Aurora Dome Sky

Date: 2024-05-20 Copyright: Xuecheng Liu & Yuxuan Liu

It seemed like night, but part of the sky glowed purple. It was the now famous night of May 10, 2024, when people over much of the world reported beautiful aurora-filled skies. The featured image was captured this night during early morning hours from Arlington, Wisconsin, USA. The panorama is a composite of several 6-second exposures covering two thirds of the visible sky, with north in the center, and processed to heighten the colors and remove electrical wires. The photographer (in the foreground) reported that the aurora appeared to flow from a point overhead but illuminated the sky only toward the north. The aurora's energetic particles originated from CMEs ejected from our Sun over sunspot AR 6443 a few days before. This large active region rotated to the far side of the Sun last week, but may well survive to rotate back toward the Earth next week.

North Celestial Aurora

Date: 2024-05-18 Copyright: Chirag Upreti

Graceful star trail arcs reflect planet Earth's daily rotation in this colorful night skyscape. To create the timelapse composite, on May 12 consecutive exposures were recorded with a camera fixed to a tripod on the shores of the Ashokan Reservoir, in the Catskills region of New York, USA. North star Polaris is near the center of the star trail arcs. The broad trail of a waxing crescent Moon is on the left, casting a strong reflection across the reservoir waters. With intense solar activity driving recent geomagnetic storms, the colorful aurora borealis or northern lights, rare to the region, shine under Polaris and the north celestial pole. AuroraSaurus: Report your aurora observations

Aurora Banks Peninsula

Date: 2024-05-17 Copyright: Kavan Chay

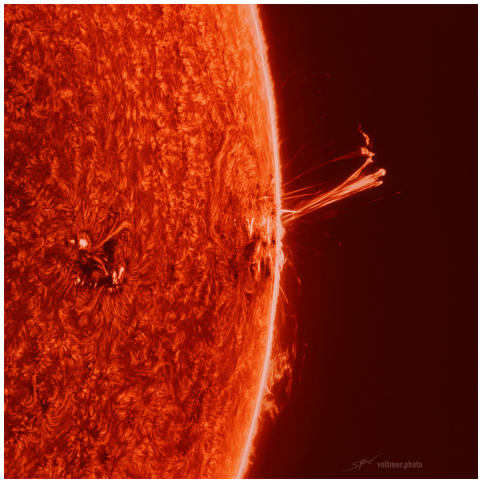
This well-composed composite panoramic view looks due south from Banks Peninsula near Christchurch on New Zealand's South Island. The base of a tower-like rocky sea stack is awash in the foreground, with stars of the Southern Cross at the top of the frame and planet Earth's south celestial pole near center. Still, captured on May 11, vibrant aurora australis dominate the starry southern sea and skyscape. The shimmering southern lights were part of extensive auroral displays that entertained skywatchers in northern and southern hemispheres around planet Earth, caused by intense geomagnetic storms. The extreme spaceweather was triggered by the impact of coronal mass ejections launched from powerful solar active region AR 3664. AuroraSaurus: Report your aurora observations

Aurora Georgia

Date: 2024-05-16 Copyright: Wright Dobbs

A familiar sight from Georgia, USA, the Moon sets near the western horizon in this rural night skyscape. Captured on May 10 before local midnight, the image overexposes the Moon's bright waxing crescent at left in the frame. A long irrigation rig stretches across farmland about 15 miles north of the city of Bainbridge. Shimmering curtains of aurora shine across the starry sky, definitely an unfamiliar sight for southern Georgia nights. Last weekend, extreme geomagnetic storms triggered by the recent intense activity from solar active region AR 3664 brought epic displays of aurora, usually seen closer to the poles, to southern Georgia and even lower latitudes on planet Earth. As solar activity ramps up, more storms are possible. AuroraSaurus: Report your aurora observations

AR 3664 at the Sun's Edge



Date: 2024-05-15 Copyright: Sebastian Voltmer

What did the monster active region that created the recent auroras look like when at the Sun's edge? There, AR 3664 better showed its 3D structure.

Pictured, a large multi-pronged solar prominence was captured extending from chaotic sunspot region AR 3664 out into space, just one example of the particle clouds ejected from this violent solar region. The Earth could easily fit under this long-extended prominence. The featured image was captured two days ago from this constantly changing region. Yesterday, the strongest solar flare in years was expelled (not shown), a blast classified in the upper X-class. Ultraviolet light from that flare quickly hit the Earth's atmosphere and caused shortwave radio blackouts across both North and South America. Although now rotated to be facing slightly away from the Earth, particles from AR 3664 and subsequent coronal mass ejections (CMEs) might still follow curved magnetic field lines across the inner Solar System and create more Earthly auroras. Gallery: Earth Aurora from Solar Active Region 3664

The 37 Cluster

Date: 2024-05-14 Copyright: Sergio Eguivar

For the mostly harmless denizens of planet Earth, the brighter stars of open cluster NGC 2169 seem to form a cosmic 37. Did you expect 42? From our perspective, the improbable numerical asterism appears solely by chance. It lies at an estimated distance of 3,300 light-years toward the constellation Orion. As far as galactic or open star clusters go, NGC 2169 is a small one, spanning about 7 light-years. Formed at the same time from the same cloud of dust and gas, the stars of NGC 2169 are only about 11 million years old. Such clusters are expected to disperse over time as they encounter other stars, interstellar clouds, and experience gravitational tides while hitchhiking through the galaxy. Over four billion years ago, our own Sun was likely formed in a similar open cluster of stars. Gallery: Earth Aurora from Solar Active Region 3664

AR 3664 on a Setting Sun

Date: 2024-05-13 Copyright: Marco Meniero

It was larger than the Earth. It was so big you could actually see it on the Sun's surface without magnification. It contained powerful and tangled magnetic fields as well as numerous dark sunspots. Labelled AR 3664, it developed into one of the most energetic areas seen on the Sun in recent years, unleashing a series of explosions that led to a surge of energetic particles striking the Earth, which created beautiful auroras. And might continue. Although active regions on the Sun like AR 3664 can be quite dangerous, this region's Coronal Mass Ejections have not done, as yet, much damage to Earth-orbiting satellites or Earth-surface electrical grids. Pictured, the enormous active region was captured on the setting Sun a few days ago from Civitavecchia, Rome, Italy. The composite image includes a very short exposure taken of just the Sun's surface, but mimics what was actually visible. Finally, AR 3664 is now rotating away from the Earth, although the region may survive long enough to come around again. Gallery: Earth Aurora from Solar Active Region 3664