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A sprightly explanation for UFO sightings?

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American Friends of Tel Aviv University



image: The appearance of a "sprite" (about 30 miles high by 30 miles wide), flashing above a distant thunderstorm. The "sprite" is about 175-250 miles away from the camera. [view more >](#)

Credit: ILAN Science Team

In legend, sprites are trolls, elves and other spirits that dance high above our ozone layer. But scientists at Tel Aviv University have discovered that some very real "sprites" are zipping across the atmosphere as well, providing a possible explanation for those other legendary denizens of the skies, UFOs.

Thunderstorms, says Prof. Colin Price, head of the Geophysics and Planetary Sciences Department at Tel Aviv University, are the catalyst for a newly discovered natural phenomenon he calls "sprites." He and his colleagues are one of the leading teams in the world studying the phenomenon, and Prof. Price leads the study of "winter sprites" — those that appear only in the northern hemisphere's winter months.

"Sprites appear above most thunderstorms," explains Prof. Price, "but we didn't see them until recently. They are high in the sky and last for only a fraction of a second." While there is much debate over the cause or function of these mysterious flashes in the sky, they may, Prof. Price says, explain some bizarre reports of UFO sightings.

An Electrifying Discovery

Sprites are described as flashes high in the atmosphere, between 35 and 80 miles from the ground, much higher than the 7 to 10 miles where regular lightning bolts usually occur.

"Lightning from the thunderstorm excites the electric field above, producing a flash of light called a sprite," explains Prof. Price. "We now understand that only a specific type of lightning is the trigger that initiates sprites aloft."

Though sprites have existed for millions of years, they were first discovered and documented only by accident in 1989 when a researcher studying stars was calibrating a camera pointed at the distant atmosphere where sprites occur.

"Sprites, which only occur in conjunction with thunderstorms, never occur on their own, and are cousins to similar natural phenomenon dubbed by atmospheric electricians as 'elves,' 'goblins' and 'trolls,'" Prof. Price says. These flashes are so named because they appear to "dance" in the sky, which may explain some UFO sightings.

Candles on a Celestial Birthday Cake

Tel Aviv University's research team is one of the leading global groups studying the phenomenon. But Prof. Price and his students are now working in collaboration with other Israeli scientists from The Open University and The Hebrew University to take three-dimensional pictures of sprites to gain a better understanding of their structure. Using remote-controlled roof-mounted cameras, the researchers are able to look at the thunderstorms that produce sprites when they are still over the Mediterranean Sea.

From their unique vantage point in Israel, the researchers are leading the world in the study of winter sprites. Prof. Price's new camera techniques, in particular, have revealed the sprites' circular structures, which are much like those of candles on a birthday cake. Using triangulation, Prof. Price and his team have also been able to calculate the dimensions of the sprites' features. "The candles in the sprites are up to 15 miles high, with the cluster of candles 45 miles wide — it looks like a huge birthday celebration!"

Because of their high altitude, sprites may also have an impact on the chemistry of the Earth's ozone layer. "Since they are relatively infrequent, the global impact is likely small," says Prof. Price. "But we're researching that now."

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Internationally recognized for the scope and groundbreaking nature of its research programs, Tel Aviv University consistently produces work with profound implications for the future.

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