	9	2.850	11%	" "	✓
22266	05:56	06:27	$^3\text{He}$	9	2.850	11%	New NNR freq swap 58.05% New Happer/compton: 3162/17269	✓
22267	06:27	07:00	$^3\text{He}$	9	2.490	11%	$^3\text{He}$ Prod. run	✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

More Comments:

**LEFT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet**

Date:	Author:
Beam Energy: 2.425 GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="checkbox"/> N, Long, <input checked="" type="checkbox"/> Tran or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.32 Polarity: "-"	Current (A): 518 Polarity: Positive
Angle: 12.5° Sieve Plate: <input checked="" type="checkbox"/> IN or OUT?	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
3396			<del>XXXX</del>	<del>XX</del>			status of this run unknown	
3397	15:29	17:21	JUNK				was cosmic run until beam came back	
3398	17:22	17:38	Optics	5	2.3M	11%	ps1=ps2=150, ps3=400 ps5=ps6=1, raster OFF ✓	
3399	17:39	17:55	Optics	5	2.3M	11%	same ps, but raster ON	
3400	17:09		optics	2	1	1%	check out	
3401-3406	see shift summary							
* 3408	21:49	22:09	<sup>3</sup> He	9	1.5M	7	Back to production	✓
3409	22:10	22:42	<sup>3</sup> He	9	4.0M	8	production	✓
3406	ref. D <sub>2</sub> (135 psi)							

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

More Comments:

\* Two minute run - L arm, <sup>coda</sup> crashed

**RIGHT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet**

Date: 06/09/09	Author:
Beam Energy: 2.425 GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="checkbox"/> N, Long, <input checked="" type="checkbox"/> Tran or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.175 Polarity: "-"	Current (A): 518 Polarity: Positive
Angle: 18° Sieve Plate: <input checked="" type="checkbox"/> IN or OUT?	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
22268			<del>XXXX</del>	<del>XX</del>			status of this run unknown	
22269	15:29	17:21	JUNK				was cosmic run until beam came back	
22270	17:22	17:38	Optics	5	2.1M	17%	raster OFF	
22271	17:39	17:55	Optics	5	2.1M	16%	raster ON	
22272			Optics					
22273-22278	see shift summary							
* 22280	21:49	22:09	<sup>3</sup> He	9	1.1M	11	Back to production	✓
22281	22:09	22:42	<sup>3</sup> He	9	2.86M	11	production	✓
22278	ref. D <sub>2</sub> (135 psi)							

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

More Comments:

\* 2 Minute run. Left arm, <sup>coda</sup> crashed

# NITROGEN "PRESSURE CURVES" RUNS

## LEFT-ARM ONLY on this page: $A_x$ , $A_z$ Production Run Sheet

Date: June 9, 2009	Author: S. Sirca
Beam Energy: 2.425 GeV	Using Pol $^3\text{He}$ Cell: Y/N, Long, Tran, or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.320	Polarity: "-"
Current (A): 518 A	Polarity: Positive
Angle: 12.5°	Sieve Plate: <u>IN</u> or OUT?
	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
3410	23:08	23:14	ref.empty	9	0.16M	-10%	-15 psig (*) / 30 ev./sec / 0 torr	
3411	23:17	23:21	ref. $\text{N}_2$	9	0.12M	-10%	-12 psig (*) / 130 torr	
3412	23:22	23:27	ref. $\text{N}_2$	9	0.21M	-8%	-9 psig (*) / 300 torr	
3413	23:29	23:34	ref. $\text{N}_2$	9	0.22M	-6%	-6 psig (*) / 480 torr	
3414	23:40	23:45	ref. $\text{N}_2$	9	0.30M	-5%	-3 psig (*) / 630 torr	
3415	23:46	23:52	ref. $\text{N}_2$	9	0.31M	0%	0 psig (*) / 764 torr	
3418	00:00	00:05	ref. $\text{N}_2$	9	0.30M	0%	3 psig (*) / 909 torr	
3419	00:07	00:11	ref. $\text{N}_2$	9	0.31M	0%	6 psig (*) (1/2)	
3420	00:13	00:17	ref. $\text{N}_2$	9	0.30M	0%	9 psig (*)	
3421	00:18	00:22	ref. $\text{N}_2$	9	0.34M	0%	12 psig (*)	
3422	00:23	00:26	ref. $\text{N}_2$	9	0.31M	0%	15 psig (*)	
3423	00:27	00:31	ref. $\text{N}_2$	9	0.39M	1%	18 psig (*)	

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

### More Comments:

- (\*) -15 psig  $\equiv$  vacuum
- runs # 3416, # 3417 are junk (coda crashed)
- (1/2) start of run # 22790 or HRSR says 3 psig, is 6 psig

# NITROGEN "PRESSURE CURVES" RUNS

## RIGHT-ARM ONLY on this page: $A_x$ , $A_z$ Production Run Sheet

Date: June 9, 2009	Author: S. Sirca
Beam Energy: GeV	Using Pol $^3\text{He}$ Cell: Y/N, Long, Tran, or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.175	Polarity: "-"
Current (A): 518	Polarity: Positive
Angle: 18.0°	Sieve Plate: <u>IN</u> or OUT?
	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
22282	23:08	23:14	ref.empty	9	0.16M	4%	-15 psig (*) / 0 torr	
22283	23:16	23:21	ref. $\text{N}_2$	9	0.11M	5%	-12 psig (*) / 130 torr	
22284	23:22	23:27	ref. $\text{N}_2$	9	0.20M	6%	-9 psig (*) / 300 torr	
22285	23:28	23:34	ref. $\text{N}_2$	9	0.21M	7%	-6 psig (*) / 480 torr	
22286	23:40	23:45	ref. $\text{N}_2$	9	0.29M	7%	-3 psig (*) / 630 torr	
22287	23:46	23:52	ref. $\text{N}_2$	9	0.29M	8%	0 psig (*) / 764 torr	
22289	00:00	00:05	ref. $\text{N}_2$	9	0.27M	9%	3 psig (*) / 909 torr	
22290	00:07	00:11	ref. $\text{N}_2$	9	0.28M	9%	6 psig (*) (1/2)	
22291	00:12	00:17	ref. $\text{N}_2$	9	0.27M	9%	9 psig (*)	
22292	00:17	00:22	ref. $\text{N}_2$	9	0.30M	9%	12 psig (*)	
22293	00:23	00:26	ref. $\text{N}_2$	9	0.27M	10%	15 psig (*)	
22294	00:27	00:31	ref. $\text{N}_2$	9	0.34M	11%	18 psig (*)	

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

### More Comments:

- (\*) -15 psig  $\equiv$  vacuum
- run # 22288 is junk (coda crashed)
- (1/2) start of run says 3 psig, is 6 psig



**LEFT-ARM ONLY on this page:  $A_x$ ,  $A_z$  Production Run Sheet**

Date: June 10, 2009	Author: S. Sirca / Lamiaa
Beam Energy: 2.425 GeV	Using Pol $^3\text{He}$ Cell: (Y)N, Long, (Tran) or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.320	Polarity: "-"
Angle: 12.5°	Sieve Plate: IN or OUT
Current (A): 518 A	Polarity: (Positive)
	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
3424	00:39	01:08	$^3\text{He}$	9	4M	8	$^3\text{He}$ Prod. run	✓
3425	01:09	01:40	$^3\text{He}$	9	4M	8	" "	✓
3426	01:41	02:11	$^3\text{He}$	9	4M	8	" "	✓
3427	02:14	02:43	$^3\text{He}$	9	4M	8	$^3\text{He}$ Prod. run (New Happen & Compton)	✓
3428	02:54	03:23	$^3\text{He}$	9	4M	8	$^3\text{He}$ Prod. run	✓
3429	03:25	04:01	$^3\text{He}$	9	4M	8	Beam was gone for 6 min in the end of this run	✓
3430	04:08	04:37	$^3\text{He}$	9	4M	8	Restarted new prod. run after a beam is back (n to m)	✓
3431	04:38	04:42	$^3\text{He}$	9	474 K	8%	Ended early to do NN R meas. suggested by TO	✓
3432	04:46	05:01	$^3\text{He}$	9	1.76M	8%	After new NN R (56.7%) we went back to prod.	✓
3433	06:09	06:38	$^3\text{He}$	9	4M	8%	Beam is back, do spot + check and continue w/ prod.	✓
3434	06:40	07:12	$^3\text{He}$	9	4M	8	New Happen/compton runs # 315.05/192.91	✓
3435	07:13	07:44	$^3\text{He}$	9	4M	8	$^3\text{He}$ Prod. run	✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

**RIGHT-ARM ONLY on this page:  $A_x$ ,  $A_z$  Production Run Sheet**

Date: June 10, 2009	Author: S. Sirca / Lamiaa
Beam Energy: 2.425 GeV	Using Pol $^3\text{He}$ Cell: (Y)N, Long, (Tran) or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.175 $\otimes$ 1.865	Polarity: "-"
Angle: 18°	Sieve Plate: IN or OUT?
Current (A): 518	Polarity: (Positive)
	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
22295	00:38	01:09	$^3\text{He}$	9	2.8M	11	$\otimes$	-
22296	01:09	01:40	$^3\text{He}$	9	2.95M	11	$\otimes$	-
22297	01:41	02:11	$^3\text{He}$	9	2.93M	11	$\otimes$	-
22298	02:14	02:43	$^3\text{He}$	9	2.9M	11	Momentum Ramped down to 1.865 GeV. Start Prod. run.	✓
22299	02:54	03:23	$^3\text{He}$	9	2.9M	11	Set new golden run for R-arm to # 22298	✓
22300	03:24	04:01	$^3\text{He}$	9	2.95M	11	New NN R: 58.8% $^3\text{He}$ Prod. run (beam gone for 6 min in the end of this run)	✓
22301	04:08	04:38	$^3\text{He}$	9	2.95M	11%	$^3\text{He}$ Prod. run (new compton run #)	✓
22302	04:38	04:42	$^3\text{He}$	9	347 K	11%	Ended run to do NN R req. sweep suggested by TO due to an error message on the NN R control screen	✓
22303	04:46	05:01	$^3\text{He}$	9	1.29M	11%	New NN R gave 56.7% back to prod.	✓
22304	06:09	06:38	$^3\text{He}$	9	2.93M	11%	After 10 min, beam is back. Resume production after spot check	✓
22305	06:40	07:12	$^3\text{He}$	9	2.93M	11	New Happen run # 315.05 compton run # 192.91	✓
22306	07:13	07:44	"	9	3M	11	$^3\text{He}$ Prod. run	✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

$\otimes$  ramping down to 1.865 GeV/c

**LEFT-ARM ONLY on this page: Ax, Az Production Run Sheet**

Date:	10/06/09	Author:	F. GARIBOLDI
Beam Energy:	2.425 GeV	Using Pol <sup>3</sup> He Cell:	<input checked="" type="checkbox"/> N, Long, <input checked="" type="checkbox"/> Tran, or Vertical
LHRS		BigBite	
Momentum (GeV/c):	2.32	Polarity: "-"	Current (A): 518
Angle:	12.5°	Sieve Plate: IN or <input checked="" type="checkbox"/> OUT?	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
3436	07:45	08:45	<sup>3</sup> He	9	4M	8%	<sup>3</sup> He Prod. run	✓
3437	08:16	08:46	<sup>3</sup> He	9	4M	8	"	✓
3438	09:02	09:31	<sup>3</sup> He	9	4M	9	change h.w. plate out	✓
3439	09:35	10:22	<sup>3</sup> He	9	4M		see spot ++ problem	✓
3440	10:25	11:01	"	9	4M	8		
3441	11:01	11:34	"	9	2.8M	7	stop on to rotate target	
3442	11:41	12:07	N2 ref	9	2.8M	1	N2 ref cell	✓
3443	12:15	12:49	<sup>3</sup> He	9	4M	8	back to longitudinal <sup>3</sup> He	✓
3444	12:52	13:25	<sup>3</sup> He	9	3.07	8	stop because of couly	
3445	14:00	14:30	<sup>3</sup> He	9	4M	8		✓
3446	14:32	15:02	<sup>3</sup> He	9	4M	8		✓
3447	15:05	15:37	<sup>3</sup> He	9	4M	8		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

**RIGHT-ARM ONLY on this page: Ax, Az Production Run Sheet**

Date:	10/06/09	Author:	F. GARIBOLDI
Beam Energy:	2.425 GeV	Using Pol <sup>3</sup> He Cell:	<input checked="" type="checkbox"/> N, Long, <input checked="" type="checkbox"/> Tran, or Vertical
RHRS		BigBite	
Momentum (GeV/c):	1.865	Polarity: "-"	Current (A): 518
Angle:	18°	Sieve Plate: IN or <input checked="" type="checkbox"/> OUT?	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
22307	07:45	08:15	<sup>3</sup> He	9		11%	<sup>3</sup> He Prod. run	✓
22308	08:16	08:47	<sup>3</sup> He	9	0.9	12	"	✓
22309	09:01	09:36	<sup>3</sup> He	9	2.9	4	7/2 is now OUT	✓
22310	09:34	10:22	<sup>3</sup> He	9	2.9		see spot ++ problem	✓
22311	10:25	11:01	"	9	2.9	11		
22312	11:02	11:34	"	11	2.1	11		✓
22313	11:41	12:07	N2 ref	9	2.9M	13	N2 ref cell	✓
22314	12:14	12:49	<sup>3</sup> He	9	2.9	11		✓
22315	12:50	13:15	<sup>3</sup> He	9	2.21	11		✓
22316	14:00	14:30	<sup>3</sup> He	9	2.93	11		✓
22317	14:31	15:02	<sup>3</sup> He	9	2.95	11		✓
22318	15:03	15:37	<sup>3</sup> He	9	2.95	11		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### LEFT-ARM ONLY on this page: $A_x$ , $A_z$ Production Run Sheet

Date: 10/06/09	Author:
Beam Energy: 2.415 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="checkbox"/> N, Long, <input checked="" type="checkbox"/> Tran, or Vertical
LHRS	BigBite
Momentum (GeV/c): Polarity: "-" Current (A): 5.18 Polarity: Positive	
Angle: 17.5 Sieve Plate: IN or OUT?	Angle: 25

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
3448	15:21	16:10	$^3\text{He}$	9	4M	8		✓
3449	16:13	16:44	$^3\text{He}$	9	1.54M	8	Coda died part way through run	✓
3450	16:57	17:24	$^3\text{He}$	9	4M	7	Target lasers off	✓
3451	17:22	17:53	$^3\text{He}$	9	4M	7		✓
3452	17:57	18:27	$^3\text{He}$	9	4M	7	1/2 plate back in	✓
3453	18:32	19:03	$^3\text{He}$	9	4M	7		✓
3454	19:05	19:55	$^3\text{He}$	9	4M	8	Target lasers back on	✓
3455	19:36	20:05	$^3\text{He}$	9	4M	8		✓
3456	20:06	20:57	$^3\text{He}$	9	4M	7		✓
3457	20:38	21:17	$^3\text{He}$	9	4M	8		✓
3458	21:13	21:45	$^3\text{He}$	9	4M	7		✓
3459	21:46	22:18	$^3\text{He}$	9	4M	7		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

More Comments:

### RIGHT-ARM ONLY on this page: $A_x$ , $A_z$ Production Run Sheet

Date: 10/06/09	Author:
Beam Energy: 2.425 GeV	Using Pol $^3\text{He}$ Cell: <input checked="" type="checkbox"/> N, Long, Tran, or Vertical
RHRS	BigBite
Momentum (GeV/c): Polarity: "-" Current (A): 5.18 Polarity: Positive	
Angle: 18 Sieve Plate: IN or OUT?	Angle: 25

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
22319	15:39	16:10	$^3\text{He}$	9	2.94			✓
22320	16:13	16:44	$^3\text{He}$	9	2.44	11		✓
22321	16:57	17:22	$^3\text{He}$	9	2.96	11	Target lasers off	✓
22322	17:22	17:54	$^3\text{He}$	9	2.96	11		✓
22323	17:57	18:27	$^3\text{He}$	9	2.95	11	1/2 wave plate back in	✓
22324	18:32	19:04	$^3\text{He}$	9	2.95	11		✓
22325	19:05	19:36	$^3\text{He}$	9	2.94	11	Target lasers back on	✓
22326	19:36	20:06	$^3\text{He}$	9	2.94	11		✓
22327	20:06	20:37	$^3\text{He}$	9	2.95	12		✓
22328	20:38	21:12	$^3\text{He}$	9	2.94	11		✓
22329	21:13	21:45	$^3\text{He}$	9	2.94	11		✓
22330	21:46	22:18	$^3\text{He}$	9	2.94	11		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

More Comments:

### LEFT-ARM ONLY on this page: $A_x, A_z$ Production Run Sheet

Date: 6/10/2009	Author: John Watson
Beam Energy: 2.425 GeV	Using Pol $^3\text{He}$ Cell: <u>Y/N</u> , Long, Tran, or Vertical
LHRS	BigBite: <del>518</del>
Momentum (GeV/c): 2.320	Polarity: "-"
Current (A): 518	Polarity: Positive
Angle: 12.5	Sieve Plate: IN or <u>OUT</u>
	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
3460	22:20	22:49	$^3\text{He}$	9	4M	8		✓
3461	22:51	23:20	$^3\text{He}$	9.4	4M	7		✓
3462	23:21	23:51	$^3\text{He}$	9	4M	8		✓
3463	23:52	00:05	$^3\text{He}$	9.5	1.8M	7	Ended to ramp down right HFS	✓
3464	00:07	00:38	$^3\text{He}$	9.5	4M	7.9%		✓
3465	00:38	01:08	$^3\text{He}$	9.5	4M	7.9		✓
3466	01:09	01:38	$^3\text{He}$	9.5	4M	9%		✓
3467	01:39	01:41	$^3\text{He}$	9.5	230k	80%	Ended in order to synchronize w/ right	✓
3468	01:52	02:22	$^3\text{He}$	9.5	2.1M	8	Ended due to MCC Problems	✓
3469							Junk test	
3470	03:02	03:31	$^3\text{He}$	9.5	4M	8		✓
3471	03:34	04:03	$^3\text{He}$	9.5	4M	8		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### RIGHT-ARM ONLY on this page: $A_x, A_z$ Production Run Sheet

Date: 6/10/2009	Author: John Watson
Beam Energy: 2.425 GeV	Using Pol $^3\text{He}$ Cell: <u>Y/N</u> , Long, Tran, or Vertical
RHRS	BigBite
Momentum (GeV/c): 1.865	Polarity: "-"
Current (A): 518	Polarity: Positive
Angle: 18°	Sieve Plate: IN or OUT ?
	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
22330	22:20	22:49	$^3\text{He}$	9	2.9M	11		✓
22332	22:51	23:20	$^3\text{He}$	9.4	2.94	11		✓
22333	23:21	23:51	$^3\text{He}$	9	2.94	11		✓
22334	23:52	00:05	$^3\text{He}$	9.5	1.3M	11	Ramp down right HFS	✓
22335	01:33	01:41	$^3\text{He}$	9.5	882k	14.8	ended in order to sync w/ left	✓
<del>22336</del>			<del><math>^3\text{He}</math></del>	<del>9.5</del>			* Now momentum is 0.7 GeV/c!!	
							momentum still hasn't stabilized	
22336	01:51	2:21	$^3\text{He}$	9.5	1.8M	12	p started at 0.623 estimate range: 0.623 - 0.75	✓
<del>22338</del>							Junk test	
22338	03:01	03:32	$^3\text{He}$	9.5	3.3M	12	Momentum stable @ 0.7 GeV/c	✓
22339	03:33	04:03	$^3\text{He}$	9.5	3.3M	12		

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### LEFT-ARM ONLY on this page: $A_x, A_z$ Production Run Sheet

Date: 6/11/09	Author: Eric Jensen
Beam Energy: 2.42552 GeV	Using Pol $^3\text{He}$ Cell: <u>Y/N</u> , Long, Tran, or Vertical
LHRS Momentum (GeV/c): 2.320 Polarity: "-" Angle: 12.5° Sieve Plate: IN or OUT?	BigBite Current (A): 518 Polarity: Positive Angle: 75.0°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
3472	4:07	4:37	$^3\text{He}$	9.5	4M	8%		✓
3473	4:38	5:07	$^3\text{He}$	9.5	4M	8%		
3474	5:09	5:39	$^3\text{He}$	9.5	4M	8%		
3475	5:41	6:14	$^3\text{He}$	9.5	4M	8%		
3476	6:16	7:01	$^3\text{He}$	9.5	4M	8%		
3477	7:05	7:41	$^3\text{He}$	9.5	4M	8%		
3478	7:44	8:18	$^3\text{He}$	9.5	4M	5%		
3479	8:21	8:43	$^3\text{He}$	9.5	2.29	7	run stop because no beam we make the target to the	✓
3480	8:52	9:09	$\text{N}_2$	9.5	1.13		vertical as bit run on $\text{N}_2$	✓
3481	14:17	14:52	$\text{N}_2$	9.5	39K	0%	no beam BB DAQ CHECKOUT!	
3482	14:54	17:59	$\text{N}_2$			0%	Cosmics	
3483	17:59	18:15	$\text{BeO}$	10	1.2M	0	optics run	

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

More Comments:

### RIGHT-ARM ONLY on this page: $A_x, A_z$ Production Run Sheet

Date: 6/11/09	Author: Eric Jensen
Beam Energy: 2.42552 GeV	Using Pol $^3\text{He}$ Cell: <u>Y/N</u> , Long, Tran, or Vertical
RHRS Momentum (GeV/c): 0.7 Polarity: "-" Angle: 18.0° Sieve Plate: IN or OUT?	BigBite Current (A): 518 Polarity: Positive Angle: 75.0°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
22340	4:06	4:37	$^3\text{He}$	9.5	3.3M	12%		
22341	4:38	5:08	$^3\text{He}$	9.5	3.3M	12%		
22342	5:08	5:39	$^3\text{He}$	9.5	3.3M	12%		
22343	5:40	6:15	$^3\text{He}$	9.5	3.4M	13%		
22344	6:15	7:02	$^3\text{He}$	9.5	3.4M	13%		
22345	7:03	7:43	$^3\text{He}$	9.5	3.4M	13%		
22346	7:44	8:18	$^3\text{He}$	9.5	3.4M	13%		
22347	8:20	8:43	$^3\text{He}$	9.5	1.93	15		✓
22348	8:56	9:09	$\text{N}_2$	9.5	1.23		we take short run on $\text{N}_2$	
22349	14:17	14:52	$\text{N}_2$	9.5	67K	1%	no beam, cosmic run	
22350	14:53	17:59	$\text{N}_2$			1%	Cosmics	
22351	17:59	18:15	$\text{BeO}$	10	161K	4%	optics run	

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

More Comments:

### LEFT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet

Date: 6/11/09	Author: Xiaojun Deng
Beam Energy: 2.475 GeV	Using Pol <sup>3</sup> He Cell: Y/N, Long, Tran, or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.320 Polarity: "-"	Current (A): Polarity: Positive
Angle: 12.5 Sieve Plate: IN or OUT?	Angle:

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
3484	18:17	18:33	BeO	10		1	optics run	
3485	18:33	18:37	BeO	10	84K		optics run	
3486	18:55	19:32	H <sub>2</sub>	10	0.9M	1		
3487	20:07	20:11	H <sub>2</sub>				optics	
3488	20:16	20:51	H <sub>2</sub>	5	3.4M			✓
3489	20:54	20:57	BeO	3	0.53M	20		
3490	20:58	21:16	BeO	3	1.7M	9	Optics run	
3491	21:19	21:32	BeO	3	1.6M	9	Raster off	
3493	21:42	21:54	BeO	3	1.7M	6	BigBite magnet current down	
3494	21:57	22:01	BeO	3	74K	5	BigBite off, raster on	
3495	22:16	22:29	BeO	3	2M	5	"	
3496	23:02		empty	3	0.5M		empty target	

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### RIGHT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet

Date: 6/11/09	Author: X
Beam Energy: 2.475 GeV	Using Pol <sup>3</sup> He Cell: Y/N, Long, Tran, or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.475 Polarity: "-"	Current (A): Polarity: Positive
Angle: 18 Sieve Plate: IN or OUT?	Angle:

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
22352	18:17	18:33	BeO	10		3	optics run	
22353	18:33	18:37	BeO	10	14K	4	optics run	
22354	18:55	19:32	H <sub>2</sub>	10	0.12M	4		
22355	20:10	20:16	H <sub>2</sub>		0.70K		junk	
22356	20:19	20:51	H <sub>2</sub>	5	0.16M		optics run.	✓
22357	20:54	20:57	BeO	3		0.		
22358	20:58	21:16	BeO	3	1.5M	13	Optics run	
22359	21:19	21:32	BeO	3	1.4M	13	Raster off	
22360	21:35	21:54	BeO	3	1.5M	13	BigBite magnet current down	
22361	21:57	22:01	BeO	3	58K	12	BigBite off, raster on	
22362	22:16	22:29	BeO	3	1.5M	12	"	
22363	23:01		empty	3		6	empty target	

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

**LEFT-ARM ONLY on this page: Ax, Az Production Run Sheet**

Date: 06/12/09	Author: Lamiaa
Beam Energy: 2.425 GeV	Using Pol <sup>3</sup> He Cell: (Y/N, Long) Tran, or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.32	Polarity: "-" Current (A): 518 Polarity: Positive
Angle: 12.5° Sieve Plate: (IN or OUT?)	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
3497	23:19		N <sub>2</sub>	3		1	N <sub>2</sub> 19 psis	
3498	23:45	00:24	<sup>3</sup> He	3	4M	5	reference cell, 3He	✓
3499	00:31	01:01	<sup>3</sup> He	9	4M	8%	Back to Prod. run after NNR freq. sweep → 66.8%	✓
3500	01:02	01:36	<sup>3</sup> He	9	4M	8%	<sup>3</sup> He Prod. run	✓
3501	01:37	02:05	<sup>3</sup> He	9	4M	8%	" "	✓
3502	02:08	02:30	<sup>3</sup> He	9	4M	8%	" "	✓
3503	02:38	03:08	<sup>3</sup> He	9	4M	8%	" "	✓
3504	03:12	03:45	<sup>3</sup> He	9	4M	8%	New Happex run #318	✓
3505	03:46	04:21	<sup>3</sup> He	9	4M	8%	<sup>3</sup> He Prod. run	✓
3506	04:23	04:24	<sup>3</sup> He	9	175k	8%	New NNR gave 65% ended earlier due to RHR S code crash	✓
3507	04:29	05:02	<sup>3</sup> He	9	4M	8%	<sup>3</sup> He Prod. run	✓
3508	05:03	05:33	<sup>3</sup> He	9	4M	8%	" "	✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

More Comments:

**RIGHT-ARM ONLY on this page: Ax, Az Production Run Sheet**

Date: 06/12/09	Author: Lamiaa
Beam Energy: 2.425 GeV	Using Pol <sup>3</sup> He Cell: (Y/N, Long) Tran, or Vertical
RHRS	BigBite
Momentum (GeV/c): 2.025	Polarity: "-" Current (A): 518 Polarity: Positive
Angle: 18° Sieve Plate: (IN or OUT?)	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
22364	23:19		N <sub>2</sub>	3		13		
22365	23:44	00:24	<sup>3</sup> He	3	3.2M	10	reference cell, 3He	✓
22366	00:30	01:02	<sup>3</sup> He	9	3.1M	12%	Back to Prod. run after new NNR → 66.8%	✓
22367	01:02	01:36	<sup>3</sup> He	9	3.1M	12%	<sup>3</sup> He Prod. run	✓
22368	01:37	02:06	<sup>3</sup> He	9	3.1M	12%	" "	✓
22369	02:07	02:37	<sup>3</sup> He	9	3.1M	12%	" "	✓
22370	02:38	03:09	<sup>3</sup> He	9	3.12M	12%	" "	✓
22371	03:12	03:45	<sup>3</sup> He	9	3.13M	12%	New Happex run #318	✓
22372	03:46	04:21	<sup>3</sup> He	9	3.12M	12%	<sup>3</sup> He Prod. run	✓
22373	04:23	-	<sup>3</sup> He	9	-	100%	New NNR gave 65% Ended earlier due to 60% dead time Pb of RHRS	✓
22374	04:28	05:03	<sup>3</sup> He	9	3.13M	12%	Reboot ROC 1, 2, 8 STS0 and Restart coda & new prod. run	✓
22375	05:03	05:33	<sup>3</sup> He	9	3.12M	12%	<sup>3</sup> He Prod. run	✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

More Comments:

### LEFT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet

Date:	06/12/09	Author:	Lamiaa
Beam Energy:	2.425 GeV	Using Pol <sup>3</sup> He Cell:	<input checked="" type="checkbox"/> N, <input checked="" type="checkbox"/> Long, <input type="checkbox"/> Tran, or <input type="checkbox"/> Vertical
LHRS		BigBite	518 +
Momentum (GeV/c):	2.32	Polarity: "-"	Current (A): 518
Angle:	12.5	Sieve Plate: <input checked="" type="checkbox"/> IN or <input type="checkbox"/> OUT?	Angle: 75°
			Polarity: Positive

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
3509	05:34	06:04	<sup>3</sup> He	9	4M	8%	<sup>3</sup> He Prod. run	✓
3510	06:04	06:37	<sup>3</sup> He	9	4M	8%	✓	✓
3511	06:37	07:11	<sup>3</sup> He	9	4M	8%	✓	✓
3512	07:13	07:35	<sup>3</sup> He	9	2.86M	8%	New Happex run # 315119	✓
3513	17:43	17:46	BeO	2	81K		raster test	
3514	17:55	17:58	<sup>3</sup> He	2			test run, 2x2 mm	
3515	18:20	18:26	<sup>3</sup> He	2			test run, 6x6 mm	
3516	18:28	18:41	<sup>3</sup> He	2	17K		test run, 4x4 mm	
3517	18:24	19:22	<sup>3</sup> He	9	1.6M	-7	production	✓
3518	19:24	19:30	<sup>3</sup> He	10		-9%	production	
3519	19:32		<sup>3</sup> He	10		3%	production	
3520	20:08	20:26	<sup>3</sup> He	10	2M	3%	production	

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:

### RIGHT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet

Date:	06/12/09	Author:	Lamiaa
Beam Energy:	2.425 GeV	Using Pol <sup>3</sup> He Cell:	<input checked="" type="checkbox"/> N, <input checked="" type="checkbox"/> Long, <input type="checkbox"/> Tran, or <input type="checkbox"/> Vertical
RHRS		BigBite	518 +
Momentum (GeV/c):	2.025	Polarity: "-"	Current (A): 518
Angle:	18	Sieve Plate: <input type="checkbox"/> IN or <input checked="" type="checkbox"/> OUT?	Angle: 75°
			Polarity: Positive

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
22376	05:34	06:04	<sup>3</sup> He	9	3.1M	12%	<sup>3</sup> He Prod. run	✓
22377	06:04	06:37	<sup>3</sup> He	9	3.12M	12%	✓	✓
22378	06:37	07:11	<sup>3</sup> He	9	3.12M	12%	✓	✓
22379	07:13	07:35	<sup>3</sup> He	9	0	12	<sup>3</sup> He Prod run / Happex run # 315119	✓
22380	17:43	17:46	BeO	2	72K		raster test	
22381	17:55	17:58	<sup>3</sup> He	2			test run, 2x2 mm	
22382	18:00	18:06	<sup>3</sup> He	2			test run, 6x6 mm	
22383	18:08	18:11	<sup>3</sup> He	2	25K		test run, 4x4 mm	
22384	18:24	19:22	<sup>3</sup> He	9	1.4M	4%	production	✓
22385	19:24	19:30	<sup>3</sup> He	10	71K	8%	production	
22386	19:32		<sup>3</sup> He	10		6%	production	
22387	20:08	20:26	<sup>3</sup> He	10		6%	production (ODS crashed)	

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
More Comments:



**LEFT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet**

Date: 06/12/09	Author: Xiaoyan Deng
Beam Energy: 2.425 / 3.606 GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="radio"/> N, <input checked="" type="radio"/> Long, Tran, or Vertical
LHRS	BigBite
Momentum (GeV/c): 2.35	Current (A): 518
Angle: 12.5	Polarity: Positive
Sieve Plate: <input checked="" type="radio"/> IN or <input type="radio"/> OUT?	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay OK?
3521								
3522	21:17	21:20	BeO		1.3M		spot ++ check <sup>MCC 7x5</sup>	
<del>3523</del> 3523	21:22	21:27	<sup>3</sup> He	2			spt ++ check MCC 7x5	✓
3524	21:28	21:56	<sup>3</sup> He	<del>10.5</del> 10.5	3M	3	production	✓
3525	21:59	22:16	<sup>3</sup> He	10	1.7M	3	production	✓
3526	22:28	23:01	<sup>3</sup> He	10	4M	3	production	✓
3527	23:02	23:35	<sup>3</sup> He	10	4M	2	production	✓
3528	23:36	23:49	<sup>3</sup> He	10		3	production	✓
3529	01:22	01:27	BeO	2	418k	1	spot ++ check run w/ 4x4 raster	spot ++ seems ok
3530	01:36	01:45	<sup>3</sup> He	2/10	726k	0/3	check out run for rates check	Rates seem ok
3531	01:46	02:21	<sup>3</sup> He	10	4M	3%	Back to <sup>3</sup> He prod. w/ L-arm only (NIB=2.6%)	✓
3532	02:22	02:48	<sup>3</sup> He	10	2.5M	3%	<sup>3</sup> He prod. run after restarting new happen run # 3523	✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

More Comments:

**RIGHT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet**

Date: 06/12/09	Author: Xiaoyan Deng
Beam Energy: 2.425 3.606 GeV	Using Pol <sup>3</sup> He Cell: <input checked="" type="radio"/> N, <input checked="" type="radio"/> Long, Tran, or Vertical
RHRS	BigBite
Momentum (GeV/c): 3.0855	Current (A): 518
Angle: 18	Polarity: Positive
Sieve Plate: <input checked="" type="radio"/> IN or <input type="radio"/> OUT?	Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay OK?
<del>22388</del> 22388								
22389	21:17	21:20	BeO		72k		spot ++ check <sup>MCC 7x5</sup>	
<del>22390</del> 22390	21:22	21:27	<sup>3</sup> He	2				
22391	21:28	21:56	<sup>3</sup> He	10.5	0.8M	6	production	✓
22392	21:59	22:16	<sup>3</sup> He	10	0.45M	6	production	✓
22393	22:28	23:01	<sup>3</sup> He	10	1M	6	production	✓
22394	23:02	23:35	<sup>3</sup> He	10	1M	6	production	✓
22395	23:36	23:49	<sup>3</sup> He	10		6	production	✓
R arm is down because the magnet pb								

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

More Comments:

**LEFT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet**

Date: 06/13/09 Author: Lamiaa  
 Beam Energy: 3.506 GeV Using Pol <sup>3</sup>He Cell:  N,  Long,  Tran, or Vertical  
 LHRS BigBite +  
 Momentum (GeV/c): 3.35 Polarity: "-" Current (A): 518 Polarity: Positive  
 Angle: 12.5° Sieve Plate:  IN or OUT? Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
3533	03:42	03:44	BeO	2	20k	0	spot++ check run w/ 6x4 raster	spot++ looks good
3534	03:47	03:53	<sup>3</sup> He	2/10	269k	0/3	Rates check w/ 2 & 10 μA	Rates are good
3535	03:54	04:24	<sup>3</sup> He	10	3.35M	3%	Back to prod. in L-arm only. Await for R-arm to come up	✓
							End this run earlier because the BBNV tripped. BBNV was turned off by the end of the run	
3536	04:32	05:07	<sup>3</sup> He	10/12	4M	3%	<sup>3</sup> He Prod. run w/ raster 6x4 Acc unit. Increase the current to 12	✓
3537	05:09	05:41	<sup>3</sup> He	12	4M	4%	<sup>3</sup> He L-arm Prod. run w/ 12 μA	✓
3538	05:45	06:12	<sup>3</sup> He	12	4M	4%	" "	✓
3539	06:14	06:50	<sup>3</sup> He	12	4M	4%	<sup>3</sup> He L-arm Prod. run after new NDR → 63.3%	✓
3540	06:52	07:23	<sup>3</sup> He	12	4M	4%	<sup>3</sup> He L-arm Prod. run w/ 5x4 raster in Acc unit	✓ set area golden run
3541	07:22	07:55	<sup>3</sup> He	12	4M	4%	<sup>3</sup> He prod. run in both arms	✓
3542	07:57	8:27	<sup>3</sup> He	12	4M	4%	" "	✓
3543	08:29	9:02	<sup>3</sup> He	12	4M	4%	" "	✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
 More Comments:

**RIGHT-ARM ONLY on this page: A<sub>x</sub>, A<sub>z</sub> Production Run Sheet**

Date: 06/13/09 Author: Lamiaa  
 Beam Energy: 3.606 GeV Using Pol <sup>3</sup>He Cell:  N,  Long,  Tran, or Vertical  
 RHRS BigBite +  
 Momentum (GeV/c): 3.0855 Polarity: "-" Current (A): 518 Polarity: Positive  
 Angle: 18° Sieve Plate: IN or OUT? Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam (μA)	Number of Events	Dead Time	Comments	Replay Ok?
22396	07:27	07:55	<sup>3</sup> He	12	1.02M	6%	The dipole mt. is not really reached in 3.0855 GeV	✓
22397	07:57	8:28	<sup>4</sup> He	12	1.036M	6%	" "	✓
22398	08:28	9:02	<sup>3</sup> He	12	1.037M	6%	" "	✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.  
 More Comments:

### LEFT-ARM ONLY on this page: $A_x, A_z$ Production Run Sheet

Date: 6/13/19	Author: Lindgren
Beam Energy: 3.606 GeV	Using Pol $^3\text{He}$ Cell: Y/N, Long, Tran, or Vertical
LHRS Momentum (GeV/c): 3.350 Polarity: "-" Angle: 12.5 Sieve Plate: IN or OUT?	BigBite Current (A): 518 Polarity: Positive Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
3544	9:03	9:31	$^3\text{He}$	12	4.00M	4		✓
3545	9:38	10:07	$^5\text{He}$	12	4.00M	4		✓
3546	10:08	10:43	$^3\text{He}$	12	4.00M	4		✓
3547	10:44	11:19	$^3\text{He}$	12	4.00M	5		✓
3548	11:20	11:55	$^3\text{He}$	12	4.00M	40		✓
3549	12:02	12:33	$^3\text{He}$	14	4.00M	5		✓
3550	12:34	13:03	$^3\text{He}$	14	4.00M	5		✓
3551	13:06	13:32	$^3\text{He}$	14	4.01M	5	At end of this run, wait for components to be moved.	✓
3552	13:38	14:07	$^3\text{He}$	14	4.01M	5		✓
3553	14:12	14:56	$^3\text{He}$	14	0.401M	-	Something went wrong here ?? was not started	—
3554	14:58	15:26	$^3\text{He}$	14	4.00	5	OK	✓
3555	15:27		$^3\text{He}$	14	4.01	5	OK	✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

More Comments:

### RIGHT-ARM ONLY on this page: $A_x, A_z$ Production Run Sheet

Date: 6/13/19	Author: Lindgren
Beam Energy: 3.606 GeV	Using Pol $^3\text{He}$ Cell: Y/N, Long, Tran, or Vertical
RHRS Momentum (GeV/c): 2.0855 Polarity: "-" Angle: 17.0 Sieve Plate: IN or OUT?	BigBite Current (A): 518 Polarity: Positive Angle: 75°

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
22399	9:03	9:37	$^3\text{He}$	12	1.070M	6		✓
22400	9:38	10:07	$^3\text{He}$	12	1.022M	6		✓
22401	10:08	10:43	$^3\text{He}$	12	1.04M	6		✓
22402	10:44	11:19	$^3\text{He}$	12	1.04M	6	UMP polarization 62.2%	✓
22403	11:20	11:55	$^3\text{He}$	12	<del>1.04M</del>	6		✓
22404	12:02	12:33	$^3\text{He}$	14	1.03M	6	Replay was empty, but data is okay.	✓
22405	12:34	13:03	$^3\text{He}$	14	1.03M	6		✓
22406	13:06	13:32	$^3\text{He}$	14	1.03M	7		✓
22407	13:37	14:07	$^3\text{He}$	14	1.03M	6		✓
22408	14:12	14:56	$^3\text{He}$	14	0.103	6	10 times less events ?? HRS-L was not started	—
22409	14:58	15:26	$^3\text{He}$	14	1.03	6	OK	✓
22410	15:27	15:27	$^3\text{He}$	14	1.03	6	OK	✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

More Comments:

HRS-R seems to be "gated" by HRS-L. That is HRS-R does not take "real" data until HRS-L is started.

## LEFT-ARM ONLY on this page: $A_x$ , $A_z$ Production Run Sheet

Date: 6-13-9	Author:
Beam Energy: 5.626 GeV	Using Pol $^3\text{He}$ Cell: Y/N, Long, Tran, or Vertical
LHRS	BigBite
Momentum (GeV/c): 5.0855 Polarity: "-"	Current (A): 5.2 Polarity: Positive
Angle: 12.0 Sieve Plate: IN or OUT?	Angle: 25.0

Run Number	Start Time	Stop Time	Target	Beam ( $\mu\text{A}$ )	Number of Events	Dead Time	Comments	Replay Ok?
3556	16:59	16:31	$^3\text{He}$	14	4M	6	$\lambda/2$ plate OUT	✓
3557	16:31	17:00	$^3\text{He}$	14	4M	5		✓
3558	17:02	17:28	$^3\text{He}$	14	4M	.5		✓
3559	17:28	17:54	$^3\text{He}$	14	4M	5		✓
3560	17:55	18:22	$^3\text{He}$	14	4M	5		✓
3561	18:23		$^3\text{He}$	14			JUNK <sup>conf</sup> crash	
3562	18:28	18:55	$^3\text{He}$	14	4M	5		✓
3563	18:57	19:23	$^3\text{He}$	14	4M	5		✓
3564	19:24	19:50		14	4M	6		✓
3565	19:51	20:20	$^3\text{He}$	14	4M	.5		✓
3566	20:21		$^3\text{He}$	14	257M		Eff crash ended run	✓
3567	20:57	21:05	$^3\text{He}$	14	4M	5		✓

Please change to a new run sheet for a new setting or a new type of run on the Run Plan.

More Comments: