1 Case 31

The minimal zero supports are given by (1,2,3),(1,2,4),(1,3,5),(2,4,5),(1,5,6),(2,5,6).

$$A = \begin{pmatrix} 1 & -cos(\phi_2) & -cos(\phi_1) & cos(\phi_2 + \phi_3) & -cos(\phi_4) & cos(\phi_4 + \phi_6) \\ -cos(\phi_2) & 1 & cos(\phi_1 + \phi_2) & -cos(\phi_3) & -cos(\phi_5) & cos(\phi_5 + \phi_6) \\ -cos(\phi_1) & cos(\phi_1 + \phi_2) & 1 & b_1 & cos(\phi_1 + \phi_4) & b_2 \\ cos(\phi_2 + \phi_3) & -cos(\phi_3) & b_1 & 1 & cos(\phi_3 + \phi_5) & b_3 \\ -cos(\phi_4) & -cos(\phi_5) & cos(\phi_1 + \phi_4) & cos(\phi_3 + \phi_5) & 1 & -cos(\phi_6) \\ cos(\phi_4 + \phi_6) & cos(\phi_5 + \phi_6) & b_2 & b_3 & -cos(\phi_6) & 1 \end{pmatrix}$$

The zeros are given by the columns:

$$(u_1, u_2, u_3, u_4, u_5, u_6) = \begin{pmatrix} sin(\phi_1 + \phi_2) \\ sin(\phi_1) \\ sin(\phi_2) \\ 0 \\ 0 \\ 0 \end{pmatrix} \begin{pmatrix} sin(\phi_3) \\ sin(\phi_2 + \phi_3) \\ 0 \\ sin(\phi_2) \\ 0 \\ 0 \end{pmatrix} \begin{pmatrix} sin(\phi_1 + \phi_4) \\ 0 \\ sin(\phi_4) \\ 0 \\ sin(\phi_1) \\ 0 \end{pmatrix} \begin{pmatrix} 0 \\ sin(\phi_3 + \phi_5) \\ 0 \\ sin(\phi_5) \\ sin(\phi_3) \\ 0 \end{pmatrix} \begin{pmatrix} sin(\phi_6) \\ 0 \\ 0 \\ 0 \\ sin(\phi_4 + \phi_6) \\ sin(\phi_4) \end{pmatrix} \begin{pmatrix} 0 \\ sin(\phi_6) \\ 0 \\ 0 \\ sin(\phi_5 + \phi_6) \\ sin(\phi_5) \end{pmatrix}$$

The zeros in this case are dependent. Proved by methods of computational algebra.