



# Star Stuff

Ford Amateur Astronomy Club Newsletter

Volume 27, Number 5

May 2017

## The Fizzy Seas of Titan

By Marcus Woo

With clouds, rain, seas, lakes and a nitrogen-filled atmosphere, Saturn's moon Titan appears to be one of the worlds most similar to Earth in the solar system. But it's still alien; its seas and lakes are full not of water but liquid methane and ethane.

At the temperatures and pressures found on Titan's surface, methane can evaporate and fall back down as rain, just like water on Earth. The methane rain flows into rivers and channels, filling lakes and seas.

Nitrogen makes up a larger portion of the atmosphere on Titan than on Earth. The gas also dissolves in methane, just like carbon dioxide in soda. And similar to when you shake an open soda bottle, disturbing a Titan lake can make the nitrogen bubble out.

But now it turns out the seas and lakes might be fizzier than previously thought. Researchers at NASA's Jet Propulsion Laboratory recently experimented with dissolved nitrogen in mixtures of liquid methane and ethane under a variety of temperatures and pressures that would exist on Titan. They measured how different conditions would trigger nitrogen bubbles. A fizzy lake, they found, would be a common sight.

On Titan, the liquid methane always contains dissolved nitrogen. So when it rains, a methane-nitrogen solution pours into the seas and lakes, either directly from rain or via stream runoff. But if the lake also contains some ethane—which doesn't dissolve nitrogen as well as methane does—mixing the liquids will force some of the nitrogen out of solution, and the lake will effervesce.

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## Presidents Article

By Liam Finn

### *Sirius Award 2017 Winner*

For those who attended the Annual Banquet on Saturday 20<sup>th</sup> had the pleasure of seeing the look of surprise on the face of our 2017 Sirius Award Winner: **Dennis Salliotte**

Dennis has been a member of the Ford Amateur Astronomy Club for 19 years (having joined in 1998).

During this time, he has volunteered his time and expertise for numerous club functions and events. Listed among these are:

- Participation at nearly all board meetings.
- Participation on numerous committees.
- Very active in club outreach and Beginner Nights
- A very dedicated planetarium presenter at Henry Ford College
- One of the first people to turn up to help out no matter what the event.
- Has managed the club equipment and equipment loan program.

IN RECOGNITION of his contributions to the Ford Amateur Astronomy Club, it was my honor and pleasure to present the Ford Amateur Astronomy Club's 2017 Sirius Award to Mr. Dennis Salliotte.

***Congratulations, Dennis, and thank you for your continued service!***

### *Beginners Nights*

Our next Beginners Night is Saturday June 3rd at Spring Mill Pond in Island Lake State Recreational Area. Now that the weather is warming up it would be an ideal time to air out those scopes and get them ready for the Eclipse. What better way to do this than among friends and fellow astronomers at our monthly Beginner Nights?

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## Presidents Article

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I call on our members to come out in force and show how active our members are and how joining our club will not only bring knowledge of Astronomy but also bring them into a close fun group they can be proud to say they are part of.

## Secretary's Report

By Jessica Edwards

### 27 April 2017 General Meeting

#### *Member Observations and What's Up*

The State Wide Astronomy Night (SWAN) had pretty good conditions for observing. Jupiter and the Great Nebula in Orion made for memorable observing for the public. Beginners Night at Island Lake had favorable conditions. Comet 41P was attempted to be seen visually, but it was a difficult feat even in an 8" telescope. The Eta Aquarids can be observed on the 5th of May. 11 May and 18 May have several shadows that will pass across Jupiter.

#### *Main Talk – Meteorites II – Formation and Types – Sandra Macika*

In this session we looked at Chondrite Meteorites. These meteorites are undifferentiated, meaning they experienced slight melting but did not form layers. They also contain chondrules, which are hardened drops of lava. The composition of the chondrules is similar to that of the solar photosphere. Many samples were passed around to members of the club.

## Plymouth Astro Imaging SIG Events

By Gordon Hansen

All are welcome to attend. The meetings are at the Plymouth Library at 6 pm on the third Tuesday of each month. Reminders are published on the club's Yahoo Group.

## The Fizzy Seas of Titan

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"It will be a big frothy mess," says Michael Malaska of JPL. "It's neat because it makes Earth look really boring by comparison."

Bubbles could also arise from a lake that contains more ethane than methane. The two will normally mix, but a less-dense layer of methane with dissolved nitrogen—from a gentle rain, for example—could settle on top of an ethane layer.

In this case, any disturbance—even a breeze—could mix the methane with dissolved nitrogen and the ethane below. The nitrogen would become less soluble and bubbles of gas would fizz out.

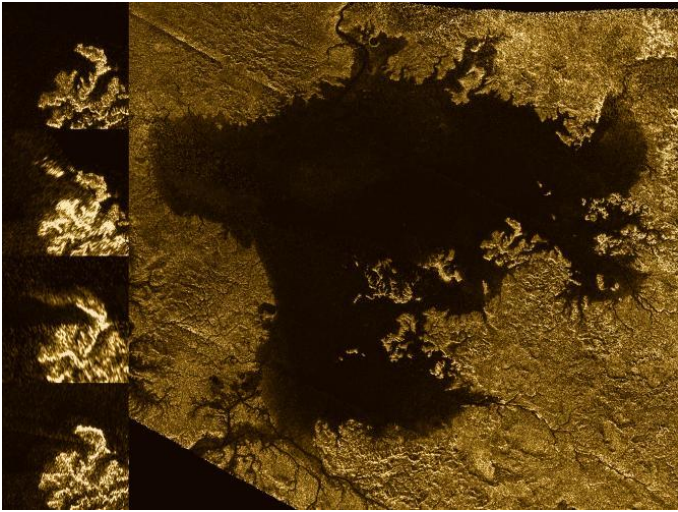
Heat, the researchers found, can also cause nitrogen to bubble out of solution while cold will coax more nitrogen to dissolve. As the seasons and climate change on Titan, the seas and lakes will inhale and exhale nitrogen.

But such warmth-induced bubbles could pose a challenge for future sea-faring spacecraft, which will have an energy source, and thus heat. "You may have this spacecraft sitting there, and it's just going to be fizzing the whole time," Malaska says. "That may actually be a problem for stability control or sampling."

Bubbles might also explain the so-called magic islands discovered by NASA's Cassini spacecraft in the last few years. Radar images revealed island-like features that appear and disappear over time. Scientists still aren't sure what the islands are, but nitrogen bubbles seem increasingly likely.

To know for sure, though, there will have to be a new mission. Cassini is entering its final phase, having finished its last flyby of Titan on April 21. Scientists are already sketching out potential spacecraft—maybe a buoy or even a submarine—to explore Titan's seas, bubbles and all.

To teach kids about the extreme conditions on Titan and other planets and moons, visit the NASA Space Place: <https://spaceplace.nasa.gov/planet-weather/>



*Caption: Radar images from Cassini showed a strange island-like feature in one of Titan's hydrocarbon seas that appeared to change over time. One possible explanation for this "magic island" is bubbles. Image credits: NASA/JPL-Caltech/ASI/Cornell*

## **Astronomical League 2017-18 Dues**

By Syed Saifullah

Astronomical League dues are due on June 30<sup>th</sup> of this year. Once again, they will be \$7.50 for the year. Joining the AL provides some nice benefits but most popular of all would probably be to complete the different observing programs and earning pins. You can read more about the observing programs here:

<https://www.astroleague.org/al/obsclubs/AlphabeticObservingClubs.html>

Personally, I enjoy the structure and goals the observing lists give me as I am working on multiple different observing programs at the moment. Also, the quarterly publications (The Reflector) are a good read. Please e-mail or get in touch with Syed Saifullah, the club ALCor (AL Coordinator) to pay your dues.

## 2017 Beginner's Nights Calendar

Month	1st Quarter	Beginner's Night	Sunset	Location
April	Monday, April 3rd	<b>Saturday, April 1st</b>	7:58pm	Island Lake
April/May	Tuesday, May 2nd	<b>Saturday, April 29th</b>	8:30pm	Island Lake
		<b>^^Int'l Astronomy Day^^</b>		
June	Thursday, June 1st	<b>Saturday, June 3rd</b>	9:04pm	Island Lake
July	Friday, June 30th	<b>Saturday, July 1st</b>	9:12pm	Island Lake
July II	Sunday, July 30th	<b>Saturday, July 22th</b>	8:54pm	Island Lake (Club Picnic)
August	Tuesday, August 29th	<b>Saturday, August 26th</b>	8:15pm	Island Lake
<b>**Solar Eclipse is on 21st** - Head for totality!</b>				
September	Friday, September 9th	<b>Fri-Sat Sept 29, 30</b>	7:17pm 7:14pm	(AATB / Island Lake)
October	Sunday, October 27th	<b>Saturday, October 28th</b>	6:30pm	Maybury State Park

# Treasurers Report

May 2017

By Mike Bruno

## Ford Amateur Astronomy Club Balance Sheet 5/20/2017

### ASSETS

<u>Checking / Savings</u>	
Checking	\$ 1,552.33
<b>FAAC Savings</b>	
<i>General</i>	3,048.00
<i>Equipment</i>	2,363.87
<i>Scholarship</i>	429.26
<b>Total FAAC Savings</b>	<u>5,841.13</u>
Petty Cash	440.75
<b>Total CD's</b>	3,191.57
<b>Total Checking / Savings</b>	<u>11,025.78</u>

**TOTAL ASSETS** \$ 11,025.78

**TOTAL EQUITY** \$ 11,025.78

### INCOME

Membership Dues	\$ 1,375.00
Equipment Fund	62.00
Scholarship Fund	87.00
Merchandise	181.00
Club Events	2,171.63
Miscellaneous	100.00
Interest	3.25
<b>Total Income</b>	<u>3,979.88</u>

### EXPENSES

Merchandise	193.05
Club Events	806.29
Office expense	98.58
<b>Total Expenses</b>	<u>1,097.92</u>

**NET INCOME** \$ 2,881.96

## FAAC Equipment Holders Report

By Dennis Salliotte

### FAAC Equipment Report 5/18/17

<u>Item</u>	<u>Currently Held By:</u>	<u>Date Last Verified</u>
<b><u>Telescopes</u></b>		
4" Dobsonian (Harold's donation)	George Korody	1/20/17
<b><u>Presentation Tools</u></b>		
Projector (older)	Jim Frisbie	1/15/17
Projection Screen 8'	Bob MacFarland	5/14/17
Speaker System w/wireless mic	Bob MacFarland	5/14/17
Bullhorn	George Korody	1/20/17
DVD Player	Jim Frisbie	1/15/17
Projection Screen 6'	Mike Dolsen	1/15/17
Projector, ViewSonic	Tim Campbell	4/20/17
<b><u>Demonstration Tools</u></b>		
Weight On Planets Scale	George Korody	1/20/17
Lunar Phase Kit	Bob MacFarland	5/14/17
100 ft Scale Model Solar System Kit	Bob MacFarland	5/14/17
<b><u>Display Items</u></b>		
Astronomy Event Sign (3' X 6')	Gordon Hansen	1/16/17
PVC Display Board - Folding	Sandra Macika	1/23/17
Banner – Small (24" X 32")	George Korody	1/20/17
Banner – Medium (24" X 72")	Sandra Macika	1/23/17
Banner – Large (32" X 16')	George Korody	1/20/17
Tri-Fold Presentation Boards	Don Klaser	1/26/17
Tri-Fold Poster Board (Early Club Photos)	George Korody	1/20/17
<b><u>Other</u></b>		
Canopy (10' X 10')	Dennis Salliotte	5/18/17
Equipment Etching Tool	Greg Ozimek	4/20/17
Pop Cooler	Dennis Salliotte	5/18/17
<b><u>EQUIPMENT KITS</u></b>		
<b><u>CARETAKER</u></b>		
<b><u>Telescopes</u></b>		
TK3 Celstrn 130 Newt Goto mount	Liam Finn	3/15/17

TK4 Clstrn 90 Refrctr w/man mount	Liam Finn	3/15/17
TK5 4 ½ “ Reflector, on Fitz GEM mount	Bob MacFarland	5/14/17
TK6 8” Orion 8XTi Dobsonian	Jed Datema CARETAKERSHIP IS AVAILABLE	3/29/17
TK1 Coronado PST solar scope w/double stack, Meade Autostar Goto mount & tripod and accessories	John McGill	1/15/17
TK7 TPO 8” f/4 Imaging Newtonian Telescope (OTA)	Jim Barnes	1/16/17
<b><u>Binoculars</u></b>		
BK3 15x70 binocs, monopod mount	Bob MacFarland	5/14/17
BK4 20x80 binocs,altaz goto mount	Sandra Macika	1/23/17
BK5 25x70 binocs w/tripod adaptor	Tim Dey	4/20/17
<b><u>Eyepiece Kit</u></b>		
EPK1 Eyepieces, filters & accesories	Liam Finn	3/15/17
<b><u>Other</u></b>		
TA Sky Quality Meter	Syed Saifullah	1/18/17
TA Sky Atlas 2000.0	Tim Dey	4/20/17
TA Orion telescope binoviewer	Liam Finn	3/15/17
<b><u>Lincoln Park Observatory</u></b>		
LPO Celestron binoviewer #93691	Tim Dey	4/20/17
LPO Celestron 2X 1.25” Barlow	Tim Dey	4/20/17
<b><u>Imaging SIG</u></b>		
C1 Celestron NexImage Solar System Imager model #93712	Gordon Hansen	4/20/17
C2 Meade Deep Sky Imager PRO III w/AutoStar Suite	Gordon Hansen	4/20/17
C3 Orion StarShoot Deep Space Video Camera NTSC #52185 w/video capture device #52178	Gordon Hansen	4/20/17
C4 Meade Electronic Eyepiece w/cable to a video monitor, VCR or TV. Pairw#43 AND Meade 3.5” LCD Color Monitor Kit # 07700 Complete (unused). Pair w#34	Gordon Hansen	4/20/17

C5 Orion StarShoot Deep Space Video Camera II #52195 AND Orion StarShoot iPhone Control for Deep Space Video Camera II #52195	Gordon Hansen	4/20/17
C6 Canon 60 DA and accessories	Tim Dey	4/20/17
CA1 Rigel Systems Spectroscope	Gordon Hansen	4/20/17
CA2 Celestron 1.25" to T-Adapter(male thread) Model #93625	Gordon Hansen	4/20/17
CA3 Canon EOS deluxe astrophoto kit FOR Canon bayonet T-thread adapter and variable 1.25" extender	Gordon Hansen	4/20/17
CA4 Orion StarShoot LCD-DVR #58125 2.5" LCD screen	Gordon Hansen	4/20/17
CA5 Celestron Canon EOS T-ring adapter #93419	Gordon Hansen	4/20/17
<b><u>Special Event Use Only- Not Available For Loan Out</u></b>		
TK2 Meade 8" ETX-LS-ACF w/tripod, voice assist, computerized GPS plus MANY (35+) accessories	Tim Dey	4/20/17
BK1 Orion BT-100 binocular telescope w/hard case, Orion VersaGo h.d. man altaz mount w/Vixen dovetail head and Vixen style binocular holder bracket	Ken Anderson	4/20/17
BK2 Zhumell 25x100 binoculars, hard case & Zhumell TRH-16 tripod w/soft fabric bag	Sandra Macika	1/23/17
TAK1 Night Vision Intensification binocular unit	George Korody	1/20/17
Dennis Salliotte equipment@fordastronomyclub.com		



## STAR STUFF

This Newsletter is published eleven times each year by:

FORD AMATEUR ASTRONOMY CLUB P.O. Box 7527 Dearborn MI 48121-7527

PRESIDENT: Liam Finn

VICE PRESIDENT: Tim Dey

SECRETARY: Jessica Edwards

TREASURER: Mike Bruno

WEBMASTER: Greg Ozimek

NEWSLETTER EDITOR: Syed Saifullah

### Club Information:

The Ford Amateur Astronomy Club (FAAC) meets on the fourth Thursday each month, except for the combined November/ December meeting on the first Thursday of December - at Henry Ford College Administration Services and Conference Center in Dearborn. Refer to our website for a map and directions. [www.fordastronomyclub.com](http://www.fordastronomyclub.com)

The FAAC observes at Spring Mill Pond within the Island Lake State Recreation Area near Brighton, Michigan. The club maintains an after-hours permit and observes on Friday and Saturday nights, and nights before holidays, weather permitting.

The FAAC also has use of a private observing site near Gregory Michigan and Lake Erie Metro Park. See the FAAC Yahoo Group\* for more information.

Observing schedules and additional info are available on our website, or via the FAAC Yahoo Group.\* Or call the FAAC Hotline, for info and leave a message, or ask questions: 313-757-2582. You may also send email inquiries to [info@fordastronomyclub.com](mailto:info@fordastronomyclub.com) .

Membership in the FAAC is open to anyone with an interest in amateur astronomy. The FAAC is an affiliate of the Ford Employees Recreation Association (F.E.R.A.).

### Membership fees:

Annual - New Members: \$30 (\$15 after July 1)

Annual - Renewal: \$25 (\$30 after January 31)

Membership includes the STAR STUFF newsletter, discounts on magazines, discounts at selected area equipment retailers, and after-hours access to the Island Lake observing site.

Astronomy or Sky & Telescope Magazine Discounts Obtain the required form from the FAAC club treasurer for a \$10 discount.

Send the completed form directly to the respective publisher with your subscriptions request and payment. Do not send any money directly to the FAAC for this.

Star Stuff Newsletter Submissions Your submissions to STAR STUFF are welcome! Send your story and/or images to the editor: [StarStuff@fordastronomyclub.com](mailto:StarStuff@fordastronomyclub.com) Email text or MS Word is fine. STAR STUFF will usually go to press the weekend prior to each general meeting.

Submissions received prior to the 15th can be included in that month's issue.

\* FAAC Members are welcome to join our Ford Astronomy Club Yahoo! Group. Messages photos, files, online discussions.