

Cave diving photography

Few common mistakes

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Features of the cave underwater environment



The cave underwater environment has many specific factors that lead to very specific problems in cave underwater photography:

These factors are:

- Lack of light**
- Lack of perspective**
- Presence of particles**
- Vital diving constraints**

We will review major faults encountered on images taken in cave underwater photography

"burnt" Picture



Cause of error:

- flash oriented towards the walls
- Flash too strong and not enough “diffusing”
- Using the ttl metering mode that does not take into account the peripheral illumination

Correction of the defect:

- Always use a diffuser on the flash
- Do not use the ttl mode light metering (matrix metering prefer if possible)
- Orienting the flash toward the center of the galleries or farthest place visible and certainly not the surrounding walls
- Reduce the flash output in the narrow galleries.

Particules



Cause of error:

Particles too! We can not do much about anything! Except treat her kicking and that of his teammates! flash oriented in the axis of the lens that illuminates the particles that behave like mirrors and reflect the light from the flash to the lens

Correction of the defect:

Plunge "first" when making pictures to avoid the "stirs" raised by the passage of divers

Flash away from the lens and move in a different axis than the goal not (or less) capture light reflected from particles



LED lamps in front of the lens



Cause of error:

- LED lamps are very powerfull and their beam is sufficient to cause locally overexposed pictures

Correction of the defect:

- turn off the lights
- Not photographing subjects with lighted lamp directed toward the camera.



Flashes poorly oriented



Cause of error:

- Flash misdirected causes overexposure of the area where it illuminates

Correction of the defect:

- Orientate the flashes in the axis of the galleries or in the direction of large volumes
- Use a flash arm mounted on the slave flash to materialize the orientation of the flash



Shadow

This error is acceptable

Cause of error:

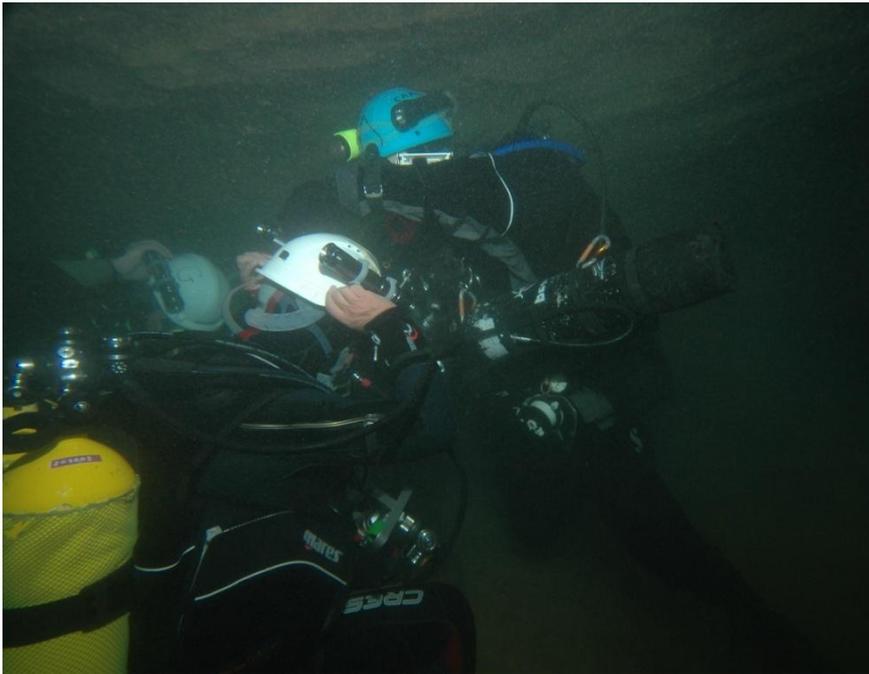
- **Lighting a diver or "object" near a wall light**



Correction of the defect:

- **Avoid shooting subjects near clear walls (prefer photographing along the axis of the galleries)**
- **Directing the flash to avoid shadows in the field of photo (easy to say, but not to do!)**

strange positions



Picture unprepared or triggered too early or too late

Correction of the defect:

- **Prepare and think about the picture before diving .**
- **Share the information with the subject (lighting, scenario...)**
- **use wetnote or understandable signs to share information underwater**

Auto focus? Or not ?

The autofocus works very badly in general in cave diving photography.

The easiest way is to disengage it and set the distance to 1 to 2 m (see table here after)

By using a wide angle it works every time.

The only practical use of the autofocus is for macro photo with magnifications and a strong illuminating of the subject with a powerful light (video types) as close as possible.

In general it works but not all the time

It is better to take a lot of pictures



Auto focus? Or not ?

- Basics on depth of field:

More the 'f' number is large (ie more the aperture is small) and more the depth of field is great.

The depth of field also depends on the focal length of the lens and of the sensor size of the digital camera and of the subject-object distance

The <http://www.dofmaster.com/dofjs.html> web site provides a calculation of the depth of field based on the type of camera and lens focal length.

Example: with a Nikon D70 (results in red are the focus range for the given setting) the yellow cells are the usual range used in cave diving photography

lens	14 mm	14mm	18mm	24mm
aperture	F 4.5	F 5.6	F 5.6	F5.6
Nominal Distance 1m	0.69-1.82m	0.64-2.32m	0.74-1.52m	0.84-1.24m
Nominal Distance 2m	1.05-22.5m	0.93-infinite	1.18-6.5m	1.44-3.27m
Nominal Distance 3m	1.3m-infinite	1.1m-infinite	1.47m-infinite	1.89-7.22m