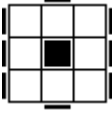
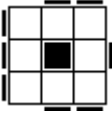
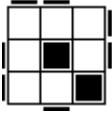
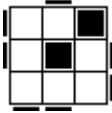
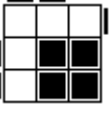
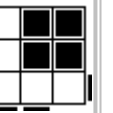
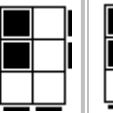
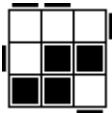
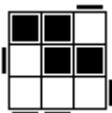
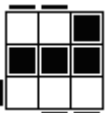
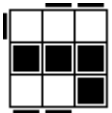
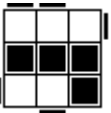
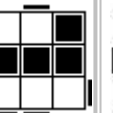
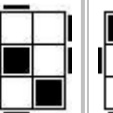
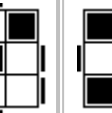
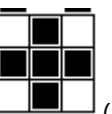
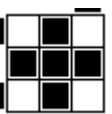
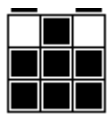
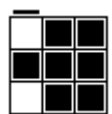
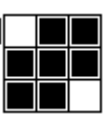
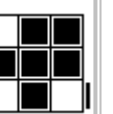
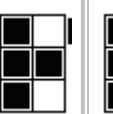
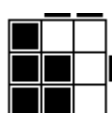
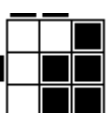
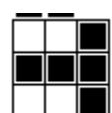
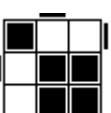
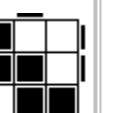
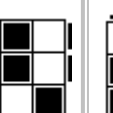
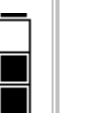
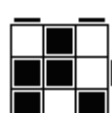
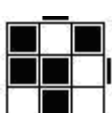
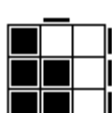
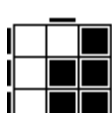
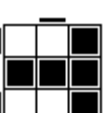
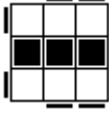
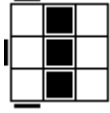
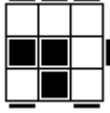
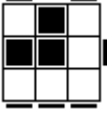
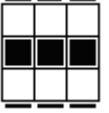
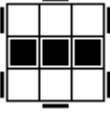
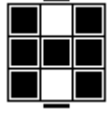
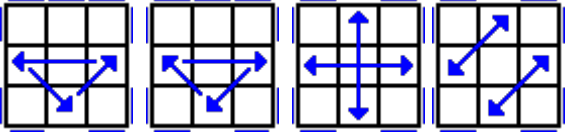
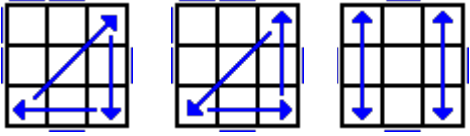
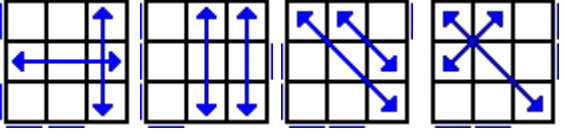
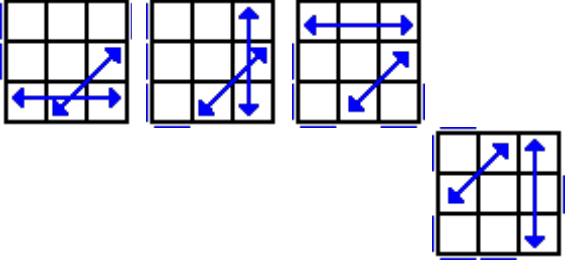
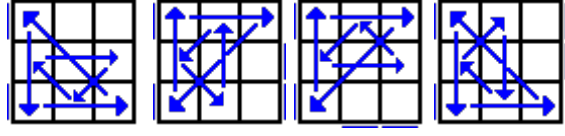
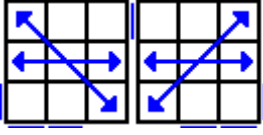


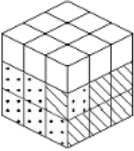
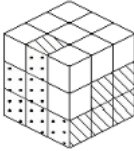
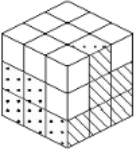
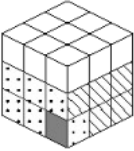
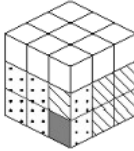
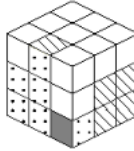
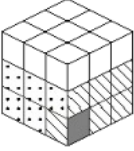
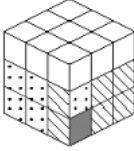
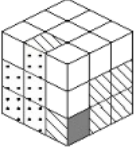
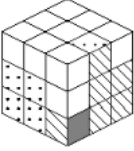
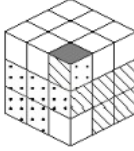
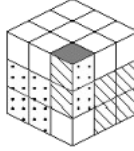
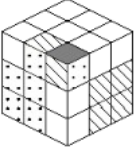
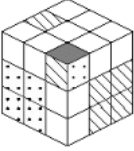
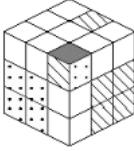
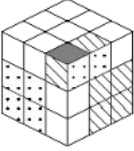
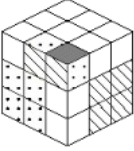
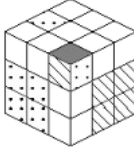
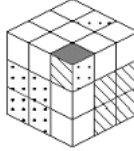
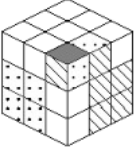
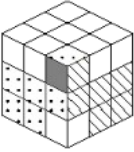
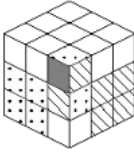
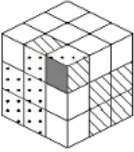
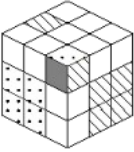
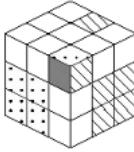
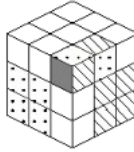
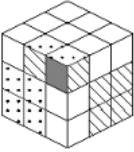
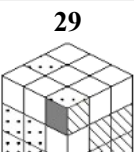
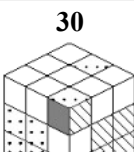
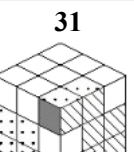
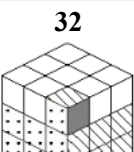
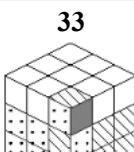
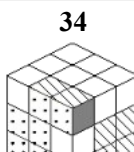
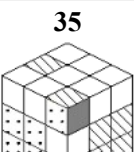
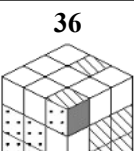
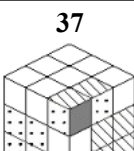
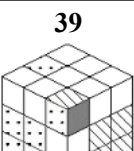
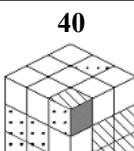
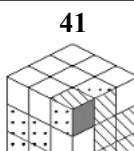
1  R $\textcolor{blue}{U}'\textcolor{blue}{U}'$ (R2' FR$\textcolor{red}{F}'$)U2 (R'FR$\textcolor{red}{F}'$)	2  F(RUR'$\textcolor{blue}{U}'$)F' f(RUR'$\textcolor{blue}{U}'$)f'	3  f(RUR'$\textcolor{blue}{U}'$)f'$\textcolor{blue}{U}'$ F(RUR'$\textcolor{blue}{U}'$)F'	$\textcolor{red}{4}$  f(RUR'$\textcolor{blue}{U}'$)f' U F(RUR'$\textcolor{blue}{U}'$)F'	5  (r' U2) (R U R'U) r	6  (r $\textcolor{blue}{U}'\textcolor{blue}{U}'$) (R' $\textcolor{blue}{U}'$ R $\textcolor{blue}{U}'$ r')	7  (rUR'U) (R $\textcolor{blue}{U}'\textcolor{blue}{U}'$r') $\textcolor{blue}{U}'$ r')	8  (r'$\textcolor{blue}{U}'$RU') (R' U2 r) F'	$\textcolor{red}{9}$  (RUR'$\textcolor{blue}{U}'$) (R'F) (R2UR'$\textcolor{blue}{U}'$) F'	$\textcolor{red}{10}$  $\textcolor{orange}{M}'$(R'U2) (RUR'URU) $\textcolor{orange}{M}$
$\textcolor{red}{11}$  (rR2UR'U) (R $\textcolor{blue}{U}'\textcolor{blue}{U}'$R'U) $\textcolor{orange}{M}'$	$\textcolor{red}{12}$  $\textcolor{orange}{M}'$(R'U'R $\textcolor{blue}{U}'$)(R'U2 R $\textcolor{blue}{U}'$) M	$\textcolor{red}{13}$  f(R U)(R2 $\textcolor{blue}{U}'$)(R' U R $\textcolor{blue}{U}'$) f'	14  (R'F) (RUR'F'R) (F $\textcolor{blue}{U}'$ F')	15  (r' $\textcolor{blue}{U}'$ r) (R'$\textcolor{blue}{U}'$RU) (r' U r)	16  (r U r') (RUR'$\textcolor{blue}{U}'$) (r $\textcolor{blue}{U}'$ r')	$\textcolor{red}{17}$  (1$\textcolor{blue}{U}'$1') f(R2B R'UR'$\textcolor{blue}{U}'$f')	$\textcolor{red}{18}$  (rUR'U)(R $\textcolor{blue}{U}'\textcolor{blue}{U}'$r') (r'$\textcolor{blue}{U}'R\textcolor{blue}{U}'$) (R'U2 r)	19  (r'RU) (RUR'$\textcolor{blue}{U}'$r) (R'2FRF')	$\textcolor{red}{20}$  (rUR'$\textcolor{blue}{U}'$)$\textcolor{orange}{M}'$2 U(RU'R'$\textcolor{blue}{U}'$) $\textcolor{orange}{M}'$
21  (R $\textcolor{blue}{U}'\textcolor{blue}{U}'$)(R' $\textcolor{blue}{U}'$RUR'$\textcolor{blue}{U}'$) (R$\textcolor{blue}{U}'$ R')	22  R $\textcolor{blue}{U}'\textcolor{blue}{U}'$ (R'2$\textcolor{blue}{U}'$)(R2$\textcolor{blue}{U}'$) (R'2 $\textcolor{blue}{U}'$)$\textcolor{blue}{U}'$R	23  (R2 $\textcolor{orange}{D}'$) (R $\textcolor{blue}{U}'\textcolor{blue}{U}'R'\textcolor{orange}{D}$) (R $\textcolor{blue}{U}'\textcolor{blue}{U}'$R)	24  (r U R' $\textcolor{blue}{U}'$) (r' F R F')	25  F'(rUR'$\textcolor{blue}{U}'$) (r' F R)	26  (R $\textcolor{blue}{U}'\textcolor{blue}{U}'$) (R'$\textcolor{blue}{U}'R\textcolor{blue}{U}'$ R')	27  (R U R' $\textcolor{orange}{U}'$) (R $\textcolor{blue}{U}'\textcolor{blue}{U}'$R')	28  (r U R' $\textcolor{blue}{U}'$) (r' R U) (R $\textcolor{blue}{U}'$ R')	$\textcolor{red}{29}$  (RUR'$\textcolor{blue}{U}'$) (RU'R'F'$\textcolor{blue}{U}'$ F)(RU R')	$\textcolor{red}{30}$  f(RU) (R2 $\textcolor{blue}{U}'$R'U) (R2 $\textcolor{blue}{U}'$ R') f'
$\textcolor{red}{31}$  (r' F' U F) (r$\textcolor{blue}{U}'$r'$\textcolor{blue}{U}'$r)	32  (RU)($\textcolor{blue}{B}'\textcolor{blue}{U}'$) (R'URBR')	33  (R U R' $\textcolor{blue}{U}'$) (R' F R F')	$\textcolor{red}{34}$  (R U R2 $\textcolor{blue}{U}'$) (R' F) (R UR $\textcolor{blue}{U}'$ $\textcolor{orange}{F}'$)	35  (R $\textcolor{blue}{U}'\textcolor{blue}{U}'$)(R2' F R F') (R $\textcolor{blue}{U}'\textcolor{blue}{U}'$R')	36  (R'$\textcolor{blue}{U}'$RU') (R'URU) ($\textcolor{blue}{U}'$R'U)	37  F (R $\textcolor{blue}{U}'$R'$\textcolor{blue}{U}'$) (RUR'F')	38  (R U R'U) (R$\textcolor{blue}{U}'$R'$\textcolor{blue}{U}'$) (R'F R F')	$\textcolor{red}{39}$  (R U R' F' $\textcolor{blue}{U}'$ F) U (R U2 R')	40  (R' F)(R U R'$\textcolor{blue}{U}'$) F' (U R)
$\textcolor{red}{41}'$  (RUR'$\textcolor{orange}{U}$)	$\textcolor{red}{42}'$ 	43 	44 	45 	46 	$\textcolor{red}{47}$ 	48 	49 	$\textcolor{red}{50}$ 

$(R\textcolor{blue}{U}'\textcolor{blue}{U}'R')$ $F(RUR'\textcolor{blue}{U}')F'$	$(r'R\textcolor{blue}{U})$ $F(RUR'\textcolor{blue}{U}')F'$ $\textcolor{brown}{M}'$	$(\textcolor{blue}{B}'\textcolor{blue}{U}')$ $(R'URB)$	$f(RU$ $R'\textcolor{blue}{U}')f'$	$F(RUR'$ $\textcolor{blue}{U}')F'$	$(R'\textcolor{blue}{U}')$ $(R'FR\textcolor{brown}{F}')$ (UR)	$\textcolor{brown}{b}'(\textcolor{blue}{U}'R'\textcolor{blue}{U})$ R^2b	$F(RUR'$ $\textcolor{blue}{U}')^2F'$	$(R\textcolor{brown}{B}')(R^2$ $F)(R^2B)$ $(R^2\textcolor{brown}{F}'R)$	$(r'U)(r^2$ $\textcolor{blue}{U}'r'^2\textcolor{blue}{U}')$ (r^2Ur')
51  $f(RUR'$ $\textcolor{blue}{U}')^2f'$	52  $(R'\textcolor{blue}{U}'R'\textcolor{blue}{U}')$ $R'U)y'$ $(R'URB)$	53  $(r'U^2)$ $(RUR'\textcolor{blue}{U}')$ $(RUR'Ur)$	54  $(r\textcolor{blue}{U}'\textcolor{blue}{U}')$ $(R'\textcolor{blue}{U}'RU)$ $(R'\textcolor{blue}{U}'RU'r')$	55  $(r$ $\textcolor{blue}{U}'\textcolor{blue}{U}'R'\textcolor{blue}{U}')$ $(r'R^2UR$ $'\textcolor{blue}{U}')$ $(r\textcolor{blue}{U}'r')$	56  $r'\textcolor{blue}{U}'r$ $(\textcolor{blue}{U}'R'UR)^2$ $(r'Ur)$	57  $(RUR'\textcolor{blue}{U}')$ $\textcolor{brown}{M}'(UR\textcolor{blue}{U}'$ $r')$	OLL(Orie ntation of Last Layer)最 后一层翻 色		

棱换		01. $M^2 U M U^2 M' U M^2$ 02. $M^2 U' M U^2 M' U' M^2$ 03. $M^2 U M^2 U^2 M^2 U M^2$ 04. $M' U (M^2 U)^2 M' U^2 M^2 U'$
角换		05. $x' R^2 D^2 (R' U' R) D^2 (R' U R')$ 06. $x' (R U' R) D^2 (R' U R) D^2 R^2$ 07. $x' (R U' R' D) (R U R' D') (R U R' D) (R U' R' D')$
邻角 对棱 对角 邻棱		08. $(R U R' U') (R' F) (R^2 U' R' U') (R U R' F')$ 09. $(R' U' F') (R U R' U') (R' F) (R^2 U' R' U') (R U R' U R)$ 10. $(R' U R' d') (R' F' R^2 U') (R' U R' F R F)$ 11. $F (R U' R' U') (R U R' F') (R U R' U') (R' F R F')$
邻角 邻棱 换		12. $z (U' R D') (R^2 U R' U') (R^2 U) (D R')$ 13. $(R U R' F') (R U R' U') (R' F R^2 U' R' U')$ 14. $(R' U^2) (R U' U') (R' F R U R' U') (R' F' R^2 U')$ 15. $(R U' R' U') (R U R D) (R' U' R D') (R' U^2 R' U')$
三角 三棱 换		16. $(R^2 u' R U' R) (U R' u) (R^2 f R' f')$ 17. $(R U R') y' (R^2 u' R U') (R' U R' u R^2)$ 18. $(R^2 u) (R' U R' U') (R u') (R^2 F' U F)$ 19. $(R' d' F) (R^2 u) (R' U) (R U' R u' R^2)$
对角 对棱 换		20. $(R' U R U') (R' F' U') (F R U R' F) (R' F' R U' R)$ 21. $(R U R' U) (R U R' F') (R U R' U') (R' F) (R^2 U' R' U^2) (R U' R')$
说明	✧ 符号系统：RLUDBF, rludfb(转两层) 如 u 就是上两层顺时针转 90 度 $M=IL'$ $E=d' D$ $S=ff'$ ✧ 字母加 ' 表示逆时针 90 度转动, 字母加 2 表示顺时针 180 度转动, 字母加 '2 表示逆时针 180 度转动 ✧ 括号表示一组连贯手法和分组记忆, $(R' U R U')^2 = (R' U R U') (R' U R U')$。	

- ✧ OLL 黑块和小黑条表示黄色块，PLL 中的小蓝条表示特征/相同色块。
- ✧ x(整个魔方以 R 的方向转动)，y(整个魔方以 U 的方向转动)，z(整个魔方以 F 的方向转动)，
- ✧ 蓝色字体表示用左食指拨动；红色字体表示用右拇指拨动；橙色字体表示用无名食指拨动

-*F2l (First 2 Layers 前两层归位) 手法 Gan

1  $(R'U'R'U)y'(R'U^2R'U'R'U)(R'UR)$	2  $(UR'U'R'U')y'(R'UR)$	3  $(R'F'RU)(R'U'R'F)$	4  $(RUR'U')(RU2R'U')(RUR')$	5  $(RU'R'd)(R'U'R'U')(R'UR)$	6  $y'(R'U'R'U)(R'U'R)$	7  $(R'U'R'U)(R'U'R)$
8  $(R'U'R'U)(R'U'R'U'R'U)(R'UR)$	9  $(RU)F(RUR'U')F'R'$	10  $y'(R'U'R'U')(R'UR)$	11  $(RUR'U')(RUR')$	12  $(RUR'U')^2(RUR')$	13  $(R'U'R'U)y'(R'UR)$	14  $y'(R'U^2)(RUR'U'R)$
15  $y'U'(R'U^2)(R'U'R'UR)$	16  $y'(R'UR'U')U'(R'UR)$	17  $U^2y'(R'U')U'(RUR'U^2)$	18  $U(RUR'U')(RUR'U)(RUR')$	19  $(R'U'R'U^2)(RUR')$	20  $U(R'U')U'(R'UR'U'R')$	21  $(R'U')U'(R'UR'UR')$
22  $U'(R'U'R'U^2)(R'UR')$	23  $U'(RUR')y'(UR'UR)$	24  $y'U(R'UR'U')(R'UR)$	25  $y'(R'UR)$	26  $y'U(R'U'R'U)(R'UR)$	27  $y'(R'U')R^2U'R^2UR'$	28  $(U)(rU'r')l'$
29  $U'(R'U')U'(R'U^2)RUR'$	30  $U'(RUR'U')U'(R'U')U'R'$	31  $UR'UR'$	32  $U'(R'U')U'R'U'(RUR')$	33  $y'U(R'UR')d'(RUR')$	34  $y'U'(R'UR)$	35  $y'U(R'UR'U')U'(R'UR)$
36  $y'U(R'U^2R'U')U'(R'UR)$	37  $(R'UR'U^2)y'(R'UR)$	38  $(R'U^2)(R^2U)^2R$	39  $U'(RUR'U)(RUR')$	40  (RUR')	41  $U'(RU'R'U)(RUR')$	数字是红色表示与原来旧版公式是不同，黑色表示没变化。