**BepiColombo: Planet Mercury (16.10.18)**

**Web Copy**

Final preparations are being made at the European spaceport in French Guiana for the launch of ESA’s BepiColombo mission to Mercury.

Due for launch on an Ariane 5 rocket on 20 October 2018 (01:45 GMT = 22:45 GFT 19 October), the spacecraft will take seven years to reach the closest planet to the Sun.

A joint programme with the Japanese space agency, JAXA, BepiColombo is one of the most complex scientific missions ever launched.

It carries two orbiters, designed to unravel many of Mercury’s mysteries. These include an unusual magnetic field and ancient ice hidden in craters.

**A-roll**

**[10:00:00]**

**ESA sting**

**[10:00:10]**

**[Mercury Messenger images and video ex NASA]**

With a thin crust of rock surrounding a dense iron core, there’s more to Mercury than there first appears.

Temperatures on the heavily cratered surface range from around 450 degrees Celsius, down to minus 180…and there are signs of past volcanic activity.

**[10:00:31]**

**[Mariner and Messenger images and video ex NASA]**

Mercury’s been visited twice – first, in 1974, by NASA’s Mariner 10 probe…and, some forty years later, by Messenger…which spent four years in orbit. Messenger mapped the surface and even discovered strong evidence for water ice in shaded craters.

**[10:00:48]**

**[BepiColombo in clean room from Kourou B-roll]**

But the mission also raised new questions about this mysterious planet…questions the BepiColombo orbiters will be trying to answer…

**[10:00:57]**

**[Emma Bunce, University of Leicester, Principal Investigator MIXS]**

**[With cutaways – removing text in brackets – of orbits animation]**

*The big step forward for BepiColombo is the fact that we have two spacecraft. The European spacecraft which is [looking directly] designed to look at the surface of the planet and to study the planet in detail [and the orbit is designed such that you maximise the objectives that you can do relating the surface]. And the second spacecraft is designed to look at the environment, so having two spacecraft will enable us to have a great deal of new science compared to the previous mission.*

**[10:01:22]**

**[MPO in clean room from Kourou B-roll]**

Protected by multi-layered insulation, hand-stitched thermal blankets and a radiator to dissipate heat, ESA’s Mercury Planetary Orbiter carries 11 science instruments.

**[10:01:31]**

**[MPO in orbit animation]**

It will focus on studying the surface and internal composition of the planet.

**[10:01:39]**

**[Gabriele Cremonese, INAF-Osservatorio Astronomico di Padova, Principal Investigator SIMBIO-SYS]**

*We will provide 3D images of the entire surface of Mercury and then there will be global mapping with the spectrograph for the composition. It means that we will provide the composition, within the spectral range covered by our instruments, of the entire surface of Mercury.*

**[10:02:03]**

**[JAXA MMO in orbit animation]**

A primary objective of the Japanese Mercury Magnetospheric Orbiter’s five instruments will be to study the planet’s magnetic field.

**[10:02:20]**

**[JAXA Magnetic field animation]**

The combined data from the orbiters will enable scientists to build up a picture of the magnetic bubble – or magnetosphere – surrounding the planet and the influence of charged particles from the Sun, known as the solar wind.

**[10:02:26]**

**[Daniel Heyner, Technische Universität Braunschweig, Co-Investigator MPO-MAG]**

*With BepiColombo, with the two satellite approach, we have one satellite – the MMO – sitting in the solar wind and the other one is in the magnetosphere, so we can see what is coming towards the magnetosphere and what is driving changes within the magnetosphere.*

**[10:02:40]**

**[ESA animation of transfer to Mercury]**

But the international science team will need to be patient. It will take seven years for BepiColombo to reach the planet and for Mercury’s mysteries to be revealed.

[Ends]

**B-Roll 1 [10:00:00]**

**B-Roll 2 [10:02:57]**

Still and animated images of Mercury from Messenger probes (Ex NASA)

**B-Roll 3 [10:04:42]**

MMO in orbit animation (copyright JAXA)

**B-Roll 4 [10:05:43]**

Emma Bunce, University of Leicester, Principal Investigator MIXS

Soundbites x3 (English)

**B-Roll 5 [10:08:29]**

Gabriele Cremonese, INAF-Osservatorio Astronomico di Padova, Principal Investigator SIMBIO-SYS

Soundbite x1 (different quote to the A-roll) (English)

**B-Roll 6 [10:10:56]**

Daniel Heyner, Technische Universität Braunschweig, Co-Investigator MPO-MAG Soundbite x1 (full version of A-roll quote) (English)

**B-Roll 7 [10:11:22]**

Juhani Huovelin, University of Helsinki, Principal Investigator SIXS

Soundbite x1 (English)

**B-Roll 8 [10:12:01]**

Manuel Grande, Aberystwyth University, Co-Principal Investigator SIXS, Co-investigator MIXS

Soundbite x1 (English)