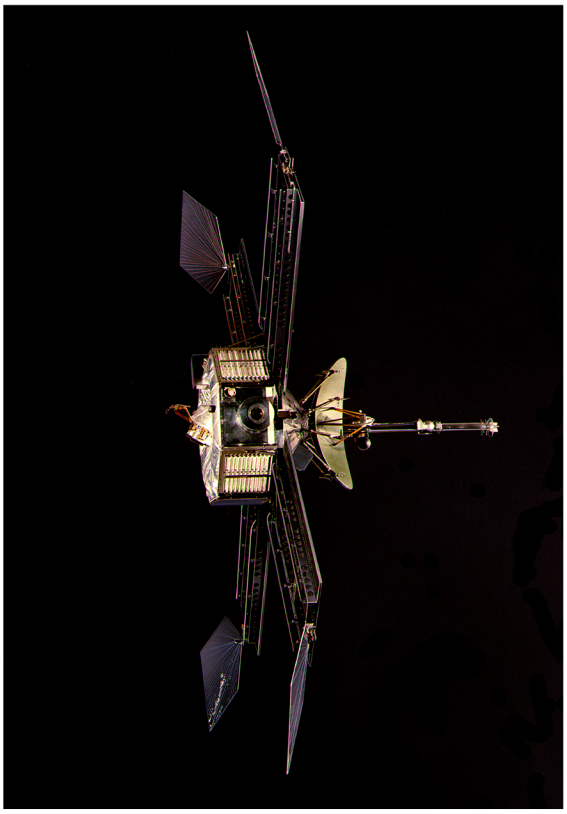
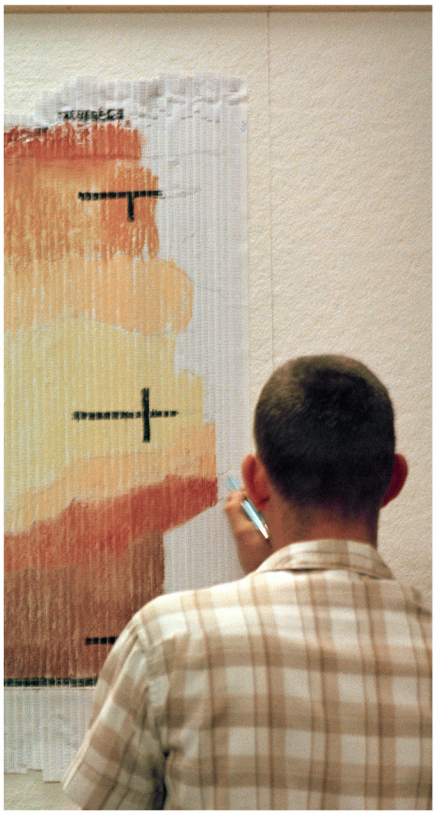
Above: In 1936 a team of Caltech students and researchers began rocket experiments at a rugged test site that grew to become JPL.

October 2016

S	M	T	W	T	F	S
						01
02	03	04	05	06	07	08
09	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31 **JPL 80th Anniversary!**					

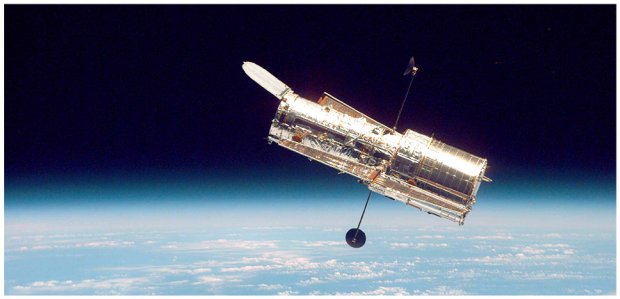




Left: The computer room at Goldstone, during the Mariner 4 voyage to Mars. Middle: A model of Mariner 4 which was launched on November 28, 1964 providing the first close-range images of Mars. Right: Too anxious to wait for the first processed image, employees from the Voyager Telecommunications Section attached the data strips side by side and hand colored the numbers in, like a paint-by-numbers picture.

November 2016

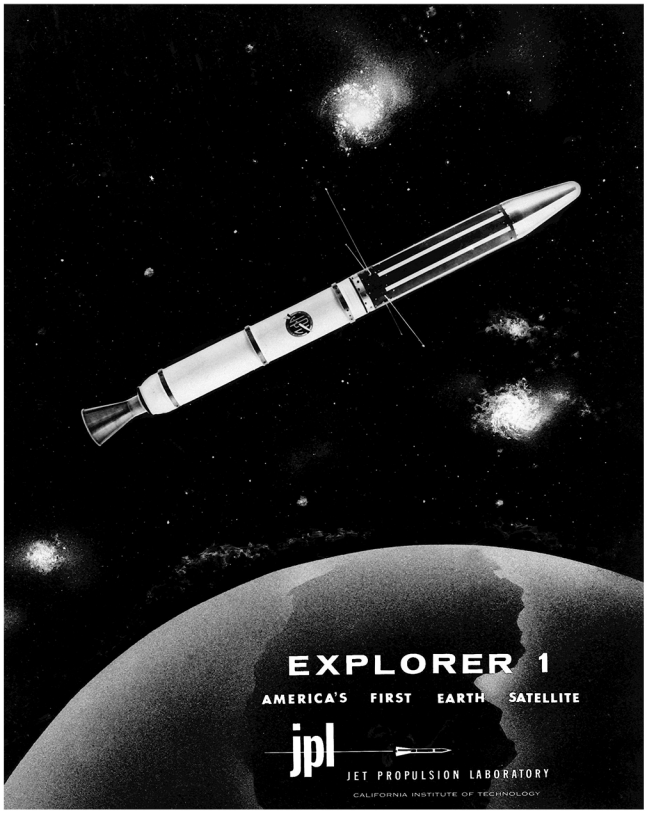
S	M	T	W	T	F	S
		01	02	03 **1973** Mariner 10 launches on a mission to Mercury and Venus.	04	05
06	07 **1967** Surveyor 6 launches for its Lunar landing mission.	08 **Election Day**	09	10	11 **Veteran's Day**	12 **1980** Voyager1 flies by Saturn.
13	14	15	16	17	18	19
20	21	22	23	24 **Thanksgiving Day**	25	26
27	28 **1964** Mariner 4 launches with a destination of Mars.	29	30			



Left: Previously unseen details of a mysterious, complex structure within the Carina Nebula (NGC 3372) are revealed by this image of the "Keyhole Nebula," obtained with Hubble's Wide Field Planetary Camera 2. Top right: The Hubble Space Telescope hovers at the boundary of Earth and space. Bottom right: Shuttle astronauts install JPL's Wide Field and Planetary Camera 2, known as "The camera that saved Hubble," in December of 1993.

December 2016

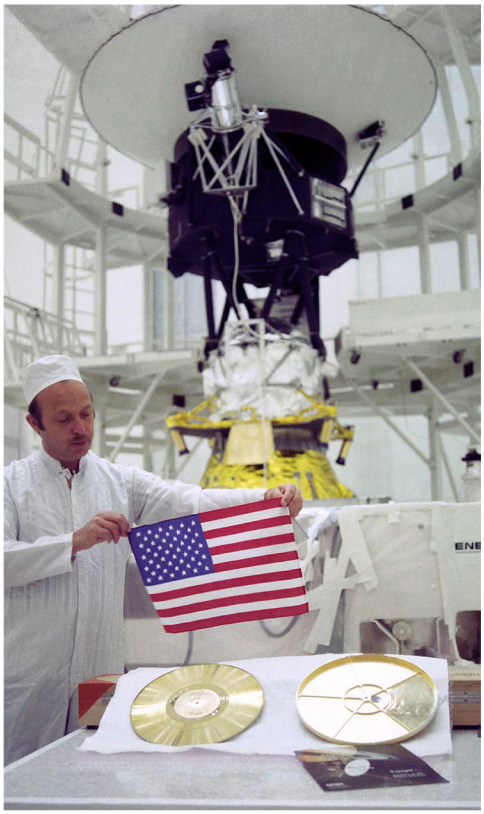
S	M	T	W	T	F	S
				01	**1993** 02 Shuttle astronauts install JPL's WFPC2 in the Hubble Space Telescope.	03
1996 04 Mars Pathfinder launches, carrying a lander and instrumented rover.	05	06	**1994** 07 Galileo arrives at Jupiter, delivering a probe into the planet's swirling atmosphere.	08	09	10
11	12	13	14 **1962** Mariner 2 conducts the first flyby of another planet when it visits Venus.	15	16	17
18 **1999** Two JPL instruments, launch aboard NASA's Terra satellite.	19	20 **1999** The Active Cavity Irradiance Monitor Satellite launches.	21	22	23	24
25 **Christmas Day**	26	27	28	29	30	31

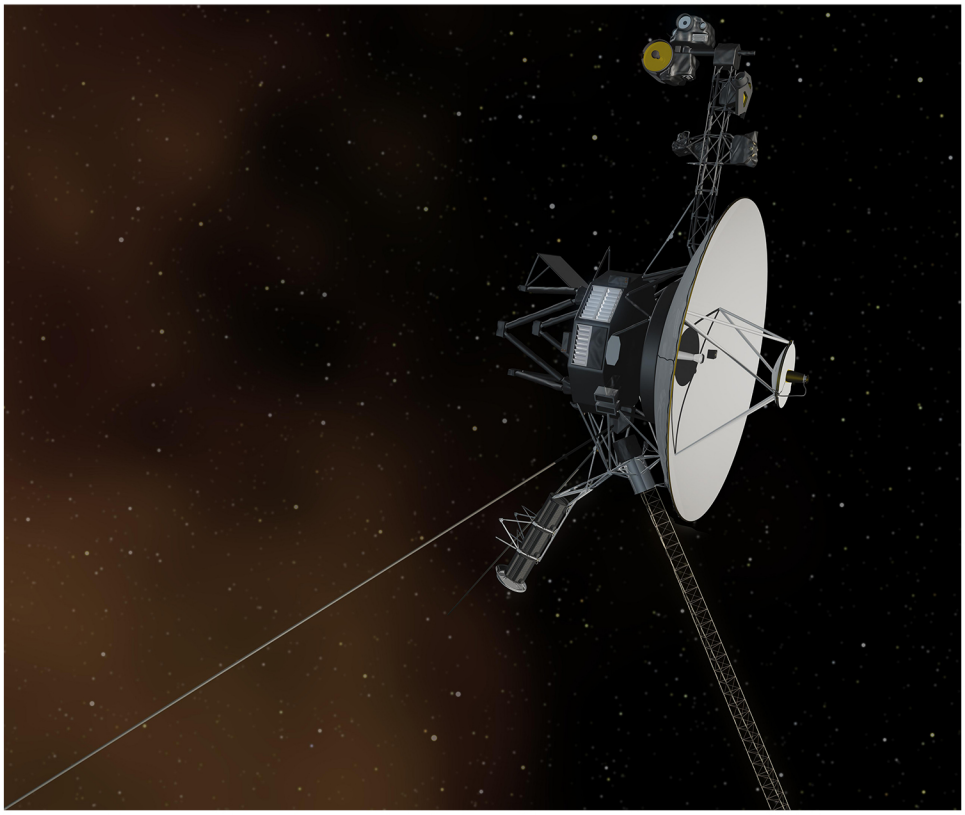


Explorer 1 became the first successfully launched satellite by the United States when it was sent to space on January 31, 1958. A quick response to the Soviet Union's launch of Sputnik 1, Explorer 1's success marked the beginning of the U.S. Space Age. Right: A model of Explorer 1, held by JPL's Director William Pickering, scientist James Van Allen and rocket pioneer Wernher von Braun.

January 2017

S	M	T	W	T	F	S
01 **New Year's Day**	02	03 **2004** Mars Exploration Rover "Spirit" lands at Gusev Crater on Mars.	04	05	06	07
08	09	10	11	12 **2005** Deep Impact launches to encounter comet Tempel 1.	13	14 **2005** The Huygens probe lands on Titan, Saturn's mysterious smoggy moon.
15 **2006** Stardust brings comet samples back to Earth.	16 **Martin Luther King Jr. Day**	17 **2016** Jason 3 satellite launches to measure global sea surface heights.	18	19	20 **Inauguration Day**	21
22	23	24 **1986** Voyager 2 makes the first-ever flyby of Uranus.	25 **1983** The Infrared Astronomical Satellite launches into Earth's orbit.	26	27	28
29	30	31 **1958** Explorer 1 is launched as the first U.S. satellite.				

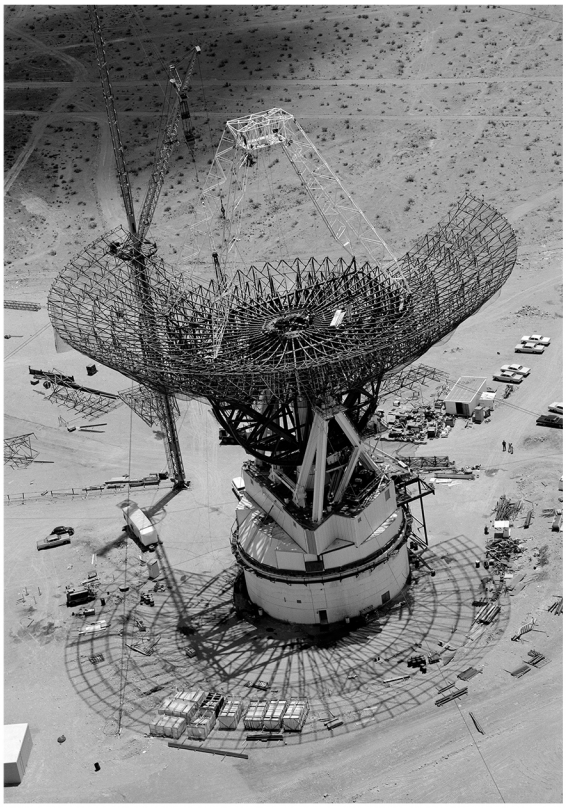




Left: John Casani, Voyager project manager in 1977, holding a small Dacron flag that was folded and sewed into the thermal blankets of the Voyager spacecraft before they launched 36 years ago. Below him lie the Golden Record (left) and its cover (right). Right: Artist's concept of NASA's Voyager 1 spacecraft entering interstellar space, or the space between stars.

February 2017

S	M	T	W	T	F	S
			01	02 **Groundhog Day**	03	04
05 **1974** Using gravity-assist, Mariner 10 swings by Venus to propel on to Mercury.	06	07 **1999** Stardust launches to return samples of comet and interstellar dust to Earth.	08	09	10	11 **2000** The Shuttle Radar Topography mission launches to map Earth's topography.
12 **1997** JPL teams up with the Space VLBI to observe the distant universe.	13	14 **Valentine's Day**	15	16	17 **1998** Voyager 1 becomes the most distant human-made object in space.	18
19	20 **President's Day**	21	22	23	24 **1969** Mariner 6 launches to assist in the first dual mission to Mars.	25
26	27	28				



The Goldstone Deep Space Communications Complex, located in the Mojave Desert in California, is one of three complexes that comprise NASA's Deep Space Network (DSN).The image on the left was taken on June 17, 1965, during its construction.

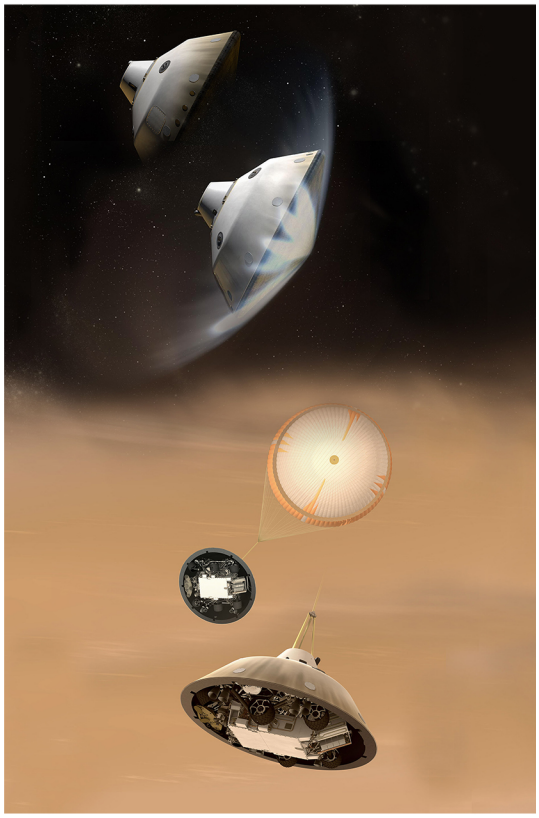
March 2017

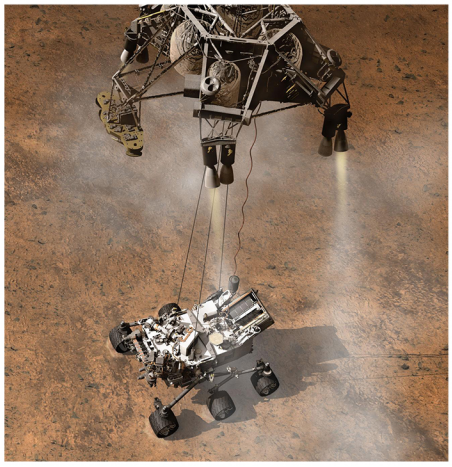
S	M	T	W	T	F	S
			01	**2004** 02 JPL's Microwave Instrument on the Rosetta Orbiter launches.	03	04
05 **1979** Voyager 1 makes its closest approach to Jupiter.	06 **2009** The Kepler mission launches on a search for Earth-like planets.	**1958** 07 Pioneer 4 launches and escapes Earth's gravity to orbit the Sun.	08	09	**2006** 10 Mars Reconnaissance Orbiter enters Mars orbit.	11
12 **Daylight Saving**	13	14	15	16	**2002** 17 The GRACE mission is launched. **St. Patrick's Day**	18
19	20	**1965** 21 Ranger 9 launches and three days later impacts the Moon in crater Alphonsus.	22	**2016** 23 Goldstone radar images the closest comet flyby of Earth in recorded history.	24	25
26	27	28	29	30	31	

JPL's Finding Individuals for Disaster and Emergency Response (FINDER) prototype technology can locate individuals buried under rubble in disaster scenarios. The suitcase-sized device helped uncover four survivors following the 7.8-magnitude earthquake that devastated Nepal on April 25, 2015.

April 2017

S	M	T	W	T	F	S
						01 **April Fools' Day**
02	03	04	05	06	**2001** 07 Mars Odyssey launches; it enters the red planet's orbit on October 24.	08
09	10	11	12	13	14	15
16 **Easter**	**1967** 17 Surveyor 3 launches, landing on the Moon on April 20.	**2014** 18 OPALS experiment begins testing on the International Space Station.	19	20	21	22 **Earth Day**
23	24	25	26	27	**2003** 28 Galaxy Evolution Explorer launches to study the history of star formation.	**2013** 29 The Cassini team observes a behemoth hurricane near Saturn's north pole.
2015 30 JPL's FINDER instrument locates four trapped men after a 7.8 earthquake.						

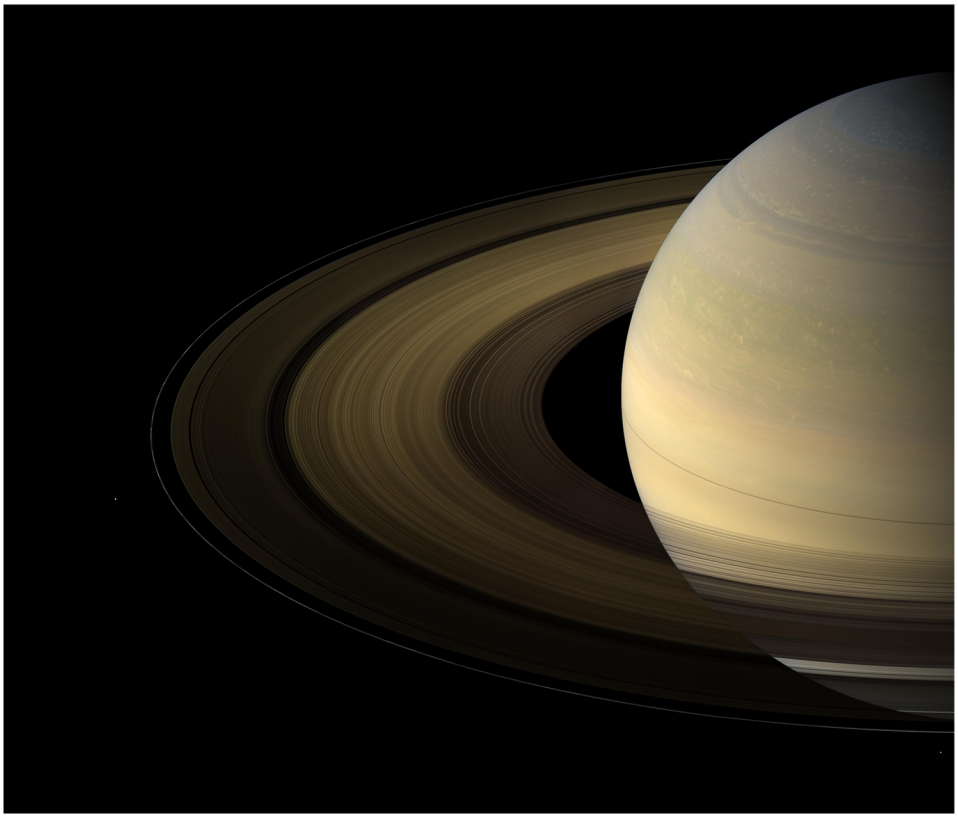




The above sequence depicts the entry, descent, and landing (EDL) phase of the Mars Science Laboratory mission. Instead of the familiar airbag landing systems of the past Mars missions, Mars Science Laboratory used a guided entry and a Sky Crane touchdown system to land the massive Curiosity rover. JPL's mission control room burst into celebration after receiving confirmation of the successful landing.

May 2017

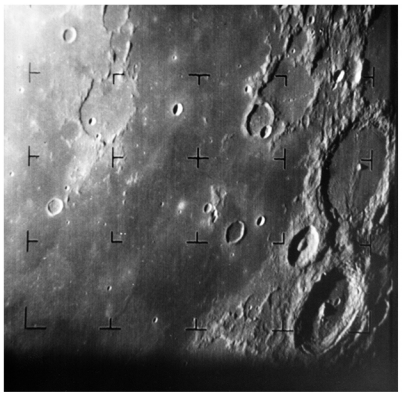
S	M	T	W	T	F	S
2004 The Mars Exploration Rovers begin the first of several extended missions.	01	02	03	04 **1989** Magellan launches on a mission to Venus.	05	06
07	08	09	10	11	12	13
2009 14 JPL technology launches on Herschel/ Planck mission. **Mother's Day**	15	16	17	18	19	**2010** 20 The "Opportunity" rover surpasses the duration record set by Viking 1.
21	22	23	24	**2008** 25 Phoenix lands near Mars' north pole to dig for water ice and analyze the soil.	26	27
28	29 **Memorial Day**	**1971** 30 Mariner 9 launches for Mars, becoming the first spacecraft to orbit another planet.	31			



Left: The Cassini spacecraft inside a JPL assembly room. The Cassini orbiter and its two onboard cameras were designed, developed and assembled at JPL. Right: Of the countless equinoxes Saturn has seen since the birth of the solar system, this one, captured here in a mosaic of light and dark, is the first witnessed up close by an emissary from Earth … none other than our faithful robotic explorer, Cassini.

June 2017

S	M	T	W	T	F	S
				01	02 **1966** Surveyor 1 becomes the first U.S. spacecraft to make a soft landing on the Moon.	03
04	05	06 **2015** RoboSimian places in the top five at DARPA's Robotic Challenge finals.	07	08	09	10 **2003** Mars Exploration Rover "Spirit" launches for Mars.
11	12	13 **2012** NuSTAR launches to conduct a deep X-ray survey for black holes.	14 **Flag Day**	15	16	17
18 **Father's Day**	19 **1976** Viking 1 arrives in orbit at Mars.	20 **2008** The Ocean Surface Topography/Jason 2 mission launches.	21	22	23	24
25	26 **1978** The experimental Seasat satellite launches to study Earth and its seas.	27	28 **2014** The Low-Density Supersonic Decelerator reentry vehicle for Mars is tested over Hawaii.	29	30 **2004** Cassini–Huygens enters Saturn orbit.	



Clockwise from top left: A dry run exercise for Ranger 7. Center: A model of the Ranger 6 spacecraft. Top right: The first picture of the Moon taken by a U.S. spacecraft (Ranger 7), on July 31, 1964. Bottom left: Ranger 7 Launch and mission control. Bottom right: NBC TV rehearsal in building 179 with Cliff Cummings in front of a Ranger block 2 spacecraft.

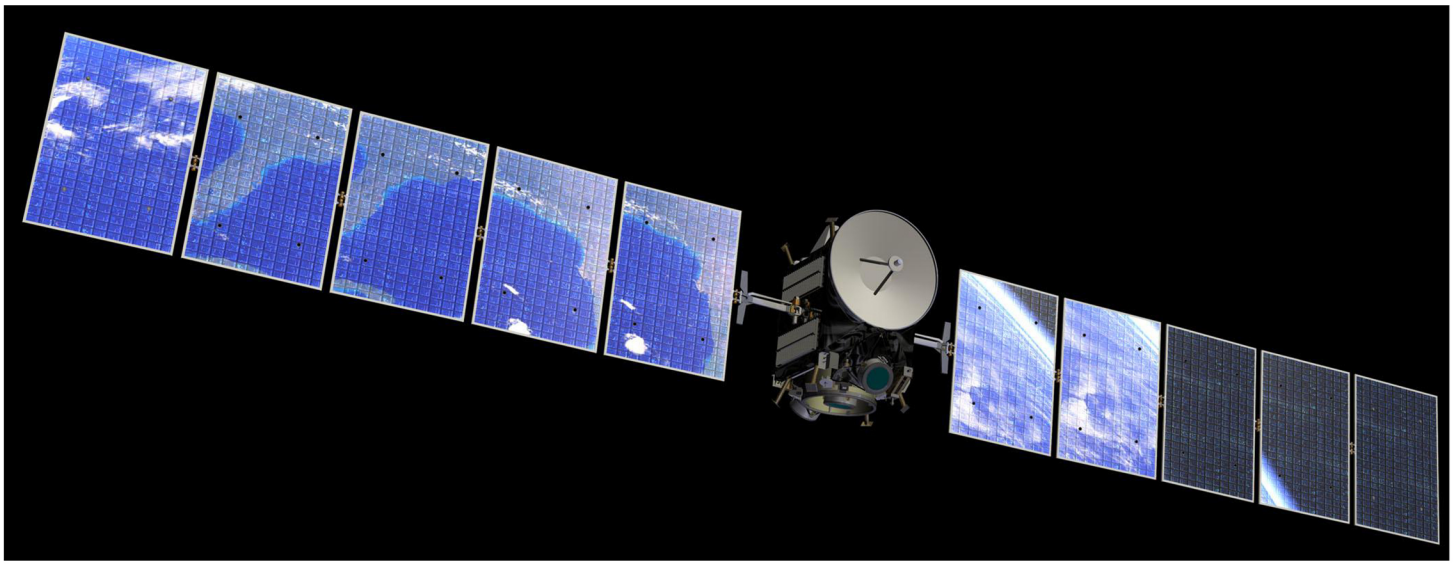
July 2017

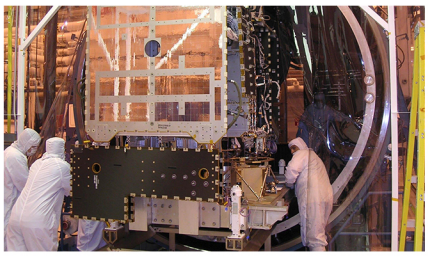
S	M	T	W	T	F	S
						01
02 **2014** OCO-2 is launched to study carbon dioxide in Earth's atmosphere.	03 **2005** Deep Impact's impactor collides with comet Tempel 1.	04 **1997** Mars Pathfinder lands. **2016** Juno enters Jupiter's Orbit. **Independence Day**	05	06	07 **2003** Mars Exploration Rover "Opportunity" launches for Mars.	08
09	10	11	12	13	14 **1965** After an eight month voyage to Mars, Mariner 4 radios back the first close-up photos.	15 **2011** The Dawn spacecraft enters orbit around proto-planet Vesta.
16	17	18	19	20 **1976** Viking 1's Mars lander becomes the first craft to soft-land on another planet.	21	22
23 **2015** Kepler scientists discover the first near-Earth size planet in the "habitable zone".	24	25	26	27	28 **1964** Ranger 7 launches and executes an intentional crash-landing into the Moon.	29
30	31					

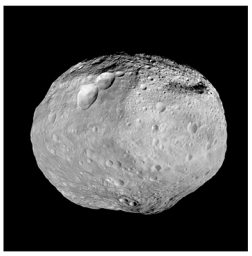
Over its ten years in space, NASA's Spitzer Space Telescope has evolved into a premier tool for studying exoplanets. Left: Preparation and assembly of the Spitzer Space Telescope. Right: The giant star Zeta Ophiuchi is having a "shocking" effect on the surrounding dust clouds in this infrared image from NASA's Spitzer Space Telescope. Zeta Ophiuchi is a young, large and hot star located around 370 light-years away.

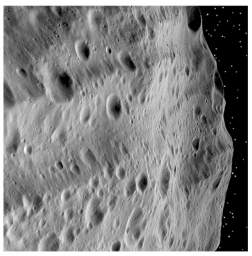
August 2017

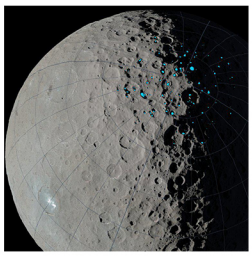
S	M	T	W	T	F	S
2003 Spitzer Space Telescope launches to study asteroids, dust-covered stars and distant galaxies.		01	02	03	04 **2007** Phoenix, a Mars lander, launches to the red planet.	**2012** The MSL "Curiosity" rover makes a dramatic landing on the red planet. 05
06	07	08 **2001** Genesis launches on a mission to return samples of the solar wind to Earth.	09	**1990** Magellan enters orbit around Venus and will ultimately map 98 percent of the planet's surface. 10	11	**2005** Mars Reconnaissance Orbiter launches to study the history of water on Mars. 12
2005 The Stardust spacecraft is reactivated to conduct a follow-up visit to Tempel 1. 13	14	15	16	17	18	19
20 **1975** The Viking 1 orbiter/lander pair is launched towards Mars.	21	22	23	24	25 **1989** Voyager 2 is the first spacecraft to fly by Neptune.	26
27	**1993** Galileo flies by a second asteroid, Ida, on its way to Jupiter. 28	29	30	31		

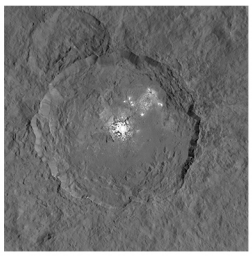








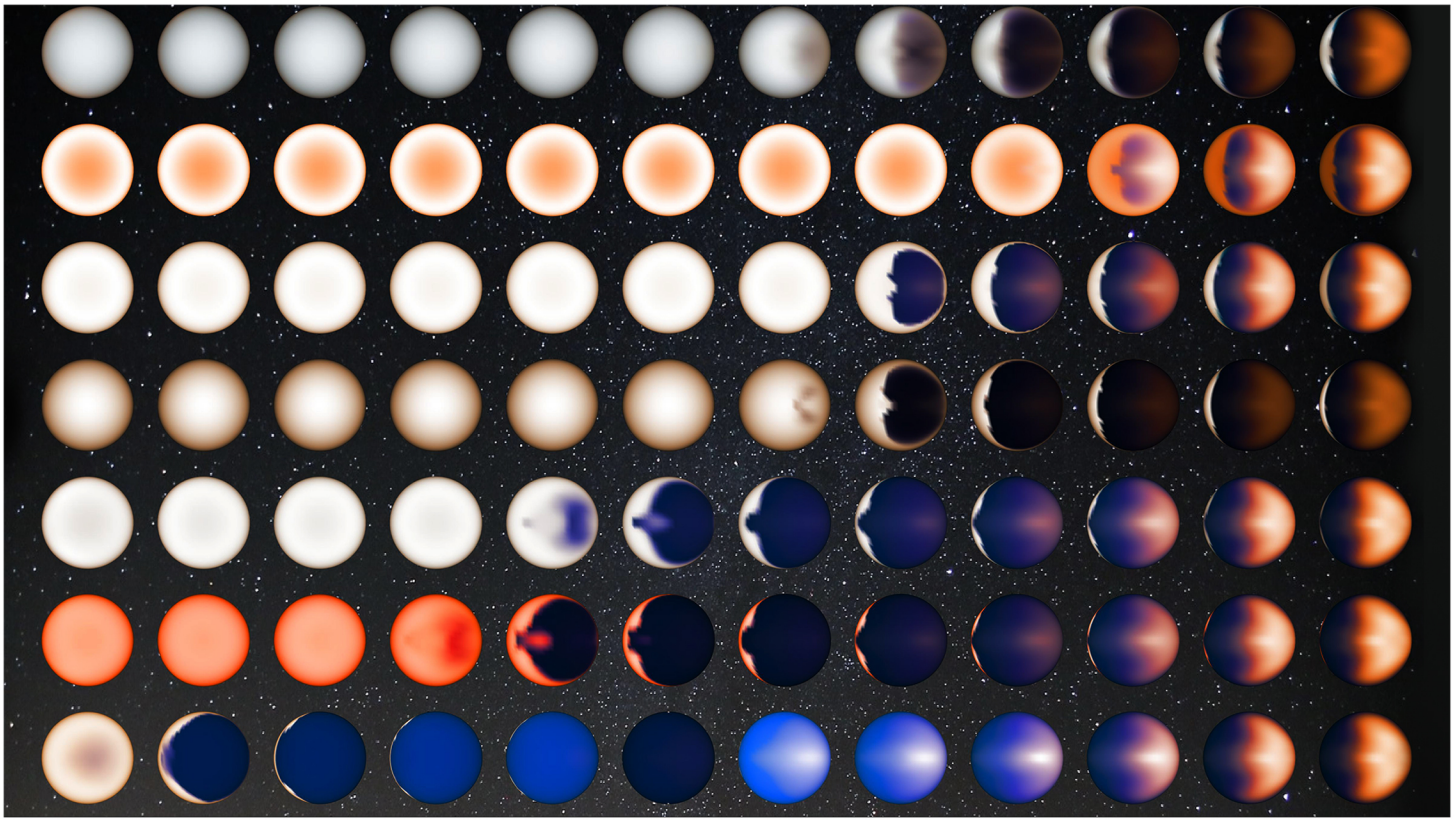




Top: Artist rendering of Dawn, part of NASA's Discovery Program of competitively selected missions, which was launched in 2007 to orbit the large asteroid Vesta and the dwarf planet Ceres. Bottom left: The Dawn spacecraft is being moved into a thermal vacuum chamber for bake-out. Bottom row: A series of images captured by Dawn, of giant asteroid Vesta and dwarf planet Ceres.

September 2017

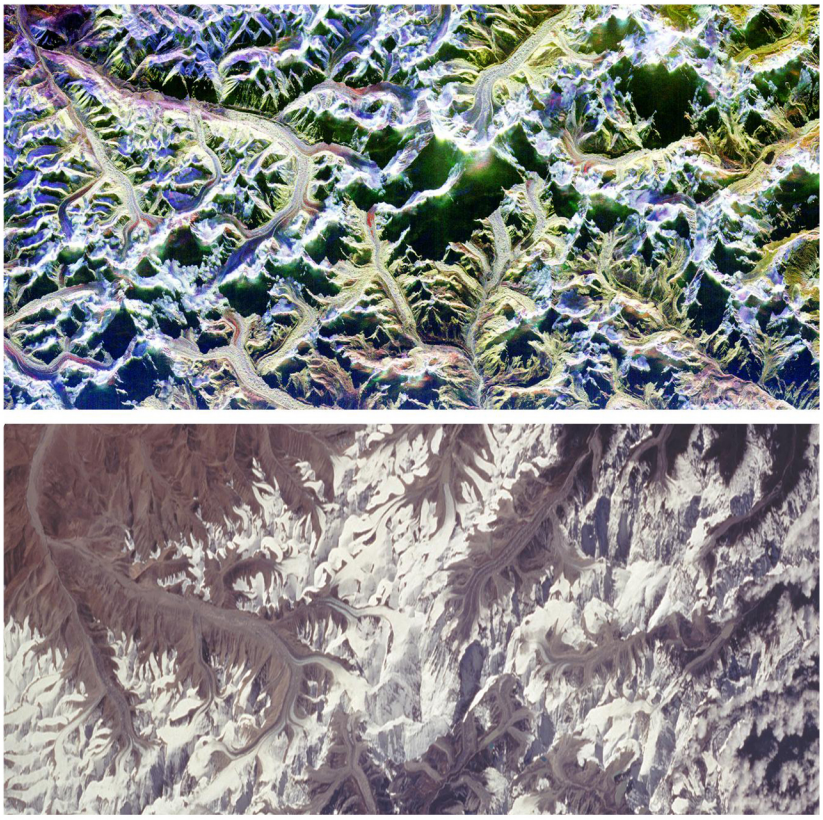
S	M	T	W	T	F	S
					01	02
03	04 **Labor Day**	05 **2012** Dawn leaves protoplanet Vesta after its 14 month orbit.	06	07	08 **1967** Surveyor 5 launches en route to the Moon.	09
10 **2011** GRAIL twin spacecraft launch to explore the Moon's gravity.	11	12 **1997** Mars Global Surveyor enters orbit.	13 **2007** Mars Exploration Rover "Opportunity" descends into Victoria Crater.	14	15	16
17	18	19	20	21	22	23
24	25	26 **2006** Mars Exploration Rover "Opportunity" begins exploring Victoria Crater.	27 **2006** The Dawn mission to asteroid Vesta and dwarf planet Ceres launches.	28	29	30



Above: A grid showing how clouds on exoplanets called “hot Jupiters” might look to a space traveler, based on computer modeling and data from NASA’s Kepler Space Telescope.

October 2017

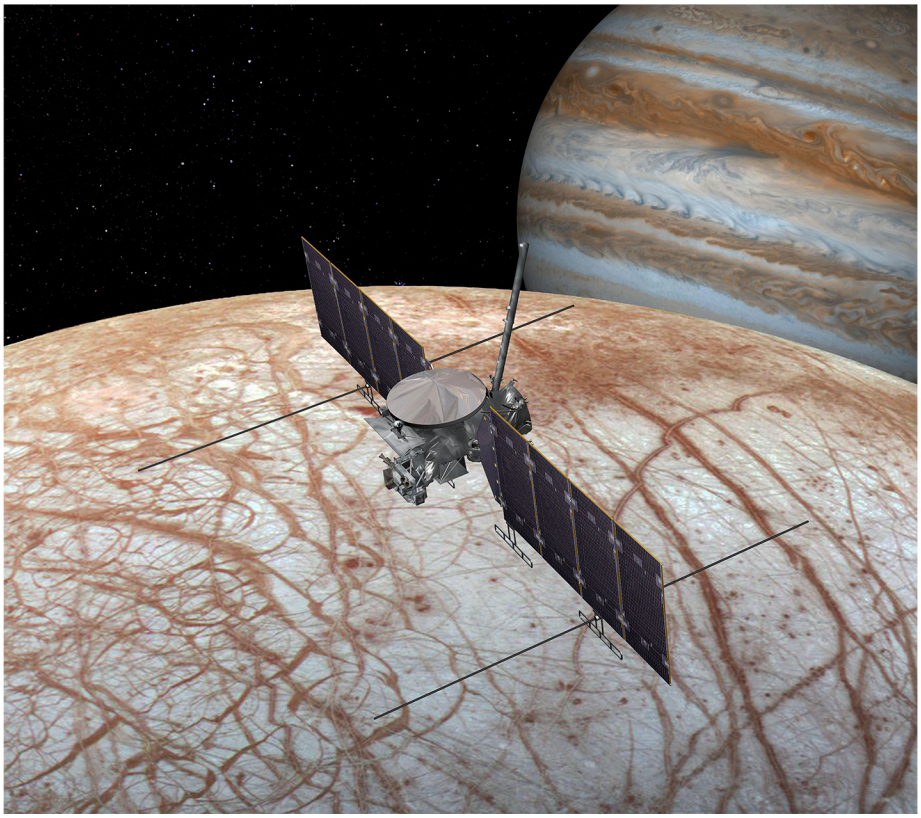
S	M	T	W	T	F	S
01	02	03	04	05	06 **1990** Ulysses spacecraft launches to study the Sun and its poles.	07
08	09 **Columbus Day**	10	11	12	13	14
15 **1997** Cassini launches on a 6 1/2-year journey to Saturn.	16	17	18 **1989** Galileo launches on a six-year journey to Jupiter.	19 **1967** Mariner 5 flies by Venus.	20	21
22	23	24 **1998** Deep Space 1 launches to flight test advanced technologies.	25	26	27	28
29 **1991** En route to Jupiter, Galileo makes the first flyby of an asteroid.	30	31 **JPL Anniversary!**				

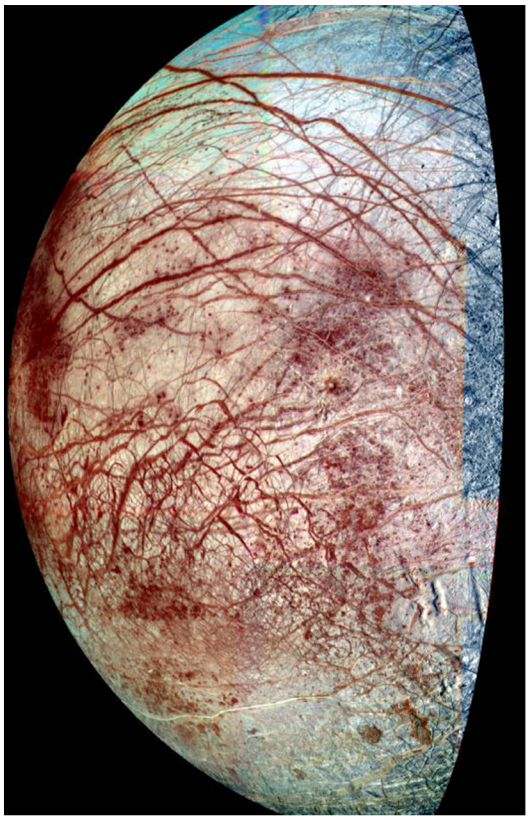


Left: Two images of Mount Everest. The image at the top was acquired through thick cloud cover by the Spaceborne Imaging Radar-C/X-band Synthetic Aperture Radar (SIR-C/X-SAR) aboard the space shuttle Endeavour on April 16, 1994. The image on the bottom is an optical photograph taken by the Endeavour crew during the second flight of SIR-C/X-SAR. Right: The SIR-C/X-SAR is shown in the payload bay of the orbiting space shuttle Endeavour.

November 2017

S	M	T	W	T	F	S
			2010 01 The 70-meter antenna at Goldstone goes back on-line after upgrades.	02	03	**2010** 04 Deep Impact–EPOXI flies by comet Hartley 2.
05 **Daylight Saving**	06	07 **Election Day**	08	09	10	11 **Veterans Day**
1981 12 The first in a series of radar imagers is launched on the space shuttle.	13	14	15	16	17	18
19	20	21	22	23 **Thanksgiving Day**	24	25
2011 26 Mars Science Laboratory rover, "Curiosity," launches for Mars.	27	28	29	30		





Left: This artist's rendering shows NASA's Europa mission spacecraft (as currently configured), which is being developed for a launch sometime in the 2020s. The mission would place the spacecraft in orbit around Jupiter in order to perform a detailed investigation of the giant planet's moon Europa -- a world which exhibits conditions favorable for life. Right: An enhanced-color image of Europa from NASA's Galileo spacecraft.

December 2017

S	M	T	W	T	F	S
					01	02
03	04	05	06	07 **2001** The U.S.–French Jason 1 ocean-ography satellite launches.	08	09
10	11	12	13 **2013** The Wide-field Infrared Survey Explorer is reactivated to hunt for asteroids.	14 **2009** The Wide-field Infrared Survey Explorer launches.	15 **2010** Mars Odyssey becomes the longest serving spacecraft at Mars.	16
17 **2012** The twin Gravity Recovery and Interior Laboratory satellites impact Earth's Moon.	18	19	20	21	22	23
24	25 **Christmas Day**	26	27	28	29	30 **2000** En route to Saturn, Cassini flies by Jupiter.
31						