

"Anyone who has never made a mistake has never tried anything new." Albert Einstein

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ASTRO

NEWSLETTER



Astronomers
Capture First Image
of a Black Hole!

Image Credit: Peter Deluce

Astro Newsletter

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What is a Black Hole?

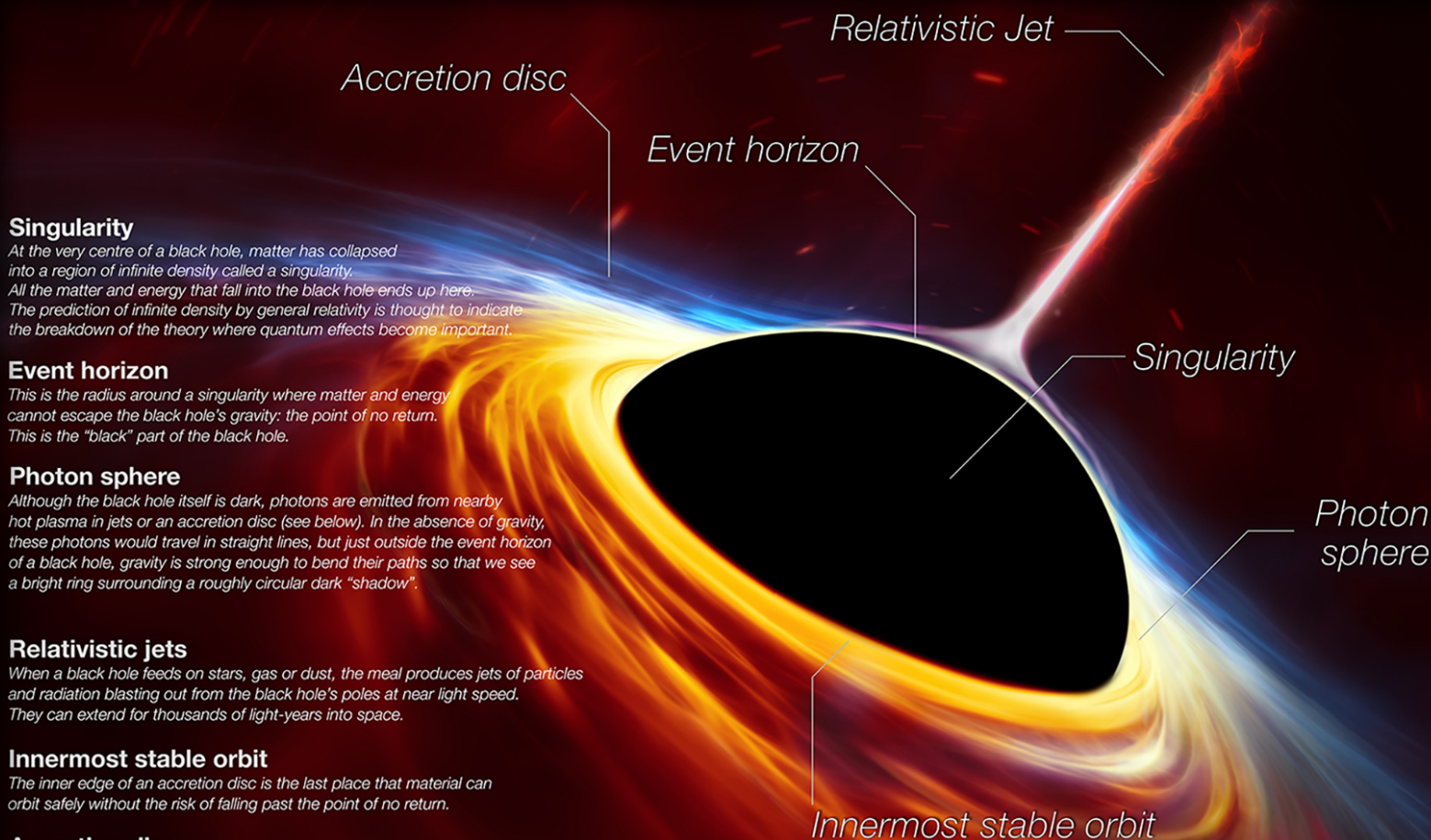
A black hole is a dense, compact object whose gravitational pull is so strong that – within a certain distance of it – nothing can escape, not even light.

Black holes are thought to result from the collapse of very massive stars at the ends of their evolution. The gravity is so strong because matter (the mass) has been squeezed into a tiny space. A black hole and its shadow were captured in an image for the first

time (2019) in a historic feat by an international network of radio telescopes called the Event Horizon Telescope (EHT).

EHT is an international collaboration whose support in the U.S. includes the National Science Foundation. To complement the EHT findings, several NASA spacecraft were part of a large effort, coordinated by the EHT's Multiwavelength Working Group, to observe the black hole using different wavelengths of light.

Credit: Event Horizon Telescope Collaboration



WE CELEBRATED YURI'S NIGHT

Yuri Gagarin was the first person to fly in space. His flight, on April 12, 1961, lasted 108 minutes as he circled the Earth for a little more than one orbit in the Soviet Union's Vostok spacecraft. Following the flight, Gagarin became a cultural hero in the Soviet Union. Even today, more than six decades after the historic flight, Gagarin is widely celebrated in Russian space museums, with numerous artifacts, busts and statues displayed in his honor. His remains are buried at the Kremlin in Moscow, and part of his spacecraft is on display at the RKK Energiya museum. Gagarin's flight came at a time when the United States and the Soviet Union were competing for technological supremacy in space. The Soviet Union had already sent the first artificial satellite, called Sputnik, into space in October 1957.

Becoming a Legendary Astronaut

The third of four children, Yuri Alekseyevich Gagarin was born on March 9, 1934, in a small village a hundred miles from Moscow. As a teenager, Gagarin witnessed a Russian Yak fighter plane make an emergency landing near his home. When offered a chance years later to join a flying club, he eagerly accepted, making his first solo flight in 1955. Only a few years later, he submitted his request to be considered as a cosmonaut.

More than 200 Russian Air Force fighter pilots were selected as cosmonaut candidates. Such pilots were considered optimal because they had exposure to the forces of acceleration and the ejection process, as well as experience with high-stress situations. Gagarin, a 27-year-old senior lieutenant at the time, was among the pilots selected. On April 12, 1961, at 9:07 a.m. Moscow time, the Vostok 1 spacecraft blasted off from the Soviets' launch site. Because no one was certain how weightlessness would affect a pilot, the spherical capsule had little in the way of onboard controls; the work was done either automatically or from the ground. If an emergency arose, Gagarin was supposed to receive an override code that would allow him to take manual control, but Sergei Korolev, chief designer of the Soviet space program, disregarded protocol and gave the code to the pilot prior to the flight.

Over the course of 108 minutes, Vostok 1 traveled around the Earth once, reaching a maximum height of 203 miles (327 kilometers). The spacecraft carried 10 days' worth of provisions in case the engines failed and Gagarin was required to wait for the orbit to naturally decay. But the supplies were unnecessary. Gagarin re-entered Earth's atmosphere, managing to maintain consciousness as he experienced forces up to eight times the pull of gravity during his descent.

Vostok 1 had no engines to slow its re-entry and no way to land safely. About 4 miles (7 km) up, Gagarin ejected from the spacecraft and parachuted to Earth. In order for the mission to be counted as an official spaceflight, the Fédération Aéronautique Internationale (FAI), the governing body for aerospace records, had determined that the pilot must land with the spacecraft. Soviet leaders indicated that Gagarin had touched down with the Vostok 1, and they did not reveal that he had ejected until 1971. Regardless, Gagarin still set the record as the first person to leave Earth's orbit and travel into space.

Space.com

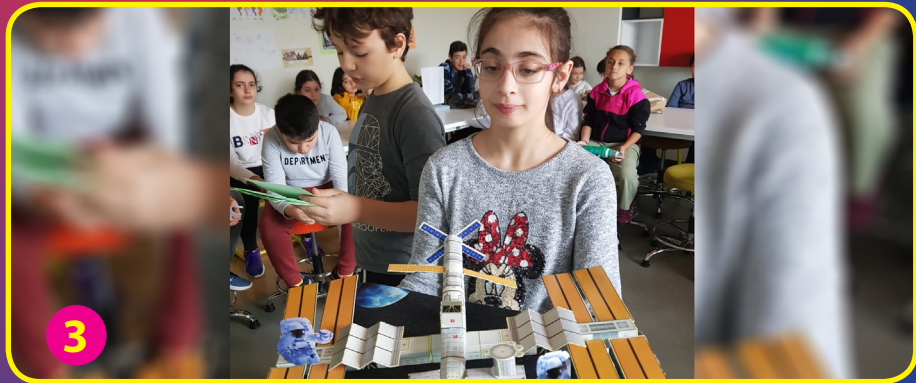


Vostok-1 Spacecraft



Schools in Action

Dear Followers,
Education is the rocket
which will propel you
towards success. All the
students are aware of
that and they will do
whatever it takes to get
a lift-off. These past two
weeks, they created
some amazing projects.
They are so excited to
share their projects with
their friends at Space
Camp Turkey during the
summer!



1- Naujamiestis Gymnasium, LITHUANIA 2- Rota College, IZMIR
3- Yönder Maltepe Schools, ISTANBUL

Astronomy Picture of the Day

In the Vicinity of the Cone Nebula

Strange shapes and textures can be found in neighborhood of the Cone Nebula. The unusual shapes originate from fine interstellar dust reacting in complex ways with the energetic light and hot gas being expelled by the young stars. The brightest star on the right of the featured picture is S Mon, while the region just below it has been nicknamed the Fox Fur Nebula for its color and structure. The blue glow directly surrounding S Mon results from reflection, where neighboring dust reflects light from the bright star. The red glow that encompasses the whole region results not only from dust reflection but also emission from hydrogen gas ionized by starlight. S Mon is part of a young open cluster of stars named NGC 2264, located about 2500 light years away toward the constellation of the Unicorn (Monoceros). Even though it points right at S Mon, details of the origin of the mysterious geometric Cone Nebula, visible on the far left, remain a mystery.

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