

# Dark Night Skies

*'How Wide Are  
Your Eyes Open?'*





# When it gets dark, it's dark

*Colin, Ancient Technology Centre*

# Example quotes from Dark Skies Pledge Survey

Question: Is there anything else you'd like to say about dark skies in the AONB?

"Wonderful to have dark skies and no street lights in Chilmark"

"Running a B&B we get lots of guests from the cities, and they all comment on how beautiful the night skies are. Many sit in the garden into the small hours looking at the stars!"

"I have been to festivals and events in the AONB and been entranced by the night skies that can be seen there. This is something all too rarely seen in a small country such as ours, is very precious and should be preserved. It is fitting that the night sky can be seen in such glory in a place with such a rich archaeological history."

"I live in the AONB and keep my outside lights switched off unless needed. I love stars and dark skies."

"A precious resource - I've cycled across Cranborne Chase at night and it was a rare and magical experience to have my way lit only by the moon for so long!"

"That's why I live here."

"We all need more galactic gateways. Fingers crossed for a successful application"

"Since moving to the area from a light-polluted city a few years ago I've come to love its dark night skies, and want to see them conserved and indeed enhanced!"

"I think it would be wonderful to have the AONB designated as a dark skies area, it's so good to be able to see the stars and we need to preserve this for future generations."

"We had a fantastic evening at the Ansty Farm Shop star-gazing event - thank you"

"I have never seen so many stars in Britain before moving here."

"The dark skies in the AONB offered myself and others the chance to explore the stars somewhere fairly local to us. Hearing the additional benefits it would have on wildlife and to the local people it seems like a no-brainer."

"Keep looking up!"



Body Painting, StarFest



StarFest tales - Valerie Bryant



Chewbakker drops in to check out the 'core' of proposed Dark Sky Reserve - M Capper



Sky glo over Shaftesbury - G. Privett



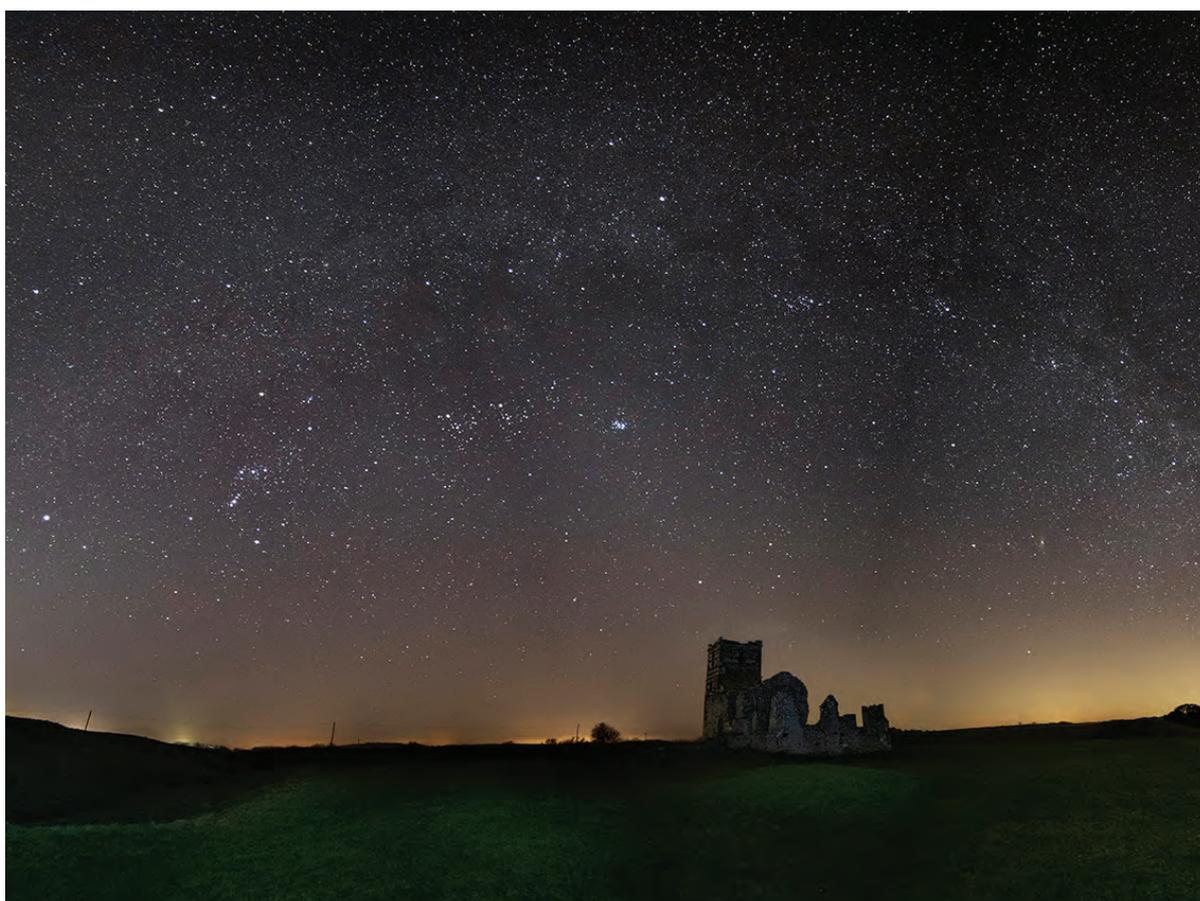
Blast off! StarFest Sixpenny Handley February 2019 - M Capper

# 11. Dark Night Skies

**Cranborne Chase AONB has the darkest night skies in central southern England. The awe-inspiring Milky Way can be readily viewed here; something that over 90% of the UK population can rarely see due to light pollution. Unlike ancient historic settlements, rivers, soils, wildlife, and our outstanding landscapes, the night sky has no legal protection, which explains why in just six years light pollution has increased by 24% across the UK as a whole.**

11.1. Special characteristics and qualities that makes this AONB special, as a whole, with regards to dark night skies:

- Cranborne Chase AONB is one of the darkest places in England<sup>42</sup>.
- Dark night skies with a myriad of visible stars have always been an outstanding, memorable and remarkable feature of this AONB.
- A topography that facilitates stargazing with open, elevated downland, wide panoramic, unobstructed views all with relatively easy public access.
- Lack of major towns and a low AONB population limits the incidence of light pollution and sky glow.



*Knowlton Church and Henge - Paul Howell*

<sup>42</sup> The most detailed ever satellite maps of England's light pollution and dark skies, were released by the Campaign to Protect Rural England (CPRE) in 2016. They showed that 52% of Cranborne Chase AONB is in Band 1, which is the darkest category and 40% of the AONB is in the next category. See CPRE (June 2016) Night Blight: Mapping England's light pollution and dark skies.



## Ambition

- 11.2. The Partnership aims to achieve International Dark Sky Reserve<sup>43</sup> status during 2019, continuing to reduce light pollution into the future to enhance further the night-time environment for the benefit of human health and wildlife. It will also reduce expenditure and carbon emissions from unnecessary lighting, and offering new opportunities for education and rural tourism.

## Key achievements

- A **Light Pollution Position Statement** endorsed by AONB Partnership in 2008
- An objective to seek International Dark Sky Reserve (IDSR) status was adopted by Partnership local authorities in the 2014-19 AONB Management Plan.
- The prevention and avoidance of light pollution has been consistently inputted to national and local planning policy consultations and detailed development management advice since 2008.
- The first specialist, dark night skies and good lighting **AONB Planning Seminar** was held in 2014, another in 2018 whilst an AONB Annual Forum was held in association with the coordinator for the BAA's Commission for Dark Skies (CfDS).
- **Good Lighting Guides** were provided by the AONB and CfDS in 2016, plus a Developers' Guide to Good Lighting in 2018.
- Partnerships have been established with the British Astronomical Association (BAA) and Wessex Astronomical Society to record sky darkness, facilitate events, and promote good lighting practice. The Head of the British Astronomical Association's Commission for Dark Skies is giving wide ranging expert advice and support.
  - **10 public stargazing sites** have been negotiated with landowners and promoted through this 'Chasing Stars' initiative.
  - **Sky Quality Meter** (SQM) readings have been taken throughout the AONB since 2015 and on a more systematic square kilometre grid basis during 2017 to map the darkest areas of the AONB.
  - Numerous public stargazing evenings have been held together with 'Space Detectives' workshops delivered to schools.
  - Some LPAs now regularly place conditions on planning approvals that ensure new lighting complies with this AONB's guidance, which echoes CfDS and International Dark-sky Association (IDA) best practice.
  - A dedicated **Dark Sky Advisor** post from August 2018 will focus on the task of attaining Reserve status.

43 An IDA International Dark Sky Reserve protects an area possessing exceptional stary nights and nocturnal environment for its scientific, natural, educational, cultural, heritage and/or public enjoyment. Reserves consist of a core area meeting minimum criteria for sky quality and natural darkness, and a peripheral area that supports dark sky preservation in the core. Formation of reserves is through partnerships that recognize the value of the natural night time environment through regulations and long-term planning – after International Dark Sky association, see <http://darksky.org/idsp/reserves/>



## Key issues

1. **Exposure to artificial light at night presents significant risks to human health** – Humans evolved with the rhythms of the natural light-dark cycle of day and night. Natural light helps set our clocks to Earth's 24-hour day-night cycle. Exposure to artificial light at night disrupts this process, increasing our risks for cancers and other potentially deadly diseases. Glare from poorly shielded outdoor lighting limits our ability to see. Aging eyes are especially affected<sup>44</sup>.
2. **Outdoor lighting impacts wildlife, especially in or near sensitive habitats** – Bad lighting policies can have lethal consequences for wildlife but good policies can maintain healthy ecosystems. Nocturnal habitats do not receive the same attention as daytime habitats.
3. **Producing artificial light consumes energy** – Promoting dark skies can reduce energy consumption and promote efficient outdoor lighting technologies. There is a need to influence the types and levels of outdoor lighting installed in the AONB.
4. **Poorly designed and/or installed outdoor lighting is a hazard to motorists, bicyclists and pedestrians in transit at night** – The same policies that keep night-time skies dark reduce glare and put the right amount of light in the right place and at the right time to ensure the safety of all.
5. **Over-lighting outdoor spaces at night can create favourable conditions for crimes of opportunity** – Bright flood lighting creates shadows that can mask a crime. Policies that protect dark skies enhance security by reducing glare and preserving night-sight.
6. Dazzle, glare and light spilling in all directions reduces the visibility of the stars and hence the opportunities to perceive a special part of the universe.
7. **Awareness and understanding of the implications of seeking IDSR status needs to be raised** – People living and working in the AONB need to be a part of this initiative. Although large parts of the area remain free from light pollution, the gradual encroachment of street, house and security lights means that starlight, which may have travelled for hundreds or even millions of years to reach our eyes, is stolen at the last moment - by sky-glow. The ongoing information and engagement programme aims to reach a consensus for limits and controls on outside lighting.
8. An absence of detailed lighting policies within current Local/Development Plans can be a barrier for LPAs implementing good lighting practice when determining planning applications. However, some lighting issues (Permitted Development / installation of blinds) fall outside planning control.
9. Planning consultants and developers need to adopt good lighting practices as standard.
10. The significant potential to attract and increase additional astro-tourism visitors to this AONB, particularly in the 'shoulder' and winter months, is not fully appreciated.

<sup>44</sup> American Medical Association, see also R Chepesiuk (2009) Missing the Dark: Health Effects of Light Pollution in Environmental Health Perspectives V.117(1) A20-A27



## The Issues Explained

- 11.3.** Whilst awareness and understanding of the multiple benefits of IDSR status is increasing, the potential improvements to human health, an enhanced environment for nocturnal wildlife, financial savings, carbon emission reductions and a much enhanced tourism offer requires ongoing promotion.
- 11.4.** The advent of LEDs, which offer welcome and considerable cost and energy savings to domestic and business users, emit a harsh, bright white light that can often dazzle onlookers, and if fixtures are incorrectly fitted, emit this unnecessary light upwards and sideways.
- 11.5.** Some of the LPAs are including conditions regarding lighting issues in line with the AONBs policies on lighting and others have yet to put this in motion. The Local/Development Plans for the seven Local Authorities cover different time periods. This means some may be willing to consider adding specific lighting policies relatively quickly whilst others suggest they are not in a position to do so for some time.
- 11.6.** The highway authorities in Dorset, Hampshire and Wiltshire each operate light dimming schemes. Dorset has a highway policy of no lights in rural areas except in special situations (for example, at major traffic junctions) and a policy that restricts upwards and sideways emission of light.
- 11.7.** Many planning consultants and developers are unaware of the light pollution caused through ill-designed lighting schemes. The Institution of Lighting Professionals has developed guidance dedicated solely to excellence in lighting that requires promotion that is more comprehensive.
- 11.8.** Plans for new developments frequently comprise floor to ceiling glass ‘walls’, and roof lights are not automatically fitted with blinds or louvres; understanding of the need for these to prevent night-time emission of light needs to be increased.
- 11.9.** IDA requires <500 lumens (equating roughly to a 60W bulb), or fully shielded fittings preferably incorporating an infra-red motion sensor to limit sideways and upwards light spill in a Dark Sky Reserve. Much of the outside, security lighting utilised on both domestic and business premises is not currently IDA compliant, with many unshielded fittings and lamps/ bulbs emitting higher than the required 500 lumens.
- 11.10.** Another factor contributing to unwanted light spill can be the inappropriate installation of light fixtures. They should be angled downwards to only light the area to be illuminated. This requires fixtures to only shine light below the horizontal. The AONB is developing a ‘Big Dipper’ type campaign to turn downwards existing light units and to encourage correct installation of light fixtures.



*Night sky, Sutton Veny – Paul Howell*



## Objectives and Policies

OBJECTIVE		POLICIES	
<b>DNS A</b>	International Dark-Sky Reserve (IDSR) status is secured for the AONB during 2019.	<b>DNS1</b>	Actively promote the benefits of IDSR status to all partners and communities to elicit appropriate action and support for the application to IDA.
<b>DNS B</b>	The IDSR status is retained through evidencing annual reductions in light pollution across the AONB.	<b>DNS2</b>	Work with all LPA partners to: Retain IDSR status through continuous improvements to lighting/retrofitting schemes. Embed good practice lighting guidance within their Local/Development Plans. Ensure substantial lighting schemes, such as those for schools, businesses and sports areas, are competently designed and meet DNS and other environmental criteria. Submit an annual report of activities to maintain the IDSR status.
		<b>DNS3</b>	Support parish councils in promoting good practice lighting to their residents and businesses, offering Dark Sky Friendly Parish Award.
		<b>DNS4</b>	Investigate the potential for sponsorship/provision of low cost good practice outside light fittings within the AONB.
<b>DNS C</b>	The multiple benefits of dark night skies are understood, valued and enjoyed by all.	<b>DNS5</b>	Work with other UK 'Dark Sky Places' and related organisations to improve awareness and understanding across the country of the need to reduce light pollution.
<b>DNS D</b>	The AONB, tourism and related businesses jointly promote, and benefit from, the AONB as a prime destination for stargazing holidays.	<b>DNS6</b>	Develop a Dark-Sky Friendly Accreditation Scheme for local tourism and allied businesses.
<b>DNS E</b>	An AONB observatory offers regular stargazing activities together with educational and study opportunities for residents, visitors and schools.	<b>DNS7</b>	Determine a potential location, design criteria and funding requirements necessary to establish an AONB Observatory within the timeframe of this Plan.

(Additional Information: Dark Skies Appendix 10)

