

G LM ERASABLE

from FSR R

7-1-69

G PRELAUNCH ERASABLE LOAD (LUMINARY 99)

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	
**	DUMPCNT	0333	2 dumps	3	10000	
*	E3J22R2M	1352	92.0479047931E15 m ⁵ /cs ²	58	12160	
*	E32C31RM	1353	13.1289255968E22 m ⁶ /cs ²	80	03363	
*	RADSKAL	1354, 1355	0 IR low scale altitude bits/meter/cs	21	00000,00000	
*	SKALSKAL	1356	0	0	00000	
*	GCOMPSW	1477	0	-	00000	
	TETCSM	1570	37777 octal	-	37777	To inhibit initial POO integration

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	TETLEM	1642	37777 octal	-	37777	To inhibit initial POO 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	
2	REFSMAT	1733, 1734	0.68020001	1	12704, 06264	rev 2 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	$0.17445 \times 10^{-5} \text{ m}^2/\text{cs}^2$	-12	00165	

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*	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	1×10^{-6} rad ²	-12	00103	1 (m rad) ²
*	TRUNVAR	2011	1×10^{-6} rad ²	-12	00103	1 (m rad) ²

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*	AGSK	2020,2021	32400000 cs	28	03671,21200	90 hr
* 1	TLAND	2400,2401	37003105 cs	28	04322, 17541	102:47:11.05 GET
*	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	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 x 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 x 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 x 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 x 10 ⁻⁴ m/cs ²	-4	77747, 56422	-3.072 ft/sec ²
*	JAPFG*	2464, 2465	0.5509930560 x 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
* 1	RIGNZ	2476, 2477	-436655.657 m	24	77125, 62404	-1432597.3 ft
* 1	KIGNX/B4	2500, 2501	-0.617631	4	76607, 61356	
*	KIGNY/B8	2502, 2503	$-2.4770341207 \times 10^{-6} \text{ m}^{-1}$	-16	72634, 51602	$-0.755 \times 10^{-6} \text{ ft/ft}^2$
*	KIGNV/B4	2504, 2505	-41000 cs	18	72775, 57777	-410 sec
* 1	LOWCRIT	2506	2124.4 DPS throttle pulses	14	04114	5985 lbf
* 1	HIGHCRIT	2507	2348.0 DPS throttle pulses	14	04454	6615 lbf

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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	0.0163371759 rev	-1	01027	} stow position
*	LRBETA1	2523	0.0665287037 rev	-1	04204	
*	LRALPHA2	2524	0.0161680555 rev	-1	01022	} hover position
*	LRBETA2	2525	0.0001361111 rev	-1	00004	
*	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
*	RODSALE	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 $\frac{\text{kg m}}{\text{cs}^2}$	12	00001, 27631	980.0 lb
*	MAXFORCE	2546, 2547	2.802379618 $\frac{\text{kg m}}{\text{cs}^2}$	12	00013, 06551	6300.0 lbs
* 1	ABTCOF	2550, 2551	0.0337969219 x 10 ⁻¹⁴ m/cs ⁴	-44	00141, 15156	0.11088229E-6 ft/sec ⁴
* 1	ABTCOF+2	2552, 2553	-0.1790496485 x 10 ⁻⁹ m/cs ³	-27	77166, 50400	-0.58743323E-3 ft/sec ³
* 1	ABTCOF+4	2554, 2555	0.1398947692 x 10 ⁻⁵ m/cs ²	-10	00027, 17034	0.45897234E-1 ft/sec ²
* 1	ABTCOF+6	2556, 2557	17.22417332 m/cs	+7	04234, 26156	5650.9755 ft/sec
* 1	ABTCOF+8	2560, 2561	0.1785439517 x 10 ⁻¹⁴ m/cs ⁴	-44	01002, 23614	0.58577412E-6 ft/sec ⁴
* 1	ABTCOF+10	2562, 2563	-0.2758097130 x 10 ⁻⁹ m/cs ³	-27	76641, 57473	-.90488751E-3 ft/sec ³
* 1	ABTCOF+12	2564, 2565	0.2840412668 x 10 ⁻⁵ m/cs ²	-10	00057, 24737	0.93189392E-1 ft/sec ²

descent

ascent

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REV	MNEMONIC	ADDRESS	VALUE	SF	OCTAL	REMARKS
* 1	ABTCOF+14	2566, 2567	17.21785025 m/cs	+7	04233, 34241	5648.9010 ft/sec ascent (cont'd)
* 1	VMIN	2570, 2571	16.80792168 m/cs	7	04147, 15177	5514.4100 ft/sec
*	YLIM	2572, 2573	15186.4 m	24	00016, 32446	8.2 n.mi.
*	ABTRDOT	2574, 2575	0.059436 m/cs	7	00007, 23346	19.5 ft/sec
*	COSTHET1	2576, 2577	0	-8	00000, 00000	
*	COSTHET2	2600, 2601	0.8660254037	+2	06733, 07535	
*	ROLLTIME	3001	2926 cs	14	05556	29.26 sec
*	PITTIME	3002	2329 cs	14	04431	23.29 sec
*	DKTRAP	3003	-0.0038888888 rev/sec	-3	77001	
*	DKOMEGAN	3004	10	14	00012	

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REV	MNEMONIC	ADDRESS	VALUE	SF	OCTAL	REMARKS
*	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	
* 1	IGNAOSQ	3012	0.0173611111 rev/sec ²	-2	02162	6.25 deg/sec ²
* 1	IGNAOSR	3013	0.0017500000 rev/sec ²	-2	00163	0.63 deg/sec ²
*	DWNTORK	3113	0 jet seconds	5	00000	
*	DWNTORK+1	3114	0 jet seconds	5	00000	
*	DWNTORK+2	3115	0 jet seconds	5	00000	

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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	-0.1668666667 rev	-1	65244	-60.072° (2's comp)
*	AOTAZ+1	3405	-0.0004277778 rev	-1	77762	-0.154° (2's comp)
*	AOTAZ+2	3406	0.1659444444 rev	-1	12476	59.740°
*	AOTAZ+3	3407	0.3332305556 rev	-1	25247	119.963°
*	AOTAZ+4	3410	0.4997944444 rev	-1	37771	179.926°

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*	AOTAZ+5	3411	-0.3337527778 rev	-1	52510	-120.151° (2's comp)
*	AOTEL	3412	0.1249805556 rev	-1	07777	44.993°
*	AOTEL+1	3413	0.1251694444 rev	-1	10006	45.061°
*	AOTEL+2	3414	0.1251750000 rev	-1	10006	45.063°
*	AOTEL+3	3415	0.1249888889 rev	-1	10000	44.996°
*	AOTEL+4	3416	0.1248027778 rev	-1	07772	44.929°
*	AOTEL+5	3417	0.1247972222 rev	-1	07771	44.927°
*	LRHMAX	3420	15240 m	14	35610	50,000 ft
*	1 LRWH	3421	0.35	0	13146	
*	ZOOMTIME	3422	2600 cs	14	05050	26 sec

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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	8000 cs	28	00000, 17500	80.0 sec

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	MASS	1244,1245	15269.7 kg	16	07351, 15463	33664.0 lbs at DOI ignition
**	LEMMASS	1331	15269.7 kg	16	07351	33664.0 lbs at DOI ignition
**	CSMMASS	1332	16542.7 kg	16	10050	36470.4 lbs
* 1	PBIASX	1452	-0.0011997222 PIPA counts/cs	-5	76612	-0.12 cm/sec ²
* 1	PIPASCFX	1453	-3.4416162967	-9	74435	-210 ppm
* 1	PBIASY	1454	0.0016994476 PIPA counts/cs	-5	01573	+0.17 cm/sec ²
* 1	PIPASCFY	1455	-3.4416162967	-9	74435	-210 ppm
* 1	PBIASZ	1456	0.0006999969 PIPA counts/cs	-5	00557	+0.07 cm/sec ²
* 1	PIPASCFZ	1457	-0.0009200572	-9	60731	-920 ppm
* 1	NBDX	1460	0.0003147125 gyro pulses/cs	-5	00245	+1.3 meru

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* 1	NBDY	1461	-0.0003643035 gyro pulses/cs	-5	77500	-1.5 meru
* 1	NBDZ	1462	-0.0004615783 gyro pulses/cs	-5	77415	-1.9 meru
* 1	ADIAX	1463		-5	02712	+57 meru/g
* 1	ADIAY	1464	-0.0001983642 $\frac{\text{gyro pulses/cm}}{\text{sec}^2}$	-5	77627	-4.0 meru/g
* 1	ADIAZ	1465	0.0009918212 $\frac{\text{gyro pulses/cm}}{\text{sec}^2}$	-5	01010	20 meru/g
* 1	ADSRAX	1466	0.0000991821 $\frac{\text{gyro pulses/cm}}{\text{sec}^2}$	-5	00064	2.0 meru/g
* 1	ADSRAY	1467	21.1262893676 $\frac{\text{gyro pulses/cm}}{\text{sec}^2}$	-5	01244	26 meru/g
* 1	ADSRAZ	1470	-0.0005455017 $\frac{\text{gyro pulses/cm}}{\text{sec}^2}$	-5	77341	-11 meru/g

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*	TEPHEM	1706-1710	134470000 cs	42	00000, 20017 20500	For launch on July 16 at 13:32 GMT in 1969
	AZO	1711, 1712	0.7746616521 rev	0	30624, 01636	
*	-AYO	1713, 1714	-0.0000395943	0	77777, 53172	
*	AXO	1715, 1716	0.0000421325	0	00000, 26056	
	REFSMMAT+2	1735, 1736	0.67020001	1	12562, 10723	rev 2 of launch tape
	REFSMMAT+4	1737, 1740	0.07161332	1	01112, 25001	TEPHEM for July 16. 13:32 GMT
*	504IM	2012, 2113	-0.17077475786 x 10 ⁻³ rad	0	77775, 46355	
*	504IM+2	2014, 2015	-0.55982545018 x 10 ⁻³ rad	0	77766, 72372	
*	504IM+4	2016, 2017	-0.40609389544 x 10 ⁻⁴ rad	0	77777, 52552	
*	1 RLS	2022, 2023	1588735.998 m	27	00301, 36000	0.6913999975 deg lat SITE 2
*	1 RLS+2	2024, 2025	697964.9961 m	27	00125, 06332	23.71690005 deg long SITE 2
*	1 RLS+4	2026, 2027	20940.99998 m	27	00002, 21632	-1.442519903 n.mi. SITE 2
*	HIASCENT	3000	5023.6 kg	16	02350	11075.1 lbs