



# StarLight

THE OFFICIAL NEWSLETTER OF THE U.S.S. BRIGHTSTAR

VOLUME ONE

FEBRUARY 2020

ISSUE EIGHT



*Dave Daring*

**VALENTINE DAY/  
PRESIDENT'S DAY ISSUE**



## From the First Officer

We're back!! And you thought we would leave you or forget about you? Never!! Never!! Never!! Because you've entered the Brightstar funny farm. Home for all the nuts, and then some. That is only if you're not being chased by the guys in the white lab coats with butterfly nets. And if that is the case, you are on your own. Because if they catch you, they will put you in a room with no windows. And if that happens, we won't be able to help you or hide you.

Well, let's change the subject. I know it doesn't work, but I had to try something. There is a lot of things going on this month. First off, we have groundhog day on the 2<sup>nd</sup>. Its where we find out whether or not we have to deal with six more weeks of winter, or if spring comes early this year.

Then there are both Washington's and Lincoln's birthdays which are celebrated on President's Day. And of course, there is Ash Wednesday to round out the month of February. Well enough of the dribble.

What we have in this issue of the Star-Light. We have our regular installment of "The Weird, The Strang and the What the @#\$%, along with Snoop's Recipes, and the next chapter in the Brightstar saga. We also have something on what took place this past January. And also N.A.S.A. new discovery and something extra. Well, that's it for now. I think its time to put this puppy to bed.

See you all next issue.

The First Officer

## N.A.S.A.'s T.E.S.S. Discovers Habitable Planet

N.A.S.A.'s T.E.S.S. (Which stands for Transiting Exoplanet Satelite System) has discovered an Earth-size planet in the habitable zone of a star system that is over 100 lightyears from Earth. Located in southern constellation Dorado. The star designated as TOI 700 is a cool M dwarf star. The star itself is 40% of our Sun in mass and in size. And half the surface temperature of our star.

When T.E.S.S. first observed the star system, the star and it's three planets, were at first misclassified as being like our own Sun and the planets appeared to be larger and hotter. It wasn't until researchers and an Alton Spencer a high school intern, caught and identified the error.

This is later confirmed when using the Spitzer Space Telescope. However, one of the three planets was observed to be in the habitable zone. It would later be designated as TOI 700 d. While the other two planets would receive the designation of TOI 700 b and TOI 700 c.

"T.E.S.S. was designed and launched specifically to find Earth-size planets orbiting nearby stars." Said Paul Hertz astrophysics division director at N.A.S.A. headquarters in Washington, D.C. "Planets around a nearby star are the easiest to follow-up with a larger telescope in space and on Earth. Discovering TOI 700 d is key science finding for T.E.S.S. Confirming the planet's size and habitable zone status with Spitzer is another win for Spitzer as it approaches the end of science operations this January."

T.E.S.S. itself observes a large section of the sky called sectors for 27 days.

This allows T.E.S.S. to watch the brightness of a star planetary passage. This is called a transit.

After the error was caught and corrected this was said, "When we correct the star parameters the size of its planets dropped and we realized the outermost one was about the size of Earth and in the habitable zone," said Emily Gilbert a graduate student at the University of Chicago.

"Additionally in 11 months of data, we saw no flares from the star which improves the chances that TOI 700 d is habitable and makes it easier to model its atmospheric and surface conditions."

With these findings, researchers including Gilbert presented their findings at the 235<sup>th</sup> meeting of American Astronomical Society in Honolulu, Hawaii. TOI 700 b is the innermost planet, it is Earth-size and may have a rocky surface. It completes an orbit every 10 days. TOI 700 c is 2.6 times larger than Earth, somewhere between the size of Earth and Neptune. It completes an orbit every 16 days. And the planet may be gas-dominated. TOI 700 d, the outer most of the planets, it is located in the habitable zone. It is only 20% larger than Earth. The planet completes an orbit every 37 days. It receives only 86% of the star energy compared to our sun. All three of these planets are believed to be tidally locked. This means that one side of the planet is always facing the star. The planet rotates once per orbit.

The Spitzer data confirmed TOI 700 d was real, the data also helped the researchers to sharpen their measurements of the orbital period by 56% and the size of the planet by 38%. The data also helped rule out the presence of a smaller, dimmer companion star as the cause for the transit signal.

"Given the impact of this discovery that it is T.E.S.S.'s first habitable-zone Earth-sized planet -we really wanted our under-

standing of this system to be as concrete as possible," Rodriguez said "Spitzer saw TOI 700 d transit exactly when we expected it to. It's a great addition to the legacy of a mission that helped confirm two of the TRAPPIst-1 planets and identify five more."

Rodriguez and his colleagues performed a follow-up observation from a 1-meter ground base telescope, global Los Cumbres Observatory Network.

These readings change the size of TOI 700 c by 36% and the orbital period by 30%. With TOI 700 system being only 100 lightyears away, the star itself is bright enough that researchers are saying that it shows no signs of stellar flares which makes the star prime candidate for more precise mas measurements. If these measurements are correct, it will confirm the scientist's estimates about the inner and outer planets. That both are rocky and the middle is a gas giant.

Future missions undertaken may confirm and identify whether both planets have an atmosphere and determine what the atmosphere composition. The exact condition of TOI 700 d is unknown at this time. However, what current information the scientist do have, they will use to generate models to make predictions. The information they will use is the type of star the planet is orbiting and the size of the planet. N.A.S.A. Goddard spaceflight center in Greenbelt, Maryland, has made over 20 potential models for the TOI 700 d environments to gauge any version resulting in surface temperatures, pressures suitability, and for habitability.

Some of the 3D climate models created showed a variety of surface types, atmospheric compositions, cloud formations, and wind patterns that are associated with tidally locked planets. One simulation shows an ocean-covered TOI 700 d dense carbon-dioxide dominated atmosphere that may have surrounded

Mars in the distant past. Another model shows an atmosphere with deep layer clouds on the star facing side of the planet. And yet another model shows TOI 700 d atmosphere to be cloudless all land version, with winds that flow away from the night side of the planet, converging at a point on the star facing side.

To determine the composition of an atmosphere, they use starlight. Starlight, when it passes into the planet's atmosphere, it interacts with the molecules that give off a very distinctive signal called spectral lines. Researchers led by Gabriele Engelmann-Suessain of the Universities Space Research Association visiting research assistant of Goddard produced 20 simulated spectral versions for TOI 700 d.

"Someday, when we have real spectral from TOI 700 d, we can backtrack, match them to the closest simulated spectrum, and then match that to a model." Engelmann-Suessain said, "It's exciting because no matter what we find out about the planet, it's going to look completely different from what we have here on Earth."

## Snoop's Recipe Files

### Captain Picard Day: The Bald Head Cocktail

#### Things you will need

1 ½ oz Gin  
1 oz Sweet Vermouth  
1 oz Dry Vermouth  
1 dash Pastis (sold either as Pastis or as Pernod)  
Twist of lemon peel for garnish

Add the liquids to a shaker filled with ice  
Stir with a bar spoon for at least 20 second

Strain into a martini glass and garnish with a twist of lemon

Relax knowing that another grueling Captain Picard Day is over

### McCoy's Family Recipe: Southern Baked Beans

#### Things you will need

1 lb	Dried Navy/Haricot Beans (Soak beans the night before)
2/3 lb	Beef Mince
½ lb	Bacon(Cut into small piece)
1	Large onion dried
1-2	Green Capsicums (Diced)
½ cup	Brown Sugar
1 can	Diced Tomatoes
2	Tablespoons Worcestershire Sause
1	Teaspoon Cayenne Pepper
3	Tablespoon Dijon Mustard
½ cup	Molasses or Golden Syrup
2 cup	Beef Stock or Water
1	Teaspoon Salt
1	Teaspoon Black Pepper
1 cup	Tennessee Whiskey ( Jack Daniel's or another brand) Divided into two ½ cup

1. The night before you'll want to cook the dish, place the dried beans in a large bowl. Pick them over and remove any discolored or small,

or extra hard ones. Cover the beans with enough water so they are all submerged and leave to soak overnight.

2. The next day, drain the beans and rinse them through, set them aside while you prepare the rest of the dish. Start by chopping all your vegetables and measuring out your ingredients and preheat your oven to 300 F.
3. In an oven-safe casserole dish or large cooking pot. Place the diced bacon and cook gently until the bacon has released its fat and has started to crisp up. If you have a lot of fat you can drain some off or leave it in. Your choice.
4. Add the minced beef, break up the beef while cooking it in the bacon fat until it is browned. Add everything to the pot with the bacon and beef, the drained beans, onion and capsicum, brown sugar, diced tomatoes, Worcestershire sauce, cayenne pepper, mustard, molasses/golden syrup and the beef stock/water. Stir it gently together.
5. Add  $\frac{1}{2}$  cup of whiskey and stir in. Cover the pot either with an oven-safe lid or with aluminum foil, and place in the oven for a minimum of 2 hours.
6. After the 2 hours is up, take the pot out of the oven and test for flavoring. Add the black pepper, and if required, the salt. Take the lid off the pot and return to the oven for another hour or until the beans are tender and the sauce has thickened.
7. To serve, stir in the remaining  $\frac{1}{2}$  cup of whiskey and ladle into bowls. Best eaten around a campfire with good friends.

## The Weird, The Strang, and What the @&!\$

### Pissy Vultures Join The Resistance and Fowl Things Up at Border Radio Tower In Texas

“The vultures often “defecate and vomit”... onto buildings below that house employees and equipment,” noted a CBP representative.

A robust wake of extremely messy vultures is getting the drop(pings) on a U.S. Customs and Border Protection radio tower in Texas. Excrement from 300 birds is so overwhelming that it’s interfering with the communication system, reports Quartz.

The entire structure in Kingsville, Texas, has been coated with “droppings mixed with urine,” according to a request for information the agency issued to vendors this week to determine the “available options” for a “Vulture Deterrence Netting System,”

The vultures will “often defecate and vomit from their roost” onto buildings below that house employees and equipment,” a CBP representative told Quartz. “There are anecdotes about birds dropping prey from a height of 300 feet, creating a terrifying and dangerous situation for those concerned,”

Vultures also “regurgitate a recking and corrosive vomit,” according to a U.S. Department of Agriculture fact sheet. The noxious waste kills bacteria on the birds’ legs but also corrodes the metal in radio towers. Vulture droppings can also carry a range of diseases.

It’s illegal to kill a vulture under the Migratory Bird Treaty Act, so CBP is getting creative to solve the radio tower issue. Officials have been working with wildlife and environmental experts, the U.S. Department of Agriculture,

and even a Texas State Historical Preservation officer to find a solution that will keep the vultures away without harming them.

CBP has opted to essentially net the tower—not the birds—to deter the vultures from roosting. Nets will be installed, likely by August, after the tower is repaired—and cleaned, according to Quartz.

### 'Alien Abduction' Victim "I Made Sure Got Home For Dinner"

Houston resident Larry Lewis said a fluke in his Ring camera made it look like he was being beamed up to outer space.

A Houston man whose Ring camera captured him appearing to be beamed up into the sky is coming clean about his "alien abduction."

On December 26, Larry Lewis was walking out of his home when his Ring camera caught him seemingly become a flash of light in the sky.

That flash of light has given him a flash of viral fame, enough that Inside Edition tracked him down hoping for an extraterrestrial exclusive. Lewis explained how he felt when he saw the spacey video.

"I saw myself walking and then I saw myself disappear," he chuckled. "I made sure I got home for dinner."

But when he was pressed for more details, he joked, "I can't talk about it right now."

Lewis isn't claiming he saw little green men or was taken aboard a UFO. Instead, he thinks the camera stopped filming right at the moment he was out of the frame and that's why it looked like he suddenly became a flash of light in the sky.

"I think it got caught up in the recording," Lewis told Inside Edition.

### Did You Know

Did you know that Friday the 13<sup>th</sup> occurs only twice a year. Whether it's a leap or not, it happens twice a year.

Some say the reason why Friday the 13<sup>th</sup> is considered to be an unlucky day, is because during the middle ages, a good portion of those who were scheduled to be executed, their execution took place on one of those two days.

### Happy Perihelion Day

Hey everyone, welcome to Perihelion Day. In case you're wondering what I'm talking about, let me explain. Perihelion is when a celestial body whether it is a planet, asteroid, or comet makes its closest approach in its orbit with a planet or a star. In our case, Earth makes its closest approach to the sun.

This happened on January 5, 2020, at 2:47 a.m. EST. Earth was at a distance of 91,398,199 mi. This happens every year two weeks after the December solstice.

Earth orbits around the sun in what is called an elliptical orbit. An elliptical orbit is not a true circle. In other words, when a planet that has an elliptical orbit, at one point it is very close to its parent star. The shape of an orbit for planetary bodies varies due to gravitational influences of other planetary objects, more so if that planet has a moon. Like ours. Approximately 100,000 years Earth orbital path changed from a nearly circular orbit or eccentricity orbit to an elliptical orbit. An eccentricity value of 0 means an orbit is circular in nature. But a value between 0 and 1 means the orbit is elliptical orbit.

Now the opposite of a Perihelion is called Aphelion. It is where planetary bodies are at the furthest point of their orbit

around their star. This happens every year 2 weeks after the June solstice. Dates for these yearly events can vary by 2 days from year to the next. In the year 1246 the December solstice and Perihelion accord on the same day. Since that time the date for this event has drifted by a day every 58 years. Mathematicians and astronomers said that in the year 6430, some 4,000 years from now, Perihelion and the March Equinox will occur on the same day.

Now when you talk about the Earth and the Moon. The terms they use are different. Even though Perihelion and Aphelion are used for Earth's orbit around the sun, these two terms are sometimes used instead. Those two terms are Perigee and Apogee. Perigee is when the Moon makes its closest approach to the Earth. Apogee is the opposite. Apogee occurs when the Moon is at its furthest from the Earth.

In case you are wondering this year Aphelion or Apogee will take place on July 4, 2020, at 7:39 a.m. The Earth will be at a distance of 94,507,655mi. Next year Perihelion or Perigee will occur on January 2, 2021, at 8:50 a.m. at a distance of 91,399,454mi. Aphelion or Apogee will take place on July 5, 2021, at 6:27 p.m. at a distance of 94,510,886mi.

Perihelion/Aphelion is Greek by the way. Peri in Greek means close to, while Apo means far from and helios means the Sun.



## STAR TREK: BRIGHTSTAR

### "Moving On"

8

Captain's Personal Log:

Captain Deora recording

Our three-hour cruise (forgive me for using the 20<sup>th</sup>-century video vernacularism) turned into a four-hour cruise, what with all the stops we had to make along the way. Belek would have us stop every once in a while to show us the sights that were along the way. If I didn't know any better, I would think he was taking an almost human emotion, pride, in the sights that Vulcan has to offer. And of course, it would also seem that some of my crew can't hold their bladder worth a damn, on a long road trip, as it were either. I mean they can hold it on a long voyage abroad ship, but not when we are planetside. Some things are just beyond my comprehension. But I'm getting off point here.

It's just as well, that I stop it here anyway. We are finally coming within sight of our destination. Once there we will get ourselves organized and deal with the two-kilometers hike. Hopefully, we won't have too many pitstops along the way for the sight or anything else for that matter.

Once both shuttles were unloaded, the group got themselves and the supplies organized into who was carrying what.

"Captain if I may, I'll take the lead since I know the way, if that is agreeable with you, sir?" Belek said.

Just as the captain was to say something, the chief of security came walking up to the captain. The captain held up her left hand to the chief while she answered Belek.

"I was just about to ask you about that." Captain Deora said with a smile. Then turned her attention to the chief.

"Yes, Ensign, what is it?" She asked.

"If it is ok with you sir, I would like to hang back and keep an eye on our rear quarter, sir."

"Why Ensign? Is there something wrong?" Captain asked her chief security officer knowing that he doesn't make these kinds of requests lightly or often.

"Nothing that the tricorders can detect. It's more of a feeling than anything else, sir. What with the Vulcan extremist possibly being involved. Let's just say my gut is telling me that we're walking into trouble. And sir, when I get that kind of feeling I listen to them." Ensign Jash stated.

"So that is why you're so good at your job." She said, but she was not finished and continued on. "Listen to me, Ensign, let's just say I would trust your gut reaction, than most people's facts." The captain added reassuring the young ensign.

The ensign looked at his commanding officer and smiled at her compliment.

"Ensign, before you take off do you still have your tricorder with you?" Deora asked.

"Yes, sir I still do. I was just about to leave it behind in one of the shuttles. Josh answered.

"For right now, keep it with you and out of sight until I can talk to Belek. And if you spot anything behind us, you high tail it upfront and let us know. Understand Ensign?"

"Understood, sir." Ensign Josh responded.

The captain looked at everyone to get their attention, then she turned her attention towards Belek.

"Belek, if you care to get this show on the road and show us the way. We're burning daylight." She said with a half chuckle.

Just as Belek was about to take the lead the doctor of the Brightstar, walked up to Belek holding a hypo-spray in her right hand.

"Belek, before we start there is something I need to take care of before we go. Otherwise, the rest of the group won't make it past half a kilometers let alone two kilometers before they start having problems ." The doctor stated.

Belek just nodded his head to acknowledge what the doctor had just said. With that, the doctor went to each member of the group and gave each of them an injection of a tri-ox compound. Tri-ox, as it is commonly called, is what is used to help off-worlders deal with Vulcan's thin atmosphere. Unfortunately, the doctor couldn't do anything about Vulcan's hot climate. Captain Deora was the last one to receive the treatment. The doctor looked at Captain Deora and Belek.

"Ok, Belek you may proceed. They won't need another shot until we reach the Forge."

"Captain, if you and everyone else are ready we shall proceed," Belek asked and stated in one breath.

With Belek leading the way, the captain fell in behind Belek and everyone else did the same behind her. And of course, Ensign Josh taking up the rear.

After a while, the group started to

settle into a steady rhythm at their pace. At one point, someone could not resist the temptation and blurted out, "Mom, are we there yet?"

Everyone including the Vulcan's that were present, stopped dead in their tracks as it were and turned to see who the guilty party was. Then without any warning, Kathy started laughing. Then someone else did the same thing and so on, and on, and on. Until the only people who weren't laughing were the Vulcans.

Without even trying and that was because he is a Vulcan, Belek said,

"No, we're not, but we are getting closer with every step we take." And that just compounded the problem and added fuel to the fire. Even Captain Deora, an Andorian joined in on the merriment of the situation.

"Belek, I thought Vulcans didn't tell jokes?" Tess asked as she too was laughing.

"I wasn't joking Ensign. By my calculations, we're within half a kilometer from our destination." He responded. But his response only added more fuel to the fire. It finally took the sheer will power of Captain Deora to get everyone moving again.

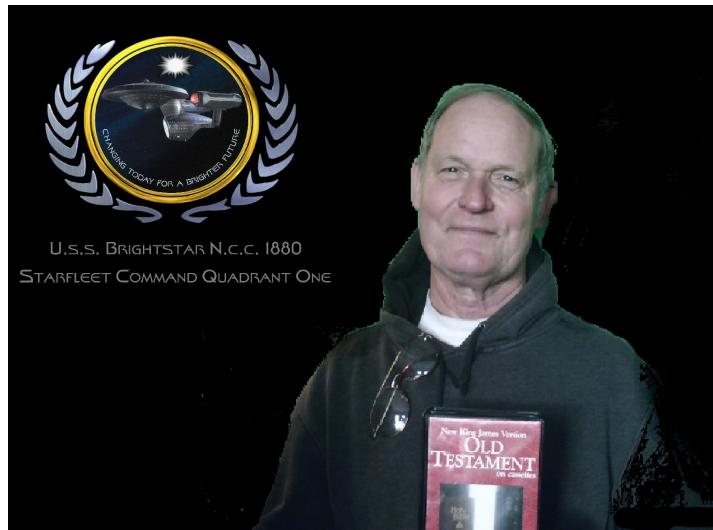
"All right everyone lets keep moving. As Belek said, we're only half a kilometer from the Forge. You can joke all you want once we're there." When Deora said this, she had a sudden thought go through her mind, "Why did I just sound like my parents?" She shook herself as if a shiver went down her spine at the thought that just went through her mind.

The bridge crew realized she is right, and they began walking again. But every once in awhile someone would start giggling including the captain. The one thing that surprised everyone the most was

the fact that even the first officer had joined in on the merriment as well.

By the time the group reached Vulcan's Forge and made camp for the night, no one had come forward to admit to starting the whole ruckus. And no one cared who it was. Well except maybe the Vulcan's.

## CELEBRATING THEIR BIRTHDAY THIS MONTH

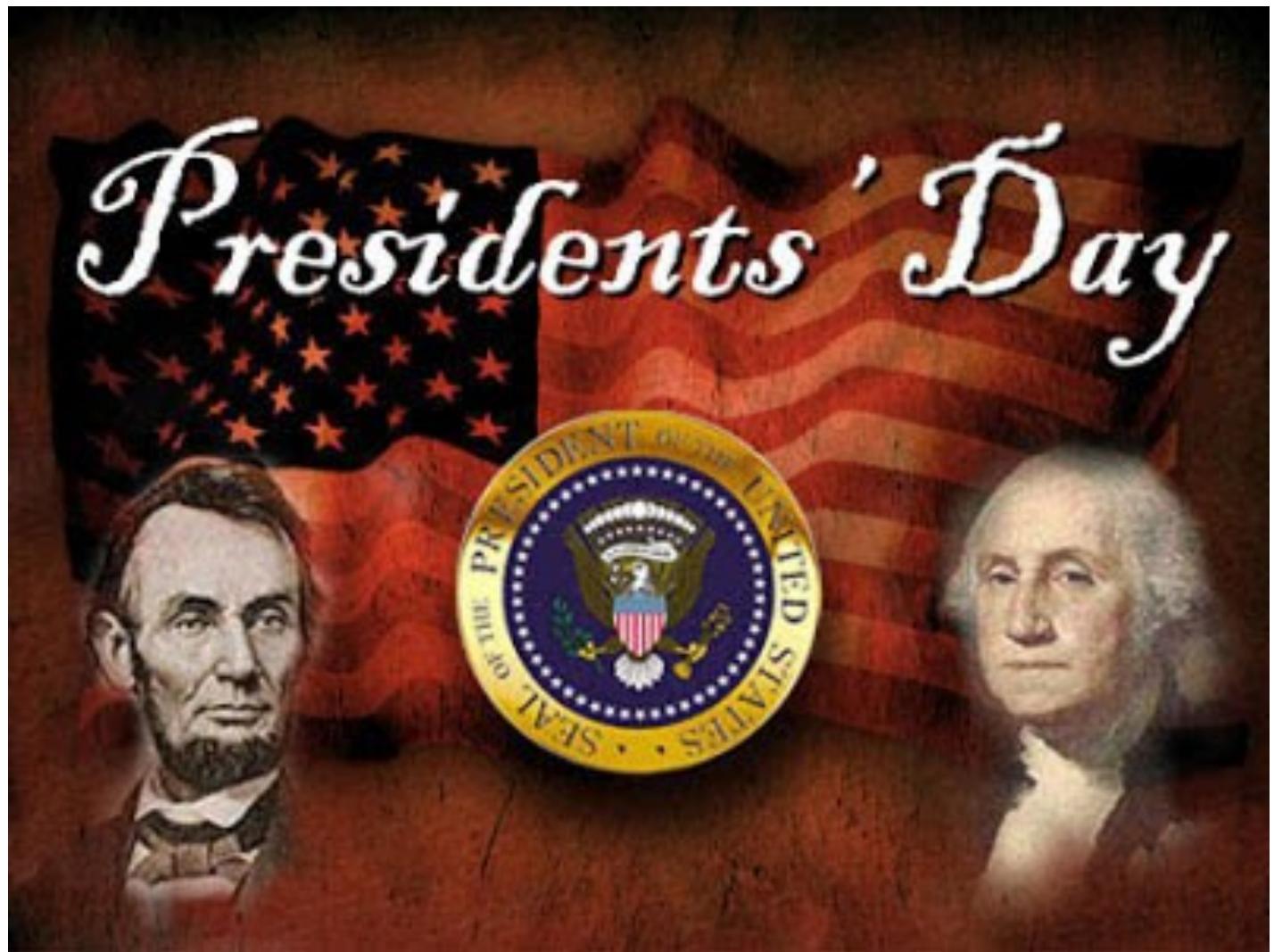


Chaplin: LTCDR Donald Henderson

February 8



See you all next issue  
Happy Valentine



Happy Presidents Day