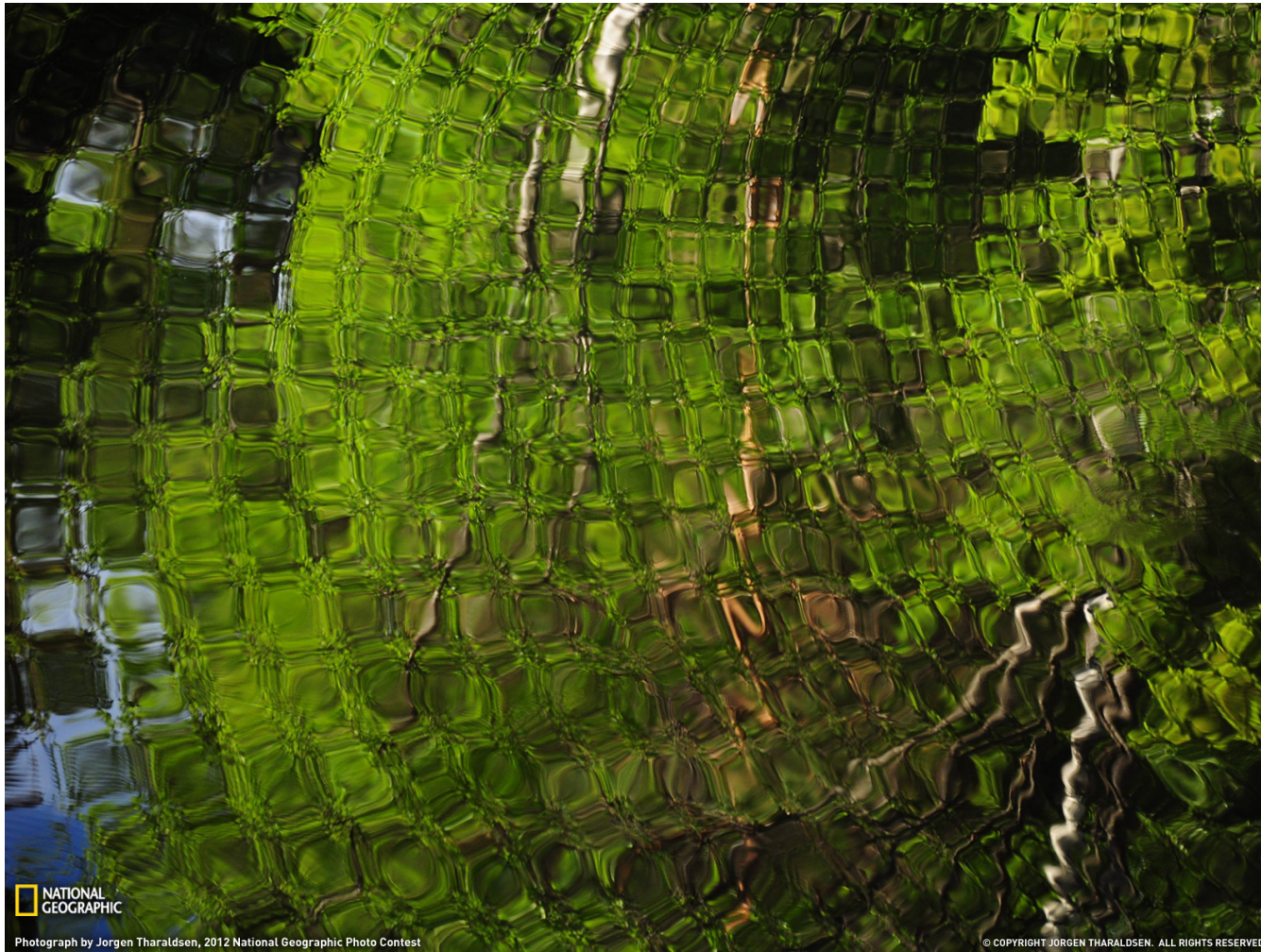


12 – Final Projects



NOVEMBER 3, 2012

Water Patterns

Photograph by Jorgen Tharaldsen

This Month in Photo of the Day:
2012 National Geographic Photo
Contest Images

In a world of a million water pictures, it's easy to dismiss this as "just another reflection shot." Still, this unedited image proves how unreal water can behave under certain circumstances.

Here I stand at the narrowest point of a small lake, and as usual I have thrown objects into the water to see how it behaves visually. Because the lake was so narrow, only a few meters, the circles started to recoil from land. The effect is called, to my knowledge, interference, but I have yet to see anything similar, even after all these years of throwing rocks into the water.

NATIONAL
GEOGRAPHIC

Photograph by Jorgen Tharaldsen, 2012 National Geographic Photo Contest

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► Possible projects... (these may or may not be good, ideally, you come up with your own idea!)

- (1) See the Newport 'Projects in Optics' and 'Projects in Fiber Optics' (see Manuals and Assemblies folder, the 'Primers' zip file), there are some projects that we did NOT do which are up for grabs!
- (2) Cooke Triplet Lens System
- (3) Voice or music over fiber (LED or laser, fiber, detector, including optimal coupling etc.). Electronics can be the tough part.
- (4) We have just received some MEMS optical switches (old ones) that you can explore and demonstrate functionality with... possibly (not sure if they work!).
- (5) Take Bionic Eye project to the next level (electrowetting lens, more theory/work).
- (6) Optical Correlation (w/ some MATLAB theory too?)
- (7) Stereoscopic 3D Display using Glasses and 'Silver Screen'
- (8) Other types of 3D displays, including holographic, volumetric, etc...
- (9) Laser Listening Device (laser reflects of a window only, or a small component mounted to a window, and can send back voices/audio in the room). This can be tough....
- (10) Something with the human eye...
- (11) Did you know that 49% of smoke detectors are 'optical', and 8% are 'laser-based-aspirating' in 2011. Build a smoke detector? Photonics Spectra: "Detection Market Catches Fire".
- (12) 3D TV?
- (13) Create more Matlab models and simulators for experiments we did this semester?
- (14) Optical isolators?
- (15) Fluorescence Resonance Energy Transfer (FRET)? Might be tough to do...
- (16) Some sort of line-of-sight communication system using a retroreflector?
- (17) Practical example of using the Fourier transform?
- (18) Earthquake detector?
- (19) Laser vibrometer.
- (20) Lots of interesting stuff here as well: <http://zeiss-campus.magnet.fsu.edu/index.html>

Try to think of your own project. Pick something that interests you! The above options are examples if you can't think of one... (some are pretty interesting).

