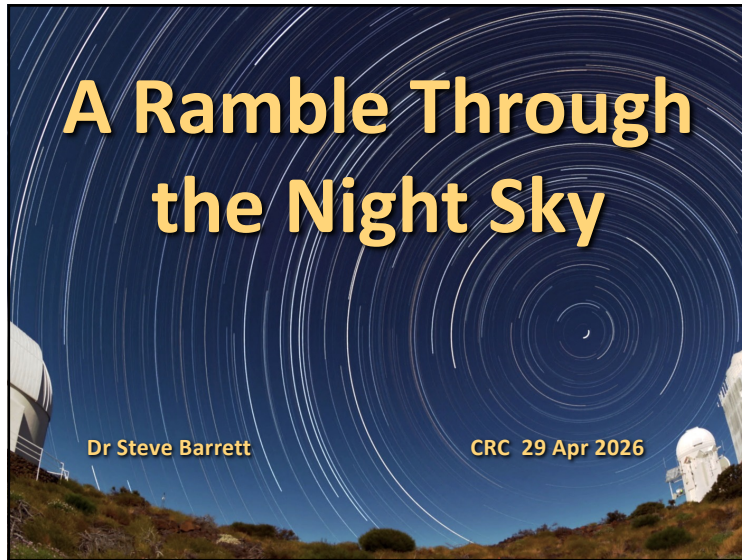


A Ramble Through the Night Sky



Contents

- What's up there? planets and comets
stars and galaxies
- How can I find my way around? maps
apps
- What if I want to see more? binoculars
telescopes
- How can I take photos? star trails
tracking the sky

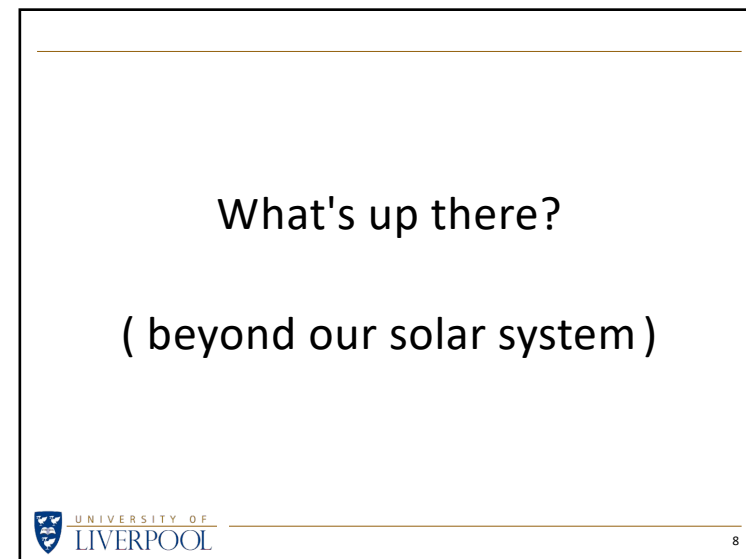
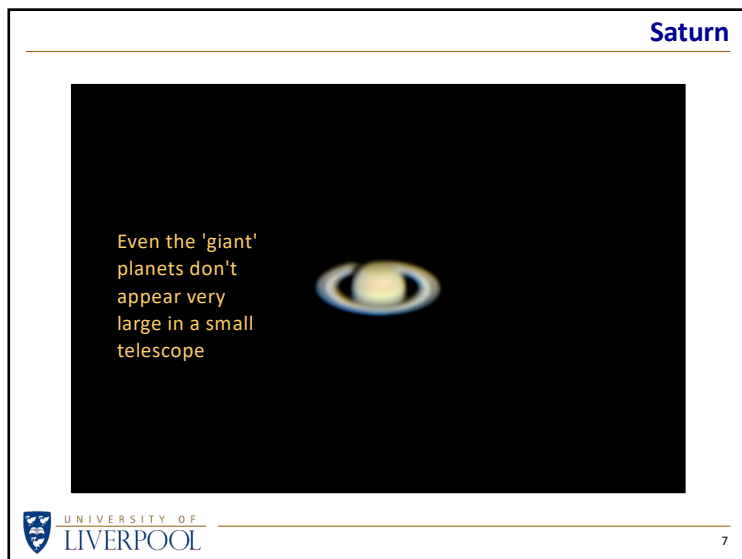
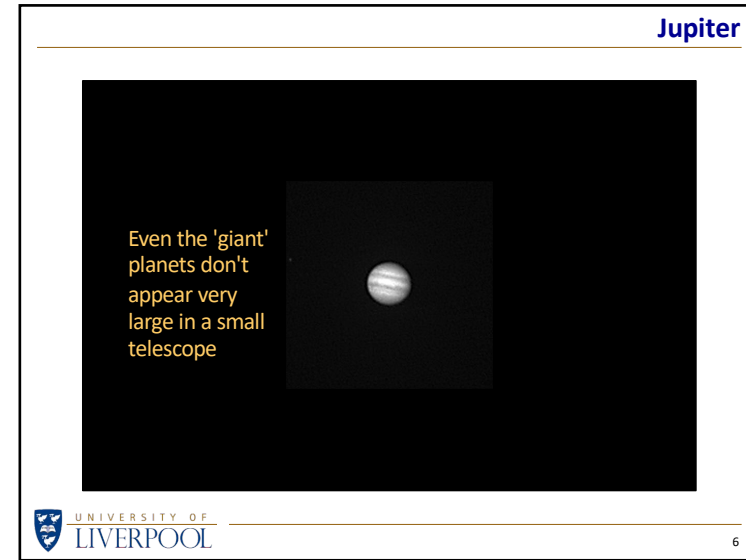
Contents

Note that ...

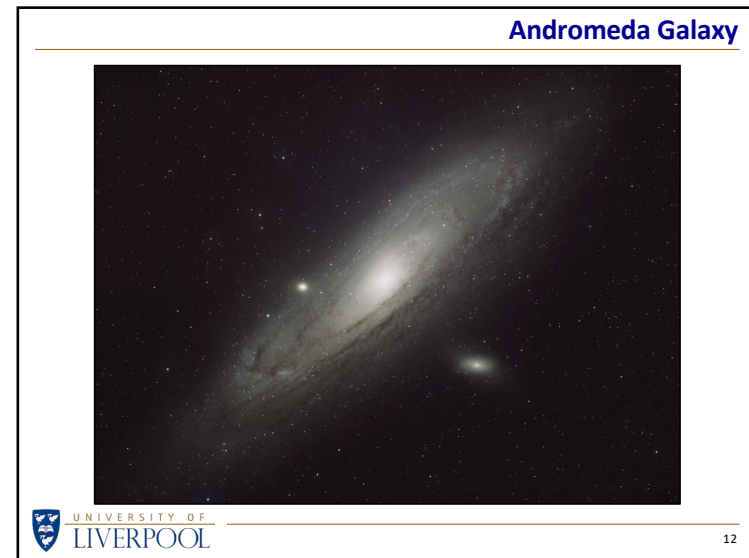
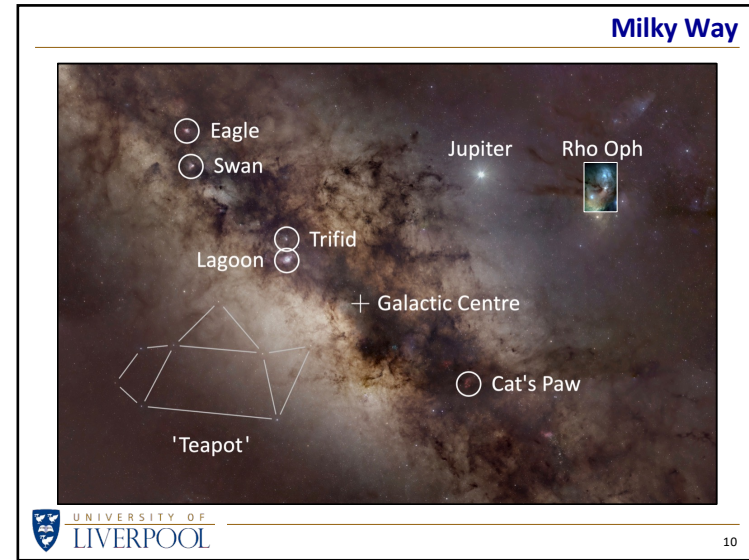
- I'm not attempting to describe everything 'up there'
- This is a random walk through the Universe
- Along the way, I will show photographs that I have taken (with and without a telescope)

What's up there?

A Ramble Through the Night Sky



A Ramble Through the Night Sky



A Ramble Through the Night Sky

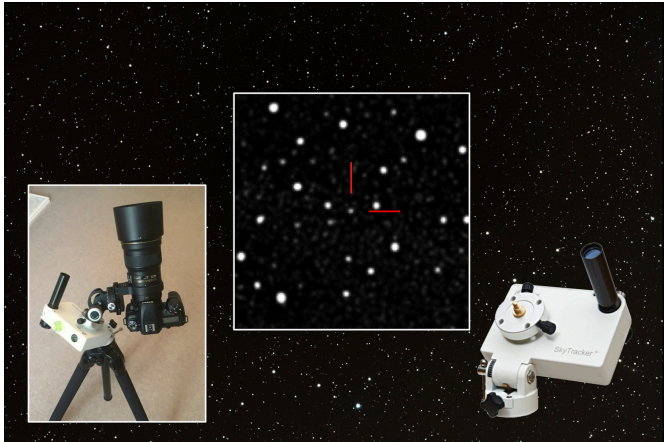
Millions of Light-Years



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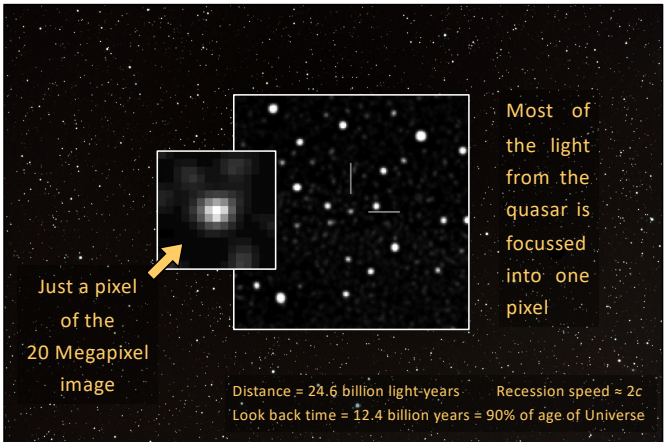
Lockdown Challenge



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Billions of Light-Years



Most of the light from the quasar is focussed into one pixel

Just a pixel of the 20 Megapixel image

Distance = 24.6 billion light-years Recession speed $\approx 2c$
Look back time = 12.4 billion years = 90% of age of Universe

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How can I find my way around?

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A Ramble Through the Night Sky


Maps and Apps



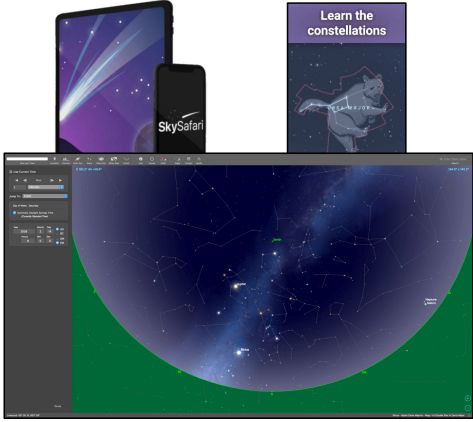
SkySafari



Starry Night



Stellarium

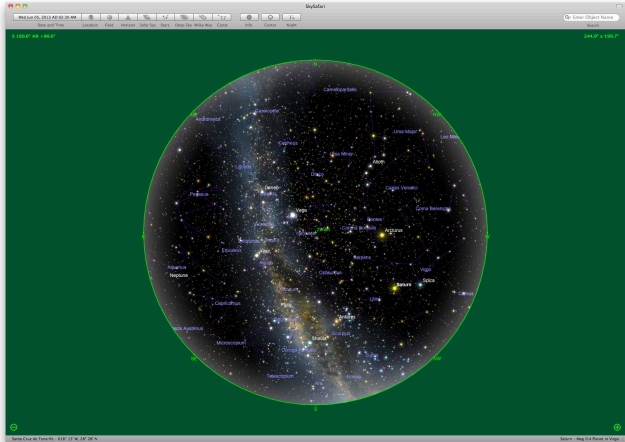


Learn the constellations

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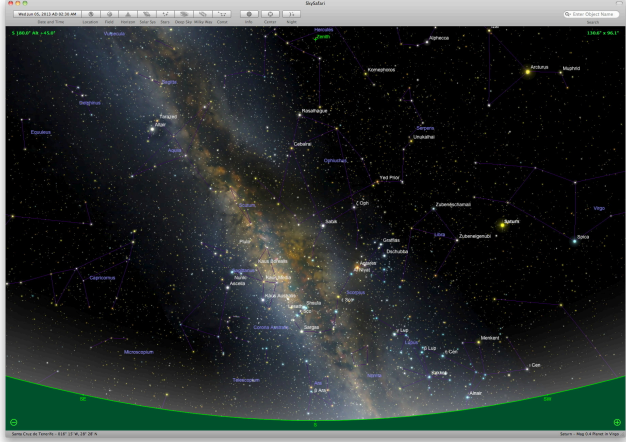
Maps and Apps



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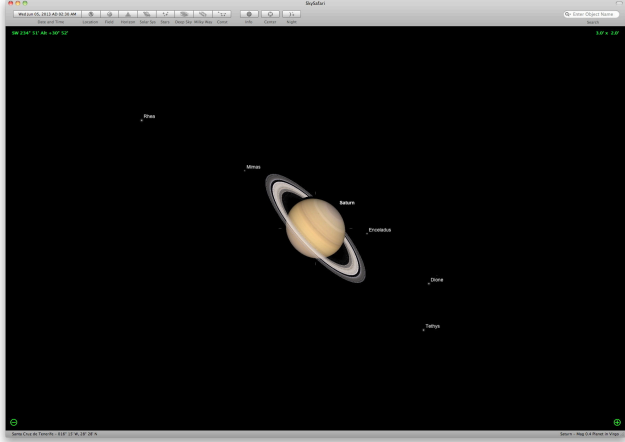
Maps and Apps



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Maps and Apps



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A Ramble Through the Night Sky

What if I want to see more?

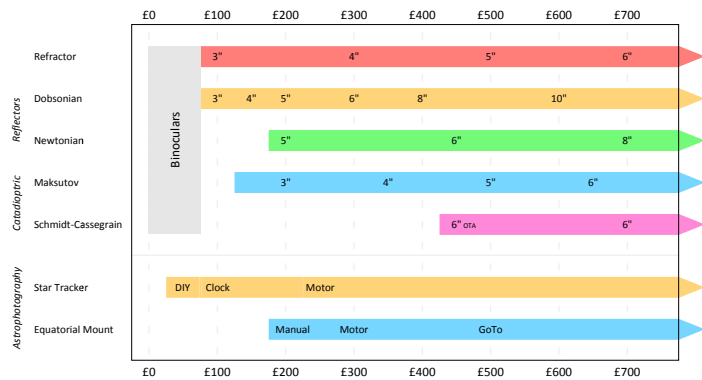
What Do You Need?

If you have
~£250 – £25,000
to spare ...



Telescope Prices

Prices collated in 2021



Telescopes

First Eye on the Sky

A Rough Guide
to buying your first astronomical telescope

Dr Steve Barrett
DLC 14 May 2025



A Ramble Through the Night Sky

Where To Put the Telescope?

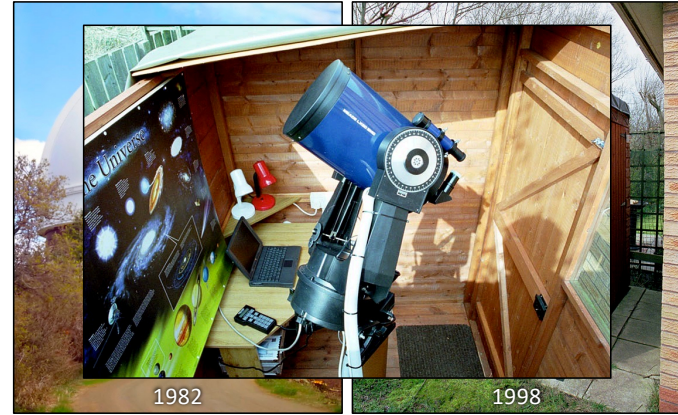


Palomar Mountain, California



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Back Garden Observatory



1982

1998



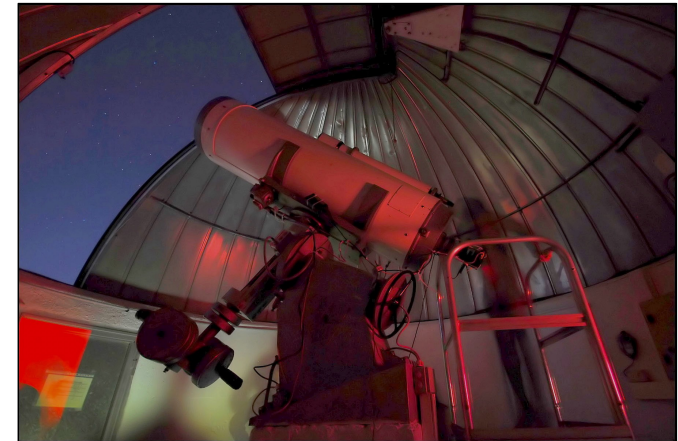
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Teide Observatory



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Mons Telescope at Teide Observatory



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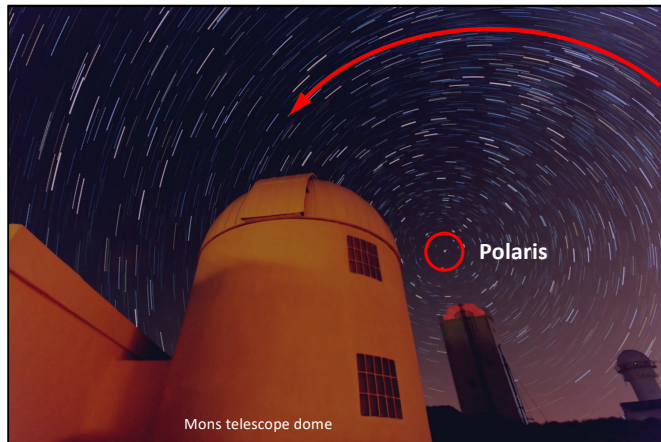
A Ramble Through the Night Sky

How can I take photos?

Astrophotography



Star Trails



Mons telescope dome


Star Trails



A Ramble Through the Night Sky

Astrophotography

Aside: Remember that astrophotography doesn't *need* a telescope, as you can use a camera on a star tracker:




Astrophotography using a telescope can be very rewarding, but to get the most out of it will take quite a bit of time, effort and cash.

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Star Trackers



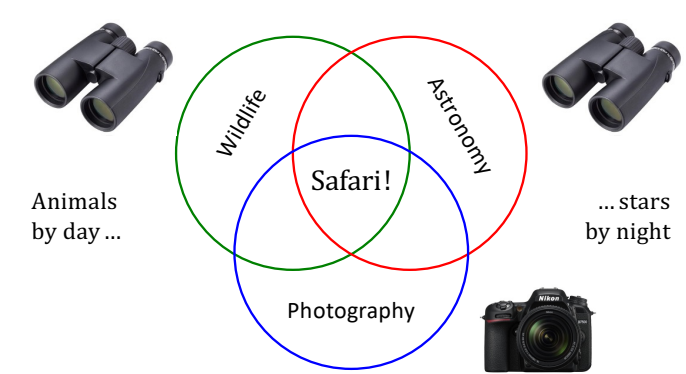
DIY star tracker 'K2' that I designed and built
Used 2007 – 2013

iOptron SkyTracker™
Used since 2015

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Wild Astronomy



Animals by day ...

... stars by night

(Sleep when you get home)

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A Ramble Through the Night Sky

www.liverpool.ac.uk/~sdb/Talks

Dr Steve Barrett

CRC 29 Apr 2026