FUNDACIÓN RAMÓN ARECES

sociedad geográfica española

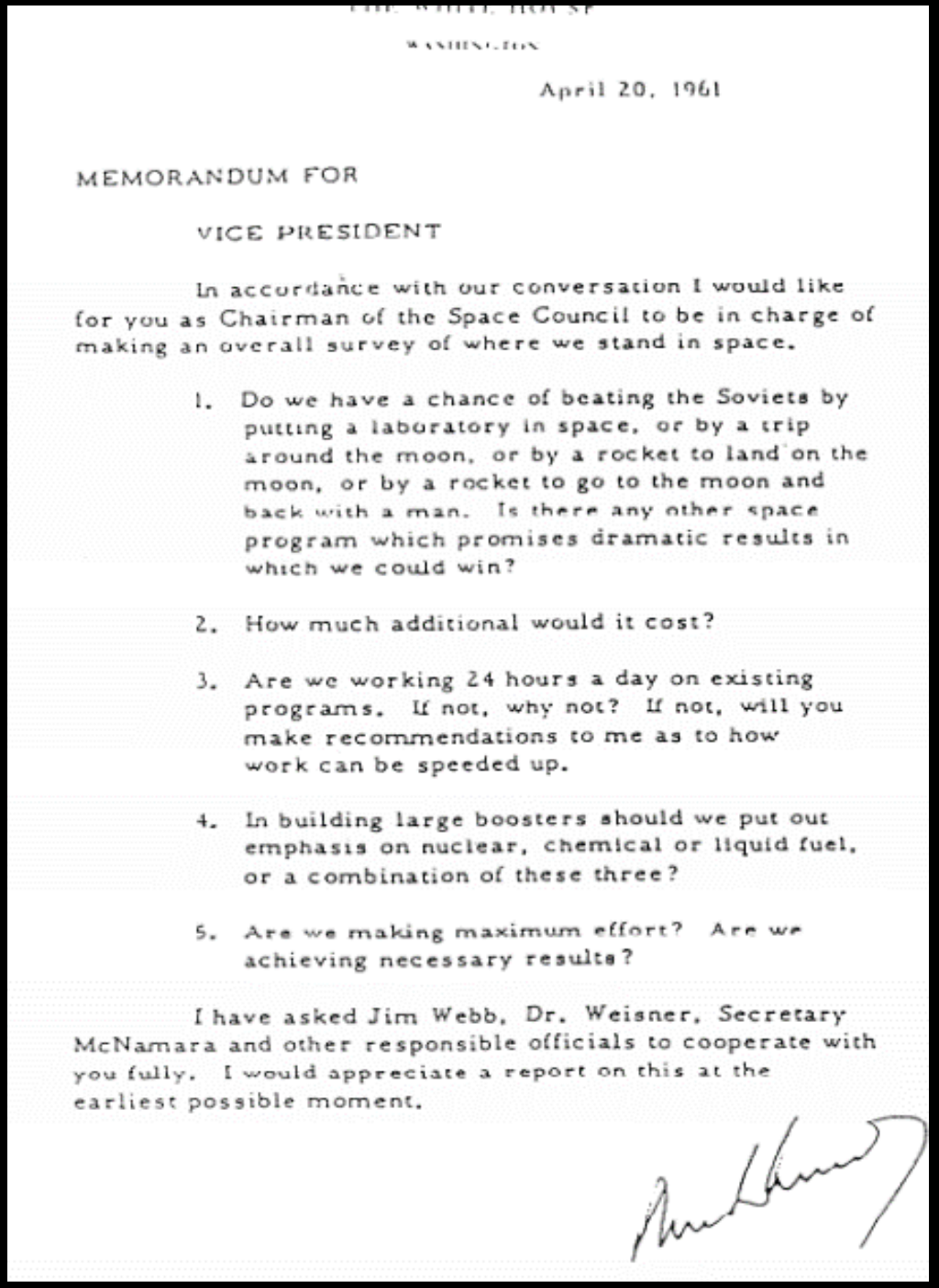
El programa Apollo

Por qué se fue a la Luna… y no se volvió en 50 años

Sociedad Geográfica Española

Fundación Areces – Octubre 2019

JFK y la Luna



THE WHITE HOUSE

WASHINGTON

April 20, 1961

MEMORANDUM FOR

VICE PRESIDENT

In accordance with our conversation I would like for you as Chairman of the Space Council to be in charge of making an overall survey of where we stand in space.

1. Do we have a chance of beating the Soviets by putting a laboratory in space, or by a trip around the moon, or by a rocket to land on the moon, or by a rocket to go to the moon and back with a man. Is there any other space program which promises dramatic results in which we could win?

2. How much additional would it cost?

3. Are we working 24 hours a day on existing programs. If not, why not? If not, will you make recommendations to me as to how work can be speeded up.

4. In building large boosters should we put out emphasis on nuclear, chemical or liquid fuel, or a combination of these three?

5. Are we making maximum effort? Are we achieving necessary results?

I have asked Jim Webb, Dr. Weisner, Secretary McNamara and other responsible officials to cooperate with you fully. I would appreciate a report on this at the earliest possible moment.

JFK y la Luna

h. The American public should be given the facts as to how we stand in the space race, told of our determination to lead in that race, and advised of the importance of such leadership to our future.

i. More resources and more effort need to be put into our space program as soon as possible. We should move forward with a bold program, while at the same time taking every practical precaution for the safety of the persons actively participating in space flights.

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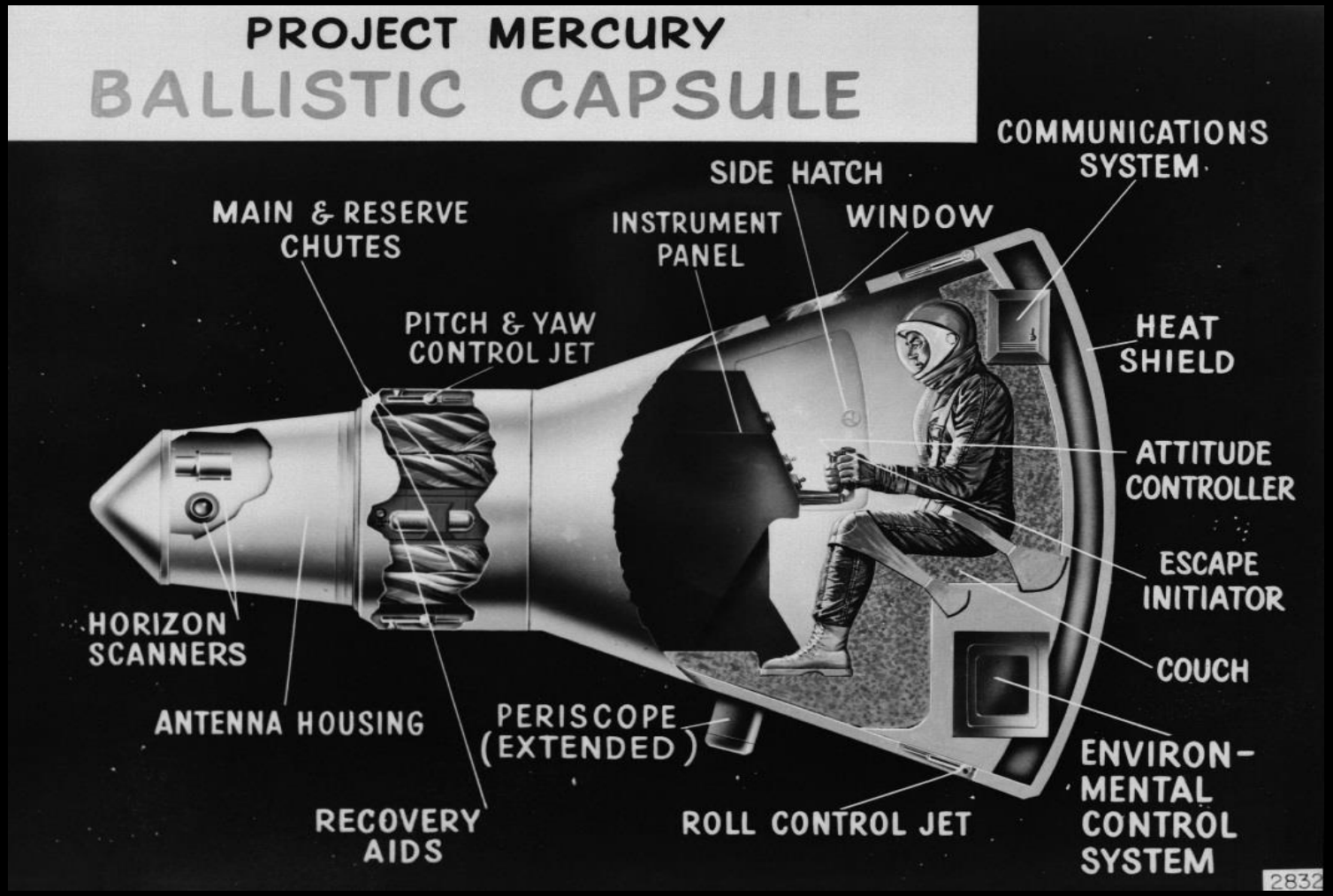
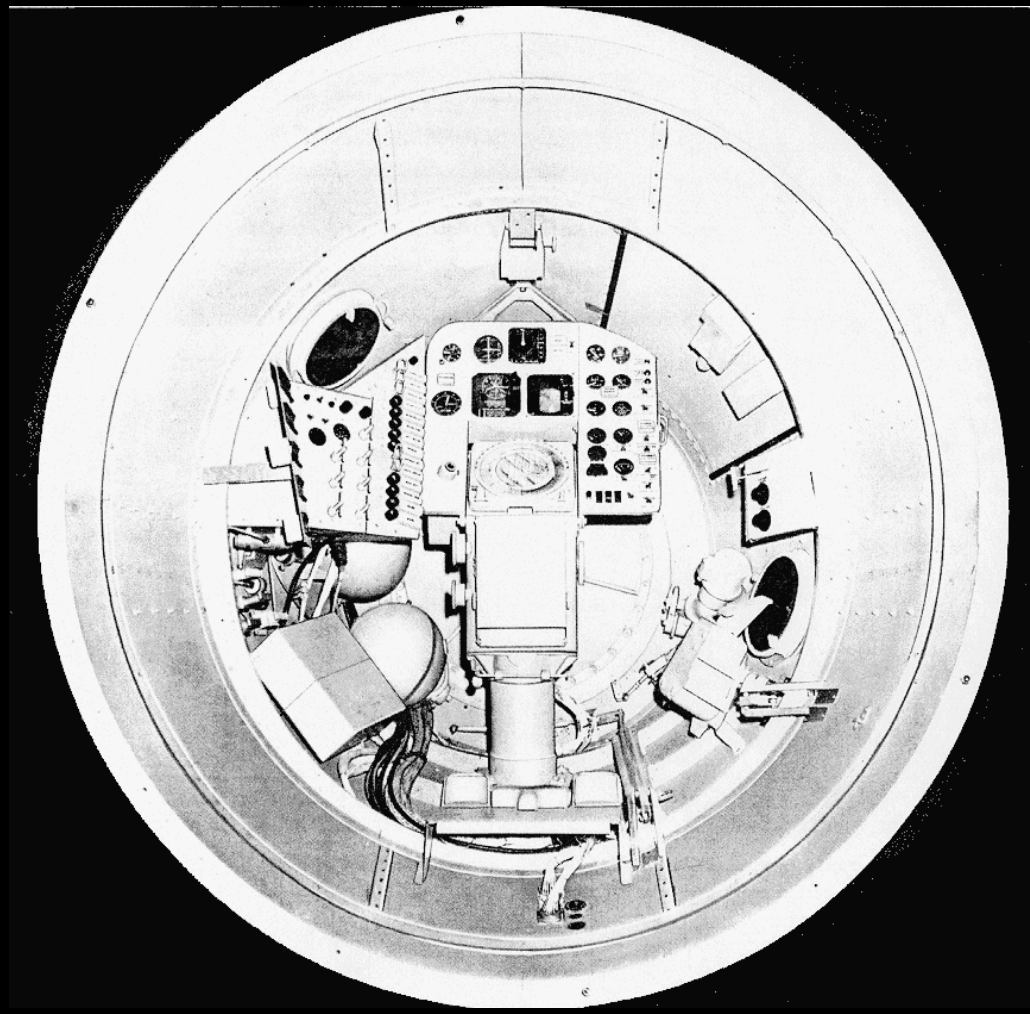
As for the specific questions posed in your memorandum, the following brief answers develop from the studies made during the past few days. These conclusions are subject to expansion and more detailed examination as our survey continues.

Q.1 - Do we have a chance of beating the Soviets by putting a laboratory in space, or by a trip around the moon, or by a rocket to land on the moon, or by a rocket to go to the moon and back with a man. Is there any other space program which promises dramatic results in which we could win?

A.1 - The Soviets now have a rocket capability for putting a multi-manned laboratory into space and have already crash-landed a rocket on the moon. They also have the booster capability of making a soft landing on the moon with a payload of instruments, although we do not know how much preparation they have made for such a project. As for a manned trip around the moon or a safe landing and return by a man to the moon, neither the U.S. nor the USSR has such capability at this time, so far as we know. The Russians have had more experience with large boosters and with flights of dogs and man. Hence they might be conceded a time advantage in circumnavigation of the moon and also in a manned trip to the moon. However, with a strong effort, the United States could conceivably be first in those two accomplishments by 1966 or 1967.

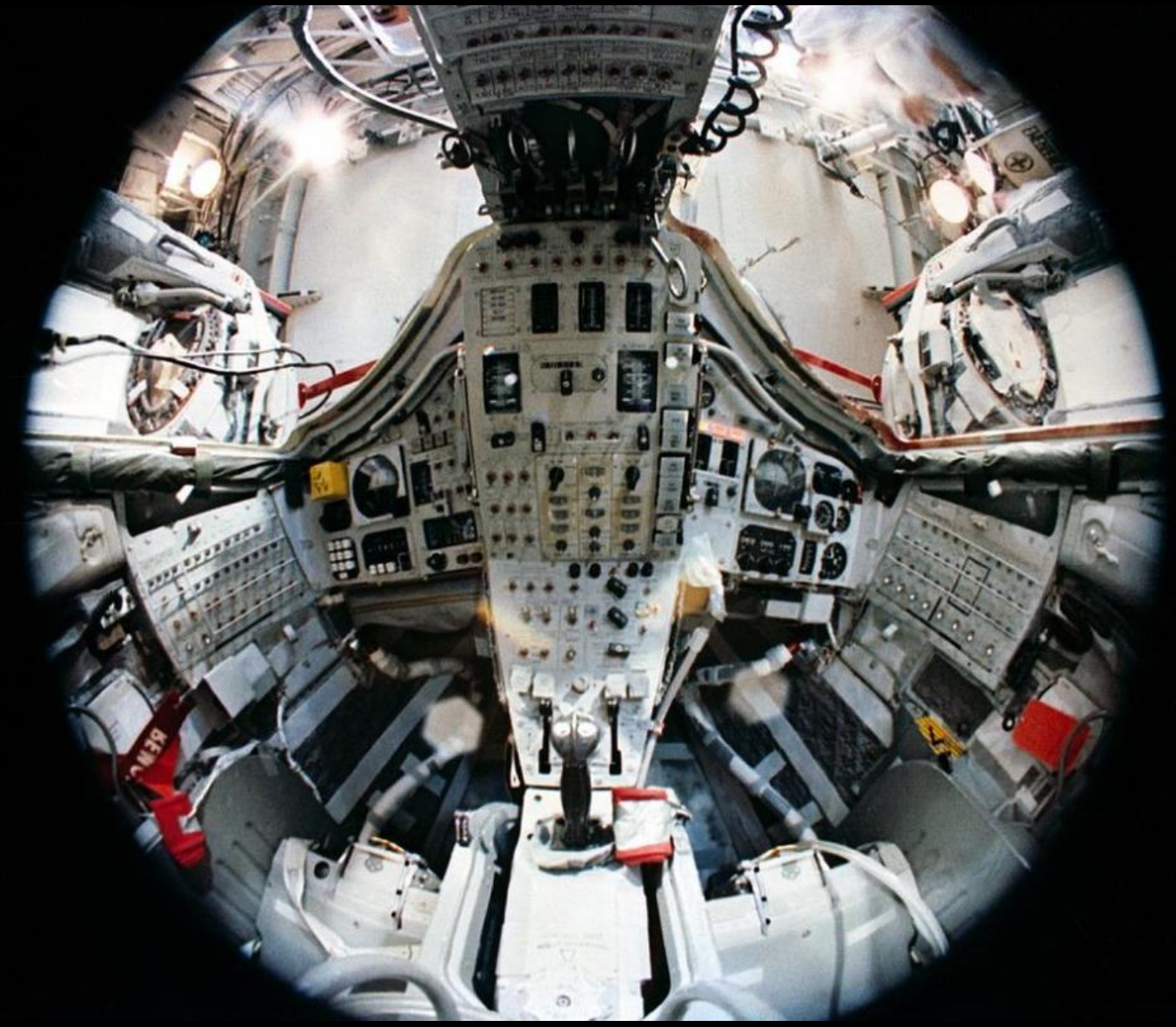
Primeros pasos: Mercury

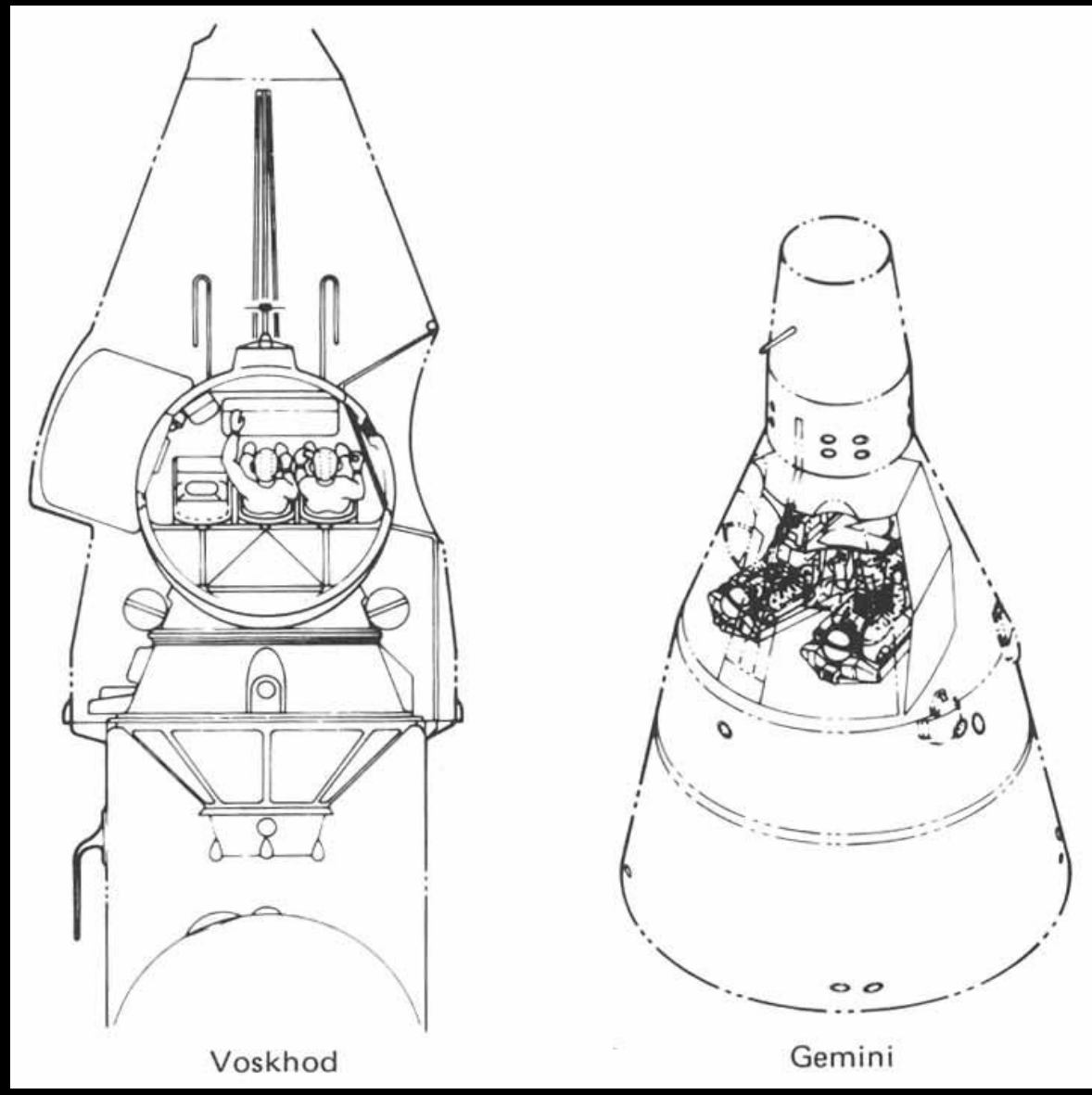




Primeros pasos: Mercury

Primeros pasos: Gemini





Primeros pasos: Gemini

Robots hacia la Luna – Lunar Orbiter

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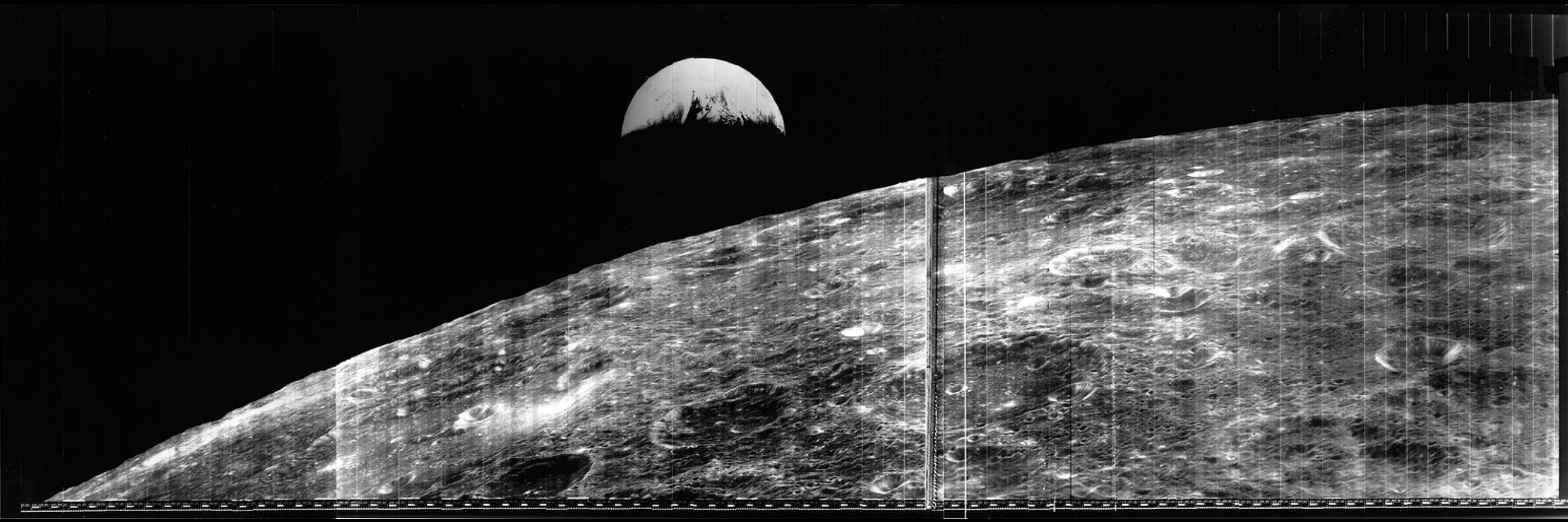
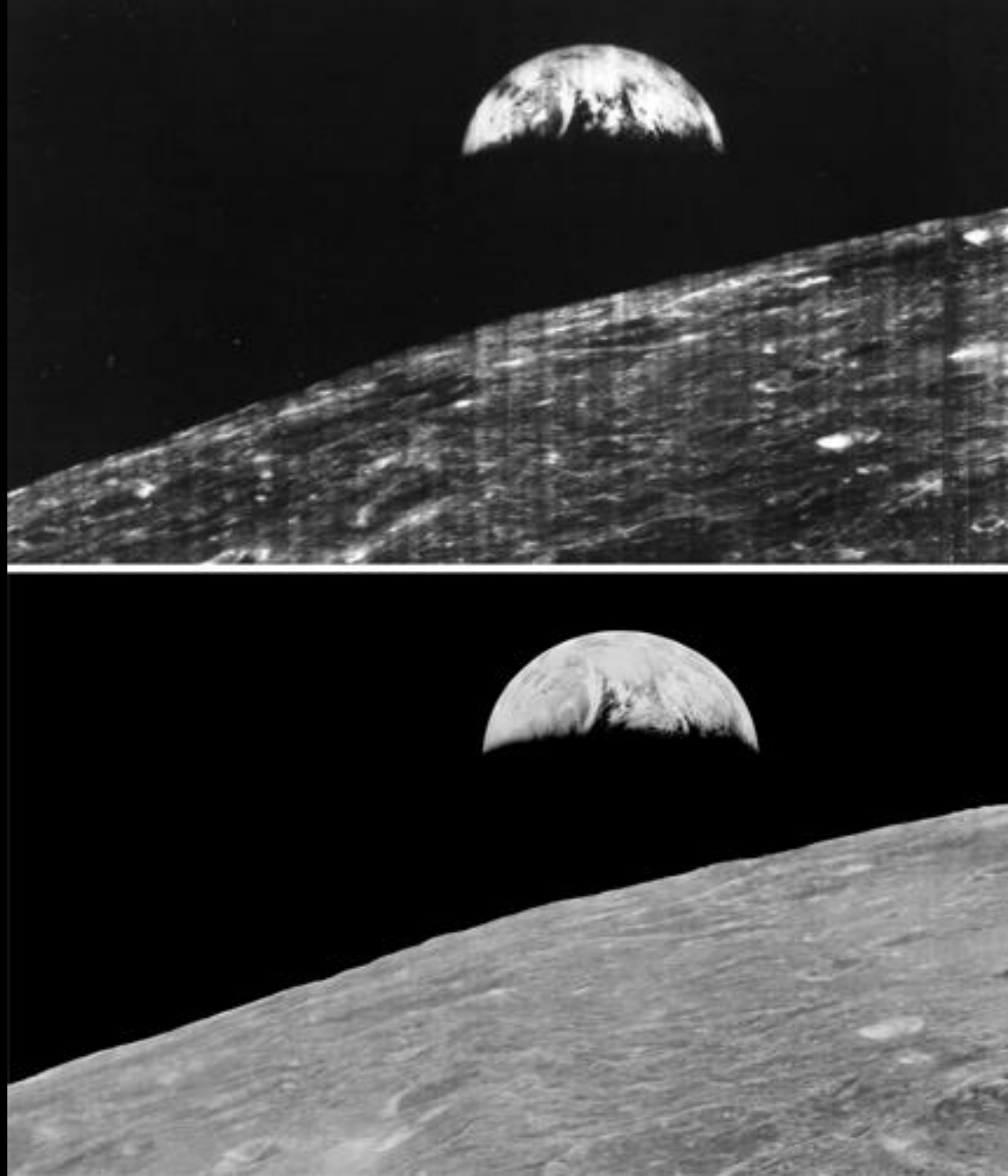
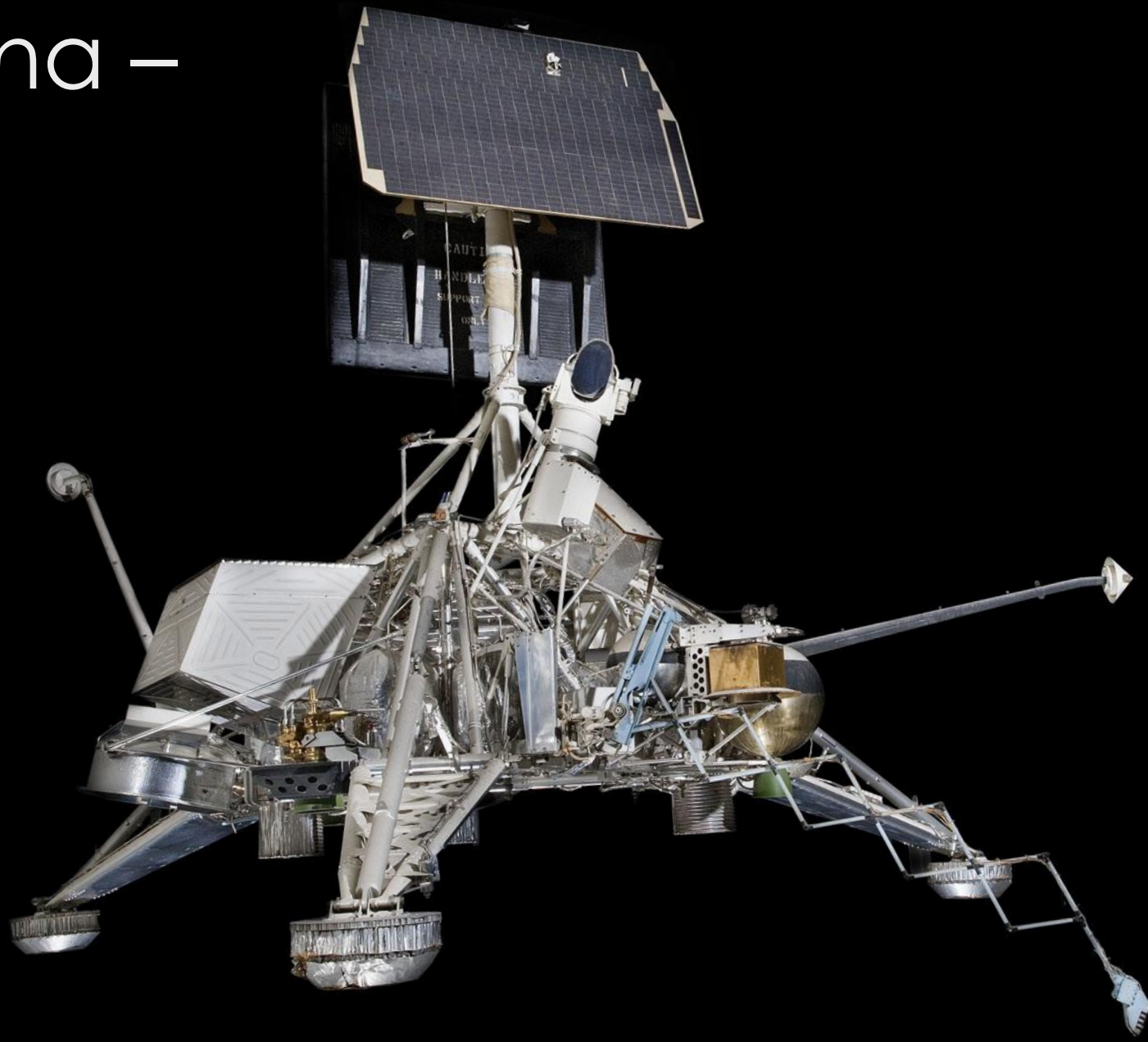


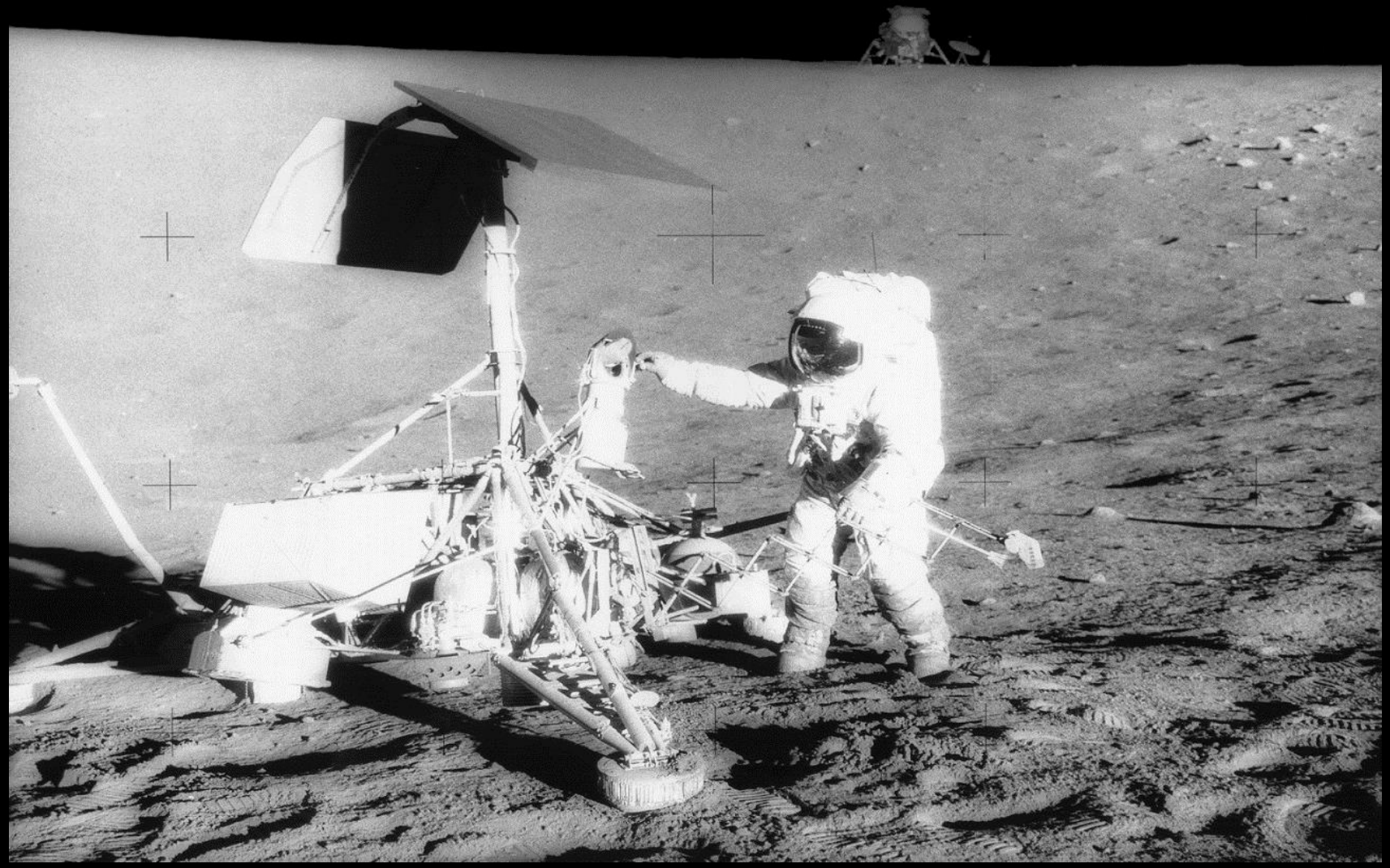
Robots hacia la Luna – Lunar Orbiter



Robots hacia la Luna – Surveyor



Robots hacia la Luna – Surveyor



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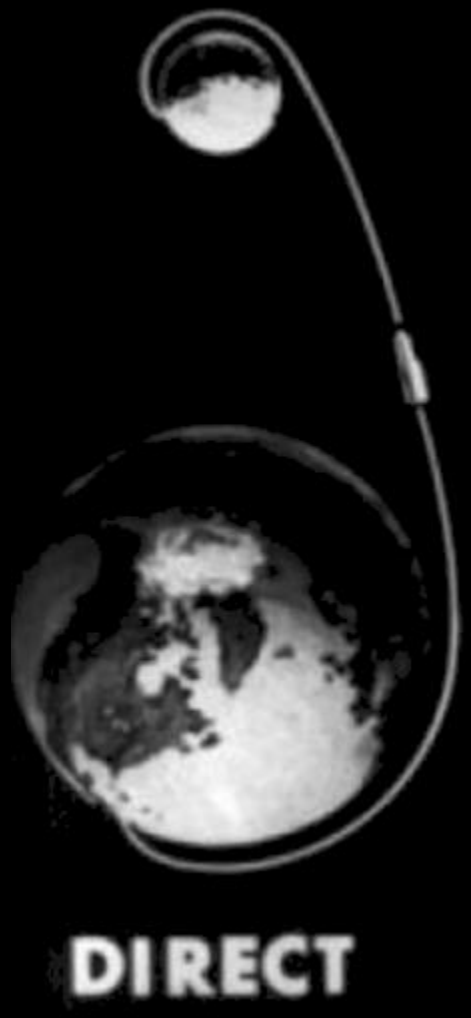

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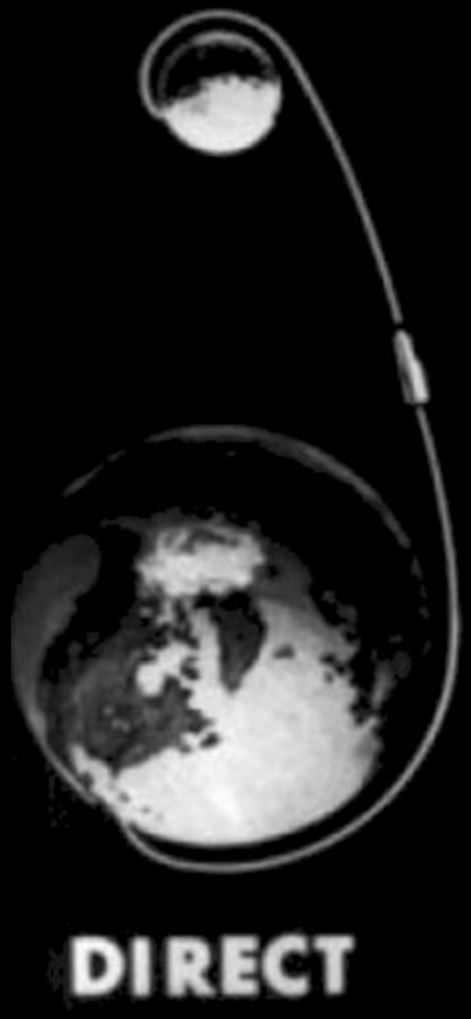

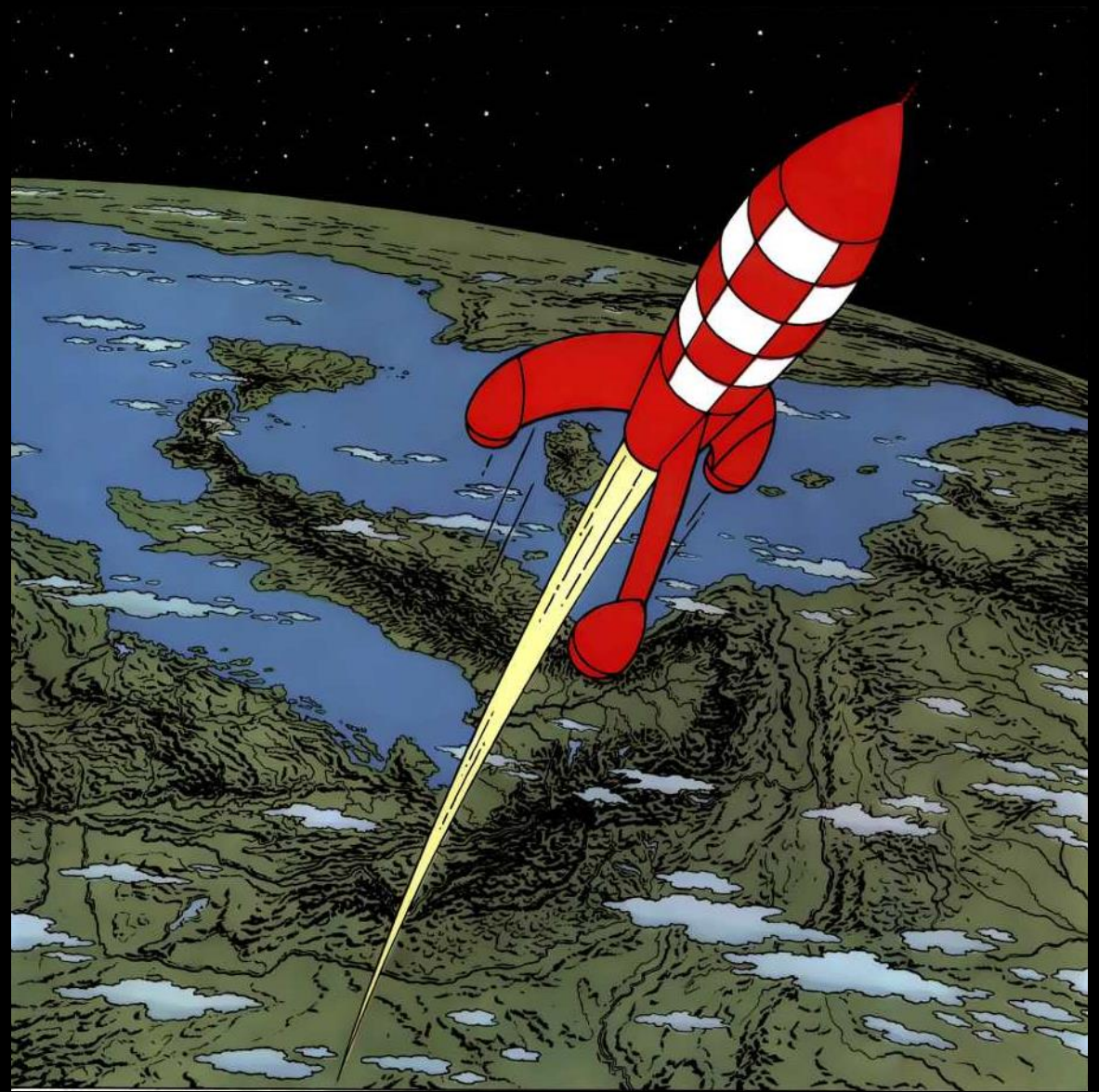

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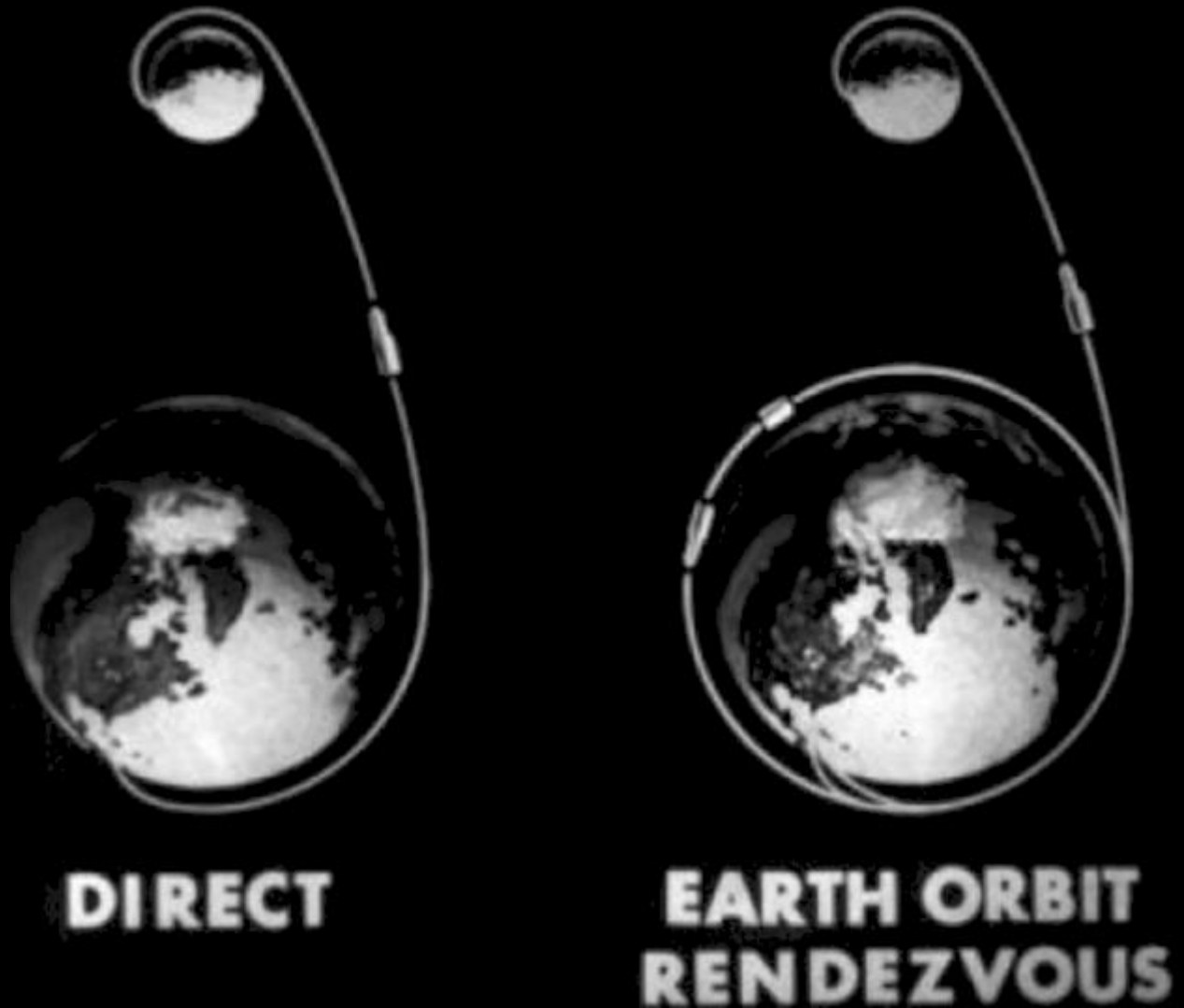

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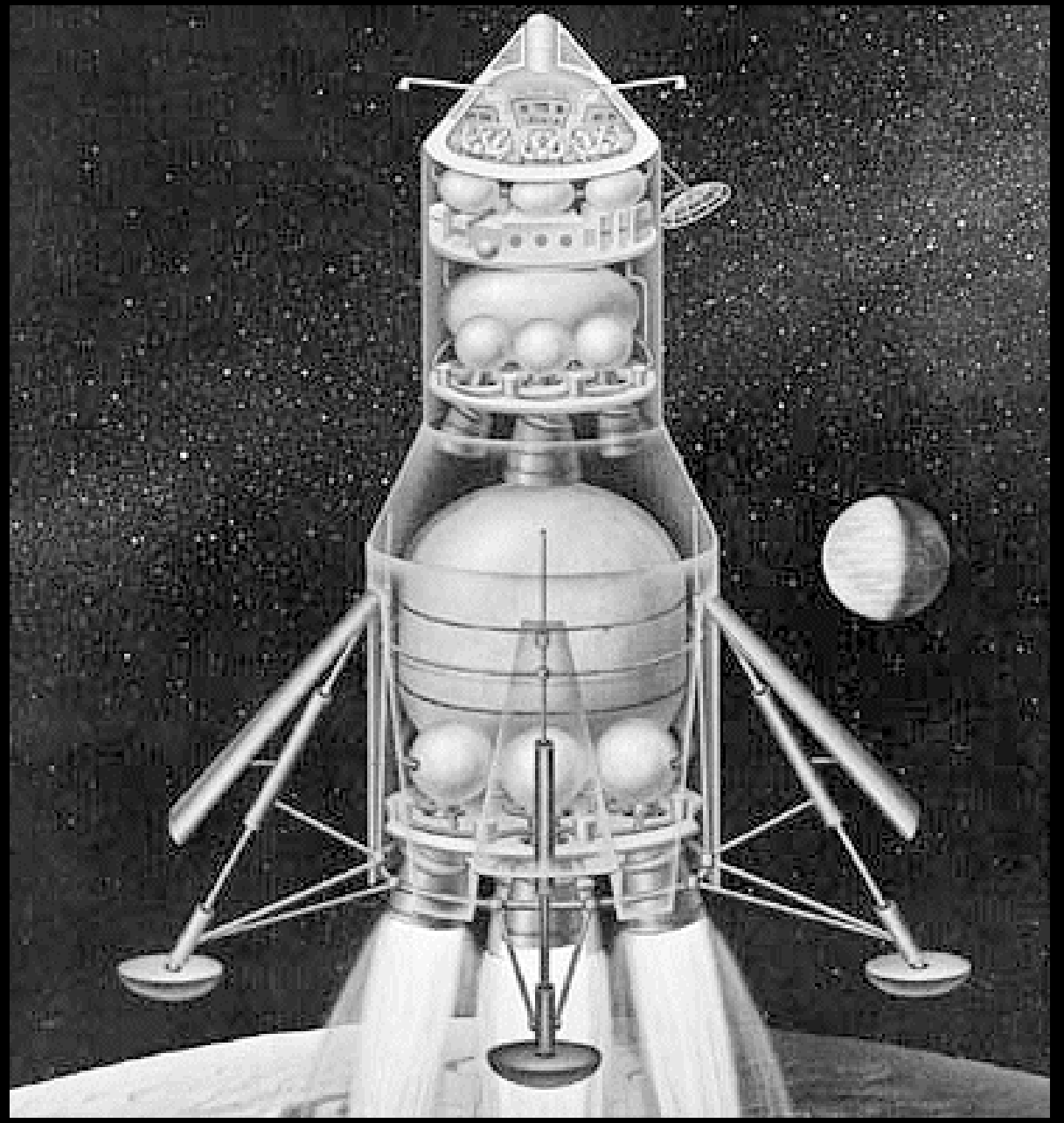

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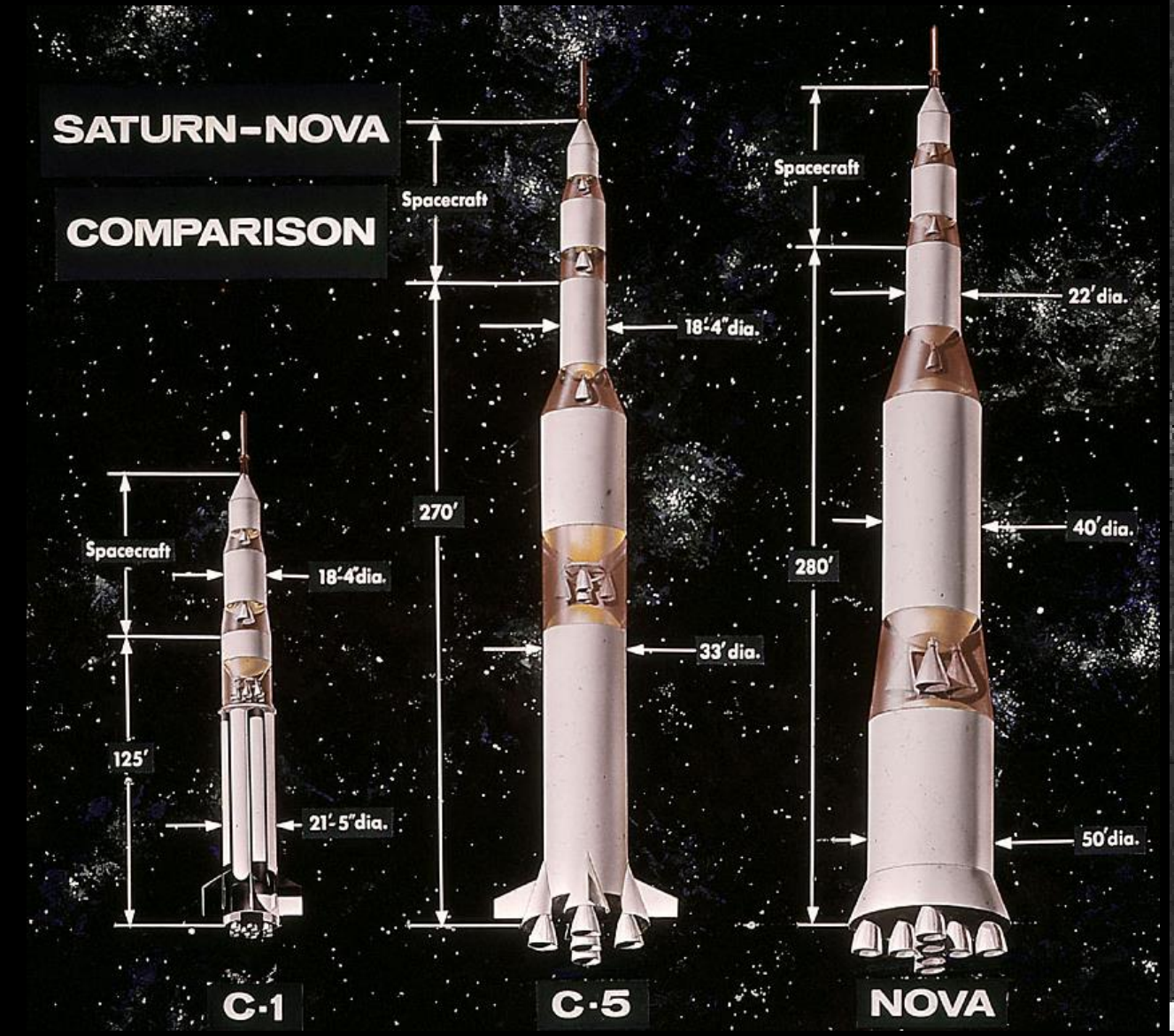

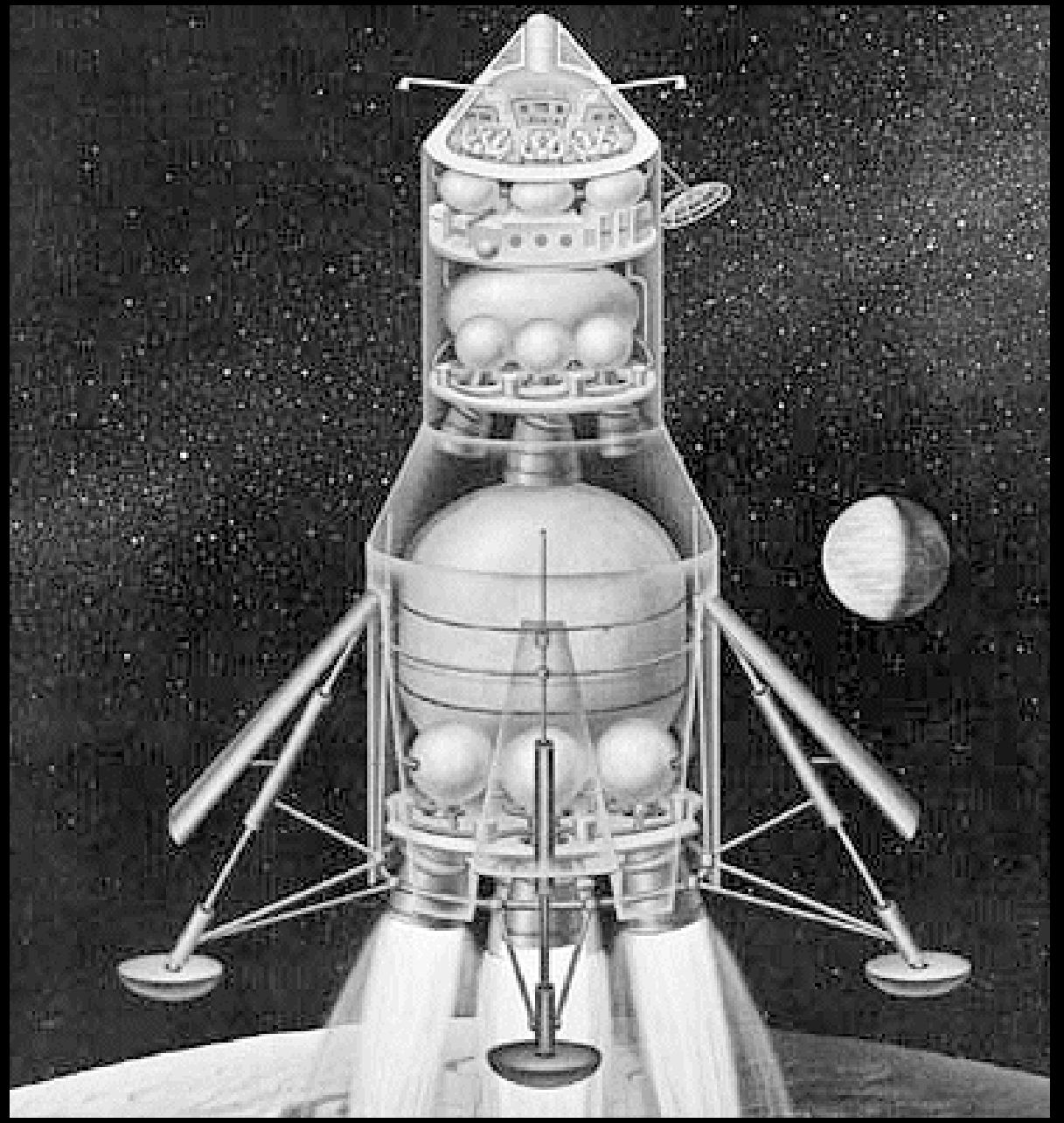

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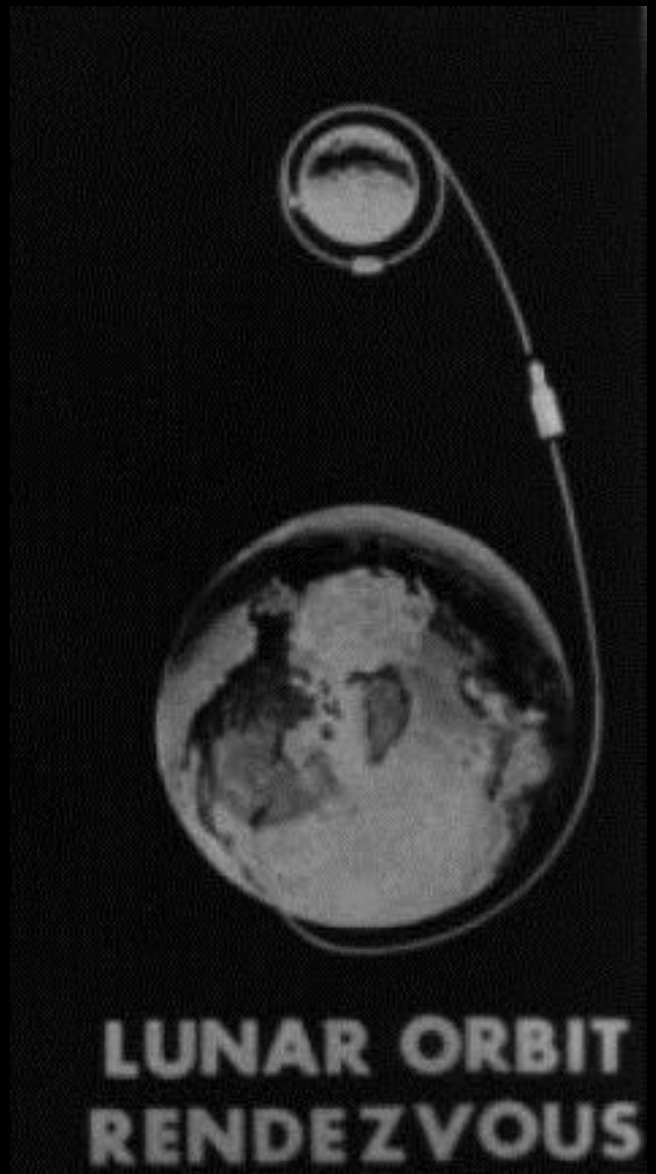

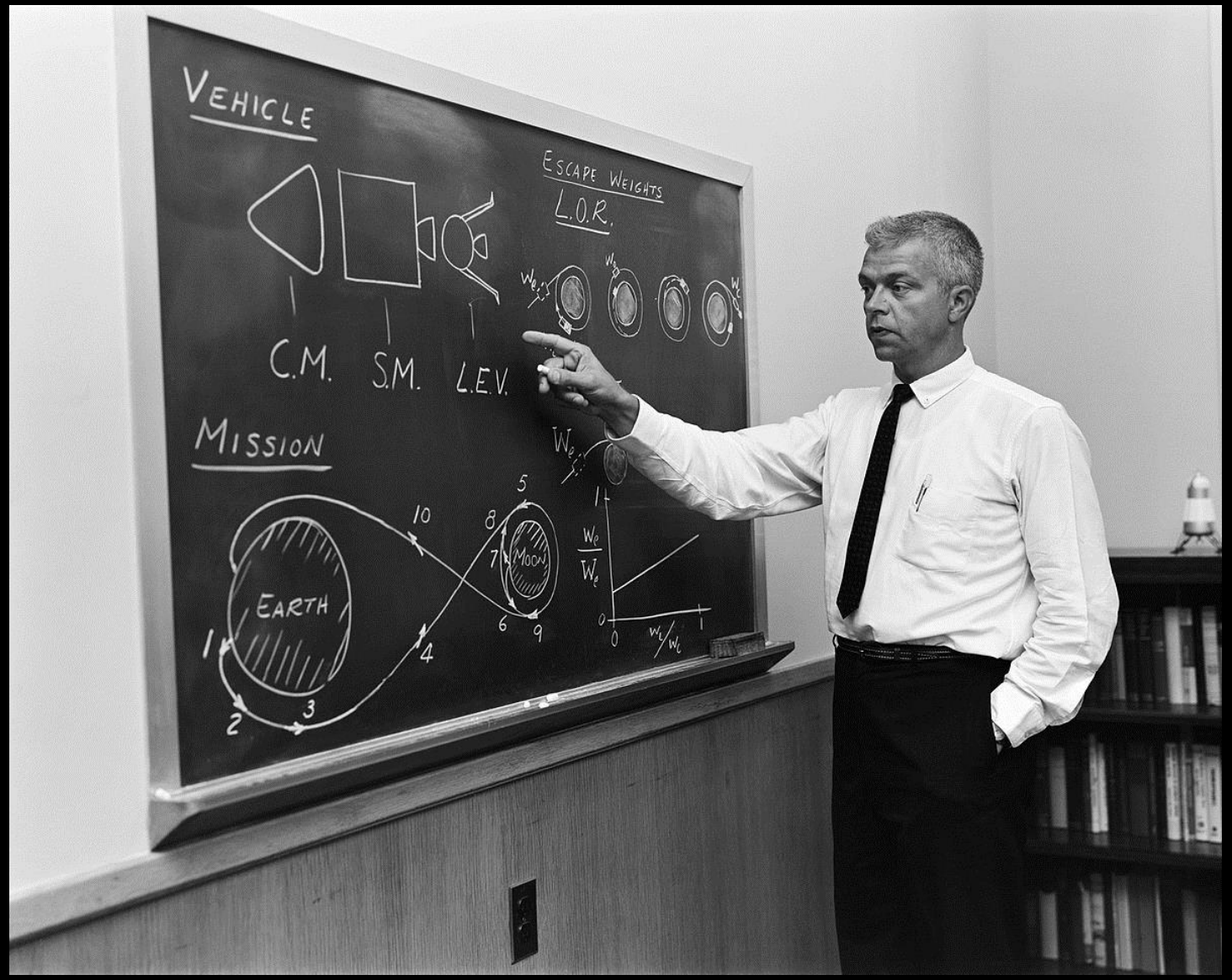

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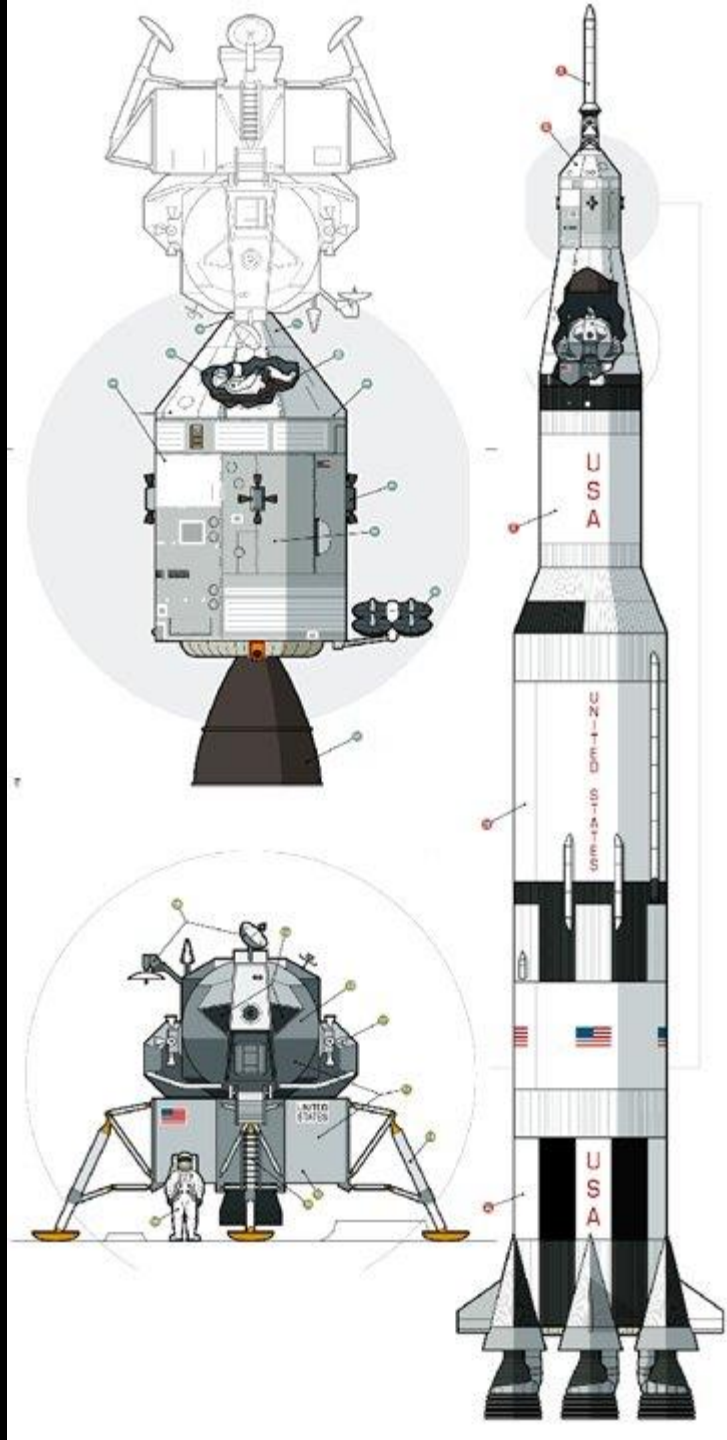

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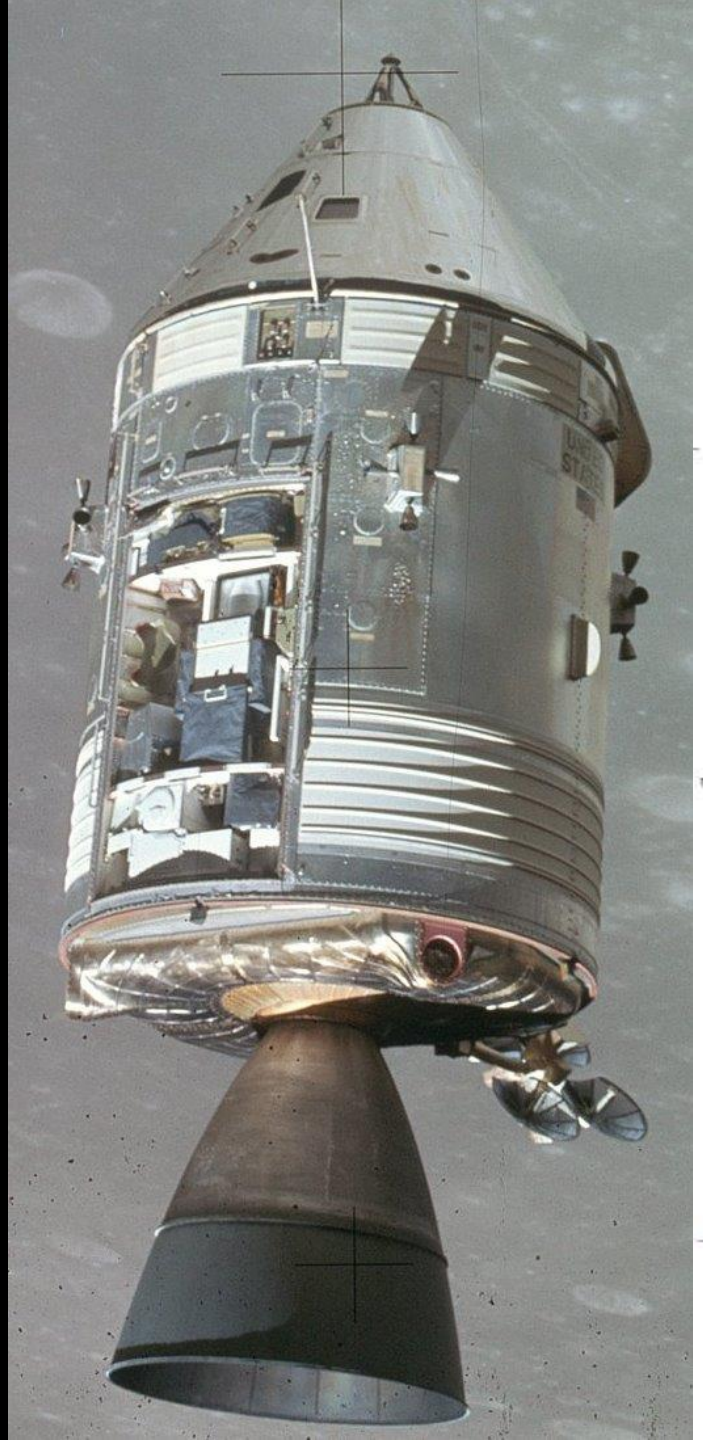

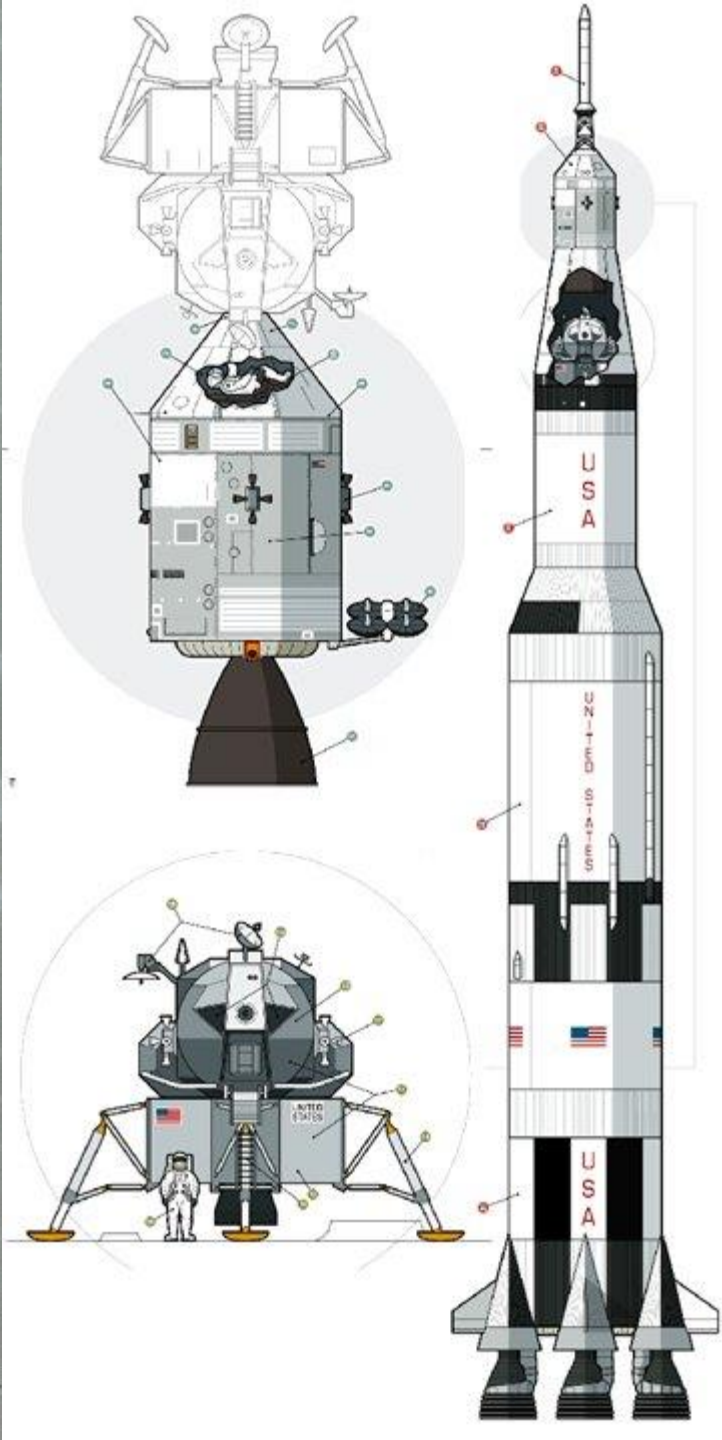

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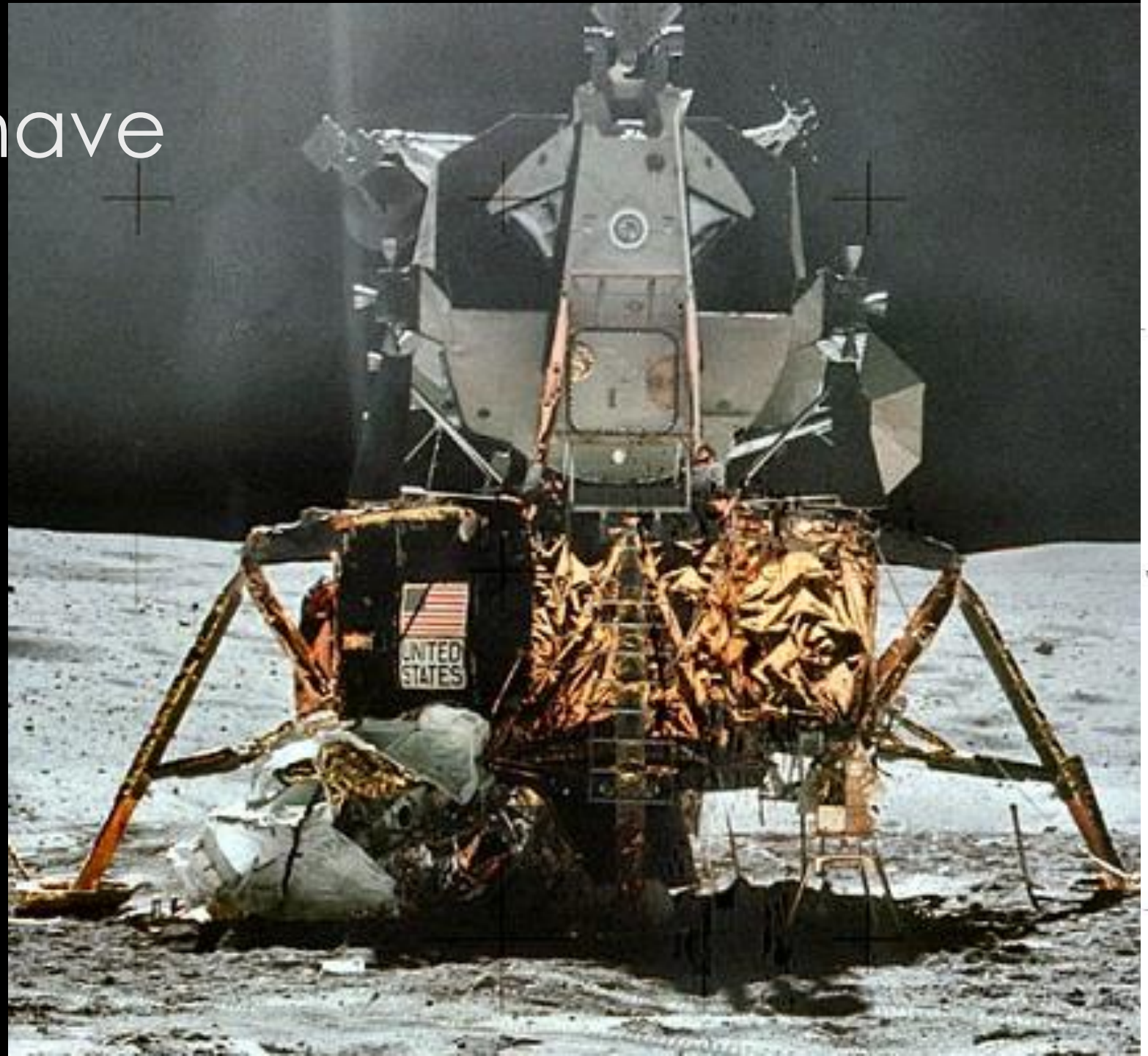

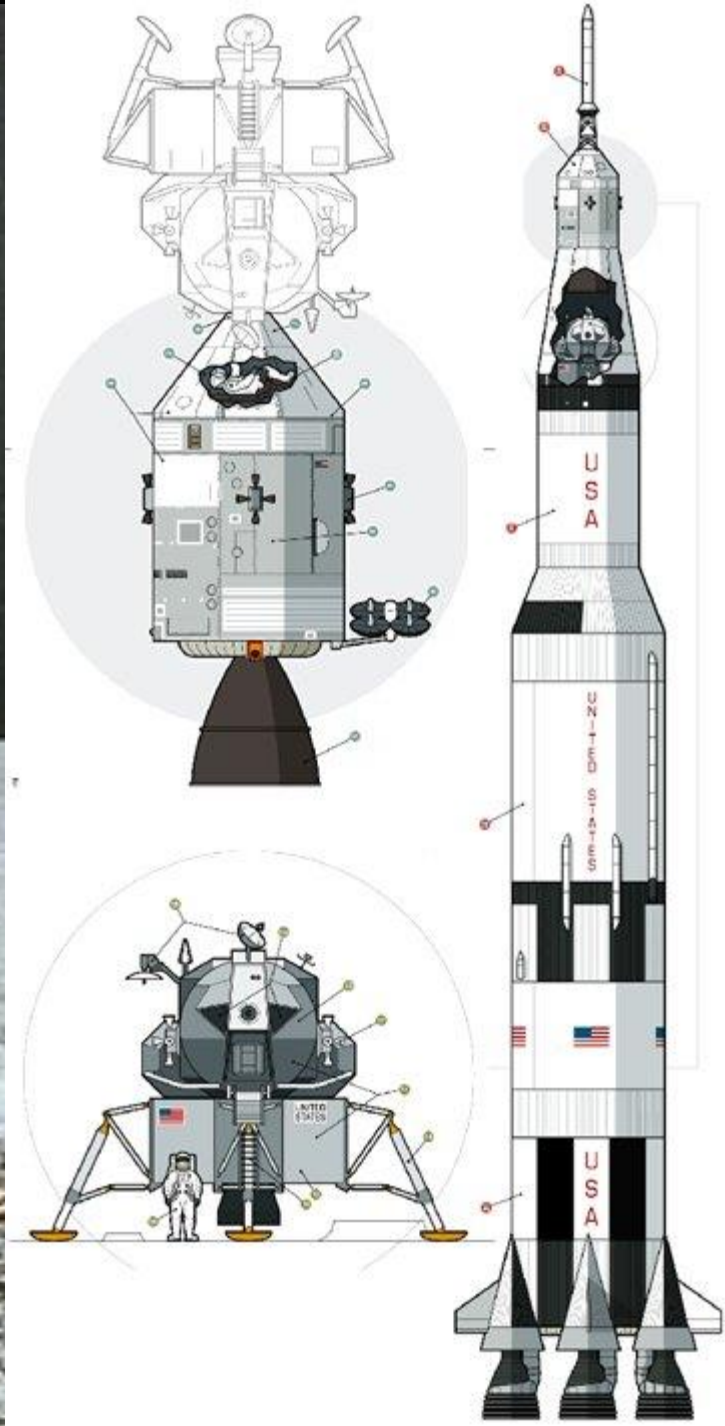

El cohete – Saturn 5

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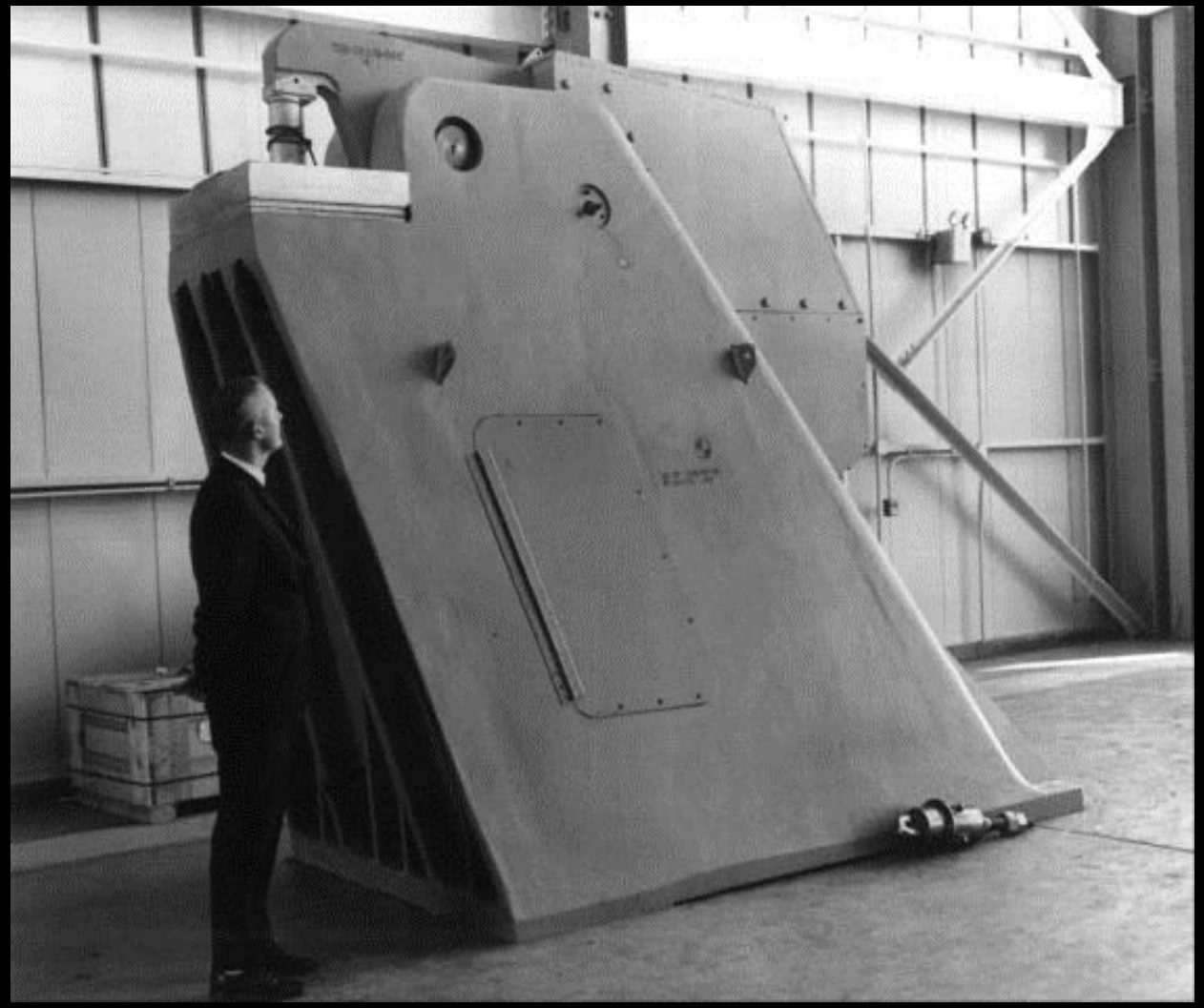

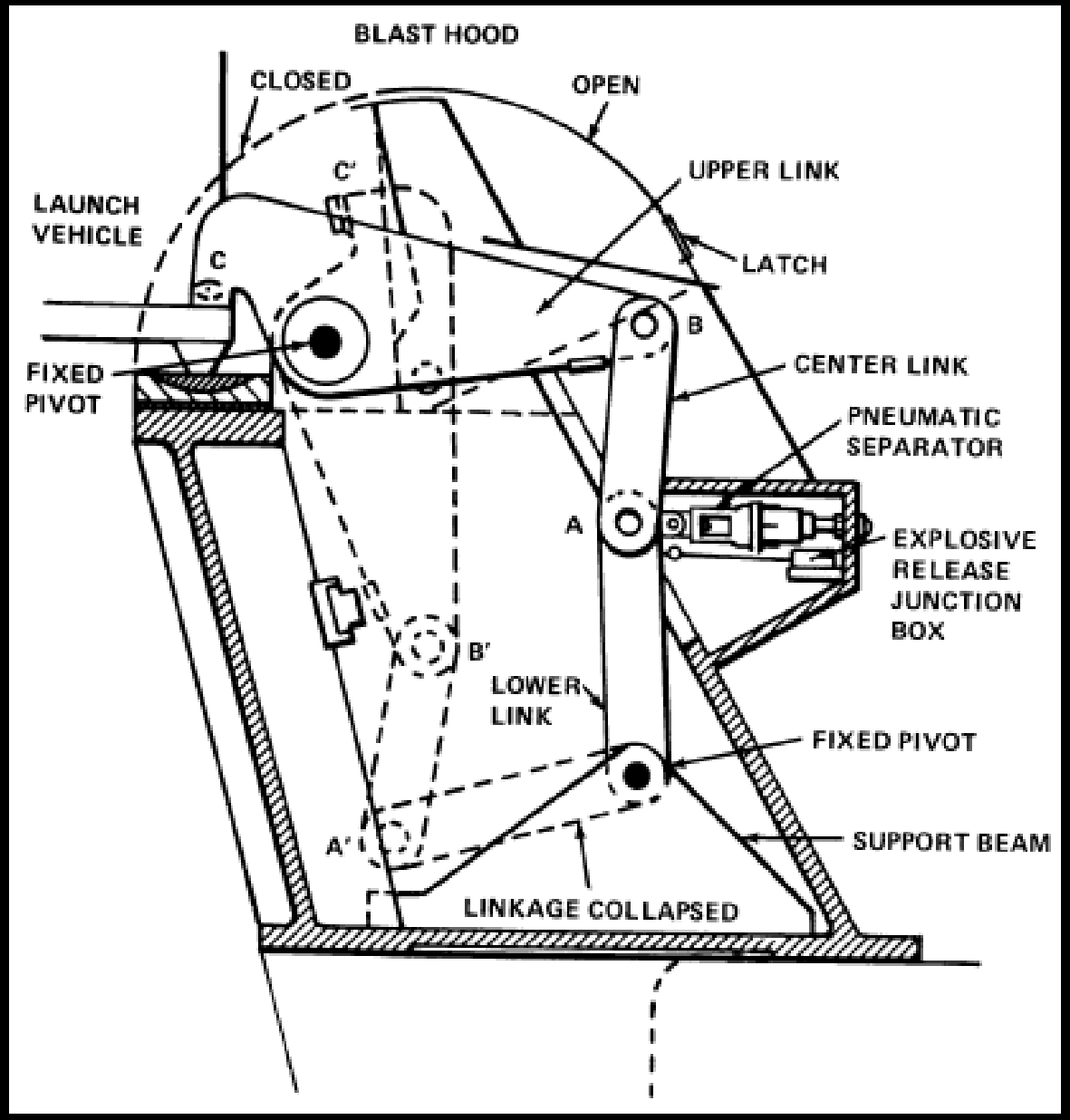

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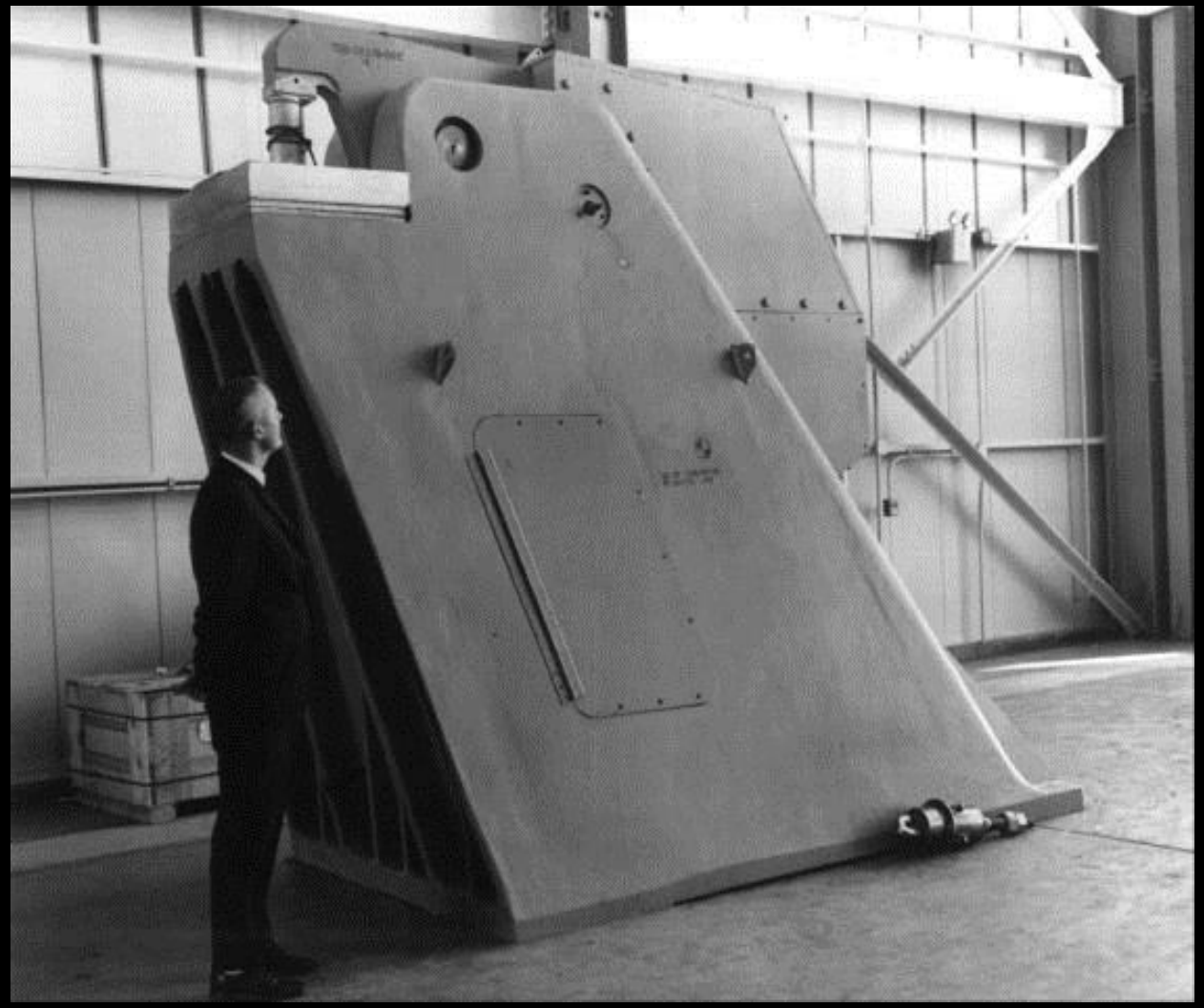
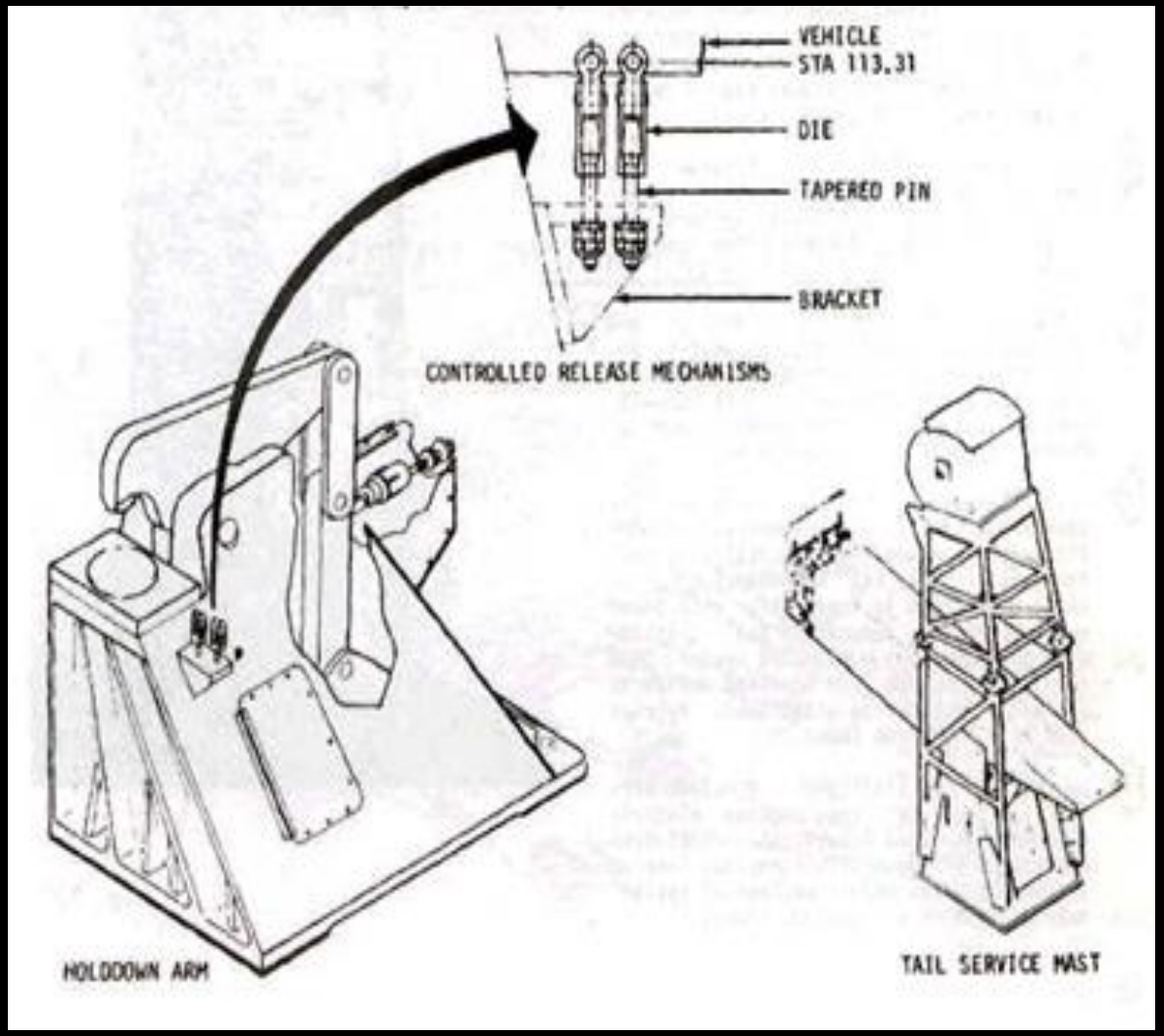
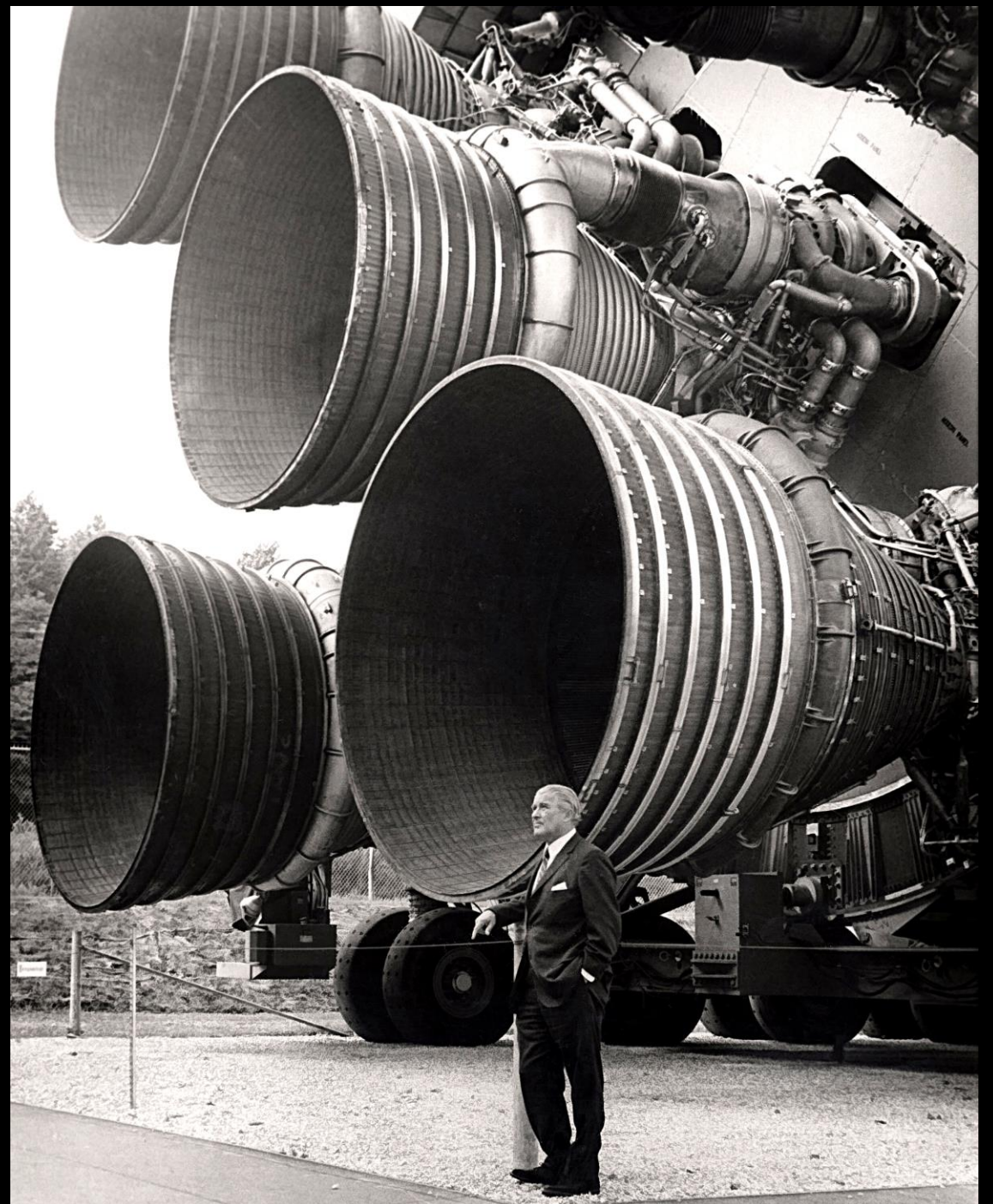




El cohete – Saturn 5

El motor Rocketdyne F1



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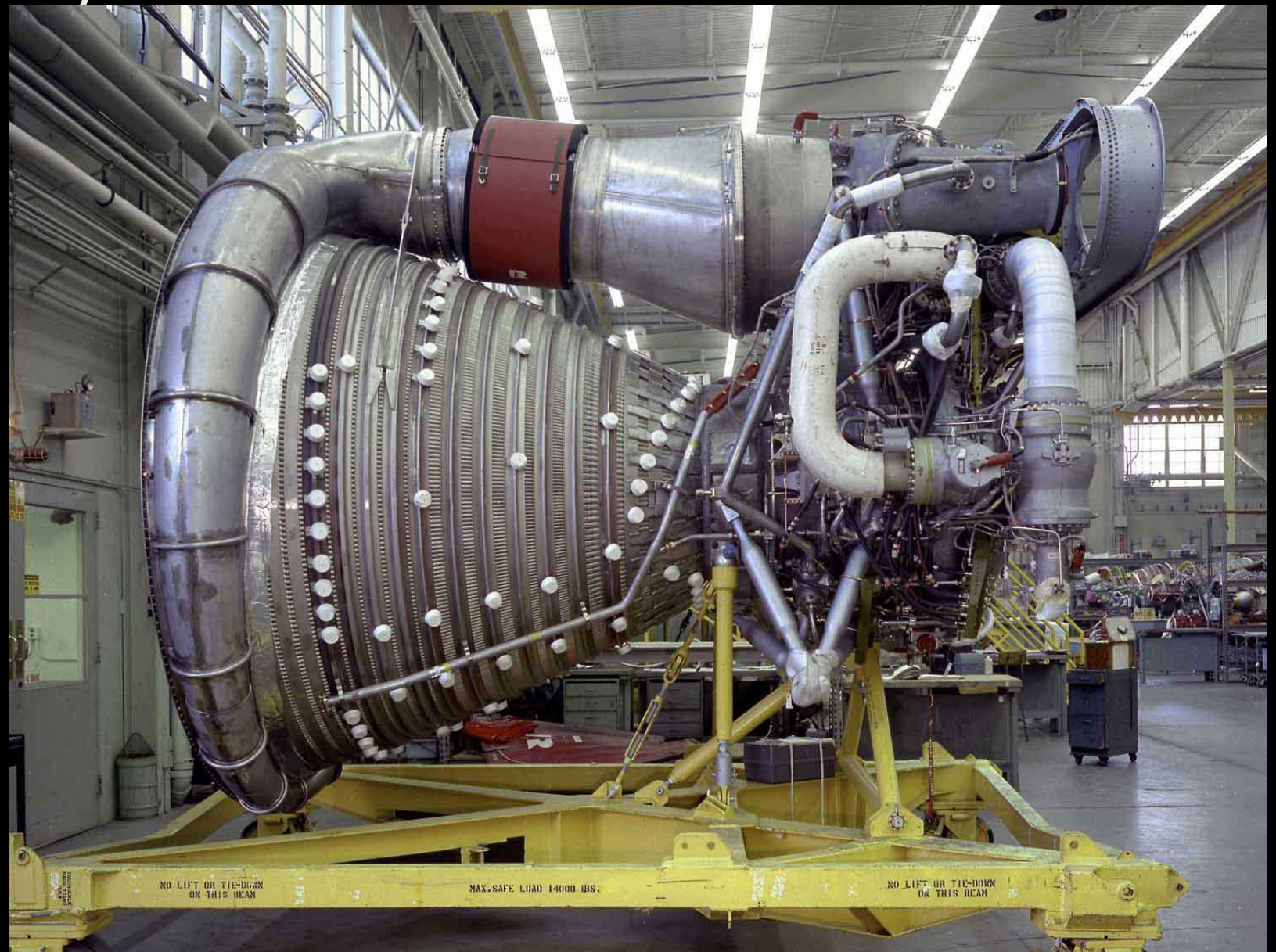

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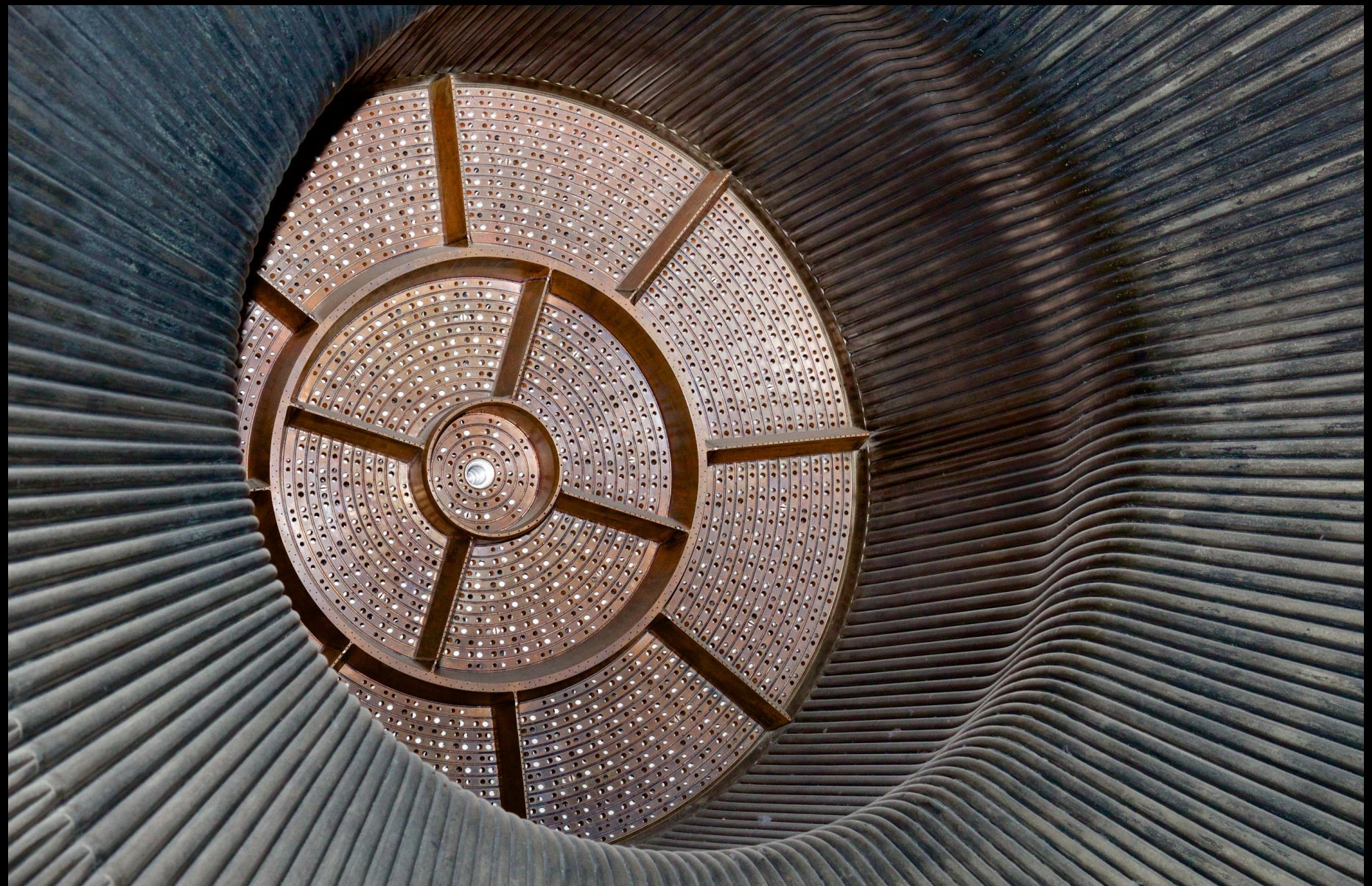

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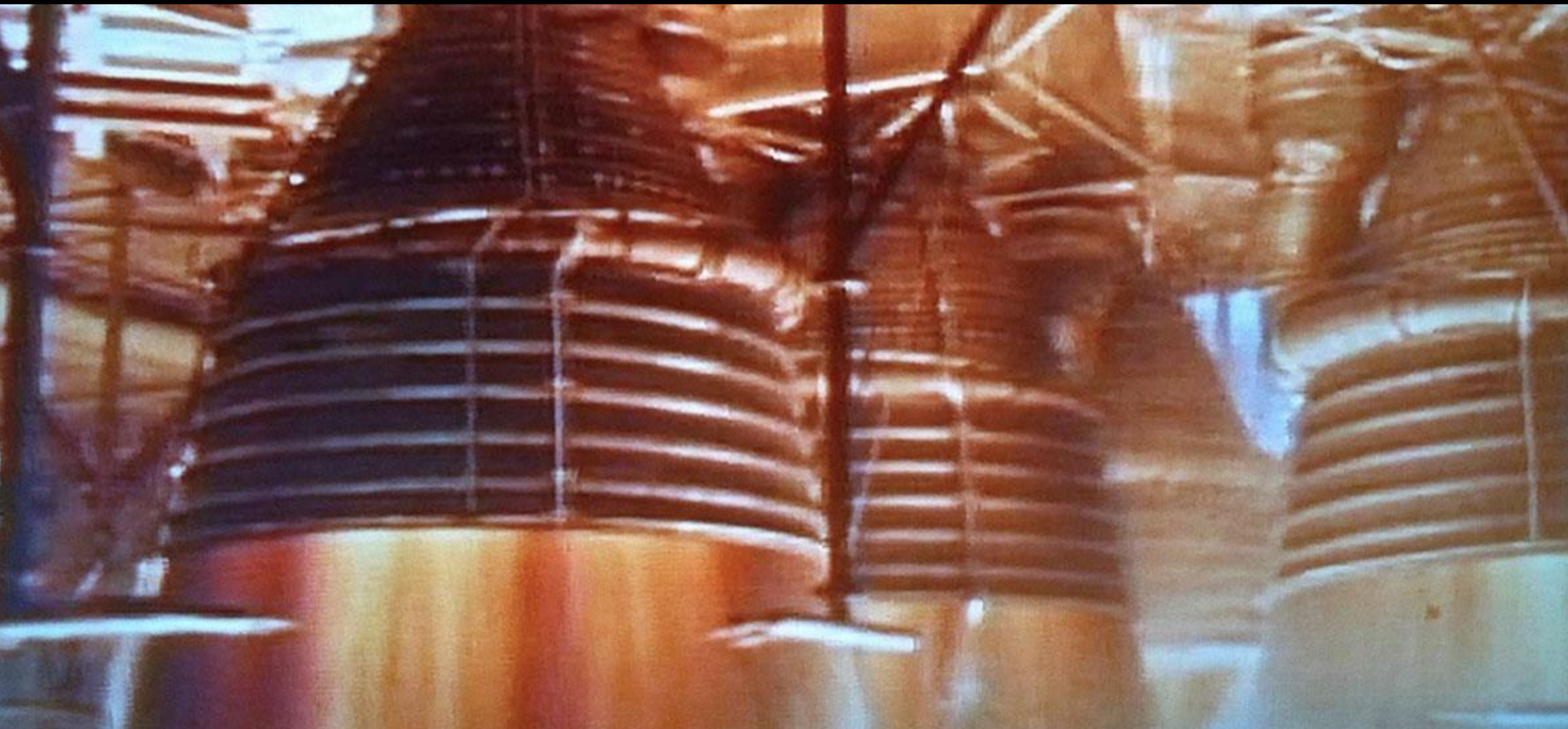


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1967 - Hacia la Luna

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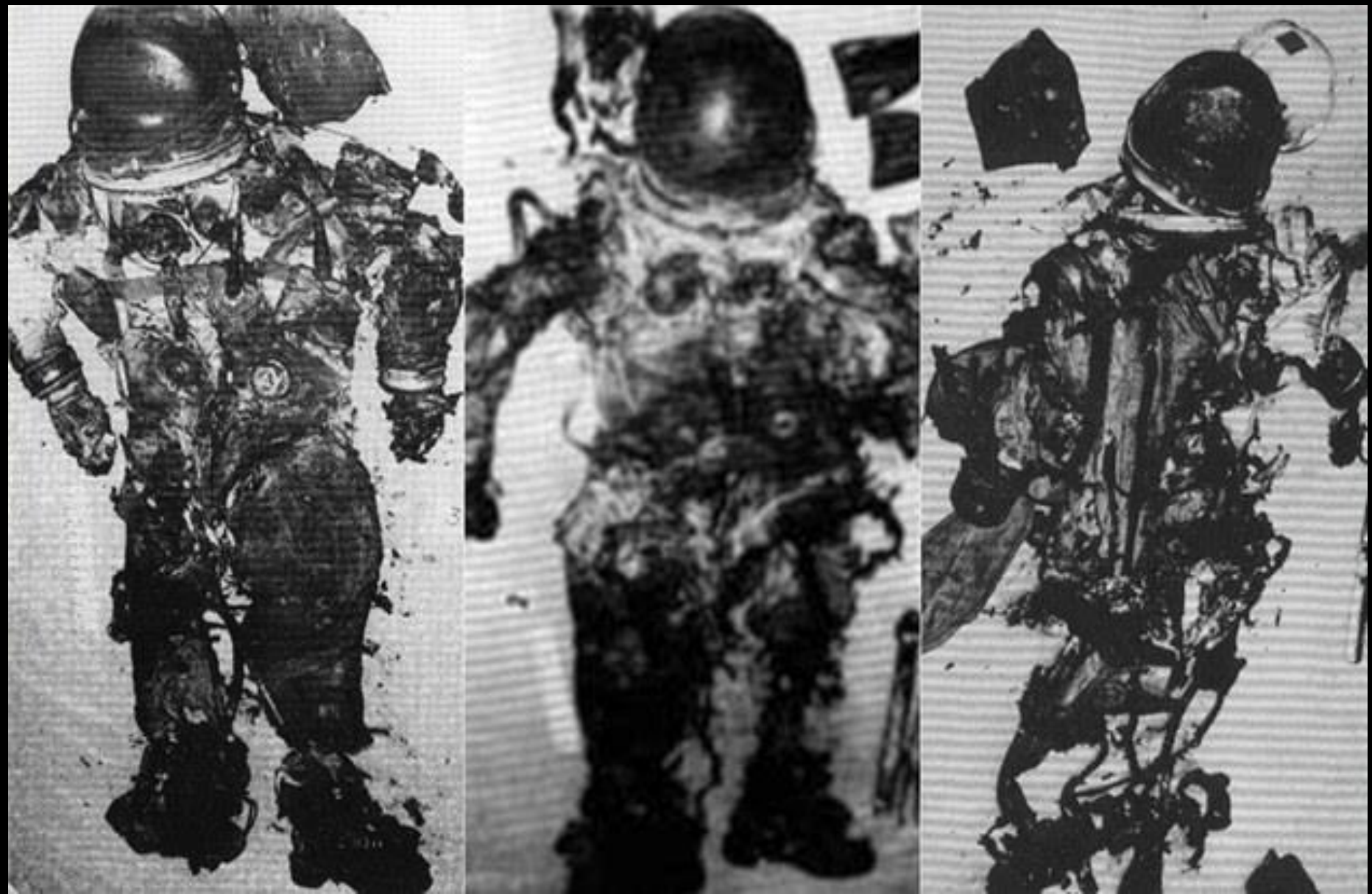
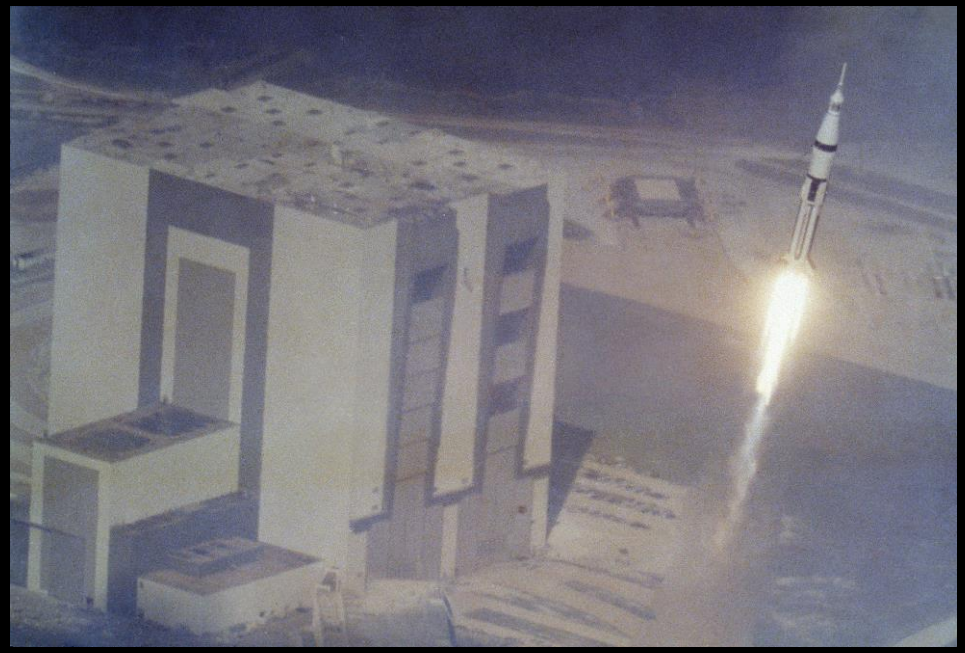
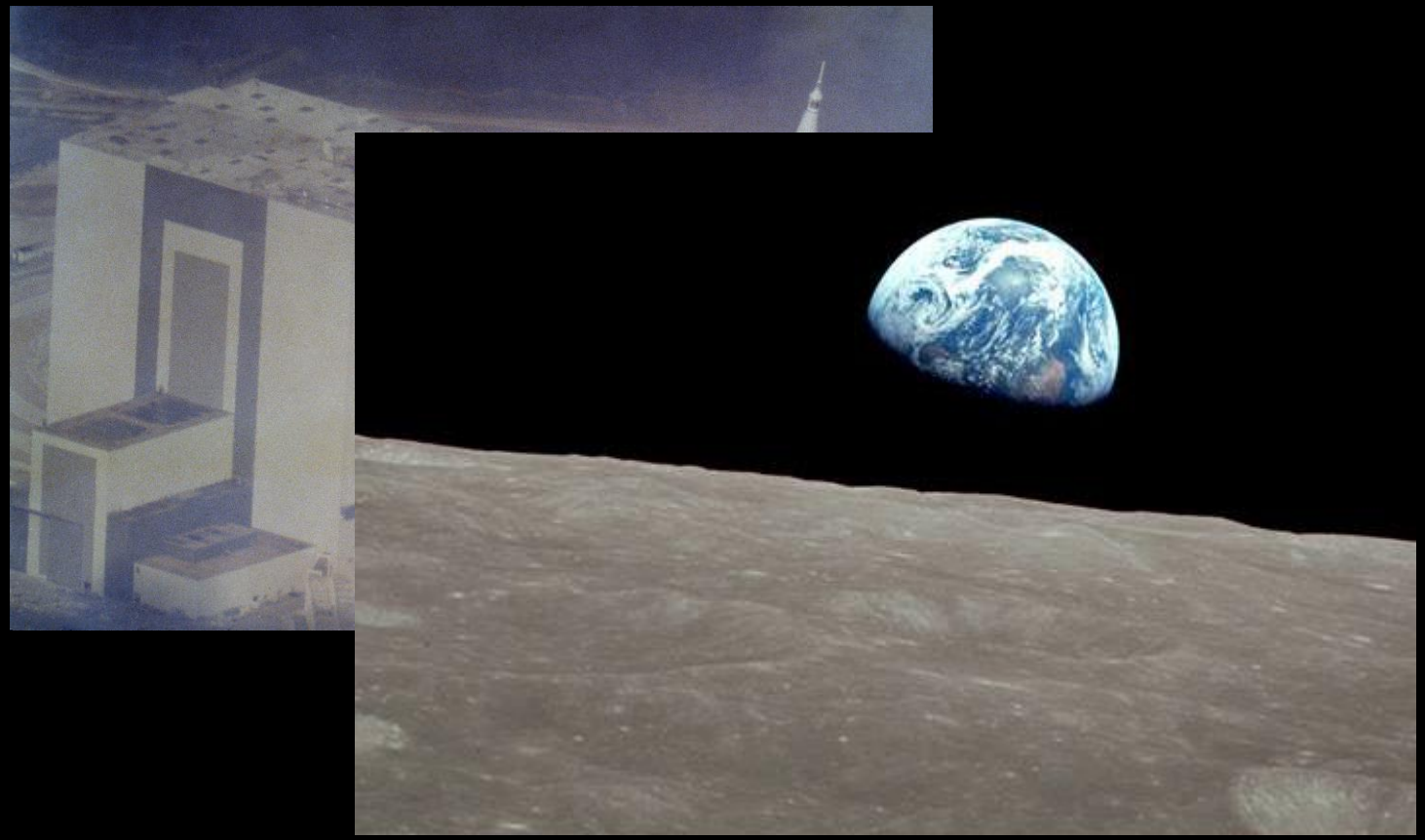


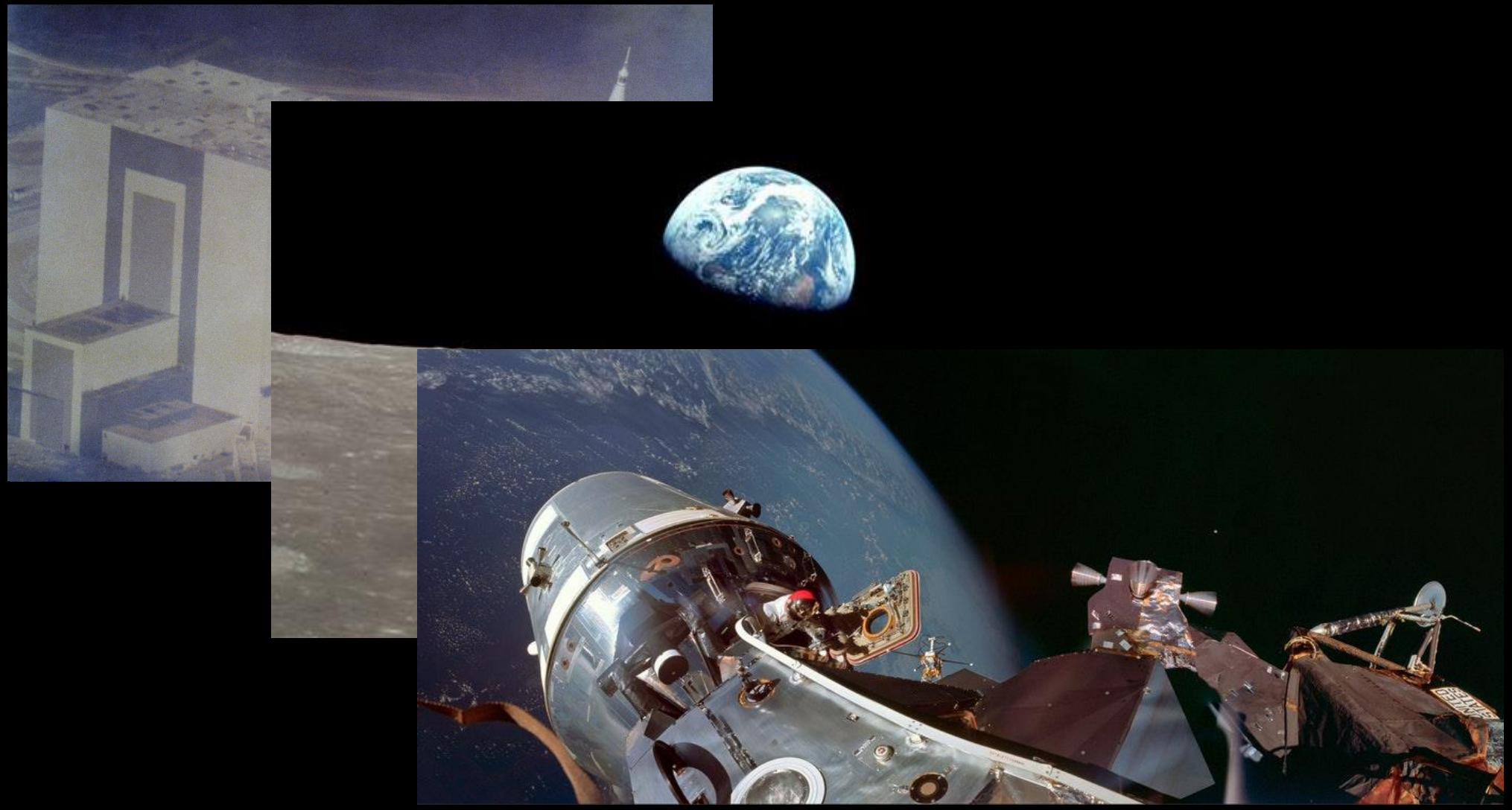
1968 - Hacia la Luna



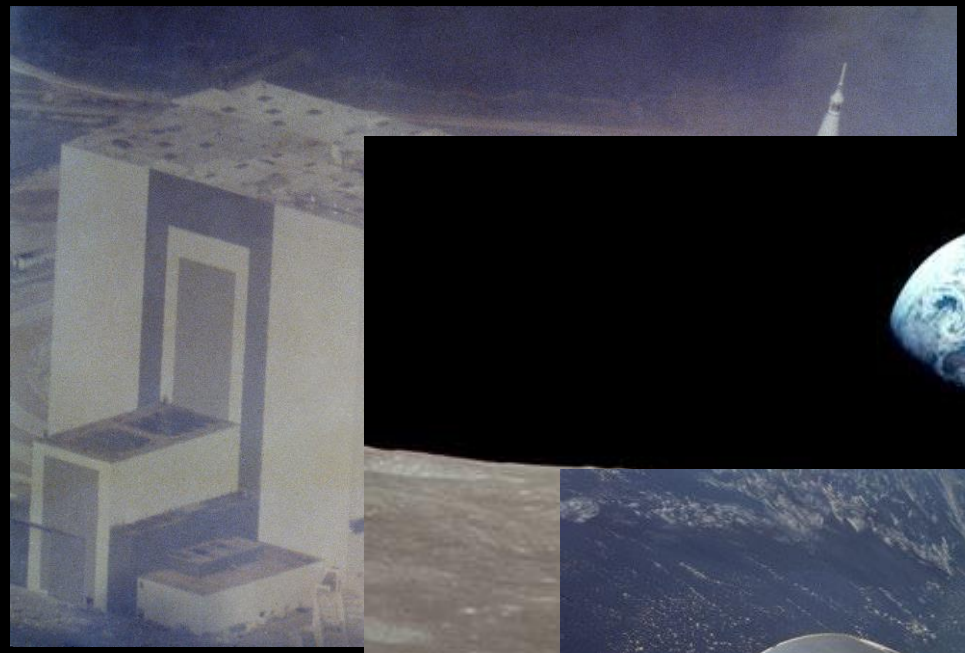
1968 - Hacia la Luna

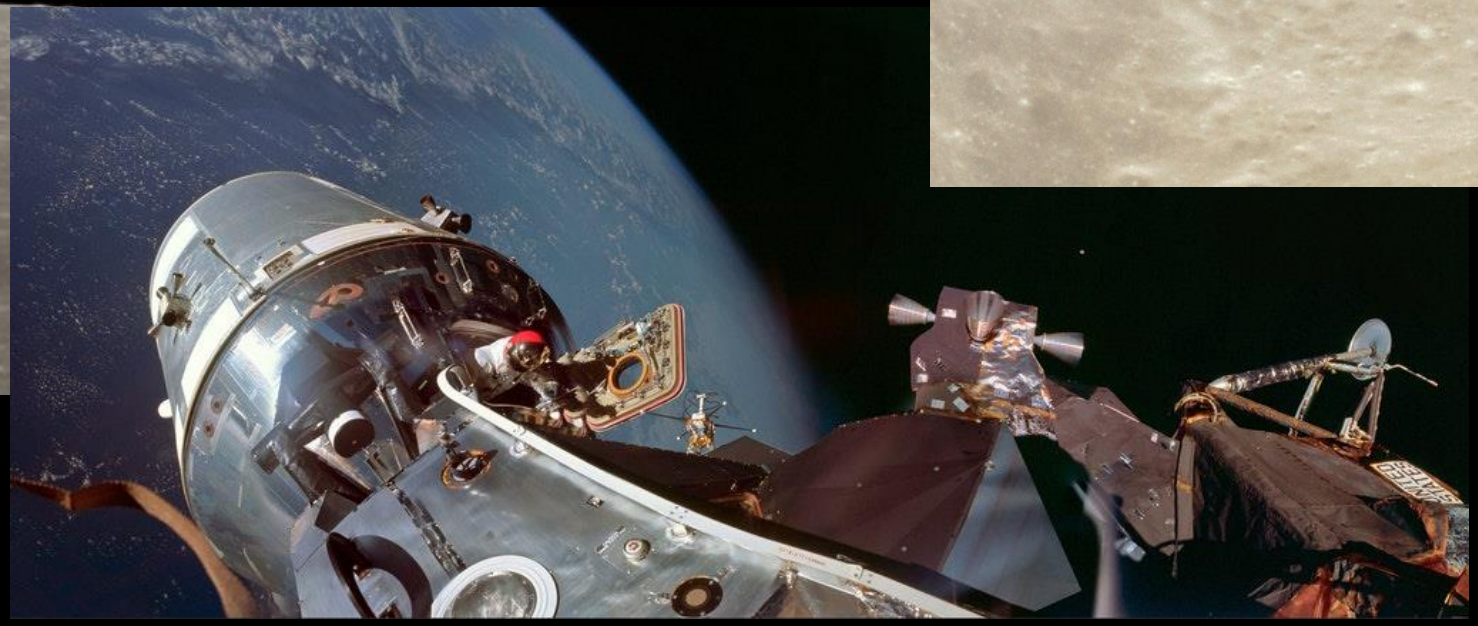


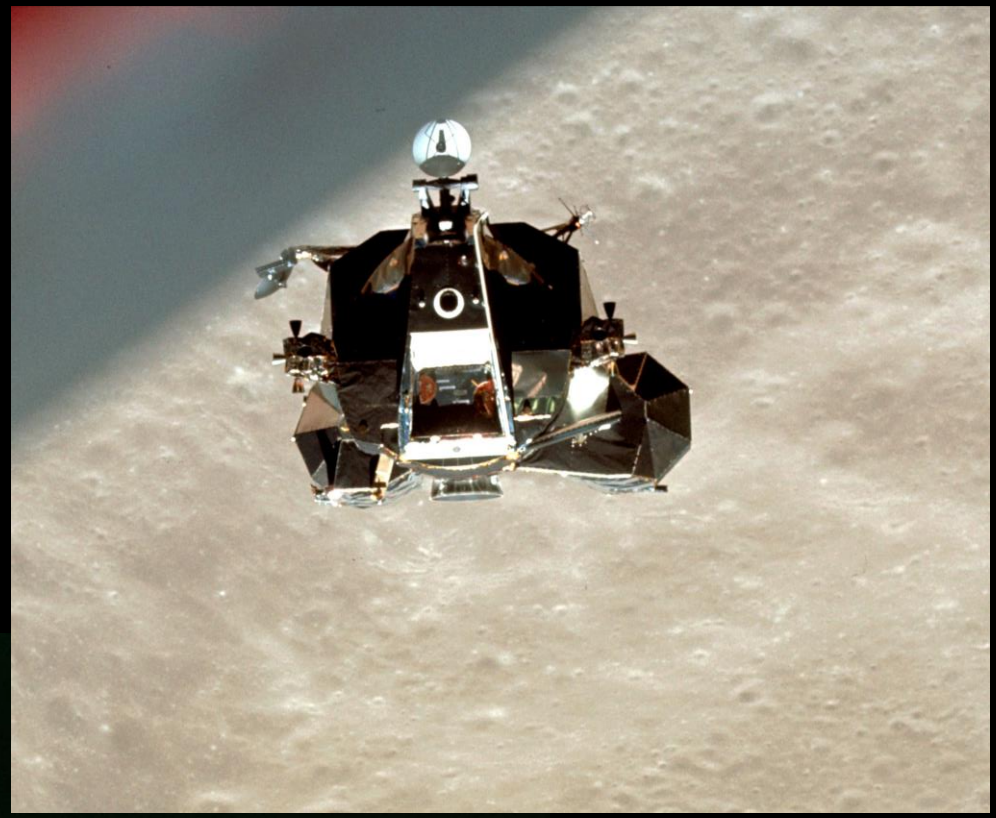
1969 - Hacia la Luna



1969 - Hacia la Luna







En la Luna

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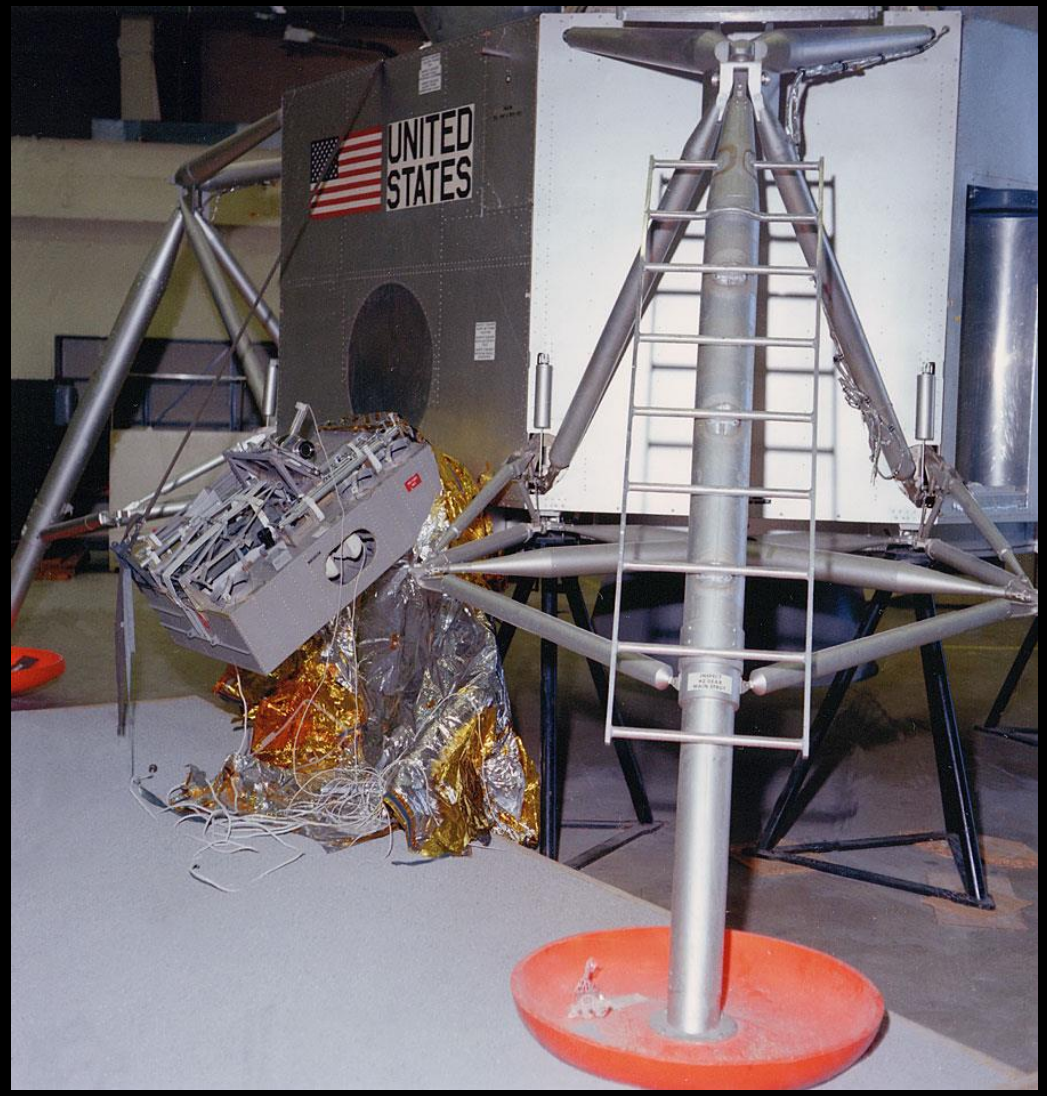

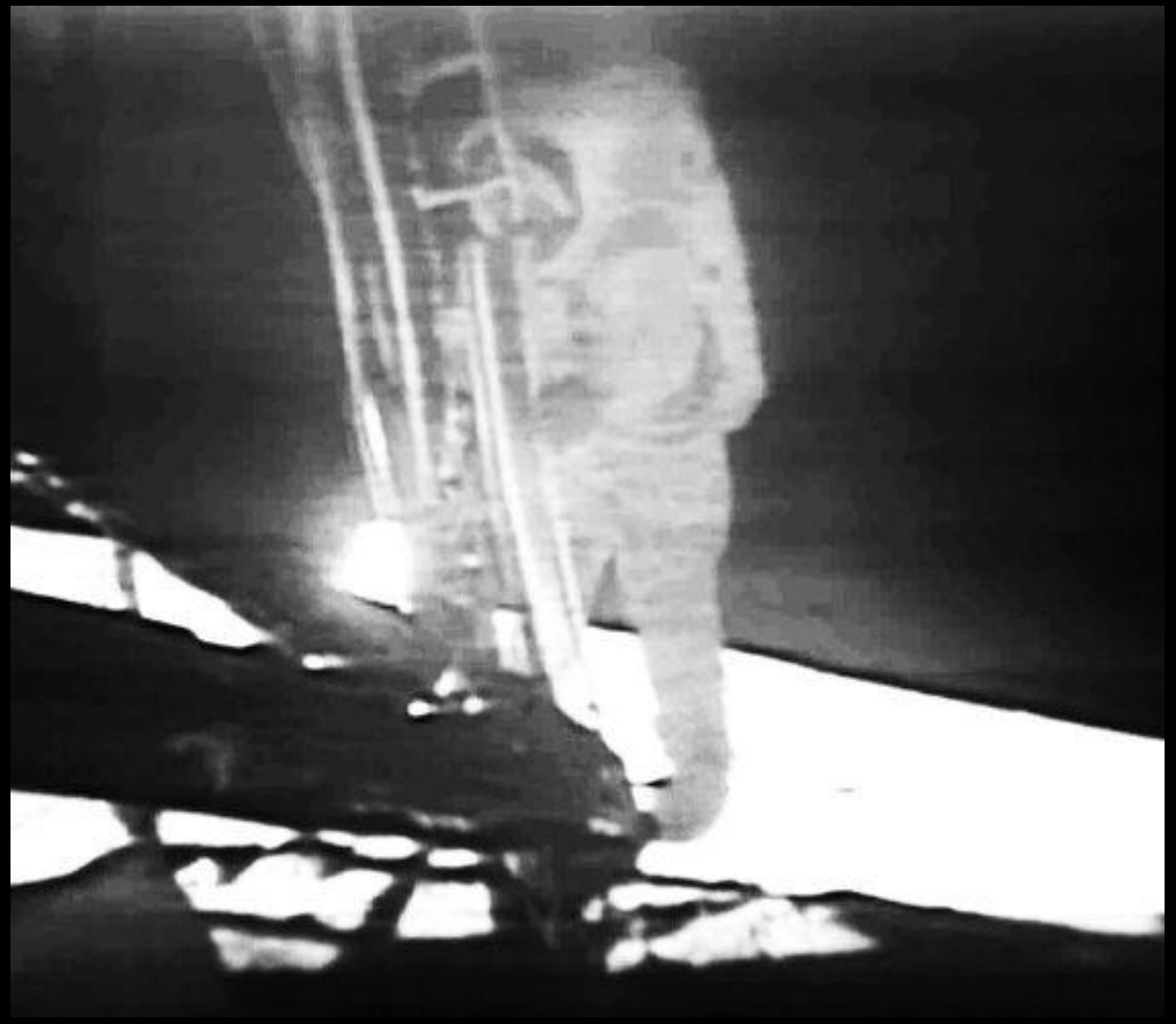

En la Luna

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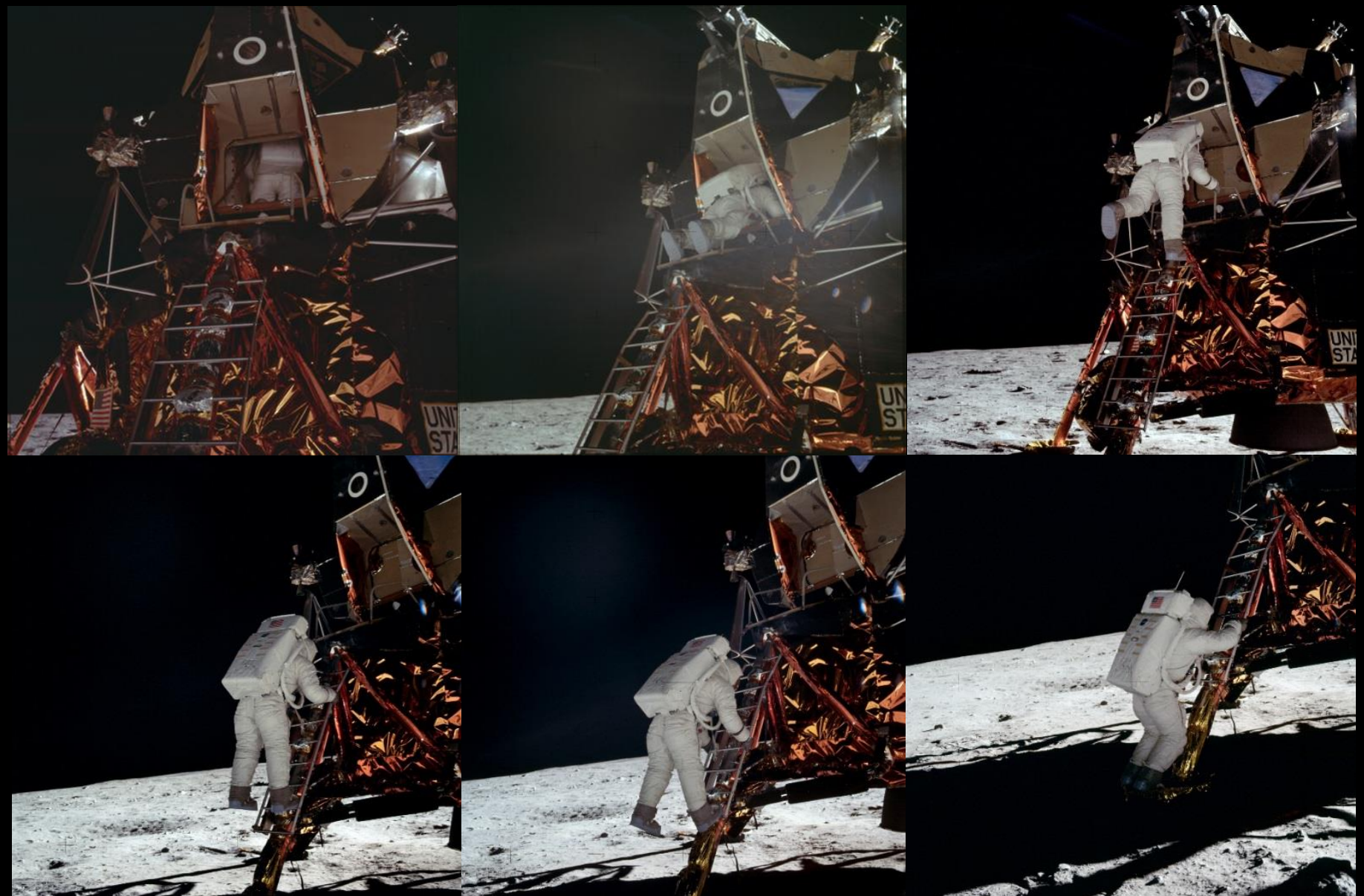

En la Luna

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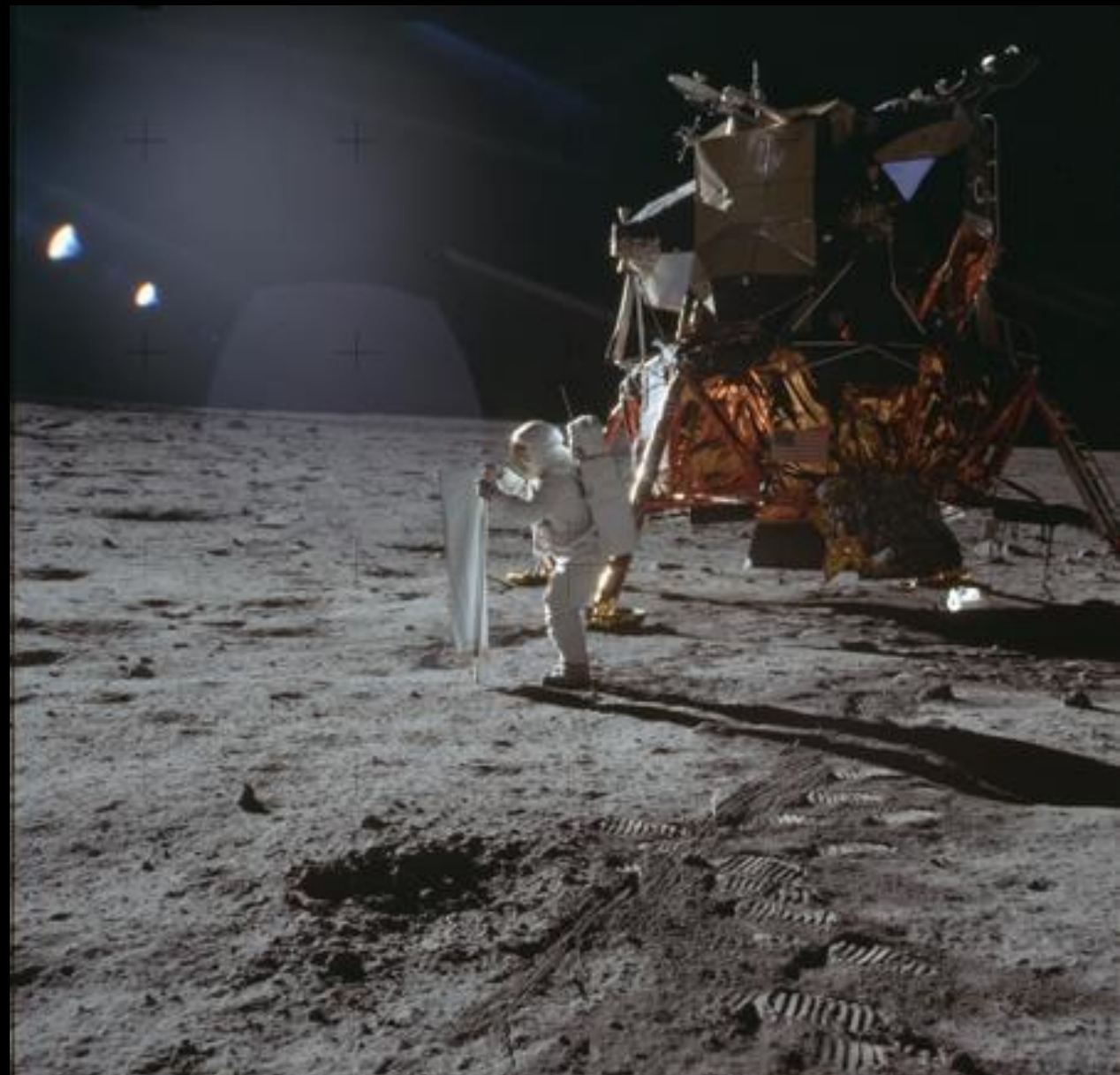

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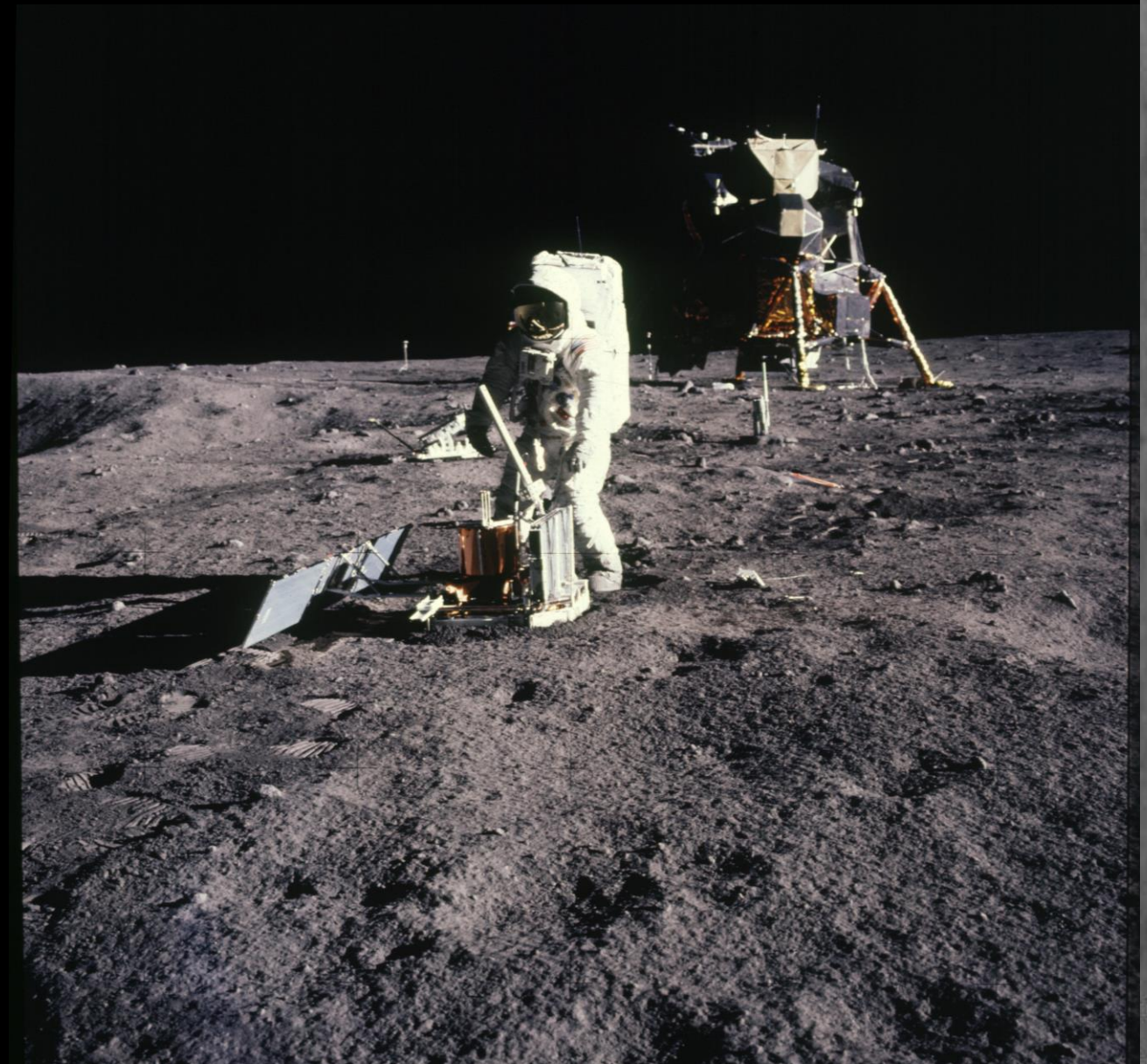

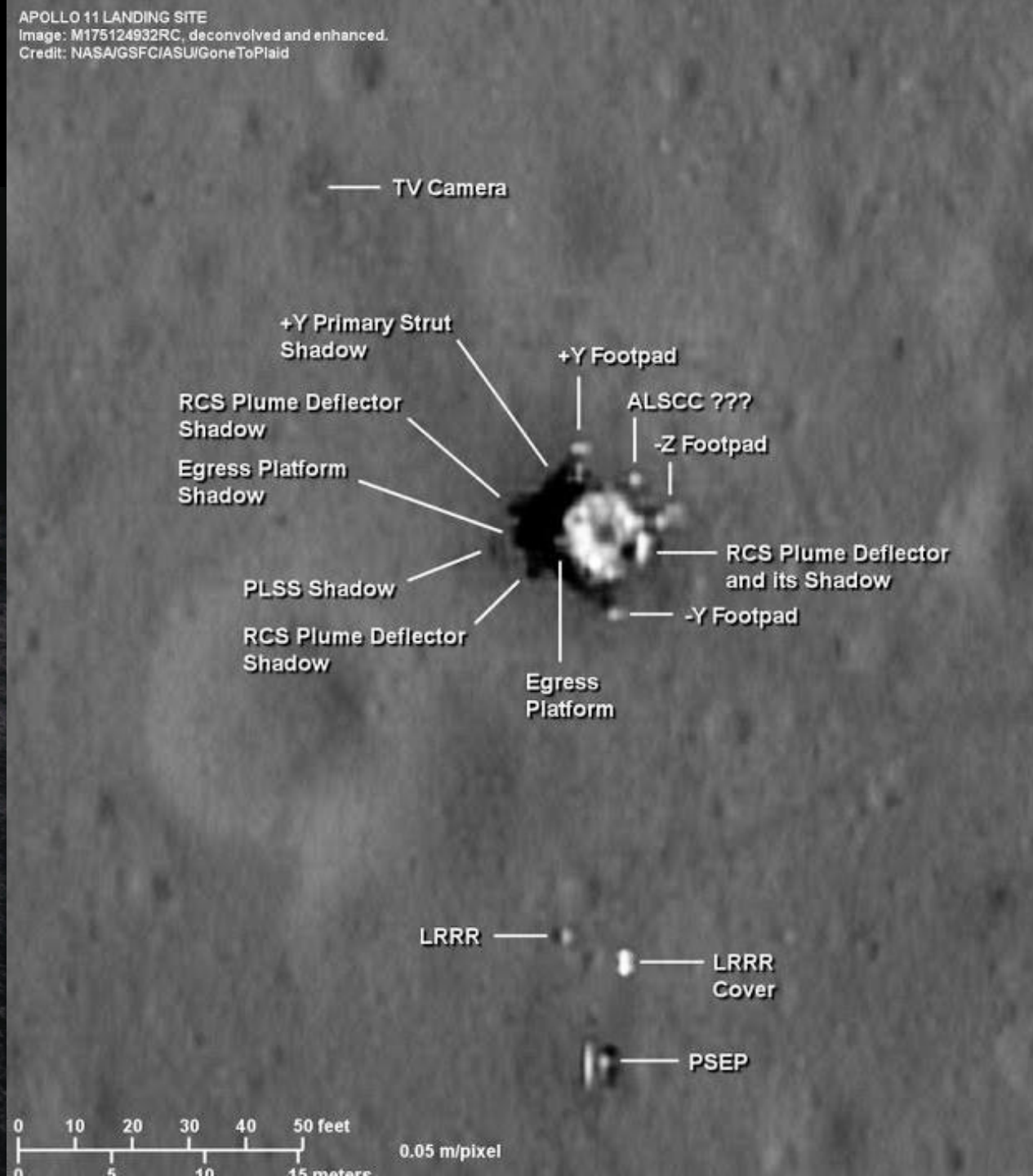
APOLLO 11 LANDING SITE
Image: M175124932RC, deconvolved and enhanced.
Credit: NASA/GSFC/ASU/GoneToPlaid
TV Camera
+Y Primary Strut Shadow
+Y Footpad
RCS Plume Deflector Shadow
ALSCC ???
-Z Footpad
Egress Platform Shadow
RCS Plume Deflector and its Shadow
PLSS Shadow
-Y Footpad
RCS Plume Deflector Shadow
Egress Platform
LRRR
LRRR Cover
PSEP
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0 5 10 15 meters
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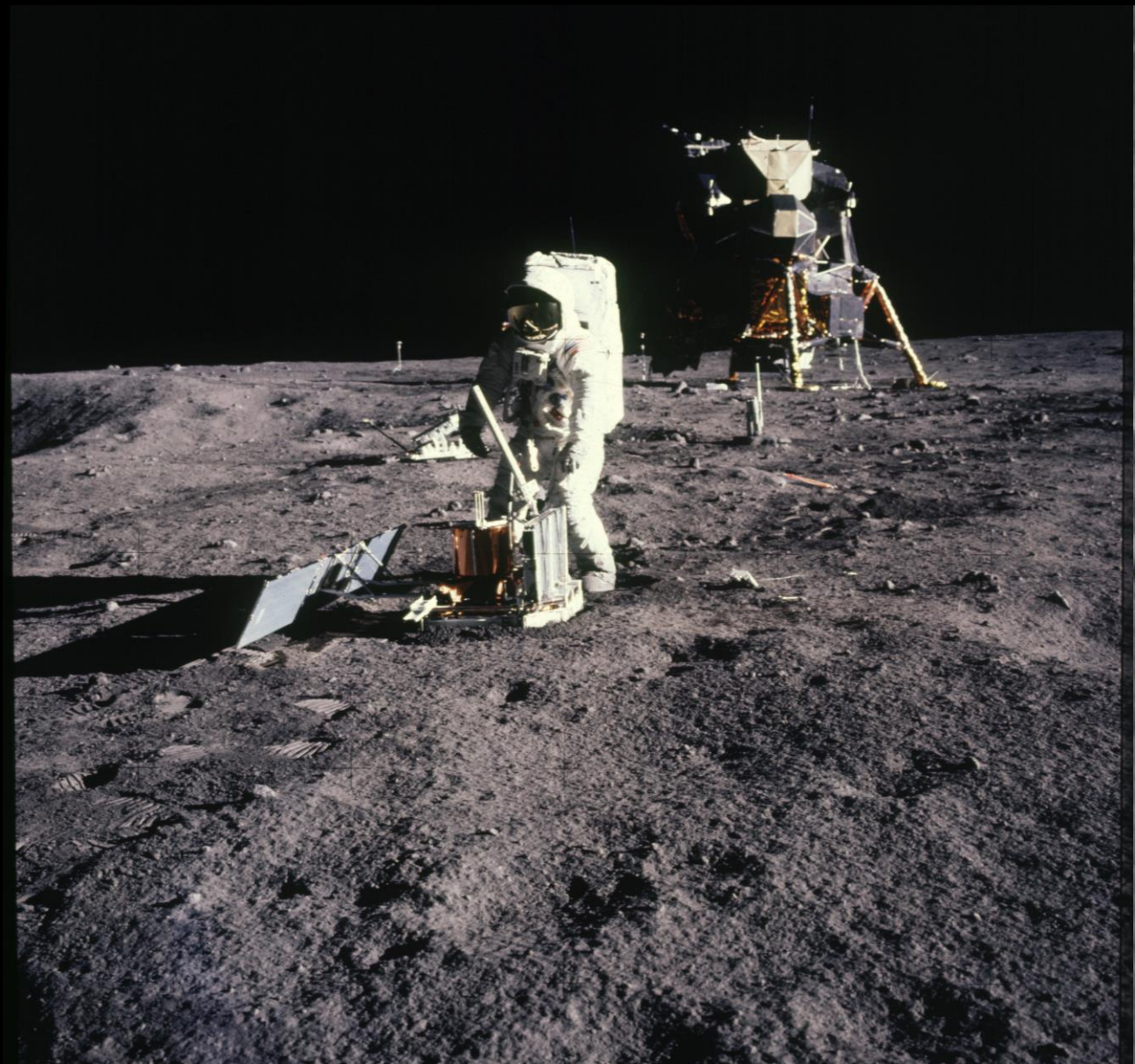
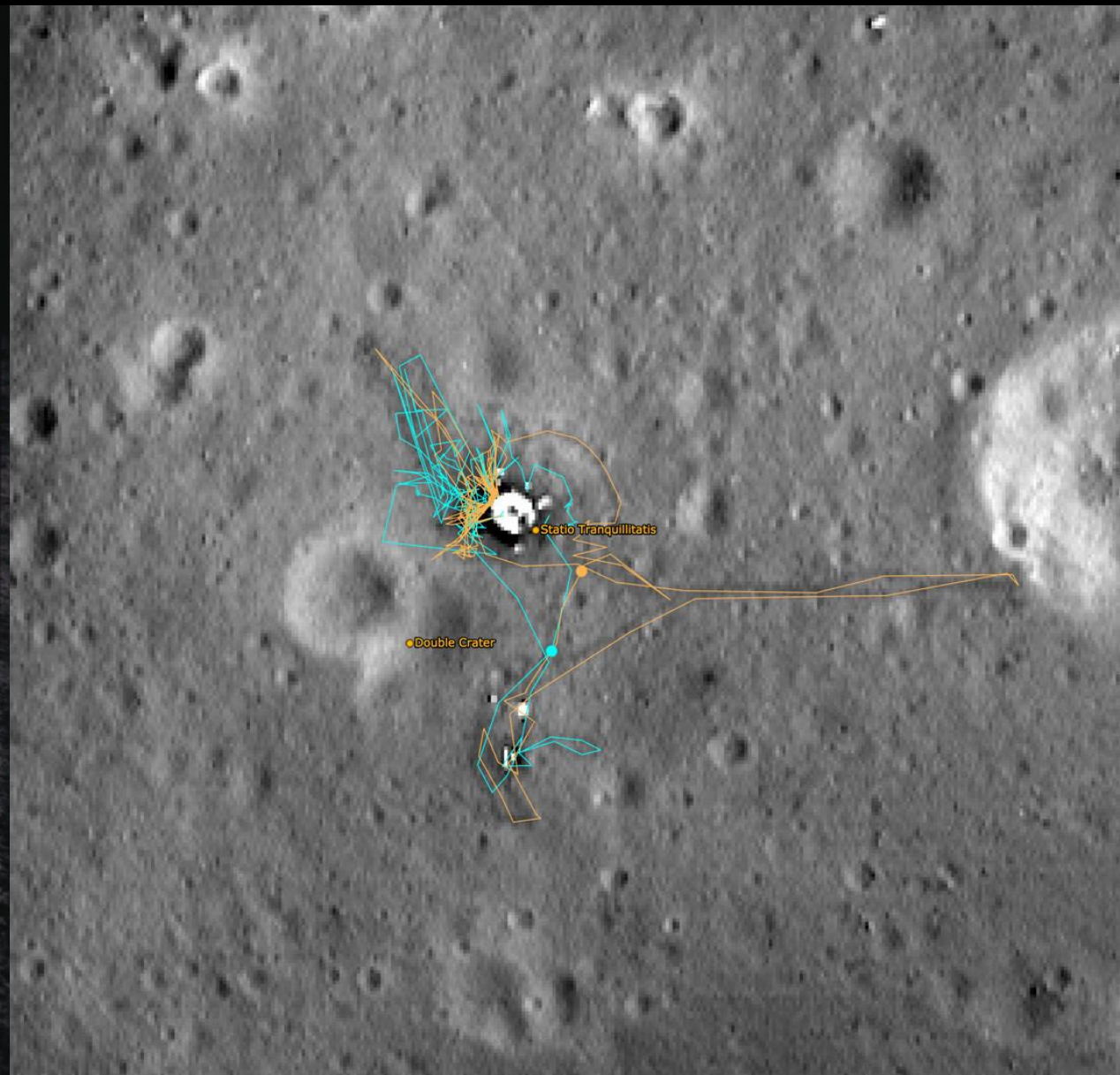
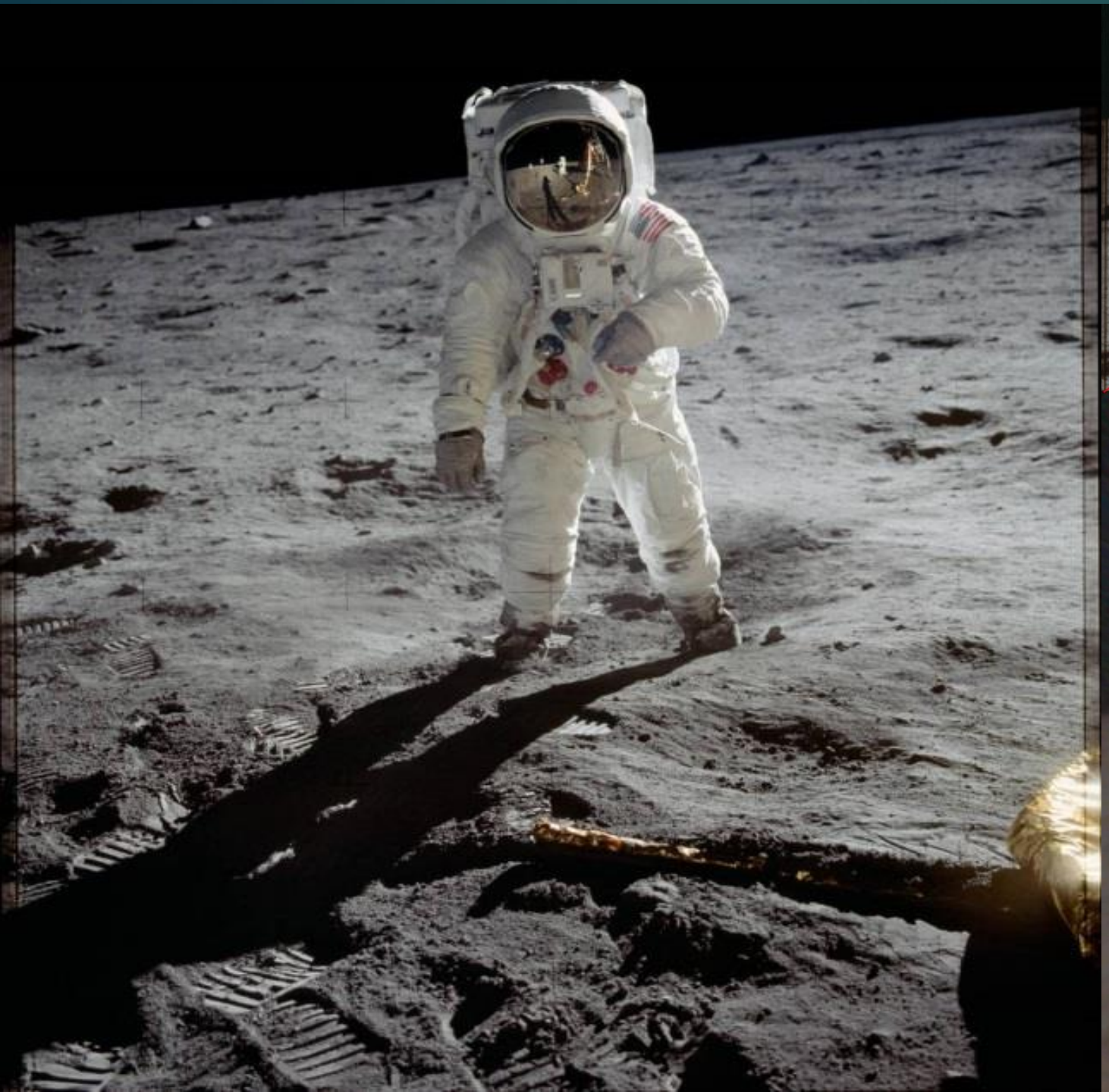
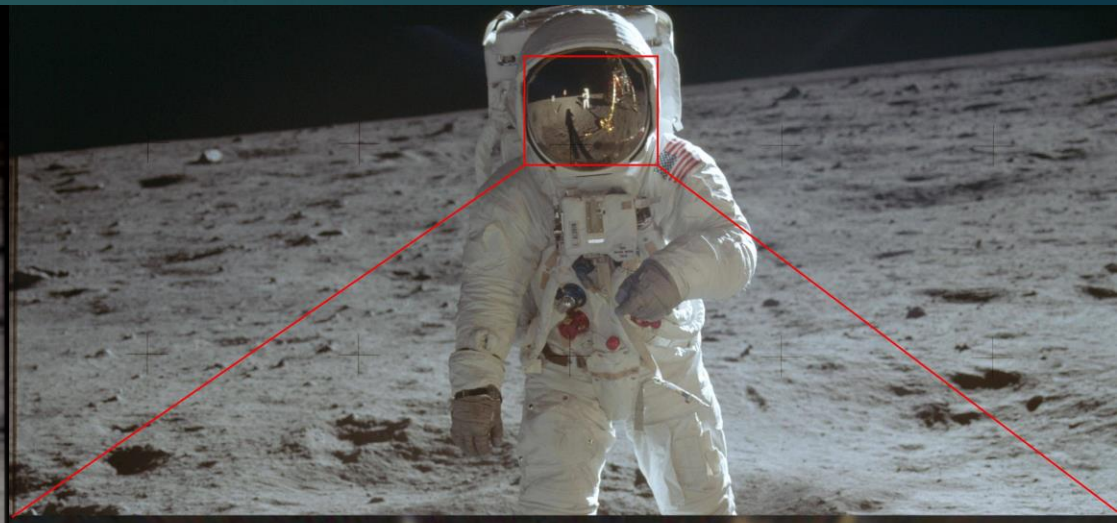
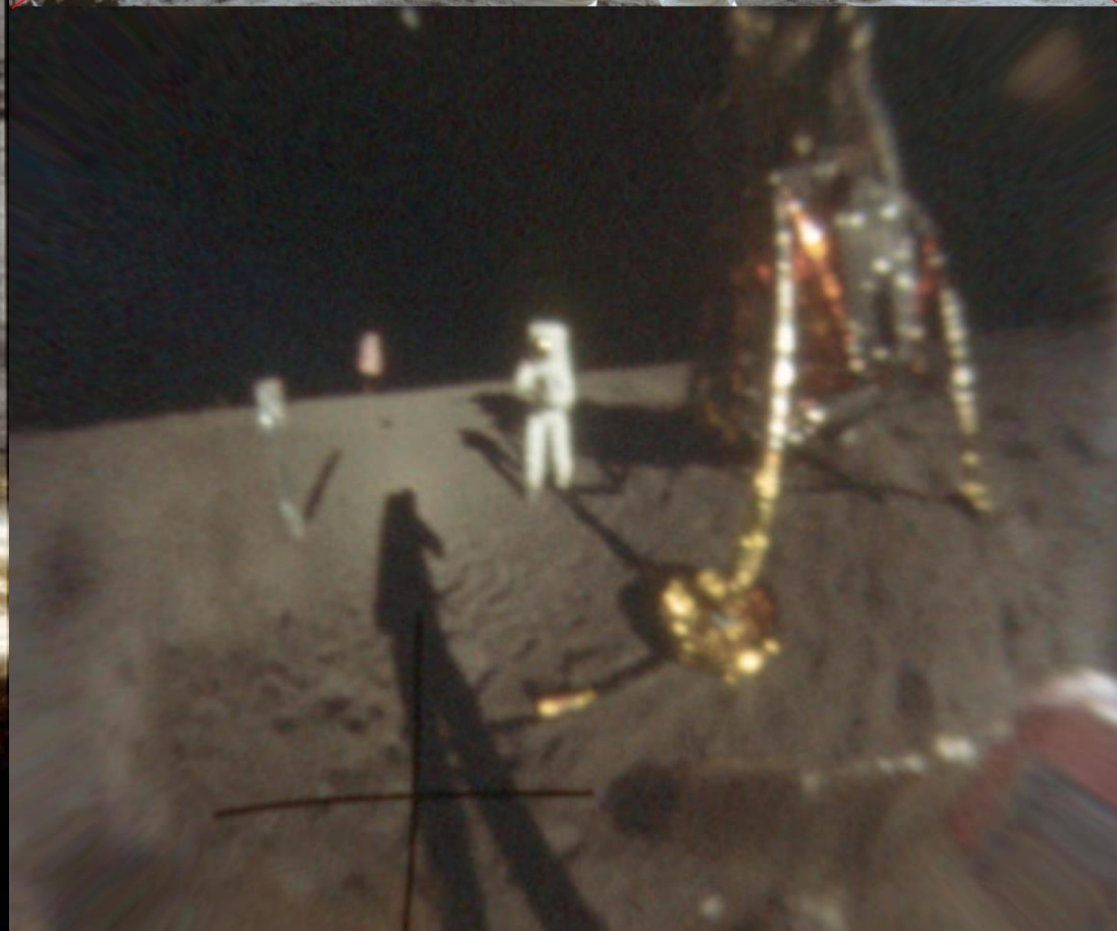
En la Luna





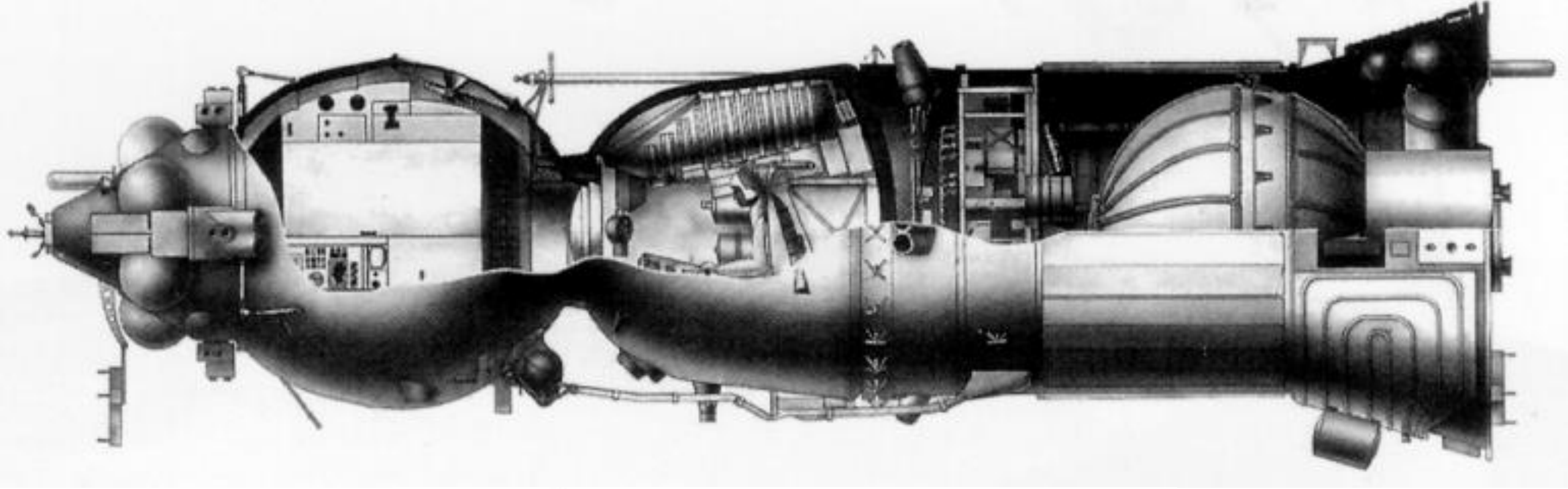


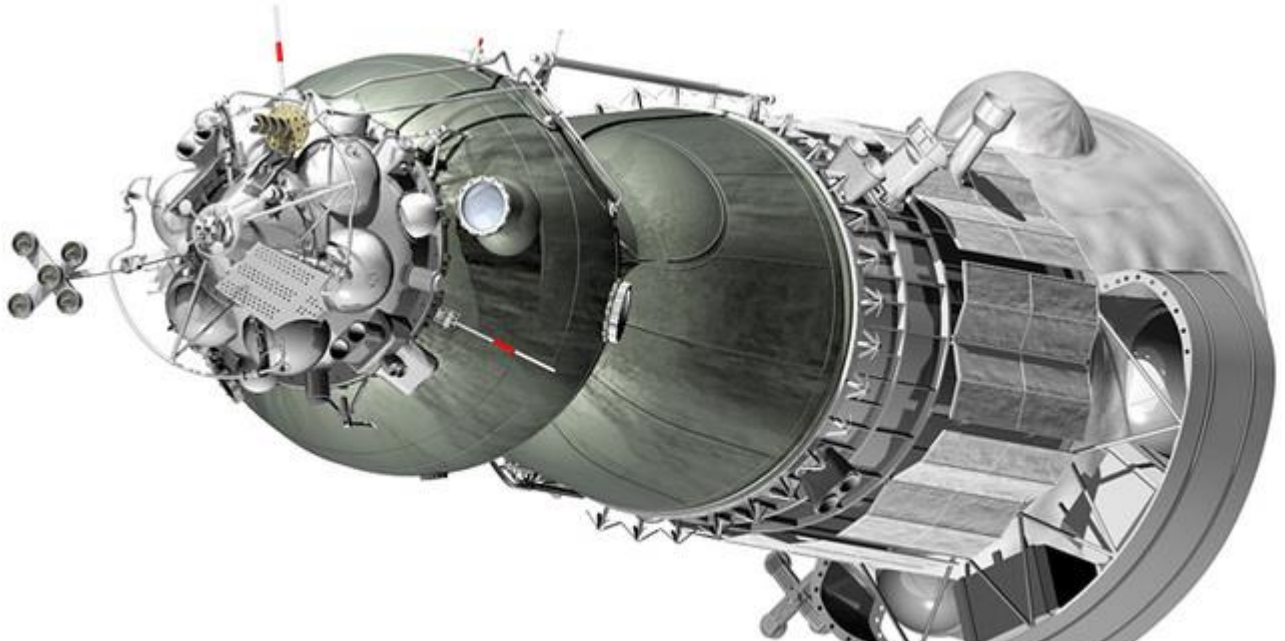


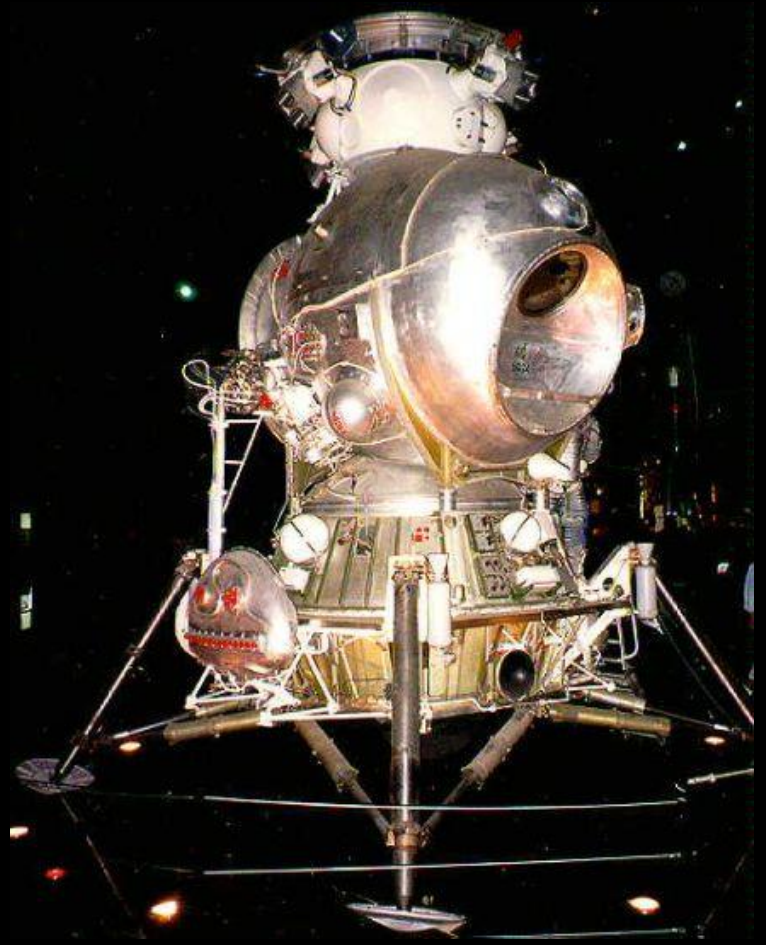


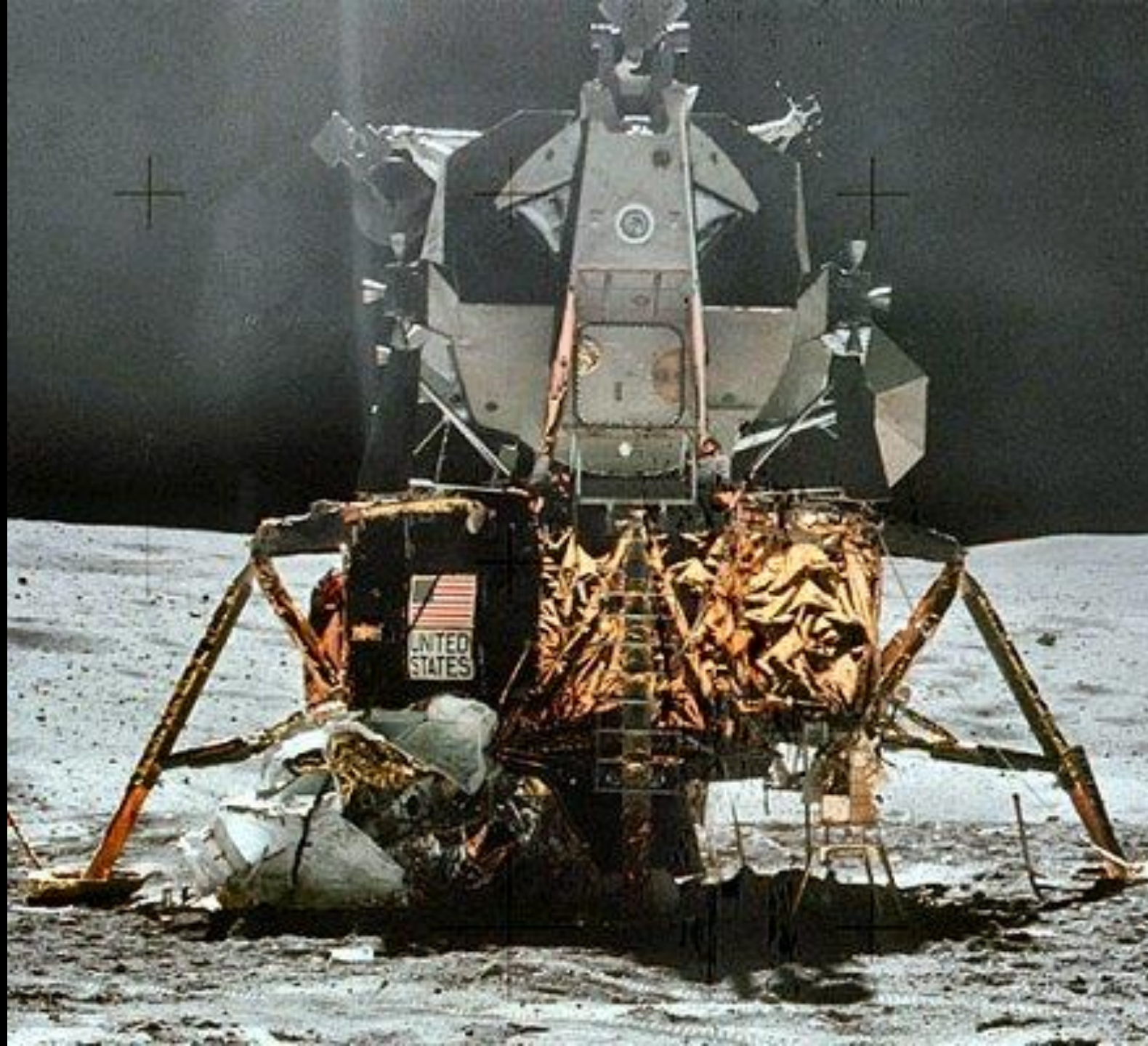
¿Y los rusos…?

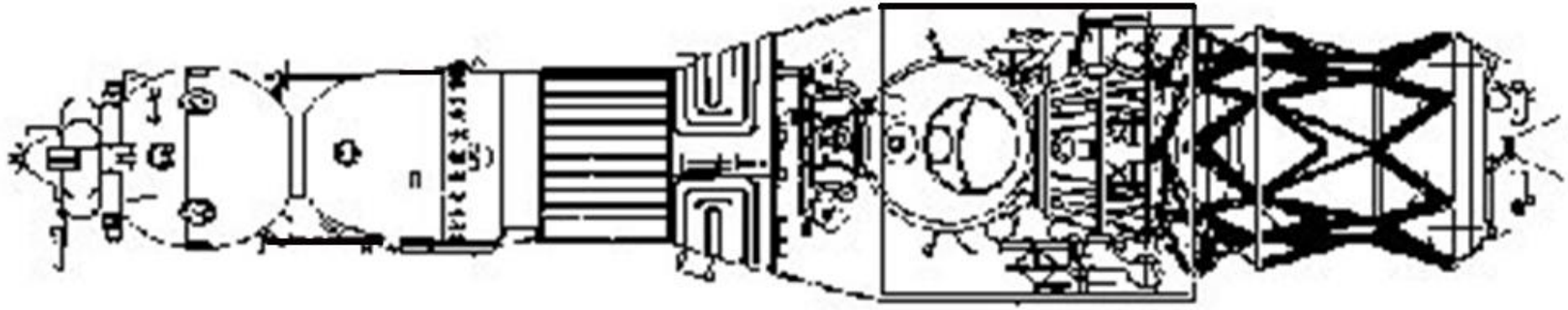

USA

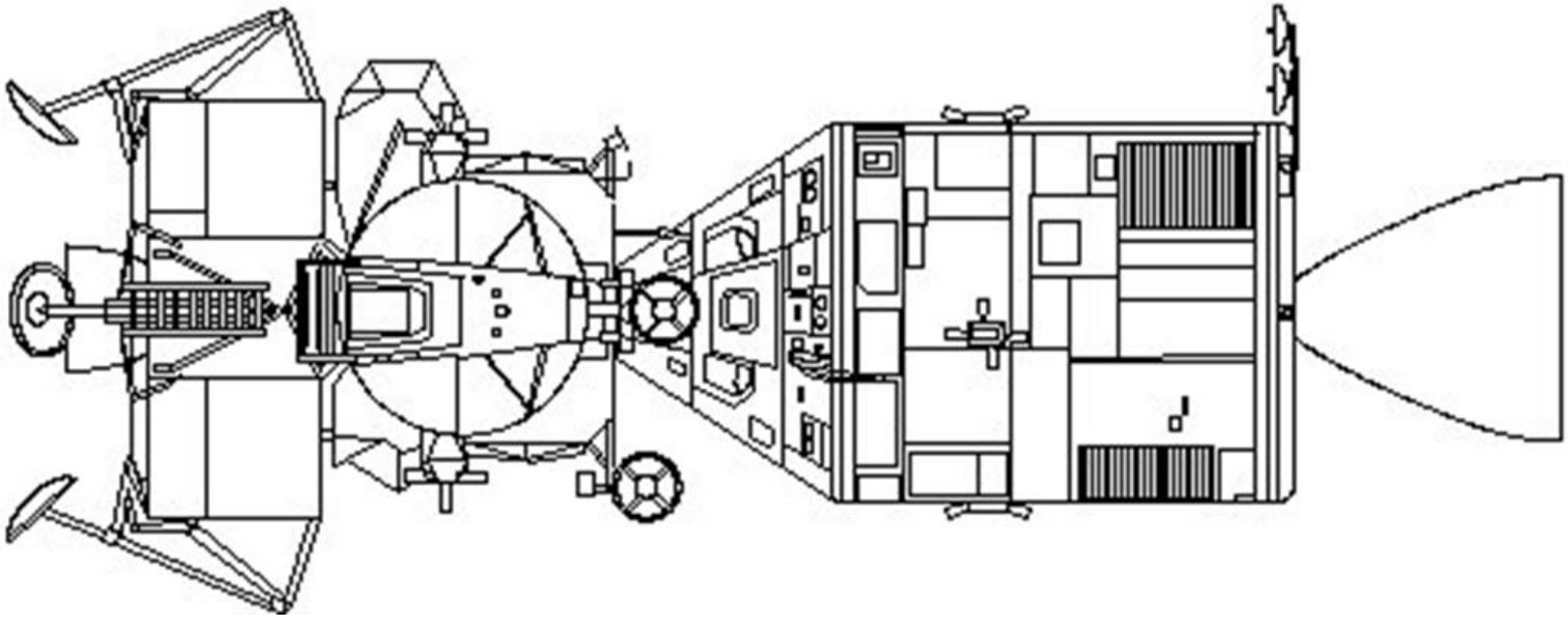




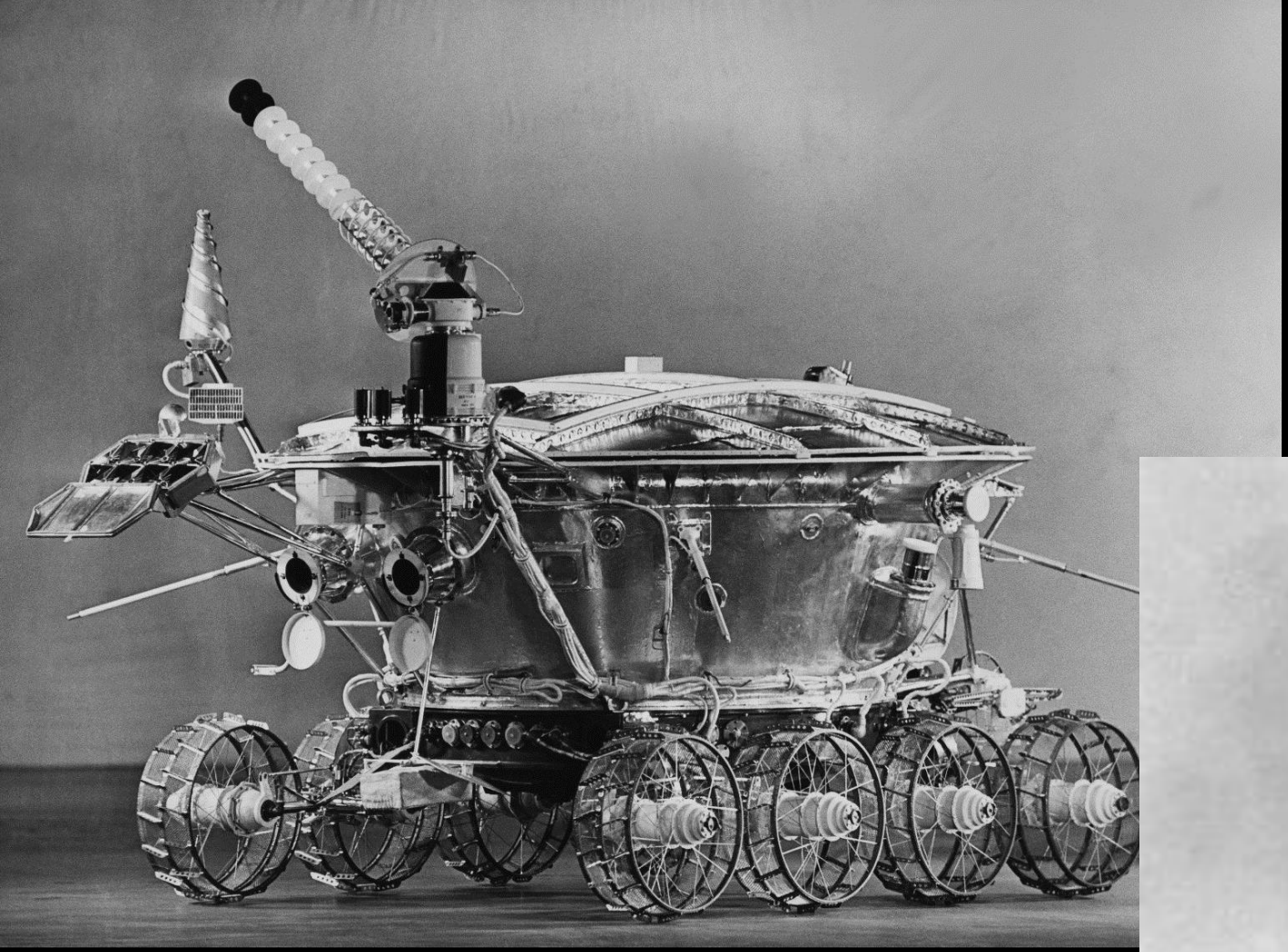


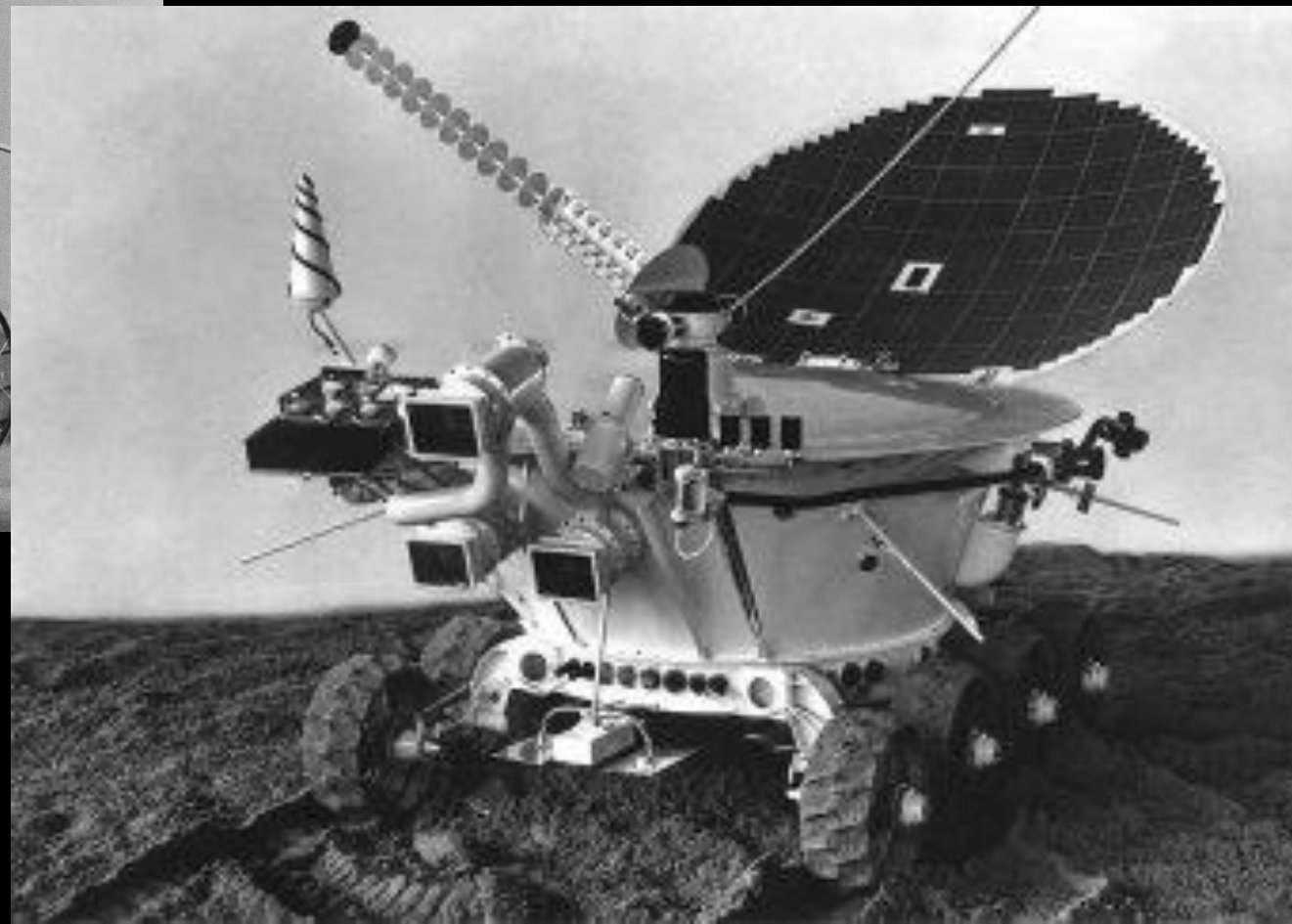

UNITED
STATES






СССР

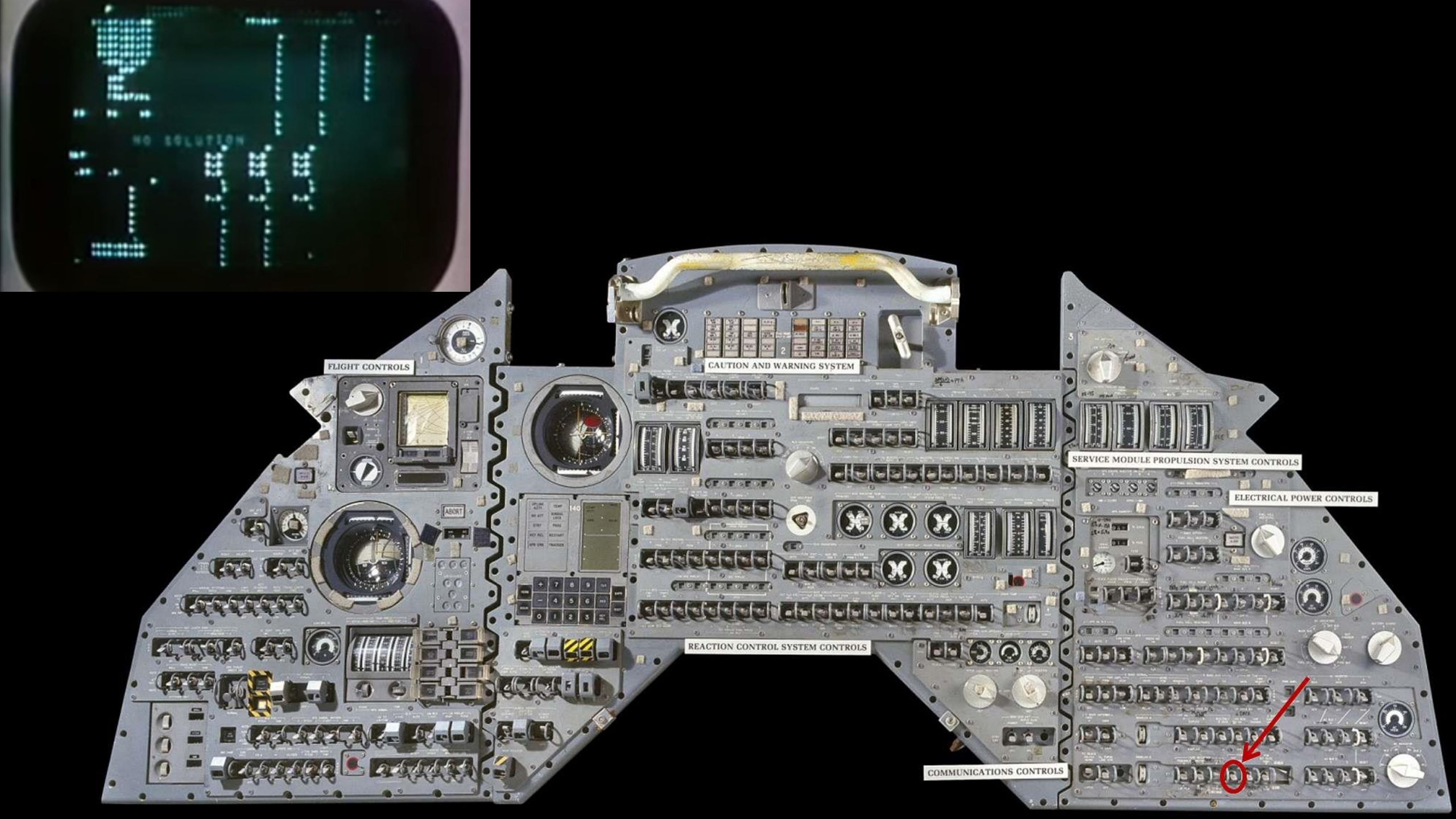




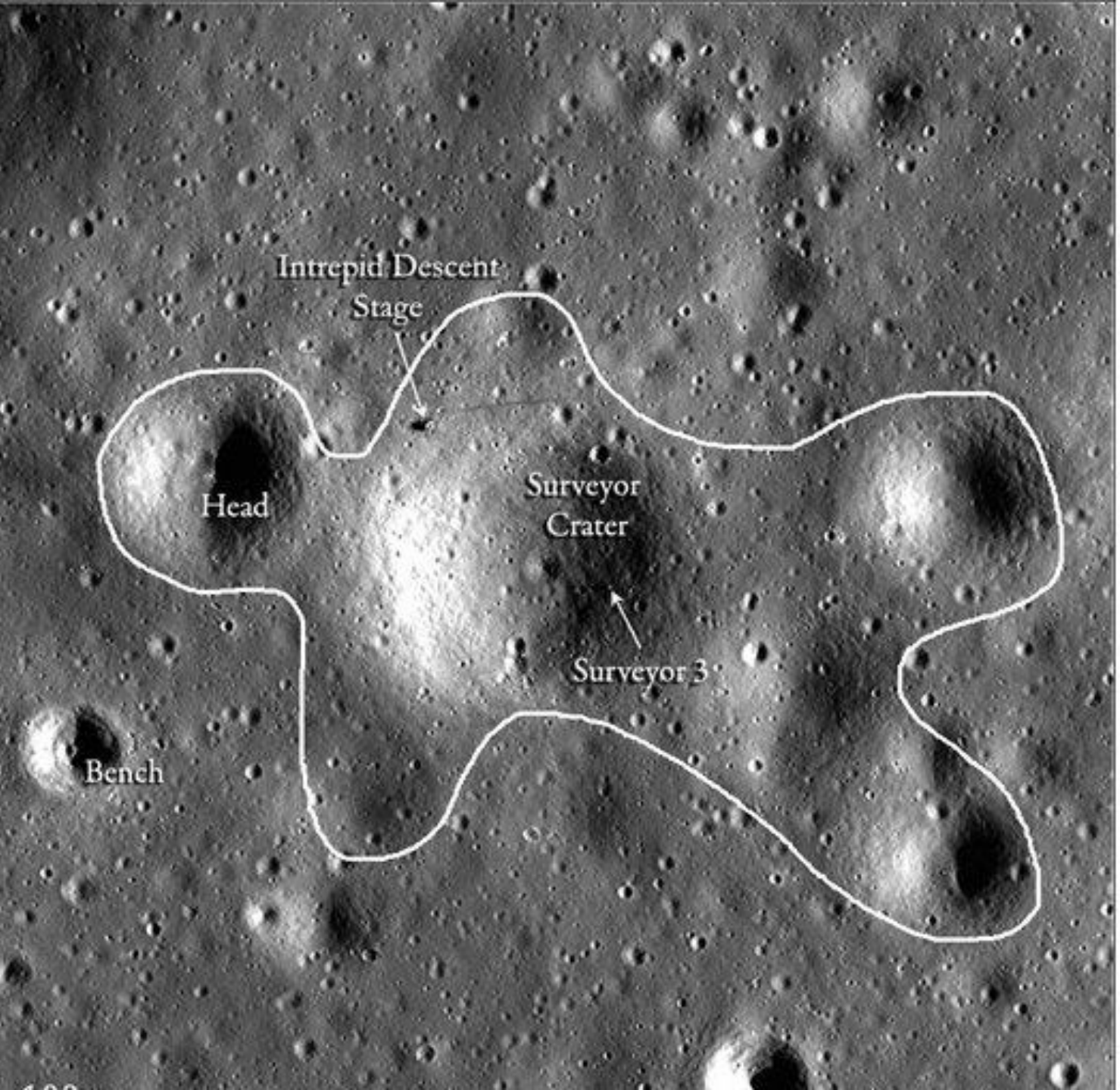
El segundo viaje a la Luna

El segundo viaje a la Luna

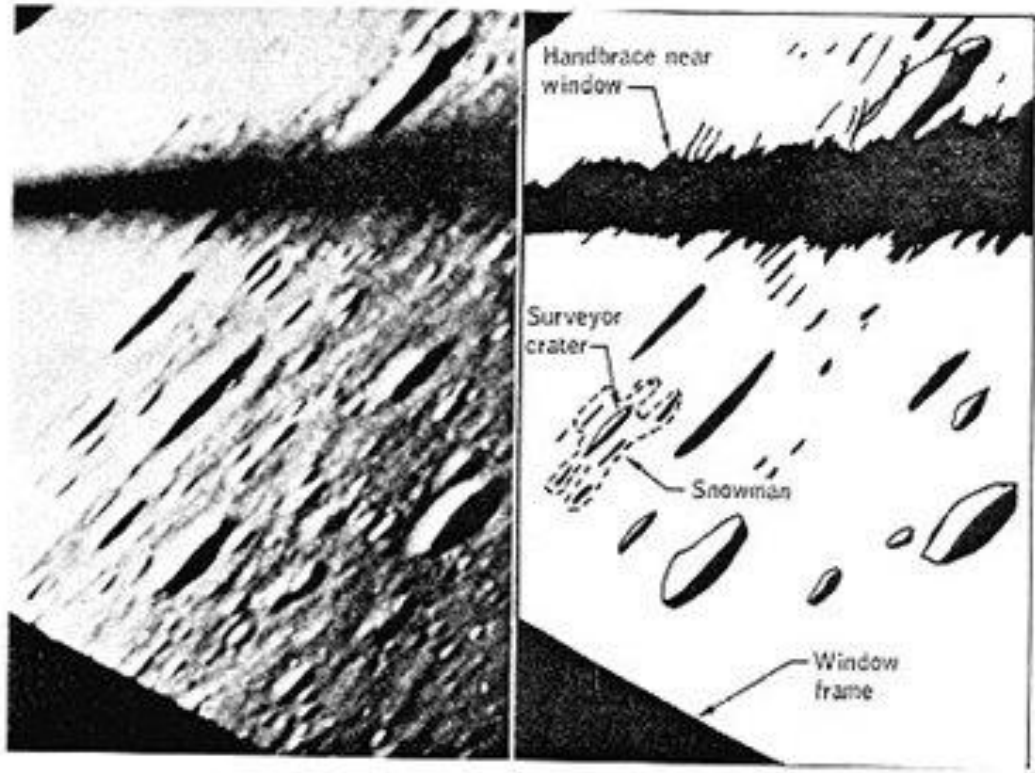
El segundo viaje a la Luna


NO SOLUTION
FLIGHT CONTROLS
CAUTION AND WARNING SYSTEM
SERVICE MODULE PROPULSION SYSTEM CONTROLS
ELECTRICAL POWER CONTROLS
REACTION CONTROL SYSTEM CONTROLS
COMMUNICATIONS CONTROLS
ABORT

NASA-S-70-562

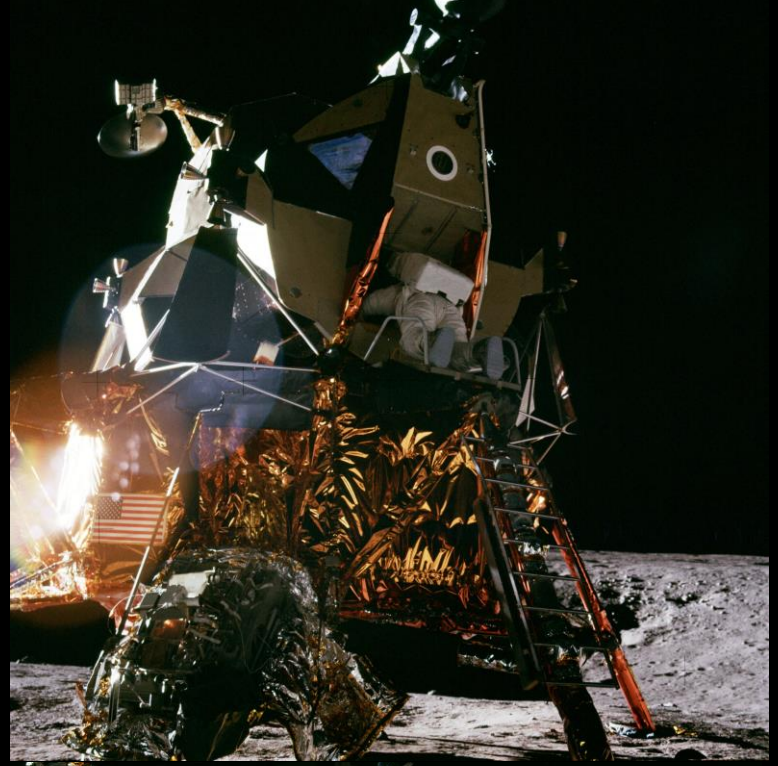
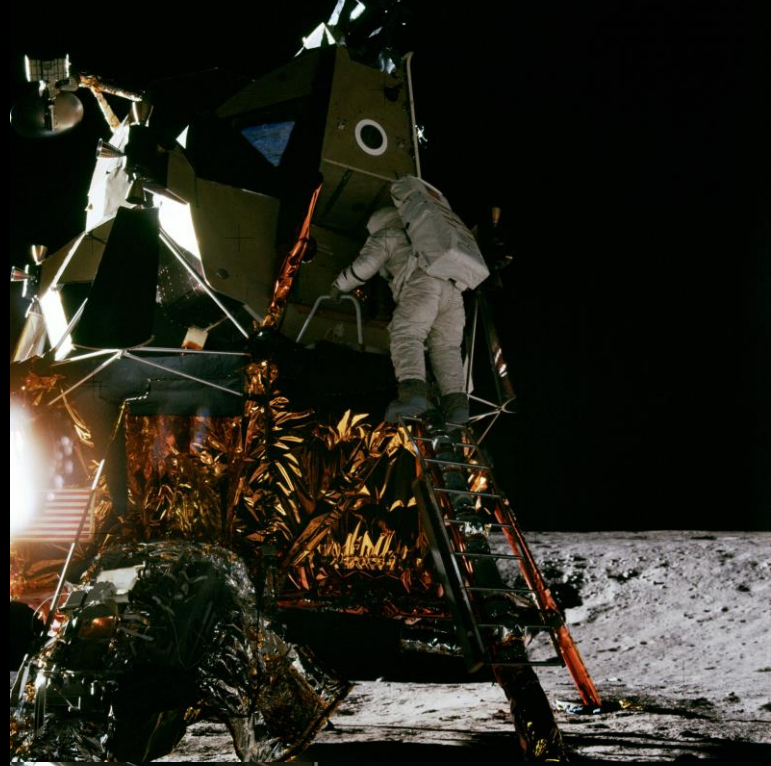
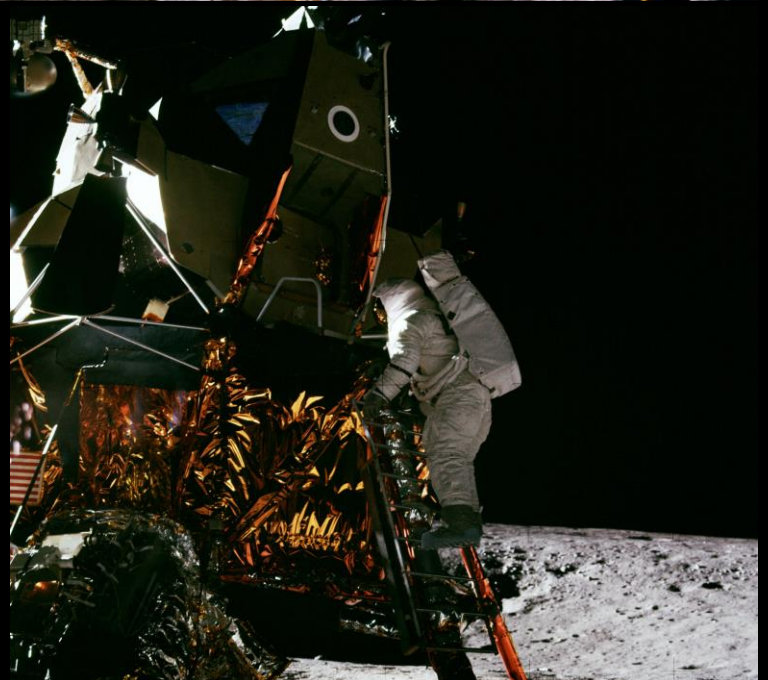
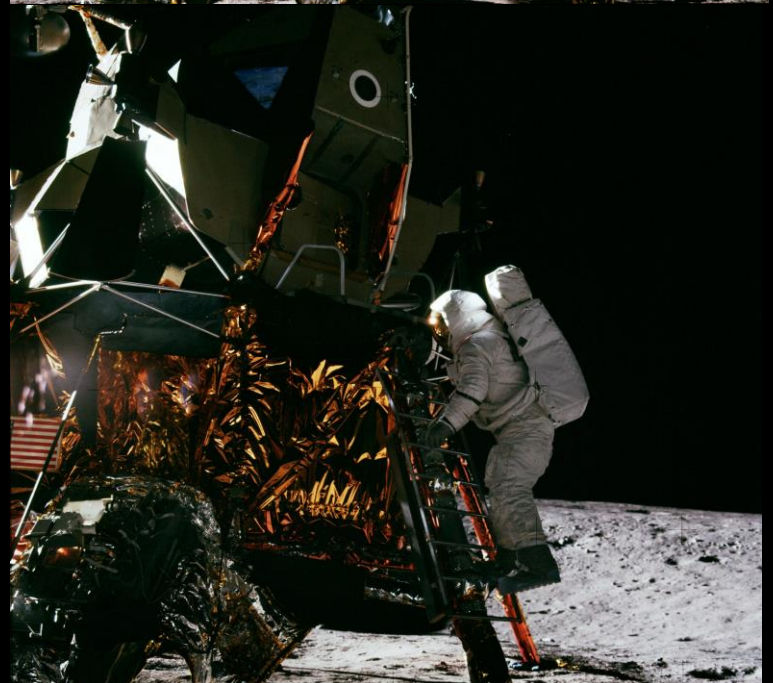


(a) Training photograph.

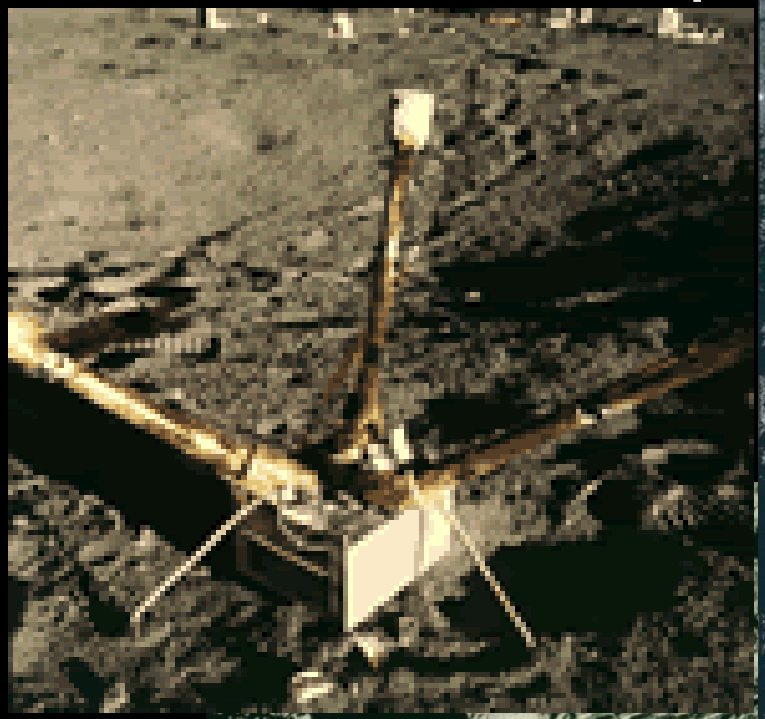


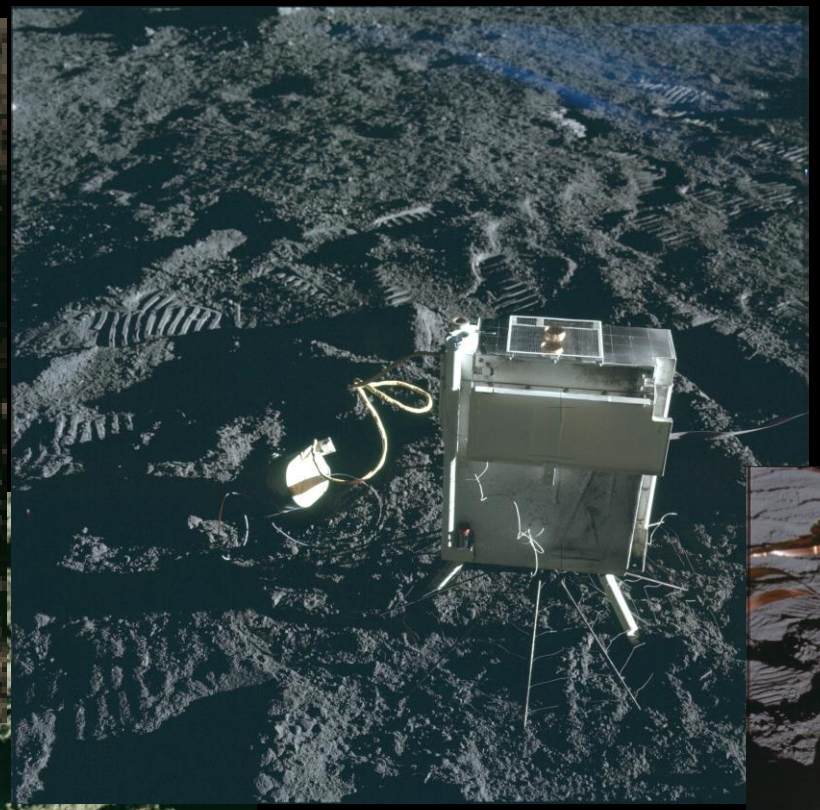
(b) Actual photograph.

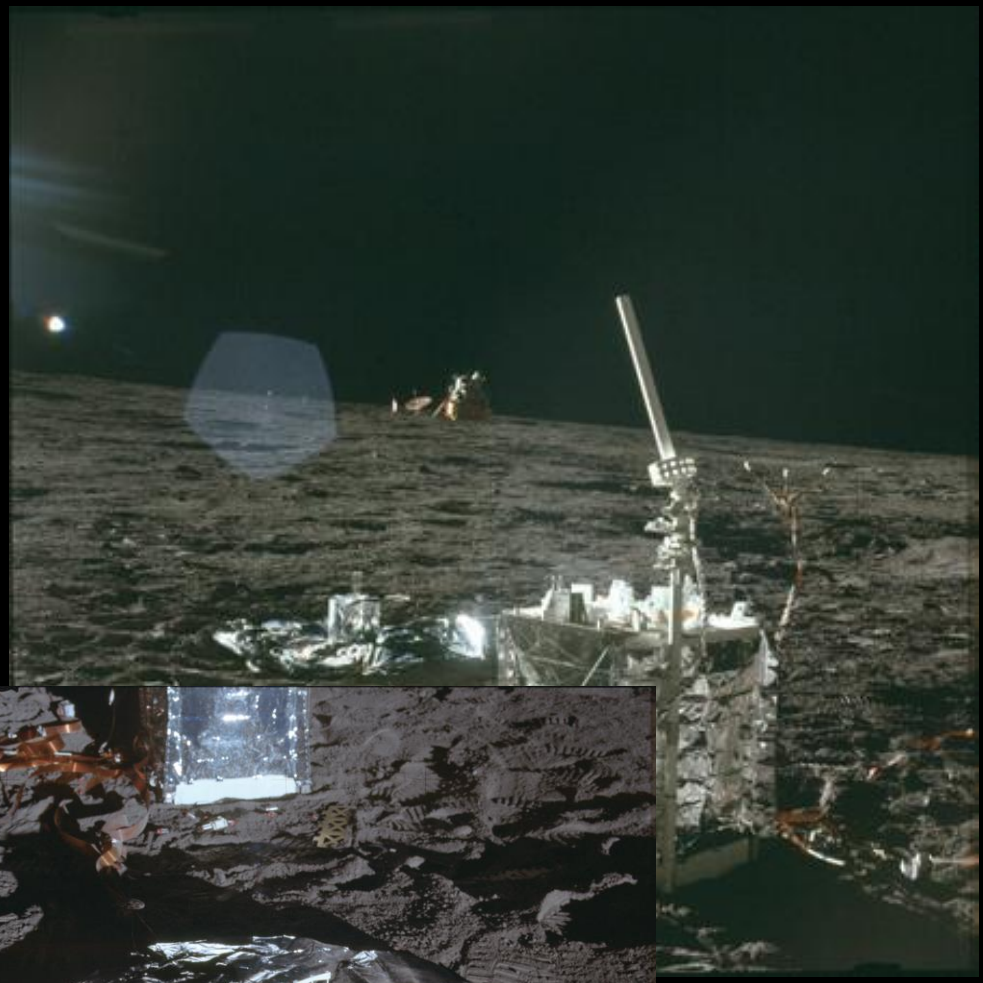
(c) Artist's drawing.

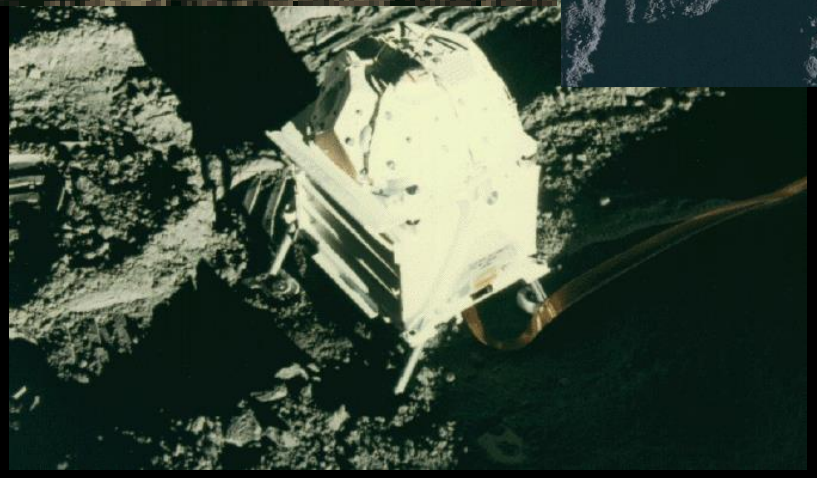






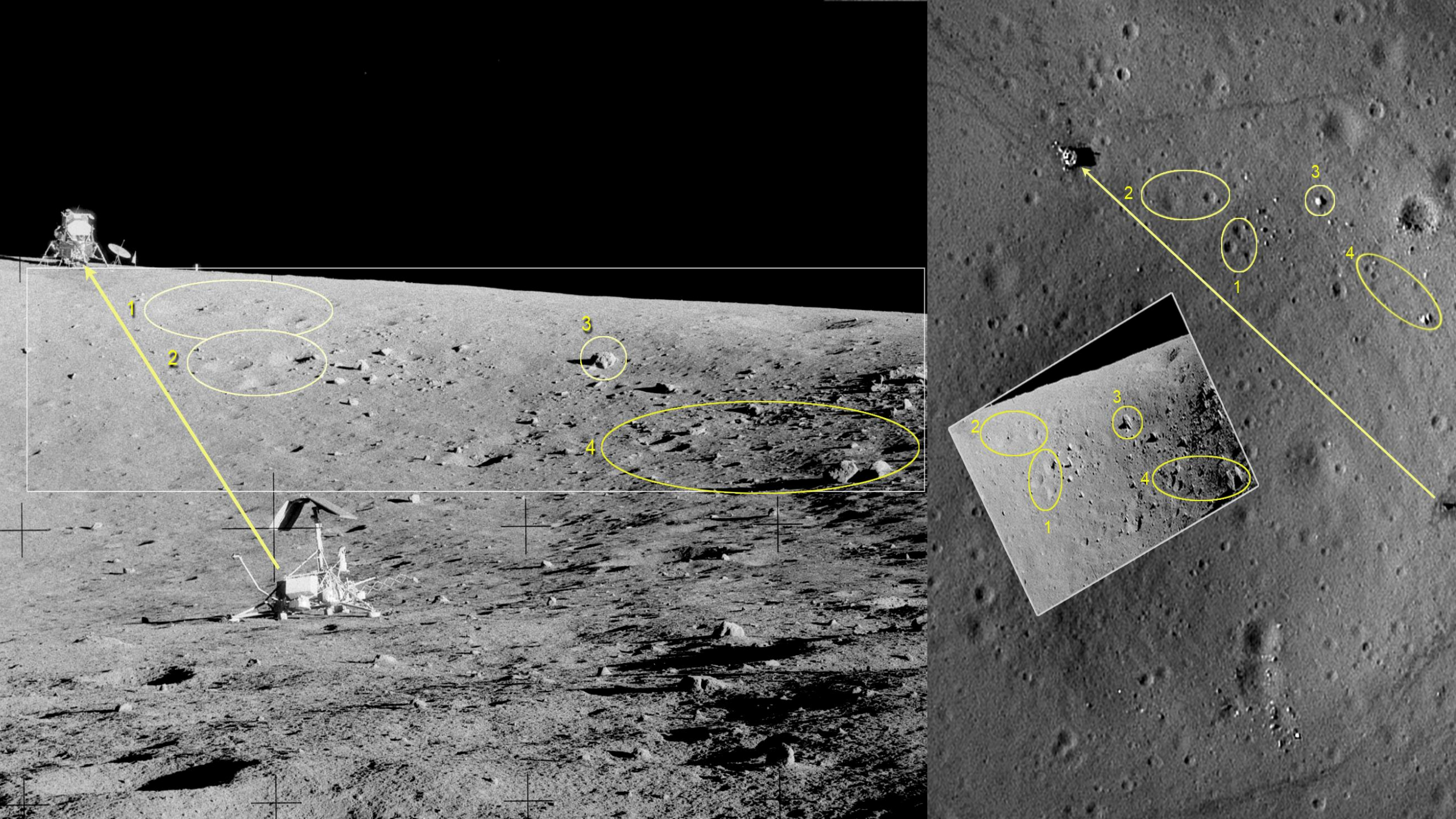

ALSEP - Experimentos

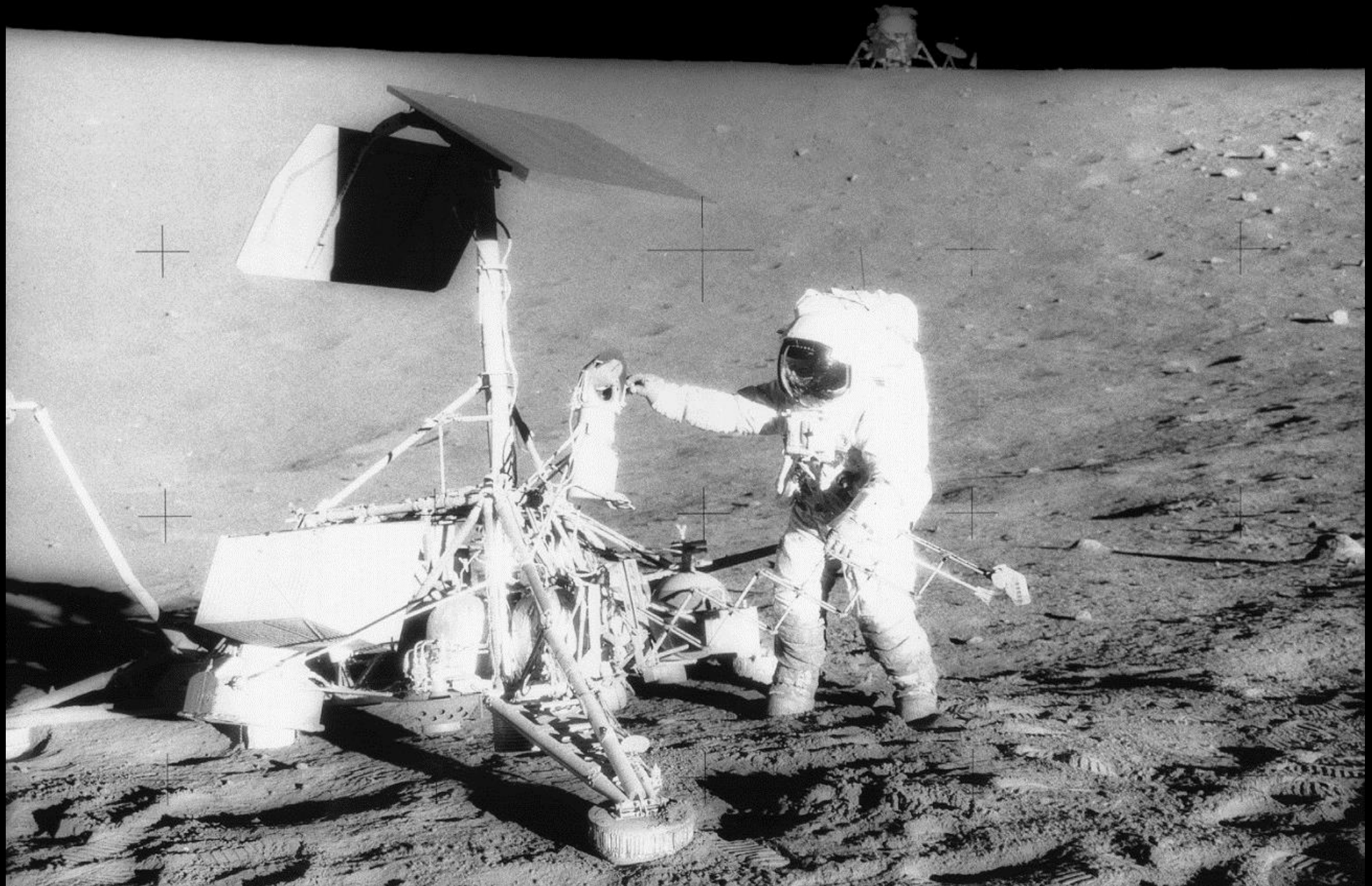


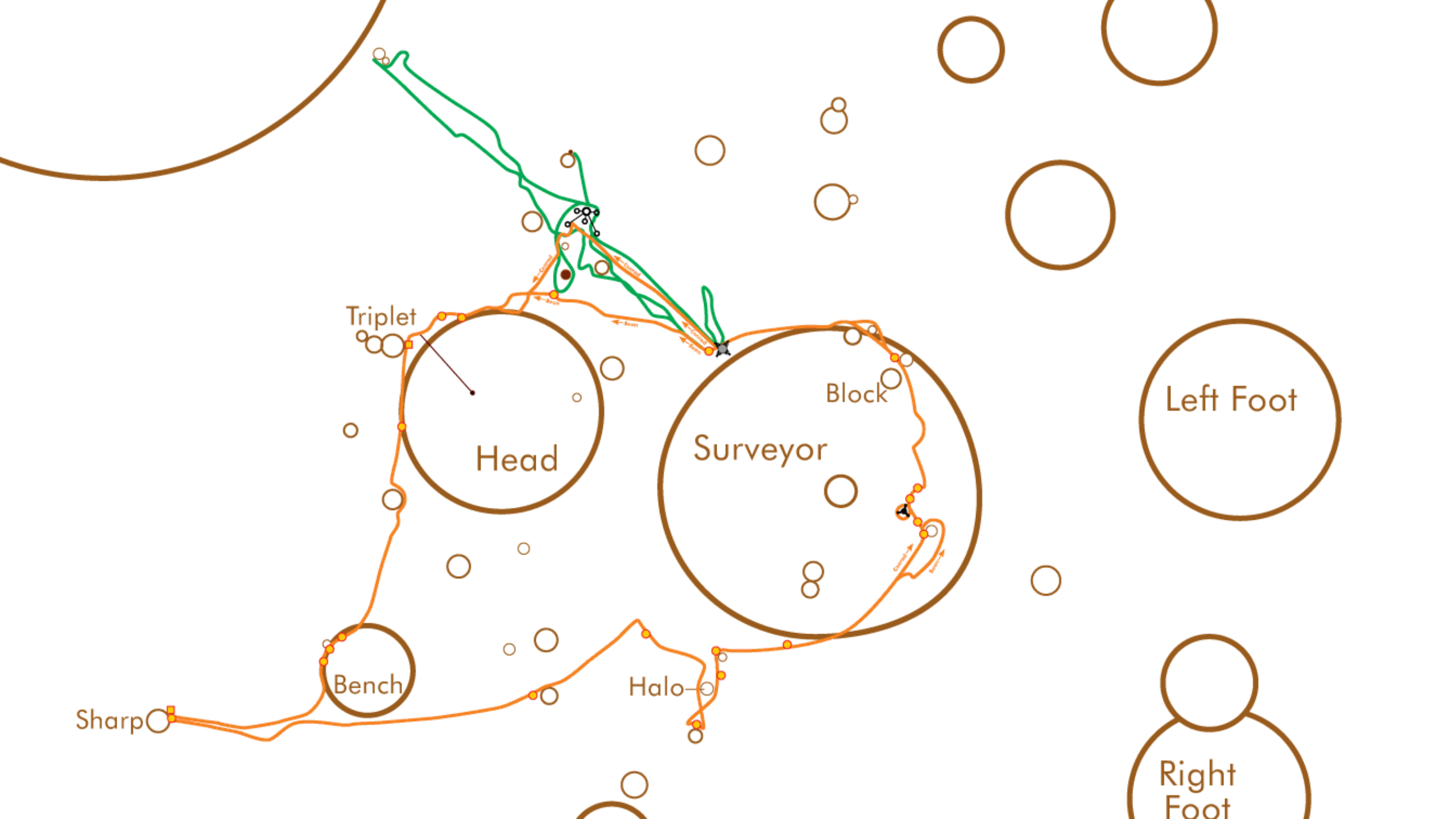


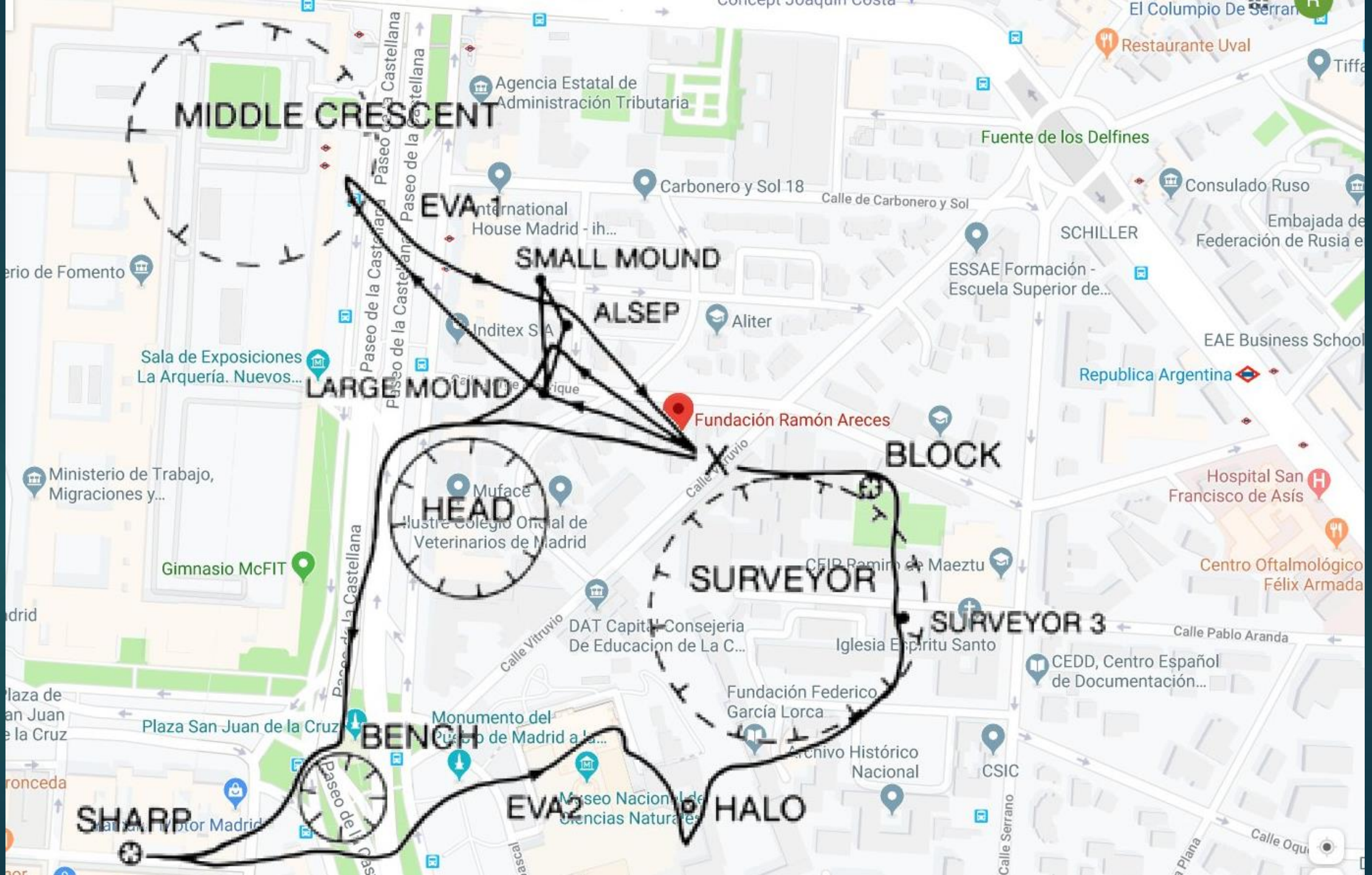





1
2
3
4
1
2
3
4
1
2
3
4




Triplet
Head
Block
Surveyor
Left Foot
Bench
Halo
Sharp
Right Foot


MIDDLE CRESCENT
EVA 1
SMALL MOUND
ALSEP
LARGE MOUND
BLOCK
HEAD
SURVEYOR
SURVEYOR 3
BENCH
SHARP
EVA 2
HALO
Agencia Estatal de Administración Tributaria
Carbonero y Sol 18
Calle de Carbonero y Sol
Fuente de los Delfines
Restaurante Uval
Consulado Ruso
SCHILLER
ESSAE Formación - Escuela Superior de...
Aliter
Inditex S.A.
Sala de Exposiciones La Arquería. Nuevos...
Fundación Ramón Areces
Republica Argentina
EAE Business School
Hospital San Francisco de Asís
Centro Oftalmológico Félix Armada
Ministerio de Trabajo, Migraciones y...
Muface
Ilustre Colegio Oficial de Veterinarios de Madrid
Gimnasio McFIT
Paseo de la Castellana
Calle Vitruvio
DAT Capital Consejeria De Educacion de La C...
Iglesia Espíritu Santo
Calle Pablo Aranda
CEDD, Centro Español de Documentación...
Fundación Federico García Lorca
Archivo Histórico Nacional
CSIC
Plaza San Juan de la Cruz
Monumento del
Museo Nacional de Ciencias Naturales
Calle Serrano

LIFE

APOLLO 12
ON THE MOON