



STRUCTURAL SCIENCE  
CRYSTAL ENGINEERING  
MATERIALS

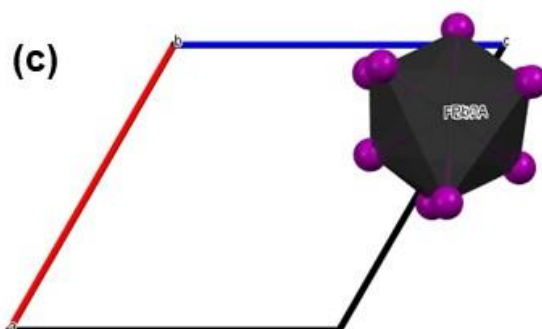
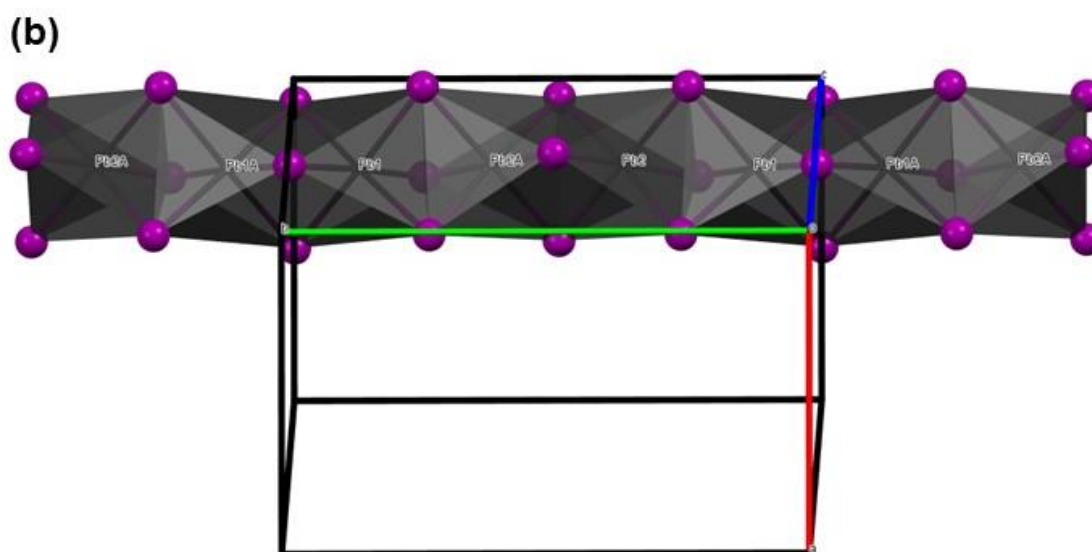
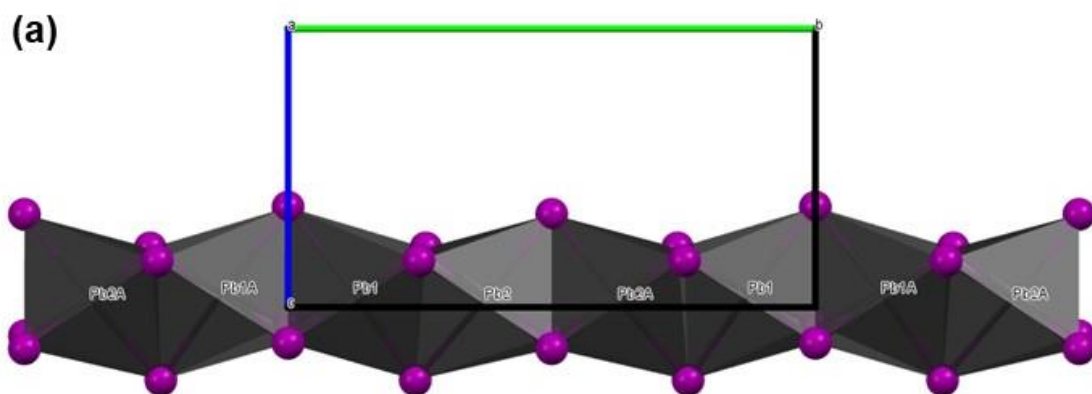
**Volume 77 (2021)**

**Supporting information for article:**

**The classification of 1D 'perovskites'**

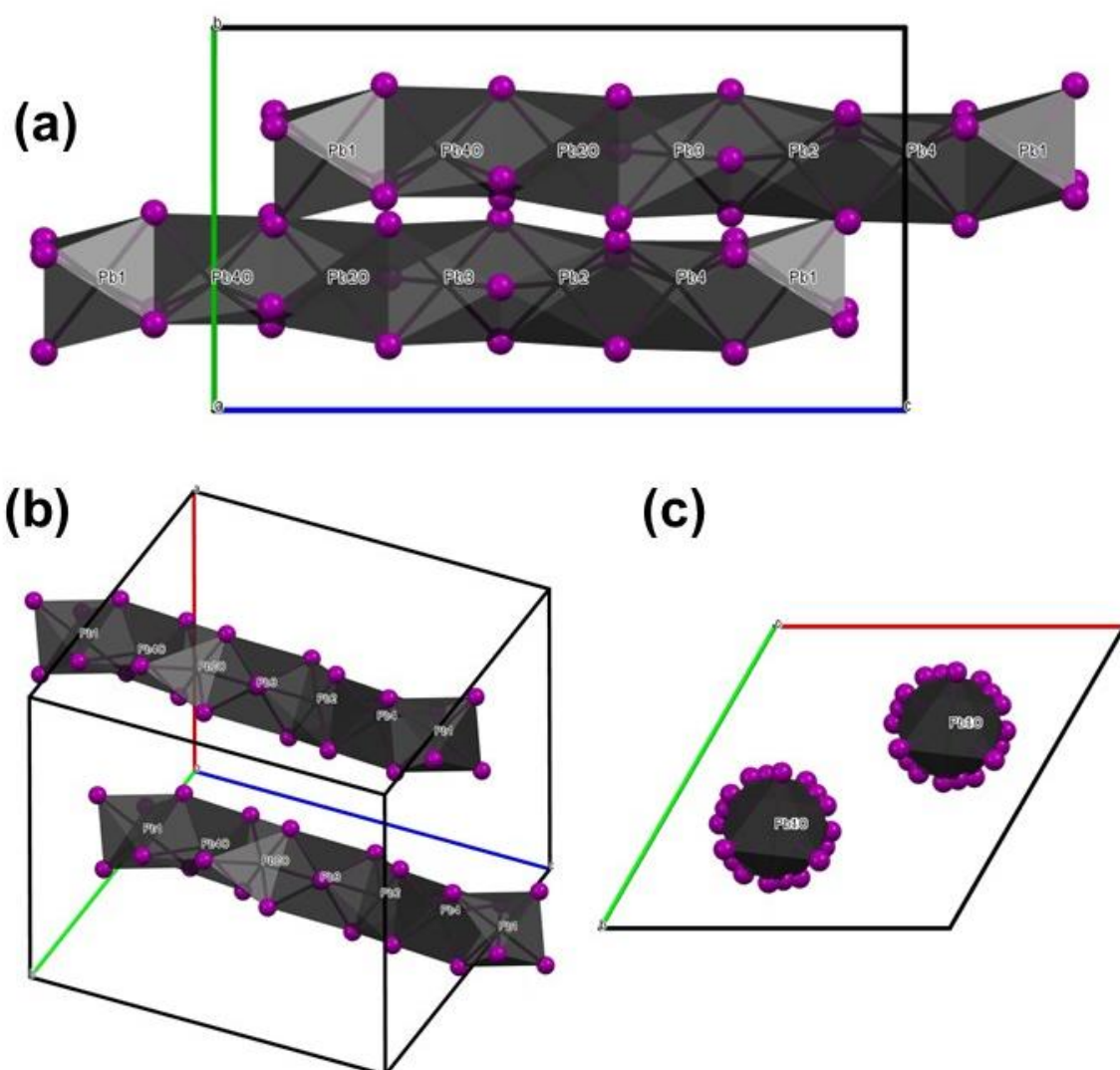
**Walter P.D. Wong, John V. Hanna and Andrew C. Grimsdale**

# 1-4FFFF reduced to 1-2FF (1-2 $F_{346}$ $F_{346}$ )



**Figure S1** The structure shown here has one octahedron per layer and the repeating unit has four layers, where the octahedra are connected through face sharing. This structure closely resembles 1-2F-F but differs due to the three inequivalent lead atoms. This structure can be simplified to 1-2FF when we idealize all the octahedra and simplify it to the smallest repeating unit. The structure illustrated here is taken from CSD- ASUFEB.

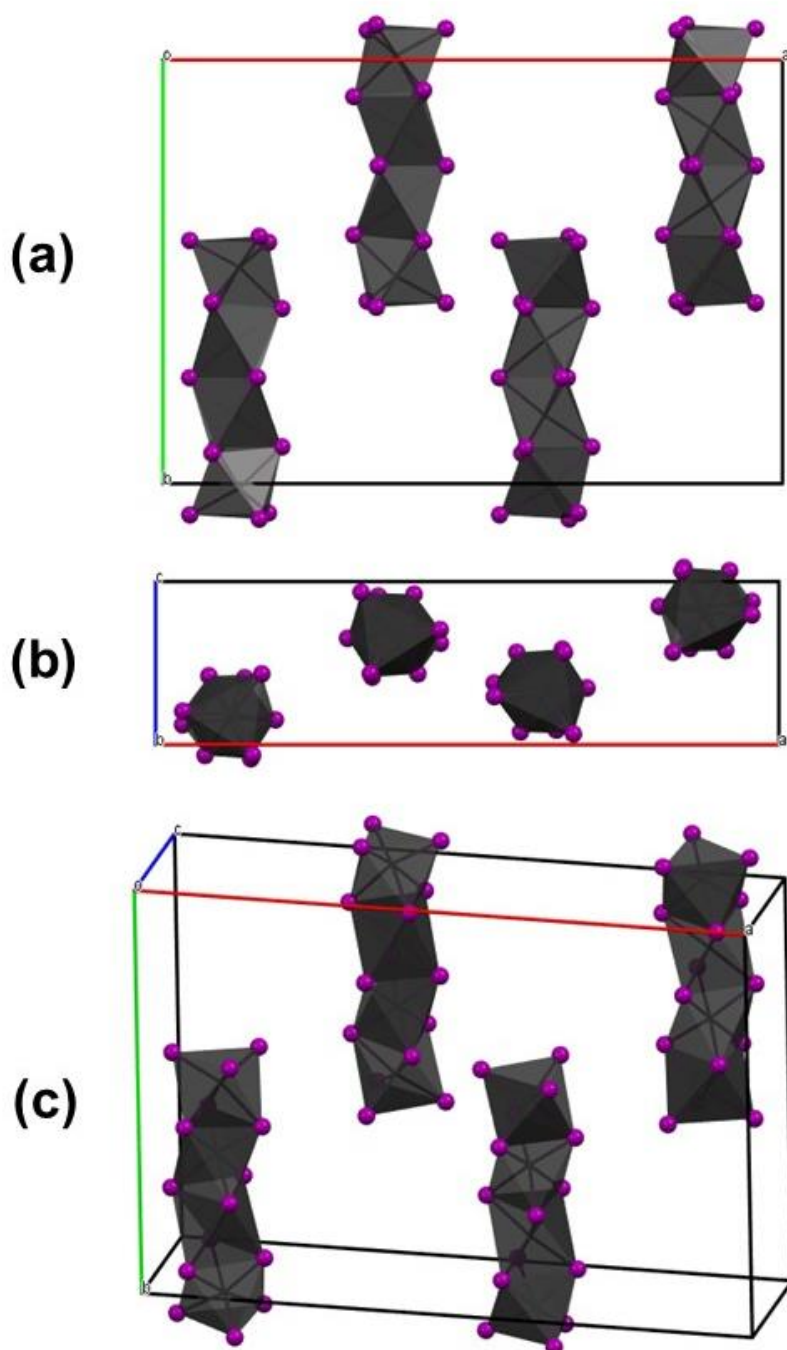
# 1-6FFFFF reduced to 1-2FF (1-2 $F_{346}$ $F_{346}$ )



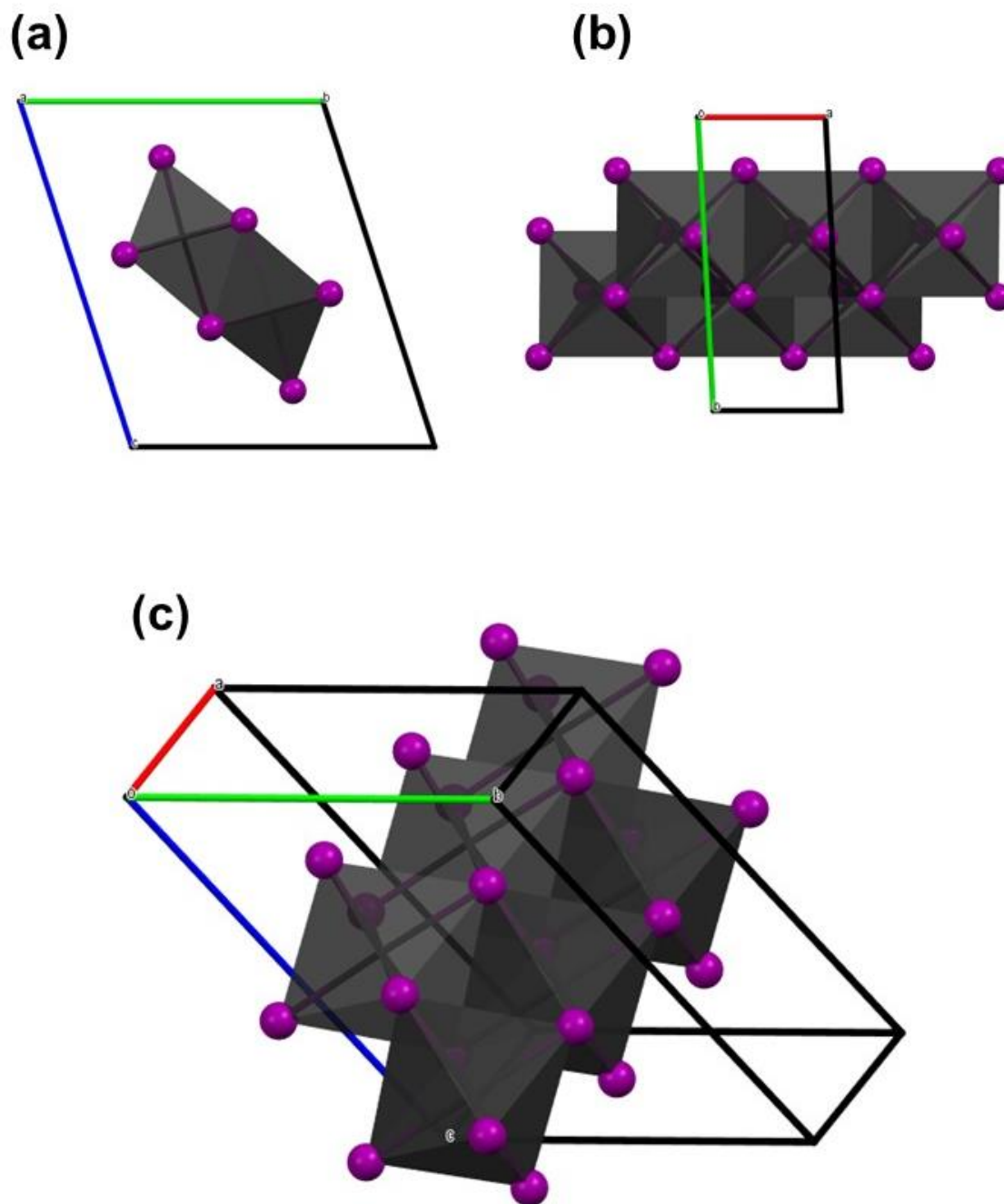
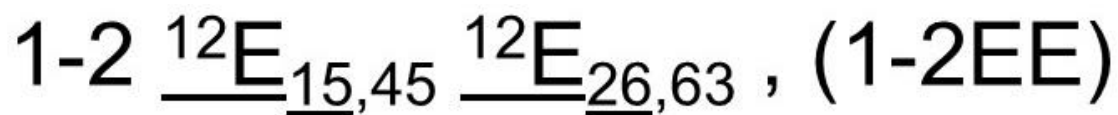
**Figure S2** The structure shown here has one octahedron per layer and the repeating unit has six layers in the unit cell, where the octahedra are all connected through face sharing. This structure can

then be simplified to 1-2FF when all the octahedra are idealized and simplified to the smallest repeating unit. The structure illustrated here is taken from CSD-XOWPIL.

# 1-4FFFX , (1-2 $F_{346}$ $F_{346}$ $F_{346}$ $F_X$ )

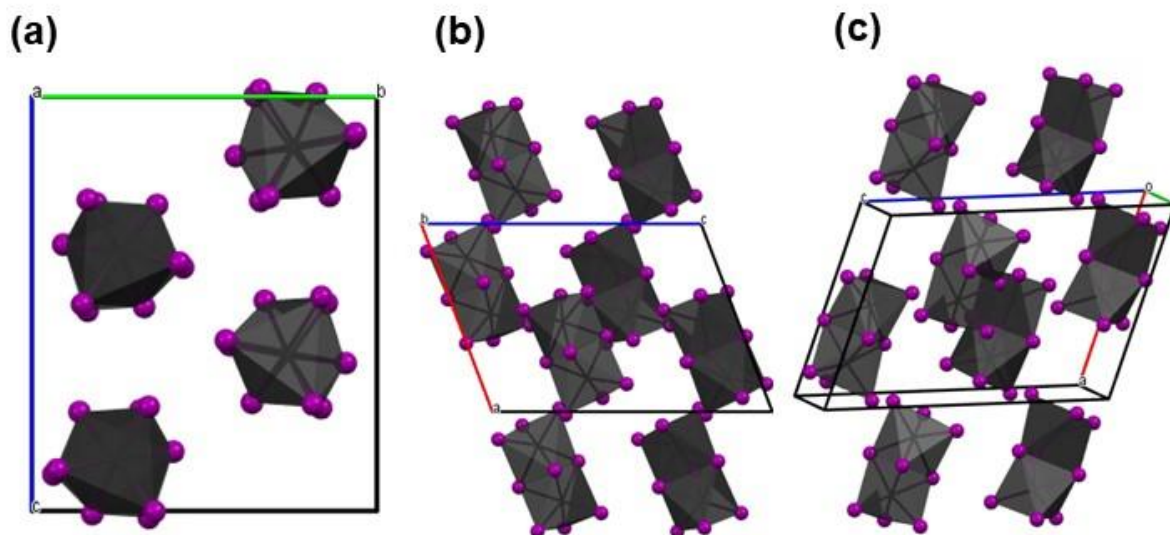


**Figure S3** The structure shown here has one octahedron per layer and the repeating unit has four layers, where the octahedra are all connected through face sharing. The repeating unit is not connected to the next unit. The structure illustrated here is taken from CSD-EKUQEH.

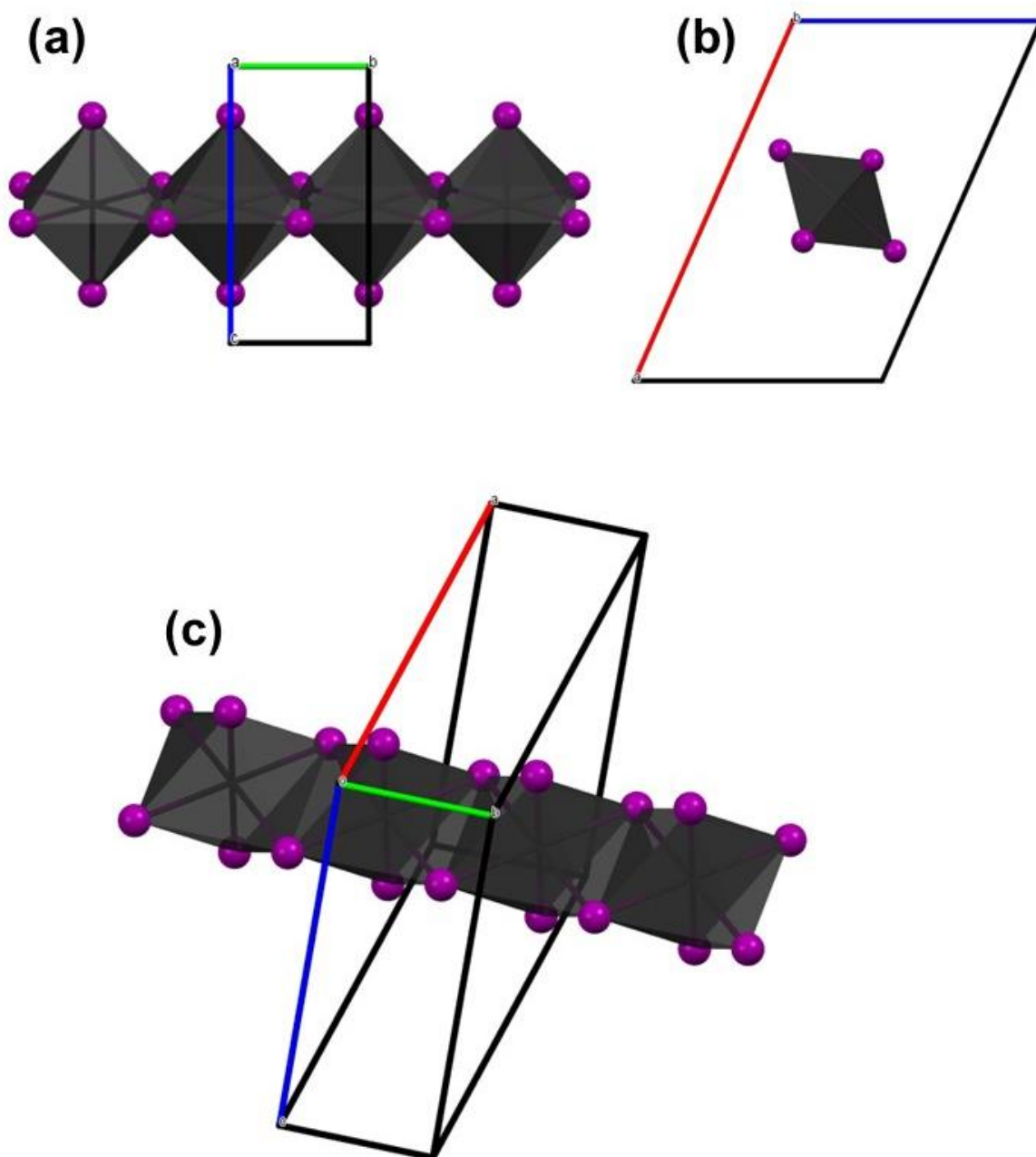


**Figure S4** The structure shown here has one octahedron per layer and the repeating unit has two layers, where the octahedra are connected through an edge sharing. The first layer's octahedron is connected not only to the second layer's octahedron on edge *15*, but is also to the third layer's octahedron on edge *45*. Hence, the full notation shows  ${}^{12}\text{E}_{15}$  in underline while *45* is not underlined. This is to specify that even though edge *45* is also participating in an edge sharing, only edge *15* is connected to the immediate next layer. The structure illustrated here is taken from CSD-HUTTEX.

# 1-2 $F_{346}$ $F_X$ , (1-2FX)

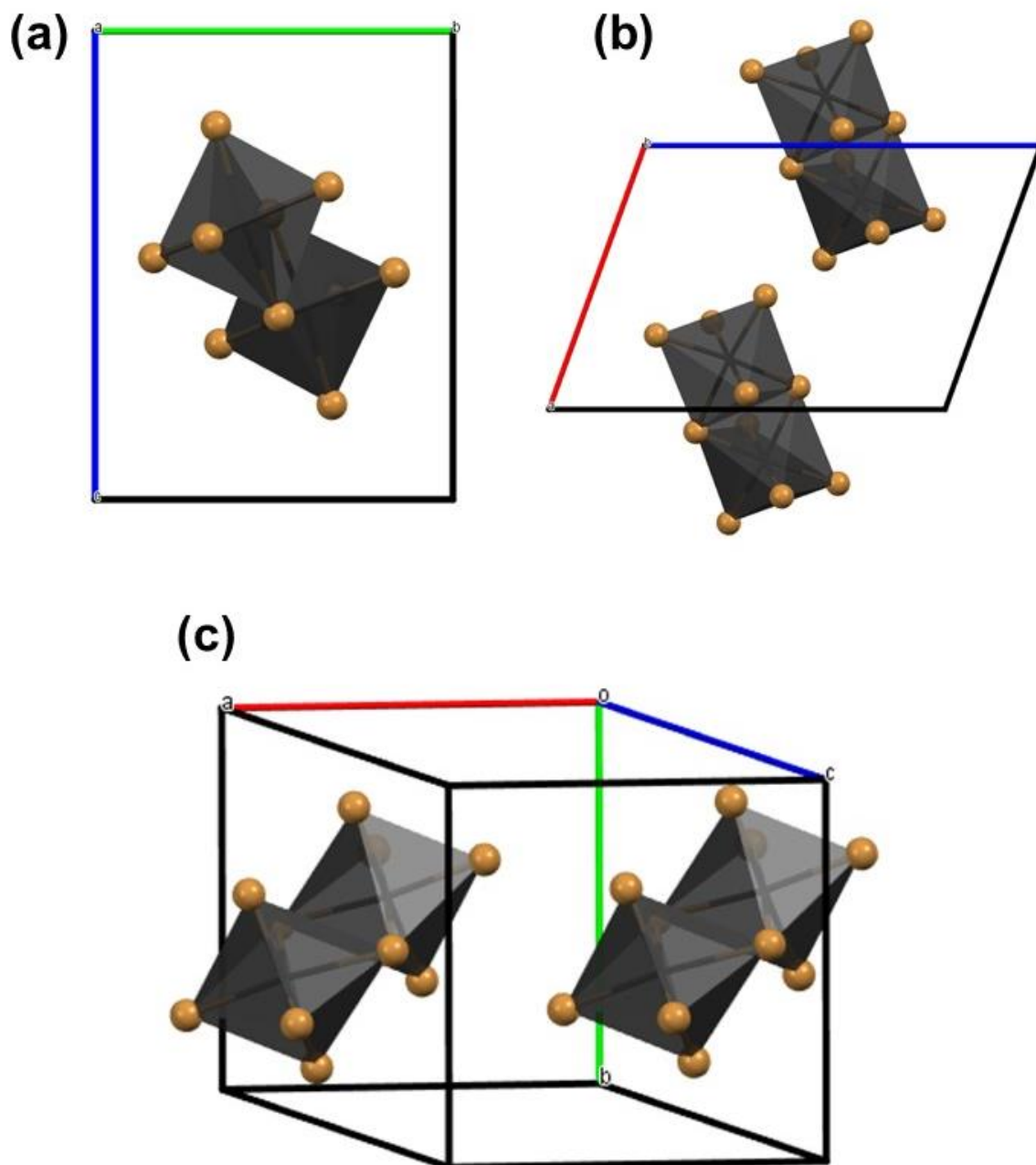


**Figure S5** The structure shown here has one octahedron per layer and the repeating unit has only two octahedra, which are connected through a face. The repeating units are not connected to the next unit through. It can also be proven that the extended notation is superfluous for this structure. The structure illustrated here is taken from CSD-WUKCAJ.

$1-1 E_{43}, (1-1E)$ 

**Figure S6** The structure shown here has one octahedron per layer, and the repeating unit has one layer. The repeating units are connected to the next unit by an edge sharing. The structure illustrated here is taken from CSD-MIFYIM.

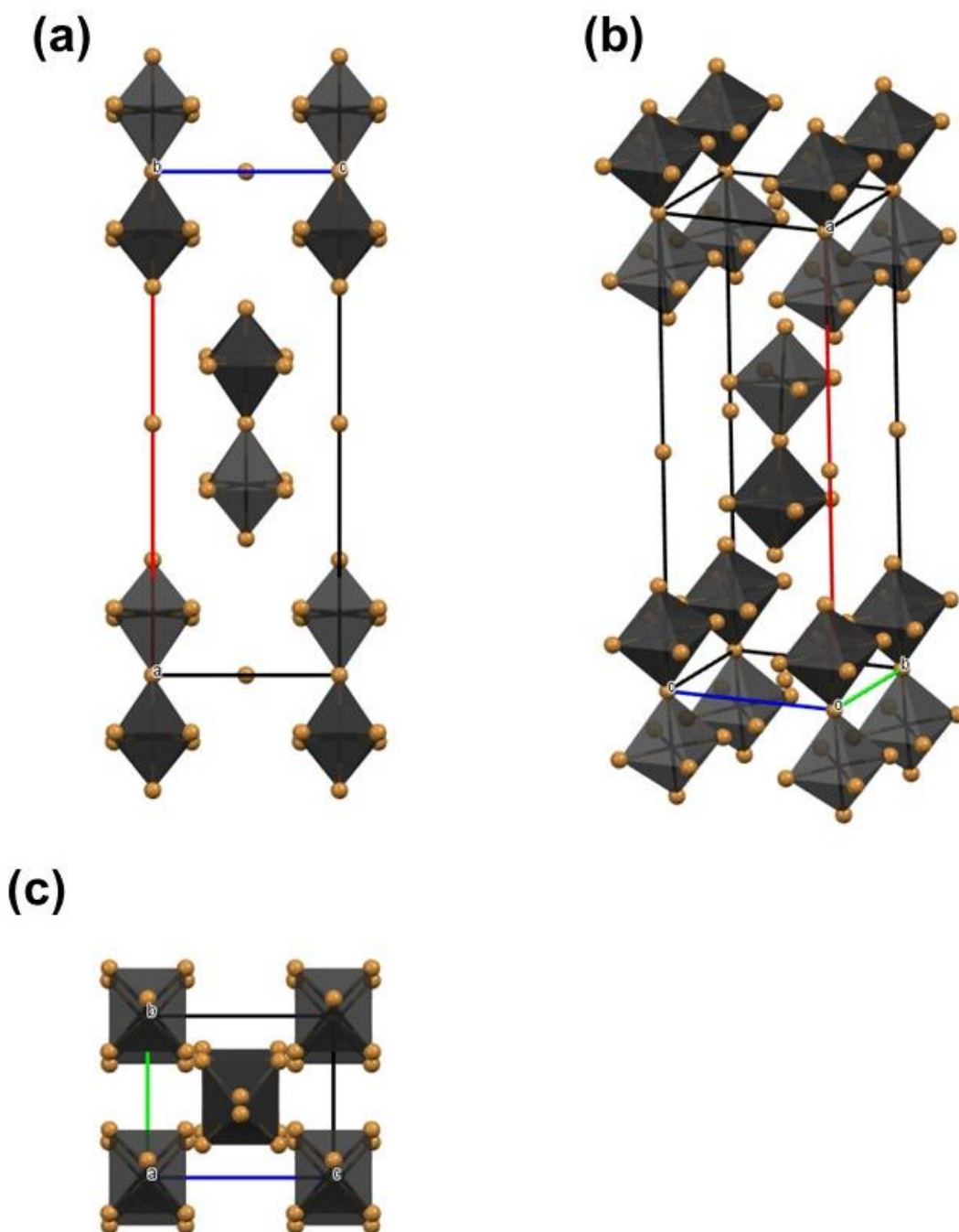
# 1-2 EX



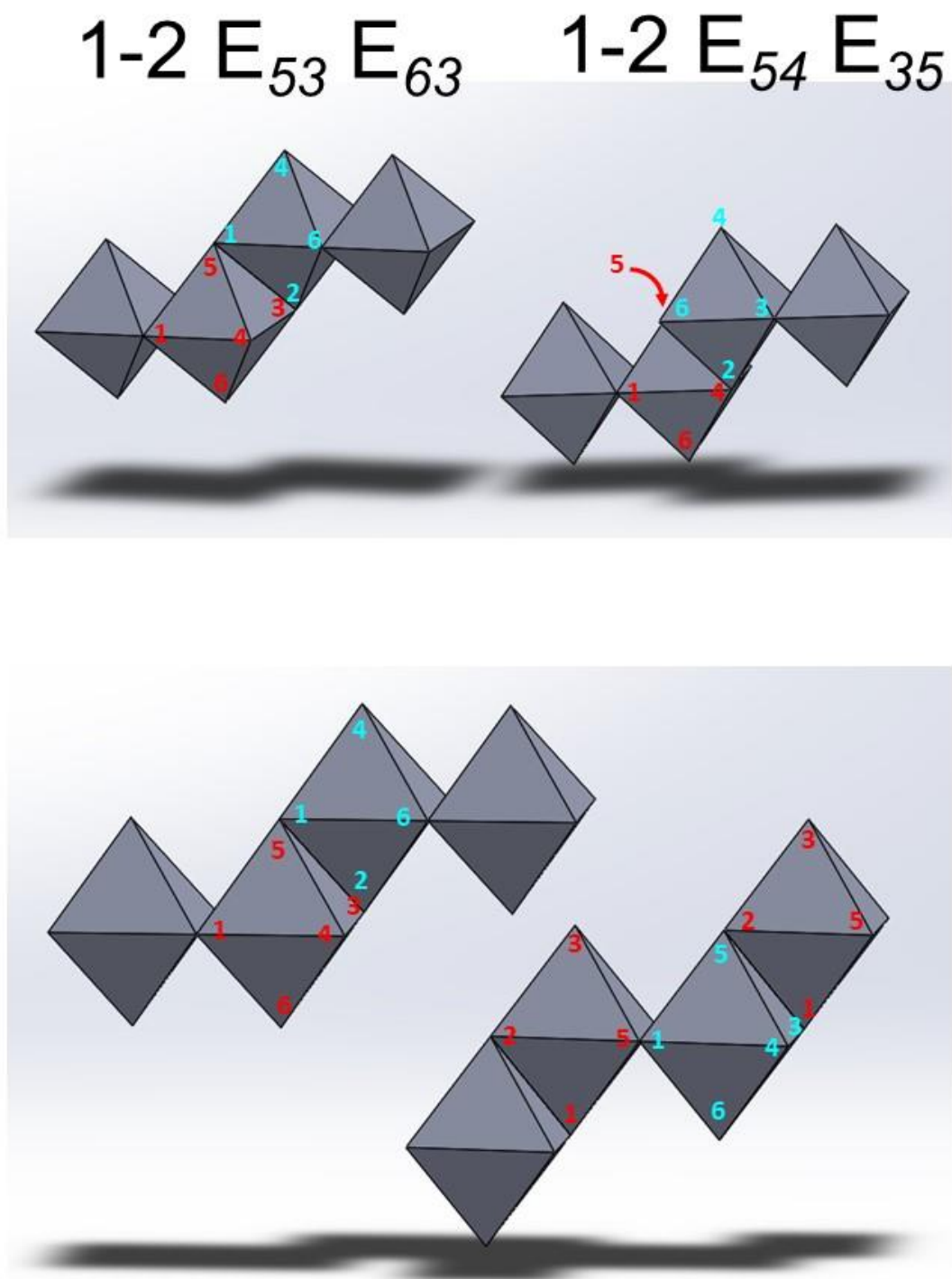
**Figure S7** The structure shown here has one octahedron per layer and the repeating unit has two layers where the octahedra are connected through an edge shared octahedron. The repeating units are not connected to the next unit. It can also be proven that the extended notation is superfluous for this structure. The structure illustrated structure is taken from CSD-FOYHIN.



## 1-2 CX



**Figure S8** The structure shown here has one octahedron per layer and the repeating unit has two layers where the octahedra are connected through a corner shared octahedron. The repeating units are not connected to the next unit. It can also be proven that the extended notation is superfluous for this structure. The structure illustrated here is taken from CSD-XOVZUG.



**Figure S9** Using an idealized octahedra, the two structures,  $1-2 E_{53} E_{63}$  and  $1-2 E_{54} E_{35}$ , initially appears to be different. However, it can be shown that the structures are the same by shifting the “origin” by one octahedron.  $1-2 E_{53} E_{63}$ , will therefore, be the more preferred notation because even though the sum of the numbers for both notations are the same, the smallest number 3 appears more frequently (i.e. two times, as compared to just one time).

**Table S1** CSD Refcode entries and the corresponding reduced and extended notation are shown in this is supplementary table

| Lead Chloride |                  |   | Lead Bromide |                         |   | Lead Iodide |                  |  |
|---------------|------------------|---|--------------|-------------------------|---|-------------|------------------|--|
| CSD Refcode   | Reduced Notation | Extended Notation   | CSD Refcode  | Reduced Notation        | Extended Notation   | CSD Refcode | Reduced Notation | Extended Notation  |
| KEZKUY        | 1-1C             | 1-1 C <sub>3</sub>  | WIMRAO       | 1-1-C and<br>2EE-1-(CC) | 1-1 C <sub>3</sub> and<br>2 <sup>X</sup> E <sub>52</sub> <sup>25</sup> E <sub>X</sub> -<br>1( <sup>1</sup> C <sub>3</sub> <sup>1</sup> C <sub>3</sub> ) | GURGIL03    | 1-2EE(E)         | 1-2 <sup>12</sup> E <sub>45,45</sub><br><sup>12</sup> E <sub>26,63</sub> |
| VUFDOS01      | 1-2CC            | 1-2 C <sub>2</sub> C <sub>4</sub>                                 | XOVZUG       | 1-2CX                   | 1-2 <sup>X</sup> C <sub>3</sub> <sup>1</sup> C <sub>X</sub>   | OWINEP      | 1-1C             | 1-1 C <sub>3</sub>   |
| NINJIG        | 1-2CX            | 1-2 C <sub>3</sub> C <sub>X</sub>                                 | BOLXOS       | 1-3EFF                  | 1-3 E <sub>435</sub> F <sub>346</sub> F <sub>34</sub>   | YITKOE      | 1-1C             | 1-1 C <sub>3</sub>   |
| IGAROA01      | 1-2EE            | 1-2 E <sub>32</sub> E <sub>14</sub>                               | FERGER       | 1-2EE                   | 1-2 E <sub>32</sub> E <sub>14</sub>   | YITKOE01    | 1-1C             | 1-1 C <sub>3</sub>   |
| MEYMIP        | 1-2EE            | 1-2 E <sub>32</sub> E <sub>14</sub>                               | JIQMUS       | 1-2EE                   | 1-2 E <sub>53</sub> E <sub>63</sub>   | YITKOE02    | 1-1C             | 1-1 C <sub>3</sub>   |
| RINROV        | 1-2FF            | 1-2 F <sub>346</sub> F <sub>346</sub>                             | MUWMIA02     | 1-2EE                   | 1-2 E <sub>53</sub> E <sub>63</sub>   | YITKOE03    | 1-1C             | 1-1 C <sub>3</sub>   |
| CUFMIC        | 1-2EE            | 1-2 E <sub>53</sub> E <sub>63</sub>                               | FOYHIN       | 1-2EX                   | 1-2 <sup>X</sup> F <sub>34</sub> F <sub>X</sub>   | YITKOE04    | 1-1C             | 1-1 C <sub>3</sub>   |
| JELQID        | 1-2EE            | 1-2 E <sub>53</sub> E <sub>63</sub>                               | GOXBON       | 1-2FF                   | 1-2 F <sub>346</sub> F <sub>346</sub>   | YUVFOK      | 1-1C             | 1-1 C <sub>3</sub>   |
| DENSEV        | 1-2FF            | 1-2 F <sub>346</sub> F <sub>346</sub>                             | GUDVIN       | 1-2FF                   | 1-2 F <sub>346</sub> F <sub>346</sub>   | MIFYIM      | 1-1E             | 1-1 E <sub>43</sub>  |
| BIGQUG        | 1-3EFF           | 1-3 E <sub>435</sub> F <sub>346</sub> F <sub>34</sub>             | RUPCUC02     | 1-2FF                   | 1-2 F <sub>346</sub> F <sub>346</sub>   | TOSSEC      | 1-2CC            | 1-2 C <sub>2</sub> C <sub>4</sub>  |
| BIGQUG01      | 1-3EFF           | 1-3 E <sub>435</sub> F <sub>346</sub> F <sub>34</sub>             | COHFAJ       | 1-2FF                   | 1-2 F <sub>346</sub> F <sub>346</sub>   | PAGDEJ      | 1-2CC            | 1-2 C <sub>2</sub> C <sub>4</sub>  |
| BIGQUG02      | 1-3EFF           | 1-3 E <sub>435</sub> F <sub>346</sub> F <sub>34</sub>             | COHFAJ01     | 1-2FF                   | 1-2 F <sub>346</sub> F <sub>346</sub>   | WUDWAV      | 1-2CC            | 1-2 C <sub>2</sub> C <sub>4</sub>  |
| BIGQUG03      | 1-3EFF           | 1-3 E <sub>435</sub> F <sub>346</sub> F <sub>34</sub>             | CUNCAR       | 1-2FF                   | 1-2 F <sub>346</sub> F <sub>346</sub>   | HOLJAW01    | 1-2EE            | 1-2 E <sub>53</sub> E <sub>63</sub>                                      |
| BIGQUG04      | 1-3EFF           | 1-3 E <sub>435</sub> F <sub>346</sub> F <sub>34</sub>             | CUNCAR01     | 1-2FF                   | 1-2 F <sub>346</sub> F <sub>346</sub>   | HUTTEX      | 1-2EE(E)         | 1-2 <sup>12</sup> E <sub>45,45</sub><br><sup>12</sup> E <sub>26,63</sub> |
| HAZKEB        | 1-3FFX           | 1-3 <sup>X</sup> F <sub>346</sub> F <sub>346</sub> F <sub>X</sub> | CUNCAR02     | 1-2FF                   | 1-2 F <sub>346</sub> F <sub>346</sub>   | EKUQAD      | 1-3EFF           | 1-3 E <sub>345</sub> F <sub>345</sub> F <sub>34</sub>                    |
| ZUVDIG        | 1-3FFX           | 1-3 <sup>X</sup> F <sub>346</sub> F <sub>346</sub> F <sub>X</sub> | DES FIR      | 1-2FF                   | 1-2 F <sub>346</sub> F <sub>346</sub>   | DADYIQ01    | 1-2FF            | 1-2 F <sub>346</sub> F <sub>346</sub>                                    |
| RESZEX        | 1-3(CC)FF        |   | EDAHIC       | 1-2FF                   | 1-2 F <sub>346</sub> F <sub>346</sub>   | DADYIQ02    | 1-2FF            | 1-2 F <sub>346</sub> F <sub>346</sub>                                    |
| RESZEX01      | 1-3(CC)FF        |   | FEBKIJ       | 1-2FF                   | 1-2 F <sub>346</sub> F <sub>346</sub>   | GIYRAH01    | 1-2FF            | 1-2 F <sub>346</sub> F <sub>346</sub>                                    |
|               |                  |   | GAZSIL       | 1-2FF                   | 1-2 F <sub>346</sub> F <sub>346</sub>   | GIYRAH02    | 1-2FF            | 1-2 F <sub>346</sub> F <sub>346</sub>                                    |
|               |                  |   | GEJHAH       | 1-2FF/1-3FFF            | 1-2 F <sub>346</sub> F <sub>346</sub>   | ARUWEP      | 1-2FF            | 1-2 F <sub>346</sub> F <sub>346</sub>                                    |
|               |                  |   | IGECEC       | 1-2FF                   | 1-2 F <sub>346</sub> F <sub>346</sub>   | BATBIJ      | 1-2FF            | 1-2 F <sub>346</sub> F <sub>346</sub>                                    |

|          |       |                                       |          |       |                                       |
|----------|-------|---------------------------------------|----------|-------|---------------------------------------|
| IHEHEJ   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> | BEWQOM   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| KECTIY   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> | BEWQOM01 | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| LEPBIU   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> | CERBUW   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| RINRUB   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> | CERBUW01 | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| RUPCUC   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> | CERBUW02 | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| RUPCUC01 | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> | CERBUW03 | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| SASGAX   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> | CIJXEB   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| SETZOJ   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> | DADYIQ   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| SETZOJ01 | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> | DENSIZ   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| SETZOJ02 | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> | DESFOX   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| TIJYUJ   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> | DIZTAK   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| TIJZAQ   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> | EJOREB   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| TOLNIU   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> | EJORIF   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| UXEPIY02 | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> | EJOROL   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| UXEPOE02 | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> | EJORUR   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| UXEROG02 | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> | ETOSUC   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| UXESAT02 | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> | FEYMAY   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| UXESIB02 | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> | FOQPEH   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| VINDOO   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> | GEHRAN   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| WADNEV   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> | GIYRAH   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| WIJSUG   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> | GOVFEE   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| WIMQOB   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> | HAXPOO   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| YEHREL   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> | HAXPUU   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| ZASLUA   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> | HOCZEH   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| LUHWAP   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> | HULLAD   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| DESFIRO1 | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> | HULMOS   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| WADNEV01 | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> | HUTTOH   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| ZUVFAA   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> | HUTTUN   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| ZUVFOO   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> | HUTVAV   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |

|          |                     |  |          |       |                         |
|----------|---------------------|--|----------|-------|-------------------------|
| YEHQUA   | 1-3(CC)FF           | $1-6 \left( \begin{smallmatrix} {}^{1+}C_{435} & 1^- \\ C_{325} & {}^{125}F_{346} \end{smallmatrix} \right)$   | HUTVAV01 | 1-2FF | 1-2 $F_{346}$ $F_{346}$ |
| CAQVIZ   | 1-3(CC)FF           | $1-6 \left( \begin{smallmatrix} {}^{1+}C_{435} & 1^- \\ C_{325} & {}^{125}F_{346} \end{smallmatrix} \right)$   | HUTVAV02 | 1-2FF | 1-2 $F_{346}$ $F_{346}$ |
| NEZBOM   | 1-3(CC)FF           | $1-6 \left( \begin{smallmatrix} {}^{1+}C_{435} & 1^- \\ C_{325} & {}^{125}F_{346} \end{smallmatrix} \right)$   | HUTVAV03 | 1-2FF | 1-2 $F_{346}$ $F_{346}$ |
| CEHDEB   | 1-3EFF              | 1-3 $E_{435}$ $F_{346}$ $F_{34}$   | HUTVAV04 | 1-2FF | 1-2 $F_{346}$ $F_{346}$ |
| HARCOV   | 1-3EFF              | 1-3 $E_{435}$ $F_{346}$ $F_{34}$   | HUTVEZ   | 1-2FF | 1-2 $F_{346}$ $F_{346}$ |
| IWICIC02 | 1-3EFF              | 1-3 $E_{435}$ $F_{346}$ $F_{34}$   | ITOCB    | 1-2FF | 1-2 $F_{346}$ $F_{346}$ |
| HAZKAX   | 1-3FFX              | 1-3 $F_{346}$ $F_{346}$ $F_X$  | ITOCIF   | 1-2FF | 1-2 $F_{346}$ $F_{346}$ |
| PINMOR   | 1-3FFX              | 1-3 $F_{346}$ $F_{346}$ $F_X$  | ITOCOL   | 1-2FF | 1-2 $F_{346}$ $F_{346}$ |
| SOCZEQ   | 1-3FFX              | 1-3 $F_{346}$ $F_{346}$ $F_X$  | IYABEP   | 1-2FF | 1-2 $F_{346}$ $F_{346}$ |
| ZUVDEC   | 1-3FFX              | 1-3 $F_{346}$ $F_{346}$ $F_X$  | JAKGIO   | 1-2FF | 1-2 $F_{346}$ $F_{346}$ |
| ZUVFEE   | 1-3FFX              | 1-3 $F_{346}$ $F_{346}$ $F_X$  | JAKGIO01 | 1-2FF | 1-2 $F_{346}$ $F_{346}$ |
| FOZVUO   | 1-3FFX              | 1-3 $F_{346}$ $F_{346}$ $F_X$  | JAKGIO02 | 1-2FF | 1-2 $F_{346}$ $F_{346}$ |
| YORDOB   | 1-<br>6(CC)FF(CC)FF | $1-6 \left( \begin{smallmatrix} {}^{1+}C_{435} & 1^- \\ C_{325} & {}^{125}F_{346} \end{smallmatrix} \right)$<br>${}^{125}F_{3-,4+} \left( \begin{smallmatrix} {}^{1+}C_{346}, \\ {}^{1-}C_{236} \end{smallmatrix} \right) {}^{125}F_{346}$ | JAKGIO03 | 1-2FF | 1-2 $F_{346}$ $F_{346}$ |
| YIDKIG   | 2EE-1-(CC)          | $2 \ ^XE_{52} \ ^{25}E_X -$<br>$1({}^1C_3 \ ^1C_3)$  | JAKHAH   | 1-2FF | 1-2 $F_{346}$ $F_{346}$ |
|          |                     |  | JAWWEJ   | 1-2FF | 1-2 $F_{346}$ $F_{346}$ |
|          |                     |  | KOFZEN   | 1-2FF | 1-2 $F_{346}$ $F_{346}$ |
|          |                     |  | LARQUT   | 1-2FF | 1-2 $F_{346}$ $F_{346}$ |
|          |                     |  | LAWZAN   | 1-2FF | 1-2 $F_{346}$ $F_{346}$ |
|          |                     |  | LUBMUS   | 1-2FF | 1-2 $F_{346}$ $F_{346}$ |
|          |                     |  | MAHJEL   | 1-2FF | 1-2 $F_{346}$ $F_{346}$ |
|          |                     |  | MEGRAS   | 1-2FF | 1-2 $F_{346}$ $F_{346}$ |

|        |       |                                       |
|--------|-------|---------------------------------------|
| MIPYER | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| MIXQUI | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| MUDLUU | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| NASCOB | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| NASCUH | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| NECSIA | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| NEFTAT | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| NEPROQ | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| NIHLIC | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| NIHLOI | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| NIHLUO | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| NUGLOR | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| OMOJAC | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| OMOJEG | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| OMOJIK | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| OMOJOQ | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| OMOJUW | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| OMOKAD | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| OMOKEH | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| OMOKIL | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| PIXBOO | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| QEXSIW | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| QOYVUX | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| RAPNIG | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| RASNEH | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| RENBEU | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| ROKBAU | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| RUZREL | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| SADYIH | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| SICHIY | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |

|          |       |                                       |
|----------|-------|---------------------------------------|
| SORZUX   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| TELLII   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| TELZIW   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| TEMFAV   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| TILNUY   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| TIZHIV   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| TOHKIM   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| TOPZIH   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| UPELUY   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| UXENUI02 | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| UXEPAQ02 | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| UXEPEU02 | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| UXERIA02 | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| VEZPEW   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| VOSFAN   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| WECTUW   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| WIHSIS   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| WOJLEP   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| WUDWOJ   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| XAKMON   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| XAXJEN   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| XIFLAC   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| XIFLEG   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| YEYXEI   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| YUVTIT   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| YUVTOZ   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| YUVTUF   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| YUVVAN   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| ZAGPAY   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |
| ZIFRUE   | 1-2FF | 1-2 F <sub>346</sub> F <sub>346</sub> |

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|----------|--------|---|
| ZIFSEP   | 1-2FF  | 1-2 F <sub>346</sub> F <sub>346</sub>                 |
| ZIFSUF   | 1-2FF  | 1-2 F <sub>346</sub> F <sub>346</sub>                 |
| DADYIQ02 | 1-2FF  | 1-2 F <sub>346</sub> F <sub>346</sub>                 |
| IGELEO   | 1-2FF  | 1-2 F <sub>346</sub> F <sub>346</sub>                 |
| IGEWZ    | 1-2FF  | 1-2 F <sub>346</sub> F <sub>346</sub>                 |
| WUKBUC   | 1-2FF  | 1-2 F <sub>346</sub> F <sub>346</sub>                 |
| BUTJUY   | 1-2FF  | 1-2 F <sub>346</sub> F <sub>346</sub>                 |
| BUTKAF   | 1-2FF  | 1-2 F <sub>346</sub> F <sub>346</sub>                 |
| DENSIZ01 | 1-2FF  | 1-2 F <sub>346</sub> F <sub>346</sub>                 |
| IGELEO01 | 1-2FF  | 1-2 F <sub>346</sub> F <sub>346</sub>                 |
| OHOCEW   | 1-2FF  | 1-2 F <sub>346</sub> F <sub>346</sub>                 |
| OHOCUM   | 1-2FF  | 1-2 F <sub>346</sub> F <sub>346</sub>                 |
| OHODAT   | 1-2FF  | 1-2 F <sub>346</sub> F <sub>346</sub>                 |
| OHODOH   | 1-2FF  | 1-2 F <sub>346</sub> F <sub>346</sub>                 |
| RUJBUW   | 1-2FF  | 1-2 F <sub>346</sub> F <sub>346</sub>                 |
| RUJCAD   | 1-2FF  | 1-2 F <sub>346</sub> F <sub>346</sub>                 |
| TELLII01 | 1-2FF  | 1-2 F <sub>346</sub> F <sub>346</sub>                 |
| ZUVDUS   | 1-2FF  | 1-2 F <sub>346</sub> F <sub>346</sub>                 |
| UPELOS   | 1-2FF  | 1-2 F <sub>346</sub> F <sub>346</sub>                 |
| RUZQIO   | 1-2EE  | 1-2 E <sub>53</sub> E <sub>63</sub>                   |
| SOTYIM   | 1-2EE  | 1-2 E <sub>53</sub> E <sub>63</sub>                   |
| WUKCAJ   | 1-2FX  | 1-2 <sup>X</sup> F <sub>346</sub> F <sub>X</sub>      |
| CUMVEO   | 1-2FX  | 1-2 <sup>X</sup> F <sub>346</sub> F <sub>X</sub>      |
| EKUQAD   | 1-3EFF | 1-3 E <sub>435</sub> F <sub>346</sub> F <sub>34</sub> |
| NOSLUF   | 1-3EFF | 1-3 E <sub>435</sub> F <sub>346</sub> F <sub>34</sub> |
| BUQSIR   | 1-3EFF | 1-3 E <sub>435</sub> F <sub>346</sub> F <sub>34</sub> |
| BUQSIR01 | 1-3EFF | 1-3 E <sub>435</sub> F <sub>346</sub> F <sub>34</sub> |
| CAJZIW   | 1-3EFF | 1-3 E <sub>435</sub> F <sub>346</sub> F <sub>34</sub> |
| MOBRIH   | 1-3EFF | 1-3 E <sub>435</sub> F <sub>346</sub> F <sub>34</sub> |
| TIDVUX   | 1-3EFF | 1-3 E <sub>435</sub> F <sub>346</sub> F <sub>34</sub> |



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| UNOSEW | 1-3EFF                | 1-3 E <sub>435</sub> F <sub>346</sub> F <sub>34</sub>   |
| WADMAQ | 1-3EFF                | 1-3 E <sub>435</sub> F <sub>346</sub> F <sub>34</sub>   |
| NIWDON | 1-3EFF                | 1-3 E <sub>435</sub> F <sub>346</sub> F <sub>34</sub>   |
| HOYRUL | 1-3FFX                | 1-3 <sup>X</sup> F <sub>346</sub> F <sub>346</sub> F <sub>X</sub>   |
| BOLXEI | 1-3FFX and<br>1-3FFX  | 1-3 <sup>X</sup> F <sub>346</sub> F <sub>346</sub> F <sub>X</sub>   |
| LASFES | 1-3FFX                | 1-3 <sup>X</sup> F <sub>346</sub> F <sub>346</sub> F <sub>X</sub>   |
| XIHZAS | 1-3FFX                | 1-3 <sup>X</sup> F <sub>346</sub> F <sub>346</sub> F <sub>X</sub>   |
| EKUQEH | 1-4FFFX               | 1-4 <sup>X</sup> F <sub>346</sub> F <sub>346</sub><br>F <sub>346</sub> F <sub>X</sub>   |
| WUDWID | 1-2FF (1-<br>4FFFF)   | 1-2 F <sub>346</sub> F <sub>346</sub>   |
| COVYUJ | 1-2FF (1-<br>4FFFF)   | 1-2 F <sub>346</sub> F <sub>346</sub>   |
| EJORAX | 1-2FF (1-<br>6FFFFFF) | 1-2 F <sub>346</sub> F <sub>346</sub>   |
| BAYHEP | 1-<br>6(CC)FF(CC)FF   | 1-6 ( <sup>1+</sup> C <sub>435</sub> <sup>1-</sup><br>C <sub>325</sub> ) <sup>125</sup> F <sub>346</sub><br><sup>125</sup> F <sub>3-,4+</sub> ( <sup>1+</sup> C <sub>346</sub> ,<br><sup>1-</sup> C <sub>236</sub> ) <sup>125</sup> F <sub>346</sub><br><sup>125</sup> F <sub>3-,4+</sub> |
| WEHSAE | 1-<br>6(CC)FF(CC)FF   | 1-6 ( <sup>1+</sup> C <sub>435</sub> <sup>1-</sup><br>C <sub>325</sub> ) <sup>125</sup> F <sub>346</sub><br><sup>125</sup> F <sub>3-,4+</sub> ( <sup>1+</sup> C <sub>346</sub> ,<br><sup>1-</sup> C <sub>236</sub> ) <sup>125</sup> F <sub>346</sub><br><sup>125</sup> F <sub>3-,4+</sub> |
| XOWPIL | 1-2FF (1-<br>6FFFFFF) | 1-2 F <sub>346</sub> F <sub>346</sub>   |
| NIHLAU | 1-2FF (1-<br>6FFFFFF) | 1-2 F <sub>346</sub> F <sub>346</sub>   |
| SULJAL | 1-2FF (1-<br>6FFFFFF) | 1-2 F <sub>346</sub> F <sub>346</sub>   |

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|--------|--------------------|---------------------------------------|
| TEMDUN | 1-2FF (1-6FFFFFFF) | 1-2 F <sub>346</sub> F <sub>346</sub> |
| HINYUY | 1-2FF (1-6FFFFFFF) | 1-2 F <sub>346</sub> F <sub>346</sub> |
| HUTTIB | 1-2FF (1-6FFFFFFF) | 1-2 F <sub>346</sub> F <sub>346</sub> |