SOLIHULL PHOTOGRAPHIC Society

MACRO WORKSHOP

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What is macro photography?

Macrophotography is close-up photography, usually of very small subjects. Classically a macrophotograph is one in which the size of the subject on the sensor is greater than life size.

However in modern use it refers to a finished photograph of a subject at greater than life size. The ratio of the subject size on the image sensor plane to the actual subject size is known as the **reproduction ratio**.

Likewise, a **macro lens** is classically one lens capable of reproduction ratios greater than 1:1, although it now refers to any lens with a large reproduction ratio, despite rarely exceeding 1:1.

How to take Macro Images

- Most macro shots require that you get the lens focussing much closer to the subject than a “normal” lens can
- Thus you usually need some extra equipment to allow you to get in closer to your subject
- There are a number of ways this can be done:

Ways of taking macro images

- "Close up" filters which fit on the front of a normal lens

You can sometimes combine these tools but watch for further loss of light

- Extension tubes/bellows which fit between the lens and the camera body

- Reverse mount a standard lens using special coupling device (*but lose auto*)

- Specialist "Macro" lens

Many compact cameras also have good macro facilities
and lens design means close focussing and reasonable depth of field

MACRO - CHALLENGES AND SOLUTIONS

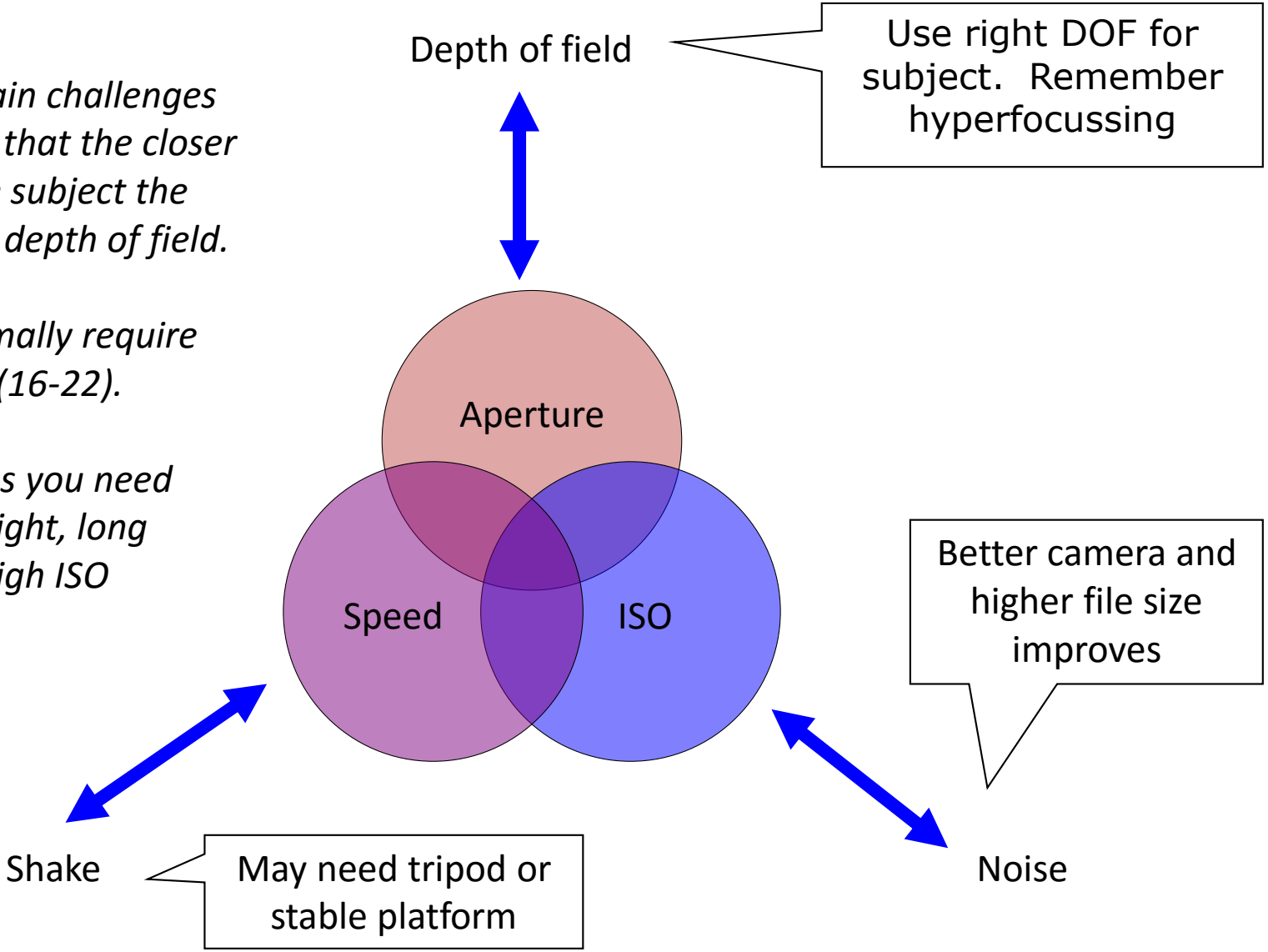
These issues are often interlinked

Exposure

One of the main challenges with macro is that the closer you get to the subject the shallower the depth of field.

Thus you normally require higher F stop (16-22).

But this means you need either: more light, long exposure or high ISO



Limited depth of field

The closer you get to the subject (higher magnification) the more limited is the depth of field

- Check DOF using app or tables - can be very limited
- Manually focus on key aspect of subject (e.g. eye)
- Keep object fully aligned with plane of lens
- Keep aperture between f11 and f22
- Use stacking software (for static subjects !)

Insufficient light at sensor

To maintain depth of field you need higher F stop but this loses light (as do some accessories)

- Use best kit that you can afford, ideally designed for macro work
- Use appropriate lenses and minimise use of kit which loses light (e.g. extension tubes)
- Use additional light on subject
  - fixed light (LED)
  - diffuse fill in flash - consider high speed flash syncro if subject moves
  - light box for subjects which can be moved
  - specialist ring light flash

Shake and vibration

The closer you get to the subject (higher magnification) the more obvious is any slight camera movement

- Use tripod, bean bag or other support
- Avoid shutter speeds between 1/15 and ¼
- Use mirror lock and/or remote shutter release
- Use higher ISO/shutter speed
- Use shielding or clamp if in field to stop wind impact (e.g. flower)

Other practical issues

- Think about background – can you use an artificial one
- Need for limited “gardening” to remove distracting elements e.g. stray grass fronds – carry small secateurs?
- If subject is low down would angled eyepiece help
- Use reflector (or foil) for subjects like fungi
- Avoid too harsh sunlight conditions to minimise high contrast

Composition

- Do not forget the principles of good composition which are equally important for macro as for other photography
- Minimise distracting background
- Use rule of thirds
- What is the main subject
- Remember to “balance” the picture

See other notes on composition for more details