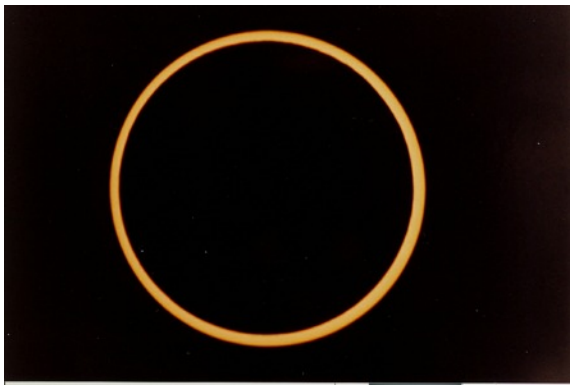
NIGHTFALL
Huachuca Astronomy Club of Southeastern Arizona

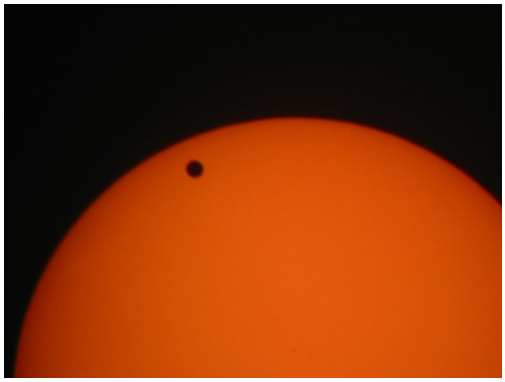
May 2012

President's Notes:

The next meeting of the Huachuca Astronomy Club will be held at Cochise College on Friday, May 4, 2012 at 7:00 pm. This meeting will be held in the community room of the Student Union building. With the annular solar eclipse centerline over Northern Arizona on May 20, there will be a presentation about eclipses and how to observe them. Also, the last Venus Transit for over 105 years will occur on June 5. HAC members discuss how we will set up telescopes for this rare transit event. If you have successfully watched a solar eclipse from the centerline, and you'd like to share your experience with a short talk, we would appreciate your participation.

On May 10, 1994, I drove from the Texas Star Party to Anthony, Texas to photograph an annular eclipse from the centerline. Back in those days, we were still using film cameras, and below left is one of my photos of that eclipse.





On May 19-20, of this year, many of us will be traveling to Page, Arizona to be on the centerline of another annular eclipse. In Sierra Vista, more than 80 percent of the sun will be eclipsed.

On June 5 in the late afternoon, we will have another rare treat. It will be the last Venus Transit for over 105 years. Don't miss it! Our last Venus Transit was June 8, 2004, and I was lucky enough to have a break in the clouds from Alexandria, Virginia to take the photo above and right.

We have reserved a place in the Veteran's Memorial Park in Sierra Vista for HAC members to set up telescopes for both the solar eclipse and the Venus transit. Your help would be appreciated.

Clear skies and bright stars, Bob Gent, President

Our sponsors: Please support our sponsors, ***Farpoint and Starizona***. They have been keeping us supplied in door prizes for some years. If you have not contacted them lately, please consider this. They have a lot of great astronomical products that we all need. For more information on products and contact information, their websites are:

http://www.farpointastro.com/
http://starizona.com/

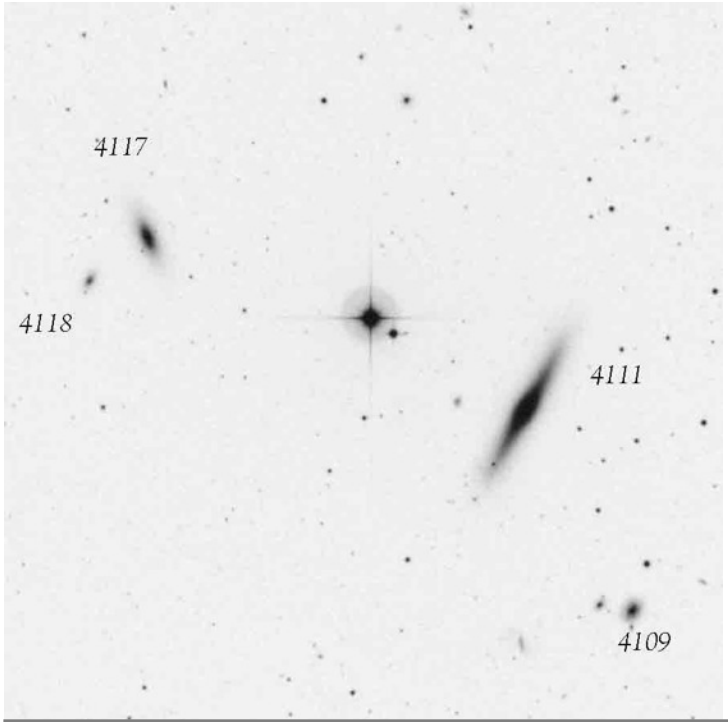
Travels on the Celestial Sphere

Bob Kepple and Glen Sanner

Friday March 16, while observing at Bob's Desert Starlight Observatory we both were looking at a few Herschel objects. As most of you know Glen is trying to finish his Herschel 400 observing list and to do so he needed a few objects in the constellation Canes Venatici, the Hunting Dogs. The object he was seeking to add to his list was NGC 4111, an edge-on galaxy in a nice star field. Well, to make a long story short we found NGC 4111 and along with it several other galaxies in the same field. Therewith, we spent some time checking the surrounding area for other galaxies nearby. Three more were visible. They were NGC 4109, NGC 4118, and NGC 4117, all galaxies within the same eyepiece field as 4111. NGC 4111 is a very nice "spindle" galaxy elongated 4' x .75' NNW-SSE. It has a very extended core and a bright stellar nucleus with a hint of a dark lane on the NE side. 5' SSW of 4111 we found NGC 4109, a small round spot with a brighter nucleus. Two 14th magnitude stars are immediately to its NE. Going 9' NE of 4111 we found NGC 4117, a slightly elongated spot of light with a brighter nucleus. A pair of stars were found between these two galaxies, one at 8th magnitude and the other at 13th magnitude. 2' SE of 4117 a faint elongated (NNW-SSE) smudge of light marks NGC 4118. We used Bob's 22" Newtonian on these fine objects and thus with our superb skies in SE Arizona we were able to see them as they should be seen, with clarity. Between us, we have over 90 years of observing experience and we are still amazed at what can be seen under the starry canopy.

Some of the data in the following list was extracted from the NASA/IPAC ExtraGalactic Database (NED) found on the internet.

Number	Galaxy Type	Right Ascension	Declination	Size	Magnitude	
NGC 4109	SA?	12h 06.8m	+42Â° 59'	0.75' x 0.6	m14.5v	SB?
NGC 4111	SA(r)O+:sp	12h 07.1m	+43Â° 04	4.4' x 0.9	m10.7v	SB 12.1
NGC 4117	SB?	12h 07.8m	+43Â° 07'	2' x 0.6'	m13.7v	SB?
NGC 4118	SO	12h 07.9m	+43Â° 06'	0.7' x 0.4	m15.5v	SB?



SKY-CALENDAR UPDATE FOR MAY 2012

Doug Snyder

Note: Unless otherwise noted, all dates and times are shown in Arizona's Mountain Standard Time – NOT in Universal Time (U.T.). MST is behind UT by 7 hours.

MAY 5 (Saturday): Meteor Shower! This shower is named η (eta) –Aquarid Meteors; unfortunately, it occurs near the same time as Full Moon !. This year, the peak is predicted at around noon, Arizona time, so that is another factor against this annual shower. In case you did not know, this shower is the result of a passage of Halley's Comet in the distant past; obviously, the radiant point is in the constellation Aquarius. Another meteor shower that is associated with Halley's Comet is the Orionids, occurring in October. If you do want to try and observe any activity for this Aquarid shower, an appropriate time would be the late evening of May 5 and into the morning hours of Sunday, May 6. GOOD LUCK!

FULL MOON: A Traditional name for the May full moon is 'Milk Moon'; this year, it is also the largest of 2012 and becomes fullest at 8:36 pm.

MAY 20 (Sunday): Annular Solar Eclipse: This very unique astronomical event will be visible as the 'Ring of Fire' in northern Arizona, as well as along a landmass pathway ranging from northern California to west Texas. Away from the centerline of this annular eclipse, many U.S. locales will witness a partial eclipse. One very popular observing site for Arizona, at least to see this 'ring of fire' is the area around Page, Arizona; many hundreds of observers, if not thousands, will witness the unfolding late-afternoon eclipse sequence among extremely scenic views that include the Glen Canyon Dam Recreation Area, Lake Powell, and the Vermilion Cliffs! The eclipse will begin at approximately 5:25 pm MST while the Sun is at an altitude of 23 degrees; it will reach maximum eclipse (the Ring of Fire) at 6:34 pm MST and the Sun at that time will be at 10 degrees. The annular portion of the eclipse will last about 4 and half minutes. At Page, the eclipse will still be in progress at sunset, and that is to occur at 7:29 pm. For much more information about this eclipse, visit skypub.com/may2012eclipse ; but keep in mind that the times shown on that site are in Universal Time (UT). You can always contact me also at (520)366-5788, and I'll try to help! For those astronomers that will be in the Sierra Vista, AZ area for the eclipse, the Huachuca Astronomy Club will be hosting a public observing event at Veteran's Memorial Park from about 4 pm to 8 pm to view the partial eclipse as it unfolds in this area. In Sierra Vista, the partial eclipse starts at about 5:32 pm, reaches maximum at 6:36 pm and sunset is at 7:11 pm. IMPORTANT: **Eye protection** is necessary during all phases of this eclipse. Use filters on telescopes, wear special 'eclipse viewing glasses' and protect your eyes and optics! At Veteran's Memorial Park on that Sunday, there will be some eclipse glasses available, as well as members' solar-filtered telescopes.

MAY 21 (Monday): If you have heard or read about an occultation occurring between the Moon and a star (Zeta Tauri) on May 22 (Universal Time), and possibly visible in Arizona, I have researched this event and unfortunately the conditions for southern Arizona do not reflect favorably on observing this occultation. The sky conditions will be too bright and the Moon will be at a very low altitude. In addition, it is not a 'graze' occultation, just a third magnitude star being occulted by the dark limb of the Moon, and reappearing a while later from the bright crescent limb of the Moon. More details can be found on the Sky & Telescope web site at skypub.com/may2012lunaroccn.

TIP OF THE MONTH – View and Show SATURN! It is the showpiece of the sky !

Sky Calendar for 2012 – Arizona sky phenomena; be sure you have a copy for the remainder of the year. One is included with this newsletter. You can also download a PDF version from http://skycalendar.blackskies.org/

Remember: There are ALWAYS exciting and unusual events happening in our 'grand universe' whether WE know it or see it; CAN you discover it? These updates are just a fraction of observable sky events! CLEAR SKIES UNTIL NEXT MONTH – Doug

HAC Officers and Board of Directors:
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Keith Mullen
Doug Snyder
Natasha Nichols
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Wayne Johnson, Past President

www.hacastronomy.com -- A great place to visit!

Contacting the Nightfall Newsletter Editor: You can reach the newsletter editor, Cindy Lund, at phone: (520) 456-4817 or email: alund@juno.com

To request a school or special event, please contact the HAC outreach events coordinator: Rich Swanson, telegeek-64@cox.net

A few Upcoming Events:

May 4 HAC Meeting at 7 pm at Cochise College – Eclipses

May 20 Annular Eclipse

May 24: Public Night at the Patterson Observatory 7:30 pm

May 30: HAC Board Meeting at the Patterson Observatory at 6:30 pm

June 1: HAC Meeting featuring Dr. C. Walker of NOAO

June 5: Last Venus Transit for 105+ Years!

Welcome New Members!

We would like to welcome new members to the Huachuca Astronomy Club. A warm welcome is sent to Robert & Connie Kelher, David Roemer & Nancy Hannaford, and Ted Forte.

2012—ARIZONA's Astronomically Handy Sky Calendar from Doug Snyder—2012

ARIZONA SKY PHENOMENA Calendar—All Times shown are MOUNTAIN STANDARD TIME*

January 2012
HIGHLITE: Shadow Transits on Jup.
01 Su New Year's Day; HNY2012 !
03 Tu Dbl. Shadow Tr., 2327hrs.,G&Eu
Quadrantid Meteors Pk@2400h. view a.m. of 4th**; an 80% moon sets just after 0300 hrs.
09 Mo ○ Full Moon 0031 hrs.
10 Tu Dbl.Shadow Tr., 2326hrs., Eu&G
11 We Comet P/2006 T1(Levy); mag.7?; perihelion@2343 hrs, 1.0074AU
16 Mo Spica 2°N. of Moon, 0100 hrs.
☾ Last Quarter Moon 0209 hrs.
21 Sa Mars at mag.-0.3, size 10.7″
23 Mo ● **NEW MOON** 0040 hrs.
30 Mo ☽ First Quarter Moon 2110 hrs.

February 2012
HIGHLITE: C/2009 P1 Garradd
03 Fr **Comet Garradd,** 0.5° from M92 Globular in Hercules, 3am
07 Tu ○ Full Moon 1454 hrs.
09 Th Venus 0.3° N. of Uranus, pm; mag. –4.1 & +5.9; size: 16″, 3.4″; eyepiece recommended
10 Fr Zodiacal Lt. in W., pm, next 2 weeks; after twilight.
14 Tu ☾ Last Quarter Moon 1005 hrs.
21 Tu ● **NEW MOON** 1535 hrs.
25 Sa Venus 3° S. of waxing Moon
26 Su Jup. 4° S. of Moon, pm
29 We ☽ First Quarter Moon 1822 hrs.
Leap-day: 2012 has 366 days

March 2012
HIGHLITE: Planetary Arrangements
03 Sa Mars @**opposition**, 1335 hrs., size at 13.9″, mag. –1.2
05 Mo Mars closest to Earth, 1000hrs
Merc. evening planet in W., 7″
08 Th ○ Full Moon 0239 hrs.
10 Sa Zodiacal Lt. in W., pm, next 2 weeks; after twilight
14 We ☾ Last Quarter Moon 1826 hrs.
19 Mo Vernal **Equinox**, 2214 hrs.
22 Th ●**NEW MOON** 0738 hrs.
Dbl. Shadow Tr., 1935hrs., I&G
27 Tu Venus G_Elong. E., 46°, in western sky after sunset
30 Fr ☽ First Quarter Moon 1241 hrs.

April 2012
HIGHLITES: Saturn, Lyrid Meteors
03 Tu **Venus** 0.5° S. of M45 (Pleiades) in early evening, western skies
06 Fr ○ Full Moon 1219 hrs.
13 Fr ☾ Last Quarter Moon 0350 hrs.
15 Su **Saturn@ opposition**, 1100hrs
18 We Merc. morning planet in E., 8″
21 Sa ● **NEW MOON** 0019 hrs.
Lyrid Meteors, Pk 2200hrs.
28 Sa **Astronomy Day #1 2012**
29 Su ☽ First Quarter Moon 0259 hrs
30 Mo Venus at brightest mag., –4.7

May 2012
HIGHLITE: Annular Solar Eclipse
05 Sa η-Aquarid Meteors; unfavorable year due to moon; pk.1200hrs.
○ Full Moon 2036 hrs.; largest in 2012
12 Sa ☾ Last Quarter Moon 1447 hrs.
20 Su ● **NEW MOON** 1648 hrs.
Annular Solar Eclipse; best Arizona site: near city of Page; low altitude Sun; starts at 1724 hrs., max. at 1834 hrs.
28 Mo ☽ First Quarter Moon 1317 hrs.

June 2012
HIGHLITE: Solar Transit of Venus
04 Mo Partial Lunar Eclipse; penumbra starts 0148 hrs.; partial at 0259 hrs; partial ends 0506 hrs
○ Full Moon 0412 hrs.
05 Tu **Transit of Venus**; start at 1510 hrs.; still in progress at sunset at 1916 hrs.
11 Mo ☾ Last Quarter Moon 0342 hrs.
19 Tu ● **NEW MOON** 0803 hrs.
20 We Summer Solstice, 1607 hrs.
26 Tu ☽ First Quarter Moon 2031 hrs.

July 2012
HIGHLITE: Jupiter's Morning Light
01 Su Merc., west sky, pm twilight, mag. +0.4, size 8.1″
03 Tu ○ Full Moon 1152 hrs.
10 Tu ☾ Last Quarter Moon 1849 hrs.
12 Th Venus, am, brightest mag., -4.7
14 Sa Comet 96P/Machholz, Perihelion
18 We ● **NEW MOON** 2125 hrs.
21 Sa Dbl.Shadow Tr., 0354hrs, Eu & I
26 Th ☽ First Quarter Moon 0157 hrs.
28 Sa Dbl.Shadow Tr., 0446hrs, Eu & I
29 Su S. δ– Aquarid meteors Pk. in am, unfavorable year, 78%Moon
30 Mo Jupiter, am, size 36″, mag. –2.1

August 2012
HIGHLITE: Perseid Meteor Shower
01 We ○ Full Moon 2028 hrs.
09 Th ☾ Last Quarter Moon 1156 hrs.
12 Su **PERSEID** Meteors: **favorable!** View pm 11th & am 12th
13 Mo Dbl.Shadow Tr., 0348hrs., I & G
Occultation of Venus by the Moon; near 1340 hrs.
16 Th Merc. morning planet in E., 8″
17 Fr ● **NEW MOON** 0855 hrs.
24 Fr Neptune @ Opposition,0600h. mag.+7.8, size 2.3″, 29AU
☽ First Quarter Moon 0654 hrs.
31 Fr ○ Full Moon (**2nd**) 0659 hrs.

September 2012
HIGHLITE: Northern Lights in AZ ?
08 Sa ☾ Last Quarter Moon 0616 hrs.
12 We Epsilon (ε) Eridanids Meteors peak near 0600hrs; favorable
14 Fr Zodiacal Lt. in E., am, next 2 weeks before twilight
15 Sa ● **NEW MOON** 1911 hrs
Alert For aurora activity before, during & after Equinox
22 Sa **Autumn Equinox** 0749 hrs.
☽ First Quarter Moon 1241 hrs.
29 Sa Uranus @ opposition, 0000hrs. mag. +5.7, size 3.7″, distance 19.1 AU from Earth
○ Full Moon 1241 hrs.

October 2012
HIGHLITE: Meteor Showers (3)
03 We Venus/Regulus Appulse—one of the best for 2012; E., 0500hrs
08 Mo ☾ Last Quarter Moon 0034hrs
Draconids Meteors: 0300 to dawn
10 We **S. Taurids** Meteors: favorable!
13 Sa Zodiacal Lt., E., am, next 2 wks.
15 Mo ● **NEW MOON** 0503 hrs.
21 Su **Orionids** Meteors: v. favorable!
☽ First Quarter Moon 2033 hrs.
29 Mo ○ Full Moon 1250 hrs.

November 2012
HIGHLITE: LEONID Meteor Shower
06 Tu ☾ Last Quarter Moon,1736hrs.
12 Mo **N. Taurids** Meteors, 0400h.
13 Tu ● **NEW MOON** 1509 hrs.
17 Sa **Leonid Meteors!** First of 2 Pks., 0200hrs.; v. favorable
19 Mo 2nd **Leonid** pk. possible 2400h.
20 Tu ☽ First Quarter Moon 0732 hrs.
27 Tu Venus/Saturn Conjunction! E., am, 0630hrs., 0.6° separation
28 We ○ Full Moon 0747 hrs.

December 2012
HIGHLITE: GEMINID Meteor Shower
02 Su JUPITER @ Opposition, 1900 h.
04 Tu Merc. morning planet in E., 7.4″
06 Th ☾ Last Quarter Moon 0832 hrs.
13 Th ● **NEW MOON** 0142 hrs.
GEMINIDS Pk: 0500 hrs.; Very Favorable for 2012
19 We ☽ First Quarter Moon 2220 hrs.
21 Th Solstice (Winter) 0412 hrs.
22 Fr **Ursid** Meteors Pk., 0100 hrs.
28 Fr ○ Full Moon 0322 hrs.

*Times/Dates= ARIZONA MountainStandardTime (UT-7hrs), NO DST; **updates/ details,** see**:** http://skycalendar.blackskies.org; **Abbr**: Tr=Transit; Pk=Peak; Merc=Mercury; E=East W=West; S=South; N=North; J, Jup.=Jupiter; V=Venus; "=arc seconds; h., hrs.=hours (24 hour time system); MP=Minor Planet; MS=Moon Set; wks=weeks; Lt=Light; pm=evening; v.= very am=morning; mag.=magnitude; **meteor shower dates reflect predicted Peak Morning, but Moon may still be present; I=Io; Eu=Europa; G=Ganymede; C=Callisto; UT=Universal Time; **bold text=**possibly a promising/worthy event or activity; G_Elong=Greatest Elongation; dbl= double; AU=Astronomical Unit; *compiler*: Doug Snyder (C/2002 E2, MP15512); V2.0.2012