In the Christian world, the history of fireworks and firework displays is associated with the spread of gunpowder, and primarily with an understanding of the possibilities of its use.¹ The production of rockets, squibs, firecrackers, artificial fires, fountains, Catherine wheels – „girandoles“, and many other types of pyrotechnics was almost exclusively directed by artillery officers.² One of the most influential fireworks manufacturers of the 17th century, Jean Appier, known as Hanzelet Lorrain (1596–1647), on the title page of his La pyrotechnie de Hanzelet Lorrain […] dated 1630, had a simple dedication written in the words Marte et Arte – By (the god of war) Mars and Arts (Fig. 1). Almost ten years later, the Frankfurt artillery officer Christoph Suenck (died 1644) had an identical dedication engraved on his portrait profile (Fig. 2). The inventor filled the area around the portrait profile with artefacts associated both with the occupation of an artilleryman and with that of a maker of fireworks for entertainment. He then symbolically combined both occupations with a shield displaying geometric instruments. To Suenck's right stands a man in a suit of armour, symbolising the power of the art of war and artillery, and to his left Pallas Athena, alternatively Minerva, symbolising the wisdom of the science and knowledge that provides the foundation for artillery officers.

Over the course of the almost 200-year period during which artillery officers gradually became an ever-increasingly important part of armies, their status also underwent a fundamental transformation, from that of disdained, undervalued, untrustworthy, and allegedly frequently drunken craftsmen at the end of the 14th century to acknowledged masters in the prominent service of European kings by the 17th century.³ The periods of

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¹ On the history of the production of gunpowder and Greek fire see James Riddick Partington, A history of Greek fire and gunpowder, Baltimore–London 1999; here see also the further literature.

² The techniques and devices of artillery manufacturers for both military and recreational pyrotechnics, including a quality pictorial accompaniment and other relevant literature, are most recently described in Alfred Geibig, Die Macht des Feuers / Might and Fire. Ernstes Feuerwerk des 15.–17. Jahrhunderts im Spiegel seiner sächlichen Überlieferung / An Object-Based Survey of Serious Fireworks of the 15th to the 17th Centuries, Coburg 2012.

peacetime, during which artillery manufacturers experimented, produced pyrotechnics for entertainment, educated themselves, and presented their art to the aristocracy, both secular and ecclesiastical, had a considerable influence on raising their social standing. The dedication Marte et Arte documents very well the duality of pyrotechnics, both in the present day and in the past. Today we divide pyrotechnics into civilian and military, and further divide civilian pyrotechnics into recreational, theatrical, and miscellaneous.4

A similar situation also applied at the threshold of the modern era. For example, in the German language the term „Feuerwerk“ is reserved for military pyrotechnics. It is only with the addition of the adjective lust, and also künstliche or rechtschaffene, that artificial fire becomes a means of entertainment and complex patterns of personal presentation, or representation and relevant propaganda. In the Early Modern era the easily comprehensible terms „recreational fireworks“ or „artificial fireworks“ began to be employed in English. The Romance languages were fairly uniform in their terminology: French had feu d’artifice (sometimes with the addition of pour le spectacle), Italian fuoco artificiati, Spanish fuegos artificiales, and finally the rare Latin terms Ignibus festivis, iocosis, or also artificialibus were used.

Artificial, or rather man-made fire was one element in the complex composition of firework displays. These, more than any other festivities, combined the (frequently embryonic) sciences with the fine arts (fiery illuminations and backdrops) and architecture (ephemeral constructions). Very often a musical element was also added (accompaniment and singing). In the best-quality examples, the overall impression was further complemented with a theatrical component (actors and recitations). The individual elements intermingled, and were accentuated with the use of contrasts: light and dark, when the fires gradually lit up relevant parts of the stage and guided the viewers’ eyes through the narrative; loud and quiet, in which the sound of noisy squibs, muskets, and cannons was an integral component of the dramatic scenes, while music, recitation, or singing formed part of the tranquil scenes developing the storyline.

The theatre scene was radically transformed during the course of the 17th century. This took place in connection with an improvement of theatre illumination, or stage lighting, leading up to the electric lamp in the 19th century. However, the creators of firework displays were already working with striking contrasts of darkened and sharply illuminated surfaces in the 17th century. Performances took place during the night and outside, often at a shooting range or beyond the city walls. An important contribution to the atmosphere of the presentation was made by fire illuminations, consisting of tens of thousands of rockets of varying height, thousands of ignited and rapidly extinguished fires, dozens of girandoles, fiery dragons, ships, and other motifs moving on ropes (Fig. 3). Ideally, all was ignited in the precise place and at the exact time in order to become an element in a frequently complicated plot, which was intended to be comprehensible to viewers who were familiar with the dynastic, political, or other events of the time.

This contribution on the history of festivities in European culture will focus in the text below on a number of prestigious and expensive firework displays, which combined all the above-described elements, and indisputably rank among the best quality examples of their type in the history of human culture. Their common denominator shall be the Central European Habsburg court during the second half of the 17th century, as well as an elaborate storyline presented over the course of several acts, the representative context responding to events of the time, spectacular pyrotechnic illuminations and ingenious devices. Last but not least, at the time of their origin all of these performances were considered to represent one of the climaxes of the specific celebrations, and were also documented as such, frequently in the form of graphic prints. With only a small number of exceptions, which are either important for the context or which we simply cannot overlook, the key chapters of the following text shall be devoted to firework displays presented within the framework of wedding celebrations. Although the presented group of firework displays will not be complete, it is sufficiently specific and mutually interconnected in its essential features that we can take the liberty of skipping several decades of development of this specific genre of musical-dramatic performances. We shall begin in the middle of the 17th century with the display that symbolically ended the Thirty Years’ War and set the modus that those who conceived the relevant performances went on to develop in future years. The concept of the profane firework display that had been familiar in the first half of the 17th century (Fig. 4), based on the celebration of an individual or dynasty, was significantly expanded. The composition of the spectacle was now no longer constructed around a central point, but altered depending on the plot being performed. The narrative was thereby enhanced in terms of its content, and made more dramatic for the audience. The authors of the conceptions gained the opportunity to develop the storyline of the performance more freely, and to depict key symbols and messages within far more grandiose settings.
Nuremberg 1650

The Peace of Westphalia, which brought the Thirty Years’ War to its end, is an act of immense importance in the political history of Europe. However, there was also a further event intended to resolve details not discussed on the occasion of the signature of the treaties of the Peace of Westphalia, namely the conference entitled the Nuremberg Executive Assembly. Those who attended it between April 1649 and July 1650 met in the imperial city of Nuremberg. The outcome of the meeting was the *Reichs-Friedens-Rezess*, issued on 26 July 1650, which primarily addressed the demobilisation and withdrawal of military cohorts from the occupied territories. The chief means of reconciling the representatives of the great European powers, who until only recently had been implacable foes, among other matters included festivities – banquets, dance performances, musical-dramatic productions, and firework displays.

The first results of the congress were celebrated in September 1649. For this occasion, Count Palatine Carl Gustav of Zweibrücken-Kleeburg (1622–1660), the future King of Sweden Carl X Gustav, prepared a feast. It was arranged on 25 September 1649, and was recorded in history as the Nuremberg Peace Banquet. Representatives of all the negotiating parties convened at a lavishly laid table in the Town Hall, where in accordance with the carefully prepared seating plan they negotiated, ate, and drank from five o’clock in the evening until two the following morning. We are informed that the spirit in which this took place was *gar schiedlich und friedlich*. As the highest authority here, the emperor was represented by the experienced imperial plenipotentiary Ottavio Piccolomini (1599–1656). On the next day, which was a Wednesday, the celebrations continued. At four o’clock in the afternoon the noblemen reconvened at the *Spittlertor*, and continued with the celebrations in their prepared tents until ten in the evening. They then proceeded to go outside, where the Swedish Field Marshal Carl Gustaf Wrangel (1613–1676) had prepared a firework display for them. The firework illuminations, consisting of more than 1300 rockets, firecrackers, and water balls, entertained the spectators gathered around the ephemeral architecture of a water castle, with a whale and a mermaid. However, the entertainment was marred by an unfortunate event when the negligence of one of the pyrotechnicians caused a lantern to collapse in a shed containing pyrotechnics. The ensuing explosion and fire killed one man inside the shed, and as a result another three men fell from the ramparts into the moat. Two of them were seriously injured, and one died. Although most of the envoys went home following the incident, Carl Gustav remained, reportedly continuing in the revelry and dancing.

5 For the most detailed study see Antje Oschmann, *Der Nürnberger Exekutionstag 1649–1650*, Münster 1991.

until five in the morning. Soon afterwards, on 4 October, Field Marshal Wrangel held his own banquet in the Ayermann house. The celebrations lasted from the evening hours until six o’clock in the morning. They also included a firework display about which we have no detailed reports.

The signing of the important final treaties was preceded by a pair of large firework displays, which were documented pictorially and in writing like no other similar performances hitherto. At the same time, as has been comprehensively described and defended by Eberhard Fähler, these firework performances, together with the accompanying propaganda in the form of poems, literary descriptions, and graphic illustrations, represented a prototype for a number of similarly extensive or even larger and more expensive presentations that took place in the second half of the 17th century – and above all for the wedding firework displays of Central European Habsburgs.

The treaties of the Nuremberg Executive Assembly were ratified in June 1650. The pair of firework displays represented the prelude to the signatures. The first, known as the Swedish fireworks, was organised by the Marshal of the Court, politician, and diplomat Christoph Karl von Schlippenbach (1624–1660) on behalf of Carl Gustav of Zweibrücken-Kleeburg. They were technically prepared by the Nuremberg pyrotechnician and engineer Johann Carl, who is listed on the graphic sheet as Zeüchmeister und Ingenieur. The event was documented by at least four graphic sheets. The first of these is an unsigned print, which is perhaps the work of the engraver Andreas Kohl (1624–1657). This was distributed on a single sheet with a printed description in verse by the poet Sigmund von Birken (1626–1681), signed on the graphic sheet with the initials S.B. The second is a faithful and again unsigned copy of the first sheet. The third sheet, which is artistically of the best quality, was most probably published by the Nuremberg printer Jeremias Dümler (1598–1668) and engraved by Peter Troschel (1620–1667) on the basis of a template by Michael Herz (Fig. 5).

The sheet from the fourth matrix, simply entitled Schwedischen Fewerwerks. Anno 1650., was printed by Matthäus Merian the Younger in the sixth volume of Theatrum

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8 Ibidem, p. 392.
11 Also in the collections of Paris, Institut national d’histoire de l’art, Collection Jacques Doucet, sign. OC 74(1).
Europaeum.\(^\text{12}\) From the text preceding the graphic sheet we learn that the firework display was a part of a banquet which took place half an hour’s journey from Nuremberg. Very attractive huts (sehr lustige hütten) were constructed for the noblemen, and fireworks which had been painstakingly prepared well in advance were ignited. The event was postponed for one day because of heavy rains and generally inclement weather.\(^\text{13}\) The preserved graphic prints inform us that the banquet with the firework display was prepared for as early as 4 June. Theatrum Europaeum states 5 June, with the above explanation. At this point in the text, it is appropriate to reflect briefly upon the credibility and limits of illustrating the firework displays on graphic sheets.

The majority of the documentary or promotional graphic works had to be prepared for the event itself, and together with any accompanying texts they were distributed to the spectators before the beginning of the presentation. Thus, if a decision was taken for any reason to change the date of the event, it would have been difficult to correct this. However, this is not the most fundamental drawback for historians; that is rather the very limited possibility of verifying the actual form of the production. The first rocket of the long-prepared display was often ignited only after the graphics workshop had printed the matrices depicting it. The fiery illuminations on the graphic sheets are therefore an ideal illustration of the display, which can show only a part of the presentation, or (which is more complicated for scholars) often depict more or even all of its separate parts simultaneously, i.e. as if the greater part of the pyrotechnics had been set off at a single moment – as in the case of the illustrated sheet showing the Swedish firework display. Last but not least, fire is unpredictable, and what is illustrated on paper may in the event have little in common with the reality. In unique cases verification may be provided by newspapers, diary entries, or chronicles.

The Swedish firework display, which instead of 4 June was therefore ignited on the 5\(^{\text{th}}\) was indisputably a spectacular event, although in comparison with the Imperial fireworks it was far simpler. The ideal view of it was from the central pavilion (A), before which stood the most important guests (B). The pyrotechnics were set off automatically. The first to be lit were eight mechanisms exploding into ground-level water balls (C). The second were tall rockets, set off in front of the ephemeral architecture of a gate (D) with a statue of Generalissimo Carl Gustav on the entablature of a triumphal arch (E), bearing Carl Gustav’s ceremonial initials \textit{CGP VIVAT} [Carl Gustav Princeps]. Carl Gustav was King of Sweden from 1654, though he was already declared the successor to Queen Christina I of Sweden (1626–1689) in 1649. Above the statue are the initials CR [Cristina Regina], and above it the royal crown and sun. These initials and symbols were composed of fire, which was gradually lit. At the very corners on the level of the


\(^{13}\) Ibidem, p. 1048.
triumphal arch, spinning girandoles in the shape of the sun were ignited (F). Next to these, further tall rockets and projectiles were launched (G).

Rope constructions (H) were drawn from the gate across the entire length of the stage, carrying fire to a trio of towers (J). Above this, on another rope construction was a flying dragon, spitting fire in the direction of a statue of Hercules with a burning cudgel on a column (P). Beyond this main focal point of the composition were mortars, cannons (M, L), and other small, medium-sized and tall rockets (Q, R, S). The main figure in the iconography of the performance was none other than the Swedish Generalissimo Carl Gustav. Besides his ceremonial initials he was also represented here by a statue of a knight, above which blazed the initials of Queen Christina and her insignia – the crown and sun. Carl Gustav was thus both the patron and the heroic knight of the queen and of the entire kingdom. The dragon on the rope construction, moving towards Hercules, symbolised the triumph of the hero (the Generalissimo) over the beast. In the firework illumination his victory was very probably depicted simply by means of his sword flaming for longer than the dragon's maw. The remainder of the composition, consisting of rockets, cannons, mortars, and other elements, merely created a figural framing for what was essentially a simple programme of the performance, celebrating the heroic figure of the Thirty Years' War.

The second display, known as the Imperial fireworks, was ordered by Ferdinand III (1608-1657) and organised in his name by Ottavio Piccolomini (1599-1656). The technical preparations were the work of the imperial quartermaster-general Gerhard Graafs, probably in cooperation with Johann Carl.14 The exhaustive description of the last days of the Executive Assembly provided by Sigmund von Birken in *Teutschlands Krieges-Beschluß* […] or in *Theatrum Europaeum*, which draws upon it, spares no superlatives in describing the firework display. It is described as magnificent (kostlichen), filled with delight (lustbarlichen), and a true feast for the eyes and the mind (rechte Weide der Augen und deß Gemüths).15 In its programme and staging it was more ingenious than its Swedish counterpart, and also included live actors directly within the pyrotechnic illuminations. This presentation too was preceded by a lavish banquet, accompanied by music and a short theatre play by Sigmund von Birken. In its plot line it preceded the story told by the pyrotechnic illuminations, and featured nine young sons of Nuremberg council-lors and patricians in the roles of Discord (Discordia), Concord (Concordia), Peace (Der

14 Eberhard Fähler names the Nuremberg pyrotechnician Lorenz Müller as the author of the imperial firework display; see E. Fähler, *Feuerwerke*, p. 157.

Fried), Justice (Justitia), a soldier (Der Soldat), a shepherd (Der Schäffer), Fama (Fama), Mars (Mars), Venus (Vénus), Cupid (Cupido), and Vulcan (Vulcanus).16

Some of these personifications were part of the story told by the pyrotechnics. The invited noblemen were treated to a banquet and a presentation in the main marquee, which is depicted on the graphic sheet in the left-hand part of the composition (Fig. 6.). It was constructed from wooden beams with a casing made of fresh, leaved branches (A). An imperial eagle was placed at its apex, and beneath it the flags of the electors. Three flags flew above the gate of the marquee – those of the Habsburg monarchy, Sweden, and France. The graphic sheet shows the audience clearly. The most distinguished members stood in front of the main marquee (H). Others watched the performance from the right and left wings of the marquee (B, C), and others from the galleries along the axis of the shooting range. Military trumpeters and drummers stood in the stands on the right – and left-hand sides (G).

The presentation was opened by Carl Gustav, who ignited pyrotechnics that drove a statue of Cupid (I) along a rope construction from the Generalissimo to the peace column, with the goddess Pax at the top (K). This graphic sheet also illustrates several phases of the production at once. The statue of Cupid is driven away from Carl Gustav, and the figures do battle while the rockets shoot and crackle in the sky. In reality the flaming Cupid first of all set light to the rocket and illuminating pyrotechnics on and around the column, including 24 cannon barrels (M). Eight figures then ran out from the Castle of Discord – four black and four white – and they proceeded to commence a battle with flaming swords around the column (L). In the meantime, the fire spread to the pyrotechnics between the Column of Peace and the Castle of Discord. A girandole was lit (N), as well as fire balls (O), fire pumps (P), and candles on the Spanish enclosure (spannische Reüther) (Q) around the castle. The castle was at a distance of approximately 100 metres from the main marquee, and was made from a wooden construction covered over with painted canvas. Each side measured approximately 21 metres in length, and had four turrets (S) approximately 12 metres high.

The first to light up on the castle were burning wheels on the four high towers. At the same time as the burning wheels, approximately 1400 rockets were launched into the sky. The statues of Discord and Mars, prepared to defend their castle, were also set alight. From the Spanish enclosure, further pyrotechnics next to and behind the castle were lit. Resounding along the left-hand side were brass and wooden mortars (W, Y), as well as 500 muskets firing in volleys (X) and a battery of twelve falkauns. Behind the castle, the tall rockets were launched from an iron construction (V). The artillery on the left-hand side was intended to simulate the shelling of the castle. Further pyrotechnics were placed on the supporting construction of the castle, which, after the shelling, began to explode, thereby initiating the process of the destruction of the Castle of Discord. First of all

the central part of the castle exploded, together with the statues of Discord and Mars, followed by the remainder of the castle, which burned down accompanied by the sound of cannon volleys and the effect of garlands. Peace triumphed, the Castle of Discord was destroyed, the personified Discord and Mars, the god of war, were defeated, and the white warriors overcame their black foes. The negotiations of the Nuremberg Executive Assembly were almost concluded to the satisfaction of the delegates. The thirty years of the ravages of Mars and conflicts among the European nations caused by Discord were erased. The future would now be bright. The Thirty Years’ War had finally come to its definitive end.

As regards the graphic documentation of the imperial fireworks, an engraved plan of the location beyond the city of Nuremberg by St. John’s firing range has been preserved, entitled *Eigentlicher Grundrieß deß Feuerwecks Schlosses und der Barraquen* [...]. The plan was not intended as a utilitarian tool, but rather as a commemorative print. It was engraved by Lucas Schnitzer (signature *LS. fecit*), with a bar indicating the scale in Nuremberg feet. We have documentation of the firework display itself from at least three artists. The first document is a sheet, probably by Andreas Kohl, accompanied by a description in verse. The second is a faithful anonymous copy by an identical engraver, as in the case of the Swedish fireworks. The third, again similarly to the Swedish fireworks, is a sheet published by Jeremias Dümler and carved by Peter Troschel on the basis of a template by Michael Herz. In this case, however, all three are also mentioned on the sheet with the relevant abbreviation. The last known version is an engraving for the sixth volume of *Theatrum Europaeum*.

We have already used several superlatives to describe the final firework displays of the Nuremberg Executive Assembly and referred to them as a watershed in the development of pyrotechnic presentations. The imperial performance in particular was a truly magnificent occasion, not only with regard to the quantity of the pyrotechnics that were ignited, but above all because of its gradually unfolding narrative, composed of several dramatic plot elements. A substantial contribution to the creation of the script was provided by the poet Sigmund von Birken. He did not present a simple narrative, based


18 Andreas Kohl (?), *Das Kaiserliche Friedens Freudsmaßl [...]*, copperplate, collection of Český Šternberk.

19 Paris, Institut national d’histoire de l’art, Collection Jacques Doucet, sign. OC 74 (2).


on the celebration of an individual – a hero or dynasty, as had often been the case in the past, and also applied to the Swedish fireworks. The event was celebrated, the story unfolded, and the stage was dramatically transformed. A similar concept was to be found shortly afterwards within the Central European and German environment, specifically at the court of the Electorate of Saxony in the years 1655, 1662, 1678, and 1679. Also as early as in 1651 at the wedding fireworks of Ferdinand III and Eleonora Magdalena Gonzaga of Mantua-Nevers (1630–1686), in 1666 at the first wedding firework display of Emperor Leopold, at the fireworks on the occasion of his second wedding in 1673, and at the third in 1676, as well as at the wedding fireworks to celebrate the marriage of Leopold’s son Joseph I (1678–1711) and his wife Wilhelmina Amalia of Brunswick-Lüneburg (1673–1742) in 1699. Within the German environment, similar displays took place in a number of royal seats of German princes, for example in Stuttgart in 1674.

The conclusion of the negotiations of the Nuremberg Executive Assembly was especially celebrated in Central Europe. The Habsburg monarchy, and Bohemia and Moravia in particular, had been the site of the fiercest battles in the final years of the war. The celebrations of the end of the negotiations were marked by a firework display about which we have no further details, staged in Prague on 24 July 1650.

Vienna | Prague 1651

During the time when the Assembly was being held, the Imperial Court was still also occupied with other concerns. A new wife was being sought for the emperor, and soon wedding preparations began. A key role was played by Ferdinand’s stepmother, the Empress Dowager Eleonora Gonzaga, who recommended to the emperor the young Mantuan princess Eleonora Magdalena Gonzaga of Mantua-Nevers. The Empress widow was the godmother of the princess, and in 1649 she had already played a crucial part in arranging the Habsburg-Gonzaga marriage of her brother Charles II Gonzaga-Nevers, Duke of Mantua and Montferrat (1629–1665), to Archduchess Isabella Clara of Austria (1629–1685). The role of envoy and procurator, who was responsible for arranging the final conditions and escorting the future empress to her husband, fell to Count Johann Maximilian von Lamberg (1608–1682). He travelled to Mantua on 24 February


23 For details on the Stuttgart fireworks see G. Kohler (ed.), *Die schöne Kunst*, pp. 140–149.

1651, and on 2 March the wedding was already held *per procuratorem* in the Basilica of St. Barbara. Lamberg presented the ring and engagement gloves to the bride.

On 16 March Eleonora left the convent in which she had been raised, after which week-long celebrations then commenced, including banquets, musical-dramatic productions, a ballet, and a grand firework display, with the illumination of the Temple of Love on St. Peter’s Square. Ferdinand also celebrated in Vienna. A report from *Theatrum Europaeum* informs us that on 12 February a day of celebrations was held, entitled the „stattliche Masquerade und schönen Thurnien“.

The firework illuminations, rather than being a performance, were staged as part of an equestrian tournament For the Quintane and were partially installed on the gates of the Hofburg on the Burgplatz (today In der Burg). After nine o’clock in the evening the fireworks were set alight by an incendiary spark from an imperial eagle on a wire, propelled in a circle by a rocket on its breast, which had been ignited from his room by Ferdinand III himself. We have a preserved archival record of this performance in the form of a bill dated 2 April 1651, ordering the payment of 467 florins to the painter Gottfried Füscher, the carpenter Hans Englbrecht, and other craftsmen for labour and material for the fireworks prepared for the Burgplatz.

However, for us it is far more important to focus on the wedding firework display, which was one of the climaxes of the celebrations. Eleonora Magdalena entered through the city walls of the capital of the monarchy at the beginning of May 1651, and on 5 May she attended a spectacular presentation before the gates of the Hofburg, together with her entire court. A detailed description of the performance has been preserved in *Theatrum Europaeum*, revealing a source of inspiration unknown today – most probably a synopsis or script. The staged firework display was divided into three parts – acts, referred to in the text as Salve. It was commenced by a salute from 30 cannons, followed by resounding mortar fire with shells weighing 100, 200, and 500 pounds (approximately 50, 100, and 250 kg). The scene was then illuminated by incendiary balls and other pyrotechnics. Eight large rockets were launched into the air, each of them weighing 40 pounds. A construction bearing the names of the emperor and empress was then set alight. Installed on the construction and also soon ignited were 100 rockets with a weight of one and a half pounds, 20 mortars with fireballs, and also six flaming


wheels – garlands. In addition to this quantity, there were further pyrotechnics numbering more than 1300 items.

The second act was again opened with a salute from the 30 main cannons, followed by booming mortar fire and eight large rockets. A chariot with flaming wheels and blazing fire was then driven through the gate. Following this, the figure of Fama, with two burning hearts in one hand and a trumpet in the other, approached the ephemeral architecture of a temple. After the second clap of thunder, the doors of the temple opened, and inside sat Venus. Fama presented both hearts to her, and the goddess in turn placed them on an altar as a gift to Apollo. The figures of Vulcan and Mars battled one another with flaming weapons. From the depiction of Time on the large gate, the figure of Vulcan and a great column were set ablaze. The God of Fire was destroyed, while a heart was set alight on the main column. On the other side of the stage, the figures of Mars and Cupid were also set on fire, and like Vulcan were also destroyed. More flaming wheels were ignited on the column. The sound of 300 shots rang out, 100 fires were set alight on the gate, 50 mortars resounded, 600 rockets were launched into the skies, and another 20 flaming wheels were lit, followed by the effects of another more than 1300 items of pyrotechnics.

At the beginning of the third act the names of the emperor and empress burned on the gate, and next to them the title VIVAT. The temple spire was illuminated and a blazing imperial eagle appeared on it, with a burning wheel on the chapel. Over 300 rockets were launched out of the temple, and the temple itself was illuminated by the lights of more than 2000 fires. The galleries of the temple blazed with star fire, and around the temple burned balls from fourteen large pumps. Then 50 mortars shot fireballs into the air. They were followed by 700 rockets. Again twenty flaming wheels were ignited, along with a further more than 1300 items of pyrotechnics. The firework display concluded with an almighty volley from 30 kartouwes.

As we shall see, the course of the wedding fireworks of Ferdinand and Eleonora Magdalena had several motifs in common with a production staged for Leopold and Margaret Theresa fifteen years later. The three-act performance was a symbolic triumph of love over Vulcan and Mars, the gods of fire and war. Unstoppable blazing love, spread by the goddess of fame and renown – Fama, presented to the most beautiful goddess – Venus, and sacrificed at the altar of the brightest – Apollo. The hearts of the imperial couple burned not only for one another, but also, through the personification of the highest office – a blazing imperial eagle – for all their subjects.

Another wedding firework display was set off in Prague on 5 June 1651. This time it was for the occasion of celebrating the marriage of the daughter of Julius Henry, Duke of Saxe-Lauenburg (1586–1665), Maria Benigna Francisca (1635–1701), to the well-known generalissimo Ottavio Piccolomini. The presentation was organised by Julius Henry himself and lasted from nine until eleven in the evening. In addition to
its duration, one detail we know about the display is its assessment as „sehr künstlich und kostbare“.\(^{28}\)

However, not all firework displays could be so well received. Towards the climax of the pregnancy of Eleonora Magdalena in the winter of 1652, the preparations for a firework display began, which was to be ignited to celebrate the birth of her issue – the imperial princess Theresia Maria Josefa (1652–1653). Although Eleonora Magdalena gave birth on 27 March, no firework display took place. We know that the construction being prepared was damaged as a result of negligence, and the pyrotechnics were set off prematurely, resulting in serious injury to seven people, two of whom died from their injuries.\(^{29}\)

An interesting archival record is to be found among the accounts of the imperial administration from 3 January 1652. This orders the payment of 100 florins to Count von Pallingen for providing all manner of requirements for a fireworks laboratory (*feuerwerksh laboratorium*) located in the former imperial armoury.\(^{30}\)

**Vienna 1654**

Between 1654 and 1660 the situation at the Viennese court was fundamentally transformed. The emperor arrived from the Regensburg Reichstag and the Augsburg coronation of Ferdinand IV (1633–1654) in poor health, and departed once again, to Laxenburg for treatment and then to the spa in Baden, though his condition did not improve. However, what was even worse was that Ferdinand IV also fell ill with smallpox, and his illness represented a genuine danger to the entire imperial family. We know that on 23 June the family returned to the capital, reportedly fresh and healthy (*frisch und gesund*). To celebrate their return and the feast of St. John the Baptist, a firework display was staged on the *Burgplatz*, intended as a replacement for the Midsummer Fires (*Sonnenwend Feuers*).\(^{31}\) However, if the health of the heir to the throne had genuinely improved, this was only temporary. Ferdinand IV died on 9 July 1654, and the court found itself in mourning. The new successor was the young Leopold (1640–1705). He accepted the tribute of the Lower Austrian estates at the end of January 1655, on 27 June 1655 he was crowned King of Hungary and on 14 September 1656 King of Bohemia. We do not have any documentation of a staged firework display from any of the coronations. The same also applies to reconstructing the journey of Leopold and his court to the imperial coronation in 1657. In Prague the young king held the Provincial Assembly from September

\(^{28}\) Ibidem, p. 144.

\(^{29}\) Ibidem, p. 176.


1657 to January 1658, and obtained means from the Bohemian estates for the representation of the royal journey, election, and coronation. Leopold entered Frankfurt am Main in a ceremonial procession on 19 March 1658, and was crowned emperor in the Cathedral of St. Bartholomew on 1 August.\footnote{For details on the coronation, see selected passages in B. H. Wanger, Kaiserwahl; on the relevant festivities and the documentation thereof, see Miroslav KINDL, Maskarada a díl komedie... Slavností, ceremonie a jejich obrazové a grafické dokumentace na habsburském dvoře ve střední Evropě v 17. století, Olomouc 2015 (Dissertation), pp. 65–68, 179–185, cat. no. 6.1, 6.2, 6.3.} In comparison with the previous customs, Leopold’s election and coronation took place at a more hurried pace, and even the festival entourage was not especially grandiose. There were banquets, musical-dramatic productions, and tournaments featuring various types of contests. However, there was no separately documented performance, and not a single memorable firework display.

As in the case of the coronation of Ferdinand III as King of the Romans in 1636,\footnote{Ferdinand’s coronation was celebrated in Rome in 1637. For further details see Alice Villon-Lechner, Sprühende Tauben und flammende Bauten. Das römische Feuerwerk als Friedensfest und Glaubenspropagandatheater, in: G. Kohler (ed.), Die schöne Kunst, pp. 17–56. The fireworks are described in the festival diary by Luigi Manzini, Applausi festivi fatti in Roma per l’elezione di Ferdinando III. [...], Roma 1637.} Leopold’s election and coronation as the defender of the Catholic faith in Transalpine Europe was also celebrated in Rome. At the very least we have a preserved sheet entitled \textit{Feste e fuochi artifiziati fatti in Roma} [...], prepared by the publisher Giovanni Giacomo de Rossi (1627–1691) for the cardinal protector and ambassador of the Holy See to Spain, Girolamo Colonna (1604–1666).\footnote{Unknown engraver, \textit{Feste e fuochi artifiziati fatti in Roma} [...], 1658, copperplate, The British Museum, inv. no. 1870, 1008.2975.} For three days in September 1658, an allegorical city firework display was staged in front of the Palazzo Colonna on the Piazza Santi Apostoli, with ingenious mechanisms and pyrotechnics.

While there was a marked increase in the number of staged and documented musical-dramatic productions at the Habsburg court during the first years of the reign of Emperor Leopold I,\footnote{On the musical-dramatic productions of the Viennese court see especially Herbert Seifert, \textit{Die Oper am Wiener Kaiserhof}, Tutzing 1985; Andrea Sommer-Mathis, \textit{Feste am Wiener Hof unter der Regierung von Kaiser Leopold I. und seiner ersten Frau Margarita Teresa (1666–1673)}, in: Fernando Checa Cremades (ed.), Arte Barroco e ideal clásico. Aspectos del arte cortesano de la segunda mitad del siglo XVII, Madrid 2004, pp. 231–256; Andrea Sommer-Mathis – Daniela Franke – Rudi Risatti (edd.), \textit{Spettacolo barocco! Triumph des Theaters}, Petersberg 2016.} we have no firework displays documented whatsoever – although of course this does not mean that none were held.

\textbf{Vienna 1666}

After the Nuremberg Imperial Fireworks, we do not have a graphically documented presentation of the imperial court until 8 December 1666. We can compensate for this...
long gap with the knowledge that we are now arriving at one of the best documented, most extensive, and allegorically most ingenious firework displays of 17th century Europe. The engagement of Emperor Leopold to the Spanish Infanta Margaret Theresa (1651-1673) was announced on 6 April 1663, and on 25 April 1666 the couple were betrothed per procuratorem in Madrid. However, several months were yet to pass before the betrothed met in person. Margaret Theresa ceremonially entered Vienna on 6 December 1666, and the wedding took place one week later, on 12 December. The wedding festivities, which lasted for almost two years, provided an example of one of the most ostentatious and allegorically sophisticated celebrations of Baroque Europe. In the first two months, reportedly not a day went by on which a ballet or comedy was not performed, or a hunt or banquet organised.

The preparations for the main events of the celebrations had to begin long before the entrance of the emperor’s bride into the capital city. The imperial administration had already started preparing the firework display, under the somewhat complex title of Flames of JoyIgnited from Heaven and Blazing Upwards through the Universal Call of the Earth (Von Himmeln entzündete und Durch allgemeinen Zuruff der Erde sich Himmel-werts erschwingende Frolockungs-Flammen), in 1665. From the accounting we learn that on 6 July, 2 October, and 7 November a total of 4500 florins was paid to the artillery paymaster Caspar Holden for the preparation of „lust feyerwerchs zur kay. Hochzeit“, on 5 September Lieutenant Vincker requested the issue of pumps, wooden poles (wagonerstangen), and 60 logs of spruce wood for the preparation of rockets; on 2 November the same lieutenant was paid 500 florins and on 2 January 1666 a further 1000 florins; on 29 April Count Ernst von Abensperg und Traun obtained 3500 florins for works in connection with the preparation of a firework display; on 7 July a further 2500 florins was added to the 2500 florins that had already been paid out; on 26 October another 6491 florins and 50 crowns; on 7 November the amount of 2000 florins was paid for wood; without further details and on an undated bill from 1666 a total of 23,500 florins was reportedly paid to Caspar Holden, and finally, again on an undated bill from 1666, we have documentation that 400 florins was paid to Captain Urban Luin for the preparation of fireworks. The undated bill for 23,500 florins probably summarised the final amount for the firework display.


38 Österreichisches Staatsarchiv Wien, Hofzahlamtsbücher 1665/66, fol. 433r, 433v, 671v; Hf. 1665 R, fol. 486v, 554r; Hoffinanz Bücher 1666 R, fol. 3v, 238r; Hoffinanz Bücher 1666 E, fol. 256v, 706v–707r, 750v; cit. according to Herbert Haupt, Archivalien zur Kulturgeschichte de Wiener
The presentation was one part of a complex allegorical story of the four elements, which the wedding celebrations projected in their composition, culminating in the equestrian ballet *La Contesa dell’Aria e dell’Acqua*, performed on 24 January 1667 and reprised one week later. In it, Emperor Leopold battled with all four elements for a pearl (in Latin Margarita), thus for the Infanta Margaret Theresa. The fireworks naturally represented the element of fire. In the synopsis it completed the composition of the elements together with water, which was fed into several festive and spectacular devices (jets and fountains), earth, which was characterised by the depiction of various festive events, and air, which was represented by echoes of the sounds of general cheering and rejoicing. The fireworks display took place under the auspices of Jupiter. He sent love to banish Vulcan, the architect of war, and to smash his weapons of destruction to pieces. He then sent Hercules to eradicate all wickedness and hardships, and finally an eagle to burn on a sacrificial altar the unity and devotion of the royal and imperial lands. The Phoenix was Emperor Leopold himself, who, out of love for his subjects, set himself ablaze.

The fireworks were ignited in front of the gates of the Hofburg, between the bastions of the city walls, probably on the same site as where the wedding fireworks of Ferdinand III and Eleonora Magdalena were staged in 1651. The performance had three acts, all of which are graphically documented (Fig. 7, 8, 9). The first was entitled Flaming Introduction (*Flammende Anlaitung*), the second Flaming Presentation (*Flammende Darstellung*), and the third Flaming Greeting (*Flammende Anwünschung*). The mountains in the first stage plan were at a distance of 440 feet (approx. 139 m) from one another, with a height of 60 feet (approx. 19 m) and a circumference of 216 feet (68 m). The Temple of Hymen in the rear section of the stage and with an ornamental pergola measured 230 feet (73 m) in width and 35 feet (11 m) in height, not including the statues and spires, while the height of the temple with the dome was 95 feet (30 m). It is most probable that the

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40 *Von Himmeln Entzindete Und Durch Allgemeinen Zurruff der Erde sich Himmelwerts erschwingende Frolokhung Flammen [...]*, [Wien] 1666; versions have also been preserved in Italian and Spanish: Le fiamme accese dal cielo et al cielo riascese Con giubilo Vniversale della Terra, Vienna 1666; Las Llamas Encendidas Del Cielo, y Tornadas Al Cielo; Con regozijo universal de la Tierra, Vienna 1666.
ephemeral architecture was made from wooden scaffolding covered with painted canvas, with the details made of cardboard and papier-mâché. The stage was never evenly illuminated during the course of the performance. The pyrotechnics always illuminated only the areas where the action was currently taking place. In the first act this was a pair of mountains – Etna and Parnassus. In the second act it was the area of the second plan between the towers where the duel between Hercules and the centaurs took place, and in the third act the Temple of Hymen was illuminated.

The first act was divided into five scenes. The performance was opened by Margaret Theresa from the window of the Hofburg by igniting a rocket on a torch on a statue of Mercury, which then descended on a rope into the area where the fireworks were, surrounded by fiery sparks. Upon the command of the gods, he symbolically announced the joyful news and set light to the pyrotechnics. The second scene was of rejoicing. Approximately 500 fires illuminated Etna and Parnassus, and a salute of 30 kartouwes rang out from the bastions, accompanied by trumpets and drums. In the third scene Etna was set ablaze, with bright, incandescent flames rising from its peak, accompanied by shots of crackling starbursts. At the foot of the mountain a cave was lit up, in which Vulcan and his helpers were manufacturing weapons. The forge was presented by pyrotechnics with the aid of firing blanks from cannons (lustkugeln), with the sound of a volley of 3 000 shots from muskets and other noise of explosive weapons. In the fourth scene, Cupid swooped into the cave housing the forge, driving out Vulcan and his assistants and smashing their weapons to pieces. He then immediately proceeded to forge a wedding ring on the spot. With this he then flew up to the heavens to the sound of general rejoicing, in order to keep it safe for eternity. In the fifth scene the mountain opposite, Parnassus, burst into flame. On it sat nine muses, symbolising the nine arts, while on its peak was the mythical Pegasus, who, in accordance with the legend, stamped his hoof on the earth, whereupon the fount of poetic inspiration sprang up. Music played. The mountain was then illuminated by the pyrotechnics of fire pumps and star fires. Firecrackers rang out, which, when they died down, were replaced by the sound of trumpets and drums.

The second act was played out in four scenes. The stage was placed between two towers, symbolising the two Habsburg dynasties, in front of a pair of gates with a pair of hearts bearing the letters symbolising the union, namely L(eopold) and M(argaret). In the second scene, centaurs ran out from Etna, to be confronted by Hercules, acting on the command of Jupiter, who battled with them and drove them from the stage. In the third scene the pair of towers (castella) were lit up, and 1000 rockets fired out of each of them. On the first of them there then appeared the title VA (Vivat Austria), and on the second VH (Vivat Hispania). In the fourth scene, volleys were fired from hundreds of mortars, their blank charges (lustkugeln) resounding in the air with thousands of shots.
At the conclusion of the second act, the letters VL (Vivat Leopoldus) and VM (Vivat Margarita) appeared on the stage, once again to the sound of trumpets and drums.

The third act was played out on the furthest part of the stage, with the first two plans, having served as the stage for the first two acts, in darkness. First of all, the pyrotechnics illuminated the Temple of Hymen, the god of marriage. From the rear a quantity of pyrotechnics was launched forwards – brightly glowing star-shaped and other fires. In the second scene Jupiter's eagle swooped down from heaven, to perch with divine blessing upon the altar before the temple and ignite the flames of rejoicing – pyrotechnics blazing all around. In the third scene the Phoenix appeared on the lantern of the temple, symbolising the self-immolating care of the emperor for his vassals and subjects. The fourth scene was the most extravagant in its pyrotechnic illuminations. From the statues and spires on the balustrade of the wings of the temple, flames rose up and rockets shot out. From a total of 39 statues, 33 balusters and 27 columns, almost 70,000 various items of pyrotechnics were launched – rockets, fires, and squibs. The following illumination saw the igniting of another 3000 flares and 1000 tall rockets, the effects of which concluded with the booming shots of six mortars. In the fifth scene, 300 rockets were launched skywards simultaneously, leaving behind them in the air the letters A. E. I. O. V. (Austria Erit in Omne Vltimum – Austria will be supreme in the world), evidently suspended on the construction and lit up by the rockets. While the letters blazed, ten mortar shells were fired out, the first set of them with a weight of 200 and the second set with a weight of 300 pounds (approximately 100 and 150 kg respectively). Several thousand firecrackers exploded in the air. Another 30 tall rockets were launched, each of the first ten weighing 50 pounds (approximately 25 kg), each of the second ten weighing 100 pounds (approximately 50 kg), and each of the last ten weighing 150 pounds (75 kg). The fireworks ended with a volley from a total of 60 kartouwes.

A detailed and credible explanation of the symbolic meanings and the individual parts and elements of the firework display was provided by Eberhard Fähler. The imperial wedding was a symbol of the eternal glory that would ensue following the overcoming of wars and disputes. Hercules’ battle with the figures of the underworld was a clear symbolic model for the role of the sovereign in establishing order. The battle of the exemplary hero was played out before illuminated initials, and his victory was therefore clearly linked with the imperial couple. From the heavenly heights descended symbols of the empire, which derived its earthly triumph from this transcendent legitimacy. The abundance and magnificence of the firework display represented the universal rejoicing and festivity of the kingdom and the hereditary lands. While the hereditary lands on the balustrade glowed in the beauty of the pyrotechnics, the sovereign, personified by the Phoenix, was prepared for sacrifice. The firework display was a clear expression of a dynastic conception of power, which has its roots in a general notion of order.

The presentation served not so much to reinforce this order as to illustrate its perfection. The elegant world of the Viennese court was celebrating a crowning event in the life of the emperor, and at the same time the celebration was an act of state. In comparison with the future two wedding firework displays of Leopold I, it did not yet betray any anxiety with regard to the absence of a successor, or any symbolic pleas for rectification of the situation.

The firework display, alongside the equestrian ballet and musical-dramatic performance *Il Pomo d’oro*, was intended to be the climax of the wedding celebrations, and as such was also meant to be well documented, with reports of it disseminated throughout Europe. In addition to a synopsis printed by the imperial printer Matthäus Cosmerovius (1606–1674), a report and a graphic sheet were also presented in the tenth volume of *Theatrum Europaeum*. We also have a preserved single-sheet report – a combination of graphic and typeset descriptive text. An interesting example of publishing practices is provided by one of the works bound into the 15th volume of Martin Meyer’s *Diarium Europaeum* from 1667 and 1668. With the exception of negligible details, the work is a copy of the synopsis, and the graphic sheets are engraved faithfully according to the original sheets on the new matrix – even page-reversed.

**Mikulov 1672**

Between 15 and 18 July 1672 Leopold and Margaret Theresa visited the Mikulov estate of the empress’s highest-ranking chamberlain (*Hofmeister*), Ferdinand Joseph, Prince of Dietrichstein (1636–1698). The prince prepared an extravagant programme for the imperial family and part of their court – from their ceremonial entrance into Mikulov, through religious services, banquets, music, and dancing to hunting, a graphically documented firework display, boat rides, and a trip to the town of Lednice (*Eißgrub*).

The prince kept detailed notes of the preparation and course of the festivities, and

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43 Unknown engraver according to Melchior Küsel, *Eigentliche Abriß und Beschreibung […]*, 1666, copperplate, Getty Research Institute.


correspondence has also been preserved.\textsuperscript{46} In addition, the visit is described in the 11\textsuperscript{th} volume of \textit{Theatrum Europaeum}.\textsuperscript{47}

The most grandiose and expensive entertainment of the visit was the ceremonial firework display ignited at half past nine in the evening of 17 July. We know that the event was initially jeopardised by storm clouds, but eventually the fireworks were lit. The spectacle was prepared by Johann Jakob Köchl (1629–1680), whom we also encounter in the role of imperial master pyrotechnician in Leopold’s subsequent two wedding firework displays. From the preserved description of the festivities in \textit{Theatrum Europaeum}, we are informed only that \textit{Abends ein schönes Feuerwerk gehalten worden}. We know from the diary entries of Ferdinand Joseph of Dietrichstein, interpreted by Rostislav Smíšek, that the fireworks lasted for 45 minutes, and the spectators viewed them from the chateau gardens. Hundreds of rockets were launched during the performance.

The firework display culminated with the emblazing of three \textit{luchstalen} bearing the letters \textit{VML (Vivat Margarita Leopoldus)}.\textsuperscript{48} When we consult the graphic sheet (Fig. 10), which allows a comparison with the imperial fireworks previously held in the second half of the 17\textsuperscript{th} century, we are able to state that the Mikulov display primarily concerned pyrotechnic illuminations, and not a sophisticated combination of a dramatic component with expensive scenery of ephemeral architecture and the relevant firework illuminations. Positioned at the front of the stage were 18 mortars, which fired pyrotechnics high into the air, where they exploded in starbursts. Arranged in two rows towards the rear of the stage were illuminating pyrotechnics for the rising fire and crackling pyrotechnics. To their sides stood four constructions for lower rockets, and at the back of the stage was a wide structure for medium-sized and tall rockets. Two masts were installed at the very side of the stage for the tallest rockets, which were most probably lit at the end of the performance. The four figures on the stage are not actors; three of them are assistants to the master pyrotechnician, and the fourth is evidently Johann Jakob Köchl himself.

The Prince of Dietrichstein did not neglect to note in his diary that he paid one gulden and 12 kreutzers for the documentation on the firework display, of which he had 24 copies printed. The print matrix was prepared for him by Johann Martin Lerch (1643–1693), an engraver from Württemberg who worked in Vienna in the 1670s at the latest, and documented a whole series of festivities for the imperial court.\textsuperscript{49} The sheet

\textsuperscript{46} Moravský zemský archiv Brno, G 140 – Rodinný archiv Ditrichštejnů, inv. no. 79, box 23.
\textsuperscript{47} \textit{Theatrum Europaeum} XI, Franckfurt am Mayn 1682, p. 53.
\textsuperscript{48} R. Smíšek, \textit{Leopold I.}, p. 88.
bearing the engraved legend is of a thoroughly documentary character, and is most probably based on source materials provided to Lerch by Köchl. Although we know that the firework display lasted for 45 minutes, on the graphic sheet it is presented in its entirety in a single moment – it does not illustrate the individual acts of the performance, but rather the illumination of all the pyrotechnics at once.

**Vienna 1673**

Empress Margaret Theresa died on 12 March 1673 at the age of 20. Only one of the children of Margaret and Leopold survived to adulthood – their daughter Maria Antonia (1669–1692). Therefore, in 1673 Leopold had no male heir. It was only on rare occasions in history that the house of Habsburg in Central Europe stood so close to its demise. The precarious dynastic situation was exploited by Leopold’s cousin, the French King Louis XIV (1638–1715), who tirelessly attempted to destabilise the position of the Holy Roman Emperor. Leopold urgently needed to find a new wife, and above all an heir. After a brief search, the emperor’s distant cousin Claudia Felicitas, Archduchess of Austria (1653–1676), was recommended to him. It was possible to arrange everything quickly and inexpensively, since Leopold was Claudia’s custodian. Graz was chosen as the location for the wedding, which was planned for 15 October 1673. After celebrations lasting for several days, from which we have no record of any fireworks, the emperor’s court set out for the gates of the capital city, which the emperor ceremonially entered in the middle of July.\(^{50}\)

On 18 July a firework display entitled *The Destruction of the Cretan Labyrinth* (*Die Vernichtung dess Cretischen Irr-Gartens*) was set off between the bastions in front of the gates of the Hofburg, thus evidently on the same site as in 1651 and 1666. We can reconstruct the performance with the aid of preserved synopses in German and Italian, and from a graphic sheet (Fig. 10).\(^{51}\) The stage was not as deep as in the case of the firework display of 1666. The main compositional element was the ephemeral architecture of the labyrinth. Most of the pyrotechnics were installed around it, while rope machines with pyrotechnics operated directly inside it. The performance had three acts. It began with the lighting of the torches that illuminated the aisles of the labyrinth, as well as the statues and the artistic decoration. Trumpets and kettledrums resounded in the night. The initial spark was ignited by the emperor himself, who from the palace window set light to pyrotechnics on a small eagle that descended on a wire construction towards a larger eagle, which soared above the stage. The labyrinth was then set alight from the

\(^{50}\) On the festivities in Graz see M. Kindl, *Maškaráda*, p. 88, cat. no. 8.1.

large eagle with pyrotechnics imitating lightning bolts. The enflaming of the large eagle by the small eagle and the final destruction of the labyrinth with its statues and spectres was symbolic. The emperor, as the small eagle, ignited the Austrian female eagle, which reduced the spectre that confronted her to ashes. The devotion of the fire to the imperial majesty was depicted by the emblazing of the letters V.L. and V.C. (Vivat Leopoldus and Vivat Claudia). The firing of 30 kartouwes resounded from the bastions, and two spectacular star fires were set alight. This was followed by illuminating pyrotechnics, which gradually lit up the 16 statues on the balustrade of the labyrinth. These statues were burned to ashes, symbolising the conviction that those who sow confusion and chaos shall eventually fall. Their demise was accompanied by flashes from fired grenades, fire from pumps, and rockets, as well as the thundering of mortars, intended to symbolise the vengeance of the god of thunder on whoever feeds the monster with human bodies. This was followed by burning wheels of fire surrounding the burnt statues, which was meant to symbolise the power of the Austrian eagle, which reduces to ashes the wheels of fortune of those who rise up against her. Mortars then fired out flaming grenades, which exploded in the air, symbolising a duel. Then the time arrived for the rockets, initially a set of 100-pound (approx. 50 kg) rockets, followed by four 60-pound grenades, and finally fire blazed from 100 three-stroke mortars, bringing the first act to an end.

At the beginning of the second act, a crackling grenade was fired from a mortar, with a weight of 28 pounds of gunpowder. It was intended to depict such chaos in the air that spectators would begin to fear for their earthly welfare. Daedalus placed wings upon Icarus, and he proceeded to fly slowly and low out of the labyrinth towards the heavens, propelled by rocket pyrotechnics. He was followed by Icarus, whose flight was fast and high. However, he soon burned himself out and fell to the earth. With the fall of Icarus, rockets and grenades were launched skywards. There followed a duel with flaming weapons in the labyrinth between Theseus and the Minotaur. Upon each strike of Theseus’s flaming weapon, the bull was set alight, until it completely burned to ash. After the defeat of the Minotaur a multitude of rockets were launched, in the centre of which were star-shaped fires, while flares were ignited on the ground, followed by the illumination of a statue of Ariadne and the lighting of a thread in the aisles of the labyrinth. On the opposite side of the labyrinth a statue of Ariadne’s sister and envious observer Phaedra was lit up. The emergence of Theseus from the labyrinth was followed by fire from 100 three-stroke mortars and further fires. The second act was concluded with the joyful news of the hero’s triumph.

The third act commenced with the burning of the statue of King Minos. Theseus then proceeded to set fire to the labyrinth in several places with his cudgel, and soon it lay in ashes. The act of destroying the king and his creation was intended to encourage reflection on the sense of abandoning chaos in favour of order. As in the case of the firework display of 1666, in this performance too a large quantity of pyrotechnics was ignited at its climax. An artificial cloud was created, as well as a creature transformed by rockets.
into fire and a set of star rockets. Mortars fired out four grenades, two of them weighing 60 pounds (approx. 30 kg) and two of 100 pounds (approx. 50 kg). Tall rockets then flew out of the tallest construction and from a quartet of masts – six of 25 pounds, four of 100 pounds, and four of 200 pounds of gunpowder. At the climax of the performance the fires of hundreds of three-stroke mortars were ignited, as well as two large girandoles, and finally thirty kartouwes were fired from the bastions.

This wedding firework display also had several symbolic meanings reflecting the political map of Europe and the dangers threatening the Habsburg monarchy. The labyrinth represented the imperfect course of the world created by Minos, which is corrupted by those who seek their own profit. The Minotaur feeding on human flesh represented war, which devours the nations of the world. Daedalus was a depiction of a man who escapes from the labyrinth, i.e. the imperfect world. At the same time, however, he does not elevate himself above that which is just – he is a representation of an upstanding inhabitant of a better universe. Icarus, by contrast, personified the presumptuous exalting of oneself above others, as a result of which he cast himself down into the chasm of damnation – he is a representation of an undesirable inhabitant of Leopold’s world. Theseus then represents the invincible Leopold, the hero whom they wished to subordinate to the beast, namely war. But he conquered war and liberated the city of Athens, which had been forced to feed its virgins to the Minotaur. Leopold thus liberated the Holy Roman Empire from the burdens placed upon it by usurpers – although none of the sources states this explicitly, it is possible to assume that the onlooking courtiers would have viewed this usurper as representing the French King Louis XIV or the Turkish sultan Mehmed IV (1642–1693). Ariadne naturally represented Claudia Felicitas. She was predestined by the heavens to offer her spouse a thread, with the aid of which he could happily escape from the narrow corridors of the imperfect world. And of course, with the Habsburgs facing a dynastic crisis, this thread represented their future progeny.

For a synopsis, the scene was recorded on a graphic sheet and engraved by the Flemish artist Nikolaas van Hoy (1631–1679). However, he was not the only one to do so. In 1673 the university printer Michael Thurmayer typeset an accompanying text, which he attached to a print of a graphic matrix by Johann Martin Lerch. The graphic sheet illustrates several different parts of the performance in a single picture.

Passau, Neuburg am Inn 1676, Vienna 1677

Although Leopold’s marriage to Claudia Felicitas was a happy one, it also failed to fulfil expectations. Purely in terms of facts and figures, in two and a half years of living together, his wife bore him only two daughters, neither of whom survived for more than a few weeks of life. Claudia Felicitas herself died of tuberculosis on 8 April 1676 at the age of only 22 years old, shortly after the birth of her second daughter. However, Leopold could not afford to spend a long time in mourning like any ordinary mortal. On the contrary, he had to act even more promptly than three years previously. Very quickly, the
choice was made in favour of the Palatinate Princess Eleonore Magdalena of Neuburg (1655–1720), and by November 1676 the conditions and details of the marriage were already arranged. The wedding was not deferred; the chosen date was 14 December, and the chosen city was Passau. The course of the celebrations is documented by *Theatrum Europaeum* and the wedding diary.\(^{52}\)

The procession with the emperor passed through several ceremonial gates, and when it reached the centre of the town 24 items of pyrotechnic illuminations were set alight, and cannon salutes resounded from the Veste Oberhaus fortress. In the meantime, Eleonore Magdalena, together with her father, mother, brother, and retinue were the guests of Georg Ludwig von Sinzendorf (1616–1681) at his chateau in Neuburg am Inn, where the princess saw Leopold for the first time on 12 December. We know that besides constructing a ceremonial gateway and arranging smaller entertainments, Sinzendorf also prepared a firework display for the Palatine court, for which he paid the price of 566 guldens.\(^{53}\) On the basis of the preserved graphic sheet, we may assume that the fireworks consisted primarily of illuminations, and not a dramatised performance.\(^{54}\) The wedding ceremony took place in the court chapel of the bishop’s residence in Passau at five o’clock in the afternoon on 14 December 1676. The newlyweds then celebrated Christmas and the New Year in Linz. They ceremonially entered the capital city on 2 February 1677, and the very same evening they witnessed the climax of the celebrations – a firework display.

The performance for the emperor and his court was once again prepared by Johann Jakob Köchl, and was entitled *The Torch of Prometheus* (*Die Fackel des Prometheus*). We again have synopses preserved in German and Italian, and we are also acquainted with the fireworks from graphic sheets (Fig. 11).\(^{55}\) The scene was composed around the Temple of Minerva with a colonnade. This was also a three-act performance. This time it was commenced by Eleonore Magdalena from the balcony of the Hofburg, by lighting a torch on a statue of Prometheus astride Pegasus. Prometheus descended to

\(^{52}\) For details on the course of the celebrations see *Theatrum Europaeum XI*, Franckfurt am Mayn 1682, pp. 913–914; Filipp. Maria Bonini – Johann Martin Lerch, *Racconto Historico Del Felicissimo Maritaggio […],* Wien 1677; Johann Martin Lerch, *Die Glückliche Vermählung […],* Linz 1677.


the statue of the First Man on a pedestal before the temple. From here the illuminating pyrotechnics were ignited, revealing the entire temple and colonnades, which had been under the cover of darkness. An imperial eagle was set aflame on the roof of the temple, and at both ends of the colonnade the letters VL (Vivat Leopoldus) and VE (Vivat Eleonora) were lit. In this case too, the symbolic meanings were very closely linked with the imperial couple. Prometheus, who fashioned a statue of the First Man from clay and brought fire to the people, represented Leopold: a hero who loved humanity, a protector of the righteous, and a warrior for the oppressed. Eleonore Magdalena was Minerva: the goddess who breathed life into Prometheus’s creation. The statue created by Prometheus and brought to life by Minerva represented The Brightest House of Austria. This had found itself in a petrified state, since it had no male heir. The task of reviving it fell to Minerva – Eleonora.

Shots from 30 cannons rang out from the ramparts, six tall rockets were launched, and six blanks were fired from mortars, exploding in the air in a starburst. This was followed by a profusion of further pyrotechnics (800 large and small rockets, 100 blank cartridges, 100 incendiary balls, 100 fire pumps, 150 firecrackers, and more). The first act ended with 500 rockets fired in opposite directions. The second act also primarily concerned pyrotechnics. At the beginning the temple and colonnades were again lit up, and 50 blank rounds were fired, exploding in the air in fiery illuminations. This was followed by the launch of 800 rockets with the effects of flaming lightning, raining sparks, roaring thunder, falling stars, comets and a blazing sun, and finally fiery rainbows. The rainbow was intended to bring tidings of the most sublime peace to the imperial couple. There followed fiery (illuminating) shots from 1000 cannons, and 100 incendiary balls and 100 mortar shells were fired. The heavens were lit up with 200 star flares. The second act was concluded with the launching of a huge quantity of rockets, which exploded in such a way that the entire stage was filled with fire. After the pyrotechnics had burned out the scene fell into darkness, to be brought back to life at the beginning of the third act by hundreds of rising and falling fires, sparks, and flares. The firing of blanks from 100 mortars lit up the heavens with star fires, followed by 1200 rockets, 100 incendiary balls, and 100 fire pumps. The earth was illuminated and shook to the sound of 200 firecrackers, girandoles were ignited, and low rockets and flares were launched. In the synopsis the illumination is described in the following blasphemous terms: *Pluto could never have sent such fires, nor Jupiter lightning bolts*. The performance, which lasted approximately 45 minutes, was ended with a larger array of rockets, 30 shots from cannons, and the burning of the Temple of Minerva to ashes. This too was symbolic. By sacrificing her temple to the flames, Minerva (Eleonore Magdalena) demonstrated her devotion to Leopold, the dynasty, the crown lands, and their subjects. For their benefit alone she gave the most important thing she had.
In comparison with the previously described three wedding firework displays, this was the least plot-centred and the most fire-centred. In its selection of themes and resources, the performance betrayed the anxiety caused by the absence of a successor. Prometheus as Leopold not only brought fire to the people on the torch, but was also meant to ignite the spark of hope for the Habsburgs – the fruit in Eleonore’s womb. There could not have been any other meaning. The interests of the family, the subjects, and the hereditary lands were as one. The twelve Olympians, looking upon the performance from the heavenly heights, were confirmation of the divine protection and blessing of the union and the story.

We have three preserved graphic records of the firework display, the first of which is to be found in the aforementioned wedding diary *Racconto storico* […]. It is signed by Johann Martin Lerch, also with a reference to imperial privilege. All the acts of the performance are depicted in it. Rockets explode, the deities deliberate, Prometheus brings fire to the people. The second print is bound into the synopsis, and illustrates the first act of the play. It is signed by Tobias Sattler (1641/42–1679), an engraver, originally from Augsburg, who lived and worked in Vienna in the 1670s. In comparison with the older documentation of firework displays, Sattler conceived his work differently from his predecessors. He did not present the spectacle from a bird’s-eye perspective, but a much lower one. He also limits the descriptive nature of the graphics in favour of a general balance and better legibility. At the same time, the graphic sheet is less schematic, while the use of the engraving tool is firmer and finer in the details. The third print is the familiar concept of a documentary single-sheet, this time with an accompanying text that is engraved rather than typeset. Johann Jacob Köchl is stated here as the author of the fireworks, also with designation of his profession: „Verfertigt vor gestellt und verbrennt durch Johann Jacob Köchlý, Röm. Kaýse Maýtt bestelten Feuerwercks Meistern den 2 Februarý 1677.“

**Bratislava 1687**

The wager on Prometheus and Minerva paid off for Leopold and Eleonore Magdalena. Only a year and a half later the imperial couple’s son Joseph (1678–1711) was born, later followed by a further nine children. The seventh, Charles (1685–1740), was installed as the head of the Habsburg monarchy and the Holy Roman Empire following the untimely death of his brother. As early as in 1687, Joseph was crowned King of Hungary in Pressburg. A firework display was staged on this occasion, with which we are acquainted from a graphic sheet and a description in the coronation diary. The fireworks, which were rather an illumination than a performance, were ignited between the ephemeral architecture of the Pillars of Hercules, bearing the device of Charles V, the Habsburg

sovereign who repelled the Turks, Plus ultra. Before them flamed the allegorical figure of the virgin goddess of justice Astraea, clutching the emblem of Hungary in her left hand and a sword wrapped in laurels and a pair of scales in her right. The linkage of Joseph, Charles V, and Astraea with all their accompanying attributes was, of course, no coincidence. In 1532 Charles V had driven the Turks out of Central Europe; Astraea was intended to help rid Hungary of wickedness and wars. Joseph was to be the leader to actually drive out the invaders and bring peace to the land.57

Mikulov 1691
In June 1691, the emperor, together with his wife and closest court, again visited the main seat of the imperial chamberlain Ferdinand Joseph, Prince of Dietrichstein. Their stay was naturally accompanied by an opulent programme. The court celebrated the emperor’s birthday on 9 June with several entertainments, the climax being a firework display prepared by the imperial pyrotechnician Franz Leopold Brabandt. A relatively large number of archival reports have been preserved on the visit of the imperial court, as well as the staged musical-dramatic productions and the fireworks. They are also interpreted in a paper in this publication by Miroslav Lukáš and Christian Neuhuber, with a detailed description of the course of the firework display and a sketch.58 Similarly as in the case of the Mikulov fireworks of 1672, the spectacle was rather an exhibition of illuminating and explosive pyrotechnics than a performance with an allegorical narrative. The central element was the illumination of the letters VL VE VI (Vivat Leopoldus, Vivat Eleonora, Vivat Iosephus).

Vienna 1699
Although Joseph and his mother Eleonore Magdalena were crowned King of the Romans and Empress of the Holy Roman Empire respectively in Augsburg at the beginning of 1690, we do not have any record of a firework display to mark this event.59 The next fireworks documented both in writing and pictorially are not to be found until the occasion of Joseph’s wedding to the Hanoverian princess Wilhelmine Amalie of Brunswick (1673–1742) in 1699. The news of the planned union was publicly announced at the end of August 1698, and the wedding per procuratorem took place on 15 January 1699 in Modena, where Wilhelmina Amalie had moved together with her

57 For details on this theme see Rostislav Smíšek, Uherská korunovace Josefa I. jako prostředek symbolické komunikace, Český časopis historický 112, 2014, pp. 624–654.
mother in April 1697. The queen and her retinue travelled from the Villa Favorita via Verona, Dolce, Rovereto, Trier, Innsbruck, Salzburg, Linz, Melk, Tulln, and Ebersdorf to Vienna, ceremonially entering the capital city on 24 February 1699.\(^{60}\) There followed the wedding, with several weeks of celebrations filled with banquets and musical-dramatic performances. One of the highlights was a firework display staged on 1 March 1699, prepared by Franz Leopold Brabandt, the chief master pyrotechnician and imperial artillery captain with whom we are already familiar, under the direction of the Court War Council, the Master-at-Arms Paul Anton, Baron von Houchin, and the imperial Lieutenant-at-Arms Matthias Franz Edler of Eisenstein.

Once again, a three-act performance was played out before the gates of the Hofburg. We can partially reconstruct it with the aid of a synopsis or report, and a description in the coronation diary.\(^{61}\) The content of the first act was an agreement between Mars and Saturn to pursue The Brightest House of Austria in the most terrible manner, completely reducing it to ruins. The first spark was ignited by Leopold. Using a burning fuse, the emperor set fire to a statue of a lion, symbolising strength and combativeness. The fire spread from the animal to the statues of Mars and Saturn, followed by the igniting of multicoloured illuminating pyrotechnics, lighting up the scene. Twenty-four men appeared on the stage, battling each other with flaming cudgels and swords. This was followed by a volley of 300 incendiary balls, mortars, 50 firecrackers, and rockets with star fires. Two girandoles were set alight, and 1000 one – to ten-pound (approx. 0.5 kg – 5 kg) rockets were launched into the air, accompanied by the firing of 14 sixty-pound (approx. 30 kg) balls, exploding in fires or firecrackers. The illumination of war and ruin was completed by 50 fires rising from mortars, 100 flaming wheels, and the explosions of 100 shells of flares imitating stars, fiery rain, and fiery lights – there were reportedly as many as 40,000 of these in the first act, which was thereby brought to an end.

In the second act, Mercury was to announce the conclusion of a universal peace, thus preventing Mars and Saturn from committing atrocities. As soon as the burning mortars closing the first act had been extinguished, Mercury appeared on one side of the stage and Venus on the other. The goddess of love set light to the hearts on the backs of the eagles at the top of the pair of gates, from which two flaming ribbons of leaves joined the beaks of the eagles with Hymen, the god of marriage, standing on an obelisk between the gates. Behind the gates a construction caught fire, bearing the lettering V. Josephus. (Vivat Josephus) and V. Amalia (Vivat Amalia). Further pyrotechnics were fired

\(^{60}\) For further details on the journey and wedding ceremonies see Hildegard Leitgeb, Kaiserin Amalie Wilhelmine, geb. Prinzessin von Braunschweig-Lüneburg-Hannover (1673–1742), Eine biographische Studie, Wien 1984 (Dissertation); Ondřej Stolička, Slavnostní vjezd Amálie Vilemíny Brušvicko-Lüneburské do Vídně roku 1699, České Budějovice 2013 (Bachelor’s thesis).

into the air and ignited on the ground, and there was firing from cannons and mortars
(300 flares, 150 cannons, 1000 rockets, and others). The second act was concluded by the
firing of 70 mortars and 50,000 flares. In the third act the main role was played by Jupi-
ter. He soared on the wings of an eagle, and foretold a long life and great successes for
both Imperial and Royal Majesties. The act opened with the arrival of Apollo’s flaming
chariot, with figures of Leopold, Eleonore Magdalena, Joseph, and Wilhelmina Amalie.

Jupiter descended from the heavens on an eagle, operated by a wire contraption.
Figures were set alight – representations of the hereditary lands in the theatre and col-
nonnade, and as a sign of their jubilation the letters V:L:I: (Vivat Leopoldus Iosephus) and
V:M:W (Vivat Magdalena Wilhelmina) were set ablaze. Behind the chariot the words
Vivant Triumphent were inflamed. The joyful scene was illuminated by several thousand
items of pyrotechnics. A further 1000 rockets were launched from the constructions and
100 flaming wheels blazed, as well as 100 shells with flares. Twenty-four blank cartridg-
es with 200, 150, 100, and 60 pounds (approx. 100, 75, 50, and 30 kg) of gunpowder
were fired. A construction was set alight, bearing the letters A.E.I.O.V. (Auspicarissum
Esto Josephe Omni Vita). The performance was concluded with the sounds of cannons,
a trumpet, and kettledrums, together with 60,000 ignited flares – all in a spirit of general
rejoicing and congratulation.

From today’s perspective, the graphic documentation of the wedding does not seem
particularly lavish. We have the firework display documented on only one graphic sheet
(Fig. 12), bound into the wedding diary Erfreutes Wienn […], the author of which is
most probably Johann Ulrich Kraus (1655–1719).62 If we compare these fireworks with
the previous four wedding firework displays, we cover almost 50 years of the develop-
ment of this type of performance at the Habsburg court. As in the past, the emperor and
empress, and king and queen, were portrayed as wholly peaceful sovereigns who cared
for their entrusted lands and subjects and protected them from rampaging Saturn and
warmongering Mars. We can only speculate as to whether the spectators projected onto
these two figures the Habsburgs’ two greatest rivals – the Turks and Louis XIV. Within
the storyline we no longer find any trace of a dynastic crisis or the absence of a successor.

The marriage of the future ruler of a large part of Central Europe was not celebrated
only in Vienna. On the day of the ceremonial entrance of the newlyweds into the city of
Vienna (24 February 1699), an allegorical firework display was set off in Brno, celebrat-
ing the Habsburg dynasty and the marriage of the heir to the throne. This was docu-
mented for the Brno Town Hall by Jan Kryštof Laidig (died 1717) on a pair of graphic
sheets.63

62 For the arguments in favour of attributing the print to Kraus see M. Kindl, Maškaráda, pp. 100–
105.

63 On the Brno fireworks see most recently Martin Deutsch, Slavobrána a slavnostní ohňostroj v Brně
Conclusion

The musical-dramatic production of the imperial court in Vienna in the second half of the 17th century has received well-deserved attention in the last few decades. An advantage of operas, music, or comedies was that unlike dramatised firework displays they could become a part of the court entertainments. By contrast, expensive dramatisations with pyrotechnics could be performed only on rare occasions, although they served better for documenting the magnificence of the court to a wider audience, and through their symbolic meanings they legitimised its status and confirmed the existing order. In comparison with the librettos of musical-dramatic productions, the synopses of firework presentations were simpler and more easily comprehensible. Very often a detailed description of them was recorded on the pages of chronicles of the time, and news of them was spread in circulations of several thousand copies. The Habsburg sovereign was a protector who put his own life at risk for the protection of his subjects. With God’s help, he conquered war and ruin. He cared for the crown lands, and together with the empress he contributed to universal prosperity. Rockets, squibs, girandoles, rope machines, and all kinds of other pyrotechnics served as a vehicle for an allegorical depiction of negative and positive meanings. The noise and dazzling glare of explosions could equally act as a representation of the crash of weapons, just as much as it could convey universal jubilation and applause. The average time of a performance, ranging from 45 to 60 minutes, meant that in comparison with musical-dramatic productions firework displays provided truly brief entertainment, though with a very broad and relatively easily comprehensible content. 64

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64 The funding for the present publication was provided by the Czech Ministry of Education, Youth and Sports for specific research (IGA_FF_2023_010).
Image attachment

1) Title page of Hanzelet Lorrain, La pyrotechnie de Hanzelet Lorrain ou sont representez les plus rares & plus appreuez secrets des machines & des feux artificiels propres pour assieger, battre, surprendre & deffendre toutes places, Av Pont a Mousson par I. & Gaspard Bernard 1630.

2) Simon de Pas, Portrait of artillery officer Christoph Suenck, 1635, médirytina, 244×182 mm, Statene Museum for Kunst, Copenhagen, inv. no. KKSgb10579.

12) Wedding fireworks of 1699 from Johann Ferdinand Xaver Fachner, Erfreutes Wienn, welches denen [...], Wien 1699.
Miroslav Kindl

Fires of Joy and Anticipation
Wedding Firework Displays of the Central European Habsburgs in the Second Half of the 17th Century

Abstract

Early modern firework illuminations and displays formed part of festivities in both secular and sacred contexts from the end of the 14th century. During the 15th and 16th centuries, their designers, often high-ranking artillery officers, became an increasingly important part not only of army but also of court life. The development of fireworks, and especially rockets, gave prominence to intricately conceived displays, which were gradually developed according to the changing tastes of musical theatre productions and the skills of masters of pyrotechnics. In Central Europe, several performances were staged at the Habsburg court from the middle of the 17th century onwards which were clearly among the most costly, complex and, above all, the highest-quality pyrotechnical displays of their kind in the history of human culture. They were instruments of the complex patterns of contemporary propaganda and courtly representation, and their stories reflected the reality, desires, visions and concerns of the ruling dynasty. We can deduce their forms, stories and messages from surviving synopses and printed illustrated sheets.

KEYWORDS:
fireworks; festivities; Central Europe; Habsburgs; pyrotechnics