Rainbows and other Luminous Marvels

A personal journey in wonder and beauty

Wells Shoemaker, June, 2025

Panamint Valley, Death Valley NP, Winter Solstice

Wintry March morning in Anza Borrego

The Petroglyph Rock from Salem’s deck at dawn

Big Sur

Virga bow in an isolated, dynamic cell near Tonopah

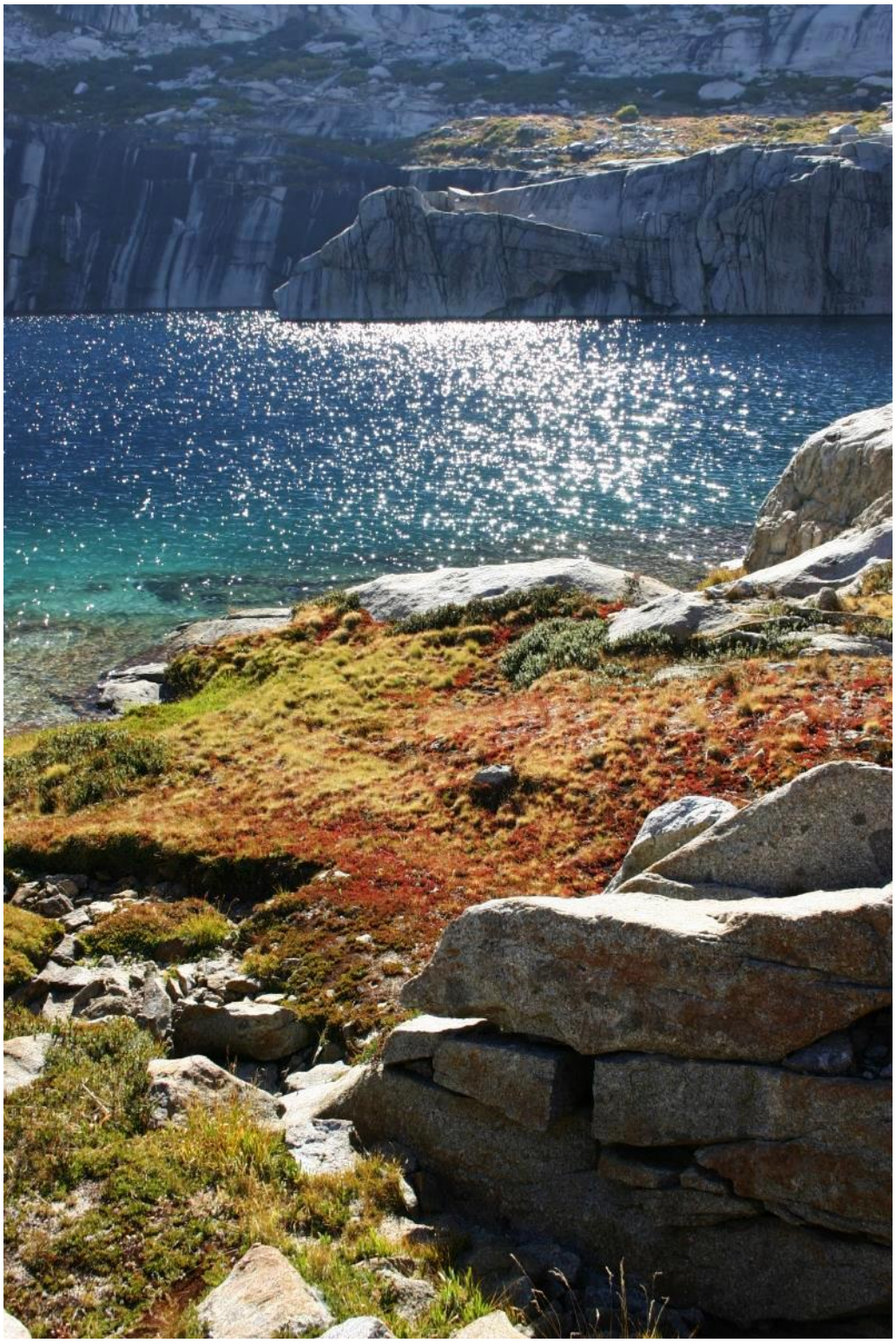
Two different rainbows in different years from Doug’s deck in Torrey

Domes of Capitol Reef in the distance

Poipu Crater

Te Anau, South Island

Maui



Heaven to Earth: Let’s call it Rainbow Lake, High Sequoia NP

Luna Brooks, Rainbow Warrior

Sun Dogs, Halos, Coronas, Flashes, Pillars, and Glories:

Icy Refractions, Exceptional Clouds, and other Light Shows

Saline Range West of the Eureka Dunes on the winter solstice

Halo’ed awakening from a nap, Mirror Lake, Trinity Alps

Halo at Joshua Tree

Big Sur

Morning of the Dog: Parhelic circle, Morris Lake, Trinity Alps

Parhelic Circle over Wilder Ranch SP

A rare circumzenithal arc on the same winter day hiking with friends in Wilder Ranch. This icy refractive arc bends convexly away from the sun, as opposed to a rainbow which bends concavely. Also in contrast to a rainbow, the warm reds appear closer to the light source.

The evanescent green flash is most commonly described as the sun just drops below the Western horizon—almost always the ocean—on a very clear day. It appears the phenomenon works at the cusp of emergence as well as the disappearance. Above, the descending sun just emerged below a dense, horizontal cloud bank above Snow Mountain summit. The sensor picked up gold...but it was green to the naked eye.

Here it was at dawn in Joshua Tree.

Refractive Cirrus above Tangle Blue Lake

Cirrus refractions and Red Fir, Trinity Alps...loved that Agfa film

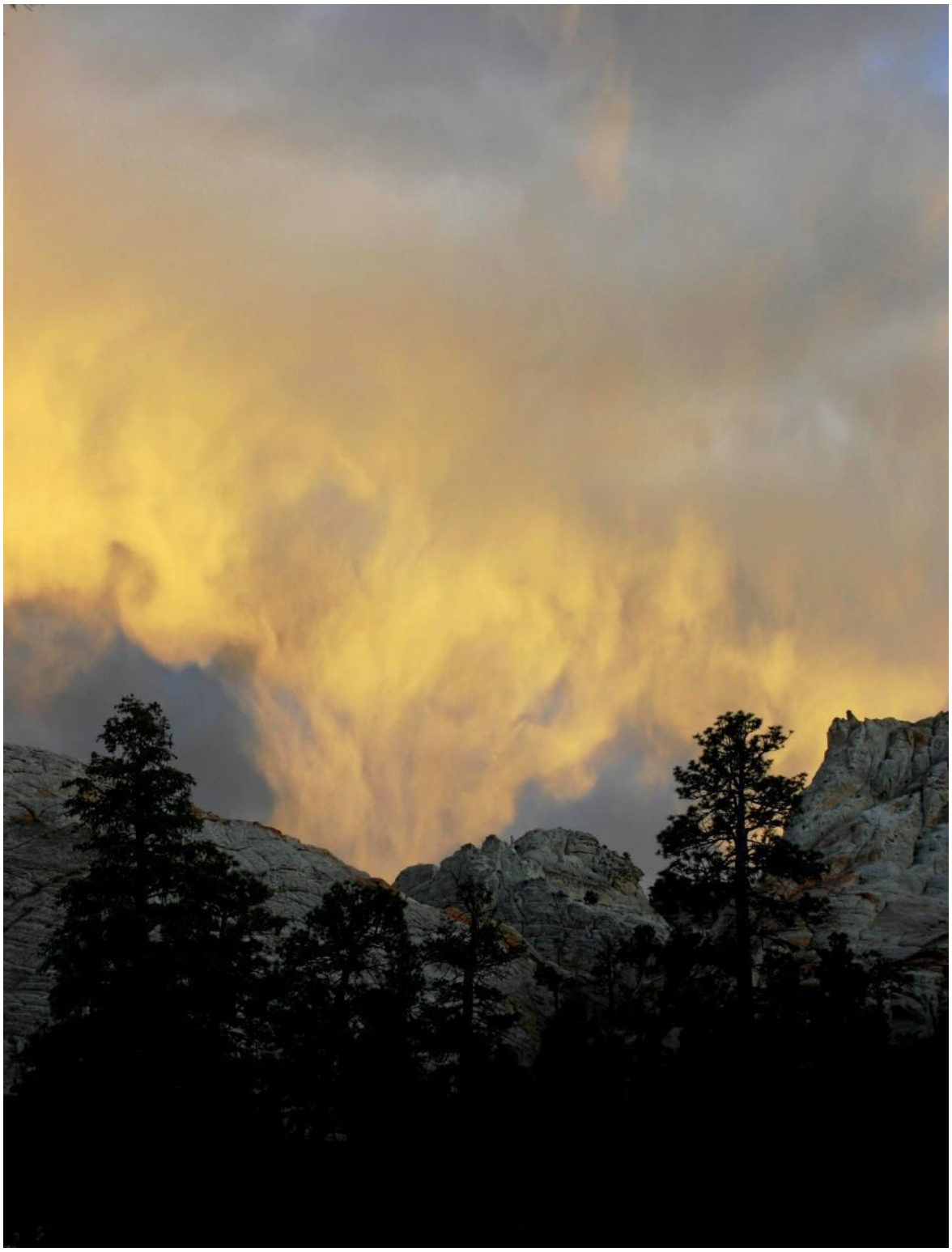
Moonbow Halo, from the sleeping bag, Death Valley

Midnight Moonplay above Salem’s deck, Utah

Sunburst above Lake Anna

Slickrock Overhang in Utah

Ulithi Lagoon



Sunset illuminated “Fire” above Salem’s Cabin

Virga at sundown, Wingate cliffs above the Dirty Devil River

Looking West into sunset virga below a “rolling pin cloud” in January, Panamint Valley

Flaming virga over Boulder Mountain, Utah

Utah, of course

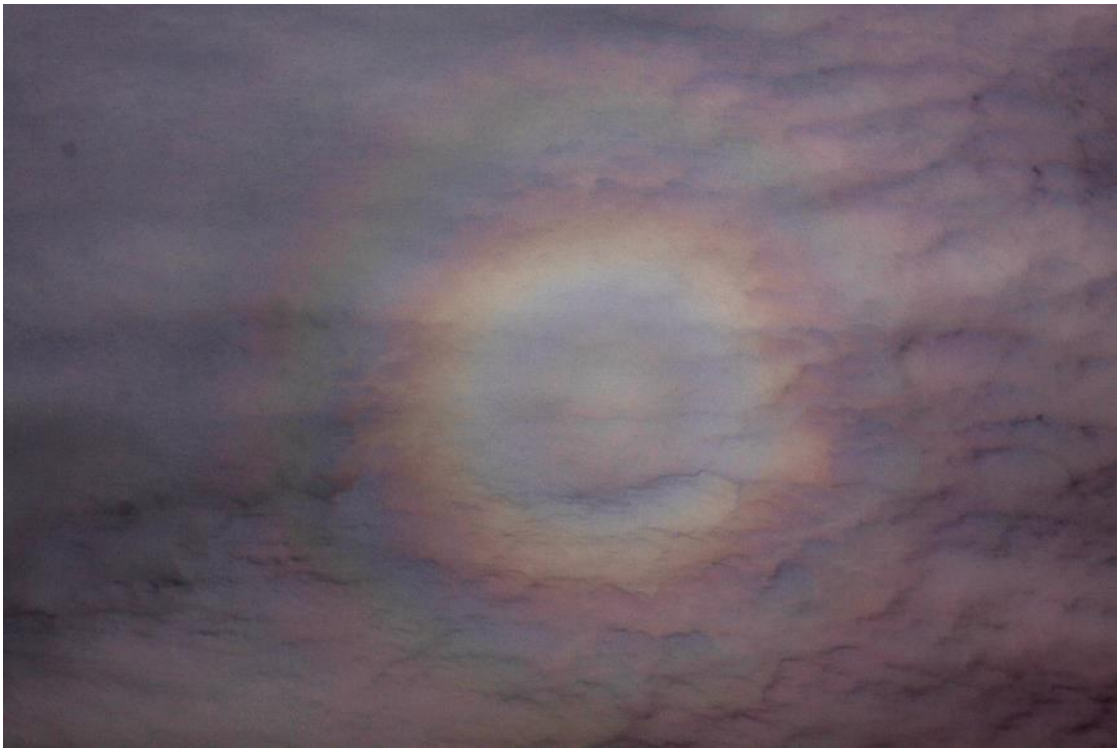
Thunderhead barreling over Sawtooth Peak...seen and heard from Canyon Creek

Red sky beneath booming thunderhead after sunset at Muley Point, Utah. Looking South. Still an intrigue to me.

Clouds and Light

Kelvin-Helmholtz cloud...a windshear effect with a bonus refractive glimmer

You can’t make this up



A “glory” seen from a jet plane window
Iridescent diffraction rings from the plane paint the cloud layer below.

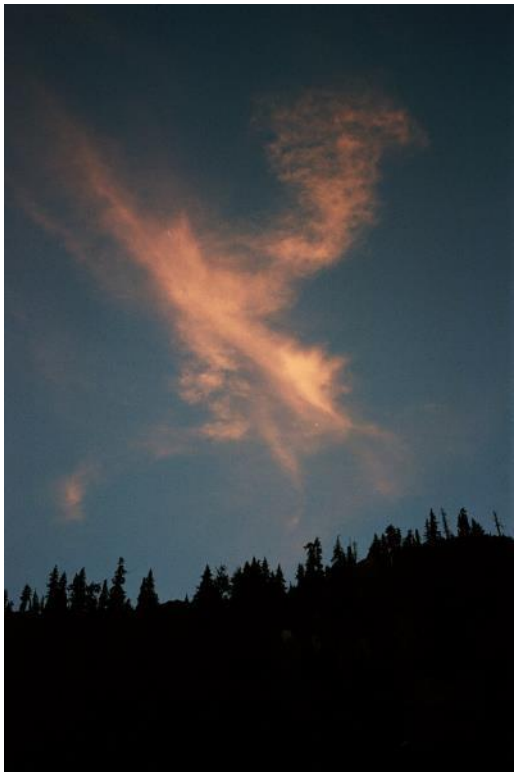
A “hole” in the supersaturated altocumulus layer over the Panamint Valley. A fighter jet flying through the clouds left a trail of particles, which precipitated the water. *Poof!*

Lenticular cloud over Crankshaft Junction, remote Death Valley

Red lenticular clouds over the Saline Range...later the same evening

Pareidolia: Faces, Friends...and Aliens...Come out of the Sky

Surfer after Sunset
Remembering Glenn Stockwell



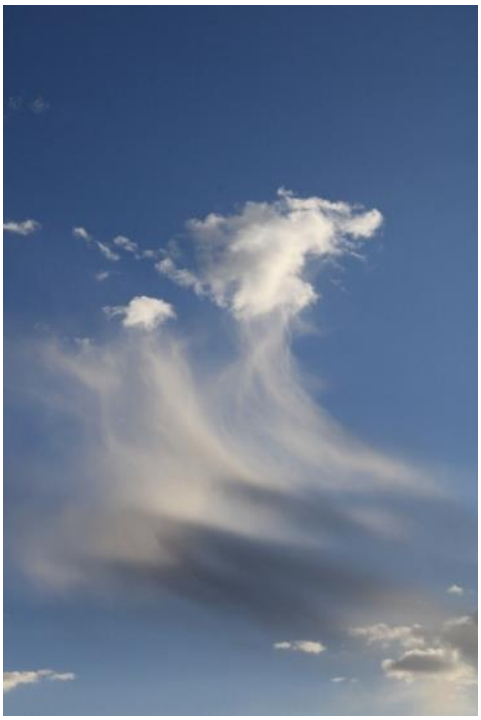
Plunging Dragon, Caribou Lake

Dawn Swoosh on a solo Trinity backpack. *G'Day, Jim. Nice Ride.*

Spaceships over the Mojave Desert

Jellyfish in the Sky

Jellyfish parade before dawn from my sleeping bag. Near US 50 in central Nevada



Utah

Nevada

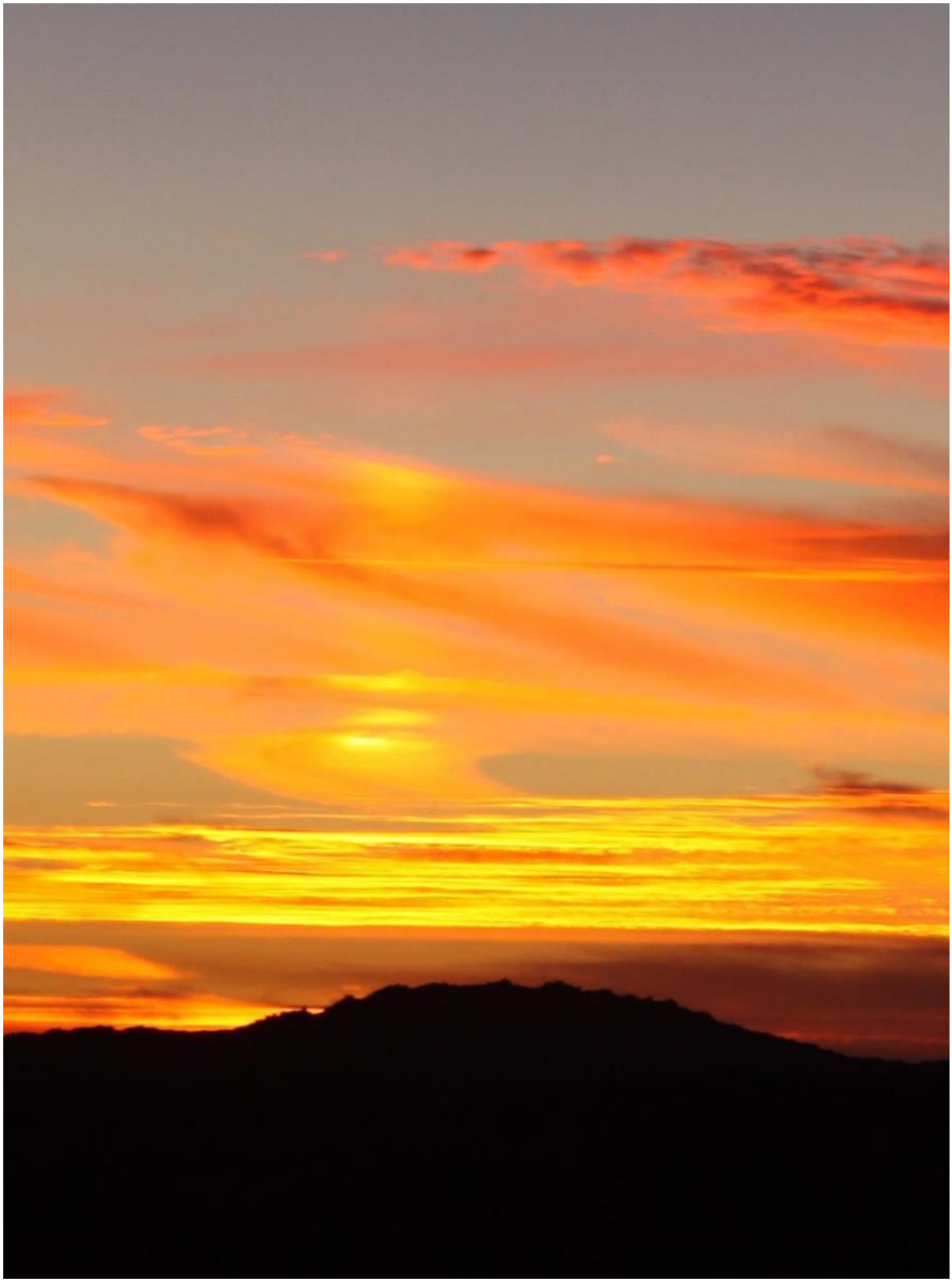
Noctilucent Clouds

Willow Creek, CA, latitude 40°, 9:55 PM in mid-June, 2019

Wispy, blue, noctilucent clouds appear in the weeks close to the summer solstice. This rare phenomenon doesn't show up until well after dark...10 PM in Northern California ...maybe later further North. Long after the sun has sunk below the horizon for Earthlings, angular light still catches a diaphanous band of reflective particles at the edge of space. We can see it glowing against the dark background looking northwest.

This band is extremely high: *50 miles!* That's well above cirrus clouds, which float a mere 4-6 miles up! There's very little water on the edge of space, but it's cold! Ice crystals form around dust particles forming a thin layer, invisible during the day. What kind of dust gets that high? NASA says it's from disintegrating meteors and major volcanic eruptions.

These sightings used to be reserved for skywatchers in northern latitudes 45-60° (Vancouver BC is 49°). That's changing, possibly with more human generated pollution from Earth, more and more rocket launches, and burning reentry vehicles.



Sun pillar in the icy high clouds from Thunder and Lightning Pass, Sequoia

Confession: This is an artifact of a handheld camera trying to capture prismatic moonlight on the clouds...at 6400 ASA. 2 stars, too. I call it the Hubble Shack Nebula.

This was real: a”Dandelion Moon” corona above Death Valley through a gauzy sky

More moonshine below

The eclipsed moon moments after reaching totality.

Moon emerging from eclipse above the Lair of the Salamandre

Total lunar eclipse just before dawn over the Eureka Dunes

Sequence of the total, annular eclipse in 2012...from Brian Head, Utah

Not the moon, but a whole planet! Venus Transit, 2012, from the Berry Deck

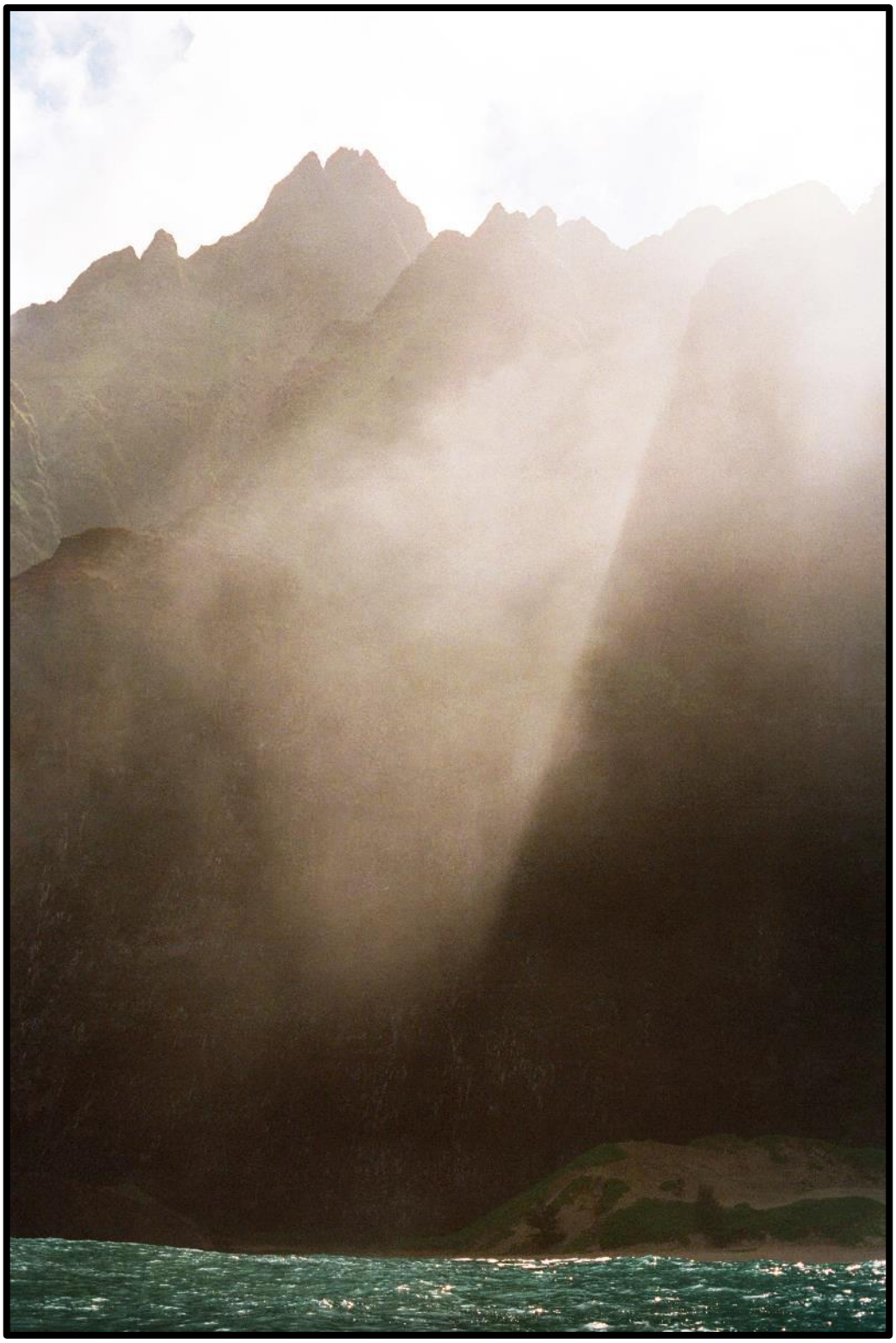
Crepuscular and Anticrepuscular Rays

Trinity Alps

Crepuscular rays, (AKA God Rays) originate with sunlight in front of the observer. Clouds, trees, or geological features...like Sawtooth Peak...create contrasting light and shadow lines on dust or mist in the air. The rays appear to diverge as they approach.

Crepuscular Rays over the Indian Ocean, Yallingup, Western Australia

Crepuscular rays and incandescent virga in an advancing, intense cell. Torrey, Utah.

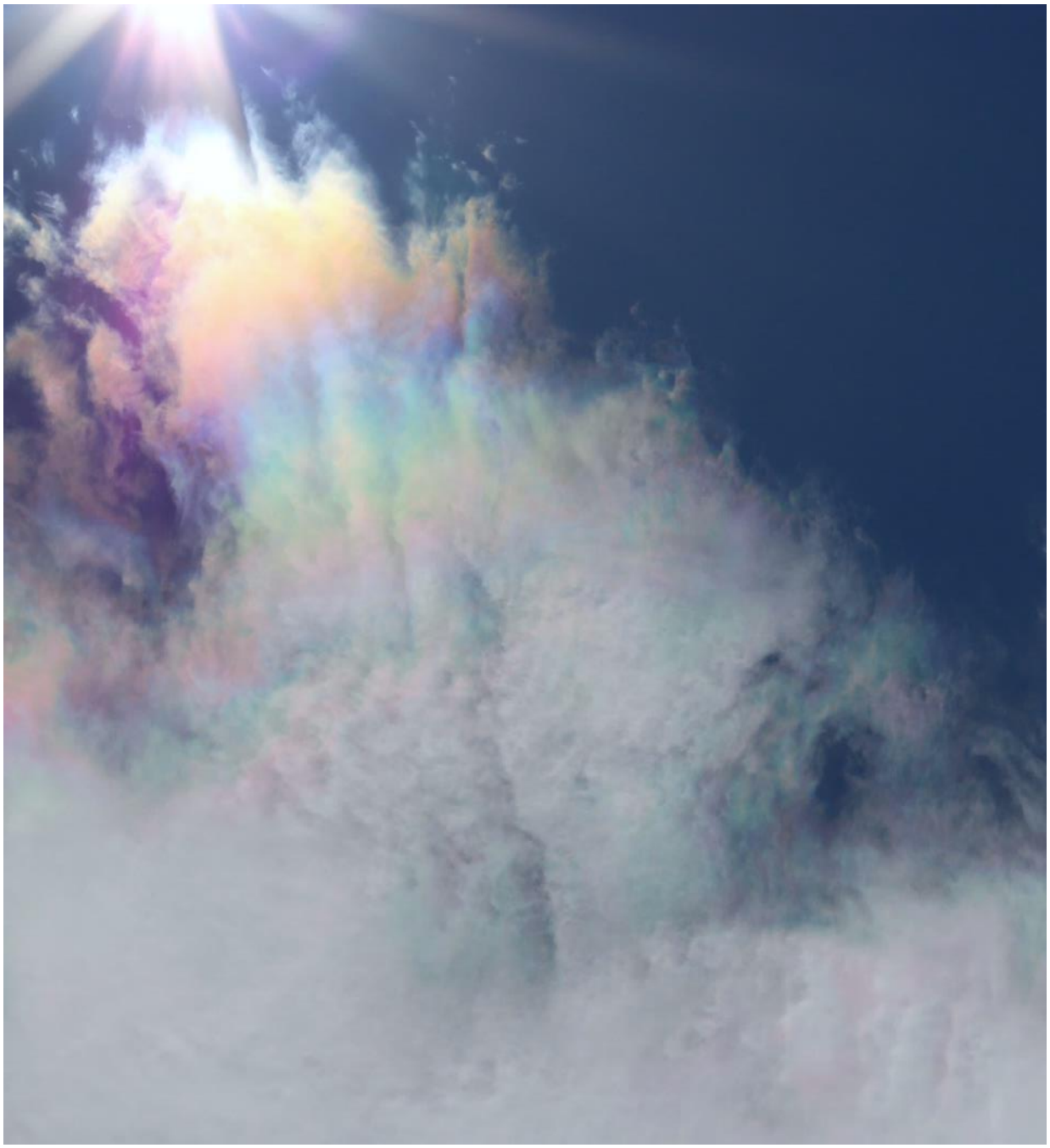


Nā Pali, Kauai

Rarer *Anticrepuscular* rays at first or last light of the day converge at a distant point on the horizon *opposite* the sun. The sun lies to the *back* of the observer.

Energetic mammatus cloud and *anti*crepuscular rays converging upon the Henry Mountains on the eastern horizon

Anticrepuscular rays approaching Delta, Utah, from the West on a nasty, stormy day



“Pillars of Creation” right here on Earth
Anza Borrego Desert on a Magical Day

You won’t find these things on your phone.

Enjoy our beautiful world, and please treat it gently.

Wells Shoemaker MD
June, 2025

Acknowledgements and Apologies

All the photographs are mine, taken over the last 60 years, but mostly over the last 25.

I love natural things in the sky, and I sheepishly admit that the cost to see these things is really just the time it takes to get out of the house and look up. For some treats, it pays to have a truck that can get to places with no lights at night, where it often behooves an observer to invest in a down jacket. Binoculars, well...those help, too. Studying these atmospheric phenomena is a respected academic discipline. I'm just a grateful dilettante with a camera.

I read the **EarthSkyNews** column every day, and I find their explanations and spirit to be the most precious thing coming from Texas. Their domain of interests stretches from the inner core of our planet to the crust, oceans, and mountains, through our sky and then the solar system and off to the furthest reaches of our universe. Their explanations of optical atmospheric phenomena, among so many other topics, are clear, entertaining, and inspiring.

> With the ignorant trampling of science by our current government of fools, EarthSkyNews must depend upon donations to survive.
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SpaceWeather.com News and information about meteor showers, solar flares, auroras, and near-Earth asteroids. Their explanations of optical phenomena are crisp and wonderful.

NOAA's www.SpaceWeather.gov is another threatened treasure. Partake while you can!

I realized that I have a pretty cool stash of photographs of optical phenomena, but I assure you that I have a fierce conviction to cull out dull pictures. My daughter is a real professional photographer (www.SaraShoemakerLind.com), and Sandie was raised by an accomplished artist, so let's just say the standard of even casual sharing in the family is strict.

This collection is personal but not complete. For example, I have marveled at the zodiacal light in the desert on a clear winter night, but failed to photograph it with the tools at hand. I have never seen the aurora borealis, but those images are plentiful.

Sunsets and sunrises are one of the most generous free gifts to humankind, and there must be hundreds of billions of photographs in drawers and memory chips around the world, including mine. For this folio, I included only ones which illustrated other atmospheric optical phenomena.

Likewise, photos of the moon and planets by an amateur are neat, but those don't hold a candle to the work of determined professionals with telescopes and $10,000 cameras. I included only those which made an optical interplay with our atmosphere.

Thanks,

Wells

Keep your distance then... Get really close

Stay forever curious