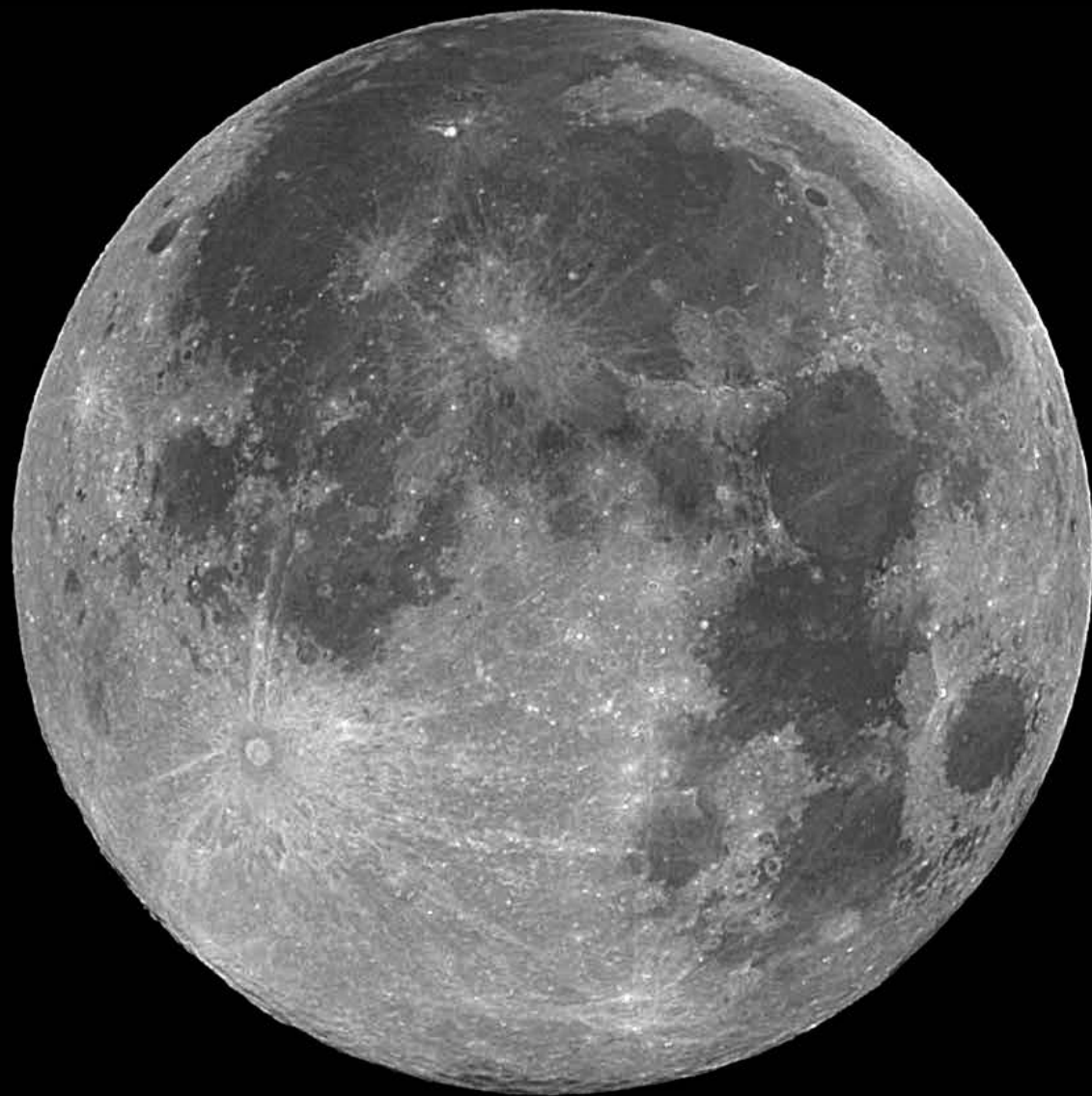


KUNSKAPSKRYSSNING 2019



Tänk om månen inte fanns...



Marie Rådbo
astronom

- Hur bildades månen?
- Hur påverkar månen jorden?
- Vad har månen betytt för vetenskapen?
- Framtiden?



The Weather

Today—Showers, thunderstorms, high in 80s. Tuesday—Fair, less humid. Chance of rain, 20% tonight. Winds variable, 10-15 m.p.h. Temperature range: Today, 72-88; Yesterday, 76-83. Details, Page D3.

The Washington Post

Times Herald

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City Life D 1	Movie Guide B 7
Classified D 4	Obituaries D 2
Comics C 4	Sports C 1
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92d Year ... No. 228

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MONDAY, JULY 21, 1969

Phone 223-6000 Circulation 213-4156
Classified 323-4209

10c

'The Eagle Has Landed'— Two Men Walk on the Moon



'One Small Step For Man ... Giant Leap for Mankind'

By Thomas O'Toole
Washington Post Staff Writer

HOUSTON, July 20—Man stepped out onto the moon tonight for the first time in his two-million-year history. "That's one small step for man," declared pioneer astronaut Neil Armstrong at 10:56 p.m. EDT, "one giant leap for mankind."

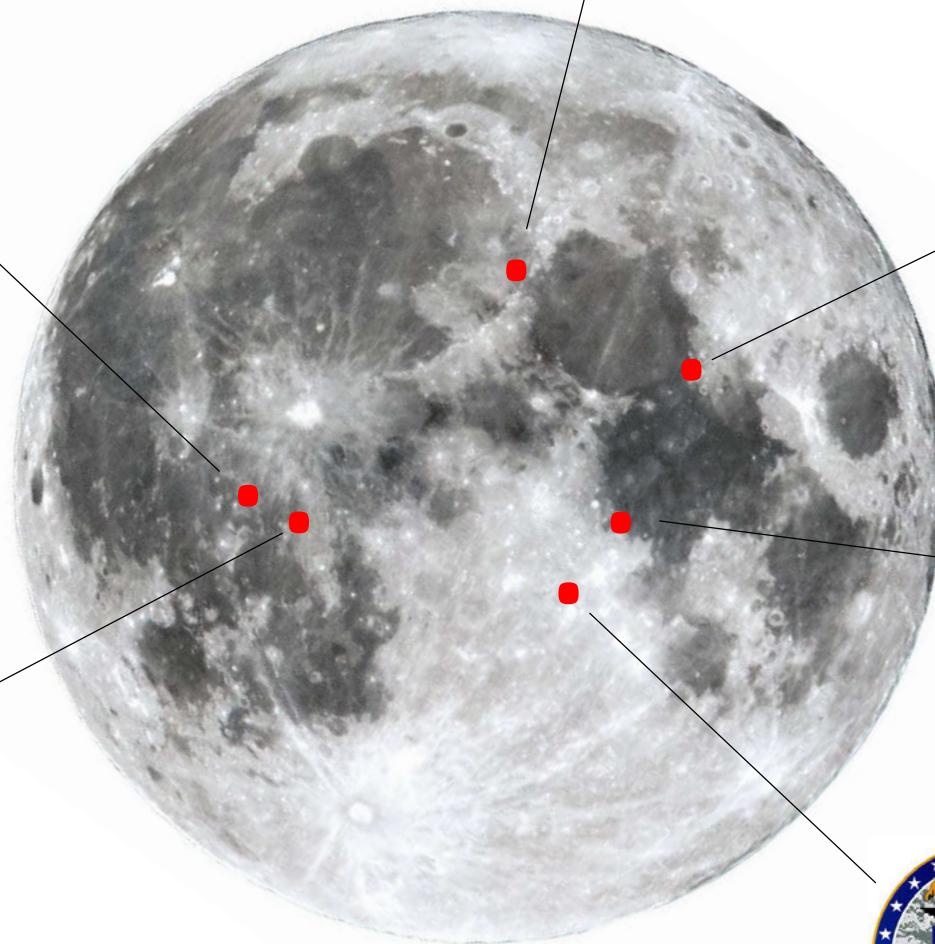
Just after that historic moment in man's quest for his origins, Armstrong walked on the dead satellite and found the surface very powdery, littered with fine grains of black dust.

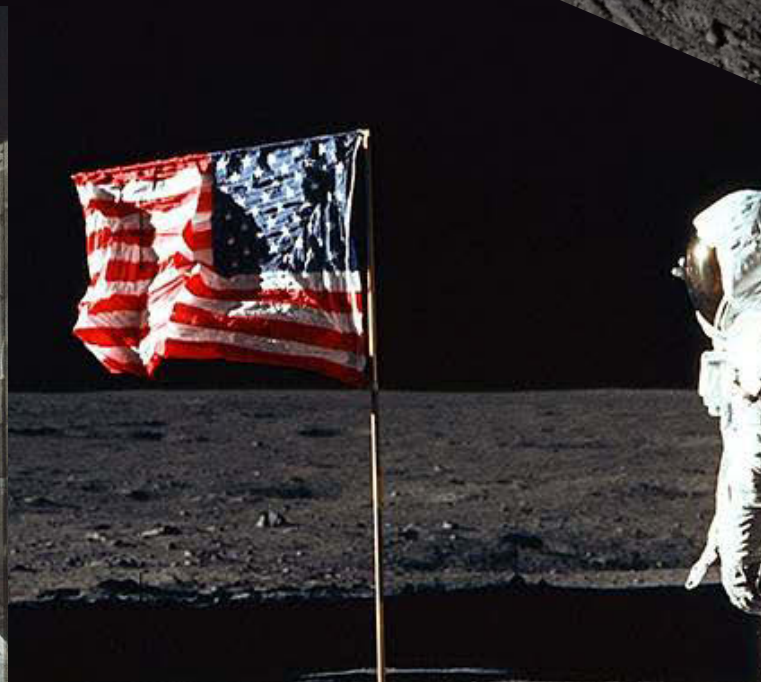
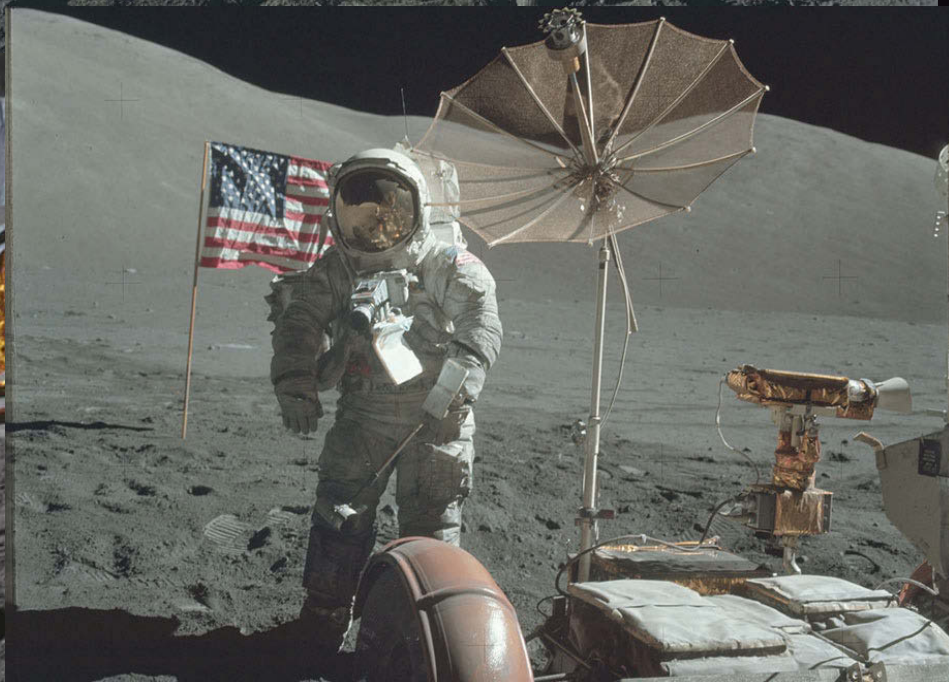
A few minutes later, Edwin (Buzz) Aldrin joined Armstrong on the lunar surface and in less than an hour they put on a show that will long be remembered by the worldwide television audience.

American Flag Planted

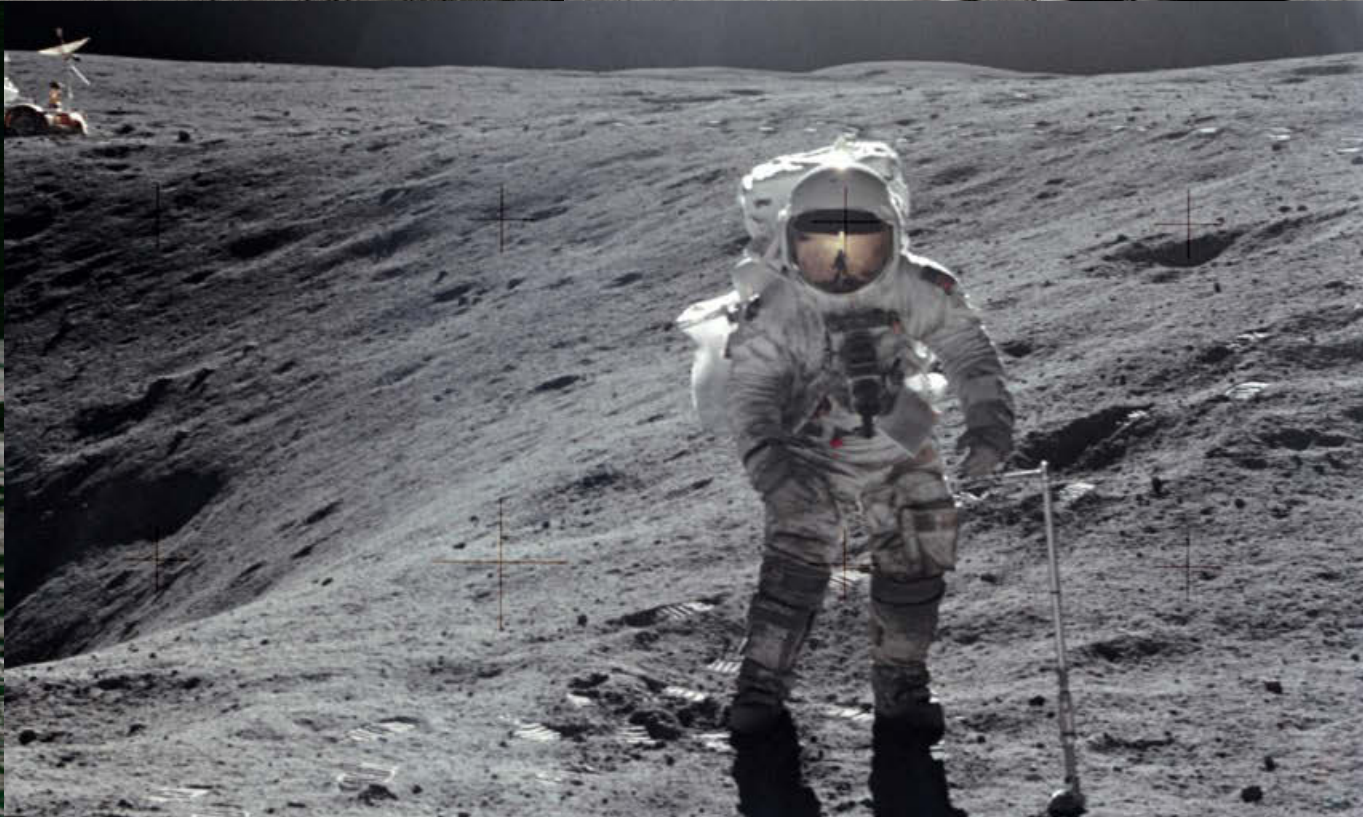
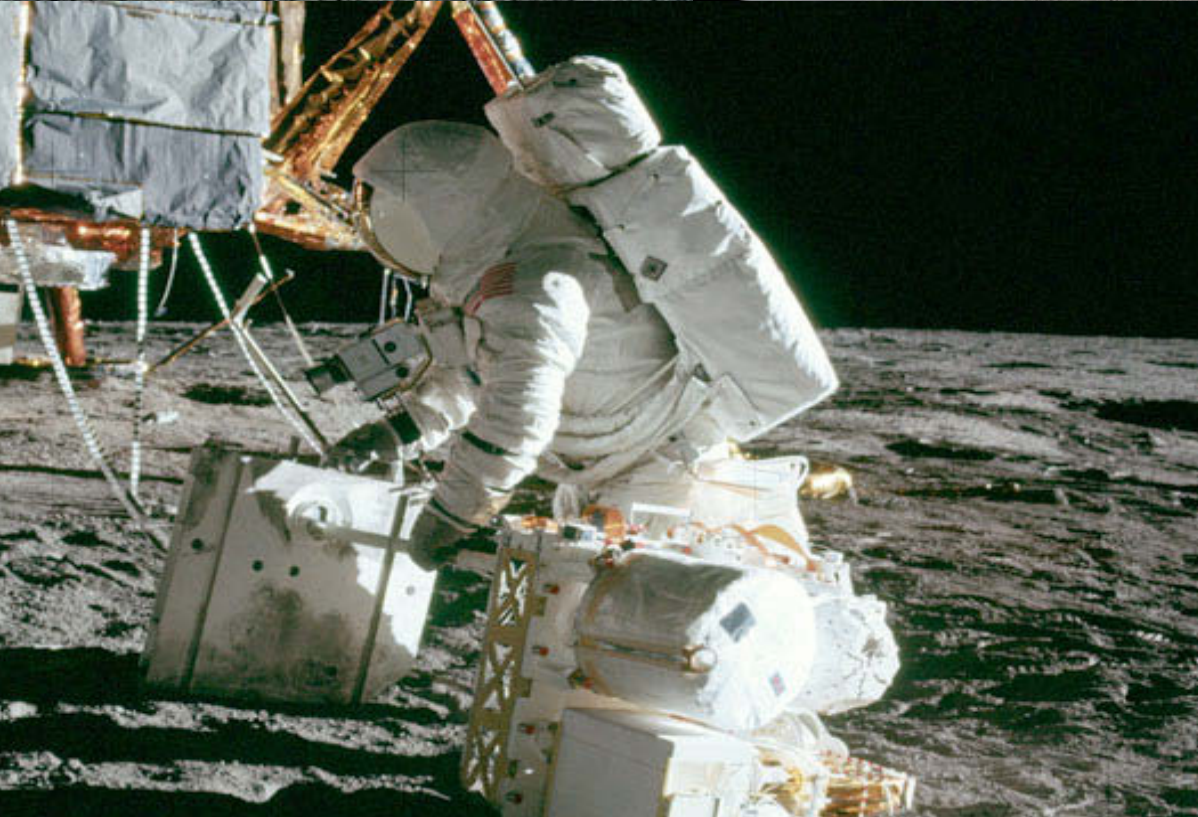
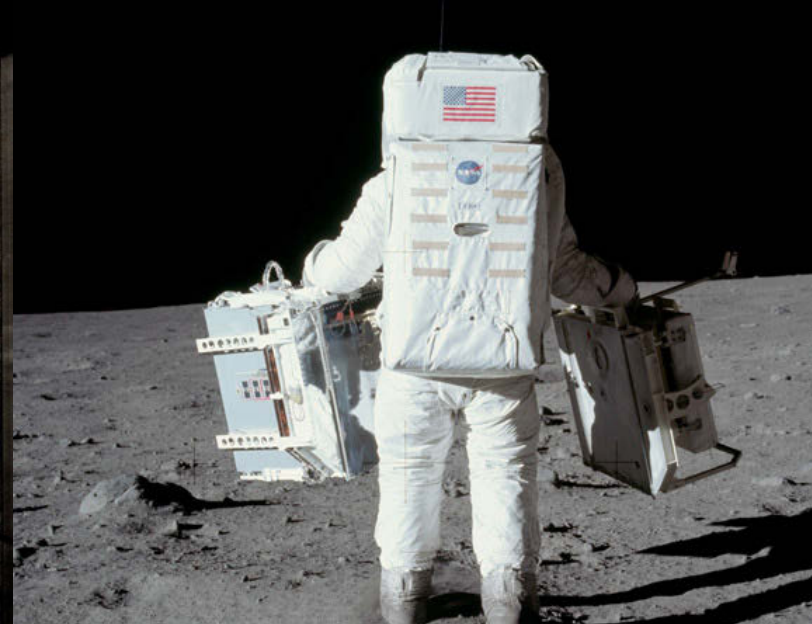
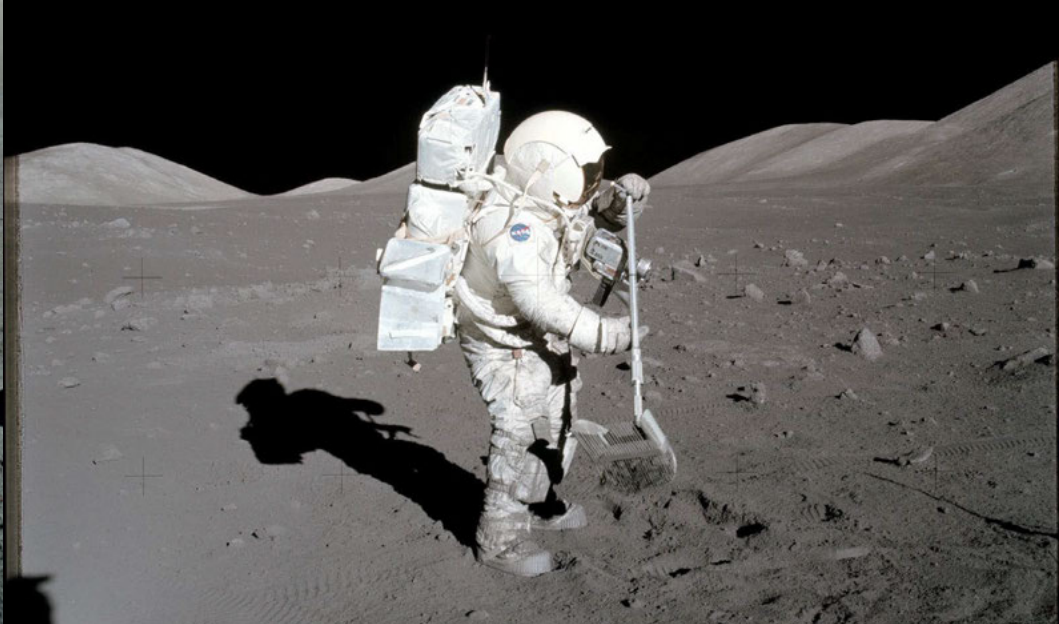
The two men walked easily, talked easily, even ran and jumped happily so it seemed. They picked up rocks, talked at length of what they saw, planted an American flag, saluted it, and talked by radiophone with the President in the White House, and then faced the camera and saluted Mr. Nixon.

"For every American, this has to be the proudest day in our history," the President told the astronauts. "For every American, this is a day of great pride and honor."







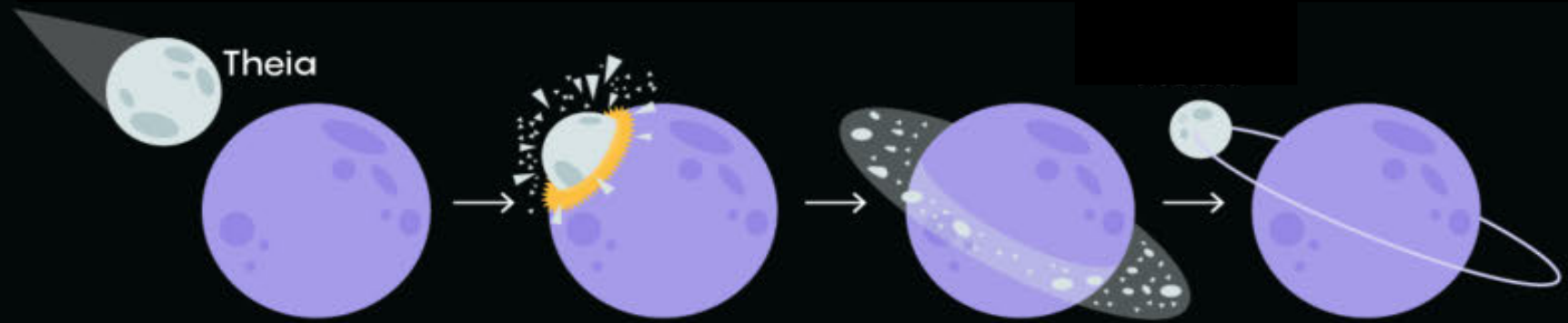




Theia

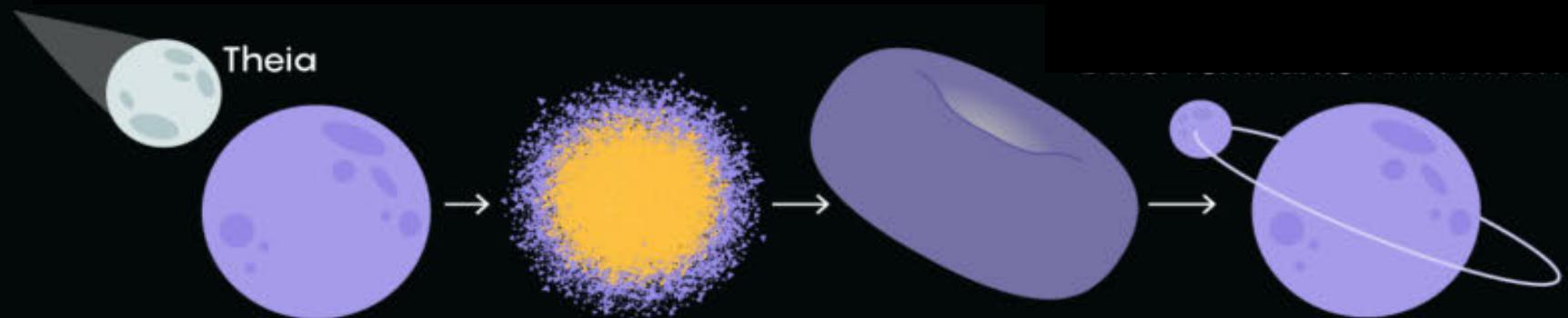


Månen bildades
efter en kollision
med en annan
himlakropp, Theia



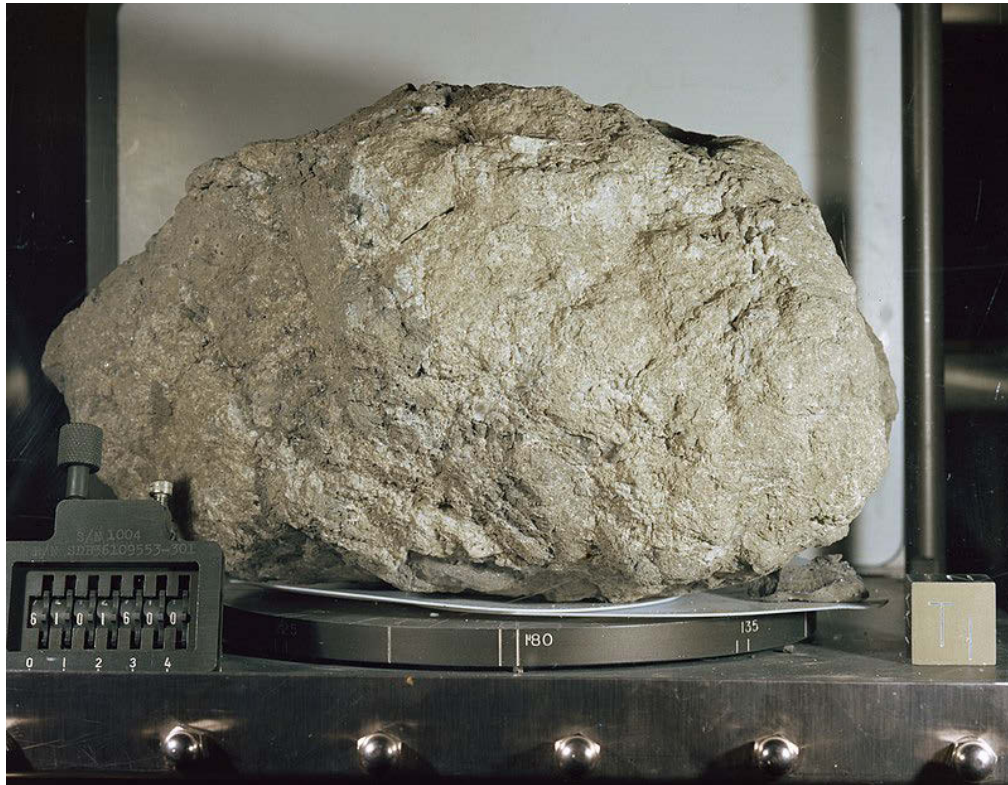
A. Månen formas i ett moln runt jorden

B. Månen formas innan jorden, i den
synestia som bildas av jorden och Theia

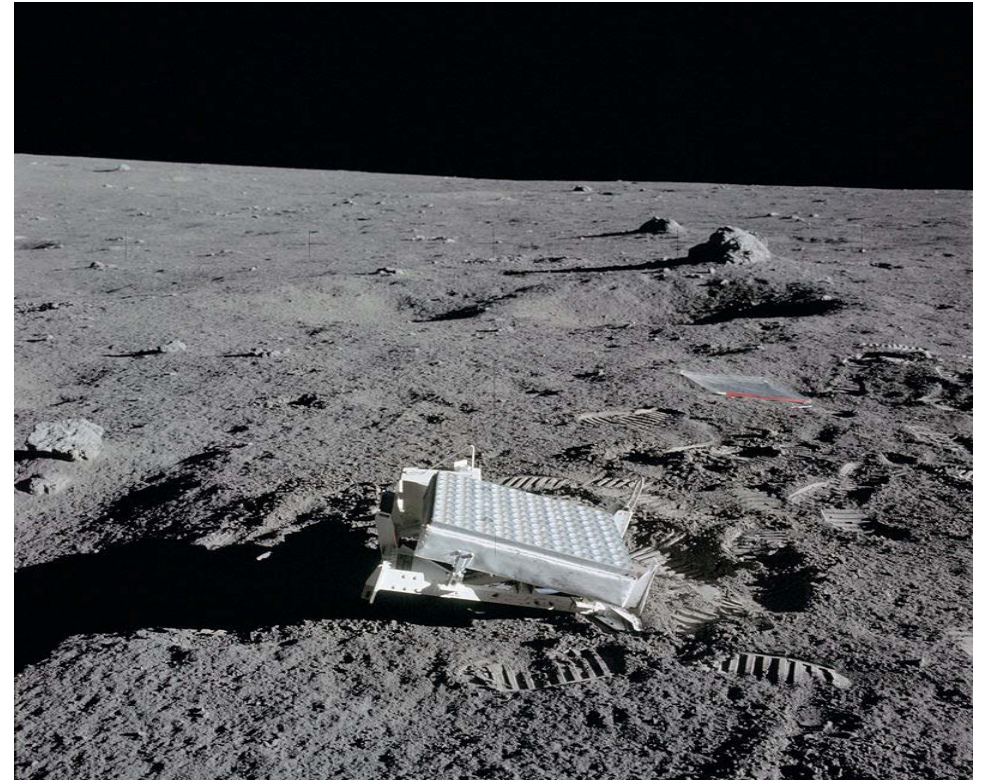


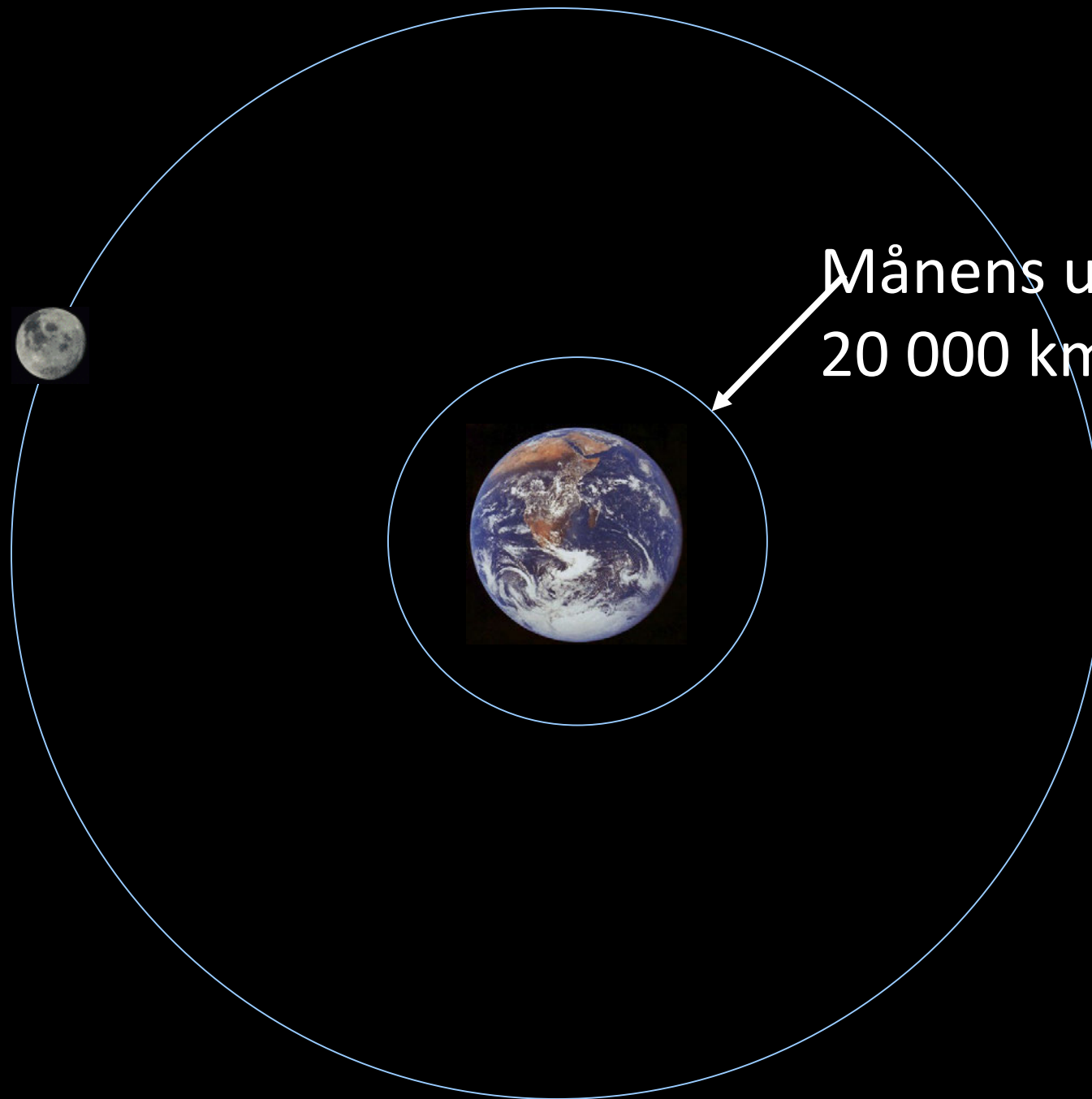
Några resultat från Apollo - resorna

Månen bildades genom en kollision med Theia

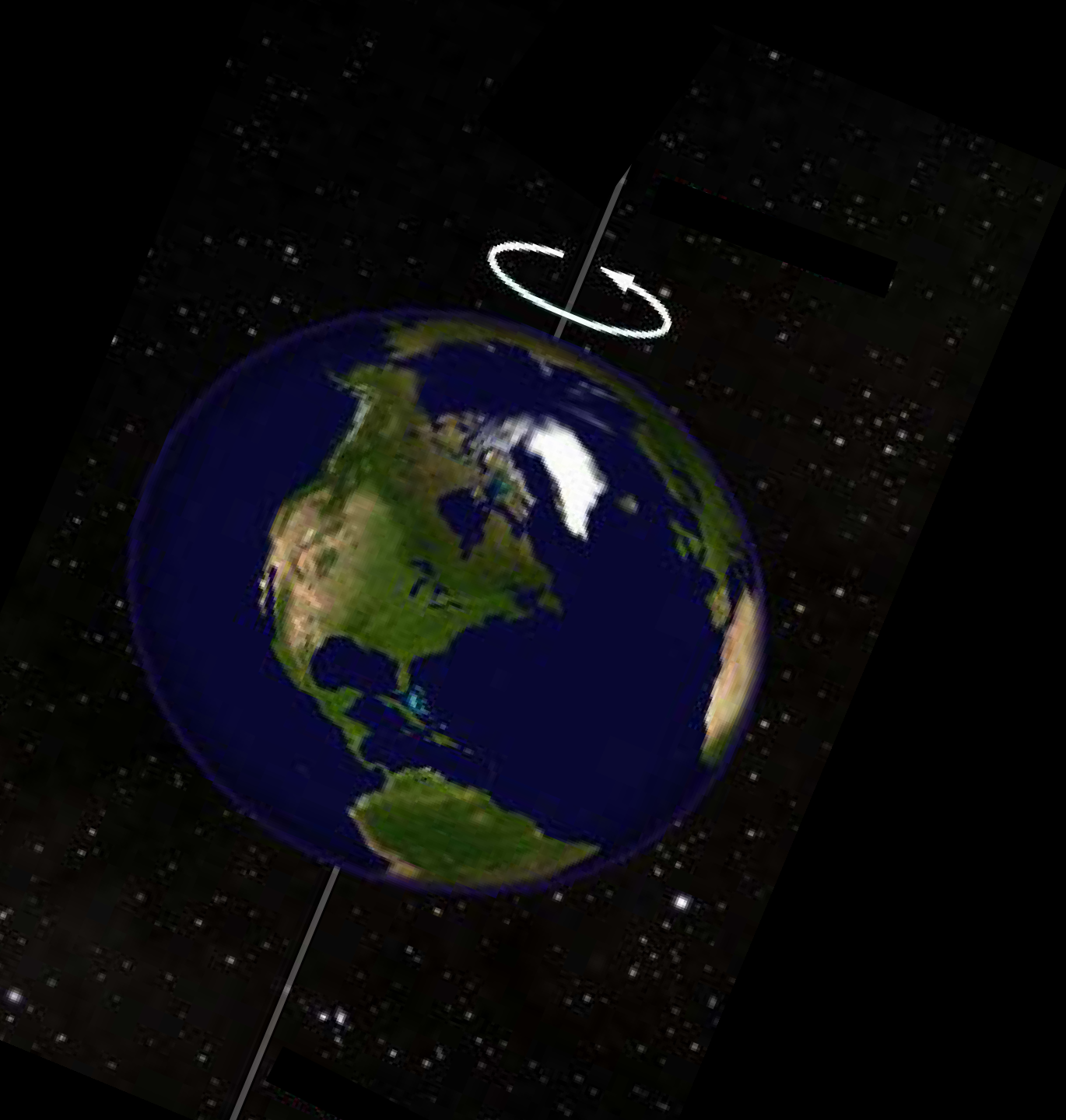


Månen avlägsnar sig 3.8 cm/år





Månens ursprungliga bana
20 000 km – 30 000 km?



För 4.5 miljarder år sedan
var dygnet 6-8 timmar.

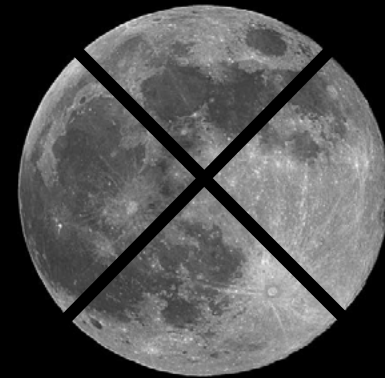
Tidvattnet bromsar nu
jordens rotation med
1 sekund på 50 000 år.

Det leder till att månen nu
avlägsnar sig 3.8 cm/år



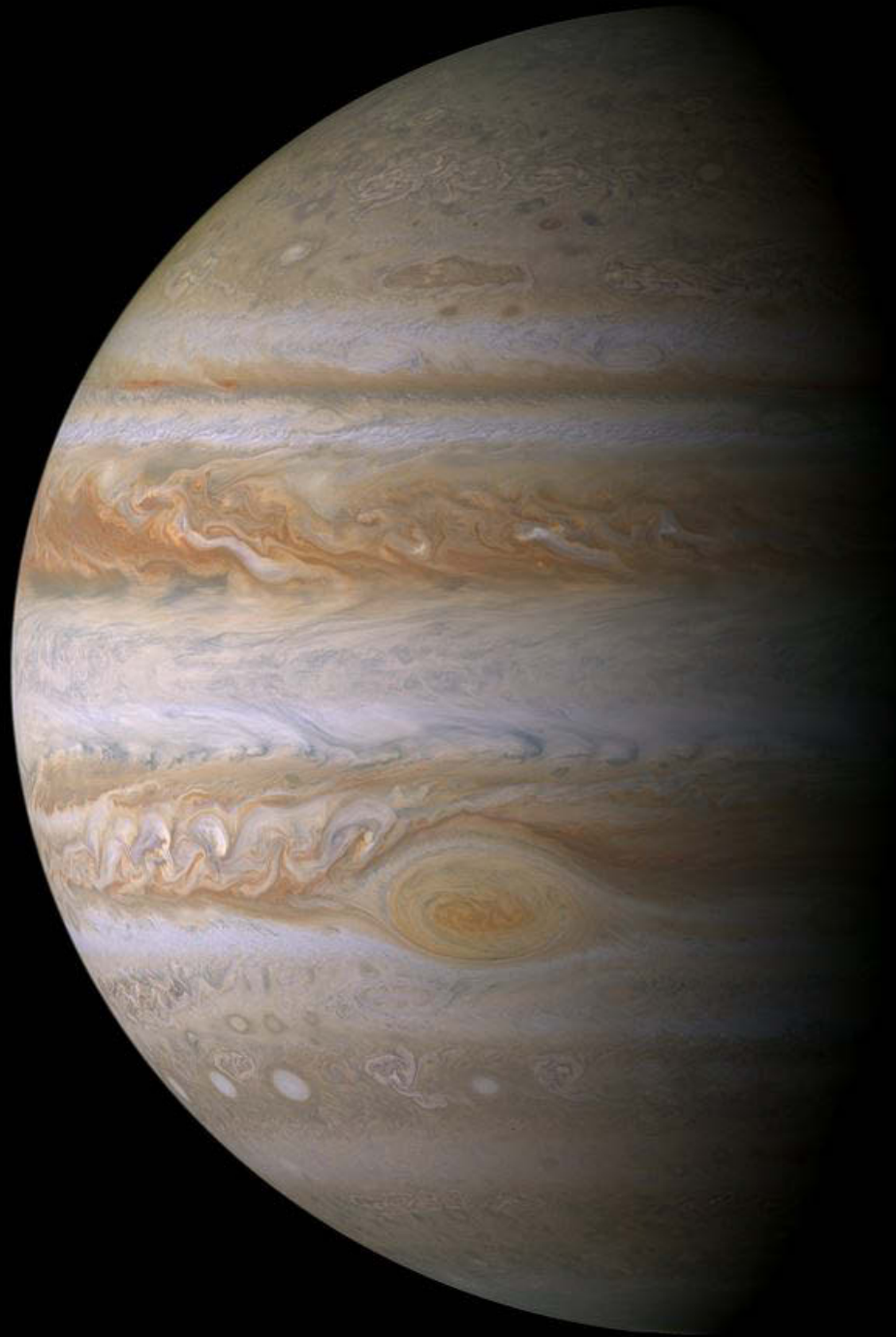
MÅNLÖSA

En jord utan måne



Månlösas egenskaper

- Lägre tidvatten
 - kortare dygn, 10-12 timmar?
 - blåsigare

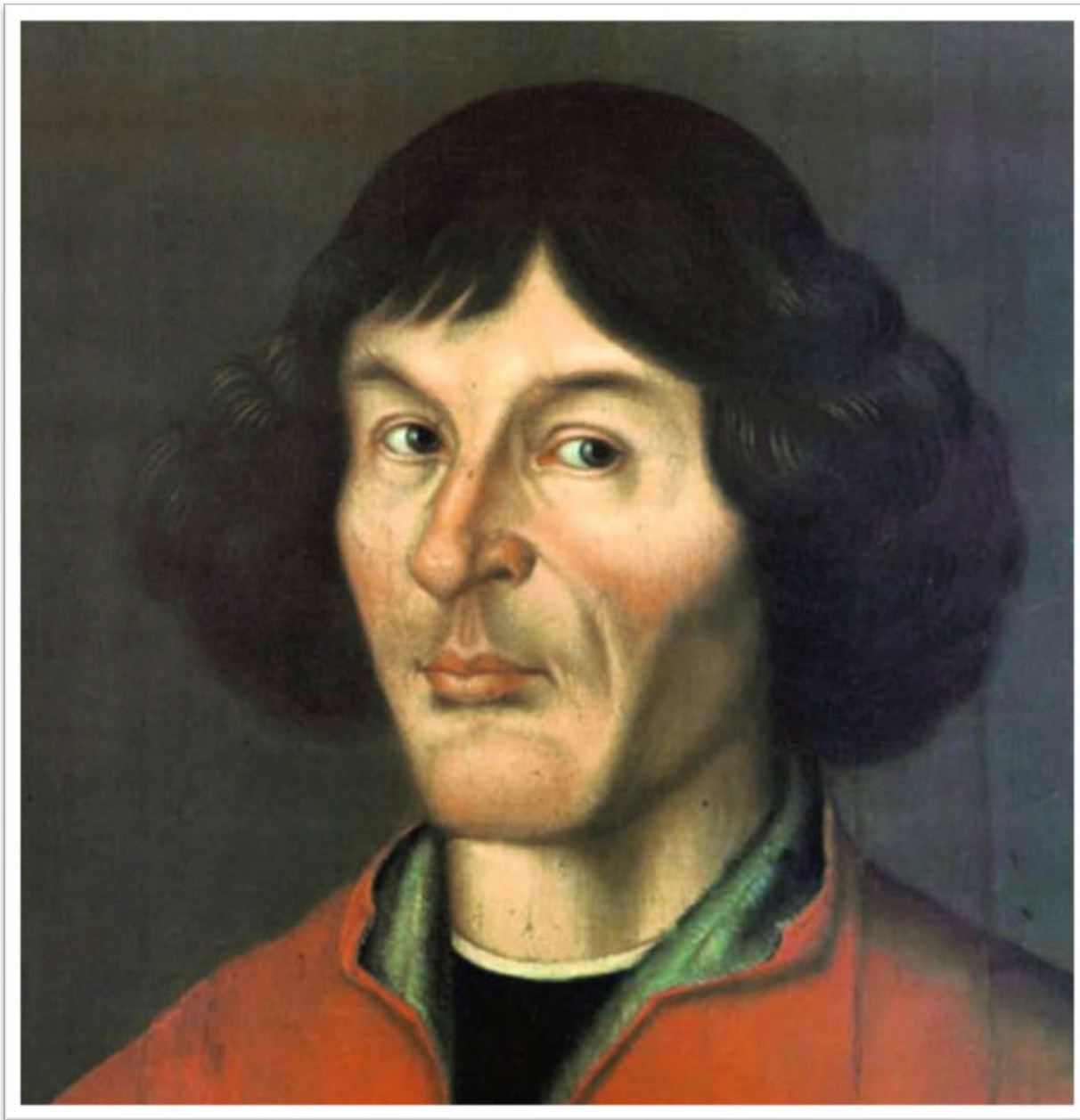


Jupiter

Månlösas egenskaper

- Lägre tidvatten
 - kortare dygn, 10-12 timmar?
 - blåsigare
 - livet?
- Instabil polaxel
 - ojämnt klimat





Mannen
som
satte jorden
i rörelse

Nicolaus
Copernicus
(1473 – 1543)

Heliocentrisk

Jupiter

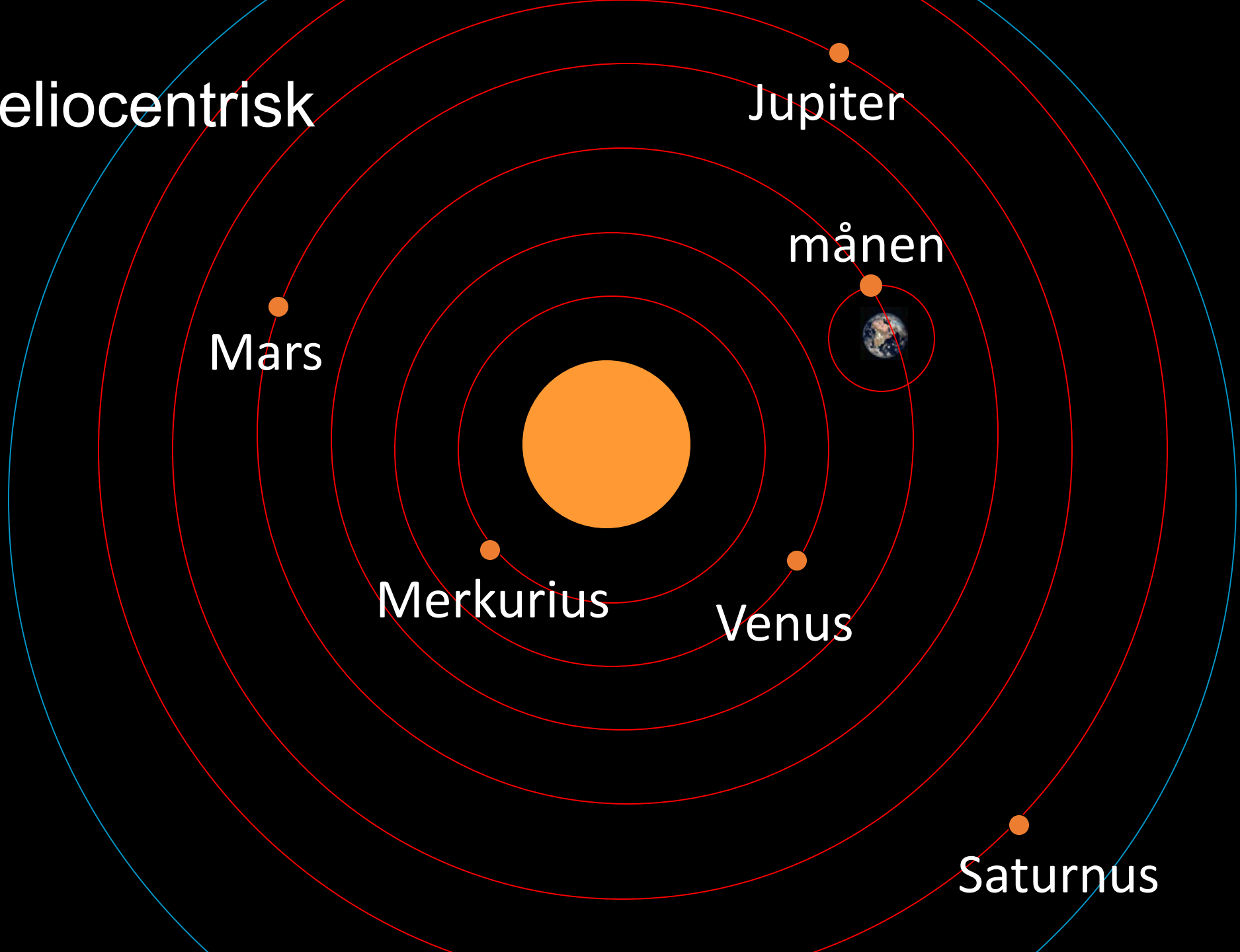
månen

Mars

Merkurius

Venus

Saturnus



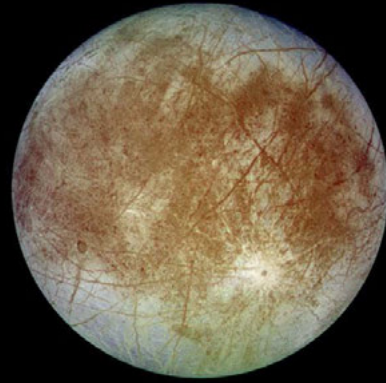
Observations January 1610				
20. Jan. Mart. H. 12	○	*	*	
30. Mart.	*	*	○	*
2. Apr.	○	*	*	*
3. Mart.	○	*	*	
3. Ho. 5.	*	○	*	
4. Mart.	*	○	*	*
6. Mart.	*	*	○	*
8. Mart. H. 13.	*	*	*	○
10. Mart.	*	*	*	○
11.	*	*	○	*
12. H. 4. u. 1/2.	*		○	*
17. Mart.	*	*	○	*
14. Apr.	*	*	*	○
15.	*	*	○	
16. Apr. H. 5.	*	○	*	*
17. Apr. H. 5.	*	○	*	*
18.	*	○	*	*
21. Mart.	*	*	○	*
24.	*	*	○	*
25.	*	*	○	*
29. Apr.	*	*	○	
30. Mart.	*	*	○	*
Januari 4. Mart.	*	*	○	*
4. Apr.	*	*	○	*
5.	*	*	○	*
6.	*	○	*	*
7.	*	○	*	*
7. Apr.	*	○	*	*
11.	*	*	○	

Galilei observerar
fyra månar runt Jupiter
vintern 1609 – 1610

Io
Ganymedes
Europa
Callisto



Io

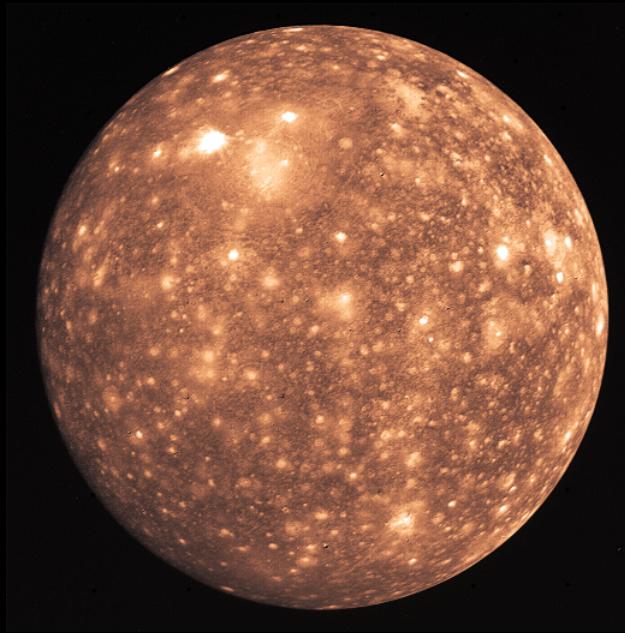


Europa

De galileiska månarna
runt Jupiter



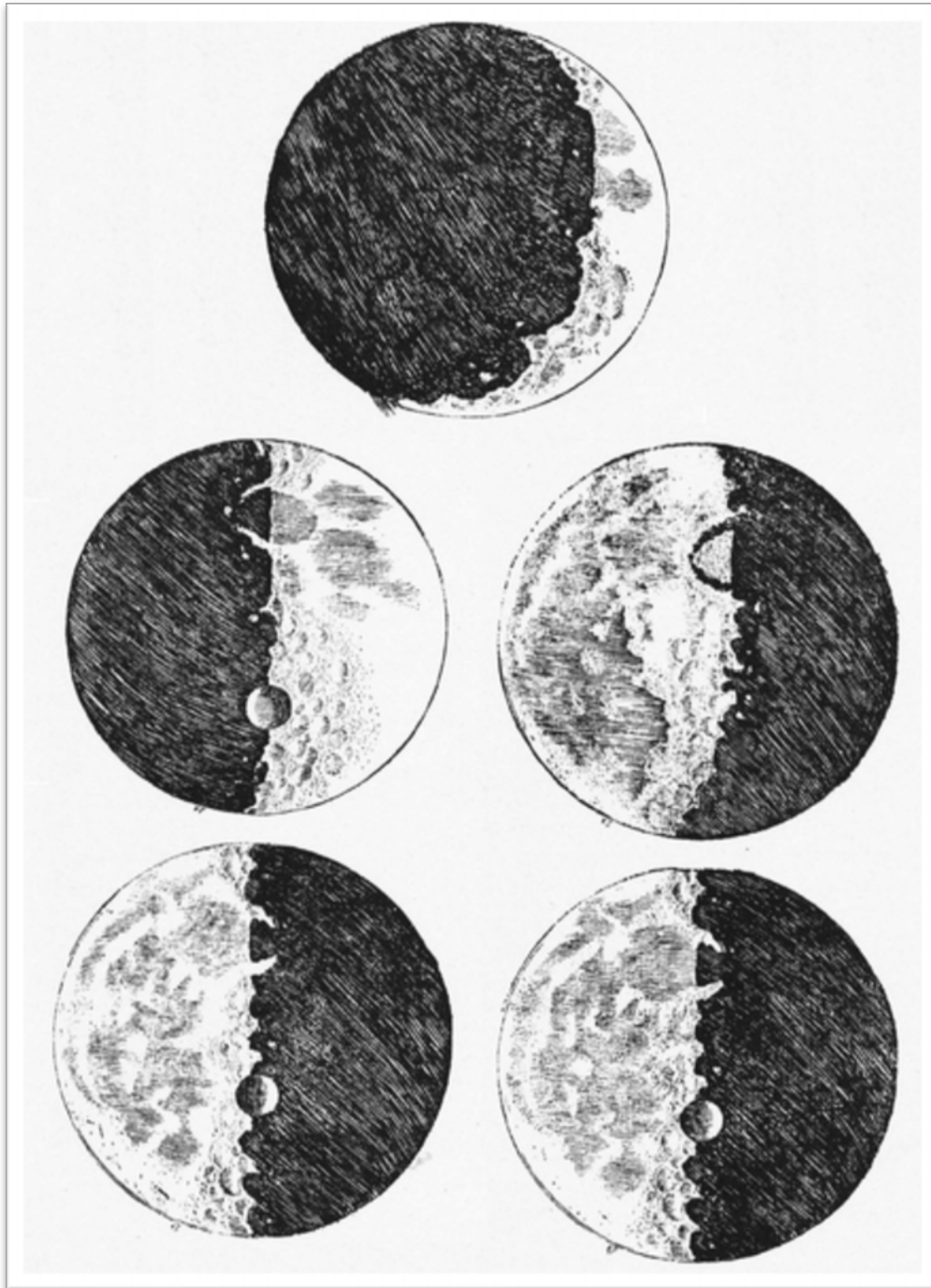
Ganymedes



Callisto

Galileo Galilei (1564 – 1642)





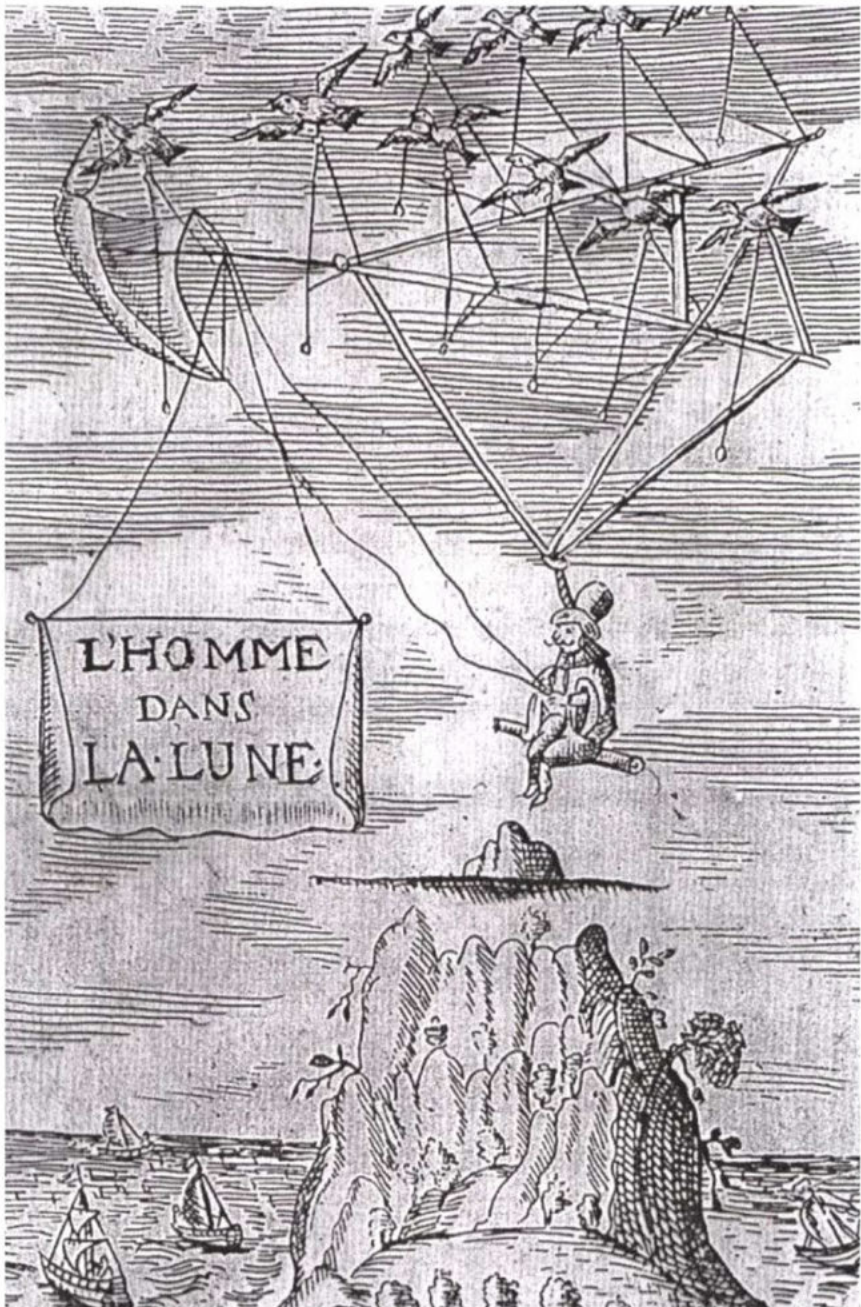
Galilei observerar
månen 1609

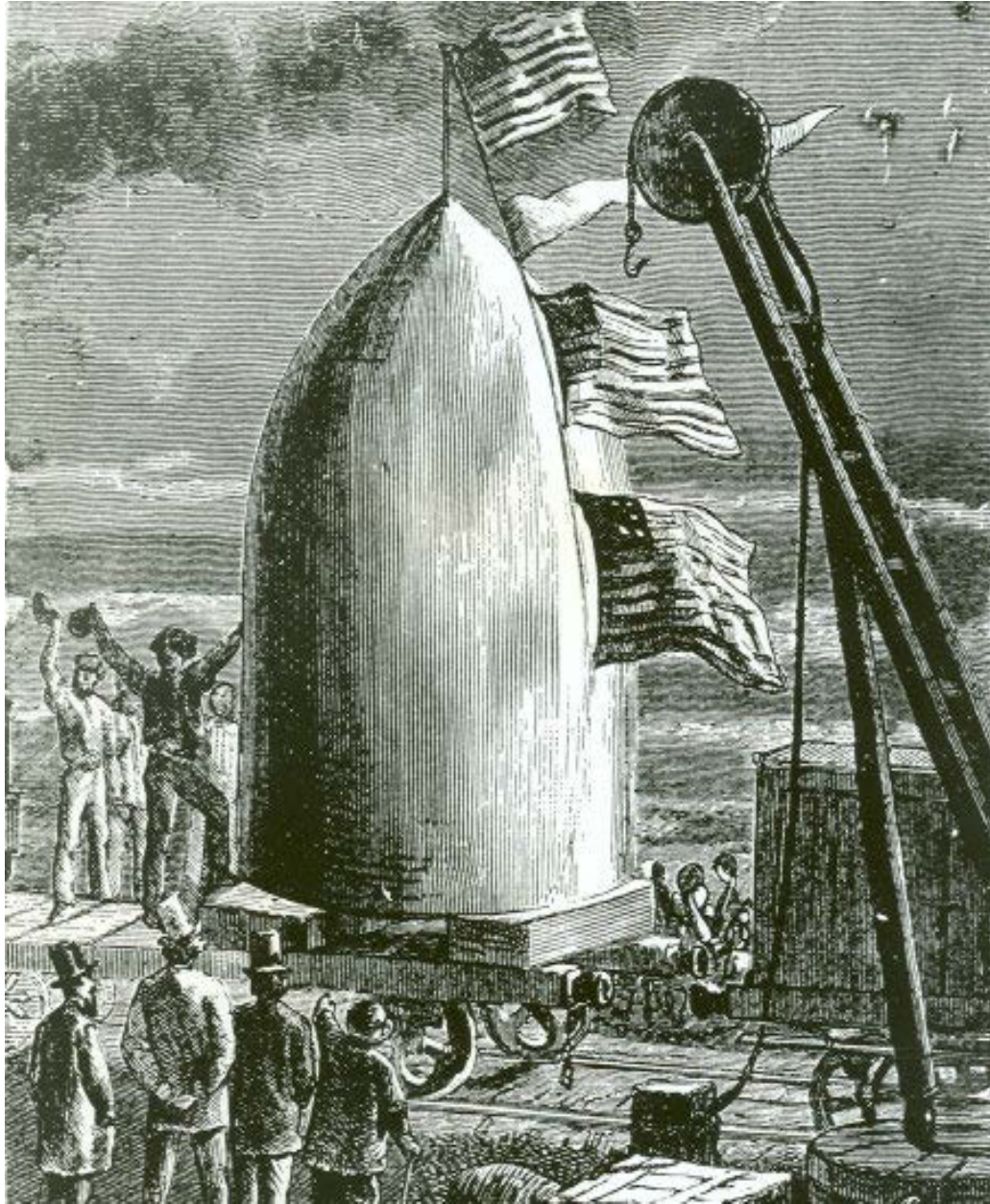
Mannen som förklarade
varför jorden rör sig

ISAAC NEWTON (1642 – 1727)



Francis Godwin (1562-1633)

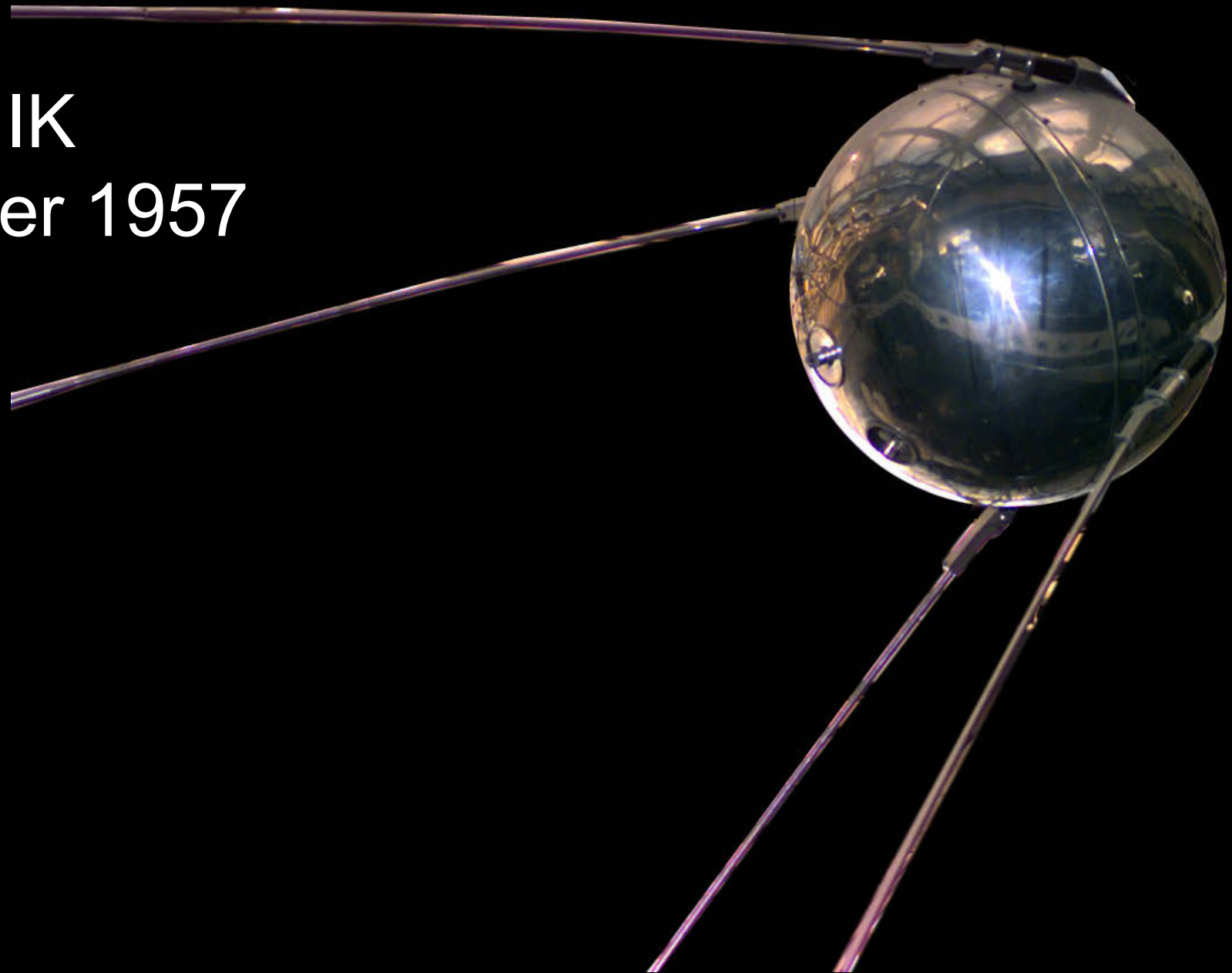




FRÅN JORDEN TILL MÅNEN

Jules Verne 1865

SPUTNIK
4 oktober 1957

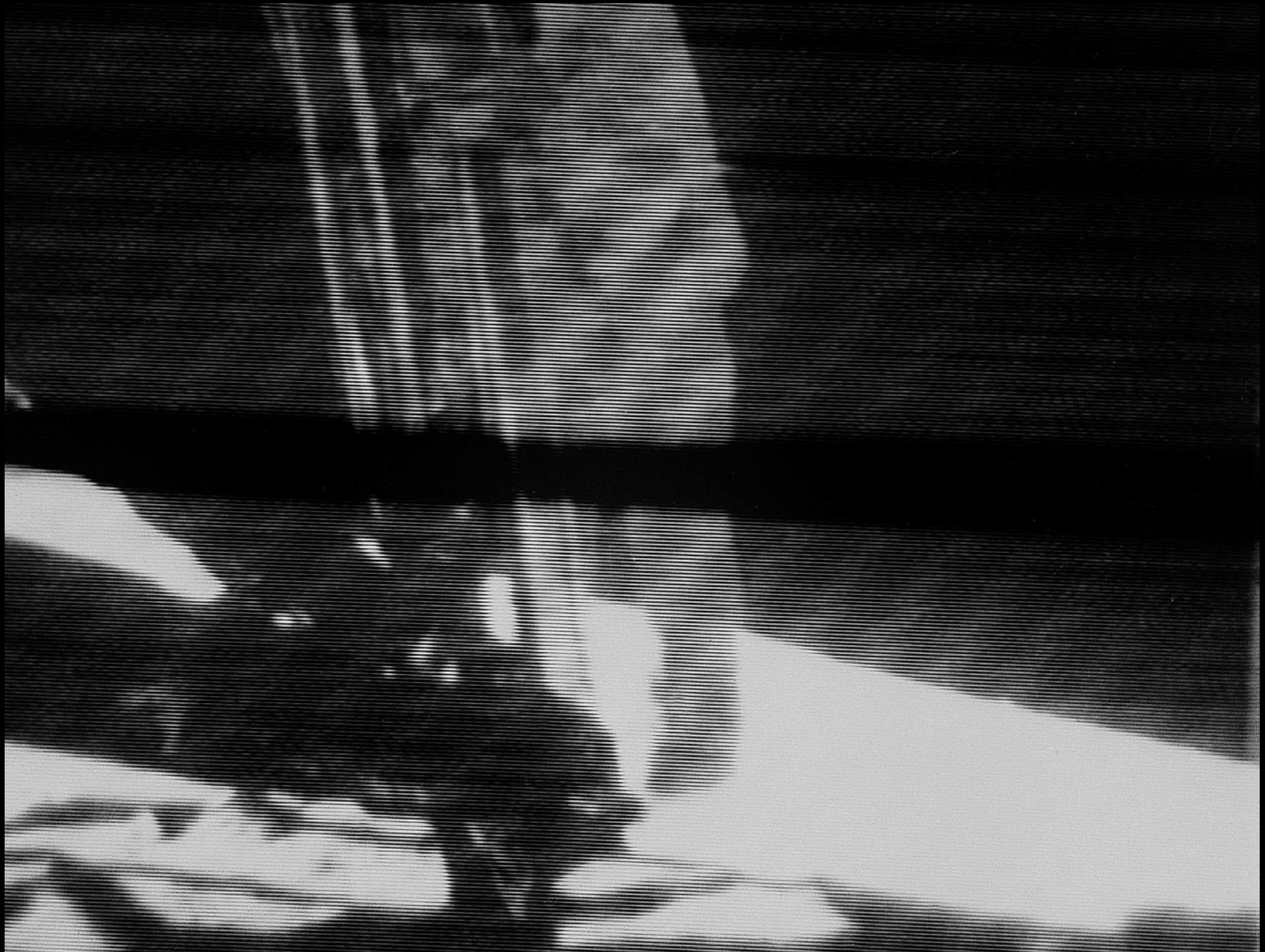


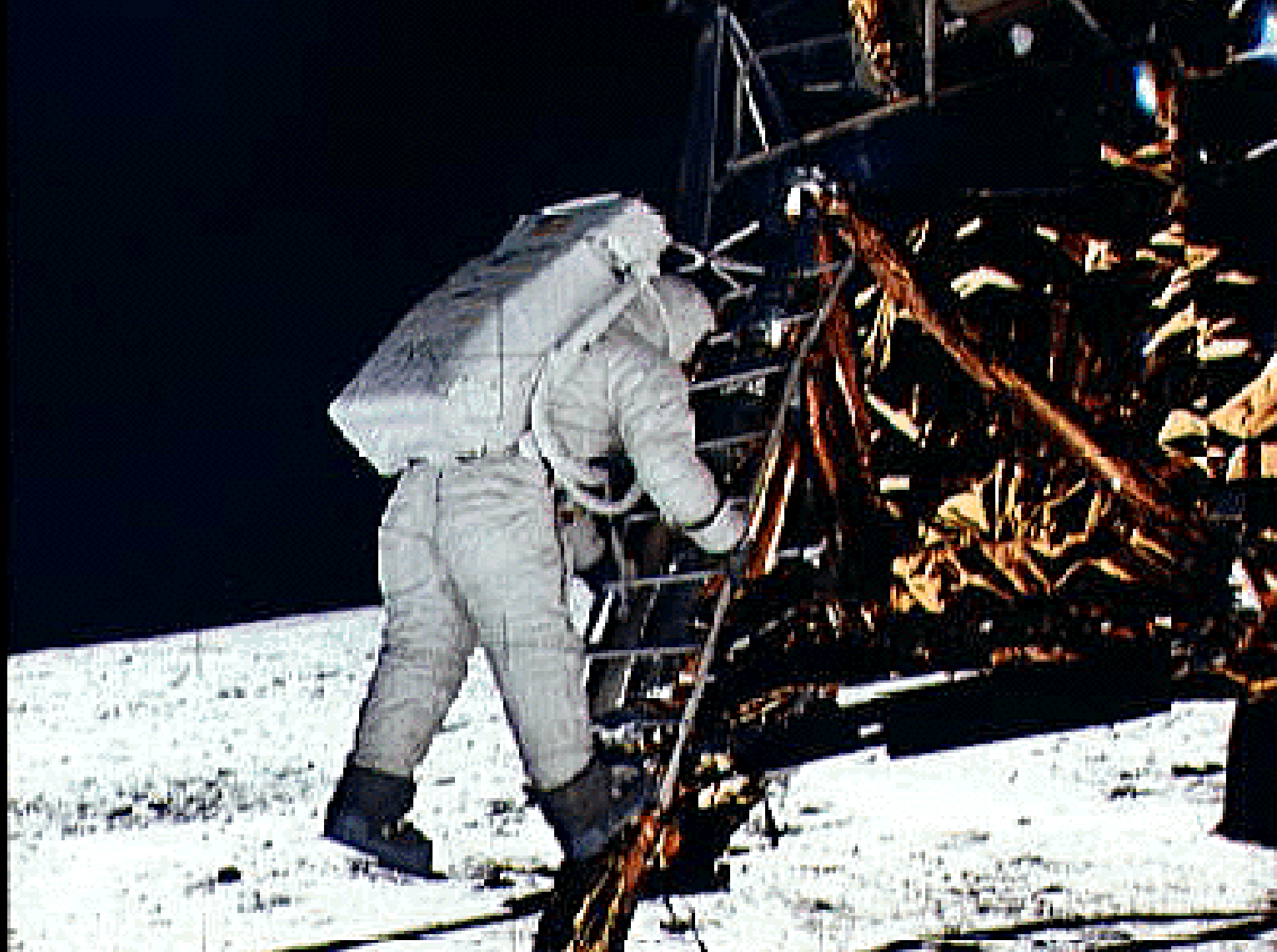


12 september 1962
Rice University









CITY FORECAST
(To midnight tomorrow)
Light variable winds
Fine. Frost. Moderate
day temperatures.
Outlook: Partly cloudy.
Frost forecast: 30-35

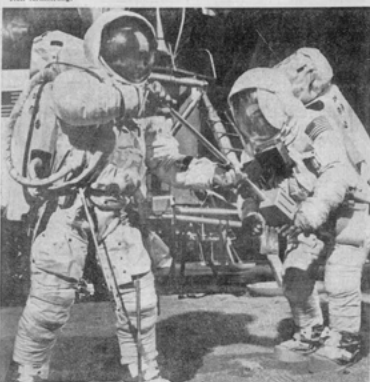
The Auckland Star

Monday, July 21, 1969

MAN'S WALK ON THE MOON

The men who did it

Soiled up and ready to go, the Apollo 11 astronauts were seen, eager and ready. They are from left, Edwin Aldrin, Michael Collins, and the mission commander Neil Armstrong.



Dig may solve mystery

A main task of the two astronauts who were scheduled to walk the moon's surface today is to bring back samples of its material. The picture above shows them practicing their digging before they set out.

Practising before the start of the moon's last journey. One of the tasks of the astronauts is to bring back samples of the moon's material. The picture above shows them practicing their digging before they set out.

The fact that the moon has no atmosphere is a major problem for the astronauts. The lack of air means that the astronauts must wear their space suits at all times. The lack of air also means that the astronauts must bring their own oxygen and water.

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Apollo 11 commander Neil Armstrong left the Eagle landing craft to take man's first step on the moon shortly after 2.40 this afternoon.

After he and Edwin Aldrin changed into their bulky space suits in the tiny moon craft—a task likened to that of two women dressing for a ball in a telephone box—the Eagle was depressurized.

The hatch was opened and Armstrong climbed out into the airless lunar atmosphere and began a slow climb down the ladder to the dusty surface.

His first task was to walk a short distance then return to the ladder, to ensure he could get back safely.

Then the remaining tasks of the walk—with Aldrin helping—were to begin.

Armstrong's descent from Eagle to the moon's surface was delayed because it took longer than expected for him and Aldrin to struggle into their bulky moon-suits.

They took longer than expected to check out communication systems.

They took longer than expected to check out communication systems.

There was little conversation between the moonship and earth as the astronauts realised the moon was not as flat as they had been told.

At 2.30 p.m. they began venting the oxygen tank and took the first step onto the moon's surface.

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MOONSHIP DOES ROCKY CRATER MAKE PERFECT

Astronauts Neil Armstrong and Edwin Aldrin do a practice run before setting the lunar lander Eagle gently down on the moon.

"The Eagle has landed," mission control in Houston (Texas) told the world from the moon, Aldrin reported. "Very smooth touchdown. And 60 miles up in the orbiting command module, Columbia, Michael Collins declared: "Fantastic."

No smooth was it. The lunar lander came down gradually, every inch of the landing gear sinking into the soft lunar soil. After giving the landing gear a quick check, Armstrong and Aldrin stepped out of the lander and began their moon walk.

Armstrong and Aldrin, who have studied their maps, began the moon walk by heading for the first of the two lunar craters. The craters are named after the first two lunar craters.

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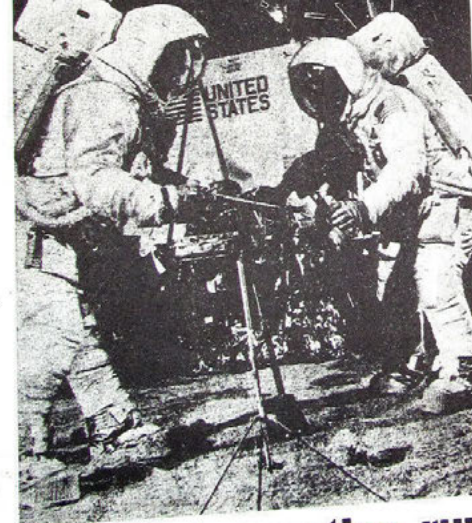
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Daily Mirror

Monday, July 21, 1969 No. 20,393

The time: 9.18 pm, July 20, AD 1969

MAN ON THE MOON



AND THE MESSAGE FROM EARTH: WE'RE BREATHING AGAIN!

Man has landed on the Moon. A new era in his history began at 9.18 last night when the lunar module Eagle settled gently on the dusty surface of the Sea of Tranquility. Inside it—Astronauts Armstrong and Aldrin, destined now for a permanent place in history. They immediately began to prepare for their Moon walk. There are still great perils ahead. But these are truly great achievements. America, the land of frontiersmen, has opened up a new frontier.

The last practice run

THIS was how the astronauts prepared for the great Moon walk... by practising the whole operation inside a Moon simulator at Houston. On the last test run, when this picture was taken, Edwin Aldrin (left) used a scoop for collecting samples while Neil Armstrong tested a camera. Today they know if the rehearsal matched the reality.

FULL STORY—SEE BACK PAGE: THE PATHFINDERS—CENTRE PAGES

THE BLADE

One Of America's Great Newspapers

TOLEDO, OHIO, THURSDAY, JULY 24, 1969

BLUE STREAK
LATEST NEWS
STOCK CLOSE

TEN CENTS

First Men To Walk On Moon Return In Triumph To Earth; Greeted On Carrier By Nixon

9 UAR Planes Downed Over Canal, Israel Says

Cairo Radio Denies Claim, Reports Raids In Sinai

Nasser Promises Liberation Of All Captured Territory

THE DOWNING OF nine Egyptian planes over the Suez Canal, Israel's claim that it had shot down the planes, and the capture of the planes by Israeli forces, were the latest in a series of events that have led to the current crisis in the Middle East.

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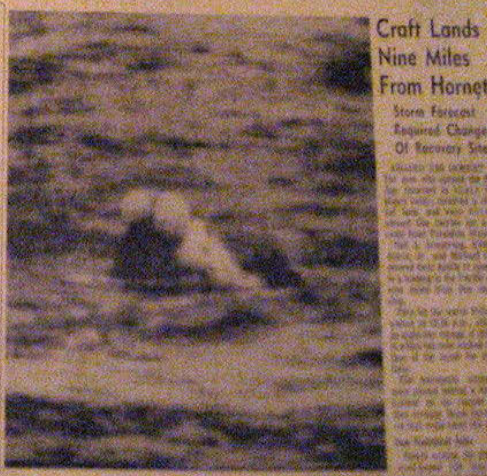
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Craft Lands Nine Miles From Hornet

Storm Forecast Required Change Of Recovery Site

THE LANDING OF the Hornet aircraft carrier off the coast of California, and the subsequent landing of the Apollo 11 lunar module Eagle, were the latest in a series of events that have led to the current crisis in the Middle East.

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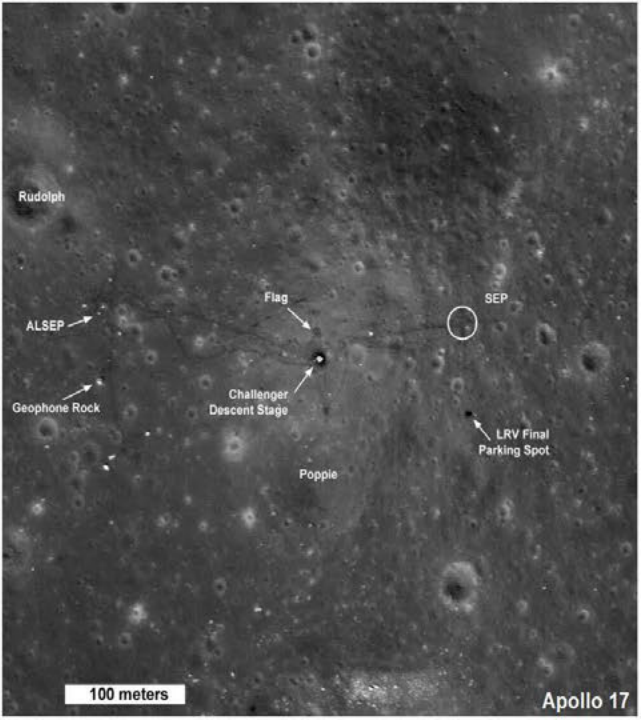
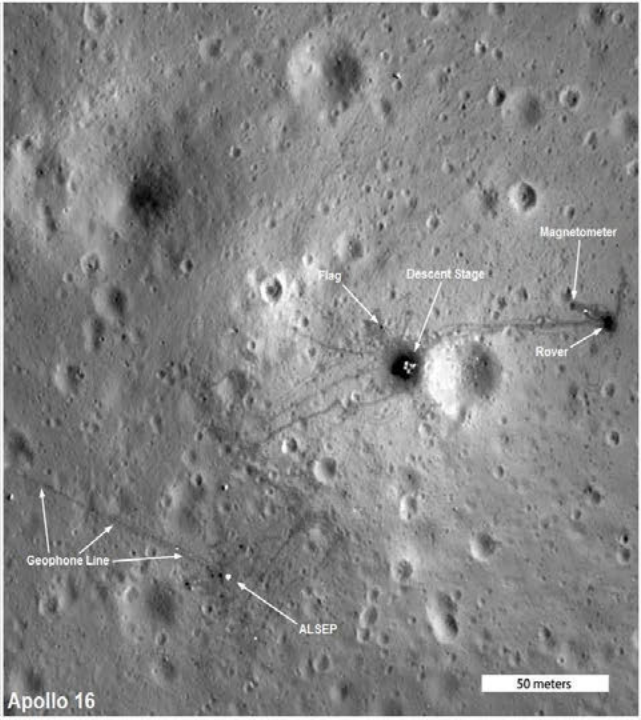
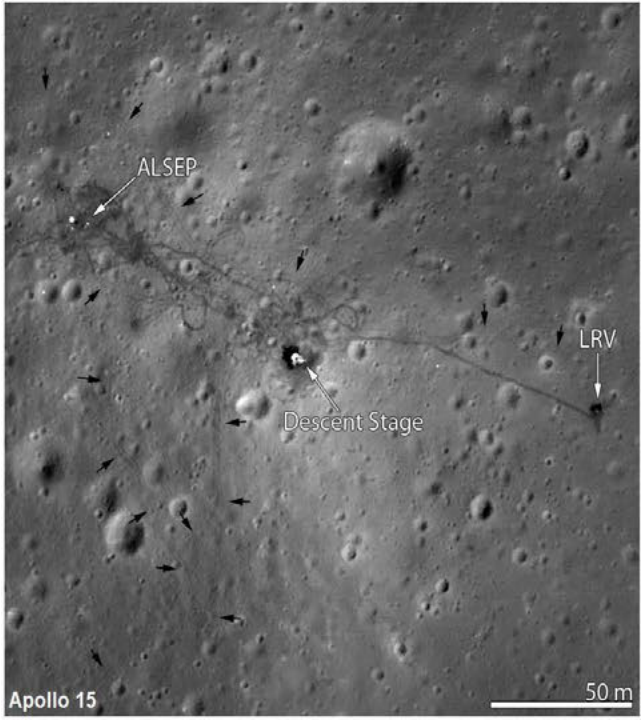
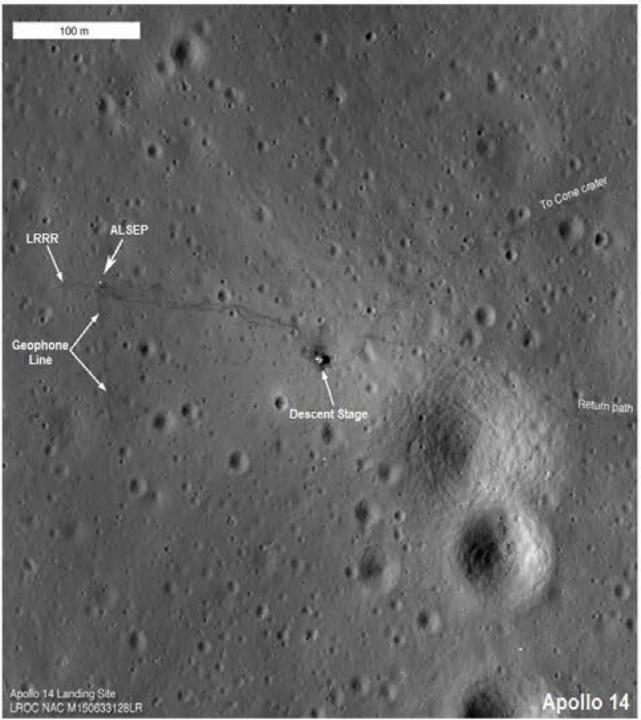
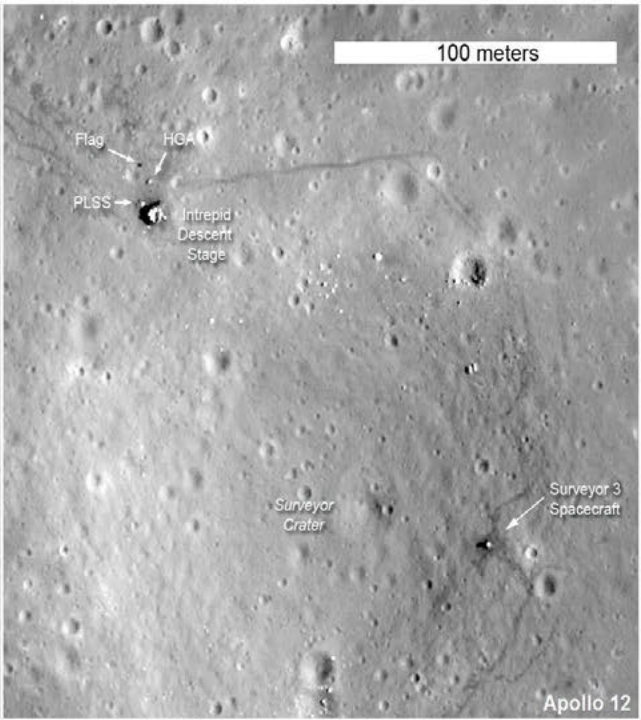
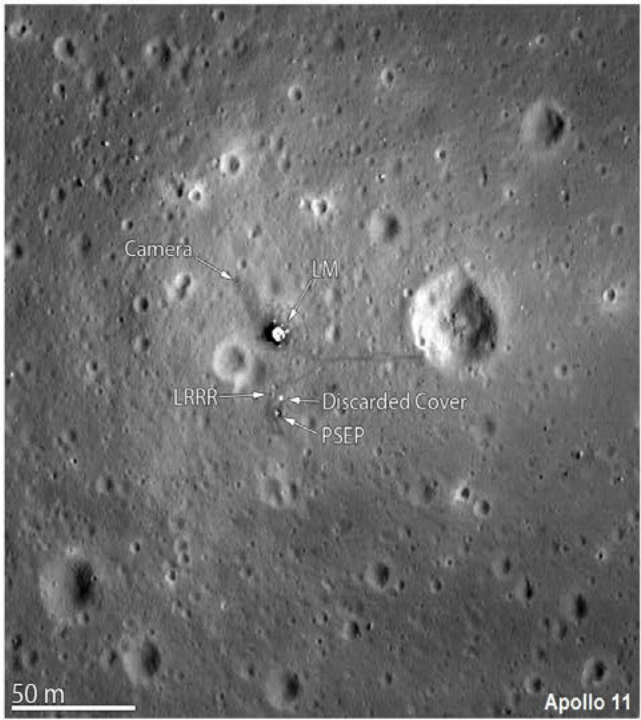
Eagle's Moon Landing Belts Sirens

THE SOUND OF the siren, which was heard in the city of Houston, Texas, when the Apollo 11 lunar module Eagle landed on the moon, was the latest in a series of events that have led to the current crisis in the Middle East.

The sound of the siren, which was heard in the city of Houston, Texas, when the Apollo 11 lunar module Eagle landed on the moon, was the latest in a series of events that have led to the current crisis in the Middle East.

HORNET + 3





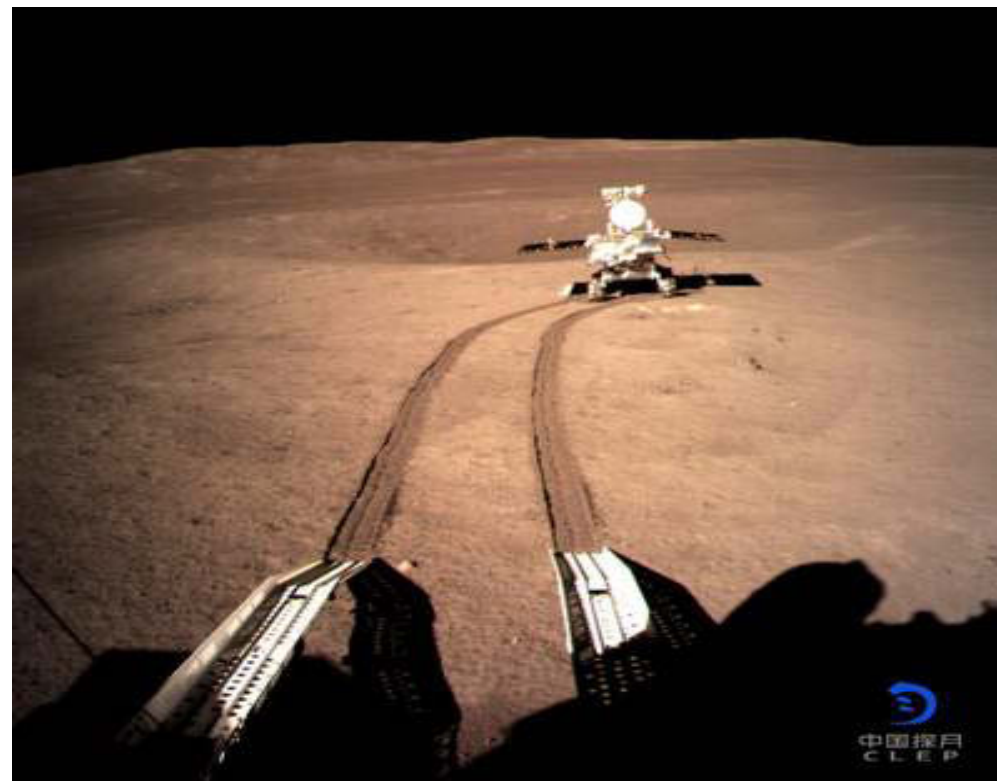




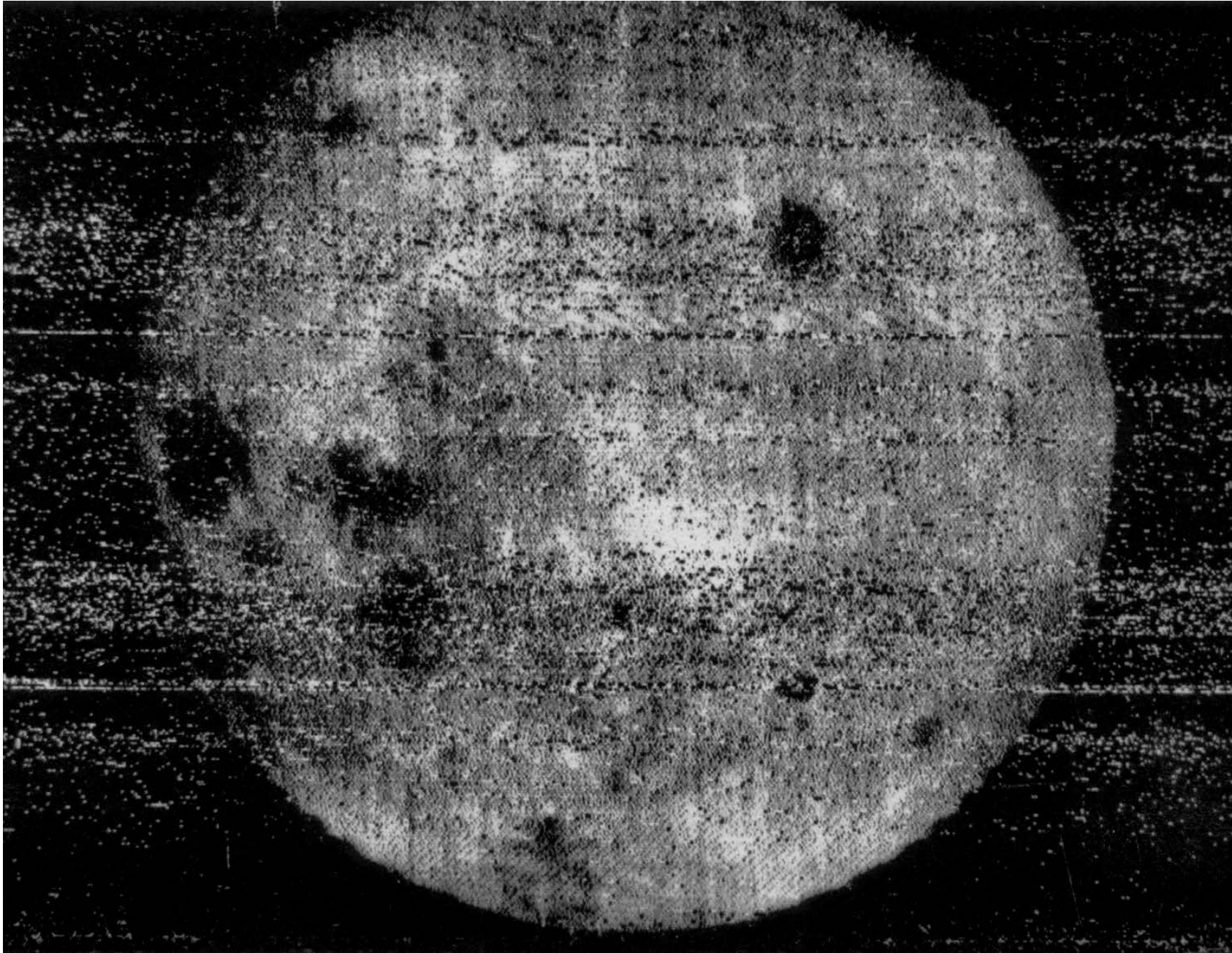


Chang'e

Yutu







Månens baksida
Luna 3, 1959

