

*Measuring Change in Art: The case for citizen science and time-lapse imaging of material cultural heritage*

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Evaluating the impact of conservation treatments, preventive measures and climate change requires information on rates of change. Managing change without measuring it inevitably leaves important questions unanswered. Fortunately, new tools are providing heritage professionals with the means to make quantitative measurements over time on works of art, such as the new project of regular measurements of the Dead Sea Scrolls and the use of geotagged images at World Heritage sites.

Rigorous time series evaluations of works of art are rare. Yet they are a critical core activity in cultural heritage conservation—the field tasked with preserving our art, architecture, archaeology, and archives. Other tools such as collections of geotagged images can enhance retrospective evaluations of change over time, producing results that are more rigorous and useful for forecasting. Rapid advances in software, sensors, instruments, networks and material science are catalyzing new research and development opportunities in preservation. The creation of high quality time series studies is of fundamental value, in part because the very nature of change is changing, as more works of art travel and climate disruptions impact cultural property. Information on rates of change can also inform researchers efforts to understand the appearance of a work of art when it was first created. This presentation represents a multifaceted effort to examine these issues, present examples and make suggestions for future work.