
Finding the Shot:
Lenses
Time & Space
(DoF and shutter speed)
Planning
John Tunney

Lenses: What to use when and why

Part of "seeing"
is knowing how
your camera
sees and records things.

Focal length expansion and compression

24mm

Wide angle expands scene

70mm

Telephoto compresses scene

19mm

60mm

24mm, F8

Wide-angle lens often used to emphasize foreground element
and maximize depth of field to create expanded sense of space and distance.

14mm, F14


16mm

Wide Angle Distortion

F5.6, 400mm

Telephoto Lens -
For when you can't get close enough

F5.6, 400mm

Or don’t want to get too close

110mm @ f8

Telephoto zoom compresses scene and depth of field, creating a flatter look.

F5.6, 400mm

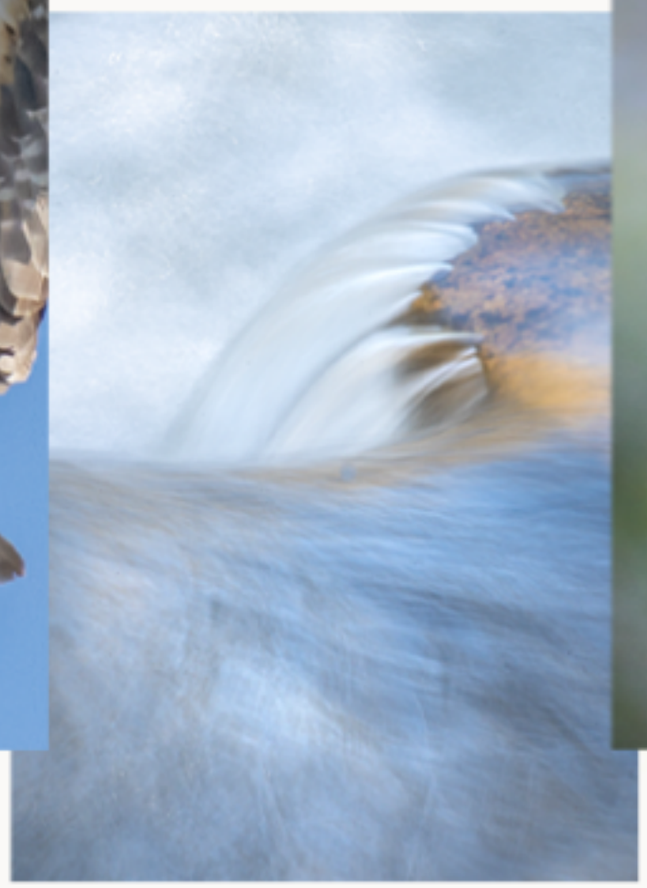
Compression

400mm, f11

400mm, F8

220mm, F5.6

400mm, F8



Experiment with Time & Space

Freeze Motion

Blur Motion

Time

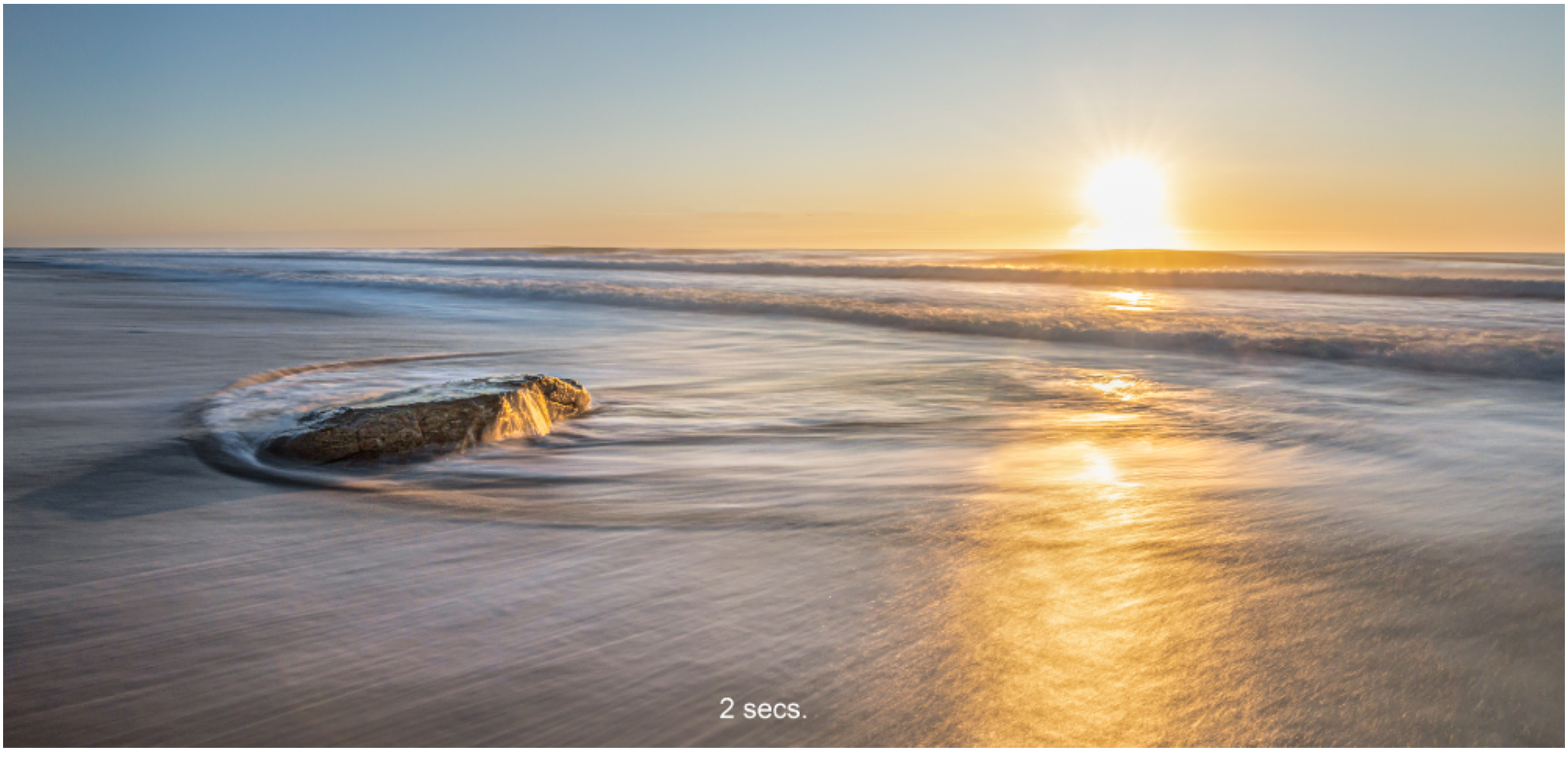
Shutter Speed

15 secs.


1/160th sec.

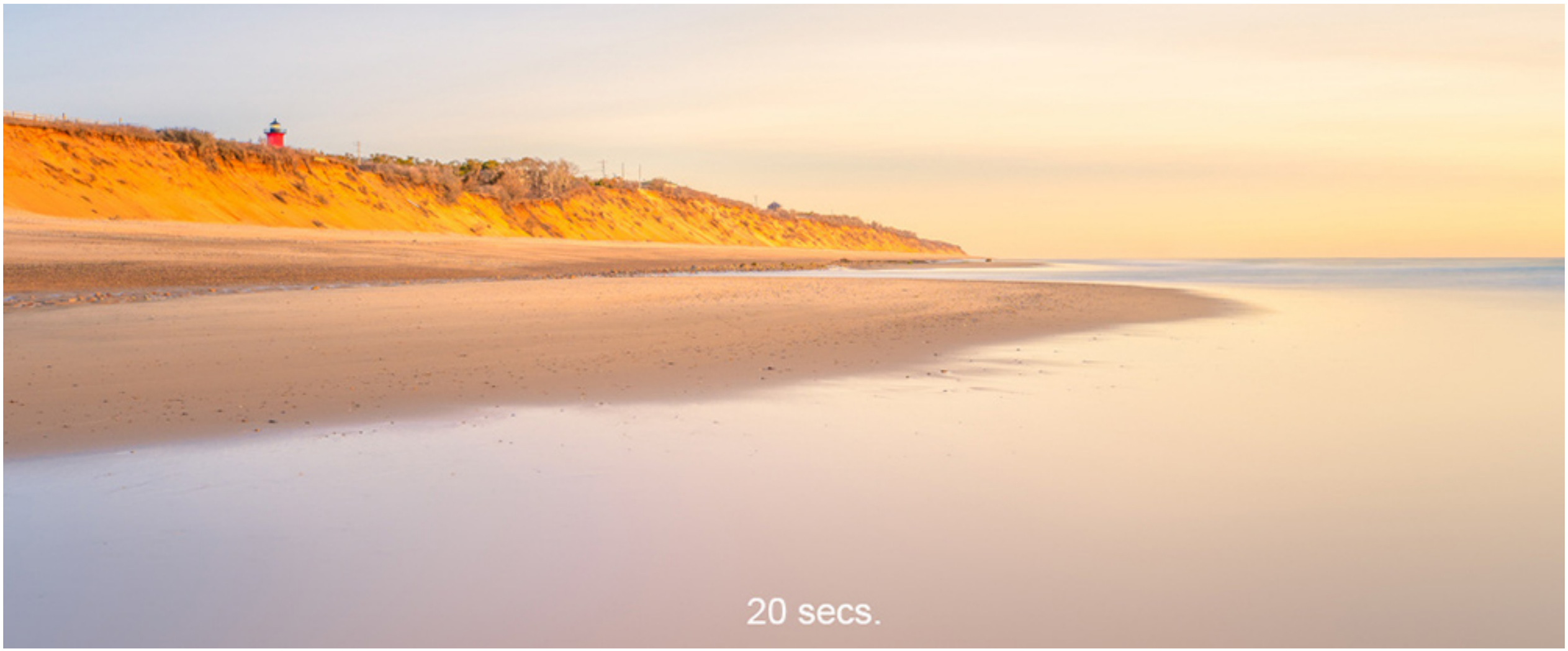

1/10th sec.


30 secs.


2 secs.

1 sec., F8, 10-stop ND Filter


20 secs.


20 secs.

Neutral Density Filter

Dark filter reduces light coming through lens

Uses:
Long-exposure blurring effect
Shallow depth of field in bright light
Balancing light for outdoor portraits

30 secs. (You don’t always need ND filter)

It depends on...

The amount of light

Speed of moving object

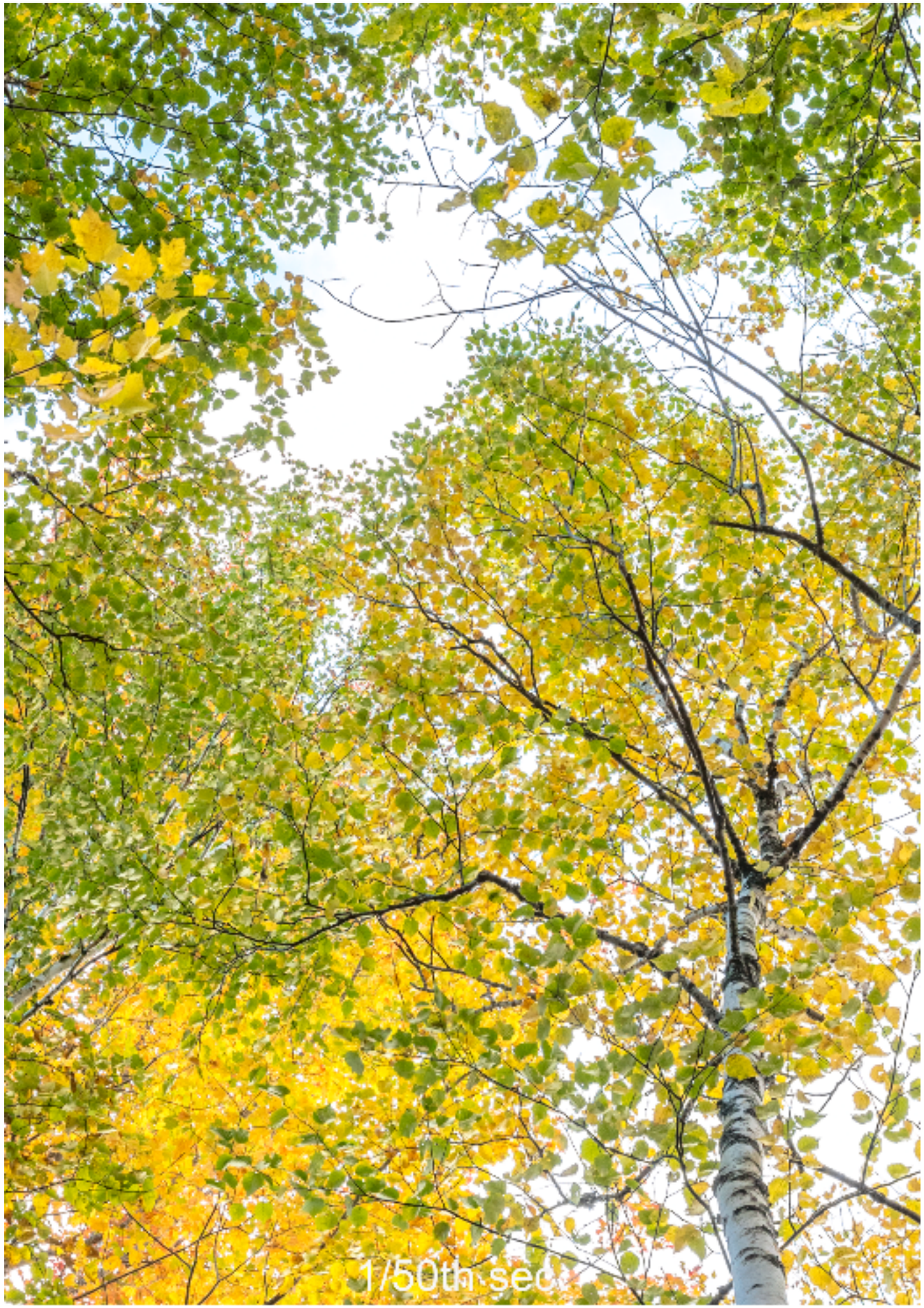
The desired effect

Experiment

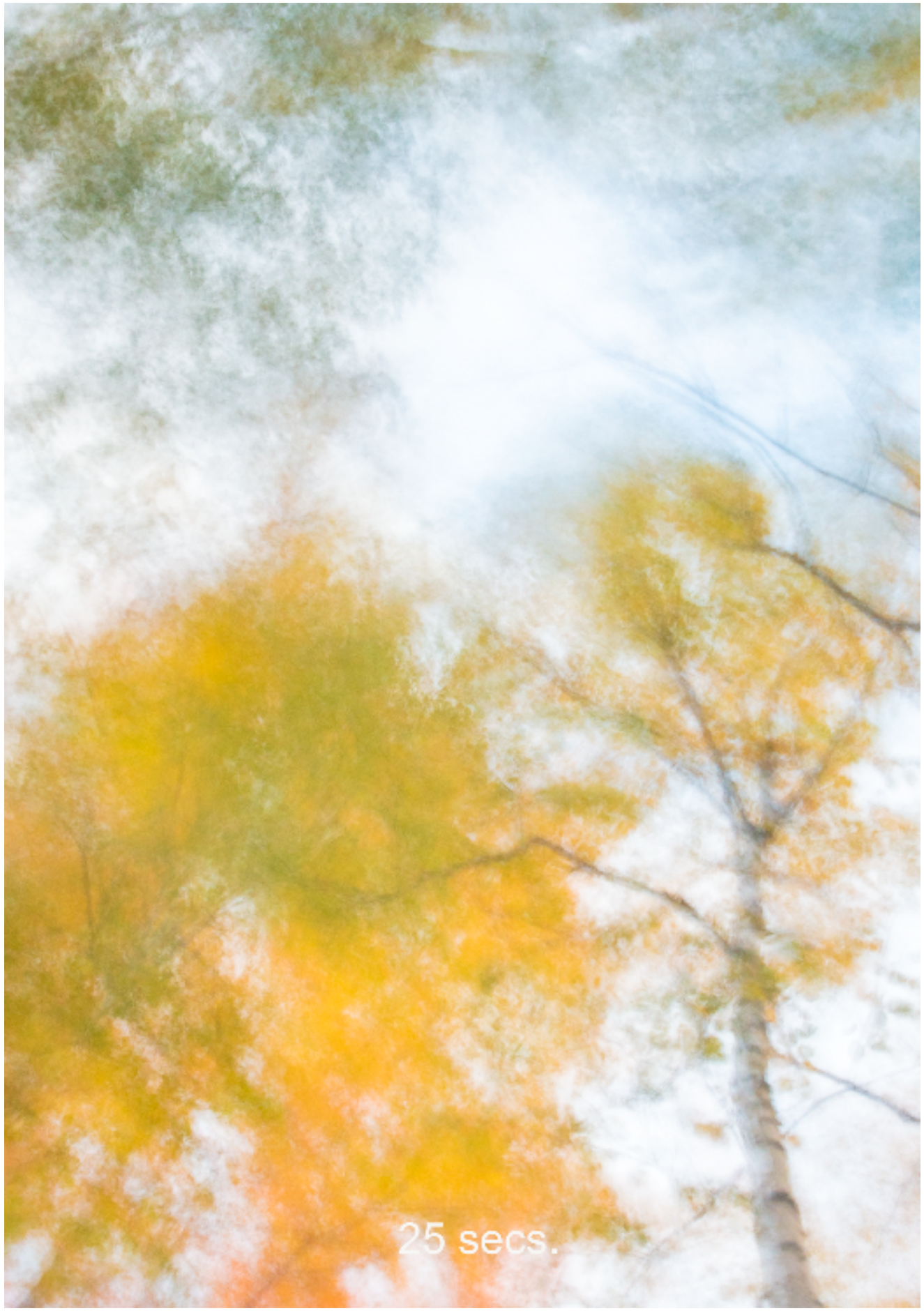

1/400th sec.

1/25th.


1/20th sec.


1/50th sec


15 secs.


25 secs.

1/3200th sec., f5.6, ISO 1250

Freeze Motion

SETTINGS

Shutter Priority

Shutter speed 1/1000th+/- sec.
- Birds in flight 1/1000-1/3200th sec.

Auto ISO (with limit)

Continuous Shutter

Focus Tracking

1/1250th sec.


1/320th sec.


1/1250th sec.


1/5000th sec.

Space

Three things affect depth of field:

1. Aperture/F-Stop
2. Focal Length of Lens
3. Proximity to Subject


Shallow DOF
Get close
Long lens
Low f-stop
F5.6, 400mm

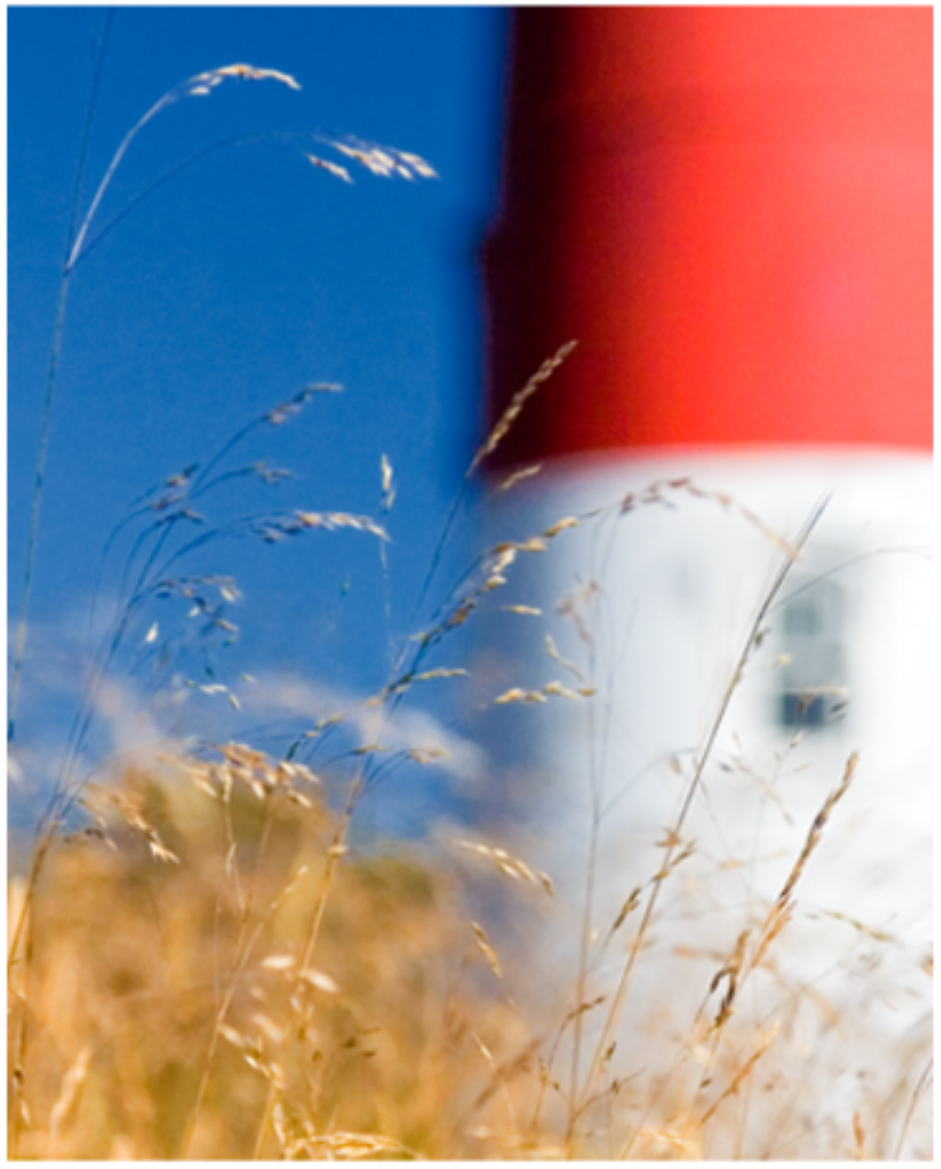
Portraits often use shallow DOF


200mm, F4

F5.6, 400mm


105mm, F4

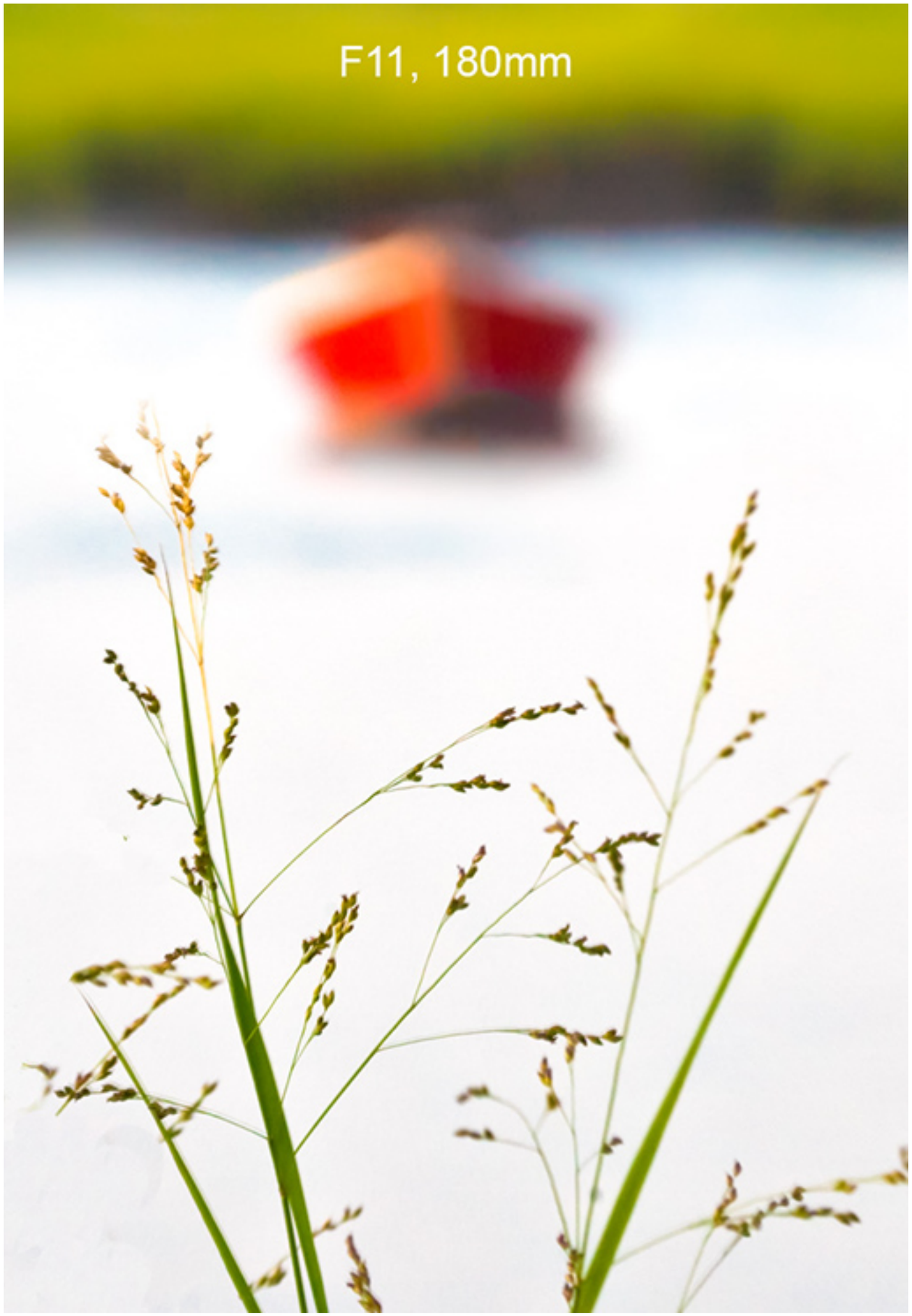
F4



F4

Shallow Depth of Field and Selective Focus


F5.6, 100mm


F11, 180mm


Deep depth of field
Wide angle
High f-stop
Not too close
F8, 20mm


F11, 24mm


F11, 400mm


F22, 16mm


F18, 17mm

Sun/Moon bursts
with high f-stop, wide angle

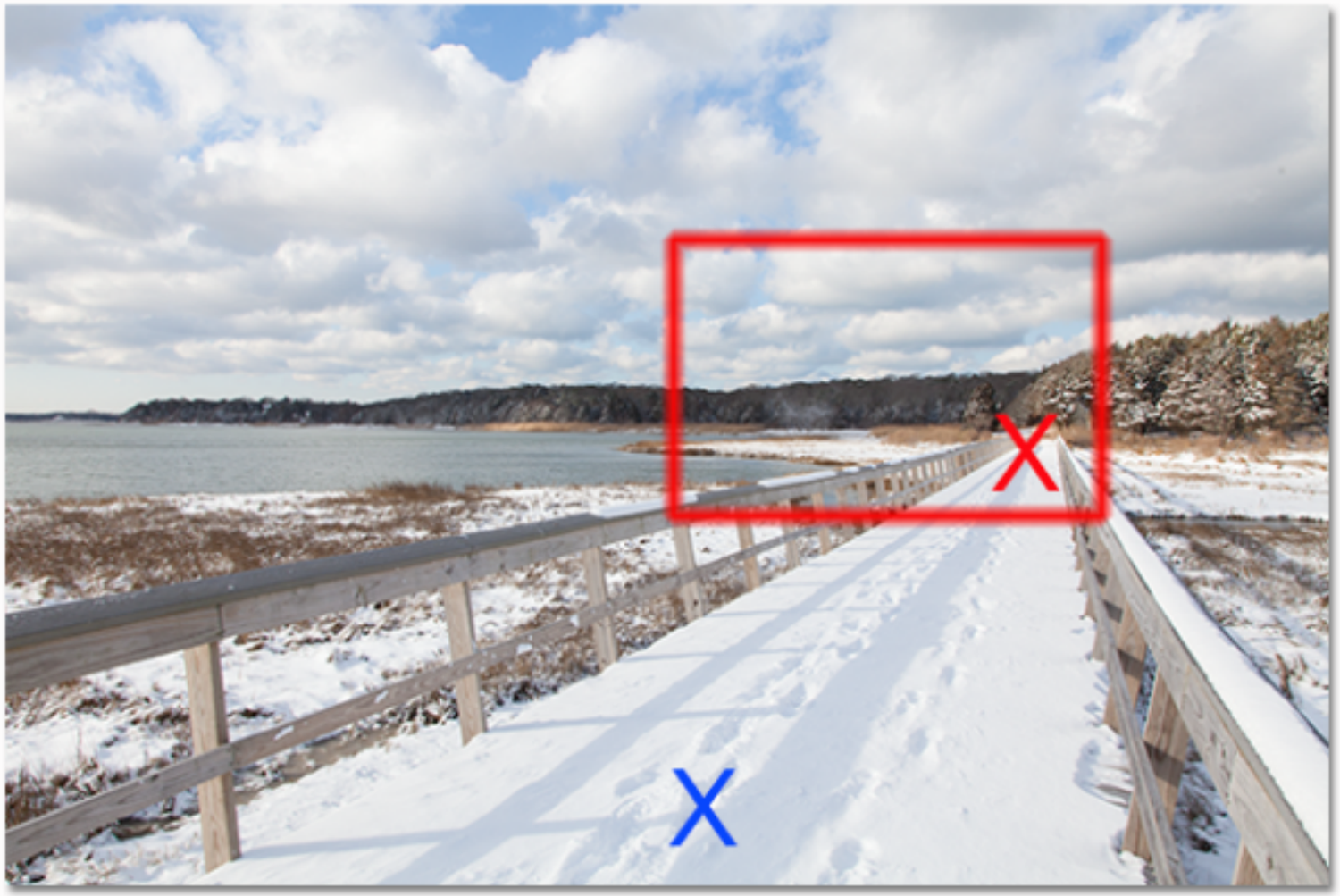
F11, 22mm

How to maximize Depth of Field

Canon 5DII
F11
24mm
Hyperfocal Distance: 5.65 ft

Canon 5DII
F11
100mm
Hyperfocal Distance: 97 ft

How to maximize Depth of Field



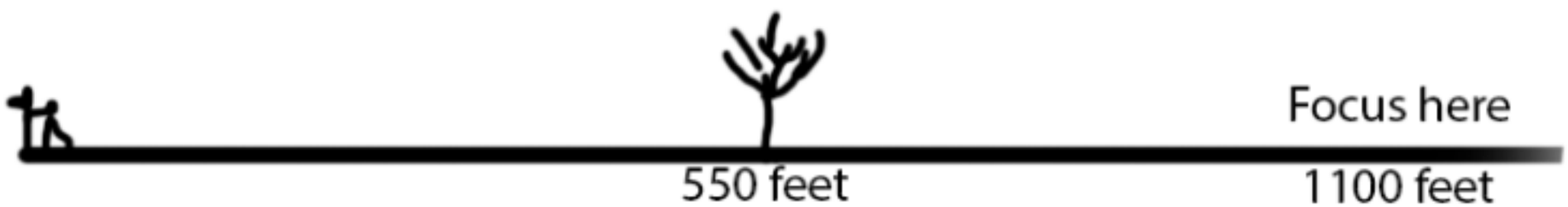
Canon 5DII
F11
24mm
Hyperfocal Distance: 5.65 ft

Canon 5DII
F11
100mm
Hyperfocal Distance: 97 ft

Use Hyperfocal Distance

Example: Full frame camera, F16, 400mm lens

Hyperfocal distance is 1100 feet



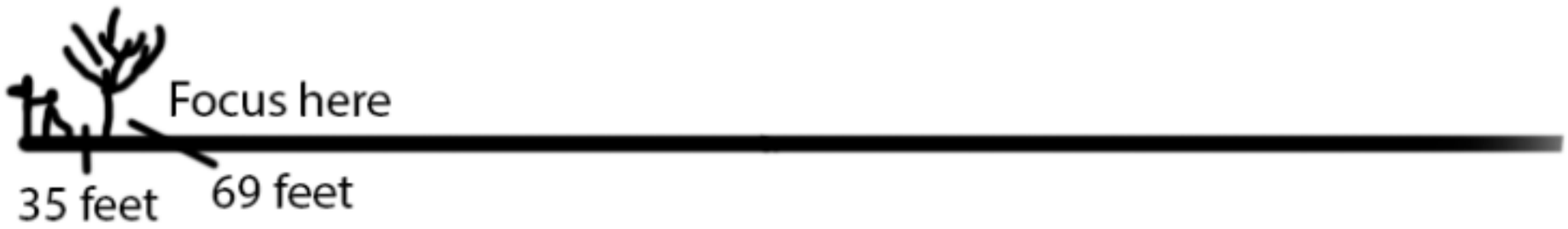
Everything
from here . . . . . to infinity will be *acceptably* sharp

Use Hyperfocal Distance

Example: Full frame camera, F16, 100mm lens

Hyperfocal distance is 69 feet

Less focal length means greater depthof field,
but smaller moon



Everything
from here . . . . . to infinity will be *acceptably* sharp

PhotoPills

3:19 LTE

Back Classic DoF

Camera Sony a7R IV >

100 mm | f/16 | 1,100'

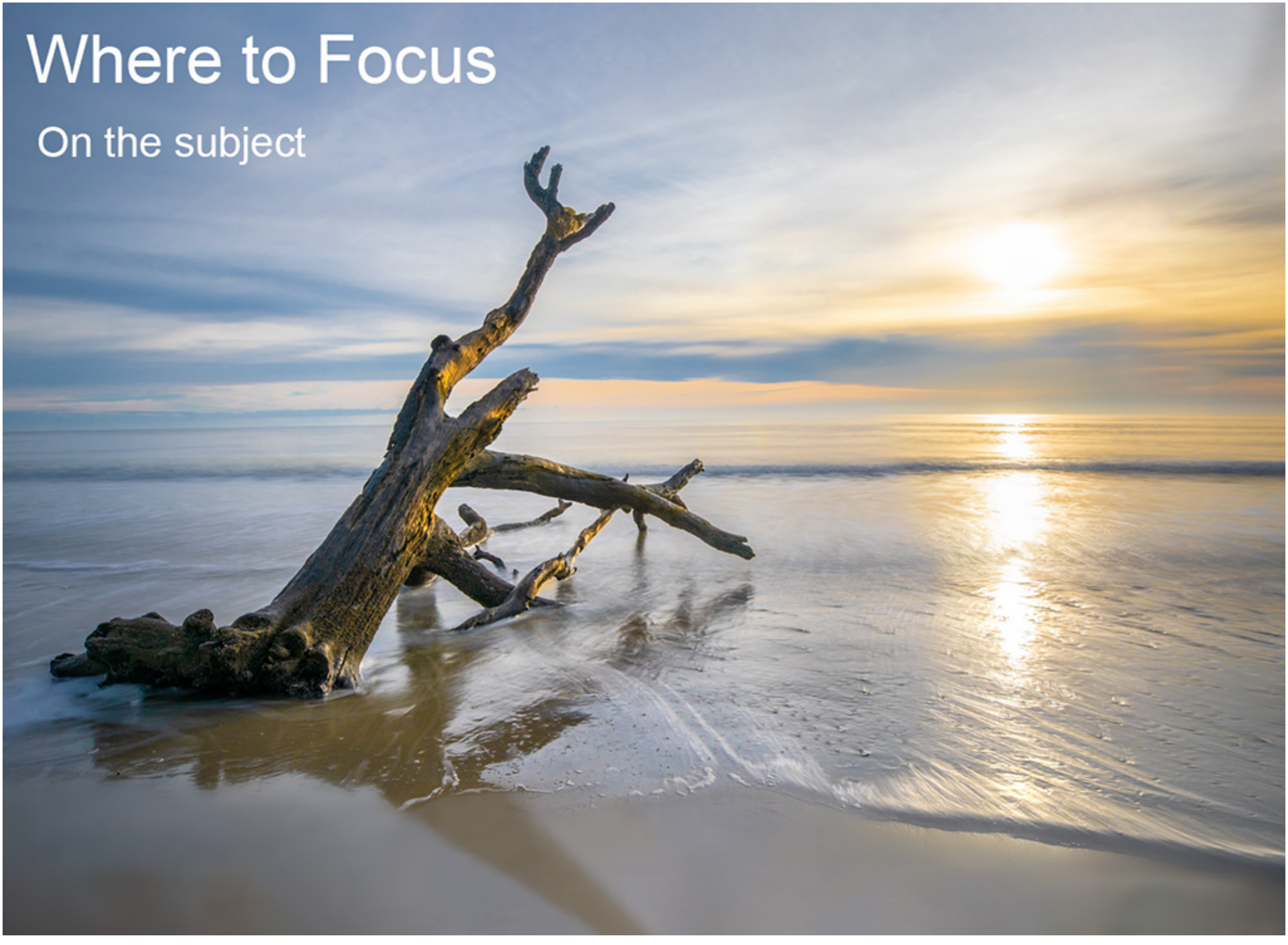
Hyperfocal distance	69' 5/32"
Hyperfocal near limit	34' 6 3/32"
DoF near limit	64' 8"
DoF far limit	∞
Depth of field	∞
Depth of field in front	1,035' 4"
Depth of field behind	∞

Inverse Advanced To FoV AR Share

Where to Focus

Where to Focus

On the subject

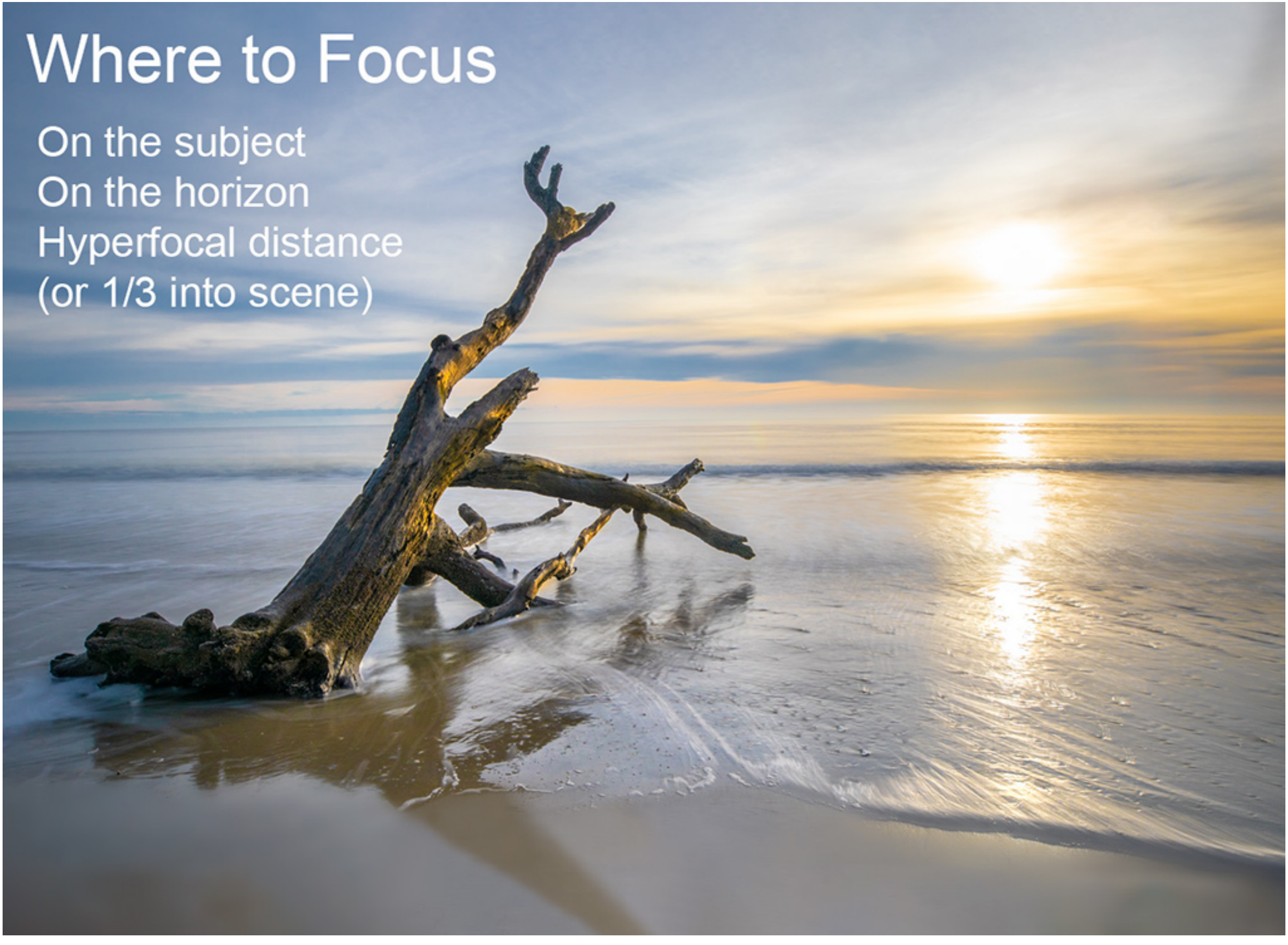


Where to Focus

On the subject
On the horizon

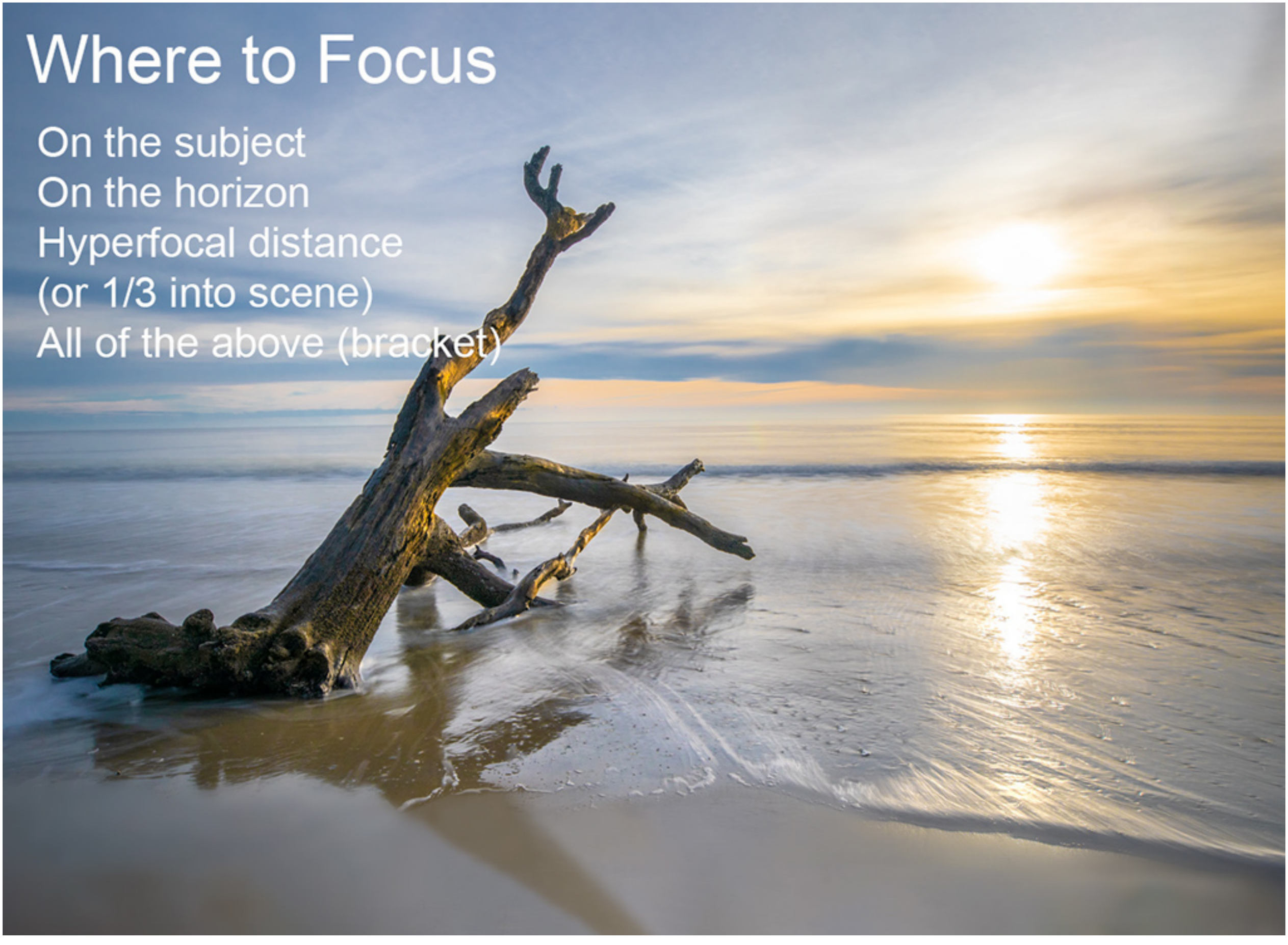
Where to Focus

On the subject
On the horizon
Hyperfocal distance
(or 1/3 into scene)



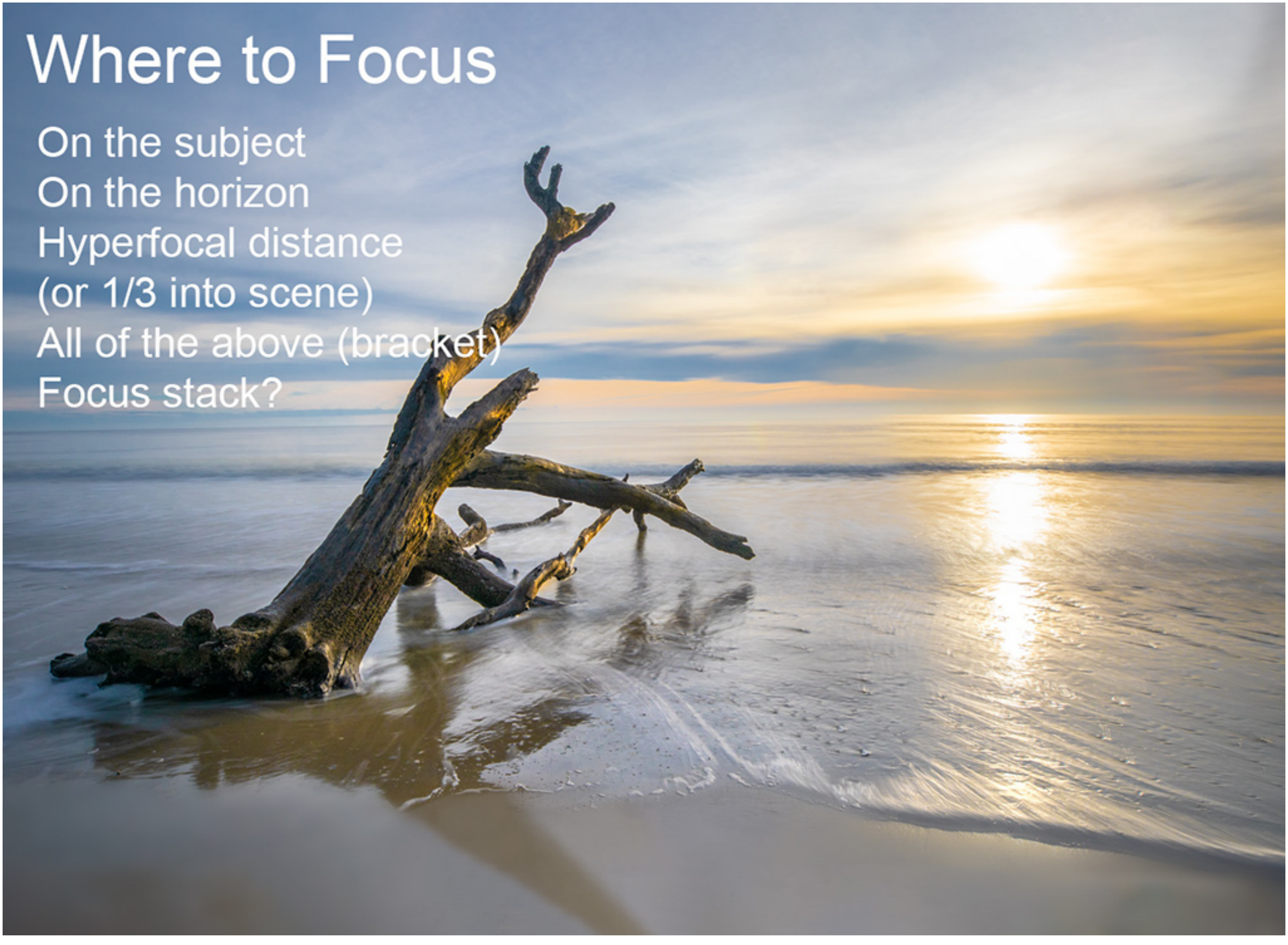
Where to Focus

On the subject
On the horizon
Hyperfocal distance
(or 1/3 into scene)
All of the above (bracket)



Where to Focus

On the subject
On the horizon
Hyperfocal distance
(or 1/3 into scene)
All of the above (bracket)
Focus stack?



Planning the Shot

Think ahead

Location research

Check sunrise/set, moonrise/set

Stars

Weather

Tides

Events:
- People (family, sports, festivals, street, etc.)
- Flora (seasonal changes)
- Fauna (bird migration, animal activity)

Use your Imagination

Pre- and post-visulization

Pre-visualization starts at home

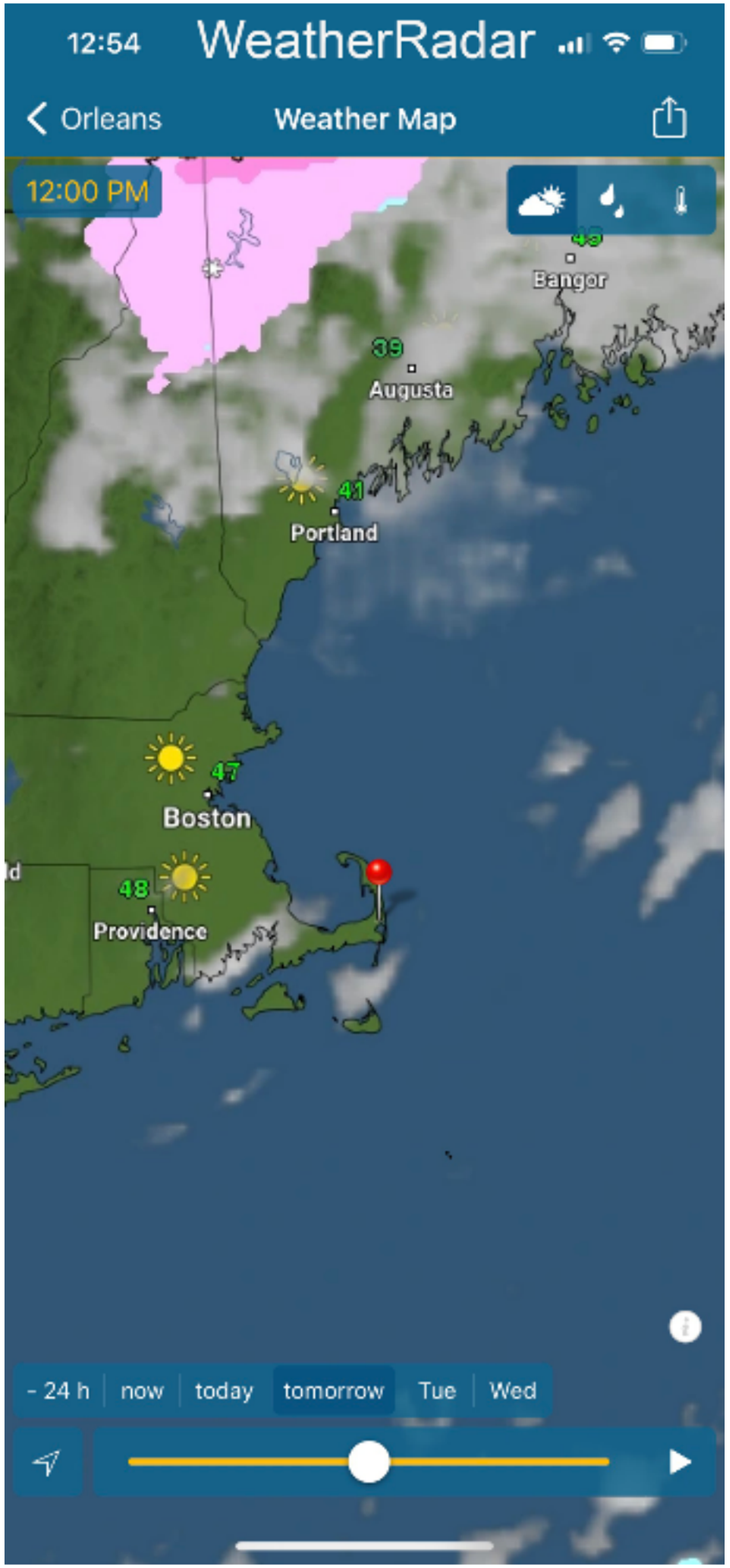
Write down your ideas

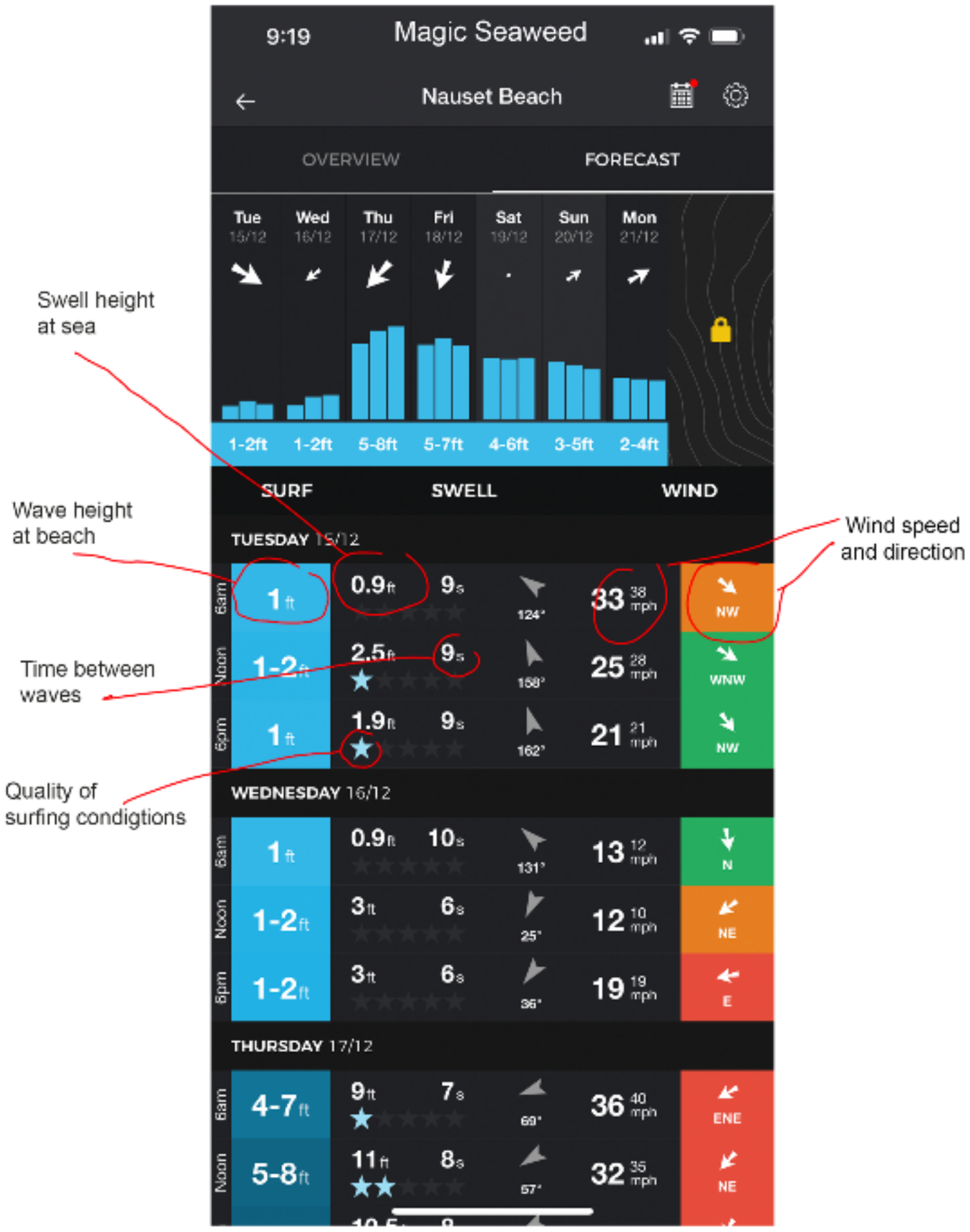
Weather Apps
Dark Sky (iOS)
Weather & Radar
Willy Weather
Clear Outside
AccuWeather

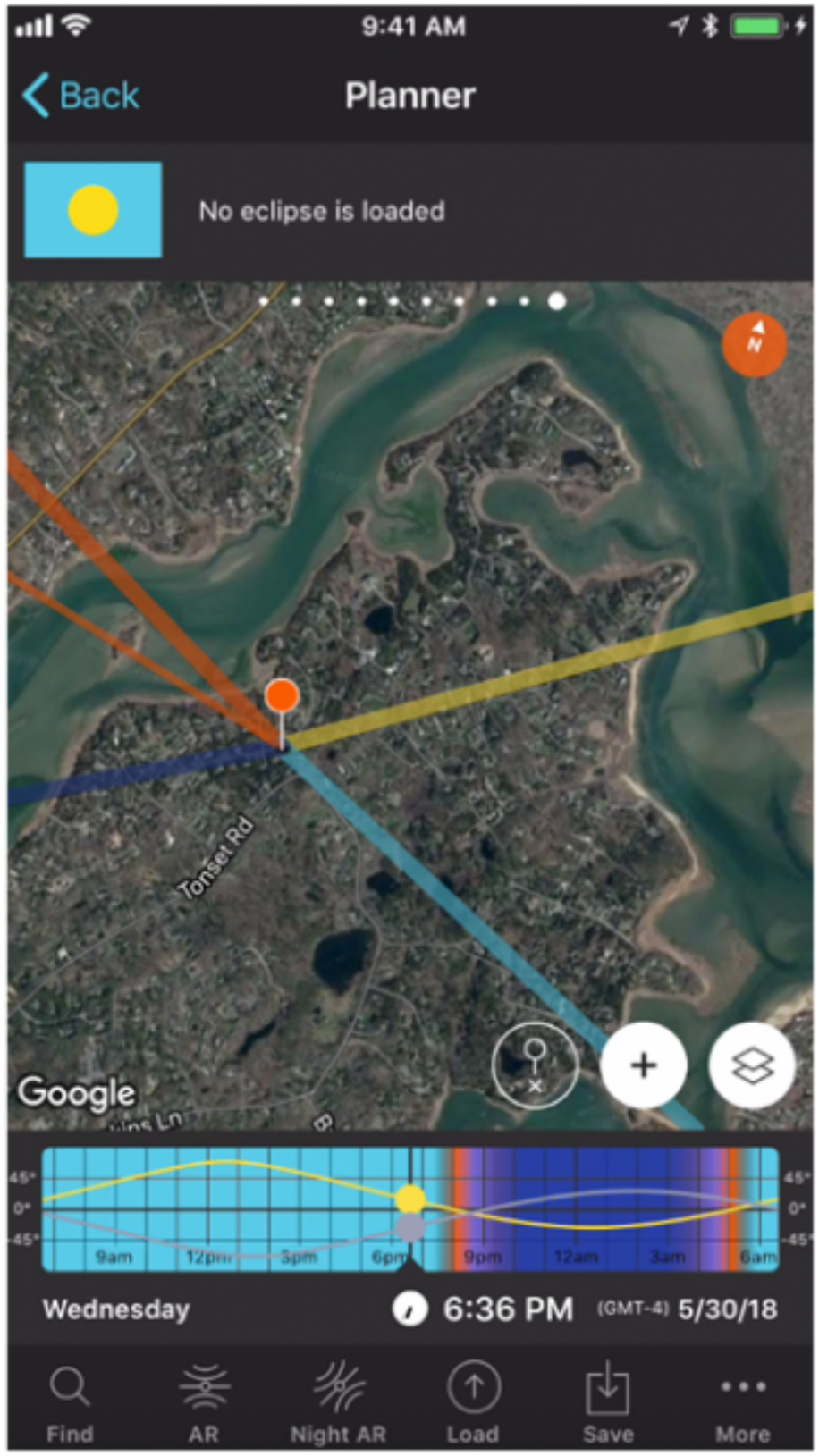
Tides and Waves
MagicSeaweed (ocean tides, waves)
Tides Near Me

Sun, Moon, Stars, Etc.
PhotoPills

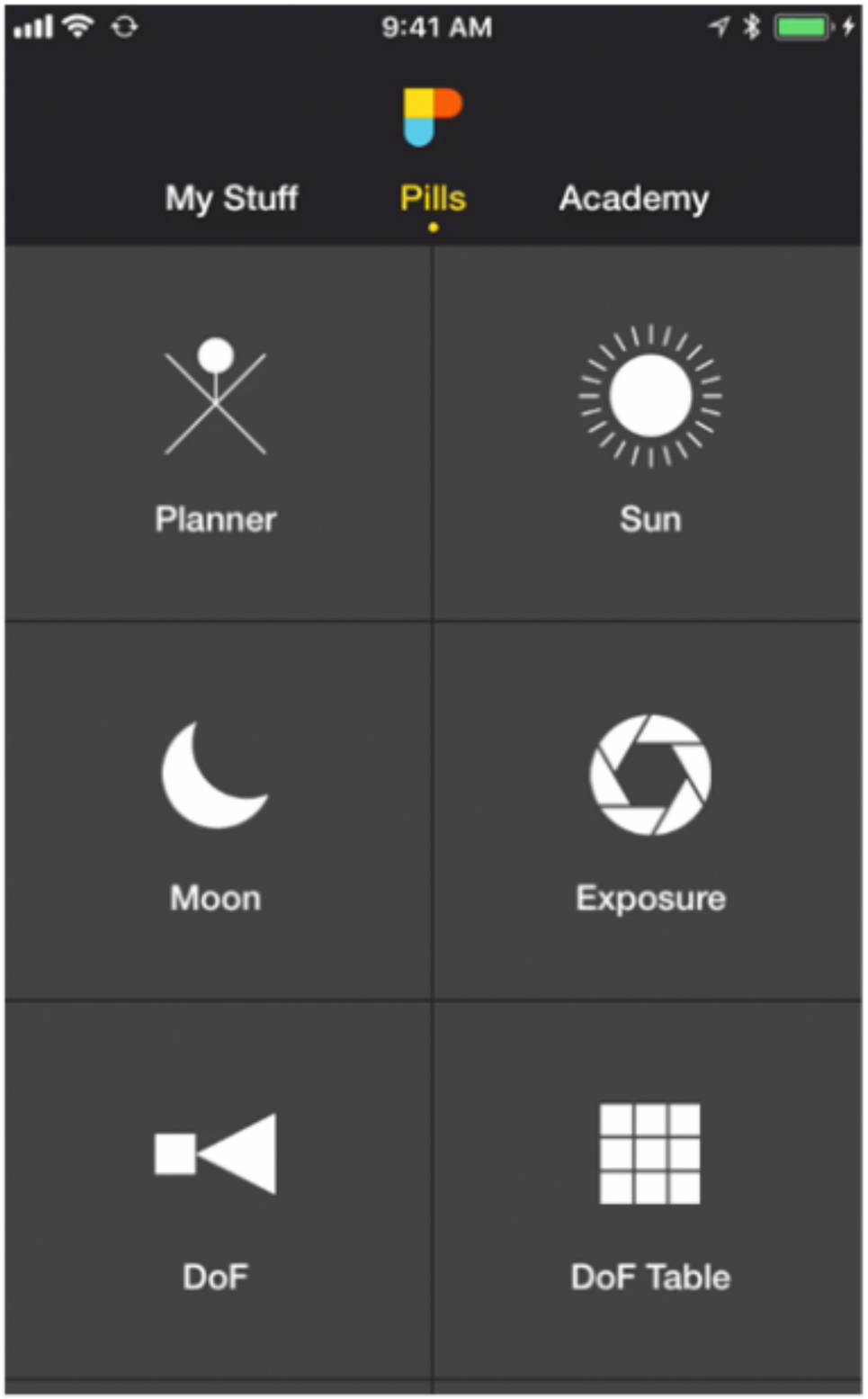
Astro
GoSkyWatch


12:54
WeatherRadar
Orleans
Weather Map
12:00 PM
43
Bangor
39
Augusta
41
Portland
47
Boston
48
Providence
- 24 h
now
today
tomorrow
Tue
Wed

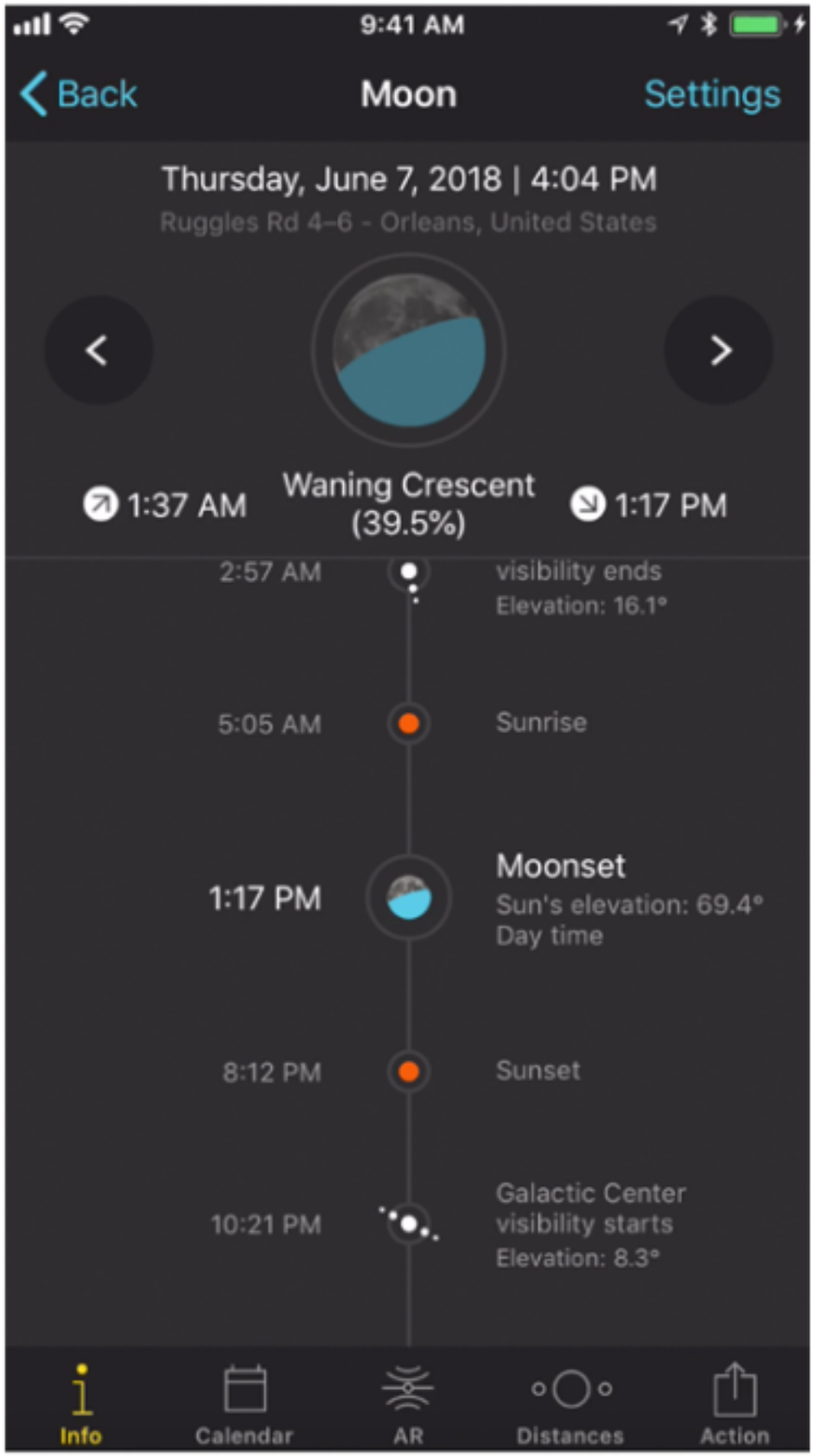

9:19
Magic Seaweed
Nauset Beach
OVERVIEW
FORECAST
Tue 15/12
Wed 16/12
Thu 17/12
Fri 18/12
Sat 19/12
Sun 20/12
Mon 21/12
1-2ft 1-2ft 5-8ft 5-7ft 4-6ft 3-5ft 2-4ft
SURF
SWELL
WIND
TUESDAY 15/12
6am 1ft 0.9ft 9s 124° 33 38 mph NW
Noon 1-2ft 2.5ft 9s 158° 25 28 mph WNW
6pm 1ft 1.9ft 9s 162° 21 21 mph NW
WEDNESDAY 16/12
6am 1ft 0.9ft 10s 131° 13 12 mph N
Noon 1-2ft 3ft 6s 25° 12 10 mph NE
6pm 1-2ft 3ft 6s 36° 19 19 mph E
THURSDAY 17/12
6am 4-7ft 9ft 7s 69° 36 40 mph ENE
Noon 5-8ft 11ft 8s 57° 32 35 mph NE
Swell height at sea
Wave height at beach
Time between waves
Quality of surfing condigtions
Wind speed and direction



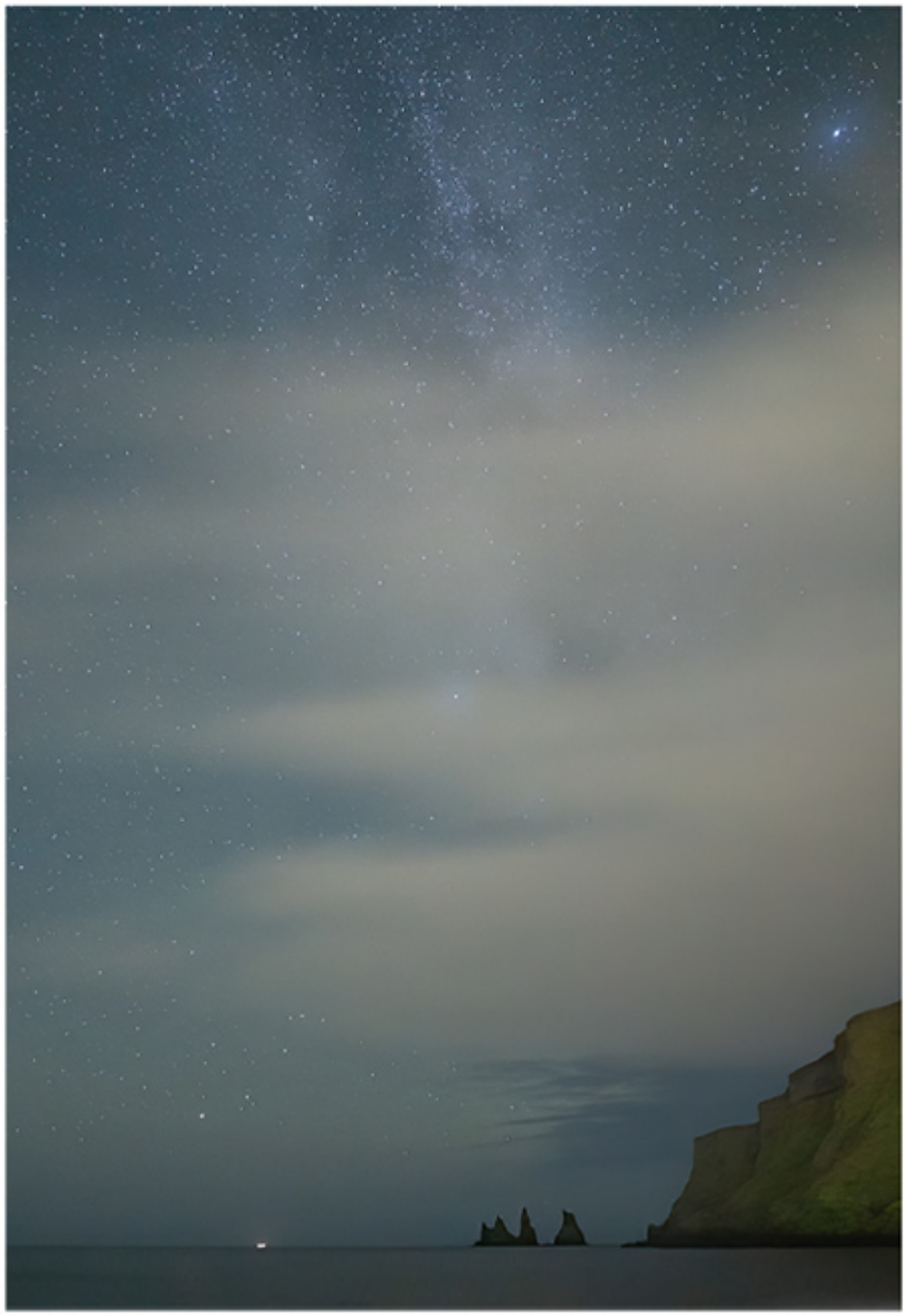
PhotoPills Planner/Map, track sunrise/moonrise & set


9:41 AM
My Stuff
Pills
Academy
Planner
Sun
Moon
Exposure
DoF
DoF Table

PhotoPills



PhotoPills/Moon & Milky Way Planning



Plans don’t always work.

Embrace serendipity.

Learn to improvise.


Happy accidents are a gift.

Finding the Shot:
The Art & Craft of Better Seeing

John Tunney