STAR status for Run 20 – Jan. 21st, 2020

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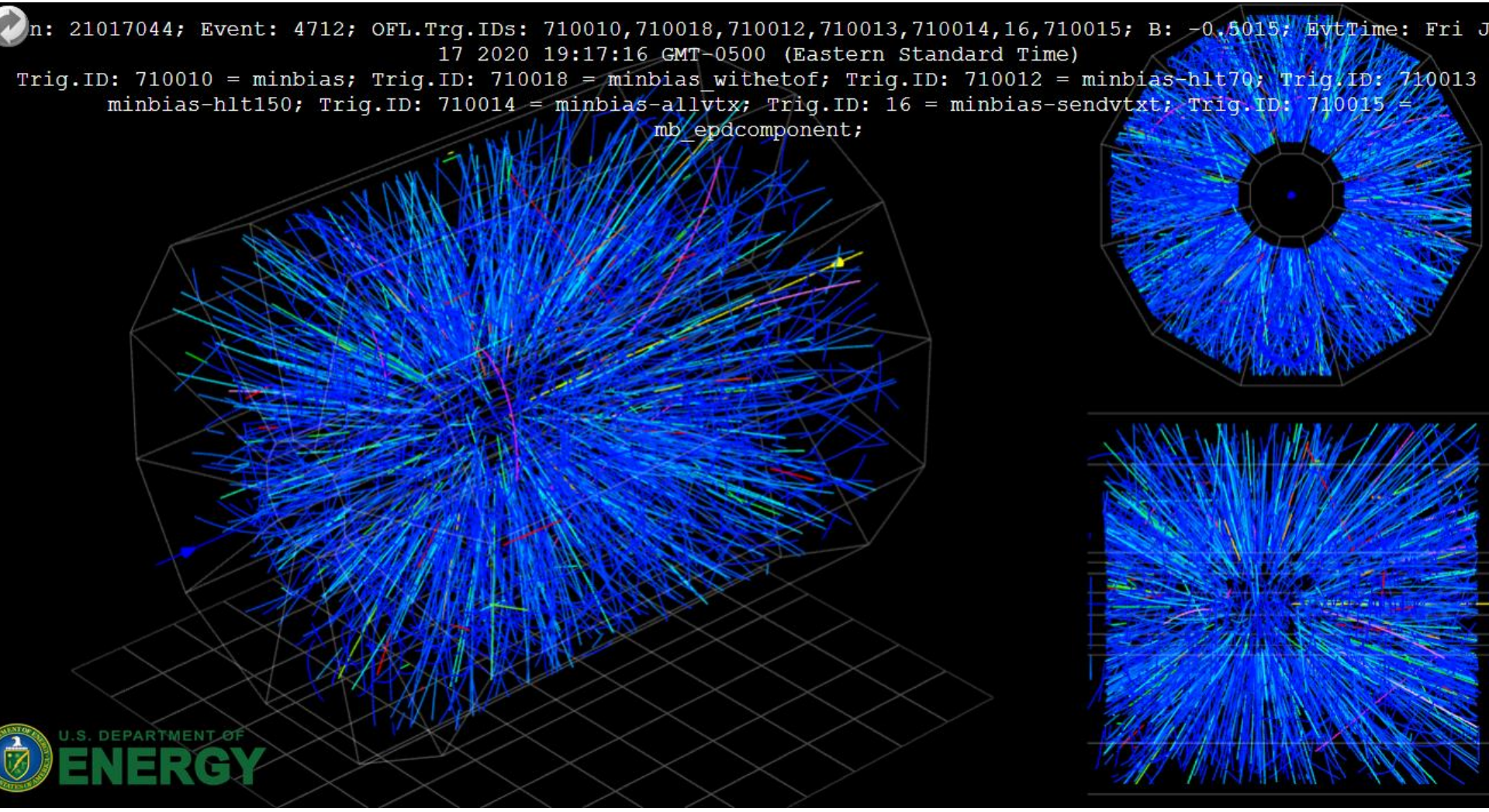
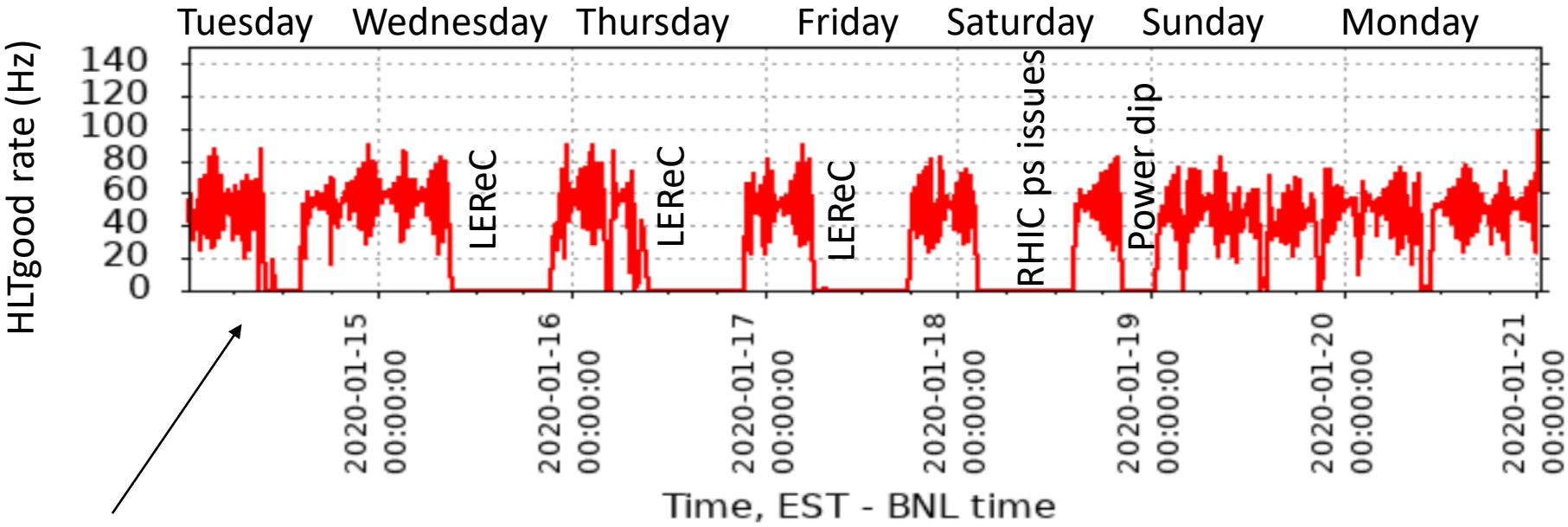
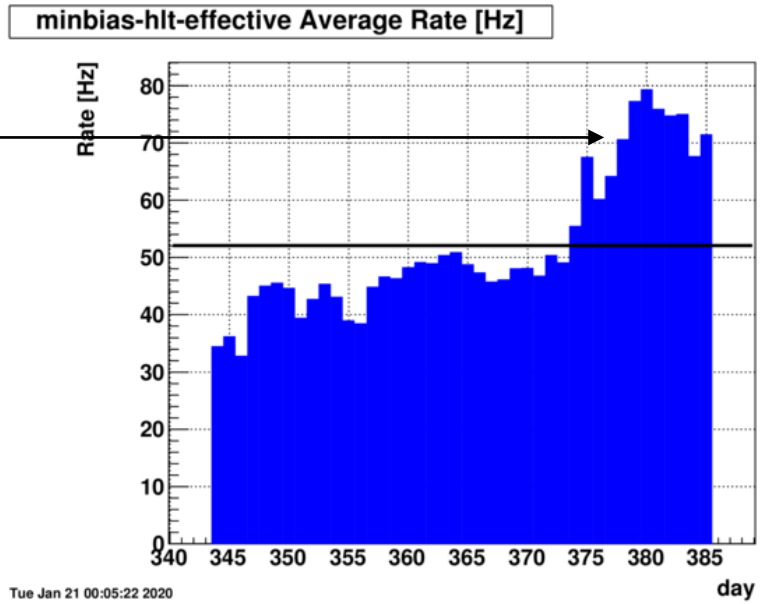


Performance for the Past Week

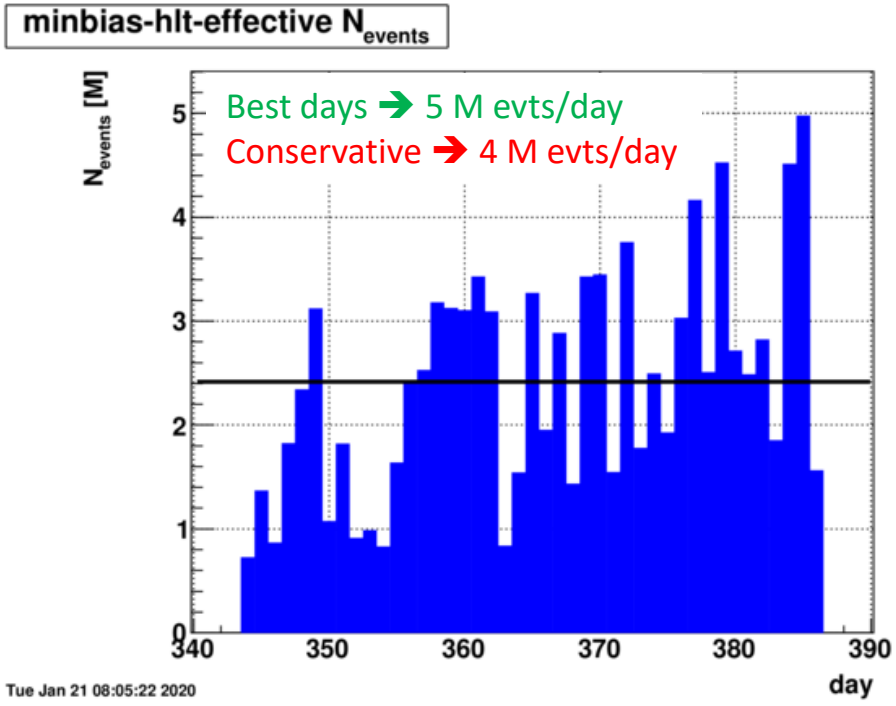


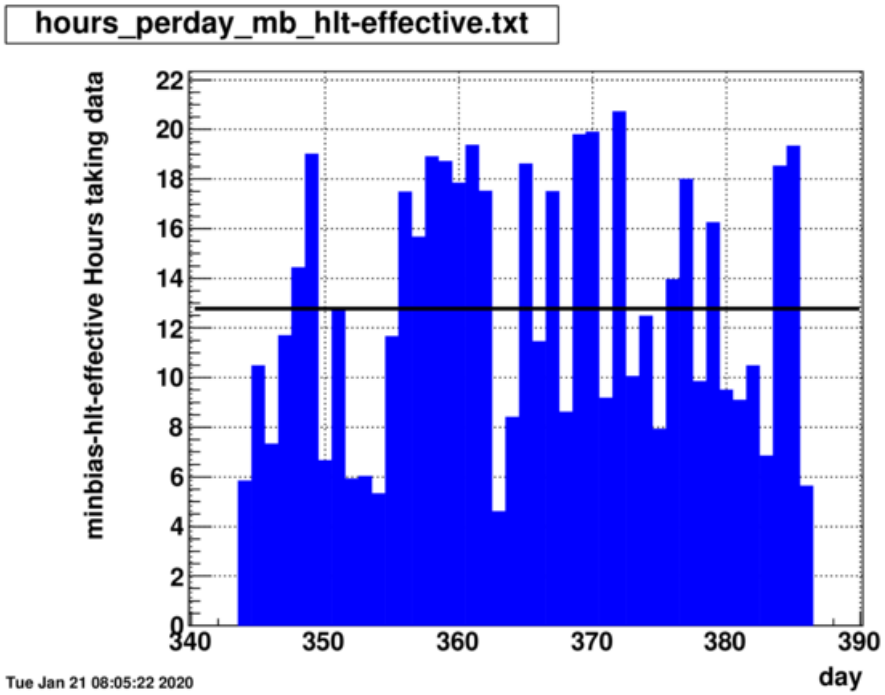
- STAR is running well, very little downtime, when we have beam.
- Consistently taking data at an average of 70-80 Hz (HLTgood_effective)
- In 2010 we achieved a HLTgood (70 cm) of 30 Hz.



11.5 GeV Status and Projections

- Currently at 104 M events.





Between now and Feb 27th , six days of running – 1 day LEReC = 5 days

5 days X 4 – 5 M evts/day = 20 – 25 M ➔ total should be 124 – 129 M

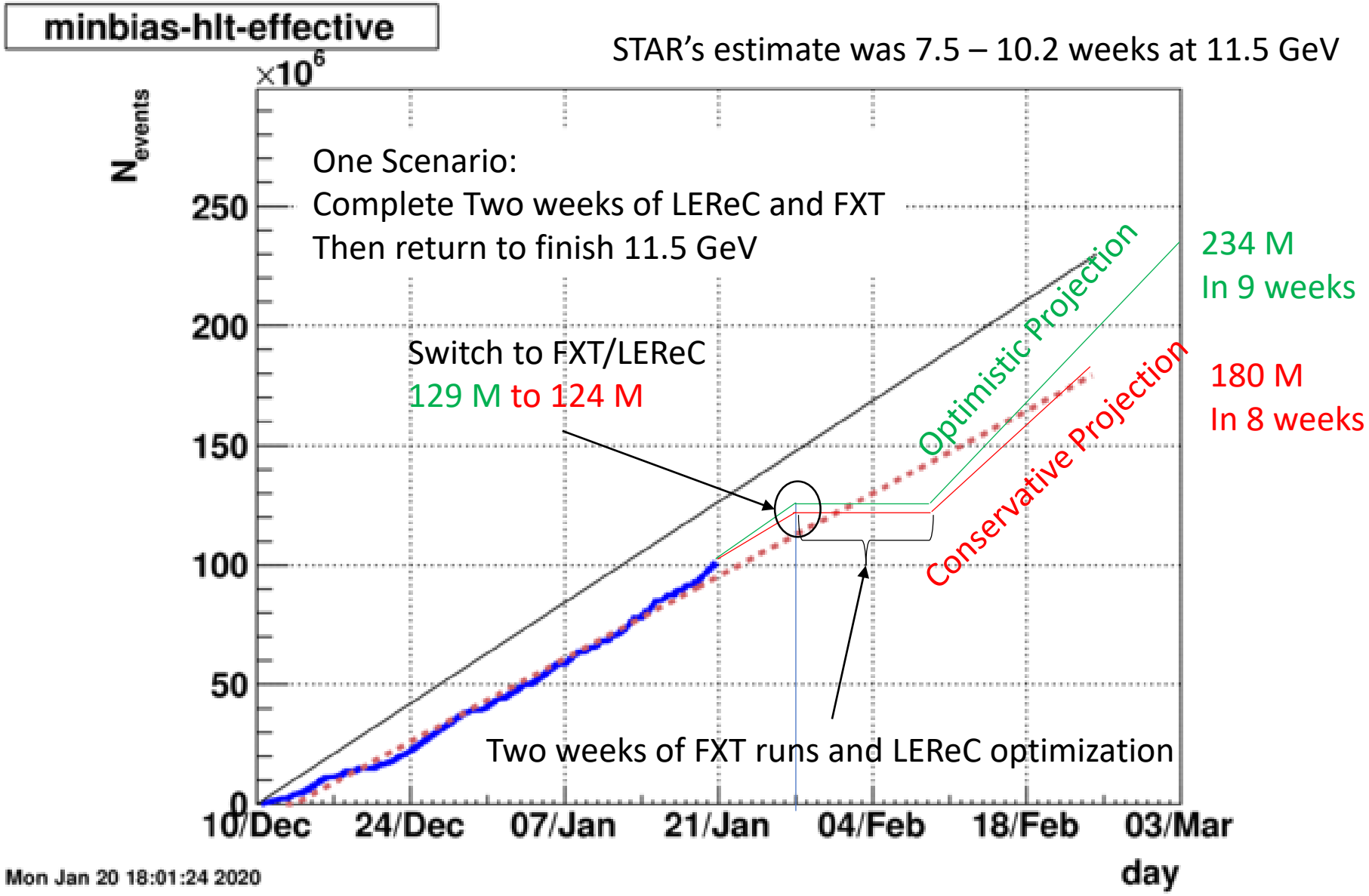
Conservative:

Between Feb 10th and Feb 24th, 14 days ➔ 14 X 4 = 56 M ➔ 124 + 56 = 180 M

Optimistic:

Between Feb 10th and Mar 3rd, 21 days ➔ 21 X 5 = 105 ➔ 129 + 105 = 234 M

11.5 GeV Projections



Completing the FXT program between Jan 27th and Feb 10th

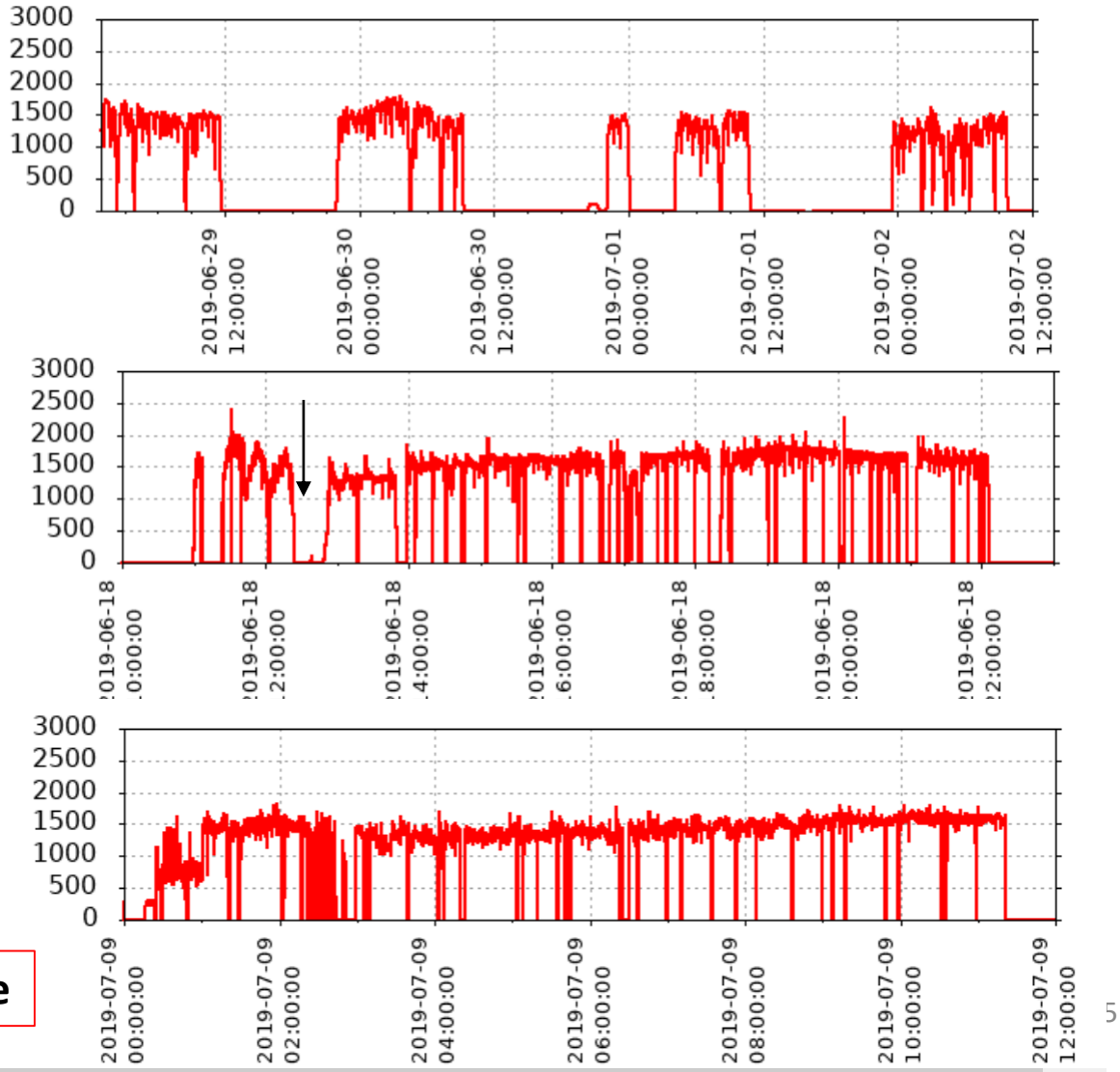
- Goals: 100 M HLTgood at each of six energies: 31.2, 19.5, 13.5, 9.8, 7.3, 5.75 GeV
- Recap of 2019 FXT:
  - STAR DAQ is limit
  - Defocus beams

4.59 GeV:
- June 28 – July 1
- 12 four hour fills
- 200 M events

7.3 GeV:
- June 18th
- Two fills over 12 hours
- 50 M events

31.2 GeV:
- July 9th
- One 12 hour fill
- 50 M events

DAQ Rate limit is about 2.2 kHz --- HLTgood about 75%



100 M in 24 hours is repeatable

Completing the FXT program between Jan 27th and Feb 10th

- The plan is to interleave FXT runs with LEReC commissioning over a two week period.
- The would start on Jan 27th, after the maintenance is completed.
- RHIC will need 1-2 shifts of beam development to ramp from injection at 7.3 GeV.
- Start with the highest energy, 31.2 GeV and move down.
- STAR is flexible and can accommodate swapping with LEReC as needed
- This was effectively done in 2019.
- At the conclusion of this two week period of the LEReC commissioning with STAR, we can better project the time needed to complete the 9.2 GeV system.

Summary:

- STAR is running well; taking data at an excellent rate
- Thursday's beam development showed significant improvement
- Off line analysis show detectors performing well
- Quality Assurance using offline production ➔ 95% or runs will pass Q/A
- Planning for FXT runs to be completed week of Jan 27 – Feb 03