

$ON \pmod{31}$

| | blocks | defect | matrix |
|-----------------|---------------|--------------------------------------|--------------------------------------|
| $G :$ | 1 | 1 | 17×15 |
| | 2 | 0 | $25916_1 = \chi_5, \varphi_7$ |
| | $3 = \bar{2}$ | 0 | $25916_2 = \chi_6, \varphi_8$ |
| | 4 | 0 | $32395_1 = \chi_8, \varphi_9$ |
| | 5 | 0 | $32395_2 = \chi_9, \varphi_{10}$ |
| | 6 | 0 | $37696_1 = \chi_{10}, \varphi_{11}$ |
| | 7 | 0 | $58311_1 = \chi_{12}, \varphi_{14}$ |
| | 8 | 0 | $58311_2 = \chi_{13}, \varphi_{15}$ |
| | 9 | 0 | $58311_3 = \chi_{14}, \varphi_{16}$ |
| | 10 | 0 | $64790_1 = \chi_{16}, \varphi_{17}$ |
| | 11 | 0 | $64790_2 = \chi_{17}, \varphi_{18}$ |
| | 12 | 0 | $85064_1 = \chi_{18}, \varphi_{20}$ |
| | 13 | 0 | $116963_1 = \chi_{19}, \varphi_{23}$ |
| | 14 | 0 | $175770_1 = \chi_{25}, \varphi_{27}$ |
| $3.G :$ | 15 | 1 | 17×15 |
| | $16 = 15^*$ | | |
| | 17 | 0 | $58311_4 = \chi_{40}, \varphi_{40}$ |
| | $18 = 17^*$ | | |
| | 19 | 0 | $63612_1 = \chi_{42}, \varphi_{41}$ |
| | $20 = 19^*$ | | |
| | 21 | 0 | $111321_1 = \chi_{43}, \varphi_{43}$ |
| | $22 = 21^*$ | | |
| | 23 | 0 | $116622_1 = \chi_{44}, \varphi_{45}$ |
| | $24 = 23^*$ | | |
| | 25 | 0 | $122760_1 = \chi_{45}, \varphi_{46}$ |
| | $26 = 25^*$ | | |
| | 27 | 0 | $169632_1 = \chi_{48}, \varphi_{49}$ |
| | $28 = 27^*$ | | |
| $29 = \bar{28}$ | 0 | $169632_3 = \chi_{49}, \varphi_{50}$ | |
| $30 = 29^*$ | | | |
| 31 | 0 | $175770_2 = \chi_{50}, \varphi_{51}$ | |
| $32 = 31^*$ | | | |

| Block 1: | φ_1 | φ_2 | φ_3 | φ_4 | φ_5 | φ_6 | φ_{12} | φ_{13} | φ_{19} | φ_{21} | φ_{22} | φ_{24} | φ_{25} | φ_{26} | φ_{28} |
|------------------------|-------------|-------------|-------------|-------------|-------------|-------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| $1_1 = \chi_1$ | 1 | . | . | . | . | . | . | . | . | . | . | . | . | . | . |
| $10944_1 = \chi_2$ | . | 1 | . | 1 | . | . | . | . | . | . | . | . | . | . | . |
| $13376_1 = \chi_3$ | . | . | . | . | 1 | . | . | . | . | . | . | . | . | . | . |
| $13376_2 = \chi_4$ | . | . | . | . | 1 | . | . | . | . | . | . | . | . | . | . |
| $26752_1 = \chi_7$ | . | 1 | . | . | . | 1 | . | . | . | . | . | . | . | . | . |
| $52668_1 = \chi_{11}$ | 1 | . | . | . | . | . | . | 1 | . | . | . | . | . | . | . |
| $58653_1 = \chi_{15}$ | . | . | 1 | . | . | . | 1 | . | . | . | . | . | . | . | . |
| $143374_1 = \chi_{20}$ | . | . | . | 1 | . | . | . | . | . | . | . | . | 1 | . | . |
| $169290_1 = \chi_{21}$ | . | . | 1 | . | . | . | . | . | . | . | . | . | . | 1 | . |
| $169290_2 = \chi_{22}$ | . | . | . | . | . | . | . | . | 1 | 1 | . | . | . | . | . |
| $175616_1 = \chi_{23}$ | . | . | . | . | 1 | . | . | . | . | . | . | . | . | 1 | . |
| $175616_2 = \chi_{24}$ | . | . | . | . | . | . | . | 1 | . | . | . | 1 | . | . | . |
| $207360_1 = \chi_{26}$ | . | . | . | . | . | . | . | . | . | 1 | 1 | . | . | . | . |
| $207360_2 = \chi_{27}$ | . | . | . | . | . | 1 | . | . | . | . | . | . | . | . | 1 |
| $207360_3 = \chi_{28}$ | . | . | . | . | . | . | . | . | 1 | . | . | . | 1 | . | . |
| $234080_1 = \chi_{29}$ | . | . | . | . | . | . | . | . | . | . | 1 | 1 | . | . | . |
| $234080_2 = \chi_{30}$ | . | . | . | . | . | . | 1 | . | . | . | . | . | . | . | 1 |

$$\begin{array}{ll}
\varphi_1 = 1_1 & \varphi_{19} = 73061_1 \\
\varphi_2 = 1869_1 & \varphi_{21} = 96229_1 \\
\varphi_3 = 7050_1 & \varphi_{22} = 111131_1 \\
\varphi_4 = 9075_1 & \varphi_{24} = 122949_1 \\
\varphi_5 = 13376_1 & \varphi_{25} = 134299_1 \\
\varphi_6 = 24883_1 & \varphi_{26} = 162240_1 \\
\varphi_{12} = 51603_1 & \varphi_{28} = 182477_1 \\
\varphi_{13} = 52667_1 &
\end{array}$$

| Blocks 15, 16: | φ_{29} | φ_{30} | φ_{31} | φ_{32} | φ_{33} | φ_{34} | φ_{35} | φ_{36} | φ_{37} | φ_{38} | φ_{39} | φ_{42} | φ_{44} | φ_{47} |
|------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| $342_1 = \chi_{31}$ | 1 | . | . | . | . | . | . | . | . | . | . | . | . | . |
| $342_3 = \chi_{32}$ | . | 1 | . | . | . | . | . | . | . | . | . | . | . | . |
| $495_1 = \chi_{33}$ | . | . | 1 | . | . | . | . | . | . | . | . | . | . | . |
| $495_3 = \chi_{34}$ | . | . | . | 1 | . | . | . | . | . | . | . | . | . | . |
| $5643_1 = \chi_{35}$ | . | . | . | . | 1 | . | . | . | . | . | . | . | . | . |
| $5643_3 = \chi_{36}$ | . | . | . | . | . | 1 | . | . | . | . | . | . | . | . |
| $5643_5 = \chi_{37}$ | . | . | . | . | . | . | 1 | . | . | . | . | . | . | . |
| $52668_2 = \chi_{38}$ | . | . | . | . | 1 | . | . | . | . | 1 | . | . | . | . |
| $52668_4 = \chi_{39}$ | . | . | . | . | . | . | . | . | . | . | 1 | . | . | . |
| $58653_2 = \chi_{41}$ | . | . | 1 | 1 | . | . | . | 1 | 1 | . | . | . | . | . |
| $169290_3 = \chi_{46}$ | 1 | 1 | . | . | . | 1 | 1 | . | 1 | . | . | . | 1 | . |
| $169290_5 = \chi_{47}$ | . | . | . | . | . | . | . | 1 | . | . | . | . | . | 1 |
| $207360_4 = \chi_{51}$ | . | . | . | . | . | . | . | . | . | 1 | . | . | . | . |
| $207360_6 = \chi_{52}$ | . | . | . | . | . | . | . | . | . | . | 1 | . | . | 1 |
| $207360_8 = \chi_{53}$ | . | . | . | . | . | . | . | . | . | . | . | 1 | 1 | . |
| $253440_1 = \chi_{54}$ | . | . | . | . | . | . | . | . | . | . | . | 1 | . | . |
| $253440_3 = \chi_{55}$ | . | . | . | . | . | . | . | . | . | . | . | 1 | . | . |

| (Blocks 15, 16:) | φ_{48} | |
|-------------------------|----------------|---------------------------|
| $342_1 = \chi_{31}$ | . | $\varphi_{29} = 342_1$ |
| $342_3 = \chi_{32}$ | . | $\varphi_{30} = 342_3$ |
| $495_1 = \chi_{33}$ | . | $\varphi_{31} = 495_1$ |
| $495_3 = \chi_{34}$ | . | $\varphi_{32} = 495_3$ |
| $5643_1 = \chi_{35}$ | . | $\varphi_{33} = 5643_1$ |
| $5643_3 = \chi_{36}$ | . | $\varphi_{34} = 5643_3$ |
| $5643_5 = \chi_{37}$ | . | $\varphi_{35} = 5643_5$ |
| $52668_2 = \chi_{38}$ | . | $\varphi_{36} = 14598_1$ |
| $52668_4 = \chi_{39}$ | . | $\varphi_{37} = 43065_1$ |
| $58653_2 = \chi_{41}$ | . | $\varphi_{38} = 47025_1$ |
| $169290_3 = \chi_{46}$ | . | $\varphi_{39} = 52668_1$ |
| $169290_5 = \chi_{47}$ | . | $\varphi_{42} = 93105_1$ |
| $207360_4 = \chi_{51}$ | 1 | $\varphi_{44} = 114255_1$ |
| $207360_6 = \chi_{52}$ | . | $\varphi_{47} = 154692_1$ |
| $207360_8 = \chi_{53}$ | . | $\varphi_{48} = 160335_1$ |
| $253440_1 = \chi_{54}$ | 1 | |
| $253440_3 = \chi_{55}$ | 1 | |