

# SJAA EPHEMERIS

## Yosemite and Hornet

Hsin I Huang

"Am I doing a star party or am I just a tourist?" For two consecutive weekends I found myself asking the same question.

Before we went to Yosemite for our annual star party in July, we heard there was a fire, but didn't know any details. When we arrived at the park, we were told that Glacier Point was closed. But

they let us in anyway and told us to stay at our special camp site, just in case the fire was under control and the star party was back on. When we set up the tent at Bridalveil Creek Campground, there was a smell of smoke in the air. You could see fire trucks coming in and out. 300 fire fighters stayed at the same camp site, just at a different area. And the sky was murky. Of course, with Glacier Point

closed, there was no star party in the night.

Friday night, the fire was finally under control and Glacier Point was re-opened. But the sky was still filled with smoke to do any serious star gazing. We had to leave Saturday morning for personal things. So for this trip, we were just tourists. My telescope was not even taken out of the car.

## SJAA Activities Calendar

Jim Van Nuland

### September

- 2** ATM class at Hough Park. 7:30 p.m.
- 10** Astronomy class at Hough Park. 7:30 p.m.
- 10** Hough Park star party. Sunset 7:22 p.m., 11% moon rise 3:37 a.m. Star party hours: 8:30 to 11:30 p.m.
- 11** Dark Sky Star Party at Coyote Lake Park, Gilroy. Potluck at 7 p.m. Sunset 7:21 p.m., 5% moon rise 4:41 a.m.
- 15** Support for the great KTEH Auction. 8:15 p.m. to midnight. (see article on page 6).
- 16** ATM Class at Hough Park. 7:30 p.m.
- 18** Deep sky weekend. Sunset 7:10 p.m., 16% moon sets 9:32 p.m.
- 24** Hough Park star party. Sunset 7:01 p.m., 88% moon sets 3:37 a.m. Star party hours: 8:00 to 11 p.m.
- 25** **General meeting**, Slide and Equipment Night. 8 p.m.

### October

- 2** ATM class at Hough Park. 7:30 p.m.
- 8** Astronomy class at Hough Park. 7:30 p.m.
- 8** Hough Park star party. Sunset 6:40 p.m., 23% moon rise 2:25 a.m. Star party hours: 7:30 p.m. to 10:30 p.m.
- 9** Deep sky weekend. Sunset 6:38 p.m., 15% moon rise 3:28 a.m.
- 14-17** Cal-Star Star Party. Lake San Antonio Regional Park.
- 16** Deep sky weekend. Sunset 6:29 p.m., 7% moon sets 8:10 p.m.
- 21** ATM Class at Hough Park. 7:30 p.m.
- 22** Hough Park star party. Sunset 6:21 p.m., 76% moon sets 2:37 a.m. Star party hours: 7:00 p.m. to 10:00 p.m.
- 23** **General meeting**. 8 p.m.
- 30** ATM Class at Hough Park. 7:30 p.m.
- 31** 3 a.m. **DST Ends**. Set your clock back to 2 a.m.

The Board of Directors meets at 6:30 p.m. preceding each general meeting. All are welcome.

The following week marked the 35th anniversary of men walking on the moon. The SF Bay Area celebration took place on board of the USS Hornet, an aircraft carrier which was built in 1944 and was used in the recovery of the Apollo 11 and 12 crews when they returned to earth. The ship was decommissioned in the 1990's and is now docked in Oakland Harbor as a museum (regular admission is \$12).

Alan Bean, the fourth man to walk on the moon and the commander of Apollo 12, was visiting as a guest speaker. Bean, now 72 years old, has retired and is an accomplished painter. About 400 people attended the dinner with him and heard his speech on board the USS Hornet. (see photo page 5)

We were called upon to do a star party on the flight deck. It was the 8th day of the lunar cycle. We were supposed to show the first quarter moon. The early evening sky was OK. Then the notorious SF fog rolled in and covered the sky. So we ended up doing nothing for the visitors. But we were allowed to sit in for Alan Bean's speech.

Add forest fire and San Francisco fog to our public enemy list!

**24 hour news and information hotline: (408) 559-1221**

<http://www.sjaa.net>

## Space Race Books

There are many books that look at the space race. This review covers four of these books. Two are by writers famous for writing about space. The other two actually were major participants. First up, "A Man on the Moon" by Andrew Chaikin. This book was used as the basis for the HBO series "From the Earth to the Moon". As if to return the favor, Tom Hanks wrote the forward. Chaikin's book essentially starts with the Apollo fire. The paperback edition I read covers all of the Apollo flights in about 650 pages. Like the TV show it inspired, you get a few tidbits here and there that Chaikin found by interviewing everyone he could find. You will not find a lot of technical information here.

William Burrows wrote "This New Ocean," a satisfying history of the exploration of space from before Goddard to the current era. He even discusses whether evidence of life in a Martian meteorite might be the catalyst to send us to Mars. The hardback version I read was as long as Chaikin but just a bit better read. Not much of the information was new but it was interesting to read about Soviet failures that were mostly unreported at that time. If someone is looking for a complete history of the space race, this book is it. Sergei Korolyov, Wernher Von Braun and John Kennedy. If you are a little light on the background of the first two, this book will fix that. As for Kennedy, he gave this book its name.

For many years Chris Kraft was known as "Flight" so it is no surprise that his book is likewise named. Kraft has absolutely no qualms about giving us his opinion such as his very negative review of Scott Carpenter's performance on the fourth Mercury flight. But the most notable thing about this book is how immensely readable it is. The hardback version I read was about 350

pages and it was quickly consumed.

While Kraft's book is the easiest to recommend, my favorite is Gene Kranz's "Failure is Not an Option." The phrase title has been over used and sounds like nerds trying to be macho. That's why I was surprised how human this book is. Kranz talks about how he apparently scared his daughter's boyfriends. He also talks about how biological necessities made it uncomfortable in the control room when they locked the doors during difficult times. But most of the book is about Kranz's experience working for Kraft and later taking over as "Flight". It covers a bit more of the manned space program because Kranz was there longer. In all of the books listed here, the one human being you will get to know best is Gene Kranz and I was quite impressed. Kranz's book is about 400 pages in the paperback version.

Here are the review statistics from Amazon.

Kranz 4.5 stars in 75 reviews.

Kraft 4.5 stars in 55 reviews.

Chaikin 5 stars in 93 reviews.

Burrows 3.5 stars in 20 reviews.

I admit that I'm a nut for all of these books and many like it. It's not exactly astronomy but it seems to me that a lot of us are the same way. Astro-nuts and astronomers rarely make a clear demarcation between their two areas. For me the first books of serious interest were the simply illustrated books by people like Willy Ley, a colleague of Wernher Von Braun. I believe they cost about 50 cents if you included two boxtops from Jets cereal and were prepared to wait the interminable 6-8 weeks. Today, two day air sounds like a major inconvenience but I'm still an avid reader of these books. If you are like me, you will have to read them all.

## In Memoriam Florence Van Nuland 1933-2004

Florence Van Nuland, wife of Jim Van Nuland, passed away on August 3, 2004 after a long battle with breast cancer. She was 71 years old. Besides Jim she is survived by 5 children and 14 grandchildren. In lieu of flowers, Jim has suggested a donation in her name to your favorite charity or the American Cancer Society. Her funeral was held on August 9.

Jim would often refer to Florence's creativity. In an e-mail in June of 1998 he said, "The mount for my 8 inch is named Gladys after one of Ruth Buzzi's characters on the late lamented Laugh-In. ... But it was my wife Florence who named it. Actually, many good ideas come from her. For instance, when I told her that the 30 inch was damaged, she immediately asked whether the SJAA observatory fund could be used for that ... you know the rest.

In October 2003 he wrote "I must brag about my creative wife. The usual long underwear is too short for my long shanks. Florence cut about a foot off a pair, then (from one with a ragged top) cut off about TWO feet of legs. Sewn onto the first pair, I have long jims that are a foot longer than usual."

And in February 2004 he wrote "I will look for a nice carrying box or case for (the video projector). Florence suggested a battery box, like the one I use for the telescope battery. ... She found a nice case for my laptop, and may find something."

Mike Koop reminded us of the saying, "Behind every great man there's a greater woman."

## Voluminous

Dave North

If there's anything particularly interesting happening on the Moon in September, I don't know about it.

This month's "pseudo event" is the Harvest Moon. It has that name simply by virtue of being the time of year somewhere when people would be harvesting crops, and if they really needed to work late it would throw enough light. There are probably a few other details as well.

Nevertheless, I've been pondering my fuzzy understanding of the size (and therefore volume) and mass of the Moon, and various theories of how it got where it is.

The Moon is about 3,476 Km in diameter, or for local convenience, about 2,160 miles. The Earth, by comparison, is about 7,926 miles at the equator.

Since we're just running rough numbers, let's see how that compares in volume, shall we? First, let's round out a bit for convenience and say the Earth is about 8,000 miles in diameter, and the Moon about 2,000. That gives us a simple 4/1 ratio.

The volume of any two solids of identical shape (but different dimensions) can be compared by taking the cube of any one dimension. So all we have to do is cube 4 (since we're only after a ratio) and we get, of course, 64.

So if the Moon and Earth were made of the same stuff, we'd presume the Moon would have about 1/64 of the Earth's mass. (I think it's interesting to reflect that the Moon, as comparatively big as it is, with over 1/4 our diameter, only has about 1/60 the volume. That's numbers for ya).

But back to mass: in the real world, the

Moon's mass is only about 1/81 of the Earth's, and in fact its density as far as I know is only about 60 percent of the Earth's.

It turns out we do share quite a similar mineralogical makeup at the surface, so the consensus is the Moon doesn't have anywhere near the density at the core.

This presumes a lot less iron and nickel, basically. This lack of iron is generally presumed to be the big problem with the idea that the Moon and Earth formed from the same bunch of scraps, dust and whatever – and is the primary driver behind the theory that the Moon was formed when an impactor hit the earth and tossed a bunch of stuff into orbit, some of which formed into the Moon.

The basic idea is if the Moon and Earth formed from the same "cloud" or "ring" or whichever/whatever term you prefer, they should have nearly identical constituent elements in similar proportions.

Curiously, in some ways they do. The isotope composition is so similar that they are generally agreed to have been made of the same source matter. But that works for either idea.

But that iron ratio, that's the big problem. And also what I've been mulling.

What I can't figure out is why a coalescing cloud/blotch/whatever should, if it somehow has a major and minor "glob," have the same stuff end up in both globs in the same proportion.

First, let me point out we're pretty sure binary systems do form with some regularity, though not as planets in our solar system. And it is not at all uncommon for those binaries to not be of equivalent size.

So at any rate, it's not ridiculous to think a binary planet could be formed as primarily a coalescing event – at least as far as I know.

Given this can happen, what would you expect if one of the clumps started out bigger than the other?

We would hardly expect them to start out identically – pure luck would indicate a fairly broad distribution of possibilities.

*"...the Moon's mass is only about 1/81 of the Earth's, and in fact its density as far as I know is only about 60 percent of the Earth's."*

Given that, do the rich normally get richer and the poor get less? In other words, if one is more massive, would we expect it to attract more mass? And if it were (quite naturally) close to the center of mass of the evolving system, would we not expect some sorting to take place, ending with the more massive "stuff" ending up nearer the center?

And if that were indeed the case, wouldn't it be reasonable to expect something not unlike the Earth/Moon system we see here?

I'm just asking in a "food for thought" kind of way, partly because I haven't seen this issue addressed. I'm not an exhaustive researcher, just curious.

Maybe Kevin or Jeff or someone else will have nothing else to do but read this and can explain (or not).

I'm curious!

## The Shallow Sky

### Wake up for the Morning Show

Akkana Peck

It's not a great month for evening planet observers. There are outer planets to look at.

Uranus (in Aquarius), Neptune (in Capricornus), and Pluto (in Ophiuchus) are all well placed for observing in the evening sky. Uranus and Neptune were both at opposition last month, so their timing is virtually ideal for the evening observer, though unfortunately they never get very high in the sky (around forty degrees).

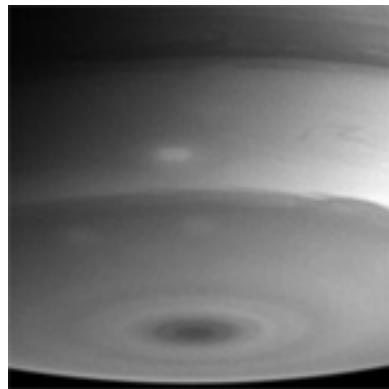
Jupiter and Mars are too close to the sun to observe this month. But the real show in September is in the mornings.

Mercury has its best morning apparition all year, rising as much as an hour and a half ahead of the sun. On the evening of Sep 9, Mercury has a very close encounter –

about 3.5 arcseconds – with the bright star Regulus. Regulus is roughly a magnitude fainter than Mercury, and with Mercury at roughly half phase and seven arcseconds in size, you won't have any difficulty telling them apart!

While you're out there, don't miss gibbous Venus, which rises four hours before sunrise. It passes within two degrees of Saturn on the first of the month – should be a lovely low-power view, if you have an eyepiece which can show two degrees.

If Mercury, Venus, and Saturn aren't enough for you, and you're out under a dark sky before dawn begins, the latter half of September is a good chance to look for the Zodiocal Light (which you may remember from March's column).



*The image was taken with the Cassini spacecraft narrow angle camera on July 13, 2004, from a distance of 5.1 million kilometers (3.2 million miles) from Saturn, through a filter sensitive to wavelengths of infrared light centered at 889 nanometers. Courtesy NASA/JPL-Caltech.*

Look for a faint band of light stretching upward along the ecliptic from the unseen location of the sun. What you're seeing is reflections off the dust left over from the protoplanetary disk out of which the solar system formed.

While you're straining to see the dim pillar of light which marks the remains of the planetary disk from which we formed, take a moment to reflect on some of the science releases this year.

In May, JPL announced that the Spitzer Space telescope had detected organic materials in the dusty planet-forming discs of several stars in Taurus (high in the sky as you await sunrise). The targets of the Spitzer were all young stars, with chunkier planetary disks – they're full of material which in our solar system has long

since been swept up by planets. But they're quite a bit farther away, too – over 400 light years from us.

Earlier, in February, a team from Berkeley and the University of Hawaii unveiled a direct image of the planetary disk around the star AU Microscopium, a star only half the mass of the sun and 33 light years away. That observation was made with a 2.2 meter telescope on earth.

Take a look at our Zodiocal Light, and reflect on how modern telescopes are able to capture spectra and direct images of disks around other stars, and spy on their planetary formation.

That's pretty amazing!

### Renewing with S & T

Gary Mitchell

Club Treasurer

Are you one of the many members who save on your Sky & Telescope subscription by going through the club? Is it nearing time to renew?

Sky Publishing sends out renewal reminders asking that you "return your renewal to your club treasurer." They make it sound as if you should include that renewal notice, but that's not the case. We don't need that reminder notice, we have our own form for bulk subscriptions.

Some of you have gone so far as to cut out your magazine mailing label and send that in to us with your renewal because you've lost the S & T reminder notice, etc. Please, folks, that's not necessary. Relax.

When it comes time to renew, you only need to send us the SJAA membership form by itself. However, we can use those S & T postage-paid envelopes. :)

### Directions to Houge Park

Houge (rhymes with "Yogi") Park is in San Jose, near Campbell and Los Gatos. From Hwy. 17, take the Camden Avenue exit. Go east 0.4 miles, and turn right at the light, onto Bascom Avenue. At the next light, turn left onto Woodard Road. At the first stop sign, turn right onto Twilight Drive. Go three blocks, cross Sunrise Drive, then turn left into the park.

From Hwy. 85, take the Bascom Avenue exit. Go north, and turn right at the first traffic light, onto White Oaks Road. At the first stop sign, turn left onto Twilight Drive. You will now be passing the park. Turn right at the first driveway, into the parking lot.

At the ASP Awards Banquet portion of AstroCon 2004, Geoff Marcy gave a talk on his extrasolar planet hunting experiences. Seated at this table from left to right are: John Diebel, Marcy, Noelle Edwards and Alex Filippenko. Photo courtesy of Carter Roberts.



Joycelin Craig and Kristin Nelson of the Astronomical Society of the Pacific are shown here at the ASP booth at AstroCon 2004. The ASP was one of the participating organizations at AstroCon 2004 held in Berkeley on July 20-24, 2004. Other participating organizations were American Association of Variable Star Observers (AAVSO), the Astronomical League (AL) and Association of Lunar and Planetary Observers (ALPO). This was the first time all four organizations met together. Sponsoring organizations were Astronomical Association of Northern California (AANC), the Eastbay Astronomical Society and us (SJAA). AstroCon 2004 was dedicated to the memory of Janet Akyüz Mattei, former director of the AAVSO. Highlights of AstroCon 2004 included a talk by David Levy about Janet Mattei, three other talks by Levy, lunch talks by Don Machholz and Tony Hallas, Dr. Louis Friedman's (The Planetary Society) talk on Solar Sails, an ASP Outreach Workshop and many door prizes and exhibitors. Photo courtesy Carter Roberts.



## *AstroCon 2004: A Superior Conjunction*

Apollo 12 Astronaut Alan Bean is shown here looking at one of his paintings that were auctioned off on August 24, 2004. The event was a gala dinner on board the USS Hornet (see article on page 1). This was the 35th anniversary of the recovery of Apollo 11, the first lunar landing. On board the Hornet you can still see the isolation lab where the astronauts were quarantined after returning from the moon. The dinner was the final event of AstroCon 2004. Photo courtesy of Hsin I Huang.

## Silicon Valley Astronomy Lecture Series

### Russell Schweickart on October 6, 2004 at 7 p.m.

Andrew Fraknoi

Apollo 9 Astronaut Russell Schweickart will give a non-technical, illustrated talk on: "Asteroid Deflection: Hopes and Fears" in the Smithwick Theater, Foothill College, El Monte Road and Freeway 280, in Los Altos Hills, California

Free and open to the public. Parking on campus costs \$2. Call the series hot-line at 650-949-7888 for more information.

Co-sponsored by:

\* NASA Ames Research Center

- \* The Foothill College Astronomy Program
- \* The SETI Institute
- \* The Astronomical Society of the Pacific

Russell Schweickart, Lunar Module Pilot on Apollo 9 and the first person to step outside a spacecraft without an umbilical cord, also served as Commissioner of Energy for the state of California. He was the founder and president of the Association of Space Explorers, the professional organization

of astronauts and cosmonauts.

Schweickart is currently Chairman of the Board of the B612 Foundation, dedicated to protecting the future of humanity by developing and demonstrating ways to deflect asteroids that are heading our way.

He will discuss what we know about the threat of cosmic rocks and the various ways that have been suggested for saving the Earth from large asteroid impacts, including both nuclear and non-nuclear alternatives.

Please come early as we expect a full house for this very special program.

## Solar System Stats for September 2004

The solar systems stats for September 2004 are available in the HTML version of the newsletter.

## ASTRONOMY magazine renewal time

Jim Van Nuland

It's time to renew our group subscription to Astronomy magazine. The rate for 2004 is again \$29, or \$55 for two years. Please send a check payable to Jim Van Nuland, 3509 Calico Ave., San Jose CA 95124.

If you subscribe independently, and your subscription ends during 2005, you may convert to the group rate. Send a check and the renewal card or a mailing label to Jim, and you'll be added to the group for an additional 12/24 months.

If you do not subscribe and wish to do so, send the \$29/55 and your subscription will begin with the January 2005 issue. I will hold your checks until early October when the renewal package is sent in. Don't worry that your check doesn't clear promptly. Any questions? Call Jim at 408.371.1307, from 10 am to 10 pm, or e-mail to <jvn@svpal.org>.

PLEASE NOTE: this applies to Astronomy magazine, not Sky & Telescope! The latter subscription is paid to SJAA as part of your dues.

Good Reading!

## KTEH Auction September 15th

Mike Koop

On August 5<sup>th</sup>, 10 SJAA members provided telephone support during the pledge breaks at KTEH for Nova's The Elegant Universe. We helped the station raise over \$13,000 that night. We had so much fun, we decided to do it again! On Wednesday, September 15<sup>th</sup>, the SJAA will be at The Great KTEH Auction. They are looking for help answering

phones, entering bids into computers, setting up bid tables, and assisting at the warehouse for pickups. Our shift will be 8:15 PM to midnight. KTEH provides the training and food. You will be amazed how fast the time goes by! If you are interested in helping out, email Mike Koop at [koopm@best.com](mailto:koopm@best.com) or phone at (408)473-6315.



The SJAA Crew at KTEH taking pledges for Nova's The Elegant Universe. We helped raise over \$13,000! Back Row: Barbara and Ernie Piini, Eric Anderson, Kosha Ganatra, Jim Albers, Paul Jordan, Hsin-I Huang. Front Row: Mike Koop, Leon Jones, Gary Mitchell. Photo courtesy of Hsin-I Huang.

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## Publication Statement

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 San Jose, CA 95159-8243

## Submit

Submit articles for publication in the SJAA Ephemeris. Send articles to the editors via e-mail to ephemeris@sjaa.net. **Deadline, 10th of previous month.**

## SJAA loaner scope status

All scopes are available to any SJAA member; contact Mike Koop by email (koopm@best.com) or by phone at work (408) 473-6315 or home (408) 446-0310 (Please leave message, phone screened).

### Available scopes

These are scopes that are available for immediate loan, stored at other SJAA members homes. If you are interested in borrowing one of these scopes, please contact Mike Koop for a scope pick up at any of the listed SJAA events.

# Scope	Description	Stored by
1	4.5" Newt/ P Mount	Annette Reyes
3	4" Quantum S/C	Hsin I. Huang
6	8" Celestron S/C	Richard Savage
7	12.5" Dobson	Tom Fredrickson
16	Solar Scope	Bob Havner
19	6" Newt/P Mount	Daryn Baker
23	6" Newt/P Mount	Wei Cheng
24	60mm Refractor	Al Kestler
27	13" Dobson	Steve Houlihan
29	C8, Astrophotography	Mike Koop
32	6" f/7 Dobson	Sandy Mohan
34	Dynamax 8" S/C	Yuan-Tung Chin
37	4" Fluorite Refractor	Gary Hansen
38	Meade 4.5" Digital Newt	Tej Kohli
39	17" Dobson	Ron Gross

### Scope loans

These are scopes that have been recently loaned out. If you are interested in borrowing one of these scopes, you will be placed on the waiting list until the scope becomes available after the due date.

# Scope	Description	Borrower	Due Date
8	14" Dobson	Jan Lynch	10/9/04
10	Star Spectroscope	Bill O'Shaughnessy	9/11/04
13	Orion XT6 Dob	Eric Anderson	10/7/04
15	8" Dobson	Scott Pelger	10/5/04
26	11" Dobson	Vivek Kumar	10/10/04
33	10" Deep Space Explorer	Jason Yoon	10/15/04
35	Meade 8" Equatorial	Peter Young	8/28/04
36	Celestron 8" f/6 Skyhopper	Dennis Hong	10/8/04
40	Super C8+	Mike Macedo	9/11/04
41	18" Sky Designs Dob	Len Bradley	10/12/04
42	11x80 Binoculars	Ritesh Vishwakarma	10/10/04

### Extended scope loans

These are scopes that have had their loan period extended. If you are interested in borrowing one of these scopes, we will contact the current borrower and try to work out a reasonable transfer time for both parties.

# Scope	Description	Borrower	Due Date
2	6" f/9 Dob	John Paul De Silva	?
9	C-11 Compustar	Bill Maney	Indefinite
11	Orion XT6 Dob	Lia Klofas	10/6/04
12	Orion XT8 Dob	Christopher Salander	9/23/04
14	8" f/8.5 Dob	Colm McGinley	9/19/04
21	10" Dobson	Michael Dajewski	Repair
28	13" Dobson	Anupam Dalal	11/1/04

### Waiting list:

8	14" Dobson	Jim Song
10	Star Spectroscope	Jim Albers
16	Solar Scope	Joe Huber
33	10" Deep Space Explorer	Ion Coman

# San Jose Astronomical Association Membership Form

**New**    **Renewal** (Name only, plus corrections below)

**Membership Type:**

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- Junior with Sky & Telescope — \$39

Subscribing to Sky & Telescope magazine through the SJAA saves you \$10 off the regular rate. (S&T will not accept multi-year subscriptions through the club program. Allow 2 months lead time.)

Bring this form to any SJAA Meeting or send (with your check) to

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