**ESA HIGHLIGHTS 2024**

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| Image | Text |
| 10:00:00:00  **images:** Footage of anticipation for the launch. The rumble and finally lift-off for Ariane 6. Part two some footage of other highlights in quick succession  **Music:** Make the music match the quiet of the anticipation and then go to overture. | **Breaths were held in the jungle of French Guiana on 9 July while the countdown of the first-ever Ariane 6 reached ‘top’, and the rocket left its launchpad with a thunderous rumble. A historic event for the European Space Agency ESA and ‘the’ highlight of 2024. Yet it was but one among many other achievements in 2024.** |
| **Text Graphics**: "ESA 2024 Highlights: flight of the Ariane 6” | **TITLE Suggestion: ESA 2024 Highlights: flight of the Ariane 6** |
| **images:** Ariane 6 inaugural launch sequence for different angles, showcasing of the experiments and building process of the launcher.  **Text Graphics**: " Ariane 6: A New Era Begins for Europe’s Space Ambitions" | **Ariane 6’s inaugural flight ensures Europe’s independent access to space. This new heavy-lift rocket offers more flexibility than its predecessor and provides the same reliability that all Ariane launchers are known for. Its first flight delivered a selection of experiments, satellites and payloads into space but mostly it showcased ‘liftoff to orbit’ for a completely new rocket. This launch marks the start of the age of Ariane 6.** |
| **images:** Vega launch and preparations for Vega-C spacecraft.  **Text Graphics**: "Say goodbye to Vega, welcome back Vega-C"  **images:** VSentinel-1C and Sentinel-2C animations and cleanroom footage.  **Text Graphics**: "Senitnel-1 and 2C joining Copernicus in orbit" | **In a fitting farewell, 2024 also witnessed the last launch of Vega, the first version of Europe’s lightweight launcher. For its last mission Vega carried Sentinel-2C into orbit. However, this last Vega mission is only the end of the beginning as its legacy continues with Vega-C. This more powerful, upgraded Vega launcher returned to flight with the launch of Sentinel-1C in December.**  **With the last Vega carrying Sentinel-2C and Vega-C bringing Sentinel-1C to orbit, two more satellites joined Europe’s Copernicus constellation. In what is the largest Earth observation programme in the world.** |
| **images:** Animation and footage of Galileo satellite launch and deployments.  **Text Graphics**: "Galileo constellation expanded with 4 more satellites”  **images:** Footage of Galileo ground segments, if possible, map showing how vast this network of ground stations is.    **~~Text Graphics~~**~~: "PRS and Galileo Ground Segment System build 2.0 successfully deployed”~~  **images:** animation of Galileo 2nd gen design.    **Text Graphics**: "Green light for Galileo 2nd generation satellite design” | **From one European constellation to another: 2024 was an important year for Europe’s Galileo constellation which continued to expand with the launch of four new satellites. The addition of these satellites increased the system’s reliability, robustness and precision, enhancing global navigation services for billions of users.**  **On Earth, an updated Galileo ground system was rolled out to enhance support for the ever-growing constellation, add extra security features and enable the Galileo second generation satellites to be flown.**  **This second generation of Galileo satellites is now in production and will consist of two different satellite families. In June, both satellite designs were reviewed and found to meet all requirements, marking another step towards the second generation of the most precise publicly owned satellite navigation system in the world.**  **In 2024, we've finalised agreements with the European Commission and industry consortium SpaceRISE for Iris*2* – a multi-orbit constellation of over 280 satellites that will deliver resilient, secure and fast communications for the EU** |
| **images:** Animation of BepiColombo, footage of fly-by’s give it room to breathe  **Text Graphics**: "BepiColombo Mercurian flyby’s give us more stunning footage.  **images:** Animations of Juice flyby and images of Juice photographing earth in the process  **Text Graphics**: "Juice: First-Ever Moon-Earth Gravity Assist"  **images:** Footage of Rosetta launch and Philea landing.  Footage of Hera launch, last look on earth and cruising to Dimorphos.  **Text Graphics**: "Hera: a last look at earth before chasing the comet"  **images:** Show Ramses beauty shot and the Apophis approach to earth video.  **Text Graphics**: "Ramses: ESA’s next asteroid mission defending Earth"  **images:** comet interceptor animation renders from esa.int comet interceptor page  **Text Graphics**: "Comet Interceptor: ESA’s mission to visit a pristine comet"  **images:** Animation of Euclid scanning, the showcasing images captured. Look for beauty shots.  **Text Graphics**: "Euclid: first Images from the Dark Cosmos"  **images:** Preferably Proba-3 launch, cutting with visuals of the sun and Porba-3 animation. Briefing speaks of stunning visuals but does not specify which -> best to check  **Text Graphics**: "Proba-3: first-ever Precision Formation for Solar Observation" | **Far away, deep in our Solar System, the ESA/JAXA BepiColombo spacecraft performed two breath-taking Mercury flybys in 2024. BepiColombo sent back its best images yet and they were stunning. These flybys are needed to slow the spacecraft down for it to enter orbit around Mercury in 2026.**  **Juice is another epic deep-space mission and it, too, performed a crucial gravity assist, this time becoming the first spacecraft to conduct a Moon-Earth double fly-by on its way to Jupiter. Now Juice is en route to Venus taking a shortcut through our Solar System and bringing the spacecraft one step closer to exploring Jupiter’s icy moons.**  **It's been 20 years since ESA’s comet chaser Rosetta was launched and 10 years since its historic arrival at the comet 67P/Churyumov-Gerasimenko. This year ESA once again launched a spacecraft to a small body, this time with the Hera mission going after an asteroid. The spacecraft is on track to investigate asteroid Dimorphos following the earlier impact of NASA’s DART mission, both part of a crucial planetary defence effort. As Hera departed home, it took one last look at the planet it is meant to protect.**  **Meanwhile ESA is already developing the Ramses mission to rendezvous with the asteroid Apophis and follow it during its exceptionally close flyby of Earth in 2029.**  **Also in development is Comet Interceptor, the first mission to visit a comet coming directly from the outer reaches of the Solar System, carrying material untouched since the dawn of the Solar System.**  **It's only been a year since Euclid has been launched and already the space telescope has released stunning images of the stars and galaxies it will study to investigate dark matter.**  **The released mosaic of 208 gigapixels contains around 100 million sources: stars in our Milky Way and galaxies beyond, revealing vast cosmic structures that challenge our understanding of dark matter and dark energy, the most enigmatic aspects of our current cosmological understanding.**  **2024 saw the launch of ESA’s Proba-3 mission to the Sun. Proba-3 consists of two precision formation flying satellites, the first in the world, and will demonstrate formation flying in the context of a large-scale science experiment. Together, the satellites will form a 144-metre long solar coronagraph, allowing thousands of hours of artificial solar eclipses to study the Sun’s faint corona.** |
| **images:** Animation of Earthcare and then showcasing the first images.  **Text Graphics**: "EarthCare: Illuminating clouds, aerosols and radiation in Earth's Atmosphere"  **images:** Animation of AWS and then showcasing the first images. (storm Boris)  **Text Graphics**: "Arctic Weather Satellite: taking the measure of temperature and humidity across the globe"  **images:** Animation of cluster re-entry and ERS-2 re-entry simulation. Also possible to use some footage of space debris video  **Text Graphics**: "ESA’s Zero debris approach for Cluster and ERS-2 re-entry" | **From the depths of space to closer to home, launched in 2024, EarthCare began transmitting its first atmospheric images and data, offering new insights into the complex interaction between clouds, aerosols and radiation in the atmosphere and our planet's climate.**  **And the same goes for ESA’s Arctic Weather Satellite which was also launched this year and started providing images after only one month in orbit. Despite its name the Arctic Weather Satellite measures temperature and humidity at various altitudes across the world. But its humidity data is particularly valuable for Artic weather prediction. Both missions reinforce ESA's dedication to Earth observation, helping us monitor environmental changes from above.**  **But ESA cares not only about the environment on Earth, but also in space. With its zero debris approach it aims to leave nothing behind when spacecraft missions end. This year both Cluster’s ‘Salsa’ spacecraft and ERS-2 made reentries into Earth’s atmosphere, breaking up as they did to keep space clean. The zero debris charter already received over 100 signatures including countries such as Mexico and New Zealand.** |
| **images:** Footage of Huginn and Muninn missions, meet up at ISS. Footage axiom 3 mission and of Mogensen return  **Text Graphics**: "Huginn and Muninn meet at the ISS"  **images:** Footage of ESA astronaut class training + graduation. Highlight Raphael and Sofie.  **Text Graphics**: "ESA Astronauts class graduates basic training. Raphaël and Sophie first ones to fly to ISS”  **images:** Reserve training footage if it exists  **Text Graphics**: "Astronaut Reserve start training at EAC”  **images:** Footage of [LUNA facility](https://www.esa.int/esatv/Videos/2024/09/LUNA_analog_facility_The_Moon_on_Earth)  **Text Graphics**: "LUNA: Europe’s Lunar Training Ground Opens" | **In human spaceflight, Europe continues to contribute to science from the ISS as Andreas Mogensen’s Huginn mission continued well into 2024. Andreas even met up in space with ESA project astronaut Marcus Wandt who was launched on his Muninn mission. Making it the first time two Scandinavians were in space together. While Marcus went to space for 18 days on a commercial astronaut mission to the ISS for Axiom, Andreas returned in March after 199 days in space.**  **Meanwhile the latest class of ESA astronauts have completed basic training and graduated in April. A milestone for ESA’s future astronauts with two of them, Sophie and Raphaël, already assigned for long-duration missions to the ISS in 2026.**  **And the astronaut corps keeps expanding – with the first half of ESA’s Astronaut Reserve starting their first training programme at the European Astronaut Centre in Cologne, covering key modules of basic astronaut training.**  **Also in Cologne, ESA inaugurated its newest training complex, the LUNA facility, with DLR. LUNA is a pioneering lunar training site simulating Moon-like conditions to prepare astronauts for future lunar mission. This state of the art-facility will greatly enhance ESA’s capabilities in training its astronauts.** |
| **images:** ESM-3 footage and footage of Artemis launcher, Orion capsule  **Text Graphics**: "ESM-3 shipped to US to power Artemis III mission.”  **images:** Signing of Argonaut + argonaut animations  **Text Graphics**: "Argonaut: ESA’s Lunar Lander contracts signed”  **images:** Animation of Lunar programmes and moonlight.  **Text Graphics**: "ESA’s Moonlight programme to aid Astronauts on the lunar surface” | **To get to the Moon, ESA is a partner in the Artemis programme, providing the European Service Module, the powerhouse for NASA’s Orion spacecraft. This year a third ESM has been shipped to the US for integration.**  **Europe is also contributing to the international Lunar Gateway and developing its own lunar lander called Argonaut, in line with tradition to name lunar missions after Greek mythology. Only recently all contractual partners in the Argonaut development signed the agreement to build five European landers. These Argonaut landers will also be using ESA Moonlight navigation and telecommunication capabilities around the moon. Moonlight is in full development and will allow for fast communication with the Gateway and Earth to return scientific and operational data, as well as location fixes for automated landings. All crucial steps for Europe in gaining access to the moon.** |
| **images:** Selection of GV’s of the past year swift montage of highlights.  **Text Graphics**: "ESA 2024: a year filled with milestones in Science, Exploration, and Innovation" | **As 2024 draws to a close, it is clear to see that ESA’s achievements this year have reinforced Europe’s role in space. With eyes set on future missions and innovations, ESA’s journey continues into new frontiers, shaping the space landscape for generations to come.** |
|  | **B-ROLL** |
|  | **ESA OUTRO** |
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