

August 14, 2014

This Week Moe Bishara, MD, FACC, FHRS Cardiology Update What we need to know and how it affects us Program Host: Tom McCurry

Dr. Moe Bishara is returning to bring us an update on the field of cardiology, from an electrocardiography viewpoint. He is a fellow of the American College of Cardiology and a Fellow of the Heart Rhythm Society.

Bishara has vast experience in electrophysiology and recently returned from two months in Kenya, working with Duke University to help set up the Cardiovascular Pulmonary Disease Center at Moi University Teaching and Referral Hospital in Eldoret, Kenya. He is a very entertaining speaker and has great insights into his field of expertise.

This is a great opportunity to invite guests to hear about a subject that will touch the lives of many of us in the future.



# **On Black Holes**

ne of the most common questions am asked when folks discover that I am a theoretical astrophysicist is: "Can you explain to me what a Black Hole is?" Well, the simple answer is: "No, I can't - at least not precisely — without first discussing Einstein's field equations of General Relativity, which, in one possible variation, involves tensor calculus and prolific use of Christoffel symbols." If the questioner was not a theoretical physicist or a mathematician well versed in the tools of differential geometry, my explanation could take many years. So instead, I offer this approximate imprecise explanation...

I first explain the concept of *escape velocity*. If we throw a ball up into the air, it falls back down. If we were to throw the ball up harder, it would go higher, before falling back to the Earth. If we could throw the ball so hard that it attains a speed of 7<sup>1</sup>/<sub>2</sub> miles per second, the ball would never come back down, it would leave the Earth's gravity and continue on forever. This critical speed — 7.5 miles per second — is called the escape velocity of the Earth.

Every planet, moon, asteroid, comet, the sun, the stars, etc has its own intrinsic escape velocity, which is proportional to the square root of the ratio of a body's mass and its radius. In other words, if our Earth were 4 times more massive at its current size, then it's escape velocity would be 15 miles per second. Or if the Earth were one fourth its current size with the same mass, it's escape velocity would also be 15 miles per second. For comparison, the escape velocity of the Sun is about 380

Please turn to Reflections, p. 4

August 14 **Santosh Srivastava** August 21 **Linda Wilkes** August 28 **Charles Wilson** 

Greeters

## **Program Review**

## Purpose, Passion, Possibilities



The footsteps of Zig Ziglar, Norman Vincent Peale, Dr. Laura Schlessinger, Dr.

Phil McGraw, Robert Schuller, Rick Warren *(Purpose Driven Life)* among other positive thinkers, Laura Cazares was here to *make you feel good*.

She addressed Club members on *Purpose, Passion and Possibilities*. Drawn into a close family structure, Cazares' early focus was *outside herself*. She began to

Sparks is published 48 weeks a year and is the official publication of the Rotary Club of Altade- na. The deadline for submission of articles is Fri- day at 6p to current editor email, fax, or delivery. Rotary Club of Altadena - #7183 Chartered: February 14, 1949 P.O. Box 414, Altadena, CA 91003 www.altadenarotary.com Meets: Thursday, 12:10p Altadena Town & Country Club 2290 Country Club Drive • Altadena, CA 626-794-7163 Rotary Int. Pres		
Dist 5300 Gov Larry Skaggs		
Officers		
Hal Yorke, Pres. Bus. 626-577-9800 Steve Cunningham, Pres. Elec. Bus. 626-786-1937 Dennis Mehringer, V. Pres. Bus. 626-577-9800 Gordon Seyffert, Sec. Bus. 626-345-0658 Mike Noll, Trea. Bus. 626-683-0515		
Directors		
Mike Noll • John Frykenberg		
Steve Cunningham • Dennis Mehringer		
Gordon Seyffert • Mike Zoeller • Ed Jasnow		
Chairmen		
Steve Cunningham Administration		
Ed Jasnow		
Lu Jasliow		
Jacque Foreman		
Jacque ForemanActing Publicity		
Jacque Foreman		
Mike Zoeller Club Projects		
Craig Cox Community		
John FrykenbergInternational		
Tony Hill Youth Contests/Awards		
Mike Zoeller		
Ray CarlsonVocational		
Tom McCurryAsst. Vocational		
Craig CoxMembership		
Editor, Design & TypesettingForeman Graphics		
Photography		
i notography		

*break-up* and *shut down*. Terrified and uncomfortable in her *own skin*, she began a long journey to *recovery*. "Am I all that I am meant to be?' she asked. Finding a level of comfort in time, she had an answer; "Yah...But ...."

What more is needed ... according to Laura ... is to turn over a new page, courage to venture; sally forth from a *call* to self-discovery in a three-step process beginning with *visualization*. Dreams born of desire and the necessary will power to believe and to commit can — according to Cazares —, lead to *self-actualization* and fulfillment and joy.

Conscious beliefs and sub-conscious feeling and energy can enable us to find the necessary courage to make the changes we seek, she states.

Cazares would like us to say "yes" to what is seeking to emerge ... "yes" to what we love ... "yes" to our visions. (Something to think about)

To underscore the hidden *energy* we all possess, Cazares selected Club members

### August Membership & Extension Month

*Program Chair, Tom McCurry* 

- Aug 14 Dr. Moe Bushar Update on Advances in Cardiology
- Aug 21 Tom McCurry Medicare Update
- Aug 28 Dr. Okey Nigeria Rotary Update

#### September New Generations Month

Program Chair, Ray Carlson Sep 04 - To be Announced Sep 11 - To be Announced Sep 18 - To Be Announced' Sep 25 - To be announced to form a human circuit (by holding hands) while holding a whistling, blinking energy

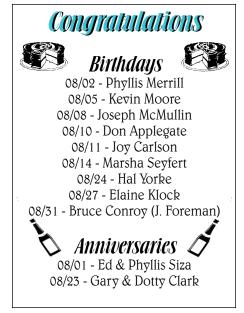


*stick* (which I won incidentally). The pretty lights and buzzing certainly brightened the day.

For those not confident in the arts of *self-help*, she is willing to coach. And you can hire her as a *life coach* if you like.

For those who have reached the pinnacle of Abraham Maslow's needs pyramid (security, shelter, food, etc.), *self-fulfillment* and *self-actualization* would seem to be at the top.

Martin Buber, St. Augustine, Prophet Jeremiah, even Muhammad might have an alternate view. John Frykenberg O





by Jacque Foreman, Public Awareness Chair



I'm not writing about being silent about the work we do

in the community. I'm talking about our website. For the last 4.5 months or so, our website has been down almost on a weekly basis for hours. No, I didn't make that choice, it has been made for us by our web hosts. I wish I could tell you why and how it happened that, after more than 15 years of reliable service, it now looks like

## The Power to be Invisible But should we choose to do so

they have moved their servers to a thirdworld country, where electricity, phone and internet service are quite iffy. But I can't, because I am getting no answers to my questions. I can tell you that it has become impossible to get their technical staff or even their billing department on the phone, and answers to emails are iffy.

But we can't be invisible for hours at a time — this weekend we were down [invisible] from 10:30 Saturday morning to 2:30 Sunday afternoon — more than 24 hours.

I have made arrangements for a new host. And, I will do my best to notify you when our site will be down for the transfer. We have run into some technical difficulties because the new host would like me to make some adjustments in the Control Panel at the old host before transfer to make it smoother and faster. But I can no longer get to the control panel. Watch for my emails letting you know what's happening.

#### BROUGHT TO YOU BY OUR LOCAL BOY SCOUT COUNCIL PLEASE TURN TO PAGE 5



With **Pat Haden** Breakfast Guest Speaker

**2014 Sports Breakfast** 

Pat Haden is the athletic director at the University of Southern California. He played quarterback for the USC Trojans before playing professionally in the NFL for the L.A. Rams. He is a Rhodes Scholar, attorney, private equity investor, sportscaster and a color commentator.



Date: Tuesday, September 9, 2014

Time: 7:00a.m. Annandale Golf Club One North San Rafael Avenue Pasadena, California

For sponsorship information or to attend the Celebrity Sports Breakfast contact : (626) 351-8815 or visit our website at www.sgvcbsa.org



#### Economic Update In The News

The Standard & Poor's/Case-Shiller 20-city housing price index — on a non-seasonally adjusted basis — rose 1.1 percent in May after an identical 1.1 percent increase in April. On a year-over-year basis, prices have risen 9.3 percent when compared with May 2013.

Pending home sales, a forward-looking indicator based on signed contracts, fell 1.1 percent in June, following a 6 percent increase in May. On a year-over-year basis,

## Reflections

Continued from p. 1

#### miles per second.

So, you may ask, "What does the escape velocity of the Sun have to do with Black Holes?" If there were some process by which we could compress the Sun's mass into a ball with a diameter of about 3.7 miles (instead of its current size of about 900,000 miles), its escape velocity would be the speed of light. Since nothing can travel faster than the speed of light, nothing could ever escape the surface of this ultra-compressed object ... not even light! This object would be a one solar mass Black Hole. (A "solar mass" is a unit of mass, which by definition is unity for the Sun.) It turns out that there are astrophysical processes that can produce Black Holes of masses that range from a June pending home sales were down 7.3 percent.

Total construction spending fell 1.8 percent to \$950.2 billion in June from the revised May estimate of \$967.8 billion. Compared to June 2013, construction spending has risen 5.5 percent on a year-over-year basis.

The Mortgage Bankers Association said its seasonally adjusted composite index of mortgage applications for the week ending July 25 fell 2.2 percent from the previous week. Purchase volume rose

few to billions of solar masses. The density of material (the mass per volume) in a 10 solar mass *Black Hole* is incredible: about 185,000,000,000,000 times that of water. By contrast, a billion solar mass Supermassive Black Hole would be about 1/2 the size of our Solar System, and its density about 1/50 times that of water (much less than styrofoam!). For obvious reasons, we cannot observe *Black Holes* directly, but we can observe how their intense gravity influences the material close by. Such observations have demonstrated that Black Holes actually exist, and, in many cases measured their mass.

So after I explain all of this, I can get back to the business of talking about Rotary. O

### TELL US ABOUT YOUR PASSION WRITE A COLUMN

0.2 percent. Refinancing applications decreased 4 percent.

The consumer confidence index rose to 90.9 in July from a revised 86.4 in June. It was the highest reading since October 2007. The index was benchmarked at 100 in 1985, a year chosen because it was neither a peak nor a trough in consumer confidence.

The Commerce Department announced that gross domestic product — the total output of goods and services produced in the US — increased at an annual rate of 4 percent in the second quarter of 2014. This follows a revised 2.1 percent decline in the first quarter of 2014.

Manufacturing activity rose to 57.1 in July after a reading of 55.3 in June. A reading above 50 signals expansion. It was the 14th consecutive month of expansion, and the overall economy grew for the 62nd consecutive month.

Initial claims for unemployment benefits for the week ending July 26 rose by 23,000 to 302,000. Continuing claims for the week ending July 19 rose by 31,000 to 2.539 million. The less volatile four-week average of claims for unemployment benefits was 297,250, the lowest level since April 2006.

The unemployment rate rose from 6.1 percent in June to 6.2 percent in July. Employers added 209,000 jobs in July and revised the June figure of jobs gained from 288,000 to 298,000.

Upcoming on the economic calendar are reports on factory orders on August 5, and wholesale trade on August 7. O

Find Linda Wilkes on line: http://www. myprospectmortgage.com/lwilkes



July 17, 2014

The San Gabriel Valley Council invites you to join us and **USC Athletic Director**, **Pat Haden** on **Tuesday**, **September 9**, **2014** at our annual Celebrity Sports Breakfast at the **Annandale Golf Club** in Pasadena. Great giveaways, autograph opportunities, and a silent auction are all a part of this special occasion as you enjoy the company of Pat Haden.

The proceeds from this event will directly support character and leadership programs for low income and at-risk youth in the greater San Gabriel and Pomona Valleys. Because we are holding the breakfast at Annandale, seating for this event is limited. Please **make your reservation early** for this always popular, one-of-a-kind, breakfast. With your support, we will continue to make a positive impact on our local youth.

Sponsor and attendance opportunities include:

#### \$10,000 Event Sponsor -

4 tables of 10 to the event, full page advertisement back or inside cover of program, 10 VIP passes to meet and greet session and acknowledgement in the annual report.

#### \$5,000 Breakfast Sponsor -

2 tables of 10 to the event, full page advertisement in program, and 5 VIP passes to meet and greet session.

#### \$2,500 Table Sponsor

1 table of 10 to the event, half page advertisement in program, and 2 VIP passes to meet and greet session.

#### \$1,000 Scout Sponsor

5 tickets to the event and 1 VIP pass to meet and greet session.

#### \$100 Individual Ticket

1 ticket to the event if purchased by September 2, 2014. (\$125 if purchased at the door)

Seating is limited so make your reservation soon. Business casual attire. We hope that you will join us at Annandale.

For additional information or to make a reservation, please contact Annette Haslam at (626) 351-8815, ext. 255, via e-mail <u>annette.haslam@scouting.org</u> or Cecilia Nazarian at (626) 351-8815, ext. 222, via e-mail <u>cecilia.nazarian@scouting.org</u> or visit our website at <u>www.sgvcbsa.org</u>.

Warmest regards,

Robert Shepherd	William Jameson
Council Event Chair	Committee Member
Martin Valencia	John Babcock
Committee Member	Committee Member

Michael Fink Committee Member

Justin Dean Committee Member







All FREE Concerts start at 7:00 PM in the Amphitheater at Farnsworth Park. 568 East Mt. Curve Ave., Altadena, CA 91001 for information: 626-798-6335 Visit: http://www.altadenasheriffs.blogspot.com

## 18th Annual Summer Concert Series Schedule - 2014

Downbeat Express (Big Band with Jennifer Gates) Whiskey Hayride (Country music and much more!) Hotsy Totsy Boys (Roarin' 20's) Let's Go! (Tribute to the Cars & more) Floyd & the Flyboys (R & B, Soul, Funk) Upstream (Reggae, Calypso, Soca & Steel Drum Music) Saturday, August 9th Delgado Brothers Band (Americana & Blues) The MIGHTY Burnt Bacon (Stax Style Soul Band)

Saturday, July 5th Saturday, July 12th Saturday, July 19th Saturday, July 26th Saturday, August 2nd Saturday, August 16th Saturday August 23rd

## And... For Our Grand Finale... Saturday, Sept. 6th Sgt. Pepper in a tribute to the Beatles! Presented By: Community Events & SSGA

