英語で学ぶ 地上での天体観測・大気と気象 12 講

Skywatching: Seeing and Understanding Cosmic Wonders

- 規　　格：　DVD(英語音声/字幕なし) 3巻(全6時間)
- 　　英文コースガイドブック付(A5版冊子)
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１単元 30 分の講義を 12 回 DVD3 枚組 合計 6 時間の連続講義。
古代からの神話・伝説を受け継ぎ、星座や占星術などの文化を発達させてきた人々の想像力と知恵。そこからは暦が生まれ、農業への応用が始まった。そして、ガリレオの時代に天体望遠鏡が発明され、ニュートンの時代には光の科学的分析が始められた。
金環蝕など地上ならではの天体観測をさらに楽しく！
米カリフォルニア大学バークレー校アレックス・フィリペンコ教授 2011 年の連続講義。
チャプタメニュー付き。字幕なし。英文コースガイドブック付(A5 判冊子体)

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4. Solar Halos—Sunlight and Ice Crystals　太陽のハローー日光と氷の結晶
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8. The Moon, Phases, and Lunar Eclipses　月、月の満ち欠け、月食
9. Satellites, Comets, and Meteors　衛星、彗星、流星
10. Observing Solar Activity and Earth's Auroras　太陽活動と地球のオーロラの観測
11. Solar Eclipses—Marvelous Coincidences　日食-素晴らしい偶然
12. Celestial Sights When the Night Is Darkest　夜が暗いときの天体

各編内容

1. Day and Night Skies across All Distances
すべての距離にわたる昼夜の空

Embark on a brief tour of the grandeur of the sky above your head—both near and far—and get a better idea of the broad range of breathtaking objects and phenomena everyone can enjoy.

2. The Blue Sky, Clouds, and Lightning
青い空、雲、雷

Why is the color of the sky blue? How does polarization work, and how can it help you see objects in the sky better? What's the difference between cirrocumulus and cirrostratus clouds? Does lightning truly never strike the same place twice? Get answers to these and a host of other questions.

3. The Rainbow Family—Sunlight and Water
虹の種類ー日光と水

Rainbows, Coronas, Cloud iridescence, Strengthen your understanding and appreciation of the science behind these and other colorful phenomena that occur due to the fascinating interaction of water with sunlight.

4. Solar Halos—Sunlight and Ice Crystals
太陽のハローー日光と氷の結晶

Travel higher up in the atmosphere and discover what happens when sunlight interacts not with raindrops but with frozen ice crystals. After learning how these delicate crystals are formed, we examine stunning photo that captures the wonders of everything from solar halos and mock suns to glitter paths and sun pillars.

5. The Colors of Sunrise and Sunset
日の出と日の入りの色

What is the science behind a majestic sunrise or dramatic sunset? Find out in this lecture on the colors and features that accompany these breathtaking, everyday events. Professor Filippenko reveals the science behind—and offers skywatching tips for—blue moons, the "belt of Venus," alpenglow, green flashes, and more.

6. Bright Stars, Constellations, and the Zodiac
明るい星、星座、星座

Stars and constellations are some of the most commonly sought-after features of the night sky. Here, learn how to spot such iconic star patterns as the Big Dipper; make sense of the zodiacal constellations; locate some of the sky's brightest stars; and learn just why it is that stars twinkle.

7. Viewing the Planets and Their Motions
惑星とその動きを見る

How can you tell the difference between a planet and a star? When is the best time to see planets such as Mercury and Jupiter? What's the difference between retrograde and prograde planetary motion? Get the answers to these and other questions in this lecture on spotting each of our solar system's planets.

8. The Moon, Phases, and Lunar Eclipses
月、月の満ち欠け、月食

Looking up at the moon has always been a favorite pastime on romantic evenings. But there's actually so much more to see and experience when you look with a trained eye.
Here, learn everything about the moon's craters and seas, follow its distinct lunar phases, ponder the "moon illusion," and explore lunar eclipses.

9. Satellites, Comets, and Meteors
衛星、彗星、流星

The International Space Station and the Hubble Space Telescope. Famous comets such as Hale-Bopp, Hyakutake, and McNaught. Brilliant meteor showers and storms, including the Perseids and Leonids. Revel in the science of understanding objects that orbit Earth or the sun and the beauty of witnessing such objects move across our sky.

10. Observing Solar Activity and Earth's Auroras
衛星、彗星、流星

Explore the inner workings of the sun; learn to look safely at amazing features such as sunspots, solar prominences, and captivating coronas. Also, learn how coronal mass ejections give rise to space weather and solar wind, possible satellite disruptions and power outages on Earth, and the shimmering auroras of the northern & southern lights.

11. Solar Eclipses—Marvelous Coincidences
日食-素晴らしい偶然

In this gorgeously illustrated lecture, follow the spectacular stages of a total solar eclipse, including first contact, totality, and the two "diamond ring" stages. Also, get tips on how best to view these marvelous celestial events—and where and when you can see them in the coming years.

12. Celestial Sights When the Night Is Darkest
夜が暗いときの天体

In this final lecture, Professor Filippenko reveals some of the breathtaking stars, galaxies, and other phenomena you can see while skywatching under extremely dark conditions, and how to find them. Also, learn how the night sky has given us clues about the birth of the universe—and even our origins.