Volume 28 Issue 7

July 2014

The Observer

East Valley Astronomy Club

M20 Trifid Nebula - APOD July 28, 2010
Robert Gendler

Upcoming Events:

Public Star Party - July 11

Evac Monthly Meeting- July 18

Local Star Party - July19

Deep Sky Star Party - July 26

Check out all of the upcoming club events in the Calendars on page 9

Inside this Issue:

EVAC This Month

by Claude Haynes

Kid's are great. I was watching a video last week, and Adam Block from U of A Catalina Observatory was talking about their public program and the questions he gets. One of his favorites was from the proverbial 11 year old boy - "What is space?". It is a wonderful question, and I will leave it to you to ponder how you might respond. We have been getting a lot of great questions from kids recently, due to the success of our summer "Explore the Night Sky" program in conjunction with the Maricopa Library and Gilbert Parks and Recreation. Gordon Rosner has done a great job in fielding them during his lecture. We had an overflow crowd last week, and a steady queue to see Saturn at the Observatory. We have a couple more on the third Monday of the month. Feel free to stop by, and test your wits against the youth. It does keep you young.

Our second annual Solstice Star-B-Que was a lot of fun. Thanks to the folks who brought items for the swap meet, and thanks to Chef Dave for manning the grill. Jan and Ron covered the drinks, and lots of extra dishes made it a delightful

Evac This Month

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night of food and conversation.

Remember that the observatory will be closed for 3 weeks staring on July 26. Dave C. is taking the tube to Starizona for some maintenance. It is hard to believe that we will have been open 8 years in October. It is time for a little cleaning, and Lisa Hermann found some money in the Gilbert Park's budget. We are upgrading the refractor, so we can have a better wide field image. As always, we are looking for more volunteers at the observatory. While I was teasing about the questions from 11 year old boys, it is amazing to just spend time talking to people as they wait to go into the dome. We have 80 year olds who have never looked through a telescope. We have 11 years old girls, who ask ever better questions than their male counterparts. We have little children who feel that seeing the moon up close is magic. And they are right – it is magical!

Keep looking up.

If It's Clear for July 2014

by Fulton Wright, Jr. Prescott Astronomy Club

Celestial events (from Sky & Telescope magazine, Astronomy magazine, and anywhere else I can find information) customized for Prescott, Arizona. Remember, the Moon is 1/2 degree or 30 arc-minutes in diameter. All times are Mountain Standard Time.

You might get a good look at comet PANSTARRS (C/2012 K1) during the first week of July. Try looking with binoculars low in the west about 9 PM. See Astronomy magazine, July 2014, p. 42 for more details and a finder chart.

You can also see asteroids 1 Ceres and 4 Vesta near each other during this first week of July. Look with binoculars after about 9:00 PM, 8 degrees above Mars. With a telescope you might also notice the two, dim, galaxies (NGC 5183 and 5184) in the area. The two asteroids are closest on July 4 (10 arc-minutes). See the July 2014 issues of Sky and Telescope (pp. 45 & 50) or Astronomy (p. 43) for more info.

If you are interested in seeing a double star change, check out 44 Bootis. It is predicted to go from 1.06 arc-seconds (difficult to see) in 2014 to 0.23 arc-seconds (impossible to see) in 2020. Sky and Telescope, July 2014, p. 52 has an article about it.

On Friday, July 4 (happy birthday USA), the Moon is at first quarter phase and sets at midnight. This is also the night Pluto reaches opposition. Finder charts for Pluto can be found in Sky and Telescope, June 2014, p. 50, and Astronomy, July 2014, p. 42.

On Saturday, July 5, about 5:40 PM you can see Mars and the Moon near each other. Even though the sun is still up, you should have no trouble finding the near first quarter phase Moon, 45 degrees above the southeast horizon. With a telescope look just above the north pole of the Moon for Mars. After sunset (7:46 PM) the Moon will have moved on but should still seem close to Mars.

On Monday, July 7, about 6:00 PM you can see Saturn and the Moon near each other. The situation is very similar to the Mars-Moon encounter 2 days ago although Saturn won't be quite so close.

On Thursday, July 10, after about 9:00 PM, you can see the planetary southwest part of the almost full Moon at its best. Libration tips that part toward us.

On Friday, July 11, at 7:01 PM (44 minutes before sunset) the full Moon rises, spoiling any chance of seeing faint fuzzies for the night.

On Saturday night, July 12, starting around 3:40 AM (Sunday), the nearly full Moon glides by Beta 1 and 2 Capricorni. This will be a grazing occultation, so, depending on your exact location in Prescott, you may see 0, 1, or 2 stars disappear. You might even see one star disappear and reappear several times. If you are up at 3:40 AM (!?), why not see what happens at your house. The show should be over by 4:10 AM.

On Friday, July 18, the Moon is at last quarter phase and rises at 12:02 AM (Saturday). On Saturday, July 26, it is new Moon and you have all night to hunt for faint fuzzies.

On Wednesday, July 30, after about 9:00 PM, you can find all of Saturn's brighter satellites on the celestial west side of the planet. Moving out from the planet you will see Rhea (magnitude 10.4), Tethys (magnitude 11.0), Dione (magnitude 11.2), and (further away) Titan (magnitude 9.2).

The Backyard Astronomer

by Bill Dellinges (July 2014)

I think it's a blast (np pun intended) to observe those little craters one finds in the larger craters on the moon. We know the big ones are 50 to 100 miles in diameter, but have you ever wondered what size those little guys are? And just how small of a crater can you pick out? Let's take a look at a few of the easy ones - and a couple not so easy.

A moon map will be very helpful in finding your way around the lunar topography. You do have one, don't you? A simple one like Sky and Telescope's Moon Map # 50495 ($6.95) will do fine. It's also available in a reversed field format. To keep things simple, we will assume a non-reversed field. We'll start with Mare Crisium on the east side of the moon. By convention, this edge, first seen after the New Moon, is the Moon's east side. The opposite side is the Moon's west. North and south are easy; north is up. Mare Crisium is not a "traditional" crater, but since maria are basically huge basins caused by the impact of huge meteoroids or asteroids, it is a crater – just a very big one. Even at relatively low power, you will note a small crater within Crisium. This is Picard, about 14 miles in diameter (dia.). It resides off center in Crisium towards the west. North of Picard you'll run into two smaller craters, Pierce (dia. 11.5 miles) and Swift (dia. 6.8 miles). You might have to pump up the power on Swift – 100x, 150x?

OK, no more maria, we're just going to plunge into "traditional" craters now. In the northeast sector of the moon, two conspicuous craters sit side by side, Hercules (dia. 43 miles) and Atlas (dia. 54 miles). Hercules, on the left, has an 11.2 mile diameter crater almost dead center in it and should be easy to spot at low power. It is designated Hercules G. Due west of Hercules you'll find the Alps Mountains. On the southern end of this range is the crater Cassini (dia. 35 miles). Cassini A (dia. 10.6 miles) is slightly offset to the north of Cassini's center. This is the largest crater relative to its host crater we have seen so far. For no extra cost you'll note another smaller crater (dia. 5.6 miles) to the lower left of A. Now slide your attention back to Hercules and slip south a bit to the east side of Mare Serenitatis. The largest crater in the area is Posidonius, one of the more interesting craters on the Moon. It's 59 miles across and has a 9.3 mile diameter crater named Posidonius A on its floor, slightly off center to the west. Also note the interesting network of crisscrossing rilles on the floor between A and Posidonius' east wall. Rilles are fractures in the solidified lava that fill some craters and maria.

Just slightly south of the Moon's center is the large lava flooded crater Ptolemaeus (dia. 96 miles). It is best seen about a day after First Quarter when the Moon's terminator just west of it creates high relief along this rugged area of the Moon. Within this beast is Ammonius (dia. 5.6 miles). It lies just northeast of its host crater. Do you see a trend here? Our little craters are getting littler! Now things get difficult.

The Backyard Astronomer

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Near the top of the Moon in the Lunar Alps is the lovely crater Plato (dia. 63 miles). There are many tiny craters on its smooth floor to test your scope, seeing, and visual acuity. Dead center in Plato is a 1.5 mile diameter crater with no name. On a night of good seeing and with high power (200x+) you should be able to spot it. When you see it, think about this – it's roughly twice the size of Meteor Crater (dia. 0.74 miles). If this Arizona tourist attraction was on the Moon, you would be hard pressed to see it with your telescope (For an image of Plato's craterlets and their diameters in kilometers: http://the-moon.wikispaces.com/Plato+Craterlets.

Though I said no more maria searching, let's make an exception and attack Armstrong (dia. 3 miles), Aldrin (dia. 2 miles) and Collins (dia. 1.5 miles) in Mare Tranquillitatis near the landing site of Apollo 11. Referring to a Moon map, this area is just less than halfway from the map center to east edge of the moon. It's also near the 7 o'clock position of Tranquillitatis. There you will see two medium sized craters, Ritter and Sabine (both dia. ~20 miles). They are at an angle of 45 degrees to each other - a sign post if you will. Due east of Sabine are three tiny craters equally spaced and in a relatively straight line – (left to right) Aldrin, Collins and Armstrong. The latter, being the biggest of the three, will be easiest to identify. Collins is very challenging. I have glimpsed it in an 11" at 250x. Photos identifying them can be found in Charles Wood's 21st Century Atlas of the Moon (2013) p. 27 and The Modern Moon, A Personal View (2003) p.84. Also see the Hamlyn Atlas of the Moon (1990) p.97.

Let's end our crater-in-a-crater tour with a grand specimen that, while not that challenging, is still a fascinating sight. Just past First Quarter on the southern edge of the Moon, you'll find Clavius (dia. 149 miles), considered to be the largest crater on the moon excluding maria impact basins. There is a unique crescent shaped string of five craters running from its southern rim and across its floor. They are in descending order of size and easy pickings, Rutherfurt, Clavius D, C, N, and J (dia. 30, 18.6, 13.6, 8, and 6.8 miles). Sometimes overlooked, our Moon actually offers the most detail available to telescopic observation of any celestial body in the night sky. The exciting and interesting thing about lunar observation is no matter how many times you observe the Moon, every time you turn your telescope on it, you'll always see something you've never noticed before. And if per chance you don't, I strongly recommend the Lunar 100 Observing Program. It will introduce you to many things you never knew existed on our nearest neighbor.

First Quarter Moon on July 5 at 7:59

*Full Moon on July 12 at 07:25

Last Quarter Moon on July 18 at 22:08

New Moon on July 26 at 18:42

Looking for that perfect weekend activity?

Why not resolve to getting involved?

Contact Dave Coshow to join the staff at GRCO

Email: grco@evaconline.org

Classified Ads

Upcoming Meetings

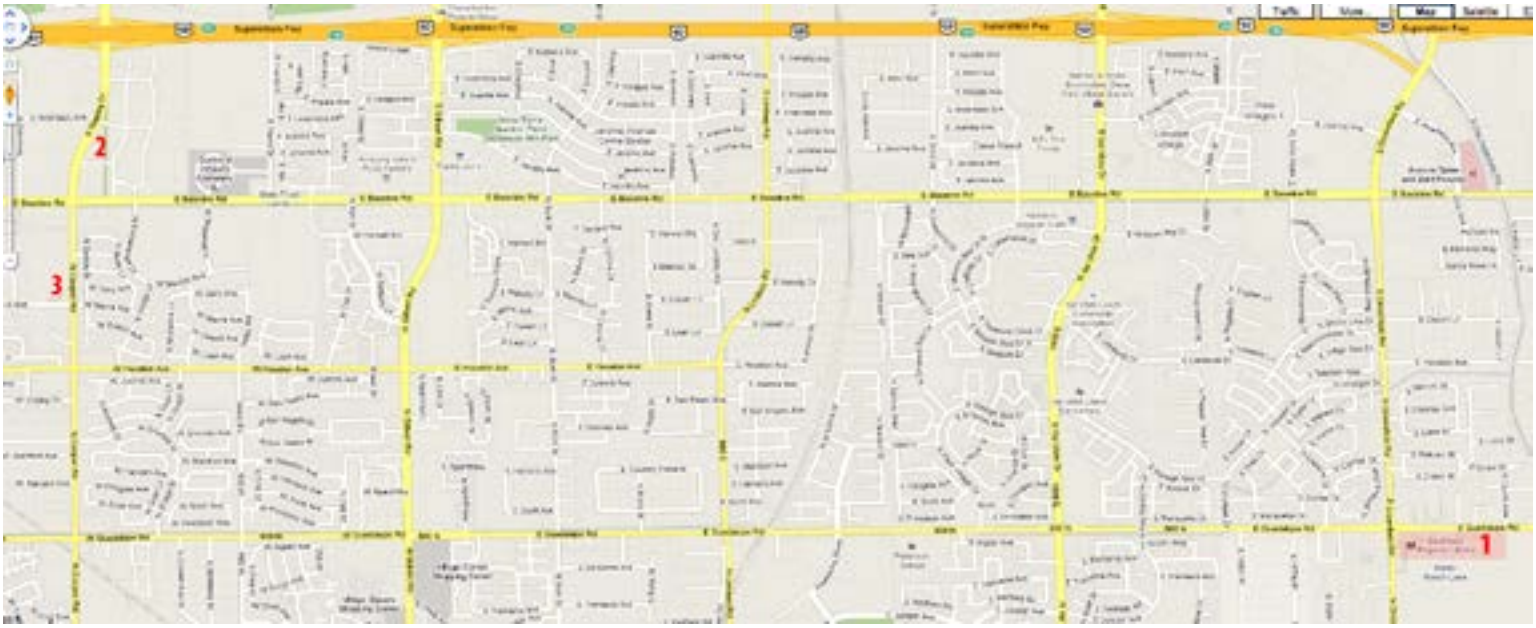
July 18
August 15
September 19
October 17
November 21
December 19
January 16

The monthly general meeting is your chance to find out what other club members are up to, learn about upcoming club events and listen to presentations by professional and well-known amateur astronomers.

Our meetings are held on the third Friday of each month at the Southeast Regional Library in Gilbert. The library is located at 775 N. Greenfield Road; on the southeast corner of Greenfield and Guadalupe Roads. Meetings begin at 7:30 pm.

All are welcome to attend the pre-meeting dinner at 5:30 pm. We meet at Old Country Buffet, located at 1855 S. Stapley Drive in Mesa. The restaurant is in the plaza on the northeast corner of Stapley and Baseline Roads, just south of US60.

Visitors are always welcome!



2 Old Country Buffet
1855 S. Stapley Drive
Mesa, Az. 85204

1 Southeast Regional Library
775 N. Greenfield Road
Gilbert, Az. 85234

July 2014

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1	2	3	4	5
6	7	8	9	10	**11**	12
13	14	15	16	17	**18**	**19**
20	21	22	23	34	25	**16**
27	28	29	30	31		

July 11 - Riparian Public Star Party/Skywatch

July 18 - General Meeting at SE Library

July 19 - Local Star Party

July 21- Explore the Night Sky

July 26 - Deep Sky Star Party

August 2014

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1	2
3	4	5	6	7	**8**	9
10	11	12	13	14	**15**	**16**
17	**18**	19	20	21	22	**23**
24	25	26	27	28	29	30

August 8 - Riparian Public Star Party/Skywatch

August 15 - General Meeting at SE Library

August 16 - Local Star Party

August 18 - Explore the Night Sky

August 23- Deep Sky Star Party

East Valley Astronomy Club -- 2013 Membership Form

Please complete this form and return it to the club Treasurer at the next meeting or mail it to EVAC, PO Box 2202, Mesa, Az, 85214-2202. Please include a check or money order made payable to EVAC for the appropriate amount.

IMPORTANT: All memberships expire on December 31 of each year.

Select one of the following:

☐ New Member ☐ Renewal ☐ Change of Address

New Member Dues (dues are prorated, select according to the month you are joining the club):

☐ **$30.00 Individual** January through March

☐ **$35.00 Family** January through March

☐ **$22.50 Individual** April through June

☐ **$26.25 Family** April through June

☐ **$15.00 Individual** July through September

☐ **$17.50 Family** July through September

☐ **$37.50 Individual** October through December

☐ **$43.75 Family** October through December

Includes dues for the following year

Renewal (current members only):

☐ **$30.00 Individual** ☐ **$35.00 Family**

Name Badges:

☐ **$10.00** Each (including postage) Quantity: _____

Name to imprint: _____

Total amount enclosed: ☐

Please make check or money order payable to EVAC

☐ Payment was remitted separately using PayPal ☐ Payment was remitted separately using my financial institution's online bill payment feature

Name: ☐ Phone: ☐

Address: ☐ Email: ☐

☐ Publish email address on website

City, State, Zip: ☐ URL: ☐

How would you like to receive your monthly newsletter? (choose one option):

☐ Electronic delivery (PDF) *Included with membership* ☐ US Mail **Please add $10 to the total payment**

Areas of Interest (check all that apply):

☐ General Observing ☐ Cosmology

☐ Lunar Observing ☐ Telescope Making

☐ Planetary Observing ☐ Astrophotography

☐ Deep Sky Observing ☐ Other

Please describe your astronomy equipment:

Would you be interested in attending a beginner's workshop? ☐ Yes ☐ No

How did you discover East Valley Astronomy Club? ☐

PO Box 2202
Mesa, AZ 85214-2202
www.evaconline.org

All members are required to have a liability release form (waiver) on file. Please complete one and forward to the Treasurer with your membership application or renewal.

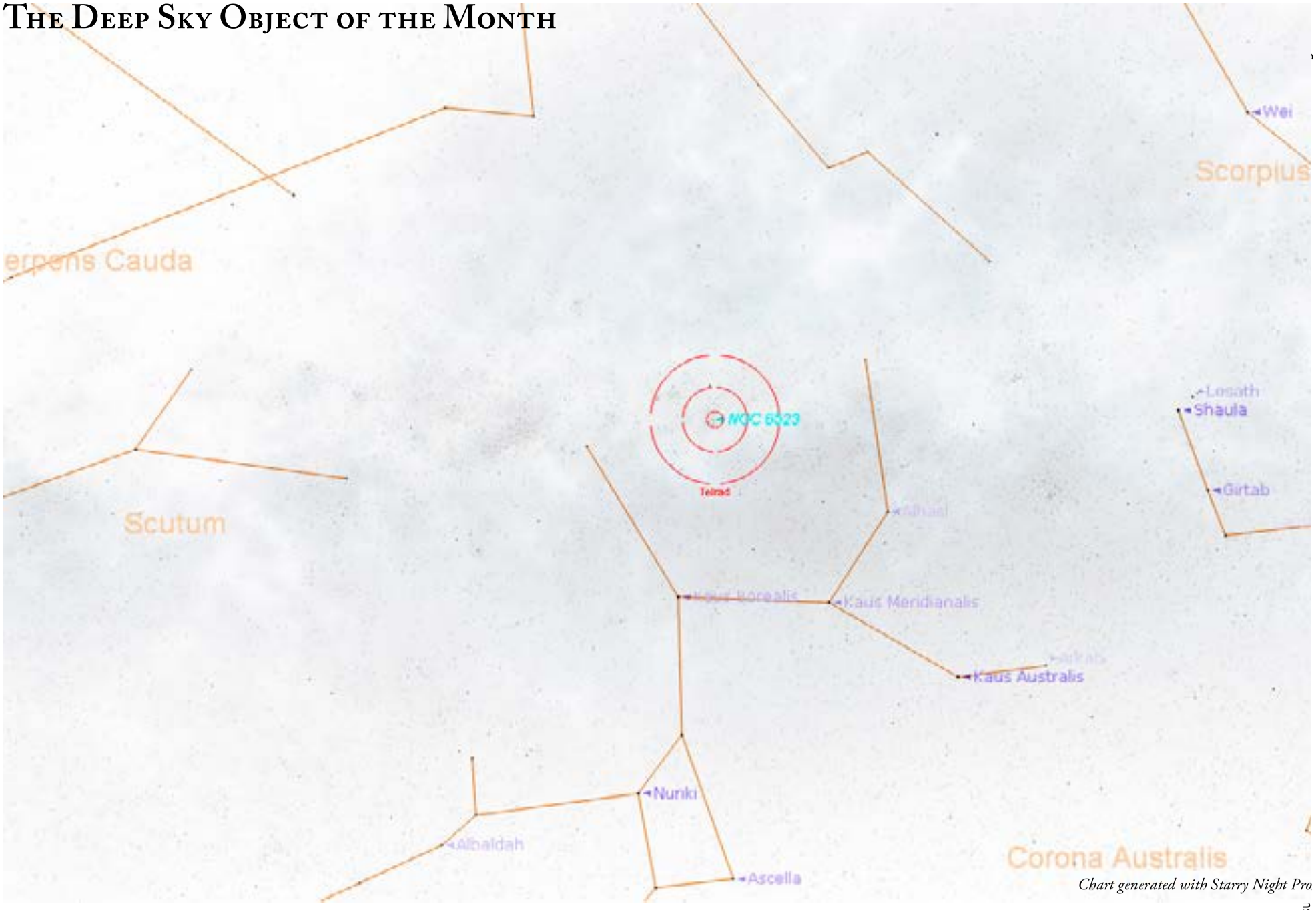


Chart generated with Starry Night Pro

NGC 6523 (M8, Lagoon Nebula) Diffuse Nebula in Sagittarius

RA 18h 04m 02.0s DEC -24° 23' 14" Magnitude: 5.0 Size: 17.0' x 15.0'

The Observer is the official publication of the East Valley Astronomy Club. It is published monthly and made available electronically as an Adobe PDF document the first week of the month. Printed copies are available at the monthly meeting. Mailed copies are available to members for a slight surcharge to offset printing and mailing expenses.

Please send your contributions, tips, suggestions and comments to the Editor at: news@evaconline.org Contributions may be edited. The views and opinions expressed in this newsletter do not necessarily represent those of the East Valley Astronomy Club, the publisher or editor.

The East Valley Astronomy Club is a 501(c)(3) nonprofit charitable organization.

www.evaconline.org

East Valley Astronomy Club
PO Box 2202
Mesa, Az. 85214-2202