**ESA Preview 2021**

**As the world leaves annus horribilis 2020 behind it looks towards 2021 with a mixture of relief and expectations. And so it goes for the European Space Agency, ESA who’s future looks bright and very much exciting. 2021 will be a year in which Vega-C will make its maiden flight, two ESA astronauts start long-duration missions aboard the International Space Station, BepiColombo and Solar Orbiter rendezvous at Venus and ESA says goodbye to its Director General Jan Wörner as his tenure ends.**

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| **10:00:00** | **ESA leader** |
| **10:00:10** | **Title: ESA PREVIEW 2021** |
| 10:00:08:00   * Vega-C AVUM stage in cleanroom – AVIO, Italy – 2020, ESA * Vega-C stage production – Avio, Italy -2020, ESA * Vega-C Faring production – RUAG, Switzerland – 2020, ESA * GV’s Eutelsat Quantum assembly at Airbus Defense and Space – Airbus Defense and Space (4 shots) | **2021 promises a to be a fruitful year for ESA and European space industry.**  **This year will see the launch of a new and innovative telecommunications satellite called Quantum. Developed through a public-private partnership with Eutelsat, Quantum is the first satellite that can be reprogrammed in orbit for maximum flexibility.** |
| 10:00:28:20   * Animation Vega-C launch – 2017, ESA (2 Shots) * Animation Vega-C on launchpad – 2017, ESA (1 Shots) * GV’s Vega Launchpad at Europe Spaceport - Kourou, French-Guiana – 2019 - ESA * Aerial. P120C BEAP hot fire testing – Kourou, French-Guiana – 2019, ESA * Animation. Ariane 6 assembly and launcher on the launchpad – 2019, ESA (4 Shots) | **Another first in 2021 will be the maiden flight of Vega-C. This new iteration of the Vega launcher is more powerful and allows for larger and heavier payloads than the current Vega with which it will share a launchpad. Vega-C’s first stage motor will also be used as a strap-on booster for Europe’s new heavy-lift launcher Ariane 6. Ariane 6’s development will continue in 2021 working towards the launcher’s inaugural flight in 2022. Through clever design both Vega-C and Ariane 6 will be cost-efficient and reliable launch vehicles ready to compete in the worldwide launcher market, confirming Europe as a frontrunner in spaceflight while also securing independent access to space for Europe.** |
| 10:01:18:20   * Animation. Galileo satellite in orbit– 2018, ESA * GV’s Galileo fit check – Kourou, French-Guiana – 2018, ESA (2 schots) * Animation. Galileo satellite in orbit– 2018, ESA | **Exciting news for Galileo, Europe’s global satellite navigation system: in January the contract for the development of the second generation Galileo satellites will be signed. Europe will also launch two first generation Galileo satellites on a Soyuz from Kourou in 2021. These satellites are set to serve as back-ups or replacements for the oldest Galileo satellites.** |
| 10:01:44:10   * Crumbling icewall – Videoblocks * Forest Fire – Videoblocks * Flooded village – Videoblocks * Animation. Sentinel-1 flyby – ESA * Animation. Sentinel-3 360° - ESA * Animation. Sentinel-5 scanning for tracegasses * Animation. Sentinel-6 measuring sea level * Animation. Copernicus programme overview - European Commission | **As humankind continues to face the challenge of climate change and our impact on the environment Earth observation continues to be a cornerstone of ESA’s activities. The Agency will carry on operating 16 Earth observation satellites monitoring our planet. Through these programmes over 250 terabytes of data are distributed to users across the globe for scientific and operational purposes. In the coming year ESA and the European Commission will also decide on the expansion Europe’s successful Copernicus Earth Observation programme.** |
| 10:02:22:17   * GV’s Matthias Maurer and Thomas Pesquet mission training Johnson space center, Houston TX, USA – unknown– ESA (2 shots) * GV’s Thomas Pesquet at NBL spacewalk training, Johnson space center, Houston TX, USA – 2015, ESA (2 shots) * Animation. Alpha mission patch – 2020, ESA * GV Matthias Maurer at NBL spacewalk training, Johnson space center, Houston TX, USA – 2017 – ESA * GV Matthias Maurer training, Johnson space center, Houston TX, USA – 2017, ESA * Animation. Cosmic Kiss mission patch – 2020, ESA * ESA Astronauts at Johnson space center, Houston TX, USA – 2017 – ESA (2 shots) * Zero gravity airplane, Matthias Maurer practising in zero Gravtiy – unknown date – ESA (2shots) * Matthias Maurer attending Astronaut class – unknown date – ESA * EXT. ISS in orbit – ESA/NASA * INT. Thomas Pesquet doing experiments aboard the ISS (2 shots) – ESA/NASA | **In 2021 two ESA astronauts will launch to the International Space Station. Thomas Pesquet will start his second long-duration mission in Spring. His mission is called Alpha after Alpha Centauri, the closest stellar system to Earth, following the French tradition to name space missions after stars or constellations.**  **In Autumn German astronaut Matthias Maurer will fly to the Space Station for his first mission called Cosmic Kiss, which represents the love of space. Matthias was the most recent astronaut to join the ESA astronaut corps and finished basic training in 2018. In 2021 ESA will start recruitment to find suitable candidates for a new astronaut class.**  **Aboard the ISS both Thomas and Matthias will spend a lot of time in the European Columbus laboratory performing hundreds of experiments in zero gravity.** |
| 10:03:22:06   * Animation. Artemis 1 mission with Orion capsule – ESA (3 shots) * Animation. Gateway station and Orion capsule – NASA/ESA/ATG Medialab * Animation. Exomars tracegas orbiter in orbit – 2019, ESA * Animation. Exomars rover on mars – 2019, ESA (6 shots) * Animation. Mars Sample return rover – 2019, ESA/ATG Medialab | **ESA will continue to collaborate with NASA in human spaceflight with the ongoing development of NASA’s Artemis-1 mission. The Artemis-1 mission will see the first flight of the new Orion capsule with ESA’s European Service Module, ESM.**  **The Orion spacecraft and ESM will become vital for human spaceflight as they will fly astronauts to the future lunar orbiting Gateway, in which ESA is one of the contributing partners, but also to the Moon or even to Mars. While it might be a while before humans set foot on it, the exploration of the red planet presses forward with the continued development of ExoMars, ESA’s Mars lander and rover scheduled for launch in 2022 and the Mars Sample Return mission in collaboration with NASA that aims to retrieve samples from our neighbouring planet.** |
| 10:04:17:09   * Animation splitscreen Venus flyby solar orbiter and Bepi\_colombo – 2020, ESA * Animation. Bepi-Colombo approaching Mercury – 2019, ESA * Animation. Solar Orbiter near the Sun – 2019, ESA * Animation. Ariane 5 launch of JWST – 2017, ESA (2shots) * GV’s JWST in cleanroom, Godard space center, USA – 2017, ESA (2shots) * Animation. JWST deployment – 2017, ESA * Animation. Galaxies – Videoblocks * GV’s Flyeye Telescope, OHB cleanroom - Milan, Italy – 2017, ESA (3shots) * Still. Artist impression Flyeye telescope – unknown date – ESA (2 shots) | **A lot farther into space ESA spacecraft BepiColombo and Solar Orbiter will perform a near-simultaneous flyby of Venus in August. It will be the second flyby of the hottest planet in our solar system for both spacecraft. BepiColombo is on a 7-year journey to Mercury and Solar Orbiter will be the first spacecraft to study the poles of our sun.**  **Science will also see the launch of James Webb Space Telescope on top of an Ariane 5 from Kourou. This infrared telescope will study every phase in the history of our Universe, ranging from the first luminous glows after the Big Bang, to the formation of solar systems capable of supporting life on planets like Earth.**  **Closer to home ESA’s Flyeye telescope will be tested and validated at Matera Space Centre in Italy. This telescope has been specially designed to scan the heavens for near-Earth objects such as asteroids, which could potentially be a threat to our planet.** |
| 10:05:20:07   * GV’s Jan Wörner at Estec – Noordwijk, The netherlands – 2016, ESA (3shots) * GV Jan Wörner speech – July 2015, ESA * GV Jan Wörner presentation – June 2017, ESA * GV’s Jan Wörner at the 2019 ministerial – Seville Spain – 2019, ESA (3 shots) * GV’s Jan Wörner round table discussion – June 2017, ESA (2shots) * GV’s Josef Aschbacher at Global Space economy forum, Estec – Noordwijk, The Netherlands – 2018, ESA (2shots) * Animation. Ariane 6 launch – 2017, ESA (2shots) | **June 2021 will mark the end an era when current ESA Director General Jan Wörner’s tenure ends. Jan became ESA Director General in July 2015, at the time he was the head of the German space agency DLR.**  **With Jan as Director General ESA saw a number of achievements like securing a record budget at the Space 19+ summit in Seville, Spain. And a renaissance in Europe’s space industry due in large part to Jan’s insistence that the private sector should play a larger part in Europe’s space ambitions. Now it will be up to a new Director General Josef Aschbacher and a younger generation to take over and lead the European Space Agency into the future.** |
| **10:06:06:08** | **B-roll** |
| **10:06:06:08** | **Eutelsat Quantum**  **GV’s of Quantum assembly in cleanroom**  **© Airbus Defense & Space**  **7 shots** |
| **10:07:07:06** | **Eutelsat Quantum**  **Artist’s impression of Eutelsat Quantum**  **3 shots** |
| **10:07:27:06** | **Vega-C**  **Animation: Vega-C launch**  **2017 – ESA**  **6 shots** |
| **10:08:43:03** | **Ariane 6**  **GV’s early combined test CCDZ**  **Europe Spaceport - Kourou, French-Guiana**  **© ESA/CNES 2020**  **39 shots** |
| **10:08:43:03** | **Ariane 6**  **GV’s early combined test CCDZ**  **Europe Spaceport - Kourou, French-Guiana**  **© ESA/CNES 2020**  **39 shots** |
| **10:10:34:11** | **Thomas Pesquet ISS-mission Alpha**  **Animation: Alpha Mission patch**  **2020 – ESA**  **1 shot** |
| **10:10:54:15** | **Matthias Maurer ISS-mission: Cosmic Kiss**  **Animation: Cosmic Kiss Mission patch**  **2020 – ESA**  **1 shot** |
| **10:11:16:16** | **Bepi-Colombo**  **Animation: Bepi-Colombo Venus Flyby**  **2020 – ESA**  **1 shot** |
| **10:11:41:16** | **Solar Orbiter**  **Animation: Solar Orbiter Venus Flyby**  **2020 – ESA**  **1 shot** |
| **10:12:44:15** | **James Webb Space telescope**  **Animation: JWST launch on top Ariane 5 and deployment**  **2017**  **2 shots** |
| **10:15:48:09** | **Flyeye Telescope**  **GV’s Flyeye Telescope**  **OHB cleanroom - Milan, Italy**  **2017 – ESA**  **8 shots** |
| **10:16:41:03** | **Flyeye Telescope**  **Flyeye Artist impression**  **ESA**  **2 shots** |
| **10:16:56:03** | **ExoMars**  **Animation: ExoMars rover on Mars**  **2020 – ESA**  **13 shots** |
| **10:18:50:23** | **Mars Sample Return**  **Animation: Sample fetch Rover for Mars Sample Return campain**  **2020 - ESA/ATG Medialab** |
| **10:19:31:24** | **Artemis 1 mission**  **Animation: Artemis 1 mission around the moon**  **2020 - ESA** |
| **10:21:53:20** | **Gateway**  **Animation: Orion docking with gateway**  **2019 - ESA/NASA/ATG Medialab** |
| **10:22:49:17** | **ESA OUTRO** |
| **10:23:01:20** | **END** |