

Now you see it: Sony picture taken with curved CMOS sensor

July 8 2014, by Nancy Owano



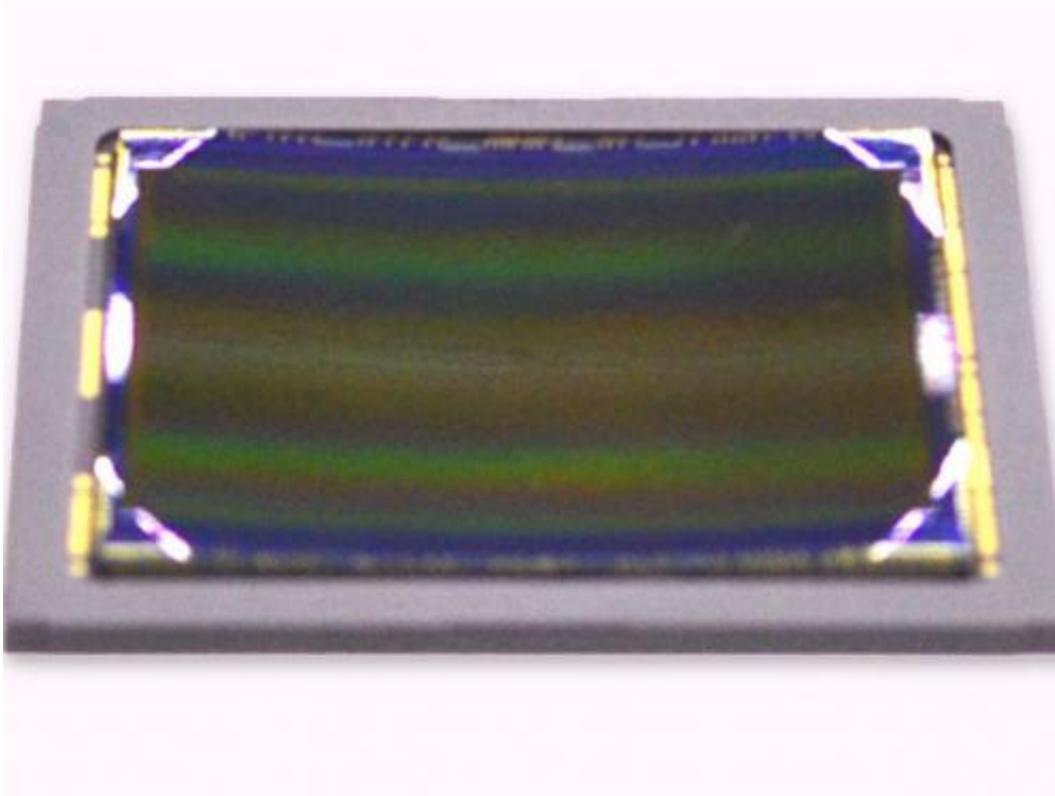
Credit: Sony

People are talking about Sony's first curved-sensor photo shown on Nikkei.jp, seen as a big deal because the company's technology signifies better-quality images and possibly cheaper lenses to come. This is capturing attention as the first picture taken with a Sony curved image sensor. The sensor that Sony has constructed is a prototype. As Nick Sutrich in AndroidHeadlines noted on Tuesday, the prototype sensor is a

much smaller [resolution](#) than the full-frame sensors that Sony is to send off to production. Sheldon Pinto wrote in TechTree that "What it indicates is that Sony is pretty sure that the technology works and is effective compared to the standard sensors that are now used in everything from mobile phones to professional [cameras](#)."

What's wrong with flat, regular [sensors](#)? They have Petzval curvature. As a result, [said](#) Engadget, the workarounds from optical designers result in costly added elements to lenses. As Rishi Sanyal explained in DPReview, "The sensors inside digital cameras are - generally - flat. But curved sensors promise greater sensitivity, better image quality, and provide scope for simpler lenses." With Sony's approach you are going to see shorter, lighter lenses with larger apertures that let more light in. Curved CMOS sensors mimic the eye; the sensors, with their architecture, work the same way as the human eye to fix optical issues, with a similar level of curvature. IEEE Spectrum recently detailed some key benefits of a curved CMOS sensor: A curved CMOS sensor, because of the geometry, can be paired with a flatter lens and a larger aperture, which lets in more light. Photodiodes at the periphery of a [sensor array](#) are bent toward the center, so light [rays](#) hit them straight on. Strain induced on the sensor by bending alters the band gap of silicon devices in the sensor region, lowering the noise created by the current that flows through a pixel even when it is receiving no external light.

Mirrorless Rumors summed up the reaction of tech sites this week that the image in and of itself does not deliver startling impact but is of historical significance. "That image doesn't look [exciting](#) at all but it's precious because it's actually the first photo taken with a Sony curved sensor!"



Credit: Sony

Engadget said, as the first image shown from Sony's curved CMOS sensor, the image indicates "a possible new direction for its digital camera division." DPReview's Sanyal commented that "some may view this image as being 'historic' and others will appreciate the simple fact that Sony's curved sensor technology is not simply a concept in its early stages of development."

Earlier this year, Reuters reported that Sony held the largest share of the global CMOS (complementary metal-oxide semiconductor) sensor market in 2012 at 32.1 percent, according to Techno Systems Research.

More information: www.nikkei.com/article/DGXNASD...0H8P_R00C14A7000000/

www.nikkei.com/article/DGXNASD...R00C14A7000000/?df=2

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