

EVA is 50

The construction and maintenance of the International Space Station from 1999 onwards and all its astonishing scientific achievements—like the wonders of the universe revealed via the Hubble Space telescope would not have been possible without the engineering work of a group of brave and dedicated astronauts and cosmonauts who routinely ventured from their mother craft, separated from the cold and dangers of outer space only by their spacesuits.

They still do to this date, but the first space walks—technically referred to as E.V.A.s (Extra Vehicular Activities) were very much steps into the unknown, the first being by a Soviet cosmonaut whose very name suggested the courage of a lion !

In attempting his first walk in the Spring of 1965 he nearly lost his life.

He was followed by many others taking small incremental steps, with a diversion to the Moon, no less, before what we regard (or just ignore) as routine today was possible.

This exhibit charts those stages in what was once a contest and now is a prime example of scientific international cooperation via the International Space Station.



From the above almost fatal maiden space walk shown on Cuba 1976 to the daily routine suggested by the 2007 United Nations mini-sheet—in 50 years



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The first man to walk in space was front page news for months. Soviet cosmonaut Alexei Leonov, also a space artist and the designer of several issues for the Soviet Union and Cuba, had this honour with a mere twelve minute spacewalk on March 18th, 1965.

Leonov who is now in his 81st year appears on a wide range of stamps celebrating the event and subsequent anniversaries.

Ironically in a competition governed by F.I.P. Astrophilatelic rules none of these items would qualify as they were not produced on the day of the original event or cancelled at the post office nearest to the Tyuratam ("Baikonur" launch site) !



Alexei Leonov photographed wearing the uniform of a Colonel in the Soviet Air Force on this maxi card bearing the Soviet issue for the flight cancelled on day of issue: 23rd May 1965

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To mark the event the Soviet Union first issued one 10k stamp on 19th March—the day after the flight—presenting to the world what we later learned was a completely fanciful representation of the spacewalk. The design, produced by the “Lesegri” team, contained several complete misrepresentations, in order to conceal technical aspects of the achievement.



The four most important design errors are i. the shape of the Voskhod craft, ii the open hatch showing the second cosmonaut, iii the suggestion that Leonov used a hand-held camera and iv the colour of the cosmonauts' space suits.

The technical deception was compounded with the issue of a mini-sheet of a rather naïve design on Cosmonautics Day (12th April 1965—exactly four years after Yuri Gagarin's flight) which repeats the three main technical errors but does not show Leonov with any camera at all!



The concealing of any technical aspect of the early Soviet space flights is a common aspect of stamps of the time from the USSR and their satellite states.

So much of their programme was surrounded in secrecy.

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In common with many early Soviet space successes, this flight was celebrated with dedicated issues from several Soviet satellite states all of whom had to follow the Soviet practice of using fantasy space craft to illustrate the event because of the lack of published information.

These issues typically comprise two, or three stamps using portraits of Leonov and fellow cosmonaut Pavel Belyaev and a space walking scenario.

Issues from Albania (15th June 1965) and East Germany, marking the cosmonauts' visit to Berlin (1st October 1965) both use the fantasy collar and thimble design for the Voskhod craft, based on a space vehicle seen in a Red Square parade in the early 1960's.



Other 1965 designs from Bulgaria (20th May), Czechoslovakia (17th April), Cuba (2nd April), Hungary (17th April), Romania (25th August) North Korea (30th June) and Viet Nam (5th October) “solve” the problem design by ignoring the craft altogether or just suggesting a small part of it.



A further Hungarian issue within a general Space Achievements set of 29th December 1966 echoes the original Soviet issues showing an open hatch.

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And the truth ?

Vostok (the craft used for example by Yuri Gagarin in 1961) and Voskhod (used for Leonov's spectacular space walk) were essentially the same craft, with Voskhod having seats for two cosmonauts. Again the naming was simply to give a false impression to the West that the Soviet Union had already developed a second generation space craft.

The first stamp to show the true shape of Vostok is the Yemen Kingdom issue of 10th December 1965 which purports to show Leonov in Voskhod 2, so its design is both wrong and right simultaneously !



For fifteen years after the flight of Voskhod 2 the Soviet Union issued anniversary stamps disguising what really had happened during Leonov's space-walk. We see this *right* on a 1972 issue (marking fifteen years since the launch of the first unmanned satellite, Sputnik), *below* on a 1975 issue on cover marking the tenth anniversary of Voskhod 2 and *below right* on a 1977 issue marking 20 years since Sputnik all of which simply show Leonov floating tethered on an umbilical from an unseen craft.



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And the truth ?

The equipment and technique involved in the first spacewalk was finally revealed in a mini-sheet - shown on cover below - produced by the USSR in 1980 and designed and drawn by Leonov.



It shows a six foot long tube sticking out from the crew capsule of Voskhod 2, forming a collapsible set of interconnected rubberised canvas cylinders with a hatch at either end effecting an airlock with a TV camera on the top.

Compare this with the design of the 1965 mini-sheet shown earlier in this display and on cover opposite and you will see how much the West was deceived.

The craft is totally different and does not have an open hatch. Leonov's suit is white and the camera (below his right breast) is an integral part of it.

A few minutes after a short space walk Leonov had the greatest difficulty in returning as his spacesuit had ballooned in the vacuum of space and his fingers and toes were not in contact with any part of it ! He should have entered feet first, but finding this impossible he eventually dragged himself in head first and shut the airlock so his partner Pavel Belayev could pressurise the tube, safely open the Voskhod hatch and let him back in.

The first space walk had proved nearly fatal.

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And the deception again...

The original mini-sheet on cover showing the Moscow Space Obelisk as its indicia—tied with a red Moscow cancel—showing all the fantastical elements of the first ever space-walk issued by the Soviet Union on Cosmonautics Day (12th April) 1965.



Postal stationery card issued to mark the 20th anniversary of Leonov's flight in 1985.



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Anniversary items

The stamp from the 1980 mini-sheet tied with a black 15th anniversary pictorial cancel struck at Baikonur Cosmodrome



A fortieth anniversary issue from Azerbaijan giving a longer perspective on Leonov's first walk.



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The American response.



Of course the Americans were disappointed being again beaten by the Soviets in yet another aspect of the Space Race with Leonov's space walk, for it was not until June 3, 1965 that NASA astronaut Edward M. White Jr emulated him. He floated in space for some twenty minutes on the end of a 25 foot "umbilical" tether as depicted on a U.S. se-tenant pair (not issued till 29th September 1967) showing his Gemini 4 space craft and the earth in the background.

There were few secrets about the nature of White's space-walk and the international issues which show Gemini with an open hatch show correct information.



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The American response and Soviet developments.



Space walking became a feature of subsequent Gemini missions and in July 1966 Michael Collins space walked from Gemini 10 to an Agena rocket with which he and his commander John Young had rendezvoused. This event is depicted on a stamp from Paraguay and is graphically described in Collins's wonderful 1974 book *Carrying the Fire*, which details the high drama of his two space walks or EVAs (Extra Vehicular Activity) as they were by then being called.

Four months later during a 44 minute space walk on the Gemini 11 mission Richard Gordon connected his mother craft to an Agena rocket with a 30 metre tether and when he returned to it pilot Charles Conrad performed the first experiment in creating artificial gravity by cartwheeling the two craft around each other.

In the later Gemini and in early Soviet Soyuz missions, the purpose of spacewalks varied from taking spectacular photographs unhindered by windows, to recovering bits of craft exposed to space for lengthy periods of time and to moving from one spacecraft to another.



This last type of activity can be seen on this selection of stamps depicting the January 1969 docking of Soyuz 4 with Soyuz 5 in a rehearsal for what was intended to be the practice when the Soviets got to the Moon. This, the first ever transfer via spacewalk of crew members was performed by cosmonauts Alexei Yeliseyev and Yevgeny Khrunov.

(Edward White later perished in the Apollo 1 fire in 1967. Had he not he would almost certainly have gone to the Moon in the Apollo programme).

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Walking on the Moon

Both the USA and the USSR were developing Moon landing programmes but after major technical set backs the Soviets abandoned such plans and openly (but deceitfully) denied that they had ever intended to, adopting a "sour grapes" attitude—and so leaving NASA a clear run.

Six Apollo two-man crews landed on the Moon between 1969 and 1972 and incrementally extended their lunar EVA each time as can only be suggested by this short part of the display.



Apollo 11 : 21st July 1969

Neil Armstrong and Edwin Aldrin carried out a sequence of activities that included taking soil samples and photography in little over two and quarter hours' contact with the lunar surface.



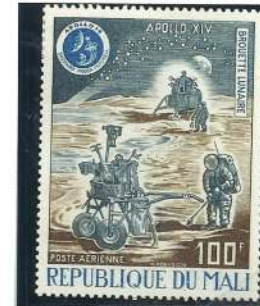
Apollo 12 : 14th November 1969

Pete Conrad and Alan Bean conducted two EVAs each lasting just under four hours, including taking back home parts of the unmanned Surveyor 3 probe which had landed over two years before.



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Walking on the Moon



Apollo 14 : February 9th 1971

During the two lunar EVAs, Alan Shepard and Edgar Mitchell collected 42 kilograms of Moon rocks and conducted several surface experiments, including seismic studies. Shepard famously hit two golf balls on the lunar surface with a makeshift club he had brought from Earth. Shepard and Mitchell spent about 33 hours on the Moon, with about 9½ hours on EVA.

Collecting samples was made easier with the lunar cart available as carriage.



Apollo 15 : July 30th 1971

David Scott and James Irwin spent three days on the Moon, including 18½ hours outside the spacecraft on lunar EVA. The mission was the first not to land in a lunar mare, instead landing near Hadley rille. The crew explored the area using the first lunar rover, which allowed them to travel much farther from the Lunar Module than had been possible previously the scope of which is shown on the Hungarian mini-sheet below.



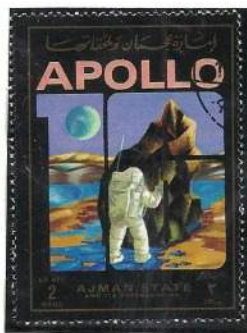
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Walking on the Moon



Apollo 16 : April 27th 1972

John Young and Charles Duke spent just under three days on the lunar surface, during which they conducted three EVA, totalling 20 hours and 14 minutes. They again pair drove a Lunar Roving Vehicle covering a distance 26.7 kilometres. On the surface, Young and Duke collected 95.8 kilograms (211 lb) of lunar samples for return to Earth



Apollo 17 : December 19th 1972

Eugene Cernan and Dr Harrison Schmitt spent just over three days on the lunar surface in the Taurus-Littrow valley, conducting three periods of EVA totalling nearly 21 hours during which they collected 95 kg of lunar samples and deployed scientific instruments. They made a famous discovery of "orange" rock shown on the Togo stamp above.

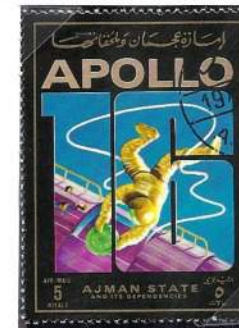
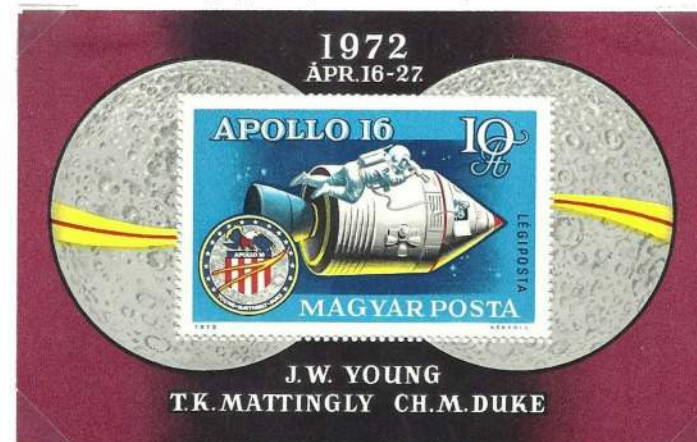
Slovakia (unusually) celebrated the event because of Cernan's family connection with the country.



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Trans-lunar EVA

Command module pilots on the Apollo programme had none of the glory of walking on the Moon (Lunar EVA) but some were compensated with an EVA on the way home leaving the confines of the craft to take spectacular photographs or recover samples from the Command Module exposed to translunar space. This is shown on stamps from Equatorial Guinea and Ajman & Hungary re Apollo 15 and Apollo 16



We see this also on these stamps for Apollo 9 which rehearsed lunar landing procedures in low Earth orbit in March 1969. David Scott is depicted in the open hatch.



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Skylab and Salyut Space Station EVAs

A new reason for spacewalking was called for during the installation of America's first successful space laboratory: Skylab 2 was launched on May 1973 but failed to deploy one of its solar panels. The emergency spacewalk to repair the solar panel; damaged during lift-off is shown on issues from the People's Republic of Congo and Hungary.



A similar repair cum maintenance event is depicted on the 1979 Soviet se-tenant pair commemorating flights to Salyut 6 station. It shows cosmonaut Valery Ryumin floating to the end of the space complex to kick free the large umbrella shaped antennae which had become stuck at one docking port. Although the stamp shows him gracefully floating on the end of his tether in reality he clung to and scrambled along the outside of the space station and only just made it back into the craft thoroughly exhausted by his endeavours – at the end of his tether metaphorically !



Теплобъе Premier Jour



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The First Female Space Walkers



Nineteen years after Leonov in Voskhod 2 first walked in space, the Soviets claimed another first by putting the first woman outside a space craft – Svetlana Savitskaya on the Soyuz T-12 flight to Salyut 7 in July 1984 appearing on this Soviet issue of July 1985 and on Guyana 1988. The technical purpose of the flight, beyond the obvious one-upmanship, was to test a Universal Manual Tool, a camera with several lenses which can be seen on the stamp in use by the first woman space walker.



The first American woman to walk in space was Kathryn Sullivan on her maiden voyage on Shuttle Mission 41-G (which used the shuttle called Challenger) in October 1984 when accompanied by David Leestma she spent more than three hours outside the craft proving the feasibility of refuelling satellites in orbit.

