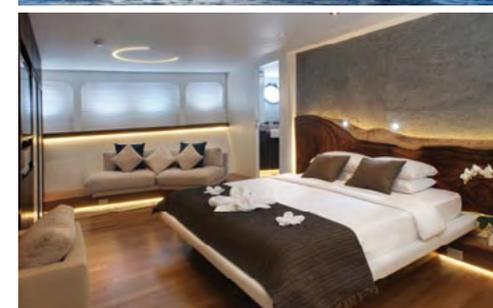




An experience without equal

At Wakatobi, you don't compromise on comfort to get away from it all. Our private air charter brings you directly to this luxuriously remote island, where all the indulgences of a five-star resort and luxury liveaboard await. Our dive team and private guides ensure your in-water experiences are perfectly matched to your abilities and interests. Your underwater encounters will create lasting memories that will remain vivid and rewarding long after the visit to Wakatobi is concluded. While at the resort, or on board the dive yacht Pelagian, you need only ask and we will gladly provide any service or facility within our power. This unmatched combination of world-renowned reefs and first-class luxuries put Wakatobi in a category all its own.



"After years of travelling to the best dive sites in the world and often experiencing poor conditions, we found Wakatobi Dive Resort. They have a perfect balance of luxury with outstanding diving."

~ Kate Pagdget-Koh



www.wakatobi.com

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Underwater Photography 2001 - 2017
© PR Productions
Publisher/Editor Peter Rowlands
www.pr-productions.co.uk
peter@uwpmag.com

UPY 2017

I couldn't let this issue go by without mentioning UPY 2017 and to say a big thank you to all of you who took part and contributed to the biggest ever entry.

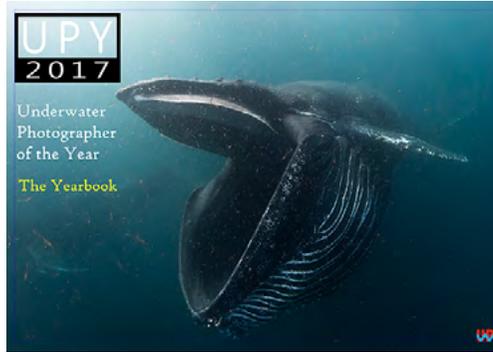
With over 4,500 images, we were 35% up and with entrants from 67 countries, that was a 25% increase.

The most pleasing increase, came from the number of entries in the Compact category and especially the British Compact category. Both of these are aimed at encouraging those users to feel included and given their space away from SLR users. Take a detailed look at the winners in both of these categories and you will see that their results are equally as impressive as the others.

But these are just statistics. What is not possible to quantify statistically is the standard of entries this year and these have definitely gone up another gear. You surpassed last years extremely high standards and took UPY 2017 to a new level of excellence which I hope you will appreciate in the 2017 Yearbook which UwP produces for UPY. The 4 main winners and 6 of my favourites are featured from page 27.

From my own point of view, I have been captivated not only by

Editorial



the winning images but also by the stories behind how those images were achieved. The conception, the planning and the physical effort to achieve a successful result; it is those efforts that we, as judges, pay our respects to by taking out two days to meet up, sit together and look in detail at all the images. It is a mammoth task but one that we all agree is a privilege to be part of.

Finally, every issue of the Yearbook provides you with the perfect reference work to study what works and is successful in our competition so that you can go out over the next year to embrace your underwater photography and come up with more groundbreaking images that will inspire us, the judges, and you, the entrants, in 2018.

I'm looking forward to next year already.

You couldn't make it up

One part of my job as Chairman of the Judges at UPY 2017 was to liaise with the press to get publicity for the results.

Last year we were contacted by just over 100 websites and publications and this year that figure doubled to just over 200. There is a list on the link below.

The vast majority were websites of all shapes and sizes and big players such as National Geographic, Washington Post and the BBC right down to The Weather Channel! The publicity they provided was enormous and global.

Yet with all this coverage it was still a print publication which gratified me the most. My local paper is the Western Morning News and when they contacted me I was excited to encourage them to use the images shot in local waters by local underwater photographers.

I sent them the press pack on Thursday, we had a couple of e mail queries on the Friday and then on the Saturday I was delighted to see the attached spread on page 3 with another local shot on the front cover. Kirsty Andrews' lovely shot of a gesturing Cuttlefish was featured the largest. It was probably the least



circulation of all of our press coverage but because it was local and in print, it somehow meant a lot more.

That lovely cosy glow faded unfortunately quite quickly when I thumbed through to the Lifestyle section and there was a double page spread on "How to cook and eat Cuttlefish!" Apparently our local fishing town Brixham is the epicentre for cuttlefish catch and on a good day can process 6-7,000 tonnes a day. Most goes to the continent but my elation went to deflation in a very short space of time.

Peter Rowlands
peter@uwpmag.com

<http://underwaterphotographeroftheyear.com/2017yearbook.aspx>

<http://underwaterphotographeroftheyear.com/2017inthedia.aspx>

Seasick Productions
presents the

BALI

PHOTO AND VIDEO WORKSHOP

September 26 - October 4, 2017

featuring
**Mike Bartick
Evan Sherman
and Ajijex Dharma**



seasickproductions.com

News, Travel & Events

Master Liveboards goes Bikini



After launching Maldives, Bahamas and Red Sea only late 2016, Master Liveboards are pleased to announce yet another exciting destination: Bikini Atoll in the Marshall Islands! This exclusive and unparalleled diving destination is undisputedly ranked first on any serious wreck & technical divers' bucket list. This is well justified; as nowhere else on earth you will be able to dive such a unique collection of historic battleships, cruisers, as well as the world famous USS Saratoga aircraft carrier with its 270m (888ft.) flight deck. For this reason, Bikini Atoll has been declared the first UNESCO World Heritage site for the Marshall Islands archipelago in 2010.

In the 1940's and 50's, the

United States designated Bikini a testing site to launch a multitude of atomic bombs on a collection of war naval ships. This resulted in the most exciting and interesting underwater wreck graveyard in the world surrounded by untouched coral gardens. The ultimate wreck diving for the true fans.

Regular trips will start from May 2018 and will be operated by the Truk Master, offering a choice of 10 and 11 nights' trips to a maximum of 11 guests per cruise. Most wrecks in Bikini Atoll are located beyond recreational diving maximum depths; therefore technical diving skills and wreck experience are required.

www.masterliveboards.com

TREK,
SNORKEL,
PHOTOGRAPHY



7th - 24th March 2018

ANTARCTICA SOUTH GEORGIA

Scott Portelli

scottportelli.com/south-georgia

PAF TACHOV

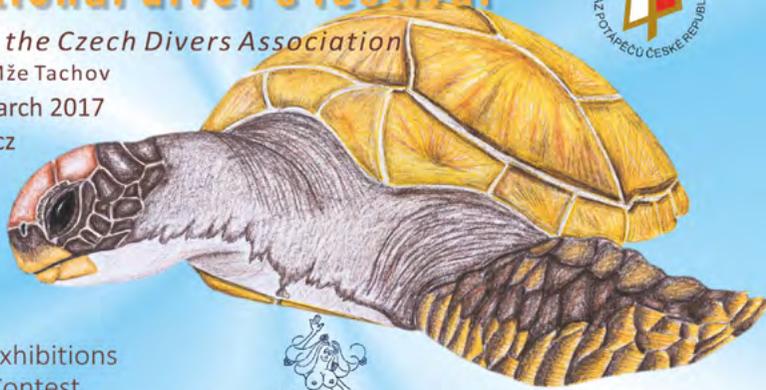
International diver's festival

Organized by the Czech Divers Association

Cultural center Mže Tachov

24th - 25th of March 2017

www.paftachov.cz



Diver's Ball
Photographic exhibitions
Children's Art Contest
Entertaining program for children
Diving and travelogue films
Diving and travelogue lectures



Drawing by: Lenka Kolivancová 14 years old

Seasick Productions
presents the

BALI

PHOTO AND VIDEO WORKSHOP

September 26 - October 4, 2017

featuring
Mike Bartick, Evan Sherman and Ajiex Dharma

JUST ANNOUNCED!

Seasick Productions Bali Photo and Video Workshop September 26 - October 4, 2017

Seasick Productions announces their Bali Photo and Video workshop featuring three of the industry's leading image-makers: widely published and renowned educator Mike Bartick, producer of the award-winning films Bali Close up and Not So Silent World Evan Sherman, and Asia's celebrity snooter Ajiex Dharma. The workshop will take place at Scuba Seraya Resort located in Tulamben, Bali and be held September 26 – October 4, 2017.

The workshop will emphasize macro and super macro imaging techniques, and guests will receive hands on coaching in and out of the water. Major equipment manufacturers will supply a variety of camera equipment allowing guests

the opportunity to test some of the industry's newest photographic tools.

Seasick Productions has limited the number of participating guests to maximize learning. Mike Bartick will be coaching on photography, Evan Sherman on videography, and Ajiex Dharma on snooting. All levels of experience are encouraged to attend.

Seasick Productions is a mixed media production company that specializes in underwater videography and photography, editing, authoring and marketing. Seasick Productions is a wholly owned subsidiary of Underwater Exposures, Inc., founded in 1994. For more information about the company, please visit

www.seasickproductions.com

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400+ sharks in 2016 our season
Peak tour season July-August
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The leading online resource for underwater photographers and videographers



TECHNIQUES

Learn the fundamentals of underwater photography and progress to the latest, most innovative techniques taught by the top pros in the industry

ARTICLES

Discover the world of underwater imaging through compelling features from photographers, filmmakers, ocean scientists, industry experts, and more

GALLERIES

Browse the portfolios of the industry's biggest names in underwater photography and share your own work online with like-minded members

TRAVEL

Read about the experiences of accomplished shooters as they visit the world's most iconic dive spots, and get inside tips on maximizing your dive vacation

NEWS

Keep up to date with everything that matters to underwater photographers, from the latest gear and gadgets to the newest developments in marine research

EXPEDITIONS

Journey with us to the hottest dive destinations on the planet and learn better technique from the most talented image makers in the scubaverse

DIVE PHOTO GUIDE

www.divephotoguide.com · contact@divephotoguide.com

Wildlife
Exposed



'Wildlife Exposed' crowd funding

I've launched 'Wildlife Exposed' a crowd funding campaign to get a TV pilot funded on wildlife photography.

The idea is to help fund a TV pilot on wildlife photography, which would then be made into a full series. Wildlife photography has never been more popular, with more affordable digital cameras and quality smart phones, it's easier than ever to take great images yourself. The natural world is full of fantastic opportunities, from the Scottish highlands to your own back garden, this series will help you pick up a few hints and tips, while also highlighting wildlife conservation issues.

Groups like Fotospeed, Opticron and Weird fish have all lent their support and added rewards to the campaign with Affinty being the principle sponsors.

I'm not expecting financial support from you but by spreading the word you'd be helping the project.



The pilot is being filmed in Shetland with the help of Shetland Nature and should it get picked up for a full series we'll visit other sites around the UK.

Wildlife photography has never been more popular but has little presence on TV until now! Crowdfunding is a democratic way to support the fundraising needs of your community. Make a contribution today!

If your not familiar with me do have a look at my website.

Jack Perks

www.jackperksphotography.com

www.indiegogo.com/projects/wildlife-exposed-wildlife-photography-tv-pilot-environment/x/15889418#/

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Lembeh Photo Fun Week

29 July - 5 August 2017

It's that time once again, after the massive success of our Photo Fun Week 2016 with the Underwater Tribe, Underwater Lightroom, and the team at NAD Lembeh Resort, we are excited to announce an all new 2017 event! We have scheduled this event during the best season for critters in the Lembeh Strait.

We will be limiting the number of divers to maximize everyone's personal time with the instructors both underwater and in the resort. One of the highlights of our workshops is that the instructors don't bring their cameras underwater, instead we spend time one on one with each participant helping them to compose their photos, aim their strobes, hold a snoot, and anything else that helps them make the most of their time underwater.

Our Fun Photo Weeks are geared toward anyone with a camera who wants to improve their skills in the water. Although we always start with the basics; we soon move on to more advanced topics such as: Achieving Black or Blue Water Macro Backgrounds, Advanced Strobe Positioning, Shooting Wide in Lembeh (CFWA), Super Macro, Snooting and others.

UNDERWATER LIGHTROOM
&
UNDERWATER TRIBE
Together again in 2017 for two awesome
Photo Workshops



Of course with post processing guru Doug Sloss in attendance, we will also be delving into Lightroom for image organization and editing so that everyone can get the utmost from their photographs.

We are happy to announce a 5 day macro and wide angle Bali Underwater Photo Workshop as an addition to our annual Lembeh Photo Fun week. The dates for this 5 day event will be 22-27 July 2017 and will take place in two of Bali's best diving locations, Tulamben and Nusa Penida. This will be the perfect addition for folks who are joining us in Lembeh Strait and are looking to extend their time in Indonesia.

www.underwatertribe.com

www.uwpmag.com

scubadiveasia

Liveaboard

Diving

Worldwide

scubadiveasia.com

Featured-Creatures online magazine

Featured-Creatures announces its new monthly online magazine that shares age-appropriate text, spectacular photographs and video clips from oceans around the world. Able to be viewed on a computer monitor, tablet, or mobile phone, Featured-Creatures provides subject matter that is fun to look at and educational for kids and adults to share with each other, their families and their friends. Every edition of Featured-Creatures serves two main purposes: educating while entertaining children, and providing



a pathway that makes it easy for children and adults to talk with each other and share a common interest.

www.featured-creatures.com

Polar Bear Expedition April 23 - May 1, 2017



Discover a place more spectacular and beautiful than anything in your wildest dreams.

This journey will try your patience, test your endurance, and show you a world of unmatched beauty and frozen splendor.

Join BigAnimals Expeditions to experience a very small group expedition that will forever be etched in your mind as one of the most epic journeys you have ever taken.

We offer this exclusive journey during the peak of the polar bear's hunting season from the end of April to the beginning of May

There is only space for two guests and we like to keep it this way for a variety of reasons. This is a special opportunity for me to personally guide you and share my techniques for capturing award winning images.

www.biganimals.com

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www.masterliveaboards.com



Issue 95/9

www.uwpmag.com




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 Shark & Shoal Diving Adventures

*2017 bookings
now open*

*Poseidon Rebreathers &
courses available*
www.thesardinerun.co.za

Worldwide Dive and Sail to merge



Worldwide Dive and Sail are extremely excited to announce that they are currently in the final stages of merging with the UK's largest dive travel company, blue o two!

Since it's foundations in 2004, Worldwide Dive and Sail has pushed the boundaries of liveaboard diving, firstly in the Asia Pacific region with Siren Fleet, followed by Master Liveboards on a global scale in 2014. Throughout this time we have consistently driven forwards, expanding into new locations and improving standards across the board.

Master Liveboards was founded jointly with blue o two to take you to the best dive locations in the world on board a series of liveboards that featured the very latest in both equipment and vessel specifications

and after beginning with one boat in Galapagos, the fleet has now grown to five vessels operating with yet another to begin operations in 2018.

The upcoming merger is the culmination of four years' of talks, and we plan to build upon this existing, and successful partnership.

As a merged group, we will operate our own liveboards that can take our scuba divers to the Red Sea, the Maldives, Palau, the Philippines, Fiji, Indonesia, Palau, Truk, Galapagos, French Polynesia, the Bahamas and Thailand – make sure you follow the group on social media to hear all of the latest developments!

www.wwdas.com

www.uwpmag.com

2017 Adventures with Basking Shark Scotland



Our busy peak basking shark season tours are starting to fill up with some tours already full. This is the start of our busy booking time, so for the best availability we always advise to book as early as possible.

As ever our season will be starting with diving from our base in Oban from March onwards with some specific exploration of the Falls of Lora then moving into our Seal & lagoon tours from April onwards.

Into June we have our Hebrides wildlife tours then onto our busy shark season Jul-Oct.

We're excited to running a freedive specific tour around the Hebrides this year at the end of August. We hope to visit some of our favourite spots around the islands and have some memorable interactions with wildlife. Seals, sharks, caves, drifts, clear water, shipwrecks and some yoga thrown in! If you are into free diving, or just advanced



snorkelling then this is a trip not to be missed.

www.baskingsharkscotland.co.uk

www.uwpmag.com

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DRAMA UNFOLDS.

NANUQ WAS RIPPED FROM HIS FAMILY MEMBERS AND FORCED TO LIVE IN A TANK WITH TWO CAPTIVE-BORN BELUGAS WHOM HE DID NOT KNOW. IN FEBRUARY 2015, NANUQ WAS ATTACKED BY THESE TWO BELUGAS. TRAPPED AND UNABLE TO ESCAPE, NANUQ DIED A SLOW DEATH FROM HIS INJURIES.

www.seashepherdglobal.org



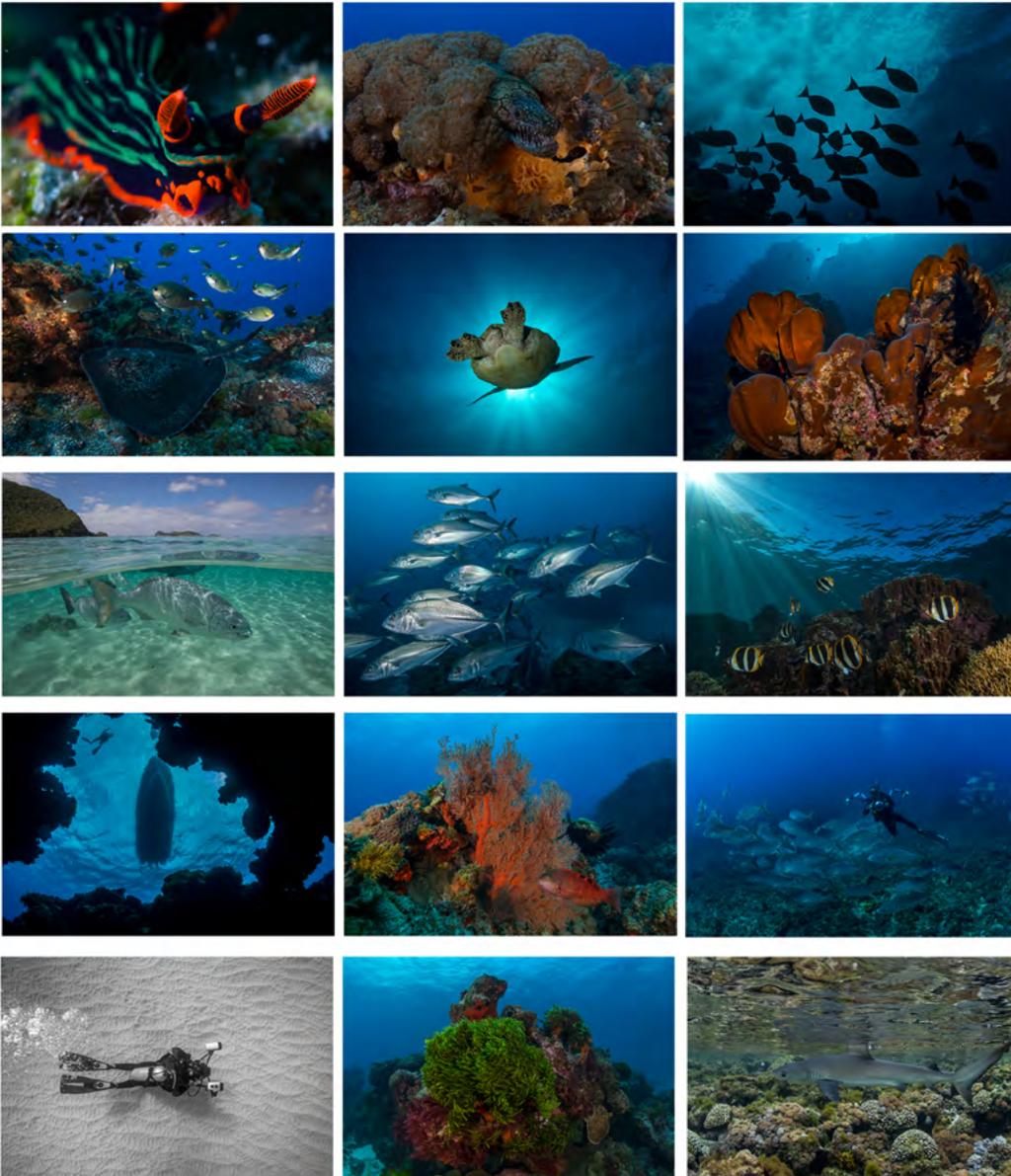
CAPTIVITY KILLS. STOP SUPPORTING MARINE PARKS.

June 2nd - 11th 2017 **PRO DIVE**
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Lord Howe Island Underwater Photo Shootout **WIN Amazing Prizes!**

Attend Photo Workshops, Awards Ceremony and Gala Dinner
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Categories for Amateurs & Professionals

www.scottportelli.com/toursexpeditions/lord-howe-island-shootout/



The Shootout Returns It's back and it is serious...

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Dive Resort
DiveGulen.com



Lembbeh Resort
DIVE RESORT & SPA

critters@Lembbeh Resort

During the 2016 Lembbeh vs Gulen shootout, two teams did battle to decide which would be champion. After an intense battle and by a narrow margin, Lembbeh eventually proved victorious.

In 2018, round two commences. From 15 to 23 June, two teams of photographers will again gather at Gulen Diver Resort, Norway and Lembbeh Resort, Indonesia to compete for individual and team glory. Guided and mentored by professional and acclaimed underwater photographers, the teams will strive to produce amazing imagery in a series of categories.

The quality of images that were produced by the teams in 2016 under

contest conditions is a true tribute to their abilities. The 2018 Shootout will provide the same challenges and an opportunities for all photographers to show their mettle. Join a team and help decide which will be the winner!

Contact Gulen Dive Resort or Lembbeh Resort for more details of diving and accommodation packages for the Shootout.

The event will be featured in local and international media and the subject of follow up articles in the diving and mainstream press.

www.gulendiveresort.com

www.lembbehresort.com

www.uwpmag.com




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New Products

Nauticam NA-EM1II housing for the Olympus E-M1 II



Compared to the previous E-M1, and all other Olympus Micro Four Thirds cameras, the E-M1 II is an improvement in every way. The new 20MP Live MOS sensor provides a useful bump in resolution. Dual quad core processors combine to allow 60 fps burst shooting (18 fps with autofocus). An incredibly advanced autofocus system (121 focus points covering 75-80% of the frame) grabs subjects instantly without hunting, and doesn't let go when tracking.

A camera of this caliber deserves an exceptional underwater housing. Five and a half years ago, Nauticam entered the Micro Four Thirds underwater housing segment. 17 housing models later,



Nauticam is proud to have produced more mirrorless underwater camera housings than any other manufacturer. The Nauticam NA-EM1II isn't a new design, it is a refinement of the housings that have come previously. The system is field tested, and underwater photographer approved.

The housing is small, but not at the expense of functionality or ergonomics. Integrated handles provide a sturdy and comfortable base to operate the system from. An ergonomic shutter release lever, thumb lever for AE-L / AF-L, and

well placed control dials provide the same operational feel as any Nauticam DSLR housing. Control buttons are placed within easy reach of the handles, with sufficient spacing to allow easy operation, even by feel. The ergonomic experience of this system is clearly influenced by Nauticam DSLR systems, with class leading control access and feel.

www.nauticam.com



Coming soon!
Underwater Housing for the Sony α 6500
APSO-A6500

ZEISS 50mm Macro, 12mm Wide and 16-70mm that are suitable for high image camera were added.



<http://acquapazza.jp/en>

Nauticam
innovation underwater



Compact Macro Converter 2

>>>>>>>>>>

CMC-2 is a new macro lens designed to stand alongside the previous CMC-1, offering a less powerful lens choice for "larger" macro subjects that is noticeably easier to use

Nauticam 蓝天海

www.nauticam.cn

CineBags protective port cases



After an incredibly successful launch of the CineBags CB70 Square Grouper at the 2016 DEMA in Las Vegas, CineBags Underwater is proud to release their new line of protective port cases. Designed to protect and transport precious underwater ports, the cases come in four sizes to accommodate the most commonly used ports for underwater photography.

The Port cases features:

- heavy duty waterproof tarpaulin fabric
- padded sidewalls
- oversized zippers
- mesh pouch for accessories
- mesh pouch to store port covers
- CineBags zipper pulls

- neoprene carry handle

The port cases are designed to protect and transport your jumbo dome port, fisheye port, macro port and medium sized dome ports.

- CB71 Jumbo Dome port case
- CB72 Macro port case
- CB73 Fisheye port case
- CB74 Dome port case

CineBags protective port cases and the CB70 Square Grouper are available through a selective network of professional underwater photography dealers and through

www.cinebagsunderwater.com

ACQUAPAZZA

APSO-A72D

Underwater Housing for the Sony ILCE-7M2/7RM2

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NEW MDX HOUSINGS



NIKON MDX-D500



CANON MDX-80D



SONY MDX-α6300

WWW.SEA-SEA.COM
SEA&SEA
THE UNDERWATER IMAGING COMPANY

Ikelite housing for Panasonic GH5



- Perfect for any wet environment including surf, dive, and pool use
- Supremely functional for maximum creative control—access is provided for all important camera functions
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- Extra-large, soft touch zoom knob; Zoom is accessible for many lenses using our unique universal zoom gear system
- Vacuum valve included; Test your system after assembly prior to entering the water; Pump sold separately
- Included Ikelite ICS-5 bulkhead connector with manual hotshoe for reliable electrical triggering of underwater strobes; Optional TTL circuitry provides automatic exposure with compatible Ikelite DS strobes
- Control symbols are laser etched into the back and will never fade or rub off

- Quick install camera mount plate does not need to be removed for battery or memory card access
- One spare 1/2-20 threaded accessory port locations on the front of the housing for the addition of optional accessories
- Includes a balanced aluminum base with left-hand quick release handle; Right-hand handle sold separately
- Signature open-groove design suspends the rear o-ring in a natural position that is easier to maintain and more reliable than forcing the o-ring into a channel
- ABS-PC and Lexan construction is fundamentally corrosion-resistant
- Made in the USA; Individually inspected for fit and water pressure tested to depth
- 200' (60m) depth rating
- 1 year limited warranty

www.ikelite.com



Nauticam NA-RX100IV for Sony RX100 IV



“Amazing 4K Compact”

With the ability to shoot stunning 4K video and 20mp stills, this camera and housing package offers image quality approaching that of an SLR system with the size and convenience of a compact. Controls are simple, but well thought out with easy to access push buttons. Dual command dials immediately access frequently used manual settings like Manual Focus, F-Stop, and Shutter Speed. The addition of excellent wet lens options make for one versatile, powerful, compact package.

www.reefphoto.com

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Sea & Sea MDX-D500 for Nikon D500



The dimensions are almost the same as those of the MDX-D810. However, the MDX-D500 is approx. 400g / 14.1 oz. lighter than the MDX-D810. The underwater weight has improved due to a more precise machining method.

Important controls such as Info, ISO and FN have been positioned on the right and left sides of the housing making it easily accessible while holding the grips. Playback and enlargement of the focal point are achieved with one lever action.

In AF mode, the AF lock lever may be easily activated, allowing for focus lock by pressing just one lever.

By attaching the VF180 (#46112) or the VF45 prism viewfinders (#46111) (magnification ratio of 1.2x) to the housing, the magnification increases by 1.2x and entire field of view can be seen at the same time. These are recommended for users committed to strict composition and focusing.

The housing has high-quality luminescent stickers. Controls will glow in low light conditions. The main command dial is located on the right-hand side of the housing. The sub-command dial is also located close to the shutter release lever, allowing for easy access of both controls.

The camera's diopter adjustment dial can be operated from the housing. This feature is effective when two or more people (with different eyesight) use the housing.

When the focus/zoom dial is pulled out, the gear inside the housing will move outward allowing for lenses with large diameters to be easily mounted.

Depth rating: 100m / 330ft

www.sea-sea.com



Nauticam NA-D500 for Nikon D500



"A New Era"

With 153 focus points and 10 fps continuous shooting, there has never been a Nikon DX camera with the level of autofocus and continuous shooting capability as the Nikon D500—not to mention the revolutionary addition of 4K UHD video. This extraordinary camera demands an equally impressive housing, and the Nauticam design team has left no detail overlooked. In addition to the superior ergonomics for which Nauticam is renowned, each NA-D500 comes with an installed manual optical flash trigger—standard!

www.reefphoto.com



Underwater Camera Housing for SONY RX100 M5
APSO-RX100M5D

A compact digital camera
also go to the depth 200m
656 ft!



<http://acquapazza.jp/en>

Isotta housings & accessories from Backscatter



Backscatter is now the premiere global dealer for Isotta housings!

The Isotta family has been making underwater imaging equipment since 1980 and they offer housings for everything from GoPro, compact point-and-shoot, mirrorless, and SLR cameras.

These housings are made of machined aluminum and sit at an entry-level price just above most polycarbonate housings, but less expensive than other aluminum housings making them a great solution for many underwater shooters. Plus, the red aluminum looks super cool!

Isotta designs their housings with simplicity and durability in mind. Our favorite thing about them is that you only need a set of metric allen keys

to adjust any control on the housing. Everything is designed to be field-serviceable and easily repaired no matter where you are in the world. The controls are all clearly labeled with engraved designations, so they will never fade or wash off like a decal.

You can use either fiber optic or Nikonos-style strobe connectors. They even have integrated LED flash triggers in the strobe connection assembly, which gives you the rapid fire of an electronic connection, with the convenience of fiber optics.

We're super excited to welcome Isotta to the Backscatter family, and we hope you are too. Stay tuned for more camera and housing specific videos!

www.backscatter.com

FROM POINT & SHOOT TO PROFESSIONAL



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Nauticam NA-A6500 for the Sony a6500



Sony a6500 is the latest high performance mirrorless interchangeable lens camera placed in the Sony E Mount lineup. Similar in size to many compact cameras, the a6500 body surrounds a large APS-C image sensor with fast and accurate autofocus performance.

The a6500 is an incredible camera for underwater imaging (both stills and motion) when paired with the ergonomic, rugged, and down right good looking Nauticam housing. The combo excels at fast action still photo shooting, 4K video, and everything in between.

Nauticam is known for ergonomics, and an unmatched experience. Key controls are placed at the photographer's fingertips. The housing and accessories are light weight, and easy to assemble. The camera drops in without any control

presetting, and lens port changes are effortless.

NA-A6500 features an integrated handle system. This ergonomic style is well proven on the full frame NA-A7 and NA-A7II housings for Sony Full Frame (FE) cameras. Exceptional control access, even with thick gloves, and ideal placement of the shutter release and AE-L / AF-L buttons at the right handle.

Nauticam build quality is well known by underwater photographers around the globe. The housing is machined from a solid block of aluminum, then hard anodized making it impervious to salt water corrosion. Marine grade stainless and plastic parts complete the housing, and it is backed by a two year warranty against manufacturing defects.

www.nauticam.com

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AUDIBLE CONFIRMATION**

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With ultra-fast auto focus and shutter response, you'll never miss a shot with the DC2000. Take control of your creativity by selecting from the 8 shooting modes: manual, aperture, underwater, shutter, program, intelligent auto, land, and panorama. JPEG and RAW imaging formats are available, providing you with nearly endless photo editing options.

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www.sealife-cameras.com

MUVI K Action cam



The MUVI K-Series has a new smaller & sleeker form factor which makes this camera even more versatile than the previous MUVI HD models. Measuring only 6cm x 4cm x 2.3cm (2.7in x 2in x 1in) the K-Series is the smallest high definition MUVI yet, meaning handsfree video capture is easier than ever before.

The MUVI K2 records high definition 1080p video at 60 FPS as well as 720p at 120 FPS.

The K2 captures stills at 8, 12 and 16 megapixel, and now comes equipped with photo burst mode that allows you to take up to 10 photos per second, which is perfect for trying to achieve the perfect action shot.

www.camerasunderwater.co.uk



NA-5DIV Housing for Canon 5DIV Camera



Hugyfot HFC-5D MkIV housing Canon 5DMkIV



The HFC-5D MkIV housing is machined out of a solid block AlMgSi1 high strength aluminum. Each housing is sanded by hand, sandblasted and finished with a hard anodisation and Teflon coating. The housing is pressure rated to 100m.

All Canon 5D MkIV camera controls can be accessed (on/off, shutter release, shutter speed, aperture, program dial, main dial, push buttons, lens release).

Subal XT2 for Fujifilm X-T2



The Subal XT2 housing for the Fujifilm X-T2 provides access to all camera functions. Maximum depth: 80 m, 120m (Optional) Weight: approx. 1,5 kg (w/o port and handles) Weight in water: nearly neutral (depending on the port and accessories) Dome port and accessories shown on picture not included.

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Underwater Camera Housing for
SIGMA dp00, dp10, dp20, dp30



<http://acquapazza.jp/en>

Subal GoPro HERO 5



Subal has announced a new housing for the GoPro HERO 5. Constructed of aluminum, it numerous mounting options and a depth rating of 300m (985 feet. It can be equipped with an adaptor that allows it to be used with Subal dome ports.

The Subal GO 5 will retail at €599

www.subal.com

INON UCL-67 M67/UCL-67 LD Close-up Lens

INON INC. have released two high-power underwater close-up lenses UCL-67 M67 (screw mount type) / UCL-67 LD (28LD compatible bayonet type) and their optional accessories. The UCL-67 series is designed best suited with 60mm-100mm macro lens for full-frame digital SLR delivering ultra high magnification yet high image quality and comfortable working distance for lighting.

www.inon.co.jp

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The UWL-09F wet wide angle lens provides an exceptionally wide field of view and a zero minimal focus distance, which allows capturing breathtaking wide angle and close-focus images that are super sharp corner-to-corner and great on the details.

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The lens mounts on the housing lens port and can be installed and removed during the course of the dive. It can be mounted on 67mm threaded lens ports and other dimensions by using an adaptor.

www.fantasea.com

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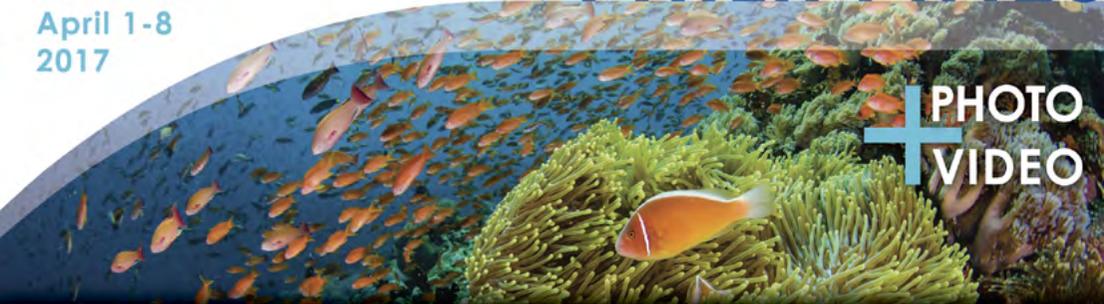


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Acquapazza APSO-A6500 housing for the Sony A6500

Japanese housing manufacturer Acquapazza are developing the APSO-A6500 housing for the Sony A6500.

The machined aluminium housing will come with a slanted rear cover as standard to incorporate the camera's tilting. The housing will have double O ring main seals.

When desorbing from a housing the camera to which 90mm Macro, ZEISS Tounit 2.8/12 were attached, even if you do not remove a port and a lens, you are possible!

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8mm diameter buttons are used for the push controls and the housing is available with the choice of 15 ports.



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Your SEACAM silver is only as good as the use you can make of it. Cameras and housings often feature technical possibilities that are seldomly used efficiently. For this reason we offer interesting work-shops and photo travels all over the world so you can further develop and deepen your skills in underwater photography. Our master photographers are happy to assist you.

www.seacam.com

Olympus TG-Tracker Lighting Package

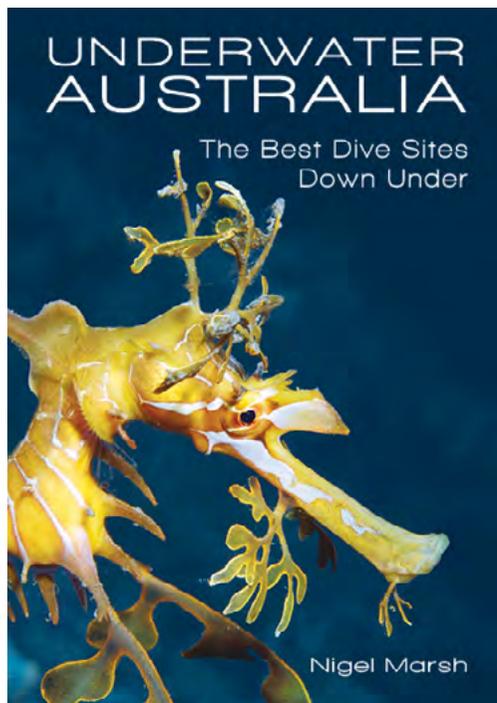


Everything you need to shoot 4K underwater video! This great video package is based around the new Olympus TG Tracker video camera good to 100' - without a housing!. It has amazing capabilities to document your dives as well. The package takes the TG Tracker one better underwater with a small Ikelite tray and handle with 2, bright 1000 lumen, i-Torch lights on quality flex arms.

The pocket-sized TG-Tracker records Ultra HD 4K video using advanced Olympus optics. Take it places you wouldn't dare take most cameras. Drop it, freeze it, submerge it, and it will just keep shooting – even 100 ft (30 m) underwater, no protective housing required. Handy extras like the LED headlight and the tilt-out monitor help you nail difficult shots. Use the built-in Action Track Sensors, GPS, and Wi-Fi to record and share every awesome moment.

www.opticaloceansales.com

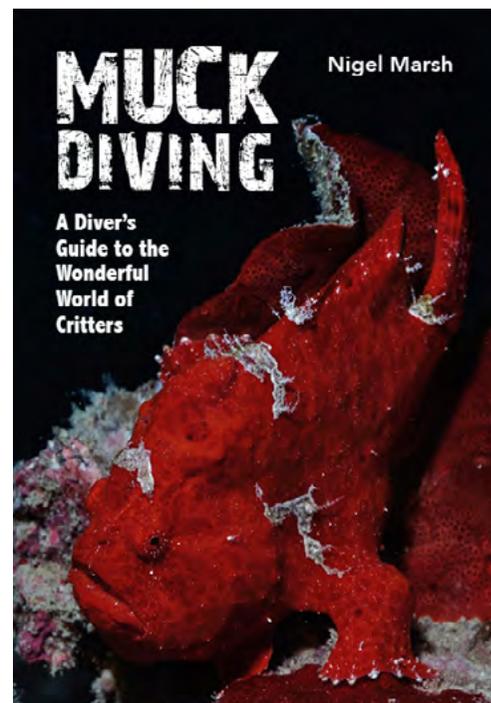
Two new Dive Guide Books from Nigel Marsh



One of Australia's leading underwater photojournalists, Nigel Marsh, has just completed work on two new dive guide books which are available in book shops now. The first is a comprehensive guide to diving in Australia called Underwater Australia and the second is the world's first guide to muck diving, simply titled Muck Diving.

Underwater Australia

Australia is blessed with one of the most diverse marine ecosystems in the world. From its tropical north to its cool temperate waters, it is truly a



diver's paradise. Down Under, divers can explore amazing coral reefs, shipwrecks, walls, pinnacles, artificial reefs, kelp forests, sponge gardens and even muck sites. Australia is also a destination where divers can encounter many wonderful endemic species seen nowhere else in the world, such as colourful seadragons, giant cuttlefish, bizarre handfish and camouflaged wobbegong sharks.

The new book Underwater Australia is a complete guide book for the diver who wants to explore the best dive sites Down Under and also encounter the unique marine

life found around this island nation. The 368 page guide book has a recommended retail price of \$A35.

Muck Diving

The oceans are full of fascinating environments - coral reefs, rocky pinnacles, caves, walls, shipwrecks and artificial reefs. But over the last two decades more and more divers have been attracted to a very different marine environment that has proved to be very rewarding - muck!

Muck diving is the exploration of sandy, silty or muddy sea floors, which might not sound very exciting but they are home to an incredible range of extraordinary critters that are not seen elsewhere in the marine world.

Full of magnificent pictures of weird and wonderful critters, this book looks at different muck environments and includes a comprehensive guide to the best muck diving sites in the Indo-Pacific region. The 352 page book has a recommended retail price of \$A29.99.

Both books are published by New Holland Publishers and are available at book shops in Australia, New Zealand and the United Kingdom. E-book editions will be available by the middle of the year.

www.nigelmarshphotography.com

Underwater Photographer of the Year 2017



Winner
'Dancing Octopus'
Gabriel Barathieu (France)

In the lagoon of Mayotte, during spring low tides, there is very little water on the flats. Only 30 cm in fact. That's when I took this picture. I had to get as close as possible to the dome to create this effect. The 14 mm is an ultra wide angle lens with very good close focus which gives this effect of great size. The octopus appears larger, and the height of water also. Also, I didn't need flash because I had lots of natural light.

Lagoon of Mayotte, Mayotte Island,
Indian Ocean

Canon 5ds, Subal housing, Canon
14 mm f2.8 II, iso 100, f/16, 1/125,
Natural light

Judges notes:

Both balletic and malevolent, this image shows that the octopus means business as it hunts in a shallow lagoon. The way it moves is so different from any predator on land, this truly could be an alien from another world. A truly memorable creature, beautifully photographed.

Alex Mustard

Judges notes:

Vibrant, contrasting colours, detailed delicate textures and a perfect pose. Add the right choice of lens for the situation and they all combine to produce a Champion.

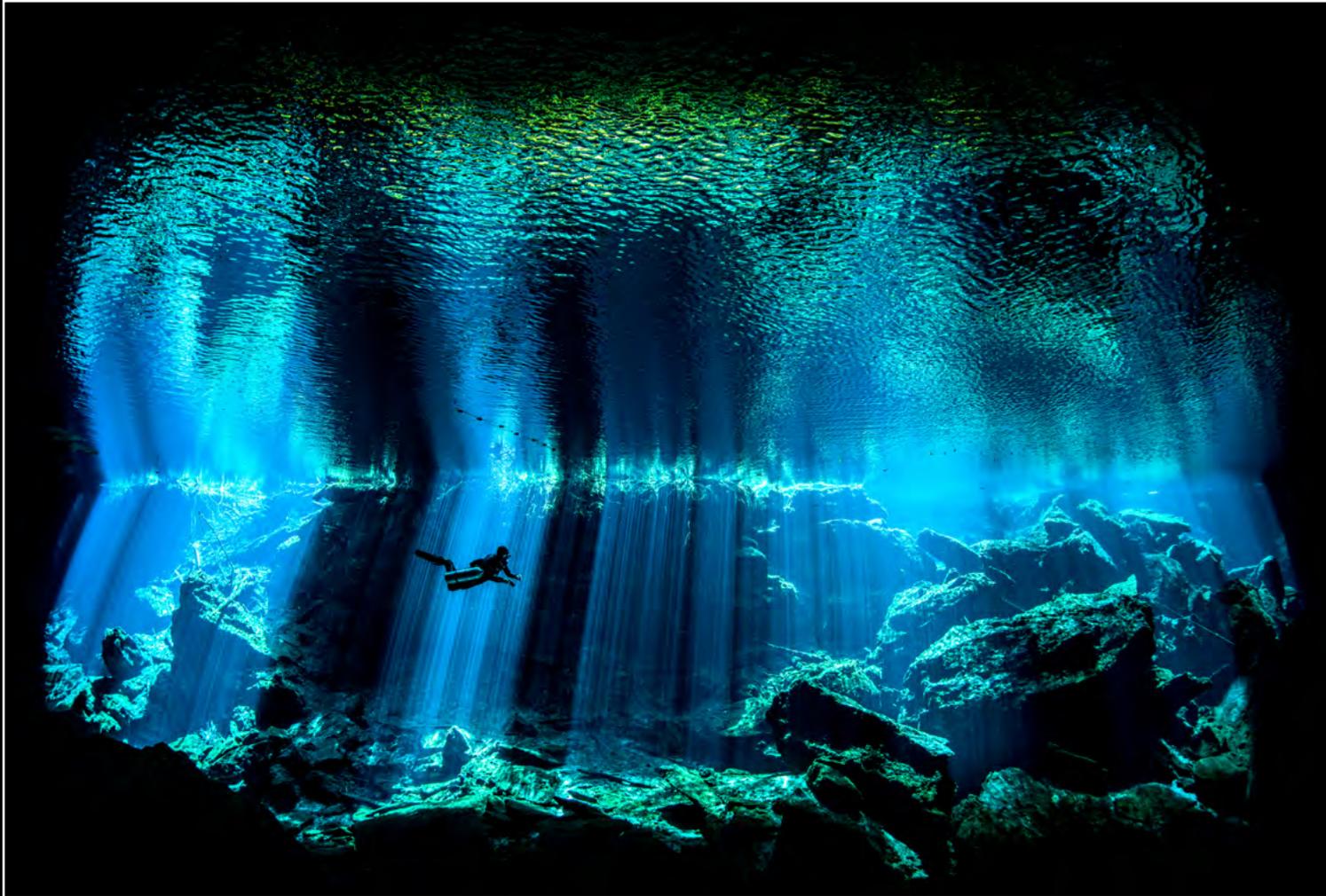
Peter Rowlands

Judges notes:

I cannot praise this photograph enough. As soon as I first set eyes on it as we worked our way through the Wide Angle Category, I knew it was destined for a huge success. One amazing image!

Martin Edge

British Underwater Photographer of the Year 2017



Winner
'Out of the Blue'
Nick Blake (UK)

Kukulcan Cenote on Mexico's Yucatan Peninsula forms part of the Chac Mool system and is noted for the spectacular light effects as the sun penetrates the darkness. I left my strobes behind for the natural light shot I wanted and positioned myself in the shadows of the cavern. Moving my eye around the viewfinder, I could see that the rock outline of the cavern around me made for a pleasing symmetry and I adjusted my position to balance the frame. The light show flickered on and off as the sun was periodically covered by cloud and as it reappeared, I beckoned to my buddy and dive guide, Andrea Costanza of ProDive, to edge into the illumination of some of the stronger beams, completing the composition. My journey from diver to underwater photographer has brought many amazing photographic opportunities and I feel humbled and privileged that this image has achieved such recognition.

Kukulcan Cenote, Yucatan, Mexico
Nikon D810, Sea & Sea MDX
housing, Sigma 15mm Fisheye, iso 400,
f/6.3, 1/60, Natural light

Judges notes:

What I really like about this image is the enclosure of the light within the Cenote. The author has contained all the sunlight so the eye of the viewer cannot escape. The lone diver is positioned within the beams and I do believe that the author meant for this to happen. Stunning natural light wide-angle!

Martin Edge

Up and coming Underwater Photographer of the Year 2017

Winner

'Oceanic in the Sky'

Horacio Martinez (Argentina)

This was my first Red Sea experience, and my first liveaboard-based photo workshop, so everything was interesting... but arduous. We were on the last dive of the day and I ventured a tad deeper to get closer portraits of the Oceanic White Tips, when I noticed this shark patrolling in the distance. I took a few shots to expose for the sun beams and the surface, and was pleased by the dreamlike effect. Oceanics are great subjects for close ups as they are anything but shy. Yet, every now and then it is great to try and capture their apparent loneliness, their wandering, and their independence in the big blue.

The Brothers, Egypt

Nikon D810, Nauticam housing,

Nikon 14-24 @24mm, iso 400, f/14, 1/200,
S&S YSD1

Judges notes:

There was a lot of competitive images in this category, as you would expect, but this one was a serious contender right from the start. The photographer has 'seen' the light and realised its dramatic effect extremely well and used it to contrast the small shark in a big, blue, lonely world. Very evocative indeed.

Peter Rowlands



Most Promising British Underwater Photographer of the Year 2017



Winner

'Orca Pod'

Nicholai Georgiou (UK)

Orcas are easily the most beautiful, intelligent and confident animals I've ever had the honor of spending time with. This photo was taken during an amazing week freediving with wild Orca in Norway. The days are quite short in winter and the water was around 5 degrees but we wore a thick wetsuit and of course with Orca around, the cold was quickly forgotten. The light had a really nice colour from the setting sun as this graceful pod of Orca swam by nice and close. It was a moment which will be hard to top and I'm glad to have this image to share it.

Tromso, Norway

Nikon D750, Ikelite housing, Sigma 15mm 2.8 Fisheye, iso 1600, f/4.5, 1/160, Natural Light

Judges notes:

Most underwater photographers would be happy to get a shot of a single killer whale in its environment but Nicholai had the composure not to panic and time the shot perfectly as a pod of killer whales passed by heading into the setting sun. I'm jealous.

Peter Rowlands



i) Wide Angle

Highly commended
'Frozen Hunting'
Fabrice Guerin (France)

The weather was cloudy and the temperature of water was 2°C. Orcas push fish towards the shore as this makes them easier to catch. Our boat captain stopped near a school of herring. When I was in the water, I saw that it was not deep, so it presented an opportunity to photograph with the light being reflected off the sand. I waited for 20 minutes in front of shoal of herring hoping to see an orca. Suddenly a humpback whale appeared. What a surprise!! It was an amazing cold water encounter!

Andenes, Norway

Canon 5D mark III, Aquatica housing,
Canon EF 16-35 mm f/4 L IS USM , iso
3200, f/4, 1/160

Judges notes:

A stunning behavioural image of a humpback in shallow water scattering herring taken in very tough conditions. The photographer did very well in very dark waters to record this breath-taking scene sharply.

Alex Mustard

2) Macro

Winner

'Prey?'

So Yat Wai (Hong Kong)

This photo was shot during a blackwater dive in Anilao. Even though the larvae mantis shrimp (left) is very small, it still a predator which uses its raptorial appendages to hunt. Has it spotted the prey and is ready to pounce?

Anilao, Philippine

Canon 5D MkIII, Sea & Sea housing,
100 mm, iso 400, f//20, 1/200, Inon Z240 x 2

Judges notes:

This shot works on so many levels; like a Sci Fi encounter in outer space, the fortuitous (for once) backscatter creates a perfect starry background which makes the main subject seem huge and menacing. Perfect composition leaves you in no doubt and you can only fear for the 'little fella' on the right.

Peter Rowlands



2) Macro

Commended
'Larval Lionfish'
Steven Kovacs (USA)



This image was taken on a black water drift dive in Palm Beach, Florida to look for alien looking pelagic animals, plankton and the larval stages of many creatures that drift out in the open ocean in their early stages of development. Many of the animals seen during black water dives are very small and can move quickly when illuminated by powerful dive lights, so getting a nice image is, not only challenging but, very rewarding as well. On one particular dive I was very fortunate to come across this rare tiny Lionfish in its early larval stage and was fortunate to get a photograph of it just as it flared it's beautiful fins for the camera.

Palm Beach, Florida, USA.

Nikon D7000, Ikelite, 60mm macro, iso 250, f/29, 1/250, 2 x Ikelite DS160 strobes

Judges notes:

Judging is a very subjective process and as I write this caption some two weeks after the judging I can't help but feel that I should have fought more for this exquisite image to be pushed a little higher up the order.

Peter Rowlands

3) Wrecks

Commended
'Last Flight'
Steve Jones (UK)

This USAAF B-17G Flying Fortress crash landed on approach to the island of Vis, Croatia after being hit by anti-aircraft fire during a bombing raid over Europe in 1944. This spectacular wreck is in remarkable condition and lies at 72 metres. I only had one dive on the wreck and the depth gave me very limited time in which to work so good communication between myself and my buddy, Andi Marovic was essential: I thoroughly briefed him on what I was trying to achieve before the dive so he could also visualise the image I was aiming for. I wanted to capture an image that showed the true scale of the aircraft so I shot with natural light and colour balanced the image during post processing.

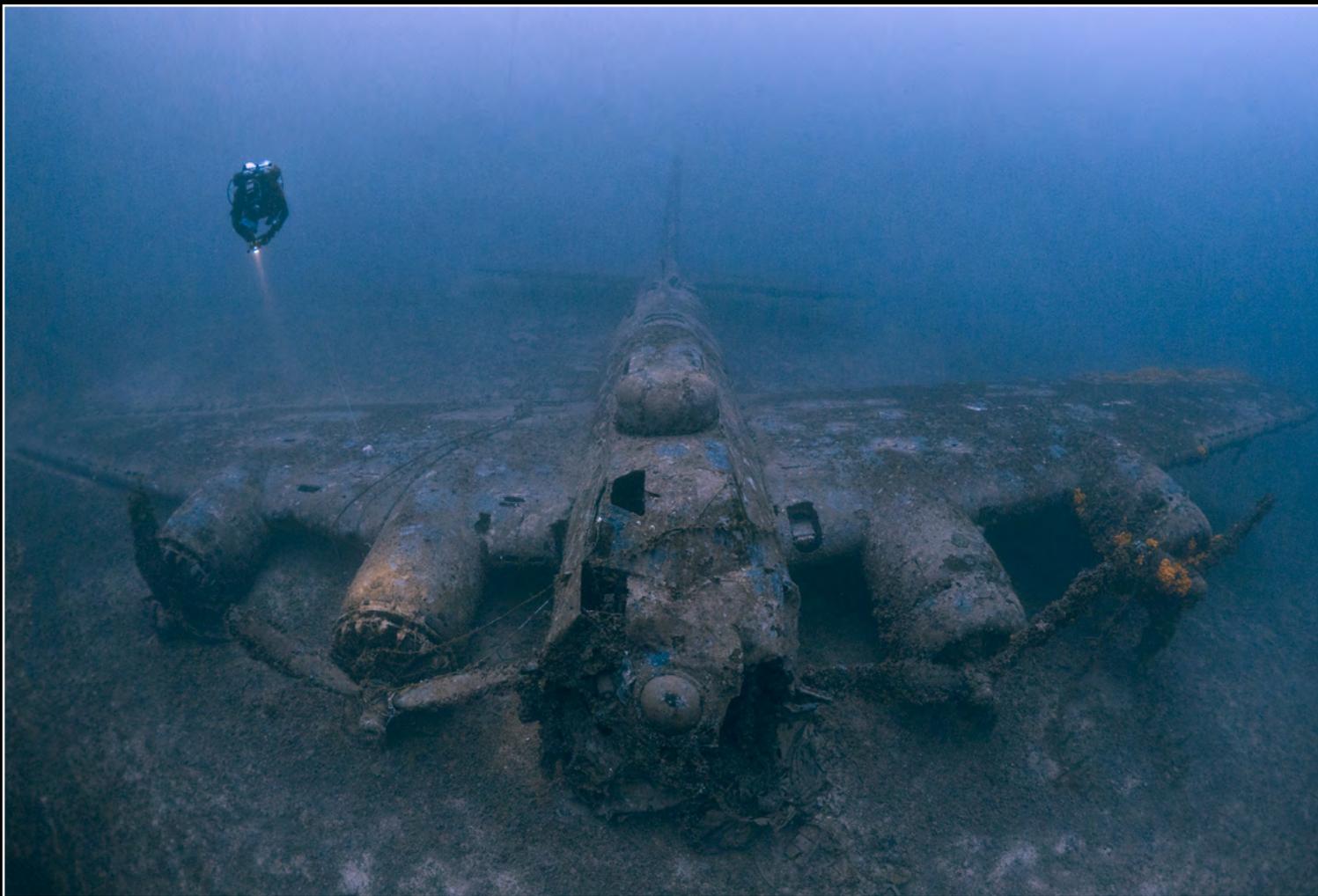
Vis Island, Croatia

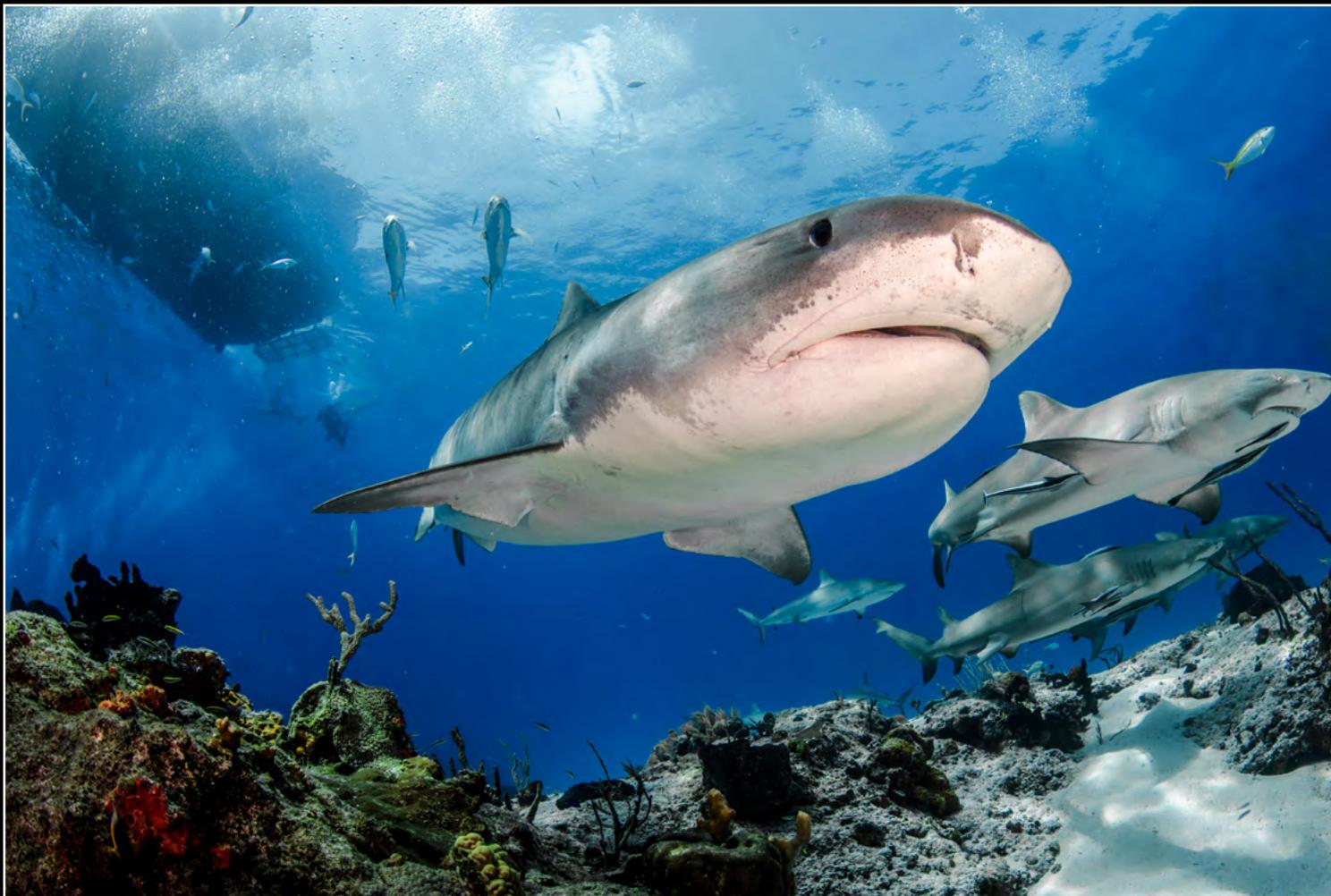
Nikon, D4 Seacam housing, Nikon 13mm RS, iso 3200, f/5, 1/80, natural light

Judges notes:

I still can't believe I had to fight the other judges to keep this shot in the top 10. OK, the standard of images in this category was extremely high but I found this to be such a powerful shot yet so simple in its execution. As is often the case where another diver is included for scale, a significant part of the credit should also go to them for their contribution to the composition.

Peter Rowlands





7) Up & Coming

Highly commended
'Tiger Beach'
Dave Baker (UK)

Fed up with getting fleeting glances of sharks and then seeing them disappear into the depths I decided to take a trip to Tiger beach in order to get up close to these magnificent creatures. I wasn't disappointed. I tried to capture as much of the experience as I could in one shot so positioned myself behind some coral with the boat on the surface. It was then a case of waiting for the Sharks to swim over with the added bonus of a diver descending from the boat as well

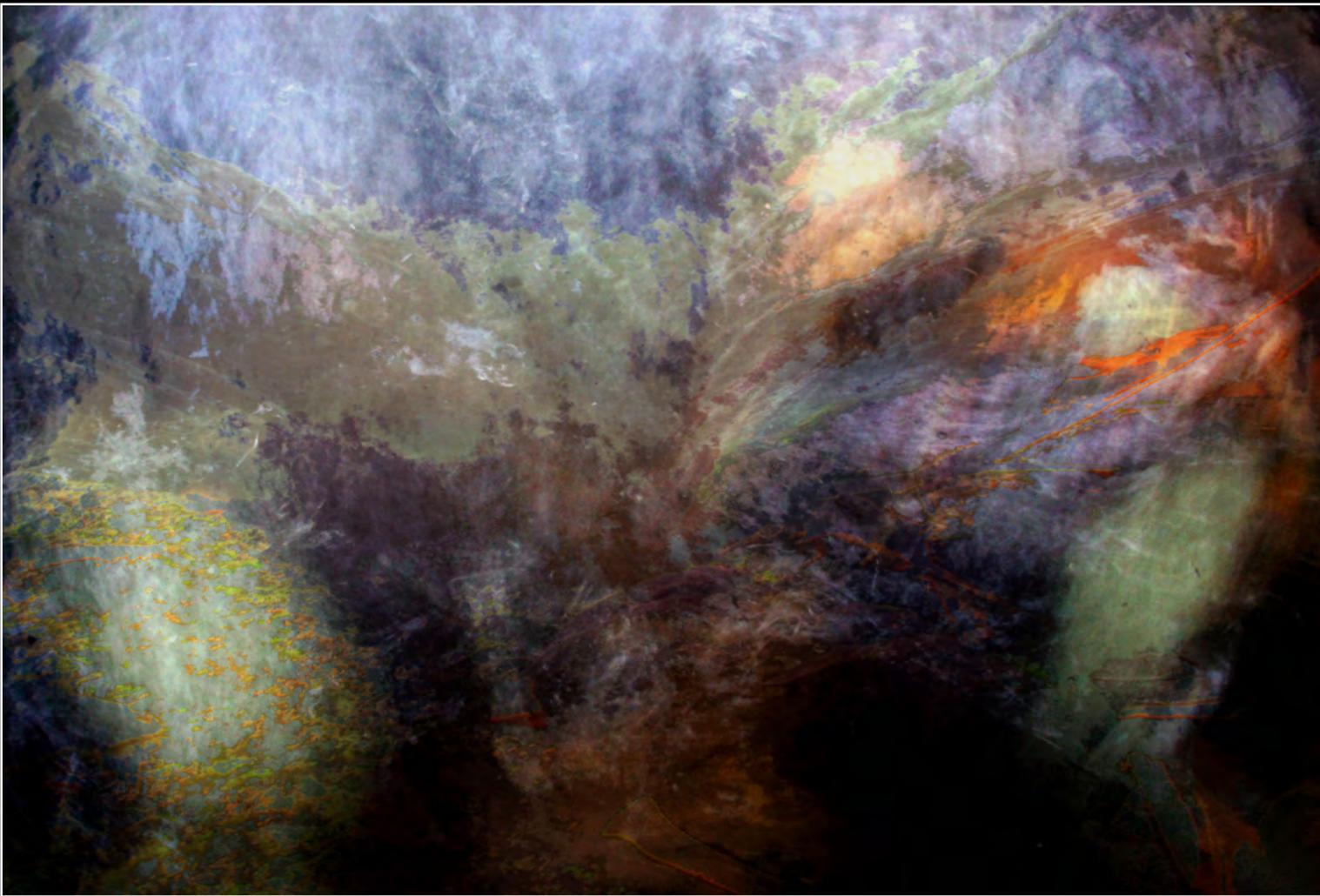
Tiger Beach, Bahamas
Nikon D7000, Sea and Sea housing,
Tokina 10-17, iso 100, f/9, 1/125, 2 x Inon 240

Judges notes:

With three species of sharks, including a huge tiger shark, all in formation, this is an easy shot to appreciate.

Alex Mustard

8) British Waters Wide Angle



Highly commended
'Tumbling Autumn Leaves'
Dave Peake (UK)

This image was taken in Dartmoor National Park, UK with the aim of capturing some underwater movement. Autumn in the rivers and streams can be very colourful with fallen leaves tumbling along. Depending on the speed of the flow I have experimented with various apertures and shutter speeds and each image can be totally different. The colours and artistic shapes have inspired me and they appear at times to be like an oil painting or better still a 'Water Colour'. The camera can be on a small tripod or held as still as possible just under the interface of water and air and a slow shutter speed used. I am fortunate to live near the National Park and when sea conditions are not good this is where I retreat and experiment.

Sheepstor Brook, Dartmoor National Park, UK

Sony NEX 5, Nauticam housing,
16mm plus fish eye attachment., iso 200,
F22, 1.6 s, Natural Light

Judges notes:

A very imaginative and beautifully balanced image. A favourite with all the judges. Groundbreaking work.

Alex Mustard

Ocean Art Winners 2016

The prestigious Ocean Art Underwater Photo Competition, organized by the Underwater Photography Guide, has announced the 2016 winners.

The 6th annual competition attracted a very high caliber of photos from waters around the world and showcases the best underwater photographs of the year.

The Best of Show is an elegant photo of a dangerous Portuguese Man Of War. Other exceptional images include some out-of-this-world fish

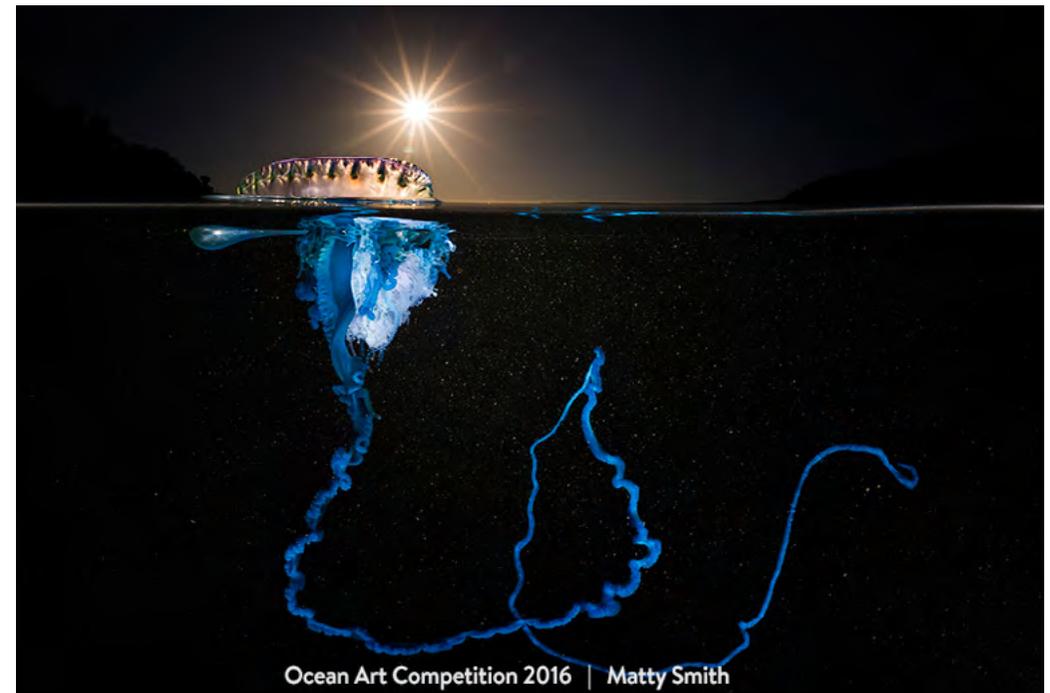
and marine life shots, rarely seen animal behavior, innovative shooting techniques, stunning portraits, sharks, ocean adventure, whales and some dramatic moments between humans and marine life.

The judges evaluated thousands of entries from over 60 countries. Ocean Art 2016 judges included prestigious underwater photographers Tony Wu, Martin Edge and Marty Snyderman, accompanied by Underwater Photography Guide publisher Scott Gietler.



Ocean Art Competition 2016 | Dennis Corpuz

1st Place Macro
Dennis Corpuz "Amazing Squid"



Ocean Art Competition 2016 | Matty Smith

1st Place Wide-Angle and Best of Show 2016
Matty Smith, "Blue Lasso"



Ocean Art Competition 2016 | Tobias Dahlin

1st Place Cold Water
Tobias Dahlin "World of a Pike"

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Olympus E-M1 Mark II and

Nauticam NA-EM1 II

by Phil Rudin

The Olympus E-M1 Mark II has been selected as camera of the year for 2016 by a number well respected reviewing sites and magazines who put far more time into pixel peeping than I do. So up front I would just like to begin by saying that I think the E-M1 Mark II is the best Micro43 camera available and that anyone interested in underwater photography should take a close look at this camera and the excellent Nauticam NA-EM1II housing system.

The E-M1 Mark II completes the hugely successful Olympus OMD series and is a brilliant successor to the E-M1 platform released in 2013.

The E-M1 Mark II is the “Pro” end of the OMD lineup and the new Olympus flagship camera. It directly targets Pros and high end enthusiasts who don't mind shelling out \$1999.00 USD (now \$1799.99 at Amazon USA and others) for a highly capable and very compact camera body.

The Mark II is a compelling choice for DSLR users considering a move to a mirrorless camera system and for Olympus users wishing to move up from the Olympus E-M5 and E-M10 series cameras.

Olympus E-M1 Mark II

This is the first in a series of reviews I will do during the year on Micro43 equipment. What sets the E-M1 Mark II apart from the still very



competitive E-M1 is a virtual laundry list of upgrades to the original.

Olympus has completely outdone itself with a total redesign of the entire camera from top to bottom. This is no incremental upgrade to stimulate new sales, instead the Mark II has exceeded all expectation for both the Olympus faithful and the seasoned reviewing community.

Some of the key upgrades include a new 20MP live MOS sensor, Cinema (DCI) and UHD 4K (237Mbps) video, Micro-HDMI, an insanely weather-sealed and temperature resistant body, a new hybrid 121 point auto focus system, high-res electronic viewfinder, fully articulating 3” LCD screen, 60 FPS burst rate, with mechanical frame rates up to 10 frames per second (18FPS in continuous AF), a new TruePic VIII processor for blazing speed and buffering, Dual card slots for SD/SDHC/and SDXC (top slot for high speed cards), the best in-body image stabilization system made with up to 6.5 stops (6.5 stops with the new Olympus 12-100mm F/4 IS and 300mm F/4 IS lenses with 5.5 stops for native and most non-native lenses), USB-3 (type-C), 50MP high-res shot mode, a larger new battery that extends battery life to new levels for a mirrorless cameras, a refined menu



interface, the ridiculous number of manual controls Olympus users have come to expect and much more.

The E-M1 Mark II is the most programmable camera on the planet with a wide array of buttons, levers and dials for every possible programming need. With the new E-M1 Mark II Olympus has also introduced the excellent new M.Zuiko Digital ED 12-100mm F/4 Pro zoom lens which has turned out to be an incredible travel lens. The new lens follows in the footsteps of the 12-40mm F/2.8 Digital ED PRO introduced with the E-M1 camera and the first of the Olympus M.Zuiko PRO line of lenses. Olympus also introduced the new powerful FL-900R external flash which has a 58m guide number, the new STF-8 macro flash set, the new HLD-9 battery grip and the PT-EP14 underwater housing.

The E-M1 Mark II body is as expensive as many current mid to high end DSLR's. While many DSLR users in the underwater photography community are still be turned off by mirrorless cameras they fully grasp the merits of APS-C over full frame sensor cameras for underwater use. These smaller cameras require smaller housings, smaller lenses, smaller ports and smaller extensions which all add up to a more cost effective and travel

friendly system.

Smaller sensors also increase depth of field and provide better corner sharpness with many wide angle lenses. If you consider the many qualities of the E-M1 Mark II along with the total system cost you have a very compelling case for the Olympus E-M1 Mark II and Nauticam NA-EM1 II combination as your next underwater photo system.

The overall build quality and finish of the E-M1 II all magnesium body is comparable to any of the top \$2000.00 plus PRO cameras bodies. The body has exceptional dust, moisture and freeze resistance along with a larger grip to accommodate the new larger battery compartment.

The E-M1 II while a bit larger than the E-M1(574g v. 497g) is much easier to hold and operate both in and out of the Nauticam housing. Olympus has also reduced the flash sync speed from the 1/320sec found on the E-M1 to 1/250sec.

I have seen a number of rants on the internet over the past three years about poor video implementation on the E-M1. This has all changed with the release of the new E-M1 II and I will be addressing the video features of the camera in a review later in the year. If video is your main interest then you should also be looking at the soon to be released Panasonic GH-5 (at \$1997.99 USD) to compare the

features that may be important for your video needs.

Olympus excellent 5-axis in-body image stabilization system is the best on-sensor stabilization made and it works with any lens including legacy lenses regardless of the type of lens mount. The latest IBIS allows an industry leading 5.5 stops of light with an impressive 6.5 stops using the new Olympus 12-100mm F/4 IS and 300mm F/4 IS Pro lenses. The operational speed of the new E-M1 II is impressive with excellent startup speed and DSLR level shot to shot speeds.

While the E-M1 II can shoot 60 FPS with the electronic shutter and focus locked A more useful speed for U/W photographers would be the continuous autofocus normal mode using the mechanical shutter at 10 FPS. This speed would be more than adequate for fast moving Sailfish attacking a bait-ball.

If you move over to the electronic shutter you get autofocus and autoexposure at up to 18 FPS with less blackout in the EVF all while shooting RAW plus jpeg. if you want. Without the sleep mode turned on or the EVF turned off I have exceeded 1000 images on a single battery charge above water.

The number of M43 lens choices for both land and underwater use is excellent with very high quality



wide angle zooms, primes and macro choices. The E-M1 II also has outstanding overall image quality and high dynamic range surpassing the E-M1 by a noticeable margin with DXO marks in the APS-C sensor range.

Nauticam NA-EM1 II

The new NA-EM1 II housing lives up to Nauticam's commitment to "Innovation Underwater" by refining and improving on its original NA-EM1 housing.

Nauticam has done away with the EM-5/EM5II removable Flex-tray and replaced it with an integrated handle system which fits flush to the bottom much like the DSLR housings. The shutter release and the focus lock can now be accessed with the thumb and forefinger using vertical control triggers rather than the push controls found on many housings. This allows you to hold the housing by the right

hand grip and control both shutter and focus locking while having a firm grip on the housing. I found this feature alone to be worth the cost of upgrading from the E-M5/5II.

The signature Nauticam handles are also reinforced by laser cut stainless steel brackets making the system more sturdy and stable when adding extra lighting. The left hand side of the housing has a rubberized zoom/focus knob which is quite smooth in use and very easy to control while holding the left hand grip. The iconic port locking system that is a hallmark of Nauticam housings incorporates the signature red port locking lever which is synonymous with Nauticam DSLR housings. The lock is on the left hand side of the housing and continues to be both the easiest and most secure port locking system I have ever used.

One thing the Nauticam NA-EM1II housing does not share with

their DSLR housings is the removable back plate and locking system. The NA-EM1 II housing has a clam shell back hinged to the left hand side of the housing it uses the same rotary locking system found on all Nauticam mirrorless camera housing.

The new housing features a locking camera tray which keeps the camera secure and properly aligned while opening the back plate. The locking tray is secured to the bottom of the camera via a tripod screw and helps to protect the LCD screen. To slide the camera tray into place inside the housing lift the on/off control then move the tray locking lever to the unlocked position. Once the camera is installed the lever is moved back into the locked position.

After installing the camera lower the on/off control lever over the top of on/off switch and always keep the camera turned off during this process. Once you cycle through this process a few times removal of the camera becomes very easy. I like this on/off configuration because I know the switch is aligned prior to entering the water.

The NA-EM1 II housing also has two fiber optic bulkheads for triggering up to four optically triggered strobes. Strobes like the Inon Z-240, Inon S-2000, Inon D-2000, Sea & Sea YS-D2, YS-01, Retra Flash and more will all fire using these sync



ports.

Strobes can be fired in TTL or manually without the use of electronic sync cables which are more prone to flooding. Optically fired strobes can be triggered in two ways.

First the Olympus FL-LM3 flash that ships with the camera can be used for both TTL and manual firing. The Olympus FL-LM3 flash uses power from the camera's battery which will slowly deplete the battery during extended use in TTL or manual mode.

In manual mode you can reduce the power output by minus three EV's of light to help reduce battery drain and the external strobes will still fire.

The NA-EM1II housing has an on/off control switch if you have forgotten to turn on the FL-LM3 flash before your dive or you want to quickly turn off your strobes for an A/V light image.

Nauticam also offers the Mini



Flash Trigger (26306) for Olympus which is compatible with NA-EM1II, NA-EM1 and NA-EM5II housings (use the LED assemble marked E-M5 II with the NA-E-M1II housing and do not replace the wedge insert). The upside to Nauticam's \$220.00 USD flash trigger is that it uses two CR2450 batteries which will run a very long time with the super small LED lights. The flash trigger will also work at blazing speeds easily keeping up with the 10 frames per second mechanical shutter speed and perhaps even 18 FPS, not yet tested.

Since strobes like the Inon Z-240 set to lower manual powers can also recycle in the 6 to 10 FPS range with quality batteries the possibilities for high speed flash photography, think the Sailfish are now possible underwater using fiber optics.

The Nauticam flash trigger for Olympus does not work in TTL which may prevent some from wanting to make the investment. After using a Nauticam manual flash trigger with a Sony A7R II underwater system for a



year and a half I will never be without one for my Olympus E-M1 II system.

Going forward I intend to carry the FL-LM3 as a backup when I travel. If you want to hardwire your strobes the NA-EM1II housing has M14 & M16 openings for Nikons and other bulkhead configurations.

Like the Nauticam E-M1 housing the new NA-EM1II housing accommodates an accessory optical view finder. But unlike the older NA-E-M1 housing you do not need to purchase an accessory EVF window to mount the viewfinder. I nitpicked Nauticam about this issue from the release of the NA-EM5 housing and recently sold my EM5 window and 45 degree finder to a friend who could not justify buying a new one.

Nauticam now offers optional 45 degree and 180 degree optical finders in a new configuration to fit all new mirrorless ICL housings. They have the same diopter adjustment

as the DSLR finders and same superior optical quality. I use the 45 degree finder for all my macro and super macro work especially with high power closeup lenses like the Nauticam CMC-1.

After years of use I have become spoiled and would not want to go back to the pickup finder which ships with the housing. For those who have never used a 45 degree finder expect a learning curve of 10 to 20 dives. For fast moving subjects and wide angle scenes the 180 degree finder will be the better choice if you are not using very low angles.

The Nauticam NA-EM1 housing was the first to be released with the optional Nauticam vacuum and leak detection electronic installed. Nauticam has updated the optional vacuum value to version II which was introduced in November at the DEMA show in Las Vegas. This optional new valve II has a red push button to release the vacuum when you remove the cap. The M14 opening on the rear door of the housing has been tilted about 20-25 degrees towards the rear of the housing making it much easier to mount the vacuum pump onto the smaller valve II without needing to move clamps, arms and other accessories.

The NA-EM1II housing has a new blue vacuum reset button at the bottom of the port mount which



allows you to reset the vacuum system without opening the rear of the housing. Once you have turned the switch on inside the housing and secured the housing back it does not need to be reopened for reset. This means that if you want to change lenses between dives you can release the vacuum by depressing the valve button, remove the port, reinstall lenses and ports then reset the vacuum system.

Once you have install a new lens & port you can draw the vacuum without ever needing to open the housing back.

With housings like the NA-EM1II and NA-A7II several lenses like the Olympus 7-14mm zoom



need to be mounted from the front of the housing due to the lens & gear diameter. Having the reset button at the port opening will expedite this process, kudos Nauticam for making life a little easier. My review of the original vacuum system is in back issue #76 at UWPMAG.com.

One of the major problems with designing a housing for such a small camera is being able to place the control buttons and dials far enough apart so that you have fingertip control even while wearing heavy gloves. The button control layout for the NA-EM1II housing is quite good allowing me to effortlessly reach all of the controls without having to look at which buttons I am about to push.



The only button on the camera that cannot be accessed is the DOF button on the front of the camera. Because of the large number of function buttons and endless programability of the E-M1II DOF can be easily assigned to a number of other control buttons if needed.

Once you have customized and mastered the button layout you will not find yourself turning the camera off or hitting the video button by mistake. I am still assigning functions but find it is a breeze to reach the controls once you have dived the system a few times. If you have ever used a housing where the control buttons were placed directly over the ones on the camera you will appreciate the time that has been spent ergonomically designing the function buttons for this housing.

All of the current Nauticam N85



The Wetter The Better, Breakers Reef, Palm Beach, Florida, Olympus E-M1 II, Olympus 8mm Fisheye lens, ISO400, F/14, 1/250sec, Nauticam ENA-MIII housing, two Inon Z-240 strobes manual power.

ports for Olympus and Panasonic lenses will fit the new housing along with the some of outstanding ZEN Underwater ports. Olympus old DSLR style threaded ports for the Olympus DSLR lenses are also supported with an optional Nauticam port adapter. New port solutions for lenses like the Olympus 8mm Fisheye, Olympus 7-14mm zoom and 30mm macro are also offered.

At \$1900.00 USD the Nauticam

NA-EM1III housing is a bargain when you consider that it includes the handles, ball-heads for mounting support arms and the Vacuum electronics plus all of the other excellent features.

In the field

For this review I thought I would shoot macro with the new Olympus 30mm F/3.5 macro lens using the Nauticam macro port 45. This new



Polka-Dot Batfish, Blue Heron Bridge, Florida, Olympus E-M1 II, Olympus 30mm macro lens, ISO64, F/9.0, 1/250sec, Nauticam ENA-MIII housing, two Inon Z-240 strobes manual power.

\$300.00 macro lens has great image quality for the price and reaches 1.25:1 (beyond life size) at the quite close minimum focus distance of 9.5mm (3.74”).

I generally find lenses in the 30mm (60mm 35 equivalent) range great for larger closeup/macro subjects and fish portraits. The high magnification and narrow lens to subject distance make using add-on closeup lenses difficult and yield very

little extra magnification.

I will also be using the Olympus 8mm fisheye with a ZEN Underwater 170mm optical glass dome port. This is the port I currently have access to and I will also be testing the Nauticam N85 140mm optical glass fisheye port with the 8mm fisheye and a 17mm extension for a review later in the year.

I currently use two 10” X 2.4” Nauticam float arms and two



Barfish, Blue Heron Bridge, Florida, Olympus E-M1 II, Olympus 30mm macro lens, ISO64, F/9.0, 1/250sec, Nauticam ENA-M1III housing, two Inon Z-240 strobes manual power.

8" double ball arms to mount my lighting. I recommend that everyone try some type of flotation with every housing to offset the weight of the system. When you are on holiday doing multiple dives over several days or weeks the added of flotation will definitely improve your ability to steady your system saving stress to your hands, wrists and forearms.

I use two Inon Z-240 type four strobes fired with fiber optics cords for most of my work. At times I will also use the SAGA optical snoot with one or two Inon Z-240 strobes mounted off camera.

Unlike most of my reviews I had a very limited amount of time with this new system before my review deadline. So this first field section is based on only three dives.

The E-M1 I has the best auto focus system of any Olympus camera I have used to date. It in fact is equal to or exceeds any of the other cameras



Conch Eye, Blue Heron Bridge, Florida, Olympus E-M1 II, Olympus 30mm macro lens, ISO64, F/11, 1/250sec, Nauticam ENA-M1III housing, two Inon Z-240 strobes manual power.

I have tested for UWPMAG. The focus locking trigger allowed for fast and accurate auto focus. I was most impressed with the pin point accuracy of the AF system when I moved the focus points to the extreme corners of the frame. I also find the super screen very easy to control from the OK arrow pad. One push of the OK button opens the super screen allowing access to a larger number of functions that can be changed using the arrow buttons. I also use the arrow buttons to quickly move the five point AF array I have selected around within the frame.

The large, bright and highly detailed EVF allowed me to see fine details as they came into sharp focus and it is easy to enlarge images to check for fine detail. The aperture and shutter speed dials are also very intuitive and easy to use without moving your eye away from the EVF.

Both lenses worked well with the ports I was using. The 30mm macro lacks a bit of the



Nurse Shark, Breakers Reef, Palm Beach, Florida, Olympus E-M1 II, Olympus 8mm Fisheye lens, ISO400, F/11, 1/125sec, Nauticam ENA-M1III housing, two Inon Z-240 strobes manual power.

speed higher cost lenses offer but image quality is excellent for an under \$300.00 macro lens. The 8mm Fisheye was extremely fast and accurate on the E-M1 II and paired with the 170mm ZEN Underwater port image quality was impressive.

If you are looking for an extremely high quality camera and housing system in a relatively small package you should checkout the E-M1 Mark II and Nauticam NA-EM1 II housing at your local retailer.

Special thanks to Nauticam USA and ZEN Underwater for assistance with some of the equipment used for this review. Also thanks to Walker's Dive Charters and the wonderful crew of "The Wetter The Better" for a great day of diving in the Palm Beaches.

Phil Rudin

Don't settle for 2nd best



Film - No Filter No
White Balance



Digital - No Filter Manual
White Balance



Magic Filter Manual
White Balance

Digital cameras have opened up new possibilities to underwater photographers. For available light photography manual white balance is an invaluable tool for restoring colours. But when you use it without a filter you are not making the most of the technique. You're doing all the hard work without reaping the full rewards. These three photos are all taken of the same wreck in the Red Sea. The left hand image was taken on slide film, which rendered the scene completely blue. The middle image is taken with a digital SLR without a filter, using manual white balance. The white balance has brought out some of the colour of the wreck, but it has also sucked all the blue out of the water behind the wreck, making it almost grey. The right hand image is taken with the same digital camera and lens, but this time using an original Magic Filter. The filter attenuates blue light meaning that the colours of the wreck are brought out and it stands out from the background water, which is recorded as an accurate blue.

www.magic-filters.com

Sealife DC2000 camera

by Jussi Hokkanen

American company Sealife, has over the years, offered all sorts of cameras for underwater photographers. They have ranged from a basic all-in-one happy snappy shooter to more “mid-range” camera plus housing packages.

All in all I've never been a big fan of the company's products. Somehow their camera systems have always been sub-standard and when it comes to technical specs, trailed back a few camera generations. It looks like Sealife is now stepping in with a camera that has up-to-date features, at least on paper. The Sealife DC2000 is the latest WiFi-enabled offering from the company that will challenge the major players in the ever narrowing compact camera marketplace.

Unlike the recent built-in Sealife cameras the new DC2000 goes back to the traditional idea of a separate, removable camera inside a housing.

The new camera is waterproof to 18m on its own, which is sure to give users some peace of mind. Just make sure that you don't pop the camera in the housing when it is wet, say... just after you have been snorkelling with it. That is a sure way to ruin your images as moisture will condensate

and fog up the insides the of the housing and the lens.

The big news is that the DC2000 camera features a 20 Megapixel Sony made 1” type CMOS sensor. This immensely popular sensor can be found from Sony's high-end compact cameras like the RX100 range. It can also be found inside many other brand cameras like the Canon G7XII, G9X and the Nikon 1 range. So in theory the image quality should be top notch.

For this review I compared the DC2000 camera with Sony RX100 MKIV. You can see the results below: First the Jpeg comparison and then RAW comparison

All in all the DC2000 image quality is not bad. Unfortunately the Sealife jpeg image processing leaves room for improvement. However, when comparing the raw footage the differences between the two are negligible. After seeing the raw footage it is easy to believe that the sensor is indeed the same one in both the Sony and the Sealife.

The weirdest thing with the DC2000 is the lens choice. For one reason or another the manufacturer has chosen a fixed 31mm (equivalent) lens for the camera. My guess is that

they had no option if they wanted to make the camera depth rated to 18m.

Unfortunately the 31mm fixed lens is problematic for underwater photography. In water, with the added magnification effect, the lens' focal length is near 40mm. This means that is neither wide enough for any kind of UW wide-angle photography nor long enough for proper close-up photography.

A fast fixed 31mm f1.8 lens is something a street photographer



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would want to use but for any underwater pics, a step above your most basic snaps, it is near useless.

To get useful shots with the DC2000 you will need to get the Sealife DC SL975 fisheye attachment lens that snaps on the front of the



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Sealife DC2000 with DC SL975 fisheye lens

housing. This lens transforms the 31mm focal length to a very useful 19mm super wide-angle. The price goes up though.

Sealife does not currently offer a close-up attachment lens for the DC range cameras so for macro photography you have to rely on what the camera has to offer. The closest focus distance with the DC2000 is 9cm when in macro or super macro mode which is pretty decent for a narrow angle lens like this. Especially considering that many today's compact cameras with zoom lens only focus this close with their lens in the wide-angle position, which nowadays is usually 24mm. You have to cast away your hopes of proper super macro photography with the Sealife though, unless some sort of close-up lens is introduced.

Sealife has always marketed their cameras as the easiest underwater cameras to use. The blocky menus and large dials of the DC2000 lean towards

the “UW photography-for-dummies” idea. This is not necessarily a bad idea as there are lots of divers who just want to capture underwater images with a minimum of effort. For example, there are easy to select underwater scene modes that are separated by depth. You can also set pre-programmed modes for external strobes or video lights.

Where the DC2000 differs from the previous Sealife models is that it also offers advanced functionality for people who are more in to their underwater photography. For example: You get A, S and full manual exposure modes with real aperture. You get a full manual white balance with dedicated underwater pre-sets. You also get RAW capture and Full HD movies up to 60fps. When it comes to the features the Sealife DC2000 is by far the most competent camera this manufacturer has ever put up for sale.

The DC2000 is a chunky piece of kit.

Compared to the Sealife micro 2.0 camera it looks like a giant. The housing is sturdy and rubber-coated with very clearly marked, easy to press buttons. A nice touch is the internal slot for the “moisture muncher” capsule. This is what Sealife calls the supplied blue desiccant capsules that keep the moisture inside the housing at bay.

Unfortunately the port of the housing does not have a thread for lens attachment. Instead it has Sealife's own so called DC clip-on mount. This means that only one current DC lens, the DC Fisheye-lens, will work. I personally would have hoped for the generic 67mm thread. This way people would have been able to use all sorts of widely available lenses. This would surely have lowered the purchase threshold for people who already have a pile of M67 lenses at home.

People with fibre optic cable triggered strobes can consider themselves more fortunate as the



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DC2000 ships with a clip-on strobe sync plate that accepts two standard “bare” fibre optic cable ends.

The new DC2000 camera is by far the best camera Sealife has ever introduced. Spec-wise it’s up there with today’s high end compact cameras. There is one caveat. To get it working properly underwater you will need to get the accessory wide-angle lens. The DC2000 camera lens is just too narrow angle for underwater photography.

The camera costs £669 in the UK and the lens is £250.00 bringing the total spending to just over £900. This might just be too much and lots of people will be put off by the cameras inability to get close to larger subjects without the lens.

In reality, of course, you will

eventually have to buy a wide-angle lens for any other compact cameras on the market too but at least these cameras start from acceptable 24mm focal length and have housings with threaded ports for standard lenses.

In conclusion: Best Sealife camera to date but proceed with caution.

Jussi Hokkanen

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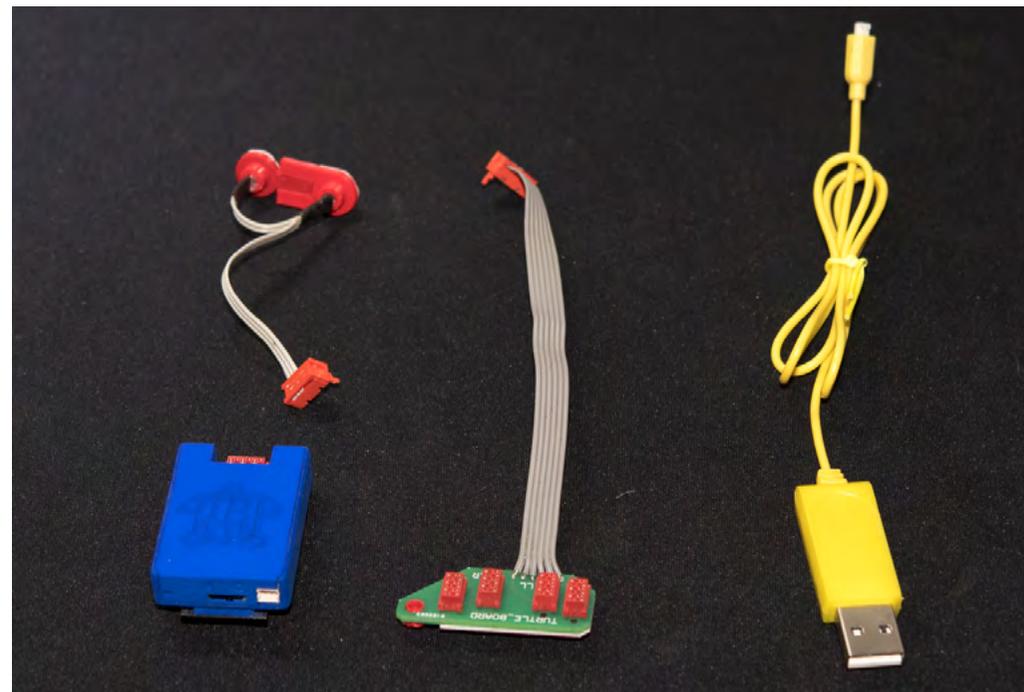
by Alex Tyrrell

For the last few years I have been eagerly awaiting the release of an optical flash trigger that can be used in my Subal housing. The main reason being for travel, so I can leave behind the heavy electronic sync-cords (including a back-up set, plus a spare dual cable just in case!), to be replaced with lightweight fiber-optic cables. An added advantage is having four fewer O-Rings to inspect and maintain, even though I generally leave the sync-cords permanently attached to the strobes when diving regularly. Also, optical cables will make packing for my daily shooting a touch easier, leaving my strobes free from cables to pack wherever I like in my rucksack that I use to carry my already prepped rig to the boat.

I have been a Nikon & Subal user for more than 10 years, starting out on the D200, then upgrading to the D7000 that gave me the option of triggering the strobes using the internal flash. But from numerous reports I had read, this wasn't the ideal solution with restrictions on the recycle time of the onboard flash. And

a recent upgrade to the D500 ruled out this option altogether, as there is no onboard flash, as is the case with all pro-body cameras, including the Nikon D4 and D5 and Canon 1DX, 5D and 6D.

If you use Nauticam housings, you have had an option for optical triggering your strobes for some time, initially with the Nauticam Flash Trigger and more recently the UW Technics Circuitry that is also available for Aquatica housings. Nauticam have also recently released a TTL circuit board with both optical & electrical connections. Sea & Sea offer an Optical YS-Convertor for some Nikon, Canon & Sony housings that converted the electrical signal from the camera to an optical one to trigger the strobes in either Manual or TTL, the same as the UW Technics does. But other housing brands the only option was to the use of the onboard flash to trigger the strobes via fiber optic connections. And as previously mentioned, this isn't even an option for my Subal ND500 and other pro bodies.



TURTLE, LED Board, TURTLE Board & USB Charger

Enter the TURTLE from Hungarian based TRT Electronics that is currently available in models that work with either Nikon & Canon cameras. The TURTLE is tiny (smaller and lighter than an AA Eneloop battery) so when plugged into the camera's accessory shoe, it will still fit inside most camera housings.

All that is needed is the housing to have Fiber Optic Ports that the LED's can be attached behind. And for older housings that do not have the fiber optic ports, there will soon be an LED bulkhead available allowing you

to use the optical capabilities of the TURTLE. But the TURTLE is more than just an optical trigger, it provides TTL flash function for a variety of strobes in both optical and electronic form.

The TURTLE measures a diminutive 41mm long, by 29mm wide and 14mm deep and is shipped with an LED Board that connects directly into the TURTLE for optical strobe triggering in both Manual and TTL Flash Modes. These have a self-adhesive backing, so you simply stick them into place on the inside of your housing.



LED Board Installed In Housing – the LED Board is attached via the self-adhesive pads on the inside of the Fiber Optic Ports.



TRT Installed In Subal ND500 – The TURTLE easily fits into the Subal ND500



The underside of the TURTLE showing the DIP Switch in the bottom right corner that is set according to the make of strobe you are using.

There is also the TURTLE Board (an electronic circuit board) that allows connection of both electronic bulkheads and the Optical Board, again allowing both manual and TTL strobe triggering. You also get a USB Charging Cable in the box. The cost of the unit is €459 for the Nikon version and €489 for the Canon model.

The internal battery of the TURTLE is advertised as giving

2,000 images on a single charge and a full recharge takes only 1-hour, via a 5V1A USB port. So you can charge from your laptop, power bank or wall mounted USB plug. It has a battery life indicator LED at the rear that blinks when 30% remaining is reached.

The unit is billed to have full electronic TTL Mode via the TURTLE Board compatible with Sea & Sea

YSD1 & D2, Sea & Sea YS250, Inon Z220, Inon Z240 Type 3 & 4 as well as all Ikelite models. Optical TTL is compatible with YSD1, YSD2 & Z240 and the TURTLE Board can be omitted with the LED Board connecting directly to the TURTLE.

To set up the TURTLE for your specific strobe model, you need to set the DIP Switch on the bottom of the unit. Instructions on which of the four

available settings to use are provided with the unit and are quick and easy to change.

I ordered my TURTLE direct from TRT Electronics in December, which was shipped to the UK and then had it brought over to Thailand just before Christmas, though was unable to dive with it until the end of January, due to various reasons including some nasty weather that brought viz down to zero! But since installing it into my housing I have been very happy with the results. It has triggered my strobes every time without fault, using both Sea & Sea YS-250 Pros and Inon Z240.

Only owning Nikon cameras means I have only tried the Nikon version, and there were some specific settings that needed to be set within the camera to get the unit to perform optimally.

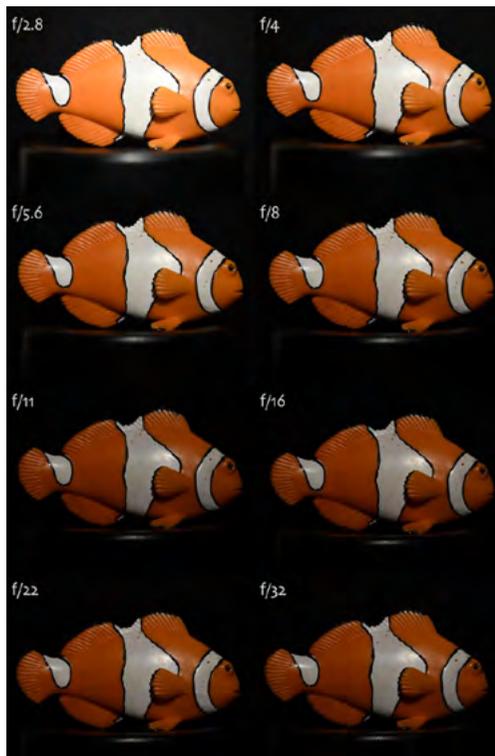
First of all I had to turn off the LCD Illumination (Custom Menu d9) as this is what controls the TTL/ Manual Modes. When you attach the TURTLE to the cameras accessory shoe and power on the unit, the default mode is TTL that is indicated on the rear LCD screen.

To switch to Manual Mode, turn on the LCD Illumination by flicking the power switch past the ON setting. Repeat to go back to TTL Mode. If you turn the camera off or the Standby Timer is activated (the camera is not



The Flash Mode (M or TTL) is displayed in the bottom left of the D500 LCD Screen when the Info button is pressed.

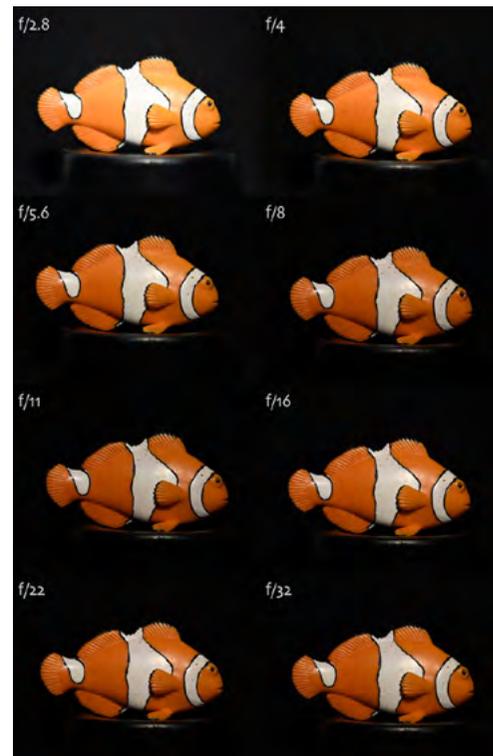
used for a certain period of time and the shooting data is not visible from the viewfinder), the Flash Mode with reset to the default TTL Mode. This is fine when shooting in TTL, but not ideal if shooting manual, as your strobe will then fire on the TTL pre-flash and may not have fully recycled for the actual exposure. To stop this happening I changed the Standby Timer (Custom Menu C2) to a duration of 10 minutes, which means



TTL YSD1 Test - D500 with 60mm Lens, Sea & Sea YSD1 on TTL Mode, ISO 100 - 1/1250th

that after 10 minutes of inactivity it will then go into Standby Mode and reset the TURTLE to TTL. I initially set this to No Limit, but found that the camera's battery drained quicker than usual, and if you forget to turn the camera off in between dives you may be left with a depleted battery.

I timed how long it took for the battery to completely drain, by leaving the camera turned on and the Standby Timer set to No Limit and it was approx. 4-hours on the D500 with



TTL Z240 Test – D500 with 60mm Lens, Inon Z240 on S-TTL Mode, ISO 100 - 1/250th

a new, fully charged, original Nikon battery.

The other option is leaving your Standby Timer set to a shorter duration for improved battery life and then remembering to check what mode the TURTLE is set to prior to shooting, and quickly changing if in the wrong mode.

The Canon version of the TURTLE needs to be set into Manual Mode via the DIP Switch, so will not have this issue, however this does

mean you cannot switch between TTL and Manual Mode during a dive, which is a feature that some users may find helpful. I have mentioned this to Balázs at TRT Electronics and this has been taken on board and will be addressed in future models, possibly by incorporating a choice of Manual or TTL default option that can be selected by the user. This would be good for times when you are more than likely to be shooting manual than TTL and therefore optimize battery life i.e. wide-angle shooting when TTL accuracy is not so reliable.

I purchased the TURTLE with the intention of using it solely as an optical trigger, as I always shoot in manual mode. I had no real desire to shoot in TTL. My last venture into the realms of TTL while shooting underwater was back in 2011 while in Malapascua, using my D7000 with the internal flash, and to be honest really didn't like it, the shooting speed was just too slow.

After a single dive, I reverted to my trusty sync-cords and manual strobe exposures. But for the purpose of this review I thought I should give the TTL feature a go, so on a dive switched into TTL Mode, that on Nikon cameras is possible to do underwater by simply switching my Z240's to S-TTL, adjusting the power dial to the correct position and then switching the TURTLE into TTL



Saddleback Anemonefish (Amphiprion polymnus) – Nikon D500, Nikkor 105mm VR, 2 x Inon Z240 in S-TTL Mode, f/5 – 1/250th, ISO 400

Steinitz's Shrimpgoby (Amblyeleotris steinitzi) - Nikon D500, Nikkor 105mm VR, 2 x Inon Z240 in S-TTL Mode, f/4.5 – 1/250th, ISO 400

Mode. This is achieved by simply activating the backlight on the power control.

I was then pleasantly surprised by the speed of shooting I could achieve in TTL Mode, that didn't seem that much slower than shooting in manual. I was able to capture precisely timed shots without the TTL lag that I had experienced on my D7000. Shrimp Gobies with fins fully extended were no problem. Saddleback Anemonefish facing into

the camera for a split second posed no timing issues. And the exposures were good.

I purposely shot at wide apertures to test out the accuracy of the TTL (but did forget to dial down the ISO from 400 that I was using on a previous shot!). Also I selected the light coloured Shrimp Goby for my first subject to see how it handled the highlights. And my second subject of the Saddleback Anemonefish has both black and white colouration for an even tougher test.

On both subjects the exposure

was bright, definitely to the right side of the histogram, but the highlights were not blown out.

Upon downloading the images to Lightroom, a quick drop in exposure brought back the detail, leaving me with what I would have strived for if I were shooting manual exposures.

I started the dive thinking it would be one of the rare occasions I opted to shoot TTL, but came up thinking that I would quite probably use TTL again! Even though it is not essential in the digital age with the instance review of images allowing

for camera/strobe setting adjustments, there are certainly circumstances where TTL would be handy to ensure an accurate exposure.

I ran some dry tests with the TURTLE in TTL Mode using the LED Board to optically trigger the strobe. I tested both Inon Z240 and Sea & Sea YS-D1 to see how accurate and consistent the exposures were through a range of apertures.

I set-up my D500 with Nikkor 60mm ED lens, shooting a single strobe with no diffuser in place. Camera settings were ISO 100 and 1/250th shutter speed. I didn't dial in any TTL Exposure Compensation on the strobe.

I ran through a range of whole f-stops from f/2.8 through to f/32 shooting a very cooperative plastic Anemonefish that I use for classroom practice in the photo courses I run, as this shows blown-out highlights very well.

When shooting with the Inon Z240, the D500's LCD showed some blown out highlights at f/2.8, but at all other apertures it was accurate and exposures were consistent.

When I imported the images into Lightroom CC it confirmed what the LCD showed, with a slightly brighter image at f/2.8 with a small amount of highlight clipping on the JPEG File. The RAW File did not show any clipped highlights.

With the Sea & Sea YS-D1 the exposure was a fraction darker than with the Z240 through the series, but still pretty consistent across the range of apertures. Again there was slight highlight clipping at f/2.8 on the JPEG File, but not on the RAW. A small positive adjustment to the TTL Exposure Compensation would easily rectify the slight underexposure from the YSD1.

The only improvements to the unit that I can currently think of, would be to add a manual mode override or default mode selection switch to preserve the camera battery life. And although not totally necessary, maybe some more advanced battery meter, letting you know the battery level prior to it reaching 30%. Though with 2,000 shots per charge, you still have 600 remaining at this point, so should easily get you through a days shooting!

Overall I am very impressed with the TURTLE and consider my money well spent. I'm also happily surprised at how well the TTL performed, particularly the shooting speed.

With no initial intention to use the TTL function, except maybe in rare circumstances, it may well be something I start switching to more frequently. Time will tell on this.

But the main reason I purchased this device will be put to good use

very soon, with an imminent trip to Lembeh. With the absence of four heavy electronic sync cords, plus the even heavier back-up dual cord, my camera bag will a bit lighter than normal!

Disclaimer: I purchased the TURTLE direct from TRT Electronics at a slightly discounted rate in exchange for feedback on the unit after testing, suggestions for improvements on future versions and the use of some of my images that were taken during the testing for their marketing.

Alex Tyrrell

Alex operates Dive4Photos, Thailand's only dedicated underwater photography training facility, located on Koh Tao in the Gulf of Thailand. He also runs regular Photo Workshops & Photo Tours to various destinations around Asia.

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The eyes have it

by Phil Rudin

The debate regarding the original source of the phrase “The eyes are the window to the soul” has raged on for decades, perhaps centuries. Over the years it has been attributed to Shakespeare and DaVinci while others believe it dates back to the Old Testament of the Bible. The human eye beyond just its aesthetic qualities is integral to non-verbal communication and is a source of self-expression. Even the most mundane portraits can be mesmerizing if the eyes captivate.

Ask any aspiring portrait photographer what the key essential is for a compelling image and the answer will surely be to making the eyes “pop”.

The same key essentials are needed for marine animal portraits as. Many of the key techniques used by portrait photographers carry over into the underwater world when photographing eyes.

Marine animals have

some of the most photogenic and unusual eyes of any of animals on the planet.

In this article I will describe some of the essential elements for successful marine animal eye photography.

Along with the normal list of challenges associated with underwater photography it is worth remembering that unlike photographing humans, most marine animals have little interest in cooperating with the photographic process.

Some animals like Frogfish will sit motionless while being photographed but others like Seahorses tend to continually turn away from the camera lens testing the photographers patients and resolve.

Spending time underwater and observing the animals you intend to photograph allows you to have a better idea of how animals will reacted when being approached and

photographed.

Success is all in the eyes

The main ingredient for successful eye portraits is eye contact and sharp focus.

In the child’s portrait taken at a temple in Victoria Point, Myanmar (Burma) the little girl was looking directly into the camera lens.

My intention was to capture a unique and compelling portrait highlighting the yellow paste called Thanakha.

Thanakha is pounded from tree bark and has been used for centuries in Myanmar by both males and females as a sun block and cosmetic to enhance personal beauty.

The focus point for this image was directly on the child’s eyes. I used an aperture setting of F/4 to defocused (also known as Bokeh) the background sufficiently to allow the child to “pop” or separate from



Burmese Child, Victoria Point, Myanmar (Burma), Olympus E-1, Olympus 11-22mm zoom at 21mm, ISO 100, F/4, 1/50sec, Olympus flash fill

the background. A strobe was used for fill light and to create a catch light making

the child’s eye look more alive. I used all of the same techniques for the Spotted

Spotted Garden Eel, Panglao Island, Bohol, Philippines, Olympus E-M5, Olympus 60mm macro, ISO 200, F/22, 1/250sec, Nauticam housing, two Inon Z-240 strobes

Garden Eel portrait taken around Panglao Island in Bohol, Philippines using a macro lens.

The techniques include compelling eye contact, a sharply focused eye, fill flash, separation from the background and vertical (portrait) composition to more fully fill the frame with the subject.

Other elements include the slight turn of the Eel's head towards the camera lens, the diagonal angle of the Eel through the frame and the rule of thirds to place the eye in a pleasing location within the frame.

One element not found in the Eel photo is catch lighting in the eye. Many marine animal eyes simply don't reflect light in the same way the human eye does while others will reflect light much like the human eye.

Since marine animals don't have eyelids many of the eyes appear larger because more of the eye is exposed. I cannot stress enough how important eye contact and sharp focus are to a successful eye portrait, I always know as soon as I view an image if I have failed to capture these key elements.

Essential equipment

While wide angle and fisheye lenses have been used for stunning photographs of large marine animal eyes the lions share of marine animal eye portraits are, taken with macro lenses.

Dedicated macro lenses in the 30mm to 60mm range are commonly used for larger more approachable subjects while lenses in the 85mm to



150mm range are used for smaller less approachable subjects and super macro subjects.

Some telephoto and "kit" lenses like the Olympus 12mm to 50mm and APS-C lenses in the 18mm to 55mm range are also frequently used by those not owning a dedicated macro lens.

Other key essential include a modern camera body with fast auto focus and no shutter lag, closeup lenses for magnification beyond life size (1:1) and a large viewfinder.

For macro I prefer to use a 45 degree finder to help get me on eye level with my subject and to keep me above the subject and off the bottom. A



Harlequin Ghost Pipefish, Puerto Galera, Philippines, Olympus E-M1, Olympus 60mm macro, ISO 100, F/13, 1/320sec, Nauticam housing, two Inon Z-240 strobes

decent quality focusing light is also helpful. I have activated the rule of thirds grid in my viewfinder to help position the eye within the frame.

Photographing marine animal eyes with a macro lens often involves getting the photography equipment very close (some times within millimeters) to the subject. This technique requires a great deal of practice and should not be attempted

Clownfish Eggs, Puerto Galera, Philippines, Olympus E-M1, Olympus 60mm macro lens, ISO 100, F/13, 1/320sec, Nauticam NA-EM1 housing, two Inon Z-240 strobes, SAGA +15 closeup lens

Octopus Eye, Blue Heron Bridge, Florida USA, Olympus E-M5, Olympus 60mm macro lens, ISO 200, F/5.6, 1/250sec, Nauticam housing, one Inon Z240 strobe, SAGA optical snoot, converted to B&W in Photoshop

by those photographers who have not yet fully mastered basic macro photography.

Regardless of how compelling a photograph may be it is not worth risking damage or injury to an animal because of poor photographic technique.

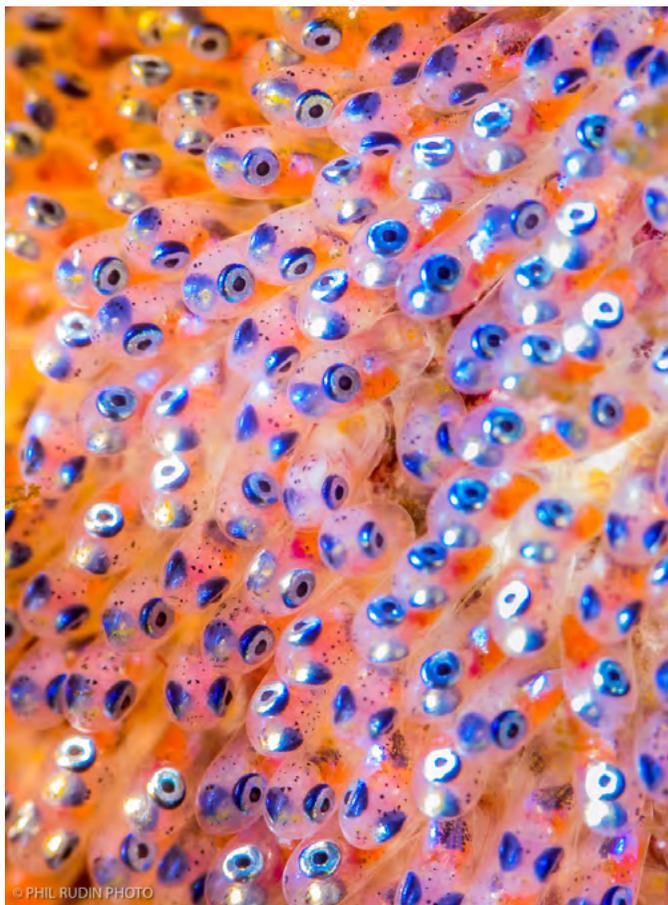
Tips for success

Most eye portraits rely heavily or entirely on strobe lighting and some may require accessory closeup lenses for added magnification of the eye within the frame.

For the photo of the Clownfish Eggs taken in Puerto Galera, Philippines I used an Olympus 60mm (120mm equivalent) macro lens and a SAGA +15 closeup lens.

Because these eggs are so small I needed to exceed life size (1:1) to fully fill the frame with the nearly mature eggs. Because depth of field is so shallow with this amount of magnification keeping the lens in a flat plain the eyes is quite challenging.

For most macro work I use a base ISO settings in the 100 to 200 range this ensures optimal image quality particularly with sub-full frame sensor cameras.



Because most macro subjects require strobe lighting I frequently use shutter speeds in the 1/125 to 1/320 second range for best results. I generally use two strobes placed fairly close to the macro port. This offers the greatest flexibility for lighting techniques such as backlighting, inward lighting, overhead lighting and more.

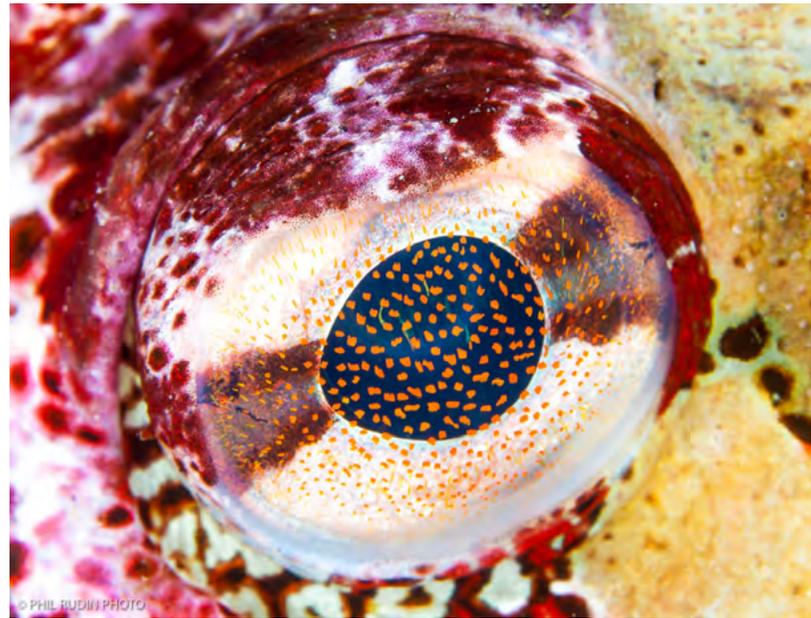
I also use single and twin strobe configurations with snoots (snoots reduce the angle of strobe coverage) for side lighting, backlighting, overhead lighting and more. I always have a focusing light attached to my housing to assist in low light situations where auto focusing begins to slow down.



For images greater than life size (1:1) I use closeup lenses in the +5 to +20 diopters range. I have learned to choose the appropriate aperture setting for controlling the depth of field I want for the image and to help control how dark my background will be.

Black backgrounds create a more dramatic look while blue water backgrounds are more true to life.

Black backgrounds are most easily rendered by using low ISO settings, higher (F/8 and above) aperture settings and fast shutter speeds in the 1/125 second or higher range.



Red Irish Lord Eye detail, Browning Wall, Alaska USA, Olympus E-330, Olympus 50mm macro lens with 1.4 X teleconverter, ISO 100, F/16, 1/160sec, Olympus housing, two Inon Z-240 strobes

Seaweed Blenny, Blue Heron Bridge, Florida USA, Olympus E-M5, Olympus 60mm macro lens, ISO 640, F/7.1, 1/250sec, Nauticam housing, one Inon Z-240 strobe, SAGA optical snoot

In many situations rendering a blue water background may only involve reducing shutter speed from say 1/250 to 1/30 of a second. In other cases using upward angles, a more open aperture setting or higher ISO settings

may be required.

I most frequently go black when I have an ugly lifeless background or turbid water where backscatter is an issue. By only lighting the animal eye in the foreground some of these distracting

issues can be mitigated.

Blue water backgrounds work well for animals perched on Sea Fans, Whip corals and other growth where you have a clean blue water background. With larger marine animals you can

completely fill the frame the animals eye eliminating any background as in the image of the Red Irish Lord eye detail taken at Browning Wall in Alaska USA.

When using more advanced lighting equipment

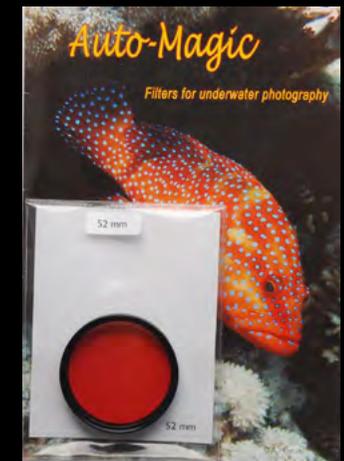
such as snoots the light output from the strobe behind the snoot is often greatly reduced. The image of the Seaweed Blenny eye was shot at F/7.1 and 1/250th sec. the ISO had to be bumped to 640 for a proper exposure even though the snoot was only a few centimeters from the Blenny's eye.

If you plan on shooting closeups of your dive buddies eyes I suggest using a translucent face mask or no mask at all. Dark mask skirts cause dark shadows in many cases while the translucent skirts transmit more light allowing the eye to pop.

Finally eye contact and sharp focus must be captured in-camera, no amount of post processing will makeup for lack of sharpness or composition. If you remember to totally fill the frame with your intended subject cropping away large numbers of megapixels will not be necessary.

Phil Rudin

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Shooting crocodiles

with Chris Knight

I am very lucky to have had the opportunity to dive with some of the world's largest species of shark. Having spent a lot of time around these amazing animals I am now starting to understand them and have realised that they are not the mindless killers that some people, press and films have made them out to be. Although I know they should always be treated with respect and that you should never take for granted the fact that they are apex predators I have to say that I do feel very comfortable around them in the water.

I sometimes watch wildlife documentaries and sit there thinking that I wouldn't be so sure about getting that close to some of the animals they feature. One such animal and one that I never thought I would ever get in the water with was a crocodile or an alligator, however this all changed when my shark contact Eli Martinez featured an American Crocodile expedition on his website – www.sdmdiving.com

I called him up and asked what the deal was with these crocs. He told me about his previous experience at this location and assured me that it was relatively safe to get in the water with them and that it made for a truly amazing experience. Having been convinced that it was going to be an awesome trip – I paid my deposit there and then a few months later flew off to Mexico for a trip that I would never forget!

American Crocodiles

Crocodiles are ancestral animals; whose origin



All the underwater images were shot with a Sony RX100 Mk3 in a Nauticam housing with a UWL 04 fish eye lens.

goes back more than 200 million years. They have witnessed the rise and extinction of the dinosaurs as well as the evolution of birds and mammals. Throughout their evolutionary history they have adapted to their environment to become one of the most efficient apex predators that exist.

The American Crocodile is the most widely distributed crocodile of the new world. A small, remnant population lives in southern Florida, but most are found in southern Mexico, Central

America, the Caribbean, and northern South America.

These prehistoric-looking creatures are distinguishable from their cousin, the American Alligator, by their longer, thinner snout, lighter colour, and two long teeth on the lower jaw that are visible when its mouth is closed.

Their habitat consists mainly of coastal areas of salt and brackish water such as rivers, lagoons and swamps. They have a high tolerance to salinity,



similar to the salt water crocodile.

The American Crocodile which can live up to 70 years is a relatively large species, with males reaching a length of around 5-6 meters, weighing in at up to 900kg's and grown females generally measuring around 3-3.5meters.

Although the American Crocodile rivals the Salt Water and Nile crocodile in size, it is not as aggressive and does not include human beings as part of their diet as the other two species do.

Their diet consists mainly of small mammals, birds, fish, crabs, insects, snails, frogs, and occasionally carrion. They have been known to attack people, but are far more likely to flee at the sight of humans.

The remote Banco Chinchorro Biosphere Reserve in southern Quintana Roo, Mexico at 800 km² is the largest coral reef atoll in the northern hemisphere. Being a Biosphere Reserve with no permanent settlements and very limited access, it is among the last few truly unspoilt, majestic natural wonders remaining.

In and around Cayo Centro, the largest island of three that are on the atoll, lives one of the largest known populations of American Crocodiles. Due to their interaction with the small group of seasonal fishermen in the reserve, they have become accustomed to coming out to clear, shallow water where you can achieve some truly close encounters with large and often multiple crocodiles.

The American Crocodile population in Banco Chinchorro is of great importance to the conservation of the species in the Yucatan Peninsula. It is one of the last two genetically pure populations in the Mexican Caribbean, has a relatively large size with individuals in all age ranges, has a good nesting success rate and is protected by being in a Biosphere Reserve that is subject to few threats due to its isolation from the continent.

Another important characteristic of Banco Chinchorro is water clarity. In some parts of the Reserve it is possible to observe crocodiles like in no other place. One of the difficulties of researching crocodiles is that these animals are difficult to observe in their natural habitat. This is particularly true of behavioural observation, with most studies having been carried out in captivity. Banco Chinchorro presents conditions suitable to carry out these types of behavioural observations in the wild because individuals allow humans to get close and because the water clarity allows us to photograph and film individuals underwater with a clarity that cannot be observed anywhere else.

The trip of a lifetime

We flew in to Cancun and transferred via minibus to the small fishing village of Xcalak which took us about 4.5 hours. With a population of around 400 it is the southernmost town on the Mexican Caribbean coast, on the border with Belize and within the Xcalak Reef National Marine Park.

We arrived at the XTC Dive Centre which at the time was the only operator that provided this unique trip. Staying there for a couple of days before the croc trip allowed us the time to dive at a location called the Tarpon Hole. This trench is a



unique geographical formation and the only one in the entire Great Maya Reef. Geologists are still uncertain about the development of this trench that runs parallel to shore for about ½ a mile. Like a box canyon, the trench begins shallow then becomes wider and deeper. On one side is a coral wall, on the other a sand hill slopes down from shallow water.

Due to the strong currents and rich nutrients in the water, this is the favourite hangout for lots of big fish. It was here that we had the opportunity to dive with 3-7-foot tarpon that would just school around us while we were moving through the trench.

On the second evening, we had our dive briefing for the crocs and were told to go pack up our gear ready for the 2-3 hour open ocean crossing to the atoll the next morning.

In the morning, we got in to an open top boat with an outboard engine that had already been packed with our gear in a number of large waterproof cases. We were told to wear a bathing suit, sunscreen, sun glasses, hat and a waterproof jacket as it can sometimes be a rough journey. The trip that had just returned from the crocs the day



before endured a perilous 3.5 hour journey in storm conditions with waves that were nearly higher than the boat! Although the captain wasn't too worried I think the passengers were very happy to have made it back to shore in one piece.

We were lucky with the weather and had a pretty smooth 2.5 hour crossing and arrived at the atoll to clear water, clear skies and a Crocodile who seemed to be waiting for us to arrive.

Although we were relieved to have stepped off the boat it was a bit of a shock when we saw our accommodation for the next 3 days. Our new home was basically a large wooden shed on stilts with 2 smaller sheds attached to it – one being the kitchen and the other a toilet. Six customers and three crew members all squeezed in to this hut sleeping on hammocks tied up to the ceiling rafters. With no running water and only a hole in the floor for a toilet you could see that some people were going to find it a challenge adjusting to this primitive way of life.

These huts on stilts situated in the shallow waters next to the mangrove are used by fishermen who travel out to the atoll to the rich fishing grounds



that surround the area. They fish the local waters and live in the shacks only to return when the boat is full of fish.

After a long day of fishing they come back to their shacks and gut all of the fish and pack them into cool boxes. It was this action of gutting the fish and throwing the waste in to the water that lured the crocodiles out of the mangrove and over to the shacks.

They would often recognise when the boats were coming in and would make their way over and lay in wait of a free meal of fish guts and carcasses that were discarded.

The fisherman had been doing this for years and thought nothing of it, however when news of this unique behaviour got out someone decided to investigate and see just how well behaved these crocs actually were. Having witnessed this relaxed and fairly predictable behaviour people actually started getting in the water with them and it was soon apparent that if you were careful and followed a few guidelines it was actually ok to get in the water to photograph, film and view them.



The next morning, we woke up early and took the boat to a local reef where we spent an hour spearfishing for Lion Fish. Lion fish pictures This species is widely known around the world as a pest due to their high breeding rates and voracious feeding habits. They have decimated the varied population on many reefs around the world and some areas are trying to control this by hunting them. Having done our part for the reef we brought the lion fish back, gutted and filleted them, unbeknown to many people that even though this is a highly poisonous fish the flesh tastes amazing. We chopped up the fillets to make ceviche and threw the guts in to the water to attract the crocs (which didn't take long). Our guides would also put the fish carcasses on to lengths of fishing line in order to cast out and pull it back in to lure the crocs towards us.

Having sorted the fish, it was time to kit up



with our snorkel and mask and get in the water. I have to say I was a bit nervous but thoroughly excited at this unique opportunity.

We used the step ladder on the back of the boat to lower ourselves three at a time into a section of waist deep water with a sandy bottom that was about the same size as our boat. Surrounding this was a shallower area of water that had a good covering of sea grass. It's here that the crocs like to stay as the water is shallow enough for them to straighten their legs and raise themselves up out of



the water in order to take a breath and have a quick look around.

They are also quite happy to have a good grip on the bottom due to the sea grass covering.

We positioned ourselves next to the grassy bank where the crocodile was already waiting and got our cameras ready. One of the crew members would flick the fish carcass in and out of the water near to the croc in order to keep his interest and to help us get the shots we wanted. Occasionally the croc would catch the fish carcass when the guide



wasn't quick enough on the line resulting in them getting the feed that they came for.

Realising that they were way more interested in the lion fish than us I started to relax into it and concentrate a bit more on getting some great shots. With my concentration fixed on the crocodile in front of me, I totally freaked out when something came from behind me and touched my leg. Luckily it was only my buddy Don who unbeknown to me was using me as a human shield and shooting over my shoulder just in case.

We spent the next couple of days in the water getting some great

pictures under the careful observation of our guide – Mathias who was next to us in the water holding a very large stick (just in case!) pic of me and croc with Mathias next to me

The crocs were quite predictable and behaved very well with each of us sticking to our positions in the water and not encroaching on each other's space. The only hairy moment was when a new and unknown croc turned up. The guides recognised and had names for most of the ones that we saw however this one had not been seen near the boat before. He was approximately 3 meters in length and quite bold. He made his way over to us and was ferociously snapping for

the bait which made for some amazing photos.

There was a moment when the smaller croc next to him had caught the bait and had it in his mouth.

The larger croc started snapping for the other fish and accidentally trod on the other one. The one with the bait jumped and maybe thought that the larger one was trying to steal his catch. A mini scuffle ensued and the water went from clear to zero visibility in seconds due to the sand that flew up from the tussle. As quick as this happened the smaller croc emerged from the sand cloud at high speed straight towards me. I jumped in the air and the croc passed directly

under me between my legs and it quickly became apparent that he was only trying to get away from the other one and eat his catch in peace. We got back on the boat for a moment while we waited for the sand to clear and then got back in the water with the larger croc who carried on performing for the camera enabling us to get some more shots.

This was a truly amazing, special experience and definitely a trip that I hope to go and do again one day. It has also left me wondering what I am going to get in the water with next!



Photographing crocs

I approached photographing crocodiles in the same way that I do when working with sharks. I ask the people that are running the trip for as much information as they can give me about the particular animal, its behaviour and how I should act when I am in the water with it. Once I have a good understanding of the animal I will start to think about my camera settings.

Shutter Speed:

How fast does the animal move in general and what is going to be the best speed for me to use to catch it and also what will the animal be doing while we are photographing it.

These crocodiles are fairly relaxed around you and if there is no food presented they are often happy to calmly sit in front of you just basking in the sun and posing for the camera. In this instance, you could quite possibly get away with a shutter speed of 125 however I would choose 250 just to be on the safe side. When the crocs are feeding, and snapping they are incredibly fast and in order to freeze their motion you will need a very high shutter speed. You will see from my pictures of them

snapping that my chosen shutter speed of 500 was a bit too slow. On one hand, I think that shooting at this speed does show the motion of the snap due to the slight blur of its jaws closing however I feel that I would have preferred to have gone up to around 650 – 800 to truly freeze the croc with its jaws wide open.

Aperture:

When I started shooting the crocs I had my camera set to shutter priority and let the camera choose the aperture and ISO. In some cases, I feel that this gave me good results but in others I was disappointed and now that I have a bit more confidence and knowledge I will often try to dial in all my settings rather than letting the camera decide.

The pictures of the crocs snapping were set at f5 and I feel this did a fairly good job of getting the head and mouth in focus whilst leaving the body and some of the water behind it blurred. Reviewing my photos and knowing what I know now I think I would have chosen an aperture of f8 for my general shooting. This would have given me the happy medium between having most of the crocodile in focus but also allowing me to keep my ISO down

and therefore reducing image noise.

ISO

As I mentioned I originally let my camera choose the ISO and to be honest most modern cameras will do a very good job of deciding what setting is best, however again I now like to have full control of what my camera is doing. I will often set my camera up to the settings that I want and either jump in or hold the camera in to the water and rattle off a couple of test shots to check my levels. In the case of shooting the crocodiles we were blessed with shallow relatively clear water and pretty good weather. I found I could mostly leave my camera on the same settings unless the clouds came over or the water conditions changed where I might have needed to raise my ISO a little

Safety

I always try to get my camera set right prior to getting in or getting close to the animals that I work with. Spending time checking your settings or reviewing your pictures will take your concentration away from the dangerous animal in front of you. I also tend to shoot with a fish eye lens and in this case, it is quite easy to point and shoot by using a



calculated guess of where to hold the camera in front of the animal. The very wide angle of the lens allows you a lot of leeway when it comes to framing the shot and getting the animal in. This also means that you don't have to try and look through the viewfinder or at the small screen on the camera as this will distract you from what is going on around you. It's much better to miss the shot than not to notice the shark or crocodile sneaking up on you from behind or to one side!

Please note that the tips I have given are what I felt worked / would have worked best for me. Things can vary greatly depending on the

equipment you use, the subject you are shooting and the way you want your image to look, I just hope that these tips can help you make the right decisions when it comes to your shoot.

Chris Knight

www.knightpics.co.uk

Check out Chris on Australian TV

<https://youtu.be/PPPZNT7HFko>



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Diving Antarctica

with Scott Portelli

Antarctica must be one of the last untouched remote destinations on the planet. Snow and ice cover the continent in a blanket of white. Surrounded by sea ice, the continent supports a thriving array of wildlife above and below the surface. In the Southern Ocean, summer signals a time to feed for all its marine creatures. Whales, seals, penguins and sea birds all feed on the abundant supplies of krill that are teeming in this sub-zero environment.

Getting in the water in Antarctica comes with its challenges, water temperature on average is -1 degree Celsius which means you are going to get cold, it's just a matter of time. But having a good drysuit with multiple layers is what makes the difference between a good comfortable dive or a short frustrating dive. I use a Waterproof D7 pro drysuit and ultima dry glove system when diving in Antarctica. This keeps me very comfortable and lets me average about 45 minutes diving and about 1 hour on the surface if snorkelling before I start to feel the cold.

Equipment is the most important factor when diving in freezing water. Regulators need to be sealed and ice rated to reduce the chance of free flow. Divers should be equipped with two fully independent regulators. Most configurations will involve a "Y" valve with 2 sets of regs, both with air sources for drysuit inflation and second stage support. So if something goes wrong you can easily switch to the additional set up.

The cold can also play havoc with your camera



equipment, and there are a few tips and techniques I follow for each dive to ensure less chance of issues with my camera gear.

Bubbles on your dome port – In cold water bubbles will continually form on the dome port as the cold water aerates the glass or acrylic port. This can ruin some amazing photos as they are very difficult to remove in post-production. So a few simple tips.

1. Have a tube of mask anti-fog gel or liquid and coat the surface of your dome port before you get into the water. This will help reduce the aeration

on the dome port. If you are doing split shots, you might also want to ensure there is a layer on your dome so the water beads off the glass better and you reduce water blotches in your photos.

2. Be conscious that aeration will form on the dome lens and always carry a small chamois cloth or use your gloves to brush the surface of your dome regularly while in the water. If you get into the practice of checking your dome regularly, you will reduce the chance of a photograph covered in air bubbles.

Lens fog/condensation – the warm and

the cool air will create condensation inside the housing and your camera which may fog your lens or dome port, try and set up the camera in a consistent temperature and avoid opening the camera housing until the equipment has returned to room temperature. You can avoid damaging your equipment by simply making sure the environment you are working maintains a consistent temperature when assembling your gear. Sometimes it is even worth keeping your housing outside in the cold environment.

Keep your batteries warm – before you set up your camera and get underwater, make sure your batteries are fully charged and keep them warm as long as you can, before you assemble your camera and underwater housing. Battery life is dramatically reduced in low temperatures, so make sure you have plenty of spare batteries readily available. When you are out on the water diving, keep a dry bag with you with any spare equipment you might need, as you never know when you might need to change a battery or card. However, in most cases you want to avoid opening the housing and camera on the water, as it only takes a few drops of salt water or a stray hair to damage your equipment.

Checklist – set yourself a simple to follow checklist to avoid issues and mistakes before getting in the water, because once you are underwater there is not much you can do if you have mistakenly put the camera together incorrectly or forgotten a crucial part. And always test your camera equipment and lighting/strobes on the surface before you hit the water. Some things to avoid and what I put on my checklist:

1. Manual focus is off on your lens and auto focus is working for the chosen lens. I have been shooting star shots the previous night and had



my camera set to manual and my ISO very high and my lens on manual focus, then put it into the housing and been underwater only to realise when I returned to the surface that nothing was in focus. Some housings may allow you to change the focus manually but in an environment, such as Antarctica, you need to be reactive and have your equipment optimized for the shooting opportunities.

2. This is one mistake I have made on a few occasions, leaving the lens cap on the camera inside the underwater housing. You find it strange that everything is black. Once you are underwater

there is nothing you can do about this without resurfacing and taking a risk in opening your underwater housing on a moving boat. Add this to your checklist.

3. Dust on inside of the dome – It sounds simple, but check the inside of your dome to make sure there are no loose dust particles moving around. Yes, these can be removed in post-production if you are shooting stills, but it is difficult to remove marks when you are shooting video. This is the difference between a nice crisp visual that people enjoy watching or a mark on the video that you can't help



but notice which ruins your beautiful video.

4. Memory card is empty and ready to shoot – it is easy to forget to delete or format a memory card before each shoot and then realise after you have shot a few hundred frames that you are running out of space. Always back up your cards after each dive and ensure a clean memory card is ready for each time you get in the water. Also, some cameras will let you shoot without the memory card, I always turn this feature off, as this is a mistake you can't afford to make

5. Check your o-rings on your camera housing as the cold and warm air can expand and contract these,

they should be clean and free of any particles, it only takes one strain of hair to flood a very expensive housing. Always carry spare o-rings as well, as you never know when you might need to change this due to the weather affecting the elasticity of the rubber seals.

Cold Hands – One thing I find when shooting in Antarctica is your hands get really cold (obvious, I know!) But because your hands are often holding your housing and your fingers are wrapped around the handles, they don't move as much and will get a little stiff. What happens then is you find it hard to press the buttons on your camera housing. You

also want to wear warm gloves under your wetsuit but not so thick that you can't easily change the settings on your camera. Look for warm thin gloves and check you can easily change the settings on your camera.

The Wildlife

The reason most divers and underwater photographers come to Antarctica is the chance to see large mammals in the water. At the top of the list is the Leopard seal, Antarctica's apex predator. Although they have a bad reputation exacerbated by negative media, these guys are impressive interactive creatures. At times, they can be intimidating,

but with all creatures I believe if you make the effort to understand their behavioural attributes, then the encounters are very rarely dangerous or risky.

Leopard seals are truly fascinating creatures, they approach with caution but often come baring teeth and blowing bubbles. More as a display of dominance than a form of aggression. As they get closer they will move their heads in an intentional head butting direction, once again not with the intension of hitting you but to assert themselves as the top predator, and if you are happy to oblige by flinching as this prehistoric creature makes its point, then the



intensity drops dramatically and the whole behaviour changes to a relaxed curious encounter.

You simply must go through the process of showing the Leopard seal that they are dominant, which is easy the first time you get in the water with one as they can be intimidating. But these guys are intelligent and the more time I spend with them the more I realise they have some complexity to their behaviour, whether hunting, socialising or interacting with divers there is a specific way they process this.

Penguins are probably the most common creature found in Antarctica and with many different species they

all react and interact differently with divers. Some Penguins are curious and will come up and see what is going on while others are cautious and prefer to avoid a big floating black creature on the surface.

Some of my best penguin encounters have been with the Gentoo penguins which are in abundance in Antarctica, these guys will zip right past you less than a metre in front of you. If there are no real predators in the water, they are more likely to be curious and come in for a closer look. But often you need to hide behind a rock or ledge in the water and wait for them to come past.

I have had some nice encounters





where I have simply drifted towards the penguin and watched them splash around in small rock pools close to their colonies. A soft slow approach has gotten me close to these guys before, but the encounters can be brief as they are a little less trusting, which is understandable with everything wanting to eat them.

The various seals you find around the Antarctic and sub-Antarctic regions include Crab Eaters, Weddell, Antarctic Fur, and Leopard Seals. But baby elephant seals must be my favourite. These seals are extremely curious and if you sit on a beach near them, sooner or later a 150-kilogram

baby seal will come up and snuggle next to you. These guys use touch to communicate and will often approach you in the water and grab a fin or simply barrel you over as they get right up in your face to rub against you. As babies these guys are curious and non-aggressive.

It is when they become adults and even more so during mating season that you really see the damage one of these guys can do. Bloody battles incur over the best space on the beach and the number of females one can gather in their harem. This is not the best time of year to get in the water with these 1000kg, 7-meter-long



beach masters. But you will see some impressive behaviour.

Ok so the one thing we haven't spoken about yet is Icebergs. Photographing icebergs is often difficult as you need to find ice that is grounded to avoid the chance of an iceberg rolling and you getting caught under it. This is especially important on a dive as you might be traversing the ice wall of an iceberg and not notice the movement of the ice until it is too late. So, photographing and diving near ice is something that needs to be taken seriously.

Ok, enough with the warnings, on a positive side 'Ice is Nice'. Ice is great to photograph, whether you are shooting a small iceberg on a dive or trying to get that split shot that shows the extent of the iceberg, it is always an impressive subject matter to capture. One of the main issues you find with icebergs is they are so very bright and if you are trying to do split shots you need to consider the dark water below and the bright white ice above which may require you to stop down to expose correctly as well as capture the depth of field to keep both above and below in focus.

There are not many operators running dive and snorkel options in Antarctica, but the key to a successful trip is going with the people that have the experience and knowledge to put you in the best position to see wildlife and ice. These trips offer so much to underwater photographers and wildlife enthusiasts above and below the surface, if it has been on your bucket list for a while, then you should try and tick it off, it is the most amazing place on the planet.

Scott Portelli

www.scottportelli.com



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The type of articles we're looking for fall into five main categories:

Uw photo techniques - Balanced light, composition, etc

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Personalities - Interviews/features about leading underwater photographers

**If you have an idea for an article,
contact me first before putting pen to paper.
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How to submit articles

To keep UwP simple and financially viable, we can only accept submissions by e mail and they need to be done in the following way:

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3. Captions - **Each and every image MUST have full photographic details** including camera, housing, lens, lighting, film, aperture, shutter speed and exposure mode. These must also be copied and pasted into the body of the e mail.

Parting Shot

This shot by Steve Jones of a B-17 Flying Fortress was commended in the Wreck category in this year's Underwater Photographer of the Year Competition and it was a particular favourite of mine. Unfortunately the other two judges weren't so enamoured so it didn't do as well as I think it should have! However my persistence not only led to Steve's shot staying in the winners enclosure but it also started an amazing chain of events.

After the judging I thought no more about the shot and got on with the job of post publicising the Competition. Dealing with just over 200 press contacts kept my Inbox busy but 3 days after the winners were announced, online and in The Yearbook, I received a message that wasn't from a newspaper or magazine. It was from the nephew of the copilot.

I forwarded his request for a copy of the photo and any other information on to Steve and this had led to an expansion of communications between the extended family in America, the divers who originally found the plane and a photo of the pilot has been sent to the group.co

As wreck photographers, especially on those where lives have been lost, we are acutely aware of our responsibility to respect the site and those lost and it is very gratifying when situations such as this occur where our photograph has opened up a new area of human discovery and thereby, closure. The family have requested that the next time the team dive the wreck they lay a wreath in the copilot's seat.

The old adage is "A picture is worth a thousand words" but in this case a photograph has created



Nikon D4, Seacam housing, 13mm lens, 1/80th @ F5. ISO 3200. Available light

a thousand words of communication between family members and those involved who, until the photograph was seen, didn't have the full story.

Peter Rowlands
www.hmsroyaloak.co.uk

Steve Jones
www.millionfish.com

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