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nightscape

A PUBLICATION OF THE INTERNATIONAL DARK-SKY ASSOCIATION

"The night sky provides a shared and common experience available for everyone. This common experience provides links between cultures throughout the world, both past, present and future."
–John Goldsmith, TWAN photographer

Babak Tafreshi

IN THIS ISSUE

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Dear Members,

As many of you know, IDA was founded as a volunteer organization. Dave and Mary Crawford guided the early days of the fight against light pollution from around their kitchen table. As new members joined, you were asked to help by volunteering a few hours a month to help IDA grow. Thanks to the grassroots efforts of so many, IDA grew and became like an extended family. Our early volunteers are an essential part of the dark sky movement and still integral to IDA's success.

However, it is difficult to maintain that same family feeling now that IDA has members across the globe. We need to get it back. With the economic crisis, IDA has had to cut expenses to meet our reduced budget like many other non-profits. At the very moment when we have so much to do to raise awareness, there just isn't enough time or hands to do it all.

IDA needs your help getting back to its roots. I know that many of you lead busy lives and don't have much time to volunteer. We appreciate your financial support more than you know. But for those with a few hours to spare, IDA will be happy to work within your schedule to efficiently use your valuable time. We are developing a survey to learn more about you and to improve our communication with you. We want to find out what skills you would be willing to share to help IDA fulfill it mission. Soon we will be rolling out a new volunteer resource on the IDA Web site. The page will feature a list of current projects and the skill sets needed for them. We will use the data from the survey to match members to projects you may enjoy and send out notices targeted to your skill set. We won't ask unless you have indicated a willingness to help. Together I hope we can accelerate this essential work and recapture the camaraderie of IDA's early days.

We will have something for everyone. Current volunteer opportunities include helping staff booths at trade shows, sending letters and articles, speaking engagements, developing web materials, and expanding the new Wiki information database. There are countless small tasks that will help improve your community and increase visibility of IDA's message.

I'd like to personally thank those of you who are volunteering at the upcoming IDA Annual Conference in April. I look forward to seeing you in Suffern, New York! Thanks as well to Chapter leaders and individual advocates who are working so hard and accomplishing so much.

This grassroots emphasis will also help us strengthen IDA Chapters' local efforts and expand the volunteer network. If you have a Chapter nearby, join or contact the Chapter leader. If there isn't a Chapter nearby, we can help you start one.

We must collaborate to meet the formidable challenges that face the dark sky movement. We have to focus on the big picture: reducing the total lumens in the environment. The transition to LED lighting will provide us with a once in a century opportunity to reshape how we use outdoor lighting. Together we can make sure we get it right.

Bob Parks
Executive Director

On the Cover: This dual image shows the same sky from different perspectives. Both shots are taken in December with a similar field of view. The left image was taken on the southern Australian island of Bruny off the coast of Tasmania. In this moonlit night, Orion stands on its head above the Antarctic Ocean. The right image shows Orion above the Alborz Mountains of Iran. The images also chronicle differences in environment. The snow-covered landscape displays the beginning of winter in the Northern Hemisphere, while the southern beach enjoys the warmth of summer. Babak Tafreshi/*Dreamview.net*

The mission of the International Dark-Sky Association (IDA) is to preserve and protect the nighttime environment and our heritage of dark skies through environmentally responsible outdoor lighting. IDA was incorporated in 1988 as a tax-exempt 501(c)(3) nonprofit organization. (FIN 74-2493011)

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ALConExpo 2010 IDAagm

Astronomical League Convention and Expo
International Dark-Sky Association Annual General Meeting

Notable names from the world of astronomy included Dr. David Levy and Dr. Roger Angel (pictured above). Dr. Angel is the 2010 Kavli Prize winner and director of Steward Observatory Mirror Laboratory. He discussed the process of using mirror technology and applying it to develop solar energy.

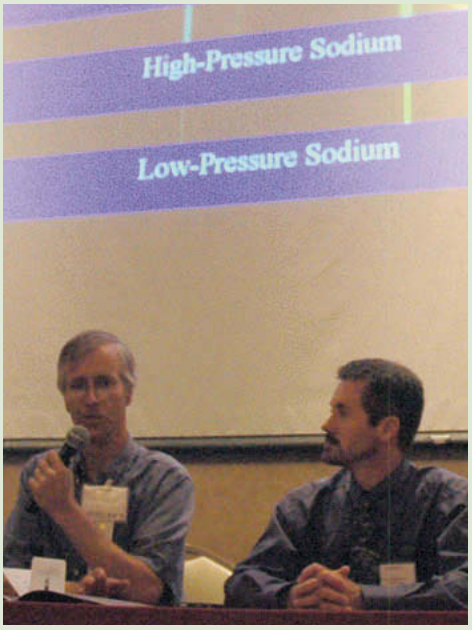
IDA partnered with the Astronomical League and Tucson Amateur Astronomy Association (TAAA) to jointly host its 22nd Annual General Meeting and Conference in Tucson, Arizona. ALCon, the annual meeting of the Astronomical League, occurred 25 & 26 June 2010, followed by IDA's program on 27 June. Lunt Solar Systems contributed its support while holding its annual conference concurrently at the same meeting venue, the Hilton East Inn and Suites in Tucson.

Co-hosting captured the cross-interests of astronomers and the dark sky movement. Nearly two years of planning by conference co-chairs Bob Gent (former IDA Board President) and TAAA President Keith Schlottman, combined with the efforts of former IDA program director Kim Patten, created a memorable event that reached a broader audience than ever before. Over 250 astronomy enthusiasts attended ALCon, and many stayed through Sunday to hear IDA's experts focus on the global fight to protect our view of the stars.

Participants, vendors and coordinators agreed that the IDA and amateur astronomy collaboration made the 2010 conference a scorching success—so successful that on 16 & 17 April 2011, IDA will hold the 2011 conference in conjunction with the largest gathering of astronomers in the country at the Northeast Astronomy Forum (NEAF), in Suffern, New York, under the generous sponsorship of the Rockland Astronomy Club.

Other celebrities from the nighttime world included Wally Pacholka of TWAN and Tyler Nordgren (pictured above). Tyler Nordgren's book, *Stars Above, Earth Below: A Guide to Astronomy in the National Parks* was reviewed in *Nightscape* issue #80.

The free exhibit of The World at Night (TWAN) photographs in the Hilton lobby captured everyone's attention. University of Arizona student Soha Namnabat coordinated the stunning display.



Panel experts such as Chris Luginbuhl (U.S. Naval Observatory, left) and Chad Moore (National Parks Service, right) outlined the challenges ahead for the night sky conservation movement. Hot topics included sky brightness monitoring, concerns about blue-rich white light, and an information session about the Model Lighting Ordinance. IDA thanks all those who participated.

A number of vendors generously donated merchandise for truly stellar door prizes. Grand Prize winner Ann Scott (bottom left, pictured with Michelle Meskill of Celestron and Dean Koening of Starizona) received a HyperStar imaging accessory donated by Starizona to go with her NexStar 8SE Telescope from Celestron, with additional winners scoring scopes from OPT Telescopes, Lumicon, and two Celestron FirstScopes from Starizona. IDA's Dark Sky Giveaway contest winner, Lee Paul, (top left, shown with Bob Parks) traveled to ALCon to receive his set of six Tele Vue eyepieces in person.

2010 European Symposium for the Protection of the Night Sky

by Bob Parks

I travelled to Kaposvár, Hungary in September to join dark sky advocates from around the world. This year's event was hosted by IDA Hungary leader Zoltán Kolláth, near Zselic National Landscape Protection Area, the site of one of Hungary's two Dark Sky Park locations.

I gave a presentation on the challenges that IDA faces and the direction for the future. Dark sky advocates must concentrate our efforts on the most critical issues. We need to start recognizing that only a reduction in overall lumens in the environment will help us reach our goal. The mass conversion to LED lighting in the next decade will provide a once in a century opportunity to fundamentally change outdoor lighting. Done right, LED lighting will provide the opportunity to re-think how, when and how much we light. We must ensure illumination levels are minimized and that adaptive controls are employed with this new technology so lighting can be dimmed to levels appropriate to the activity and turned off when no longer needed. Several presentations explored this idea, such as Mike Hall's discourse on lighting for signs.

The dark sky movement must capitalize on the worldwide energy conservation movement and educate the public and government that outdoor lighting holds the potential for huge energy savings and reduction of greenhouse gases. The two-day symposium's 2010 theme, "The Science of Light Pollution," focused attention on these areas with presentations on modeling the biological effects of light at night by Mihály János Varró, a study of the effects of artificial night lighting on marine birds on the Azores by Christoph Aubrecht, light pollution assessment and control at the Calar Alto Observatory by David Galadí Enríquez, sky monitoring with the IYA lightmeter network by Günther Wuchterl, and a panel on night sky metrology. Joint sessions with International Astronomical Union Commission 50 examined lighting and astronomy.

This event was a great opportunity to get to know our Chapter leaders and other dark sky advocates better and to learn what is being done to fight light pollution and raise awareness globally.

More importantly, the 2010 symposium opened a candid discussion of issues that are most important to dark sky advocates around the world and exploration of how these concerns will impact IDA as a whole. Serious interest in organizing the separate advocacy groups in Europe into a single unified group that will operate independently from IDA is developing. One compelling reason for this change is the idea that an EU based group would have better access to government grants and financial support. IDA representatives in Europe and the U.S. are continuing a dialog regarding the best way to pursue this idea while maximizing cooperation and minimizing duplicated effort. IDA's European board members, Friedel Pas and Martin Morgan-Taylor, will continue to be involved in the process and to recommend the most effective direction for coordinating efforts to protect the night skies worldwide.

The next European Symposium will be held in Osnabrück, Germany and hosted by Andreas Hänel of Dark Skies Germany. Hope to see you there.

Natural skies enhance natural features

First: Clayton Lake State Park in Northeast New Mexico by Peter Lipscomb
Second: Goldendale Observatory State Park in Washington State by ***www.RogerMullis.com***
Third: Hortobágy Starry Sky Park in eastern Hungary by István Gyarmathy
Fourth: Sark Island in the English Channel by Martin Morgan-Taylor

The International Dark Sky Places program is growing briskly. Four additional sites have passed the rigorous application process, bringing the total of protected parks, communities, and reserves to nearly a dozen.

IDSPlaces are exceptional not only for their excellent management initiatives, but for the way each location tailors a dark sky conservation plan to meet site-specific goals. As the program develops, IDA is helping sites create lighting management plans and outreach functions that accentuate their identity. These four sites used the IDSPlace requirements to enhance their prevailing character while adding another draw for tourism. In every case, the night sky conservation regimen complimented existing programs, even those that were not astronomy based.

Clayton Lake State Park

2010 **Clayton Lake State Park** in northeast New Mexico features thriving wildlife and an exciting slice of natural history. The lake offers abundant trout, catfish, and bass, and its spillway is an internationally significant dinosaur trackway, revealing over 500 dinosaur footprints left 100 million years ago. Now Clayton Lake SP has added unpolluted starry skies to their list of historical wonders with a Gold Tier IDSPark designation awarded 22 June (Gold, Silver or Bronze Tiers describe the quality of a region's night sky and are not related to a park's conservation regimen). The designation increases a sense of primeval timelessness that endures both day and night.

Approximately 65,000 visitors per year visit the park, and many attend star parties at the park's observatory facility. The Reach for the Stars program, initiated in 2004, uses trained interpreters and amateur astronomers to promote the night sky as an educational and economic resource for New Mexico. Park staff and volunteers worked closely with the town of Clayton and the New Mexico State Parks system to ensure quality lighting guidelines both within the park and in the surrounding community. In 2010, the park completed lighting retrofits to conform 100% with shielding and spectral considerations for low-light areas.

The IDSPark designation represents a significant achievement for the region, since the New Mexico Heritage Preservation Alliance declared New Mexico's night sky as one of the state's most endangered cultural resources in 1999. "We are grateful for this recognition and hope that Clayton Lake State Park is the first of many New Mexico State Parks to achieve this distinction," said David J. Simon, director of the New Mexico State Parks system.

Goldendale Observatory State Park

Goldendale Observatory State Park (GOSP) in southern Washington faces several challenges to execution of its night sky protection program, but earned provisional status for a Silver Tier designation on 22 June. As a five acre educational facility perched on a 2,100 foot (640 meter) hilltop, the area resembles a small campus more closely than a landscape protection area. It is situated close to the City of Goldendale within a moderately light polluted area.

Despite its diminutive size, GOSP has been promoting astronomy education since its dedication in 1973. Housing one of the nation's largest public telescopes (24.5 inches) GOSP is the primary night sky interpretive site in the Washington State Parks system. At the time of application, park management had already created curricula correlating to the public education component of an IDSPark designation, providing a vigorous agenda including history of Astronomy, telescopes, and the space program. Dave Ingram, IDA Northwest Chapter leader, is working to develop and expand education activities. Mr. Ingram regularly fields calls from Washington State Park personnel interested in initiating dark sky education in parks across the state.

The Dark Sky Places Committee granted Goldendale provisional status to encourage park personnel and the surrounding community to enact permanent measures that will secure the reclamation of dark skies over one of the largest public observatories in the U.S. It is believed that provisional status will create momentum to carry out the lighting retrofits to GOSP that must be completed prior to full designation. Protecting this important observatory from light pollution is key to inspiring additional night sky conservation within the Washington State Parks system. GOSP Facility supervisor Steve Stout remains committed to expanding Goldendale Observatory's role in public astronomy and increasing the park's appeal as a scientific and recreational destination.

Hortobágy Starry Sky Park

2011 Hungary's second IDSPark, **Hortobágy Starry Sky Park** in eastern Hungary (Silver Tier) comprises 10,000 hectares deep within Hortobágy National Park, which protects the largest continuous native grassland in Europe. Hortobágy's rich marshland and alkaline flats provide a vital haven for wildlife and birds, and it is a UNESCO Ramsar site and Biosphere reserve. The ancient land has remained largely untouched since the last ice age, but was an important area for early civilizations. Ancient pastoral buildings scattered among the grounds led to its recognition a UNESCO World Heritage site.

Hortobágy is the most important bird corridor of the Transylvanian Basin region, home to 159 species of nesting birds and host to 178 migrating species. Seasonal migrations see between 100,000–300,000 gray geese, approximately 100,000 cranes, and 50,000–200,000 ruffs. The area supports rare species of plover, the Pale Harrier, and has offered glimpses of the critically endangered Slender-billed Curlew.

Hortobágy's lighting management plan focuses on avian protection. It is the first IDSPlace to concentrate primarily on wildlife impacts, with astronomy programs in the supporting role. IDA hopes this emphasis on ecology is the basis for many future dark sky conservation initiatives.

Zoltán Kollanth, president of the Hungarian Astronomical Association and leader of IDA Hungary, coordinated action between numerous parties including astronomical groups, the Hortobágy National Park Directorate and the Hortobágy Nature Conservation. Likewise, the accomplishments of the designation are threefold: in addition to habitat protection, IDSPlace status extends astronomy outreach (future plans include opening an observatory in the park) and bolsters support for a proposed national light pollution law.

Sark Island

Located in the English Channel off the coast of Normandy, France, **Sark Island** offers a singular blend of history and culture that attracts approximately 40,000 tourists per year. A Feudal society until 2008, Sark's 650 residents now govern themselves with a parliament based around Norman law. Though Sark is a United Kingdom protectorate, many island elders speak a Norman dialect known as Sercquiais.

Life on Sark connotes a step back in time. The island has no public lighting and allows no motor vehicles beyond tractors used for farming. Destinations are reached on foot, by bicycle, or by horse drawn carts.

Touting itself as the world's first Dark Sky Island, Sark is taking advantage of its Silver Tier IDSCommunity status to boost tourism and to add a new dimension to its default anachronisms. Thanks to its island location and generally low use of residential and commercial electricity, Sark offers a lovely view of the Milky Way. Yet residents worked hard to show full support of the IDSCommunity requirements.

Hotels are already offering astrotourism options. Sark's government has pledged to conform any future lighting to IDS Community requirements. Residents anticipate how the lighting management plan will add to the island's character. The community's new lighting guidelines preserve its charm while embracing sustainability and creating a purposeful directive for future lighting practices.

Steve Owens, a member of the Campaign for Dark Skies and chief coordinator of Sark Island's outdoor lighting management plan, notes, "It was clear to me when I began working with the community on Sark that they realize how precious and rare their view of the night sky is. The decision to seek designation was really supported by everyone on the island, and great efforts were made to improve lighting, both by individuals and businesses, who see the benefit of astronomy as a way of supporting the local economy during the winter."

CHAPTER NEWS

Chapter activity and volunteer work have never been higher! IDA's "all stars" are raising awareness and improve outdoor lighting in five continents. And helping out has never been easier. IDA's easily navigable Web site and Wiki page (*wiki.darksky.org*) empower the exchange of information with the click of a mouse. Outreach manager Johanna Duffek circulates educational and organizational materials for serious volunteers in the monthly Chapter periodical *Nite Net*, a great resource available free to members on the "members" section of the Web site.

Nightscape's Chapter News section no longer does justice to the fantastic activities of IDA volunteers. In order to get the high volume of news out in a timely fashion, we are proudly circulating Chapter updates in our bi-weekly eNews, Night Watch, and in *Nite Net*. We hope the extended coverage encourages more people to work with their Chapters and to volunteer themselves.

NEW CHAPTER

IDA Colorado Plateau
Kate Magargal
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EUROPEAN CHAPTERS

IDA Belgium

Over 24,000 participants raised awareness of light pollution at the fifteenth annual Belgian Night of Darkness on 16 October 2010. Instigated by IDA Board member and leader of IDA Belgium, Friedel Pas in 1995, the event has grown steadily while celebrating positive changes to Belgium's lighting policies.

During the ceremony, the minister for public infrastructure announced the intention to permanently switch off highway lighting in the Flanders region, a significant national achievement. Belgium has nearly 100% continuous roadway lighting along highways, but the government is now taking steps to reduce energy consumption through smarter lighting policies. Lighting curfews initiated 10 years ago continue to evolve toward darker streets (with a permanent exception for large intersections and exit ramps, and additional exceptions during poor driving conditions and roadway construction). The announced change will turn off all lamps currently switched off at midnight.

The announcement followed a release from the Belgium Institute of Traffic Safety, which did a study on past switch off efforts and determined that lighting curfews did not impact roadway safety. Calculations on estimated cost savings equate the all-night switch off at more than 2 million Euros per year. Three municipalities announced plans to proceed with either an earlier lighting curfew or permanent removal of selected lighting fixtures outside the central urban core.

IDA Northern Ireland

Four secondary school students from Santa Sabina, Dominican College, Dublin, Ireland earned the "Most Innovative Award" from among over 8,000 participants at the ECO-UNESCO Young Environmentalist Awards (*www.ecounesco.ie*) with their project "The Light Pollution Game."

Using Thinking Worlds® software, the students developed a 3D interactive environment (originally created for the Light Pollution Challenge at the 9th European Symposium for the Protection of the Night Sky), to highlight problems associated with light pollution. The game was designed to raise awareness in young children and the general public.

North Norfolk, United Kingdom

The North Norfolk Dark Sky Survey team has created a survey to establish a benchmark for night sky quality along the North Norfolk coast. Team member John Prockter reports taking 114 readings along a 60 kilometer (47 mile) span to start a database on sky quality that will continue to expand with time.

Survey findings will be used to monitor and protect the skies over North Norfolk, which enjoy some of the best quality night skies in England. Classed as an Area of Outstanding Natural Beauty, the coast has been given priority for the initial work. Future work will extend further inland and ideally more of North Norfolk is hoped to be surveyed if possible. Alongside the quality readings, a series of 360 degree photographs are being taken to identify light pollution sources.

NORTH AMERICAN CHAPTERS

IDA Ontario, Canada

On 17 May 2010, representatives from the Royal Astronomical Society of Canada (RASC) and the Peterborough Astronomical Association (both IDA organizational members) attended the Canada-wide Science Fair at Trent University in Peterborough, Ontario. John Crossen of Buckhorn Observatory, RASC Kingston Centre, and the PAA ran sessions with a portable Star Lab Planetarium while Mark Coady, Director of Light Pollution Abatement for RASC, ran six sessions of safe solar viewing. Light pollution abatement (LPA) displays and brochures were on view.

IDA Pinal County, Arizona

Under unanimous recommendation from the Planning and Zoning Commission, the Pinal County Board of Supervisors has enacted a lighting code that IDA Pinal County leader Keith Krueger has been working on for several years. While Mr. Krueger is disappointed in the loose lumen restrictions, the lighting ordinance is a huge step forward for Pinal County. In general it requires full cutoff fixtures, with allowances for cutoff or semi-cutoff fixtures for dimmer lights. In some zones, color temperature is limited to 3000K. Total lumen limits are currently being established, and IDA Pinal County is petitioning the County Board of Supervisors to cap the amount of allowable unshielded light at 100 watts incandescent and to further reduce the amount of allowed uplighting.

IDA Denver, Colorado

IDA Denver leader Robert Stencil reports that on 21 June 2010, the city and county of Denver, Colorado adopted sweeping new building and zoning code regulations that address lighting management for the first time. Stencil writes, "the code was developed with sustainability concepts that represent the area's growing awareness of the value of resource conservation and pushed by a precursor effort known as Greenprint Denver. Lighting language is limited but represents a step forward in recognition of the need for smarter lighting in a large city." Code details can be found at *www.newcodedenver.org* under Article 10 - General Design Standards.

IDA Chicago, Illinois

The Boy Scouts of America Astronomy Merit Badge now has a light pollution element added to the requirements. Those who earn the badge must now "Explain what light pollution is and how it and air pollution affect astronomy." The new requirements took effect on 1 January 2011. Audrey Fischer, leader of IDA Chicago and an IDA Board member, saw this project completed after several years of involvement with star parties and astronomy activities for local scout troops.

IDA Texas

Dark sky leaders from around the Lone Star State met on 11 May 2010 in Fort Davis, Texas. IDA Texas coordinator Benjamin Jones, McDonald Observatory's Bill Wren, Sierra la Rana's Gil Bartee, George Observatory's Barbara Wilson, and others shared insights on lighting issues facing the state. One important conversation involved enforcement of existing state laws. Texas has a state law in place requiring all state funded entities to use cutoff outdoor lighting at their facilities, yet the law cannot be enforced without a strict enforcement policy.

Efforts for night sky preservation continue to shine in the Big Bend Region, with ordinances passed in Alpine, Van Horn, and under development in Lajitas, Marfa, and Burleson. Innovative funding sources promote lighting retrofits in Alpine and Big Bend National Park. Star Parties in 2011 continue to showcase the region's exceptionally dark nights. Events in Lajitas (1 & 2 April 2011) and the Prude Ranch near Fort Davis (29 May–5 June 2011) promise beautiful views and rousing discussion on ways to preserve them.

IDA Westchester County, New York

IDA Westchester County leader Charles Fulco joined an organization to observe the total solar eclipse on 11 July in Patagonia, Argentina. The group arrived in Buenos Aires, then flew to El Calafate to teach astronomy and the history and science of eclipses to school children, making sure to squeeze in dark sky principles. Light pollution in Buenos Aires rendered extremely limited visibility, but in El Calafate, Fulco reports, it was possible to see everything from about 20 kilometers away from the town. Inspired by the experience, he has made contact with Westchester County officials to discuss outdoor lighting regulations.

IN MEMORIAM
Chapter leaders

Tine Thevenin

Longtime IDA member Tine Thevenin died at home in rural Lake City, Minnesota, USA on 21 June 2010, at the age of 68. Known as the "Night Lady," her tenacious efforts to educate regional leaders on better outdoor lighting created an environmental awareness that continues to protect the night skies above Minnesota.

In 1998, the experience of stargazing outside a friend's rural home inspired a passion that led to 13 years of animated volunteerism. In that time, she landed seats on the Wabasha County Comprehensive Plan committee, the Wabasha County Zoning Committee, and other county committees. In 2000, Tine received a grant from the University of Minnesota to study downlighting in southeast Minnesota. She produced a presentation and a video to share with community leaders around the state. She explains the fruits of her advocacy in "Seeing Stars," her 1998 article for *Orion* magazine, which is available online at *http://www.orionmagazine.org/index.php/articles/article/2871/*.

Dave Toeppen

David R. Toeppen, 83, died on 15 February 2011. Dave attended New Trier High School and Northwestern University before graduating from Miami University of Ohio. While attending high school during World War II, Dave built a 10" reflector telescope despite wartime rationing of crucial materials, in pursuit of what turned out to be a lifelong interest in astronomy.

Dave enjoyed operating his telescope in public settings to share the night sky with others. He was a passionate advocate for dark skies, not only to preserve future generations' ability to view the heavens, but also as a means of preserving the environment through reduced energy consumption. He was the longtime leader of the Illinois at Large IDA Chapter. His persistent advocacy through IDA has led to the adoption of new dark sky regulations in several nearby jurisdictions, including Homer Glen in Illinois and the Kickapoo Valley in Wisconsin.

Dave also had a strong interest in the daytime environment and its protection, and often documented it through photographs

Continued on page 22

MEETING NEWS

Abuja, Nigeria

Technical Director Pete Strasser was the keynote speaker and guest of the Nigerian government at a lighting conference in Abuja, Nigeria held 4–8 June 2010. He met with the Ministers of Energy and Environment and was featured on the national television news and public radio network. "Nigeria has an amazing opportunity," observed Strasser, adding, "There is no reason that Nigeria can't be the showplace for the world and utilize the latest technological advancements and demonstrate to the rest of the world how modern lighting installations should be done. There is no reason for the country to duplicate the mistakes of the last 70 years." Nigeria is a clean slate. Leadership is willing to explore new technology and install state of the art equipment to save energy, save money, and preserve the nocturnal habitat.

Antofagasta, Chile

Pete Strasser was the keynote speaker at the International Conference on Light Pollution held 2–4 August 2010 in Antofagasta, Chile. Strasser gave a detailed presentation on the newest lighting technologies and the promise and peril they hold for astronomical observation and the nocturnal habitat to over 120 participants representing over 20 nationalities. He later participated in a panel discussion regarding enactment and enforcement of lighting ordinances. "Many ordinances are on the books, yet frequently ignored," said Strasser. "It is essential to engage the community on the fundamentals of the ordinance, and insist that laws be followed. The more the community understands the importance of ordinances, the more they will be enforced."

Salt Lake City, Utah

The Outdoor Retailer Summer Market occurred 3–6 August 2010 in Salt Lake City, Utah. IDA met with existing partners such as Celestron, *National Geographic* magazine, and the National Parks Conservation Alliance, and identified numerous potential partners among the broad spectrum of companies promoting outdoor activity.

Outreach manager Johanna Duffek reports that IDA's mission resonated among many of the approximately 20,000 daily attendees. Everyone had a personal starry night story. Companies understood the benefits of keeping the skies natural as a way to enhance the total camping and hiking experience. Duffek was interviewed for a feature in the blog for outdoor retailing giant REI.

Vienna, Austria

Pete Strasser participated in the CIE division 4 and 5 annual meeting in Vienna, Austria, held 4–8 September 2010. As chairman of T C5-27, the committee examining "Effects of Artificial Light and the Environment," he established a new concept for information transmission. Instead of printing a single report, a searchable database will be hosted by CIE to store information on all environmental studies pertaining to light. The database will divided between abiotic (non living or atmospheric effects) and biotic (living organisms and systems) effects. A baseline document will be prepared, then an annual update to indicate all new studies added to the database that year. The intent is to create a single location where anyone concerned with lighting can search using keywords. This database concept represents a huge change from the way CIE has approached problems and solutions, and is expected to help them gain an identity as an up-to-date and truly global authority on lighting and potential environmental consequences.

Chicago, Illinois

IDA Board member Audrey Fischer gave a presentation on reducing light pollution at the North Park Village Advisory Council (NPVAC) meeting in North Park Village, Illinois on 15 September 2010. The talk was inspired by a "Chicago Tonight" WTTW broadcast on dark skies featuring fellow IDA Board member Debra Norvil. According to minutes recorded by Glenda Daniel, Co-chair of the NPVAC, Fischer's talk addressed "benefits of retrofitting street lights so that wasted light doesn't go upward into the sky and is instead directed downward toward the street where it is needed. She also recommended other changes such as lighting billboards from the top down instead of from the bottom up which is currently standard practice." Fischer also described her contact with Mike Rashed, chief engineer for the Chicago Department of Transportation's Division of Electrical Operations. After the talk, NPVAC member Wayne Svoboda made a motion, which was seconded and unanimously approved, to recommend to the City of Chicago 's Department of General Services that burnt out fixtures in North Park Village be replaced with dark sky fixtures.

Chicago, Illinois

Johanna Duffek and Matt Root represented IDA at Greenbuild, the U.S. Green Building Council's 2010 Conference and Expo, held in Chicago, Illinois, 16–18 November. Over 1,000 exhibitors and almost 30,000 attendees sharing sustainable development information made this Expo, IDA's sixth as a non-profit participant, the largest conference to date. IDA was again able to entice new partnerships at this important sustainability forum. Inroads for future collaborations occurred with the Underwriters' Laboratory, Westinghouse, and the U.S. Ambassador from Finland.

Seattle, Washington

In November 2010, Pete Strasser was a guest speaker at FiRe Global West Coast, a conference that focuses on technological innovation and sustainable design. This year's event was held in Seattle, Washington. In addition to addressing over 300 participants, he met with Congressman Jay Inslee (WA-01) and

discussed the need for continuing nocturnal habitat impact research with respect to new lighting technologies being installed.

Park City, Utah

Pete Strasser was invited to speak to the City of Park City, Utah on dark sky and nocturnal habitat issues in a visit sponsored by both the City and private individuals. His meeting with the public was well attended. According to Diane Foster, city commissioner and head of sustainability efforts in Park City, Strasser's message and presentation were exactly what residents needed to hear. She anticipates action on his recommendations by the City and the meeting's citizen participants.

Toronto, Ontario

Bob Parks attended the Canadian Street Lighting Summit in Toronto on 7 & 8 March 2011. Speakers included Ed Ebrahimian of the Los Angeles Bureau of Street Lighting, Ron Gibbons of Virginia Tech Transportation Institute, Paul Lutkevich of Parsons Brinckerhoff and Nancy Clanton of Clanton and Associates. General consensus is that the LED revolution is here, but the economic benefits are not yet overwhelming. All seem to feel that cost/benefit will continue to improve rapidly and that many cities will continue pilot studies until the return on investment is more compelling. All agreed that it is important to share LED experiences to help cities make informed decisions.

Model Lighting Ordinance (MLO) training updates

Online MLO information sessions at have been conducted several locations throughout the country to gauge reaction and ensure understanding. The first MLO Webinar occurred 27 June 2010 at the Annual General Meeting in Tucson.

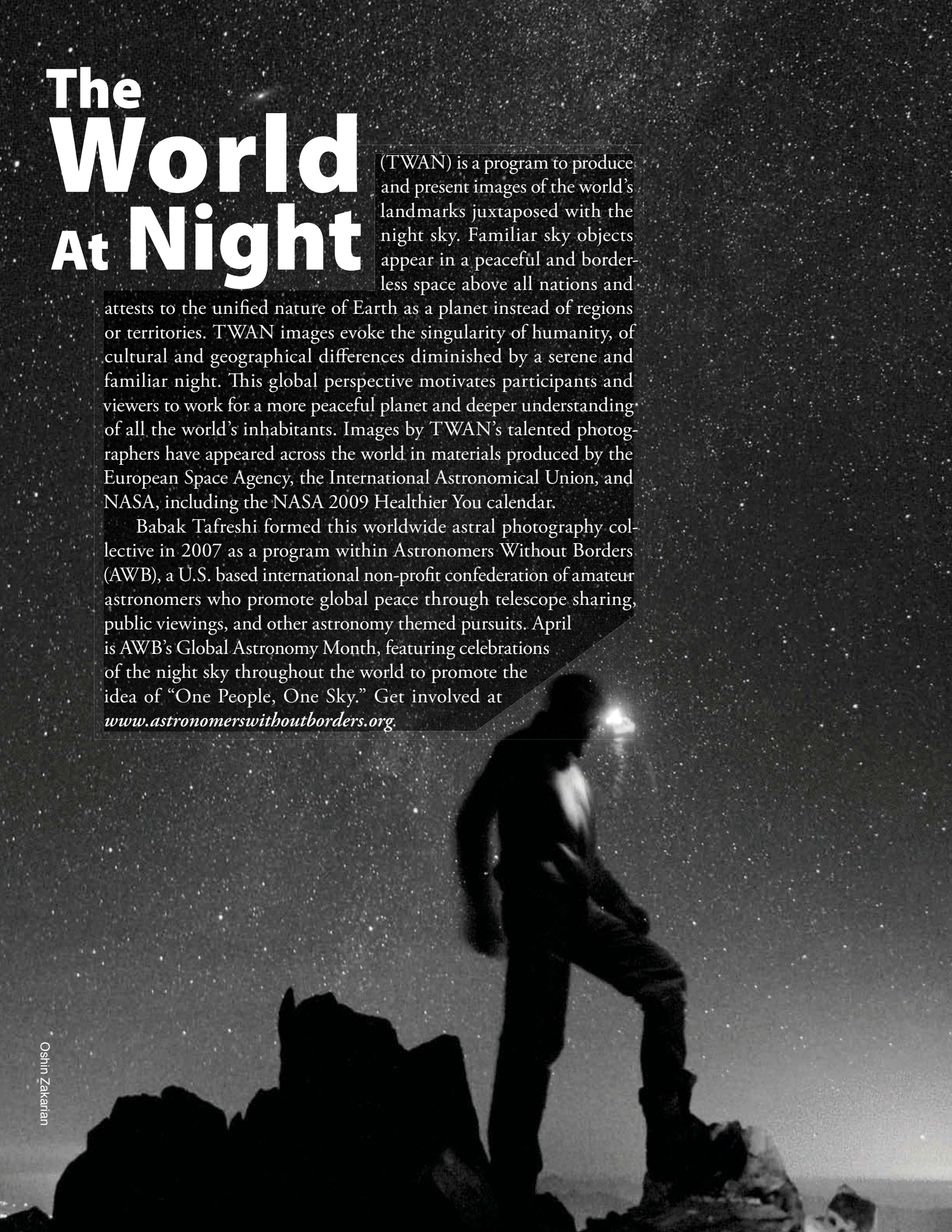
A Webinar distributed by the Illuminating Engineering Society (IES) took place on 13 October, and on 4 November, the International Association of Lighting Designers (IALD) featured the MLO at their workshop, "Dark Skies and Bright Lights: A Better Approach." A free presentation on the MLO can be viewed at *http://www.darksky.org/page/MLO.*

On 27 August, IDA hosted a live seminar on the MLO at George Mason University in Northern Virginia. The session reached individuals representing the IDA Board, lighting companies, billboard companies, government officials, county planning officials, and an IDA Chapter leader. IDA Board member Jim Benya, who chaired the IDA/IESNA Joint Task Force for a Model Lighting Ordinance, explained the history and content of the current ordinance. Terry McGowan, chairman of the IDA Technical Committee, spoke about uplight, glare and broad spectrum white light issues. The presence of so many experts from so many sides of the issue made for interesting and helpful discussions.

The World At Night

(TWAN) is a program to produce and present images of the world's landmarks juxtaposed with the night sky. Familiar sky objects appear in a peaceful and borderless space above all nations and attests to the unified nature of Earth as a planet instead of regions or territories. TWAN images evoke the singularity of humanity, of cultural and geographical differences diminished by a serene and familiar night. This global perspective motivates participants and viewers to work for a more peaceful planet and deeper understanding of all the world's inhabitants. Images by TWAN's talented photographers have appeared across the world in materials produced by the European Space Agency, the International Astronomical Union, and NASA, including the NASA 2009 Healthier You calendar.

Babak Tafreshi formed this worldwide astral photography collective in 2007 as a program within Astronomers Without Borders (AWB), a U.S. based international non-profit confederation of amateur astronomers who promote global peace through telescope sharing, public viewings, and other astronomy themed pursuits. April is AWB's Global Astronomy Month, featuring celebrations of the night sky throughout the world to promote the idea of "One People, One Sky." Get involved at ***www.astronomerswithoutborders.org***.



Oshin Zakarian

Q and A with Babak Tafreshi

Where did you get the inspiration to form TWAN?

The night sky is my second home (or, as my wife often reminds me, it's my first home!). I feel peace, enjoyment, and eternality under the starry sky. In the early 1990s I started to take night sky images with a simple manual film camera. I tried many kinds of photography, but my passion is to bring Earth and sky into one frame and to display the connection as it has been appreciated by humans for eons. I gradually noticed a universal message of sky in my photos: the same sky above various symbols of civilizations; the same sky above a temple, a church or a mosque. This eternal roof above all of us makes us one family of humanity and embodies the idea of "One People, One Sky." I noticed there are other sky photographers with the same goal around the world and I had the idea of making this effort an international program. It finally became real when AWB was founded in early 2007 by Mike Simmons. Our first program was to establish the TWAN project. I started contacting photographers who were most accomplished in this style from various continents.

What would you consider to be TWAN's largest successes?

TWAN photographers work to reclaim a night sky that most modern people have lost, taking people to remote places where the stars still look like they did at the dawn of mankind. I'm also pleased with how TWAN is a small step toward universality and better understanding of our conditions on this small planet. But we are always working toward our goals:

- To better connect people with astronomy using beautiful, educative, and easy to communicate images using familiar landmarks of daily life. These images display the hidden beauty of night that could be experienced by anyone without giant telescopes or any optical aid. They also illustrate important principles of astronomy and sky gazing. Astronomers and educators worldwide use TWAN imagery to popularize astronomy.
- To increase the interest and knowledge of sky photography.
- To introduce astronomy destinations around the globe and to display the best observing locations of the planet, where the cutting-edge professional observations are being made.

Congratulations on TWAN's first book, *Zauber der Sterne* (*The Night's Magic*), published by KOSMOS in Europe. Are there other TWAN projects to look forward to?

While TWAN activities have been mostly concentrated on global exhibitions, workshops and lectures, and media contributions, we also work on some products. The book will be translated and published in other languages, and we are negotiating with several publishers for a TWAN English book in the U.S. TWAN is also featured in the film "Acquainted with the Night," based loosely on the book by the Governor General award winning author Christopher Dewdney, and produced by the Canadian film company Markham Street Films. It has already been screened in Canada and at the Palm Springs Film Festival, and will be airing on ARTE France in the spring.

> *…a single celestial event can inspire people around the world, despite how different they might be in culture or how our political boundaries might separate them…*

How do TWAN events contribute to astronomy in small communities?

We use imaging missions to work within a country, where we hold workshops and share ideas and experiences with a local astronomy community. Some TWAN members lead expeditions. The TWAN team makes long-term planning for worldwide celestial events, and some of us are specialized in chasing events such as solar eclipses.

One of the best results of this teamwork is to better display how the night sky is a bridge between all of us, how a single celestial event can inspire people around the world, despite how different they might be in culture or how our political boundaries might separate them. Such projects have occurred in Algeria, Brazil, India, Iran, Nepal and several other countries.

What do you see as TWAN's role in the reduction of light pollution?

TWAN images try to make people aware of how the night sky is an essential part of our environment, and not just an astronomer's laboratory, and to display how the night sky becomes a forgotten part of nature for many people in urban light polluted areas. We look for dark locations where the natural beauty of night sky is not spoiled, but we also occasionally photograph in urban areas to compare the beauty that is gone with the lights. The archive of TWAN imaging is also useful to display how light pollution is increased or controlled at various sites by comparing images taken in different years, especially at important observatories. This project idea has been shared with a few astronomers at NOAO, and TWAN has the potential to develop it.

How can people get more involved with TWAN?

TWAN's Guest Gallery allows photographers from around the world to submit their TWAN-style images.

Following pages feature images and insights from fellow TWAN members.

Continued on page 22

"To capture the nature in all its glory, there are three principles: To "see," to be in the right place at the right time, to use the right gear for that particular subject."

–Oshin Zakarian
www.dreamview.net

In a moonlit night in the World Heritage Site of Sagarmatha National Park in Nepal, the spectacular view of the Himalayas emerges under the starry sky. The scene was recorded in late November from an altitude of 3,600 meters (11,800 feet) near Tengboche Monastery. On the left, Lhotse, the world's fourth highest peak (8,616 meters, 28,267 feet), is visible while the outstanding Ama Dablam (6,812 meters, 22,349 feet) is on the right, where the Beehive Star Cluster, or M44, rises in the autumn sky.

Oshin Zakarian

Persian-Armenian photographer Oshin Zakarian was born in Tehran in 1977 and began his career in photography in 1992. He is completely devoted to photography of all kinds including nature, architecture, industry and products, people and portraiture. But Zakarian's main interest is capturing nature and historical landmarks at night during astronomical events. He feels that a strong emotional connection with nature helps a photographer produce greater impact in his photographs. His passion for photographing monuments of different cultures under the same starry sky has led him on many adventures as well as the TWAN project.

Zakarian shuns today's common digital equipment in favor of traditional medium-format film cameras. His photographs have appeared in many publications and on calendars as well as in America's best-known astronomy magazines. His work has been exhibited in Iran and in several European countries.

Yuichi Takasaka

Yuichi Takasaka became interested in photography in his late teens when he moved to Canada from Tokyo, Japan. He worked as a video cameraman in the late 1980s and developed an eye for a good picture. Takasaka didn't seriously develop his photography skills until the early 1990s, when he moved to Yellowknife in the Northwest Territories, Canada. While living there, he gained much of his expertise from conferring with professional photographers who shared their love of the craft with him. Since that time, his images have appeared in various brochures and magazines, educational books, textbooks, and on many Internet web pages, including NASA. Takasama left Yellowknife after seven years; however, he returns to lead photography tours every year.

"A fall Aurora photography tour session is great to capture the reflection of the Aurora on Prelude Lake and it is not super cold like winter time. This panorama was composite of 6 images to cover about 180 degrees, using Canon EOS 5D Mark II and EF24/1.4L Mark II lens pointed vertically."

–Yuichi Takasaka
www.blue-moon.ca

This gorgeous night skyscape first appeared on NASA's Astronomy Picture of the Day. In the foreground lies the peaceful Prelude Lake, located about 30 kilometers east of Yellowknife, Northwest Territories, Canada. From high northern latitudes these mesmerizing northern lights, also known as the aurora borealis, are becoming a more familiar sight. This panoramic scene spans about 180 degrees. Brighter stars peering through the auroral glow at the left form the recognizable northern asterism, the Big Dipper. A more compact Pleiades star cluster shines at the far right. It was filmed at a Madeline Lake cabin on 8 September 2010 at 2:04 MST.

John Goldsmith

West Australian astronomical photographer and researcher John Goldsmith is conducting Ph.D. research at the International Centre for Radio Astronomy Research (*www.icrar.org*) into the subject of Aboriginal sky knowledge and the ways in which this knowledge is being shared today. Goldsmith's 2010 field work included a visit to the well preserved Kandimalal, Wolfe Creek Meteorite Crater located on the border of the Great Sandy Desert in Western Australia's East Kimberley region.

Many crater images are featured in Goldsmith's exhibition "Celestial Visions." His work also appears in international exhibitions via The World At Night. One of his most exciting photographic projects developed from a remarkable chance event. In 1995, Goldsmith photographed Comet Hale Bopp one week before it was discovered. In 1997, he embarked on a photographic journey to document the comet as it appeared above the world heritage sites of the Pyramids of Giza, Egypt, and Stonehenge, United Kingdom, inspired by how it had appeared over 4,000 years ago in these ancient civilizations.

Goldsmith's interest in the cultural aspects of astronomy has developed through his contribution to the Cosmology Gallery in Western Australia. The gallery brings together exhibits exploring the diverse ways in which cultures imagine the night sky, and the origin of the universe. Artwork has been inspired by Buddhist, Christian, Islamic, Hindu, Australian Indigenous, and scientific perspectives (*www.gravitycentre.com.au*).

> *"I'm extremely fortunate to be able to document the night sky, and the remarkable astronomical landscapes I've visited. Many people will never have the opportunity to experience this for themselves, so my astronomical photography has become a way of sharing with others the remarkable Universe we live in."*
>
> –John Goldsmith
> *www.celestialvisions.com.au*

"Kandimalal, the crater, is a very special place. It allows you to experience an ancient landscape and gain a sense of the massive meteorite impact event which took place some 300,000 years ago," says Goldsmith. His 25+ years of astronomical photography experience indicates the enormous depth of inspiration that the night sky provides. He uses astronomical photography, time-lapse and panoramic photographic techniques. This panoramic of Kandimalal is illuminated by strong moonlight.

A nearly full night of Patagonia is captured in this long accumulated exposure, made of hundreds of continuous shots. The resulting star-brimming image shows the sky rotation (caused by the rotation of our planet). Note the diverse star colors visible with their trails. The famous "Cuernos" (horns) Mountains and Pehoé Lake in the World Heritage Site, Torres del Paine National Park, are shown in this image. These gigantic granite monoliths are shaped by the forces of glacial ice. A time-lapse video made by continuous shots used for this startrail image is available at *http://astrosurf.com/sguisard/Pagim/Torres_Del_Paine.html*.

Stéphane Guisard

Native of the Lorraine region of France, Stéphane Guisard has been living in Chile since 1994, where he works as an optics engineer at the Very Large Telescope in the Atacama Desert. He is specialized in active optics, optical alignment and telescope optical and image quality improvement.

Besides working in a professional observatory, Guisard has been an amateur astronomer since childhood, when he started to build his first telescopes. He especially enjoys taking images and time-lapse movies of the night sky in order to share the beauties of the heaven to the public. He takes advantage of the pure and dark sky of the Atacama Desert where he works to make sharp deep sky astrophotographs. His images have been published in many books, magazines and television programs around the world.

http://astrosurf.com/sguisard

A shot in the dark?

How to capture deep sky images in spite of light pollution

IC 1396: **Acquired and processed by Neil Fleming**

IC 1396 featuring the Elephant's Trunk (3 o'clock) was imaged from severely light polluted Boston, Massachusetts using an SBIG monochrome STL-6303 CCD with Astrodon Ha, OIII, and SII filters, through a Takahashi FSQ apochromatic refractor of 530mm focal length.

By Warren Keller

There is a transformation occurring in amateur astronomy. The accessibility of sophisticated cameras and imaging equipment has more and more visual observers turning towards photography as an astronomy pastime. With patience and the right accessories, even a novice can get good shots with affordable gear.

Imaging at low magnification is always the best place to start. A DSLR with an average lens (approximately 50mm) mounted on a tripod enables the capture of star trails, wide field constellation shots, even meteor showers. As one advances, the camera and a telephoto lens (approximately 100–300mm) can be mounted 'piggyback' to a tracking mount for increased magnification and longer exposure times. Cooled video cameras for astronomy can be attached to either a camera lens or a telescope and allow real-time views to be shared on a monitor while the session is recorded.

For those without access to a dark sky, the capture of bright solar system objects such as the sun, planets, and moon require a steady atmosphere ('good seeing'). Streaming devices such as webcams are able to aggregate fleeting seconds of best seeing. Software splits the movie into individual frames, selecting only the sharpest ones to stack into a finished image. High magnification through a telescope is usually required, but the short exposures do not require accurate tracking mounts or polar alignment.

Photography of the deep sky (galaxies and nebula) does require a precise tracking mount that is polar aligned, and for most systems, a second camera called an autoguider. Over the course of multiple exposures, the autoguider's job is to correct errors in the mount's motor drive. Thus, despite the Earth's rotation and mechanical imperfections, images of nice round stars are achieved.

For high quality deep sky imaging, there is no substitute for dark sky. Many elite imagers opt for remote setups under pristine conditions. Amateur domes are controlled via the internet from suburban homes, sometimes thousands of miles away. Darkness is essential to create the contrast necessary to render the dimmest details of deep sky subjects. Steady seeing and transparency are equally important factors for exceptional images, which is why the thin, dry air of mountainous desert regions is so popular.

Rho: Acquired by Brent Maynard of Huntington, West Virginia, processed by Warren Keller

The Antares-Rho Ophiuchi region was imaged from the Winter Star Party in Florida using a modified Canon 450D DSLR with a 180mm f/2.8 Nikkor camera lens.

If photography of deep sky objects from a light polluted location is the goal, there are accessories that will help. Light pollution filters reject many of the man-made wavelengths while passing desired ones. Sophisticated software further eliminates residual light pollution gradients in order to extract good color. Telescopes with longer focal lengths yield narrower fields of view, and this, along with their slower focal ratios, is preferred for avoiding the unwanted ambient light. Newer photographers often choose less ambitious equipment with wider field setups for general application. However, these systems are more adversely affected by light polluted skies—something to keep in mind when deciding on equipment.

If the location is severely light polluted (<LM 3), narrowband filters offer salvation. Here, a very narrow bandpass rejects everything but the specific wavelength targeted- often Hydrogen alpha, Oxygen III, and Sulfur II. This technique offers images that are either black and white, or have a "sci-fi" look called 'mapped color'.

Narrowbanding is best accomplished with a thermoelectrically cooled, monochromatic CCD camera. These are capable of individual exposures, often 10–30 minutes in length, through one filter type at a time. Several hours worth of these individual subexposures are then digitally stacked by software into finished 'masters'.

Wonderful, natural color results can be achieved in good to great sky (>LM 4) with either a monochromatic CCD using LRGB filters (Luminance, Red, Green, Blue), commercial DSLRs (*e.g.* a Canon Rebel modified for astrophotography), or a One-Shot-Color (OSC) CCD camera. OSCs possess the cooling attributes and 16-bit output of monochromatic CCD cameras, but as with DSLRs, are able to collect all color at once without the use of filters and a filter wheel. Though they are very convenient, they are less efficient than their monochromatic counterpart, and not recommended for narrowband work.

No matter what level you choose to enter the wonderful world of astroimaging, there is a piece of heaven waiting to be captured by you!

Warren Keller teaches astroimage processing via IP4AP.com tutorials—a Sky & Telescope *'Hot Product'. His images and articles have been published in* Sky & Telescope, AstroPhoto Insight, Amateur Astronomy, *and many places on the Web, including NASA's APOD. He is currently writing a book for Springer Press and is the U.S. representative for Atik CCD cameras. Visit his Web sites' at* ***www.BillionsandBillions.com*** *and* ***www.IP4AP.com***

Aknitak: Acquired by David Plesko, processed by Warren Keller

The Alnitak region of Orion was imaged from Cherry Mountain Observatory in Fredericksburg, Texas using an SBIG monochrome STL-11000M CCD with Astrodon CRGB filters, through a Tele Vue NP101is apochromatic refractor of 545mm focal length.

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LIGHTING NEWS

Light pollution shown to increase air pollution

In December 2010, the National Oceanic and Atmospheric Administration (NOAA) and the Cooperative Institute for Research in Environmental Sciences (CIRES) at the University of Colorado released a study that linked sky glow over Los Angeles, California to increased air pollution.

Vehicle exhaust, factory emissions, and other human created particulates are broken down every night and prevented from becoming smog and ozone by a form of nitrogen oxide known as the nitrate radical. This useful compound forms naturally at night and is destroyed by sunlight. The study showed that the nighttime lights of Los Angeles, although 10,000 times dimmer than the Sun, mimic the effects of sunlight on the nitrate radical, impeding nighttime air cleansing by up to 7% and increasing the starting chemicals for ozone pollution the next day by up to 5%.

NOAA investigator Harald Stark will speak on the implications of these epic findings at the IDA Annual Conference on 16 April 2011.

Energy and environmental legislation: Two avenues toward darker skies

by Milt Roney
Associate Director, IDA Washington Office

All politics is local, as the saying goes, so when the White House Office of Science and Technology asked IDA to bring a display to a star party near the Washington Monument last July, the Washington Office readily agreed. Squinting in the glare of hundreds of intensely bright acorn lights, the DC office explained light pollution to Congressional staffers and others who showed up. At that event, IDA DC was recruited to appear at a fundraiser for the financially endangered Arlington Planetarium two weeks later. Hundreds showed up for the event and all of them got a chance to talk to us and get a look at the IDA display.

IDA used these opportunities to speak on the topic of solid state lighting, as exciting developments in the technology suggest that it will take over the outdoor lighting industry in coming years. IDA is advocating solid research to determine whether the eye's sensitivity to blue-rich light emitted by some solid state lighting products means that lighting levels should be reduced from current standards for other types of lighting. During August and September, IDA DC met with a number of House appropriations staffers to discuss the future of lighting and ask for support.

Little by little, IDA DC is increasing the number of people in government who realize the problem is significant, and is seeking a way to make excess artificial light at night an issue within the broader topics of environmental and energy legislation.

Good outdoor lighting continues to emerge as a federal energy issue, thanks in large part to IDA technical experts. Vigilant attendance at Energy Star meetings jointly held by EPA and the Department of Energy, Energy Star has made progress in requiring dark sky friendly design criteria for manufacturers seeking Energy Star ratings for outdoor lighting fixtures.

Background research on environmental protection law

The Washington Office is also investigating the possibility of bringing environmental protection law to bear on the problem of light pollution. This cause was boosted strenuously by a study from Dr. Harald Stark of the National Oceanic and Atmospheric Association showing that sky glow over Los Angeles inhibited the function of a naturally occurring air-cleaning compound, the nitrate radical, resulting in an increase in air particulates. This information has been integrated into the campaign to include light pollution as an environmental protection issue.

The Clean Air Act requires steps to ensure visibility at National Parks, but the Environmental Protection Agency (EPA) has only acted on daytime visibility. Before joining IDA, Robert Wagner, president of the IDA Board of Directors, filed a citizens' petition to have EPA act on light pollution, as it interferes with nighttime visibility. This action sends a visible message of concern for the nighttime environment to environmental regulatory boards, Sadly, virtually all EPA regulatory actions face strong legal challenges, and EPA has so far chosen not to take this one on.

The EPA is required to act where critical habitat of endangered species is threatened. Light pollution is a clear threat to sea turtles, but this only affects certain shorelines. Light pollution is a stress factor for other species, but not clearly a deciding factor.

Most dark sky advocates are well aware that millions of birds are killed each year because of badly lighted buildings. Rep. Mike Quigley (IL-05) has crafted legislation directing the General Services Administration to incorporate 'bird safe' building practices, including dark sky friendly lighting, into construction of federal government buildings. Supporters of the bill, H.R. 4797, the "Federal Bird-Safe Buildings Act of 2010," argued that the bill would save thousands of birds every year, and would have no cost impact. Unfortunately, the bill did not pass in the last Congress, but it serves as a blueprint for further legislation.

Continued from page 13

We also hold photo contests. A new international contest with the theme Dark Skies Importance starts 1 April 2011 as an event for Global Astronomy Month. The two categories are Against the Lights and Beauty of the Night Sky. We also started a TWAN page on Facebook to better communicate with the fans and sky photographers.

Besides the TWAN team of 40 photographers, coordinators and consultants, there are many people who locally help us organize TWAN events. Learn more at *www.twanight.org*.

What advice would you give to aspiring astral photographers?

Starting Earth and sky imaging is fast and easy, but for those who aim for high-level landscape astrophotos there are challenges too. You need to be out for starry adventures. Although good equipment helps a lot, it's not the main secret of successful imaging. In this style of sky imaging you need to be "in the right place at the right time." Even at full moon or mostly cloudy nights when deep sky imaging is impossible, there are great chances for creative Earth and sky imaging.

Continued from page 9

and film. In the 1950s, Dave took numerous raft trips on the Colorado River, including on his honeymoon with his wife of 48 years, Rachel, and battled against the damming of the river at Glen Canyon. In addition to his work with IDA, Dave focused his attention on the Mount Prospect Historical Society, Yellowstone Coalition, and Environmental Defense Fund. He remained an active participant the lives of his son Dennis and his daughter Laurell, and shared a special bond with grandson Ian. During his last hours, Dave roused himself to communicate with the energetic five-year-old.

Dark sky advocates

David Postsmouth

David Portsmouth, a pan-European leader in the fight against light pollution, died on 7 December 2010. Born in the U.K., he lived in France for most of his life, where his measures to limit the consumption and illumination of outdoor lighting were an important component of the work to adopt a national law controlling light pollution. David was an elected official of the City of Orgeval, near Paris, and a member of the Board of Directors for ANPCEN, France's anti-light pollution association, since 2005. He was highly regarded by the international astronomy community as well as fellow light pollution leaders for his great work and his charming personality.

Leif Robinson

The amateur astronomy community lost a star when Leif Robinson, longtime editor in chief of *Sky and Telescope* magazine and author of the book *Outdoor Optics*, died on 28 February 2011 following a long illness. Leif spent 38 years on the editorial staff at *S&T*, serving as editor in chief from 1980 to his retirement in 2000. He was known for his stringent journalistic principles of accuracy and integrity, his fair leadership, and his boisterous sense of humor. *S&T* circulation grew significantly and became an important periodical for amateur astronomers under his direction.

His support of amateur astronomy and birdwatching was common knowledge, but he was also a friend to dark skies. IDA past president Bob Gent writes, "He was extremely supportive of IDA, and he was always suggesting new ways to help us. Our strongest membership drive ever was due to *S&T*'s support more than a decade ago. In 1998, IDA received 100 new members in a single day."

Leif's passions fueled his retired life. He continued to give talks to amateur astronomers and general audiences and authored the "50 & 25" column for *S&T*, as well as serving on the Board of Directors for the Astronomy Society of the Pacific.

Happy Birthday, Dave Crawford!

IDA co-founder Dr. Dave Crawford celebrated his 80th birthday on 2 March 2011. Dr. Crawford, the program manager of Kitt Peak Observatory until 1995 and one of the forces behind Tucson, Arizona's progressive lighting ordinance, is one of the world's leading voices on light pollution awareness and control. IDA celebrates his lifetime of service to the natural night and appreciates his continued input to the organization he founded.

CORRECTIONS

When Dark Sky North Georgia leader Jim Reaves spoke to Dollar General's corporate lighting designer, his suggested changes will applied to 4,600 stores nationwide, not 4,300 as stated in *Nightscape* issue #80.

TWAN CONTINUED




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