



Considerations for Sharp Images

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Introduction



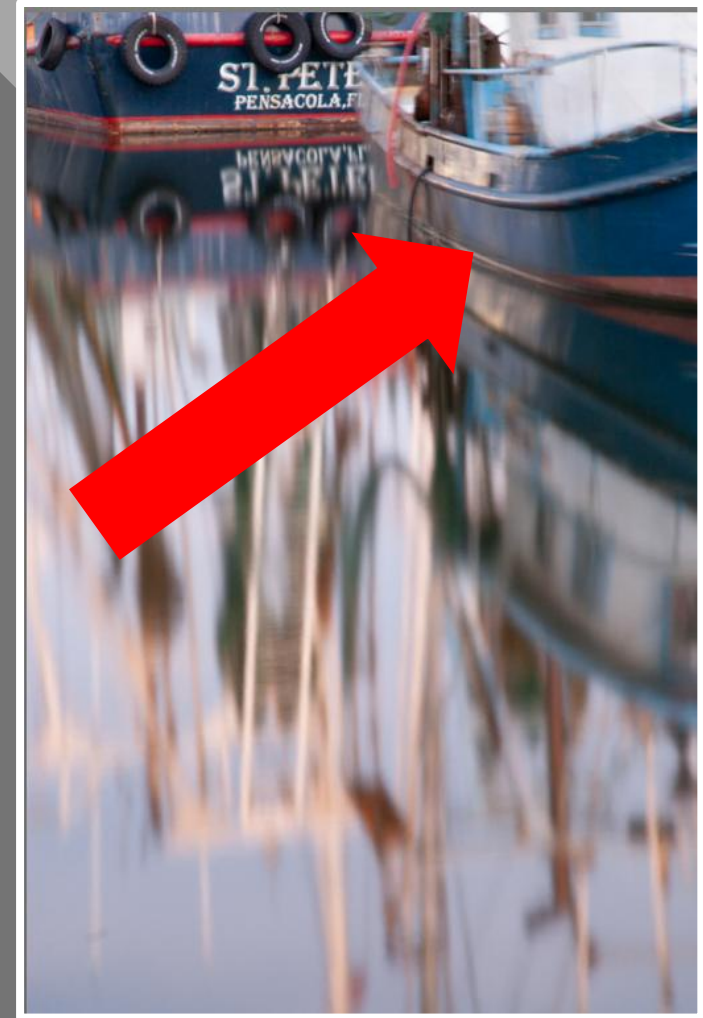
What Causes Unsharp Images?

Technical Considerations

Handheld Shooting Techniques

What Causes Unsharp (Blurry) Images?

- Photographer/Subject Movement



What Causes Unsharp (Blurry) Images?

- Photographer/Subject Movement
- Camera Movement



What Causes Unsharp (Blurry) Images?

- Photographer/Subject Movement
- Camera Movement
- Shutter Speed Too Slow

1/60, f/16, ISO 100



What Causes Unsharp (Blurry) Images?

- Photographer/Subject Movement
- Camera Movement
- Shutter Speed Too Slow
- **Misplaced Focus Point**



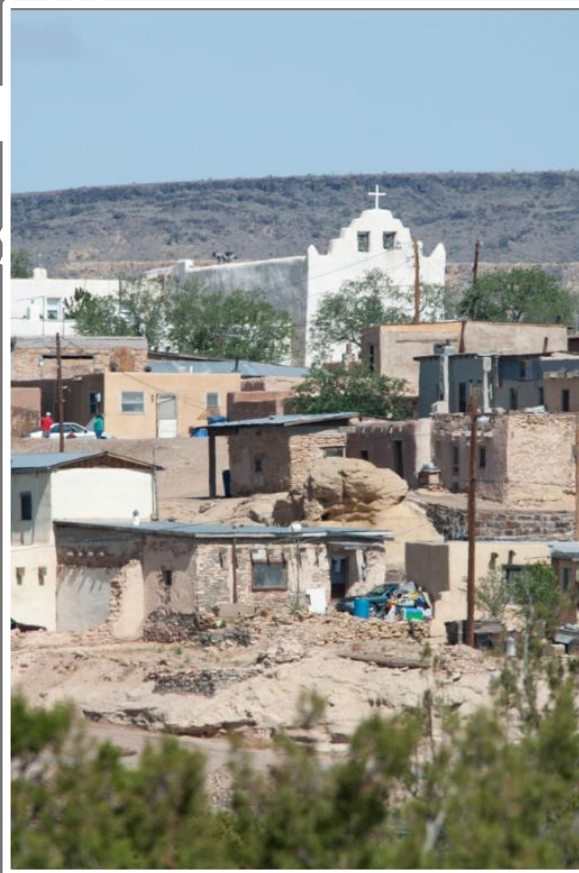
What Causes Unsharp (Blurry) Images?

- Photographer/Subject Movement
- Camera Movement
- Shutter Speed Too Slow
- Misplaced Focus Point
- Excessive ISO



What Causes Unsharp (Blurry) Images?

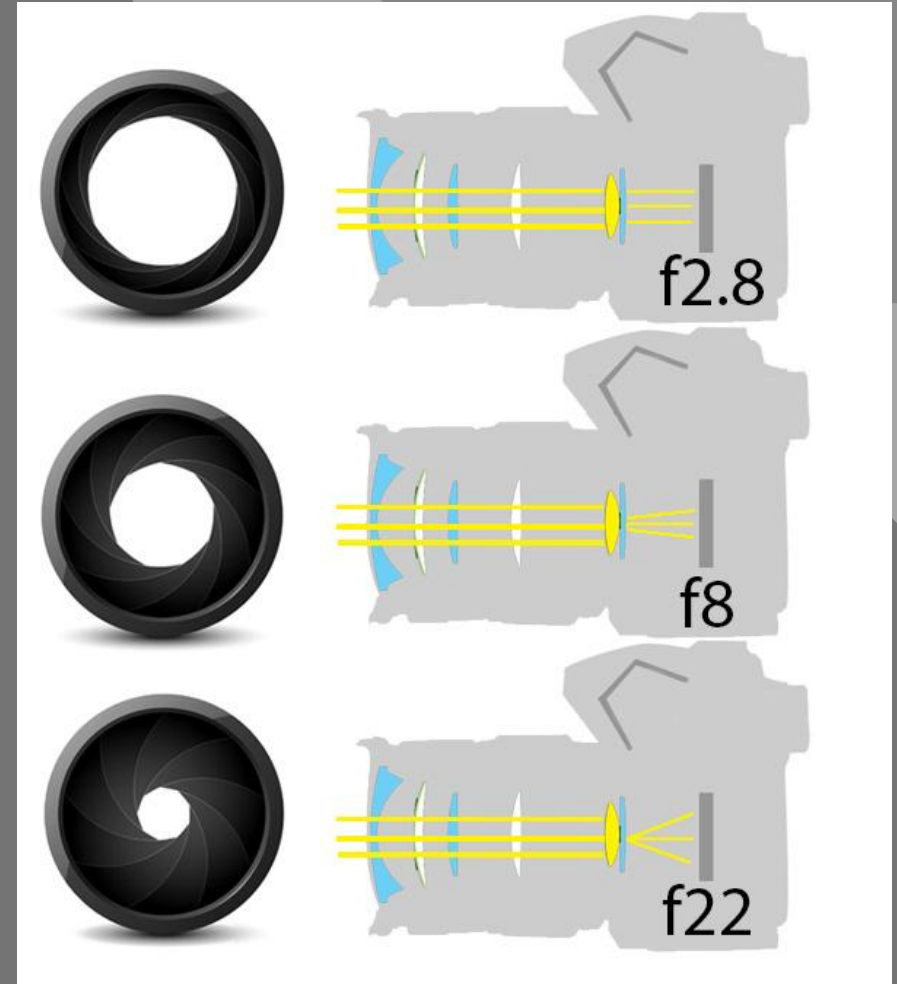
- Photographer/Subject Movement
- Camera Movement
- Shutter Speed Too Slow
- Misplaced Focus
- Excessive ISO
- Heat Waves



Shot with a long telephoto lens from across a highway on a sunny, late morning in July, in New Mexico.

What Causes Unsharp (Blurry) Images?

- Photographer/Subject Movement
- Camera Movement
- Shutter Speed Too Slow
- Misplaced Focus Point
- Excessive ISO
- Heat Waves
- **Diffraction**



What Causes Unsharp Images?

Technical Considerations

Handheld Shooting Techniques

Technical Considerations

- Use a Tripod



Use a Tripod

- Stability



Use a Tripod

- Stability
- Allows time to consider the scene and your vision



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Use a Tripod

- Stability
- Allows time to consider the scene and your vision
- Makes it easier to focus on your subject



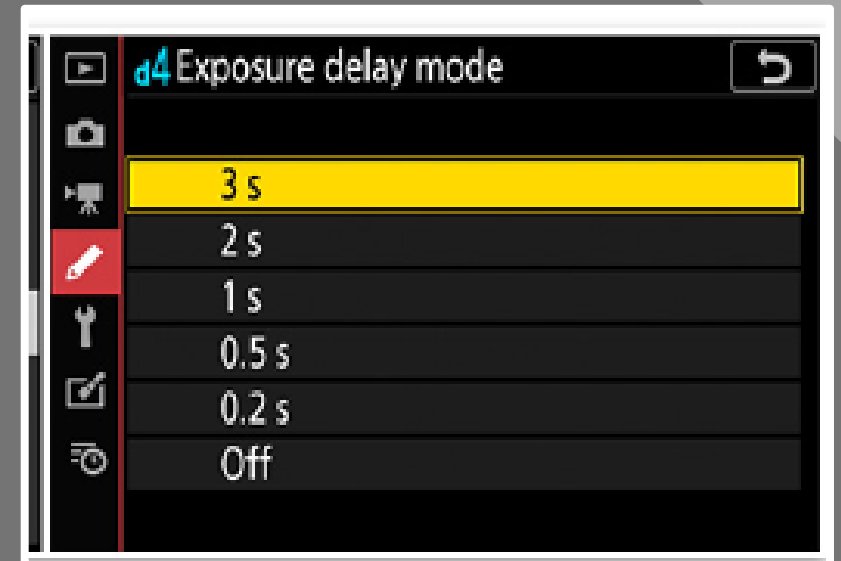
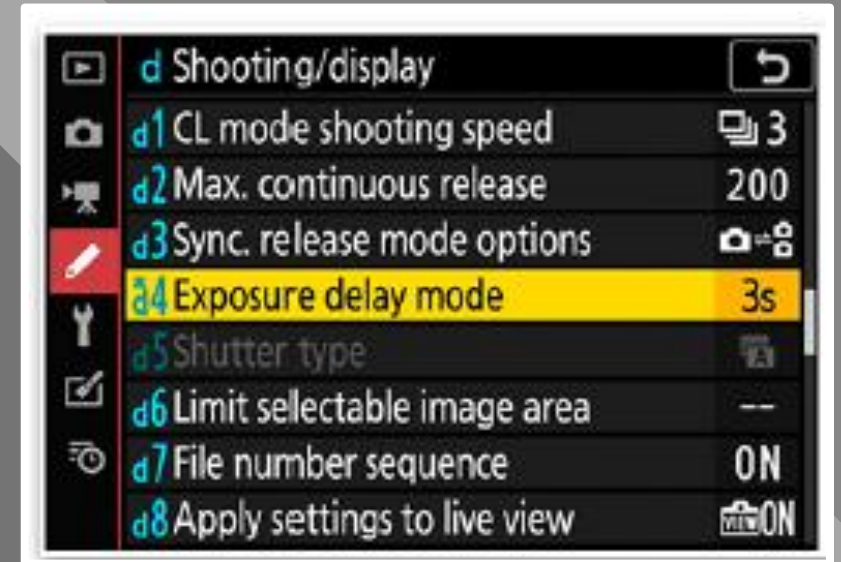
Use a Tripod

- Stability
- Allows time to consider the scene and your vision
- Makes it easier to focus on your subject
- In general, turn image stabilization OFF when using a tripod



Use a Tripod

- Stability
- Allows time to consider the scene and your vision
- Makes it easier to focus on your subject
- In general, turn image stabilization OFF when using a tripod
- Use a remote shutter release or add shutter delay



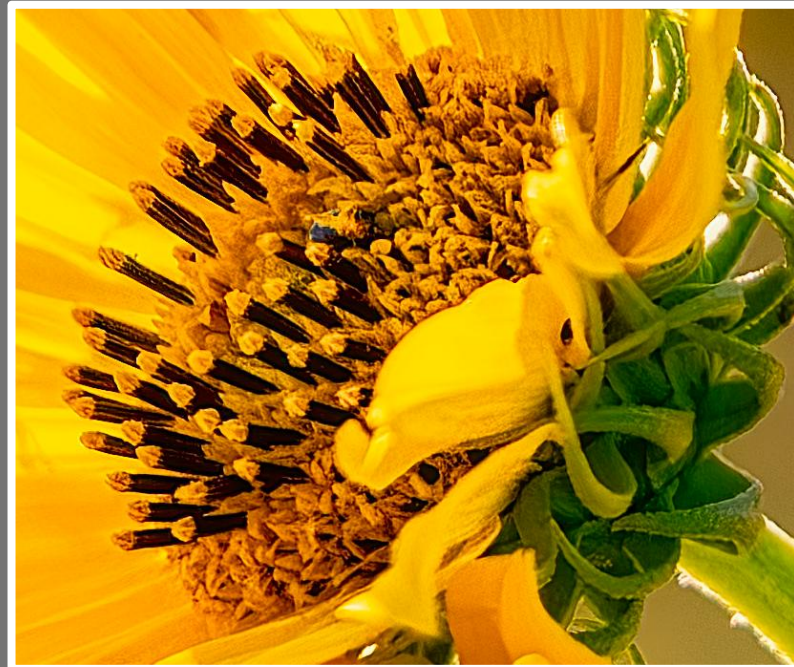
Technical Considerations

- Use a Tripod
- Choose the Correct Aperture for Your Subject



Technical Considerations

- Use a Tripod
- Choose the Correct Aperture for Your Subject



Technical Considerations

- Use a Tripod
- Choose the Correct Aperture for Your Subject
- Choose the Correct Aperture for Your Lens

Maximum Lens Aperture	Sharpest Lens Aperture
<i>f/1.2 or f/1.4</i>	<i>f/4 or f/5.6</i>
<i>f/1.8</i>	<i>f/5.6</i>
<i>f/2</i>	<i>f/8</i>
<i>f/4</i>	<i>f/8</i>
<i>f/5.6</i>	<i>f/11</i>

Technical Considerations

- Use a Tripod
- Choose the Correct Aperture for Your Subject
- Choose the Correct Aperture for Your Lens
- Choose an Acceptable Shutter Speed

CAMERA SHUTTER SPEED GUIDE



1/500



1/250



1/125



1/60



1/30



1/15



1/8



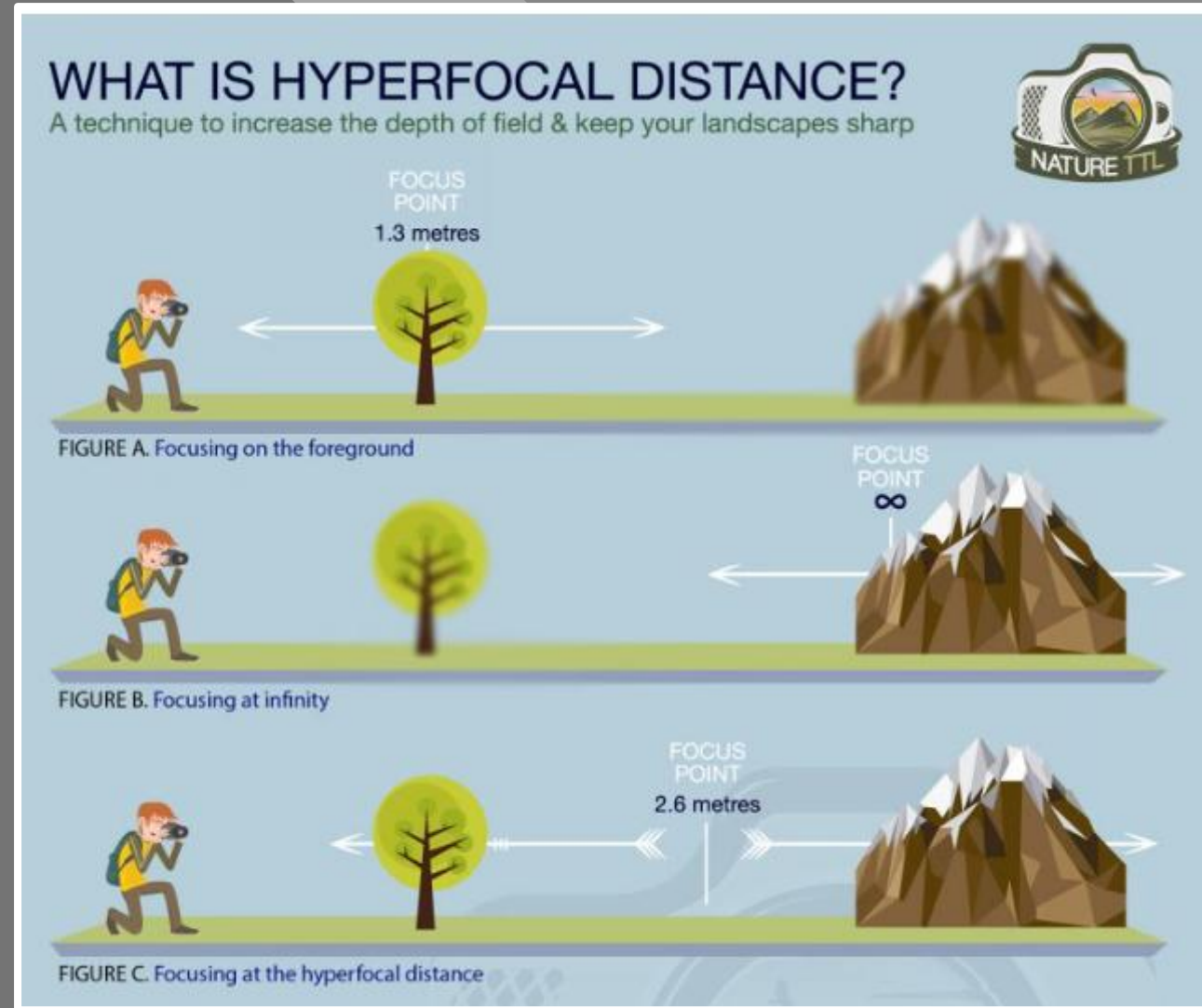
1/4



1/2

Technical Considerations

- Use a Tripod
- Choose the Correct Aperture for Your Subject
- Choose the Correct Aperture for Your Lens
- Choose an Acceptable Shutter Speed
- Consider Hyperfocal Distance



What Causes Unsharp Images?

Technical Considerations

Handheld Shooting Techniques

Handheld Shooting Techniques

- Keep a good position; brace yourself



Simon d'Entremont

Handheld Shooting Techniques

- Keep a good position; brace yourself
- Turn on vibration reduction or image stabilization



Handheld Shooting Techniques

- Keep a good position; brace yourself
- Turn on vibration reduction or image stabilization
- Gently press the shutter



Handheld Shooting Techniques

- Keep a good position; brace yourself
- Turn on vibration reduction or image stabilization
- Gently press the shutter
- When panning, move your entire upper body, not just your arms



Handheld Shooting Techniques

- Keep a good position; brace yourself
- Turn on vibration reduction or image stabilization
- Gently press the shutter
- When panning, move your entire upper body, not just your arms
- Shoot a burst of images (continuous shooting mode)



What Causes Unsharp Images?

Technical Considerations

Handheld Shooting Techniques

Example

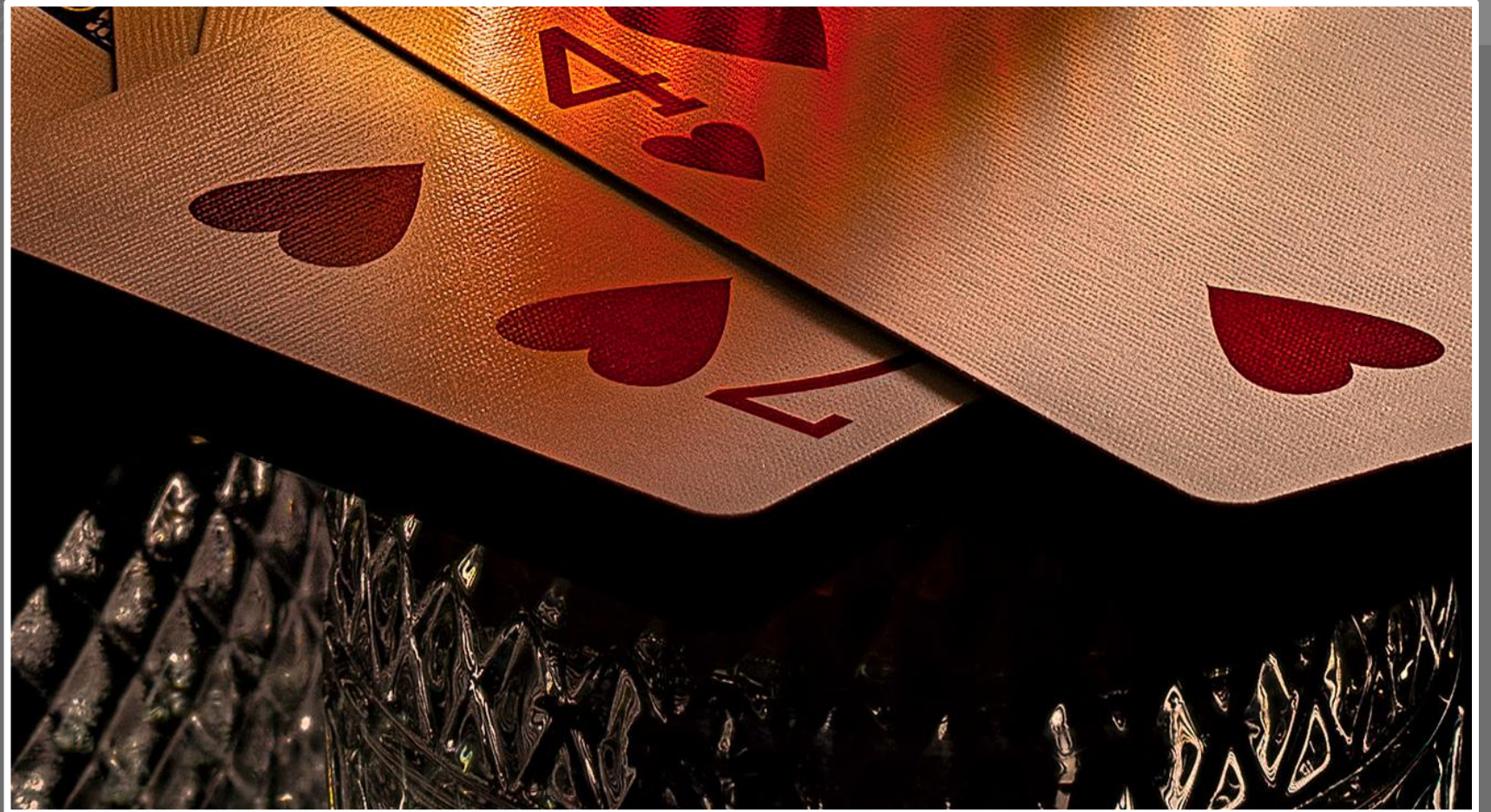
Final Image



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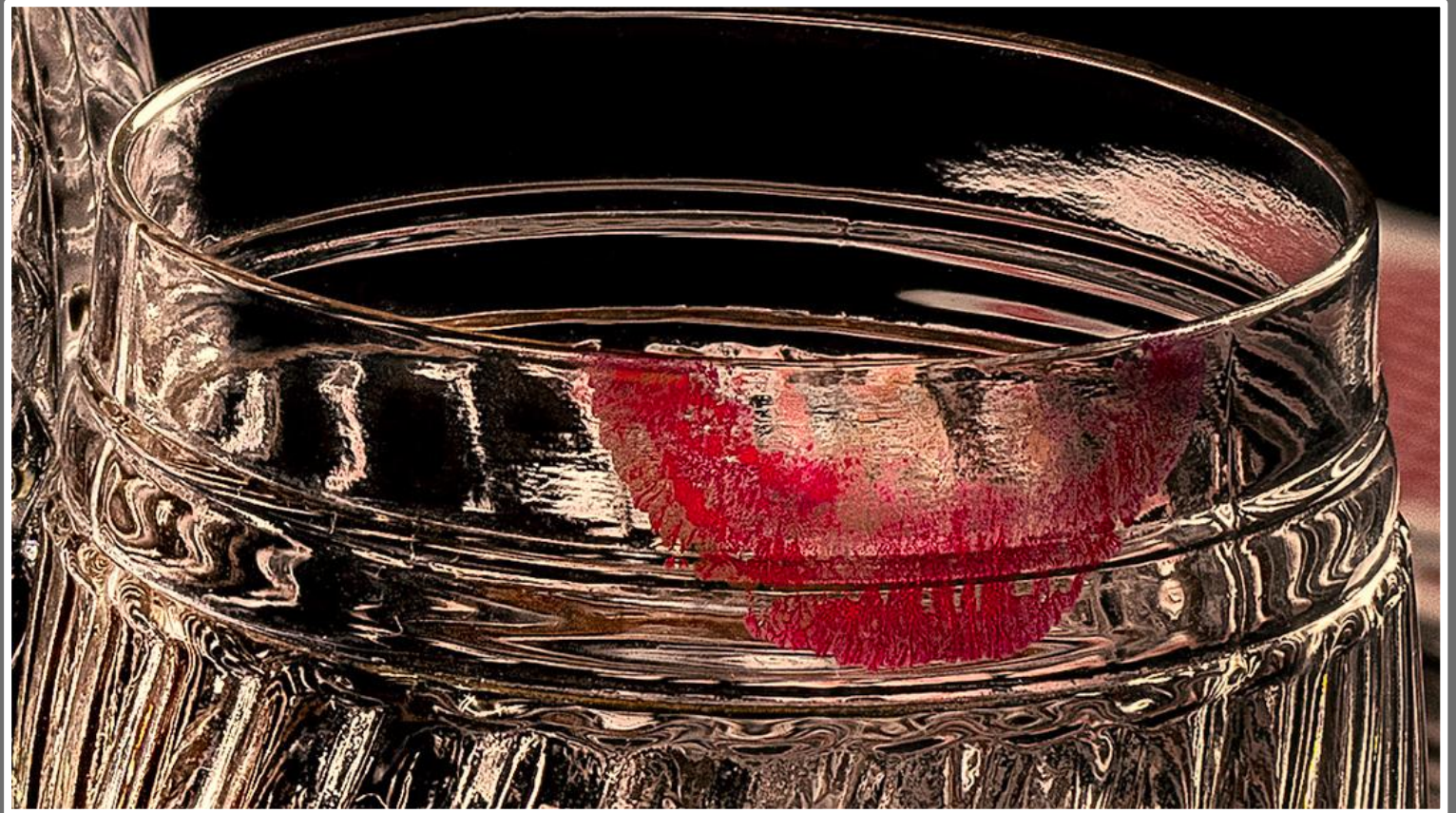
Example

Foreground and
Reflection Sharp



Example

Glass and Lipstick Sharp



Example

Glass Sharp, but
NOT Deck of Cards
in Background

