

## Binocular Sky Review: Astro Devices Parallelogram Standard III Pro

Properties	
Weight (lbs)	11
Payload (lbs)	15
Vertical range (cm)	84
Counterweight arm	20mm od tube
Tripod Mount	10mm + optional 3/8" and 5/8" adaptors
Instrument mount	1/4" and 3/8" Whitworth
Degrees of motion	4
Centre of mass adjustment	No
Body Material	Steel and aluminium
Handles	2, poly-carbonate
Counterweights	Optional
Origin	Ukraine



**Price: \$239 (USD)**

**Available from:** [Astro Devices](#)

### Initial Impressions

The parallelogram arrived wrapped in copious quantities of bubble-wrap bound with adhesive tape. Removal of the wrapping revealed the mount; it has an unrefined "functional" feel about it. For example, there was some swarf in the threaded hole in the base and the counterweight end of the upper parallelogram bar. The parallelogram required minimal assembly: initially only the mounting bracket needs to be attached to the main parallelogram. The main structure, and the mounting bracket, are made of powder-coated metal. The counterweight arm is a 20mm diameter metal tube, capped at both ends with a slightly oversized knurled screw-cap. Bolts and knobs appear to be made of stainless steel. The parallel arms are U-section and have been slotted, presumably for weight

reduction. The tripod end has an M10 thread for mounting on a standard *Skywatcher/Vixen* astronomical tripod. (3/8" and 5/8" Whitworth adaptors are available to permit it to be mounted on standard photographic and surveyor tripods.) There are two mounting bushes – 1/4" and 3/8" Whitworth – for mounting binoculars or a telescope on the mounting bracket. A polycarbonate handle screws into the underside of this and another handle is permanently fixed to the instrument-end of the parallelogram structure.

### Testing in the Field

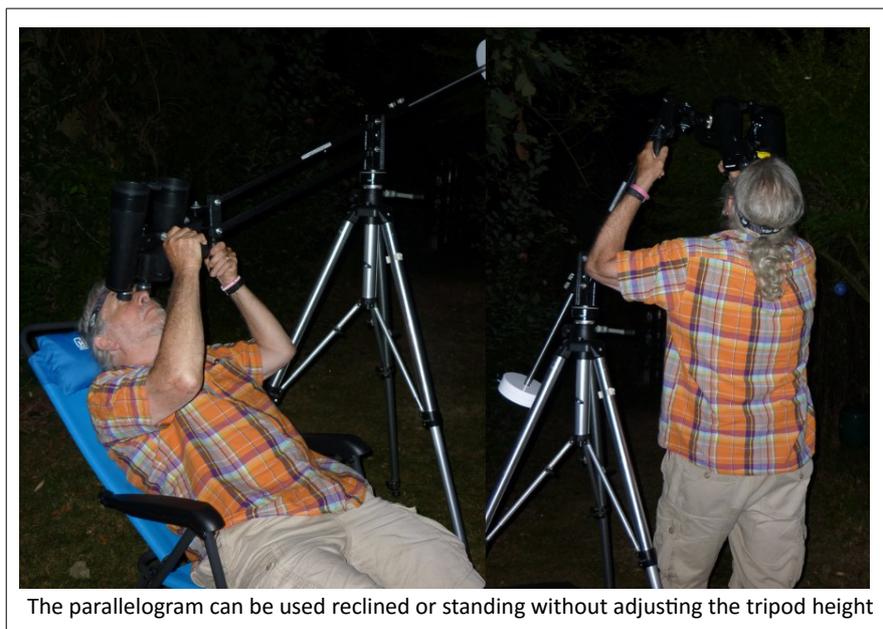
I tried this parallelogram mounted on these tripods: *Amazon "basics"*, *Manfrotto 055*, *Manfrotto 075*, *Skywatcher* stainless steel (1.75" legs). The *Amazon "basics"* is inadequate; the 055 is appropriate lightweight binoculars (up to 1.5 kg), the 075 is sound for anything up to about 3 kg, and the *Skywatcher* for anything up to the maximum load. Its intended use is with a *Helios Stellar 20x80* (2.7 kg), so the 075 is the tripod of choice (it is considerably lighter than the *Skywatcher*).

The counterweight arm is designed to take a standard *Vixen* or *Skywatcher* counterweight. The oversized screw-cap acts as a stop to prevent a poorly-secured counterweight from slipping off the end of the arm. The arm is secured by two locking screws, whose knurled heads are sufficiently large to enable operation with gloved hands. I found a 5kg counterweight to be ideal for the 20x80.

I was curious about the claims of a 15 lb load capacity, so I tested it with my *Miyauchi* Bj100 (5.6 kg/12.3 lbs) – absolutely rock solid, and it was still so if I rested the 20x80 on top of the *Miya*. The only negative consequence of binoculars of this weight is that vibration/oscillation damping takes a lot longer.

The mount has four degrees of motion: the base rotation, the parallelogram's vertical motion, and the pan and tilt of the mounting bracket. This is adequate for most purposes, but the lack of centre-of-mass adjustment on the mounting bracket meant that I could not balance the *Miyauchi* longitudinally, and even with the mount-arm fulcrum tightened as much as I could, the binocular would not hold its position.

However, the four degrees of motion are a marked improvement over the three degrees (tilt only at the mounting end) of simpler mounts like the *Orion Paragon*, which limit you to looking back over the tripod, thus excluding the possibility of reclined observing.



The parallelogram arms have 52cm between their fulcrums. This allows 84cm of vertical motion, which I found sufficient to enable standing and reclined observing without altering the tripod height.

The 20x80 I use with this mount has the mounting bar type of attachment. This enables the binocular to be balanced longitudinally. The resulting centre of mass just happens to be pretty much in line with the fulcrum of the mounting bracket, so the binocular stays put at any angle, even with the fulcrum quite slack.

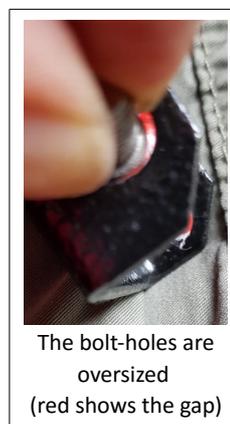
All the motions operate smoothly with no perceptible “stiction” (static friction), no matter how tight you adjust them.

Damping time is a few seconds at most, which is entirely reasonable for a mount of this length with this sort of weight on it.

I initially doubted the utility of having two handles, but they turn out to be surprisingly useful.

Even though it is in its third incarnation, the parallelogram still has a few niggles.

The first was that I noticed that the mounting bracket did not appear to be horizontal. I traced this to some play in the parallelogram fulcrums. The bolts, which have shoulders that insert into the parallelogram arms, are about half a millimetre undersized.



The combined effect of all four slack fulcrums amounts to a little more than 3° at the mounting bracket. This is correctable for equal eye height if you are mounting with an L bracket or have a binocular with a longitudinal mounting bar so it rotates about a longitudinal axis, but not if your binocular has a fixed mounting point (e.g. the Swift Newport 10x50 Mk II, or most of the quality 100mm binoculars). It also means that panning using the mounting bracket is not horizontal. You will need to be aware of this if you are doing a horizon step-search.

Secondly, the 3/8” mounting adaptor does not screw fully into the base, and it is undersized so that the locking screws on the tripod mounting plate cannot be used. The first of these can be remedied with a few minutes in the workshop with a file.



Thirdly, there is a tendency of the bolt that secures the parallelogram structure to the base to unscrew. This is common to several parallelogram – and other – mounts that I have used, and results from my tendency to favour moving widdershins (anticlockwise) around the tripod. It is worth checking it periodically if this is also your tendency.

Lastly, as mentioned above, there is no facility for adjusting the position of the binocular's centre of mass in relation to the mounting bracket's horizontal fulcrum. This means that they will inevitably become unbalanced. With lightweight binoculars, you can compensate for this by tightening the fulcrum, but with heavy binoculars, this may not be possible. However, implementing full centre of mass adjustment requires an additional two degrees of adjustment (vertical and longitudinal), and this would inevitably make the mount more expensive.

If you use this mount only with one binocular, there is an instant aid that you can implement: wrap a few turns of electricians tape or similar around the counterweight bar inside the parallelogram arm to act as a stop, so you can easily pull it out the same distance every time, by feel alone, in the dark. This will save you having to rebalance the counterweight each time you use it.



This base-securing bolt can work loose in use; check periodically



Taped stop on counterweight bar

## Conclusions

Despite its shortcomings, the most significant of which for me is the 3° "sag" in the mounting bracket, this is a pleasant mount to use. I also have a *Virgo Skymount* (original incarnation of what is now the *Orion Paragon*) and a *Universal Astronomics T-mount Deluxe* to which to compare it. It is more satisfying to use than the *Skymount* (which is severely limited by having only three degrees of motion), but is not of the same quality, complexity or capacity as the T-mount, which has five degrees of motion and centre-of-mass adjustment, but retailed for more than twice as much, but the point is moot because *Universal Astronomics* has ceased production.

The motions are smooth, the half-metre-long parallelogram arms make it easy to use the mount from a standing or reclined position without adjusting the tripod height, damping time is minimal with medium-weight binoculars, and the lack of centre of mass adjustment is insignificant if you use it with lightweight binoculars or medium-weight ones with a longitudinal mounting bar between the optical tubes. The mount is also relatively light-weight, owing to the slotted U-section arms. I found it possible to compensate for the non-horizontal panning when step-scanning near the horizon. In my opinion, the mount is not suitable for use with a heavy binoculars with a fixed mounting point.



Mounting bar between the optical tubes

A little "naughty" perhaps, but with M10 and 3/8" Whitworth threads being so close in size, I have taken to mounting the parallelogram directly onto a 3/8" tripod plate. Do this at your own risk (of stripped threads)!

If Valentin Gajdaj, the man behind *AstroDevices* is able to address the shortcomings, this will become a very capable mount indeed.

### **A note on delivery**

There have been problems with reliable delivery to some parts of the world, including the United Kingdom, with parallelograms getting delayed or lost. There's always likely to be a little uneasiness when ordering from a country we don't know much about.

In my case, eventual delivery took place exactly 100 days after I placed the order, and the unit I received was the second one that Valentin sent, the first having disappeared somewhere between the Ukraine and the UK. (But, for perspective, some people are willing to wait for far longer, sometimes a year or more, for kit, or warranty repairs, from some astro retailers.)

Whilst I was waiting for delivery, Valentin was contactable throughout by email and acted in a very reasonable manner. I think one of the issues is that he is trying to keep shipping costs to a minimum; my opinion is that most of us would be prepared to pay more for a fast, reliable method. Alternatively, I have suggested to Valentin that he could do with a reputable UK dealer to handle UK sales, and to whom he could ship in bulk. The important point for me is that Valentin ensured that I got the parallelogram (and no, he did not know that I would be reviewing it!).

What this saga has reinforced for me is that, as long as we are dealing with honourable people, things that go wrong will be put right. I always contend that any fool can behave well when things are going to plan, but that the mark of a good vendor is how s/he behaves when things go wrong. In this regard, *AstroDevices* is, in my opinion, a very good vendor.

**Stephen Tonkin**  
2018 July 30

© 2018 Stephen Tonkin under a [Creative Commons BY-NC-SA License](https://creativecommons.org/licenses/by-nc-sa/4.0/)

