



EVAC NEWS

East Valley Astronomy Club

Volume 19 Issue 1

From the Desk of the President by Steven Aggas, 2005 EVAC President

Once again the Yule arrives and auld lang syne plays in the background as we begin a new year at the East Valley Astronomy Club.

It is my delight to announce the EVAC governing body for 2005:

President:

Steven Aggas

Vice President:

Howard Israel

Treasurer:

Wayne Thomas

Secretary:

Diane Cook

Event Coordinators:

Gwen Grace

Dave Williams

Newsletter Editor:

Peter Argenziano

Properties Director:

Dave Williams

Webmaster:

Marty Pieczonka

Board Members:

Dave Shafer

Jim Fitzpatrick

Tom Polakis

John Holmquist

Joe Goss

Please take a moment to congratulate them and make them feel welcome as they undertake the business of our club.

This year will bring many interesting viewing oppor-

tunities, like Comet Machholz, unusual asteroid occultation's that may want their shape determined by timings, and a hybrid Solar eclipse, annular at the ends of the track and total in the middle. Let's get out there and view them! If any of you plan outings, let me know and we'll see if we can't get more people involved.

At last month's meeting we were treated to yet another of Tom Polakis' memorable excursions into the Southern Hemisphere, to Namibia, Africa! Adding to the ambiance was the demonstration of the planetarium

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The Backyard Astronomer Difficult Winter Double Stars by Bill Dellinges

And now for something completely different. In the September newsletter I wrote about fall doubles. November's newsletter covered binocular doubles. Let's now look at not just the usual showcase win-

ter doubles, but those that will drive you nuts trying to split. Why would you want to attack difficult doubles in the cold and lousy seeing of winter nights? For the challenge, of course!

[Key: Star name, Right Ascension in hours (h) and minutes (m, of time), Declination in degrees (°) and minutes (' of arc), Separation in arc minutes ("), Magnitude (Mag) and

(Continued on page 2)

January Events:

- Local Star Party on January 1 at Boyce Thompson
- Deep Sky Star Party on January 8 at Vekol Road
- Monthly Meeting on January 12 at Scottsdale Community College (Room PS-172E)
- Public Star Party on January 14 at Riparian Institute

The Backyard Astronomer

(Continued from page 1)

Position Angle (PA)].

Alpha Piscium: RA 2h 02m Dec +2° 46' Mag.= AB 4.1, 4.9 Sep.= 1.9" PA 272°

A C14 at 230x shows two mush balls touching. A 5" APO at 130x shows a hint of duplicity. 260x shows a very clean split. If having trouble, try a refractor when this star is on the meridian.

Iota Cassiopeiae: 2h 29m, +67° 24' Mag.= AB 4.6, 6.8, Sep. 2.8" PA 230°

AC 4.6, 9.0, sep. 7.3" PA 114°

A beautiful triple star more difficult than Beta Monocerotis. It's the AB pair that will be challenging. AB is unforgiving in less than good seeing. A C14 at 177x did it one night. Another night took 230x to resolve.

Gamma Ceti: 2h 43m +3° 14' mag 3.6, 3.6, Sep. 2.6" PA 294°

I had to wait for this star to get 45° up in the east before standing a ghost of a chance of splitting it this winter. A C14 did just a so-so job at 230x and 279x. Two weeks later, a little higher, but still not at the meridian, a 5" APO did a much more convincing job at 260x.

H 3750 or ADS 3930 in Lepus: 5h 20.4m -21° 14' Mag 4.7, 8.5, Sep. 4.2" PA 282°. A Rigel type problem here. The primary overwhelms the secondary. Low declination doesn't help. C14 at 230x barely succeeds in bad seeing. The secondary "comes and goes" as seeing momentarily improves.

Eta Orionis: 5h 24m 29s -2° 24' Mag 3.4, 4.8 Sep. 1.7" PA 87°

A toughie. C14 at 145x-no. 230x, barely split.

E and F components of the Trapezium (Theta one Orionis).

AE Mag 6.7, 11.1, Sep. 4.1" PA 351°

CF mag 5.1, 11.5, Sep. 4.0" PA 122°

Even my Tele Vue 85 at 29x can split the main four stars of the Trapezium. But the 4th and 5th stars, E and F require good optics and seeing. E is the easier since it's a tad brighter than F. Last January the C14 saw E but not F. Last February the 5" APO at 183x saw E but not F (even at 258x). This month the C14 saw E at 98x and F at 230x. It's really a matter of hitting the right night to pull in E and F.

Zeta Orionis: 5h 40m 45s -1° 57' AB Mag 1.9, 3.7 Sep. 2.4" PA 165° AC Mag 1.9, 9.9 Sep. 57.8" PA 10°

Alnitak (triple), eastern star in sword. Tele Vue 85 no can do on the AB pair in January. In October, the TV85 at 29x sees the C component (rather easy) and BARELY splits the AB pair. I need to try the 5" or 14" on it.

52 Orionis: 5h 48m +6° 27' mag 6.1, 6.1, Sep. 1.6" PA 210° (thanks to Silvio Jaconelli for pointing this double star out to me!). My notes read, "C14 unable to split at any power." This double should be doable. I'll try again when it's on the meridian during a night of better seeing...and maybe with the refractor (the double buster)!

Take a shot at a few of these trouble makers.

*On January 10, 1946
the US Army Signal
Corps makes first
radar contact with
the Moon*

President's Notes

(Continued from page 1)

software at Dorrance Planetarium at the Arizona Science Center, where we got to see the star patterns as seen from 25° South Latitude. I personally must trek below the equator, as Tom says, "Just below the horizon are fascinating objects", and I agree, Columba, Dorrado, and Achernar, the end of Eridanus are what's there!

For January's General Meeting we will have the EVAC Officers hold a 'Town Meeting', where we want to hear from the members about the direction they would like to see the club take, whether it's star-party locations or the general meeting location. Please attend so that we may hear from you. Additionally, Win Pendleton will give us an update on the Riparian Society's Observatory project. This project is shaping up nicely.

See you at the meeting!

Meeting Reminder

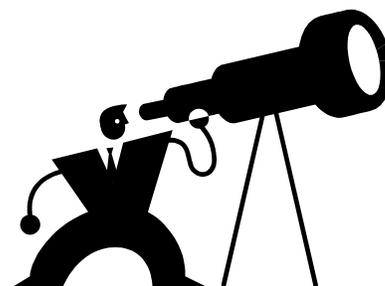
Wednesday, January 12th

Begins at 7:30 PM

Room PS-172E

Scottsdale Community College

Join us for a pre-meeting dinner at Hometown Buffet!



An Observing Session with Takahashi 22x60 Binoculars

by *Silvio Jaconelli*

I do most of my observing from my Gilbert back yard, which means very little observing of deep sky objects! The equipment of choice for me is anything ultra-portable with sharp optics. A recent acquisition was a pair of Takahashi 22x60 fluorite binoculars which consist of a couple of Takahashi 60mm refractors joined together. At 22 power, the double stars that these binoculars should be able to theoretically split would be around 14 arc seconds (derived by dividing 300 by 22 power). Given that these are premium optics, I decided to try to see how low a separation I could actually achieve. I chose an observing list from the Binoculars Forum on Cloudynights. As I had already split doubles around 10 arc second separations I decided to go for separations lower than this.

A quick word on separations – the easiest doubles to separate are those with equal magnitudes. The greater the difference in magnitudes of the components then the tougher it becomes to achieve a split. So I decided to ‘cheat’ and look only at doubles with approximately equal magnitudes. I made this decision after failing to split Rigel, whose components are separated by a whopping 9.4 seconds (sounds real easy) but with a magnitude difference of 7 – this magnitude difference makes it a very tough split. Well, onto less challenging targets.

To get warmed up, the first target was the ‘Poor man’s double-double’ in Lyra which was beginning to set in the west. These are Struve 2470

& 2474 at 19h 07min, +34N which are dimmer (7th magnitude) but wider (14 arc seconds or so) than the similar famous (brighter but tighter) ‘double-double’ Epsilon Lyrae insofar as they both easily fit in the same eyepiece FOV. The stars were faint – at 60 mm of aperture, I do find images in these binoculars to be dim – but a very easy split; all four components were easily identified. Now on to the real tests.....

Gamma Arietis (magnitudes 4.4, 4.8. Separation 7.8 arc seconds). This was an easy split – not a challenge at all for the Tak’s.

Struve 232 in Triangulum located at 2h 15min, +31N. The magnitudes are 7.9 and 7.8 with a separation of 6.6 arc seconds. Again an easy split.

Struve 953 in Monoceros at 6h 40min, +9N magnitudes 7.2 and 7.7 with a separation of 7.1. Now this one was the toughest so far (apart from Rigel), probably due to the magnitude differences between the components. But a split was obtained.

Resolved all 4 stars in the Trapezium. The closed stars are just under 9 seconds apart but the brightness of all the four stars tends to make this tough to split at 22x – just like Rigel or Sirius where the glare from the primary star(s) makes resolving the fainter star(s) that much tougher. At 60 mm of aperture there was just no hope of ever gathering enough light to resolve stars 5 and 6.

Resolved all 3 stars in Struve 761, the triple in the same eyepiece FOV

west of Sigma Orionis. Sigma Orionis itself was easily split into it’s 3 components though the 10th magnitude 4th component was not visible from my light polluted back yard. The location was 5h 39min, -2S. From my light polluted backyard, it was tough to make out galaxies and faint nebulae, and the brighter open clusters were nothing special to look at - but the double stars were great!! On other occasions the Moon and sunspots always look top notch through these binoculars (although the latter two targets always look great at low power in any instrument!).

Just as I was packing up for the evening I saw Saturn low in the east. I had to give this a shot, and I was rewarded by being able to see dark space at the ansae of the rings. A heck of an achievement for binoculars! A nice end to a pleasant evening’s observing.

Postscript – I keep these binoculars permanently set up on a Bogen tripod in my living room. The total weight of this set up is around 12 pounds. This makes for set-up and tear-down times of less than one minute – a boon for an aging astronomer like me!

Luna 1 was the first craft to leave Earth’s gravity on 2 January 1959

2005: A Year of Sky Events *by Joe Orman*

Mark your calendar for these interesting alignments, conjunctions, occultations, eclipses & meteor showers in the year 2005. Times are calculated for Phoenix, Arizona; other locations may differ. Most will be easy to see with the unaided eye, some very challenging -- take a look! Constructive comments and corrections welcome. This list may be copied and distributed for non-commercial use, but it must be credited to Joe Orman.

January 1 (morning): Mercury 1 degree above Venus, low in SE before sunrise. Mars and star Antares to upper right.

January 4 (morning): Star Spica 2 degrees to lower right of thick crescent moon, Jupiter 8 degrees to upper right, high in S before sunrise.

January 7 (morning) Crescent moon, Mars and star Antares form triangle within 5 degrees, in SE before sunrise. Venus and Mercury to lower left.

January 7-8 (night): Comet C/2004 Q2 (Machholz) 2 degrees west of the Pleiades star cluster.

January 8 (morning): Mercury 1 degree to upper right of Venus, crescent moon 8 degrees to right, low in SE before sunrise.

January 12-13 (mornings): Mercury 1/3 degrees to right of Venus, very low in SE before sunrise.

February 15-16 (night): Star cluster Pleiades 1 degree to right of first-quarter moon, set in WNW about 1:30 a.m.

March 2-3 (night): Last-quarter Moon occults star Antares (moonrise 1:19 a.m. MST, disappears behind bright side 1:25 a.m.,

reappears from dark side 2:22 a.m.), low in SE.

March 11 (evening): Mercury 5 degrees to lower right of crescent moon, low in W after sunset.

March 20: Spring equinox (5:33 a.m. MST). Sunrise straight east (6:32 a.m., azimuth 89.5 degrees), sunset straight west (6:40 p.m., azimuth 270.8 degrees). Always use proper eye protection when viewing the sun.

March 25 (morning): Full moon sets straight west at sunrise (moon 1 degree up straight west at 6:16 a.m. MST, sunrise 6:25 a.m.).

March 31 (morning): Star Antares 3 degrees to left of gibbous moon, in S before sunrise (occultation for Japan and Hawaii).

April 8 (afternoon): Very slight partial solar eclipse, high in SW. Mere sliver of SE edge of sun will be covered. Starts 2:31 p.m. MST, greatest 3:04 p.m., ends 3:37 p.m. (annular/total in Southern Hemisphere). Always use proper eye protection when viewing the sun.

April 11 (evening): Star cluster Pleiades 1 degree to lower right of crescent moon, in W after sunset.

May 2 (morning): Mars 5 degrees to upper left of thick crescent moon, in SE before sunrise.

May 23-24 (night): Full moon occults star Antares in S. Disappears 12:07 a.m. MST, reappears 1:25 a.m.

May 31 (morning): Mars 1 degree above thick crescent moon, rising in E about 1:30 a.m. and in SE before sunrise.

June 9 (evening): Saturn 5 degrees to lower left of crescent moon, in W after sunset. Stars Castor and Pollux straight in line to right, Venus to lower right.

June 15-16 (night): Jupiter 2 degrees to upper left of gibbous moon, high in S after sunset. Set in W about 1:00 a.m. with Jupiter 1 degree to upper right of moon.

June 25 (evening): Saturn 1 1/2 degrees to lower left of Venus, Mercury 1/2 degree to lower right of Venus, low in W after sunset. Stars Castor and Pollux straight in line to right.

June 27 (evening): Mercury just 9 arc-minutes (!) to left of Venus, very

Photo Pages:

<http://pages.prodigy.net/pam.orman/JoeHome.html>

low in WNW after sunset.

July 2 (morning): Star cluster Pleiades 5 degrees to lower left of crescent moon, in E before sunrise.

July 8 (evening): Mercury 2 degrees to lower left of Venus, crescent Moon 3 degrees above, low in W after sunset.

July 17 (evening): Gibbous moon occults star Antares, in S after sunset. Disappears behind dark edge 8:32 p.m. MST, reappears from bright edge 9:13 p.m.

July 22 (evening): Star Regulus 1 degree to lower left of Venus, low in W after sunset.

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2005: A Year of Sky Events

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August 7 (evening): Venus 1 degree to left of crescent Moon, low in W after sunset.

August 9 (evening): Jupiter 3 degrees to upper left of crescent moon, in W after sunset. Venus to lower right, star Spica to upper left.

August 11 - 12 (night): Perseids meteor shower. First-quarter moon setting about 11 p.m. will not interfere. Shower radiates from constellation Perseus, which rises in NE about 10 p.m. Best time to look between midnight and morning twilight. Typical rate 50 to 100 meteors per hour. Night of August 12 - 13 good too.

August 25-26 (night): Star cluster Pleiades 1 degree to left of last-quarter moon, rise in ENE about 11:00 p.m. 2 degrees apart near zenith at dawn on August 26.

September 1 (evening): Jupiter 1 1/2 degrees to the upper right of Venus, low in W after sunset. Star Spica 5 degrees to left.

September 2 (morning): Mercury 3 degrees to right of crescent moon, very low in E before sunrise.

September 6 (evening): Jupiter, Venus, star Spica and crescent moon tight grouping within 5 degrees, low in W after sunset.

September 21 (evening): Mars 5 degrees to lower right of gibbous moon, rising in SE about 9 p.m.

September 22: Fall equinox (3:23 p.m. MST). Sunrise straight east (6:16 a.m., azimuth 89.2 degrees), sunset straight west (6:25 p.m., azimuth 270.5 degrees). Always use proper eye protection when viewing the sun.

October 6 (evening): Venus 3 degrees above crescent Moon, low in SW after sunset.

October 16 (evening): Star Antares 1 1/2 degrees to lower left of Venus, low in SW after sunset.

October 17 (morning): Very slight partial lunar eclipse, in W before sunrise. Moon enters umbra 4:32 a.m. MST, middle of eclipse 5:00 a.m. (only 6% of the moon's diameter in umbra), leaves umbra 5:26 a.m.

October 18-19 (night): Mars 5 degrees directly below full moon as they rise in ENE about 7:00 p.m., close all night.

October 29-30 (night): Mars closest to earth and biggest diameter (20.2 arc-seconds). Close to opposition, up all night.

November 3 (evening): Mercury 2 degrees to upper right of very thin crescent Moon, very low in SW after sunset. Venus to upper left.

November 6 (evening): Venus 4 degrees to right of crescent Moon, in SW after sunset.

November 14 (evening): Mars 2 degrees straight below full moon, low in E after sunset.

December 4 (evening): Venus 5 degrees to right of crescent Moon, in SW after sunset.

December 11-12 (night): Mars 1 1/2 degrees to lower left of gibbous moon, high in E after sunset. Pass within 1 degree of each other later at night, set in W about 4:00 a.m. with Mars 3 degrees directly below moon.

December 25 (morning): Star Spica very close to thick crescent moon, high in S before sunrise. Only 3 arc-minutes (!) from edge of

moon at dawn (occultation for central and eastern North America).



The club maintains a library of books and other useful resources, including a couple of telescopes. Contact the Properties Director, Dave Williams, for complete details.

Club memberships are \$20 annually and are prorated quarterly. See page 11 of this issue for a membership form.

The club hosts at least three star parties each month: a public event on the second Friday at the Riparian Institute in Gilbert; a local event at Boyce Thompson on the Saturday nearest last-quarter Moon; and a deep sky event on the Saturday closest to New Moon. The local and deep sky events are for members and invited guests.

Club meetings are held on the second Wednesday of each month (unless otherwise noted) at Scottsdale Community College (room PS-172E).

My Experiences with a Tele Vue 85mm Refractor

by *Silvio Jaconelli*

For anyone interested in reading about my experiences with choosing equipment for backyard suburban use...

My primary backyard targets are the Sun, Moon, planets & double stars. These targets do very good through my 6" refractor, especially mated to a binocular viewer, but I was trying to emulate a smaller, more portable, version of this set up. After a lot of research and after looking through fellow EVAC'r Bill Dellinges' Tele Vue 85 mm, this seemed like a very good choice for those frequent occasions when it's too much effort to haul out the 6" refractor.

Life has a habit of not working out like we expect! My first bump in the road was trying to mate my binocular viewer to the TV 85. It's an older Takahashi TwinView model and it is not as user friendly as the newer models currently hitting the street. I ran into some major issues attempting to keep the telescope balanced on my alt-az mount (remember, I did not want to lug around an equatorial mount), what with a heavy binocular viewer plus a pair of eyepieces grouped at one end. I finally resorted to using Velcro'd counterweights on the dew shield to keep the scope in balance. However, this was not a very satisfactory fix as the scope would immediately lose balance the moment I tried to switch eyepieces, given how far out the binocular viewer had to hang off the end with an extension tube added to handle the barlowed images. And no, there was not enough in-focus to handle the binocular viewer on its own, so a barlow had to be used. Another issue was the damping times – my telescope was now over 2 feet long and much heavier than in Cyclops

mode – all perched on a Bogen tripod; at very high power the damping time was almost 10 seconds. But it all seemed worth it because of the marvelous views available to two eyed viewing.

I did have a gap in my magnification options that would be filled by eyepieces in the 8mm to 11mm range, so I decided to treat myself to a pair of 9mm Nagler T6's. Several negative results ensued from this (quite apart from the obvious financial negative result!). Firstly, I could not use anywhere like 82 degree FOV; I was getting just over half of this due, I think, to the low eye relief of only 10mm. Remember, with binocular viewers you do not have the ability to move your head around to utilize the available FOV. I had to ask myself why I should pay Nagler prices for a Plossl FOV. Secondly, these eyepieces are heavier than the other pairs that I have and they just exacerbated by balancing problems – I had to rebalance the scope every time I switched to or from these Naglers.

That did it for me – I sent the Naglers back to the dealer and decided that binocular viewing for me with the TV 85 and my Twin view was not a good combination.

Jim Gutman had let me borrow a pair of Nagler 3-6 zooms to try out. They produced just too much magnification when used with the barlowed binocular viewer but I decided to try one of them in Cyclops mode – and what a revelation...! This is a match made in heaven. Combined with a 25 Plossl and a TV 1.8x Barlow, my magnification ranges almost continuously from 24x to 360x, all with at least 10mm eye relief and a 50 degree AFOV.

And the clarity from the zoom eyepiece is top notch. Gone were the balancing problems, gone were the long damping times, and gone were the cut offs in the FOV. Unfortunately, also gone were the gorgeous two-eyed views (but that is where my 6" refractor fills that need!).

There now follows a recent evening's double star observing report using just the zoom eyepiece and the 1.8x Barlow.

Gamma Ceti (3.5, 7.3, separation 2.8) was close to Zenith so I decided to give it a try. 200x was inconclusive so I decided to pop in the barlow; in addition to giving increased magnification, the barlow also increases the focal ratio of the telescope (= better images). So I now had the scope at f/14. At 220x, I thought I saw a tiny dot of light but it was right on top of one of the diffraction rings so I went up to 270x. At this power I did see something stationery that was not dancing around like the diffraction rings. I was sure that this was the companion. To be sure, I zoomed up to maximum power of 360x - at this power the star was held in the FOV for about 25 seconds before I had to nudge the scope (the true FOV at 360x is less than 7 arc minutes!); this was difficult as the scope overshoot the star most of the times that I nudged it. But I did have a definite split!!!! To make sure, I guesstimated the PA to be 290, and when I checked the PA from my charts it turned out to be 294. This cinched it for me. Using the Lord Nomogram (see footnote below) I then computed the tightest separation that an 85mm scope with no central obstruction is capable of,

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My Experiences with a Tele Vue 85mm Refractor

(Continued from page 6)

with a 3.8 magnitude difference, with moderate seeing – and came up with 4.2 arc seconds. So the TV 85mm was able (with great difficulty!!) to get down to 2.8 arc seconds, far better than the Nomogram suggested. Neat!

Alpha Pisces (4.2, 5.3; separation 1.8 arc seconds) was a snap - I got it at first go at 220x. Even though the separation was only 1.8 arc seconds, the magnitudes were fairly close (1.1) so that made it easy. It's amazing how magnitude differences play such a major role in the degree of difficulty of splitting double stars!

Eta Orionis (3.8, 4.8) had a separation of 1.5 arc seconds but I WAS able to split this; this took 270x to split it.

52 Orionis was tough (6.1, 6.1: 1.4 arc seconds). Even at 360x all I was getting was elongation. The Dawes limit for 3.3" aperture is around 1.5 arc seconds so I was unable to break through that limit. The separation on this was listed in some literature at 1.6 arc seconds and for the life of me I could not understand why I could not split this while Eta Orionis was split at 1.5 arc seconds. Bill Dellenges came to the rescue on this one – he has an Italian astronomer buddy who has literature showing the split at 1.4 arc seconds; I guess that my 1.6 arc second separation data is outdated and that the true separation is only 1.4 arc seconds.

Z848 in Orion (8.3, 9.0; 2.5 arc seconds) was easy at 150x.

Beta Monocerotis (a fine triple), Castor (3.5 arc seconds) and Rigel (9.4 arc seconds but with a magnitude difference of 7) were real easy at 100x - the TV 85 whacked these

with ease!

The 4th star in the Trapezium was actually very faint - hmmm, must be the small aperture. The 6" refractor shows this star brightly. Nor was the TV 85 able to pick up the 5th or 6th stars. I also tried the Messier open clusters in Auriga – they were there but they were faint. And here is the Achilles' Heel of the TV 85 – small aperture resulting in faint images. This is not a drawback for Moon, sunspots, planets and double stars, but it hurts when observing deep sky objects from a light polluted location.

Finally, Saturn at 45 degrees above the horizon was disappointing – Cassini was not that obvious at any magnification, though several Saturnian Moons were obvious. Maybe Saturn was too low in the sky, or else the TV 85's performance on double stars had me spoiled!

In conclusion, my experiences with the TV 85 confirmed that the first 3 equipment rules (at least for me) are quality, quality and quality. I tried lower quality eyepieces but they served up mediocre images. Secondly, barlows are great for improving the performance of eyepieces – you get to keep the higher eye relief, and the higher focal ratio lessens the impact of eyepiece imperfections. Next, it is very tough to get equipment that will excel over all areas of performance – I have learned to define what my main requirement is, and then to choose the equipment best suited for that requirement; to expect excellence in more than two or three areas is not realistic.

FOOTNOTE: The January 2002 issue of Sky & Telescope discussed the Lord Nomogram, a series of steps designed to calculate the

minimum double star separation that a telescope is capable of splitting. It uses 3 variables :

Seeing – the worse the seeing then the more difficult it is to achieve separation.

Central obstruction - the larger the central obstruction the more difficult it is to achieve separation.

Aperture – the larger the aperture the more difficult it is to achieve separation. The aperture variable surprised me, but it seems that a larger aperture is more impacted by seeing issues.

The next step is to input the magnitude differences between the two components – this is a huge factor in the degree of difficulty in being able to split double stars. As an example, my TV 85 mm scope can easily split a 1.6 arc second double of equal magnitude components, but it would take a 40" scope to split Sirius at its minimum separation of 5 arc seconds – the reason being that there is a 10 magnitude difference between the two components.

The final step is to read off the minimum separation that is achievable given all the variables listed above. I knew that some of my targets were right on the threshold of the capabilities of my equipment but it was fun trying to push the equipment to the limit!!

Galileo discovered the Jovian satellites Io, Europa and Callisto on 7 January 1610

Gilbert Rotary Observatory at Water Ranch

Several months ago the Gilbert Rotary Club adopted as their centennial project the construction of an observatory in Gilbert. The observatory itself is part of a larger educational complex that will eventually house a classroom, offices and an exhibit hall.

The primary purpose of the facility will be in service to the community in the form of public outreach and education.

On October 8 2004, a groundbreaking ceremony was held at the site of the Gilbert Rotary Observatory (GRO). The observatory will be built at the Riparian Institute's Water Ranch, located just east of the Southeast Regional Library (Greenfield and Guadalupe Roads).

Shortly after undertaking this project, Rotary and EVAC member Win Pendleton turned to the club to solicit volunteers for this exciting project. An observatory advisory committee was formed to provide guidance to the Rotary on decisions regarding the dome and the telescope to be housed inside. If you would like to participate, contact Win.

The facility was designed by a local architectural firm to include a 5-meter dome encircled by an observation deck. The facility will be a showpiece in the East Valley, and the club is most fortunate to be involved in the project.

The first decision facing the advisory committee was on the choice of domes. Consensus was reached on an Observa-DOME, an aluminum structure with laterally opening shutter. The order is being finalized and should arrive onsite by the end of summer 2005.

Next up for the committee is the choice of telescope. As you can well imagine, reaching consensus on this decision isn't as easy as the dome. Put a group of amateur astronomers together in a room and ask them to choose *one* telescope? Luckily we have time to sort out all the various designs, and their inherent advantages and disadvantages. The leading candidates (at this time) are a 14" Schmidt-Cassegrain mounted on a Paramount ME German equatorial mount or a 16" Meade LX200. Obviously,

either choice will serve its intended audience quite well.

Once the GRO has been built, the club will once again be called upon for volunteers. This time it will be to serve on the volunteer staff assembled to operate the telescope during the various programs to be developed and scheduled at the facility. If you are interested in participating, now is the time to step forward.

For those who have either attended or participated in EVAC's Public Star parties, the GRO will be situated a few hundred feet south of the site of our monthly Gilbert event. Needless to say, our public outreach will take a quantum leap forward.

As articulated in a story on page 10 of this issue, we hope to be moving our monthly meetings to the Southeast Regional Library sometime in 2005. This strategic move will position EVAC as a prominent contributor to the success of this facility. Additionally, we will have a great meeting site with potential for some enhanced activities on meeting night. And that, as they say, is all good!

Member Survey on the Telescope for the Gilbert Rotary Observatory

Don't have time to participate in the project formally?
We'd still like to hear your thoughts.

What is your choice for the telescope to be housed in the observatory?

- 16" Meade LX200
- 14"-16" SCT on Paramount ME GEM
- Other

Please take a moment to cast your vote along with the rationale behind your recommendation. Send your thoughts to the Newsletter Editor at news@eastvalleyastronomy.org and the results will be tabulated and published in a future issue.

<http://www.eastvalleyastronomy.org/observatory.htm>

Classified Advertisements

Only non-commercial advertisements for astronomical equipment will be accepted from current EVAC members. Ads will be published as space permits and may be edited. Ads should consist of a brief text description and must include a current member name and phone number. You may include your email address if you wish. Ads will be run until canceled or until they have appeared in three issues of the newsletter (whichever occurs first). Ads are "tagged" with the first issue in which they appeared. Ads should be emailed to: news@eastvalleyastronomy.org

Meade Pictor 416XT CCD (Nov.)

All components, filters, manuals, adaptors, autoguider and CCD camera are still in their original factory sealed condition and plastic wrap. Why? Well, the Pictor and it's software are intended for use with a Windows computer and I never got around to buying a Windows laptop -- sounds silly -- but that's the fact. The Pictor 416XT uses the Kodak KAF-0400 CCD chip with the extended blue response. As a CCD camera, it's considered among the best available under \$5000! The autoguider and camera will connect directly to the control panel jacks of Meade LX50, LX90 (APM) and LX200 telescopes (and probably others with similar electronic relay autoguider ports). See a current ad for this unit at: http://telescopes.net/ccd_cameras.html

The Pictor 416XT normally sells for about \$2000 (I paid \$2035 with tax), but I'll sell it for \$1299 (brand new!!).

John Matthews (602) 952-9808
john-cathy@cox.net

16" f4.5 Meade Starfinder with Equatorial Mount

Optics remounted into a new tube with a JMI focuser built by Pierre Schwarr. Includes 7, 12.5, 17, 20, and 32mm eyepieces plus 2.8 klee Barlow, laser collimator and OM1 camera.

Many extras! Call or e-mail me for a list.
\$5200 invested, but will sell for \$2600

Dave Rainey 602-980-0582
drainey7@cox.net

Set of four Tele Vue Radian Eyepieces

Focal lengths of 3, 5, 8 and 10mm
Asking \$150.00 each or \$550.00 for all four. Like new condition in original packages.

An alt-azimuth head from a Tele Vue Gibraltar mount in good condition, just needs legs or permanent pier.
Asking \$100.00 OBO

Russ (480)554-0815 - days only
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Jack Johnston

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ASTROPHOTOGRAPHY EQUIPMENT, ASSISTANCE, ADVICE

January 2005

SUN	MON	TUE	WED	THU	FRI	SAT
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30	31					

Schedule of Events

- *January 1 - Local Star Party at Boyce Thompson Arboretum State Park*
- *January 8 - Deep Sky Star Party at Vekol Road*
- *January 12 - Monthly Meeting at Scottsdale Community College -- Room Ps-172E, at 7:30 PM*
- *January 14 - Public Star Party at the Riparian Institute in Gilbert*

Possible Change of Venue for Meetings Later This Year

As you may recall from recent discussions, the club found itself searching for a new meeting site as we closed out 2004. We have been meeting on the campus of Scottsdale Community College, but this location has recently become more expensive.

In the second half of the year we *officially* lost our faculty sponsor, leading to an increase in usage fees charged by both the college and the Salt River Pima Maricopa Indian Community. Overnight our expenses increased from zero to \$170 per month for the use of the classroom and its amenities. The governing body agreed that options for a new site be explored before commit-

ting to an annual expense of \$2,040 at SCC.

To that end, we are hoping to relocate to a site that is properly situated in the East Valley: the Southeast Regional Library in Gilbert. The facility is located on the southeast corner of Greenfield and Guadalupe Roads. The physical address is 775 S. Greenfield Road, Gilbert, 85234.

In the meantime, we have scheduled our regular room (PS-172E) at Scottsdale Community College for the January, February and March meetings. That should allow us time to negotiate the use of the new facility for our purposes.

The library site offers ample parking at a location easily accessible from US 60. Our meetings would still begin at 7:30 PM, but would conclude at 9:30 PM to comply with the rules of this facility.

Keep watching this space - and the website - for news of a potential change in meeting location.

But for the time being we will continue to meet in our usual place at SCC.

January 12 at SCC (room PS-172E)
 February 9 at SCC (room PS-172E)
 March 9 at SCC (room PS-172E)

East Valley Astronomy Club

Membership Form

Please complete this form and return it to the club Treasurer at the next meeting or mail it to the club's postal address listed below. Please include a check or money order made payable to EVAC for the appropriate amount.

IMPORTANT: All memberships expire on December 31 of each year.

New Member Only — select month joining:

- \$20 January - March
- \$15 April - June
- \$10 July - September
- \$25 October - December + Following Year

Newsletter Delivery Option:

- Electronic Delivery
- US Mail

Please consider receiving your monthly newsletter electronically, as this delivery method saves on the club's printing and postage expenses.

Membership Renewal:

- \$20 January - December

Total Amount Enclosed: _____

Name Badges:

\$9.50 Each (includes postage)

Name: _____

Shipping Address: _____

Name: _____

Address: _____

Phone: _____

Email: _____

Magazines:

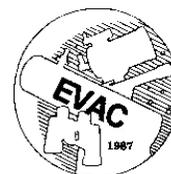
If renewal, customer #: _____

- Astronomy \$29 annually
- Sky & Telescope \$33 annually

Please submit renewal form received from publisher. Please renew early, allowing seven weeks for processing to avoid subscription interruption.

East Valley Astronomy Club

PO Box 2202
Mesa, AZ 85214-2202



All financial matters can be addressed with the Treasurer (Wayne Thomas) at:
treasurer@eastvalleyastronomy.org

Special EVAC Town Hall Meeting

Wednesday, January 12th

The evening of Wednesday, January 12 will see another monthly meeting of the East Valley Astronomy Club in room PS-172E on the campus of Scottsdale Community College. But, this will be unlike any meeting in recent memory. On this night the governing body will host a Town Hall in the time slot usually occupied by a guest speaker.

The meeting will begin as usual, with the scheduled introductions, announcements and recognition we have grown accustomed to hearing. We will also have a couple of member presentations: Joe Orman will show us some of his latest sky photography and Win Pendleton will give us an update on the Gilbert Rotary Observatory. But, after the usual break a special *meeting within a meeting* will occur.

What is a Town Hall Meeting?

Town Hall meetings are an opportunity for members to voice their concerns and opinions on specific topics so as to raise awareness and press for action. A Town Hall meeting provides an organized opportunity for members to be heard by the leaders and others in decision-making positions.

Why Have a Town Hall Meeting?

Club leaders may be unaware of the real needs or concerns of members. A Town Hall meeting is a terrific way to bring together members who want to voice their concerns. The knowledge they gather at a Town Hall meeting can provide valuable information and broaden their understanding of what it really means to be a club member, information and understanding that just may

affect their thinking as they review existing programs and consider actions to meet the future needs of the club and its members. In addition, Town Hall meetings are an opportunity for would-be champions to proclaim their intent and for members to network.

For a Town Hall meeting to be successful, it must be recognized as a group activity with a limited agenda, facilitated by a pre-selected panel. The panel will be comprised of club Officers, and will be moderated by our new Vice President, Howard Israel.

In an effort to provide a meaningful meeting, the agenda will be limited to three topics:

1. Location for the club's monthly meetings.
2. Monthly club-sponsored star parties.
3. Open agenda.

Each portion of the agenda will be allotted approximately 30 minutes for discussion. The moderator will introduce the topic and then open it up to the floor for comment. The panel will take notes, capturing all commentary by the members.

The open agenda will allow for the introduction of new ideas, or perhaps just an opportunity for you to let the club's leadership know what's on your mind.

The moderator will be tasked with keeping the meeting flowing and encouraging dialogue.

It is hoped that such a meeting will provide an opportunity for members to have their voice heard by the leadership of the club.

Additionally, we look to spark new dialogues on issues of importance to members. Hopefully we can also identify and engage influential *champions* who will continue to work with this administration to bring about positive change for all members.

The meeting will be summarized and reported on the website and in a future edition of the newsletter.

January 3: Last-Quarter Moon at 10:46

January 10: New Moon at 05:03

*January 17: First-Quarter Moon at
23:58*

January 25: Full Moon at 03:32



Special recognition goes out to Bill Dellinges for successfully completing the EVAC Double Star Observing Program on December 16, 2004.

NASA Set to Launch First Comet Impact Probe

Launch and flight teams are in final preparations for the planned January 12, 2005, liftoff from Cape Canaveral Air Force Station of NASA's Deep Impact spacecraft. The mission is designed for a six-month, one-way, 431-million-kilometer (268-million-mile) voyage. Deep Impact will deploy a probe that essentially will be *run over* by the nucleus of comet Tempel 1 at approximately 37,000 kph (23,000 mph).

"From central Florida to the surface of a comet in six months is almost instant gratification from a deep space mission viewpoint," said Rick Grammier, Deep Impact project manager at NASA's Jet Propulsion Laboratory, Pasadena, Calif. "It is going to be an exciting mission, and we can all witness its culmination together as Deep Impact provides the planet with its first human-made celestial fireworks on our nation's birthday, July 4th," he said.

The fireworks will be courtesy of a 1- by 1-meter (39- by 39-inch) copper-fortified probe. It is designed to obliterate itself, as it excavates a crater possibly large enough to swallow the Roman Coliseum. Before, during and after the demise of this 372-kilogram (820-pound) impactor, a nearby spacecraft will be watching the 6-kilometer-wide (3.7-mile) comet nucleus, collecting pictures and data of the event.

"We will be capturing the whole thing on the most powerful camera to fly in deep space," said University of Maryland astronomy professor Dr. Michael A'Hearn, Deep Impact's principal investigator. "We know so little about the structure of cometary nuclei that we need exceptional equipment to ensure that

we capture the event, whatever the details of the impact turn out to be," he explained.

Imagery and other data from the Deep Impact cameras will be sent back to Earth through the antennas of the Deep Space Network. But they will not be the only eyes on the prize. NASA's Chandra, Hubble and Spitzer space telescopes will be observing from near-Earth space. Hundreds of miles below, professional and amateur astronomers on Earth will also be able to observe the material flying from the comet's newly formed crater.

Deep Impact will provide a glimpse beneath the surface of a comet, where material and debris from the solar system's formation remain relatively unchanged. Mission scientists are confident the project will answer basic questions about the formation of the solar system, by offering a better look at the nature and composition of the celestial travelers we call comets.

"Understanding conditions that lead to the formation of planets is a goal of NASA's mission of exploration," said Andy Dantzler, acting director of the Solar System Division at NASA Headquarters, Washington. "Deep Impact is a bold, in-

novative and exciting mission which will attempt something never done before to try to uncover clues about our own origins."

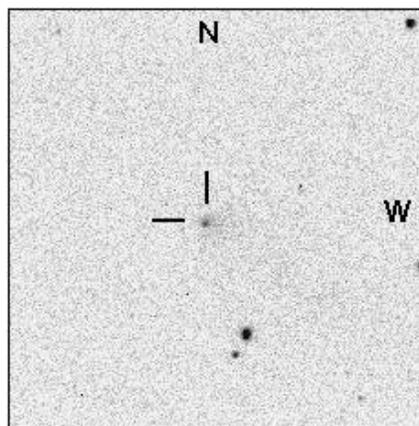
With a closing speed of about 37,000 kph (23,000 mph), what of the washing machine-sized impactor and its mountain-sized quarry? "In the world of science, this is the astronomical equivalent of a 767 airliner running into a mosquito," said Don Yeomans, a Deep Impact mission scientist at JPL. "It simply will not appreciably modify the comet's orbital path. Comet Tempel 1 poses no threat to Earth now or in the foreseeable future," he added.

Liftoff is scheduled for January 12 at 1:08:20 p.m. EST, with another opportunity at 1:48:04 p.m. EST.

Principal Investigator A'Hearn leads the mission from the University of Maryland, College Park. JPL manages the Deep Impact project for the Science Mission Directorate at NASA Headquarters. Deep Impact is a mission in NASA's Discovery Program of moderately priced solar system exploration missions.

For more information about Deep Impact on the Internet, visit:

<http://www.nasa.gov/deepimpact>



Dennis Brogman and his team at the George Observatory near Houston, Texas, took this image of Tempel 1 on August 6 at 9.13 hours UT. This image is a single, 240-second exposure using a photometric red filter which emphasizes the dust in the comet's coma and tail. An SBIG ST-9E CCD camera was used with the observatory's 0.91-meter Cassegrain telescope at f/7.6. The field of view is 5 x 5 arcminutes and covers an area of the sky that is one-twentieth of the size of a full moon.

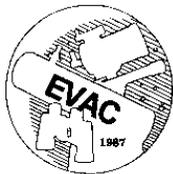
This newsletter is published monthly and made available the week preceding the monthly club meeting. An electronic version (Adobe PDF) is available online.

Please send your contributions, tips, suggestions and comments to the Editor (Peter Argenziano) at:
news@eastvalleyastronomy.org

Contributions may be edited.

www.eastvalleyastronomy.org

Keep Looking Up!



East Valley Astronomy Club

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Mesa, AZ 85214-2202

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