
Analysis and Characterization of Early French Paper Negatives from the Collection of the J Paul Getty Museum

Art Kaplan*^{†1}, Vincent Beltran , Sarah Freeman , Karen Hellman , Herant Khanjian ,
and Michael Schilling

¹Getty Conservation Institute – États-Unis

Résumé

Paper negatives represent some of the earliest examples of the photographic medium on paper with some specimens pre-dating the public announcement of Photography and the Daguerreotype process on August 19, 1839. While the chemistry and materials used to create these negatives are often thought of as being "simple" relative to later processes, in actuality this period of experimentation and discovery in the new medium resulted in an incredible diversity of materials and recipes used in the creation of early paper negatives. As part of the Calotype Initiative, with several partner institutions in France (Centre de Recherche sur la Conservation (CRC), the Centre de Recherche et de Restauration des Musées de France (C2RMF), Bibliothèque Nationale de France (BnF)), the Getty Conservation Institute (GCI) and J Paul Getty Museum (JPGM) performed analysis of a selection of French paper negatives from the JPGM collection in order to better understand and document their composition and condition, as well as to identify patterns, trends, and differences among a number of early practitioners of the paper negative process in France.

Sixteen paper negatives by six French practitioners from the JPGM exhibition *Real/Ideal: Photography in France, 1847 – 1860* were selected for this study. In order to fully document each negative their physical dimensions were measured including their length, width, thickness and weight. The light stability of each negative was measured using a microfading tester (MFT), analyzing multiple spots of different densities on each negative. Elemental analysis of each negative was performed using X-ray fluorescence (XRF) spectroscopy in order to identify paper fillers, imaging metals, and any possible toning metals. Areas where there was evidence of applied pigment or other material to the surface of any negative were also analyzed using XRF. In order to identify the presence of any sizing or organic coating present on each negative, analysis was performed using Fourier-transform infrared spectroscopy (FTIR). The FTIR analysis was performed using both reflectance and attenuated total reflectance (ATR) techniques on multiple spots of the recto and verso of each negative.

To gain a better understanding and help with the interpretation of the analytical results a series of standards were prepared using a variety of coating materials and following historical recipes. One series of standards was analyzed unaged using FTIR while another set was artificially aged and analyzed. The results of the analysis of the standards was compared to the analysis of the historical images in order to help identify the material present as well as to make a comparison between the naturally aged historic samples and the aged and unaged

*Intervenant

[†]Auteur correspondant: AKaplan@getty.edu

standards.

The methods of analysis, data treatments used, results and their implications on a better understanding of the materials, chemistry, and working practices of the artists will be discussed with a particular focus on the similarities and difference in the materials and practices between them.