The Astronews

HUI KILOLANI

Volume 62, Issue 7

July 2014

www.hawastsoc.org

"Galileo and the Roman Inquisition"

Special Guest Speaker

Robert D. Joseph, PhD

Institute for Astronomy

Tuesday, July 1, 7:30PM

Bob Joseph is an Astronomer at the Institute for Astronomy (IfA), UH Manoa. He has been at IfA for 25 years. Before coming to Hawaii he was Reader in Astrophysics at Imperial College, University of London for almost 20 years.

He also served as Director of the NASA Infrared Telescope Facility on Mauna Kea from 1989-2000, and was recently awarded the NASA Public Service Medal for outstanding leadership while serving as Director.

Asteroid 7159 has been named ''Bobjoseph" by the International Astronomical Union.

Joseph's research interests are in extragalactic astronomy, and he has published over 200 scientific papers. He is on the editorial board of the journal, Contemporary Physics.

In 1979, Joseph was one of a group of a dozen European astronomers who first proposed the space astronomy mission, the Infrared Space Observatory (ISO) to the European Space Agency. ISO launched in 1995, and Joseph was a Co-Investigator on the ISOPHOT instrument on this successful mission.

Joseph was also one of the proposers to the European Space Agency for the Far-Infrared and Submillimetre Telescope (FIRST). This mission was re-named Herschel, and was launched in May 2009.

☆ ☆ ☆

Inside this issue:

President's Message	1
NASA Space Place	4
Meteor Log	5
Oberserver's Notebook	6
Calendar	8
Minutes	9
Star Parties	10
Treasurer's Report	10

Upcoming Events:

☆The next meeting is 7:30PM on **Tues., July 1** at the Bishop Museum.

☆Bishop Museum's next evening planetarium shows are every Saturday of the month at 8:00 p.m. www.bishopmuseum.org/calendar

☆The next Board Meeting is Sun., **June 29** at 3:30 p.m. at the POST building at UH.

Up To The Minute:

CAROLYN'S LAST SOAPBOX (FOR A LITTLE WHILE AT LEAST!)

It's funny that when you have too much to say, you suddenly don't know how to say it. This is the case with me right now as I sit down to wrap up my 5.5 years of being the newsletter editor. When I first started this job I had the momentum of years of creative writing; but subsequent jobs haven't allowed me to continue in that mode, so currently I'm at a bit of a loss--I couldn't even think of an appropriate title for this column!

I have enjoyed these years of contributing what I could to the Hawaiian Astronomical Society and some part of me still wishes I had the luxury of time to keep doing this on a monthly basis. But we all know "nothing stays the same", and right now I believe is the right time to move on and concentrate on other things I need to spend my energy on. Thanks to all my contibutors--I couldn't have done this alone!

I have been careful and cautious about interjecting too many of my personal opinions in this newsletter, but that is only because of my background in news. This newletter is indeed for opinions and ideas and if I could leave one piece of advice I would say more of you need to come forward with your voices. Like government, if you don't participate you shouldn't complain.

Secondly, it's time for the club to step more boldly into the 21st century--in a word: DIGITAL. Let's face it, out of our 120+ members that pay dues in our club, maybe 10% will read this issue. But how many more are reaching out on our Facebook page or hitting our website? As valuable as our outreach volunteers are, we need those of you who cannot volunteer telescopes to help promote the club in other ways.

Some of us have been tossing around the idea of putting the newletter into a blog form. What do you think? Let us know and we will try to make it happen. Better yet, help make it happen with us!

Fond aloha,

Editor

Hawaiian Astronomical Society
P.O. Box 17671
Honolulu, HI 9681-0671

President
Chris Peterson
956-3131
chrisp@higp.hawaii.edu

Vice-President
Peter Besenbruch
peter@besenbruch.info

Secretary
Gretchen West
282-1892
gwest002@hawaii.rr.com

Treasurer
April Lew
734-2705
stardustlounge@hotmail.com

The Astronews **Editor**
Carolyn Kaichi
c.kaichi2001@gmail.com

Board Members at-Large
Otis A.Wikman
otisann49@gmail.com

Charles Rykken
cjrykken@gmail.com

HAS Webmasters
Peter Besenbruch
peter@besenbruch.info

Harry Zisko
harryz@pobox.com

School Star Party Coordinator
John Gallagher
gallaghej002@hawaii.rr.com

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

President's Message

by Chris Peterson

Mutual events occur when two or more celestial bodies appear close enough to each other in our sky to get our attention. The ones we notice include eclipses and transits as well as close approaches of relatively bright objects. Some are very common, such as transits of Jupiter's moons across its face. The Moon frequently occults relatively bright stars. Others are less frequent. July will have a couple of these.

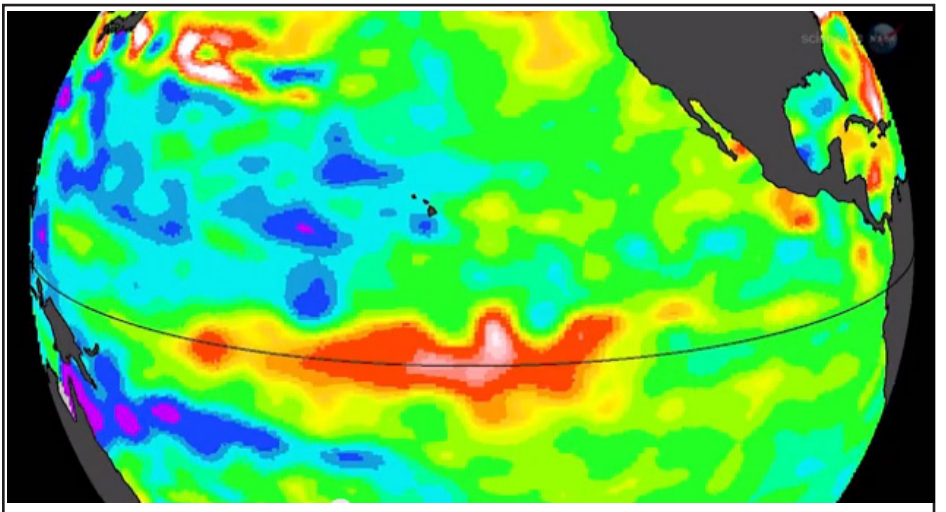
On July 5th, Mars will be occulted by the Moon. Hawaii is the only place in the U.S. where this will be visible, but it will occur in the daytime, between about 12:45 and 1:45 p.m. This is also the day of our regular Kahala and Geiger star parties, so the Moon and Mars will be very close together that night.

That same evening (and the night before) there is another pairing of interest. Ceres and Vesta, the two largest and brightest asteroids, will be about 10 arcminutes apart and less than 10 degrees from Mars. The Dawn spacecraft left Vesta in September of 2012 after orbiting for over a year and is en route to Ceres, so it will be in the same field of view as the two asteroids although not visible to us. The mission was planned for a time when the two bodies would be positioned to enable Dawn to visit both in a reasonable interval of time. Dawn should arrive at Ceres in the Spring of 2015. Ceres will be at about magnitude 8.5 on July 5th, Vesta 7.2.

Mars will have an encounter with Saturn in August. On the 24th they will be only about 3 ½ degrees apart. That would put them in the same binocular field of view.

We are looking for a new Astronews editor. If we identify a candidate, we will have a special election at the July meeting to fill that spot. Please consider serving the club if you have the necessary skills and some time to spare. The HAS can only continue to exist if its members fulfill the functions necessary for its survival. We each need to do our part.

Chris



Ocean and atmospheric scientists at NOAA and NASA are carefully monitoring the Pacific trade winds. The tipping point for declaring a significant El Niño will be an even longer lasting, larger collapse in Pacific trade winds, possibly signaling a shift in weather all around our planet.
Watch or read the full story at ***http://science.nasa.gov/science-news/science-at-nasa/2014/19may_elnino/***

NASA's Space Place

A Glorious Gravitational Lens

By Dr. Ethan Siegel

As we look at the universe on larger and larger scales, from stars to galaxies to groups to the largest galaxy clusters, we become able to perceive objects that are significantly farther away. But as we consider these larger classes of objects, they don't merely emit increased amounts of light, but they also contain increased amounts of mass. Under the best of circumstances, these gravitational clumps can open up a window to the distant universe well beyond what any astronomer could hope to see otherwise.

The oldest style of telescope is the refractor, where light from an arbitrarily distant source is passed through a converging lens. The incoming light rays—initially spread

(Continued on page 9)

Abel 2218—a gravitationally-lensed cluster of galaxies that is a great target for deep-sky astrophotograhy. Image credit: NASA, ESA, and Johan Richard (Caltech). Acknowledgement: Davide de Martin & James Long (ESA/Hubble).

There certainly was a flurry of activity around the Comet LINEAR P/209 "meteor storm" predicted for the northern sky in May. We dutifully researched the shower, planned for the best observing location, and prepared for the big show. We'll, as we now know, this was the storm that wasn't … at least on this planet!

Was it time ill spent? Not at all! We always tend to look forward to celestial events maybe because they are unpredictable and we never really know what we about the see until we look.

A fair number of us "looked" on the Friday evening of May 23rd. Ten people arrived at the observing site at Dillingham airfield. The view to the north was quite acceptable, with only a line of trees in the distance blocking the low horizon. The radiant was less than 20 degrees up from our latitude; however, we knew that any meteors traveling up from the radiant would be easily visible. Our biggest issue was the weather, which had been unstable for the days leading up to Friday. Though we had driven through rain to get to the site, the weather did improve during the evening. It was never completely clear, with high clouds always present, but it was good enough that we can say that the weather didn't prevent use from seeing meteors.

We observed from dusk until around 11pm. Recall, that the peak was between 9 and 10 pm local time. We did observe meteors, but only one "possible" meteor from Comet LINEAR. It was viewed by two observers but was either so short or fast that the direction couldn't be confirmed by them. They both mentioned that it was reddish in color. This occurred early in the session. The group went on to confirm seven sporadic meteors, which are random and not related to the shower. From this we can conclude that we had the sky to see meteors, just not Comet LINEAR meteors.

(Continued on page 10)

MOON PHASES

First Quarter	*Full Moon*	*Last Quarter*	*New Moon*
Jul 05	**Jul 12**	**Jul 19**	**Jul 26**

Shower	Activity	Max Date	λ 2000	Radiant α	Radiant δ	V∞ km/s	*r*	ZHR
Piscis Austrinids (PAU)	07/15 - 08/10	Jul 28	125°	341°	-30°	35	3.2	5
S, δ-Aquariids (SDA)	07/12 - 08/23	Jul 30	127°	340°	-16°	41	3.2	16
α-Capricornids (CAP)	07/03 - 08/15	Jul 30	127°	307°	-10°	23	2.5	5

Bolide, fireball, or storm shower - - Give us a report!
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

Jul 5, 15h, M 0.24° NNW of Mars (96° from sun in evening sky)

Jul 7, 16h, M 0.44° SE of Saturn (121° from sun in evening sky)

Jul 15, 05h, M 4.4° NNW of Neptune (135° from sun in morning sky)

Jul 17, 21h, M 1.6° NW of Uranus (99° from sun in morning sky)

Jul 24, 07h, M 4.4° S of Venus (24° from sun in morning sky)

Jul 24, 04h, M 5.0° S of Mercury (15° from sun in morning sky)

Jupiter is closer that 15° from the sun when near the moon in July.

Other Events of Interest

Times are Hawaii Standard Time

Jul 3, 14h, Earth at aphelion (1.01682 au from sun)

Jul 3, 17h, Pluto at opposition

Jul 3, 23h, Asteroid 4-Vesta 0.19° SSW of 1-Ceres (99° from sun in evening sky)

Jul 12, 01:26h, Full Moon

Jul 12, 08h, Mercury at greatest elongation (20.9° west of the sun in morning sky)

Jul 12, 22:32h, Moon at perigee (21 hours after full moon, expect very high and very low tides.)

Jul 16, 09h, Mercury 6.2° ESE of Venus (20° and 26° from sun in morning sky)

Jul 24, 11h, Jupiter at conjunction with sun (Passes into morning sky)

Jul26, 12:42h New Moon

☿ Mercury

Mercury is visible in the dawn twilight during the middle of July. Look for it below Venus on the evening of July 16.

♀ Venus

Shines brightly in the morning sky, about 20° above the dawn horizon at the beginning of the month, then dropping lower.

♂ Mars

Visible in the SW evening sky, gradually becoming dimmer. An occultation by the moon will be visible from Hawaii during daylight hours in the early afternoon of July 5.

♃ Jupiter

Jupiter reaches conjunction with the sun late in the month and is lost in the twilight glare.

♄ Saturn

Saturn is visible high in the western sky at sunset and can be viewed most of the evening.

♅ Uranus

Uranus is visible in the southeast before sunrise, but will be much better placed for viewing later in the year.

♆ Neptune

Neptune is above Uranus in the eastern sky before sunrise. It will also be better placed for viewing later in the year.

♇ Dwarf Planet Pluto

Reaches opposition this month, so is in the sky all night and almost at the zenith around midnight.

4 Vesta/ 1 Ceres

Have a very close approach on the evening of July 3. At only 0.19° apart they should be in the same field of view for most telescopes.

Meeting Minutes

by Gretchen West

President Chris Peterson called the June 3, 2014 meeting of the Hawaiian Astronomical Society to order at 7:38p.m. The meeting was held in the Planetarium, on the grounds of the Bishop Museum, Honolulu, Hawaii. There were 27 members in attendance.

Hawaii Space Lecture Series: Regular lectures usually take place at the NASA Pacific Regional Planetary Data Center, room 544 in the Pacific Ocean Science and Technology Building on the Manoa campus of the University of Hawaii. Should you be interested in upcoming lectures or for information you can contact NASA PRPDC at 808-956-3132 or on the Web go to http://www.higp.hawaii.edu/prpdc.

June Pot Luck: Thank you to all who participated in the evening's get-together. The food was delicious and conversations were brisk and pleasant. We have a wide assortment of dishes and lots of yummy desserts.

Kepler Space Telescope: ***Chris Peterson*** adiscussed the intended use of the Kepler Space Telescope, its problems with orienting itself in space to complete it job, and the intended fixes for the problem.

Lacy Veach Day 2014: The Hawaiian Astronomical Society will participate with astronomers at the upcoming Lacy Veach Day of Discovery to be held again on the grounds of Punahou School in October. ***Gretchen West*** will have a sign-up sheet at the July meeting for those who wish to help out.

Thirty Meter Telescope Project: The Thirty Meter Telescope Project (TMT) has one last hurdle to overcome before it can break ground. There will be a hearing of the Hawaii State Land Board on June 13th at 9:00 am, at which final approval will hopefully be given. H.A.S. has sent a letter of support for the TMT. H.A.S. Board members and assembled members at this month's general membership meeting added their names to the letter of support.

Meteor Shower Report: On the evening of Friday, May 23rd there was an early evening meteor shower. About 15 members of H.A.S. gathered at Dillingham Airfield to witness the shower of meteors from the remnants of Comet Linear 209P. Meteor watcher ***Tom Giguere*** indicated that the radiant for this meteor shower should have been near Polaris and be somewhat tightly focused. Unfortunately, clouds obscured the view somewhat and there was a dearth of meteors. It was reported that 8 meteors were counted at Dillingham between 9:00 pm and 11:00pm.

Astronews News : We are sorry to report that ***Carolyn Kaichi*** will be stepping down as Astronews Editor. The Board is searching for a dedicated H.A.S. member willing to take on the responsibilities of crafting our club newsletter. Should you wish to take on this challenge, be sure to contact ***Chris Peterson*** at the phone number listed in the masthead.

School Star Parties: ***John Gallagher*** reports that there are no schools star parties scheduled for June or July.

John Gallagher urged members to visit the Night Sky Network website and sign up to help at star parties. Logging mileage when volunteering at star parties can be tracked on the website and printed out to help on yearly tax forms as well

Help Out at the Bishop Museum: The Bishop Museum is requesting volunteers to sign up to help out at the Museum and run the scope on Saturday evenings 6:30 to 10:00. Anyone interested contact ***Joanne Bogan.***

(Continued on page 9)

July 2014

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
		1 7:30 PM Club Meeting	2	3	4	5 7:29 PM Public Star Party(G) 7:28 PM Public Star Party(K)
6 sunset: 16:13	7 7:30 PM Upward Bound (Private)	8	9	10	11	12 7:30 PM Star Party with Scott Fis (Private)
13 sunset: 16:10	14	15	16 8:00 PM Globe at Night	17 8:00 PM Globe at Night	18 8:00 PM Globe at Night	19 8:00 PM Globe at Night 6:45 PM Club Star Party (D) (Private)
20 8:00 PM Globe at Night sunset: 16:06	21 8:00 PM Globe at Night	22 8:00 PM Globe at Night	23 8:00 PM Globe at Night	24 8:00 PM Globe at Night	25 8:00 PM Globe at Night	26 6:00 PM Public Star Party(D)
27 sunset: 16:00	28	29	30	31		

▪ observing event ▪ club event ▪ community event

<<Upcoming Star Parties>>

Kahala/Ewa Public	**July 5**
Club Only-Dillingham	**July 19**
Public Party-Dillingham	**July 26 (Wikman)**

☆ ☆ Upcoming School Star Parties ☆ ☆

Mon.	**07/07**	University of Hawaii (Manoa)
Sat.	**07/12**	Kahala Elementary (Kahala)
Fri.	**08/15**	Waialua UCC Bible School (Waialua)

(Space Place continued from page 4)

over a large area—are brought together at a point on the opposite side of the lens, with light rays from significantly closer sources bent in characteristic ways as well. While the universe doesn't consist of large optical lenses, mass itself is capable of bending light in accord with Einstein's theory of General Relativity, and acts as a gravitational lens!

The first prediction that real-life galaxy clusters would behave as such lenses came from Fritz Zwicky in 1937. These foreground masses would lead to multiple images and distorted arcs of the same lensed background object, all of which would be magnified as well. It wasn't until 1979, however, that this process was confirmed with the observation of the Twin Quasar: QSO 0957+561. Gravitational lensing requires a serendipitous alignment of a massive foreground galaxy cluster with a background galaxy (or cluster) in the right location to be seen by an observer at our location, but the universe is kind enough to provide us with many such examples of this good fortune, including one accessible to astrophotographers with 11" scopes and larger: Abell 2218.

Located in the Constellation of Draco at position (J2000): R.A. 16h 35m 54s, Dec. +66° 13' 00" (about 2° North of the star 18 Draconis), Abell 2218 is an extremely massive cluster of about 10,000 galaxies located 2 billion light years away, but it's also located quite close to the zenith for northern hemisphere observers, making it a great target for deep-sky astrophotography. Multiple images and sweeping arcs abound between magnitudes 17 and 20, and include galaxies at a variety of redshifts ranging from z=0.7 all the way up to z=2.5, with farther ones at even fainter magnitudes unveiled by Hubble. For those looking for an astronomical challenge this summer, take a shot at Abell 2218, a cluster responsible for perhaps the most glorious gravitational lens visible from Earth!

Learn about current efforts to study gravitational lensing using NASA facilities: *http://www.nasa.gov/press/2014/january/nasas-fermi-makes-first-gamma-ray-study-of-a-gravitational-lens/*

Kids can learn about gravity at NASA's Space Place: *http://spaceplace.nasa.gov/what-is-gravity/*

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

☆

(Minutes continued from page 7)

Peter Besenbruch utilized the digital projector to display information regarding Pan-stars and Jacques in Monoceros.

Planetarium: ***Joanne Bogan*** gave members an astronomer's view of the night skies as seen by the wayfarers on the voyaging canoes Hokulea and Hikianalia. She helped us to refresh our knowledge of the Hawaiian constellations and how they aid the wayfarers on their three-year journey around the world.

Mahalo: As there was no further business, the meeting was adjourned at 9:00 p.***m.***

Respectfully Submitted,
Gretchen West
HAS Secretary

Treasurer's Report

by April Lew

HAS Financial Report for the month ending as of Jun. 15, 2014

Initial Balance:	**$3,735.13**
Income:	
Donations	105.00
Dues Received	106.00
Total Income:	**$211.00**
No Expenses	**$0**
Final Balance	**$3,946.13**

Welcome to new members ***Susie & Toby Clairmont,*** and ***Bob Jones.***

Thanks to all members who ***renewed*** their membership this month! A reminder to those whose membership expired at the end of last year. **Check your mailing label for your anniversary date.**

HAS POTLUCK SUMMER 2014

(Meteor Report continued from page 5)

Press was good for this shower and we had many reports from other locations. From the UH campus, Chris Peterson called to report that no meteors were seen; Mike Morrow saw a nice 25 degree meteor, but it was a sporadic; Steve Bond and his wife drove up Haleakala, about a hundred people some with scopes were there, meteors were seen but I'm not sure if they were sporadic or not; further afield, friend Gary Weibert was clouded out in Las Vegas so he drove 100 miles into the California desert to enjoy a bright golden-white meteor streaking between Ursa Major & Minor, quite possibly a LINEAR.

So… what happened to the "storm"? Looking back at pre-shower predictions, Esko Lyytinen and Peter Jenniskens, later confirmed by other researchers, predicted 209P/LINEAR might generate the next big meteor shower (100-400 meteors/hour) which would come from the constellation Camelopardalis. The 2014 Camelopardalids only generated 10–15 visual meteors per hour. But the expected radiant and date of visual maximum were correctly predicted. The shower peaked around 6h UT (10pm HST) on 23 May 2014. The Canadian Meteor Orbit Radar (CMOR) detected the shower using HF/VHF radar echos but the particles were too small for visual detection. Interesting… a few of us at the observing session, while skies were cloudy, conjectured that the meteors might be too small to see, maybe a few more looks through the telescope would have paid dividends?!? There's always next time…!

Tom

Hawaiian Astronomical Society
P.O. Box 17671
Honolulu, HI 96817-0671

Place stamp here. Post Office will not deliver mail without proper postage

EDITOR'S PREROGATIVE: Astronews Editor bids aloha by featuring her picture at the June HAS Potluck. Shown in the picture are fellow club members ***Mel and Clare Levin***, enjoying the great food at our bi-annual event.
All Potluck images courtesy: April Lew