

# GLAST IFC: Update and Meeting Goals

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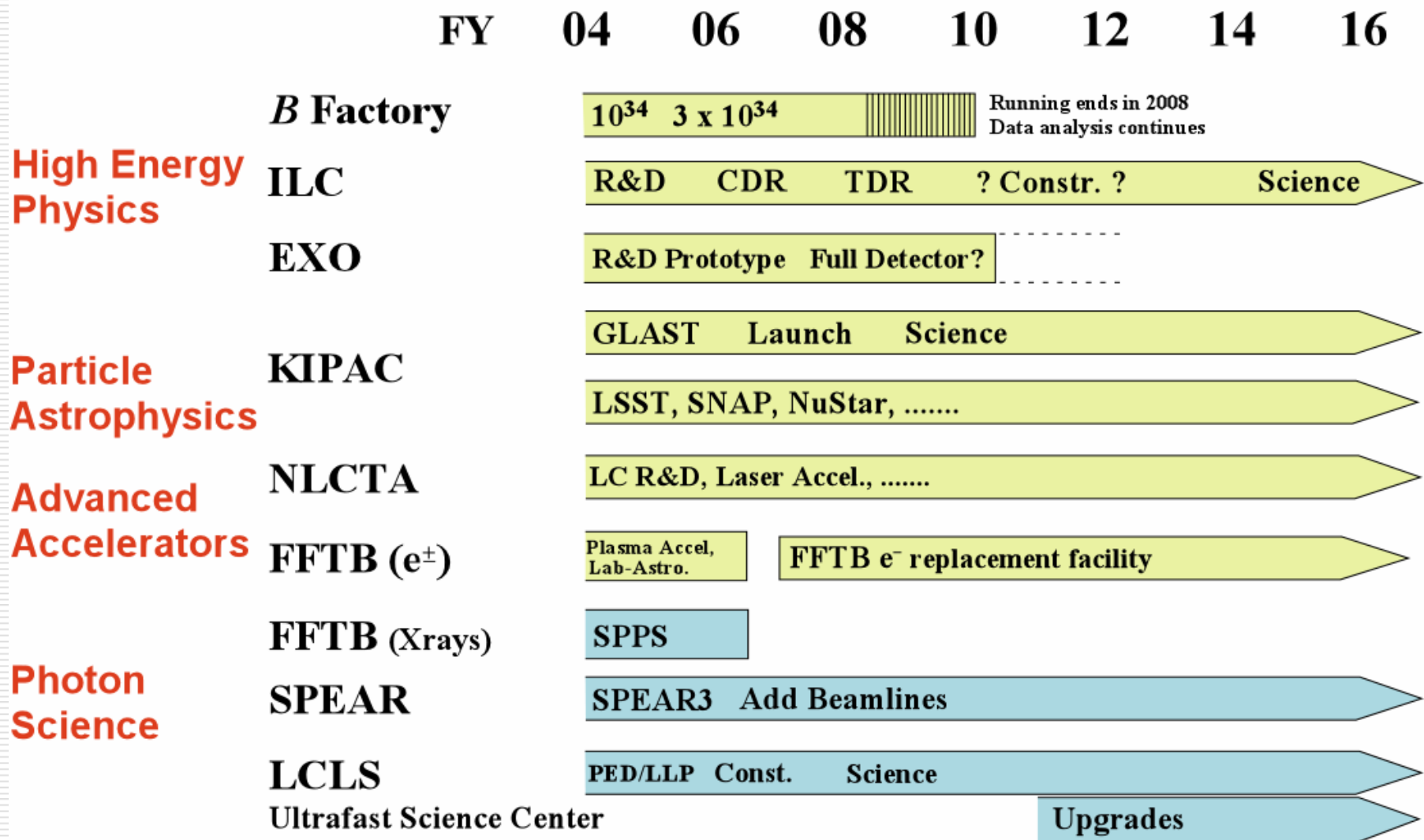
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# SLAC: Scientific Programs

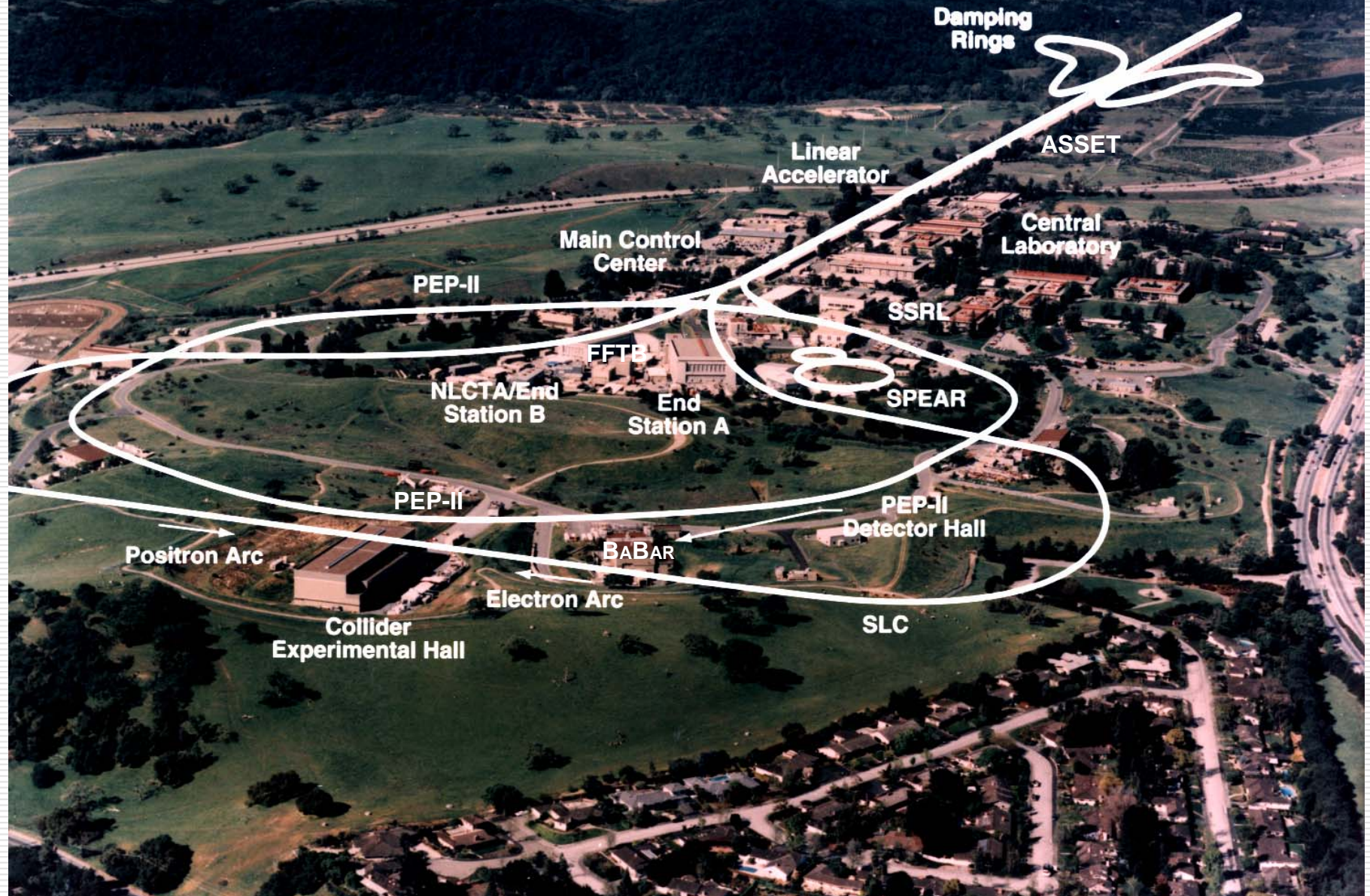
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- High Energy Physics/Particle Astrophysics
  - B-factory
  - ILC
  - GLAST
  - Advanced Accelerator R&D
  - New Initiatives
- Photon Science
  - SPEAR III—3<sup>rd</sup> generation synchrotron
  - LCLS—Linac Coherent Light Source
    - X-ray FEL

# SLAC Scientific Program



# Stanford Linear Accelerator Center



# Evolution of the Laboratory

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- Particle Astrophysics at SLAC is growing
  - GLAST
    - Launch in 2007
  - KIPAC
- B-factory will turn off in 2008
- Progress with ILC
- LCLS construction starting this year
  - By 2009, onsite accelerators will be operating for photon science rather than HEP

# Future Particle Astro at Stanford

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- KIPAC: Kavli Institute for Particle Astrophysics and Cosmology
  - Born from the faculty of HEP/SLAC and Physics Dept /H&S
    - Roger Blandford—Director
    - Steve Kahn – Deputy Director
  - Director reports to Stanford Dean of Research
    - Operates as independent research center
    - 9 new faculty
      - Most (if not all) will be joint SLAC/Campus
      - Exploit synergy that has come from birth of GLAST
  - It is anticipated the institute will bring in funds from NASA and NSF that will flow through campus in addition to DOE funds that will flow through SLAC

# KIPAC

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- KIPAC is launched!
  - Tremendous Growth in the Past Year
    - > 30 new people including 4 new faculty, 4 new professional staff, 12 postdocs, 9 students, and lots of visitors
    - Search for next 2 faculty underway
- Physical Location
  - Kavli building in construction on SLAC site
  - Varian II building in construction on campus
- GLAST will be part of KIPAC intellectual environment
  - Many Stanford/SLAC members of GLAST are members of KIPAC
  - KIPAC will house some of the GLAST scientists

# KIPAC will define the future of Particle Astrophysics at SLAC

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- Approved KIPAC Project:
  - NuStar
    - Will be the first focusing X-ray telescope in the hard X-ray band
      - Will study the extragalactic hard X-ray sky in unprecedented detail
      - Will map diffuse non-thermal and nuclear line emission
      - Will resolve source populations in the Galactic plane
- Potential SLAC/KIPAC Projects
  - SNAP Collaboration (JDEM)
    - 2m telescope, 0.7 sq deg field in space
      - Study high z SNe → Dark Energy
      - Strong Lensing → Small scale structure
  - LSST
    - 8.4 m telescope, 8.6 sq deg field on the ground
      - Weak lensing survey of entire sky → Dark matter power density spectrum → Constraints on Dark Energy
- Many other NASA funded KIPAC Projects under discussion (Exist, Next, POGO, ...)
- Theory effort already very productive

# Events of the past 6 months

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- Past 6 months has been a time of great progress for the lab programs:
  - Spectacular science output from B-factory
  - Start of LCLS Construction (~\$375M project)
    - First ~\$50M this year
  - Tremendous progress on GLAST
    - Flight hardware is arriving
    - Tour at lunch time to see I&T facilities
    - Details of GLAST progress throughout today and tomorrow

# Events of the past 6 months

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- Past 6 months has also been a time of great challenges for the lab programs
  - Budget
  - Aftermath of a serious electrical accident
  - For GLAST: Budget and Schedule

# Challenging Times— Laboratory Budget

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- Laboratory faced significant budget shortfall in FY05  
Issues
  - ★ No cost of living adjustment
  - ★ Cost of electrical power doubling (~ \$7M)
    - ↪ Overlap of these two issues had made FY05 a challenge
    - ↪ We hope to get help with power
  - ★ 60 layoffs necessary in FY05
- Laboratory support for GLAST is still very strong
  - Evidenced by significant number of senior scientists from lab staff and faculty who have joined effort to complete flight build
    - Kahn, Himel, Young, Su Dong, Drell

# Challenging Times – The Accident

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- We had a serious electrical accident in the laboratory on October 11
  - Laboratory operations significantly impacted
  - Accelerators were down
    - SPEAR – restarted in January
    - PEP-II—restarting now
- Accident has led to top to bottom review of safety at the laboratory

# Accident – Impact on GLAST

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- Small impact on schedule as laboratory 'stood down' to review safety procedures
- In general, GLAST fared well in reviews and was able to resume normal work in a timely manner
  - Work authorization process and documentation required for a space project to protect instrument are also effective at ensuring compliance with safety standards at the lab
  - Continue to be vigilant, especially with lifting and crane work
    - Area of greatest vulnerability

# Challenges for GLAST: Cost and Schedule

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□ At October IFC Meeting, Lowell Klaisner said:

- **Tight schedule to deliver to observatory integration in Dec '05**
  - **Anomalies have been uncovered during the testing of the flight components in the Tracker, Calorimeter, and Anticoincidence Detector**
  - **The TKR, CAL, ACD and Electronics have had components that failed to meet requirements**
  - **The associated delays in delivery of the first flight unit puts the overall schedule in jeopardy**
  - **The schedule will be reevaluated after the first tower is integrated and all systems are in production**

# Challenges for GLAST: Cost and Schedule

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- Since the last IFC Meeting:
  - Project has had to rebaseline
    - Cost of instrument has increased
    - Schedule has slipped
  - De-scopes of the instrument have been discussed although none are planned at this time
  - This will be discussed in detail by Lowell and Peter

# Agenda and Goals for the Meeting

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- Overview of LAT Project and GLAST Mission
  - Project Overview and Collaboration Status
  - Project Status: Technical
  - Project Status: Cost and Schedule including DOE rebaseline
  - Mission Status
- Discussion of LAT rebaseline
  - Status of discussion of potential de-scopes of instrument
- Discussion of Operations phase support and OCF
  - Review of current draft
- IFC Roundtable
  - Roundtable discussion of funding status from each agency
- Approval of October Minutes