

## DiscMounts DM-4: Zen - Now in a smaller package!

Tom Trusock – 12/05



**T**om Peters has done it again.

Tom owns and operates DiscMounts – if you aren't familiar with them, then you're probably not aware of one of the best alt/az mounts on the market. Two years ago, Tom introduced his first product - the DM-6, a revolutionary high quality alt/az mount for the discriminating visual observer.

Make no mistake; I'm a big fan of alt/az mounts. For 90% of my observing, they are far more convenient than GEM's – no messing with polar alignments, counterweights or doing the funky chicken when dancing around the mount trying to look through the eyepiece. They're well, Zen

There are however, some disadvantages to traditional alt/az mounts – namely that they are extremely sensitive changes in balance, and can be something of a

pain at high powers.

DiscMounts design allows you to eliminate rebalancing or tension adjustments when moving between heavy and light eyepieces – and not at the sacrifice of ease of motion. Because of the large disc assembly used to provide friction for the bearings, locking the axis becomes unnecessary when changing eyepieces - and the scope will stay on target! Smooth motions at high powers are the norm, with the ability to go from lightweight to heavy eyepieces without having to rebalance the telescope.

What I liked	What I disliked
<ul style="list-style-type: none"><li>• Little brother to the DM-6</li><li>• More portable</li><li>• Sits much better on a large Bogen / Manfrotto</li><li>• Less expensive than the DM-6</li><li>• Tray now available</li><li>• Best mount in it's class</li></ul>	<ul style="list-style-type: none"><li>• Still a bit heavy for travel</li><li>• Balance range not as large as DM-6</li><li>• Tom Peters still won't give them out for free ☺</li></ul>



Everything about the DM-6 is first class, without a doubt it's one of the best mounts on the market. In form and function, it's tops. Tom's attention to detail is extraordinary. IN fact, there were only two things that a consumer might find fault with: price (perfection isn't cheap) and weight (stability comes at a price).

Tom's been fielded multiple requests from his customers (both current and potential) users to address this in the form of a lighter, less expensive mount that folks can travel with and thus was born the DM-4.

My first impressions were that the DM-4 was a DM-6 after Atkins. The bearings are 4" instead of 6", allowing Tom to reduce the overall size of the head and reducing weight and materials required. The DM-4 also differs from the DM-6 in a couple of other minor ways;

- The sides of the DM-4 are attached by hex head screws – even the side plate. On the DM-6 this just slid in and out.
- The tension adjustment wrench does not store inside the head like it does with the DM-6.
- Because of its lighter weight, the DM-4 is better suited to a heavy duty camera tripod like the Bogen / Manfrotto 425/3036, which makes it a better option for travel (with a few caveats that I'll discuss later).
- Because of its smaller bearings, the DM-4 does not deal with the same range of weight changes as gracefully as the DM-6 does.
- Since it's a smaller mount than the DM-6, the load bearing capacity is naturally a bit lower ☺ (15 very conservative lbs vs 40).

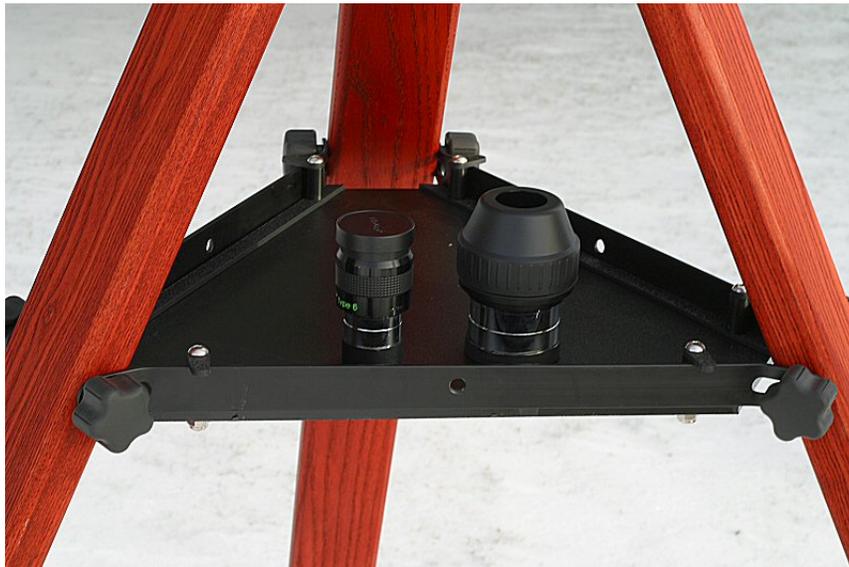
At this point, I've used a DM-4 for several months, with a variety of telescopes; Coronado SM60, the NP101, TV102, a StellarVue NightHawk, and several other telescopes.

### **So how does it perform?**

The DM-4 - like the DM-6 – is everything



Tom bills it. On the default tripod, the DM-4 handled everything I could throw at it with aplomb. My worst case scope was the TV102 – due in part to its weight and long moment arm. The DM-4 held the TV102 very well. Motions were smooth at 300x, and damping time was a mere 2-3 seconds (max). IMO, the damping time was only that long because of the single clamshell ring that TV uses. Dampening times were in fact, even shorter with the FS102. I found the scope to balance well with eyepieces ranging from my 17mm t4 Nagler (25.6 oz) on the heavy side to my 3-6 Nagler Zoom (5.6 oz) on the light. If I wished to use the mount/telescope with a binoviewer, it was a small matter to slide the OTA forward in the clamshell ring and rebalance. If you change OTA's or accessories often, Tom recommends using a long balance plate, and making note of where the balance position may be with different accessories. Then place a small piece of tape on the backside of the plate and label it for that particular scope or accessory.



DiscMounts now also offers a tray for their tripod – taking up the entire area inside the bars used to lock the legs in place, it's made of a very thick Delrin like material, easy to install, very large and quite stable (and highly recommended).

Tom offers two different heights for the tripod, and I was shipped the taller version along with the mount itself. Of the two heights, this is the one I prefer for stargazing. I'm a big guy 6' 2", and had to plant my rear on the ground when gazing at or near zenith with the shorter tripod. With the taller tripod; I am now able to use my observing chair at all times – thus I find it far more comfortable. Make your choice accordingly.

The DM4 is probably one of the most stable setup's I've ever used. The balance, damping time and overall usability of the mount (on Peters tripod) simply improved as I moved to shorter (and smaller) OTA's.

However, the story wasn't quite as rosy when I mounted the DM-4 on my Bogen 3036. While performance was fine for smaller scopes, it suffered noticeably with the larger ones. Because of the longer length and single clamshell ring, the telescope affected the worst by the tripod switch was my TV102. Dampening times increased to 5-7 seconds at

high power. Vibration suppression pads cut this in half, but its just one more thing to carry. I've wondered why Tom has never recommended a collapsible mount for use with the DiscMounts – now it's clear. The vibrations I experienced were in no way the fault of the head, it was clearly the tripod. While this setup would work in a pinch, I probably wouldn't recommend mounting anything heavier than 10-12 lbs on the DM-4 if it's on anything other than the DiscMounts tripod.

One other point- the DM-4 Manfrotto / Bogen 475 / 3036 combo worked very well for a buddies Solarmax 60. With a beefy camera tripod, and a small, short, lightweight telescope, kept to moderate powers – it may be just the ticket for someone looking for a portable solution that has exceptionally smooth motions at high powers.

### Got Computerized Pointing?

The DM-4 shipped with a new model Sky Commander and 4000 tic encoders (look for a review of the new Sky Commander down the road), mounted on a tilted plate above the head itself. This arrangement (like the DM-6) allows Tom to hide the cords almost entirely within the DM-4 head and eliminates any problems with cord wrap. While DiscMounts sells the Sky Commander and 4000 tic encoders with its mounts, the system is compatible with nearly any DSC system on the market. Although I rarely use DSC's on small telescopes anymore (I seem to go in phases) the ability to mount

## DM-4 Specifications

### DM-4 DiscMounts' head Specifications:

*Azimuth axis (Tripod) mounting hole:* 3/8"-16 centered on 4" disc

*Altitude axis (Saddle) mounting holes:*

DM-4: 1/4 " - 20 spaced 3" apart (compatible\* with the [Losmandy](#) G-8 and G-8D saddle plate system) centered on 4 " disc

\*Please note, due to the diameter of the DiscMounts' disc DiscMounts' modifies the G-8 saddle plate

*Material:* All aluminum is 6061-T6 hard coat anodized and machined to close tolerance from sold blocks. All hardware, shafts, and ball bearings are made from stainless steel

*Weight no accessories:* DM-4: 5.2lbs

*Dimensions:* DM-4 Head only: 5 3/4" long, 4" wide, 5" high Height to center of Altitude disc: 2 1/2"

*Head Load weight:* DM-4: 15 lbs (load weight varies with diameter and length of tube)

*Eyepiece/Camera deferential load weight to maintain balance (at end of focuser):* DM-4: 0 to 1.5 lbs. typical

Please note this can change up or down depending on the telescope and the highest magnification required.

### Ash Tripod Specifications:

*Ash Wood Tripod:* Natural oil, Red Mahogany stain with oil, or Walnut stain with oil

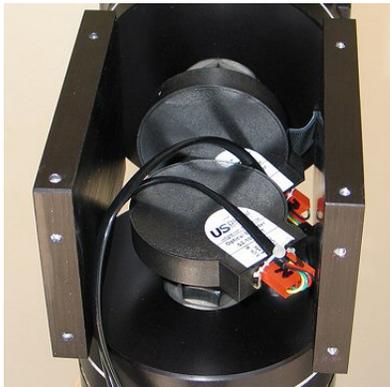
*Top plate DM-4:* 4" diameter with 3/8"-16 mounting pin. All aluminum is 6061T6 hard coat anodized, and machined to close tolerance from sold blocks. All hardware is made from stainless steel

*Legs:* 3" wide, 1 1/4 thick, solid Ash non-adjustable

*Maximum load weight including mount head:* 40 lbs. (with spreader braces installed)

*Leg spread circle stand Ash Wood Tripod:* approximately 37" to 39" adjustable

them is something that many observers will appreciate – especially ones observing deep within the light dome of an urban area, or observers looking to actually observe instead of hunt for their objects.



Tom now includes 18” of cable (stored inside the DM-4 head) to mount the DSC where ever you would like – if that’s not enough, you can visit any Radio Shack to obtain the correct connectors and extensions. This means that you can use Tom’s tilted top mount (show in the article), mount the DSC on the front of the DM-4 itself, a leg, the tripod or basically anywhere you choose. Many users request the mount to be set up for the Argo Navis. Because of its programming the Argo needs a fixed reference point to mark its position in relation to the mount in addition to a two star

alignment. Thus, Argo setup and reference marks are available by request for an additional charge.

The accuracy of the DSC pointing depends heavily on the construction of the mount. In short, it requires that the mounts axis be perfectly perpendicular to each other – orthogonal – for best results. To make a long story short, the DM-4 is orthogonal. Period. DSC pointing accuracy was everything one could want. It easily allowed me to center objects at high power.

So how does this mount compare to say – a Gibraltar? First, the ability to not have to rebalance or tighten your tension is - well – pretty dang nice. It’s hard to describe until you get used to it. But once you do, you come to appreciate it. Another area in which the DM-4 surpasses the Gibraltar is when you increase the magnification above 150x or so for detailed lunar and planetary analysis. The DM-4 is far more stable, and the motions are much smoother easier. High power hand tracking is very doable with the DM-4. In short, while detailed investigation of the moon and planets can be a chore with the Gibraltar, the DM-4 invites it – especially when it comes to using smaller AFOV eyepieces. Finally, you’re limited by the OTA size – so the DM-4 can accept a wider range of OTA’s – like an 8” SCT.

### **Perfection?**

Nearly.

Ironically, I’d almost like to see an altitude lock or tensioning screw that’s easily accessible. The DM-4 does not handle the extreme weight differences the DM-6 does, and a lock would come in handy while you rebalance the telescope (which in all fairness is only if you’re moving to extremely heavy eyepieces or



accessories like a binoviewer). You can, of course, tighten down the Alt axis to compensate, but then motions tend to become a bit stiffer than I prefer. I should note that shorter scopes tend to have less of a problem as their moment arms aren't as long.

Another "flaw" isn't really in the mount; it's in the fact that it uses the Losmandy 4" saddle plate. While this is one of the most common arrangements on the market today, it does have one drawback. The lock knob isn't captive. Why should this matter? Well, let's step back a moment and think about this – Go back to the design of the G11 saddle - it's not a tip in plate – something that's very hard for a sleep deprived brain to remember. Putting the DM-4 to bed one night in the process of separating the scope and tripod, I unscrewed the lock knob too far at which point the knob fell on the OTA and took a small chip out of the paint. Soon thereafter I had a talk with Tom and he assured me he's been looking at implementing a solution for a while

The final drawback is a fiscal one. While the DM-4 is certainly less expensive than the DM-6 (and fairly comparable to a completely decked out Gibraltar), it's still not an inexpensive mount anymore than a fully loaded H2 would be an inexpensive car. If you want quality, (and the DiscMounts ARE quality, on that rest assured) you are going to have to pay for it – that's one miracle even Tom Peters can't pull off.

### **Final Words**

When all is said and done the DM-4's greatest competition is probably the DM-6. Frankly, Tom's done an excellent job of scaling down the DM-6, but with the 6's capability to handle a wider range of weight changes, one should think long and hard about which to purchase – the 4 or the 6.

DiscMounts have again shown they make the Cadillac ALT/AZ – the only question is, do you want a midsize or full size? I'd talk it over with Mr. Peters, but my recommendation would be the DM-4 would be perfect for a 4-5 inch or smaller apo, or an 8+” CAT. Anything larger or longer, I'd want the DM6.

Overall, DiscMounts has given us another top notch alt/az mount. If you're a visual observer looking for a top-of-the-line luxury alt/az mount – DiscMounts sits atop the heap.

### **For pricing and options contact:**

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