

BOOKS

Here is a witty guide to incredible sights in the heavens that can be seen with the naked eye by those who escape the city lights

Unveiled Glories of the Night Sky

By **Simson L. Garfinkel**

IF you want to see some of the most amazing things in the universe, all you have to do is get away from the city lights – at least 50 miles, to be safe – take out a blanket, and gaze up. After just a few minutes you will begin to see the most incredible sights.

Most people know the heavenly basics: the stars, the planets, and the occasional meteor. After reading Bob Berman's "Secrets of the Night Sky," you will know what else to look for, and you will understand a lot more about what you are seeing.

Consider those small dots that occasionally move in straight lines across the sky in the early night. They are satellites, writes Berman, who then explains the secret to distinguishing between abandoned spy satellites and space junk.

SECRETS OF THE NIGHT SKY: THE MOST AMAZING THINGS IN THE UNIVERSE YOU CAN SEE WITH THE NAKED EYE

By *Bob Berman*
Illustrated by *Alan McKnight*
William Morrow,
320 pp., \$23

Ever see a faint glowing band of light that rises from the horizon at an angle? It's the zodiacal light, which is the sun's light reflecting off the dust in the orbital paths of the planets. The light is visible only after sunset in early spring and before dawn during fall, and only when the zodiacal constellations are at their highest point in the sky.

Many books have been written in recent years on the structure of the cosmos and the evolution of the universe. What makes Berman's book truly exceptional is twofold: his emphasis on things that can be seen in the sky with the unaided eye and his erudite but informal tone that combines with a puckish prose. It is as if one had one's own private tutor. His wit never ceases to crack a grin on the reader's face.

Every dot of light is a jumping-off point for Berman. There is Andromeda, a galaxy of more than a trillion stars, which is on a collision course with our own. (Estimated time of arrival: 5 billion years.) There is Venus, which is so bright that it has been frequently mistaken for a UFO. And then, of course, there is Betelgeuse.

The name Betelgeuse, Berman tells us, comes from the ancient Sumerians, who thought that Orion looked more like a sheep than a hunter. The name literally translates as "the armpit of the sheep." Read a little further, and you'll learn that Betelgeuse is the largest single object that you can see in the entire universe. What's more, it's pulsating:

"Usually it's just plain enormous, some 200 million times bigger than the volume of the sun. Then a burst of energy at its core drives its surface outward until it be-

comes a billion miles wide, huge enough to occupy our solar system past the orbit of Jupiter. But whoops, it went too far. Its central furnace cannot sustain such a size. (Who could? Ever try feeding a teenager?) The force of gravity forces its surface to collapse, which continues until the process of shrinking goes too far and creates too much heat, so it rebounds like a trampoline. Out it goes again, to perform the trick all over."

Throughout the book, Berman uses the sky as his classroom to convey the limits of current cosmological knowledge. And he does it with such warmth and obvious love of his subject, that it's like eating star candy.

Although some of the chapters are adapted from Berman's monthly column in Discover magazine, "Night Watchman," much of the material in "Secrets of the Night Sky" is new. For those who are not satisfied observing with their eyes alone, Berman teaches the secrets to choosing a good telescope and taking care of it.

This spring, as the nights grow warmer and the April showers give way to clear skies, we would all do well to follow Berman's advice and take to the countryside. The universe awaits.

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THE SUN SETS IN THE WEST – SORT OF: Multiple-exposure photography shows the sunset over Salt Lake City, where the streets are aligned precisely from east to west. On the fall equinox, the sun sets due west (above), but two days earlier (below), it clearly missed.

