

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD	A-ADDR	B-ADDR
101				JOB	FORTRAN COMPILER -- ARITH PHASE FIVE -- PHASE 37								
102				CTL	6611								
103				*									
104				*	IF STATEMENT EXITS AND STRINGS FOR EXPONENTIATION ARE CREATED.								
105				*									
106			X1	EQU	89			0089					
107			X2	EQU	94			0094					
108			X3	EQU	99			0099					
109				*									
110				*	STUFF IN THE RESIDENT AREA								
111				*									
112			PHASID	EQU	110			0110					
113			SERIES	EQU	117			0117					
114			LOGF	EQU	119			0119					
115			EXPF	EQU	120			0120					
116			XFIXF	EQU	124			0124					
117			FLOATF	EQU	125			0125					
118			NEGAR3	EQU	157			0157					
119			ARYSIZ	EQU	160			0160					
120			GLOBER	EQU	184			0184					
121				*									
122				EXT00	SNAPSH, LOADNX, CDOVLY								MACRO
123			SNAPSH	EQU	333			0333					GEN
124			PHASLD	EQU	381			0381					GEN
125			SNAPEX	EQU	564			0564					GEN
126			LOADNX	EQU	700			0700					GEN
127			CDOVLY	EQU	700			0700					GEN
128			TPREAD	EQU	704			0704					GEN
129			TPERR	EQU	728			0728					GEN
130				*									
131				*	RUNTIME ADDRESSES								
132				*									
133			ARITF	EQU	700			0700					
134				*									
135				EXT03	START, TOP OF PHASE 3								MACRO
136			BEGIN3	EQU	838			0838					GEN
137			TOP3	EQU	2600			2600					GEN
138				*									
139			110	DCW	@ARITH 5@		7	0110				1	
140				*									
141			PHAS37	LDPH	ARITH FIV,LOADAD,LOADNX,,37.1								MACRO
				*	PHAZ LDPH [PHASID],LOADAD,ENTAD[,SKIPFG,SKIP],[NUMBER][,HALT]								GEN
				*	XFR PHASZ PROHIBITED IN A MACRO								GEN
				*									GEN
				*	LOAD A BLOCK								GEN
				*									GEN
142			)6J003	EQU	110			0110					GEN
143			)6K003	EQU	700			0700					GEN
144			)6L003	EQU	704			0704					GEN
145			)6M003	EQU	728			0728					GEN

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD	A-ADDR	B-ADDR
			*							GEN			
146				ORG	201				0201				
147			PHAS37	EQU	*&1			0201		GEN			
148				LCA	)9J003,)6J003	7		0201	L 252 110	GEN	2	252	110
149				BCE	)6K003,)6K003,1	8		0208	B 700 700 1	GEN	2	700	700
150				BCE	)6K003,)6L003&4,0	8		0216	B 700 708 0	GEN	2	700	708
151				RTW	1,LOADAD	8		0224	L %U1 838 R	GEN	2	%U1	838
152				BER	)6M003	5		0232	B 728 L	GEN	2	728	
153				CS	LOADNX,)9R003	7		0237	/ 700 258	GEN	3	700	258
154			)9J003	DCW	@ARITH FIV@	9		0252		GEN	3		
155				DC	#1	1		0253		GEN	3		
156				DC	@37.1@	4		0257	PHASE NUMBER	GEN	3		
157			)9R003	DCW	@}@	1		0258		GEN	3		
158				XFR	PHAS37				B 201		4	201	
159			*										
160				ORG	BEGIN3				0838				
161			LOADAD	EQU	*&1			0838					
162	838		BEGN37	BCE	DONE,X2,. DONE?	8		0838	B U99 094 .		5	1499	094
163	846			C	0&X2	4		0846	C 0!0		5	000+2	
164	850			SAR	X2	4		0850	Q 094		5	094	
165	854			SBR	SX2	4		0854	H 075		5	2675	
166	858			C	0&X1	4		0858	C 0 0		5	000+1	
167	862			SAR	X1	4		0862	Q 089		5	089	
168	866		LOOP	MCW	0&X1,SEQNO	7		0866	M 0 0 072		5	000+1	2672
169	873			MCW		1		0873	M		6		
170	874			BCE	ARIF,CODE,E IF STATEMENT	8		0874	B 894 069 E		6	894	2669
171	882			BCE	ARIF,CODE,R ARITHMETIC ASSIGNMENT STATEMENT	8		0882	B 894 069 R		6	894	2669
172	890			B	ALMOST	4		0890	B U78		6	1478	
173	894		ARIF	LCA	0&X1,0&X2 MOVE UP PREFIX	7		0894	L 0 0 0!0		6	000+1	000+2
174	901			SAR	X1	4		0901	Q 089		6	089	
175	905			C	0&X2	4		0905	C 0!0		6	000+2	
176	909			SAR	X2	4		0909	Q 094		7	094	
177	913			LCA	1&X2,2&X2 MOVE UP GMWM?	7		0913	L 0!1 0!2		7	001+2	002+2
178	920			SBR	X2	4		0920	H 094		7	094	
179	924			CW	PARITY	4		0924	) 076		7	2676	
180	928			BCE	IFSTMT,2&X1,E IF STATEMENT	8		0928	B V08 0 2 E		7	1508	002+1
181			*										
182			* ASSIGNMENT STATEMENT										
183			*										
184	936		ASGSTM	LCA	0&X1,0&X2	7		0936	L 0 0 0!0		7	000+1	000+2
185	943			SAR	X1	4		0943	Q 089		7	089	
186	947			C	0&X2	4		0947	C 0!0		8	000+2	
187	951			SAR	X2	4		0951	Q 094		8	094	
188	955			SBR	X3,0&X1	7		0955	H 099 0 0		8	099	000+1
189	962			SBR	SX1	4		0962	H 079		8	2679	
190	966			BCE	ENDSTM,0&X1,}	8		0966	B U21 0 0 } GMARK		8	1421	000+1
191	974		GETOP	MN	0&X3,LOOKOP&7	7		0974	D 0?0 999		8	000+3	999
192	981			MZ	0&X3,LOOKOP&7	7		0981	Y 0?0 999		9	000+3	999
193	988			SAR	X3	4		0988	Q 099		9	099	
194	992		LOOKOP	BCE	GOTOP,OPS,0 &-@*.#	8		0992	B  09 085 0		9	1009	2685





SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD	A-ADDR	B-ADDR
295					* ALMOST DONE								
296					*								
297	1	478	ALMOST	SBR	X1,5&X1	7		1478	H 089 0 5		23	089	005+1
298	1	485		MCW	SX2,X3	7		1485	M 075 099		23	2675	099
299	1	492		SBR	X3,2&X3	7		1492	H 099 0?2		23	099	002+3
300					*								
301	1	499	DONE	BSS	SNAPSH,C	5		1499	B 333 C		24	333	
302	1	518		B	LOADNX	4		1504	B 700		24	700	
303					*								
304					* IF STATEMENT								
305					*								
306					* TAPE BLOCK IS TOO BIG FOR CHM TAU EMULATOR								
307					*								
308			END1	DCW	@}@ END OF PART 1	1		1508		GMARK	24		
309				XFR	LOADNX LOAD PART 2				B 700		25	700	
310					* LOAD PART 2, START IN PART 1								
311			PART2	LDPH	ARITH FIV,PHASE2,BEGN37,,,37.2					MACRO			
					* PHAZ LDPH [PHASID],LOADAD,ENTAD[,SKIPFG,SKIP],[NUMBER][,HALT]					GEN			
					* XFR PHASZ PROHIBITED IN A MACRO					GEN			
					*					GEN			
					* LOAD A BLOCK					GEN			
					*					GEN			
312			)6J004	EQU	110 PHASE ID			0110					
313			)6K004	EQU	700 LOAD NEXT PHASE			0700					
314			)6L004	EQU	704 TAPE READ INSTRUCTION			0704					
315			)6M004	EQU	728 TAPE ERROR HANDLER			0728					
					*					GEN			
316				ORG	201				0201				
317			PART2	EQU	*&1			0201		GEN			
318				LCA	)9J004,)6J004	7		0201	L 252 110	GEN	26	252	110
319				BCE	)6K004,)6K004,1 Q: LOADING FROM CARDS?	8		0208	B 700 700 1	GEN	26	700	700
320				BCE	)6K004,)6L004&4,0 Q: LOADING FROM AUTOCODER TAPE?	8		0216	B 700 708 0	GEN	26	700	708
321				RTW	1,PHASE2 READ THE BLOCK	8		0224	L %U1 V08 R	GEN	26	%U1	1508
322				BER	)6M004 Q: TAPE ERROR?	5		0232	B 728 L	GEN	26	728	
323				CS	BEGN37,)9R004 ENTER THE BLOCK	7		0237	/ 838 258	GEN	27	838	258
324			)9J004	DCW	@ARITH FIV@ PHASE ID	9		0252		GEN	27		
325				DC	#1	1		0253		GEN	27		
326				DC	@37.2@ PHASE NUMBER	4		0257		GEN	27		
327			)9R004	DCW	@}@	1		0258		GEN	27		
328				XFR	PART2				B 201		28	201	
329				ORG	END1				1508				
330					*								
331			PHASE2	EQU	*&1			1508					
332	1	522	IFSTMT	C	0&X1	4		1508	C 0 0		29	000+1	
333	1	526		SAR	X1	4		1512	Q 089		29	089	
334	1	530		MCW	9&X1,LABNEG NEGATIVE BRANCH	7		1516	M 0 9 M94		29	009+1	2494
335	1	537		MCW	6&X1,LABZRO ZERO BRANCH	7		1523	M 0 6 M86		29	006+1	2486
336	1	544		MCW	3&X1,LABPOS POSITIVE BRANCH	7		1530	M 0 3 M78		29	003+1	2478
337	1	551		MZ	X2ZONE,LABNEG-1	7		1537	Y P09 M93		29	2709	2493
338	1	558		MZ	X2ZONE,LABZRO-1	7		1544	Y P09 M85		30	2709	2485

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD	A-ADDR	B-ADDR
339	1	565		MZ	X2ZONE, LABPOS-1	7		1551	Y P09 M77		30	2709	2477
340	1	572		MCW	LABPOS, UNCOND	7		1558	M M78 M74		30	2478	2474
341	1	579		LCA	KB20, W20	7		1565	L P29 M70		30	2729	2470
342	1	586		SBR	X3, RECMRK	7		1572	H 099 M50		30	099	2450
343	1	593		C	LABPOS, LABZRO	7		1579	C M78 M86		31	2478	2486
344	1	600		BE	POSZRO POSITIVE AND ZERO THE SAME LABEL	5		1586	B X65 S		31	1765	
345	1	605		C	LABZRO, LABNEG	7		1591	C M86 M94		31	2486	2494
346	1	612		BE	ZEQNEG NEGATIVE AND ZERO THE SAME LABEL	5		1598	B W28 S		31	1628	
347	1	617		SBR	X3, 8&X3	7		1603	H 099 0?8		31	099	008+3
348	1	624		MCW	BRZERO	4		1610	M M90		31	2490	
349	1	628		MCW		1		1614	M		31		
350	1	629		LCA		1		1615	L		32		
351	1	630		C	LABPOS, LABNEG	7		1616	C M78 M94		32	2478	2494
352	1	637		BE	POSNEG POSITIVE AND NEGATIVE THE SAME LABEL	5		1623	B W48 S		32	1648	
353	1	642	ZEQNEG	SBR	X3, 8&X3	7		1628	H 099 0?8		32	099	008+3
354	1	649		MCW	BRPOS	4		1635	M M82		32	2482	
355	1	653		MCW		1		1639	M		32		
356	1	654		LCA		1		1640	L		32		
357	1	655		MCW	LABNEG, UNCOND	7		1641	M M94 M74		33	2494	2474
358	1	662	POSNEG	MCW	X3, SX1	7		1648	M 099 0?9		33	099	2679
359	1	669		BWZ	*&5, SEQNO, 2	8		1655	V W67 0?2 2		33	1667	2672
360	1	677		B	*&9	4		1663	B W75		33	1675	
361	1	681		BWZ	*&15, SEQNO-2, 2	8		1667	V W89 0?0 2		33	1689	2670
362	1	689		MCW	SEQNO, X3 ADDRESS OF SEQUENCE NUMBER IF ZONES	7		1675	M 0?2 0?9		34	2672	099
363	1	696		MCW	0&X3, SEQNO	7		1682	M 0?0 0?2		34	000+3	2672
364	1	703		A	KP1, SEQNO	7		1689	A P30 0?2		34	2730	2672
365	1	710		MCW	UNCOND, X3	7		1696	M M74 0?9		34	2474	099
366	1	717		C	0&X3, SEQNO	7		1703	C 0?0 0?2		34	000+3	2672
367	1	724		MCW	SX1, X3	7		1710	M 0?9 0?9		35	2679	099
368	1	731		BE	MOVEUP	5		1717	B X34 S		35	1734	
369	1	736	POSN2	SBR	X3, 4&X3	7		1722	H 099 0?4		35	099	004+3
370	1	743		MCW	UNCOND	4		1729	M M74		35	2474	
371	1	747		LCA		1		1733	L		35		
372	1	748	MOVEUP	LCA	0&X3, 0&X2 MOVE UP GENERATED CODE	7		1734	L 0?0 0!0		35	000+3	000+2
373	1	755		SAR	X3	4		1741	Q 0?9		35	099	
374	1	759		C	0&X2	4		1745	C 0!0		36	000+2	
375	1	763		SAR	X2	4		1749	Q 0?4		36	094	
376	1	767		BCE	ASGSTM, 0&X3,	8		1753	B 936 0?0		36	936	000+3
377	1	775		B	MOVEUP	4		1761	B X34		36	1734	
378	1	779	POSZRO	C	LABPOS, LABNEG	7		1765	C M78 M94		36	2478	2494
379	1	786		BE	POSN2 ALL THE SAME LABEL	5		1772	B X22 S		36	1722	
380	1	791		SBR	X3, 8&X3	7		1777	H 099 0?8		36	099	008+3
381	1	798		MCW	BRNEG	4		1784	M M98		37	2498	
382	1	802		MCW		1		1788	M		37		
383	1	803		LCA		1		1789	L		37		
384	1	804		B	POSNEG	4		1790	B W48		37	1648	
385			*										
386			*	EXPONENTIATION OPERATOR									
387			*										
388	1	808	EXPON3 SW		1&X1	4		1794	, 0 1		37	001+1	

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD	A-ADDR	B-ADDR
389	1	812		BCE	ESUBR,1&X1,\$	8		1798	B M99 0 1 \$		37	2499	001+1
390	1	820		LCA	3&X1,W17A	7		1806	L 0 3 P47		37	003+1	2747
391	1	827		MZ	2&X1,EXPRT	7		1813	Y 0 2 P48		38	002+1	2748
392	1	834		SBR	SX1P3,3&X1	7		1820	H P51 0 3		38	2751	003+1
393	1	841		C	SX1P3,X3	7		1827	C P51 099		38	2751	099
394	1	848		BE	EXPON5	5		1834	B Y66 S		38	1866	
395	1	853		SW	4&X1	4		1839	, 0 4		38	004+1	
396	1	857	EXPON4	LCA	0&X3,0&X2	7		1843	L 0?0 0!0		38	000+3	000+2
397	1	864		SAR	X3	4		1850	Q 099		39	099	
398	1	868		C	0&X2	4		1854	C 0!0		39	000+2	
399	1	872		SAR	X2	4		1858	Q 094		39	094	
400	1	876		CW	1&X2	4		1862	) 0!1		39	001+2	
401	1	880	EXPON5	C	0&X1,KB4	7		1866	C 0 0 P55		39	000+1	2755
402	1	887		SAR	X1	4		1873	Q 089		39	089	
403	1	891		BCE	ESUBL,3&X1,\$	8		1877	B N64 0 3 \$		39	2564	003+1
404	1	899		MZ	2&X1,EXPLT	7		1885	Y 0 2 P56		40	002+1	2756
405	1	906		SW	1&X1	4		1892	, 0 1		40	001+1	
406	1	910	EXPON6	LCA	3&X1,W17B	7		1896	L 0 3 P73		40	003+1	2773
407	1	917		SAR	X1	4		1903	Q 089		40	089	
408	1	921		BWZ	ERX,EXPRT,S	8		1907	V !63 P48 S		40	2063	2748
409	1	929		BWZ	ERX,EXPRT,K	8		1915	V !63 P48 K		40	2063	2748
410	1	937		CW	LOGF,EXPF NEED LOGF AND EXPF	7		1923	) 119 120		41	119	120
411	1	944		CW	SERIES AND SERIES	4		1930	) 117		41	117	
412	1	948		BWZ	ERFLF,EXPLT,2	8		1934	V !18 P56 2		41	2018	2756
413	1	956		BWZ	ERFLF,EXPLT,B	8		1942	V !18 P56 B		41	2018	2756
414	1	964		BWZ	*&5,SEQNO,2	8		1950	V Z62 072 2		41	1962	2672
415	1	972		B	*&9	4		1958	B Z70		41	1970	
416	1	976		BWZ	MSG30,SEQNO-2,2 SEQUENCE NUMBER IF NO ZONES	8		1962	V Z84 070 2		42	1984	2670
417	1	984		MCW	SEQNO,X3 ADDRESS OF SEQUENCE NUMBER	7		1970	M 072 099		42	2672	099
418	1	991		MCW	0&X3,SEQNO	7		1977	M 0?0 072		42	000+3	2672
419	1	998	MSG30	CS	332	4		1984	/ 332		42	332	
420	2	002		CS		1		1988	/		42		
421	2	003		SW	GLOBER	4		1989	, 184		42	184	
422	2	007		MN	SEQNO,244	7		1993	D 072 244		42	2672	244
423	2	014		MN		1		2000	D		43		
424	2	015		MN		1		2001	D		43		
425	2	016		MCW	ERR30	4		2002	M Q14		43	2814	
426	2	020		W		1		2006	2		43		
427	2	021		BCV	*&5	5		2007	B !16 @		43	2016	
428	2	026		B	*&3	4		2012	B !18		43	2018	
429	2	030		CC	1	2		2016	F 1		43		
430	2	032	ERFLF	LCA	ECODE,0&X2 BOTH OPERANDS FLOAT	7		2018	L Q15 0!0		44	2815	000+2
431	2	039		LCA	W17A	4		2025	L P47		44	2747	
432	2	043		LCA	KGSTAR G*	4		2029	L Q17		44	2817	
433	2	047		SBR	X2	4		2033	H 094		44	094	
434	2	051		CW	3&X2,1&X1	7		2037	) 0!3 0 1		44	003+2	001+1
435	2	058		LCA	W17B,0&X2	7		2044	L P73 0!0		44	2773	000+2
436	2	065		SBR	X2	4		2051	H 094		44	094	
437	2	069		CW	1&X2	4		2055	) 0!1		45	001+2	
438	2	073		B	ENDEXP	4		2059	B T82		45	1382	

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD	A-ADDR	B-ADDR
439					*								
440					* RIGHT OPERAND OF EXPONENTIATION IS FIXED POINT								
441					*								
442	2	077	ERX	BWZ	GETFUN,EXPRT,K	8		2063	V K40 P48 K		45	2240	2748
443	2	085		BCE	GETFUN,W17A-2,<	8		2071	B K40 P45 <		45	2240	2745
444	2	093		MCW	W17A,X3	7		2079	M P47 099		45	2747	099
445	2	100		MA	ARYSIZ,X3	7		2086	# 160 099		45	160	099
446	2	107		C	K3,0&X3	7		2093	C Q18 0?0		46	2818	000+3
447	2	114		BH	GETFUN	5		2100	B K40 U		46	2240	
448	2	119		LCA	W17B,0&X2	7		2105	L P73 0!0		46	2773	000+2
449	2	126		LCA	KSTAR	4		2112	L Q19		46	2819	
450	2	130		SBR	X2	4		2116	H 094		46	094	
451	2	134		SBR	SX2B	4		2120	H Q22		46	2822	
452	2	138		CW	1&X2,2&X2	7		2124	) 0!1 0!2		46	001+2	002+2
453	2	145		LCA	W17B,0&X2	7		2131	L P73 0!0		47	2773	000+2
454	2	152		SBR	X2	4		2138	H 094		47	094	
455	2	156		CW	1&X2	4		2142	) 0!1		47	001+2	
456	2	160		BCE	ERX2,0&X3,0	8		2146	B K04 0?0 0		47	2204	000+3
457	2	168		BCE	ERX3,0&X3,1	8		2154	B K22 0?0 1		47	2222	000+3
458	2	176		BCE	ENDEXP,0&X3,2	8		2162	B T82 0?0 2		47	1382	000+3
459	2	184		LCA	KSTAR,0&X2	7		2170	L Q19 0!0		48	2819	000+2
460	2	191		SBR	X2	4		2177	H 094		48	094	
461	2	195		CW	1&X2	4		2181	) 0!1		48	001+2	
462	2	199		LCA	W17B,0&X2	7		2185	L P73 0!0		48	2773	000+2
463	2	206		SBR	X2	4		2192	H 094		48	094	
464	2	210		CW	1&X2	4		2196	) 0!1		48	001+2	
465	2	214		B	ENDEXP	4		2200	B T82		48	1382	
466					*								
467	2	218	ERX2	MCW	SX2B,X3	7		2204	M Q22 099		49	2822	099
468	2	225		MCW	SLASH,1&X3	7		2211	M P08 0?1		49	2708	001+3
469	2	232		B	ENDEXP	4		2218	B T82		49	1382	
470					*								
471	2	236	ERX3	MCW	SX2B,X2	7		2222	M Q22 094		49	2822	094
472	2	243		SBR	X2,1&X2	7		2229	H 094 0!1		49	094	001+2
473	2	250		B	ENDEXP	4		2236	B T82		49	1382	
474					*								
475	2	254	GETFUN	CW	LOGF,EXPF NEED LOGF AND EXPF	7		2240	) 119 120		50	119	120
476	2	261		CW	SERIES,FLOATF	7		2247	) 117 125		50	117	125
477	2	268		BWZ	GETFF1,EXPLT,2 LEFT IS FLOAT	8		2254	V L07 P56 2		50	2307	2756
478	2	276		BWZ	GETFF1,EXPLT,B LEFT IS FLOAT	8		2262	V L07 P56 B		50	2307	2756
479	2	284		LCA	XCODE,0&X2 XFIXF CODE	7		2270	L P07 0!0		50	2707	000+2
480	2	291		SBR	X2	4		2277	H 094		51	094	
481	2	295		CW	0&X2,XFIXF	7		2281	) 0!0 124		51	000+2	124
482	2	302		LCA	NEGAR3,0&X2	7		2288	L 157 0!0		51	157	000+2
483	2	309		LCA	KPLUS	4		2295	L Q23		51	2823	
484	2	313		SBR	X2	4		2299	H 094		51	094	
485	2	317		CW	2&X2	4		2303	) 0!2		51	002+2	
486	2	321	GETFF1	LCA	ECODE,0&X2	7		2307	L Q15 0!0		51	2815	000+2
487	2	328		LCA	KFLESS F*<4?	4		2314	L Q28		52	2828	
488	2	332		LCA	W17A	4		2318	L P47		52	2747	



SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD	A-ADDR	B-ADDR
489	2	336		SBR	X2	4		2322	H 094		52	094	
490	2	340		CW	1&X2	4		2326	) 0!1		52	001+2	
491	2	344		C	0&X1,KB4	7		2330	C 0 0 P55		52	000+1	2755
492	2	351		SAR	X3	4		2337	Q 099		52	099	
493	2	355		BCE	SUBFUN,3&X3,\$	8		2341	B 009 0?3 \$		52	2609	003+3
494	2	363	SUBFUB	SW	1&X3	4		2349	, 0?1		53	001+3	
495	2	367		LCA	0&X1,0&X2	7		2353	L 0 0 0!0		53	000+1	000+2
496	2	374		SAR	X1	4		2360	Q 089		53	089	
497	2	378		C	0&X2	4		2364	C 0!0		53	000+2	
498	2	382		SAR	X2	4		2368	Q 094		53	094	
499	2	386		CW	1&X2	4		2372	) 0!1		53	001+2	
500	2	390		LCA	KGRM G	4		2376	L Q30		53	2830	
501	2	394		SBR	X2	4		2380	H 094		54	094	
502	2	398		BWZ	GETFF2,EXPLT,2	8		2384	V M11 P56 2		54	2411	2756
503	2	406		BWZ	GETFF2,EXPLT,B	8		2392	V M11 P56 B		54	2411	2756
504	2	414		LCA	FCODE,0&X2	7		2400	L P06 0!0		54	2706	000+2
505	2	421		SBR	X2	4		2407	H 094		54	094	
506	2	425	GETFF2	LCA	W17B,0&X2	7		2411	L P73 0!0		54	2773	000+2
507	2	432		LCA	KL4 <4?#	4		2418	L Q34		55	2834	
508	2	436		SBR	X2	4		2422	H 094		55	094	
509	2	440		CW	5&X2	4		2426	) 0!5		55	005+2	
510	2	444		C	0&X1,BARITF&3	7		2430	C 0 0 Q38		55	000+1	2838
511	2	451		BE	ENDEXP	5		2437	B T82 S		55	1382	
512	2	456		CW	1&X2	4		2442	) 0!1		55	001+2	
513	2	460		B	ENDEXP	4		2446	B T82		55	1382	
514			*										
515	2	464	RECMRK	DCW	@ @	1		2450			56		
516	2	484	W20	DCW	#20	20		2470			56		
517	2	485		B		1		2471	B		56		
518	2	488	UNCOND	DCW	#3	3		2474			56		
519	2	489		BWZ		1		2475	V		56		
520	2	492	LABPOS	DCW	#3 POSITIVE BRANCH FROM ARITHMETIC IF	3		2478			56		
521	2	495		DSA	277&X3	3		2481	2G7		56	277	
522	2	496	BRPOS	DC	@B@	1		2482			56		
523	2	497		B		1		2483	B		57		
524	2	500	LABZRO	DCW	#3 ZERO BRANCH FROM ARITHMETIC IF	3		2486			57		
525	2	503		DSA	280	3		2489	280		57	280	
526	2	504	BRZERO	DC	0	1		2490			57		
527	2	505		BWZ		1		2491	V		57		
528	2	508	LABNEG	DCW	#3 NEGATIVE BRANCH FROM ARITHMETIC IF	3		2494			57		
529	2	511		DSA	277&X3	3		2497	2G7		57	277	
530	2	512	BRNEG	DC	@K@	1		2498			57		
531			*										
532			*		RIGHT OPERAND OF EXPONENTIATION OPERATOR IS SUBSCRIPTED								
533			*										
534	2	513	ESUBR	MZ	3&X1,EXPR	7		2499	Y 0 3 P48		57	003+1	2748
535	2	520		SBR	X1,11&X1	7		2506	H 089 0/1		58	089	011+1
536	2	527		BCE	*&8,0&X1,\$	8		2513	B N28 0 0 \$		58	2528	000+1
537	2	535		SBR	X1,6&X1	7		2521	H 089 0 6		58	089	006+1
538	2	542		C	X1,X3	7		2528	C 089 099		58	089	099

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD	A-ADDR	B-ADDR
539	2	549		BE	*&5	5		2535	B N44	S	58	2544	
540	2	554		SW	1&X1	4		2540	, 0 1		58	001+1	
541	2	558		LCA	0&X1,W17A	7		2544	L 0 0 P47		59	000+1	2747
542	2	565		SAR	X1	4		2551	Q 089		59	089	
543	2	569		BE	EXPON5	5		2555	B Y66	S	59	1866	
544	2	574		B	EXPON4	4		2560	B Y43		59	1843	
545				*									
546				*	LEFT OPERAND OF EXPONENTIATION OPERATOR IS SUBSCRIPTED								
547				*									
548	2	578	ESUBL	C	0&X1,W8	7		2564	C 0 0 Q46		59	000+1	2846
549	2	585		SAR	X3	4		2571	Q 099		59	099	
550	2	589		BCE	*&12,1&X3,\$	8		2575	B N94 0?1 \$		59	2594	001+3
551	2	597		C	0&X3,W6	7		2583	C 0?0 Q52		60	000+3	2852
552	2	604		SAR	X3	4		2590	Q 099		60	099	
553	2	608		MZ	3&X3,EXPLT	7		2594	Y 0?3 P56		60	003+3	2756
554	2	615		SW	1&X3	4		2601	, 0?1		60	001+3	
555	2	619		B	EXPON6	4		2605	B Y96		60	1896	
556				*									
557				*	SUBSCRIPT AFTER ???								
558				*									
559	2	623	SUBFUN	C	0&X3,W8	7		2609	C 0?0 Q46		60	000+3	2846
560	2	630		SAR	X3	4		2616	Q 099		60	099	
561	2	634		BCE	SUBFUB,1&X3,\$	8		2620	B L49 0?1 \$		61	2349	001+3
562	2	642		C	0&X3,W6	7		2628	C 0?0 Q52		61	000+3	2852
563	2	649		SAR	X3	4		2635	Q 099		61	099	
564	2	653		B	SUBFUB	4		2639	B L49		61	2349	
565				*									
566				*	SUBSCRIPT ON LEFT OF EQUAL SIGN								
567				*									
568	2	657	SUBLFT	MZ	W18A-9,LSTYPE TYPE TAG FOR LHS	7		2643	Y 095 P05		61	2695	2705
569	2	664		BCE	SBLBAK,W18A-11,\$	8		2650	B S54 093 \$		61	1254	2693
570	2	672		MZ	W18A-15,LSTYPE TYPE TAG FOR LHS	7		2658	Y 089 P05		62	2689	2705
571	2	679		B	SBLBAK	4		2665	B S54		62	1254	
572				*									
573				*	DATA								
574				*									
575	2	683	CODE	DCW	#1 STATEMENT CODE	1		2669			62		
576	2	686	SEQNO	DCW	#3 SEQUENCE NUMBER OR	3		2672			62		
577	2	689	SX2	DCW	#3	3		2675			62		
578	2	690	PARITY	DCW	#1 OF LOOP IN ASSIGNMENT STATEMENT PROCESSING	1		2676			62		
579	2	693	SX1	DCW	#3	3		2679			62		
580	2	699	OPS	DCW	@&-@*.*#@	6		2685			63		
581	2	700	SAVZON	DCW	#1	1		2686			63		
582	2	718	W18A	DCW	#18	18		2704			63		
583	2	719	LSTYPE	DCW	#1 TYPE ZONE FOR LHS	1		2705			63		
584	2	720	FCODE	DCW	@F@ FIX-TO-FLOAT (FLOATF) CODE	1		2706			63		
585	2	721	XCODE	DCW	@X@ FLOAT-TO-FIX (XFIXF) CODE	1		2707			63		
586	2	722	SLASH	DCW	@/@	1		2708			63		
587	2	729	X2ZONE	DCW	@K@	1		2709			64		
588	2	749	KB20	DCW	#20	20		2729			64		

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD	A-ADDR	B-ADDR
589	2	750	KP1	DCW	&1		1	2730			64		
590	2	767	W17A	DCW	#17		17	2747			64		
591	2	768	EXPRT	DCW	#1 TYPE TAG OF RIGHT OPERAND OF EXPONENTIATION		1	2748			65		
592	2	771	SX1P3	DCW	#3		3	2751			65		
593	2	775	KB4	DCW	#4 USED IN COMPARE TO DECREMENT INDEX		4	2755			65		
594	2	776	EXPLT	DCW	#1 TYPE TAG OF LEFT OPERAND OF EXPONENTIATION		1	2756			65		
595	2	793	W17B	DCW	#17		17	2773			65		
596	2	834	ERR30	DCW	@ERROR 30 - FIX TO FLOAT POWER, STATEMENT @		41	2814			67		
597	2	835	ECODE	DCW	@E@ CODE FOR EXPONENTIAL		1	2815			67		
598	2	837	KGSTAR	DCW	@G*@ CODE FOR LOGARITHM		2	2817			67		
599	2	838	K3	DCW	3		1	2818			67		
600	2	839	KSTAR	DCW	@*@		1	2819			67		
601	2	842	SX2B	DCW	#3		3	2822			68		
602	2	843	KPLUS	DCW	@&@		1	2823			68		
603	2	848	KFLESS	DCW	@F*<4?@		5	2828			68		
604	2	850	KGRM	DCW	@G @		2	2830			68		
605	2	854	KL4	DCW	@<4?#@		4	2834			68		
606	2	855	BARITF	B	ARITF		4	2835	B 700		68	700	
607	2	866	W8	DCW	#8 USED IN COMPARE TO DECREMENT INDEX		8	2846			68		
608	2	872	W6	DCW	#6 USED IN COMPARE TO DECREMENT INDEX		6	2852			69		
609	2	873	GMWM	DCW	@}@		1	2853		GMARK	69		
610			XFR		BEGN37				B 838		70	838	
611			CLRME	CLRA	BEGN37, GMWM					MACRO			
			*	CLRA	CLRBOT, CLRTOP [, ORG, GMWMAD]					GEN			
			*							GEN			
			*	CLEAR CORE	AFTER A PHASE USING THE CLRTOP ADDRESS					GEN			
			*							GEN			
612			ORG		201				0201				
			*							GEN			
			*	CLEAR DOWN	TO CLRBOT & X00 THE EASY WAY					GEN			
			*							GEN			
613			CLRME	EQU	*&1			0201					
614			)0J005	CS	GMWM CLEAR FROM CLRTOP		4	0201	/ Q53		71	2853	
615				SBR	)0J005&3		4	0205	H 204		71	204	
616				SBR	)0L005&6		4	0209	H 250		71	250	
617				C	)0J005&3,)0M005 DOWN TO CLRBOT & X00?		7	0213	C 204 261		71	204	261
618				BU	)0J005		5	0220	B 201 /		71	201	
			*							GEN			
			*	NOW CLEAR	DOWN TO CLRBOT THE HARD WAY					GEN			
			*							GEN			
619			)0K005	C	)0L005&6,)0N005		7	0225	C 250 264		71	250	264
620				BU	)0L005		5	0232	B 244 /		71	244	
621				CS	LOADNX,)0Q005 LOAD THE NEXT BLOCK AT 1		7	0237	/ 700 271		72	700	271
622			)0L005	LCA	)0P005,0-0 CLEAR WITH BLANK AND WORD MARK		7	0244	L 265 000		72	265	000
623				SBR	)0L005&6		4	0251	H 250		72	250	
624				B	)0K005		4	0255	B 225		72	225	
625			)0M005	DSA	)0R005 CLRBOT & X00 - 1		3	0261	899		72	899	
626			)0N005	DSA	BEGN37 CLRBOT		3	0264	838		72	838	
627			)0P005	DCW	#1		1	0265			72		
628				DC	@CLRA @ IDENTIFY IN A DECK, TAPE, OR DUMP		5	0270			72		

SEQ	PG	LIN	LABEL	OP	OPERANDS	SFX	CT	LOCN	INSTRUCTION	TYPE	CARD	A-ADDR	B-ADDR
629			)0Q005	DCW	@}@		1	0271		GEN	73		
630				ORG	BEGN37&X00				0900				
631			)0R005	EQU	* CLRBOT & X00 - 1			0899		GEN			
632				XFR	CLRME				B 201		74	201	

SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS	SYMBOL	ADDRESS
)0J005	0201: 0	)0K005	0225: 0	)0L005	0244: 0	)0M005	0261: 0	)0N005	0264: 0	)0P005	0265: 0
)0Q005	0271: 0	)0R005	0899: 0	)6J003	0110: 0	)6J004	0110: 0	)6K003	0700: 0	)6K004	0700: 0
)6L003	0704: 0	)6L004	0704: 0	)6M003	0728: 0	)6M004	0728: 0	)9J003	0252: 0	)9J004	0252: 0
)9R003	0258: 0	)9R004	0258: 0	ALMOST	1478: 0	ARIF	0894: 0	ARITF	0700: 0	ARYSIZ	0160: 0
ASGSTM	0936: 0	BARITF	2835: 0	BEGIN3	0838: 0	BEGN37	0838: 0	BRNEG	2498: 0	BRPOS	2482: 0
BRZERO	2490: 0	CDOVLY	0700: 0	CLRME	0201: 0	CODE	2669: 0	DIVOP	1463: 0	DONE	1499: 0
ECODE	2815: 0	END1	1508: 0	ENDEX2	1389: 0	ENDEXP	1382: 0	ENDSTM	1421: 0	ERFLF	2018: 0
ERR30	2814: 0	ERX	2063: 0	ERX2	2204: 0	ERX3	2222: 0	ESUBL	2564: 0	ESUBR	2499: 0
EVEN	1101: 0	EXPF	0120: 0	EXPLT	2756: 0	EXPON	1109: 0	EXPON2	1154: 0	EXPON3	1794: 0
EXPON4	1843: 0	EXPON5	1866: 0	EXPON6	1896: 0	EXPONL	1128: 0	EXPRT	2748: 0	FCODE	2706: 0
FINSTM	1452: 0	FLOATF	0125: 0	GETASG	1216: 0	GETFF1	2307: 0	GETFF2	2411: 0	GETFUN	2240: 0
GETOP	0974: 0	GLOBER	0184: 0	GMWM	2853: 0	GOTASG	1232: 0	GOTOP	1009: 0	IFSTMT	1508: 0
INNER	1046: 0	K3	2818: 0	KB20	2729: 0	KB4	2755: 0	KFLESS	2828: 0	KGRM	2830: 0
KGSTAR	2817: 0	KL4	2834: 0	KP1	2730: 0	KPLUS	2823: 0	KSTAR	2819: 0	LABNEG	2494: 0
LABPOS	2478: 0	LABZRO	2486: 0	LFIX	1340: 0	LFRF	1316: 0	LFRX	1294: 0	LOADAD	0838: 0
LOADNX	0700: 0	LOGF	0119: 0	LOOKOP	0992: 0	LOOP	0866: 0	LSTYPE	2705: 0	LXRF	1364: 0
LXRX	1328: 0	MOVEUP	1734: 0	MSG30	1984: 0	NEGAR3	0157: 0	OPS	2685: 0	OUTER	1039: 0
PARITY	2676: 0	PART2	0201: 0	PHAS37	0201: 0	PHASE2	1508: 0	PHASID	0110: 0	PHASLD	0381: 0
POSN2	1722: 0	POSNEG	1648: 0	POSZRO	1765: 0	RECMRK	2450: 0	SAVZON	2686: 0	SBLBAK	1254: 0
SEQNO	2672: 0	SERIES	0117: 0	SLASH	2708: 0	SNAPEX	0564: 0	SNAPSH	0333: 0	SUBFUB	2349: 0
SUBFUN	2609: 0	SUBLFT	2643: 0	SUBS	1190: 0	SX1	2679: 0	SX1P3	2751: 0	SX2	2675: 0
SX2B	2822: 0	SX3	1135: 0	TOP3	2600: 0	TPERR	0728: 0	TPREAD	0704: 0	UNCOND	2474: 0
W17A	2747: 0	W17B	2773: 0	W18A	2704: 0	W20	2470: 0	W6	2852: 0	W8	2846: 0
X1	0089: 0	X2	0094: 0	X2ZONE	2709: 0	X3	0099: 0	XCODE	2707: 0	XFIXF	0124: 0
ZEQNEG	1628: 0										

## UNREFERENCED SYMBOLS

CDOVLY PHASID PHASLD SNAPEX TOP3 TPERR TPREAD