



S O F T W A R E   B I S Q U E

## Paramount Taurus™ 500/600/700 Direct-Drive Specifications






### Enjoy efficient, uninterrupted horizon-to-horizon imaging.

- The Paramount Taurus™ equatorial fork mount provides exceptional stability and does not require meridian flips.
- If you enjoy visual observing, you will appreciate the far easier access to your eyepieces over what other mount designs provide, making it ideal for public outreach.
- The included TPoint™ technology provides extreme pointing accuracy while its ProTrack™ assisted tracking produces pinpoint stars over long exposures.
- Designed and manufactured at our state-of-the-art factory in Golden, Colorado where all components are precision machined to ensure optimal performance.

Model	Price	Maximum Instrument Capacity	Typical OTA Aperture
Paramount Taurus™ 500	\$49,595	400 pounds (180 kg)	20-inch (0.5 meter)
Paramount Taurus™ 600	\$51,595	400 pounds (180 kg)	24-inch (0.6 meter)
Paramount Taurus™ 700	\$55,595	600 pounds (270 kg)	28-inch (0.7 meter)

*Telescope sold separately. Optional accessories are described below.*

## Critical Features and Performance Specifications

Category	Feature/Specification	Details
<p><b>Software</b></p> 	<p>TheSky™ Universal bundle includes TheSky Professional, TPoint, Cameras+, Domes, Multi-OS+ and Weather modules. TheSky runs on macOS, Windows, and Linux (ARM64, and x86_64 architectures).</p> <div style="text-align: center;">  </div>	<p>The Paramount Taurus™ is also equipped with TPoint™ and ProTrack™ which produced unmatched pointing and tracking accuracies.</p> <p>The Satellites module for mission-critical satellite tracking is also included.</p> 
<p><b>All-Sky Pointing Accuracy</b></p>	<p>20 arcseconds or less.</p>	<p>In <i>theory</i>, the Paramount points the telescope to <i>two-hundredths of one arcsecond</i>, which is the fundamental resolution of the on-axis absolute encoders.</p> <p>In <i>practice</i>, you should expect to achieve repeatable, quantifiable pointing accuracies at or below 20 arcseconds RMS with TPoint telescope modeling.</p> <p>With TPoint and a well-mounted payload and a fixed mirror telescope, typical pointing accuracies are 10 arcseconds RMS or less.</p>
<p><b>Backlash</b></p>	<p>None.</p>	<p>The direct-drive motors produce no measurable backlash.</p>
<p><b>Nightly Startup</b></p>	<p>On-axis absolute encoders ensure the mount is always ready to use.</p>	<p>The Paramount and TPoint™ and ProTrack™, can be restarted (powered off then on) with virtually identical pointing and tracking accuracy from session to session.</p>
<p><b>Periodic Error</b></p>	<p>Negligible.</p>	<p>With on-axis absolute encoders, periodic error is negligible.</p>

## Technical Specifications

Component	Specification	Details
<b>Design</b>	Equatorial Fork	The equatorial fork design offers through-the-meridian tracking.
<b>Composition</b>		
<b>Body</b>	6061-grade aluminum alloy	All mechanical components are manufactured and assembled in Golden, Colorado, USA.  The only external non-metal components are the access hole covers, Delrin™ washers on the altitude axis retaining knobs, and the knob on the end of the hand paddle's joystick.
<b>Counterweights</b>	Stainless steel	
<b>Control System</b>	Three-axis industrial direct drive motor controller	Configurable 10-20A, 20 KHz control algorithm rate.
<b>Motors</b>	Direct Drive	37 Nm continuous torque in both the hour angle and declination axes.
<b>Included Items</b>		Control system power supply, Ethernet cable, hand paddle, tine counterweight shaft and 10 pounds (4.5 kg) of tine counterweights, bubble level, imperial hex wrench set.
<b>Through-the-Mount Cabling</b>	All the control system cabling is routed internally.	Built-in cable conduits allow additional custom cables to be easily routed through the mount and up the fork arms.

## Physical Specifications

Physical Specification	Details
Equipment Capacity	Models 500 and 600: 400 pounds (180 kg) total instrument capacity. Model 700: 600 pounds (270 kg) total instrument capacity.
Equatorial Wedge Polar Axis	Polar axis can be adjusted from 0° to 58° using a built-in ratcheting altitude mechanism. We can manufacture custom mounting pedestals for higher latitudes.
Tracking Past Meridian	The equatorial fork design permits tracking objects up to six (6) hours beyond the meridian (effectively horizon to horizon).
Construction	<ul style="list-style-type: none"><li>• 10 in. (25.4 cm) diameter right ascension tube.</li><li>• 5 in. (13 cm) diameter right ascension shaft.</li></ul>
Bearings	<ul style="list-style-type: none"><li>• 10 in. (25.4 cm) bearing on the hour angle axis.</li><li>• 8 in. (20 cm) bearing on the declination axis.</li></ul>
Fork Tines	Machined 6061-grade aluminum with internal lightening.  The fork can accommodate a single or multiple optical tube assemblies with an outer diameter of 24 in. (61 cm) up to 35 in. (89 cm).  Note that 24-in. (61 cm) aperture telescopes from Officina Stellare™ and PlaneWave Instruments™ have an outer dimension with mounting plates of approximately 35 in. (89 cm).
Integrated Mount Base	Measures approximately 20 in. x 16 in. (51 cm x 41 cm) with 23 in. (58 cm) tall wedges.
Altitude Adjustment	3/4-inch threaded adjuster with thrust bearings for smooth operation.
Azimuth Adjustment	Mechanical, rotating push system with plus or minus 2.5° maximum adjustment.
Slew Speeds	30 degrees per second maximum slew rates is a reasonable limit for most telescope loads.
Weight	The total weight is approximately 400 lb. (180 kg).  The mount breaks down into five separate components (not including the optional mounting base, see the <i>Components</i> diagram below for details) and can be assembled by a two-person team in about one hour.

Physical Specification	Details
<b>On-Axis Absolute Encoders</b>	26-bit on-axis absolute encoders provide a resolution of 0.02 arcseconds on each axis.
<b>Transport and Assembly</b>	Design consists of five separate components, each weighing less than 100 pounds (45 kg), making it the most easily deployable mount in its class. A two-person team can fully assemble the Paramount Taurus™ in about one hour. The fork arms are precision machined from solid aluminum to provide exceptional stability and rigidity.
<b>Mounting Telescope</b>	The built-in polar elevation ratcheting system makes attaching the telescope less cumbersome. When the forks are horizontal, adjusting the fork spacing, attaching the telescope, and balancing the payload can be accomplished before raising the polar axis. The mechanical ratcheting system in the wedge allows the entire payload to be incrementally stepped up in six-degree increments. Once the mount's polar axis is approximately aligned, TheSky's <i>Accurate Polar Alignment</i> feature, coupled with the mount's mechanical fine-tuning mechanism, assure the mount is precisely aligned to the refracted pole.



*Individual Paramount Taurus components.*

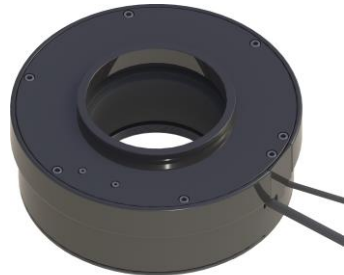
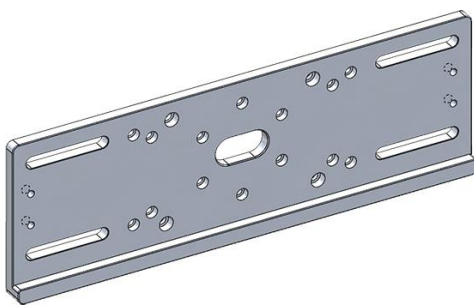
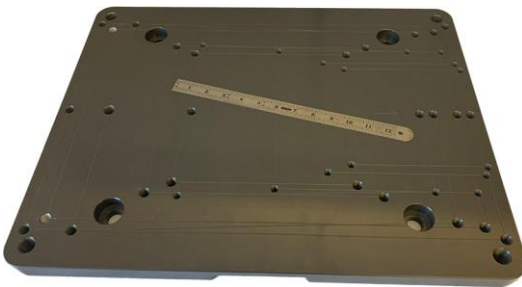
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## Optional Accessories

Accessory	Price (USD)
<p><b>Direct-Drive Instrument Rotator</b></p> <ul style="list-style-type: none"><li>• 3.5-in. (8.9 cm) clear aperture.</li><li>• Up to 30 degrees per second rotation.</li><li>• Massive bearings to securely carry your instrumentation.</li></ul>	<p><b>\$8,625</b></p> 
<p><b>Telescope Mounting Hardware</b></p> <p>Telescope mounting hardware is available to accommodate telescopes from various manufacturers that include Officina Stellare, PlaneWave Instruments, and AG Optical Systems.</p> <p>Custom mounting hardware for other OTAs can be designed and manufactured by Software Bisque.</p>	<p><b>\$950</b></p> 
<p><b>Universal Adapter Plate</b></p> <p>The optional 6061-grade aluminum adapter plate can be mounted to an existing surface and includes mounting holes to attach the Apollo's base plate.</p> <p>Questions? Please email <a href="mailto:systems@bisque.com">systems@bisque.com</a>.</p>	<p><b>\$865</b></p> 



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