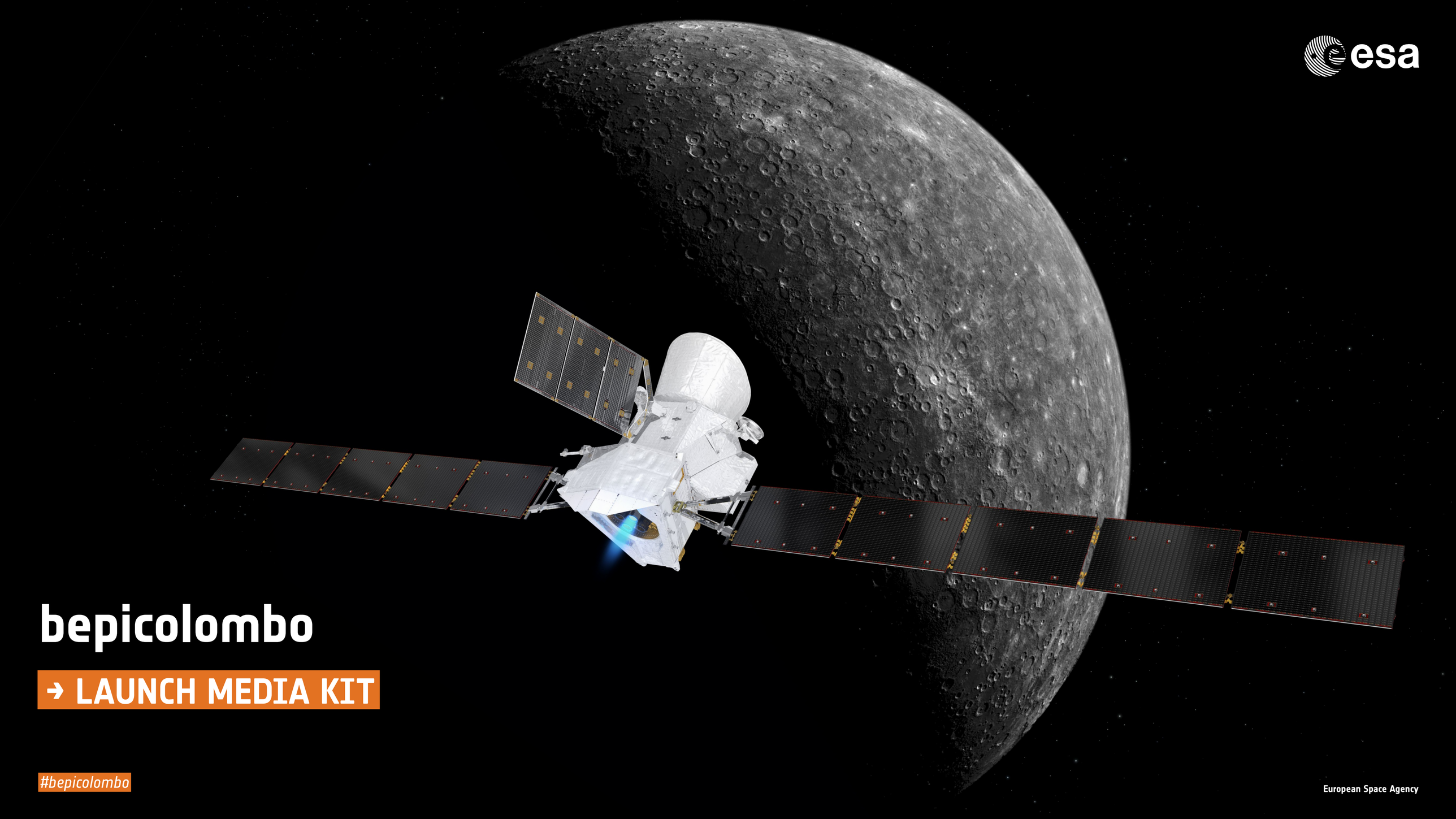


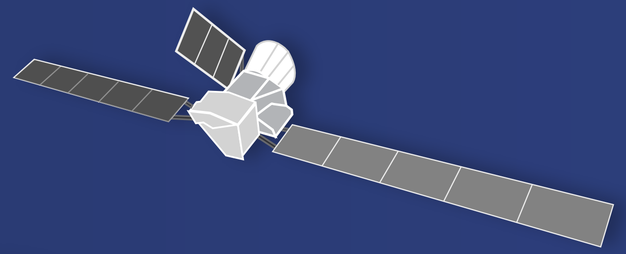
bepicolombo

→ LAUNCH MEDIA KIT

#bepicolombo

European Space Agency

→ CONTENTS



→ INTRODUCTION

BepiColombo – a joint ESA-JAXA mission to Mercury – is scheduled to launch aboard an Ariane 5 from Europe's Spaceport in Kourou, French Guiana at 01:45 GMT on 20 October 2018.

BepiColombo is the first European mission to Mercury, the smallest and least explored planet in the inner Solar System. It is the first Mercury mission to send two spacecraft to make complementary measurements of the planet's dynamic environment at the same time.

It will build on the discoveries and questions raised by NASA's Messenger mission, which orbited the planet between 2011 and 2015, to provide the best understanding to date of the Solar System's innermost planet. BepiColombo will deliver information about solar system evolution in general – not just about our own, but regarding how planets orbiting close to their stars in exoplanet systems form and evolve, too.

The mission comprises two science orbiters: ESA's Mercury Planetary Orbiter (MPO) and JAXA's Mercury Magnetospheric Orbiter (MMO). The ESA-built Mercury Transfer Module (MTM) will carry the orbiters to Mercury using a combination of solar electric propulsion and gravity assist flybys. Over seven years, the mission will make one flyby of Earth, two at Venus, and six at Mercury. The orbiters will be able to operate some of their instruments during the cruise phase, affording unique opportunities to collect scientifically valuable data at Venus, for example.

A big challenge for the mission is the Sun's enormous gravity, which makes it difficult to place a spacecraft into a stable orbit around Mercury – even more energy is needed than sending a mission to Pluto. After launch, and having escaped the 'gravity well' of Earth, BepiColombo has to constantly brake against the gravitational pull of the Sun. Ion thrusters on the MTM will provide the needed low thrust over long durations of the cruise phase. The ion thruster technology was demonstrated previously in ESA's GOCE mission to study Earth's gravity and in the SMART-1 mission to the Moon.

The high solar intensity experienced during the journey and operations at Mercury also demanded new technologies and materials to be developed, such as high-temperature coatings and multi-layered insulation, a radiator for the MPO, and a novel spin-technique for MMO, to avoid overheating. During the cruise phase, however, it will not be spinning, so it is protected by a sunshield. Many of the technologies developed for operating BepiColombo in extreme temperature conditions, both hot and cold, are relevant for future missions such as ESA's upcoming Solar Orbiter and Jupiter Icy moons Explorer (Juice).

Why "BepiColombo"?

The mission is named after the Italian mathematician and engineer Giuseppe (Bepi) Colombo (1920–84). He is known for explaining Mercury's peculiar characteristic of rotating about its own axis three times in every two orbits of the Sun. He also proposed to NASA the interplanetary trajectories that would allow Mariner 10 multiple Mercury flybys, by using gravity assists at Venus for the first time.

Partners

BepiColombo is the result of major international cooperation, with ESA being responsible for the overall mission design:

- Airbus Defence and Space in Germany is the prime contractor for the design and procurement of the ESA parts of the spacecraft, including MPO, MTM, MMO's sunshield, and the interface between MPO and MMO. It provided the design and development of the data management, attitude and orbit control subsystems, and solar arrays.
- Thales Alenia Space Italy is the co-prime contractor for the development of the MPO's electrical power, thermal control and communications systems and for the integration and test activities.
- In the UK, Airbus Defence and Space is co-prime contractor for the electrical and chemical propulsion systems, for the structure of all modules and for the thermal control of MTM. Airbus Defence and Space in France has developed the onboard software.
- MMO was designed and developed by JAXA, who in turn was responsible for procuring the spacecraft from an industrial team led by NEC Corporation.

About this media kit

This is an interactive media kit. Navigate between pages from the contents page or with the arrows at the bottom of each page. Explore scientific and technological themes of the BepiColombo mission through the series of infographics. Roll over the graphic elements to discover hyperlinks to more information on related webpages. Click on the symbol ⬇ to directly access the infographic download page. Links to recommended images, videos and animations are provided towards the end of this media kit. An internet connection is required to access the external webpages.

→ EVENT PROGRAMME

Provisional schedule at ESA's mission control centre in Darmstadt, Germany, 20 October (all times in local CEST)

02:30 Doors open

03:00 Programme begins

Scientists and mission operations experts present the mission, with live transmissions from Kourou including the moment of launch at 03:45 CEST. This will be followed by the announcement of acquisition of signal from the Main Control Room.

04:30 Q&A and individual interview opportunities

05:00 End of event – media invited to join team breakfast with representatives of ESA, industry and the scientific community.

→ LIVE UPDATES

Webstreaming

ESA will cover the launch live from 03:15 CEST at esa.int/live

Twitter

For live updates throughout the launch period, follow @BepiColombo, @esaoperations and @esascience on Twitter.

Follow JAXA at @JAXA_jp or @JAXA_en for tweets in Japanese or English, respectively.

The three spacecraft modules also have personalised accounts (@JAXA_MMO, @ESA_Bepi and @ESA_MTM); follow for extra content and a unique take on the mission.

Note that images from the MTM's monitoring camera, showing the deployed solar arrays of the MTM, and the MPO's antennas, will only be taken approximately 12 hours and 1.5 days after launch, respectively. They will be shared on esa.int/bepicolombo and from the @ESA_MTM account on Twitter in the first instance, once available.

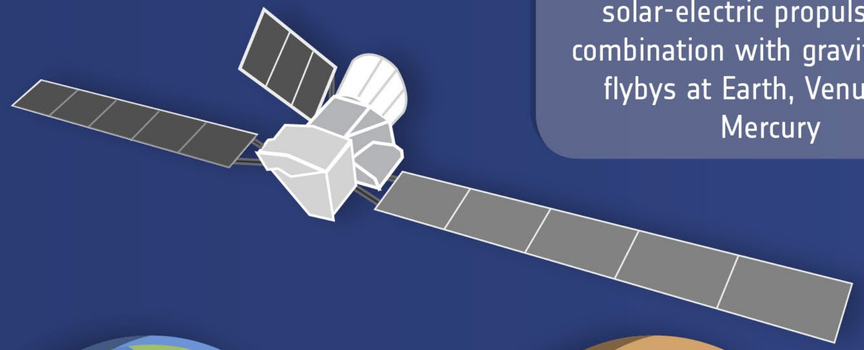
The official hashtag is *#bepicolombo*

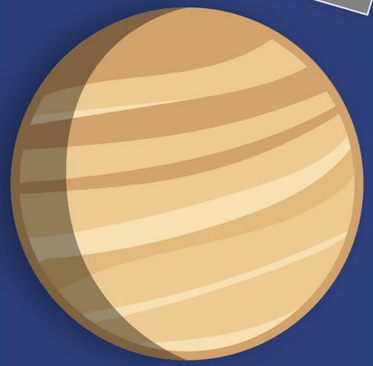
Information for general public: esa.int/bepicolombo
In-depth information: sci.esa.int/bepicolombo

Facebook.com/EuropeanSpaceAgency Youtube.com/ESA Instagram.com/europeanspaceagency

→ BEPICOLOMBO: KEY MESSAGES

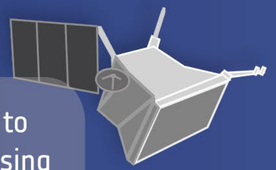
Preparing the technological future of space exploration by using solar-electric propulsion in combination with gravity assist flybys at Earth, Venus and Mercury



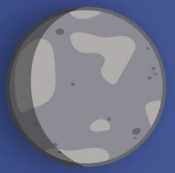


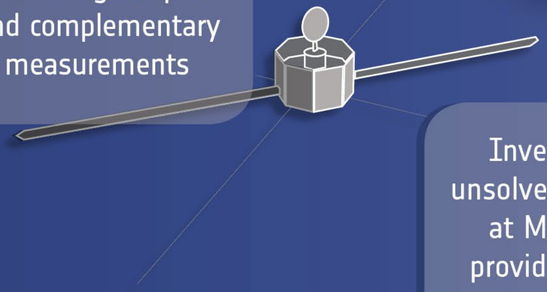
A major world class scientific mission led by ESA in close cooperation with JAXA

First European mission to Mercury, the least explored planet in the inner Solar System



First mission to Mercury comprising two science orbiters, enabling unique and complementary measurements

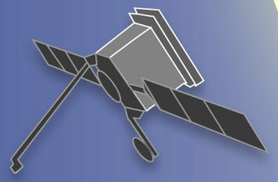




Investigating unsolved mysteries at Mercury to provide the best understanding of the planet to date

New high-temperature technologies and more experience in space operations close to the Sun

Understanding how a planet close to the Sun forms and evolves



Knowledge gained for future mission Solar Orbiter

→ BEPICOLOMBO SCIENCE THEMES

The structure, composition, origin and dynamics of Mercury's exosphere

The structure and dynamics of Mercury's magnetosphere

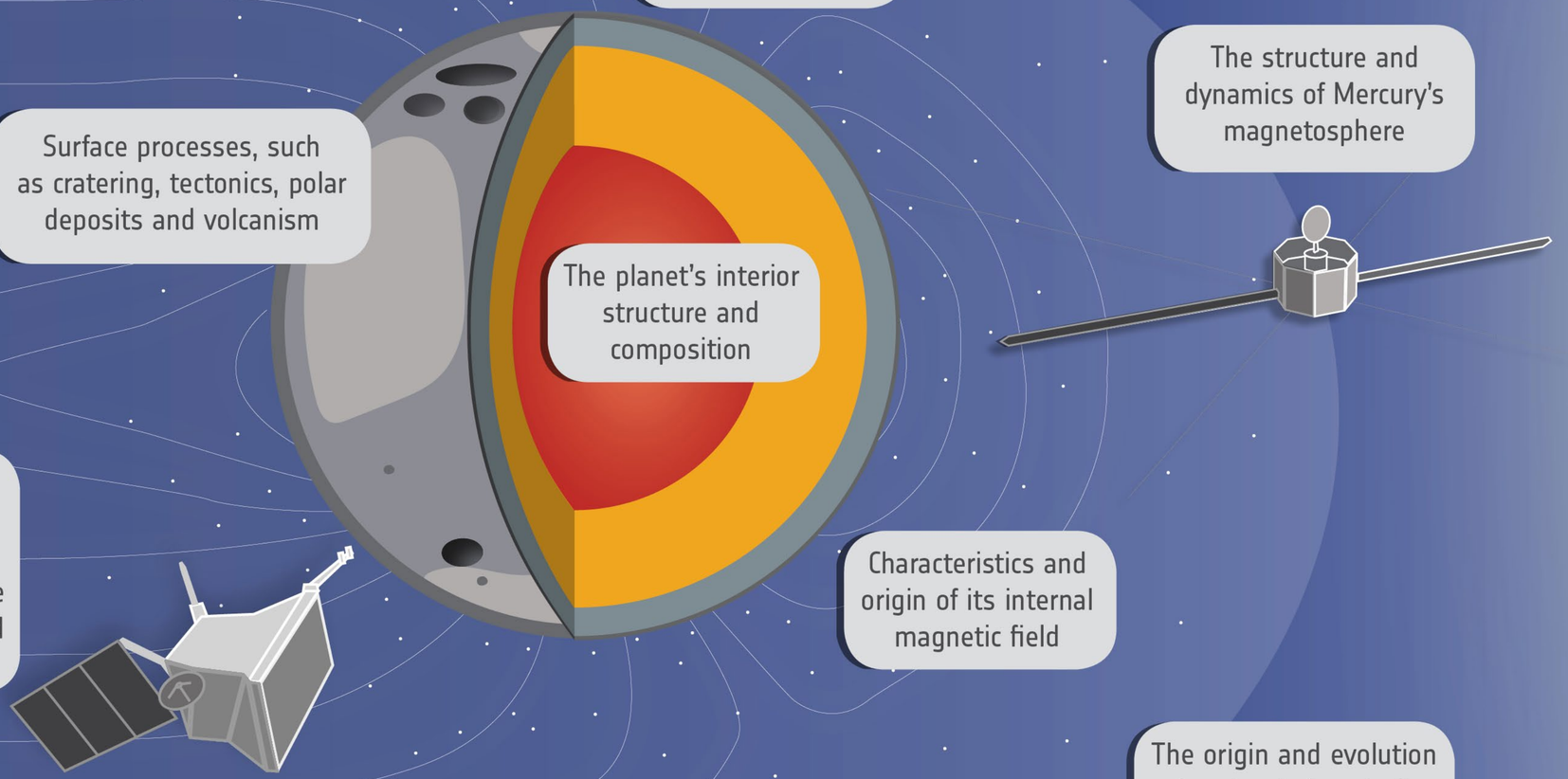
Surface processes, such as cratering, tectonics, polar deposits and volcanism

The planet's interior structure and composition

Einstein's General Theory of Relativity (by making precise measurements of the spacecraft's orbit and position)

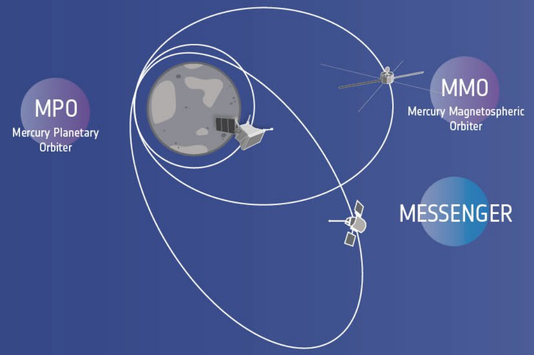
Characteristics and origin of its internal magnetic field

The origin and evolution of a planet close to its parent star



→ FROM MESSENGER TO BEPICOLOMBO

Examples of how BepiColombo will follow up on discoveries made by NASA's Messenger mission



OFFSET MAGNETIC FIELD

Messenger's observations showed that the centre of origin of Mercury's magnetic field is offset from the centre of the planet by about 20% of its radius

BepiColombo will obtain detailed measurements in the southern hemisphere, complementing the details obtained by Messenger in the northern hemisphere, in order to provide a more complete view of the situation

SHADOWED CRATERS

Messenger identified deposits in shadowed craters at the poles that are thought to be water-ice

BepiColombo, with its polar orbit, will provide a more comprehensive coverage of these areas with many different instruments

UNIQUE SURFACE FEATURES

Messenger identified new surface features, such as the so-called 'hollows', that appear to be young and unique to Mercury

BepiColombo's high resolution imaging, from ultraviolet to thermal infrared, will determine the chemical composition, helping to home in on how they form

DYNAMIC MAGNETOSPHERE

Messenger monitored Mercury's highly dynamic magnetosphere as it responded to the Sun's activity

BepiColombo's two spacecraft, from their different orbits, will provide unique insight into the relationship between the Sun's activity, the magnetosphere and surface processes

VOLCANIC ACTIVITY

Messenger imaged a range of geologic features associated with past volcanic activity

BepiColombo is capable of improving the understanding of the variations in volcanic eruptive style over time

SHRINKING PLANET

Messenger's results found that Mercury has shrunk by as much as 7 km in radius as its interior cooled and contracted

BepiColombo will image surface features, in particular at higher resolution in the southern hemisphere, to help determine how this contraction was distributed over time, improving our knowledge of the cooling history of a planet without plate tectonics

CARBON'S ORIGIN

Messenger's measurements suggested that graphitic carbon is responsible for Mercury's dark surface, but did it come from external sources or rather from a global ocean of molten magma in the planet's early history?

BepiColombo will provide information on the nature and abundance of the carbon to help pinpoint its origin

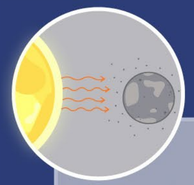
CHANGING EXOSPHERE

Messenger monitored Mercury's constantly changing exosphere, finding that species such as sodium, potassium, calcium and magnesium all exhibit different distributions that do not fit with standard models

BepiColombo will provide additional insight into the temporal evolution of the structure and composition of the exosphere, and is expected to detect other species as well

CONTENT

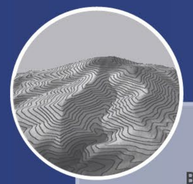
→ MERCURY PLANETARY ORBITER'S SCIENCE INSTRUMENTS



SERENA

Search for Exosphere Refilling and Emitted Neutral Abundances (neutral and ionised particle analyser)

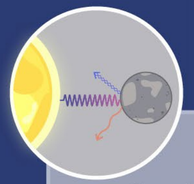
Studying the gaseous interaction between Mercury's surface, exosphere, magnetosphere and the solar wind and interplanetary medium



BELA

BepiColombo Laser Altimeter

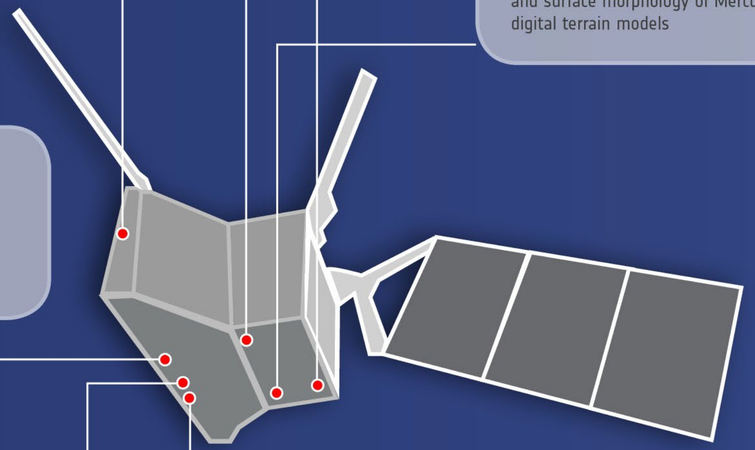
Characterising and measuring the topography and surface morphology of Mercury to create digital terrain models



MIXS

Mercury Imaging X-ray Spectrometer

Producing a global map of Mercury's surface atomic composition at high spatial resolution



MERTIS

Mercury Radiometer and Thermal Imaging Spectrometer

Detailing the mineralogical composition of Mercury's surface, its temperature and thermal inertia, important for models of the origin and evolution of the planet

SIMBIO-SYS

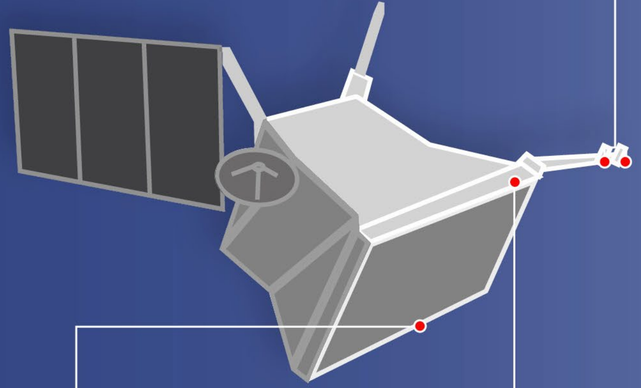
Spectrometers and Imagers for MPO BepiColombo Integrated Observatory

Examining with stereo and colour imaging, and spectroscopic analysis, Mercury's surface geology, volcanism, global tectonics, surface age and composition

PHEBUS

Probing of Hermean Exosphere by Ultraviolet Spectroscopy

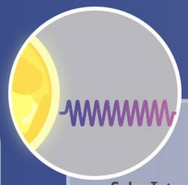
Characterising Mercury's exosphere composition and dynamics and searching for surface ice layers in permanently shadowed regions of high-latitude craters



MPO-MAG

Magnetic Field Investigation

Measuring Mercury's magnetic field, the interaction of the solar wind, and the formation and dynamics of the magnetosphere, and understanding the origin, evolution and current state of the planet's interior

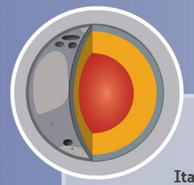


SIXS

Solar Intensity X-ray and particle Spectrometer

Monitoring the flux of X-rays and particles of solar origin

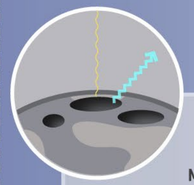
Instruments inside the spacecraft



ISA

Italian Spring Accelerometer

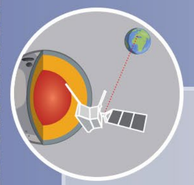
Providing information on Mercury's interior structure and testing Einstein's theory of General Relativity to an unprecedented level of accuracy



MGNS

Mercury Gamma-ray and Neutron Spectrometer

Determining the elemental compositions of the surface and subsurface of Mercury, and identifying the regional distribution of volatiles in permanently shadowed polar regions



MORE

Mercury Orbiter Radio science Experiment

Determining the gravity field of Mercury, and the size and physical state of its core; measuring the gravitational oblateness of the Sun and testing the most advanced interplanetary tracking system ever built

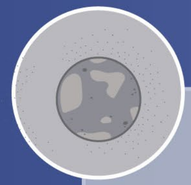
CONTENT

→ MERCURY MAGNETOSPHERIC ORBITER'S SCIENCE INSTRUMENTS

PWI

Mercury Plasma Wave Instrument

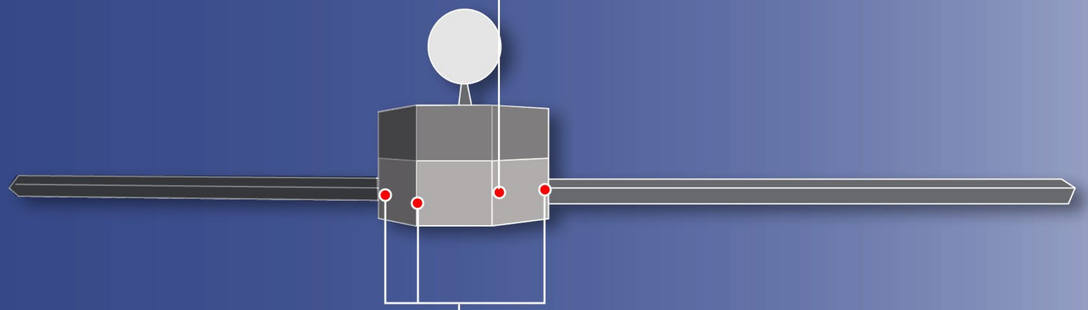
In situ and remote-sensing analysis of electric fields, plasma waves and radio waves in Mercury's plasma environment



MDM

Mercury Dust Monitor

Studying the distribution of interplanetary dust in the orbit of Mercury



MMO-MAG

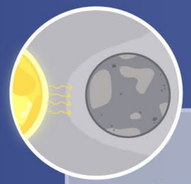
Mercury Magnetometer

Providing a detailed description of Mercury's magnetosphere and of its interaction with the planetary magnetic field and the solar wind

MSASI

Mercury Sodium Atmosphere Spectral Imager

Measuring the abundance, distribution and dynamics of sodium in Mercury's exosphere to investigate its sources and related processes



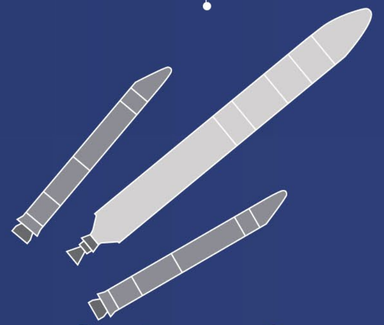
MPPE

Mercury Plasma Particle Experiment

Seven sensors studying plasma and energetic particles in the magnetosphere and the interaction between the solar wind and Mercury's magnetosphere

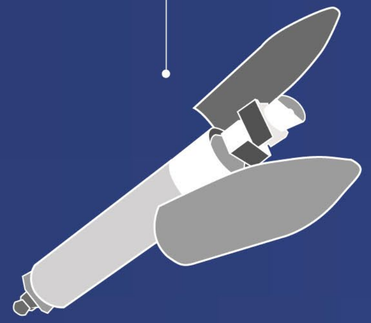
→ LAUNCH AND SEPARATION

L + 2 mins



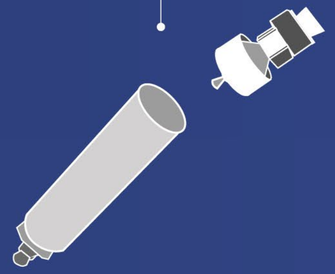
Booster separation

L + 3 mins



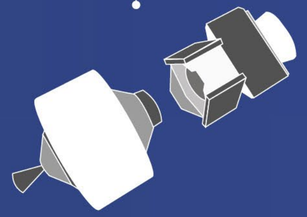
Fairing separation

L + 9 mins



Main stage separation

L + 27 mins

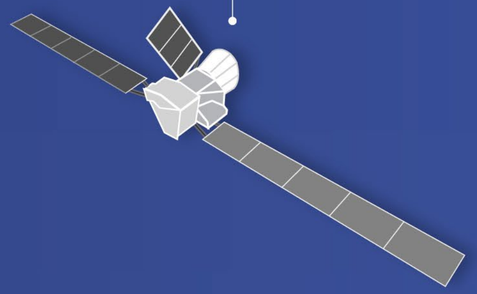


Spacecraft separation

L + 40 mins

First acquisition of signal expected L+36-44 mins

L + 74 mins



Solar array deployment completed

Lift-off with Ariane 5

19-10-2018: 22:45:28 GFT

20-10-2018: 01:45:28 GMT

03:45:28 CEST

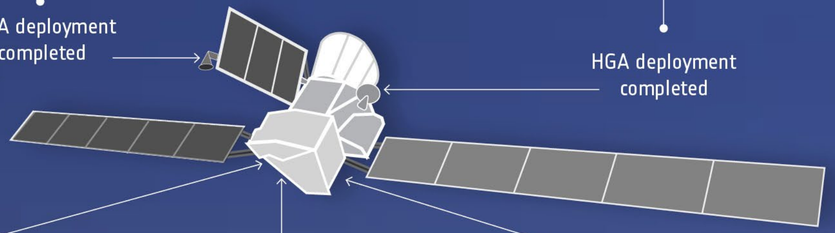
10:45:28 JST

L + 18 hours

MGA deployment completed

L + 29.5 hours

HGA deployment completed



Monitoring cameras image deployed MGA

L + 1.5 days

Monitoring cameras image deployed MTM solar array

L + 12 hours

Monitoring cameras image deployed HGA

L + 1.5 days

L + 3 days

Spacecraft subsystem and instrument checkouts, start of cruise phase

L + 2 months

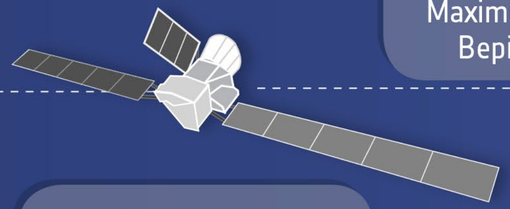
Start of first electric propulsion arc

CONTENT

Times are approximate and subject to change

→ JOURNEY TO MERCURY

240 milion km
Maximum distance between BepiColombo and Earth

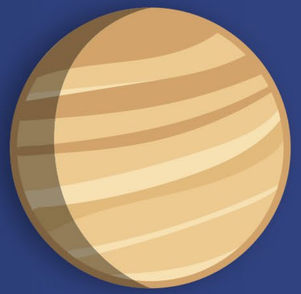


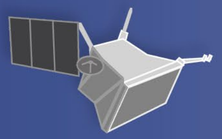
9 billion km
Total distance to travel

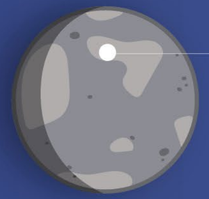
60 km/s
Speed of BepiColombo at its fastest, twice as fast around the Sun than Earth's orbital speed

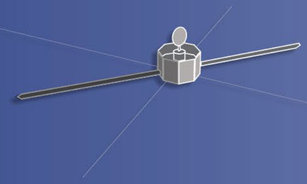
13 min
Maximum one way signal travel time between Bepicolombo and Earth

18 orbits
around the Sun









19/20 October 2018
Launch

13 April 2020
Earth flyby
11 264 km

16 October 2020
1st Venus flyby
10 907 km

11 August 2021
2nd Venus flyby
1 007 km

2 October 2021
1st Mercury flyby
200 km

23 June 2022
2nd Mercury flyby
200 km

20 June 2023
3rd Mercury flyby
200 km

5 September 2024
4th Mercury flyby
200 km

2 December 2024
5th Mercury flyby
40 000 km

9 January 2025
6th Mercury flyby
345 km

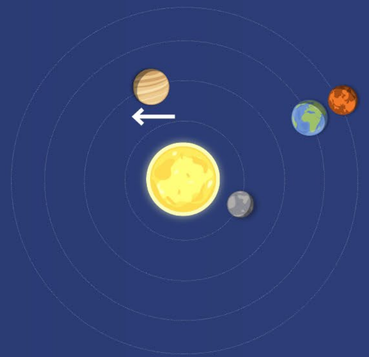
5 December 2025
Arrival at Mercury

The Sun's enormous gravity means that even more energy is needed to enter a stable orbit around Mercury than to send a mission to Pluto

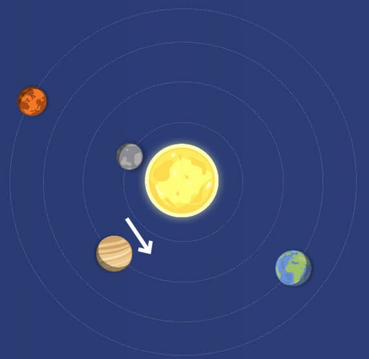
Flyby distances at closest approach

→ VENUS FLYBY SCIENCE OPERATIONS

BepiColombo teams are planning to operate eight out of eleven science instruments on the Mercury Planetary Orbiter and three out of five on the Mercury Magentospheric Orbiter during the two flybys of Venus



First flyby
16 October 2020
10 907 km



Second flyby
11 August 2021
1 007 km

Flyby distances at closest approach

Atmosphere studies

Temperature and density profiles

Chemical composition

Global circulation

Internal structure

Probing the internal structure of the planet

Interactions between the Sun and Venus

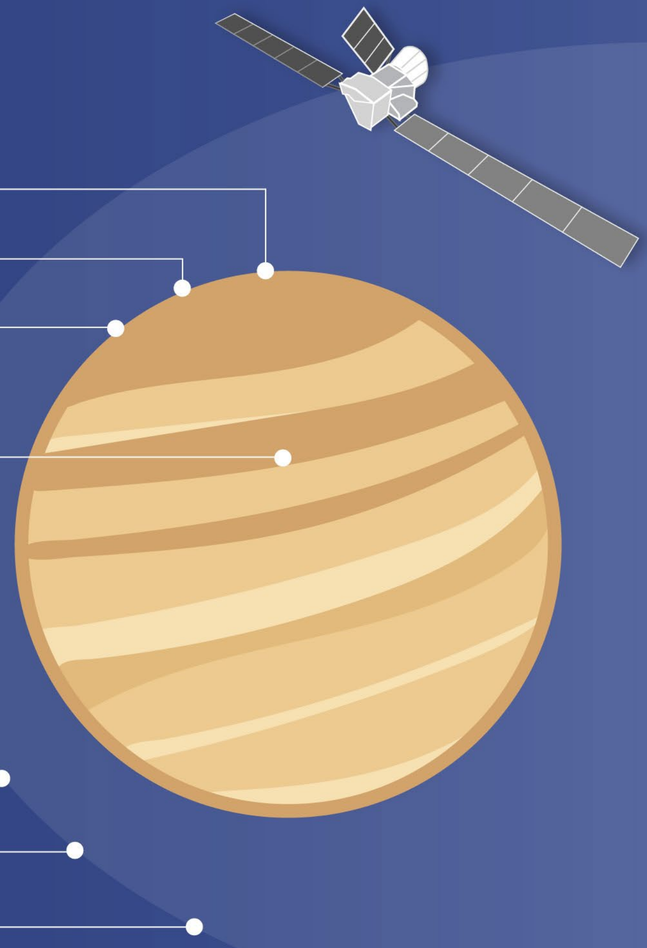
Solar radiation

Energetic particles

Plasma interactions

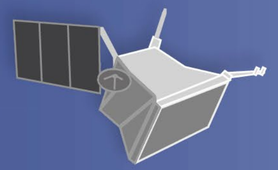
Local interplanetary magnetic field

Electric field, plasma and radio waves



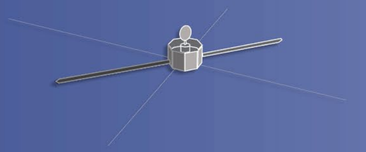
Science operations at Venus are in the planning stage, and may change closer to the event

Instruments active during flyby



Mercury Planetery Orbiter

BELA
ISA
MERTIS
MGNS
MIXS
MORE
MPO-MAG
PHEBUS
SERENA
SIMBIO-SYS
SIXS



Mercury Magnetospheric Orbiter

MDM
MMO-MAG
MPPE
MSASI
PWI

→ ARRIVAL AT MERCURY

24 October 2025

Mercury Transfer Module releases Mercury Planetary Orbiter and Mercury Magnetospheric Orbiter

5 December 2025

The science orbiters, still attached, are captured by Mercury's gravity onto a 674 x 178 000 km orbit

20 December 2025

The Mercury Planetary Orbiter releases the Mercury Magnetospheric Orbiter onto its 590 x 11 640 km altitude orbit

26 December 2025

The Mercury Planetary Orbiter ejects the sunshield, and continues to its own orbit at 480 x 1500 km altitude

14 March 2026

The Mercury Planetary Orbiter arrives in its final orbit

March 2026

Science begins

CONTENT

→ OPERATING IN EXTREME ENVIRONMENTS

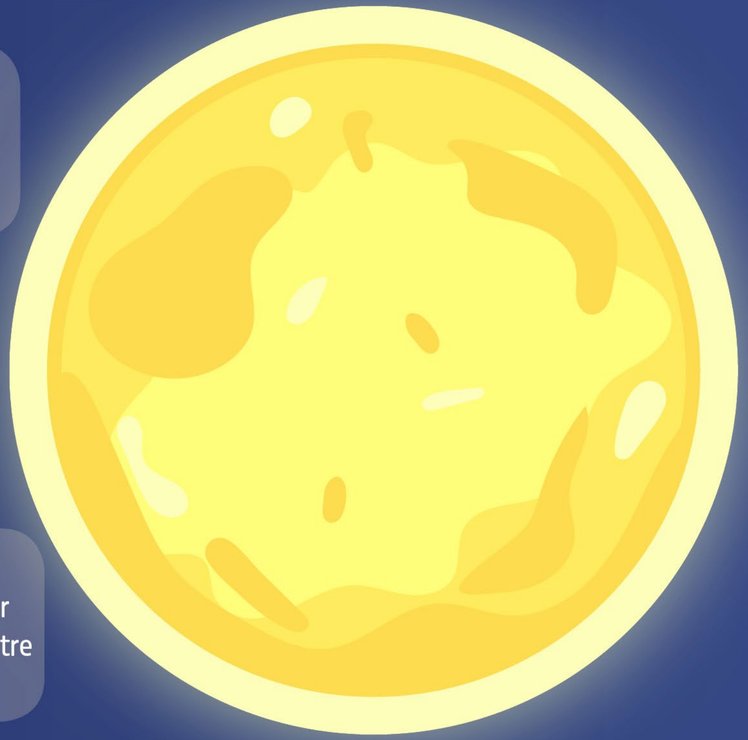
The solar intensity at Mercury is about 10 times that at Earth

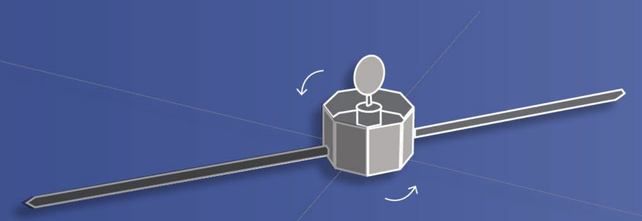
Large temperature changes will be experienced at Mercury, from −180°C to +450°C

New high-temperature coatings, multi-layered insulation, and high-temperature mechanisms were required for BepiColombo

To have representative test conditions, the solar simulator at ESA's test centre had to be modified

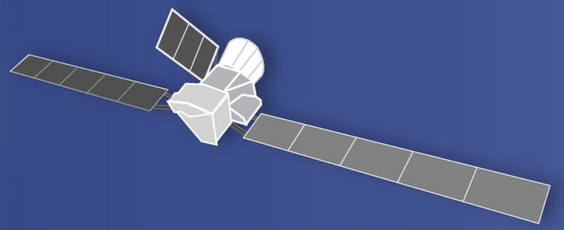
Over 80% of materials had not been tested in such an extreme environment before



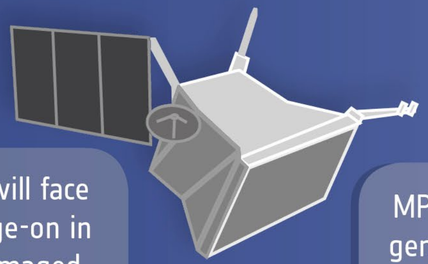


MMO will spin 15 times per minute to distribute the Sun's heat over its solar cells

A sunshield protects MMO on the journey



MTM's solar arrays are rotated away from the Sun to prevent damage and therefore need a large area to meet the power requirements



MPO's solar array will face the Sun almost edge-on in order to not be damaged by solar radiation

MPO's radiator will carry away heat generated by the spacecraft, as well as from the Sun and Mercury's surface

→ QUICK LOOK MERCURY FACTS

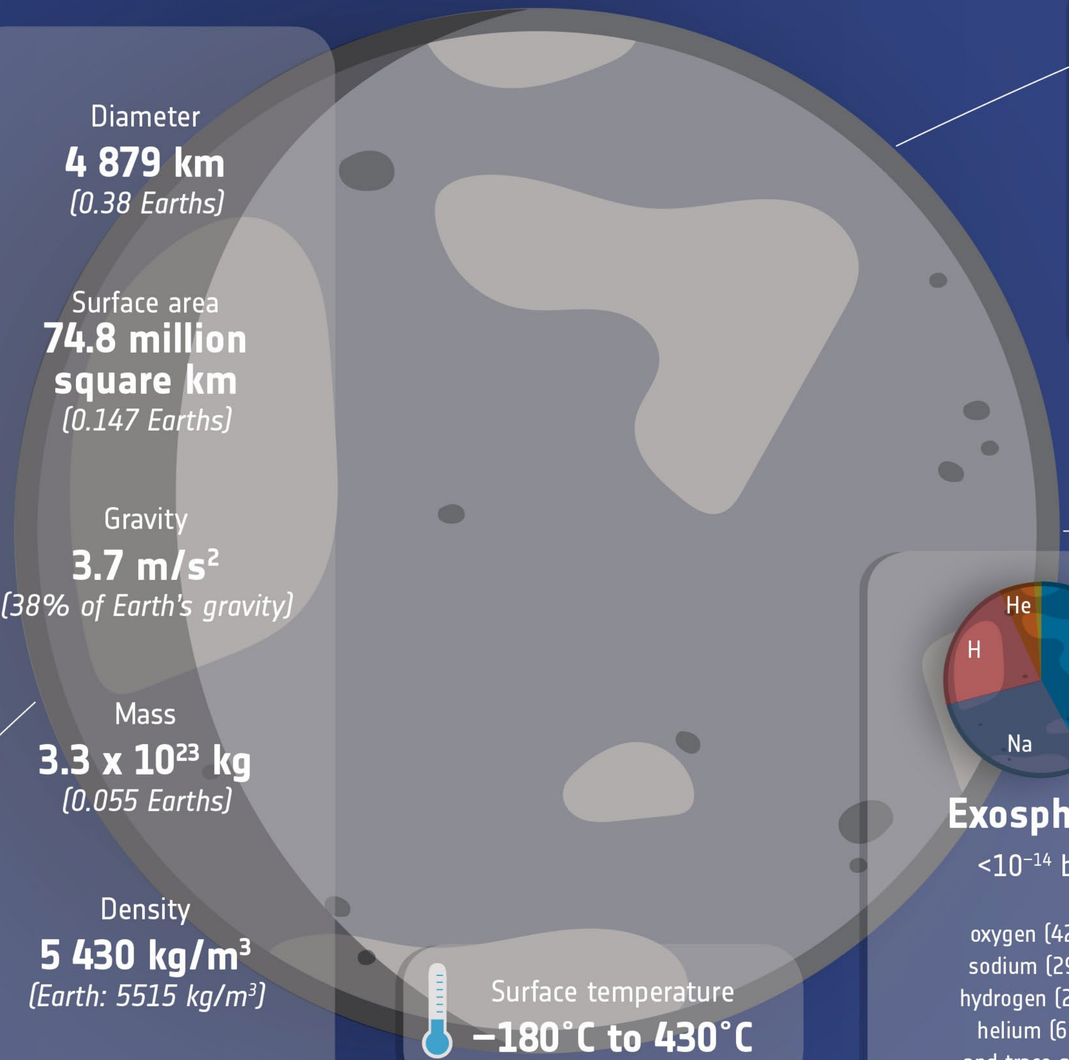
Diameter
4 879 km
(0.38 Earths)

Surface area
74.8 million square km
(0.147 Earths)

Gravity
3.7 m/s²
(38% of Earth's gravity)

Mass
3.3 x 10^{23} kg
(0.055 Earths)

Density
5 430 kg/m³
(Earth: 5515 kg/m³)



Surface temperature
−180°C to 430°C

Exosphere
<10^{-14} bar

oxygen (42%)
sodium (29%)
hydrogen (22%)
helium (6%)
and trace gases

Mercury rotates about its own axis three times in every two orbits of the Sun

58 Earth days
to turn once on its axis

176 Earth days
for the Sun to return to the same spot in the sky, as seen from a fixed point on the surface

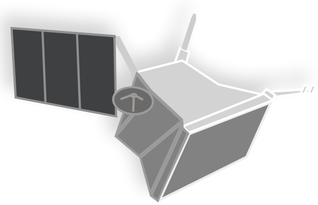
88 Earth days
to orbit the Sun

Distance from Sun
46 001 200 – 69 816 900 km
(Earth: 149 597 900 km)

Solar irradiance
6 272 – 14 448 W/m²
(Earth: 1 366 W/m²)

CONTENT

→ MPO AND MMO PRINCIPAL INVESTIGATORS



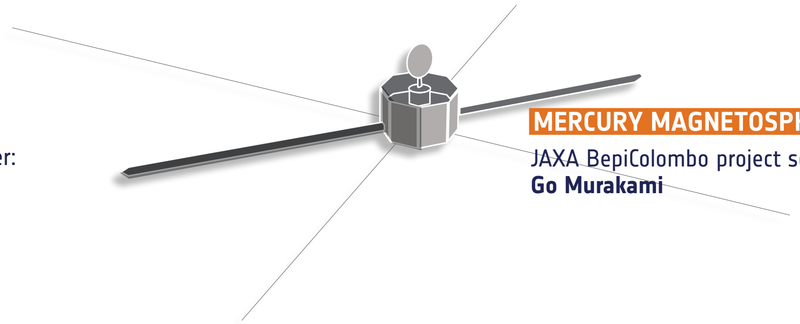
MERCURY PLANETARY ORBITER

ESA BepiColombo project scientist:
Johannes Benkhoff

ESA BepiColombo deputy project scientist:
Joe Zender

ESA BepiColombo project manager:
Ulrich Reininghaus

ESA BepiColombo MTM manager:
Orson Sutherland



MERCURY MAGNETOSPHERIC ORBITER

JAXA BepiColombo project scientist:
Go Murakami

BELA
Nicolas Thomas
University of Bern, Switzerland.
Hauke Hussmann
DLR Institut für Planetenforschung, Berlin, Germany.

ISA
Valerio Iafolla
INAF-IAPS Istituto di Astrofisica e Planetologia Spaziali, Rome, Italy.

MERTIS
Harald Hiesinger
University of Münster, Germany.

MGNS
Igor Mitrofanov
Russian Academy of Sciences, Space Research Institute, IKI, Moscow, Russian Federation.

MIXS
Emma Bunce
Space Research Centre, University of Leicester, UK.

MORE
Luciano Iess
University of Rome 'La Sapienza', Italy.

MPO-MAG
Karl-Heinz Glassmeier
Technische Universität Braunschweig, Germany.

PHEBUS
Eric Quémerais
LATMOS-IPSL, Guyancourt, France.

SERENA
Stefano Orsini
INAF-IAPS Istituto di Astrofisica e Planetologia Spaziali, Rome, Italy.

SIMBIO-SYS
Gabriele Cremonese
INAF-Osservatorio Astronomico di Padova, Italy.

SIXS
Juhani Huovelin
University of Helsinki, Department of Physics, Finland.

MDM
Masanori Kobayashi
Chiba Institute of Technology, Japan.

MMO-MAG
Wolfgang Baumjohann
Austrian Space Science, Graz, Austria.

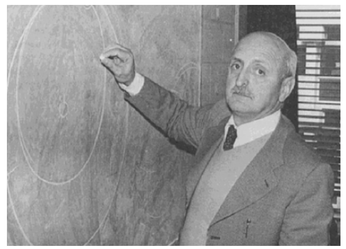
MPPE
Yoshifumi Saito
Institute of Space and Astronautical Science, Kanagawa, Japan.

MSASI
Ichiro Yoshikawa
University of Tokyo, Japan.

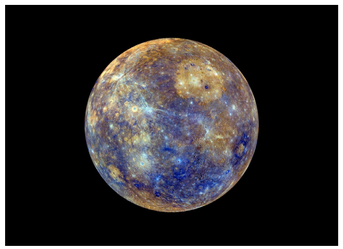
PWI
Yasumasa Kasaba
Tohoku University, Sendai, Japan.

→ IMAGES

PHOTOS

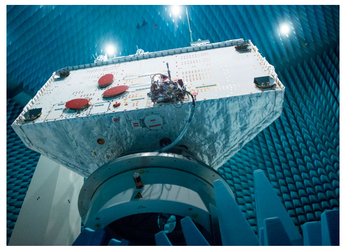


PROFESSOR GIUSEPPE COLOMBO



MESSENGER'S VIEW OF IRIDESCENT MERCURY

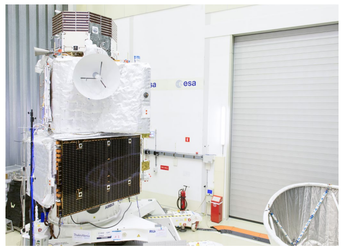
MESSENGER'S GLOBAL COVERAGE OF MERCURY



RADIO TESTING OF BEPICOLOMBO ORBITER

BEPICOLOMBO STACK

MERCURY TRANSFER MODULE SOLAR WING DEPLOYMENT



BEPICOLOMBO AT ESA'S TEST CENTRE

MERCURY MAGNETOSPHERIC ORBITER ON TOP OF MERCURY PLANETARY ORBITER

MERCURY PLANETARY ORBITER – RADIATOR PANEL AND INSTRUMENTS

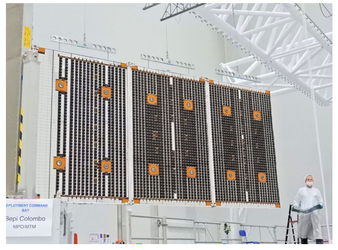
BEPICOLOMBO ACOUSTIC TEST

LOADING THE ANTONOV

MPO UNPACKED AT EUROPE'S SPACEPORT

SEWING MTM INSULATION BLANKETS

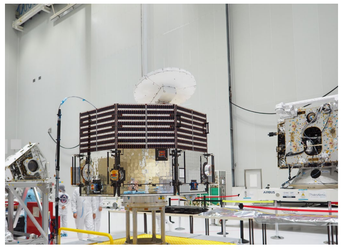
HAND-SEWN INSULATION BLANKETS



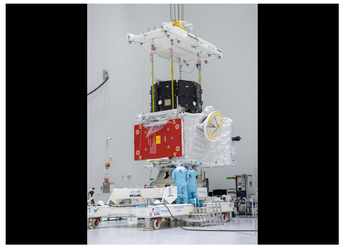
BEPICOLOMBO MPO SOLAR ARRAY DEPLOYMENT

MERCURY TRANSFER MODULE PREPARATIONS

BEPICOLOMBO SUNSHIELD

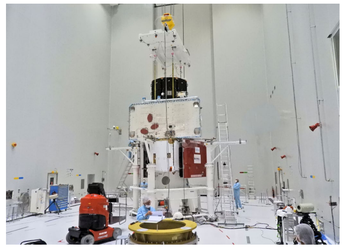


MMO UNPACKED AT EUROPE'S SPACEPORT



MPO AND MMO IN LAUNCH CONFIGURATION

COMPLETING THE BEPICOLOMBO STACK



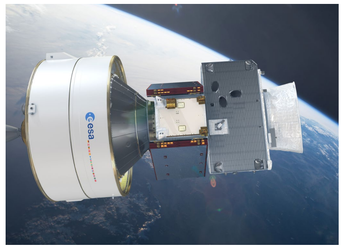
COMPLETING THE BEPICOLOMBO STACK

CONTENT

→ IMAGES

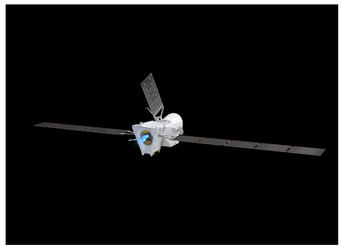
ARTIST IMPRESSIONS

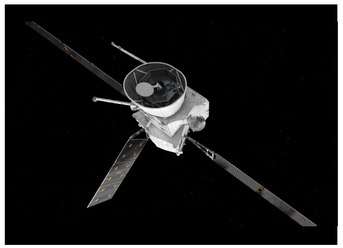

BEPICOLOMBO FAIRING RELEASE


BEPICOLOMBO IN LOW EARTH ORBIT

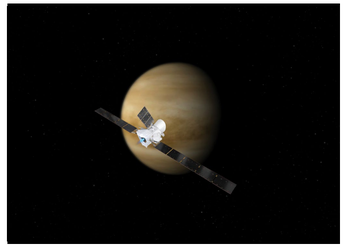

SEPARATION AFTER LAUNCH


BEPICOLOMBO EARTH FLYBY

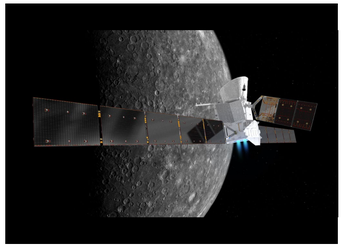

BEPICOLOMBO IN CRUISE CONFIGURATION

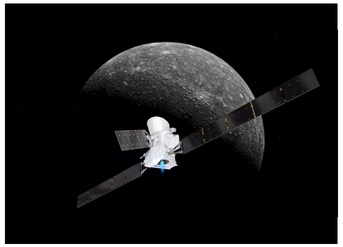

BEPICOLOMBO CRUISE CONFIGURATION


BEPICOLOMBO CRUISE CONFIGURATION

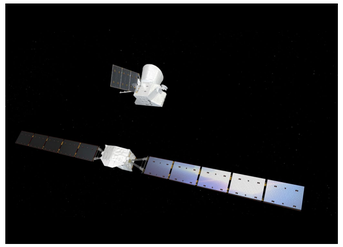

BEPICOLOMBO AT VENUS

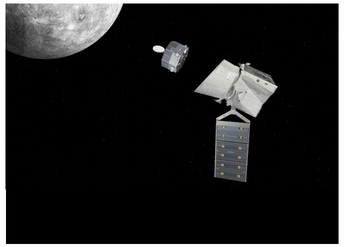

BEPICOLOMBO APPROACHING MERCURY

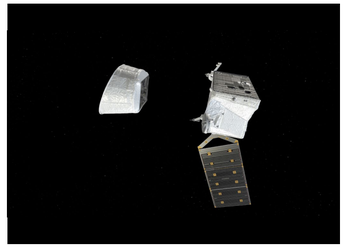

BEPICOLOMBO AT MERCURY

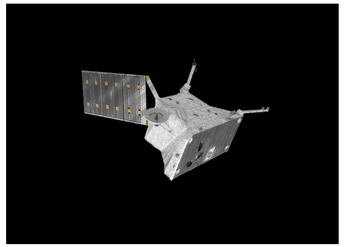

BEPICOLOMBO APPROACHING MERCURY

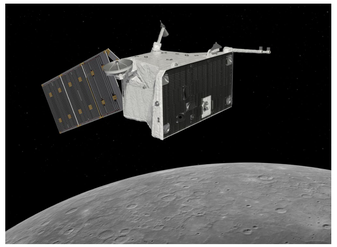

MERCURY TRANSFER MODULE SEPARATION

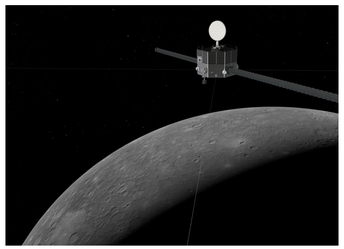

MERCURY TRANSFER MODULE SEPARATION

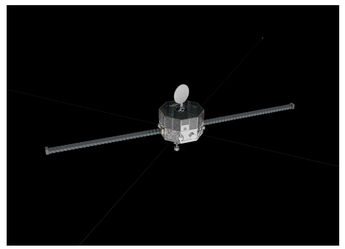

SEPARATION OF MERCURY MAGNETOSPHERIC ORBITER

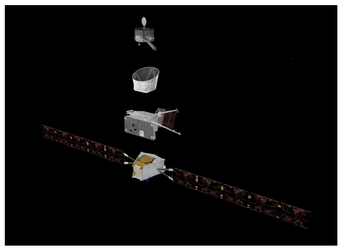

SUNSHIELD EJECTION

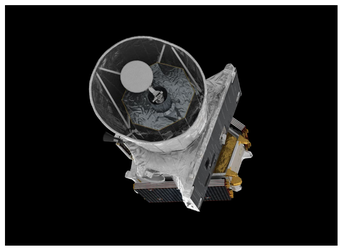

MERCURY PLANETARY ORBITER


MERCURY PLANETARY ORBITER AT MERCURY


MERCURY MAGNETOSPHERIC ORBITER AT MERCURY


MERCURY MAGNETOSPHERIC ORBITER


BEPICOLOMBO EXPLODED VIEW

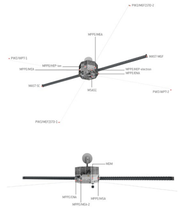

BEPICOLOMBO STACK

→ IMAGES

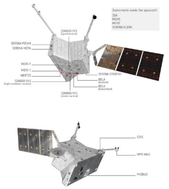
GRAPHICS

BEPICOLOMBO MISSION LOGO

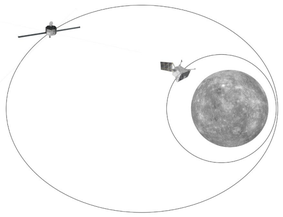
BEPICOLOMBO MISSION POSTER



BEPICOLOMBO MMO'S SCIENCE INSTRUMENTS

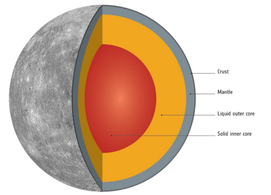


BEPICOLOMBO MPO'S SCIENCE INSTRUMENTS

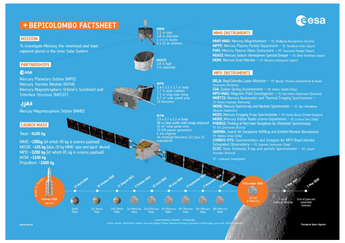


BEPICOLOMBO ORBITS

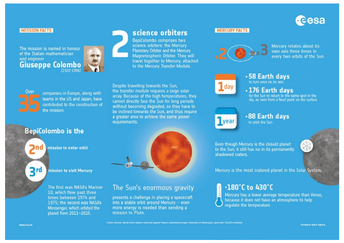
BEPICOLOMBO JOURNEY TIMELINE



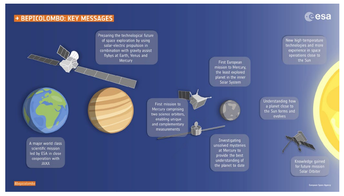
INTERIOR OF MERCURY - ANNOTATED



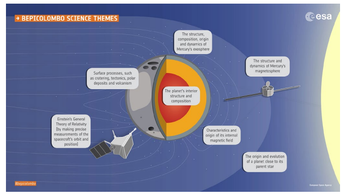
BEPICOLOMBO SPACECRAFT FACTS



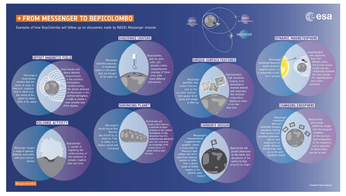
BEPICOLOMBO MISSION AND MERCURY FACTS



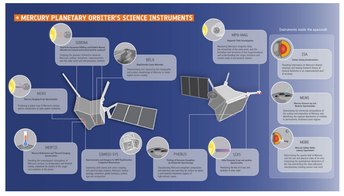
BEPICOLOMBO: KEY MESSAGES



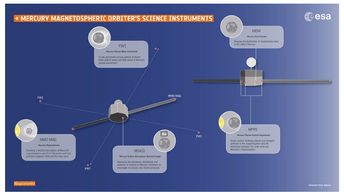
BEPICOLOMBO SCIENCE THEMES



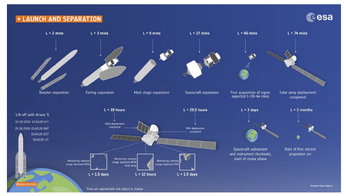
FROM MESSENGER TO BEPICOLOMBO



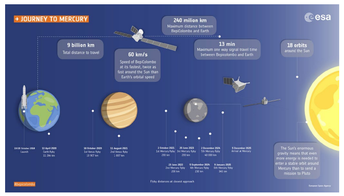
MPO'S SCIENCE INSTRUMENTS



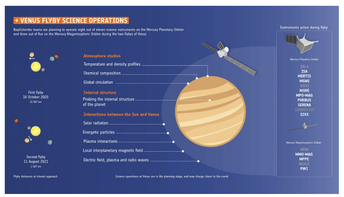
MMO'S SCIENCE INSTRUMENTS



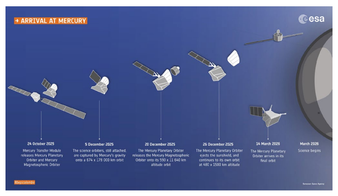
LAUNCH AND SEPARATION



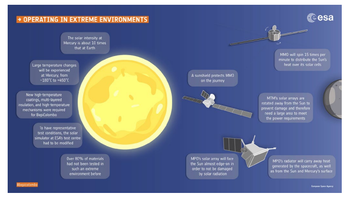
JOURNEY TO MERCURY



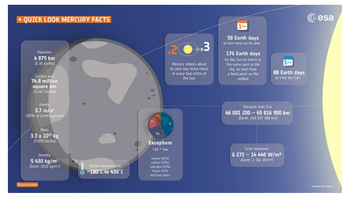
VENUS FLYBY SCIENCE OPERATIONS



ARRIVAL AT MERCURY



OPERATING IN EXTREME ENVIRONMENTS



QUICK LOOK MERCURY FACTS

CONTENT

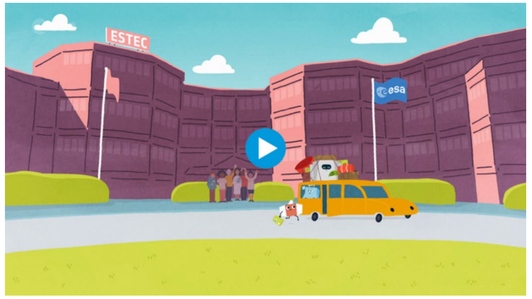
→ VIDEOS & ANIMATIONS

INSIDE THE CLEANROOM WITH BEPICOLOMBO

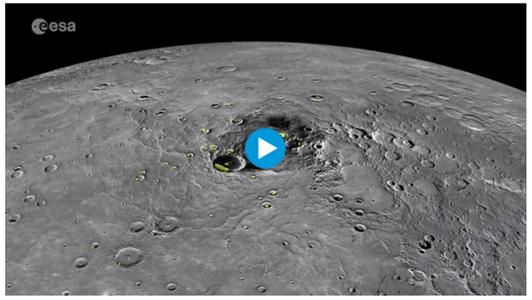
BEPICOLOMBO SIMULATION

BEPICOLOMBO LAUNCH TO MERCURY

TO MERCURY, VIA EUROPE'S SPACEPORT!

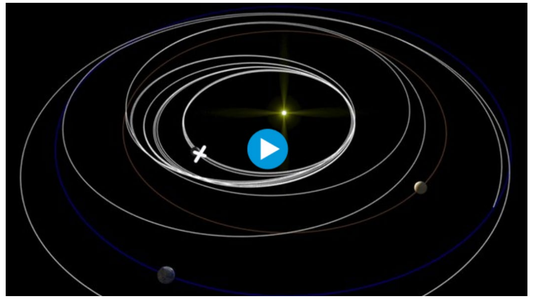


CARTOON: TO EUROPE'S SPACEPORT!

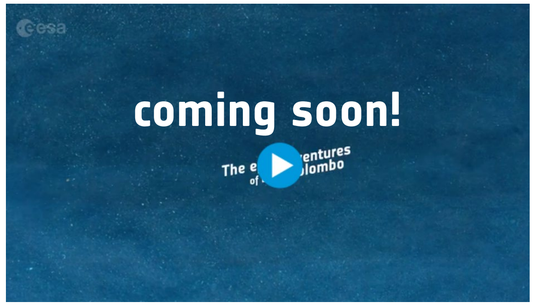


BEPICOLOMBO PREPARES FOR MERCURY

MERCURY TRANSFER MODULE
SOLAR WING DEPLOYMENT



BEPICOLOMBO'S JOURNEY TO MERCURY



CARTOON:
THE EPIC ADVENTURES OF BEPICOLOMBO PART 1

CONTENT

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Livestream of media event

ESA will cover the launch of BepiColombo at esa.int/live on 20 October, 03:15–04:30 CEST.
It will cover the liftoff at 03:45 CEST, and the acquisition of signal approximately 40 minutes later.

ESA TV productions
ESA TV productions are available at television.esa.int

BepiColombo online
Information for general public: esa.int/bepicolombo
In-depth information: sci.esa.int/bepicolombo

BepiColombo on social media

Twitter
@bepicolombo
@ESA_Bepi
@ESA_MTM
@JAXA_MMO

Facebook.com/EuropeanSpaceAgency
Youtube.com/ESA
Instagram.com/europeanspaceagency

Official hashtag: #bepicolombo

Multimedia

A variety of photographs, illustrations, graphics and animations are available via:
ESA Space in Images
ESA Space in Videos
ESA's Photo Library for Professionals
ESA's Video Library for Professionals

See also pages 17-20 in this media kit for recommended multimedia products


esa
THANK YOU FOR JOINING US FOR
THE LAUNCH OF BEPICOLOMBO TO MERCURY!
#bepicolombo
European Space Agency