COMSTAR

Publication of the *U.S.S. Chesapeake Star Trek* and Science-Fiction Club
December, 2008

Happy holidays! It's the December club meeting!

It's time to enjoy the holiday season as only the crew of the *U.S.S. Chesapeake Star Trek* and Science-Fiction Club can do on Saturday night, December 20, for what has long been one of our most popular and enjoyable events of the entire year!

The meeting will be held at the Potomac, Maryland, home of Chief Operations Officer Ann Harding.

We'll kick off the holiday festivities with our dinner at 5:00 p.m., which is again being coordinated this year by Second Officer Phil Margolies.

Conn Officer Lorenzo Heard will be cooking turkey and some veggies for club members to enjoy, so be sure to come hungry and bring plenty of food to share with your crewmates.

At 7:00 p.m., we'll start our monthly business meeting, which will include the latest updates on club member activities, finding out the most recent news in *Star Trek* and other science fiction, and planning many of our discussion panels for the fan-run Farpoint convention that will be held in Hunt Valley (north of Baltimore), Maryland, in mid-February. We'll have a lot to talk about regarding this special convention.

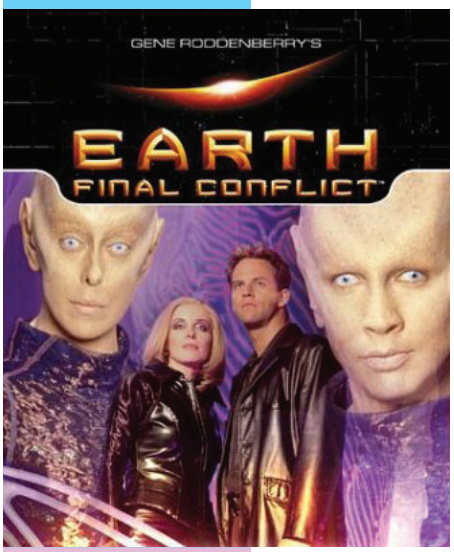
We'll also be discussing other conventions that will take place over the next year, including Shore Leave during July, 2009.

At some point during the evening, we'll participate in our annual gift exchange. Be sure that you bring at least one wrapped science-fiction-related gift costing no more than $25. It's always fun to see just what the creative minds in the club have sought out and brought to the meeting to exchange with (and then steal from) other members!

For directions to the meeting and party, check out the front page of this month's Insert in our club's Yahoo! Group! ■

Captain Randy Hall's Captain's Log *will return next month.*

REFLECTIONS: *Earth's* third season revisited



Earth: Final Conflict's third season featured Da'an (left), Renee Palmer, Liam Neeson and Zo'or.

Check out our club website: *www.usschesapeake.org*

The opinions expressed in this publication do not necessarily represent those of the entire club.

COMSTAR, *page 2*

"They have come to Earth with the promise of peace, a n alien race called the Taelons. But there are those who resist these Ali en Companions. For the Taelons' true mission, the secrets they hide, will forever alter our world. The fate of humanity now relies on those who dare challenge the future of Earth."—Season Three introduction

As I've stated in these hallowed pages for the past few months, this show kept me on my toes. Now, don't misunderstand. I never said *Earth: Final Conflict* was a great show. It does not rank up there with *Deep Space Nine* and *St. Elsewhere* or even *Next Generation.* In the course of its five-year run, the series had some missteps, as do most shows on network and syndicated television, and in each season, you can find a handful of throwaway episodes that were obviously filler.

As I said, it's not a great show, but it WAS a significant show, especially in the realm of ongoing television series. I've already explained the reasons for the significance in the previous articles, but allow this slight digression. THEY KILLED OFF MAJOR CHARACTERS! Boy, I love saying that! No other show in the history of television has done that with such frequency, such ease and skill, with such implacability, with such ... cruelty! Well, maybe *Law and Order.*

Law and Order was set up so you'd never really get to know the characters on the show. Its emphasis was always on the case at hand. If you never explore the characters, you never become intimate with the characters. If you never have a personal stake in the characters, then you'll never miss them when they're gone. *Law and Order* is to this day totally plot oriented and almost never rely on its characters for stories. When they did, the results were horrendous, but that's another column.

Earth, on the other hand, was totally dependent on its characters for its stories and situations. This makes the random (and planned) "sudden departures" all the more ... well, significant and noteworthy, which is why I'm devoting so much page space to them.

Nevertheless, there were stumbling blocks. The third season was a major one. The writers seemed to have lost their way somewhere around mid-season. They seemed to have forgotten where they were going and why. They managed to rebound at the end of the season and leave us with some intriguing developments. This is common in television. When the writers plan their upcoming season, they usually know how it will begin and how it will end. The middle is usually up for grabs. This why televison shows with writing staffs STILL take freelance scripts. They hope that fresh minds and different aspects will help carry them through the rough middle passage.

When last we left our resistance group, Jonathan Doors was captured and taken aboard the Taelon Mothership along with many of the resistance members. Liam and Augur tried to rescue Doors but were pinned down by weapons fire. Lili tries to destroy the Mothership in a last ditch effort to save Earth.

Lili's plan backfired, and she wound up dead, finally exposed as a traitor to the Taelons. Liam and Augur were rescued by a Volunteer. Doors, on the other hand, was captured. Doors was able to cut a deal with Zo'or to get free while ensuring that his company could secretly resist the Taelons. The Volunteer was really one of Door's people, Renee Palmer, and new CEO of Doors International. Martial law was repealed, and many of the resistance members were returned. Lili turned out to be alive, and had been held captive by Sandoval. He altered her DNA and sent her off into deep space. Liam and Augur continued to lead the resistance.

Doors would work separately from the resistance, but Renee would work with Liam on occasion. Over time they would become close partners. Da'an and Liam's relationship became strained. Zo'or continued his ambitious plans while Sandoval seemed to have his own agenda.

Lili was tricked into giving the Jaridians ID travel and realized she was on Jaridia. Jonathan Doors died saving his son. Lili returned to Earth pregnant with the child of a Jaridian named Vorjack. Liam and Renee helped her through a difficult delivery.

Next month: Season Four rebound. ■

Conn Officer Lorenzo Heard

SCIENCE *TREK*: Size matters

In science, as in other disciplines, innovation and discovery can advance the field by evolution (slow, steady progress) or revolution (sudden, radical changes). An oversimplification, of course, but it paints a reasonable picture. In the last century, two discoveries in particular are milestones in the latter category: relativity and quantum mechanics.

(Side Note: The discoverer of the former, a certain Albert Einstein, spent much of his post-discovery life objecting to the latter: "God does not play dice with the universe" is his famous quote).

Although Greek philosophers and scientists conceived of the atom as a basic unit of matter millennia ago, it was only in the last century or so that scientists delved into the atomic and subatomic world.

In 1897, J. J. Thompson discovered the negatively charged electron. A dozen years later, Ernest Rutherford found that atoms have a central positively charged core, the nucleus. Einstein proposed that energy—whether taking the form of a particle or a wave—moves in discrete packets called quanta (for which he won the 1921 Nobel Prize in Physics).

Niles Bohr refined Rutherford's model of the atom, positing that electrons can only orbit at certain distances from the nucleus. These models are what most of us probably learned in school.

1927: The Year Everything Changed

"I have no doubt that in reality the future will be vastly more surprising than anything I can imagine. Now my own suspicion is that the universe is not only queerer than we suppose, but queerer than we *can* suppose."—J.B.S. Haldane, *Possible Worlds and Other Papers*, 1927

Six years after Al E. took home the Nobel, young Werner Heisenberg put forward what is known as the uncertainty principle: the theory that the more precisely the location of a sub-atomic particle is measured, the less accurately we can know its momentum, and vice versa. The very act of studying the atom's make-up changes the atom.

The term "quantum mechanics" itself came to life three years earlier courtesy of Max Born. Quantum mechanics, as you may have surmised, is the study of the motion of Einstein's quanta, those tiny bundles of energy that constitute all matter and energy at the atomic (and subatomic) level.

So how do we measure the motion of particles when we know from Heisenberg that the act of measuring changes the thing being measured? Very carefully! (Yes, David, I heard you say it.)

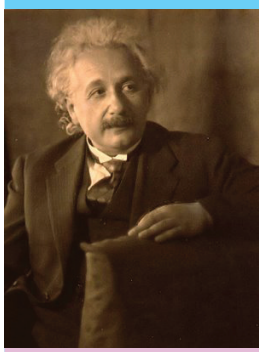
Unlike the macro world where we measure distance in miles and meters and speed in miles per hour (or micrometers per millennia as the case may be), in the micro world, all measurements are in probabilities. That is, physicists determine the probability that a particle is in a certain place at a certain moment moving a certain speed in a certain direction. This is the idea Einstein had trouble accepting.

Scientists love to make analogies, and Erwin Schrödinger gave us the following thought experiment in 1935 that helps wrap the mind around the probabilities of quantum mechanics.

Imagine a cat in a sealed box with a vial of poison. The vial is sealed, but there is a radioactive particle in the box that controls the seal. The particle has a 50 percent chance of decaying over the next hour. If the particle decays, the seal is broken, the poison released, and (sorry, feline lovers) the cat dies. Therefore, according to probabilities before the box is opened and we ascertain whether the cat is alive or dead, the cat is half alive and half dead.

Schrödinger's intention was to show that quantum mechanics was easier to

Continued on Page 4



Albert Einstein proposed that energy moves in discrete packets called quanta.

ART CREDITS:
Dynamic Graphics 1
images.google.com
2, 3, 4, Insert back, Insert front

COMING EVENTS

DECEMBER

December 20 ..... The next meeting will be on Saturday, December 20, at the Harding home in Potomac, Maryland. We'll gather for dinner at 5 p.m., so be sure to bring the food you volunteered. Our monthly meeting will begin no later than 7 p.m. followed by our yearly gift exchange, so don't miss it!

JANUARY

January 17 or 24 ..... The first club meeting of 2009 is expected to take place on Saturday, January 17 or 24. Be sure to stay tuned for date and location, but we'll likely gather for dinner at 5 p.m., with our monthly meeting set to begin no later than 7 p.m.

SCIENCE *TREK:* Size matters (concluded)

continued from Page 3

conceive of as a mathematical model than a description of reality.

1964: The Universe Gets Queerer

The 1960s was a time of mind-bending experimentation, or so I'm told. In 1964, physicist John Bell proposed that the concept of "entanglement" whereby two subatomic particles that once interacted are always joined. Measure one (thus affecting its position or velocity) and the other particle—no matter how far away or how long since they interacted—is affected in a measurable and predictable way.

James Trefil, in his review of Louisa Gilder's book *The Age of Entanglement: When Quantum Physics was Reborn* (*Washington Post* Book World, December 7, 2008), provides the example of two baseballs thrown in opposite directions from the same hand (you can do that, right?) at the same time.

In the somewhat rational macroworld, one would suppose that measuring the velocity of one baseball would not affect the other one. Yet in the microworld, that is exactly what happens! The radar gun tells us the ball crossing home plate is travelling at 102 miles per hour, and we know not only the speed of that ball, but also the speed of the other ball as it crosses second base!

Entanglement is the principle behind recent experiments claiming the discovery of "*Star Trek's* transporter." Effect the first baseball the way you want and you automatically know the state of the second baseball no matter how far away it is. You have instantaneously transported the information across vast distances. Experiments should, to the best of our current understanding, that this is how the universe works. We just don't know the means. In the tradition of Isaac Asimov and Arthur C. Clarke, Trefil proposes three laws for quantum mechanics:

Every physicist knows that his or her interpretation is right; every physicist knows that everyone else's interpretation is wrong; and no two interpretations are the same. ■

Second Officer Phil Margolies

Scientists have recently claimed they have discovered how to make *Star Trek*'s transporter a reality.

Web Notes:

- *http://www.sparknotes.com/testprep/books/sat2/physics/chapter19section2.rhtml* (Need practice for the SATs?);
- *http://en.wikiquote.org/wiki/J._B._S._Haldane* (What's Web Notes without a Wiki Reference?);
- *http://en.wikipedia.org/wiki/Quantum_physics* (Okay, I can't resist.); and
- *http://www.washingtonpost.com/wp-dyn/content/article/2008/12/04/AR2008120402695.html?sub=new* (Wayne's paper ... you'll have to register to see this one).