

# CONSERVATION AND INSTALLATION OF A LARGE SCALE TIMELINE FOR MATHEMATICA AT THE HENRY FORD

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*Mathematica: A World of Numbers...and Beyond* is a permanent exhibit at The Henry Ford Museum of American Innovation at **The Henry Ford** (THF) that opened on September 23, 2017. The exhibit contains both kinetic and static representations of mathematical ideas from the 20th Century American designers **Charles and Ray Eames**. There are two other variations of the *Mathematica* exhibit at the Museum of Science, Boston and in the New York Hall of Science, Queens. The THF exhibit shows key interactive artifacts from the 1964 World's Fair in New York that were on display at Seattle's Pacific Science Center and the former Science and Technology Museum in Atlanta before being acquired in 2015. This article focuses on the conservation of a multi-media timeline measuring over 22 feet in length, and the collaborative journey that led to its final display design, including the fabrication of the largest seamed Optium Museum Acrylic® to date.

## History Timeline

Fig. 1



The complete view of the assembled timeline from Charles and Ray Eames (© The Henry Ford)

The History **timeline** for *Mathematica* is essentially a montage documenting events and discoveries related to mathematics spanning from 1100 to the 1900s (Fig. 1). The timeline is comprised of nine parts (excluding its walnut handrail components), in which three main panels are joined together to form a 40" x 270" (101 x 685cm) montage. Short biographies of mathematicians and well-known historic and artistic facsimiles are affixed on to a painted Masonite fiberboard framed in walnut moulding. Each main panel has supplemental panels attached above and below, displaying dates, years, and historic events. The entire assemblage is displayed at an angle, leaning out from the wall slightly at the top.

## Conservation of the History Timeline

Since the timeline was last exhibited, its overall condition showed only minor signs of damage. The most noticeable form of disfigurement was caused by light exposure, which resulted in fading of affixed photographs, cutouts, and prints. Other damage included a crack and small chips in the fiberboard. The panels warped, likely from the weight of the glass glazing as well as stress from the angle of display.

The first panel had been reinforced previously and was not suitably sturdy for installation. A replica of this panel was made due to safety concerns for visitors and the potential risk of future damage.

Fig. 2



Examples of the structural damage on the text (left) and faded colors (right) (© The Henry Ford)

An overall dry cleaning of the painted surface of the fiberboard was conducted and structural cracks were filled and mended.

## Reproductions

While curators sought to retain all the original elements from the panels, the faded images affected the visitor's ability to interpret the designers' intent. Senior Paper Conservator Minoo Larson and Book and Paper Conservator Erin Murray devised a method using neodymium magnets to hold replica prints directly over the faded originals. Where it was not possible to use magnets, reproductions were secured with small L-shape pins. In all, twenty reproductions were mounted on the timeline through coordination with curators, the Creative Services, and the Exhibits departments (Fig. 3).

## Glazing

The original glass glazing was lost before the timeline came into the collection. Curatorial research provided historic

Fig. 3



The before and after process, when the reproduction was magnetically affixed for a Giotto montage of the Timeline. (© The Henry Ford)