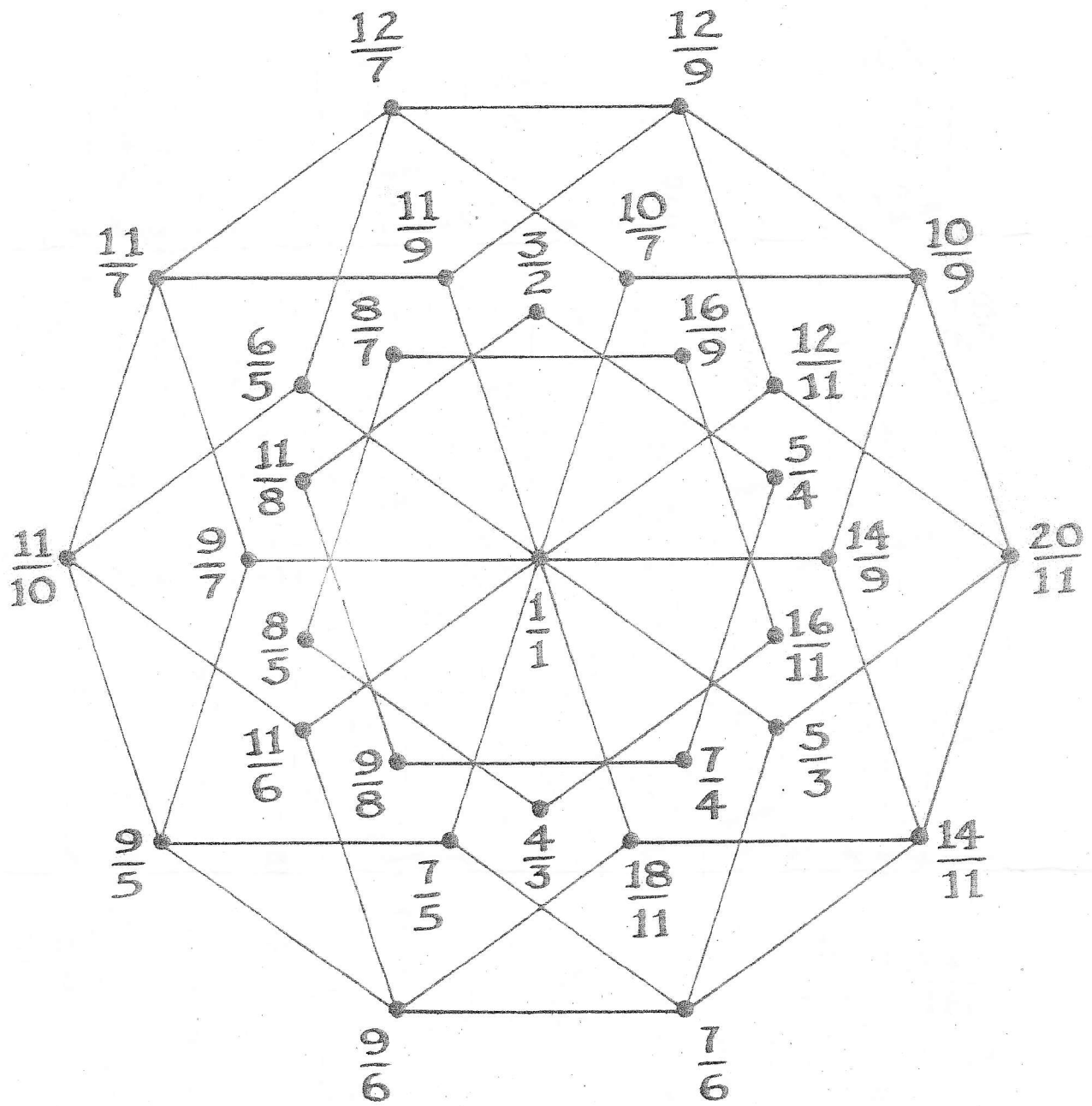


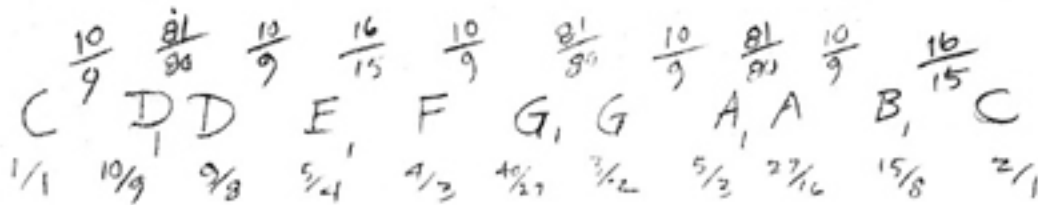
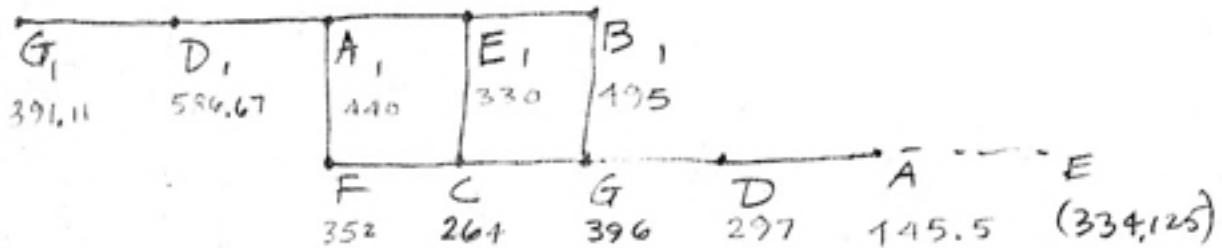
Xenharmonikôn 3



Spring 1975

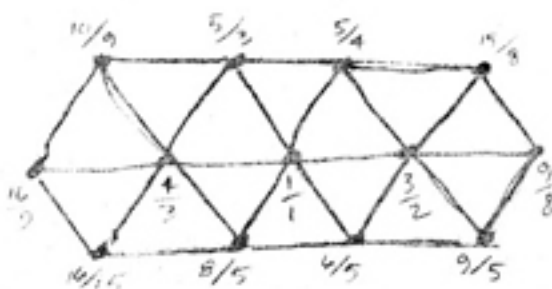
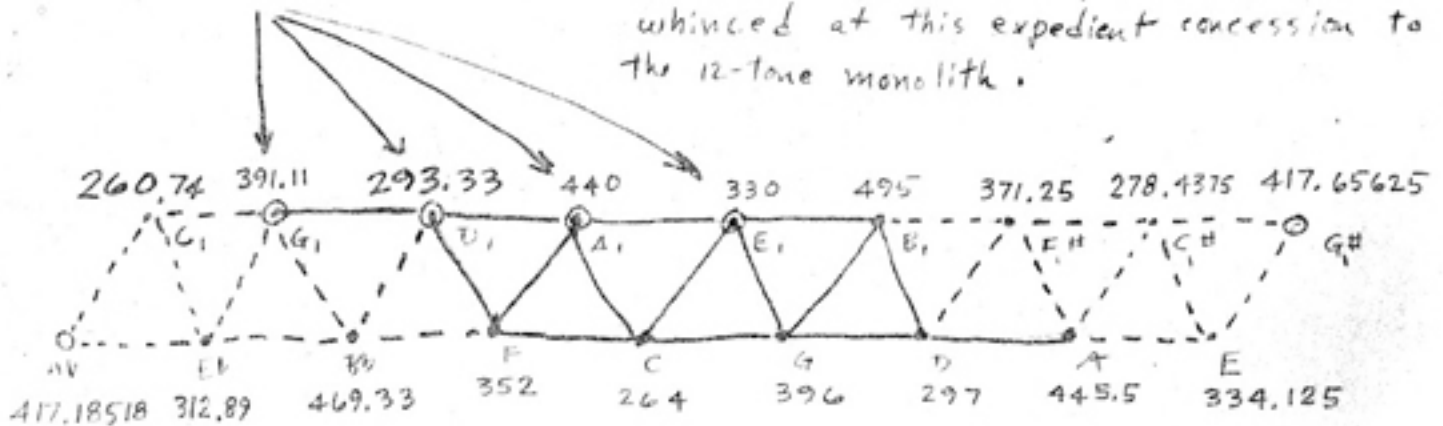
Some Basic Pitches

© Erv Wilson 1976



Harry used the tempered G 392 rather than the just G 391.11 because forks to 392 were available, and to 391.11 were not. Purist that he was, he must have winced at this expedient concession to the 12-tone monolith.

OVIOLA pitches



1 3 9 5 15 Diamond



1 3 9 5 15 Pentad

Erv Wilson

Interpretation of Partch's Diagram 19 by Erv Wilson Mar 12, 1996

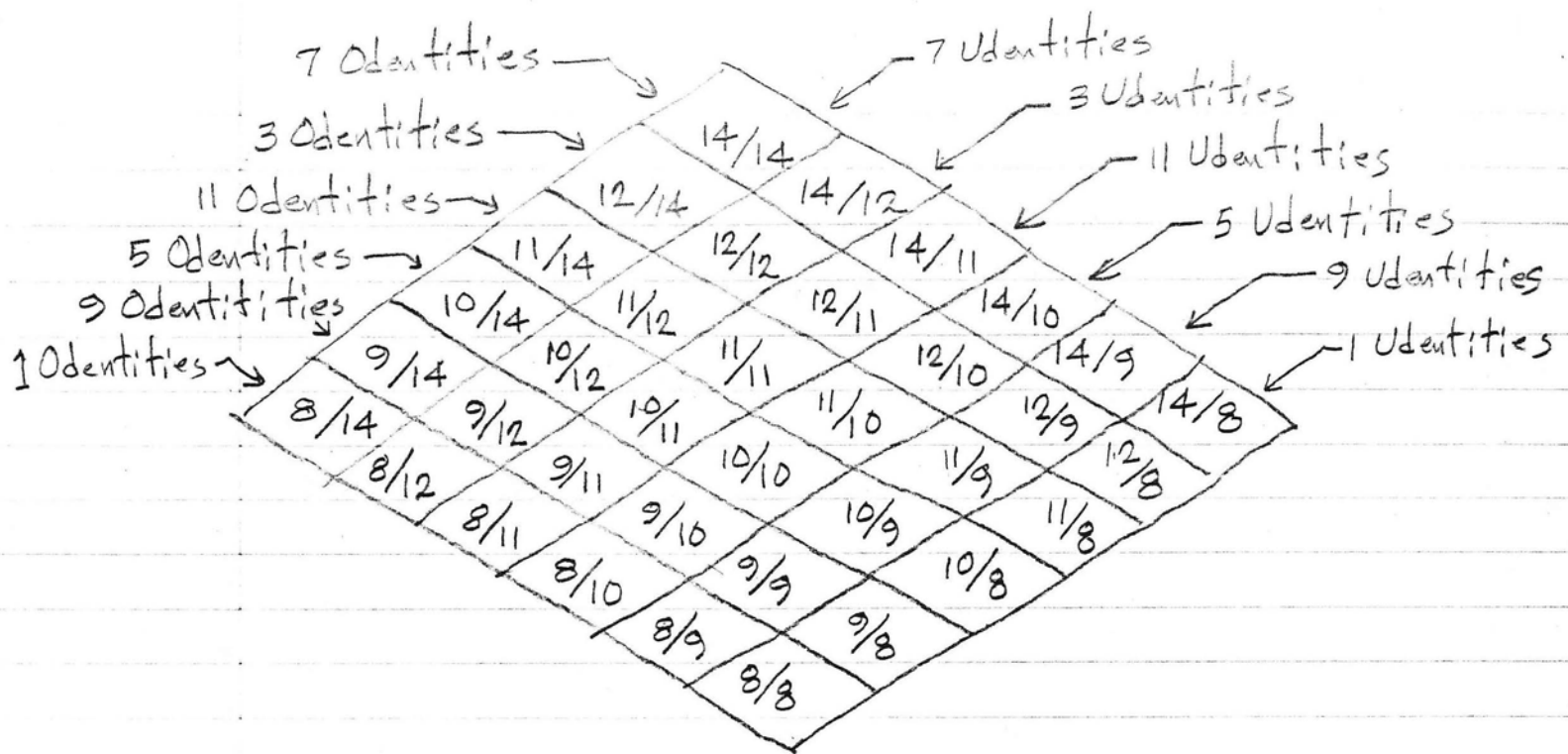


Diagram 19. - One Section of the Ptolemy Diamond Keyboard (Page 207)

ratios are entered by Erv Wilson

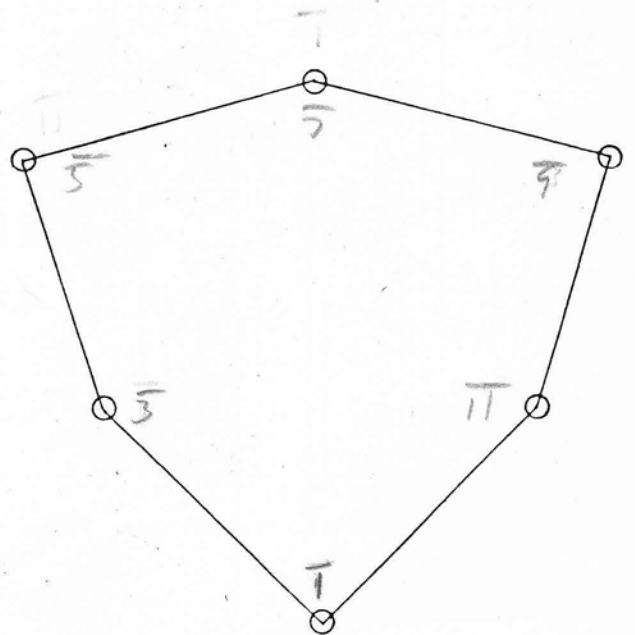
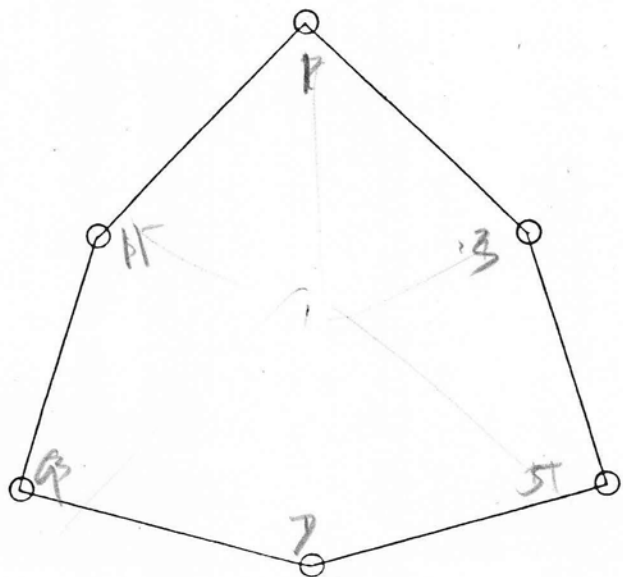
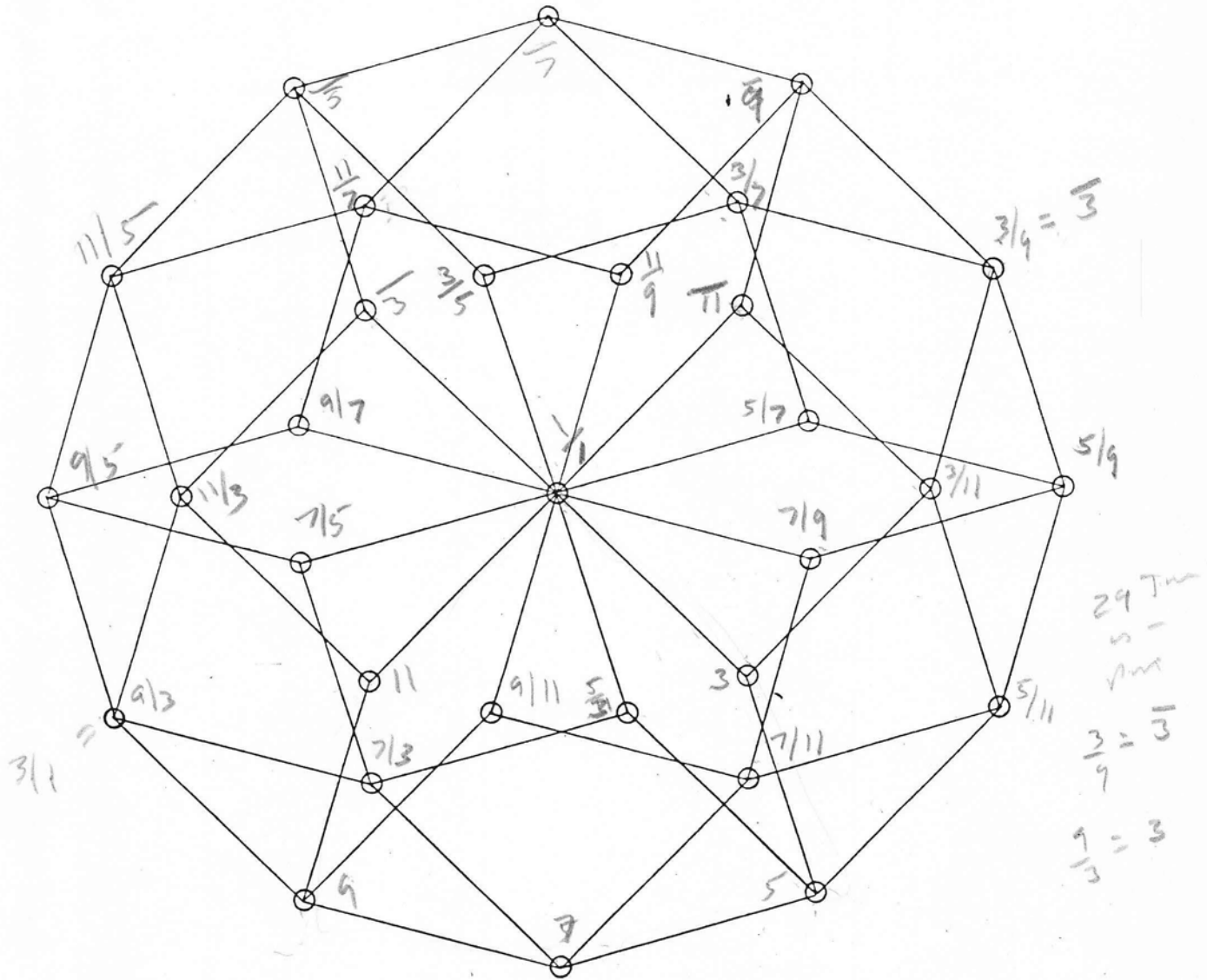
6	14	10	8	19	7	20	9	15	13	15	18	20	11	23	12	22	20	17	15	18	11	25	9	25	11	14	21	10	mediants		
10	21	14	11	25	9	25	11	18	15	17	20	22	12	23	11	20	18	15	13	15	9	20	7	19	8	10	14	6	x = mismatch		
x			x	x				x	x									x	x			x	x					x			
4	9	2	5	8	3	11	4	9	5	6	8	9	10	11	1	12	11	10	9	7	6	11	5	14	4	11	7	3	14	7	Terms
7	14	3	7	11	4	14	5	11	6	7	9	10	11	12	1	11	10	9	8	6	5	9	4	11	3	8	5	2	9	4	
63/56 = 9/8	28/27	15/14	56/55	33/32	44/42 = 22/21	56/55	45/44	55/54	36/35	56/54 = 28/27	81/80	100/99	121/120	12/11	12/11	121/120	100/99	81/80	56/54 = 28/27	36/35	45/44	56/55	44/42 = 22/21	33/32	56/55	15/14	28/27	63/56 = 9/8	epimoria		

Feininger Cactus series

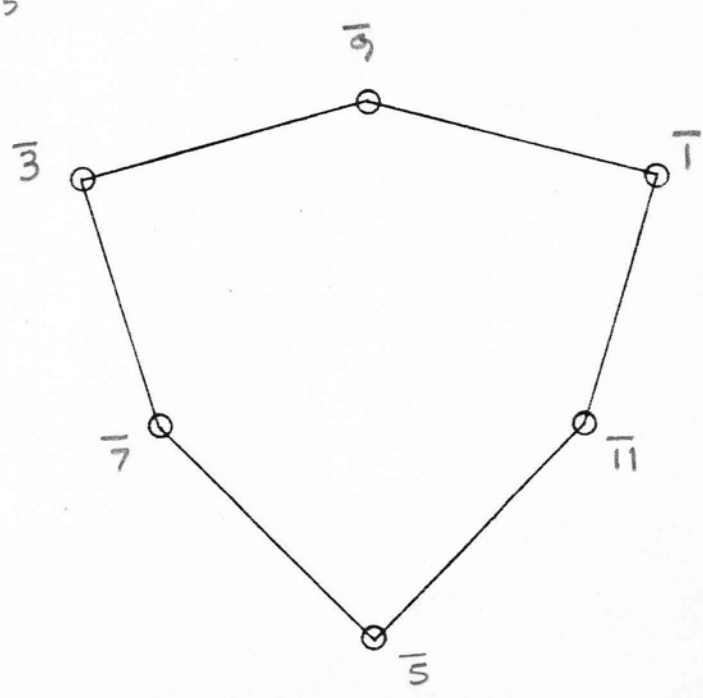
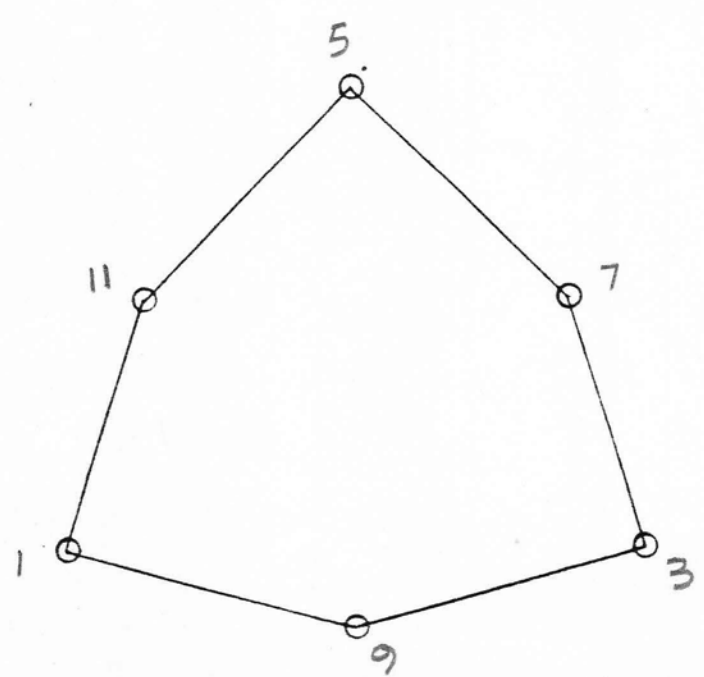
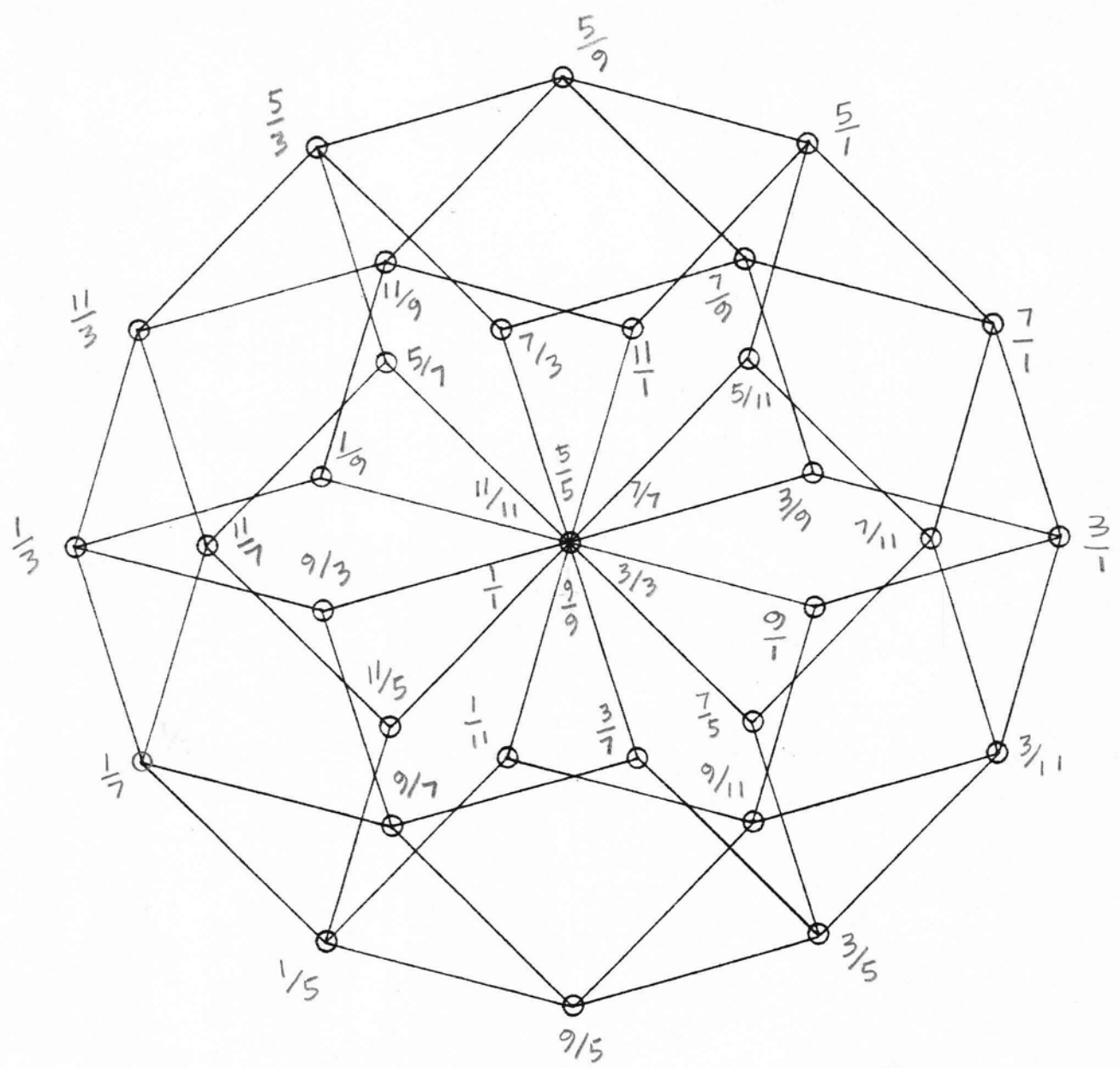
a c e c
 b d f d dec.
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 6 11 5 .181818

	1	3	5	7	9	11	13	15
1	1/1	3/1	5/1	7/1	9/1	11/1	13/1	15/1
3	1/3	3/3	5/3	7/3	9/3	11/3	13/3	15/3
5	1/5	3/5	5/5	7/5	9/5	11/5	13/5	15/5
7	1/7	3/7	5/7	7/7	9/7	11/7	13/7	15/7
9	1/9	3/9	5/9	7/9	9/9	11/9	13/9	15/9
11	1/11	3/11	5/11	7/11	9/11	11/11	13/11	15/11
13	1/13	3/13	5/13	7/13	9/13	11/13	13/13	15/13
15	1/15	3/15	5/15	7/15	9/15	11/15	13/15	15/15

50, +38 65.
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 27.
 64.
 38.
 17. 32.
 22. 64. 45. 8. 34. 55. 15.
 65. 40. 57.



5 11 19 3 7

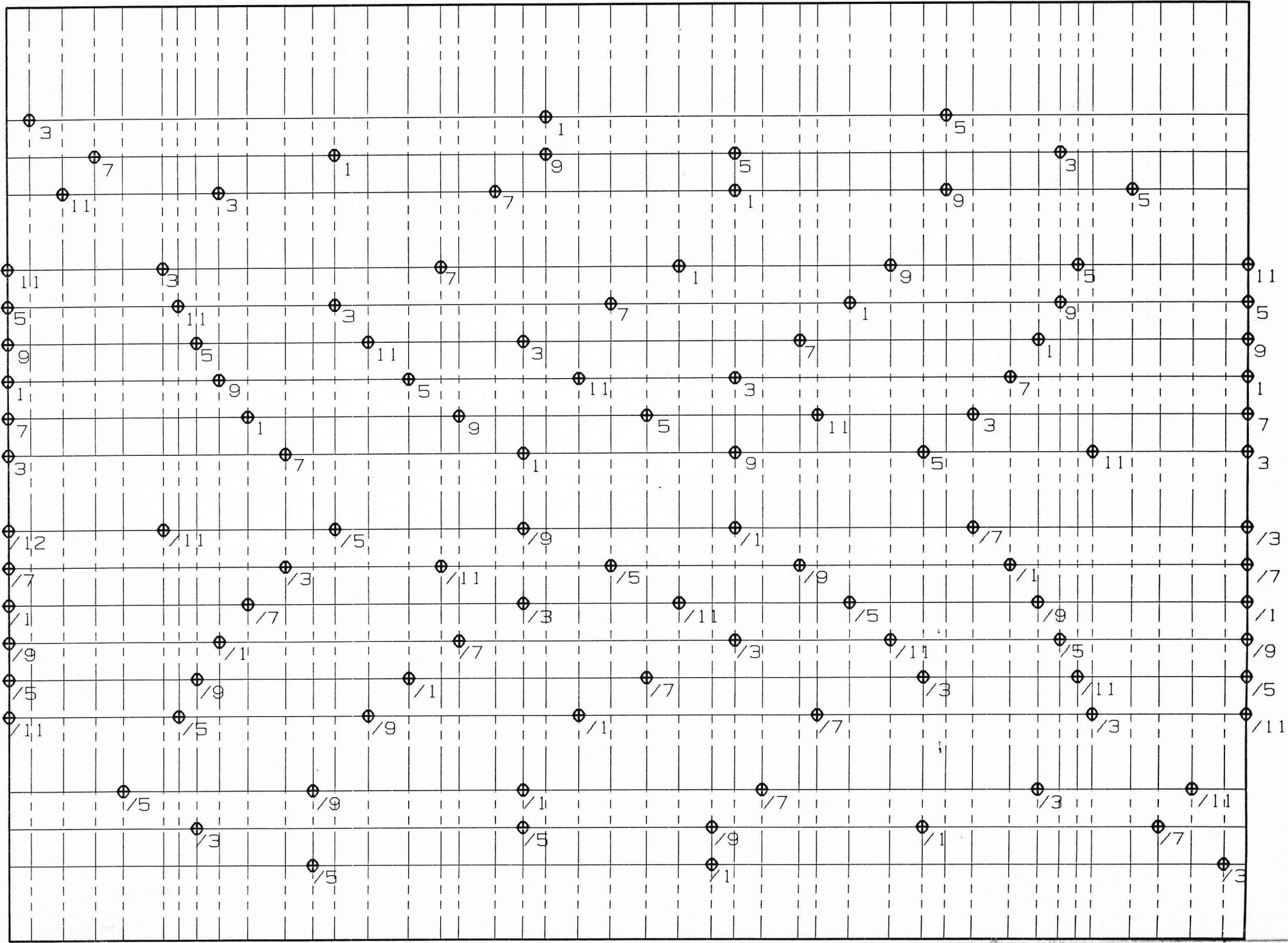


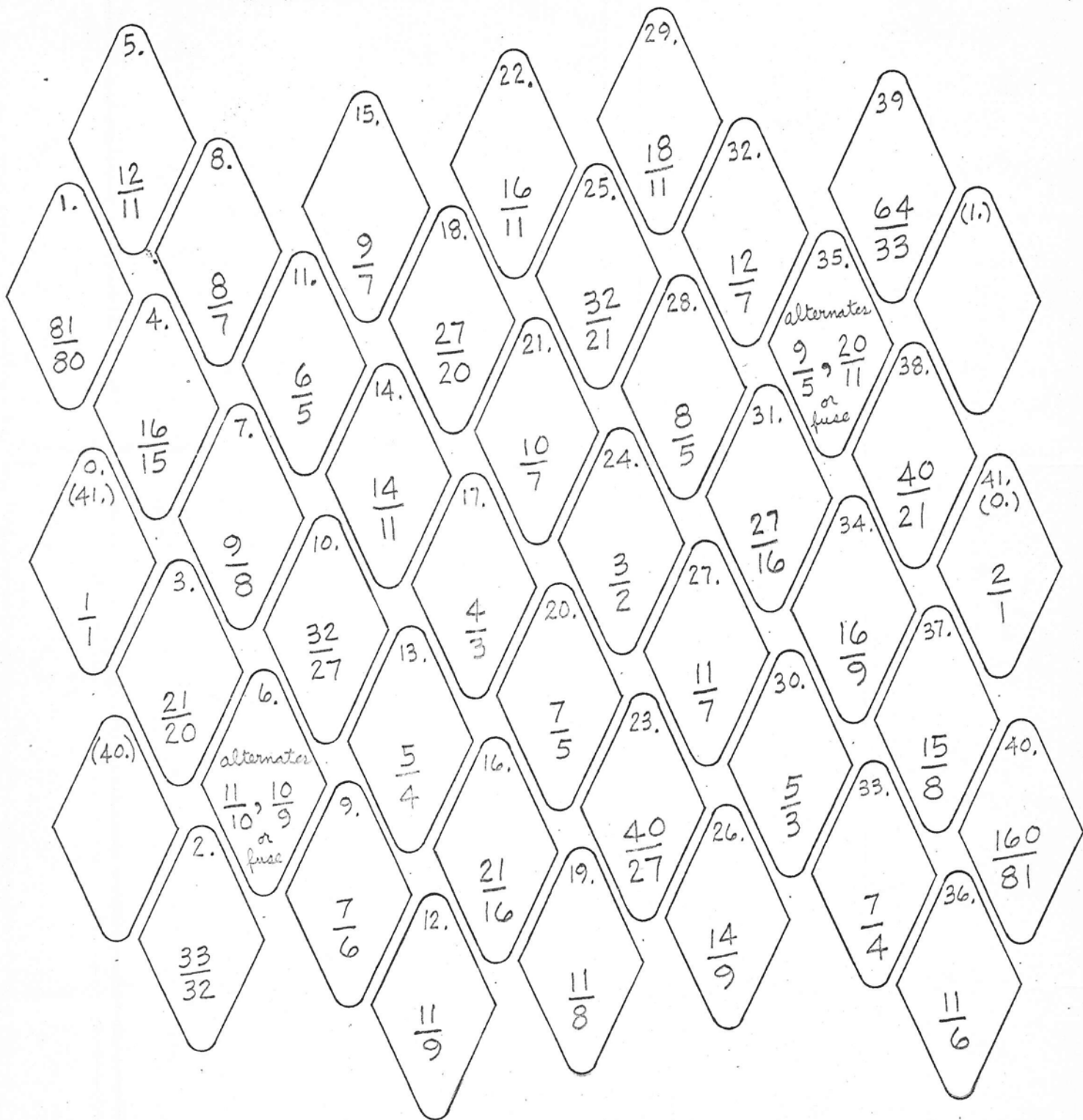
Partch / Novarro

23 Aug 99. EW

1/1	12/11	0°	
12/11	121/120	45.19°	✓
11/10	100/99	49.50°	✓
10/9	81/80	54.72°	✓
9/8	64/63	61.17°	✓
8/7	49/48	69.35°	✓
7/6	36/35	80.06°	✓
6/5	55/54	94.69°	✓
11/9	45/44	104.22°	✓
5/4	56/55	115.89°	✓
14/11	99/98	125.25°	✓
9/7	28/27	130.53°	✓
4/3, 12/9	33/32	149.41°	✓
11/8	56/55	165.40°	✓
7/5	50/49	174.75°	✓
10/7	56/55	185.25°	✓
16/11	33/32	194.60°	✓
3/2, 9/6	28/27	210.59°	✓
14/9	99/98	229.47°	✓
11/7	56/55	234.75°	✓
8/5	45/44	244.11°	✓
18/11	55/54	255.78°	✓
5/3	36/35	265.31°	✓
12/7	49/48	279.94°	✓
7/4	64/63	290.65°	✓
16/9	81/80	298.83°	✓
9/5	100/99	305.28°	✓
20/11	121/120	310.50°	✓
11/6	12/11	314.81°	
2/1		360°	

1/1
 81/80
 33/32
 21/20
 16/15
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 11/6
 15/8
 40/21
 64/33
 160/81
 2/1



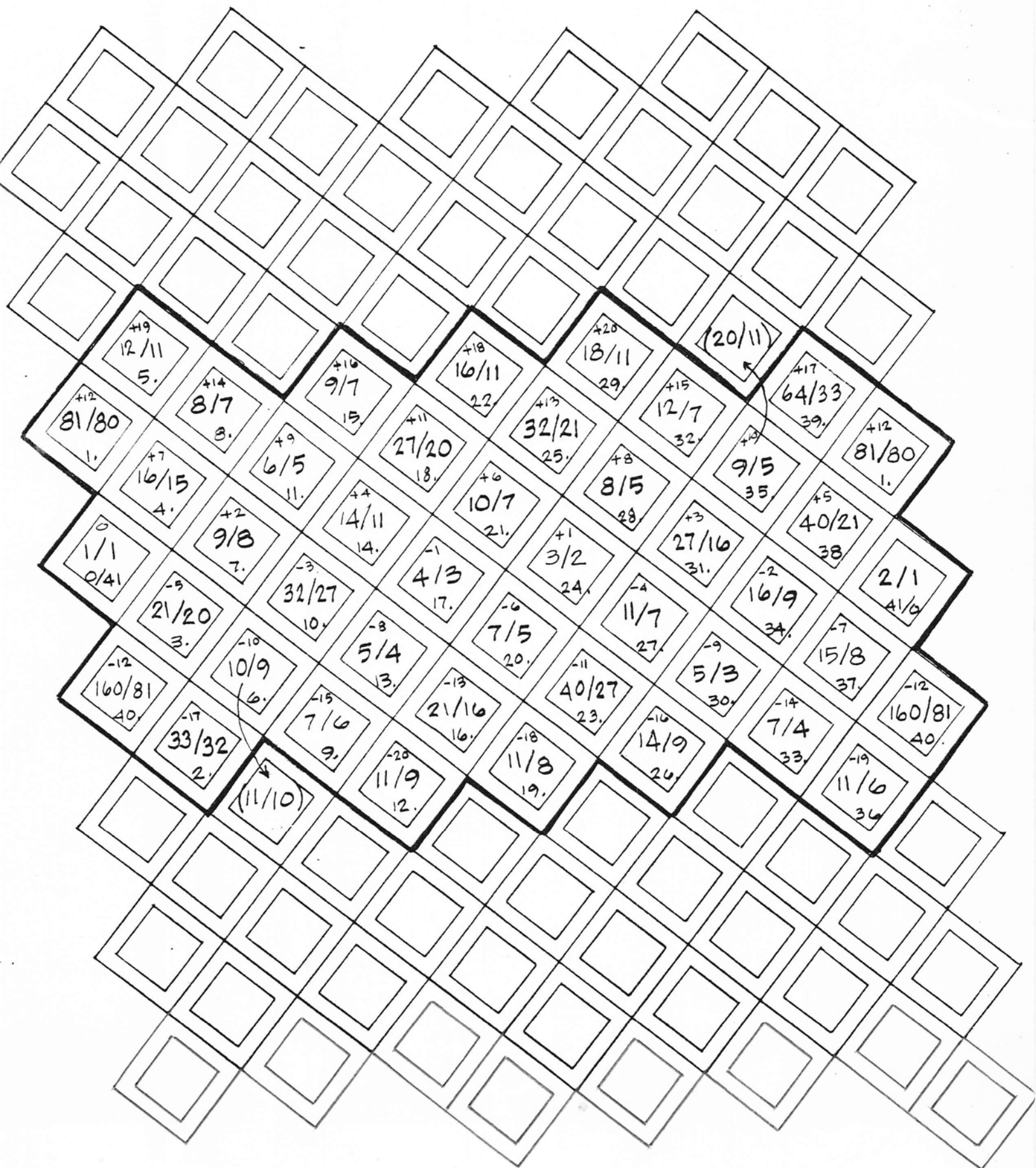


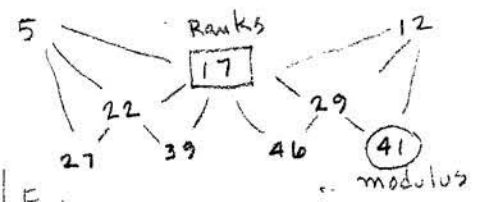
PARTCH'S 43-TONE 'SCALE' TREATED AS A STABLE 41-TONE SYSTEM
WITH ALTERNATE INFLECTION OF DEGREE 6 AND 35.

In view of the fact that the inflectional alternates, are, in both cases members of the Diamond (to which he is pretty well committed), and in view of his stated (emphatic) objection to 'tempered' tones, he has done the best possible thing he could do; supply us with 2 extra tones. This systematic redundancy (forgive, Harry) excludes the possibility of his ever using a completely homogeneous keyboard. Were he to fuse the 100/99 in these two cases, and on this keyboard, he would find homogeneous (identical) fingering for all his 'utonalities' as he would also for his '0tonalities'.

Partch's 43-tone Scale, Linear mapped to modulus 41
and the Bosanquet Pattern

Issued 1989. by Erv Wilson





Linear Series →

Modulus → 41/6

enter

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

Grid with columns labeled A through G and rows for Linear Series and Modulus. Contains various mathematical expressions and numbers.

(20/11)

18/11 12/11 16/11 64/33 9/7 12/7 8/7 32/21 81/80 27/20 9/5 6/5 8/5 10/5 10/7 40/21 14/11 27/16 9/8 3/2 1/1 4/3 10/9 32/27 11/7 21/20 7/5 15/8 5/4 5/3 10/9 40/27 160/81 21/16 7/4 7/6 14/9 33/32 11/8 11/6 11/9

+20 +19 +18 +17 +16 +15 +14 +13 +12 +11 +10 +9 +8 +7 +6 +5 +4 +3 +2 +1 0 -1 -2 -3 -4 -5 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15 -16 -17 -18 -19 -20

4/3 4/3 4/3 297/224 4/3 4/3 4/3 1701/1280 4/3 4/3 4/3 4/3 4/3 75/56 4/3 147/110 297/224 4/3 4/3 4/3

488.36 492.29 505.76 501.98 488.36

Marimba Keyboard

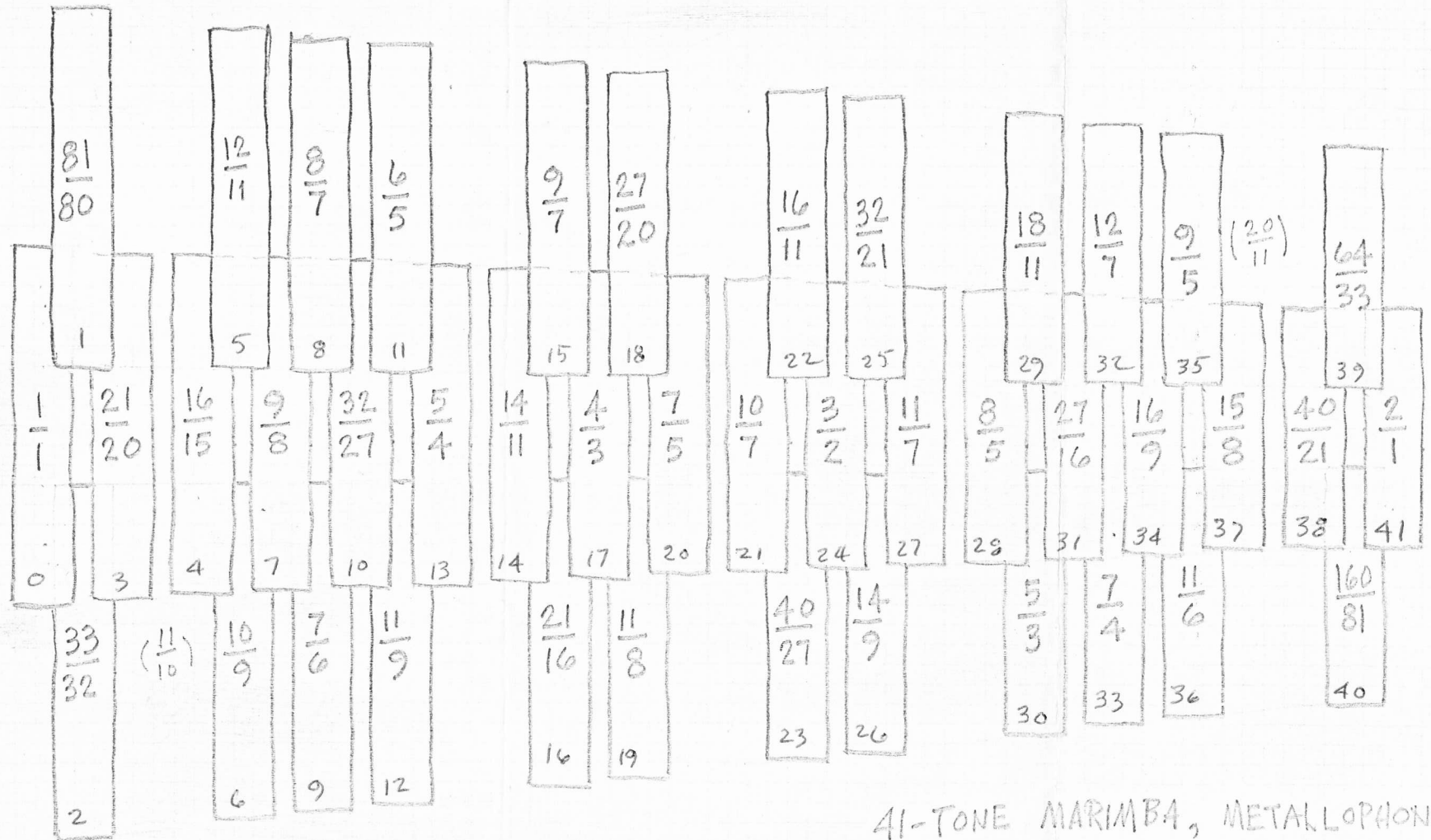
17-Rank Variation of Bosanquet's Generalized Keyboard

17-Rank Marimb

John,

This design takes advantage of Moments-of-symmetry of 41. MOS. 17 is taken as the central row and MOS. 12 falls on either side, i.e. $12+17+12=41$.

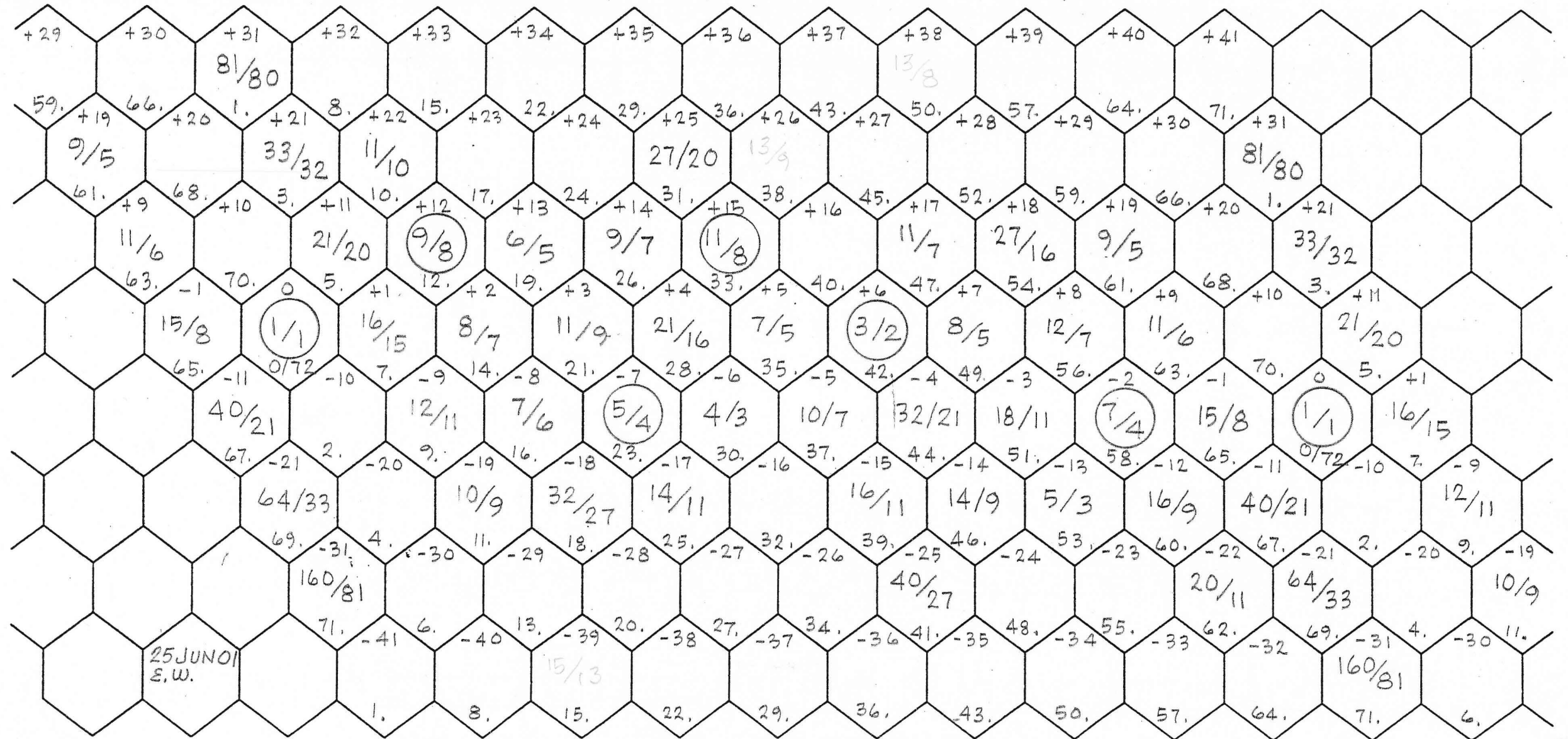
(This is exactly analogous to a 17-tone system being expressed as $5+7+5$)



41-TONE MARIMBA, METALLOPHONE WITH PARTCH RATIOS

DESIGN: ERV WILSON 13 MAY 65

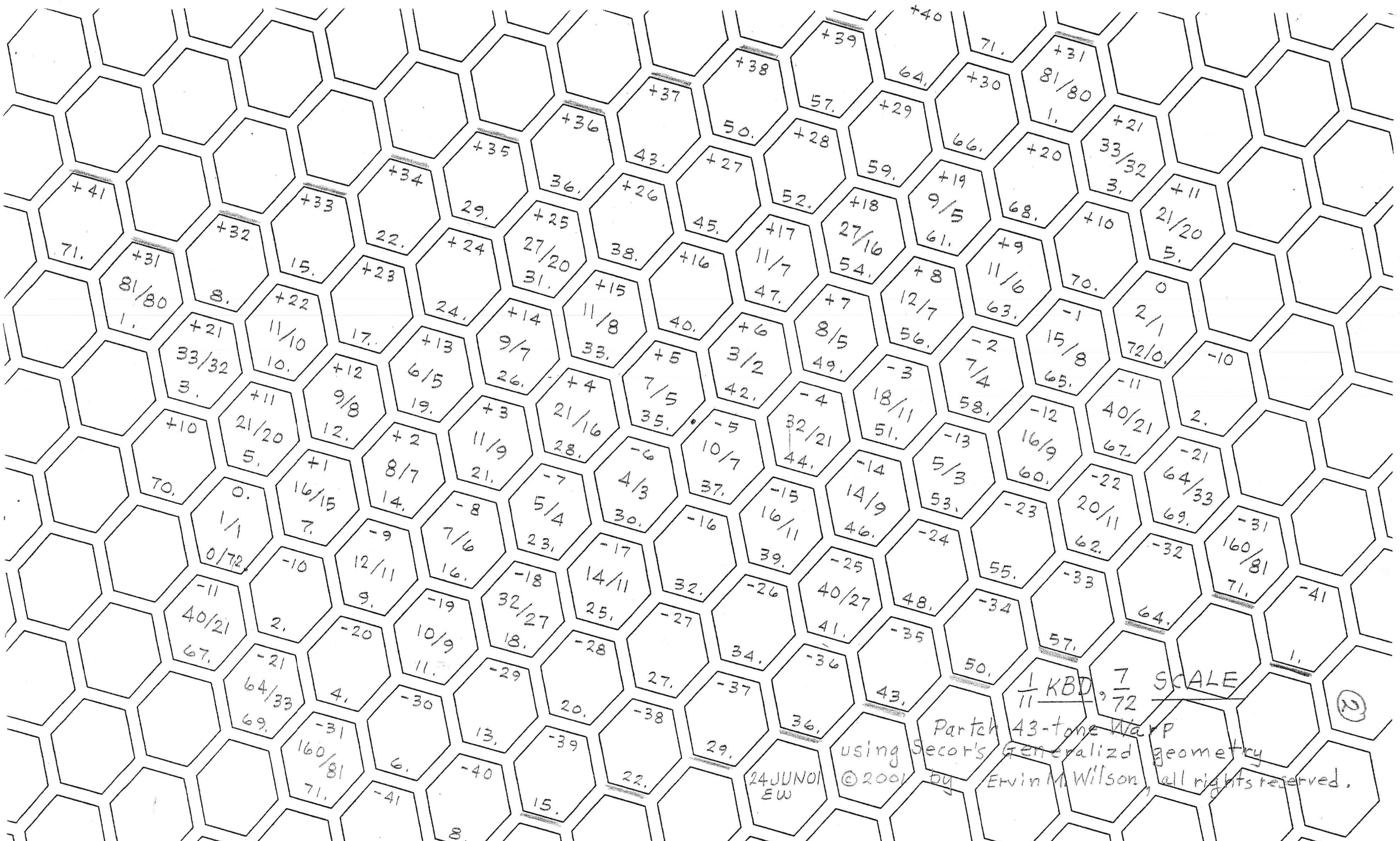
REF; SISTEMA NATURAL base del NATURAL APROXIMADO, por Augusto Novaro, 1927
 GENESIS OF A MUSIC, Harry Partch, 1949
 A NEW LOOK AT THE PARTCH MONOPHONIC FABRIC, George Secor, XH3 1975



PARTCH MONOPHONIC WARP, in a 72-tone Scale — (Nested MOS of ... $\frac{1}{10}, \frac{1}{11}, \frac{2}{21}, \frac{3}{31}, \frac{4}{41}, \frac{7}{72}$)
 shown with Secor Generalized Geometry, on a Janko grid.

© 2,001 by Erv Wilson

(5)

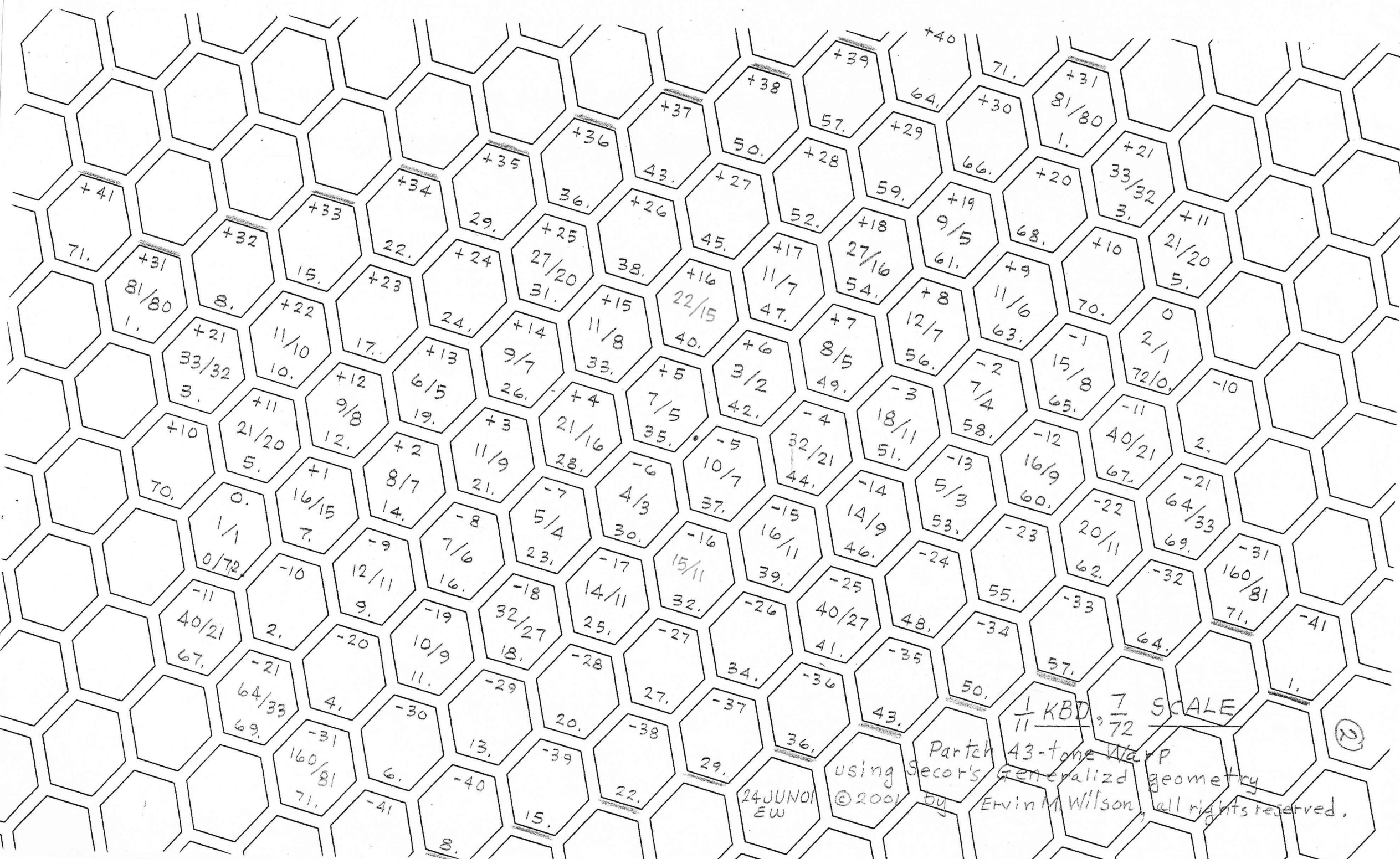


1/11 KBD, 7/72 SCALE

Partch 43-tone W/P
using Secor's Generalized geometry
©2001 by Erwin M. Wilson, all rights reserved.

24 JUN 01
EW





1/11 KBD, 7/72 SCALE

Partch 43-tone Warp using Secor's Generalized geometry ©2001 by Erwin M. Wilson, all rights reserved.

24 JUN 01 EW



$\frac{1}{11}$ KBD, $\frac{7}{72}$ SCALE,

23 JUN 01. EW

PARTCH MONOPHONIC WARP

© 2001 by Erv Wilson

Secor Generalized Geometry
Uath Grid

+72

+41

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+31
81/80

+21
1.
33/32

+10
5.
21/20

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C 1/1
0/72

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+32

+22

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Wilson

Copies: Secor
fortuit

$\frac{1}{11}$ KBDs $\frac{7}{72}$ SCALE

PARTCH MONOPHONIC WARP

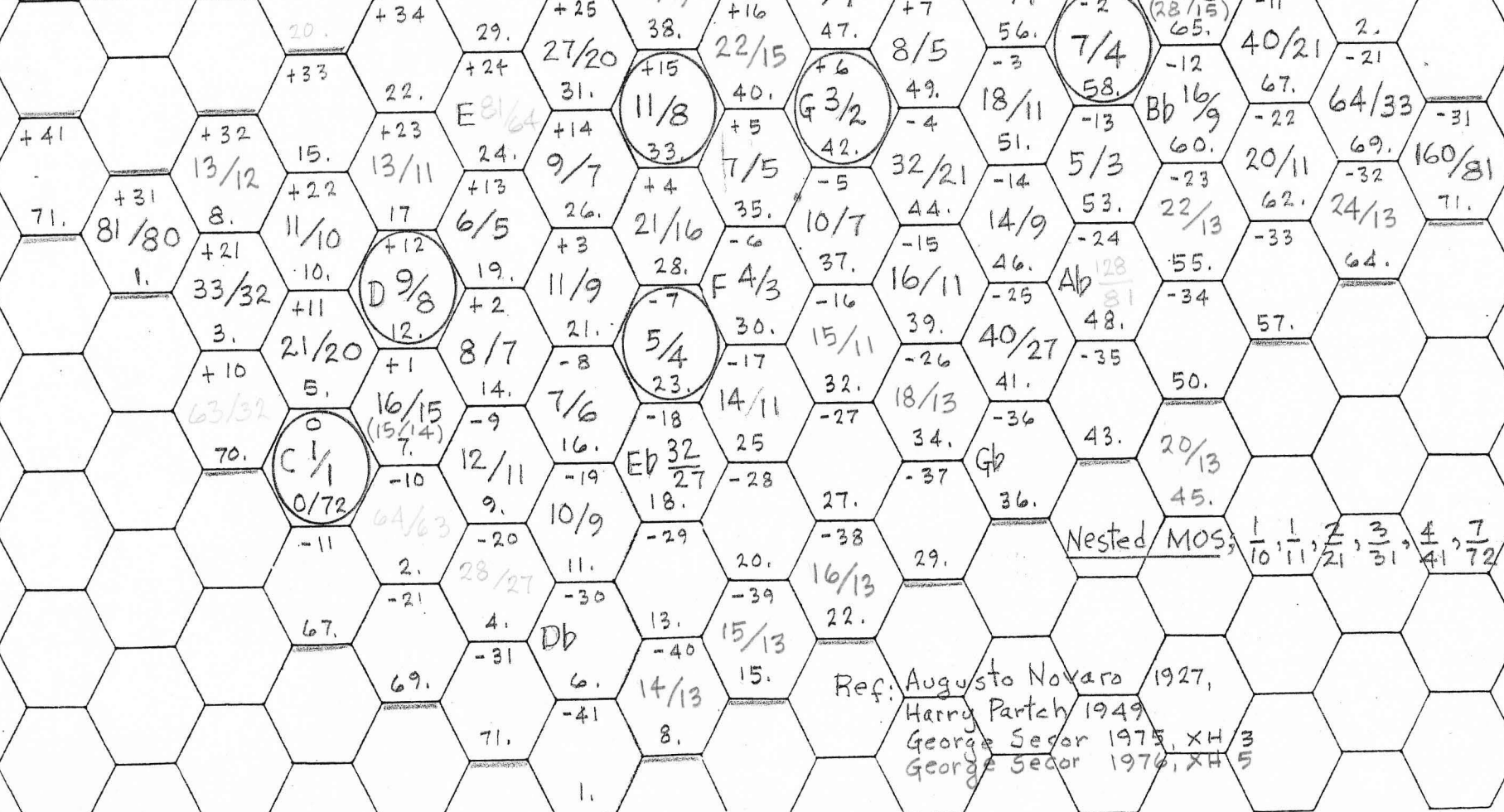
© 2001 by Erv Wilson

Secor Generalized Geometry

Math Grid

23 JUN 01. EW

+72



①

$$2^{\left(\frac{7}{72}\right)} = 1.06971184581\dots$$

$$\rightarrow \text{Log}_2 \underline{.0972222222\dots}$$

a b	c d	e f	$\frac{c}{d}$ dec.	Root $0x, 0y$	Generator $a'x, e'y$	Octave $b'x, f'y$
0 1	1 1	1 0	1.000000	$0x, 0y$	$0x, 1y$	$1x, 0y$
			←			
0 1	1 2	1 1	.500000	$0x, 0y$	$0x, 1y$	$1x, 1y$
			←			
0 1	1 3	1 2	.333333	$0x, 0y$	$0x, 1y$	$1x, 2y$
			←			
0 1	1 4	1 3	.250000	$0x, 0y$	$0x, 1y$	$1x, 3y$
			←			
0 1	1 5	1 4	.200000	$0x, 0y$	$0x, 1y$	$1x, 4y$
			←			
0 1	1 6	1 5	.166667	$0x, 0y$	$0x, 1y$	$1x, 5y$
			←			
0 1	1 7	1 6	.142857	$0x, 0y$	$0x, 1y$	$1x, 6y$
			←			
0 1	1 8	1 7	.125000	$0x, 0y$	$0x, 1y$	$1x, 7y$
			←			
0 1	1 9	1 8	.111111	$0x, 0y$	$0x, 1y$	$1x, 8y$
			←			
0 1	1 10	1 9	.100000	$0x, 0y$	$0x, 1y$	$1x, 9y$
			←			
0 1	1 11	1 10	.090909	$0x, 0y$	$0x, 1y$	$1x, 10y$
			→			
1 11	2 21	1 10	.095238	$0x, 0y$	$1x, 1y$	$11x, 10y$
			→			
2 21	3 31	1 10	.096774	$0x, 0y$	$2x, 1y$	$21x, 10y$
			→			
3 31	4 41	1 10	.097561	$0x, 0y$	$3x, 1y$	$31x, 10y$
			←			
3 31	7 72	4 41	<u>.097222</u>	$0x, 0y$	$3x, 4y$	$31x, 41y$

$2^{(\frac{65}{72})}$
Log₂

1.86966238416...
90277777778...

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a b	c d	e f	$\frac{c}{d}$ dec.	Root	Generator	Octave
				$0x, 0y$	$a'x, e'y$	$b'x, f'y$
0	1	0	1.00000 ←	$0x, 0y$	$0x, 1y$	$1x, 0y$
0	$\frac{1}{2}$	1	.500000 →	$0x, 0y$	$0x, 1y$	$1x, 1y$
1	$\frac{2}{3}$	1	.666667 →	$0x, 0y$	$1x, 1y$	$2x, 1y$
2	$\frac{3}{4}$	1	.750000 →	$0x, 0y$	$2x, 1y$	$3x, 1y$
3	$\frac{4}{5}$	1	.800000 →	$0x, 0y$	$3x, 1y$	$4x, 1y$
4	$\frac{5}{6}$	1	.833333 →	$0x, 0y$	$4x, 1y$	$5x, 1y$
5	$\frac{6}{7}$	1	.857143 →	$0x, 0y$	$5x, 1y$	$6x, 1y$
6	$\frac{7}{8}$	1	.875000 →	$0x, 0y$	$6x, 1y$	$7x, 1y$
7	$\frac{8}{9}$	1	.888889 →	$0x, 0y$	$7x, 1y$	$8x, 1y$
8	$\frac{9}{10}$	1	.900000 →	$0x, 0y$	$8x, 1y$	$9x, 1y$
9	$\frac{10}{11}$	1	.909091 ←	$0x, 0y$	$9x, 1y$	$10x, 1y$
9	$\frac{19}{21}$	10	.904762 ←	$0x, 0y$	$9x, 10y$	$10x, 11y$
9	$\frac{28}{31}$	19	.903226 ←	$0x, 0y$	$9x, 19y$	$10x, 21y$
9	$\frac{37}{41}$	28	.902439 →	$0x, 0y$	$9x, 28y$	$10x, 31y$
37	$\frac{65}{72}$	28	.902778 →	$0x, 0y$	$37x, 28y$	$41x, 31y$

23 JUN 01 15:00

Fretted Kithara Cross-Sets work in progress

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by Ervin M. Wilson

Jun 24, 1997

Fig 1. Diamond

11/11	11/9	11/7	11/6	11/5	11/4	4/4	5/4	6/4	7/4	9/4	11/4
9/11	9/9	9/7	9/6	9/5	9/4	4/5	5/5	6/5	7/5	9/5	11/5
7/11	7/9	7/7	7/6	7/5	7/4	4/6	5/6	6/6	7/6	9/6	11/6
6/11	6/9	6/7	6/6	6/5	6/4	4/7	5/7	6/7	7/7	9/7	11/7
5/11	5/9	5/7	5/6	5/5	5/4	4/9	5/9	6/9	7/9	9/9	11/9
4/11	4/9	4/7	4/6	4/5	4/4	4/11	5/11	6/11	7/11	9/11	11/11

Ref: Genesis of a Music, Harry Partch, 1949, Diagram 20

Fig 2. Lambda

12/12	12/11	12/10	12/9	12/8	12/7	12/6	12/5	12/4	12/3	12/2	12/1
11/12	11/11	11/10	11/9	11/8	11/7	11/6	11/5	11/4	11/3	11/2	11/1
10/12	10/11	10/10	10/9	10/8	10/7	10/6	10/5	10/4	10/3	10/2	10/1
9/12	9/11	9/10	9/9	9/8	9/7	9/6	9/5	9/4	9/3	9/2	9/1
8/12	8/11	8/10	8/9	8/8	8/7	8/6	8/5	8/4	8/3	8/2	8/1
7/12	7/11	7/10	7/9	7/8	7/7	7/6	7/5	7/4	7/3	7/2	7/1
6/12	6/11	6/10	6/9	6/8	6/7	6/6	6/5	6/4	6/3	6/2	6/1
5/12	5/11	5/10	5/9	5/8	5/7	5/6	5/5	5/4	5/3	5/2	5/1
4/12	4/11	4/10	4/9	4/8	4/7	4/6	4/5	4/4	4/3	4/2	4/1
3/12	3/11	3/10	3/9	3/8	3/7	3/6	3/5	3/4	3/3	3/2	3/1
2/12	2/11	2/10	2/9	2/8	2/7	2/6	2/5	2/4	2/3	2/2	2/1
1/12	1/11	1/10	1/9	1/8	1/7	1/6	1/5	1/4	1/3	1/2	1/1

41.	1.0000	→ 2/1	1.0000	±.0000
40.	.9756	→ 160/81	.9821	-.0065
39.	.9512	→ 64/33	.9556	-.0044
38.	.9268	→ 40/21	.9296	-.0028
37.	.9024	→ 15/8	.9069	-.0045
36.	.8780	→ 11/6	.8745	+.0035
35.	.8536	{ -20/11 -9/5	.8625 .8480	-.0089 +.0056
34.	.8293	→ 16/9	.8301	-.0008
33.	.8049	→ 7/4	.8074	-.0025
32.	.7805	→ 12/7	.7776	+.0029
31.	.7561	→ 27/16	.7549	+.0012
30.	.7317	→ 5/3	.7370	-.0053
29.	.7073	→ 18/11	.7105	-.0032
28.	.6289	→ 8/5	.6781	+.0048
27.	.6585	→ 11/7	.6521	+.0064
26.	.6341	→ 14/9	.6374	-.0033
25.	.6098	→ 32/21	.6077	+.0021
24.	.5854	→ 3/2	.5850	+.0004
23.	.5610	→ 40/27	.5670	-.0060
22.	.5366	→ 16/11	.5406	-.0040
21.	.5122	→ 10/7	.5146	-.0024
20.	.4878	→ 7/5	.4854	+.0024
19.	.4634	→ 11/8	.4594	+.0040
18.	.4390	→ 27/20	.4330	+.0060
17.	.4146	→ 4/3	.4150	-.0004
16.	.3902	→ 21/16	.3923	-.0021
15.	.3658	→ 9/7	.3626	+.0033
14.	.3415	→ 14/11	.3479	-.0064
13.	.3171	→ 5/4	.3219	-.0048
12.	.2927	→ 11/9	.2895	+.0032
11.	.2683	→ 6/5	.2630	+.0053
10.	.2439	→ 32/27	.2451	-.0012
9.	.2195	→ 7/6	.2224	-.0029
8.	.1951	→ 8/7	.1926	+.0025
7.	.1707	→ 9/8	.1699	+.0008
6.	.1463	{ +10/9 +11/10	.1520 .1375	-.0056 +.0089
5.	.1220	→ 12/11	.1255	-.0035
4.	.0976	→ 16/15	.0931	+.0045
3.	.0732	→ 21/20	.0704	+.0028
2.	.0488	→ 33/32	.0444	+.0044
1.	.0244	→ 81/80	.0179	+.0065

COMPARISON CHART ★
PARTCH'S 43-TONE SCALE
WITH 41-TONE EQUAL TEMP.

I must say, a vivid demonstration of the Parallel between Partch and 41

Also a couple of thots on notation enclosed.

Letter later,

Erv

5.8wt

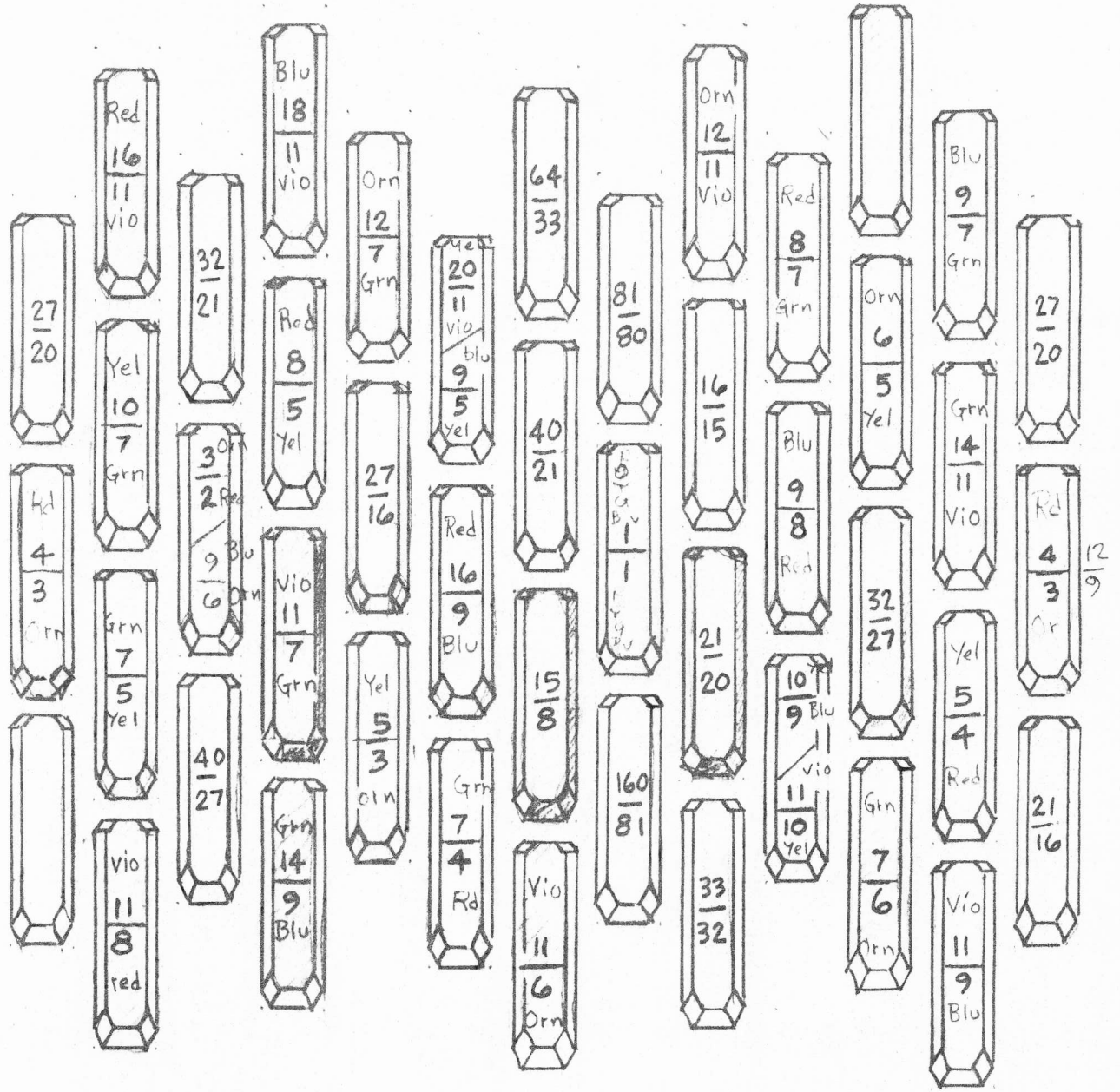
1.44wt

* This is approximately the discrepancy of the 'meantone'. However, since it somewhat exceeds 1/2 of possible error (.0061) its toneme identity could become ambiguous.

← Sorry about the bottom plot,!

Foreshortened Bosanquet Keyboard to $\frac{1}{2}$ its original depth, showing the Partch ratios issued by Erv Wilson 1977

$\frac{12}{9}$



R
Grn
Orn
Blu
Yel
vio



Harry Partch's Scale on the Bosanquet keyboard

by Erv Wilson 1975

