

MIT/IL SOFTWARE ANOMALY REPORT

MIT REPORT NO. LDY 55
PROGRAM LUMINARY 1A
PROGRAM REVISION ALL

1.1 ORIGINATOR: J. M. REBER	1.2 ORGANIZATION: MIT/IL	1.3 DATE: 3/27/69	1.4 ORIGINATOR CONTROL NO.
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1.5 DESCRIPTION OF ANOMALY:

Errors in LUMINARY 1A and C LOSSUS 2A fixed constants, viz

$$\omega_E, \dot{B}, \Omega_{10}, \dot{\Omega}_{10}, \dot{F}_0, F_0$$

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1.6 DESCRIPTION OF RUN:

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- MIT ANALYSIS -

2.1 CAUSE:

Error in MAC generation program.

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2.2 RECOGNITION:

Difficult to assess.

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2.3 MISSION EFFECT:

See attached table (negligible for G)

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2.4 AVOIDANCE PROCEDURE:

Absorb errors in lunar constants in libration vector.

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2.5 RECOVERY PROCEDURE:

None

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2.6 PROGRAM CORRECTION:

Use attached values.

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2.7 RECOMMENDED DISPOSITION (Fix, Work-around, etc):

None for G, fix for subsequent missions.

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2.8 RECOMMENDED RE-TESTING:

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2.9 MIT/IL SIGNATURE: <i>Thomas W. Cherry</i>	2.10 DATE:
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3.1 NASA DIRECTION:	4.1 CLOSING ACTION TAKEN: Fix in LUMINARY 1B
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3.2 NASA/MSC SIGNATURE:	3.3 ORGANIZATION	3.4 DATE:	4.2 SIGNATURE:	4.3 ORGANIZATION	4.4 DATE:
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2.3 Mission Effect, cont'd.

U.E.
B.
C-10
C-10
F-0
F-0

@ July 1969

@ July 1970

Error on Earth Surface	0	430 m
Error on Moon Surface	0	$22(10)^{-8}$ m
Error on Moon Surface	0.02 m	0.02 m
Error on Moon Surface	0	0.03 m
Error on Moon Surface	4.1 m	4.1 m
Error on Moon Surface	0	8.2 m

2.6 Program Correction, cont'd.

- U.E. = 7.292 115 147 $(10)^{-5}$ RAD/SEC
B. = -7.197 573 418 $(10)^{-14}$ RAD/SEC
C-10 = 6.196 536 640 RAD
C-10 = -1.070 470 170 $(10)^{-8}$ RAD/SEC
F-0 = 5.209 327 056 RAD
F-0 = 2.672 404 256 $(10)^{-6}$ RAD/SEC