NIGHTFALL
Huachuca Astronomy Club of Southeastern Arizona

General Meeting is 23 April 2010

7 pm, Cochise College, Sierra Vista, Rm. 305A/B

Guest Speaker: Glenn Minuth
Topic: SOFIA - Stratospheric Observatory for Infrared Astronomy

PLUS our monthly Show-N-Tells, upcoming event details, refreshments & Door Prizes!

The President's Perspective

It's late, but welcome to the New Year! We haven't had a newsletter since December when Teresa Mullen, after having done a fantastic job as newletter editor for several years, decided it was time for someone else to take on the duties. It took a few months of searching, but Mark Meanings has stepped forward and volunteered to take on the challenge. The HAC membership met Mark when he gave a short, but spirited, presentation at our last meeting. It sounds like he has a lot of good ideas and enthusiasm for the position as our new editor. Please welcome Mark aboard and give him lots of support and encouragement. The hardest part of being an editor is gathering articles and tidbits for the newsletter. If you find something of astronomical interest please submit it to him. Don't assume that everyone will have already seen the information you're submitting. Mark, as editor, will have the responsibility of deciding what goes into the newsletter, but I'm sure he'll be more than willing to publish most of what he receives.

We would also like to welcome Tony Maslanka as refreshments chairman at our HAC General Meetings. He takes over for Tim Doyle who did a great job in that capacity for the past year. Please continue to donate for the refreshments served at the meeting. It has been self-sustaining due to your wonderful participation. I'm sure Tony will take suggestions and possibly accept home-baked donations as the year goes by, but please let him know in advance if you plan to do so. Probably the best way is to let him know you would like to help out is when you see him at the meetings.

Despite the overall lack of cooperation by the weather, we have already managed to have several successful Astronomy Nights (aka Member and Guest Star Parties) at some of our members observatories/houses. I would like to thank them, especially Dave Healy, Bob Kepple, and Bob Hebert (so far this year), on behalf of the club, for allowing us to use their facilities. We just had a very successful Messier Marathon at Keith and Teresa Mullen's place with over two dozen people participating and nearly twenty of them staying the entire night to enjoy breakfast at dawn. We have had good participation in Outreach events this year at some of the local elementary schools and organizations with Rich (Swanee) Swanson heading them up. Bob Gent has been acting as liaison for several school events, especially with the UA South's monthly astronomy nights at Patterson Observatory. Glenn Minuth, our speaker this month, has been instrumental in arranging Sidewalk Astronomy events at several venues in downtown Sierra Vista which have been quite successful. We have a number of activities where you don't necessarily need advanced equipment, but we need _you_ to come participate and see how enjoyable it is to not only do your own personal observing, but share some of your enthusiasm with the general public. It's surprising how excited people get when they see their first celestial object (like the moon or one of the planets) through a telescope.

But in order for us to continue these activities we need you to participate! It cannot be emphasized too strongly that participation is the lifeblood of this (and any) organization. No one person can accomplish all the little tasks that it makes to comprise all the activities our Club does. We ask that you, as a valued member, participate when and where you can. We are all busy people, but participation in the hobby and the club you enjoy, helps build a stronger and

better organization. We hope to see you at, and participating in, the various activities HAC has to offer.

Clear skies, Wayne (aka Mr. Galaxy) Johnson President, HAC

Welcome Back *Nightfall* Newsletter!!!

- by Mark Meanings

I am honored and excited about being the newsletter editor. I've only been a member a few months, but I'm impressed by the unusual density of active people dedicated to astronomy within this organization. I'm humbled to be associated with you all.

I feel that the newsletter of such an organization should be equally impressive. To that end, I'd like to briefly outline a new structure to the newsletter that will be adopted over the next several months:

1. The 'President's Perspective' by our current president will continue.
2. Bob and Glen's excellent 'Travels On the Celestial Sphere' will continue.
3. If possible, I'm going to try to arrange an interview with the current month's speaker prior to the general meeting and publish it in the newsletter. This will allow members to preview the topic and get a good introduction before they see the presentation at the meeting.
4. I'm going to put on my 'Press' hat and dig for local astronomy news -- especially the activity of HAC members. This will hopefully also include a number of "observatory tours" and personal interviews that I plan on taking for story ideas.
5. There will be a calendar of events which will include: - local, regional, and national astronomical meetings, symposia, and other presentations - various astronomical events (solar/lunar/planetary, occultations, variable stars, etc)
6. There will be a classified ads section in which members can advertise for sale and wanted items, as well as various astronomical services
7. There will be product reviews in

Travels on the Celestial Sphere

Objects in Virgo

Bob Kepple and Glen Sanner

April, and spring in general, is galaxy season as we are looking out into deep space between the winter and the summer Milky Way. It is mind boggling to think that there are billions of galaxies and each one contains hundreds of billions of stars. Is anyone looking back at our own Milky Way Galaxy? I'd like to think so! If we are the only intelligent life in the universe then there is a lot of wasted space out there. The galaxies in the Coma-Virgo Supercluster average a distance of about 65 million light years while the galaxies in Ursa Major, and Canes Venatici, are considerably closer. M106 is about 35 million light years away while M81 and M82 are only 10 million light years from our solar system.

Use low power to locate the objects in this month's article then re-examine each object with higher magnification; you will be surprised how much more detail becomes visible.

17 Virginis , Double Star , Spectral Type F8 , Mags. 6.6, 9.4, Separation 20", P.A. 337°, R.A. 12h22.5m, Dec. +05°18'

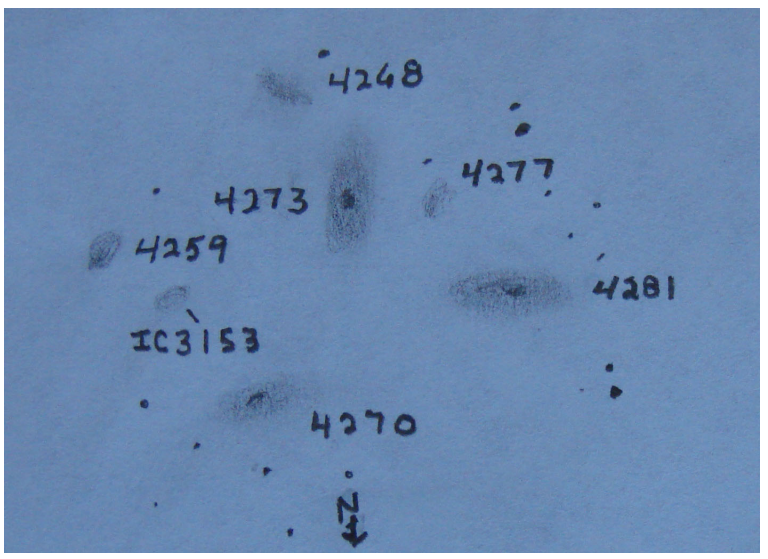
17 Virginis is a nice double for small telescopes with a yellowish primary and a white secondary.

51-Theta Virginis , Double Star , Spectral Type A0 , AB Pair: Mags. 4.4, 9.4, Separation 7.1", P.A. 343°, R.A. 13h09.9m, Dec. -05°32'

Theta Virginis has a bright white primary with an easily separated pale yellow companion. A third 10.4 magnitude companion lies nearly 70" away in position angle 298°

105-Phi Virginis , Triple Star , Spectral Type K0 , AB Pair: Mags. 4.8, 9.3, Separation 4.8", P.A. 110°, R.A. 14h28.2m, Dec. -02°14'

Phi Virginis is a triple star system with a deep yellow primary, a close orange secondary, and a wide bluish 12th magnitude component 93 seconds away in position angle 205 degrees.



which I hope to interview the producers and users of various pieces of hardware and software. HAC members are encouraged to submit their own reviews.

8. There will be book reviews. Same plan as the product reviews.
9. There will be general astronomical news, gleened from the various current astronomical journals. I'm hoping to interview authors on their work to get a more personal view.
10. If any HAC member is doing research or is involved in a project that they'd like other members (and the world!) to know about, send me an article! I can help putting it together, if necessary.
11. I'll always be on the lookout for astro humor. If you know a good joke (in good taste, please), let me know!
12. I'd like to include some short stories or artwork with an astronomical theme. Are there any aspiring writers or artists who are also HAC members that would like to get their work published?

The deadline for submissions to the newsletter will be the Monday before the publication date. The publication date will be about one week before the general meeting. In the short term, this newsletter will only be available in electronic form as you see it now -- as a webpage. Hopefully the next issue will also be available in Adobe Acrobat (.pdf) format.

Clear Skies and Peace to All

Exoplanet Orbits Turn Planet Theory Upside Down

- by Mark Meanings

A number of members of HAC are involved, either directly or indirectly, in exoplanet observing and research. A recent discovery of six exoplanets in *retrograde* orbits around their parent stars have planetary astronomers scratching their heads. Current understanding of planet formation concludes that planets will orbit

Sketch made by Bob Kepple with a 16-inch Reflector at 200x.

Looking into Virgo this spring you will find many groups of galaxies which are especially nice, one such group is found within 3 minutes of double star 17 Virginis. The group has seven galaxies within a span of 15 arc minutes and will fit in a medium power eyepiece. **NGC 4273**, lying at the heart of the group, is a fairly bright 11.9 magnitude galaxy elongated 1.5'x1' N-S with a bright central core. NGC 4273 forms a close pair with **NGC 4277** lying 2' east. NGC 4277 is a tiny round 0.7' spot glowing at only 13th magnitude. Located 7' ENE of NGC 4273 you will find **NGC 4281**, another bright galaxy which is elongated 2'x1' E-W with a bright stellar nucleus. Jumping 8' NW of NGC 4281 you will find **NGC 4270** which is a fairly bright galaxy with an oval halo elongated 1.5'x0.7' NW-SE with a stellar nucleus. At the southernmost end of the group lying 4' SW of NGC 4273 is **NGC 4268** a fairly bright 12.8 magnitude galaxy elongated 1.2'x0.5' NE-SW with a stellar nucleus. A very faint 14th magnitude star lies less than 1' NW of the galaxy. Look at the western edge of the group 8.5' from NGC 4273 and you will find **NGC 4259** a fairly faint, slightly oval 14th magnitude glow having a brighter core. Lying 3.7' NE of NGC 4259 is **IC 3153** is a round, faint 15.2 magnitude smudge of light.

While you're in the area, pan 22' south of the 4273-4281 galaxy group and you should be able to sweep up another three galaxies. **NGC 4261** is a nearly circular 3' diameter galaxy shinning at magnitude 10.4 with a fairly bright core and a well concentrated nonstellar nucleus. Lying just 3' ENE of NGC 4261 is **NGC 4264**, a small but obvious 1' diameter object with a bright core that is large compared to its faint halo. Lying another 16' north of NGC 4261 is **NGC 4260** a fairly bright but diffuse oval elongated 2'x1' ENE-WSW with a broad central concentration. If you use a low power eyepiece the three galaxies will fit into the same field of view. Article content based on *The Night Sky Observer's Guide, Vol. 2* courtesy of Willmann-Bell, Inc.

NGC4259, Dia. 1.1' x 0.4', Mag. 13.6v, SB 12.5, 12h19.4m, Dec. +05°23' Type S0 sp
NGC4260, Dia. 2.0' x 1.1', Mag. 11.8v, SB 12.5, 12h19.4m, Dec. +06°06' Type SB(s)a
NGC4261, Dia. 3.5' x 3.1', Mag. 10.4v, SB 12.9, 12h19.4m, Dec. +05°49' Type E2-3
NGC4264, Dia. 0.8' x 0.6', Mag. 12.8v, SB 11.9, 12h19.6m, Dec. +05°51' Type SB(rs)0+
IC 3153, Dia. 0.5' x 0.3', Mag. 14.8v, SB 13.2, 12h19.6m, Dec. +05°24' Type Sc(r)
NGC 4268, Dia. 1.2' x 0.5', Mag. 12.8v, SB 12.1, 12h19.8m, Dec. +05°18' Type SB0/a: sp
NGC 4270, Dia. 1.7' x 0.7', Mag. 12.2v, SB 12.2, 12h19.8m, Dec. +05°28' Type S0
NGC 4273, Dia. 2.3' x 1.1', Mag. 11.9v, SB 12.7, 12h19.9m, Dec. +05°21' Type SB(s)c
NGC 4277, Dia. 0.8' x 0.7', Mag. 13.4v, SB 12.6, 12h20.1m, Dec. +05°21' Type SAB0/a:
NGC 4281, Dia. 2.5' x 1.3', Mag. 11.3v, SB 12.4, 12h20.4m, Dec. +05°23' Type S0+: sp

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in the same direction as the star rotates. This seems to only make sense: some of the angular momentum of a young, rotating star will transfer outwards to the dust and gas surrounding it. It is within this dust and gas that planets form, and they'll be orbiting the star in the same direction that it's rotating.

But now, a "bomb has been dropped" on that theory. How can these planets be orbiting their parent star in a retrograde motion? No one really knows for sure, yet. I'd also suggest that more observations need to be taken in order to be absolutely sure. Measurements like these are *really* tough. But, there are already some theories out there explaining the retrograde motion. Quoting an article appearing on *ScienceDaily*: "To account for the new retrograde exoplanets an alternative migration theory suggests that the proximity of hot Jupiters to their stars is not due to interactions with the dust disc at all, but to a slower evolution process involving a gravitational tug-of-war with more distant planetary or stellar companions over hundreds of millions of years. After these disturbances have bounced a giant exoplanet into a tilted and elongated orbit it would suffer tidal friction, losing energy every time it swung close to the star. It would eventually become parked in a near circular, but randomly tilted, orbit close to the star." So basically what they're saying is that these exoplanets ARE actually orbiting the stars correctly, just with an "inclination" of 180 degrees! Hmmmmmmm.....

So we will see. For me it's always great to have solid, foundational understandings blown to smithereens by a close look at reality. For sure, exoplanets will continue to blow our minds and our theories for the foreseeable future. If anyone is interested in getting into observing exoplanets, please get ahold of HAC member Bruce Gary who has written a whole book on how to do it.

International Dark-Sky Association co-Hosts Convention with

What is Spacemusic?

- by Mark Meanings

My first encounter with space music was when I was doing UBV photometry of white dwarf stars up at the 61" telescope on Mt Bigelow in the Catalina Mountains. The way the instrument and computer was set up, I had to sit out there, in the dark and cold, watching the photons pile in and be counted. During those long, cold nights, I was able to pipe the local classical station up into the dome. Sometime in the middle of the night, a show called 'Music From the Hearts of Space' would come on and for the next hour I'd be taken away to beautiful, imaginary places. To this day, I look back fondly on that time and remember how happy I was doing my research "the 'ol fashion way" and listening to space music.

The following is taken from the Hearts of Space website:

"A timeless experience...as ancient as the echoes of a simple bamboo flute, as contemporary as the latest ambient electronica.

"Any music with a generally slow pace and space-creating sound image can be called spacemusic. Generally quiet, consonant, ethereal, often without conventional rhythmic and dynamic contrasts, contemplative music is found within many historical, ethnic, and contemporary genres.

"Spacemusic can relax the body while stimulating the imagination. Restorative powers are often claimed for it, and at its best it can create an effective environment to balance some of the stress, noise, and complexity of everyday life.

"Unlike conventional background music, spacemusic does not depend on simple nostalgia (in the words of Brian Eno) "to induce calm and a space to think." Rather, it builds expansive sound images from refined timbres and offers subtle psychological resonances.

"From abstract electronic soundworlds to the romantic grandeur of orchestral soundtracks, from classical adagios to delicate jazz improvisations, Hearts of Space ranges across the music of hundreds of artists to create experiences of quality and depth."

I encourage everyone to take an hour a week, put on the headphones, unplug the phone and the TV, put the dog outside, sit back in a comfortable chair, close your eyes, and enjoy the beautiful sounds of space music.

Bright ISS Passes over Sierra Vista (from Heavens Above)

Date	Mag	Start			Max Alt			End		
		Time	Alt	Az	Time	Alt	Az	Time	Alt	Az
26 Apr	-3.4	05:07:35	10	NW	05:10:30	87	ESE	05:13:18	10	SE
27 Apr	-3.5	20:18:20	10	SW	20:21:15	87	E	20:22:09	39	NE
28										

Apr	-3.5	04:20:28	17	NW	04:22:31	88	NNW	04:25:24	10	SE
29 Apr	-3.4	19:30:21	10	SW	19:33:15	88	ESE	19:36:07	10	NE
15 May	-1.9	21:04:40	10	NW	21:06:35	38	NW	21:06:35	38	NW
17 May	-3.5	20:15:55	10	NW	20:18:47	85	NE	20:20:02	30	SE
19 May	-3.4	19:27:05	10	NW	19:29:57	84	NE	19:32:48	10	SE

Astronomical League

- From Bob Gent

The annual convention of the Astronomical League will occur 25 and 26 June at the Tucson Hilton East in Southern Arizona . The event, known as ALCon, is jointly hosted by the International Dark-Sky Association (IDA), the Astronomical League (AL), and the Tucson Amateur Astronomy Association. IDA will hold their Annual General Meeting directly following the Astronomical League convention, on 27 June, in the same venue.

ALCon will feature leading figures in astronomy and optics. One speaker of note includes David Levy, author, editor, and discoverer of 23 comets, including co-discovery of the Shoemaker-Levy 9 comet, which collided with Jupiter in 1994 to produce one of the most spectacular explosions witnessed in the solar system. Dr. Robert Angel, director of the Steward Observatory Mirror Laboratory, makers of the largest telescope mirrors in the world, will present the keynote speech on 26 June.

Education sessions offered during this joint convention include astrophotography discourse, reports from observatories, advancements in solar power, and training on outdoor lighting ordinances. Educational opportunities continue at IDA's Annual General meeting with panels on the effects of blue light, planning and zoning, and lighting for safety and security.

The ALCon awards banquet on 26 June will present numerous national awards, including the prestigious National Young Astronomer Award. The IDA luncheon held one day later will recognize outstanding achievements for dark skies and reveal the winner of the Dark Sky Giveaway, a drawing to win a set of six Tele Vue eyepieces.

Home to Kitt Peak National Observatory and the National Optical Astronomy Observatory, Tucson , AZ is recognized for its astronomical significance and boasts exciting tour opportunities. ALCon attendees will be offered a sample of Tucson's still notably dark skies with a star party held at the Tucson International

Modelplex Park Association.

More information on this event is available at the ALCon Expo Web site.

Join the HAC-List
The HAC-List is the Huachuca Astronomy Club's online forum. Read the Hac-List to stay updated with all of the news from the HAC and the local astronomy community.

HAC-List:
http://tech.groups.yahoo.com/group/haclist/

May 2010 Moon/Planet Events

d	h		d	h	
1	14	Moon furthest South (-25.1)	20	8	Mars 4.8N of Moon
2	20	Pluto 5.9N of Moon	20	8	Moon at perigee
6	4	LAST QUARTER	20	23	FIRST QUARTER
6	22	Moon at apogee	20	23	Regulus 4.2N of Moon
7	6	Neptune 4.0S of Moon	24	19	Spica 3.0N of Moon
9	12	Jupiter 5.9S of Moon	26	3	Mercury greatest elong W(25)
9	20	Uranus 5.6S of Moon	27	23	FULL MOON
11	0	Mercury stationary	28	5	Antares 1.8S of Moon
14	1	NEW MOON	28	22	Moon furthest South (-25.0)
15	23	Moon furthest North (25.1)	30	3	Pluto 5.9N of Moon
16	10	Venus 0.1S of Moon Occn	31	16	Saturn stationary


STARIZONA
ADVENTURES IN ASTRONOMY & NATURE