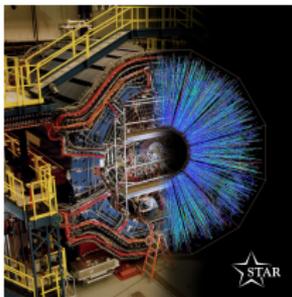


# STAR Status From January 28th to February 3rd

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February 4, 2020



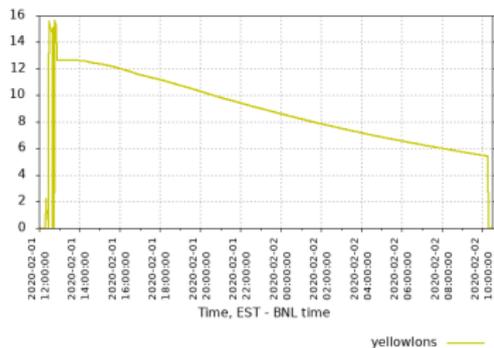
- Running fix target experiments at beam energies of 31.2, 19.5, 13.5, 9.8, and 7.3 GeV interleaved with LeREC development at 4.6 GeV
- Statistics collected for fix target experiments
- Preview of data collected at 4.6 GeV beam collisions
- Summary

# Statistics collected for fix target experiments

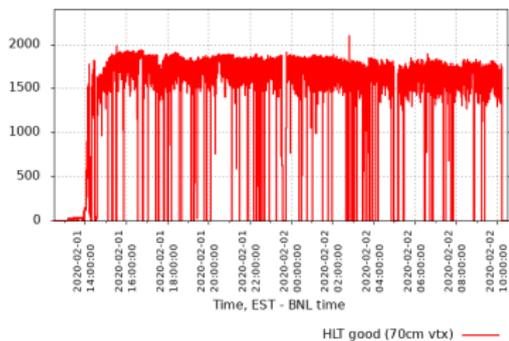
- STAR detector components: BBC, VPD, TOF, TPC, BEMC, and ETOF
- Event selection: high level trigger (HLT) system
- Beam conditions fairly good, debunching effect becomes prominent at low energies for example 9.8 GeV,
- Introduced yellow sync bit to trigger on events from filled bunches except at 31.2 GeV
- Trigger requirements: EPD East, VPD East, BBC East, TOF multiplicity  $>$  thresholds, at HLT,  $v_z$  close to target,  $v_r < 4$  cm,  $N_{TPC,tracks} \geq 3$
- Average time to achieve our statistics goal for each energy:  $\sim 20$  hours

Beam energy (in GeV)	Start	Finish	Number of good events (in M)	Target(in M)
31.2	01/28/20	01/29/20	112	100
19.5	02/01/20	02/02/20	118	100
13.5	02/02/20	02/03/20	103	100
9.8	01/29/20	02/01/20	108	100
7.3	02/04/20	present	47 as today	100
5.75	TBD	TBD	0	100

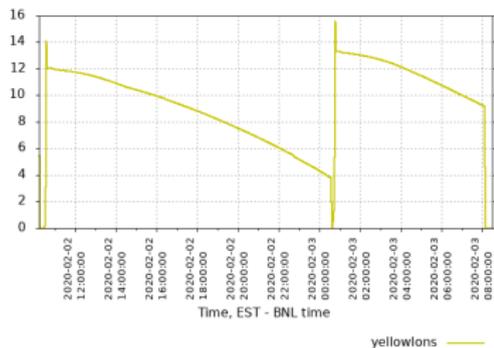
# Fix target at 19.5 GeV



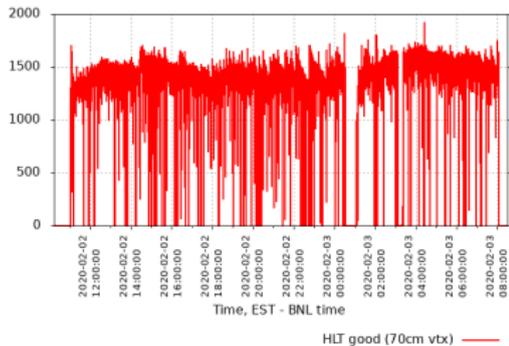
- Beam intensity drops slowly
- STAR good HLT event rates stabilized around 1600 Hz



# Fix target at 13.5 GeV

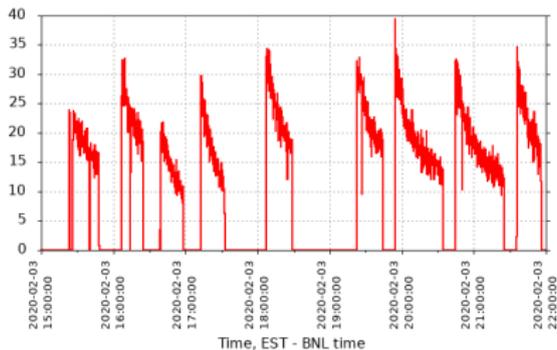


- 2 stores
- STAR good HLT event rates stabilized around 1400 and 1500 Hz



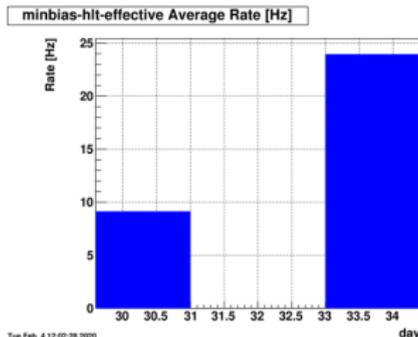
# Collisions at 4.6 GeV during LeREC development

- HLT good event rates during 4.6 GeV collision taken on Feb. 3rd, 2020



HLT good (70cm vtx) —

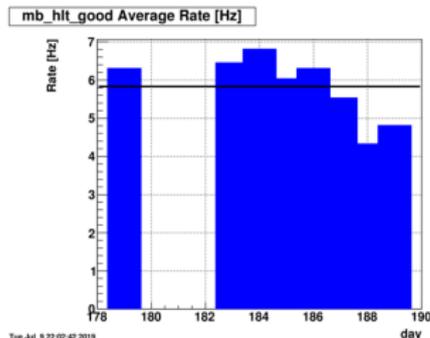
- Average HLT good event rates per day in 2020, on Day 33 (Feb. 3rd):  
~ 24 Hz



Tue Feb 4 12:02:28 2020

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- Average HLT good event rates in 2019, ~ 6 Hz



Tue Jul 9 22:02:42 2019

BNL CAD Time Meeting

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- Other issues:
  - A power glitch happened at the end of the 9.8 GeV fix target run on Saturday morning, which tripped our magnet. It took us a couple of hours to recover
- **Achieved goals** for fix target at 31.2, 19.5, 13.5 and 9.8 GeV during last week
- Wrap up 7.3 GeV fix target running by Wednesday morning
- Physics running with collisions at 4.6 GeV with LeREC **cooling** would be the top priority