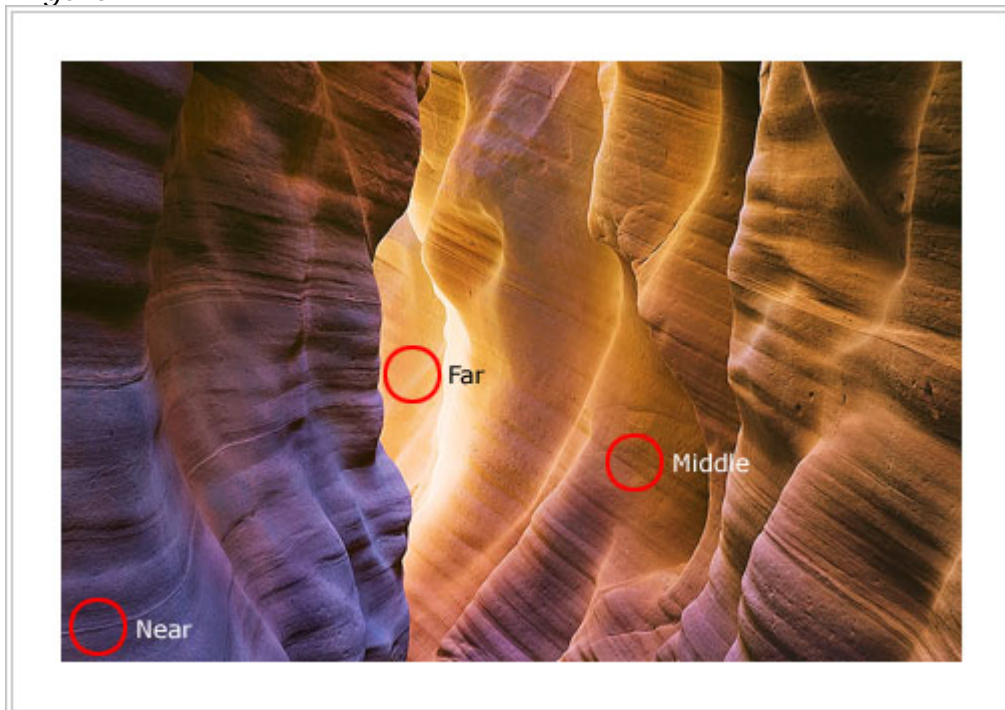


Take Pictures

Digital Scheimpflug works by exposing different focus planes in the scene that are parallel to the focus planes of the lens and film, thereby insuring maximum sharpness of that plane, and then combining these images in Photoshop to reveal the in-focus parts of each exposure. This technique works particularly well in landscape nature photography and in situations where the subject is relatively unmoving, at least for a short period. Multiple exposures require a bit of time to complete, and rapidly changing light or moving subjects might not allow a sufficient interval to complete the task.

To produce the focus plane slices, compose the scene as usual through the view finder. Set the focus first on the nearest object in the frame. Make an exposure and then refocus on another object a little deeper into the frame. Make another exposure, and continue the cycle of refocusing and exposing until an exposure focused on the most distant item in the frame is made. *Figure 2* shows an image created using digital Scheimpflug. It is a scene with significant depth-of-field shot at a 90-mm focal length (low telephoto setting). Since even $f/32$ would not have been sufficient to bring all the elements into sharp focus, three focus plane slices were taken at $f/16$ with the focus points circled in red. These exposures were later combined to create a scene with sharp focus throughout the frame.

Figure 2



The best setting to take pictures for digital Scheimpflug is completely "Manual" for both focus and exposure. Manual focus is almost mandatory since it is necessary to choose different focus points in the scene by looking through the viewfinder. While spot-focusing can be accomplished by changing the chosen focus point on the focusing screen, it's rather cumbersome compared to manually refocusing the image while looking through the viewfinder. Manual focus yields excellent results with digital Scheimpflug and usually requires less touching of the camera than choosing a new spot-focus point. Manual focus also allows including additional exposures a little beyond what would normally be considered the near and far focus points in a scene in order to make sure all the necessary focus planes have been included in the series of captures.

Auto-exposure can still be used successfully with digital Scheimpflug, though occasionally there is a slight exposure shift of a third of a stop in either direction. While this can be corrected during RAW processing, using manual exposure means there is one less variable to deal with when it's time to combine the images in Photoshop. If auto-exposure is used, it should be set to "aperture priority."

Choosing the right aperture is important to the success of digital Scheimpflug. Remembering that the purpose of digital Scheimpflug is to produce the sharpest possible image, it's necessary to use an aperture that actually produces a sharp image for a given lens. This is generally a stop or two down from the maximum aperture for the lens and no smaller than $f/16$. While lens testing can help determine the aperture where a lens is the sharpest, $f/8$, $f/11$, and $f/16$ are reasonable starting points for using the technique with most lenses.

Images that require a focal length greater than 50-mm are best for facilitating refocusing between exposures. The longer the focal length, the easier it is to observe the focus changes in the viewfinder. For images using wide-angle focal lengths where it's hard to see the focus changes, it's usually possible to focus first on the nearest object in the scene, recompose the image, and then after each exposure reset the focus a little closer to infinity through small turns of the focus ring. While it might not be possible to see the focus change, the focus plane slices will be accurately recorded with this technique, and once the images are available in the computer, the zoom function can be used to determine the sharpest areas of each slice to be used in the final composition.

The number of exposures necessary for a successful digital Scheimpflug can be as few as two, but it's usually a good idea to record more slices if time permits. As a rule of thumb, if a new focal point can be observed in the viewfinder, take another exposure. Ideally the focus will overlap with that of the previous exposure in order to avoid focus gaps between slices. Three or four exposures are typical for most scenes with significant depth-of-field.