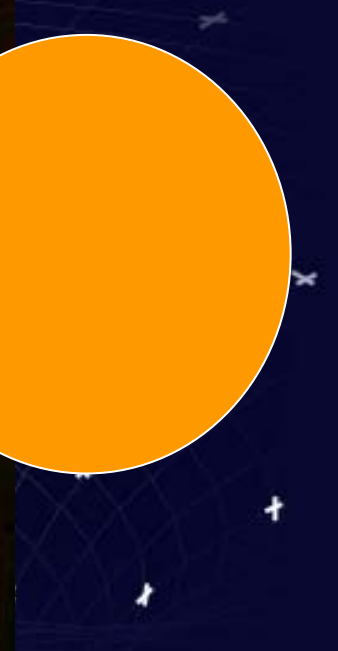
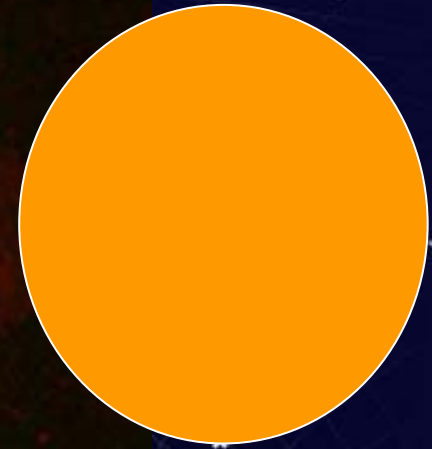


- PPARC Science Challenges.
- Position sensitive detectors and PPARC
- Technology Challenges. Big Questions, Big Projects.
- Developing technology, working with industry.

PPARC



- How did the Universe begin and how (and when) will it end?
- How do stars, planets and galaxies form?
- Are we alone in the Universe or is there life elsewhere?
- What is the Universe made of and what holds it together?
- Where does mass come from?
- How does the Sun work and how does it affect the Earth?
- Why does there seem to be much more matter in the Universe than anti-matter?

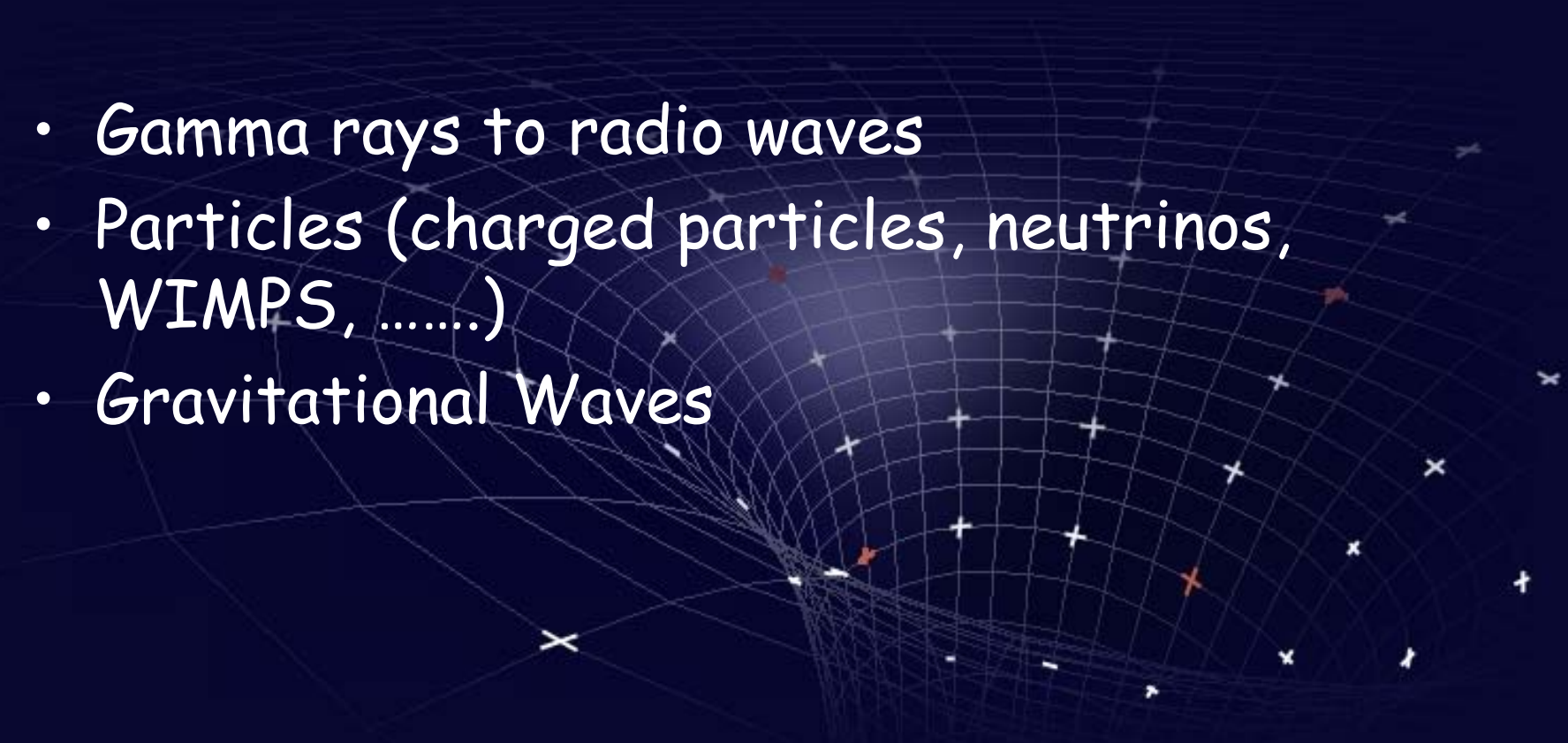
Position Sensitive Detectors and PPARC

- Detector Systems key to PPARC Science
- Virtually every conceivable form of detector employed in PPARC science area
 - CCDs
 - Silicon strip
 - Wire chambers
 - Hybrid photomultipliers
 - TES

PPARC

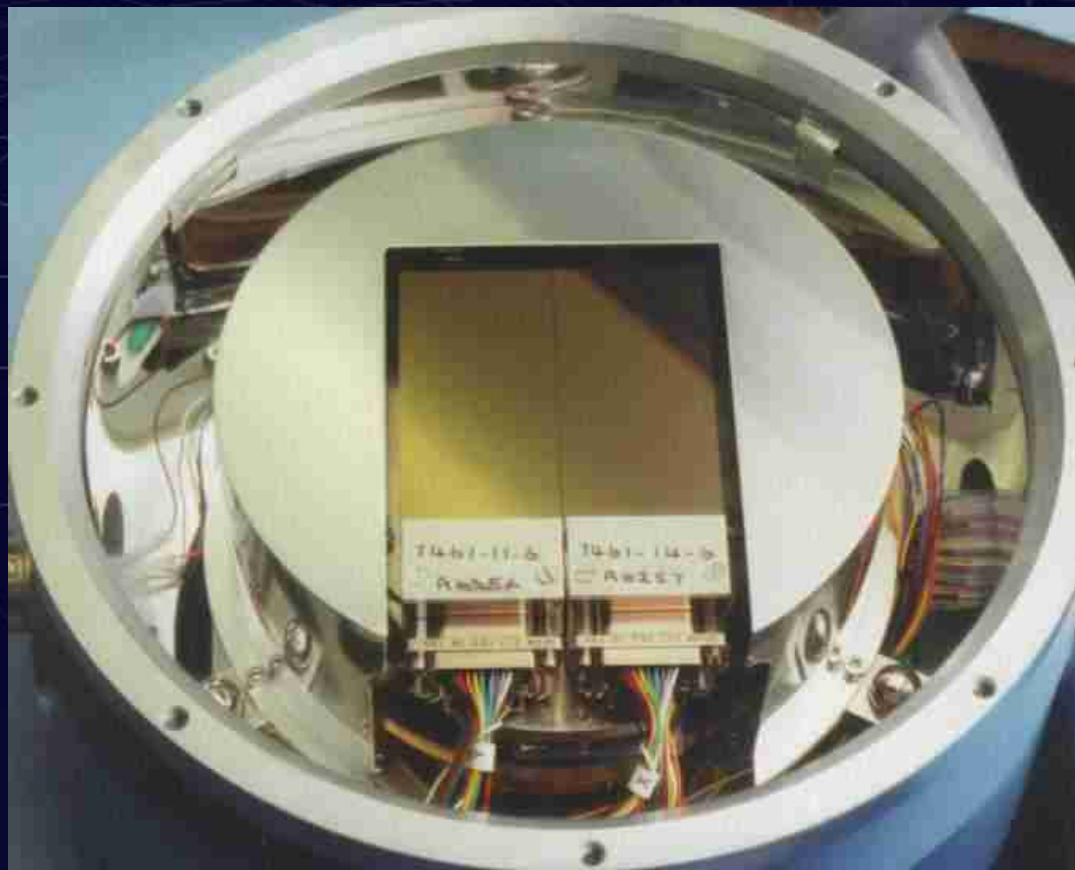
Position Sensitive Detectors and PPARC

- Gamma rays to radio waves
- Particles (charged particles, neutrinos, WIMPS,
- Gravitational Waves



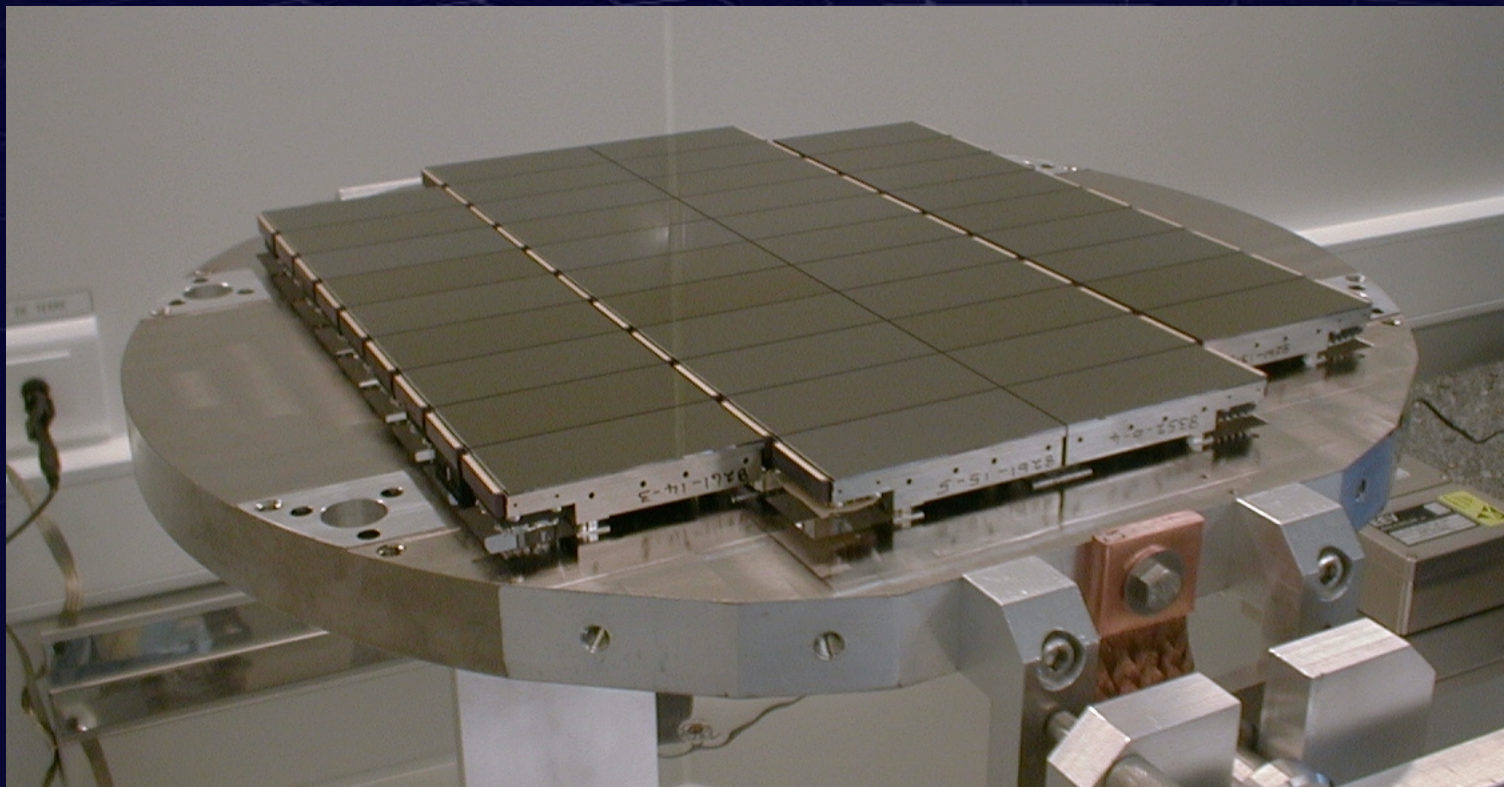
PPARC

WHT Wide Field Camera



PPARC

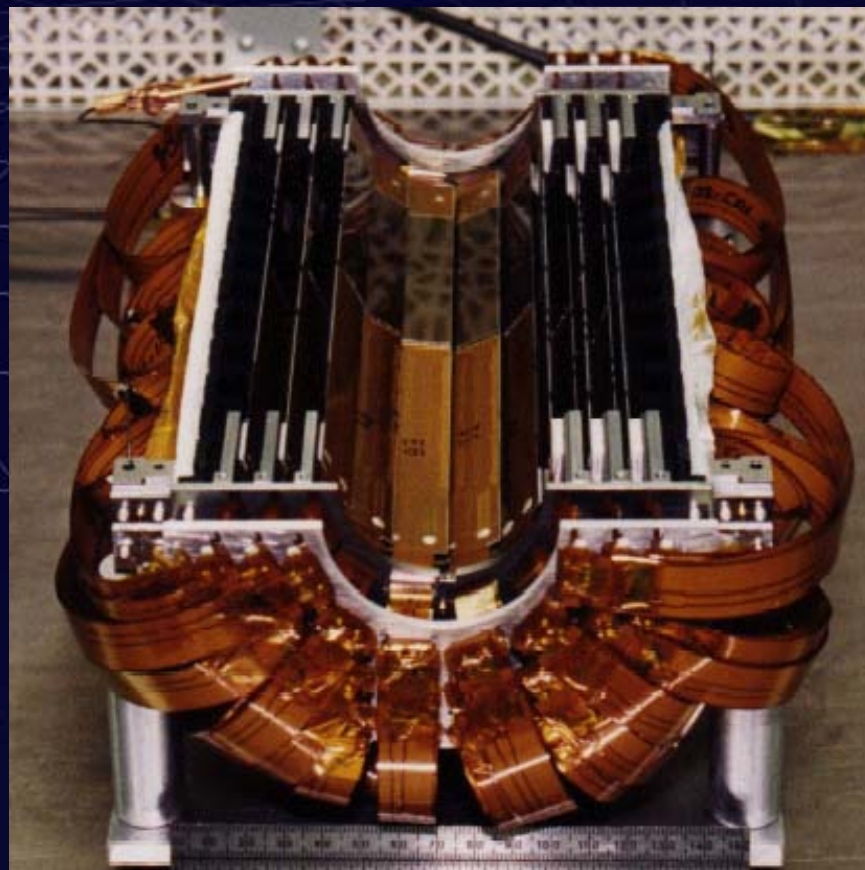
CFHT MegaCam



40 e2v CCDs, 377 Mpixels

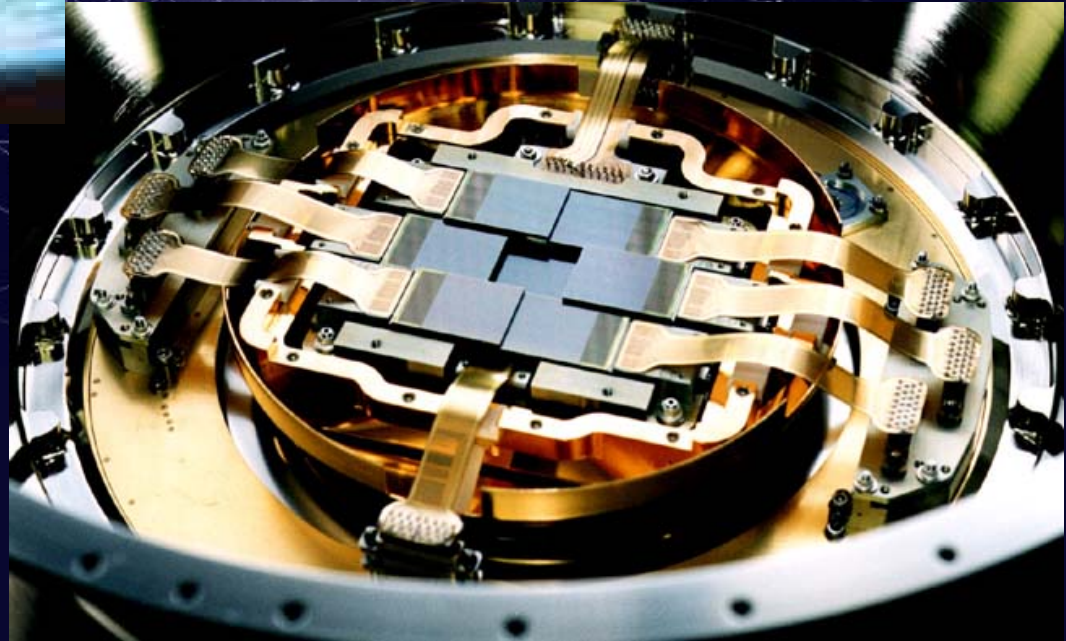
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SLAC vertex detector



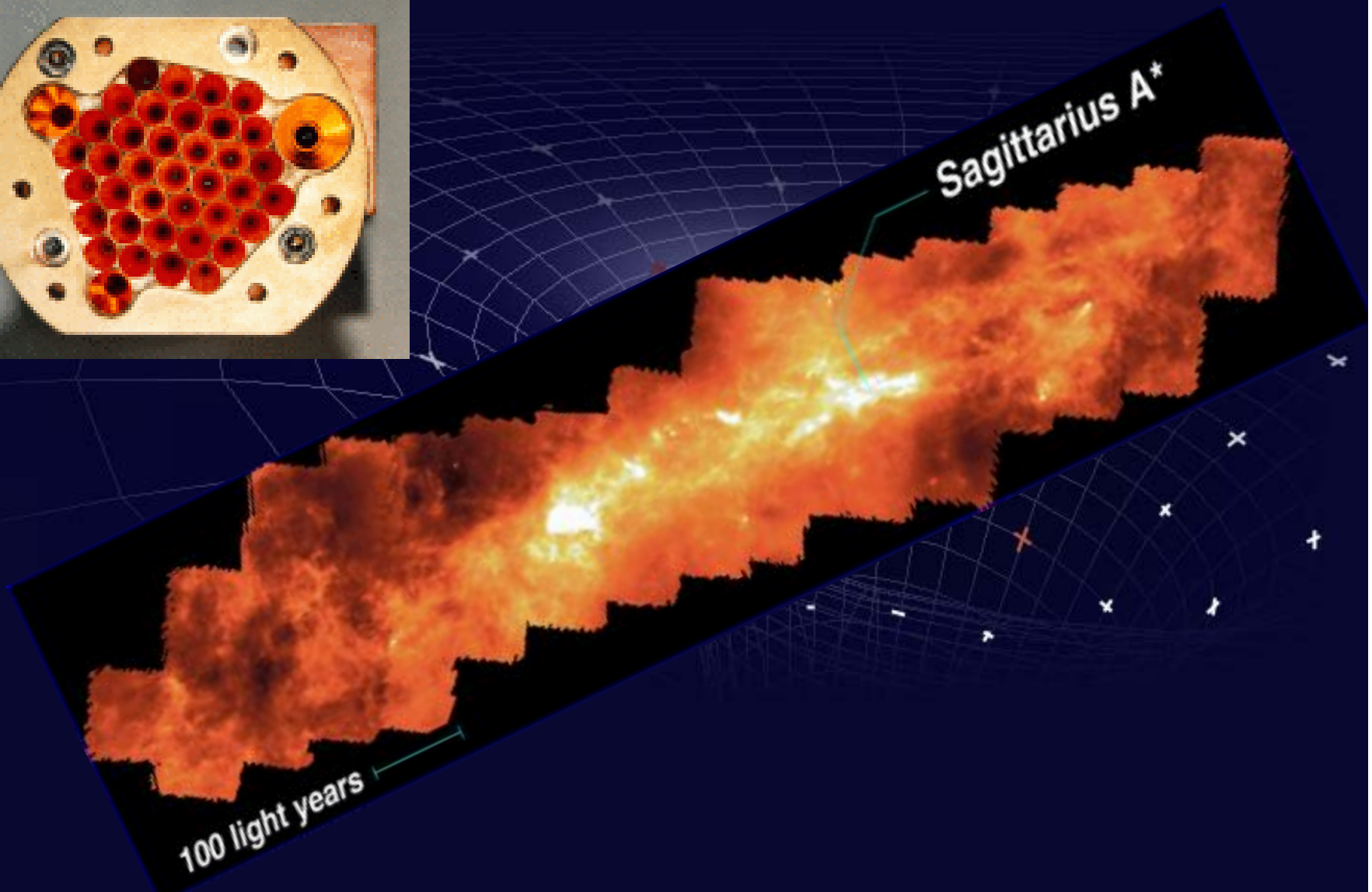
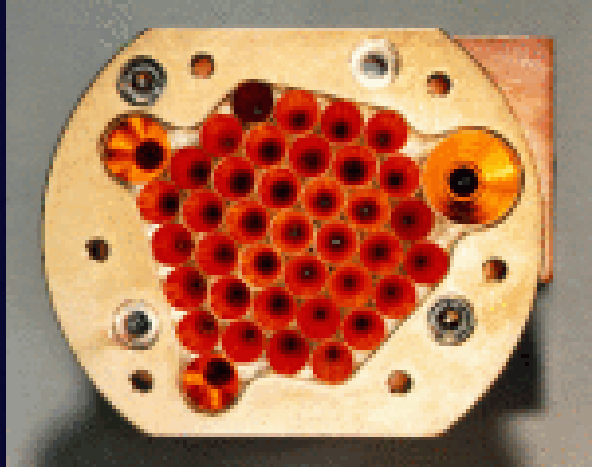
PPARC

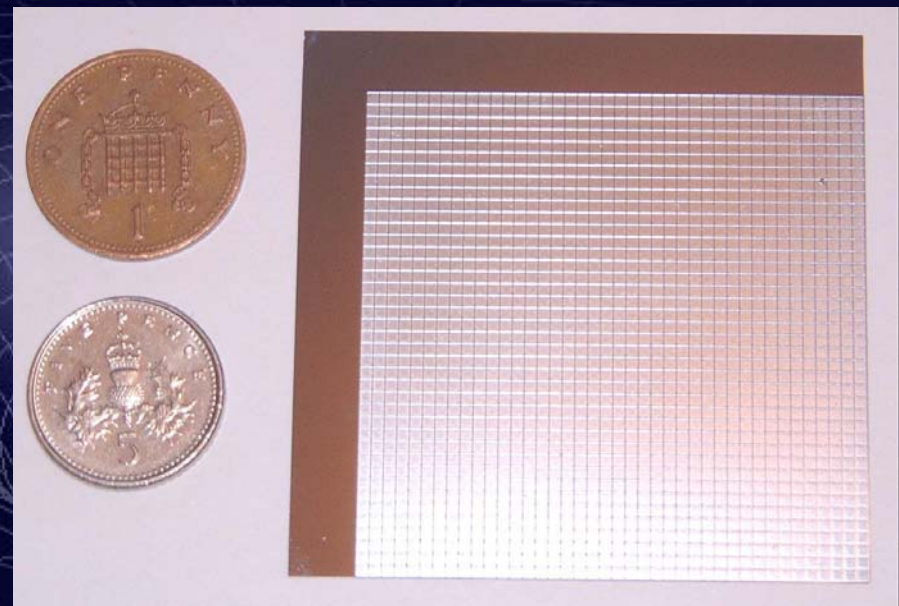
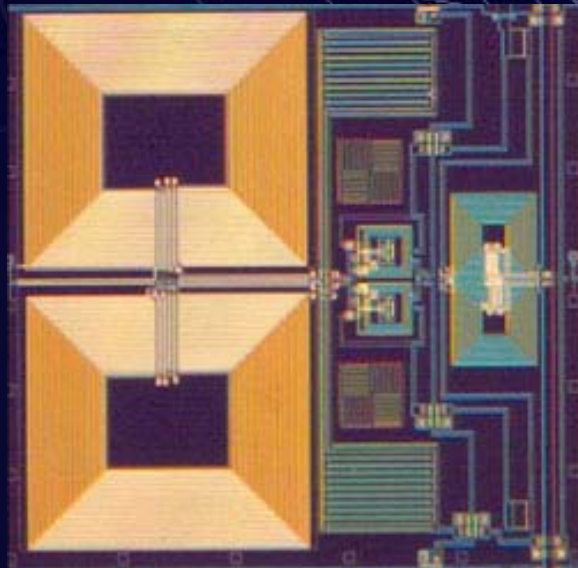
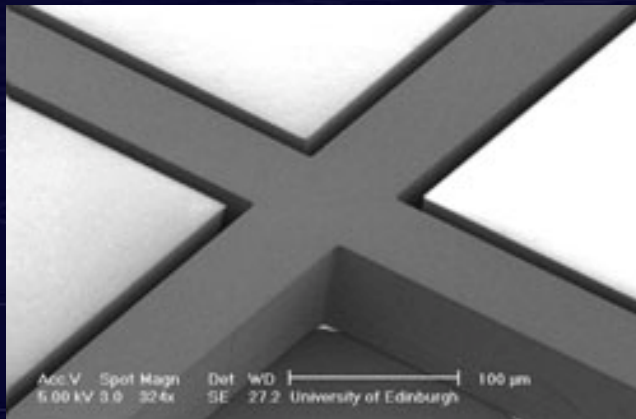
XMM-EPIC Focal Plane Array



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SCUBA





10,000 pixels
100 times faster than SCUBA

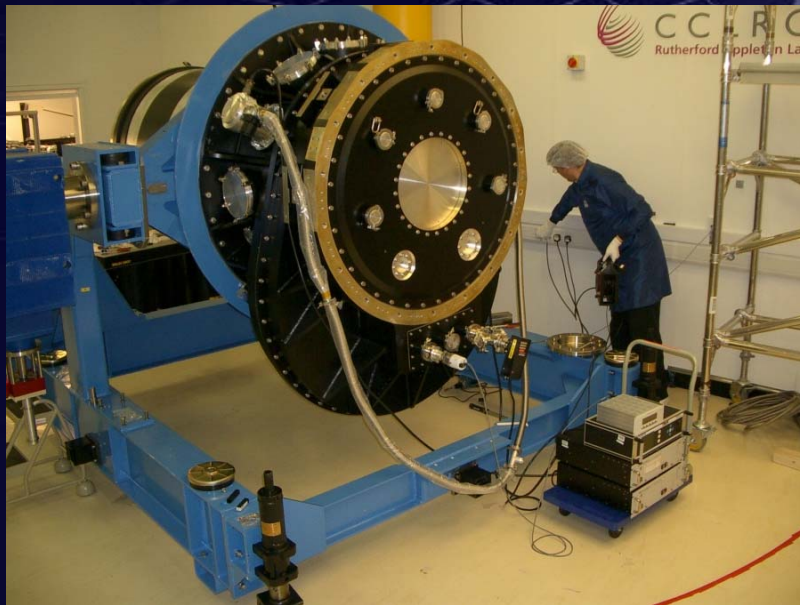
PPARC

VISTA IR Camera



x

+



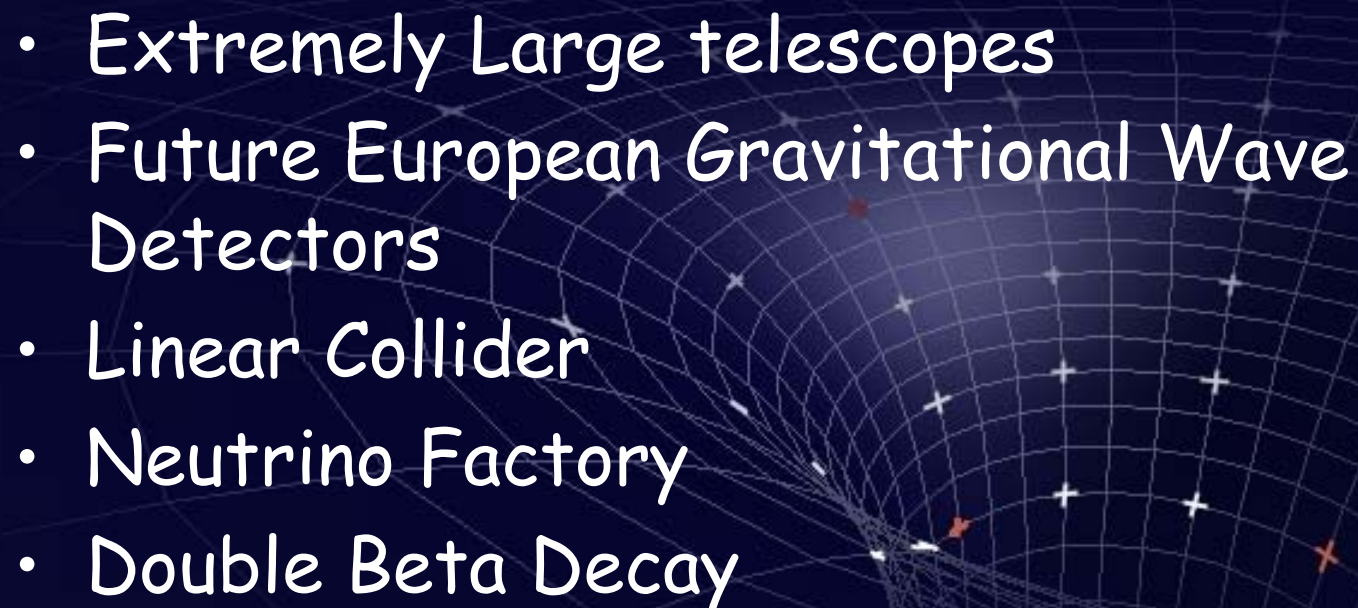
16 Raytheon VIRGO 2048x2048 HgCdTe arrays

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Big Questions, Big Projects



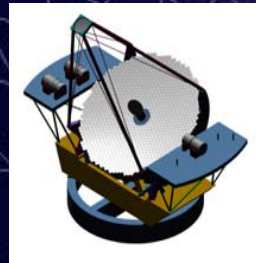
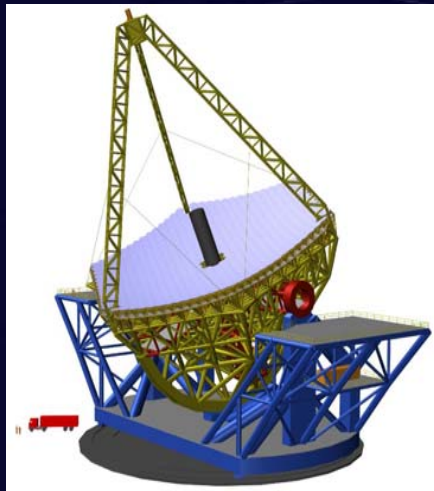
Big Questions Big Projects (large capital projects)

- Extremely Large telescopes
 - Future European Gravitational Wave Detectors
 - Linear Collider
 - Neutrino Factory
 - Double Beta Decay
- 

Big Questions Big Projects

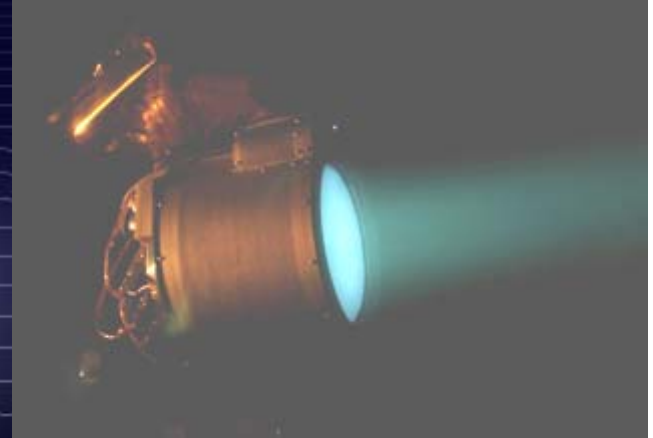
- Aurora (Mars exploration)
- XEUS (Next Generation X-ray observatory)
- DARWIN (search for planets)
- LISA (space based gravitational wave observatory)
- LHC upgrades, super LHC?
- CLIC

Extremely Large Telescopes

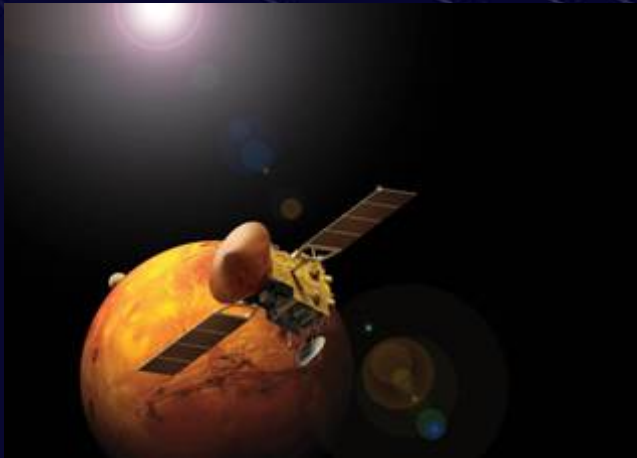


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Big Questions Big Projects

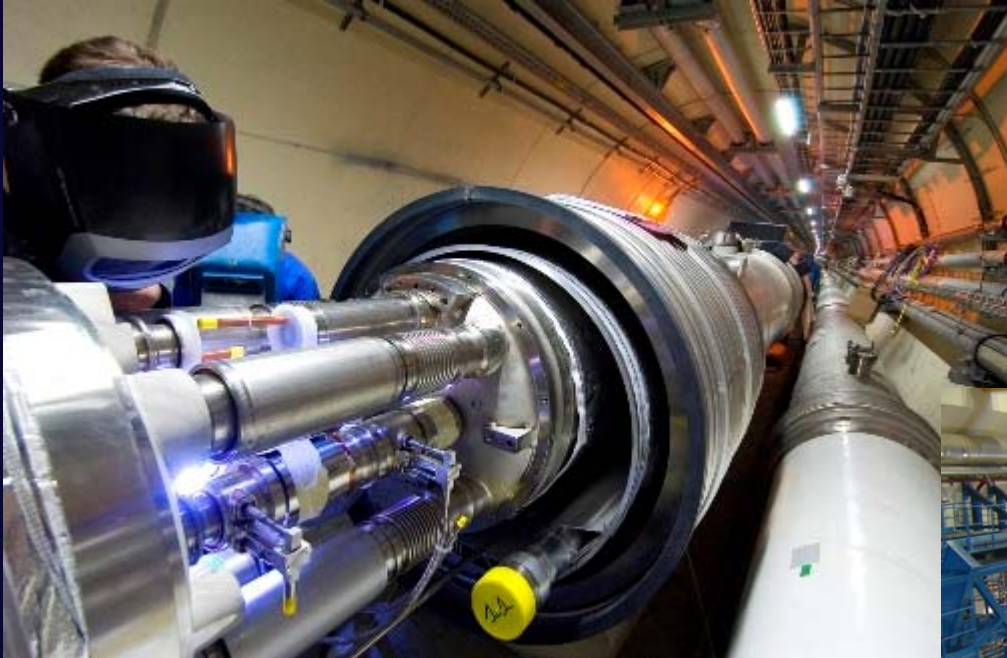


Aurora



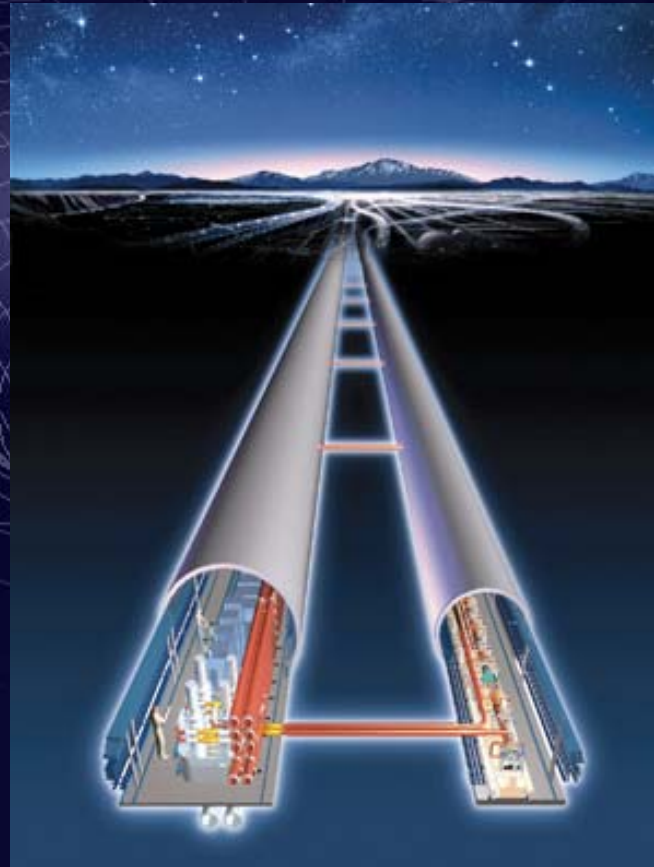
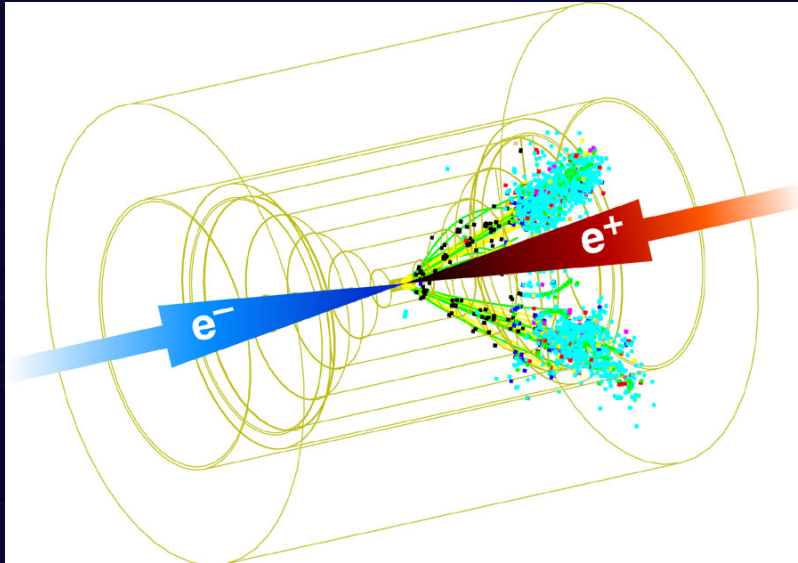
PPARC

Big Questions Big Projects LHC



PPARC

Big Questions Big Projects Linear Collider





Enabling Technology Development and Knowledge Transfer.

- Technology Development
- Working with industry
- Knowledge transfer and exploitation

- Project based technology road-mapping.
- Single fund for Project R&D.
- Project funded studentships.
- Four year studentships available.

Working With Industry

- Opening up funding to industry.
- Trial scheme being run by PPARC
 - initially for AURORA but then for Project R&D.

Knowledge Transfer and Exploitation

- News PIPSS
 - Focus on knowledge transfer
- Extended brokerage scheme





Science and Innovation Investment Framework 2004-2014

- World class research at the UK's strongest centres of excellence.
- Greater responsiveness to the needs of the economy (knowledge transfer)
- Increased business investment in R&D and increased business engagement in drawing on the UK science base for ideas and talent.
- A strong supply of scientists, engineers and technologists.
- Sustainable and financially robust universities.



Science and Innovation Investment Framework 2004-2014

- PPARC is well placed to deliver the governments goals and is in a fantastic position to inspire the next generation of scientist and engineers.

PPARC

"There are no such things as applied sciences, only applications of science".

Louis Pasteur

Science and Innovation Investment Framework 2004-2014