

[See the new Apollo 11 30th Anniversary Page](#)



Apollo 11

Launched: 16 July 1969 UT 13:32:00
(09:32:00 a.m. EDT)

Landed on Moon: 20 July 1969 UT
20:17:40 (04:17:40 p.m. EDT)

Landing Site: Mare Tranquillitatis -
Sea of Tranquility (0.67 N, 23.47 E)

Returned to Earth: 24 July 1969 UT
16:50:35 (12:50:35 p.m. EDT)

Neil A. Armstrong, commander

**Michael Collins, command module
pilot**

**Edwin E. Aldrin, Jr., lunar module
pilot**

[Apollo 11 Mission Summary](#)

Apollo 11 Command Module "Columbia"

- **Photographic Studies -**
[Experiment Description](#)
☒ [Data Sets](#)

- **Window Meteoroid Detector -**
[Experiment Description](#)
☒ No Data Sets Available at NSSDC.

[Apollo 11 Lunar Module "Eagle"](#)

- **Photographic Studies -**
[Experiment Description](#)

☒ [Data Sets](#)

- **Lunar Field Geology -** [Experiment Description](#)

☒ [Data Sets](#)

- **Solar Wind Composition by Foil
Entrapment -** [Experiment Description](#)

☒ No Data Sets Available at NSSDC.

- **Passive Seismic Experiment -**
[Experiment Description](#)

[Data Sets](#)

- **Laser Ranging Retroreflector - [Experiment Description](#)**


[Data Sets](#)


- **Lunar Dust Detector - [Experiment Description](#)**

 No Data Sets Available at NSSDC.

- **Soil Mechanics - [Experiment Description](#)**

[Data Sets](#)

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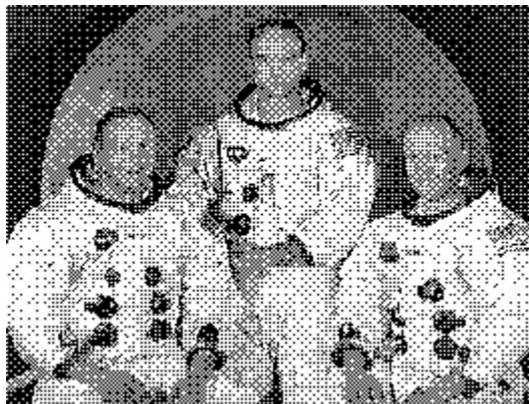
Greenbelt, MD 20771

+1-301-286-1258

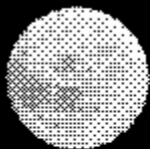


NASA Official: J. H. King, joseph.h.king@gsfc.nasa.gov

Last Updated: 16 July 1999, DRW



1969-1999



110

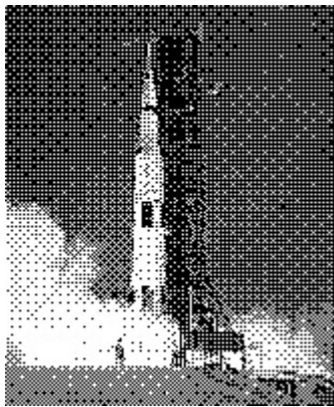
APOLLO

30TH ANNIVERSARY

30th anniversary of Apollo 11 : 1969 - 1999

The picture above shows the crew of Apollo 11: Commander Neil A. Armstrong, 38, a civilian who'd flown previously on Gemini 8, Command Module Pilot Michael Collins, 38, a USAF Lt. Colonel who'd flown Gemini 10, Lunar Module Pilot Edwin E. Aldrin, Jr., 39, a USAF Colonel who'd flown Gemini 12. Photograph taken May 1, 1969.

(NASA photo ID S69-31739)



The first human journey to the surface of the Moon began at Pad A, Launch Complex 39, Kennedy Space Center, Florida with the [liftoff](#)


[of Apollo 11](#) on a Saturn V booster at 9:32 a.m. EDT (13:32 UT) on a clear sunny Wednesday, 16 July 1969.

(NASA photo ID S69-39525)




The Apollo spacecraft reached Earth parking orbit after 11 minutes. After one and a half orbits the Saturn thrusters fired and the astronauts began their journey to the Moon. This spectacular photo of the Earth was taken from 158,000 km (98,000 miles) during the Apollo 11 translunar injection on July 16. Most of Africa and parts of Europe and Asia are visible.

(NASA photo ID AS11-36-5355)

 On July 20, 1969, after a four day trip, the Apollo astronauts arrived at the Moon. This photo of Earthrise over the lunar horizon is one of the most famous images returned from

the space program, although even the astronauts themselves cannot remember who actually took the picture. The lunar terrain shown, centered at 85 degrees east longitude and 3 degrees north latitude on the nearside of the Moon is in the area of Smyth's Sea.
(NASA photo ID AS11-44-6552)

This west- 
looking image of the landing site in the southwestern Sea of Tranquility was taken from the lunar module one orbit before descent, while still docked to the command module. The Tranquility base site is near the shadow line, just to the right of center. The large crater at the

lower right is Maskelyne. The large black object in the lower left is not a shadow but a LM thruster in the camera field of view.

(NASA photo ID AS11-37-5437)

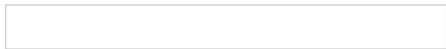
At 1:47 pm EDT, July 20, the Lunar Module "Eagle" carrying Neil Armstrong and Edwin Aldrin, separated from the Command Module "Columbia". Michael Collins, aboard the Columbia, took this picture of the LM as it prepared for its descent to the Moon. "You cats take it easy on the lunar surface", Collins said as he released the LM. Collins did a visual inspection of the lunar module and said, "I think you've got a fine

looking machine there, Eagle, despite the fact that you're upside-down."

"Somebody's upside-down", Armstrong replied. The lunar horizon can be seen in the background.

(NASA photo ID AS11-44-6574)

This



photograph of the Command Module was taken from the LM after separation. The lunar surface below is in the north central Sea of Fertility, centered at 51 degree east longitude, 1 degree north latitude. Over the next day, Michael Collins would orbit the Moon while his colleagues walked on its surface. With no video monitor onboard he could not

watch the proceedings but only listen in on the radio communications - and enjoy the sensation of orbiting the Moon solo, the first time anyone had been the only person in lunar orbit.

(NASA photo ID AS11-37-5445)

"Houston, Tranquility Base here. The Eagle has landed." These words ushered in a new era of human exploration at 4:18 p.m. EDT on July 20, as the first crewed flight to the Moon touched down after flying longer than planned, down to the last 40 seconds of fuel, to avoid a field of boulders and a large crater. Charles Duke, the Capcom (capsule communicator) back in Houston, replied,

"Roger, Tranquility. We copy you on the ground. You got a bunch of guys about to turn blue. We're breathing again." This picture, taken from the LM window shortly before touchdown, shows the surface of the Moon near the touchdown point in the Sea of Tranquility. (NASA photo ID AS11-37-5458)

["That's one small step for man, one giant leap for mankind."](#) At 10:56 p.m. EDT on July 20, 1969, Neil Armstrong became the first human to set foot on the Moon. This image was taken from the telecast of the event, watched by over half a billion people around the world. Armstrong composed the quote




after landing on the Moon, he had meant to say, "That's one small step for *aman* ...". The pictures were taken by the Apollo lunar surface camera, mounted on one of the LM legs. The black bar running through the center of the picture is an anomaly in the Goldstone ground data system.

(NASA photo ID S69-42583)



[redacted] Aldrin joined

[redacted]
Armstrong on the surface about nineteen minutes later, calling it "[Magnificent desolation](#)". As he left the LM, Aldrin said, "Now I want to back up and partially close the hatch - making sure not to lock it on my way out." "A


particularly good thought." laughed Armstrong. Asked later on why they bothered closing the hatch, Armstrong said it was to avoid having someone ask "Were you born in a barn?" (NASA photo IDs AS11-40-5863 and AS11-40-5868)

The astronauts  removed a sheet of stainless steel to unveil the plaque affixed to the lunar module leg under the descent ladder and read to the television audience: "Here men from the planet Earth first set foot upon the Moon, July 1969 A.D. We came in peace for all mankind." It was signed by Armstrong, Collins, Aldrin,

and President Richard Nixon.
(NASA photo ID AS11-40-5899)

 The
 footprints left by the
astronauts in the Sea of Tranquility are
more permanent than most solid
structures on Earth. Barring a chance
meteorite impact, these impressions in
the lunar soil will probably last for
millions of years. Photographs of the
footprints were actually part of a
planned experiment by Aldrin to study
the nature of the lunar dust and the
effects of pressure on the surface.
(NASA photo ID's AS11-40-5880 and
AS11-40-5878)

Here



Aldrin is unloading the passive seismometer of the Early Apollo Scientific Experiments Package (EASEP) from the lunar module equipment bay. The white apparatus in the foreground is the 35 mm stereo close-up camera. Beyond the right leg is the solar wind experiment, and beyond that the lunar surface TV camera. The LM legs are wrapped in foil to provide thermal insulation. There is a split rock in the lower right of the frame which is presumably ejecta from a nearby impact crater.

(NASA photo ID AS11-40-5931)

In the couple hours that Aldrin and Armstrong were on the Moon, there was little time to set up scientific experiments, but a small package (the EASEP, or Early Apollo Scientific Experiments Package) was deployed. Aldrin is shown here setting up the Passive Seismic Experiments Package. Behind Aldrin to the left is the Laser Ranging Retro-Reflector. The flag and the lunar surface television camera are left of the LM. This mission paved the way for the more extensive scientific studies done on later Apollo missions.
(NASA photo ID AS11-40-5949)

Aldrin posed for this picture next to the U.S. flag. The rod to hold the flag out horizontally would not extend fully, so the flag ended up with a slight waviness, giving the appearance of being windblown. The flag itself was difficult to erect, it was very hard to penetrate beyond about 6 to 8 inches into the lunar soil.

(NASA Photo ID AS11-40-5875)

Millions of Earthlings watched the drama unfold on TV images taken by the black and white lunar surface camera. Here, Armstrong is standing in the center, and Aldrin is saluting President Richard M. Nixon, who had just spoken

to the two astronauts by radio telephone from the White House: "Hello, Neil and Buzz. I'm talking to you by telephone from the Oval Room at the White House, and this certainly has to be the most historic telephone call ever made Because of what you have done, the heavens have become a part of man's world". Armstrong replied, "Thank you, Mr. President. It's a great honor and privilege for us to be here representing not only the United States but men of peace of all nations, and with interests and the curiosity and with the vision for the future."

(NASA photo ID S69-39562)



Walking on the lunar surface was not difficult, but took a little practice. Despite the fact that the backpacks and astronauts only weighed 1/6 on their 350 pound Earth weight, their center of gravity was shifted so they had to lean slightly forward to balance, and they still had to overcome the inertia of all that mass, so stopping usually took a few steps. Here Aldrin is walking in the typical bent posture near the leg of the lunar module. Footprints are clearly visible in the foreground.
(NASA photo ID AS11-40-5902)


Neil
Armstrong took this picture of Edwin

Aldrin, showing a reflection in Aldrin's visor of Armstrong and the Lunar Module. This is one of the few photographs showing Armstrong (who carried the camera most of the time) on the Moon. The tasks assigned to both astronauts were carefully choreographed and practiced back on Earth, and Aldrin was busy setting up scientific experiments among other responsibilities. Apparently taking pictures was not as carefully planned. Aldrin later said, "My fault, perhaps, but we had never simulated this in training." (NASA photo ID AS11-40-5903)

Armstrong




was photographed here at the Modular Equipment Stowage Assembly (MESA) on the lunar module, packing the bulk rock and soil sample he had collected. Aldrin took this picture as part of a series of panoramas of the area around the Tranquility Base landing site. Armstrong is in the shadow of the lunar module, details can only be seen with processing, making the sunlit surface directly behind the LM appear very bright.
(NASA photo ID AS11-40-5886)

 At one point Armstrong disappeared from the TV camera for about 3 minutes to photograph East


Crater about 60 meters away from the LM. He estimated the crater was about 70 or 80 feet in diameter and 15 or 20 feet deep. The crater wall in the background is in deep shadow. The object at lower left is the stereo close-up camera.

(NASA photo ID AS11-40-5954)

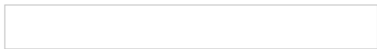
The astronauts  returned to the Lunar Module after 2 hours and 32 minutes on the surface and took this picture. The footprints of the astronauts and the lunar surface television camera can be seen. The flag was actually knocked over when by the LM's exhaust when the astronauts took

off from the Moon at 1:54 p.m. EDT on July 21.

(NASA photo ID AS11-37-5545)

 After lifting off from the lunar surface, the lunar module made its rendezvous with the command module. The Eagle docked with Columbia, and the lunar samples were brought aboard. The LM was left behind in lunar orbit while the three astronauts returned in the command module to the blue planet in the background.

(NASA photo ID AS11-44-6642)



View of a full Moon photographed from the Apollo 11 spacecraft during its transearth journey homeward. When this picture was taken the spacecraft was about 10,000 nautical miles from the Moon, after a successful burn of the command/service module main engine to leave lunar orbit. After a two and a half day coast the astronauts would re-enter Earth's atmosphere.

(NASA photo ID AS11-44-6667)

The final phase of [Kennedy's challenge](#) was completed at 12:50 p.m. EDT on July 24, 1969, when the Columbia splashed down about 812 nautical miles southwest of Hawaii, returning the 3

astronauts safely to Earth. Here they are shown in a life raft with a Navy frogman. All four men are wearing biological isolation garments, awaiting helicopter pickup and transport to the U.S.S. Hornet. They stayed in quarantine for three weeks. The day before splashdown, Aldrin said, "We feel this stands as a symbol of the insatiable curiosity of all mankind to explore the unknown." It also stands as a tribute to the thousands of engineers, scientists, and others who made the journey possible with their extraordinary efforts. (NASA photo ID S69-21698)

To order hardcopy versions of any of the

AS11- images above, contact the
NSSDC Request Office at
request@nssdc.gsfc.nasa.gov, (301)
286-6695.

- [the Apollo 11 home page](#)
- [Apollo 11 Mission Summary](#)
- [the Apollo home page](#)
- [Three asteroids named for Apollo 11 crew](#)

Other Apollo 11 sites:

- [Apollo 11 30th Anniversary Page](#) - NASA History Office
- [Apollo 11 30th Anniversary](#) - List of Events
- [The First Lunar Landing](#) - Astronauts' Post-Flight Press Conference

- ☛ [Apollo 11 images at Johnson Space Center](#)
- ☛ [Apollo 11 Lunar Surface Journal](#) - Transcript of Apollo 11 communications
- ☛ [Washington goes to the Moon](#) - American University Radio
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- ☛ [Apollo 11 30th Anniversary](#) - National Space Society
- ☛ [Apollo 11 30th Anniversary](#) - Boeing

In memory of the irrepressible [Charles "Pete" Conrad](#), June 2, 1930 - July 8,

1999.

Gemini 5 and 11, Apollo 12, Skylab.

Third astronaut to walk on the Moon.

"Whoopie! Man, that may have been a small one for Neil, but that's a long one for me!"

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Last Updated: 28 July 1999, DRW

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25th anniversary of Apollo 11 : 1969 - 1994

The crew of Apollo 11: Commander Neil A. Armstrong, Command Module pilot Michael Collins, Lunar Module pilot Edwin E. Aldrin, Jr. May 1, 1969. (NASA photo ID S69-31739)

The first manned journey to the Moon began at Pad A,

Launch Complex 39, Kennedy Space Center, Florida with the [liftoff of Apollo 11](#) at 9:32 a.m. EDT on July 16, 1969. (NASA photo ID S69-39525)

 The Apollo spacecraft reached Earth parking orbit after 11 minutes. After one and a half orbits the Saturn thrusters fired and the astronauts began their journey to the Moon. This spectacular photo of the Earth was taken from 98,000 miles during the Apollo 11 translunar injection on July 16. Most of Africa and parts of Europe and Asia are visible. (NASA photo ID AS11-36-5355)

On July 20, 1969, after a four day trip, the Apollo astronauts arrived at the Moon. This photo of Earthrise over the lunar horizon is one of the most famous images returned from the space program, although even the astronauts themselves cannot remember who actually took the picture. The lunar terrain shown, centered at 85 degrees east longitude and 3 degrees north latitude on the nearside of the Moon is in the area of Smyth's Sea.
(NASA photo ID AS11-44-6552)


This west-looking image of the landing site in the southwestern Sea of Tranquility was

taken from the Lunar Module (LM) one orbit before descent, while still docked to the Command Module (CM). The Tranquility base site is near the shadow line, just to the right of center. The large crater at the lower right is Maskelyne. The large black object in the lower left is not a shadow but a LM thruster. (NASA photo ID AS11-37-5437)

At 1:47 pm EDT, July 20, the Lunar Module "Eagle" carrying Neil Armstrong and Edwin Aldrin, separated from the Command Module "Columbia". Michael Collins, aboard the CM, took this picture of the LM as it prepared for its descent to the lunar surface. "You

cats take it easy on the lunar surface", Collins said as he released the LM. The lunar horizon can be seen in the background.

(NASA photo ID AS11-44-6574)

 This photograph of the Command Module was taken from the LM after separation. The lunar surface below is in the north central Sea of Fertility, centered at 51 degree east longitude, 1 degree north latitude. Over the next day, Michael Collins would orbit the Moon while his colleagues walked on its surface.

(NASA photo ID AS11-37-5445)

"Houston, Tranquility Base here. The Eagle has landed." These words ushered in a new era of human exploration at 4:18 pm EDT on July 20, as the first manned flight to the Moon touched down. This picture, taken from the LM window shortly before touchdown, shows the surface of the Moon near the touchdown point in the Sea of Tranquility. "Magnificent desolation", Aldrin called it.
(NASA photo ID AS11-37-5458)

"That's one small step for man, one giant leap for mankind." At 10:56 pm EDT on July 20, 1969, Neil Armstrong became

the first human to set foot on the Moon. This image was taken from the telecast of the event, watched by people around the world. The pictures were taken by the Apollo lunar surface camera, the black bar running through the center of the picture is an anomaly in the Goldstone ground data system. (NASA photo ID S69-42583)

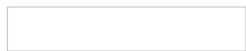


Aldrin

joined Armstrong on the surface less than fifteen minutes later, in this photo taken by Armstrong. As he left the LM, Aldrin said, "Now I want to partially close the hatch, making sure not to lock it on my way out." "A good thought."

replied Armstrong.

(NASA photo ID AS11-40-5868)




The footprints left by the astronauts in the Sea of Tranquility are more permanent than many solid structures on Earth. Barring a chance meteorite impact, these impressions in the lunar soil will probably last for millions of years.

(NASA photo ID AS11-40-5878)




A view of the Lunar Module "Eagle" on the Moon. Aldrin is opening the stowage area and preparing to unload the scientific

experiments package. Beyond the right leg is the solar wind experiment, and beyond that the lunar surface TV camera. (NASA photo ID AS11-40-5927)


 In the few hours that Aldrin and Armstrong were on the Moon, there was little time to set up scientific experiments, but a small package (the EASEP, or Early Apollo Scientific Experiments Package) was deployed. Aldrin is shown here setting up the Passive Seismic Experiments Package. Back to the left is the Laser Ranging Retro-Reflector. More extensive scientific studies were done on later Apollo missions.

(NASA photo ID AS11-40-5949)




Millions of Earthlings watched the drama unfold on TV images taken by the black and white lunar surface camera. Here, Armstrong is standing in the center, and Aldrin, a colonel in the Air Force, is saluting President Richard M. Nixon, who had just spoken to the two astronauts by radio.

(NASA photo ID S69-39562)




Neil
Armstrong took this picture of Edwin Aldrin, showing a reflection in Aldrin's visor of Armstrong and the Lunar


Module. This is one of the only photographs showing Armstrong, who carried the camera, on the Moon. Aldrin later said, "My fault, perhaps, but we had never simulated this in training." (NASA photo ID AS11-40-5903)

 The astronauts returned to the Lunar Module after 2 hours and 32 minutes on the surface (2:15 for Aldrin) and took this picture. The footprints of the astronauts and the lunar surface television camera can be seen. The flag had been difficult to set up, and was actually knocked over when the LM took off from the Moon 21 hours after landing.

(NASA photo ID AS11-37-5545)

 After lifting off from the lunar surface, the LM made its rendezvous with the Command Module. The Eagle docked with the Command Module, and the lunar samples were brought aboard. The LM was left behind in lunar orbit while the 3 astronauts returned in the Columbia to the blue planet in the background.

(NASA photo ID AS11-44-6642)

 The final phase of [Kennedy's challenge](#) was completed at 12:50 p.m. EDT on July 24, 1969, when the Columbia

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(NASA photo ID S69-21698)

Special thanks to the Johnson Space Center digital image library. Many more Apollo 11 images are available at this

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☛ [Apollo Lunar Surface Journal](#) - Transcript of Apollo communications

The image at the top of the page of
Aldrin with the U.S. flag is NASA Photo
ID AS11-40-5875

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Last Updated: 16 July 1999, DRW



Apollo Lunar Landings (1969 - 1972)

**Apollo
Mission
Launch
Date
Landing
Date
Landing Site
Latitude**

Longitude

EVA time

(hours)

Traverse

(km)

Sample

Return (kg)

11

16 Jul 1969

20 Jul 1969

Mare Tranquilitatis

0.674 N

23.473 E

2.53

0.25

21.7

12

14 Nov 1969

19 Nov 1969

Oceanus Procellarum

3.014 S

23.419 W

7.75

1.35

34.4

14

31 Jan 1971

05 Feb 1971

Fra Mauro

3.645 S

17.471 W

9.38

3.45

42.9

15

26 Jul 1971

30 Jul 1971

Hadley Rille

26.132 N

3.634 E

19.13

27.9

76.8

16

16 Apr 1972

20 Apr 1972

Descartes

8.973 S

15.499 E

20.23

27.

94.7

17

07 Dec 1972

11 Dec 1972

Taurus-Littrow

20.188 N

30.775 E

22.07

35.

110.5

Latitude and longitude referenced to modified DMA/603 control network

 Text version of the Apollo lunar

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Last Updated: 22 June 1999, DRW**



Apollo Landing Site Coordinates

Site coordinates are based on the IAU Mean Earth Polar Axis coordinate system, from the transformed Defense Mapping Agency 603 (DMA/603) lunar cartographic control network as described in Davies et al., *J. Geophys. Res.*, v. 92, pp. 14177-14184, 1987 and personal communication (1998). The Apollo 11, 12, and 14 landing site locations are estimated from the transformed DMA/603 network and the relative locations of the ALSEP's

(Apollo Lunar Surface Experiments Packages) and LRRR's (lunar ranging retroreflectors) as given in the Apollo ALSEP Termination Report and Apollo Preliminary Science Reports. The full locations used are given below:

degrees N
latitude
degrees E
longitude

[Apollo 11](#)

LRRR

0.67337

23.47293

Lunar Module

0.67409

23.47298

[Apollo 12](#)

ALSEP

-3.01084

-23.42456

Lunar Module

-3.01381

-23.41930

Apollo 14

LRRR

-3.64422

-17.47880

ALSEP

-3.64450

-17.47753

Lunar Module

-3.64544

-17.47139

[Apollo 15](#)

LRRR

26.13333

3.62837

ALSEP

26.13407

3.62981

Lunar Module

26.13224

3.63400

[Apollo 16](#)

ALSEP

-8.97577

15.49649

Lunar Module

-8.97341

15.49859

[Apollo 17](#)

ALSEP

20.18935

30.76796

Lunar Module

20.18809

30.77475

Coordinates last updated 17 June 1998,
DRW

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Last Updated: 22 June 1999, DRW

Impact Sites of Apollo LM Ascent and SIVB Stages

Object

Date

Time (UT)

Latitude

Longitude

Impact Velocity

(km/s)

Impact Energy

(ergs)

Angle from Horizontal

Apollo 12 LM

20 November 1969

22:17:17.7

3.94 S

21.20 W

1.68

3.36×10^{16}

3.7

Apollo 13 SIVB

14 April 1970

01:09:41.0

2.75 S

27.86 W

2.58

4.63 x 10¹⁷

76

[Apollo 14 SIVB](#)

4 February 1971

07:40:55.4

8.09 S

26.02 W

2.54

4.52 x 10¹⁷

69

[Apollo 14 LM](#)

8 February 1971

00:45:25.7

3.42 S

19.67 W

1.68

3.25 x 10¹⁶

3.6

Apollo 15 SIVB

29 July 1971

20:58:42.9

1.51 S

11.81 W

2.58

4.61 x 10¹⁷

62

Apollo 15 LM

4 August 1971

03:03:37.0

26.36 N

0.25 E

1.70

3.44×10^{16}

3.2

Apollo 16 SIVB

19 April 1972

21:02:04*

1.3 N*

23.8 W*

2.5 - 2.6

4.59×10^{17} *

~79

Apollo 17 SIVB

10 December 1972

20:32:42.3

4.21 S

12.31 W

2.55

4.71 x 10¹⁷

55

Apollo 17 LM

15 December 1972

06:50:20.8

19.96 N

30.50 E

1.67

3.15 x 10¹⁶

4.9

Notes

Impact times are Earth received times, approximately 1.3 seconds later than real time on the Moon.

Listed coordinates are derived from the Manned Space Flight Network tracking data referenced to a mean spherical surface and may differ by several km from coordinates based on surface features.

The Apollo 11 SIVB was injected into heliocentric orbit, the Apollo 12 SIVB into Earth orbit.

The Apollo 11 and 16 LM's were jettisoned into (temporary) lunar orbits. The Apollo 13 LM re-entered Earth's atmosphere on 17 April 1970.

* A malfunction resulted in premature loss of tracking data for the Apollo 16 SIVB.

Time, location, and impact energy are estimates based on interpretation of seismic data.

Uncertainty in the Apollo 16 impact time is about 4 seconds.

Uncertainty in the Apollo 16 impact location is about 0.7 deg. latitude, 0.3 deg. longitude.

(The impact location estimated based on tracking prior to signal loss is 2.24 N, 24.49 W)

Most data from [Toksoz et al., 1974](#)

■ [Text version of the Apollo impact table](#)

■ [Apollo landing sites, ALSEP, and](#)

LRRR locations

■ [Apollo Home Page](#)

■ [Lunar Home Page](#)

■ [NSSDC Planetary Home Page](#)

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Last Updated: 22 June 1999, DRW



Apollo: Where are they now?

Current locations of the Apollo Command Module Capsules (and Lunar Module crash sites)

The Apollo Command Module Capsules are on display at various sites throughout the U.S. and the world. The Apollo Lunar Modules were deliberately targeted to impact the Moon to provide artificial moonquake sources for seismic experiments. The list below gives the locations of these displays and impacts.

[Apollo 7](#)

Command Module

National Museum of Science and
Technology, Ottawa, Canada

[Apollo 8](#)

Command Module

Chicago Museum of Science and
Industry, Chicago, Illinois

[Apollo 9](#)

Command Module "Gumdrop"

Michigan Space and Science Center,
Jackson, Michigan

[Apollo 10](#)

Command Module "Charlie Brown"

Science Museum, London, England

Lunar Module "Snoopy"

In heliocentric orbit

[Apollo 11](#)

Command Module "Columbia"

The National Air and Space Museum,
Washington, D.C.

Lunar Module "Eagle"

Jettisoned from the Command Module on
21 July 1969 at 23:41 UT (7:41 PM)

EDT)

Impact site unknown

[Apollo 12](#)

Command Module "Yankee Clipper"

Virginia Air and Space Center,
Hampton, Virginia

Lunar Module "Intrepid"

Impacted Moon 20 November 1969 at
22:17:17.7 UT (5:17 PM EST)

3.94 S, 21.20 W

[Apollo 13](#)

Command Module "Odyssey"

Kansas Cosmosphere and Space Center,
Hutchinson, Kansas
(formerly at Musee de l'Air, Paris,
France)

Lunar Module "Aquarius"

Burned up in Earth's atmosphere 17
April 1970

Apollo 14

Command Module "Kitty Hawk"

Astronaut Hall of Fame, Titusville,
Florida

Lunar Module "Antares"

Impacted Moon 07 February 1971 at
00:45:25.7 UT (06 February, 7:45 PM

EST)

3.42 S, 19.67 W

[Apollo 15](#)

Command Module "Endeavor"

USAF Museum, Wright-Patterson Air
Force Base, Dayton, Ohio

Lunar Module "Falcon"

Impacted Moon 03 August 1971 at
03:03:37.0 UT (02 August, 11:03 PM
EDT)

26.36 N, 0.25 E

[Apollo 16](#)

Command Module "Casper"

U.S. Space and Rocket Center,
Huntsville, Alabama

Lunar Module "Orion"

Released 24 April 1972, loss of attitude control made targeted impact impossible.

Impact site unknown

[Apollo 17](#)

Command Module "America"

NASA Johnson Space Center, Houston,
Texas

Lunar Module "Challenger"

Impacted Moon 15 December 1972 at

06:50:20.8 UT (1:50 AM EST)

19.96 N, 30.50 E

Apollo-Soyuz

Command Module

NASA Kennedy Space Center, Cape
Canaveral, Florida

Test Command Module

Museum of Flight, Seattle, Washington

Skylab 2 / Crew 1

Command Module

Naval Aviation Museum, Pensacola,
Florida

Skylab 3 / Crew 2

Command Module

NASA Glenn Research Center,
Cleveland, Ohio

Skylab 4 / Crew 3

Command Module

National Air and Space Museum,
Washington, D.C.

■ [Text version of this and other Apollo tables](#)

■ [Impact Sites of the Apollo LM's and SIVB's](#)

■ [More details on Apollo lunar landings](#)

■ [Landing Site References](#) - the control network used and more precise coordinates for the landing, ALSEP, and LRRR sites

■ [Apollo home page](#)

■ [Lunar home page](#)

■ [The Apollo 11 mission](#) - Images, audio clips, and a brief history.

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The Apollo Program (1963 - 1972)

[30th Anniversary of Apollo 11 - July, 1999](#)

The Apollo program was designed to land humans on the Moon and bring them safely back to Earth. Six of the missions (Apollos 11, 12, 14, 15, 16, and 17) achieved this goal. Apollos 7 and 9 were Earth orbiting missions to test the Command and Lunar Modules, and did

not return lunar data. Apollos 8 and 10 tested various components while orbiting the Moon, and returned photography of the lunar surface. Apollo 13 did not land on the Moon due to a malfunction, but also returned photographs. The six missions that landed on the Moon returned a wealth of scientific data and almost 400 kilograms of lunar samples. Experiments included soil mechanics, meteoroids, seismic, heat flow, lunar ranging, magnetic fields, and solar wind experiments.

Click on the spacecraft name for information about the spacecraft and data held at NSSDC

Apollo Lunar Missions

[Apollo 8](#)

Launched 21 December 1968

Lunar Orbit and Return

Returned to Earth 27 December 1968

[Apollo 10](#)

Launched 18 May 1969

Lunar Orbit and Return

Returned to Earth 26 May 1969

[Apollo 11](#)

Launched 16 July 1969

Landed on Moon 20 July 1969

Sea of Tranquility

Returned to Earth 24 July 1969

Apollo 12

Launched 14 November 1969

Landed on Moon 19 November 1969

Sea of Storms

Returned to Earth 24 November 1969

Apollo 13

Launched 11 April 1970

Lunar Flyby and Return

Malfunction forced cancellation of lunar

landing

Returned to Earth 17 April 1970

[Apollo 14](#)

Launched 31 January 1971

Landed on Moon 5 February 1971

Fra Mauro

Returned to Earth 9 February 1971

[Apollo 15](#)

Launched 26 July 1971

Landed on Moon 30 July 1971

Hadley Rille

Returned to Earth 7 August 1971

Apollo 16

Launched 16 April 1972

Landed on Moon 20 April 1972

Descartes

Returned to Earth 27 April 1972

Apollo 17

Launched 07 December 1972

Landed on Moon 11 December 1972

Taurus-Littrow

Returned to Earth 19 December 1972

The Apollo mission consisted of a Command Module (CM) and a Lunar Module (LM). The CM and LM would

separate after lunar orbit insertion. One crew member would stay in the CM, which would orbit the Moon, while the other two astronauts would take the LM down to the lunar surface. After exploring the surface, setting up experiments, taking pictures, collecting rock samples, etc., the astronauts would return to the CM for the journey back to Earth.

Apollo Manned Earth Orbiting Missions

[Apollo 7](#)

Launched 11 October 1968

First manned Apollo flight

Splashdown 22 October 1968

[Apollo 9](#)

Launched 03 March 1969

First manned Lunar Module test

Splashdown 13 March 1969

Apollo Unmanned Earth Orbiting Missions

SA-6

Launched 28 May 1964

First Apollo boilerplate model

AS-203

Launched 5 July 1966

First Apollo orbital mission

Apollo 4

Launched 9 November 1967

First all-up launch of Saturn V

[Apollo 5](#)

Launched 22 January 1968

First test of Lunar Module in space

[Apollo 6](#)

Launched 4 April 1968

Final unmanned Apollo test flight

Apollo Unmanned Suborbital Flights

[AS-201](#)

Launched 26 February 1966
First flight of Saturn 1B

[AS-202](#)

Launched 25 August 1966
Apollo development flight

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- [More details on Apollo lunar landings](#)
 - [Precise positions of LM's and science](#)

experiments on the Moon

■ Impact sites of the Apollo LM's and SIVB's

■ Where are they now? - A guide to the current locations of the Apollos

■ Lunar home page

■ The Apollo 8 Christmas Eve Broadcast

■ 30th Anniversary of the Apollo 11 mission - Images, audio clips, and a brief history.

■ The Apollo 11 mission - 25th Anniversary

■ The Apollo 13 malfunction - Images and information on the accident

■ The Apollo 14 Moon Trees - Trees grown from seeds brought to the Moon by Apollo 14

☛ [The Apollo 17 LM liftoff from the Moon \(80 K Quicktime movie\) and a 1 Mbyte version](#)

☛ [Restored ALSEP Data](#) - Suprathermal Ion Detector Experiment

☛ [Apollo Images](#) - Johnson Space Center

☛ [Apollo Lunar Surface Journal](#) -
Transcripts of Apollo communications

☛ [Apollo Missions](#) - Lunar and Planetary Institute

☛ [Apollo Manned Space Program](#) - Smithsonian National Air and Space Museum

☛ [Project Apollo](#) - Kennedy Space Center

☛ [Apollo Expeditions to the Moon](#) - Online Book at NASA History Office

- ☛ [Planetary Materials Curation](#) - Lunar samples at Johnson Space Center
 - ☛ [Lunar Module](#) - Spacecraft Assembly and Test Page
-

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Lunar Exploration

On July 20, 1969, Neil Armstrong became the first human being to set foot on the Moon. The first step onto the Lunar surface from the Apollo 11 Lunar Module, the Eagle, fulfilled the [promise of President John F. Kennedy](#) that the U.S. would land a man on the Moon before the end of the decade. It was the highlight of an extended U.S. program to study and map the Moon, beginning with Ranger 7 impacting the Moon on July 31, 1964 and culminating with Apollo 17, which left the Moon on December 14, 1972. The scientific return from these

missions was immensely important and included nearly complete high-resolution imaging of the lunar surface, lunar samples, topographic, seismic, and gravity data, and information on the lunar environment. [These data, as well as data from the Galileo, Clementine, and many Soviet missions, are currently available from the NSSDC.](#)

■ [Lunar Exploration Timeline](#)

■ [Ranger \(1964 - 1965\)](#)

■ [Surveyor \(1966 - 1968\)](#)

■ [Lunar Orbiter \(1966 - 1967\)](#)

■ [Apollo \(1968 - 1972\)](#)

■ [Galileo \(1990, 1992\)](#)

■ [Clementine \(1994\)](#)

☛ [Soviet Missions \(1959 - 1976\)](#)

☛ [Lunar Prospector \(1997\)](#)

☛ [SMART-1 \(2002\)](#)

☛ [Lunar-A \(2003\)](#)

☛ [Selene \(2003\)](#)

☛ [Index to Lunar Data at NSSDC](#)

☛ [The Apollo 11 mission](#) - Images, audio clips, and a brief history.

☛ [The Apollo 13 accident](#) - What happened, including a detailed chronology of events.

☛ [The Moon Trees](#) - Trees grown from seeds brought to the Moon by Apollo 14

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