**ExoMars: ready for science VNR [ESA TV A and B roll RH FINAL 13.5.18]**

ESA’s Trace Gas Orbiter mission arrived at Mars in October 2016. After a year spent carefully adjusting its position, the spacecraft is now beginning its science operations.

The Trace Gas Orbiter’s instruments will be able to look through the atmosphere to identify trace gases – in particular methane – which could indicate signs of past or even present life. The orbiter will also act as a relay for rovers on the Martian surface.

A-roll includes footage from mission control and interviews with the ESA mission Project Scientist and Flight Operations Director. B-roll includes soundbites in English, French, Swedish and Dutch.

**A-ROLL [10:00:00:00]**

**[Control room sequence filmed at ESOC Darmstadt April 18]**

In ESA’s Planetary Missions Control Room in Darmstadt, Germany, flight controllers have been working round the clock, checking systems and commissioning instruments on the ExoMars Trace Gas Orbiter.

**[ExoMars animation into orbital animation ex ESA videos]**

Since arriving at Mars more than 18 months ago, this three-and-a-half-tonne spacecraft has been gently brushing the atmosphere to gradually adjust its orbit.

Now, it’s ready to begin its science mission…

**[Michel Denis, ExoMars Flight Operations Director, ESA]**

*I’m looking forward to the next few months enormously because the TGO will finally be able to show its full capability, the full capability of its instruments in terms of accuracy, quantity and quality of data, pictures, spectra and also because we will be able to do joint observations with our previous spacecraft at Mars, Mars Express.*

**[TGO image:** [**http://www.esa.int/spaceinimages/Images/2018/04/ExoMars\_images\_Korolev\_Crater2**](http://www.esa.int/spaceinimages/Images/2018/04/ExoMars_images_Korolev_Crater2)**]**

Early images captured by the new orbiter’s stereo camera show the capabilities of the spacecraft.

**[Planet animation ex ESA videos]**

The Trace Gas Orbiter’s primary mission is to identify gases in the Martian atmosphere, particularly methane…

**[Curiosity rover POV ex NASA]**

….first hinted-at by Mars Express and then by NASA’s Curiosity rover.

**[Håkan Svedhem, TGO Project Scientist, ESA]**

*We know that the lifetime of methane is very short - just a few hundred years - it will be broken down by the sunlight, by the UV, ultraviolet component of the sunlight. So, if it is there now, we know it has to be refilled every time. So where does it come from? That’s the big question.*

**[ExoMars and ExoMars drilling animation ex ESA]**

By using the orbiter’s powerful spectrometer, scientists hope to discover whether the methane comes from a geological or biological source.

95% of methane on our own planet comes from living organisms.

The ExoMars rover - landing in 2021 - will drill up to two metres beneath the surface to also search for evidence of life.

And the rover – as well as NASA rovers and landers - will use the orbiter to keep in touch with Earth…

**[Michel Denis, ExoMars Flight Operations Director, ESA]**

*The so-called relay function allows us to communicate with all landers and rovers on the surface of mars. At the moment there are only landers and rovers from NASA – curiosity and opportunity. Some tests had been done already soon after arrival at Mars and now we are going to start a campaign to calibrate and determine the best performance to relay data.*

**[Set-up shots Hakan in ESTEC Mars yard filmed May 18]**

Mars exploration is an international endeavour - and every mission adds to our understanding of this alien world…a place that someday some of us might call home.

**[Håkan Svedhem, TGO Project Scientist, ESA]**

*Mars has this very special thing, it’s actually a place that you can imagine yourself walking on. Eventually with not too far in the future surely people will be walking on Mars, that makes it very exciting and then to think about this idea that there might have been life or it might even exist today underground – that makes it a very special place.*

**[Ends]**

**B-ROLL\_002 [10:03:12:12]**

**Michel Denis, ExoMars Flight Operations Director, ESA**

**Soundbites English X3**

[1] *I’m looking forward to the next few months enormously because the TGO will finally be able to show its full capability, the full capability of its instruments in terms of accuracy, quantity and quality of data, pictures, spectra and also because we will be able to do joint observations with our previous spacecraft at Mars, Mars Express, which is still alive and working after 15 years and for ESA having two spacecraft around Mars in complementary orbits from a scientific point of view is very exciting and will allow certainly some very interesting discoveries and observations.*

*[2] It is a communications satellite on top of being a science orbiter, the so-called relay function allows us to communicate with all landers and rovers on the surface of mars. At the moment there are only landers and rovers from NASA – curiosity and opportunity. Some tests had been done already soon after arrival at mars and now we are going to start a campaign to calibrate and determine the best performance to relay data.*

*[3] It has been a long time since we arrived at Mars in October 2016 and we have had a very long period of aerobraking which consisted in reducing the orbital period – from the time when we arrived when it was actually several days to 2 hours which is the nominal period for science observations.*

**B-ROLL\_003 [10:05:21:10]**

**Michel Denis, ExoMars Flight Operations Director, ESA**

**Soundbites French X1**

**B-ROLL\_004 [10:07:14:04]**

**Håkan Svedhem, TGO Project Scientist, ESA**

**Soundbites English X2**

*[1] We know that the lifetime of methane is very short – just a few hundred years – it will be broken down by the sunlight, by the uv, ultraviolet component of the sunlight. So if it is there now, we know that it has to be refilled every time. So where does it come from? That is the big question. It cannot be synthesised really in the atmosphere it has to come from the surface or from the subsurface. But what are the processes that produces it, this is what we want to find out. One possibility is that it’s geological reaction between minerals and water – another possibility is actually there’re microbes down buried underneath the surface that is producing it today or has produced it a long time ago and they’re all dead now but the methane was kept underground and with some mechanism was released to get up into the atmosphere, these are all of the kinds of things we try to find out.*

*[2] Planetary exploration is always very exciting – mars has this very special thing, it’s actually a place that you can imagine yourself walking on. Eventually with not too far in the future surely people will be walking on Mars, that makes it very exciting and then to think about this idea that there might have been life or it might even exist today underground – that makes it a very special place.*

**B-ROLL\_005 [10:08:49:16]**

**Håkan Svedhem, TGO Project Scientist, ESA**

**Soundbites Swedish X2**

**B-ROLL\_006 [10:10:26:01]**

**Håkan Svedhem, TGO Project Scientist, ESA**

**Soundbites Dutch X2**

**B-ROLL\_007 [10:12:40:02]**

**Set-up shots in ESA’s Planetary Missions Control Room in Darmstadt, Germany**

**B-ROLL\_008** **[10:14:21:11]**

**Set-up shots filmed in the Mars Yard, ESTEC (Netherlands)**

**[ends]**