

The Night Everything Changed

Uncle Rod Mollise

“Let’s go sell our Naglers on Astromart before anybody else finds out about the UWANs”—Chiefland Star Party observer after trying the 28mm UWAN eyepiece.

Used to be that amateur astronomy was comfortingly changeless. When I got started in this wonderful avocation way back in the early 1960s, very little changed from year to year—when it came to equipment, anyway. Page through *Sky and Telescope* magazine (the only major amateur astronomy publication at the time), and you saw the same old ads month after month, year after year. Heck, Jaegers and Unitron (I know you old timers remember them) ran the exact same ads for at *least* a decade.

But that was then and this is now. Today, amateur astronomy changes at a dizzying pace not only year to year but month to month. Not just equipment-wise, but that’s a big part of the changes that keep coming thick and fast. This change is being driven by two things: advances in technology, and the availability of inexpensive but relatively high quality gear from the Far East. And by the Far East, as you’ve probably guessed, I’m talking about Taiwan and Mainland China. The Chinese optics factories have been pumping out shovel-fulls of astro-gear: scopes, mounts, and, maybe most of all *eyepieces* for about a decade.

Yep, Chinese eyepieces. Which means cheap Chinese plossls, right? Well, it used to mean that, and nothing wrong with that. The influx of Chinese oculars has meant that Joe and Jane Novice-Amateur can now expect to receive two or three decent quality plossls with their new scopes rather than the one (usually crappy) Kellner that was *de rigueur* in the 80s and early 90s.

“Well,” you say, “that’s fine for the newbies, but the last thing I need is another 50 degree apparent field plossl. I’m in the TeleVue and Pentax league now. Wake me up when the Chinese factories start turning out eyepieces like Naglers and XLs.” OK, well, WAKE UP. In one sense, this has already happened. The guts for most of the TeleVue eyepieces have been coming from Taiwan for some years. But I know what you mean: When will Mainland or Taiwanese factories bring forth something to rival a Nagler or a Panoptic *at a bargain price*?

The last time I reported on “import” eyepieces here, about a year and a half ago, I said:

Chinese eyepieces with spaceship-porthole fields are popping up everywhere, with several U.S. vendors offering 65° and, more recently, 80° apparent field oculars. Are they competitive with Naglers? No. Not right now. Not even close.

And, truthfully, if I'd been asked to guess when we'd see ultra-wide type eyepieces with the quality of TV and Pentax and Meade flowing from Taiwan and Mainland China and into our hot and eager little hands, I would have guessed "five years." Sure, Chinese firms had been producing significant numbers of 80-degree apparent field range eyepieces for a while, but a glance at the field edge of one of these oculars, even in my beloved f/10 SCTs, showed that their designers had a long, long way to go before they could hope to challenge TeleVue or Pentax. Or so I thought, anyway. On one recent night, you see, *everything changed*: the UWANs are here.

What the aitch-E-double-L is a "UWAN"? How do you even pronounce it? Well, I 'speck you'll be hearing a lot about this new series of William Optics eyepieces in the coming months, and will get used to chattering about them on the Internet and with your astronomy club buddies. U-W-A-N will roll off your tongue just like N-A-G-L-E-R (which, incidentally, some folks still don't know how to pronounce). Anyhoo, "UWAN" ain't a town in Taiwan, it's an acronym for "Ultra Wide Angle."

"OK. Whatever. Another wide-field from the East that makes an open cluster look like a flock of seagulls." I must admit that was what I thought when I first heard about the UWANs. But my opinion began to change as soon as I plucked the first eyepiece out of its TV-like cardboard box. Actually, my opinion changed a wee bit as soon as I laid eyes on the eyepiece's box. Even the packaging for the UWANs spells quality. It's about as far from plastic baggies and proletarian plastic "bolt cases" as you can get. Not that I spent much time thinking about the UWANs' boxes.

No, once I'd retrieved the three boxes containing 7mm, 16mm and 28mm eyepieces from the shipping container Daniel and the gang at William Optics had sent me, I didn't waste any time. In fact, I tore at the 28mm UWAN's box like a madman. I focused on the 28 first solely because its box was *big*. *35 Pan big or 31 Nagler big*. When I came to my senses, what I found myself holding was the Big Dog our lovely model, Teresa, is showing off in the photo.

The 28mm UWAN was an incredibly impressive eyepiece at first sight, and not just because of its size (this is a 2-inch only eyepiece) or its weight (2.2 pounds, same as the 31 Nagler), but because, without even looking through it, I knew this was the highest quality Chinese eyepiece I'd ever run across. If you'll look back at my earlier review, "A Bird's Eye View of Chinese Eyepieces," you'll find that I was fairly impressed with the 80-degree apparent field Bird's Eye 30mm, which was the first ultra-wide import eyepiece I'd tried. One look at the 28 UWAN, however, and I knew the eyepiece business had suddenly become a whole new ballgame.

The other UWANs, the 7 and the 16 (WO also makes a 4mm, which I didn't evaluate), are almost identical to the 28 except for size, weight, and barrel format

(they are both 1.25 inchers). That is, they're smaller, but obviously also made to the same high standards (see Table I for their vital statistics).

Pretty, yes, but pretty is as pretty does. When would I get to try these things? A peep through one of Chaos Manor South's windows revealed that it would be a beautifully clear—if substantially light polluted--winter's evening. Apparently the New Telescope Curse only applies to telescopes, not eyepieces. It's not an exaggeration to say that I was like a little kid on the night before Christmas as I waited for darkness.

Act I: Chaos Manor South Backyard

When the Sun finally dipped beneath the horizon and darkness deepened across The Swamp, I gathered up the William Optics 80mm Fluorite refractor and the brace of UWANs and headed for the backyard. This would be a preliminary sort of test, just enough to let me know if I needed to *bother* with further testing to include taking these eyepieces to a dark site. While my expectations were fairly high, I'll also admit that there was a bit of prejudice lurking in the back of my mind: "These eyepieces will probably be alright, but they will *not* be as good as TeleVues. My job will be to see how close they come to the Naglers, even if they do fall short."

Why save the best for last? I'd start out with the 28mm, and work my way down in focal length. What would I look at? Where better to start than with M42? With the 80mm refractor, the 28 UWAN would yield about 20x, and the rich star fields of the sword area would provide a fairly punishing first test for "Big Dog." OK, tighten those setscrews; this is one heavy mutha, move just a little south, touch up the focus a bit (is my hand trembling?)...take a look....Ahhhh...

Maybe the beauty of the view was enhanced by the fact that I really hadn't expected *too* much. But what I was seeing was pinpoint stars all across the field of the eyepiece. Tiny little stars and high contrast nebulosity. It really was that "spaceship porthole" experience that Uncle Al Nagler has preached about for so many years—this time without a TeleVue eyepiece. To say the view reminded me of what I'd seen in a comparable Nagler, a 26 or a 31, was an understatement. The field was wonderfully flat nearly to the edge, without any apparent astigmatism on view.

Yes, I was shocked. SHOCKED I tell you. The obvious build quality had meant I'd expected "good," but not "world class." Was I crackin' up? Had the rat race finally become too much for Unk Rod? Was his memory of what a TV eyepiece field looks like slippin'? I wasn't sure. Unfortunately, I had neither a 31 nor a 26 Nagler available for one-on-one comparison. But I do own a much-loved 35mm Panoptic. I rushed backed into the house to retrieve it. Slammed it into the diagonal. Took a look. Uh-oh. Things are gonna be different from this night forward.

While the 35 ain't exactly a Nagler, it's a *very* good performer, especially in medium focal ratio telescopes. The 68-degree field doesn't stress things out much, no matter what the f/r. But there was no denying it: the view in the 28mm UWAN was *better*. The field looked sharper at the edge in my opinion. And...the 28 was more comfortable to use. While eye placement is a factor with the UWAN, it is less so than with the 35mm Panoptic (which can be a real pain in the you-know-what till you've used it for a few weeks). On top of that, there's that giant UWAN 82-degree big-screen-television field. No contest, really.

Back in went the UWAN. So much for the deep sky. A gibbous moon was smiling down on Chaos Manor South's hallowed halls. How would the 28 handle a bright object? Very well indeed. The Moon was satisfyingly sharp no matter where I moved it in the field. Chromatic aberration? If it was there, it was subtle. I was never quite sure whether what I was seeing along the limb was really due to chromatic aberration or due to differential refraction. A 28mm ultra-wide wouldn't normally be my choice for Lunar observing. But you could certainly do it with *this* ultra-wide. Scattered light, whether Diana was in the field or just outside it, was fairly minimal and contrast was very good as gauged by the appearance of stars nearing the Lunar limb.

Yes, I was bowled over by the 28, but I realized I shouldn't ignore the 16 and the 7. I was particularly interested in the 16, as this is a focal length that is quite useful for me given my SCTs' normally high focal ratios. A good meat and potatoes eyepiece, whether used at f/10, reduced to f/6.3 or barlowed to f/20. The 16mm performed very similarly to the 28mm, displaying a good, flat field, a lack of astigmatism, and excellent contrast characteristics. As I played around with the Moon, moving it about in the field, I thought the color effects along the Moon's limb were slightly more noticeable than in the 28, but not more noticeable than what I saw in a comparable focal length TeleVue eyepiece, a 22 Panoptic. As with the 28, this slight color was quite likely due to atmospheric effects rather than any optical problems in the eyepiece or the APO refractor. In all respects, from field flatness to field size, the UWAN 16 was clearly superior to the 22 Panoptic.

While the 28 is an impressive eyepiece, for sure, believe it or not, the 16mm has actually seen more use in my SCTs. It's just a good general purpose ocular, and works surpassingly well in conjunction with my Denkmeier Power X Switch diagonal (which allows you to switch in an f/5 focal reducer or a barlow at will) in my C11. In fact, there've been plenty of nights where *all* I've used has been the 16. No foolin'.

The 7mm? This is a less interesting eyepiece for me, since, given that I'm an SCT/MCT *nut*, 7mm of eyepiece focal length isn't often as useful (on the deep sky) as 28 or 16 millimeters. In the little 80 APO, it did provide a comfortable magnification of 80x. In all respects, the 7's an eyepiece that's very similar to the

16, just with shorter focal length. While I'm not an eyeglasses wearer, and really not the one to judge what you spectacle users will like or not like, I'd say that the 7's 12mm of eye relief (same as the 16) will be at least *bearable*. This is, by the way, the same amount of eye relief as on the Nagler 7. On Luna, the UWAN 7 provided satisfying detail, though I did notice a bit more in the way of stray reflected light, both with the Moon in the field and just off the field edge, than I recalled with a 7 Nagler.

As I was breaking down the scope, I began ruminating on the evening's observing run. To say I was surprised would be an understatement. I was surprised, alright. Surprised that the UWANs had appeared to perform identically to comparable Naglers. But the fact was I hadn't been able to do a direct side by side comparison with TeleVue's ultra-wide wonders. The only Nagler in my eyepiece box at this time was a 12mm, which falls smack in between the 16 and the 7 focal-length-wise. What did I know for sure? It was undeniably clear that the UWANs were superior to TeleVue Panoptics, but that was all I was willing to say at this point. Were the UWANs really as good as Naglers? After a shot or two of Rebel Yell whisky, I began to doubt what I *thought* I'd seen.

Intermission

Ah, the clear light of morning. Time to reevaluate the UWANs. Or at least do further testing and checking in daylight. I also called my long-time observing companion, Pat Rochford, and made plans to give the UWANs a thorough workout from dark skies. In addition to seeing how the eyepieces would perform on a variety of deep sky objects, I'd be able to use Pat's 31 and 7 millimeter Naglers for comparison with two of the UWANs.

But what could I deduce about the UWANs in the sane light of day following my night of eyepiece debauchery? I started back at square one. Other than that the 28mm is one big, heavy eyepiece, what could I say about the *appearance* of the UWANs? Well, looking at the picture below, you can see that all three look surprisingly different from most other eyepieces on the market, ultra-wide or not. We know what an eyepiece is 'sposed to look like. Black top, chrome barrel. Not these. The whole shebang is a shiny anodized black. While this looks "different," it's also very attractive and "professional" looking. I like this color scheme for the same reason I prefer all-black single lens reflex cameras to the chrome-top models: the black finish just looks cool.

What else? The eye guards brought me up short for a while. When I first removed the eyepieces from their packaging the night before, I was baffled by the eyecups—or rather by the apparent lack of them. Oh, there was a rubber thingy at the top of the eyepiece, but try as he might, silly old Uncle Rod couldn't get this "eyecup" to flip up. Oh, well, I forgot about it in my rush to get the eyepieces out into the backyard on that first evening.

In the day-lit living room of Chaos Manor South, I got the UWAN eyecups figured out. Turn the rubber part counterclockwise to extend the eye guard, clockwise to return it to its “retracted” position. The tip-off was the raised arrow-like symbol on the side of the eyecup. Well, nobody ever said Uncle Rod was quick off the mark. I found that this system worked very well, and, unlike on the new Meade Ultrawide eyepieces, there is absolutely no yucky grease involved (which will get on your fingers and will inevitably be transferred to the eye lens).

Good thing these eyecups work well, ‘cause you’ll find you need them. Using the UWANs on terrestrial subjects showed that they are a little pickier with regards to eye placement than Naglers. Especially the 28mm. Don’t hold your head right, and you’ll notice some “blackout”—the field will tend to go dark, at least in places. With the eyecups extended, it’s easy to place your eye so as to minimize any of this behavior. Now, don’t panic. Eye placement is less critical with these eyepieces than with the renowned 35mm Panoptic, and problems in this regard only became truly notable when the UWANs were used on bright terrestrial subjects.

After looking at a few errant squirrels with the UWANs and the 80 APO, I removed the eyepieces to my sunlit deck where I examined them between draughts of Dixie Beer. Holding the eye lens up to incident light revealed flawless coatings that reflected back tones of violet and green (the UWANs are, not surprisingly, “fully multicoated”). Not the gaudy greens of the coatings of many of the inexpensive optics you see these days, but subdued reflections set against a dark background. Think of the coatings on a good SLR lens.

T’other end? Coatings on the field lenses looked just as good as those on the eye lenses. One thing I did note was that the insides of the barrels seemed to reflect more light than I’d have expected. They verge on shiny, just like the eyepiece exteriors, rather than flat black. However, the whole barrel is threaded, not just the end where you’ll screw on a filter, and these threads appear to help keep unwonted reflections in check. I do think flat black like that used on the TeleVue eyepieces would probably improve the UWANs’ scattered light handling, however.

Lens caps? *Who cares about lens caps?* We all do. When you spend what seems like half your life removing and replacing caps on eyepieces, they assume more prominence than you’d think. One of the few things I have never liked about TeleVue eyepieces is their semi-hard plastic lens caps. The large ones that go over the eye lenses always seem to be in the process of falling off, and god only knows how many hours I’ve spent searching for them with a red light on a dark observing field. All the UWANs use softer rubber lens caps for both field and eye lenses, which are easy to remove, but which also stay firmly attached. They are purty, too, with an embossed WO swan logo.

Another thing I don't like about Naglers and Panoptics? Those blasted safety "undercuts" on the barrels. I don't know what makes eyepieces with these undercut areas "safer," really, but I do know that your Uncle Rod says lots of *bad words* when he tries to remove a TV eyepiece from a diagonal that uses a compression ring securing system rather than a set-screw. The compression ring always seem to "snag" on the undercut, and I have to spend the next several minutes loosening the securing screw and moving the eyepiece back and forth in hopes of getting it out of the danged diagonal without moving the scope off target. I've mentioned to Al and David Nagler how much I HATE these undercuts, but they seem unimpressed.

The good news? The UWANs do away with the undercut and, instead, feature a barrel that slopes-in gently just before it terminates in the upper body of the eyepiece. I really don't think even this is necessary, but if you need some kind of a safety, this is much preferable to that gull-derned undercut.

How about the eyepieces' other specs? Eye relief, field stop diameter, etc.? I don't have anything like an optical bench squirreled away in the bowels of Chaos Manor South, and my pore ol' eyes ain't what they used to be (if they ever were), but my measurements agreed pretty closely with those given by WO and shown in Table I.

Act II: Stargate Observatory

When night came on a cool—not cold—January evening, I was champing at the bit. I was eager to head away from the city and its sodium streetlight glow to the relatively dark skies of Fairhope, Alabama and my friend, Pat Rochford's, magnificent *Stargate Observatory*. I'd determined that, yes, the UWANs were seriously worthy of dark skies. But, even more than I wanted to see what they'd do on the "real" dark sky, I wanted to see, in one-on-one fashion, how they would stack up against the real deal: the 31mm and 7mm Naglers.

While Pat owns an impressive stable of scopes, I figured I'd stick with the WO 80 APO. I wanted to give it a good dark sky try-out too. Also, I figured the 80's f/7 focal ratio was a good compromise. If the eyepieces came close to holding their own with the Naglers in a side-by-side, I'd think about torturing them in really fast telescopes.

Again, I sent the li'l 80 to The Great Orion Nebula (what else), which was blazing away in the south. In went the 28. Magnificent. Just like at home, but better, with an inky black background to set off the hordes of tiny gems and the milky nebulosity. Pat took a look, "Hmm, looks pretty good. But let me run get the 31." In went that titan of eyepieces. "Well, looks nice too. Let's have the 28 again."

"Pat, whattaya think?"

“Rod, I’ve got to say it’s close. With the 28 being maybe just a little *better*. Hard to tell. When I’ve got one in, I like that best. When I’ve got the other in, I like *that*.”

I took over and did some swapping myself. Like Pat, it was hard to tell which was the “better” ocular. I felt pretty sure the 28 UWAN was just slightly, ever so slightly, sharper. On the other hand, the 31 Nagler seemed just a smidge more comfortable to use, which I attributed to the eye placement issues I’d noted during the daytime. It wasn’t a matter of eye relief, since they are very close in that regard (18mm for the UWAN, 19mm for the Nagler). Frankly, the eyepieces were so close in performance that they seemed, except for the 31’s slightly longer focal length, to be twins.

Except when it comes to prices. I’ve been doing astronomy for a very long time, both as an avocation and as a vocation (at least in part). Almost half a century (shudder). I’ve reached the point where I can afford good gear, but I’m not and never have been one to spend needlessly. While the \$600.00 price tag for the 31 Nagler seems “reasonable” to me (sorta, anyway), I know it will be a tough nut to crack for quite a few folks. When you’ve got a flock of kids in school and are wondering how you’re gonna pay for Junior’s college tuition, 600 bucks for an eyepiece, no matter how surpassingly good that eyepiece is, doesn’t seem “reasonable.” Even *I* have to stop and think about spending 600 smackers for another play-pretty.

The “admission price” for the UWANs, as Pat and I discussed, is one of the things that makes them so consarned cool. The 28mm is \$398.00, the 16mm is \$238.00, and the 7mm is \$198.00. Significant savings over comparable TeleVues, and, as we were discovering, you do not have to give up optical quality to save some significant sawbucks.

The 7mm? I haven’t forgotten the little guy. Pat and I played around with it, swapping it in and out for the 7 Nagler. It acquitted itself well on the deep sky; seeming easily the equal of the TeleVue on the objects we tried it on. Is there anything bad I can say about it? Only that, again, that 12mm of eye relief is a little tight for everybody and really tight for eyeglass wearers. On the other hand, the 7mm “offers” the same 12mm, and costs nearly \$100.00 more.

ACT III: The Chiefland Shootout

With the “dark sky hurdle” passed by the UWANs, Pat and I felt it was time to subject them to the ultimate test: A fast scope comparo in the hands of the Big Dob types who swarm into the Chiefland Astronomy Village in Chiefland, Florida for twice-annual deep sky pow-wows. We’re talking people who *eat and breathe* Naglers, XLs, and Ultra-wides.

I had prepared a little speech to recite to prospective “subjects” for the testing we proposed to do, explaining what a “UWAN” was, and that we wanted to get their

opinions on the eyepieces in their scopes. It turned out that my little spiel wasn't needed. In these days of Internet newsgroups, Yahoogroups, and Astromart, news about new astronomy equipment travels fast. In no time we'd not only assembled several experienced observers, we'd also been able to find somebody with a 26mm Nagler, which we felt would be a good "opponent" for the 28 in the "Shootout at the Chiefland" Corral."

Telescopes? It wasn't difficult to find several "test beds" in a field overflowing with dobsonian reflectors of every size and focal ratio. We settled on three. An f/5, an f/4.5, and, the ultimate punishment for any eyepiece, an f/3.26. What did I do? I basically just stepped back and let Pat direct the testing. He's more familiar with the ins-and-outs of dobs than I am. I also felt I was becoming a little less than unbiased. Yes, I was rooting for the UWANs. They were the underdog, and I always find myself taking the side of that puppy, sometimes against my better judgment.

I needn't have worried about the 28mm holding its own. There was general agreement that the 28 was "as good or a little better" than the 26 Nagler in the areas of field flatness, sharpness, and edge-quality. This was on a variety of objects, including monstrous Omega Centauri with its countless tiny, tiny stars. In fact, the only time our informal panel of testers felt that the 26 Nagler pulled ahead was in the f/3.26 scope, and everybody agreed that its advantage, even there, was relatively slight.

The quote at the beginning of this review is genuine. The testing over, I was confronted by the sight of my group of eyepiece evaluators walking back to my observing spot on the field like Olympic victors, with one worthy hefting the 28 UWAN like a trophy while chirping: "Let's get on Astromart and sell our Naglers before anybody else finds out about the UWANs!"

Denouement

The UWAN eyepieces, those I've tested, the 28, the 16, and the 7, are clearly the equal of the TeleVue Naglers (and, in my opinion, any other premium eyepieces currently being marketed by anybody). What does that mean for amateur astronomers and amateur astronomy? For the average amateur, this is a boon. It means those of us who thought premium ultra-wide eyepieces were out of reach can do a little re-thinking and re-budgeting.

What will happen to TeleVue (or Pentax or Meade)? They aren't going anywhere, I hope. If they can continue to innovate and if (and this is a big if) they can hold the line on or even roll back prices, I think they will be fine.

For William Optics, this is a significant breakthrough. Look for them to assume the role of major player in the astro-equipment biz *if* they can capitalize on the UWANs. That means continuing to add focal lengths and improve the product. It

also means a sustained advertising campaign to get the word out on their eyepieces and other gear (which they seem to be beginning to do). Will they do these things? I don't know, but if they do, they will be *huge*.

For us hard-core equipment-crazy galoots the arrival of the UWANs is really all *gravy*. Nagler quality at Panoptic (or lower) prices. Whoo-hoo! Yes, *one night everything did change*. And it feels good, pardners. Real good. Pass me that 16 UWAN, wouldya?

Table 1

Specification	UWAN 28	UWAN 16	UWAN 7
Focal Length (mm)	28	16	7
Eye Relief (mm)	18	12	12
AFOV (degrees)	82	82	82
Lens	6 elements in 4 groups	7 elements in 4 groups	7 elements in 4 groups
Field Stop (mm)	43.5	28.6	25.8
Barrel Diameter	2-inch	1.25-inch	1.25-inch
Weight	1000 grams/2.2 pounds	200 grams/.44 pounds	200 grams/.44 pounds