



PAINTINGS EXAMINATION REPORT

CNS 197800

PAGE 1 OF 7

OWNER/AGENT	Peter Gabak
Owner's id nr.	315.277.0511
Date received	September 27, 2019
EXAMINER	Josephine Ren
Faculty supervisor(s)	Fiona Beckett
Date of report	December 13, 2021



Figure 1: Overall image.

ARTIST/MAKER (Owner Attribution)	Unknown
Signature, Location	None
Title (“”) or description	Portrait of George Thomson
Date created	1890 – early 20 th century (painting), 20 th century (frame)
Materials	Oil on canvas, wooden frame
Dimensions (HxWxD) cm	In frame: 90.8 x 103.5 x 4.8 cm (outer), 61 x 73.7 cm (inner) Unframed: 76.2 x 63.5 x 1.9 cm
Accessories (frame, other)	Wooden frame
Legends/labels/stamps	Stamp on reverse of canvas in the center: “[griffin trademark] Prepared by Winsor and Newton, Limited. 38, Rathbone Place, London, W. 268802”
Other distinguishing marks	Inscription in red media on reverse: “George Thomson 1672 – 1734”

I. GENERAL DESCRIPTION

The painting (Fig. 1) is a half-length or third-length portrait of a man in formal attire and a powdered wig, and is an example of modern British portraiture. He wears a coat or jacket with three buttons and a white cravat. The sitter is in three-quarter view and against a plain black background. The medium is oil paint on canvas. An inscription on the back states the name of the sitter, George Thomson, and the dates of his life (1672-1734). An online search for the sitter's information did not reveal any conclusions regarding his identity, yet a few online genealogical records suggest someone with the same name and life dates who lived in Glasgow, United Kingdom; this nationality aligns with that of the commercial supplier of the artist's materials, specifically the canvas (see Section II.2). The artwork is housed within a carved, gold-colored wooden frame.

II. CONDITION

Current Condition Summary:

The painting is in a moderate state of deterioration. Structurally the artwork is stable, and the canvas is

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well-supported by the stretcher. There are two canvas patches adhered to the reverse. The paint layer is stable and intact overall, with some minor losses along the edges. The image appears to have darkened or discolored heavily due to the likely presence of a varnish or other surface coating. This varnish layer is uneven in gloss and disfiguring to the surface. There are also areas of overpaint and one area of previous cleaning in the image area.

1. AUXILIARY SUPPORT

Construction:

The painting is on a pre-primed canvas tacked to the back and edges of a four-member wooden stretcher. The stretcher has eight keys and mortis and tenon butt joints at the corners. There are no crossbars. On the center of the right member, there is a stamped inscription in black saying "30 x 25". The stamp refers to the stretcher's dimensions and indicates commercial production.

Condition:

The stretcher is stable and has a layer of surface dirt and dust—particularly along the bottom member and between the keys. One of the keys in the bottom right corner has a major area of loss. There is a deep impression of a nail in the middle of the top member, as well as some slight rectangular indentations in the top and bottom members. Overall, there are some slight abrasions and scratches throughout the wood surface. A few tiny holes in the wood may have been caused by a former presence of pests.

2. SUPPORT

Construction:

The canvas appears to be a medium weight, plain-weave linen fabric with a vertical warp and horizontal weft orientation, as evidenced by selvage on the top edge. The yarn count is 37 warp by 37 weft per square inch. The color is a tan or dark beige color. Tacking margins are present and attached along the edges of the stretcher. There are 7 tacking nails on the shorter edges, and 9 on the longer edges.

On the reverse, there is a black stamp in the center that states: "[griffin trademark] PREPARED BY WINSOR & NEWTON, LIMITED. 38, RATHBONE PLACE, LONDON, W. 268802" (Fig. 2). This stamp further confirms commercial preparation of this canvas, and indicates the company, the location, and potentially the dating of this canvas' production. According to the National Portrait Gallery London's online survey of Winsor & Newton canvas stamps, this canvas series' production dates were during the 1890s-1910s (Fig. 3), suggesting this work was produced around the 1890s or later (National Portrait Gallery, n.d.). The upper area on the right edge has the inscription "30x25" which appears to be written in graphite. There is also a large inscription that writes: "George Thomson 1672-1734". This inscription is in a dark red color and appears to be applied using paint with wide brush point and scumbled effect. No lining is present. The inscription fluoresces a bright orange under UVA irradiation, indicating that the paint contains a lake pigment.



Figure 2: Canvas stamp.

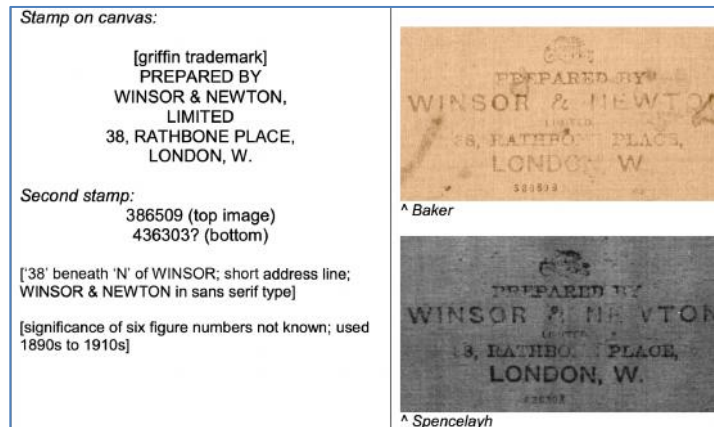


Figure 3: Section from National Portrait Gallery canvas stamp survey.

Condition:

Overall, the canvas is stable and well-supported on the stretcher. There are draws or planar distortions in both of the upper right corners, and slight buckling in the lower right corner. There are five small bulges along the lower edge of the canvas; the largest bulge is in the lower right corner and may be due to a foreign object stuck in the stretcher from the reverse. There are some breaks, tears, and losses along the top and bottom edges of the canvas, as seen from the reverse. Some minor cusping is visible along the top and bottom tacking margins.

There is a significant layer of dirt, dust, and soiling throughout the reverse. Two canvas patches are adhered to the reverse: one is circular and measures at $2 \frac{3}{4} \times 2 \frac{3}{8}$ inches, and the other resembles a strip with rounded corners and measures at 2×6 inches. The adhesive under both patches is unconfined and leeching out from all edges, and has darkened or discolored to a brown color. Adjacent to the patches are what seems to be two tracings of the same adhesive in the same circle and oval shapes of the patches. It is possible that these impressions were created by the temporary placement of the two adhesive-backed patches on a different area of the canvas. These tracings fluoresce bright, yellow-brown under UVA irradiation. The circular patch has adhesive applied to its reverse as well and has an upward-pointing arrow inscribed on it. The adhesive applied over this circular patch fluoresces dark black under UVA irradiation. The long oval patch is an off-white or cream color and the circular patch may have also been the same color, yet has become discolored due to application of the adhesive.

The media of the large red inscription has some waxy, gray-colored accretions on it.

3. GROUND LAYER(S)**Construction:**

The ground is thinly applied and may have initially been an off-white or cream color. The ground layer extends past the edges of the tacking margins yet stops before the selvage and cut edges of the canvas, indicating that the ground was commercially prepared. The material composition of the ground will be determined at a later date.

Condition:

The ground is dirty, heavily and unevenly discolored, and has significantly darkened along the side and top edges. There are some small abrasions and losses along the edges. Some larger areas of loss and abrasion are visible along the edges from the reverse.

4. COMPOSITION PLANNING

No underdrawing is discernible under normal illumination. Some areas of impasto do not align with the form in the image. Transmitted infrared illumination and X-radiography revealed the presence of a second composition underneath: a portrait of a woman facing the opposite direction in three-quarter view, donning a ruffled neckline making up the bodice of a gown (Fig. 4-5). The earlier portrait appears stylistically similar to the current composition, meaning it may be painted by the same artist. X-ray fluorescence spectroscopy mapping suggested that the former portrait may have been partially or entirely covered up with another lead-based priming layer before painting the present portrait. The composition also appears to have been formerly framed in an oval shape.



Figure 4: Transmitted infrared illumination.



Figure :5 X-radiograph.

5. PAINT LAYERS

Construction:

The paint layer appears to be paste vehicular and is thinly applied in the majority of the painting. There are some areas with slight impasto in the lower half of the painting throughout the sitter's clothing. The medium is likely linseed oil. The color palette consists of primarily brown, black, white, yellow, and flesh tone hues.

Condition:

There is blistering throughout the entire surface, likely caused by heat damage, and it is most significant throughout the background and corners of the painting (Fig. 6). There is no blistering in the areas along the edges that were in contact with the frame, which could indicate that the frame protected the paint

layer from blistering. Along the top side, there is a linear abrasion along where the edge of the frame's inner side was in contact with the painting. Along parts of the right and left sides, where the frame was in contact with the painting, there are linear, raised ridges which may be built-up material deposited by the frame. There are multiple small areas of paint loss along the top, right, and bottom edges. There are two minor deformations in the canvas along the lower edge, which are associated with areas of paint loss. The paint layer also appears to have a fine craquelure throughout. Overall, the image is disfigured by the darkening and discoloration of the varnish layer or other surface coating.

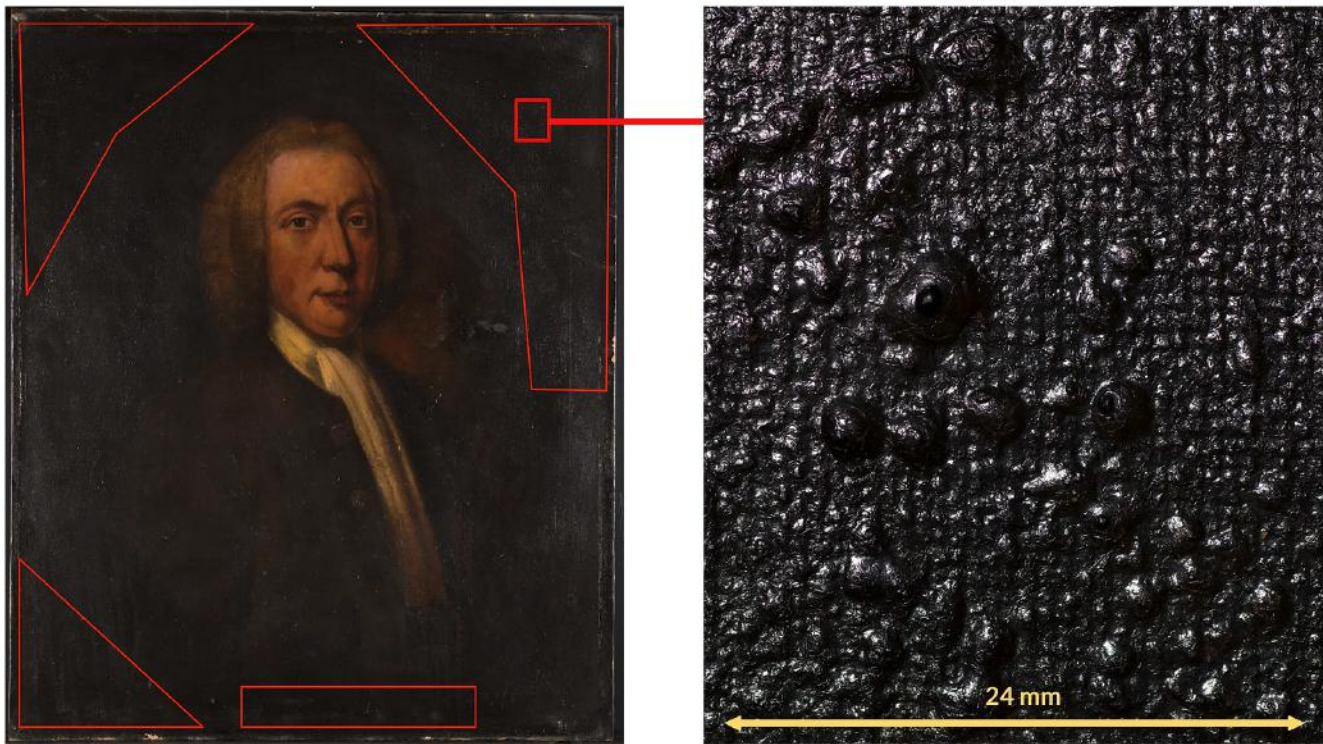


Figure 6: Diagram mapping out areas of blistering (left) and photomicrograph detail of paint blistering/bubbling (right).

6. VARNISH/ SURFACE COATING(S)

Construction:

A few factors point to the presence of a varnish. There is a gloss throughout the painting. The outer sides of the painting that were in contact with the frame, more noticeably the top and right sides, are smoother and glossier in comparison to the rest of the painting. There are multiple translucent drips along the top, right, and left tacking margins of the canvas.

Examining the painting with a handheld UVA lamp confirmed the presence of a varnish, and the coating's bright green-blue fluorescence indicates that it is synthetic or a combination of synthetic and natural resins. Fourier transform infrared spectroscopy analysis revealed that the varnish is likely an alkyd resin and may primarily be synthetic. The varnish was applied thickly with a brush, and there are multiple circular 'teardrops' in the varnish layer which may have occurred during its application. There are circular impressions in the varnish that appear to have resulted from the varnish possibly being buffed in circular motions.

Condition:

Overall the painting has some surface grime and dirt on it. There are areas of overpaint or previous inpainting in a few spots in the background by the figure's proper left shoulder, which fluoresce dark black under UVA irradiation. These areas of overpaint are very matte in comparison to the rest of the painting, and do not have the same suspected varnish or coating applied over them. A matte area in the forehead appeared to be overpainted under visible light; however, examining under UVA radiation revealed that this may have been an area of previous cleaning. Overall, there is an uneven level of gloss and sheen throughout the painting. The entire image appears to have darkened, and may be yellowed or discolored in various areas. Raking light reveals large, hazy areas of vertical drips among the lower right quadrant and the lower left corner. There may be a fine, subtle cracking in the varnish layer in the upper right quadrant when viewed in raking light, however it is unclear whether this is in the varnish or paint layer. Examination under UVA radiation revealed areas with a brownish tone in the top corners, indicating the possible presence of an unknown layer underneath the varnish that may be solubilized. The edges also fluoresce in a different tone compared to the rest of the painting, possibly due to the frame protecting these edges from ageing the same way.

7. FRAME**Construction:**

Notes on previous consultation with former objects professor Jonathan Thornton indicate that the frame might be a 19th-20th century Aesthetic Movement piece that may have been custom-made for this painting and later antiqued to look aged. Further art historical research is required to determine the period, make, and style of the frame. The decoration is carved directly out of the wood, then the frame had a gold or bronze metallic colorant applied. The golden color may be intended to simulate a gilded frame, as the frame does not appear to be gilded. The carved decoration depicts a floral chain-molding design, along with some geometric forms interlocked with foliage. Each corner also has a square-shaped foliage design. The joinery is mitered at the corners and is mortis and tenon. There is hardware on the back of the frame.

The painting was not secured stably to the frame; it sat on an attached wooden piece along the bottom of the inner side and reverse of the frame, and was secured by 3 nails. The artwork does not fit the inner edges of the frame well, and the frame may have caused some of the condition issues present in the paint layer. The frame is possibly non-original to the artwork.

Condition:

Overall the frame is in good and stable condition. The surface is dirty and has many abrasions throughout—more noticeably along the lower edge. There is a level of darkening or discoloration in the surface, and the gold colorant has worn off in multiple areas in various degrees. The reverse has a noticeable layer of dirt and dust, along with spiderwebs and what seems to be two insect casings along the bottom. There is adhesive applied between the joints of the mitered corners, as well as some spots of adhesive throughout the reverse of the frame. There are also several holes that were likely caused by a wood-boring insect. The infestation is inactive, as there are no wood dust particles or insect frass present. Along the inner edges of the frame and from the reverse are traces of what looks like a blackened, glossy coating. These traces may have originated from the painting; they match the size, edges, and color of the painting, and one area appears to also have some sort of white ground layer with the impression of canvas in it.

8. SUMMARY OF TREATMENT HISTORY

The details of any past restorations or treatments are unknown. There are areas of overpaint or inpainting in the image, which are visible under normal illumination and appear distinctly matte in comparison the rest of the painting. There may be an area of previous cleaning in the forehead. Two canvas patches are adhered to the back of the canvas as part of a previous treatment campaign (see section 2. Support: Condition).

9. ADDITIONAL NOTES OR COMMENTS

None at present.

III. REFERENCES

National Portrait Gallery, London, n.d. "Artists, their materials, and suppliers: Part 10, Winsor & Newton canvas." National Portrait Gallery. Accessed December 13, 2021.
https://www.npg.org.uk/assets/files/pdf/research/artists_materials_10_Winsor.pdf



EXAMINATION REPORT – Analysis & Photography/Imaging

CNS 197800

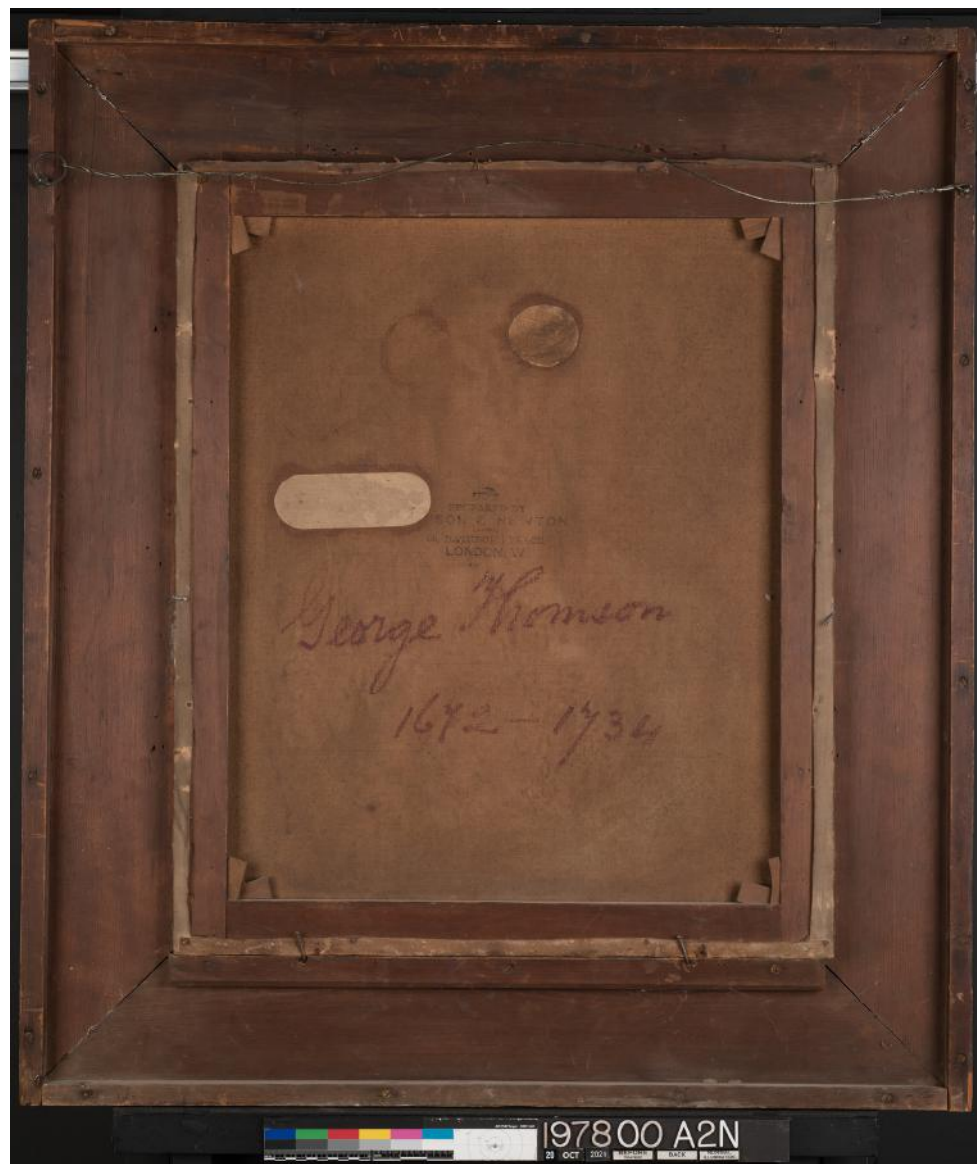
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PRE-TREATMENT PHOTOGRAPHS

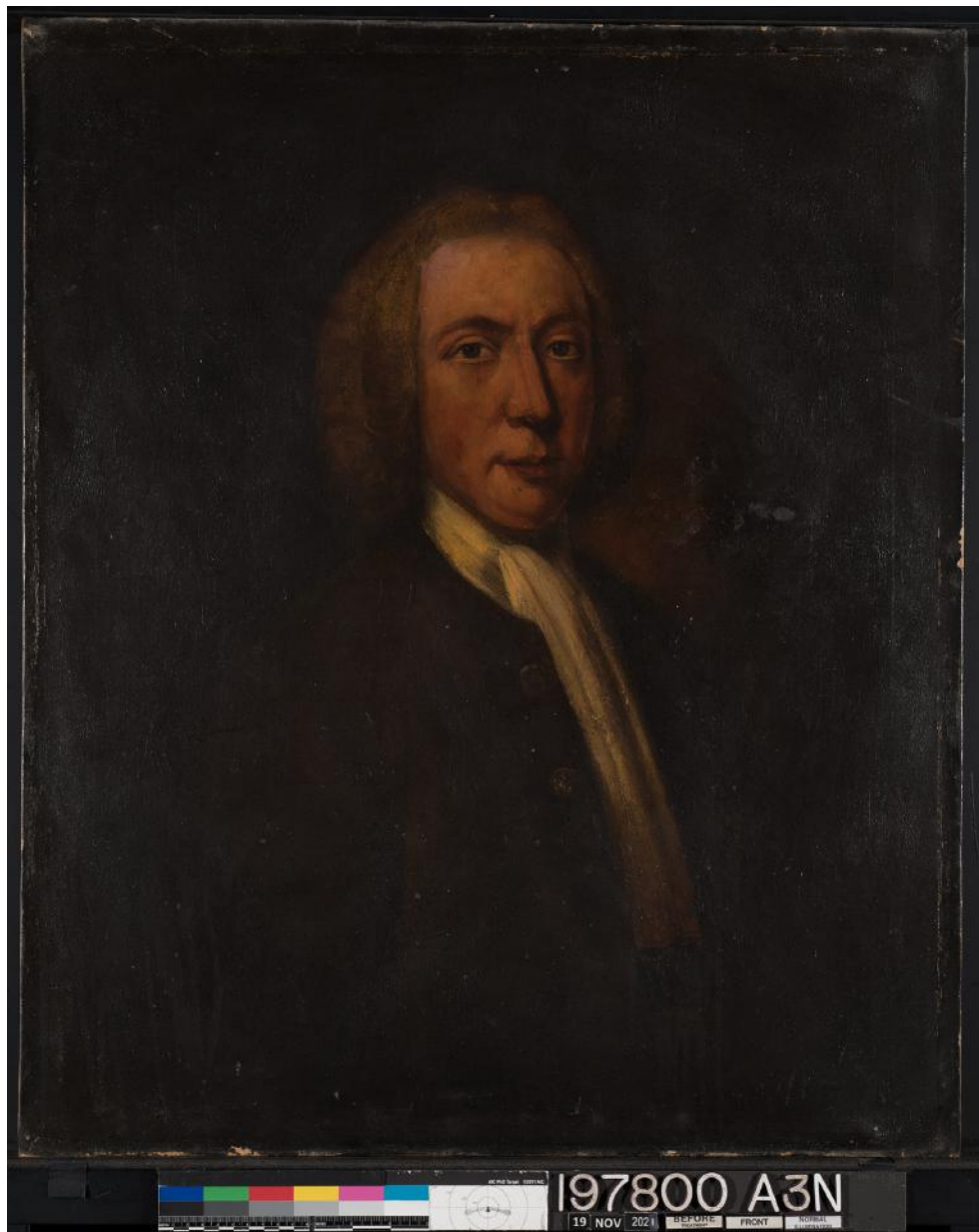
No.	DESCRIPTION	TECHNICAL NOTES	COMMENTS
A1N	Front, framed, normal illumination, before treatment	Lighting approximates standard viewing conditions.	The painting fits relatively well in its frame. Frame is slightly reflective and has a sheen due to its gold metallic coloring. There is a difference in the sheen between the right and left sides, likely due to various levels of soiling.
A2N	Back, framed, normal illumination, before treatment	Lighting approximates standard viewing conditions.	Hanging hardware in upper half, nails to secure painting into frame.
A3N	Front, normal illumination, before treatment	Lighting approximates standard viewing conditions.	Overall darkening of varnish layer makes it difficult to see the painting composition clearly.
A4N	Back, normal illumination, before treatment	Lighting approximates standard viewing conditions.	Two adhered patches from previous treatment. Large inscription indicating subject of portrait. Stamp denotes commercial canvas production.
A5RK	Front, raking illumination, before treatment	The light was positioned at the left, at a low angle to the surface of the painting in order to emphasize the surface topography.	Note blistering in paint layer, slight draws in corners, small local bulges along the lower edge, hazy drips in lower left quadrant. Impasto is visible.
A6SP	Front, axial specular illumination, before treatment	Lights were positioned adjacent to the camera to create specular reflections on the surface. These reflections provide information about surface characteristics (e.g. matte vs. glossy) as well as information about surface topography (dents, bulges, cracks, etc.)	Very uneven, high gloss and surface sheen due to varnish layer, except in areas of previous cleaning or inpainting. Bulges along lower edge are visible.
A7SP	Front, oblique specular illumination, before treatment	The subject was photographed at an oblique angle opposite the light source. The reflection of the light off the surface provides information about surface characteristics (e.g. matte vs. glossy) as well as information about surface topography (dents, bulges, cracks, etc.)	Area of inpainting or previous cleaning is visible in forehead. Very uneven, high gloss due to varnish layer can be seen. Bulges from possible inclusions are visible along lower edge.
A8N	Top, bottom, left, and right tacking margins, normal illumination, before treatment	Lighting approximates standard viewing conditions.	Extended ground layer on all four sides, indicating commercial production. Varnish drips can be seen on all sides. Top edge is much darker.
A9TR	Front, transmitted illumination, before treatment	The source of illumination was positioned behind the subject. The front of the subject is facing the camera.	Majority of paint layers possibly painted with black or darker pigments that block out visible light, except around the face and collar. Extensive craquelure of paint layer can be seen throughout.
A10RK	Front, raking illumination, before treatment	The light was positioned at the top, at a low angle to the surface of the painting in order to emphasize the surface topography.	Slight draws and undulations in canvas can be seen around top edge and corners. Note extensive blistering in paint layer, especially around the top quadrants.



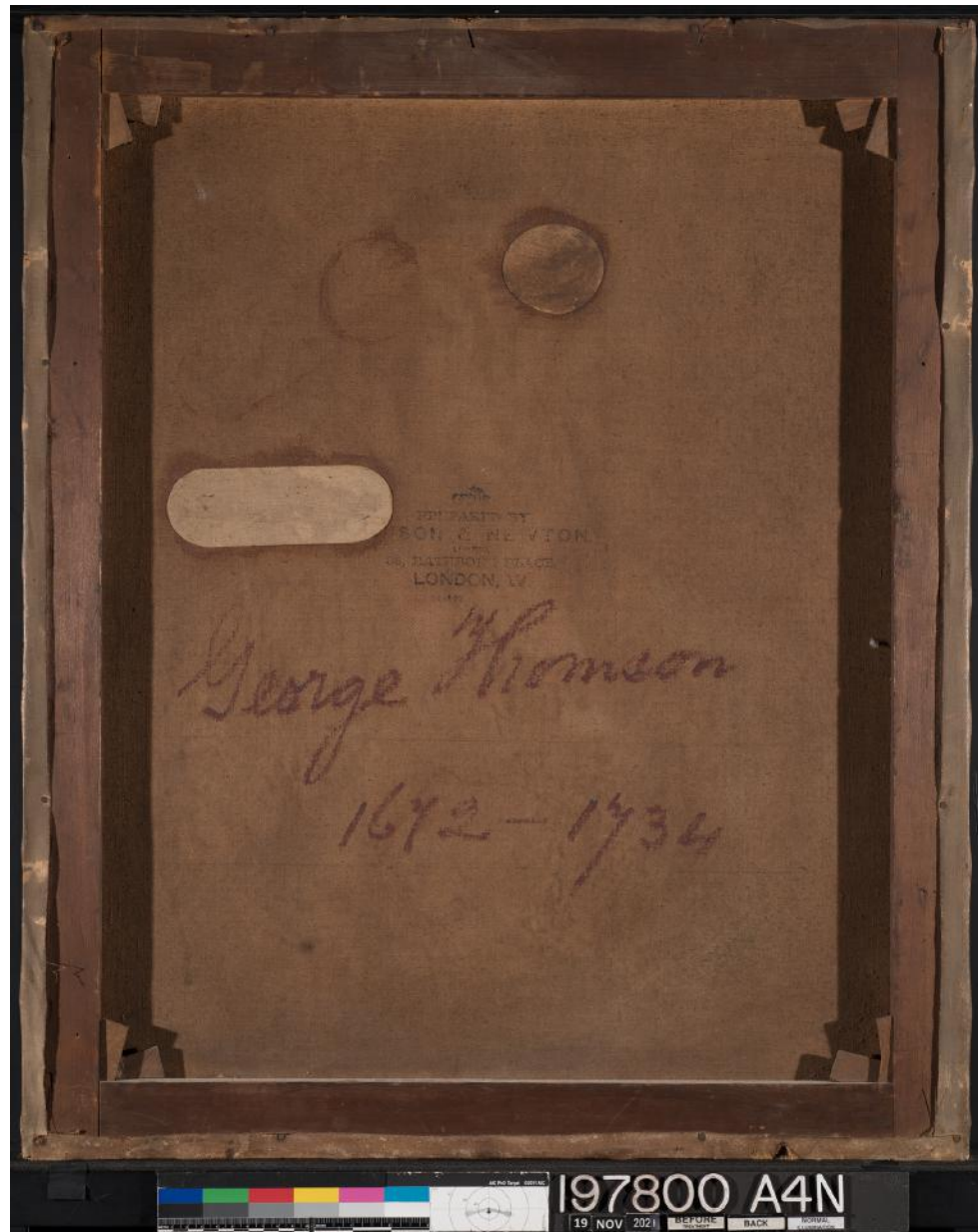
197800_A1N



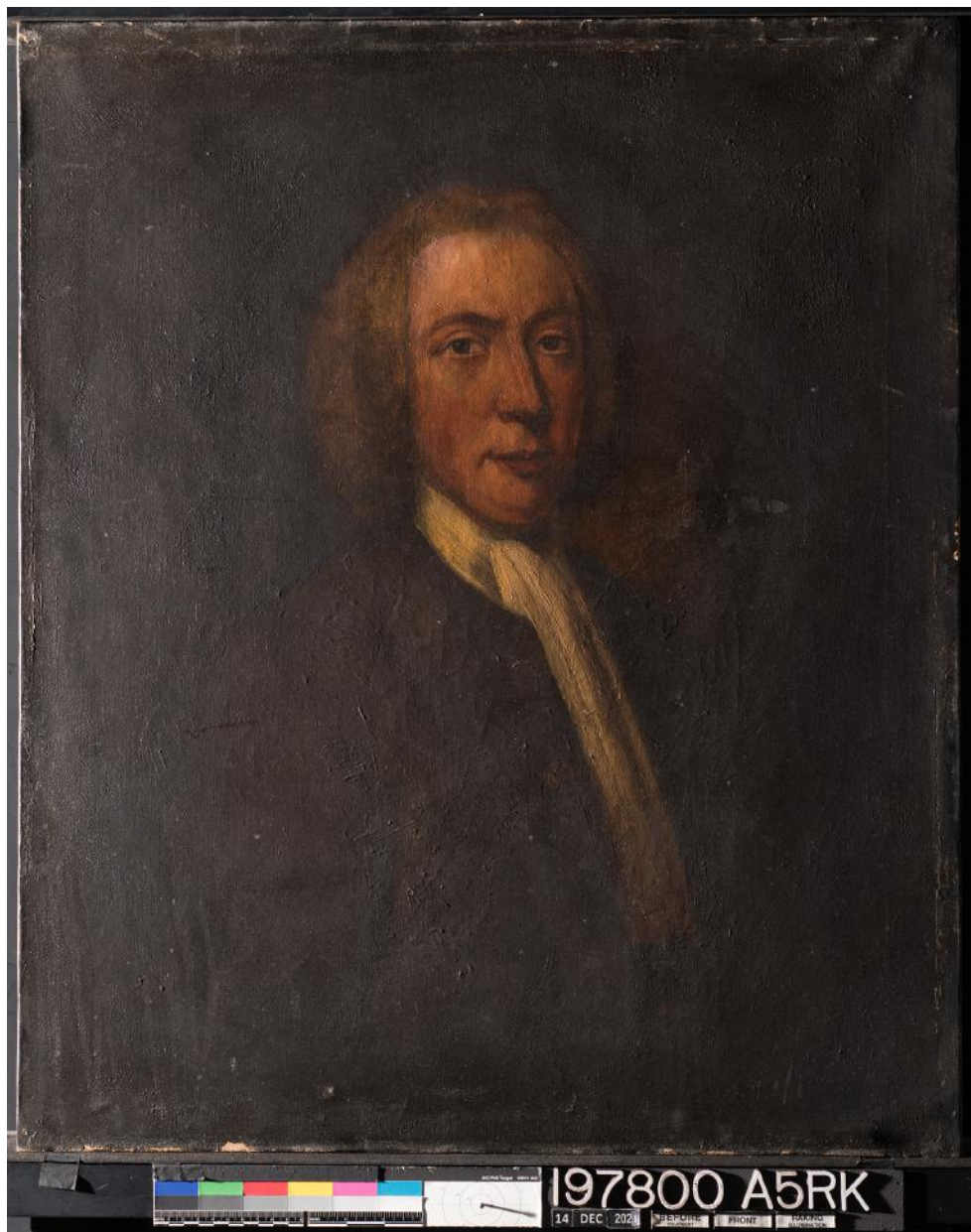
197800_A2N



197800_A3N



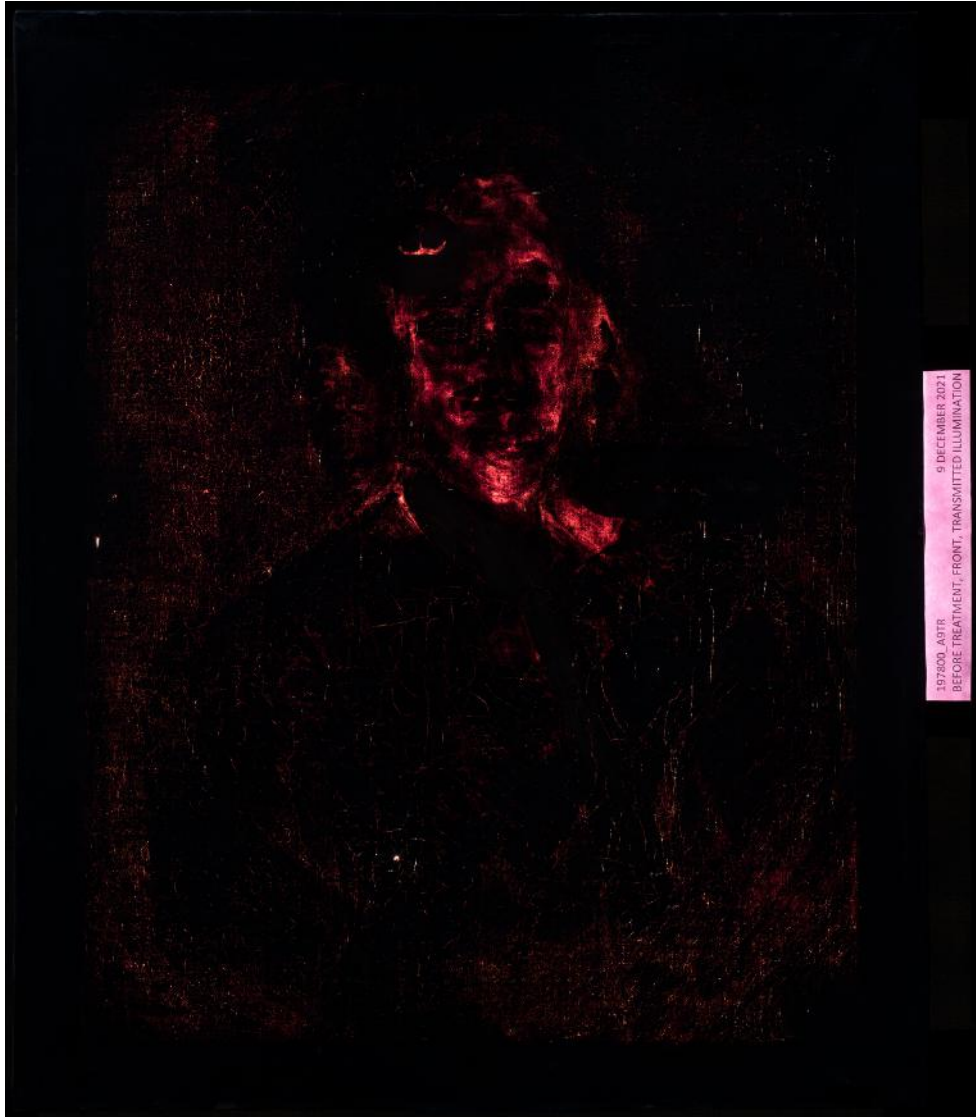
197800_A4N



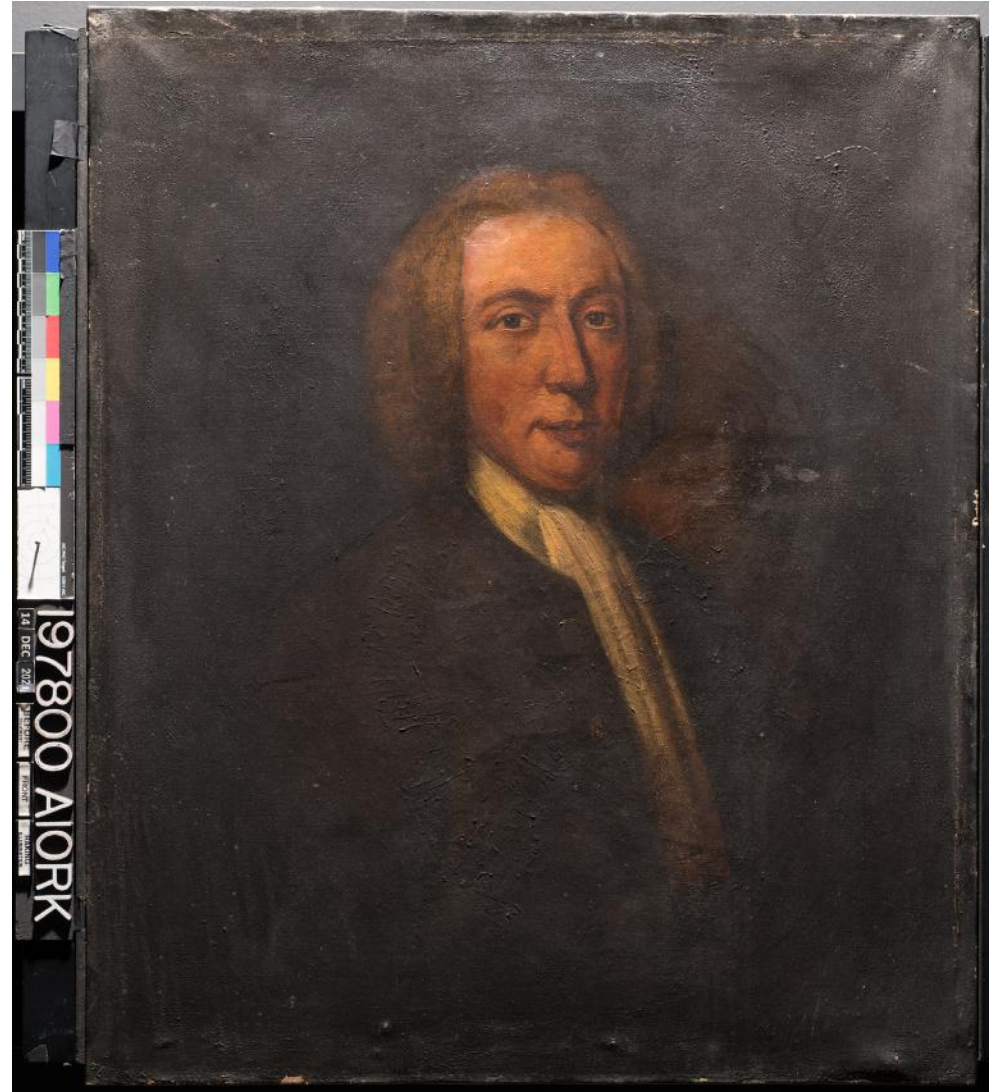
197800_A5RK



197800_A6SP



197800_A9TR_merged



197800_A10RK



PAINTINGS TREATMENT PROPOSAL

CNS 197800

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OWNER/AGENT	Peter Gabak
PROPOSED BY	Josephine Ren
FACULTY SUPERVISOR(S)	Fiona Beckett
DATE OF REPORT	January 31, 2022
ARTIST/MAKER (Owner's Attribution)	Unknown
TITLE	Unknown
DATE	1 90P- Early 20 th Century

1. Complete written and photographic documentation before, during, and after treatment.
2. Dry surface-clean overall face and reverse of the painting.
3. Remove any foreign materials lodged between the canvas and the stretcher bars.
4. Locally humidify and flatten areas of planar deformation.
5. Perform aqueous solubility testing.
6. Use aqueous cleaning systems on the face of the painting to remove dirt and grime.
7. Perform solvent solubility testing.
8. Use appropriate solvent-based cleaning systems on the face of the painting to remove varnish layer keeping in mind areas of overpaint and/or previous testing.
9. Evaluate possible methods for addressing blistering in the surface.
10. Assess stability of the paint layer around losses and consolidate local areas as needed.
11. Remove patches from reverse of the canvas mechanically or with the use of aqueous methods or solvents as appropriate.
12. Address any additional structural issues present after removing patches.
13. Apply isolating varnish layer as necessary.
14. Inpaint losses using appropriate conservation-grade materials.
15. Apply final overall varnish layer.

FACTORS INFLUENCING TREATMENT

Solvent-based solubility tests for the varnish layer and overpaint will determine how much of both layers can be removed. If the solubility of the overpaint is similar to that of the oil paint layer, this will complicate the process for overpaint removal. Additionally, there is severe blistering in the surface of the paint layer which will likely remain visible after cleaning and varnish removal.

ANTICIPATED RESULTS OF TREATMENT

The removal or reduction of the discolored, uneven varnish layer will brighten the appearance of the painting overall. Inpainting areas of loss will minimize visual distractions and restore unity to the composition. Applying a final varnish layer will improve visual continuity to the presently uneven surface sheen of the painting. Removing any foreign materials from the reverse, in combination with local humidification and flattening, will reduce planar deformations and disfigurements in the canvas structure.

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PAINTINGS TREATMENT REPORT

CNS 197800

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OWNER/AGENT	Peter Gabak	
OWNER'S ID NR.	315.277.0511	
DATE RECEIVED	September 27, 2019	
EXAMINER	Josephine Ren	
FACULTY SUPERVISOR(S)	Fiona Beckett	
DATE OF REPORT	July 28, 2023	
<hr/>		
ARTIST/MAKER (Ownership Attribution)	Unknown	
SIGNATURE and its LOCATION	None	
TITLE	Portrait of George Thomson	
DATE	1890 – early 20 th century	
STRUCTURE	Oil on canvas on a 4-member structure	
DIMENSIONS (H x W x D)	76.2 x 63.5 x 1.9 cm	
ACCESSORIES	Wooden Frame	

Figure 1: Overall image.

☐ OBSERVATIONS DURING TREATMENT

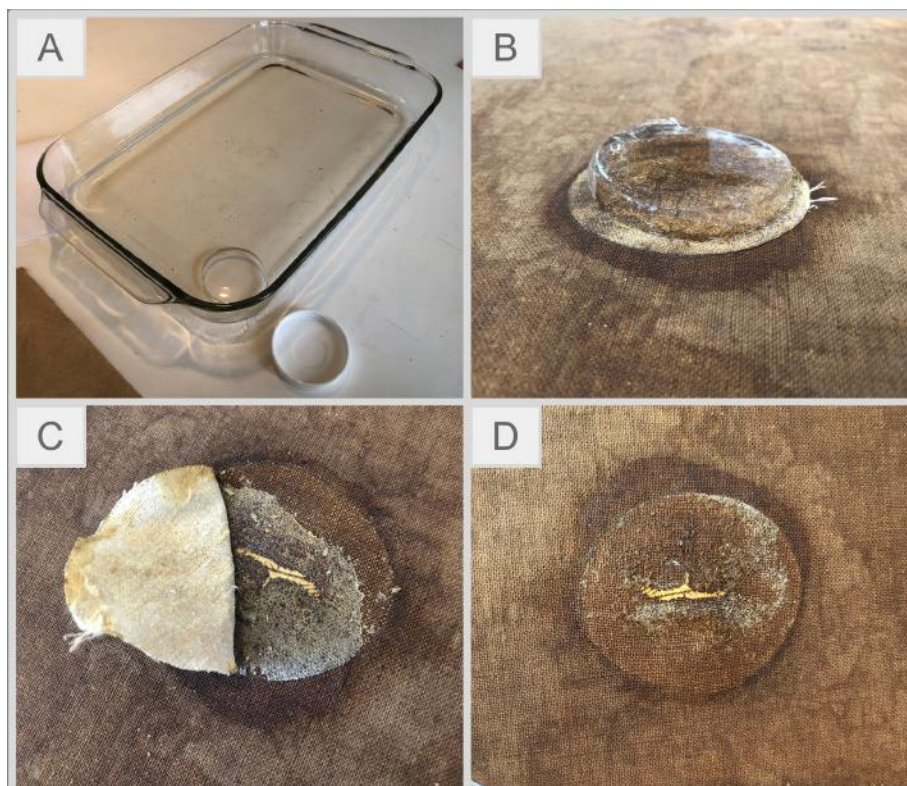
Complete varnish removal was not possible due to the extent of previous damages, heat damage, and modifications of the composition, as well as the presence of overpaint and possible presence of multiple types of varnish. As such, the varnish was successfully thinned and this is most evident in lighter areas of the composition. The full extent of overpaint was difficult to define since the entire composition currently covers up a second portrait underneath. Examination under the microscope and cleaning tests have revealed considerable amounts of overpaint along the background edges and in the red-brown area in the background adjacent to the right of the subject's face.

☐ TREATMENT PERFORMED

1. Performed written and photographic documentation before, during, and after treatment.
2. Dry surface-cleaned the face and reverse of the painting to remove accumulation of dirt and dust using a soft brush and HEPA-filtered vacuum.

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- Mechanically removed foreign materials lodged between the canvas and the bottom stretcher bar using a custom-shaped pointed piece of blotter.
- Conducted aqueous solubility testing and performed aqueous cleaning of the face with deionized water and custom-rolled cotton swabs to reduce surface soiling and dust.
- Consolidated local areas of weakly-adhered paint with a 4% isinglass¹ in deionized water solution introduced into cracks with a fine-tipped brush.
- Applied a rigid gel of gellan gum² and water on top of canvas patches on the reverse of the painting for a contact time of 15-20 minutes in order to soften the patches and adhesive, then delicately removed the patches with a Casselli spatula (Fig. 2A-D). Reduced remaining adhesive residue from the reverse by a combination of swabbing with isopropanol to soften the adhesive and dry mechanical action using a scalpel and Casselli spatula.



Figures 2A-D: Process of using gellan gum gel to remove old canvas patch from reverse.

- Locally humidified and flattened a small area of planar deformation in the bottom edge of the canvas against the stretcher using a three-tiered humidification system. The humidification system was prepared using a stack of 3 pieces of blotter in the following order: dry blotter, blotter dampened with water, and dry blotter. Inserted stack between canvas and stretcher along with a piece of G-10

¹ ISINGLASS #63110 (sturgeon fish swim bladders); Kremer Pigments, 247 West 29th Street New York, NY 10001, (212) 219-2394.

² GELLAN GUM (low acyl gellan gum used to make a rigid polysaccharide gel); manufactured by Ingredion Inc.; available from TALAS, 330 Morgan Ave Brooklyn, NY 11211, (212) 219-0770.

epoxy sheet³ in the side away from the canvas, to support the canvas while the painting remained face up. Humidified area for 5 minutes. Removed materials and applied blotter, acrylic sheet⁴, and weight atop the area for 2 hours, ensuring the canvas was supported the entire time.

8. Conducted solvent solubility testing and repeated as needed throughout different areas of the painting to determine the solubility of the varnish.
9. Reduced varnish in a successive manner using ethanol or a 3:1 mixture of ethanol to Odorless Mineral Spirits⁵ depending on the area and its solvent sensitivity.
10. Reduced overpaint using ethanol and custom-rolled cotton swabs, while examining under the microscope as necessary.
11. Consolidated additional area of flaking and cupping paint using dilute BEVA 371⁶ in 1:1 xylene and naphtha. Gently set down paint layers using a heated tacking iron, applying heat through silicone release Mylar⁷ (Fig. 3-4).



Figure 3: Area of cupping paint before treatment.



Figure 4: Area of cupping paint after treatment.

³ G-10 HIGH PRESSURE LAMINATE (fiberglass and epoxy) [NOTE: this should be colored a pale, translucent green; a newer resin is colored an unacceptable orange] manufactured by Accurate Plastics, Inc., 18 Morris Place, Yonkers, NY 10705, (914) 476-0700; Acculam - <http://www.accum.com/home.htm>

⁴ Plexiglas acrylic sheet, Rohm & Haas.

⁵ GAMSOL ODORLESS MINERAL SPIRITS; Gamblin Artists Colors Co., PO Box 15009 Portland, OR 97293, (503) 235-1945.

⁶ BEVA 371 (an ethylene vinyl acetate based adhesive); Conservator's Products Co. (CPC), P.O. Box 601, Flanders, NJ 07836; 973-927-4855.

⁷ SILICONE coated polyester film 0.015" thick; (Mylar with silicone coating on both sides) University Products, Inc., 517 Main Street, P.O. Box 101, Holyoke, MA 01041-0101. (800) 628-1912 or Talas 330 Morgan Ave Brooklyn, NY 11211; 212-219-0770; OR: Archivart, Division of Nielsen Bainbridge, LLC, 40 Eisenhower Drive, Paramus, NJ 07652. 800-804-8428

12. Repaired the tear and structural loss in forehead area with a canvas insert. Selected a linen canvas with similar weight and weave structure. Traced area of loss with Mylar polyester film⁸ and a Sharpie pen. Used Mylar tracing to cut canvas insert to shape. Adhered canvas insert into area of loss using an adhesive mixture of 20% isinglass and 10% wheat starch paste in a 1:1 ratio in deionized water, then left area under weight overnight. Several dots of Lascaux polyamide welding power⁹ were applied afterward along the join areas of the insert. A heated wax-carving tool with interchangeable tips was used to apply and cure both adhesives. The area was then locally humidified with dampened blotter and flattened under weight.
13. Adhered a piece of Japanese tissue paper¹⁰ over the canvas insert on the reverse using dilute BEVA 371¹¹ in 1:1 xylene and naphtha to provide additional structural reinforcement. The Japanese tissue was cut and pinked to the shape of the canvas insert.
14. Filled large losses with Beckers latex-based spackle fill¹² and Flugger acrylic filler¹³ and texturized to match the surrounding area. Filled small losses with Aquazol-based paintable fill¹⁴ to allow for more precise application of fill material.
15. Applied an isolating varnish layer of 12% Paraloid B-72¹⁵ in 1:1 xylene to Shellsol A100 by brush (Fig. 5).



Figure 5: Brushing on initial varnish.

⁸ MYLAR Type D [clear] (polyester film), 1, 3, & 5 mil thick (1 mil = .001") now known as *Mitsubishi Hostaphan 43SM* or *Dupont Melinex type 516* or *456*, since the brand *Mylar-D* has been discontinued as of 2001, although the name "Mylar" continues to be used; available from Talas 330 Morgan Ave Brooklyn, NY 11211; 212-219-0770.

⁹ LASCAUX 5060 (polyamide textile welding powder); Talas 330 Morgan Ave Brooklyn, NY 11211; 212-219-0770.

¹⁰ SHIN TENGUJO (machine made roll); imported by Aiko's Art Materials Import, Inc., 3347 N. Clark, Chicago, IL 60657 [101cm wide x 200 m long; made by Morita Japanese Paper Co., Ltd. Kyoto, Japan].

¹¹ BEVA 371 (an ethylene vinyl acetate based adhesive); Conservator's Products Co. (CPC), P.O. Box 601, Flanders, NJ 07836; 973-927-4855.

¹² BECKERS LATEXSPACKEL (latex based spackle fill); Beckers Farg, 117 83 Stockholm, Sweden.

¹³ FLUGGER ACRYLIC FILLER (bonding and filling acrylate); available from Talas 330 Morgan Ave Brooklyn, NY 11211; 212-219-0770.

¹⁴ AQUAZOL PAINTABLE FILL; self-prepared recipe includes 10 g. Aquazol 200, 37.5 mL deionized water, 12.5 mL ethanol, 30 g. Golden Acrylic Gesso, and 2.75 g. French Whiting.

¹⁵ PARALOID B-72 (a copolymer of ethylmethacrylate and methyl acrylate); Rohm & Haas, Philadelphia, PA.

16. Inpainted fills using Galdehyde¹⁶ resin mixed with stable dry pigments and a diluent of 1-methoxy-2-propanol (Fig. 6).
17. Applied a final varnish of 18.5% Laropal A81¹⁷ in 3:3:4 Shellsol A100 to Shellsol 340 to xylene with 2% Tinuvin 292 by spray gun.
18. Attached a custom rigid backing board made of single-walled corrugated board¹⁸, Fome-cor¹⁹, and mat board²⁰.
19. Dusted frame and removed old hanging wire and hardware.

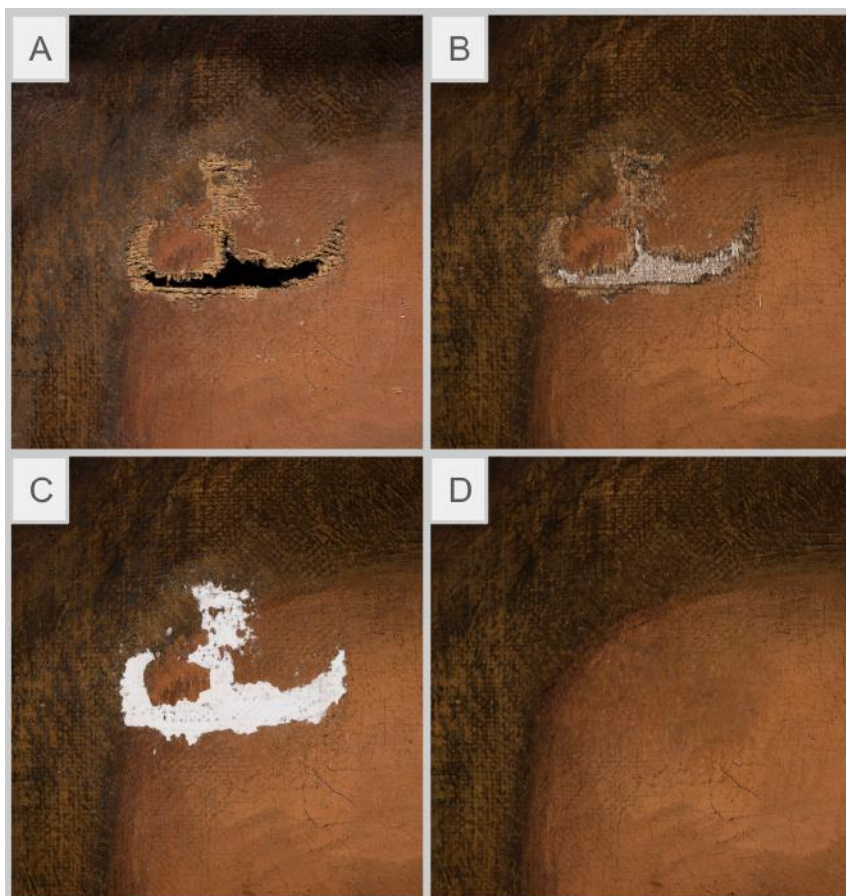


Figure 6: A) Loss in forehead before tear repair, B) After tear repair, C) After filling, D) After inpainting and varnishing.

¹⁶ GAMBLIN GALDEHYDE RESIN SOLUTION (Laropal A81 aldehyde resin solution); available from Talas 330 Morgan Ave Brooklyn, NY 11211; 212-219-0770.

¹⁷ LAROPAL A81 (condensation product of urea and aliphatic aldehydes) manufactured by Badische Aniline und Soda Fabrik [BASF], supplied by Conservation Resources International, LLC, 5532 Port Royal Road, Springfield, Virginia 22151; 800-634-6932 [703-321-7730].

¹⁸ ARCHIVAL CORRUGATED BOARD (acid- and lignin-free); distributed by University Products, Holyoke, MA.

¹⁹ FOME-COR (expanded styrene core, acid free paper skins); [manufactured by Monsanto Engineered Plastics, St. Louis, MO] United Mfrs. Supplies, Inc., 80 Gordon Drive, Syosset, NY 11791; 516-496-4430.

²⁰ MATBOARD - WESTMINSTER (acid free, 100% cotton rag pH ~ 9.0); Light Impressions, P.O. Box 787, Brea, CA 92822-0787; 800-828-6216.



TREATMENT REPORT – Analysis & Photography/Imaging

CNS197800

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MATERIALS ANALYSIS

SAMPLE and LOCATION	ANALYTICAL METHOD	FINDINGS
Samples of loose paint flakes collected from unknown area in background	Material analysis using Fourier Transform Infrared Spectroscopy-Attenuated Total Reflectance (FTIR-ATR)	Contains a resin (varnish)
Samples taken of adhesive used to adhere canvas patches on reverse from previous restorations	Material analysis using FTIR-ATR	Adhesive is polyvinyl alcohol based
Samples taken of fill material from a previous restoration, located on the front to the right of the figure's face	Material analysis using FTIR-ATR	Fill material is calcium carbonate based
Sample of varnish collected from the face by the lower left edge	Material analysis using FTIR-ATR	Varnish is an alkyd resin, likely mostly synthetic

Phy

Type	Number of Samples
Loose paint flakes from unknown area in background	One sample about 1mm
Canvas patch adhesive removed from reverse	One sample about 2mm
Fill material removed from front	Two samples about 1mm each
Varnish collected from face and edge	One sample

i.e.: cross-section, edge cut, etc.

TREATMENT PHOTOGRAPHS

No.	DESCRIPTION	TECHNICAL NOTES	COMMENTS
B1UVA	Front, UVA-induced visible fluorescence, during treatment	Irradiation setup approximates standard viewing conditions under UVA-vis fluorescence using a stabilized radiation source. The subject was photographed in a darkened room while irradiated by a long wave ultraviolet lamp (blacklight). The ultraviolet radiation causes some materials in the subject to fluoresce (emit light). <i>Camera filtration: PECA 918+2E #2</i>	Varnish is present and is possibly synthetic or a combination of synthetic and natural resin. Method of application (brushwork, drips) can be seen. Areas of overpaint or prior cleaning tests are visible, as well as a few areas of loss in the edges (most notably the bottom edge). Uneven layer of varnish.
B2UVA	Back, UVA-induced visible fluorescence, during treatment	Irradiation setup approximates standard viewing conditions under UVA-vis fluorescence using a stabilized radiation source. The subject was photographed in a darkened room while irradiated by a long wave ultraviolet lamp (blacklight). The ultraviolet radiation causes some materials in the subject to fluoresce (emit light). <i>Camera filtration: PECA 918+2E #2</i>	Inscription on the back has been done using a lake pigment, possibly a madder pigment. Patches are modern additions and made of a material containing optical brighteners. The back is very dark overall.
B3N	Front, normal illumination, during treatment	Lighting approximates standard viewing conditions.	Image taken as reference for modified UV-vis-IR techniques.

All conservation documentation should be retained with the artifact as part of its historical record. Documentation which the department provides complies with the principles set forth in the *Code of Ethics and Guidelines for Practice* of the American Institute for Conservation

B4FCIR	Front, false color reflected near infrared, during treatment	<p>The subject was illuminated with incandescent lamps. A special camera, sensitive to the invisible near infrared radiation emitted by the bulb was used to record how the radiation penetrated the subject, or was absorbed or reflected by the materials in the subject. Infrared radiation may penetrate overlying layers to reveal underlying information or may help to characterize materials or to distinguish different materials that are similar in appearance.</p> <p><i>Camera filtration: X-Nite 1,000</i></p>	Did not provide additional information.
B4IR	Front, reflected near infrared, during treatment	<p>The subject was illuminated with incandescent lamps. A special camera, sensitive to the invisible near infrared radiation emitted by the bulb was used to record how the radiation penetrated the subject, or was absorbed or reflected by the materials in the subject. Infrared radiation may penetrate overlying layers to reveal underlying information or may help to characterize materials or to distinguish different materials that are similar in appearance.</p> <p><i>Camera filtration: X-Nite 1,000</i></p>	Composition and some details are visually clearer, such as the buttons on his jacket. Composition also appears to be originally in an oval frame rather than rectangular.
B5IRLUM	Front, infrared luminescence, during treatment	<p>The subject was illuminated with an infrared free visible light source. The visible light energy is absorbed by some materials in the subject and released as invisible near infrared luminescence. The luminescence is photographed using a special camera filtered to record only infrared radiation.</p> <p><i>Illumination source and filtration: White Light LED covered with BG38 filter</i> <i>Camera filtration: Kodak Wratten 88A</i></p>	No bright luminescence observed and did not reveal additional information about the painting.
B6FCUV	Front, false color reflected UVA, during treatment	<p>The subject was placed in front of a long wave ultraviolet lamp (blacklight). A camera with sensitivity to the invisible ultraviolet radiation was used to record how the ultraviolet was absorbed (area appears dark) or reflected (area appears light) by materials in the subject. This image can aid in differentiation or characterization of materials. Because the ultraviolet penetrates little beyond the surface, the visibility of anomalies in surface can also be enhanced.</p> <p><i>Camera filtration: X-Nite CCI+B+W403</i></p>	Did not reveal additional information about the painting.
B6RUVA	Front, reflected UVA, during treatment	<p>The subject was placed in front of a long wave ultraviolet lamp (blacklight). A camera with sensitivity to the invisible ultraviolet radiation was used to record how the ultraviolet was absorbed (area appears dark) or reflected (area appears light) by materials in the subject. This image can aid in differentiation or characterization of materials. Because the ultraviolet penetrates little beyond the surface, the visibility of anomalies in surface can also be enhanced.</p> <p><i>Camera filtration: X-Nite CCI+B+W403</i></p>	Evidence of varnish removal and cleaning tests are visible in the figure, yet is less apparent compared to UVA imaging. Areas in the forehead and background center to the right of the sitter are not varnished, indicating presence of overpaint or prior cleaning tests. White pigment in scarf is not zinc white and may be lead white.
B7UVA	Front, UVA-induced visible fluorescence, during treatment	<p>Irradiation setup approximates standard viewing conditions under UVA-vis fluorescence using a stabilized radiation source. The subject was photographed in a darkened room while irradiated by a long wave ultraviolet lamp (blacklight). The ultraviolet radiation causes some materials in the subject to fluoresce (emit light).</p> <p><i>Camera filtration: X-Nite CCI+PECA 918+2E #2</i></p>	Reveals that after an initial pass of cleaning in the jacket of the of the sitter, layers of varnish are still left in that area. Varnish has been more readily removed in the scarf area.
B8DET_SP	Front, detail, axial specular illumination, during treatment	<p>A detail about 3.5 x 2.5 cm area was captured via a digital camera. The light was positioned adjacent to the camera to create specular reflections on the surface. These reflections provide information about surface characteristics (e.g. matte vs. glossy) as well</p>	Area of previous intervention or treatment, shows intersection between varnished area and removed varnish. Highlights large crack that appears different to cracking pattern in the rest of the original paint layer (refer to B12DET_RK).

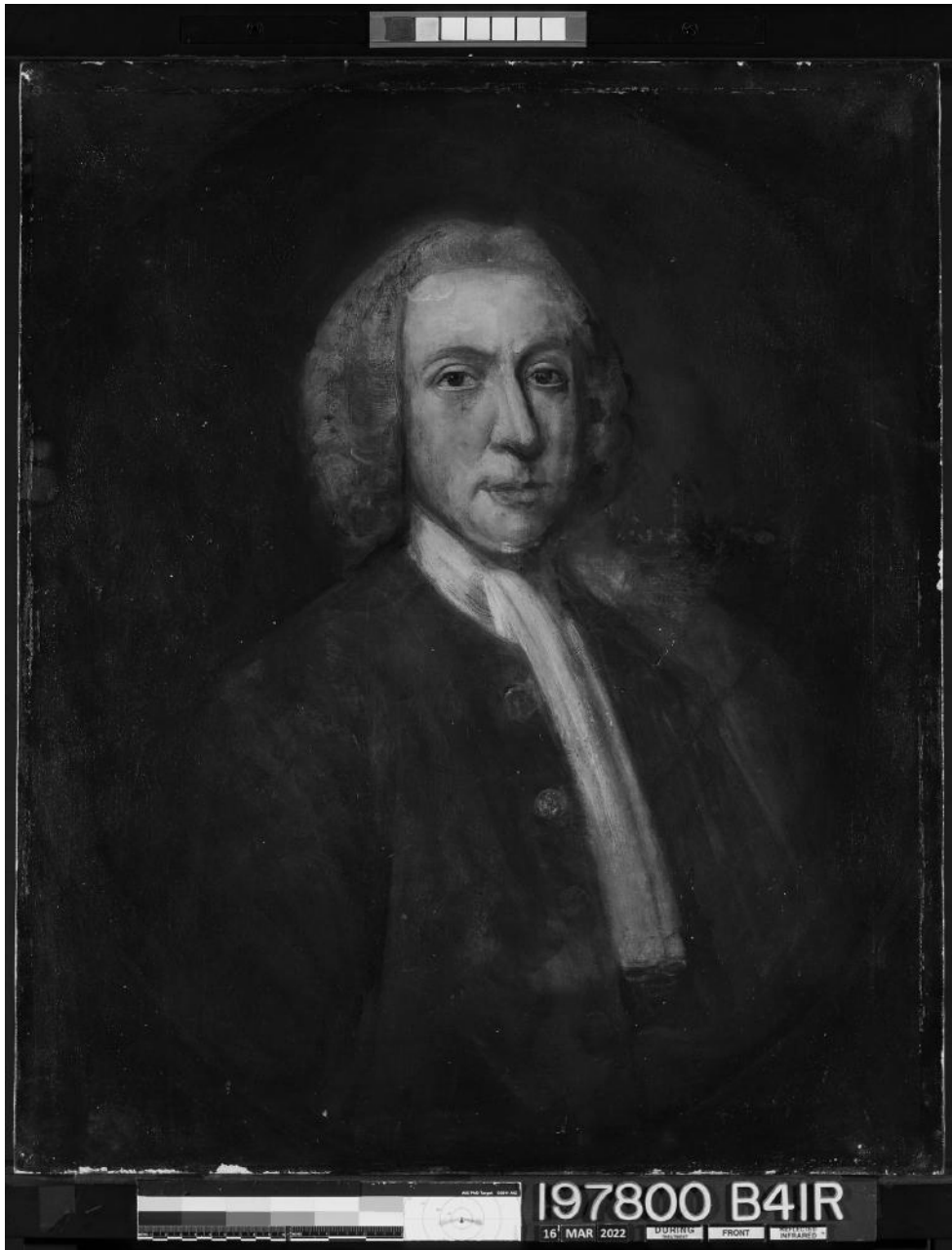
		as information about surface topography (dents, bulges, cracks, etc.)	
B9DET_RK	Front, detail, axial specular illumination, during treatment	A detail about 3.5 x 2.5 cm area was captured via a digital camera. The light was positioned at the top, at a low angle to the surface of the painting in order to emphasize the surface topography.	Area shows texture of paint in original paint layer and possible fill area.
B10DET_RK	Front, detail, raking illumination, during treatment	A detail about 3.5 x 2.5 cm area was captured via a digital camera. The light was positioned at the left, at a low angle to the surface of the painting in order to emphasize the surface topography.	Area shows texture of paint in original paint layer and possible fill area.
B11DET_SP	Front, detail, axial specular illumination, during treatment	A detail about 3.5 x 2.5 cm area was captured via a digital camera. The light was positioned adjacent to the camera to create specular reflections on the surface. These reflections provide information about surface characteristics (e.g. matte vs. glossy) as well as information about surface topography (dents, bulges, cracks, etc.)	Shows formation of bubbling or blistering in the paint layer, indicating exposure to severe heat.
B12DET_RK	Front, detail, raking illumination, during treatment	A detail about 3.5 x 2.5 cm area was captured via a digital camera. The light was positioned at the left, at a low angle to the surface of the painting in order to emphasize the surface topography.	Reveals cracking system in the original paint layer. No overpaint is visible.
B13TRIR	Front, transmitted near infrared, during treatment	The subject was positioned in front of a standard incandescent bulb. A special camera, sensitive to the invisible near infrared radiation emitted by the bulb was used to record how the radiation was absorbed or transmitted by the subject. Infrared radiation may penetrate visibly opaque layers to reveal underlying information <i>Front of subject is facing the camera. Camera filtration: X-nite 1000</i>	Reveals prior compositions below current one. There are ruffles that may appear to form the neckline of a woman's gown or bodice. There may be 1-2 sets of faces or facial features in the prior compositions. The area around the hair also appears larger. Can clearly see that the composition used to be framed in an oval shape. There is also a shawl or some item wrapping around the shoulders of the current composition's sitter.
B14N	Front, normal illumination, during treatment	Lighting approximates standard viewing conditions. <i>Camera filtration: X-Nite CCI</i>	Surface sheen is altered due to in progress varnish removal. In progress areas of overpaint removal are visible in the background adjacent to the right of the sitter's face, where fill material can be seen. Some blanching is present.
B15UVA	Front, UVA-induced visible fluorescence, during treatment	Irradiation setup approximates standard viewing conditions under UVA-vis fluorescence using a stabilized radiation source. The subject was photographed in a darkened room while irradiated by a long wave ultraviolet lamp (blacklight). The ultraviolet radiation causes some materials in the subject to fluoresce (emit light). <i>Camera filtration: X-Nite CCI+PECA 9I8+2E #2</i>	Reveals progress of varnish removal/reduction so far.
B16SWIR_composite	Front, reflected shortwave infrared (infrared reflectogram), during treatment	The subject was illuminated with incandescent lamps. An imaging camera, sensitive to the invisible shortwave infrared radiation emitted by the bulb was used to record how the radiation penetrated the subject, or was absorbed or reflected by the materials in the subject. Infrared radiation may penetrate overlying layers to reveal underlying information or may help to characterize materials or to distinguish different materials that are similar in appearance. <i>Imaging camera sensor: InSb Filtration (wavelength band): C, 1530-1700 nm Mosaic tile field of view: full painting</i>	Reveals evidence of a prior composition and some reworking below the current image. There is a black mass behind the current figure's head, which appears to be the form of a prior sitter's head and hair. There are bold strokes outlining the form of a figure's neck, shoulders, and arm. The composition formerly had oval-shaped framing.
B17XR_merged	Overall, X-Radiograph, during treatment	The subject was penetrated by a beam of x-rays and the extent of x-ray penetration was recorded on a digital imaging plate. Areas of the subject that are denser, thicker, and/or composed of materials that contain elements of higher atomic weight absorb more x-rays, diminishing penetration. They thus appear lighter in tone in the radiograph. <i>kV: 38 mAS: 640 seconds S/D: 56.16"</i>	Reveals clear, detailed image of underpainting and its composition. Underpainting is a portrait of a woman who is in three-quarter view and faces the opposite direction of the current sitter. Stylistically it appears that the underpainting is likely by the same artist.

		<i>Tube filtration:</i> None <i>Screens:</i> None <i>Imaging plate:</i> Kodak Industrex Flex HR Digital Imaging Plate, 14 x 36"	
B18NDET	Front, detail, normal illumination, during treatment	A detail about 3.5 x 4 inches area was captured via a digital camera. Lighting approximates standard viewing conditions.	Detail of area of loss and gaping tear prior to structural treatment.
B19NDET	Back, detail, normal illumination, during treatment	A detail about 3.5 x 4 inches area was captured via a digital camera. Lighting approximates standard viewing conditions.	Detail of area of loss and gaping tear prior to structural treatment.
B20N	Front, normal illumination, during treatment	Lighting approximates standard viewing conditions. <i>Camera filtration:</i> X-Nite CCI	Tear is repaired with a canvas insert and the overall paint surface is re-saturated after application of an isolating varnish layer.
B21NDET	Front, detail, normal illumination, during treatment	A detail about 3.5 x 4 inches area was captured via a digital camera. Lighting approximates standard viewing conditions. <i>Camera filtration:</i> X-Nite CCI	Detail of area of loss and gaping tear after structural treatment.
C1N	Front, normal illumination, during treatment	Lighting approximates standard viewing conditions. <i>Camera filtration:</i> X-Nite CCI	Overall image after filling losses and prior to inpainting.
C2UVA	Front, UVA-induced visible fluorescence, during treatment	Irradiation setup approximates standard viewing conditions under UVA-vis fluorescence using a stabilized radiation source. The subject was photographed in a darkened room while irradiated by a long wave ultraviolet lamp (blacklight). The ultraviolet radiation causes some materials in the subject to fluoresce (emit light). <i>Camera filtration:</i> X-Nite CCI+PECA 918+2E #2	Overall image prior to inpainting.
C3NDET	Front, detail, normal illumination, during treatment	A detail about 3.5 x 4 inches area was captured via a digital camera. Lighting approximates standard viewing conditions. <i>Camera filtration:</i> X-Nite CCI	Detail of area of loss and gaping tear after filling and prior to inpainting.

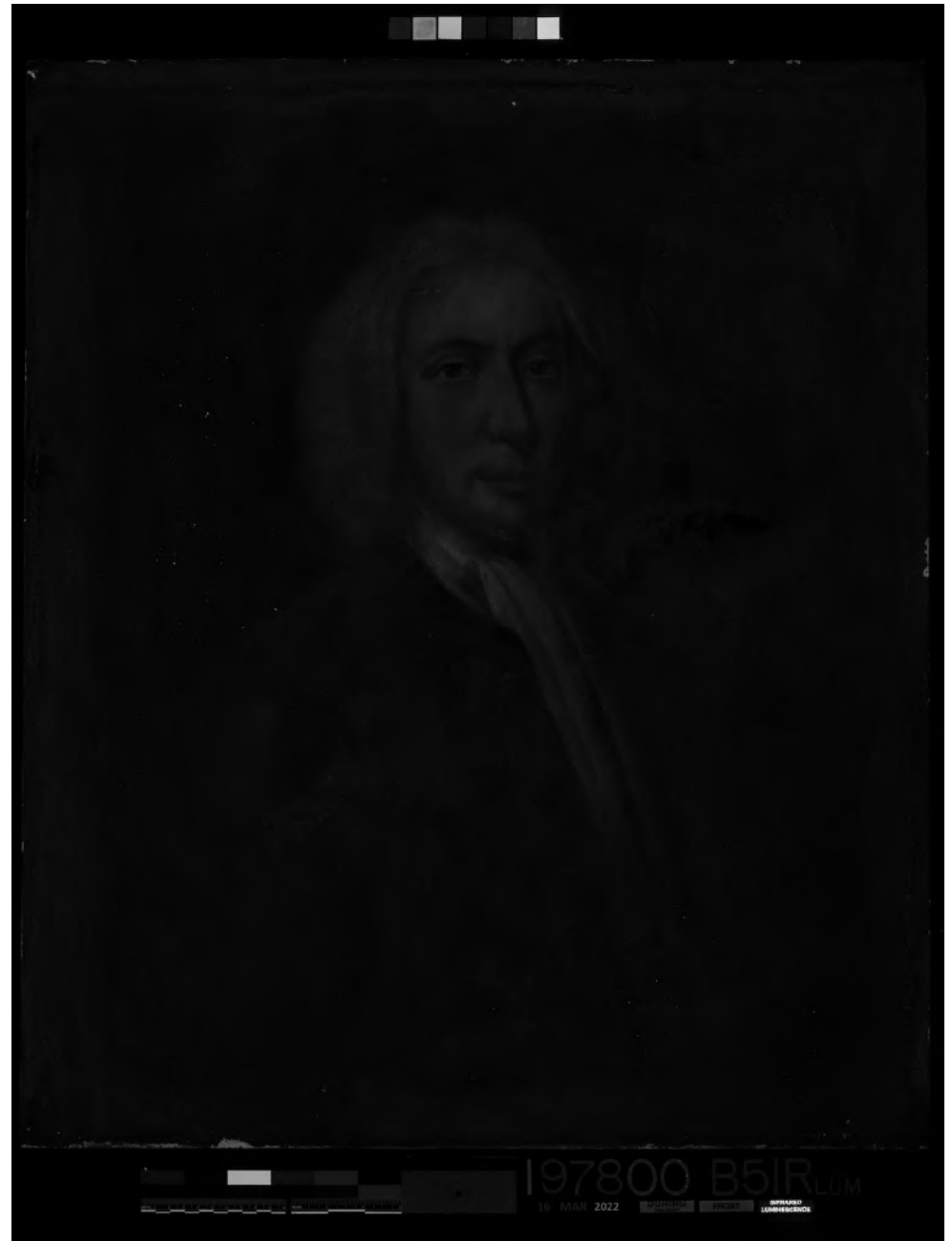
POST-TREATMENT PHOTOGRAPHS

No.	DESCRIPTION	TECHNICAL NOTES	COMMENTS
D1N	Front, normal illumination, after treatment	Lighting approximates standard viewing conditions. <i>Camera filtration:</i> X-Nite CCI	Aesthetic compensation is complete, the painting is fully re-saturated, and areas of prior restoration are better reintegrated.
D2RK	Front, raking illumination, after treatment	The light was positioned at the left, at a low angle to the surface of the painting in order to emphasize the surface topography. <i>Camera filtration:</i> X-Nite CCI	Small bulges along the lower edge have been reduced, dust and grime have been removed, surface has become less hazy overall, previously restored area in forehead has become less visually distracting.
D3SP	Front, axial specular illumination, after treatment	Lights were positioned adjacent to the camera to create specular reflections on the surface. These reflections provide information about surface characteristics (e.g. matte vs. glossy) as well as information about surface topography (dents, bulges, cracks, etc.) <i>Camera filtration:</i> X-Nite CCI	Small bulges along the lower edge have been reduced, previously restored area in forehead better matches the rest of the surface in terms of sheen, surface has become less hazy overall, the paint layer is better saturated.
D4UVA	Front, UVA-induced visible fluorescence, after treatment	Irradiation setup approximates standard viewing conditions under UVA-vis fluorescence using a stabilized radiation source. The subject was photographed in a darkened room while irradiated by a long wave ultraviolet lamp (blacklight). The ultraviolet radiation causes some materials in the subject to fluoresce (emit light). <i>Camera filtration:</i> X-Nite CCI+PECA 918+2E #2	Areas of inpainting are visible, as indicated by dark black areas.
D5N	Back, normal illumination, after treatment	Lighting approximates standard viewing conditions. <i>Camera filtration:</i> X-Nite CCI	Canvas patches from prior restoration have been removed, excess adhesive from the patches has been significantly reduced, pinked Japanese tissue adhered

			with dilute BEVA 371 against canvas insert to provide additional structural support.
D6N	Back, normal illumination, after treatment	Lighting approximates standard viewing conditions. <i>Camera filtration: X-Nite CCI</i>	Custom rigid padded backing board attached.
D7NDET	Front, detail, normal illumination, after treatment	A detail about 3.5 x 4 inches area was captured via a digital camera. Lighting approximates standard viewing conditions. <i>Camera filtration: X-Nite CCI</i>	Detail of area of loss and gaping tear after completed aesthetic compensation.



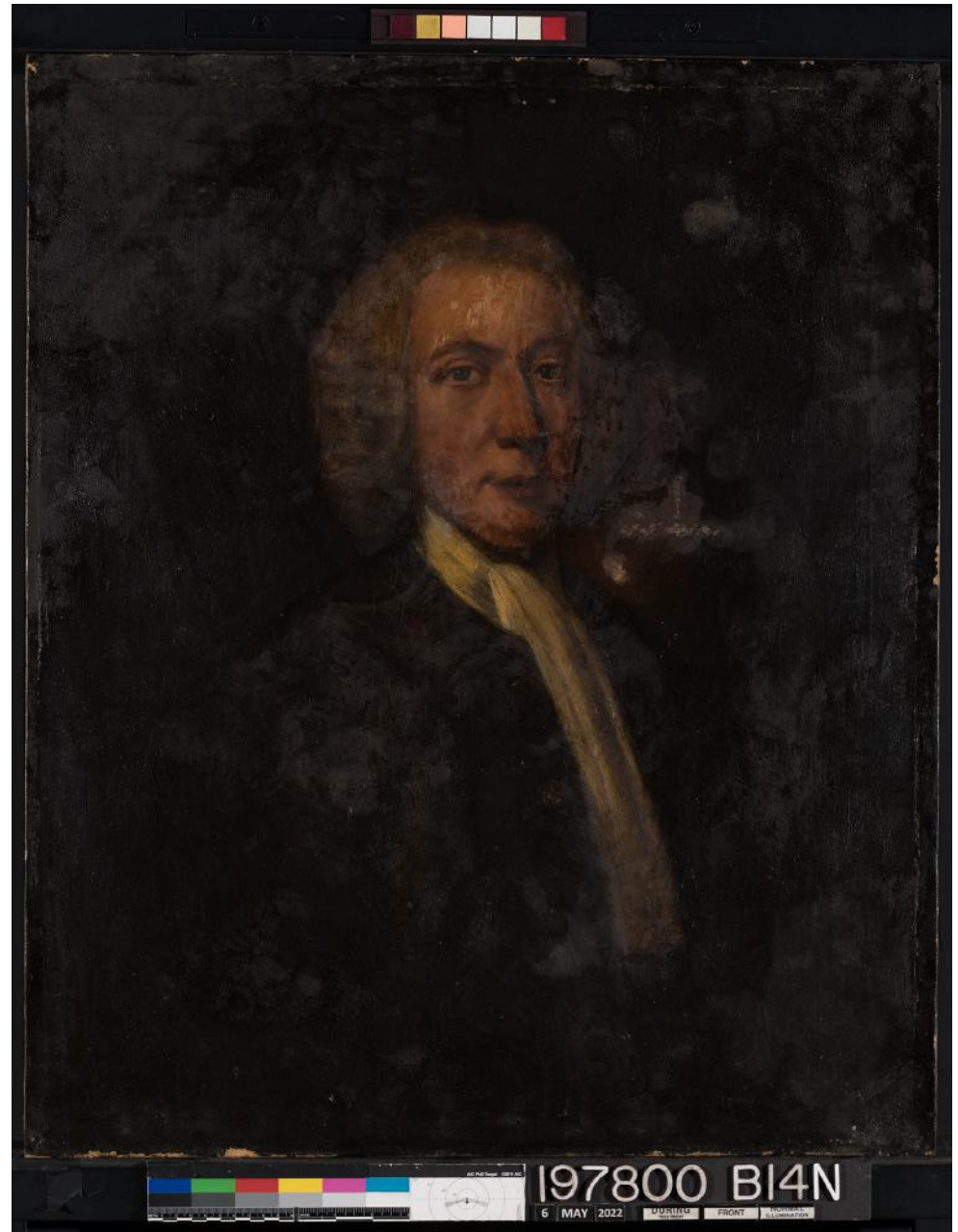
197800_B4IR



197800_B5IRLUM



197800_B13TRIR_merged



197800_B14N

