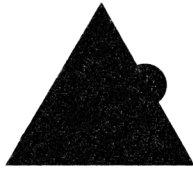


CONTACT INFORMATION

Andrew Busti
Sarah Biagini
Taylor Dunne
Robert Schaller
Eric Stewart
Andrés Denegri
Mariya Nikiforova
Kevin Rice

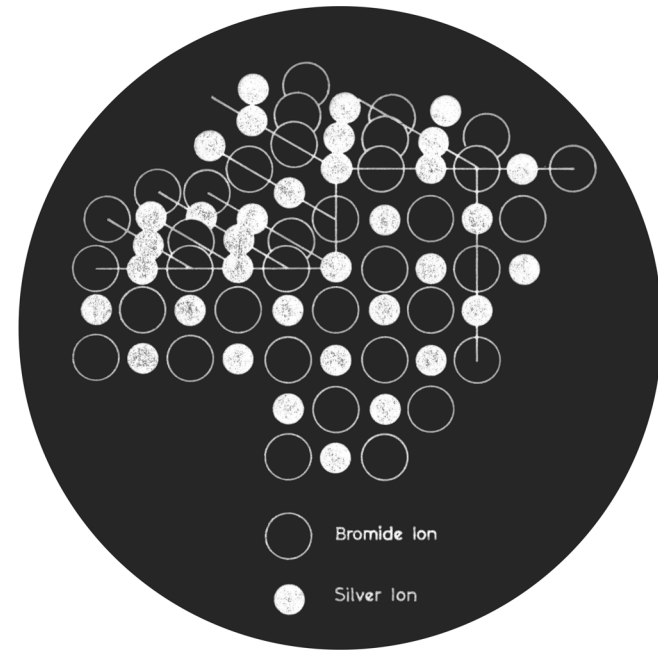
andy@processreversal.org
sarah@processreversal.org
taylor@processreversal.org
robert@robertschaller.org
e.l.j.stewart@gmail.com
andresdenegri@yahoo.com
mariya@radonlake.com
kevin@processreversal.org



Frenkel Defects is a recurring film series produced by Process Reversal: a US based, tax exempt organization & programming collective whose mission and purpose is to advocate and ensure the viability of film for all.

Since 2012, Process Reversal has been developing educational programs oriented towards the promotion of the argentic arts, including travelling workshops and screenings that have visited over 20 countries and 50 discreet film communities around the world. Today, Process Reversal continues to operate these programs, but has also expanded into charitable initiatives to help further achieve its purpose. This includes the Film Labs Program which aims to supply celluloid oriented communities (especially those in the US) with the necessary resources to build, operate and maintain public facilities for working with and presenting on motion picture film. Among those resources, Process Reversal has been fortunate enough to receive donations of countless pieces of essential equipment -- including projectors, contact printers, optical printers and optical sound camera -- which it plans to distribute to these communities and train them in their maintenance and operation. In addition to this, Process Reversal also focuses on designing and manufacturing new equipment for use in everything from processing to projection.

Find us on facebook, twitter or instagram or visit processreversal.org



FRENKEL DEFECTS

Gainseville, Florida - April 1st, 2016
for Flex Fest

*With thanks to Alisson Bittiker, UFLEX Students
and to all Participating Filmmakers*



The photosensitive material is formed of a multitude of silver halide crystals, suspended in gelatin, without which we would not be able to record a latent image and amplify it accordingly in the reduction of the material.

These crystals are produced by the electrovalent bonding of silver ions and halogen cations (e.g. bromide, chloride, iodide, etc.) wherein the ions sequentially architect themselves into an electrically neutral, cubic lattice structure. Figure 1.3 below illustrates such a structure, when perfectly formed; a lattice of silver bromide, the most common silver halide in photography:

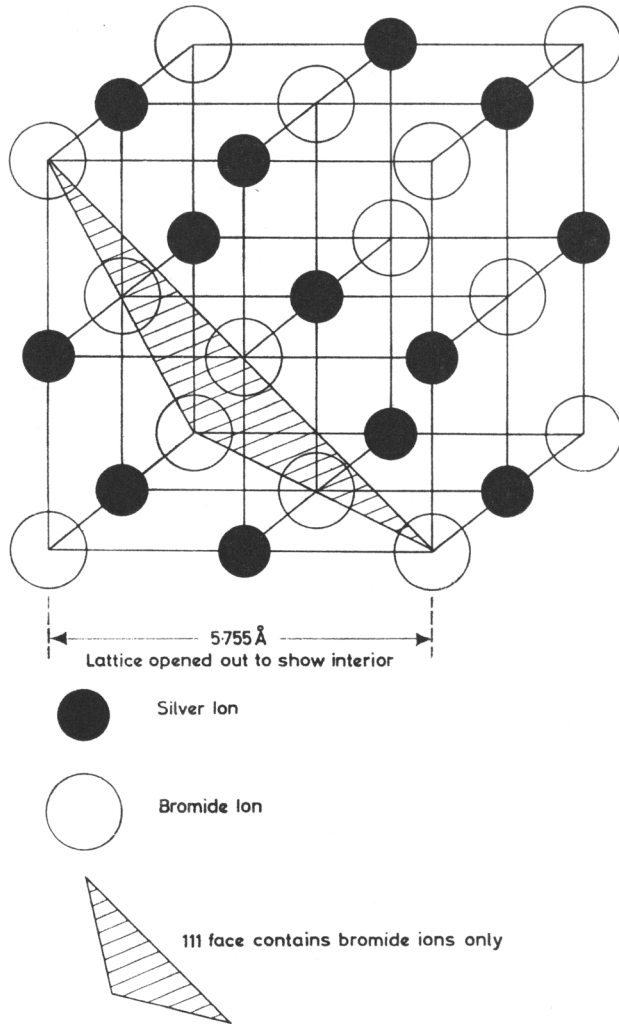


Fig. 1.3 Representation of silver bromide lattice

Mountain Home

Robert Schaller (Colorado) - 360 feet, 1.33:1, MOS

"A vision of the mountains in which I live, both gentle and harsh, domestic and wild, populated and not. Shot on a homemade pinhole camera. Edited initially in 2007, then finished and printed in 2010."

Aula Magna

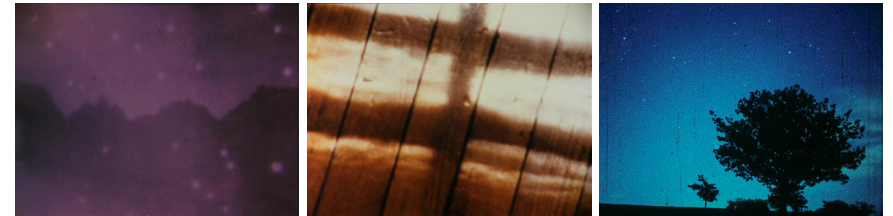
Andrés Denegri (Argentina) - 360 feet, 1.33:1, Optical Sound

"A structural farewell poem made for a beloved place. The images were shot frame by frame over the course of a year, in order to portray the author's home main room through the variation of the light coming from a window. The sound, by Pablo Denegri, was made by mixing and processing, in real time, direct recordings made in the same space."

Sanctuary

Kevin Rice (Colorado) - 108 feet, 1.33:1, MOS

No description



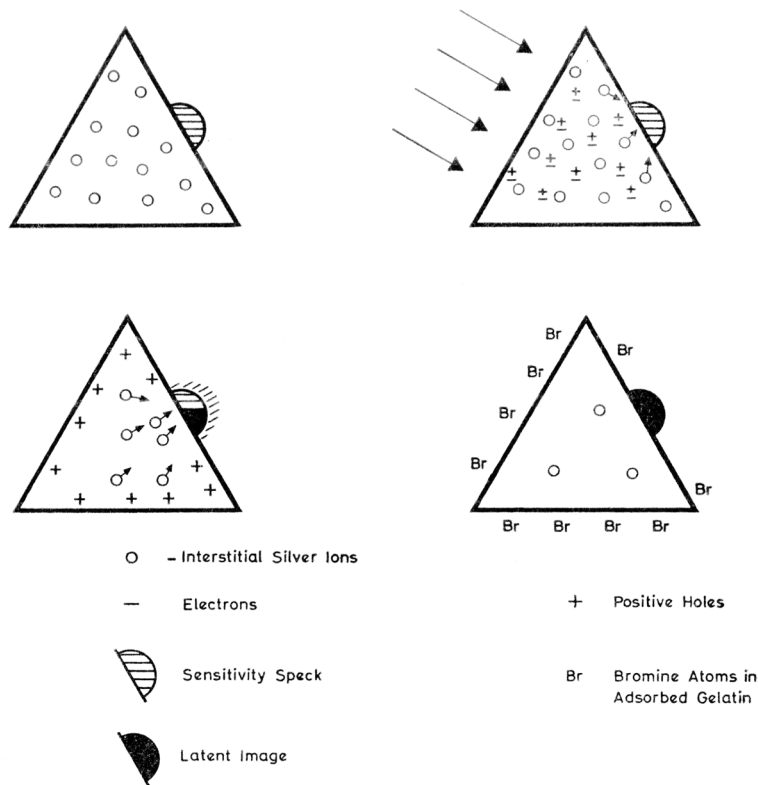
Stills from both films, in order of appearance

Notes on Film Length: There are 40 frames per foot of 16mm film, with "sound speed" projection being carried out at a rate of 24 frames per second. Thus, for every foot of film projected, there is 1.66 seconds of projection time, or 1 minute of projection for every 36 feet of film. Of course, no projector runs perfectly at 24 frame per second, so time is variable...

Notes on Audio Format: 'Optical Sound' indicates a print that has had a waveform pattern printed into the soundtrack area of the filmstrip (i.e. a married print) which is then 'read' and amplified by the projector during projection. 'Wild Sound,' on the other hand, indicates a print whose audio is not married to the print and must instead be played back through an independent audio system. Finally, MOS indicates a film that is silent, but projected at sound speed (24 fps) whereas 'Silent' indicates a print that is both silent and projected at silent speed (18 fps) [no films in this specific program are projected at silent speed].

Figures 9.1 - 9.4 illustrate the mechanics of latent image formation as theorized by Gurney & Mott. In their theory, the interstitial ions of the Frenkel defect, upon exposure to light, are allowed to move freely within the crystal lattice to a "sensitivity speck." As these interstitial ions continue to migrate, the crystals sensitivity spec gradual forms into a faint, solid silver grain. It is this grain which acts as the supposed "latent" image -- the catalyst for amplification (i.e. development), without which we could not render a usable photographic image upon the film strip.

However, perhaps the most interesting aspect of the Frenkel Defects (at least in the vein of this program) is not specifically it's photo-mechanical properties, but the implication that film must be imperfect to function. In this sense, the silver halide might also be seen as a reflection of our films and ourselves, both which, arguably, necessitate a mode of imperfection. Further, we might also consider that projection is a form of photography, one whereby we, the audience, are the photosensitive material -- full of defects -- that is allowed to be imprinted with a latent image. That latent image is in turned processed, printed, projected, over and over again. That is this program...



Figs. 9.1—9.4 Gurney—Mott mechanism for latent-image formation

26 Pulse Wrought (Film for Rewinds) Vol. I
 Windows for Recursive Triangulation

Andrew Busti (Colorado) - 108 feet, 1.33:1, Optical Sound

"The first film in a series of coded letters. A film for illumination and inspection; exploring travel from east to west and from west to east. Reflecting on the setting Sun of the Winter Solstice, the crux of increasing light... seen setting over the Pacific."

Yes it is here...it is here, where we are...

WAKE

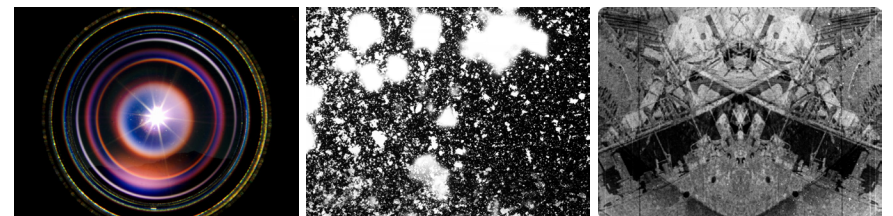
Eric Stewart (Colorado) - 288 feet, 1.33:1, MOS

"Wake is a dirge in celluloid. It is a celebration of my father's life, a meditation on his body and a visual record of mourning. When my father died, there was never a chance to see his body after life had left it. This film was made by placing his ashes directly on 35mm film in a dark room and moving the film a frame at a time. What we see in this process of photograming is not the object in the photographic sense, but instead a representation of the space surrounding an object. The photogram is a shadow charting the distance between things."

I Swim Now

Sarah Biagini (Colorado) - 324 feet, 1.33:1, Optical Sound

"I Swim Now challenges the visual intelligibility of landscape aesthetics by imagining the experiences of one Violet Jessop, a stewardess on board all three sister ships of the White Star Line – the Olympic, the Titanic, and the Britannic – while each suffered varying degrees of collision and wreckage at sea. I Swim Now evokes the intense brutality and repetition of Violet's unique physical interactions with nature through an expansive accumulation of optical techniques and manipulations."



Stills from each film, in order of appearance

Of important note, however, is the apparent lack of photo sensitivity within a perfect, silver halide crystal. Rather, it appears that the crystals photo-mechanical properties rely on the formation of defects within the lattice — particularly, the Frenkel defect.

A Frenkel defect is a fault within the crystal wherein an ion is omitted from its usual position in the lattice and, in order to maintain electrical neutrality, placed within a non-lattice, interstitial position. Figure 4.10 illustrates such a defect within a silver-bromide halide.

This figure also shows that the appreciably larger bromide ions cannot, because of their size, be located in interstitial positions. Rather, it is the smaller silver ions which are moved from their usual place; these ions located in the interstitial positions are thus called interstitial silver ions.

Additionally, these interstitial ions do not remain in a static position, but instead are allowed to move throughout the cubic lattice structure freely.

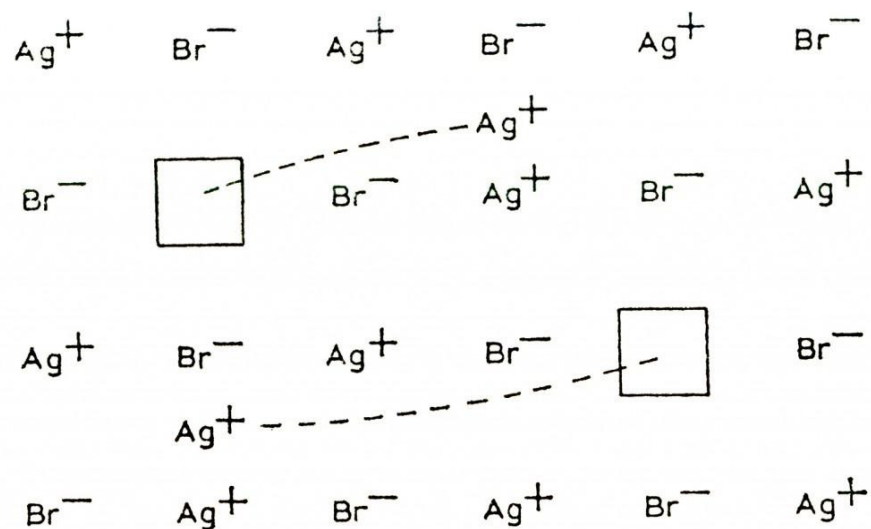


Fig. 4.10. A Frenkel Defect

26 Pulse Wrought (Film for Rewinds) Vol. III
Parallel Beams or The Ineffable Inefficiency of Words

Andrew Busti (Colorado) - 108 feet, 1.33:1, Optical Sound

These words here are meaningless...

Rewards

Mariya Nikiforova (France) - 216 feet, 1.33:1, Optical Sound

“A destructive physical and chemical process reveals hidden energies in a forgotten Boston green space. The resulting debris alternately evoke graffiti, stained glass, natural decomposition, and the effects of heatstroke on a tired brain. The minimally sourced soundtrack, composed in collaboration with Stefan Grabowski, explores the way in which we sometimes “hear” what we see and vice versa.”

At Hand

Andrew Busti (Colorado) - 324 feet, 1.33:1, Optical Sound

“An exorcism, an exploration, and an unveiling.
A subconscious landscape of a withering relationship.”

Corn Mother

Taylor Dunne (Colorado) - 216 feet, 1.33:1, MOS

“A single cartridge of Super 8 captures my mothers last visit to her garden. Her body is seen slowly dissolving towards illumination, while her image is forever immortalized in light and silver. Poem borrowed from the Wabanaki creation myth of the first woman, The Corn and Tobacco Mother.”



Stills from each film (except 26 Pulse Wrought, Vol. III), in order of appearance