The Wonders of the Night Sky

A Journey of Photographic Discovery

Peter Baumgarten

Understanding the Night Sky

"Timing is Everything"

Winter - core not visible

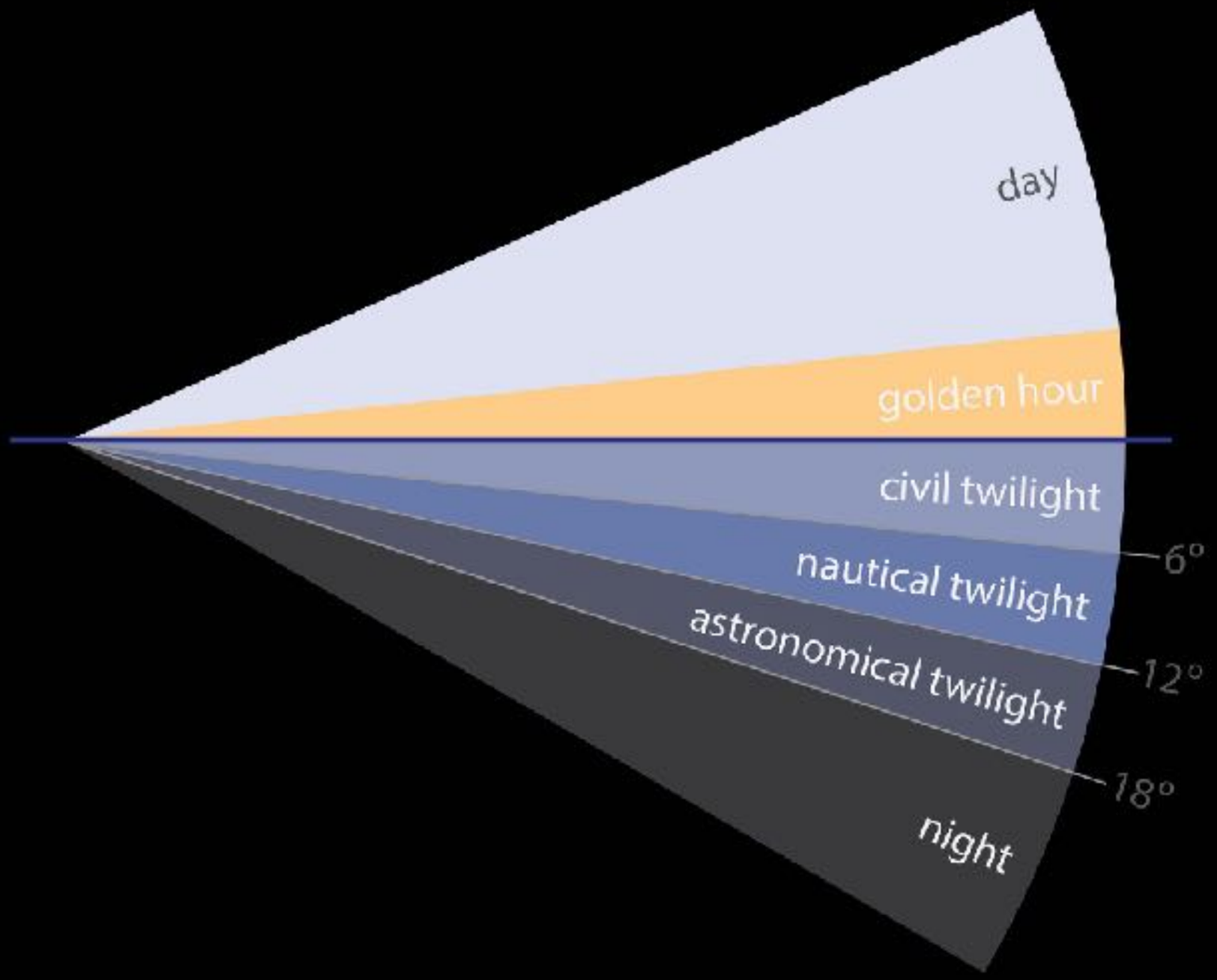
March through Early May - Milky Way appears as an arc and is best viewed early in the morning. MW rises in the east, but the core is toward the southeast.

Late May through early July - Milky Way has a 'typical' orientation. Arc is still present, but it is much higher in the sky.

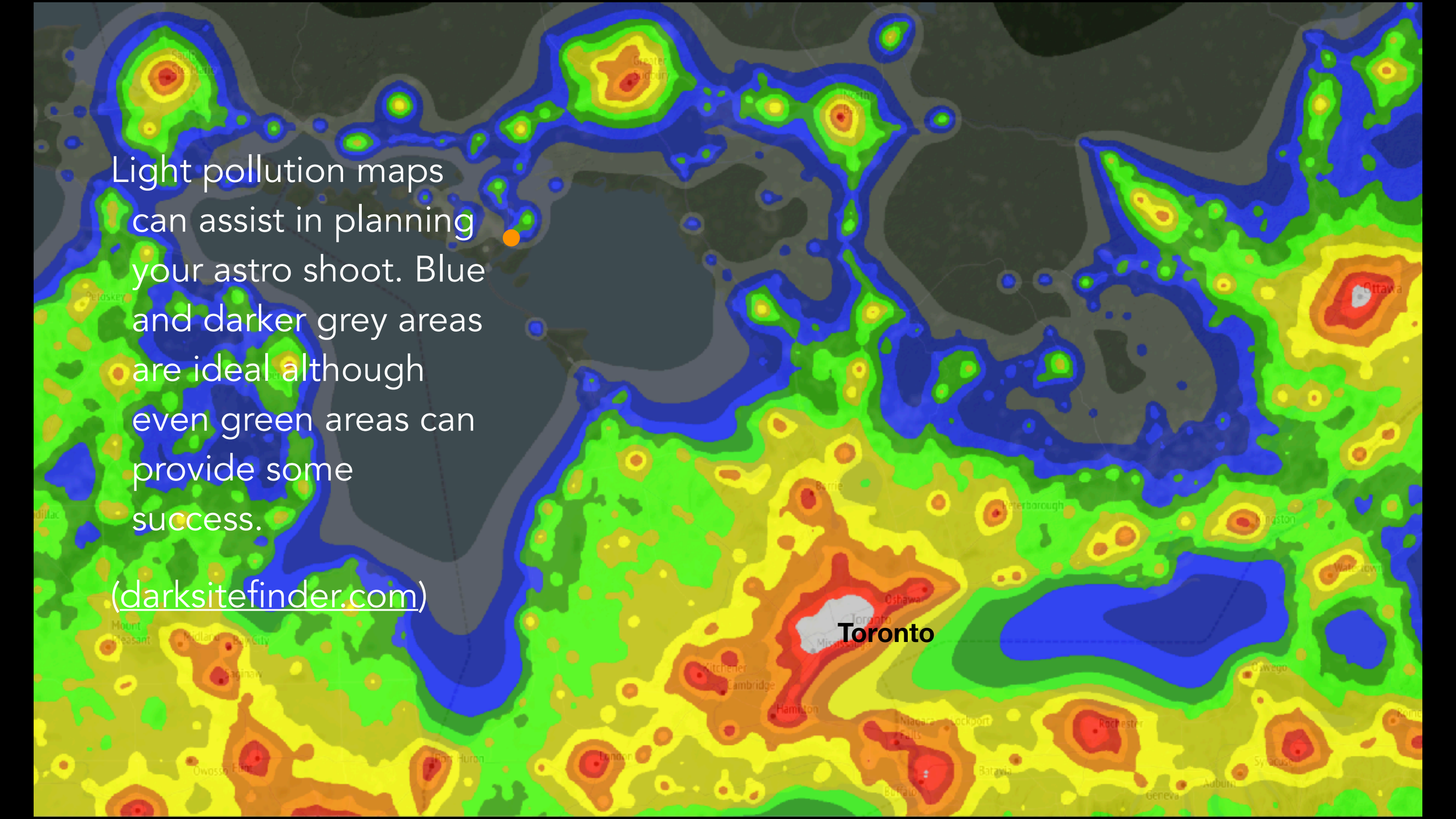
August through September - Milky Way has a 'vertical' orientation and is present once darkness sets in.

The Fight Against the Light

"Too much light is going to limit your opportunities."



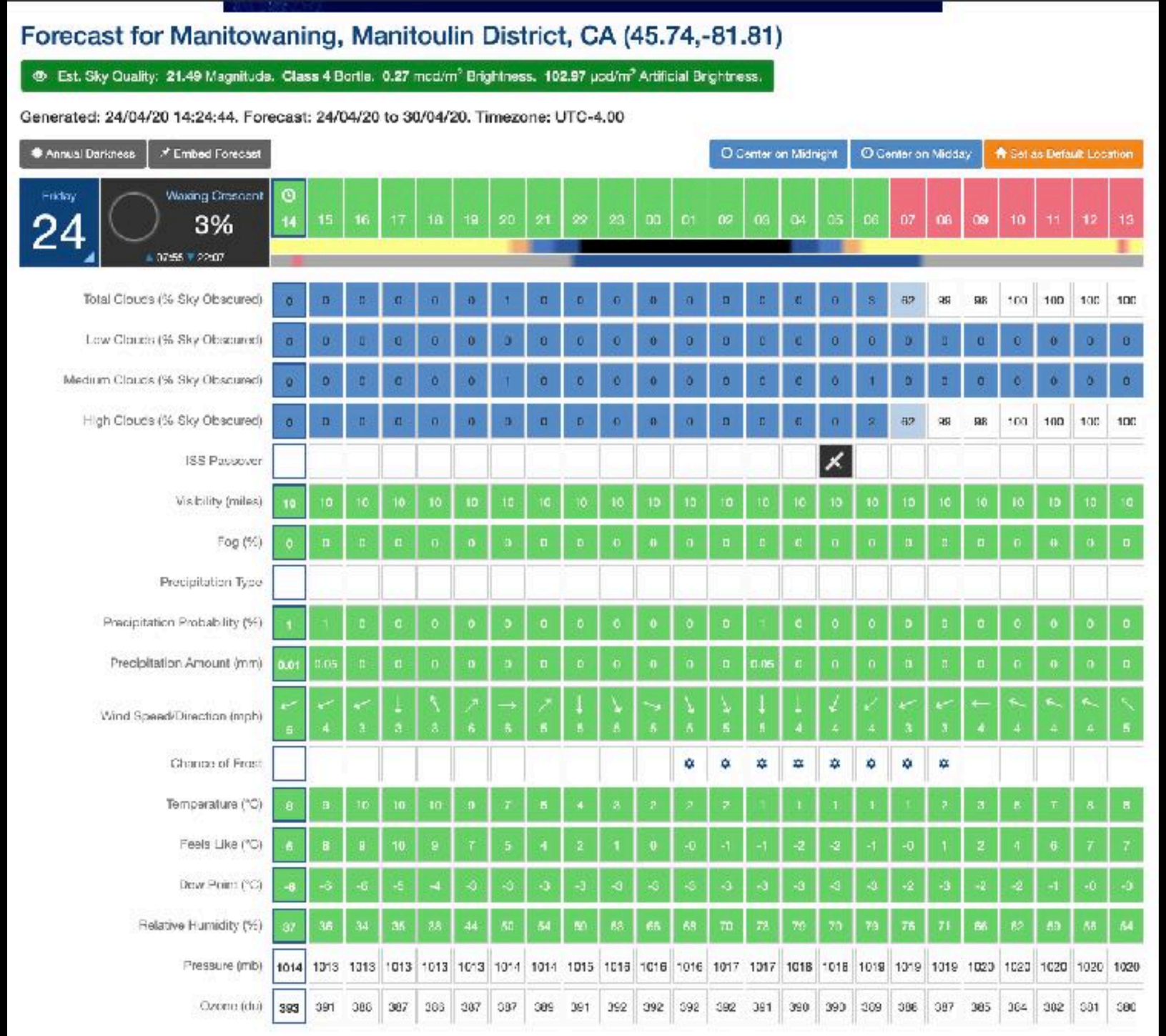
Night officially begins after astronomical twilight. The twilight period can last up to two hours but is dependant on your latitude and the time of year.


Light pollution maps can assist in planning your astro shoot. Blue and darker grey areas are ideal although even green areas can provide some success.
(darksitefinder.com)
Toronto

2021	Moonrise/Moonset			Meridian Passing		
Jun	Moonrise	Moonset	Moonrise	Time	Distance (km)	Illumination
1	1:55 a (114°)	12:06 p (249°)	-	6:56 am (29.6°)	385,604	58.9%
2	2:21 a (107°)	1:14 p (250°)	-	7:43 am (34.5°)	391,447	48.3%
3	2:44 am (100°)	2:18 pm (264°)	-	8:26 am (39.9°)	396,466	38.1%
4	3:04 am (92°)	3:21 pm (271°)	-	9:07 am (45.3°)	400,479	28.6%
5	3:24 am (85°)	4:22 pm (278°)	-	9:48 am (50.7°)	403,412	20.1%
6	3:45 am (78°)	5:24 pm (288°)	-	10:29 am (56.8°)	405,275	12.6%
7	4:07 am (71°)	6:26 pm (292°)	-	11:11 am (60.6°)	406,138	7.0%
8	4:31 am (65°)	7:28 pm (296°)	-	11:54 am (64.7°)	406,106	2.9%
9	5:00 am (60°)	8:30 pm (302°)	-	12:41 pm (66.1°)	405,287	0.5%
10	5:35 am (58°)	9:30 pm (306°)	-	1:28 pm (70.4°)	403,782	0.1%
11	6:17 am (54°)	10:25 pm (307°)	-	2:20 pm (71.6°)	401,661	1.0%
12	7:07 am (53°)	11:14 pm (309°)	-	3:12 pm (71.5°)	399,971	5.2%
13	8:05 am (55°)	11:56 pm (309°)	-	4:04 pm (70.0°)	395,731	10.7%
14	9:08 am (59°)	-	-	4:55 pm (67.2°)	391,958	18.0%
15	-	12:31 am (298°)	10:15 am (84°)	5:44 pm (63.2°)	387,679	26.8%
16	-	1:01 am (292°)	11:25 am (71°)	6:32 pm (58.3°)	382,875	37.0%
17	-	1:27 am (285°)	12:35 pm (78°)	7:19 pm (52.6°)	377,993	48.0%
18	-	1:51 am (277°)	1:46 pm (87°)	8:07 pm (46.5°)	372,972	59.5%
19	-	2:15 am (269°)	3:00 pm (96°)	8:56 pm (40.1°)	368,245	70.7%
20	-	2:40 am (260°)	4:16 pm (104°)	9:47 pm (33.9°)	364,224	81.1%
21	-	3:07 am (252°)	5:35 pm (113°)	10:42 pm (28.3°)	361,347	89.6%
22	-	3:39 am (244°)	6:56 pm (120°)	11:41 pm (23.8°)	360,013	96.1%
23	-	4:19 am (236°)	8:15 pm (125°)	Moon does not pass the meridian on this day.		
24	-	5:09 am (234°)	9:27 pm (127°)	12:44 am (20.8°)	360,487	99.6%
25	-	6:10 am (238°)	10:28 pm (126°)	1:49 am (19.8°)	362,824	99.6%
26	-	7:20 am (235°)	11:15 pm (122°)	2:52 am (20.8°)	366,835	96.7%
27	-	8:34 am (240°)	11:53 pm (117°)	3:52 am (23.5°)	372,123	91.1%
28	-	9:48 am (246°)	-	4:46 am (27.8°)	378,166	83.4%
29	12:22 am (110°)	10:58 am (253°)	-	5:36 am (32.4°)	384,412	74.3%
30	12:47 am (103°)	12:06 pm (261°)	-	6:21 am (37.8°)	390,381	64.5%

Each month there is approximately a two-week window in which the moon won't interfere with your night shooting as long as you take into account the moonrise and moonset times.

(timeanddate.com)

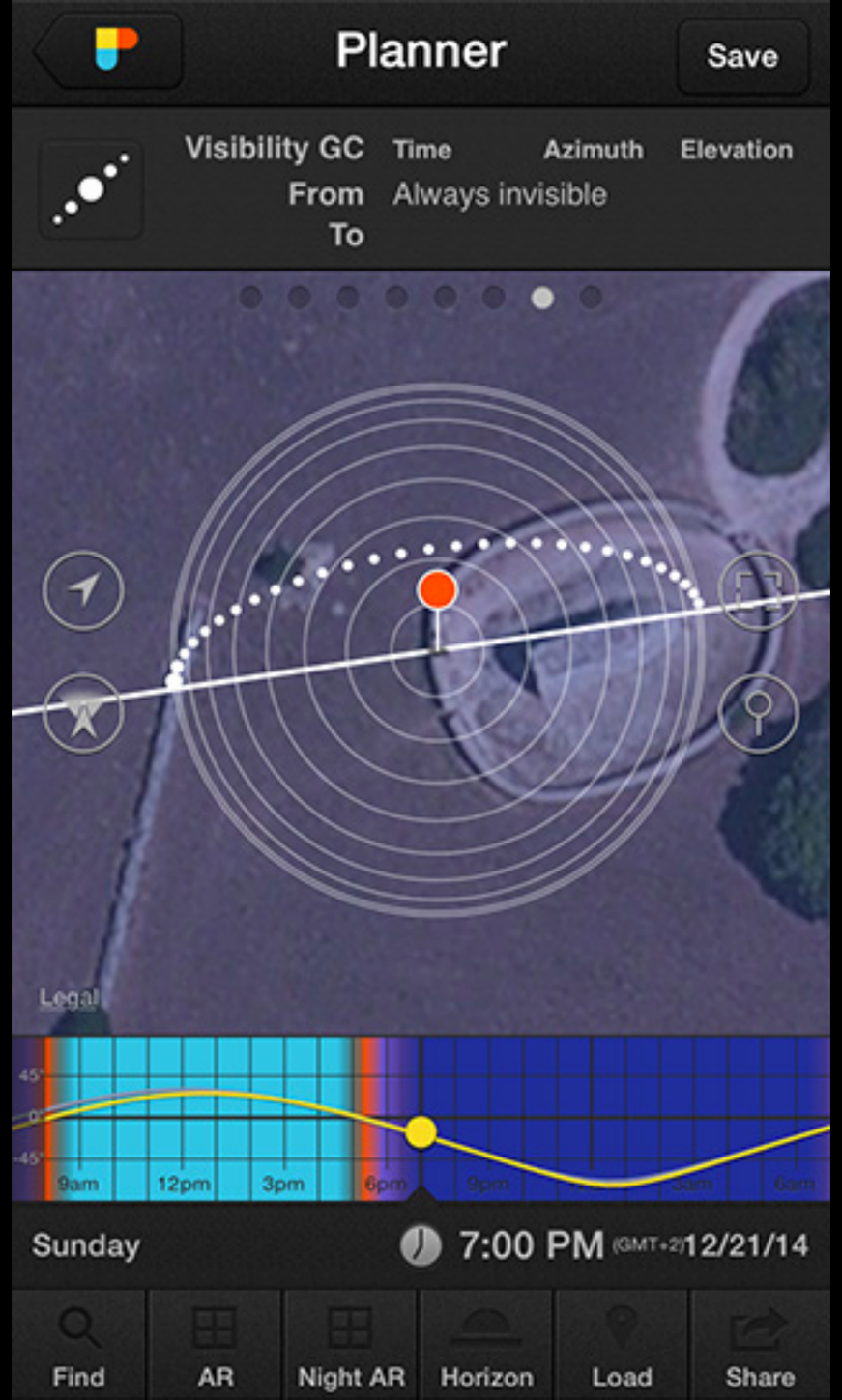


The Clear Outside website and app provides detailed forecasting to aid in planning your night shoot.

(clearoutside.com)

Number Code	*Map Color Code*	*Label*
1		excellent dark sky
2		average dark sky
3		rural sky
4		rural/suburban transition
5		suburban
6		bright suburban
7		suburban/urban transition
8		city sky
9		inner city sky

The Bortle classification system provides a simple method of determining how dark an area is. Class 2 and 3 are ideal for capturing good views of the night sky.



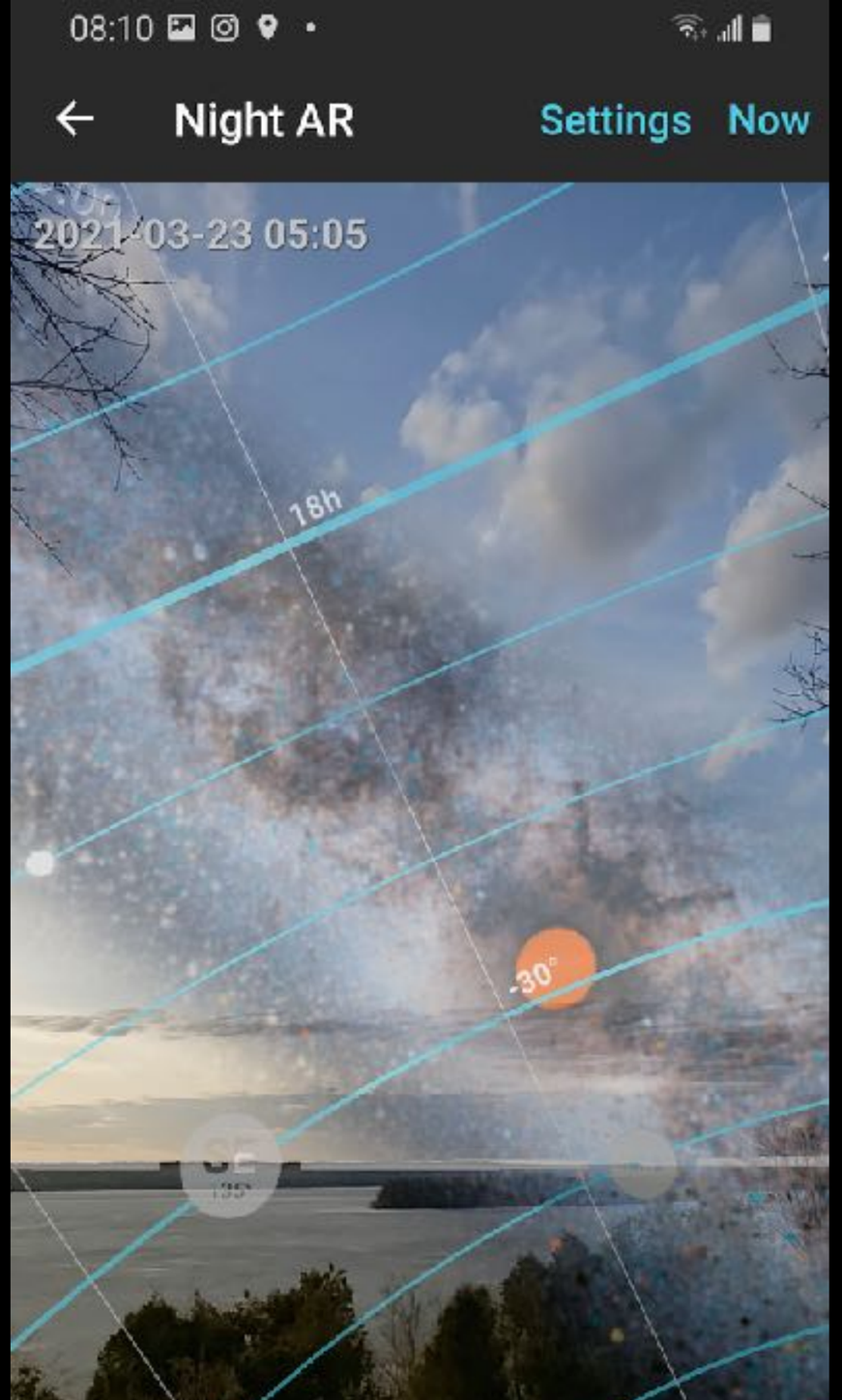


Photo Pills is an excellent app to assist in planning location shoots. Other apps to investigate are Photographer's Ephemeris and Stellarium.

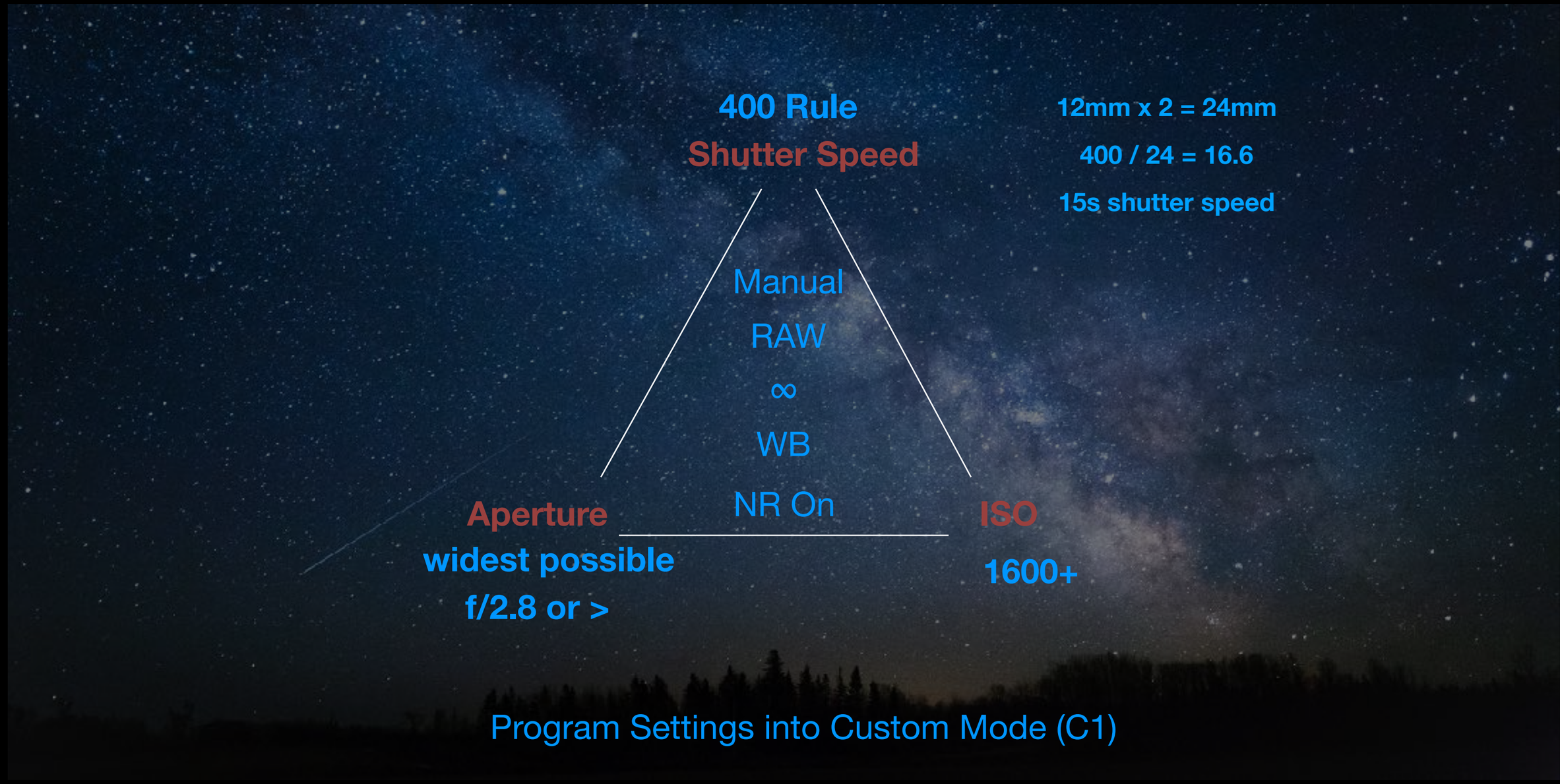
Other Planning Considerations





Gear and Settings

"Astrophotography can be very unforgiving if you get the camera settings wrong."



Program Settings into Custom Mode (C1)

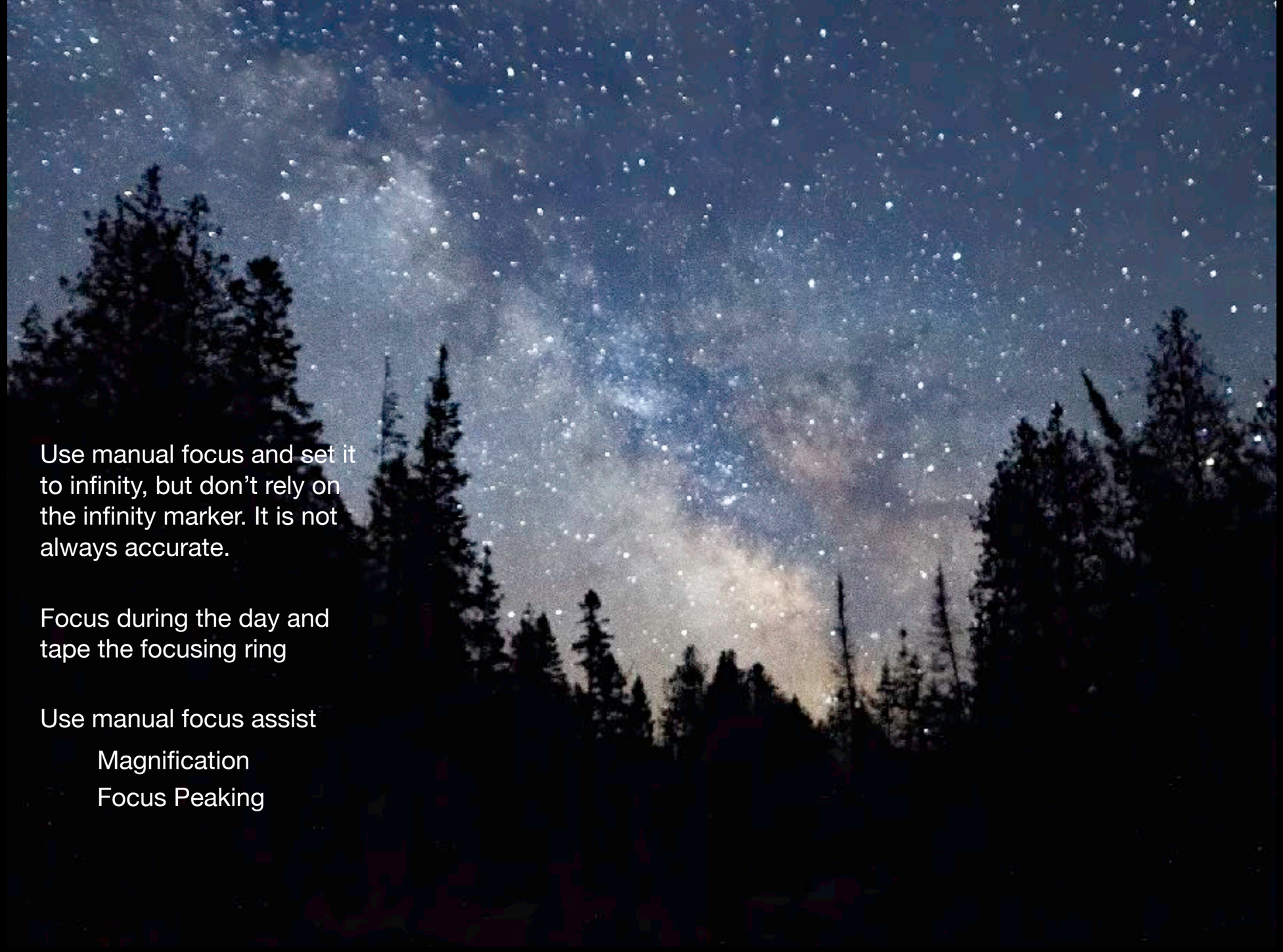
White Balance

Setting a custom white balance of approximately 3800K can provide a more natural looking sky.

Tungsten
2850 K

CWB
3400 K

CWB
3800 K



Use manual focus and set it to infinity, but don’t rely on the infinity marker. It is not always accurate.

Focus during the day and tape the focusing ring

Use manual focus assist

- Magnification
- Focus Peaking

Composition is Key

"Your composition will determine how well your image stands out."

The Stars are Just the Backdrop

"How will you light up the scene?"

1. Ambient Light

“Star Light, Star Bright…

And that’s about it!”

No additional lighting is utilized. This often means shooting silhouetted subjects, but some artificial lighting from street lights and the like can also lead to good results.

2. Light it Up!

"Add dimension to your shots with simple light painting."

Light painting involves using your headlamp or flashlight to illuminate your foreground. Practice is required in order to get the correct amount of light during the exposure.

3. Control the Light

"Use low level lighting to better control the scene."

Low level lighting involves using dimmable LED panels or a screen flashlight app to add light to the foreground. The light source is left on during the entire exposure which leads to consistent lighting between shots.

4. Time Blends

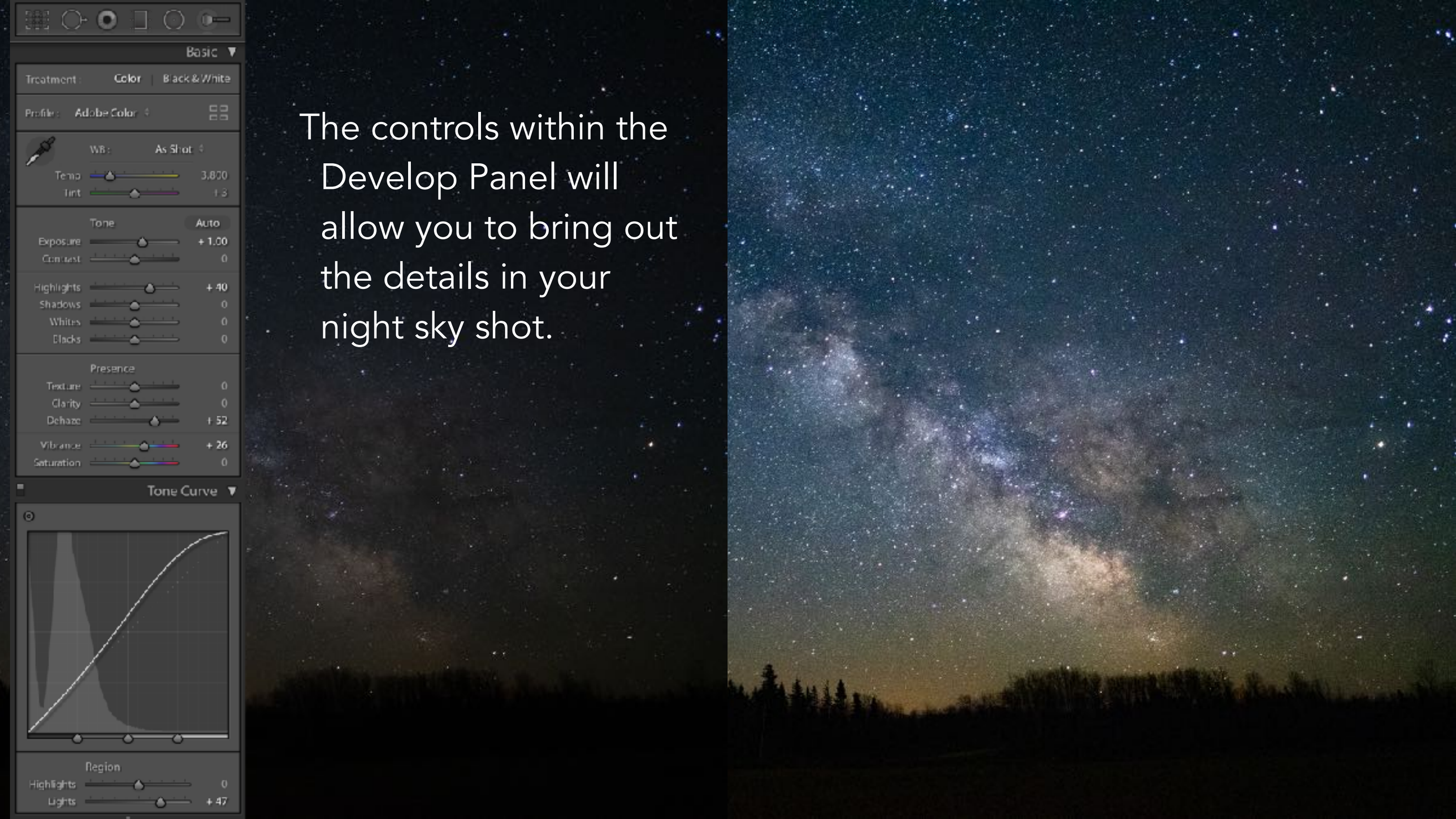
"Create surreal images using time lapse sequences. "

In time blending two or more shots are taken from the same position over the course of a longer period of time and then blended together in Photoshop.

Post Processing Basics

"Do you Photoshop your work?"

Post-processing is a key component of astro-landscape photography. In my workflow most of my editing is done in Lightroom.



The controls within the Develop Panel will allow you to bring out the details in your night sky shot.

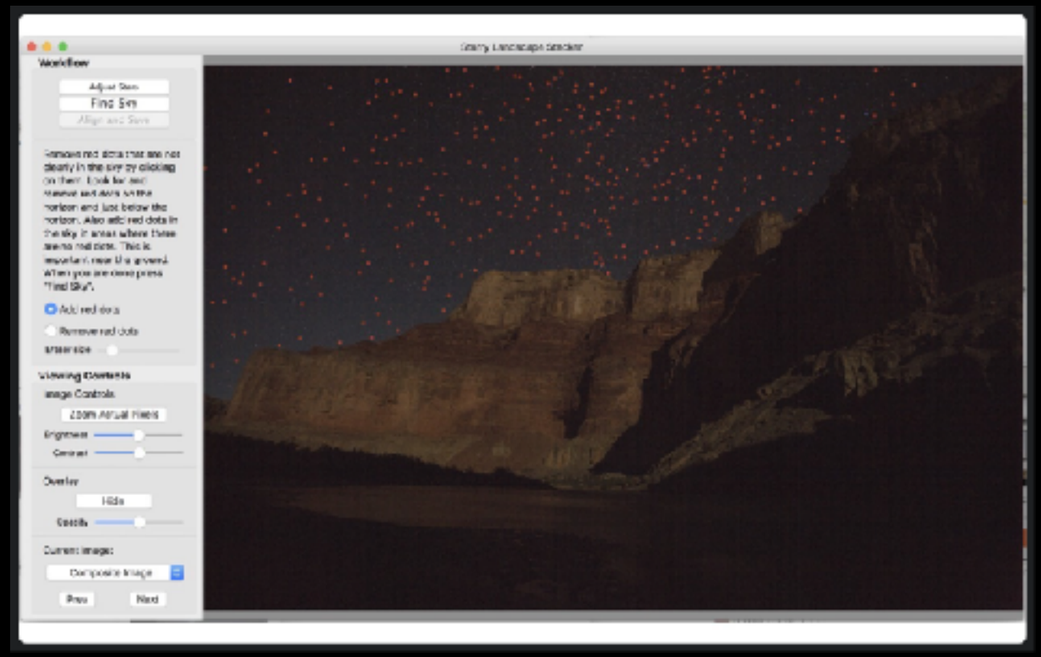
Image Stacking

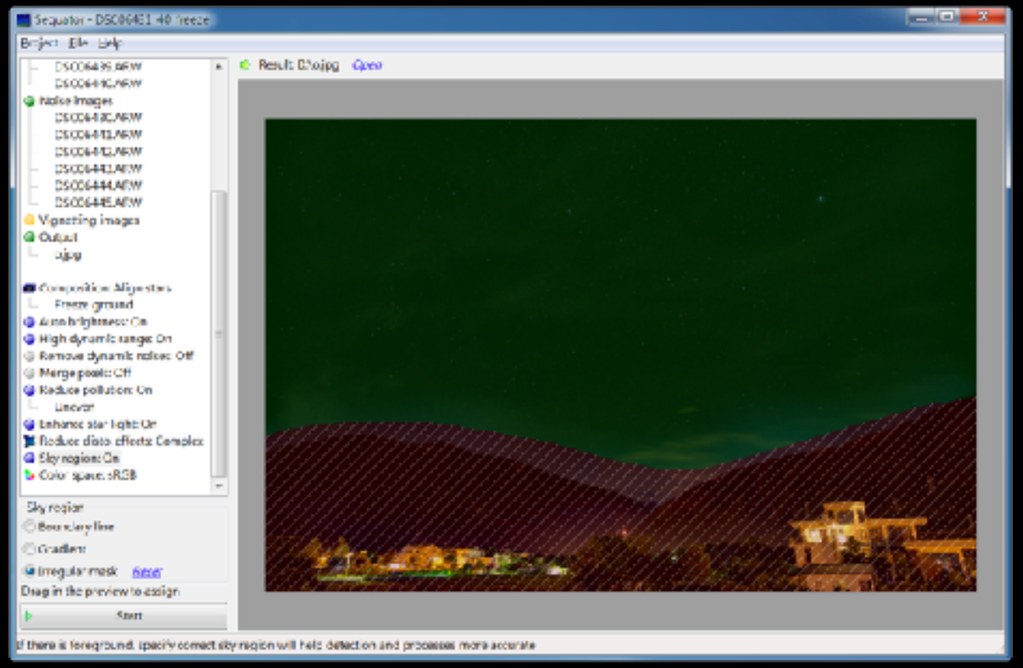
"Reduce noise by stacking several images in post."

Image stacking involves taking numerous photos (between 10 and 20) in succession and then using software to 'stack' these shots. This significantly reduces digital noise and improves tonal range.

Starry Landscape Stacker

Mac - $39.99





Sequator

Windows - Free

Single Shot

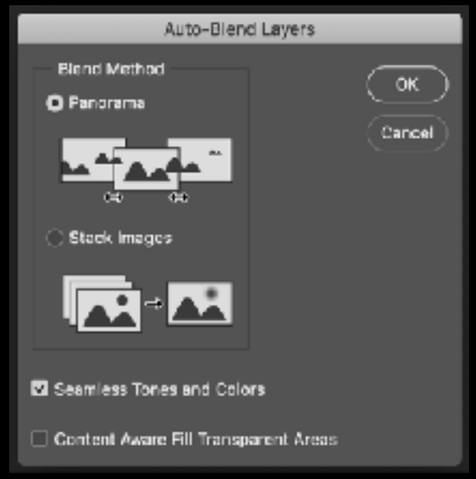
Stacked Image

Creating Panos

"It's a big sky. Capture the big picture."

Shoot panos in vertical format starting at the ‘tail end’ of the Milky Way and overlap each image by about 30 to 40%.

Use Photoshop to align and blend the images to create your pano.



Time Lapse

"Using the time lapse features opens up several new possibilities. "

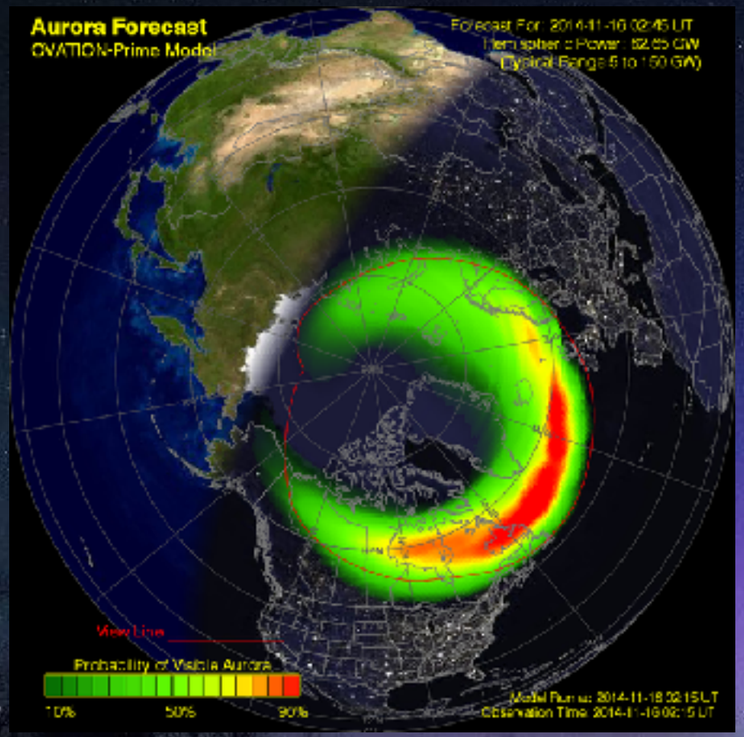
Use your camera's intervalometer or a third-party option to shoot time lapse images. These can be used to create time lapse videos of the moving sky, the aurora, or during a meteor shower.

Dancing through the Stars

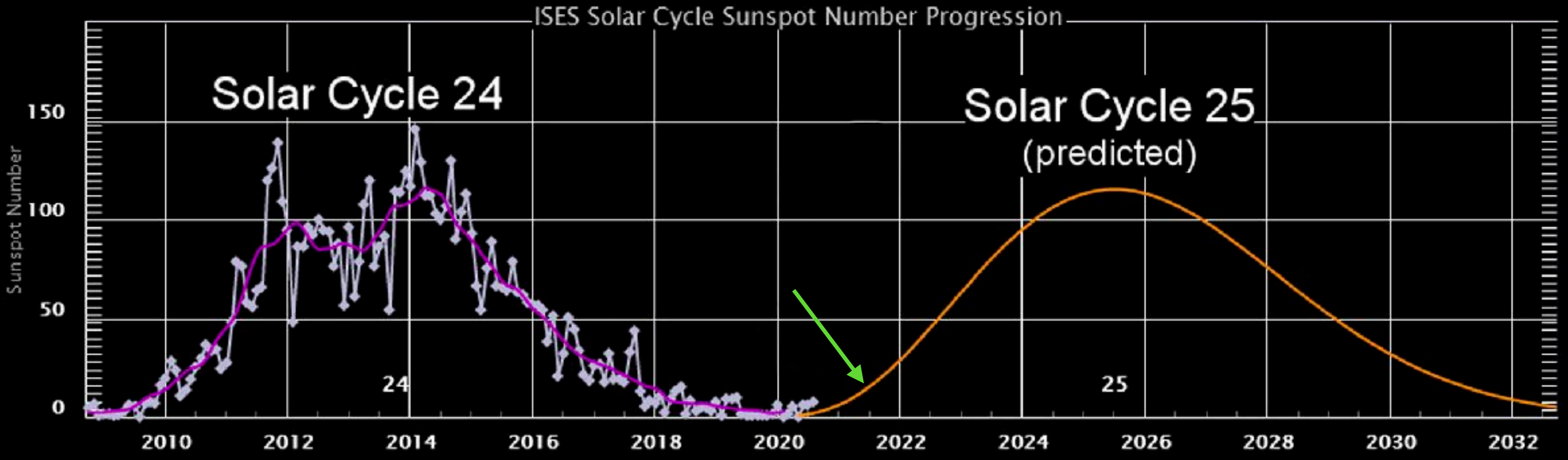
"The aurora can be one of the most rewarding phenomena to photograph."

The aurora are quite unpredictable. Various online forecasting tools are available to improve your chances of success.

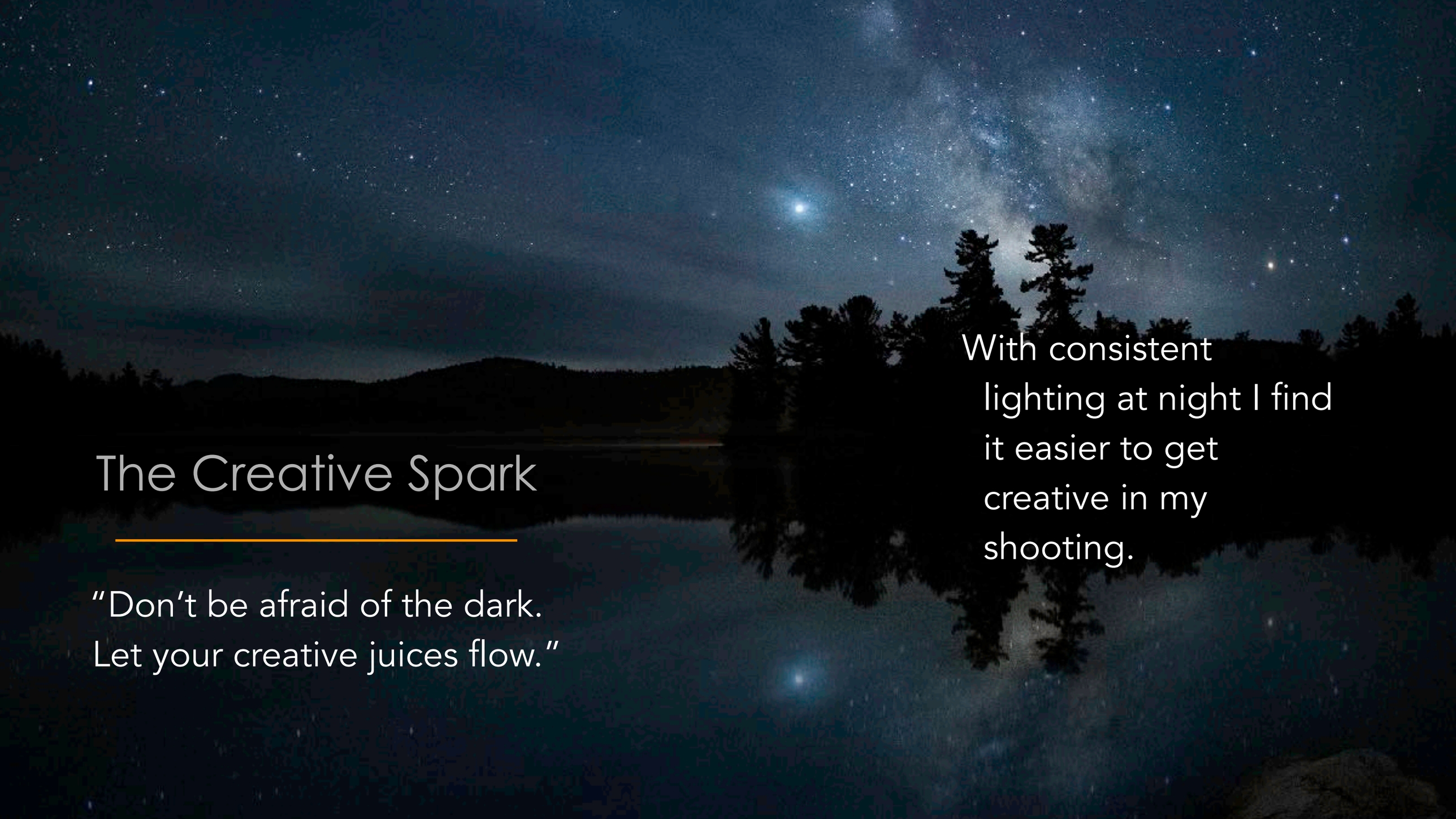
www.softservenews.com



Even lower latitudes in Canada and the US can get impressive displays during a ‘storm’. Use faster shutter speeds to maintain definition in the ‘dancing lights’.



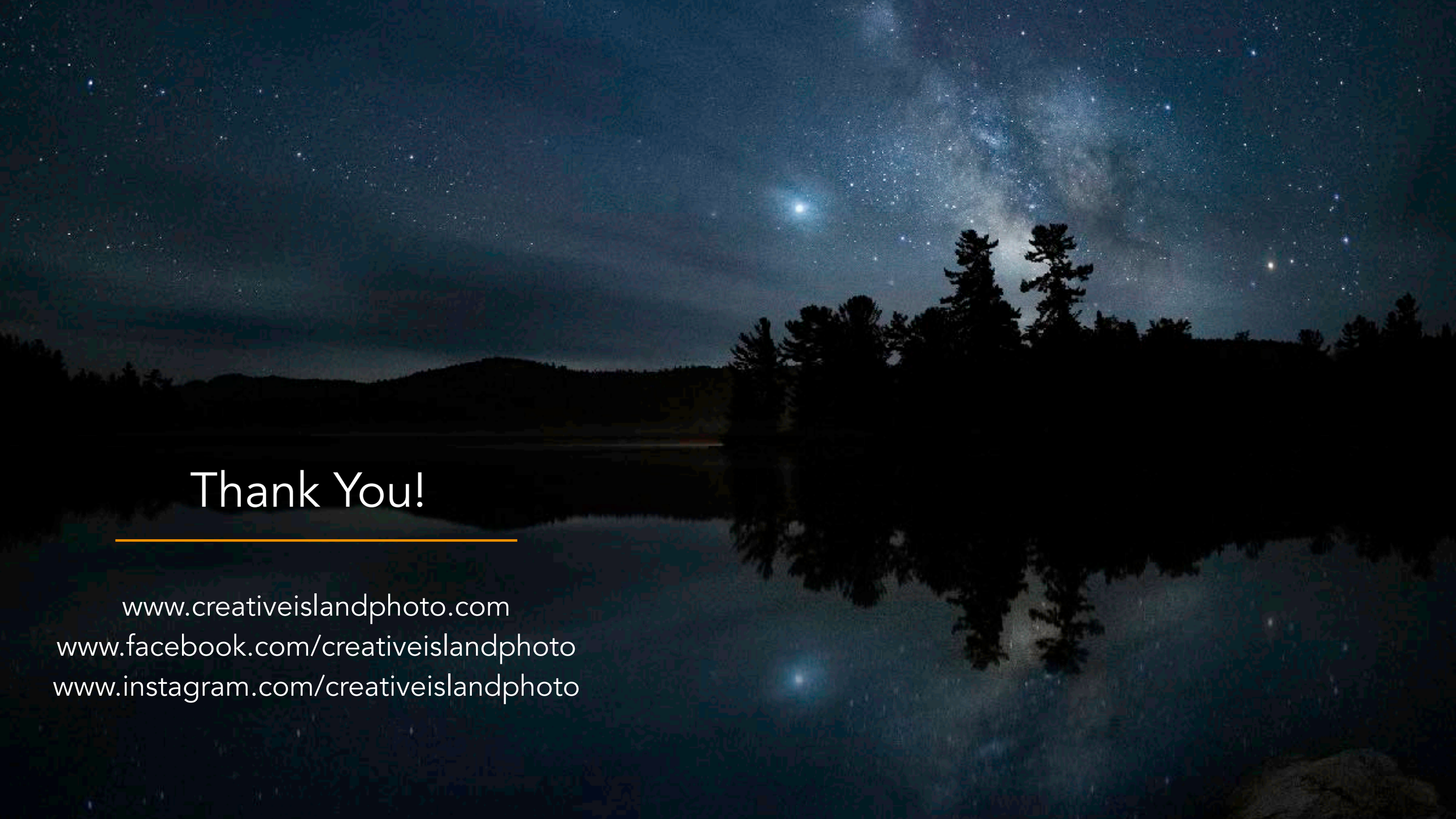
The sun is moving out of a period of inactivity. Auroral ‘storms’ should be increasing over the next few years.



The Creative Spark

"Don't be afraid of the dark.
Let your creative juices flow."

With consistent lighting at night I find it easier to get creative in my shooting.



Thank You!

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