Middleweight Imported GEM Shootout

by John Crilly

CG5-GT LXD75 LXD55

I've been looking forward to writing this one for a long time. I'm going to compare the three most popular middleweight computerized German EQ mounts!

The contenders have all been individually reviewed here on Cloudy Nights and I will avoid repeating any more material than is necessary - instead I'll refer the reader to those reviews. They include the obsolete but readily available second-hand Meade LXD55, Celestron's CG5-GT, and Meade's current LXD75.

LXD55

The Meade LXD55 started the movement toward inexpensive imported computerized GEMs. When it was introduced it caused quite a stir because of its amazing capabilities for the price. Sadly, it showed signs of having been rushed to the market and the initial failure rate was unacceptably high. This gave it a bad reputation which has also affected its successor, the LXD75. That's a shame, because by the time they phased it out they were shipping good units - and the LXD75 never had those problems. Tom Trusock reviewed an early unit here:
http://www.cloudynights.com/premium2/Mounts.htm

CG5-GT

Celestron responded with their CG5-GT mount, which was obviously inspired by the LXD55's market success. With the benefit of hindsight, the designers of this mount

managed to avoid several of the most serious issues affecting the LXD55. I reviewed this mount here:
http://www.cloudynights.com/premium2/Mounts.htm

LXD75

Meade called and raised the bet by releasing the LXD75. This unit, while from the same factory as the LXD55, also showed the value of hindsight. It corrected several of the same issues that Celestron had addressed, and added a few new enhancements. I reviewed the LXD75 and that review can be found here:
http://www.cloudynights.com/premium2/Mounts.htm

HOW ARE THEY ALIKE?

All these mounts share a common heritage: they are Chinese or Taiwanese derivatives of the well-respected Vixen Great Polaris EQ mount. All of them use a Vixen-style saddle and dovetail plate. All operate from 12 Volts DC and none of them are bundled with an AC supply. They are all bundled by the importer with various optical tubes weighing up to 30 pounds. For visual use I've loaded them all up to at least that and have been pleased with the performance. As with any mount, loading near the maximum has a detrimental effect on stability and accuracy and they should all be derated about 50% for imaging purposes.

All offer computerized GoTo operation with large object databases and tracking capabilities. All include many objects in these databases that will never be visible in amateur telescopes, even from very dark locations. All are capable of placing objects within a typical eyepiece field of view at reasonable magnifications.

HOW ARE THEY DIFFERENT?

I'll proceed by listing a number of the factors in which the mounts differ. In each area, I'll describe the differences and rank them as I see them. The mounts will be described in the order of their introduction (LXD55, CG5-GT, LXD75).

Tripod - (1)CG5-GT, (2)LXD75, (3)LXD55

The most frequently heard complaint about the LXD55 is the lightweight, extruded aluminum tripod. It's barely adequate for the lighter loads and not suitable at all for heavier optical tubes. I used mine on heavier tripods and they worked fine - but it's an added expense.

The CG5-GT really jumped on this one. The supplied tripod has 2" steel legs; they are the same as on the much heavier EQ-6 (Atlas) mount. It's a heavy tripod to carry around but works very well. The leg locks are large levers which are comfortable even with cold fingers.

The LXD75 includes a steel-legged tripod but the legs are much slimmer than those on the CG-5. It's a huge improvement over the LXD55's tripod and easier to carry around than that of the CG5-GT, but I have to give the CG5-GT the nod on this one.

Polar alignment scope - (1)LXD75, (2)LXD55, (3)CG5-GT

The LXD55 included a very usable polar alignment scope, though the mounting was tricky to align. It had an illuminator that killed many batteries due to it's tendency to turn itself on when bumped.

The CG5-GT doesn't include a polar alignment scope as standard equipment. Like both Meades, it does provide a polar alignment routine that makes it less necessary than it would otherwise be - but it would be nice if it were there.

The LXD75 uses the same polar scope as the LXD55 but includes a much nicer illuminator, which features both a dimmer and a real switch. It's also the only one of the three with a provision to keep the polar scope cover from falling off and getting lost.

Controller – tie

I'm going to discuss these, but I'll cop out rather than rank them. They both work equally well, and a preference for one over the other would be very subjective. I prefer the Autostar but I know plenty of folks with experience with both types who prefer the Celestron.

The LXD55 and LXD75 share the same controller. It has a very powerful menu but no "hot keys" - everything requires going through the menus. The Meade controller can be updated by the user and thus can have bug fixes or new features added very easily. All

the brains are in the handbox. Current features include PEC but not an autoguide port. The Autostar can be autoguided via its serial port with Meade's LPI and Autostar Suite.

The Celestron controller seems less powerful but uses "hot keys" for convenience. It uses distributed processing; two controllers are inside the mount and those can be updated by the user with an optional interface. The user interface firmware is within the handbox and that cannot be updated by the user. Current features include an autoguide port but no PEC.

Fit & Finish (1)CG5-GT, (2)LXD75, (3)LXD55

The LXD55 was introduced as a low-end mount with no real competition, and it shows. They work well enough, but rough castings are common. The motors look like the afterthought they are.

The CG5-GT has a more integrated look. Castings and paint are very nice, and the motors look as though they belong.

Castings and paint on the LXD75 are better than the LXD55, but it uses the same motors and they look even more out of place since they are still black while the mount is cream.

Axis mechanics (1)LXD75, (2)CG5-GT,(3)LXD55

The LXD55 relied on bushings and non-metallic spacers to support both axes. This, combined with the usual thick grease, caused the motions to be very stiff. It was

common for users to tear new mounts down just to clean the grease out and lubricate these mounts with better grease.

The CG5-GT has ball bearings in the RA axis, which is the more critical axis for tracking and imaging. Without new grease they are still pretty stiff in both axes, though.

The LXD75 has ball bearings supporting both axes. It also seems to have better lubrication, as after a brief break-in period mine had very smooth and easy motions in both axes.

Handbox holder (1)CG5-GT, (2)tie - LXD75 and LXD55

LXD55 - none.

CG5-GT - it's plastic, but it's there. I like it better than the one supplied with the much more expensive CGE.

LXD75 - none.

Bundled optical tubes (1)CG5-GT, (2)LXD75, (3)LXD55

The LXD55 was bundled with 5" and 6" achromatic refractors, 6", 8", and 10" Schmidt-Newtonians, and an 8" Schmidt-Cassegrain optical tube. I really liked the catadioptrics. It wasn't offered as a bare mount.

The CG5-GT is offered with 8" and 10" Newtonians, 5", 8", 9.25", and 11" Schmidt-Cassegrains, and a 6" refractor. It's also offered as a bare mount. Despite concerns about the stability with the C11 it's tough to argue with the quality of that optical tube. Between the C9.25, the C11, and the bare option Celestron wins this one handily.

The LXD75 is offered with slightly upgraded versions of the same optical tubes with which the LXD55 was offered, plus a 6" Newtonian. I still like the catadioptrics better. I currently own the 6" refractor and the 8" SNT.

Optical coatings - (1)CG5-GT, (2)tie - LXD55 & LXD75

This category applies only to the catadioptrics sometimes bundled with the mounts. The Newtonians and refractors all use the same MgFL coatings.

The LXD55 cats all offered either "standard" coatings or optional excellent UHTC multicoatings. The standard coatings were plain MgFL and not at all competitive with

those on any other cats on the market. This makes the UHTC option not very optional; it's pretty much a necessity.

The CG5-GT cats are offered with either the very good Starbright coatings or the excellent optional Starbright XLT coatings. The Starbright XLT coatings appear to be very slightly superior to UHTC but not by enough to win the coatings shootout. Celestron DOES win, however, by offering two realistic options. The standard Starbright coatings are quite good, while Meade's MgFL offering is just silly in this market. Either Celestron option would be fine; those wanting the best can choose XLT while those wanting to save a few bucks can still get the original Starbright.

The LXD75 cats are offered with the same coatings options as those of the LXD55. Again, there's really only one desirable coating offered; the UHTC isn't truly optional.

So which one works better? Tie

I was going to keep careful records of GoTo accuracy and tracking performance but all three did everything I asked them to. I suspect that than any small performance differences I observed would be within the range expected from different mounts of the same type. Any of these mounts will do the job for you if it's in good shape.

OK, then - which one is more likely to be (and remain) in good operating condition? (1)CG-5GT, (2)LXD75, (3)LXD55

The LXD55's rough castings and lack of bearings make it more likely to require periodic maintenance and adjustments, even after known setscrew weaknesses are corrected.

The CG5-GT has an edge here because it comes with a 2 year warranty compared with one year for the Meades. The superior fit and finish imply better internal quality also. It's the most expensive mount of the three and the extra cost seems to buy a little more mount.

The LXD75 has better castings than the LXD55 and better bearings than either of the others - but it uses the same old motors and drive train as the LXD55 (though with better setscrews on the transfer gears). The tripod isn't quite up to the CG5-GT's and leg damage seems more likely.

So - which one's the better value? It depends…

For a while Meade was selling refurbished LXD55's in their outlet store for about $250

shipped - with a one year warranty. That was a no-brainer. I had a couple of those and they were nice, but when they ran out some folks were wishing they had grabbed them so I let mine go to help them out. If another one showed up in the Outlet Store I'd grab it. On the used market they go for around $400-$500. At that price I'd rather pay a little more to get an LXD75 from someone who bought it for the optical tube.

Because it is the only unit offered as a bare mount, the CG5-GT could be considered the most economical - there's no need to spend extra money for a telescope if you don't need one. On the other hand, the bundles are better values if you need or will sell the telescope. In particular, the current price for the C11 bundle is about the same as the price of a bare C11 so the mount is nearly free!

For the price difference, the LXD75 bundles are attractive - especially while the LPI is being included. The only real overlap between the LXD75 and the CG5-GT bundles is the 6" F/8 achromat; I'd probably pick the LXD75 just because of the price difference if I were buying one of those today. For a lighter achromat with less chromatic aberration the LXD75-AR5 is a good pick. For a poor man's astrograph, I'd look at the 6" or 8" SNT on an LXD75 mount. The SNT's are optimized for DSO imaging and the combination of LPI autoguiding and PEC should be a benefit. For visual use with an SCT, though, the C9.25 and C11 appear to be the best value.

So which one did you keep?

Folks who know me know that I don't keep anything very long; those mounts are all merely fond memories now. I liked them all - if I were shopping for a middleweight GEM today, I'd buy the first one among them that came along at the right price.

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The LXD55 and LXD75 pictured above were purchased at retail from Oceanside Photo and Telescope. The CG5-GT was purchased from Digitec Optical. The author has no commercial relationship with Meade Instruments, Celestron International, OPT, Digitec, or any other telescope manufacturer or retailer. All photos used are the property of the author and Cloudy Nights is granted permission to use them in conjunction with this article.