

**Apollo 11**  
**Lunar Landing 20 July 1969,**  
**3:18 p.m. EST**  
**Lunar liftoff 21 July 1969,**  
**12:54 p.m. EST**

The first mission to land mankind on the Moon was Apollo 11, touching down in the southwestern corner of the Sea of Tranquillity – Mare Tranquillitatis.

1. Look for the largest nearby crater, Theophilus, lying at the southern end of Sinus Asperitatis, an off-shoot of Mare Tranquillitatis.

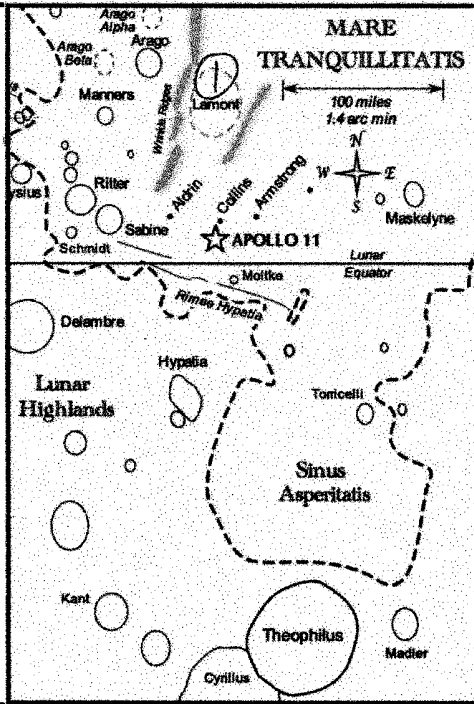
2. Following three Theophilus diameters north leads to the smaller but distinct crater, Moltke.

3. The landing site is situated just northwest of Moltke, and east of Sabine.

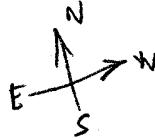
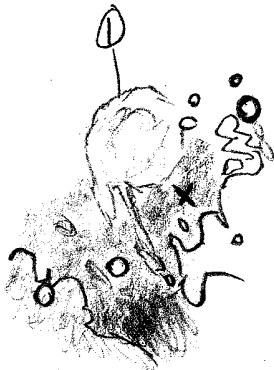
• The two moonwalkers were Neil Armstrong and Ed (Buzz) Aldrin, with Michael Collins in lunar orbit.

• The lunar phase was waxing crescent, 6.2–7.1 days, 33–42% illuminated.

• Its one EVA lasted 2.3 hours, and 47 pounds of rocks and regolith were returned.



Sketch by: B. Young



DATE: 5/20/19 TIME: 9:00 AM  
 AGE: \_\_\_\_\_ SEEING: II TRANS: III  
 EQUIPMENT: ETX-16  
 LOCATION: Home

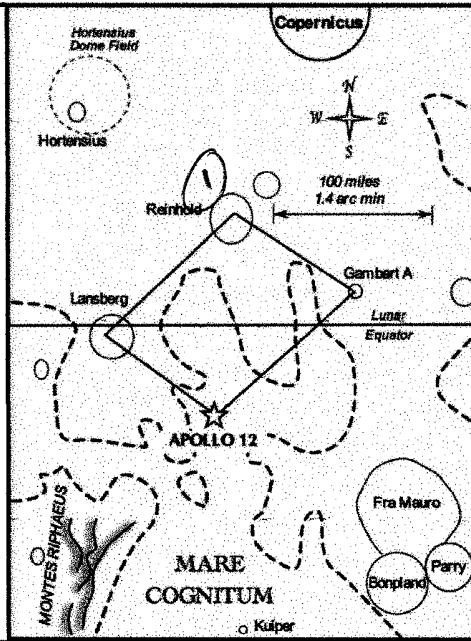
Description: 9mm = 200X  
FOUND EASILY - NICE  
SMOOTH AREA

**Apollo 12**  
**Lunar landing 19 Nov 1969**  
**Lunar liftoff 20 Nov 1969**

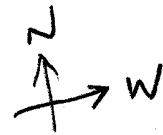
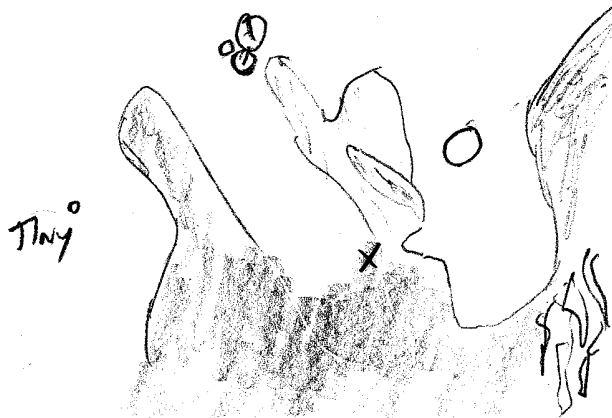
The second mission landed in Mare Cognitum (an off-shoot of Oceanus Procellarum), within walking distance of the Surveyor 3 craft.

1. Locate the large crater Copernicus.
2. Look southwest to the deep ringed craters Reinhold and Lansberg, and south to the bright, small crater Gambart A.
3. The Apollo 12 landing site forms a parallelogram with Reinhold, Lansberg, and Gambart A.

- The two moonwalkers were Pete Conrad and Alan Bean, with Dick Gordon in lunar orbit.
- The lunar phase was waxing gibbous, 9.3-10.6 days, 77-88% illuminated.
- The two EVAs totaled 7.75 hours, and returned 75 pounds of rocks and regolith along with several parts removed from the Surveyor 3 craft.



Sketch by: B. Young



DATE: 5/25/19 TIME: 9:25 UT  
 AGE: \_\_\_\_\_ SEEING: II TRANS: III  
 EQUIPMENT: ETX-125  
 LOCATION: Home

Description: I SEE AREA A  
LITTLE DIFFERENT THAN  
SKETCH PROVIDED  
200X

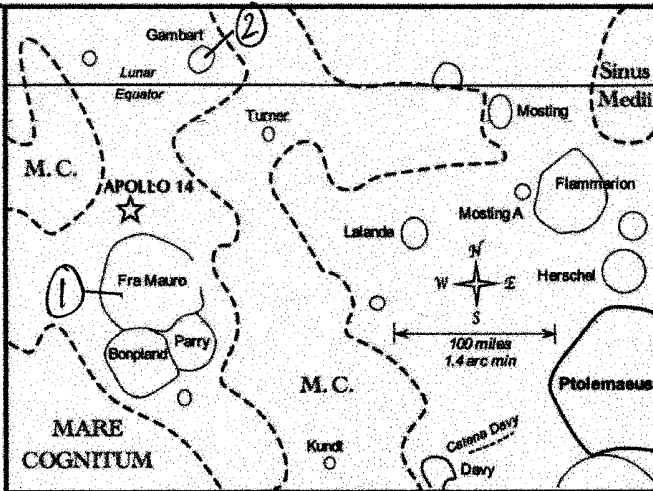
# Apollo 14

Lunar landing 05 Feb 1971

Lunar liftoff 06 Feb 1971

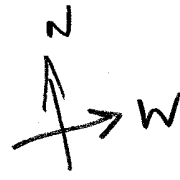
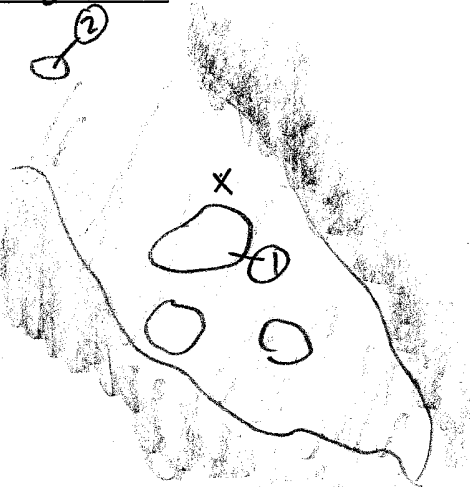
After the failure of Apollo 13, all eyes were on the Apollo 14 mission, which touched down in the Fra Mauro formation.

1. Look for the large crater Ptolemaeus and the crater Herschel just above it.
2. Find the crater Lalande which sits about one Ptolemaeus diameter to the northwest of it.
3. The weak walled Fra Mauro crater lies west of Lalande about 1.5 times the Ptolemaeus-Lalande distance. The Apollo 14 site lies directly north of Fra Mauro.



- The two moonwalkers were Alan Shepard and Ed Mitchell, with Stu Roosa in lunar orbit.
- The lunar phase was waxing gibbous, 9.4–10.8 days, 77–89% illuminated.
- The two EVAs totaled 9.3 hours, and 94 pounds of rocks and regolith were returned.

Sketch by: B. Young



DATE: 5/25/19 TIME: 9:40  
 AGE: \_\_\_\_\_ SEEING: II TRANS: III  
 EQUIPMENT: ETV-125  
 LOCATION: Home

Description: 200X  
EASILY FOUND AREA

# Apollo 15

Lunar landing 30 Jul 1971

Lunar liftoff 1 Aug 1971

Apollo 15 landed alongside Hadley Rille and was the first mission to utilize the lunar rover.

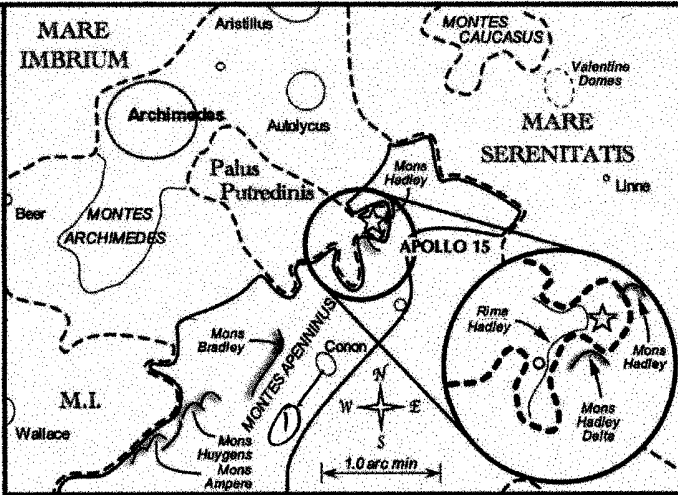
1. Find the prominent crater Archimedes in eastern Mare Imbrium.

2. Draw a line from the middle of Archimedes southeast perpendicular to the Apennine Mountains.

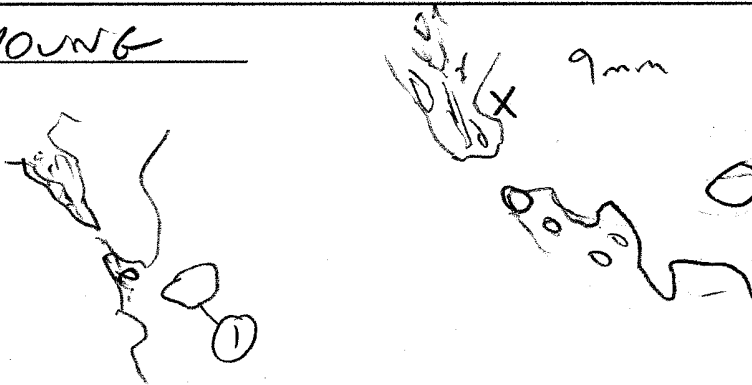
3. Jump northeast to the next alcove in the mountain range to find the Apollo 15 site.

4. If you are able to resolve Hadley Rille, follow its sinuous run north to where it sharply bends west to find the landing spot more precisely.

- The lunar phase was waxing gibbous, 8.7–11.3 days, 56–81% illuminated.
- Four EVAs logged a total of 18.3 hours, and 169 pounds of rocks and regolith were returned.
- The Lunar Rover covered 17.3 miles.



Sketch by: B. YOUNG



DATE: 5/25/19 TIME: 10:00 J  
 AGE: \_\_\_\_\_ SEEING: II TRANS: III  
 EQUIPMENT: ETX-125  
 LOCATION: HOME

Description: 200X DETAIL  
VERY COMPLICATED AREA  
HARD TO DRAW  
50X OVERVIEW

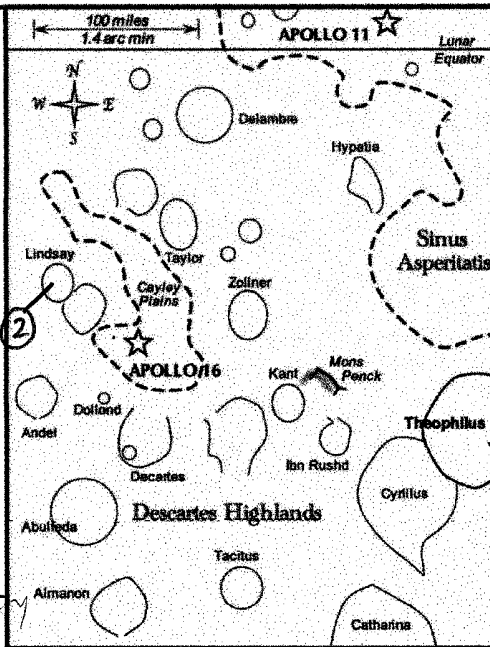
# Apollo 16

Lunar landing 20 Apr 1972

Lunar liftoff 23 Apr 1972

Apollo 16 was the first mission to land in the lunar highlands, in the Cayley Formation.

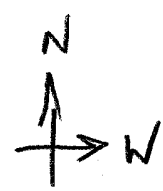
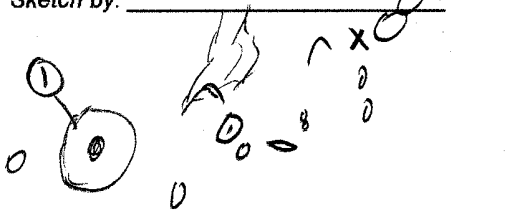
1. Begin by locating the crater Theophilus (the same crater used to find Apollo 11).
  2. Look west past Mons Penck to the smaller crater, Kant, then travel the same distance to the even smaller crater Dolland E.
  3. Looking directly north a small distance from Dolland E will lead to the Apollo 16 site.
- The two moonwalkers were John Young and Charlie Duke, with Ken Mattingly in lunar orbit.
  - The lunar phase was 7.2 – 10.2 days, with 56% – 83% illumination.
  - Three EVAs totaled 20.25 hours and returned 207 pounds of rocks and regolith.
  - Lunar rover covered a distance of 16.6 miles.



at 39  
 O x 38 - 2L U  
 5x+  
 a-37

Sketch by:

B. YOUNG



DATE: 7/13/19 TIME: 5:25  
 AGE: \_\_\_\_\_ SEEING: II TRANS: II  
 EQUIPMENT: ETQ-125  
 LOCATION: HOME

Description: SOX  
SEEMS TO ENOUGH  
POWER - LINED UP  
W/ CRATERS

# Apollo 17

Lunar landing: 11 Dec 1972

Lunar liftoff: 14 Dec 1972

The final Apollo mission landed in the Taurus-Littrow Valley.

1. Find the oblong crater Posidonius at the northeast corner of Mare Serenitatis.

2. Travel south to Le Monnier, Littrow, and then Vitruvius craters

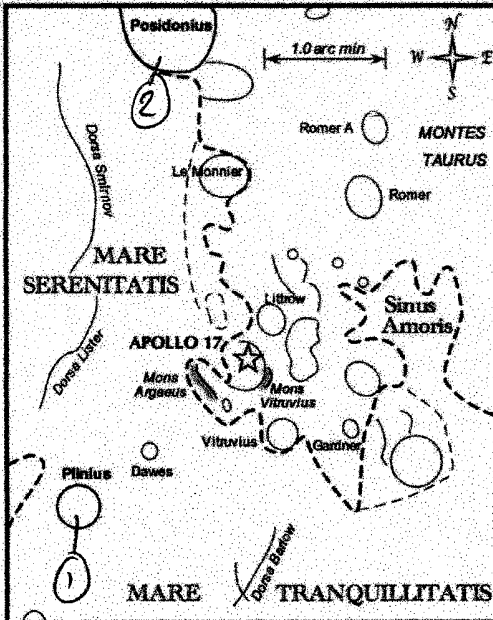
3. Apollo 17 landed immediately northwest of Mons Vitruvius in the dark valley between Littrow and Vitruvius.

- The two moonwalkers were Gene Cernan and Harrison Schmitt, with Ron Evans in lunar orbit.

- Lunar phase was 5.5-8.6 days, illumination was 25-57%.

- \* Three EVAs totaled 22.0 hours and returned 243 pounds of rocks and regolith.

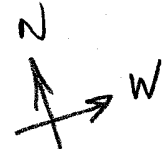
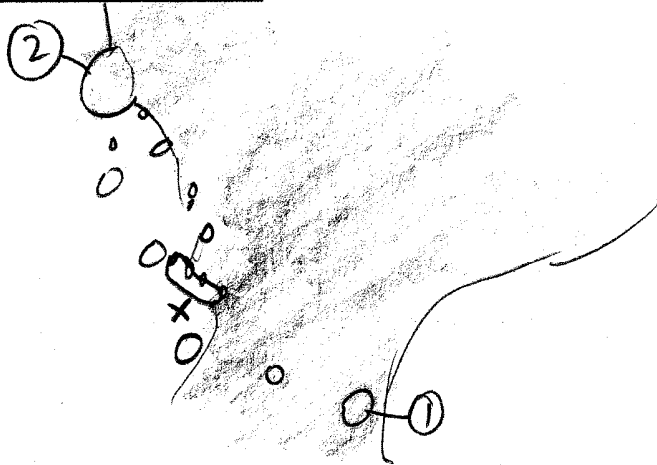
- The Lunar Rover covered a distance 22.2 miles.



2 ⊙

Sketch by:

B. Young



DATE: 7/13/19 TIME: 5:55 UT  
 AGE: \_\_\_\_\_ SEEING: II TRANS: II  
 EQUIPMENT: BTX-125  
 LOCATION: HOME

Description: SOX VIEW  
RIGHT NEXT TO OBVIOUS  
HIGHLANDS