



The President's Corner

Yo, star club guys...

The Prez is off this month enjoying the Holidays with family and friends, so he did not send his usual note. But I must say that 2011 was a great year for our President. You did a great job leading the club, Chris!

Similar kudos to Tom Polakis, who did an outstanding job of lining up speakers this year, to Paul Dixon as secretary, and Mitch Prause as treasurer. (We still have money, right?) And thanks to the other appointed posts, such as Properties Guru Lynn Blackburn, Novice Coordinator Steve Dodder (also of Grand Canyon Star Party North Rim fame), web wizard Peter Argenziano, Public Events coordinator Jack Jones, ATM leader Paul Lind (a super engineer and good friend too), Imaging Coordinator Al Stiewig, Deep Sky Master A. J. Crayon, and Sketchbook Coordinator Rick Rotramel.

Let's look forward to a great 2012, with an annular eclipse and many hours of dark nights with good friends and expensive glass!

The Editor



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From the Editor's Cluttered Desk

By Richard Harshaw

This will be a short issue because of the Holidays, but that's ok because none of us has the time to spend a lot of time on articles or paste up.

Instead of my usual drivel, just let me wish you all a wonderful Holiday. (That would be Christmas for the Christians among us, Chanukah for our Jewish brothers, Kwanza for our African friends, Feliz Navidad for our Hispanic contingent, or Festivus for the pagans— take your choice. I am an equal opportunity sort of guy.)

I am reminded of what a friend of mine told me decades ago when I was a graduate student. She was an English major and specialized in Olde English (the language of the time of Chaucer). She said that the old Christmas Carol "God Rest Ye Merry, Gentlemen" is of the Chaucerian era and that the comma in the title is significant. (When you think about it, why IS there a comma there anyway?) She explained that in Chaucer's day, the title was the equivalent of saying, "May God give good rest to good men," as "merry" did not mean "happy" so much as it meant "good" or "wholesome". So my wish for you is to be well rested and refreshed this Season, all you good men (and women) of SAC.

Now who ordered the new Takahashi 7-inch refractor for Christmas, thereby dumping all our unusually rotten weather on us this time of year?



Richard W. Harshaw



Call for Observations / Celestial Sketch Book

By A. J. Crayon and Rick Rotramel

The December selection is Cetus the Whale, or Sea Monster. This is our first pass for this constellation which is mostly filled with galaxies of which only one stands out, **M77**. In this column we are also exposed to a new catalog, **New**, yes **New**. Here is some information, from David Hofland, about this little known catalog. **New** refers to new galaxies in the Revised Shapley-Ames Catalog. Yet there isn't any explanation where the name came from or why it is called New. The SAC database has 5 references to this catalog.



Starting from the western end of the constellation is magnitude 10.6 **MCG -03-01-015** located at RA 00 01.9 Dec -15 27 about 10° west of northwest from Deneb Katos (beta Ceti) and near the border with Aquarius.

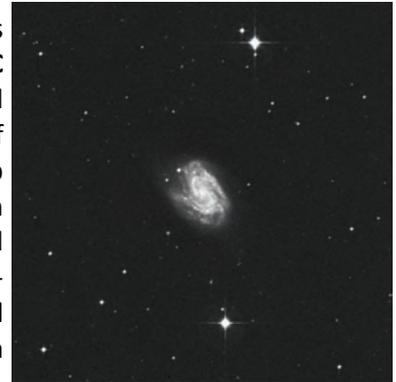
It has a low surface brightness due to its 11'x4' size. It is also referred to as UGCA 444 and is the Wolf-Lundmark-Melotte galaxy, which is indeed a well-known Local Group member, Brian Skiff.

8" F6 Newtonian, 120X; Charlie Whiting: Basically this galaxy was invisible to me. I was only able to detect it by using my Dec and RA controls to rock back and forth across my field of view. I could only tell that there was something there because a small ghostly irregular smudge could be seen moving. I could not say how large it was or its shape. The only smudge I saw was small and was probably just the central condensation of the galaxy.

12.5" f4.9 Newtonian, 100x; Rick Rotramel: G - L, F, oblong, very fleeting, can't define the shape.

25" Newtonian, 200X; Wayne Johnson (Mr. Galaxy): I had to sweep over the area a couple times to make sure I had something in the field. Although the transparency wasn't the best I was able to see it as: very faint, large, oval, within a large triangle of faint stars, a couple very faint stars near the middle (maybe a stellar nucleus?), very gradual, if any, brightening toward the middle.

The next galaxy is the barred spiral **NGC 157** and is found about 10° north of northwest from Deneb Katos. It is 4.1'x2.7' in position angle 40° and is a Herschel 400 entry. It was discovered by William Herschel in 1783 and has a grand-



design spiral pattern. Optical types for this galaxy are varied amongst several catalogues and indicate it is a rare example of a galaxy that appears optically barred, but unbarred in the near-IR. What appears to be a bar in the optical looks much more like the result of projection in the near-IR.

8" SCT, 65x; Richard Harshaw: Very faint. It lies between two 9th mag stars (one 10' N, the other 10' SW). Its axis runs NE-SW. A very dim star (~12th mag) lies just E of it.

8" F6 Newtonian, 120X; Charlie Whiting: This galaxy was seen using direct vision. But, with averted vision, it grows a little and its shape is more apparent. It is roughly oval, but gives the impression of being irregular. It is about 4' x 2.5'. It is aligned to the northeast. There appears to be one or two very dim stars located right on its northeast point. The galaxy is not quite midway between two bright stars to its north and south. The North Star is about 8th mag and has a 12th mag companion. The south star is about 9th mag.

continued on the next page

Last Call (Con't)

10" f4.5 Newtonian 163x, Dave Hofland: $\sim 4^\circ$ E of Iota Ceti, 46x a dim but not hard to find smudge of glow located along the short side of a little 25' wide triangle of 8.5-9th mag stars. 163x dim $\sim 3' \times 2'$ oval aligned roughly N-S, relatively well defined edges but pretty much uniformly illuminated across its halo, no core noted. 9th mag star $\sim 5''$ S, an 8th mag/12th mag visual double $\sim 7''$ N.

12.5" f4.9 Newtonian, 175x; Rick Rotramel: G - pL, pB, oval, face on spiral, mottled, a bright star at one end.



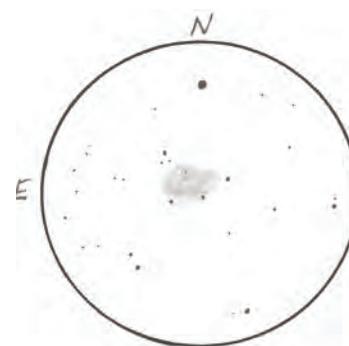
Moving more to the north and a little east find **IC 1613** an irregular galaxy that is 16.6' X 14.9' and has a magnitude of 9.2. It is a dwarf member of the Local Group and was discovered by Max Wolf photographically in 1906. It took astronomers until 1978

to discover any clusters or nebulae in this sparse galaxy (distant galaxies can be seen THROUGH it!). No one has a good theory at this time on why this galaxy is so dust and cluster poor. This galaxy is considered to be a low surface brightness galaxy, at 15th mag I would agree with that.

8" SCT at 104x; Richard Harshaw: Faint and indistinct. You can find it about 40' NW of the easy pair 26 Cet (6.1 and 9.0, 17" @ 254).

8" F6 Newtonian, 75X; Charlie Whiting: I could barely detect this galaxy's presence. The star patterns were exact for its location. It is supposed to be 16' x 15' but all I could see was a very dim patch of gray about 4' diameter. It is 9.9mag, but its average surface brightness is about 16th mag. So I am seeing only its brightest core portion. It is roughly circular. Hard to tell where my seeing ends. There's a field star involved in its full boundary. The part that I see is east of this star. As I stared at it longer, it seemed to develop several patches. Perhaps

these are its arms. I assume from the dimensions that I am looking at it face on. The next day I looked up this object in Vickers Deep Space CCD Atlas. The picture shows this as a very faint, very large object with no definition as to its shape. It is as though it is hidden behind an intervening layer of interstellar dust, maybe? No wonder I could hardly see it!



NGC 1613 by
Steve Coe (13" at 100x)

10" f4.5 Newtonian 71x, Dave Hofland: 35x with UHC filter, it is difficult but visible with patient AV as a diffuse ill defined $\sim 10'$ diam glow with a mottled texture. 71x with concentrated av and using a towel as a hood, some small irregular spots of glow pop up here and then there within $\sim 10'$ diam area, but I was never able to get a sense of really seeing the entire object at the same time. Note: This dwarf member of our local group, ~ 2.4 mly distant.

12.5" f4.9 Newtonian, 100x; Rick Rotramel: G - L, F, oval, even brightness throughout.

25" Newtonian, 200X; Wayne (Mr. Galaxy): very large, very faint, elongated oval outline with several very faint stellarings and clumps scattered around it; very gradually, very little brighter nucleus located following the center of that oval outline. There is a very bright star north proceeding the galaxy which I tried to keep out of the field of view and a pretty bright star is on the south proceeding edge.



Last Call (Con't)

Our fourth selection is from a catalog we haven't seen in this column, was discussed in the opening introduction, is the galaxy **New 1** and is located at RA 01 05.1 Dec -06 13. It is 4.5'x3.5', has an 11.8 magnitude and surface brightness of mag 14.4.

8" F6 Newtonian, 120X; Charlie Whiting: This galaxy was not visible with direct vision. Even using averted vision I could only get a glimpse of a mid-size patch of gray at about 10' south of a pair of 11th / 12th mag stars. The galaxy appears irregular in shape, but its crosswise measurements are close to equal at about 5'. It does not appear to be oriented in any particular direction. It is evenly bright overall. There is a 13th mag star off of its east side, and, a 14th mag star off of its south side. Sky-Map Pro shows another galaxy, PGC 3853, in almost exactly the same position as New 1.

11" SCT at 127x; Richard Harshaw: Pretty large but extremely faint (low surface brightness), it does not brighten much anywhere. Round shape. A wide pair of 13th mag stars is 10' N.

16" f4.5 Newtonian 261x, Dave Hofland: ~25' ENE of NGC 357, with av ~2' diam very diffuse hazy halo with a gradually and slightly brighter nucleus. Note: The Revised Shapely-Ames Catalogue of Bright Galaxies contains objects given the designation "New" and numbered 1-6. The more common catalogue designation of these galaxies are: New 1 = MCG-01-03-085 New 2 = NGC 4507 New 3 = MCG-02-33-015 New 4 = UGC 08041 New 5 = IC 4946 New 6 = ESO 287-G013.



Moving on to another Herschel 400 galaxy is **NGC1055**, nearly edge-on with an equatorial dust lane with a Sombrero shape. It's listed as 7.6'x3' and magnitude of 10.6. It was discovered by William Herschel in 1783, may be interacting with M77

and appears to be part of a group including NGC 936, NGC 1084 and NGC 1087. (M77 is 425,000 light years away.)

8" SCT at 104x; Richard Harshaw: Two 7th mag stars to the N (8.0 mag SAO 110692 on the E, 6.8 mag 110689 on the W) are a problem. There is also an 11th mag star about 1' N. The axis runs E-W, and a dust lane is visible at high powers.

8" F6 Newtonian, 120X; Charlie Whiting: This galaxy is detectable with direct vision. But, it is best seen with averted vision. Its overall dimensions are 7' x 3'. But it did not appear to be oval. Rather, it looked irregular. It was evenly bright overall with no central condensation. Some of its inside areas seemed brighter. So, the areas that seemed darker most have been the dust lanes described in SAC data. The galaxy is stretched between two 11th / 12th mag stars. It is aligned a little south of due east. (I looked for a design amongst the galaxy and the field stars, but failed to recognize what it might be.)

16" f4.4 Newtonian, Rick Rotramel: G - pS, F, oval, low surface brightness, no nucleus seen.

22" f3.6 Newtonian 226x, Dave Hofland: ~45' E of 4.1 mag Delta Ceti, about 30' NNW of M77, ~5' south of E-W aligned pair of stars mag 6.7 and 7.6 separated by about 5', easily detected as an irregular shaped ~5'x2' area of diffuse glow aligned ~E-W, PA ~100, With av the object isn't distinctly clear but clearly there is a rather wide dark lane running along the long axis through the halo, south of this lane the halo is brighter than north of it.

continued next page

Last Call (Con't)

The next galaxy is about 30' to the south-east of NGC1055. It is the Seyfert galaxy **M 77!** It is 7.3'X6.3' in a position angle of 70°. With a large enough telescope one should be able to see lots of detail in the middle. M77 is 425,000 light years away.



14X70 binos; Richard Harshaw: Small with a very rapidly brighter middle.

8" SCT at 65x; Richard Harshaw: Small nucleus with a bright halo; round. It takes high power well. An 11th mag star is on the E edge. It runs NE-SW and you'll find averted vision a help.

8" F6 Newtonian, 105X; Charlie Whiting: This galaxy has a very bright central condensation. It is about equal in brightness to the 10.8 mag star just east of its core. The bright center is about 5" to 10" in diameter. Surrounding the core is a large bright area, roughly circular and about 1' or 2' in diameter. Then the halo gradually fades away. The dim halo envelops the above-mentioned star. Averted vision is needed to see the faint halo. But, it can not be seen all at once. I had to move my eye around the field of view to see different parts. Overall the galaxy appeared to be circular, about 6' in diameter.

12.5" f4.9 Newtonian, 175x; Rick Rotramel: G - pS, pB, round, face on spiral, bright stellar nucleus.

22" f3.6 Newtonian 226x, Dave Hofland: a little less than 1 deg SE of Delta Ceti, centered ~1' WNW of a 10th mag star, a bright stellar core with a large diffuse misty halo, that diminishes in brightness very quickly beyond the core, with the faint halo periphery extends to involve the 10th mag star on the ESE edge, ~4'+ diam.

The last is the SBc galaxy **NGC1087** that has a Ring. It is about one degree southeast from M77 and is in a field with other galaxies so care should be taken when looking at this field. It has a magnitude of 10.9 and is 3.9'X2.3' in a 5° position.



Don't look for the ring as you probably won't see it. William Herschel discovered it in 1785. R. O. Evans, Coonabarabran, N.S.W., visually discovered SN 1995V in this galaxy with the Australian National University 1-m telescope at Siding Spring (assisted by J. Jarman and T. Cragg) on Aug. 18 UT. Its expansion rate was measured to be about 11 000 km/s. [Source: 1995 IAUC].

8" SCT at 104x; Richard Harshaw: forms a right triangle with a 9th mag star and a 10th mag star. It has a N-S axis, and is fairly easy.

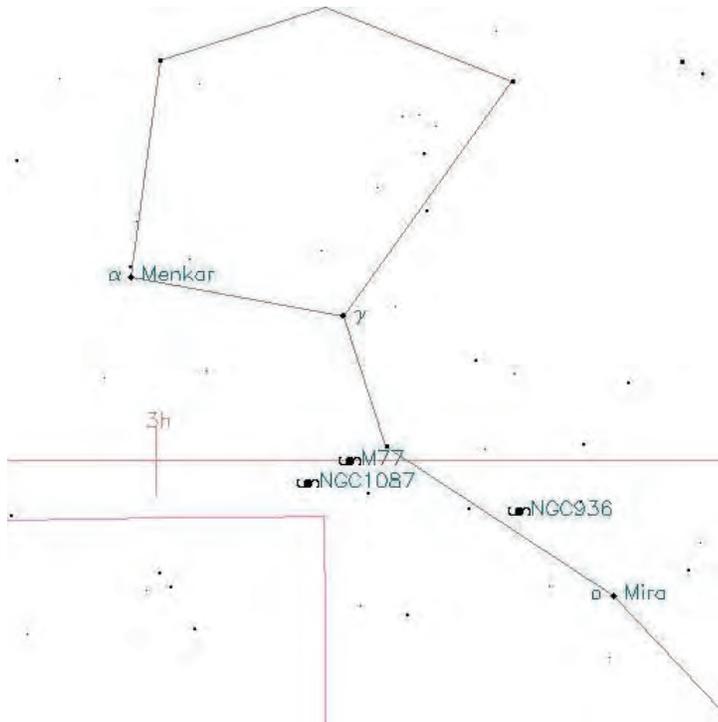
8" F6 Newtonian, 120X; Charlie Whiting: This galaxy is mostly oval in shape, about 4' x 2'. Aligned due north. Evenly bright overall. No central condensation. I was able to detect it with direct vision, but, averted vision is needed to see its size and shape. About 15' due north of NGC 1087 is NGC 1090. NGC 1090 is also an oval, but a little smaller and a little dimmer. It is aligned due east.

22" f3.6 Newtonian 226x, Dave Hofland: ~2 deg SE of Delta Cet, ~1 deg SE of M 77, ~4'x2' oval glow aligned ~N-S, only slightly brighter center, gradually diminishing halo, NGC 1090 is ~12' N, it's ~3'x1' smudge, PA ~100 with a very faint star just on the S edge, NGC 1094 a small faint ~1' sized diffuse spot of glow ~5' S of a 9th mag star.

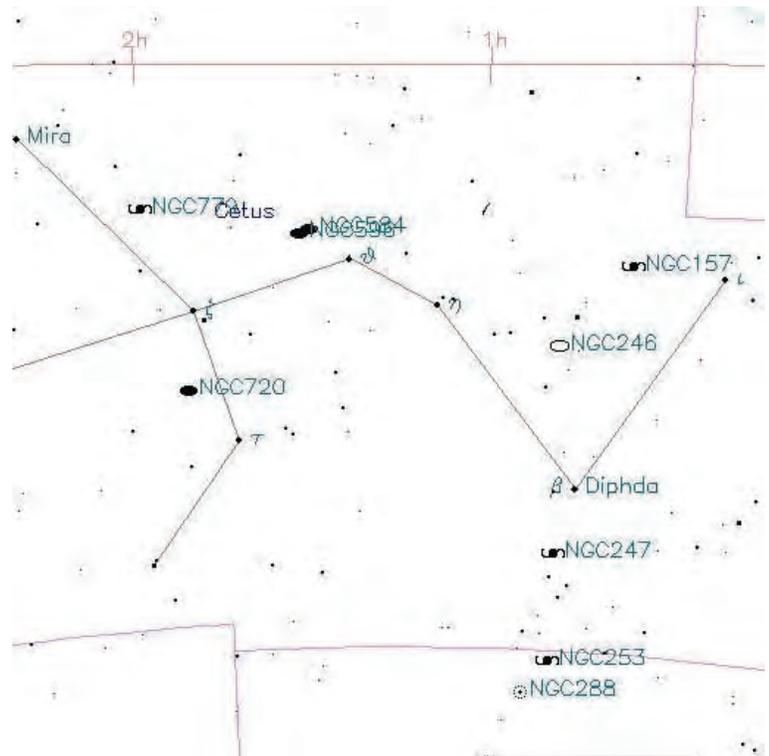
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Last Call (Con't)



Star Atlas: © Your Sky, by John Walker,
<http://www.fourmilab.ch/yoursky/>





Call for Observations

By A. J. Crayon

The New Year will start out with Andromeda, which has only been done in 2004 – December to exact. That installation covered most of the show pieces of the constellation, yet there are some interesting things to check out, amongst them are a couple of open clusters and asterisms in addition to one MCG entry. So, without farther delay, let's get on with the list. I've read a few times about a reference to the Andromeda Dipper that, actually, isn't a dipper at all. Yet some times it creeps up in conversations, articles or the Internet. So to help understand this here are the stars that makeup this misnomer.

It starts in Andromeda with gamma, beta and alpha then continues in Pegasus with gamma, alpha and beta. Don't ask me where this naming began, hopefully this will help from keeping it from spreading. Now, moving on to objects of more interest we start in the western part of the constellation with **NGC7640**, a nearly edge-on spiral listed as faint and large. Also in the western reaches is **UGC12632**, a 12th mag spiral. What kind of NGC Description would you use to describe this galaxy? Next is the open cluster **Aveni-Hunter 1** listed in the SAC database at 23h 37.8m +48° 34'. The documentation but has no reference for this catalog. It is referenced in deepskypedia.com as an open cluster in Andromeda with no other comments. It includes the variable star BM Andromeda. With your observation give a star count and estimate the Trumpler description in addition to other features that seem important to you. Next is an entry from the Morphological Catalog of Galaxies and its number is **MCG +08-01-016**. You can find its 12th mag at 23h 59.2' and +46° 53'. The MCG catalog notes indicate it is face-on and the inner regions are completely black. Perhaps a larger scope will reveal this feature. Moving on to the next is **NGC160**, an early type spiral galaxy. Be careful as the field includes an 8th mag star that may make this a difficult observation. Moving on towards the center part of the constellation is another galaxy, **NGC252**. This galaxy has a nice double star that precedes by about 4'. Now we get a small surprise, **NGC272** an open cluster. It's listed as mag 8.5 but don't expect much. As in prior open clusters give star count, your Trumpler description along with features that jump out

at you. Going back to galaxies is the bright and small **NGC529**. It precedes another galaxy of mag 13.2, can you see it in your telescope? Now towards the eastern part of the constellation is an asterism titled the Golf Putter found at 01h 52.5m and +37° 30' and is 95' X 25'. What end is the putter found? **NGC982** our last object for this sequence. It is a faint, small galaxy that is supposed to be north follow if 2 galaxies. Do you see them?

Camelopardalis was done in 2007 and 2010 and it is time now to do it again, but with objects not on the two prior lists. We start with a nice surprise **STF 374**, a double star. In case you don't have its coordinates handy here it is; R.A. 03h 24.2m, Dec +67° 27". Pay attention and note the magnitudes, position angle, separation and any other information you think will help describe this double. Next deep sky entry is **NGC1708** an open cluster with no magnitude. Estimate magnitude, size, number of stars and brightest star. The NGC Description includes stars large and small. Find **Cr 464** another open cluster. It was listed in the 2007 article but no observations were submitted. As in the prior cluster give us your estimates. So much for clusters, now on to galaxies. First galaxy is the faint **NGC2256** a barred spiral that has a 9.5 mag star about 3' to the south of south-east. Don't let the 13th and 14th mag field galaxies confuse you. The next galaxy, **NGC2366** isn't as faint and seems a little larger, yet there seems to be some interesting details. Can you ferret them out? Now give **NGC2403/4** a try. They are listed as a galaxy and a diffuse nebula. The galaxy is NGC2403; the nebula, NGC2404. There is a disagreement amongst SAC NGC database, NGC/IC Project and Vickers CCD Atlas as to where the nebula is located so you must decide for yourself and let us know. The galaxy has two exclamation points in the description so you will not want to miss it. It is also a Herschel 400 entry. Following is **NGC2646** another

continued next page



Call for Observations (Con't)

barred spiral that seems to be faint and small. It has two stars of 11th and 12th magnitudes 2' to the southeast and this should aid in locating, but be careful not to confuse the galaxy with the three other much fainter field galaxies. Now another challenge is MCG +13-07-007 that I'll call faint and very small. This catalogue indicates the *Inner Regions Very Black*. It is located at R.A. 08 53.2 Dec +76° 30'. The last one for this month is located on the far side of the constellation and is **IC3568**, a planetary nebula. It has a high surface brightness because it is so small and has a 10th mag star 7' to the east of north-east. It may be difficult to find and a UHC filter should be tried.



Being Double Minded

By Richard Harshaw

For this year's last column, I offer up 9 more binary beauties for your optical delight. As per the usual conventions for this column, the position is given in HHMM.M RA and DDMM DEC, so that 2 hours 27.3 min of RA and +16 degrees 22 minutes of DEC would be 0227.3+1622. Colors are along the ROY G BIV convention, with exclamation points meaning strong colors, and lower case letters meaning a blend of colors (so that yO would be read as "yellowish-orange").

My rating system is based on a 1-5 scale where 1 is a view that I consider stunning or superb and 5 is where I wish I had done a root canal instead.

The list of stars appears on the next page in Landscape format as this better facilitates the data layout.

Since it is Christmas, I decided to throw in a "bonus" pair for your stocking. It is a really tough split and will require at least 10 inches of aperture and superbly steady skies.

Enjoy, and good splitting to you!



Being Double Minded (Con't)

Pair	Aliases:	RA:	DEC:	Con:	Rat- ing:	Mag A:	Mag B:	Mag Spect A	Mag Spect B	Color A	Color Spect B	Year of Last Meas ure	Sep AB	PA AB	Num Meas AB	Notes:	Observa- tions:
Easy Pairs																	
STF 470	32 Eri	3	-0257	Eri	1	4.80	5.89	G8 III	dY!	A2 V	B	2007	6.9	348	129	A is a spectro- scopic binary.	
STF 494		0408. 9	+230 6	Tau	1	7.53	7.65	A3 IV	W	A3 IV	W	2007	5.3	189	95		
STF 401		0331. 3	+273 4	Tau	1	6.61	6.99	A2 V	W	A3 V	W	2007	11.4	270	94	Probably physi- cal.	Beauti- ful!
Medium Pairs																	
STF 559		0433. 5	+180 1	Tau	1	6.97	7.02	B9 IVn	W		W	2007	3	277	158		
STT 81	56 Per	0424. 6	+335 8	Per	2	5.84	9.25	F5 V	W		O	2002	4.4	17	87		Nice field!
STF 589		0444. 8	+051 7	Ori	2	8.78	8.92	G5 V?	B	G5 V?	O	2006	4.4	279	144		
Difficult Pairs																	
STF 622		0458. 1	+014 1	Ori	2	8.48	8.61	F5	O		B	1997	2.4	165	96		
STT 88		0457. 3	+614 5	Cam	2	7.21	8.33	G0	W		W	2002	0.7	310	19		
HU 1056		0319. 6	+671 4	Cam	2	8.72	8.89	F8 V	W		W	2006	1.1	261	25		
Harshaw, are you nuts?																	
STF 346	52 Ari	0305. 4	+251 5	Ari	2	6.21	6.19	B7 V	bW		W?	2006	0.4	253	149		AB period is 227 years; semi-major axis of 0.47", direct

**Star Party Dates, 2012**

Compiled by Rick Tejera

Date	Sunset	Astro Twilight Ends	Moonset	Moonrise	ATB	Dark Time
Saturday, January 21, 2012	17:55:00	19:14:00			4:45:00	9:31
Saturday, February 18, 2012	18:21:00	19:16:00		5:34:00		10:18
Saturday, April 21, 2012	19:10:00	20:40:00	19:52:00		4:26:00	7:46
Saturday, May 19, 2012	19:27:00	21:07:00			3:42:00	6:35
Saturday, June 23, 2012	19:45:00	21:31:00	22:26:00		3:31:00	5:05
Saturday, July 21, 2012	19:38:00	21:18:00	21:02:00		3:52:00	6:34
Saturday, August 18, 2012	19:12:00	20:42:00	19:37:00		4:22:00	7:40
Saturday, October 13, 2012	18:03:00	19:25:00			5:16:00	9:51
Saturday, November 10, 2012	17:35:00	19:00:00		4:28:00		9:28
Saturday, December 15, 2012	17:28:00	18:57:00			3:03:00	8:06

2011 SAC Officers and ContactsBoard Members

President	Chris Hanrahan (president@saguaroastro.org)
Vice-President	Tom Polakis (tpolakis@cox.net)
Treasurer	Mitch Prause (mitch.prause@thehartford.com)
Secretary	Paul Dickson (paul@permanentmail.com)
Properties	Lynn Blackburn (properties@saguaroastro.org)

Non-board Positions

Novice Group Leader	Steve Dodder (fester00@hotmail.com)
Newsletter Editor	Richard Harshaw (rharshaw2@cox.net)
Webmaster	Peter Argenziano (webmaster@saguaroastro.org)
Public Events	Jack Jones (publicevents@saguaroastro.org)
ATM Group	Paul Lind (atmgroup@saguaroastro.org)
Imaging	Al Stiewing (amst@cox.net)
Deep Sky Group	A. J. Crayon (acrayon@cox.net)
Sketchbook	Rick Rotramel (rick.rotramel@honeywell.com)



SAC Dates of Significance, 2012

Compiled by Rick Tejera

Date	Start Time	End Time	Event	Location
January 6, 2012	19:30	22:00	SAC General Meeting	Grand Canyon University, Rm 105 Fleming Bldg
January 14, 2012	17:46	23:48	SAC Star Party	Saddle Mountain
January 21, 2012	17:55	6:10	DOTM Star Party	Antennas
February 10, 2012	19:30	22:00	SAC General Meeting	Grand Canyon University, Rm 105 Fleming Bldg
February 18, 2012	18:21	5:34	DOTM Star Party	Antennas
March 9, 2012	19:30	22:00	SAC General Meeting	Grand Canyon University, Rm 105 Fleming Bldg
March 17, 2012	18:42	4:09	SAC Star Party	Saddle Mountain
March 24, 2012	18:50	6:31	All Arizona Messier Marathon	Salome Emergency Airfield
April 6, 2012	19:30	22:00	SAC General Meeting	Grand Canyon University, Rm 105 Fleming Bldg
April 14, 2012	19:03	2:46	SAC Star Party	Saddle Mountain
April 21, 2012	19:10	4:26	DOTM Star Party	Antennas
May 4, 2012	19:30	22:00	SAC General Meeting	Grand Canyon University, Rm 105 Fleming Bldg
May 12, 2012	19:22	1:17	SAC Star Party	Cherry Rd
May 19, 2012	19:27	3:42	DOTM Star Party	Cherry Rd
June 1, 2012	19:30	22:00	SAC General Meeting	Grand Canyon University, Rm 105 Fleming Bldg
June 16, 2012	19:43	3:30	SAC Star Party	Cherry Rd
June 23, 2012	19:45	3:31	DOTM Star Party	Cherry Rd
June 29, 2012	19:30	22:00	SAC General Meeting	Grand Canyon University, Rm 105 Fleming Bldg
July 14, 2012	19:42	2:27	SAC Star Party	Cherry Rd
July 21, 2012	19:38	3:52	DOTM Star Party	Cherry Rd
July 27, 2012	19:30	22:00	SAC General Meeting	Grand Canyon University, Rm 105 Fleming Bldg
August 11, 2012	19:20	1:09	SAC Star Party	Cherry Rd
August 18, 2012	19:12	4:22	DOTM Star Party	Cherry Rd
August 31, 2012	19:30	22:00	SAC General Meeting	Grand Canyon University, Rm 105 Fleming Bldg
September 8, 2012	18:44	23:51	SAC Star Party	Cherry Rd
September 14, 2012	18:33	4:45	Fredrickesen's Meadow Star Party	Fredrickesen's Meadow
September 28, 2012	19:30	22:00	SAC General Meeting	Grand Canyon University, Rm 105 Fleming Bldg
October 13, 2012	18:03	5:16	DOTM Star Party	Antennas
October 20, 2012	17:54	5:21	SAC Star Party	Antennas
October 26, 2012	19:30	22:00	SAC General Meeting	Grand Canyon University, Rm 105 Fleming Bldg
November 10, 2012	17:35	4:28	DOTM Star Party	Antennas
November 17, 2012	17:30	5:43	SAC Star Party	Antennas
November 23, 2012	19:30	22:00	SAC General Meeting	Grand Canyon University, Rm 105 Fleming Bldg
December 8, 2012	17:25	3:11	SAC Star Party	Saddle Mountain
December 15, 2012	17:28	3:03	DOTM Star Party	Antennas

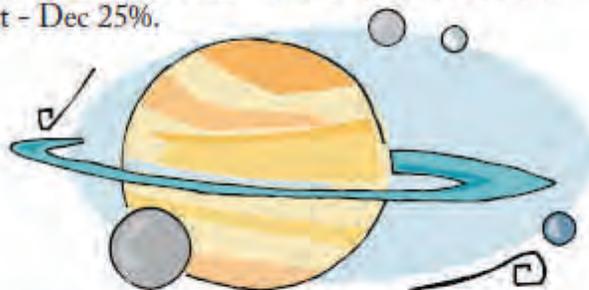


Saguaro Astronomy Club Membership Services

Membership -- Memberships are for the calendar year and are pro-rated for new members as follows: Jan - Mar: 100%; Apr - Jun: 75%; Jul - Sep: 50%; Oct - Dec 25%.

- \$32.00 Individual Membership
- \$48.00 Family Membership
- \$14.00 Newsletter Only
- \$10.50 Member Nametag (pinned clasp)
- \$12.50 Member Nametag (magnetic clasp)

Nametags will be mailed to address provided below



Please print all information legibly

Name: _____
 Address: _____
 Address: _____
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Check here if this is updated information already on file

Make check payable to: SAC

Please bring your completed form to a meeting or mail it with payment to:

SAC Treasurer
c/o Mitch Prause
8441 W. Foothill Dr.
Peoria, Az 85383

Magazine Subscription Information

Effective January 1, 2011, SAC no longer accepts payment for magazine subscriptions to *Astronomy* or *Sky & Telescope*. All new subscriptions and/or renewals should be handled by the individual members directly with the publisher.

SAC on the Internet

*SAC has several email lists. To subscribe, simply send an email to the list address with **Subscribe** on the subject line.*

SAC-Announce@freelists.org - Sac Announce is a list used for club announcements. Traffic is usually less than six messages per month.

SAC-Forum@freelists.org - SAC Forum is a general discussion list for members to discuss the club or astronomy in general.

SAC-Board@freelists.org - SAC Board is a list for discussions of club business. If you'd like to see how the club is being run, this is the list for you.

AZ-Observing@freelists.org - AZ-Observing is not a SAC list, but many members participate. This is the list for discussions on observing around the state.

As the costs of paper, printing services, and postage increase SAC can save significant financial resources if you opt to download the PDF version of the monthly newsletter from our website. When the newsletter is published a message will be sent to the email address provided above containing a URL to the current newsletter. Please check the box if you don't have internet access or prefer a printed copy. Please send me a printed copy of the newsletter.



Contacting This Issue's Authors

If you wish to write to an author if this month's issue, complaining that they don't know what they are talking about or that they utterly dazzled you with their wordsmith skills, contact them by sending your message to the editor of Saguaro Skies, Richard Harshaw, at:

rhshaw2@cox.net

I will then forward your questions, comments or carping to the author who may (or may not) reply.