

# The Sky-Watcher SynScan

**Astronomy**  
**HOT**  
**Product**

**Ade Ashford** investigates a suite of computerised telescopes that press all the right buttons.

In recent years the Sky-Watcher brand has won several plaudits for its well engineered and easy-to-use range of GOTO mounts. From the heavy-duty EQ6 Pro down to the NEQ3, each of the four German equatorial mounts uses a common computerised hand controller called the SynScan, currently running firmware v3.23. Acknowledging the need for a lightweight alt-azimuth GOTO mount to complement the existing range, Sky-Watcher has just introduced six optical tube assemblies on the new SynScan AZ – two refractors (70mm and 102mm aperture), a pair of Maksutov–Cassegrains (102mm and 127mm) and a brace of Newtonians (114mm and 130mm).

## First impressions

The black SynScan AZ livery with metallic gold fleck accentuation may not be to everyone's taste, but I feel it lends the range a classy air. The more expensive tube assemblies of the range sport quality 6 x 30 optical finders with a quick release bracket and spring-loaded alignment adjustment – a vast improvement on the ubiquitous (and cheap) red-dot finder.

Aside from its silver and black finish, the mount itself will inevitably invite comparisons with that of Celestron's SLT range, but apart from an identical tripod and similar castings for the single-arm fork, they are very different mounts. Unlike the tube-specific

plastic moulding surrounding the dovetail-mounting block on the SLT, the SynScan AZ has an all-alloy fixture that presents no such restriction, and just about any compact OTA less than five kilograms with a Vixen-style dovetail bar may be used with it.

The mount and tubular stainless steel tripod (aluminium, in the case of the Mercury-707) are nicely matched to the OTAs of the SynScan AZ range. The height of the altitude axis ranges from 80cm up to 126cm with the legs fully extended. In the latter configuration, the damping time on grass with the SkyMax-102 was around two seconds.

## Performance tests

For the evaluations I used the SynScan AZ with two optical tube assemblies from the range: the SkyMax-102 (a four-inch f/12.7 Maksutov-Cassegrain) and the Explorer-130P (a 5.1-inch f/5 Newtonian). The former delivers high contrast, pin-sharp views that

one has become accustomed

to with Sky-Watcher Maksutovs. As for the Explorer-130, aside from the

new colour scheme

and an improved focuser that will

accept both

1.25- and

2-inch

eyepieces, this

telescope

contains

quality optics

consistent with the

same specification OTAs

that I've covered in former

*Astronomy Now* reviews and on

ScopeTest.com.

I was pleasantly surprised

at the overall performance of

this budget mount. There

are two alignment modes:

'Brightest-Star' or 'Two-

Star' align. The first is

suitable for novices and

searches for a bright

star in a user-chosen

compass direction,

while the second

method is for

more seasoned

observers.

◀ The SkyMax 102 Maksutov-Cassegrain on the SynScan 102. Image: Ade Ashford.

◀ A Sky-Watcher Explorer 130PM on a SynScan AZ mount. Image: Ade Ashford.

# AZ GOTO range

Irrespective of the alignment mode chosen, you do need to know the name of at least one bright star in the currently visible sky.

Once the date, time and location are entered (the latter is saved between sessions) you start the alignment process by pointing the telescope to the named reference star. However, once this first alignment point is established, the telescope will automatically slew close to the second, which will be the brightest star in the vicinity. You then refine the second object position with the fully featured hand controller and the alignment is complete. Within five minutes, you can be exploring objects in the capacious SynScan database.

Even without being particularly careful about initial set-up (there is a bubble level in the top of the tripod), the mount repeatedly performed well in all GOTO tests. The Moon – a fast-moving object subject to a large parallax and always a good test – was consistently positioned in the central part of the field of view, as were the planets. The SynScan AZ swiftly and reliably found every

requested random object over the entire visible hemisphere with a pointing error not exceeding 0.3 degrees. It's also possible to 'park' your telescope after a night session. This process preserves your last alignment, making it easy to, for example, locate planets in the daytime.

## Conclusions

The new SynScan AZ offers the key features, upgradeable feature set and ease of use of Sky-Watcher's more expensive GOTO mounts in a sturdy, single-arm fork package weighing less than 4.5 kilograms (including tripod) and with an impressive targeting accuracy. Quieter in operation than the competing Celestron SLT mount and equally capable of external computer control, the SynScan AZ is ideally suited to sub-five kilogram grab-and-go instruments with a standard Vixen dovetail bar fitting. It is highly recommended.

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## Sky-Watcher AZ4 mount

Sky-Watcher is also poised to release a keenly priced heavy-duty alt-azimuth mount, filling a gap in the market for observers who have a large optical tube like a six-inch Maksutov or larger Newtonian and regard equatorials as something of an anathema. If you fall into this category, then Sky-Watcher's new AZ4 may be just what you're looking for.

It is available in two flavours: for weight-saving you can have it supplied on an aluminium tripod, or for optimal stability you may choose the version with 1.75-inch stainless steel legs. In either configuration, the AZ4 does feel reassuringly solid. There are easy to grip friction clutches on both axes and there's a stout, 29cm-long panning handle that may be screwed into one of two ergonomically sited points separated by a 90-degree angle for additional control.

A rugged Vixen-style dovetail-mounting block ensures compatibility with a wide range of optical tubes up to around eight inches in diameter. It's quite feasible to mount a six-inch Newtonian on this rig. For spotting-scope users with a mounting point on the underside, an L-shaped bracket is also included. Another nice feature is the altitude and azimuth scales marked in one-degree divisions — a nice aid to locating celestial objects if you have a Palm or PocketPC planetarium program.

## At a glance: SkyScan AZ

<b>Mount type:</b>	Dual-axis motorised GOTO
<b>SynScan database:</b>	42,900 objects, including complete Messier, Caldwell, NGC, IC and SAO catalogues
<b>Alignment methods:</b>	'Two-Star' or 'Brightest Star Alignment'
<b>Refinements:</b>	Pointing Accuracy Enhancement (PAE), Unknown Object Identification, 25 user-defined objects
<b>Pointing accuracy:</b>	>0.2 degrees (based on actual tests)
<b>Tracking rates:</b>	Sidereal, lunar, solar
<b>Slewing speeds:</b>	1, 2, 16, 32, 64, 128, 400, 500, 600 & 800x sidereal rate
<b>Motor specification:</b>	DC Servo, resolution 1,452,425 steps/rev.
<b>External PC control:</b>	RS-232 interface, cable supplied, Celestron NexStar 5i/8i/GPS protocol
<b>GPS:</b>	Compatible with SynScan GPS (optional extra)
<b>Hand controller:</b>	Ver.03.03 firmware, Internet upgradeable
<b>Power requirements:</b>	12v DC (tip positive), or 8 x AA battery pack
<b>Weight:</b>	4.5kg (mount + tripod)

## At a glance: SynScan AZ4

<b>Mount type:</b>	single-fork alt-azimuth
<b>Aluminium tripod model:</b>	
<b>Height to altitude axis:</b>	91–142cm
<b>Weight:</b>	5.4kg
<b>Price:</b>	£129
<b>Stainless steel tripod model:</b>	
<b>Height to altitude axis:</b>	103–135cm
<b>Weight:</b>	8.1kg



◀ A close up of the forthcoming Sky-Watcher AZ4 mount.