

Saharan Stars

A collaboration between two astro-
photographers, from Algeria &
Western Australian, has produced
beautiful images of the Saharan
desert at night



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**A collaborative astrophotography project
between Algeria and Western Australia**

Photos © Aissa Aoumoussa Mohammed / Algeria
Text © John Goldsmith / Western Australia
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28th October 2013.

In 2011, Algerian astrophotographer, Aissa Aoumoussa Mohammed, contacted The World At Night astrophotographer, John Goldsmith, (based in Western Australia), seeking advice on how to take better astrophotographs. Goldsmith recognised an opportunity to mentor, teach and for Mohammed to record the unique and stunning Algerian desert landscape. A collaboration began, with guidance provided, entirely by email instruction. Working in the style of The World at Night (www.twanight.org), Mohammed photographed his Algerian landscape, the desert and communities by night. The results include beautiful images of the Saharan desert at night, with stunning views of the Milky Way, and unique desert architecture, under the desert stars. The collaboration has shown how a common love of the night sky can unite people across the world.



About Aissa Aoumoussa Mohammed

Aissa Aoumoussa Mohammed is a 38 year old Algerian, with a diploma in information / option programming. Mohammed lives in the North African Sahara desert, in Guerrara, a small town 650km to the south from Algiers, the Capital of



Algeria. His interests include astronomy and astrophotography, and he has developed a collection of astronomical landscape images showing the desert landscape at night. Mohammed says "I love this kind of activity (astrophotography), and my objective is to show the beauty of the night sky with the landscape and buildings". Of the desert skies, Mohammed says "the sky here is clear in perhaps all days of the year and in the summer the sky is dusty so observation is difficult. We can see a clear sky with 10 or 20 percent light pollution. More information about Mohammed's town of Guerrara is available at http://en.wikipedia.org/wiki/EI_Guerrara

About John Goldsmith

John Goldsmith is a PhD researcher and astrophotographer based in Western Australia. His PhD research, at the International Centre for Radio Astronomy Research, Curtin University, focussed on cultural astronomy and the



documentation, communication and sharing of Aboriginal sky knowledge. The PhD features the outstanding "*Ilgarijiri- Things Belonging to the Sky*" Aboriginal art exhibition and collaboration between radio astronomers, Aboriginal Elders and artists, associated with the Square Kilometre Array radio telescope project, Murchison Radio Observatory. His PhD research also investigated Aboriginal sky knowledge associated with Kandimalal, the 300,000+ year old meteorite crater known as Wolfe Creek Crater, in the East Kimberley of WA. His PhD research applied a suite of digital imaging for site documentation, including astronomical timelapse and 360° spherical imaging. John is a member of The World at Night (www.twanight.org), a leading global network of astronomical landscape photographers. He is the creative developer behind Celestial Visions (www.celestialvisions.com.au) and his astro-imaging is exhibited worldwide. In 2011, John was awarded the inaugural De Laeter Science Engagement Scholarship, (Gravity Discovery Centre, Western Australia), where he featured Aboriginal and scientific perspectives of Kandimalal, Wolfe Creek Meteorite Crater.

The collaboration

On 31 May 2011, the following email was received, asking for guidance on how to take better astrophotos;

*Hi John Goldsmith
How are you
Nice to know you
I am prepossessing about your gallery photos in the site of TWAN
i am in the firsts steps of astrophotography
I need your golden advices in this way
You know the next lunar eclipse
I want to know how I can or what is the method of photographing this phenomena
Thank you very much
My name is Mohammed From south Algeria
I am 35 years old
Really I need your advices*

Good luck

Beginning with this first message, a collaboration developed in which about twenty emails over the next two years were exchanged.

Guidance by email

Guidance and instruction about astrophotography was provided solely via email messages. With concise email messages from Mohammed and some sample photos attached to emails, John Goldsmith was able to offer suggestions on how to develop Mohammed's astrophotography techniques and skills. Topics and advice was based on the questions asked by Mohammed, and also included some background about the fundamentals of photography and astrophotography.

The following are just some of the topics which were discussed by email;

- Advice about camera gear suitable for astrophotography
- Practical approaches and methods for astrophotography
- Correct exposures, and the role of ISO, aperture and exposure duration (shutter speed)
- The importance of focus
- Using tripods and remote switches; overcoming camera movement
- Composition
- Using software to adjust photographs
- Star trail images and timelapse
- Astrophotography styles and approaches; The World At Night style of astrophotography.
- Combining landscapes and astronomical events.
- Planning astrophotography, recognising important opportunities
- Preparing and maintaining your camera
- Dealing with dust with digital cameras
- Technical details ; White-balance for astrophotos, JPEG and RAW format
- Hot pixels, and noise reduction
- Panoramic photography



Unique desert architecture (left), palm trees & celestial pole star trails (right)



Celestial pole star trails & desert landscape (left), architecture star trails (right)

Overcoming distance and language barriers

The barriers of both distance and language were overcome by the use of email and the internet. An example is provided below, of one of the emails in which a google translation service was used to convert messages into Arabic, to assist communication;

Hello Mohammed, How are you?

مرحباً محمد، كيف حالك؟

How is your astrophotography been going? Have you been taking new pictures? If so, I would like to see them.

كيف يتم التصوير الفلكي الخاص تم في الذهاب إليه؟ هل تم التقاط الصور الجديدة؟ إذا كان الأمر كذلك، أود أن أراهم.

I have been busy finishing my PhD thesis, and I am now almost finished.

لقد كنت مشغولاً بالانتهاء من رسالة الدكتوراه الخاصة بي، وأنا الآن الآن الانتهاء تقريباً.

Mohammed, I would like to show some of your photos on my web site,

www.celestialvisions.com.au, as an example of our collaboration.

محمد، وأود أن تظهر بعض من الصور الخاصة بك على موقع الويب على www.celestialvisions.com.au، على تعاوننا كمثال، الخاص بي.

Would you be interested for this to happen?

هل تكون مهتممة لهذا أن يحدث؟

If so, can you please send me some new examples of your astro photos?

إذا كان الأمر كذلك، يمكن أن ترسل لي بعض أمثلة جديدة من الصور الفلكية؟

Also, some information about you, e.g. where you live, what your astro photo interests are, and anything else you would like people to know about our working together

أيضاً، بعض المعلومات عنك، على سبيل المثال المكان الذي تعيش كنت أود أن يعرف فيه، ما يثير صورك الفلكية هي، وأي شيء آخر الناس عن عملنا معاً

Also, some photos of you, perhaps when taking your astro photos?

أيضاً، بعض صور لك، وربما عند اتخاذ صورك استرو؟

I offer this because I think people would like to know about our example of using the internet to work together on an astro photo project.

أنا أقدم هذا لأنني أعتقد أن الناس تريد أن تعرف حول لدينا مثال عن استخدام شبكة الانترنت للعمل معاً على مشروع صور الفلكية

Do you have a web site? Or do you put your photos on other sites?

هل وضع الصور الخاصة بك على هل لديك موقع على شبكة الإنترنت؟ أو مواقع أخرى؟

I have used the Google Translate service with this email, <http://translate.google.com.au>

لقد استخدمت خدمة ترجمة غوغل مع هذا البريد الإلكتروني <http://translate.google.com.au>

Please let me know if you find it helpful

واسمحوا لي أن أعرف إذا كنت تجد أنه من المفيد

Best wishes

أطيب التمنيات



The Milky Way, viewed from Saharan desert in Algeria.

A visit to an African Meteorite Crater

In early 2012, John Goldsmith recognised an opportunity for Mohammed to visit a large meteorite crater situated relatively close to his home town, in Algeria. Known as the Talemzane crater, this impact crater is large; some 1.75 kilometres in diameter. It is also located in remote and extremely dry country.

In 2012, Mohammed visited the crater, with a group of friends and colleagues, and achieved panoramic images of the crater. Examples of the panoramic images are provided below;



Conclusions

The collaboration has shown excellent results, with significant skill and knowledge development resulting from the email based collaboration between Mohammed and Goldsmith. A range of beautiful astronomical landscape images have been developed by Mohammed, and the opportunities provided by the Algerian desert landscape, in relation to astrophotography, have been recognised. An emerging collection of images are being developed. The World at Night style of photography, in which landscape, cultural and building features are combined with astronomical and sky-scapes, has provided an important focus for the collaboration. The panoramic images of the Talemzane crater are new and provide an excellent visual record of this large impact crater. The collaboration also shows how distance and language do not need to be barriers, for people who wish to learn and extend their capabilities with astrophotography.

(right) Mohammed participating at the SIRIUS Astronomy Association Astronomy meeting, Algeria.



