



**Greg Smith – editor**

**Volume 24, No. 7  
November 2018**

**Program: Howard Knytych**  
“Living in the Middle of the Universe”.

**Meeting: November 14th**  
7 pm Mark Morris HS LGIC

### **New Blood**

It is amazing what happens to a club when it gains new members, especially when they come from out of town and have experience with other astronomy clubs. This is invigorating. It invigorates both the spirit of the club and its outreach. To include partners in the Solstice Walk event, like the scouts, the hiking club, and Geocachers to name a few seem to be the obvious people to partner with; as these are people who go outdoors and are overnights too. They look at the night sky just as we do; they know the constellation and star names too. I hope we make best use of this inclusion of fellow outdoor lovers and night sky gazers and they make use of us.

We need to keep up this kind of publicity. We can go from a virtually unknown small specialized group to one that the community will recognize and know that it exists. Yes, putting in the Solar System Walk did get our name out there; participating in Earth Day is good but we need to be more proactive. We need to keep up this type of active publicity of our group. We have started by getting a social media presence and it has been a huge boost to our recognizability; I think doing this new public outreach will draw more people to the website and hopefully to our meetings.

Maybe we should meet to have a semiannual 'think tank' to come up with more ideas. Here is an idea: Be a speaker at a local group on a topic like: Light Pollution and its affect on Humans, Wildlife and the Economy. There I said it, let's not just talk to ourselves about these topics let us be activists. Reducing light pollution is not just making for darker skies so we can see more stars with our telescopes; it's a whole environmental issue.

With new contacts we can be a source of correct information. If they know who to call to clarify the stuff they read on the internet, or to point them in the right direction, we are here to educate, that's part of our mission statement. We can be so much more than a small geeky club.

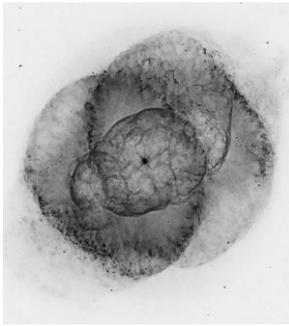
2019 and into the 20's can be years of revitalization. I may be a bit ahead of my time, but let's go for a "Roaring 20's" of more outreach to the whole county.

There is so much happening in the next few months in astronomy; we have a lot of information to get 'under our belts', so let's put on our 'thinking caps' and get ready for a great year ahead.

To plan for outreach we need ideas, to have ideas, we need everyone's participation.

**Every Day is a Star Filled Day**

# Every Night is a Starry Night



*One Eyed,  
One Horned,  
Flying Purple  
People Eater*



## Extraterrestrial Life Could Be Purple

### Alien life might be purple.

That's the conclusion of a new research paper that suggests that the first life on Earth might have had a lavender hue. In the International Journal of Astrobiology, microbiologist Shiladitya DasSarma of the University of Maryland School of Medicine and postdoctoral researcher Edward Schwieterman at the University of California, Riverside, argue that before green plants started harnessing the power of the sun for energy, tiny purple organisms figured out a way to do the same.

Alien life could be thriving in the same way, DasSarma said.

#### *Purple Earth*

The idea that the early Earth was purple is not new, DasSarma and his colleagues advanced the theory in 2007. The thinking goes like this: Plants and photosynthesizing algae use chlorophyll to absorb energy from the sun, but they don't absorb green light. That's odd, because green light is energy-rich. Perhaps, DasSarma and his colleagues reasoned, something else was already using that part of the spectrum when chlorophyll photo synthesizers evolved.

That "something else" would be simple organisms that captured solar energy with a molecule called retinal. Retinal pigments absorb green light best. They're not as efficient as chlorophylls in capturing solar energy, but they are simpler, the researchers wrote in their new paper published Oct. 11.

Retinal light-harvesting is still widespread today among bacteria and the single-celled organisms called Archaea. These purple organisms have been discovered everywhere from the oceans to the Antarctic Dry Valley to the surfaces of leaves, Schwieterman told Live Science. Retinal pigments are also found in the visual system of more complex animals. The appearance of the pigments across many living organisms hints that they may have evolved very early on, in ancestors common to many branches of the tree of life, the researchers wrote. There is even some evidence that modern purple-pigmented salt-loving organisms called halophiles might be related to some of the earliest life on Earth, which thrived around methane vents in the ocean, Schwieterman said.

#### *Purple aliens*

Regardless of whether the first life on Earth was purple, it's clear that lavender life suits some organisms just fine, Schwieterman and DasSarma argue in their new paper. That means that alien life could be using the same strategy. And if alien life is using

retinal pigments to capture energy, astrobiologists will find them only by looking for particular light signatures, they wrote.

Chlorophyll, Schwieterman said, absorbs mostly red and blue light. But the spectrum reflected from a plant-covered planet displays what astrobiologists call a "vegetation red edge." This "red edge" is a sudden change in the reflection of light at the near-infrared part of the spectrum, where plants suddenly stop absorbing red wavelengths and start reflecting them away.

Retinal-based photo synthesizers, on the other hand, have a "green edge," Schwieterman said. They absorb light up to the green portion of the spectrum, and then start reflecting longer wavelengths away.

Astrobiologists have long been intrigued by the possibility of detecting extraterrestrial life by detecting the "red edge," Schwieterman said, but they may need to consider searching for the "green edge," too.

"If these organisms were present in sufficient densities on an exoplanet, those reflection properties would be imprinted on that planet's reflected light spectrum," he said.

*Originally published on Live Science.*

[in the song who is purple? The alien or the people it eats?]

## **Minutes of the October Meeting**

Greg Smith called the meeting to order. He introduced the guests.

Thank you's to: Tom Meek for article in Tuesday's TDN about tonight's meeting and speaker, Ted Gruber's Sky Report in the current Columbia River Reader, Greg's October newsletter, Sue Piper's photo of FOG during the July picnic, Roy Gawlick for updating the website, and Rich Brown for the Facebook page. A couple more Thank you's to everyone who helped at the recent Sidewalk Astronomy at Starbucks, Tom Meek for refreshments, Steve Powell for reserving LGIC, and Les Hastings for driving from Stevenson to be our guest speaker tonight.

Steve Powell gave the Treasurer's Report. He is also taking orders for calendars.

Ted Gruber reminded us that the November meeting is moved up a week to November 14th because of Thanksgiving. We will be in Steve Powell's classroom, Room D-8.

Les Hastings, NASA Solar System Ambassador, is our guest speaker tonight. He is a teacher for the Stevenson School District. His presentation updated us on the ISS spacemen who returned after Soyuz malfunctioned, ICESat-2 spacecraft launch, SLS, Mars dust storm, Mars Reconnaissance Orbiter spots rover, Curiosity rover, Dawn spacecraft, Environmental satellites, Hubble spacecraft placed in standby, InSight spacecraft, Moon Mineralogy Mapper instrument, New Horizons spacecraft, OSIRIS-REx spacecraft, Parker Solar Probe, and instruments on three spacecraft see first light. He also talked about

Exoplanets and possible evidence of an exoplanet's moon. The 60th Anniversary of NASA was celebrated on October 1st. [www.nasa.gov/60](http://www.nasa.gov/60)

Ted Gruber gave the Sky Report. Jupiter and Mercury are visible low in the southwestern sky at dusk. Both planets are visible until they set 30-60 minutes after sunset. They lie only about 5 degrees above the horizon, so you'll need an unobstructed southwestern view to see them. Saturn because visible in the southwestern sky as darkness falls. Mars is visible in the southern sky from twilight until it sets about 1:00 am. On November 15th, the first quarter moon passes 1 degree south of Mars. Venus returns to the morning sky early in November. It rises about 30 minutes before sunrise on November 1st, 2 hours before sunrise by mid November and about 3 hours before sunrise by the end of November. The Orionids are active through November 7th. The Messier of the Month is M71. It is a magnitude 6.1 globular cluster in the constellation Sagitta. It is about 12,000 light years away and has an estimated 20,000 stars that are loosely packed. It is one of the smallest known globular clusters. It appears as a fuzzy patch of gray light though binoculars and larger telescopes will resolve individual stars.

Roy Gawlick would like to have a Solstice Walk on the Winter Solstice, December 21st, at Lake Sacajawea. He has already got some extra help. It would be an evening event. He still needs to contact the city about how to go about it.

Meeting adjourned

**☞ November 2018 Meeting ☞**

**DATE: Wednesday, November 14, 2018**

**TIME 7:00 pm**

**PLACE: Mark Morris High School  
Large Group Learning Center  
Use back Parking Lot on 17<sup>th</sup>**

**PROGRAM: Howard Knytych:  
"Living in the Middle of the Universe"**

**SNACKS: Mark Thorson**

**DRINKS: Ripp Family**

## Friends of Galileo Club Officers

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## Next Month's Newsletter Deadline

The deadline for items in next month's newsletter is:

**Wednesday: seven days  
before next meeting.**

**Please feel free to send in your  
thoughts and experiences about  
your astronomical adventure.**

Submit your material by E-mail to:

[grlyth@msn.com](mailto:grlyth@msn.com)