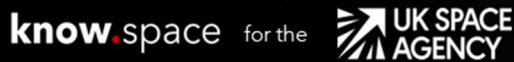


Comet Interceptor Monitoring & Evaluation Support

Interim Process & Impact Evaluation Key Findings



Comet Interceptor is ESA's first F-Class (fast, flexible, and low-cost) mission, set for launch in 2029 in collaboration with JAXA. It aims to be the first mission to intercept a pristine comet, providing valuable insights into the early solar system. The UK has played a leading role in designing the mission, with £16m of national funding from the UK Space Agency planned, complementing mandatory ESA contributions. This national funding aims to achieve:

- 1. Increased scientific knowledge and UK research competitiveness**, including positioning the UK as the partner of choice for future space science missions.
- 2. More international collaborations and partnerships**, bolstering the UK's international reputation and enhancing the reach of the UK space sector.
- 3. Inspired and upskilled space talent pipeline** to expand the UK's academic base and address the technical skill gaps outlined in the R&D People and Culture Strategy.

UK scientific influence is secured through the key Interdisciplinary Scientist (IDS) role for Prof. Snodgrass at the University of Edinburgh, as well as leadership over two critical instruments: MIRMIS (University of Oxford) and the Fluxgate Magnetometer (Imperial College London). As launch is still years away, most scientific benefits will emerge in the longer term as researchers analyse cometary gas, dust, and plasma data from the target comet fly-by. Early scientific trends are precursors to larger future impacts, though preparatory science is underway, with publications on Comet Interceptor's objectives and instruments emerging since 2019.



164 Comet Interceptor-related papers have been produced to date, with UK-authors featured in **39%**.

UK-authored Comet Interceptor related papers have received **271 citations**.

18 UK organisations have produced a Comet Interceptor-related publication, led by Edinburgh and UCL.

In the longer term, Comet Interceptor is expected to boost activity in cometary science, though its publications currently account for only ~4% of the field. As the only cometary mission in development globally, it will fill the gap left by Rosetta's end in 2016. UK researchers, co-authoring 12-16% of cometary publications but featuring in 25% of the top-cited papers since 2021, are already showing disproportionate impact - a trend likely to continue as Comet Interceptor research accelerates.

UK Space Agency investment has driven strong international collaboration within a consortium of 90 organisations from 9 countries, leading to early UK reputation and influence gains - although these are initial trends in a long-term picture. Stakeholders noted retention of fixed-term staff and limited resourcing as potential risks to future impacts.



94% of UK authored papers are **internationally collaborative**, which has risen in absolute and relative terms.

UK authors have collaborated with **26 countries** following UK Space Agency investment.

The UK has produced the **2nd most Comet Interceptor publications** worldwide, just behind Italy.

Early signs of upskilling are emerging within the UK project team, including technical and project management skills development for early-career workers. The project team have also conducted outreach and engagement for wider audiences, which could boost future STEM skills development and raise interest in the mission.



~10 UK team members are developing project management, modelling, and engineering skills through the mission.

Project team members have delivered **45 conferences and engagement events**, spanning **13** countries.

Around **two-thirds** of events are for a professional audience, with others directed at **families and schools**.

As expected, there have been relatively limited commercial benefits associated with the mission so far. The mission relies on instrumentation with high existing technology readiness levels, limiting the scope for radical innovation. Nevertheless, there have been promising opportunities underpinned by instrument development, as procurement opportunities for 11 UK organisations could help them expand and support/create employment.



The University of Oxford has **sold £150k worth of filters** derived from the MIRMIS instrument to a **US company**.

This could enable further **revenue and export** benefits in the future, or potential NASA mars-based mission roles.

Further **spin-out opportunities are identified** (e.g. in Earth Observation), but these are resource dependent.

This evaluation of the UK's national investment into the Comet Interceptor mission highlights early progress across scientific, technical, and reputational objectives. While it remains too early to assess full routes to impact from the mission, the national funding - and the scientific and technical leadership roles it has secured - is beginning to lead to greater UK returns from the broader mission.