

Tokina AT-X Pro 17 mm f/3.5

Yesterday morning, on April 23, 2003, I had a pleasant surprise: the Tokina 17/3.5 that I had ordered arrived. I took some quick test shots and made some stupid mistakes, and wrote a hasty post on Digital Photography Review. Now I've had the chance to get better acquainted with this beast. Since the choice of wide-angle lenses for the 1.6x field of view crop isn't huge, I thought this article may be of interest for others in the same situation as myself.



It's been a while since I've shot with a wide-angle prime. I've missed it. The Tokina certainly qualifies -- the perspective is very respectably wide, even with the field of view crop.

I'm using the lens on my EOS-10D, where it's the approximate equivalent of a 28 mm, so these comments don't apply to anything that may or may not be going on around the edges of the frame. I intend to have a party with it on my wife's film EOS, but as you'll see below, I don't expect miracles for this purpose.



Here's the beast on the camera. Not tiny, but not a heavyweight either.

Build and handling

This lens is built like the proverbial brick outhouse. It's heavy for its size, the metal barrel has a reassuring feel, the rubber on the focus ring and the black "crinkle" finish are impeccable. The manual focus ring has the Tokina specialty, the MF clutch: you need to pull the focus ring towards the camera while rotating it in order to click it to the MF position; if you leave it there and AF, the ring turns, and the AF motor works more slowly. In addition, you need to switch the AF on and off from the switch on the lens barrel in the usual position.

Once I'd figured out the mysteries of the focus clutch, the focus ring feels almost like it was on a real lens, not one of the plastic toys that pass for them nowadays: buttery smooth, very precise. Special points for the DOF markings: with a lens this short, AF is practically pointless: the DOF markings make it possible to get optimal focus most of the time. Points also for the nice, padded, well-made faux leather lens case and the hood that came with it.



The manual focus ring in the "engaged" position. Note the DOF markings.

The focus clutch seems like a bit of a kludge, though: why did they need to add a separate AF-MF switch? It would've been better to have the clutch control the focus mode as well. On the other hand, this doesn't have a great deal of practical importance, as I don't think I'll use AF much precisely because of the huge DOF -- no matter where I point it, a couple of the AF points are likely to blink, and the focus position hardly moves. (The focusing motor is a bit noisy although acceptably fast, when the MF clutch is disengaged.)

The dual MF/AF switch/clutch kludge aside, this has to be the best built and most nicely finished AF lens I've ever handled. Bravo, Tokina.

Optical quality

My baseline for optical quality is the 50/1.4, so I know what pictures produced by a really good lens looks like. The Tokina puts up a good fight, but unsurprisingly Canon's best is clearly better in several respects.

Sharpness

The AT-X is a sharp lens. At its best, its resolving power clearly exceeds that of my 10D.



Here it is at its sharpest: f/8, 100% crop from near the center of the frame, USM added appropriately.

Towards the edges, sharpness decreases noticeably even at f/8, and slightly even at f/11. At f/22, there is no noticeable decrease in sharpness, but the picture is slightly softer overall due to diffraction effects. In my opinion, this softening is insignificant in practice. However, the lens is entirely sharp enough even wide-open.



Here's a crop near the edge of the frame at f/4. Visibly softer, but still pretty sharp. Note also the almost total lack of chromatic aberration.

The extreme corners do go visibly soft, although not to a degree that would be visible on normal-sized prints.



A crop from the very corner of the frame. Visibly softened by spherical aberration, but in my opinion not

disastrously so.

In sum, at least at the 1.6x FOV crop, the lens's sharpness ranges from acceptable at f/3.5 to very good at f/8 and above. It is just short of excellent because of the slight corner softening.

Distortion

I took some test shots of a brick wall, and although I noticed afterwards that I'd screwed up the test procedure (I wasn't perfectly perpendicular to the wall), they do show up a small amount of barrel distortion. It's not bad enough to be a serious distraction. In my opinion, distortion is not an issue for this lens.



Barrel distortion: I can see it in the brick wall test shot, but can you see it here?

So, so far the lens is holding up very well: not quite as sharp as the 50/1.4 towards the corners, but not very far behind, either.

Chromatic aberration

Here we come to the lens's weakest point. At least with the 10D, it tends to produce chromatic aberrations in high-contrast areas near the edge of the frame, particularly if the areas are not within the depth of field. The CA is easily apparent when examining the picture at 100% (actual pixels). However, it is not visible on downsampled screen images or prints of a reasonable size.



Two examples of chromatic aberration, both from near the edge of the frame. Notice also the corner softening. The CA takes the shape of green-red or green-purple shifts around edges.

To put things into perspective, I looked at some of Phil's test shots for the 10D. From them, it becomes clear that Canon's 17-35L, not exactly a Coke bottle, shows clearly more CA in the corners than the Tokina. See the top right corner of the first picture in his Canon EOS 10D review gallery [http://www.dpreview.com/gallery/canoneos10d_samples1] for an example.

Color and contrast

The lens appears to give a very slightly warm (yellowish) cast to pictures. I don't consider this an issue, since it is easily addressed by a very slight adjustment out-of-camera (and I make similar adjustments anyway). The lens appears to be reasonably contrasty, although of unsurprisingly it does not have the out-of-this-world clarity of the 50/1.4.

Flare

The AT-X is an ultrawide, at 17 mm. Ultrawides flare. This lens is no exception. The lens hood does not help much, as it's designed for the full frame: it would be nice if there was an optional one I could use for the cropped frame DSLR's. As it is, the flare isn't terribly bad -- it takes the form of red or green fairly dim flecks and fairly small light-colored flecks. No surprises here.



The full frame scaled down to fit on the page. Flare is apparent at top right and bottom left. I could easily have eliminated it by shading the lens with my hand.

Overall verdict

The Tokina AT-X Pro 17 mm f/3.5 is a very respectable wide-angle lens for the "APS-size sensor" cameras. Perfect it isn't, but from what I can tell, it appears to at least match if not beat Canon's best WA zooms in optical quality, at less than a quarter of the price (compared to the 16-35 f/2.8) or half the price (compared to the "affordable" 17-40 f/4). Its weakest points are slight corner softness and a tendency to mild chromatic aberration near the edges -- but in the former respect it appears very similar to Canon's top of the line WA zooms, and in the latter, it appears significantly better.

In my opinion, it handles actually better than the Canons -- the feel of the focus ring and the better balance of the camera due to the lighter weight and shorter length of the lens give it a clear edge in this area. The arrangement with the focus clutch and the MF/AF switch is a bit redundant, but since in practice the lens will spend most of its time in the MF position, this is not a big deal. It's also a good deal smaller and lighter (although at 435 g it's by no means a featherweight).

The slight corner softening does not bode well for performance at full-frame. I haven't shot any film with it yet, although I intend to once I get around to it. I did peer through the viewfinder of my wife's EOS-500 with it, and light fall-off was apparent even to the naked eye. I will extend this article once I have some film shots to look at.

Of course, the Tokina doesn't zoom: this may be a good thing or a bad thing, depending on your style and your needs. For me, it's a good thing. (I intend to explain why, one of these days.) The bottom line is, that although the Tokina isn't perfect, I have no idea where I could find better optical quality at this focal

length for anything less than Canon's stratospherically priced 14/2.8L. The handling characteristics (the excellent feel of the focus ring and the DOF markings) make this an eminently fieldable lens. If you're looking for a wide-angle for your D30, D60, 10D, D100, S1, S2, or whatever others are out there, this Tokina is certainly worth a close, hard look. I'm pretty sure I'll be a happy photographer with it.



Update: Field Notes

With a few months under my belt with this lens, I like it even more than originally. Next to the Canon 35/2, it's become my favorite lens: in fact, on a recent trip to France, it was my most-used lens by a wide margin, and most of my favorite shots came from it. The beast has taken some time to tame, though. Here are some additional observations on it.



Pont Julien, near Apt, Provence

Likes: ergonomics, resistance to flare, consistency, contrast

The Tokina is a marvelously usable lens. The clear DOF markings and excellent manual-focusing feel make picture-taking tactilely extremely pleasurable: the lens gives wonderful control over the process. In this respect it's much better than any of my Canons. With the tremendous depth of field even wide-open, there's little point in using it in AF mode: guesstimating subject distance gives better control even for situationals.

One truly remarkable quality in the Tokina is its resistance to flare. I've taken pictures directly into the setting sun (or moon), and the worst I can get are a few faint flare spots neatly in a row -- rather nice-looking, actually, and easy to clean up if they're distracting. No veiling, loss of contrast, or "purple haze" to be found under any circumstances. This is a really impressive performance, especially for an UWA: it's actually better than either of my Canon primes in this respect.



Lake Salagou in moonlight, Languedoc

Another remarkable quality of the lens is its consistent performance across apertures. There's hardly any difference in sharpness or contrast between a picture shot at $f/3.5$ and one shot at $f/11$. If this is a hallmark of a "professional" lens, the Tokina certainly qualifies.

Finally, pictures that come from the Tokina have a lovely "transparent" quality attributable to excellent contrast. In this respect, it's also in the same ballpark as my Canon primes.



Farmhand feeding cattle, Camargue

Dislikes: Chromatic aberration

As I noted in my original review, CA is the lens's weakest point. Under certain conditions, namely high-contrast edges towards the sides of the frame, especially ones that aren't perfectly within the depth of field, the lens exhibits red-green or magenta-cyan aberration that's bad enough to need to be addressed out-of-camera. I've developed some Photoshop actions for dealing with this, and in general the CA can be cleaned out very effectively. Still, it's a shame that such a good lens is marred by this problem. This *could* be an individual issue: I understand the lens uses a pressed, not ground, aspherical element to correct for this type of aberration, which has sloppier tolerances and larger variation between units. I haven't tested any other units, but if you have the chance, cherry-picking may help. On the other hand, Tokina's QA reputation is very good...



Chromatic aberration in a RL shot (unprocessed 100% crop).

Eccentricities: color, field curvature?

In addition to its clear strengths and one weakness, the lens has a couple of individual quirks. It definitely does *something* to color: I haven't studied this systematically, but the impression is that somehow Tokina pictures seem to show more vivid color than Canon ones. This can't happen, of course, so it must be a subtle color cast issue. In any case, it gives the pictures a characteristic but hard-to-define "look". I like it. Others may not. In any case, since color is easy to manipulate out-of-camera, this shouldn't be an actual issue either way.

Another eccentricity of the lens is the mystery of the Reappearing Soft Corners. On some pictures, sharpness across the frame is impeccable. On others, one or more corners appear distinctly soft... even when they were shot at the same apertures. The brick-wall test (necessarily close-up, due to the wide field of view) reveals visible softening towards the corners at all apertures down to $f/16$. However, real-life scenes usually have objects at different distances towards the sides, especially on an UWA like the Tokina (big scenes, big differences in distance).

The only reason for this bizarre behaviour that I've been able to think of is field curvature. I haven't systematically investigated the hypothesis, but I get the weird feeling that the field curves *inwards* at least at certain focus distances, leaving close-by objects near the corners outside the depth of field and appearing soft. I've by and large gotten rid of the issue by guesstimating the distance to the nearest object in the frame, setting focus to that distance or slightly beyond it, and setting aperture to bring the rest of the scene into DOF -- focusing somewhat closer to the subject than I'd expect.

Second bottom line: I love it!

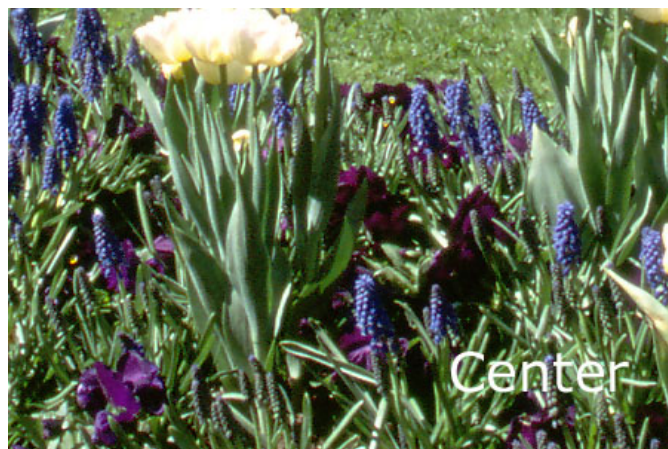
Despite the lens's eccentricities, I feel that its strengths far outstrip its weaknesses. I've really grown to love this lens. It's consistent, dependable, practically impossible to get to flare badly enough to ruin a picture, and the image quality, while somewhat marred by CA, is still very strong where it counts -- contrast, color, sharpness. Most importantly, with its excellent manual-focus ergonomics and "feel," it's a real pleasure to use.



Horses, Camargue

Update: Kicks Butt With Film

I finally managed to put a roll of slide film through a camera with the Tokina on. (Man, I had forgotten what a drag it is to scan slides.) Anyway, the lens far exceeded my expectations in this respect: the chromatic aberration is as good as gone, and sharpness holds up very well up to the edges of the frame. It appears that despite Tokina's "Recommended for digital SLR" text on the box, the lens was clearly designed with film in mind. I can highly recommend the lens for any film shooters that may have stumbled on these pages.



Crop from near the center of the frame.



Crop from the bottom left corner.

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