

# An Astronomer's Guide to Exmoor National Park International Dark Sky Reserve

by: Jo Richardson FRAS



**EXMOOR**  
NATIONAL PARK



*Exmoor is a magical place for astronomy –  
it will touch your hearts leaving you wanting more!*

**Sarah Bryan - Exmoor National Park Authority**

*I've fallen in love with Exmoor's truly dark skies, cloudless nights,  
low horizons and stunning landscapes.*

**Jo Richardson - Astronomer**

*There are few places I love more than Exmoor for stargazing and  
contemplating the universe.*

**Professor Roger Davies - Cosmologist, Oxford University**

*Exmoor rightly claims to have some of the darkest skies in the country.*

**Richard Darn - Go Stargazing**

The Great Andromeda Nebula taken from Exmoor by Pete Richardson

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**"Astronomy is a humbling and  
character-building experience."**

**Carl Sagan (astronomer)**

The above statement holds a great resonance with both amateur and professional astronomers especially when the skies above us are clear, perfectly dark and filled with the wonders of our incredible universe. Here on Exmoor, we have some of the darkest skies, more cloudless nights, and the most stunning landscapes and wildlife in the UK.

Exmoor National Park is proud of our designation as International Dark Sky Reserve and we hope to share the area's special qualities with astronomers from all over the world.

Whether you are into simple stargazing or indeed astrophotography, this guide aims to highlight some of the best areas within the National Park to set up equipment, make observations and scientific recordings as well as enjoy the beauty of your surroundings and everything else that Exmoor has to offer.

*Jo Richardson*

Astronomer & Guide Author

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# Introduction to Exmoor

Exmoor, in the south west of England, was designated as one of the UK's National Parks in 1954. It has been recognised as one of the finest landscapes in the UK. Its deep valleys, high cliffs, wide open moorland and clear streams provide inspiration and enjoyment to locals and visitors. Covering 692 square kilometres (267 square miles), Exmoor straddles the border of two English counties, Devon (north) and Somerset (west).

In 2011, the International Dark-Sky Association (IDA) designated Exmoor as Europe's first Dark Sky Reserve. Exmoor National Park Authority, local residents and businesses celebrate their dark skies and work hard to protect them.

**For general information about Exmoor see  
[www.exmoor-nationalpark.gov.uk](http://www.exmoor-nationalpark.gov.uk) or  
[www.visit-exmoor.co.uk](http://www.visit-exmoor.co.uk)**

# The Importance of a Dark Sky

Light pollution is a sad fact of modern day living. However, in recent years there has been increasing evidence that light pollution not only affects our ability to see the night sky, but it can also have detrimental effects on both human and wildlife health and behaviour.

Light pollution has no respect for town or county borders and the light from over lit towns and cities can easily spill into rural unlit areas. In recent years, increased development within the UK has put further pressure on those once dark, countryside areas.

On Exmoor, our dark skies are officially recognised as one of the area's special qualities. We work hard to control light pollution and keep the skies dark by raising awareness of the importance of dark skies within local communities and actively engaging with visitors within our National Park Centres and at organised stargazing events.

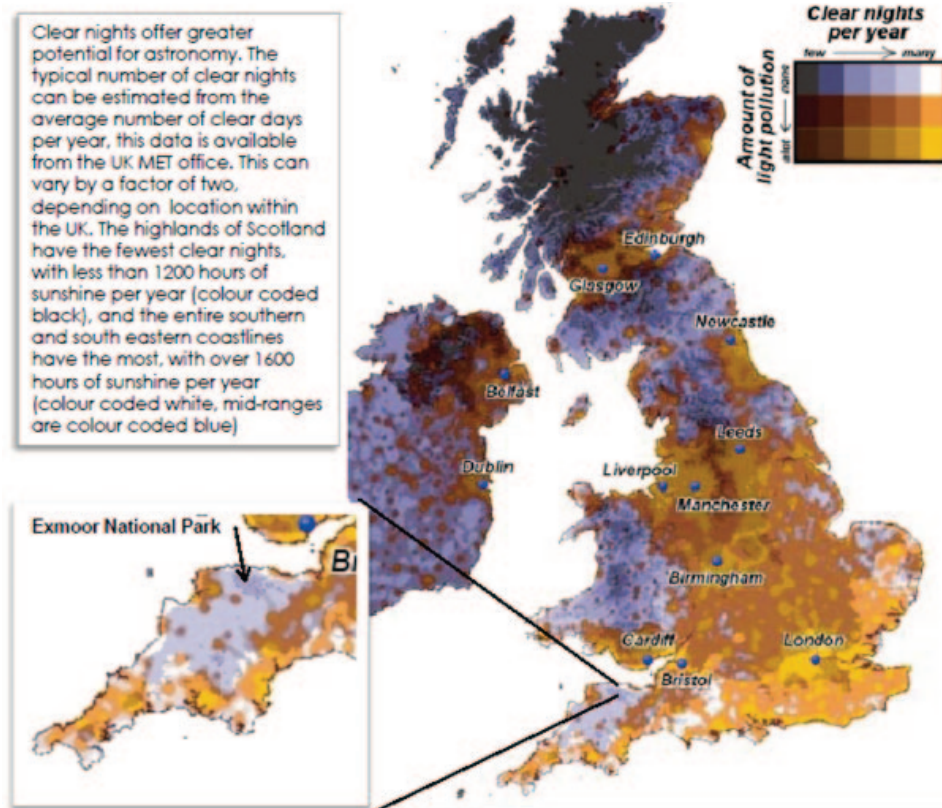


The Milky Way over Exmoor by Keith Trueman

# Weather and Moon Phases

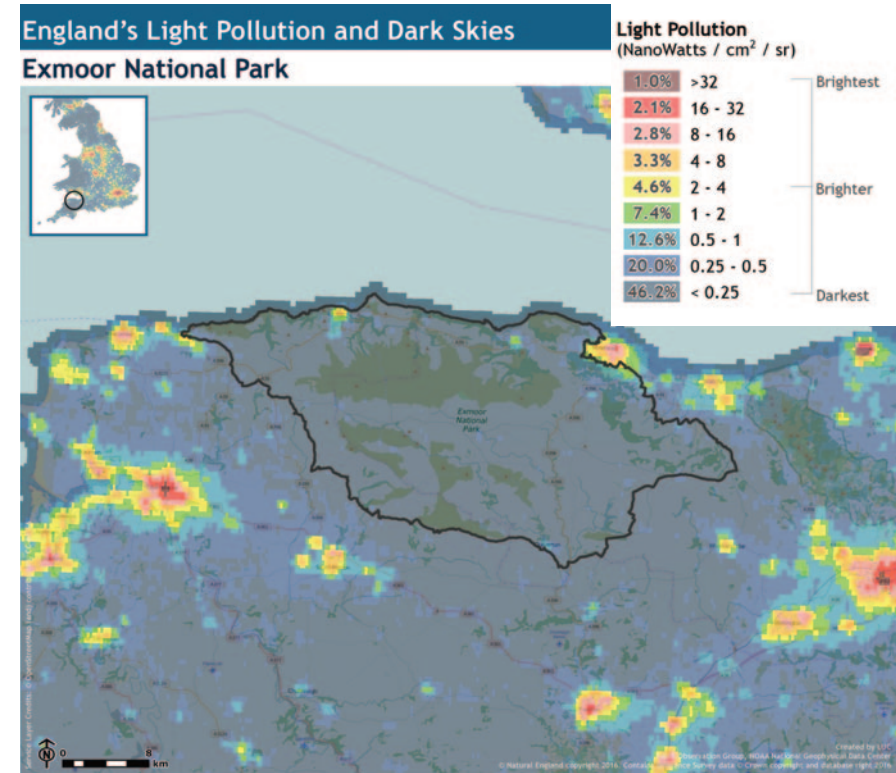
For the best experience of the stars and Milky Way try to visit on dry, clear nights (see Met Office Cloud Cover Forecast [www.metoffice.gov.uk/public/weather/uk-cloud-cover-forecast](http://www.metoffice.gov.uk/public/weather/uk-cloud-cover-forecast)) with little or no moonlight (the week before New Moon is perfect, see Moon Phases 2021 – Lunar Calendar for Exford, England, United Kingdom ([timeanddate.com](http://timeanddate.com))). Some of the lower lying or coastal areas (such as the eastern side of the National Park) have more cloudless nights than the higher moorland.

The Campaign for Dark Skies combined light pollution levels and clear nights data as can be seen in the map below. This map indicates that Exmoor is one of the best places in the UK for quality night sky observation.



# Why is Exmoor so great for Astronomy?

## Minimal Light Pollution



This map produced by CPRE, the countryside charity, demonstrates that 92% of Exmoor has pristine night skies, free from light pollution, and when that's combined with the second darkest category it's 98% which is astounding! Exmoor is the second darkest National Park in England, just behind Northumberland. Consider the clear skies data (see the map opposite) and you'll find that Exmoor is one of the best places in the UK for quality night sky observation.



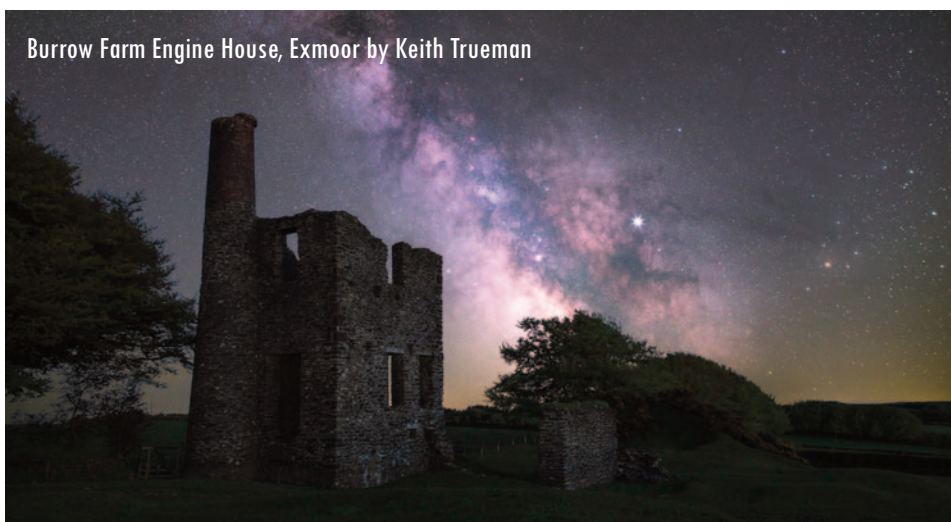
## Bortle Scale

On Exmoor there are many suitable sites with the best quality skies rated Bortle scale 1 and 2.

The Bortle scale is a nine-level numeric scale that measures the night sky's brightness of a particular location. It quantifies the astronomical observability of celestial objects and the interference caused by light pollution. The scale was designed to help amateur astronomers evaluate the darkness of an observing site, and secondarily, to compare the darkness of observing sites. The scale ranges from Class 1, the darkest skies available on Earth, through Class 9, inner-city skies.

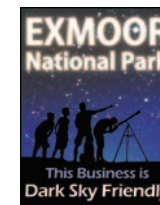
## Exmoor is an International Dark Sky Reserve

In 2011, the International Dark-Sky Association (IDA) designated Exmoor as Europe's first Dark Sky Reserve. The IDA designated area of the Dark Sky Reserve covers a darker core of 83 square kilometres which is mainly made up of open access heather and grass moorland. The core area is surrounded by a buffer zone of further 98 square kilometres consisting of farmland and small village settlements. These zones were informed by Sky Quality Meter readings and open public access, along with several other factors and it should be noted that whilst these areas are the officially designated zones, the majority of Exmoor can boast incredibly dark skies.



## Accessibility and Services

Exmoor is within half an hour's drive of the M5 motorway, and just 2½ hours from London. With good transport links, and welcoming communities, Exmoor is the ideal place for astronomers.



Specially trained accommodation and stargazing experience providers can help you make the most of your visit. Some have telescopes and binoculars available for use by guests. You can find a list of accredited **Dark Sky Friendly Businesses** on our website at [www.exmoor-nationalpark.gov.uk/enjoying/stargazing](http://www.exmoor-nationalpark.gov.uk/enjoying/stargazing). **Skywatcher Dobsonian** telescopes can also be hired from our National Park Centres at Dulverton, Dunster and Lynmouth, see website for details.

## Astronomy Group Visits

If you are arranging group travel for an Astronomy Society, or even a large family, Exmoor National Park Authority is able to help you find facilities and sites specifically suitable for you.

Exmoor National Park Authority operates the Pinkery Centre for Outdoor Learning (right) located within the darkest and most remote area of Exmoor so there'll be plenty of peace during the day and wild open countryside and 360°



views for astronomy at night. The flexible accommodation can sleep up to 40 people in comfortable bunk rooms, has large communal dining and lounge areas and the centre is easily accessible for cars and coaches. It's also great value for money. We can provide speakers and activity guides to make your visit a success.

Further details can be found at [www.exmoor-nationalpark.gov.uk/pinkery-centre](http://www.exmoor-nationalpark.gov.uk/pinkery-centre) or you can contact the Centre Manager Dave Huxtable for a chat on 01643 831437.

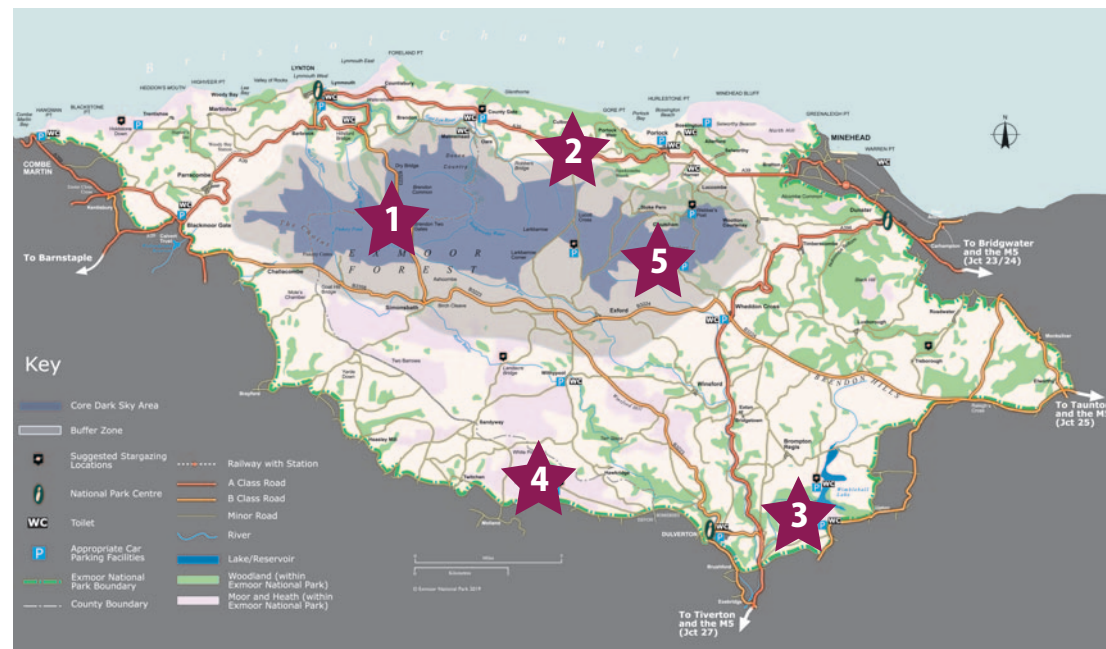
# Recommended Observation Sites

These recommended observation sites have been chosen not just with dark sky sites in mind. Consideration has also been given to direction of view, equipment set up, ease of access and parking facilities.

**www.gridreferencefinder.com** Use this website to find the UK Grid Reference - it will give a more accurate location on the map than the postcode.

## Recommended Sites at a Glance

See following pages for further details.



No.	Name/Location	UK Grid Reference and Postcode	Bortle Scale Class (1-9)	Highlights	Ideal for observing:
1	Brendon Two Gates/Common	SS 76001 44284 TA24 7LB	2	360° view	Deep Sky, Planetary, Lunar, Constellations
2	Porlock Common	SS 85382 46343 TA24 8JJ	1	360° view	Deep Sky, Planetary, Lunar, Constellations
3	Haddon Hill	SS 96913 28507 TA4 2DS	3	Open views, accessibility, toilets	Planetary, Lunar, Constellations, Summer Milky Way
4	Molland Moor	SS 84009 29673 TA22 9RY	4	360° view	Planetary, Lunar, Constellations
5	Dunkery Beacon	SS 89571 40613 TA24 8TB	2	360° view, highest point on Exmoor, popular landscape astrophotography spot	Deep Sky, Messier, Planetary, Lunar, Constellations, Summer Milky Way



## 1 Brendon Two Gates/Brendon Common

Situated in the designated Dark Sky Reserve core with a light meter reading of 21.60 (Class 2 on the Bortle Scale-typical truly dark sky site).

### Observation Site

Brendon Common provides a 360° unobstructed view with wonderful sunsets at dusk. Great for deep sky, lunar and planetary observations as well as star counting/constellations. The Summer Milky Way is highly structured. Equipment can be easily set up within the parking areas which are fairly level with a mix of rough gravel and soil.

### Facilities

No facilities on site. Nearest toilets/refreshments are available in Simonsbath or Lynton/Lynmouth.

### Directions and Parking

UK Grid Reference SS 76001 44284  
nearest postcode TA24 7LB

Easily accessed via single lane road B3223 (with passing places) from either Lynmouth/Lynton or Simonsbath. Parking is in designated roadside areas, of which there are plenty on both sides.



## 2 Porlock Common



Situated in the designated Dark Sky Reserve core with a light meter reading of 21.70 (Class 1 on the Bortle Scale-excellent dark sky site).

### Observation Site

Porlock Common provides a 360° unobstructed view, with particularly good views to the south and west. Great for deep sky, lunar and planetary observations. Many constellations, particularly fainter ones, are also barely recognizable amid the large number of visible stars.

Equipment can be easily set up within the parking areas which are fairly level with a mix of rough gravel and soil.

### Facilities

No facilities on site. Nearest toilets/refreshments are available in nearby Porlock and Porlock Weir.

### Directions and Parking

UK Grid Reference SS 85382 46343  
nearest postcode TA24 8JJ

Easily accessed on the A39 through Porlock, via Porlock Hill in the east and from Lynmouth in the west. Parking is in designated roadside areas, of which there are plenty on both sides.

### 3 Haddon Hill

A great site on the south eastern edge of the National Park with a light meter reading of 21.30 (Bortle Scale 3- Rural Sky).

#### Observation Site

The large flat grassed area in the middle of the car park affords some super overhead views, although there is some obstruction with surrounding trees. Alternatively, if you are prepared to walk with your equipment, head west to the summit, approximately 1 km along the ridge path. Here your view opens up significantly and will provide some super planetary and lunar observations. In summer months, the Milky Way should also show some complexity.

#### Facilities

Toilets available on site but nearest refreshments are in Bampton to the south.

#### Directions and Parking

UK Grid Reference SS 96913 28507  
nearest postcode TA4 2DS

Located off the B3190 between Raleigh's Cross and Bampton. Parking is available in a large flat, circular area.



### 4 Molland Moor



A breath-taking area of open moorland on the southern edge of the National Park with a light meter reading of 21.25 (Bortle Scale 4 – rural/suburban transition).

#### Observation Site

The Common offers another 360° unobstructed view and set up could quite easily be done within the car park which is laid to rough gravel and soil.

A super spot for lunar, constellation viewing and planetary observations, however due to possible low level light pollution on the southerly horizon, deep sky work may be more of a challenge.

#### Facilities

No facilities on site. Nearest toilets/refreshments can be found Dulverton.

#### Directions and Parking

UK Grid Reference SS 84009 29673  
nearest postcode TA22 9RY

Take the B3222 from Dulverton, turning left towards Hawkridge on Windball Hill. Continue for several miles until the countryside opens to moorland. Parking is available in several designated areas, the main area being the location of the memorial stone.



## 5 Dunkery

The highest point on Exmoor standing at some 519 metres above sea level and with a light meter reading of 21.70 (Bortle Scale 1 - excellent dark sky site).

### Observation Site

Super views directly overhead and to the south will afford excellent deep sky, lunar, and planetary observations. It is even possible to see Messier objects with the naked eye as well as having a well-structured and defined Summer Milky Way. See notes under Parking regarding best set up.

### Facilities

No facilities on site. Nearest toilets and refreshments can be found in Wheddon Cross to the south east or Porlock to the north.



### Directions and Parking

UK Grid Reference SS 89571 40613  
nearest postcode TA24 8TB

Take the B3224 from Wheddon Cross towards Exford and follow the signs to Dunkery Beacon.

Parking on the southern edge of the Beacon will afford the best views and mitigate any potential light pollution intrusion coming from the town of Minehead in the north and across from the South Wales Coast. Parking is available in a designated area on both sides of the road. Laid to rough gravel and grassy areas, level and ideal for the set-up of equipment.

## Photo Gallery

A selection of photographs taken from Exmoor at Night



Light and Land, Peter Hendrie



Simonsbath, Pictor Images



Dunkery and dark skies, Keith Trueman



Heart Nebula, Craig Ogier



Above: The Great Orion Nebula from Somerset, Pete Richardson

Left: Orion Nebula from Exmoor, Andrieu Panagiotis