

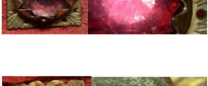
Supplementary material

Table S1: Gemological features of studied gems in the *Cintola del Duomo*. Substitutions are explicitly mentioned in the Microscopic Features section

Gem ID	Shape and cut	Color	Size (mm)	Microscopic features	Pictures
1	Octagonal	Blue	11.56 × 7.61	Elongated bubble trails	
2	Oval	Pink	10.66 × 8.96	Natural inclusions, silver foil and colored pigments	
3	Oval	Cognac	7.31 × 5.70	Natural inclusions, silver foil and colored pigments	
4	Oval	Green	8.39 × 7.07	Elongated bubble trails; conchoidal fracture. XVIII cent. substitution	
5	Oval	Green	11.45 × 9.07	Elongated bubble trails. Substitution	
6	Octagonal	Colorless	11.25 × 11.25	Natural inclusions, silver foil and colored pigments	
5	Oval	Pink	11.21 × 8.05	Natural inclusions, silver foil and colored pigments	
8	Rectangular	Blue	7.95 × 7.43	Elongated bubble trails; conchoidal fracture	
9	Octagonal	Pink	9.80 × 7.54	Natural inclusions, silver foil and colored pigments	
10	Oval	Orange-Brown	10.73 × 9.31	Natural inclusions, silver foil and colored pigments	
11	Rounded	Gray	Ø 7.24	Natural inclusions, silver foil and colored pigments. Triplet	
12	Octagonal	Blue	7.85×7.10	Elongated bubble trails; conchoidal fracture	
13	Rectangular	Blue	7.60 × 6.67	Elongated bubble trails. Doublet	
14	Rectangular	Cognac	7.66 × 6.89	Natural inclusions, silver foil and colored pigments. Triplet	

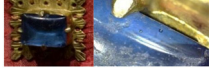
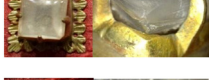
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Table S1: *Continued*

Gem ID	Shape and cut	Color	Size (mm)	Microscopic features	Pictures
15	Octagonal	Blue	10.71 × 9.40	Elongated bubble trails	
16	Oval	Blue	10.10 × 8.08	Elongated bubble trails. Doublet	
17	Octagonal	Blue	13.44 × 11.65	Natural inclusions. Doublet	
18	Oval	Blue	11.01 × 7.75	Elongated bubble trails	
19	Octagonal	Blue	10.08 × 9.63	Elongated bubble trails	
20	Octagonal	Blue	11.02 × 8.19	Elongated bubble trails	
21	Rectangular	Blue	11.11 × 8.78	Elongated bubble trails	
22	Squared	Orange	8.81 × 7.72	Elongated bubble trails; conchoidal fracture	
23	Oval	Pink	13.59 × 11.59	Natural inclusions, silver foil and colored pigments. XVIII cent. substitution	
24	Rectangular	Green	7.43 × 6.63	Natural inclusions, silver foil and colored pigments	
25	Rectangular	Orange/Red	8.77 × 7.29	Doublet	
26	Oval	Green	9.67 × 8.56	Bubbles, vortex	
27	Oval	Orange/Red	11.19 × 9.05	Elongated bubble trails. XVIII cent. substitution	
28	Oval	Green	10.45 × 8.34	Bubbles, vortex	

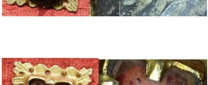
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Table S1: *Continued*

Gem ID	Shape and cut	Color	Size (mm)	Microscopic features	Pictures
29	Octagonal	Blue	10.67 × 8.17	Elongated bubble trails	
30	Octagonal	Blue	10.90 × 9.15	Elongated bubble trails	
31	Octagonal	Blue	11 × 8.70	Elongated bubble trails	
32	Octagonal	Blue	10.18 × 8.89	Elongated bubble trails	
33	Octagonal	Blue	11.08 × 8.91	Elongated bubble trails	
34	Octagonal	Blue	11.09 × 9.66	Elongated bubble trails	
35	Octagonal	Blue	10.68 × 8.16	Elongated bubble trails	
36	Oval	Colorless	10.76 × 9.74	Silver foil, conchoidal fracture. Substitution	
37	Square	Colorless	9.75 × 9.74	Silver foil. XVIII cent. substitution	
38	Square	Blue	9.61 × 9.31	Elongated bubble trails	
39	Oval	Blue	15.62 × 11.55	Silver foil and colored pigments. XVIII cent. substitution	
40	Cushion cut; oval	Colorless	17.22 × 13.30	Silver foil. XVIII cent. substitution	
41	Cabochon; square	Green	11.16 × 9.84	Natural inclusions and colored pigments. Triplet	
42	Cabochon; square	Colorless	9.84 × 9.84	Natural inclusions and colored pigments. Doublet	
43	Cabochon; square	Colorless	10.89 × 9.74	Natural inclusions and colored pigments. Doublet	

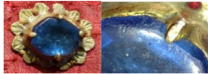
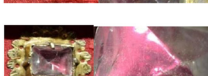
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Table S1: *Continued*

Gem ID	Shape and cut	Color	Size (mm)	Microscopic features	Pictures
44	Cabochon; square	Green	10.50 × 10.43	Natural inclusions and colored pigments. Triplet	
45	Octagonal	Blue	10.43 × 8.9	Elongated bubble trails	
46	Octagonal	Blue	11.23 × 8.61	Elongated bubble trails	
47	Mixed cut; Oval	Blue	18.01 × 11.74	Natural pigments and silver foil. XVIII cent. substitution	
48	Octagonal	Blue	12.26 × 12.26	Natural pigments and silver foil	
49	Octagonal	Blue	10.07 × 8.88	Elongated bubble trails	
50	Octagonal	Blue	11.35 × 8.85	Elongated bubble trails	
51	Cabochon; rectangular	Cognac	11.21 × 9.66	Bubbles. XVIII cent. substitution	
52	Cabochon; rectangular	Brown/Orange	7.79 × 6.41	Elongated bubble trails, silver foil and colored pigments	
53	Irregular	Lineated gray	9.78 × 8.49	Elongated bubble trails, silver foil and colored pigments. XVIII cent. substitution	
54	Irregular	Pink	8.88 × 6.66	Bubble trails, silver foil and colored pigments. XVIII cent. substitution	
55	Cabochon; oval	Green	11.71 × 10.03	Colored pigments. Triplet	
56	Mixed cut; oval	Pink	13.10 × 10.04	Natural inclusions, silver foil and colored pigments. XVIII cent. substitution	
57	Cabochon; Oval	Green	11.48 × 9.25	Natural inclusions and colored pigments. Triplet	
58	Octagonal	Blue	9.56 × 7.78	Bubble trails	

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Table S1: Continued

Gem ID	Shape and cut	Color	Size (mm)	Microscopic features	Pictures
59	Octagonal	Blue	9.50 × 7.97	Elongated bubble trails; conchoidal fracture	
60	Cabochon; oval	Gray	13.78 × 10.10	Natural inclusions, silver foil and colored pigments	
61	Octagonal	Purple	13.62 × 10.42	Natural inclusions	
62	Octagonal	Blue	8.80 × 8.83	Elongated bubble trails	
63	Irregular	Colorless	8.84 × 7.29	Natural inclusions, silver foil and colored pigments	
64	Mixed cut; oval	Green	11.34 × 10.02	Silver foil and colored pigments. XVIII cent. substitution	
65	Mixed cut; oval	Colorless	12.51 × 9.27	Silver foil. XVIII cent. substitution	
66	Mixed cut; oval	Colorless	10.86 × 8.91	Silver foil. XVIII cent. substitution	
67	Octagonal	Blue	9.31 × 7.92	Elongated bubble trails	
68	Mixed cut; oval	Red/Purple	11.30 × 9.54	Silver foil and natural pigments. Substitution	
69	Octagonal	Blue	10.21 × 8.71	Elongated bubble trails	
70	Octagonal	Blue	10.48 × 9.40	Elongated bubble trails; conchoidal fracture	
71	Cabochon; oval	Orange	7.98 × 7.09	Natural inclusions and colored pigments. Triplet.	
72	Mixed cut; oval	colorless	10.22 × 8.98	Silver foil. XVIII cent. substitution	
73	Mixed cut; oval	Pink	10.10 × 7.80	Silver foil and colored pigments. XVIII cent. substitution	
74	Table cut; rectangular	Pink	12.33 × 10.55	Natural inclusions, silver foil and colored pigments. XVIII cent. substitution	

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Table S1: *Continued*

Gem ID	Shape and cut	Color	Size (mm)	Microscopic features	Pictures
75	Cabochon; rectangular	Green	19.19 × 13.86	Natural inclusions, silver foil and colored pigments.	
76	Mixed cut; rectangular	Yellow	11.49 × 10.61	Elongated bubble trails; conchoidal fracture. XVIII cent. substitution	
77	Cushion cut; square	Colorless	8.54 × 8.53	Silver foil. XVIII cent. substitution	
78	Cabochon; oval	Green	12.70 × 9.90	Natural inclusions, silver foil and colored pigments. Triplet	
79	Cabochon; square	Red	7.99 × 7.51	Silver foil and natural pigments. Triplet	
80	Cabochon; oval	Brown/ orange	6.62 × 6.09	Silver foil and natural pigments. Triplet	
81	Cabochon; oval	Blue	8.12 × 5.56	Triplet	
82	Cabochon; oval	Green	9.22 × 8.10	Triplet	
83				Enamel	