

ESA uses cookies to track visits to our website only, no personal information is collected. By continuing to use the site you are agreeing to our use of cookies.



OK

Find out more about our cookie policy.

ROPEAN SPACE AGENCY

ABOUT US

OUR ACTIVITIES

CONNECT WITH US

FOR MEDIA

FOR EDUCATORS

FOR KIDS

# 50 years of humans in space



50 YEARS OF HUMANS IN SPACE

ESA HISTORY

HUMAN SPACEFLIGHT

Gagarin: first man in space

Yuri Gagarin

First flight of Vostok 1

Timeline of early spaceflights

Gagarin's traditions

Sergei Korolev: Father of the Soviet Union's success in space

Women in space

First woman in space: Valentina

Mercury 13

NASA: the Space Shuttle era

Today's women in space

European women in space

Timeline

50 years of human spaceflight

See Earth! It is so beautiful!"

What is Gagarin's legacy?

Key years on

The trail of Gagarin

Meet Yuri Gagarin in space'

Routes from European space explorers

ESA > About Us > Welcome to ESA > ESA history > 50 years of humans in space



## THE FLIGHT OF VOSTOK 1



Gagarin is helped in suiting up

On the morning of 12 April 1961, at 5:30 a.m. Moscow time (2:30 UTC), cosmonauts Yuri Gagarin and his back-up Gherman Titov were woken in their hut at the Baikonur Cosmodrome. They had breakfast, were assisted into their spacesuits, and then were transported to the launch pad. Gagarin entered the Vostok 1 spacecraft and at 07:10 local time, the radio communication system was turned on.

The hatch of the spacecraft was closed about 40 minutes later, but it was soon discovered that the seal was not complete, so technicians spent nearly an hour removing all the screws and then

resealing the hatch.

During this time, Gagarin requested some music to be played over the radio. Chief designer Sergei Korolev was very nervous in the control centre, but Gagarin was described as 'calm'; about half an hour before launch his pulse was recorded at 64 beats per minute.

### Launch



The Vostok 1 launcher rollout

#### 06:07 UTC

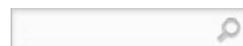
Launch occurs from the Baikonur Cosmodrome Site No.1. Korolev radioed, "Preliminary stage..... intermediate..... main..... LIFT OFF! We wish you a good flight. Everything is all right." Gagarin replied, "Poyekhali! (Off we go!)."

#### 06:09 UTC (T+ 119 s)

Two minutes into the flight and the four strap-on booster sections of the Vostok rocket have used up the last of their propellant, they shut down and drop away from the core vehicle.

#### 06:10 UTC (T+ 156 s)

The payload shroud covering *Vostok 1* is released, this uncovers the window at Gagarin's feet with



50 years of humans in space



Mission patch gallery



History of Europe in space

- Space history on the web

#### Related links

- Yuri's Night
- yurigagarin50.org

#### Further reading

- English
- Français
- Deutsch

#### Gagarin videos

- Roscosmos tribute to Yuri Gagarin
- "First orbit"
- 50 years of humans in space (video)
- Euronews: First man in space



#### **06:46 UTC**

Khabarovsk ground station sends the message "KK" via telegraph (on HF radio to Vostok 1). This message means, "Report the monitoring of commands." They were asking Gagarin to report when the spacecraft automated descent system had received its instructions from the ground control. Gagarin reported back at 06:48 UTC.

#### **06:48 UTC**

Vostok 1 crosses the equator at about 170° West, traveling in a south east direction and begins crossing the South Pacific. Gagarin transmits over HF radio, "I am transmitting the regular report message: 9 hours 48 minutes (Moscow Time), the flight is proceeding successfully. Spusk-1 is operating normally. The mobile index of the descent mode monitor is moving. Pressure in the cockpit is 1; humidity 65; temperature 20; pressure in the compartment 1.2 ... Manual 150; First automatic 155; second automatic 155; retro rocket system tanks 320 atmospheres. I feel fine..."

#### **06:49 UTC**

Gagarin reports he is on the night side of Earth.

#### **06:51 UTC**

Gagarin reports the Sun-seeking attitude control system had been switched on. The Sun-seeking attitude control system is used to orient Vostok 1 for retrofire. The automated orientation system consisted of two redundant systems: an automatic/solar orientation system and a manual/visual orientation system. Either system could operate the two redundant cold nitrogen gas thruster systems, each with 10 kg (22 lb) of gas.

#### **06:53 UTC**

The Khabarovsk ground station sends Gagarin the following message via HF radio, "By order of No.33 (General Nikolai Kamanin) the transmitters have been switched on, and we are transmitting this: the flight is proceeding as planned and the orbit is as calculated." They are telling Gagarin that Vostok 1 is in a stable orbit. He acknowledges the message.

#### **06:57 UTC**

Vostok 1 is over the South Pacific between New Zealand and Chile when Gagarin sends this message, "...I'm continuing the flight, and I'm over America. I transmitted the telegraph signal 'ON'.

#### **07:00 UTC**

*Vostok 1* crosses the Strait of Magellan at the tip of South America. News of the Vostok 1 mission is broadcast on Radio Moscow.

#### **07:04 UTC**

Gagarin sends spacecraft status message, similar to the one sent at 06:48. The message is not received by ground stations.

#### **07:09 UTC**

Gagarin sends spacecraft status message, the message is not received by ground stations.

#### **07:10 UTC**

Passing over the South Atlantic, the Sun rises and Vostok 1 is in daylight again. Vostok 1 is 15 minutes from retrofire.

#### **07:13 UTC**

Gagarin sends spacecraft status message, similar to the one sent at 06:48. Moscow picks up this partial message from Gagarin, "I read you well. The flight is going..."

#### **07:18 UTC**

Gagarin sends spacecraft status message, the message is not received by ground stations.

#### **07:23 UTC**

Gagarin sends spacecraft status message, the message is not received by ground stations.

The automatic system brings Vostok 1 into alignment for retrofire about one hour into the flight.

### Reentry and landing



Vostok 1's reentry capsule after landing

#### 07:25 UTC

The spacecraft's automatic systems bring it into the required attitude (orientation) for the reentry engine firing, and shortly afterwards, the engine firing occurs. This takes place over the west coast of Africa, near Angola, about 8000 km from the desired landing point. The liquid-fueled retrorockets fire for about 42 seconds.

Ten seconds after retrofire, commands are sent to separate the Vostok service module from the reentry module, but the Vostok equipment module unexpectedly remains attached to the reentry module by a bundle of wires.

#### Around 07:35 UTC

The two halves of the spacecraft begin reentry and go through strong gyrations as Vostok 1 crosses over Egypt. At this point the wires break, the two modules separate, and the descent module settles into the proper reentry attitude. Gagarin telegraphs "Everything is OK" despite continuing gyrations. He later reports that he did not want to 'make a noise' because he had (correctly) reasoned that the gyrations did not pose a danger to the mission (and were apparently caused by the spherical shape of the reentry module).

As Gagarin continues his descent, he experiences about 8g during reentry but remains conscious.

#### 07:55 UTC

Vostok 1 is still 7 km from the ground when the hatch of the spacecraft is released, and two seconds later Gagarin uses the ejection seat to leave the capsule. At 2.5 km altitude, the main parachute is deployed from the Vostok spacecraft.

#### 08:05 UTC

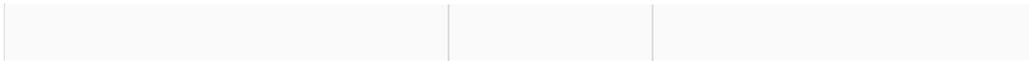
Gagarin lands using his own parachute, which opened almost immediately after ejecting from the spacecraft ten minutes earlier. Both he and the spacecraft landed 26 km south west of Engels, in the Saratov region at 51° North, 45° East.

Two schoolgirls witness the Vostok 1 capsule landing and describe the scene: "It was a huge ball, about two or three metres high. It fell, then it bounced and then it fell again. There was a huge hole where it hit the first time."

A farmer and her daughter observe the strange scene of a figure in a bright orange suit with a large white helmet landing near them by parachute.

Gagarin later recalled, "When they saw me in my spacesuit and the parachute dragging alongside as I walked, they started to back away in fear. I told them, 'Don't be afraid, I am a Soviet like you, who has descended from space and I must find a telephone to call Moscow!'"

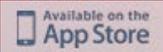
RATE THIS	VIEWS	SHARE
 <p>Rating: 4.3/5 (16 votes cast)</p>	<p>26603</p>	<p>Tweet</p> 



CONNECT WITH US



SUBSCRIBE



LATEST ARTICLES

- Testing astronauts' lungs in Space...
- Galileo satellites ready for fuell...
- Scanning Earth, saving lives
- Have you ever used a camera on boa...
- ESA experts assess risk from explo...

MOST-VIEWED ARTICLES

- Live updates: Rosetta mission...
- Touchdown! Rosetta's Philae p...
- Pioneering Philae completes m...
- Rosetta to deploy lander on 1...
- Black hole-star pair orbiting...

MOST-VIEWED IMAGES

- Welcome to a comet
- ROLIS descent image
- First comet panoramic
- OSIRIS spots Philae drifting ...
- Comet panoramic – lander orie...

MOST-VIEWED VIDEOS

- Ambition the film
- Rosetta's twelve-year journey...
- Mars showcase
- Philae's mission at comet 67P
- Striking lightning from space

[JOBS AT ESA](#)

[SITE MAP](#)

[CONTACTS](#)

[TERMS AND CONDITIONS](#)

