

Universal Multiple-Octet Coded Character Set
 International Organization for Standardization
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 Международная организация по стандартизации

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0. Introduction

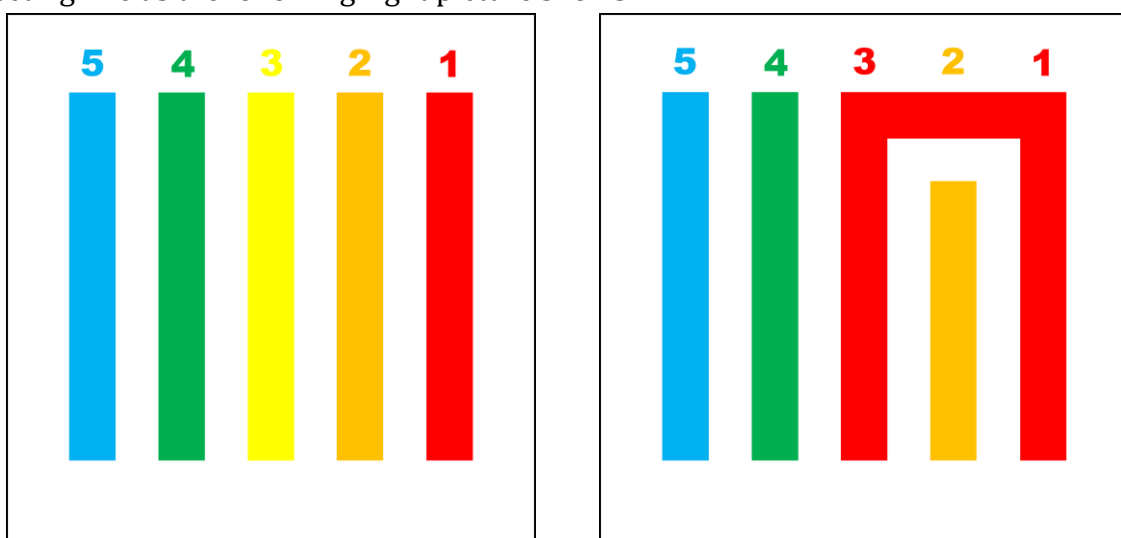
Kōdō (香道/こうどう) is an art of appreciating incense in Japan, which is counted as one of the three classical Japanese arts of refinement, along with kadō (華道/かどう) for flower arrangement, and chadō (茶道/ちゃどう) for tea and the tea ceremony. It came from the game of the aristocrats in Heian Period (平安時代/へいあんじだい), who were keen on the romantic themes. Kōdō includes all aspects of the incense process, from the tools to activities.

Prince Shōtoku (聖徳太子/しょうとくたいし) once dispatched kenzuishi (遣隋使/けんずいし) to China four times during Asuka Period (飛鳥時代/あすかじだい), which was the Japanese official opening to learn from China. With the introduction of Buddhism into Japan, temples became the pioneers in using incense. The Japanese aristocrats made Chinese incense formula be localized during Heian Period. Japanese kōdō and Chinese traditional incense culture have deep historical origins.

There are various incense smelling games in the kōdō activities, and different recording methods are used in different games. The recording methods include Japanese kanji (十炷香, 梅花香, 桜香 with 一, 二, 三, ウ; 八景香 with 春, 夏, 秋, 冬; 土金香 with 金, 木, 水, 火, 土 and so on), Bagua or Ich'ing symbols (八卦香 with ☰, ☷, ☱, ☴, ☵, ☶, ☳, ☲), and incense linear patterns. Notice that ウ here means the vulgar variant of kanji 客. The games using incense linear patterns include at least 8 kinds, but there are only 3 kinds still in use today, which are Genjikō (源氏香/げんじこう), Keizukō (系図香/けいずこう) and Sanshukō (三種香/さんしゅこう). Among these three, Genjikō is the most common and well-known one. The first episode of TV Asahi's drama [Kenji-0](#) (『刑事ゼロ』) starring Sawamura Ikki (沢村 一樹) and Takimoto Miori (瀧本 美織) in 2019 included the narrative elements of Genjikō. Please see Fig. 1. The Japanese movie [The Lady Shogun and Her Men](#) (『大奥』) starring Ninomiya Kazunari (二宮 和也), Shibasaki Kou (柴咲 コウ) and Horikita Maki (堀北 真希) in 2010 included

the story about Sanshukō. Please see Fig. 2.

In the incense smelling game of Genjikō, the participants choose 5 kinds of incense, 5 packets of each kind, totally 25 packets, and then take 5 packets randomly and smell one by one carefully and seriously. The participants write down the corresponding Genjikō Linear Patterns on the white paper and answer the similarities and differences between five packets of incense. The Genjikō Linear Patterns include 5 basic parallel vertical lines from right to left, which represents the 5 packets of incense in order and the top horizontal connecting lines shows the generations of 5 packets. If the 5 packets are different, there will be no top horizontal connecting lines as the following left picture shows. If the first and the third packets are the same, but others are different, the first and the third basic vertical lines should be connected by one top horizontal connecting line as the following right picture shows.



[*The Tale of Genji*](#) (『源氏物語』 / 『げんじものがたり』) was written at the start of the 11th century by Murasaki Shikibu (紫式部/むらさき しきぶ), which is generally considered the world's first novel. There are 54 chapters in the novel, and there are 52 results for the Genjikō Linear Patterns. Each Genjikō Linear Pattern corresponds to one chapter in the novel, except the first and the last chapters. The above left one (||||) corresponds to the second chapter *Hahakigi* (帚木/ははきぎ) and the above right one (|||) corresponds to the eighth chapter *Hananoen* (花宴/はなのえん).

The rules of the Keizukō and Sanshukō games and linear patterns are similar to that of Genjikō, and the numbers of the incense kinds and packets should be 4 and 3. In the history, the numbers of the incense kinds and packets could be extended to 6 to 10, but the corresponding meanings are unclear now.

When we check the generations between the kind numbers and the pattern numbers, it is easy to know the numbers match Bell Numbers, which satisfy

$$B_{n+1} = \sum_{k=0}^n \binom{n}{k} B_k.$$

Therefore, we can get the generations between the numbers of the incense kinds or packets and the numbers of the final linear patterns as below.

Sanshukō	Keizukō	Genjikō					
3	4	5	6	7	8	9	10
5	15	52	203	877	4,140	21,147	115,975













If we encode all the patterns separately in UCS / Unicode, they will occupy 142,414 code points, that means more than 2 planes. I propose the other encoding method in this document.





The block name should follow the NHK documentary [Core Kyoto](#) as Kōdō Incense Linear Patterns. Please click [here](#). The corresponding Japanese name is 香図 or 香の図, and the Chinese name is 香图/香圖/香圖/香圖. This section is written with reference to the book *Japanese Incense Culture* (《日本香文化》).

1. Proposal

1.1. Repertoire

I abstract 10 incense characters, 1 end control is used to end the sequence, and 1 variation selector is used to make the glyph for the sequence change to the variation form.

UCS	Glyph	Character Name	Abbreviation
U+1DAB0		KODO INCENSE LINEAR PATTERNS INCENSE-1	KILPI1
U+1DAB1		KODO INCENSE LINEAR PATTERNS INCENSE-2	KILPI2
U+1DAB2		KODO INCENSE LINEAR PATTERNS INCENSE-3	KILPI3
U+1DAB3		KODO INCENSE LINEAR PATTERNS INCENSE-4	KILPI4
U+1DAB4		KODO INCENSE LINEAR PATTERNS INCENSE-5	KILPI5
U+1DAB5		KODO INCENSE LINEAR PATTERNS INCENSE-6	KILPI6
U+1DAB6		KODO INCENSE LINEAR PATTERNS INCENSE-7	KILPI7
U+1DAB7		KODO INCENSE LINEAR PATTERNS INCENSE-8	KILPI8
U+1DAB8		KODO INCENSE LINEAR PATTERNS INCENSE-9	KILPI9
U+1DAB9		KODO INCENSE LINEAR PATTERNS INCENSE-10	KILPI10
U+1DABA		<reserved>	
U+1DABB		<reserved>	

UCS	Glyph	Character Name	Abbreviation
U+1DABC		<reserved>	
U+1DABD		<reserved>	
U+1DABE		KODO INCENSE LINEAR PATTERNS END CONTROL	KILPEC
U+1DABF		KODO INCENSE LINEAR PATTERNS VARIATION SELECTOR	KILPVS

The information for NamesList.txt file is shown as below.

```

@@ 1DAB0 Kodo Incense Linear Patterns 1DABF
1DAB0 KODO INCENSE LINEAR PATTERNS INCENSE-1
* Genjikō, Keizukō, Sanshukō
* commonly abbreviated as KILPI1
1DAB1 KODO INCENSE LINEAR PATTERNS INCENSE-2
* Genjikō, Keizukō, Sanshukō
* commonly abbreviated as KILPI2
1DAB2 KODO INCENSE LINEAR PATTERNS INCENSE-3
* Genjikō, Keizukō, Sanshukō
* commonly abbreviated as KILPI3
1DAB3 KODO INCENSE LINEAR PATTERNS INCENSE-4
* Genjikō, Keizukō
* commonly abbreviated as KILPI4
1DAB4 KODO INCENSE LINEAR PATTERNS INCENSE-5
* Genjikō
* commonly abbreviated as KILPI5
1DAB5 KODO INCENSE LINEAR PATTERNS INCENSE-6
* obsolete
* commonly abbreviated as KILPI6
1DAB6 KODO INCENSE LINEAR PATTERNS INCENSE-7
* obsolete
* commonly abbreviated as KILPI7
1DAB7 KODO INCENSE LINEAR PATTERNS INCENSE-8
* obsolete
* commonly abbreviated as KILPI8
1DAB8 KODO INCENSE LINEAR PATTERNS INCENSE-9
* obsolete
* commonly abbreviated as KILPI9
1DAB9 KODO INCENSE LINEAR PATTERNS INCENSE-10
* obsolete
* commonly abbreviated as KILPI10
1DABA <reserved>
1DABB <reserved>
1DABC <reserved>

```

```

1DABD <reserved>
1DABE KODO INCENSE LINEAR PATTERNS END CONTROL
      * commonly abbreviated as KILPEC
1DABF KODO INCENSE LINEAR PATTERNS VARIATION SELECTOR
      * commonly abbreviated as KILPVS

```

All the kōdō incense linear patterns are the symbols, so the script should be the same as other symbols. In `Scripts.txt` file, the VS used for SVS and IVS are “Inherited”, but FVSeS are “Mongolian” to follow the block. KILPVS is only used for kōdō incense linear patterns, so it’s better to keep the script value as the same as other characters in this block.

```
Script=Common
```

The information for `UnicodeData.txt` file is shown as below.

```

1DAB0;KODO INCENSE LINEAR PATTERNS INCENSE-1;Cf;0;ON;;;;N;;;;;
1DAB1;KODO INCENSE LINEAR PATTERNS INCENSE-2;Cf;0;ON;;;;N;;;;;
1DAB2;KODO INCENSE LINEAR PATTERNS INCENSE-3;Cf;0;ON;;;;N;;;;;
1DAB3;KODO INCENSE LINEAR PATTERNS INCENSE-4;Cf;0;ON;;;;N;;;;;
1DAB4;KODO INCENSE LINEAR PATTERNS INCENSE-5;Cf;0;ON;;;;N;;;;;
1DAB5;KODO INCENSE LINEAR PATTERNS INCENSE-6;Cf;0;ON;;;;N;;;;;
1DAB6;KODO INCENSE LINEAR PATTERNS INCENSE-7;Cf;0;ON;;;;N;;;;;
1DAB7;KODO INCENSE LINEAR PATTERNS INCENSE-8;Cf;0;ON;;;;N;;;;;
1DAB8;KODO INCENSE LINEAR PATTERNS INCENSE-9;Cf;0;ON;;;;N;;;;;
1DAB9;KODO INCENSE LINEAR PATTERNS INCENSE-10;Cf;0;ON;;;;N;;;;;
1DABE;KODO INCENSE LINEAR PATTERNS END CONTROL;Cf;0;BN;;;;N;;;;;
1DABF;KODO INCENSE LINEAR PATTERNS VARIATION
SELECTOR;Mn;0;NSM;;;;N;;;;;

```

The information for `EastAsianWidth.txt` file is shown as below. The kōdō incense linear patterns are mainly used in East Asia with CJKUI in the strict sense, and they can be also used with non-CJKUI, so “A” tag will be better for the incense characters.

```

1DAB0..1DAB9;A # Cf [10] KODO INCENSE LINEAR PATTERNS
INCENSE-1..KODO INCENSE LINEAR PATTERNS INCENSE-10
1DABE;N # Cf KODO INCENSE LINEAR PATTERNS END
CONTROL
1DABF;N # Mn KODO INCENSE LINEAR PATTERNS VARIATION
SELECTOR

```

The information for `LineBreak.txt` file is shown as below.

```

1DAB0..1DAB9;AL # Cf [10] KODO INCENSE LINEAR PATTERNS
INCENSE-1..KODO INCENSE LINEAR PATTERNS INCENSE-10
1DABE;CM # Cf KODO INCENSE LINEAR PATTERNS END
CONTROL
1DABF;CM # Mn KODO INCENSE LINEAR PATTERNS
VARIATION SELECTOR

```

The information for `NameAliases.txt` file is shown as below. The presenting glyphs in the code charts and the future fonts are based on the character names, so the abbreviations are needed for the type designers.

```
U+1DAB0;KILPI1;abbreviation
```

```

U+1DAB1;KILPI2;abbreviation
U+1DAB2;KILPI3;abbreviation
U+1DAB3;KILPI4;abbreviation
U+1DAB4;KILPI5;abbreviation
U+1DAB5;KILPI6;abbreviation
U+1DAB6;KILPI7;abbreviation
U+1DAB7;KILPI8;abbreviation
U+1DAB8;KILPI9;abbreviation
U+1DAB9;KILPI10;abbreviation
U+1DABE;KILPEC;abbreviation
U+1DABF;KILPVS;abbreviation

```

The information for PropList.txt file is shown as below.

```

1DAB0..1DAB9 ; Pattern_Syntax # Cf [10] KODO INCENSE LINEAR
PATTERNS INCENSE-1..KODO INCENSE LINEAR PATTERNS INCENSE-10
1DABE ; Other_Grapheme_Extend # Cf KODO INCENSE LINEAR
PATTERNS END CONTROL
1DABF ; Variation_Selector # Mn KODO INCENSE LINEAR
PATTERNS VARIATION SELECTOR

```

The information for VerticalOrientation.txt file is shown as below. As mentioned earlier in this document, these patterns are mainly used in East Asia with CJKUI, and the vertical orientation is the same as common CJKUI in the historical layouts, so we must keep the incense characters as “U” tags, and the end control and variation selector should follow the common format control characters and vs.

```

1DAB0..1DAB9 ; U # Cf [10] KODO INCENSE LINEAR PATTERNS
INCENSE-1..KODO INCENSE LINEAR PATTERNS INCENSE-10
1DABE ; R # Cf KODO INCENSE LINEAR PATTERNS END
CONTROL
1DABF ; R # Mn KODO INCENSE LINEAR PATTERNS
VARIATION SELECTOR

```

1.2. Character order

The character order should follow the original mathematical order of the incense characters. In general, the variation form should be ordered after the common form, so the KILPVS should be the last one in the code chart.



1.3. Encoding model

The sequence composition is similar to the analysis of Bell Numbers, but not the same. The position in the sequence means the basic incense number except the last position. We mark the position number as *p*, the character represented number as *n*. If *n=p*, there is no need to connect incense *p* with other incense, that means incense *p* will be kept as the single vertical line; if *n>p*, incense *p* should connect to incense *n* from right to left; if *n<p*, incense *p* should connect to incense *n* from left to right. The last two will form the logical closed cycle(s) in the sequence. In

one logical closed cycle of a reasonable sequence, there is only one position for $n < p$ at most, and each incense character can appear at most once in one sequence.

The end control is used to end a sequence. When more than two kōdō incense linear patterns appear one after another in the text, the end control can make the border of the sequences clear. The end control is one of the elements in a sequence, so it is not like the space.

The variation selector here (KILPVS) is different from other vs. The vses used for the common SVSes and IVSes just affect the character before the vs, but KILPVS should affect the whole sequence not any one character in the sequence.

We mark the incense characters as I , the end control as E , the vs as V , and the sequence format should be described as below.

$$I\{3,10\}EV?$$

We use the above examples mentioned in Section 0 and other more two examples to illustrate how to use the encoding model.

Eg.1 1,2,3,4,5

For the left one (||||), the n values should be 1, 2, 3, 4, 5 in order.

p	1	2	3	4	5
n	1	2	3	4	5
comparison	$n=p$	$n=p$	$n=p$	$n=p$	$n=p$

All the comparisons are $n=p$, so all the incenses should be kept as the single vertical lines. And then the end control should end the sequence, so the corresponding encoding sequence should be $\langle U+1DAB0,U+1DAB1,U+1DAB2,U+1DAB3,U+1DAB4,U+1DABE \rangle$.

Eg.2 3,2,1,4,5

For the right one (|||), the n values should be 3, 2, 1, 4, 5 in order.

p	1	2	3	4	5
n	3	2	1	4	5
comparison	$n > p$	$n=p$	$n < p$	$n=p$	$n=p$

For the second, the fourth and the fifth positions, the comparisons are $n=p$, so the incenses should be kept as the single vertical lines in these three positions. In the first position, the comparison is $n > p$, so the first vertical lines should connect to the third one; in the third position, the comparison is $n < p$, so the third vertical lines should connect to the first one as well. The first and the third positions become a logical closed cycle, And then the end control should end the sequence, so the corresponding encoding sequence should be $\langle U+1DAB2,U+1DAB1,U+1DAB0,U+1DAB3,U+1DAB4,U+1DABE \rangle$.

Eg.3 3,4,1,5,2

If we meet the n values are 3, 4, 1, 5, 2 in order, we can get the following.

p	1	2	3	4	5
n	3	4	1	5	2
comparison	$n > p$	$n > p$	$n < p$	$n > p$	$n < p$

The first position shows the comparison is $n > p$, which it should connect to the third vertical

line, and the third position shows the comparison is $n < p$, which it should connect back to the first vertical line, so this is a logical closed cycle. The second and the fourth position both show the comparisons are $n > p$, which the second one should connect to the fourth vertical line and the fourth one should connect to the fifth vertical line, and the fifth position shows the comparison is $n < p$, which it should connect back to the second vertical line, so this is also a logical closed cycle. This is a reasonable sequence with two logical cycles. And then the end control should end the sequence, so the corresponding encoding sequence should be $\langle U+1DAB2,U+1DAB3,U+1DAB0,U+1DAB4,U+1DAB1,U+1DABE \rangle$ (𐀀𐀁).

Eg.4 5,2,1,3,4

If we meet the n values are 5, 2, 1, 3, 4 in order, we can get the following.

p	1	2	3	4	5
n	5	2	1	3	4
comparison	$n > p$	$n = p$	$n < p$	$n < p$	$n < p$

The third, the fourth and the fifth positions all show the comparisons are $n < p$, and there is only one position which the comparison is $n > p$, so the sequence is not a well one as what mentioned above. If the end user input the sequence like $\langle U+1DAB4,U+1DAB1,U+1DAB0,U+1DAB2,U+1DAB3,U+1DABE \rangle$, there will be no the corresponding proper pattern to display.

1.4. Patterns and sequences

I choose 13 ancient publishing sources, 1 modern source and 3 fonts to compare and unify the patterns. The sources information is shown as below.

Source Code	Source Name	Use
NN1	源氏香図 / 中野幸一旧蔵	1
NN2	源氏香の図 / 中野幸一旧蔵	1
NN3	源氏香図 / 中野幸一旧蔵	1
NN4	源氏香の具 / 中野幸一旧蔵	1, 2, 3, 4, 5, 6, 7, 8
FK	新案源氏香女の一生双六	1
TS	投扇興の仕様	1
KA	源氏香合	1, 2, 3
KH	香道秘伝	2
UG	源氏香の図 / 豊国 画	1
MC	改正壺ノ紋帳	1
MZ	源氏様模図	1
EK	絵本草源氏：近江八景 香之図	1
KY	十種香暗部山	1
SG	源氏物語 de 数学～源氏香と組合せ～	1
NT	Nishiki-teki, Version 3.40d	1, 2, 3
QV	Quivira, Version 4.1	1


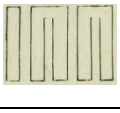



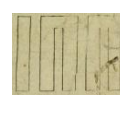
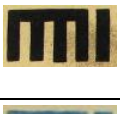












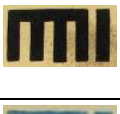


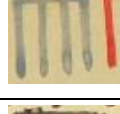



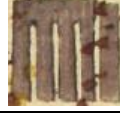


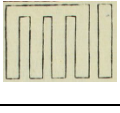












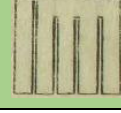
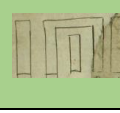
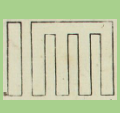













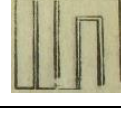
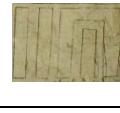
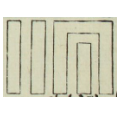

















Source Code	Source Name	Use
KS	K'sGenjikoze, Version 1.0	1

The cells with the #A8D08D background mean incorrect in the original sources. The reviewers could ignore these.

1.4.1. Genjikō Linear Patterns

There are 16 sources to support the patterns, and five patterns have the variant forms. Please also see Fig. 3.

<i>n</i>	Glyph	NN1	NN2	NN3	NN4		FK
		TS		KA	UG	MC	MZ
		EK	KY	SG	NT	QV	KS
1,2,3,4,5							
2,1,3,4,5							
1,3,2,4,5							
2,1,4,3,5							

<i>n</i>	Glyph	NN1	NN2	NN3	NN4		FK
		TS		KA	UG	MC	MZ
		EK	KY	SG	NT	QV	KS
							
							
							
1,3,4,5,2							
							
							
3,2,4,1,5							
							
							
3,2,1,4,5							
							
							
1,2,3,5,4							
							

<i>n</i>	Glyph	NN1	NN2	NN3	NN4		FK
		TS		KA	UG	MC	MZ
		EK	KY	SG	NT	QV	KS
2,1,4,5,3	𓄀						
3,4,1,2,5	𓄁						
4,3,5,1,2	𓄂						
1,2,4,3,5	𓄃						








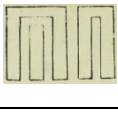
















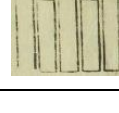
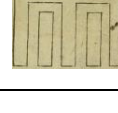

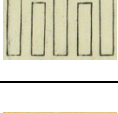












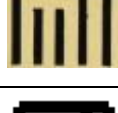

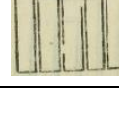
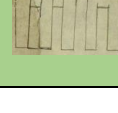
















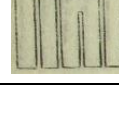
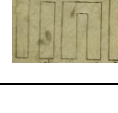

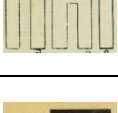












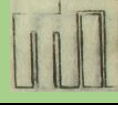

n	Glyph	NN1	NN2	NN3	NN4		FK
		TS		KA	UG	MC	MZ
		EK	KY	SG	NT	QV	KS
2,4,3,1,5							
1,2,4,5,3							
1,3,4,2,5							
4,2,5,1,3							
1,3,2,5,4							

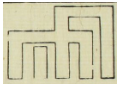
















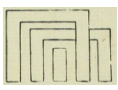



































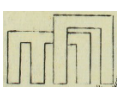





<i>n</i>	Glyph	NN1	NN2	NN3	NN4		FK
		TS		KA	UG	MC	MZ
		EK	KY	SG	NT	QV	KS
2,3,4,1,5							
1,3,5,4,2							
1,2,5,4,3							
2,3,1,5,4							

n	Glyph	NN1	NN2	NN3	NN4		FK
		TS		KA	UG	MC	MZ
		EK	KY	SG	NT	QV	KS
1,4,5,2,3	𐎎						
	𐎏						
3,5,4,1,2	𐎐						
1,4,3,5,2	𐎑						
2,3,1,4,5	𐎒						

<i>n</i>	Glyph	NN1	NN2	NN3	NN4		FK
		TS		KA	UG	MC	MZ
		EK	KY	SG	NT	QV	KS
1,4,3,2,5							
2,1,3,5,4							
2,4,5,1,3							
1,5,3,4,2							

n	Glyph	NN1	NN2	NN3	NN4		FK
		TS		KA	UG	MC	MZ
		EK	KY	SG	NT	QV	KS
5,4,3,2,1							
3,2,4,5,1							
4,3,2,1,5							
4,3,2,5,1							
2,1,5,4,3							

n	Glyph	NN1	NN2	NN3	NN4		FK	
		TS		KA	UG	MC	MZ	
		EK	KY	SG	NT	QV	KS	
								
								
3,2,5,4,1								
								
								
2,5,3,4,1								
								
								
5,3,2,4,1								
								
								
3,5,1,4,2								
								

n	Glyph	NN1	NN2	NN3	NN4		FK
		TS		KA	UG	MC	MZ
		EK	KY	SG	NT	QV	KS
							
							
4,5,3,1,2							
							
							
							
5,2,3,4,1							
							
							
							
							
							

n	Glyph	NN1	NN2	NN3	NN4		FK
		TS		KA	UG	MC	MZ
		EK	KY	SG	NT	QV	KS
4,2,3,1,5							
5,3,4,2,1							
2,3,5,4,1							
1,5,4,3,2							

n	Glyph	NN1	NN2	NN3	NN4		FK
		TS		KA	UG	MC	MZ
		EK	KY	SG	NT	QV	KS
2,5,4,3,1							
3,2,1,5,4							
2,4,3,5,1							
4,2,3,5,1							

n	Glyph	NN1	NN2	NN3	NN4		FK	
		TS		KA	UG	MC	MZ	
		EK	KY	SG	NT	QV	KS	
5,2,4,3,1								
3,4,5,2,1								
2,3,4,5,1								

Based on the above analysis, the glyphs for the patterns are stable. Each pattern has the corresponding meaning based on the chapter name of the novel *The Tale of Genji*. Notice that the original Chapter 1 and 54 (桐壺 & 夢浮橋) have not the corresponding patterns, and the variant form of 2,3,4,5,1 (手習) uses the bottom horizontal connecting lines between the first and the second vertical lines, the third and the fourth vertical lines, which this variant form is

common in use, so it is OK to accept it.

<i>n</i>	Glyph	Sequence	Meaning
			桐壺
1,2,3,4,5		<U+1DAB0,U+1DAB1,U+1DAB2,U+1DAB3, U+1DAB4,U+1DABE>	籌木
2,1,3,4,5		<U+1DAB1,U+1DAB0,U+1DAB2,U+1DAB3, U+1DAB4,U+1DABE>	空蟬
1,3,2,4,5		<U+1DAB0,U+1DAB2,U+1DAB1,U+1DAB3, U+1DAB4,U+1DABE>	夕顔
2,1,4,3,5		<U+1DAB1,U+1DAB0,U+1DAB3,U+1DAB2, U+1DAB4,U+1DABE>	若紫
1,3,4,5,2		<U+1DAB0,U+1DAB2,U+1DAB3,U+1DAB4, U+1DAB1,U+1DABE>	未摘花
3,2,4,1,5		<U+1DAB2,U+1DAB1,U+1DAB3,U+1DAB0, U+1DAB4,U+1DABE>	紅葉賀
3,2,1,4,5		<U+1DAB2,U+1DAB1,U+1DAB0,U+1DAB3, U+1DAB4,U+1DABE>	花宴
1,2,3,5,4		<U+1DAB0,U+1DAB1,U+1DAB2,U+1DAB4, U+1DAB3,U+1DABE>	葵
2,1,4,5,3		<U+1DAB1,U+1DAB0,U+1DAB3,U+1DAB4, U+1DAB2,U+1DABE>	賢木 or 榭
3,4,1,2,5		<U+1DAB2,U+1DAB3,U+1DAB0,U+1DAB1, U+1DAB4,U+1DABE>	花散里
4,3,5,1,2		<U+1DAB3,U+1DAB2,U+1DAB4,U+1DAB0, U+1DAB1,U+1DABE>	須磨
1,2,4,3,5		<U+1DAB0,U+1DAB1,U+1DAB3,U+1DAB2, U+1DAB4,U+1DABE>	明石
2,4,3,1,5		<U+1DAB1,U+1DAB3,U+1DAB2,U+1DAB0, U+1DAB4,U+1DABE>	滯標
1,2,4,5,3		<U+1DAB0,U+1DAB1,U+1DAB3,U+1DAB4, U+1DAB2,U+1DABE>	蓬生
1,3,4,2,5		<U+1DAB0,U+1DAB2,U+1DAB3,U+1DAB1, U+1DAB4,U+1DABE>	関屋
4,2,5,1,3		<U+1DAB3,U+1DAB1,U+1DAB4,U+1DAB0, U+1DAB2,U+1DABE>	絵合
1,3,2,5,4		<U+1DAB0,U+1DAB2,U+1DAB1,U+1DAB4, U+1DAB3,U+1DABE>	松風
2,3,4,1,5		<U+1DAB1,U+1DAB2,U+1DAB3,U+1DAB0, U+1DAB4,U+1DABE>	薄雲
1,3,5,4,2		<U+1DAB0,U+1DAB2,U+1DAB4,U+1DAB3, U+1DAB1,U+1DABE>	朝顔

<i>n</i>	Glyph	Sequence	Meaning
1,2,5,4,3	𠄎	<U+1DAB0,U+1DAB1,U+1DAB4,U+1DAB3, U+1DAB2,U+1DABE>	乙女 or 少女
2,3,1,5,4	𠄎	<U+1DAB1,U+1DAB2,U+1DAB0,U+1DAB4, U+1DAB3,U+1DABE>	玉鬘
1,4,5,2,3	𠄎	<U+1DAB0,U+1DAB3,U+1DAB4,U+1DAB1, U+1DAB2,U+1DABE>	初音
	𠄎	<U+1DAB0,U+1DAB3,U+1DAB4,U+1DAB1, U+1DAB2,U+1DABE,U+1DABF>	
3,5,4,1,2	𠄎	<U+1DAB2,U+1DAB4,U+1DAB3,U+1DAB0, U+1DAB1,U+1DABE>	胡蝶
1,4,3,5,2	𠄎	<U+1DAB0,U+1DAB3,U+1DAB2,U+1DAB4, U+1DAB1,U+1DABE>	蛩
2,3,1,4,5	𠄎	<U+1DAB1,U+1DAB2,U+1DAB0,U+1DAB3, U+1DAB4,U+1DABE>	常夏
1,4,3,2,5	𠄎	<U+1DAB0,U+1DAB3,U+1DAB2,U+1DAB1, U+1DAB4,U+1DABE>	篝火
2,1,3,5,4	𠄎	<U+1DAB1,U+1DAB0,U+1DAB2,U+1DAB4, U+1DAB3,U+1DABE>	野分
2,4,5,1,3	𠄎	<U+1DAB1,U+1DAB3,U+1DAB4,U+1DAB0, U+1DAB2,U+1DABE>	行幸
1,5,3,4,2	𠄎	<U+1DAB0,U+1DAB4,U+1DAB2,U+1DAB3, U+1DAB1,U+1DABE>	藤袴
5,4,3,2,1	𠄎	<U+1DAB4,U+1DAB3,U+1DAB2,U+1DAB1, U+1DAB0,U+1DABE>	真木柱
3,2,4,5,1	𠄎	<U+1DAB2,U+1DAB1,U+1DAB3,U+1DAB4, U+1DAB0,U+1DABE>	梅枝
4,3,2,1,5	𠄎	<U+1DAB3,U+1DAB2,U+1DAB1,U+1DAB0, U+1DAB4,U+1DABE>	藤裏葉
4,3,2,5,1	𠄎	<U+1DAB3,U+1DAB2,U+1DAB1,U+1DAB4, U+1DAB0,U+1DABE>	若菜上
2,1,5,4,3	𠄎	<U+1DAB1,U+1DAB0,U+1DAB4,U+1DAB3, U+1DAB2,U+1DABE>	若菜下
3,2,5,4,1	𠄎	<U+1DAB2,U+1DAB1,U+1DAB4,U+1DAB3, U+1DAB0,U+1DABE>	柏木
2,5,3,4,1	𠄎	<U+1DAB1,U+1DAB4,U+1DAB2,U+1DAB3, U+1DAB0,U+1DABE>	横笛
5,3,2,4,1	𠄎	<U+1DAB4,U+1DAB2,U+1DAB1,U+1DAB3, U+1DAB0,U+1DABE>	鈴蟲
3,5,1,4,2	𠄎	<U+1DAB2,U+1DAB4,U+1DAB0,U+1DAB3, U+1DAB1,U+1DABE>	夕霧
	𠄎	<U+1DAB2,U+1DAB4,U+1DAB0,U+1DAB3, U+1DAB1,U+1DABE,U+1DABF>	

<i>n</i>	Glyph	Sequence	Meaning
4,5,3,1,2	𠄎	<U+1DAB3,U+1DAB4,U+1DAB2,U+1DAB0, U+1DAB1,U+1DABE>	御法
	𠄏	<U+1DAB3,U+1DAB4,U+1DAB2,U+1DAB0, U+1DAB1,U+1DABE,U+1DABF>	
5,2,3,4,1	𠄐	<U+1DAB4,U+1DAB1,U+1DAB2,U+1DAB3, U+1DAB0,U+1DABE>	幻
3,4,1,5,2	𠄑	<U+1DAB2,U+1DAB3,U+1DAB0,U+1DAB4, U+1DAB1,U+1DABE>	匂宮
	𠄒	<U+1DAB2,U+1DAB3,U+1DAB0,U+1DAB4, U+1DAB1,U+1DABE,U+1DABF>	
4,2,3,1,5	𠄓	<U+1DAB3,U+1DAB1,U+1DAB2,U+1DAB0, U+1DAB4,U+1DABE>	紅梅
5,3,4,2,1	𠄔	<U+1DAB4,U+1DAB2,U+1DAB3,U+1DAB1, U+1DAB0,U+1DABE>	竹河
2,3,5,4,1	𠄕	<U+1DAB1,U+1DAB2,U+1DAB4,U+1DAB3, U+1DAB0,U+1DABE>	橋姫
1,5,4,3,2	𠄖	<U+1DAB0,U+1DAB4,U+1DAB3,U+1DAB2, U+1DAB1,U+1DABE>	椎本
2,5,4,3,1	𠄗	<U+1DAB1,U+1DAB4,U+1DAB3,U+1DAB2, U+1DAB0,U+1DABE>	総角
3,2,1,5,4	𠄘	<U+1DAB2,U+1DAB1,U+1DAB0,U+1DAB4, U+1DAB3,U+1DABE>	早蕨
2,4,3,5,1	𠄙	<U+1DAB1,U+1DAB3,U+1DAB2,U+1DAB4, U+1DAB0,U+1DABE>	寄生
4,2,3,5,1	𠄚	<U+1DAB3,U+1DAB1,U+1DAB2,U+1DAB4, U+1DAB0,U+1DABE>	東屋
5,2,4,3,1	𠄛	<U+1DAB4,U+1DAB1,U+1DAB3,U+1DAB2, U+1DAB0,U+1DABE>	浮舟
3,4,5,2,1	𠄜	<U+1DAB2,U+1DAB3,U+1DAB4,U+1DAB1, U+1DAB0,U+1DABE>	蜻蛉
2,3,4,5,1	𠄝	<U+1DAB1,U+1DAB2,U+1DAB3,U+1DAB4, U+1DAB0,U+1DABE>	手習
	𠄞	<U+1DAB1,U+1DAB2,U+1DAB3,U+1DAB4, U+1DAB0,U+1DABE,U+1DABF>	
			夢浮橋

1.4.2. Keizukō Linear Patterns

There are 4 sources to support the patterns, and one pattern has the variant form. Please also see Fig. 4.

n	Glyph	KA	KH	NN4		NT
1,2,3,4						
2,1,3,4						
1,3,2,4						
1,2,4,3						
2,1,4,3						
4,2,3,1						
3,2,1,4						
2,3,1,4						
1,3,4,2						
3,4,1,2						
1,4,3,2						
4,3,2,1						
3,2,4,1						

<i>n</i>	Glyph	KA	KH	NN4		NT
2,4,3,1						
2,3,4,1						
















Based on the above analysis, the glyphs for the patterns are stable. The meanings are different according to the definition of different schools. In the following table, the left meaning is used for Shinoryū (志野流/しのりゅう), the right meaning is used for Oieryū (御家流/おいえりゅう). Some meanings used for Shinoryū are cited from the other Japanese novel *The Tale of Ise* (伊勢物語/いせものがたり), such as 1,2,3,4 (𠄎) corresponds to Chapter 1, 4,2,3,1 (𠄎) corresponds to Chapter 13, 2,3,1,4 (𠄎) is related to Chapter 68 and 117. The meaning of 1,3,2,4 (𠄎) is the same as 1,3,4,2,5 (𠄎) in Genjikō; the meaning of 2,4,3,1 (𠄎) is the same as 1,4,3,2,5 (𠄎) in Genjikō. The meanings are stable for the one school use.

<i>n</i>	Glyph	Sequence	Meaning	
1,2,3,4	𠄎	<U+1DAB0,U+1DAB1,U+1DAB2,U+1DAB3,U+1DABE>	初冠	春錦
2,1,3,4	𠄎	<U+1DAB1,U+1DAB0,U+1DAB2,U+1DAB3,U+1DABE>	葎の宿	野守鏡
1,3,2,4	𠄎	<U+1DAB0,U+1DAB2,U+1DAB1,U+1DAB3,U+1DABE>	関屋	高麗渡
1,2,4,3	𠄎	<U+1DAB0,U+1DAB1,U+1DAB3,U+1DAB2,U+1DABE>	龍田	銀河
2,1,4,3	𠄎	<U+1DAB1,U+1DAB0,U+1DAB3,U+1DAB2,U+1DABE>	春日野	煙競
4,2,3,1	𠄎	<U+1DAB3,U+1DAB1,U+1DAB2,U+1DAB0,U+1DABE>	武蔵鎧	三角柏
3,2,1,4	𠄎	<U+1DAB2,U+1DAB1,U+1DAB0,U+1DAB3,U+1DABE>	花筐	河社
2,3,1,4	𠄎	<U+1DAB1,U+1DAB2,U+1DAB0,U+1DAB3,U+1DABE>	住吉	伏見里
1,3,4,2	𠄎	<U+1DAB0,U+1DAB2,U+1DAB3,U+1DAB1,U+1DABE>	野中の葎	百舌茎
3,4,1,2	𠄎	<U+1DAB2,U+1DAB3,U+1DAB0,U+1DAB1,U+1DABE>	鳴子	鹿角菜
	𠄎	<U+1DAB2,U+1DAB3,U+1DAB0,U+1DAB1,U+1DABE,U+1DABF>		
1,4,3,2	𠄎	<U+1DAB0,U+1DAB3,U+1DAB2,U+1DAB1,U+1DABE>	八橋	竈景
4,3,2,1	𠄎	<U+1DAB3,U+1DAB2,U+1DAB1,U+1DAB0,U+1DABE>	苧田	篠薄

<i>n</i>	Glyph	Sequence	Meaning	
3,2,4,1	𠄎	<U+1DAB2,U+1DAB1,U+1DAB3, U+1DAB0,U+1DABE>	落葉	根合
2,4,3,1	𠄎	<U+1DAB1,U+1DAB3,U+1DAB2, U+1DAB0,U+1DABE>	篝火	和歌浦
2,3,4,1	𠄎	<U+1DAB1,U+1DAB2,U+1DAB3, U+1DAB0,U+1DABE>	小笹	常陸帯

1.4.3. Sanshukō Linear Patterns

There are 3 sources to support the patterns, and no pattern has the variant form. Please also see Fig. 5.

<i>n</i>	Glyph	KA	NN4		NT
1,2,3					
2,1,3					
3,2,1					
1,3,2					
2,3,1					

Based on the above analysis, the glyphs for the patterns are stable. The meanings are also stable.

<i>n</i>	Glyph	Sequence	Meaning
1,2,3		<U+1DAB0,U+1DAB1,U+1DAB2,U+1DABE>	緑樹の林
2,1,3		<U+1DAB1,U+1DAB0,U+1DAB2,U+1DABE>	隣家の梅
3,2,1		<U+1DAB2,U+1DAB1,U+1DAB0,U+1DABE>	孤峯の雪
1,3,2		<U+1DAB0,U+1DAB2,U+1DAB1,U+1DABE>	琴の音
2,3,1		<U+1DAB1,U+1DAB2,U+1DAB0,U+1DABE>	尾花の露

1.4.4. Partial linear patterns for six packets of incense

There is only one source to show the patterns. There will be 203 patterns based on Bell Numbers, but these patterns are no longer used in modern times, and the meanings are unclear. The list is incomplete, even if we can deduce all the possibilities.

n	Glyph	NN4	
1,3,4,5,6,2			
6,2,3,4,5,1			
1,2,4,5,6,3			
6,2,4,3,5,1			
1,3,2,5,4,6			
4,3,2,1,5,6			
2,1,4,3,6,5			
2,3,4,5,6,1			
1,2,3,4,5,6			
1,2,4,3,5,6			
2,3,1,5,6,4			
1,5,3,4,2,6			

1.4.5. Partial linear patterns for seven packets of incense

There is only one source to show the patterns. There will be 877 patterns based on Bell Numbers, but these patterns are no longer used in modern times, and the meanings are unclear. The list is incomplete, even if we can deduce all the possibilities.

n	Glyph	NN4
1,2,3,4,6,7,5		
2,1,5,4,7,6,3		
1,2,3,5,6,7,4		
3,4,1,6,7,2,5		
3,5,4,1,6,7,2		
1,2,4,5,6,7,3		
1,2,5,4,3,6,7		
2,1,4,3,6,5,7		
2,4,3,5,7,6,1		
2,1,3,4,7,6,5		
2,3,4,5,6,7,1		
1,2,3,4,5,6,7		

1.4.6. Partial linear patterns for eight packets of incense

There is only one source to show the patterns. There will be 4,140 patterns based on Bell Numbers, but these patterns are no longer used in modern times, and the meanings are unclear. The list is incomplete, even if we can deduce all the possibilities.

n	Glyph	NN4	
2,3,4,1,6,7,5,8			
2,3,1,5,6,7,8,4			
2,3,4,5,6,7,8,1			
1,2,3,4,5,6,7,8			
2,3,1,4,5,7,8,6			
2,1,3,5,6,4,7,8			
8,2,3,4,5,6,7,1			
2,3,4,1,6,7,8,5			
2,4,3,6,5,8,7,1			
1,2,6,4,5,3,7,8			
2,3,1,5,6,4,7,8			
2,1,3,5,6,7,4,8			

1.4.7. Partial linear patterns for nine packets of incense

There is only one source to show the patterns. There will be 21,147 patterns based on Bell Numbers, but these patterns are no longer used in modern times, and the meanings are unclear. The list is incomplete, even if we can deduce all the possibilities.

n	Glyph	NN4
8,3,2,5,4,7,6,1,9		
2,3,5,4,7,6,8,1,9		
2,1,8,5,4,7,6,3,9		
9,4,3,2,5,7,8,6,1		
2,3,1,4,5,6,8,9,7		
3,5,1,6,2,4,7,9,8		

1.4.8. Partial linear patterns for ten packets of incense

There is only one source to show the patterns. There will be 115,975 patterns based on Bell Numbers, but these patterns are no longer used in modern times, and the meanings are unclear. The list is incomplete, even if we can deduce all the possibilities.

n	Glyph	NN4
2,3,4,5,6,7,8,9,10,1		
1,2,3,9,10,6,7,8,4,5		
3,2,1,5,6,7,8,4,10,9		
1,3,2,4,6,5,7,9,8,10		
2,3,4,5,1,7,8,9,10,6		
2,1,4,3,6,5,8,7,10,9		

1.4.9. Named sequences

The patterns listed in 1.4.1, 1.4.2 and 1.4.3 are stable and well-known in kōdō games, so it's necessary to include them in `NamedSequences.txt` as below. The patterns listed in 1.4.4 through 1.4.8 are not suitable to include.

```
# Sanshuko Linear Patterns.

SANSHUKO LINEAR PATTERN-123;1DAB0 1DAB1 1DAB2 1DABE
SANSHUKO LINEAR PATTERN-132;1DAB0 1DAB2 1DAB1 1DABE
SANSHUKO LINEAR PATTERN-213;1DAB1 1DAB0 1DAB2 1DABE
SANSHUKO LINEAR PATTERN-231;1DAB1 1DAB2 1DAB0 1DABE
SANSHUKO LINEAR PATTERN-321;1DAB2 1DAB1 1DAB0 1DABE

# Keizuko Linear Patterns.

KEIZUKO LINEAR PATTERN-1234;1DAB0 1DAB1 1DAB2 1DAB3 1DABE
KEIZUKO LINEAR PATTERN-1243;1DAB0 1DAB1 1DAB3 1DAB2 1DABE
KEIZUKO LINEAR PATTERN-1324;1DAB0 1DAB2 1DAB1 1DAB3 1DABE
KEIZUKO LINEAR PATTERN-1342;1DAB0 1DAB2 1DAB3 1DAB1 1DABE
KEIZUKO LINEAR PATTERN-1432;1DAB0 1DAB3 1DAB2 1DAB1 1DABE
KEIZUKO LINEAR PATTERN-2134;1DAB1 1DAB0 1DAB2 1DAB3 1DABE
KEIZUKO LINEAR PATTERN-2143;1DAB1 1DAB0 1DAB3 1DAB2 1DABE
KEIZUKO LINEAR PATTERN-2314;1DAB1 1DAB2 1DAB0 1DAB3 1DABE
KEIZUKO LINEAR PATTERN-2341;1DAB1 1DAB2 1DAB3 1DAB0 1DABE
KEIZUKO LINEAR PATTERN-2431;1DAB1 1DAB3 1DAB2 1DAB0 1DABE
KEIZUKO LINEAR PATTERN-3214;1DAB2 1DAB1 1DAB0 1DAB3 1DABE
KEIZUKO LINEAR PATTERN-3241;1DAB2 1DAB1 1DAB3 1DAB0 1DABE
KEIZUKO LINEAR PATTERN-3412;1DAB2 1DAB3 1DAB0 1DAB1 1DABE
KEIZUKO LINEAR PATTERN-4231;1DAB3 1DAB1 1DAB2 1DAB0 1DABE
KEIZUKO LINEAR PATTERN-4321;1DAB3 1DAB2 1DAB1 1DAB0 1DABE

# Genjiko Linear Patterns.

GENJIKO LINEAR PATTERN-12345;1DAB0 1DAB1 1DAB2 1DAB3 1DAB4 1DABE
GENJIKO LINEAR PATTERN-12354;1DAB0 1DAB1 1DAB2 1DAB4 1DAB3 1DABE
GENJIKO LINEAR PATTERN-12435;1DAB0 1DAB1 1DAB3 1DAB2 1DAB4 1DABE
GENJIKO LINEAR PATTERN-12453;1DAB0 1DAB1 1DAB3 1DAB4 1DAB2 1DABE
GENJIKO LINEAR PATTERN-12543;1DAB0 1DAB1 1DAB4 1DAB3 1DAB2 1DABE
GENJIKO LINEAR PATTERN-13245;1DAB0 1DAB2 1DAB1 1DAB3 1DAB4 1DABE
GENJIKO LINEAR PATTERN-13254;1DAB0 1DAB2 1DAB1 1DAB4 1DAB3 1DABE
GENJIKO LINEAR PATTERN-13425;1DAB0 1DAB2 1DAB3 1DAB1 1DAB4 1DABE
GENJIKO LINEAR PATTERN-13452;1DAB0 1DAB2 1DAB3 1DAB4 1DAB1 1DABE
GENJIKO LINEAR PATTERN-13542;1DAB0 1DAB2 1DAB4 1DAB3 1DAB1 1DABE
GENJIKO LINEAR PATTERN-14325;1DAB0 1DAB3 1DAB2 1DAB1 1DAB4 1DABE
GENJIKO LINEAR PATTERN-14352;1DAB0 1DAB3 1DAB2 1DAB4 1DAB1 1DABE
```


GENJIKO	LINEAR	PATTERN-14523;	1DAB0	1DAB3	1DAB4	1DAB1	1DAB2	1DABE
GENJIKO	LINEAR	PATTERN-15342;	1DAB0	1DAB4	1DAB2	1DAB3	1DAB1	1DABE
GENJIKO	LINEAR	PATTERN-15432;	1DAB0	1DAB4	1DAB3	1DAB2	1DAB1	1DABE
GENJIKO	LINEAR	PATTERN-21345;	1DAB1	1DAB0	1DAB2	1DAB3	1DAB4	1DABE
GENJIKO	LINEAR	PATTERN-21354;	1DAB1	1DAB0	1DAB2	1DAB4	1DAB3	1DABE
GENJIKO	LINEAR	PATTERN-21435;	1DAB1	1DAB0	1DAB3	1DAB2	1DAB4	1DABE
GENJIKO	LINEAR	PATTERN-21453;	1DAB1	1DAB0	1DAB3	1DAB4	1DAB2	1DABE
GENJIKO	LINEAR	PATTERN-21543;	1DAB1	1DAB0	1DAB4	1DAB3	1DAB2	1DABE
GENJIKO	LINEAR	PATTERN-23145;	1DAB1	1DAB2	1DAB0	1DAB3	1DAB4	1DABE
GENJIKO	LINEAR	PATTERN-23154;	1DAB1	1DAB2	1DAB0	1DAB4	1DAB3	1DABE
GENJIKO	LINEAR	PATTERN-23415;	1DAB1	1DAB2	1DAB3	1DAB0	1DAB4	1DABE
GENJIKO	LINEAR	PATTERN-23451;	1DAB1	1DAB2	1DAB3	1DAB4	1DAB0	1DABE
GENJIKO	LINEAR	PATTERN-23541;	1DAB1	1DAB2	1DAB4	1DAB3	1DAB0	1DABE
GENJIKO	LINEAR	PATTERN-24315;	1DAB1	1DAB3	1DAB2	1DAB0	1DAB4	1DABE
GENJIKO	LINEAR	PATTERN-24351;	1DAB1	1DAB3	1DAB2	1DAB4	1DAB0	1DABE
GENJIKO	LINEAR	PATTERN-24513;	1DAB1	1DAB3	1DAB4	1DAB0	1DAB2	1DABE
GENJIKO	LINEAR	PATTERN-25341;	1DAB1	1DAB4	1DAB2	1DAB3	1DAB0	1DABE
GENJIKO	LINEAR	PATTERN-25431;	1DAB1	1DAB4	1DAB3	1DAB2	1DAB0	1DABE
GENJIKO	LINEAR	PATTERN-32145;	1DAB2	1DAB1	1DAB0	1DAB3	1DAB4	1DABE
GENJIKO	LINEAR	PATTERN-32154;	1DAB2	1DAB1	1DAB0	1DAB4	1DAB3	1DABE
GENJIKO	LINEAR	PATTERN-32415;	1DAB2	1DAB1	1DAB3	1DAB0	1DAB4	1DABE
GENJIKO	LINEAR	PATTERN-32451;	1DAB2	1DAB1	1DAB3	1DAB4	1DAB0	1DABE
GENJIKO	LINEAR	PATTERN-32541;	1DAB2	1DAB1	1DAB4	1DAB3	1DAB0	1DABE
GENJIKO	LINEAR	PATTERN-34125;	1DAB2	1DAB3	1DAB0	1DAB1	1DAB4	1DABE
GENJIKO	LINEAR	PATTERN-34152;	1DAB2	1DAB3	1DAB0	1DAB4	1DAB1	1DABE
GENJIKO	LINEAR	PATTERN-34521;	1DAB2	1DAB3	1DAB4	1DAB1	1DAB0	1DABE
GENJIKO	LINEAR	PATTERN-35142;	1DAB2	1DAB4	1DAB0	1DAB3	1DAB1	1DABE
GENJIKO	LINEAR	PATTERN-35412;	1DAB2	1DAB4	1DAB3	1DAB0	1DAB1	1DABE
GENJIKO	LINEAR	PATTERN-42315;	1DAB3	1DAB1	1DAB2	1DAB0	1DAB4	1DABE
GENJIKO	LINEAR	PATTERN-42351;	1DAB3	1DAB1	1DAB2	1DAB4	1DAB0	1DABE
GENJIKO	LINEAR	PATTERN-42513;	1DAB3	1DAB1	1DAB4	1DAB0	1DAB2	1DABE
GENJIKO	LINEAR	PATTERN-43215;	1DAB3	1DAB2	1DAB1	1DAB0	1DAB4	1DABE
GENJIKO	LINEAR	PATTERN-43251;	1DAB3	1DAB2	1DAB1	1DAB4	1DAB0	1DABE
GENJIKO	LINEAR	PATTERN-43512;	1DAB3	1DAB2	1DAB4	1DAB0	1DAB1	1DABE
GENJIKO	LINEAR	PATTERN-45312;	1DAB3	1DAB4	1DAB2	1DAB0	1DAB1	1DABE
GENJIKO	LINEAR	PATTERN-52341;	1DAB4	1DAB1	1DAB2	1DAB3	1DAB0	1DABE
GENJIKO	LINEAR	PATTERN-52431;	1DAB4	1DAB1	1DAB3	1DAB2	1DAB0	1DABE
GENJIKO	LINEAR	PATTERN-53241;	1DAB4	1DAB2	1DAB1	1DAB3	1DAB0	1DABE
GENJIKO	LINEAR	PATTERN-53421;	1DAB4	1DAB2	1DAB3	1DAB1	1DAB0	1DABE
GENJIKO	LINEAR	PATTERN-54321;	1DAB4	1DAB3	1DAB2	1DAB1	1DAB0	1DABE

In 1.4.1 and 1.4.2, there are 6 variant forms, I also request to include them to StandardizedVariants.txt as below.

```
# Keizuko linear patterns variant
```

```

1DAB2 1DAB3 1DAB0 1DAB1 1DABE 1DABF; variant form; # KEIZUKO
LINEAR PATTERN-3412

# Genjiko linear patterns variants

1DAB0 1DAB3 1DAB4 1DAB1 1DAB2 1DABE 1DABF; variant form; #
GENJIKO LINEAR PATTERN-14523
1DAB1 1DAB2 1DAB3 1DAB4 1DAB0 1DABE 1DABF; variant form; #
GENJIKO LINEAR PATTERN-23451
1DAB2 1DAB3 1DAB0 1DAB4 1DAB1 1DABE 1DABF; variant form; #
GENJIKO LINEAR PATTERN-34152
1DAB2 1DAB4 1DAB0 1DAB3 1DAB1 1DABE 1DABF; variant form; #
GENJIKO LINEAR PATTERN-35142
1DAB3 1DAB4 1DAB2 1DAB0 1DAB1 1DABE 1DABF; variant form; #
GENJIKO LINEAR PATTERN-45312

```

1.5. Similar characters

The glyphs for 3 patterns are similar to that of 3 counting rod digits as below.

SN	UCS or Sequence	Glyph	Name
1	1D36B		COUNTING ROD TENS DIGIT THREE
	1DAB0 1DAB1 1DAB2 1DABE		SANSHUKO LINEAR PATTERN-123
2	1D36C		COUNTING ROD TENS DIGIT FOUR
	1DAB0 1DAB1 1DAB2 1DAB3 1DABE		KEIZUKO LINEAR PATTERN-1234
3	1D36D		COUNTING ROD TENS DIGIT FIVE
	1DAB0 1DAB1 1DAB2 1DAB3 1DAB4 1DABE		GENJIKO LINEAR PATTERN-12345

2. Actual use

2.1. Kōdō games

The most important use is for the kōdō games as the above shows. Until now, the participants are still use the writing brush to write these patterns with kanji. Please see Fig. 1, 2, 6, 7 and 8. These show the patterns are used with CJKUI in the kōdō games texts like other CJK symbols.

2.2. Math

In Japan, the patterns are also used in the mathematical questions. Please Fig. 9 and 10.

In Fig. 9, the author used Latin letters I, T and some box drawing symbols to try to show the glyphs for the patterns, because the patterns have not been encoded in UCS / Unicode yet.

2.3. Japanese kamon

Kamon (家紋) is the Japanese unique emblem system, which refers to a crest used in Japan to indicate one's origins. It is said that there are more than 20,000 distinct individual kamons in Japan. Please see more details [here](#). The Japanese people use kanji, small seal, coin patterns, animal and plant images, shogi symbols, kōdō incense linear patterns and so on to design their exclusive kamons, which are like the modern trademarks.

Kōdō incense linear patterns were used to designed as kamons, but they are not only used for kamon. The situation is similar to that kanji and small seal are used for kamon, but they are not only used for kamon. Genjikō Linear Patterns “was invented in the early Edo period and later used as kamons, there are only ten types that can be used as kamon.” (Please see [here](#).) Even so, the patterns are not the main reference source of the kamons. Therefore, using as kamons is not a suitable and sufficient reason to reject them to encode to UCS / Unicode.

2.4 Fonts

I find 3 fonts which included the kōdō incense linear patterns. The corresponding websites are listed as below.

Nishiki-teki	https://umihotaru.work/	PUA
Quivira	http://quivira-font.com/	PUA
K'sGenjikoze	https://ksbookshelf.com/FD/KsGenjikoze.html	Basic Latin

These fonts all include the patterns as the separate characters.

2.5. Others

The patterns are also used for the furniture and clothing commonly like other symbols. Please see Fig. 11, 12, 13. It is enough to prove how the people like them.

3. Pictures

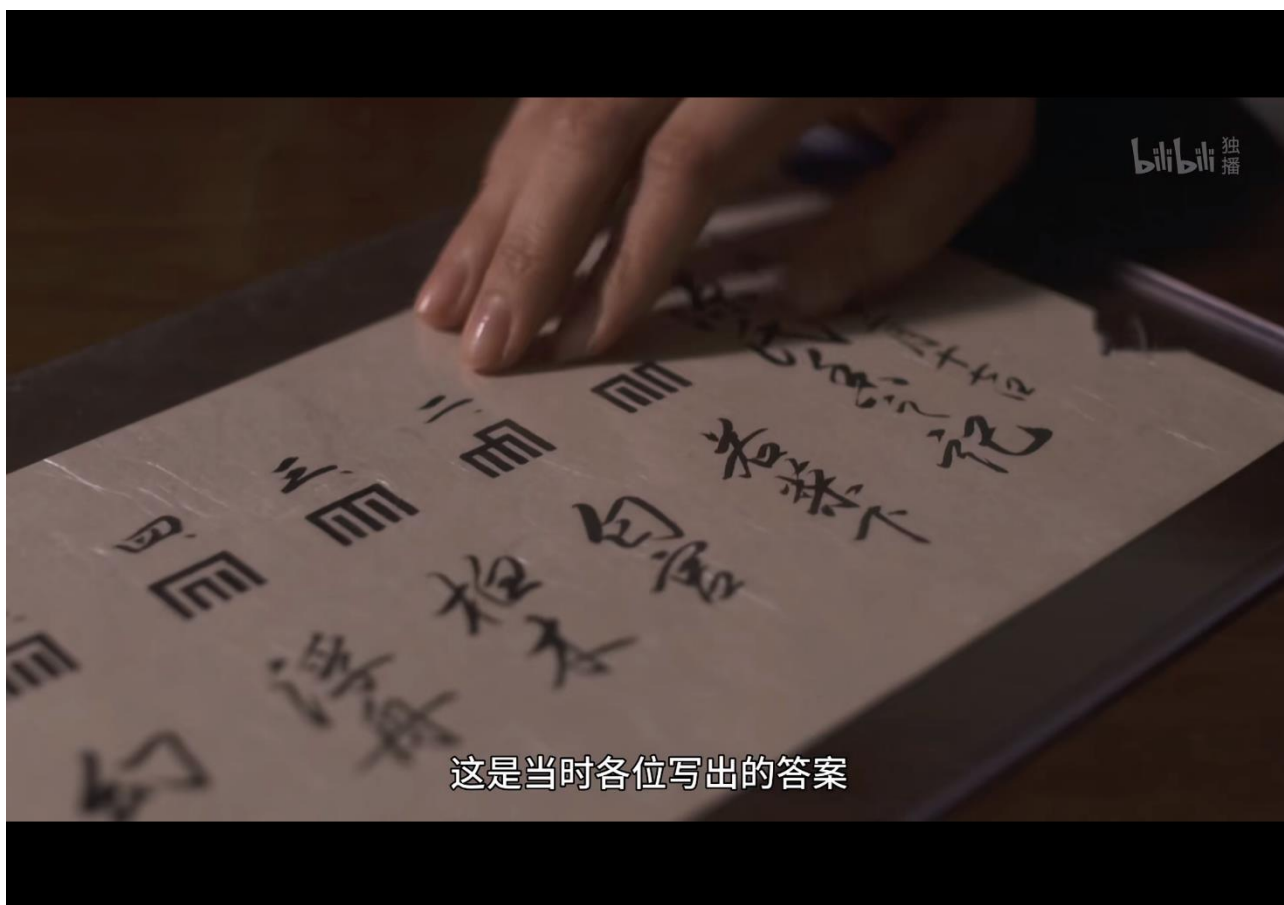


Fig. 1 A screenshot of Japanese drama Kenji-0
The picture is screenshotted from [bilibili.com](https://www.bilibili.com).



Fig. 2 A screenshot of Japanese movie The Lady Shogun and Her Men
The picture is copied from [the article to introduce kōdō](#) on a WeChat public account.

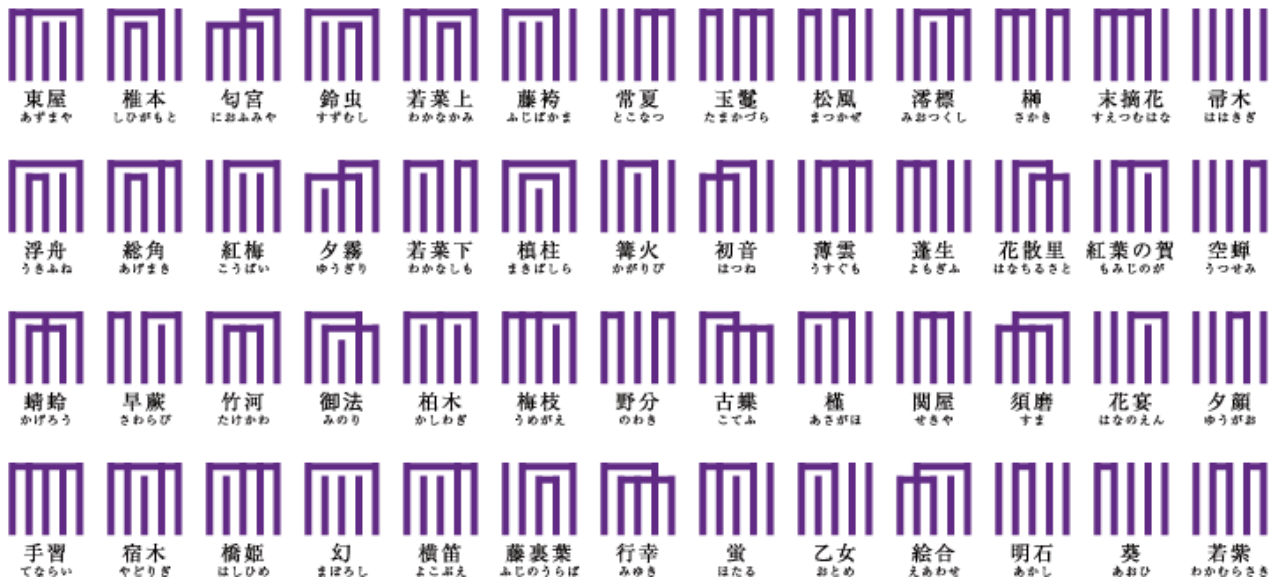


Fig. 3 Full list of Genjikō Linear Patterns

The picture is copied from [the article to introduce kōdō](#) on nipponkodo.co.jp

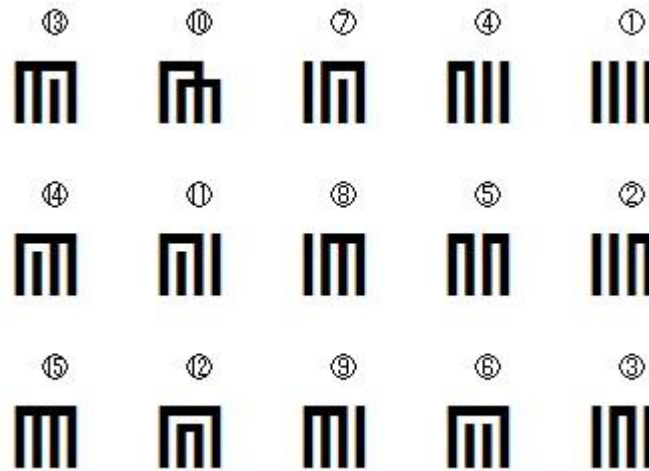


Fig. 4 Full list of Keizukō Linear Patterns

The picture is copied from [the article to introduce Keizukō](#) on watayax.com.

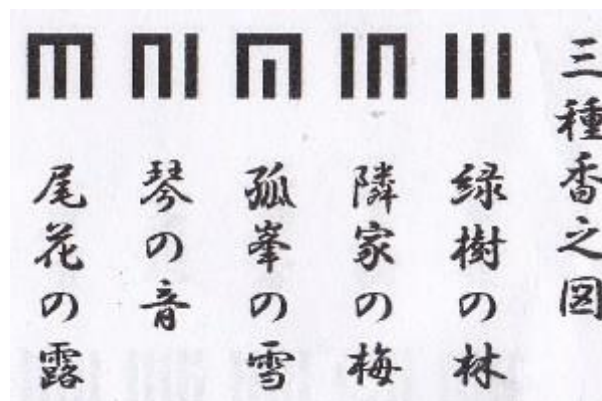


Fig. 5 Full list of Sanshukō Linear Patterns

The picture is copied from [the article to introduce Sanshukō](#) on watayax.com.

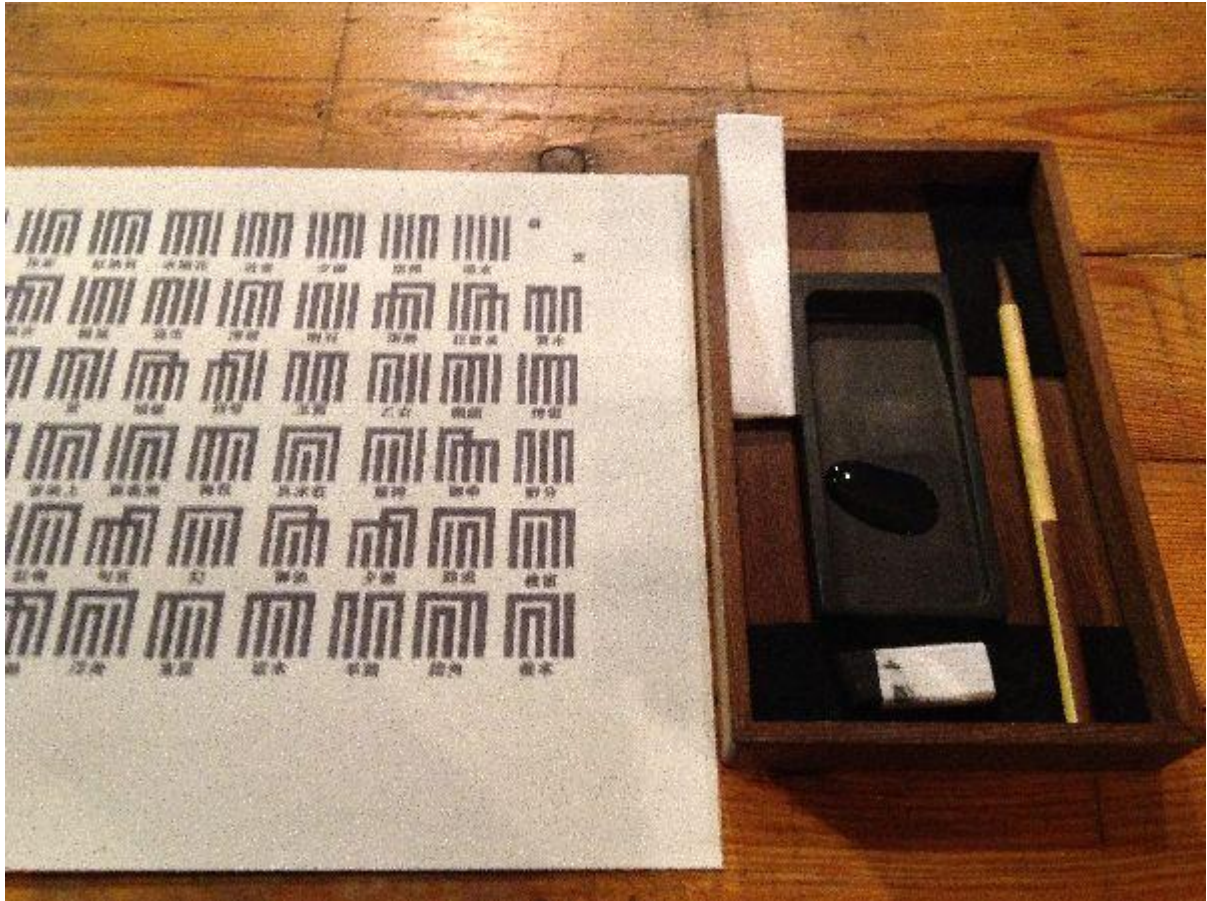


Fig. 6 Using writing brush to write Genjikō Linear Patterns

The picture is copied from [the article to introduce Genjikō](#) on [risaikurukimono.com](#).

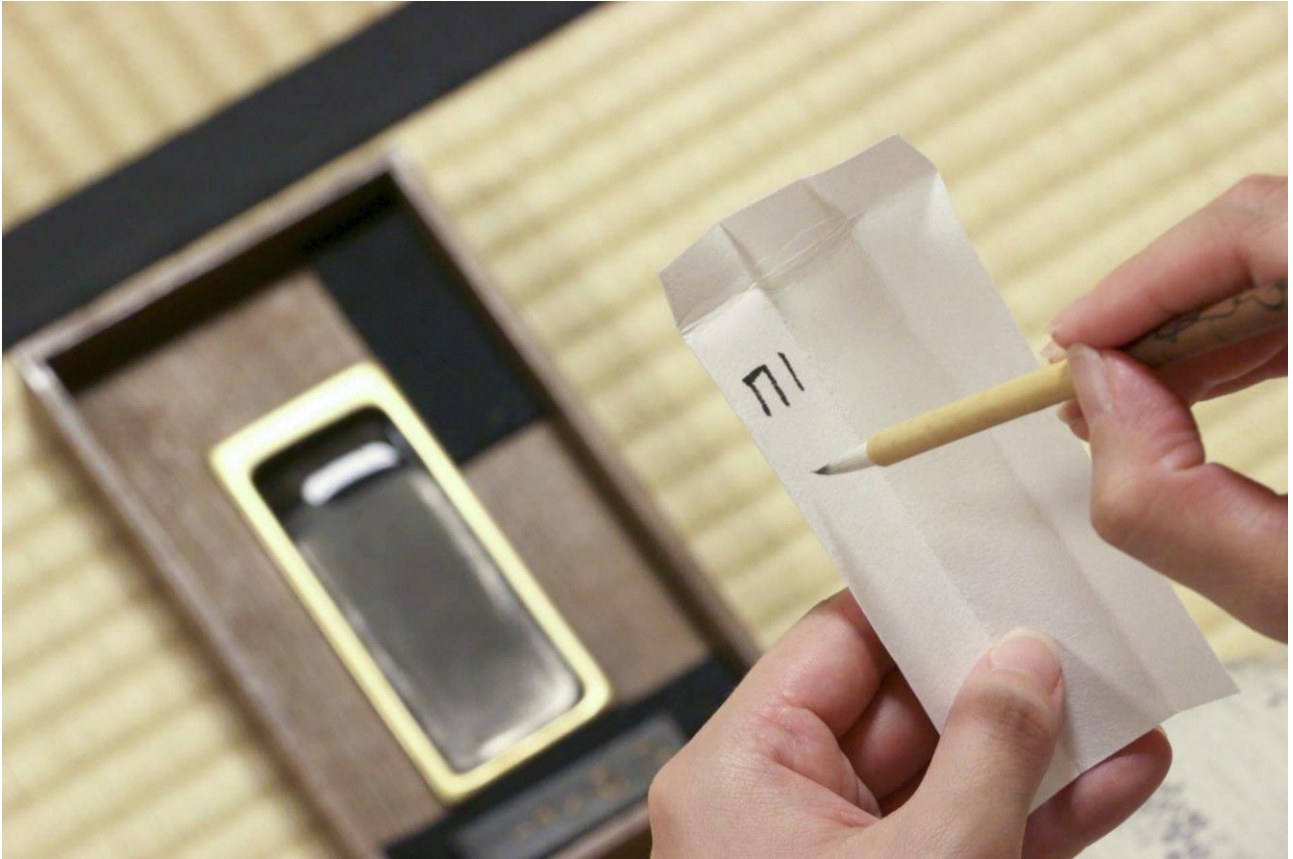


Fig. 7 Using writing brush to write Sanshukō Linear Patterns

The picture is copied from [the article to introduce Sanshukō](#) on [story.nakagawa-masashichi.jp](#).

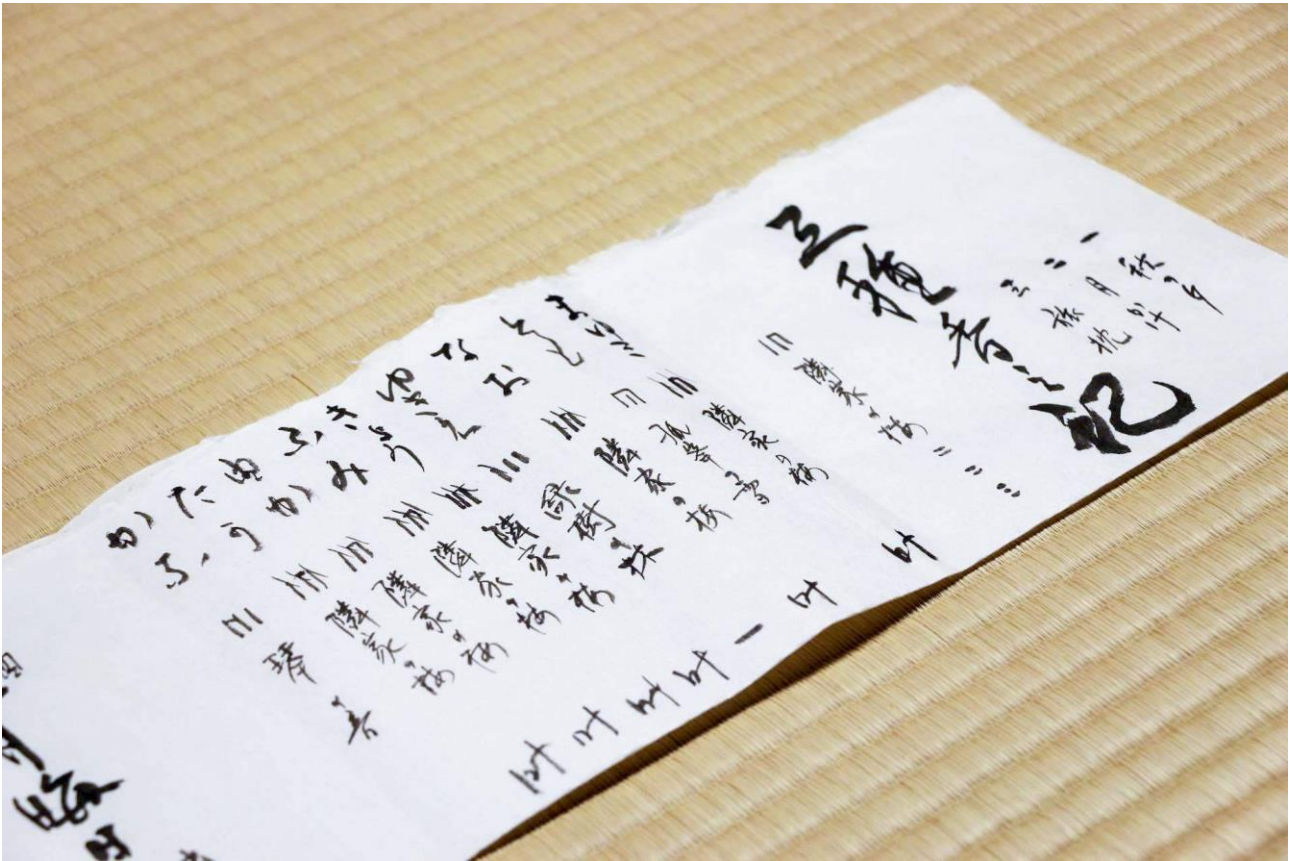



Fig. 8 Using writing brush to write Sanshukō Linear Patterns

The picture is copied from [the article to introduce Sanshukō](http://story.nakagawa-masashichi.jp) on story.nakagawa-masashichi.jp.

1、香が一種類の場合 5回とも同じだから、**(TTTTT)**の形で1通り・・・（香の種類は問わないので、5種類のどの香でもいい）



2、香が五種類の場合 5回とも別だから、**(11111 (1+1+1+1+1))**の形で1通り・・・（香の種類は考えないので、5種類が別々とわかれればいい）

3、香が二種類の場合

A 1+4 1回だけ異なり、他の4回は同じ香だった場合・ 5回のうちの1回を選ぶから、5通り・・・（4本つながった**TTTT**図中に単独の1が入る場所は5通り）


B 2+3 2回同じで、残りの3回が同じ場合・（上の「玉鬘」の例がそれに当たる）

5回の中から2回（または3回）を選ぶ場合の数である。 $5C_2=5C_3=10$ 通り・・・
（五本の中から二本（または三本）のを選ぶ組合せ）
書き上げてみると分かりやすい。（下図参照）この書き上げは、4のBにも5にも応用できる。

4、香が三種類の場合

A 1+2+2の場合、つまり二種類が2回ずつと、単独が一回（上の「初音」がその例）

単独の1を置く場所が5通り、残りの4箇所から二つを選ぶ方法は $4C_2=6$ 通りだが2：2で同じものが重複するので、2で割り3通りとなる。
 $5 \times 3 = 15$ 通り・・・
（または 同じものを含む場合の順列、5つのうちから2つえらび、残りの3から2を選び、種類を区別しないので2で割る $5C_2 \times 3C_2 / 2 = 15$ 通り）



4本を2と2に分ける組合せは左の3種類・その図に 1 がどこかに入り5本線となる。

B 1+1+3の場合、つまり一種類を3回たき、残りの2回がそれぞれ別・

5回の中から3回を選ぶ組合せ。3のBと同じ考え方で $5C_2=5C_3=10$ 通り・・・

Fig. 9 Genjikō and Keizukō Linear Patterns used in the mathematical questions

The picture is screenshots from tutor-sapporo.xii.jp.

先日、京都府宇治市にある源氏物語ミュージアムで、下のような図柄に出くわしました。



何の暗号だろうと思いながら、解説のパネルを読んでも、これは「源氏香(げんじこう)」という江戸時代に広く楽しまれていた香り当て遊びの解答図(香の図)だとのこと。

具体的には、次のようにおこないます。

- ①5種類の香りを5個ずつ合計25個用意します。
- ②25個のなかから任意に5個選びます。
- ③5個の香りのうち、どれとどれが同じ香りで、どれとどれが違う香りかを当てます。
- ④解答を図に表します。

例えば、2番目と3番目が同じ香り、ほかはすべて違う香りだと思ったときは、5本の縦棒のうち、2番目と3番目の棒を横線で結びます(右図)。



このようにしてできる香の図は、全部で52通りあるそうで、江戸時代の人々は、源氏物語が54帖あることを想起して、第1巻と第54巻を除いた52の巻名をそれぞれの図柄に命名したのだそうです。ちなみに、解答例の図柄は「夕顔」になるそうです。

Fig. 10 Genjiko Linear Patterns used in the mathematical questions
The picture is screenshoted from dainippon-tosho.co.jp.



Fig. 11 Japanese traditional clothing with Genjikō Linear Patterns
The picture is copied from [the article](#) on [y-yukiko.jp](#).



Fig. 12 Japanese traditional clothing with Genjikō Linear Patterns
The picture is copied from [the article](#) on kimono-kitai.info.



Fig. 13 Japanese ranma with Genjikō Linear Patterns
The picture is copied from [the article](#) on e-nobiru.com.

4. Bibliography

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(End of Document)

**ISO/IEC JTC 1/SC 2/WG 2
PROPOSAL SUMMARY FORM TO ACCOMPANY SUBMISSIONS
FOR ADDITIONS TO THE REPERTOIRE OF ISO/IEC 10646¹.**

Please fill all the sections A, B and C below.

Please read Principles and Procedures Document (P & P) from <http://std.dkuug.dk/JTC1/SC2/WG2/docs/principles.html> for guidelines and details before filling this form.

Please ensure you are using the latest Form from <http://std.dkuug.dk/JTC1/SC2/WG2/docs/summaryform.html>.

See also <http://std.dkuug.dk/JTC1/SC2/WG2/docs/roadmaps.html> for latest Roadmaps.

A. Administrative

1. Title:	Proposal to encode Kōdō Incense Linear Patterns to UCS
2. Requester's name:	<i>Eiso CHAN</i>
3. Requester type (Member body/Liaison/Individual contribution):	<i>Individual contribution</i>
4. Submission date:	<i>2022-06-03</i>
5. Requester's reference (if applicable):	
6. Choose one of the following:	
This is a complete proposal:	<i>YES</i>
(or) More information will be provided later:	

B. Technical – General

1. Choose one of the following:	
a. This proposal is for a new script (set of characters):	<i>NO</i>
Proposed name of script:	
b. The proposal is for addition of character(s) to an existing block:	<i>NO</i>
Name of the existing block:	
2. Number of characters in proposal: <i>12</i>	
3. Proposed category (select one from below - see section 2.2 of P&P document):	
A-Contemporary <input checked="" type="checkbox"/>	B.1-Specialized (small collection) <input type="checkbox"/>
C-Major extinct <input type="checkbox"/>	D-Attested extinct <input type="checkbox"/>
E-Minor extinct <input type="checkbox"/>	G-Obscure or questionable usage symbols <input type="checkbox"/>
F-Archaic Hieroglyphic or Ideographic <input type="checkbox"/>	
4. Is a repertoire including character names provided? <i>YES</i>	
a. If YES, are the names in accordance with the "character naming guidelines" in Annex L of P&P document? <i>YES</i>	
b. Are the character shapes attached in a legible form suitable for review? <i>YES</i>	
5. Fonts related:	
a. Who will provide the appropriate computerized font to the Project Editor of 10646 for publishing the standard?	<i>Eiso CHAN</i>
b. Identify the party granting a license for use of the font by the editors (include address, e-mail, ftp-site, etc.):	<i>Eiso CHAN, eisoch@126.com</i>
6. References:	
a. Are references (to other character sets, dictionaries, descriptive texts etc.) provided? <i>YES</i>	
b. Are published examples of use (such as samples from newspapers, magazines, or other sources) of proposed characters attached? <i>YES</i>	
7. Special encoding issues:	
Does the proposal address other aspects of character data processing (if applicable) such as input, presentation, sorting, searching, indexing, transliteration etc. (if yes please enclose information)? <i>NO</i>	

8. Additional Information:

Submitters are invited to provide any additional information about Properties of the proposed Character(s) or Script that will assist in correct understanding of and correct linguistic processing of the proposed character(s) or script. Examples of such properties are: Casing information, Numeric information, Currency information, Display behaviour information such as line breaks, widths etc., Combining behaviour, Spacing behaviour, Directional behaviour, Default Collation behaviour, relevance in Mark Up contexts, Compatibility equivalence and other Unicode normalization related information. See the Unicode standard at <http://www.unicode.org> for such information on other scripts. Also see Unicode Character Database

¹. Form number: N4502-F (Original 1994-10-14; Revised 1995-01, 1995-04, 1996-04, 1996-08, 1999-03, 2001-05, 2001-09, 2003-11, 2005-01, 2005-09, 2005-10, 2007-03, 2008-05, 2009-11, 2011-03, 2012-01)

(<http://www.unicode.org/reports/tr44/>) and associated Unicode Technical Reports for information needed for consideration by the Unicode Technical Committee for inclusion in the Unicode Standard.

C. Technical - Justification

1. Has this proposal for addition of character(s) been submitted before? If YES explain	<i>NO</i>
2. Has contact been made to members of the user community (for example: National Body, user groups of the script or characters, other experts, etc.)? If YES, with whom? If YES, available relevant documents:	<i>YES</i> <i>kōdō participants in East Asia</i> <i>this document</i>
3. Information on the user community for the proposed characters (for example: size, demographics, information technology use, or publishing use) is included? Reference:	<i>YES</i> <i>Contemporary and historical use by specialists and hobbyists, information processing history</i>
4. The context of use for the proposed characters (type of use; common or rare) Reference:	<i>Rare</i>
5. Are the proposed characters in current use by the user community? If YES, where? Reference:	<i>YES</i> <i>East Asia, but particularly in Japan.</i>
6. After giving due considerations to the principles in the P&P document must the proposed characters be entirely in the BMP? If YES, is a rationale provided? If YES, reference:	<i>NO</i>
7. Should the proposed characters be kept together in a contiguous range (rather than being scattered)?	<i>YES</i>
8. Can any of the proposed characters be considered a presentation form of an existing character or character sequence? If YES, is a rationale for its inclusion provided? If YES, reference:	<i>NO</i>
9. Can any of the proposed characters be encoded using a composed character sequence of either existing characters or other proposed characters? If YES, is a rationale for its inclusion provided? If YES, reference:	<i>NO</i>
10. Can any of the proposed character(s) be considered to be similar (in appearance or function) to, or could be confused with, an existing character? If YES, is a rationale for its inclusion provided? If YES, reference:	<i>NO</i>
11. Does the proposal include use of combining characters and/or use of composite sequences? If YES, is a rationale for such use provided? If YES, reference: Is a list of composite sequences and their corresponding glyph images (graphic symbols) provided? If YES, reference:	<i>NO</i> <i>NO</i>
12. Does the proposal contain characters with any special properties such as control function or similar semantics? If YES, describe in detail (include attachment if necessary)	<i>NO</i>
13. Does the proposal contain any Ideographic compatibility characters? If YES, are the equivalent corresponding unified ideographic characters identified? If YES, reference:	<i>NO</i>