

Perspective

The Second: First Space Flight after half a Century

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Space Journey: After half a century break the NASA takes renewed course on the moon. First goal is to experience once again what NASA already once could do. Donald Trump had attempted to do everything in order to accelerate the new moon programme of US Space Agent NASA. He wanted to experience as President first landing on the moon since Apollo in 1972. But it was not so. On the 29th August 2022 in the Presidentship of Joe Biden NASA was to press towards the launch of a moon rocket to put a crew capsule in the lunar orbit for the first time in 50 years.

One half century after the end of Apollo Programme new begins the programme Artemis. For the first flight the NASA has chosen the Start Block 39B of Kennedy Space Centre from which already several Apollo mission and space shuttle flights were started. For the first time the hardware is tested for a new rocket.

A New Rocket: The 322 feet (98 meter) rocket is the most powerful ever built by NASA, out muscling even the Saturn V used by the Apollo programme that carried astronauts to the moon a half century ago. A new capsule for the crew and one new driving module for the capsule with which the NASA in the coming decades beyond, has to do in respect of the moon.

With the first flight there will be no human being on board the flight. The risk would be with the new too high. Instead of that the NASA has installed dummies. Two of which are the German-Israelis twins Helga and Zohar, the imitations of

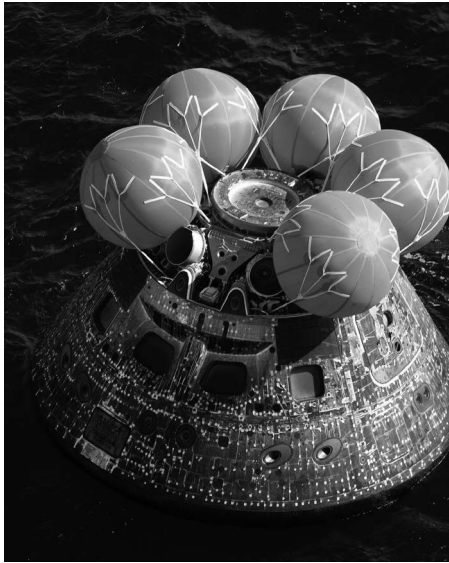
feminine torso which are full to the brim with radiation measuring sensors. One of the phantoms carries a protective vest but the other not so the participating researchers want to find out how the radiation in cosmos works on the feminine body and helps against that.

Soon after overcoming several natural and technological hurdles and obstacles like hazardous hydrogen fuel leak prompting a slew of repairs for the NASA's most powerful rocket several days Artemis-1 started off for the moon on the morning of 16th November 2022. This rocket will travel during 4 to 6 weeks a distance of two lakh eighty thousand miles from the earth. Although the Orion crew capsule will remain inside but no human being will be there. Instead three dummies with large number sensors all over the torso are there. Artemis 1 will place the Orion in earth's orbit. This Orion crew capsule will travel for 26 days on a predetermined path and also travel past the moon to a certain distance. Whether this rocket will be able to make the astronauts reach the moon that will be evaluated in Artemis 1 mission. In Artemis 2 mission astronauts will be sent.

Orion crew capsule reached the moon's orbit on 18th November 2022 and the goal of the mission to revolve halfway achieved but that was to be completed by Saturday as per NASA and that will complete successfully the first stage of the mission. The success of Artemis 2 and Artemis 3 entirely depends on the successful mission of Orion. In this mission the Orion will travel still

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40 thousand miles more beyond the moon. After completing half the orbit it will start for return journey. It was expected that after 25 days of start off Orion would return to earth on Sunday the 11th December. After revolving the moon for 25 days NASA's Orion capsule returned to the earth on Sunday, the 11th December 2022 and descended on the Pacific Ocean near the Mexican coast.



Apart from that on the moon station saving mass earliest knowledge on that gets collected, how human being manage in isolation and the high radiation doses on the other side of earth's magnetic fields. First when these and many additional questions are clarified the NASA can make for the goal that it has not yet reached mars.

Orion and the service module

The moon hardware consists of capsule Orion and service module. Orion is built by US Space Journey concern Lockheed Martin and provides space for a group of maximum 4(four) members of the crew. For the first flight mass dummies are built up. The service module comprises by the side of the propulsive force also the tanks for respiration, air and water as also the electric supply of capsule. It will be supplied from airbus and built up in Bremen. Orion and the service module are each other bound together through an adaptor, likewise as service module and the rocket.

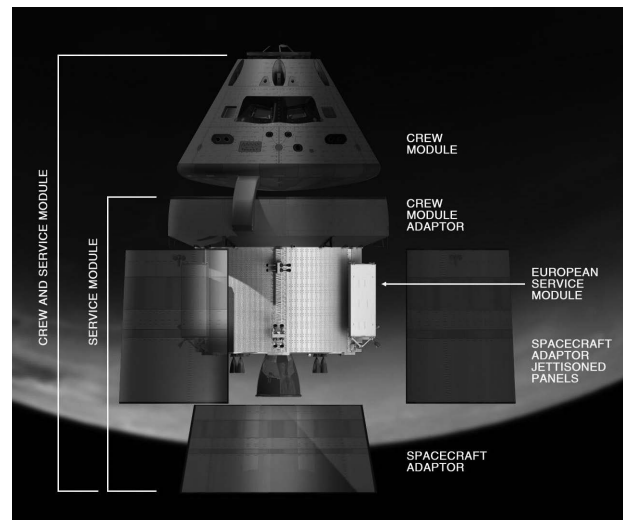
On the following Artemis-Missions for the first time women should be sent according to the NASA to the moon. In the year 2024 a crew mission is

planned which should revolve round the moon. In 2025 should then the first landing will occur since one half of a century.

Artemis should be more than the repetition of the Apollo programme. With the fourth mission the construction of a space station will begin in the moon's orbit. The NASA speaks of Gateway? For the year 2030 is planned that human beings leave for the first time the earth-moon system in order to travel to mars

For such flight in deep Space a moon station would be helpful even if not indispensable. Hardware must there from no more overcome the full gravitation of the earth. That saves fuel and starting elements. Apart from that on a moon station earliest knowledge about how human beings in isolation and high radiation doses get collected on the other side of the earth's magnetic field. First when these and many other questions are clarified, the NASA can make for the goal that it has not yet achieved: that is Mars.

Artemis 1: Mission Scheme



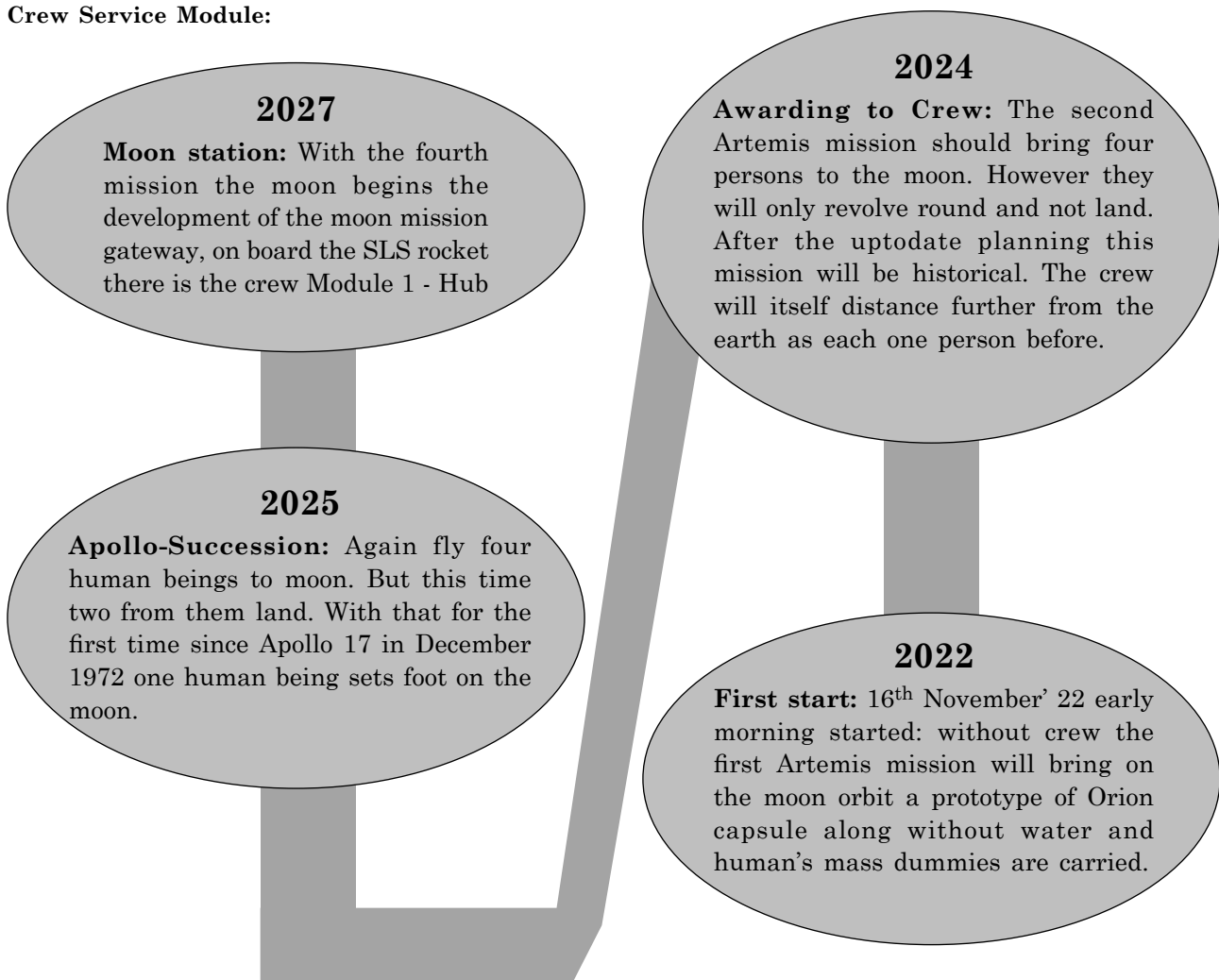
The Artemis 1 mission should continue between 26 and 42 days dependent on all of the number of moon orbits. On the way in total ten cubical sats should be set out – small hexadron research satellites

1. Starting of Space Launch System rocket
2. System checks in earth orbit
3. Trans lunar injection: 20 mins manoeuvre, which brings the Orion capsule on the moon course

4. Separation of the last rocket stage
 5. First flying part: Orion approaches moon's surface upto 110 km
 6. Applying brake in the moon orbit (distant retrograde orbit)/DRO
 7. DRO: 70000 km on the surface
 8. Beginning of flight back
 9. Second flying part
 10. Service module is jumped off
 11. Reentry in the earth's atmosphere
 12. Splash down: Landing in the Pacific Ocean. A/B/C cubesats are started off.
- "In 2025 we want to provide spaceship which are designed for long spaceflight. The goal for the first time crews should fly beyond the moon". Barack Obama the then President, USA sketched in 2010 the goal of his space journey policy.

Service Module

Crew Service Module:



Source: VDI nachrichten, Technik Wirtschaft Gesellschaft, 12 August 2022, Nr. 16, Seite 8, 9 Von Iestyn Hartbrich and newspaper reports from The Statesman and Bartaman.