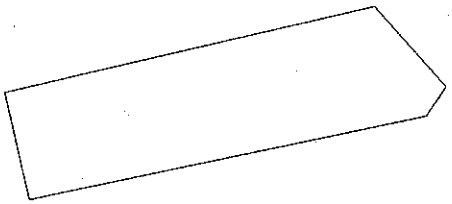
iX1



MAY 20 1971

NASA Review Completed. NRO review(s) completed.

MEMORANDUM FOR: Honorable Henry A. Kissinger
Assistant to the President
for National Security Affairs

SUBJECT: [redacted] 15 Earth Orbital Contingency Mission

References:

1. Memo dated April 3, 1970, from Mr. Shapley to Members of the 40 Committee, subject: Apollo 13 Earth Orbital Contingency Mission [redacted] 25X1

2. Memorandum for the Record dated 10 April 1970 re approval of above request [redacted] 25X1

3. Memo dated Nov. 19, 1970, from Mr. Krueger to Mr. Frank Chapin, Executive Secretary, 40 Committee, subject: [redacted] 14 Earth Observation Contingency Mission Plan [redacted] 25X1

As we have done in the past, we are planning for an earth orbital contingency mission in the unlikely event that [redacted] 15, now scheduled for launch to the moon on 26 July 1971, cannot continue to the moon from earth orbit, but can safely stay in earth orbit and perform useful experimentation. This contingency would offer a unique opportunity to acquire earth survey photography in support of the NASA Earth Resources Survey Program.

NASA
25X

[redacted]

We plan to optimize photographic coverage of the United States and contiguous areas and plan to operate all the on-board photographic systems in consonance with 40 Committee approvals for Apollos 13 and 14. 25X1

iX1

[redacted]

[redacted]

This document consists of [illegible] pages
No. 3 of 4 Copies, Series A

OFFICIAL FILE COPY

CONCURRENCES

OFFICE CODE ▶								
INITIALS ▶								
DATE ▶								

NASA FORM 1267 OCT. 68 PREVIOUS EDITIONS MAY BE USED

SECRET

In keeping with prior practice, we plan to have an interagency review of all contingency earth photography prior to its release and dissemination.

iX1 NRO

James C. Fletcher
Administrator

Enclosure
Memo dtd May 7, 1971,
subj: Apollo 15
Contingency Mission
Planning (uncl.)

NAS
25X

iX1

25X1

SECRET

25X1 NRO

25X1 NRO

OFFICIAL FILE COPY

CONCURRENCES

OFFICE CODE ▶	ADA/Shapley		AA/Newell		AD/Low			
INITIALS ▶								
DATE ▶			19 May 71		5-20-71			

NASA FORM 1267 OCT. 68 PREVIOUS EDITIONS MAY BE USED

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
WASHINGTON, D.C. 20546

REPLY TO
ATTN OF: MAO

MAY 7 1971

MEMORANDUM

TO: M/Associate Administrator for Manned Space Flight

FROM: MA/Apollo Program Director

SUBJECT: Apollo 15 Contingency Mission Planning

Contingency plans are being developed, as they were for past Apollo lunar missions, for the unlikely event that Apollo 15, scheduled for launch in late July of 1971, achieves earth orbit successfully, but is unable to meet the GO criteria for carrying out the translunar injection burn.

In studying possible earth orbital contingency missions, we noted that alternate earth orbital parameters maximize only the potential results of the earth's resources photography. All other experiments, except using the X-ray for galactic survey, will either be saturated or will not provide meaningful data. Therefore, unless photographic tasks were conducted, an earth orbital mission would have little scientific merit.

In the case of earth resources photography, the major equipment to be used would be the ITEK 24-inch focal length panoramic camera and the Fairchild 3-inch focal-length stellar-index mapping camera, both of which are mounted outside of the Command Module in the scientific instrument bay of the Apollo Service Module. This camera package has been developed for high-quality lunar surface photography from lunar orbital altitudes of 60 to 80 nautical miles.

Given a class of mission failure which permits the crew to remain without danger in earth orbit for up to six days, the earth photography contingency mission would be conducted at an altitude of 230 nautical miles in order to accommodate the slower forward motion compensation rates built into the ITEK optical bar for the lunar mission. The orbital inclination would be increased to 40° and solar illumination conditions selected to provide the greatest possible coverage of the United States. The same contingency plan is expected to apply to Apollos 16 and 17 scheduled for 1972.

filter is always used in high altitude earth photography to minimize the deleterious effects of haze and blue scattered light on system performance. The lunar photographic system on Apollo 15 does not have such a filter, thus the above performance will be degraded because of loss in scene contrast and thus loss in ground resolution.

The objectives of this contingency mission would be to acquire relatively high resolution coverage of the United States and contiguous areas, for evaluation by the scientific and earth resources management communities as an adjunct to the interagency Earth Resources Survey Program. This program includes remote sensing aircraft, the Earth Resources Technology Satellite project, and the Earth Resources Experiment Package on the manned Skylab.

ORIGINAL SIGNED BY
ROCCO A. PETRONE

Rocco A. Petrone