



# The Pacific Tradewinds Quarterly

The official newsletter of the Schools of the Pacific Rainfall Climate Experiment

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## SPaRCE Coordinator Says "Goodbye"

By Nikki Acton

After three years working as the SPaRCE Coordinator my time has come to say goodbye. My fiancé is starting his Ph.D. in a few months so we are moving 2300 kilometers from Oklahoma to South Florida. I will be finishing my Master's degree by the end of the year with my thesis "Future and Historical Rainfall Trends in the South Pacific." Once I finish, I look forward to contributing part of my thesis to a future issue of *The Pacific Tradewinds Quarterly*.



One of my favorite things about being the SPaRCE Coordinator was talking to our participants and sponsors over email and getting letters in the mail. Even though I am no longer working for SPaRCE, I would still love to hear from you. Feel free to drop me an email and let me know how things are going. I also enjoyed learning about the different countries and cultures in the Pacific.

It has been a lot of fun explaining to people what I did for my job. The truth is no one else has a job quite like

the SPaRCE Coordinator. I would like to thank Susan Postawko and Mark Morrissey with their efforts to keep SPaRCE up and running over the last 15 years. I also want to give a huge thanks to Mike Klatt for all of the help over the years. Lastly, I cannot thank Scott Greene enough for hiring me for the position. I would have never believed all of the opportunities that would result from my initial hire with SPaRCE.

I know that SPaRCE and PACRAIN will continue to grow and prosper as more people become aware of the Earth's changing climate. The rainfall records collected from SPaRCE participants are important for this very reason. SPaRCE brings a unique aspect to the table by involving schools, teachers, and students, and I am happy to be able to say that I was able to work on such a wonderful project.

I've never been good with saying goodbye, as I usually just end up in tears. However, it is hard to end up in tears whenever you are sitting outside, and palm trees are all around, and the ocean is just a few miles away. I fully understand why everyone in the Pacific seemed so happy when I talked to them. In all seriousness, I will miss everyone in Oklahoma and all of my friends I have made out in the Pacific.

Blue underlined text is clickable in the electronic version of the newsletter.

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## Tonga Plans to Install Rooftop Solar Systems

150 Electric systems to curb fossil fuel dependence

Friday, May 6, 2011

Nukualofa, Tonga—The Government of Tonga has announced plans to enable the setup of rooftop solar electric systems around the country, as part of on going efforts by the Tonga Energy Road Map [TERM] to help curb dependence on fossil fuels.

At a special handover event at St Andrew's High School last weekend, the Prime Minister Lord Tu'ivakano declared an initial target of 150 rooftop PV systems to be installed by the private sector by 2012.

These can produce more than 1 megawatt of electricity, or about 5 percent of the country's electricity consumption. Currently, 99 percent of local power is generated from fossil fuels.

"My government is determined to explore every possible channel under TERM, to see that we adhere to the scheduled program of actions adopted by IRENA [International Renewable Energy Agency], so that we are able to achieve the required percentage of fuel reduction by the set timelines," said the Prime Minister.

St Andrew's High School will be given an 8 kilowatt PV solar system as a donation from European solar energy management company ImmoSolar. The project is one of a number of similar programs on TERM's agenda over the next couple of years.

Presenting the donation for ImmoSolar was Raphaël Domjan, initiator of the PlanetSolar project, whose mission to sail around the globe using only solar energy brought the world's largest solar-powered ship for an overnight stop in Tonga last week.

At a special reception hosted for the crew, politicians – including long time MP 'Akilisi Pohiva – diplomats, local business people, and members of the media heard about Government's plans to inte-



grate renewable energy policies as a vital part of Tonga's future.

"It goes without saying, that renewable energy is the way forward, but it is also the answer to our current needs in finding a healthier environment... [Through TERM] we can only look forward to a more prosperous living standard for our people," said the Prime Minister.

The Government of Tonga developed the Tonga Energy Road Map in 2009 with the aim of cutting green house gas emissions and improving national energy security. TERM works by bringing together various donors under a single sector-wide scheme to support renewable energy use through modern, environmentally sustainable ways.

From: Pacific Islands Report (<http://pidp.eastwestcenter.org/pireport/2011/May/05-09-13.htm>)

Source: [Taimi Media Network](#)  
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## Scientists Find 1,000 New Species on Vanuatu's Santo

Tuesday, June 7, 2011

Wellington, New Zealand— The results of a broad study of the biodiversity of the Vanuatu island of Santo have been made available to the Vanuatu authorities.

The study involved more than 150 researchers from 25 countries who spent several months in 2006 on Santo to examine the island's reefs, forests and rivers.

The project was led by Philippe Bouchet of the Natural History Museum in Paris, a French university professor, Herve Le Guyader, and Olivier Pascal of pro-Natura International.

The team catalogued thousands of species and is believed to have found more than a thousand new ones.

The findings are contained in an illustrated 500-page book called the *Natural History of Santo*.

Reprinted From: Pacific Islands Report (<http://pidp.eastwestcenter.org/pireport/2011/June/06-08-06.htm>)

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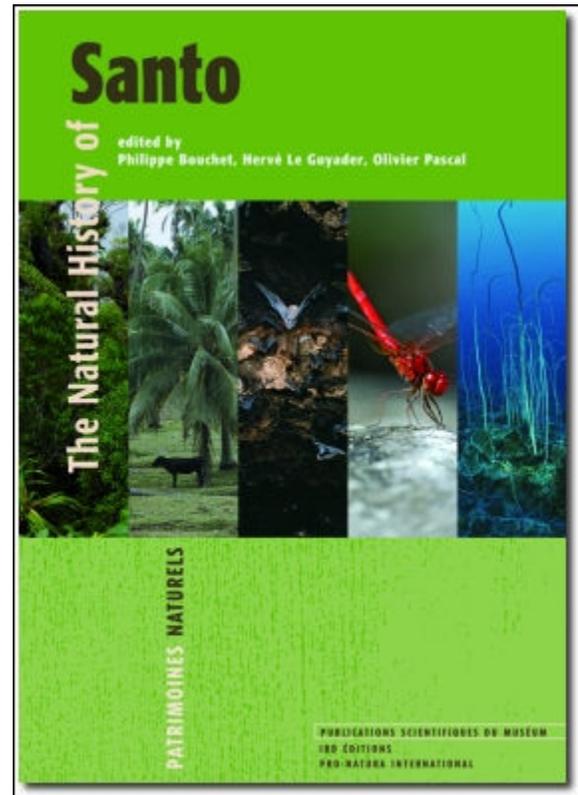


Image Courtesy of Radio New Zealand International

## Fiji Plans Biomass Power Plant

### Japanese to Consult on the Project

Sunday, June 26, 2011

By Nanise Loanakadavu

Plans are under way to set up a biomass-fired power plant similar to the one at Kawasaki, Kanagawa in Japan.

A team from the Japanese company is expected to visit Fiji shortly for consultations on some specific issues that still need to be clarified from Fiji.

This follows the President Ratu Epeli Nailatikau's visit to the Kawasaki Biomass Power Plant early this week.

The 33 MW Kawasaki Biomass Power station generates power using wood residuals from areas such as logging, forestry and construction.

The company provided a brief outlook about their investment intentions for Fiji and is currently on the design phase of their proposed investment in Fiji's renewable energy sector.

The Ministry of Foreign Affairs revealed that a major advantage of the biomass plant proposed for Fiji is that it does not require a specific plant or wood type to be the raw material for energy generation.

During the discussion it was noted in that the availability of fuel in Fiji, in the form of wood material, and other vegetation would greatly benefit Fiji's use of biomass generated power.

The ministry says this plant proposed for Fiji operates on any wood waste that is readily available.

The Fiji Embassy in Tokyo has been consulting with the Ka-

*continued on next page*

wasaki Biomass Power Plant management since March.

This is consistent with the Government's initiatives to reduce fossil fuel import costs through the introduction of clean and renewable energy sources.

Ratu Epeli was accompanied by Ambassador Isikeli Mataitoga, the official secretary Joeli Rokovada, and other officials.

On arrival at the plant, Ratu Epeli was received by the president of the Kawasaki Biomass Power Plant, Hiroaki Togawa and Hiroshi Murakami, the general manager.

He was given a conducted tour of the plant followed by detailed briefing from plant officials on its operation.

The visit was organized by the Fiji Mission in Tokyo and officials of the Kawasaki Biomass Power Plant, to view clean and renewable energy processing methods utilized at the plant.

Ratu Epeli was impressed with the two concepts adopted by the plant. The first of which is the generation of electricity from raw materials many may consider as waste. The second is the ability to use whatever plant material is available rather than being forced to plant a certain variety of vegetation species.

From: <http://pidp.eastwestcenter.org/pireport/2011/June/06-27-17.htm>  
 FijiSUN:  
<http://www.sun.com.fj/>  
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## Brain Teasers

### Sudoku

Complete the grid such that every row, every column, and the nine 3x3 blocks contain the digits from 1 to 9.

		1	4		5	3		
				1				
6		9	7		8	5		1
4		6				8		5
	8						9	
5		7				6		2
9		2	1		6	4		8
				2				
		4	9		3	2		

Puzzles devised by © Kevin Stone  
[www.brainbashers.com](http://www.brainbashers.com)

### Math Quiz



1. Fred can eat 27 chocolates in a hour, Alice can eat 2 chocolates in 10 minutes, and Kelly can eat 7 chocolates in 20 minutes. How long will it take them to share and eat a large box of 120 chocolates ?
2. Can you find a seven digit number which describes itself. The first digit is the number of zeros in the number. The second digit is the number of ones in the number, etc. For example, in the number 21200, there are 2 zeros, 1 one, 2 twos, 0 threes and 0 fours.

**Look for answers in the next newsletter!**

**Previous newsletter puzzle answers:**

Sudoku

6	7	5	8	1	3	9	4	2
9	1	3	2	4	7	5	8	6
2	4	8	5	9	6	7	3	1
1	2	9	4	3	5	6	7	8
5	8	4	7	6	2	1	9	3
7	3	6	1	8	9	2	5	4
8	5	7	3	2	1	4	6	9
4	9	1	6	5	8	3	2	7
3	6	2	9	7	4	8	1	5

Math Quiz

1. 120 times: don't forget rooms 440-449.
2. Hours in 10 years. In a day there are 60 x 60 x 24 seconds = 86,400 seconds. In 10 years there are 10 x 365 x 24 hours = 87,600 hours, which even without the leap years is already the larger number.

## What's Going on with SPaRCE:

Greetings all!

This will be my last shout-out to my friends and readers of The Pacific Tradewinds Quarterly. Please join me in welcoming Jonathan Moore as the new SPaRCE Coordinator (he might look a bit familiar, hint: he was in the Get to Know of the previous newsletter issue). From this point on please direct any electronic correspondence to [sparcecoordinator@gmail.com](mailto:sparcecoordinator@gmail.com). I know that Jonathan is excited to get to know everyone. If you have a chance, send him an email or letter and introduce yourself.

Unfortunately, our trip to the Pacific Educators Conference in Pohnpei had to be cancelled. If you were looking forward to meeting Susan and me, we do apologize. SPaRCE and PACRAIN will still make an appearance in the Pacific this year as Susan and Mark are attending the Pacific Regional Meteorological Service Directors meeting in Majuro from August 8-12. Be sure to contact them if you will be in the area, they would love to hear from you!

I wish everyone the best of luck in the future.

Sincerely,

Nikki Acton

## Contribute to the Newsletter!

### Put Your Story in the SPaRCE Newsletter!

In order to get to know our schools and participants a bit better, please send us items to be published in the SPaRCE newsletter.

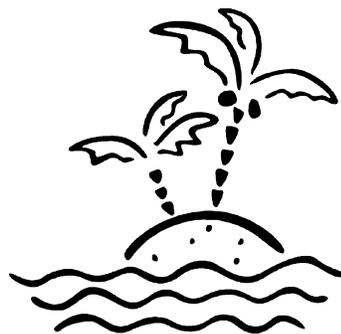
Here is a list of ideas:

- Accounts of extreme weather events
- School history
- Pictures of students taking measurements
- Activities using SPaRCE data
- Songs or poems about weather
- Any other interesting facts about your school or culture.

### Do You Have Questions?

### We Want To Answer Them!

If you or your students have any questions relating to science please send them to us here at SPaRCE. Once we receive a question we will publish the question and an answer in the next newsletter.



## Classroom Science Focus

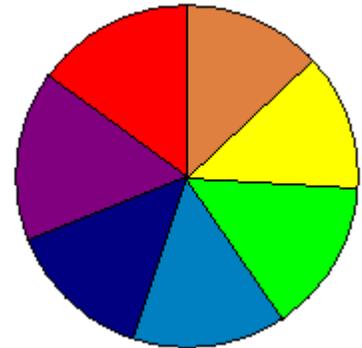
# Rainbow Pinwheel Experiment

Light is one of the most amazing things in nature. The light from sun carries with it all the colors of the rainbow, but we usually only see light as white in color. This occurs because different wavelengths of light, that is the different colors of light, combine together to form white light.

This experiment will allow you to see how combining the different colors lets you see white light.

### Materials Needed:

- \*\* Cardboard circle of about 30 cm (12 in) diameter. This can be from any old box. It helps to make sure the circle is just right.
- \*\* One sheet of paper of EACH of the following seven colors:  
Red, Orange, Yellow, Green, Blue Indigo (purplish dark blue) and Violet.
- \*\* A piece of wood dowel, any length (Pencils work great).
- \*\* A thumbtack or push pin.



### Procedure:

Step 1: Cut out 7 wedges, one of each of the above mentioned colors.

Step 2: The wedges need to each be the same size. If you are using a protractor, the angle of each wedge is 51.4 degrees.

Step 3: Arrange the wedges around the center of the cardboard circle, as shown in the picture above.

Step 4: Paste these wedges onto the cardboard circle in the order shown in the picture.

Step 5: Put the thumbtack or pushpin through the centre of the cardboard circle and pin it to the flat end of the piece of dowel. It must be loose enough to spin freely.

Step 6: Take the pinwheel outside into bright light. Spin it as fast as you can and see what happens.

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Visit us on the web!

<http://sparce.evac.ou.edu/>

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## ENSO Discussion

Issued by The Climate Prediction Center/NCEP 7 July 2011

**Synopsis:** ENSO-neutral conditions are expected to continue into the Northern Hemisphere fall 2011.

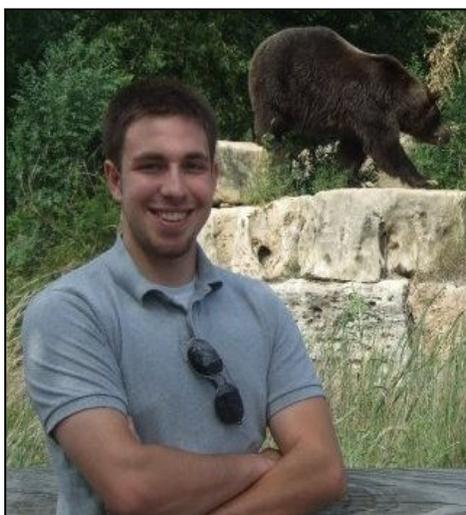
During June 2011, ENSO-neutral conditions continued as reflected by the overall pattern of small sea surface temperature (SST) anomalies across the equatorial Pacific Ocean. All of the latest weekly Niño index values were near average, ranging between 0.0°C (Niño-4) and 0.4°C (Niño-1+2). The subsurface oceanic heat content anomaly (average temperature anomalies in the upper 300m of the ocean) remained elevated, but weakened slightly throughout the month, in accordance with the declining strength of above-average temperatures at depth. While weak, the atmospheric circulation anomalies remained consistent with certain aspects of La Niña. In particular, convection continued to be enhanced over eastern Indonesia and suppressed over the central equatorial Pacific, mainly south of the equator. Also, anomalous low-level easterly and upper-level westerly winds persisted over the central Pacific. Collectively, these tropical Pacific anomalies indicate ENSO-neutral conditions, but the atmospheric circulation continues to be characteristic of La Niña.

Forecasts from a majority of the ENSO models, indicate ENSO-neutral will continue into the Northern Hemisphere fall 2011. However, over the last couple of weeks, forecasts created by the NCEP Climate Forecast System (CFS) have begun to indicate the re-emergence of La Niña during Northern Hemisphere fall 2011. Combined with the recent weakening of the positive subsurface ocean anomalies and the lingering La Niña state of the atmosphere, the possibility of a return to La Niña during the Northern Hemisphere fall 2011 has increased over the past month. However, ENSO-neutral remains most likely into the Northern Hemisphere fall 2011, with most models and all multi-model forecasts predicting ENSO-neutral to continue through early 2012.

This discussion is a consolidated effort of the National Oceanic and Atmospheric Administration (NOAA), NOAA's National Weather Service, and their funded institutions. Oceanic and atmospheric conditions are updated weekly on the Climate Prediction Center web site ([El Niño/La Niña Current Conditions and Expert Discussions](#)). Forecasts for the evolution of El Niño/La Niña are updated monthly in the [Forecast Forum](#) section of CPC's Climate Diagnostics Bulletin. The next ENSO Diagnostics Discussion is scheduled for 4 August 2011. To receive an e-mail notification when the monthly ENSO Diagnostic Discussions are released, please send an e-mail message to: [ncep.list.ensc-update@noaa.gov](mailto:ncep.list.ensc-update@noaa.gov).

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## Get to Know: The new SPaRCE Coordinator



Jonathan with a bear.

Hello!

I am Jonathan Moore. You may remember me from the last issue of the Pacific Trade Winds Quarterly. As Nikki finishes her degree and moves on to bigger and brighter tomorrows I will be stepping in to fill the role of SPaRCE Coordinator for the time being.

I know I will have a lot to learn as I move into this new job and I hope that maybe we can learn some things together.

Nikki has done an excellent job as the SPaRCE coordinator these past three years. She always attributed a great deal of her success to the interaction she had with you all out in the Pacific. I look forward to getting to know more about each of the schools and islands participating with SPaRCE.