

BIK II / 414

INPUT CHANNEL 31 (INVERTED LOGIC) TRANSLATION AND ROTATION

BIT POSITION	CHANNEL INPUT SIGNAL	CM	LEM
1	MANR+P	+PITCH MAN ROT	+EL (LPD), +PMI
2	MANR-P	-PITCH MAN ROT	-EL (LPD), -PMI
3	MANR+Y	+YAW MAN ROT	+YMI
4	MANR-Y	-YAW MAN ROT	-YMI
5	MANR+Z	+ROLL MAN ROT	+AZ (LPD), +RMI
6	MANR-Z	-ROLL MAN ROT	-AZ (LPD), -RMI
7	TRAN+X	+X TRANSLATION	* SAME AS CM
8	TRAN-X	-X TRANSLATION	*
9	TRAN+Y	+Y TRANSLATION	*
10	TRAN-Y	-Y TRANSLATION	*
11	TRAN+Z	+Z TRANSLATION	*
12	TRAN-Z	-Z TRANSLATION	*
13	HOLFUN	HOLD FUNCTION	ATTITUDE HOLD
14	FREFUN	FREE FUNCTION	AUTO STABILIZATION
15	GCAPCL	GUIDANCE CONTROL, AUTO PILOT CONTROL	ATTITUDE CONTROL OUT OF DETENT

INPUT CHANNEL 32 (INVERTED LOGIC) IMPULSE

BIT POSITION	CHANNEL INPUT SIGNAL	CM	LEM
1	MNIM+P	+PITCH MIN IMPULSE	THRUSTER 2-4 FAIL
2	MNIM-P	-PITCH MIN IMPULSE	THRUSTER 5-8 FAIL
3	MNIM+Y	+YAW MIN IMPULSE	THRUSTER 1-3 FAIL
4	MNIM-Y	-YAW MIN IMPULSE	THRUSTER 6-7 FAIL
5	MNIM+R	+ROLL MIN IMPULSE	THRUSTER 14-16 FAIL
6	MNIM-R	-ROLL MIN IMPULSE	THRUSTER 13-15 FAIL
7	TRST9	-	THRUSTER 9-12 FAIL
8	TRST10	-	THRUSTER 10-11 FAIL
9	PCHGOF	-	PITCH GIMBAL OFF
10	ROLGOF	-	ROLL GIMBAL OFF
11	LEMATT	LEM ATTACHED	
12	IN3212		
13	IN3213		
14	IN3214		
15	IN3216		

INPUT CHANNEL 33 (INVERTED LOGIC) OPTICS AND AGC

BIT POSITION	CHANNEL INPUT SIGNAL	CM	LEM
1	-	-	RR ON AUTO/STAR/BEAC
2	RRPONA	-	RR ON LO/LOTS LOCK ON
3	RRRLSC	-	RR AND LOTS DATA GOOD
4	ZEROP	ZERO OPTICS	LR DATA GOOD
5	OPMSW2	AGC HAS CONTROL	LR POSITION 1 (DESCENT)
6	OPMSW3	STAR TRACKER ON	LR POSITION 2 (HOVER)
7	STRPRS	STAR PRESENT	LANDING VELOCITY DATA
8	LVDAGD	-	GOOD
9	LRRLSC	-	LR ON LOW SCALE
10	BLKUPL	ACCEPT UPLINK DATA	*SAME AS CM
11	NO NAME 3	IN LINK TOO FAST	*
12	NO NAME 4	DOWNLINK TOO FAST	*
13	PIPAFL 2	PIPA FAIL	*
14	AGCW AR 2	AGC WARNING	*
15	OSCALM 2	OSCILLATOR ALARM	*



INPUT CHANNEL 15

MAIN PANEL KEYBOARD

BIT POSITION	CHANNEL INPUT SIGNAL	CM	LEM	TRAP	RUPT
1	MKEY1	KEY 1M	*SAME AS CM	15	5
2	MKEY2	KEY 2M	*	15	5
3	MKEY3	KEY 3M	*	15	5
4	MKEY4	KEY 4M	*	15	5
5	MKEY5	KEY 5M	*	15	5

INPUT CHANNEL 16

NAVIGATION PANEL KEYBOARD

BIT POSITION	CHANNEL INPUT SIGNAL	CM	LEM	TRAP	RUPT
1	NKEY1	KEY1	-	16A	6
2	NKEY2	KEY2	-	16A	6
3	NKEY3	KEY3	MARK X	16A	6
4	NKEY4	KEY4	MARK Y	16A	6
5	NKEY5	KEY5	MARK REJECT	16A	6
6	MARK	MARK	DESCENT +	16B	6
7	MRKREJ	MARK REJECT	DESCENT -	16B	6

INPUT CHANNEL 30

(INVERTED LOGIC)

GN & C

BIT POSITION	CHANNEL INPUT SIGNAL	CM	LEM
1	ULLTHR	ULLAGE THRUST PRESENT	ABORT
2	SMSEPR	SM SEPARATION	STAGE VERIFICATION
3	SPSRDY	SPS READY	ENGINE ARMED
4	S4BSAB	SIVB SEPARATION	STAGE ABORT
5	LFTOFF	LIFT OFF SIVB	AUTO THROTTLE
6	GUIREL	GUIDANCE REF RELEASE	INERTIAL DATA DISPLAY
7	OPCDFL	OPTICS CDU FAIL	RR CDU FAIL
8	IN3008		
9	IMUOPR	IMU OPERATE	*SAME AS CM
10	CTLSAT	SATURN CONTROL	G&N CONTROL OF S/C
11	IMUCAG	IMU CAGE	*
12	CDUFAL	IMU CDU FAIL	*
13	IMUFAL	IMU FAIL	*
14	ISSTOR	ISS TURNED ON REQUEST	*
15	TEMPIN	TEMP IN LIMITS	*

1 MARCH 1966

OUTPUT CHANNEL 11

DSKY A RELAYS

BIT POSITION	CHANNEL OUTPUT SIGNAL	CM	LEM
1	ISSWAR	ISS WARNING	* SAME AS CM
2	COMACT	LIGHT COMPUTER ACTIVITY LAMP	*
3	UPLACT	LIGHT UPLINK ACTIVITY LAMP	*
4	TMPOUT	LIGHT TEMP CAUTION LAMP	*
5	KYRLS	LIGHT KEY RELEASE LAMP (FLASH)	*
6	VNFLSH	FLASH VERB AND NOUN LAMPS	*
7	OPEROR	LIGHT OPERATOR ERROR LAMP (FLASH)	*
8	OT1108	TEST CONNECTOR OUTBIT CAUTION RESET	ENGINE ON ASC/DESC ENGINE OFF ASC/DESC
9	OT1109		
10	OT1110		
11	OT1111		
12	OT1112		
13	OT1113		
14	OT1114		
15/16	OT1116		

OUTPUT CHANNEL 12

GN & C

BIT POSITION	CHANNEL OUTPUT SIGNAL	CM	LEM
1	ZOPCDU	ZERO OPTICS CDU	ZERO RR CDU
2	ENEROP	ENABLE OPTICS ERROR COUNTER	ENABLE RR COUNTER
3	STARON	ENABLE STAR TRACKER	LOTS COARSE ALIGN
4	COARSE	COARSE ALIGN ENABLE	USE LOW SCALE FACTOR FOR HORIZON VELOCITY
5	ZIMCDU	ZERO IMU CDU'S	*SAME AS CM
6	ENERIM	ENABLE IMU ERROR COUNTER	*
7	-	-	-
8	TVCNAB	ENABLE SIVB ENGINE TVC	CDU CONTROL
9	S4BTAK	ENABLE SIVB TAKE OVER	+ PITCH GIMBAL TRIM
10	ZEROPT	ZERO OPTICS	-PITCH GIMBAL TRIM
11	DISDAC	DISENGAGE OPTICS DAC	+ROLL PITCH GIMBAL TRIM
12	MROLGT	-	-ROLL PITCH GIMBAL TRIM
13	S4BSEQ	ENABLE SIV START SEQUENCE	LANDING RADAR
14	S4BOFF	CUTOFF SIV ENGINE	POSITION COMMAND
15	ISSTDC	ISS TURN ON DELAY COMPLETED	ENABLE RR LOCK ON
			LOTS TRACK ENABLE

1 MARCH 1966

OUTPUT CHANNEL 05

PITCH AND YAW RCS

BIT POSITION	CHANNEL OUTPUT SIGNAL	CM	LEM
1	RC + X + P	# 1 RCS + X + P	# 1 RCS 4U
2	RC - X - P	# 2 RCS - X - P	# 2 RCS 4D
3	RC - X + P	# 5 RCS - X + P	# 5 RCS 3U
4	RC + X - P	# 6 RCS + X - P	# 6 RCS 3D
5	RC + X + Y	# 9 RCS + X + Y	# 9 RCS 2U
6	RC - X - Y	# 10 RCS - X - Y	# 10 RCS 2D
7	RC - X + Y	# 13 RCS - X + Y	# 13 RCS 1U
8	RC + X - Y	# 14 RCS + X - Y	# 14 RCS 1D

OUTPUT CHANNEL 06

ROLL RCS

BIT POSITION	CHANNEL OUTPUT SIGNAL	CM	LEM
1	RC + Z + R	# 7 RCS + Z + R	# 7 RCS 3F
2	RC - Z - R	# 3 RCS - Z - R	# 3 RCS 4F
3	RC - Z + R	# 15 RCS - Z + R	# 15 RCS 1F
4	RC + Z - R	# 11 RCS + Z - R	# 11 RCS 2F
5	RC + Y + R	# 12 RCS + Y + R	# 12 RCS 2S
6	RC - Y - R	# 8 RCS - Y - R	# 8 RCS 3S
7	RC - Y + R	# 4 RCS - Y + R	# 4 RCS 4S
8	RC + Y - R	# 16 RCS + Y - R	# 16 RCS 1S

OUTPUT CHANNEL 10

DSKY R RELAYS

BIT POSITION	CHANNEL INPUT SIGNAL	CM	LEM
1	RLYBO1	RELAY BIT 1	* SAME AS CM
2	RLYBO2	RELAY BIT 2	*
3	RLYBO3	RELAY BIT 3	*
4	RLYBO4	RELAY BIT 4	*
5	RLYBO5	RELAY BIT 5	*
6	RLYBO6	RELAY BIT 6	*
7	RLYBO7	RELAY BIT 7	*
8	RLYBO8	RELAY BIT 8	*
9	RLYBO9	RELAY BIT 9	*
10	RLYBO10	RELAY BIT 10	*
11	RLYB11	RELAY BIT 11	*
12	RYWD12	RELAY ADDRESS 1	*
13	RYWD13	RELAY ADDRESS 2	*
14	RYWD14	RELAY ADDRESS 3	*
15/16	RYWD16	RELAY ADDRESS 4	*



AC ELECTRONICS

CHANNEL ASSIGNMENTS LEM

CHANNEL	NAME	BIT POSITIONS															CHANNEL	
		15	14	13	12	11	10	9	8	7	6	5	4	3	2	1		
1	L	CP REGISTER L, BITS 16-1															1	
2	Q	CP REGISTER Q, BITS 16-1															2	
3	SCALER2	HIGH - ORDER SCALER CHANNEL, BITS 14-1															3	
4	SCALER1	LOW - ORDER SCALER CHANNEL, BITS 14-1															4	
5	PITCH YAW									14 RCS 1U	13 RCS 1U	10 RCS 2D	9 RCS 2U	6 RCS 3D	5 RCS 3U	2 RCS 4D	1 RCS 4U	5
6	ROLL									16 RCS 1S	4 RCS 4S	8 RCS 3S	12 RCS 2S	11 RCS 2F	15 RCS 1F	3 RCS 4F	7 RCS 3F	6
7	FEXT									E7	E6	E5						7
10	DSKY R	RELAY ADRS 4	RELAY ADRS 3	RELAY ADRS 2	RELAY ADRS 1	RELAY BIT 11	RELAY BIT 10	RELAY BIT 9	RELAY BIT 8	RELAY BIT 7	RELAY BIT 6	RELAY BIT 5	RELAY BIT 4	RELAY BIT 3	RELAY BIT 2	RELAY BIT 1		10
11	DSKY A		ENGINE OFF	ENGINE ON			CAUTION RESET	TEST CONNCT		OP ERROR	VN FLASH	KEY RLSE	TEMP CAUTION	UPLINK ACTV	COMP ACT	ISS WARN		11
12	GN&C	ISS T ON DEL COMP	RR ENAB AUTO TR	LR POS COMM	-ROLL TRIM	+ROLL TRIM	-PITCH TRIM	+PITCH TRIM	DISPLAY 1 DATA		ENABL IMU ERR	ZERO ICDO	COARS ALIGN	H VEL LO SCL	ENABL RR ERR	ZERO RRCDU		12
13	AGC	ENABL TO RUPT	RESET TRAP 32	RESET TRAP 31B	RESET TRAP 31A	ENABL STANDBY	TEST ALARMS	RHC READ	ENABL RHC CTR	DNLNK WD ORD	BLOCK INLINK	INHIBIT UPLINK	RADAR ACT	RADAR a	RADAR b	RADAR c		13
14	IMU	DRIVE CDUX	DRIVE CDUY	DRIVE CDUZ	DRIVE OCDUT	DRIVE OCDUS	GYRO ACT	GYRO MINUS	GYRO a	GYRO b	GYRO ENABL		THRUST DRIVE	ALT METER	ALT RATE	OUTLINK ACTV		14
15	MAIN DSKY											KEY 5M	KEY 4M	KEY 3M	KEY 2M	KEY 1M		15
16	NAV DSKY									DESCENT -	DESCENT +	MARK REJECT	MARK Y	MARK X				16
30	GN&C	TEMP IN LIM	ISS T ON REQUEST	IMU FAIL	ICDU FAIL	IMU GAGE	G N CONT OF S C	IMU OPRAT		RRCDU FAIL	DISPLAY T DATA	AUTO THROTL	ABORT STAGE	ENGINE ARMED	STAGE VERIFY	ABORT		30
31	TRANS ROT	ATT CONT OUT OF D	AUTO STAB	ATT HOLD	-Z TRANS	+Z TRANS	-Y TRANS	+Y TRANS	-X TRANS	+X TRANS	-AZ (LPD) -RMI	+AZ (LPD) +RMI	-YMI	+YMI	-EL (LPD) -PMI	+EL (LPD) +PMI		31
32	IMPULSE						ROLL GIMB OFF	PITCH GIMB OFF	T 10-11 FAIL	T 9-12 FAIL	T 13-15 FAIL	T 14-16 FAIL	T 6-7 FAIL	T 1-3 FAIL	T 5-8 FAIL	T 2-4 FAIL		32
33	OPTICS AGC	OSC ALARM	AGC WARNING	PIPA FAIL	DNLNK TOO FAST	UPLNK TOO FAST	BLOCK UPLNK	LR RANG LO SCL	LR VEL DAT GOOD	LR POS 2	LR POS 1	LR DATA GOOD	RR DATA GOOD	RR RANG LO SCL	RR PWR ON AUTO			33
34	DNLNK1																34	
35	DNLNK2																35	
		15	14	13	12	11	10	9	8	7	6	5	4	3	2	1		

CHANNEL ASSIGNMENTS CM

CHANNEL	NAME	BIT POSITIONS															CHANNEL
		15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	
1	L	CP REGISTER L, BITS 16-1															1
2	Q	CP REGISTER Q, BITS 16-1															2
3	SCALER2	HIGH-ORDER SCALER CHANNEL, BITS 14-1															3
4	SCALER1	LOW-ORDER SCALER CHANNEL, BITS 14-1															4
5	PITCH YAW							#6 -YW-X+P	#7 +YW-X-P	#8 -YW-X-P	#5 +YW-X+P	#2 -P+Z+R	#3 +P-X-YW	#4 -P+Z-R	#1 +P-X+YW		5
6	ROLL											#10 -R-Y+Z	#11 +R+Y-Z	#12 -R-Y-Z	#9 +R+Y+Z		6
7	FEXT									E7	E6	E5					7
10	DSKY R	RELAY ADRS 4	RELAY ADRS 3	RELAY ADRS 2	RELAY ADRS 1	RELAY BIT 11	RELAY BIT 10	RELAY BIT 9	RELAY BIT 8	RELAY BIT 7	RELAY BIT 6	RELAY BIT 5	RELAY BIT 4	RELAY BIT 3	RELAY BIT 2	RELAY BIT 1	10
11	DSKY A			ENGINE ON	-		CAUTION RESET	TEST CONNEC		OP ERROR	VN FLASH	KEY RLSE	TEMP CAUTION	UPLINK ACTV	COMP ACT	ISS WARN	11
12	GN&C	ISS T ON DEL COMP	SIVB CUTOFF	SIVB INJ SEQ		DISENG OPT DAC	ZERO OPTICS	SIVB TAK OVR	TVC ENABLE		ENABL IMU ERR	ZERO ICDU	COARS ALIGN	STAR TRACK	ENABL OPT ERR	ZERO OCDU	12
13	AGC	ENABL T6 RUPT	RESET TRAP 32	RESET TRAP 31B	RESET TRAP 31A	ENABL STANDBY	TEST ALARMS		BMAG CTR ENB	DNLNK WD ORD	BLOCK INLINK	INHIBIT UPLINK	RADAR ACT	RADAR a	RADAR b	RADAR c	13
14	IMU	DRIVE CDUX	DRIVE CDUY	DRIVE CDUZ	DRIVE OCOUT	DRIVE OCODS	GYRO ACT	GYRO MINUS	GYRO a	GYRO b	GYRO ENABL					OUTLINK ACTV	14
15	MAIN DSKY											KEY 5M	KEY 4M	KEY 3M	KEY 2M	KEY 1M	15
16	NAV DSKY									MARK REJECT	MARK	KEY 5N	KEY 4N	KEY 3N	KEY 2N	KEY 1N	16
30	GN&C	TEMP IN LIM	ISS T ON REQUEST	IMU FAIL	ICDU FAIL	IMU CAGE	S/C CONT OF SAT	IMU OPRAT		OCDU FAIL	GUID REF REL	LIFT OFF	SIVB SEPRAT	SPS READY	SM SEPRAT	ULLAGE THRUST	30
31	TRANS ROT	G/C AUTO PILOT	FREE FUNC	HOLD FUNC	-Z TRANS	+Z TRANS	-Y TRANS	+Y TRANS	-X TRANS	+X TRANS	-ROLL MAN ROT	+ROLL MAN ROT	-YAW MAN ROT	+YAW MAN ROT	-PITCH MAN ROT	+PITCH MAN ROT	31
32	IMPULSE					LEM ATTCHD					-ROLL MIN IMP	+ROLL MIN IMP	-YAW MIN IMP	+YAW MIN IMP	-PITCH MIN IMP	+PITCH MIN IMP	32
33	OPTICS AGC	OSC ALARM	AGC WARNING	PIPA FAIL	DNLNK TOO FAST	UPLNK TOO FAST	BLOCK UPLNK			STAR PRES	STAR TRACK	AGC CONTRL	ZERO OPTICS				33
34	DNLNK1	16 BITS															34
35	DNLNK2	16 BITS															35
		15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1 JUNE 1966



AC ELECTRONICS

AURORA 88 VERB/NOUN CODES

VERBS

01 DISPLAY OCTAL COMP 1
 02 DISPLAY OCTAL COMP 2
 03 DISPLAY OCTAL COMP 3
 04 DISPLAY OCTAL COMP 1, 2
 05 DISPLAY OCTAL COMP 1, 2, 3
 06 DECIMAL DISPLAY
 07 DP DECIMAL DISPLAY
 10 ILLEGAL
 11 MONITOR OCT COMP 1
 12 MONITOR OCT COMP 2
 13 MONITOR OCT COMP 3
 14 MONITOR OCT COMP 1, 2
 15 MONITOR OCT COMP 1, 2, 3
 16 MONITOR DECIMAL
 17 MONITOR DP DECIMAL
 20 ILLEGAL
 21 LOAD COMP 1
 22 LOAD COMP 2
 23 LOAD COMP 3
 24 LOAD COMP 1, 2
 25 LOAD COMP 1, 2, 3
 26 ILLEGAL
 27 FIXED MEMORY DISPLAY
 30 REQUEST EXECUTIVE
 31 REQUEST WAITLIST
 32 C(R2) INTO R3, C(R1) INTO R2
 33 PROCEED WITHOUT DATA
 34 TERMINATE
 35 TEST LIGHTS
 36 FRESH START
 37 CHANGE MAJOR MODE
 40 ZERO
 41 COARSE ALIGN
 42 FINE ALIGN IMU
 43 LOAD IMU ATTITUDE ERROR METERS
 44 ILLEGAL
 45 COMMAND LR TO POSITION 2
 46 SAMPLE RADAR ONCE PER SEC
 47 PERFORM LEM FCS TEST
 50 PLEASE PERFORM
 51 PLEASE MARK
 52 PLEASE MARK Y
 53 PLEASE MARK X OR Y
 54 PULSE TORQUE GYROs
 55 ALIGN TIME
 56 PERFORM BANKSUM
 57 PERFORM SYSTEM TEST
 60 ILLEGAL
 61 ILLEGAL
 62 SCAN LEM INBITS
 63 INITIALIZE AGS
 64 ILLEGAL
 65 ILLEGAL
 66 LOTS FRESH START
 67 ILLEGAL
 70 ACQUIRE WITH LOTS
 71 LOTS SELF TEST
 72 RETURN LOTS TO STOW
 73 ILLEGAL
 74 ILLEGAL
 75 ILLEGAL
 76 ILLEGAL
 77 ILLEGAL

NOUNS

01 SPECIFY ADDRESS (FRACTIONAL)
 02 SPECIFY ADDRESS (WHOLE)
 03 SPECIFY ADDRESS (DEGREES)
 04 SPECIFY ADDRESS (HOURS)
 05 SPECIFY ADDRESS (SECONDS)
 06 SPECIFY ADDRESS (GYRO DEGREES)
 07 SPARE
 10 CHANNEL TO BE SPECIFIED
 11 SPARE
 12 SPARE
 13 SPARE
 14 SPARE
 15 INCREMENT ADDRESS
 16 TIME SECONDS
 17 TIME HOURS
 20 ICDU
 21 PIPAS
 22 NEW ANGLES 1
 23 DELTA ANGLES 1
 24 DELTA TIME (SECONDS)
 25 CHECKLIST
 26 PRIO/DELAY, ADRES, BBCON
 27 SELF TEST ON/OFF SWITCH
 30 STAR NUMBERS
 31 FAILREG, SFAIL, ERCOUNT
 32 DECISION TIME (MIDCOURSE)
 33 EPHEMERIS TIME (MIDCOURSE)
 34 MEASURED QUANTITY (MIDCOURSE)
 35 INBIT MESSAGE
 36 LANDMARK DATA 1
 37 LANDMARK DATA 2
 40 RR ANGLES (TRUNNION, SHAFT)
 41 NEW RR ANGLES (TRUNNION, SHAFT)
 42 AOT ROTATION ANGLES
 43 AOT DETENT CODE
 44 FORWARD VELOCITY, LATERAL VELOCITY
 45 ROTATIONAL HAND CONTROLLER ANGLE RATES
 46 SPARE
 47 SPARE
 50 SPARE
 51 SPARE
 52 GYRO BIAS DRIFT
 53 GYRO INPUT AXIS ACCELERATION DRIFT
 54 GYRO SPIN AXIS ACCELERATION DRIFT
 55 LR ALTITUDE, TIME
 56 LR VELX, TIME
 57 LR VELY, TIME
 60 LR VELZ, TIME
 61 TARGET AZIMUTH AND ELEVATION
 62 RR RANGE, TRUNNION, SHAFT
 63 RR RANGE RATE, TRUNNION, SHAFT
 64 INITIAL ALT., FINAL ALT., ALT. RATE
 65 SAMPLED TIME (HOURS AND SECONDS)
 66 SYSTEM TEST RESULTS
 67 DELTA GYRO ANGLES
 70 LOTS ANGLES (AZIMUTH, ELEVATION)
 71 DESIRED LOTS ANGLES (AZIMUTH, ELEVATION)
 72 DELTA POSITION
 73 DELTA VELOCITY
 74 MEASUREMENT DATA (MIDCOURSE)
 75 MEASUREMENT DEVIATIONS (MIDCOURSE)
 76 POSITION VECTOR
 77 VELOCITY VECTOR

1 AUGUST 1966



AC ELECTRONICS

AURORA 88 ERROR CODES

OPTICS SUBSYSTEM

00105 MARK BUTTONS NOT AVAILABLE
00111 MARK IS MISSING AFTER ENTER
00112 MARK NOT BEING ACCEPTED
00113 NO INBITS
00114 MARK MADE BUT NOT DESIRED
00115 X MARK NOT MADE

IMU SUBSYSTEM

00206 ZERO CDU NOT ALLOWED WITH COARSE ALIGN AND GIMBAL LOCK
00207 ISS TURN-ON REQUEST NOT PRESENT FOR 90 SECONDS
00210 IMU NOT OPERATING
00211 COARSE ALIGN ERROR
00212 PIPA FAIL BUT PIPA IS NOT BEING USED
00213 IMU NOT OPERATING WITH TURN-ON REQUEST
00214 PROGRAM USING IMU WHEN TURNED OFF

PROCEDURAL DIFFICULTY

00401 DESIRED GIMBAL ANGLES YIELD GIMBAL LOCK
00402 STAR OUT OF FIELD OF VIEW
00403 STAR OUT OF FIELD OF VIEW

RADAR ERRORS

00501 RADAR ANTENNA OUT OF LIMITS
00502 BAD RADAR GIMBAL ANGLE INPUTS
00503 RADAR ANTENNA DESIGNATE FAIL
00510 RADAR AUTO DISCRETE NOT PRESENT
00514 RADAR GOES OUT OF AUTO MODE WHILE BEING USED
00520 NO RADAR RUPT EXPECTED
00521 RADAR DATA COULD NOT BE READ
00522 WRONG LR POSITION
00523 LR ANTENNA DID NOT MAKE IT
00524 BAD RADAR TARGET

COMPUTER HARDWARE MALFUNCTIONS

01102 AGC SELF TEST ERROR
01103 UNUSED CCS BRANCH EXECUTED ABORT
01105 DOWNLINK TOO FAST
01106 UPLINK TOO FAST
01107 (SHOWN IN R2) PHASE TABLE DISAGREEMENT IN RESTART

LIST OVERFLOWS (ALL ABORTS)

01201 EXECUTIVE OVERFLOW-NO VAC AREAS
01202 EXECUTIVE OVERFLOW-NO CORE SETS
01203 WAITLIST OVERFLOW-TOO MANY TASKS
01206 KEYBOARD AND DISPLAY WAITING LINE OVERFLOW
01207 NO VAC AREA FOR MARKS
01210 TWO PROGRAMS USING DEVICE AT SAME TIME

INTERPRETER ERRORS

01301 ARCSIN-ARCCOS INPUT ANGLE TOO LARGE ABORT
01302 SQRT CALLED WITH NEGATIVE ARGUMENT ABORT

DISPLAY ALARMS

01400 PITCH AND/OR ROLL TRIM FAIL IS ON (WITH V05 N25)
01410 TEMPORARY JET FAIL
01411 A) OPCHK. IMU IS NOT ON, IN IMU OPERATIONAL CHECK.
B) ERRMASK. CDU DOES NOT AGREE WITH COMMAND IN IMU OPCHK.
C) STILLOOK. FIRST CDU PULSE WAS MISSED IN IRIG SF TEST.
D) STOPTEST. LAST CDU PULSE WAS MISSED OR GYRO TORQUE LOOP OUT OF LIMITS IN IRIG SF TEST.

KEYBOARD AND DISPLAY PROGRAM

01501 KEYBOARD AND DISPLAY ALARM DURING INTERNAL USE (NVSUB) ABORT

SYSTEM TEST ALARMS

01600 DRIFT TEST MISSED IN TIME STEP
01601 DRIFT TEST INTEGRATION OVERFLOW
01602 DRIFT TEST ERROR IN GYRO TORQUING

Prepared By: O.H. Cerbins



AC ELECTRONICS

APOLLO MISSIONS

MISSION	OBJECTIVE	CSM	LEM	G&N	
201	SUB-ORBITAL. SHORT RANGE LOB SHOT TEST OF CSM AND LAUNCH VEHICLE 40 MINUTES	009	-	-	
203	100 MILE CIRCULAR ORBIT. LIQUID HYDROGEN EXPERIMENT UNDER ZERO GRAVITY. 3 REVOLUTIONS	-	-	-	
202	SUB-ORBITAL. LONG RANGE LOB SHOT TEST OF CSM AND LAUNCH VEHICLE 1.5 HOURS	011	-	017	
204A	EARTH ORBIT. FIRST MANNED LONG DURATION TEST OF CSM. 0-14 DAYS	012	-	012	
204B	CONTINGENCY FOR 201 AND 202 EARTH ORBIT. 5-7 HOURS	012	-	012	
205A	CSM. 10-14 DAYS. MANNED	014	-	121	
205B	UNMANNED CONTINGENCY FOR 205A	-	-	-	
501	1ST SATURN V TEST OF HEAT SHIELD DEVELOPMENT 2 or 3 REVOLUTIONS	17	LTA #10	LEM	CSM
				-	122
206A	TEST OF LEM DEVELOPMENT. 10 HOURS	BP 30	1	603	-
206B	TEST OF LEM DEVELOPMENT. 3 DAYS. MANNED	101	1	-	-
502	SATURN FLIGHT. TEST OF HEAT SHIELD DEVELOPMENT 12 HOURS	020	LTA #2	-	123
207A	SATURN FLIGHT OPERATIONAL TEST OF CSM AND LEM 3.5 DAYS. MANNED	101	2	605	204
207B	SATURN FLIGHT OPERATIONAL TEST OF CSM AND LEM 3.5 DAYS. MANNED	101	2	605	204
503	FIRST MANNED FLIGHT TO THE MOON 0-14 DAYS	102	3	606	205
208	ALTERNATE LUNAR FLIGHT FOR 503	102	3	606	205
504	LUNAR LANDING 8 DAYS	103	4	607	206

Prepared by O. H. Cerbins



AC ELECTRONICS