



TOUR AND OVERVIEW

Cape Canaveral Air Force Station

Cape Canaveral Air Force Station (CCAFS) is an installation of the U.S. Air Force Space Command's 45th Space Wing, headquartered at nearby Patrick Air Force Base. It is the primary launch head of America's Eastern Range, with three launch pads currently active (Space Launch Complexes 37-B, 40, and 41).

The U.S. Government has used the CCAFS since 1949 when President Harry S. Truman established the Joint Long Range Proving Grounds at Cape Canaveral to test missiles. The location was among the best in the continental United States for this purpose, as it allowed for launches over the Atlantic Ocean. CCAFS is also closer to the equator than most other parts of the country, allowing rockets to get an extra boost from the Earth's rotation.

A number of American space exploration firsts were launched from CCAFS, including the first U.S. Earth satellite (1958), first U.S. astronaut (1961), and first U.S. unmanned lunar landing (1966). It also was the launch site for the first spacecrafts to fly past each of the planets in the Solar System (1962-1977), the first spacecraft to orbit Mars (1971) and roam its surface (1996), the first American spacecraft to orbit and land on Venus (1978), and the first spacecraft to orbit Saturn (2004) and Mercury (2011).



Use this area to record what you learn and observe during the tour.





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MORRELL OPERATIONS CENTER

Construction of a Range Operations Control Center started in the late 1980s to provide more integrated, flexible, and fast operations than were possible at the time. The Center was declared operational in 1995, and in 2007 it was renamed the Morrell Operations Center in honor of the first commander of the 45th Space Wing. It serves as the central control point for all range support of missile and space launches.

- Notes and observations.



CAPE CANAVERAL LIGHTHOUSE

The lighthouse is the oldest standing structure on the Cape. Its heritage dates back to before the Civil War when in 1838, Florida Territorial delegate Charles Downing requested that a lighthouse be built on Cape Canaveral. The original 65-foot-tall brick lighthouse was built in 1848, followed by a 151-foot-tall iron tower 20 years later. The threat of shoreline erosion prompted the Federal Government to dismantle the lighthouse and move it about a mile inland in 1894, where it remains today.

When its stewardship was transferred to the 45th Space Wing, Patrick Air Force Base, it became the only fully operational lighthouse owned and operated by the Air Force. The light, which comes on automatically at dark, flashes two times in 4.8 seconds, then is dark for 14.8 seconds before flashing again. It has a visible range of more than 20 miles.

- Notes and observations.





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LAUNCH COMPLEX 14 (LC-14)

LC-14 was the first Atlas pad in operation and hosted the initial test flights in 1957 and 1958. In 1959, minor modifications were made to support the Mercury Program space launches, the first of which occurred in September of that year. It was the designated Mercury-Atlas facility, and as such was the only Atlas pad with the infrastructure necessary for manned launches.

LC-14 is perhaps most well known as the launch site for NASA's 1962 Mercury-Atlas 6 flight, during which astronaut John Glenn became the first American to orbit Earth. It also was the launch site of the other three Mercury-Atlas flights and various unmanned Atlas launches. Later, it was the site for Atlas-Agena launches for the Agena Target Vehicles for Project Gemini.

Following deactivation in 1967, LC-14 slowly fell into decay. The proximity to the Atlantic Ocean created an ideal environment for corrosion of metal components, and the complex's red metal gantry structures were dismantled for safety purposes in the 1970s. In 1984 it was declared a National Historic Landmark, and in 1988 the blockhouse was restored and converted to meeting space to commemorate the 35th anniversary of the final Mercury flight.

■ Notes and observations.



LAUNCH COMPLEX 19 (LC-19)

LC-19 was the launch site for unmanned and manned Titan I and Titan II missions, for which it used a horizontal-to-vertical erector system to place missiles on the launch pad. It also was the launch site for all 10 manned Gemini missions, the last of which—Gemini 12, launched in November 1966—was the final mission launched from the pad.

LC-19 was deactivated in April 1967, and its service tower and umbilical were demolished 10 years later. In 2003, the white room from the pad erector was restored and moved to the Air Force Space and Missile Museum. The pad and remainder of the erector were demolished in 2012 and 2013.

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LAUNCH COMPLEX 34 (LC-34)

LC-34 was the site for four Saturn I and three Saturn IB launches between October 1961 and October 1968. The first manned Saturn IB Apollo test flight was scheduled for launch in February 1967, but tragedy struck on January 27, 1967, during a pre-flight test when a flash fire in the capsule killed astronauts Virgil "Gus" Grissom, Edward White III, and Roger Chaffee.

The following October, the first manned Saturn IB Apollo launch, Apollo 7, took place; it also was the only manned Apollo launch from CCAFS. The Apollo Program continued from neighboring Kennedy Space Center Pads 29A and 39B. LC-34 was held in standby for possible use in the Skylab Program, then deactivated in early 1969, and the service structure was scrapped in 1972. Today, only the launch platform stands, serving as a memorial to the crew of Apollo 1.

■ Notes and observations.



LAUNCH COMPLEX 26 (LC-26)

LC-26 is a deactivated launch site that consisted of two pads: A and B. Pad A was the launch site for 10 Jupiter rockets, and for Explorer 1, the United States' first satellite, in 1958. Pad B was used to launch 16 Jupiter rockets, six Juno rockets, and in 1958, the first bioflight with a monkey named Gordo.

LC-26 was deactivated and reassigned to the Air Force Space Museum in 1964, and twenty years later was declared a National Historic Landmark. Today it displays more than 55 missiles and rockets that show the history of the missile and space program.

■ Notes and observations.





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LAUNCH COMPLEX 40 (SLC-40)

SLC-40, previously Launch Complex 40 (LC-40), was used by the U.S. Air Force for 55 Titan III and Titan IV launches between 1965 and 2005.

After 2007, the U.S. Air Force leased the complex to SpaceX to launch the Falcon 9 rocket. The following year, the complex was modified to include a large hangar on the pad to work on the Falcon, a new launch mount, a mobile transporter/erector system, and support equipment. The first Falcon 9 launch, a test of the booster, took place in June 2010. As of December 2017, 26 launches of the Falcon 9 have occurred from the complex.

The site was heavily damaged during a September 2016 run-up to a static fire test, when an anomaly on the launch pad resulted in an explosion and the loss of the Flight 29 vehicle and its payload. There were no injuries.

■ Notes and observations.



LANDING ZONES 1 AND 2 (LZ-1 AND LZ-2)

LZ-1 and LZ-2 are used for recovering components of SpaceX's Vertical Takeoff Vertical Landing (VTVL) reusable launch vehicles. The facility was built on land leased by SpaceX in February 2015 from the U.S. Air Force, on the site of the former CCAFS Launch Complex 13 (LC-13), and renamed LZ-1. LC-13 supported 51 Atlas and Atlas Agena launches over a twenty-year period starting in 1958.

SpaceX accomplished its first successful landing at LZ-1 in December 2015 with the Falcon 9 Flight 20. In May 2017, SpaceX began construction on a second, smaller pad, LZ-2, to support Falcon Heavy booster landings. It was first used by the maiden launch of Falcon Heavy in February 2018, when the rocket's two side boosters touched down on LZ-1 and LZ-2. All landing attempts since 2015 have been successful at the complex.

■ Notes and observations.



