

UK starts planning for Cosmic Vision

May 23 2005

Whilst many of us find it a challenge to plan a few weeks ahead the space industry works on far longer time scales - planning years ahead. UK space scientists and industrialists met on 19th May to look at technology requirements for the European Space Agency's (ESA) Cosmic Vision programme - which sets out themes for planetary exploration for the time period 2015-2025.

The meeting, held at the National Space Centre in Leicester, brought together over 100 people representing 44 organisations (including 12 universities and 23 companies) with a view to identifying areas in which UK scientists and industrialists can start developing technologies required in order to address the themes identified within Cosmic Vision.

Professor David Southwood, ESA Director of Science, presented an overview of the programme (as recently presented to ESA member states at the Science Policy Committee meeting in Helsinki (9th/10th May). Cosmic Visions custodian Professor Giovanni Bignami (Chair of the European Space Science Advisory Committee) then presented the themes of the programme. They are:

- What are the conditions for life and planetary formation?
- How does the Solar System work?
- What are the fundamental laws of the Universe?
- How did the Universe originate and what is it made of?

It is these themes that will form the basis for the development of mission concepts which will address the broad questions about the origins of the

Universe. Possible missions include the exploration of Jupiter and its moon, Europa, and an interstellar probe powered by a solar sail.

Some of the technologies required evolve from current demonstrator missions. For instance, the solar electric propulsion as demonstrated successfully by the ongoing SMART-1 mission to the Moon will be used on the Bepi Colombo mission to Mercury and potentially on a future Solar Orbiter mission. However, new solutions will also be required. Today's event presented the opportunity for participants to identify an A list of technology challenges that will need to be addressed in order to fulfill the missions, and in particular highlight the areas in which UK science and industry already has particular strength and expertise.

The areas identified included ultra light weight optical systems, sensors, detectors, instrumentation for formation flying, autonomous operations and software, miniaturized hardware, propulsion systems, control systems and cryogenics.

Dr David Parker, Director of Space Science, PPARC, said: "UK space scientists and industrialists have a lot to offer Cosmic Vision, as demonstrated by recent successes in building instruments for SMART-1, Rosetta, Cassini-Huygens and XMM-Newton Observatory." He adds, "Whilst it may seem like we are planning a long way in advance the first calls for proposals for a mission due to launch 2015 needs to take place in 2006. By engaging the scientific and industrial community and encouraging collaboration at this early stage the UK will be in a competitive position to contribute as the missions are shaped more fully in the coming months."

ESA were suitably encouraged by achievements of the day. Their Director of Science, Professor David Southwood said, "I am impressed by the efforts PPARC is making to bring its industrial and academic communities together to discuss opportunities for space technology."

Dr Tone Peacock, ESAs Head of Science Payloads Technology Division, also added, "This is one of the most focused events I have been to in this area, UK plc is getting its act together in putting on a more united front."

Source: PPARC

Citation: UK starts planning for Cosmic Vision (2005, May 23) retrieved 11 May 2024 from <https://phys.org/news/2005-05-uk-cosmic-vision.html>

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