OPTIONAL FORM NO. 10
MAY 1962 EDITION
GSA FPMR (41 CFR) 101-11.6

UNITED STATES GOVERNMENT

Memorandum

H

TO : Apollo Spacecraft Program Office
Attention: PD7/Richard H. Kohrs

DATE: SEP 2 9 1969

In reply refer to:
69-FS55-44

FROM : FS/Chief, Flight Support Division

SUBJECT: Mission H1 Flight Readiness Test Prelaunch Erasable Load for LUMINARY 116

1. The enclosure consists of the current values for the parameters in the Mission H1 Prelaunch Erasable Load for the LGC. These values are not to be regarded as final.

2. A single or double star (* or **) next to a parameter mnemonic denotes that it is also in the Inflight Erasable Load. These parameters would have to be verified or reloaded in order to completely initialize the LGC in orbit. A single star denotes loading by ground uplink; a double star denotes loading by the astronaut via the DSKY.

3. All questions or comments regarding prelaunch erasable loads should be directed to Mr. John W. Jurgensen, extension 2111.

Lynwood C. Dunseith

Enclosure

cc:
(See attached page)

FS55:JWJurgensen:beb

PRELAUNCH [H] LOAD

cc:
MIT/IL(Cambridge)/I. Johnson
S. Drake
D. Hoag
W. Marscher
M. Hamilton
A. Kosmala
J. Suomala
P. Heinemann
B. Day
A. Laats
P. Felleman
R. Larson
M. Johnston
G. Cherry
J. Kuman
B. McCoy
GAEC/C. Tillman
F. Chen
J. Marino
TRW(Houston)/J. Norton
J. Griggs
T. Fujawa
R. Rountree
H. Widdifield
W. Klenk
IBM(Houston)/R. N. Harris

CA/D. K. Slayton
CB/P. Conrad
A. Bean
R. Gordon
D. Scott
CF/W. North
CF3/C. Woodling
CF33/C. Nelson
C. Seeman
EA2/R. Gardiner
ED72/J. Raney
EG2/C. Hackler
EG23/K. Cox
H. Kaupp
EG412/J. Hanaway
E. Dickinson
PD/O. Maynard
PD7/R. S. Morton
PE/O. G. Morris
PE7/J. Vincze
D. T. Lockhard
PF/R. Lanzkron
FA/C. C. Kraft, Jr.
S. A. Sjoberg

FC/E. F. Kranz
C. Charlesworth
C. Parker
N. Hutchinson
R. Carlton
J. Hannigan
J. Craven
R. Thorson
FM/J. P. Mayer
FM3/T. Carter, Jr.
FM7/S. P. Mann
A. Bordano
O. Graf
FS63/J. Lyon
FS5/S. Hinson
C. Zinn
J. Williams, Jr. (10)
T. F. Gibson, Jr.
R. B. Williams
FC/J. Mill
K. Russell
S. Bales
W. Presley
FM4/B. Cockrell

H PRELAUNCH ERASABLE LOAD (LUMINARY 116)

MISSION TAPE

	REV	MNEMONIC	ADDRESS	VALUE	SF	OCTAL	REMARKS
		FLAGWRD 3	0077	02000 octal	-	02000	
		FLAGWRD 8	0104	00000 octal	-	00000	
		FLGWRD 10	0106	00000 octal	-	00000	
*		E3J22R2M	1347	92.047904793lE15 $m^5/_{cs^2}$	58	12160	
*		E32C31RM	1350	13.1289255968E22 $m^6/_{cs^2}$	80	03363	
*		RADSKAL	1351, 1352	0 LR low scale altitude bits/meter/cs	21	00000,00000	
*		SKALSKAL	1353	0	0	00000	
*		GCOMPSW	1477	0	-	00000	
		TETCSM	1570	37777 octal	-	37777	To inhibit initial P00 integration

H PRELAUNCH ERASABLE LOAD (LUMINARY 116)

MISSION TAPE

	REV	MNEMONIC	ADDRESS	VALUE	SF	OCTAL	REMARKS
		TETLEM	1642	37777 octal	-	37777	To inhibit initial P00 integration
*		X789	1700, 1701	0.0 radians	*	00000, 00000	
*		X789+2	1702, 1703	0.0 radians	*	00000, 00000	
*		X789+4	1704, 1705	0.0 radians	*	00000, 00000	
		REFSMMAT	1733, 1734	0.68000001	1	12702, 21730	rev 0 of mission tape
*		RANGEVAR	1770, 1771	$0.1111111111 \times 10^{-4}$	-12	01351, 24734	
*		RATEVAR	1772, 1773	1.877777×10^{-5}	-12	02354, 04750	
*		RVARMIN	1774	66 m^2	12	00410	
*		VVARMIN	1775	0.17445×10^{-5} m^2/cs^2	-12	00165	

*5 for earth; 3 for moon

H PRELAUNCH ERASABLE LOAD (LUMINARY 116)

MISSION TAPE

	REV	MNEMONIC	ADDRESS	VALUE	SF	OCTAL	REMARKS
*		WRENDPOS	2000	3048 m	14	05750	10,000 ft
*		WRENDVEL	2001	0.03048 m/cs	0	00763	10 ft/sec
*		WSHAFT	2002	0.015 radians	-5	17270	15 m rad
*		WTRUN	2003	0.015 radians	-5	17270	15 m rad
*		RMAX	2004	609.6 m	19	00023	2000 ft
*		VMAX	2005	0.006096 m/cs	7	00001	2 ft/sec
*		WSURFPOS	2006	1524 m	14	02764	5000 ft
*		WSURFVEL	2007	0.01524 m/cs	0	00372	5 ft/sec
*		SHAFTVAR	2010	$1x10^{-6}$ rad^2	-12	00103	1 $(m\ rad)^2$
*		TRUNVAR	2011	$1x10^{-6}$ rad^2	-12	00103	1 $(m\ rad)^2$

H PRELAUNCH ERASABLE LOAD (LUMINARY 116)

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	REV	MNEMONIC	ADDRESS	VALUE	SF	OCTAL	REMARKS
*		AGSK	2020,2021	32400000 cs	28	03671,21200	90 hr
*		TLAND	2400,2401	39811554.0 cs	28	04575, 34742	110.58765 hrs
*		RBRFG	2402,2403	52.37530800 m	24	00000,01506	171.835 ft
*		RBRFG+2	2404,2405	0.0 m	24	00000,00000	0.0 ft
*		RBRFG+4	2406,2407	-3254.836061 m	24	77774,72222	-10678.596 ft
*		VBRFG	2410,2411	-0.3227100480 m/cs	10	77772,72612	-105.876 ft/sec
*		VBRFG+2	2412,2413	0.0 m/cs	10	00000,00000	0.0 ft/sec
*		VBRFG+4	2414,2415	-0.0031699200 m/cs	10	77777,76300	-1.040 ft/sec
*		ABRFG	2416,2417	0.000019022568 m/cs^2	-4	00004,37445	0.6241 ft/sec^2
*		ABRFG+2	2420,2421	0.0 m/cs^2	-4	00000,00000	0.0 ft/sec^2

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	REV	MNEMONIC	ADDRESS	VALUE	SF	OCTAL	REMARKS
*		ABRFG+4	2422,2423	-0.000277502112 m/cs^2	-4	77667,50111	-9.1044 ft/sec^2
*		VBRFG*	2424,2425	-0.0570585600 m/cs	13	77777, 74261	-18.72 ft/sec
*		ABRFG*	2426,2427	-0.001665012672 m/cs^2	-4	77113,60670	-54.6264 ft/sec^2
*		JBRFG*	2430,2431	$-0.5738399496 \times 10^{-8}$ m/cs^3	-21	77472, 72437	-0.01882677 ft/sec^3
*		GAINBRAK	2432, 2433	1.0	0	37777, 37777	1.0
*		TCGFBRAK	2434	3000 cs	17	00567	30 sec
*		TCGIBRAK	2435	90000 cs	17	25762	900 sec
*		RAPFG	2436, 2437	33.85870800 m	24	00000, 01036	111.085 ft
*		RAPFG+2	2440, 2441	0.0 m	24	00000, 00000	0.0 ft
*		RAPFG+4	2442, 2443	-8.166811200 m	24	77777, 77574	-26.794 ft

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	REV	MNEMONIC	ADDRESS	VALUE	SF	OCTAL	REMARKS
*		VAPFG	2444, 2445	-0.0152186640 m/cs	10	77777, 70152	-4.993 ft/sec
*		VAPFG+2	2446, 2447	0.0 m/cs	10	00000, 00000	0.0 ft/sec
*		VAPFG+4	2450, 2451	0.0007559040 m/cs	10	00000, 00306	0.248 ft/sec
*		AAPFG	2452, 2453	$-0.07997952 \times 10^{-4}$ m/cs^2	-4	77775, 74720	-0.2624 ft/sec^2
*		AAPFG+2	2454, 2455	0.0 m/cs^2	-4	00000, 00000	0.0 ft/sec^2
*		AAPFG+4	2456, 2457	$-0.1560576 \times 10^{-4}$ m/cs^2	-4	77773, 75055	-0.5120 ft/sec^2
*		VAPFG*	2460, 2461	0.0136062720 m/cs	13	00000, 00676	4.464 ft/sec
*		AAPFG*	2462, 2463	$-0.9363456 \times 10^{-4}$ m/cs^2	-4	77747, 56422	-3.072 ft/sec^2
*		JAPFG*	2464, 2465	$0.5509930560 \times 10^{-9}$ m/cs^3	-21	00022, 35646	0.0018077200 ft/sec^3
*	1	GAINAPPR	2466, 2467	0	0	00000,00000	

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	REV	MNEMONIC	ADDRESS	VALUE	SF	OCTAL	REMARKS
*		TCGFAPPR	2470	3000 cs	17	00567	30 sec
*		TCGIAPPR	2471	20000 cs	17	04704	200 sec
*		VIGN	2472, 2473	16.90256208 m/cs	10	00416, 16071	5545.46 ft/sec
*		RIGNX	2474, 2475	-39782.453328 m	24	77731, 44630	-130519.86 ft
*		RIGNZ	2476, 2477	-436655.657 m	24	77125, 62404	-1432597.3 ft
*		KIGNX/B4	2500, 2501	-0.617631	4	76607, 61356	
*		KIGNY/B8	2502, 2503	$-2.4770341207 \times 10^{-6}$ m^{-1}	-16	72634, 51602	-0.755×10^{-6} ft/ft^2
*		KIGNV/B4	2504, 2505	-41000 cs	18	72775, 57777	-410 sec
*		LOWCRIT	2506	2124.4 DPS throttle pulses	14	04114	5985 lbf
*		HIGHCRIT	2507	2348.0 DPS throttle pulses	14	04454	6615 lbf

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MISSION TAPE

	REV	MNEMONIC	ADDRESS	VALUE	SF	OCTAL	REMARKS
*		V2FG	2510, 2511	-0.009144 m/cs	10	77777, 73242	-3.0 ft/sec
*		V2FG+2	2512, 2513	0 m/cs	10	00000, 00000	0
*		V2FG+4	2514, 2515	0 m/cs	10	00000, 00000	0
*		TAUVERT	2516, 2517	1000 cs	14	01750, 00000	10.0 sec
*		DELQFIX	2520, 2521	60.96 m	24	00000, 01717	200 ft
*		LRALPHA	2522	0.0166666667 rev	-1	01042	6.0 deg. } stow position
*		LRBETA1	2523	0.0666666667 rev	-1	04211	24.0 deg. } Note: These are nominal rather than measured LR position values
*		LRALPHA2	2524	0.0166666667 rev	-1	01042	6.0 deg. } hover position
*		LRBETA2	2525	0.0 rev	-1	00000	0.0 deg. }
*		LRVMAX	2526	6.096 m/cs	7	01414	2,000 ft/sec

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	REV	MNEMONIC	ADDRESS	VALUE	SF	OCTAL	REMARKS
*		LRVF	2527	0.6096 m/cs	7	00116	200 ft/sec
*		LRWVZ	2530	0.3	0	11463	
*		LRWVY	2531	0.3	0	11463	
*		LRWVX	2532	0.3	0	11463	
*		LRWVFZ	2533	0.2	0	06315	0.2
*		LRWVFY	2534	0.2	0	06315	0.2
*		LRWVFX	2535	0.2	0	06315	0.2
*		LRWVFF	2536	0.1	0	03146	0.1
*		RODSCALE	2537	0.003048 m/cs	-7	14370	1.0 ft/sec
*		TAUROD	2540, 2541	150 cs	9	11300, 00000	1.5 sec

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	REV	MNEMONIC	ADDRESS	VALUE	SF	OCTAL	REMARKS
*		LAG/TAU	2542, 2543	0.413333	0	15164, 01420	0.413333
*		MINFORCE	2544, 2545	0.4359257183 $\frac{kg\ m}{cs^2}$	12	00001, 27631	980.0 lb
*		MAXFORCE	2546, 2547	2.802379618 $\frac{kg\ m}{cs^2}$	12	00013, 06551	6300.0 lbs
*		J1PARM	2550, 2551	1838791.801 m	23	07007, 14372	6032781.5 ft
*		K1PARM	2552, 2553	-1202676.250 m/rw	23	73323, 40567	-627991.7 ft/rad
*		J2PARM	2554, 2555	1880624.221 m	23	07131, 03007	617008.6 ft
*		K2PARM	2556, 2557	-1129727.418 m/rw	23	73541, 60022	-589900.6 ft/rad
*		THETCRIT	2560, 2561	0.0234444444 rev	0	00600, 03510	8.44 deg
*		RAMIN	2562, 2563	1791455.081 m	24	03325, 16761	5877477.3 ft
*		YLIM	2564, 2565	15186.4 m	24	00016, 32446	8.2 n.mi.
*		ABTRDOT	2566, 2567	0.059436 m/cs	7	00007, 23346	19.5 ft/sec
*		COSTHET1	2570, 2571	0	-8	00000, 00000	
*		COSTHET2	2572, 2573	0.8660254037	+2	06733, 07535	
*		DLAND	2634, 2635	0 m	24	00000, 00000	
*		DLAND+2	2636, 2637	0 m	24	00000, 00000	

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MISSION TAPE

	REV	MNEMONIC	ADDRESS	VALUE	SF	OCTAL	REMARKS
*		DLAND+4	2640, 2641	0 m	24	00000, 00000	
*		ROLLTIME	3001	2783 cs	14	05337	27.83 sec
*		PITTIME	3002	2338 cs	14	04442	23.38 sec
*		DKTRAP	3003	-0.0038888888 rev/sec	-3	77001	
*		DKOMEGAN	3004	10	14	0012	
*		DKKAOSN	3005	60	14	00074	
*		LMTRAP	3006	-0.0038888888 rev/sec	-3	77001	
*		LMOMEGAN	3007	0	14	00000	
*		LMKAOSN	3010	60	14	00074	
*		DKDB	3011	256 rev^{-1}	15	00200	
*		IGNAOSQ	3012	0.020611111 rev/sec^2	-2	02507	7.42 deg/sec^2
*		IGNAOSR	3013	0.0007777778 rev/sec^2	-2	00063	0.28 deg/sec^2
*		DOWNTORK	3113	0 jet seconds	5	00000	
*		DOWNTORK+1	3114	0 jet seconds	5	00000	
*		DOWNTORK+2	3115	0 jet seconds	5	00000	

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MISSION TAPE

	REV	MNEMONIC	ADDRESS	VALUE	SF	OCTAL	REMARKS
*		DOWNTORK+3	3116	0 jet seconds	5	00000	
*		DOWNTORK+4	3117	0 jet seconds	5	00000	
*		DOWNTORK+5	3120	0 jet seconds	5	00000	
*		ATIGINC	3400,3401	18000 cs	28	00001,03120	3 min
*		PTIGINC	3402,3403	18000 cs	28	00001,03120	3 min
*		AOTAZ	3404	-0.1656777778 rev	-1	65312	-59.644° (2's comp)
*		AOTAZ+1	3405	+0.0008750000 rev	-1	00035	+0.315° (2's comp)
*		AOTAZ+2	3406	0.167444444 rev	-1	12557	+60.280°
*		AOTAZ+3	3407	0.3343194444 rev	-1	25313	+120.355°
*		AOTAZ+4	3410	-0.4990583333 rev	-1	40036	-179.661°

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MISSION TAPE

	REV	MNEMONIC	ADDRESS	VALUE	SF	OCTAL	REMARKS
*		AOTAZ+5	3411	-0.3324666667 rev	-1	52561	-119.688° (2's comp)
*		AOTEL	3412	0.1252166667 rev	-1	10007	+45.078°
*		AOTEL+1	3413	0.1252805556 rev	-1	10011	+45.101°
*		AOTEL+2	3414	0.1252750000 rev	-1	10011	+45.099°
*		AOTEL+3	3415	0.1252055556 rev	-1	10007	+45.074°
*		AOTEL+4	3416	0.1251444444 rev	-1	10005	+45.052°
*		AOTEL+5	3417	0.1251472222 rev	-1	10005	+45.053°
*		LRHMAX	3420	15240 m	14	35610	50,000 ft
*		LRWH	3421	0.35	0	13146	
*		ZOOMTIME	3422	2600 cs	14	05050	26 sec

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MISSION TAPE

	REV	MNEMONIC	ADDRESS	VALUE	SF	OCTAL	REMARKS
*		TENDBRAK	3423	6200 cs	17	01407	62 sec
*		TENDAPPR	3424	1200 cs	17	00226	12 sec
*		DELTTFAP	3425	-11000 cs	17	75240	-110.0 sec
*		LEADTIME	3426	-220 cs	17	77743	2.2 sec (a negative number for coding ease)
*		RPCRTIME	3427	6200 cs	17	01407	62 sec
*		RPCRTQSW	3430	-1	+1	57777	
*		TNEWA	3431, 3432	20000,00000 octal	28	20000, 00000	A large number (about 2 weeks); to prevent recycling the Lambert solution.

H PRELAUNCH ERASABLE LOAD (LUMINARY 116)

LAUNCH TAPE

	REV	MNEMONIC	ADDRESS	VALUE	SF	OCTAL	REMARKS
		MASS	1243, 1244	15240.48 kg	16	07342, 00000	33599.5 lbs at DOI ignition
**		LEMMASS	1326	15240.48 kg	16	07342	33599.5 lbs at DOI ignition
**		CSMMASS	1327	16562.29 kg	16	10055	36513.6 lbs
*		PBIASX	1452	PIPA counts/cs	-3	76730	cm/sec^2
*		PIPASCFX	1453		-9	65013	ppm
*		PBIASY	1454	PIPA counts/cs	-3	00047	cm/sec^2
*		PIPASCFY	1455		-9	66376	ppm
*		PBIASZ	1456	PIPA counts/cs	-3	01217	cm/sec^2
*		PIPASCFZ	1457		-9	61721	ppm
*		NBDX	1460	gyro pulses/cs	-5	00177	meru

H PRELAUNCH ERASABLE LOAD (LUMINARY 116)

LAUNCH TAPE

	REV	MNEMONIC	ADDRESS	VALUE	SF	OCTAL	REMARKS
*		NBDY	1461	gyro pulses/cs	-5	00245	meru
*		NBDZ	1462	gyro pulses/cs	-5	00430	meru
*		ADIAX	1463	$\frac{\text{gyro pulses/cm}}{\text{sec}^2}$	-5	00202	meru/g
*		ADIAY	1464	$\frac{\text{gyro pulses/cm}}{\text{sec}^2}$	-5	77373	meru/g
*		ADIAZ	1465	$\frac{\text{gyro pulses/cm}}{\text{sec}^2}$	-5	00150	meru/g
*		ADSRAX	1466	$\frac{\text{gyro pulses/cm}}{\text{sec}^2}$	-5	77661	meru/g
*		ADSRAY	1467	$\frac{\text{gyro pulses/cm}}{\text{sec}^2}$	-5	00064	meru/g
*		ADSRAZ	1470	$\frac{\text{gyro pulses/cm}}{\text{sec}^2}$	-5	00234	meru/g

H PRELAUNCH ERASABLE LOAD (LUMINARY 116)

LAUNCH TAPE

	REV	MNEMONIC	ADDRESS	VALUE	SF	OCTAL	REMARKS
*		TEPHEM	1706-1710	1180932000 cs	42	00004, 14616 13640	For launch on November 14 at 16:22 GMT in 1969
		AZO	1711, 1712	0.7746576443 rev	0	30623, 37552	
*		-AYO	1713, 1714		0	77777, 73551	
*		AXO	1715, 1716		0	00000, 26073	
		REFSMMAT+2	1735, 1736	0.11141622	1	01620, 27060	TEPHEM for November 14 = 16:22 GMT
*		504LM	2012, 2013		0	77775, 44333	
*		504LM+2	2014, 2015		0	77767, 67526	
*		504LM+4	2016, 2017		0	77771, 55324	
*	1	RLS	2022, 2023	1.590504497E6m	27	00302, 04721	-2.942400008 deg lat SITE 7
*	1	RLS+2	2024, 2025	-6,896999955E05m	27	77653, 71667	-2.344329983 deg long SITE 7
*	1	RLS+4	2026, 2027	-8.910649896E04m	27	77765, 43732	-1.185205176 n.mi. SITE 7
*		HIASCENT	3000	4945.3 kg	16	02324	10.902.5 lbs