



Desert Sky Observer

Volume 30

Antelope Valley Astronomy Club Newsletter

June 2010

Up-Coming Events

June 5: Moon Walk @ [Prime Desert Woodlands](#)

June 5: Scope Repair day @ Don's house

June 11: Club Meeting*

June 12: Dark Sky Star Party @ [Mt. Pinos](#)

June 14: Executive Board Meeting

* Monthly meetings are held at the S.A.G.E. Planetarium on the Cactus School campus in Palmdale, the second Friday of each month. The meeting location is at the northeast corner of Avenue R and 20th Street East. Meetings start at 7 p.m. and are open to the public. *Please note that food and drink are not allowed in the planetarium*



President

Don Bryden

Well it's a week since RTMC and my check book's still smoking! John, Farah and the folks at Woodland Hills Camera & Telescope did us right and the discounts were flying out the door, errr, tent. Needless to say, my eyepiece case is a bit heavier now! One of the items I picked up was an Explore Scientific 100° FOV 9mm eyepiece, the very one that Frank has been waiting for all year! I was shopping while Frank and Rose were setting their stuff up. When I got back to camp and Frank saw what I had he lit out across the telescope field to the vendor tents before I even had it snug in my case! Good thing, by the end of the day every ES eyepiece they had was gone.

Keith Lawson and his son were there, too. Keith had a rail refractor (no tube just baffles) that he built and entered it in the merit awards. I entered the MarvScope as well. It was cloudy Thursday and Friday but cleared off around 11pm each night. Saturday turned out to be a great day, mostly clear all day and night. Once again we were all "out front!" but no one won any door prizes (I guess we needed the Trotta and Leone kids to improve our odds). Inside (out of the cold!) I saw Tom Koonce and Tom Vardon both up for the day for the vendors and raffles. Well we weren't totally skunked. Keith won a merit award for his gorgeous rail scope (you should see the great views of Saturn through an 8" refractor) and I got one for the MarvScope!

Frank and I had a nice time in Tony Hallas' astrophotography class on Sunday. For one thing, he had a number of matted prints that were just fantastic looking and let anyone in the class buy them for \$5 apiece. He also showed us all his Photoshop tricks for getting the fantastic range you see in his images. Now I'm itching to reprocess all my earlier photos to see what I can dig out of them!

It was a good time and a shame not more of us were in attendance. I see that the next year and for the next few years, they should be able to have RTMC on Memorial Day weekend as in the past so I hope we can increase our attendance next year.

Speaking of attendance, I hope to see everyone up at Mt. Pinos on the 12th of June. Prepare for a hot day and a cold, cold night. It'll be a new moon that night so be prepared for views of the Milky Way that can't

be beat. Also, the previous weekend, on Saturday the 5th, we're having a repair day. Except this time all the club scopes are fine. This one's for the member's equipment. So if you have any questions about how to clean your optics or collimate your scope, come on out and we'll get to work. It'll be at my house on Saturday the 5th of June at 2pm. This will also count for your intermediate and advanced class for the club. Later that evening put your new skills to the test out at our Prime Desert moonwalk.

Clear skies.



Vice President

Doug Drake

Hi everyone, finally we will be getting some better weather starting mid June for good observing. Saturn is still up for viewing this month with its rings tilted about two degrees from edgewise.

Scott Kardel of Mt. Palomar will be the guest speaker at our 11 June meeting. Scott is the Palomar Observatory's first full-time person dedicated to education and public outreach. He has a masters degree in Astronomy from the University of Arizona and joined the staff of the Palomar Observatory in 2003. Scott spends his time running the observatory's public outreach program, explaining how Palomar's astronomers study the universe and educating the public on topics in astronomy including how to curb the growth of light pollution. He will be giving us a presentation on the construction of Palomar observatory and what research they are conducting at the present time.

Enjoy the night sky; it's there for you to share with the universe.



Director of Community Development

Rose Moore

Many thanks to all who came out to help at the Poppy Festival this year! We had telescopes and some solar telescopes out and the public really enjoyed looking at the Sun! Our winner for the telescope raffle was Nanette, who came out to the PDW event on Saturday, May 8th, to receive her scope! Don set it up, and showed her how to use it. Nanette not only won the scope, but also a family membership to AVAC!

Another round of thanks to the members who came out to the 4-H Science Fair at Rosamond Airport! Thanks to Jeff, (and Roswell!), Dick, Don, Duane, and Frank! We had a clear sunny day, and again, the kids and adults really enjoyed looking at the Sun and the Moon. There were plane rides, however, none of us were brave enough to get on and get a free ride!

Coming up in June we have a Prime Desert Moonwalk with Jeremy on Saturday, June 5th at 8:30 pm. Come on out with your telescopes and support Jeremy and our club in this public event! Also this month, our first club star party at Mt. Pinos on Saturday, June 12th!

July will be our monthly PDW Moonwalk with Jeremy on July 10th, time TBA. This is the same day as our club star party at Mt. Pinos, so for those who can't make it up to Pinos, please help out and bring your scope to PDW.

On Friday, July 16th, from 6-9pm, will be the event at Highland High School in Palmdale for the kids of Lockheed employees, 'A Night to Explore'! We still need volunteers with telescopes, and other astronomy items of interest such as meteorites, displays, posters, etc. Please sign up or contact me or one of the board members if you will be able to attend.

And don't forget the Mt. Wilson trip on Saturday, August 7th! June 1st is the deadline for signed up members to confirm with me if they are attending. On June 1st, any openings on the list open up to those people who are on the standby list. Payment is due for all by June 15th, so that we can get a payment to Mt. Wilson the first week of July. Payment is \$36/per person.

During the month of June, we should be hearing from Mt. Palomar for confirmation for our tour on Saturday, August 14th. More info to come.

Clear skies to all, and happy summer!



Secretary

Frank Moore

Hi folks. It's been awhile since I contributed to the DSO and I thought offer the high points of my 2010 RTMC experience.

As you know, RTMC was moved from Memorial Day weekend to the "New Moon Weekend" this year. Because of this, many regular attendees were unable to get time off for the event and attendance was definitely down. It was announced at the awards ceremony and raffle on Saturday night that they had distributed 325 raffle tickets. Regular contributors on the CloudyNights forum offered that they normally distribute 900 tickets, this would be in line with my impression that attendance was one third of what it has been in years past.

After Rose arrived home from work, we loaded some last minute items and left Tehachapi around 6:30 PM Wednesday night. We picked Duane Lewis up in the "Star Cruiser" (as he calls our motor home) at around 7:30, filled up with gas, got some snacks, and hit the road. We didn't want to arrive at Camp Oakes after dark and disturb those who were observing, or perhaps even imaging. so we went "Wallydocking" at the Walmart in Victorville. (Wallydocking is RV speak for "boondocking", or dry camping, in a Walmart parking lot...with the blessing of Walmart management of course.)

After breakfast Thursday morning, we headed on towards Big Bear arriving around 10:30. Don Bryden stepped out of his motor home, walkie talkie in hand, intending to call us just as we pulled up to the usual AVAC campsite. We pulled into our spot, leveled the motor home, extended the awning, and unloaded all of the telescope gear just in time to be greeted by a brief rainstorm. It was good thing we had extended the awning as we had to move many items further beneath it to avoid the windblown rain. Every time I considered setting up the telescope, the clouds would roll back in so we just left them under cover Thursday night.

After breakfast Friday morning, Don headed over to check out the vendors. When he returned, he had one of the new 100° 9mm eyepieces from Explore Scientific. Since I had been trying to get one of these for months, only to find them on perpetual backorder, I did not walk but RAN to our friends and sponsors at Woodland Hills Camera and Telescope to get one. John from Woodland Hills said I looked like the cartoon Roadrunner, approaching in cloud of dust, with my arms waving frantically. It turned out to be a good thing I was in such a hurry because when I returned to the booth several hours later...they had sold out of them.

While there I also told John that we were looking for a nice 2", 28mm, eyepiece as this would give us 100 power with Rose's 2800mm focal length C-11. Without hesitation, John said, "I have one of the best kept secrets in eyepieces right here." He produced a 28mm Orion MegaView eyepiece with an 82° apparent field of view. John offered to let us, "try it", and compare it to Don's 26mm Nagler, but we really wanted a 28mm exactly and we chose to buy it. That night, the first object viewed with it, right out of the box, was M51, the Whirlpool Galaxy. It was stunning...and the eyepiece was a perfect match for our telescope. Rose proclaimed that she'd never seen more detail in the arms of the Whirlpool. Throughout the weekend, it became our favorite and offered the best views I have ever seen of numerous objects including stunning views of the Lagoon, Swan, and Trifid nebulas. The last object I viewed with it, under the beautiful Milky Way at 2:30 Sunday morning, was the Sagittarius Star Cloud, M24. It was so beautiful I could hardly take my eye away and found myself peering deeply into its seemingly endless wonders.

The turnout at RTMC was light. The skies were partly cloudy till Saturday night when they opened up and presented wonderful viewing. Thanks to our friends at Woodland Hills Camera & Telescope, we purchased an eyepiece that seems to be a perfect match for our equipment...and at a great price. For us, that personal relationship, and personal service, was perhaps the greatest factor in making the trip worthwhile.

Dark skies.

Roswell's Report by Roswell

Greetings to all earthlings from Belluckleonia (or as you pronounce it, Belt Buckle)!

I recently received a telepathic message from Dick Hague inviting me to help at a sort of science fair for several 4-H groups. I had nothing else to do, so I thought I would stop by.

You earthlings are really an interesting species!

Dick, did his usual outstanding job of enlightening your offspring in the very simple fact that the earth is not the only habitable planet in the universe. Duh! Tell me something that I don't know! By the way, Dick was wearing his SpaceShipOne cap which reminds me when I got a pretty good laugh watching SpaceShipOne making its first space flight on 24 June 2004.

Don Bryden and Frank Moore were wonderful in showing everyone your star. Don even managed to "steal" a few photographs of me. They better not end up in the National Enquirer!

Duane Lewis. This guy is awesome and does a great job working with your offspring. I think I need to spend some time with him to see just what exactly his connection with Martians is.

Rose Moore, thank you for serving as a translator for my interview with the Rosamond Desert News.

That knucklehead Jeff had kids scared that they were going to get buried by tons of comet dust falling from the sky! And as if that wasn't enough, he almost dropped his meteorite on the head of some poor little girl! And he wonders why I won't take him for a visit to my planet!

If you get the chance, be sure to ask Frank Moore about the Fly Guys chair.

Space Place

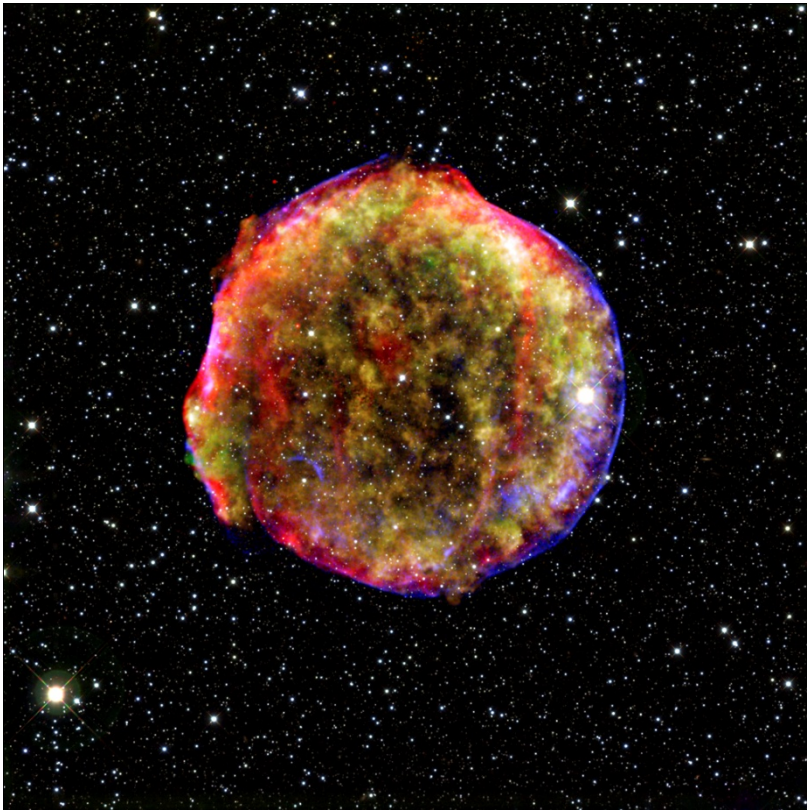
Ancient Supernova Riddle, Solved

By Dr. Tony Phillips

Australopithecus squinted at the blue African sky. He had never seen a star in broad daylight before, but he could see one today. Was it dangerous? He stared for a long time, puzzled, but nothing happened, and after a while he strode across the savanna unconcerned.

Millions of years later, we know better.

That star was a supernova, one of many that exploded in our corner of the Milky Way around the Pliocene era of pre-humans. Australopithecus left no records; we know the explosions happened because their debris is still around. The solar system and everything else within about 300 light-years is surrounded by supernova exhaust—a haze of million-degree gas that permeates all of local space.



Left-over cloud from the Tycho supernova, witnessed by Tycho Brahe and other astronomers over 400 years ago. This image combines infrared light captured by the Spitzer Space Telescope with x-rays captured by the Chandra X-ray Observatory, plus visible light from the Calar Alto Observatory in Spain.

Supernovas are dangerous things, and when one appears in the daytime sky, it is cause for alarm. How did Earth survive? Modern astronomers believe the blasts were too far away (albeit not by much) to zap our planet with lethal amounts of radiation. Also, the Sun's magnetic field has done a good job holding the hot gas at bay. In other words, we lucked out.

The debris from those old explosions has the compelling power of a train wreck; astronomers have trouble tearing their eyes away. Over the years, they've thoroughly surveyed the wreckage and therein found a mystery—clouds of hydrogen and helium apparently too fragile to have survived the blasts. One of them, whimsically called “the Local Fluff,” is on the doorstep of the solar system.

“The observed temperature and density of the Fluff do not provide enough pressure to resist the crushing action of the hot supernova gas around it,” says astronomer Merav Opher of George Mason University. “It makes us wonder, how can such a cloud exist?”

NASA's Voyager spacecraft may have found the answer.

NASA's two Voyager probes have been racing out of the solar system for more than 30 years. They are now beyond the orbit of Pluto and on the verge of entering interstellar space. “The Voyagers are not

actually inside the Local Fluff,” explains Opher. “But they are getting close and can sense what the cloud is like as they approach it.”

And the answer is ...

“Magnetism,” says Opher. “Voyager data show that the Fluff is strongly magnetized with a field strength between 4 and 5 microgauss. This magnetic field can provide the pressure required to resist destruction.”

If fluffy clouds of hydrogen can survive a supernova blast, maybe it’s not so surprising that we did, too. “Indeed, this is helping us understand how supernovas interact with their environment—and how destructive the blasts actually are,” says Opher.

Maybe Australopithecus was on to something after all.

Opher’s original research describing Voyager’s discovery of the magnetic field in the Local Fluff may be found in *Nature*, 462, 1036-1038 (24 December 2009). The Space Place has a new Amazing Fact page about the Voyagers’ Golden Records, with sample images and sounds of Earth. Just in case one of the Voyagers’ ever meets up with ET, we will want to introduce ourselves. Visit <http://spaceplace.nasa.gov/en/kids/voyager>.

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.

Extraterrestrial Tidbits (ET) by Jeff Riechmann

Soyuz 11

Back in April, we learned about Soyuz 10, and its unsuccessful mission to the Salyut space station. On 6 June 1971, Soyuz 11 would be launched with Commander Georgi Dobrovlsky, Test Engineer Viktor Patsayev, and Flight Engineer Vladislov Volkov. The docking went smoothly, and the crew soon entered the station and began around-the-clock operations in the space station. While one person worked, another would be off duty relaxing and the third crewmember sleeping. On 16 June 1971 a minor fire broke out on the station. The fire was quickly extinguished, but the decision was made to abandon the station. The station was placed on automatic mode, and the crew entered their spacecraft for the return to earth. On 29 June 1971, as the reentry module separated from the rest of the spacecraft, an explosive bolt forced open a pressure valve allowing air to escape from the cabin. The three cosmonauts would be suffocated before they re-entered earth’s atmosphere.

It reminds us of the words of Gus Grissom: “The conquest of space is worth the risk of life.”

June Sky Data

Best time for deep sky observing this month:
June 20 through June 30

Mercury is at superior conjunction (almost directly behind the Sun) on June 28th. We won't be able to see it at all, this month.

Venus is visible in the western sky as soon as it starts to get dark, and doesn't set in the north-west until late in the evening. It starts the month in Gemini, on the 11th it's exactly in line with the "Twin" stars. It crosses into Cancer on June 12th, passing through the edge of the "Beehive" star-cluster on the 20th. Venus carries on right across Cancer and into Leo on the 29th.

Mars is high in the western sky at dusk, and it doesn't set in the north-west until after midnight. At the start of June, Mars is about 40 degrees to the left of much-brighter Venus, and somewhat higher in the sky. Mars is moving steadily south-eastwards in Leo, passing just above Regulus (the brightest star in Leo) on June 7th.

Jupiter is rising in the east around midnight, and should be visible low in the south-east at dawn. The giant planet is less brilliant than Venus, but can still be seen even against a brightening sky. Relative to the stars, Jupiter is moving slowly north-eastwards in Pisces.

Saturn is well up in the south-western sky at dusk, and doesn't set until well after midnight. The three planets Saturn, Mars and Venus make a line from left to right across the evening sky, with Mars slightly nearer to Saturn. Venus is far the brightest, while Saturn is just a little brighter (and whiter) than Mars.

There are no significant **meteor-showers** in June.

June is the best time of the year to see **Noctilucent Clouds**. These are beautiful, high-altitude clouds that form only occasionally, and usually only for a few weeks around midsummer. They are formed of tiny ice-crystals, and they have a sharply-defined structure. NLCs shine with a clear, blue-white light and often exhibit a rippled pattern, like the marks left by waves on the beach. They are usually seen low in the northern sky. In June, the best time to look for them is around 1 am.

Last Qtr
Jun 4

New
Jun 12

First Qtr
Jun 18

Full
Jun 26



Sun and Moon Rise and Set

Date	Moonrise	Moonset	Sunrise	Sunset
6/1/2010	23:48	09:53	05:40	19:59
6/5/2010	01:10	13:37	05:39	20:02
6/10/2010	03:51	18:41	05:38	20:04
6/15/2010	09:07	23:00	05:38	20:06
6/20/2010	14:46	01:11	05:39	20:07
6/25/2010	19:50	04:47	05:40	20:08
6/30/2010	22:45	09:37	05:42	20:08

Planet Data

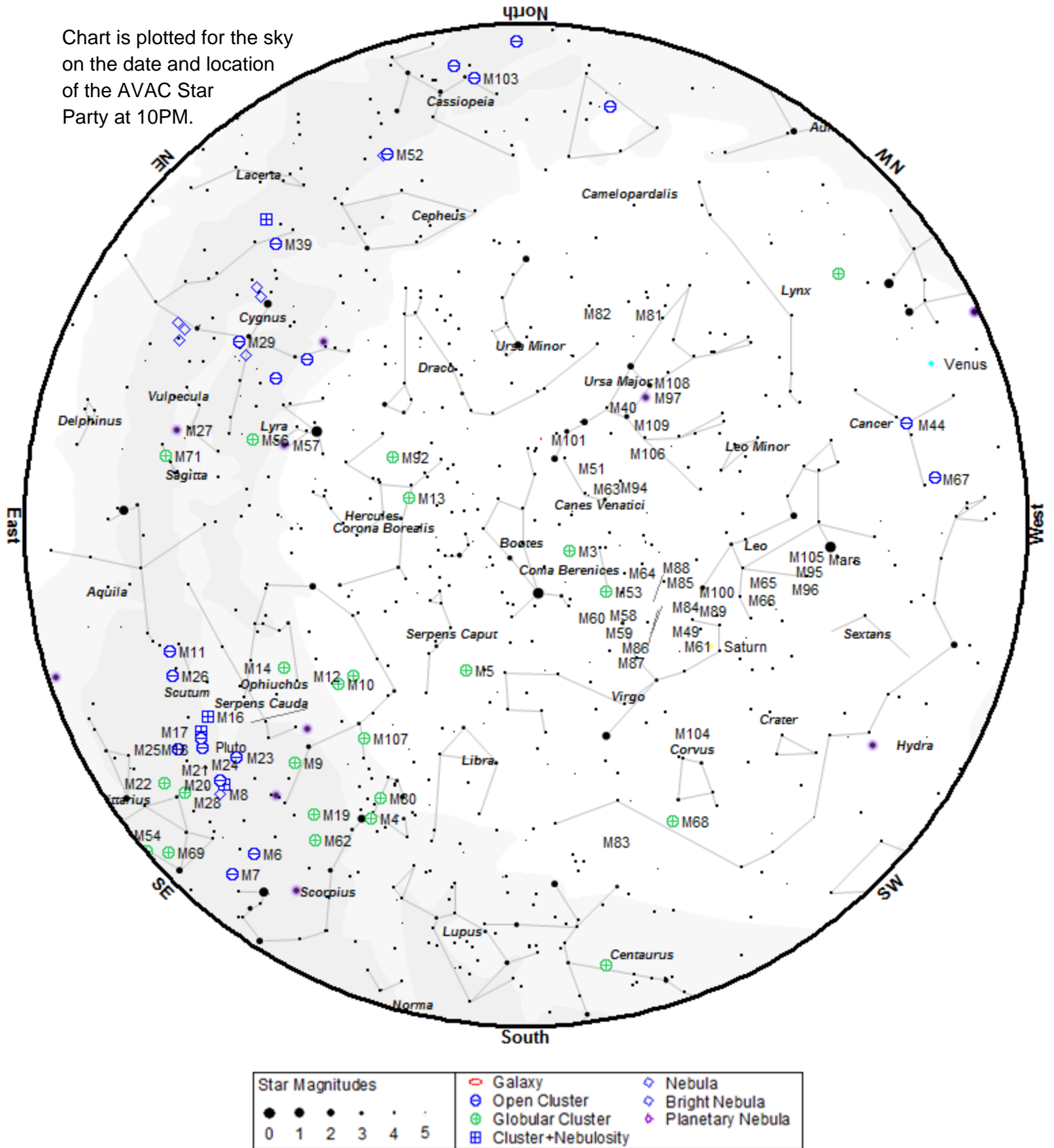
Jun 1				
	Rise	Transit	Set	Mag
Mercury	04:27	11:21	18:12	0.1
Venus	07:57	15:23	22:51	-4.0
Mars	11:23	18:15	01:06	1.1
Jupiter	02:06	08:13	14:23	-2.3
Saturn	13:51	20:11	02:30	1.0

Jun 15				
	Rise	Transit	Set	Mag
Mercury	04:42	11:59	19:12	-1.0
Venus	08:22	15:39	22:56	-4.0
Mars	11:04	17:48	00:30	1.2
Jupiter	01:15	07:24	13:37	-2.4
Saturn	12:57	19:16	01:35	1.0

Jun 30				
	Rise	Transit	Set	Mag
Mercury	05:50	13:13	20:42	-1.9
Venus	08:50	15:50	22:51	-4.0
Mars	10:46	17:19	23:52	1.3
Jupiter	00:20	06:30	12:44	-2.5
Saturn	12:01	18:19	00:37	1.1

Planet, Sun, and Moon data calculated for local time at Lancaster, CA

Chart is plotted for the sky
on the date and location
of the AVAC Star
Party at 10PM.



To use the chart, go outside within an hour or so of the time listed and hold it up to the sky. Turn the chart so the direction you are looking is at the bottom of the chart. If you are looking to the south then have 'South horizon' at the lower edge.

Suggested Observing List

The list below contains objects that will be visible on the night of the AVAC Star Party. The list is sorted by the best time to observe the object. The difficulty column describes how difficult it is to observe the object from the current location on a perfect night in a 6 inch Newtonian telescope.

ID	Cls	Mag	Con	RA 2000	Dec 2000	Begin	Best	End	Difficulty
NGC 5128	Gal	7.8	Cen	13h25m27.7s	-43°01'07"	21:29	21:43	22:09	difficult
NGC 5139	Glob	3.9	Cen	13h26m46.0s	-47°28'36"	21:24	21:44	22:26	detectable
M 68	Glob	7.3	Hya	12h39m28.0s	-26°44'36"	21:26	21:47	22:48	detectable
NGC 3227	Gal	11.5	Leo	10h23m30.6s	+19°51'54"	21:34	21:50	22:21	difficult
M 65	Gal	10.1	Leo	11h18m55.7s	+13°05'32"	21:28	21:52	23:00	detectable
M 66	Gal	9.7	Leo	11h20m14.9s	+12°59'30"	21:28	21:51	23:02	detectable
M 104	Gal	9.1	Vir	12h39m59.3s	-11°37'22"	21:27	21:52	22:51	detectable
M 83	Gal	7.8	Hya	13h37m00.8s	-29°51'56"	21:26	21:53	23:31	detectable
M 86	Gal	9.8	Vir	12h26m12.2s	+12°56'44"	21:30	21:55	23:33	detectable
M 84	Gal	10.1	Vir	12h25m03.9s	+12°53'12"	21:28	21:55	23:45	detectable
M 49	Gal	9.3	Vir	12h29m46.8s	+08°00'01"	21:27	21:54	23:46	detectable
M 87	Gal	9.6	Vir	12h30m49.2s	+12°23'29"	21:28	21:56	23:51	detectable
Col 256	Open	2.9	Com	12h25m06.0s	+26°06'00"	21:24	21:57	00:37	easy
NGC 4565	Gal	10.1	Com	12h36m20.8s	+25°59'15"	21:31	21:57	23:48	difficult
M 82	Gal	9.0	UMa	09h55m52.4s	+69°40'47"	21:30	21:59	23:56	easy
M 81	Gal	7.8	UMa	09h55m33.1s	+69°03'56"	21:30	21:59	23:52	detectable
M 106	Gal	9.1	CVn	12h18m57.6s	+47°18'13"	21:30	21:59	00:30	detectable
M 64	Gal	9.3	Com	12h56m43.8s	+21°41'00"	21:27	21:58	00:33	detectable
M 94	Gal	8.7	CVn	12h50m53.1s	+41°07'12"	21:25	22:00	01:12	easy
NGC 5195	Gal	10.5	CVn	13h29m59.6s	+47°15'58"	21:29	22:03	01:21	detectable
M 51	Gal	8.7	CVn	13h29m52.3s	+47°11'40"	21:27	22:03	02:02	easy
M 3	Glob	6.3	CVn	13h42m11.0s	+28°22'42"	21:24	22:03	01:32	easy
M 101	Gal	8.4	UMa	14h03m12.4s	+54°20'53"	21:32	22:10	01:52	detectable
NGC 5897	Glob	8.4	Lib	15h17m24.0s	-21°00'36"	21:35	22:49	00:20	difficult
M 5	Glob	5.7	Ser	15h18m34.0s	+02°05'00"	21:25	22:50	02:25	easy
NGC 5986	Glob	7.6	Lup	15h46m03.0s	-37°47'12"	21:49	23:18	00:50	detectable
M 80	Glob	7.3	Sco	16h17m02.0s	-22°58'30"	22:42	23:48	00:55	detectable
NGC 6124	Open	6.3	Sco	16h25m20.0s	-40°39'12"	23:00	23:57	00:54	difficult
NGC 6167	Open	6.6	Nor	16h34m34.0s	-49°46'18"	22:48	00:06	01:24	easy
NGC 6178	Open	7.2	Sco	16h35m47.0s	-45°38'36"	22:17	00:07	01:57	easy
NGC 6193	Open	5.4	Ara	16h41m20.0s	-48°45'48"	22:45	00:12	01:40	easy
M 13	Glob	5.8	Her	16h41m41.0s	+36°27'36"	21:27	00:13	04:18	easy
M 12	Glob	6.1	Oph	16h47m14.0s	-01°56'48"	21:31	00:19	03:40	easy
M 10	Glob	6.6	Oph	16h57m09.0s	-04°06'00"	21:40	00:28	03:31	detectable
M 19	Glob	6.8	Oph	17h02m38.0s	-26°16'06"	22:23	00:34	02:44	detectable
M 62	Glob	6.4	Oph	17h01m13.0s	-30°06'48"	22:19	00:33	02:47	detectable
M 92	Glob	6.5	Her	17h17m07.0s	+43°08'12"	21:31	00:48	04:21	easy
M 9	Glob	7.8	Oph	17h19m12.0s	-18°31'00"	22:55	00:50	02:46	detectable

ID	Cls	Mag	Con	RA 2000	Dec 2000	Begin	Best	End	Difficulty
NGC 6322	Open	6.5	Sco	17h18m25.0s	-42°56'00"	22:40	00:50	03:00	easy
NGC 6383	Open	5.4	Sco	17h34m48.0s	-32°34'00"	22:41	01:06	03:31	easy
M 14	Glob	7.6	Oph	17h37m36.0s	-03°14'48"	22:06	01:09	04:06	detectable
NGC 6388	Glob	6.8	Sco	17h36m17.0s	-44°44'06"	23:37	01:08	02:39	detectable
M 6	Open	4.6	Sco	17h40m20.0s	-32°15'12"	22:33	01:12	03:50	easy
IC 4665	Open	5.3	Oph	17h46m18.0s	+05°43'00"	22:09	01:17	04:11	detectable
M 7	Open	3.3	Sco	17h53m51.0s	-34°47'36"	23:14	01:25	03:35	easy
NGC 6543	PNe	8.3	Dra	17h58m33.4s	+66°37'59"	21:17	01:29	04:37	obvious
M 23	Open	5.9	Sgr	17h57m04.0s	-18°59'06"	23:37	01:29	03:20	detectable
M 20	Open	5.2	Sgr	18h02m42.0s	-22°58'18"	00:27	01:34	02:42	easy
M 8	Neb	5.0	Sgr	18h04m02.0s	-24°23'14"	00:55	01:35	02:15	easy
M 21	Open	7.2	Sgr	18h04m13.0s	-22°29'24"	00:22	01:36	02:50	detectable
NGC 6541	Glob	6.3	CrA	18h08m02.0s	-43°42'54"	00:16	01:39	03:03	detectable
NGC 6572	PNe	8.0	Oph	18h12m06.4s	+06°51'12"	21:52	01:43	04:42	obvious
M 16	Open	6.5	Ser	18h18m48.0s	-13°48'24"	23:21	01:50	04:17	obvious
M 17	Open	7.3	Sgr	18h20m47.0s	-16°10'18"	23:40	01:52	04:04	detectable
M 18	Open	7.5	Sgr	18h19m58.0s	-17°06'06"	23:45	01:51	03:58	easy
M 28	Glob	6.9	Sgr	18h24m33.0s	-24°52'12"	01:30	01:56	02:21	detectable
NGC 6633	Open	5.6	Oph	18h27m15.0s	+06°30'30"	22:09	01:58	04:27	easy
M 25	Open	6.2	Sgr	18h31m47.0s	-19°07'00"	00:13	02:02	03:54	detectable
M 22	Glob	5.2	Sgr	18h36m24.0s	-23°54'12"	01:15	02:07	02:58	detectable
IC 4756	Open	5.4	Ser	18h39m00.0s	+05°27'00"	22:35	02:10	04:24	easy
M 70	Glob	7.8	Sgr	18h43m13.0s	-32°17'30"	00:17	02:14	04:08	detectable
M 11	Open	6.1	Sct	18h51m05.0s	-06°16'12"	23:17	02:22	04:23	detectable
NGC 6716	Open	7.5	Sgr	18h54m34.0s	-19°54'06"	00:41	02:25	04:09	detectable
M 57	PNe	9.4	Lyr	18h53m35.1s	+33°01'45"	21:40	02:24	04:31	easy
M 54	Glob	7.7	Sgr	18h55m03.0s	-30°28'42"	00:40	02:26	04:08	detectable
NGC 6723	Glob	6.8	Sgr	18h59m33.0s	-36°37'54"	00:45	02:31	04:11	detectable
M 56	Glob	8.4	Lyr	19h16m36.0s	+30°11'06"	23:07	02:47	04:24	detectable
M 55	Glob	6.3	Sgr	19h40m00.0s	-30°57'42"	01:06	03:11	04:23	detectable
NGC 6818	PNe	10.0	Sgr	19h43m57.8s	-14°09'12"	00:49	03:15	04:36	easy
M 71	Glob	8.4	Sge	19h53m46.0s	+18°46'42"	23:13	03:24	04:28	easy
M 27	PNe	7.3	Vul	19h59m36.3s	+22°43'16"	23:14	03:28	04:29	easy
NGC 6871	Open	5.8	Cyg	20h05m59.0s	+35°46'36"	23:01	03:31	04:29	easy
NGC 6910	Open	7.3	Cyg	20h23m12.0s	+40°46'42"	22:59	03:40	04:29	easy
M 29	Open	7.5	Cyg	20h23m57.0s	+38°30'30"	23:11	03:40	04:28	easy
NGC 7160	Open	6.4	Cep	21h53m40.0s	+62°36'12"	23:20	03:49	04:31	obvious
M 39	Open	5.3	Cyg	21h31m48.0s	+48°26'00"	23:36	03:50	04:29	easy
M 52	Open	8.2	Cas	23h24m48.0s	+61°35'36"	01:45	03:53	04:21	detectable
NGC 7243	Open	6.7	Lac	22h15m08.0s	+49°53'54"	01:05	03:53	04:24	detectable
NGC 7790	Open	7.2	Cas	23h58m24.0s	+61°12'30"	01:29	03:55	04:29	obvious
NGC 7789	Open	7.5	Cas	23h57m24.0s	+56°42'30"	02:19	03:56	04:19	detectable
M 15	Glob	6.3	Peg	21h29m58.0s	+12°10'00"	01:07	03:55	04:28	easy
NGC 637	Open	7.3	Cas	01h43m04.0s	+64°02'24"	03:05	03:57	04:29	obvious
NGC 559	Open	7.4	Cas	01h29m31.0s	+63°18'24"	02:54	03:57	04:26	easy

ID	Cls	Mag	Con	RA 2000	Dec 2000	Begin	Best	End	Difficulty
M 2	Glob	6.6	Aqr	21h33m27.0s	-00°49'24"	01:36	03:56	04:27	detectable
NGC 7009	PNe	8.3	Aqr	21h04m10.9s	-11°21'48"	01:53	03:56	04:40	obvious
NGC 663	Open	6.4	Cas	01h46m09.0s	+61°14'06"	03:17	03:57	04:25	easy
M 103	Open	6.9	Cas	01h33m23.0s	+60°39'00"	03:06	03:57	04:28	obvious
NGC 457	Open	5.1	Cas	01h19m35.0s	+58°17'12"	02:58	03:57	04:26	obvious
NGC 1027	Open	7.4	Cas	02h42m40.0s	+61°35'42"	02:58	03:59	04:19	detectable
NGC 884	Open	4.4	Per	02h22m18.0s	+57°08'12"	01:50	03:59	04:28	obvious
NGC 869	Open	4.3	Per	02h19m00.0s	+57°07'42"	01:47	03:59	04:28	obvious
NGC 957	Open	7.2	Per	02h33m21.0s	+57°33'36"	02:31	04:00	04:23	easy
M 76	PNe	10.1	Per	01h42m19.9s	+51°34'31"	03:36	04:00	04:19	detectable
M 110	Gal	8.9	And	00h40m22.3s	+41°41'09"	02:57	03:59	04:21	detectable
M 31	Gal	4.3	And	00h42m44.3s	+41°16'07"	02:59	04:00	04:23	easy
M 32	Gal	8.9	And	00h42m41.8s	+40°51'58"	03:00	03:59	04:24	easy
M 30	Glob	6.9	Cap	21h40m22.0s	-23°10'42"	02:26	04:01	04:26	detectable
M 33	Gal	6.4	Tri	01h33m50.9s	+30°39'36"	03:25	04:03	04:19	detectable
NGC 7293	PNe	6.3	Aqr	22h29m38.5s	-20°50'14"	02:55	04:05	04:28	detectable

News Headlines

Demise of a star under surprising circumstances

Supernovae, gigantic stellar explosions, are not only used as cosmic yardsticks by cosmologists, they are also important chemical element factories in our Universe. So far, astrophysicists know of two physical processes giving rise to these bursts: one is the core collapse of a massive star at the end of its lifetime, the other the thermonuclear detonation of an old white dwarf star. An international team of researchers, including scientists from the Max Planck Institute for Astrophysics, have now identified a third type of these stellar explosions, arising from a helium-rich, old stellar system.

http://www.mpa-garching.mpg.de/mpa/institute/news_archives/news1005_mazzali/news1005_mazzali-en.html

X-ray Discovery Points to Location of Missing Matter

Using observations with NASA's Chandra X-ray Observatory and ESA's XMM-Newton, astronomers have announced a robust detection of a vast reservoir of intergalactic gas about 400 million light years from Earth. This discovery is the strongest evidence yet that the "missing matter" in the nearby Universe is located in an enormous web of hot, diffuse gas.

http://www.nasa.gov/mission_pages/chandra/news/10-048.html

Hubble Finds a Star Eating a Planet

ScienceDaily (May 21, 2010) — The hottest known planet in the Milky Way galaxy may also be its shortest-lived world. The doomed planet is being eaten by its parent star, according to observations made by a new instrument on NASA's Hubble Space Telescope, the Cosmic Origins Spectrograph (COS). The planet may only have another 10 million years left before it is completely devoured.

<http://www.sciencedaily.com/releases/2010/05/100521191622.htm>

Big Mystery: Jupiter Loses a Stripe

In a development that has transformed the appearance of the solar system's largest planet, one of Jupiter's two main cloud belts has completely disappeared. "This is a big event," says planetary scientist Glenn Orton of NASA's Jet Propulsion Lab. "We're monitoring the situation closely and do not yet fully understand what's going on."

http://science.nasa.gov/science-news/science-at-nasa/2010/20may_loststripe/

Oldest, Most Distant Galaxy Family Spotted

Galaxies are a gregarious lot, even those that existed 9.6 billion years ago. Two separate teams of astronomers have detected signs of a surprisingly modern looking cluster of galaxies of that age using a combination of X-ray and infrared coming from the distant galactic gathering.

<http://news.discovery.com/space/oldest-galaxy-cluster.html>

CSIRO telescope spots mega-star cradle

Using a CSIRO radio telescope, an international team of researchers has caught an enormous cloud of cosmic gas and dust in the process of collapsing in on itself - a discovery which could help solve one of astronomy's enduring conundrums: 'How do massive stars form?'

<http://www.spaceref.com/news/viewpr.html?pid=30734>

A.V.A.C. Information

Membership in the Antelope Valley Astronomy Club is open to any individual or family.

The Club has three categories of membership.

- Family membership at \$30.00 per year.
- Individual membership at \$25.00 per year.
- Junior membership at \$15.00 per year.

Membership entitles you to...

- Desert Sky Observer—monthly newsletter.
- The Reflector – the publication of the Astronomical League.
- The A.V.A.C. Membership Manual.
- To borrow club equipment, books, videos and other items.

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