HERA Overview

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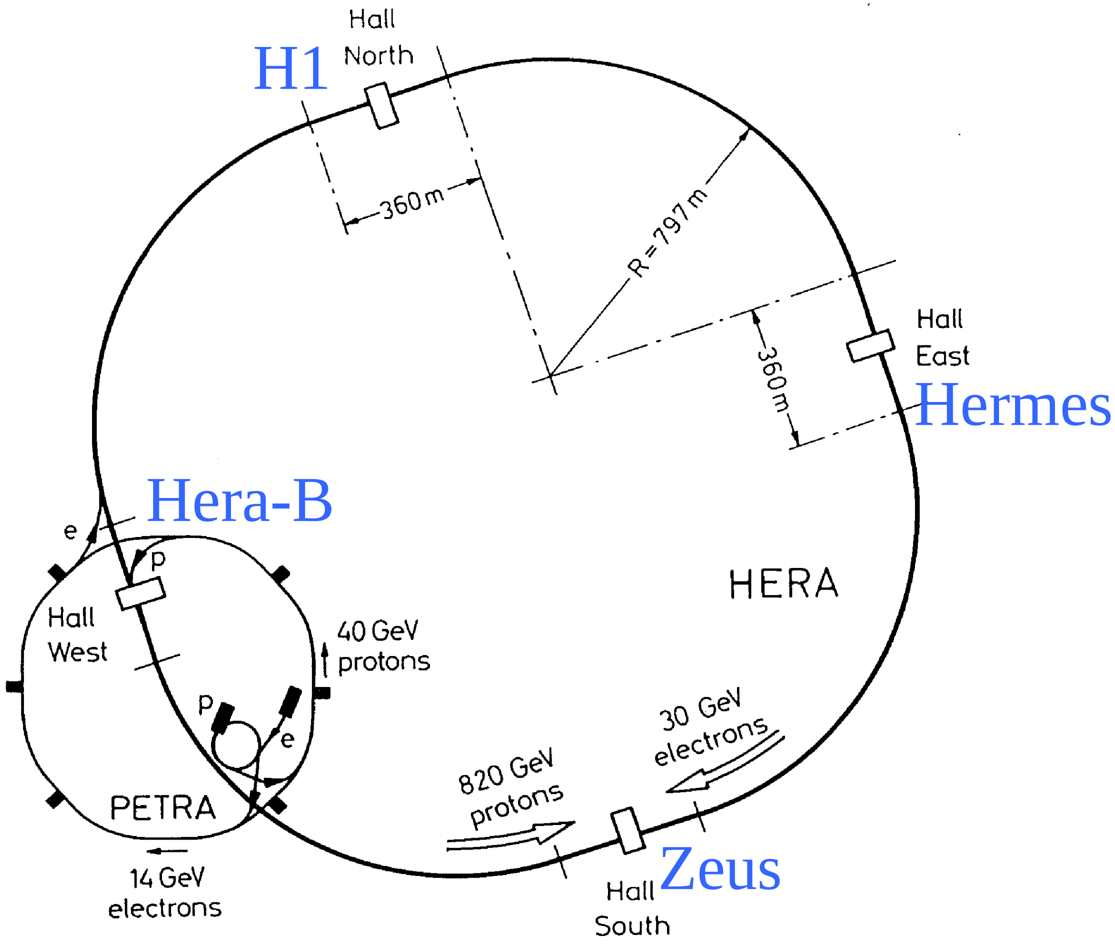
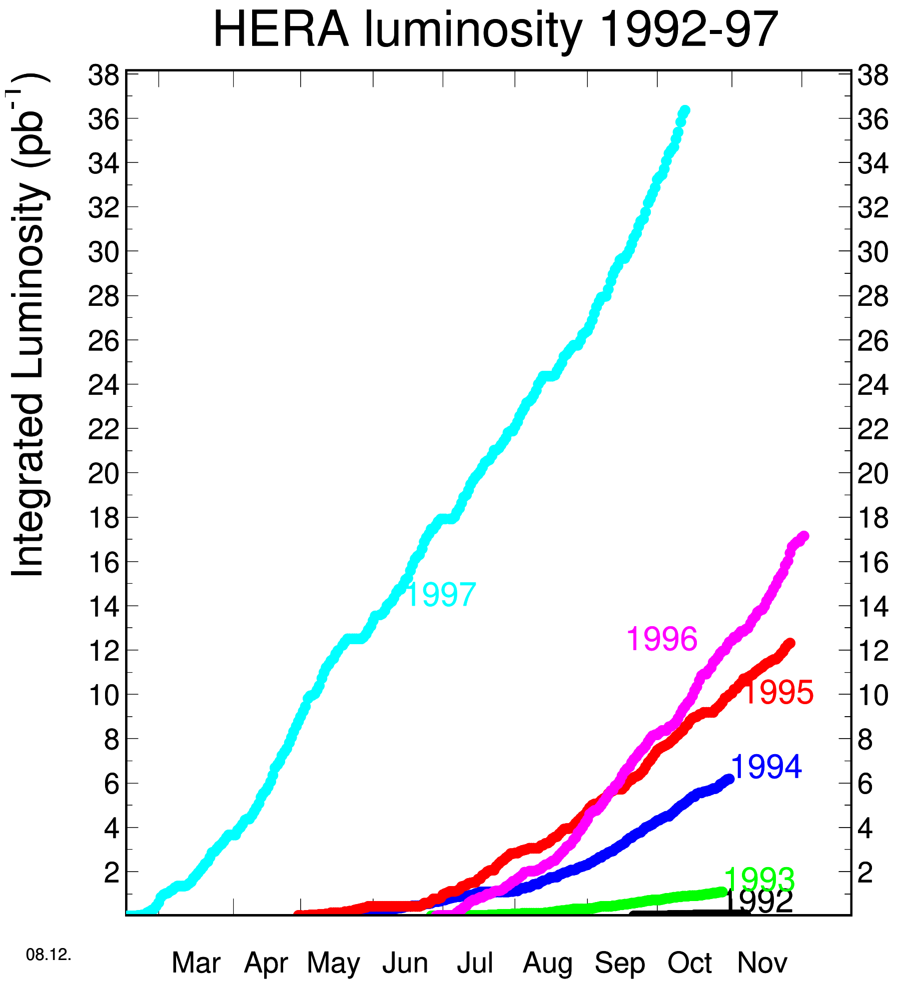
HERA Schematic



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

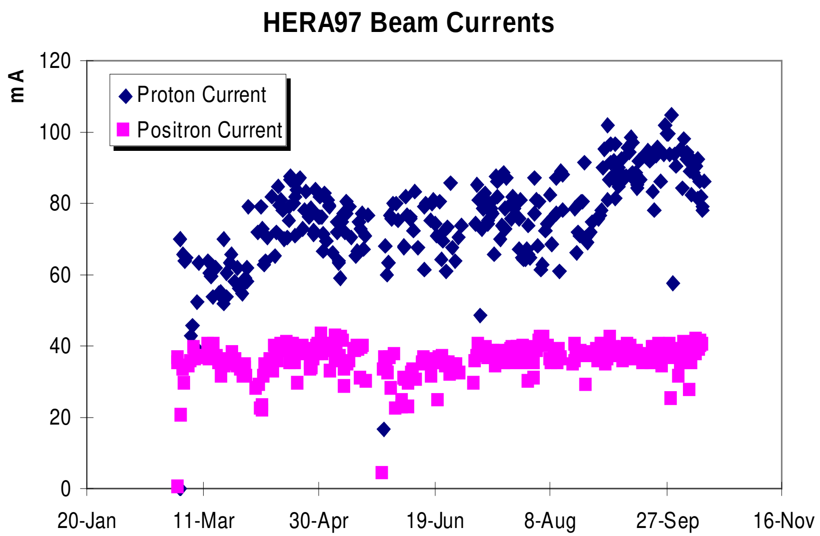
HERA Performance

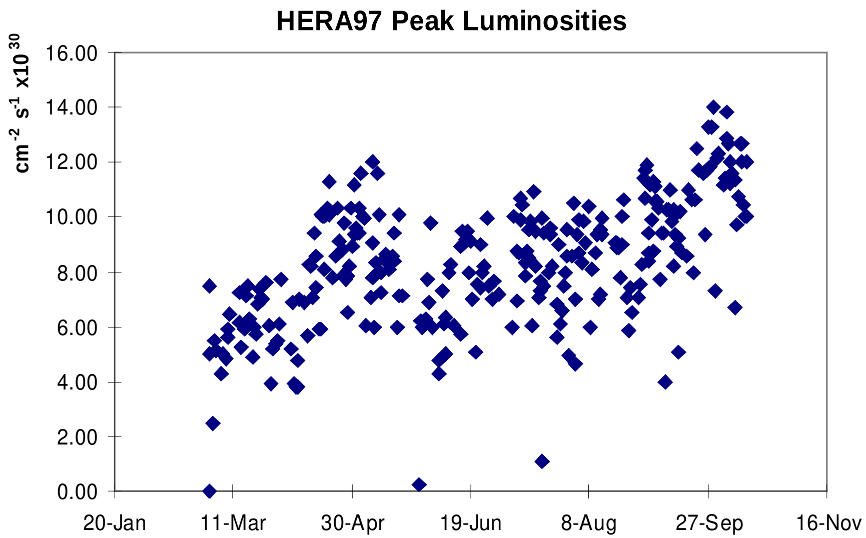


Year	Delivered (pb^{-1})
1993	1.1
1994	5.1
1995	12.3
1996	17.2
1997	36.4

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

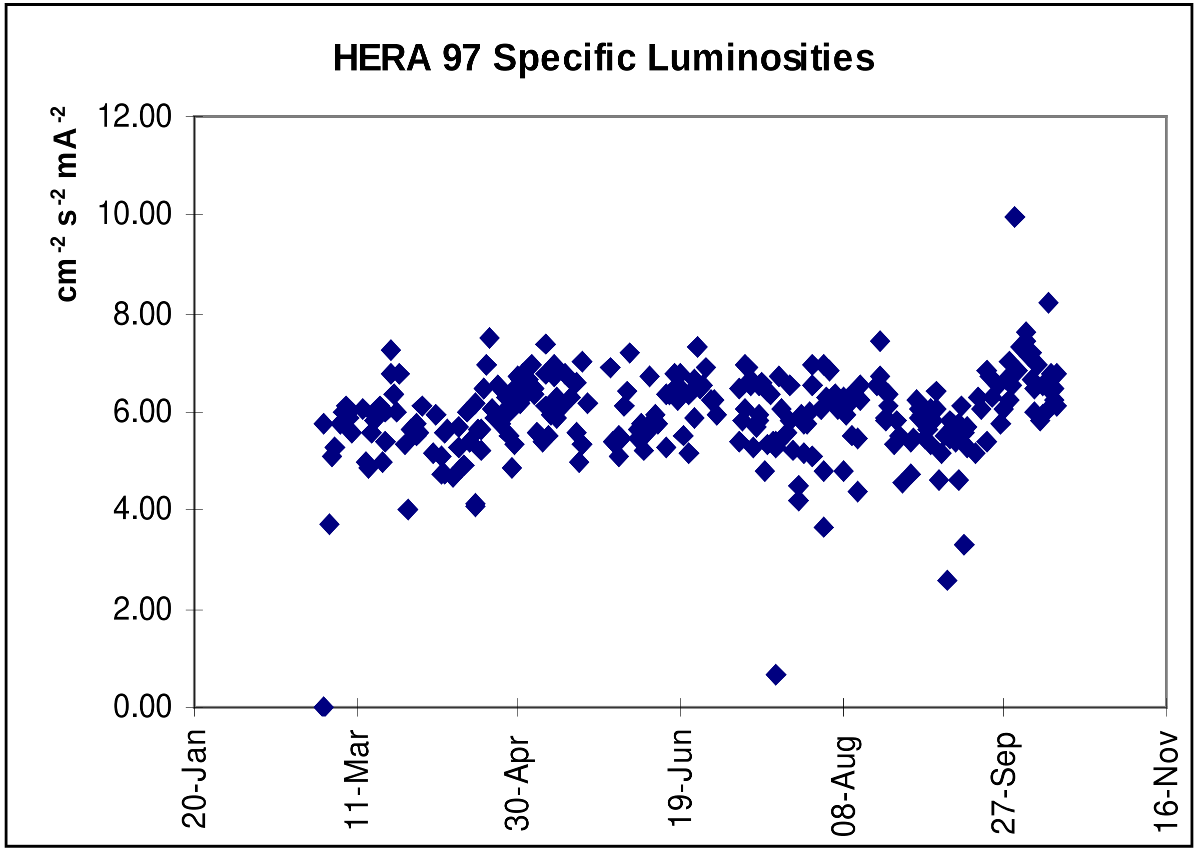
HERA Currents and Luminosity





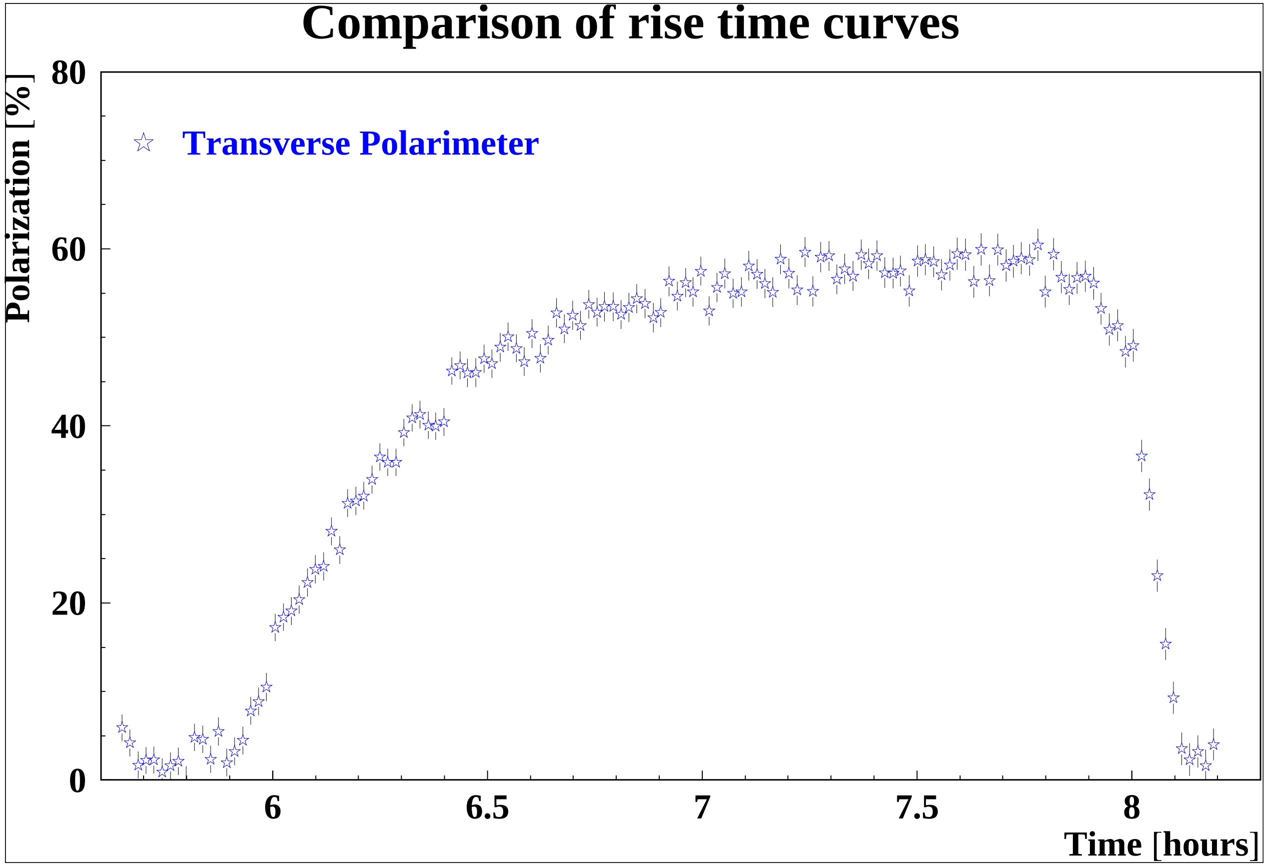
- **Steady increase in I_p through 1997**
- **Peak luminosity $1.4 \times 10^{31} cm^{-2} s^{-1}$**

HERA Specific Luminosity



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

Polarisation



- 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**