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The Space Race I: The First Space Flight

On April 12, 1961, a Russian cosmonaut (space pilot) named Yuri Gagarin became the first human to soar into space. He made one complete orbit of the Earth in a spacecraft called *Vostok 1*. It was a proud moment for Soviet space engineers and a disturbing one for U.S. leaders. The latter were playing catch-up in what people were calling “the space race.”

As far as the public was concerned, the “race” had started three and a half years before, on October 4, 1957, when the Soviet Union launched *Sputnik 1*—the first artificial satellite to be put into earth orbit. Early in 1959 an unmanned Soviet space vehicle passed close to the moon and went into orbit around the sun. U.S. leaders were shocked by these challenges to what most Americans had assumed was U.S. superiority in all areas of technology. Especially disturbing during this time of the cold war was the thought that the same Soviet rockets that launched space vehicles could be adapted to carry nuclear weapons around the world for strikes against U.S. targets.

After the Gagarin flight in 1961, the United States bounced back to win “the space race.” In May 1961 U.S. astronaut Alan B. Shepard, Jr., rode into space and returned, although he did not orbit the Earth. A few weeks later, President John F. Kennedy announced that the United States was committing itself to the goal of landing an astronaut on the moon “before this decade is out.”

The document that follows is an account of Gagarin’s pioneering space flight.

9:11 Moscow time. Gagarin had left Earth’s atmosphere. The second stage¹ had separated and fallen away. Temperature and velocity fell sharply. There were silent handshakes 200 miles below

¹stage—a booster rocket that enabled the *Vostok* and other spacecraft to accelerate and escape the earth’s gravitational pull

[at the Baikonur space center]. In the cabin Gagarin felt the sudden release as his [flight path] altered and he fell into the huge swinging curve that was to take him around the world. He was in orbit.

Gagarin had counted from the moment of separation. Now his words came through clearly . . . "18 . . . 19 . . . 20 . . . this is Vostok. Last stage gone. . . ." He pulled his body toward the cabin window and the dim light beyond. "I can see the Earth in a haze. Feeling fine." He added, after a second look, "How beautiful. . . ."

Now he was able to move for the first time, and he loosened his straps. Instantly his body parted from the seat and he was floating, still held down by the straps, but completely relaxed. He loosened the nylon bonds still further and unclipped his face mask. Ground control asked him how he was. "Fine . . ." he repeated.

Already he had been in a state of zero gravity, in flight, longer than any man had ever experienced. . . . He reached down and switched on the globe navigator. This was a space-age instrument straight from science fiction. No man had ever used the whole globe as his chart before now. It was revolving, slowly, as his position altered in relation to Earth. A cross in the center indicated the exact spot below him. Another switch, and the spot was pulled up into sharp magnification. He was tracing his own invisible equator around the earth; Siberia, the Pacific . . . into darkness, for he was now moving into the shadowed part of the globe. Through the porthole, though, he could just make out the outline of islands and streamers of white and grey cloud.

He repeated the instrument readings every three or four minutes; after each came a calm confirmation from Earth. . . .

Minutes went by, and as he hurtled on toward his second dawn of the day he strained his eyes to watch it; watching it as no one had ever watched a sunrise. . . . This little porthole was Man's first unclouded window on the Universe. . . .

Vostok sailed on, and Gagarin sang. . . . Through his headphones he heard an appreciative chuckle. "When you're through singing, we've got a professional," and clearly, with only a trace of [static] to heighten the effect, came the nostalgia-charged lyrics of "Moscow Nights," a honey-sweet hit tune that throbs with emotion. Gagarin knew it well; Moscow Radio plays it every day, but it had never been played like this before. . . .

The south Atlantic slid into view. Just 188 miles down there, heaving on an ice-cold sea, a Russian tracking ship was stationed, its radar antennae probing skyward for its countryman riding the biggest sea of all.

Gagarin . . . felt for the feeding tube; he hadn't had breakfast. . . .

Time: 10:15. He reported: "Over Africa," and then, in reply to a query, "Standing up well to weightlessness." At 10:16, as the minute hand of the chronometer passed zero plus sixty-nine [minutes since takeoff], the red panel light glowed to give notice of descent in ten minutes. He was 8,000 km. from the landing ground. Swiftly he checked his instruments again, reported once more that all was well and that there were no abnormalities. Control confirmed this, asking if he now wanted to make any alteration in the flight plan. . . .

In front of him the magic eye globe was still revolving in its socket, and he pushed the switch for magnification. A glass strip, etched with a tiny white triangle, moved slowly toward a thick red line. When the two met, that was the exact moment for the firing of the retro-rockets. The area inside the triangle would be the landing place, Smelovka. . . .

Gagarin . . . strapped himself back into the seat, released a catch to let it down into the fully reclining position, and waited. . . .

Even firmly strapped in, Gagarin felt the atmosphere around him in the cabin change, almost imperceptibly. The sensation of weightlessness left him. The brakes had fired with a shattering roar and he watched, awed, as white tongues of flames streaked past the porthole. . . . The solar thermometers in the cabin and on Earth shot up to register a fantastic 4,000° C.; the skin [of the space capsule] was hotter than a bar of molten steel, but the two refrigeration units, the cooling system and the air regeneration equipment pumped steadily on.

Overload was greater than on the way up; the pressure was painful in the extreme. Every muscle and nerve was being hammered by vibration. Instruments began to swim in front of his eyes, but through it all the clock was visible. . . .

Time: 10:27. There were twenty-eight minutes to go. On the TV screens Gagarin's face retreated in profile until it was almost flat. The nose was pushed in, the eye sockets grew larger, and shadowy. Every bone in his face was sharply outlined by dead-white skin. Speech was impossible, though he could just hear the reassuring

voice of the controller through the screeching of the engine, telling him that all was well.

The pressure was slowly lifted. After one and a half minutes he was warned by orange lights and radio to prepare for landing. "Above target, on course, para-brakes," called control, and Gagarin felt a push in the chest as the parachutes, a huge cluster of them, billowed out high above the capsule. . . . As he floated down gently, he could see from his window the multicolored squares of familiar farmland rushing up to meet him; familiar because this was near Saratov, his old training base. . . .

Two women working in the fields were staring at the sky. The dot grew larger, changing from black to white. Parachutist, one whispered. Alarmed but determined, they ran toward the object as it drifted over the trees and hit the earth in the middle of a long, stubbly field. As they ran a hatch opened and a head emerged, followed by a body in a sky-blue suit. . . . [T]he spaceman grinned and called: "Hello, give me a hand."

Review Questions

1. Identify:
 - a. *Vostok 1*
 - b. Yuri Gagarin
2. a. Why were many Americans concerned that Russia was ahead of the United States in the space race?
 - b. How did President John F. Kennedy respond to Yuri Gagarin's flight into space?
3. What new scientific instrument did Gagarin use on his flight?
4. Approximately how long did Gagarin's flight into space last?