

## COLORIMETRIC ANALYSIS OF AN ENHANCED CANCEL ON A MAURITIUS 1D STAMP



In 2007, Thomas Lera was appointed as the Winton M. Blount Research Chair at the Smithsonian National Postal Museum. He has written over 100 philatelic articles and papers published in leading journals such as *The London Philatelist*, *The Collectors Club Philatelist*, *The Confederate Philatelist* and the 2003 and 2009 Congress Books. He has co-chaired the Winton M. Blount Symposium from 2007 to present, and edited *The Winton M. Blount Symposia: Select Papers 2006-2009* with the Smithsonian Institution Scholarly Press published October 2010. He is a national philatelic judge and has won gold and grand awards for his single and multi-frame philatelic exhibits.

The Smithsonian National Postal Museum (NPM) recently obtained a VSC6000 (video spectral comparator) for philatelic research. Two of the many key features are:

- A dedicated light source that allows for reflectance and absorption examination with a 100W spot light filtered using the band-pass filter (an internal continuously variable interference filter operating from 400-1000nm in 3.5nm incremental steps allowing for greater discrimination between inks when examining differences); and,
- The magnification range extends up to x140 optical magnification, allowing philatelic objects to be examined in greater detail without the need for an external microscope.

An examination of one of the Mauritius items in the NPM collection shows a Mauritius 1d stamp (SG 31) canceled by a circled PAID (Figure 1). At 10x magnification one can see the cancel appears to have been enhanced.

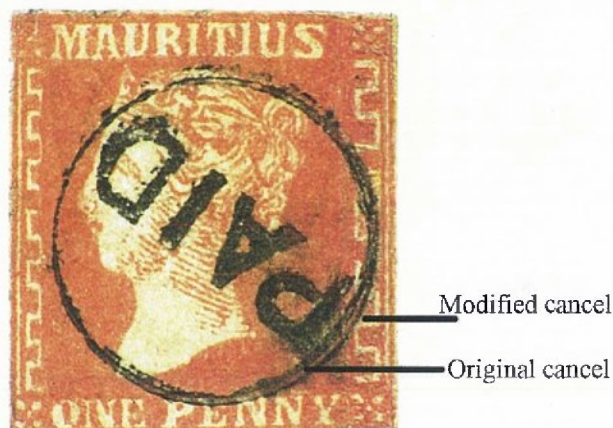


Fig.1 Mauritius 1d, deep red, Scott 16a (NPM Accession Number 1979.0941)

An examination using the VSC 6000 allows the reflectance to be measured and curves to be plotted for various points on the different portions of the cancelation. Three points on what appeared to be the original cancel were sampled, and three more on the apparently modified cancel. The reflectance curve of the modified cancel shows a different shape and higher reflectance than the original black ink starting at about 600 nm and continuing into the UV region. (Figure 2) This supports the conclusion the cancel has been enhanced.

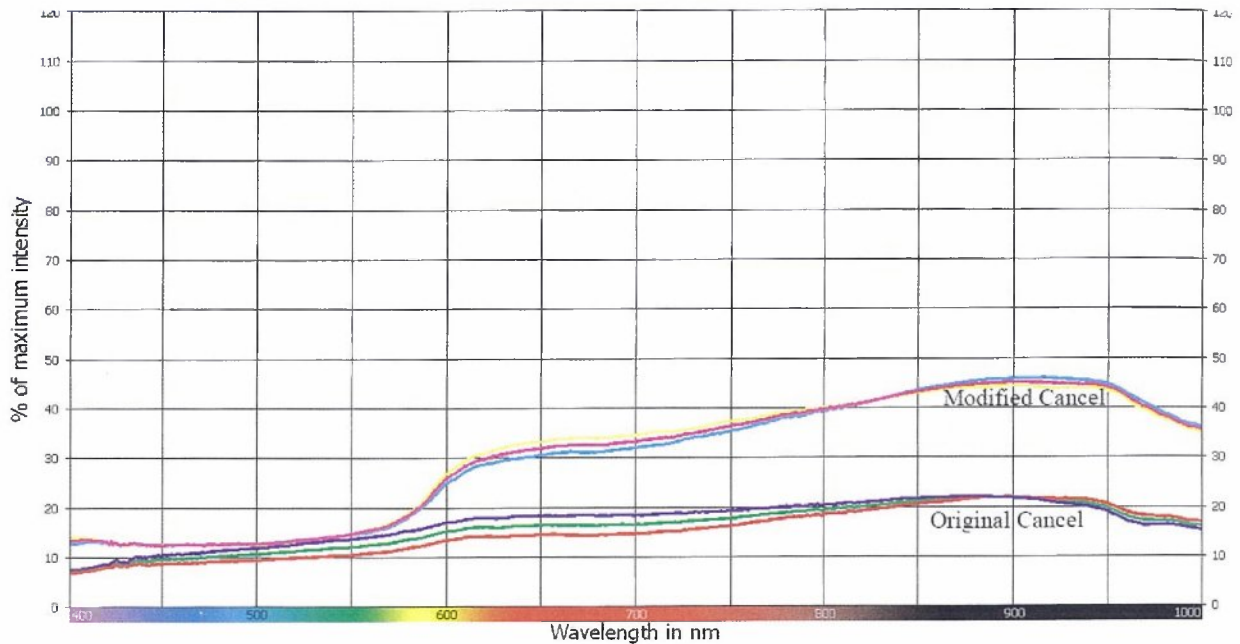


Fig.2 Reflectance curves

The VSC spectroscopic analysis also provides the detailed reflectance data for wavelengths from 400 nm to 1000 nm. The software functions allow the user to perform several mathematical analyses including averages of and deviations between different samples. It also provides the data for use in CIE color models. The data available include tristimulus values (X,Y,Z), (x,y), (u,v), and (L\*,a\*,b\*)

The NPM is advancing knowledge of both philately and postal operations through an aggressive philatelic research program. This will be strengthened by creating partnerships and establishing working relationships with scholars and researchers. To this end, the NPM has created five scholarships to fund original scientific and historical research and analysis relating to the design and/or printing of a specific issue(s), or to a concept, valuation, issuance, distribution, policy, and/or decision arising from the postal department or service. To accomplish this, we intend to provide the means by which philatelists and scholars can collaborate effectively to advance research, improve access, and realize the potential of Smithsonian National Postal Museum Collections. Further information can be found at: <http://www.postalmuseum.si.edu/Scholarships/index.html>.

We have also partnered with the Institute for Analytical Philately (IAP), an educational institution dedicated to applying analytical techniques to philatelic studies which are intended to provide long term and wide ranging benefits to all aspects of philately. The IAP also has scholarship opportunities for philatelic research. Their web site has scholarship information at: <http://www.analyticalphilately.org/>.

The VSC6000 is available to philatelic researchers; contact the author for additional information.