

# The World At Night: A New International Year of Astronomy 2009 Project

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### Key Words

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### Summary

The World At Night (TWAN) is a new programme founded in 2007 with the goal of creating a collection of stunning photographs of the world's most beautiful and historic sites against the night-time backdrop of stars, planets, and celestial events. The eternally peaceful sky looks the same above all the symbols of different nations and regions, a testament to the truly unified nature of Earth as a planet rather than an amalgam of human-designated territories. Those involved in global programmes learn to see humanity as a family living together on a single planet amidst the vast ocean of our Universe. This global perspective motivates us to work for a better, more peaceful planet for all the world's inhabitants. TWAN is an innovative approach to expanding this global perspective. TWAN's primary goal is to present the public with a new and enlightening view of the wonders of our planet by revealing the unified nature of Earth's people as one family and our world as a living planet that we must all care for together.



Figure 1. Trails of stars in a multi-hour exposure from a high point in Yosemite National Park (Credit: Stefan Seip).

The brainchild of the Iranian photographer, science journalist, and co-author Babak A. Tafreshi, TWAN existed in concept only until Astronomers Without Borders (AWB) was formed in 2007. Designated as an IYA2009 Organisational Node in 2007, AWB is a US-based non-profit initiative dedicated to promoting understanding and peace between peoples worldwide through a common interest in astronomy. AWB serves as an umbrella for projects that connect astronomy enthusiasts around the world. Tafreshi, editor of Iran's Nojum (Astronomy) Magazine (the Middle East's only astronomy magazine) has practised his photographic art at historic and natural sites throughout his home country and around the world, publishing many spectacular images in international publications and on important websites. He had entertained the idea of creating TWAN for years, but accepted the challenge after TWAN became a project of AWB, whose global reach and greater resources made the logistic and financial needs of the project

feasible. Tafreshi is assembling a team of dedicated, world-renowned photographers who excel at the specialty of landscape astrophotography. Many not only travel the globe to capture unique landscape astrophotos, several are well-known astronomy lecturers and educators with astronomy books and TV appearances to their credit. The collection of images has already begun, primarily with pre-existing images but also with new images specific to TWAN's needs. The 20 photographers invited to join the TWAN team have contributed approximately 200 images to the collection and online gallery as of mid-February 2008. The carefully selected image collection already portrays celebrated sites on all continents — from the planet's most remote locations like Chile's Atacama desert and Antarctica to some of the world's most visited sites such as the Taj Mahal, the Acropolis, and the Great Wall of China — all pictured beneath the splendour of the night sky. With TWAN's goal of photographing important sites worldwide, dedicated wide-field photographers in more regions will be selected and invited to join the effort. Only well-published specialists in wide-field landscape astrophotography are being considered, in keeping with the high

quality of the cadre of photographers recruited to date.

As image collection continues, a comprehensive list of all potential TWAN sites around the world is being prepared, with more than 100 candidate sites already included. The 851 UNESCO World Heritage Sites are given the highest priority and as many as possible will be visited. But there are many other outstanding sites throughout the world that will also be included. Only with the broadest survey of the nature, culture, and history that the Earth offers can TWAN and AWB present their ultimate message — that we all share the same sky regardless of our location, our culture, or our beliefs.

The inventory of candidate TWAN sites will begin with World Heritage Sites and other well-known locations and monuments and be augmented by input from around the world. Each site must be scrutinised for suitability for use in the TWAN project, including not only the site's uniqueness and appearance but also the potential to include suitable sections of the sky in images and the local visibility of celestial events. Some remote sites present particular difficulties in

access while others may suffer from poor climatic conditions for astrophotography. Sites will be rated according to their suitability for inclusion in TWAN, with greater weight given to the most important sites. Thus, some sites will deserve the expenditure of greater resources to ensure their inclusion in the collection. TWAN will include many unique astronomical sites as well, from the modern world's greatest telescopes to the ruins of ancient observatories. Presenting the starry sky above the greatest monuments of ancient astronomy, such as Stonehenge and Mayan observatories, is a TWAN goal shared with the IAU/UNESCO Astronomy and World Heritage Initiative.

To achieve its ambitious goal of surveying and including the world's most important sites in its collection, TWAN seeks funding for a broad programme of travel by TWAN photographers to candidate TWAN sites. TWAN will seek support from UNESCO for visits to World Heritage Sites, national tourist ministries and bureaux, national air carriers, and other institutions with a stake in seeing the sites of their countries included in the resulting high-profile exhibitions and materials. At many good sites, access and



photography is restricted, and many are not available for night-time visits. This has been a particular problem for many TWAN photographers in their own work. AWB's international nature and the credibility the global TWAN effort bring should encourage greater cooperation and access. UNESCO and national, regional, and local governments will be approached for assistance.

Along with surveying potential TWAN sites worldwide, the potential for capturing special celestial events at each site must also be considered. Eclipses, conjunctions, and unexpected events such as the appearance of a bright comet present opportunities for unique images from many TWAN locations. Determining the best sites for these images includes consideration of geographic location and altitude, local topography, light pollution, accessibility and local circumstances including government restrictions and political conditions. The knowledge of local citizens is often invaluable here, as many

TWAN photographers have found many times in their own work.

Images from TWAN sites worldwide will be selected for a major international travelling exhibition that will first be shown in 2008. A schedule of exhibits worldwide is being prepared for IYA2009, perhaps including the IAU General Assembly in Rio de Janeiro, Brazil. TWAN has approached organisations in various countries to discuss hosting this world-class exhibition, which will be accompanied by unique presentations and educational workshops. Companion books and DVDs based on TWAN images will also be published.

A major part of TWAN is time-lapse digital photography showing celestial motion over the planet's most important sites, with breathtaking videos of sky motion above splendid mountains and historic monuments. A high-quality documentary film of images will also be produced for large screens, which will

also be the basis for the first presentations at conferences at public venues worldwide. Presentations for live display and television following TWAN photographers in their quest to obtain these unique but challenging images are also being considered. Tours to TWAN sites, as part of AWB's programme of astro-tourism, will give photographers, astronomers, and others the opportunity to visit sites they've seen in the image collection, where they can also try their hand at taking their own images. Tours will be led by TWAN project leaders and local TWAN photographers.

Because the TWAN team is composed of individual photographers with their own interests, image ownership and copyright issues must also be addressed. All photographers retain rights to their images, with licence given to TWAN to include them in TWAN presentations. TWAN is already receiving requests for use of TWAN images in other publications, and the TWAN project



Figure 2. Aurora Borealis over the World Heritage Site of Denali National Park, Alaska, USA (Credit: Dennis Mammana)



Figure 3. Stars of the Summer Triangle in the last hour of a winter night near the village of Mesr, a remote unspoiled area in the central desert of Iran. (Credit: Babak Tafreshi)

and individual photographers work together on copyright and photo credit issues. With many decades of combined experience in publishing images, the TWAN team itself has emerged as an expert body for discussion and decisions regarding these issues.

TWAN has enjoyed an auspicious beginning. The public first learned of TWAN with the launch of its web site in December 2007. NASA's Astronomy Picture of the Day (APOD) web site featured a TWAN image on Christmas Day, 2007 — an image taken the same month by TWAN photographer Wally Pacholka in the USA's famous Monument Valley — with an announcement of TWAN's creation and a link to the TWAN website. The

venue for this public announcement was fitting given the dozens of previously published APOD images created by photographers who have joined TWAN. Spaceweather.com, a Sky and Telescope weblog, and others quickly followed suit with news of the new initiative to bring innovative and inspiring views of the night sky to the public. Traffic on the TWAN web site was high and feedback has been very encouraging.

This success suggests an important role that "TWAN-style" photography can play in reaching the public and sparking the imagination of viewers. The inclusion of known or recognisable terrestrial landmarks in these images of the night sky provides a context to

the images that many people can relate to. While deep-sky images present unparalleled beauty in the processes they portray and the science they represent, sparking the imaginations of all, the views from Earth exhibited in TWAN images communicate with viewers on a more basic level. Even city dwellers who have never experienced the beauty of the Milky Way in a dark sky can relate to the images with familiar landmarks included. The opportunities that TWAN's image collection represent are yet to be fully explored. But the response to TWAN so far demonstrates the tremendous potential such images have to communicate astronomy to the public in new and exciting ways. TWAN photos emphasise how fascinating the science is that explores the many beauties of the night sky, but they also motivate the public to gaze at stars even with the un-aided eye.

While the joy of astronomy and the importance of dark skies are inseparable messages of TWAN, the cultural depth of the photos builds bridges through the sky to connect the civilisations of our planet. Wars are fought over boundaries that have been created in the name of politics, religion, race, and beliefs. But the view from space reveals the true nature of our cosmic home — a borderless planet divided only into land and sea. While few will experience that view first-hand, the same is also true in reverse; the night sky above us — a view that is accessible to everyone on the planet — also has no visible borders. This common view is a bridge that connects us, creating understanding and friendship. When borders vanish, political and cultural differences become irrelevant. We all live under the same eternally peaceful sky. And the Earth we inhabit under it belongs to us all. This is the message that Astronomers Without Borders was created to spread. TWAN conveys this message in a profound and enthralling way. The measure of success of TWAN is simple — if it brings this message to the public, then it has succeeded.

## Bios

**Mike Simmons** is the founder and President of Astronomers Without Borders, an IYA2009 Organisational Node. He is the Vice President of the Mount Wilson Observatory Association. He has been involved in education and public outreach in astronomy for 35 years.

**Babak A. Tafreshi** is the Director of The World At Night (TWAN) Project and board member of Astronomers Without Borders, is a science journalist, astronomy communicator and photographer. He was editor of Astronomy Magazine of Iran from 1997 to 2007. He has traveled to every continent, including Antarctica, in pursuit of celestial events, unique astrophotographs and interesting astronomy stories.

Figure 4. (next page). Analemma with the Temple of Zeus (340-330 BC), Ancient Nemea, Greece (Credit: Anthony Ayiomamitis)

