

# Astronomy Picture of the Day

2023 October 2



Sprite Lightning in High Definition

Image Credit & Copyright: Nicolas Escurat

Explanation: Sometimes lightning occurs out near space. One such lightning type is red sprite lightning, which has only been photographed and studied on Earth over the past 25 years. The origins of all types of lightning remain topics for research, and scientists are still trying to figure out why red sprite lightning occurs at all. Research has shown that following a powerful positive cloud-to-ground lightning strike, red sprites may start as 100-meter balls of ionized air that shoot down from about 80-km high at 10 percent the speed of light. They are quickly followed by a group of upward streaking ionized balls. Featured here is an extraordinarily high-resolution image of a group of red sprites. This image is a single frame lasting only 1/25th of a second from a video taken above Castelnau Castle in Dordogne, France, about three weeks ago. The sprites quickly vanished — no sprites were visible even on the very next video frame.

Tomorrow's picture: eye in the sky

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