See story on page 5.

Image credit: NASA/JPL-NOAA

A relatively new type of El Niño, which has its warmest waters in the central-equatorial Pacific Ocean, rather than in the eastern-equatorial Pacific, is becoming more common and progressively stronger, according to a new study by NASA and NOAA. The research may improve our understanding of the relationship between El Niños and climate change, and has potentially significant implications for long-term weather forecasting.



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Hawaiian Astronomical Society



www.hawastsoc.org

President's Message

by Chris Peterson

For those who haven't heard, I have to pass along some sad news. Forrest Luke, our star party coordinator for more than a quarter century, died of a heart attack at his home on July 23rd at the age of 71.

Forrest was an aviation meteorologist with the Air Force where he attained the rank of major. He later taught physics at several schools in Honolulu, ending up at Leilehua High School until his retirement in 2002. Memorial services were scheduled in his childhood home of Joplin, Missouri.

He was with the club so long that it has been hard to figure out when he joined and when he began coordinating our star parties. The earliest date that's been mentioned to me is 1984. If anyone has more accurate information or corrections to this report, please let me know so I can include them in my next message.

Most current members of HAS who have ever attended a meeting will recall Forrest reporting on recent observing sessions, informing us of upcoming star parties, and passing around his clipboard to get enough volunteers signed up to cover the next month's events. Star party coordinator was not an

(Continued on page 11)

	Upcoming Star F	Parties ☆	
Club P	arty-Dillingham	Sept. 4	
Public	Party-Dillingham	Sept. 11	
Kahala	/Waikele Party	Sept. 18	

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President's Message			
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Night Sky Network News			
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Meteor Log			
Treasurer's Report			

Upcoming Events:

calendar

☆ The next meeting is 7:30PM on **Tues., Sept. 7** at the Bishop Museum Planetarium

☆Bishop Museum's next planetarium shows with Barry Peckham are Friday, Sept. 3 & 17 at 8:00 p.m. www.bishopmuseum.org/

The next Board Meeting is Sunday, **Sept. 5** at 3:30 p.m. at the POST building at UH.



FORREST THROUGH THE TREES..

I'm not trying to turn this month's newsletter into the "Forrest Luke Memorial", however I do feel compelled to recognize his service to both the "HAS's" that I represent.

Club president Chris Peterson has already given tribute to Forrest in his column, and club member Gary Ward contributed some nice photos as well.

I would also like to add my thoughts about the Forrest I knew through my vocation with the Hawai'i Academy of Science.

Truthfully, I had some trouble figuring out what to say about Forrest. But it's not what you think! It's just that I didn't know him that well. However, this is what I did know of him through our short association:

1) He loved to talk;

2) He was a dedicated volunteer that followed through on whatever tasks he committed himself to;

3) He loved to talk;

4) He always put kids and education first and never let his ego get in the way of teaching;

5) He loved to talk;

6) He truly cared about science and science education;

7) He loved to talk.

I totally appreciated Forrest the during last two years when I coordinated the state science fair, as he was our main "muscle" for many years prior as well. He was responsible for moving the science fair office to the venue, then 3 days later moving us back. He would show up without fail and use his own truck to transport our equipment and supplies.

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School Star Party Coordinator Forrest Luke

The Astroneus 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.

The Astroneus

(President ontinued from page 1)

official club position to which Forrest was elected. It was just a job that needed to be done, so he did it. In recent years he also was a regular participant in the first quarter Moon star parties held at Waikele Community Park.

Forrest was a strong advocate of science education. He was involved with the Hawaii Science Teachers Association and the American Association of Physics Teachers. He also contributed to various educational efforts through the Institute for Astronomy and other organizations.

Forrest held strong opinions and was not reluctant to share them with others! He could be a little abrasive at times, but no one can doubt his dedication to serving the astronomical community in Hawaii. We will miss him and his service to the club. For the time being, John Gallagher has agreed to coordinate our star parties. Please send star party inquiries his way.





HAS lost longtime member and active club volunteer FORREST LUKE who passed away on Aug. 12. Survived by his wife Pauline and two sons, Forrest will be also missed by many in the club and the community.

Treasurer's Report

by Jim MacDonald

HAS Financial Report for the month ending as of Aug. 15, 2010

Initial Balance:	\$4,499.34	
Receipts:		
Donations	100.00	
Dues Received	150.00	
Magazine Payments	34.00	
Total Income:	\$284.00	
Expenses:		
Astronews	167.13	
Magazine Subscription	34.00	
Postage	7.17	
Total Expenses:	\$208.30	
Final Balance	\$4,575.04	

We gained a new members this month with *Sebastien How*. In addition, *Russell Shigeoka* has also rejoined the club. A special thanks to *Susan Girard* for her donation to HAS in memory of *Forrest Luke*.

Thanks and clear skies to all renewing their membership this month.

HAS Policy Statement On Use Of Lasers (Adopted July 6, 2004)

1. No laser in excess of 5mW output shall be used by any person at any event sponsored by the Hawaiian Astronomical Society (HAS). This restriction also applies to HAS members participating in events sponsored by other organizations such as schools, scouting groups, churches, etc., which include HAS as a participating organization. This maximum output level will not exceed lasers found in category Class IIIA as spelled out in ANSI Z136.1-1993.

2. Individuals using lasers are expected to exercise utmost caution in their handling of such instruments. Lasers used as pointers should only be aimed skyward, not at any aircraft, or where they might reflect off of shiny surfaces, or where there is a possibility of hitting any person or animal. Telescopes in the process of being aligned by a laser need to be pointed in such a manner that any laser beam escaping from the scope's optics will be directed skyward.

Meeting Minutes

President *Chris Peterson* called the August 3, 2010 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 22 members and two visitors in attendance.

Passing – Chris Peterson informed the membership of the passing of *Forrest Luke*. Forrest had been a long-time member and had worked tirelessly as the club's Star Party coordinator and provided service to the club for a number of years. His passing will leave a void in our group. Member *Sue Girard* has made a donation to the Hawaiian Astronomical Society in his name. *John Gallagher* will assume the duties of Star Party Coordinator.

School Star Party Report: John Gallagher reported that the Island Pacific Academy's Starry Night activity in Kapolei on July 16th was a success. Seven astronomers from the Hawaiian Astronomical Society along with four other astronomers associated with the school provided the large crowd with good views of the night skies.

Hawaii Space Lecture Series: HAS President Chris Peterson reports that the next lecture in the series will take place at 7:30 pm, Tuesday, August 24th. The subject of this month's talk will be "The Hawaii Space Flight Laboratory: UH Goes to Space." The speaker will be Dr. Luke Flynn of the Hawaii Institute of Geophysics and Planetology at the University of Hawaii. Contact NASA PRPDC at 808-956-3132 or go to http://www.higp.hawaii.edu/prpdc for more information.

Visitors – We were happy to welcome two visitors to our meeting this week. Club member and IFA associate *Mary Kadooka* brought *Jared* to our meeting. Jared is interested in creating a science project associated with astronomy. And former HAS member *Russell Shigeoka* is striking up a new relationship with the club to help his son with his astronomy merit badge for scouting.

FYI – President Chris Peterson reports that the Mars Spirit rover remains silent.

The 2009 Legislative session saw the formation of a coordinating committee to report on and make suggestions regarding the Starlight Reserve Bill. *Chris Peterson* attended the first coordination meeting on July 13th for *Harry Zisko* who was unable to attend. The Hawaiian Astronomical Society was named as an "interested group" and we have been asked to contribute input. Jim Crisafulli chairs the Starlight Reserve recommendation committee. Dr. Richard Wainscoat of IFA made a detailed presentation to the group. The legislation hopes to enact restrictions on lighting to reduce light pollution and light trespass. The next meeting for the recommendation committee should take place in September 2010 for recommendations to the next legislative session. The group will be looking at legislation in place on the Mainland and internationally. Anyone interested in viewing the legislation may look for Hawaii SB536-2009.

Teleconference – John Gallagher reported on the last teleconference which took place on July 22nd and discussed the International Observe the Moon Night. The event will take place September 18th and amateur astronomers will introduce the public to the face of the moon.

Sky Tools III – Jim MacDonald reports that club members have the opportunity to make a group purchase of the update of Sky Tools, Sky Tools III, at a reduced group price. If you are interested in details regarding the purchase, please contact Jim MacDonald. To acquaint members with the virtues of the software, *Paul Lawler* took the assembled members on a viewing tour of the software. Paul showed the group how to set parameters for individual use and the results that can be achieved. The software can provide users with useful sky maps of differing depth of field for whatever type of scope or eyepiece astronomers wish to employ. Paul fielded a variety of questions from members.

The Astronews



The Turbulent Tale of a Tiny Galaxy

By Dr. Tony Phillips

Next time you hike in the woods, pause at a babbling stream. Watch carefully how the water flows around rocks. After piling up in curved waves on the upstream side, like the bow wave in front of a motorboat, the water speeds around the rock, spilling into a riotous, turbulent wake downstream. Lightweight leaves or grass blades can get trapped in the wake, swirling round and round in little eddy currents that collect debris.

Astronomers have found something similar happening in the turbulent wake of a tiny galaxy that is plunging into a cluster of 1,500 galaxies in the constellation Virgo. In this case, however, instead of collecting grass and leaves, eddy currents in the little galaxy's tail seem to be gathering gaseous material to make new stars.

"It's a fascinating case of turbulence [rather than gravity] trapping the gas, allowing it to become dense enough to form stars," says Janice A. Hester of the California Institute of Technology in Pasadena.

The tell-tale galaxy, designated IC 3418, is only a hundredth the size of the Milky Way and hardly stands out in visible light images of the busy Virgo Cluster. Astronomers realized it was interesting, however, when they looked at it using NASA's Galaxy Evolution Explorer satellite. "Ultraviolet images from the Galaxy Evolution Explorer revealed a long tail filled with clusters of massive, young stars," explains Hester.



In the ultraviolet image on the left, from the Galaxy Evolution Explorer, galaxy IC 3418 leaves a turbulent star forming region in its wake. In the visible light image on the right (from the Sloan Digital Sky Survey), the wake with its new stars is not apparent.

(Space Place continued from page 4)

Galaxies with spectacular tails have been seen before. Usually they are behemoths large spiral galaxies colliding with one another in the crowded environment of a busy cluster. Tidal forces during the collision pull gas and stars of all ages out of these massive galaxies to form long tails. But in IC 3418, the tail has just young stars. No old stars.

"The lack of older stars was one tip-off that IC 3418's tail isn't tidal," says Hester. "Something else must be responsible for these stars"

Hester and eight coauthors published their findings in the June 10, 2010, issue of The Astrophysical Journal Letters. The team described the following scenario: IC 3418 is speeding toward the center of the Virgo cluster at 1,000 kilometers per second. The space between cluster galaxies is not empty; it is filled with a gaseous atmosphere of diffuse, hot hydrogen. Thus, like a bicyclist coasting downhill feels wind even on a calm day, IC 3418 experiences "a stiff wind" that sweeps interstellar gas right out of the little galaxy, said Hester—gas that trails far behind its galaxy in a choppy, twisting wake akin to the wake downstream of the rock in the babbling brook. Eddy currents swirling in the turbulent wake trap the gas, allowing it to become dense enough to form stars.

"Astronomers have long debated the importance of gravity vs. turbulence in star formation," Hester noted. "In IC 3418's tail, it's ALL turbulence."

To many astronomers, that's a surprising tale indeed.

See other surprising UV images from the Galaxy Evolution Explorer at http://www.galex.caltech.edu. Kids (and grownups) can play the challenging new Photon Pileup game at http://spaceplace.nasa.gov/en/kids/galex/photon/.

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



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The Astronews

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Hawaiian Astronomical Society Event Calendar



(FORREST continued from page 2)

Forrest also served in many other volunteer capacities during the science fair as well, and although he had his share of opinions on many things, he could *always* be counted on to perform his duty and never ask for much in return. Maybe just a friendly ear to listen.

Both the astronomy club and the Academy of Science have lost a strong and dedicated volunteer. His passion will truly be missed.

Editor



The Astroneus



The Exploratorium Museum in San Francisco has added a new section to it's web site called "Never Lost", which concerns itself with Polynesian navigation of the oceans. The features include a planetarium so that you learn the Hawaiian names for the constellations.

The URL is: http://www.exploratorium.edu/neverlost

NASA/NOAA Study Finds El Niños are Growing Stronger

Tong Lee of NASA's Jet Propulsion Laboratory, Pasadena, Calif., and Michael McPhaden of NOAA's Pacific Marine Environmental Laboratory, Seattle, measured changes in El Niño intensity since 1982. They analyzed NOAA satellite observations of sea surface temperature, checked against and blended with directly-measured ocean temperature data. The strength of each El Niño was gauged by how much its sea surface temperatures deviated from the average. They found the intensity of El Niños in the central Pacific has nearly doubled, with the most intense event occurring in 2009-10.

The scientists say the stronger El Niños help explain a steady rise in central Pacific sea surface temperatures observed over the past few decades in previous studies-a trend attributed by some to the effects of global warming. While Lee and McPhaden observed a rise in sea surface temperatures during El Niño years, no significant temperature increases were seen in years when ocean conditions were neutral, or when El Niño's cool water counterpart, La Niña, was present.

Since the early 1990s scientists have noted a new type of El Niño that has been occurring with greater frequency. Known as "central-Pacific El Niño," "warm-pool El Niño," "dateline El Niño" or "El Niño Modoki" (Japanese for "similar but different"), the maximum ocean warming from such El Niños is found in the central-equatorial, rather than eastern, Pacific. A recent study found many climate models predict such events will become much more frequent under projected global warming scenarios.

Lee said further research is needed to evaluate the impacts of these increasingly intense El Niños and determine why these changes are occurring. "It is important to know if the increasing intensity and frequency of these central Pacific El Niños are due to natural variations in climate or to climate change caused by human-produced greenhouse gas emissions," he said. *(See NOAA/NASA images on back cover)*

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Observer's Notebook - Sept. 2010 by Jay Wrathall

Planets Close To the Moon Times are Hawaii Standard Time

Sep 9, 08h, M 7.2° SSW of Saturn (19° from sun in evening sky)

Sep 10, 18h, M 4.8° SSW of Mars (39° from sun in evening sky)

Sep 11, 04h, M 0.56° SE of Venus (44° from sun in evening sky)

Sep 20, 03h, M 4.2° NNW of Neptune (149° from sun in evening sky)

Sep 22, 18h, M 6.5° NNW of Jupiter (175° from sun in midnight sky)

Sep 22, 19h, M 5.7° NNW of Uranus (175° from sun in morning sky)

Mercury is closer than 15° from the sun when near the moon in September. Sep 27, 05h, Venus brightest, Mag. -4.6.

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Other Events of Interest Times are Hawaii Standard Time

Sep 3, 02h, Mercury at inferior conj. with **sun** (Passes into morning sky)

Sep 8, 00:29h, Moon New

Sep 18, 14h, Jupiter 0.81° SSE of Uranus $(177^{\circ} \text{ from sun in midnight sky})$

Sep 19, 07h, Mercury at greatest elongation (17.9° west of the sun in morning sky)

Sep 20, 15h, Asteroid 6 Hebe

at opposition

Sep 21, 01h, Jupiter at opposition

Sep 21, 07h, Uranus at opposition

Sep 22, 17:13h, Autumn Equinox

Sep 22, 23:18h, Moon Full

Sep 30, 15h, Saturn at conj. with sun. (Passes into morning sky)

The Astroneus

کې Mercury	Q Venus	O ^{* Mars}	
Has its best morning appa- rition of the year, reaching greatest elongation on Sep 19.	Shines brightly in the evening sky, reaching greatest brightness on Sep 27 (Mag -4.6).	Between Venus and Sat- urn in the evening sky, at about magnitude +1.5.	
외 ^{Jupiter}	 わ Saturn	O Uranus	
Reaches opposition Sep 21. This opposition is the nearest perihelion and so Jupiter is brighter than it will be until 2022.	Reaches conj. with the sun on Sep 30, but may be viewed the first week of the month low in the west after sunset.	Reaches opposition on Sep 21. Less than a degree from Jupiter Sep 18.	
₩ Neptune	P Dwarf Planet Pluto	Asteroid 6 Hebe	
Rises before midnight and is visible in the morning sky.	Still in view north of the Sagittarius "teapot" in the very early evening.	Reaches opposition on Sep 20 at mag +7.1.	

(Minutes continued from page 3)

Planetarium guide and longtime member Joanne Bogan lead us through the summer skies over Hawaii, showing us which planets are visible and other interesting objects.

As there was no further business, the meeting was adjourned at 9:12 p.m. Refreshments were served.



*			
Thurs.	9/16	Nui Valley Middle School	
Wed.	10/13	Mililani Uka Elementary	
Fri.	10/15	Mililani Ike Elementary	
Fri.	11/12	Leihoku Elementary, Waianae	
Fri.	12/10	Kamehameha Schools (Pending)	

If you are interested in helping out at a School Star Party, sign up at the HAS meeting or contact the Star Party Coordinator: John Gallagher at 683-0118 (leave message) or e-mail at gallaghej002@hawaii.rr.com. If you are contacted for a School Star Party please have the school submit a request at http://nightsky.jpl.nasa.gov/club-eventrequest.cfm?Club ID=453 (note underline between Club ID).



International Observe the Moon Night (InOMN) 2010:

This is the first annual public outreach event dedicated to engaging the lunar science and education community, amateur astronomers, space enthusiasts, and the general public in annual lunar observations that share the excitement of lunar science and exploration. Your club will be participating and your help is needed.

In addition to the obvious need for telescopes, help will be needed to greet visitors and pass out handouts on the moon. Notices of this event will be submitted to the local newspapers to attract the public.

This event takes place on September 18, 2010 which is a Saturday night and just happens to be one of our regular star party nights at Kahala and Waikele Community Parks. Plan now to be a participant and support your club.

Clear Nights, John G. 27

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