



# The American Astronomer

THE QUARTERLY NEWSLETTER OF  
THE AMERICAN ASSOCIATION OF AMATEUR ASTRONOMERS

Volume III, No. 2

March 1999



Feb. 15, 1999

Photo by Ron & Jean Zincone, AAAA  
Richmond, RI



Feb. 23, 1999

Photo by Ed Flaspoebler, AAAA  
Dallas, TX

## Conjunction of Venus and Jupiter

All eyes were focused on the southwest skies at sunset during the month of February, as the two bright planets Jupiter and Venus danced together in the evening sky. Over the course of a week or more, moving higher night by night, Venus slowly ascended from the horizon until she nearly touched her brother Jupiter in the evening twilight. There was a truly spectacular alignment of the two planets with the crescent moon on the evening of February 17. Then, on Tuesday, Feb. 23, these two planets passed within 0.15 degrees of each other, shining brightly in the same telescope field less than half the diameter of the full moon apart.

AAAA member Ron Zincone and his wife, Jean, noticed this event on February 15, and made a beautiful portrait of the two planets under a perfectly clear sky from their home in Richmond, Rhode Island. Ron has a special interest in astrophotography, and used a 50-mm lens at f/1.5 for his 10-second exposure.

AAAA Vice-President Ed Flaspoebler took his photo using his Meade 2045 4-inch SCT in his backyard in Dallas, TX, about 18:45 CST on Feb 23, 1999. He used Kodak Gold 400 negative film, for a 2 sec exposure at f/10 with a 2x Barlow lens to magnify the image on the film plane.

Such a spectacular alignment of two bright planets so close together is not a common occurrence, and was of great interest to amateur astronomers and the general public that week. While there is no real significance to this chance alignment, it makes for a pretty view, and should be enjoyed for its rarity and beauty.

Both of these images can be seen in color on the AAAA web page.

## OBSERVING IS THE HEART OF AMATEUR ASTRONOMY

The American Association of Amateur Astronomers, as a member society of the Astronomical League, is pleased to announce a new service from its Internet Web Page, <http://www.corvus.com>. We are providing the AL's FREE Observe Programs in Adobe Acrobat Portable Document File format at no charge as a service to members of the AAAA, the Astronomical League, and the astronomical community at large. The Observing Programs which require a published manual must still be obtained from Astronomical League Sales, PO Box 572, West Burlington, IA 52655.

You will need Adobe Acrobat Reader Version 3.0 or higher to read these files in your web browser or after download for later use. This Reader software can be obtained FREE from the Adobe web page. <http://www.adobe.com>.

AAAA encourages you to download these files for your own use, and to distribute them, in either electronic or printed form, to your friends and other interested observers, as an encouragement to further participation in amateur astronomy.

AAAA members are eligible to earn any of the AL's observing awards. Observing is the heart of amateur astronomy. We encourage you to participate in all of the programs which interest you.

### Larry E. Robinson Earns Asteroid Certificate

The Astronomical League's Asteroid Observing Club Certificate Number One in the Gold Member category goes to our own AAAA member, Larry Robinson, of Olathe, Kansas. Larry operates Sunflower Observatory, and observed and recorded 100 asteroids using his ten-inch Meade S/C and an ST7 CCD camera. Needless to say, we are very proud of Larry's accomplishment and are glad he is a member of the AAAA. Well done, Larry.



# AAAA

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THE NEWSLETTER OF  
THE AMERICAN  
ASSOCIATION OF  
AMATEUR  
ASTRONOMERS

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A Member  
Society of  
The  
Astronomical  
League

# Notes from the President

Hi everyone! I am happy to announce that the Astronomical League has three new observing programs. The first new program is the *Planetary Observers Club*. This club is a list of 27 selected projects to introduce you to the pleasures of planetary observing. You need only complete 25 of these projects to earn a certificate. This is a great program for those of you who are hampered in your observing by excessive light pollution.

The second program is the new *Asteroid Club*, which was created to encourage amateurs to identify and observe asteroids. This program has two levels. The first level is Regular Member, which is obtained by observing and recording 25 asteroids. This level requires a telescope of four inches or larger. The second level is Gold Member. This level is obtained by observing and recording 100 asteroids. A telescope of six inches and larger is recommended here. Regular Member status earns a certificate, while Gold Member status earns both a certificate and pin.

The third new program is the *Universe Sampler*. This is a great program for the amateur new to the hobby and who wants to learn different aspects of it. The *Universe Sampler* is for small scopes and the naked eye, and was designed as a teaching tool to introduce the novice to different types of objects, help them learn their way around the night sky, and teach some of the basics of astronomy. Twelve lessons are involved, as well as a list of objects for telescopes and the naked eye.

As an AAAA member, you can participate in each of these programs and earn a certificate and a pin. Details for all three of these new programs can be found on the AAAA web page at <http://www.corvus.com>. A free Adobe Acrobat PDF file is available for download for the *Planetary Observers Club*. The other two programs, as well as all Astronomical League Observing Programs, can be obtained from Astronomical League Sales, PO Box 572, Burlington, Iowa 52655

And now for the really exciting news. There has already been a certificate and pin awarded for the *Asteroid Club* in the Gold Member category. This is Certificate Number One in the entire country, and it goes to our own AAAA member, Larry Robinson, of Olathe, Kansas. Larry operates Sunflower Observatory, and observed and recorded 100 asteroids using his ten-inch Meade S/C and an ST7 CCD camera. Needless to say, we are very proud of Larry's accomplishment and are glad he is a member of the AAAA. Well done, Larry.

Ron Muir of the Fort Worth Astronomical Society has created an important new database of astronomical objects. This database contains 1,200 objects in three categories: lightweight, middleweight, and heavyweight, and covers the night sky for the entire year. Lightweight is for small scopes and light polluted conditions. Middleweight is for six-inch and larger scopes and moderate light pollution. Heavyweight is for dark skies and scopes eight-inches or larger. We have already sent you the first installment of this new database, and will send you future installments throughout the year. I am sure that you will enjoy observing these objects as much as I already am.

Finally, because of the many requests that the AAAA has had for information on the planets, from educators and students alike, your club has created a new Solar System Data Page as part of the AAAA web page. This important new resource, which covers all nine planets as well as the sun, and everything in between, will continue to be expanded over the next several months. You can access the Solar System Data Page on our web page at <http://www.corvus.com>. As you can see, the AAAA continues, through your support, to meet the needs of the amateur and educational communities. Thank you for your encouragement.

If you run across anything that you feel would be of interest to your fellow members of the AAAA, please send it my way and we will see to it that it is shared with everyone. That's all for now, but as is obvious, it has been a busy and exciting period. Keep on observing and let me know how you are doing.

Clear, dry skies, and bloodshot eyes.

*John Wagoner - President - AAAA*

# Lunar Occultation of Aldebaran January 27, 1999

**A Report by Brenda Culbertson  
stargazr@mail.holton.k12.ks.us**

The date of the lunar occultation of Aldebaran, January 27, 1999, was drawn to my attention as I was making plans for the beginning astrophotography class I teach. I thought that it would be a good photo opportunity, and easy enough for beginners to do, since Aldebaran is a 1st magnitude star that would go into the middle of the dark portion of the Quarter Moon. A freebie, so to speak. As long as the weather allowed.

Weather in Kansas is so unpredictable; metrologists only work here because of the tornadoes. I started keeping track of the weather predictions in northeastern Kansas on January 23. Knowing that the weather predictions would surely change from morning to night each day, I did not get too serious about photographing the occultation.

Come Monday morning, I told my students about the occultation, and how to photograph it. I also told them that the weather forecast for the next few days was not good. We did not plan a group photo session, but I kept my eye out any way.

Tuesday morning, I called my friendly TV meteorologist, Ed Levy, to get an update. Ed is not related to David Levy, the famous comet hunter, but he likes astronomy, and is always happy to give me his special astronomy weather prediction. (A side note: I told Ed that my version of clear was not the same as the typical clear a weatherman gave. I said that clear to me meant no twinkling.) Ed checked his satellite displays and double-checked other instruments while we talked. He gave me his opinion of the conditions for the night. He said that he could not promise it, but it appeared like we would get a nice break at about the time of the event. He also wanted to see any pic-

tures I got. I agreed.

Tuesday night was our Observational Astronomy Lab class at Washburn University, where I assist Dr. Darrell Parnell. Dr. Parnell and I discussed taking the class up to Crane Observatory to see a possible pre-event. We wanted to see the occultation of Theta-2 Tauri, and kept watch on that as the class practiced viewing through binoculars. The class was dismissed after a while, and eventually we also dismissed the fact that we would see the double star occultation. It was a miss for us.

Skies were clearing and my husband, Mike, and I went home around 11 p.m. to get ready for the Aldebaran occultation. The wind was blowing at about 20 m.p.h. and I knew that my telescope would not hold a steady photographic shot. So I opted for video instead of still photography.

I made sure the battery in my video camera was charged and that the tape was in the machine, set to record the bright star disappearing into the dark limb of the Moon. All I needed was a steady hand for a tight shot. I tried a practice shot and felt that the video was do-able, but that I had to hand hold the camera for a secure stand.

Mike kept watch with binoculars and had high anticipation of the event. He had never seen an occultation before. I told him what would happen, so he was ready. He also saw how excited Dr. Parnell was while watching the close approach of the double star, Theta-2, earlier. As he watched, he could see Aldebaran and the Moon get closer and closer and closer...

At 1:50 a.m. (CST) Aldebaran approached the lunar limb, and I could see that any minute (or second) Aldebaran would blink out. I kept the camera as steady as possible as I recorded the approach of the star. Steady ... steady ... blink! It was out. That was it. The whole excited night was



spent for one blink of light. Are we crazy, or what?!

Mike asked me if that was it. I replied with an honest, Yep, and slowly disassembled my video system. He did not say he was disappointed, but I know he liked the planet occultations more. There is more to a planet disappearing, but a blink is so quick. You have to be into it to enjoy it all.

Nap time now, at 1:50 a.m. on January 27. I had class that same morning at 8 a.m., so I didn't get much sleep.

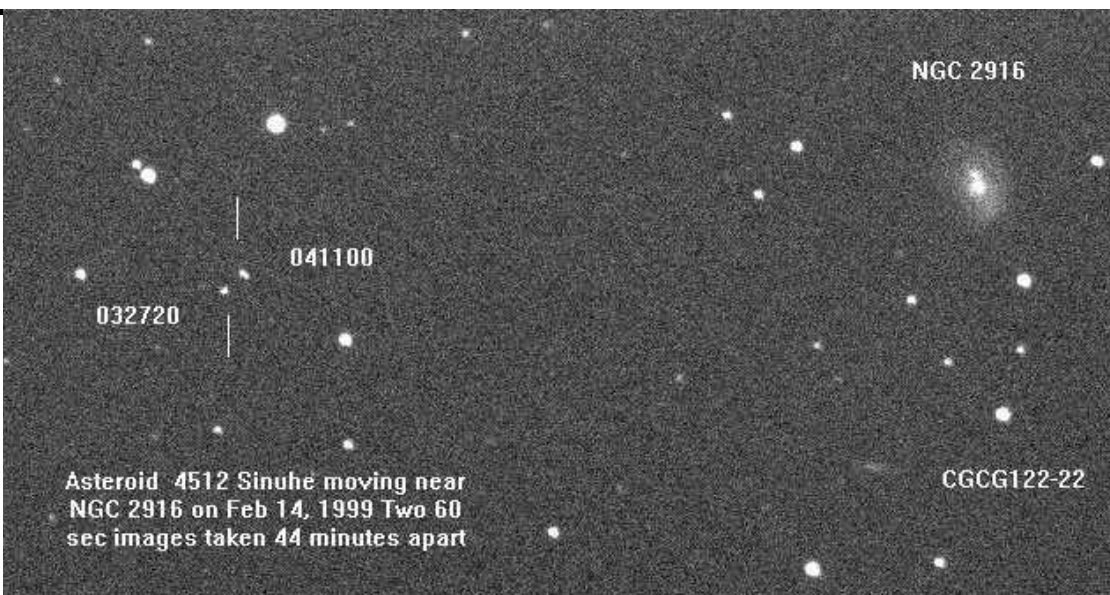
I called Ed Levy later that day and took the video to him so he could see the event. He liked it, but said it wasn't something he thought would be for the general viewing audience. He would have put it on his weather segment on TV if it was.

The general populace would probably have thought it was no big deal, but it was really exciting for us. I should never have doubted that the weather would clear and we would see the event. My favorite saying is, God loves astronomers. He has cleared the skies for eclipses, aurora, and other celestial events for me before, so I should have known it would be clear for this one, too.

Clips from my video are shown on the AAAA web page. AAAA member Stephen Laflamme of Bridgeport, MASS., used his Snappy frame grabber and made still shots of the approach and blink-out of Aldebaran. Theta-2 Tauri close approach is also shown.

## An Asteroid Observation

*From his own Sunflower Observatory near Kansas City, AAAA member Larry Robinson imaged Asteroid 4512, Sinuhe, near spiral galaxy NGC 2916 in Leo. It was images such as this one, recording the change in position of the asteroid over a period of time, that earned Larry the AL's Asteroid Certificate Number One.*



Asteroid 4512 Sinuhe moving near NGC 2916 on Feb 14, 1999 Two 60 sec images taken 44 minutes apart

# Welcome to Hill CCD Imaging !

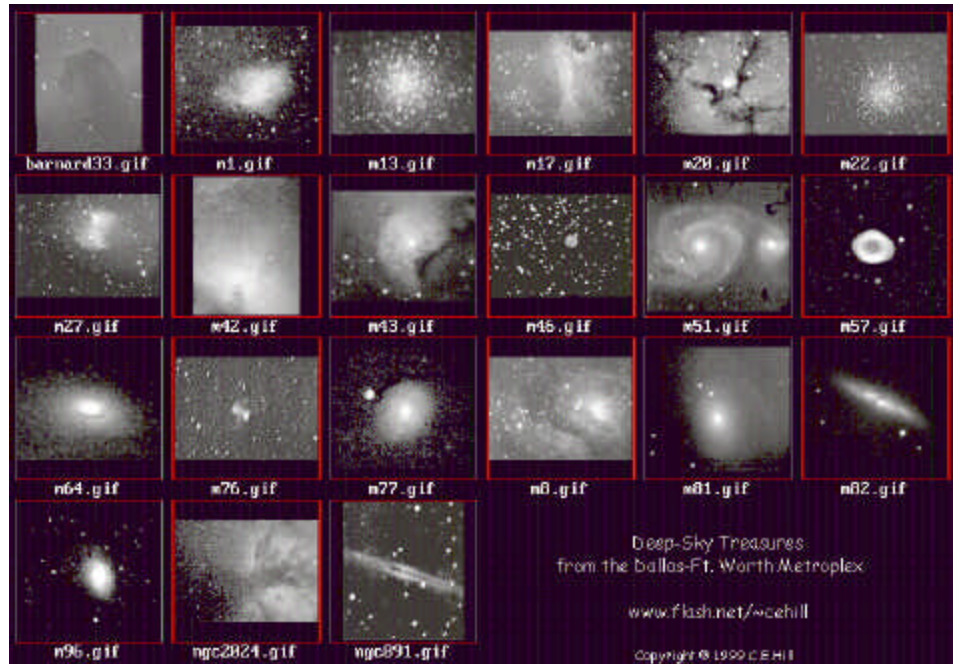
Comet Hyautake in March of 1996 was the first comet I'd ever seen and photographed with a 35mm camera. Soon the challenges of deep-sky imaging caught my interest and so did Comet Hale-Bopp. The *CCD Camera Cookbook* showed how to build a powerful monochrome CCD camera that produces outstanding 378 x 242 images without the cost of developing.

Comet Hale-Bopp's viewing was a once-in-a-lifetime event. Now I'm imaging the Messier catalogue, perfecting my technique imaging distant galaxies with a CCD camera that penetrates the light polluted sky.

I'll never see everything I want to see, or see it with as much detail as I'd like to, but this CCD camera images objects my eyes can't even see from my backyard in the Dallas-Ft.Worth Metroplex.

Calvin E. Hill

<http://www.flash.net/~cehill>



**AAAA Member Calvin E. Hill takes high quality astronomical images from his backyard using a CCD camera and a 10-inch Meade SCT telescope.**

As we lead our daily lives, our planet Earth rotates around a Sun cradled within the Milky Way galaxy to which we belong. Nightly, amateur astronomers around the world peer into the sky with their telescopes and CCD cameras. We encounter a variety of gas clouds, globular clusters, and galaxies far beyond our lifetime's reach. We see the clouds of interstellar gas called nebulae, perhaps the most stunning of all objects to image. We see globular clusters, spherical collections of various stars. And further out, we see distant galaxies like our own located inconceivable distances away. Every so often, we are witness to a spectacular comet that occurs but once in a lifetime. These are the deep-sky wonders I have seen and imaged from the city so far...

## STAR HOPPING IN PUPPIS

*Observing Report - Feb. 13/14, 1999*

*by Ed Flaspoeehler*

It started out slowly, even though it was one of those perfect winter nights at the Atoka Site. I am still working on the AL s Herschel 400 list, and with 193 objects left to observe, was barely half way through the project. Since I arrived at 7:00 PM, just after sunset, it was already mostly dark, and after taking my time setting up, I had a hard time getting started.

I decided to begin work in Auriga, and after a fitful start could not find a thing. It is amazing how quickly one loses perspective in this hobby, forgetting that connection between sky and chart that allows for progress. But, enthusiasm at a minimum notwithstanding, I decided to press on.

Auriga was right overhead, the sky was perfectly clear, and it was not too cold (only mid-30 s and no wind) but it still took me over two hours to find eight Herschel objects. Sure, they were faint clusters, but there were plenty of landmarks-and bright stars, so it should have been easier. But it wasn't. I had been out of practice for too long.

My last time out observing was during the TAS picnic last September. Since then, bad weather, Thanksgiving and Christmas, year end processing at work, and at least one issue of the REFLECTOR, kept me from a weekend at the observing site. But anyway, now that Auriga was done, it was still only 11:30, so, astronomically speaking, the night was still young. What to do next?

I consulted my Herschel List. I use the one in order by constellation, and found that Canis Major and Puppis were wide open. Since these constellations are low in the south, it was probably now or never. So I forged ahead, looking for the four objects in Canis

Major. Suddenly, within the space of 30 minutes, I had bagged them all. There were bright guide stars and they were bright clusters. It was a snap!

Now it was about midnight. I was on a roll, so on to Puppis. But, Hey! Where is Puppis and how do you find your way around? By consulting my *Tirion Sky Atlas 2000*, I discovered that this sprawling constellation is just to the south and east of Canis Major. But it was so big, with no bright stars, and my heart sank. On closer inspection, however, I found out that the eleven Herschel objects in this constellation were in the northern part, no further south than the bottom end of Canis Major.

I began my search, again working in NGC number order, and quickly found out that there was a small group of objects all together, and that they were all in the vicinity of M46 and M47. Wow! Bright and easy landmarks! I was able to snap off three Herschel objects in ten minutes, with most of that time spent writing in the log book.

Then I looked at the chart again, and found that everything else in Puppis was a faint open cluster with no bright landmarks nearby, each one standing out alone all by itself. The only object that was not an open cluster was planetary nebula NGC 2440. Now, I hate planetary nebulae, because they always look like stars until you pump up the magnification to 200x or something like that, and they are the devil to locate. So I started with NGC 2421, a cluster which was pretty easy since it was close to a 4.5 magnitude bright star, and suddenly found myself star hopping through a series of five faint clusters and that one pesky planetary nebula. I picked up the remaining two clusters with little trouble at all. Eureka! I had done it! Eleven objects in Puppis in 70 minutes.

212 down and 188 to go!



# COSMOSPHERE

**KANSAS COSMOSPHERE  
AND SPACE CENTER**

by Brenda Culbertson

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History buffs, especially rocket history and space flight history buffs, might enjoy a visit to the Kansas Cosmosphere and Space Center in Hutchinson, Kansas. The Cosmosphere is a combination museum and activity center. It is full of artifacts, exhibiting such things as the original Apollo 13 command module *Odyssey*, the SR-71 Blackbird spy plane (the whole plane), and a full-scale Space Shuttle replica, as well as displays involving the development of rock-

etry. The Cosmosphere is not only a museum, though. It also has the Justice Planetarium Theater, where a basic beginner s-level planetarium show is provided. A laser light show is also given in the planetarium. Robert Goddard's Lab is another part of the Cosmosphere. It provides a hands-on learning experience about rocket science from someone made up to look like Dr. Goddard, who is known to be the father of rocket science.

However, the most popular part of the Cosmosphere is not the museum, nor is it Dr. Goddard's Lab. It is the Carey IMAX Dome Theater. The theater is a 44-foot, wrap-

around dome that uses a special projection system to makes you feel like you are sitting in the center of the scene while watching the movie. The sound system in the theater is wrap-around as well, enabling viewers to get a feeling of movement as well as image, providing such effects as falling over a cliff or banking around a curve as if in a plane. People come from all over the country to sit in this theater in order to be subjected to extreme vertigo.

The Kansas Cosmosphere and Space Center is a good way to spend a day. You can go into any or all of the activities, as well as the gift shop, which has some very unusual items. Prices for the activities are adjusted if you purchase a ticket for all the events. There are also group rates.

The Cosmosphere is designed for the curious beginner, and advanced astronomers might find themselves somewhat bored with the simplicity of the activities. The planetarium show is very basic, showing very few constellations and views of objects through three different magnifications. The program is somewhat misleading unless you know what the sky really looks like. The seats are stationary, so, in order to allow the audience to see north after seeing south, the projection

rotates instead of the person turning. This, to me, seems like we are seeing all the objects while viewing south at all times. During the program, there is no mention about the sky orientation being turned around. In my opinion, the show should encourage the audience members who wants to see all of the objects to turn around as if looking at the real sky. I suppose it is useful for the novice astronomer, but I do not particularly like it.

The laser light show has good music to it, but is (in my opinion) just a bunch of squiggly lines projected on the dome. At times a burst of bright light is flashed to emphasize a particular part of a song, but I keep my eyes shut and listen to the music most of the time. These shows vary from season to season.

The museum is interesting with all its American, Russian, and German artifacts and information on rocket history. The IMAX is the most fun, but the whole Cosmosphere is quite an experience.

When you are passing through Kansas, look up Hutchinson. It isn't a very large city, and you will be able to find the Cosmosphere easily enough. Just stop and ask anyone in the city. You can call ahead and find out what is playing at the IMAX, too. Then, take the time to stop and visit the Kansas Cosmosphere and Space Center.

**Kansas Cosmosphere and Space Center**  
1100 N. Plum  
Hutchinson, KS 66501-9926  
316-662-2305  
800-397-0330  
<http://www.cosmo.org>

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# Spring Observing

by Brenda Culbertson

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The nights are getting shorter as spring approaches. It won't be long before we hear the familiar sounds of insects buzzing around our ears and smell the familiar scent of insect repellent wafting through the air. But with the unpredictable weather we have seen in the past few years, it is difficult to tell what the temperatures will do.

Here in Kansas, we have enjoyed a few moderately warm nights with good seeing this winter, and we have had some great meteor showers, including the Leonids in November and the Geminids in December. Just check out the AAAA web page and to see what some of the members have been up to.

I have been doing some solar observing. If you have the proper equipment to view the Sun safely, you might start observing it more frequently. We are coming into a sunspot maximum and I have seen many naked ... oops!, I mean, unaided eye sunspots. Once the Sun becomes active, aurorae cannot be far behind. Please let me know via my e-mail address if you see any aurorae. I am working on a research project and need sightings.

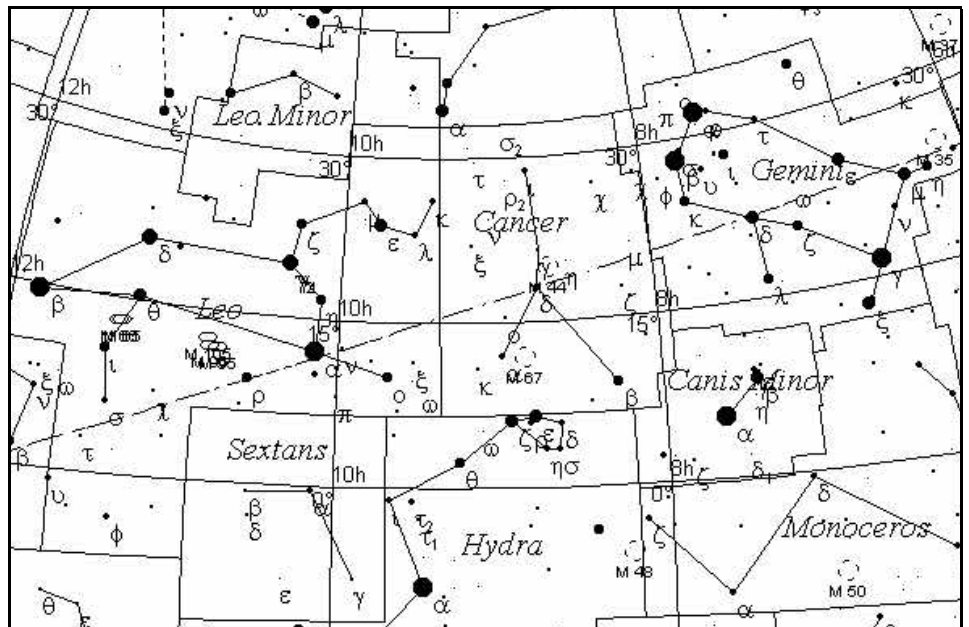
Quick, before the mosquitoes start munching, dust off your telescope or binoculars and go out to enjoy the Spring nights. Don't forget your list of things to find and your log book. To help you out, here are some spring objects for you to look for.

## EASY OBJECTS

In the spring, the bees start buzzing. The same holds true for the celestial bees. The Beehive Cluster, Praesepe (M44), will be buzzing overhead and is very easily found. Praesepe is in the constellation Cancer, which is not an extremely noticeable constellation, except for this one rather obvious star cluster. The cluster is inside a triangle whose points are Procyon, Regulus and Pollux. A nice dark site will allow you to find the star cluster without optical aid, but binoculars of any size will enhance the view.

Another star cluster that is easy to find is a globular cluster in Hercules. It is the Hercules Cluster (M13) and can be seen on a good night away from the city lights. An easy way to find this globular is to locate Corona Borealis. Where the arc points into the Keystone of Hercules (a third of the way between Eta and Zeta) you should find the cluster. The Keystone area of Hercules is the trapezoidal shape of bright stars forming his torso. Binoculars will improve your view of this cluster.

Gemini holds some nice things for us to view. Look for another cluster that is also visible without optical aid, although binoculars



Spring Constellations: Leo, Cancer, Gemini and Surrounding Area

will certainly help. The cluster M35 is about 2 1/2 degrees northwest of Eta Geminorum.

Don't forget to follow the Milky Way as it starts to shift its overhead angle. Follow the arm from north to south and pick out the many clusters and galaxies along the way. Using binoculars will help you find more objects.

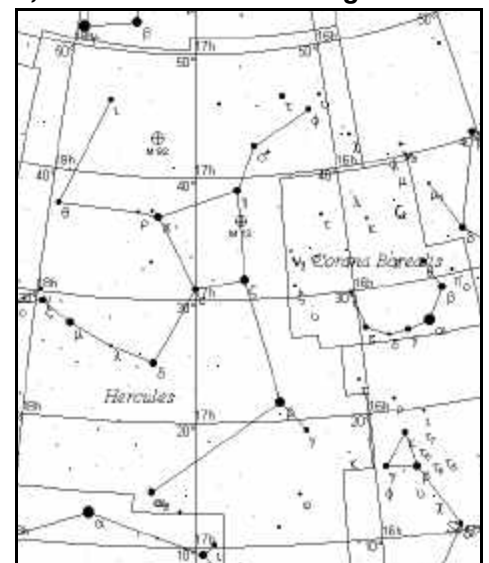
As you observe, remember to look to the northern horizon from time to time. If you see a red glow or some white shafts of light rising up from the horizon, you most likely have spotted an aurora. View aurorae without aid, but if you have a camera, take a shot about 30 to 45 seconds long. See what you get.

## MODERATLY DIFFICULT OBJECTS

Gemini has some objects for those who want a little more challenge. The two most noticeable stars in Gemini are Castor and Pollux. Castor is the fainter, more northern of the two stars. It is also a multiple system. Castor A has a magnitude of 2.0 and Castor B is 2.8. There is a 9.1 magnitude companion, Castor C. Try to see if you can separate Castor into its components.

While in Gemini, look for the Eskimo Nebula (NGC 2392). It is about half way between Kappa and Lambda Geminorum. This planetary nebula appears as a glow in smaller telescopes, but larger apertures will see a happy face in a hood. If you look at the Eskimo, the Eskimo will look at you.

Go Ring-Tail hunting this spring. The Ring-Tail Galaxy (NGC 4038) is a fun object to view. It is in the constellation Corvus and appears at 11th magnitude. Look west-southwest of Gamma Corvi about 4 degrees and you will find an odd shaped object. Some say it is a spiral galaxy, others say it is a result



Spring Constellations: Hercules

of colliding galaxies. What do you say?

Sea snake, anyone? Hydra has some interesting objects inside its borders. It also shares an object with a bordering constellation. M 83 is a large spiral galaxy on the Hydra-Centaurus border, with Spica about 18 degrees to the north. The galaxy is about magnitude 8. Look for details in this galaxy by using a fairly large aperture telescope. It has some fascinating details.

## DIFFICULT OBJECTS

Gemini holds some rather difficult objects to see. The easy to see cluster M35 has a friend, NGC 2158. NGC 2158 is a galactic star cluster southwest of M35 by about a half degree, and visible in your telescope eyepiece in the same field of view. The cluster has nebulosity with resolvable stars and is of magnitude 11. Distinguishing it

# Spring Observing

from the stars of M35 is a trick.

Look for the extremely faint galaxy cluster in Corona Borealis. Over 400 galaxies are known to exist in this group. The brightest member of the group is about magnitude 16 and a large aperture telescope is required, along with a good eye. Look in the southwest corner of the constellation for this hard to find group.

Hydra holds an 8th magnitude globular cluster that may not be a challenge to see, but may be a challenge to find. To find this cluster, according to Burnham's Celestial Handbook, ... draw an imaginary line from Delta through Beta in Corvus, extend it out 3.8 degrees to the 5th magnitude double star B230, the only naked-eye star in the area. The cluster lies about 0.6 degrees northeast of this star. This cluster has about 40 variable stars.

## OTHER

Keep track of the sunspots as they trek across the solar disk. And watch for aurorae in the northern skies on moonless nights. Aurorae are generally a red glowing skies along the northern horizon, but can be any color and intensity during an auroral storm. Curtains and rolling balls of light are often seen during intense periods of activity. The

more northerly your viewing location, the more likely you are to see aurorae. These are great photo opportunities.

The Moon is always great to observe when it is the brightest thing out there except for Full Moon nights. The Full Moon is very bright and does not show much shadow detail. Follow illuminated mountain peaks as they grow or shrink as the sun light passes along the terminator during waxing or waning phases. Learn a few crater names and impress your friends and strangers.

No matter which of God's treasures you plan to observe, enjoy your time in the heavens. Share the views with a friend or neighbor. You will be surprised to find out how little people know about what is out there.

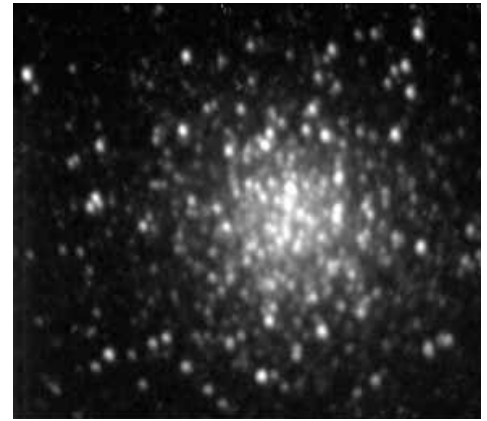
Consult your star charts for exact placement of objects, or e-mail me with your request.

## Meteor Showers for Spring

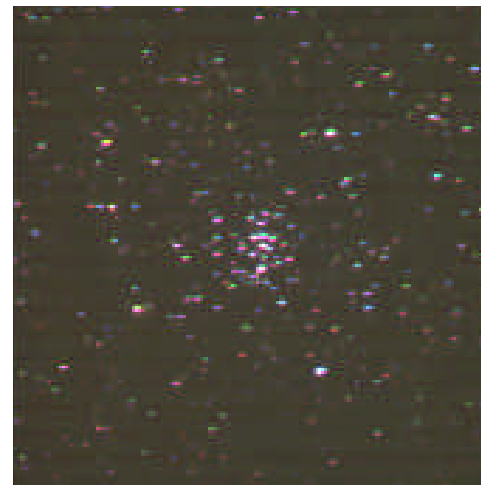
April 21/22 Lyrids, First Quarter Moon

May 04/05 Eta Aquarids, Between Full and Last Quarter Moon

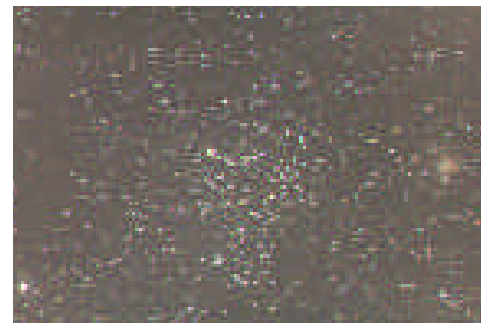
June 30 Beta Taurids, Full Moon



M13 in Hercules by Calvin Hill



M44 in Cancer by Ed Flaspoepler



M35 in Gemini by Ed Flaspoepler



M83 in Hydra from RealSky CD

## Dates to Remember

April 02	Good Friday
April 04	Easter. Daylight-Savings Time Begins
April 10	Neptune 1.1 Degree South of the Moon, Occultation
April 11	Uranus 1.0 Degree South of the Moon, Occultation
April 16	New Moon
April 18	Aldebaran is 0.7 Degrees South of the Moon
April 24	Regulus is 0.5 Degrees South of the Moon
April 30	Full Moon
May 07	Neptune 0.9 Degrees South of the Moon, Occultation
May 08	Uranus is 0.7 Degrees South of the Moon, Occultation
May 09	Mother's Day
May 13	Mercury 0.7 Degrees North of Saturn
May 15	New Moon
May 16	Aldebaran is 0.9 Degrees South of the Moon
May 21	Regulus is 0.7 Degrees South of the Moon
May 30	Full Moon
May 31	Memorial Day
June 03	Neptune is 0.7 Degrees South of the Moon, Occultation
June 04	Uranus is 0.5 Degrees South of the Moon, Occultation
June 13	New Moon
June 14	Flag Day
June 18	Regulus is 1.0 Degree South of the Moon
June 20	Father's Day
June 21	Summer Solstice
June 28	Full Moon
June 30	Neptune is 0.6 Degrees South of the Moon, Occultation

There are several occultations of various sorts, as well as eclipses and other astronomical events over the next few months. Check your calendar for dates. Also *Sky & Telescope's* News Bulletin and *Sky at a Glance* will give specific information.

# The AAAA Solar System Data Page

Nine planets and their satellites make up the Solar System, but only five of these bodies, Venus, Mars, Jupiter, Saturn, and the moon, make ideal telescope targets. The Inner Planets, Mercury and Venus, are so classified because they are inside the orbit of the earth. The remaining planets are classified as Outer Planets because of their position outside the earth's orbit.

Planetary observing is one of the most accessible of observing pursuits for amateur astronomers, now that most of us live in light polluted urban centers. Because of their brightness, planets can be seen on any clear night from inside the limits of any large city, even when the bright stars are not visible.

Planetary observing can be done either visually or with optical equipment, such as binoculars or a telescope. With the unaided eye, it is easily possible for anyone to note the movements of the five brighter planets across the sky from day to day and from month to month. With binoculars, it is possible to see the satellites of Jupiter and locate the positions of Uranus and Neptune. Using a telescope, the interested observer can note the changing positions of the satellites of Jupiter and Saturn, and make regular observations of changing features on the surface of any of the bright planets.

The AAAA's Solar System Data page is a reference to basic data on the planets and their satellites as you pursue your planetary observations. The URL on the AAAA web page is <http://www.corvus.com/planets/planets.htm>

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