

THE STAR DIAGONAL

THE JOURNAL OF THE OGDEN ASTRONOMICAL SOCIETY

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The President's Message

Hi All:

It's Christmas all ready! I am convinced that I must be circling a black hole because I am in not moving very fast but time just keeps flying by. It seems that just a few days ago that I was doing last months Presidents message but here we are. This month I would like to do a show and tell so please bring that latest gizmo that you acquired over the summer and share it with the club.

I don't think the shirts that were ordered at the last meeting will arrive in time for the meeting, but maybe we could meet some where, when they do come in it you need them for Christmas.

We should have the Star Dust Mission Coins around the end of the month. We are charging \$10.00 for club members and \$13.00 for non club members Mike Kline is taking orders. If you can't make the meeting you can contact him at vacman84015@yahoo.com or 390-0823.

We have a star party for Bountiful Jr. High coming up probably before you receive this news letter and we will be trying to do a redo for Sunset Jr. High at about the same time. I hope that you all have a Merry Christmas and a very happy New Year.

Clear Skies
Craig

OAS Minutes, Nov 05

The Monthly meeting of the Ogden Astronomical Society was held on October 10 at the Ott Planetarium. President Craig Browne called the meeting to order. Doug Say presented a slide show from the St. George Star Party. Robert Hillier thanked those that came to Sunset Jr High. They had

about 80 students come out to look at Mars and Venus as they peeked through the clouds. Craig asked for ideas on locations to hold star parties for next year. Some of the ideas were; Moab in April, St. George in January or February, Cathedral Gorge, Cedar Breaks and Craters of the Moon. Mike Klein had the nearly final design for the Star Dust Mission commemorative coin. It was proposed and approved by vote that OAS purchase 150 coins at no more than \$1500, the cost is estimated to be between \$5 & \$8 per coin. We would plan to sell the coins for a \$4 or \$7 dollar profit per coin. We plan to have them available at star parties and sell them on ebay.

The remainder of the meeting was the planetarium show, "Hubble Vision".

Update on the coins. I just got with Mike and found that the final cost was just over \$5, we paid \$772.50 for 150 coins. This should be a nice fund raiser for the club. The Ott Planetarium bought the other half of the coins to make the 300 that were needed for the order.

David Dunn

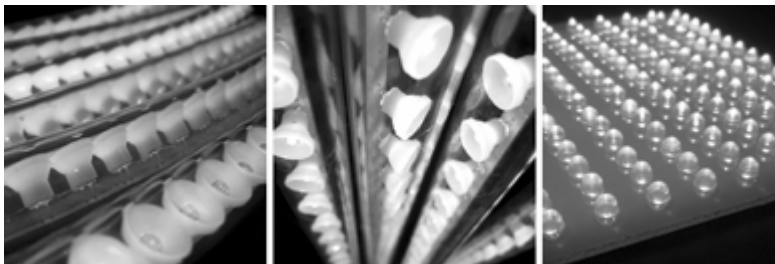
Note from the Treasurer

If you have not paid your dues, please get them to Doug Say this month. This will allow you to continue receiving the Star Diagonal and the other benefits of membership in the Ogden Astronomical Society. Dues are \$12 and are renewed each September.

Doug Say
2060 West 1025 North
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Picture of the Stardust Coin.



Lighting Redefined: The Rise of LEDs

By [Mike Hollibaugh](#)

LIGHTING IS A POWERFUL ELEMENT, capable of stirring feelings and unveiling hidden environments. The light bulb, the icon of a good idea, has undergone various enhancements. But new technologies and sophisticated materials have brought about a revolution in lighting. Hidden within the backlit screens of mobile phones and handheld gadgets, light-emitting diodes (LEDs) are demanding new standards not only for portable illumination, but also for residential and outdoor lighting.

Incandescent and halogen lamps create light by use of a fragile filament in a glass bulb; when electric power is applied, the filament heats and glows. Fluorescent lamps create light by use of a ballast in a thin glass tube; when powered the ballast excites

mercury gas, activating phosphors that heat and glow. Both technologies have drawbacks: heat, fragility, inefficiency, reliance on ecologically unfriendly materials, and uncontrolled light projection.

Conventional lamps devour more energy than they produce light. But LEDs utilize the bare minimum energy required to operate. They generate light through a cold process: power stimulates semiconductors, which stir electrons, which produce photons or visible light (the light that we see). Because LEDs don't use wire filaments or conductors, they create less heat, require less ventilation, and last longer than conventional lamps.

Incandescent lamps project light in every direction (omni-directionality), relying on shades and reflectors to aim light where it is needed. Used outdoors, incandescent lighting often proves excessive. LEDs, on the other hand, are ideal for dark sky friendly outdoor lighting because they project light in specified angles. Geared for harsh environments, LEDs function from -40° to 180°F (-40° to 82°C) and require no warm-up time. As DC-native diodes, they are well suited to solar power.

LEDs enjoy high energy efficiency, long life expectancy, low costs, and low maintenance. Instead of installing conventional lighting systems with bloated power requirements, consider implementing efficient, dark sky friendly LED systems.

Unlike conventional light sources, white LEDs don't emit ultraviolet (UV) light, which attracts insects and damages human skin. But LEDs are available in a wide array of visible color temperatures. Colors may even be customized by tuning LEDs to specific light

frequencies. Already used in displays and panels, organic light-emitting diodes (OLEDs) offer even more color choices and deeper contrasts than inorganic LEDs.

LEDs have evolved dramatically within the decade. In 1998 the Nichia Corporation, based in Japan, pioneered the first white LED of 2,200 millicandelas (mcd). Today, Nichia offers white LEDs eight times as intense—up to 18,000 mcd. (Whereas conventional bulbs are rated in watts, LEDs are rated in mcd, which better describe their luminous and radiant intensity.)

Much like computer processors, LEDs will continue to yield higher outputs and more options while maintaining—or even reducing—package size and power requirements. With standardization, anticipate broader use of organic components, improved quality, and price declines in LED technologies.



[Mike Hollibaugh](#) is founder of [Eneome](#) and project manager, consultant and engineer for [Holly Solar Products/Suntronics](#) in Petaluma, California, U.S. Founded in 1974 by Mike's father, Bill, Holly Solar leads the industry in low-voltage solid-state LED technology. In 1987 the company introduced the first LED flashlight.



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