

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD	A-ADDR	B-ADDR
101	1	01		JOB	1401 FORTRAN SNAPSHOT ROUTINE								
102			*										
103			*		THIS IS GARY MOKOTOFFS V3M4 PHASE 59ABC. IT IS ALWAYS USED AS								
104			*		CARD IMAGES BECAUSE IT'S USED TO PUNCH THE CONDENSED DECK.								
105			*		IT'S NOT LOADED AS PART OF THE COMPILER.								
106			*										
107			*		THE CLEAR ME OVERLAY FROM PHASE 58 IS MOVED HERE SO AS TO BE								
108			*		AFTER THE CARDS THAT PHASE 58 PUNCHES INTO THE CONDENSED DECK.								
109			*										
110				EXT00	SNAPSH, LOADNX, CDOVLY					MACRO			
111			SNAPSH	EQU	333			0333		GEN			
112			PHASLD	EQU	381			0381		GEN			
113			SNAPEX	EQU	564			0564		GEN			
114			LOADNX	EQU	700			0700		GEN			
115			CDOVLY	EQU	700			0700		GEN			
116			TPREAD	EQU	704			0704		GEN			
117			TPERR	EQU	728			0728		GEN			
118				EXT03	START, TOP OF PHASE 4					MACRO			
119			BEGIN3	EQU	838			0838		GEN			
120			TOP3	EQU	2600			2600		GEN			
121			*										
122	1	02		CTL	644 11								
123	1	03		SFX	#								
124	1	04	XXX	EQU	0	#		0000					
125	1	05	XL1	EQU	089	#		0089					
126	1	06	XL2	EQU	094	#		0094					
127	1	07	XL3	EQU	099	#		0099					
128	1	08	PARAM	EQU	686	#		0686					
129			*		SIGNAL FOR THE TAPE GENERATOR								
130			110	DCW	@]]]]] 59ABC@	#	12	0110			1		
131			*										
132	1	09		ORG	333	#		0333					
133	1	10		SBR	PRTXT&3	#	4	0333	H 567		2	567	
134	1	11		SBR	HLDXT&6	#	4	0337	H 408		2	408	
135	1	12		MCW	@000@,LINCT-2	#	7	0341	M 661 656		2	661	656
136	1	13		MCW	XL3, HLD32&6	#	7	0348	M 099 415		2	099	415
137	1	14		MCW	XL1, HLD31&6	#	7	0355	M 089 422		2	089	422
138	1	15		SBR	XL1, 1	#	7	0362	H 089 001		2	089	001
139	1	16		SBR	XL3, 202	#	7	0369	H 099 202		3	099	202
140	1	17		CS	332	#	4	0376	/ 332		3	332	
141	1	18		CS		#	1	0380	/		3		
142	1	19		NOP	110,210	#	7	0381	N 110 210		3	110	210
143	1	20		BSS	ONLY,F	#	5	0388	B 621 F		3	621	
144	1	21		CC	1	#	2	0393	F 1		3		
145	1	22		MCW	094,250	#	7	0395	M 094 250		3	094	250
146	1	23	HLDXT	SBR	216,XXX	#	7	0402	H 216 000		4	216	000
147	1	24	HLD32	SBR	256,XXX	#	7	0409	H 256 000		4	256	000
148	1	25	HLD31	SBR	244,XXX	#	7	0416	H 244 000		4	244	000
149	1	26		W		#	1	0423	2		4		
150	1	27		CC	K	#	2	0424	F K		4		

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD	A-ADDR	B-ADDR
151	1	28		ZA	&2,PGCTR#2	#	7	0426	? 662 664		4	662	664
152	1	29	NULINE	CS	332	#	4	0433	/ 332		4	332	
153	1	30		CS		#	1	0437	/		5		
154	1	31		CC	J	#	2	0438	F J		5		
155	1	32		MCW	LINCT,306	#	7	0440	M 658 306		5	658	306
156	1	33		MCW		#	1	0447	M		5		
157	1	34		SBR	MVHED&6	#	4	0448	H 465		5	465	
158	1	35		MCW	@9@, CTR-1	#	7	0452	M 665 668		5	665	668
159	1	36	MVHED	MCW	CTR-1,XXX	#	7	0459	M 668 000		5	668	000
160	1	37		MCW	HEAD	#	4	0466	M 651		6	651	
161	1	38		SBR	MVHED&6	#	4	0470	H 465		6	465	
162	1	39		A	@I0@, CTR#2	#	7	0474	A 667 669		6	667	669
163	1	40		BWZ	MVHED, CTR-1, 2	#	8	0481	V 459 668 2		6	459	668
164	1	41		A	&1,LINCT-2	#	7	0489	A 670 656		6	670	656
165	1	42		W		#	1	0496	2		6		
166	1	43	LOOP	SW	0&X3	#	4	0497	, 0?0		6	000+3	
167	1	44		MCW	0&X1,0&X3	#	7	0501	M 0|0 0?0		7	000+1	000+3
168	1	45		BW	CMPAB,0&X1	#	8	0508	V 520 0|0 1		7	520	000+1
169	1	46		CW	0&X3	#	4	0516	) 0?0		7	000+3	
170	1	47	CMPAB	C	XL1,PARAM&2	#	7	0520	C 089 688		7	089	688
171	1	48		BU	CPL	#	5	0527	B 568 /		7	568	
172	1	49		W		#	1	0532	2		7		
173	1	50		WM		#	2	0533	2)		7		
174	1	51	RSTRX	MCW	HLD31&6,XL1	#	7	0535	M 422 089		8	422	089
175	1	52		MCW	HLD32&6,XL3	#	7	0542	M 415 099		8	415	099
176	1	53		CS	332	#	4	0549	/ 332		8	332	
177	1	54		CS		#	1	0553	/		8		
178	1	55		BSS	*&5,G	#	5	0554	B 563 G		8	563	
179	1	56		B	PRTXT	#	4	0559	B 564		8	564	
180	1	57		H		#	1	0563	.		8		
181	1	58	PRTXT	H	0	#	4	0564	. 000		9	000	
182	1	59	CPL	SBR	XL1, 1&X1	#	7	0568	H 089 0|1		9	089	001+1
183	1	60		BCE	INC, XL3-2, 2	#	8	0575	B 632 097 2		9	632	097
184	1	61		SBR	XL3, 201	#	7	0583	H 099 201		9	099	201
185	1	62		W		#	1	0590	2		9		
186	1	63		WM		#	2	0591	2)		9		
187	1	64		A	&1,PGCTR	#	7	0593	A 670 664		9	670	664
188	1	65		C	PGCTR,&15	#	7	0600	C 664 672		10	664	672
189	1	66		BU	NULINE	#	5	0607	B 433 /		10	433	
190	1	67		S	PGCTR	#	4	0612	S 664		10	664	
191	1	68		CCB	NULINE,1	#	5	0616	F 433 1		10	433	
192	1	69	ONLY	MCW	@EXECUTED@,220	#	7	0621	M 680 220		10	680	220
193	1	70		W	RSTRX	#	4	0628	2 535		10	535	
194	1	71	INC	A	&1,XL3	#	7	0632	A 670 099		10	670	099
195	1	72		B	LOOP	#	4	0639	B 497		11	497	
196	1	73	HEAD	DCW	@9.....@	#	9	0651			11		
197	1	74		DCW	@9-@	#	2	0653			11		
198	1	75	LINCT	DCW	00000	#	5	0658			11		
199	1	76		LTORG	*	#			0659				
				DCW	@000@	#	3	0661		LIT	11		

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD	A-ADDR	B-ADDR
				DCW	&2	#	1	0662		LIT	11		
			PGCTR#	DCW	#02	#	2	0664		AREA	11		
				DCW	@9@	#	1	0665		LIT	12		
				DCW	@I0@	#	2	0667		LIT	12		
			CTR #	DCW	#02	#	2	0669		AREA	12		
				DCW	&1	#	1	0670		LIT	12		
				DCW	&15	#	2	0672		LIT	12		
				DCW	@EXECUTED@	#	8	0680		LIT	12		
200	1	77		XFR	0	#			B 001		13	001	

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD	A-ADDR	B-ADDR
201	1	78		JOB	1401 FORTRAN FIXED XLINK ROUTINE								
202	1	79		ORG	333	#			0333				
203	1	80		H	333	#	4	0333	. 333		14	333	
204	1	81	START	MCW	86,XL2	#	7	0337	M 086 094		14	086	094
205	1	82		CS	80	#	4	0344	/ 080		14	080	
206	1	83		BCE	ARRAY,0&X2,\$	#	8	0348	B 585 0!0 \$		14	585	000+2
207	1	84	CLEAR	CS	000	#	4	0356	/ 000		14	000	
208	1	85		SBR	ADR3	#	4	0360	H 359		14	359	
209	1	86		C	ADR3,@699@	#	7	0364	C 359 645		14	359	645
210	1	87		BU	CLEAR	#	5	0371	B 356 /		15	356	
211	1	88		SW	ACCHI-5&X3	#	4	0376	, 2G4		15	274+3	
212	1	89		MZ	ACCHI&X3,FIELD	#	7	0380	Y 2G9 642		15	279+3	642
213	1	90		C	FIELD,ACCHI&X3	#	7	0387	C 642 2G9		15	642	279+3
214	1	91		BE	CARDS	#	5	0394	B 603 S		15	603	
215	1	92		BM	GETM,ACCHI&X3	#	8	0399	V 620 2G9 K		15	620	279+3
216	1	93		MZ	ZERO,ACCHI&X3	#	7	0407	Y 637 2G9		16	637	279+3
217	1	94		C	699,ACCHI&X3	#	7	0414	C 699 2G9		16	699	279+3
218	1	95		BE	GETM	#	5	0421	B 620 S		16	620	
219	1	96		SW	22	#	4	0426	, 022		16	022	
220	1	97		MCW	GM,22	#	7	0430	M 680 022		16	680	022
221	1	98	SERCH	RT	1,1	#	8	0437	M %U1 001 R		16	%U1	001
222	1	99		BEF	OUT	#	5	0445	B 478 K		17	478	
223	2	00		C	10,@LIB@	#	7	0450	C 010 648		17	010	648
224	2	01		BU	SERCH	#	5	0457	B 437 /		17	437	
225	2	02		C	17,ACCHI&X3	#	7	0462	C 017 2G9		17	017	279+3
226	2	03		BE	T1	#	5	0469	B 498 S		17	498	
227	2	04		B	SERCH	#	4	0474	B 437		17	437	
228	2	05	OUT	NOF	CARDS	#	4	0478	N 603		17	603	
229	2	06		MCW	TPERM,OUT	V3M4 #	7	0482	M 581 478		18	581	478
230	2	07		RWD	1	#	5	0489	U %U1 R		18	%U1	
231	2	08		B	SERCH	#	4	0494	B 437		18	437	
232	2	09	T1	LCA	ZEROS,101	#	7	0498	L 641 101		18	641	101
233	2	10		LCA	ZEROS	#	4	0505	L 641		18	641	
234	2	11		LCA	ZEROS	#	4	0509	L 641		18	641	
235	2	12		RTW	1,333	#	8	0513	L %U1 333 R		18	%U1	333
236	2	13		BER	ERR	#	5	0521	B 557 L		19	557	
237	2	14		MCW	ZERO,CTRR	#	7	0526	M 637 641		19	637	641
238	2	15		SBR	TPERM-1,T2	#	7	0533	H 580 540		19	580	540
239	2	16	T2	RTW	1,700	#	8	0540	L %U1 700 R		19	%U1	700
240	2	17		BER	ERR	#	5	0548	B 557 L		19	557	
241	2	18	TBOOT	B	000	#	4	0553	B 000		19	000	
242	2	19	ERR	A	ONE,CTRR	#	7	0557	A 679 641		20	679	641
243	2	20		BCE	TPERM,CTRR,9	#	8	0564	B 581 641 9		20	581	641
244	2	21		BSP	1	#	5	0572	U %U1 B		20	%U1	
245	2	22		B	T1	#	4	0577	B 498		20	498	
246	2	23	TPERM	H	TPERM	#	4	0581	. 581		20	581	
247	2	24	ARRAY	MCW	3&X2,ADR3	#	7	0585	M 0!3 359		20	003+2	359
248	2	25		MZ	ZERO,ADR3-1	#	7	0592	Y 637 358		21	637	358
249	2	26		B	CLEAR	#	4	0599	B 356		21	356	
250	2	27	CARDS	SW	1	#	4	0603	, 001		21	001	

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD	A-ADDR	B-ADDR
251	2	28		R		#	1	0607	1		21		
252	2	29		BCE	1,1,,	#	8	0608	B 001 001 ,		21	001	001
253	2	30		B	CARDS	#	4	0616	B 603		21	603	
254	2	31	GETM	RWD	1	#	5	0620	U %U1 R		21	%U1	
255	2	32		RTW	1,1	#	8	0625	L %U1 001 R		22	%U1	001
256	2	33		B	1 EXECUTE MONITOR PROGRAM	#	4	0633	B 001		22	001	
257	2	34	ADR3	EQU	CLEAR&3	#		0359					
258	2	35	FIELD	DCW	@000000@	#	6	0642			22		
259	2	36	ZEROS	EQU	FIELD-1	#		0641					
260	2	37	ZERO	EQU	ZEROS-4	#		0637					
261	2	38	CTRR	EQU	ZEROS	#		0641					
262	2	39	ACCHI	EQU	279	#		0279					
263	2	40	ONE	EQU	679	#		0679					
264	2	41	GM	EQU	680	#		0680					
265	2	42		LTORG	*	#			0643				
				DCW	@699@	#	3	0645		LIT	22		
				DCW	@LIB@	#	3	0648		LIT	22		
266	2	43		ORG	679	#			0679				
267	2	44		DCW	@1}@	#	2	0680			23		
268	2	45		XFR	0	#			B 001		24	001	

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD	A-ADDR	B-ADDR
269	2	46		JOB	1401 FORTRAN ARITH AND RELOCATABLE ROUTINES								
270	2	47	*										
271	2	48		SFX	B								
272	2	49	*										
273	2	50		XINIT	XL1, XL2, XL3, , , , XXXX					MACRO			
274			XXX	EQU	0	B		0000		GEN			
275			XL1	EQU	089	B		0089		GEN			
276			089	DCW	000	B	3	0089		GEN	25		
277			091	DC	00	B	2	0091		GEN	25		
278			XL2	EQU	094	B		0094		GEN			
279			094	DCW	000	B	3	0094		GEN	25		
280			096	DC	00	B	2	0096		GEN	25		
281			XL3	EQU	099	B		0099		GEN			
282			099	DCW	000	B	3	0099		GEN	25		
283			100	DC	0	B	1	0100		GEN	25		
284	2	51	*										
285	2	52		XNMBR						MACRO			
286			X1	EQU	089	B		0089		GEN			
287			X2	EQU	094	B		0094		GEN			
288			X3	EQU	099	B		0099		GEN			
289	2	53	*										
290	2	54	WKZON	EQU	200	B		0200					
291	2	55	TOP	EQU	WKZON&1	B		0201					
292	2	56	SPOT	EQU	WKZON&50	B		0250					
293	2	57	ACCHI	EQU	WKZON&79	B		0279					
294	2	58	*										
295	2	59		ORG	700	B		0700					
296	2	60	*										
297	2	61	*		ARITHMETIC ROUTINE MONITOR								
298	2	62	*										
299	2	63	ARITF	SBR	X2	B	4	0700	H 094		26	094	
300	2	64		SBR	086	B	4	0704	H 086		26	086	
301	2	65		SBR	STMNM&6	B	4	0708	H V06		26	1506	
302	2	66	ARITH	MCW	2&X2, X1	B	7	0712	M 0!2 089		26	002+2	089
303	2	67		SAR	ALGRT&6	B	4	0719	Q 765		26	765	
304	2	68	SBBR1	SBR	BRWHR&6	B	4	0723	H S27		26	1227	
305	2	69		BCE	STSUB, 0&X2, \$	B	8	0727	B S06 0!0 \$		26	1206	000+2
306	2	70		SBR	OUT2&6, 0&X1	B	7	0735	H T75 0!0		27	1375	000+1
307	2	71		CS	WKZON&103	B	4	0742	/ 303		27	303	
308	2	72		CS		B	1	0746	/		27		
309	2	73		CS		B	1	0747	/		27		
310	2	74		LCA	@0@, ACCHI&1	B	7	0748	L W85 280		27	1685	280
311	2	75	CLR X	S	X1&2	B	4	0755	S 091		27	091	
312	2	76	ALGRT	SBR	XL2, XXX	B	7	0759	H 094 000		27	094	000
313	2	77		C	4&X2, @#@	B	7	0766	C 0!4 W86		28	004+2	1686
314	2	78		MCW	4&X2, SIGNF	B	7	0773	M 0!4 924		28	004+2	924
315	2	79		SW	TOP	B	4	0780	, 201		28	201	
316	2	80	EXIT	BL	QFUNCT	B	5	0784	B T05 T		28	1305	
317	2	81		SBR	NGBMP&6, 4&X2	B	7	0789	H 874 0!4		28	874	004+2
318	2	82		BCE	OPDSC, 5&X2, \$	B	8	0796	B /99 0!5 \$		28	1199	005+2

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD	A-ADDR	B-ADDR
319	2	83		MCW	7&X2, XL1	B	7	0804	M 0!7 089		29	007+2	089
320	2	84		SAR	ALGRT&6	B	4	0811	Q 765		29	765	
321	2	85	SBBR2	BWZ	XSIZE,X1-1,K	B	8	0815	V V30 088 K		29	1530	088
322	2	86		BWZ	XSIZE,X1-1,S	B	8	0823	V V30 088 S		29	1530	088
323	2	87	*										
324	2	88	*		FLOAT ARITHMETIC								
325	2	89	*										
326	*2	90	FSIZE	SBR	X3,XXX	B	7	0831	H 099 000		29	099	000
327	2	91		CW	FIXSW#1	B	4	0838	) W87		29	1687	
328	2	92		MCW	0&X1,EXPB	B	7	0842	M 0|0 W82		30	000+1	1682
329	2	93		SAR	XL1	B	4	0849	Q 089		30	089	
330	2	94		MCW	0&X1,SPOT	B	7	0853	M 0|0 250		30	000+1	250
331	2	95		SBR	XL2	B	4	0860	H 094		30	094	
332	2	96		LCA	@0@	B	4	0864	L W85		30	1685	
333	2	97	NGBMP	BW	*&8,0	B	8	0868	V 883 000 1		30	883	000
334	2	98		MZ	SPOT, NSIGN	B	7	0876	Y 250 |87		31	250	1087
335	2	99		S	@0@,SPOT&2&X3	B	7	0883	S W85 2E2		31	1685	252+3
336	3	00		C	1&X2, @0@	B	7	0890	C 0!1 W85		31	001+2	1685
337	3	01		A	XL3, XL2	B	7	0897	A 099 094		31	099	094
338	3	02		BCE	FDIV, CODE, /	B	8	0904	B S33 924 /		31	1233	924
339	3	03		BCE	FMPY, CODE, *	B	8	0912	B S62 924 *		32	1262	924
340	3	04	*										
341	3	05	*		FLOATING ADD / SUBTRACT								
342	3	06	*										
343	3	07		S	SIGNF	B	4	0920	S 924		32	924	
344	3	08	SIGNF	ZA	NSIGN	B	4	0924	? |87		32	1087	
345	3	09		BCE	NUVAL,ACCHI&1,0	B	8	0928	B |17 280 0		32	1017	280
346	3	10		BE	CLRWK	B	5	0936	B /34 S		32	1134	
347	3	11		S	EXPB,EXP	B	7	0941	S W82 W79		32	1682	1679
348	3	12		ZA	EXP&1,XL1&1	B	7	0948	? W80 090		33	1680	090
349	3	13		C	XL3, XL1	B	7	0955	C 099 089		33	099	089
350	3	14		BM	RTN1,EXP	B	8	0962	V /65 W79 K		33	1165	1679
351	3	15		BH	CHGEX BR IF PREV RESULT TO BE RETAINED IN WK ACC	B	5	0970	B /88 U		33	1188	
352	3	16		A	EXP,EXPB	B	7	0975	A W79 W82		33	1679	1682
353	3	17		ZA	SPOT,SPOT&X1	B	7	0982	? 250 2V0		34	250	250+1
354	3	18		ZA	XL3&1,XL1&1	B	7	0989	? 100 090		34	100	090
355	3	19	ASCOM	MZ	NSIGN,0&X2	B	7	0996	Y |87 0!0		34	1087	000+2
356	3	20		A	ACCHI&X1,0&X2	B	7	1003	A 2X9 0!0		34	279+1	000+2
357	3	21	MVZON	MZ	0&X2,NSIGN	B	7	1010	Y 0!0 |87		34	000+2	1087
358	3	22	NUVAL	ZA	EXPB,EXP	B	7	1017	? W82 W79		35	1682	1679
359	3	23	*										
360	3	24	*		NORMALIZE								
361	3	25	*										
362	3	26	NMLZ1	MCW	RCDMK,1&X2	B	7	1024	M W75 0!1		35	1675	001+2
363	3	27		MZ		B	1	1031	Y		35		
364	3	28		MZ		B	1	1032	Y		35		
365	3	29		A		B	1	1033	A		35		
366	3	30		MN		B	1	1034	D		35		
367	3	31		SBR	XL1	B	4	1035	H 089		35	089	
368	3	32		S	ACCHI&2&X3	B	4	1039	S 2H1		36	281+3	

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD	A-ADDR	B-ADDR
419	3	83	OPDSC	SBR	X2,5&X2	B	7	1199	H 094 0!5		41	094	005+2
420	*3	84	STSUB	B	XXX	B	4	1206	B 000		41	000	
421	3	85		MN	0&X2	B	4	1210	D 0!0		41	000+2	
422	3	86		MN		B	1	1214	D		41		
423	3	87		MN		B	1	1215	D		41		
424	3	88		MN		B	1	1216	D		41		
425	3	89		SAR	ALGRT&6	B	4	1217	Q 765		41	765	
426	3	90	BRWHR	BCE	SBBR1,XXX,\$	B	8	1221	B 723 000 \$		42	723	000
427	3	91		B	SBBR2	B	4	1229	B 815		42	815	
428	3	92		*									
429	3	93		*	FLOATING DIVIDE								
430	3	94		*									
431	3	95	FDIV	BE	DVERR	B	5	1233	B /54 S		42	1154	
432	3	96		MN	ACCHI&X3, 1&X2	B	7	1238	D 2G9 0!1		42	279+3	001+2
433	3	97		MCW		B	1	1245	M		42		
434	3	98		MN		B	1	1246	D		42		
435	3	99		D	0&X1, SPOT&1	B	7	1247	% 0|0 251		42	000+1	251
436	4	00		ZS	EXPB	B	4	1254	! W82		43	1682	
437	4	01		B	NDMDV	B	4	1258	B S83		43	1283	
438	4	02		*									
439	4	03		*	FLOATING MULTIPLY								
440	4	04		*									
441	4	05	FMPY	M	ACCHI&X3, SPOT&1&X3	B	7	1262	@ 2G9 2E1		43	279+3	251+3
442	4	06		SBR	X2,3&X2	B	7	1269	H 094 0!3		43	094	003+2
443	4	07		S	&2,EXP	B	7	1276	S W90 W79		43	1690	1679
444	4	08	NDMDV	A	EXPB, EXP	B	7	1283	A W82 W79		43	1682	1679
445	4	09		MZ	ACCHI&X3, *&1	B	7	1290	Y 2G9 S97		44	279+3	1297
446	4	10		ZA	NSIGN	B	4	1297	? |87		44	1087	
447	4	11		B	NMLZ1	B	4	1301	B |24		44	1024	
448	4	12		*									
449	4	13		*	EXIT ROUTINE								
450	4	14		*									
451	4	15	QFUNCT	BCE	OUT1,4&X2, |	B	8	1305	B T31 0!4 |		44	1331	004+2
452	4	16		SBR	ALGRT&6,1&X2	B	7	1313	H 765 0!1		44	765	001+2
453	4	17		C	ACCHI&1,@0@	B	7	1320	C 280 W85		44	280	1685
454	*4	18	QFUNCX	B	XXX	B	4	1327	B 000	BRANCH TO FUNCTION SELECTION ROUTINE	45	000	
455	4	19	OUT1	BCE	OUT2,ACCHI&1,0	B	8	1331	B T69 280 0		45	1369	280
456	4	20		BW	OUT2,FIXSW	B	8	1339	V T69 W87 1		45	1369	1687
457	4	21		BW	FINST,4&X2	B	8	1347	V T92 0!4 1	BRANCH IF FINAL STORAGE OF COMP	45	1392	004+2
458	4	22		SBR	X3,2&X3	B	7	1355	H 099 0?2		45	099	002+3
459	4	23	MVEXP	MCM	EXP-1,ACCHI-1&X3	B	7	1362	P W78 2G8		46	1678	278+3
460	4	24	OUT2	LCA	ACCHI&X3,XXX	B	7	1369	L 2G9 000		46	279+3	000
461	4	25		BW	5&X2,4&X2	B	8	1376	V 0!5 0!4 1	BR TO PROG MAINLINE IF END OF ARITH STR	46	005+2	004+2
462	4	26		SAR	XL2	B	4	1384	Q 094		46	094	
463	4	27		B	ARITH	B	4	1388	B 712		46	712	
464	4	28		*									
465	4	29		*	ROUNDING FOR FINAL STORAGE								
466	4	30		*									
467	4	31	FINST	A	&5,ACCHI-1&X3	B	7	1392	A W91 2G8		46	1691	278+3
468	4	82		BWZ	RDOVF,ACCHI&1,S	B	8	1399	V U18 280 S		47	1418	280

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD	A-ADDR	B-ADDR
519	4	83	*										
520	4	84	XMPY	LCA	0&X1, SPOT	B	7	1598	L 0|0 250		52	000+1	250
521	4	85		M	ACCHI&X3, SPOT&1&X3	B	7	1605	@ 2G9 2E1		52	279+3	251+3
522	4	86		MCW	SPOT&1&X3, ACCHI&X3	B	7	1612	M 2E1 2G9		53	251+3	279+3
523	4	87		B	CLRWK	B	4	1619	B /34		53	1134	
524	4	88	*										
525	4	89	*		FIXED DIVIDE								
526	4	90	*										
527	4	91	XDIV	BCE	DVERR, SPOT,	B	8	1623	B /54 250		53	1154	250
528	4	92		MCW	0&X1, SPOT&X3	B	7	1631	M 0|0 2E0		53	000+1	250+3
529	4	93		MN		B	1	1638	D		53		
530	4	94		SBR	MVQUT&3	B	4	1639	H W64		53	1664	
531	4	95		LCA	ACCHI&X3	B	4	1643	L 2G9		53	279+3	
532	4	96		ZA	ACCHI&X3, SPOT&X3	B	7	1647	? 2G9 2E0		54	279+3	250+3
533	4	97		D	0&X1, SPOT&1	B	7	1654	% 0|0 251		54	000+1	251
534	4	98	MVQUT	MCW	SPOT-1, ACCHI&X3	B	7	1661	M 249 2G9		54	249	279+3
535	4	99		B	CLRWK	B	4	1668	B /34		54	1134	
536	5	00	*										
537	5	01		DCW	000	B	3	1674			54		
538	5	02	RCDMK	DCW	@|@	B	1	1675			54		
539	5	03		DCW	0	B	1	1676			54		
540	5	04	EXP	DCW	000	B	3	1679			55		
541	5	05		DC	@|@	B	1	1680			55		
542	5	06	EXPB	DCW	00	B	2	1682			55		
543	5	07		DC	0	B	1	1683			55		
544	5	08	CODE	EQU	SIGNF	B		0924					
545	5	09	ZROSW	EQU	*&1	B		1684					
546	5	10	BASEZ	EQU	*&1	B		1684					
547	5	11	XPNUM	DCW	@8@	B	1	1684			55		
548	5	12		LTORG		B			1685				
				DCW	@0@	B	1	1685		LIT	55		
				DCW	@#@	B	1	1686		LIT	55		
			FIXSWB	DCW	#01	B	1	1687		AREA	55		
				DCW	&99	B	2	1689		LIT	55		
				DCW	&2	B	1	1690		LIT	56		
				DCW	&5	B	1	1691		LIT	56		
				DCW	&1	B	1	1692		LIT	56		
				DCW	@1@	B	1	1693		LIT	56		
549	5	13		DS	1	B		1694					
550	5	14		DCW	@0@	B	1	1695			57		
551	5	15		DC	@}@	B	1	1696		GMARK	57		
552	5	16		XFR	0	B			B 001		58	001	

SYSTEM GROUP MARK

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD	A-ADDR	B-ADDR
553	5	17		JOB	1401 FORTRAN FUNCTION COMMON DECK								
554	5	18	*		INSERT BEFORE SIN-COS DECK								
555	5	19		ORG	2000	B			2000				
556	5	20	*										
557	5	21	110	DCW	@_____@	B	5	0110			59		
558	5	22	*										
559	5	23	*		VARIABLE LENGTH DIVIDE								
560	5	24	*										
561	5	25	DIVID	SBR	DVXT&3	B	4	2000	H !46		60	2046	
562	5	26		MCW	ACCHI&X3, SPOT	B	7	2004	M 2G9 250		60	279+3	250
563	5	27		MN		B	1	2011	D		60		
564	5	28		LCA	&0	B	4	2012	L K61		60	2261	
565	5	29		S	&0, SPOT-1&X2	B	7	2016	S K61 2M9		60	2261	249+2
566	5	30		D	0&X1, SPOT	B	7	2023	% 0|0 250		60	000+1	250
567	5	31		MN	SPOT-1&X2, ACCHI&X3	B	7	2030	D 2M9 2G9		60	249+2	279+3
568	5	32		MCW		B	1	2037	M		61		
569	5	33		MN		B	1	2038	D		61		
570	5	34		SAR	X1	B	4	2039	Q 089		61	089	
571	5	35	DVXT	B	XXX	B	4	2043	B 000		61	000	
572	5	36	*										
573	5	37	*		POWER SERIES CALCULATION								
574	5	38	*										
575	5	39	CALC	SBR	CALXT&3	B	4	2047	H J90		61	2190	
576	5	40		CW	LOGM1, LOGM2	B	7	2051	) J49 J71		61	2149	2171
577	5	41	CALC1	S	TOP&1&X3	B	4	2058	S 2?2		61	202+3	
578	5	42		CW	ACCHI&1	B	4	2062	) 280		62	280	
579	5	43		CW		B	1	2066	)		62		
580	5	44		SW		B	1	2067	,		62		
581	5	45		S	X2&2	B	4	2068	S 096		62	096	
582	5	46		SBR	X2, SPOT	B	7	2072	H 094 250		62	094	250
583	5	47	CALCL	MCS	SPOT	B	4	2079	Z 250		62	250	
584	5	48		SW	0&X1	B	4	2083	, 0|0		62	000+1	
585	5	49		BCE	FINIS, 0&X2,	B	8	2087	B J83 0!0		63	2183	000+2
586	5	50		MZ	SPOT&1, 1&X2	B	7	2095	Y 251 0!1		63	251	001+2
587	5	51		A	1&X2, TOP&1&X3	B	7	2102	A 0!1 2?2		63	001+2	202+3
588	5	52		A	DEC, X2&1	B	7	2109	A K59 095		63	2259	095
589	5	53		C	X2, X1	B	7	2116	C 094 089		63	094	089
590	5	54		BH	FINIS	B	5	2123	B J83 U		64	2183	
591	5	55		A	UPBY, NCON	B	7	2128	A K50 K53		64	2250	2253
592	5	56		A	NCON, NCTR	B	7	2135	A K53 K56		64	2253	2256
593	5	57		NOP	XXX, SPOT&1	B	7	2142	N 000 251		64	000	251
594	5	58	LOGM1	ZA		B	1	2149	?		64		
595	5	59		M	ACCHI&X3, SPOT&4&X3	B	7	2150	@ 2G9 2E4		64	279+3	254+3
596	5	60		MZ	SPOT&4&X3, SPOT&5	B	7	2157	Y 2E4 255		65	254+3	255
597	5	61		NOP	SPOT&5, XXX	B	7	2164	N 255 000		65	255	000
598	5	62	LOGM2	ZA		B	1	2171	?		65		
599	5	63		D	NCTR, 4&X1	B	7	2172	% K56 0|4		65	2256	004+1
600	5	64		B	CALCL	B	4	2179	B !79		65	2079	
601	5	65	FINIS	SW	ACCHI&1	B	4	2183	, 280		65	280	
602	5	66	CALXT	B	XXX	B	4	2187	B 000		65	000	

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD	A-ADDR	B-ADDR
603	5	67	*										
604	5	68	STR1	S	ACCHI&X3	B	4	2191	S 2G9		66	279+3	
605	5	69		MN	&1,ACCHI&1	B	7	2195	D K62 280		66	2262	280
606	5	70		MZ	TWTCH,ACCHI&X3	B	7	2202	Y K60 2G9		66	2260	279+3
607	5	71		MZ	CALC,TWTCH	B	7	2209	Y !47 K60		66	2047	2260
608	5	72		ZA	&1,EXP	B	7	2216	? K62 W79		66	2262	1679
609	5	73		B	CLR X	B	4	2223	B 755		66	755	
610	5	74	*										
611	5	75	*		COMMON CONSTANTS								
612	5	76	*										
613	5	77	LN10	EQU	* NATURAL LOG OF TEN	B		2226					
614	5	78		DCW	23025850929940456840179	B	23	2249			67		
615	5	79	UPBY	DCW	#1	B	1	2250			67		
616	5	80	NCON	DCW	#3	B	3	2253			67		
617	5	81	NCTR	DCW	#3	B	3	2256			67		
618	5	82	DEC	DCW	#3	B	3	2259			67		
619	5	83	TWTCH	DCW	@A@	B	1	2260			67		
620	5	84	*		LOADER								
				DCW	&0	B	1	2261		LIT	67		
				DCW	&1	B	1	2262		LIT	68		
621	5	85		EX	DIVID	B			B !00		69	2000	
622					* SIGNAL FOR THE TAPE GENERATOR								
623			110	DCW	@; ; ; ; @ ALL 11-6-8 LAST CARD	B	5	0110			70		

SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS
ACCHI#	0279: 0	ACCHIB	0279: 0	ADDRTB	1579: 0	ADR3 #	0359: 0	ALGRTB	0759: 0	ARITFB	0700: 0
ARITHB	0712: 0	ARRAY#	0585: 0	ASCOMB	0996: 0	BASEZB	1684: 0	BEGIN3	0838: 0	BRWHRB	1221: 0
CALC B	2047: 0	CALC1B	2058: 0	CALCLB	2079: 0	CALXTB	2187: 0	CARDS#	0603: 0	CDOVLY	0700: 0
CHGEXB	1188: 0	CLEAR#	0356: 0	CLRWBK	1134: 0	CLR X B	0755: 0	CMPAB#	0520: 0	CODE B	0924: 0
CPL #	0568: 0	CTR #	0669: 0	CTRR #	0641: 0	DEC B	2259: 0	DIVIDB	2000: 0	DVERRB	1154: 0
DVXT B	2043: 0	ERMSGB	1471: 0	ERMXTB	1526: 0	ERR #	0557: 0	EXIT B	0784: 0	EXP B	1679: 0
EXPB B	1682: 0	FDIV B	1233: 0	FIELD#	0642: 0	FINISB	2183: 0	FINSTB	1392: 0	FIXPTB	1541: 0
FIXSWB	1687: 0	FMPY B	1262: 0	FSIZEB	0831: 0	GETM #	0620: 0	GM #	0680: 0	HEAD #	0651: 0
HLD31#	0416: 0	HLD32#	0409: 0	HLDXT#	0402: 0	INC #	0632: 0	LINCT#	0658: 0	LN10 B	2226: 0
LOADNX	0700: 0	LOGM1B	2149: 0	LOGM2B	2171: 0	LOOP #	0497: 0	MVEXPB	1362: 0	MVHED#	0459: 0
MVQUTB	1661: 0	MVZONB	1010: 0	NCON B	2253: 0	NCTR B	2256: 0	NDMDVB	1283: 0	NGBMPB	0868: 0
NLOOPB	1043: 0	NMLZ1B	1024: 0	NORNDB	1448: 0	NSIGNB	1087: 0	NULINE	0433: 0	NUVALB	1017: 0
ONE #	0679: 0	ONLY #	0621: 0	OPDSCB	1199: 0	OUT #	0478: 0	OUT1 B	1331: 0	OUT2 B	1369: 0
PARAM	0686: 0	PGCTR#	0664: 0	PHASLD	0381: 0	PRTXT#	0564: 0	QFUNC	1305: 0	QFUNCX	1327: 0
RCDMKB	1675: 0	RDOVFB	1418: 0	RINX2B	1519: 0	RSTRX#	0535: 0	RTN1 B	1165: 0	SBBR1B	0723: 0
SBBR2B	0815: 0	SERCH#	0437: 0	SIGNFB	0924: 0	SNAPEX	0564: 0	SNAPSH	0333: 0	SPOT B	0250: 0
START#	0337: 0	STMNMB	1500: 0	STR1 B	2191: 0	STR99B	1115: 0	STRX2B	1486: 0	STRZEB	1142: 0
STSUBB	1206: 0	SUBTRB	1587: 0	T1 #	0498: 0	T2 #	0540: 0	TBOOT#	0553: 0	TOP B	0201: 0
TOP3	2600: 0	TPERM#	0581: 0	TPERR	0728: 0	TPREAD	0704: 0	TWTCB	2260: 0	UPBY B	2250: 0
WKZONB	0200: 0	X1 B	0089: 0	X2 B	0094: 0	X3 B	0099: 0	XDIV B	1623: 0	XL1 #	0089: 0
XL1 B	0089: 0	XL2 #	0094: 0	XL2 B	0094: 0	XL3 #	0099: 0	XL3 B	0099: 0	XMPY B	1598: 0
XPNUMB	1684: 0	XSIZEB	1530: 0	XXX #	0000: 0	XXX B	0000: 0	ZERO #	0637: 0	ZEROS#	0641: 0
ZONMVB	1407: 0	ZROSWB	1684: 0								

UNREFERENCED SYMBOLS

ARITFB BASEZB BEGIN3 CALC1B CDOVLY EXIT B FIXPTB FSIZEB LN10 B LOADNX MVZONB PHASLD QFUNCX SNAPEX SNAPSH START# STR1 B
TBOOT# TOP3 TPERR TPREAD XPNUMB ZROSWB