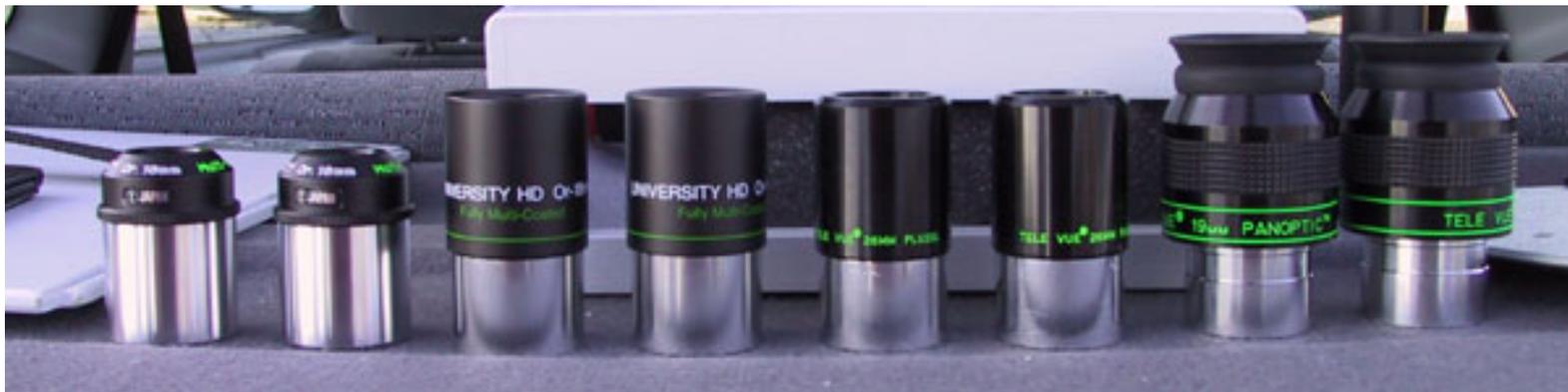


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UO standards (left), UO HDs (2nd to left)

UO 18mm vs UO 18mm HD

by Daniel Mounsey [click to email author](#)

Introduction

My tests were conducted from a private lunar & planetary observing site near Mt. Wilson, CA on March 18, 2004. Seeing was a 9 on a scale from 1-10. My reasons for conducting this comparison were provoked by my own curiosity to see if there were actually any difference between these two eyepieces.

For day time testing, I used a Televue 70mm Ranger and a Lumicon star diagonal. For planets, I decided to choose my 10" F5 Teleport Newtonian with Zambuto Optics, along with a Televue Binovue and a tracking platform. Each eyepiece was carefully examined for cleanliness prior to these tests.

Important Note

My tests are based strictly on the 18's. I have had no prior experience with the shorter HD focal lengths yet. All of my partners and I use binoviewers.

Physical Appearance

I have always liked the appearance of the cone tops the best. They give the classic Abbe Ortho look. The 18mm HD was noticeably larger and heavier than the original 18mm Ortho. When looking through each eyepiece alone, I noticed a difference in the baffling. Both give the same apparent field of view, but the original models leave a bit of room to look around the inside while the HD's look like a pitch black drain pipe with a white hole at the end. Note the relative sizes.



Please disregard the other eyepieces as I was conducting other tests for specific reasons aside from this one. They are not part of this comparison.

Daytime Testing

The first feeling I got when looking through the HD's in the Ranger was that they give a more private look while the original cone tops allow some outside light to get in easier, however, my colleagues and I noticed no difference whatsoever in the clarity, resolution, detail, definition, color or tonal issues of either eyepiece, so it was a tie as far as we were concerned.

Jupiter and Saturn

For those of you who may not know, you should never conclude the optical performance of an eyepiece just by testing in the day. Bright objects against a dark background can push an eyepiece to its limits. I cooled the Teleport down using an extra fan for a full two hours to remove the boundary layer over the primary and clear the optical path. The scope was carefully collimated and star tested prior to this comparison with excellent results.

I used the 3.5x configuration on the Binovue to produce 247x. I started with the standard 18mm Orthos and spent about 10 minutes getting acquainted with them. When I put the HD's in, it was a bit difficult to say whether I liked them more or less at the moment. Sometimes the seeing can change while you switch eyepieces, so you have to be very careful not to judge wrongly.

As I kept changing sets, something started to become apparent. The HD appeared to give less light scatter around Saturn. This could be described as a very subtle, white halo of light around the planet. I went back and forth between the two 18's, but still wasn't prepared to conclude just yet without further testing. They were both very good eyepieces putting up a good fight, so I decided to put each one in the bino side by side to be sure about my impressions.

NOTE! I made sure to switch the eyepieces back and forth on each side of the bino cups, just in case the bino contributed any optical issues of its own. When this was done, my suspicions were clearly verified by the speed in which I was able to compare them. Two things immediately became apparent and I don't believe either had to do with the coatings. The issues had everything to do with the baffling of each eyepiece.

First, the standard models field-stop looked a bit washed out on one side. The fact that light had room to scatter between the inner lens and the inside of the field-stop definitely contributed to this and can be verified by holding them up and looking through them in the daylight once you know what to look for. In the HD, the barrel was pitch black with an impeccably defined field-stop, producing a pure circle in space.

This had an important effect on the performance of each eyepiece. Each time I went back and forth between them, there was absolutely no doubt what-so-ever that the HD was giving an overall, more defined image of Saturn's surface features and limbs. The details popped out with just a bit more punch, while the standard models gave a slightly more washed appearance because of the scattered light. The subtle white halo of light seen around Saturn in the standard model was more evident and extended. With the HD, it was almost lights out!

It got to the point where I wasn't even looking through the standard models on Saturn anymore and I fell in love with the HD's. My attempts on Jupiter concluded exactly the same. It's beautiful rusty hues and creams were a sight to behold. This baffle issue may not be the same on the shorter focal length standard Orthos but it was clearly conclusive on the 18mm models.

I'd be willing to bet that there's a way to modify the standard models with a tiny rim of black velvet or paper around the inside wall, between the inner most lens and the top of the field-stop. Baffles can make a world of difference and many observers in my opinion, wrongly blame the optics.

Conclusions

Once again, the 18mm HD clearly had superior baffling to the standard model and I contribute this to be the route cause of the differences, NOT the coatings. I don't know how into this you are. As for me, I would not settle for anything less. If you already own the standard 18mm models, there is no question that it's worth getting the HD's instead if you want top notch results. For only \$79.95 you could even keep your older ones. I would also like to say something about the University Optics Company in general.

They have NEVER charged the ridiculous prices for eyepieces that many other companies are charging.

They sell some of the finest planetary eyepieces in the world, which have stood the test of time for decades and they still continue to charge the lowest prices ever. Note, I have absolutely no affiliation with this company. I only wish to give credit where it is due.

I have tested many eyepieces for the Moon & planets and I can tell you exactly what the characteristics of each are. They all have subtle but distinctive differences, no different than tasting different wines. If you're a purist and you still want something a notch above, then I strongly recommend the 18mm HD's. If you can not afford to change them, then I still highly recommend the standard models, which still compete and even surpass many eyepieces on the market today for planets. Good luck on your choices.

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