"Which lens should I buy?"

This has got to be one of the most FAQ's on the Canon SLR Talk forum at DPReview, and little wonder. Lens selection is arcane, the variety is huge, and there's a lot of money involved. Especially someone on their first SLR, or otherwise thinking seriously about lens choice for the first time, it is overwhelming.

The first commmon mistake SLR newbies make is trying to duplicate the capabilities of their superzoom-equipped digicam on the SLR. This is a bad idea: with very few (and expensive!) exceptions, superzooms are optically mediocre to downright bad and involve other trade-offs as well. A cheap superzoom on a DSLR is usually a big waste of money, as it throws out most of the image quality potential of the DSLR that you already paid for.

The second mistake is to be seduced by an individual, exceptionally capable lens... in Canon's case, usually an "L" lens, or if you're a prime-o-phile, something like the "sharpest lens in Canon's stable," the 100/2.8 Macro. This leads easily to overspending: you pay through the nose for capabilities you really may not need, such as weather sealing, an extra stop or two of brightness, or the convenience of not having to use extension rings on a cheaper lens... and into the bargain you usually get a big, heavy chunk of metal and glass you may not be that thrilled about carrying around.

The trick is to think in terms of line-ups, not individual lenses. Three or four lenses can already give you a very versatile stable that beats a superzoom to a bloody pulp both in terms of optical quality and usability. It also has the advantage of being tailorable to your personal requirements: if you enjoy landscapes and architecture, invest more in the wide end; if you shoot birds, put the dollars in the tele end -- and if you do street and situational, weight the normal range.

Suggested lineups

In my opinion, before embarking on lens selection, you should sink two fenceposts: budget and weight. A lens that's too heavy to take along is utterly wasted money. A lens that's so expensive that it leaves you short in a critical area will also hurt you... although, of course, patience helps -- you can always get the other stuff later. (In fact, this is probably a good idea in any case.)

Here I present a two suggested lineups for starter lens kits. All of the lenses are very good value for money, and the more expensive ones should retain their value very well, too, so "trading up" isn't as expensive a proposition as it may seem, if that should happen.

"Budget Convenient"

1. Sigma DC 18-50/3.5-5.6, or
2. Canon 20-35 USM (if you're in America, in Europe it's way overpriced), and
3. Canon 28-135IS

This lineup covers the focal length range from respectably wide to respectable tele. Image quality is very good (if not excellent), and due to the IS, available-light usability is also pretty good. The major downside

of this setup is control over depth of field in the normal range: the 28-135 is too slow to permit this except near its tele end. This poses limitations for portraits. Also, the IS won't help with subject motion, making the set-up less than ideal for indoor or low-light sports and similar shooting. This weakness can be inexpensively and pretty effectively if inelegantly patched up by adding the **Canon 50/1.8 II** to the line-up: excellent optical quality, good control over depth of field, and very good low-light capability. The cost is in convenience, though.

There are two obvious options for upgrading this setup: replace the Sigma wide-angle with either the **Canon 17-40/4L** or the **Sigma EX 15-30/3.5-4.5**. In both cases, you'll get significantly more width, better contrast, fewer optical problems, and better build -- but you'll pay a good deal more and carry a good deal more weight. Still, both the Sigma and the Canon are very good value for money. If your main interest lies in the wider end of things, they're probably worth the extra price and weight.

"Pro Image Quality For Less"

1. Tokina AT-X Pro 17/3.5 or Sigma EX 20/1.8
2. Canon 35/2
3. Canon 50/1.8 II
4. (Canon 80-200/4-5.6 "Pocket Rocket")

This lineup is capable of image quality rivaling or exceeding that of the world's most expensive professional lenses, yet costs and weighs a fraction of it. It's especially strong for available-light situational shooting. The downside is that as it's prime-based, changing focal lengths requires changing lenses. It also leaves the tele end of thing unaddressed: I'll treat that as a separate topic. I've included the Pocket Rocket in parentheses, as it doesn't quite fit the requirements of the "Good, Cheap Tele" discussion... but is a good lens in its own right, apart from being very small and very cheap, and fills in the tele end of things of this line-up rather prettily.

Wide-End Shuffle

It's an interesting time to be window-shopping for lenses, these days. The APS-size DSLR's, and I believe especially the Canon 300D, have finally brought out a quite a bunch of new solutions for the wide end. A few months ago, when I first wrote this article, literally the only real choices below 20 mm at a human-affordable budget were the big and clunky Sigma 15-30, excellent but pricey Canon 17-40, and the barely-below-20 and optically decent but not superb Tokina 19-35. Now there are a quite a few others worth considering:

- **Canon 18-55 3.5-5.6 (300D kit lens):** virtually free, and optically entirely acceptable. If you're getting the 300D, go with this lens, and don't even consider upgrading unless it's for something in the range of the 17-40/4L (or maybe another lens I'm discussing below). You'll pay a lot more and get very little in return.
- **Sigma DC 18-50/3.5-5.6:** This is what standard lenses for 1.6x crop cameras should be like. Decently built, compact, optically not bad, and very affordable. Sure, it won't work on full-frame cameras, but at this price, so what? Just sell it with your crop factor camera if you want to be rid of it. At this writing, it's something of a "no-brainer" low-budget walkaround wide-angle solution. If you want something significantly better, be prepared to shell out for the 17-40.
- **Sigma EX 12-24/4.5-5.6:** Oh boy, I'm *really* rooting for this lens. The samples from Phil's Sigma SD10 review [http://www.dpreview.com/articles/sigmasd10/] weren't perfect, but they weren't a disaster either. If it does work out, this will be a historic lens: the first 12 mm rectilinear SLR lens ever (yes, it's full-frame), and actually brighter than the first 12 mm lens for any 35 mm camera (the

Voigtländer Heliar Ultra-Wide 12/5.6). It's on my wishlist, if only it isn't a total disaster optically.

My choice

As regular visitors to this site know (I like to imagine you exist), I chose something very like the prime line-up. I did spring for the more expensive 50/1.4, simply because I didn't like the handling of the 50/1.8 Mk II and it's a focal length I use a quite a lot. I don't mind the inconvenience of changing lenses -- in fact, I think that primes help me see photographically, and I am a bit picky about image quality.

The Good, Cheap Tele

Up to 200 mm or so, there are a quite a few reasonably affordable alternatives for telephoto (for example, the Sigma 105/2.8 Macro coupled to a 2x teleconverter is suprisingly good, as is the "Pocket Rocket"). Once things get past it, they either start getting expensive and heavy... or the optical quality often becomes rather iffy. So the search for the Good, Cheap Tele becomes a rather an interesting quest.

One intriguing option for tele photography is the mirror lens. You can get a 500 mm f/8 mirror lens for under 200 Euro. Kiev Camera manufactures a Canon-compatible 1000 mm f/10 mirror lens for under $300. That's some serious reach, friends. Of course, they're fixed aperture and manual-focus only, they have the funky donut highlights, and at that focal length, depth of field will be severely limited. Still, they might be worth a look. Personally, I have no experience whatsoever with them, and have never even seen a full-size image shot with one. I did have a reflector astronomical telescope as a kid, though...

But passing by the the mirror lenses with their limitations, if we set the target at 300/5.6, sink the fenceposts at about 1000 Euro and 1000 grams, we're left with a few options. Here are some that have caught my interest. I've sorted them in descending order of expected image quality:

1. Canon 200/2.8L + 1.4x TC: 280/4, ca 1100 Euro, ca 1 kg
2. Canon 70-200/4L + 1.4x TC: 280/5.6, ca 950 Euro, ca 1 kg
3. Canon 100-300/5.6L (used, ca 350-550 Euro), 695 g
4. Sigma 70-300/4-5.6 APO Macro, ca 210 Euro, 530 g
5. Canon 75-300/4-5.6 IS, ca 600 Euro, 650 g
6. Canon 100-300/5.6 Macro (used, ca 100 Euro), 695 g
7. Canon 90-300/4.5-5.6, ca 250 Euro, 420 g

The Canon L's are very close to each other in terms of image quality, but very different in other characteristics. The Sigma and the Canon 75-300 IS and 5.6 Macro are optically midrange, while the 90-300 brings up the rear.

Canon 200/2.8L: The 200/2.8L is bright (at 200 mm), built as well as the come, focuses fast, and is optically impeccable: with a 2x teleconverter, it makes a very respectable 400/5.6. The wide maximum aperture makes it the most usable lens of the bunch for dusk or dawn photography. See my review for more on this piece of glass.

Canon 70-200/4L: The "Baby-L" is optically as good as the professional's workhorse, the 70-200/2.8L (IS or not). It's also comparatively small and light, and much more affordable. Compared to the 200/2.8L, basically you sacrifice a stop to get the zoom. This means that 2x teleconverters are out as a practical proposition, but it's a pretty worthwhile trade-off anyway.

Canon 100-300/5.6L: Out of production, the 100-300/5.6L is a bit of an oddball. Optically, it certainly

lives up to its "L" designation, but build-wise it's clearly inferior: it focuses slowly and has an inconvenient and dust-prone pump zoom design. It's also quite dark: definitely something of a fair-weather lens. But it does have the reach and the sharpness.

Sigma 70-300/4-5.6 APO Macro: Don't confuse this lens with the clearly inferior non-APO version. It's optically speaking a bargain: not up to L standards, but a cut above Canon's bottom-feeders. It's also reasonably well-built. Its major weakness (apart from the dark apertures) is that it's slow to focus, much like the Canon 100-300/5.6's.

Canon 75-300/4-5.6 IS: Optically, its major weakness is slight softening at maximum tele. It's also slow to focus and lacks some more or less important build features (FTM, "pan mode" in IS). However, it does have IS, it has very few aberrations, has decent contrast, and overall quite respectable image quality. Whether the IS is worth the trade-off in maximal attainable image quality (or the extra money, compared to the Sigma or the Canon 100-300/5.6 Macro) is a matter of taste.

Canon 100-300/5.6 Macro: Probably the biggest bargain telephoto I've come across. These can be had for under a hundred Euro, and are optically quite decent. They're in fact a similar design to the 5.6L, except they don't have the exotic elements the L counterpart does, and in fact this is visible as more chromatic aberration. It also shares the L's weaknesses -- slow to focus, inconvenient pump zoom design. But at the price, it's hard to beat. Don't confuse this with the 100-300/4.5-5.6 USM, which is well-built and fast-focusing, but optically disappointing.

Canon 90-300/4.5-5.6 (USM or non-): Canon's current entry-level telezoom, not available in the US yet, I hear. It's optically frankly not that great (I should know, I owned one; see my review), but it's light and compact and focuses very fast and accurately in its class. In other words, it'll get you the shot that the other budget alternatives will miss -- although it might not get quite as good quality. It's in fact similar both optically and in focusing speed to the much better built 100-300/4.5-5.6 USM, but costs way less. Therefore, it merits a place on this list.

So, which is it?

I think all of the above lenses merit a close look, and final choice should (as always) depend on the intended application. I actually bought the 90-300/4.5-5.6 USM, and eventually traded up to the 200/2.8L. Knowing what I know now, I would probably have chosen the Sigma 70-300 instead.

However, as things currently stand, I'm considering selling the 200/2.8L. Tele photography is kind of fun, but in the end, I've decided that it really doesn't rock my boat. My interests lie more at the wider end of things, and I don't know how much sense it makes that my most expensive lens is the one I use the least. If I do sell it, I'll keep an eye out for a bargain on some of those used wonders, or maybe an 80-200/4.5-5.6 "Pocket Rocket."