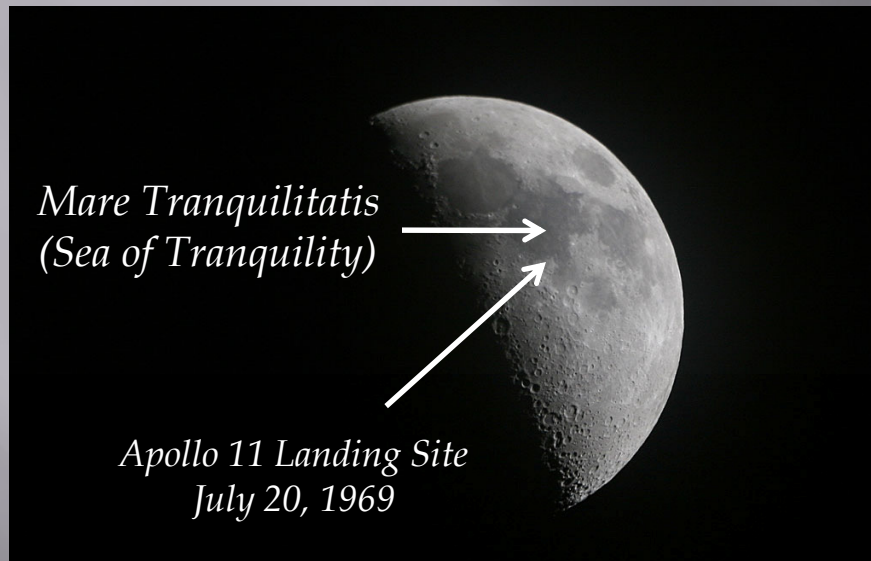
A photograph of an astronaut in a white spacesuit standing on the lunar surface next to the Lunar Module of the Apollo 16 mission. The astronaut is holding a white flag. The Lunar Module is partially illuminated, showing its gold thermal insulation and various instruments. The background is the dark, cratered surface of the moon under a black sky with a few bright stars.

*The Nomination of
Objects Associated with
Tranquility Base
to the
California Register of
Historical Resources*

January 29, 2010

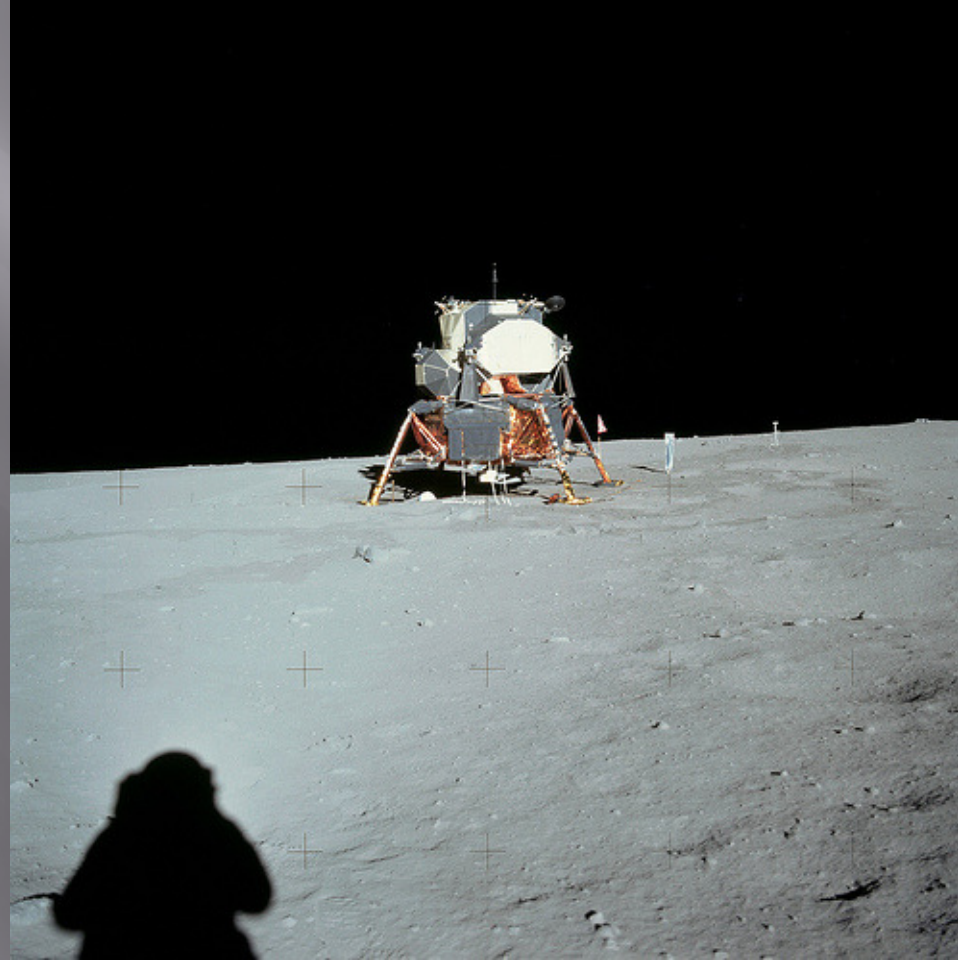
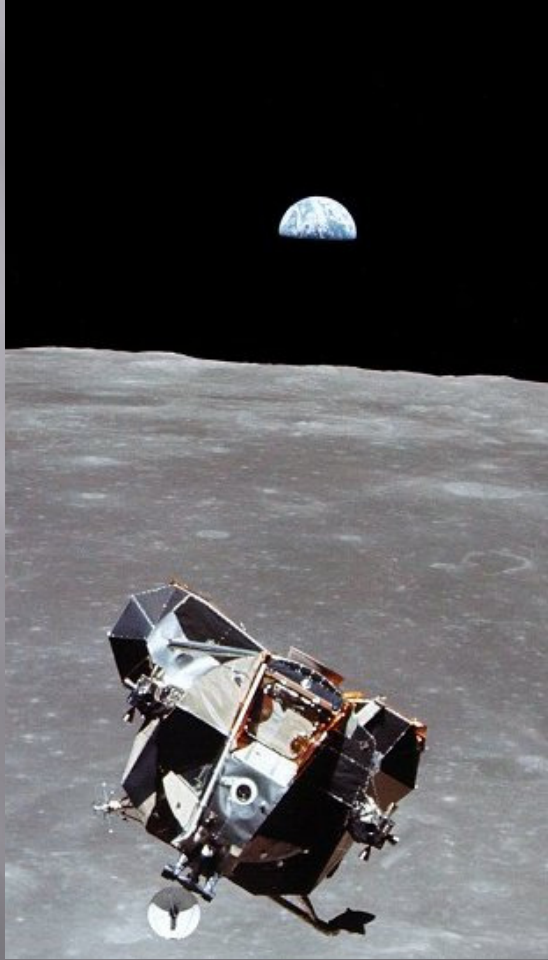
Lisa Westwood, MA, RPA - ECORP
Ralph Gibson, MA - Placer County Museums
Not present: Dr. Beth O'Leary, PhD; John Versluis, MA

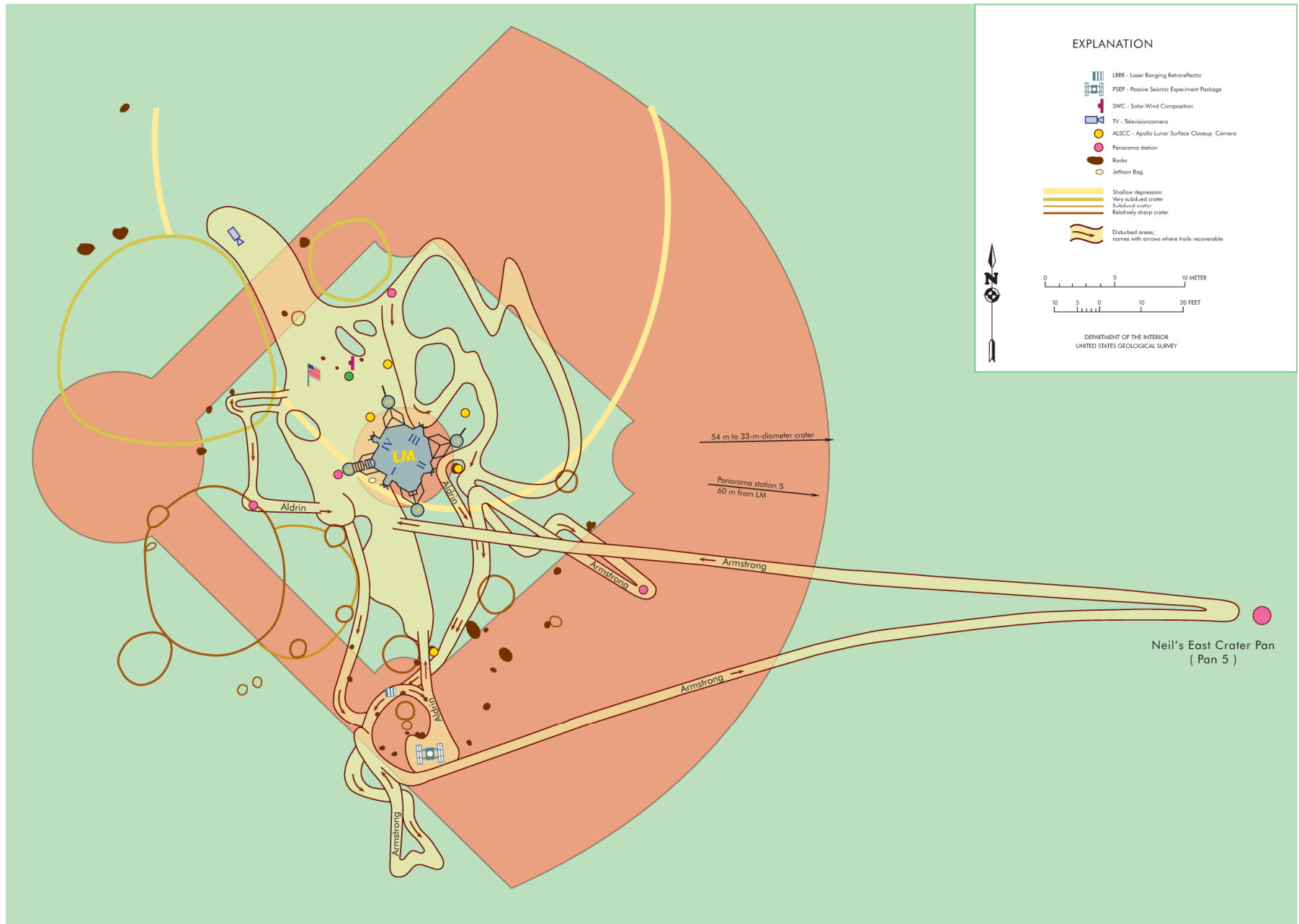
An Overview of the Nomination
















- ▣ Overview of Tranquility Base
- ▣ Resource Description and Significance
- ▣ Why California?
- ▣ *Can California?*
- ▣ Why List, Why Now?
 - *World Heritage List*

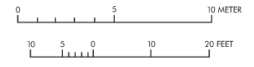
Tranquility Base





EXPLANATION

-  LRRR - Laser Ranging Retroreflector
-  PSEP - Passive Seismic Experiment Package
-  SWC - Solar Wind Composition
-  TV - Television camera
-  ALSCC - Apollo Lunar Surface Closeup Camera
-  Panorama station
-  Rocks
-  Jettison Bag
-  Shallow depression
-  Very subdued crater
-  Subdued crater
-  Relatively sharp crater
-  Disturbed areas; names with arrows where trails recoverable



DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

54 m to 33-m-diameter crater

Panorama station 5
60 m from LM

Neil's East Crater Pan
(Pan 5)

Aldrin

Murray

Armstrong

Armstrong

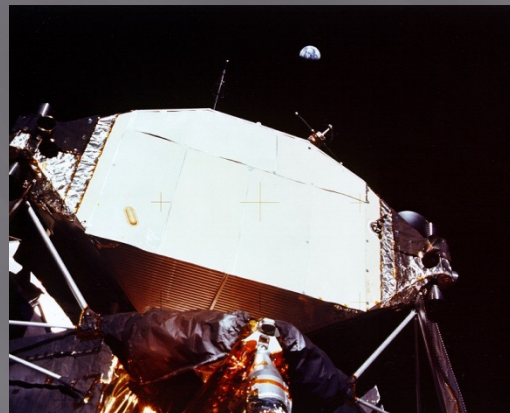
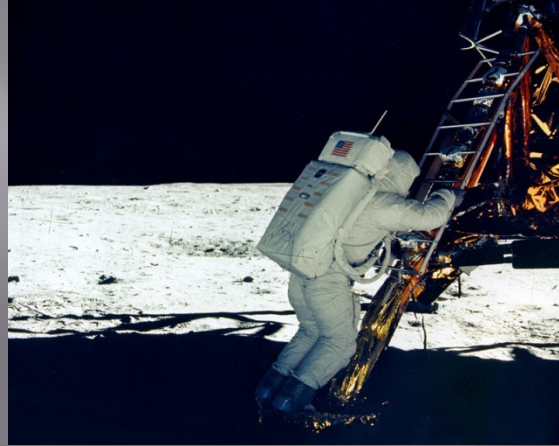
Armstrong

Armstrong

Aldrin

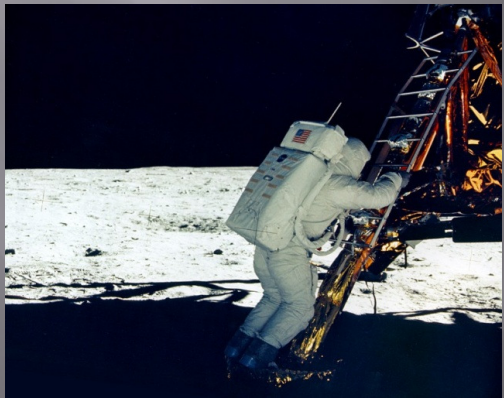
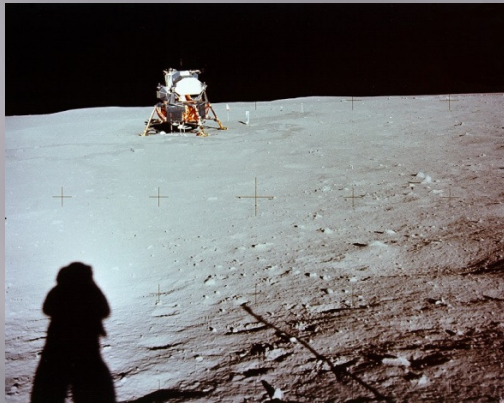
LM

The Historical Resource



Five Classifications of Objects

LUNAR MODULE



COMMEMORATIVE

- ▣ U.S. 3' x 5' Flag
- ▣ Silicon Disc Carrying Statements from Presidents Nixon, Johnson, Kennedy, Eisenhower, and from Leaders of 73 Other Nations
- ▣ Commemorative Plaque attached to the Lunar Module Descent Leg. "Here men from the planet Earth first set foot upon the Moon. July 1969, A.D. We came in peace for all mankind." The plaque is signed by the Apollo 11 crew and President Richard M. Nixon



Five Classifications of Objects

EXPERIMENTAL

- ❑ Laser Ranging Retro-Reflector
- ❑ Passive Seismic Experiment
- ❑ Solar Wind Composition Staff



MISSION TOOLS & GEAR

- ❑ Space boots and portable life support systems
- ❑ Cameras, scales, scoops
- ❑ Containers, bags, hammers, capsules

WASTE

- ❑ Wrappers, food bags, and packaging

Integrity

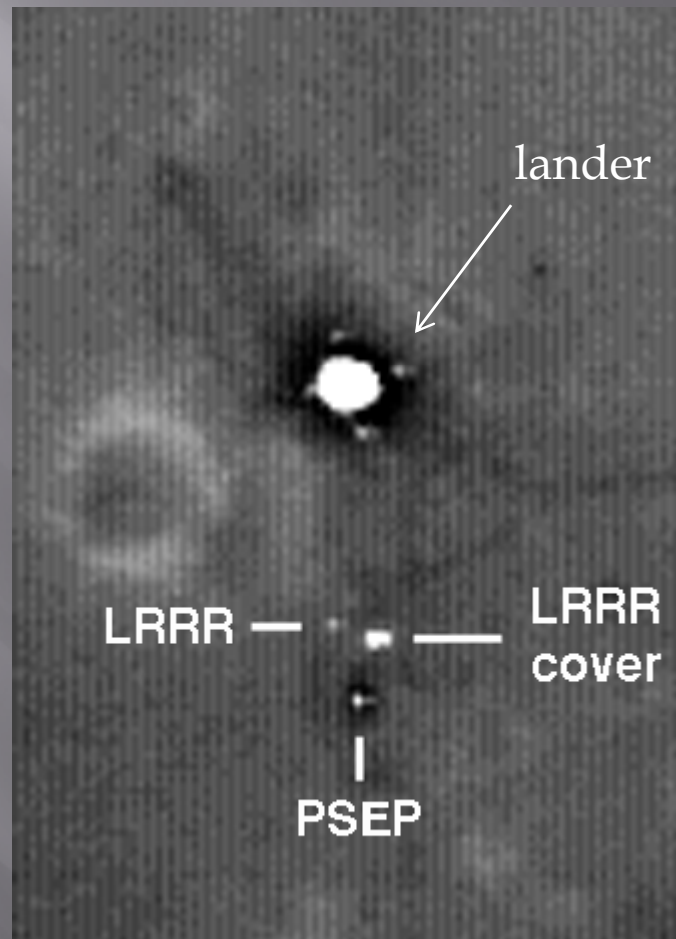


Photo: Recent photo by the Lunar Crater Observation and Sensing Satellite (LCROSS)

Historical Context

- ▣ Associated with one of the most important technological events in human history, within the context of the Cold War
- ▣ California contributed significantly to the space program

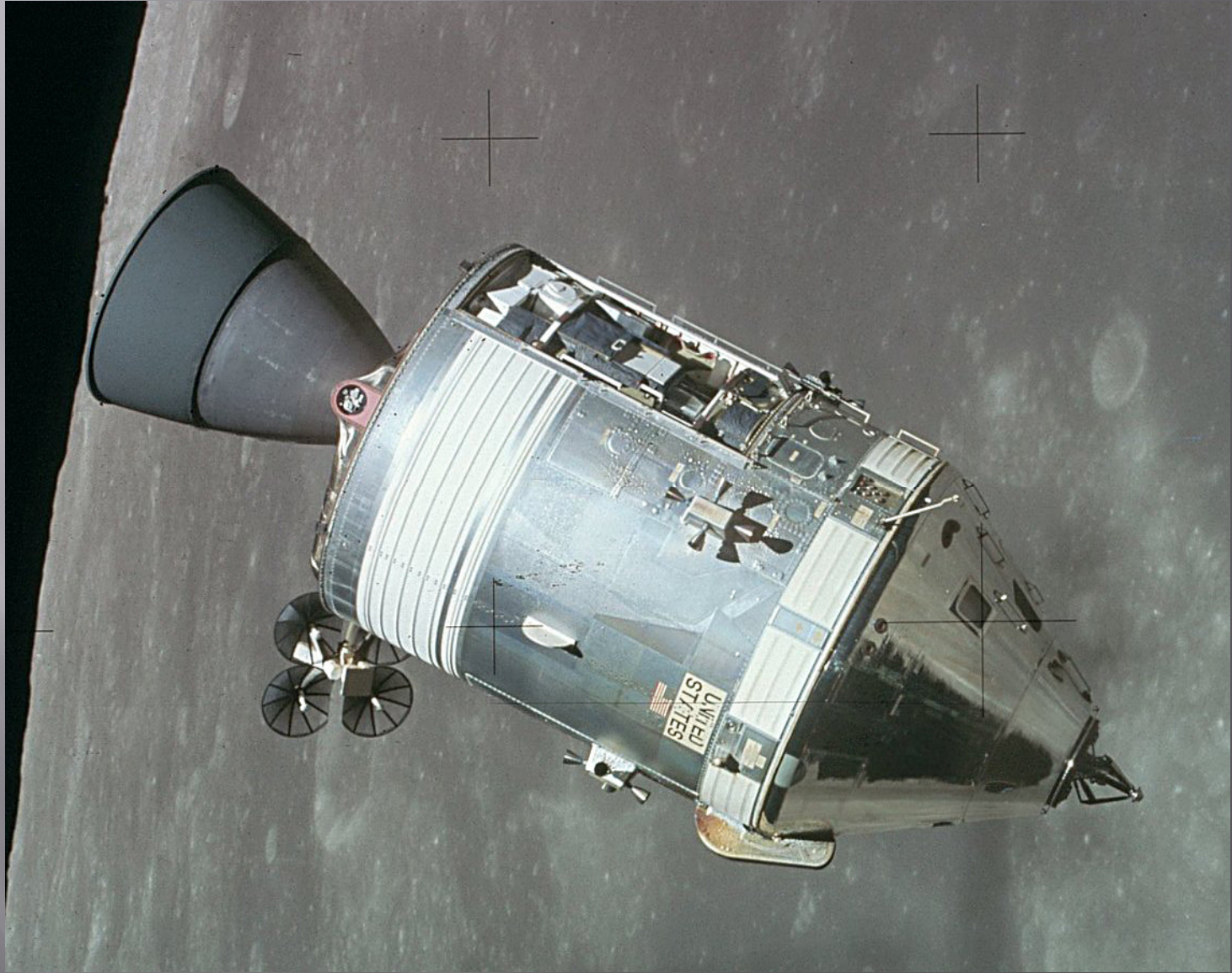


Why California?

- ▣ California Institute of Technology
 - Rocket propulsion research in 1930s
- ▣ Jet Propulsion Laboratory
 - R&D of first jet-assisted take-off technology, 1936
 - Missile technology and system engineering required for the Apollo 11 mission
- ▣ Dryden Flight Research Center at Edwards AFB
 - High-speed flight station and research in atmospheric flight operations
 - Flight training for astronauts

Why California?

- ▣ Aerojet Engineering Corporation
 - Rocket engine R&D for Gemini, Apollo in 1950s-1960s
- ▣ Ames Research Center
 - Research in conductive heating problem for Apollo
- ▣ North American Aviation in Downey, CA
 - Constructed the Apollo command module and service module



CRHR Criteria

- ▣ CRHR allows for CA and national importance
- ▣ CRHR does not require resource to be *in* CA
- ▣ Satisfies all four significance criteria
 - 1) associated with first human presence somewhere other than Earth, which occurred because of R&D and equipment from CA
 - 2) associated with important persons (Apollo crew), who were trained in CA (Edwards AFB)
 - 3) embodies distinctive engineering/technology (for some objects, only replicas and prototypes exist on Earth)
 - 4) can yield important information about history (early space exploration and site formation processes; some documents/tapes were erased or are missing)

Can California List?

- ▣ Moveable objects can be listed in CRHR (PRC 5020.1 [j])
 - Example: The *Catalina*
- ▣ NASA retains ownership of the objects
 - these are not privately owned objects subject to owner consent under 5024.1 (f)(4)
 - Launch Complex 33 at White Sands Missile Range: federally owned and listed on NM register
 - Beaver Island Light Station: federally-owned then listed on MI register, later on NRHP

Can California List?

- ▣ Listing does not take or declare ownership (PRC 5029 [g])
- ▣ Listing does not have financial implications for CA
- ▣ CEQA is not a factor
- ▣ Listing formally memorializes the historical significance of the resource and the event
- ▣ Listing provides limited protection until a WHS

Why List?

- ▣ Next: National Historic Landmark listing with mounting support among other SHPOs, legislators, & international community
- ▣ Then: UNESCO World Heritage List
 - United Nations Educational, Scientific, and Cultural Organization



Great Wall of China



First human footprints: Laetoli, E. Africa



Pyramids at Giza

Why List Now?

- ▣ Increased interest in returning
- ▣ Private-sector or university-based efforts to use robotic scouts to return to the location as early as next year (Lunar X Prize)
- ▣ Raising awareness of historic preservation and the importance of site stewardship *now* is critical
- ▣ A necessary step to NHL and then WHL

Why List and Why Now?

- ▣ Rare opportunity to provide some level of protection and to instill a sense of site stewardship among the public before damage occurs



Summary

- ▣ Tranquility Base is significant to CA and the US and is an Historical Resource
- ▣ Listing it does not conflict with state, federal, or international laws or treaties
 - *it does not include the lunar surface or subsurface – only federally-owned objects*
- ▣ Listing it officially acknowledges the historical importance of the resource
- ▣ Listing it is a critical first step toward a World Heritage Site listing through UNESCO