
Desert Sky Observer

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NEWSLETTER OF THE ANTELOPE VALLEY ASTRONOMY CLUB, INC
P.O. BOX 4595, LANCASTER, CALIFORNIA 93539-4595
The Antelope Valley Astronomy Club, Inc., is a 501(c)(3) Non-Profit Corporation. Visit the Antelope Valley Astronomy Club website at www.avastronomyclub.org/ The A.V.A.C. is a Sustaining Member of The Astronomical League and the International Darksky Association



Up-Coming Events

July 2: Full Moon

July 9: Last Quarter Moon

July 9: Monthly Club Meeting*

July 17: New Moon

July 17: Club Picnic, Crystalaire

July 24: First Quarter Moon

July 24: Jethawks game

July 31: Full Moon

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

President's Report

Terry Babineaux

Half the year is gone already and summer is upon us. Though most of our kids are out of school, to me summer has always brought with it a certain lightness. If summer had the equivalent of Christmas tree lights, they'd most certainly be the Milky Way, complete with the summer nebula glowing merrily in the southern skies. I am looking forward to our annual picnic later in the month, along with our visit to the Hangar to watch the Jethawks in action.

Executive board elections are right around the corner. The various positions entail different levels of involvement- one of them is most likely right for you! The executive board is now considering nominations. New blood and fresh ideas will help our club continue to thrive. Please let us know if you know of anyone who would like to participate or if you yourself would be interested in one of the positions. We'd be more than happy to discuss with you what each position involves. Let's start getting some names for our ballot- I'd love to see some lively competition this year.

The position for the International Dark Skies officer remains open. I'd like to see this position filled. This is a wonderful opportunity to make a meaningful difference in the community.

Everyone have a great Fourth of July. We should be having a lot of fun this month. Hope to see everyone there!

Vice President's Report

Doug Drake

You can still follow comet Neat this month and what's most exciting is that everyone should easily find it. Comet Neat will travel right between the pointer stars in the Big Dipper on July 20th. Take out your binoculars and scope out this area during the first part of the month because the Moon will not be up yet to cause moonshine (that is not the moonshine you drink!)

The presentation given this month at our club meeting, July 9th, will be given by our very own president Terry Babineaux. His talk will be entitled, "Introduction to CCD Astrophotography."

Don't forget about our club picnic at Crystallaire Country Club on Saturday, July 17th, starting at 2:00 pm. Dinner is at 6:00 pm with a silent auction and raffle from 7:00 to 8:00 pm. My wife and I will not be able to be there because my work has taken me to Ft. Worth, Texas, during this time. Things for us should be back to normal by the end of August and we are looking forward to being back with ya'll.

Doug Drake's *Planet Watch*



Earth

As we all know, we are getting warmer as summer comes about in the northern hemisphere. But did you know that on July 5th our planet will be its farthest distance from the Sun? How is it that we are getting warmer when we are getting farther from the Sun? It is because the Earth is tilted and the northern hemisphere is pointing toward the Sun during summer, so the Sun rays incident through less atmosphere and the days become longer.

Mercury and Mars

On July 10th, 45 minutes after sunset in the northwestern sky, both Mercury and Mars will be very close to each other- about 0.2 degrees apart. Use your binoculars and look up from the northwestern horizon. Mars will be a reddish dim object with Mercury about seven times brighter.

Venus

If you're up just before sunup you can make a wish on the morning star, the lovely lady Venus. One hour before sunup she will be in the northeastern morning sky at about 16 degrees high during the first part of July and 32 degrees high the last part of July.

Jupiter

Jupiter is the evening star in the southwest. Observe Jupiter early in the evening before it gets low into the atmosphere.



News from the Astronomical League

by Tom Koonce

The AVAC is a member of a national organization of astronomy clubs called the "Astronomical League." We've chosen to be a member of the AL because of the many benefits it provides to our members. I have served as the club's 'Astronomical League Coordinator' (AlCor) for the last four years. My duties include the submittal of members completed observing awards, like the Messier Certificate or the Lunar Certificate. The observing clubs include so many different projects- there is something for EVERYONE! From absolute beginner to turbo astro geek-everyone!

At present the list is: Arp Peculiar Galaxy Club, Asteroid Observing Club, Binocular Messier Club, Caldwell Club, Comet Club, Constellation Hunter Club, Deep Sky Binocular Club, Double Star Club, Earth Orbiting Satellite Club, Galaxy Groups & Clusters Club, Herschel 400 Club, Herschel II Club, Lunar Club, The Master Observer Club, Messier Club, Meteor Club, Planetary Observers Club, Sky Puppy Club, Southern Skies Binocular Club, Sunspotters Club, Universe Sampler Club, Urban Observing Club.

I'd like to feature one of these 'clubs' in the next several newsletters. For most AL club projects you can use binoculars or a small telescope, but for some projects, you'll need quite a bit more-even travel to the southern hemisphere to complete them. But let's start out with the Universe Sampler Club.

Universe Sampler Webpage:

<http://www.astroleague.org/al/obsclubs/univsamp/univsamp.html>

The Universe Sampler observing program is a unique observing program designed specifically for the beginning observer. It is designed to expose the beginner to a sample of the many different types of objects that the Universe has to offer for our observing enjoyment. It is designed to help the new observer learn his or her way around the sky and to teach some of the basics of astronomy. It offers an alternate naked-eye list of deep sky objects for those who are interested in astronomy but shy away because they do not have a telescope or binoculars. You may do this program on your own, but I suggest that you talk another club member into working on the project with you at the same time. You will both learn more and you can schedule nights at star parties or even during the week where you can get a lot done. How long does it take to do the program? The AL observing programs are set up to be challenging, but rewarding... No Pain, No Gain, right? They are all do-able with just a little persistence and time. I'd estimate that someone could complete the Universe Sampler program in 2 -3 months of casual observing and weekend effort.

The first step is for you to order the manual for just \$8.00. This is a great booklet to read or even to home school from anyway, but it will serve as your guide through the entire Universe Sampler Program. The Universe Sampler is designed specifically as a teaching aid for the beginning observer. Due to the program's design and purpose, the object lists are not available separate from the manual. You can order the manual here:

Universe Sampler Booklet:

<http://www.astronomicalleague.com/universe.htm>

Once you have completed the Universe Sampler observing program, you should be well acquainted with the night sky and be able to find your way among the stars with no problem. You should be in a position to know what type of objects interest you most and be ready to continue your observing with one or more of the Astronomical League's other observing programs, e.g., the Messier List, the Double Star Program, the Lunar Programs, etc.

The titles of the step-by-step lessons in the Universe Sampler booklet are: Basic Sky Movement, How to Find North in the Sky, Star Charts and Constellation Patterns, Angular Measures and Distance, Stating the Location of Objects in the Sky, Star-Hopping, Eyepiece Field Orientation, Recording Your Observations, The Art of Seeing, The Moon, Variable Stars, and The Sun. Do any of these sound interesting to you? If so, I hope that you'll enjoy the Universe Sampler Club as a way of developing your astronomical knowledge.

Astrophoto of the Month:



M101 by Club President Terry Babineaux

Submit your "Astrophoto of the Month" to the following address by the 20th of each month:
newsletter@avastronomyclub.org



Member

of
the

Month

This month's featured member is Steve Trotta. Here is an excerpt of his rabid astronomical fervor. For more of his interview, go to www.avastronomyclub.org:

Q: What was the first thing you remember really looking up and seeing?

Steve: The first thing I looked at with a telescope was M42.

Q: When did you join the AVAC? What events have you enjoyed the most?

Steve: I joined in January 2000. The star parties are my favorite. It's always more fun for me to observe with other people.

Q: Have you ever done any astrophotography or CCD imaging? What kind of equipment did you use?

Steve: I do film astrophotography. I use an Olympus OM-1 with my C-9 1/4 . I guide with an ST-5 CCD camera attached to my AT1010 which is piggy-backed on the 9 1/4 .

Q: What kind of telescope do you use most often? How many do you have? What would be your dream scope?

Steve: My main scope is a Celestron Ultima 9 1/4. I currently have 5 scopes: the C-9 1/4, a 10" Dob, an ETX-90, a Stellarvue AT1010 (an 80mm refractor), and my first scope, the 60mm Meade. My dream scope would probably be a 16" Schmidt-Cassegrain.



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Space Weather

by Patrick L. Barry and Tony Phillips

Radiation storms, 250 mile-per-second winds, charged particles raining down from magnetic tempests overhead... it sounds like the extreme weather of some alien world. But this bizarre weather happens right here at Earth.

Scientists call it "space weather." It occurs mostly within the gradual boundary between our atmosphere and interplanetary space, where the blast of particles and radiation streaming from the Sun plows into the protective bubble of Earth's magnetic field. But space weather can also descend to Earth's surface. Because the Earth's magnetic field envelops all of us, vibrations in this springy field caused by space weather reverberate in the room around you and within your body as much as at the edge of space far overhead.

In fact, one way to see these "geomagnetic storms" is to suspend a magnetized needle from a thin thread inside of a bottle. When solar storms buffet Earth's magnetic field, you'll see the needle move and swing. If you live at higher latitudes, you can see a more spectacular effect: the *aurora borealis* and the *aurora australis*. These colorful light shows happen when charged particles trapped in the outer bands of Earth's magnetic field get "shaken loose" and rain down on Earth's atmosphere.

And because a vibrating magnetic field will induce an electric current in a conductor, geomagnetic storms can have a less enjoyable effect: widespread power blackouts. Such a blackout happened in 1989 in Quebec, Canada, during a particularly strong geomagnetic storm. These storms can also induce currents in the metallic body of an orbiting satellite, knocking the satellite out temporarily- and sometimes permanently.

Partly because of these adverse effects, scientists keep close tabs on the space weather forecast. The best way to do this is to watch the Sun. The NASA/ESA SOHO satellite and NOAA's fleet of GOES satellites keep a constant watch on the Sun's activity. If a "coronal hole"- where high-speed solar wind streams out from the Sun's surface- comes into view, it could mean that a strong gust of solar wind is on its way, along with the geomagnetic storms it will trigger. And an explosive ejection of hot plasma toward the Earth- called a "coronal mass ejection"- could mean danger for astronauts in orbit. The advancing front of ejected matter, moving much faster than the solar wind, will accelerate particles in its path to near the speed of light, spawning a radiation storm that can threaten astronauts' health.

Look for coming articles for more about space weather and about NOAA's efforts to forecast these celestial storms. Meanwhile, read today's space weather forecast at <http://www.sec.noaa.gov/>. Kids can learn about the geostationary and orbits of the GOES satellites at http://spaceplace.nasa.gov/en/kids/goes/goes_poes_orbits.shtml.

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

*** * NOTICE * ***

If you are interested in becoming the new International Dark Skies Association liaison for the AVAC, now is the time. If you do not want to take the job on, you can still help by e-mailing the County of Los Angeles Department of Regional Planning. Please contact Terry Babineaux for more details.



The Gathering at Crystallaire at an impromptu star party.



Tom sets up his water tower that poses as a telescope.



Mindy gives it a whirl with her new rig.



Rich, Tina and Mindy prepare for the coming night.



There's Tom, always with expensive ideas about what Mindy needs to buy next.



Matt and Mr. Water Heater pose together at Crystaliare.



Tina and Kelly enjoy a laugh as the sunlight retreats.

Did you know? **?**

As all eyes now focus on Cassini, the Rover “Opportunity” makes its way down into the crater “Endurance.”

? **?** **?**

Astronomy Links on the Web

<http://www.astropaws.com>

(Terry Babineaux’s astrophotos)

<http://www.actonastro.com/>

(Steve Trotta’s website)

<http://www.noexitrecords.com/zerobox/astro.htm>

(Tom Varden’s website)

<http://www.astro-tom.com/>

(Tom Koonce’s website)

<http://www.astroleague.org/>

(The Astronomical League site)

<http://antwrp.gsfc.nasa.gov/apod/archivepix.html>

(Pic of the Day)

www.avastronomyclub.org/

(us desert astronomy folks)

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A.V.A.C. Membership Information

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

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 quarterly publication of the Astronomical League.
- The A.V.A.C. Membership Manual.
- To borrow club telescopes, binoculars, camera, books, videos and other items.

The Desert Sky Observer is available as a separate publication to individuals at a cost of \$10.00 per year. Subscription to the Desert Sky Observer does not entitle the subscriber to membership in the Antelope Valley Astronomy Club and its associated privileges.

A.V.A.C. Board Members

President: Terry Babineaux (661) 724-1248 president@avastronomyclub.org

Vice-President: Doug Drake (661) 724-0849 vice-president@avastronomyclub.org

Secretary: Larry Ochsner (661) 274-9006 secretary@avastronomyclub.org

Treasurer: Tom Koonce (661) 943-8200 treasurer@avastronomyclub.org

Director of Community Development:

Mike Roberson (661) 948-1303 community@avastronomyclub.org

Newsletter Editor:

Brian Peterson (661) 273-1693 newsletter@avastronomyclub.org

Club Librarian:

Herb Boyd (661) 274-8418 library@avastronomyclub.org

Astronomical League & Club Historian:

Tom Koonce (661) 943-8200 al@avastronomyclub.org

Webmaster of Club Site:

Steve Trotta (661) 269-5428 webmaster@avastronomyclub.org

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How To... Sketch

by Rich Harper

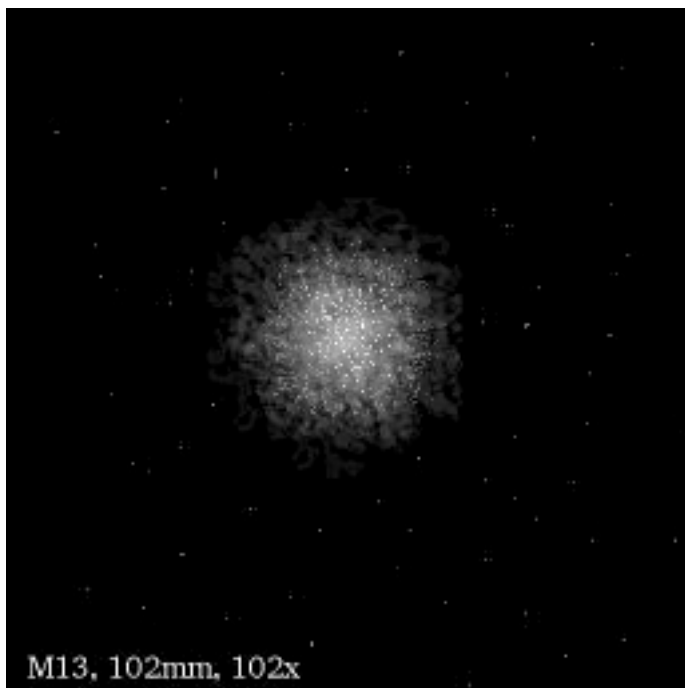
Some of the easiest things to sketch are DSO's (Deep Sky Objects), especially the big faint fuzzies. And the easiest way I've found to do this is with the computer. I've tried sketching with pens and pencils. Usually I end up with a mess, a pile of half-completed drawings and sketches with crossed out features or other errors. Nor do I find the black on white of pen or pencil on paper to be as aesthetically pleasing as white on black.

With a computer and a computer drawing program it becomes much easier to make sketches of what we see, if only because of the handy UNDO feature. Below I'll give some examples, and then walk you through a sketch of M42 using a photograph and memory for a reference. The other sketches are based on rough drawings made at the eyepiece, along with notes taken at the time.

I start by observing my subject for twenty or thirty minutes, at various magnifications, to fix an image of my subject in my mind. I then make a rough sketch or series of sketches, referring back to the eyepieces. I also make notes regarding any visible, mottling, knots of brightness, dark structure, or any other features visible. I also sketch at various magnifications, focusing in on structural detail, and then pulling back to get the wide view.

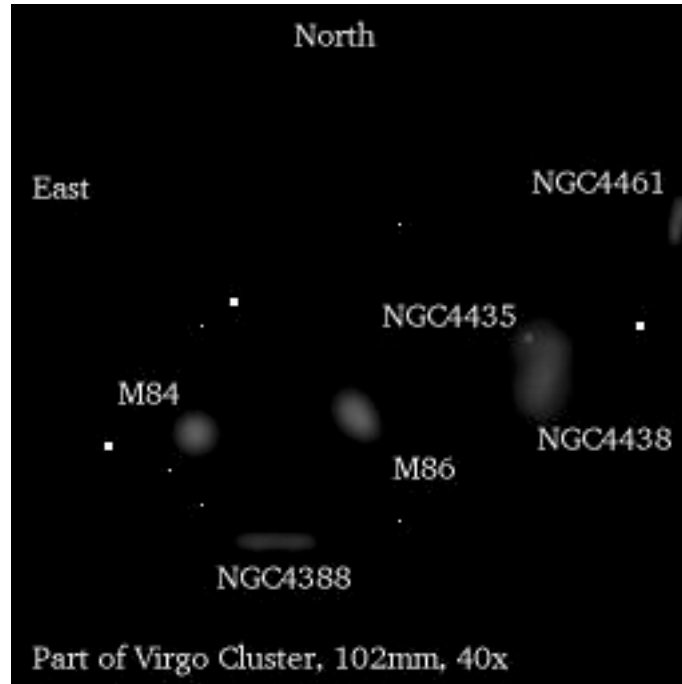
I then review my sketches, and create a composite on a computer drawing program. I use GIMP, but PhotoShop or any other drawing program will do. I find the airbrush tools to be most useful, along with the pencil tool to put in any stars. Unlike a pencil or pen drawing, where the star's relative brightness is illustrated by a larger or smaller dot, on the computer you can just vary the brightness of a single pixel, from dark gray to bright white.

Here is a sketch of M13 in Hercules. The star field is random, and added for contextual effect. M13 was a shimmering, glittering mass, and this sketch is an attempt to capture that effect, not necessarily a literal interpretation of what I saw at the eyepiece.



M13 was sketched by using various tool types to get a mottled effect, overlaying pure white with an opacity/transparency of 15% or so to get the desired effect. When I didn't like my results, I would just UNDO them! Gray and nearly white dots were then overlaid on the mottled center to give the effect of stars at the core.

This next one is my first sketch of part of the Virgo Cluster of Galaxies. Here I used larger and smaller stars to illustrate magnitude. You can compare this with the picture above and see which effect you prefer.

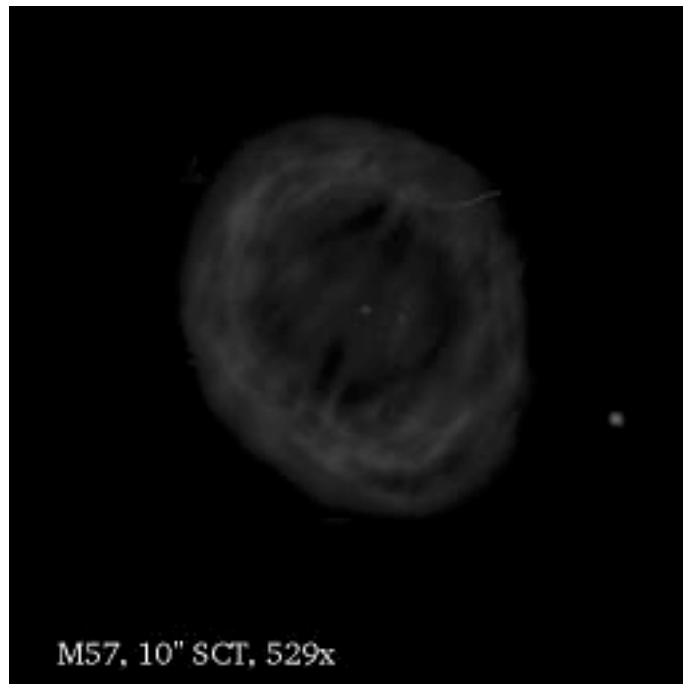


You can see that the stars, being larger than one pixel, are not as aesthetically pleasing as the background stars in M13, above.

Here is a drawing of M51, made from my observing notes and sketches from Crystallaire.



And here is M57 through a 10" SCT. The visible detail is exaggerated somewhat as it is very hard to record what can only be seen with averted vision.



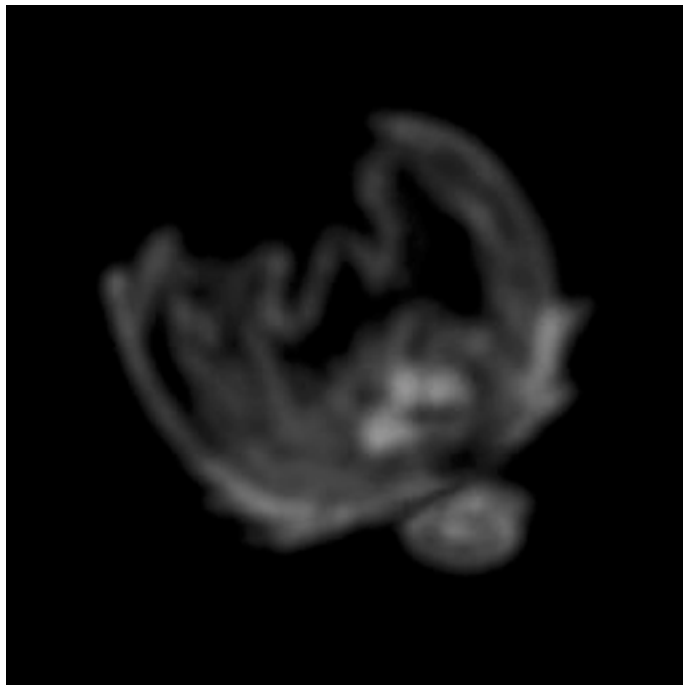
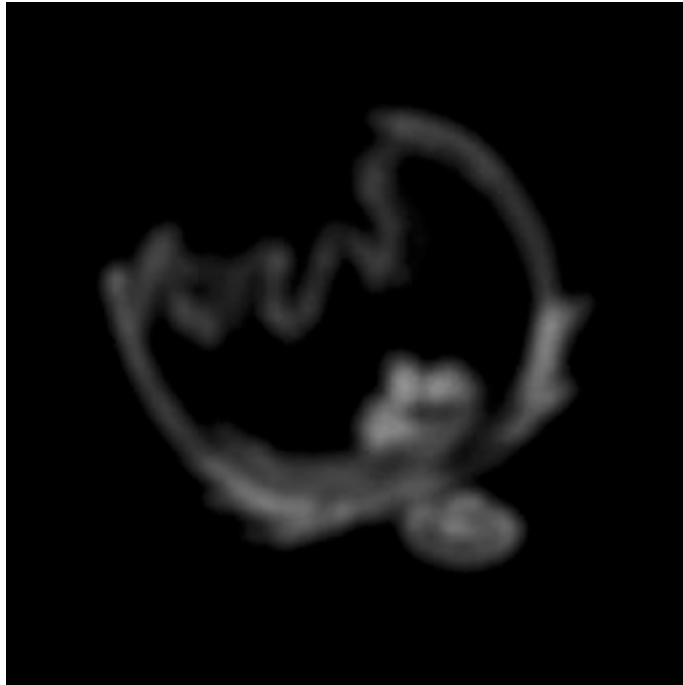
The sketch of M42 is based largely on photographs. M42 was selected as an illustration of computer sketching technique since it only requires the use of the airbrush tools, shades of white and black, and everyone should be able to find a good picture to work from. I don't vary the shade, just the transparency/opacity of the layer being put down with the brush.

First, we must define the basic structure of the nebula. If you have sketches, this would have been done in the field, and you would refer to those.

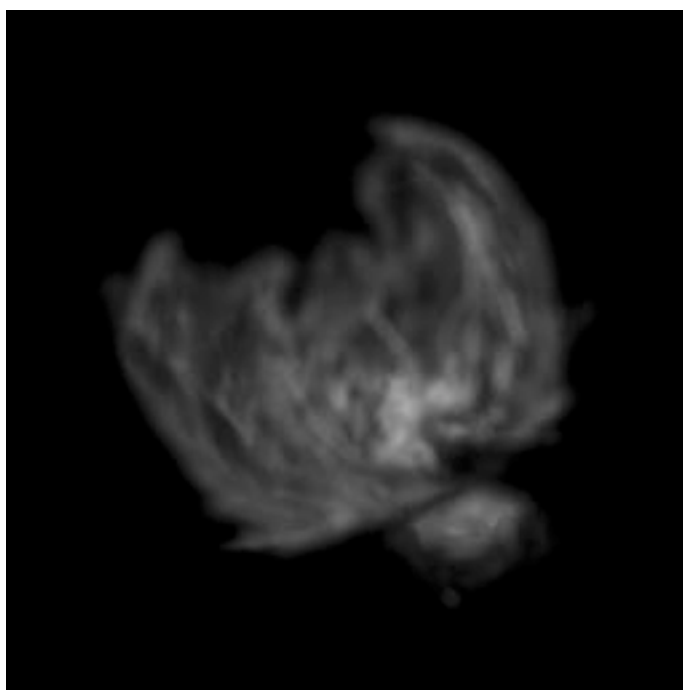
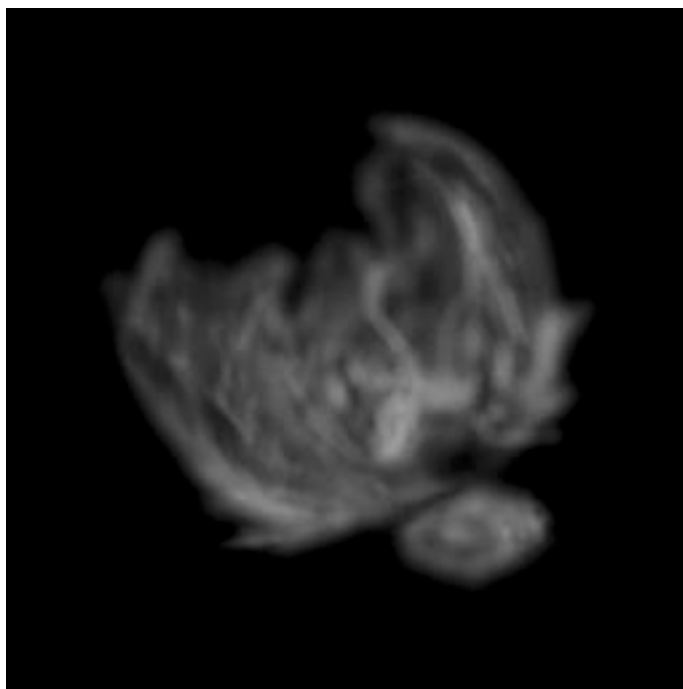
Here is the basic outline of M42. Sort of an upside down Alfred Hitchcock.



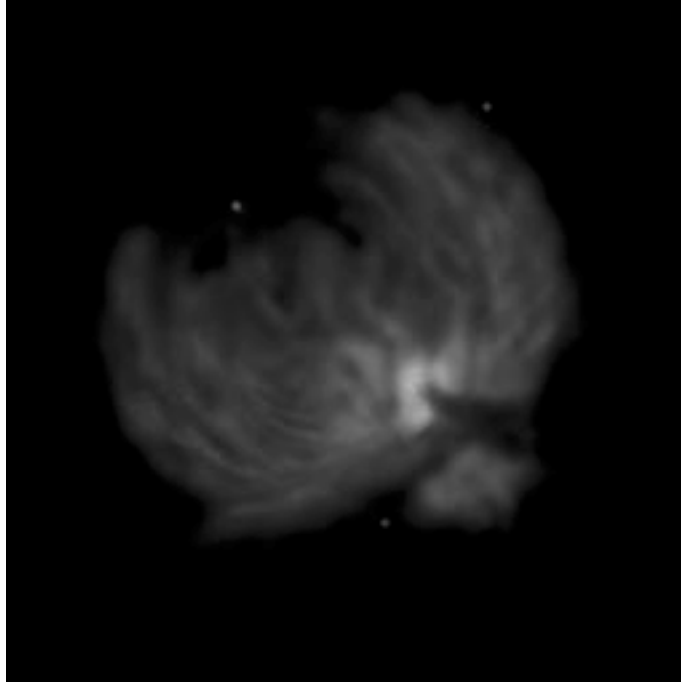
Next, we fill in some of the details visible. I start with the brighter areas first. Because each layer will add brightness to the image, we want to work our way from bright to dim.



Here we've added the brighter regions around the Trapezium and the "wings," a la Batman. Next we'll add some other details and start to fill out the body of the nebula.



Using finer and finer brushes, additional detail is added. Areas which have become too bright are overlaid with thin coats of black, a bit of smudging here and there smooths the sharp edges of contrast, yielding our final result.



I hope you enjoyed this article and will give it a try yourself.

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QNET: 1529 E. Palmdale Blvd., Suite 200. (661) 538-2028. As an Internet provider, they are kind enough to provide us with a free website.

High Desert Broadcasting: General Manager, Vicky Connors (661) 947-3107; They assist us in advertising our Club.

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www.telescopes.net

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