

May 2007
HAC's 25th
Anniversary Year!



HAC web page <http://hacastronomy.com>

++++ HAC MEETING: THIS **Saturday**, May 5, 2007 +++++

Speaker: Dave Healy

Topic: Junk Bond Observatory (JBO)

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

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

Star Party Corner

Keith Mullen, Star Party Coordinator (520) 366-0049 email: repozger@msn.com

Participation is the Lifeblood of the Club! "NO MORE, NO-GO"

April is traditionally the month we break out the scopes. This year didn't disappoint us. We ventured out for our first out-of-town member Star Party, hosted by Jim and Diane McCaw at their new and wonderful Wind Spirit Observatory (WSO, get to know it). We had over 2 dozen members and guests attending. Jim's 25" gives some killer views. I plan on having several more Star Parties out there in the future!

Many thanks go out to all those who attended and volunteered to make this years Telescopes in the Park a successful adventure. Eighteen scopes were present. We collected over One Thousand Dollars in gate donations and raffle ticket sales all of which goes into the HAC checking account. We estimated between 5-6 hundred joined us for the event. Congratulations to the Michael Combs family of Sierra Vista who won the Celestron 114GT raffle scope; we hope they become club members soon.

May Star Party Schedule

Saturday, May 12th finds us back at Doug Snyder's Palominas Star Haven Observatory for the monthly member Star Party. Doug has the new Stella Cam III and will be using it that night on the 14", maybe we can talk him into dusting off the 20" too!

Friday, May 18th will be a new adventure at JBO. Dave has had the old Celestron 14" reworked and set up in the old observatory. We are hoping it will be available by the 18th, if not, Dave says it WILL BE ready for both star parties at JBO in June!

GET YOUR MONTHLY NEWSLETTER ONLINE AT WWW.HACAstronomy.COM

Postage costs are rising again! Not to mention printing costs too. To help defray these costs would you consider downloading your newsletter electronically. Not only will this save the Club money, it is environmentally friendly and also in color. Contact Teresa Mullen at 366-0049 or nightfall@hacastronomy.com to request your name be removed from the newsletter mailing list.

President's Perspective

Well, miracles do happen. I guess no one purchased a new telescope of significant size to spoil the weather for our Astronomy Day event at Veteran's Park! The skies were perfectly clear on April 21 and though we had some light breezes early on, they died down as the night progressed. Maybe it could have been about 10 degrees warmer, but who's complaining? We had an excellent turnout in terms of HAC membership and members of the community. Many thanks go to Keith and Teresa Mullen for coordinating this year's Telescopes in the Park (TIP) event, including the efforts leading up to and following it. A lot of work was done by them and many others, too numerous to mention, but it looks like the effort paid off. It was exciting to see over a dozen telescopes pointing at a variety of objects, including some high tech digital displays over in CRT corner. I hope Keith will cover more details in his article, such as: how many people attended, how many members helped out, who won the telescope, and how much the club made during this event. For myself, I was very happy that the Vega-Bray Observatory in Benson didn't need my services that night! I was able to participate in the TIP activities and thoroughly enjoyed showing off objects like the moon, Venus, Saturn, and the Orion Nebula through my 13-inch Dobsonian telescope to a personal estimate of 200 people looking through my optics alone. This month has been great for club observing! The members' star party at Jim and Diane McCaw's house in J-6 was a rousing success too, despite a last minute family emergency, which fortunately turned out okay. Those of you who made it to his house (a pretty large number, by the way!) now understand the drive I make to attend club events. There is something about the "fifty-mile rule", where everything I want to participate in is 50 miles away, usually one way. No complaint, just the facts... Now that we have the TIP accomplished, the next big event we have been working on in the background comes to the forefront: HAC's 25th Anniversary Dinner! We will start taking reservations beginning with the May meeting. Be advised the seating is limited to 70 people and tickets will cost \$25/person. Save the date 7-7-7 on your calendar and please plan on attending! David Levy will be our guest speaker, and we plan to have past presidents in attendance to say a few encouraging words. It is rumored that Keith is finding some nice items for door prizes for those in attendance.

Clear skies, Wayne – Your resident President.

Dollar\$ & Cent\$ - Tim Doyle

Well after all the dust has settled the club now has a total balance of \$4,603.57 including petty cash. We did very well on the Telescopes in the Park event bringing in a total of \$1,011.98. A big thanks for all the help. All of you that incurred expenses need to get your receipts in to me ASAP so we can figure out our net on this event.

We would like to welcome into the membership Nicholas & Eric Swisher, James Taylor, Tom Kaye, and David Butler. We had many inquiries to join during the Telescopes in the Park event so we may be getting some more new members soon.

Editor's Notes... would like to thank all of our Astronomical writer's for their monthly dedication to our newsletter! Keep them coming.

♣ HAPPY MOTHER'S DAY EVERYONE! ♣

Outreach Biz-Jeanne Herbert

Very little happening so far for outreach events. There are two science camps coming up...

May 3 and **May 10** -- a group of Phoenix area students will be at the Huachuca Oaks Baptist Camp sponsored by Fred Stahl.

May 11 -- a group of 3rd graders from Bisbee will be at RepoGazer Observatory.

Help is needed at all these events. Call Jeanne for more information at 366-5690 or Keith at 366-0049.

Let's see some new volunteers at these outreach events.

Huachuca Astronomy Club P.O. Box 922 Sierra Vista, AZ 85636 <http://hacastronomy.com> , email: mrgalaxy@juno.com
Yearly Membership: Individual: \$25; Family: \$35; Military: \$20; student:\$10 (with restrictions) ,
President: Wayne Johnson, mrgalaxy@juno.com ; Vice President: Keith Mullen, 520.366.0049;
Treasurer: Tim Doyle 378-5121; Secretary: Jeanne Herbert, 366-5690
Star Party Coordinator: Keith Mullen, repogazer@msn.com ;
Outreach Events Coordinator: Jeanne Herbert, jeanne_hrbt@yahoo.com / 366-5690 (early evenings);
Loaner Scopes: Gary Myers 432-4433; Newsletter Editor: Teresa Mullen, nightfall@hacastronomy.com / 366-0049

About the Speaker...

Mr. Healy, a long time member of HAC, will talk about construction of his Junk Bond Observatory (JBO) and discuss his current astronomical activities. Many people know Dave from the Public Star Parties that he regularly hosts at JBO. His observatory features a 16.5 foot diameter Ash Dome housing a 32-inch Ritchey-Chretien telescope made by Optical Guidance Systems along with a telescope control room. The telescope is used for both imaging and visual work. Mr. Healy is credited with discovering over 200 asteroids. For many years Dave was an avid astro-photographer using film cameras, but has recently moved into astro-imaging with digital CCD cameras. His work has appeared in several amateur astronomical publications and he is a contributing editor to "Astronomy Magazine".

Spring's Best Galaxies for Small Telescopes

By Bob Kepple & Glen Sanner

This month's article surveys the ten best galaxies for small telescopes in an effort to encourage those with small as well as large scopes to get out under the night sky and view nature's celestial wonders. We had a time trying to select the ten finest objects in the spring skies. If we were making a list of the very ten finest galaxies other seasons would have come into play so this helped reduce our selection. We also cheated a little by including only the brightest galaxy within a pair or group. M65 and M66 deserved to be included but were omitted since we described them last month in our Leo article. There were many other objects that could have been included but we had to keep the article to ten object lest it become too long. All of these galaxies have a five star rating in our one to five star deep-sky rating system. The following descriptions were adapted from *The Night Sky Observer's Guide* by the authors. Any use of this material in other publications is not permitted unless permission is granted by the authors or publisher.

NGC 2903, Type SABbc, dia. 12.0'x 5.6', m9.0v, SB 13.4, 09h32.2m +21°30', Leo

The large bright galaxy NGC 2903 is unusual for being one of the few nearby galaxies unattached to any of the local galaxy groups. It is around 31 million light years away. Its absolute magnitude is therefore -20.9, a luminosity of 19 billion suns, and its true size over 110,000 light years. This is one of the better objects missed by Charles Messier.

NGC 2903, centered 20' south of a 7th magnitude star, is a fine bright galaxy for small telescopes from 4 to 6-inches. It is elongated 8'x 4' NNE-SSW with a well concentrated oval core, and is positioned in the mouth of a west-opening irregular semicircle of stars, including two of the 10th magnitude 4.5' SSE and 6' SSW of the galaxy's halo. 8 and 10-inch scopes will show a bright stellar nucleus embedded in a large, extended core surrounded by a mottled halo that is elongated 9'x 4' NNE-SSW with diffuse edges. Views through 12-inch and larger scopes are superb! NGC 2903 has a bright 10'x 5' halo elongated in position angle 15° and containing an intense 1'x 0.5' core. The halo is mottled throughout, with bright and dark patches. Two particularly bright patches are about 1.25' north and south of the galaxy's center. The halo's diffuse periphery extends farther east than west from the core. A 13th magnitude star lies near the halo's edge 2' ESE of the galaxy's center.

NGC 3034, Messier 82, Type I0, dia. 12.0'x 5.6', m8.4v, SB 12.8, 09h55.8m +69°41', Ursa Major

M82 and M81 were discovered by Bode in 1774, and Messier added them to his catalog in February 1781. These two galaxies are the brightest in a small cluster of galaxies called the Messier 81 Galaxy Group. The distance to the center of the cluster is about 10 million light years: it is the second nearest galaxy group to our Local Group, the Sculptor Galaxy Group being only about 8 million light years away. The M81 Group includes, in addition to its two Messier members, NGCs 2976 and 3077 in Ursa Major, NGCs 2366 and 2403 in Camelopardalis, and NGC 4236 in Draco. The absolute magnitudes of M81 and M82 are -20.8 and -19.3, respectively, luminosities of 17 billion and 4.4 billion suns. The true diameter of M81 is at least 70,000 light years and that of M82 35,000 light years.

M82, located only 38' north of M81, is an edge-on galaxy fainter but much more detailed than its companion. It has a mottled, highly elongated 8'x 2' ENE-WSW halo in 4 to 6-inch scopes. The central core seems offset toward the halo's SE side. A 10th magnitude star is visible just south of the halo's WSW tip. In 8 to 10-inch scopes M82 has a bright, mottled, irregularly illuminated 9'x 2' ENE-WSW halo. A dark lane perpendicular to the major axis bisects the halo into two nearly equal parts. The eastern part is more mottled but fades much more quickly out along the major axis. Both eastern and western parts are spotted with dark areas. In 16-inch and larger instruments M82 is a magnificent cigar-shaped galaxy elongated 10'x3' in position angle 60° with a 5' core extended along its major axis. Because of its high surface brightness, the halo has a well-defined outline. The core is very irregular in profile and severed in two almost equally long parts by a diagonal dark band. The western part of the core is brighter and is studded with short dark streaks jutting out at different angles. The eastern half of the core has the largest unbroken area. Several bright knots are strung along the major axis, a couple nearly stellar at their sharpest points of concentration.

NGC 4244, Type SAcd: sp IV, dia. 17.0'x 2.2', m10.4v, SB 14.2, 12h17.5m +37°49', Canes Venatici

4244 is a magnificent edge-on galaxy that rivals 4565 in Coma Berenices. Through 6 and 8-inch telescopes NGC 4244 is fairly bright, extraordinarily long, thin 15'x 1.25' NE-SW spindle with a slightly brighter, extended core. Its SW tip touches an 11th magnitude star and the

(Continued on page 5)

HAC's 25th Anniversary Dinner - Helen Patterson

**HUACHUCA ASTRONOMY CLUB
25TH ANNIVERSARY PARTY**
07/07/07 AT 5:00 P.M.
**ARIZONA FOLKLORE PRESERVE
RAMSEY CANYON ROAD**
GUEST SPEAKER: DAVID LEVY
EXCITING DOOR PRIZES
TICKETS ARE \$25.00 PER PERSON
**TICKET SALES BEGIN AT THE
MAY 5TH MEETING.**

DINNER MENU
ROAST TOP SIRLOIN
LEMON CHICKEN
PARSLEY POTATOES
GREEN BEANS ALMANDINE
RICE PILAF
ROSEMARY CARROTS
DINNER ROLLS
DESSERT
COFFEE & ICED TEA

"View A Naked Eye Asteroid? Tell Me About It!!
By Doug Snyder

That's right! Asteroid 4 Vesta, currently residing in the constellation Ophiuchus (The Serpent Bearer) will become visible to the naked eye during most of May and June of 2007. This is not a common event - Vesta, at a diameter of about 512 kilometers (320 miles) is the third largest main belt asteroid but the fourth to be discovered and that was in 1807, two hundred years ago. It is the only asteroid that occasionally reaches a magnitude into the '5' range and that occurs this spring when it reaches opposition (opposite the Sun) on May 30th and perihelion (closest to the Sun in its orbit) on June 16th. This will be the brightest asteroid magnitude so far this century, and you can be one of the very, very few human beings ever to see an asteroid without optical aid! So this is a CHALLENGE to all you HAC members to venture to a dark sky site (say, like a HAC star party!) and seek out this celestial object gliding ever so slowly overhead. It's not going to be a fast mover as it takes Vesta 3.6 years to orbit the Sun, but we will be able to see the changing position against background stars and hopefully identify it in star fields that are not overly strewn with bright stars. Since Ophiuchus and Scorpius currently rise late in the evening and are best seen when they transit the meridian, you'll want to explore the sky for Vesta at around midnight or later. Okay, I don't want to hear from the few of you who say, "Oh, that's too late" and "that's past my bedtime" - we're talking a considerable time span here which includes a number of weekends. Hey, live a little!

I have drawn up a star chart with the aid of 'TheSky6' to provide more information on the event and where Vesta will be during this time period. On May 1st, its magnitude will be about 6.0; at the end of May, it will be at its brightest, mag. 5.4, and then once again 'fading' to mag. 6.0 near the end of June. On May 31st, the asteroid will be about 1 degree due south of globular cluster M107. The chart also shows the magnitude of the brighter stars in the field and the location of Vesta on various dates in May and June. You will also be able to find similar charts and information in both Sky & Telescope (June 2007) and Astronomy (May 2007) and of course on-line. For those who have a copy of 'Observer's Handbook 2007', you can also find more data on pages 194 & 195. We want to keep a log of our members who have observed Vesta without optical aid this year and so, why not you? Send your observations and comments into this here 'hac-list' If you want to use binoculars as a first finder, that's fine also, but keep trying for that naked eye identification! Using binoculars, you should be able to confirm seeing the 'rock' in one evening. But don't be hesitant to press your observing skills over a period of a few nights. Heck, it's only mag. 5.4, but I doubt if you'll see it from downtown Sierra Vista! Let's also see who can identify it at 6.0 or fainter observing naked-eye. Maybe the members who image or do photography or the Stellacam thing can show their efforts at the June meeting. Hey, if Dave Healy can find these rocks at magnitude 21 or 22, you should be able to do it at mag. 5.4! (Note: If not a member of hac-list, get on the ball and subscribe - send a blank email addressed to haclist-subscribe@yahoo.com) Clear Skies!"

See star chart on page 7

Backyard Astronomer- Neal Galt

What's up in May? We start the month off with a full moon on May 2nd. Depending on where you're from, it could be the Egg Moon, Grass Moon, Easter Moon, or Paschal Moon. In Arizona, most of us just call it the "great street light in the sky!" It is a good guide post. On May 4th it will be located beside Jupiter.

A Brontosaurus was near by on 4/27/2007. That's the name of an asteroid. Look it up. On May 3rd an asteroid named Bilbo gets close to earth. (1.155 AU). May 4th is the 40th anniversary of the launch of Lunar Orbiter 4, and May 5th marks 46 years since Alan Shephard became the first American to travel in space.

Look for the crescent moon near Venus on May 19th. Venus reaches a maximum height above the horizon this month of about 35 degrees above the horizon. Starting with the end of May, Venus will really get bright. By the start of August, Venus will start to cross back into the morning sky. So, watch it now as it gets so bright, that even experienced airline pilots will mistake it for an on-coming aircraft. And here come the UFO reports!

The last half of May will be a good time to see Mercury. Saturn is now to the upper left of Venus, and still high enough for good observations. Jupiter keeps rising earlier each night in the east, by month end it will rise just after sunset. Mars is still an early morning object in the east and still too distant for good observations. But, it is closing in on earth. By December, Mars will be close and will be a hot topic.

I've never been too impressed with the meteor activity for May. But, a bright meteor can always be seen at any time by the observer who happens to be looking in the correct location. Good Luck in May!

NE tip extends slightly past a 12th magnitude star. In medium and large telescopes it is a bright shaft of light with a mottled texture elongated 15'x 1.5' NE-SW with a highly extended 5' long core which is noticeably bulged at center. A faint irregular knot lies near each tip of the core. A NE-SW double of 14th magnitude stars is 3' NNE of the galaxy's center just off the NW edge of its halo.
NGC 4258 Messier 106 Galaxy Type SABbc II-III

NGC 4258, M106, Type SABbc II, dia. 20.0'x 8.4', m8.4v, SB 13.8, 12h19.0m +47°18', Canes Venatici

Messier 106, some 35 million light years distant, is a large, massive system with a tightly wound spiral structure tilted 25° to our line of sight and is a source of radio emission. Messier 106 was discovered by Mechain in 1781.

In 4 to 6-inch telescopes, M106 is a fine sight with a bright halo elongated 10'x 7' NNW-SSE. It has a large, bright core with a prominent nucleus. In 8 to 10-inch scopes become quite impressive showing a bright core containing a nonstellar nucleus embedded in a well concentrated 5'x 2' inner region which in turn is surrounded by a much fainter halo elongated 12'x 4' NNW-SSE. At its northern end the halo extends to a magnitude 12.5 star and at its southern end to a 13th magnitude star. A 10th magnitude star lies 3' further south of the southern end. With 12-inch and larger telescopes it is fine, bright galaxy with a mottled, well-concentrated 5'x3' central region containing a 1' diameter core containing a bright nonstellar nucleus. The outer halo is much fainter and more diffuse, extending to 16'x 5' in P.A. 150°. With averted vision hints of spiral structure can be glimpsed in the form of two broadly brighter extensions from the central region out into the halo, the northern extension being more prominent. Both extensions have an indistinct dark streak. Several stars are embedded in the outer arms on both sides. Companion galaxy NGC 4248, lying 13' NW, has a faint halo elongated 1.25'x0.5' ESE-WNW.

NGC 4406, M86, Type E3, dia. 12.0'x 9.3', m8.9v, SB 13.9, 12h26.2m +12°57', Virgo

Messier 86 along with Messier 84 were discovered by Charles Messier on March 18, 1781. This bright galaxy lies in the direction of the gravitational center of the Coma-Virgo Supercluster. However, M86 has a blue-shift rather than a red-shift (which means that it is approaching rather than receding from us) and therefore is probably closer to us than M84. Assuming that it is 50 million light years from us rather than the 65 million light years to the center of the Supercluster, its absolute magnitude is -22.1, a luminosity of 57 billion suns, and its true diameter at least (and probably well over) 175,000 light years. If M84 and M86 were both 65 million light years away, they would be only about 300,000 light years apart which is very unlikely since giant ellipticals are solitary systems. Supergiant ellipticals, which have absolute magnitudes around -24, are probably the result of the merging of one or more giant ellipticals that got too near each other. M86 along with M84 and NGC 4388 form the popular formation called the "Propeller" with the much smaller galaxy NGC 4387 marking the propeller's hub. M84 is the beginning of the Markarian Galaxy Chain that runs all the way from Virgo to M88 in Coma Berenices. Using a moderately low power eyepiece to "galaxy hop" from one island star city to another can be a lot of fun as there are galaxies everywhere in this region of the sky.

In small scopes Messier 86 appears similar to Messier 84 lying 17' to the west, but is clearly more extended, being elongated 2'x 1.5' NW-SE. Its halo has a broad central brightening. The halo of Messier 86 is noticeably larger and more extended than that of Messier 84 in 8 to 10-inch scopes, measuring 3.5'x 3' NW-SE, but has the same smooth texture and broad central concentration. The diffuse periphery fades smoothly outward until it can be traced only with averted vision. In 16-inch and larger telescopes M86 shows a 5'x 3' oval halo that smoothly brightens to a small, sharp core at its center. A very faint galactic knot or foreground star is on the NNE edge.

NGC 4565, Type SAB? sp, dia 14.0'x 1.8', m9.6v, SB 12.9, 12h36.3m +25°59', Coma Berenices

NGC 4565 is one of the brightest members of the 31 million light year distant Coma I Galaxy Cloud. Its edge-on absolute magnitude is -20.3, a luminosity of 11 billion suns; but if we saw it face-on, these values would be much higher. Its true length is in excess of 125,000 light years.

6 and 8-inch scopes will show a moderately faint, but extremely large halo highly elongated 12'x 1.5' NW-SE with a bulging core at its center. A 13.5 magnitude star lies 1.5' NE of the center. A faint dust lane is just visible without averted vision passing off-center along the NE side of the core. With 12-inch instruments, NGC 4565 becomes the "showpiece" of all edge-on galaxies with a beautiful 14.0'x 1.5' streak elongated NW-SE with a bright 3'x 2' central bulge flanked by 13.5 magnitude stars 1.5' to its NE and 7' to its SSW. The dust lane is quite obvious, passing NE of the core and extending at least 60% of the halo's length. Some faint mottling can be seen along the lane, and a few knots are visible SE of the core. In 16-inch and larger instruments NGC 4565 is awesome, filling the entire field of view. The halo is elongated 16'x2' NW-SE, and the dust lane extending for nearly all this length, fading near the edges. The core is a bright 4'x3' oval with the dark lane off-center to the NE. A prominent bright streak is NW of the core, and some mottling is visible along the central stretch of the dark lane. Smaller bright streaks lie along the SE extension of the dark lane. A very faint threshold star touches the core's SW edge.

**NGC 4594, M104, Type SA: asp, dia. 7.1'x 4.4', m8.0v, SB 11.6, 12h40.0m 11°37', Virgo
Sombrero Galaxy**

Mechain discovered M104 in May, 1781. William Herschel was probably the first observer to notice the galaxy's beautiful dark dust lane. M104 is well away from the core of the Coma-Virgo Supercluster, which is to the north in the M87 region, but undoubtedly is a Coma-Virgo member. Indeed, it is one of the brightest and most massive galaxies in the Coma-Virgo Supercluster. Assuming it to be 65 million light years distant (if anything, an underestimate), M104 has an absolute magnitude of -23.5, a remarkable luminosity of 210 billion suns and about 16 times the brightness of our own very respectable Milky Way Galaxy. The true diameter of M104 is over 135,000 light years. Much of the luminosity of the galaxy comes from its unusually large central bulge.

M104, centered 4' ENE of a 10th magnitude star, is a fine, bright object even in small instruments. It is a large ellipse with pointed ends to the east and west. The dark dust lane, which bisects the galaxy into two unequal sections, passes just south of center and may be seen with direct vision under good skies. In telescopes of 8 to 10-inch aperture, M104 is an attractive object displaying the most prominent dark lanes in any galaxy except Centaurus A. The lane cuts the 6'x 2' E-W halo in two unequal parts, the northern part being the larger. In 16-inch and larger telescopes is a magnificent! The halo spans 8'x 3' E-W and is severed into unequal N-S segments by the conspicuous dark dust lane, which runs the galaxy's length just south its prominent bulging center. The larger segment on the north is the top of the "sombrero." Low power accentuates the relative bright-star-richness of the field around M104.

**NGC 4631, Type SBd III, 15.5'x3.3', m9.2v, SB 13.3, 12h42.1m +32°32', Canes Venatici
The Whale and the Pup**

NGC 4631 is a striking edge-on spiral galaxy that looks like a submarine or whale. 4627 lying to the north is the whale's offspring, the pup. Half a degree SE lies the Hockey Stick formed by two galaxies NGC 4656-57. Lower powers allow views of both the Whale and Hockey Stick in the same field of view.

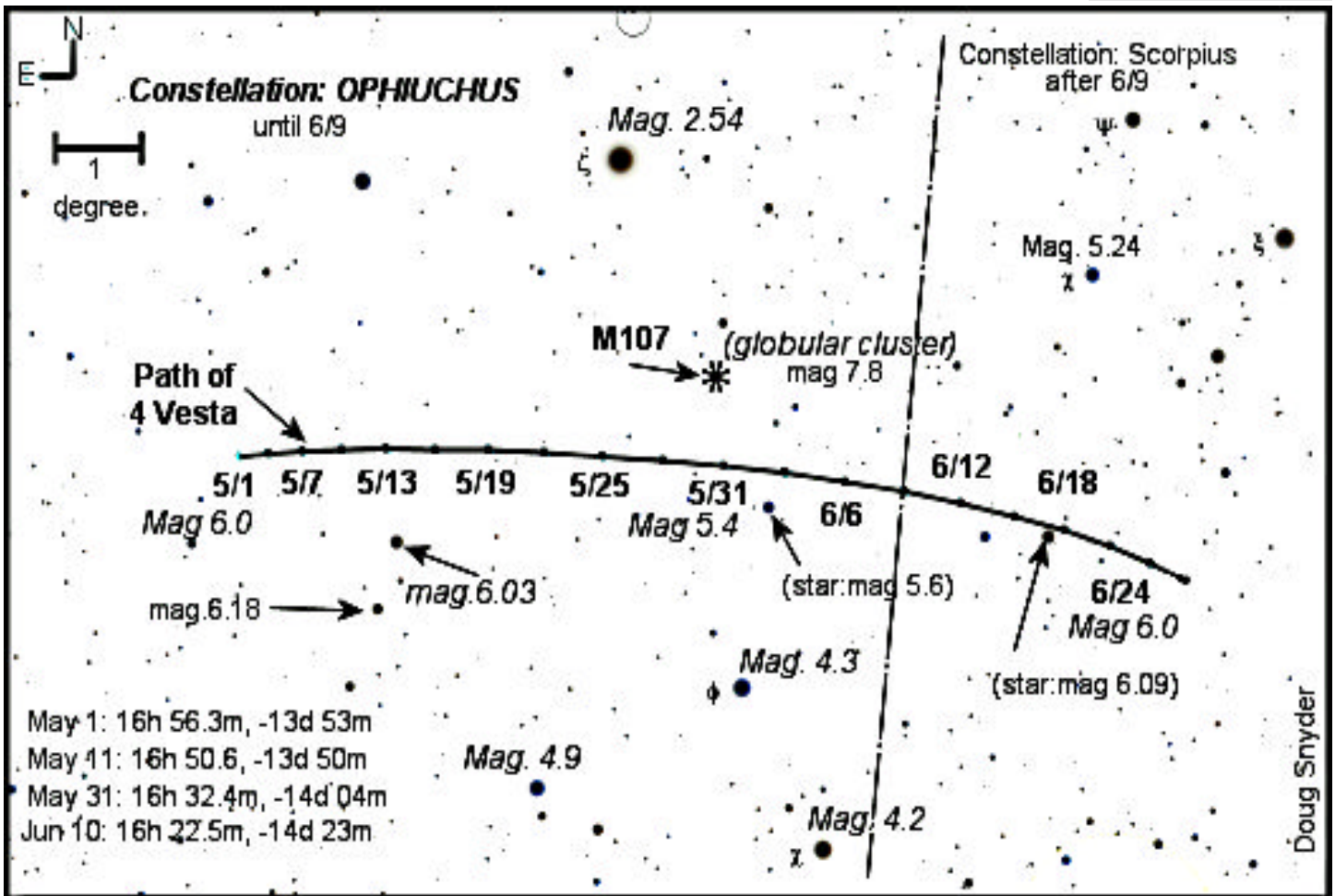
Using 4 and 6-inch scopes, 4631, the "whale", is a bright glowing streak highly elongated 14'x 1.5' E-W with tapered ends. 10 and 12-inch scopes may show a mottled texture. The western end is longer and more pointed than the fainter, broader and blunted eastern end. The central bulge is offset to the east and more protruded on the north. With 16-inch and larger instruments it becomes awesome! NGC 4631 is an extremely long, very thin 15'x 2' E-W spindle with an irregularly bright, mottled halo and highly tapered ends. A well-concentrated knot is visible on the western tip, and numerous bright and dark splotches are sprinkled along the length of the major axis. A 12th magnitude star touches the northern edge of the halo near the spindle's center, and a 13th magnitude star is just north of the galaxy's western tip. 2' NW of the 12th magnitude star is the whale's "pup" NGC 4627, a faint 1'x 0.5' N-S smudge.

**NGC 5194, M51, Type SAbc pec HI, dia. 8.2'x 6.9', m8.4v, 13h29.9m +47°12', Canes Venatici
The Whirlpool Galaxy**

M51 was discovered by Messier in October, 1773. However, its remarkable "whirlpool" spiral pattern was not seen until 1845 when Lord Rosse discerned it in his 6-foot reflector at Parsonstown, Ireland. At first its spiral pattern was thought to confirm Laplace's Nebular Hypothesis of solar system formation. This misconception was not dispelled until 1923 when it was finally recognized that "spiral nebulae" are in fact external galaxies and much more remote than previously suspected. Messier 51 is comparable to the Andromeda Galaxy (M31) and our own Milky Way Galaxy in size, mass, and luminosity. And, like M31 and the Milky Way, M51 has a major satellite galaxy, NGC 5195 to its north. Visually the two systems give the impression of being actually connected. But photographs prove that such is not true, for they reveal that dark dust lanes of the large spiral curve in front of the companion. M52 is about 35 million light years distant.

In 8-inch telescopes, M51 has a well-concentrated, mottled halo that suddenly brightens through the core to a stellar nucleus. The bridge to NGC 5195 is undetectable. With a 12-inch scope M51 has large and diffuse 10'x 7' N-S halo containing a well-concentrated core. With averted vision, the spiral arms are quite visible, separated by dark swirls north and SW of the core. The spiral arm east and NE of the core is the most prominent. Averted vision is also necessary to see the bridge between M51 and NGC 5195. The latter has a core

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Stargazing with Binoculars Hans Clahsen

Here are some highlights for binocular viewing from the Nikon website...

For all of recorded history and much beyond, humans have been fascinated with the stars, as evidenced by the cave drawings of early man through to the mystic symbols and horoscopes drawn up by the ancients. Winter is the perfect season for stargazing because the air is transparent and the sky is clear. The winter skies host a multitude of first- and second-magnitude stars that are easy to locate, even with the naked eye. But once you graduate from the naked eye to binoculars, you will realize that you have entered a different level of perception. Try it!

Stargazing- when & where?

What are the optimum conditions for stargazing?

A dry night with low humidity is perfect for observing stars because the air is clearer.

The moon is actually brighter than you think - it can be a distraction - so you will be able to see more stars when the moon is not prominent.

Where is the best place for stargazing?

Anywhere you have a clear view of the four cardinal compass points is a good place for stargazing because you can look at stars in any direction. Street lighting and bright illuminations will prevent a clear view of the stars, so look for a place that has a bare minimum of artificial lighting. Be aware of your surroundings. Do not stargaze while standing out on the street or unstable ground such as waterfronts or cliffs.

Can we stargaze near home?

You can enjoy stargazing from your window or balcony. If there are streetlights nearby, use your hand to shield out the light so that it is easier to see the stars. At midnight, when the lights go out in residential areas, you will be able to see more stars.

For more information go to www.nikonspoptics.com

"Vintage Telescopes For Sale"

An astronomer in Bisbee is selling two vintage telescopes and he is very eager to get these telescopes to a 'caring' home, preferably local. There are photographs of these two telescopes on the home page of the club's website. One of the telescopes is an early 80's version Celestron C8 with pristine optics and a working tracking drive. This scope is an 8", f/10 Orange Tube model and comes with an 'AccuTrack' Drive Speed Control. Also included are several Celestron eyepieces (Kellner's) and of course the tripod as well as the original storage trunk for the telescope. The second telescope is a 5", f/15 Singlet Lens Refractor which features a stainless steel OTA. The length of this tube is about 6 ft. It comes with a high pier and best of all, a Byers 58 German Equatorial Mount (dual axis). This Bisbee astronomer also has numerous other items for sale, including a rolling wood cabinet used to store all of the associated refractor parts. Serious offers can be presented to either Keith Mullen or Doug Snyder (520-366-5788)

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nearly as bright as, but smaller than, the large spiral's. The halo of the satellite is elongated 5'x 4' N-S and highly variegated. A dark notch is on its SE edge. Through 16-inch and larger telescopes M51 is a stunning object. Its 10'x 7.5' NE-SW halo contains a clockwise spiral structure of two arms arcing almost completely around the large, bright core. The brighter arm springs from the south side of the core and curves east, north, west, and finally SW, where it is separated from the core by a fainter arm. The bridge that appears to link the spiral to its NGC 5195 satellite extends to the north tangentially from the bright spiral arm. The two spiral arms are mottled with bright areas and laced throughout with dark dust lanes. NGC 5195 is 4' in diameter, as bright as the core of the spiral, and contains a stellar nucleus off-center to the SE. At least ten stars are superimposed.

NGC 5236, M83, Type SABc II, dia.15.5'x13.0', m7.6v, SB 13.2, 13h37.0m 29°52' Hydra

Messier 83 was discovered by Lacaille at the Cape of Good Hope in 1752 and Messier added it to his catalogue in March 1781. It lies 22 million light years distant and is part of the Centaurus Galaxy Group along with NGC 4945, NGC 5102, and NGC 5253 in Centaurus to the south, and NGC 5068 in Virgo to its north. M83's absolute magnitude is -21.6, a luminosity of 36 billion suns. Its true diameter is over 100,000 light years. This magnificent galaxy forms a large triangle with a 7th magnitude star 15' to its east and a 6th magnitude star 25' to its NE.

In 6 and 8-inch scopes Messier 83 has a bright, circular core in a NE-SW bar with spiral arms arcing from either end of the bar within a 14' diameter halo. The arm from the NE end of the bar curves east and then south; the arm from the SW end of the bar curves west and north. With averted vision the two arms appear to curve into each other. The inner arm zones are sprinkled with marginally resolved objects that are either threshold foreground stars of our own Galaxy or actual M83 giant emission nebulae. In scopes of 12 to 14-inch aperture Messier 83 is a fine face-on barred spiral galaxy with an oval core and a bright bar encircled by an interesting spiral arm pattern. The irregular halo has a profile similar to that of the gibbous Moon, its periphery circular on the east side but raggedly linear on the west. The spiral arm that springs from the NE end of the bar arcs through only 90°, ending south of the galaxy's center; but the arm that springs from the bar's SW end wraps all the way around the north side of the galaxy to its east, thus giving the galaxy an asymmetrical look. Dark lanes divide the spiral arms, the most conspicuous being NNE and SSE of the bar. A dozen foreground stars are superimposed upon the halo. The star field is richest to the south and SE of the galaxy. Three 9th magnitude stars lie near M83, one just outside its south edge, a second 7' to its south, and the third 9' to the ESE. A 12th magnitude star is on the outer edge of the WSW spiral arm.