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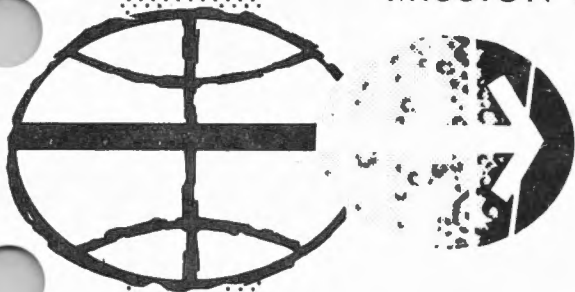
May 6, 1971

APOLLO 15 (MISSION J-1)
MIDCOURSE CORRECTION
SIMULATOR DATA PACKAGE

Mission Planning Support Office

MISSION PLANNING AND ANALYSIS DIVISION

MANNED SPACECRAFT CENTER
HOUSTON, TEXAS



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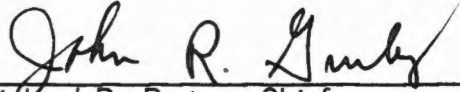
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APOLLO 15 (MISSION J-1) MIDCOURSE
CORRECTION SIMULATOR DATA PACKAGE

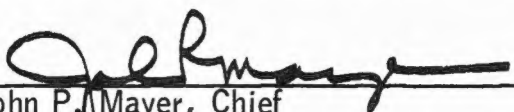
By Data Management Group
Mission Planning Support Office

May 6, 1971

MISSION PLANNING AND ANALYSIS DIVISION
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
MANNED SPACECRAFT CENTER
HOUSTON, TEXAS

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APOLLO 15 (MISSION J-1) MIDCOURSE CORRECTION

SIMULATOR DATA PACKAGE

By Data Management Group
Mission Planning Support Office

INTRODUCTION

This internal note provides a midcourse correction simulator data package to be used for Apollo 15 flight crew and flight controller training on the command module simulators at the Manned Spacecraft Center and at Kennedy Space Center, and on the mission evaluator at North American Rockwell, Downey, California. This package contains simulator data for midcourse correction maneuvers based on dispersed Apollo 15 operational trajectory vectors (ref. 1). This data package was based on a July 26, 1971, launch with an assumed lift-off time of 13^h34^m00^s Greenwich mean time.

The data for tables I through VI was generated by R. H. Sanders (Planetary Mission Analysis Branch).

DATA DESCRIPTION

Midcourse correction (MCC) data are provided for MCC-2, MCC-4, MCC-5, and MCC-7. Table I contains the REFSMMATS to be used for MCC-2 (preferred REFSMMAT), MCC 4 [passive thermal control (PTC) and lunar orbit insertion (LOI) preferred REFSMMAT], MCC-5 (PTC REFSMMAT), and MCC-7 (entry REFSMMAT). Nominally MCC-2 would be performed using the PTC REFSMMAT, but use of the PTC REFSMMAT for MCC-2 results in an unacceptable middle gimbal angle. Data for MCC-4 are provided using the PTC REFSMMAT (nominal) and the LOI preferred REFSMMAT.

Table II contains geocentric and selenocentric state vectors for the command and service module (CSM) in the mean Besselian coordinate system at specific times prior to MCC-2, MCC-4, MCC-5, and MCC-7.

Table III contains the command module simulators (CMS) navigation update loads computed 12 minutes prior to ignition of MCC-2, MCC-4, MCC-5, and MCC-7.

Table IV contains the navigation checks computed 30 minutes after each navigation update and is based on zero ΔV applied.

Table V contains the external ΔV updates for MCC-2, MCC-4, MCC-5, and MCC-7.

Table VI contains the maneuver pads for MCC-2, MCC-4, MCC-5, and MCC-7.

Tables VIII, IX, and X of reference 2 should be used for erasable load data, scale factors, propulsion data, mass properties data, and consumables data.

Any questions concerning this data package should be directed to Larry Davis of the Data Management Group, HU3-4091.

TABLE I. - REFSMMAT UPDATES
(a) Preferred REFSMMAT for MCC-2

OID	FCT	DSKY	DECIMAL
01	INDEX		
02	ADD		
03	XIXE	03565	.23312538+00
04	XIXE	30327	
05	XIYE	62056	-.86929560+00
06	XIYE	67276	
07	XIZE	71015	-.43586435+00
10	XIZE	54615	
11	YIXE	00765	.61166398-01
12	YIXE	02317	
13	YIYE	07273	.46043467+00
14	YIYE	34140	
15	YIZE	61651	-.88558377+00
16	YIZE	51415	
17	ZIXE	17416	.97052112+00
20	ZIXE	20224	
21	ZIYE	02700	.17979180+00
22	ZIYE	33257	
23	ZIZE	02442	.16051069+00
24	ZIZE	34724	

TABLE I. - REFSMMAT UPDATES - Continued

(b) LOI preferred REFSMMAT for MCC-4

OID	FCT	DSKY	DECIMAL
01	INDEX		
02	ADD		
03	XIXE	07543	.48089333+00
04	XIXE	17232	
05	XIYE	71267	-.41515140+00
06	XIYE	42431	
07	XIZE	63511	-.77226350+00
10	XIZE	63602	
11	YIXE	00235	.19274136-01
12	YIXE	34463	
13	YIYE	61773	-.87557759+00
14	YIYE	50454	
15	YIZE	07562	.48269284+00
16	YIZE	07020	
17	ZIXE	61763	-.87656723+00
20	ZIXE	45121	
21	ZIYE	74030	-.24700848+00
22	ZIYE	60152	
23	ZIZE	71310	-.41305774+00
24	ZIZE	47307	

TABLE I. - REFSMMAT UPDATES - Continued
(c) PTC REFSMMAT for MCC-4 and MCC-5

OID	FCT	DSKY	DECIMAL
01	INDEX		
02	ADD		
03	XIXE	17021	.93969262+00
04	XIXE	36621	
05	XIYE	05012	.31378939+00
06	XIYE	22004	
07	XIZE	02132	.13606614+00
10	XIZE	24730	
11	YIXE	05361	.34202014+00
12	YIXE	32416	
13	YIYE	62151	-.86212927+00
14	YIYE	55767	
15	YIZE	72011	-.37383864+00
16	YIZE	60341	
17	ZIXE	00000	.37252904-08
20	ZIXE	00001	
21	ZIYE	06273	.39783077+00
22	ZIYE	00746	
23	ZIZE	61249	-.91745881+00
24	ZIZE	45532	

TABLE I - REFSMMAT UPDATES - Concluded

(d) Entry REFSMMAT for MCC-7

OID	FCT	DSKY	DECIMAL
01	INDEX		
02	ADD		
03	XIXE	63236	-.79310282+00
04	XIXE	74664	
05	XIYE	75662	-.13441632+00
06	XIYE	73442	
07	XIZE	11402	.59407085+00
10	XIZE	24070	
11	YIXE	66204	-.60877234+00
12	YIXE	75766	
13	YIYE	03232	.20632025+00
14	YIYE	05474	
15	YIZE	63574	-.76604711+00
16	YIZE	61260	
17	ZIXE	77537	-.19599613-01
20	ZIXE	56047	
21	ZIYE	60374	-.96920802+00
22	ZIYE	47734	
23	ZIZE	74045	-.24546211+00
24	ZIZE	45450	

TABLE II. - RESET VECTORS UPDATE

(a) MCC-2 - 2.5 hours

GET = 28 HR 25 MIN .00 SEC

	GEOCENTRIC	SELENOCENTRIC
X =	-.65670783+09	.66393114+09 FT
Y =	-.22801110+09	-.17313702+09 FT
Z =	-.16348232+09	-.37803558+08 FT
XDOT =	-.39310564+04	-.41674001+04 FT/SEC
YDOT =	-.23783920+04	.44646057+03 FT/SEC
ZDOT =	-.15549853+04	-.12355555+03 FT/SEC
X =	-.31382780+02	.31727968+02 ER
Y =	-.10896204+02	-.82738787+01 ER
Z =	-.78124996+01	-.18065580+01 ER
XDOT =	-.67628693+00	-.71694677+00 ER/HR
YDOT =	-.40917129+00	.76807711-01 ER/HR
ZDOT =	-.26751493+00	-.21256119-01 ER/HR
WT =	.10318480+06 LBS	

TABLE II.- RESET VECTORS UPDATE - Continued

(b) MCC-2 - 1 hour

GET	=	29 HR 55 MIN	.00 SEC
		GEOCENTRIC	SELENOCENTRIC
X	=	-.67757801+09	.64166741+09 FT
Y	=	-.24072630+09	-.17060419+09 FT
Z	=	-.17178817+09	-.38391495+08 FT
XDOT	=	-.38002608+04	-.40800407+04 FT/SEC
YDOT	=	-.23313162+04	.49116642+03 FT/SEC
ZDOT	=	-.15215536+04	-.94539734+02 FT/SEC
X	=	-.32380125+02	.30664028+02 ER
Y	=	-.11503838+02	-.81528397+01 ER
Z	=	-.82094198+01	-.18346543+01 ER
XDOT	=	-.65378526+00	-.70191773+00 ER/HR
YDOT	=	-.40107251+00	.84498771+01 ER/HR
ZDOT	=	-.626176343+00	-.16264327+01 ER/HR
WT	=	.10318480+06 LBS	

TABLE II. - RESET VECTORS UPDATE - Continued

(c) MCC-2 - 20 minutes

GET = 30 HR 35 MIN .00 SEC

	GEOCENTRIC	SELENOCENTRIC
X =	-.68663212+09	.63191867+09 FT
Y =	-.24629711+09	-.16940244+09 FT
Z =	-.17542267+09	-.38603584+08 FT
XDOT =	-.37451258+04	-.40441940+04 FT/SEC
YDOT =	-.23110937+04	.51017596+03 FT/SEC
ZDOT =	-.15072492+04	-.82278690+02 FT/SEC
X =	-.32812803+02	.30198155+02 ER
Y =	-.11770056+02	-.80954106+01 ER
Z =	-.83831054+01	-.18447896+01 ER
XDOT =	-.64429999+00	-.69575077+00 ER/HR
YDOT =	-.39759351+00	.87769113+01 ER/HR
ZDOT =	-.25930255+00	-.14154974+01 ER/HR
WT =	.10318480+06 LBS	

(d) MCC-4 - 2.5 hours

GET = 71 HR 1 MIN .00 SEC

GEOCENTRIC

SELENOCENTRIC

X 8

W. 10844611-10

• 10715942+09 FY

Y =

-051618701+09

7.42859130+08 FT

2 8

- 34975961-09

- . 18969284 + 08 FT

XDOT =

- 21912899-04

π.36194582+04 FT/SEC

YDOT =

- . 14250460 + 04

•11420050•04 FT/SEC

ZDOT =

- 92844643+03

.28287006+03 FT/SEC

X ■

-051824273+02

.51209387*01 ER

Y. 22

-024667565+02

- .20481538+01 ER

Z - ■

-016714326+02

- 90650492-00 ER

XDOT =

-0.37698281+00

- .62268053+00 ER/HR

YDOT =

• 24516056+00

• 19646706 • 00 ER/HR

ZDOT -

- 15972709+00

.48664101-01 ER/HR

WT = .10281650+06 LBS

TABLE II.- RESET VECTORS UPDATE - Continued

(e) MCC-4 - 1 hour

	GET	=	72 HR 31 MIN	.00 SEC
			GEOCENTRIC	SELENOCENTRIC
X	=		-.10963708+10	.87430769+08 FT
Y	=		-.52374990+09	-.36603263+08 FT
Z	=		-.35470097+09	-.17399648+08 FT
XDOT	=		-.22246237+04	-.36923324+04 FT/SEC
YDOT	=		-.13739101+04	.11770162+04 FT/SEC
ZDOT	=		-.90056638+03	.29956125+03 FT/SEC
X	=		-.52393413+02	.41781451+01 ER
Y	=		-.25028981+02	-.17491982+01 ER
Z	=		-.16950464+02	-.83149510+00 ER
XDOT	=		-.38271747+00	-.63521758+00 ER/HR
YDOT	=		-.23636330+00	.20249028+00 ER/HR
ZDOT	=		-.15493069+00	.51535603+01 ER/HR
	WT	=	.10281650+06 LBS	

TABLE II. - RESET VECTORS UPDATE - Continued

(f) MCC-4 - 20 minutes

	GET	=	73 HR 11 MIN	.00 SEC
			GEOCENTRIC	SELENOCENTRIC
X	=		-.11017397+10	.78518370+08 FT
Y	=		-.52701474+09	-.33754600+08 FT
Z	=		-.35684459+09	-.16668982+08 FT
XDOT	=		-.22509492+04	-.37361592+04 FT/SEC
YDOT	=		-.13460629+04	.11975472+04 FT/SEC
ZDOT	=		-.88537168+03	.30971162+03 FT/SEC
X	=		-.52649980+02	.37522390+01 ER
Y	=		-.25185002+02	-.16130662+01 ER
Z	=		-.17052904+02	-.79657798+00 ER
XDOT	=		-.38724643+00	-.64275741+00 ER/HR
YDOT	=		-.23157254+00	.20602236+00 ER/HR
ZDOT	=		-.15231664+00	.53281840+01 ER/HR
	WT	=	.10281650+06	LBS

TABLE II.- RESET VECTORS UPDATE - Continued

(g) MCC-5 - 2.5 hours

	GET	=	238 HR 16 MIN	.00 SEC
			GEOCENTRIC	SELENOCENTRIC
X	=		.30938972+09	-.20102937+09 FT
Y	=		-.93434066+09	.66558920+08 FT
Z	=		-.49048664+09	-.14817277+08 FT
XDOT	=		-.37641452+03	-.34489938+04 FT/SEC
YDOT	=		.26767462+04	.13285480+04 FT/SEC
ZDOT	=		.87882042+03	-.39870766+02 FT/SEC
X	=		.14785128+02	-.96067996+01 ER
Y	=		-.44650309+02	.31807203+01 ER
Z	=		-.23439395+02	-.70808864+00 ER
XDOT	=		-.64757203-01	-.59335434+00 ER/HR
YDOT	=		.46049923+00	.22855934+00 ER/HR
ZDOT	=		.15118958+00	-.68592448-02 ER/HR
	WT	=	.26836550+05	LBS

TABLE II. - RESET VECTORS UPDATE - Continued

(h) MCC-5 - 1 hour

GET = 239 HR 46 MIN .00 SEC

	GEOCENTRIC	SELENOCENTRIC
X =	.30735892+09	-.21959405+09 FT
Y =	-.91975662+09	.73749139+08 FT
Z =	-.48566046+09	-.15006004+08 FT
XDOT =	-.37637767+03	-.34273303+04 FT/SEC
YDOT =	.27251529+04	.13349344+04 FT/SEC
ZDOT =	.90874540+03	-.29903641+02 FT/SEC
X =	.14688080+02	-.10493969+02 ER
Y =	-.43953366+02	.35243268+01 ER
Z =	-.23208762+02	-.71710753+00 ER
XDOT =	-.64750864-01	-.58962742+00 ER/HR
YDOT =	.46882697+00	.22965804+00 ER/HR
ZDOT =	.15633778+00	-.51445309+02 ER/HR
WT =	.26836550+05 LBS	

TABLE II.- RESET VECTORS UPDATE - Continued
(i) MCC-5 - 20 minutes

GET = 240 HR 26 MIN .00 SEC

	GEOCENTRIC	SELENOCENTRIC
X =	.30645437+09	-.22780915+09 FT
Y =	-.91318961+09	.76957250+08 FT
Z =	-.48346331+09	-.15072209+08 FT
XDOT =	-.37752621+03	-.34186250+04 FT/SEC
YDOT =	.27474172+04	.13385937+04 FT/SEC
ZDOT =	.92224556+03	-.25219509+02 FT/SEC
X =	.14644854+02	-.10886553+02 ER
Y =	-.43639542+02	.36776361+01 ER
Z =	-.23103764+02	-.72027135+00 ER
XDOT =	-.64948454+01	-.58812980+00 ER/HR
YDOT =	.47265726+00	.23028757+00 ER/HR
ZDOT =	.15866031+00	-.43386873+02 ER/HR

WT = .26836550+05 LBS

TABLE II. - RESET VECTORS UPDATE - Continued
(j) MCC-7 - 2.5 hours

	GET	=	289 HR 28 MIN	.00 SEC
			GEOCENTRIC	SELENOCENTRIC
X	=	.13890513+09		-.84515823+09 FT
Y	=	-.16107471+09		.47000545+09 FT
Z	=	-.15368282+09		.97270244+08 FT
XDOT	=	-.30377786+04		-.49740666+04 FT/SEC
YDOT	=	.77372578+04		.51529340+04 FT/SEC
ZDOT	=	.44930834+04		.30242877+04 FT/SEC
X	=	.66380039+01		-.40388455+02 ER
Y	=	-.76974447+01		.22460639+02 ER
Z	=	-.73442008+01		.46483543+01 ER
XDOT	=	-.52261014+00		-.85572321+00 ER/HR
YDOT	=	.13310942+01		.88649502+00 ER/HR
ZDOT	=	.77297633+00		.52028921+00 ER/HR
	WT	=	.26700000+05 LBS	

TABLE II. - RESET VECTORS UPDATE - Continued

(k) MCC-7 - 1 hour

GET = 290 HR 58 MIN .00 SEC

	GEOCENTRIC	SELENOCENTRIC
X =	.12064287+09	-.87375719+09 FT
Y =	-.11725600+09	.49979357+09 FT
Z =	-.12739470+09	.11559709+09 FT
XDOT =	-.37902274+04	-.56822618+04 FT/SEC
YDOT =	.85366656+04	.59245768+04 FT/SEC
ZDOT =	.53063089+04	.38265430+04 FT/SEC
X =	.57652863+01	-.41755144+02 ER
Y =	-.56034344+01	.23884155+02 ER
Z =	-.60879428+01	.55241585+01 ER
XDOT =	-.65205915+00	-.97755895+00 ER/HR
YDOT =	.14686219+01	.10192461+01 ER/HR
ZDOT =	.91288117+00	.65830676+00 ER/HR
WT =	.26700000+05 LBS	

TABLE II. - RESET VECTORS UPDATE - Concluded

(I) MCC-7 - 20 minutes

	GET	=	291 HR 38 MIN	.00 SEC
	GEOCENTRIC			SELENOCENTRIC
X	=	.11097339+09		-.88794370+09 FT
Y	=	-.96231255+08		.51453479+09 FT
Z	=	-.11405979+09		.12537488+09 FT
XDOT	=	-.42924055+04		-.61646075+04 FT/SEC
YDOT	=	.89979187+04		.63736847+04 FT/SEC
ZDOT	=	.58295280+04		.43449985+04 FT/SEC
X	=	.53032010+01		-.42433089+02 ER
Y	=	-.45987031+01		.24588609+02 ER
Z	=	-.54506936+01		.59914200+01 ER
XDOT	=	-.73845232+00		-.10605402+01 ER/HR
YDOT	=	.15479744+01		.10965092+01 ER/HR
ZDOT	=	.10028942+01		.74750027+00 ER/HR
	WT	=	.26700000+05 LBS	

TABLE III.- NAVIGATION UPDATES
(a) MCC-2

LOAD NO	GET GEN	SITES
STA ID		GMT ID
OID	FCT	DSKY V71 VECTOR
1	INDEX	
2	ADD	
3	VID	
4	X	63373
5	X	56675
6	Y	73402
7	Y	43305
10	Z	74631
11	Z	44727
12	X-DOT	75117
13	X-DOT	52260
14	Y-DOT	76173
15	Y-DOT	77477
16	Z-DOT	76665
17	Z-DOT	43646
16	T	01243
17	T	03006
		30 43 27.42

TABLE III.- NAVIGATION UPDATES - Continued

(b) MCC-4

LOAD NO	GET GEN	SITES
STA ID		GMT ID
OID	FCT	DSKY V71 VECTOR
1	INDEX	
2	ADD	
3	VID	
4	X	05446 .76719535+08
5	X	20146
6	Y	75455 -.33177673+08
7	Y	61651
10	Z	76631 -.16519505+08
11	Z	53354
12	X=DOT	64451 -.37460966+04
13	X=DOT	75635
14	Y=DOT	03524 .12021929+04
15	Y=DOT	03502
16	Z=DOT	00746 .31205009+03
17	Z=DOT	37226
16	T	03112 73 19 .83
17	T	36743

TABLE III.- NAVIGATION UPDATES - Continued
(c) MCC-5

LOAD NO	GET GEN	SITES
STA ID		GMT ID
OID	FCT	DSKY V71 VECTOR
1	INDEX	
2	ADD	
3	VID	
4	X	05440 .30627274+09
5	X	34000
6	Y	57336 -.91186730+09
7	Y	40775
10	Z	67163 -.48301914+09
11	Z	42251
12	X-DOT	77554 -.37783413+03
13	X-DOT	62706
14	Y-DOT	02061 .27519323+04
15	Y-DOT	24630
16	Z-DOT	00550 .92496725+03
17	Z-DOT	33665
16	T	12245 240 34 .90
17	T	34471

TABLE III.- NAVIGATION UPDATES - Concluded

(d) MCC-7

LOAD NO	GET GEN	SITES
STA ID		GMT ID
OID	FCT	DSKY V71 VECTOR
1	INDEX	
2	ADD	
3	VID	
4	X	01764 .10880652+09
5	X	02742
6	Y	76252 -.91727016+08
7	Y	70702
10	Z	75766 -.11112717+09
11	Z	52233
12	X-DOT	74504 -.44174733+04
13	X-DOT	61447
14	Y-DOT	06740 .91048621+04
15	Y-DOT	06504
16	Z-DOT	04424 .59576976+04
17	Z-DOT	13412
16	T	14412 291 46 17.64
17	T	37705

TABLE IV. - NAVIGATION CHECKS

(a) MCC-2

Geographic

GET = 31 13 27.42

LAT = -.13603793+02

LON = .30315184+03

H NM = .12174995+06

Selenographic

GET = 31 13 27.42

LATS = .35670893+01

LONS = -.21592457+02

H NM = .10539955+06

TABLE IV. - NAVIGATION CHECKS - Continued

(b) MCC-4

Geographic

GET	=	73	49	.83
LAT	=	-0.16300161	+02	
LON	=	.28205245	+02	
M NM	=	.20699933	+06	

Selenographic

GET	=	73	49	.83
LATS	=	-0.11872069	+01	
LONS	=	-0.56057043	+02	
M NM	=	.11924634	+05	

TABLE IV. - NAVIGATION CHECKS - Continued

(c) MCC-5

Geographic

GET = 241 4 .90

LAT = -0.26704136×10^2 LON = 0.11562076×10^3 H NM = 0.17286126×10^6

Selenographic

GET = 241 4 .90

LATS = -0.11289084×10^2 LONS = 0.42303115×10^2 H NM = 0.40088593×10^5

TABLE IV. - NAVIGATION CHECKS - Concluded

(d) MCC-7

Geographic

GET = 292 16 17.64

LAT = -.38600783+02

LON = .10007744+03

H NM = .22935350+05

Selenographic

GET = 292 16 17.64

LATS = -.50302497+01

LONS = -.60116597+00

H NM = .17278701+06

TABLE V. - EXTERNAL DELTA V UPDATE

(a) MCC-2

OID	FCT	DSKY V71	DECIMAL
01	INDEX		
02	ADD		
03	VGX	00010	.21526500+02
04	VGX	14600	
05	VGY	77777	-.88590000+00
06	VGY	64740	
07	VGZ	77776	-.38421000+01
10	VGZ	60020	
11	TIGN	01247	30 55 27.42
12	TIGN	17506	

TABLE V. - EXTERNAL DELTA V UPDATE - Continued
(b) MCC-4

OID	FCT	DSKY V71	DECIMAL
01	INDEX		
02	ADD		
03	VGX	00001	.30820000+01
04	VGX	06365	
05	VGY	00000	.000000000
06	VGY	00000	
07	VGZ	00000	.000000000
10	VGZ	00000	
11	TIGN	03117	73 31 .83
12	TIGN	13443	

TABLE V. - EXTERNAL DELTA V UPDATE - Continued
(c) MCC-5

OID	FCT	DSKY V.71	DECIMAL
01	INDEX		
02	ADD		
03	VGX	00001	.48487999+01
04	VGX	34422	
05	VGX	00000	.00000000
06	VGX	00000	
07	VGZ	77777	.71000000+01
10	VGZ	77071	
11	TIGN	12252	240 46 .90
12	TIGN	11171	

TABLE V. - EXTERNAL DELTA V UPDATE - Concluded
(d) MCC-7

OID	FCT	DSKY V71	DECIMAL
01	INDEX		
02	ADD		
03	VGX	00000	.20573000+01
04	VGX	31537	
05	VGX	00000	.00000000
06	VGX	00000	
07	VGZ	77777	-.82900000-01
10	VGZ	76755	
11	TIGN	14417	291 58 17.64
12	TIGN	14405	

TABLE VI. - MANEUVER PADS

(a) MCC-2

P30 MANEUVER

SET STARS		M	C	C	2	PURPOSE
		S	P	S/G	+ N	PROP/GUID
		+	6	6	9 4 7	WT N47
R ALIGN		-	0	0	0 9 2	P TRIM N48
P ALIGN		+	0	0	0 8 4	Y TRIM
Y ALIGN		+	0	0	0 3 0	HRS GETI
		+	0	0	0 5 5	MIN N33
		+	0	2	7 4 2	SEC
ULLAGE	NONE	+	0	0	2 1 5	ΔV_X N81
		-	0	0	0 0 9	ΔV_Y
		-	0	0	0 3 8	ΔV_Z
		X	X	X	0 0 0	R
		X	X	X	0 0 0	P
		X	X	X	0 0 0	Y
		+			NA	H _A N44
					NA	H _P
		+	0	0	2 1 9	ΔVT
HORIZON/WINDOW		X	X	X	0 0 3	BT
		X	0	0	1 8 1	ΔVC
		X	X	X	X	SXTS
		+			0	SFT
		+			0 0	TRN
		X	X	X		BSS
		X	X			SPA
		X	X	X		SXP
OTHER	LM WT=36238		0			LAT N61
						LONG
		+				RTGO EMS
		+				V10
						GET 0.05G

TABLE VI. - MANEUVER PADS - Continued

(b) MCC-4 - PTC REFSMMAT

P30 MANEUVER

SET STARS		MCC 4					PURPOSE	
		R	C	S/G	+	N	PROP/GUID	
		+	6	6	5	7	8	WT N47
R ALIGN	_____	0	0	NA				P TRIM N48
P ALIGN	_____	0	0	NA				Y TRIM
Y ALIGN	_____	+	0	0	0	7	3	HRS GETI
		+	0	0	0	3	1	MIN N33
		+	0	0	0	8	3	SEC
ULLAGE	_____	+	0	0	0	3	1	ΔV_X N81
	_____	+	0	0	0	0	0	ΔV_Y
	_____	+	0	0	0	0	0	ΔV_Z
	_____	X	X	X	0	6	4	R
	_____	X	X	X	2	1	6	P
	_____	X	X	X	0	3	7	Y
		+			NA			H _A N44
					NA			H _P
		+	0	0	0	3	1	ΔVT
HORIZON/WINDOW	_____	X	X	X	0	2	8	BT
	_____	X	0	0	0	3	1	ΔVC
	_____	X	X	X	X			SXTS
	_____	+					0	SFT
	_____	+					0 0	TRN
		X	X	X				BSS
		X	X					SPA
		X	X	X				SXP
OTHER	_____		0					LAT N61
	LM WT = 36238							LONG
	_____	+						RTGO EMS
	_____	+						V10
								GET 0.05G

TABLE VI.- MANEUVER PADS - Continued

(c) MCC-4 - LOI preferred REFSMMAT

P30 MANEUVER

SET STARS		MCC 4				PURPOSE		
		RC S/G + N				PROP/GUID		
		+	6	6	5	7	8	WT N47
R ALIGN	_____		0	0	NA			P TRIM N48
P ALIGN	_____		0	0	NA			Y TRIM
Y ALIGN	_____	+	0	0	0	7	3	HRS GET1
		+	0	0	0	3	1	MIN N33
		+	0	0	0	8	3	SEC
ULLAGE	_____	+	0	0	0	3	1	ΔV_X N81
	_____	+	0	0	0	0	0	ΔV_Y
	_____	+	0	0	0	0	0	ΔV_Z
	_____	X	X	X	0	1	5	R
	_____	X	X	X	3	0	8	P
	_____	X	X	X	0	0	6	Y
		+			NA			H _A N44
					NA			H _P
		+	0	0	0	3	1	ΔVT
HORIZON/WINDOW	_____	X	X	X	0	2	8	BT
	_____	X	0	0	0	3	1	ΔVC
	_____	X	X	X	X			SXTS
	_____	+					0	SFT
	_____	+				0	0	TRN
		X	X	X				BSS
		X	X					SPA
		X	X	X				SXP
OTHER	_____		0					LAT N61
	LM WT = 36238							LONG
	_____	+						RTGO EMS
	_____	+						V10
								GET 0.05G

TABLE VI. - MANEUVER PADS - Continued

(d) MCC-5

P30 MANEUVER

SET STARS		MCC5					PURPOSE	
		R	C	S	G	T	N	PROP/GUID
		+	2	6	8	3	7	WT N47
R ALIGN	_____	0	0	NA				P TRIM N48
P ALIGN	_____	0	0	NA				Y TRIM
Y ALIGN	_____	+	0	0	2	4	0	HRS GETI
		+	0	0	0	4	6	MIN N33
		+	0	00.90				SEC
ULLAGE	_____	+	0	0	0	4	8	ΔV_X N81
	_____	+	0	0	0	0	0	ΔV_Y
	_____	-	0	0	0	0	1	ΔV_Z
	_____	X	X	X	0	9	5	R
	_____	X	X	X	3	1	5	P
	_____	X	X	X	0	0	0	Y
		+			NA			H _A N44
					NA			H _P
		+	0	0	0	4	8	ΔVT
HORIZON/WINDOW	_____	X	X	X	0	1	1	BT
	_____	X	0	0	0	4	8	ΔVC
	_____	X	X	X	X			SXTS
	_____	+					0	SFT
	_____	+					0 0	TRN
		X	X	X				BSS
		X	X					SPA
		X	X	X				SXP
OTHER	_____		0					LAT N61
	_____							LONG
	_____	+						RTGO EMS
	_____	+						V10
								GET 0.05G

TABLE VI. - MANEUVER PADS - Concluded

(e) MCC-7

P30 MANEUVER

SET STARS		M	C	C	7	PURPOSE	
		R	C	5	6	+ N	PROP/GUID
		+	2	6	7	0 0	WT N47
R ALIGN	_____		0	0	M	A	P TRIM N48
P ALIGN	_____		0	0	M	A	Y TRIM
Y ALIGN	_____	+	0	0	2	9 1	HRS GETI
		+	0	0	0	5 8	MIN N33
		+	0	1	7	6 4	SEC
ULLAGE	_____	+	0	0	0	2.1	ΔV_X N81
	_____	+	0	0	0	0.0	ΔV_Y
	_____	-	0	0	0	0.1	ΔV_Z
	_____	X	X	X	0	0 0	R
	_____	X	X	X	1	3 0	P
	_____	X	X	X	0	0 0	Y
		+			M	A	H _A N44
					M	A	H _P
		+	0	0	0	2.1	ΔV_T
HORIZON/WINDOW	_____	X	X	X	0	0 5	BT
	_____	X	0	0	0	2.1	ΔV_C
	_____	X	X	X	X		SXTS
	_____	+				0	SFT
	_____	+			0	0	TRN
		X	X	X			BSS
		X	X				SPA
		X	X	X			SXP
OTHER	_____		0				LAT N61
	_____						LONG
	_____	+					RTGO EMS
	_____	+					V10
							GET 0.05G

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