



# Desert Sky Observer

Volume 33

Antelope Valley Astronomy Club Newsletter

June 2013

## Up-Coming Events

- June 1: Moon Walk @ [Prime Desert Woodlands](#)
- June 1: [Repair Day](#)
- June 8: Dark Sky Star Party @ [Lake Castiac](#)
- June 14: Club Meeting\*
- June 26: [Acton Library Lecture/Star Party Series](#)
- June 29: Poppy Reserve Star Party @ Antelope Valley California Poppy Reserve

\* 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 20<sup>th</sup> 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

Reporting from RTMC – Remember a few years back when they moved RTMC to follow the new moon? It had long been over Memorial weekend and everyone was up in arms due to it being pushed up a week. “It’ll snow! It’ll be too cold! I’m not going!” And sure enough, attendance was down.

After that year the organizers announced that they would be holding all future RTMC’s on Memorial weekend, regardless of the moon phase. And for a few years everything worked out – dark skies, Memorial weekend, and better attendance – or was it? It seems that ever since fewer and fewer vendors were showing up as well as fewer and fewer attendees.



I mean they had a star party event in “Nightfall” and a trade show in “PATS” and RTMC seemed to be trying to be both. But not really. RTMC has always been about the innovative amateur astronomer – the Riverside Telescope Maker’s Conference. A time to wander around and look at cool, innovative designs and ideas as well as the latest gear. And the speakers always have great programs – from astrophotography to telescope making to beginner’s classes on a wide range of topics like eyepiece selection, collimation and so on.

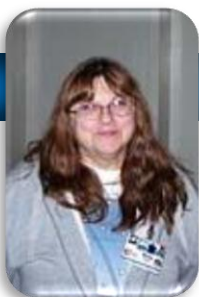
This year was their worst nightmare – a Full moon on Friday. Of those who came up early, virtually no one set up to observe. Attendance was down for both participants and vendors. But looking around I noticed that it didn’t really matter. Jack Eastman was there with his ubiquitous Clark refractor, there was a funky solar projection telescope, Warren Keller was talking about astroimaging, Richard Berry, Daniel Barth and Trina Ray were speaking as well.

The innovation and amateur enthusiasm were alive and well and next year RTMC runs from last quarter to new moon so look for the usual suspects back at our usual spot



(though I might have a hard time convincing Mimi and Sophie to stay in the RV next year instead of the cabin)!

Well RTMC 2014 is a year away but there are plenty of other events to take part in. Come out to Lake Castaic on June 8<sup>th</sup> for a star party and also to help the local cub scouts with their Astronomy belt loops. Later, on the 29<sup>th</sup>, we'll be out at the Poppy Reserve for a public star party with the Rangers and then it's up to Mt. Pinos on the 6<sup>th</sup> of July. So let's all get out there under the stars!



## Director of Community Development

### Rose Moore

Summer is almost here, and time for some warm weather observing! Many thanks to those who came out to our public outreach events the month of May! Our Dark Sky Star Party at Red Rock turned out some pretty nice skies, and about 50 or so attendees came out to observe. We were with the China Lake Club for this event (see Don's note above). We looked at many objects, including Comet PanStarrs, now about mag 8, and I was able to get quite a few more Messier Objects completed towards my goal! Thanks also to Don and Frank for being able to attend the Miller School day event and give quite a show for a lot of kids, and teachers!

Our first public event of June is Prime Desert Woodlands Moon Walk with Jeremy on Saturday, June 1st at 8:30pm. Come on out with your scopes for viewing, or take the Moon Walk with Jeremy! No Moon, it's just past last quarter. Setup time approximately 1 hour prior.

On Wednesday, June 26th at 8:30pm is a Star Party with Jeremy at the Acton Library! Bring your telescopes to help out Jeremy at this public event to show some of the night sky objects.

We tentatively have a public star party at the Poppy Reserve in Lancaster on Saturday, June 29th. I'm waiting to hear back from Ranger Jean concerning the date. Will keep you all posted!

Clear Skies!

## News Headlines

### **Huge Rock Crashes Into Moon, Sparks Giant Explosion**

The moon has a new hole on its surface thanks to a boulder that slammed into it in March, creating the biggest explosion scientists have seen on the moon since they started monitoring it. The meteorite crashed on March 17, slamming into the lunar surface at a mind-boggling 56,000 mph (90,000 kph) and creating a new crater 65 feet wide (20 meters). The crash sparked a bright flash of light that would have been visible to anyone looking at the moon at the time with the naked eye, NASA scientists say.

<http://www.space.com/21197-moon-crash-meteor-impact-explosion.html>

### **Large asteroid safely zips past Earth**

The world is OK -- at least this time -- and scientists are psyched. An asteroid dubbed 1998 QE2 whizzed past Earth on Friday, with its own moon in tow. "Asteroid QE2 has sailed harmlessly past Earth," NASA's Jet Propulsion Laboratory tweeted around 5 p.m. ET. It got within about 3.6 million miles of our planet. That's close relatively given the vastness of space, but still more than 15 times the distance from wherever you are to our moon.

<http://www.cnn.com/2013/05/31/world/earth-new-asteroid>

### **Low Sodium Diet Key to Old Age for Stars**

Astronomers expect that stars like the Sun will blow off much of their atmospheres into space near the ends of their lives. But new observations of a huge star cluster made using ESO's Very Large Telescope have shown — against all expectations — that a majority of the stars studied simply did not get to this stage in their lives at all. The international team found that the amount of sodium in the stars was a very strong predictor of how they ended their lives.

<http://www.eso.org/public/news/eso1323/>

### **Hubble reveals the Ring Nebula's true shape**

The Ring Nebula's distinctive shape makes it a popular illustration for astronomy books. But new observations by NASA's Hubble Space Telescope of the glowing gas shroud around an old, dying, sun-like star reveal a new twist. "The nebula is not like a bagel, but rather, it's like a jelly doughnut, because it's filled with material in the middle," said C. Robert O'Dell of Vanderbilt University in Nashville, Tenn.

[http://www.spacedaily.com/reports/Hubble\\_reveals\\_the\\_Ring\\_Nebulas\\_true\\_shape\\_999.html](http://www.spacedaily.com/reports/Hubble_reveals_the_Ring_Nebulas_true_shape_999.html)

### **Pebbly Rocks Testify to Old Streambed on Mars**

Detailed analysis and review have borne out researchers' initial interpretation of pebble-containing slabs that NASA's Mars rover Curiosity investigated last year: They are part of an ancient streambed. The rocks are the first ever found on Mars that contain streambed gravels. The sizes and shapes of the gravels embedded in these conglomerate rocks -- from the size of sand particles to the size of golf balls -- enabled researchers to calculate the depth and speed of the water that once flowed at this location.

<http://mars.jpl.nasa.gov/msl/news/whatsnew/index.cfm?FuseAction=ShowNews&NewsID=1477>

### **NASA's Asteroid Sample Return Mission Moves into Development**

NASA's first mission to sample an asteroid is moving ahead into development and testing in preparation for its launch in 2016. The Origins-Spectral Interpretation Resource Identification Security Regolith Explorer (OSIRIS-REx) passed a confirmation review Wednesday called Key Decision Point (KDP)-C.

[http://www.nasa.gov/mission\\_pages/osiris-rex/osiris-rex-development.html](http://www.nasa.gov/mission_pages/osiris-rex/osiris-rex-development.html)

## June Sky Data

New Jun 8      First Qtr Jun 16      Full Jun 23      Last Qtr Jun 29

**Best time for deep sky observing this month:  
June 1 through June 10**



Following its tight grouping with Jupiter and Venus on the 26th of last month, **Mercury** will be seen forming a line with them as June begins and, with a magnitude of -0.4, will be the faintest of the three but the highest in the sky. Mercury reaches greatest eastern elongation (when it is furthest in angle from the Sun) on the 12th June with an angular separation of 24 degrees and will then be best seen about 30 minutes after sunset. This is the best evening apparition for Mercury this year.

**Venus** begins June shining at magnitude -3.8 about 8 degrees above the western horizon half an hour after sunset. In contrast to many of its apparitions when it is seen high in the sky, the fact that the plane of the ecliptic is at a shallow angle to the horizon in mid-summer means that it will never rise that high in the sky. It will reach its maximum elevation (~10 degrees) around the 20th-25th of the month.

**Mars** passed behind the Sun on April 18th and will appear in the pre-dawn sky this month, rising about 30 minutes before the Sun on the first of June shining at magnitude +1.4. A telescope would be needed to spot it then but, by the end of the month, it will lie about 7 degrees above the eastern horizon at this time and should be visible in binoculars.

**Saturn**, lies just to the west of south as darkness falls. It is down to the lower left of the first magnitude star Spica, and will appear slightly brighter with a yellowish hue. Saturn's magnitude falls during the month, from +0.3 to +0.5 magnitudes, while its angular size decreases from 18.5 to 17.8 arc seconds.

**Jupiter**, seen in a very close grouping with Venus and Mercury towards the end of last month and shining at magnitude -1.8, disappears into the Sun's glare by the second week of June and passes behind the Sun on the 19th to re-emerge into the pre-dawn sky towards the end of next month.

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

## Sun and Moon Rise and Set

Date	Moonrise	Moonset	Sunrise	Sunset
6/1/2013	01:23	13:48	05:40	19:59
6/5/2013	03:40	17:37	05:39	20:02
6/10/2013	07:27	21:38	05:38	20:04
6/15/2013	12:02	-----	05:38	20:06
6/20/2013	17:19	03:03	05:39	20:07
6/25/2013	22:05	08:18	05:40	20:08
6/30/2013	00:31	13:38	05:42	20:08

## Planet Data

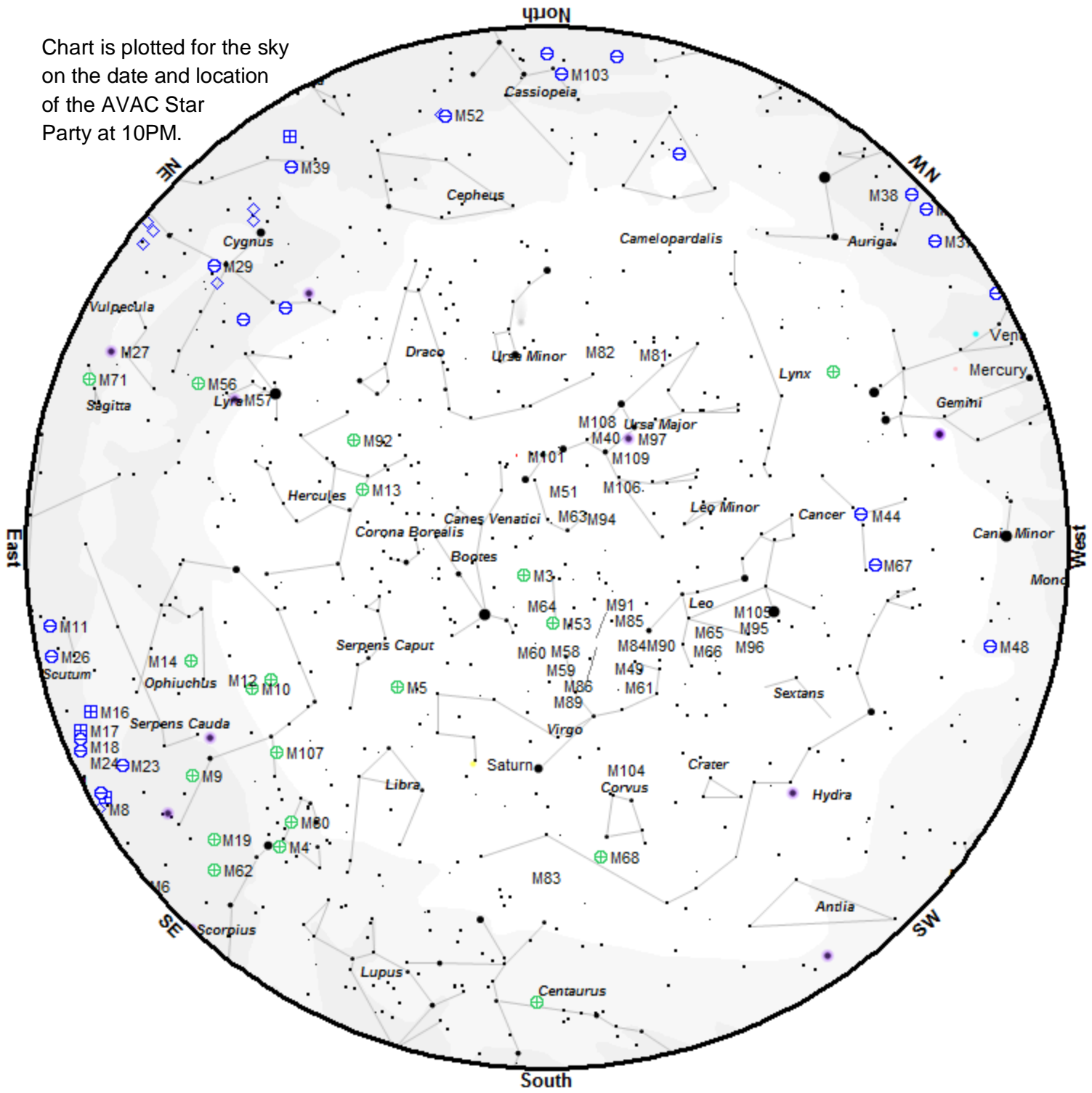
	Jun 1			
	Rise	Transit	Set	Mag
<b>Mercury</b>	06:58	14:22	21:50	-0.2
<b>Venus</b>	06:44	14:05	21:27	-3.9
<b>Mars</b>	04:57	12:07	19:15	1.4
<b>Jupiter</b>	06:28	13:47	21:04	-1.9
<b>Saturn</b>	16:52	22:27	04:03	0.3

	Jun 15			
	Rise	Transit	Set	Mag
<b>Mercury</b>	07:22	14:38	21:54	0.9
<b>Venus</b>	07:05	14:24	21:45	-3.9
<b>Mars</b>	04:38	11:52	19:08	1.5
<b>Jupiter</b>	05:46	13:06	20:23	-1.9
<b>Saturn</b>	15:54	21:30	03:06	0.4

	Jun 30			
	Rise	Transit	Set	Mag
<b>Mercury</b>	06:46	13:52	20:52	3.0
<b>Venus</b>	07:35	14:43	21:53	-3.9
<b>Mars</b>	04:19	11:38	18:58	1.5
<b>Jupiter</b>	05:02	12:22	19:39	-1.9
<b>Saturn</b>	14:53	20:29	02:06	0.5

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.



<p>Star Magnitudes</p> <p>● ● ● ● ● ●</p> <p>0 1 2 3 4 5</p>	<p>Galaxy</p> <p>Open Cluster</p> <p>Globular Cluster</p> <p>Cluster+Nebulosity</p>	<p>Nebula</p> <p>Bright Nebula</p> <p>Planetary Nebula</p>
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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
M 65	Gal	10.1	Leo	11h18m55.7s	+13°05'32"	21:25	21:46	22:53	detectable
M 66	Gal	9.7	Leo	11h20m14.9s	+12°59'30"	21:25	21:47	22:57	detectable
M 104	Gal	9.1	Vir	12h39m59.3s	-11°37'22"	21:22	21:48	23:03	detectable
M 49	Gal	9.3	Vir	12h29m46.8s	+08°00'01"	21:24	21:50	23:36	detectable
M 86	Gal	9.8	Vir	12h26m12.2s	+12°56'44"	21:27	21:51	23:21	detectable
M 84	Gal	10.1	Vir	12h25m03.9s	+12°53'12"	21:25	21:51	23:33	detectable
M 87	Gal	9.6	Vir	12h30m49.2s	+12°23'29"	21:24	21:51	23:39	detectable
Col 256	Open	2.9	Com	12h25m06.0s	+26°06'00"	21:22	21:53	00:35	easy
NGC 4565	Gal	10.1	Com	12h36m20.8s	+25°59'15"	21:28	21:53	23:33	difficult
M 82	Gal	9.0	UMa	09h55m52.4s	+69°40'47"	21:26	21:53	00:07	detectable
M 81	Gal	7.8	UMa	09h55m33.1s	+69°03'56"	21:26	21:53	00:04	detectable
M 97	PNe	9.7	UMa	11h14m47.7s	+55°01'09"	21:28	21:53	23:49	detectable
M 64	Gal	9.3	Com	12h56m43.8s	+21°41'00"	21:23	21:54	00:21	detectable
M 106	Gal	9.1	CVn	12h18m57.6s	+47°18'13"	21:26	21:55	00:13	detectable
M 94	Gal	8.7	CVn	12h50m53.1s	+41°07'12"	21:23	21:56	01:00	detectable
M 3	Glob	6.3	CVn	13h42m11.0s	+28°22'42"	21:22	22:00	01:22	detectable
NGC 5195	Gal	10.5	CVn	13h29m59.6s	+47°15'58"	21:26	22:01	01:05	detectable
M 51	Gal	8.7	CVn	13h29m52.3s	+47°11'40"	21:22	22:01	01:48	easy
M 101	Gal	8.4	UMa	14h03m12.4s	+54°20'53"	21:28	22:08	01:35	detectable
M 5	Glob	5.7	Ser	15h18m34.0s	+02°05'00"	21:23	23:01	02:17	easy
M 13	Glob	5.8	Her	16h41m41.0s	+36°27'36"	21:25	00:24	04:12	easy
M 12	Glob	6.1	Oph	16h47m14.0s	-01°56'48"	21:33	00:30	03:44	easy
M 10	Glob	6.6	Oph	16h57m09.0s	-04°06'00"	21:56	00:40	03:24	detectable
M 92	Glob	6.5	Her	17h17m07.0s	+43°08'12"	21:28	00:59	04:17	easy
M 14	Glob	7.6	Oph	17h37m36.0s	-03°14'48"	22:36	01:20	04:00	detectable
IC 4665	Open	5.3	Oph	17h46m18.0s	+05°43'00"	22:39	01:28	04:07	detectable
NGC 6543	PNe	8.3	Dra	17h58m33.4s	+66°37'59"	21:15	01:40	04:32	obvious
NGC 6572	PNe	8.0	Oph	18h12m06.4s	+06°51'12"	22:03	01:54	04:36	obvious
M 16	Open	6.5	Ser	18h18m48.0s	-13°48'24"	23:32	02:01	04:25	obvious
M 18	Open	7.5	Sgr	18h19m58.0s	-17°06'06"	23:56	02:02	04:09	easy
M 17	Open	7.3	Sgr	18h20m47.0s	-16°10'18"	00:08	02:03	03:55	difficult
NGC 6633	Open	5.6	Oph	18h27m15.0s	+06°30'30"	22:24	02:09	04:24	easy
IC 4756	Open	5.4	Ser	18h39m00.0s	+05°27'00"	23:04	02:22	04:19	detectable
M 11	Open	6.1	Sct	18h51m05.0s	-06°16'12"	23:47	02:33	04:19	detectable
M 57	PNe	9.4	Lyr	18h53m35.1s	+33°01'45"	22:01	02:36	04:26	easy
M 56	Glob	8.4	Lyr	19h16m36.0s	+30°11'06"	23:38	02:58	04:18	detectable
NGC 6818	PNe	10.0	Sgr	19h43m57.8s	-14°09'12"	01:00	03:25	04:31	easy
M 71	Glob	8.4	Sge	19h53m46.0s	+18°46'42"	23:45	03:31	04:24	easy

ID	Cls	Mag	Con	RA 2000	Dec 2000	Begin	Best	End	Difficulty
M 27	PNe	7.3	Vul	19h59m36.3s	+22°43'16"	23:44	03:34	04:23	easy
NGC 6871	Open	5.8	Cyg	20h05m59.0s	+35°46'36"	23:32	03:35	04:22	easy
NGC 6910	Open	7.3	Cyg	20h23m12.0s	+40°46'42"	23:31	03:40	04:24	easy
M 29	Open	7.5	Cyg	20h23m57.0s	+38°30'30"	23:44	03:41	04:23	easy
NGC 7160	Open	6.4	Cep	21h53m40.0s	+62°36'12"	23:33	03:47	04:27	obvious
IC 1396	Neb		Cep	21h39m06.0s	+57°30'00"	23:48	03:47	04:23	challenging
M 39	Open	5.3	Cyg	21h31m48.0s	+48°26'00"	00:09	03:48	04:22	easy
Cocoon	Neb	10.0	Cyg	21h53m24.0s	+47°16'00"	00:27	03:49	04:24	challenging
NGC 7243	Open	6.7	Lac	22h15m08.0s	+49°53'54"	01:34	03:50	04:19	detectable
M 52	Open	8.2	Cas	23h24m48.0s	+61°35'36"	02:14	03:51	04:14	detectable
NGC 7790	Open	7.2	Cas	23h58m24.0s	+61°12'30"	01:40	03:52	04:23	easy
M 15	Glob	6.3	Peg	21h29m58.0s	+12°10'00"	01:33	03:53	04:22	detectable
NGC 7789	Open	7.5	Cas	23h57m24.0s	+56°42'30"	02:45	03:53	04:13	difficult
M 2	Glob	6.6	Aqr	21h33m27.0s	-00°49'24"	02:01	03:54	04:21	detectable
NGC 7009	PNe	8.3	Aqr	21h04m10.9s	-11°21'48"	02:04	03:56	04:34	obvious

## 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.

### AVAC

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Visit the Antelope Valley Astronomy Club website at [www.avastronomyclub.org/](http://www.avastronomyclub.org/)

The Antelope Valley Astronomy Club, Inc. is a 501(c)(3) Non-Profit Corporation.

The A.V.A.C. is a Sustaining Member of The Astronomical League and the International Dark-Sky Association.

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