**Solar Orbiter: A close-up study of the Sun (RH FINAL)**

ESA’s mission to the Sun, Solar Orbiter, is due for launch on an Atlas V 411 from Cape Canaveral, Florida on 7 February (23:15 EST = 04:15 GMT on the 8 Feb).

Equipped with a suite of ten instruments, Solar Orbiter will capture the first images of the Sun’s poles and make detailed observations of solar activity. Its specially designed heatshield is capable of enduring temperatures of more than 500 degrees Celsius.

This A and B roll includes footage of launch preparations in Florida and interviews with mission leaders.

**A-Roll**

|  |  |
| --- | --- |
| **Pictures** | **Script** |
| **10:00:10****GVs Solar Orbiter launch preparation in Florida (shot Jan 2020)** | After some 20 years of development……six years of construction…and more than a year of testing……Solar Orbiter is being readied for launch from Cape Canaveral, Florida on an Atlas 5. Built by Airbus in the UK, engineers have had the challenging task of designing a mission to make detailed observations of the Sun and capture the closest ever pictures of our nearest star and the first images of the poles. |
| **10:00:37****Daniel Müller, Solar Orbiter Project Scientist, ESA**  | *The spacecraft has a number of key new technologies that have been developed just for the purpose of flying close to the Sun. We have a specific heat shield designed just for Solar Orbiter that will reach temperatures of over five hundred degrees centigrade on the front side and will keep things as cool as just about 50 degrees centigrade on the backside to protect the sensitive electronics.* |

|  |  |
| --- | --- |
| **10:00:58****Close-up Sun shots and animations…into heliosphere animations** | The Sun generates a bubble of plasma, enveloping the entire solar system.Known as the heliosphere, anything within it – including Earth – is subject to a stream of charged particles called the solar wind.Violent space weather from flares and coronal mass ejections has the potential to damage satellites, disrupt communications and knock out power grids on the ground. Solar Orbiter will help answer fundamental questions about the Sun’s activity. |
| **10:01:28****César García, Solar Orbiter Project Manager, ESA** | *One of the key questions that scientists have is how the heliosphere is actually generated and how it's accelerating. So, what is really driving the solar winds? And the second key question of the mission is understanding what makes the Sun change or vary over this eleven-year cycle that we all know. So, understanding the magnetic properties of the Sun and how this changes over these eleven-year cycle is one of the key scientific objectives of solar orbiter.* |
| **10:01:58****Solar Orbiter close-ups showing the apertures**From:<https://www.esa.int/esatv/Videos/2019/10/Solar_Orbiter/Shots_of_Solar_Orbiter_in_the_IABG_cleanroom_Munich_October_2019> | To measure the magnetic environment around the Sun, Solar Orbiter is fitted with a suite of ten extremely sensitive instruments. And, so it can take pictures, the heatshield has peepholes through it…covered by protective doors. |

|  |  |
| --- | --- |
| **10:02:12****Frédéric Auchère, Principal Investigator** | *We are going to places where no other solar telescopes have been before. We are going to be very close to the sun to take very high-resolution images of the sun. Unprecedented spatial resolution. And we are also going to fly over the poles of the sun - regions that are very much unknown because we don't see them very well from Earth, but they are the source of the solar wind and therefore very important.* |
| **10:02:33****Orbital animations:**<http://www.esa.int/spaceinvideos/Videos/2019/10/Solar_Orbiter_s_journey_around_the_Sun>  | Solar Orbiter will take several years – using the gravity of Venus and Earth – to reach its operational orbit |
| **10:02:44****Parker animations:****Parker animations (NASA):**<http://parkersolarprobe.jhuapl.edu/Multimedia/Videos.php> | But once in position, the spacecraft will take measurements that complement NASA’s Parker Solar Probe, which launched in 2018. |
| **10:02:49****Daniel Müller, Solar Orbiter Project Scientist, ESA** | *We will not get as close to the sun, but we will have a vastly bigger payload complement, so more instruments with more cameras looking at the Sun. So, we will do science that is complementary to Solar Probe and the two will really have a great deal of synergy.* |
| **10:03:03****Clean-room images (Florida)****10:03:20:04 End**  | With launch preparations underway, the engineers and scientists working on Solar Orbiter can now look forward to their hard work revealing our Sun as never before. |

**B-ROLL**

**10:03:20:04**

**César García, Solar Orbiter Project Manager, ESA**

New interview recorded in Florida (Jan 2020)

[**Note: soundbites used in the A-roll come from this interview:**

<https://www.esa.int/esatv/Videos/2019/10/Solar_Orbiter>]

**Soundbites in English:**

*It carries many instruments. And every of the instruments is top class, is world class. And one of the key features of solar orbiter is not only that it will carry 10 instruments. It's also that the 10 instruments will be working in unison and they will be communicating with each other. So that when one of them detects a specific fixed feature of interest, it will trigger flags so that the other instruments can also either point in that direction or change their operating mode to take the maximum benefit for that specific feature.*

Our *scientists have designed this mission so that they improve significantly their knowledge of the solar wind and what drives the solar wind and as well what creates and generates the solar cycles. And eventually with this information, they will be able to improve the knowledge and the models of how the sun works and hopefully also to be able to predict behaviour, which will be a big asset respect to protecting what we have on the ground, but also to protect our astronauts or our space assets once we go in deeper into the solar system.*

**10:04:40**

**César García, Solar Orbiter Project Manager, ESA**

Soundbites in Spanish

**10:06:17**

**Daniel Müller, Solar Orbiter Project Scientist, ESA**

Soundbite in English

*We will not get as close to the sun, but we will have a vastly bigger payload complement, so more instruments with more cameras looking at the Sun. So, we will do science that is complementary to Solar Probe and the two will really have a great deal of synergy.*

**10:06:41**

**Daniel Müller, Solar Orbiter Project Scientist, ESA**

Soundbites in German x2

**10:08:03**

**Frédéric Auchère, Principal Investigator**

Soundbites in English

*We are going to places where no other solar telescopes have been before. We are going to be very close to the sun to take very high-resolution images of the sun. Unprecedented spatial resolution. And we are also going to fly over the poles of the sun - regions that are very much unknown because we don't see them very well from Earth, but they are the source of the solar wind and therefore very important.*

*I'm looking forward to the launch of Orbiter. I've been working on that mission for 15 years. The instruments are all in good shape, they are integrated in the spacecraft. And all I'm waiting for now is to just go there and go visit the Sun.*

**10:08:49**

**Frédéric Auchère, Principal Investigator**

Soundbites in French

**10:10:14**

**Solar Orbiter launch Vehicle (Atlas V 411) on stand**

Filmed 6 Jan 2020, Cape Canaveral, Florida

**10:13:00**

**Solar Orbiter in clean room, Cape Canaveral, Florida**

Filmed Jan 2020

10:14:17

END B-Roll

10:14:22:13

END