

To Mel, with Love

Kenneth Peckham and Carolyn Kaichi

The club lost a much loved member, Mel Levin, and by popular demand we are featuring a remembrance by two contributors as well as a reprint of an article submitted by Mel in 2010.

Club-Conscious Memories: Mel Levin

In the late '90s I taught a class in leisure astronomy at UH called "How To Play With The Universe". Waiting outside the classroom on the night of the first in a 6-session-series, I spotted a wandering couple, looking for the astronomy classroom. I introduced myself and asked what they wanted to get from the classes. They introduced themselves as Mel and Clare Levin and said that the class was a reward of sorts for Clare, who had recovered from a serious medical procedure. It was Clare, Mel claimed, who was eager to learn more about the night sky. Mel implied that he was just along for the ride, which happens often with astronomy couples, yet Clare and Mel seemed equally anxious to absorb the universe every way they could. Mel was no drag-along spouse. They both took my series of classes twice.

This couple began to attend star parties and club meetings right away. They

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Upcoming Events:

- The next meeting is at 7:30 p.m. on Tuesday, Oct. 7th at the Bishop Museum.
- Bishop Museum's planetarium shows are every Saturday of the month at 8:00 PM www.bishopmuseum.org/calendar
- The next Board meeting is Sun., Oct 5 at 3:30 PM in POST building at UH.

President's Message October 2014

Celestial objects move in regular rhythms at a wide variety of time scales. Some events occur frequently and are considered commonplace, such as the rising and setting of the Sun or the cycles of the Moon. Others are less frequent and eagerly anticipated at each reoccurrence, such as oppositions of Mars. Many events happen at such great time intervals that many people have no chance to experience them. People born after the last transit of Venus, for example, may not live to see the next one.

Then there are events that may not be rare but are being witnessed in a new way for the first time by humans. There are a couple of these coming up. The first is the passage of comet Siding Spring by Mars in mid-October. Not only will this visitor from the Oort cloud pass closer to Mars than any comet in recorded history has come to Earth, but Mars will be hosting a large number of spacecraft at the same time, including a couple of new arrivals, NASA's MAVEN mission, and India's Mangalyann or MOM (Mars Orbiter Mission), both arriving in late September. Although the rovers on the surface of Mars should be in no danger, the debris shed by the comet is of concern to the orbiting spacecraft, and orbits are being shifted so that these missions can be as far away from the comet as possible at its time of closest approach to Mars. While none of these missions was designed to observe a comet, many will turn their instruments to Siding Spring to observe whatever they can. We on Earth can expect to see the comet telescopically in the vicinity of Mars, an interesting view.

While this is going on, European scientists will be preparing for a November landing of the Philae lander (currently at-

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Planets Close To the Moon
Times are Hawaii Standard Time









- Oct 5, 08h, M 4.4° NNW of Neptune
(143° from sun in evening sky)
- Oct 8, 01h, M 1.1° NNW of Uranus
(179° from sun in midnight sky)
- Oct 17, 15h, M 5.2° SSW of Jupiter
(66° from sun in morning sky)
- Oct 25, 06h, M 1.4° NE of Saturn
(21° from sun in evening sky)
- Oct 28, 02h, M 5.0° S of Mars
(56° from sun in evening sky)

Venus is closer that 15° from the sun when near the moon in October

Other Events of Interest
Times are Hawaii Standard Time

- Oct 7, 11h, Uranus at opposition.
- Oct 8, 100:50h, Full Moon
(Total eclipse of the moon visible in Hawaii)
- Oct 16, 11h, Mercury at inferior conj. with sun
(Passes into morning sky)
- Oct 23, 11:55h New Moon
- Oct 24, 21h, Venus at superior conj, with sun
(Passes into evening sky)
- Oct 25, 17h, Moon 1.7° N of dwarf planet 1 Ceres
(26° from sun in evening sky)

Planets in October

<p>Mercury</p>  <p>is too close to the sun to be viewed in October.</p>	<p>Venus</p>  <p>is also too close to the sun to be viewed this month.</p>	<p>Mars</p>  <p>is visible in the SW evening sky and is gradually becoming dimmer.</p>
<p>Jupiter</p>  <p>is climbing in the eastern sky before dawn, rising about 4 hours before the sun.</p>	<p>Saturn</p>  <p>is in the SW after sunset and sets about 2 hours after the sun, giving only a short period of viewing after evening twilight..</p>	<p>Uranus</p>  <p>reaches opposition on October 7, so is in the sky all night. Best viewed late in the evening.</p>
<p>♆ Neptune</p>  <p>is visible in the evening sky to the west of Uranus.</p>	<p>♇ Pluto (Dwarf Planet)</p>  <p>Is visible in SW after sunset, but very difficult to view.</p>	

Meeting Minutes

H.A.S. Secretary

The meeting was called to order by Chris. He told about the lecture at the HSL this month on Earth-like Exoplanets. The speaker is Dr. Andrew Howard from the UH.

Our table cover is here and it is GORGEOUS!!! Thank you Peter for a job well done (That wasn't technically from the meeting, we discussed sending the logo being sent! But what the heck!!!)

As to the gate times at Dillingham changing... Duke has always been most accommodating to our requests. So if you are the key person, just keep him in the loop about departures and all should be cool.

Barry reported on the Starlight Reserve Meeting he attended on our behalf, on July 9. Richard Wainscoat and Jim Crisafulli were there and as in most government meetings not many results and it will be continued. Thank you Barry for your time!

There is an Eclipse Event at Bishop Museum on Oct. 7 that coincides with our meeting date. The Event starts at 9 pm. For those of you who participate in the full lunar eclipse I imagine things will set up much the same way. Since our meetings usually last until 9:30 PM, our room may change for that meeting only.

Both of the star parties at Kahala and Geiger had good turn outs. Kahala had good

views of the moon (sorry guys no sex on the moon this time).

There is a star party at Mililani Iki on Oct.1, Please contact John Gallagher if you are interested,

There were 2 newbies so thank you for joining us in our stargazing passion!

April has the calendars for \$6.50! Contact her to purchase one. There are some great pictures in it!!

The highlight of the meeting was watching the (almost) completed version of the "Wayfarer" I am afraid that I sorta stopped taking notes and just watched... It was wonderful. I may even pay to see it!!!

Chris adjourned the meeting at 9:30ish Thank you all for attending...

Respectfully Submitted,

*Otis Wickam
filling in for
Gretchen West
H.A.S. Secretary*

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joined the club and participated in every way possible. They bought a telescope, volunteered for school star parties and even took on East Oahu schools when Forrest Luke resigned as star party coordinator. Mel spoke at meetings, wrote articles and poetry for the Astronews and even took on his own astro-tourism gig, decades beyond retirement age. At club star parties Mel and Clare took turns hunting for galaxies and nebulae, like fewer than 10% of our membership does. From their home in East Oahu, they went outside in the wee hours and scanned the skies with binoculars. Mel and Clare also hosted a star-hopping seminar for our club.

Before long, Mel felt ready to take on the hassle of a larger telescope, and he hauled it to star parties for more than a decade. He asked lots of questions and countered club apathy with his enthusiasm. Neither he nor his wife sat around much when the sky was dark and clear. They flew to Molokai with our club, in search of darkness.

Mel Levin's life was already filled to the brim with meaning and purpose when he decided to take on the rest of the universe. He would say that it was an exer-

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Hawaiian Astronomical Society Event Calendar

< October 2014 >						
SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
			1 8:30 PM Grade 3 Miliani (Private)	2	3	4 6:22 PM Public Star Party(G) 6:21 PM Public Star Party(K)
5 sunset: 14:18	6	7 7:30 PM Club Meeting 8:00 PM Lunar Eclipse at BM	8	9	10	11
12 sunset: 14:07	13	14 8:00 PM Globe at Night	15 8:00 PM Globe at Night	16 8:00 PM Globe at Night	17 8:00 PM Globe at Night	18 8:00 PM Globe at Night 6:12 PM Club Star Party (D) (Private)
19 8:00 PM Globe at Night sunset: 13:56	20 8:00 PM Globe at Night	21 8:00 PM Globe at Night	22 8:00 PM Globe at Night	23 8:00 PM Globe at Night	24	25 6:00 PM Public Star Party(D) 7:45 AM Lacey Veach Day
26 sunset: 13:47	27	28	29	30	31	

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cise in keeping his mind sharp, but his enthusiasm always gave him away: he loved it. This club of ours owes to Mel and Clare Levin a debt of gratitude for setting such a good example of how to pursue a passion. Mel knows that we will be keeping him in our thoughts. Surely some unnamed galaxy out there is hungry for an identity: the “Mel-Key Way”...? **Kenneth Peckham**

From Carolyn Kaichi:

When I met Mel Levin he was already an “old man”...technically. Over the years I discovered he was one of the few people, along with his beautiful wife Clare, that I considered as *friends*, rather than “the older couple who I was friends with”. Age was just another attribute, kind of like being tan or having blue eyes.

This opinion was formed partly because of Mel’s ability to relate to folks on a level that transcended the age barrier, and I never felt as if he condescended or

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President's Report (Continued from page 2)

tached to the Rosetta spacecraft) on the surface of comet 67P/Churyumov-Gerasimenko. Primary and backup sites have been chosen, and Philae's touch-down is scheduled for November 11th. As comet C-G nears the Sun, its activity will increase, so this landing attempt is risky and by no means assured of success. If all goes as planned, we should be witness to our first views from inside a coma. What times we live in!

Chris

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looked down upon my wisdom-challenged stage in life. The other part of his presence centered around the quality of his character—his inner energy and quest for understanding—qualities that I believe draws all of us together in the club.

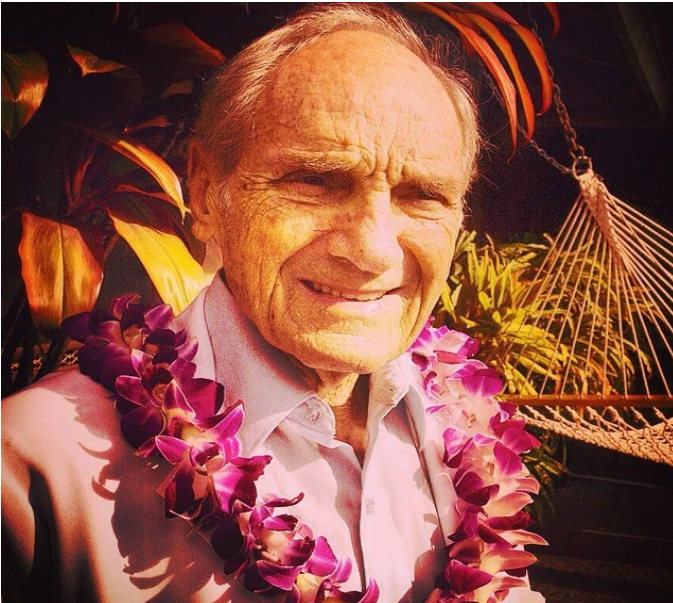
Ultimately, we all have that expiration date stamped somewhere on us that we can't see. Dr. Mel Levin's was Sept. 27, 2014. He was fortunate to have the time, the intelligence, and the love until the very last moment when he went peacefully toward his next state of existence. He was a very

lucky person, but we are also lucky to have shared a part of his life on this planet.

As a previous editor of the Astronews, I was privileged to channel the thoughts and expertise of our club members, and Mel was one of those who were willing to express his musings through the newsletter. I am attaching one of those articles written in 2010. It is my personal hope that Mel is waving at us from his planet Heart.

Safe travels and clear skies, Mel....

Carolyn Kaichi



Mel's article is to be found on page 10.

Twinkle, twinkle, variable star

by Dr. Ethan Siegel



As bright and steady as they appear, the stars in our sky won't shine forever. The steady brilliance of these sources of light is powered by a tumultuous interior, where nuclear processes fuse light elements and isotopes into heavier ones. Because the heavier nuclei up to iron (Fe), have a greater binding energies-per-nucleon, each reaction results in a slight reduction of the star's mass, converting it into energy via Einstein's famous equation relating changes in mass and energy output, $E = mc^2$. Over timescales of tens of thousands of years, that energy migrates to the star's photosphere, where it's emitted out into the universe as starlight.

There's only a finite amount of fuel in there, and when stars run out, the interior contracts and heats up, often enabling heavier elements to burn at even higher temperatures, and causing sun-like stars to grow into red giants. Even though the cores of both hydrogen burning and helium-burning stars have consistent, steady energy outputs, our sun's overall brightness varies by just ~0.1%, while red giants can have their brightness's vary by factors of thousands or more over the course of a single year! In fact, the first periodic or pulsating variable star ever discovered—Mira (omicron Ceti)—behaves exactly in this way.

There are many types of variable stars, including Cepheids, RR Lyrae, cataclysmic variables and more, but it's the Mira-type variables that give us a glimpse into our Sun's likely future. In general, the cores of stars burn through their fuel in a very consistent fashion, but in the case of pulsating variable

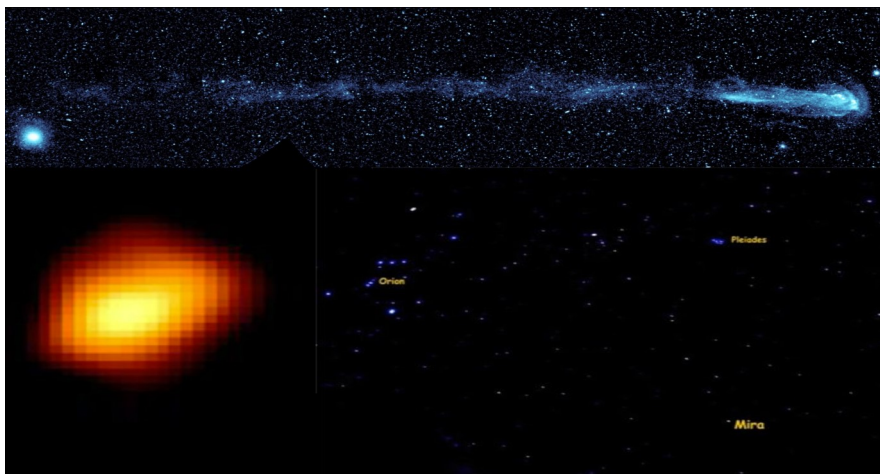
stars the outer layers of stellar atmospheres vary. Initially heating up and expanding, they overshoot equilibrium, reach a maximum size, cool, then often forming neutral molecules that behave as light-blocking dust, with the dust then falling back to the star, ionizing and starting the whole process over again.

This temporarily neutral dust absorbs the visible light from the star and re-emits it, but as infrared radiation, which is invisible to our eyes. In the case of Mira (and many red giants), it's Titanium Monoxide (TiO) that causes it to dim so severely, from a maximum magnitude of +2 or +3 (clearly visible to the naked eye) to a minimum of +9 or +10, requiring a telescope (and an experienced observer) to find!

Visible in the constellation of Cetus during the fall-and-winter from the Northern Hemisphere, Mira is presently at magnitude +7 and headed towards its minimum, but will reach its maximum brightness again in May of next year and every 332 days thereafter. Shockingly, Mira contains a huge, 13 light-year-long tail -- visible only in the UV -- that it leaves as it rockets through the interstellar medium at 130 km/sec! Look for it in your skies all winter long, and contribute your results to the AAVSO (American Association of Variable Star Observers) International Database to help study its long-term behavior!

Check out some cool images and simulated animations of Mira here:

http://www.nasa.gov/mission_pages/galex/20070815/v.html



Meteor Log—October 2014

by Tom Giguere

Looking ahead to the three major showers coming up between now and the end of the year we always have to take the Moon into consideration. I love observing the Moon, but it has its place in the night sky, and that place is preferably out of the way when the meteor shower of interest is peaking!

- The Orionids (ORI) peak on 10/21 (Tue) with new Moon on 10/23. 2 Days later.
- The Leonids (LEO) peak on 11/17 (Mon) with new Moon on 11/22. 5 Days later.
- The Geminids (GEM) peak on 12/14 (Mon), new Moon is on 12/22. 8 Days later.

The October Orionids are about ideal, with the two-days away from new

waning sliver of a Moon barely interfering with observation. This Moon would rise shortly before dawn probably after all observers have headed for their beds (***) *See announcement below* (***)). The November Leonids are second best, but the thick waning crescent would cause some havoc with dedicated observers as the Moon will rise around 2:30am - when the action may be getting interesting. Lastly, the most reliable shower of the fall, the Geminids will be impacted worst of the three showers this year. The 20-day old moon will rise right about midnight and majorly impact this shower. Even though the last quarter Moon (21-days old) is only 1/11th as bright as the full Moon it still renders all but the brightest meteors visible. I would estimate that an

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First Quarter	Full Moon	Last Quarter	New Moon
October 1 & 31	October 8	October 16	October 23

Shower	Activity	Maximum		Radiant		V _∞	r	ZHR
		Date	λ□	α	δ			
Draconids (DRA)	10/6 → 10/10	Oct 08	195.4°	262°	+54°	20	2.6	Var
Southern Taurids (STA)	09/10→ 11/20	Oct 10	197°	32°	+09°	27	2.3	5
δ-Aurigids (DAU)	10/10→ 10/18	Oct 11	198°	84°	+44°	64	3.0	5
ε-Geminids (EGE)	10/14→ 10/27	Oct 18	205°	102°	+27°	70	3.0	3
Orionids (ORI)	10/02→ 11/07	Oct 21	208°	65°	+16°	66	2.5	20
Leo Minorids (LMI)	10/19→ 10/27	Oct 24	211°	162°	+37°	62	3.0	2

Treasurer's Report

by April Lew

HAS Revised Financial Report July 16, 2014 to August 15, 2014

Beginning balance:		3184.54
Income:		
Donations:	120.00	
Dues received	102.00	
S&T magazine sub payment	65.90	
Ast magazine subscription payment	34.00	
Total Income		321.90
Expenses:		
Microsoft program for Astronews	83.76	
Astronews printing	65.28	
Astronews postage	61.74	
S&T magazine subscription	65.90	
Astronomy magazine subscription	34.00	
Total expenses		310.68
Ending balance		3195.76

HAS financial report August 16, 2014 to September 15, 2014

Beginning balance:		3195.76
Income:		
Donations:	18.00	
Dues received	146.00	
Astronomy mag subscription payment	34.00	
Total Income		198.00
Expenses:		
Astronews printing	73.39	
Astronews postage	121.65	
Office supplies	14.66	
Mercer HAS club insurance	320.00	
Total Expenses		529.70
Ending balance		2864.06

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We welcome three new members this month. They are **Andre Yanoviak**, **Chris Dacus**, and **Marcin Lajdecki**. A special thanks to **Albert Kanno** and **James Brachaud** for their donations. Many thanks also to those renewing their membership (Albert Kanno, Martin Kinna, D. Masui, and James Branchaud). As a reminder, please check your membership anniversary date listed on the Astronews address label. Clear skies to all!

Skywatchers

by Mel Levin

Far away from earth in the constellation CYGNUS, The Swan, there happens to be an "ordinary" star similar to our sun. It is called 52 Cygni and is estimated to be about 1800 light years from us. That's six trillion miles times 1,800 if you care to be exact.

The reason I'm telling you about this ordinary star is because it has five satellites in orbit—we'll call them planets. One of them is so similar to our Earth that it's almost a dead-ringer for us. Of course, no one knows any of this—yet. It will probably take years and expenditure of vast sums before mankind learns what I'm now divulging.

But I have a purpose in this narration so bear with me. When mankind finally studies this star and its satellites they are in for a shocking revelation—not that there is life—by 2015 we found proof of rudimentary life on several exo-planets. No, the big news is that there is humanoid intelligent life on the Earth-like planet.

Before we go further we must have a name for this planet. Since it is so Earth-like, if we transpose the last H it would spell "HEART", so that seems a fitting name—so be it!

Did I tell you I had shocking news!? Well it gets better! On planet Heart, the human-like species that has evolved is compartmentalized into various sub groups, depending on their role to society as a whole—not too unlike "ant" colonies on earth. So there are several grades of workers etc. in ascending order of importance and get this—the top of the heap is a small group of Heart-things called: SKYWATCHERS!!!!

It seems that somehow the Heart-beings figured out that of all the activities these beings could engage in (not counting food production and reproduction), star-gazing just might be the most important and prestigious. Therefore they trained their most precocious and motivated youngsters for this exciting scientific endeavor.

No one knows for sure why and how this evolved—for defense, intellectual curiosity, or what? What I can tell you is that when I focused my 50" litebox Dob from my special platform in space above the Earth's atmosphere on that planet Heart, I saw something absolutely unbelievable—there in a remote highland area I could make out someone using a large refractor, and it saw me seeing it! I saw it waving to me and I waved back—WHAT A COMPELLING MOMENT!!!!

The lesson for all of us seems to be, "Take Heart, believe in Heart, strive to be like a Heart on EARTH".

Mel



Errata from your editor:

Last month I took it upon myself to “correct” the treasurer’s report submitted by April Lew without letting her know. I thought my correction was so obvious that I did not need to bother April. Oh well. Once again I am finding my feet firmly planted in a canis canis pile. Bow wow Charlie. This month’s Treasurer’s report has a revised report for last month as well as the report for this month. Mea culpa and a thousand apologies to April and the readers of Astronews. My hope and intention is that the probability of such errors will diminish to the level of extremely unlikely very soon.
Charles Rykken

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observer would be lucky to see meteors any fainter than third magnitude.

On a related note, the last-quarter Moon is actually not as bright as the first-quarter Moon (Ref: Space.com). If we examine the Moon the reason becomes apparent... If the Moon were perfectly smooth and uniformly bright, then the brightness of the first and third-quarter Moons would be identical. Fortunately, the surface of the Moon is far more interesting than that and has undergone modification over the millennia. The diagram illustrates the phases of the Moon, and the illustrator has conveniently inserted actual mini-photographs of the lunar surface. Light (ancient highlands crust) and dark (basaltic lava flows) areas may be seen in the photos. The first quarter photo shows a higher percentage of light to dark areas than does the third quarter photo. That really is all there is to it – the third quarter moon is not as bright as the first quarter Moon because there is a larger percentage of basalt (dark lava rock, similar to that found on the big island) than on the first quarter moon.

*** Orionid Meteor Showing Viewing Party ***

Join club members for a viewing session in Waianae site at the Mouna farm, on the evening of Tuesday, October 21st. Since this is a new site for most of us, it’s probably best to arrive before dark, so plan on arriving around 6ish. The shower is best after midnight, so bring your sleeping bag if you want to make a night of it. Please contact Chris or me for directions.

Background: The Orionids are a medium strength shower that sometimes reaches high strength activity. In a normal year the Orionids may produce 20 -25 shower members at maximum. The Orionids often provide several lesser maxima, helping activity sometimes remain roughly constant for several consecutive nights centered on the main peak. See below for more Orionid details.

**H.A.S.
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About This Image

The Butterfly Nebula from Hubble

Image Credit: [NASA](#), [ESA](#), and the [Hubble SM4 ERO Team](#)

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