

Project Fire Flower
Exhibition Overview & Display Descriptions
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Exhibition Overview

Project Fire Flower is an invitation to explore pyrotechnical arts through both visual and non-visual senses. The exhibition presents the shapes of fireworks in physical forms – revealing the transient and dynamic structures of their light as if frozen in time. The primary displays are accessible to viewers using vision, touch, and/or hearing. These include the following:

- Pyrotechnical Tableau – An arrangement of faux plants and racked mortars representing a 3-D scene of a fireworks display that can be explored through touch
- Tactile Fire Flowers – An assortment of touch-friendly faux flowers that correspond to the classic forms of fireworks (including the chrysanthemum, dahlia, and peony) as well as other items that suggest the characteristics of fireworks and their shell-burst patterns
- Firework Tactile Panels – A set of touchable acrylic panels with engraved pathways of light showing the shapes of 7 distinct firework effects
- Fireworks Video Display – A visual presentation of fireworks shows created by Celebration Fireworks of British Columbia as well as the documentary “Passfire” about pyrotechnics by Veverka Brothers Productions.

The exhibition is designed to highlight the distinctive forms of several different fireworks effects. One of my goals with this project is to present the effects with enough clarity so that viewers can begin to recognize and identify the different fireworks by their shapes. This can be done with or without eyesight. In addition, the exhibition also provides an opportunity for visitors to consider and experience accessible art – using touch to “see” the star trajectories of fireworks and to appreciate pyrotechnics as its own unique art form.

Display Descriptions

Pyrotechnical Tableau:

In fireworks displays, effects commonly appear simultaneously at different locations in the sky. The scene – tableau – displayed here shows a combination of different effects which are visible at a range of altitudes. Typically, the larger the shell the higher its elevation before it bursts open and ejects the burning stars it contains.

The scene includes authentic equipment for launching professional fireworks shells, courtesy of Celebration Fireworks in British Columbia. The mortars (tubes) are 2, 3, and 4 inches in diameter. These are secured in metal racks designed to withstand the recoil impact when the fireworks shells are launched.

At the bottom level is a “waterfall” effect depicting streams of sparks pouring over the front of the display. Rising above the waterfall are several clusters of “star mines” shown as tufts of meadow grass. Behind the waterfall is a set of taller 3” mortars. These are the base for an array of “comets” with angled trajectories. The burning stars at the head of the comets are represented with pin-cushion flowers while the tails are pampas grass stalks.

At the top of the scene are several compound effects in the form of a “shell-of-shells” represented by spider plants. These show how shells can have distinct phases in the visible lifespan of the effect. In this case, the “parent” spider sends out stars that burst again at the bottom of their flight trajectories, giving life to smaller “baby” spiders.

The tableau presented here is fairly dense and shows quite a few effects at one time. However, an actual fireworks display can be stunningly beautiful using only a few high-quality shells designed to open in specific locations with precision timing. In this regard, a simple waterfall effect or a single shell-of-shells can be breathtaking in its impact.

Tactile Fire Flowers:

Fireworks create distinct shapes through the movement of their burning stars during their brief visible lifespans. Some effects, such as the chrysanthemum, feature streams of sparkling light trailing behind the stars as they move away from the shell-burst. Other effects, such as the peony, have ball stars which burn without leaving visible trails of light. The items featured in this display suggest these distinctive characteristics. These include the classic “fire flower” blossoms such as the chrysanthemum, dahlia, and peony. Other flowers that depict smaller spherical shell-bursts are also available to touch here.

The tactile display also includes a metal sculpture that perfectly represents the form of a firework with spikes of light radiating outwards from the centre point of the shell burst. A few other objects depict the helical (twisted) flightpath that some specialty shells will display on their ascent after launch.

Firework Tactile Panels:

The tactile panels on display for Project Fire Flower can be “seen” through touch. Each panel is a 24” by 24” square and depicts a classic firework effect. The trajectories of the stars, which give fireworks their characteristic shapes, are illuminated in coloured light against a black background. The panels look somewhat like long-exposure photographs that reveal the movement of the stars as streaks of light. These streaks are engraved as grooves or “pathways” that can be followed by touch with a fingertip – revealing how the firework effect blossoms during its transient visible lifespan.

- **Chrysanthemum**
The chrysanthemum shell creates a spherical structure of light and is named after the chrysanthemum flower. At the zenith (top) of this shell's ascent, an explosive "hard break" burst charge ejects scores of fast-moving stars outwards in all directions. These stars leave visible straight tracers (streaks) of light behind them, which appear to connect the moving stars to their centre burst point. The overall effect looks like spikes of light radiating outwards to create a perfect sphere of shooting stars. The structure of this shell is similar to a dandelion flower which has gone to seed. When the sphere stops expanding, the stars may sparkle briefly before they suddenly disappear.
- **Comets**
Comets are stars featuring long thick tails of glittering light streaming behind them as they travel. They may appear like slow-moving "shooting stars" with their trajectories revealed by their trails of light. Comet stars are used as a component in many shells, including chrysanthemum, palm, and willow shells to name a few. Comets may be launched in an array (group) featuring different firing angles for each shell – creating fingers of light spreading out in a fan-shaped (palmate) pattern. When comets come from different locations so that their diagonal flight paths cross in the air, they appear to "weave" their strands of light into an interlaced criss-crossing lattice pattern.
- **Willow**
This gorgeous firework shell creates the shape of a weeping willow tree. As the shell rises after launch, it leaves a thick trail of sparks which show the "trunk" of the tree. When the shell reaches its desired altitude, it bursts open gently into dozens of comet-like stars. These arc outwards like the curved spines of an open umbrella. The stars leave long trails of light, creating the vine-like branches of the weeping willow tree. A charcoal composite is used to create the burning orange streaks which stay visible as the stars slowly descend.
- **Dahlia**
The dahlia shell features large bright stars, sometimes with visible tracers of light. Like the chrysanthemum, the structure of the effect is created by radiating spikes of light coming from a centre burst point. However, the dahlia features larger (and fewer) stars compared to the chrysanthemum and peony shells. Thus, it may not appear to be spherical. The dahlia's long and bright spikes of light may seem more like a many-pointed sea star or a blossom with long lush petals. The effect can be dazzling when rendered in white light.
- **Palm**
The palm shell is named after the classic coconut palm tree. This shell ascends with a thick "rising tail" of light behind it – creating the appearance of a palm tree trunk. Sometimes, the shell rotates while rising- creating a twisting tail in a helix (corkscrew) pattern of light on its way up. At the desired altitude, the shell breaks and ejects several brilliant large palm tree fronds which complete the appearance of the entire tree. These

palm shells may also appear as a cluster of several trees growing at different angles from a central launch point.

- **Shell of shells**
This complex firework shell has more than one phase in its lifespan – creating a sequence of movements over time. A shell of shells is a compound (multi-break) fireworks effect which can take many forms. One of these opens gently with a “soft-break” at its apex and emits brilliant comet stars with visible tails of shimmering light. The arching trails of light look like curving blades of grass. These falling stars then burst open again, giving life to more clusters of comet stars. The structure is like a spider plant with smaller “spiders” emerging from the descending vines of the “parent” plant.
- **Peony**
The peony is a spherical aerial firework featuring dozens of stars. The shell bursts in air with an explosive “hard-break” ejecting its stars in all directions. These ball stars move outwards without leaving any streaks or tracers of light behind them. This creates a rapidly expanding ball of light with the burning stars covering the surface. Like the chrysanthemum shell, the peony stars also radiate in all directions simultaneously: some moving toward you, some moving to the sides, and some moving away from you. The growth of the peony firework blossom can be shown in a sequence of “snapshots” each of which depicts how the stars spread out as the peony expands. A series of panels depict a peony firework at 3 time points showing “freeze-framed” images as the shell’s stars move increasingly farther apart. This approach was used for the peony shell because it does not leave visible streaks behind the moving stars (as opposed to other fireworks such as the chrysanthemum shell).

Fireworks Video Display:

The final display in the exhibition is a selection of videos about fireworks which is available for viewing in the media room in the rear of the gallery. This includes footage of fireworks shows designed by Celebration Fireworks – a local family-run firm that designs and produces displays throughout British Columbia. These videos also feature musical soundtracks for the fireworks shows. Also included here is the “Passfire” documentary about fireworks from around the world. This documentary was created by Veverka Brothers Productions, who specialize in filming the pyrotechnical arts and the pyrotechnicians who create them.

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Collin van Uchelen, Ph.D., Conceptual Designer for Project Fire Flower

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Recognition of Artistic Practice & Intellectual Property

The ideas described above reflect my artistic practice of translating the light of fireworks into non-visual forms. I have been developing approaches to do this in several projects throughout the time I have been losing my own eyesight. I request that my conceptual work, such as is described here, be treated as intellectual property protected by copyright, and not be appropriated without permission. The creative ideas and design concepts are my own original art and should be acknowledged as such. In the spirit of giving credit where credit is due, I am also willing to acknowledge the contributions of those who collaborate with me in conceptualizing my artwork. This request is about mutual respect for creative authorship and intellectual property – essential aspects of my practice as a conceptual artist and professional consultant.

Thank you,

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