

# Saguaro Astronomy Club

Metro Phoenix, Arizona

## SACNEWS



October 1998 — Issue #261

v10.5

## Say No to NEMA

by Sam Herchak



Every astronomer dreads the “dusk to dawn security” lights that pop up all the time. My question is, “Why do people put up with them?” NEMA mercury vapor lighting has been outlawed by the State of Arizona for years! In addition, our laws require that most outdoor lighting be shielded. The fact is bad lighting is illegal in many states now, so manufacturers are dumping (selling them cheap) and it is up to us to do something about it. The State of Arizona nor any single organization has the resources to police and insist on the enforcement of the laws already in place. It’s up to you and me.

So what do we do? First of all, support the International Dark-Sky Association (founded in Tucson by a former Director of Kitt Peak Observatory). It is non-profit; run by mostly volunteers, and they work hard to educate government entities and lighting manufacturers on the realities of bad lighting. This is important work—join today!

Second, educate yourselves. No need to reinvent the wheel though. Go to the IDA website and read up on the issues. Talk to myself or others listed below who want to see our lighting laws enforced. If the support is there, we can work together in the Phoenix area as a local “chapter” of IDA to proceed with step three, which is:

Educate others. When you see NEMA lighting fixtures being sold in Arizona, talk to the retailer, write the chain’s headquarters, etc. and show them the laws. Most people selling these fixtures don’t know they are illegal (did you?), and will comply once educated. For those fixtures already in place, don’t threaten legal action, but instead explain how cheap and effective the Hubble Skycaps are (light shields designed specifically for the NEMA fixtures). Explain what good lighting is (vs. glare lighting), and ask they use it next time (the ballast element is expensive-when it fails, it then becomes cost effective to replace a NEMA fixture). If it’s a neighbor, invite them over to look through your telescope so they can see firsthand how much that bad fixture ruins your view.

## Quick Calendar

SAC Meeting

7:30 PM, Friday, October 2

SAC Star Party

*Novice Session*

Buckeye Hills Recreation Area

Saturday, October 10

All-Arizona Star Party

Arizona City Site

Friday & Saturday, October 16 & 17

SAC Meeting

7:30 PM, Friday, November 6

SAC Deep-Sky Meeting

September and October Fuzzy Spot Objects

7:30 PM, Thursday, November 12

## Officer Nominations Open

Once people learn bad lighting doesn’t enhance security, and good lighting is cost effective (in the long run—typically 5 years or so), we can both win on this issue. It’s not that much work, but it does take involvement. If you like astronomy enough to be in a club, you should care enough to stop, and eventually reverse, light pollution. We hope to hear from you soon.

### Contacts:

Sam Herchak (Mesa, 924-5981)

Silvio Jaconelli (Gilbert, 926-8529)

Bill Dellings (Apache Junction, 983-6651)

Wil Milan (Phoenix, 996-8827)

### References:

International Dark-Sky Association (new address)

3225 N. First Ave

Tucson, AZ 85719-2103

<http://www.darksky.org/ida/index.html>.

NEMA: National Electrical Manufacturers Association—adopted this standard for outdoor area lights back in the 1960’s, before conserving energy (and light pollution) was a big concern.

Hubble Skycaps:

<http://www.darksky.org/ida/skycap.html>

Other Lighting Sites:



## Northern Arizona Star Party Observing Site

<http://www.streetlights.net/links.html>  
<http://www.fpi-protostar.com/olpac/Links.htm>

### Arizona Revised Statutes

(<http://www.azleg.state.az.us/ars/ars.htm>)

#### 49-1104 . Use of mercury vapor light fixtures

**A.** No new mercury vapor outdoor light fixtures shall be installed after the effective date of this section. No replacement equipment other than bulbs for mercury vapor lighting fixtures shall be sold in the state after January 1, 1991 and the use of mercury vapor light fixtures is prohibited after January 1, 2011.

**B.** The provisions of this section shall not apply to outdoor light systems erected prior to 1950.

#### 49-1102 . Shielding of outdoor light fixtures

All outdoor light fixtures shall be fully or partially

shielded except incandescent fixtures of one hundred fifty watts or less and other sources of seventy watts or less. Street light fixtures are exempt from this requirement if the shielding is not available from the manufacturer.

## Bits and Pieces

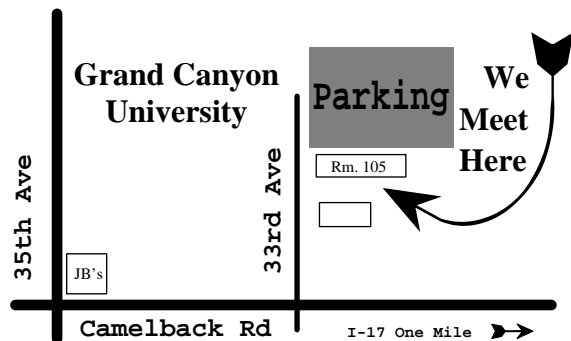
### Minutes from the September Meeting

President Paul Dickson called the meeting to order at 7:30. He invited any guests to sign the guest book and introduce themselves.

Jack Jones gave the treasure report. He also mentioned that the Observers Handbook will be printed in October. Subscriptions for Astronomy magazine will be going up to \$24 for 1999 (a last minute E-mail from Jack

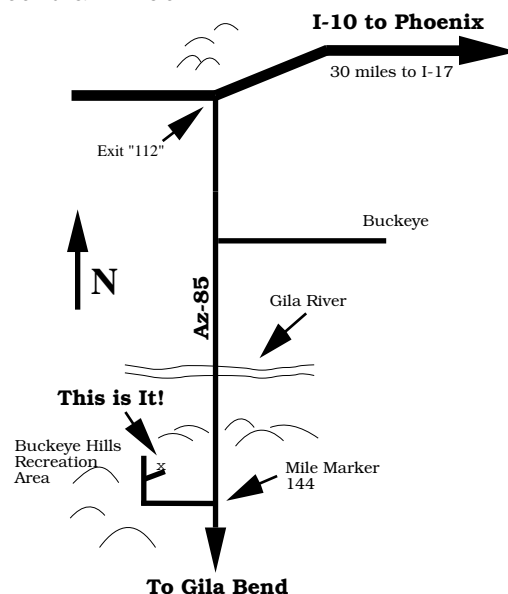
## Directions to SAC Events

**SAC General Meetings 7:30 PM at Grand Canyon University, Fleming Building, Room 105** — 1 mile west of Interstate 17 on Camelback Rd., north on 33rd Ave., second building on the right.



**SAC Deep Sky Subgroup Meeting at John & Tom McGrath's, 11239 N. 75th St., Scottsdale, 998-4661** — Scottsdale Rd. north, Cholla St. east to 75th St., southeast corner.

**SAC Star Parties at Buckeye Hills Recreation Area** Interstate 10 west to Exit 112 (30 miles west of Interstate 17), then south for 10.5 miles, right at entrance to recreation area, one-half mile, on the right. No water and only pit toilets. Please arrive before sunset; allow one hour from central Phoenix.



said that this cost is now \$29). A.J. Crayon turned over the T-shirt sales to Jack Jones, there are only a few left, so see Jack on these.

Paul Dickson mentioned the upcoming star parties, including the Northern Arizona Star Party which is on

the weekend of September 19th, and the All Arizona star party on the weekend of October 17th.

A.J. Crayon invited everyone to the Deep Sky meeting. This month will be the astro-photo fest.

Paul Dickson mentioned that nominations for Offi-

# Comet Comments

## by Don Machholz

(530) 346-8963 CC242.TXT September 9, 1998  
<http://members.aol.com/cometcom/index.html>  
 DonM353259@aol.com

C/1997 J2 (Meunier-Dupouy)					
Date	RA-2000-Dec	Elong	Sky	Mag	
10-09	20h58.9m	-06°34'	119°	E	12.1
10-14	20h58.2m	-07°58'	114°	E	12.2
10-19	20h58.0m	-09°15'	109°	E	12.3
10-24	20h58.3m	-10°26'	104°	E	12.4
10-29	20h59.0m	-11°30'	98°	E	12.5
11-03	21h00.1m	-12°29'	94°	E	12.6
11-08	21h01.7m	-13°22'	89°	E	12.7

**Periodic Comet Giacobini-Zinner** continues to brighten in the evening sky, while the fainter **Comets Meunier-Dupouy** and **LINEAR** linger nearby. Meanwhile two new comets have been discovered, one remains bright.

On August 10 Peter Williams of Australia visually discovered a new comet near the south polar region. He was using a 12" reflector (f/6) at 72 power for the find. Williams was not comet hunting, but instead was examining the variable star EK TrA. He then started sweeping northward to another variable star when he spotted the comet. **Comet Williams** has a retrograde orbit that places it near the far side of the sun when at perihelion (Oct. 18). Northern Hemisphere observers will have their first chance to observe it in December when the comet will be visible in the southern morning sky at magnitude nine.

The LINEAR project found a new comet on August 24. **C/1998 Q1** is quite small and will remain faint.

A study of **Periodic Comet Tempel 1** by the Hubble Space Telescope indicates that its elongated nucleus measures about 6 by 4 miles in diameter. The observations were conducted in late 1997 when the comet was about 400 million miles from the earth. It is assumed

that the nucleus reflects only 4

COMET HUNTING NOTES: Williams' comet discovery on August 10 brings the total number of Australian visual comet discoverers to five, this is now half the number of Americans (10) who have visually found comets since 1975. There are only two other Southern Hemisphere comet discoverers: Austin of New Zealand and Campos of South Africa. All 24 comets found by these seven men were discovered south of the celestial equator, 23 being found by only one discoverer.

Peter Williams is the first person to qualify for the Edgar Wilson Award: a cash sum of about \$20,000 to be divided up among all the amateurs who discover comets before June 11, 1999.

21P/Giacobini-Zinner					
Date	RA-2000-Dec	Elong	Sky	Mag	
10-09	17h41.1m	+06°44'	72°	E	10.3
10-14	17h55.4m	+04°40'	71°	E	10.0
10-19	18h11.0m	+02°28'	70°	E	9.8
10-24	18h27.8m	+00°11'	69°	E	9.6
10-29	18h46.3m	-02°13'	69°	E	9.4
11-03	19h06.1m	-04°43'	68°	E	9.2
11-08	19h27.4m	-07°16'	68°	E	9.1

C/1998 M5 (LINEAR)					
Date	RA-2000-Dec	Elong	Sky	Mag	
10-09	19h23.2m	+39°01'	99°	E	10.3
10-14	19h14.5m	+38°29'	95°	E	10.2
10-19	19h07.1m	+37°56'	91°	E	10.2
10-24	19h01.0m	+37°26'	87°	E	10.1
10-29	18h56.1m	+36°59'	83°	E	10.1
11-03	18h52.3m	+36°36'	80°	E	10.0
11-08	18h49.4m	+36°19'	77°	E	10.0

C/1998 P1 (Williams)					
Date	RA-2000-Dec	Elong	Sky	Mag	
10-09	13h30.5m	-29°24'	25°	E	8.6
10-14	13h29.7m	-28°10'	20°	E	8.6
10-19	13h29.0m	-27°00'	17°	M	8.7
10-24	13h28.4m	-25°53'	15°	M	8.7
10-29	13h27.7m	-24°48'	16°	M	8.8
11-03	13h26.9m	-23°44'	18°	M	8.8
11-08	13h26.1m	-22°40'	21°	M	8.9

### Orbital Elements

Object:	Giacobini-Zinner	Meunier-Dupouy	William	LINEAR
Peri Date:	1998 11 21.32107	1998 03 10.4365	1998 10 17.836	1999 01 24.2786
Peri Dist:	1.0337095 AU	3.051015 AU	1.14678 AU	1.745425 AU
Arg/Peri (2000)	172.54569°	122.6755°	294.466°	101.1088°
Asc Node (2000)	195.39930°	148.8429°	156.376°	333.4049°
Incl (2000):	031.85856°	091.2731°	145.729°	082.2683°
Eccentricity:	0.7064344	1.000760	1.0	1.0
Orbital Period:	6.61 years	Long Period	Long Period?	Long Period?
Reference:	NK 629	MPC 30738	MPEC 1998-Q10	MPC 32169
Epoch:	1998 11 21	1998 03 08	1998 10 17	1999 01 24
Absol Mag/"n":	9.0/6.0	4.0/4.0	6.5/4.0	5.5/4.0

# Fuzzy Spot

## by Ken Reeves

Pegasus

October 1998

The great square of Pegasus is a sure sign of Fall. The four stars, alpha, beta, gamma, and delta, form an almost perfect rectangle with delta being slightly out of place. Delta is a "shared" star, now officially identified as alpha Andromeda. This is a good constellations to work if you want a break from the Milky Way, as Pegasus is loaded with galaxies. Don't overlook globular cluster M 15 though.

For large scope owners, there are the companions of 7331 and Stephans Quintet. Also, you get to see the first object in the NGC catalogue. Don't expect much from NGC 1, it was a toughie in the 20" scope.

Now that you're ready to hunt down some galaxies, let's jump into, as they call it in the old star charts, Pegafus.

**NGC 7078** (21h30.0 +12°10') **M 15** is the only Messier Object in Pegasus, but it is a doosey! At 100X, I saw this globular cluster as very large, pretty bright, resolving many stars in the halo, gradually brightening towards the middle, then suddenly very much brighter and more dense in the nucleus. There is somewhat of a dark lane on the SE side of the cluster. I estimated that at least 200 stars were resolved. Absolutely beautiful cluster with so many stars. If you want an extra challenge, hunt down the planetary nebula in the cluster, something I haven't had the patients or courage to do yet.

**NGC 7217** (22h07.9 +31°22') In the 10" scope, I saw this galaxy as fairly small, round, containing a fairly bright middle with a bright sub-stellar nucleus which comes and goes with seeing. Using averted vision make the halo pop out. There is a fairly bright star to the SE. In the 20" scope, I suspected some mottling in the halo, although the picture in Vickers shows it very even.

**NGC 7317, 7318A 7318B, 7319, 7320** (22h36.1 +33°57') Don't think that **Stephans Quintet** is only for people with very large scopes. In the 10" scope I was able to see 7320 and 7318A/B with certainty and could suspect

7319. This was accomplished using a hood and really concentrating. The area was best describes as lumpiness in the darkness. The 20" scope was able to reveal all 5 galaxies. 7320 was the brightest, seen as somewhat small, somewhat faint, elongated NW/SE 2:1. There is a star involved which is probably not the nucleus. To the NW is 7318 A/B. These are very small, pretty faint, with the halos merged into a single object but with separate brighter middles. To the N of 7320 is 7319 which is very small, pretty faint, and very slightly brighter in the middle. Finally, to the W of 7320 is 7317, the faintest of the galaxies, and a star on the NW doesn't help with the viewing either. This galaxy is very small, very faint, and slightly brighter in the middle.

**NGC 7331** (22h37.1 +34°25') This galaxy is really a beauty. At 140X, it is very bright, pretty large, extremely elongated N/S with 2 fairly bright start on the E. There is a bright core and an even brighter stellar nucleus. The halo is more prominent on the E side indicating that the W side is probably cut off with a dust lane. Try as I might, I couldn't see any of the companions in the 10" scope.

**NGC 7448** (23h00.0 +15°59') A somewhat bright galaxy at 100X situated between 2 stars on the ESE and WNW, it is pretty small and is elongated N/S. The galaxy is slightly brighter in the middle and a stellar nucleus comes and goes. On the WNW is a faint star which appears fuzzy in the 10" scope. Looking in Vickers' *Deep Space CCD Atlas*, this star is a very close triple.

**NGC 7479** (23h04.9 +12°19') The last galaxy of the month is somewhat faint, pretty large, and very elongated NE/SW. There is only a little brightening toward the middle with no nucleus seen. Using averted vision, I did suspect some mottling. Look for a faint star on NE and a brighter star on SW. Little brightening toward the middle. This is a nice galaxy in an out of the way place.

**NGC 7772** (23h51.8 +16°15') We'll finish off the month with an open cluster. This small grouping of stars is pretty small, fairly bright, very poor, and extremely loose. There is a total of 6 stars in an "M" shape. Since this is well out of the Milky Way it stands out quite well.

### Herschel 400 Objects

7217, 7331, 7448, 7479

### SAC's 110 Best of the NGC Objects

7331

cers will be open in October. We have volunteers for all positions except Properties.

Dean Ketelsen talked about using irrigation tubing for telescopes, with tubing available from Rain for Rent Irrigation. They reportedly provide discounts for telescope makers. Dean also invited all to the mirror lab in Tucson on Monday the 14th to see the Magellan II mirror casting open up. He finished up with some overheads on the Magellan I interferometer.

For show and tell, Bob Gardener talked about the potential upcoming Giacobinid meteor shower. He recalls seeing an intense meteor shower about 50 years ago from Williams and believes it was this same shower.

Pierre Schwaar showed slides and videos of lightning storms, and provided some insight on how to get good photographs of such storms. He also had videos of sunspots and Iridium Flares.

At the break, 45 people were counted.

After the break, Vice President Gerry Rattley in-

roduced speaker Dr. Peter Wehinger who presented a very interesting and informative presentation on the Large Binocular Telescope being built on Mt. Graham. There are already several scopes on Mt. Graham. The nearby town of Safford has been very supportive of the telescope construction and is conscious of lighting, with the city only using low pressure sodium lights. One use of the telescope will be to search for planets around other stars. Interferometry will be used to blank out the light of the host star, allowing the reflected light from planets to be imaged.

Following Peter's presentation, Paul Dickson adjourned the meeting at 10:00, after which 15 people continued the informal meeting at JB's.

—Ken Reeves, SAC Secretary

# October 1998

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<div style="border: 1px solid black; padding: 5px; display: inline-block;">                     All Times are Mountain Standard Time                 </div>				<b>PAS Meeting</b> Brophy Prep. Physics Lab  1	<b>SAC Meeting</b> Grand Canyon University, Fleming Rm. 105  2	3
4	Full Moon 1:12 P.M.	<b>SAC Star Party</b> Saturday, Oct. 10 <b>Novice Session</b> There will be a novice session at the club star party. Please arrive early.		Draconid Meteors Peak: All Night Z.H.R. Low 'til 1998  8	<b>SAC Star Party</b> Buckeye Hills (members&guests)  10	
11	Last Quarter Moon 4:12 A.M.	12	<b>EVAC Meeting</b> (SCC: Rm. PS172)  14	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> <b>Fri. &amp; Sat., Oct. 16-17:</b>  <b>All-Arizona Star Party</b>                      Arizona City                 </div>		
18	19	New Moon 3:10 A.M.	20	21	Saturn at Opposition  23	24
25	26	27	First Quarter Moon 3:47 A.M.	Venus at superior conjunction (moves into evening sky)  29	Sun enters Libra 9 P.M.  30	31

## SAC Information

Area Code (602)

President & SACNEWS Editor	Paul Dickson Ans. & FAX: 841-0509 dickson@primenet.com
Vice President	Gerry Rattley 892-5698
Treasurer	Jack Jones 944-5488 looka.fuzzy@mcione.com
Secretary	Ken Reeves 878-9460 ken.reeves@cas.honeywell.com
Properties	Adam Sunshine 780-1386 asunshine@netzone.com
Public Events	Rich Walker 997-0711 rhwalker@aztec.asu.edu
Public Events	Wil Milan 8am-6pm: 996-8329 wmilan@airdigital.com
Deep-Sky Group	A.J. Crayon 938-3277 acrayon@primenet.com

## E-Mail Mailing Lists

**SAC-mls** is a mailing list for club announcements and quick notification of astronomical events.

**SAC-Board** is for SAC business. All club members are welcome to participate.

**AZ-Observing** is a fairly general mailing list about observing in Arizona. Where the star parties are and who's going, as well as what's up.

To join, send E-mail with the Subject: subscribe to the "-request" mailing address at psiaz.com. For example, you would send the request for AZ-Observing to AZ-Observing-request@psiaz.com.

## SAC Web Sites

[www.accessarizona.com/groups/group\\_access.html](http://www.accessarizona.com/groups/group_access.html)  
[www.primenet.com/~dickson/sac.html](http://www.primenet.com/~dickson/sac.html)

## Saguaro Astronomy Club Member Services Form

### Membership

Memberships are for the calendar year and are prorated as follows: Jan - Mar 100%, Apr - Jun 75%, Jul - Sep 50%, Oct - Dec 25%.

- \$28.....Individual Membership
- \$42.....Family Membership (one newsletter)
- \$100.....Business Membership (includes advertising)
- \$4.....Nametag for members
- \$14.....Newsletter Only

### Subscriptions

The following magazines are available to members. Subscribe or renew by paying the club treasurer. You will receive the discounted club rate only by allowing the club treasurer to renew your subscription.

- Sky & Telescope.....\$27.00 for one year
- Astronomy.....\$29.00 for one year

Write your name, address, phone number, and E-mail address in the space below.

Make checks payable to SAC.  
Mail the completed form to:

Jack Jones  
SAC Treasurer  
2313 W Sierra St  
Phoenix AZ 85029

## SAC and SAC Meetings

**Saguaro Astronomy Club (SAC)** was formed in 1977 to promote fellowship and the exchange of scientific information among its members — amateur astronomers. SAC meets monthly for both general meetings and star parties, and regularly conducts and supports public programs on astronomy.

SAC meetings are usually held on the Friday nearest the full moon. This means that over the course of the year, meetings are not held on the same week of the month. The same is true of the club's star parties. Star parties at Buckeye Hills Recreation Area are mostly held on the Saturday of the third quarter moon.

**SAC General Meetings:** 7:30 PM at Grand Canyon University, Fleming Building, room 105 — one mile west of Interstate 17 on Camelback Rd, north on 33rd Ave., second building on the right. See inside for a map to the meeting location.

### 1998 SAC Meetings

Jan. 9  
Feb. 13  
Mar. 13  
Apr. 10  
May 8  
Jun. 12  
Jul. 10  
Aug. 7  
Sep. 11  
Oct. 2  
Nov. 6  
Dec. 5 Party

### 1998 SAC Star Parties

Date	Sunset	Moonrise
Feb. 21	6:18PM	3:40AM
Mar. 21	6:39PM	2:23AM
Apr. 18	6:59PM	1:08AM
May 16	7:19PM	11:54AM
Jun. 20	7:37PM	3:27AM
Jul. 18	7:34PM	2:10AM
Aug. 15	7:12PM	12:57AM
Sep. 12	6:37PM	11:45PM
Oct. 10	6:00PM	10:32AM
Nov. 14	5:27PM	3:48AM
Dec. 12	5:22PM	2:35AM

## SACNEWS

c/o Paul Dickson  
7714 N 36th Avenue  
Phoenix AZ 85051

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### Inside:

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SAC Meeting — October 2

SAC Star Party — October 10

All-AZ Star Party — October 16 & 17

SAC Meeting — November 6