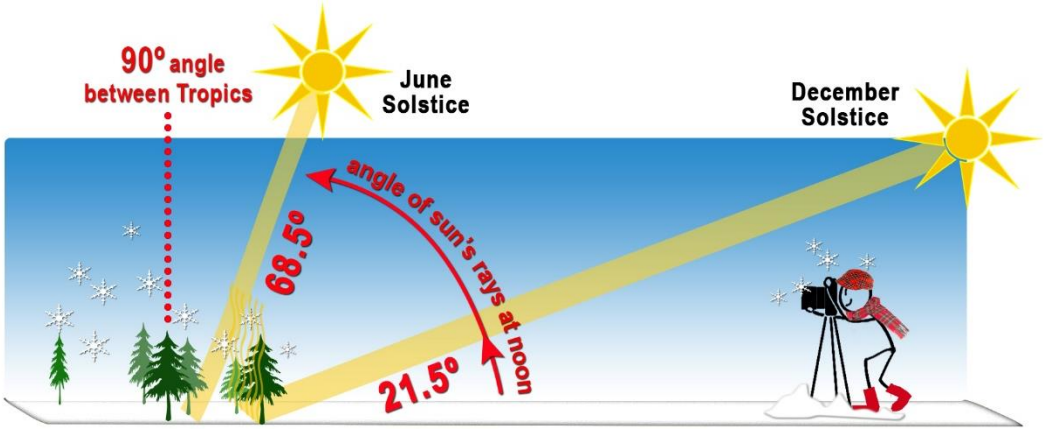
Winter Photography
with Kas Stone

The Science of Winter

- Winter = the coldest season of the year, occurs in mid-to-polar latitudes, beginning at the winter solstice (Dec 20-22 in the northern hemisphere).
- Caused by tilt of earth's rotational axis (23.5º) vs its orbital plane around the sun, which angles the northern hemisphere away from the sun between Sept and March, reducing the amount of solar energy (light & heat) with increasing severity toward the pole, causing more oblique light, shorter days and cooler temperatures.
- Light particles are absorbed and scattered when passing through Earth's atmosphere. The more angled the incoming light (toward the poles, during winter, at dawn/dusk), the less intense and more diffuse the light. Short violet/blue wavelengths are more susceptible to scattering than long red/yellow wavelengths, resulting in a 'golden' colour cast in low-angle light.



Personal Comfort & Protection

- Winter hazards = hypothermia, dehydration, sunburn/glare, accidents on ice & snow.
- Layers of clothing (fleece, wool, silk, Gore-Tex, *not* cotton), hand/toe-warmers, sunglasses, sunscreen, lip balm, icers, snowshoes, first aid kit with warm drinks, snacks and space-blanket.

Care of Camera Gear

- Electronics slow in cold, short-circuit in wet; plastic components brittle; metal components cold.
- Lubricants & liquids (ie. LCD screen) have high viscosity in cold → stiff, slow response.
- External moisture: protect lens with hood/cap and camera with plastic bag (*not* under coat!)
- Condensation from temperature changes: moisture from warm air (indoors, breath, body) condenses on cold camera/lens; avoid by keeping gear outdoors; before coming indoors place gear in air-tight plastic bag (with optional desiccant) and allow to warm slowly (air in bag is cold and therefore low-moisture).
- Tripod: apply insulating leg covers; tape feet to base; caution re over-extending legs in snow.
- Memory cards: most function well in cold; pro/industrial SD cards rated to -40º performance.
- Batteries: rotate 2-3 batteries between camera and pocket with hand-warmer.

Technical Challenges

The camera's light/colour metering systems always assume 'average' tonality and colour in a scene (mid-grey & neutral hue), and its auto settings attempt to replicate this in the resulting image. However the low-angle, diffuse winter light is often *not* average, so the photographer must override the camera's settings manually for the best visual results.

Light

- *Intensity = quantity of light* → camera exposure controlled by ISO, aperture & shutter speed.
- *Quality = diffuseness of light* → hard/direct vs soft/scattered → contrast and shadow definition.
- *Direction = source of light relative to camera* → top (in tropics) vs front vs side vs back.
- *Colour = wavelength of light* = solar energy that we perceive as colour.

Winter Exposure Challenges

- *Underexposure:* camera misinterprets a snowy scene as 'too bright', so underexposes the image → *solution:* add 1-3 stops of light via manual exposure or exposure compensation; shoot RAW to maximize tonal recovery; use histogram and highlight warnings (blinkies, zebras) to evaluate & retain appropriate detail in important features.
- *Dark Subject in a Snowy Setting:* camera meters the entire scene, so underexposes the subject → *solution:* spot-meter and expose for the subject, accepting possible loss of detail in the snow.
- *High-contrast Scene:* camera can't capture range of tonality between darkest and brightest areas → *solution:* graduated ND filter, fill-flash, reflectors, bracketing, HDR post-processing.
- *Dull Overcast Light, Thick Falling Snow:* no shadows to provide detail, texture or sense of depth → *solution:* 'flatness' can be used as an artistic tool to create minimalism in the image.

Winter Colour & White Balance

- *Colour:* what we perceive as the visible spectrum of light, measured via Kelvin temperature scale.
- *White Balance:* what the camera does (or we do) to neutralize colour casts.
- *Winter Colour Temperature:* camera sees the incoming 'golden light' and auto-WB compensates by adding blue to neutralize colours; we can restore the 'warm' colour by setting WB to cloudy/ shade or shoot RAW and adjust colour temperature during post-processing.

Focus

- *Camera's Autofocus System:* measures contrast at the point of focus, so requires a clear H or V light-dark edge to achieve focus.
- *Winter Focus Problem #1:* snow/ice can be shiny and featureless with no clear edges, so lens 'hunts' for focus.
- *Winter Focus Problem #2:* camera detects and locks focus on edges of falling snowflakes instead of on subject behind.
- *Solutions:* focus manually using viewfinder or live-view; lock focus on an object at the right distance, then re-compose.

Artistry & Inspiration

Seasonal Subjects

Landscapes: land, water, sky, trees, transformed by ice/snow → familiar becomes unfamiliar.
Weather: storms, snow, ice, wind, frost, snowflakes (macro & motion).
Nature: bird & animal species with their plumage/pelage and winter behaviour (congregating around feeding & shelter sites).
People: winter sports & recreation activities, winter hardship (especially urban streets & traffic), portraits (soft-box light + snow as a reflector).
Christmas: colourful lights, decorations, trees, holiday traditions & cards.
Abstracts: line, shape, texture, patterns, colour (lack of) in large-scale scenes & intimate details.

Winter's Visual Environment → Shooting & Post-Processing Choices

The Light: soft or sparkling, exaggerated shadows, prominent textures.
Colour Palette: naturally monochrome, muted colours, colour accents 'pop'.
Snow & Ice & Leafless/Brown Vegetation: hides clutter, obscures backgrounds, simplifies, creates mystery and visual minimalism.
Weather Activity: storm drama, falling snow, icy stillness (± motion)

Post-Processing:

- *Tone:* high-key (bright, cheerful) vs low-key (gloomy), HDR (tonal blending)
- *Colour:* cool/warm cast, saturate or subdue, monochrome
- *Sharpness:* accentuate detail & crispness
- *Blur:* soften detail, smooth edges
- *Noise/Grain/Textures:* vintage, grunge, provide visual content for bare areas
- *Fake Snow:* www.photoshopessentials.com/photo-effects/photoshop-snow

Summary: Use subject selection + visual design + camera technique + post-processing to make images that express *your* personal response to the winter season and showcase winter's drama, bleakness, softness, chill, hardship, fun (or however *you* feel about it).

Resources for Winter Image Inspiration

In Search of Winter story by Kas Stone in *On Your Doorstep* magazine, Issue #6, pages 24-34, (www.thurmanovich.com/magazine).

James Balog: www.jamesbalog.com (Extreme Ice portfolio and *Chasing Ice* documentary film)

Thierry Vezon: www.thierryvezon.com

Richard Burdon: www.rjbphotographic.co.uk

Larry Monczka & Kathleen Pickard: www.raraavisphotos.com

Kathy Keates: www.katherinekeatesphotography.com