EQF-Note 2014-07-27

Background for these notes is:
Chris van Tienhoven: Encyclopedia of Quadri-Figures
http://www.chrisvantienhoven.nl/

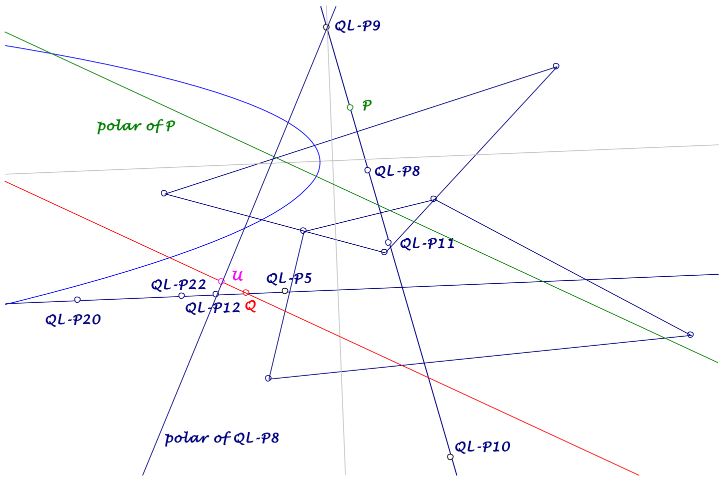
A Curious QL-Point

This point is already described in EQF-Note 2013-04-12 (see QFG-message 30) and under QL-P22 in EQF-Note-2014-07-17 (see QFG-message 628). Independent of this here is another curious aspect related to correspondent points on the Newton-Line QL-L1 and the QL-DT-Euler-Line QL-L7.

On *QL-L7* and *QL-L1* we find points with the same distance ratios:

QL-L7:	***QL-P9***	***QL-P8***	***QL-P11***	***QL-P10***
	2	**:** **1**	**:** **3**	
QL-L1:	***QL-P5***	***QL-P12***	***QL-P22***	***QL-P20*** **.**

A point *P* on *QL-L7* and a point *Q* on *QL-L1* shall be named "correspondent" points, if *P* divides *QL-P9.QL-P8* in the same ratio as *Q* divides *QL-P5. QL-P12*.

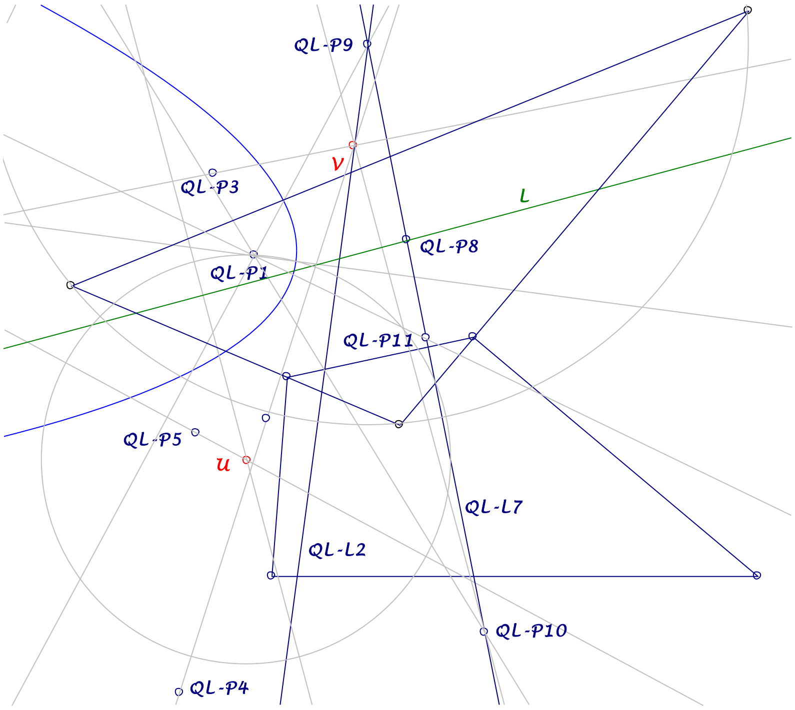


- **Parallels to the polars of *P* wrt the Inscribed Parabola *QL-Co1* through the correspondent points *Q* have a common point *U*.**

- The common point *U* is the intersection of the polar of *QL-P8* wrt *QL-Co1* and a perpendicular line to *QL-P1.QL-P9* through *QL-P5*.

- The common point *U* has the *DT*-coordinates:

$$U(u(v(a^2w+c^2u)^2-w(a^2v+b^2u)^2)$$
$$:v(w(a^2v+b^2u)^2-u(b^2w+c^2v)^2):w(u(b^2w+c^2v)^2-v(a^2w+c^2u)^2))$$
$$\text{with}\quad u=m^2-n^2,\quad v=n^2-l,\quad w=l^2-m^2\,.$$



- Let *V* be the intersection of *QL-L2* and a perpendicular line to *QL-L7* through *QL-P3*. Let *L* be a line through *QL-P8* perpendicular to *V.QL-P10*. The pole of *L* wrt *QL-Co1* is the point *U*.

- The point *U* lies on a perpendicular line to *QL-P1.QL-P11* through the midpoint of *V* and *QL-P4*.

- A circle round *U* through *QL-P1* cuts the *QL-DT*-circumcircle orthogonal.

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