Challenges and Opportunities in Restoring Technicolor
Berlinale Retrospective, 2015

Restoring Technicolor
Swiss Research Project DIASTOR*

Prof. Dr. Barbara Flueckiger
University of Zurich http://www.diastor.ch
* Funded by the Swiss Commission of Technology and Innovation CTI

CTI Research Project DIASTOR
Bridging the Gap | Science to Market

Service provider: Cinegrell Zurich
Engineering: Sondor

Research in humanities

Research in science

Case studies

External clients

Archives: Cinémathèque suisse
SRF Swiss Radio and Television

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DIASTOR: Restoring Technicolor
HELIDE UND PETER
(CH 1955)

Eastmancolor negative

B/w separations

Three different Technicolor dye-transfer prints

French print

German print

Print “2003”

DIASTOR Restoring Technicolor

Information vs. Appearance

Negative
• Contains highest amount of information
• Does not contain information about style and color appearance

Dye-transfer print
• Reference for style and color appearance
• Lower resolution
• Lower latitude

Transfer Function Δ

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DIASTOR Restoring Technicolor
Appearance: Texture and Graininess

Continuous tone in Technicolor
Photomicrograph. 20x magnification

Color clouds in chromogenic stock
Photomicrograph. 20x magnification

Photomicrographs by Silvana Konermann, MIT

DIASTOR Restoring Technicolor
Appearance: Creating a Reference

Projected Technicolor vs. scanned Technicolor
(Samson and Delilah trailer projected on an ARRI LocPro (left) in
DIASTOR Partner Cinegrell’s Baselight grading suite)

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DIASTOR Restoring Technicolor Appearance: Creating a Reference

Photographic documentation of color appearance:
Calibrated modular camera setup

DIASTOR Restoring Technicolor Appearance: Creating a Reference

Projected Technicolor vs. photographed Technicolor
(HEIDI UND PETER projected on an ARRI LocPro (left) in DIASTOR Partner Cinegrell’s Baselight grading suite)

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DIASTOR Restoring Technicolor
Information: Colorimetric Analysis

Statistical method according to Ohta 1973 (Trumpy/Flueckiger 2015)

DIASTOR Restoring Technicolor
Color and Style Transfer

RestoGUI: A feature-based approach for the automatic or semi-automatic transfer, developed by Simone Croci, Tunç Aydin and Aljosha Smolic (ETHZ / Disney Research Zurich)

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KTI DIASTOR @ UZH
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Timeline of Historical Film Colors
zauberklang.ch/filmcOLORs and filmcOLORs.org

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