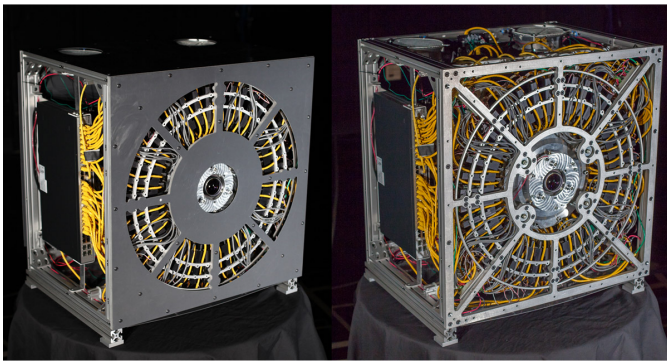


Beyond Megapixels with Gigapixels

Written by Marco Attard
27 June 2012

None of your customers' DSLRs are a match against what a team at Duke University, Durham, has built using off-the-shelf electronics-- the AWARE-2, a camera able to shoot 1000-megapixel (or one gigapixel) pictures.



Described in scientific magazine *Nature*, the AWARE-2 consists of 98 identical 14-megapixel microcameras looking through a single large spherical lens. Each microcamera uses own optics and runs independent autofocus and exposure algorithms, before an image processor stitches together 98 sub-images into a single large one at around 3 frames per minute.

The current prototype measures 0.75 x 0.75 x 0.5m, complete with packaging, data-processing electronics and cooling systems. It is also much more efficient than previous attempts at gigapixel arrays, which are costly, computationally complex and suffer from geometric aberrations.

Image examples in *Nature* magazine show the detail the camera is able to capture-- one cannot see wildlife in a compressed image of a wide view at a lake, but zooming in allows one to see individual birds on and above the lake.

Such gigapixel technology is not available for consumers yet, particularly since conventional file formats cannot even handle the immense amounts of data involved. But the AWARE-2 team plans to develop the technology further, and is already busy working on a 10000 megapixel (10 gigapixel) model.

Go [Gigapixel Camera Catches the Smallest Details \(Nature\)](#)

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