MEMORANDUM

Date: September 14, 2017
To: Distribution
From: Rolf Ent and Arne Freyberger for the Nuclear Physics Experiment Scheduling Committee
Subject: Accelerator Schedule through December 2018

Schedule

Attached is the accelerator operations schedule through December 2018. It has also been posted at http://www.jlab.org/div_dept/physics_division/experiments/schedule.html.

The operations schedule is based on expected fiscal 2018 and 2019 funding, and, consequently, may be subject to further adjustments due to actual funding and the progress of repairs and maintenance tasks. An electrical power failure of one of the Central Helium Liquefiers (CHL) in late July caused severe contamination of the system, loss of helium and the warm up of several cryomodules. Cleaning and recovery of the affected CHL is proceeding well and re-cooling of the affected cryomodules has started. There are several tasks related to the acceleration system that must be performed before accelerator operations for physics resumes. Those tasks are now delayed until recovery of the CHL complex takes place. The present schedule expects that the accelerator complex had begun restoring by mid-November and it is able to deliver beam for physics early December 2017. This will be the first time a simultaneous four-hall operation is attempted. The program in Hall A until December 2018 is a set of four Tritium experiments. Hall B will perform an engineering run followed by about 40% of the Physics Advisory Committee (PAC) approved beam time of Run Group A. Hall C is expected to complete a major fraction of the initial commissioning experiment group envisioned for this hall. Hall D is expected to complete E12-06-102, the first GlueX experiment, during this period. The schedule has been reviewed and approved by the Director.

The Jefferson Lab Nuclear Physics Experiment Scheduling Committee developed the schedule. Committee members are: Volker Burkert, Eugene Chudakov, Rolf Ent (Co-Chair), Arne Freyberger (Co-Chair), Javier Gomez, Cynthia Keppel, Robert McKeown, Fulvia Pilat, Matt Poelker, Patrizia Rossi and Mike Spata.

Supplementary Information

Accelerator

CEBAF accelerator operation terminated early in March 2017 due to cold-compressor (CC5) failure. This failure prevented operation of the sub-atmospheric cold-box (SC1) required for CEBAF operations. This is the same cold-box, but different compressor, that terminated operations in spring 2015. CEBAF transitioned to summer maintenance activities with the Linacs maintained at 4K by CHL1. The process of warming SC1 to investigate CC5 was initiated at this time. Once SC1 was at room temperature and disassembled, mid-May, the inspection of CC5 revealed that a control wire in the vacuum side of the feed-through had become disconnected.

Near the end of July, the cryogenic maintenance on SC1 was complete, two additional leaks into the vacuum space were identified and corrected. Unfortunately a few days prior to starting the tests of the repaired SC1, CHL1 underwent a power event that partially tripped some but not all of the compressors in CHL1. This partial trip resulted in an inrush of air into CHL1 through the open vent lines (these vent lines open automatically when the compressors trip off) due to the remaining active compressors. This resulted in severe contamination to CHL1 and CHL1 operations had to be terminated. An emergency cool-down and turn-on of the warm CHL2 plant was started immediately as the LHe in the linac was evaporating. It is strongly desired to maintain the CEBAF cavities at 4K or below and any temperature excursions above 50K on the original C20 modules require that the module be warmed up to near room temperature and cool downed in a prescribed manner. It was estimated that it would take about 48 hours for the LHe to evaporate and the modules to warm above 50K. The race between resumption of CHL2 and LHe levels ended with the majority of the modules remaining cold and about 25% transitioning across the 50K line. There were a number of modules warm at the start of this event, ~25%, for summer maintenance, so about half of CEBAF was warm at this point. This event while similar to the aftermath of hurricane Isabel, is different in that the cryomodule shield vacuum and valves systems remained active throughout this event, so the modules warmed up in a *controlled manner*.

Once the cryogenic situation was stabilized, cryogenics worked on cleaning up the Helium that remained in the system, purging and cleaning the CHL1 system and rebuilding inventory of LHe. Then the process of filling the cold-modules and cooling and filling the warm modules started. By the end of August, most of the south linac is cold (@4K) and full. The remaining modules in the north linac should be cold (@4K) and full by mid-Sept.

The high-level plan this Fall is to:

1. Switch to CHL1->SC1 operation as soon as possible to verify that SC1 is a viable cold-box, presently this is on track to occur in late September.
2. Transition CEBAF from 4K to 2K.
3. Perform a gradient assessment of every SRF cavity to quantify the impact of this event on SRF performance. Historically, warming a module results in a small degradation in gradient (on average).
4. Commission the most recent C50 module (C50-13).
5. Transition CEBAF from 1 CHL/cold-box operation to 2 CHL/cold-box operation.

6. Collect new fault data on the cavities for optimizing the gradient distribution (minimize RF trip rate).
7. Resume beam operations!

The estimate is that CEBAF could be ready for beam operations after the Thanksgiving break with a very brief shutdown over winter break and beam restoration starting on Jan 9, 2018.

In addition to the recovery efforts, investigation into the root cause of the CHL1 contamination event and the accelerator operations response to the loss of 4K He is on-going. Re-evaluation of the benefits and risks of transitioning CEBAF to 4K for short durations and evaluation of how to configure the cryogenic system and CEBAF to reduce risk to these types of events is also on-going.

When beam operations do resume, the focus will be on establishing beams for the experimental program, improving CEBAF reliability and a complete system commissioning of simultaneous 4-hall operation. The last piece of the 4-hall system, RF laser controls, was successfully commissioned in April after the CHL1->SC1 failure. With this new capability, comes some additional constraints that the user should be aware of:

- 4-hall operations requires at least one of the original halls (ABC) to receive 5^{th} pass beam.
- Any of the original halls receiving 5^{th} pass beam concurrently with Hall-D will receive beam with a 249.5 MHz repetition rate.
    - Halls on passes 1-4 will default to a 499 MHz repetition rate unless the experiment specifically requests 249.5 MHz.
- Hall-D must be at 249.5 MHz repetition rate whenever an original hall is simultaneously receiving 5^{th} pass beam.
- Hall-D can only receive 499 MHz beam when the 5^{th} pass separator and another hall is turned off.

<u>4-hall operation will be scheduled as opportunistic (3+ halls) until the complete 4-hall system is commissioned and the delivered beam parameters, including reliability, meet the users requirements.</u>

Looking beyond FY18, accelerator operations will be working with lab management to implement the recently developed *CEBAF Performance Plan.* This plan has been developed to bridge the identified gaps in the accelerator performance, gaps in reliability, energy reach and ability to support 4-hall operation. In support of improving CEBAF reliability, the laboratory has received funding for a new 2K cold-box, which will take several years to design, fabricate and commission; big step towards decommissioning an end-of-life system (SC1 cold-box).

Hall A

The Hall A collaboration set out in 2014 to complete 50% of Experiments E12-06-114, "Measurements of the Electron-helicity Dependent Cross Sections of the DVCS with CEBAF at 12 GeV" (DVCS), and E12-07-108, "Precision Measurement of the Proton Elastic Cross Section at High Q^2" (GMp). DVCS achieved the planned 50% completion at the end of calendar year 2016, and GMp

full completion at that time. The rather long time period of the above experiments included significant Hall base equipment commissioning work as well as scientific production running. GMp has already publicly presented preliminary cross section results, and will provide final results for publication also in Spring 2018. DVCS expects to present preliminary results in April 2018, with a first publication submission in July 2018.

The Hall A collaboration next set out in 2017 to complete Experiment E12-14-012, a measurement of the Argon spectral function. This is a measurement of a fundamental nuclear physics observable critical also to the analysis of a new generation of neutrino experiments such as DUNE and MicroBooNE. E12-14-012 started taking data in February 2017, and was fully completed by March 2017. The experiment expects a first publication this Fall/Winter 2017. It is of note that this experiment was, moreover, a first test run for the tritium gas target cells (filled in this case with Argon) and as such provided useful practical experience with this critical system.

The next run period will continue with a suite of four experiments in Hall A that will utilize a tritium target (E12-10-103, E12-11-112, E12-14-011 and E12-17-003).

Hall B

The FY'17 has seen the completion of full CLAS12 hardware construction, the successful commissioning of the Torus magnet in November 2016 and the installation of all CLAS12 components in Hall B. The KPP demonstration was successfully completed in early February with all CLAS12 detector elements present, however without the solenoid magnet in place. The solenoid magnet has been received from ETI on June 27 2017. The magnet has since then been assembled with the Solenoid Service Tower (SST) and the cryogenics distribution box (CDB). After the successful evacuation the magnet has been cooled down and is expected to reach liquid helium temperature by mid September 2017. The magnet will then be powered up to full magnet field to complete the commissioning process. Following this schedule, the CLAS12 Central Detector will be installed once the solenoid magnet has been commissioned, which is expected to be completed by the end of September 2017. The first physics quality beam is then expected in December 2017 to begin a 30 days engineering run that will continue in January 2018. The engineering run is followed by data taking for Run Group A (RG-A) in 5-th pass using a liquid hydrogen target. This run will continue during the spring of 2018 and resume in October 2018 to complete in December 2018. This would give RG-A approximately 43% of its approved beam time assuming the usual 50% overall efficiency in beam availability in Hall B.

Hall C

In early 2017 construction of the SHMS spectrometer was completed with all magnets tested to their 11 GeV currents. In March, the Hall received beam for checkout of the beam line and the SHMS. With all detectors in operation, the Key Performance Parameters of the SHMS were demonstrated. While not a priority for this run, the HMS was also shown to be operating qualitatively as expected. Final preparations are underway to ready the Hall and spectrometers for normal operations. Shielding is

being installed around the SHMS dipole to minimize backgrounds in the detector hut. Some detector phototubes are being replaced and the original HMS drift chambers are being replaced with new drift chambers built with the same design as the SHMS chambers. The fall run will start with commissioning and optics calibration of both spectrometers and then move onto executing the commissioning and early experiments planned for the Hall.

Hall D

In the spring of 2017, the 1-st physics run of the GlueX (E12-06-102) experiment took place for 40 calendar days. The electron beam energy was 11.7 GeV. The solenoid operated at the nominal current for GlueX of 1350A. A 0.058mm diamond radiator was used. The DAQ ran at about 30 kHz for a half of the run. For another half the beam intensity was increased and the DAQ rate was about 55 kHz. The data have been passed through the reconstruction procedures and the physics analysis is ongoing. The experiment plans to continue data taking in FY18 at the same or very close conditions. A thinner diamond radiator may be used, depending on its quality, which will need to be verified during the run.

Additional Schedule Information

- On the schedule, daily status changes take place at the end of the owl shift (~ 7 AM) unless otherwise indicated.
- Operating one or more of Halls A, B and C at five passes together with Hall D at 5.5 passes requires a polarized gun laser frequency of 250MHz for those halls. A laser frequency of 500 MHz can be used otherwise. For the same average beam current, the charge per micro-bunch when operating the laser at 250 MHz will be twice that of 500 MHz. For each hall, the energy, current, polarization column now also includes the laser frequency.

The Meaning of Priority on the Accelerator Schedule

Generally, the assignment of priority to a hall means that the identified hall will have the primary voice in decisions on beam quality and/or changes in operating conditions. We will do our best to deliver the beam conditions identified in the schedule for the priority hall. It will not, however, mean that the priority hall can demand changes in beam energy that would affect planned running in the other halls without the consent of the other halls. Of course, final authority for decisions about unplanned changes in machine operation will rest with the laboratory management.

The operation of more than one hall at Jefferson Lab substantively complicates the interaction between the experimenters and the accelerator operations group. It is in the interests of the entire physics community that the laboratory be as productive as possible. Therefore, we require that the run coordinators for all operating halls do their best to respond flexibly to the needs of experiments running in other halls. The run coordinators for all experiments either receiving beam or scheduled to receive beam that day should meet with the Program Deputy at 7:45 AM in the MCC on weekdays and at the Program Deputy's discretion on weekends.

To provide some guidance and order to the process of resolving the differing requirements of the

running halls, we have assigned a "priority hall" for each day beam delivery has been scheduled. We outline here the meaning of priority and its effect on accelerator operations.

The priority hall has the right to:

- require a re-tune of the accelerator to take place immediately when beam quality is not acceptable
- insist that energy changes occur as scheduled
- obtain hall access as desired
- request that beam delivery interruptions for experiment-related operations which temporarily block normal beam delivery to all other halls take place as requested. Mott measurements of the beam polarization or pulsed operation for current monitor calibrations represent examples of such interruptions. Interruptions of this type require, at a minimum, 24 hours advance notification and coordination with the Program Deputy and the other halls.

These interruptions shall be limited by a sum rule - the total time lost to the non-priority hall(s) due to such requests shall not exceed 2.5 hours in any 24-hour period. It is, of course, highly preferred that these measurements be scheduled at the morning meeting of the run coordinators whenever possible, and coordinated between halls whenever possible.

When the priority hall has requested a re-tune, if the re-tune degrades a previously acceptable beam for one of the other, lower priority running halls, then the re-tune shall continue until the beam is acceptable to both the priority hall and the other running halls that had acceptable beam at the time the re-tune began.

Non-priority halls can:

- require that a retune of the accelerator take place within 2.5 hours of the desired time (it will nominally occur at the earliest convenient break in the priority hall's schedule)
- require access to the hall within 1 hour of the desired time (again, it will nominally occur at the earliest convenient break in the priority hall's schedule)
- request that beam delivery interruptions for experiment-related operations which temporarily block normal beam delivery to all other halls occur within 2.5 hours of the desired time. Interruptions of this type require, at a minimum, 24 hours advance notification and coordination with the Program Deputy and the other halls.

The ability of non-priority halls to request retunes and accesses shall be limited by a sum rule - the total time lost to the priority hall due to such requests shall not exceed 2.5 hours in any 24-hour period. (To facilitate more extended tuning associated with complex beam delivery, with the agreement of the run coordinators for all operating halls, the sum rule may be applied over a period as long as three days, so long as the average impact is less than 2.5 hours/day.) In the event that two non-priority halls are running, the 2.5 hours shall be split evenly between them in the absence of mutual agreement on a different split.

All Halls:

Can negotiate with other halls, and with the Accelerator and Physics Division for changes in

scheduled energy changes (either direction).

Initial Tune-up of New Beams:

Normally one and one half shifts (12 hours) is set aside for tune-up whenever a new beam setup is being tuned (for unusual beam setups more time may be scheduled explicitly for tuning at the discretion of the scheduling committee). It is understood that beam tune-ups shall *always* be done in the order that the accelerator operations group believes will minimize the *total* time needed to tune *all* scheduled beams (i.e., the "priority hall" beam is not necessarily tuned first). In the event that obtaining the new beam setup requires more than the scheduled time, the Accelerator Program Deputy is authorized to spend up to one additional shift of tuning in an effort to deliver all scheduled beams instead of just the "priority hall" beam.

Maintenance/Development. Accelerator Division may request up to sixteen hours per week. Users will be consulted in deciding how these sixteen hours per week are placed on the calendar, i.e. five shorter or three long blocks of time.

December 1, 2017 - December 31, 2018
(v20170828.0)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	**Date**	**Weekday**		**Operations**	**Hall A**	**Hall A**	**Hall B**	**Hall B**	**Hall C**	**Hall C**	**Hall D**	**Hall D**	**Priority**	**Pass**	**Notes**
2			**(GeV/pass)**	**Status**	**Experiment**	**GeV/μA/Pol/MHz**	**Experiment**	**GeV/nA/Pol/MHz**	**Experiment**	**GeV/μA/Pol/MHz**	**Experiment**	**GeV/nA/Pol/MHz**	**Hall**	**A/B/C/D**	**Notes**
3	10/01/17	Sunday													FY18 BEGINS
4	10/02/17	Monday													
5	10/03/17	Tuesday													
6	10/04/17	Wednesday													
7	10/05/17	Thursday													
8	10/06/17	Friday													
9	10/07/17	Saturday													
10	10/08/17	Sunday													
11	10/09/17	Monday													
12	10/10/17	Tuesday													
13	10/11/17	Wednesday													
14	10/12/17	Thursday													
15	10/13/17	Friday													
16	10/14/17	Saturday													
17	10/15/17	Sunday													
18	10/16/17	Monday													
19	10/17/17	Tuesday													
20	10/18/17	Wednesday													
21	10/19/17	Thursday													
22	10/20/17	Friday													
23	10/21/17	Saturday													
24	10/22/17	Sunday													
25	10/23/17	Monday													
26	10/24/17	Tuesday													
27	10/25/17	Wednesday													
28	10/26/17	Thursday													
29	10/27/17	Friday													
30	10/28/17	Saturday													
31	10/29/17	Sunday													
32	10/30/17	Monday													
33	10/31/17	Tuesday													
34	11/01/17	Wednesday													
35	11/02/17	Thursday													
36	11/03/17	Friday													
37	11/04/17	Saturday													
38	11/05/17	Sunday													
39	11/06/17	Monday													
40	11/07/17	Tuesday													
41	11/08/17	Wednesday													
42	11/09/17	Thursday													
43	11/10/17	Friday													
44	11/11/17	Saturday													
45	11/12/17	Sunday													
46	11/13/17	Monday													
47	11/14/17	Tuesday													
48	11/15/17	Wednesday													
49	11/16/17	Thursday													
50	11/17/17	Friday													
51	11/18/17	Saturday													
52	11/19/17	Sunday													
53	11/20/17	Monday													
54	11/21/17	Tuesday													
55	11/22/17	Wednesday													
56	11/23/17	Thursday													
57	11/24/17	Friday													
58	11/25/17	Saturday													
59	11/26/17	Sunday													
60	11/27/17	Monday		RESTORE											
61	11/28/17	Tuesday		RESTORE											
62	11/29/17	Wednesday		RESTORE											
63	11/30/17	Thursday		RESTORE											
64	12/01/17	Friday		RESTORE											
65	12/02/17	Saturday		RESTORE											
66	12/03/17	Sunday		RESTORE											
67	12/04/17	Monday	2.1	PHYSICS	E12-11-112	4.3/20/-/500	Engineering Run	10.6/100/p/250 (**NOTE**)	SHMS commissioning	2.2, 6.4/20/-/500	E12-06-102	11.7/200/-/250	D/A/B/C	2/5/1,3/5.5	
68	12/05/17	Tuesday	2.1	PHYSICS	E12-11-112	4.3/20/-/500	Engineering Run	10.6/100/p/250	SHMS commissioning	2.2, 6.4/20/-/500	E12-06-102	11.7/200/-/250	D/A/B/C	2/5/1,3/5.5	
69	12/06/17	Wednesday	2.1	PHYSICS	E12-11-112	4.3/20/-/500	Engineering Run	10.6/100/p/250	SHMS commissioning	2.2, 6.4/20/-/500	E12-06-102	11.7/200/-/250	D/A/B/C	2/5/1,3/5.5	
70	12/07/17	Thursday	2.1	PHYSICS	E12-11-112	4.3/20/-/500	Engineering Run	10.6/100/p/250	SHMS commissioning	2.2, 6.4/20/-/500	E12-06-102	11.7/200/-/250	A/B/C/D	2/5/1,3/5.5	
71	12/08/17	Friday	2.1	PHYSICS	E12-11-112	4.3/20/-/500	Engineering Run	10.6/100/p/250	SHMS commissioning	2.2, 6.4/20/-/500	E12-06-102	11.7/200/-/250	A/B/C/D	2/5/1,3/5.5	**NOTE**
72	12/09/17	Saturday	2.1	PHYSICS	E12-11-112	4.3/20/-/500	Engineering Run	10.6/100/p/250	SHMS commissioning	2.2, 6.4/20/-/500	E12-06-102	11.7/200/-/250	A/B/C/D	2/5/1,3/5.5	**Hall B may request to be put**
73	12/10/17	Sunday	2.1	PHYSICS	E12-11-112	4.3/20/-/500	Engineering Run	10.6/100/p/250	SHMS commissioning	2.2, 6.4/20/-/500	E12-06-102	11.7/200/-/250	B/C/D/A	2/5/1,3/5.5	**at 3rd-pass while Hall C is**
74	12/11/17	Monday	2.1	PHYSICS	E12-11-112	4.3/20/-/500	Engineering Run	10.6/100/p/250	SHMS commissioning	2.2, 6.4/20/-/500	E12-06-102	11.7/200/-/250	B/C/D/A	2/5/1,3/5.5	**at 1st-pass**
75	12/12/17	Tuesday	2.1	PHYSICS	E12-11-112	4.3/20/-/500	Engineering Run	10.6/100/p/250	SHMS Comm./E12-10-002	6.4/20/-/500	E12-06-102	11.7/200/-/250	B/C/D/A	2/5/3/5.5	
76	12/13/17	Wednesday	2.1	PHYSICS	E12-11-112	4.3/20/-/500	Engineering Run	10.6/100/p/250	SHMS Comm./E12-10-002	6.4/20/-/500	E12-06-102	11.7/200/-/250	C/D/A/B	2/5/3/5.5	
77	12/14/17	Thursday	2.1	PHYSICS	E12-11-112	4.3/20/-/500	Pass change (12hrs)		Pass change (12hrs)		E12-06-102	11.7/200/-/250	C/D/A/B	2/3/4/5.5	
78	12/15/17	Friday	2.1	PHYSICS	E12-11-112	4.3/20/-/500	Engineering Run	6.4/100/p/500	E12-06-107	8.5/80/-/500	E12-06-102	11.7/200/-/250	C/D/A/B	2/3/4/5.5	
79	12/16/17	Saturday	2.1	PHYSICS	E12-11-112	4.3/20/-/500	Engineering Run	6.4/100/p/500	E12-06-107	8.5/80/-/500	E12-06-102	11.7/200/-/250	D/A/B/C	2/3/4/5.5	
80	12/17/17	Sunday	2.1	PHYSICS	E12-11-112	4.3/20/-/500	Engineering Run	6.4/100/p/500	E12-06-107	8.5/80/-/500	E12-06-102	11.7/200/-/250	D/A/B/C	2/3/4/5.5	
81	12/18/17	Monday		OFF											
82	12/19/17	Tuesday													
83	12/20/17	Wednesday													
84	12/21/17	Thursday													
85	12/22/17	Friday													
86	12/23/17	Saturday													
87	12/24/17	Sunday													
88	12/25/17	Monday													
89	12/26/17	Tuesday													
90	12/27/17	Wednesday													

December 1, 2017 - December 31, 2018
(v20170828.0)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
91	12/28/17	Thursday													
92	12/29/17	Friday													
93	12/30/17	Saturday													
94	12/31/17	Sunday													
95	01/01/18	Monday													
96	01/02/18	Tuesday													
97	01/03/18	Wednesday													
98	01/04/18	Thursday													
99	01/05/18	Friday													
100	01/06/18	Saturday													
101	01/07/18	Sunday													
102	01/08/18	Monday													
103	01/09/18	Tuesday		RESTORE											
104	01/10/18	Wednesday		RESTORE											
105	01/11/18	Thursday		RESTORE											
106	01/12/18	Friday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Engineering Run	10.6/100/p/250	E12-06-107	8.5/80/-/500	E12-06-102	11.7/200/-/250	D/A/B/C	5/5/4/5.5	
107	01/13/18	Saturday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Engineering Run	10.6/100/p/250	E12-06-107	8.5/80/-/500	E12-06-102	11.7/200/-/250	C/D/A/B	5/5/4/5.5	
108	01/14/18	Sunday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Engineering Run	10.6/100/p/250	Pass change (12hrs)		E12-06-102	11.7/200/-/250	C/D/A/B	5/5/5/5.5	
109	01/15/18	Monday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Engineering Run	10.6/100/p/250	E12-06-107	10.6/65/-/250	E12-06-102	11.7/200/-/250	C/D/A/B	5/5/5/5.5	
110	01/16/18	Tuesday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Engineering Run	10.6/100/p/250	E12-06-107	10.6/65/-/250	E12-06-102	11.7/200/-/250	B/C/D/A	5/5/5/5.5	
111	01/17/18	Wednesday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Engineering Run	10.6/100/p/250	E12-06-107	10.6/65/-/250	E12-06-102	11.7/200/-/250	B/C/D/A	5/5/5/5.5	
112	01/18/18	Thursday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Engineering Run	10.6/100/p/250	E12-06-107	10.6/65/-/250	E12-06-102	11.7/200/-/250	B/C/D/A	5/5/5/5.5	
113	01/19/18	Friday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Engineering Run	10.6/100/p/250	E12-06-107	10.6/65/-/250	E12-06-102	11.7/200/-/250	A/B/C/D	5/5/5/5.5	
114	01/20/18	Saturday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Engineering Run	10.6/100/p/250	E12-06-107	10.6/65/-/250	E12-06-102	11.7/200/-/250	A/B/C/D	5/5/5/5.5	
115	01/21/18	Sunday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Engineering Run	10.6/100/p/250	E12-06-107	10.6/65/-/250	E12-06-102	11.7/200/-/250	A/B/C/D	5/5/5/5.5	
116	01/22/18	Monday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Engineering Run	10.6/100/p/250	E12-06-107	10.6/65/-/250	E12-06-102	11.7/200/-/250	D/A/B/C	5/5/5/5.5	
117	01/23/18	Tuesday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Engineering Run	10.6/100/p/250	E12-06-107	10.6/65/-/250	E12-06-102	11.7/200/-/250	D/A/B/C	5/5/5/5.5	
118	01/24/18	Wednesday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Engineering Run	10.6/100/p/250	E12-06-107	10.6/65/-/250	E12-06-102	11.7/200/-/250	D/A/B/C	5/5/5/5.5	
119	01/25/18	Thursday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Engineering Run	10.6/100/p/250	E12-06-107	10.6/65/-/250	E12-06-102	11.7/200/-/250	D/A/B/C	5/5/5/5.5	
120	01/26/18	Friday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Engineering Run	10.6/100/p/250	E12-06-107	10.6/65/-/250	E12-06-102	11.7/200/-/250	D/A/B/C	5/5/5/5.5	
121	01/27/18	Saturday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Engineering Run (30 days)	10.6/100/p/250	E12-06-107	10.6/65/-/250	E12-06-102	11.7/200/-/250	D/A/B/C	5/5/5/5.5	
122	01/28/18	Sunday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	CLAS12 changes/improvements		E12-06-107	10.6/65/-/250	E12-06-102	11.7/200/-/250	D/A/B/C	5/-/5/5.5	
123	01/29/18	Monday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	CLAS12 changes/improvements		E12-06-107	10.6/65/-/250	E12-06-102	11.7/200/-/250	C/D/A/B	5/-/5/5.5	
124	01/30/18	Tuesday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	CLAS12 changes/improvements		E12-10-002/E12-10-008	10.6/65/-/250	E12-06-102	11.7/200/-/250	C/D/A/B	5/-/5/5.5	
125	01/31/18	Wednesday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	CLAS12 changes/improvements		E12-10-002/E12-10-008	10.6/65/-/250	E12-06-102	11.7/200/-/250	C/D/A/B	5/-/5/5.5	
126	02/01/18	Thursday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	CLAS12 changes/improvements		E12-10-002/E12-10-008	10.6/65/-/250	E12-06-102	11.7/200/-/250	C/D/A/B	5/-/5/5.5	
127	02/02/18	Friday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	CLAS12 changes/improvements		E12-10-002/E12-10-008	10.6/65/-/250	E12-06-102	11.7/200/-/250	C/D/A/B	5/-/5/5.5	
128	02/03/18	Saturday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	CLAS12 changes/improvements		E12-10-002/E12-10-008	10.6/65/-/250	E12-06-102	11.7/200/-/250	C/D/A/B	5/-/5/5.5	
129	02/04/18	Sunday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	CLAS12 changes/improvements		E12-10-002/E12-10-008	10.6/65/-/250	E12-06-102	11.7/200/-/250	C/D/A/B	5/-/5/5.5	
130	02/05/18	Monday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Run Group A	10.6/100/p/250	E12-10-002/E12-10-008	10.6/65/-/250	E12-06-102	11.7/200/-/250	B/C/D/A	5/5/5/5.5	
131	02/06/18	Tuesday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Run Group A	10.6/100/p/250	E12-10-002/E12-10-008	10.6/65/-/250	E12-06-102	11.7/200/-/250	B/C/D/A	5/5/5/5.5	
132	02/07/18	Wednesday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Run Group A	10.6/100/p/250	E12-10-002/E12-10-008	10.6/65/-/250	E12-06-102	11.7/200/-/250	B/C/D/A	5/5/5/5.5	
133	02/08/18	Thursday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Run Group A	10.6/100/p/250	E12-10-002/E12-10-008	10.6/65/-/250	E12-06-102	11.7/200/-/250	B/C/D/A	5/5/5/5.5	
134	02/09/18	Friday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Run Group A	10.6/100/p/250	E12-10-002/E12-10-008	10.6/65/-/250	E12-06-102	11.7/200/-/250	B/C/D/A	5/5/5/5.5	
135	02/10/18	Saturday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Run Group A	10.6/100/p/250	E12-10-002/E12-10-008	10.6/65/-/250	E12-06-102	11.7/200/-/250	B/C/D/A	5/5/5/5.5	
136	02/11/18	Sunday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Run Group A	10.6/100/p/250	E12-10-002/E12-10-008	10.6/65/-/250	E12-06-102	11.7/200/-/250	B/C/D/A	5/5/5/5.5	
137	02/12/18	Monday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Run Group A	10.6/100/p/250	E12-10-002/E12-10-008	10.6/65/-/250	E12-06-102	11.7/200/-/250	A/B/C/D	5/5/5/5.5	
138	02/13/18	Tuesday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Run Group A	10.6/100/p/250	E12-10-002/E12-10-008	10.6/65/-/250	E12-06-102	11.7/200/-/250	A/B/C/D	5/5/5/5.5	
139	02/14/18	Wednesday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Run Group A	10.6/100/p/250	E12-10-002/E12-10-008	10.6/65/-/250	E12-06-102	11.7/200/-/250	A/B/C/D	5/5/5/5.5	
140	02/15/18	Thursday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Run Group A	10.6/100/p/250	E12-10-002/E12-10-008	10.6/65/-/250	E12-06-102	11.7/200/-/250	A/B/C/D	5/5/5/5.5	
141	02/16/18	Friday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Run Group A	10.6/100/p/250	E12-10-002/E12-10-008	10.6/65/-/250	E12-06-102	11.7/200/-/250	A/B/C/D	5/5/5/5.5	
142	02/17/18	Saturday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Run Group A	10.6/100/p/250	E12-10-002/E12-10-008	10.6/65/-/250	E12-06-102	11.7/200/-/250	A/B/C/D	5/5/5/5.5	
143	02/18/18	Sunday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Run Group A	10.6/100/p/250	E12-10-002/E12-10-008	10.6/65/-/250	E12-06-102	11.7/200/-/250	A/B/C/D	5/5/5/5.5	
144	02/19/18	Monday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Run Group A	10.6/100/p/250	E12-10-002/E12-10-008	10.6/65/-/250	E12-06-102	11.7/200/-/250	D/A/B/C	5/5/5/5.5	
145	02/20/18	Tuesday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Run Group A	10.6/100/p/250	E12-10-002/E12-10-008	10.6/65/-/250	E12-06-102	11.7/200/-/250	D/A/B/C	5/5/5/5.5	
146	02/21/18	Wednesday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Run Group A	10.6/100/p/250	E12-10-002/E12-10-008	10.6/65/-/250	E12-06-102	11.7/200/-/250	D/A/B/C	5/5/5/5.5	
147	02/22/18	Thursday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Run Group A	10.6/100/p/250	E12-10-002/E12-10-008	10.6/65/-/250	E12-06-102	11.7/200/-/250	D/A/B/C	5/5/5/5.5	
148	02/23/18	Friday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Run Group A	10.6/100/p/250	E12-10-002/E12-10-008	10.6/65/-/250	E12-06-102	11.7/200/-/250	D/A/B/C	5/5/5/5.5	
149	02/24/18	Saturday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Run Group A	10.6/100/p/250	E12-10-003	10.6/70/-/250	E12-06-102	11.7/200/-/250	D/A/B/C	5/5/5/5.5	
150	02/25/18	Sunday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Run Group A	10.6/100/p/250	E12-10-003	10.6/70/-/250	E12-06-102	11.7/200/-/250	D/A/B/C	5/5/5/5.5	
151	02/26/18	Monday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Run Group A	10.6/100/p/250	E12-10-003	10.6/70/-/250	E12-06-102	11.7/200/-/250	C/D/A/B	5/5/5/5.5	
152	02/27/18	Tuesday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Run Group A	10.6/100/p/250	E12-10-003	10.6/70/-/250	E12-06-102	11.7/200/-/250	C/D/A/B	5/5/5/5.5	
153	02/28/18	Wednesday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Run Group A	10.6/100/p/250	E12-10-003	10.6/70/-/250	E12-06-102	11.7/200/-/250	C/D/A/B	5/5/5/5.5	
154	03/01/18	Thursday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Run Group A	10.6/100/p/250	E12-10-003	10.6/70/-/250	E12-06-102	11.7/200/-/250	C/D/A/B	5/5/5/5.5	
155	03/02/18	Friday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Run Group A	10.6/100/p/250	E12-09-017	10.6/70/p/250	E12-06-102	11.7/200/-/250	C/D/A/B	5/5/5/5.5	
156	03/03/18	Saturday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Run Group A	10.6/100/p/250	E12-09-017	10.6/70/p/250	E12-06-102	11.7/200/-/250	C/D/A/B	5/5/5/5.5	
157	03/04/18	Sunday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Run Group A	10.6/100/p/250	E12-09-017	10.6/70/p/250	E12-06-102	11.7/200/-/250	C/D/A/B	5/5/5/5.5	
158	03/05/18	Monday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Run Group A	10.6/100/p/250	E12-09-017	10.6/70/p/250	E12-06-102	11.7/200/-/251	B/C/D/A	5/5/5/5.5	
159	03/06/18	Tuesday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Run Group A	10.6/100/p/250	E12-09-017	10.6/70/p/250	E12-06-102	11.7/200/-/252	B/C/D/A	5/5/5/5.5	
160	03/07/18	Wednesday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Run Group A	10.6/100/p/250	E12-09-017	10.6/70/p/250	E12-06-102	11.7/200/-/253	B/C/D/A	5/5/5/5.5	
161	03/08/18	Thursday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Run Group A	10.6/100/p/250	E12-09-017	10.6/70/p/250	E12-06-102	11.7/200/-/250	B/C/D/A	5/5/5/5.5	
162	03/09/18	Friday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Run Group A	10.6/100/p/250	E12-09-017	10.6/70/p/250	E12-06-102	11.7/200/-/250	B/C/D/A	5/5/5/5.5	
163	03/10/18	Saturday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Run Group A	10.6/100/p/250	E12-09-017	10.6/70/p/250	E12-06-102	11.7/200/-/250	B/C/D/A	5/5/5/5.5	
164	03/11/18	Sunday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Run Group A	10.6/100/p/250	E12-09-017	10.6/70/p/250	E12-06-102	11.7/200/-/250	B/C/D/A	5/5/5/5.5	
165	03/12/18	Monday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Run Group A	10.6/100/p/250	E12-09-017	10.6/70/p/250	E12-06-102	11.7/200/-/250	A/B/C/D	5/5/5/5.5	
166	03/13/18	Tuesday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Run Group A	10.6/100/p/250	E12-09-017	10.6/70/p/250	E12-06-102	11.7/200/-/250	A/B/C/D	5/5/5/5.5	
167	03/14/18	Wednesday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Run Group A	10.6/100/p/250	E12-09-017	10.6/70/p/250	E12-06-102	11.7/200/-/250	A/B/C/D	5/5/5/5.5	
168	03/15/18	Thursday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Run Group A	10.6/100/p/250	E12-09-017	10.6/70/p/250	E12-06-102	11.7/200/-/250	A/B/C/D	5/5/5/5.5	
169	03/16/18	Friday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Run Group A	10.6/100/p/250	E12-09-017	10.6/70/p/250	E12-06-102	11.7/200/-/250	A/B/C/D	5/5/5/5.5	
170	03/17/18	Saturday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Run Group A	10.6/100/p/250	E12-09-017	10.6/70/p/250	E12-06-102	11.7/200/-/250	A/B/C/D	5/5/5/5.5	
171	03/18/18	Sunday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Run Group A	10.6/100/p/250	E12-09-017	10.6/70/p/250	E12-06-102	11.7/200/-/250	A/B/C/D	5/5/5/5.5	
172	03/19/18	Monday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Run Group A	10.6/100/p/250	E12-09-017	10.6/70/p/250	E12-06-102	11.7/200/-/250	D/A/B/C	5/5/5/5.5	
173	03/20/18	Tuesday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Run Group A	10.6/100/p/250	E12-09-017	10.6/70/p/250	E12-06-102	11.7/200/-/250	D/A/B/C	5/5/5/5.5	
174	03/21/18	Wednesday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Run Group A	10.6/100/p/250	E12-09-017	10.6/70/p/250	E12-06-102	11.7/200/-/250	D/A/B/C	5/5/5/5.5	
175	03/22/18	Thursday	2.1	PHYSICS	E12-10-103	10.6/20/-/250	Run Group A	10.6/100/p/250	E12-09-017	10.6/70/p/250	E12-06-102	11.7/200/-/250	D/A/B/C	5/5/5/5.5	
176	03/23/18	Friday	12 WEEKS	OFF											
177	03/24/18	Saturday													
178	03/25/18	Sunday													
179	03/26/18	Monday													

December 1, 2017 - December 31, 2018
(v20170828.0)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
180	03/27/18	Tuesday													
181	03/28/18	Wednesday													
182	03/29/18	Thursday													
183	03/30/18	Friday													
184	03/31/18	Saturday													
185	04/01/18	Sunday													
186	04/02/18	Monday													
187	04/03/18	Tuesday													
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210	04/26/18	Thursday													
211	04/27/18	Friday													
212	04/28/18	Saturday													
213	04/29/18	Sunday													
214	04/30/18	Monday													
215	05/01/18	Tuesday													
216	05/02/18	Wednesday													
217	05/03/18	Thursday													
218	05/04/18	Friday	PWR METER												
219	05/05/18	Saturday													
220	05/06/18	Sunday													
221	05/07/18	Monday													
222	05/08/18	Tuesday													
223	05/09/18	Wednesday													
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227	05/13/18	Sunday													
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230	05/16/18	Wednesday													
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268	06/23/18	Saturday													
269	06/24/18	Sunday													
270	06/25/18	Monday													

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271	06/26/18	Tuesday													
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341	09/04/18	Tuesday													
342	09/05/18	Wednesday													
343	09/06/18	Thursday													
344	09/07/18	Friday													
345	09/08/18	Saturday													
346	09/09/18	Sunday													
347	09/10/18	Monday													
348	09/11/18	Tuesday													
349	09/12/18	Wednesday													
350	09/13/18	Thursday													
351	09/14/18	Friday													
352	09/15/18	Saturday													
353	09/16/18	Sunday													
354	09/17/18	Monday													
355	09/18/18	Tuesday													
356	09/19/18	Wednesday													
357	09/20/18	Thursday													
358	09/21/18	Friday													
359	09/22/18	Saturday													
360	09/23/18	Sunday													
361	09/24/18	Monday													
362	09/25/18	Tuesday													
363	09/26/18	Wednesday	2.1	RESTORE											
364	09/27/18	Thursday	2.1	RESTORE											
365	09/28/18	Friday	2.1	RESTORE											
366	09/29/18	Saturday	2.1	RESTORE											

December 1, 2017 - December 31, 2018
(v20170828.0)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
367	09/30/18	Sunday	2.1	RESTORE											
368	10/01/18	Monday	2.1	RESTORE											FY19 BEGINS
369	10/02/18	Tuesday	2.1	RESTORE											
370	10/03/18	Wednesday	2.1	PHYSICS	E12-11-112	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-017	10.6/70/p/250	E12-06-102	11.7/200/-/250	D/A/B/C	2/5/5/5.5	
371	10/04/18	Thursday	2.1	PHYSICS	E12-11-112	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-017	10.6/70/p/250	E12-06-102	11.7/200/-/250	D/A/B/C	2/5/5/5.5	
372	10/05/18	Friday	2.1	PHYSICS	E12-11-112	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-017	10.6/70/p/250	E12-06-102	11.7/200/-/250	A/B/C/D	2/5/5/5.5	
373	10/06/18	Saturday	2.1	PHYSICS	E12-11-112	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-017	10.6/70/p/250	E12-06-102	11.7/200/-/250	A/B/C/D	2/5/5/5.5	
374	10/07/18	Sunday	2.1	PHYSICS	E12-11-112	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-017	10.6/70/p/250	E12-06-102	11.7/200/-/250	A/B/C/D	2/5/5/5.5	
375	10/08/18	Monday	2.1	PHYSICS	E12-11-112	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-017	10.6/70/p/250	E12-06-102	11.7/200/-/250	B/C/D/A	2/5/5/5.5	
376	10/09/18	Tuesday	2.1	PHYSICS	E12-11-112	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-017	10.6/70/p/250	E12-06-102	11.7/200/-/250	B/C/D/A	2/5/5/5.5	
377	10/10/18	Wednesday	2.1	PHYSICS	E12-11-112	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-017	10.6/70/p/250	E12-06-102	11.7/200/-/250	B/C/D/A	2/5/5/5.5	
378	10/11/18	Thursday	2.1	PHYSICS	E12-11-112	4.3/20/-/500	Run Group A	10.6/100/p/250	Pass change (12hrs)		E12-06-102	11.7/200/-/250	C/D/A/B	2/5/4/5.5	
379	10/12/18	Friday	2.1	PHYSICS	E12-11-112	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-017	8.5/70/p/500	E12-06-102	11.7/200/-/250	C/D/A/B	2/5/4/5.5	
380	10/13/18	Saturday	2.1	PHYSICS	E12-11-112	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-017	8.5/70/p/500	E12-06-102	11.7/200/-/250	C/D/A/B	2/5/4/5.5	
381	10/14/18	Sunday	2.1	PHYSICS	E12-11-112	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-017	8.5/70/p/500	E12-06-102	11.7/200/-/250	D/A/B/C	2/5/4/5.5	
382	10/15/18	Monday	2.1	PHYSICS	E12-11-112	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-017	8.5/70/p/500	E12-06-102	11.7/200/-/250	D/A/B/C	2/5/4/5.5	
383	10/16/18	Tuesday	2.1	PHYSICS	E12-11-112	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-017	8.5/70/p/500	E12-06-102	11.7/200/-/250	D/A/B/C	2/5/4/5.5	
384	10/17/18	Wednesday	2.1	PHYSICS	E12-11-112	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-017	8.5/70/p/500	E12-06-102	11.7/200/-/250	D/A/B/C	2/5/4/5.5	
385	10/18/18	Thursday	2.1	PHYSICS	E12-11-112	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-017	8.5/70/p/500	E12-06-102	11.7/200/-/250	D/A/B/C	2/5/4/5.5	
386	10/19/18	Friday	2.1	PHYSICS	E12-11-112	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-017	8.5/70/p/500	E12-06-102	11.7/200/-/250	D/A/B/C	2/5/4/5.5	
387	10/20/18	Saturday	2.1	PHYSICS	E12-11-112	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-017	8.5/70/p/500	E12-06-102	11.7/200/-/250	B/A/C/D	2/5/4/5.5	
388	10/21/18	Sunday	2.1	PHYSICS	E12-11-112	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-017	8.5/70/p/500	E12-06-102	11.7/200/-/250	B/A/C/D	2/5/4/5.5	
389	10/22/18	Monday	2.1	PHYSICS	E12-11-112	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-017	8.5/70/p/500	E12-06-102	11.7/200/-/250	B/A/C/D	2/5/4/5.5	
390	10/23/18	Tuesday	2.1	PHYSICS	E12-11-112	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-017	8.5/70/p/500	E12-06-102	11.7/200/-/250	B/A/C/D	2/5/4/5.5	
391	10/24/18	Wednesday	2.1	PHYSICS	Pass change (12hrs)		Run Group A	10.6/100/p/250	E12-09-017	8.5/70/p/500	E12-06-102	11.7/200/-/250	B/A/C/D	1/5/4/5.5	
392	10/25/18	Thursday	2.1	PHYSICS	E12-11-112	2.2/20/-/500	Run Group A	10.6/100/p/250	E12-09-017	8.5/70/p/500	E12-06-102	11.7/200/-/250	B/A/C/D	1/5/4/5.5	
393	10/26/18	Friday	2.1	PHYSICS	E12-11-112	2.2/20/-/500	Run Group A	10.6/100/p/250	E12-09-011	8.5/70/-/500	E12-06-102	11.7/200/-/250	A/C/D/B	1/5/4/5.5	
394	10/27/18	Saturday	2.1	PHYSICS	E12-11-112 (38)	2.2/20/-/500	Run Group A	10.6/100/p/250	E12-09-011	8.5/70/-/500	E12-06-102	11.7/200/-/250	A/C/D/B	1/5/4/5.5	
395	10/28/18	Sunday	2.1	PHYSICS	INSTALL		Run Group A	10.6/100/p/250	E12-09-011	8.5/70/-/500	E12-06-102	11.7/200/-/250	A/C/D/B	2/5/4/5.5	
396	10/29/18	Monday	2.1	PHYSICS	INSTALL		Run Group A	10.6/100/p/250	E12-09-011	8.5/70/-/500	E12-06-102	11.7/200/-/250	A/C/D/B	2/5/4/5.5	
397	10/30/18	Tuesday	2.1	PHYSICS	E12-14-011	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-011	8.5/70/-/500	E12-06-102	11.7/200/-/250	A/C/D/B	2/5/4/5.5	
398	10/31/18	Wednesday	2.1	PHYSICS	E12-14-011	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-011	8.5/70/-/500	E12-06-102	11.7/200/-/250	A/C/D/B	2/5/4/5.5	
399	11/01/18	Thursday	2.1	PHYSICS	E12-14-011	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-011	8.5/70/-/500	E12-06-102	11.7/200/-/250	A/C/D/B	2/5/4/5.5	
400	11/02/18	Friday	2.1	PHYSICS	E12-14-011	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-011	8.5/70/-/500	E12-06-102	11.7/200/-/250	C/D/B/A	2/5/4/5.5	
401	11/03/18	Saturday	2.1	PHYSICS	E12-14-011	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-011	8.5/70/-/500	E12-06-102	11.7/200/-/250	C/D/B/A	2/5/4/5.5	
402	11/04/18	Sunday	2.1	PHYSICS	E12-14-011	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-011	8.5/70/-/500	E12-06-102	11.7/200/-/250	C/D/B/A	2/5/4/5.5	
403	11/05/18	Monday	2.1	PHYSICS	E12-14-011	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-011	8.5/70/-/500	E12-06-102	11.7/200/-/250	C/D/B/A	2/5/4/5.5	
404	11/06/18	Tuesday	2.1	PHYSICS	E12-14-011	4.3/20/-/500	Run Group A	10.6/100/p/250	Pass change (12hrs)		E12-06-102	11.7/200/-/250	C/D/B/A	2/5/5/5.5	
405	11/07/18	Wednesday	2.1	PHYSICS	E12-14-011	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-002	10.6/70/-/250	E12-06-102	11.7/200/-/250	C/D/B/A	2/5/5/5.5	
406	11/08/18	Thursday	2.1	PHYSICS	E12-14-011	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-002	10.6/70/-/250	E12-06-102	11.7/200/-/250	C/D/B/A	2/5/5/5.5	
407	11/09/18	Friday	2.1	PHYSICS	E12-14-011	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-002	10.6/70/-/250	E12-06-102	11.7/200/-/250	D/B/A/C	2/5/5/5.5	
408	11/10/18	Saturday	2.1	PHYSICS	E12-14-011	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-002	10.6/70/-/250	E12-06-102	11.7/200/-/250	D/B/A/C	2/5/5/5.5	
409	11/11/18	Sunday	2.1	PHYSICS	E12-14-011	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-002	10.6/70/-/250	E12-06-102	11.7/200/-/250	D/B/A/C	2/5/5/5.5	
410	11/12/18	Monday	2.1	PHYSICS	E12-14-011	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-002	10.6/70/-/250	E12-06-102	11.7/200/-/250	D/B/A/C	2/5/5/5.5	
411	11/13/18	Tuesday	2.1	PHYSICS	E12-14-011	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-002	10.6/70/-/250	E12-06-102	11.7/200/-/250	D/B/A/C	2/5/5/5.5	
412	11/14/18	Wednesday	2.1	PHYSICS	E12-14-011	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-002	10.6/70/-/250	E12-06-102	11.7/200/-/250	D/B/A/C	2/5/5/5.5	
413	11/15/18	Thursday	2.1	PHYSICS	E12-14-011	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-002	10.6/70/-/250	E12-06-102	11.7/200/-/250	D/B/A/C	2/5/5/5.5	
414	11/16/18	Friday	2.1	PHYSICS	E12-14-011	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-002	10.6/70/-/250	E12-06-102	11.7/200/-/250	B/A/C/D	2/5/5/5.5	
415	11/17/18	Saturday	2.1	PHYSICS	E12-14-011	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-002	10.6/70/-/250	E12-06-102	11.7/200/-/250	B/A/C/D	2/5/5/5.5	
416	11/18/18	Sunday	2.1	PHYSICS	E12-14-011	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-002	10.6/70/-/250	E12-06-102	11.7/200/-/250	B/A/C/D	2/5/5/5.5	
417	11/19/18	Monday	2.1	PHYSICS	E12-14-011	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-002	10.6/70/-/250	E12-06-102	11.7/200/-/250	B/A/C/D	2/5/5/5.5	
418	11/20/18	Tuesday	2.1	PHYSICS	E12-14-011	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-002	10.6/70/-/250	E12-06-102	11.7/200/-/250	B/A/C/D	2/5/5/5.5	
419	11/21/18	Wednesday	2.1	PHYSICS	E12-14-011	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-002	10.6/70/-/250	E12-06-102	11.7/200/-/250	B/A/C/D	2/5/5/5.5	
420	11/22/18	Thursday	2.1	PHYSICS	E12-14-011 (24)	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-002	10.6/70/-/250	E12-06-102	11.7/200/-/250	B/A/C/D	2/5/5/5.5	
421	11/23/18	Friday	2.1	PHYSICS	INSTALL		Run Group A	10.6/100/p/250	E12-09-002	10.6/70/-/250	E12-06-102	11.7/200/-/250	A/C/D/B	2/5/5/5.5	
422	11/24/18	Saturday	2.1	PHYSICS	E12-17-003	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-002	10.6/70/-/250	E12-06-102	11.7/200/-/250	A/C/D/B	2/5/5/5.5	
423	11/25/18	Sunday	2.1	PHYSICS	E12-17-003	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-002	10.6/70/-/250	E12-06-102	11.7/200/-/250	A/C/D/B	2/5/5/5.5	
424	11/26/18	Monday	2.1	PHYSICS	E12-17-003	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-002	10.6/70/-/250	E12-06-102	11.7/200/-/250	A/C/D/B	2/5/5/5.5	
425	11/27/18	Tuesday	2.1	PHYSICS	E12-17-003	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-011	10.6/70/-/250	E12-06-102 (140)	11.7/200/-/250	A/C/D/B	2/5/5/5.5	
426	11/28/18	Wednesday	2.1	PHYSICS	E12-17-003	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-011	10.6/70/-/250	GlueX +DIRC/Primakov	11.2/200/-/250	A/C/D/B	2/5/5/5.5	
427	11/29/18	Thursday	2.1	PHYSICS	E12-17-003	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-011	10.6/70/-/250	GlueX +DIRC/Primakov	11.2/200/-/250	A/C/D/B	2/5/5/5.5	
428	11/30/18	Friday	2.1	PHYSICS	E12-17-003	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-011	10.6/70/-/250	GlueX +DIRC/Primakov	11.2/200/-/250	D/C/B/A	2/5/5/5.5	
429	12/01/18	Saturday	2.1	PHYSICS	E12-17-003	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-011	10.6/70/-/250	GlueX +DIRC/Primakov	11.2/200/-/250	D/C/B/A	2/5/5/5.5	
430	12/02/18	Sunday	2.1	PHYSICS	E12-17-003	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-011	10.6/70/-/250	GlueX +DIRC/Primakov	11.2/200/-/250	D/C/B/A	2/5/5/5.5	
431	12/03/18	Monday	2.1	PHYSICS	E12-17-003	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-011	10.6/70/-/250	GlueX +DIRC/Primakov	11.2/200/-/250	D/C/B/A	2/5/5/5.5	
432	12/04/18	Tuesday	2.1	PHYSICS	E12-17-003	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-011	10.6/70/-/250	GlueX +DIRC/Primakov	11.2/200/-/250	D/C/B/A	2/5/5/5.5	
433	12/05/18	Wednesday	2.1	PHYSICS	E12-17-003	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-011	10.6/70/-/250	GlueX +DIRC/Primakov	11.2/200/-/250	D/C/B/A	2/5/5/5.5	
434	12/06/18	Thursday	2.1	PHYSICS	E12-17-003	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-011	10.6/70/-/250	GlueX +DIRC/Primakov	11.2/200/-/250	D/C/B/A	2/5/5/5.5	
435	12/07/18	Friday	2.1	PHYSICS	E12-17-003	4.3/20/-/500	Run Group A	10.6/100/p/250	Pass change (12hrs)		GlueX +DIRC/Primakov	11.2/200/-/250	C/B/A/D	2/5/3/5.5	
436	12/08/18	Saturday	2.1	PHYSICS	E12-17-003	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-011	6.4/70/-/500	GlueX +DIRC/Primakov	11.2/200/-/250	C/B/A/D	2/5/3/5.5	
437	12/09/18	Sunday	2.1	PHYSICS	E12-17-003	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-011	6.4/70/-/500	GlueX +DIRC/Primakov	11.2/200/-/250	C/B/A/D	2/5/3/5.5	
438	12/10/18	Monday	2.1	PHYSICS	E12-17-003	4.3/20/-/500	Run Group A	10.6/100/p/250	Pass change (12hrs)		GlueX +DIRC/Primakov	11.2/200/-/250	C/B/A/D	2/5/5/5.5	
439	12/11/18	Tuesday	2.1	PHYSICS	E12-17-003	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-011	10.6/70/-/250	GlueX +DIRC/Primakov	11.2/200/-/250	C/B/A/D	2/5/5/5.5	
440	12/12/18	Wednesday	2.1	PHYSICS	E12-17-003	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-011	10.6/70/-/250	GlueX +DIRC/Primakov	11.2/200/-/250	C/B/A/D	2/5/5/5.5	
441	12/13/18	Thursday	2.1	PHYSICS	E12-17-003	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-011	10.6/70/-/250	GlueX +DIRC/Primakov	11.2/200/-/250	C/B/A/D	2/5/5/5.5	
442	12/14/18	Friday	2.1	PHYSICS	E12-17-003	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-011	10.6/70/-/250	GlueX +DIRC/Primakov	11.2/200/-/250	B/A/D/C	2/5/5/5.5	
443	12/15/18	Saturday	2.1	PHYSICS	E12-17-003	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-011	10.6/70/-/250	GlueX +DIRC/Primakov	11.2/200/-/250	B/A/D/C	2/5/5/5.5	
444	12/16/18	Sunday	2.1	PHYSICS	E12-17-003	4.3/20/-/500	Run Group A	10.6/100/p/250	E12-09-011	10.6/70/-/250	GlueX +DIRC/Primakov	11.2/200/-/250	B/A/D/C	2/5/5/5.5	
445	12/17/18	Monday	2.1	PHYSICS	E12-17-003 (24)	4.3/20/-/500	Run Group A (280 -> 122)	10.6/100/p/250	E12-09-011	10.6/70/-/250	GlueX +DIRC/Primakov	11.2/200/-/250	B/A/D/C	2/5/5/5.5	
446	12/18/18	Tuesday		OFF											
447	12/19/18	Wednesday		OFF											
448	12/20/18	Thursday		OFF											
449	12/21/18	Friday		OFF											
450	12/22/18	Saturday		OFF											
451	12/23/18	Sunday		OFF											
452	12/24/18	Monday		OFF											
453	12/25/18	Tuesday		OFF											
454	12/26/18	Wednesday		OFF											
455	12/27/18	Thursday		OFF											

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
456	12/28/18	Friday		OFF											
457	12/29/18	Saturday		OFF											
458	12/30/18	Sunday		OFF											
459	12/31/18	Monday		OFF											
460															
461															