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***
***          RELEASE 18 - H
***          *****
***          *
***          *          JOB: B122289
***          *          PROBLEM: 0011
***          *          PROGRAMMER: KLUMPP.A
***          *          ROOM: DL7 220A MS# 73
***          *          EXTENSION: 1105
***          *          HOME PHONE: 358-7659
***          *
***          *****
***

```

// EXEC AGCSIM

```

XXR          EXEC PGM=MACFETCH,REGION=368K,PARM=AGCSIM          00010000
XXMACPAC DD DSN=SYS1.MACPAC,DISP=SHR                          00030000
XX          DD DSN=SYS1.MACEXT,DISP=SHR                        00040000
XXSYSPRINT DD SYSOUT=A                                         00050000
XXSYSUDUMP DD SYSOUT=A                                         00060000
XXDISKSYMB DD UNIT=2301,SPACE=(CYL,(1,1))                     00070000
XXSIMBINXX DD UNIT=2301,SPACE=(CYL,(1,1))                     00080000
XXSIMDISKP DD VOLUME=SER=AGCB02,UNIT=2314,DISP=SHR           00090000
XXTAPEDIR1 DD DSN=SYS1.TAPDIR8,DISP=SHR                       00100000
XXTAPEDIR2 DD DSN=SYS1.TAPDIR9,DISP=SHR                       00110000
XXMARS01 DD UNIT=(TAPE9,,DEFER),LABEL=(,SL),DISP=(NEW,KEEP)  00120000
XXMARS02 DD UNIT=(TAPE9,,DEFER),LABEL=(,SL),DISP=(NEW,KEEP)  00130000
XXSIMDAT DD DSN=AGCSIM.ADATA,DISP=SHR                         00140000
XXSIMINPUT DD UNIT=SYSDA,SPACE=(TRK,(10,2))                   00150000
XXAGCSTAT DD DSN=AGCSIM.STATDATA,DISP=SHR                     00160000

```

//SYSIN DD *
//

BEGIN STEP 1: REGION=368K MAXTIME= 60.000 PGM=MACFETCH

12/14/70 15:51:52

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IEF236I ALLOC. FOR B122289 R
IEF237I 347 ALLOCATED TO MACPAC
IEF237I 347 ALLOCATED TO
IEF237I 02F ALLOCATED TO SYSPRINT
IEF237I 03E ALLOCATED TO SYSUDUMP
IEF237I 1C0 ALLOCATED TO DISKSYMB
IEF237I 1C0 ALLOCATED TO SIMBINXX
IEF237I 451 ALLOCATED TO SIMDISKP
IEF237I 341 ALLOCATED TO TAPEDIR1
IEF237I 347 ALLOCATED TO TAPEDIR2
IEF237I 0C2 ALLOCATED TO MARS01
IEF237I 0C4 ALLOCATED TO MARS02
IEF237I 234 ALLOCATED TO SIMDAT
IEF237I 236 ALLOCATED TO SIMINPUT
IEF237I 456 ALLOCATED TO AGCSTAT
IEF237I 081 ALLOCATED TO SYSIN
COMPLETION CODE - SYSTEM=000 USER=0052

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IEF285I SYS1.MACPAC KEPT
IEF285I VOL SER NOS= SYSLIB.
IEF285I SYS1.MACEXT KEPT
IEF285I VOL SER NOS= SYSLIB.
IEF285I SYS70348.T093447.RV000.B122289.R0002665 DELETED
IEF285I VOL SER NOS=
IEF285I SYS70348.T093447.RV000.B122289.R0002667 DELETED
IEF285I VOL SER NOS= WRKDRM.
IEF285I SYS70348.T093447.RV000.B122289.R0002668 DELETED
IEF285I VOL SER NOS= WRKDRM.
IEF285I AGCPROG.LUMINARY.R178 KEPT
IEF285I VOL SER NOS= AGCB02.

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IEF285I TAPDIR8 KEPT
IEF285I VOL SER NOS= STOR01. KEPT
IEF285I TAPDIR9 KEPT
IEF285I VOL SER NOS= SYSLIB. KEPT
IEF285I AGCSIM.ADATA KEPT
IEF285I VOL SER NOS= SYS002.
IEF285I SYS70348.T093447.RV000.B122289.R0002672 DELETED
IEF285I VOL SER NOS= SYSI01.
IEF285I AGCSIM.STATDATA KEPT
IEF285I VOL SER NOS= STOR03.
IEF285I SYS70348.T093447.RV000.B122289.R0002673 DELETED
IEF285I VOL SER NOS= .
END STEP 1: B122289 R

STEP TIME = 0.034 MIN, STEP I/O COUNT = 510

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END JOB: B122289

0011

KLUMPP.A

PRTY = 03

12/14/70 15:52:16

JOB ACCOUNTING TOTALS: CPU TIME USED = 0.034 MIN LINES PRINTED = 404
I/O COUNT = 510 CARDS PUNCHED = 0
CARDS READ = 194

TOTAL CHARGE = 0.264 'MACHINE UNITS'

ADJUSTED ACCOUNT BUDGET: MACHINE UNITS USED: PRIO>0 = 124.327 PRIO0 = 21.117
MACHINE UNITS LEFT: PRIO3 = 108.415 PRIO2 = 44.516

ACCUMULATED CHARGE THIS MONTH = 145.444 'MACHINE UNITS'

A G C SIMULATION
COMMUNICATOR H03
SIMULATOR C02

COMPUTER: AGC

PROGRAM TITLE: LUMINARY

REVISN 178

AUTHOR: NASA 2021112-151

SPECIAL REQUESTS

| CARD | LOCATION | OP | ADDRESS 1 | ADDRESS 2 | ID | REQ CLAS |
|-------|----------|-------|-----------|-----------|--------|----------|
| SLAP1 | | START | | | 022460 | 1 |
| SLAP1 | +1 | STOP | | | 022461 | 0256 3 |

P TRAJECTORY 7012120 POST-DOI DATA
 R LANDING SITE DEPENDENT DATA

R AGC MNEMONIC AGC VALUE GSOP MNEMONIC GSOP VALUE (MKS)

R INITIAL TIME

| | | | | | | | | | |
|---|--------|----|----------------|--------------|------------------|--------|-------|-------|--------|
| R | TEPHEM | | 1D + 6 | T (EPOCH | +1.85627999 E+ 7 | 001706 | 00006 | 0257 | 2 |
| R | TEPHEM | +1 | 2D + 245667264 | 0 SECS U.T.) | | 001707 | 35222 | 12700 | 0258 2 |
| R | TIME2 | | 2D + 39104688 | T | +3.91046880 E+ 5 | 000024 | 04522 | 30260 | 0259 2 |
| R | TETLEM | | 2D + 39104688 | T | +3.91046880 E+ 5 | 001642 | 04522 | 30260 | 0260 2 |
| R | TETCSM | | 2D + 39104688 | T | +3.91046880 E+ 5 | 001570 | 04522 | 30260 | 0261 2 |

R INITIAL CONDITIONS

| | | | | | | | | | |
|---|-----------|----|------------------------------|--|------------------|--------|-------|-------|--------|
| R | MASS | | 2D +1.54077163 E+ 48-16 M | | +1.54077163 E+ 4 | 001243 | 07413 | 35566 | 0262 2 |
| R | RCVLEM | | 2D -1.27553366 E+ 68-27 - | | -1.27553366 E+ 6 | 001660 | 77544 | 51344 | 0263 2 |
| R | RCVLEM | +2 | 2D +1.19317498 E+ 68-27 R | | +1.19317498 E+ 6 | 001662 | 00221 | 24656 | 0264 2 |
| R | RCVLEM | +4 | 2D +1.56367062 E+ 58-27 LCON | | +1.56367062 E+ 5 | 001664 | 00023 | 02636 | 0265 2 |
| R | RRECTLEM | | 2D -1.27553366 E+ 68-27 - | | -1.27553366 E+ 6 | 001626 | 77544 | 51344 | 0266 2 |
| R | RRECTLEM | +2 | 2D +1.19317498 E+ 68-27 R | | +1.19317498 E+ 6 | 001630 | 00221 | 24656 | 0267 2 |
| R | RRECTLEM | +4 | 2D +1.56367062 E+ 58-27 LO | | +1.56367062 E+ 5 | 001632 | 00023 | 02636 | 0268 2 |
| R | VCVLEM | | 2D +1.09875516 E+ 18-05 - | | +1.09875516 E+ 3 | 001666 | 12771 | 24027 | 0269 2 |
| R | VCVLEM | +2 | 2D +1.06107936 E+ 18-05 V | | +1.06107936 E+ 3 | 001670 | 12470 | 27174 | 0270 2 |
| R | VCVLEM | +4 | 2D +7.30720070 E+ 08-05 LCON | | +7.30720070 E+ 2 | 001672 | 07235 | 11132 | 0271 2 |
| R | VRECTLEM | | 2D +1.09875516 E+ 18-05 - | | +1.09875516 E+ 3 | 001634 | 12771 | 24027 | 0272 2 |
| R | VRECTLEM | +2 | 2D +1.06107936 E+ 18-05 V | | +1.06107936 E+ 3 | 001636 | 12470 | 27174 | 0273 2 |
| R | VRECTLEM | +4 | 2D +7.30720070 E+ 08-05 LO | | +7.30720070 E+ 2 | 001640 | 07235 | 11132 | 0274 2 |
| R | RCVCSCM | | 2D -1.67002840 E+ 68-27 - | | -1.67002840 E+ 6 | 001606 | 77464 | 44346 | 0275 2 |
| R | RCVCSCM | +2 | 2D +7.87612969 E+ 58-27 R | | +7.87612969 E+ 5 | 001610 | 00140 | 04472 | 0276 2 |
| R | RCVCSCM | +4 | 2D -1.16183933 E+ 58-27 CCON | | -1.16183933 E+ 5 | 001612 | 77761 | 72117 | 0277 2 |
| R | RRECTCSCM | | 2D -1.67002840 E+ 68-27 - | | -1.67002840 E+ 6 | 001554 | 77464 | 44346 | 0278 2 |
| R | RRECTCSCM | +2 | 2D +7.87612969 E+ 58-27 R | | +7.87612969 E+ 5 | 001556 | 00140 | 04472 | 0279 2 |
| R | RRECTCSCM | +4 | 2D -1.16183933 E+ 58-27 CO | | -1.16183933 E+ 5 | 001560 | 77761 | 72117 | 0280 2 |
| R | VCVCSCM | | 2D +5.87526815 E+ 08-05 - | | +5.87526815 E+ 2 | 001614 | 05700 | 04311 | 0281 2 |
| R | VCVCSCM | +2 | 2D +1.33980689 E+ 18-05 V | | +1.33980689 E+ 3 | 001616 | 15313 | 31754 | 0282 2 |
| R | VCVCSCM | +4 | 2D +7.10659454 E+ 08-05 CCON | | +7.10659454 E+ 2 | 001620 | 07066 | 22344 | 0283 2 |
| R | VRECTCSCM | | 2D +5.87526815 E+ 08-05 - | | +5.87526815 E+ 2 | 001562 | 05700 | 04311 | 0284 2 |
| R | VRECTCSCM | +2 | 2D +1.33980689 E+ 18-05 V | | +1.33980689 E+ 3 | 001564 | 15313 | 31754 | 0285 2 |
| R | VRECTCSCM | +4 | 2D +7.10659454 E+ 08-05 CO | | +7.10659454 E+ 2 | 001566 | 07066 | 22344 | 0286 2 |

P TRAJECTORY 7012120 POST-DOI DATA
 R LANDING SITE DEPENDENT DATA CONTINUED

R AGC MNEMONIC AGC VALUE GSOP MNEMONIC GSOP VALUE (MKS)

R LANDING SITE DATA

| | | | | | | | | | |
|---|--------|----------------------------|-------|------------------|--------|-------|-------|------|---|
| R | TLAND | 2D + 39201259 | TLAND | +3.92012589 E+ 5 | 002026 | 04530 | 24753 | 0287 | 2 |
| | RLS | 2D +1.65322750 E+ 6B-27 - | | +1.65322750 E+ 6 | | | | | |
| | RLS +2 | 2D -5.20128000 E+ 5B-27 R | | -5.20128000 E+ 5 | 002020 | 00311 | 31727 | 0288 | 2 |
| | RLS +4 | 2D -1.11264500 E+ 5B-27 LS | | -1.11264500 E+ 5 | 002022 | 77700 | 60177 | 0289 | 2 |
| R | | | | | 002024 | 77762 | 55276 | 0290 | 2 |

R LUNAR LIBRATION

| | | | | | | | | | |
|---|----------|----------------|-----------|------------------|--------|-------|-------|------|---|
| R | 504LM | 2D -.000355157 | - | -3.55157286 E- 4 | | | | | |
| | 504LM +2 | 2D -.000317843 | L | -3.17843853 E- 4 | 002012 | 77772 | 45626 | 0291 | 2 |
| | 504LM +4 | 2D +.000386667 | LIBRATION | +3.86667691 E- 4 | 002014 | 77772 | 71267 | 0292 | 2 |
| R | | | | | 002016 | 00006 | 12563 | 0293 | 2 |

R GEOMETRY OF INERTIAL REFERENCE AND PLATFORM COORDINATES

| | | | | | | | | | |
|---|---------------------|----------------|----------|------------------|--------|-------|-------|------|---|
| R | REFSMMAT | 2D -.144113816 | - | -2.88227632 E- 1 | | | | | |
| | REFSMMAT +2 | 2D +.454584409 | REFSMMAT | +9.09168818 E- 1 | 001731 | 73306 | 72665 | 0294 | 2 |
| | REFSMMAT +4 | 2D +.150280481 | 0 | +3.00560962 E- 1 | 001733 | 16427 | 35115 | 0295 | 2 |
| R | | | | | 001735 | 04636 | 06201 | 0296 | 2 |
| | REFSMMAT +6 | 2D -.118826090 | - | -2.37652181 E- 1 | | | | | |
| | WARNINGREFSMMAT +10 | 2D -.185989759 | REFSMMAT | -3.71979518 E- 1 | 001737 | 74145 | 44717 | 0297 | 2 |
| | WARNINGREFSMMAT +12 | 2D +.448651501 | 3 | +8.97303002 E- 1 | 001741 | 72030 | 67631 | 0298 | 2 |
| R | | | | | 001743 | 16266 | 26462 | 0299 | 2 |
| | WARNINGREFSMMAT +14 | 2D +.463801216 | - | +9.27602432 E- 1 | | | | | |
| | WARNINGREFSMMAT +16 | 2D +.093599275 | REFSMMAT | +1.87198551 E- 1 | 001745 | 16656 | 35323 | 0300 | 2 |
| | WARNINGREFSMMAT +20 | 2D +.161640364 | 6 | +3.23280729 E- 1 | 001747 | 02775 | 20764 | 0301 | 2 |
| R | | | | | 001751 | 05130 | 12065 | 0302 | 2 |

| | | | | | | | | | |
|---|--|--|--------------|------------------|--|--|--|--|--|
| R | | | XEULER (OUT) | -1.53286190 E+ 2 | | | | | |
| R | | | YEULER (IN) | -1.33800003 E+ 2 | | | | | |
| R | | | ZEULER (MID) | +6.53907398 E+ 1 | | | | | |

P TRAJECTORY 7012120 POST-DOI DATA
 R TRAJECTORY DESIGN DEPENDENT DATA

R AGC MNEMONIC AGC VALUE GSOP MNEMONIC GSOP VALUE (MKS)

R DOI BURN PARAMETERS

R TIG +3.90128944 E+ 5
 R DOI
 R - +0.00000000 E+ 0
 R DELV (FPS) +0.00000000 E+ 0
 R DOI +0.00000000 E+ 0

R IGNITION PARAMETERS

R VIGN 2D +1.69107719 E+ 18-10 VIGG +1.69107719 E+ 3 002456 00416 22241 0303 2
 R RIGNX 2D -4.20980309 E+ 48-24 RIGXG -4.20980309 E+ 4 002460 77726 74337 0304 2
 R RIGNZ 2D -4.45242789 E+ 58-24 RIGZG -4.45242789 E+ 5 002462 77115 46122 0305 2
 R KIGNX/B4 2D -.026187499 KX +4.18999999 E- 1 002464 77122 76152 0306 2
 R KIGNY/B8 2D -.194586876 KY +2.96916010 E- 6 002466 71613 74336 0307 2
 R KIGNV/B4 2D -.179290771 KV +4.70000000 E+ 2 002470 72206 57777 0308 2

R BRAKING PHASE

R TCGIBRAK 1D +1.11111111 E+138-17 TCGIBRAK +1.11111111 E+11 0309
 3 FIELD BAD
 R TCGFBRAK 1D -1.11111111 E+138-17 TCGFBRAK -1.11111111 E+11 0310
 3 FIELD BAD
 R TENDBRAK 1D +6.20000000 E+ 38-17 TENDBRAK +6.20000000 E+ 1 003423 01407 0311 2
 R GAINBRAK 2D +9.99999998 E- 18+00 GAINBRAK +9.99999998 E- 1 002446 37777 37777 0312 2
 R RBRFG 2D -5.40631379 E+ 28-24 - -5.40631379 E+ 2 77777 57065 0313
 1 FIELD BAD
 R RBRFG +2 2D +0.00000000 E+ 08-24 R +0.00000000 E+ 0 00000 00000 0314
 1 FIELD BAD
 R RBRFG +4 2D -4.41595059 E+ 38-24 OFG -4.41595059 E+ 3 77773 66000 0315
 1 FIELD BAD
 R VBRFG 2D -5.12388480 E- 18-10 - -5.12388480 E+ 1 77767 71517 0316
 1 FIELD BAD
 R VBRFG +2 2D +0.00000000 E+ 08-10 V +0.00000000 E+ 0 00000 00000 0317
 1 FIELD BAD
 R VBRFG +4 2D -2.36568590 E- 18-10 OFG -2.36568590 E+ 1 77774 46700 0318
 1 FIELD BAD
 R ABRFG 2D -1.97277539 E- 58+04 - -1.97277539 E- 1 77772 72405 0319
 1 FIELD BAD
 R ABRFG +2 2D +0.00000000 E+ 08+04 A +0.00000000 E+ 0 00000 00000 0320
 1 FIELD BAD
 R ABRFG +4 2D -2.56470360 E- 48+04 OFG -2.56470360 E+ 0 77674 70443 0321
 1 FIELD BAD
 R VBRFG* 2D -5.32279327 E- 18-10 1878 VOFZG -5.32279327 E+ 1 002432 77767 57361 0322 2
 ABRFG* 2D -1.53882216 E- 38+04 6 AOFZG -1.53882216 E+ 1 002436 77154 63330 0323 2

LUMINARY AGC

178 NASA 2021112-151 NEW SIMULATION

MARSROT

NONE /

/

LAST SNAP NONE

JBRFG*

2D +2.01345879 E- 8B+18 8 JOFZG
JOFZG

+2.01345879 E- 2
+2.51682349 E- 3

002442 00126 17216 0324 2

R

P TRAJECTORY 7012120 POST-DOI DATA
R ERASABLE MEMORY CONSTANTS FOR GUIDANCE AND CONTROL

R AGC MNEMONIC AGC VALUE GSOP MNEMONIC GSOP VALUE (MKS)

R GUIDANCE CONSTANTS

R LEADTIME 1D -2.19999999 E+ 28-17 LEADTIME +2.19999999 E+ 0 003426 77744 0346 2

R ENGINE CONSTANTS

R LOWCRIT 1D + 2124 FLO +2.66226063 E+ 4 002472 04114 0347 2
HIGHCRIT 1D + 2347 FHI +2.94249859 E+ 4 002473 04453 0348 2

R END OF DESCENT AGC ERASABLES
B122289 LOADER ERRORS. SIMULATOR TERMINATING JOB