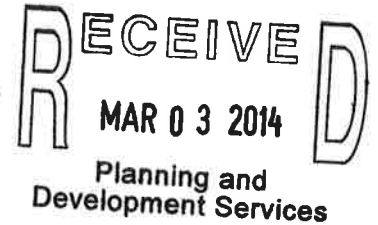




Date: March 3, 2014

To: County of San Diego  
Planning and Development Services (PDS)  
Project Processing Counter  
5510 Overland Avenue, Suite 110  
San Diego, CA 92123



From: San Diego Astronomy Association  
Board of Directors  
PO Box 23215  
San Diego, CA 92193-3215

San Diego Astronomy Association Tierra del Sol Observatory Site  
961 Tierra De Luna Road  
Boulevard, CA 91905

Re: Soitec Solar Development Program Environmental Impact Report, Log No:  
PDS2012-3910-12005  
Tierra del Sol, 3300-12-007

Dear Planning and Development Services,

The Board of Directors San Diego Astronomy Association submitted comments on the above referenced PEIR dated February 10, 2014. With the extension of the comment period to March 3, we wanted to clarify and emphasize our comments. We asked the San Diego Planning and Development Services whether designation as a sensitive land use was related to a request for mitigation. Ms. Ashley Gungle kindly replied designation as a sensitive land use is not directly related to mitigation, but we wanted to comment further on both.

SDAA property at TDS is located near the proposed Tierra del Sol solar farm, as shown on the attached copy of PEIR Figure 2.5-4 "Tierra del Sol Sensitive Land Uses Within 1,000'" indicating our facility with a red arrow. However we were not designated as a 'sensitive' land use in the PEIR, and strongly believe this is erroneous. In support of our request to be included as sensitive, we have attached our Major/Minor Deviation Use Permit, permitting the SDAA to use our land for astronomical purposes. As stated in our Use Permit, we are approved to use the land "for an astronomical observation

facility". Our land use is exquisitely sensitive to nearby nighttime lighting. We believe our TDS facility should be included as sensitive. A copy of Figure 2.5-4 is attached with a red arrow showing our property. Note: we are nearly surrounded by 'sensitive' properties.

Also attached is a local announcement to the Boulevard community to visit our facilities, and a copy of a brochure on good lighting we provided by the thousands to San Diego County building permit sites. We have contacted and replaced outdoor fixtures for our neighbors around our TDS observatory facilities. We are sensitive to nighttime light pollution, and as a consequence, ask not only that Soitec agree to the mitigation measures as stated in our Feb 10 comment, but also request that the County of San Diego PDS include these mitigation measures in the Major Use Permit the Solar Farm will operate under. It has come to our attention Soitec is the developer and will likely sell or lease the facility to others. If only Soitec agrees to nighttime lighting mitigation, subsequent owners and operators may not be bound.

**Thus, the SDAA requests the County include the nighttime lighting mitigation measures in the Major Use Permit for the Tierra del Sol solar farm.**

Additionally supporting our dark skies protection, we have attached our letter to the US Customs and Border Protection, when the Border Patrol was proposing lighting up the border at Tierra del Sol. We are very pleased the US BCP, after a short trial of border lighting, has adopted night vision and modern surveillance technologies such as we enumerate below, preserving our night skies. Soitec and successor owner/operators can meet their nighttime security needs without lighting up the night sky. Since Soitec is not the long term owner operator, **we request our dark sky mitigation be included within the TDS solar farm Major Use Permit.** This will prevent future owner/operators from lighting up our night sky. SDAA members and associates have consulted with casinos and developers on best practices for night time lighting and security. We humbly offer Soitec our expertise during development, and request the county require the following dark sky mitigation measures in the TDS solar farm Major Use Permit:

***The proposed solar farm, we believe, can be a good neighbor to our observatories by installation of fully shielded outdoor lighting fixtures such as required in Zone A, by turning off outdoor lighting when no one is on site, and using motion sensors and night vision cameras for security. Specifically:***

The San Diego Astronomy Association requests the County PDS require the Proposer to specifically agree to:

- 1. Installation of fully shielded outdoor lighting fixtures such as required in Zone A at TDS, (LPC Sec 59.105)***
- 2. Use fully shielded motion sensor lighting at entrance gates, buildings, etc and turn off all outdoor lighting when no one is on site.***
- 3. When possible, wash solar arrays during evening and morning hours,***

4. **Use motion sensors and night vision cameras for security. (LPC Section 59.107),**
5. **Prohibit post construction addition of outdoor lighting not included in the proposed project, and**
6. **add the SDAA property to the list of sensitive land uses within 1,000' as shown on Figure 2.5-4.**

The nearly 600 members and Board of the San Diego Astronomy Association appreciate this opportunity to provide input to the San Diego County Planning and Development Services department and the Board of Supervisors of the County of San Diego. These comments are in addition to our comments dated Feb 10, 2014.

Very truly yours,

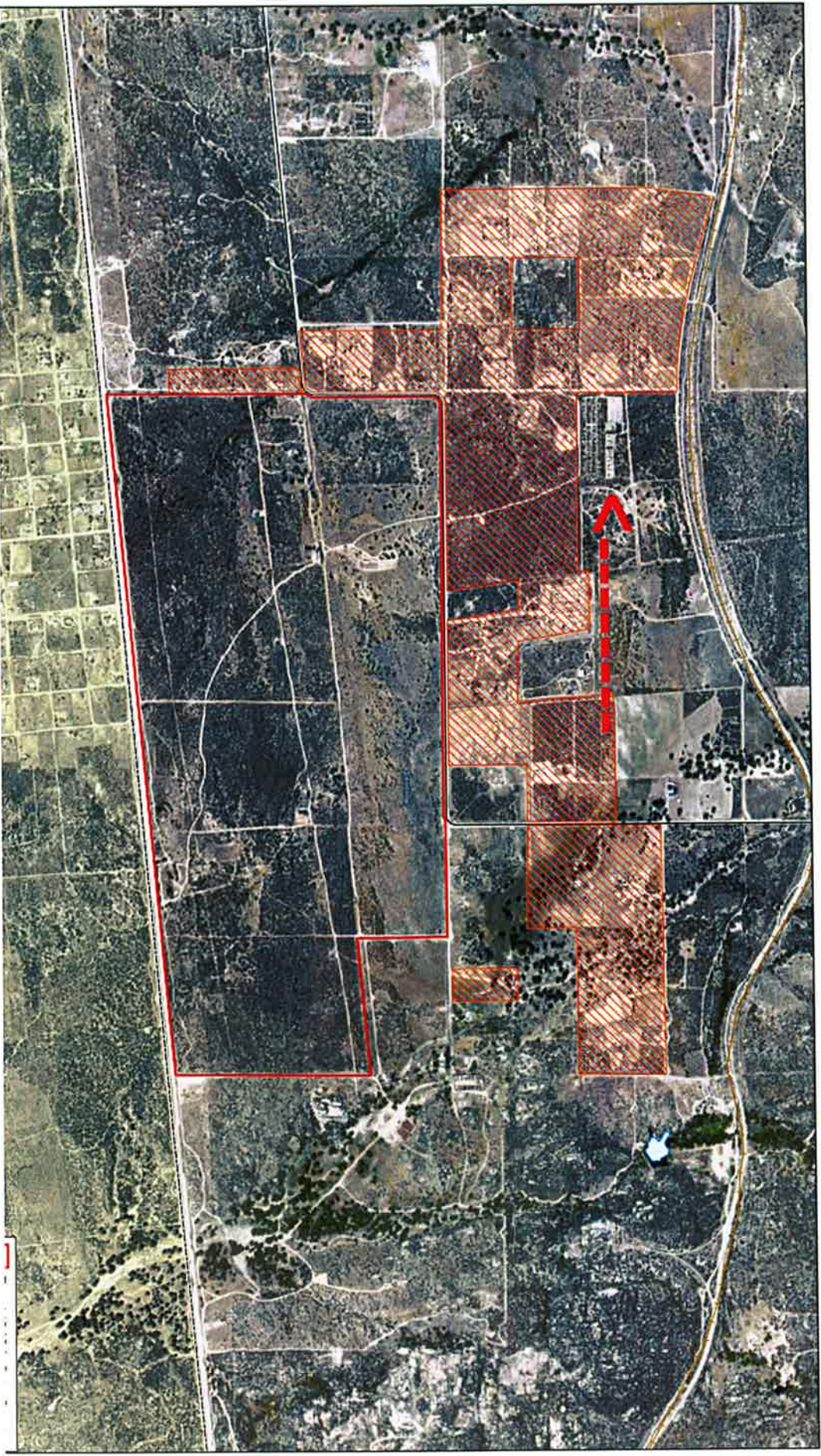


Michael Vander Vorst  
President  
San Diego Astronomy Association

- Attachment:
1. TDS Astronomy Boulevard Invitation
  2. SDAA Minor Deviation Major Use Permit
  3. SDAA letter to US CBP
  4. PEIR Figure 2.5-4 "Tierra del Sol Sensitive Land Uses Within 1,000'" showing SDAA Astronomy facility with red arrow

**San Diego Astronomy Association 10 Acre Tierra del Sol  
Astronomical Observation Facility**

**Red Arrow, shown on Soitec Draft PEIR Fig 2.5-4**





LAUREN M. WASSERMAN  
DIRECTOR  
(619) 694-2962

# County of San Diego

DEPARTMENT OF PLANNING AND LAND USE

MAIN OFFICE  
5201 RUFFIN ROAD, SUITE B, SAN DIEGO, CALIFORNIA 92123-1666  
INFORMATION (619) 694-2960

FIELD OFFICE  
334 VIA VERA CRUZ  
SUITE 130  
SAN MARCOS  
CALIFORNIA 92069-2636  
(619) 591-8092

July 22, 1994

Decision of the Director, Department of Planning and Land Use  
on a Minor Deviation from Plot Plan  
Major Use Permit P76-003M<sup>1</sup>

A revised plot plan dated June 23, 1994, was submitted by San Diego Astronomy Association for a "Minor Deviation" from plot plan approved in connection with Major Use Permit P76-003M<sup>1</sup> for an astronomical observation facility. The applicant's request is to construct one observation structure (maximum size of 20 feet by 42 feet) with retractable roof, and allowing all existing observatories to be completely enclosed with retractable roofs. Also, included are the following additions: one gated entrance located on the northern property line, 31 concrete (10 foot by 10 foot) observation pads, one storage/utility (10 foot by 15 foot) shed, and a covered patio located near the existing restroom facilities. The property is located at 961 Tierra De Luma Road in the Mountain Empire Subregional area and has a (18) Multiple Rural Use Land Use Designation.

In accordance with Section 7609 of The Zoning Ordinance the Director, Department of Planning and Land Use hereby finds that the proposed minor deviation does not constitute a substantial change in the Major Use Permit and that said deviation will not adversely affect adjacent property or adjacent property owners, and approves said minor deviation as per revised plot plan.

**DEFENSE OF LAWSUITS AND INDEMNITY:** The applicant shall: (1) defend, indemnify and hold harmless the County, its agents, officers and employees, from any claim, action or proceeding against the County, its agents, officers or employees to attack, set aside, void or annul this approval or any of the proceedings, acts of determination taken, done or made prior to this approval, if the action is brought within the time period specified in Government Code Section 66499.37; and (2) reimburse the County, its agents, officers and employees for any court costs and attorney's fees which the County, its agents or officers or employees may be required to pay as a result of this approval. At its sole discretion, the County may participate at its own expense in the defense of any such action, but such participation shall not relieve the applicant of any obligation imposed by this condition. The County shall notify the applicant promptly of any claim or action and cooperate fully in the defense.

P76-003M<sup>1</sup>

-2-

July 22, 1994

The issuance of this permit by the County of San Diego does not authorize the applicant for said permit to violate any federal, state or county laws, ordinances, regulations or policies including, but not limited to the Federal Endangered Species Act of 1973 and any amendments thereto (16 U.S.C. Section 1531 et seq.).

DEPARTMENT OF PLANNING AND LAND USE  
LAUREN M. WASSERMAN, DIRECTOR

By:

*for*



DENNIS J. VERRILLI, Chief  
Southern Planning Area

DJV:RPR:jcr

Enclosures

cc: San Diego Astronomy Association, P.O. Box 23215, San Diego, CA 92193  
John Laborde, 10840 New Salem Way, San Diego, CA 92126

MDS.94\P76003.794

David W. Stichler, Special Operations  
United States Border Patrol Campo Station  
PO Box 68  
Campo, CA 91906

March 22, 2004

Via Fax 619-478-5651 and e-mail David.W.Stichler@usdoj.gov

Re: Environmental Assessment for Lighting Sector 30, Tierra del Sol Border

Dear Mr. Stichler,

I enjoyed the Border Patrol presentation in Boulevard moderated by Representative Filner, and commend Border Patrol efforts to reduce illegal immigration in the Tierra del Sol area and Representative Filner for taking time to assist in determining information. However as an observatory owner at the San Diego Astronomy Association facility and member since the 1970's, I am significantly adversely impacted by the decision to light the border 1.1 miles away. At the meeting you indicated you were the contact for requesting a copy of the lighting Environmental Assessment (EA) prepared by the Border Patrol. I gave you my business card and request you make a copy of the EA and contact me at 619-890-7480 (cell) to pick it up at your Campo office at your first opportunity. If the EA is available in electronic form, please e-mail it to me at [ritz@san.rr.com](mailto:ritz@san.rr.com). In the event you cannot make a copy this week, I can pick it up, make a copy, and return it to you the same day. I will call you to be sure you receive this fax and e-mail.

As Corresponding Secretary for the SDAA from 2000-2004, I can assure you we did not receive any information on this EA. I also know that public review is not required for an EA, but an Environmental Impact Statement (EIS) with public review is required if the proposed action is controversial, among other requirements. As demonstrated by the Boulevard overflow attendance, this border lighting is controversial and significantly impacts our rural San Diego environment. There are also, as presented, better methods to secure the Border. Due to these serious concerns a comprehensive review is necessary, beginning with the EA, before deployment of the lighting. I am a past Board Member of the SDAA and am not speaking for the SDAA, but will share the EA with the Board and 600+ members.

I look forward to your reply.

Very truly yours,

Dennis P. Ritz  
505 Colima Street  
La Jolla, CA 92037  
619-890-7480  
ritz@san.rr.com

CC: Representative Bob Filner  
333 "F" Street, Suite A  
Chula Vista, California 91910  
(619) 422-5963  
Fax: (619) 422-7290



David W. Sitchler, Special Operations  
United States Border Patrol Campo Station  
PO Box 68  
Campo, CA 91906

April 12, 2004

Via Fax 619-478-5651 and mail

Re: Lighting Sector 30, Tierra del Sol Border

Dear Agent Sitchler,

I gave the EA to a special meeting of the San Diego Astronomy Association Board for consideration, and the Board asked me to write a follow-up letter. Among questions raised was the possibility of turning the proposed border lighting off a couple of weekend nights per month in the area directly south and west (about 1 mile) from our TDS observatories. Twice a month, on clear Saturdays (and occasionally Fridays) near the new moon, the SDAA holds public star parties. Many members and guests attend and if it would be possible to coordinate darkness with the Border Patrol agents in charge, it would mitigate our problems with local lighting. The Saturday night dates are semi-random and could be further randomized to prevent a pattern from emerging. Perhaps use of night vision equipment a couple of dark nights per month might even benefit, catching them 'off guard'.

Another question was if the SDAA could raise donations to pay for shielding or HPS (high pressure sodium) bulbs on the portable lights. You said you had a phone call into the manufacture in Wisconsin regarding shielding. Did you hear from the manufactures, do they have shields or bulb alternatives? I mentioned when we met at your office the existing metal halide bulbs produce considerable blue light which bounces around the local atmosphere producing glare, while HPS has little blue glare. The EA said lower wattage bulbs were eliminated as not effective, however the type of bulb (HPS vs metal halide) was not considered. If there is no Border Patrol budget for shields or bulbs, can the SDAA donate these improvements?

Could you forward this letter for consideration 'downtown'? I'll call you next week to follow-up; please contact me if I may be of assistance

The emerging Board consensus seems to be it's time to move the SDAA Tierra del Sol observing site to another location, a process that will take

considerable time, money and effort. Certainly by the time 'Imperial Beach' style lighting is in place, there is no place for astronomy nearby.

On behalf of the Board of the San Diego Astronomy Association, we look forward to your reply.

Very truly yours,

Dennis P. Ritz  
505 Colima Street  
La Jolla, CA 92037  
619-890-7480  
[ritz@san.rr.com](mailto:ritz@san.rr.com)

CC: Congressman Bob Filner  
333 "F" Street, Suite A  
Chula Vista, California 91910  
(619) 422-5963  
Fax: (619) 422-7290

US Department of Homeland Security  
US Border Patrol  
Campo Station San Diego Sector

*San Diego Astronomy Association  
PO Box 23215  
San Diego, CA 92193-3215)*

April 12, 2004

Dear Mr. Ritz,

I am in receipt of your letter dated April 12, 2004. I recently contacted Magnum Industries, our Portable Light Tower distributor and I found they stock the 'visor' light shield for the particular portable lights we currently have. I recently purchased one set of the shields, with a delivery date of approximately April 16, 2004. As soon as they arrive we will install them on a portable light and make it available for public display.

Per your recommendation, I looked into purchasing High Pressure Sodium bulbs for our portable units. After consulting with the manufacturer, we found that changing the Metal Halide bulbs to High Pressure Sodium will require a different ballast system than the one currently installed in our units. The cost ranged from \$600.00 to \$1,000.00 per light tower. As you can see, this is a substantial cost to the government should we be required to outfit the fifty units we propose to deploy. Additionally, our Sector Counsel has advised that since Congress appropriates our funding, it would be a conflict of interest to accept donations for such equipment.

In response to your request to turn off the lighting for your occasional star parties, I would like to deploy the units, assess their impact, and then meet with you or one of the SDAA representatives to discuss the impact on your property. If at that time we find there is significant impact, I will forward the results of our assessment to our Sector Staff for a determination. As soon as I get the shields installed, I will send out a notice so the public can view the portable units prior to our deployment.

If I can be of further assistance, please call me at (619) 557-6144, Ext. 506.

Sincerely,

*Signature*  
David W. Sitchler  
Special Operations Supervisor

LAMP TYPE	ZONE B
Low pressure Sodium	Fully Shielded
Others above 4050 <sup>1</sup> Lumens	Prohibited
Others 4050 <sup>2</sup> Lumens & Below	Allowed <sup>2</sup>

### CLASS III - DECORATIVE

LAMP TYPE	ZONE A (15 MJ)
Low Pressure Sodium	Prohibited
Others above 4050 <sup>1</sup> Lumens	Prohibited
Others 4050 <sup>1</sup> Lumens & Below	Prohibited
Luminous Tube	Prohibited

LAMP TYPE	ZONE B
Low Pressure Sodium	Full Shield
Others above 4050 <sup>1</sup> Lumens	Prohibited
Others 4050 <sup>1</sup> Lumens & Below	Allowed <sup>2</sup>
Luminous Tube	Allowed <sup>2</sup>

<sup>1</sup> EXAMPLES OF LAMP TYPES OF 4550 LUMENS & BELOW (The acceptability of a particular light is decided by its lumen output, not wattage; check manufacturers specifications):

- 200 Watt Standard Incandescent and less
- 150 Watt Tungsten-Halogen (quartz) and less
- 75 Watt Mercury Vapor and less
- 50 Watt High pressure Sodium and less
- 40 Watt Fluorescent and less
- Not allowed in Zone A, Class I

<sup>2</sup> Lights shall be shielded where feasible and focused to minimize spill light into the night sky or adjacent properties.

<sup>3</sup> Maximum of 8100 total lumens per acre or per parcel if under 1 acre.<sup>4</sup>

Now, if you're saying "All those 175 watt unshielded mercury vapor 'barneyard' lights are illegal." That's right! Also consider blue light emitted by mercury vapor is scattered by the air near these fixtures resulting in a lot of sky glow and glare. The daytime sky is blue for the same reason, scattering of blue sunlight by the atmosphere. Use High or Low Pressure sodium lighting for security lights. HPS and LPS are far more efficient than mercury or metal halide lamps and do not have blue sky glow. HPS will produce 140 lumens per watt of electricity, versus 110 lumens per watt for mercury vapor.

Look for modern electronic ballasts instead of the wire transformer ballasts. Transformer ballasts waste electricity heating the coils, an electronic solid state ballast will save perhaps an additional 5-10% in electrical costs. While well-designed fixtures may cost a little more to buy, you will save yourself money over the life of the fixture.

For additional information, see the SDAA News/Light Pollution page on our web site at [www.sdaa.org](http://www.sdaa.org) or contact us for sources of proper fixtures. May you have clear, dark skies, and save some money too!

## Help Protect Our Night Sky



San Diego Astronomy Association  
PO Box 23215, San Diego, CA 92123  
[www.sdaa.org](http://www.sdaa.org)

# Help Protect Our Night Sky

An Overview of the  
County of San Diego  
Light Pollution Code

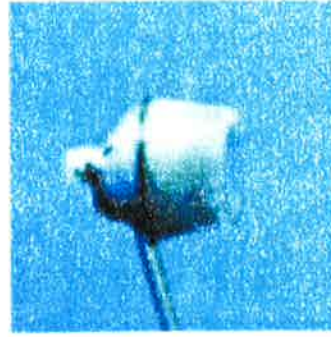
Presented as a  
Public Service by the  
San Diego Astronomy Association

This brochure is brought to you courtesy of the San Diego Astronomy Association, a non-profit educational association dedicated to astronomy and the enjoyment of the night sky of its members and the public. It will assist you as residents of San Diego to install outdoor lighting efficiently, effectively, and in compliance with San Diego County Code.

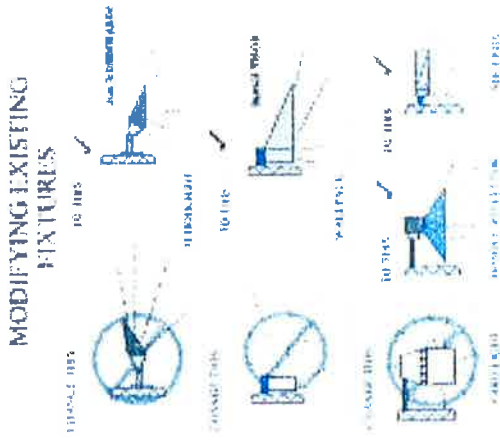
Outdoor lighting fixtures in the unincorporated portions of the county are regulated for brightness (*lumens*) and fixture design. Incorporated cities, Federal (Indian Country) and State lands are not subject to the County ordinance and have their own regulations.

Poorly designed lighting fixtures allow light to escape into the sky, wasting money and causing light pollution. It has been estimated that poorly designed outdoor lighting fixtures in the United States waste *one billion dollars* a year in electricity lighting up the sky.

So what makes a good fixture? Good fixture design does not allow light to shine into the sky; it is directed onto the ground. Consider this typical 175-watt mercury vapor fixture.



The diffuser on the bottom half covers the bulb, but allows the light to be emitted through the diffuser in all directions. Light not directed to the ground is wasted, and produces glare making it harder to see in the nearby shadows. A 'shoe box' or shielded fixture reflects light down to the ground where it is needed. Consider these types of fixtures and adjustments.



In 1985 the San Diego County Board of Supervisors passed the Light Pollution Div 9, Sec 59 Code for the following reasons:

It is the intent of this Division is to restrict the permitted use of outdoor light fixtures emitting undesirable light rays into the night sky which have a detrimental effect on astronomical research.

### County of San Diego Code

The County Code divides lighting into three Classes and two Zones. The Zones are:

**Zone A** – within a 15-mile radius from the Laguna and Palomar Observatories.

**Zone B** – the rest of the County.

The Classes of lighting are as follows:

a. **Class I** lighting means all outdoor lighting used for but not limited to outdoor sales or eating areas, assembly or repair areas,

billboards and other signs, decorative effects, recreational facilities and other similar applications when color rendition is important.

- b. **Class II** lighting means all outdoor lighting used for but not limited to illumination for walkways, roadways, equipment yards, parking lots and outdoor security.
- c. **Class III** lighting means outdoor lighting used for decorative effects.

The lamps and zones are regulated as follows:

### SEC. 59.106 REQUIREMENT FOR LAMP SOURCE AND SHIELDING

The requirements for lamp source and shielding of light emissions for outdoor light fixtures shall be as set forth in the following table:

#### LAMP TYPE AND SHIELDING REQUIREMENTS PER FIXTURE

#### CLASS I – COLOR RENDITION IMPORTANT

LAMP TYPE	ZONE A (15 MI)
Low Pressure Sodium	Fully Shielded
Others above 4050 <sup>1</sup> Lumens	Prohibited
Others 4050 <sup>1</sup> Lumens & Below	Allowed <sup>1,2,3</sup>
LAMP TYPE	ZONE B
Low Pressure Sodium	Fully Shielded
Others above 4050 <sup>1</sup> Lumens	Fully Shielded
Others 4050 <sup>1</sup> Lumens & Below	Allowed <sup>2</sup>

#### CLASS II – PARKING LOTS, SECURITY, ETC

LAMP TYPE	ZONE A (15 MI)
Low pressure Sodium	Fully Shielded
Others above 4050 <sup>1</sup> Lumens	Prohibited
Others 4050 <sup>1</sup> Lumens & Below	Prohibited

# YOU'RE INVITED TO A BARBEQUE WITH THE STARS!

Hello! We are the *San Diego Astronomy Association*, a group of amateur astronomers who enjoy the pristine skies at our dark sky observing site in Tierra del Sol. Some of you may not know we have observatories and public viewing at our site right here in the neighborhood. Our members use this site for their astronomical pursuits; but it's also for public outreach, one of the Association's prime charters. We would like our neighbors around our Tierra del Sol site to get to know us and let us show you all about this great family-oriented resource available to you.

You are invited to come tour our site, enjoy a barbeque hosted by the SDAA, and spend time observing through our telescopes. We will have safe telescope views of the Sun during the day, a Site Orientation Tour for our members (which you are welcome to attend), and a general site tour for our guests. After sunset, spend the evening under a canopy of stars looking through our telescopes.

At the BBQ, we will serve hamburgers, hotdogs, veggie burgers, buns, condiments, water, soda and ice. Members generally bring dishes potluck-style to share, giving us a wonderful assortment of dishes. Though not required, you may bring a dish to share. **But most important, bring yourself and your family and friends** (and don't forget the sunscreen, chairs for your group, and hats/umbrellas for shade).

Our site is located just off Tierra del Sol Road, at 961 Tierra del Luna Road. Maps below show where our site is located. If you still need help finding us, call the number listed below.

**DATE:** October 6, 2007

**TIME:** Come anytime after 2:00 pm

Barbecue and food service starts at 3:00 pm

Observing starts just after sunset (6:27 pm)

Questions, please call Bob Austin at (760) 787-1174



## Getting to and Parking at the SDAA's Tierra del Sol Observing Site

Our site is located south on Tierra del Sol Road; go past the community of Tierra del Sol, across the railroad tracks and continue south until the road turns west. Head west, and when the road turns south again, going towards Shockey Truck Trail, you will see the sign pointing to the SDAA. Turn north onto Tierra del Luna Road, and continue about 1/4 mile north until you come to our gate. Turn right into the site, and then immediately turn left to come into the public area. Members will be there to help you into the site and with parking.

