



HDR ~ *The Possibilities*

Pittwater Camera Club

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HDR - The Possibilities

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Send me an email if you'd like a PDF copy of this presentation.

Subject: HDR Notes



HDR

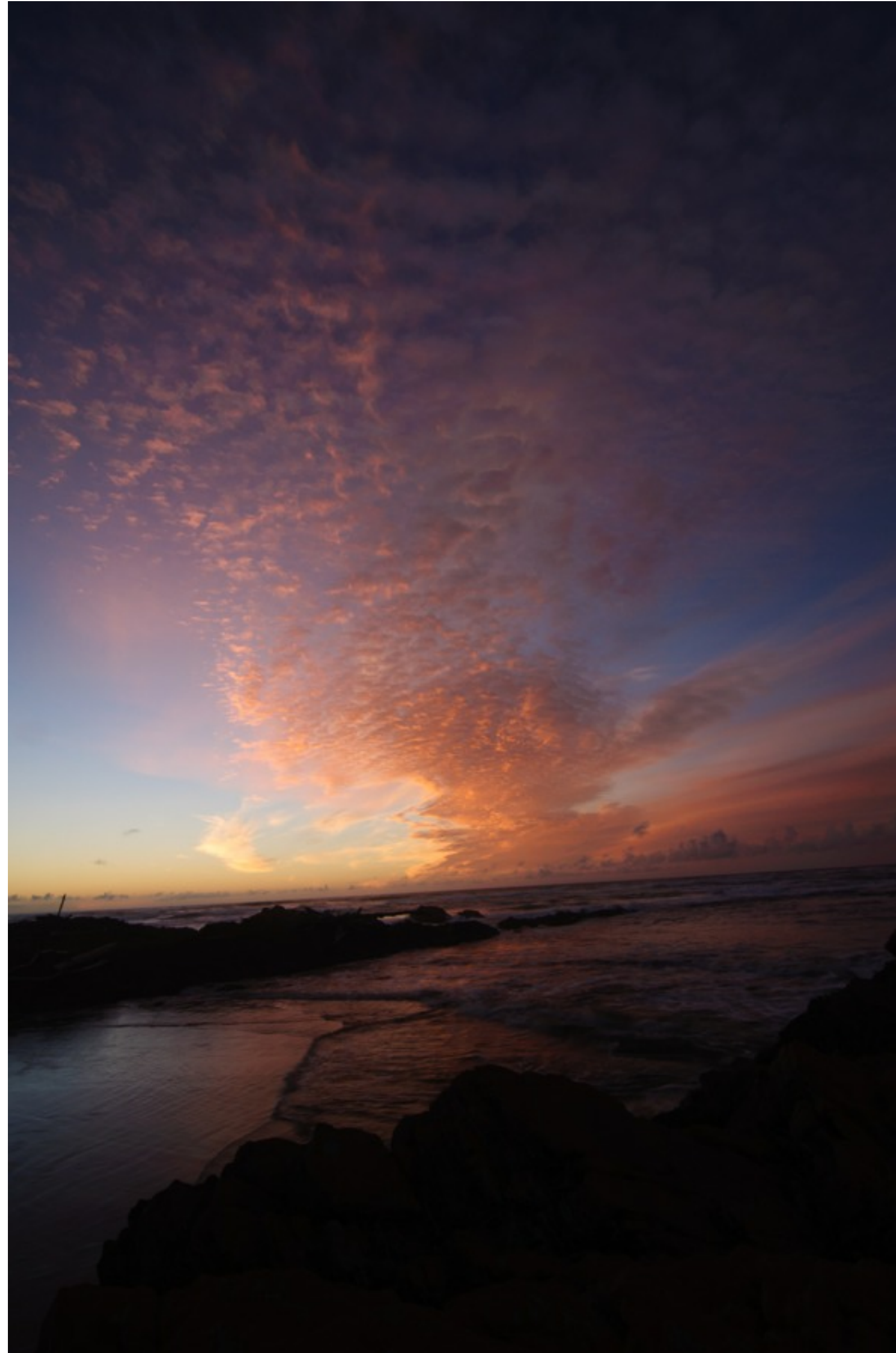
HDR = High Dynamic Range



HDR = High Dynamic Range

Why use HDR Photography?

HDR



HDR



HDR



HDR





HDR

Two different uses for HDR

- #1 - To Handle Bright, High Contrast Lighting
 - Sunset
 - Sunrise
 - Interior + Exterior Combined
 - Bright Australian Sunlight



HDR = High Dynamic Range

- *#2 - To Add Creativity to your Images with :*
 - Tone-Mapping
 - Local Contrast
 - Structure
 - Detail



What We'll Cover - I

- Discussion of Dynamic Range
 - Film
 - Digital
 - The Human Eye



What We'll Cover - II

- Bracketing in Camera
- Software
- Audio Visual
 - *Use of Local Contrast, Detail and Structure*



What We'll Cover - III

■ Software Demos

1. Manual Blending in Photoshop
2. Auto Blending in Photoshop ~ Tonemapping in Lightroom 4.1
3. HDR and Blending with Photomatix
4. Single Image HDR with Photomatix
5. HDR with HDR Efex Pro
 - Use of Control Points
 - Structure and Local Contrast with Nik Sharpener



A Quick Survey

- What do you think of HDR ?
 1. You're *very experienced* in HDR
 2. You shoot a *medium level* of HDR
 3. You've tried it *a bit*
 4. You've not tried it but are *interested to learn*
 5. It's *horrible* - *can't stand HDR !!*



Dynamic Range

- Slide Film ~ 6-7 Stops.
- Negative Film ~ 10-12 Stops.
- Good Digital Sensors ~ 7-10 Stops.
- The Human Eye ~ 15-24 Stops.
- A Bright Sunny Day ~ 12-15 Stops.



Dynamic Range

■ So

- The previous slide is very approximate, and
- Non-scientific

■ But

- The figures do show that the human eye can see far better than even the best cameras, film or digital.

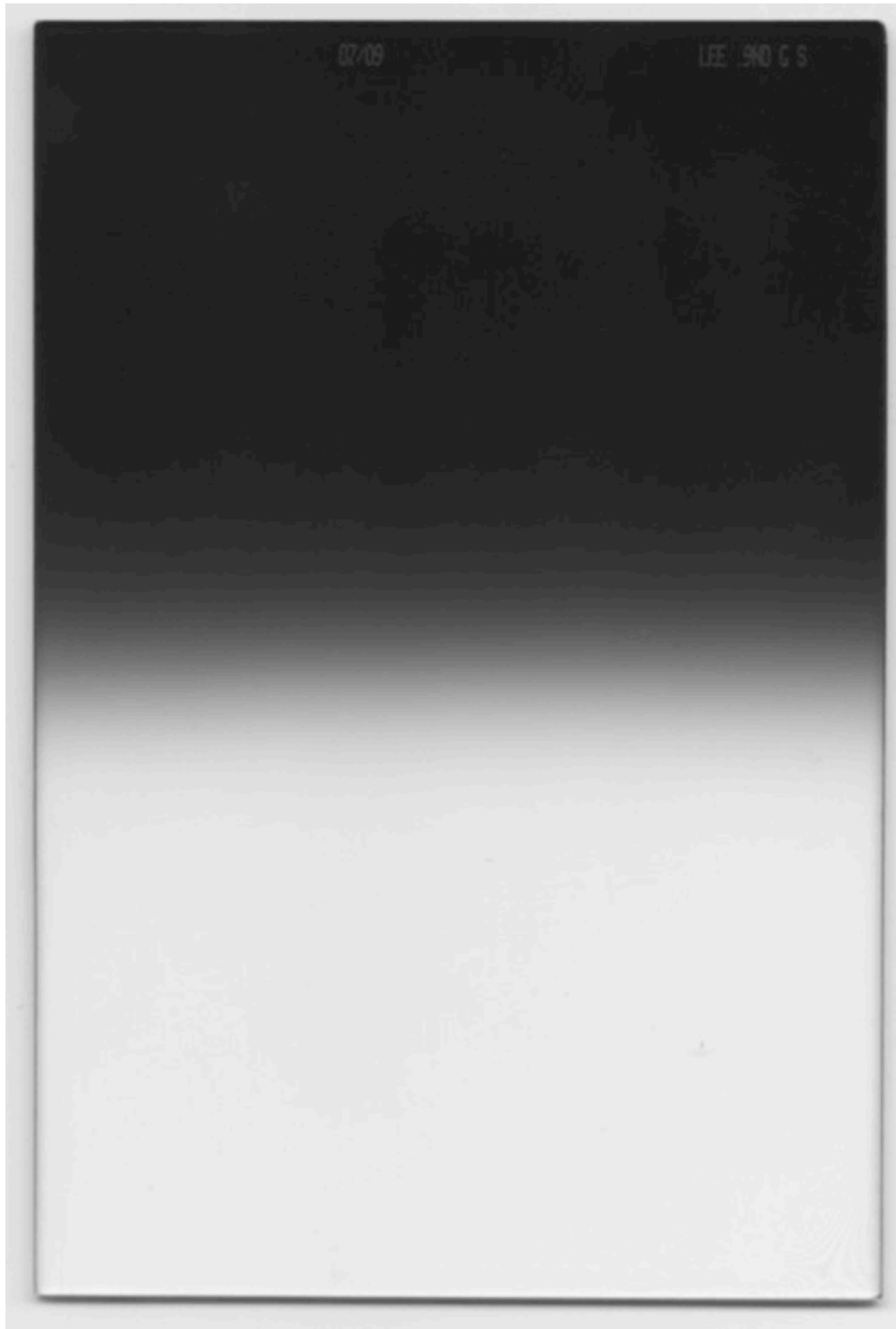


What Shall We Do ?

- How can we overcome bright light ?
 - Use Fill-Flash
 - *Doesn't help with Landscapes*
 - Only shoot on dull days
 - Move to England !!

What Shall We Do ?

- Use Graduated Neutral Density Filters



← - 1 to 3 Stops

← Soft or Hard Transition

← 0 Stops

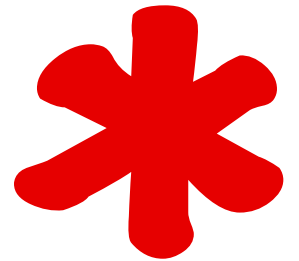


Graduated Neutral Density Filters



Pros

- I. Result is obtained in a single exposure
- II. All the work is done in camera



Cons

- I. Straight Line Transitions
 - * Ok, with a simple straight horizon
 - * Otherwise it's a problem
- II. Limited Control, 1 to 3 stops



What Shall We Do ?

- Take Multiple Bracketed Images, **and**
- Combine the Images on your Computer



Combining Images

1. Manual Blending
2. Automatic Blending
3. HDR Software
4. Combinations of 1, 2 and 3

A High Dynamic Range Image

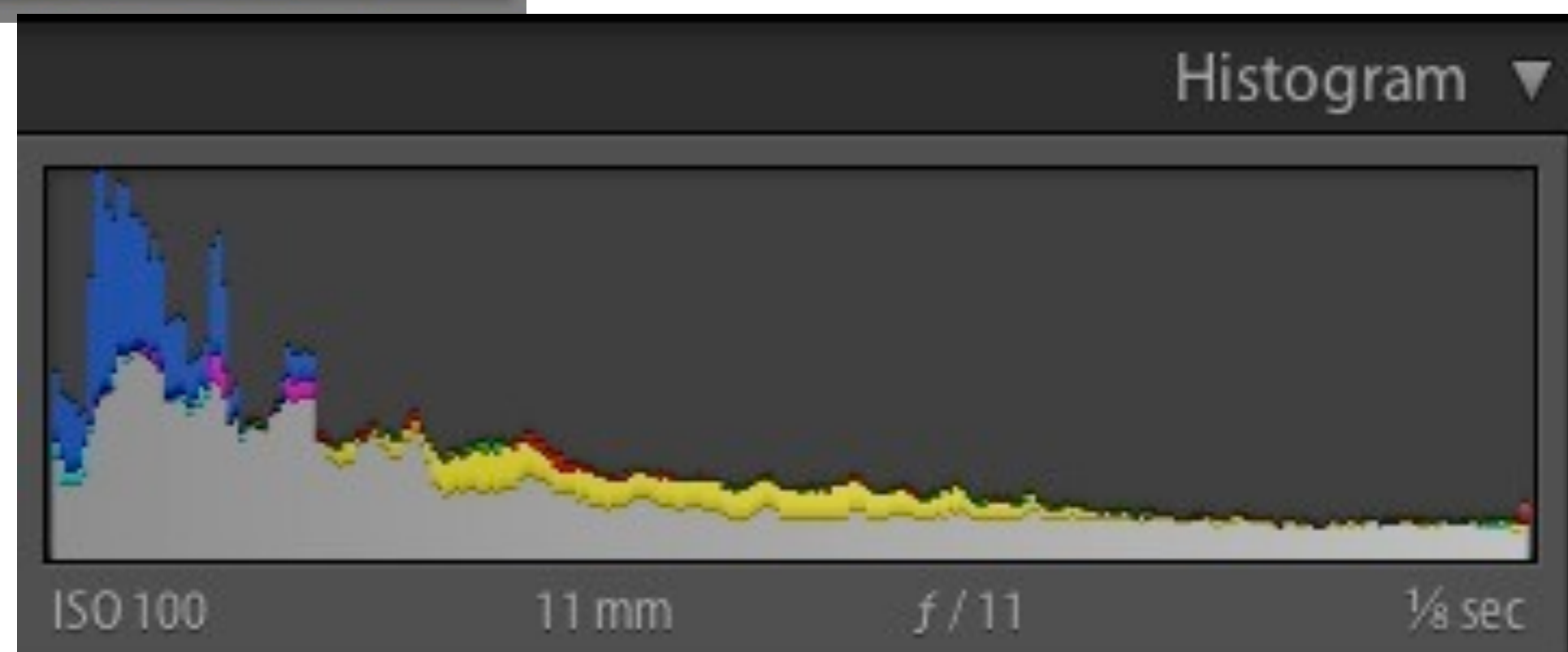
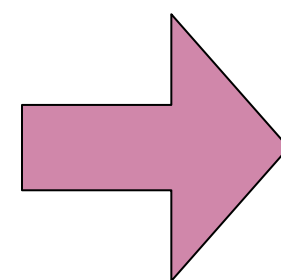
091224_151150_D90_8672.NEF

1/8 sec at $f / 11$, ISO 100

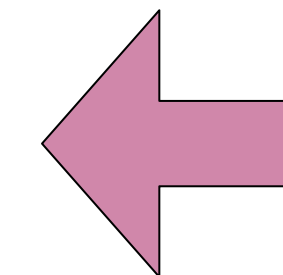
11 mm (11.0-16.0 mm $f/2.8$)



Clipped Shadows



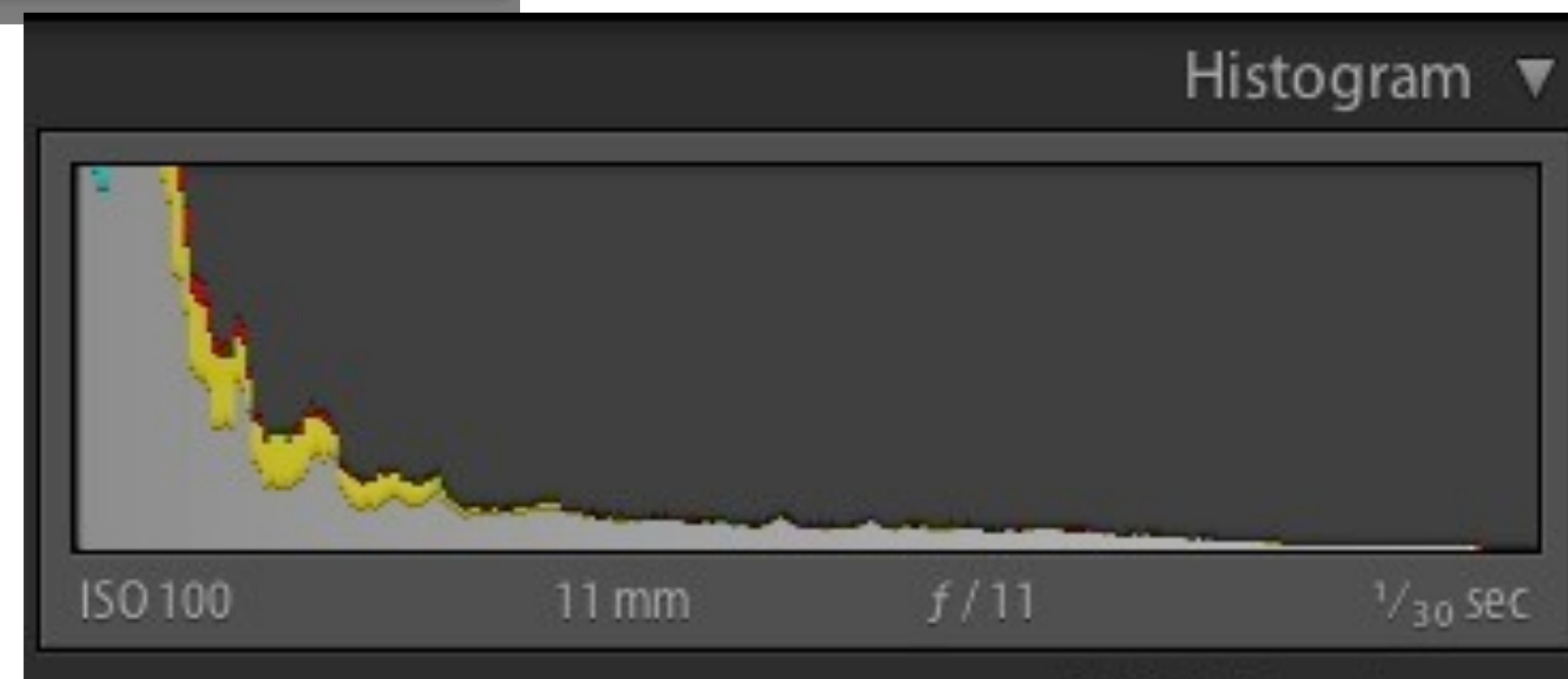
Blown Highlights



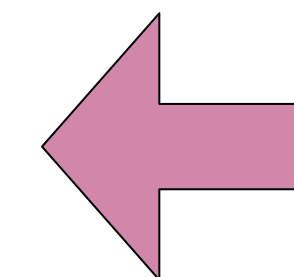
Two Stops Under-Exposed

091224_151152_D90_8673.NEF

$\frac{1}{30}$ sec at $f / 11$, ISO 100
11 mm (11.0-16.0 mm $f/2.8$)



No Blown Highlights



Two Stops Over-Exposed

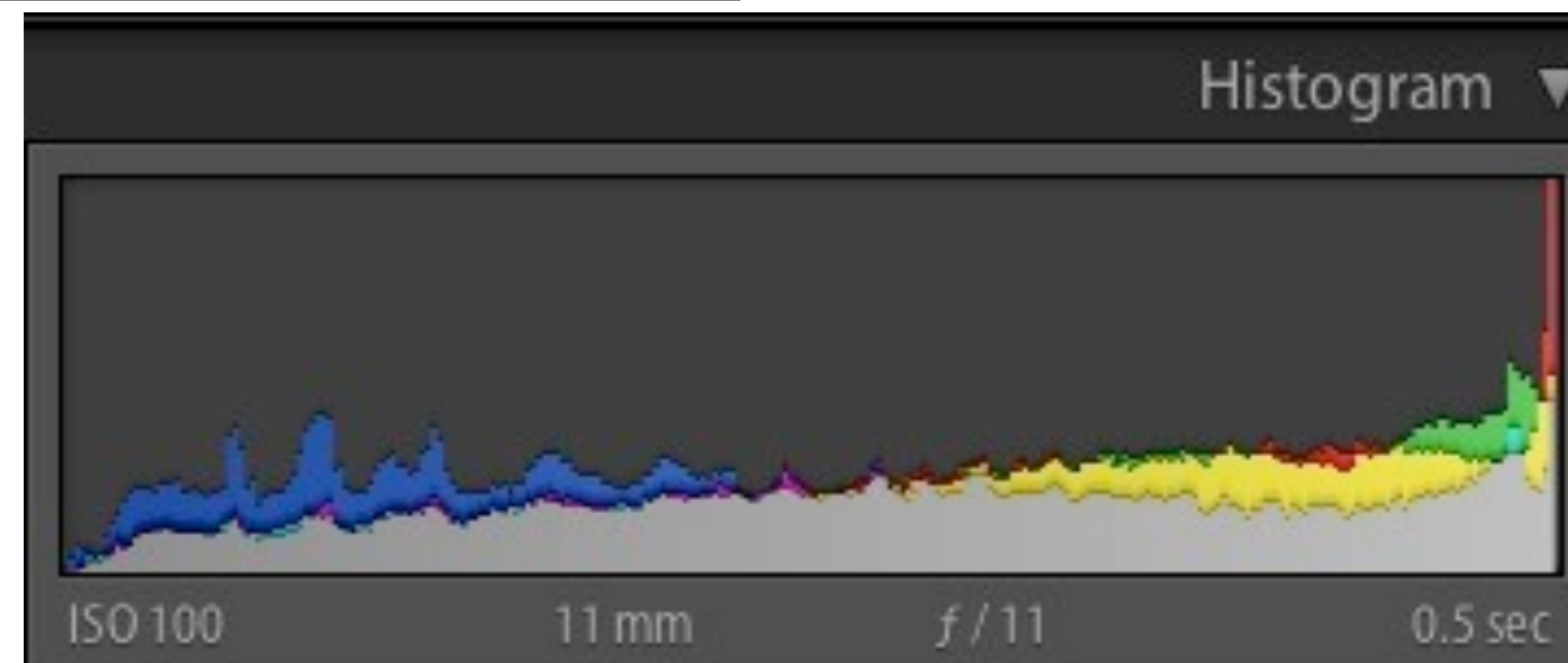
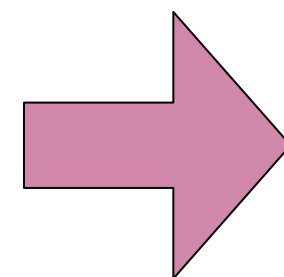
091224_151153_D90_8674.NEF

0.5 sec at $f / 11$, ISO 100

11 mm (11.0-16.0 mm $f/2.8$)



Full Shadow Detail



3 Images Combined

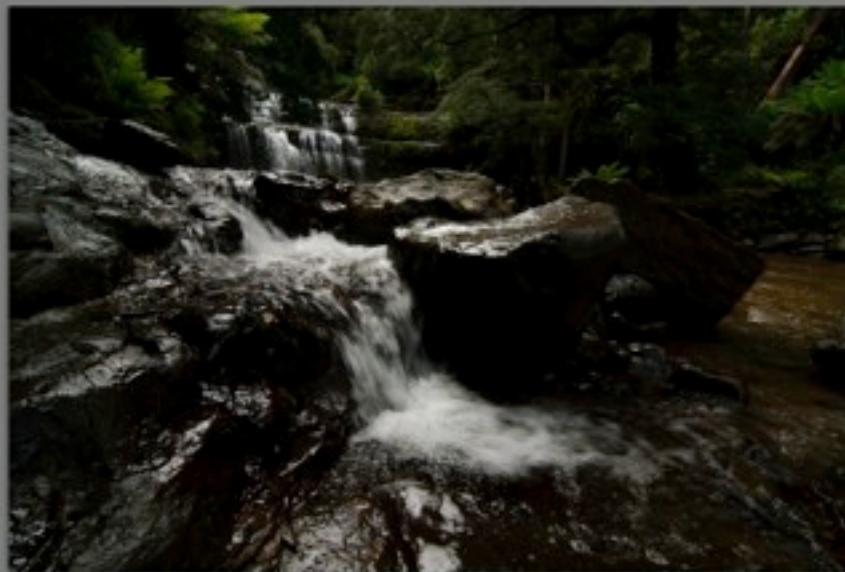


3 Originals + Blended Image

091224_151150_D90_8672.NEF
1/8 sec at f / 11, ISO 100
11 mm (11.0-16.0 mm f/2.8)



091224_151152_D90_8673.NEF
1/30 sec at f / 11, ISO 100
11 mm (11.0-16.0 mm f/2.8)



091224_151153_D90_8674.NEF
0.5 sec at f / 11, ISO 100
11 mm (11.0-16.0 mm f/2.8)



Types of HDR Images - Blending



Types of HDR Images - Over the Top



Types of HDR Images - A Compromise





Bracketing

- Take Several Exposures 1 or 2 stops apart
 - Doing This Manually is Slow and Tedious
 - Most DSLRs have Automatic Bracketing
 - Many Higher-End P&S Cameras do too



Bracketing

- Select the Number of Shots to Take
 - Usually 3
 - *Can be 5, 7 or even 9*
- Select the Exposure Difference
 - *0.3, 0.7, 1 or 2 EV (aka Stops)*
- 3 Shots at 0, -2 and +2 EV works well for me.
 - *Sunrise/Sunset might need more over/under exposure.*



Automatic Exposure Bracketing (AEB)

- Set Your Camera to Continuous Shooting
- Set the Number of Images
- Set the Exposure Difference
- Hold the Trigger Down
- All Shots are taken in quick succession
- I know this works for Canon, Nikon and Olympus
- I am pretty sure it also works for most other brands



Bracketing ~ Camera Settings I

- Manual Focus

- Tip - Focus once using Auto-Focus then set to Manual

- Use RAW

- Not Essential but HIGHLY RECOMMENDED !!



Bracketing ~ Camera Settings II

- **Don't Use Auto-ISO**

- *For best results set your ISO at your camera's lowest setting*
- *You can use Auto-ISO but your results might not be so good*

- **Don't use Auto White Balance**

- *Chose the most appropriate, Daylight, Cloudy, etc.*
- *You can use Auto-White Balance but your results might not be so good*



Bracketing ~ Camera Settings III

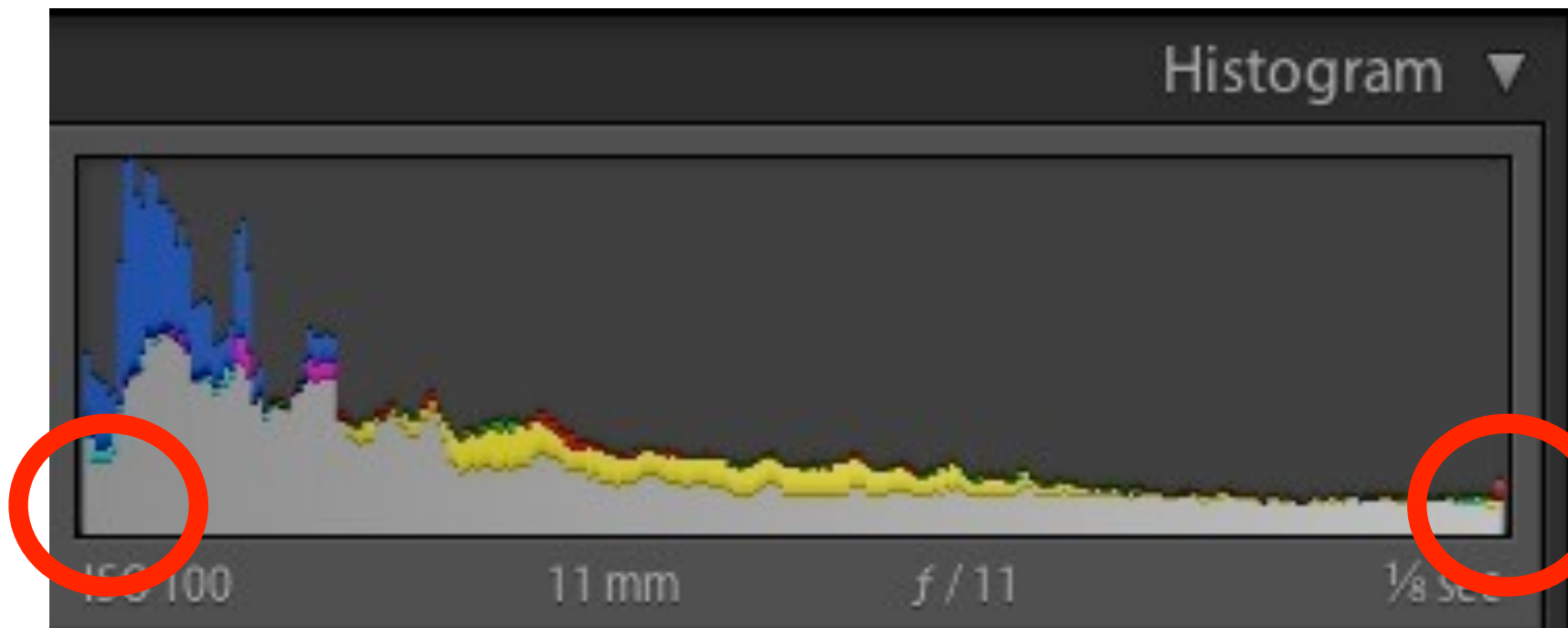
- Use Aperture Preferred Mode
 - The *Aperture* **MUST** remain the same
 - The Depth of Field (DOF) must not change
 - It's the Shutter Speed that we want to vary
- For Exposures longer than 1/30 sec ~ Use Mirror Lock-Up
 - Exposure Delay Mode on a Nikon
 - Recommended for all long exposures - not just Bracketing
 - Optional ~ use your own judgment ~ get to know your camera



Tripod or Hand-Held

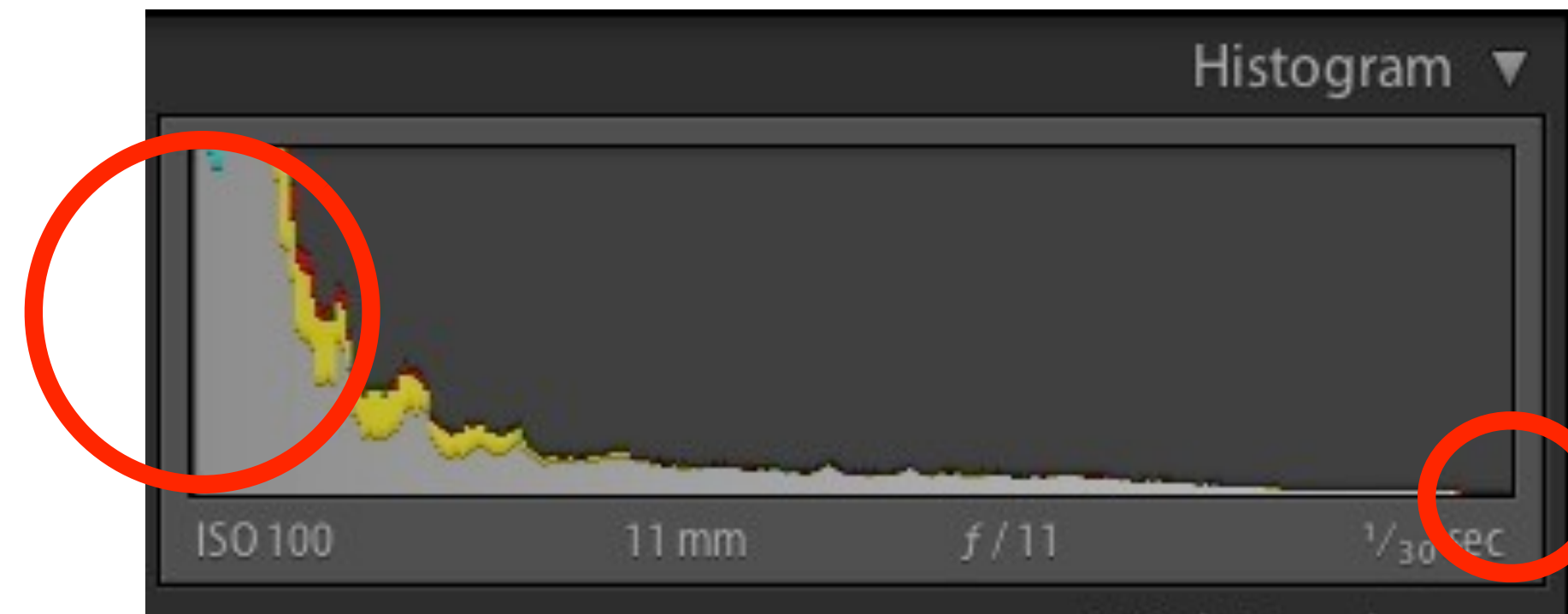
- Do I need a Tripod ?
 - Always Preferable
 - Not Absolutely Necessary
 - Modern HDR and Blending Software can Align your Images
- If you Hand-Hold check for the Slowest Speed
 - If your standard exposure is $1/30$ th second
 - A +2 stops exposure will be $1/8$ th second

Watch Your Histograms



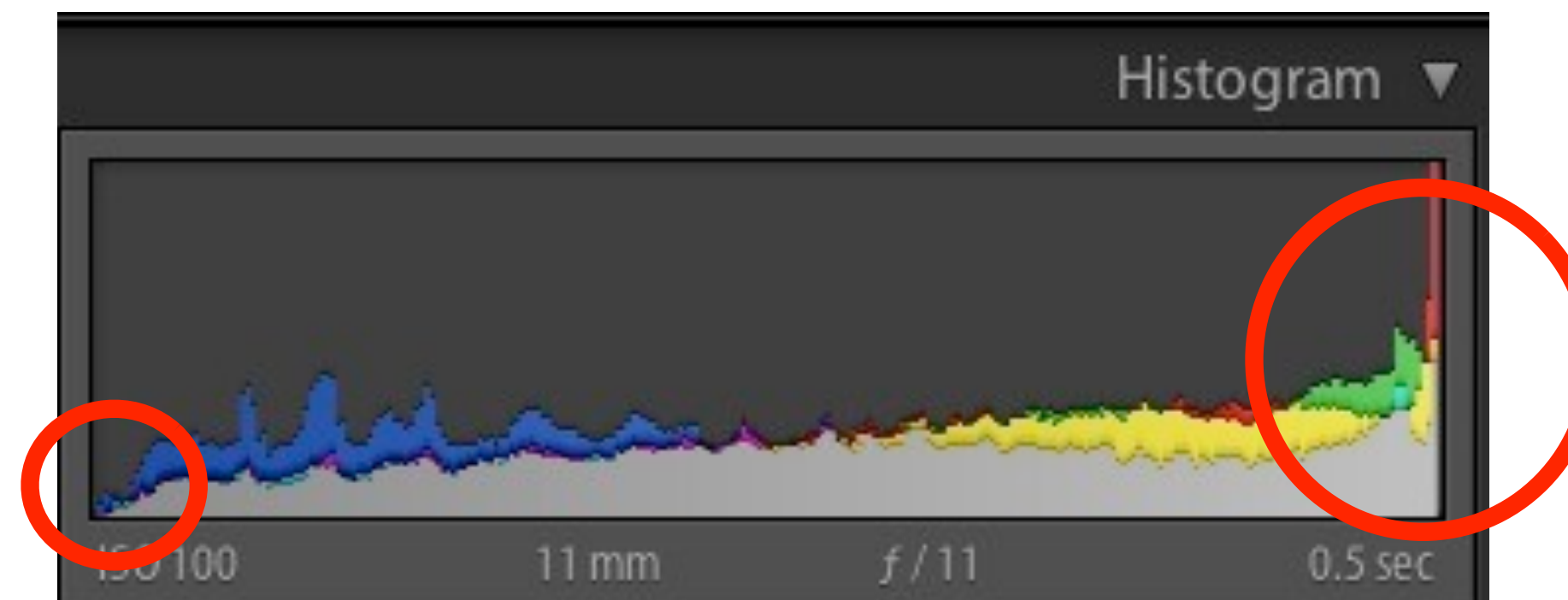
Standard Exposure

Mid-Range Fine but ...
Clipped Shadows
Blown Highlights



Under Exposure -2 Stops

Highlights OK
Clipped Shadows

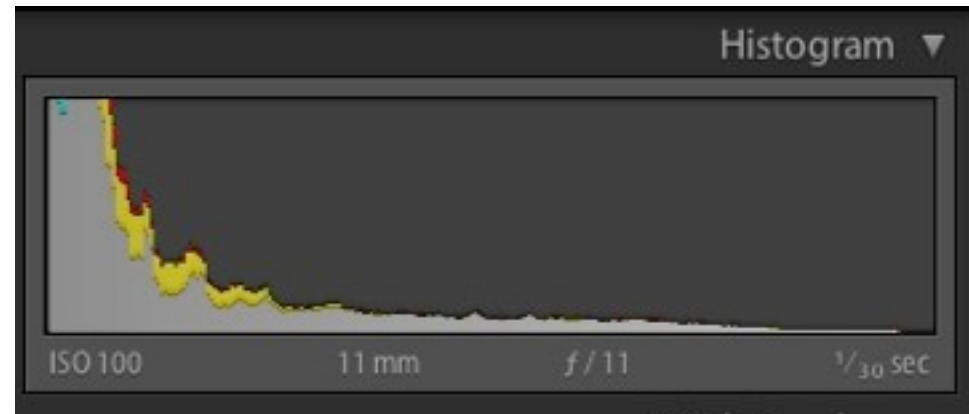


Over Exposure + 2 Stops

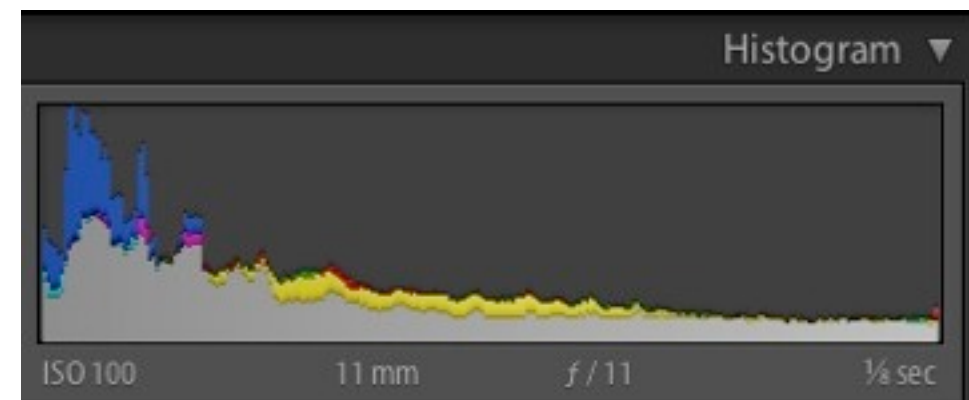
Shadows OK
Highlights Blown

HDR - Post-Processing

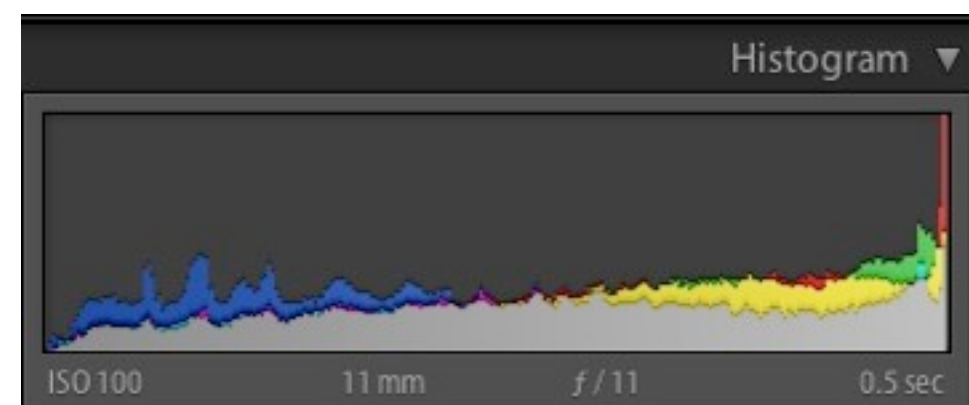
RAW Files



Underexposure -2 Stops



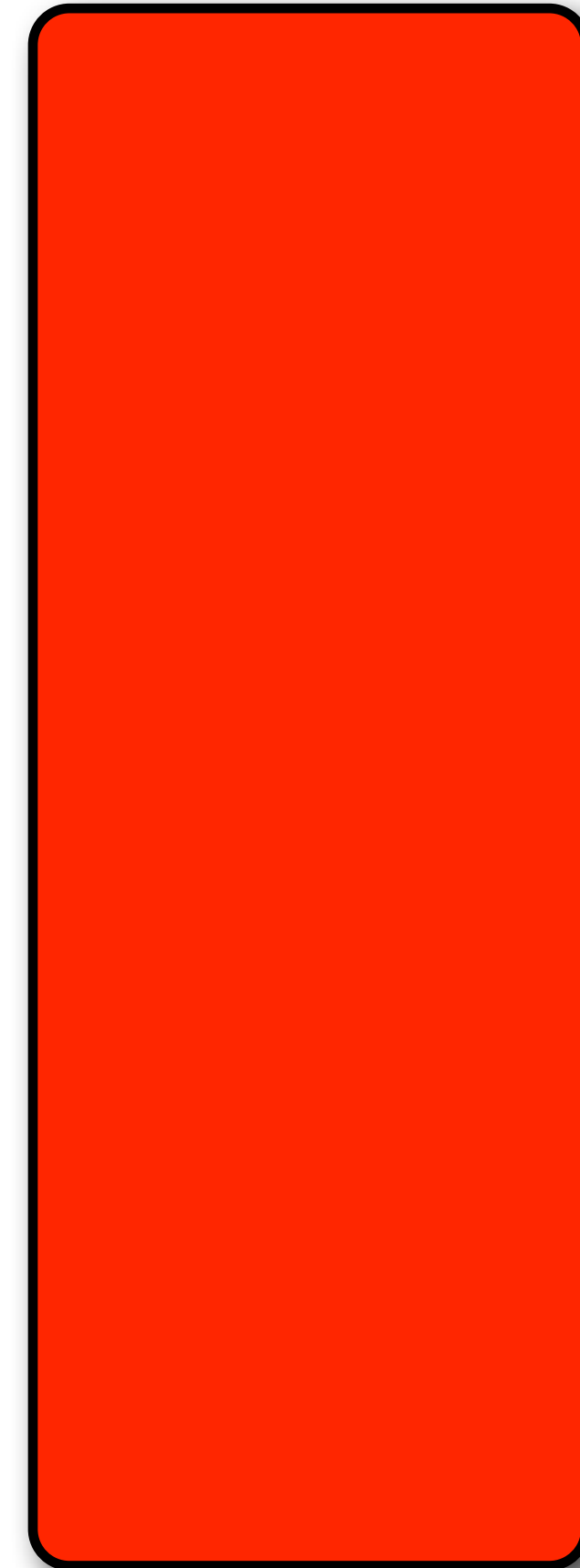
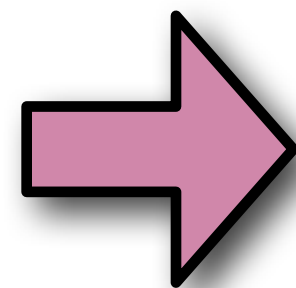
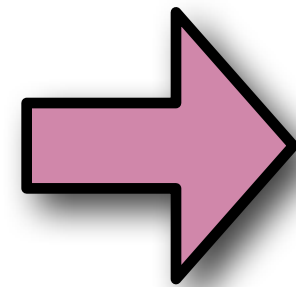
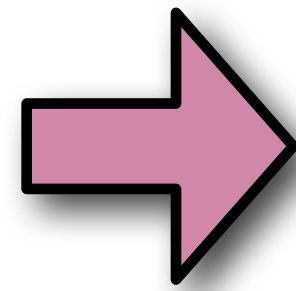
Standard Exposure



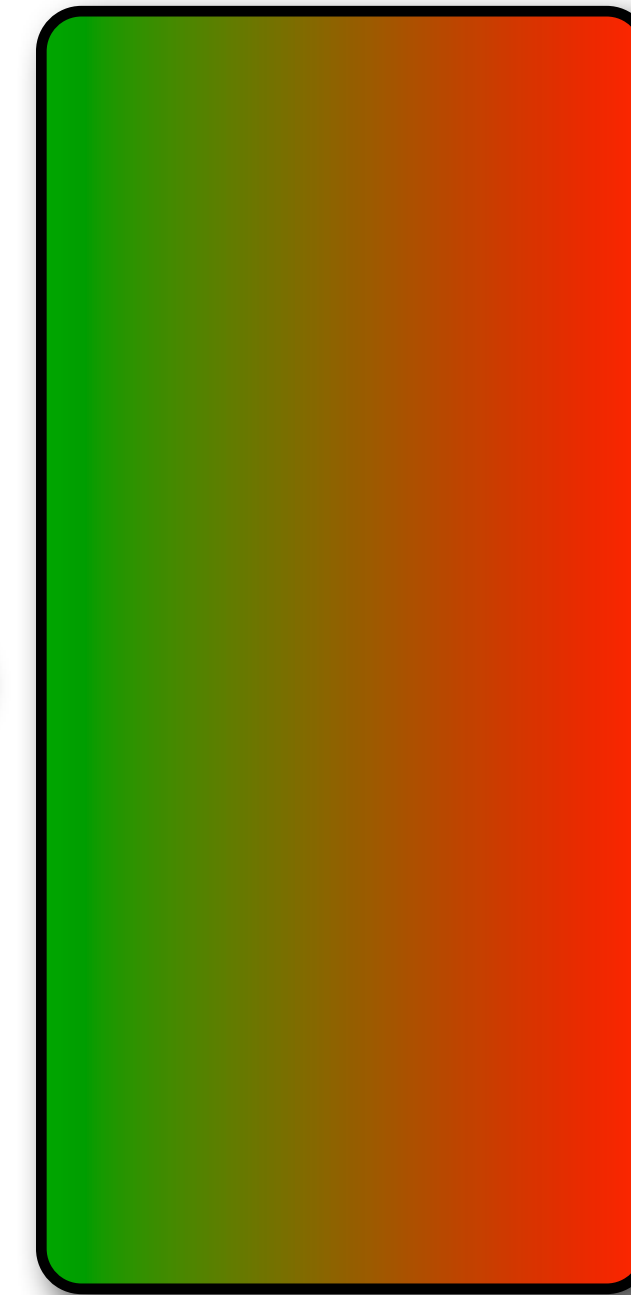
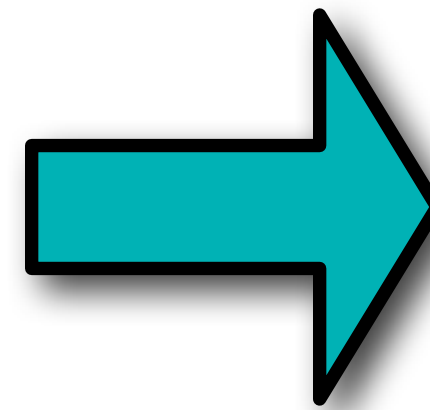
Overexposure + 2 Stops

32-Bit HDR File

Tone-Mapped File



Exposures Blended
Images Aligned
De-Ghosting (Movement)
Reduce Noise and CA



16-Bit Tiff File, or
8-Bit Jpeg File
Exposure
Contrast
Saturation, etc..



HDR - Post Processing

- 32-Bit HDR File

- Process is mostly automatic
- A few user options - Align, De-Ghost, De-Noise, etc.

- Tone-Mapped File

- Huge Variety of User Controls
 - Exposure, Contrast, Saturation, Colour Temperature
 - HDR Strength, Detail Contrast, Highlights, Shadows, etc., etc..



HDR Software

- Links to HDR and Blending Software :-
 - Adobe Photoshop CS5 and now CS6
 - Included as standard part of CS5 and CS6
 - Many Tutorials on the Internet
 - Photomatix - <http://hdrsoft.com/>
 - The Original and still very good (since 2005)
 - Pro ~ USD \$ 99 ~ Includes Batch Processing & Lightroom Plug-In
 - Essentials ~ USD \$ 39 ~ Standalone Only



HDR Software - continued

- HDR Expose and Express - <http://www.unifiedcolor.com/>
 - *Very Good for a Natural Look, from USD \$ 99 to \$ 149*
- NIK Software HDR Efex Pro -
 - <http://www.niksoftware.com/hdrefexpro/usa/entry.php>
 - *Very Powerful*
 - *Includes “Control Points”*
 - *Takes a Powerful PC/Mac to run well*
 - *USD \$ 99.95*



Blending Software

- LR/Enfuse Blending Software :-

<http://www.photographers-toolbox.com/products/lrenfuse.php>

- A very cheap donation-ware program
- Provides a link between Lightroom and Enfuse
- Enfuse is an Open Source Blending Program
- I get good results from it



Detail, Local Contrast, Structure

- Topaz Labs :-

- Topaz Adjust \$ 49.99 : <http://www.topazlabs.com/adjust/>
- Topaz Detail \$ 39.99 : <http://www.topazlabs.com/detail/>

- Nik Software :-

- NIK Sharpener Pro \$ 199.95 :

<http://www.niksoftware.com/sharpenerpro/usa/entry.php/>

- Structure
- Local Contrast



Software

- There are many Programs Available
 - Download Trial Versions
 - Try them and see what results you like best



A Break from My Voice

- TOSA
 - “Textures of Sydney Architecture”
- Use of Structure and Local Contrast
 - Similar Effect to HDR
 - But on a Single Image
- Sit Back, Relax - I Hope you Enjoy It





Blending and HDR Demos

- Photoshop Layers – 3 Images - Manual Process
- LR -> PS -> LR - Automatic Process
- HDR and Blending with Photomatix
- Photomatix
 - *Single Image*
- Nik Software – HDR Efex Pro



A Couple of Hints and Tips

■ Photoshop

➔ Merge Visible Layers

- Shortcut Command + Option (Mac) / Control + Alt (Win) + Shift + E

- <http://blogs.adobe.com/jkost/2011/08/using-merge-visible-instead-of-flattening-layers-within-actions.html>

➔ Align Layers - especially if images were hand-held

- Select 2 or more layers to align
- Menu->Edit->Auto-Align Layers...-> Projection->Auto



HDR - Additional Information

- General HDR Information

- A Whole Range of HDR information is available on Digital Outback Photo's Website :

- http://www.outbackphoto.com/CONTENT_2007_01/section_hdr_and_tonemapping/index.html

- A new and excellent HDR website, HDR One :

- <http://www.hdrone.com/>

- Includes a monthly magazine



HDR - Photomatix Information

- Trey Ratcliff ~ American HDR Photographer ~ Uses Photomatix
 - www.stuckincustoms.com/hdr-tutorial/
- Peter Carr ~ UK HDR Photographer ~ Also Uses Photomatix
 - [http://digg.com/newsbar/topnews/HDR Tutorial How to create High Dynamic Range Images Using Photmatrix](http://digg.com/newsbar/topnews/HDR_Tutorial_How_to_create_High_Dynamic_Range_Images_Using_Photmatrix)
- Photomatix List of Online Resources, Tutorials, etc.
 - <http://www.hdrsoft.com/resources/index.html>



HDR - HDR Efex Pro Information

- HDR Efex Pro from Nik Software
 - Nik has a great range of video tutorials
 - A good starting point :
 - <http://www.niksoftware.com/learnmore/usa/index.php/webinars/archives#/hdr-efex-pro-with-rick-sammon/0/9/0/old-to-new/0/page:1>
 - The whole range of videos. Select “HDR Efex Pro” under ‘Program’
 - <http://www.colortrails.com/2011/09/06/getting-started-with-lightroom-and-hdr-efex-pro/>
- A Text-based tutorial :
 - <http://www.colortrails.com/2011/09/06/getting-started-with-lightroom-and-hdr-efex-pro/>



HDR - The Possibilities

- That's It !!
- That's Yer Lot !!
- Thank You for Watching
- Thank You for Listening

- HDR - Have a Go !



HDR - The Possibilities

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