

Run 20 RHIC Machine/Experiments Meeting

September 1, 2020

Agenda:

- General discussion of Run 20 status, progress, and end - W. Christie
- RHIC Status - C. Liu
- STAR Status - JH Lee
- CeC Status - V. Litvinenko
- All Other Business (AOB)

BLUEJEANS CONNECTION INFO

Meeting URL

https://bluejeans.com/806756566?src=join_info

Meeting ID: **806 756 566**

Want to dial in from a phone?

Dial one of the following numbers:

+1.408.419.1715 (United States(San Jose))

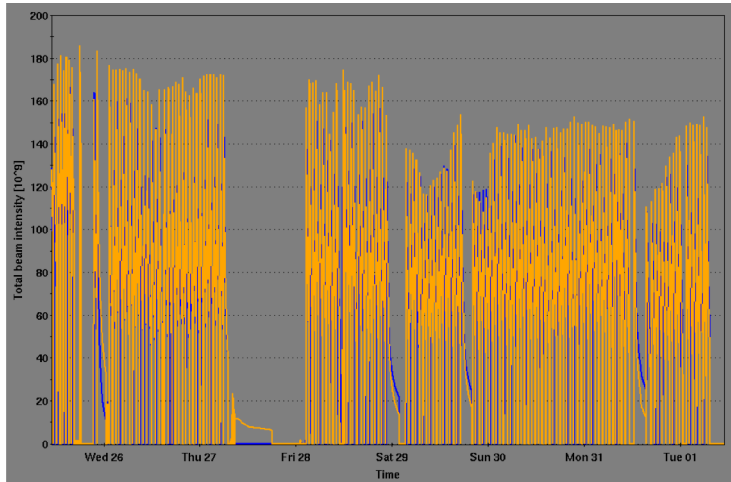
+1.408.915.6290 (United States(San Jose))

(see all numbers - <https://www.bluejeans.com/premium-numbers>)

Enter the meeting ID and passcode followed by #

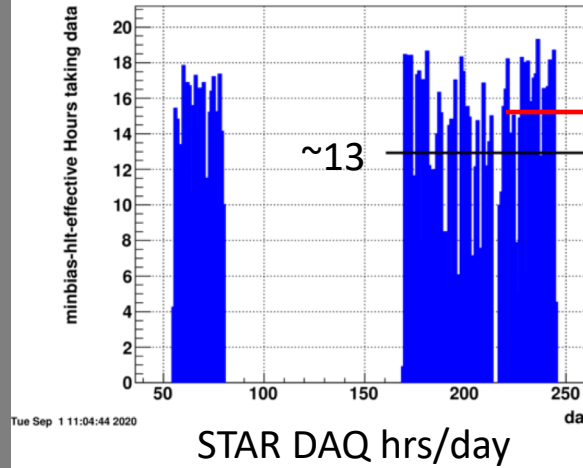
Some Performance Plots for the past week's Operations

Black # = Average since restart
Red # = Average for past week



RHIC Store Intensities

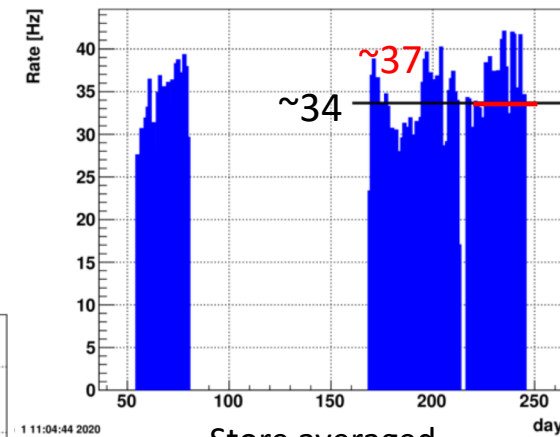
hours_perday_mb_hlt-effective.txt



Tue Sep 1 11:04:44 2020

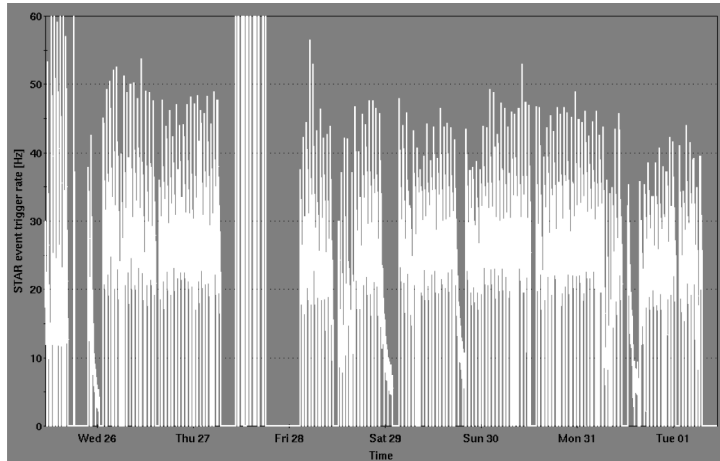
STAR DAQ hrs/day

ninbias-hlt-effective Average Rate [Hz]



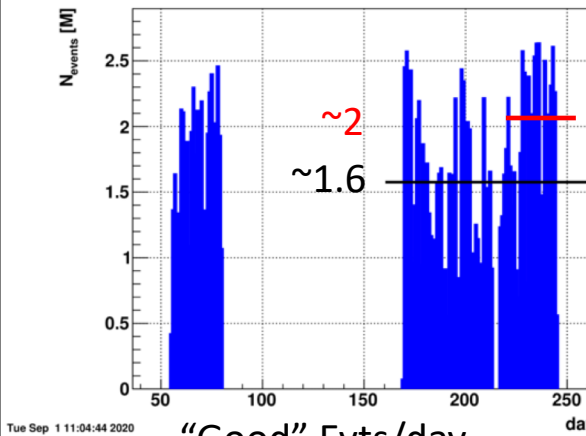
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Store averaged
"good" evt rates



STAR "Good" Event rates

minbias-hlt-effective N_{events}

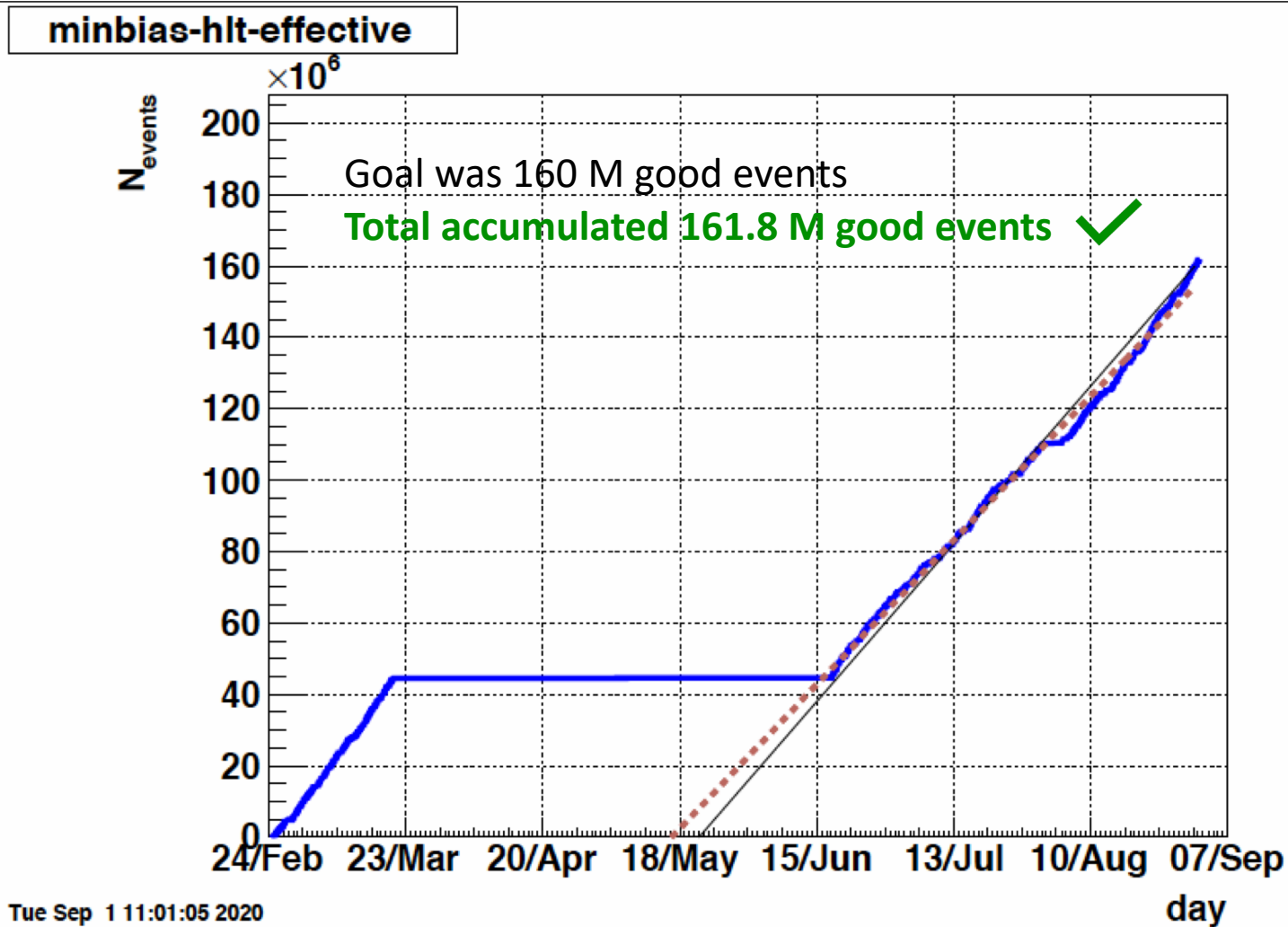


Tue Sep 1 11:04:44 2020

"Good" Evts/day

Another good week


















Current STAR Projections



Complete success for the 9.2 GeV Au on Au data set

A Long range Forecast for coming weeks

September

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
30  Mostly Sunny Actual: 80° 62° 0.24 in	31  Mostly Cloudy Actual: 74° 57° 0 in	1  Partly Cloudy Forecast: 76° 68° 0 in	2  Scattered Thunderstorm Forecast: 78° 72° 0.21 in	3  Partly Cloudy Forecast: 83° 71° 0.14 in	4  Sunny Forecast: 83° 64° 0 in	5  Mostly Sunny Forecast: 77° 63° 0 in
6  Sunny Forecast: 77° 66° 0 in	7  Mostly Sunny Forecast: 78° 65° 0 in	8  Partly Cloudy Forecast: 77° 67° 0.09 in	9  Scattered Thunderstorm Forecast: 79° 69° 0.39 in	10  Scattered Thunderstorm Forecast: 79° 66° 0.41 in	11  AM Showers Forecast: 74° 62° 0.11 in	12  Partly Cloudy Forecast: 73° 61° 0 in
13  Partly Cloudy Forecast: 74° 61° 0 in	14  Partly Cloudy Forecast: 74° 61° 0 in	15  Partly Cloudy Forecast: 74° 61° 0 in	16 Average: 74° 58° 0 in	17 Average: 74° 57° 0 in	18 Average: 73° 57° 0 in	19 Average: 73° 56° 0 in

In general the weather ahead of us dynamic, with a few days with possible thunder storms, and a trend of cooler nights.

LEReC tests and running at 3.85GeV:

Does not include any RHIC machine development with ions if needed.

Day 1: [Tuesday Sept. 1st](#)

DAY shift, 8am-4pm:

- 1.) access to IP4 to tune 9MHz RF: 6 hours
- 2.) access to IP2 to exchange Gun HVPS (install new inverter #1): 1-2 hour
- 3.) after IP2 access, 10am: establish e-beam operation at 1.6MeV, check e-beam optics in cooling sections

EVE shift, 4pm-12am (ions in RHIC should be ready for this shift) [Wednesday DAY shift](#)

- 4.) finish e-beam work, LLRF for electrons first, then tuning and sync of electron/ions at new energy
- 5.) check cooling with ions if ready

Owl shift, 12am-8am (**ions in RHIC must be available, otherwise no shift**) [Wednesday Evening/OWL shift](#)

- 6.) cooling optimization of ions

Day 2: [Thursday Sept. 3rd](#)

DAY shift:

- 7.) access to IP2 to exchange Gun HVPS (install new inverter #2): 1-2 hour
- 8.) switch to new HVPS controller: 1-2 hours
- 9.) Check Gun operation with new controller: 2 hours
- 10.) Establish and check performance at high-current running
- 11.) Access to IP2 to exchange Gun HVPS (install new inverter #3): 1-2 hour

EVE shift, 4pm-12am

- 12.) optimize cooling of ions (cooling/heating studies)

Owl shift, 12am-8am

- 13.) cooling of ions with detectors ON (full stores)

STAR Online and taking data (Thursday Owl shift)

Day 3: [Friday Sept. 4th](#)

STAR taking data

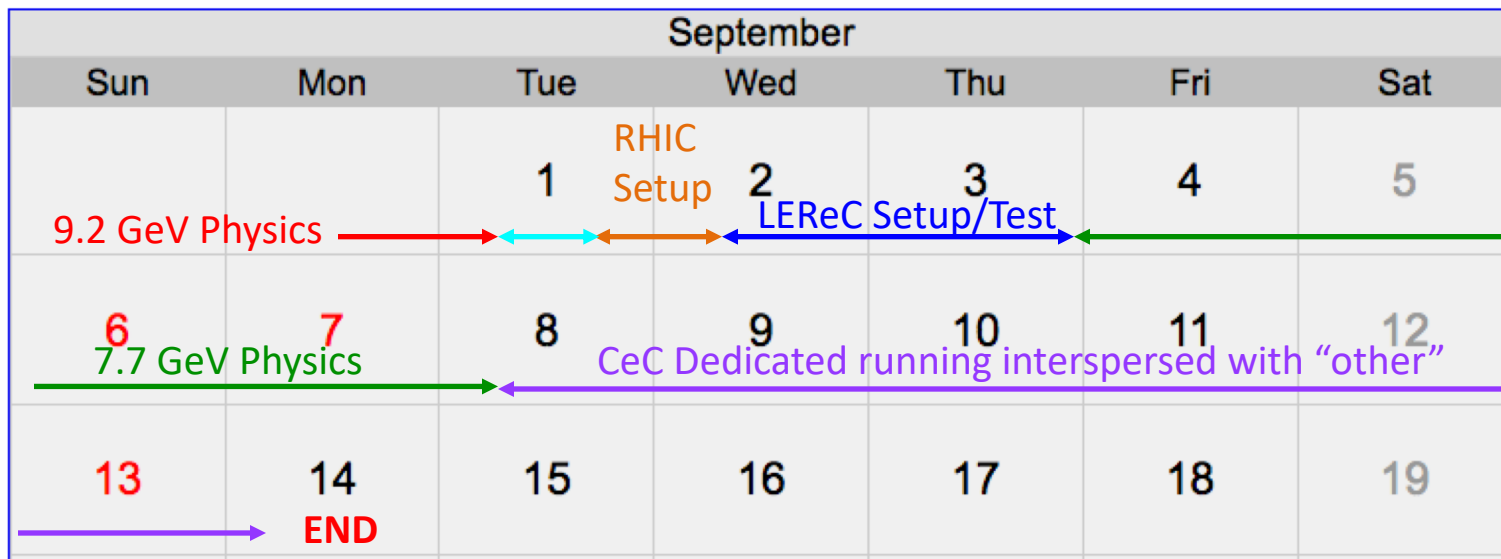
DAY shift, 8am-4pm:

- 14.) optimize cooling of ions, if needed
- 15.) optimize ions lifetime and luminosity with cooling

EVE, OWL shift: Physics running with cooling

Day 4,5,6,7 (possibly more if needed by STAR) Fri, Sat, Sun., Mon, STAR taking data (~ 4.5 - 5 days)

End Game



From Tuesday morning, Sept. 8th, through 8 am Monday Sept. 14th:

- CeC dedicated running (~ 6 days possible)
- Further 7.7 GeV studies/optimizations
- Possible APEX
- Mix of the two when CeC wants to step back

Beam Operations end at 8 am on Monday, September 14th. High current and High Pot testing for about a shift, and then RHIC Run 2020 Ends. First Helium offload (truck) Tuesday morning.

The Cryo plant would have been operating for 41 weeks if we end on Sept. 14th.

AOB

Calendars as a possible aid for discussion

2020

September							October						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
		1	2	3	4	5				1	2	3	
6	7	8	9	10	11	12	4	5	6	7	8	9	10
13	14	15	16	17	18	19	11	12	13	14	15	16	17
20	21	22	23	24	25	26	18	19	20	21	22	23	24
27	28	29	30				25	26	27	28	29	30	31

November							December						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
1	2	3	4	5	6	7			1	2	3	4	5
8	9	10	11	12	13	14	6	7	8	9	10	11	12
15	16	17	18	19	20	21	13	14	15	16	17	18	19
22	23	24	25	26	27	28	20	21	22	23	24	25	26
29	30						27	28	29	30	31		

Calendar for Year 2021 (United States)

January							February							March						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
					1	2		1	2	3	4	5	6		1	2	3	4	5	6
3	4	5	6	7	8	9	7	8	9	10	11	12	13	7	8	9	10	11	12	13
10	11	12	13	14	15	16	14	15	16	17	18	19	20	14	15	16	17	18	19	20
17	18	19	20	21	22	23	21	22	23	24	25	26	27	21	22	23	24	25	26	27
24	25	26	27	28	29	30	28							28	29	30	31			
6:○	13:●	20:○	28:○				4:○	11:●	19:○	27:○				5:○	13:●	21:○	28:○			

April							May							June						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
				1	2	3						1				1	2	3	4	5
4	5	6	7	8	9	10	2	3	4	5	6	7	8	6	7	8	9	10	11	12
11	12	13	14	15	16	17	9	10	11	12	13	14	15	13	14	15	16	17	18	19
18	19	20	21	22	23	24	16	17	18	19	20	21	22	20	21	22	23	24	25	26
25	26	27	28	29	30		23	24	25	26	27	28	29	27	28	29	30			
4:○	11:●	20:○	26:○				3:○	11:●	19:○	26:○				2:○	10:●	17:○	24:○			

July							August							September						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
				1	2	3		1	2	3	4	5	6	7			1	2	3	4
4	5	6	7	8	9	10	8	9	10	11	12	13	14	5	6	7	8	9	10	11
11	12	13	14	15	16	17	15	16	17	18	19	20	21	12	13	14	15	16	17	18
18	19	20	21	22	23	24	22	23	24	25	26	27	28	19	20	21	22	23	24	25
25	26	27	28	29	30	31	29	30	31					26	27	28	29	30		
1:○	9:●	17:○	23:○	31:○			8:●	15:○	22:○	30:○				6:●	13:○	20:○	28:○			

October							November							December						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
				1	2			1	2	3	4	5	6			1	2	3	4	
3	4	5	6	7	8	9	7	8	9	10	11	12	13	5	6	7	8	9	10	11
10	11	12	13	14	15	16	14	15	16	17	18	19	20	12	13	14	15	16	17	18
17	18	19	20	21	22	23	21	22	23	24	25	26	27	19	20	21	22	23	24	25
24	25	26	27	28	29	30	28	29	30					26	27	28	29	30	31	
6:●	12:○	20:○	28:○				4:●	11:○	19:○	27:○				4:●	10:○	18:○	26:○			

2022

January							February							March						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
						1		1	2	3	4	5		1	2	3	4	5		
2	3	4	5	6	7	8	6	7	8	9	10	11	12	6	7	8	9	10	11	12
9	10	11	12	13	14	15	13	14	15	16	17	18	19	13	14	15	16	17	18	19
16	17	18	19	20	21	22	20	21	22	23	24	25	26	20	21	22	23	24	25	26
23	24	25	26	27	28	29	27	28						27	28	29	30	31		
30	31																			
2:●	9:○	17:○	25:○				1:●	8:○	16:○	23:○				2:●	10:○	18:○	25:○			

April							May							June						
Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa	Su	Mo	Tu	We	Th	Fr	Sa
				1	2		1	2	3	4	5	6	7			1	2	3	4	
3	4	5	6	7	8	9	8	9	10	11	12	13	14	5	6	7	8	9	10	11
10	11	12	13	14	15	16	15	16	17	18	19	20	21	12	13	14	15	16	17	18
17	18	19	20	21	22	23	22	23	24	25	26	27	28	19	20	21	22	23	24	25
24	25	26	27	28	29	30	29	30	31					26	27	28	29	30		
1:●	9:○	16:○	23:○	30:●			8:○	16:○	22:○	30:●				7:○	14:○	20:○	28:●			