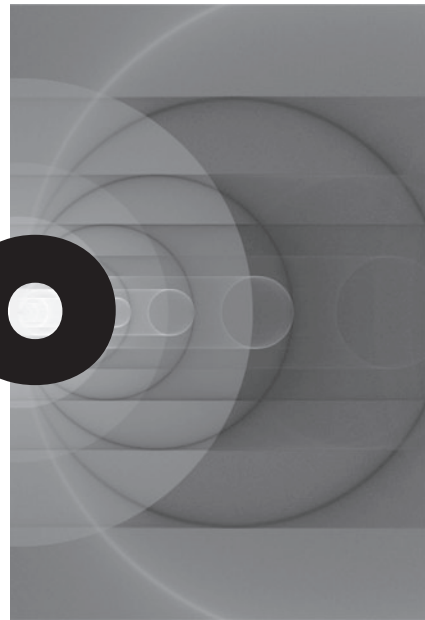


T H E

ECHO

April 2015



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Letter

from the Editor

See anything that needs to be replaced or something that would be good to have for the community? Send your suggestions to the PAC board for consideration in next year's budget. What is obvious to you may not be on someone else's radar. Most things can't happen unless they've been budgeted for. Now is the time.

While you're at it, a number of elections are coming up. Think about offering some of your time to help out in the Park. Or give a little nudge to someone who you think would be good, to show them they would be welcomed.

We have a fair and two new groups in the Park. See pages 6-8.

If we subtract two days from our already ridiculously early deadline, we might get the *Echo* sooner than the very end of the month. Our new **deadline is the 8th of the month** for the following month's edition. Let's see how that works. Thanks to all who sent things early this month.



Dorothy Mersmen
124 Sunrise Lane
February 12, 2015

Philip John Wharton
17 Fallen Leaf Way
February 14, 2015

Marv Thompson
February 2015

Notices

MARCH

Novato City Council meeting at MVMCC

Monday, March 31, 6:30 p.m. Check for the starting time and agenda, last week of March. Please all attend—MVMCC issues will be discussed

APRIL

1—PAC meeting 1st Wednesday, 7 p.m.

8—MarVal meeting 2nd Wednesday, 6 p.m.

Art in the Park meeting

Saturday, April 4, 10:30 a.m. Fireside

Debris bin

Saturday through Sunday, April 11-12

Next Steps

Film: *The Most Excellent Death of Theodore Jack Heckelman*
Sunday, April 12, 3-5 p.m.

15—HOL meeting 3rd Wednesday, 7 p.m.

MarVal/HOL Volunteer Dinner

Saturday, April 18, 5:00 p.m.

MVEST Emergency Preparedness Fair

Saturday, April 25, 10 a.m.-2 p.m. ballroom

MAY

Art in the Park final meeting

Saturday, May 2, 10:30 a.m. Fireside

PAC Board Nominations

Saturday May 9—Saturday, May 16

3rd Annual Art in the Park

Sunday, May 17, 1:00-4:00 p.m.

HOL elections

HOL meeting Wednesday, May 20

Meet the Candidates

Wednesday, May 27

T H E *ECHO*

APRIL 2015

MARIN VALLEY
MOBILE COUNTRY CLUB

100 MARIN VALLEY DRIVE
NOVATO, CA 94949
415-883-5911

novatofinancing@att.net
WWW.MVMCC.COM

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PAC BOARD

PRESIDENT **Jay Shelfer** 415-883-6945
VICE PRESIDENT **Desiree Storch** 415-250-7297
SECRETARY **Mike Hagerty** mrhagerty@ucdavis.edu
TREASURER **Larry Cohen** 415-883-7786
AT LARGE **Tom Miller** 415-244-5413

HOL BOARD

PRESIDENT **Nancy Bingham** 415-883-7879
1ST VICE PRESIDENT **Pauline Hawkins** 415-884-0494
VICE PRESIDENT (MVEST) **Serena D'Arcy-Fisher**
415-506-4235
VICE PRESIDENT ACTIVITIES AND EVENTS
Carolyn Corry 415-370-6403
RECORDING/CORRESPONDING SECRETARY
Miriam Dvorin-Spross 415-884-0607
TREASURER **Gwendolyn Morgan** 415-475-2629

MAR VAL BOARD

PRESIDENT **Kathleen Dargie** 415-884-2649
1ST VICE PRESIDENT **Dan Sebastian** 415-382-7738
2ND VICE PRESIDENT **Pat Thurston** 415-884-0740
SECRETARY **Carole Gathman** 415-884-2720
TREASURER **Sandee Duncan** 415-883-3034
DIRECTOR **Dee Schneider** 415-883-4182
DIRECTOR/BAR MANAGER **Fred Dargie** 884-2649
DIRECTOR/RESERVATIONS **Carolyn Corry** 506-2335

Please email all articles to the editor, with the word "ECHO" as the first word of the subject line and a copy of the article in the body of the email to:

ermawheatley@gmail.com

Images and photographs should have a resolution of 300 ppi (pixels per inch).

Everything is due the
8TH of the MONTH or SOONER
for the following month's edition.

Letter to Residents

Management Report

Please note

The Novato City Council will meet at MVMCC on Monday, March 31, at 6:30 p.m. (tentative) in the Clubhouse.

Dear Residents,

MVMCC finances remain stable and secure.

The Novato City Council should be meeting with us in the Clubhouse March 31. We are awaiting the agenda for this meeting, which they usually post the week prior to their meetings.

The New Year's budget is under discussion with Management, MarVal, HOL, and PAC. Should you have any input, please contact members of these boards.

As part of the Delegation Agreement, members of the PAC and city officials meet quarterly to discuss items of interest pertaining to MVMCC. There are several pending issues, and we are waiting for them to schedule the next meeting. Please keep in mind that you can bring forward matters that you wish discussed with the city staff through the PAC board.

There is an upcoming election in May/June for two seats on the PAC board. If you wish to participate, please contact Peggy Hill or Desiree Storch.

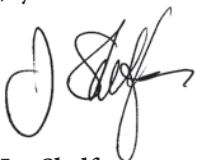
PAC, MarVal, and HOL have approved and amended the city-amended events policy. It now passes back to the city's staff for review, then passage by the City Council. This action will begin the process of formally adopting the policy for events at the Clubhouse.

HOL will vote on the tree and shrub policy in their March meeting. By the publishing of this month's *Echo* we will know if it has moved on to the PAC board for its approval.

Our next meeting will be **April 1**. Hope to see you then.

In service,

Jay Shelfer



Jay Shelfer
PAC PRESIDENT
jjshelfer@yahoo.com

Come enjoy the **swimming pool**. The heater is on!

Dumpster Alert: Available for household debris disposal April 11-12 at the lower turnaround.

Please, **no construction** debris accepted

Please refrain from flushing **handy wipes**. They are a constant problem for our sewer pump system.

Remember Marin Valley is a **NO** poison community. There are many alternative methods to eliminate rats and gophers without the use of poisons. Owls and coyotes are impacted when they eat poisoned rodents.

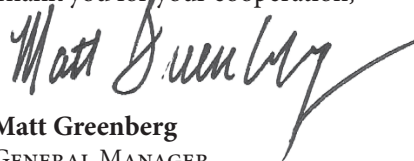
Park Rule #12, Carports: Carports and porches are not to be used as storage facilities. Many residents need to be aware of this rule. It affects the Park and your neighbor's home value to have items stacked in your carport. Thanks for your anticipated cooperation with cleanup and removal of stored items.

Park Rule 21.4, RV Storage: RV parking is not to be used for vehicles that are inoperable or stored permanently without being used. Keep your RV space clean and void of garbage or any stored items other than your RV.

Men's and Women's Sauna: Please do not pour water over the heating element. This has taken place for a long time. The wood floors are now full of dry rot, and this is extremely dangerous. A 220-volt system is not watertight. These are dry heat saunas, not steam room units.

Park Rule 21.3, Repairs: No repairing or servicing (whether major or minor in nature) of vehicles (including boats) will be permitted in driveways, carports, or streets.

Thank you for your cooperation,



Matt Greenberg
GENERAL MANAGER
gm.mvmcc@gmail.com
415-883-5911, Fax 415-883-1971

HOL

Message from Homeowners' League

Spring is here!

This means flowers blooming, trees getting new leaves, and yard maintenance to be completed. I have received a shock! Someone has been taking or borrowing without returning supplies from around the Clubhouse and the pump station. These are supplies that are paid for by the residents for the use of keeping the gardens in their glory.

Also, spring brings out various pests such as gophers, voles, and rats.

PLEASE REMEMBER, NOT TO USE POISONS AS A CONTROL METHOD FOR THESE PESTS!

Poisons also kill owls, hawks, and other wildlife that we so enjoy after they eat one of the poisoned pests.

Our April meeting was very exciting with discussions and voting by the residents on music in the exercise room and on the tree/shrub policy. Thank all of you for your attention to these important matters.

During our April meeting we will begin the process of accepting your nominations for various offices of HOL. There will be an election of new HOL officers during the May meeting. Please step forward to serve on the board or one of the committees.

I am pleased to see so many of you interested in attending the Novato

City Council meeting on March 31. Our participation demonstrates to the city how involved we are in the welfare of our park.

Please attend the next HOL meeting, to be held Wednesday, April 15, 2015 at 7:00 p.m. in the Fireside Room. You will have an opportunity to express your concerns and make suggestions.

Thank you,



Nancy Bingham
HOL PRESIDENT
nancybingham@msn.com
(415) 883-7879

MARVAL

Message from MarVal

Dear Friends,

Of the many pleasures accompanying the arrival of spring, one must surely be our annual celebration in recognition of Marin Valley's volunteers.

This will be the 45th year in which MarVal is highlighting an individual contributor by naming him or her Volunteer of the Year and including their name on the plaque in the library. In 2002, we initiated the Volunteer Appreciation Dinner in order to express our gratitude to all who had volunteered for MarVal events in the preceding year.

In the past few years, with the increase of major volunteerism in HOL and PAC, the dinner was expanded to also include volunteers of these major organizations.

On **Saturday, April 18**, MarVal and HOL will once again cohost the Volunteer Appreciation Dinner honoring those who volunteered for HOL, MaVal, or PAC during the period April 2014 through March 2015.

MarVal will continue its tradition of naming a **Volunteer of the Year**, and we are delighted to confirm that HOL will for the first time present a similar award.

Those intending to be present at the event must sign the sheet which will be available in the Clubhouse. You will be asked to indicate which organization you volunteered with as well as indicating your choice of entrée.

We look forward to seeing ALL our remarkable volunteers at the dinner.

With warmest regards,



Kathleen Dargie
MAR VAL PRESIDENT
kfdargie@aol.com

2015 Election News

Two Candidates Needed for the PAC Board of Directors

Two PAC board positions (Larry Cohen and Tom Miller) are open.

Nominees must be registered homeowners and/or residents of the Park and be willing to serve for the two-year term.

Nominations will open on Saturday, May 9, and will close Saturday, May 16.

The Meet the Candidates program is scheduled for Wednesday evening, May 27; voting begins immediately after the program and ends on Friday, June 5. Results will be announced at the annual PAC board meeting on Saturday, June 6.

More information will be included in the May issue of the *Echo*.

Peggy Hill

Election Committee Chair

Election of Two Officers for the Marin Valley Senior Community (MVSC), Inc. Board of Directors

MVSC is an IRS-designated 501(c)(3) tax-free charitable corporation, so it pays no federal, state, or local taxes.

Examples of these are organizations for: charity, religion, education, science, or prevention of cruelty to children or to animals.

Specific examples: MADD, Red Cross, Salvation Army, Sisters of Charity, Jewish Community Center, Lutheran Brotherhood, PTAs, some hospitals, alumni associations, etc.

Money given to them is tax-deductible for the donor.

If someone or some corporation were to gift something of value to this Park, or include us in their annuity or will, specifying the Marin Valley Senior Community, Inc., it would go to us, the residents, to be used for charitable purposes, not to the City of Novato.

MVSC is a resident-controlled 501(c)(3) corporation in this Park. Every resident of this Park, by virtue of being a resident, is a member of MVSC.

The articles of corporation require three outside board members and four resident board members. They are elected by the residents. Their terms are for four years.

Two resident board positions are coming up for election. If you are interested in serving, please send me an email of your interest to serve on the board. I will see that your name gets on the ballot. The election will be conducted next month.

Thank you,

Bill Davis

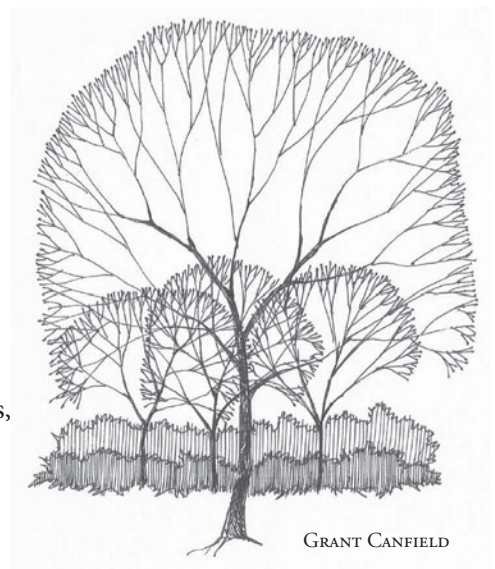
President, MVSC

billdavismsp@hotmail.com

All Positions Open for HOL Offices

Nominations for HOL offices will open at the April HOL meeting on Wednesday, April 15. The entire board is up for election: President, Vice President, Vice President of Marin

Valley Emergency Services Team, Vice President of Activities and Events, Recording/Corresponding Secretary, and Treasurer. Elections will take place at the May meeting on May 20.





EMERGENCY PREPAREDNESS FAIR

TALKS & DEMOS

Novato Fire Dept.
Novato Police Dept.
Humane Society
Get Ready Marin
CERT Radio
Local companies

The fire-safe house
Earthquake bracing
Mitigation financing
Pet preparedness
Emergency kits
Safety devices

Sponsored by
Marin Valley Emergency
Services Team

Saturday
April 25, 2015

10am-2pm

Marin Valley

MVMCC CLUBHOUSE
100 Marin Valley Drive
Novato



**2014
Napa
Earthquake**

Emergency Preparedness Fair

SAVE THE DATE!

Saturday, April 25
10 a.m.-2 p.m.
Clubhouse

MVEST welcomes all residents to this informative and fun event. A broad range of emergency preparedness topics offered by professionals and vendors include:

Presentations on:

- How to make your house fire-safe and the Neighborhood Watch program by the fire and police departments
- Pet emergency preparedness by the Humane Society
- How to access low-interest loans for making your home safer by the Housing Authority.

A variety of vendors offering:

- Earthquake bracing demonstrations
- Safety locks for cabinets
- Earthquake preparedness kits
- Homeowners insurance, and more!

Our MVEST volunteers will also be out in force to share with you what we are doing in the park to make this community safer.

So come on down, learn a lot, and join us for a bowl of chili.

We will put a detailed schedule of the day's events in resident tubes in April. Stay tuned for more details!

If you would like assistance getting to the event, please contact serenafisher@comcast.net.

Local Emergency Services Training Opportunities

CERT Trainings

San Rafael—April 11
Mill Valley—April 18
Nicasio—May 16
Novato—August 6
San Rafael—September 12
Mill Valley—October 7

Registration form:

<http://readymarin.org/readymarin/wp-content/uploads/2013/09/CERT-RegistrationForm-2015.pdf>

Get Ready Mill Valley

Saturday, March 21, 10:00–11:30 a.m.
Mill Valley Community Center
180 Camino Alto
Mill Valley 94941

Free 1½-hour class on home preparedness. Learn what supplies would be helpful to store to keep your family safe, warm, and fed after a disaster. What would you need to take with you if you're evacuating from a wildland fire? Preregistration. (walk-ins welcome)

Disaster First Aid for CERTs

Saturday, March 28, 9:00 a.m.–1:00 p.m.
Terra Linda Community Center
670 Del Ganado Road
San Rafael

A four-hour, skill-building workshop trains participants to recognize life threats in 15 seconds, protect an airway, and stop bleeding. Although designed for nonmedical volunteers,

many MDs, RNs and EMTs have attended the workshop and evaluated it as a timely and valuable update in knowledge and skills.
RSVP at 415-485-3409 or coordinator@marincountycert.org

Annual CERT Disaster Simulation Exercise

Saturday, May 2, 9:00 a.m.–3:00 p.m.
San Rafael Dominican Neighborhood
Open to all Marin County CERTs

CPR Class

Saturday, May 2, 9:00 a.m.–12 p.m.
Corte Madera Fire Dept.
342 Tamalpais Ave.
Corte Madera 94925

CPR class taught by Fire Dept. personnel; call 415-927-5077 to register.

CERT Radio Training

Saturday, May 9
Saturday, August 8
Saturday, November 14

License Class starts at 9:00 a.m.
(Preregistration Required)

License testing is held at 1:00 p.m.
(walk-ins welcome)

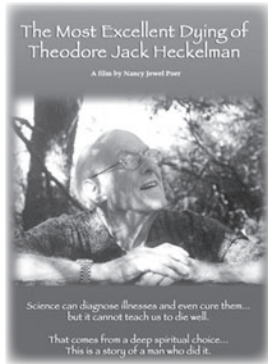
Trinity Community Church
1675 Grand Avenue
San Rafael

If you have any questions, please don't hesitate to call. The telephone number is 415-485-3815 or call Bill at 415-258-0864

Next Steps—

TWO NEW GROUPS IN THE PARK ADDRESS ISSUES OF DEATH AND DYING, AND GRIEVING

by Karin Mortensen, Helen MacLam, Shareen Akroosh, and Michael Hagerty



APRIL EVENT

Sunday, April 12
3:00–5:00 p.m.
Fireside Room

VIDEO SHOWING

*"The Most Excellent
Dying Of Theodore
Jack Heckelman"*

Twenty-seven residents met March 8 for the first Death Cafe—A Conversation on Death and Dying. It was a lively and rewarding time to talk about an inevitable experience for us all, and to build resources in our community to help people prepare. Topics include:

- inexpensive funeral homes
- when to call hospice
- counseling for surviving loved ones
- how to have a "good death"
- effects of suicide
- how to plan for rituals around dying
- how to set up living trusts

Each month we will be addressing these topics in more detail.

Next month, on Sunday, April 12, 3:00–5:00 p.m., we will watch a video, *The Most Excellent Dying of Theodore Jack Heckelman*, a film by Nancy Jewel Poer.

This heartwarming documentary of what Jack called "my last great adventure" includes touching footage of his community and family support, of family and friends gathering during his last weeks for singing and farewells, and caring for him after death in a three-day vigil at home. It was Jack's wish that this film be his legacy to all people, to empower them with choices for their own dying.

We all want to die well, and this film gives us many ways to do it. A discussion will follow.

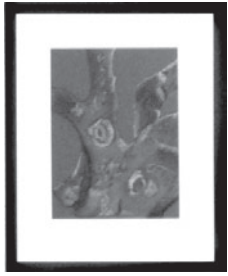
Grief Circles

Therapists Renee LaFarge and Dyane Sax will be co-facilitating a bereavement group for our community.

This offering comes in connection to the Death Cafe but will be separate from general meetings.

This counseling service will be for those grappling with a spectrum of difficult emotions often accompanying loss of a loved one.

Date, time, and further details for Grief Circles will soon be announced.



Calling All Artists

ART IN THE PARK

March 2015 Gallery Show



by **Suzie Lahr**

**A
representational
exhibit of
resident artists in
MVMCC**



On Sunday, May 17, 2015 we will be presenting our 3rd annual Art in the Park. All MVMCC resident artists are invited to join us to present your talents to the entire MVMCC community.

The event is open to visual arts, sculpture, pottery, crafts, jewelry, floral displays, poetry, music, or whatever talent you would like to display. We will also be having demonstrating artists to show how their creations are made. This is a wonderful and fulfilling way of expressing your gratitude for the gift of residing in this beautiful place, both as an artist and as an attendee.

The artists have been meeting each month for camaraderie and to plan this event. All artists please join us for the following meeting if you would like to participate.

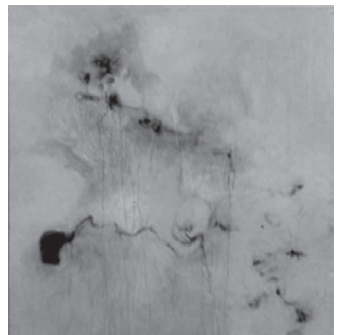
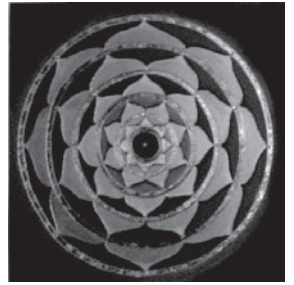
Meetings take place in the Fireside Room on Saturday, April 4, at 10:30 a.m. and on Saturday, May 2, at 10:30 a.m., which will be our final meeting to discuss the logistics.

May 1 is the final deadline to participate, but we prefer you sign up before then. There are registration forms in the lobby of the Clubhouse.

Enjoy this gallery show as a preview to our May 2015 event, where you will then see all of the resident artistic talents displayed by each artist in our main ballroom and Fireside Room.

This project began in 2013 when the residents displayed their artistic works in our 1st annual Art in the Park. We have expanded from this event to also creating a biannual rotating art gallery for our residents and their guests to enjoy throughout the year.

If you are interested in purchasing artwork from the gallery, please contact the artist directly with the contact information in the gallery book. The artist in turn will give a donation from the sale to the MVMCC Homeowners League, which sponsors the gallery and Art in the Park. Thank you for your support in our endeavors, and enjoy the gallery!



A Smart Person Knows Where the Exit Is

by **Bill Davis, RN, and David Krasnor**

Do you have an exit plan?

If so, then get it in writing. If not, then consider a few things for the next couple of minutes.

What is the first thing you notice when you enter a nursing home? Might it be a message from your nose of the stench of urine, either subtle or pungent? Is that where you want to make your exit? There are other options. You need a plan, and you need it written on a piece of paper. That plan then needs to be placed in your Vial of Life, given to your doctor, and handed to the person who has your power of attorney.

If you already have a Living Trust, Durable Power of Attorney (DPA), and Health Care Directive (HCD), you are in good shape. If not, get a piece of paper and a pen.

In the end you might not be able to make a decision about prolonging a poor quality of life. Do you have a trusted person designated to do that for you? Under what conditions do you want certain medical treatments not done and to be allowed to pass on, expire, leave this world, die, or fly away? Do you want comfort care only? Or perhaps you have no plan, so you may get rushed to a hospital by paramedics and get heroic care, only to become a vegetable kept alive by a machine. You have a choice now but perhaps not later.

You have to have your wishes clearly spelled out for your future—on paper, on file—with your doctor and the person trusted with your power of attorney.

Growing older gives us wisdom, which is a combination of knowledge

and experience. But there is a senior DISADVANTAGE to wisdom if you do not have it written down or tattooed on your chest at the end.

There is no easy way to plan for your future health care. There are always choices you can make for a high-quality life. Of course, we all want a high-quality life. How about a high-quality exit also? Get it written down (a trust is nice) and file the HCD with your primary care physician. Then send a copy to the person with your power of attorney, and place a copy in your Vial of Life if you have one. If not, check with MVEST, and we will get you one.

To get the necessary forms, ask your doctor, download them from the Internet, or copy the Five Wishes folder in the MVMCC library.



PHOTO: MARIANNE YORK

Interview

Martin Dvorin

by Inga Grace

Marty collects elephants. “Do you know the story of the blind men and an elephant?” he asked. They all touched a different part of the elephant and made their own conclusions: The one who touched the tail said the elephant is like a rope, the one who felt the belly said the elephant is like a wall, the one who touched the tusk said the elephant is like a solid pipe, and the one who felt a leg said the elephant is like a tree trunk.

Indeed, Marty has had enough professions and life experiences to cover an entire elephant!

Now 92, he retired as a tenured professor and dean 30 years ago. His repertoire includes innovative optical engineering, stand-up comedy, research, management, numerous patents, medals from World War II, multiple near-death experiences....

Although Marty will probably never really retire. He's busy as ever, writing, learning, connecting and living, his voice strong and clear, his memory exceptional. What is the secret of this long, productive life?

“Health, trust and love,” Marty responded without hesitation.

Health: 1980 “I was diagnosed with coronary artery disease; my life expectancy was five years.” That diagnosis inspired a new career in health and longevity research. Many books later, Marty was on the lecture circuit talking about: “Adding Birthdays While Becoming Younger.” The secret? Wanting to live—to fully embody “I want to live”—and never stop learning.



PHOTO: INGA GRACE

Also important: exercise, nutrition, healthy emotions, and thinking.

Trust: Don't deceive people. Tell the truth; don't lie. Care for others, and be kind.

Love: “I am a lover, I love women. I love you.”

“I loved my wife, Harriette, for 50 years. She passed away in the early '90s, and my step-by-step engineering approach helped me recover. I tell people who are recently bereaved that, yes, you let it all out, but eventually the happy memories outlive the sadness. That's what happened to me.”

Meditation has been a part of Marty's life for decades. Yet when asked what it means to him to meditate, he is for the first time lost for words. He then speaks of exhaling deeply and noticing the body, being in present time, paying attention, being quiet, and avoiding unhappiness.

Living independence at its best, Marty cleans and cooks for himself and drives his vivid yellow Mazda locally. He stays engaged with, and proud of, his former students. He builds friendships with new and younger friends, flirts a little for fun, tries new things, is willing to fail, and keeps an open mind.

A recent fall, due to another's unfortunate negligence, has made walking longer distances and extensive travel a challenge. It brought us to the subjects of resilience and forgiveness. “If you can't give something up, it owns you. I believe that every experience in life has the potential to make us better.” Marty continues, “The injury gave me a stronger desire to live and a better attitude toward life. I have forgiven the driver and I made a lot of friends at the rehab hospital.”

A few of his many accomplishments include:

- Patented device for mapping lunar landings (yes, you read that right!)
- Patent on a vinyl record changer
- Patent on earthquake-proofing technology
- Designing special cameras for the CIA (all declassified now!)
- Creating technology programs for community colleges and pre-engineering programs for inner city high schools

Marty wants you all to know that his doors at 34 Club View Drive are always open and that you are welcome in his home to learn more of his remarkable achievements—or perhaps just to share a few jokes!

The Expanding Universe

by Mike Krupp

The universe is a mighty big place, and we can't see all of it. So how do we know it's expanding, and what's all the fuss about whether the rate of expansion is increasing? It's an exciting story, full of unexpected discoveries that challenges what we think we know of the universe.

It all began with three people: American astronomer Henrietta Swan Leavitt, French physicist Hippolyte Fizeau, and American astronomer Edwin Hubble—and Albert Einstein, who was one of the big players in cosmology.

In 1907 Ms. Leavitt was studying stars whose luminosity (brightness measured from a standard distance) changed periodically; these are called variable stars, and Leavitt was studying so-called Cepheid variables. She discovered a relationship between the star's luminosity and the period of its luminosity cycle. Cepheid variables can be seen at great distances, even in other galaxies. This discovery was a bombshell. If you know the luminosity of a star and you measure how bright it appears to you, you can calculate the distance to that star. And there are Cepheids in distant galaxies, so you can measure cosmological distances.

Fizeau studied the spectra of stars and in 1848 discovered an anomaly: in some stars the fine lines (Fraunhofer lines) in the spectra were seen in the wrong

places: they were shifted toward the red end of the spectrum. He theorized this was caused by the Doppler effect, in which light from a star coming closer is shifted toward the blue end of the spectrum (the blue shift), and light from a receding star is shifted into the red end (called the red shift). Furthermore, the amount of the shift is determined by the star's speed. This is a method for determining the speed and direction of motion for any star you can see, even stars at the other end of the universe.

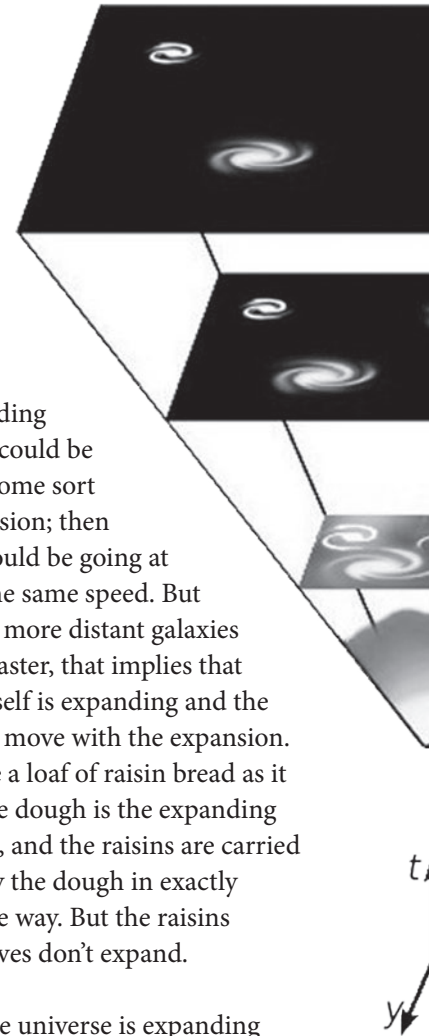
Before 1923 people thought our galaxy was the only thing in the universe; there was nothing but us. Then in 1923 Hubble used Cepheid variables to measure the distances of several objects that in those days were called nebulae, or clouds of gas, and he found some that were so distant they could not be a part of our galaxy. Hubble's findings expanded the size of the universe tremendously.

Then in 1929 Hubble measured the red shift in the spectra of those Cepheids and found not only that they were all receding—one amazing finding—but also the more distant the star was, the greater was its red shift—another surprising thing and totally unexpected. Since every remote galaxy seemed to be receding, and receding faster with greater distance, the easiest conclusion was that the universe was expanding.

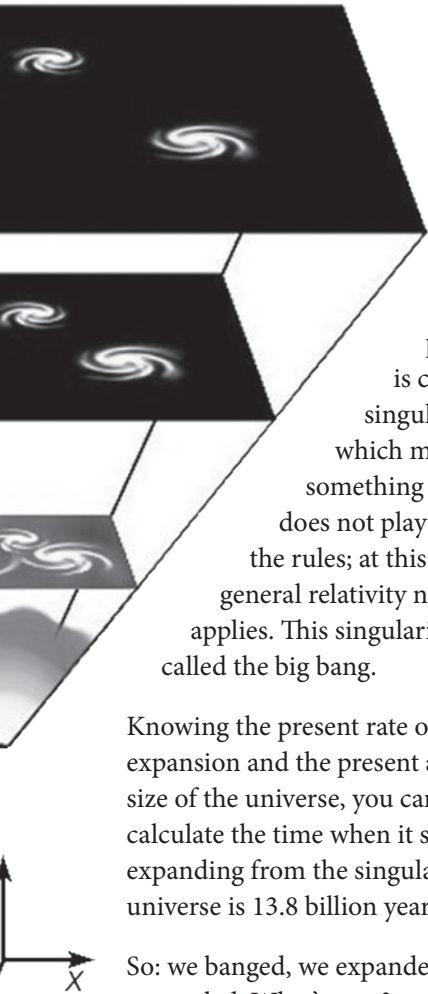
If remote galaxies are receding at all, it could be due to some sort of explosion; then they should be going at about the same speed. But because more distant galaxies recede faster, that implies that space itself is expanding and the galaxies move with the expansion. Imagine a loaf of raisin bread as it rises: the dough is the expanding element, and the raisins are carried along by the dough in exactly the same way. But the raisins themselves don't expand.

Since the universe is expanding now, then in earlier times it must have been smaller. Go back far enough in time, and the universe is smaller than an atom.

In 1917 Einstein found that according to general relativity, the universe must either expand or contract but could not remain at a constant size; the apparent expansion of the universe is consistent with general relativity. But if you apply general relativity to the universe as you go back in time, at some point the universe must be infinitely dense and infinitely hot.



V e r s e



This point is called a singularity, which means something that does not play by the rules; at this point general relativity no longer applies. This singularity is called the big bang.

Knowing the present rate of expansion and the present apparent size of the universe, you can calculate the time when it started expanding from the singularity: the universe is 13.8 billion years old.

So: we banged, we expanded, and we cooled. What's next?

If we keep expanding, eventually all other galaxies should recede out of sight. Our Milky Way would be all alone in dark, empty space.

Or, according to conventional physics, gravity is the chief force acting on the universe nowadays. Since gravity wants to pull all things together, the expansion should slow down and stop, and the universe should start shrinking. As it shrank, it would get hotter, and objects would move faster; this seems to say that someday there would be a “big crunch,” which

might then generate another big bang, so you could either have one big crunch or a series of big bangs.

Here's an unexpected discovery: in the 1990s it was observed that the rate of expansion used to be smaller than it is now, which means the expansion is accelerating. Different methods of measuring the rate of expansion in the past seem to confirm this. Since gravity is trying to slow down the expansion, there must be some other force acting that is stronger than gravity. So far it seems that nobody has found that force.

The best hypothesis is something called dark energy. Nobody has actually seen this; evidence that it exists is indirect. The two current models of the universe that contain dark energy both require it to have negative pressure: it tends to push ordinary matter away.

Different ways of estimating the amount of dark energy give another surprise: the mass of the observable universe consists of 68% dark energy, 27% dark matter, and less than 5% ordinary matter.

We and everything we see are less than 1/20 of everything there is. We were tiny before; now we're even tinier.

CODA

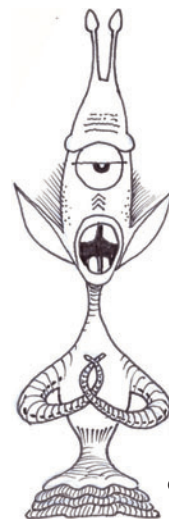
The study of cosmology itself began in the 1920s with a big bang from Hubble's discoveries. Like the cosmos, cosmology is expanding faster and faster as time passes. Cosmology is becoming more

chaotic as it evolves; there has not been enough time for the usual Darwinian weeding-out of less viable theories.

A musical metaphor comes to mind—*Boléro*, written by Maurice Ravel, coincidentally in 1928. *Boléro* starts very softly: a snare drum beats a pattern that is repeated throughout the whole piece, and a flute plays a soft, liquid melody which is also repeated over and over. The serenity lasts a little while; then gradually more and more instruments appear, and the sound gets louder and louder. Eventually, with the drum and an orchestra playing at full volume, the repetitive melody falls apart; the music is dissonant—the piece ends with a crash: its own big bang.

In cosmology more observations and theories keep appearing and continue to do so. We never know what will happen next.

Stay tuned.



GRANT CANFIELD

The Starry Messenger

by Mike Krupp

April 2015



Right Hand Rule

To visualize the earth rotating on its axis, use the right hand rule: make a fist with your right hand; then stick out your thumb. Your thumb is the earth's axis projecting out from the North Pole, and your fingers curl in the direction the earth is rotating.

A very brief total eclipse of the Moon, Earthshine on the new Moon may be visible, some beautiful visits by the Moon with Venus and Jupiter, and a meteor shower—the meteors will be there but they may not be visible. The skies will be interesting this month.

Here's the calendar:

1st: April Fool! Don't believe anything you see or hear, not even me.

4th: Full moon, called the full pink moon by Native Americans because it marked the appearance of one of the earliest blooming flowers: the pink wild ground phlox. Aliases include the sprouting grass moon, the growing moon, and the full fish moon because in some areas the shad appeared, swimming upstream to spawn.

A total eclipse of the moon in the early morning, starting around 2:00 a.m., peaking about 5:00 a.m., and ending at about moonset near 7:00 a.m. Totality will be very brief, only about 3 minutes, so be on time.

8th: Saturn will be about four moon-widths south of the waning moon, with moonrise about 10:00 p.m.

20th-22nd: The new moon will come close to Venus and the Pleiades. The sun will set around 8:00 p.m. and the moon about 9:00 p.m., so the best time to see these two shining wanderers would be as late as you can see the moon. Also on these days look for earthshine on the new moon.

22nd-23rd: the Lyrids meteor shower will peak. The Lyrids is an average shower, usually producing about 20 meteors per hour at its peak. It is produced by dust particles left behind by comet C/1861 G1 Thatcher, which was discovered in 1861. These meteors can sometimes produce bright dust trails that last for several seconds. The first quarter moon will set shortly after midnight, leaving fairly dark skies for what could be a good show. Best viewing will be from a dark location after midnight. The Park is not a very dark place, so don't be too surprised if you don't see any meteors.

26th: Bright Jupiter will be fairly close to the gibbous moon. The sky will be fairly dark from 5:00 p.m. onward, and this display will be visible until the moon sets around 1:00 a.m.



Northern Mockingbird— *The All-night Singer*

by **Bill Noble**

Stop right now. Listen.

3:00 a.m.? Who cares. That chatter you're hearing—sweet music or rusty hinges, car horns or frog creaks—if they're repeated half a dozen times and the whole racket never stops. That's a mockingbird!

From Oregon and Nova Scotia south through Mexico and most of the Caribbean, mockingbirds are our noisy, conspicuous neighbors, reverse Southern carpetbaggers who've followed suburbia north. In Marin County, they're late arrivals, originally found only in the southern deserts, not reaching places like Point Reyes Station till the 1970s.

Smaller and slimmer than a robin, mockers are immaculate gray with bold white flashes in their wings and tail. They'll mob crows and cats and sometimes fly into a rage at their own reflection in your living room window. They do fluttering aerial dances to show off their wing pattern. They're not lazy. And they're not shy.

Both the male and female of a pair sing, though the all-night concert outside your bedroom is likely an unmated but ever-hopeful guy.

Singing is what mockers do—with all their heart. A fledgling may start experimenting when it's only a month old, and most males sing year-round except for a couple of winter months.

Their vocal imitations—up to 150 different “mockings” per bird—are virtuoso and extravagant. And researchers have discovered that individual mockers have different and barely overlapping repertoires for spring and fall!

A pair splits up the tasks of raising young in an unusual way, with the female doing all the brooding, but both birds feeding the babies. That often means that the male will take over most of the food gathering toward fledging time while the female begins another nest. Doing this, they can raise up to four broods a year—all ready to sing!



April 2015

	1	2	3	4
<i>Wednesday</i>	<i>Thursday</i>	<i>Friday</i>	<i>Saturday</i>	
	10 AM-2 PM Craft Group 11 AM-1 PM Whistlestop 7 PM PAC MEETING	9:15-10:15 AM Qi Gong with Dove 6:30-7:10 PM Silent Meditation 7:20 PM Poor Man's Poker	4 PM Canasta ♠♣♦ 5-7 PM Pub Night	10 AM Pre-Tai Chi with Jay 10:30 AM Art in the Park meeting 8:04 PM
	10 AM-2 PM Craft Group 11 AM-1 PM Whistlestop 7 PM MAR VAL MEETING	9:15-10:15 AM Qi Gong with Dove 6:30-7:10 PM Silent Meditation 7:20 PM Poor Man's Poker	4 PM Canasta ♠♣♦ 5-7 PM Pub Night 7:15 PM Bingo	10 AM Pre-Tai Chi with Jay
	10 AM-2 PM Craft Group 11 AM Ladies' Bridge 11 AM-1 PM Whistlestop 7 PM HOL MEETING	9:15-10:15 AM Qi Gong with Dove 6:30-7:10 PM Silent Meditation 7:20 PM Poor Man's Poker	4 PM Canasta ♠♣♦ 5-7 PM Pub Night	10 AM Pre-Tai Chi with Jay MAR VAL / HOL VOLUNTEER DINNER 5 PM
	10 AM-2 PM Craft Group 11 AM-1 PM Whistlestop	9:15-10:15 AM Qi Gong with Dove 6:30-7:10 PM Silent Meditation 7:20 PM Poor Man's Poker	4 PM Canasta ♠♣♦ 5-7 PM Pub Night	10 AM Pre-Tai Chi with Jay INVEST EMERGENCY PREPAREDNESS FAIR 10 AM-2 PM
<i>Sunday</i>	<i>Monday</i>	<i>Tuesday</i>		
	5	6	7	8
1-4 PM Mahjong 5 PM Free-Form Dance & Movement	6-8 AM Trash Pickup 9:30 AM Aerobics 7:20 PM Poor Man's Poker	5:45-6:45 PM Meditation	5:45-6:45 PM Meditation	10 AM-2 PM Craft Group 11 AM-1 PM Whistlestop 7 PM MAR VAL MEETING
1-4 PM Mahjong 3-5 PM Video 5 PM Free-Form Dance & Movement	6-8 AM Trash Pickup 9:30 AM Aerobics 7:20 PM Poor Man's Poker	5:45-6:45 PM Meditation	5:45-6:45 PM Meditation	10 AM-2 PM Craft Group 11 AM Ladies' Bridge 11 AM-1 PM Whistlestop 7 PM HOL MEETING
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	9	10	11	12
	16	17	18	19
	23	24	25	26
	30			