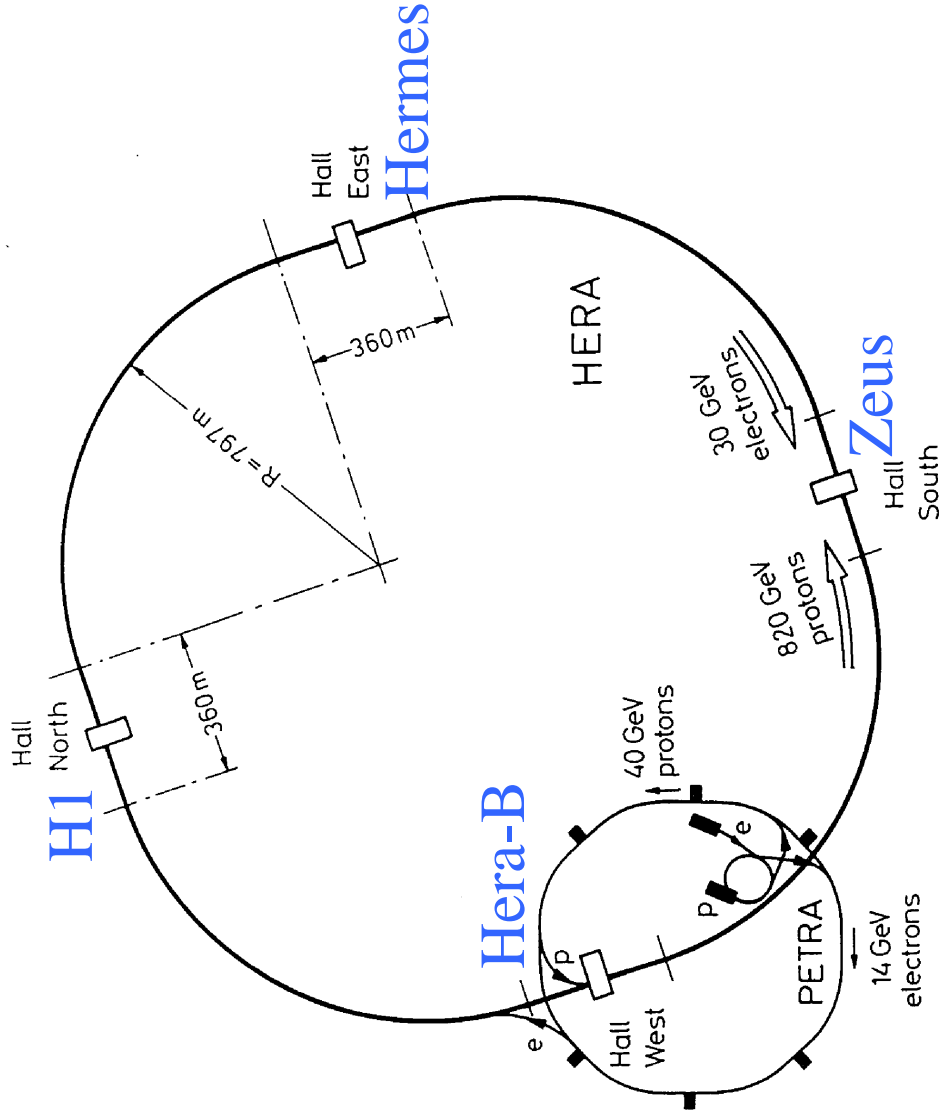


HERA Overview

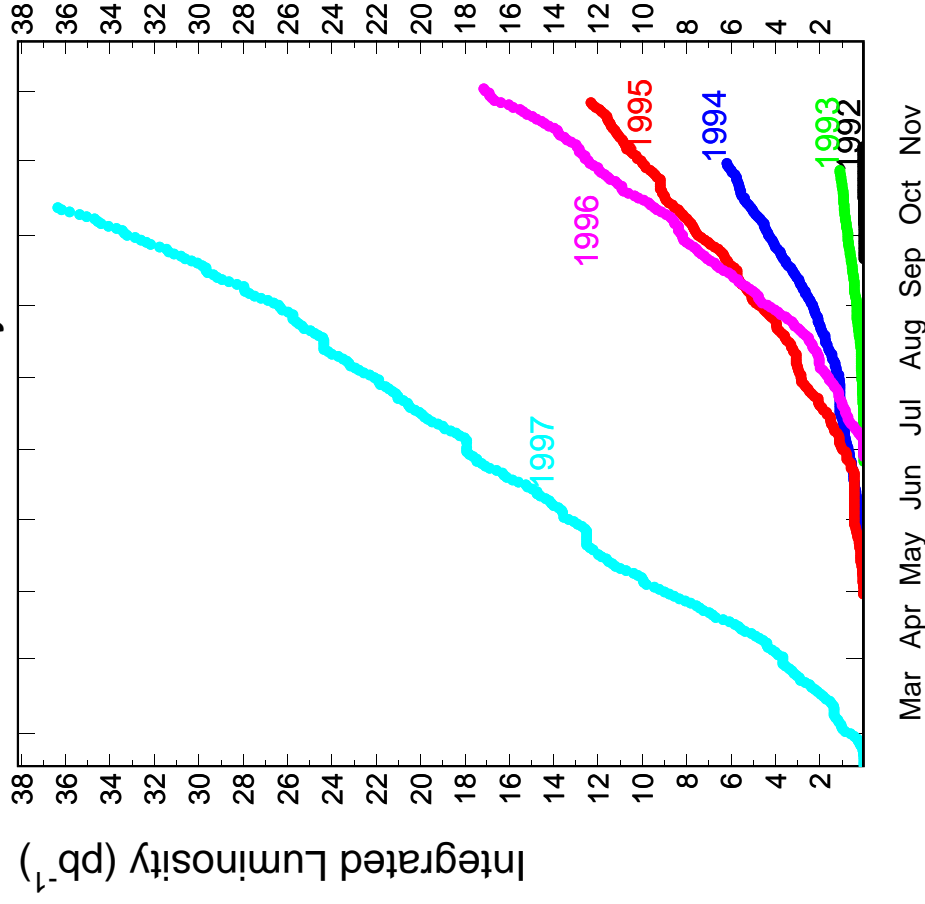
David Bailey
Bristol University

- The world's only electron-proton collider
- Collides 27.5 GeV electrons with 820 GeV protons



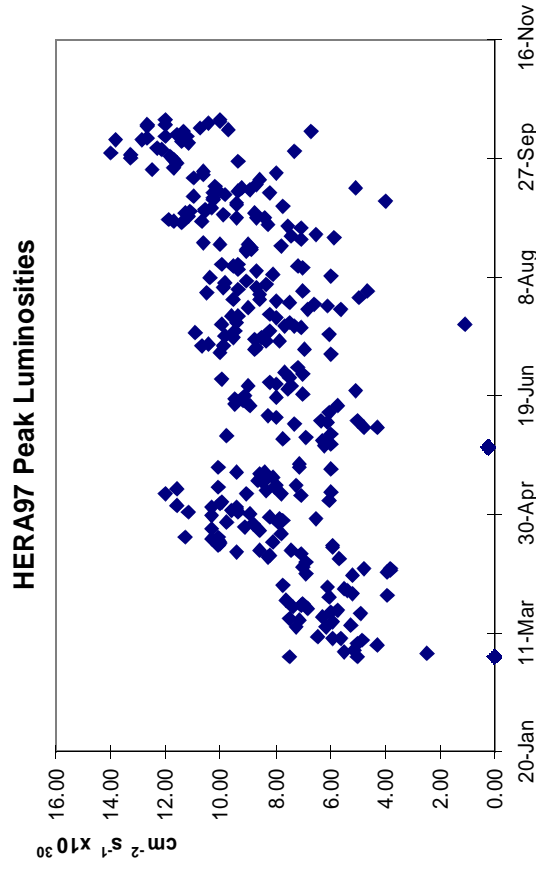
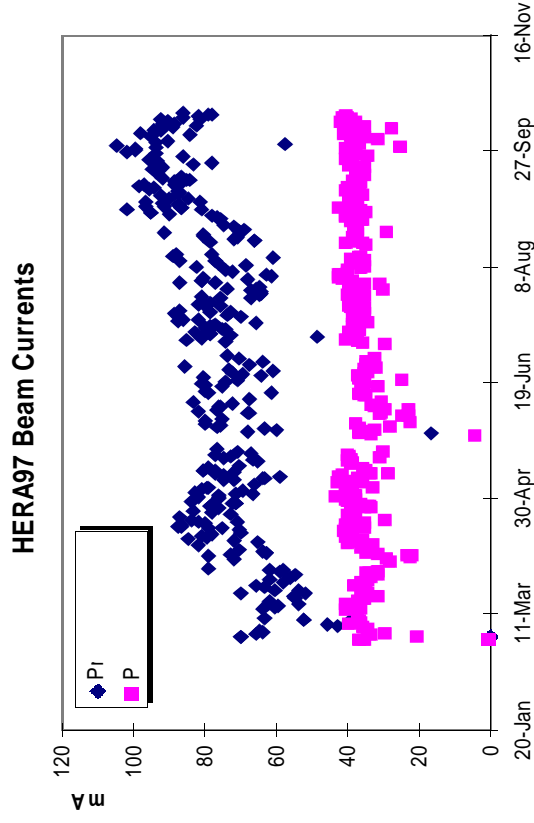
HERA Performance

HERA luminosity 1992-97



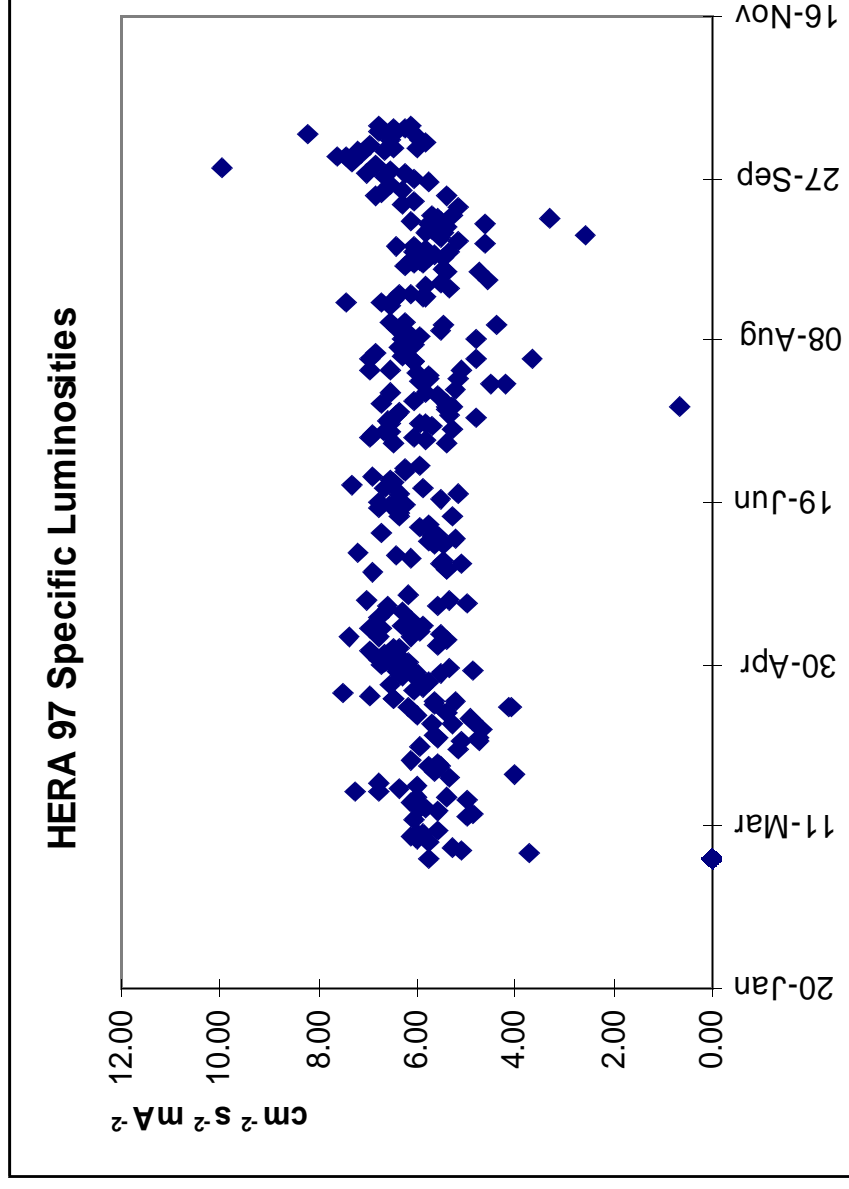
- Constant increase in performance year by year
- 1997 doubled delivered luminosity
 - Successful change to shutdown scheduling

HERA Currents and Luminosity



- Steady increase in I_p through 1997
- Peak luminosity $1.4 \times 10^{31} \text{cm}^{-2} \text{s}^{-1}$

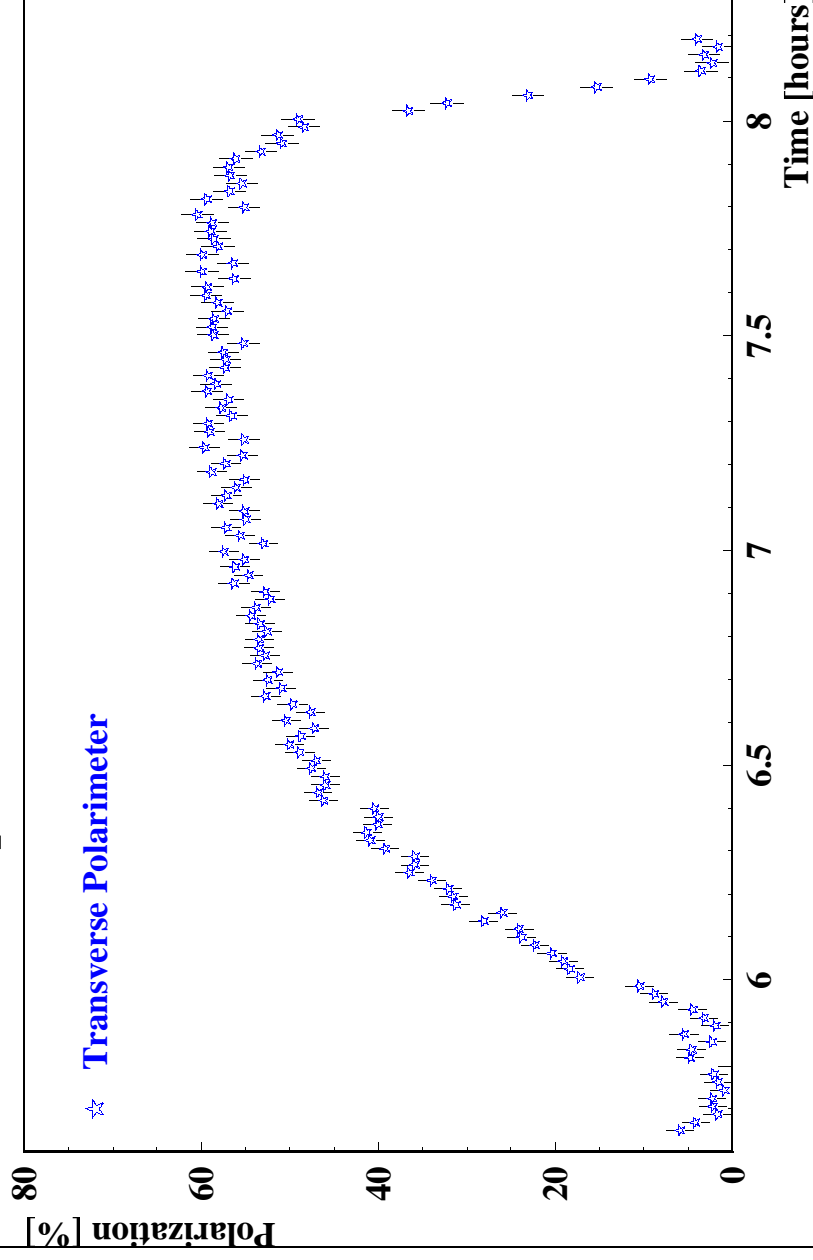
HERA Specific Luminosity



- Higher than design values
- 1997 change to β functions successful

Polarisation

Comparison of rise time curves



- Consistently able to achieve high degree of polarisation
- 60% typical

The Next Years

- New vacuum pumps for electron ring installed this shutdown
 - Running with e^- in 1998 and 1999
 - Comparable delivered luminosity to e^+p over two years
- Test with proton energy increased to 920GeV

Into the next Millennium

● HERA will run until 2005

- Upgrade to deliver 1fb^{-1} by 2005 will be carried out during 1999/2000 long shutdown
 - » Explore High- Q^2 and electroweak physics
 - » Requires major modifications to experimental interaction regions
- Spin Rotators installed for Zeus and H1 experiments in 1999/2000 (Hermes already operational)
 - » Begin program of polarised measurements

To Conclude

- HERA has performed well over the last two years
- We look forward to high luminosity running until 2005
- Still a wealth of physics to investigate