



# NAVIGATING THE FUTURE



TECH RETREAT 2023

## Restoration and Preservation

Anthony Magliocco

Entertainment and Media Technology Marketing



## Invaders From Mars 1953



## HPA Awards

- Since 2006, the HPA Awards honors creative achievement, outstanding artistry, lifetime achievement, and engineering excellence
- Our emphasis has been on recognizing the individual contributors
- We honor the image, sound and archive teams
- Restoration software is eligible under our engineering awards.



## Our Presenters and Agenda

- Janice Simpson - Walt Disney Company
- The project details



## The folks behind the scenes

- Content Owners
- Preservation teams
- Research and “Archeological Teams”
- Photo Chemical Restoration
  - Film repair
  - New file element creation
- High resolution scanning
- Software tools
- New deliverables



*Photo: Paramount Pictures*

## Preservation

Janice Simpson – Walt Disney Company

## Definition of Terms

### Preservation

Preservation generally refers to the proper care and handling of assets, geographically separated, in environmentally controlled storage. The goal of a preservation program is to ensure the long-term accessibility of assets, by guarding against damage or deterioration. Successful programs require the development and implementation of standard operating procedures, as well as projects and activities that reduce the risk of loss and increase assets' life expectancy (LE), for example, digitization initiatives and/or manufacturing protection copies.



## Definition of Terms

### Restoration

Restoration refers to the process of bringing a film or television program back to its original look and sound, as it was experienced when it was first released or produced. Using analog and/or digital tools, this might involve replacing a scene where the negative is torn, scratched or deteriorated. It might also involve color correcting faded images, sound replacement, or putting back a scene that was edited out after the film was initially released. As a result of each restoration, new master elements are typically created ensuring that the film or episodic is available for future audiences.

# Restoration



## Resources

Academy Digital Preservation Forum <https://academydigitalpreservationforum.org/>

Association of Moving Image Archivists <https://amianet.org/>

International Federation of Film Archives <https://www.fiafnet.org/>

SouthEast Asia-Pacific Audiovisual Archive Association <https://seapavaa.net/>

National Film Preservation Foundation <https://www.filmpreservation.org/>

Filmcare.org [https://www.filmcare.org/about\\_film](https://www.filmcare.org/about_film)



The logo for HDA, featuring the letters 'H', 'D', and 'A' in a bold, white, sans-serif font. The 'H' and 'D' are connected, and the 'A' is a simple, geometric shape. The background is a dark blue gradient with a pattern of glowing red and orange dots, some of which are arranged in vertical lines on the left and a curved pattern on the right.

# HDA

TECH RETREAT 2023



# NAVIGATING THE FUTURE



TECH RETREAT 2023

2022 Award Winner  
Restoration

Anthony Magliocco    [anthony@emtminfo.com](mailto:anthony@emtminfo.com)





TECH RETREAT 2023

# INVADERS FROM MARS

A Nightmare of  
Restoration  
Author: Scott  
MacQueen



IGNITE FILMS   
CLASSICS FOR THE FUTURE



# INVADERS FROM MARS



- Filmed in 1953 at the height of the science fiction film boom and height of the wave of flying saucer sightings in the US.
- Cold War paranoia.
- Distrust of authority.
- Dream logic.



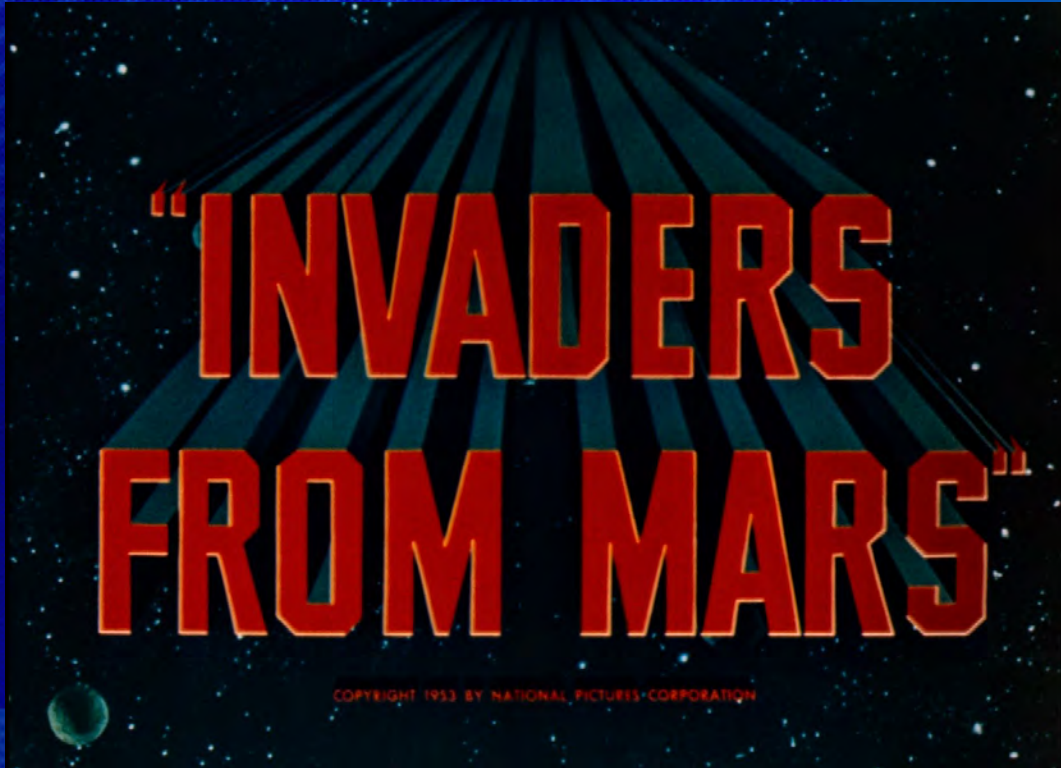
# WHY DID THE FILM BECOME “LOST”?



The Eastman Color negative was redundant. With Cinecolor and producer Edward Alperson bankrupt by 1956, prime film elements were scattered.



## WHY DID THE FILM BECOME “LOST”?



Titles and opticals were assembled in the Cinecolor printing dupe negatives.







TECH RETREAT 2023

# RANKING OF SOURCES

## 1) ORIGINAL CAMERA NEGATIVE



**Domestic Version.** Ignite Films . Located with a Los Angeles stock library, purchased 2014 on deposit at UCLA Film & Television Archive). *Eastman Kodak 5248*. 8 of 9 reels conformed for Cinecolor printing. No titles, stock shots or optical effects. Ree1 1B missing in entirety.





TECH RETREAT 2023

## RANKING OF SOURCES

### 2) 35mm CINECOLOR PRINT

01:04:34:13

European Version, National Film and Sound Archive of Australia (NFSA). DU PONT stock. 4 x 2000-foot print distributed by RKO Radio Pictures.

- Sub-standard color and quality control. Most of the European Observatory sequence missing.
- Repeated stock and optical shots missing. Scenes of army tanks and scenes inside the MacLean house and Martian tunnels exhibit “solarization” (*tone reversal* due to extreme overexposure) causing erratic bright blue in maximum density shadows.
- Well-worn, scratched, field splices. Color dirt including hairs and silver halide clusters induced during printing/ processing.



# RANKING OF SOURCES

## 3) 35mm CINECOLOR PRINT



### 3) 35mm CINECOLOR PRINT European Version, George Eastman Museum (GEM)

- DU PONT stock. 4 x 2000 feet. RKO Radio sister print to the NFSA print with erratic grading, eccentric damage and printing defects.
- The 4K scans were unstable due to shrinkage or damaged perforations. Used sparingly, with stabilization, only when shots were not present or damaged in the OCN or the NFSA print.



# RANKING OF SOURCES

## 4) 35mm CINECOLOR PRINT,

**Domestic Version.** collector print,  
George Eastman Museum (GEM)

- Solarized shadows
- Emulsion defects

04:08:37:17



04:18:05:08

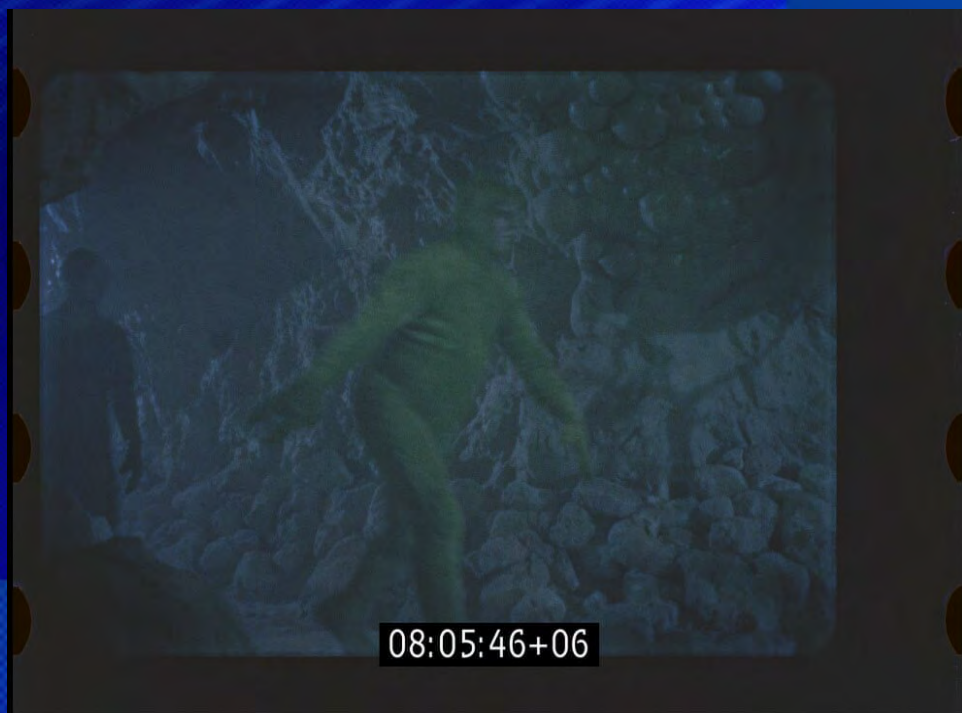




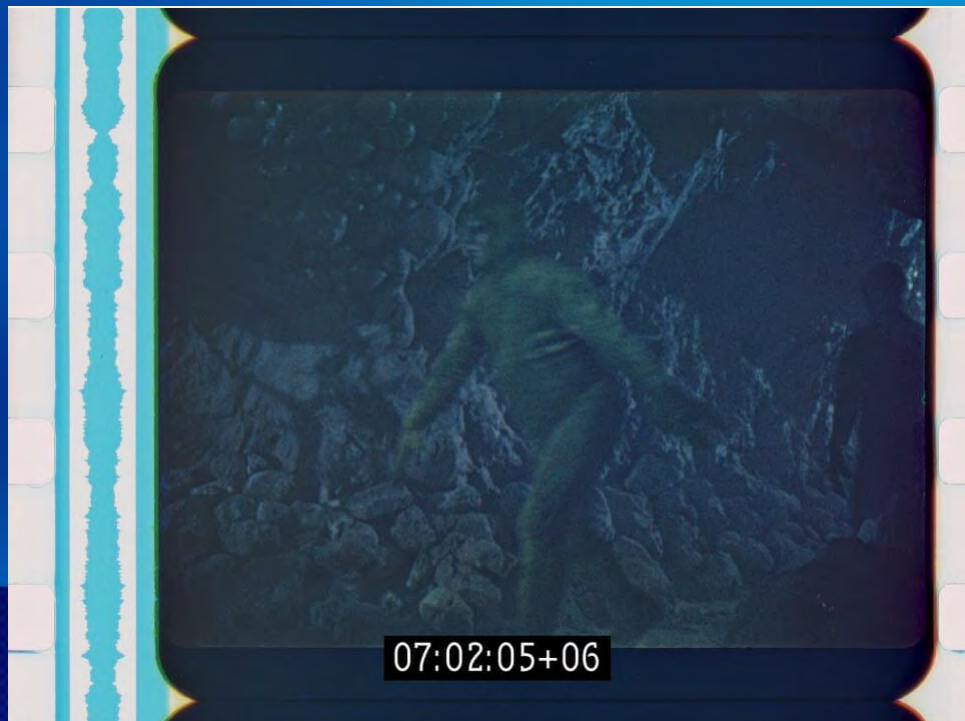


TECH RETREAT 2023

The EDL was provided to Roundabout who prepared a rough assembly. The Restoration Supervisor sat in with the editor and reviewed the rough cut. Some shots were still “missing”. We quickly learned that they were optical floppers, repeats and repositions. Repositions, often flopped as well, were the most stubborn until we looked for enlargements and reorientations.



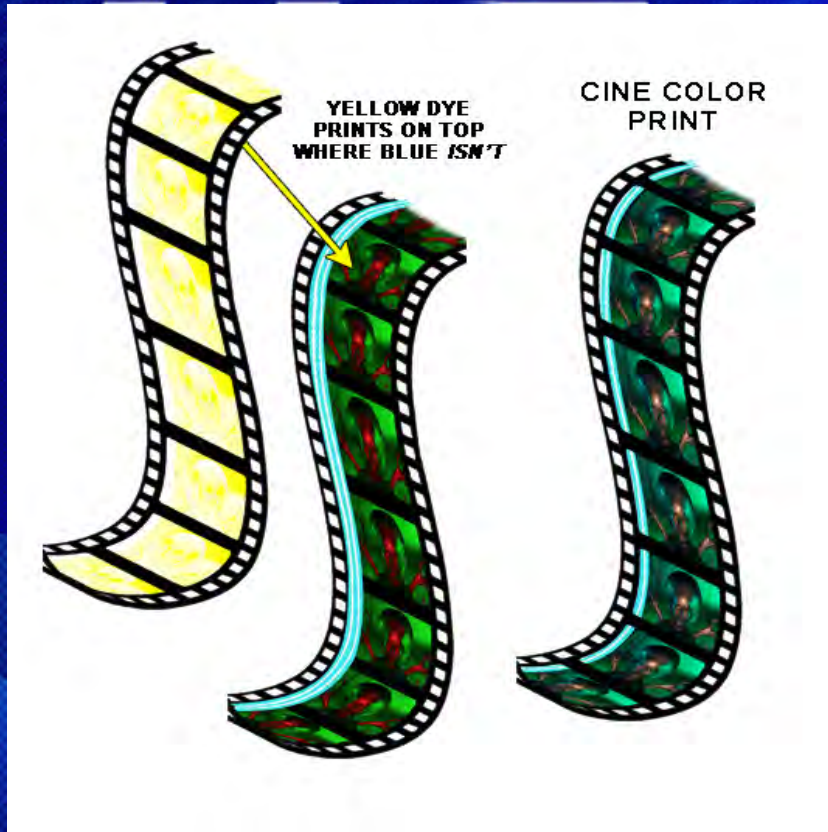
ORIGINAL CAMERA NEGATIVE



CINECOLOR PRINT, FLOPPED



# CINECOLOR PRINTING PROCESS

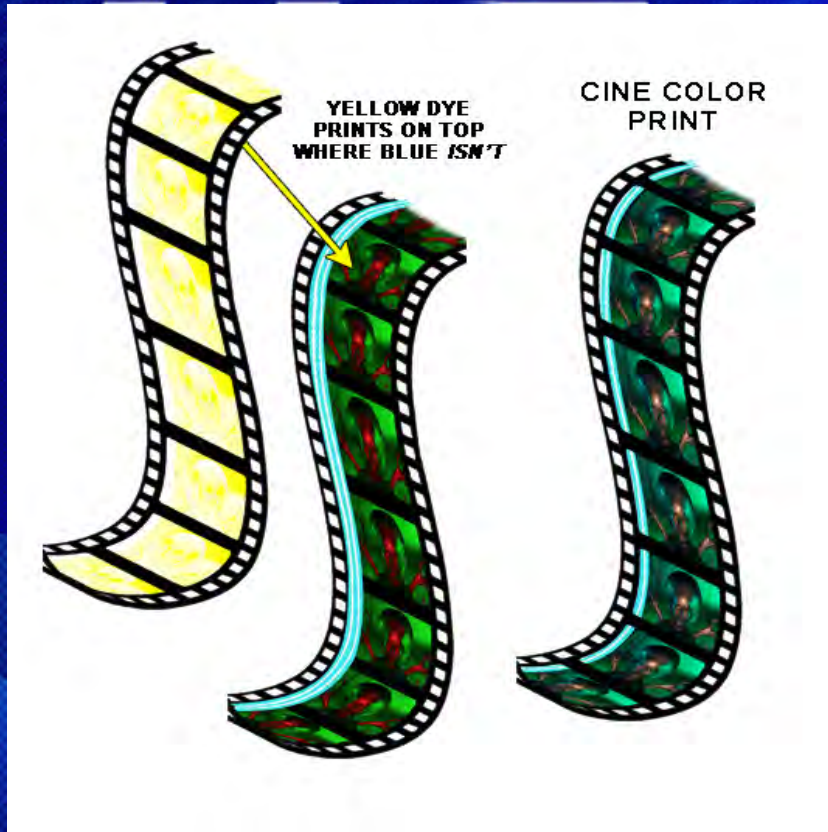


- RGB color separation positives from the Eastmancolor negative, (not pictured)
- YCM dupe negatives from the RGB separations
- Color-blind B&W positive emulsions impregnated with a water-soluble yellow dye step printed Cyan and Magenta simultaneously on opposite sides of duplitized DuPont film, along with the Cyan soundtrack.





# CINECOLOR PRINTING PROCESS



- DuPont duplitized print stock captured the latent black-and-white images, which were then developed into silver.
- The Cyan was laid face down on a solution that converted the soundtrack and latent image into a Cyan toned pigment.
- The verso was floated on a bath that converted the latent silver to a Magenta pigment.





# TAKING PROCESS

## EASTMAN KODAK 5248 CAMERA NEGATIVE

**HPA**  
TECH RETREAT 2023

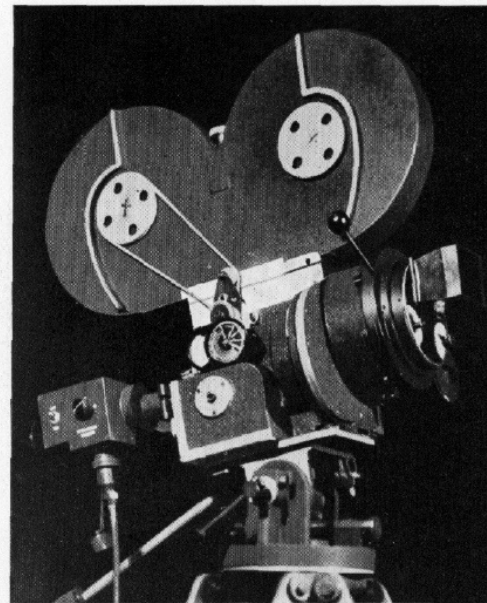


FIG. 63.—Cinecolor camera by Vinten Ltd. and Adam Hilger Ltd.

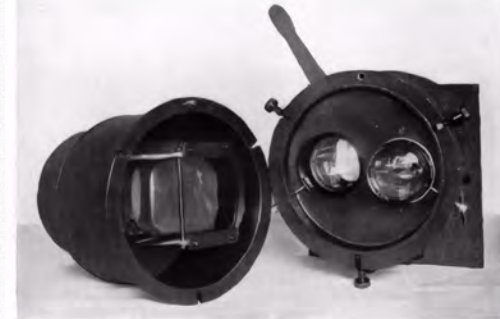
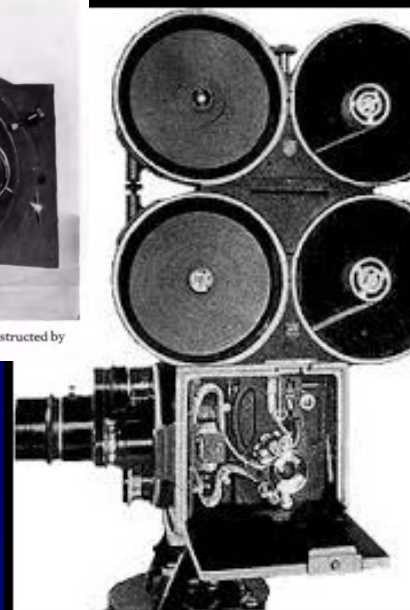


FIG. 62.—Early Cinecolor prism unit for extra width film. Constructed by Adam Hilger Ltd. (Hilger-Workman Patents.)



Bell and Howell bi-pack





TECH RETREAT 2023

# THE RESTORATION PROCESS

INVADERS FROM MARS Edit Decision List 2/18/2021				Ignite Films			
Master Continuity Scene Description	OCN	AUSTRALIAN	AU Comment	GEM FOREIGN	GEM FOREIGN Comment	GEM COLLECTOR	GEM COLLECTOR Comment
END 2AB	invaders_from_mars_negative_proxy_r4.mov						
29:25 observatory telescope lowers	04:00:03:10						
29:35 3S Pat/David/ Kelston							
END 2AB	invaders_from_mars_negative_proxy_r5.mov	invaders_from_mars_proxy_r3.mov		invaders_from_mars_gem_r3_proxy.mov			
39:02 down shot army car	05:00:08:00						
39:06 Col, group meet Lt.							
39:12 Sgt creeps along fence							
39:18 Col, group in front of house							
39:24 Col, group in front of CLOSER	05:00:37:06						
39:32 Sgt creeps along fence		03:00:28:18 03:00:32:06					
39:35 CUTBACK Col, group in front of CLOSER	05:00:37:23						
39:51 Sgt crawls along fence							
40:03 sand							
40:06 CUTBACK Sgt crawls along fence							
40:11 CUTBACK Col, group in front of CLOSER-binoculars	05:01:08:00						
40:29 vignette Sgt crawls along fence		03:01:26:03 03:01:29:23					
40:33 Col, group in front of house	05:01:31:18						
40:38 vignette Sgt touches sand w/rifle		03:01:35:09 03:01:37:20					
40:41 sand opens	05:01:38:12						
40:45 CU David							
41:15 CLOSER Col, group in front of house	05:02:22:17						
41:25 sand closes DX Col on phone DX tanks DX tanks		MISSING		03:11:58:16 03:12:12:20	WEAVE possibly use 1977 Eastmancolor		

- There are 667 events in *Invaders from Mars*
- QuickTime proxies were made with visible time code of all sources
- An Edit Decision List (EDL) was created that reflected our choices shot-by-shot







TECH RETREAT 2023

LEFT : 1954 Cinecolor print with false coloration  
(plus-Magenta wall, plus-Yellow skin tone. RIGHT :  
Correct color with accurate rendition of flesh and  
background.



ORIGINAL CAMERA NEGATIVE (4K graded)



CINECOLOR PRINT (4K scan)

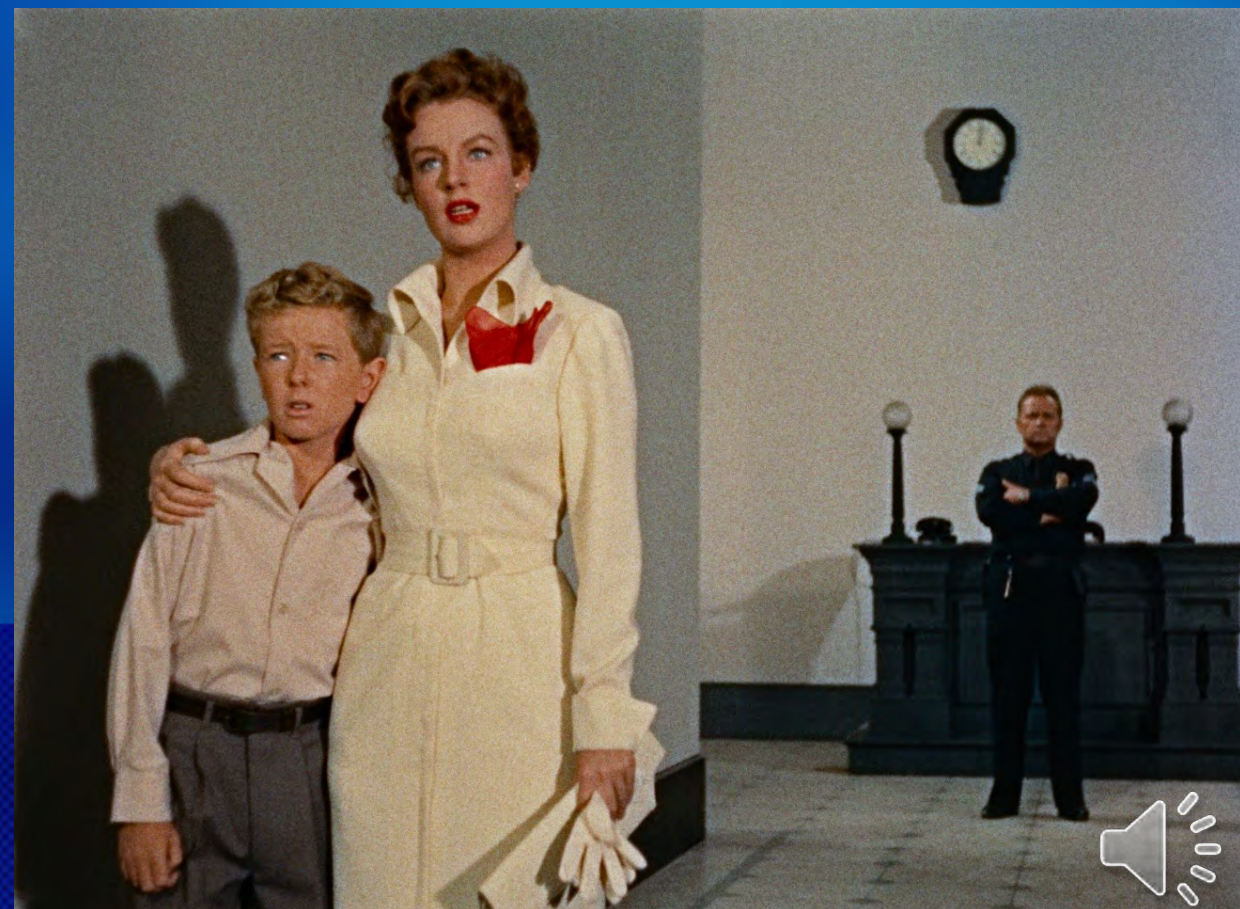






TECH RETREAT 2023

LEFT : 1954 Cinecolor print with false coloration (plus-Magenta wall, plus-Magenta skin tone). RIGHT : Correct color with accurate rendition of flesh, wardrobe and background.







TECH RETREAT 2023

# MAIN TITLE SEQUENCE

Before (Cinecolor) and After (processed  
Cinecolor)







TECH RETREAT 2023

# POLICE STATION SEQUENCE

## Final Graded Color from Camera Negative







TECH RETREAT 2023

# MEETING THE SUPREME INTELLIGENCE

Final color grade color from Camera Negative







TECH RETREAT 2023

# SUPREME INTELLIGENCE MIND PROBE

## Final Graded color from Camera Negative







TECH RETREAT 2023

# THE SECOND SAUCER

1953 Cinecolor Print Domestic  
Version – as found

04:18:04:23







TECH RETREAT 2023

# THE SECOND SAUCER

Restored from 1953 Cinecolor Print  
Domestic Version

01:17:39:09





# Notes from Vincent Pirozzi of Roundabout Entertainment



- One of the most challenging aspects of this project - Piecing the puzzle together (**picture and audio**)
- This was a bit of an orphan - No studio rights
- This made for a heavier lift on the pre-production side of the process - gathering all available elements
- Using a combination of prints as a guide for editorial, the goal was to first and foremost piece together the most complete version of the original theatrical domestic cut - as ultimately there was a foreign cut which had some added scenes and a pretty drastically different ending. Most of the surviving elements **were not of the desired domestic cut.**





TECH RETREAT 2023

# About Scott MacQueen



Scott MacQueen first saw *Invaders from Mars* at age seven and like many “baby boomers”, never quite recovered from the experience. A graduate of NYU Film School, Scott joined the Walt Disney Company in 1991 as Director of Restoration before taking a position as Director of Restoration Management with PRO-TEK. He joined the UCLA Film & Television Archive in 2012 as Head of Preservation and led the archive into the 21<sup>st</sup> Century bridging traditional techniques with high-quality digital restoration.



## Q and A

