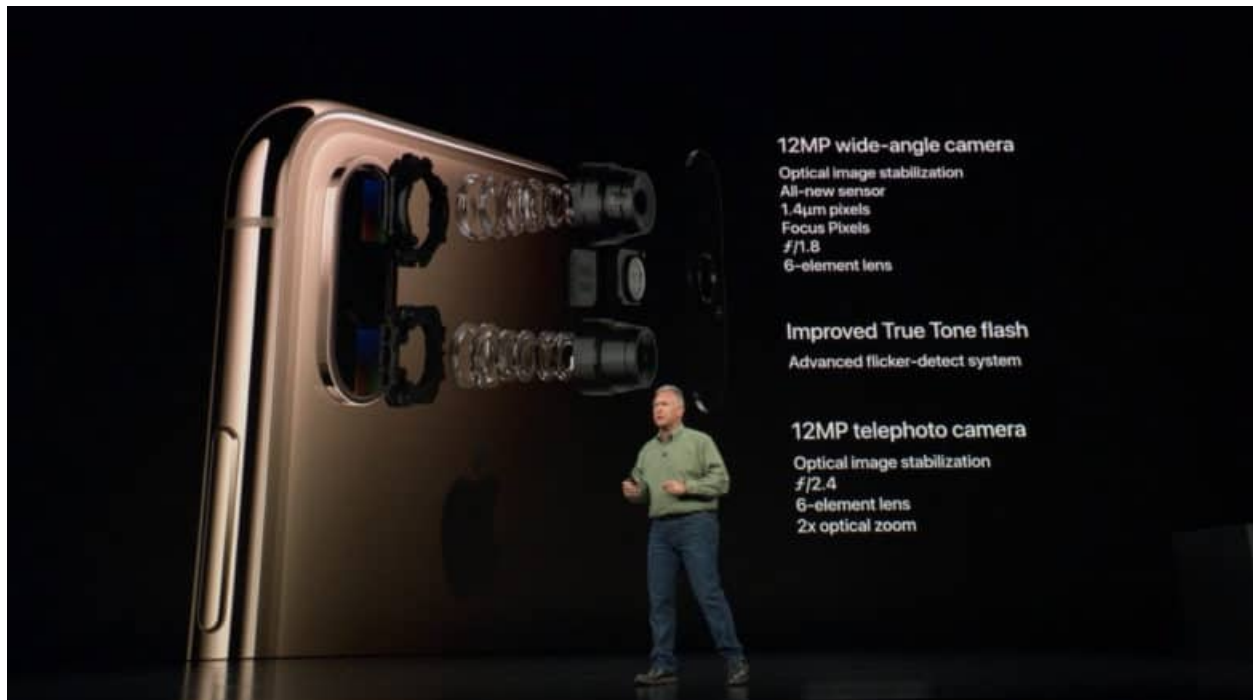# iPhone XS camera design proves even more impressive than we thought

BY BUSTER HEIN • 1:15 PM, SEPTEMBER 18, 2018 - Cult of Mac

Apple's new iPhone cameras.
Photo: Apple

The new camera sensors on the iPhone XS and iPhone XS Max could be worth a $1000 upgrade all their own.

Early reviews of the new cameras are overwhelmingly positive. Even though we already knew Apple made the pixels larger and the sensor bigger, we now have a better idea of the crazy engineering that went into making it the best iPhone camera ever.

In his comprehensive review of the iPhone XS and iPhone XS Max, John Gruber reveals that Apple made the camera sensor 32% larger but pulling that off wasn't easy. After noticing that the wide-angle lens on the iPhone XS is 2mm wider than the one on the iPhone X, Gruber also discovered the lens is longer too.

Longer Lens. Bigger Sensor. Same Thickness

A bigger sensor and longer lens don't sound like a big deal, but it required some crafty design work to pull it off without making the iPhone a bloated beast.

"What makes this 32 percent increase in sensor size hard to believe, especially combined with a slightly longer lens, is that by necessity, this combination means the sensor must be further away from the lens. The basic necessity of moving the lens further from the sensor (or film) is why DSLRs are so big compared to a phone. But the iPhone XS is exactly the same thickness as the iPhone X, including the camera bump."

Another impressive feature on the iPhone XS camera is its ability to adapt to low-light on the fly. If you're shooting video at 30FPS, there's an option to enable "Auto Low Light FPS." The feature will drop the framerate to 24 FPS when it detects that there's not enough light to get a good exposure. All of this happens without the user even

knowing, so now you can go from a bright scene and pan over to a darker area and the framerate changes automagically.

original article:
https://www.cultofmac.com/577337/iphone-xs-camera-improvements/