

# **Report on the examination of the artwork**

*Rayonistic Composition (1916)*

**by Mikhail Larionov**

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Location and date of the report: Museum Ludwig, Cologne, May 2018

## 1. Identification of the artwork

object type:	painting
genre:	drawing
title(s):	<i>Rayonistic Composition</i> ( <i>Rayonistische Komposition</i> )
artist:	Larionov, Mikhail (1881-1964)  variations in spelling: Larionow, Michail Larionoff, Michel Larionow, Michail Larionov, Michail Fedorovic
signed:	M. Larionoff (front, bottom right)
date of object:	1916 (as given in the museum files)
inventory number:	ML/Z 2011/134 (Dep. Slg. L. 1982/525)
owner:	Museum Ludwig, Cologne Donation of Peter and Irene Ludwig (Ludwig Collection)
location:	Museum Ludwig, Cologne
material/ technique: as given by the museum records:	Gouache on cardboard
description after technical study and after analysis:	Paint and pastel on black-coloured paper
size of object (height x width):	45,7 x 56,4 cm

## 2. Technical investigation

Methods of examination:

The investigation of the artwork *Rayonistic Composition* was carried out in April/May 2017 by Verena Franken. It contained the examination of the artwork with the naked eye as well as with a stereomicroscope<sup>1</sup> in different light sources (incident light, raking light, reflective light). In addition, results of investigation under ultraviolet light (UV) are considered in the following text.

### 2.1 Paper support

The support is a medium-thick, relatively smooth, black-coloured<sup>2</sup>, wove paper (vellum paper). It has a size of 457 x 564 mm and the edges are cut unevenly (see Fig. 1). On the reverse the inscription 'M. Larionov 1916 Paris' is noticed.

### 2.2 Underdrawing and preparatory layer(s)

There is no evidence of an underdrawing work and of a preparatory layer. Even with a magnification of x 40 no underdrawing was revealed. It is rather to suppose that the artist worked directly without underdrawing because paint application was done rather quickly.

### 2.3 Paint layer

The entire sheet of paper has been used for colour application. A shape on the top middle area of the work and at the lower right corner have been highlighted with white tone. A black semi-circular shape in the top middle area as well as some diagonal black lines have been used as compositional elements. Beside white and black colours different grey shades were predominantly used for this work.

Generally, the surface has a matte appearance. Small areas of paints (apparently water based; not oil paints) are worked in light peach tones, light yellow brown paint, a red and a purple colour (see Figs. 3-7). Additionally, lines or small spaces of pastels in white, yellow (light yellow and ochre-yellow), orange (orange-red and orange-brown), blue, green, greyish and black tones are visible (see Figs. 8-13).

Opaque and transparent layers of water colours were drawn with brush. The paints mostly were applied as very thin glazing layers and as diluted paints. As result of these thin layers the structure of the paper support is clearly visible (see Figs. 3 and 4). There are just a few small areas painted in black tone where water colours were applied as thicker layers with more body (see Fig. 22). Often paint layers do not fully cover the black-coloured paper support (see Fig. 7). There are several absences or voids of water colour medium within thickly applied passages. Magnification reveals that these areas are not losses but rather places where the

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<sup>1</sup> Firm: Wild Heerbrugg, type: 308795, magnification: x 10-40.

<sup>2</sup> There is also another artwork ('Landscape with Figures', begin of 1910 s, gouache on paper, 122 x 109 cm) painted by Larionov's first wife on a similar black-coloured paper.

Source: *Mit voller Kraft. Russische Avantgarde 1910-1934* [exhibition catalogue, Museum für Kunst und Gewerbe, Hamburg, Winterhall AG, Kassel und OAO Gazprom, Moscow] Hornbostel, W., Kopanski, K. W. and Rudi, T. (ed.) Heidelberg: Edition Braus (2001), p. 31 (with photo).

media did not adhere to the underlying support when applied. The artist layered several fine brush strokes of opaque and transparent water colours upon one another to form the dense grove of lines (see Figs. 5, 6 and 13). This direct additive process involved little blending (see Figs. 5, 6 and 13), except from the lower part of the composition.

For a few areas the artist layered a variety of tones of paints and pastels upon one another (see Figs. 12 and 13). Generally, layers of water colours were painted first by the artist and afterwards tones of pastels were added. With the addition of broad transparent colour fields and sketched lines, providing great detail, to create depth and texture and place selected areas into compositional context, the composition was brought to completion. Several thin and broad lines of pastels were used by the artist to reinforce the composition. The coloured lines are fairly consistent in length and thickness (see Fig. 9). Certain areas have a chalky appearance.

At front side the work is signed on bottom at left in black tone with 'M. Larionoff' (see Fig. 16) and it is dated by the artist with '1916' (in the right lower corner, see Fig. 15). Neither a coating nor a fixative is visible on the paint surface. No major revisions or changes are visible in the composition in normal conditions or under magnification.

There is a painting by Larionow with the same title, dated to 1913/16 and owned by the Wilhelm-Hack-Museum, Ludwigshafen on the Rhine, which exhibits several compositional similarities.<sup>3</sup>

It might be possible that the examined work on paper has been used as a preparatory work for the painting in the Hack Collection.

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<sup>3</sup> It is painted by oil on cardboard, also signed and dated. This painting and the examined painting differ in their size. The current is bigger than the painting which has only a small size of 245 x 302 mm (see also report on archive review).

### 3. Summary of the results of pigment analysis by M. Kokkori

#### Instrumentation

The drawing was analysed in November 2013.<sup>4</sup> The results base on the elements detected in five selected areas (black, red, white, purple and blue paint, no analysis of pastel paints) detected with x-ray fluorescence (XRF). The non-contact analysis of the paint surface was performed using a *Bruker/Keymaster TRACeR III-V™* energy dispersive *X-ray Fluorescence analyser*. The size of the analysed spot is approximately 6-8 mm in diameter.

#### Analysis results

The pigments identified include the following compounds:

- calcium compound(s), such as calcium carbonate ( $\text{CaCO}_3$ ) and/or calcium sulphate ( $\text{CaSO}_4$ ) and/or bone/ ivory black ( $\text{Ca}_3(\text{PO}_4)_2$ )
- Ultramarine blue ( $\text{Na}_{8-10}\text{Al}_6\text{Si}_6\text{O}_{24}\text{S}_{2-4}$ )
- Prussian blue ( $\text{Fe}_4[\text{Fe}(\text{CN})_6]_3$ )
- iron oxide containing pigment(s) including red iron oxide
- chromium containing pigment(s), such as viridian ( $\text{Cr}_2\text{O}_3 \cdot \text{H}_2\text{O}$ ) and chrome yellow ( $\text{PbCrO}_4$ )
- zinc containing pigment(s), such as zinc white ( $\text{ZnO}$ )

As extenders the following compounds were identified:

- calcium compound(s), such as calcium carbonate ( $\text{CaCO}_3$ ) and/or calcium sulphate ( $\text{CaSO}_4$ )
- barium sulphate ( $\text{BaSO}_4$ )
- strontium sulphate ( $\text{SrSO}_4$ ) or impurity

Although attempts were made to analyse all of the main colours of the drawing the analysis results may not represent all pigments which are possibly present in the artwork (no analysis of pastel paints). Furthermore, the XRF unit is capable of analysing light elements by pulling a vacuum at the instrument tip. However, due to the necessity of performing non-contact analysis of the paint surface, elements below sulphur (S) are not detected in this modality.

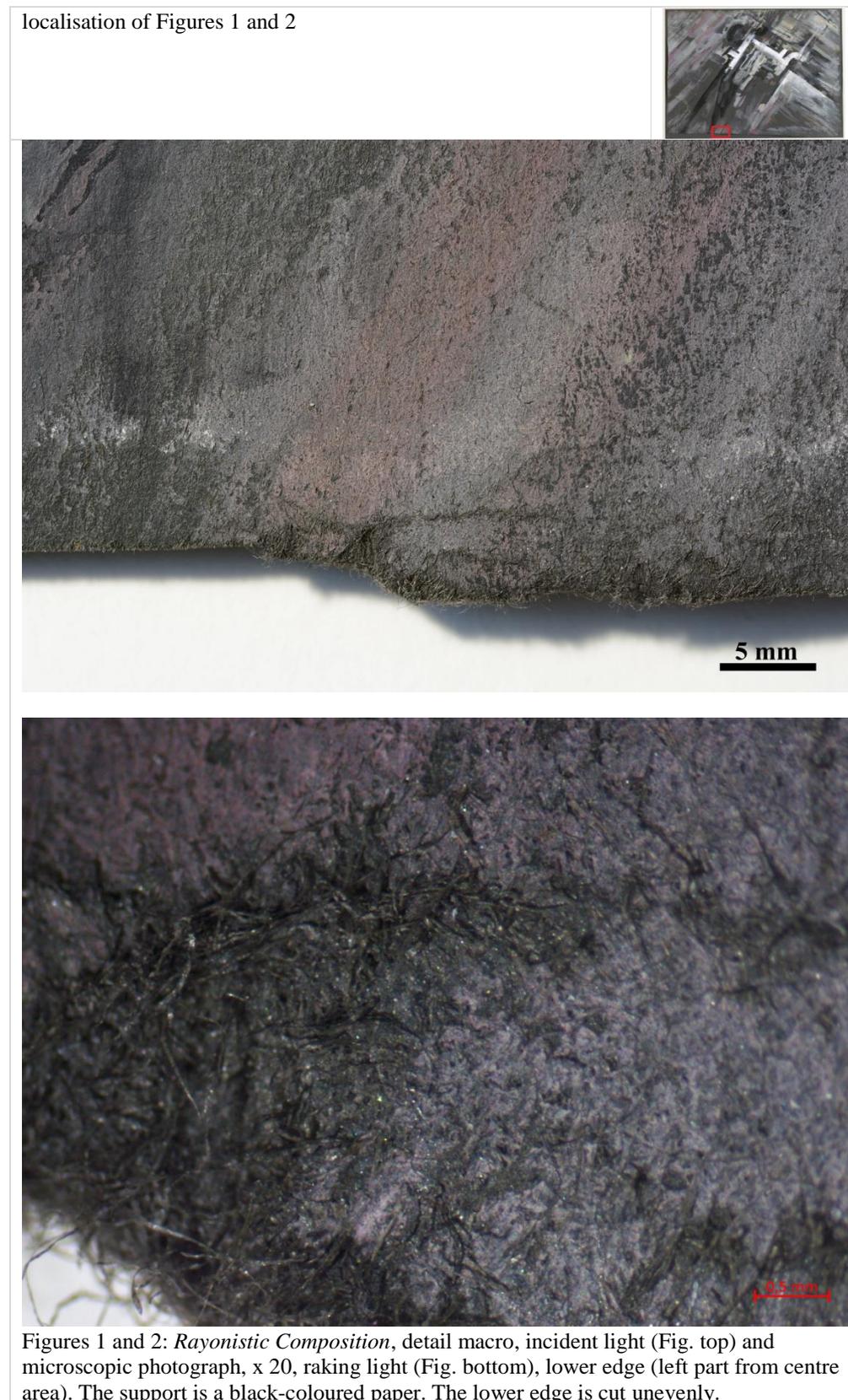
[These results are extended by the work done by Art Analysis & Research; see Report AAR0955.N].

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<sup>4</sup> Report Dr: Maria Kokkori, conservation scientist, Art Institute Chicago. Report unpublished, located Museum Ludwig.

## 4. Photographic documentation

### Technical aspects



localisation of Figures 3 and 4



Figures 3 and 4: *Rayonistic Composition*, detail macro, incident light (Fig. top) and microscopic photograph, x 6.3, raking light (Fig. bottom), centre of the artwork. The paints were applied as very thin glazing layers. The structure of the paper is clearly visible.

localisation of Figures 5 and 6



Figures 5 and 6: *Rayonistic Composition*, details macro, area above the centre, raking light. The artist used especially white and black paints which were diluted and thinly applied.

localisation of Figure 7



Figure 7: *Rayonistic Composition*, detail macro, left upper part, raking light. The different tones of paint (red, purple and light grey) do not fully cover the paper support. On these paints a line in white was applied.

localisation of Figure 8



Figure 8: *Rayonistic Composition*, detail macro, centre of the artwork, raking light. The orange-brownish pastel was applied only for a small area. Most space of the black-coloured paper is left free.

localisation of Figure 9

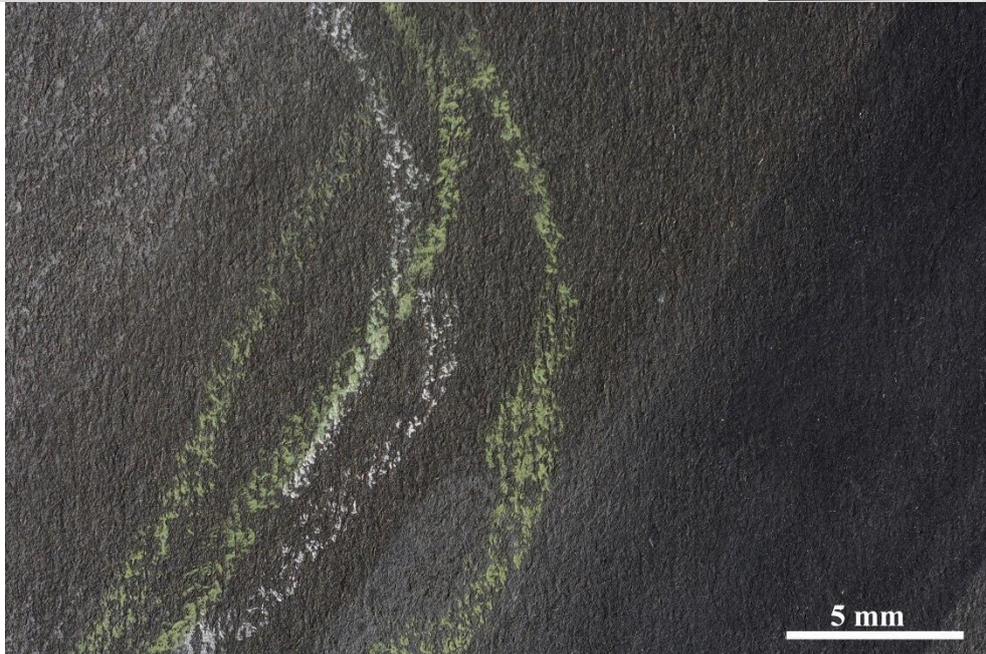


Figure 9: *Rayonistic Composition*, detail macro, left lower part, raking light. Relatively thin lines of pastel in white and light green tone were used by the artist. Most parts of the paper are left free.

localisation of Figure 10

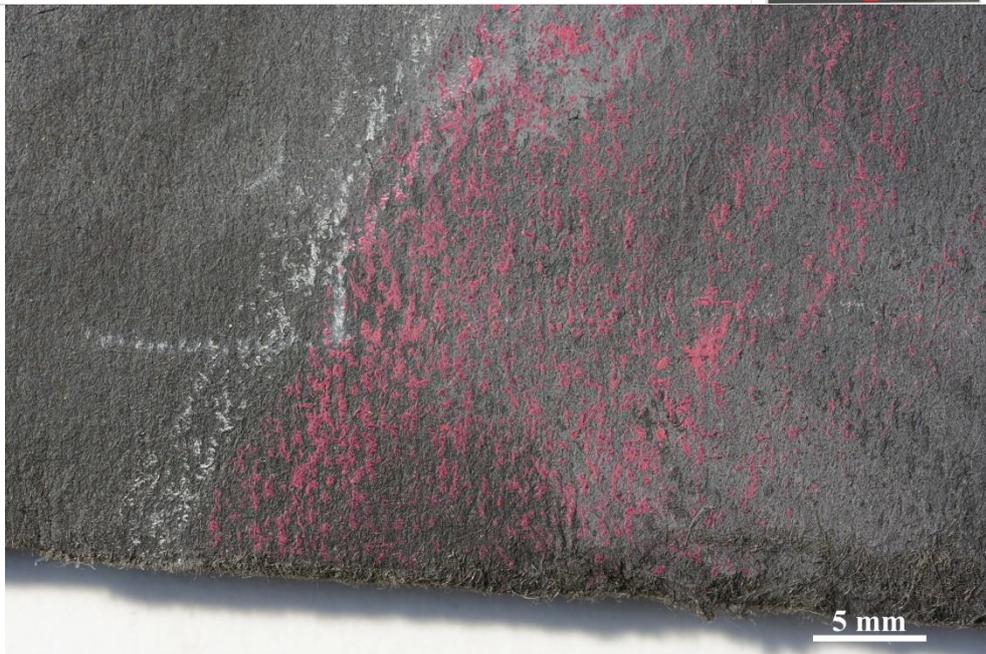


Figure 10: *Rayonistic Composition*, detail macro, lower edge (centre area), raking light. The artist used pastels in white and in pink tones.

localisation of Figure 11



Figure 11: *Rayonistic Composition*, detail macro, upper part (centre area), raking light. First a white layer (probably diluted paint) was painted. Afterwards a layer of pastel in an orange-reddish tone was applied which has a chalky appearance.

localisation of Figure 12

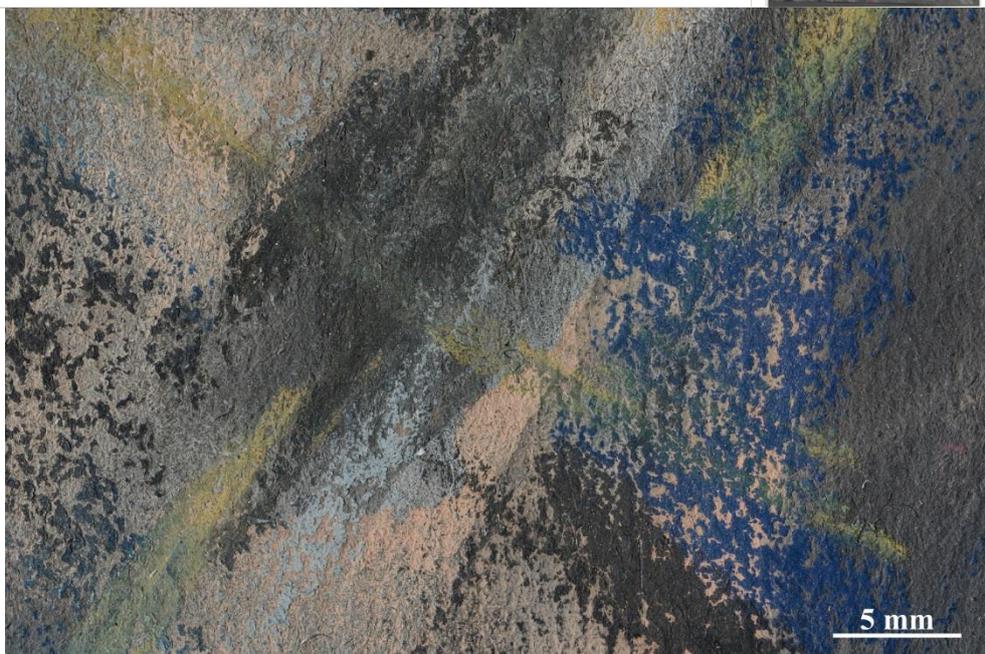
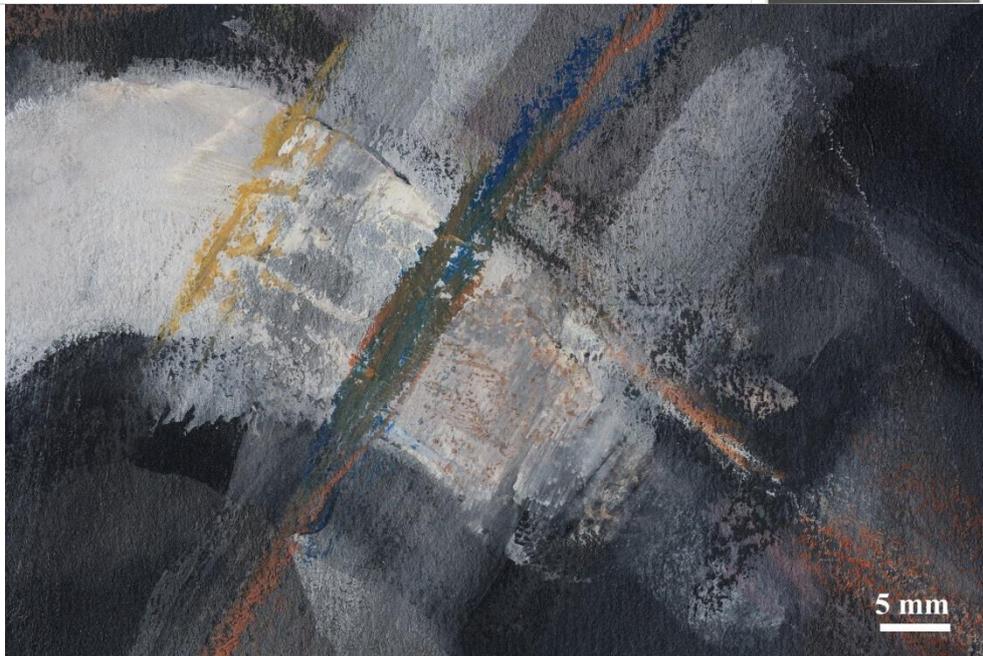


Figure 12: *Rayonistic Composition*, detail macro, upper edge (centre area), raking light. Different media (paint and pastel) and a variety of tones (flesh tone, yellow, blue, light grey, black) were layered upon one another.

localisation of Figures 13 and 14



Figures 13 and 14: *Rayonistic Composition*, detail macro (Fig. top) and microscopic photograph, x 6.3, right upper area from the centre, raking light. Different tones of paints and pastels were layered upon another. Generally, paints were applied first. Afterwards lines of pastels were done.

localisation of Figure 15



Figure 15: *Rayonistic Composition*, detail macro, lower edge, near left lower corner, incident light. At front side the work is signed on bottom at left with 'M. Larionoff'.

localisation of Figure 16



Figure 16: *Rayonistic Composition*, detail macro, right lower corner, incident light. The artwork is dated by the artist with '1916'.