

Exmoor Dark Skies

Our Window into a Universe of Fragile Starlight

Seb Jay

Look up on a moonless cloud-free night from Exmoor National Park and you'll be greeted by a dazzling starlit landscape. Thousands of more stars can be seen from this tiny dark sky enclave in Southwest Britain than from most towns and cities around the world. It is a stargazing paradise – a window into a Universe of distant fragile light that can only be seen because of Exmoor's zero tolerance towards light pollution.

In *Exmoor Dark Skies* life-long amateur astronomer Sebastian T. Jay explores the wonders of this night-time world above our heads from some of the darkest places around Exmoor's International Dark Sky Reserve. He uses his robust knowledge of astronomy to take us on a journey out across the cosmos with our eyes, revealing what we can see by just looking up, and the treasures that await our personal discovery when using a small portable telescope.

Whether you're an experienced amateur astronomer, new to the night sky, or simply want to learn more about the opportunities to stargaze from Exmoor, this book serves as a practical guide to help you get the most out of your time under Exmoor's dark skies.

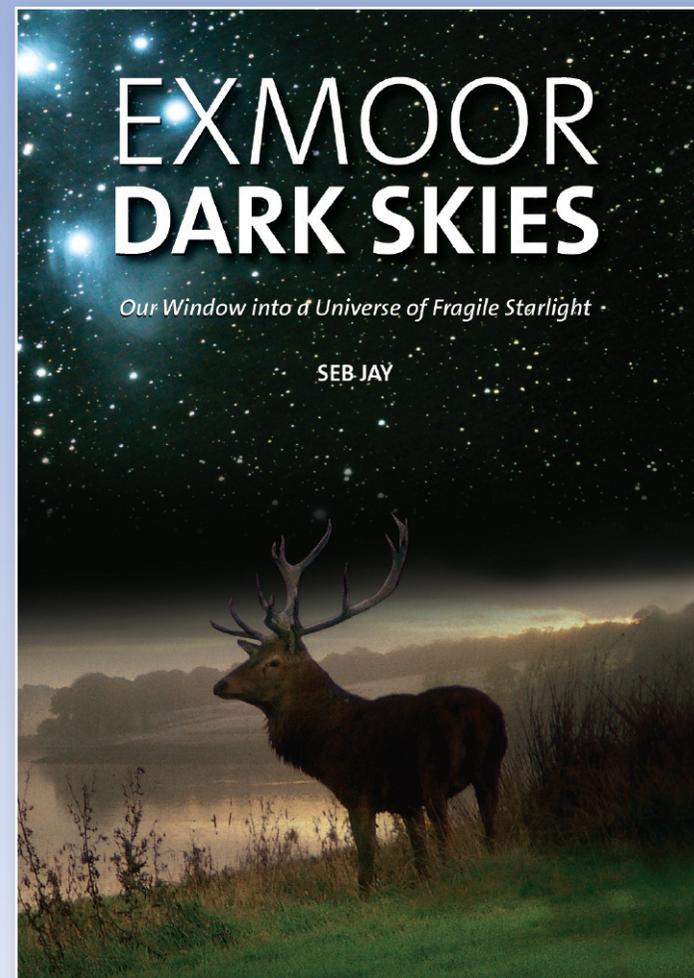
ABOUT THE AUTHOR

Seb Jay is an amateur astronomer and owner of Dark Sky Telescope Hire. He has spent more than 25 years as a cosmic adventurer, exploring the Universe from some of the darkest skies in the world. An advocate of Exmoor National Park's International Dark Sky Reserve, Seb spends his time sharing his enthusiasm for stargazing from dark sky locations. His aim is to spread awareness of Exmoor's dark sky resource, and to help others get the most out of their dark sky experience on the moors. In doing so he hopes to show why this resource should be protected now and for future generations.

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HALSGROVE TITLE INFORMATION



Format: *Hardback, 144 pages, 210x148mm, profusely illustrated in colour throughout*

Price: *£9.99*

ISBN: *978 0 85710 091 7*

Imprint: *PiXZ Books*

Published: *Sept 2014*



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Wellington, Somerset TA21 9PZ Tel: 01823 653777 Fax: 01823 216796
www.halsgrove.com e-mail: sales@halsgrove.com

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Above: Looking north on Exmoor.
Adrian Cubitt - ATV Productions Ltd

Left: The summer Milky Way crosses through the Summer Triangle and reaches down through Scutum and Sagittarius. Mike Meal

Example of a double-page spread.



Messier 88 Spiral Galaxy in the Virgo Cluster imaged using the 24-inch Telescope on Mt Lemmon in Arizona, USA. - J Schulman



The full moon as it appears through a 200mm aperture telescope at x63 magnification. Seb Jay

2 Journeying to the Moon

The Moon

ORBITING EARTH AT an average distance of 384,400kms is a familiar sight – the Moon. The Greek philosopher Anaxagoras (500BC - 428BC) was the first to correctly propose that the Moon's light is reflected sunlight. It was not until the invention of the telescope however that the Moon was proved not to be a smooth surface, but is instead strewn with deep craters and high mountain chains. The actual geological composition of the Moon is a relatively recent discovery, only being confirmed in the twentieth century by spacecraft landers and orbiters.

Formation

Current theory asserts that the Moon formed around 4.5 billion years ago when an object about 10 per cent the mass of the Earth collided with our newly formed planet. At that time Earth was still an extremely young seething molten mass of material. The collision

The Moon's Formation
The Giant Impact Hypothesis

Approximately four and a half billion years ago, a Mars-sized body collided with earth.

The impact caused the newly formed Earth to rotate fast.

A cloud of debris was propelled into space.

The impact tilted the Earth's axial plane by 23 degrees & sped up the Earth's rotation.

Most of the debris fell back to Earth, but Gravity pulled some of it into the earth's orbit.

Finally, the Moon was assembled from the debris swirling around the earth.

Parham Collier



Jupiter's atmosphere is constantly changing. These are the belts and zones that are normally visible. Sometimes they merge and /or disappear. NASA

Holdstone Down looking northeast.

