



WhatGoodAreAesthetics

WHAT GOOD ARE AESTHETICS?

APS DFD MINISYMPOSIUM: FLUID MECHANICS
AND ART
NOVEMBER 23-26 2019

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Art and Aesthetics

What is art? What *good* is art?


- Art theory
 - To depict reality: Realism
< then photography happened >
 - To show emotions: Expressionism
 - To elicit visceral reactions: Formalism
 - Postmodernism, all of the above, plus social, ethical, political concepts. Nothing is absolute.

What is good art?

- Aesthetics
 - Study of beauty
 - Psychological measure of affect
 - Metric for art: is it art? Is it good art?
 - Is money an aesthetic?
 - Set of guidelines, design rules that define an artist or a movement

A Theory of Art

- Art is the embodiment, the instantiation, the execution of an extraordinary vision.
- Mundane, routine activities don't make the cut.
- Any endeavor can be raised to the level of art: Mathematics, physics, cooking, sports.
- Art is not a luxury, not something extra for times of prosperity, not an afterthought to necessary work.
- "Art and aesthetics give meaning to our lives, and are actually crucial for explaining / getting through the difficulty, racism, wars, and pressures of the world." -Anonymous student



Aesthetics in Flow Visualization

- Beauty
- Power
- Destruction
- Oddness

Illustrations from student work, professional artists and public choices



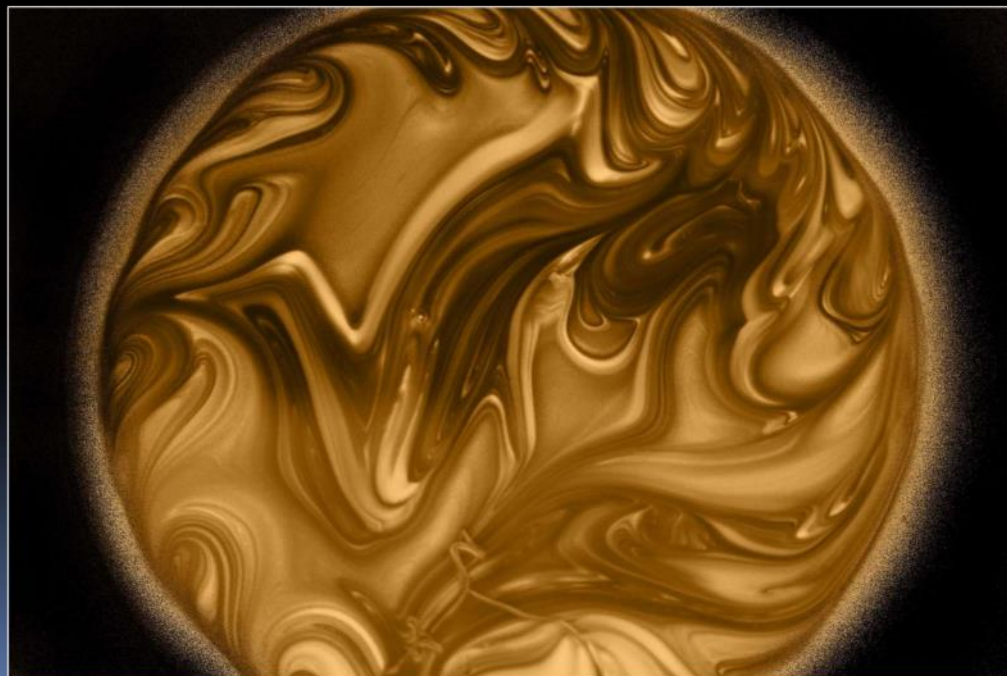
Aesthetics of Beauty

Focus on forms, lines, textures, color.



Silver bottle sealing wax, melting in a hot pot

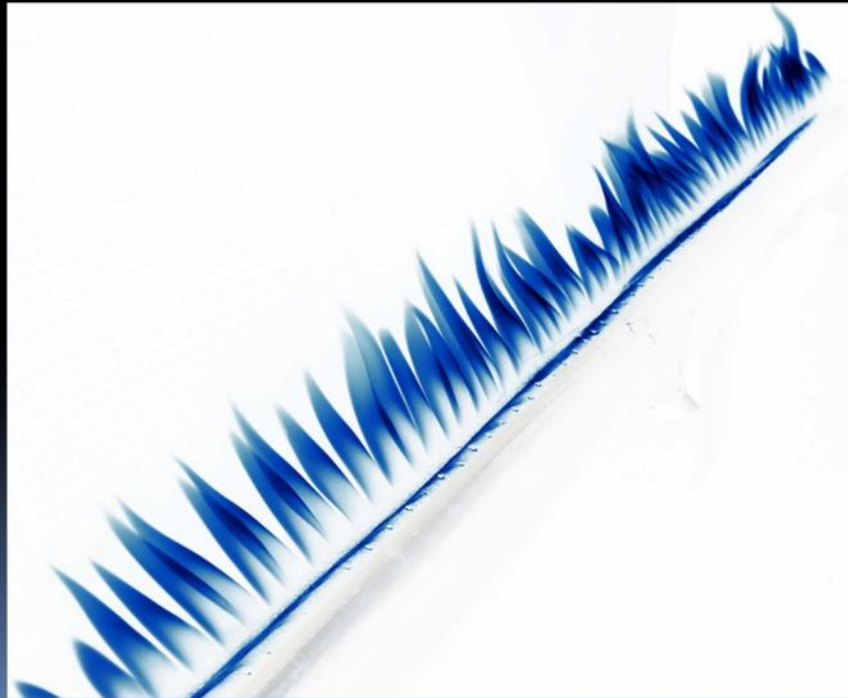
Alex Unger
Flow Vis course, Team Third assignment, Spring 2014





Rubens tube, color reversed, excited by rock music

Aaron Zetley, Max Armstrong, Robert Gianella, Evan Blake, Byron Pullutasig.
Flow Vis course, Team First, Fall 2019





Ink in Motion

Macro Room, a video production company founded by Ben Ouaniche
https://macroroom.com/?page_id=74





Aesthetics of Power

It's all about control.



Space Shuttle Rocket Booster Launch

Best of the Best, NASA 2010

<https://www.youtube.com/watch?v=vFwqZ4qAUkE>

7:36-7:50 minutes



the Best" Provides New Views, Commentary of Shuttle Launches





2011 ROC Centennial Fireworks

Cai Guo-Qiang

<https://www.youtube.com/watch?v=ljgGMRqCsgs>



The Art of Vape

vAustinL, AKA Austin Lawrence
<https://www.youtube.com/watch?v=Syccl7rd3Lk>





Aesthetics of Destruction

Taking pleasure in the loss of control

Natural disasters

Volcano

Tsunami

Avalanche and landslide (granular flow)

Tornado

Wildland fire

Structure fire

Explosions

Intentional: military

Not intentional:

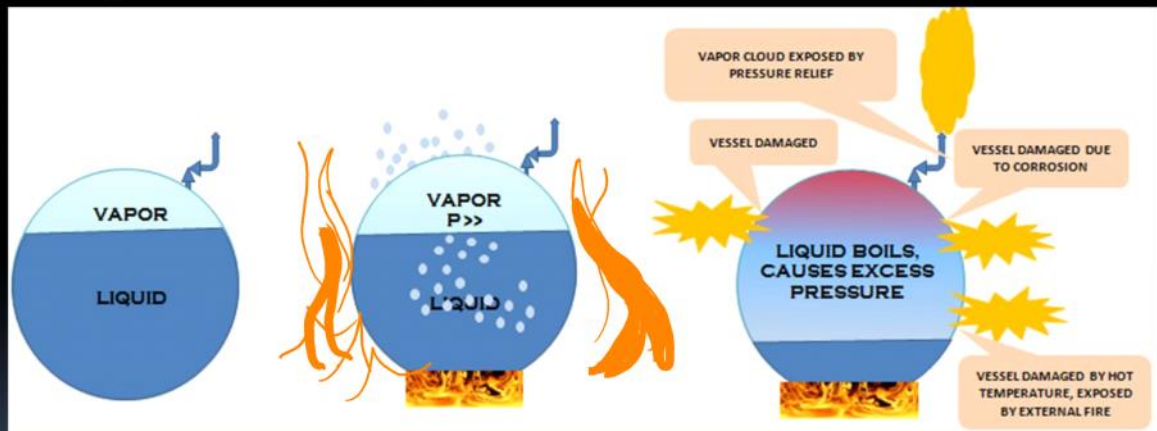
rocket launch failures

BLEVE



BLEVE = Boiling Liquid Expanding Vapor Explosion

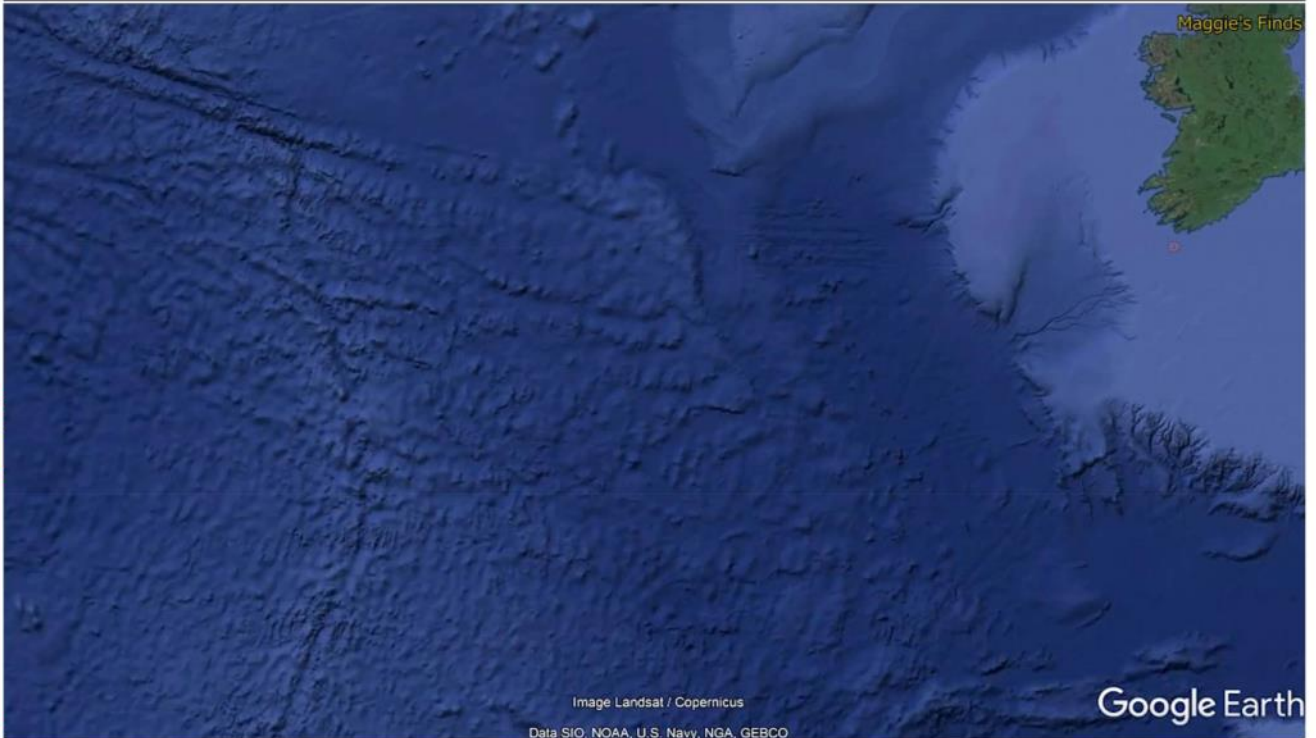
Partial confinement leads to transition from a deflagration (ordinary flame) to detonation (supersonic combustion)



<https://imgur.com/gallery/GMoBTtq>

BLEVE during oil refinery fire

"Maggie's Finds" 2019 explosion compilation
<https://www.youtube.com/watch?v=VXXIfMVSNv8&feature=youtu.be>





Aesthetics of Oddness

Beauty, power and destruction are all very dramatic.
Oddness is attractive, but not dramatic.

Familiar examples:

Oobleck (cornstarch and water)

Mentos in soda/cola





The Kaye Effect

Daniel Notary
Flow Vis course, 2010, Get Wet assignment



Dyed shaving cream pushed through a shower drain cover

Cody Williams
Flow Vis course, Team Second assignment, Spring 2018



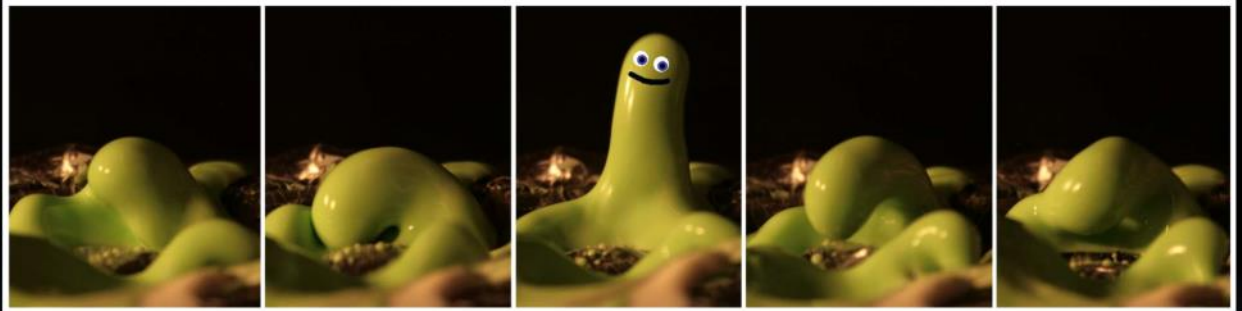
99 proof peppermint schnapps burns briefly

Kevin Oh
Flow Vis course, Get Wet assignment, Spring 2018



Oobleck on a loudspeaker forms crawling fingers

Matthew Phee, Austin Edwards, Andrew Bornstein, Tyler Coffey, Steven Hendricks
Flow Vis course, Team Second assignment, Spring 2011



Uses of Aesthetics in Education and Outreach

- Aesthetics are a valid motivation for doing science
 - Gives pleasure, drives intrinsic motivation
 - Drives curiosity, can lead to 'lifelong learning'
 - Works at many levels of intensity
 - Students can submit a 'Flow Vis of the Day' in class or on social media.
 - One or more assignments or workshop at interface of art and science.
 - Whole art and engineering or science course.
- Facilitates 'transformative experience': expanded perception, increased affect, application outside of course.**



