Affinity Photo Learning

This is a set of notes I made as I was watching the 185 official Affinity Photo videos (over 16 hours) as below (with subsequent updates). No guarantees as to completeness or correctness, of course. I use them now to remind myself of various details. And, if I'm still not sure, will re-watch the video (links are in each section. Any comments/corrections, ping me on the Affinity Forum. I'm 'dmstraker'.

Source: *https://affinity.serif.com/forum/index.php?/topic/10119-in-house-affinity-photo-video-tutorials/*

Videos: Vimeo - http://affin.co/PhotoVids   YouTube - http://affin.co/photoyt

Contents

1. Beginners Series

Opening & Saving (04:04)

- [Opening & Saving](#)

Copy images from camera to computer.

Open image: File/Open.

Save: File/Save will overwrite original image file. This is destructive.

File/Save As… will save to .afphoto format (affinity format keeps your edits so next time you can adjust your edits).

[To save to jpeg and other formats, use File/Export]

Layers (07:38)

- [Layers](#)

Think of layers as building blocks that form a vertical stack of bits of images. You look down on them and can see through parts of upper images so every layer contributes to the whole of what you see.

Layers are shown on the right hand Layer panel.

Layers can include basic images, text, adjustments, filters, vectors, masks and more.

Original image is 'pixel' background layer, above which more layers are added as the image is adjusted.

A new layer affects all layers beneath unless it is told not do to this.

Click on check-box on right to hide or show image.

Layers allow non-destructive workflow that does not change original image file. They let you experiment and go back to tweak a previous adjustment.

Layers can be reordered by dragging and dropping.

Adjustments (06:39)

- [Adjustments](#)

[Adjustments are done via layers, not directly to image as in other editors (this allows them to be changed later.]

Eg. Contrast: Layer/New Adjustment Layer/Brightness+Contrast Adjustment

Selective Colour: adjusts individual colour components.

Levels: black level slider increases intensity of darker tones. Likewise for white slider for lighter tones.

To change any time in future, double-click layer icon (white square)

Click on check mark (tick) on right to turn off any layer.

['Merge' blends this down into layer below and removes the adjustment layer – like 'ok' on PS adjustment]

Filters (07:32)

- [Filters](#)

Filters/<filter> to add.

Filters only apply to a pixel layer that is currently highlighted. They are destructive as they are directly applied to the layer.

Layers/New Live Filter Layer/… adds filter as layer. This appears as a 'child' layer to pixel layer so it only applies to the layer. [this can be changed in Assistant – 'i' button in menu.]

[you can drag and drop the live filter layer to top level if you like.]

'live perspective' filter useful.

Exit rather than 'apply' as application is done real-time.

Lighting filter – you can add multiple lights under one filter.

Exporting (03:25)

- [Exporting](#)

Use to save to jpg, png, tiff, etc.

File/Export

In jpg, a small reduction in quality will result in a big reduction in file size.

2. Introduction

Discover Affinity Photo (06:53)

- [Discover Affinity Photo](#)

Basics of interface.

LHS: tools panel;

Context toolbar above (changes with tool).

RHS assorted panels.

View/Studio to see other panels not currently shown, eg. Macro and library.

 Top left are 'persona' buttons. Each persona has different set of tools. 'Develop' is for RAW files. Tone mapping does 'HDR' styling but is useful generally too.

Getting Started (10:17)

- [Getting Started](#)

Opening many photos at once: File/Open and select them all in normal Windows way.

Adjust using Layer/Add New Adjustment Layer.

Levels: Pull in black level and white level to edge of histogram to increase contrast.

Black&White: Sliders control mix of colours into the b/w image.

White balance: cool and warm and adjust tint.

Crop with crop tool on left. Click 'Apply' near top left. Click and drag line to straighten photo. Ctrl-0 to zoom to fit.

Alt-mouse wheel to scroll sideways.

Inpainting in 'heal' section on left toolbar. Like PS context-aware fill.

Layer/Add New Live Filter/Vignette for vignette.

Technical Benefits (06:11)

- [Technical Benefits](#)

Brush stroke hover shows what will be achieved. Also layers, layer blending, Opacity, gradients.

Raw: engine can be changed. Assistant changes with persona.

Fast undo history. Fast scroll (60+fps).

Live filter layers.

You can edit different bits differently – eg. Doing curves in RGB format.

Instant frequency separation setup.

All filters 8 and 16 bit.

No loss when shrinking/enlarging raster layers.

Editing stacks of images – auto alignment

3. Basics

Document Setup (02:23)

- [Document Setup](#)

File/New.

Type lets you set destination (eg web).

Web: 72dpi. RGB.

Print ready: CMYK. 300dpi. Colour format suited to print being used.

Devices lets you set up for ipad, etc (if option available).

After creating document, use Document menu to change format, resize, flip, rotate, etc. (and flatten)

Layer Concepts (06:42)

- [Layer Concepts](#)

Layers are rasterized bitmaps, tonal adjustments, convolution filters and vector objects.

Their main purpose is non-destructive workflow that lets you go back and change or delete previous adjustments and objects.

Child layers are nested within a pixel layer and applies only to that parent layer.

You can drag child layers out to a top-level layer so it affects all below it.

You can drag top-level layers to child position by dragging them on top of pixel layer.

Note that tools (LHS) affect only the currently-selected pixel layer (they won't affect adjustment layers).

Soft proof layer will let you see how image will be printed.

Layers Overview (02:49)

- [Layers Overview](#)

Layers stack to add and edit detail.

Nested adjustments only affect they layer they are nested under.

To turn on/off adjustments, shift-click their icons (red line appears through them).

Typical composite stack consists of several pixel layers, each with a set of adjustments nested under them, and then with a set of adjustments at the top that apply to all layers.

To turn on/off a group of layers, click on the top, shift-click on the bottom to select all, then click on one checkbox (all selected will turn on/off with this).

Rename layers by clicking once on the name.

Create a group by selecting a set of layers and using ctrl-G or right-click/Group. Then rename it.

Live Filter Layers (08:21)

- [Live Filter Layers](#)

Seen with double-triangle icon.

Layer/New Live Filter Layer/… or click on double-triangle below layers.

Allows non-destructive, re-editable edit. It's like an adjustment layer for filters. It allows you to hide and re-edit the effect (double-click icon).

Saves a lot on file size too (vs multiple pixel layers).

Example: Depth of Field, Tilt & Shift

[T&S image often best from high position]

Rotate to fit major vector in image. Check Preserve Alpha and slide up Radius.

Example: Unsharp Mask and selective application

Zoom in. Radius 1.5px. Factor 3.

Apply selectively by selecting filter layer, Layer/Invert (Ctrl-I) so effect disappears (layer has built-in mask), then paint back effect with soft white brush.

Example: Unsharp Mask and Blend Mode

Radius right up. Blend Mode: Darken.

This 'thickens up' only darker areas such as window frames.

Example: Add Noise and Blend Ranges

Increase Noise. Select filter layer. Click cogwheel for Blend Ranges. Left 'spline' graph, drag right node down.

This applies noise more to darker areas, tailing off application into light areas.

Zoom in to see effect. Uncheck 'Linear' and drag from middle to control where noise appears. Also play with Opacity as needed.

Note how adding adjustments and filters are added as child or top-level layers. Drag these to the desired place as needed. Use Assistant (top toolbar) to change default effect.

Scaling and Transforming (05:52)

- [Scaling and Transforming](#)

To move something, you need both the view tool (hand, H) and a layer selected.

Select a layer by clicking on it either in the main window or

Rotate with move tool (arrow) which adds blue surround, and using either green rotate handle or hovering at corners until rotate arrows appear.

Shift-rotate snaps it to 15 degree increments.

Scale with corner handles to sustain aspect ratio. Shift to allow stretching. Ctrl-shift to keep layer centred.

Stretch with side handles (changing aspect ratio).

Skew with cursor just outside side handles (dual arrows cursor appears). This can be handy for quick perspective correction.

Cutting Out (07:00)

- [Cutting Out](#)

Selection brush tool. Paint over area to select.

Go into Refine and click 'matte edges' to feather edges. Apply to accept.

Click mask icon at bottom of layer panel to add mask to layer with selection masked [alt-click mask icon to see image mask, with selected area in white].

File/Export to save just selected item (perhaps for re-inclusion in composite image). Use png or tiff to include blank areas (not jpg).

Making a composite image:

Cut/paste into other image for composite. Use move tool to scale it to fit.

To blend it in: Add mask. Select paintbrush and paint in white on mask to re-reveal background.

Paint with textured brush (brushes panel, drop-down Texture, Grunge 1) to make edge blending more natural and 'rough'.

When adding composite layer, use a little bit of Gaussian Blur (maybe 0.1 pixel) on the layer to match the focus to the surroundings (having layer too sharp makes it look odd).

Also add curves (nested into composite image layer) to blend tonally with background – tweak each RGB curve.

Understanding DPI (05:58)

- [Understanding DPI](#)

Standard AP usage is at 96 dpi. But printing uses 300! Don't worry: dpi is for printing. We edit at whatever pixels are available.

In File/New, for example, if you measure in inches, then dpi is relevant. If you use pixels, dpi is irrelevant.

Accessing Help (02:33)

- [Accessing Help](#)

Help on main menu. Good range of detail. Searchable.

Resize window to narrow and Table of contents disappears into a menu. Good for keeping help visible while working on a photo.

4. Transforming

Document/Image Resizing () **

- [Document/Image Resizing](#)

Document/Resize document.

Lock icon sustains aspect ratio. Double-click to turn locking off.

DPI (aka ppi): web: 72 or 96. Print: 2-300. Only relevant for print, when using distance size (not pixels).

Resampling:
- Nearest neighbour: fast, best on pixel art and designs, not photos.
- Billinear: smooth and soft, best for high-frequency content, good for scaling down to smaller file size, or when fine detail give 'too sharp' appearance.
- Bicubic: ok and popular for images.
- Lanczos (separable): sharper than bicubic but slower and higher chance of edge artifacts such as ringing and haloing.
- Lanczos (non-separable): sharper and slower again – best for scaling up.

Uncheck 'Resample' for unsmoothed rescaling (eg for manual control of pixel graphic changes).

Note: You can also resize when Exporting, for example when outputting to smaller jpg image.

Note this is non-destructive, so resizing back the other way retrieves 'lost' image bits.

Canvas Resizing (03:22)

- [Canvas Resizing](#)

Document/Resize canvas

Anchor point stays where it is – the rest moves with resize.

Typical use: create border. Leave lock to sustain aspect ratio or turn off for precision.

To colour border: Layer/New Fill Layer. Drag beneath image layer. Change colour (right top panel) as needed.

You can also expand the canvas with Cropping tool – just select outside the image and Apply.

Tip: To extend the sky upwards: Expand canvas upwards. Select slice right across the sky (often from as low as you can go) up to the top (and even above). Copy and paste into another layer. Select Move tool (arrow) on LH toolbar. Drag top blue node upwards to fill canvas. [beware of odd distortion effects – better when you've lots of sky available].

Cropping: Practical (02:36)

- [Cropping: Practical](#)

Crop tool on LHS toolbar.

Mode drop-down lets you select, including pixel-sized crop and custom ratio

Drag to envelop target area.

Click magnet on top bar to toggle snapping (useful to ensure crop snaps to edge of photo).

Click Apply at top left to accept crop.

Cropping: Aesthetic (02:50)

- [Cropping: Aesthetic](#)

Use thirds grid, diagonals (gives zone), golden spiral

Undo a crop with Document/Unclip canvas. All crops are non-destructive.

Straightening Images (02:14)

- [Straightening Images](#)

Crop tool (toolbar). Straighten on top bar.

Ctrl-shift drag line is alternative.

Cropping: Golden Spiral (00:59)

- [Cropping: Golden Spiral](#)

Tip: Shift-O rotates golden spiral overlay.

Cropping: Options (07:41)

- [Cropping: Options](#)

Drag from dots around crop box or redraw box starting anywhere in image.

Custom ratio lets you set your own ratio. Tab between input boxes.

Mode/Add preset to save your custom crop.

Mode/Absolute dimensions, for pixel size.

Physical dimensions are tied into document DPI. As Document/resize.

Aligning Images (02:26)

- [Aligning Images](#)

Stacking (File/New stack…) is useful for focus stacking, noise removal, long exposure simulation, object removal, exposure merging.

It can also be used to align images. Open a new stack (selecting images to align), checking 'Automatically align images'. Then click layer group and Arrange/Ungroup to see all images in separate parallel layers. Crop to remove non-aligned elements.

One use for this is to assess lens performance, depth of field, etc. at different apertures.

[Perspective alignment is best for most. Scale, Rotate and Translate is best when there is little fine detail the Perspective algorithm can use to lock images together]

5. Selections and Masking

Making Selections (03:50)

- [Making Selections](#)

Basic: <u>rectangular</u> or <u>elliptical</u> (right click rectangular) selection on LHS toolbar. Shift-draw forces square/circle.

Deselect with Ctrl-D.

<u>Flood select</u> (above rectangle select on toolbar) to fill an area. Dragging left or right (away from first click) increases tolerance (more shades included). Remember to select a layer first.

<u>Freehand selection</u> (right click rectangular) drag around object.

Context bar: lets you force new selection, add, subtract or intersect. Antialias and feather smooths outline.

<u>Selection brush</u> (on toolbar above flood select) good for mixed area with clear edges. Snap to edge (on context bar) helps select outline.
Tip: Start with small brush. Go slow for a bit over a partial area, then quick over the rest. Often gives a better overall result, needing less correction.

Refining Selections (06:58)

- [Refining Selections](#)

After selection, click on Refine on context bar at top. Red overlay appears with selected area not red.

With Matte selected (default), brush over edge to refine [centre outside shape]. Good for selecting hair. Deselect unwanted areas with Alt-brush.

Adjustment brush: Matte finds edges. Foreground adds to selection. Background removes from selection. Feather feathers.

Ctrl-brush to add. Alt-brush to remove.

Click Apply when done.

Create mask (icon at bottom of layers panel) and deselect (ctrl-D).

Right-click mask icon and you can Refine Mask to repeat masking process.

Use Transparent (at top of refine dialogue) to check for background still selected. Black/white shows background spill areas that may need to be fixed.

Sliders:
Border width – changes tolerance. Up leads to tighter selection. Down may give more spill.
Smooth – eliminates fine detail.
Feather – softens selection.
Ramp – controls offset of selection (up expands selection, down contracts it)

Pixel Selections from Layers (01:44)

- [Pixel Selections from Layers](#)

To create a selection from a layer – Select/Selection from layer.

To select what is not selected, Select/Invert pixel selection.

Useful when you've got multiple layers. Select from layer such as sky. Change to another layer, such as land. Invert pixel selection and you can then adjust only foreground.

[This works because a selection on one layer is still there when you switch to another layer.]

Quick Masks (02:20)

- [Quick Masks](#)

Click on quick mask icon at top (or hit Q). Screen goes red ('Overlay').

Paint in white to create selection. Paint in black to deselect.

Quick mask is particularly useful when selection brush would not work (when there are not clear edges).

Mask Layers (03:11)

- [Mask Layers](#)

Any layer you add already has its own mask. [You can see it with Alt-click of mask icon – initially it iw white]

So you can apply an adjustment, then paint out the adjustment in black (on adjustment layer).

Or you can invert the mask (Select/Invert pixel selection), which removes your adjustment, then selectively paint it back in with white.

Example: Changing sky

Add new sky as layer on top. Use File/Place for this, click-dragging to cover the whole sky area. Hide this top layer.

On original layer, select sky. Use Flood Fill tool, clicking and dragging within the sky until it is all filled.

Switch to new sky layer. Sky selection still is active.

Then add mask layer (click mask icon at bottom of Layers panel). Mask will automatically be white for selected area (showing new sky) and black elsewhere (hiding where new sky shouldn't show).

You can then edit the mask to improve selection. Good way to do this with right-click mask, refine mask.

Example: Increasing sky colour

Use Selection brush (LH toolbar) and drag across sky to select. Don't worry too much about minor 'misses' such as in trees.

Layer/New Adjustment Layer/HSL Adjustment. Note having a selection active while adding an adjustment results in mask being automatically added so the adjustment only applies to the selected area. Increase Saturation to suit.

You can then selectively adjust foreground by adding a new adjustment layer, adjusting for foreground, inverting the adjustment mask (Ctrl-I) and painting in white with soft brush to restore the change just in the required area. Alt-click the mask/adjustment to see monochrome mask and paint on this to fill in missing area and smooth edges.

Similarly, add Layer/New Live Filter Layer. Unsharp Mask. 100%. Invert (Ctrl-I). Paint back only where high detail is needed.

Exposure Merging (06:26)

- [Exposure Merging](#)

Example

Blending two photos, one over-exposed, the other under-exposed.

Darker exposure on upper layer.

Ensure both are aligned by setting top layer blend mode to 'difference' and manually nudge one layer (move tool – arrow on left toolbar). Focus on getting key blend areas right. Reset blend mode afterwards.

Blend ranges (cogwheel icon on top layer) and reduce shadows (left hand chart, left hand handle down about 20%). This reveals something of the layer below.

Add layer mask to top layer (mask icon at bottom of layers panel).

Soft brush, lower Opacity. Paint black on mask to expose lower layer. Do this gently using multi-approach. 40% Opacity for main subject. 20% Opacity for shadow (just to make things distinct).

Curves adjustment (S curve). Colour balance adjustment (tone shadows a tiny bit magenta, -5%, and a bit blue, 12%).

To reduce purple fringing. Select both layers (even if one is hidden). Filters/Defringe. Purple colour. Tolerance up (80%). Radius up (40px). Threshold down (10%). Apply. Even hidden layer will be edited.

Clipping vs Masking (06:58)

- [Clipping vs Masking](#)

Example – rectangle as mask

New A4 document. Draw rectangle (left toolbar). Stroke style (top toolbar) to give black border.

File/Place [lets you position an image in current document] image on top.

Drag rectangle up to image icon (not below or above) and it acts as mask, showing only what's inside the rectangle. [watch for vertical blue box and the preview on main screen area]

Resizing rectangle changes the masking effect.

Selecting image and resizing it makes mask follow image (keeping proportions).

Dragging rectangle above image blot out part of image.

Drag image onto rectangle so it becomes a child. The rectangle is now a clipping layer.

The image can now be moved around inside the rectangle, with the edges of the rectangle constraining what can be seen.

Rectangle can now be moved and scaled. Image follows it. Use shift when resizing to sustain aspect ratio.

'Lock children' on top toolbar will keep image in original place when rectangle is moved.

Place another image. Do an adjustment. Both images are affected as the adjustment is at the top. Drag adjustment to one image icon (watch for vertical blue box) to make it a child.

Key note from all this: Drag an adjustment/mask to a layer. Blue box appears. Vertical blue box at side of layer icon and drop for mask, horizontal blue box underneath for clipping layer.

Adjustments and masks have the same effect in either of these. Only physical objects (images) are affected by this clipping/masking child positioning.

Vector Masking (02:06)

- [Vector Masking](#)

You can add a vector layer as a mask to a raster layer.

Draw an ellipse on picture. Drag into picture icon in layers for blue vertical bar next to picture. This makes it into a mask.

Select just the mask. Effects tab, Gaussian Blur – blurs the edge of the outline.

6. Correction

Adjustment Layers (05:04)

- [Adjustment Layers](#)

Non-destructive changes to image by recording changes to make to a pixel image in separate layers. You can come back to revise or remove these at any time in the future.

Layers/New Adjustment Layer/...

Black+White adjustment: change colour components while watching the effects of these. Eg. Blue and cyan mostly affect the sky.

White Balance adjustment: Get whites white and adjust for colour casts.

HSL: Saturation changes 'punchiness'. HSV (checkbox): Hue, Saturation, Value. Decreasing saturation also increases brightness.

Exposure: Adjust for best overall exposure.

You can easily nest adjustments and filters within layers (so they apply just to that layer). Useful for example when you have sky and foreground on separate layers. Drag adjustment onto layer icon until blue bar appears below.

When you already have a nested adjustment, it automatically nests any others you add.

Adjustments can be added from various places. Layers menu and adjustments icon (b/w circle at bottom of layer panel) are the same. Adjustments panel offers presets.

Levels (01:23)

- [Levels](#)

Levels are tonal range of image as values (0=black, 255=white, also RGB).

Auto levels on top toolbar. Or Filter/Colours/Auto Levels. Stretches histogram to fit all black-to-white.

Filter/Levels adjustment layer. Allows black point, white point and gamma (midtones) adjustment, for left, middle and right part of histogram adjustment.

Colour level adjustment also possible by RGB.

Curves (03:08)

- [Curves](#)

Layer/Add adjustment layer/Curves.

Basic use: boost highlights and bring shadows down in gentle S-curve (increases contrast).

Good for low contrast landscapes, including where there's mist. Grab middle of curve line and pull down to de-haze (darkening mid-tones most). Push up shadows (left) and highlights (right) as needed to sustain contrast.

Drop-down allows you to adjust curve for chrominance (RGB) for example to change tint.

[CMYK, Black, move left end along bottom to half-way looks good for improving shadows]

Shadows/Highlights (04:15)

- [Shadows/Highlights](#)

Shadows/highlights are available in Develop persona. You can also do the same in Layer/New Adjustment Layer/Shadows & Highlights. These are both fine for small tweaks.

Filters/Shadows & Highlights (destructive) or Layer/New Live Filter Layer/Shadows & Highlights (or double-triangle icon) (non-destructive) in Photo persona, has more controls available and is best for over/under exposure [typically from wide dynamic range scene].

Basic Shadows and Highlights sliders helps recover these, but the result can look a bit tone-mapped and fake.

Shadow range determines tonal range being boosted. Shadow radius determines mid-tone contrast (good for reducing halo). Increasing these can make the image more realistic. Similarly for highlights. Experiment especially with radius to remove halo.

Split Toning and Selective Colour (03:27)

- [Split Toning and Selective Colour](#)

Develop persona, Tones panel (on right), Split toning. Lets you adjust highlights and shadows separately, tweaking the hue and saturation on each. You can also directly balance the emphasis between these.

Photo persona, Layer/New Adjustment Layer/Selective Colour adjustment. Individual colours (RGB, CMYK, White and Neutral) can now be tweaked with CMYK sliders. 'Neutral' is for overall tonal adjustment. Keep 'Relative' checkbox checked (garish if unchecked).

[These are good for individually making different areas more or less vivid, such as grass and sky]

LAB Colour Mode (07:52)

- [LAB Colour Mode](#)

Based on colour-opponent theory [which is how the eyes work]. L is luminance. A is red-green. B is yellow-blue.

Change to LAB with Document/Colour format/LAB.

Wherever RGB appears in tools, now Lightness, AOpponent and BOpponent are used.

LAB leads to different selection, for example.

This is particularly useful when you want to tweak just the luminance and not the colour, for example in low-light and urban photography.

Curves: use L for shadows/highlights. Use A and B to pull right and left at bottom-left and top-right points to increase the intensity of the colours. Small differences between A and B there can be big differences in colour – useful where there is a colour cast.

Channels: Lets you apply filters and effect just to the lightness (for example).

Sharpening can exacerbate colour noise and fringing. Fix this by clicking off A and B composite channels (pencil icon) while sharpening.

Gaussian Blur on just A and B keeps the sharpness and blurs the colour, fixing colour noise. Good for fixing moire too (eg. When taking image from video).

Note: LAB needs more processor power than RGB so is slower.

Defringing and Chromatic Aberration (03:02)

- [Defringing and Chromatic Aberration](#)

Purple fringing is common in high-contrast scenes shot with wide-angle lens. Seen as purple edging to area.

Defringing can be done with Develop persona. Also Photo persona Filters or Layers/New Live Filter Layer.

Move Fringe Colour slider to match fringing. Use other sliders to refine.

Add further live defringe layer to adjust fringes in other colours.

Chromatic aberration fixed with Filters/Colours/Chromatic Aberration. Repeat as needed.

Live Perspective (02:56)

- [Live Perspective](#)

Layer/New Live Filter Layer/Perspective filter. Is much like perspective tool on LHS toolbar.

Drag corner handles to suit. Turn on snapping (magnet at top) to help ensure horizontal lines.

Haze Removal (03:18)

- [Haze Removal](#)

Filters/Haze Removal.

Distance slider progressively removes haze into the distance. Strength changes amount.

Beware of revealing chrominance noise when turning effect up higher.

Exposure: removing haze can make things brighter and darker. Increase exposure to restore more of the original image balance (or darken for a different effect).

Even in 'ordinary' pictures, you can dehaze to bring back colour.

[beware of perceptual 'flattening' of the image – we use haze to perceive depth]

Tricky Panoramas (03:26)

- [Tricky Panoramas](#)

Sometimes panoramas don't stitch perfectly.

File/New Panorama. Add files. Stitch panorama.

'Add to source image' mask tool (LH toolbar). Click around panorama to see individual images and how they are masked. Spot where images do fit together, then paint over selected image to remove non-aligned parts. Then click 'render' (at top).

FFT Denoise (04:29)

- [FFT Denoise](#)

Useful when there is a regular interference pattern in the image.

Filters/Noise/FFT Denoise. Picture shown is mapping from image. Points on this indicate problems. Alt-mouse zoom out to see all points.

Click on all points except the middle point (mirror points will be automatically done). Sometimes points on the axis should not be clicked (try experiment).

If you can't get rid of it all, add noise. Filters/Noise/Add noise. Turn up intensity for best effect.

Removing Lens Flares (09:43)

- [Removing Lens Flares](#)

Often appears with wide-angle lens.

Use Filters/Frequency Separation. Turn up radius until flare is not visible on high-pass layer.

On low-frequency layer, use soft clone brush (LH toolbar) to remove flare colour. Then use soft healing brush tool (LH toolbar) to improve blending around this area.

Look at just high frequency layer for colour. Use Sponge brush tool (LH toolbar), with Desaturate and HSL Saturation (on top toolbar) to ensure all colours are equally removed. (A higher radius on the Frequency separation controls might have avoided the need for this).

You can also use Inpainting brush tool (LH toolbar) to paint out stronger colours on high frequency layer. Desaturate again as needed.

Panorama Distortion Correction (04:50)

- [Panorama Distortion Correction](#)

Use Mesh Warp tool (on LH toolbar).

Set 'Source' (not destination, on top toolbar).

Double-click on image to set stable nodes in grid, including on a created grid line. To level a curved building, do this once at corner one end, then double-click on line and drag it to corner on other end.

Click and drag lines to curve it to suit. Also end-point of bars at nodes.

Switch back Destination (top toolbar) to see what it looks like. You can also manipulate curves in Destination mode.

To correct overall distortion, go to Develop persona (top left), click Lens tab (on right) and tweak Distortion slider a bit.

Changing Eye Colour (08:32)

- [Changing Eye Colour](#)

Method 1: colour change

Quick Mask (top of window middle). Paint eyes in white. Soft brush.

Layer/New Adjustment Layer/Recolour Adjustment. Once new adjustment layer is created, you can deselect marquee (Ctrl-D). Change Hue and Saturation to suit.

Further adjust with layer Blend Modes (Overlay or Colour is often good). Re-adjust Hue, Saturation. Also layer Opacity.

You can also paint white/black to create and edit a mask on the adjustment layer for further fine tuning.

Method 2: more painterly

Create pixel layer (bottom right of layer area).

Soft brush, set to desired colour. Blend Mode: Overlay. Reduce Opacity of pixel layer.

Paint over eyes.

Use erase brush tool (LH toolbar) to remove unwanted colouration (eg. In pupil).

Further adjust with Opacity. Try other Blend Modes if you like.

Extra tweak: New pixel layer. Blend Mode: Reflect. 25% Opacity. Darken colour of brush. Paint over eyes again to give more depth. Experiment with Opacity and blending of two pixel layers.

Tip: When changing colour sliders, Shift locks sliders relative to one another so you change just the lightness/darkness of the colour.

Tip: When doing fine detail work, occasionally zoom out to check work in context.

Graduated ND Filter Effect (04:45)

- [Graduated ND Filter Effect](#)

Method 1: Curves and gradient

Curves adjustment layer. Grab point near left then drag down and right.

Gradient tool (LH toolbar). Drag line from top downwards (eg. Over sky). Click on palette on top context toolbar. Select handle on the right (for bottom node on image). Set Opacity to zero. Drag nodes on image up and down to adjust the look.

Re-adjust curves to suit.

Method 2: Fill layer and gradient

Layer/New Fill layer. Blend Mode: Overlay (can experiment with this later).

Gradient tool. Click drag down.

Click on palette on top context toolbar. Select handle on the right (for bottom node on image). Set Opacity to zero. Select left handle and experiment with colour changes. Drag nodes on image up and down to adjust the look.

Experiment with blend modes and Opacity. Eg. Multiply and low Opacity.

Note: Fill layer is vector, so gradient lines remain and can be re-edited later. This is not true for gradients on pixel layers.

Note: HSL Colour wheel is good way of selecting colour (better than RGB!).

Salvaging Underexposed Images (07:22)

- [Salvaging Underexposed Images](#)

Develop persona:

Highlights down. Blackpoint down.

Tones tab. Curves. Inverted S curve (drag lower part a bit up and upper part a bit down).

Develop (left near top).

Photo persona:

Note: you may begin to see lack of precision more in shadows. Typical of many cameras.

Layers/New Adjustment Layer/Brightness and contrast. Brightness up a bit. Contrast up a lot. Brings back punch.

Tip: Blend ranges (via cogwheel on Brightness & Contrast layer). Left side box, drag right node all the way down. Uncheck 'Linear' and drag up about 40% of the way across. This causes blend to happen more in shadows than highlights. This lets you brighten (or use whatever adjustment you have) just on shadows. Curve makes this nice and gradual.

Tip: Layers/New Live Filter Layer/Unsharp Mask. Blend Mode: Darken. Slide radius all the way up. This significantly increases contrast but without halo. Brings out darker tones nicely.x

Tip: where shadows have poor detail, try selecting pixel layer, then Filters/Noise/Denoise. Luminance right up. Looks worse! But then Filters/Noise/Add noise. Add about 8% intensity. This replaces ugly fixed pattern noise with random noise.

7. Retouching

Cloning (04:51)

- [Cloning](#)

Non-destructive method:

New pixel layer (icon at bottom of Layers panel). Black shows through to original. Keep focus on this layer.

Select Clone brush (LH toolbar). Set Source option in top toolbar to 'Current Layer and Below'. Alt-click for source and then paint it in where you want it.

Advantage of this method (vs single layer cloning) is that you can use the Erase brush to remove/soften edges of cloned item and base image below reappears.

You can scale the selection (top right toolbar) but beware of pixel effects.

Tip: you can use multiple pixel layers, for example if you might want to change a whole group.

Inpainting (05:11)

- [Inpainting](#)

[Like PS content-aware fill]

Inpainting brush in LH toolbar 'heal' section. Just paint over item to remove.

Often best done on original pixel layer rather than after modification.

Duplicate layer before you start in case you need to go back.

If a paint doesn't quite work, repeat with what is left.

Frequency Separation (09:24)

- [Frequency Separation](#)

Separates 'high frequency' sharpness detail from 'low frequency' colour. Useful for removing blemishes and major wrinkles on skin (on low frequency layer) without losing texture. Also fine wrinkles etc. on HF layer.

Duplicate layer to preserve original.

Filter/Frequency separation…

Increasing radius moves more detail into HF layer. Default about 2px.

Soft healing brush tool on LF layer. Alt-click for source then paint (like clone, but with edge healing). You can be quite heavy-handed as the sharp detail is on the HF layer.

On the HF layer, use hard healing brush (soft brush would lose detail). It's easier to do this with both layers visible. Inpainting can be useful on HF too. Clone brush is the heaviest method.

Liquify: Retouching (04:36)

- [Liquify: Retouching](#)

Liquify persona (top left)

Make thing bigger, with Punch tool (LH toolbar). eg dilate pupils, plump lips, open flowers.

Freeze tool stops things being liquefied. Eg. Paint on body for minimum position (shows as red overlay), then Push left (also use with Alt) around it to push edge of body in. Then use Thaw tool to remove Freeze overlay.

Use Twirl to turn up corners of mouth.

Clean up image after with standard heal tools.

Vector-Based Retouching (08:33)

- [Vector-Based Retouching](#)

Example: Improving windows on building

Select pen tool (picture of fountain pen nib) on LH toolbar. Start clicking around corners. A Curve layer (not 'Curves') is added to the window. Complete by clicking back to original corner. [watch for nodes changing appearance when they reach 'complete shape' overlap.]

Touch colour tool (top right panel) and the curve enclosure fills with the colour (white to start with). 80% Opacity and Gaussian Blur makes it look like a grey window!

To adjust corners of shape, select Node tool and drag nodes.

Redraw outlines by increasing stroke width appropriately.

Tip: To start drawing a new curve when one is already highlighted: press Esc twice.

Tip: Select all curve layers, group them (folder icon at bottom of layers panel) and add a tiny (0.1px) Gaussian Blur to smooth the jaggies (Filters/New Live filter/Gaussian Blur).

Tip: Improve clarity with Filters/New Live Filter Layer/Clarity filter. Turn right up. Blend Mode Darken. Adds punch to dark lines in picture.

Enhancing Landscapes/Architecture (06:44)

- [Enhancing Landscapes/Architecture](#)

Tips for improving architecture.

Use Curves S-curve to bring out highlights.

LH toolbar: Dodge. Tonal range: Highlights (50% Opacity). Reduce Opacity and paint again. Repeat as needed.

Tip: Lighting: Dodge highlights in parts of image to give impression of directional light. Eg. One side of mountain or building, Opacity about 70%. Progressively reduce Opacity for additional paint-overs if needed. Burn adjacent areas to create contrast.

Tip: Popping: Make colours pop with Sponge brush tool (sponge icon under Dodge/Burn on LH toolbar) with Saturate and Vibrance selected, Opacity 80%. Then select Desaturate, Opacity lower (45%).

Try tweaking Curves again after dodge/burn.

Vector Architecture: Worked Example (14:21)

- [Vector Architecture: Worked Example](#)

For non-destructive patching, add pixel layer (bottom of layers panel), plus Inpainting tool (LH heal menu) with Current Layer and Below. This lets you paint on the pixel layer with sampling taken from the layer below, to clean up the image.

Enhance lines with Pen tool and draw over lines. Select size (eg 2pt) and draw around windows and along other lines. If window goes out of image, extend the box outside too.

Fill windows with pure white, then add Live Gaussian Blur, 1px radius. Opacity 75%.

To copy window overlays, duplicate the layer, drag to other window and reposition corners with Node tool (under Pen tool).

On outlines, add Gaussian Blur (0.2 radius) to take the edge off aliasing.

To simplify sky, select it (eg. With Selection brush) and recolour with Layer/New Adjustment Layer/Recolour adjustment. Use Refine to smooth edges (paint around the edge of the sky).

To simplify/lighten a grotty area, use Pen tool with Smart Mode button (top menu) selected so it will follow curves to outline area. Fill with white and add small Gaussian Blur. Reduce Opacity.

Add Curves to overall image with S-curve.

Thicken line detail by adding Clarity filter with Darken blend mode. Very high radius.

Enhancing Camera Phone Photography (11:43)

- [Enhancing Camera Phone Photography](#)

Small sensors and lenses lead to noise, artefacts, limited focus, etc.

Noise: the principle is to remove coarse noise and put back in finer noise.

Filters/Noise/Denoise. Chrominance slider right up. Luminance until moderate smoothing.

Add a little bit of sharpening.

Add a bit of noise. Check Monochromatic.

Crop wasted space.

Example is night-time picture of neon-lit building.

Colour correction. Draw vector box in white over the whole image. Blend Mode Overlay. Reduce colours of overlay box to moderate gray. Then tweak to change colour, for example decrease blue a bit.

Intensify colours. Add pixel layer. Soft paintbrush. Overlay blend mode. Opacity 30%. Big brush. Set colour to approximately the underlying colour (or drag dropper in colour panel to matching colour). Paint over matching colours. Do this in main mono-colour sections.

Glow. Add pixel layer. Opacity 30%. Blend Mode: glow. Select underlying colour. Paint (or tap brush) over matching colours.

Add Diffuse Glow filter (Layer/New Live Filter Layer/Diffuse Glow). Wind up radius high. Decrease intensity. Increase Opacity. Paint over areas to create more glow.

Making Images Pop (04:20)

- [Making Images Pop](#)

Eg. For tonally flat landscape – taken under cloud.

Filter/Sharpen/Unsharp Mask. Large radius to increase local contrast (sim to clarity filter). Blend Mode: Lighten.

Revealing Sky Detail (07:40)

- [Revealing Sky Detail](#)

Especially for dull skies.

Curves can work but then you have to compensate for darkening of the rest of the image.

Better: Filters/Haze removal. Increasing strength works, but results in halo. So play to find balance between Strength and Exposure sliders.

Curves after haze removal allows pushing of tones for punchier foreground.

Tip: To remove halo. If, after haze removal there is still haloes, add Gaussian Blur, checking 'Preserve alpha', blend mode: Darken, radius about 20. This gives darkish halo. Then invert the Gaussian Blur layer (Layer/Invert). Then paint in white over any visible haloing (this uses built-in mask for all adjustments) to restore dark halo. Then reopen Gaussian Blur and reduce Opacity until halo disappears (dark halo is counterbalancing light halo).

Bringing Out Water Detail (04:57)

- [Bringing Out Water Detail](#)

High-Pass filter method: Layer/New Live Filter Layer/High Pass filter. Monochrome. Radius 30-40 px. Select just HP layer. Right-click Invert (inverts mask). Soft paintbrush. Paint white to restore HP over water. Don't worry about a bit of overspill. Blend Mode: Hard light (but try others like Linear light). [tweak Opacity to suit]

Tone map method (more extreme): Duplicate layer. Tone map persona. Tone compression right down. Local contrast high. Apply tone mapping to return to Photo persona. Add child mask (bottom of layers panel) to duplicate layer. Paint in white over water to reveal tone mapping. Tweak Opacity to suit.

8. RAW Development

Raw: Discover Develop (03:34)

- [Raw: Discover Develop](#)

File/Open.

Top tools: Personas, Before/after view, Sync, Assistant, Snapping, Show clipping.

Before/after allows multiple adjustments. Sync lets you forget or select them all.

Right hand panel allows typical Raw adjustments. Overlay allows painting area-specific adjustments or gradient (tools at bottom of panel or left toolbar). [Erase overlay on left toolbar]

Raw: Developing Images (05:44)

- [Raw: Developing Images](#)

More raw editing.

Make histogram fit/fill the window with Exposure/Black point/Brightness.

Clarity is very sensitive. Small change, big difference.

Vibrance brings out certain tones, such as green and blue.

Tint is traditionally to correct for green/magenta colour cast from artificial lighting.

Profile: lets you assign input/camera profile (eg Adobe) and output/screen profile.

Lens tab: various corrections.

One-click Chromatic Aberration. [Filters/Colours/Chromatic Aberration in Photo persona for more]

Defringe: removes other edge effects. Select colour to remove. Lower tolerance will remove more edge colour.

Details panel: sharpening and noise.

Sharpen: Amount high, then slowly with Radius.

Noise reduction in sky after sharpen: click 'Extreme' and bring up Chrominance slider slowly.

B/W: colour mixing allows for much variation.

Split toning: allows for separate toning of shadows and highlights.

Raw: Overlays (02:31)

- [Raw: Overlays](#)

Overlays panel on right. Master is basic image. Other overlays appear below, each renameable, deleteable.

Gradient. Tool on LH toolbar and RH Overlay panel. Click-drag, including diagonally. Reposition using nodes. Then make adjustment. Works well for increasing sky contrast.

Raw: Redeveloping Images (01:50)

- [Raw: Redeveloping Images](#)

Any pixel layer in Photo persona can be re-edited in Develop persona.

Raw: Noise Reduction (04:50)

- [Raw: Noise Reduction](#)

If no visible colour noise, turn down Chrominance slider until noise appears, then back up a bit.

Turning noise reduction up too much can start to show banding. Fix by checking 'Noise addition' and introducing Gaussian noise.

Use Assistant (on top toolbar) to change defaults for noise control. Auto noise reduction is calculated from image, not a standard value [so you can use this as a start points].

'Extreme' checkboxes let you go over the 100%. Good for high-ISO (1600+).

Maximising Raw Latitude (03:35)

- [Maximising Raw Latitude](#)

'Latitude' is dynamic range.

Assistant (top bar) defaults to applying a logarithmic tone curve, which can burn highlights. You can turn this off to see linear result. This can be a good idea when recovering details in Highlights.

Use Brightness slider to move mid-tones up.

The flatter result is good as a base for making deliberate tonal adjustments in Photo persona. Curves then can be used to restore logarithmic shape (S curve with more lift at the top) without loss of highlights.

Custom Tone Curve (02:55)

- [Custom Tone Curve](#)

With bright sky and dark foreground, Assistant/Take no action on tone curve.

Highlights all the way down. Curves push up middle to lift foreground without blowing highlights.

Then either (a) Add another node near the bottom and return it to the diagonal to get rid of milky grey look, or (b) move up Black point on Basic panel.

Nudge up mid-tones with Brightness.

Raw Development Quality (06:14)

- [Raw Development Quality](#)

Recovering highlights: in Develop persona, slide down Highlights.

Remove 'tone curve' from Assistant (top toolbar).

Turn up Brightness to improve mid-tones, but beware blowing highlights.

Add Curves layer, curve above line but tied to line near bottom.

The program doesn't do additional sharpening, so you may need to do this on Details panel. Small Radius (up to 10%) then increase Amount. If 100% still doesn't work, gradually raise Radius.

Noise reduction automatically added. Typically Colour 40%, Details 35%. You can change this of course.

To counteract 'plastacine' unnatural smoothness (esp. after high noise reduction), use Noise Addition. Seldom needs more than 10%. 5% often better. This fine grain is much better than original blocky noise.

32-bit Raw Development (03:35)

- [32-bit Raw Development](#)

[RGB is 8 bit. RAW is typically 12 or 14 bit. CGI can be 32 bit. In other words, you can get every colour possible with 32 bits. It is hence often called 'unbounded']

To edit in 32 bit, in Develop persona, click Assistant (top bar) and change Raw Output to 32 bit. (this will set Tone Curve to 'Take no action').

When you click 'Develop', detail outside histogram area is lost. Keeping 32 bit means all data is passed to Photo persona (and hence out-of-range data can be later recovered).

View/Studio/32 bit preview (in Photo persona) – opens panel to let you see the full tonal range possibilities.

Beware of pushing tones - banding and posterisation can still appear.

Raw Colour Quality (03:27)

- [Raw Colour Quality](#)

From v1.5 colour handling is much better, including when Exposure increased. This is because a wider gamut is used for colour operation and 32 bit work is allowed.

This is great for low-light photographers!

Automatic Lens Corrections (02:11)

- [Automatic Lens Corrections](#)

Lens correction is automatically set via Assistant. This is done using the EXIF data (see top info bar for what this says.

You can turn this off and still use the Lens tab to adjust further.

Raw: Recovering Overexposed Highlights (03:56)

- [Raw: Recovering Overexposed Highlights](#)

Drag Highlights slider down to recover highlights (eg sky).

Counteract 'compressed' dynamic appearance by increasing mid-tones using Brightness.

Another approach is to bring down Exposure to fix sky then increase Brightness to restore land. This darkens foreground a bit.

Preferred method:

Turn off automatic tone curve (via Assistant on top bar).

Bring down Highlights.

Tones, Curves and push up mid-tones. But this brightens whole image, so restore darks by pulling down bottom of curve to just below diagonal line.

Raw: Exposure Bias (02:20)

- [Raw: Exposure Bias](#)

If you have set an exposure bias on the camera (eg. '-1.7'), you can see this on the EXIF tab.

Affinity can take this into account via the Assistant (top toolbar), Exposure bias. Two options:

- Apply exposure bias as a default: Apply exposure bias compensation and start with Exposure slider at zero.
- Apply exposure bias as initial state: Apply exposure bias compensation and start with Exposure slider at the compensation value.

Assistant will pop up a window to tell you that it has applied this compensation.

9. Getting Creative

Lighting (07:07)

- [Lighting](#)

Layers/New Live Filter Layer/Lighting filter.

Good for adding such as sunshine through trees.

Move light around and shape it with the little blue nodes.

Ambient – increases light power.

Tip: Duplicate lighting layer and set blend mode to Multiply. Increase Ambient, Specular and Shininess. Retweak Ambience on original layer and widen the cone a bit.

Improving light on mountains:

Dodge areas to lighten. Opacity 25%. Gentle layering. Start by dodging highlights, then mid-tones in surrounding area. Then Burn surrounding darker areas. Repeat gently as appropriate.

Then add live lighting filter. Set warm orange specular colour.

Tip: Create 'sun' by stretching outer cone out fully sideways.

Add Curve with darker tones pulled down and highlights restored to diagonal.

Tip: Add glow with Gaussian Blur, check 'Preserve alpha', radius 9, Blend Mode: Hard light. Layer/Invert. Soft paint brush, Opacity 50%, paint where light is hitting most strongly. Opacity 25%, paint the blur into darker areas at edges.

Creative Gradients (03:21)

- [Creative Gradients](#)

Radial blend to create glowing punch

New pixel layer.

Set radial gradient centred on focal point in image.

In gradient colour (top context toolbar towards left) darken outer (right) colour.

Blend Mode: glow.

Darken white end of gradient to improve visibility in image.

Re-adjust gradient nodes on photo.

Adding atmospheric haze

Draw gradient from bottom upwards.

Blend Mode: Screen.

In gradient colour, make right (top) colour black and left (bottom) a mid grey.

Stretch the gradient line outside the photo and change Opacity as needed.

Creative Black & White (03:00)

- [Creative Black & White](#)

Layer/New Adjustment Layer/Black and White.

Play with colour contributions to change tone of b/w image.

Turn off Adjustment layer to check original for which sliders will change which parts of photo. Eg. Yellow/green affect grass, cyan/blue affect sky.

Tip: Add HSL adjustment underneath b/w one. Experiment with slider. Do this after b/w layer tweaks. Saturation slides changes contrast.

Sepia Images (00:57)

- [Sepia Images](#)

Add b/w adjustment layer and tweak for contrast, etc.

Layer/New Adjustment Layer/Recolour adjustment. Change Hue to make it orange, then turn down the Saturation (or Opacity).

Brushes (07:37)

- [Brushes](#)

Hovering brush over area will give you preview of what will be painted.

Tip: Paint in black with Blend Mode: Overlay, for colour intensification. Change strength of effect with Opacity.

Select areas to get sharp or controlled edge to painting. Flood select (toolbar on left), then click and drag to increase area. Click 'Contiguous' as needed.

Tip: Strengthen solid-colour area by selecting the colour and painting over it to make it strong.

Click 'Brushes' tab on top right to change brush. Click 'Basic' to access other categories of brush.

Non-destructive painting: New pixel layer, Blend Mode: Normal. Paint on empty layer. Lets you play with Opacity, blend, etc.

Tip: Add structure to sky by painting with texture brush, black, Blend Mode: Overlay.

Click 'More' on top context menu for loads of controls. Under 'Dynamics' choose Random for random brush.

Blend Modes (05:30)

- [Blend Modes](#)

Click 'Blend' on any layer to set the way it mixes with the layer(s) beneath.

Hovering up and down shows preview of how it would look.

Duplicate layer and make top layer blend Overlay is like adding an S-curve to image. [Is combination of Multiply and Screen for darks and lights]

Tip: Create glow with: Duplicate layer. Gaussian Blur. Overlay blend. Adjust with Opacity.

Soft light is not as extreme as Overlay. Vivid light is more extreme.

Tip: Lighting layer. Duplicate layer. Blend Mode: Multiply.

Tip: White balance adjustment. Tweak. Blend Mode: Hard light. Pops colours, increases contrast.

Key to blend modes is to experiment. What works on one image won't on another.

Tip: Duplicate layer. Filters/Detect/Detect Edges. Blend Mode: Subtract. Strong sharpening effect. Correct colours with HSL layer (nest under pixel layer) and turn Saturation right down. Add Gaussian Blur layer under pixel layer, small blur (.7).

Blend Ranges (03:19)

- [Blend Ranges](#)

Access Blend Ranges via cogwheel icon on any layer.

Example: Moon on dark sky. Drag down the left side of the left graph and the sky disappears!

You can shape the graph by clicking on the line anywhere and dragging. Much like Curves. If 'Linear' is checked, you get straight-line segments, otherwise it's a smooth curve.

Example: Replacing sky. Add new sky in a layer. In Blend Ranges for this layer, select Blue channel. Drag down left of RH chart. Uncheck Linear. Drag points to make new sky fit as best as possible. Then paint in black over sky layer to mask out where sky is still visible in the land.

Liquify Persona (05:26)

- [Liquify Persona](#)

Liquify persona (top left) changes tools. On left is a number of tools.

On top right, click at top to turn mesh on/off and change its characteristics.

Default tool on left is 'Push forward' – click and drag to move pixels.

Twirl tool – click to twist pixels.

Pinch tool – probably the most common. Default settings are conservative so you may need to tweak these. Clicking expands; alt-click 'punches', pulling pixels in towards mouse position. Good for expanding eyes.

Freeze and thaw – Freeze stops areas being affected by other tools. Thaw removes freeze.

General method: small change per click, with lots of clicks to shape carefully.

Sky Replacement (07:27)

- [Sky Replacement](#)

Use Selection Brush tool (LH toolbar) to select sky (paint on it to get most), then Refine and paint edges to improve selection, so trees, etc. turn red (not selected) with sky detail not red. Output as a mask (at bottom of Refine window).

Copy/paste in new sky from another image to a new layer. Move tool (arrow on LH toolbar) to move and scale it into place.

Drag and drop the mask into a child position of the sky layer (when vertical blue bar is seen next to the layer image icon).

Match the tone of the sky to the image. Ways to do this (or even a mix of these):

- Adjust Opacity.
- Adjust Saturation (HSL, Brightness/Contrast adjustment layers).
- Blend Modes. Overlay may well work.
- Adjust the foreground instead.

Adding Borders (02:40)

- [Adding Borders](#)

Create flattened layer, eg with Layer/Merge Visible. Turn off visible other layers.

Turn snapping on (magnet in top bar). Select box tool (LH toolbar). Move cursor until vertical and horizontal snapping lines appear, showing you are in the middle. Alt-draw shape of picture you want (to expand it from the middle.

This gives white box on top of image. Drag it as a child into the image and it becomes a mask, now working properly in creating a border.

Create a new white pixel layer. Drag it below the image layer. You can now change the colour of this to create a coloured border.

You can create effects with the border. Select the mask layer. Click Effects tab. Gaussian Blur will blur the edge of the photo into the border. Outer Shadow gives grey into border (3D effect esp using Offset).

Diffuse Glow (02:21)

- [Diffuse Glow](#)

Method 1: Gaussian Blur and Blend ranges.

Layer/New Live Filter layer/Gaussian Blur.

Check 'Preserve Alpha' [to stop image boundary blurring]. Increase radius (to about middle). Blend Mode: Overlay.

Blend Ranges (cogwheel icon on layer): drag down left node. Uncheck Linear and drag down middle of left curve to apply effect only to highlights.

Method 2: Select highlights and Lens blur

Select highlights: Select/Tonal range/Highlights. (or Ctrl-Shift-click on pixel layer icon.)

 Layer/New Live layer/Lens Blur. Check 'Preserve Alpha'. Increase radius (to about middle). Blend Mode: Overlay. Tweak radius to suit.

Tip: Once new adjustment layer is created, you can remove selection.

You can also combine the methods, eg. Lens blur with blend range to control luminance application.

Displacement (06:38)

- [Displacement](#)

Used to make text blend into the background rather than 'sit above' it.

Select Text tool on LH toolbar. Click-drag in image to start. Type text. Change font to suit. Click Character button on top toolbar to adjust font.

Layers/New Live filter/Displace filter. With pixel layer beneath, click 'Load Map From Layers Beneath'. Tweak Strength to suit.

This gives text a map from layer beneath.

Match clarity of text with that of background using a Gaussian Blur.

Blend Mode: Screen

Use mask to remove parts of text not needed or for making it look worn.

Tip: as this is a live filter layer, you can reposition it later.

Circular Bokeh (04:02)

- [Circular Bokeh](#)

Use when there is existing bokeh, to make it more circular.

Duplicate layer.

Filters/Blur/Maximum Blur. Check 'Circular'. Increase radius for suitable sized bokeh.

Note: Maximum filter creates sharp edges and banding, esp in 8-bit image. So add Gaussian Blur to smooth bokeh edges. It also tends to increase brightness, so add Brightness/Contrast layer to adjust.

Add mask (bottom of layer panel) and paint in black to reveal foreground in image beneath. Paint in white to recover overspill. Alt-click mask to check full coverage.

Swirling Bokeh (05:22)

- [Swirling Bokeh](#)

Duplicate layer. Turn off underlying layer.

With Selection Brush, select focal plane containing subject (horizontal stripe across image). Refine, maximum Feather. Delete.

Filters/Blur/Maximum Blur. Check 'Circular'. Increase radius for suitable sized bokeh.

Fill in deleted area with Inpainting brush (in LH heal tools).

Filters/Blur/Radial Blur (1 degree angle).

Turn on layer beneath. Add mask to top layer. Soft brush. Paint in black through to expose sharp layer. Gradually reduce Opacity for successive edging painting.

Reverse paint colour (to white) and selectively paint back bits of bokeh in non-focus areas.

Add Brightness/Contrast adjustment into bokeh layer to reduce brightness back to original levels. Add a little bit of contrast.

You can get a different effect by changing order of radial blur and maximum blur.

Panoramas (04:32)

- [Panoramas](#)

File/New Panorama. Add files. Stitch Panorama. Click ok.

Develop.

Crop tool on LH toolbar. Click Crop to Opaque on top toolbar to exclude white edges. Or click 'Inpaint missing areas' button on top toolbar.

Apply to get to normal editing.

Tip: When adding images, the software will figure out what fits together and exclude what doesn't fit. This means you can add files for multiple panoramas and it will do several at once.

Note: It will also figure out whether the panorama is horizontal or vertical sweep.

Simulating Ambient Occlusion (05:04)

- [Simulating Ambient Occlusion](#)

Occlusion here is depth. Darkening into shadows. Good for stonework.

Layers/Add New Adjustment Layer/Threshold Adjustment.

Tweak Threshold to see what is in the image and the darker tones. Move layer above pixel layer.

Layer/Merge visible. This creates a new pixel layer above based on all adjustments below.

Delete the Threshold adjustment layer.

On merge layer, Effects (above layer) add Gaussian Blur until picture is softened but not blurred.

Blend Mode: Multiply. Adjust Opacity to taste. Readjust Gaussian Blur as needed. Note: increasing blur often needs Opacity increase too. Balance the two.

[Some interesting effects possible here with other blend modes and blend ranges]

Texturing with Blend Modes (04:36)

- [Texturing with Blend Modes](#)

Good with such as rock, wood and sand.

In Develop, remove automated tone curve in Assistant. Highlights right down. Brightness up a bit. Develop.

Improve texture: Layer/New Adjustment Layer/Recolour. Orange. Lower saturation. Blend Mode: Reflect.

Alternative: Recolour as above then use Blend Mode: Glow. Reduce Opacity to suit. Then adjust saturation.

Landscape: Black/white layer. Paintbrush tool: paint out sky. Experiment with Reflect and Glow. Glow often makes landscapes look more barren. Adjust b/w colour slides to change appearance.

Creating Atmosphere (05:16)

- [Creating Atmosphere](#)

Adding fog or haze.

Add pixel layer.

Draw fog: Gradient tool. Shift-drag down from top of screen to paint grey gradient.

Ease off on darks: Blend Mode: Hard light. Blend ranges: pull down left side of left graph.

Make nearer things stand out more: Add mask. Paint tool. Brush: Textures, Grunge6. Opacity 10%. Paint in black.

Add colour cast: Layers/New Adjustment Layer/Recolour. Change Hue to orange. Turn down saturation for faint brown (woody scene). Blend Mode: Multiply. Come back later to tinker with this if needed to take edge off orange hue.

Improve contrast: Curves. S-curve.

Creating Light Beams (06:25)

[Creating Light Beams](#)

Example 1: Window light.

Where there is a window, accentuate with a beam of light.

Pen tool (LH toolbar, nib icon). Draw outline of where the light will go, including the source, such as a window. Fill with white.

Tip: Start click-dragging colour panel and current shape will automatically fill.

On Effects tab on right panel, add lots of Gaussian Blur (above 50px).

Blend Mode: Soft light.

Node tool (under Pen tool), adjust nodes to correct light spread.

Dodge tool. Select pixel layer. Big soft brush. Opacity 25% or to suit. Highlights. Paint over areas to lighten further under the light beam. Note: areas closer to window will be brighter.

Example 2: Woodland

Pen tool. Draw light beam area.

Tip: Draw outside image to ensure light will go right to the edge.

Effects, Gaussian Blur to maximum. Opacity down a bit.

Create more scatter: Duplicate shape layer. Pointer tool (LH arrow), expand new shape so blur extends other layer blur. Move this shape layer below the first one. Reduce Opacity to make it blend.

Dodge tool. Select pixel layer. Big soft brush. Low Opacity. Paint around to soften and make more realistic.

Add Curves layer. S-curve to add drama.

Vector Lighting (05:24)

- [Vector Lighting](#)

Example: Windows with quadrilateral overlays to simplify. Group sets of them.

Layers/New Live Filter Layer/Lighting Filter. Increase Specular and Brightness to create subtle difference between different windows, thereby creating greater realism. Play with Specular colour if you like.

Add more lighting filters for individual window sets.

Simple Gradients (02:19)

- [Simple Gradients](#)

Simple gradient colouring techniques.

Add pixel layer. Gradient tool. Draw top to bottom to create gradient. Blend Mode: Overlay.

Click on gradient colour and change to creative colours, eg. Orange at top, blue at bottom.

Change Opacity to suit. Play with Blend Modes. Often an extreme effect can work well at a lower Opacity.

Technicolor Emulation (05:36)

- [Technicolor Emulation](#)

Technicolor creates three film strips, dyes them, then presses them together. Skin has a magenta cast.

Create three extra duplicate layers (for RGB and original). Rename layers to suit.

Select only Red layer (deselect others). Channels panel. Find channels for this layer (not composite channels). Clear blue and green channels by right clicking icon and clicking 'Clear'.

Repeat for Blue and Green layers.

Now, to replicate the technicolor effect, we need to tint the red channel cyan, green channel magenta and blue channel yellow.

Select Red layer only. Layer/New Adjustment Layer/Recolour. Change colour to cyan (270'). Repeat Green (300') to magenta and Blue to yellow (60').

Select Red, Green and Blue layers (not bottom original layer). Blend Mode: Lighten. This is effectively a colour negative.

Add HSL layer above other layers. Invert hue (180'). Ole! This is the technicolor positive. Tweak saturation to suit.

Add Curves layer above others. Change RGB to CMYK. You can now tweak curves for colours separately. Eg. Pull down magenta curve to reduce pinky skin. Play with cyan to change sky. And yellow to change leaves.

Creative Painting (12:58)

- [Creative Painting](#)

Example: Night scene

Traditional approach is with adjustments, such as saturation, but this can posterise colours and be garish.

Better to take the painter's approach, building it up in layers, painting colours onto lots of separate pixel layers to add distinctive vibrance.

Colour cast: Rectangle tool (LH toolbar). Draw rectangle over entire image. Blend Mode: Overlay. Colour panel: RGB sliders to mid point, then tweak a little up and down, exploring effects.

Note: in pixel layers below, the initial colour is black, so they have no effect until they are painted upon.

Bring out lights: New pixel layer. Blend Mode: Overlay. Soft brush. Colour: white (sliders all right) with tweaks downwards (typically yellow, to bring out lights). Opacity about 40%. Paint over areas where there are lights or are lit, to bring out light more.

Intensify colours: New pixel layer. Blend Mode: Overlay. Opacity about 25%. Click-drag colour dropper on colour panel to pick up common mid colour (eg orange) and click small circle by dropper to assign to brush colour. Tweak colour sliders to add drama. Paint over the areas where the colour is prevalent, particularly to strengthen key areas for visual attention. [Experiment with final tweak with Opacity]

Repeat for other key colours, (typically blues and purples). Maybe higher Opacity with less dominant colours.

Tip: Hover over areas with paintbrush to see how the image will be affected.

Add radiance to lights: Add another pixel layer. Colour: light version of illumination colour (eg blue). Blend Mode: Glow. Opacity about 20%. Paint around illuminated areas of same colour to spread light, including reflections. Use cautiously as this doesn't blend as subtly as Overlay blending.

Repeat for other key lighting colours (eg. Orange).

Reflect lights onto buildings: Add pixel layer. Blend Mode Overlay. Opacity 20-30%. Colour is light version of illumination colour (eg. Blue) and single-click paint hints of light on buildings or surroundings.

Repeat for other key lighting colours.

Intensify radiance and light sources: New pixel layer. Opacity 50%. Brush colour near white (maybe slight magenta tone). Click on light sources to brighten and tone them. Big brush, single click over area to create more radiance there.

Repeat for other tones, particularly those that match light sources (eg. Blue-ish, orange-ish) and areas that have a particular colour tone. Even a bit of new colour (eg purple) can enhance the image with more variation in light areas.

Tip: Remove over-done area, select Erase Brush tool. Soft brush. Carefully paint out overspill. Larger brush may help.

Colour toning with shapes (05:58)

- [Colour toning with shapes](#)

Here's a neat way of toning images, using vector overlays and blend modes to create tints, add highlights, etc.

Rather than use adjustments, start with a white vector rectangle (LH toolbar) drawn over the image. Blend Mode: Overlay. Play with colour sliders to tint image.

Draw another rectangle over the image and try another blend mode, say Reflect. Play with sliders and Opacity to see how this overlay interacts with image so far.

Rectangles are great to cover the whole image, but you can use any shape [even polygons drawn with Pen tool] to add tints and effects to parts of the image. Oval can give pools of light. Cogwheel cog blends in well.

Use Shift and Ctrl to sustain the shape and how it expands.

Use Move tool (pointer) to move and stretch shapes later.

Use Effects/Gaussian Blur along with colour sliders, blend mode and Opacity to help blend shape in.

Tip: Keep most changes subtle. Be ready to return to a layer to tweak for this effect.

Infrared Emulation (07:00)

- [Infrared Emulation](#)

Duplicate background layer. Layer/Invert. Blend Mode: Colour.

Red-blue swap: Layer/New Adjustment Layer/Channel Mixer. Red channel. Red to zero. Blue to 100%. Blue channel. Blue to 0. Red to 100%.

Red down, yellow up: Layer/New Adjustment Layer/HSL Adjustment. Ensure above all layers. Red channel. Reduce Saturation to -80 to -100%. Yellow channel. Increase Saturation until yellows in greens start intensifying (typically around 80%). If yellow is too strong, tweak Hue slider.

Diffuse glow to highlights: Layer/New Live Filter Layer/Diffuse Filter. Drags layer out to top of stack. Radius right up. Decrease Intensity most of the way and increase Opacity most of the way.

Radial Blur (12:20)

- [Radial Blur](#)

Example: making aeroplane propeller more realistic.

Problems: Need to keep things behind propeller sharp. Radial blur is also destructive only.

Select propeller area. Duplicate layer (copies only selected area).

On duplicate layer. Filters/Blur/Radial blur. Adjust angle. Click on canvas to centre it. Adjust angle.

Add mask to duplicate layer. Paint area where sharp detail is required. Zoom out to check all is done.

Filters/Noise/Add Noise. Check 'Monochromatic'. Tweak intensity to suit.

Regular Tone Mapping (05:21)

- [Regular Tone Mapping](#)

Tone mapping simulates colours that may be found in 32-bit image.

Tone mapping persona. Reduce Tone Compression to something more acceptable.

Turn up Local Contrast to suit. This is the main benefit of using the tone mapping persona.

Detail Refinement (on right). Turn Radius up high. Turn up Amount a bit. This will further increase local effects and give HDR appearance.

Raw files need a bit of work to get them ready for tone mapping: Assistant, turn off tone curve. Highlights right down. Brightness right up.

In Tone Mapping, Tone Compression down, Local Contrast up. Use other controls to adjust, such as Curves.

Compositing Landscapes (10:00)

- [Compositing Landscapes](#)

Taking an item from one landscape image onto another, from foreground to buildings.

It's more than just cut and paste. You have to match the tones, lighting, etc.

Use Selection brush (LH toolbar) to select area to copy from one image. Start with larger brush and reduce to pick up smaller detail. Take out overspill with 'Subtract' on top toolbar or by holding down Alt key.

Note: Selection brush pays attention to velocity, so the faster the mouse moves, the greater the tolerance. So for fine areas, move slowly.

Add mask to see only the selection. Copy image and mask (so mask may be tweaked later) and paste onto destination image. Turn on snapping (magnet in top toolbar) to force it to snap to image edge (if needed). Use Move tool (arrow on LH toolbar) to drag it into place.

Note: Adding mask layer when there is a selection will make the selected area white (keep) and the rest black (see layers below).

Add HSL layer and drag into foreground layer, ensuring you get the vertical blue bar next to the icon before you release the mouse button. Adjust saturation to match background. Add Brightness & Contrast layer and likewise put into foreground layer and adjust to match background.

Tip: When matching layers, go to Channels panel (bottom right) and look separately at RGB layers. This will show if any one colour channel insufficiently matches the contrast of the background.

To correct individual colour channels, add a Curves layer into the pixel layer that is affected and select the offending colour to tweak just this. Drag left/bottom node vertically up. Do final tweak of all these visually.

Tip: If image seems to have gone monochrome, it may be because you have only one colour channel selected (clicking on one turns off the others). Click on the circle arrow above to turn them all back on.

Do final tweaks on top of other layers, eg with Curves and HSL.

Tip: If masked overlay is not edged properly, right click on mask and do Refine Mask.

Tip: To give random edge to masked area, use texture brush.

Adding Extended Borders (03:56)

- [Adding Extended Borders](#)

How to add a white (or other colour) border to an image.

Document/Resize Canvas. Click on middle Anchor dot (so it expands equally on all sides). Change to measurement (vs pixels) as it is easier to increment these [unless you want pixel sizing]. Click on padlock to allow change in aspect ratio. Resize.

The image will now have a border, but which is transparent.

Find pixel layer closest to the top of the stack and Layer/Fill Layer. Change the colour of this new layer to the border you want and drag the layer underneath the image layer so only the border shows.

[Alternative: Edit/Matte will fill in any non-transparent pixels with chosen colour on same layer]

Creating Photo Collages (09:02)

- [Creating Photo Collages](#)

File/New Document. Select style and size, eg. Print, A4, Landscape . [or do pixel sizing]

Import images with File/Place. This makes it easy to scale and align images. Click to drop image or click-drag to scale it as you drop it. Note: Image is not rasterised, so you can resize at any time.

Alternative: Drag/drop from external folder.

Turn on snapping (magnet on top toolbar) to help alignment of images.

When resizing, Alt-drag keeps scale and Ctrl-drag pins middle of image.

Group with Shift-click on layers panel or drag rectangle over images. Dragging corner will resize them all as a group. Shift-drag retains aspect ratio.

Lines will appear to help alignment on page, eg green vertical centre line and red distance lines.

To get equal page border, select all images and drag around until alignment lines indicate middle or the right distances.

You can enhance the images by selecting them all and use Effects tab to add things like outer shadow, outline, etc.

Change background with Layer/New Fill Layer. Drag to bottom of stack. Change colour to suit.

You can put an adjustment layer at the top of the stack (eg. Curves) and tweak the appearance of all the visible layers below.

Abstract Ideas #01 (06:31)

- [Abstract Ideas #01](#)

Example: starting image of leafless tree reflected in water.

Document/Flip Vertical. Document/Flip Horizontal.

Thicken up tree branches. Layer/New Live Filter Layer/Unsharp Mask. Radius all the way up. Blend Mode: Darken. Merge (to flatten into a base image).

Layer/New Adjustment Layer/Black & White. Blend Mode: Multiply. Red & Yellow sliders all the way down to neutralise leaf colour. Cyan & Blue all the way up to increase contrast with sky.

Layer/New Adjustment Layer/Recolour. Blend Mode: Soft Light. Tweak Hue and Saturation to suit.

More tree/sky contrast: Select pixel layer. Add pixel layer. Paintbrush tool. Brushes, Texture, Grunge brush. Blend Mode: Overlay. Opacity 50%. Big brush. Paint into denser areas to bring out contrast.

Make it more painterly with Layer/New Live Filter Layer/Bilateral Blur. Drag the layer out to top of stack. Radius 25%. Tolerance up a bit.

Tip: Bilateral Blur layer is an edge-preserving blur filter. Tolerance affects how much of the edge gets blurred.

If contrast is too harsh, add Brightness & Contrast adjustment.

Abstract Ideas #02 (03:54)

- [Abstract Ideas #02](#)

Example: Starting image is vinyl record on turntable.

Layer/New Adjustment Layer/Black & White. Turn down Red to enhance contrast.

Sharpen spindle. Select background pixel layer (so High-Pass filter will nest with this). Layer/New Live Filter Layer/High Pass Filter. Radius about 10. Layer/Invert to invert High Pass filter layer mask. Paint in white over spindle with soft brush. Blend Mode: Linear Light.

Add creative noise. Select/Deselect Layers (so filter appears at top). Layer/New Live Filter Layer/Add Noise. Intensity about 20%.

Add Curves. Black up a bit. Shadows down a bit. Mid tones up a bit. [S-curve]

Enhancing Low Light Trails (04:47)

- [Enhancing Low Light Trails](#)

Example: Source image is light trail from passing car.

Develop: Highlights right down.

Increase colour gamut to allow richer colours. Profile, Output Profile (RH panel) to Prophoto (if you have it) or ROMM or Adobe RGB.

Develop. [to switch to Photo persona]

Layers/Add New Adjustment Layer/Black & White. Blend Mode: Multiply. Reds and Yellow all the way up. Darkens bits but keeps light trails.

Layers/Add New Adjustment Layer/HSL. Master, Reds. Saturation about 40%.

Layers/Add New Adjustment Layer/HSL. Master, Yellow. Saturation mostly down. Paintbrush. Paint in black with soft brush on light trail, to mask yellows back in. Double-click HSL layer. Master, Red. Turn it up to enhance red reflections.

Layers/Add New Adjustment Layer/Curves. Shadows down a bit. Midtones/highlights up a bit.

Crop to letterbox for best final shape.

Light Painting Compositing (07:45)

- [Light Painting Compositing](#)

Example has three images of same scene with two different light paints and a long exposure for background detail. All done on tripod.

Quick way to load multiple images: File/New Stack. Select files. Uncheck 'Align Images'. Ok. Arrange/Ungroup.

Drag background detail to bottom. Hide top layer. Add mask to second layer. Invert (Ctrl-I). So only bottom layer can be seen.

Soft, large paintbrush. Hover for preview. Paint on mask in white to expose light painting.

Do the same to paint in light trail of top image (mask, invert, paint in white).

Tonally match the painted layers with the background. Add Brightness & Contrast layer. Drag in as child layer to top painted layer. Increase contrast to match with background image. Repeat for second layer.

Layer/Merge Visible for single composite layer.

Tip: To level horizon. Filters/Distort/Deform. Click to create nodes either side of the current horizon line, outside the image. Then drag one node to level the horizon. This rotates the image around the other node. So click outside the image in corners to pull down and pin. Drag nodes to adjust further.

Adjust tones: Select area. HSL adjust as needed.

Tweak to change overall colours: Layer/New Adjustment Layer/Channel Mixer. LAB colour model. BOpponent. 50% each in AOpponent and BOpponent. Creates reddish, slightly desaturated look.

Layer/New Adjustment Layer/Selective Colour Adjustment. Cyan up a bit. Yellow down a bit. Whites: Yellow up a bit. Gives a stylised look.

Brightness & Contrast to taste.

Tone Mapping Portraits (07:18)

- [Tone Mapping Portraits](#)

Example doing more punch and monochrome to image of old guy.

Select pixel layer. Tone Mapping Persona.

Initial settings are for HDR merges so need to change. Tone Compression right down.

B/w by turning saturation right down.

Accentuate detail: Local Contrast steadily up (to about 40%).

Curves: Shadows down a bit. Midtones/highlights up a bit.

Apply (top left) to exit Tone Mapping.

Darken background: Layer/New Fill Layer. This starts with Gradient Tool selected. Set gradient to separate background from subject. Blend Mode: Overlay. Right gradient node a dark grey. Opacity right down to decrease white node effect.

Perk up dominant eye: Select background layer. Layer/New Live Filter Layer/Live Unsharp Mask layer. Radius 100. Blend mode: Lighten. Layer/Invert, then paint in white on eye to sharpen/brighten it. Ensure Opacity high enough.

Sharpen eye more: Select background. Add High Pass filter layer. Select Monochrome. Radius 2px. Select High Pass layer. Layer/Invert. Paint white over eye to expose High Pass. Blend Mode: Linear Light.

10. Design Aids

Snapshots (2:34)

- [Snapshots](#)

Lets you save a snapshot of current work and revisit it later.

Snapshots contain all work so far. So you can see what you did, easily rewind or fork out to an alternative set of changes.

View/Studio/Snapshots to make it visible in the bottom RH panel.

To add snapshot, click on 'Add' icon on panel. Name it something sensible.

To view snapshot, just click on name. You can then also delete it, or start a new document with it.

Note: the snapshots are stored within the document file, so you can access them even after shutting down.

Modifiers (06:26)

- [Modifiers](#)

[Modifiers are keys like Shift, Ctrl and Alt]

Bottom of window will show modifiers available.

When using a brush and a mouse. Ctrl-Alt-right button down. Sideways changes size, vertical changes hardness.

Alt means 'reverse' in lots of situations. Accesses 'Subtract'.

Colour palette. Ctrl-click-drag over image to use colour picker tool.

Alt-dodge = burn.

When dragging shape. Shift keeps it regular. Alt centres the shape on first click point. Alt-shift draws regular shape centred on first click point.

Alt stops snapping in shape creation and moving.

Designer/Photo Interworking (01:44)

- [Designer/Photo Interworking](#)

File/Place lets you select Affinity Designer document. Click to place it in image. Drag corners to scale.

Use blend mode to change how it is seen.

Useful for such as logos and watermarks.

Pixel Accurate Design (01:34)

- [Pixel Accurate Design](#)

Force pixel alignment is option on top toolbar (near magnet).

File/Place a logo or something. Zoom right in and turn on grid (View/Show Grid).

With 'Force pixel alignment' button on, moving object will snap to pixel grid, keeping its current form. Turn off and moving allows for greater variability, but this changes the smoothing around the object, which can make it look subtly different.

Force pixel alignment can hence be used to ensure objects which are accurate to the pixel level to retain this when being moved around.

Placing Documents (07:10)

- [Placing Documents](#)

Placing allows embedding of other Affinity documents within the image.

File/Place document. Click to place. Drag nodes to scale.

Placed documents have full editability. Double-click it and it appears as a separate document, complete with layers, masks, etc. Close this and the changes appear in the main image.

You can also add adjustments to the placed document.

Matching a placed item, add a curves layer and modify RGB separately. Tip: Keep the curve to a straight line, just moving the ends. Add HSL and Brightness & Contrast layers as needed.

Useful Keyboard Shortcuts (02:58)

- [Useful Keyboard Shortcuts](#)

Numbers 1 to 0: Sets Opacity 10% to 100%, even when just selecting an adjustment layer.

Type two numbers quickly: Sets Opacity 01-100%.

Semicolon toggles snapping.

Ctrl-D deselects.

In layer stack, Ctrl-[or -] moves up or down.

Space-bar click-drag for panning around image.

Ctrl-R toggles rulers.

Ctrl-= and Ctrl-- to zoom in and out.

Ctrl-G groups selected layers.

In Frequency Separation, F toggles between high and low frequency layers.

Non Destructive Inpainting and Cloning (02:36)

- [Non Destructive Inpainting and Cloning](#)

Add pixel layer (Icon in bottom of layers panel). Should be black, so it is invisible. This is vs 'common' approach of duplicating layer.

Select cloning or healing tool (from LH toolbar).

Select Source on top menu to 'Current Layers and Below' (or Layers Beneath). Current Layer won't work because it is just black.

Now cloning is written to pixel layer.

Layer Creation Behaviour (02:39)

- [Layer Creation Behaviour](#)

Adding adjustment layer puts it above current position on stack.

Adding live filter layer, it is nested with current pixel layer.

Note: This action is controlled by Assistant (on top toolbar) which determines whether new adjustment, filter or mask layer is added as a new layer or a child layer.

Layer Nesting (02:58)

- [Layer Nesting](#)

Adjustments are, by default, added above currently selected layer. Live filters are nested.

Layers can be dragged to wherever you want them to be. At top level, they affect everything below them. Nested, they affect only the parent layer.

Adding a live filter when and adjustment is selected results in it being nested below the adjustment, which means it will have no effect on anything.

[Tip: Before adding adjustment or filter, make sure you have a pixel layer selected. Masks can be nested within adjustments and filters to limit their effect.]

[Tip: No need to add a mask to a filter or adjustment: just paint black on it to selectively remove effect. Flood-fill with black then paint in white to selectively add in effect.

Select/Deselect layers ensures any adjustment etc will appear at the top of the layer stack.

Exporting 3D LUTs (03:45)

- [Exporting 3D LUTs](#)

LUT = Look-Up Table. Used to define colours. With the same LUT you can get the same colours in other software, eg. Video editing.

Affinity Photo can be used to create a LUT for a video by importing a still frame, tweaking the colour and exporting the LUT, which can then be imported by video software in order to set the colour of the whole video.

Note: only adjustment layers are carried through to the LUT. So don't use live filter layers or more pixel layers.

Once you have the 'look' you like, go to File/Export 3D LUT. Increase quality and name the LUT. Export to file. Import into video depends on the software and may mean just copying the exported LUT file into a particular folder.

LUTs for Tonal Adjustments (02:11)

- [LUTs for Tonal Adjustments](#)

A LUT is a Look-Up Table for setting colour. You can make adjustments (only) and save these as a LUT and then apply them to other images.

Make adjustments (not live filters, masks or more pixel layers). File/Export 3D LUT. Quality up. Name it and Export.

In new image, Layer/New Adjustment Layer/ LUT. Load, navigate to file, Open.

View Points (02:39)

- [View Points](#)

Navigator (bottom right panel). Click drop down icon/Advanced.

Use normal zoom/pan tools to select an area to view. You can also use Navigator slider and drag overlay to select area to create a view. Then click cogwheel icon underneath Navigator panel and click Add. 'View Point 1' appears on the drop-down next to the cogwheel.

You can add, delete and rename viewpoints using the cogwheel icon.

Note: The Advanced option must be checked for these viewpoints to be available.

Tip: In Edit/Preferences/Keyboard short-cuts you can set up keystrokes to step around the viewpoints you have set.

Global Cloning (04:32)

- [Global Cloning](#)

Useful for taking something out of one image to paste into another.

Open image that is source and that which is to be destination for the cloning.

On source image, select Clone tool (LH toolbar). Alt-click source. Ensure 'Source' on top toolbar is 'Current Layer', click 'Set Global Source' on top toolbar and set to Global.

Change to destination image. Click 'Source' and select 'Global'. Paint away – you should see the preview clone under the brush area.

[Note: if needed click another tool and then back to clone tool. The 'Sources' panel will appear, from which you can select all the sources that have been set to Global.]

Other tricks:

- Create pixel layer and paint here to work non-destructively.
- Click on 'Flip' (top toolbar) to paint mirror-image.
- Change scale (top toolbar), eg, to shrink to fit.

Tidy up cloning for example with texture brush erasing to hide edges and do tonal matching.

Subtle Toning (02:33)

- [Subtle Toning](#)

This is a method for subtly toning edges in an image or object.

Create edge mask: Duplicate layer. Filters/Detect/Detect Edges. Layer/Rasterize to Mask.

Add adjustment layer, such as White Balance. Drag mask into child position for this layer.

Try different blend modes, such as Overlay.

Multiple Colour Formats (02:58)

- [Multiple Colour Formats](#)

You can set various colour formats for the image, including RGB, CMYK and LAB. You can also use Greyscale.

Document/Colour Format/… changes the colour format for the whole image.

You can, however, switch to manipulation in one of the alternative formats, even when the document format is something else.

In Curves, you can switch to another colour format for editing (Change by clicking RGB, below curve on left). This allows you to tweak curves for different aspects (click Master, below curve).

This also works in Levels and Channel Mixer.

Tip: Switch to LAB and change the curve just for lightness for different contrast effect without changing colours in image.

Note: You can only work with one colour format at a time. If you switch between formats, the line resets to the standard diagonal.

Scopes (08:28)

- [Scopes](#)

These are traditionally used to analyse broadcast video signals.

Show panel with View/Studio/Scope. It appears in the upper right panel set.

Intensity Waveform Y axis shows quantity of light, which is luminosity on this chart, (black at bottom, white at top). So dots near the top shows significant numbers of high luminosity pixels in this vertical slice. X axis is position across the image. White burn is seen as dots and line at the very top. Dots at the bottom show blacks. [It seems that a dot appears from 0-100% if there are a certain number of pixels in the vertical slice of this percentage luminance – if there are too few, the point is left black. Note: not fully sure about this.]

Clicking 'Intensity Waveform' to select other views.

RGB Waveform can show how channels have different dominance in certain areas. For example blue higher up chart can show dominance of blue in sky. Right node of curve correlates with higher scope dots, while left node of curve correlates with low scope dots. Shifting the nodes shifts the dots. Bending the curve, redistributes the dots between these.

Note: There can be a delay between tweaking curve and scope updating.

RGB Parade can be used with curves, to nudge up and down the end nodes of RGB curves to rebalance dominance of channels. This can be used to change colour casts. RGB Waveform can be used to align more directly colours on top of one another by tweaking the relevant curve.

Vectorscope shows if there are more pixels of one particular colour than another. This will show up casts and large areas of one colour.

Note: while the scope can give a useful map of luminosity and power, and can show results of tweaks, an image that seems ok here may actually look terrible. Always check what you see!

Tip: more explanation here: http://blog.ieba.com/wp-content/uploads/2010/06/ReadWaveformVector.pdf

Curves Picker (05:31)

- [Curves Picker](#)

On Curves panel (Layer/Add New Adjustment Layer/Curves), bottom right is 'Picker'. Click on this then press and hold the mouse left button anywhere in the image. A node is added to the curve at the same luminosity as the point clicked.

Holding down the left mouse button, slide the pointer up and down over the image and the node in the curves window will be moved up and down.

Tip: Switch to LAB colour format (below curve, on left) from RGB, then select Lightness (under Master drop-down). This lets you set up the curve for luminance. Pick darker area and adjust. Pick a mid-tone to adjust the overall brightness. AOpponent curve (red-green): adjust a middle tone then a brighter tone. BOpponent curve (blue-yellow): do the same thing.

Tip: Follow LAB adjustment with another Curves layer, this time switching to CMYK for final adjustment. Cyan: make sky bluer as needed (pull up middle). Magenta: Foreground tint, esp stonework (eg with S-curve). Yellow: foliage (lift mid-point, then pick plant colour and adjust). Black: luminance (brighten foreground by pulling down middle, then add contrast by creating S, lifting highlights).

Tip: When tweaking curves, zoom in and around image to check the tone at a more detailed level. Then zoom out to check overall impression. Check both foreground and background. Repeat often. Be ready to go back to any curve and readjust it.

Non-Destructive Dodge & Burn (1:59)

- [Non-Destructive Dodge & Burn](#)

Traditional dodge and burn uses brush from LH toolbar with selected tonal range and brush. To be non-destructive with this, a duplicate layer is used. However, this still means that any later change may mean repeating this whole dodge-burn process, even if other changes are preserved.

Add mid-grey layer: Create new pixel layer (icon on right below layers panel). Edit/Fill. Click on white rectangle to right of 'Custom Colour'. Colour panel pops up. Click on drop-down at top (usually 'RGB sliders') and select Greyness. Then enter '50' into the percentage number field. Apply.

Tip: Duplicate several copies of this grey layer to allow for recovery of stages of dodge/burn process.

Blend Mode: Overlay. Paint in shades of grey. Lighter than 50% grey will dodge (lighten). Darker than 50% grey will burn (darken).

[Tip: Set foreground/background colours to black/white, then use Opacity to set shade. Number keys then are shortcut to set Opacity, and X switches between dodge and burn.]

Flexible Defringing (02:30)

- [Flexible Defringing](#)

In Develop persona, under Defringe, change Hue to match colour of fringe (often magenta) and change Radius to fix. Threshold low. Tolerance high. Check 'Also Remove Complementary Hue'.

However, this can remove colour from other parts of the image (eg. Removing magenta can tone down reds).

Better, in Photo persona, Layer/New Live Filter Layer/Defringe. Repeat the same settings as for Develop persona above. Then select Defringe layer, select Paintbrush tool and paint black over unwanted changes to the rest of the image. This prevents the filter being applied in these areas.

Edge Detection for Masking (09:14)

- [Edge Detection for Masking](#)

Example 1: CGI anti-aliasing

CGI images often have weak aliasing at the edge of objects, so items have an overly-harsh edge that creates too much separation from the background.

Fix this by using the edge detection filter as a mask to add in some Gaussian Blur.

Duplicate layer. Filters/Detect/Detect Edges. Layer/Rasterise to Mask.

You could drag the mask under the lower layer, but here's another way.

Channels. Right click 'Background Alpha' (assuming the mask layer is still selected and called Background). Create Spare Channel. Rename Spare Channel (at bottom), eg 'Edges'.

You can now delete the original mask created in the layers stack as this information is now in a spare channel.

Select original layer. Layers/New Live Filter Layer/Gaussian Blur. Check 'Preserve Alpha'. Radius about 1px. Whole image is now softened.

Select Gaussian Blur filter layer. Right-click on Edges spare channel and 'Add to Gaussian Blur Alpha'. Blur is now only applied to edges selected by mask.

Example 2: Thickening edges to make detail pop

Thickening edges can make items stand out more strongly.

Repeat process above to create spare channel. Duplicate layer. Detect Edges. Rasterise to Mask. Create spare channel. Rename. Delete mask on layers.

On original layer, add Filter/Sharpen/Unsharp Mask. Radius right up to add lots of local contrast (note: this is similar to how Clarity filter works).

Select Unsharp Mask layer. Channels, right-click spare channel created, Load to Unsharp Mask Alpha.

This leaves sharpening just around enhanced edges.

Example 3: Smoothing sky especially through trees or other lacing

Create Edges spare channel as above.

Add Gaussian Blur filter. Preserve Alpha checked. Radius up until sky detail starts to soften.

Select Gaussian Blur layer. Channels, right-click spare channel, Load to Gaussian Blur Alpha.

Also in Channels, right-click Gaussian Blur Alpha and Invert. This blurs all detail that is not considered sharp or edge information.

Double-click Gaussian Blur layer and reduce Radius to compensate for any excessive blur in the image elsewhere. This will leave more noise in the sky so this is a balancing operation.

Split & Mirror View (02:24)

- [Split & Mirror View](#)

In Filters tools, little blue circles appear at the bottom of the dialogue panel. The Develop persona has these available on the top toolbar.

The middle one (Split) splits the screen, showing before/after. You can drag the split line.

The right one (Mirror) shows the same half before/after. You can scroll the picture in these 50/50 panes (eg. Spacebar-click-drag).

The left one turns these off.

Batch Processing (05:15)

- [Batch Processing](#)

Lets you perform basic tasks on a set of files (in a similar way to PS).

File/New Batch Job.

Click Add to add a set of files as sources.

You can save to the same folder or to a custom folder (Save Into…).

Choose output format, eg. Jpg.

W and H set maximum pixels for Width and Height. A checked keeps aspect ratio. Enter values here next to the file type selected. Click '…' on right for more options. Some of these will be specific to the file type selected (eg. 'quality' for compressed formats).

Select Macros to apply and click 'Apply' to move them to the Applied Macros list. Select and click 'Remove' to move macros back to the Available Macros list.

Turn off 'Parallel Processing' if the computer is heavily loaded (to avoid crashing it).

Click Ok and Batch Panel applies, showing processing progress.

Clone Sources (09:01)

- [Clone Sources](#)

Example: With multiple shots of the same place, though with different people walking around. Goal is to include multiple people to make it seem more crowded.

View/Studio/Sources. Shows panel where multiple images can be shown as being a clone source.

Click on image that is to be used as a clone source (to show in main image panel) and click on Add Global Source at the bottom of the Sources panel. A thumbnail appears in the Sources panel.

Click on Clone brush and double-click on Source panel image. You can now click on the start point for the cloning. A circle appears in the Source panel image.

Repeat this as often as required, even using the same source image for multiple copy points.

Tip: When copying from image of same scene, click in source image on a point you can also locate in the destination image. Then start painting from there.

Go to destination image. Click on Clone brush. Make sure image layer is selected in Layers panel. Click on source panel to use. Paint in item.

Tip: If clone painting will obscure something you want to keep, add a pixel layer above the destination image in the Layers panel and clone to this, not worrying about overlap with item you want to keep. Then use Erase brush (LH toolbar) to remove unwanted cloned area in this pixel layer.

Note: Once you have added an image to the Source panel, and selected the source point, you can close the main source image.

Pixel Art Resize (04:16)

- [Pixel Art Resize](#)

Method 1: Normal resize

Document/Resize Document. Enlarge size. Bicubic sampling.

Result is not great. Pixels are just bigger.

Method 2: Pixel art resize

Document/Resize Pixel Art Document. Different scaling options now.

HQX improves pixellation problem. XBR does a smoothed HQX. Note: These are only good on real pixel art, not resampled, scanned, simulated, et.

Direct PSD write-back (round tripping) (02:43)

- [Direct PSD write-back (round tripping)](#)

If you are in Photoshop (or a DAM application that uses .psd format) and want to use Affinity for something, you can save to a .psd file in PS, open it in AP, export it to PSD then open the new file in PS.

The problem is that this breaks the seamless workflow 'round trip' with a new file. No worries! Go to Edit/Preferences/General and check 'Enable "Save" over imported PSD files'. Do read the caveat about this. Now File/Save writes back to the original .psd file.

Freehand Selection Tool (05:39)

- [Freehand Selection Tool](#)

This is the lasso on the LH toolbar (may need to right-click rectangle selection tool to see it).

'Type:' on top toolbar gives three options: Freehand, Polygon and Magnetic.

- Magnetic: Click once then drag around border (mouse button up). Line will snap to nearest boundary. Single click to force a new node. Hold down Shift to force a straight line. Hold down mouse button to temporarily shift to Freehand mode. Good when there is clear contrast so the software can find the right edge.
- Polygon: Click for each point. Hold down Shift to make it Magnetic. Good with a mouse and where the outline is not too wavy.
- Freehand: You literally draw on the screen. Good for low-contrast areas. Tricky with a mouse Better with a tablet and pen.

Modifiers you can use are at the bottom of the overall window.
End selection with single click on original node or double-click anywhere [straight line will go from
    last node to first node].
Backtracking: Backspace successively removes prior nodes.

Undo History (04:17)

- [Undo History](#)

File/Save History with Document: will keep history of changes when you re-open the .afphoto file.
This lets you undo even destructive adjustments. Note: This may significantly increase file size.

History panel is bottom right. Click on any previous item to go back to it. Slider at top lets you easily
roll back a long way.

Importing .abr Brushes (1:57)

- [Importing .abr Brushes](#)

1. Brushes panel (on right). Drop-down, Import Brushes.
2. Or: Drag-drop brush file onto the canvas.

Undo Brush with Snapshots (05:33)

- [Undo Brush with Snapshots](#)

Undo brush (LH toolbar) works on history items (click on little camera icon in history list). [A simple
use is tidying up destructive brushwork that has gone too far]. It also works with snapshots.

Useful method when you're unsure about which way to go and may want to blend different results
later.

View/Studio/Snapshots to see the snapshots panel. Do edits. Add snapshots. Rewind History.
Repeat, so you end up with a set of different editing experiments.

Start again. Select Undo brush. Select camera icons in one of the snapshots. Paint on original photo.
You will now be painting all you did on the selected item onto the original image.

If you paint from one snapshot then paint the same area from a second snapshot, the second once
will overwrite the first one. To blend the two, paint the second one with reduced (eg. 50%) Opacity.

11. Channels
Channels (03:14)

- [Channels](#)

Can be seen through channels tab, bottom right.

Two sets can be seen. Top set are for whole image (composite). Bottom set are just for selected
layer. [Alpha shows transparency – all white is fully visible]

Right-click bottom channels and you can load as mask.

Right click top channels and you can use to load/add/subtract to selection.

Use to create adjustment layers. Green to enhance foliage. Blue to enhance sky.

Grayscale layer is good for using with blend modes.

Channels for Alpha Masking (05:08)

- [Channels for Alpha Masking](#)

Select/Tonal range/Select shadows. [can do highlights or midtones too]

Select/Save selection/As spare channel.

Find spare channel under channels tab, right-click and rename (eg 'Shadows').

Channels: Creating/Storing Selections (07:35)

- [Channels: Creating/Storing Selections](#)

Using channels to create, store and load high quality selections. Eg. Sky with tree in front.

Find channel with most difference between tree and sky. Click channels to see them as grayscale. Blue is likely to be the best.

Note: This will leave the main image as grayscale. Click curl arrow top right of channels panel to turn on all channels to restore colour image.

Find layer blue channel. Right click. Create grayscale layer.

Need to accentuate sky/tree. [note: this is a key method]

Add brightness/contrast adjustment layer. Drag it into grayscale layer. Turn up brightness and contrast [avoiding clipping edge of tree].

Add levels adjustment. Drag into grayscale layer. Tweak black level up and white level down a bit. Again, beware of clipping.

Right click grayscale layer and Rasterize [adjustments disappear]

Flood select tool (left hand toolbar). Uncheck Contiguous.

Click and hold on bit of sky then drag to increase tolerance until good sky selection made.

Selection brush (left hand toolbar). Tidy up selection, removing and adding (Subtract/Add on context toolbar at top) as needed.

Pixel selection on Channels panel. Right-click/Create spare channel. Right-click new channel Rename.

Selection brush. Refine (top context bar). Channels pixel selection. Right-click/Create spare channel. Right-click/Rename to new 'refined' channel. Idea is to try both selections and use which is best.

Add adjustment layer (eg HSL). Right-click new channel and Load to adjustment's alpha channel. Now changing adjustment only applies to area selected by spare channel added.

You can also right-click adjustment layer icon and click 'invert' to adjust the rest of the image.

(Tidying up fringing should have been done before grayscale stuff).

Editing Single Channels (05:25)

- [Editing Single Channels](#)

<u>Example 1</u>: denoising sky.

Channels panel (bottom right). Click individual channels to see R, G and B. Blue is light and no noise. A bit of noise on green. Red is very noisy.

[Assuming only sky is selected. Eg on separate layer]

Select Green channel. Filters/Noise/Denoise. Luminance right up. Ok.

Select Red channel. Filters/Blur/Bilateral Blur. (this is edge preserving). Radius something like 4.5px. Ok.

<u>Example 2</u>: noisy sky in low light image.

Convert image to LAB: Document/Colour Format/Lab (16 bit). Look at channels. Lightness most noise. AOpponent little noise. BOpponent some noise.

Lightness channel: Filters/Blur/Bilateral Blur. Radius ~20px. Tolerance down to about 2 or 3, to preserve non-sky edges.

BOpponent channel: Filters/Noise/Denoise. Luminance down. Colour right up.

Check all channels.

Tip: Sharpen in LAB, Lightness only.

Channels: Greyscale Blending (05:04)

- [Channels: Greyscale Blending](#)

Using greyscale information to change brightness and contrast.

<u>Example 1</u>: hazy image of trees.

Look at channels, R, G and B separately. Find the most contrasty one. Eg. Red. Then click Background (layer) channel. Right click/Create Greyscale Layer. This adds a monochrome layer above the Background layer.

Drag greyscale layer underneath Background layer. Filters/Apply Image. Click-drag greyscale layer onto Apply Image dialogue to make it the source image.

Check Equations and Equation Colour Space: LAB. Da=Da, Db=Db. Apply. This uses the red channel's contrast for the whole image.

 <u>Example 2</u>: Tree and country house.

Check RGB channels. More contrast now in Blue.

Same as above until Apply Image Equations.

Equation Colour Space: CMYK. DC=DC, DM=DM, DY=DY.

Image looks odd, so DK=lerp(DK, SK, 0.5). Lerp means 'linear interpolate' and this blends between destination and source black, 50/50 each. Experiment with changing the 0.5.

Channel Packing (08:13)

- [Channel Packing](#)

Channel packing is used in texture work to save disk space.

Separate layers. Common one is RMA: Roughness, Metallic, Ambient Occlusion.

Open a layer image. Right-click any Background channel (as it's monochrome, all will be the same) and create spare channel. Rename this. Delete layer.

Repeat for the other layers.

Create new pixel layer. Right-click Alpha channel. Fill. This gives it content.

Right-click Roughness spare channel, Load to Red. Do same Metallic to Green, and Ambient Occlusion to Blue.

It looks odd, but clicking on composite channel you can see the monochrome versions.

Export to lossless format, such as tiff.

12. Filters

Live Filter Layers (Also in Basics)

- [Live Filter Layers](#)

See commentary already added [above](#).

Apply Image (01:48)

- [Apply Image](#)

For blending one image or layer into another.

Start with an image.

Filters/Apply Image. Load Source From File (or drag in layer from current document).

Experiment with Opacity and Blend Mode.

(Equations are explained in next video).

Apply Image: Equations (04:07)

- [Apply Image: Equations](#)

With single image layer, Filters/Apply Image. Click 'Use Current Layer as Source'. This enables equations (as will any loading of image).

Equations at bottom are for four channels: DX, where D=Destination image and X=R, G, B, A (alpha).

You can also use other colour spaces, such as CMYK, and hence have DC, SM, etc.

 Check 'Equations' and SX is added to each, where S=Source image. Algebraic expressions may now be added to each of these, using DX, SX, numbers and various operators.

[Operators include +-/*, sin(), cos() and more. Eg. DR=SR+0.5*SB (destination red pixels = source red pixels plus half value of source blue pixels.]

[Channel values seem to range 0-1]

Apply Image can hence be used to create interesting and creative effects.

 Default equation is DX=SX. In other words each destination pixel is converted to be the same as the source pixel. If the source is the same image, then there is no change.

Tip: Make subtle adjustments to colours by using current layer as source and just do equations using constants to turn up and down each channel, eg. DR=SR*1.2, DG=SG-05, etc.

Tip: Use Layer/Fade Apply Image afterwards to reduce the effect (where Opacity is not available).

Equations Filter (06:12)

- [Equations Filter](#)

Filters/Distort/Equations.

Two systems: Cartesian and Polar. In Cartesian you can calculate with x and y. In Polar you can use r (radius) and t (theta, or angle).

You also have three Parameter variables, a, b and c, which vary between 0 and 1, and can be later changed with sliders below.

Example: x=y, y=x. Does portrait transformation from landscape (and vice versa).

Example: x=x+100, y=y+300. Shifts image 100px right and 300px up.

 [Example: x=x*a, y=y*b. Now a and b sliders act as y and y zooms]

Constants available include: gr=golden ratio (1.6), pi=pi (3.15). Loads more expressions in Help, under Workspace, More, Expressions for field input.

Example: x=lerp(x, y, a). Parameter a slider now controls image skew.

Tip: Multiply Parameters a-c by fraction to limit slider effect (eg. a*0.2).

Polar system spins the image and can be used with such as textures to create interesting effects (eg. r=r*cos(r)).

Dust & Scratches Filter (04:16)

- [Dust & Scratches Filter](#)

Filters/Noise/Dust & Scratches.

Radius removes bigger points, but loses detail. Tolerance pulls back detail. Balance the two.

Use Undo brush to paint over high contrast areas and those not affected by noise, in order to limit the effect. Paint in gentle layers. [Or use mask]

[Tip: use this filter rather than Gaussian blur in skies. Select sky first]

Halftone Scanlines Effect (03:33)

- [Halftone Scanlines Effect](#)

Duplicate layer. Filters/Colours/Halftone.

Screen type: Line. Cell size very low. Contrast to taste.

Two methods to combine these:

- Blend Mode: Darken (or what you like).
- Or: Layer/Rasterise to mask. Drag mask to nest under original layer. Layer/New Fill layer. Drag underneath everything (new layer). Colour: black (or to taste).

Adjust Opacity as needed.

Mirror filter (05:28)

- [Mirror filter](#)

Filters/Distort/Mirror.

Increasing the number of mirrors creates a kaleidoscopic effect. Rotating the dials also makes it more 'creative'

Rotating snaps in 45 degree increments. Hold down Alt to move smoothly.

You can use the symmetrical results for creative uses such as logos and general branding.

[Do water effect with one simple mirror, then select the bottom mirror image and use a Filters/Distort/Ripple filter].

Diffuse Glow Filter (3:49)

- [Diffuse Glow Filter](#)

Creates gentle glow to image highlights.

This can be added Filter/New Live Filter Layer/Diffuse Filter or from Filters/Blur/Diffuse Glow.

Radius high. Lower Threshold so more of the image is affected. Then play with controls.

Two approaches: Low Intensity, high Opacity, or vice versa. Intensity affects more of the image.

Tip: Useful in buildings where windows are blown with the exterior light. Radius high. Opacity high. Intensity low. Then experiment (maybe swapping Opacity and Intensity).

Defeating Filter Limits (04:23)

- [Defeating Filter Limits](#)

Here's a trick to use with blur and sharpen filters.

When changing Radius, the panel limits to 100. But if you move the cursor out into the image, it changes a bit. And you can click-drag to change the Radius again, but now you can go way past the 100! In fact as far as 1024.

In Unsharp Mask, increasing Radius, which actually increases local contrast, effectively increases Clarity. With a low Factor this can offer an interesting result. Increase Factor until just before it looks too odd.

Unsharp can be usefully added live to allow blending, with a Layers/New Live Filter Layer/Live Unsharp Filter. High Radius. Creep up Factor. Set Blend Mode to Lighten. Retweak Unsharp and Opacity settings to taste.

Some filters are more useful than others. Gaussian Blur, for example ends up with an unrecognizable blur. Yet even this might be useful when used for an average gradient effect [which can be used for image toning with such as an Overlay blend].

1024-level Radii are openly available in some other filters, such as Pinch/Punch to create extreme effects.

13. HDR (High Dynamic Range)
HDR: Merging & Tone Mapping (06:12)

- [HDR: Merging & Tone Mapping](#)

This is how to merge a set of bracketed images (constant aperture) to a 32 bit HDR image.

[Camera sensors do not capture the full range of light and dark detail. If, however, you take a set of images of exactly the same scene, with fixed aperture (to ensure the same focal depth) and varying speed (to ensure consistent exposure) then these can be combined with HDR merge into an image that captures the detail in both dark shadows and bright lights.]

File/New HDR Merge. Add. Select images. Set options as needed. Align especially if taken hand-held.

If 'Tone Mapping' is selected, you get taken straight into the Tone Mapping persona.

Main controls are Tone Compression (which brings out of range tones into range) and Local Contrast (which creates that 'HDR look' by increasing contrast between neighbouring pixels and can seem like a Clarity filter on steroids!).

Typical adjustments: Tone Compression right up. Local Contrast low to middle. Highlights down a bit. Saturation down a bit.

Tip: Lower Black Point (goes dull), but then add contrast back with Curves S-curve.

There are groups ('categories') of Presets under drop-down menu at top of Presets panel you can alternatively choose.

Presets can be imported and exported via little drop-down menu on top right of Presets window.

Note: You can import and export 32 bit EXR and Radiance HDR documents.

Document/Colour Format – lets you set and hence export to an appropriate format, from 8 bit for Web images to 32 bit high detail.

HDR: Tone Map Presets (03:31)

- [HDR: Tone Map Presets](#)

Create presets category: In Tone Mapping persona, make adjustments then on Presets panel top right menu, select Create New Category. This creates a new 'folder' of presets called 'Presets'. Rename to something sensible.

Save current settings to current category with Presets top right menu and Add Preset.

HDR: Panoramas (05:14)

- [HDR: Panoramas](#)

Stitching 32 bit HDR images into panorama.

Start with series of bracketed image set, each set a part of the panorama. For each set, File/New HDR Merge, without tone mapping. Then File/Export as EXR (to retain 32 bit data).

File/New Panorama. Add the HDR merged images. Check and fix any stitching errors. Crop and edit (this is where you may want to use Tone Mapping persona).

HDR: Preprocessing (04:41)

- [HDR: Preprocessing](#)

If you HDR merge RAW files, remember that there are no fixes yet applied for standard RAW issues such as chromatic aberration, lens distortion, noise, etc. that might be applied in Develop persona in a normal adjustment. In particular, if you tone map without fixing chrominance noise and colour fringes, the image will look worse in these areas.

First do the HDR merge of the file set (with Tone Map Image unchecked, then edit for these basic fixes.

Noise: View/Studio/32 bit Preview. Pushing up exposure on this will reveal chrominance noise. So Filter/Noise/Denoise and drag up Colour Denoise slider. If sliding right up is not enough, check 'Extreme' and keep sliding up. Avoid Luminance Denoise if you can as this can compromise fine detail.

Fringing: Drop exposure on 32 bit Preview panel and look for colour fringes between dark and light areas (typically between structure and sky). Filters/Colour/Defringe. Zoom right in to see pixels. Edge Brightness Threshold low. Tolerance high. Check 'Remove Complementary Hue'. Tweak Radius as needed.

Now you can go do Tone Mapping and make any other corrections or adjustments.

HDR: Advanced Editing (05:23)

- [HDR: Advanced Editing](#)

More detail on tone mapping.

Usual start: turn up Local Contrast and turn down Tone Compression, both slowly, watching effect.

Click on RH Overlays tab. Paint or add gradient (tools are below and LH toolbar) and a new overlay is created (visible in panel). When this is selected and you click back to Tone Map tab, any changes now are restricted to overlay area. This is much like the way the Develop persona Overlays operate.

You can use this to adjust tonal differences, washed out areas, etc.

If you don't check the 'Tone Map' box in the HDR Merge dialogue, you stop when you get to the Photo persona. You can see or access Sources (View/Studio/Sources) here and do deghosting if needed.

You can make a selection here (eg the sky) and go to Tone Mapping persona to just tone map the selected area.

Tip: To get rid of marquee, uncheck View/Show Pixel Selection.

HDR: Ghosts Removal (06:12)

- [HDR: Ghosts Removal](#)

File/HDR Merge. Check 'Automatically Remove Ghosts'.

In Photo persona, select Clone Brush tool. Look at Sources. The top image is deghosted. The next is the HDR Merge before deghosting. The rest are the contribution images.

If deghosting doesn't work, do not select it in HDR Merge. Then use Sources panel to manually clone to HDR image from suitable source images (these turn up by default). Longer exposure images may have too much motion blur. Shorter exposure ones often have too much noise in the dark areas. In other words, a middle one often works best.

Tip: To toggle Sources panel, switch back and fore to such as hand tool.

HDR: 32-bit Editing (03:23)

- [HDR: 32-bit Editing](#)

It is not essential to Tone Map a merged bracketed image. You can also use Affinity as a part of a lossless 32 bit imaging workflow, for example in high detail video work.

File/HDR Merge. Uncheck Tone Mapping. Turn off Sources panel (used just for deghosting).

View/Studio/32 bit Preview. You can now look at the entire tonal range. Eg. sliding exposure up and down shows all possible detail levels.

Keep 32 bit detail by File/Export to EXR or HDR formats. These can later be reopened and will contain the full detail. 'Preset:' options let you choose OpenEXR, for people in film industry.

14. Focus Merging (Stacking)

Focus Merging (04:12)

- [Focus Merging](#)

When photographing close-up with macro lens (or such as with macro tubes), the depth of field will be very shallow. Focus merging/stacking blends multiple images where each has been focused at a point that is progressively further away (or closer). The result is an image that is in focus for the full depth of desired focus.

File/New Focus Merge. Add images.

There are three automated stages: aligning images, depth mapping and rendering merged result.

After merge, Sources panel appears in order to allow you to retouch using parts of individual images.

Note: You can also use focus merging in landscape photography, especially if you have a close foreground and/or are unable to use a narrow aperture.

Focus Merge Retouching (04:39)

- [Focus Merge Retouching](#)

You can retouch a focus merged image using the Sources panel that pops up after the merge, plus the clone brush.

Zoom into the affected area. Click on 'Source Preview' icon at the bottom left of the Sources panel. Scan through the images to find the best clone source to fix the problem. Then, with chosen source image selected, turn off Source Preview and use Clone Brush to paint in copy to main image.

Focus Merging Bracketed Exposures (05:24)

- [Focus Merging Bracketed Exposures](#)

You can merge aperture-bracketed images that are typically fed to HDR Merge, but using Focus Merge instead. This process looks for the best pixels but does not try to create a 32 bit image (it just stays at the pixel depth of the source images).

File/New Focus Merge. Add images.

You can still apply adjustments and will get a bit more latitude than a single image, but not as much tone potential as the HDR Merge. Curves is a good option.

The result may be slightly hyper-real, especially for architecture.

15. Live Stacking

Maximum Stacking (03:20)

- [Maximum Stacking](#)

File/Create new stack. Add images.

Click Greek letter on top image and try Maximum. This selects the maximum luminosity from each image. It works well where areas of interests are the brightest. Eg. Bonfires, fireworks.

With fireworks, uncheck 'Align'. Switch to Maximum. Use pointer tool (LH toolbar) to move around and scale individual layers.

Big Stopper Effect (07:10)

- [Big Stopper Effect](#)

[The 'Big Stopper' is a very dark (10 stop) physical filter that is typically used to photograph water in daylight to get a blurred 'milky' effect, or to see movement in clouds]

First take a set of exposures with as slow a shutter as possible, so a bit of movement can be seen in each. Typically these will be several seconds long, so will need a tripod to hold the camera perfectly still. Note: this allows you to use a variable ND filter to change the sky-ground exposure balance.

File/New Stack. Add images. Automatically align. Experiment with Greek-letter operator. Mean can be good.

If this doesn't work, ungroup them (Arrange/Ungroup). Select all and explore blend modes. Average is often good.

Use Curves to adjust final contrast. Top-heavy S is often good (bigger lift at lighter tones, holding small dip in darks. Maybe a bit of HSL saturation also.

Tip: To remove dust spots, put pixel layer at too of stack and Levels layer on top of that, turning black level up and white level down until spots get clearer. Set 'Current Layer and Below' on top toolbar and use Inpainting brush (or other healing) to remove spots.

Light Painting Blending (05:20)

- [Light Painting Blending](#)

Stacking and editing light painting shots. [Light painting is setting long exposure then running around waving a torch or other light source (possibly painting light onto a building or other object).]

File/New Stack. Add images. Greek letter combination: Maximum (so all lights come through full strength).

Add black pixel layer. Blend Mode: Overlay. Opacity about 50%. Paintbrush tool, soft brush, full Opacity. Alt-left click suitable tone in image to select for paintbrush colour (typically in the overspill around the burned out core of the light). Then paint over light trails to increase 'spill' and add a little tone to the burned area. Do this in layers, with smaller brush again over highlighted area.

Layer/New Live Filter Layer/Diffuse Glow. Drag to above other layers. Radius right up for softer effect. Opacity right up. Intensity low (typically <5%). Threshold down (maybe 20%).

Layer/New Adjustment Layer/Curves. Shadows down a bit. Mid-tones on diagonal. Highlights slightly up.

Alternative is to ungroup the stack (Arrange/Ungroup) and use blend modes. Select all layers and change blend mode. Lighten will give a similar effect to Maximum as above. Screen will give a brighter version.

Tip: To turn a set of layers (back) into a stack, use Layers/Live Stack Group.

Stacking: Long Exposure Simulation (04:39)

- [Stacking: Long Exposure Simulation](#)

Can be used to create motion blur without tripod. Eg. Waterfall, sea.

Use burst mode on camera to take a lot of pictures. Maybe a dozen or more.

File/New Stack. Open all the images. Click 'Align'. Ok.

Tip: When there are multiple layers, Alt-click icon for single layer to see just that picture.

Experiment with the operator (click Greek symbol on top layer). Maximum can be good.

Stacking: Noise Reduction (07:34)

- [Stacking: Noise Reduction](#)

File/New stack…, Add, and select multiple images. Automatically align.

Noise reduction will be done via combining images and appear in image at top of group.

Alt-click individual layers to see just the layer.

Click on Greek symbol on top layer to try mean (or other) method rather than median averaging.

Stacking: Object Removal (05:51)

- [Stacking: Object Removal](#)

Take multiple photos of scene where there are people, vehicles, etc. With time between each shot so all of the background gets exposed in at least one image.

File/New stack, Add. Input the images. Note: scale-rotate is traditional. Perspective is better.

Play with stacking modes (Greek symbol on layer) to see different combination effects.

You can do this at night, reducing noise and removing objects at the same time.

[note: wind can make trees, etc. go funny with this. May need additional editing]

Stacking: Exposure Merging (03:46)

- [Stacking: Exposure Merging](#)

[This is like HDR but without the extra processing.]

File/New Stack, Add. Input the images.

Play with stacking modes (Greek symbol on layer). Mid-range is often good (bases light on middle image).

Document/Flatten reduces it to one layer. Layer/Merge Visible - puts one flattened layer above other layers.

For darker areas in result, use Dodge brush to create contrast punch.

Stacking: Star Trail Effect (09:44)

- [Stacking: Star Trail Effect](#)

Take image set. 30 to 60 seconds per image. 1600+ ISO. F2.8 or F3.5.

File/New Stack/Add. Add all images. Uncheck 'Automatically Align' assuming all taken on a tripod (saves time).

Greek letter merge: Median will show little. Maximum shows more.

Start with Mean merge as this averages out noise in the foreground. Layer/Merge Visible to create new layer with good foreground. Hide layer.

Then Maximum merge to see star trails. Layer/Merge Visible. Then delete stack.

Drag star trail layer to top. Mask sky with Selection Brush. Then use Refine to tidy up horizon. Click Mask icon at bottom of layers panel.

Use healing tools to tidy up things like lens blur.

Sharpen stars. Filters/Sharpen/Unsharp Mask. Blend Mode: Lighten. Radius right up. (Another method is to use Radial Blur, setting middle at centre of star rotation. Very low Radius, fraction of a degree).

Improve colours. Adjustment layers at top.

- Channel Mixer. Colour model LAB. BOpponent. AOpponent and BOpponent both 50% (mixes A into B) to redden foreground.
- Selective Colour Adjustment. Whites. Cyan up a bit. Yellow down a bit. Same in Neutrals.
- Brightness & Contrast.

Pin Sharp Stars (07:14)

- [Pin Sharp Stars](#)

Take burst of 1-second images at ISO 6400.

File/New Stack. Add images.

Mean stack (Greek mu). Flatten document.

Curves. Darken shadows. Midtones/highlights up.

Sharpen: Layer/New Live Filter Layer/Unsharp Mask. Blend Mode: Lighten. Radius right up.

Healing tools to remove lens flare.

White balance to adjust sky colour.

Histogram is bunched low. So Brightness & Contrast. Turn them both right up.

Remove noise with Filters/Blur/Bilateral Blur. If this creates banding, first convert image to 16 bit (Document/Colour Format/RGB 16 bit). Low Tolerance to avoid smudging out detail.

Round off with Exposure adjustment.

16. Live Projections (360 editing, perspective projection)

360 Live Editing (05:09)

- [360 Live Editing](#)

Editing 360 degree image using live equirectangular projection.

Start with 360 stitched panorama. Layer/Live Projection/Equirectangular Projection. Now you can click-drag to pan all around the image.

Pan around the image, looking for blank areas where the camera did not reach (typically including bottom, where tripod was). Then just use healing or Clone Brush tools (LH toolbar) to fill in the missing detail. You can also do other adjustments.

Editing the image will turn off panning ability. To restore this, ensure panorama pixel layer is selected and either use Edit/Live Projection/Edit Live Projection (or its shortcut), or select View tool (hand on LH toolbar) and click 'Edit Live Projection'.

To return to original image: Layer/Live Projection/Remove Projection.

360 Advanced Editing (07:17)

- [360 Advanced Editing](#)

Start with 360 stitched panorama. Layer/Live Projection/Equirectangular Projection.

Note: If you have added objects (rather than adjustments), such as a vector item or text, this will not appear correctly in the 360 image unless you first destructively merge them down into the panorama layer.

Edit as normal photo. Note: Adjustments will apply to whole image.

Tip: Add copyright notice at bottom where tripod was.

360 Retouching (09:53)

- [360 Retouching](#)

360 cameras can have chromatic aberration, fringing and other unwanted things. You can edit the image to fix this.

Touch up window edge problems with a glow. New pixel layer. Paint brush. Select matching colour (Alt-click nearby colour). 35% Opacity. Blend Mode: Glow. Paint on and around windows.

If there is too much overspill, pull back with soft Erase brush.

Enlivening light on wall and other objects (enhancing contrast): New pixel layer. Blend Mode: Reflect. Paint brush. Alt-click wall to sample nice colour. Adjust with colour palette (shift-click one slider to lock them together). You can also use Opacity to change saturation.

Tip: Large brush waved over destination will use preview to test effect.

Remember to Merge Down pixel layers into panorama image.

360 Multiple Views (03:44)

- [360 Multiple Views](#)

Start with 360 stitched panorama. Layer/Live Projection/Equirectangular Projection.

File/New. Page Preset: QFHD (4K document).

Go back to 360 image. Select/Select All. Edit/Copy.

Switch to blank document and paste.

Move tool (arrow on LH toolbar). Turn on snapping (magnet on top toolbar). Resize image to within a quarter of the document.

Select Edit Live Projection on top toolbar. You can now use the Move tool to pan and zoom around the 360 image! Note: These you can also use the Pitch and Field of View on the top toolbar.

Layer/Duplicate. Drag duplicated image to another quadrant of the document and pan this to get another view.

Repeat and you can get the full 360 as a set of images on one page!

Live Perspective Projection (10:14)

- [Live Perspective Projection](#)

Layer/Live Projection/Perspective Projection.

Move corner handles to fit a perspective area (eg side of building). Choose a tool, such as a brush, and the quadrilateral contents will be turned into a rectangle and presented to you.

You can now edit this area. Note that you have to Merge Down layers created before returning to normal view. With Move tool selected, you can now return to the live projection where your edits will be seen in the area selected.

You can also add multiple such planes with Add Plane on top toolbar. When you have multiple planes, just click on each to select it.

Exit with Layer/Live Projection/Remove Projection.

17. OpenEXR/32-bit

OpenEXR Multichannel Import/Export (03:23)

- [OpenEXR Multichannel Import/Export](#)

Affinity opens these files no problem. Layers appear in Layers panel. Hide layers to see final render. Alt-click a layer to see just that layer.

To save layers, File/Export, EXR, Preset: Layered. Click 'More' for additional options.

Affinity will also convert colour space to Scene Linear.

OpenEXR Import Options (03:09)

- [OpenEXR Import Options](#)

Edit/Preferences, Colour. Open EXR import options are at the bottom.

You can, for example, associate alpha channels with colour channels (or not), so alpha is pre-multiplied.

Editing 32-bit 3D Renders (10:09)

- [Editing 32-bit 3D Renders](#)

Need is to reduce 32-bit HDR image to low dynamic range image that can be shared.

Group and hide editing layers, so you just see the final item.

View/Studio/32-bit Preview to explore image.

Gentle Curves adjustment (this will be very sensitive, especially at lower 25%).

Tilt-shift to add depth with Live Depth of Field filter.

Live filter Vignette.

Drag Curves to the top and re-tweak.

Tone map image layer.

Layer/Merge Visible before reducing Document/Colour Format to 8 bit (otherwise adjustment effects will change).

Note: Not all adjustments and filters are available in 32 bit editing, but most are.

OpenEXR: Using Alpha Channels & Association (2:40)

- [OpenEXR: Using Alpha Channels & Association](#)

Alpha channel is imported as separate layer.

Select A channel. Layer/Rasterise to Mask. Drag it to nest into RGB layer.

Edit/Preferences, Colour. Check Associate OpenEXR alpha channels, to pre-Multiply this.

18. 3D Render/Texture Work

Seamless Textures (03:26)

- [Seamless Textures](#)

[Textures are typically photos of walls, ground, paper and other materials that include random patterns, which are used to give texture to a target photo.]

Use textures 1:1 rather than scaling them, so, if possible crop a larger texture image to size.

Document/Flatten to remove detail that is not needed.

Clone over lines created by image extension/repetition to hide lines. Use bigger brush after to break up patterning.

Filters/Distort/Affine. -50% Offset in X and Y (note minus).

Save/export for future use as a texture.

Clone Sources: Texture Creation (07:39)

- [Clone Sources: Texture Creation](#)

Example: compositing a number of photos of the ground into one large high-res texture image.

File/New. Create large blank image, eg. 4096 x 4096.

View/Studio/Sources.

Select or open source image. Click Add on Sources panel. Click on clone brush. Double-click on Sources panel image. Click in image near top left corner. Small circle will appear in Source panel image.

Click on Add again to add the same image to Sources panel, double click Sources panel image and click in main image near bottom right corner. Close image.

Move to next image file. Add image to Source panel. Double click panel image and click main image in middle. Close image. Repeat for next image setting clone point near top right. Repeat for same image with clone point top right. Repeat as often as required.

Return to blank image. Add pixel layer. Clone brush tool. Large, soft brush. Click on random source in Source panel and paint a random area in the main image pixel layer. Repeat using random sources until you have a patchwork that covers the whole image area.

Make seamless: Filters/Distort/Affine. Offset X 50%. Offset Y 50%. Apply. This scrolls the image with one side falling off and arriving on the others side, so what were the straight edges are now in the

middle. Clone on top of these lines. The texture can now be tiled in a larger area and will appear seamless!

Save and use texture.

Enhancing 3D Renders #01 (08:46)

- [Enhancing 3D Renders #01](#)

Tweaking CGI pictures to soften, deepen and add grain.

Soften sharp edges:

Duplicate layer. Filter/Detect/Detect Edges.

Layer/Rasterise to Mask. This gives us an edge mask to direct the blur.

Tip: Select/Deselect Layers (stops blur being nested by removing any layer selection).

Layer/New Live Filter/Gaussian Blur. Radius: 8 pixels.

Drag mask into Gaussian Blur layer to constrain the blur to the edges. Review blur as applied and adjust as required.

Layer/Merge Down. Working destructively here.

Layer/Add New Adjustment Layer/Curves. Drag middle down. This gives a darker base on which to add more colour, tone and light.

New Pixel layer. Blend Mode: Overlay. Opacity 20%. Paint brush. Alt-click to sample colour in target area to enhance. Typically this will be a light source.

Tip: Make colour lighter by Shift-slide one colour slider left (locks others with it).

Paint in more interest, for example paint the light into and around the light source. Change Opacity to taste.

Repeat as needed. Including painting almost neutral colours to bring out items that just need a bit more lightening [you can do similar work to darken].

Add another pixel layer, now with a Reflect blend mode. About 10% Opacity. Shift-click intense colour that you want to reflect the colour. Play with Opacity, but beware making changes obvious.

Add grain (to remove digital look). Layers/Deselect Layers. New Live Filter Layer/Add Noise. Zoom in and tweak Intensity to suit. Typically something like 5%.

Enhancing 3D Renders #02 (07:02)

- [Enhancing 3D Renders #02](#)

Liquify persona. Push forward tool (on left). Go around outlines pushing in points to give smooth outline of polygonal shapes. Fine tune with smaller brush.

Photo persona. Use Levels adjustment to fully expand histogram.

HSL adjustment. Can target individual colours, eg for land and sky.

Pixel layer. Overlay blend mode. Soft brush. Big brush. Select colour to help enhance tones. Paint over areas to colourise. Change Opacity to suit.

Curves to enhance contrast.

Soften slightly to make it more realistic: Gaussian Blur live layer. Drag to top. Preserve alpha. Radius about 5px. Blend Mode: Average. Use Opacity to create suitable blend.

Add live filter layer to Add Noise. Under 10%.

Tone Mapping 3D Renders (05:00)

- [Tone Mapping 3D Renders](#)

All needed adjustments can be done within Tone Mapping. Select pixel layer first.

Back off Tone Compression. Beware of over-doing Local Contrast (none may be ok).

Curves, reducing shadows to counteract washed out appearance.

Be gentle with other controls.

Switch to 8 bit to see shared visual.

Export as needed.

19. Colour Management

OpenColorIO Setup (04:13)

- [OpenColorIO Setup](#)

See OpenColorIO website for details about this. " OpenColorIO (OCIO) is a complete color management solution geared towards motion picture production with an emphasis on visual effects and computer animation."

Download colour configurations from this website.

Edit/Preferences, Colour. Lets you import the colour configuration file. Also set search folder.

Other options are also available.

OpenColorIO Adjustment (05:17)

- [OpenColorIO Adjustment](#)

Useful when compositing sources with different colour spaces, eg. two EXR documents.

AP converts to Scene Linear. Use File/Place to add new file items.

Use Layer/New Adjustment Layer/OCIO Adjustment to change colour formats to match. Use grouping to contain related adjustments.

Soft Proofing (04:41)

- [Soft Proofing](#)

Layer/New Adjustment Layer/Soft Proof.

As an adjustment layer that needs to be applied to the whole image, it needs to be at the top of the layer stack.

Select your device from Proof Profile to see what the image will look like a display, printer, etc.

Rendering Intent:

- Absolute Colorimetric is default, which is often just fine for colours.
- Relative Colorimetric will do its best to cope with colours which are out of gamut.
- Saturation aims to retain brightness and saturation of colours as much as possible.
- Perceptual compresses the source profile's gamut to the Proof Profile gamut.

Checking 'Gamut Check' will convert some tones to grey. These are colours that are hard for the printer to reproduce as they are not within the gamut of the profile. You can leave this visible and add a curves layer to the pixel layer beneath. Drag bottom node up (or otherwise tweak) to decrease the grey area. You may need to also add and HSL adjustment, eg. when a single colour is still grey. Do adjustments on both Master and RGB channels.

Remember to turn off Soft Proof layer before export/print.

Printing on Mac (10:15)

- [Printing on Mac](#)

See Printing on Windows, below.

Profile monitor. Soft Proof image. Merged top layer.

Ensure software controls colour, not printer. Colour management: Colour Sync.

Printing on Windows (09:51)

- [Printing on Windows](#)

Profile your monitor. What you see should be what you get from a printer.

DisplayCal is a useful free system. If in doubt, D50 or D55 may well be a good default setting (rather than D65 or sRGB).

Layer/New Adjustment Layer/Soft Proof.

Your printer driver may well install .icc profiles for different types of paper. These should show up here.

Note: hide or delete soft proof layer before printing (otherwise it will change the image).

Before printing, it is a good idea to do Layer/Merge Visible to ensure there is a composite pixel layer on top that will get directly printed and does not require rendering during the print process.

File/Print. Unlike Mac, much printer setup is done via its own software – access this via Properties.

Tip: Watch out for selections within printer drivers changing other elements, such as print quality!

You can also create a new document with the exact dimensions to print (so you control the scaling, ppi, etc.). File/New. Then copy and paste from original merge layer. Use Move tool to resize. Turn on snapping to ensure image snaps to edge of document.

In printing, turn off 'helpful' colour adjustment by printer. The software should control colour management, not the printer. Colour Handling: Performed by App.

ProPhoto vs sRGB (09:51)

- [ProPhoto vs sRGB](#)

ProPhoto RGB gives a wider gamut (more colours) than sRGB.

Document/Convert ICC Profile. ProPhoto RGB.

No immediate gain, but it does influence colour manipulations. Eg. you can stack HSL layers, turning one colour up and others down to create a popping effect.

Editing Raw file, in Develop persona, Profiles (RH panel), Output Profile. Change ProPhoto RGB.

Tip: Strengthen colour zones of image by selecting highlight colour (Alt-click with paintbrush selected) use soft brush to paint it over areas of similar colour.

Tip: Create contrast by duplicating layer, change to black/white, Blend Mode: Soft Light. Adjust colours to change colour (Red up often works).

Potential problem with editing in ProPhoto is that strongly pushed colours can fall outside sRGB colour space be burned out when converted back to sRGB. So be careful. You will see the difference when converting back anyway.

Two methods to keep detail:

- Merge Visible before converting to sRGB.
- File/Export. More. Change ICC Profile to sRGB.

Overall, editing in ProPhoto allows adjustments to work in a wider colour space, yet these changes will often still fit into sRGB colour space.

20. Macros

Macros (06:50)

- [Macros](#)

Macros are recorded sequences of operations, during the playback of which the user may be offered certain controls.

View/Studio/Macros (also ../Library) to show panel.

Click red circle record on Macros panel to begin recording. Perform sequence of actions, then click white square on Macros panel to stop recording.

To play macro, just select it and click play (triangle on Macros panel). During recording, steps are shown on Macro panel. When starting a new macro, select and delete any previous steps on the panel.

To let user control a slider, click cog icon next to step in Macros panel. Then click little eye icon on popout. Then you can custom name the slider.

To add macro to library, click '+' at top of Macros panel.

In Library panel, click macro name to run it.

In Library panel, click flyout menu (top right) to set new category (default name Macros) to hold macro sets. Rename it to suit.

Drag-drop macros into library.

Edit macros from library via right-click.

Macros can be exported.

Macros: Equations (06:29)

- Macros: Equations

How to create library macro that offers user various slider controls.

View/Studio/Macros. Filters/Distort/Equations.

Start recording.

Enter equations for x and y. Use a, b and/or c in both. a-c now controlled by sliders (ranging from 0 to 1).

In Macro panel, click on cogwheel. Variables a-c sliders appear. You can click on left of these to edit the name and make them visible to the user.

Stop recording.

Add Macro to Library.

Now in any image you can go to the Library, click on the macro and it will process using the equations and bring up a panel containing the renamed sliders.

Example: Noise macro

As above, with equations x=noise(x*y)*a; y=noise(y*x)*a (note: four types of noise available)

Apply equation

Filters/Gaussian Blur and make small adjustment.

HSL layer, saturation right down. Merge Down into noise layer.

Adjust opacity of noise (eg. 75%).

Now in Macro panel you can click on the cogwheels for such as equation, blur and opacity, changing the name and making them visible/controllable to the user.

Save Macro as 'Noise Generation'.

Macros: Layer Behaviour (08:33)

- [Macros: Layer Behaviour](#)

When recording a macro, you need to careful to ensure it will replay exactly as required. When you click on a layer it offers choice to help this. It offers 'Select layer named Background', for example, but there may be more than one layer with this name, so choosing 'Select layer 1 below current' can be more reliable.

When a child layer is created, after completion nothing seems selected though actually the child layer is. You can't just click on any other layer (options will be greyed out). First, you must click on the parent layer, at which an option will be given to confirm this.

To ensure a new layer goes at the very top of the stack, first Layers/Deselect Layers.

You can also use the Assistant beforehand to force new layers to be added as children or at the top level. Note that even if you change Assistant settings, the macro will repeat the setting in which it was recorded.

Tip: Name layers as you add them in the macro as it makes it easier to select them later. [A way to avoid replication of already-existing layers is to prefix all names in the macro with something macro-unique, such as MPX-'.]

Batch Processing with Macros (03:34)

- [Batch Processing with Macros](#)

Record the macro you want to apply to a set of files.

File/New Batch Job.

Click Add and select source images to be changed. Repeat as needed.

Set destination, such as a 'batch' sub-folder and configure save parameters.

Select library category and macro you want to use. Click Apply.

Click Ok to set off batch job.

21. Finishing Off

Sharpening (04:51)

- [Sharpening](#)

Sharpening is usually the final step before export.

Unsharp mask. For general sharpening.

Layer/New Live Filter Layer/Unsharp Mask Filter.

Unsharp method 1: Start with small radius, eg. 0.5px. Turn factor right up. This accentuates small details.

Unsharp method 2: Start with higher radius, eg. 4px. Smaller factor. This acts more like a clarity filter as it accentuates the larger details.

High pass filter. Used with blend mode to just sharpen higher frequency details.

Duplicate main layer. Filters/Sharpen/High Pass.

Change radius to select amount of high frequency data to sharpen. To stick to smaller details, the mask will look less obvious. Blend Mode: Linear Light.

Clarity. Used just to add a little punch to an already-sharp picture by adding mid-tone contrast.

Layer/New Live Filter Layer/Clarity.

You can use blend modes, layer masks and Opacity for specific and local effects.

Selective Sharpening (02:25)

- [Selective Sharpening](#)

Avoid sharpening soft, out of focus and blurry areas as this introduces digital noise.

Do sharpening. Then Layer/Invert. This makes the sharpening layer black, hiding the effect. We can now re-introduce the sharpening only where we want it.

Paintbrush tool (LH toolbar). Soft brush. Paint in white to expose sharpening.

Exporting (08:04)

- [Exporting](#)

File/Export.

Each file format has its own presets. You can also resize here. Usefully, it shows destination file size.

'More' offers further control, such as embedding metadata and an ICC colour profile with the image.

Note: Only layers which are activated will be exported. Unchecked layers will be ignored.

Export Persona.

This is particularly useful for slicing up images for web and email applications.

Slices panel has Background which is the entire document. We can also define slices by layers or click-dragging rectangles on the image.

For layer export, select layers needed and click Create Slice. This lets you mock up layouts and then export the parts.

Export format can be changed at top of slice panel for all or individual slices. Expand individual slices to see the export format. You can also export different aspects of different slices.

You may also save filesize with a softer sampling method, such as Bicubic (reenabling the Progressive checkbox).

Export Compression Efficiency (03:44)

- [Export Compression Efficiency](#)

Note on exporting for the web.

Colour noise easily creeps in. Filters/Noise/Denoise. Check Extreme for Colour Denoise and wind it up. Ignore Luminance denoise. This will reduce the export file size!

You can reduce file size more by clicking on 'More' and checking 'Progressive'. This will result in an image that arrives on a web page initially blurry then the quality steadily improves.

22. Plugins

Installing Nik Plugins (macOS) (06:01)

- [Installing Nik Plugins (macOS)](#)

[Nik Filters, a powerful add-on designed for Photoshop can be used with Affinity Photo. They used to be expensive, then Google bought them, dropped the price and now gives them away free at https://www.google.com/nikcollection/]

Double click installer. Uncheck 'usage'. Accept.

If no compatible application available (eg PhotoShop), which gives a place to put Nik, add your own destination folder (you may have to do this outside the Nik installer).

In Affinity: Edit/Preferences, Photoshop Plugins. Add installation folder in plugin search folders.

Restart Affinity. Edit/Preferences, Photoshop Plugins. Plugins that 'Requires global support' need to access other directories. Click Authorise Global. Restart. Check 'Allow Unknown Plugins'.

To sustain a non-destrictive workflow, always apply plugins to a duplicate layer.

Note: Plugins should work in 16 bit colour space, but if they don't, switch to 8 bit.

Installing Nik Plugins (Windows) (03:31)

- [Installing Nik Plugins (Windows)](#)

[Nik Filters, a powerful add-on designed for Photoshop can be used with Affinity Photo. They used to be expensive, then Google bought them, dropped the price and now gives them away free at https://www.google.com/nikcollection/]

Run the setup. Installation is to c:/Program Files/Google/Nik Collection.

Edit/Preferences, Photoshop Plugins. Under Plugin Search Folders, click 'Add'. Navigate to Nik Collection folder and click Select Folder.

Restart Affinity Photo.

Edit/Preferences, Photoshop Plugins. You can see the plugins. Check 'Allow Unknown Plugins'. Nik should now work.

To sustain a non-destrictive workflow, always apply plugins to a duplicate layer. This also allows before/after comparisons.

Note: Plugins should work in 16 bit colour space, but if they don't, switch to 8 bit.

Installing & Using Nik Dfine (06:16)

- [Installing & Using Nik Dfine](#)

Install Mac version of Nik as above.

If you want to use Nik Dfine as your standard denoiser, open Assistant and turn off Noise Correction.

To sustain a non-destrictive workflow, always apply plugins to a duplicate layer. This also allows before/after comparisons.

In Dfine, drag image to see noise. Let go to see noise suppression applied. Go to flat area like sky to see noise. Contrast Noise up a bit. Then Colour Noise.

23. Projects

Nature Portrait (08:34)

- [Nature Portrait](#)

Here's a standard portrait workflow.

Always start by duplicating original background layer so you can always get back to it to compare changes. Uncheck the bottom layer.

Reduce skin blemishes.

Filters/Frequency Separation. Choose Low Frequency layer. Blemish Removal tool (LH toolbar). Two options with this:

- Alt-click source layer and paint destination (like clone brush).
- Click-hold destination and drag to source area.

Healing brush tool to remove wrinkles and other larger blemishes. Alt-click source and paint over destination. Adjust size and hardness to suit.

Turning High Frequency layer back on shows texture, but without the removed blemishes.

Reduce lines on High Frequency layer with In-painting tool. Small, harder brush. Be careful to sustain clarity.

Use Healing brush to address dry skin, such as around the mouth on Low Frequency layer.

Change eye colour.

Quick mask (Q). Paint over eyes (pupil and iris) to expose them. Add Layer/New Adjustment Layer/Recolour adjustment, changing both Hue and Saturation. Blend Mode: Overlay.

Other tweaks

Curves: Switch to LAB from RGB (bottom left). Select Lightness (under Master). Do S-curve.

HSL: Brighten up a bit.

Supermoon (05:40)

- [Supermoon](#)

Bracketed set of moon images.

File/New HDR Merge. Where there is little information for the software to match features, the Scale Rotate and Match option may well be better than Perspective. Uncheck Tone Map.

Remove colour cast. There are several ways to do this. Filters/Apply Image. Use Current Layer as Source. DB=SB+SG/8. Check before/after. Apply.

Tone Mapping persona. Tone Compression very low. Local Contrast up a bit.

Curves, S-curve to remove banding. Saturation down. Brightness up a bit. Select moon and Refine to matte the edges.

Tone Mapping persona (with moon still selected). Tone Compression very low. Local Contrast up moderately.

Crop tool. 1:1 aspect ratio. Set Overlay to diagonals so you can centre the moon.

Product Shot Retouching #01

- [Product Shot Retouching #01](#)

20. Windows Workflow videos

Hadrian's Wall (08:47)

- [Hadrian's Wall](#)

A standard workflow for scenery.

Develop persona.

Assistant: turn off automatic tone curve.

Highlights right down (to recover detail).

Curves: one point near bottom pulling it down. Another around halfway pushing up (top-heavy S curve).

Check noise (it's always there). Colour noise at low ISO – fix is about 25-30%. Luminance correction right up until no visible noise, then click 'Noise Addition' and slider up a tad (around 5%) to add back in finer noise (to avoid flatness).

Photo persona.

 Select/Tonal Range/Mid Tones. HSL adjustment. Saturation up a little. Experiment with hue shift.

White balance. Warm it up a bit. Multiply blend mode. Blend ranges: pull down right node of left graph. Uncheck Linear and pull the middle down a bit.

Select background layer. Channels. Right-click Composite Red. Create Spare Channel. Right-click spare channel and rename to Red.

Click top of layer stack and add Curves. Right-click spare Red channel and Load to Curves Adjustment Alpha. S-curve on Curves.

Layers/New Live Filter Layer/Diffuse Glow. Click-drag layer out to top of stack. Large Radius. 100% Opacity. Intensity right down. Adds diffuse glow to highlights.

Add another Curves adjustment. Slide bottom node up and pull down just above it to keep most of the line on the diagonal. Maybe boost highlights a tad.

Add live filter Add Noise. Small amount of noise. Blend ranges and pull down highlights node.

Note: Live Filter layers are computationally expensive, which is why the default is to nest them. Change the Assistant to make them appear at top level and it'll slow things down. If this happens, turn off live layers, only turning them on to preview image.

Tiled Building (08:30)

- [Tiled Building](#)

Select sky and all the windows with selection brush. Alt-click to subtract overspill. Ctrl- to select just under brush.

Ctrl-I invert to select only tiles. Right-click 'Pixel selection' in Channels and 'Create Spare Channel' to take a copy of the selection. Right-click new spare channel and rename this 'Tiles'. You can now Ctrl-D deselect tiles.

HSL adjustment. Right click Tiles/Load to HSL Shift Adjustment Alpha. This masks the HSL to just the tiled area of the building.

New Pixel layer. Blend Mode: Reflect. Soft Paintbrush. Dark brown colour – in Reflect mode painting tiles will intensify colours. Adjust effect with Opacity.

Add Mask layer (as child of pixel layer). Right-click Tiles spare channel and Load to Mask Alpha. This masks out any overspill of the painting onto the tiles.

Layer/New Live Filter Layer/Lighting filter. Place lighting outside bottom right of image. Increase outer cone angle for general lighting. Decrease inner cone angle for contrasting shaft of light. Shininess up. Play with light positioning.

Add Curves adjustment at the top of the layer stack. Left node up a bit. Pull down to diagonal just to the right of this, then up to diagonal towards top of line. Play with these to enhance contrast.

Paint out lighting effect spillover into the sky by painting (in black) mask on lighting layer.

Portrait Retouching (13:43)

- [Portrait Retouching](#)

Image is of woman with 'crown of flowers'.

A workflow for retouching a portrait.

Remove skin wrinkles and blemishes.

Filters/Frequency Separation.

Turn off High Frequency layer (on top). Soft Healing Brush. Alt-click source and paint out wrinkles and blemishes. Repeat as needed.

Note: in removing blemishes, avoid flattening too much.

Tip: Pan with either middle mouse button and drag, or spacebar and drag.

Turn on High Frequency layer. Use Clone Brush with very high hardness to remove any wrinkles and blemishes here (soft brush or healing brush tool would affect the fine texture.

Layer/Merge Visible to give a layer on which to work next.

Create focus on face: New Live Filter Layer/Depth of Field filter. Preserve Alpha. Make elliptical to fit head/face. High Radius.

Intensify eyes: New pixel layer. Blend Mode: Overlay. Opacity 50%. Soft Paintbrush. Alt-click to pick up main colour in eye. Then vary this on the colour panel to something stronger. Paint around iris. Adjust with Opacity.

Add glow: New Live Filter Layer/Diffuse Glow. Drag above pixel layer. Radius right up . Intensity 2%. Opacity right up.

Relight: New Live Filter Layer/Lighting. Pull point of light outside image and top-side (to shine on face from above). Drag middle node to change azimuth (rotation) and elevation (height). Specular 70%. Shininess 90%.

Compensate for lighting excess: New Adjustment Layer/Curves. Pull down near bottom and top to tame highlights. Go back and tweak lighting, eg narrowing inner cone. Paint black onto lighting layer to decrease any excessive highlights.

Vignette: New Live Filter Layer/Vignette. Exposure right down. Hardness 50%. Tweak Shape and Scale to fit.

Drag Curves layer above Vignette.

Monochromatic Architecture (05:36)

- [Monochromatic Architecture](#)

Image is of top of building with curved, corrugated roof.

Dull day can flatten tones.

Create toning: Layers/New Adjustment Layer/Black & White. Blend Mode: Glow. Red, Cyan, Blue to 200%.

Ensure all is monochrome: Layers/New Adjustment Layer/Black & White.

Selective tone popping:

- New pixel layer. Blend Mode: Overlay. Opacity 40%. Soft white Paintbrush. Paint roof edges to bring these out.
- New pixel layer. Blend Mode: Reflect. Opacity 60%. Soft black Paintbrush. Paint darker areas on roof.
- Tidy up: Harder Erase brush. Paint out any overspill.
- Bring out shadow tones: New pixel layer. Blend Mode: Overlay. Opacity 20%. Soft white Paintbrush. Paint in shadows.
- Add grain: New Live Filter Layer/Add Noise. Drag out to top layer. Intensity 20%.

Canary Wharf (06:20)

- [Canary Wharf](#)

Image is of office buildings at night.

Develop persona.

Remove auto tone curve: Assistant, Tone Curve: Take no action.

Recover highlights: Shadows/Highlights. Highlights right down.

Push mid-tones: Brightness right up.

Noise down: Details panel: Luminance slider up a bit.

Develop.

Photo persona.

Duplicate background layer.

Adjust colour cast: Filters/Apply Image. Use Current Layer as Source. Check Equations. LAB colour space. Db=lerp(Sa,Sa,0.5). Apply.

Address light pollution colour cast in sky: New Adjustment Layer/Black & White. Blend Mode: Multiply. Opacity to suit. Red, Yellow and Green sliders up (to accentuate building tones).

Accentuate lit window tones: Pixel layer. Blend Mode: Overlay. Soft, big Paintbrush. Pastel blue colour. Paint over windows areas to lighten and blue-tint windows. Be careful not to let any paint bleed into sky. Single-click on individual street lights.

Final tonal tweak: New Adjustment Layer/Curves. Add node and pull down on left side of main histogram shape. Push up mid-tones quite high.

Sharpen: New Live Filter Layer/Unsharp Mask. Drag out to the top. Radius 1 (find sharpening). Factor 1.8. Just enough to make it pop.

Banded Demoiselle (06:57)

- [Banded Demoiselle](#)

Image is dragonfly insect.

Tone down background: Selection Brush. Select body and wings. Don't need legs. Alt-brush to remove. Select/Invert Pixel Selection. Layers/Add New Adjustment Layer/Black and White. Opacity about 75%. Increase red tones. Decrease yellow and green.

Relight: Layer/New Live Filter Layer/Lighting. Drag layout out to top of stack. Drag corner well outside image. Diffuse, Specular, Shininess, Distance, all to maximum. Blend Mode: Multiply. Tweak centre node, cone angles (inner cone narrow) for kind of vignetting effect.

Bring out insect. Select background layer (to force nesting of filter). Layer/New Live Filter Layer/High Pass Filter. Check Monochrome. Bring up Radius (higher radius gives more local contrast). Select High Pass layer and Layer/Invert. Soft white Paintbrush. Paint over insect body. Keep inside body (paint black to fix overspill). Experiment with Blend Mode, eg. Linear Light, Hard Light.

Add tint to image: Layer/New Adjustment Layer/White Balance. Tint down about -12%.