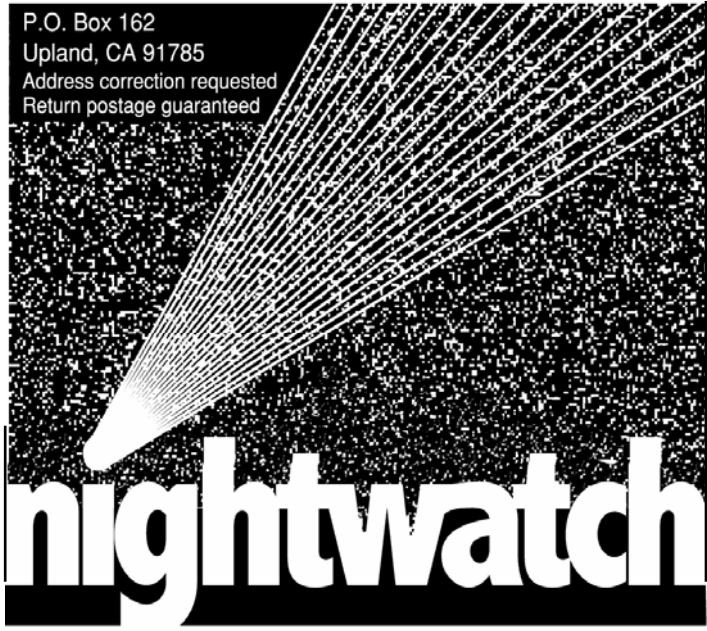


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Newsletter of the Pomona Valley Amateur Astronomers

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Volume 25 Number 4

*nightwatch*

April 2005

## President's ADDRESS

In April we will be doing something a little different. On April 22<sup>nd</sup>, instead of meeting at our usual location in Galileo Hall at Harvey Mudd College, we will be meeting at Milliken Planetarium on the campus of Chaffey College. It will be the first time that I have been in the planetarium since I was a student at Chaffey in the early 1970s. Program director, Penny Cavallo will be providing us with an exciting planetarium show.

Our next star party will be at Cottonwood Springs on May 7<sup>th</sup>. We always meet in loop B of the campground.

On May 14<sup>th</sup> and 15<sup>th</sup> JPL (Jet Propulsion Laboratory) will be having its annual open house. This event was not held for a while after September 11<sup>th</sup>, 2001 so it is good that they are open to the public again.

The Riverside Telescope Makers Conference will be at Camp Oakes near Big Bear on Memorial Day weekend May 27<sup>th</sup> through May 29<sup>th</sup>. This is one of the largest gatherings of amateur astronomers anywhere in the world. I have attended every year since 1994 and have had a great time on each occasion.

I hope that I will be seeing many of you at one or more of these upcoming events. Happy stargazing.

*Ron Hoekwater*

**As usual, the April General Meeting will begin at 7:30 p.m. in Galileo Hall on the campus of Harvey Mudd College**

### March General Meeting

Lee Collins' What's Up covered the galaxy rich area of the sky around Leo, Coma Berenices, Virgo, and Ursa Major. The largest object in the asteroid belt between Jupiter and Mars, Ceres, is also in this area of the sky – with the help of a current map of its position and a scope of at least

### Star Party Sites

- (MBC) Mecca Beach Campground (see page 4)
- (CS) Cottonwood Springs campgrnd, Josua Tree Ntl. Pk
- (CC) Cow Canyon Saddle, Mount Baldy Village
- (MS) Mequite Springs campgrnd, Death Valley National Pk
- (CWP) Claremont Wilderness Park parking lot
- (KD) Kelso Dunes
- (WM) White Mountains
- (CGT) Calico Ghost Town Campground

### PVAA Events Calendar

Month	Star Party	Star Party	General Meeting	Board Meeting
Apr	KD	9	22	14
May	CS	7	20	12
June	CS	4	24	16
July	WM	9	22	14

10" in size you can find a host of interesting objects.

Bob Branch reminded us to keep an eye – although not literally – on our own star. Despite the upcoming solar minimum expected in late 2005 or early 2006, a naked eye sunspot group has been visible on the sun during the last few days. Another naked eye object Bob recommended to us was Algol. Over the space of 3 days, this eclipsing binary system will range in magnitude from 2.1 – 3.5, enough of a difference to observe easily over this short period of time.

We were reminded of the upcoming star party on April 9<sup>th</sup> at Kelso Dunes – see [www.pvaa.us](http://www.pvaa.us) for maps to that site along with the schedule and maps to other upcoming club events. Ron was also thinking of heading out to Death Valley around April 11<sup>th</sup> and 12<sup>th</sup> to see not only the dark skies but a couple of other rare sites – an ancient lake bed in the Valley which is full (to a depth of 6" or so) of water and prolific wildflower displays, also thanks to the high rainfall levels we've experienced this year.

After finding interest among the membership, Ron agreed to arrange a Saturday tour for the Club at the Deep Space Network facility in Goldstone. We should have a date soon.

We were also reminded of the upcoming Riverside Telescope Makers Conference (RTMC) on Memorial Day weekend, May 27-29. It sounds like a great event, whether your interest is in vendors, speakers, seeing homebuilt telescopes, camping, or the fellowship of other like minded people under a dark sky. Register by May 1<sup>st</sup> to save on your registration fees.

**Featured Speaker**

Club member Joann Eisberg was our speaker in March. Astronomy is not only Joann's hobby but her livelihood as well. After receiving her PhD in the History of Astronomy from Harvard, she has taught at various colleges throughout the country and is currently teaching Astronomy at Chaffey College.

The subject of her talk was a project Joann has been working on for much of the last decade – a biography of astronomer Beatrice Tinsley. She was born Beatrice Hill in Chester, England in 1941 in the middle of an air raid during WWII. At the end of the war, her family migrated with Beatrice and her two sisters in search of business success, to New Zealand. Despite what were probably even more pronounced feelings of inappropriateness than those felt by some today, Beatrice excelled in both math and science, studying at the University of Canterbury, New Zealand. While at this school, she met and married Brian Tinsley, who received his PhD in Atmospheric Physics from the University in 1962.

Beatrice traveled with Brian to the United States where he found a position in his field at the Texas Institute in Dallas, Texas, where she hoped to finish her education. She soon found she was unable to complete her PhD in Dallas, and instead traveled 400 miles to stay 3-4 days per week in Austin to finish her doctoral work. Apparently she got a lot of her class reading assignments done during these commutes – it must be a testament to lighter traffic during the 1960s on Texas roads that both she and her fellow travelers suffered no significant accidents as a result of her schooling in Austin.

After earning her degree, she took the motherhood track for a time, raising two children adopted in 1965 and 1967 – less as it was her nature and more as it was the expected next step for a young married woman at this time. During these years, Beatrice got a job as an adjunct professor – trying to start an astronomy program but finding herself without much power or influence on this low rung of the teaching ladder. Despite her frustrations, she wrote and found her papers were well distributed and she gained a reputation in the scientific community outside of her local

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state of Texas. Perhaps partially as a result of the limitations put on her by her role as a mother or due to her limited impact in her working world, she and Brian divorced in the early 1970s. The two children stayed with Brian and Beatrice put herself back out in the job market, receiving several offers of Assistant Professorships. She accepts one at Yale University.

Beatrice's area of interest was cosmology – the study of how the universe came to be and of theories on where it is going. Discussions of the day focused on whether the universe was bound or unbound – that is, would it continue to expand forever or would it eventually reach a limit and then fall in upon itself. Beatrice was also interested in establishing if the light from galaxies were an accurate standard candle which could be used to determine accurate distances to objects in the universe. Her theory was that galaxies should not be standards as their light varied with the age of the stars they were made up of. A galaxy made up of brighter but shorter lived stars glowed blue while if the galaxy was older and made up of longer lived yellow and red stars, its light would radiate in the red area of the spectrum.

Tinsley joined the staff at Yale and in particular, with Richard Larsen – at an exciting time for her field. The two of them collaborated to put on what proved to be a very popular conference hosted by Yale which discussed these ideas about galaxies and which first pointed out the need for an area of study devoted to galaxies and their properties. It was discovered galaxies were not nearly as standard as had been thought and that understanding their true nature was essential to the field of cosmology.

True to Tinsley's theories, galaxies are no longer used as standard candles today to measure the universe. Cepheid variables and super novae are used instead.

In keeping with the fact that young, hot stars burn out fast – Beatrice Tinsley was about to discover she had the same fate. One year after the exciting conference at Yale and just after receiving tenure, Beatrice was diagnosed with melanoma on her leg. While efforts were made to stop it, she had put off dealing with the mole for too long and died two years later in 1981, at the age of 40.

Thank you, Joann, for a very interesting tale of the life and studies of an individual who played a pivotal role in both the history of the search for knowledge and the increasingly important and acknowledged role of female scientists during the last century. We're all anxiously awaiting the publication of your book so we can pick up a copy and read the full story!

### **ARM WRESTLING GALAXIES**

Recently, I was out in the desert getting a good look at M51 or the Whirlpool Galaxy. This galaxy is actually two

galaxies, an arm wrestling couple with a couple of stories to tell. They are located in Canis Venatici (Hunting Dogs) just south of the end of the Big Dipper's arm. The larger of the two is called the Whirlpool because we see it face on with its bright arms totally revealed. Although it's a mind boggling 20 million light years away, it stands out because its arms are so bright and yanked open. This brightness is because of an explosive abundance of young, brilliantly hot stars. The brightness of these stars is the result of its agitated connection with its smaller partner which appears as a gleaming, inflamed blob (NGC 5195). It is linked to the larger spiral (NGC 5194) by an arm wrestling grip of their two galactic arms.

This isthmus of stars resulted from a collision about 300 million years ago. Then, in cosmic slow motion, the two sideswiped each other in a glancing, arm wrenching clash that left both disturbingly brighter and more visible. The smaller, which is now in back of the larger, was originally a spiral but was torn up into a glowing blaze as it scraped past. Most of its stars became strung out in a bent arm wrestling bridge with the larger Whirlpool. Explosive bursts of radio waves still come from both galaxies. Although both are smaller than our Milky Way Galaxy, they are over four times brighter. Colliding galaxies are not unusual, the same relationship can be seen between M81 and M82, although they have moved much further apart since their contact.

This brings us to the second story. Because of its unusual brightness, M51 was the first galaxy to be recognized as a spiral 160 years ago. It was then that Irish landowner William Parsons, Earl of Rosse, decided that his 36 inch reflector wasn't big enough. So, in 1845, he constructed the first 72 inch reflector. In those days the best discoveries were made by rich amateur astronomers. Although his mirror was made of metals not nearly as reflective as modern mirrors, it was a giant telescope for its day. Mounted between two huge stone walls in a 60 foot iron tube, it became known as the Leviathan of Parsonstown. Observing the newly cataloged Messier objects he was delighted to see "spiral convolutions" in M51. This was the first discovery of "spiral nebula". It would be at the Mt. Wilson telescope, 80 years later, that Edwin Hubble would prove them to be vast distant galaxies external to our own.

*Lee Collins*

### Kelso Dunes Star Party

The drive out to Kelso Dunes is a little longer than that to most of our star party sites. Fortunately, riding along, were Laura Jaoui, her son Michael, and his friend Sam. Having pleasant company with whom to share the drive makes the journey out to the dunes a very enjoyable part of the whole star party experience.

For Michael and Sam this was their first trip to a really dark sky observing site. This was my second visit to Kelso Dunes and I have been impressed both times. There is a small light dome to the northeast (which I presume to be Las Vegas) but, Death Valley and White Mountain are the only sites that I have observed from which suffer from less light pollution.

We arrived at the dunes in the late afternoon. I set up my telescope in the parking area east of the restrooms and my traveling companions set up their camp about ¼ mile farther down the road. There were perhaps, a dozen people camped in the area. As it became dark several of them came over to chat and to take a look through the telescope. One man had come all the way from Israel for his vacation. Laura spoke with him in Hebrew. Our visitors saw Saturn, Jupiter, the Orion Nebula, and M65, M66, and NGC 3628 (the "Trio in Leo"). M51 (the "Whirlpool Galaxy") was especially impressive. I think that it was the best that I have ever seen it.

On Sunday morning we packed everything up and headed to Mitchell Caverns and "Hole in the Wall." The two sites are farther east along the 40 freeway, about 60 miles from Kelso Dunes and are within minutes of each other.

Mitchell Caverns are the only limestone caves in the California Park system and well worth a visit when you are in the area. One can only enter the caverns as a member of a guided tour. The tour takes about 1½ hours. This site gives more information: [http://www.desertusa.com/mnp/mnp\\_mc.html](http://www.desertusa.com/mnp/mnp_mc.html).

Hole in the Wall is collection of volcanic rock formations produced by eruptions over millions of years and the subsequent eroding action of wind and rain. There are picnicking and campground facilities. For more information visit: [http://www.desertusa.com/mnp/mnp\\_hole.html](http://www.desertusa.com/mnp/mnp_hole.html).

In May the PVAA star party will be on the 7<sup>th</sup> at Cottonwood Springs. I hope to see you there.

*Ron Hoekwater*

### PVAA Host 2nd Star Party for The Los Angeles Braille Institute

It's hard to believe that it has been 1 year since our first star party for the Los Angeles Braille Institute. It may seem odd to host a star party for a group of blind students. That is until we understand blindness and what it means to be legally blind. To be legally blind one must have "corrected" vision of 20/ 200 or worse and a field of view of 20 degrees or less. Out of the 8 million legally blind individuals in the United States 80% have some amount of vision.

At 5:30 Pm the Braille caravan of vehicles slowly made it's way down the narrow, Joshua Tree National Park's, campground road. The enthusiasm was instant. Among the group there were several Astronomy enthusiasts. Among them Bob Petrone, a Braille Instructor. Bob has a 6" Telescope and could hardly contain himself at using a 16 " instrument that evening.

Elize Van Zandt, a Joshua tree Ranger kicked off the event with a welcome to Joshua tree and a tactile presentation of the desert environment. As one learns about the desert it becomes evident what a lively environment it actually is. This would be one of Elize's last presentations as she is set to retire from the Park Service after a great career.

As the sun set Joe Hillberg's Buffalo Roast was ready and we all settled in for a beautiful and relaxing outdoor dinner. Joe started his roast on outdoor camp stoves at 1200 noon...5 hours in preparation.

Our Astronomical; events began at 7:00 PM with Ludd Trozpek giving a very clear and and easy to sense presentation on the astronomical targets that by now were directly above us, and that we would soon enjoy with our telescopes. Our equipment included a 16" 10" Dobsonias and a 4.7" refractor. All well suited for our bright sky objects. We needed all the astronomical light that we could obtain for our wide, vision diverse, group. Our evening was full of bright objects. The Braille students varied in age from 20 - 80 years of age. Richard Coke an electrical engineer has detached retinas. Others had optical distrophy. While others had varying degrees of macullar damage and other forms of blindness. One thing was certain the group of students where expanding their visual horizons like never before

The sky was full of exciting and well positioned astronomical targets. We all enjoyed a 5 day moon with a variety of craters and mountains. Jupiter displayed Equatorial bands and the 4 Galilean moons. Saturn was brilliant and a huge hit with it's ring system. The group even challenged themselves and requested to observe the Orion Nebula. Ludd's presentation earlier made all these telescopic observations very real, meaningful, and desireable.

Our evening under the universe was a delightful one, with nighttime temperatures at 50 degrees with very slight to no winds.

It was very rewarding for all in attendance to see the pure joy expressed by these Visually imparied students as they did what ever it took to "see" the universe. Some with the help of their sighted assistants

needed to be guided to the telescopes and have their heads placed over the eyepieces. While others just looked up with expressions of , " Look at That". Richard Coke's detached Retinas were no obstacle. His vision is a world out of focus and very grainy. Although he could not use a telescope with any real affect he stated, with a look of full content as he obseved the sky un-aided, "Tonight I have seen the stars, the moon and planets like never before." I'll never forget this night thank you."

**This Star party, was a very special night .**

A great thanks to Ludd Trozpek, Joe Hillberg and the entire Stover family who without their help this event would have never happened.

*Frank Busutil*

## Los Angeles Braille Institute Star Party



