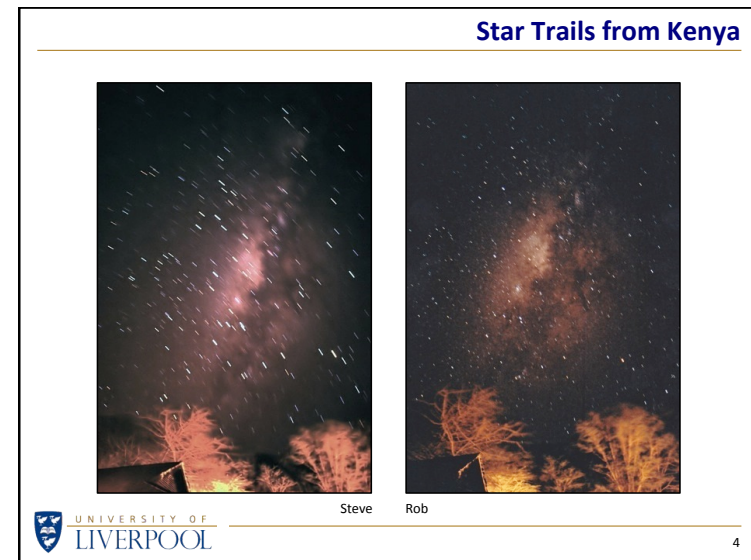
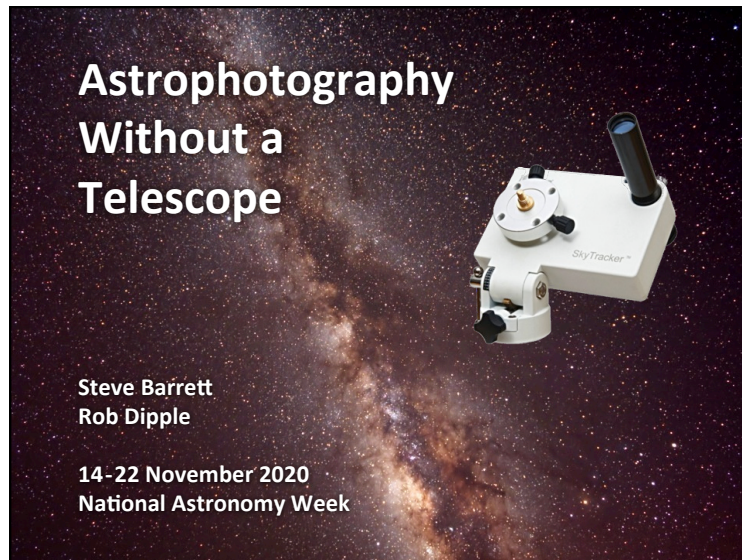
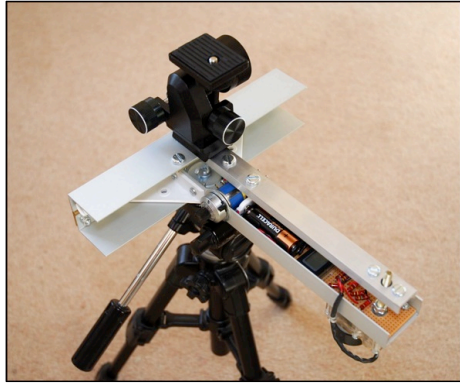


Astrophotography Without a Telescope



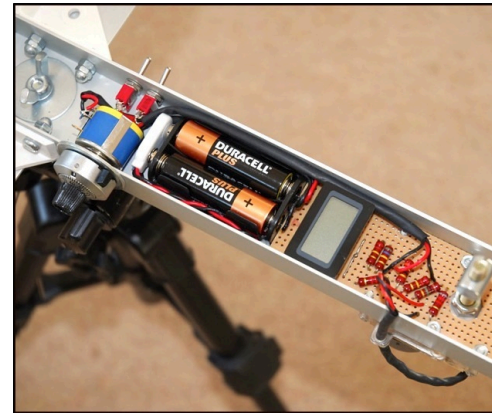
Astrophotography Without a Telescope

Early days of K2

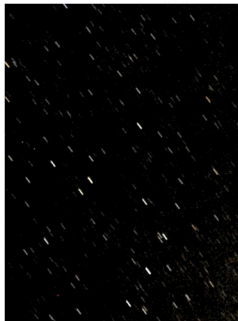


K2 is a star tracker that I designed and built with simplicity and cheapness in mind.

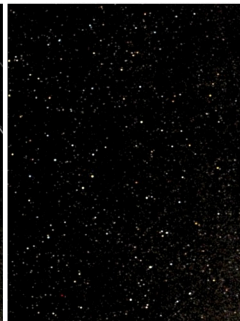
K2 Construction



K2 – Off and On

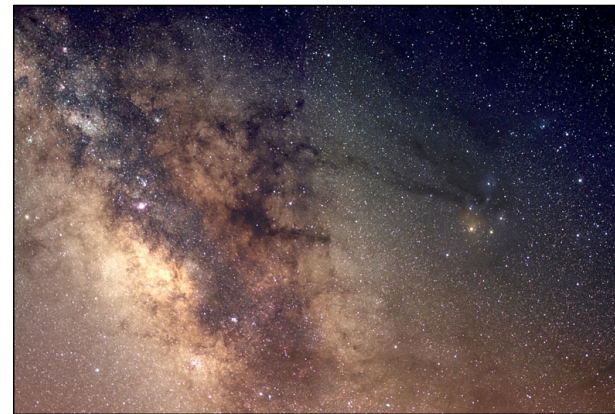


With K2 switched off
the stars trail after just
a few seconds.



With K2 switched on
the stars are imaged
as pinpoints.

Milky Way from Teide Observatory



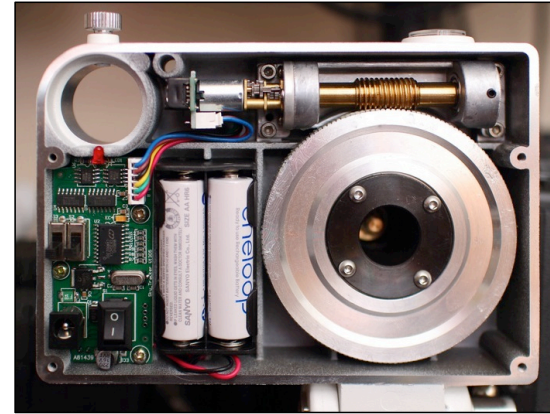
Astrophotography Without a Telescope

iOptron SkyTracker

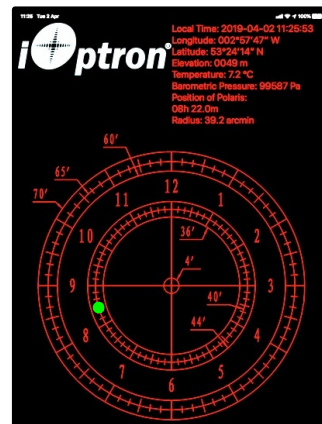
An alternative is a commercial product like the iOptron SkyTracker™.



Inside the SkyTracker



Polar Alignment

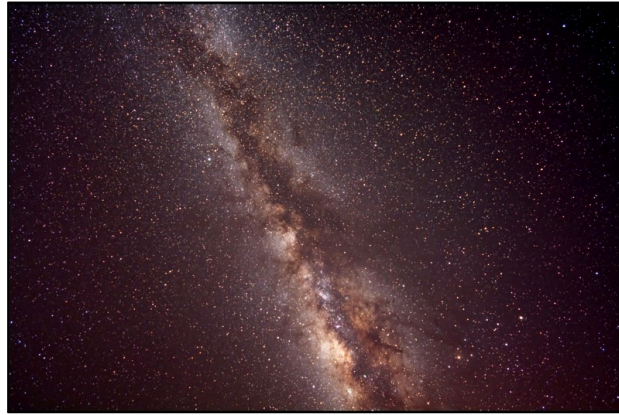


Attaching a Camera



Astrophotography Without a Telescope

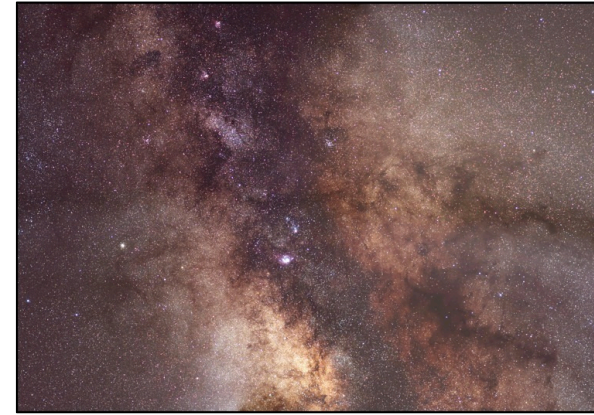
Milky Way with 10mm lens



Taken by Steve / Nikon D7100 + 10mm lens / 6 x 240s

13

Milky Way with 85 mm lens



Taken by Steve / Nikon D7100 + 85mm lens / 10 x 120s

14

Antares and Rho Ophiuchi



Antares and the Rho Ophiuchi Molecular Cloud Complex
Taken from Teide Observatory in Tenerife
60 x 120s exposures taken with a Nikon D7500 and 5.55mm f/2 lens
© Steve Barrett 2018



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With a 135 mm telephoto lens more detail can be captured in the region north of Antares, including the nebulosity around Rho Ophiuchi.

Longer focal length lenses may show some trailing unless the polar alignment of the tracker is set carefully.

Shorter exposures usually gets around that problem.

Milky Way from UK



Taken by Rob / Nikon D7500 + 50mm lens / 20 x 30s

16

Astrophotography Without a Telescope

Milky Way from UK



Taken by Rob / Pentax K-5 + 35mm lens / 20 x 30s

17

Andromeda Galaxy from UK



Taken by Rob / Nikon D7500 + 50mm lens / 30 x 120s

18

Star Party 2017



Taken by Rob / Pentax K-5 + 135mm lens / 38 x 60s

19

BASoc Star Party
28 September 2019



M45
Pleiades Cluster



C33 + C34
Veil Nebula



M31
Andromeda
Galaxy

© Steve Barrett

Nikon D7500 + 300mm f/4 lens + iOptron SkyTracker

Astrophotography Without a Telescope

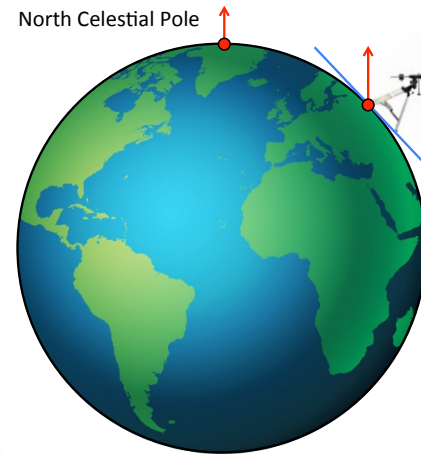
Aligning Using Polaris

With Polaris visible, aligning a star tracker is easy in the UK, but ...



... when in Kenya, on the equator, things are more tricky.

Aligning Using Polaris



In East Africa the NCP and Polaris are very close to the horizon, and hence are hidden behind elephants or distant hills.

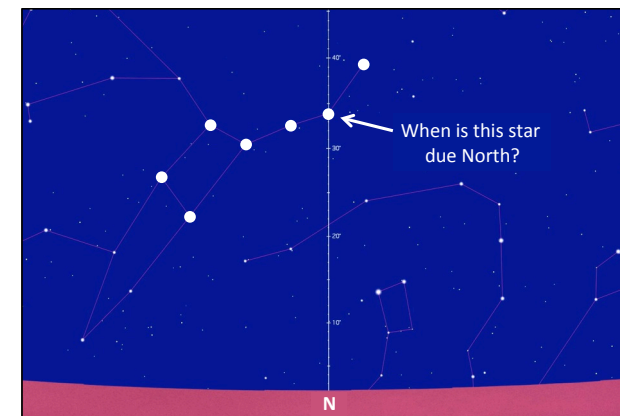
Alternative Ways To Align

To align a tracker with the North Celestial Pole, even if you can't see it, you can use a compass to find North and a spirit level to set the tracker's axis to the correct altitude (= your latitude on the Earth's surface).



But beware...
Magnetic North is not the same as True North, and a compass needle can be affected by nearby metal and motors found in, for instance, a motorised star tracker!

Alternative Ways To Align



Astrophotography Without a Telescope

