Pigments Checker v.5

Updates to Pigments Checker version 5

We often examine a painting with transmitted visible light and infrared radiation. In particular, Transmitted Infrared photography (IRT) is part of the Technical Photography documentation and allows to detect underdrawing and pentimenti. It is a very effective imaging method since pigments become even more transparent than in the usual IR photography method.

So, we are releasing a new Pigments Checker with a translucent support, such that of a canvas painting. Now you can use Pigments Checker to practice also those useful and effective imaging methods implying transmitted radiation. With Pigments Checker v.5 you can now practice Transmitted Infrared photography (IRT) which is part of the Technical Photography documentation and allows to detect underdrawing and *pentimenti*. It is a very effective imaging method since pigments become even more transparent than in the usual IR photography method. This method is useful for art on translucent supports, such as paintings on canvas, drawings on paper and historical documents and manuscripts. The lamp providing IR radiation should face the back of the painting while the camera focus on the front. The lamp should be shielded so that only the radiation through the canvas can reach the camera. Any other source of radiation in the examination room should be turned off to avoid diffused light (actually diffused infrared).

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IRT often provides better images compared to IR for detecting underdrawing, underpainting, pentimenti, or just the actual build-up technique of the painter to shape of the figures. IRT is so powerful in particular for white pigments, such as lead white and titanium white, the most common in the art, very important white pigments in art, are the most used, respectively, before and after about 1920'. These pigments reflect a lot of the incoming infrared and, consequently, their hiding power is barely affected by infrared coming from the front. They will just reflect most of the IR and they will not produce contrast between the ground and the underdrawing. When the infrared radiation comes from the back (transmission), the infrared can penetrate the paint and the underdrawing becomes apparent in the resulted IRT image.

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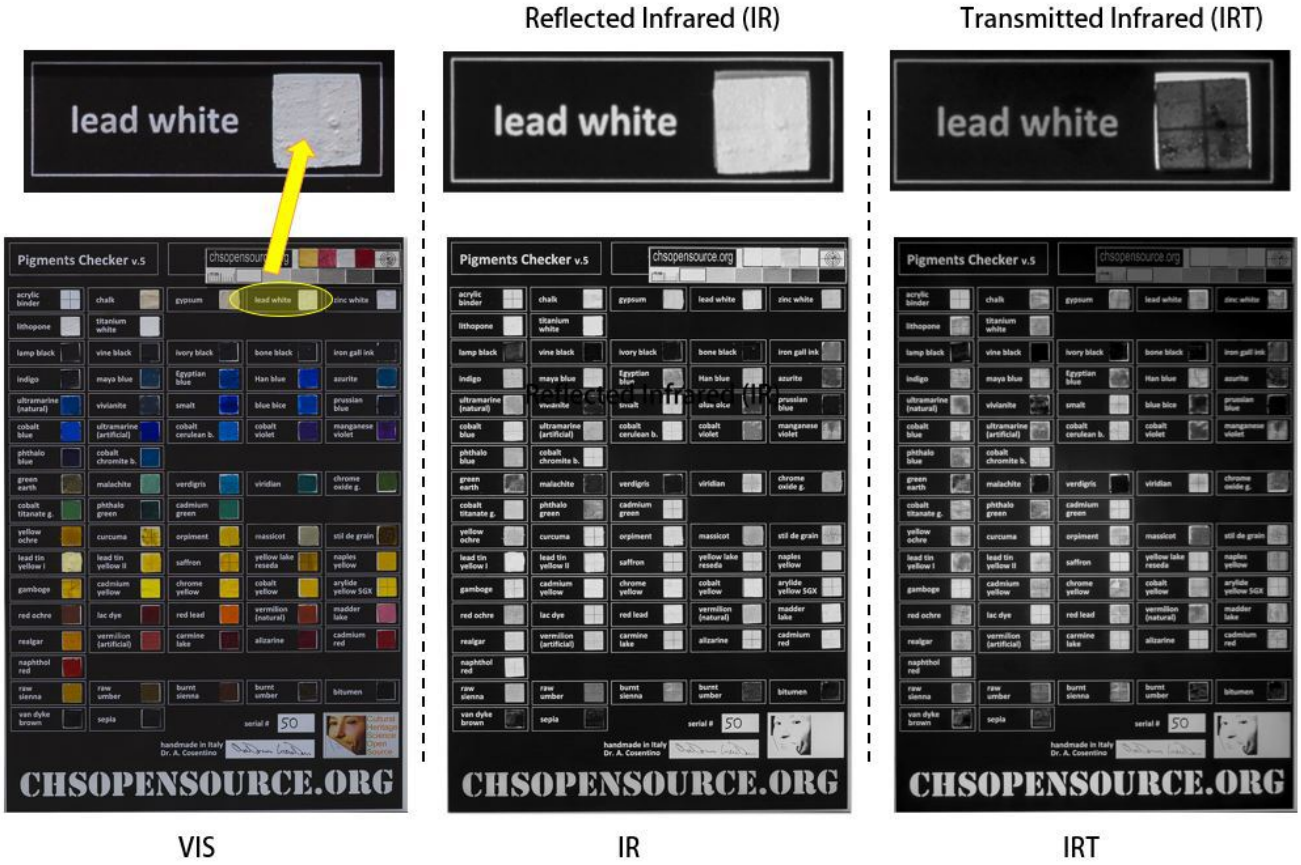

Pigments Checker has now a translucent support, such as a painting on canvas. You can now use it to test and evaluate the enhanced transparency of the pigments when observed with transmitted infrared photography (IRT). See for example, lead white. It is opaque in standard reflected infrared photography but it becomes transparent in transmitted infrared photography where the underdrawing is now visible.

In Brief

Pigments Checker is a collection of pigments important in art history. Among all the pigments and their varieties ever used in art, this collection selects the most used from antiquity to early 1950'. Pigments Checker is a standard tool designed for Art professionals, scientists, students and conservators to evaluate and practice non-invasive techniques for pigments identification.

Criteria for selecting the pigments' collection

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One of each kind. There are plenty of version of the same pigments. For example, the earth pigments: red and yellow ochre as well as umber, sienna and green earth. Earth pigments extracted from different locations have slightly varying mineral content and they have been marketed over the centuries, with specific names, such as Pozzuoli red and Sinopia. Both are red ochre pigments, but from, respectively, Naples area and Cappadocia. They are characterized by their common iron oxides content but different proportions of other minerals accounting for their different hues. Pigments Checker collects just one pigment for each kind. It features just one red ochre, one yellow ochre and so on. Pigments Checker is an education tool for students and art professional learning pigments identification with affordable and simple technical tools. Distinguish among varieties of red ochre is possible but requires more advanced and costly equipment.

Highest quality. We constantly evaluate the quality of the pigments provided by a number of vendors using spectroscopic analysis. We want to be sure that Pigments Checker features best quality pigments.

Mineral and artificial. Natural ultramarine and artificial ultramarine, cinnabar and vermilion, madder lake and alizarin. These are some examples of mineral and organic pigments which eventually were produced artificially. Pigments Checker features both the natural (mineral or organic) and the artificial versions. It is of the most interest to distinguish natural pigments from their artificial counterparts for dating works of art. This can be achieved from microscopic and spectroscopic observations (different impurities and crystal forms).

Old recipe. We choose pigments manufactured following original recipes.

Chemical quality check. An international team of Laboratories and Research Groups involved in Scientific Art Examination are collaborating with CHSOS to evaluate the chemical composition of each pigment. This data contributes to the **Free and Downloadable** spectral database of the pigments used in Pigments Checker: Raman, XRF, FTIR and XRD.

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> Pigments Checker (610 euro + 30 euro handling and shipping)

Pigments' Table (version 5)

Check out the list of pigments and browse their spectra and other relevant information. CLICK HERE

Previous Pigments Checker versions

If you have a previous Pigments Checker you can retrieve their specific information from here:

- version 4
- version 3
- version 2

Pigments' Timeline

Pigments Checker - Timeline (300 downloads)
Pigments Checker Timeline provides a simplified representation of the use of the pigments across ages. Pigments' history is actually quite complex and depends on a number of factors; The kind of artifacts. A pigment can be used on wall paintings while becoming obsolete in easel paintings. Geography. As an example, natural cinnabar is found in Almaden (Spain) and Murillo used it since it was close to him, rather than the artificial form, vermilion, much more diffused elsewhere.

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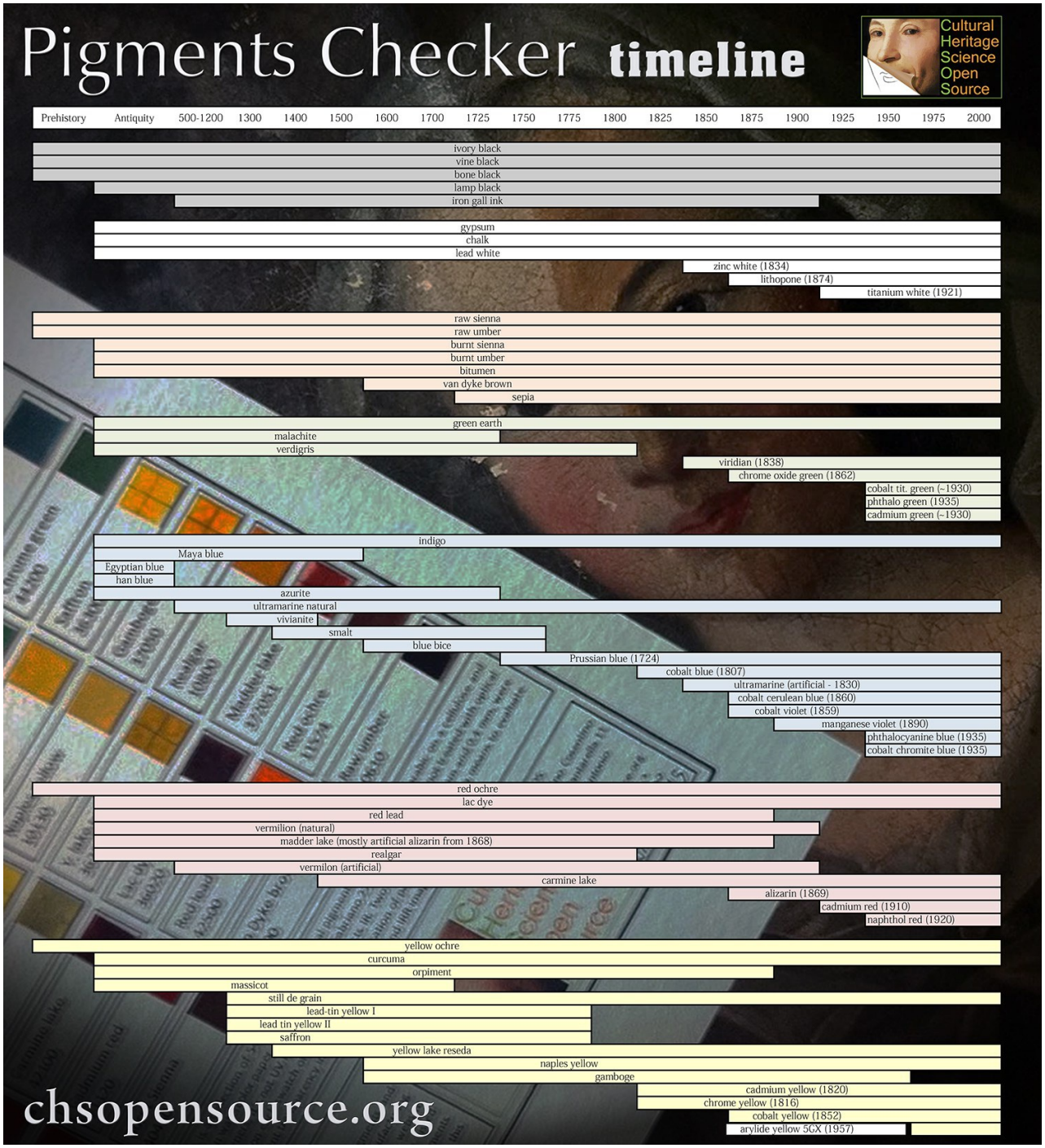

Features

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Cardboard: cellulose and cotton watercolor paper, acids and lignin free, not treated with optical brigtheners. Slightly ultraviolet fluorescent, it reflects infrared radiation.

Swatches: 2 cross-hairs (0,2 mm) printed on each swatch of paper before application of paint, to evaluate pigments' transparency in infrared photography.

We made Pigments Checker more durable adding a rigid finnboard support (pure wood pulp, 3 mm).

MSI calibration card

Pigments Checker comes with our new Multispectral Imaging calibration card. Commercial gray cards for photography cannot be used for multispectral imaging since they absorb near UV and violet radiation. We developed a gray card to cover the 400-1000 nm spectral range. Take our Training program and Learn how to use the calibration card with our Multispectral Imaging system.

Technical Photography of Pigments Checker v.4

Check out technical photography images of the latest Pigments Checker. CLICK HERE.

Who purchased Pigments Checker

Institutes and businesses are purchasing Pigments Checker for research and education. Visit the Pigments Checker map to know where we shipped it. CLICK HERE

Research papers using Pigments Checker

Check out the list of scientific papers using Pigments Checker. CLICK HERE

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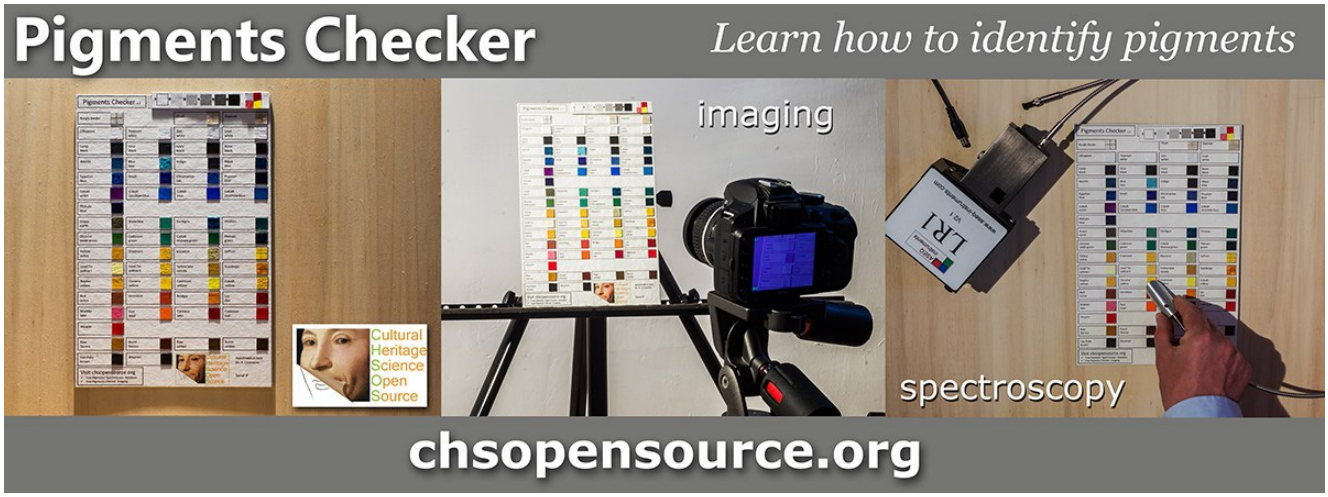

How to take care of your Pigments Checker?

Pigments Checker is actually a painting! So you should consider all the standard conservation procedures you would use for a painting made with historical pigments. Reduce as possible exposure to light and keep it a controlled environment with constant temperature and humidity. If you notice difference in the hue of the paint of a swatch, this is normal and it is due to the manual brush application of the paints which could provide brighter or darker areas. Some of the oldest pigments are indeed the most difficult to apply while modern age pigments allow a more uniform application.

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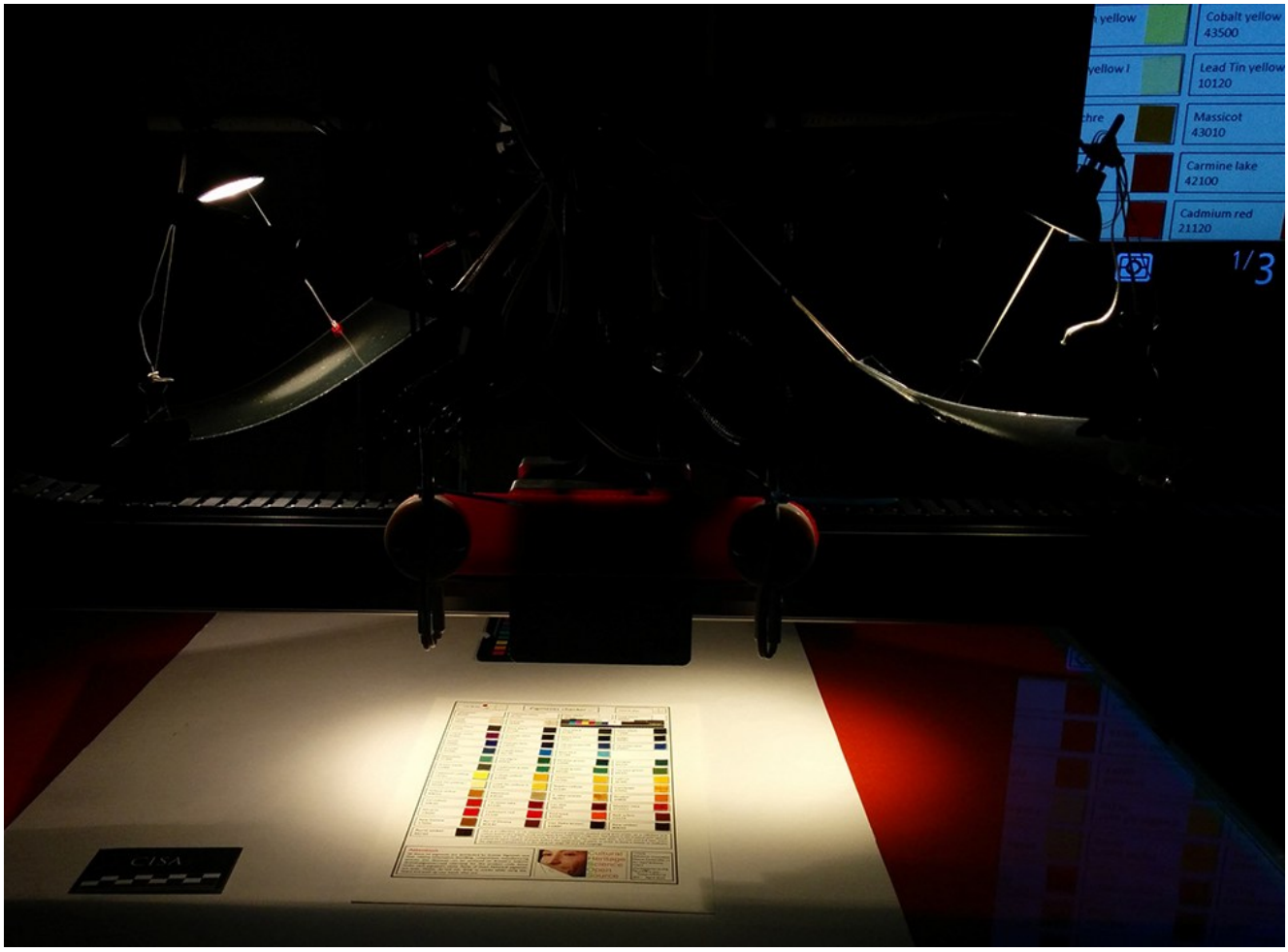
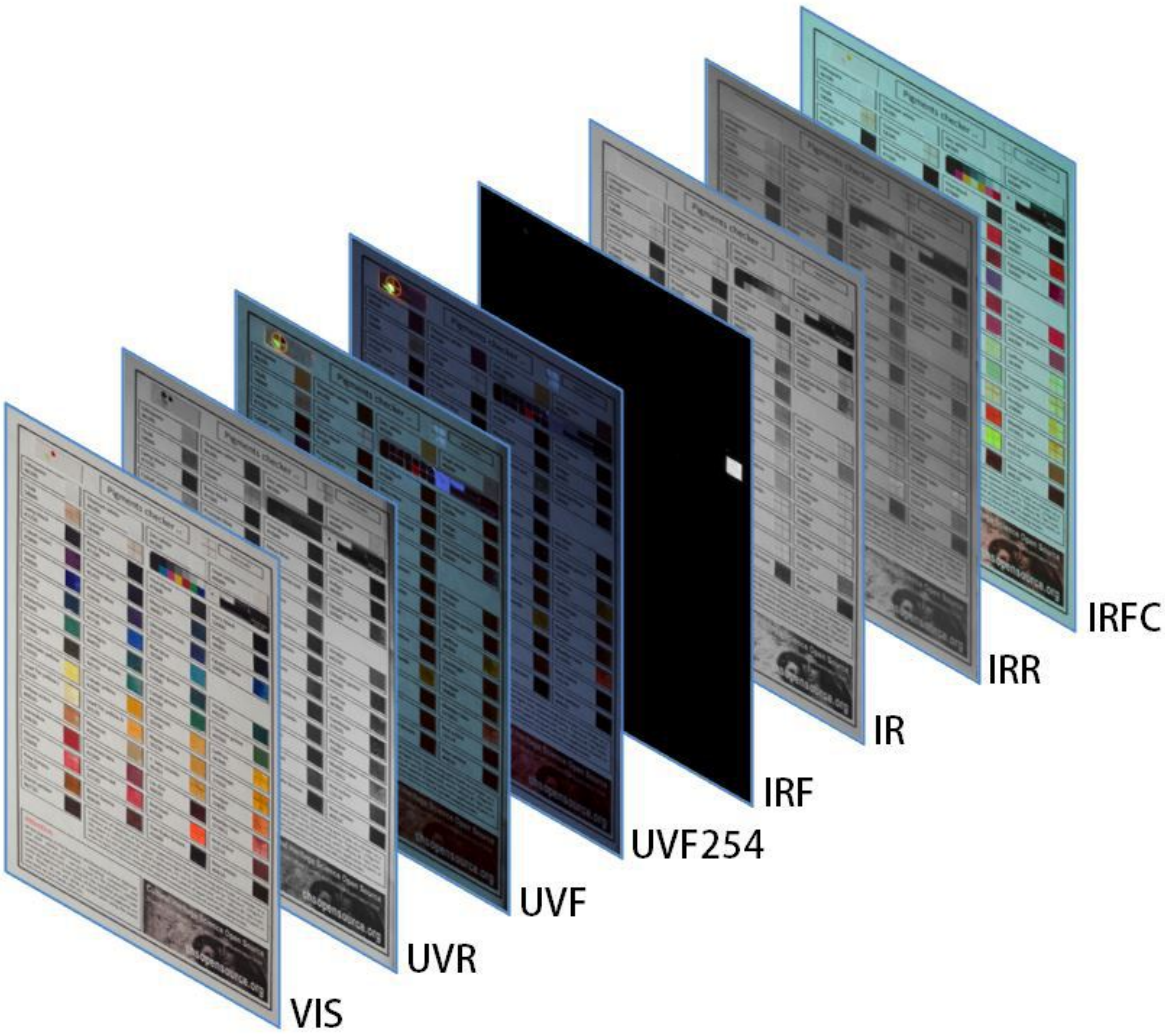


Pigments Checker is tested at University of California San Diego (CISA3) with their new multi-techniques scanner for Art



Technical Photography (TP) of a pigments checker

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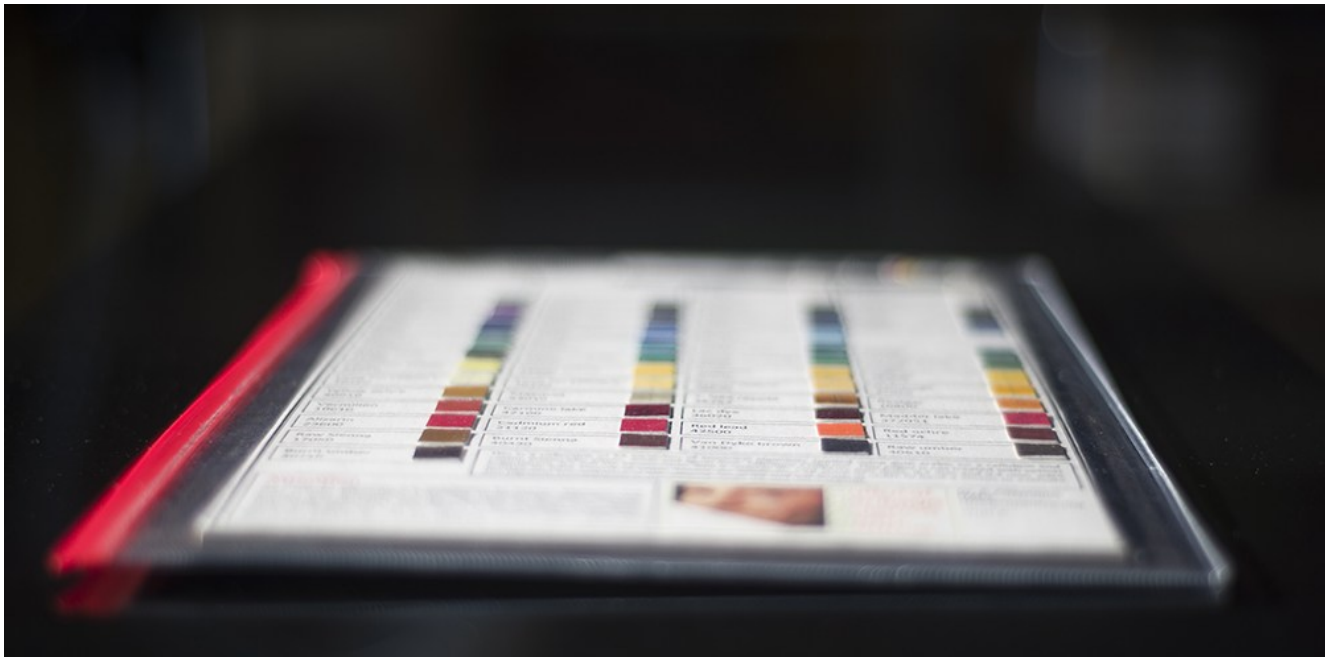
Infrared Reflectography of Pigments Checker



Pigments Checker 2.1

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Technical photography of Pigments Checker

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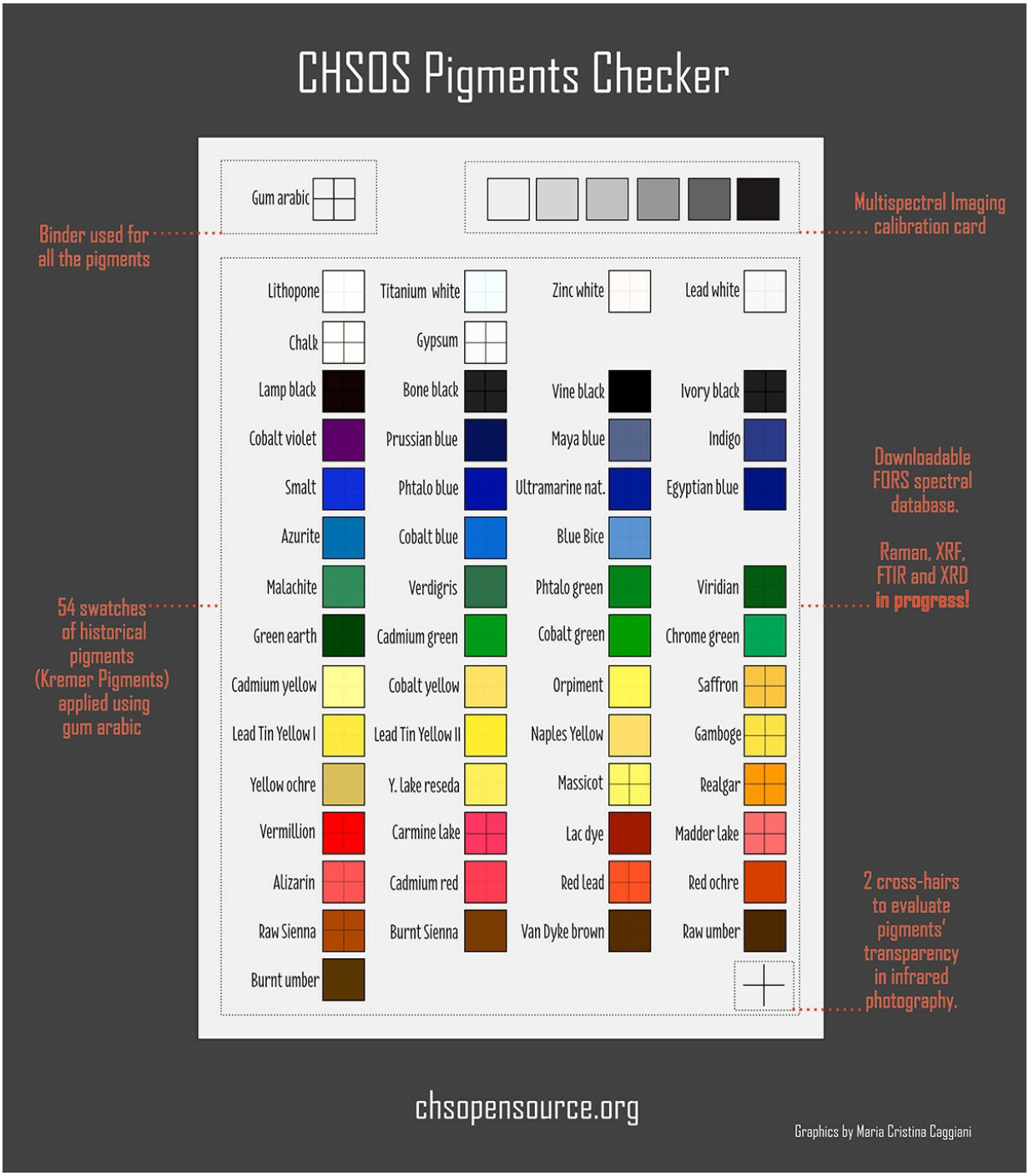
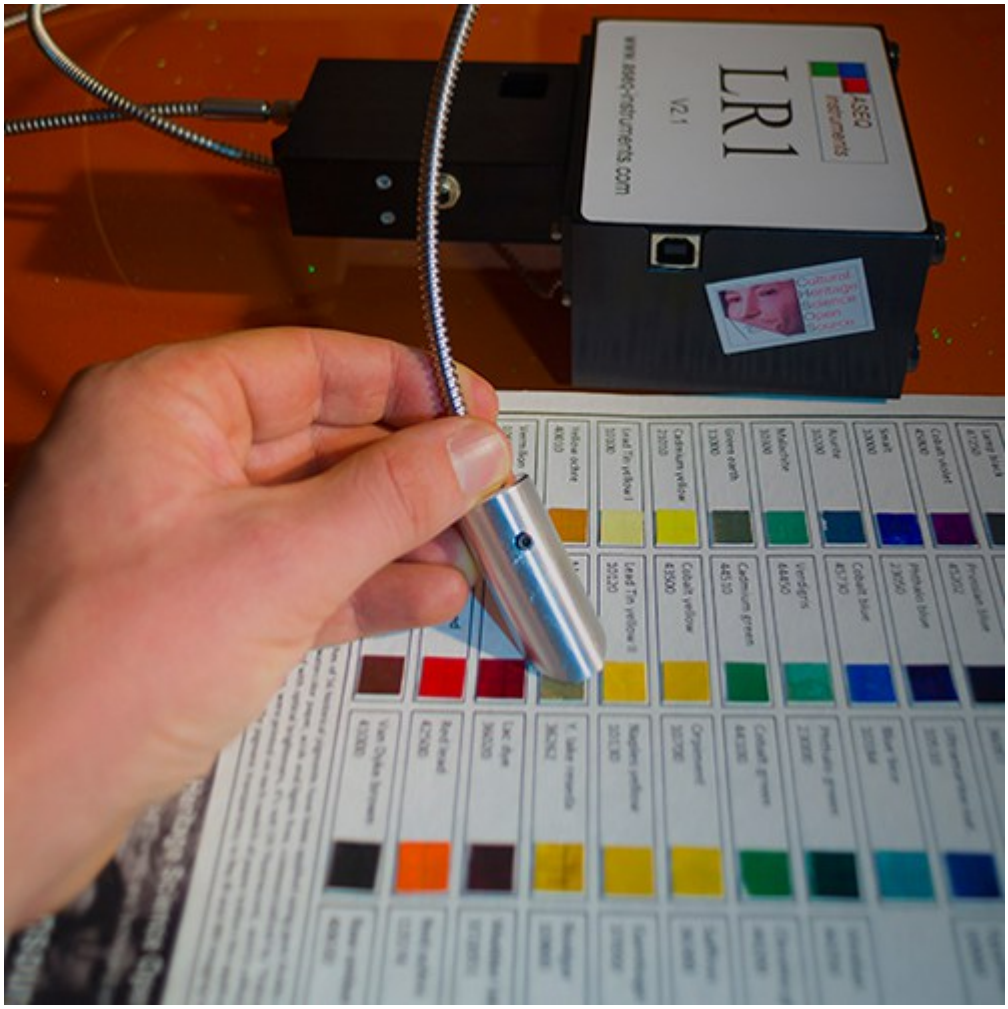


Pigments Checker



Reflectance Spectroscopy of Pigments Checker