



S O F T W A R E B I S Q U E

Paramount Taurus Robotic Mount System Specifications




Starting at \$17,595

The Software Bisque Paramount Taurus™ model 400 carries 17-inch (0.4 m) OTAs weighing up to 150 pounds (70 kg)

The Taurus' transportable 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 Taurus in about one hour. The fork arms are precision machined from solid aluminum to provide exceptional stability and rigidity.

Telescope and pier sold separately; optional accessories are described below.

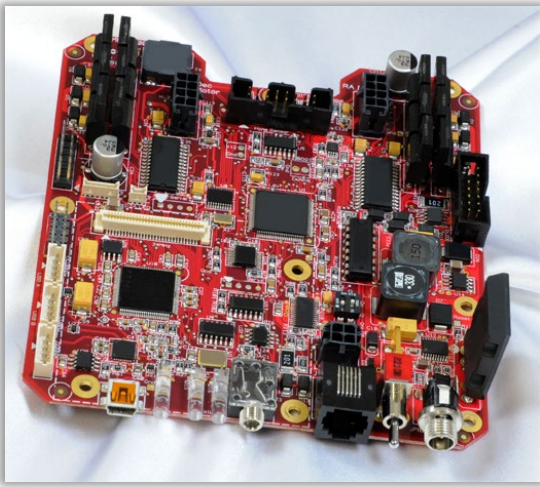
Critical Features and Performance Specifications

Category	Feature/Specification	Details
Control software	The Paramount Software Suite includes the world's most powerful observatory control software, which means you will enjoy the benefits of increased productivity and ease of use, right out of the box.	The Paramount Software Suite includes TheSky Imaging edition, the Dome module, the Multi-OS and Six License Add On. The software suite is compatible with macOS, Windows, Linux (ARM64, ARM32, and x86_64 architectures). 
All-sky pointing accuracy	<ul style="list-style-type: none"> • 10 arcseconds or less with optional on-axis absolute encoders • 20 arcseconds or less without on-axis absolute encoders 	<p>In theory, the Paramount can point your telescope under well under one arcsecond (the limit of the control system's encoders).</p> <p>In <i>practice</i>, you should expect to achieve repeatable and quantifiable pointing accuracies at or below 20 arcseconds RMS by employing the TPoint Telescope Pointing Analysis software.</p> <p>The bottom line is that a Paramount with <i>TheSky Professional Edition</i> and the <i>TPoint Module</i>, when used in conjunction with a well-mounted payload with a fixed mirror optical tube delivers exceptional pointing accuracy.</p>
Backlash	Negligible	The spring-loaded worm-to-gear interface has virtually zero backlash in both the right ascension and declination axis.
Nightly startup	<ul style="list-style-type: none"> • Optional on-axis absolute encoders ensure the mount is always ready to use. • Incremental encoders: home, calibrate and start imaging 	The Paramount with TPoint and ProTrack can be restarted (powered off then on) with virtually identical pointing and tracking accuracy from session to session.
Tracking performance and periodic error	<ul style="list-style-type: none"> • With the optional on-axis absolute encoders, periodic error is automatically removed and is negligible. 	

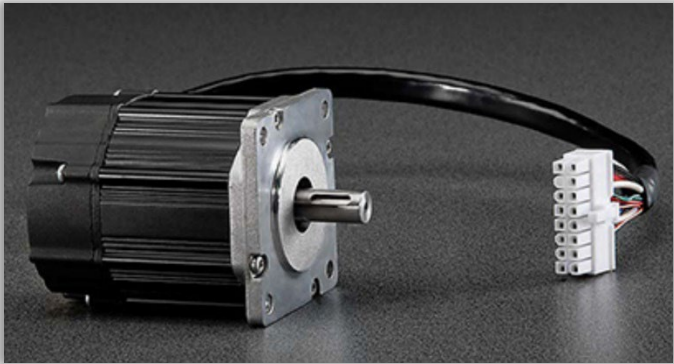
Category	Feature/Specification	Details
	<ul style="list-style-type: none"> Without on-axis absolute encoders the worm wheel has seven (7) arcseconds or less peak-to-peak periodic error before correction. 	<p>The <i>peak-to-peak periodic error</i> for the Paramount right ascension gear is seven (7) arcseconds or less, <i>before periodic error correction</i>.</p> <p>The typical periodic error <i>after</i> periodic error correction is applied is one (1) arcsecond peak-to-peak or less. This means the tracking errors that are the result of the worm rotating are generally less than the errors introduced by atmospheric turbulence (local seeing) and are negligible.</p> <p>Coupled TPoint's <i>tracking</i> correction technology, called ProTrack™, the Paramount can acquire pinpoint stars in relatively long, unguided photos, even at moderate focal lengths.</p>

■ Technical Specifications ■

Component	Specification	Details
Design	Equatorial fork	The equatorial fork design offers through-the-meridian tracking.
Composition		
Body and gears	6061 and 6063 aluminum	All mechanical components are manufactured and assembled in Golden, Colorado, USA.
Worm gear	Brass	
Counterweights and counterweight shafts	Stainless steel	
Fasteners		
		The only non-metal components are the worm block adjustment access hole covers, Delrin™ washers on the altitude axis retaining knobs, and the knob on the end of the hand paddle's joystick.
Control system electronics	MKS 5000 dual axis motion control system	Software Bisque's fourth-generation dual-axis motion control system features: <ul style="list-style-type: none"> USB PC-to-mount interface for high-speed communication with TheSky Imaging edition

Component	Specification	Details
		<ul style="list-style-type: none">• LED and audible feedback for startup, homing, and error conditions• Integrated internal wiring for all mount electronics• Two-port USB hub on the Instrument Panel (near your equipment)• Tracking and "in-progress slews" are immediately stopped in the event the mount's payload encounters a fixed object, such as the side of the pier• Power supply: Max power output: 221W Max, 4.6A, +48V, Input: 100-240VAC ~50/60HZ• Field-upgradable firmware• Hand controller features an integrated mini-joystick controller and configurable five-position rate switch that allows single-handed mount control, an integrated bright red LED flashlight, a "hang anywhere" cable loop and 15-foot coiled hand paddle-to-mount cable• For mounts without on-axis absolute encoders, programmable periodic error correction with periodic error curve fitting included with TheSky Imaging edition• Built-in 'ST-4 standard' autoguider port on the Instrument Panel.• Temperature-compensated internal oscillator precise to better than one part in 10 million to ensure accurate tracking rates over a wide temperature range• Built-in temperature sensor that allows the slew rate to be

Software Bisque's MKS 5000 dual-axis control system electronics.

Component	Specification	Details
		<p>automatically reduced when the temperature drops</p> <ul style="list-style-type: none"> • Soft "reboot" capability. This means that the control system can be restarted through software and does not have to be manually turned off, then on
<p>Motors</p>  <p><i>Brushless servo motors offer long life and reliable operation. Photo © Teknic.</i></p>	<p>Single stack NEMA 23 Brushless DC Servo motors.</p>	<ul style="list-style-type: none"> • All moving parts are on bearing surfaces and provide reliable operation that is suitable for all-night, every-clear-night use. • Fast slew speeds and consistent torque at all slew rates. Though good balance is always recommended, the Paramount can slew or track several foot-pounds out of balance. You'll spend less time fiddling with the telescope and more time acquiring data. • FEA designed with sintered Neodymium-Iron-Boron permanent magnet (no plastic) for optimal performance. • Optimized thermal design meets continuous high-torque demands. • Smooth rotation and quiet operation.
<p>Work area illumination</p>	<p>Hand paddle LED</p>	<p>A built-in red LED on the hand paddle doubles as a flashlight that can be helpful during nightly setup tasks.</p>
<p>Accessories included</p>		<p>48V DC power supply, PC-to-mount USB cable, hand paddle, fork arm counterweight shaft and 10 pounds (4.5 kg) of fork-arm counterweights, TheSky Imaging for macOS, Linux (ARM32, ARM64, and x86_64</p>

Component	Specification	Details
		architectures), bubble level, hex wrench set.
Through-the-mount cabling	All the control system cabling is routed internally	Built-in cable conduits allow additional custom cables to be routed through the mount and up the fork arms.
Wi-Fi control	Wireless mount operation	The built-in <i>WiSky</i> control module allows the Paramount to be controlled wirelessly from an Internet-ready computer and TheSky Imaging edition, or with an iPhone or iPad running TheSky for iOS.

Physical Specifications

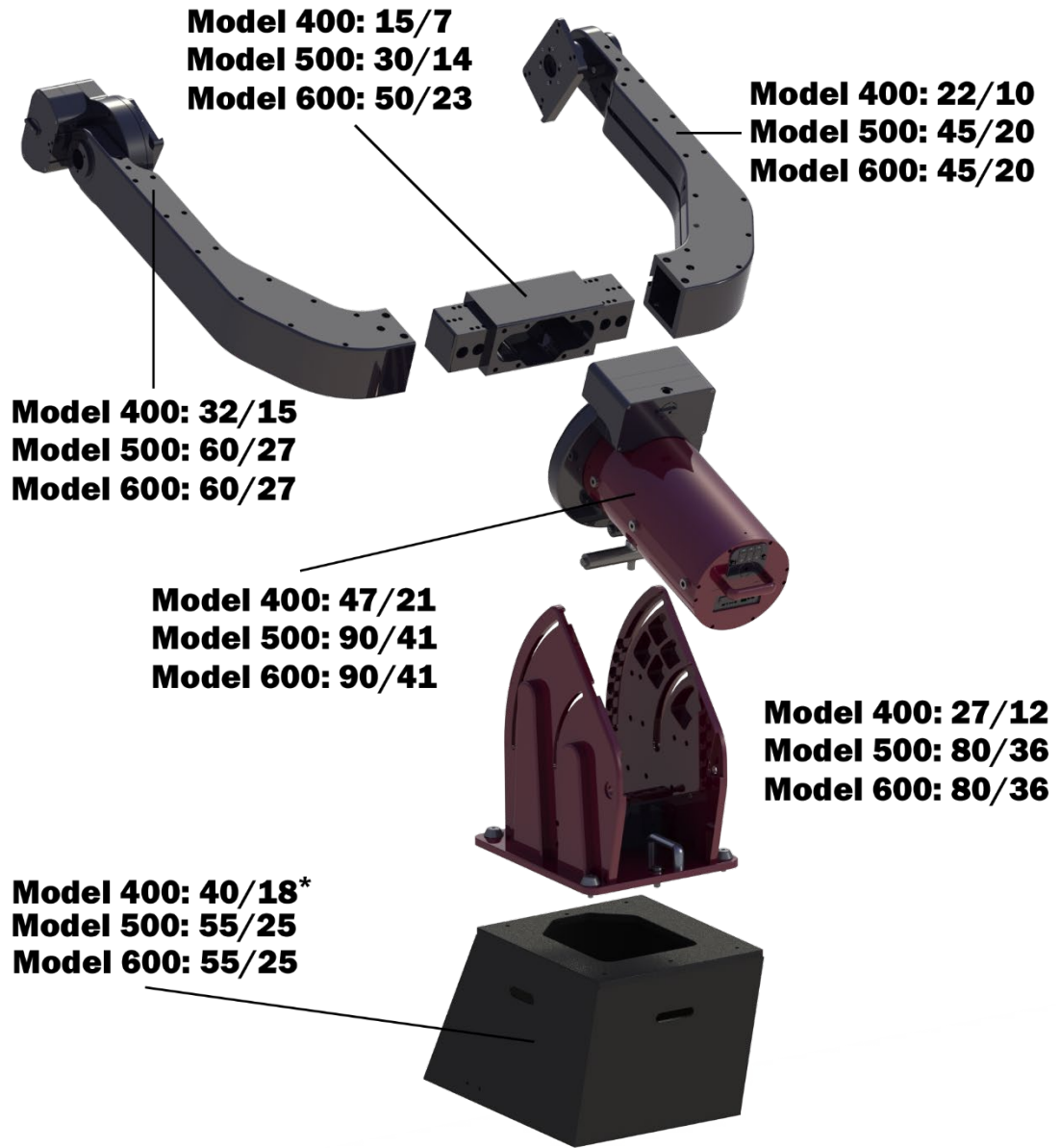
Equipment capacity	150 lb. (70 kg) total instrument capacity.	
Equatorial wedge polar axis	Polar axis can be adjusted from 0° to 58° using a built-in ratcheting altitude mechanism. A custom mounting pedestal can be manufactured for higher latitudes.	
Tracking past meridian	The equatorial fork design permits tracking objects up to six (6) hours beyond the meridian.	
Gears	<ul style="list-style-type: none"> • Research-grade 11.5 in. (29 cm) 776-tooth aluminum right ascension gear. • 10 in. (25 cm) 420-tooth aluminum declination gear. 	
Construction	<ul style="list-style-type: none"> • 10 in. diameter right ascension tube. • 5 in. diameter right ascension shaft. 	
Bearings	<ul style="list-style-type: none"> • 8 in. (20 cm) with ¾ in. cross section in right ascension. • 8 in. (20 cm) declination axis. 	
Fork arms	<p>Machined 6061 aluminum with internal lightening.</p> <p>The fork can accommodate a single or multiple OTAs with an outer diameter of 14 in. (36 cm) up to 22 in. (55 cm).</p>	
Integrated mount base	Measures approximately 14 in. x 12 in. (36 cm x 30 cm) with 27 in. (43 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.
Maximum slew speed	<p>3.5 degrees per second in both axes. The factory default of 80% maximum slew rate works well with most payloads over a wide range of temperatures. Paramount mounts can slew at the maximum slew rate with a balanced payload that is approximately 50% or less of the total rated capacity, when the spring plunger pressure adjusted to factory standards at moderate ambient temperatures.</p> <p>As the mass of the payload increases, and/or the ambient temperature decreases, the mount may not be able to maintain maximum slew speeds. When near or above the stated capacity of the mount, or during cold temperature operation, slower maximum slew speeds and lower accelerations are required.</p>
Weight	<p>The total weight of the mount is approximately 142 lb. (65 kg).</p> <p>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.</p>
On-axis absolute encoders	<p>Renishaw on-axis absolute encoders with 50 nanometer resolution tape provides better than 0.1 arcsecond resolution on each axis.</p> <p>Model 400: optional</p>
OTA mounting	<p>OTA mounting is aided by a built-in ratcheting system in the wedge. The OTA can be attached when the forks are horizontal, so that adjusting the fork spacing, attaching the OTA, 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 Accurate Polar Alignment feature, coupled with the mount's mechanical fine-tuning mechanism, assure the mount is precisely aligned to the refracted pole.</p>



Fork arms can be placed horizontally to make mounting and balancing the optical tube assembly simpler.

Components



pounds/kilograms

* angled pier not shown

Optional Accessories

Accessory

Price (USD)

Taurus Mounting Pier/Pedestal

\$1,400

Model 400: The Paramount Taurus is mounted to the angled Software Bisque permanent pier (sold separately).

Pier URL: <https://www.bisque.com/product/paramount-taurus-400-pier/>

OTA Mounting Rails

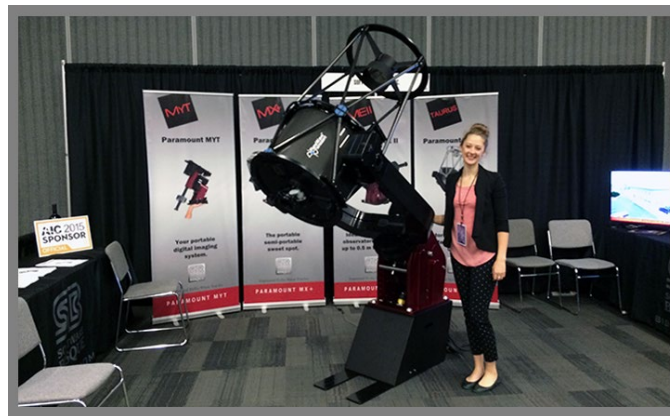
\$950

Optional optical tube assembly mounting hardware is available for Officina Stellare™ and PlaneWave Instruments™ telescopes. Custom mounting hardware for other OTAs can be designed and manufactured by Software Bisque as needed.

TheSky Fusion

\$1,895

TheSky Fusion is an embedded astronomical device that attaches to your telescope that supplies power and remotely controls your imaging system hardware.



Made in the USA



S O F T W A R E B I S Q U E

Superior imaging solutions for discriminating astronomers.

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