THE FUTURE EXPLORATION OF THE OUTER PLANETS:
(Royal Astronomical Society Meeting, December 2012)

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RAS Discussion Meeting

- One-day meeting for the UK planetary science community sponsored by the Royal Astronomical Society.

- **Aims:**
  - ESA-led missions and collaboration for ice giant exploration
  - Review key questions and destinations for the outer solar system.
  - Bring together science and industry hoping to participate in the JUICE mission.

- Series of invited talks lasting ~6 hours, plus discussion, including representation from the US (Mark Hofstadter) and French (Olivier Mousis) outer planets communities.
ESA/NASA Ice Giant Exploration?

- **Hofstadter (JPL)**: Outcome of the US decadal, future prospects for NASA-led missions (Discovery, New Frontiers, Flagship?)
  - “Best of times, worst of times...”
- **Arridge (MSSL)**: Uranus Pathfinder concept, ESA reaction, future intentions.
- **Mousis (Toulouse)**: Ice giant origins, future in situ exploration, entry probes.
- **Ambrosi (Leicester)**: European RTG studies using Americium-241
- **Possibilities for next L class (L2/L3, survey in 2013?) and M-class (M4 in 2014?) calls.**
- **International collaborations.**
Gas Giant System Exploration

- **Stallard** (Leicester): Prospects for auroral science from Juno/JWST.
- **Murray** (QMUL): Overview of comparative ring science.
- **Leese** (Open University): Future exploration of Titan.
- **Morse** (Open University): In situ technology for entry probes and penetrometers.
- **Stuttard** (Astrium): Industrial studies for JUICE.
- **Dougherty** (Imperial): Science of JUICE.
Summary: Sequence of Talks

Potential collaborations on future ESA M and L-class missions for ice giants and in situ exploration, and possibilities related to New Frontiers (possibly Discovery) bids for the ice giants in the US.

10:40 - 11:10 Prospects for a NASA-led Ice Giant Mission - Mark Hofstadter, NASA/JPL
11:10 - 11:30 Uranus Pathfinder - Chris Arridge, MSSL
11:30 - 11:50 Gas Giant Ionospheres and Aurora - Tom Stallard, Leicester
11:50 - 12:20 Origin of Uranus and its Satellite System - Olivier Mousis, Toulouse
12:20 - 12:40 Radioactive Power Sources and Technology Development - Richard Ambrosi, Leicester
12:40 - 13:00 Outer Solar System Technology Development - Matthew Stuttard, Astrium
14:00 - 14:30 Exploration of the Jovian System and JUICE - Michele Dougherty, Imperial
14:30 - 14:50 Future Exploration of Titan - Mark Leese, Open University
14:50 - 15:10 Instrumentation for in-situ measurements of the gas giants and their satellites - Andrew Morse, Open University
15:10 - 15:30 Exploration of Planetary Rings - Carl Murray, QMUL