



**NORTHUMBRIAN
WATER**

Illuminating dark sky science

The award-winning Kielder Water & Forest Park in Northumberland has the darkest starry skies in England.

Originally, volunteer astronomers used the Park twice a year to hold 'star camps' because of its dark skies. Inspired by this they came up with the idea of developing a publicly accessible Observatory.

The Park is home to a unique collection of visual art and architecture so it was only fitting that the design of the observatory should complement the landscape.

A Royal Institute of British Architecture (RIBA) competition was launched and the design of the observatory was created by the winner, Charles Barclay architects from London.

The fabulous building was opened in 2008 by Sir Arnold Wolfendale (14th Astronomer Royal) and around 200 public events are delivered every year by Kielder Observatory Astronomy Society (KOAS) a registered charity and team of passionate volunteers.

Kielder Observatory is the only purpose-built public observatory in a truly dark sky location in the whole of Europe and is at the heart of the current exciting bid to create the third largest Dark Sky Park in the world.



We are currently working together with Northumberland National Park to protect 400-square miles of dark starry sky. If successful, we will join the likes of Death Valley, California and Big Bend National Park, Texas, in the USA.

We can see the universe's distant stars and galaxies using the telescopes at the observatory.

Telescopes act as a light funnel – they detect visible light from space and because they are much bigger than our eyes they collect more light. Using clever optics, they squeeze the light down the telescope in a funnel effect and the faraway object will appear much closer.

Presenters from legendary BBC science programme, The Sky at Night and members of KOAS, named the largest facility at The Kielder Observatory 'The Sir Patrick Moore Observatory', in honour of Sir Patrick who died on 9th December 2012.

Kielder Observatory has dedicated its largest 'turret', home of one of the biggest public telescopes in the UK, (a 0.5m Newtonian reflecting telescope), to Sir Patrick.

It is one of two permanently mounted telescopes each housed in separate facilities at the the Observatory, and part of its large telescope collection which is regularly used by the public.

There is a manually operated 20" Newtonian reflector, named after Sir Isaac Newton, which is used to track down distant galaxies and nebulae.

This is in contrast to the 16" reflector telescope which is fully computer controlled. It also has various cameras which are used for photography, as well as looking through to space.

There is a massive database of objects so with one click of the mouse we can point this telescope to whatever we want to look at, from the moon onwards to each of the other planets in our solar system and right down to Saturn's rings!

A Hydrogen Alpha Solar telescope is solely used for looking at the sun to see solar flairs and even the surface of the sun.

Objects that can be observed at Kielder Observatory by telescope, binoculars and the naked eye include supernova remnants, areas of star formation, star clusters, distant galaxies and Jupiter, the largest planet in the solar system.

