On March 8, 2004, the Mars Exploration Rover Spirit took the first image of Earth from the surface of another planet.In July 1969, the first human lunar landing mission, Apollo 11, returned many iconic photographs of Neil A. Armstrong and Edwin E. "Buzz" Aldrin on the surface, and also included the first image of the Earth taken by an astronaut on the Moon. In December 1972, astronauts on the final Apollo lunar landing mission, Apollo 17, took the famous Blue Marble image of the Earth from 72,000 miles away on their way to the Moon. More recently, in November 2012, the uncrewed Artemis I mission imaged the Moon and Earth together, from a distance of 268,563 miles from Earth. Left: A composite of two separate images of the Earth and Moon, taken by Mariner 10 in 1973 as it headed toward encounters with Venus and Mercury. Middle: The first image of the Earth-Moon system in a single photographic frame taken by Voyager 1 in 1977 as it departed on its journey to explore Jupiter, Saturn, and beyond. Right: The first image of Earth taken by a planetary spacecraft, Galileo, as it made a return encounter with its home planet for a gravity assist in 1990. As planetary spacecraft carried increasingly sophisticated instruments in the 1970s, some turned their cameras toward the Earth as they departed on their long voyages of exploration. In November 1973, a few days after Mariner 10 launched on its mission to explore Venus and Mercury, it snapped separate photographs of the Earth and the Moon, that technicians combined into a composite photo. On Sept. 18, 1977, at a distance of 7.25 million miles, the Jupiter-bound Voyager 1 snapped the first photograph of the Earth-Moon system in a single frame, providing an impression of the view from a spacecraft approaching our home planet. The Galileo spacecraft did exactly that - on Dec. 8, 1990, more than two years after its launch, it passed within 600 miles of Earth, using the planet for a gravity assist to reach Jupiter. During the fly-by, Galileo used its sophisticated instruments and cameras to study Earth as an unexplored planet and detected chemical signatures in atmospheric trace elements associated with life-form activity. Pale Blue Dot Revisited, NASA's 2020 remastered version of the Voyager 1 image of Earth. On Feb. 14, 1990, more than 12 years after it began its journey from Earth and shortly before controller permanently turned off its cameras to conserve power, Voyager 1 spun around and pointed them back into the solar system. In a mosaic of 60 images, it captured a "family portrait" of six of the solar system's planets, including a pale blue dot called Earth more than 3.7 billion miles away.The composite shows six planets, Venus, Earth, Jupiter, Mars, Mercury, and Saturn, and even several planetary satellites including the Moon and Jupiter's four Galilean moons Callisto, Ganymede, Europa, and Io. Left: Earth and Moon photographed by the Mars Global Surveyor spacecraft in orbit around Mars in 2003.From sounding rockets in the 1940s and Earth orbiting satellites in the early 1960s to spacecraft and people traveling to the Moon in the late 1960s and early 1970s and since then to spacecraft exploring all reaches of our solar system, the images of Earth they sent back expanded our horizons while showing an ever-smaller pale blue dot in the vastness of space Left: The Mars Exploration Rover Spirit photographed Earth before sunrise in 2004.The primary purpose of early robotic spacecraft to the Moon was to prepare for the crewed Apollo missions that followed, including extensive photography of the lunar terrain from orbit and from the surface.The image of the smooth blue ball of Earth appearing suspended over the battered gray lunar terrain provided inspiration for the ecology movement of the time.On the same day that Cassini imaged Earth and other planets from Saturn, the MESSENGER spacecraft in orbit around Mercury, during a

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search for possible moons orbiting the small planet, took a photograph of the Earth–Moon system from 61 million miles away.The Earth appearing as nothing more than a bright star provided a new perspective on our home planet, a perspective reshaped over the past eight decades as cameras aboard rockets and spacecraft traveled farther and farther away.On Oct. 24, 1946, more than 10 years before the launch of the first artificial satellite Sputnik, scientists at the White Sands Missile Range in New Mexico placed a camera on top of a captured German V–2 ballistic missile.The Surveyor 3 robotic lander, later visited by the Apollo 12 astronauts, took the first photograph of Earth from the lunar surface on April 30, 1967.On March 8, it turned its camera skyward in an attempt to photograph the Martian moon Deimos partially eclipsing the Sun as it transited across its disc.Nearly a decade passed before another rover, the Mars Science Laboratory Curiosity, took another photograph of Earth from its location in Mars' Gale Crater.On April 1, 1960, from an orbital altitude of about 450 miles, the TIROS–1 weather satellite returned the first of its 23,000 television images of the Earth, most of them of sufficient quality for the satellite's main purpose, weather forecasting.On Dec. 11, 1966, the ATS–1 advanced technology satellite beamed back the first photograph of Earth from geostationary orbit 22,300 miles above Ecuador.The Apollo missions of the late 1960s and early 1970s returned thousands of stunning and memorable images of humanity's first exploration of another world.In February 2020, to commemorate the photograph's 30th anniversary, NASA released a remastered version of the image of Earth as Pale Blue Dot Revisited.From near the orbit of Mercury, the MESSENGER spacecraft took 34 images on Nov. 3 and 16, 2010, that engineers stitched together.Two months later, in July 2003, the European Space Agency's (ESA) Mars Express spacecraft photographed them appearing much further apart, given the Moon's orbital position.Engineers stitched the images together to create an amazing video of the solar corona and a coronal mass ejection.The ESA Solar Orbiter spacecraft's primary objectives focus on studying the Sun from close distances.Shortly before sunrise, Spirit's camera managed to capture Earth as a bright star, appearing much as Venus does to terrestrial observers.Image credit: courtesy White Sands Missile Range/Applied Physics Laboratory.Image credit: courtesy LOIRP.

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