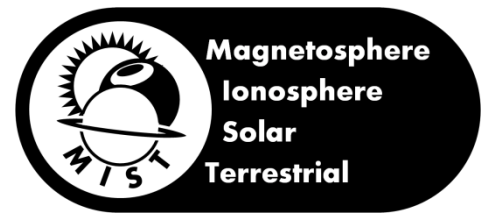


MIST response to the STFC prioritisation



STFC published its 5-year science programme prioritisation just before Christmas 2009. This prioritisation represents the second set of cuts in two years that STFC has introduced without a clearly defined science strategy in place. The current prioritisation calls for major cuts in existing science programmes including **“managed withdrawal”** from five space science missions in which the UK has key leadership roles (**Cassini, Cluster, SOHO, Venus Express** and **XMM**). STFC has also announced that it will cease to fund research based on data from these **“lower priority”** missions, all of which have publicly accessible archives that will support much new world-class science over the next five years.

The MIST community appreciates the financial constraints on STFC that have driven this approach, but is deeply concerned about the strategic consequences of these cuts. The programme of managed withdrawals seeks to cut all UK instrument support for space missions actively making in-situ plasma measurements. It undermines an internationally recognised area of UK leadership and influence, and one with great future potential for discoveries about, and deeper understanding of, universal processes that shape the plasmas which fill most of the solar system and the wider universe.

The in-situ study of space plasmas is a recognised part of space science around the world and, in particular, forms a significant element of the ESA Science Programme. In-situ plasma measurements form a part of the payloads of **Rosetta** and **Bepi-Colombo**, and similar measurements are planned on many of the **Cosmic Vision** candidates (e.g. **Solar Orbiter, CrossScale** and **Europa-Jupiter System Mission**). These European missions are complemented by similar plans in the other major space-faring nations, not least the US, where we know UK science participation is welcome. Thus we expect there to be a wealth of new space plasma data available from the middle of the coming decade and would expect an overall STFC strategy to reflect this by providing a level of support for projects and exploitation that ensure UK capability to respond to these opportunities.

We also note that in-situ studies of space plasmas are an essential complement to remote sensing techniques, e.g. as used to observe the Sun, solar ejecta and planetary aurorae. This complementarity is an increasing important element in international scientific efforts to study cosmic plasmas – the emerging science of heliophysics. We would expect an overall STFC programme to recognise this.

However, the current prioritisation reflects none of this. Taken at face value, the proposed cuts will create a funding gap during which relevant UK capabilities will wither. This exemplifies the weakness of the current prioritisation process and, indeed, of previous exercises by STFC and its predecessor, PPARC. The process focuses on details of specific facilities and prioritises those facilities which STFC has previously indicated a preference towards without regard for strategic balance. It marginalises areas whose facilities are not high in the current list of favourites – to the detriment of long-term science strategy. We note that the results of this prioritisation exercise bear little resemblance to the results of a 6 month community consultation exercise designed to feed into the prioritisation.

We therefore call on STFC to work with the community to ensure that its strategy maintains UK strengths in the study of solar system plasmas and encourages the application of these strengths to the study of cosmic plasmas.

We also call on STFC to acknowledge that it continues to fund the ESA archives for Cluster, SOHO and Venus Express (as part of its ESA subscription) and thus that UK scientists can seek STFC funding to exploit data from these archives.