The best known (n, r)-arcs in PG(2, 13)

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After the absurd death of Axel Kohnert in 2013 several hardware errors on the site of the University of Bayreuth have occurred and the database for (n, r)-arcs is no longer available. For that reason we decided to reconstruct the database.

Lower and upper bounds on $m_r(2, 13)$ [1]

$r = 2$	$r = 3$	$r = 4$	$r = 5$	$r = 6$	$r = 7$
14	23	38–40	49–53	64–66	79

$r = 8$	$r = 9$	$r = 10$	$r = 11$	$r = 12$	
92	105	118–119	132–133	145–147	

1. A (23,3)-arc ([2])

The points in the arc are
$(0, 0, 1)$, $(0, 1, 0)$, $(1, 0, 0)$, $(1, 1, 7)$, $(1, 8, 6)$, $(1, 12, 7)$, $(1, 5, 6)$, $(1, 1, 12)$, $(1, 8, 1)$, $(1, 12, 12)$, $(1, 5, 1)$, $(1, 10, 4)$, $(1, 2, 9)$, $(1, 3, 4)$, $(1, 11, 9)$, $(1, 10, 3)$, $(1, 2, 10)$, $(1, 3, 3)$, $(1, 11, 10)$, $(1, 4, 11)$, $(1, 6, 2)$, $(1, 9, 11)$, $(1, 7, 2)$

The secant distribution of the arc is $\tau = (44, 26, 43, 70, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0)$

The arc is found by prescribing the group generated by

$$\left\langle \begin{pmatrix} 12 & 0 & 0 \\ 0 & 12 & 0 \\ 0 & 0 & 12 \end{pmatrix}, \begin{pmatrix} 12 & 0 & 0 \\ 0 & 5 & 0 \\ 0 & 0 & 1 \end{pmatrix}, \begin{pmatrix} 12 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 12 \end{pmatrix} \right\rangle.$$

The order of the group is 8.

2. A (38,4)-arc ([2])

The points in the arc are
$(0, 0, 1)$, $(0, 1, 0)$, $(1, 1, 1)$, $(1, 9, 3)$, $(1, 12, 12)$, $(1, 3, 9)$, $(1, 10, 4)$, $(1, 4, 10)$, $(1, 1, 8)$, $(1, 9, 11)$, $(1, 8, 1)$, $(1, 5, 12)$, $(1, 3, 7)$, $(1, 11, 9)$, $(1, 2, 4)$, $(1, 7, 3)$, $(1, 12, 5)$, $(1, 6, 10)$, $(1, 4, 2)$, $(1, 10, 6)$, $(1, 1, 9)$, $(1, 9, 1)$, $(1, 4, 12)$, $(1, 3, 3)$, $(1, 12, 4)$, $(1, 10, 10)$, $(1, 11, 6)$, $(1, 8, 5)$, $(1, 6, 11)$, $(1, 7, 2)$, $(1, 5, 8)$, $(1, 2, 7)$, $(1, 11, 2)$, $(1, 8, 6)$, $(1, 2, 11)$, $(1, 7, 5)$, $(1, 6, 8)$, $(1, 5, 7)$

The secant distribution of the arc is $\tau = (24, 14, 19, 24, 102, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0)$

The arc is found by prescribing the group generated by

$$\left\langle \begin{pmatrix} 1 & 0 & 0 \\ 0 & 9 & 0 \\ 0 & 0 & 3 \end{pmatrix}, \begin{pmatrix} 12 & 0 & 0 \\ 0 & 0 & 12 \\ 0 & 12 & 0 \end{pmatrix}, \begin{pmatrix} 12 & 0 & 0 \\ 0 & 0 & 1 \\ 0 & 1 & 0 \end{pmatrix} \right\rangle.$$

The order of the group is 12.

3. A (49,5)-arc ([2])
The points in the arc are
$(0, 1, 5)$, $(0, 1, 6)$, $(0, 1, 7)$, $(0, 1, 9)$, $(0, 1, 12)$, $(1, 0, 1)$, $(1, 0, 8)$, $(1, 0, 12)$, $(1, 0, 5)$, $(1, 1, 0)$, $(1, 8, 0)$,
$(1, 12, 0)$, $(1, 5, 0)$, $(1, 1, 1)$, $(1, 8, 8)$, $(1, 12, 12)$, $(1, 5, 5)$, $(1, 1, 3)$, $(1, 8, 11)$, $(1, 12, 10)$, $(1, 5, 2)$,
$(1, 1, 4)$, $(1, 8, 6)$, $(1, 12, 9)$, $(1, 5, 7)$, $(1, 1, 12)$, $(1, 8, 5)$, $(1, 12, 1)$, $(1, 5, 8)$, $(1, 10, 5)$, $(1, 2, 1)$,
$(1, 3, 8)$, $(1, 11, 12)$, $(1, 10, 7)$, $(1, 2, 4)$, $(1, 3, 6)$, $(1, 11, 9)$, $(1, 10, 9)$, $(1, 2, 7)$, $(1, 3, 4)$, $(1, 11, 6)$,
$(1, 10, 6)$, $(1, 2, 9)$, $(1, 3, 7)$, $(1, 11, 4)$, $(1, 4, 7)$, $(1, 6, 4)$, $(1, 9, 6)$, $(1, 7, 9)$

The secant distribution of the arc is $\tau = (5, 34, 0, 8, 52, 84, 0, 0, 0, 0, 0, 0, 0, 0, 0)$

The arc is found by prescribing the group generated by

$$\left\langle \begin{pmatrix} 4 & 0 & 0 \\ 0 & 6 & 0 \\ 0 & 0 & 6 \end{pmatrix} \right\rangle.$$

The order of the group is 12.

4. A (64,6)-arc ([2])
The points in the arc are
$(1, 0, 0)$, $(1, 0, 1)$, $(1, 8, 10)$, $(1, 2, 8)$, $(1, 12, 5)$, $(1, 1, 3)$, $(1, 11, 12)$, $(1, 5, 0)$, $(1, 0, 3)$, $(1, 11, 4)$,
$(1, 6, 11)$, $(1, 10, 2)$, $(1, 3, 9)$, $(1, 7, 10)$, $(1, 2, 0)$, $(1, 0, 10)$, $(1, 2, 9)$, $(1, 7, 2)$, $(1, 3, 11)$, $(1, 10, 4)$,
$(1, 6, 3)$, $(1, 11, 0)$, $(1, 0, 12)$, $(1, 5, 3)$, $(1, 11, 5)$, $(1, 1, 8)$, $(1, 12, 10)$, $(1, 2, 1)$, $(1, 8, 0)$, $(1, 1, 2)$,
$(1, 3, 2)$, $(1, 3, 5)$, $(1, 1, 9)$, $(1, 7, 7)$, $(1, 4, 9)$, $(1, 7, 5)$, $(1, 1, 12)$, $(1, 5, 11)$, $(1, 10, 7)$, $(1, 4, 7)$, $(1, 4, 11)$,
$(1, 10, 12)$, $(1, 5, 5)$, $(1, 2, 10)$, $(1, 2, 12)$, $(1, 5, 6)$, $(1, 9, 9)$, $(1, 7, 6)$, $(1, 9, 12)$, $(1, 5, 10)$, $(1, 12, 1)$,
$(1, 8, 2)$, $(1, 3, 6)$, $(1, 9, 6)$, $(1, 9, 2)$, $(1, 3, 1)$, $(1, 8, 8)$, $(1, 11, 1)$, $(1, 8, 7)$, $(1, 4, 4)$, $(1, 6, 7)$, $(1, 4, 1)$,
$(1, 8, 3)$, $(1, 11, 3)$

The secant distribution of the arc is $\tau = (15, 0, 0, 14, 14, 42, 98, 0, 0, 0, 0, 0, 0, 0, 0)$

The arc is found by prescribing the group generated by

$$\left\langle \begin{pmatrix} 9 & 0 & 0 \\ 0 & 0 & 7 \\ 0 & 7 & 12 \end{pmatrix} \right\rangle.$$

The order of the group is 21.

5. A (79,7)-arc (Barlotti's construction, [3])
The points in the arc are
$(0, 1, 0)$, $(1, 1, 1)$, $(1, 1, 2)$, $(1, 1, 6)$, $(1, 1, 7)$, $(1, 1, 11)$, $(1, 1, 12)$, $(1, 2, 0)$, $(1, 2, 2)$, $(1, 2, 3)$, $(1, 2, 4)$,
$(1, 2, 9)$, $(1, 2, 10)$, $(1, 2, 11)$, $(1, 3, 2)$, $(1, 3, 4)$, $(1, 3, 5)$, $(1, 3, 8)$, $(1, 3, 9)$, $(1, 3, 11)$, $(1, 4, 1)$, $(1, 4, 2)$,
$(1, 4, 4)$, $(1, 4, 9)$, $(1, 4, 11)$, $(1, 4, 12)$, $(1, 5, 0)$, $(1, 5, 1)$, $(1, 5, 4)$, $(1, 5, 6)$, $(1, 5, 7)$, $(1, 5, 9)$, $(1, 5, 12)$,
$(1, 6, 0)$, $(1, 6, 1)$, $(1, 6, 3)$, $(1, 6, 5)$, $(1, 6, 8)$, $(1, 6, 10)$, $(1, 6, 12)$, $(1, 7, 0)$, $(1, 7, 1)$, $(1, 7, 2)$, $(1, 7, 5)$,

$(1, 7, 8)$, $(1, 7, 11)$, $(1, 7, 12)$, $(1, 8, 0)$, $(1, 8, 4)$, $(1, 8, 5)$, $(1, 8, 6)$, $(1, 8, 7)$, $(1, 8, 8)$, $(1, 8, 9)$, $(1, 9, 3)$, $(1, 9, 5)$, $(1, 9, 6)$, $(1, 9, 7)$, $(1, 9, 8)$, $(1, 9, 10)$, $(1, 10, 1)$, $(1, 10, 3)$, $(1, 10, 6)$, $(1, 10, 7)$, $(1, 10, 10)$, $(1, 10, 12)$, $(1, 11, 0)$, $(1, 11, 2)$, $(1, 11, 3)$, $(1, 11, 6)$, $(1, 11, 7)$, $(1, 11, 10)$, $(1, 11, 11)$, $(1, 12, 3)$, $(1, 12, 4)$, $(1, 12, 5)$, $(1, 12, 8)$, $(1, 12, 9)$, $(1, 12, 10)$

The secant distribution of the arc is $\tau = (13, 1, 0, 0, 0, 0, 78, 91, 0, 0, 0, 0, 0, 0, 0)$

6. A (92,8)-arc (Barlotti's construction, [3])
The points in the arc are
$(0, 1, 0)$, $(1, 0, 0)$, $(1, 1, 1)$, $(1, 1, 2)$, $(1, 1, 5)$, $(1, 1, 6)$, $(1, 1, 7)$, $(1, 1, 8)$, $(1, 1, 11)$, $(1, 1, 12)$, $(1, 2, 0)$, $(1, 2, 2)$, $(1, 2, 3)$, $(1, 2, 4)$, $(1, 2, 9)$, $(1, 2, 10)$, $(1, 2, 11)$, $(1, 3, 2)$, $(1, 3, 4)$, $(1, 3, 5)$, $(1, 3, 6)$, $(1, 3, 7)$, $(1, 3, 8)$, $(1, 3, 9)$, $(1, 3, 11)$, $(1, 4, 1)$, $(1, 4, 2)$, $(1, 4, 3)$, $(1, 4, 4)$, $(1, 4, 9)$, $(1, 4, 10)$, $(1, 4, 11)$, $(1, 4, 12)$, $(1, 5, 0)$, $(1, 5, 1)$, $(1, 5, 4)$, $(1, 5, 6)$, $(1, 5, 7)$, $(1, 5, 9)$, $(1, 5, 12)$, $(1, 6, 0)$, $(1, 6, 1)$, $(1, 6, 3)$, $(1, 6, 5)$, $(1, 6, 8)$, $(1, 6, 10)$, $(1, 6, 12)$, $(1, 7, 0)$, $(1, 7, 1)$, $(1, 7, 2)$, $(1, 7, 5)$, $(1, 7, 8)$, $(1, 7, 11)$, $(1, 7, 12)$, $(1, 8, 0)$, $(1, 8, 4)$, $(1, 8, 5)$, $(1, 8, 6)$, $(1, 8, 7)$, $(1, 8, 8)$, $(1, 8, 9)$, $(1, 9, 2)$, $(1, 9, 3)$, $(1, 9, 5)$, $(1, 9, 6)$, $(1, 9, 7)$, $(1, 9, 8)$, $(1, 9, 10)$, $(1, 9, 11)$, $(1, 10, 1)$, $(1, 10, 3)$, $(1, 10, 4)$, $(1, 10, 6)$, $(1, 10, 7)$, $(1, 10, 9)$, $(1, 10, 10)$, $(1, 10, 12)$, $(1, 11, 0)$, $(1, 11, 2)$, $(1, 11, 3)$, $(1, 11, 6)$, $(1, 11, 7)$, $(1, 11, 10)$, $(1, 11, 11)$, $(1, 12, 1)$, $(1, 12, 3)$, $(1, 12, 4)$, $(1, 12, 5)$, $(1, 12, 8)$, $(1, 12, 9)$, $(1, 12, 10)$, $(1, 12, 12)$

The secant distribution of the arc is $\tau = (0, 14, 0, 0, 0, 0, 0, 78, 91, 0, 0, 0, 0, 0, 0, 0)$

7. A (105,9)-arc ([2])
The points in the arc are
$(0, 1, 2)$, $(1, 2, 0)$, $(1, 7, 0)$, $(1, 0, 7)$, $(0, 1, 7)$, $(1, 0, 2)$, $(0, 1, 3)$, $(1, 3, 0)$, $(1, 9, 0)$, $(1, 0, 9)$, $(0, 1, 9)$, $(1, 0, 3)$, $(0, 1, 5)$, $(1, 5, 0)$, $(1, 8, 0)$, $(1, 0, 8)$, $(0, 1, 8)$, $(1, 0, 5)$, $(0, 1, 11)$, $(1, 11, 0)$, $(1, 6, 0)$, $(1, 0, 6)$, $(0, 1, 6)$, $(1, 0, 11)$, $(1, 1, 3)$, $(1, 3, 1)$, $(1, 9, 9)$, $(1, 1, 4)$, $(1, 4, 1)$, $(1, 10, 10)$, $(1, 1, 5)$, $(1, 5, 1)$, $(1, 8, 8)$, $(1, 1, 6)$, $(1, 6, 1)$, $(1, 11, 11)$, $(1, 1, 7)$, $(1, 7, 1)$, $(1, 2, 2)$, $(1, 1, 8)$, $(1, 8, 1)$, $(1, 5, 5)$, $(1, 1, 9)$, $(1, 9, 1)$, $(1, 3, 3)$, $(1, 1, 10)$, $(1, 10, 1)$, $(1, 4, 4)$, $(1, 1, 11)$, $(1, 11, 1)$, $(1, 6, 6)$, $(1, 10, 7)$, $(1, 2, 4)$, $(1, 7, 2)$, $(1, 2, 7)$, $(1, 7, 10)$, $(1, 4, 2)$, $(1, 11, 9)$, $(1, 2, 6)$, $(1, 7, 3)$, $(1, 3, 7)$, $(1, 9, 11)$, $(1, 6, 2)$, $(1, 10, 5)$, $(1, 7, 4)$, $(1, 2, 8)$, $(1, 8, 2)$, $(1, 5, 10)$, $(1, 4, 7)$, $(1, 11, 7)$, $(1, 3, 6)$, $(1, 9, 2)$, $(1, 2, 9)$, $(1, 7, 11)$, $(1, 6, 3)$, $(1, 10, 2)$, $(1, 8, 4)$, $(1, 5, 7)$, $(1, 7, 5)$, $(1, 2, 10)$, $(1, 4, 8)$, $(1, 11, 8)$, $(1, 9, 6)$, $(1, 3, 5)$, $(1, 5, 3)$, $(1, 8, 11)$, $(1, 6, 9)$, $(1, 10, 8)$, $(1, 6, 4)$, $(1, 11, 5)$, $(1, 5, 11)$, $(1, 8, 10)$, $(1, 4, 6)$, $(1, 10, 6)$, $(1, 11, 4)$, $(1, 6, 11)$, $(1, 11, 6)$, $(1, 6, 10)$, $(1, 4, 11)$, $(1, 12, 5)$, $(1, 8, 12)$, $(1, 5, 8)$, $(1, 8, 5)$, $(1, 5, 12)$, $(1, 12, 8)$

The secant distribution of the arc is $\tau = (5, 0, 3, 0, 0, 0, 6, 27, 39, 103, 0, 0, 0, 0, 0)$

The arc is found by prescribing the group generated by

$$\left\langle \begin{pmatrix} 0 & 1 & 0 \\ 0 & 0 & 1 \\ 1 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 & 1 \\ 0 & 1 & 0 \\ 1 & 0 & 0 \end{pmatrix} \right\rangle.$$

The order of the group is 6.

8. A (118,10)-arc ([2])
The points in the arc are
$(0, 1, 1)$, $(1, 1, 0)$, $(1, 0, 1)$, $(1, 12, 0)$, $(1, 0, 12)$, $(0, 1, 12)$, $(0, 1, 11)$, $(1, 11, 0)$, $(1, 0, 6)$, $(1, 2, 0)$, $(1, 0, 7)$, $(0, 1, 2)$, $(0, 1, 4)$, $(1, 4, 0)$, $(1, 0, 10)$, $(1, 9, 0)$, $(1, 0, 3)$, $(0, 1, 9)$, $(0, 1, 5)$, $(1, 5, 0)$, $(1, 0, 8)$, $(1, 8, 0)$, $(1, 0, 5)$, $(0, 1, 8)$, $(0, 1, 6)$, $(1, 6, 0)$, $(1, 0, 11)$, $(1, 7, 0)$, $(1, 0, 2)$, $(0, 1, 7)$, $(1, 1, 11)$, $(1, 11, 1)$, $(1, 12, 2)$, $(1, 6, 6)$, $(1, 2, 12)$, $(1, 11, 12)$, $(1, 7, 7)$, $(1, 6, 7)$, $(1, 7, 6)$, $(1, 2, 1)$, $(1, 1, 2)$, $(1, 12, 11)$, $(1, 1, 10)$, $(1, 10, 1)$, $(1, 12, 3)$, $(1, 4, 4)$, $(1, 3, 12)$, $(1, 10, 12)$, $(1, 9, 9)$, $(1, 4, 9)$, $(1, 9, 4)$, $(1, 3, 1)$,

$(1, 1, 3)$, $(1, 12, 10)$, $(1, 1, 4)$, $(1, 4, 1)$, $(1, 12, 9)$, $(1, 10, 10)$, $(1, 9, 12)$, $(1, 4, 12)$, $(1, 3, 3)$, $(1, 10, 3)$, $(1, 3, 10)$, $(1, 9, 1)$, $(1, 1, 9)$, $(1, 12, 4)$, $(1, 10, 6)$, $(1, 11, 4)$, $(1, 3, 7)$, $(1, 11, 6)$, $(1, 2, 9)$, $(1, 11, 9)$, $(1, 2, 7)$, $(1, 11, 7)$, $(1, 2, 6)$, $(1, 2, 4)$, $(1, 10, 7)$, $(1, 3, 6)$, $(1, 11, 5)$, $(1, 4, 6)$, $(1, 2, 8)$, $(1, 8, 10)$, $(1, 9, 7)$, $(1, 4, 7)$, $(1, 5, 3)$, $(1, 8, 3)$, $(1, 5, 10)$, $(1, 9, 6)$, $(1, 11, 8)$, $(1, 2, 5)$, $(1, 10, 11)$, $(1, 5, 4)$, $(1, 3, 2)$, $(1, 6, 8)$, $(1, 8, 9)$, $(1, 5, 9)$, $(1, 7, 5)$, $(1, 6, 5)$, $(1, 7, 8)$, $(1, 8, 4)$, $(1, 10, 2)$, $(1, 3, 11)$, $(1, 10, 4)$, $(1, 3, 4)$, $(1, 3, 9)$, $(1, 10, 9)$, $(1, 4, 11)$, $(1, 6, 10)$, $(1, 9, 2)$, $(1, 6, 11)$, $(1, 7, 3)$, $(1, 6, 3)$, $(1, 7, 2)$, $(1, 6, 2)$, $(1, 7, 11)$, $(1, 7, 10)$, $(1, 4, 2)$, $(1, 9, 11)$

The secant distribution of the arc is $\tau = (4, 0, 0, 0, 0, 6, 0, 6, 12, 66, 89, 0, 0, 0, 0)$

The arc is found by prescribing the group generated by

$$\left\langle \begin{pmatrix} 0 & 1 & 0 \\ 0 & 0 & 1 \\ 1 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 5 & 0 & 0 \\ 0 & 8 & 0 \\ 0 & 0 & 8 \end{pmatrix} \right\rangle.$$

The order of the group is 48.

9. A (132,11)-arc ([2])
The points in the arc are
$(0, 0, 1)$, $(0, 1, 0)$, $(1, 0, 0)$, $(0, 1, 1)$, $(1, 1, 0)$, $(1, 0, 1)$, $(0, 1, 2)$, $(1, 2, 0)$, $(1, 0, 2)$, $(1, 0, 7)$, $(1, 7, 0)$, $(0, 1, 7)$, $(0, 1, 3)$, $(1, 3, 0)$, $(1, 0, 3)$, $(1, 0, 9)$, $(1, 9, 0)$, $(0, 1, 9)$, $(0, 1, 10)$, $(1, 10, 0)$, $(1, 0, 10)$, $(1, 0, 4)$, $(1, 4, 0)$, $(0, 1, 4)$, $(0, 1, 5)$, $(1, 5, 0)$, $(1, 0, 5)$, $(1, 0, 8)$, $(1, 8, 0)$, $(0, 1, 8)$, $(1, 1, 1)$, $(1, 1, 2)$, $(1, 2, 1)$, $(1, 7, 7)$, $(1, 1, 4)$, $(1, 4, 1)$, $(1, 10, 10)$, $(1, 1, 9)$, $(1, 9, 1)$, $(1, 3, 3)$, $(1, 1, 11)$, $(1, 11, 1)$, $(1, 6, 6)$, $(1, 1, 12)$, $(1, 12, 1)$, $(1, 12, 12)$, $(1, 2, 3)$, $(1, 8, 7)$, $(1, 7, 8)$, $(1, 9, 5)$, $(1, 5, 9)$, $(1, 3, 2)$, $(1, 10, 7)$, $(1, 2, 4)$, $(1, 4, 2)$, $(1, 2, 7)$, $(1, 7, 2)$, $(1, 7, 10)$, $(1, 2, 5)$, $(1, 9, 7)$, $(1, 7, 9)$, $(1, 8, 3)$, $(1, 3, 8)$, $(1, 5, 2)$, $(1, 11, 9)$, $(1, 2, 6)$, $(1, 6, 2)$, $(1, 3, 7)$, $(1, 7, 3)$, $(1, 9, 11)$, $(1, 10, 2)$, $(1, 8, 4)$, $(1, 4, 8)$, $(1, 7, 5)$, $(1, 5, 7)$, $(1, 2, 10)$, $(1, 11, 2)$, $(1, 12, 6)$, $(1, 6, 12)$, $(1, 7, 12)$, $(1, 12, 7)$, $(1, 2, 11)$, $(1, 11, 12)$, $(1, 7, 6)$, $(1, 6, 7)$, $(1, 12, 2)$, $(1, 2, 12)$, $(1, 12, 11)$, $(1, 10, 4)$, $(1, 3, 4)$, $(1, 4, 3)$, $(1, 10, 9)$, $(1, 9, 10)$, $(1, 4, 10)$, $(1, 11, 8)$, $(1, 9, 6)$, $(1, 6, 9)$, $(1, 5, 3)$, $(1, 3, 5)$, $(1, 8, 11)$, $(1, 3, 9)$, $(1, 9, 3)$, $(1, 11, 3)$, $(1, 5, 6)$, $(1, 6, 5)$, $(1, 9, 8)$, $(1, 8, 9)$, $(1, 3, 11)$, $(1, 10, 12)$, $(1, 9, 4)$, $(1, 4, 9)$, $(1, 12, 3)$, $(1, 3, 12)$, $(1, 12, 10)$, $(1, 10, 8)$, $(1, 6, 4)$, $(1, 4, 6)$, $(1, 5, 11)$, $(1, 11, 5)$, $(1, 8, 10)$, $(1, 10, 6)$, $(1, 11, 4)$, $(1, 4, 11)$, $(1, 11, 6)$, $(1, 6, 11)$, $(1, 6, 10)$, $(1, 12, 5)$, $(1, 8, 12)$, $(1, 12, 8)$, $(1, 8, 5)$, $(1, 5, 8)$, $(1, 5, 12)$

The secant distribution of the arc is $\tau = (0, 0, 0, 0, 0, 9, 6, 0, 9, 9, 36, 114, 0, 0, 0)$

The arc is found by prescribing the group generated by

$$\left\langle \begin{pmatrix} 0 & 1 & 0 \\ 0 & 0 & 1 \\ 1 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 1 & 0 \\ 1 & 0 & 0 \\ 0 & 0 & 1 \end{pmatrix} \right\rangle.$$

The order of the group is 6.

10. A (145,12)-arc ([2])
The points in the arc are
$(0, 0, 1)$, $(0, 1, 0)$, $(1, 0, 0)$, $(0, 1, 11)$, $(1, 11, 0)$, $(1, 0, 6)$, $(1, 2, 0)$, $(1, 0, 7)$, $(0, 1, 2)$, $(0, 1, 10)$, $(1, 10, 0)$, $(1, 0, 4)$, $(1, 3, 0)$, $(1, 0, 9)$, $(0, 1, 3)$, $(0, 1, 4)$, $(1, 4, 0)$, $(1, 0, 10)$, $(1, 9, 0)$, $(1, 0, 3)$, $(0, 1, 9)$, $(0, 1, 5)$, $(1, 5, 0)$, $(1, 0, 8)$, $(1, 8, 0)$, $(1, 0, 5)$, $(0, 1, 8)$, $(0, 1, 6)$, $(1, 6, 0)$, $(1, 0, 11)$, $(1, 7, 0)$, $(1, 0, 2)$, $(0, 1, 7)$, $(1, 1, 10)$, $(1, 10, 1)$, $(1, 12, 3)$, $(1, 4, 4)$, $(1, 3, 12)$, $(1, 10, 12)$, $(1, 9, 9)$, $(1, 4, 9)$, $(1, 9, 4)$, $(1, 3, 1)$, $(1, 1, 3)$, $(1, 12, 10)$, $(1, 1, 4)$, $(1, 4, 1)$, $(1, 12, 9)$, $(1, 10, 10)$, $(1, 9, 12)$, $(1, 4, 12)$, $(1, 3, 3)$, $(1, 10, 3)$, $(1, 3, 10)$, $(1, 9, 1)$, $(1, 1, 9)$, $(1, 12, 4)$, $(1, 1, 5)$, $(1, 5, 1)$, $(1, 12, 8)$, $(1, 8, 8)$, $(1, 8, 12)$, $(1, 5, 12)$, $(1, 5, 5)$, $(1, 8, 5)$, $(1, 5, 8)$, $(1, 8, 1)$, $(1, 1, 8)$, $(1, 12, 5)$, $(1, 1, 6)$, $(1, 6, 1)$, $(1, 12, 7)$, $(1, 11, 11)$,

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$(1, 7, 12)$, $(1, 6, 12)$, $(1, 2, 2)$, $(1, 11, 2)$, $(1, 2, 11)$, $(1, 7, 1)$, $(1, 1, 7)$, $(1, 12, 6)$, $(1, 10, 6)$, $(1, 11, 4)$, $(1, 3, 7)$, $(1, 11, 6)$, $(1, 2, 9)$, $(1, 11, 9)$, $(1, 2, 7)$, $(1, 11, 7)$, $(1, 2, 6)$, $(1, 2, 4)$, $(1, 10, 7)$, $(1, 3, 6)$, $(1, 11, 5)$, $(1, 4, 6)$, $(1, 2, 8)$, $(1, 8, 10)$, $(1, 9, 7)$, $(1, 4, 7)$, $(1, 5, 3)$, $(1, 8, 3)$, $(1, 5, 10)$, $(1, 9, 6)$, $(1, 11, 8)$, $(1, 2, 5)$, $(1, 10, 11)$, $(1, 5, 4)$, $(1, 3, 2)$, $(1, 6, 8)$, $(1, 8, 9)$, $(1, 5, 9)$, $(1, 7, 5)$, $(1, 6, 5)$, $(1, 7, 8)$, $(1, 8, 4)$, $(1, 10, 2)$, $(1, 3, 11)$, $(1, 10, 5)$, $(1, 7, 4)$, $(1, 3, 8)$, $(1, 8, 2)$, $(1, 6, 9)$, $(1, 7, 9)$, $(1, 5, 11)$, $(1, 8, 11)$, $(1, 5, 2)$, $(1, 6, 4)$, $(1, 10, 8)$, $(1, 3, 5)$, $(1, 4, 11)$, $(1, 6, 10)$, $(1, 9, 2)$, $(1, 6, 11)$, $(1, 7, 3)$, $(1, 6, 3)$, $(1, 7, 2)$, $(1, 6, 2)$, $(1, 7, 11)$, $(1, 7, 10)$, $(1, 4, 2)$, $(1, 9, 11)$, $(1, 4, 10)$, $(1, 9, 10)$, $(1, 9, 3)$, $(1, 4, 3)$

The secant distribution of the arc is $\tau = (0, 0, 0, 0, 4, 0, 0, 0, 0, 18, 22, 36, 103, 0, 0)$

The arc is found by prescribing the group generated by

$$\left\langle \begin{pmatrix} 0 & 1 & 0 \\ 0 & 0 & 1 \\ 1 & 0 & 0 \end{pmatrix}, \begin{pmatrix} 5 & 0 & 0 \\ 0 & 8 & 0 \\ 0 & 0 & 8 \end{pmatrix} \right\rangle.$$

The order of the group is 48.

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