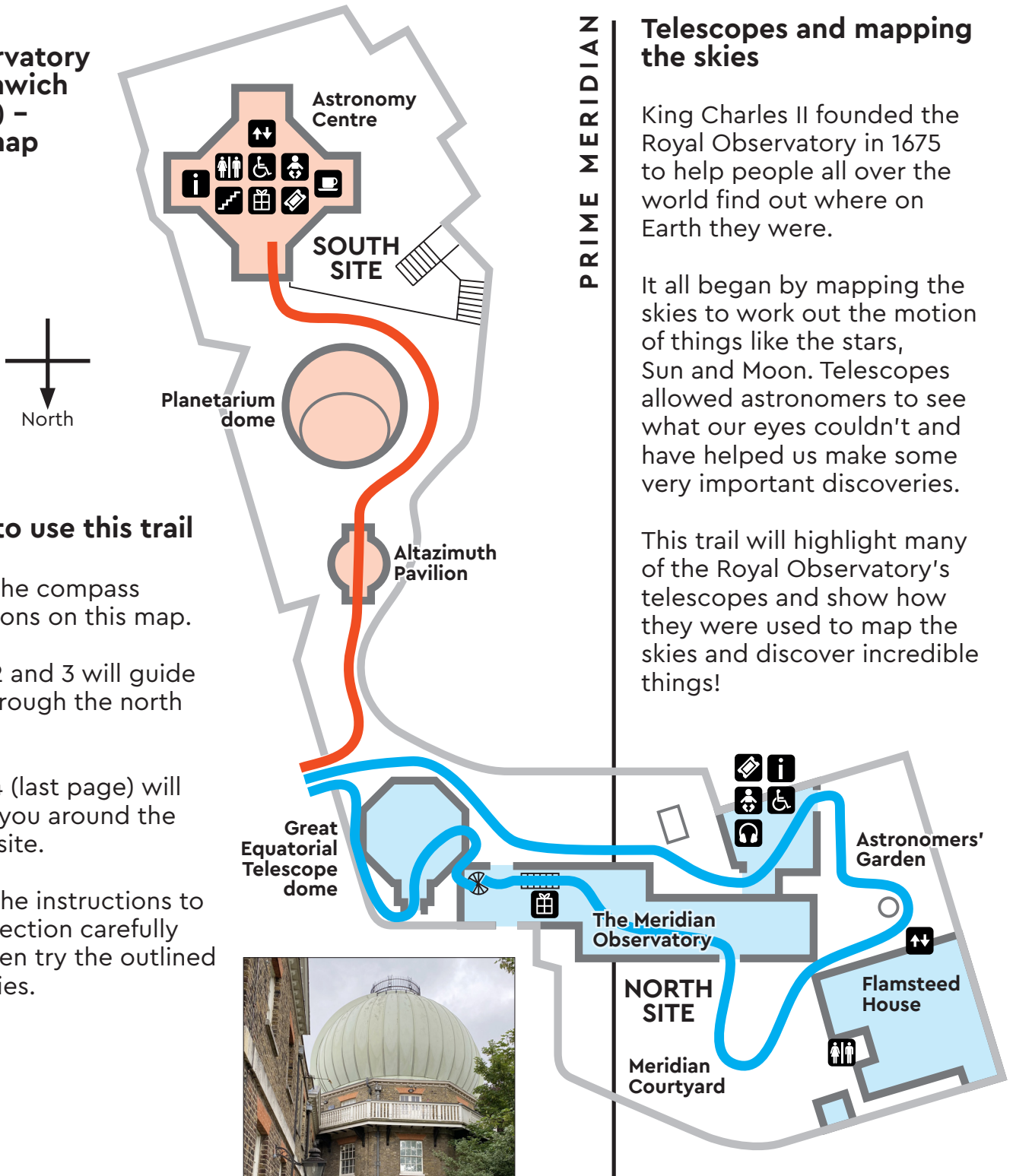


KS3 School Trail

Royal Observatory Greenwich (ROG) – site map



How to use this trail

Fill in the compass directions on this map.

Page 2 and 3 will guide you through the north site.

Page 4 (last page) will guide you around the south site.

Read the instructions to each section carefully and then try the outlined activities.

Telescopes and mapping the skies

King Charles II founded the Royal Observatory in 1675 to help people all over the world find out where on Earth they were.

It all began by mapping the skies to work out the motion of things like the stars, Sun and Moon. Telescopes allowed astronomers to see what our eyes couldn't and have helped us make some very important discoveries.

This trail will highlight many of the Royal Observatory's telescopes and show how they were used to map the skies and discover incredible things!

1



KS3 School Trail – NORTH SITE

2



1

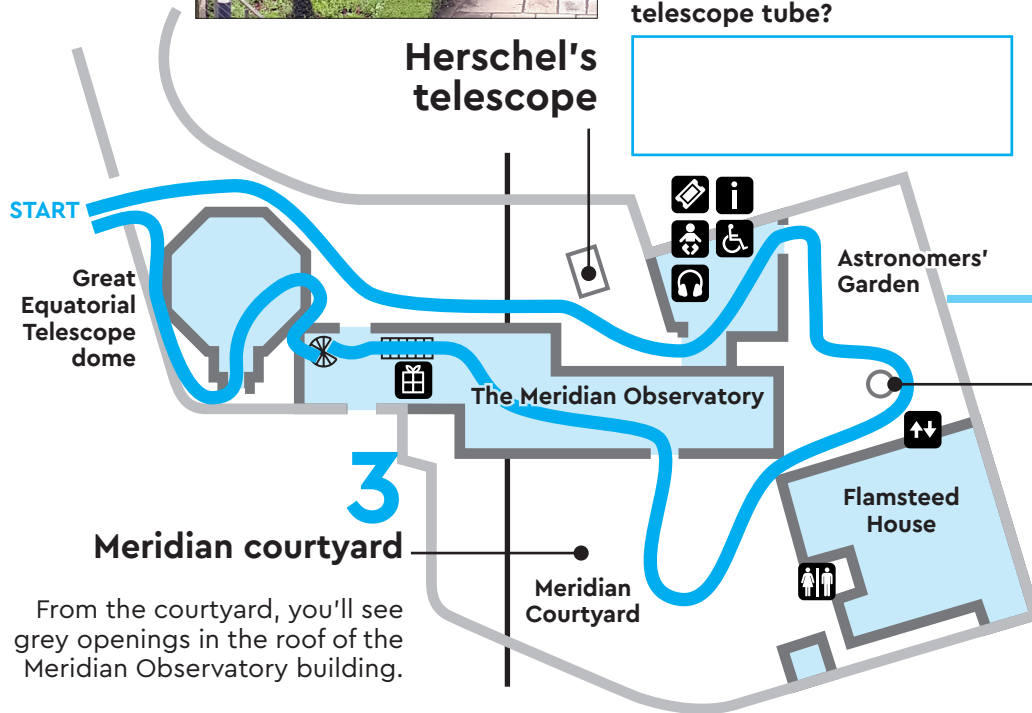
As you enter the ROG North site, see if you can spot the remaining section of Herschel's large telescope!

It is 10 feet long, how much longer was the entire telescope tube?

Fun Fact

Herschel initially called it 'Georgium Sidus' in honour of King George III of England, but the name we use today was chosen to fit with planetary naming conventions (must be from Greek / Roman mythology).

What did William Herschel become famous for discovering?



Herschel's telescope

START

Great Equatorial Telescope dome

Astronomers' Garden

The Meridian Observatory

Flamsteed House

3

Meridian courtyard

Meridian Courtyard

From the courtyard, you'll see grey openings in the roof of the Meridian Observatory building.

2

Dolphin sundial

Look out for the Dolphin Sundial. Sundials are used to tell the time by using the shadow cast by the sun.



Find the time, by looking at where the gap in the shadow falls on the curved plate (where the shadows of the dolphins' tails almost meet).

Dolphin Sundial time

Watch / phone / clock time

The Sun is currently in the direction of:

(Use the compass/map on page 1 of this trail to help you).

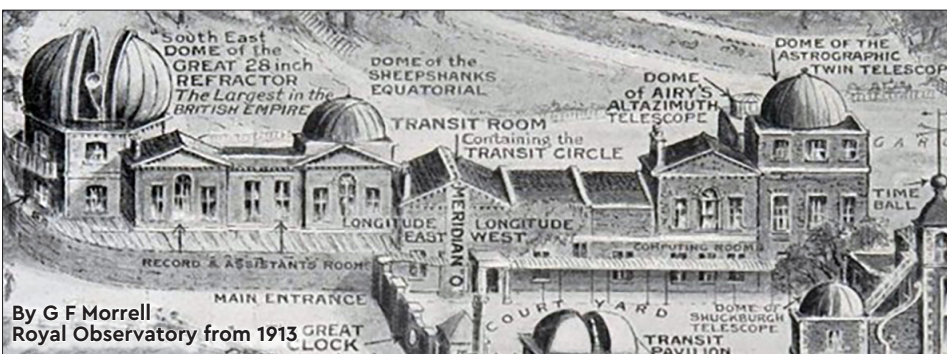
Do the openings in the roofs run north to south or east to west?

Telescopes were later built inside domes. The opening could then be rotated making observations easier!

The Sun seems to move across the sky throughout the day and, at night, the stars appear to move too. But they're not actually moving! Can you explain why?



Look around - how many telescope domes can you spot?



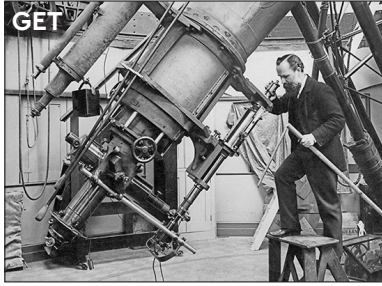
By G F Morrell

Royal Observatory from 1913

Circle on this diagram, all the domes you can see which still exist today.

KS3 School Trail – NORTH SITE

3



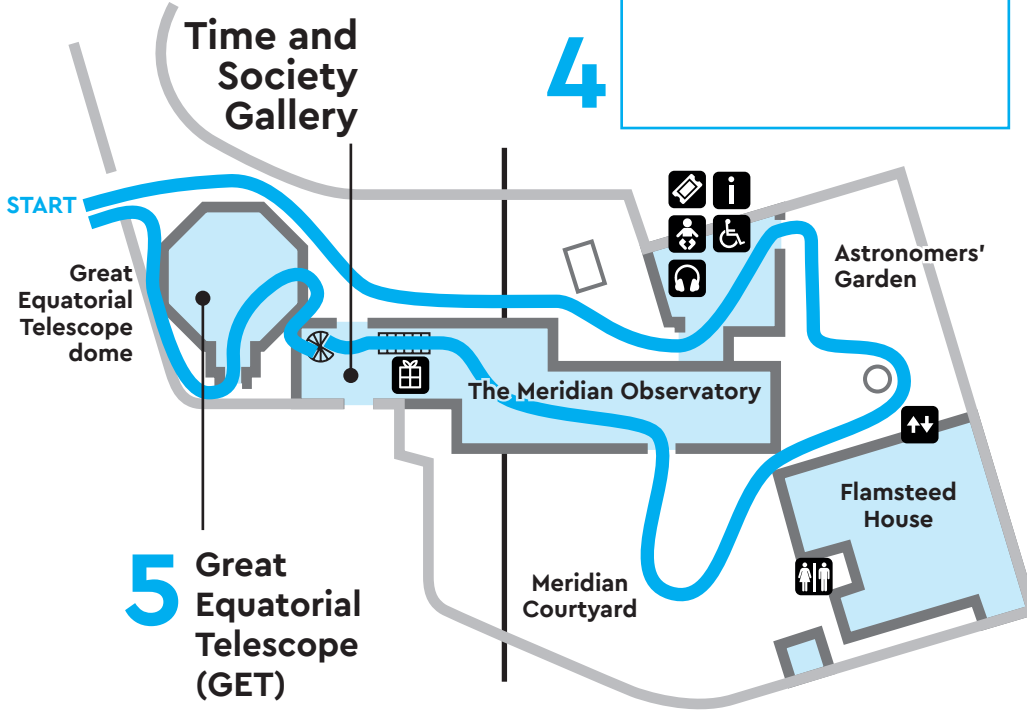
Walk through the Meridian Observatory Building until you reach the gift shop. Go up the stairs to the **Time and Society Gallery** – look for a telescope dome.

This telescope dome is called:

It once housed the **Sheepshanks Equatorial telescope** – it's now in storage, but in its glory days:

It helped to observe...

It helped to measure...



5

Great Equatorial Telescope (GET)

From the Time and Society Gallery – walk up the spiral staircase to the **GET** dome!!

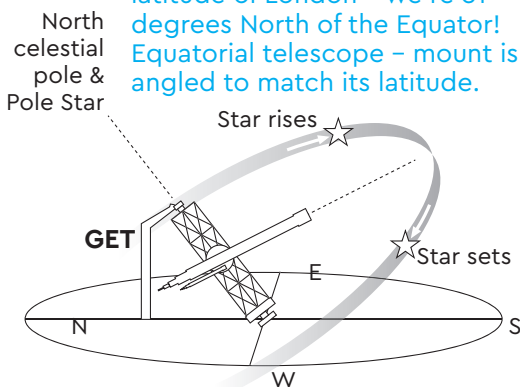
A surprising fact about the GET is...

Sketch the GET and add the following labels: **28-inch lens, equatorial mount, eyepiece, finderscope, main telescope tube.**



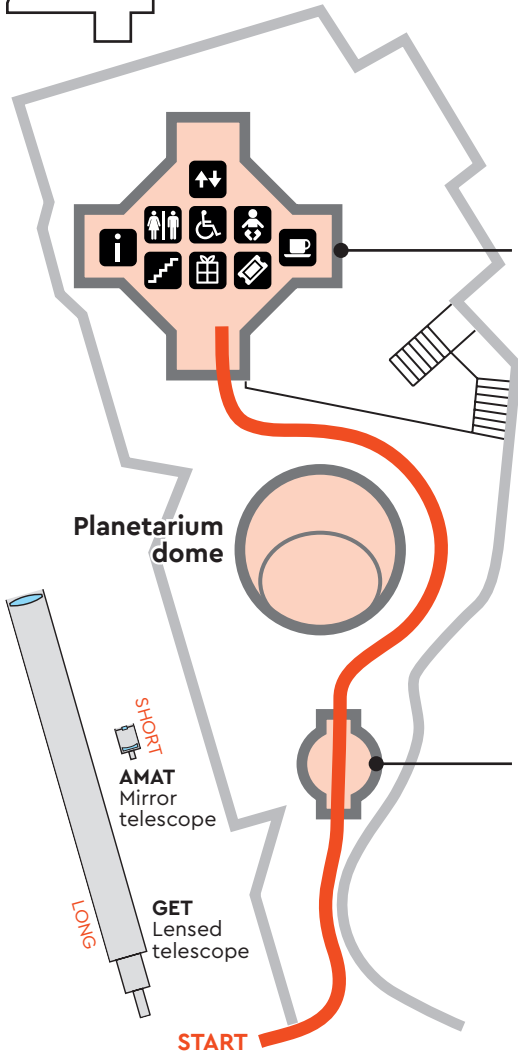
Fun Fact

Notice that the telescope mount is angled – it's angled at 51 degrees – the same as the latitude of London – we're 51 degrees North of the Equator! Equatorial telescope – mount is angled to match its latitude.



4

KS3 School Trail – SOUTH SITE



Astronomy Centre

2

Look around the outside of the **Astronomy Centre** building – can you spot the names of any famous astronomers / scientists? Write down any names you've heard of and anything you already know about them.

1

Altazimuth Pavilion

The Altazimuth Pavilion is now home to a telescope called **AMAT** (Annie Maunder Astrographic telescope) – it's 4 telescopes in 1!

The Altazimuth building has a dome at the top, why do you think it was built like this?

CHALLENGE: The Great Equatorial Telescope is the UK's largest lensed telescope, but professional astronomers often prefer telescopes that use mirrors – why do you think this is the case?

1

2

Clues might be found on this page.

Fun Fact

Annie Maunder was one of the first female scientists to work at the ROG. She got a job at Greenwich in 1891 working as a "lady computer", doing supporting calculations for male scientists. But she became a great solar eclipse photographer and helped make key discoveries about the Sun's 11 year solar cycle.



AMAT

The Great Equatorial Telescope (**GET**) is x14 longer and x2 as wide as the largest telescope on **AMAT**!

AMAT is small but powerful – its largest telescope uses mirrors so it can reflect the light back and forth inside the smaller tube to focus the light. But the **GET** uses lenses and needs a long telescope tube to direct the light to focus it.

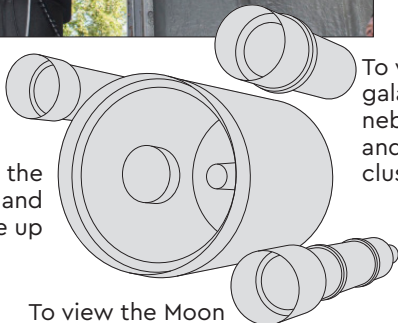


Two of the images below were taken by **AMAT** – tick the correct images. The other was taken by the **GET**.

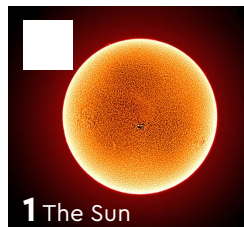
To view the Sun's surface

To view the Moon and planets close up

To view the Moon and planets



To view galaxies, nebulae and star clusters



1 The Sun



2 A nebula



3 The Moon

Check your answers at the bottom of the first page