**ExoMars at Mars**

**A-roll FINAL**

**TAPE STARTS: 10:00:00**

**A ROLL: 10:00:10**

10:00:10

[ANIMATION OF EXOMARS ORBITER PLUS LANDER SEPARATION]

ExoMars 2016 is several missions in one. Its orbiter is a science and relay mission, while the lander is a technology demonstrator to test key technologies for future missions to Mars. And three days before arriving at Mars on October the 19th, the Trace Gas Orbiter - or TGO - will release its entry, descent and landing demonstrator, Schiaparelli.

10:00:37

[INSET CLIP: MICHEL DENIS, EXOMARS FLIGHT OPERATIONS DIRECTOR, ESA]

*“We separate not too early so that the accuracy of landing is good but also not too late so that we have time then to reorientate the TGO and actually raise its altitude and not crash on Mars, because it is on a collision course up to the moment of separation so that it can bring Schiaparelli to the ground. To the centre, hopefully, of a landing ellipse.”*

10:01:04

[ANIMATION OF MARS AND ELLIPSE LANDING SITE; MARS EXPRESS IMAGES]

The landing ellipse is an area close to the equator about 100 kms long and 15 kms wide. It’s in the planet’s Meridiani Planum region, is relatively flat and smooth and is well studied. NASA’s O pportunity rover is on the ground and ESA’s Mars Express spacecraft has been overhead since 2003. Mars Express produced these images and will also act as one of the data relay orbiters.

10:01:32

[ANIMATION SCHIAPARELLI LANDER DESCENT]

The Schiaparelli lander will use a heat shield, parachute and propulsion system to slow down its six minute descent to Mars - testing the technology for a rover in 2020, as well as studying the environment at the landing site.

Europe will be on Mars but the mission is far from over....

10:01:51

[ANIMATION OF TRACE GAS ORBITER AROUND MARS AND GEOLOGICAL PRODUCTION OF METHANE]

On arrival, the Trace Gas Orbiter will be captured by the planet’s orbit to observe the Martian atmosphere using four scientific instruments. The TGO will search for evidence of gases, such as methane, that may be associated with geological processes or biological ones, such as life. And in order to enter its science orbit, the spacecraft with need to gradually lower its orbit.

10:02:16

[INSET CLIP: JOHANNES BAUER, EXOMARS SPACECRAFT OPERATIONS ENGINEER, ESA]

*“With ExoMars ESA is going to use, for the first time, a method called aerobraking for a spacecraft in orbit around Mars to decrease the orbit by letting it fly through the atmosphere and using the atmospheric density to slow it down instead of using fuel for the engines.”*

10:02:34

[ANIMATION OF EXOMARS 2020 ROVER ON MARTIAN SURFACE]

TGO will also be used to relay communications with Earth for current and future Martian missions. For example the planned 2020 Rover - the second phase of this joint European and Russian ExoMars mission.

10:02:48

[EXOMARS MISSION LAUNCH SHOTS - caption 14 March 2016; ANIMATION OF MARS SURFACE]

Seven months after its launch from the Baikonur cosmodrome in Kazakhstan, the challenge now is to release the Schiaparelli lander for its descent to Mars and for the Trace Gas Orbiter to successfully enter an orbit around a planet whose history reveals so much about the origins of own world.

10:03:09 [ENDS]

**BROLL**

**10:03:09:18**

**[TITLE] MICHEL DENIS, EXOMARS FLIGHT OPERATIONS DIRECTOR, ESA (French)**

A description of the challenges ahead when arriving at Mars (French).

**10:04:22:06**

**[TITLE] SET UP SHOTS, MICHEL DENIS, EUROPEAN SPACE OPERATIONS CENTRE**

Inside European Space Operations Centre (ESOC) at Darmstadt, Germany, the mission control for ExoMars.

**10:05:28:11**

**[TITLE] JOHANNES BAUER, EXOMARS SPACECRAFT OPERATIONS ENGINEER, ESA (German)**

An explanation of how ExoMars will use aerobraking to lower its orbit - a first for the European Space Agency on a Mars mission.

**10:06:09:00**

**[TITLE] ANIMATION OF ORBITER AND LANDER SEPARATION**

Three days before arriving at Mars, the Schiaparelli lander will separate from the Trace Gas Orbiter.

**10:06:59:01**

**[TITLE] ANIMATION OF LANDER DESCENDING TO MARS**

Animation of the Schiaparelli lander during its descent to Mars, showing the protective heat shield and use of its parachute. Credit: ESA

**10:08:35:18**

**[TITLE] ANIMATION OF LANDING SITE AREA**

The landing site covers an ellipse close to the equator about 100 kms long and 15 kms wide in the planet’s Meridiani Planum region. Credit: ESA/DLR/FU Berlin

**10:09:45:07**

**[TITLE] ANIMATION OF EXOMARS 2020 MISSION ROVER**

The ExoMars Trace Gas Orbiter will also be used to relay communications with Earth for current and future Martian missions, such as the planned 2020 Rover - the second phase of the ExoMars mission. Credit: ESA

[ENDS]