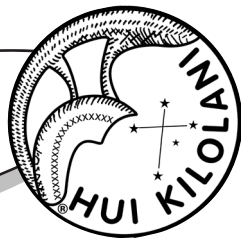


The Astronews



Volume 61, Issue 1

January 2013

www.hawastsoc.org



Happy New Year POTLUCK!

In celebration of the New Year and the reopening of the Planetarium, come and celebrate with food and friends on **Tuesday, January 8th** starting at 6 PM. We will hold the regular meeting beginning at 7:30 and see the refurbished facility.

We currently have several folks signed up for various dishes and supplies. If possible, please email me if you need ideas. If someone can bring an ice chest (and ice) that would be great. If bringing drinks, utensils or other paper supplies, please make sure you come on time--it's difficult to eat without those things!

Please contact me at c.kaichi2001@gmail.com if you haven't already signed up. Although it's not necessary it may help others to have an idea of something to bring if they haven't decided.

The celebration will be set up outside the Planetarium lobby on the side of the museum grounds.



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Upcoming Events:

☆ The next meeting is 7:30PM on **Tues., Jan 8** at the Bishop Museum Planetarium

☆ Planetarium shows with **Barry Peckham** are ON HOLD until further notice.
www.bishopmuseum.org/calendar

☆ The next Board Meeting is Sun., **Jan. 6** at 3:30 p.m. at the POST building at UH.



HOLIDAY STAR WATCHES, GIZMOS AND MURPHY (A Special Report)

I love participating in public starwatches. The lines of people, the anticipation, the excitement! All to peer at blurry, fuzzy splotches thru thousands of (borrowed) dollars' worth of optical equipment. I have participated in many star parties for many diverse groups. The public-at-large, community college students and staff, church groups, vacation/conventioners, and of course, grades schoolers have all spent time with me under the night skies.

The holidays are here and star watch opportunities abound. Now to help the line waiters wait patiently for their turn at the eyepiece, I have taken a page from our friends at the airport TSA. No, not full body pat-downs, but VIDS, i.e.; visual instructional displays.

Yes! The large screen TVs you watch while you wait while you wait for your pat-down. Of course, mine is merely a 1st generation ipad mounted on a light stand (which is a small photographic tripod meant for holding remote flashes; but more on this later). But instead of the "1-2-3s of secure air travel" on my display, I run a brief slideshow featuring some highlights of the night's sky. Internet culled images with appropriate facts, some fancy transition effects via Powerpoint or Keynote, running in "loop" mode. Viola! What an idea!!!

There are a multitude of ipad/iphone/smart-phone apps that can display constellations, star names and other astro data. NightSky, Galaxy Zoo, and StarWalk come to mind. How's about this idea...a digital camera, equipped with an "Eye-Fi" enabled SD media, that you image through your scope's eyepiece, capture and broadcast via the private wi-fi network of the SD media, and send directly to your ipad/iphone instantly? Amazing technology, or the ramblings of your inner geek?!!! Once the equipment is configured correctly, the people in line can see what is viewed in the eyepiece in real time!

Want to be the talk of the starwatch? This

(Continued on page 3)

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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.

If you are reading this in the Astronews, then you know that the world didn't end on December 21st. This probably didn't surprise you, but it may have come as a shock to some who thought that the Maya had predicted such a thing. I always look at this kind of popular nonsense as an opportunity to educate people about the universe and our place in it. Although I didn't run into anyone who seemed to actually believe the so-called prophecy, I did field a few questions from curious school children, and I was happy for the chance to debunk this idea.

At our meeting last month at Leeward Community College, we got to see a presentation of "Maya Skies" in the newly renovated Imaginarium. It was a good demonstration of the capabilities of that projection system, but I was hoping for a little more explanation of the Maya calendar. It is well known that the Maya studied the movement of Venus in the sky, so when I first heard about the end of their "long count" I assumed that it would be related to Venus in some way. After all, we did have a rare transit of Venus across the Sun in June. It doesn't seem that December 21st corresponded to a special position of Venus, but the Maya may have had a different opinion, perhaps related to its rising in relation to specific local geography, for example.

Anyway, you have another chance this month to view a newly renovated planetarium! This will be our first meeting in Bishop Museum's planetarium since its total overhaul of the last few months. We've seen the new digital system in action, but there is a new software version, a new internal dome, and new seating. As Joanne learns more about this system each month, I'm sure we'll have some new treats in store every month for a while.

To celebrate, we're going to repeat what was a very successful format: a potluck dinner before the meeting. Bring something tasty and enjoy the chance to talk at leisure with other club members. We're also going to try taking a group photo. Let's hope this is the start to a wonderful year for all of us.

Chris 

.....
(Guest Report continued from page 2)

is your opportunity!...I am here to remind you the Astro Gods have placed stumbling blocks in your path to star party herodrom. The following immutable laws have the essence of Murphy throughout. Consider:

1) No matter how carefully you pack your equipment: how fastidiously, you plan your starwatch inventory, you will forget or neglect some crucial or critical component.

This leads to the corollary, "The amount (bulk or dollar value) of equipment you bring to Starwatch is inversely proportional to the probability of the normal or expected functioning of that equipment." My ipad is secured on a modified aluminum lightstand, attached with a custom bracket and multi articulating "griphead". That ipad is not coming off the tripod. Murph just snickers and allows the whole tripod to fall over! I got off with minimal screen damage, but the charge port is really dented up. This leads to the next special law of Murphy, the plague of photographers too:

2) No matter how resolutely you tighten the lock mechanisms on your tripod, no matter how precisely you position the legs, a passer-by will jostle your tripod to such a degree that ranges thus;

*-irretrievably spoil your perfect step-in-dog-poo-once-in-a-lifetime polar alignment
-tip over completely, spilling over your eyepieces, binoculars; or in slapstick fashion
cause complementary mishaps to members' setups close-by.*

Consequently, this follows:

3) The probability that your component is damaged in the fall, is directly proportional to its repair/replacement cost.

(Continued on page 11)

Partnering to Solve Saturn's Mysteries

By Diane K. Fisher

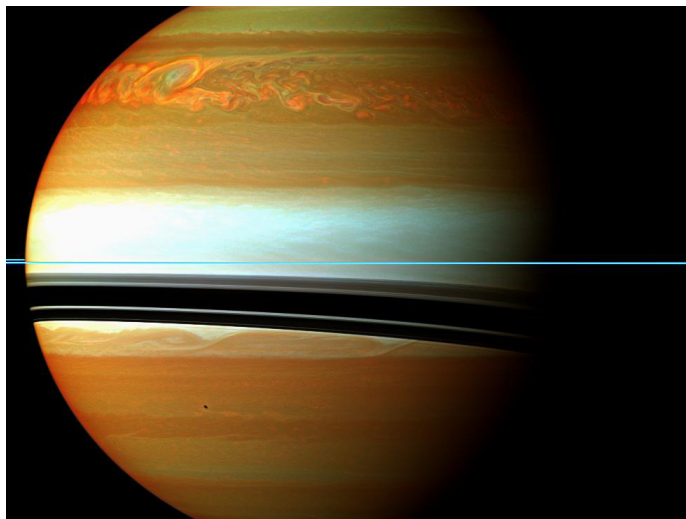
From December 2010 through mid-summer 2011, a giant storm raged in Saturn's northern hemisphere. It was clearly visible not only to NASA's Cassini spacecraft orbiting Saturn, but also astronomers here on Earth—even those watching from their back yards. The storm came as a surprise, since it was about 10 years earlier in Saturn's seasonal cycle than expected from observations of similar storms in the past. Saturn's year is about 30 Earth years. Saturn is tilted on its axis (about 27° to Earth's 23°), causing it to have seasons as Earth does.

But even more surprising than the unseasonal storm was the related event that followed.

First, a giant bubble of very warm material broke through the clouds in the region of the now-abated storm, suddenly raising the temperature of Saturn's stratosphere over 150°F . Accompanying this enormous "burp" was a sudden increase in ethylene gas. It took Cassini's Composite Infrared Spectrometer instrument to detect it.

According to Dr. Scott Edgington, Deputy Project Scientist for Cassini, "Ethylene [C_2H_4] is normally present in only very low concentrations in Saturn's atmosphere and has been very difficult to detect. Although it is a transitional product of the thermochemical processes that normally occur in Saturn's atmosphere, the concentrations detected concurrent with the big 'burp' were 100 times what we would expect."

(Continued on page 9)



This false-colored Cassini image of Saturn was taken in near-infrared light on January 12, 2011. Red and orange show clouds deep in the atmosphere. Yellow and green are intermediate clouds. White and blue are high clouds and haze. The rings appear as a thin, blue horizontal line.

Credit: NASA

From the Editor: There was no Meteor Report filed this month, so we will begin a series contributed by Joseph E. Ciotti, Professor of Physics, Astronomy & Mathematics/ Director of the Center for Aerospace Education, Windward Community College, University of Hawai'i

This article originally appeared in The Hawaiian Journal of History, Vol. 45, 2011

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

INTRODUCTION

Hawai'i currently faces unresolved sovereignty issues and their resulting polarizing effects. One such case of continuing discord involves a sacred and strategically important mountain named Mauna Kea—the highest peak in the Pacific. Traditionalists regard this mountain as the altar of Wākea, the Polynesian sky god and father of all indigenous Hawaiians, while astronomers extol its lofty summit as a premier platform for astronomical observations.

To address this conflict, the University of Hawai'i at Hilo together with congressional support established the 'Imiloa Astronomy Center, a cultural science museum and planetarium, whose mission includes bringing the Hawaiian community and astronomers together to discuss and mitigate their differences.

Explored here are the background behind these issues and the unique attempt of informal education to resolve them.

MAUNA KEA—A SACRED MOUNTAIN

Towering 13,796 feet above sea level, Mauna Kea is the highest peak in the Pacific basin. Measured from its base at the ocean floor, this massive shield volcano is actually the tallest mountain on earth. According to Hawaiian tradition, Mauna Kea is the mountain altar of Wākea, the celestial father—sire of the indigenous Hawaiian race. This mountain is said to protect burials of the highest chiefs, the descendants of Wākea and Papahānaumoku, who gave birth to the islands. Mauna Kea is often eulogized as Hawai'i's piko—the umbilical cord connecting earth and sky. In recent years, some Hawaiians have traveled to Lake Wai'au, an alpine lake 750 feet below the mountain's summit, to offer the umbilical cords of their newborns.

In wintertime, the summit is often covered with snow—giving the mountain its name Mauna Kea, White Mountain. Reaching above 40 percent of the earth's atmosphere, its dry conditions have attracted thirteen astronomical observatories, more than on any other mountain peak on earth.

Volcanically dormant for over 4,000 years, this mountain has become the epicenter of recent social upheaval arising from disputes between those who worship its sacred altar to their sky father and those awed by its pristine views into the heavens.

NECESSITY—THE MOTHER OF INTERVENTION

The recognition of Mauna Kea as a premier site for astronomical observation stemmed from unrelated happenstances and the necessity that followed. As is often the case, the road leading to its development and the consequential collision of cultures was paved with good intentions.

Surprisingly, prior to the early 1960s, Mauna Kea was never seriously considered a potential site for a major observatory. In fact, since the 1940s, the summit of Haleakalā on the neighboring island of Maui had been receiving the undivided attention of observational astronomers. Haleakalā already held claim on a major solar observatory. Haleakalā's allure had even enticed world-renowned astronomer Gerard Kuiper, Director of the University of Arizona's Lunar and Planetary Laboratory, to Maui in 1963 to survey potential sites for a major observatory. So, with all of Maui's successful pioneering work in observational astronomy, why were sights eventually turned to Mauna Kea?

This series will be continued in upcoming issues

Planets Close To the Moon

Times are Hawaii Standard Time

Jan 6, 14h, M 3.7° SSW of Saturn
(67° from sun in morning sky)

Jan 10, 01h, M 2.8° NNW of Venus
(19° from sun in morning sky)

Jan 12, 21h, M 6.2° NNW of Mars
(21° from sun in evening sky)

Jan 14, 04h, M 5.7° NNW of Neptune
(37° from sun in evening sky)

Jan 16, 16h, M 4.5° NNW of Uranus
(68° from sun in evening sky)

Jan 21, 16h, M 0.81° SW of Jupiter
(124° from sun in evening sky)

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

Other Events of Interest

Times are Hawaii Standard Time

Jan 1, 19h, Earth at Perihelion - nearest the sun (Distance - 0.98330 a.u.)










Jan 3 Quadrantid meteors
(Unfavorable year for this major shower)

Jan 11, 09:44h, Moon new

Jan 14, Jan 1 in Julian Calendar

Jan 17, 23h, Mercury at superior conj. with sun (Passes into morning sky)

Jan 26, 18:39 h, Moon full

 Mercury Mercury is too close to the sun to view during January.	 Venus Shines brightly low in the southeast before dawn. Look for it near the moon on Jan 9 and 10.	 Mars Mars is now too close to the western horizon after sunset to be seen crisply.
 Jupiter Reaches opposition on Dec 2 and is in the sky most of the night. Look for it in Taurus between the Hyades and the Pleiades.	 Saturn Rises shortly after midnight and is best observed high in the east before dawn.	 Uranus Uranus is visible in the evening sky in the southwest after sunset.
 Neptune Can be viewed low in the southwest in the early evening.	 Asteroid 4-Vesta Reaches opposition on Dec 8 and dims during January from magnitude +6.9 to +7.5.	 Dwarf Planet 1 Ceres Reaches opposition on Dec 17 and dims during January from magnitude +7.1 to +7.8.

President Chris Peterson called the December 4, 2012 meeting of the Hawaiian Astronomical Society to order at 7:46p.m. The meeting was held at the Imaginarium, at Windward Community College in Kaneohe. There were 13 members in attendance.

Planetarium Upgrade: *Chris Peterson* discussed the reopening of the Bishop Museum Planetarium. Seats will be installed in mid-December and we should be back at the Planetarium for our general membership meeting in January 2013.

Hawaii Space Lecture Series: There is no lecture scheduled during December 2012. The lecture for January 2013 will be announced later.

January 2013 General Membership meeting: The next meeting for the Hawaiian Astronomical Society will take place on January 8, 2013. We will have a pot luck supper prior to the meeting in the area adjacent to the Planetarium rotunda. *Carolyn Kaichi* passed around a sign up sheet for information on what kinds of dishes members will be bringing. If you are thinking of joining us, please contact Carolyn and let her know what you might be bringing. We hope that all members will join us in celebrating the new year, the reopening of the Planetarium and will participate with us in the coming year. We intend to take a club picture prior to the meeting. Come! Join us!

Update of e-mail addresses: H.A.S. would like to update our records. We would like members to send us their current e-mail addresses, for H.A.S. use only. These addresses will not be dispersed to the public. We would like to be able to contact members by e-mail for special H.A.S. events.

Recent Donation Available: H.A.S. recently received the donation of a 8" Coultter Odyssey. The telescope has been cleaned up, refurbished, and is available for rent to interested club members. If you are interested in taking a scope home with you for a month of viewing pleasure contact, *Jim MacDonald*. The night skies await you. A small rental fee will be asked.

Other Donations: *Susan Girard* has made a donation of a table-top mount for the club P.S.T. (Personal Solar Telescope). We thank Sue for her gracious donation which will make solar viewing so much more enjoyable. The P.S.T. is also available for rent by club members for a small charge.

John Sandor gave away a very nice carry-case. Thank you, John.





Yearly Elections: H.A.S. yearly elections for the Board of Directors took place at the December meeting. *Joanne Bogan* conducted the election. The 2012 H.A.S. Board of Directors- *Chris Peterson* (president), *Leslie Galloway* (vice-president), *Jim MacDonald* (treasurer), *Gretchen West* (secretary), *Carolyn Kaichi* (ASTRONEWS editor), and at-large members, *Sue Girard and April Lew* were unanimously reelected.

Imaginarium: H.A.S. members were treated to a wonderful set of programs at the Windward Community College Imaginarium. The first part of the program was titled "Maya Skies" outlining the middle American culture and portions of its astronomical history. The second portion of the experience at the Imaginarium was a trip through the night skies and out into space. We would like to thank the Imaginarium staff for their invitation and helpful attitude. It was a wonderful experience.

As there was no further business, the meeting was adjourned at 9:40 p.m. Members enjoyed refreshments after the meeting.

Respectfully Submitted,
Gretchen West
Secretary



List View Past Events < January 2013 > Upcoming Events Add/Log Event						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
30	31	New Year's Day 1	2	3	4	5:40 PM Club Star Party (D) 5 Sunset: 6:05 PM 
6	7	7:30 PM Club Meeting 8	9	10	11	5:45 PM Public Star Party(D) 12 Sunset: 6:09 PM 
13	14	15	16	17	6:30 PM Waikiki Elem SP 18	5:45 PM Public Star Party(G) 19 5:45 PM Public Star Party(K) Sunset: 6:14 PM 
20	Martin Luther King, Jr. Day 21	22	23	24	25	26 Sunset: 6:19 PM
27 	28	29	30	31	1	2

Star Party Report

by Sue Girard

Dillingham Club Star Party - December 8, 2012

The entire island of O’ahu was pretty much clouded out as I drove to the Dillingham star party site and I expected the evening observing session to be canceled. Six die-hard members arrived and we sat around waiting to get the word from **Chris Peterson**, the evenings coordinator.

A tiny hole opened in the east and Jupiter appeared, so I quickly set up my 10” Dobs and we all took turns at the scope. Unfortunately, the image of Jupiter ‘roiled’ with atmospheric turbulence. We even managed to catch the appearance of the moon Io from behind Jupiter’s shadow. A few more ‘sucker holes’ opened and we hopped from Eta Cassiopeia to the Andromeda galaxy, and even to Alberio briefly. We were treated to a couple satellites going slowly over and a bright meteor between the thick, dark clouds.

Then at 19:07 the ISS made a bright pass and we were able to catch a couple minutes of it before it, too, disappeared behind the rapidly thickening clouds. We realized that was all we were going to see for the rest of the evening, so we packed up and left. It was a short but relatively sweet star party for our little group (**Gretchen, Chris, Peter B, Micky and Rob**).

(Continued on page 9)

(Space Place continued from page 4)

So what was going on?

Chemical reaction rates vary greatly with the energy available for the process. Saturn's seasonal changes are exaggerated due to the effect of the rings acting as venetian blinds, throwing the northern hemisphere into shade during winter. So when the Sun again reaches the northern hemisphere, the photochemical reactions that take place in the atmosphere can speed up quickly. If not for its rings, Saturn's seasons would vary as predictably as Earth's.

But there may be another cycle going on besides the seasonal one. Computer models are based on expected reaction rates for the temperatures and pressures in Saturn's atmosphere, explains Edgington. However, it is very difficult to validate those models here on Earth. Setting up a lab to replicate conditions on Saturn is not easy!

Also contributing to the apparent mystery is the fact that haze on Saturn often obscures the view of storms below. Only once in a while do storms punch through the hazes. Astronomers may have previously missed large storms, thus failing to notice any non-seasonal patterns.

As for atmospheric events that are visible to Earth-bound telescopes, Edgington is particularly grateful for non-professional astronomers. While these astronomers are free to watch a planet continuously over long periods and record their finding in photographs, Cassini and its several science instruments must be shared with other scientists. Observation time on Cassini is planned more than six months in advance, making it difficult to immediately train it on the unexpected. That's where the volunteer astronomers come in, keeping a continuous watch on the changes taking place on Saturn.

Edgington says, "Astronomy is one of those fields of study where amateurs can contribute as much as professionals."

Go to <http://saturn.jpl.nasa.gov/> to read about the latest Cassini discoveries. For kids, The space Place has lots of ways to explore Saturn at <http://spaceplace.nasa.gov/search/cassini/>. ☆

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

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(STAR PARTY continued from page 8)

Dillingham Public Star Party - December 15, 2012

We had quite a number of visitors (38 people and 15 cars) show up considering that the sky was pretty much cloudy island wide. However, after a while the sky cleared, so we set up our scopes. Jupiter was somewhat affected by the turbulent atmosphere until about an hour later when it gave much better views.

The visitors were very enthusiastic and delighted in views of the thin, crescent Moon. A few even tried their hand at some 'point and shoot' pictures of the cratered edge. We took a last peak at Mars, which was very blurry but was a first time event for many visitors.

Saint Andrews Priory astronomy class students really appreciated the star clusters and double stars since they were just learning many of these objects. There were a number of folks who showed up from **Gary Ward's** pizza gram email notices. We were able to get some good observing in until about 8:15pm when clouds started to make their appearance, so we decided to call it quits.

Thanks to the members who showed up (**Gretchen, John G, Peter B**).



Treasurer's Report

by Jim MacDonald

HAS Financial Report for the month ending as of Dec. 15, 2012

Initial Balance:	\$4,276.97
<i>Receipts:</i>	
Donations	25.00
Dues Received	146.00
Magazine Payment	68.00
Polo Shirt Deposit	30.00
Total Income:	\$269.00
<i>Expenses:</i>	
Refreshments	13.07
Total Expenses:	\$13.07
Final Balance	\$4,332.35

The club gained six new members this month. They are *Bernice, Patrick, and Charlie Parsons; Bob Kern, and Micki Stash; and Mark Watanabe*. A special thanks to *Mark Watanabe and Gary Shimazu* for their donations.

December is the month when most members memberships are due for renewal! We appreciate all of those who remembered to renew their membership on time.

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<<Upcoming Star Parties>>

CLUB Party-Dillingham	Jan. 5 (Galloway)
Public Party-Dillingham	Jan. 12 (Girard)
Kahala/Ewa Party	Jan. 19

.....

☆ ☆ Upcoming School Star Parties ☆ ☆

		Happy New Year!
Fri	1/18	Waikiki Elementary (Honolulu)

The Night Sky Network has just provided us with a link to their answer for the perennial question, “What kind of telescope should I buy?” <https://nightsky.jpl.nasa.gov/news-display.cfm?News_ID=545> In their own wording it is “the answer”, to be freely sewn among budding astronomy enthusiasts. In a nutshell, the message is this: buy binoculars instead of a telescope, and better yet, join an astronomy club. The advice isn’t bad, but it surely needs tempering. The following are reasons to AVOID binoculars as an initial optical aid for enjoying the night sky:

What does every beginner think of when they picture a telescope under a starry sky? Saturn! Will binoculars show them a recognizable ringed orb? No!

The views in binoculars cannot be shared without an expensive mount and a lot of focusing hassle. As a teaching/sharing tool for the night sky, binoculars fail!

And since the focusing issue came up... we know that binoculars work wonderfully when focused, but less than 1 in 20 Americans is willing or able to focus binoculars. Do your own survey: most folks just use one eye and refuse to fiddle with the focus wheel. Their views of starfields will be unrewarding and their stargazing will probably stop. Telescopes do not have complex focusing challenges.

Binoculars for kids? A kid is way more likely to drop binoculars than a telescope (because it has a base). In fact kids under 20 are guaranteed to drop binoculars. And binoculars may only be dropped once. Are you going to tell a parent to put \$150 into binoculars that their child will surely drop? Cheap binoculars don’t work on the night sky. What’s an astronomical enabler to do?

It is as difficult to pick a proper pair of binoculars as it is to pick a proper telescope. One must hunt and hunt and study and study. Impulse buyers do not like this, and smart shoppers might as well shop for an actual telescope, which can be had (used) for the price of a bicycle. Who argues that bicycles are too expensive?

So, please be careful with the binocular plug, but don’t be shy about telling all to join their local astronomy club and to rent club scopes. Later, we can sell them our scopes and get bigger ones for ourselves!

Barry 

.....
(Guest Report continued from page 3)

After clumsy Johnny trips on your set up, the cheesy 26mil plossl (or the “bonus” hi-power eyepiece thrown in by your dealer) will roll around like a marble in a roulette wheel, but will NOT fall. But your prized 13mil Ethos? It’s going down big time!

My pitiful stratagem is to anchor my tripod with a sandbag. I’m too cheap to purchase a real one, so I make do with a recycled gallon ziplock, filled with “borrowed” gravel from my neighbor’s latest landscaping project and I’m off to tempt Murph.

I have dealt with Murphy’s law for decades, first as a kid fixing radios, a teen fiddling with racecars, a young adult repairing computers and now as an old fart messing with various mechanicals. Experience has shown Murph to be irrefutable, unchallengeable and unmerciful. However, I have formulated my own lemma, and it seems proper to this time of the year:

The hassles, the incidents, the frustrations and anguish are directly proportional to the love we have for what we do.

So in the spirits of the holidays, whether experiencing frustrations at a starwatch, fiddling with intransigent gear or in traffic, or at the mall fighting the crowds, we still endure and do these things because we love them, like kids love Christmas.

☆ Merry Christmas and Happy New Year to ALL.--Rankin Pang
(reporting from Kauai)

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Part of a panoramic image of winter on Mauna Kea from the perspective of the astronomers and support personnel. See related story on the history of Mauna Kea on page 5. For the full image, see <http://www.gemini.edu/gallery/v/Facilities/gn/exterior/SNPanPV.jpg.html>

Image courtesy: Gemini Observatory

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