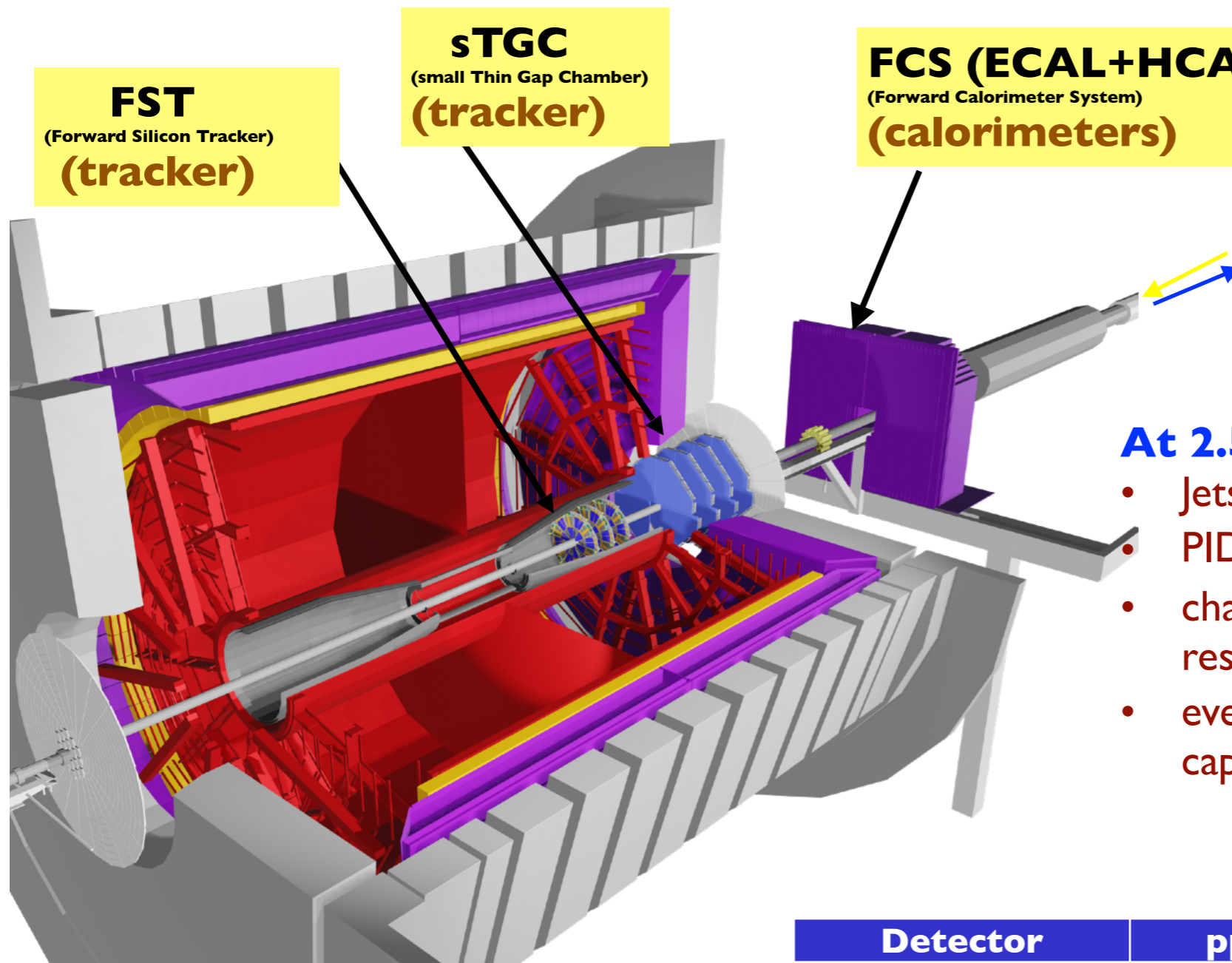


# STAR status and schedule

- New Forward upgrade detectors are fully installed on schedule
- Detector maintenance, reinstallation to be done by Nov. 15
- Magnet PS test and heat run Nov. 5-9
- On shift starting Nov. 9 (2-person shift: Leader+Detector Operator)
  - Start flammable gas flow
- Cosmic data taking with TPC Nov. 11 -
  - Detector/trigger setup, calibration, commissioning
- Full shift (4-person) starting Nov. 16
  - Shift Leader, 2 Detector Operators, Online QA (remote)
  - Period Coordinator (onsite)
- When collisions available, initial timing and trigger setup/tuning ~ 1-2 days before Physics
- Start Physics program at midrapidity interleaving commissioning of new Forward detectors (for a few weeks), then run Full physics program when the commissioning is done

# STAR Forward Upgrade



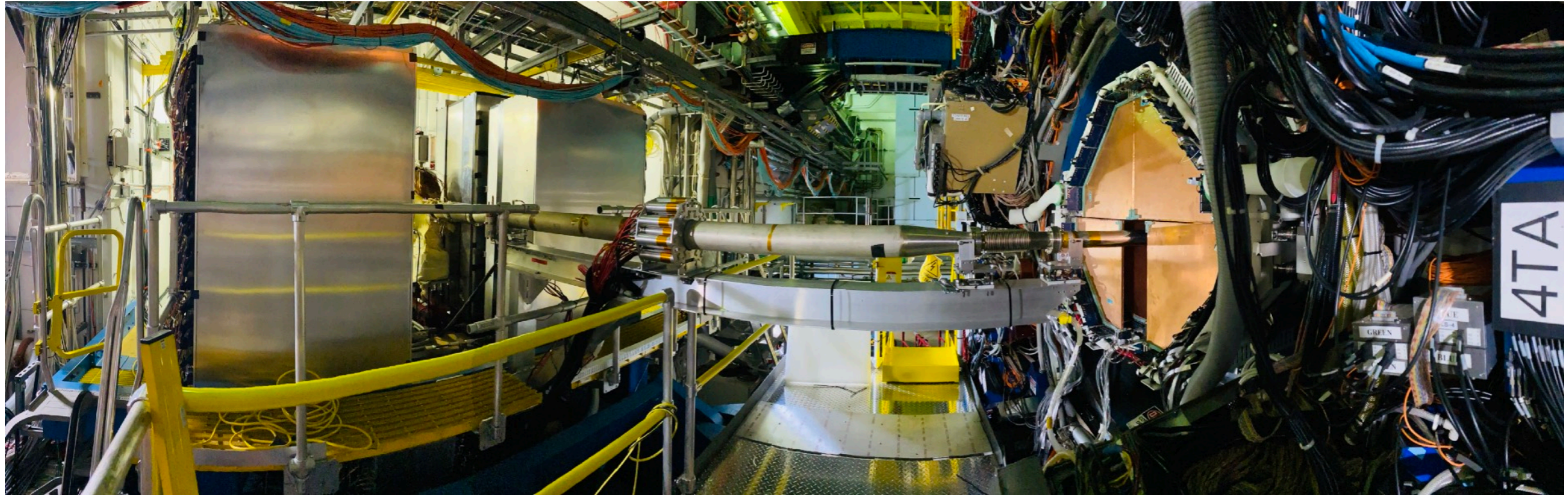
## At $2.5 < \eta < 4$ (Forward)

- Jets
- PID ( $\pi^0$ ,  $\gamma$ ,  $e$ ,  $\Lambda$ )
- charged particle momentum resolution 20-30% at  $0.2 < p_T < 2$  GeV/c
- event-plane reconstruction and trigger capability

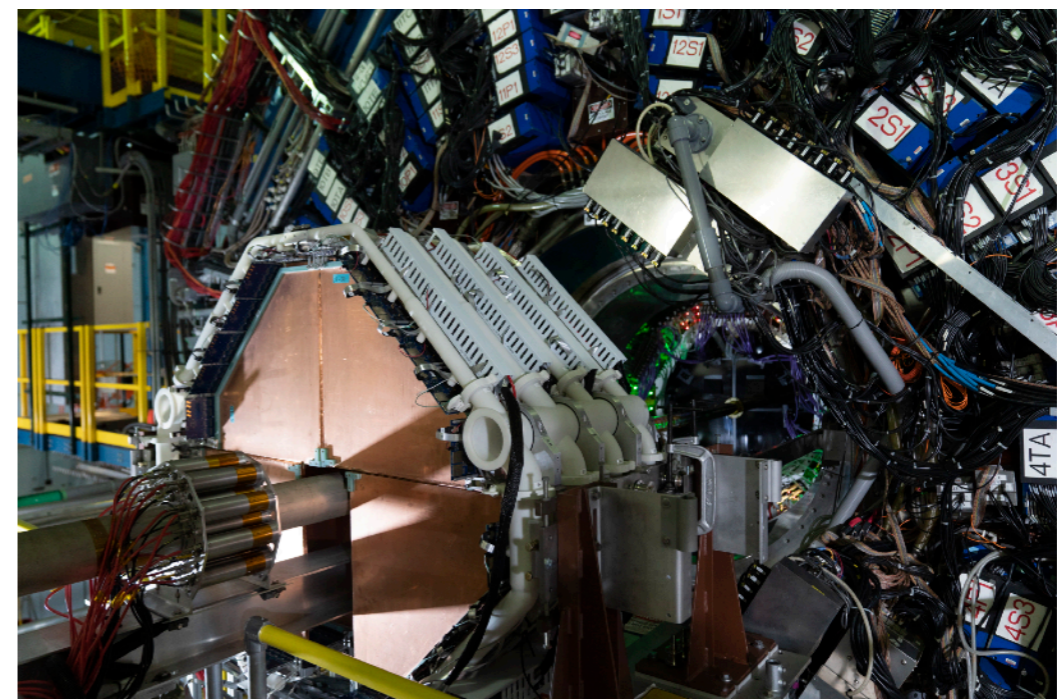
Detector	pp and pA	AA
ECal	$\sim 10\%/\sqrt{E}$	$\sim 20\%/\sqrt{E}$
HCal	$\sim 50\%/\sqrt{E} + 10\%$	---
Tracking	charge separation photon suppression	$0.2 < p_T < 2$ GeV/c with 20-30% $1/p_T$



# FCS and sTGC



10/21/21

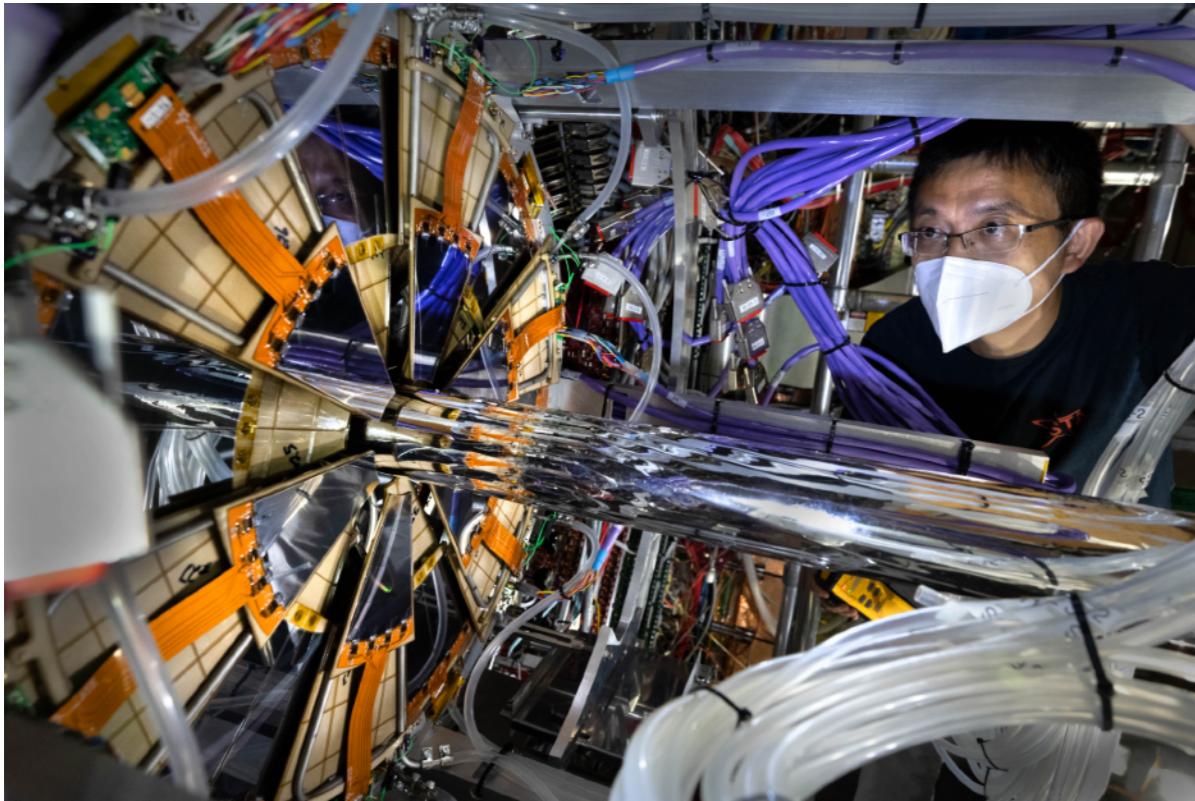


3

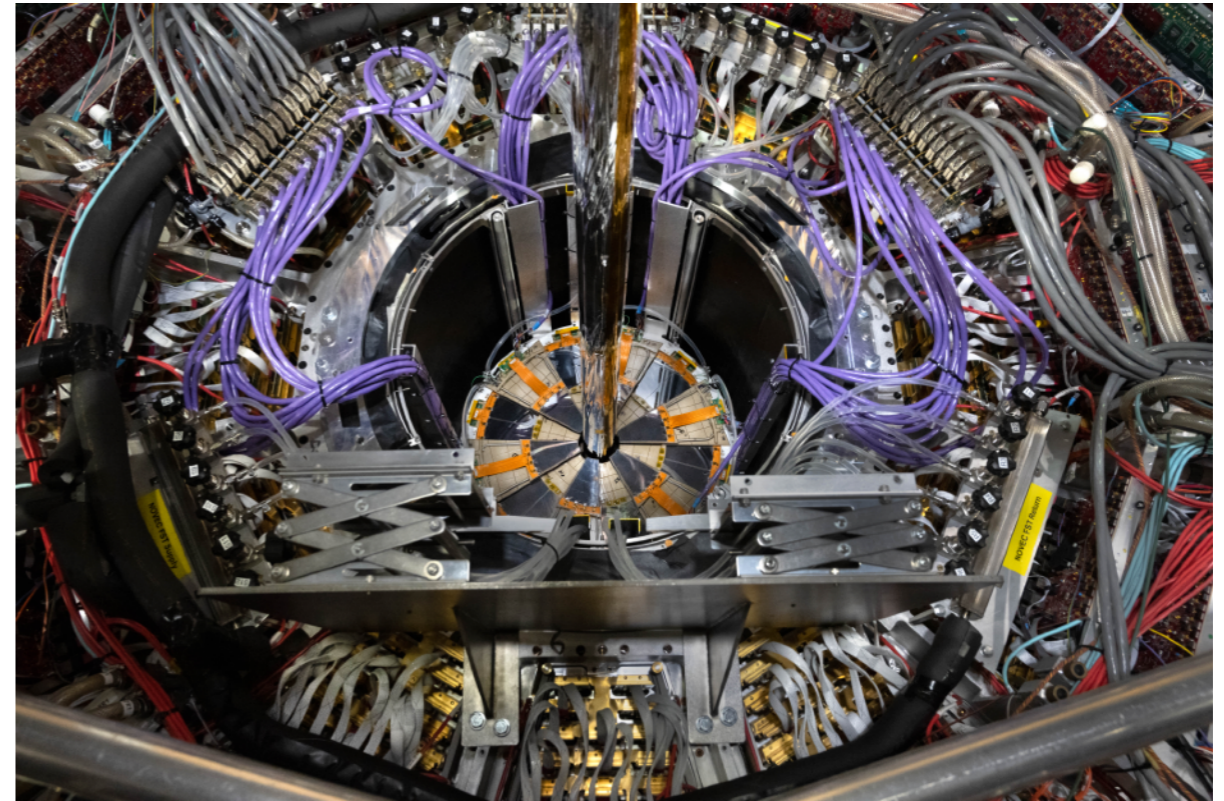
4 layers of small-strip Thin Gap Chambers: 3.07, 3.25, 3.43, 3.61 m from IP



# Forward Silicon Tracker



3 layers of silicone mini-strip disk: 1.46, 1.6, 1.73 m from IP



8/17/2021

# Goal and Request for Run22

- Request: **Sampled luminosity 400 pb<sup>-1</sup>**
- **Luminosity leveling** for maximum FOM at ZDC ~ 330 KHz ( $\mathcal{L} \sim 135 \cdot 10^{30} \text{ cm}^{-2}\text{s}^{-1}$ ) and **polarization  $\geq 55\%$**
- Other beam conditions - spin pattern and abort gap : same as in Run17
  - Run17 running condition: 356 pb<sup>-1</sup> total sampled luminosity from 13.6 physics weeks (request: 400 pb<sup>-1</sup> delivered luminosity)
    - $\langle \mathcal{L} \rangle = 127 \cdot 10^{30} \text{ cm}^{-2}\text{s}^{-1}$  with leveling via  $\beta$ -squeeze
    - $\langle \text{polarization} \rangle \sim 55\%$
    - sampled/delivered  $\sim 65\%$  :
      - STAR trigger/detector deadtime ( $\sim 20\%$ ), interruptions for polarization measurements +  $\beta$ -squeeze ( $\sim 4\%$ ), run control ( $\sim 4\%$ ) detector ramping up/down ( $\sim 2\%$ ), detector downtime
- Commissioning Forward upgrade detector systems (first weeks)
  - A few special runs will be requested for commissioning and calibration: low-lumi, small number of bunches for setup and calibration
  - Running time/time sharing (with CeC) optimization for efficient commissioning with experts availability