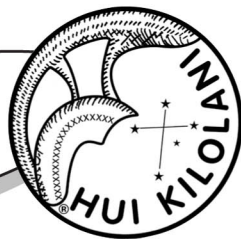


The Astronews



Volume 57, Issue 7

July 2009

www.hawastsoc.org

President's Message

by Chris Peterson

Never mind Bishop Museum has reconsidered, and we will be allowed to resume meeting on the **first Tuesday** of each month in the planetarium. We will do so on July 7th. We hope this situation will remain stable for a long time.

* * * * *

In this International Year of Astronomy, there are many opportunities to look back and see how far we have come in 400 years. July is one such time. Forty years ago this month, the Apollo 11 mission landed the first humans on the Moon, the first time we had set foot on another world. The place that Galileo and others first began to reveal as something more complicated than a light in the sky became, with the Apollo program, a place that people had visited, studied, and returned with pieces of. Anyone who was old enough to be aware of the Apollo 11 landing at the time remembers that momentous event, surely one of the most symbolically significant events in human history. With those footsteps, we became a spacefaring species, one not limited to a single world.

Now that time is 40 years in the past, one tenth of the time since the telescope was invented. In the next 40 years, it is likely that humans will visit Mars for the first time. Before that happens, though, we will probably return to the Moon for more than just a quick visit. By the time you read this issue of the Astronews, the Lunar Reconnaissance Orbiter should be in orbit around the Moon. Its primary purpose is to improve our knowledge in ways that will enable planning for future human lunar missions. Eventually, a site will be chosen for a lunar

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Upcoming Events:

- ☆ The next meeting is 7:30PM on **Tues., July 7** at the Bishop Museum Planetarium.
- ☆ Bishop Museum's next planetarium show with **Barry Peckham** is Friday, **July 3 & 17** at 7:00 p.m.
www.bishopmuseum.org/calendar
- ☆ The next Board Meeting is Sunday, **July 5** at 3:30 p.m. at the POST building at UH.



Editor's Thanks:

I'd like to thank our multi-talented Treasurer of HAS, **Jim McDonald**, for filling in my Astronews duties while I was away on business (and a much-needed vacation) last month. Back from the International Science and Engineering Fair in lovely Reno, I am refreshed and ready to roll again. Mahalo, Jim.

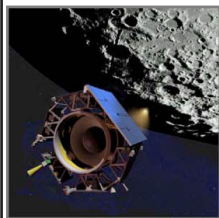
On another personal note, I would like to thank **Forrest Luke, John Gallagher, Joanne Bogan** and **Steve Chun** for their assistance in the Camp Anuenue event on June 8 and 9. Forrest and John took care of the evening viewing the first night, and Joanne and I handled an educational program the following day, with Steve manning his solar telescope for a nice crowd.

I've singled this out specifically because:

1) I was the initial contact person for the Camp's Event Coordinator and I felt responsible; and 2) it was an especially rewarding experience. Camp Anuenue is sponsored by the American Cancer Society and is for children 7-17 who have cancer or are cancer survivors. This camp is open to kids in the Pacific region, including Hawaii, Guam and American Samoa.

The kids and staff were impressive in their appreciation and enthusiasm and I have already expressed interest in participating again next year. The camp is a week long and is across the Dillingham Airfield at Camp Mokeleia. ☆

* * * * *



LCROSS UPDATE:

*Launched June 18
Current projected
impact date:
Oct. 9, 11:30 UT
(1:30 AM HST)
Stay Tuned...*

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The **Astronews** is a monthly newsletter of the Hawaiian Astronomical Society. Some of the contents may be copyrighted. We request that authors and artists be given credit for their work. Contributions are welcome. Send them to the Editor via email. The deadline is the 16th of each month. We are not responsible for unsolicited artwork.

President **Chris Peterson** called the June 1, 2009 meeting of the Hawaiian Astronomical Society to order at 7:33 p.m. The meeting was held at the Planetarium on the grounds of the Bishop Museum. There were nineteen members in attendance.

Meeting Date – The General Membership Meetings for the Hawaiian Astronomical Society will continue to take place on the first Tuesday of each month at the Bishop Museum. While the Bishop Museum has announced that it will be closed on Tuesdays until further notice, they have given permission to the H.A.S. to continue to hold meetings on the regular monthly basis as we have done in the past.

Hawaii Space Lecture Series: President **Chris Peterson** reports that Bill Bodke will speak on planet formation (mathematical modeling of planetary formation) June 23rd. Should you be interested in any upcoming lectures or for information you can contact NASA PRPDC at 808-056-3132 or on the Web go to <http://www.higp.hawaii.edu/prpdc> <<http://www.higp.hawaii.edu/prpdc>>.

FYI – Bill SB536, the Starlight Reserve or Statewide Lighting Law has been passed and has been sent on to Governor Lingle for signature. Board members have sent letters of support for the bill to Governor Lingle. A petition/letter for member's signatures will be available.

Farrington Highway Lights-Shielding of the streetlights #'s 45-47 has taken place. While the lights are at a 20-degree angle to the road, the 4" shields surrounding the bubble lights still allow light to escape and we will still see the lights from Dillingham Airfield taxi holding area where we hold our star parties. **Barry Peckham** will write and will bring a copy of a thank you letter to the May 31st general membership meeting for Board members and club members to sign. We will thank the Department of Transportation – Highway Division and suggest that the any new bulb replacements be of a flat variety.

Ko'Olina– H.A.S. member **Greg McCartney** extended an open invitation to H.A.S. members and to anyone willing to help out at this event with their scope. This event will be at the 4th Lagoon at Ko'Olina beginning at about 7:00 p.m. and run until 10:00 p.m. Members will be admitted free of charge but need to contact Greg at 291-2464 for a free star pass before June 13th. Donna Bever was listed as the IFA point of contact. Greg is affiliated with "Stars Above Hawaii" and is hoping for support from club members.

Sky Images- Jim Borg, a reporter from the Star Bulletin has requested information on contacting an imager to take a time lapse exposure of the night sky, as it might be "a cool picture" to publish. Anyone interested in taking such a picture for publication is urged to contact Chris Peterson for further details.

October Event- H.A.S. has been asked to participate in a Child & Youth Festival on the grounds of the Capitol in the upcoming month of October. Dennis Young would like to see some astronomers come and show the public some aspects of astronomy. Solar viewing may be a prospect. As this event takes place in October, we will report any further developments to the general membership as it becomes available.

Trip to Mars- Brian Shiro, a representative of the Mars Society would like to come to speak to HAS and raise money for the Mars Society's Arctic experiment on Devon Island in Canada. It was decided that their representative might come to speak to us after the fact, perhaps in October 2009.

Speakers – Michael Chauvin will speak to the club at the July. The subject of his talk will be Archeoastronomy and Hiram Bingham. We hope that **Travis Le**, who recently participated in the 2009 Intel International Science and Engineering Fair in Reno Nevada, will present his project to the club during the August Meeting.

Science Café- **Carolyn Kaichi** sent us a report that the monthly Science Café will

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The Cool Chemistry of Alien Life

Alien life on distant worlds. What would it be like? For millennia people could only wonder, but now NASA's Spitzer Space Telescope is producing some hard data. It turns out that life around certain kinds of stars would likely be very different from life as we know it. Using Spitzer, astronomers have discovered the organic chemical acetylene in the planet-forming discs surrounding 17 M-dwarf stars. It's the first time any chemical has been detected around one of these small, cool stars. However, scientists are more intrigued by what was not there: a chemical called hydrogen cyanide (HCN), an important building block for life as we know it. "The fact that we do not detect hydrogen cyanide around cool stars suggests that that prebiotic chemistry may unfold differently on planets orbiting cool stars," says Ilaria Pascucci, lead scientist for the Spitzer observations and an astrophysicist at Johns Hopkins University in Baltimore, Maryland. That's because HCN is the basic component for making adenine, one of the four information-carrying chemicals in DNA. All known life on Earth is based on DNA, but without adenine available, life in a dwarf-star solar system would have to make do without it. "You cannot make adenine in another way," Pascucci explains. "You need hydrogen cyanide." M-dwarf and brown dwarf stars emit far less ultraviolet light than larger, hotter stars such as our sun. Pascucci thinks this difference could explain the lack of HCN around dwarf stars. For HCN to form, molecules of nitrogen must first be split into individual nitrogen atoms. But the triple bond holding molecular nitrogen together is very strong. High-energy ultraviolet photons

(Continued on page 9)



This alien planet may never develop life if its star can't muster the oomph to break a certain molecular bond.

Joanne Bogan and I recently had the chance to visit Paris. While there, we connected with former HAS member, Nicolas Biver, who was kind enough to give us a personal tour of Meudon Observatory. Members who went to club star parties in the late 90s will remember Nicolas for his superb astronomical observing and drawing skills, which he performed using his squat homemade 10" reflector, that uniquely shaped scope in the rectangular white wooden box. He had the uncanny ability to find and visually observe 14th-magnitude and fainter comets by star hopping. I don't remember how many times he would call us over to his scope on star party nights at Dillingham, where he would ask "Do you want to see a comet?" I would try my best to discern some sense of photons in a nearly black eyepiece field, but disappoint him with my admission that "No, I don't see it." He would check again to be sure it was still there, and then declare: "Well, you have no experience." Nicolas was a post-doc with IfA in Hawaii for several years, and is now a researcher with the Paris Observatory, specializing in radio astronomy, especially in cometary observation. Although his office is in Meudon, these days Nicolas uses data collected from radio observatories mainly in Spain.

His office and the observatory are located in the town of Meudon, a suburb of Paris near Versailles, around a half hour journey from central Paris. From our hotel near the Arc de Triomphe, we took the Metro and then a commuter train (RER line C) to Meudon-Val Fleury station. Our Metro pass was convenient because it allowed transport on subway, bus, and train. We had arranged to call him at his observatory office from the train station when we arrived, and he drove down to pick us up. We had not seen him for over eight years, but he hadn't changed, looking like a young college student still, although he was now a professor. We drove up the hill from the quaint 1920s vintage train station through the sleepy town on an early Saturday morning. Meudon Observatory is part of the Paris Observatories, a nationally funded institute for higher learning. Not surprisingly, the observatory site is found at the very top of the town. The day of our visit was drizzly and gray, but we could still appreciate the beauty of the observatory's verdant setting. Historically, it was built as a summer palace and hunting lodge for French royalty. The grounds are still well-manicured, with topiary and box-cut trees, expansive lawns, and views that extend all the way to the center of Paris. Along the tree-lined paths is a scale model of the solar system from the Sun to Neptune, the distances between the sun and planets proportionately spaced. Even at a scale of 1m to 10 million km, it's still a hefty walk!

(Continued on page 11)



Planets Close To the Moon

Times are Hawaii Standard Time

July 10, 09h, M 3.3° NNW of Jupiter
(143° from sun in morning sky)

July 10, 09h, M 2.7° NNW of Neptune
(143° from sun in morning sky)

July 12, 21h, M 5.2° NNW of Uranus
(114° from sun in morning sky)

July 18, 01h, M 4.8° N of Mars
(51° from sun in morning sky)

July 18, 19h, M 5.9° NNW of Venus
(41° from sun in morning sky)

July 25, 00h, M 6.0° SSW of Saturn
(70° from sun in evening sky)

Mercury is closer than 15° from the sun
when near the moon in July

Other Events of Interest

Times are Hawaii Standard Time

July 2, 22h, Earth at aphelion (furthest
from sun). (1.01668 a.u.)

July 6, 23:21h, Moon Full

July 9, 07h, Jupiter 0.56° SSE of Neptune
(141° from sun in morning sky)

July 13, 09h, Moon 1.3° NNW of Juno
(109° from sun in morning sky)










July 13, 16h, Mercury at superior conj.
with sun. (passes into evening sky)

July 21, 16:34h, Moon New

July 21, Longest solar eclipse of the
century visible in Asia and the western
pacific. Partial solar eclipse visible in
Hawaii (from about 6:30 to 7:00 pm)

July 23, Astronomy Day

July 28, Delta Aquarid meteors (south)

 Mercury Visible low in the west after sunset during the last week of July.	 Venus Still more than 45° from the sun and dominates the morning sky.	 Mars Close to Venus in the predawn sky between the Pleiades and the Hyades.
 Jupiter Rises about 11:00 pm and is high in the morning sky in the predawn hours.	 Saturn Visible in the SW before sunset but must be viewed early before it gets too close to the horizon.	 Uranus Between Venus and Jupi- ter in the morning sky.
 Neptune Close to Jupiter in the morning sky.	 Dwarf Planet Pluto Reached opposition on June 23. View this dwarf planet in the late evening.	 Asteroid Juno Visible in the morning sky and will reach oppo- sition in September.

(Minutes continued from page 3)

take place on June 30th at P.F. Chang's Restaurant. Dr. Rolf Peter Kudritzki, director of the Institute for Astronomy at UH, will discuss the future of Mauna Kea and astronomy in Hawaii. Remember, pupus at 6 p.m. and discussion at 7 p.m.

Donation - As a thank you for their school star party, the students and faculty of Red Hill Elementary School made a generous donation of \$50 to H.A.S.

School Star Party Report: **Forrest Luke** reported that there would be at least two school star parties in during the Month of June.

June 4th - Waikele Elementary

June 8th - Camp Anuenue (Mokuleia) for American Cancer Society

Planetary Observations- We will have the opportunity to view the two largest planets of our solar system this month and in the upcoming months. Views of Saturn will be a real delight. Views of satellites of Saturn are to be savored while this planet is in the night skies. Jupiter will creep back into the evening skies this month. This is something to look forward to.

World Travels - **Joanne Bogan** reported that during a recent trip to France, she and **John Sandor** visited with former H.A.S. member, **Nicolas Bivet**, who is now back living and working in France.

Kona Weather Rocks- Vice President **Barry Peckham** urged all active sky watchers to get excited about Kona weather, which brings with it stable skies and good seeing.

Barry reported on his Kauai trip and sky watching with the outer island club. The Friday May 18th outing at Barking Sands was at first overcast but viewing was still a treat. The Saturday, May 19th star party at the Kaumakani Elementary School Baseball Field was well attended and everyone had a good time viewing Saturn.

Use Your Digital Cameras - Barry encourages active visual astronomers to use their personal digital cameras to capture views of the moon. Pictures of this type help individuals to view and learn more about the moon and its structures. Snapshots are great learning tools.

Shadow Transits - Keep your eyes peeled for shadow transits of the moons of Saturn. (See back cover photo by **Freddy Willems**) With the rings reflecting less light, we get to see more of the planets satellites, Titan, Iapetus, Enceladus, Mimas and Rhea. Keep an eye on the skies.

A Trip Across the Night Sky - **Joanne Bogan** with help from Vice President **Barry Peckham** dimmed the lights and took H.A.S. members on a trip across the Night Sky, to conclude our first meeting back in the Bishop Museum Planetarium. I always learn something!

As there was no further business, the meeting was adjourned at 8:59 p.m. Refreshments were served.

Respectfully Submitted,
Gretchen West



Meteor Log - July 2009

by Mike Morrow

The nights are a bit darker, but most showers are very minor. We could call them drizzles. Sporadic rates do improve.

Tuesday the 28th the **Delta Aquarids**. Radiant 22h36m, -16 deg. With luck rates should be about 15 meteors an hour. The Moon is good for this shower, thanks to Zena. The radiant is up about all night and the maximum may be over several days not only on one night. The meteors are mainly faint, medium-speed, but occasionally a bright meteor may be observed. A few may leave persistent trains.

If you are interested in observing meteors contact Tom Giguere at 672-6677, or write Mike Morrow, P.O. Box 6692, Ocean View, Hawaii 96737

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 27	28 Asteroid 2001 FE90 Near-Earth Flyby (0.018 AU) M 12.41	29	30	1	2	3	4 Earth At Aphelion (1.017 AU From Sun) Asteroid 7 Iris at Opposition (8.7 Magnitude)
Week 28	5	6	7 Full Moon 7:30p HAS Meeting	8	9	10	11 30th Anniversary (1979), Skylab Re-Enters Into Earth's Atmosphere Dillingham-Public Star Party
Week 29	12	13 Conjunction: Jupiter, Neptune.	14 3p Teleconference - Rocks & Ice in the Solar System	15	16	17	18 Club Star Party - Dillingham
Week 30	19	20	21	22 New Moon Total Solar Eclipse	23	24	25 Kahala/Waikele Star Party
Week 31	26	27	28	29 South Delta-Aquarids Meteor Shower Peak	30	31	1 Alpha Capricornids Meteor Shower Peak

HAS Yahoo Group

<http://tech.groups.yahoo.com/group/HawaiianAstronomicalSociety/>

(Cool Chemistry continued from page 4)

can break this bond, but the lower-energy photons from M-dwarf stars cannot. "Other nitrogen-bearing molecules are going to be affected by this same chemistry," Pascucci says, possibly including the precursors to amino acids and thus proteins. To search for HCN, Pascucci's team looked at data from Spitzer, which observes the universe at infrared wavelengths. Planet-forming discs around M-dwarf stars have very faint infrared emissions, but Spitzer is sensitive enough to detect them. HCN's distinctive 14-micron emission band was absent in the infrared spectra of the M-dwarf stars, but Spitzer did detect HCN in the spectra of 44 hotter, sun-like stars. Infrared astronomy will be a powerful tool for studying other prebiotic chemicals in planet-forming discs, says Pascucci, and the Spitzer Space Telescope is at the forefront of the field. Spitzer can't yet draw us a picture of alien life forms, but it's beginning to tell us what they could—and could not—be made of. "That's pretty wonderful, too," says Pascucci.

For news of other discoveries based on Spitzer data, visit www.spitzer.caltech.edu. Kids can learn Spitzer astronomy words and concepts by playing the Spitzer "Sign Here!" game at spaceplace.nasa.gov/en/kids/spitzer/signs.

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.



NIGHT SKY NETWORK NEWS

by John Gallagher

Mark your calendar for another IYA 2009 Teleconference on Tuesday, July 14th with the theme Rocks and Ice in the Solar System with Dr. Peter Jenniskens. Teleconference begins at 3:00 pm (local time). Contact Night Sky Network Coordinator, **John Gallagher**, 683-0118 for details on downloading the power point presentation. Details are also posted on the HAS Yahoo Group Calendar.

Most Night Sky Network (NSN) Teleconferences are held around 3:00 pm (Local Time). This is inconvenient for many club members. There are several options. Joining the NSN is the most logical since all teleconference material (PPT, transcript of the presentation, MP3 file) is posted on the NSN site and can be downloaded. Joining the NSN is easy. Provide the club's NSN Coordinator, John Gallagher, (gallaghej002@hawaii.rr.com) with your real name, e-mail address, and phone number. The NSN Coordinator will get you registered, an e-mail will be sent to you by the NSN which you can later change. You will receive one or two e-mails per month with update info on the NSN plus upcoming teleconferences.

However, some members may get the "hibi jibis" about joining the NSN. To encourage members to listen to some of the teleconferences (there are many really good ones), I will provide an alternate method. Send me an e-mail with the name of the teleconference you would like to hear and what you would like - PPT, transcript, MP3 file. Only one teleconference request per e-mail. I will download the files and send it to you. The PPT and MP3 files average 25-35 MB so be sure your e-mail program can handle. For obvious reasons, I will limit you to 5 requests total (remember, one request per e-mail). Once you need more than 5, you should join the NSN.

For members who are in no hurry and enjoy taking a slow boat to China, there is still another option. Bring either a CD or DVD to a club meeting. I will copy your request(s) up to 5 maximum and return the CD or DVD to you at the next club meeting.

Since you will need a list of the teleconferences available, just send me a request. I have a list of most of the teleconferences that I can send you. It is in MS Word format. I also make this list available at club meetings for viewing.

Now what could be easier?



HAS Financial Report for the month ending as of June 15, 2009

Initial Balance:	\$5,009.06
<i>Receipts:</i>	
Dues Received	122.00
Donations	95.00
Magazine Payment	32.95
T-Shirt Sales	85.00
Total Income:	\$249.95
<i>Expenses:</i>	
Astronews	159.96
Magazine Subscription	66.95
Postage	5.54
Astronomical League Dues	665.00
Total Expenses:	\$897.45
Final Balance	\$4,361.56

There are two new members this month. They are ***Dave Millar*** and ***Martha Noyes***. A special thanks to the Red Hill Elementary School and Wallace Izuo for their donations. Thanks and clear skies to all renewing their membership during the month.

FROM MOLOKAI TO MACHU PICCHU:

A talk by Michael Chauvin at
the next HAS meeting
July 7, Bishop Museum
Planetarium
7:30 PM

Upcoming Star Parties

Public Party- Dillingham July 11

Club Party-Dillingham July 18

Kahala/Waikele Party July 25

Upcoming School Star Parties 2009


No school parties scheduled for July

If you are interested in helping out at a school star party, sign up at the HAS meeting or contact the star party coordinator, FORREST LUKE at 623-9830 or lukef003@hawaii.

(President continued from page 1)

base that can be continually occupied while infrastructure is expanded as has been done on the International Space Station.

Living on the Moon will provide experience that should prove valuable for those who will go to Mars. Other destinations in the solar system will eventually be settled as well. Beyond that, though, the vast distance to even the nearest star makes it unlikely that we will venture that far without technological leaps we may never achieve. However, there is no such limit on what astronomy can teach us. The universe is an inexhaustible reservoir of wonder that telescopes will continue to reveal to us for the next 400 years and more.

Chris 

(Meudon Observatory continued from page 5)

What is left of the former royal chateau is a single wing, which with the addition of a large dome in 1893, transformed the abandoned palace into an observatory. The aging building holds an interesting museum on the lower floor, with educational displays about telescopes, the history of astronomy and the universe, and the types of discoveries that were made at the Paris Observatories. Marble floors and columns decorate the cupola, with picture windows overlooking the gardens. There are scale models of many of the world's largest telescopes. The upstairs dome and 33" "Grand Lunette" refractor were in a suspended state of repair, so we could not view the grandeur of the observatory's main instrument, one of the world's three largest refracting telescopes. Several other observatories were added in modern times. The first one we visited revealed what appeared to be Nicolas' telescope, only blown up by a factor of ten and sitting on a large equatorial mount. It had the same rectangular white-painted wooden box frame, so we could instantly see the likeness to Nicolas' personal scope design. Graduate students still occasionally use this 60cm Schmidt scope for observations, so there was a small shed-like plywood office with computer and desk sitting in the dome. We also were shown a one meter Cassegrain reflector behemoth, and a siderostat solar telescope that has been making continual daily observations of solar activity for over 100 years. What appeared to be an airport control tower was a large solar spectrograph, built in 1964. Alas, there was no possibility to view the sun on the day we visited. Like many old observatories that were built in their time far at the outskirts of growing cities, visual astronomy from Meudon is now greatly impaired due to surrounding light pollution. Meudon Observatory surely ranks highly as a beautiful location to work, but the lights you see twinkling at night from there are more likely to be from the Eiffel Tower than from distant stars.

We had lunch with Nicolas at a charming bistro in the city of Versailles, where he has his residence. Afterwards, a visit to the ornate Palace of Versailles was a must, even though the entry lines were long and we couldn't talk them into giving Nicolas a kama'aina admission discount. Our day wrapped up with a visit to his apartment home, where we enjoyed tea and dessert while looking through some of his albums of astronomical drawings, many dating back to his teenage years.

Check out this link to see some of Nicolas' superb drawings:
<http://www.wusr2.obspm.fr/~biver/planetnews.html#saturn> (click on links to Mars, Jupiter and Saturn)

Also, see the remarkable pictures of the ISS taken through his telescope:
http://spaceweather.com/submissions/large_image_popup.php?image_name=Nicolas-Biver-ISS280409-2h56-anim_1241024776.gif ☆

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Titan transits Saturn 30May09 photo credit club member *Freddy Willem's*

All images are taken with the Meade 14" f/10 LX200 UHTC, Located at Freddy's rooftop in Waipahu, Hawaii.

Camera used DFK21AU04 as color version Imaging Source. Each image was stack 2000 out of 4500 taken. Processed in Registax V5 and Astra Image.

Animated GIF made in Photoshop ImageReady. 14 Avi's were used to make the animation. Each Avi duration was 180 sec. at frame rate 30 fps, exposure time 1/30; gain set at 850, gamma set at 95.

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