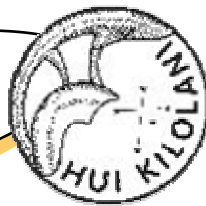


The Astronews



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Real Signs of the Zodiac

by Dr. Lee T. Shapiro

Sooner or later anyone involved with astronomy has contact (or conflict) with astrology or someone interested in astrology. To a great extent the response from the astronomical and planetarium community has been defensive, denying the validity of astrology when asked. There have been some attempts to go on the offensive, such as the recent publication *Objections to Astrology* (Prometheus Books, 1975). However, such clearly anti-astrology publications are probably only read by those who already are nonbelievers.

To put astrology in the proper perspective, we can do two things to

(Continued on page 6)

Upcoming Star Parties

Public Party	June 1	Dillingham
Club Party	June 8	Dillingham
Public Party	June 15	Kahala Park
Club Party	July 8	Dillingham
Public Party	July 13	Dillingham
Public Party	July 20	Kahala Park

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Special points of interest:

- The next meeting is 7:30 on June 3 at Bishop Museum
- **Sam Rhodes** Hanauma Bay shows have moved to the 2nd Monday of every month. Gates close at 7:30

President's Message

by Gretchen West

Have you ever noticed that the caché of a telescope in an area with moderate pedestrian traffic creates a kind of curiosity and interest with the public that is palpable! With children, interest is immediate and undeniable. But with adults the curiosity is more subdued, or should I say more repressed. You can see it in their body language, their demeanor.

With the adults, the feet say keep moving but the kid in them makes their shoulders turn and eyes to creep over in your direction. You can almost hear the little gears turning. "Oh, I'm too old for that." "I'm sophisticated and couldn't possibly stop and look." But just about then, the kid inside them really takes control. And so they turn and edge a bit closer. Their eyes are saying, "It's only for a minute or two." "I'll look but I won't be impressed." They sidle over and lean in to take a look. "Wow, Is that the Moon... or ...Jupiter? It's so wonderful!" And the hook is set, you can start to reel them in. You've got them!

"Is this a telescope?" "What are you looking at?" "How far can you see?" Yes some of the questions are a bit silly but that's not the point. The interest that was there as a youngster, is alive and well, just a little dust covered and somewhat hesitant. They open up, and talk, and laugh. They stay and carry on conversations that just a few minutes earlier were the farthest thing from their minds.

Why not take a chance in your own neighborhood? Go out, set up, and you too can perpetrate a random, senseless act of Astronomy.

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Planets Close to the Moon

Times are Hawaii Standard Time

- June 1, 11h, M 4.2° SSE of Uranus (102° from sun in morning sky)
- June 9, 03h, M 2.6° NNW of Mercury (17° from sun in morning sky)
- June 12, 02 h, M 2.4° N of Mars (18° from sun in evening sky)
- June 12, 18h, M2.5° N of Jupiter (27° from sun in evening sky)
- June 13, 12h, M 1.5° NNE of Venus (36° from sun in evening sky)
- June 28, 19h, M 4.2° SSE of Neptune (129° from sun in morning sky)

Saturn is closer than 15° from the sun when near the moon in June.

Other Events of Interest

Times are Hawaii Standard Time

- June 3, 13h, Venus 1.6° N of Jupiter (34° from sun in evening sky)
- June 6, 18h, Pluto at opposition
- June 9, 01h, Saturn at conjunction with sun, passes into morning sky.
- June 10, Annular eclipse of the sun. Seen in Hawaii as a partial eclipse from about 13:05 and to about 16:07 HST with about 30% of sun covered at maximum.**
- June 10, 13:47h, New Moon
- June 12, 13h, Juno 0.51° SSW of Regulus (68° from sun in evening sky)
- June 21, 03:23h, Summer Solstice
- June 21, 04h, Mercury at greatest elongation (22.7° west of sun in morning sky)
- June 24, 11:42h, Full Moon

The Planets in June

♿ Mercury	♀ Venus	♂ Mars
Mercury is visible in the morning sky late in June, reaching max. elongation on the 21st.	Venus is visible in the southwest near Jupiter just after sunset. Mag. -3.9.	Mars remains in the southwest at dusk below Venus. Mag. +1.7
♃ Jupiter	♄ Saturn	♅ Uranus
Jupiter is close to Venus in the evening sky early in the month. Mag. -1.9	Saturn is at conjunction with the sun this month and is too close to the sun to view.	Uranus rises about an hour after Neptune and can be viewed in the pre-dawn sky. Mag +5.8
♆ Neptune	♇ Pluto	
Neptune rises just after midnight and is near the meridian by dawn. Mag +7.9	Pluto is at opposition this month. It will be in the sky all night and near the zenith at midnight.	

Editor's Retraction

Before you rush out and try the "Vodka Diet" in order to improve your brain function, we have learned that the *NASA pen vs. the Russian pencil* story from the May issue was just too good to be true. It is, in fact, an urban legend. The following URL confirms this:

<<http://www.snopes.com/business/genius/spacepen.htm>>



Good things come to those who wait. The longer the wait, the greater the reward seems to be. On May 13th that beautiful blue color came back into the skies of Oahu and all the plants looked up from their long, long drink. While broadcast meteorologists continued to talk about a flash flood watch, it was clear that this island would once again see stars. So a few of us dropped everything and headed for the country. Termites, moths, cockroaches and everything else in the air welcomed us

back like rock stars at their old high school. We kept our focus on the stars we had come for and before long our winged fans bugged off.

A pretty crescent moon dropped into the trees below Venus, which had climbed above Mars only recently. Jupiter showed only two moons at first. The missing moons were hiding in front and behind. Half a dozen military guys showed up for a quick peek at this planet and then ran back into the bushes on cue from a nearby chopper. Darkness hid them but showed us that the Coma/Virgo realm of galaxies was nearing the zenith, so we got busy with that area right away. Walking a scope through the Messiers of this area beats down a pathway in one's mind. Friendly asterisms and faint smudges show up like old friends to give directions. It feels good to visit with them again.

Both seeing and transparency were so-so on this transitional night, but we managed fine views of the Sombrero Galaxy, The Whirlpool, The Black Eye, and Bernice's Hairpin (NGC 4565). The Owl Nebula kept trying to show its eyes. Omega Centauri looked surprisingly sharp and smaller globulars M3 and M5 were nicely resolved at 174X.

By 8:30 I remembered that someone on the Internet

(www.shallowsky.com) mentioned about comet Ikeya-Zhang approaching Hercules. The Keystone (most visible asterism of Hercules) had just cleared the eastern trees so with 10x42s I took a shot in the dark and was amazed to see a fuzzy blob far outshining M13 just left of the Keystone's upper left corner (i.e., north of Eta Hercules). The telescope showed the comet as very large and diffuse, with hints of a very subtle, very wide tail. Its glory days are gone but I'll bet that it would have been naked-eye for us a bit later at night.

Half a dozen military guys showed up for a quick peek at the planet Jupiter, then ran back into the bushes on cue from a nearby chopper.

By then the old menace had crept in from the East. Thankfully the pace of these clouds was as slow as the snails on my Punchbowl home's damp steps. It was 10:00 PM when access to the universe was once again denied. And once again we are reminded of the link between rarity and value.

Some members have asked about the possibility of obtaining polo shirts with the HAS logo printed on them. These are pullover shirts with collars. Our supplier can provide them, but there are a couple of problems. First, there is a minimum order of 24 shirts. Then, as these are not a one-size-fits-all, the question becomes what sizes do we order? The club has no plans to stock an inventory of such shirts. If we are to make a purchase of polo shirts, interested members would be required to pre-order/pre-pay for shirts by specific sizes. Each would be in the \$20 price range.

For silk screening, the fabric is not the usual heavy knit, but a smooth weave. Shirts are available in various colors. However, our order must be all the same color because the colors of the logo would need to be changed to be visible and the printer is not willing to make individual color changes for such a small order. Further, it has been recommended that only the front logo be printed and that the back be left blank. I will have an un-printed sample of the shirt at our next meeting. Also, I still have 26 of the other T-Shirts available for sale ranging in size from small through 2XL. We will probably not be reordering shirts when these items are sold.

Meteor Log — June 2002

by Mike Morrow

Not much happens in June. There are several radio showers and two minor visual showers. Sunday the 16th, the June Lyrids. Radiant 18h23m +35.

This drizzle may get to 5 meteors per hour but that would be a bit of luck. the Moon is not a problem this year. The shower is weak, but apparently genuine. It may be occasionally active.

Thursday the 27th, the June Bootids. Radiant 14h56m +48. While the shower is generally very weak at times it may produce about 50 meteors per hour. 1998 was a grand event. These meteors

may be from Comet Pons-Winnecke.

This should be a good year to check the activity of this shower, but the Moon will be up and bright all night. Members of the shower are slow moving. Only really bright members might survive the moonlight.

If you are interested in observing Meteors contact Tom Giguere on Oahu at 672-6677 or write to Mike Morrow, Meteor Group Hawaii, P.O. Box 6692, Ocean View, HI 96737

Real Signs of the Zodiac (Continued from page 1)

try to remedy the situation.

First we must stop spreading astrological information. Yes, I believe all of us have done this even though unintentionally. The prime example and major point of this article is in reference to the band of the zodiac. Consider just the ecliptic. How often have you referred to the twelve constellations that the sun passes through during a year? The number twelve is correct only if one is using astrological constellations. There are thirteen astronomical constellations that cross the ecliptic. Whenever you refer to the zodiac use the number thirteen and name the constellations of the ecliptic (see Table #1). If someone complains that these are not the right constellations, just point out that all constellations are arbitrary and strictly artificial. The ones we use are the official constellations of the International Astronomical Union.

Table #1 The Astronomical Constellations of the Ecliptic			
Constellation	Start	End	Days
Sagittarius	Dec 18	Jan 18	32
Capricornus	Jan 19	Feb 15	28
Aquarius	Feb 16	Mar 11	24
Pices	Mar 12	Apr 18	38
Aries	Apr 19	May 13	25
Taurus	May 14	Jun 19	37
Gemini	Jun 20	Jul 20	31
Cancer	Jul 21	Aug 9	20
Leo	Aug 10	Sep 15	37
Virgo	Sep 16	Oct 30	45
Libra	Nov 1	Nov 22	23
Scorpius	Nov 23	Nov 29	7
Ophiuchus	Nov 30	Dec 17	18

In addition to ceasing our propagation of astrological information, we can also give the public further astronomical information that will hopefully have the effect of raising questions about astrological belief and practice. Table #1 also includes the dates for which the sun is in each constellation of the ecliptic

and the number of days it spends in each constellation. If someone asks you what constellation the sun is in on a particular date, use this information and mention that the answer you are giving

is the astronomical constellation the sun is in on the date in question. If you cross check between the dates listed here and the “standard” astrological dates, you will find there are approximately only four dozen dates in common.

The modern astrologer plots your chart not based on the alignment of planets and stars on the actual date of your birth, but where they were 2,000 years ago on the date of your birth. -ed

Then there is a question of the definition of the zodiac itself. In a quick survey through about ten basic astronomy texts, the definition given was either 8° or 9° on either side of the ecliptic. To be on the conservative side, Table #2 lists those constellations that come within 8° of the ecliptic. (Venus is the only naked eye planet that reaches more than 8° away from the ecliptic.) You can quickly see that there are not 12 constellations of the zodiac but 21. At the appropriate times you can list the nontraditional constellations in which the sun, moon, or planets can be found. The current *American Ephemeris & Nautical Almanac* and the *Atlas Coeli* (or some other suitable stellar atlas with constellation boundaries marked) are all that are needed for producing this type of list.

Table #2 Constellations within 8° of the Ecliptic			
Aquarius	Aries	Cancer	Capricornus
Cetus	Corvus	Crater	Gemini
Hydra	Leo	Libra	Ophiuchus
Orion	Pegasus	Pisces	Sagittarius
Scorpius	Scutum	Sextans	Taurus
Virgo			

If you include the orbit of Pluto which is tilted at 17° to the ecliptic, then the zodiac also includes the constellations Bootes, Coma Berenices, Eridanus, and Leo Minor. Using this information, you can have an interesting time incorporating it into shows or creating public displays. If and when astrologers complain, your interest is promoting astronomy, not astrology.

However, there is one caution I would like to mention. If someone asks you whether you believe in astrology, ask them what they mean before you reply. If someone gives me a definition such as “the belief and study of cosmic influences on the earth and its creatures,” I can agree that such influences

If you cross check between the dates listed here and “standard” astrological dates, you will find that there are approximately only 4 dozen dates in common.

do exist. However, I point out that while it is obvious there are cosmic influences, especially from the sun and the moon, there is no evidence that positions of the heavenly bodies can be used to predict the actions, characteristics or futures of individuals.

Dr. Shapiro is Director of Operations of the Morehead Planetarium at the University of North Carolina, Chapel Hill.

Reprinted (with permission) from the *Planetarian*, Vol 6, #1, Spring 1977.

I have always been interested in the night sky. I can remember lying out on a lawn in Aina Hina as a teen watching a Leonid meteor shower with the family and being amazed at all of those 'shooting stars.' I tried looking at the night sky with binoculars, but I could never hold steady enough and I never knew anyone with a telescope. I later remember seeing a comet high overhead in Kailua in the early morning sometime in the late sixties or early seventies. I even took a picture of it, but that seems to have been misplaced.

Later in years I worked for the Air Force and traveled to South East Asia and the Philippines. I would go out at night to try to identify some of the constellations overhead and enjoyed the black of night where light pollution was not a major problem. I only wish that I knew then what I know now. I would be looking for specific objects in the southern hemisphere like the Magellanic Clouds and other sights that are not visible in Hawaii.

One day in the early nineties, I walked into the Nature Company at Ala Moana Shopping Center and saw this beautiful telescope. What did the sky look like through it and did I

really want to spend that much money and would my interested in astronomy continue? The sales person told me that telescopes were setup and that I could actually look through one at a couple of places. These locations were the Blow Hole and at the end of the island out in Mokuleia. A group called the Hawaiian Astronomical Society met regularly at the Bishop Museum Planetarium and I could get more information from them.

I attended a meeting of HAS and found Ray Fabre conducting the meeting. I met people like Peter Besenbruch, Jay Wrathall, Kevin Polk, and a host of others. It looked like an interesting group and I did not need to be sold on the topic. After that meeting, I attended my first Star Party and was hooked. Subsequently, I decided I needed a telescope and ordered a Meade LX50. That was the biggest thing I could handle, not to mention afford. I convinced myself that this was the only scope I would ever need. Why I could even take pictures with it.

Presently, I am on my third scope and have my eye out for another that will meet my needs for a quick setup. I love the hobby and never seem to get enough time at the eyepiece.

What they really mean

A guide to understanding articles in the Astronews & other publications.

What they say:

It is a difficult double star.

This is a test for a 4" telescope.

An experienced observer can detect the star's variability.

What they really mean:

If you see two stars, it is probably wishful thinking.

Use a 10" and maybe you'll see it.

If you haven't been observing for at least ten years, don't try it.

The cluster has over two hundred stars.

The color contrast is striking.

The slightest haze will obscure it.

The telescope's optics are superb.

The site offers clear skies year round.

A person with average eyesight can split this pair.

"Uh, that's neat." (Spoken by your non-astronomer neighbor after being shown M31).

After moonrise, members ceased deep-sky activities and enjoyed pleasant views of the moon.

I counted twenty-five with a 10" telescope.

One star is white, the other is white.

You probably won't see it on the clear-est night.

They magnify atmospheric disturbances perfectly.

It is 200 miles from civilization.

Over half the world is blind.

"How much did you say you paid for this thing?"

Everybody (a) cursed, (b) seared their retinas before packing up, and (c) went home.

Minutes

by Chris Trusty

President, Gretchen West, called the meeting to order at 7:35pm. Gretchen thanked all the volunteers that helped at the school star parties last month. There are three star parties in May; Laie (Jay Wrathal), May 10th Variety School and May 31 at Hoku-lani School. Sign up sheets were circulated. Waldorf school has requested a star party while up at Camp Timberline on June 3 or 4. If you are available, please contact Barry Peckham.

Our guest speaker, Richard Waincoat, gave an enlightening talk about light pollution. Richard is an astronomer with the University of Hawaii's Institute for Astronomy. He just returned from a conference on light pollution in La Serena, Chile and shared a synopsis of the research presented at the conference. He shared

photos from satellites that demonstrate that there are very few dark places left on the planet. Because of the telescopes on Mauna Kea the subject of light pollution is well know in the political arena with legislation outlawing mercury lights. But enforcement of the law is nonexistent. Building more observatories on Mauna Kea is becoming increasingly more difficult, so the astronomy community is looking to Haleakala. The light pollution from Oahu affects the viewing on Maui. Richard encourages everyone to join the International Dark-Sky Association and learn about how to help save Hawaii's dark skies.

There was a break for refreshments and conversation. Meeting reconvened in at the planetarium for a "stars tonight" tour of the sky. Meeting adjourned at 9:45pm.

HAS Financial Report as of May 15, 2002

Initial Balance:	\$6,018.94
Receipts:	
Donations	3.00
Dues Received	78.00
Interest Income	1.26
T-Shirt Sales	75.00
Total Income:	\$157.26
Expenses:	
Astronews	163.59
Astronomy Day Printing	12.86
Magazine Subscription Payment	58.95
Refreshments/Speaker's dinner	39.60
WAA Dues	20.00
Total Expenses:	\$295.00
Final Balance	\$5,881.20

Since last month, we have had two new members join us. They are **Lawrence Peraza** and **Richard Rivera**. Welcome to the club. Many thanks to **Jane Houston** and **Mojo Jones** for their donation.

Clear skies to the many members renewing their membership this month! Hopefully, one of these nights, we'll see clear skies during one of our outings.

Star Party Coordinator

We need a volunteer to coordinate the school star parties. This position entails receiving calls and/or emails requesting a star party and assigning that party to a member on the volunteer list. That member will be responsible for rounding up enough folks and actually providing the star party.

Mel and Claire Levine have volunteered to oversee the East Oahu area. Forest Luke continues to provide for the Leeward area. We need a coordinator to keep track of all the parties and make sure enough people and scopes show up.

The coordinator does not need to go to all the star parties, rather be more of a liaison for the schools and club members. This is our community outreach and we need your kokua to continue to make it a successful program. Here's your chance to make a difference. Call Gretchen (735-0482) if you are interested.

Astronomy Swap Meet

The club is planning to hold a swap meet where members can get together to find new homes for those astronomy items each of us no longer need. I talked to the folks at Bishop Museum to try to schedule the Atherton Halau. We are currently looking for a Saturday morning sometime in the month of July or August. This is to be a one-time event, but if it's a success, we can always schedule another one in the future. Any ideas? You can send an e-mail to Jim MacDonald at (Jim.Macd@Verizon.net) Start looking your equipment over to see what's no longer needed, but which is still serviceable.



Astronomy Day (April 20) at Barnes and Noble in Kahala Mall. Left to Right are club members **Jim MacDonald, Glenn Nanamori, Barry Peckham, John Gallagher, Paul Lawler, Gretchen West, Kevin Polk and Don Tucker**. What the photo fails to reveal is that the photographer (**Stephanie Choquette**) is standing in the pouring rain while taking this photo.

How Far is Deneb? (an Astronomy Mystery)

At Sam Rhodes planetarium show he indicated that Deneb is 3,200 light years away. *2sky* and *Starry Night* also indicate this same distance. However, (as Barry pointed out) several other sources list Deneb as half of that, only 1,600 light years away. Your editor has found on-line sources estimating its distance as 2,500 light years. Can anyone shed any "light" on this mystery? Regardless of distance, Deneb is likely the brightest star of its class in our galaxy, with a luminosity of over 200,000 suns. If it was the same distance as Alpha Centauri it would have a visual magnitude of -11 . The full moon is -18 by comparison.

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