

## Re: 2" 90° Apparent Field Eyepieces Announced

**Source:** <http://sci.tech-archive.net/Archive/sci.astro.amateur/2004-07/0403.html>

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**Date:** 07/02/04

Date: Fri, 02 Jul 2004 15:27:58 GMT

"> Don Dilworth demonstrated that its possible to build a 90deg. eyepiece  
> *with extraordinary performance. See U.S. Patent 4,720,183. The*  
> *designs published in this patent are among the highest performance*  
> *eyepieces I've ever seen. Much better than even the published Nagler*  
> *designs. No ED or high-index lanthanum type glasses are needed. The*  
> *only drawback is size. A 29mm focal length would have some elements*  
> *as large as 4" in diameter. Below is the patent prescription for a*  
> *15.9mm Dilworth:*

I remember Don's eyepiece. I got a chance to look through it at Stellafane some years ago. The issue with it was not one of performance. It performed quite well. It was that it would cost too much to produce commercially. I felt sorry for Don because he had done a tremendous job in designing the eyepiece and producing the prototype. It just would have been too expensive to produce. What you would save in not using expensive glass would be lost in the difficulty of producing the glass curves commercially, at least at that time.

As to size, that was not an issue at the time. The longest FL Nagler was the 13mm Type I at that point. The Dilworth design allowed for a longer focal length to be produced within a reasonable size. After this AI came out with designs that finally allowed for a 31mm FL to be practical. The Type II Naglers were produced right after the Dilworth, and allowed for somewhat longer focal lengths (the 16mm and I believe the 20mm). The bar has been raised a bit since that time.

Thanks, Tom Davis