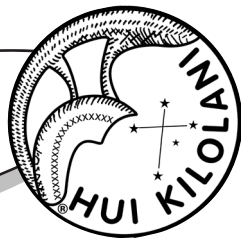


The Astronews

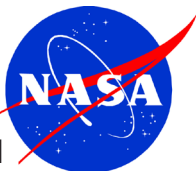


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NASA REACTS TO GOVERNMENT SEQUESTRATION



--LATE-BREAKING NEWS--

NOTE FROM THE EDITOR:



By the time you receive this either in by mail or electronically, the news in this article will most likely be “old” news, and (hopefully) some of the more extreme interpretations of the announcement will be mitigated by saner thought. But initially the NASA memo regarding the suspension of all outreach and informal education impacts everyone, especially those of us engaged in promoting the science of space and astronomy.

The following few pages is a reprint of excerpts of one of the documents released by NASA on March 22. Let's all hope this is just a “knee-jerk” reaction to a political powerplay in Congress and the next few weeks will give way to a reasonable solution.

NASA Internal Memo: Guidance for Education and Public Outreach Activities Under Sequestration

Subject: Guidance for Education and Public Outreach Activities Under Sequestration

As you know, we have taken the first steps in addressing the mandatory spending cuts called for in the Budget Control Act of 2011. The law mandates a series of indiscriminate and significant across-the-board spending reductions

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Upcoming Events:

☆ The next meeting is 7:30PM
on **Tues., Apr 2** at the Bishop
Museum Planetarium

☆ Planetarium shows with
Barry Peckham are ON
HOLD until further notice.
[www.bishopmuseum.org/
calendar](http://www.bishopmuseum.org/calendar)

☆ The next Board Meeting is
Sun., **Mar 31** at 3:30 p.m.
at the POST building at UH.

(Continued on page 2)

Up To The Minute:



(NASA continued from page 2)

totaling \$1.2 trillion over 10 years.

As a result, we are forced to implement a number of new cost-saving measures, policies, and reviews in order to minimize impacts to the mission-critical activities of the Agency. We have already provided new guidance regarding conferences, travel, and training that reflect the new fiscal reality in which we find ourselves. Some have asked for more specific guidance at it relates to public outreach and engagement activities.

Effective immediately, all education and public outreach activities should be suspended, pending further review. In terms of scope, this includes all public engagement and outreach events, programs, activities, and products developed and implemented by Headquarters, Mission Directorates, and Centers across the Agency, including all education and public outreach efforts conducted by programs and projects.

The scope comprises activities intended to communicate, connect with, and engage a wide and diverse set of audiences to raise awareness and involvement in NASA, its goals, missions and programs, and to develop an appreciation for, exposure to, and involvement in STEM. Audiences include employees, partners, educators, students, and members of the general public.

For future activities, the Offices of Communications and Education have established a process to assess and determine, in light of the current budget situation, what education and public outreach activities should be determined Agency mission critical and thereby be continued or implemented. We are requesting Mission Directorates and Headquarters organizations submit a summary of activities, including those planned by their respective programs and projects. We are also requesting that Centers submit a summary of Center-sponsored or supported activities. For public outreach activities, these should be submitted to David Weaver, Associate Administrator for Communications, no later than April 15, 2013. For education activities, these should be submitted to Leland Melvin, Asso-

(Continued on page 2)

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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.

I'm writing this message from Houston where I've come to attend the 44th Lunar and Planetary Science Conference. Before the meeting there is a Microsymposium hosted by Brown University and the Vernadsky Institute (in Moscow) and this year also by MIT and the NASA Lunar Science Institute. I attended most of the second day (Sunday) of the talks. The speakers included old timers from both the (then) Soviet Union and U.S. space programs. Igor Mitrofanov spoke about the Luna program of landers (during the same period as the Apollo program), some of which returned samples to Earth. David Scott, Commander of the Apollo 15 mission, spoke about that mission and about future lunar exploration by humans.

Two MIT students gave a report about their study of how to send humans back to the Moon using current technology. With the benefit of both increased experience with human spaceflight and technological advancements of the past several decades, future missions could launch humans to the Moon without a giant rocket like the Saturn V that the Apollo Moon missions used. Two or three launches would be required to put the vehicles, propulsion systems, and crew into Earth orbit where the pieces would be assembled before the trip to the Moon.

I asked Mr. Scott a question about the problems caused by dust on the Moon. I must admit that, while I was interested in his response, I also asked the question just so I could have some interaction with a man who has walked (and driven!) on the Moon. Of the twelve Moon walkers, only eight are now left, and there's no guarantee that any of them will live to see the next person join their ranks, so it's nice to see one of them working with young students studying how to get us back there.

There's more I could say just about the talks I heard today, but space won't permit, and the conference proper hasn't even begun! I'll report more on what I learn from this conference at our next meeting.

Chris



.....
(NASA continued from page 2)

ciate Administrator for Education, also no later than April 15, 2013. Required summary and waiver documentation is being provided for distribution to Mission Directorates, Centers, programs, and projects through the Communications and Education Coordinating Councils. The Headquarters Office of Communications, working in conjunction with the Office of Education, will review the requested data and will make a timely and appropriate determination regarding what activities will go forward as planned.

This guidance is to be applied to all NASA employees, civil servants, and contractors (working through their contract officers). Leadership in our Centers, Mission Directorates, as well as individual program and project managers are responsible for ensuring that all public engagement activities, including the education and public outreach efforts conducted by programs and projects, are suspended and submitted to the review process. This guidance applies to existing and future efforts at least through the end of FY2013. ☆

NASA PETITION

Want to do something? Contact our representatives in Washington, or go to this link:

<https://petitions.whitehouse.gov/petition/repeal-sequesters-cuts-nasas-spending-public-outreach-and-its-stem-programs/kY7Tw85q>

and sign the online petition.

Editor



Your Daily Dose of Astonishment

By Diane K. Fisher

As a person vitally interested in astronomy, you probably have the Astronomy Picture of the Day website at apod.nasa.gov set as favorite link. APOD has been around since practically the beginning of the web. The first APOD appeared unannounced on June 16, 1995. It got 15 hits. The next picture appeared June 20, 1995, and the site has not taken a day off since. Now daily traffic is more like one million hits.

Obviously, someone is responsible for picking, posting, and writing the detailed descriptions for these images. Is it a whole team of people? No. Surprisingly, it is only two men, the same ones who started it and have been doing it ever since.

Robert Nemiroff and Jerry Bonnell shared an office at NASA's Goddard Space Flight Center in the early-90s, when the term "World Wide Web" was unknown, but a software program called Mosaic could connect to and display specially coded content on other computers. The office mates thought "we should do something with this."

(Continued on page 9)



The January 20, 2013, Astronomy Picture of the Day is one that might fall into the "quirky" category. The object was found at the bottom of the sea aboard a Greek ship that sank in 80 BCE. It is an Antikythera mechanism, a mechanical computer of an accuracy thought impossible for that era. Its wheels and gears create a portable orrery of the sky that predicts star and planet locations as well as lunar and solar eclipses. *Credit: NASA*

There are two showers in April, the first favors northern hemisphere observers and the second the southern observers. Alas, the full moon falls too close to make either shower reasonable to observe. Even when the moon gets in the way during shower time it is still important to watch all throughout the month. Our own **Mike Morrow** illustrated this point earlier in March. On March 11th, he arose early (6:14 am) and it was still dark. He opened the curtains just in time to see a magnificent fireball! He didn't see the beginning of the show, as the meteor was above the roof line but it still traveled for another 25 degrees. He was looking west and it was brighter than Venus, with pieces breaking off as it traveled. Did anyone in the HAS happen to see this meteor?

You never know when a major fireball might appear in the night sky, or day sky, in the case of Russia in February. If you do spot a fireball, there are groups who track these events. You can report it at the American Meteor Society (AMS) website at <http://www.amsmeteors.org/members/fireball/report-a-fireball>. Fill in as much information as you can recall and submit it to the AMS. All fireballs reported are listed in a searchable format.

The AMS maps the meteor based on the observer's location and the information provided. Note that "Mike's" fireball has already been reported by four people. He needs to add his observation to better locate the event!

Last Quarter
Apr 03

New Moon
Apr 10

First Quarter
Apr 18

Full Moon
Apr 25

Shower	Activity	Max Date	λ 2000	Radiant α	V_{∞} δ km/s	r	ZHR
Lyrids (LYR)	4/16 - 4/25	Apr 22	32°	271°	+34°	49	2.1 18
π -Puppids (PPU)	4/16 - 4/28	Apr 23	33.5°	110°	-45°	18	2.0 Var

Keep an eye out for another "big" one!
Tom Giguere, 808-782-1408, Thomas.giguere@yahoo.com
Mike Morrow, PO Box 6692, Ocean View, HI 96737

Planets Close To the Moon

Times are Hawaii Standard Time

Apr 6, 12h, M 5.6° NNW of Neptune
(42° from sun in morning sky)

Apr 7, 18h, M 6.6° NNW of Mercury
(27° from sun in morning sky)

Apr 14, 10h, M 2.2° SSE of Jupiter
(49° from sun in morning sky)

Apr 25, 14h, M 3.5° SSW of Saturn
(176° from sun in mmidnight sky)

Mars, Venus and Uranus are closer that 15° from the sun when near the moon in April.

Other Events of Interest

Times are Hawaii Standard Time

Apr 9, 09:53h, Moon new

Apr 17, 14h, Mars at conjunction with sun (Passes into morning sky)










Apr 20, Astronomy Day

Apr 20, 00h, Mercury 1.8° SSE of Uranus (21° from sun in morning sky)

Apr 22, Lyrid meteors (Unfavorable year for this sometimes strong shower)

Apr 25, 09:59h, Moon full

Apr 27, 22h, Saturn at opposition with sun (Above the horizon all night)

 Mercury <p>Mercury makes a rather poor morning appearance in the morning sky at the beginning of the month.</p>	 Venus <p>Reached conjunction in March but still close to the sun. It will be visible low in the west after sunset late in the month.</p>	 Mars <p>Mars is now too close to the sun to be viewed.</p>
 Jupiter <p>Jupiter shines brightly in the southwest after sunset. It sets 2 to 3 hours after the sun.</p>	 Saturn <p>Saturn is at opposition on April 27, so this is the best month of the year to view the ringed planet.</p>	 Uranus <p>Uranus is too close to the sun to be easily viewed in April.</p>
 Neptune <p>Is far enough from the sun to be viewed in the early morning before sunrise, but will be better later this year.</p>	 Dwarf Planet Pluto <p>Visible in the morning sky, but will be better placed for viewing later in the year.</p>	 Comet PanSTARRS <p>Fades rapidly in April but moves further from the horizon as it passes through Andromeda and Cassiopeia.</p>

HISTORICAL VIEWS ON MAUNA KEA: FROM THE VANTAGE POINTS OF HAWAIIAN CULTURE AND ASTRONOMICAL RESEARCH

PERFECT STORM—THE MAKING OF A CULTURE RIFT (cont.)

In part, this resentment had sparked from the backfire of overstating a case. The damage had already begun. And still more was ahead.

In 1993, President Bill Clinton signed the United States Public Law 103-15 (aka Apology Resolution), which formally apologized for the overthrow of the Hawaiian monarchy 100 years before. As the LA Times succinctly put it:

A once fledgling Hawaiian movement has grown into a vocal political power in the islands. There are calls for secession from the United States, a return of native Hawaiian lands and, on Mauna Kea, a moratorium on telescopes and even their removal. ... The battle over telescopes has become a chance to reclaim, symbolically and practically, ground that their people lost long ago.

Soon after, other events conspired to widen the rift between the astronomers and the Hawaiian community and other groups, including culturalists, environmentalists and recreationalists:

- In 1994, when construction trash blew down from the observatories and was left unretrieved, the Sierra Club's complaint was reportedly met with indifference by the astronomy staff. The trash was only removed several months later after local newspaper support was enlisted. This publicity started people wondering if other environmental laws were being circumvented or decisions being made without full public hearings.
- Studies in 1996 revealed that the habitat of an endemic alpine insect, called the wekiu bug, was being destroyed by the construction of the observatories. Measuring a quarter-inch long, this recently discovered insect is found only at the summit of Mauna Kea, where it can endure extreme cold due to an antifreeze-like substance in its body.
- Others voiced bitterness from personal experience. Kealoha Pisciotta, a native Hawaiian, once worked as a telescope technician at the summit's two sub-millimeter facilities. Honoring her Hawaiian tradition, she routinely brought offerings to the family's stone shrine that she had erected on the mountainside.

Several times her altar was removed—on at least one occasion reportedly by an astronomy colleague. The ultimate desecration occurred when the ashes of her aunt were strewn across the cinder landscape when the shrine was vandalized again. While the astronomy community was not responsible for this act, it was an easy target for the understandable hurt feelings and anger.

- Perhaps most damaging was a scathing 1998 legislative audit on the summit's management. That report essentially supported many of the claims levied by the Hawaiian and environmental communities and concluded that the IfA had “failed to develop and implement adequate controls to balance the environmental concerns with astronomy development.” In response, the IfA proposed to limit access to the summit road. The community, however, saw this as a veiled attempt at self-protection rather than environmental control.

BROKEN TRUST—WIDENING THE CULTURAL DIVIDE

As a result of this audit, the university initiated the development of a new Mauna Kea Science Reserve Master Plan. This time, however, the university actively sought out community input. And, unlike before, the community spoke out in numbers with

(Continued on page 11)

Hawaiian Astronomical Society

Event Calendar

List View	Past Events	< April 2013 >		Upcoming Events		Add/Log Event
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
31 8:00 PM Globe at Night	1 8:00 PM Globe at Night 7:30 PM Club Meeting	2 8:00 PM Globe at Night	3 8:00 PM Globe at Night	4 8:00 PM Globe at Night	5 8:00 PM Globe at Night 7:30 PM Niu Valley Middle School	6 8:00 PM Globe at Night 6:20 PM Club Star Party (D) Sunset: 6:49 PM
7 8:00 PM Globe at Night	8 8:00 PM Globe at Night	9 8:00 PM Globe at Night	10 <			

NOTICE:



HAS will publish a complete listing of Club members in the **June 2013** issue of the Astronews. This publication is required by Club by-laws, Article III, Section 2 Para C(e) and Article VIII, Section 1B. Unless notified otherwise, this list will include all member's names, mailing addresses, and phone numbers. If you wish to have some or all of your data excluded, please notify the Club Treasurer, **Jim MacDonald** before **May 15, 2013** by sending him an e-mail at jim.macd@hawaiiantel.net or by written notice to the Club's post office box listed on the back page of this newsletter. Please be advised that this listing is intended for Club members' personal use only in contacting one another. It is not to be used for any commercial or solicitation purposes. With the exception of our membership in the Astronomical League, HAS does make this list available to, nor do we sell its contents to anyone for any purpose. Please respect our member's right to privacy.

Member information is not to be republished, redistributed, or used for any commercial or solicitation purposes.

Thus was conceived the Astronomy Picture of the Day. Now, in addition to the wildly popular English version, over 25 mirror websites in other languages are maintained independently by volunteers. (See http://apod.nasa.gov/apod/lib/about_apod.html for links). An archive of every APOD ever published is at <http://apod.nasa.gov/apod/archivepix.html>. Dr. Nemiroff also maintains a discussion website at <http://asterisk.apod.com/>.

But how does it get done? Do these guys even have day jobs?

Dr. Nemiroff has since moved to Michigan Technological University in Houghton, Michigan, where he is professor of astrophysics, both teaching and doing research. Dr. Bonnell is still with NASA, an astrophysicist with the Compton Gamma Ray Observatory Science Support Center at Goddard. APOD is only a very small part of their responsibilities. They do not collaborate, but rather divide up the calendar, and each picks the image, writes the description, and includes the links for the days on his own list. The files are queued up for posting by a “robot” each day.

They use the same tools they used at the beginning: Raw HTML code written using the vi text editor in Linux. This simple format has now become such a part of the brand that they would upset all the people and websites and mobile apps that link to their feed if they were to change anything at this point.

Where do they find the images? Candidates are volunteered from large and small observatories, space telescopes (like the Hubble and Spitzer), and independent astronomers and astro-photographers. The good doctors receive ten images for every one they publish on APOD. But, as Dr. Nemiroff emphasizes, being picked or not picked is no reflection on the value of the image. Some of the selections are picked for their quirkiness. Some are videos instead of images. Some have nothing to do with astronomy at all, like the astonishing August 21, 2012, video of a replicating DNA molecule.



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

Star Party Report

by Sue Girard

Dillingham Public Star Party - March 2, 2013

The March Dillingham Public Star party was pretty much in line with the last few gatherings at Dillingham. The weather has been following a consistent pattern with clouds forming at sundown and remaining throughout the evening with a few breaks. This evening was no different. The sky cleared for a while, but clouds kept forming and shutting out the sky periodically.

We had about 18 cars and 35 people show up and, since Jupiter was prominently displayed in the zenith, we were able to give the visitors some very enjoyable views of it. Io was transiting the Jovian disk and the shadow was quite obvious for all to see. The Great Red spot was also visible but not very obvious, so visitors were a bit hard-pressed to see it. The Orion nebula, however, was quite spectacular. We had some last looks at the Andromeda galaxy as well as some of the gems in Cassiopeia and Auriga.

Gary Ward's group included visitors from Texas, Virginia, Colorado, and North Carolina. Most folks left at 8:30pm since the sky had gotten clouded over, however about 5 of us hard-core members decided to stay. We probably should have left with the crowd because we spent the next hour waiting for the clouds to break and were only rewarded with a few ‘sucker holes’, and so we decided to call it quits at 9:30pm.

Treasurer's Report

by Jim MacDonald

HAS Financial Report for the month ending as of Mar. 15, 2013

Initial Balance:	\$4,428.52
<i>Receipts:</i>	
Donations	20.00
Dues Received	248.00
Magazine Payments	126.95
Polo Shirt Deposit	26.18
Telescope Fee	20.00
Total Income:	\$441.13
<i>Expenses:</i>	
Astronews	59.89
Magazine Subscriptions	131.80
Blank Checks	40.00
Envelopes	5.71
Postage	5.42
Total Expenses:	\$242.82
Final Balance	\$4,626.83

The club gained nine new members this month. They are *Matthew Takamatsu; John and Joanne Spurlock; Matthew, Teresa and Dylan Tanaka; Richard and Rose Marie Pritts; and Elissa Yellin.* A special thanks to *Matthew Takamatsu* for his donation. A reminder to those whose memberships expired at the end of last year. Check your mailing label for your anniversary date.

<<Upcoming Star Parties>>

CLUB Party-Dillingham Apr. 6 (Galloway)
Kahala/Ewa Party Apr. 13

☆ ☆ Upcoming School Star Parties ☆ ☆

Fri.	4/05	Niu Valley Middle School
Fri.	4/12	Gus Webling Elementary-Cub Scouts (Aiea)
Wed.	4/17	Ala Wai Elementary (McCully-Waikiki)
Fri.	4/19	Bellows AFB -Cub Scouts (Waimanalo)

HISTORICAL VIEWS ON MAUNA KEA: FROM THE VANTAGE POINTS OF HAWAIIAN CULTURE AND ASTRONOMICAL RESEARCH (cont. from page 7)

uninhibited “rancor about desecration of traditional sites, blocked access to gathering and spiritual sites, and about what was widely perceived to be general disregard for the care of the mountain.”

An impartial examination of the circumstances leading to this cultural divide suggests that both parties shared the blame, albeit in different ways. It wasn't so much the different beliefs that both cultures professed, but the behavior they exhibited when confronting those differences.

The astronomers' clinical view of the summit's use was pragmatic and altruistic. It was couched in academic idealism. Surely, such a pure, intellectually-minded endeavor was evidence enough to persuade all of the summit's strategic value. Besides, the summit's astronomical discoveries mirrored the explorations of ancient Polynesian navigators. From the vantage point of the astronomers, the horizon is a barrier to be pushed back—beyond which new frontiers lie. Certainly, all people share astronomy's noble quest—to discover our origins and place in the universe.

In contrast, the community's cultural view of the mountain was steeped in heritage and spirituality. It was charged with the latent resentment of a disputed overthrow. Surely, such long-held, culturally-minded beliefs were enough to exhort all of the mountain's sacredness. Besides, the summit's pristine majesty reflected the unspoiled, untouched wonders of outer space. From the viewpoint of the Hawaiian culturalists, the horizon is an embracing shelter within which heritage is safeguarded. Certainly, all people are mindful of traditions—to preserve our origins and genealogical connections with the sky.

These were certainly different philosophies, different beliefs, different mindsets—potential reasons for disagreeing, but not justification for being disagreeable. Lost in the dispute was honest dialog. Both cultures felt misunderstood, or worse, ignored. There was lack of candor for fear of offending others and overstating cases to advance one's position. Public hearings often took on an adversarial atmosphere. What was sorely needed was a non-threatening venue where these two cultures could speak frankly and without accusation of bias. That venue wasn't to appear for several more years.

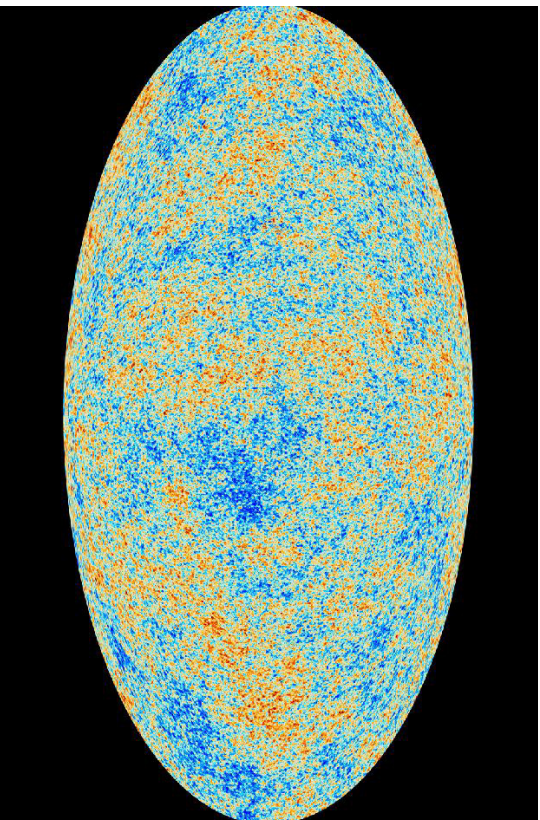
(To Be Continued) ☆



*Ahu lele altar
at the summit
of Mauna Kea
(Pu'u Wekiu)
Credit:
Joseph Ciotti*

Hawaiian Astronomical Society
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JUST IN TIME FOR EASTER

Looking like a decorated egg, this map shows the oldest light in our universe, as detected with the greatest precision yet by the Planck mission. The ancient light, called the cosmic microwave background, was imprinted on the sky when the universe was 370,000 years old. It shows tiny temperature fluctuations that correspond to regions of slightly different densities, representing the seeds of all future structure: the stars and galaxies of today.

Image courtesy: ESA and the Planck Collaboration