What soap bubbles and telescopes have in common?

Very Large Telescope Interferometer - ESO
A diagram illustrating the properties of waves.

- **Amplitude**: The maximum displacement from the equilibrium position.
- **Wavelength**: The distance between two successive crests or troughs.
- **Crests**: The highest points of a wave.
- **Troughs**: The lowest points of a wave.
- **Displacement**: The position of the wave relative to the equilibrium position.

The diagram shows how these properties are measured and related on a waveform.
Red: about 700 billionths of a meter
Violet: about 400 billionths of a meter
Interference!
Interference

CONSTRUCTIVE

DESTRUCTIVE
CLUES

1) Thin sandwich
2) Black $\rightarrow$ destructive interference
Optical reflecting Telescopes

Magellan Telescope, Chile

Carnegie Institution,
University of Arizona,
Harvard University,
University of Michigan,
and
Massachusetts Institute of Technology
Interference

ESO Very Large Telescope Interferometer - Chile

NRAO Very Large Array
New Mexico (USA)
ALMA, Chile - international collaboration!
66 ANTENNAE www.almaobservatory.org
INTERFERENCE
Zubbles: the colored bubbles!

www.zubbles.com
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