

How Are You Feeling Today?

biorhythms with your KIM

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Processor Applications

Biorhythm theory states that we have hourly, half day, daily, monthly, seasonal and annual cycles that are thought to somehow trigger and coordinate many of our automatic body functions. If the theory is correct,

then by keeping track of the various cycles it should be possible to predict, to a certain extent, the body's potential for performance during the various cycles.

Of the many cycles, the ones most frequently charted and correlated are the physical (23 days), emotional (28 days) and intellectual (33 days). Although the majority of the work being done is

empirical and after the fact, it is still extremely interesting.

As shown in Fig. 1, these three cycles are represented as sine waves that start on the day of birth. As each cycle crosses the baseline, it is denoted as a *switchpoint* day. If either or both of the other cycles cross at the same time, rising or falling, it is denoted as a *critical* day. By correlation of switchpoint and

critical days, accidents-and-illness researchers have found that people tend to have more accidents or become ill on those days.

A further postulation of the theory states that when the cycles are above the baseline (positive) you're having a *high* for that rhythm. Obviously, you cannot have something for nothing; the theory goes on to say that when the cycle is below the baseline, you are having a *low* for that rhythm.

One interesting relationship of the cycles is that in 21,252 days from your birth date, the cycles will start repeating.

For more information on the subject of biorhythms, check your local library or bookstores. The bookstores in my area had three or four paperbacks by different authors.

The program listing is divided into four parts:

1. 0-12_{hex} contains the required data and temporary storage locations.
2. 20-8C_{hex} contains the look-up tables.
3. 200-2C2_{hex} contains all of the subroutines.
4. 2C3-3D5_{hex} is the main program.

The program starts by converting the total years that you have lived into days. Next, it does the days for the first month, and for each month in the first year. It finishes by doing the days for each month in the last year and for the last month. Then it does the three biorhythm period calculations and jumps to the display routine.

Using the KIM-1 system to display biorhythm graphs does present one small problem: A 7-segment display graph tends to make little sense. Therefore, I converted the three biorhythm periods to a numerical representation with the use of the formula in Example 1 and added a fudge factor when needed. If a cycle was within one day of either of its peaks, I added or subtracted one so that I

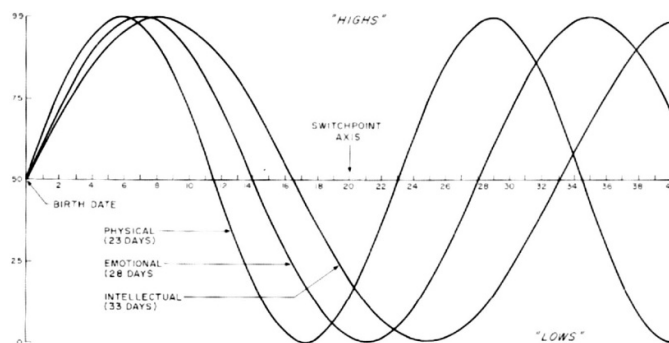


Fig. 1. Graphic representation of biorhythm cycles.

$$\left\{ \left[\sin \left(\frac{360}{\text{total period}} \times \frac{\text{day in period}}{\text{period}} \right) \right] \times 100 \right\} + 50$$

Example 1.

could see the difference between those days and the peak day. Since the sine function ranges from +1 to -1, the display should read between 0 and 100. So, I applied one more fudge factor — the display ranges between 0 and 99. In this manner, all three of the values can be displayed at the same time. The order of display from left to right is: physical, emotional and intellectual. The magnitude

SYMBOL	VALUE	LINE DEFINED			CROSS-REFERENCES							
ADDDAYS	023D	105	124	126	128	130	235	249	272	278	294	318
			324									
ADD1	0253	117	109	113								
BDAY	0001	4	271	277								
BLYR	0003	6	212	257								
BMON	0000	3	259	266								
BMYR	0002	5	215	255								
BRPER	03A3	330	273									
CHECK	02A0	171	168									
CONVD	1F48	22	156	159								
CORDEC	0269	134	240	260	287	308	333	340	347			
COR1	0276	143	134									
COR2	026F	138	140									
DAC0	030D	243	247	251								
DAC1	0320	255	220	239	244							
DAC10	0348	274	264	267								
DAC11	0363	290	295									
DAC12	0370	299	292									
DAC13	039E	323	300	316								
DAC14	0391	314	319									
DAC15	0359	286	283									
DAC18	035E	288	285									
DAC3	02F1	230	227	237								
DAC4	0302	238	225									
DAC5	02F3	231	229	233								
DISP	0277	147	351									
DIS1	00FB	23	336									
DIS2	00FA	24	343									
DIS3	00F9	25	151	157	350							
DIS4	0280	151	161									
DIS5	027C	149	162									
EMO	0050	47	342									
HTDAY	0009	12	65	111	112	203						
HTDAYT	0011	20	66	77	93	95						
INCYR	0255	123	231	245								
INT	006C	52	349									
LPYR	0297	167	258	306								
LPYR1	029C	169	167									
LPYR2	02B4	181	172	174	176	178						
LPYR3	02B6	182	170	180								
LYCORR	02B7	187	261	288	309	312						
LYC1	02C1	194	189									
LYFLG	000D	16	181	188	205	302						
MOTBLE	0020	34	274	293	317							
PADD	1741	26	148									
PDAY	0005	8	270	323								
PERCAL	020D	74	332	339	346							
PER1	0221	87	79	82								
PER2	0210	76	91	96	101							
PHY	0039	43	335									
PLYR	0007	10	211	305								
PMON	0004	7	265	286	307							
PMYR	0006	9	214	303								
START	02C3	199	****									
SVTDAY	0200	63	330	337	344							
TEMP1	000E	17	75	81	89	218	263	282	299	310	315	
TEMP2	000F	18	169	256	289	291	304					
TEMPLYR	000C	15	213	217	226	238	241	243				
TMPMYR	000B	14	216	224	236							
TTDAY	000A	13	67	115	116	204						
TTDAYT	0012	21	68	78	98	100						
UTDAY	0008	11	63	107	108	202						
UTDAYT	0010	19	64	80	83	88	90					

Symbol table.

of the display indicates your body's potential for each rhythm, with 0 being the lowest, 43 to 57 being the switchpoint days and 99 being the highest.

To use the program, you need to enter into locations 0 through 7 the month, day and year of your birth (01-15-1943), then the month, day and year

(12-30-1977) that you wish to calculate. Next, enter the starting address (02C3) and GO. If the program loaded correctly, the display will show 7639 15.

Since the KIM-1 display routine displays the "data" located at the "address," I had to write my own display routine. Therefore, the only active keys, after executing

the program, are ST and RS. I tried to modify the data used for calculations or the results of any calculations as little as possible, making it easier to single-step through programs.

I chose to do all the calculations in decimal because of the decimal mode in the 6502 CPU. Now I'm not convinced that it was the easiest way,

but since all the input data was in decimal and I wanted decimal results, it seemed the best at the time. Also, it did make it easier to debug my calculation algorithms.

One last thought — in locations A, 9 and 8 are the total number of days that you have lived (8 = least significant). I only mention it for the younger ones among us. ■

Program listing.

LINE #	LOC	CODE	LINE	10	20	30	40
1	0000		* = \$0				
3	0000		BMON	*=+1	BIRTH MONTH		
4	0001		BDAY	*=+1	BIRTH DAY		
5	0002		BMYR	*=+1	BIRTH MOST SIG. YEARS (19)77		
6	0003		BLYR	*=+1	BIRTH LEAST SIG. YEARS 19(77)		
7	0004		PMON	*=+1	PROJECTED MONTH		
8	0005		PDAY	*=+1	DAY		
9	0006		PMYR	*=+1	MS YEARS		
10	0007		PLYR	*=+1	LS YEARS		
11	0008		UTDAY	*=+1	1&10 DAYS TEMP		
12	0009		HTDAY	*=+1	100&1000 DAYS TEMP		
13	000A		TTDAY	*=+1	100K & 10K DAYS		
14	000B		TMPLYR	*=+1	TEMP MSD FOR YEARS		
15	000C		TMPLYR	*=+1	TEMP LSD FOR YEARS		
16	000D		LYFLG	*=+1	LEAP YEAR FLAG		
17	000E		TEMP1	*=+1	TEMP STORAGE		
18	000F		TEMP2	*=+1			
19	0010		UTDAYT	*=+1	TOTAL DAYS TEMPS FOR PERIOD CALC.		
20	0011		HTDAYT	*=+1			
21	0012		TTDAYT	*=+1			
22	0013		CONVD =	\$1F48	KIM CONVERT HEX TO 7-SEG DISPLAY		
23	0013		DIS1 =	\$FB	KIM 7-SEG MSA		
24	0013		DIS2 =	\$FA	LSA		
25	0013		DIS3 =	\$F9	DATA		
26	0013		PADD =	\$1741	P1A DATA DIRECTION REG		
28	0013		:	***** LOOK UP TABLES *****			
30	0013		* = \$20				
32	0020		:	TABLE FOR DAYS IN MONTHS			
34	0020	00	MOTBLE	.BYTE	0,\$31,\$28,\$31,\$30,\$31,\$30,\$31,\$31		
34	0021	31					
34	0022	28					
34	0023	31					
34	0024	30					
34	0025	31					
34	0026	30					
34	0027	31					
34	0028	31					
35	0029	30		.BYTE	\$30,\$31,\$30,\$31		
35	002A	31					
35	002B	30					
35	002C	31					
36	002D	31		.BYTE	\$31,\$29,\$31,\$30,\$31,\$30,\$31,\$31		
36	002E	29					
36	002F	31					
36	0030	30					
36	0031	31					
36	0032	30					
36	0033	31					
36	0034	31					
37	0035	30		.BYTE	\$30,\$31,\$30,\$31		
37	0036	31					
37	0037	30					
37	0038	31					
39	0039		:	TABLES FOR CONVERTING DAYS TO PERCENTAGE			
40	0039		:	NUMBERS RANGE FROM 0 TO 99			
41	0039		:	0 = LOWEST POINT 99 = HIGHEST POINT			
43	0039	50	PHY	.BYTE	\$50,\$63,\$76,\$87,\$94,\$98,\$99,\$97		
43	003A	63					
43	003B	76					
43	003C	87					
43	003D	94					
43	003E	98					

43	003F	99			
43	0040	97			
44	0041	91		.BYTE	\$91,\$82,\$70,\$57,\$43,\$30,\$18,\$9
44	0042	82			
44	0043	70			
44	0044	57			
44	0045	43			
44	0046	30			
44	0047	18			
44	0048	09			
45	0049	03		.BYTE	3,0,1,6,\$13,\$24,\$37
45	004A	00			
45	004B	01			
45	004C	06			
45	004D	13			
45	004E	24			
45	004F	37			
47	0050	50	EMO	.BYTE	\$50,\$61,\$72,\$81,\$89,\$95,\$98,\$99
47	0051	61			
47	0052	72			
47	0053	81			
47	0054	89			
47	0055	95			
47	0056	98			
47	0057	99			
48	0058	98		.BYTE	\$98,\$95,\$89,\$81,\$72,\$61,\$50,\$39
48	0059	95			
48	005A	89			
48	005B	81			
48	004C	72			
48	005D	61			
48	005E	50			
48	005F	39			
49	0060	28		.BYTE	\$28,\$19,\$11,5,1,0,1,5
49	0061	19			
49	0062	11			
49	0063	05			
49	0064	01			
49	0065	00			
49	0066	01			
49	0067	05			
50	0068	11		.BYTE	\$11,\$19,\$28,\$39
50	0069	19			
50	006A	28			
50	006B	39			
52	006C	50	INT	.BYTE	\$50,\$59,\$69,\$77,\$85,\$91,\$95,\$98
52	006D	59			
52	006E	69			
52	006F	77			
52	0070	85			
52	0071	91			
52	0072	95			
52	0073	98			
53	0074	99		.BYTE	\$99,\$98,\$97,\$93,\$88,\$81,\$73,\$64
53	0075	98			
53	0076	97			
53	0077	93			
53	0078	88			
53	0079	81			
53	007A	73			
53	007B	64			
54	007C	55		.BYTE	\$55,\$45,\$36,\$27,\$19,\$12,7,3
54	007D	45			
54	007E	36			
54	007F	27			
54	0080	19			
54	0081	12			
54	0082	07			
54	0083	03			
55	0084	01		.BYTE	1,0,1,5,9,\$15,\$23,\$31,\$41
55	0085	00			
55	0086	01			
55	0087	05			
55	0088	09			
55	0089	15			
55	008A	23			
55	008B	31			
55	008C	41			
57	008D				* = \$200
59	0200		:	***** SUBROUTINES *****	
61	0200		:	SAVES TOTAL DAYS ALIVE IN TEMP LOCS.	
63	0200	A5	08	SVTDAY	LDA UTDAY
64	0202	85	10		STA UTDAYT
65	0204	A5	09		LDA HTDAY
66	0206	85	11		STA HTDAYT
67	0208	A5	0A		LDA TTDAY
68	020A	85	12		STA TTDAYT

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69      020C      60              RTS
71      020D      :SUBROUTINE TO DO PERIOD CALCULATION
72      020D      :CHECKS PERIOD WITH CONTENTS OF A REG

74      020D      F8              PERCAL      SED
75      020E      85              STA TEMP1      SAVE A FOR REPEATED SUBTRACTION
76      0210      18              PER 2      CLC      FIRST CHECK TO SEE IF DIVISION
77      0211      A5      11      LDA HTDAYT      CAN BE PERFORMED ADD MSBS TOGETHER
78      0213      65      12      ADC TTDAYT
79      0215      D0      0A      BNE PER1      CLOSE TO CONVERGENCE IF EQUAL
80      0217      A5      10      LDA UTDAYT      GET LSDS OF DAYS
81      0219      C5      0E      CMP TEMP1      COMPARE IT TO PERIOD
82      021B      10      04      BPL PER1      IF PLUS, CAN STILL DIVIDE
83      021D      A5      10      LDA UTDAYT      IF NOT, DONE.
84      021F      D8              CLD      SO RETURN
85      0220      60              RTS      WITH RESULT IN A REG

87      0221      38              PER 1      SEC
88      0222      A5      10      LDA UTDAYT      GET LSDS OF DAYS
89      0224      E5      0E      SBC TEMP1      DO THE SUBTRACTION
90      0226      85      10      STA UTDAYT      STORE NEW NUMBER BACK
91      0228      B0      E6      BCS PER2      IF CARRY SET, NO BORROW, THEREFORE
92      022A      38              SEC      NO CORRECTION NEEDED
93      022B      A5      11      LDA HTDAYT      ELSE, DEC HUNDREDS & THOUSANDS
94      022D      E9      01      SBC #1      BY ONE
95      022F      85      11      STA HTDAYT      STORE NEW RESULT
96      0231      B0      DD      BCS PER2
97      0233      38              SEC      DEC TEN & HUNDRED THOUSANDS
98      0234      A5      12      LDA TTDAYT
99      0236      E9      01      SBC #1
100     0238      85      12      STA TTDAYT
101     023A      4C      10 02      JMP PER2

103     023D      :ADD TO DAYS, CONTENTS OF A
105     023D      F8              ADDAYS      SED      SET DECIMAL
106     023E      18              CLC
107     023F      65      08      ADC UTDAY      DO 1 & 10
108     0241      85      08      STA UTDAY
109     0243      90      0E      BCC ADD1      DONE IF NO CARRY
110     0245      A9      00      LDA #0      ELSE DO 100 & 1000
111     0247      65      09      ADC HTDAY
112     0249      85      09      STA HTDAY
113     024B      90      06      BCC ADD1      DONE IF NO CARRY
114     024D      A9      00      LDA #0
115     024F      65      0A      ADC TTDAY      ELSE DO 10,000 & 100,000
116     0251      85      0A      STA TTDAY
117     0253      D8              ADD1      CLD      CLEAR DECIMAL
118     0254      60              RTS

120     0255      :ADD 365 TO DAYS
123     0255      A9      99      INCYR      LDA #99      ADD IN STEPS
124     0257      20      3D 02      JSR ADDAYS
125     025A      A9      99      LDA #99
126     025C      20      3D 02      JSR ADDAYS
127     025F      A9      99      LDA #99
128     0261      20      3D 02      JSR ADDAYS
129     0264      A9      68      LDA #68
130     0266      4C      3D 02      JMP ADDAYS

132     0269      :CORRECTS VALUE IN A FROM DECIMAL TO HEX
134     0269      F0      0B      CORDEC      BEQ COR1      IF ZERO LEAVE
135     026B      A0      00      LDY #0      ELSE DO CORRECTION
136     026D      F8              SED
137     026E      38              SEC
138     026F      C8              COR 2      INY      INCREASE Y IN HEX BY ONE
139     0270      E9      01      SBC #1      FOR EACH DECREASE OF A IN DECIMAL BY ONE
140     0272      D0      FB      BNE COR2
141     0274      D8              CLD
142     0275      98              TYA      RETURN WITH RESULT IN A
143     0276      60              COR 1      RTS

145     0277      :DISPLAY ROUTINE
147     0277      A9      7F      DISP      LDA #7F      SET UP PIA FOR DISPLAY
148     0279      8D      41 17      STA PADD
149     027C      A2      09      DIS5      LDX #9      DIGIT INDEX
150     027E      A0      03      LDY #3      BYTE INDEX
151     0280      B9      F8 00      DIS4      LDA DIS3-1,Y      FETCH DATA
152     0283      4A              LSR A      SHIFT MSNYBBLE TO LOWER POSITION
153     0284      4A              LSR A
154     0285      4A              LSR A
155     0286      4A              LSR A
156     0287      20      48 1F      JSR CONV D      CONVERT AND DISPLAY
157     028A      B9      F8 00      LDA DIS3-1,Y      FETCH DATA FOR LSNYBBLE
158     028D      29      0F      AND #7F      MASK OFF MSN
159     028F      20      48 1F      JSR CONV D      CONVERT AND DISPLAY
160     0292      88              DEY      DECREMENT BYTE INDEX
161     0293      D0      EB      BNE DIS4
162     0295      F0      E5      BEQ DIS5      STAY IN THIS LOOP UNTIL RESET

164     0297      :CHECKS YEARS FOR LEAP YEAR, IF FOUND SETS FLAG.
165     0297      :FLAG CAUSES USE OF SECOND HALF OF MOTBLE

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167 0297 F0 03 LPYR BEQ LPYR1 IF 00 SKIP FIRST CHECK
168 0299 4C A0 02 JMP CHECK
169 029C A5 0F LPYR1 LDA TEMP2 NOW DO MOST SIG YEARS
170 029E F0 16 BEQ LPYR3 CHECK FOR YEAR '0'. NOT A LY
171 02A0 29 1F CHECK AND #81F MASK OFF DON'T CARES
172 02A2 F0 10 BEQ LPYR2 CHECK FOR 20,40,60,80-- ALL ARE LY
173 02A4 C9 04 CMP #4 FIRST TWO COMPARES CHECK IF LEFT
174 02A6 F0 0C BEQ LPYR2 DIGIT IS A MULTIPLE OF TWO AND
175 02A8 C9 08 CMP #8
176 02AA F0 08 BEQ LPYR2
177 02AC C9 12 CMP #12 NEXT TWO CHECK IF LEFT DIGIT IS ODD
178 02AE F0 04 BEQ LPYR2 AND RIGHT DIGIT IS A 2 OR 6
179 02B0 C9 16 CMP #16
180 02B2 D0 02 BNE LPYR3
181 02B4 E6 0D LPYR2 INC LYFLG IF HERE, IT IS A LY, SET FLAG
182 02B6 60 0D LPYR3 RTS

184 02B7 :CHECKS IF LYFLG SET, IF SET ADDS 12 TO CAUSE
185 02B7 :USE OF SECOND HALF OF MOTBLE

187 02B7 48 LYCORR PHA HOLD A
188 02B8 A5 0D LDA LYFLG
189 02BA F0 05 BEQ LYC1 IF ZERO SKIP ADD
190 02BC 18 CLC
191 02BD 68 PLA
192 02BE 69 0C ADC #12
193 02C0 48 PHA DUMMY PUSH FOR NEXT PULL
194 02C1 68 LYC1 PLA
195 02C2 60 RTS

197 02C3 ; ***** MAIN PROGRAM *****

199 02C3 A2 FF START LDX #$FF SET UP STACK
200 02C5 9A TXS
201 02C6 A9 00 LDA #0 CLEAR OUT DAY LOCATIONS
202 02C8 85 08 STA UTDAY
203 02CA 85 09 STA HTDAY
204 02CC 85 0A STA TTDAY
205 02CE 85 0D STA LYFLG ZERO FLAG

207 02D0 :DAYS ALIVE CALCULATION, DO YEARS FIRST

209 02D0 F8 SED SET DECIMAL
210 02D1 38 SEC SET CARRY FOR SUBTRACTION
211 02D2 A5 07 LDA PLYR GET PROJECTED YEAR LSDS
212 02D4 E5 03 SBC BLYR SUB BIRTH YEAR LSDS
213 02D6 85 0C STA TPLYR STORE IT AT TEMP YEARS
214 02D8 A5 06 LDA PMYR NEXT DO MSDS
215 02DA E5 02 SBC BMYR
216 02DC 85 0B STA TMPMYR
217 02DE 05 0C ORA TPLYR SET UP A YEAR FLAG
218 02E0 85 0E STA TEMP1 IF NOT ZERO, WILL DO NORMAL CALC
219 02E2 D8 CLD CLEAR DECIMAL
220 02E3 F0 3B BEQ DAC1 IF ZERO SKIP YEARS CALCULATION

222 02E5 :CONVERT TOTAL YEARS TO DAYS

224 02E5 A5 0B LDA TMPMYR CHECK IF HUNDREDS SET
225 02E7 F0 19 BEQ DAC4 GOTO TENS AND UNITS IF NOT
226 02E9 A5 0C LDA TPLYR CHECK IF EXACTLY 100 YEARS
227 02EB D0 04 BNE DAC3 IF NOT ZERO, DO 100
228 02ED A2 63 LDX #99 IF ZERO, DO 99 YEARS
229 02EF D0 02 BNE DAC5 BRANCH ALWAYS
230 02F1 A2 64 DAC3 LDX #100 SET X FOR REPEATED LOOP
231 02F3 20 55 02 DAC5 JSR INCYR ADD 365 TO DAYS
232 02F6 CA DEX
233 02F7 D0 FA BNE DAC5
234 02F9 A9 25 LDA #25 CORRECT FOR 25 LEAP YEARS
235 02FB 20 3D 02 JSR ADDDAYS FOR ONE CENTURY
236 02FE C6 0B DEC TMPMYR DEC 100 & 1000 YEARS
237 0300 D0 EF BNE DAC3 MORE TO GO, IF NOT ZERO
238 0302 A5 0C DAC4 LDA TPLYR DO 10 & 1 NOW
239 0304 F0 1A BEQ DAC1
240 0306 20 69 02 JSR CORDEC CORRECT FROM DECIMAL TO HEX
241 0309 85 0C STA TPLYR REPLACE VALUE IN TEMP
242 030B A2 03 LDX #3 LOOP INDEX FOR LEAP YEARS, FOR FIRST PASS
243 030D C6 0C DAC0 DEC TPLYR CORRECT TPLYR FOR 1ST & LAST YEARS LIVED, ON FIRST PASS
244 030F F0 0F BEQ DAC1 DONE WHEN 0
245 0311 20 55 02 JSR INCYR INC DAYS BY 365
246 0314 CA DEX
247 0315 D0 F6 BNE DAC0 IF 0 THEN CORRECT FOR LEAP YEAR
248 0317 A9 01 LDA #1
249 0319 20 3D 02 JSR ADDDAYS
250 031C A2 04 LDX #4 LOOP INDEX FOR REPEATED PASSES
251 031E D0 ED BNE DAC0 BRANCH ALWAYS

253 0320 :NEXT DO DAYS FOR THE FIRST MONTH

255 0320 A5 02 DAC1 LDA BMYR
256 0322 85 0F STA TEMP2 LOCATE FOR USE IN LY CHECK
257 0324 A5 03 LDA BLYR
258 0326 20 97 02 JSR LPYR CHECK IF A LEAP YEAR
259 0329 A5 00 LDA BMON GET BIRTH MONTH
260 032B 20 69 02 JSR CORDEC CONVERT IT TO HEX
261 032E 20 B7 02 JSR LYCORR CORRECT IF NEEDED

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262 0331 AA 00 TAX X= CORRECT VALUE IN HEX OF BIRTH MONTH
263 0332 A5 0E LDA TEMP1 YEAR FLAG, IF NOT ZERO, DO
264 0334 D0 12 BNE DAC10 NORMAL CALC.
265 0336 A5 04 LDA PMON ELSE, CHECK MONTHS
266 0338 C5 00 CMP BMON IF DIFFERENT, DO NORMAL
267 033A D0 0C BNE DAC10
268 033C 38 SEC ELSE DO THIS PART
269 033D F8 SED
270 033E A5 05 LDA PDAY
271 0340 E5 01 SBC BDAY
272 0342 20 3D 02 JSR ADDAYS ADD IT TO TEMP DAYS
273 0345 4C A3 03 JMP BRPER AND DO PERIOD CALC.
274 034B B5 20 DAC10 LDA MOTBLE,X GET DAYS IN BIRTH MONTH
275 034C F8 SED
276 034E 38 SEC
277 034C E5 01 SBC BDAY A-BDAY-C* > A
278 034E 20 3D 02 JSR ADDAYS ADD IT TO TOTAL DAYS
280 0351 ; NEXT DO REST OF MONTHS IN FIRST YEAR

282 0351 A5 0E LDA TEMP1 YEAR FLAG
283 0353 F0 04 BEQ DAC15 IF ZERO, DO SHORT YEAR
284 0355 A9 0D LDA #13 ELSE SET UP FOR REST OF YEAR
285 0357 D0 05 BNE DAC18 NORMAL BRANCH ALWAYS
286 0359 A5 04 DAC15 LDA PMON GET PROJECTED MONTH FOR SHORT YEAR CALC.
287 035B 20 69 02 JSR CORDEC CORRECT DECIMAL NUMBER TO HEX FOR LOOP
288 035E 20 B7 02 DAC18 JSR LYCORR
289 0361 85 0F STA TEMP2
290 0363 E8 00 DAC11 INX MOVE INDEX TO NEXT MONTH
291 0364 E4 0F CPX TEMP2 AT END YET
292 0366 F0 08 BEQ DAC12 IF EQUAL, YES
293 0368 B5 20 LDA MOTBLE,X ELSE, GET DAYS FOR XTH MONTH
294 036A 20 3D 02 JSR ADDAYS ADD IT TO TOTAL DAYS
295 036D 4C 63 03 JMP DAC11 CONTINUE, COMPARE CAUSES EXIT FROM LOOP
297 0370 ; NEXT DO PROJECTED YEAR'S DAYS
299 0370 A5 0E DAC12 LDA TEMP1 YEAR FLAG
300 0372 F0 2A BEQ DAC13 IF ZERO, SKIP THIS PART
301 0374 A9 00 LDA #0
302 0376 85 0D STA LYFLG CLEAR FLAG
303 0378 A5 06 LDA PMYR
304 037A 85 0F STA TEMP2
305 037C A5 07 LDA PLYR
306 037E 20 97 02 JSR LPYR CHECK FOR LY
307 0381 A5 04 LDA PMON GET PROJECTED MONTH
308 0383 20 69 02 JSR CORDEC CORRECT IT TO HEX
309 0386 20 B7 02 JSR LYCORR
310 0389 85 0E STA TEMP1
311 038B A9 00 LDA #0 DO MONTHS FIRST
312 038D 20 B7 02 JSR LYCORR
313 0390 AA TAX
314 0391 E8 00 DAC14 INX
315 0392 E4 0E CPX TEMP1 DONE WITH MONTHS WHEN
316 0394 F0 08 BEQ DAC13 EQUAL
317 0396 B5 20 LDA MOTBLE,X ELSE, GET NUMBER OF DAYS/MONTH
318 0398 20 3D 02 JSR ADDAYS ADD THEM TO TOTAL
319 039B 4C 91 03 JMP DAC14
321 039E ; NEXT THE DAYS IN THE LAST MONTH
323 039E A5 05 DAC13 LDA PDAY
324 03A0 20 3D 02 JSR ADDAYS
326 03A3 ;UT,HT,TT DAYS NOW CONTAINS THE AMOUNT OF DAYS
327 03A3 ;LIVED FROM BIRTH TO PROJECTED IN DECIMAL
328 03A3 ;IT IS NOW TIME TO CALCULATE THE BIORHYTHM PERIODS
330 03A3 20 00 02 BRPER JSR SVTDAY FIRST SAVE TOTAL DAYS
331 03A6 A9 23 LDA #23 DO PHYSICAL FIRST
332 03A8 20 0D 02 JSR PERCAL PERIOD CALCULATION SUBROUTINE
333 03AB 20 69 02 JSR CORDEC
334 03AE AA TAX
335 03AF B5 39 LDA PHY,X GET NUMBER FROM TABLE
336 03B1 85 FB STA DIS1 STORE IN DISPLAY LOCATIONS
337 03B3 20 00 02 JSR SVTDAY NEXT EMOTIONAL
338 03B6 A9 28 LDA #28
339 03B8 20 0D 02 JSR PERCAL
340 03BB 20 69 02 JSR CORDEC
341 03BE AA TAX
342 03BF B5 50 LDA EMO,X
343 03C1 85 FA STA DIS2
344 03C3 20 00 02 JSR SVTDAY
345 03C6 A9 33 LDA #33 AND INTELLECTUAL
346 03C8 20 0D 02 JSR PERCAL
347 03CB 20 69 02 JSR CORDEC
348 03CE AA TAX
349 03CF B5 6C LDA INT,X
350 03D1 85 F9 STA DIS3
351 03D3 JMP DISP DONE GOTO DISPLAY ROUTINE
353 03D6 .END
NUMBER OF ERRORS = 0, NUMBER OF WARNINGS = 0

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