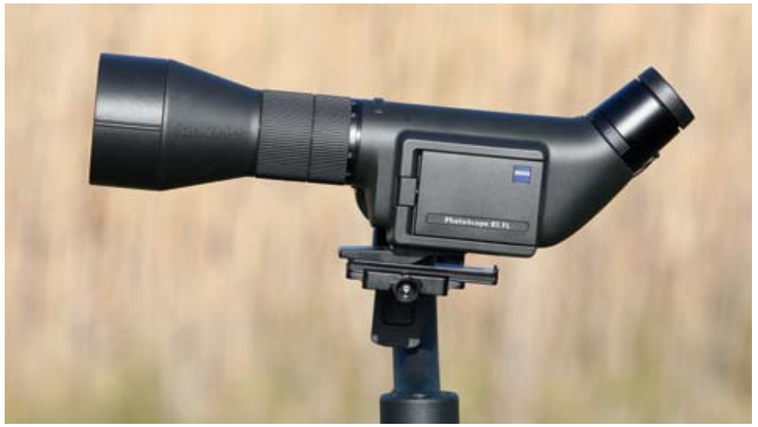
USER'S GUIDE
Zeiss Victory PhotoScope 85 T FL*

In 2009 Peter Ryan reviewed the Zeiss DC4 camera eyepiece that was designed specifically to work with a Zeiss spotting 'scope and thus take the fuss out of digiscoping (*Africa – Birds & Birding* 14(2): 18–19). Despite its obvious appeal to birders, the DC4 was already being phased out and an announcement about its replacement, the PhotoScope 85 T* FL, was made in October 2008. It has taken a while for a review model of the PhotoScope to become available to us, but Peter finally got his hands on one for a weekend.



PETER RYAN (3)

Above *The Zeiss Victory PhotoScope 85 T* FL looks and handles like a large spotting 'scope.*

Opposite, above *This White-breasted Cormorant portrait is quite acceptable, despite being shot at 40x magnification.*

Opposite, below *Depth of field is better than that of an SLR and a super-telephoto lens, where you would have to use a very small aperture to have both the eye and bill tip of this female Common Ostrich in focus.*

The major difference between the PhotoScope and the DC4 camera eyepiece is that the new model has the camera fully integrated into the telescope, whereas the DC4 could be replaced by a standard 'scope eyepiece. As a result, the PhotoScope forms an integrated unit with better balance and even greater ease of use. For example, you no longer need to remove the eyepiece to change the camera batteries. But on the down side, you don't have the option to upgrade the camera independently of the expensive, high-quality optics.

Another plus is that the PhotoScope has a zoom lens ranging from 15x to 45x, equivalent to a 35-mm camera lens ranging from 600mm to 1 800mm. I didn't push this to the upper limit (as with most 'scope zooms, the images began to look washed out at the top end of the zoom range), but it certainly took acceptable photographs at 40x. This allows you to take images of more distant birds than is possible with a traditional SLR camera and telephoto lens. Like the DC4 camera eyepiece, the PhotoScope uses Zeiss's revolutionary light-splitting technique to allow you to record images while looking through the telescope. And thanks to the lack of any shutter movement, there is no internal source of vibration to blur the image (but damping external shake resulting from wind remains a challenge). I didn't have time to explore the camera options fully (you can set ISO and white balance, select various light-metering modes, and adjust the exposure, aperture setting, etc.). Suffice to say I managed to take some reasonable images at the first attempt, but could no doubt have got even better results with a bit more time and effort.

Many of the comments I made about the DC4 apply equally to the new PhotoScope. Although the camera specs have improved (for example, image size has increased from four to seven megapixels and maximum shutter speed from 1/200 second to 1/4000 second), it still falls some way short of modern digital camera standards. Images can be produced in jpeg or DNG raw formats and video footage can also be recorded, but only at a modest 320x240 line resolution. There is still a lag between triggering the camera and the picture being taken, which will frustrate anyone used to the immediate response of an SLR camera. The rate at which you can take successive images remains rather slow, and you still have to focus manually, although there is a focus-assist function.

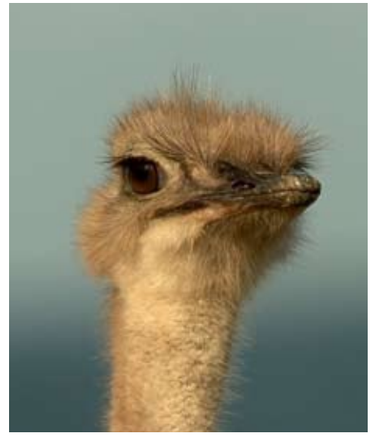
So despite its impressive reach, the PhotoScope is not going to replace the dedicated bird-photographer's SLR cameras and huge super-telephoto lenses. But if you mainly want to document the birds you see, especially species that lend themselves to telescope observation such as waders or roosting terns, then it is well worth giving this serious consideration.

And the PhotoScope demands respect simply for its quality as a telescope. For years I have discouraged people from getting a zoom eyepiece with a 'scope because

of the limited field of view compared to a fixed wide-angle eyepiece. But Zeiss has come up with a truly special zoom that performs brilliantly from 15x to at least 40x magnification. Compared with a Swarovski AT80 HD 'scope with 32x wide angle, the field of view was identical at just above 30x. In a side-by-side comparison with the Swarovski's zoom eyepiece the PhotoScope was far superior for field of view and image quality across the range.

If you're in the market for a top-quality 'scope and want the flexibility of a zoom but the image quality and field of view of a wide-angle eyepiece, then the PhotoScope is the best I have seen. The fact that it can take pretty good images with very little fuss is an added bonus. Zeiss has improved the speed of focus compared to its Diascope range, with the PhotoScope requiring two full revolutions of the barrel-focusing ring to go from infinity to minimum focus at around five metres, the same as a Swarovski 'scope. At times I did find having the zoom and focusing barrels right next to each other a little confusing, but with practice they should be easy enough to work with.

There are a couple of drawbacks to having the integrated camera. At three kilograms it is around 50 per cent heavier than a traditional spotting 'scope, but still feels comfortably light if you're used to lugging an SLR camera and super-telephoto lens around. I would encourage Zeiss to make the photo-frame brackets a bit finer in the field of view as they are heavier than strictly necessary. And it would be nice to have an indicator to show that the camera is on without having to open the fold-out image screen, and to be able to take a picture without the remote control (in



case your remote batteries die or you lose the remote). But these are minor quibbles. Given the choice, I would swap my current 'scope for the PhotoScope in a heartbeat. The biggest drawback is its price, which at more than R80 000 is roughly twice that of a top-end telescope (but still cheaper than a digital SLR and top-end super-telephoto lens). If Zeiss takes the improvements from the PhotoScope across to its Diascope range, it will definitely have the edge in the birding market for traditional spotting 'scopes.

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The recommended retail price of the PhotoScope is R80 500 (incl. VAT). It is stocked by Zeiss in Johannesburg and dealers order from there on demand. For more details, contact Craig Smith, Carl Zeiss Sports Optics, on tel. +27 (0)11 886 9510 or +27 (0)83 256 7321; e-mail *craigsmith@zeiss.co.za*